Innovation in Motion
TSUBAKI

TSUBAKI
DRIVE CHAINS & SPROCKETS



Catalog ver. 2

TSUBAKI ECO LINK

Miniature chain made with Tsubaki pride

Epsilon

Stainless Steel Epsilon Chain™



Comparison with other small power-transmitting components

Epsilon's extremely small size means it can be used for applications where conventional chains are unsuitable—and it can be used to replace belts and wires.

	Epsilon Chain™	Small-pitch toothed belt	Small-diameter wire rope
Compact	◎	△	△
Tensile strength	○	—	◎
Positioning accuracy	○	◎	×
Extrusion applications	○	×	×
Installation tension settings	○ (Not needed)	× (Needed)	—

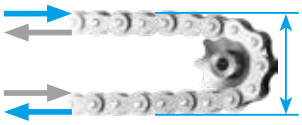
◎ Excellent ○ Good △ OK × Not good – Not applicable

Benefits

● **Reliable power transmission**
Unlike power transmission by friction, engaging transmission prevents chain slippage.

● **High rigidity**
Also usable for pushing applications. It also maintains tension when run in reverse.

● **Compact articulation**
Unlike wire ropes or belt core wire, the chain resists deformation or breakage from bending.



7.6 mm
(When using the smallest drive sprocket with 9 teeth)

Epsilon chain can be used in complex layouts in tight spaces.

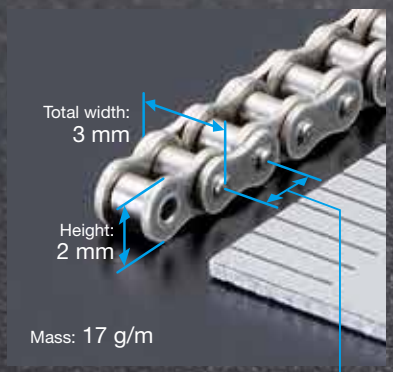
Belt sprockets used with toothed belts and wire ropes have flanges to prevent them from coming off. This requires a larger space in the direction of the pitch circle diameter.





Extremely small

Our smallest roller chain, achieved through the culmination of Tsubaki's parts manufacturing and assembly technologies developed over the years.

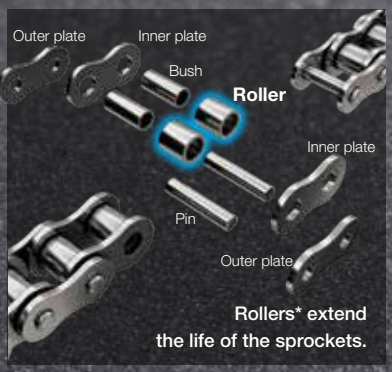


Pitch:

1.905mm

Sufficient strength

This high-spec chain, small yet strong, was created by fully leveraging our core technologies.



Min. tensile strength:

0.36kN

*Conventional small-size chains don't have rollers.

Withstands corrosive environments

This stainless steel chain can be used in environments exposed to water, such as cleaning processes.



Application examples

A smaller chain size allows for more compact and lightweight applications.
Also, a smaller backlash enhances operational accuracy.



Endoscope



End effector



Crop harvesting robot



Powered exoskeleton



Prosthetic hand

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Standard Roller Chains p.29

RS Roller Chains feature even higher kilowatt ratings and better performance for each size.

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RS Roller Chain B Series ---- 58

Lube Free Roller Chains p.76

These chains reduce your maintenance times, improve your work environment, and increase your productivity.

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These chains provide higher kilowatt ratings, allowable loads, and greater tensile strength than RS Roller Chain, allowing users to go one to two sizes down.

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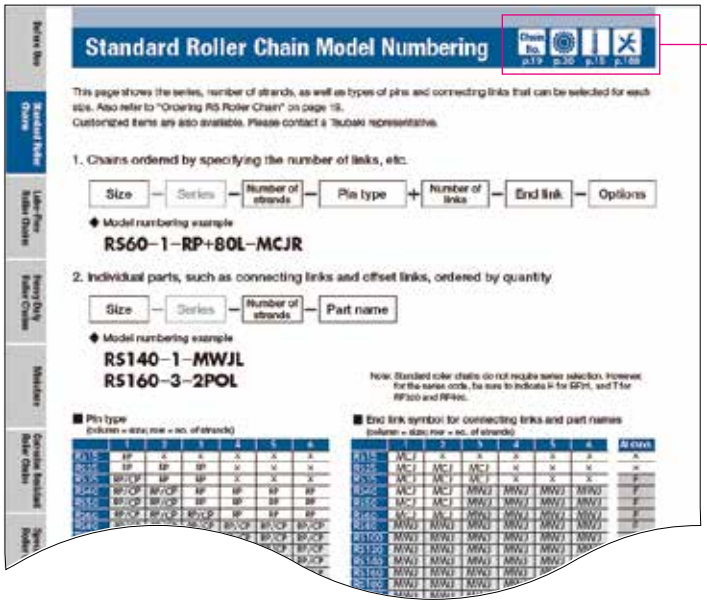
Our smallest chain, ideal for compact layouts.

Epsilon Chain™ ESS Series ---- 97

Corrosion Resistant Roller Chains p.99

These chains provide resistance to a variety of operating environments.

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◆ What the pictograms mean

Chain number
Indicates the page explaining the chain number.

Sprockets
Indicates the page showing the corresponding sprockets.

Operating temperature range
Indicates the page showing the corresponding operating temperature range.

Engineering
Indicates the pages on selection, handling, troubleshooting, and more.

Tsubaki Eco Link
The Tsubaki Group cares about the environment. That is why we have established standards for evaluating the environmental friendliness of our products. Only products that meet our exacting guidelines are recognized as eco-products and certified with the Tsubaki Eco Link logo.

Specialty Roller Chains p.113

These chains are designed for special applications.

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G8 Series RS Roller Chain

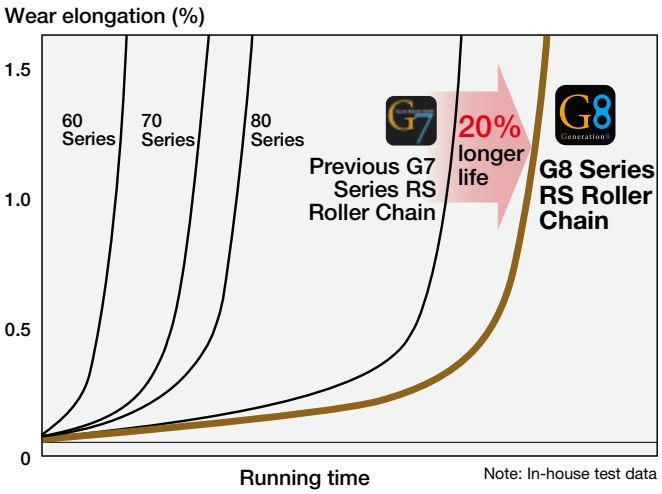
p.29–



20% longer wear life (compared to G7 Series)

Anti-rust lubrication minimizes tackiness and increases handleability

Evolution of chain wear life



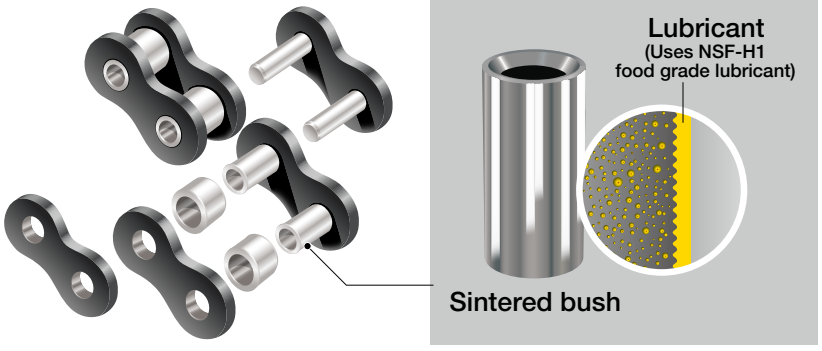
G8 Series LAMBDA Chain

p.76–



Oil impregnated sintered bushes use NSF-H1 certified oil

Basic Lambda Chain construction



Long life without additional lubrication

G8 Series Lambda Chain can offer up to twice the wear life* of previous Lambda Chain under particular conditions.

*In-house test results; actual results will vary depending on operating conditions.

G8 Series Heavy Duty Chain

Super Chain/RS-HT Chain/Super-H Chain

p.86–



5–10%
higher maximum allowable load than the previous series

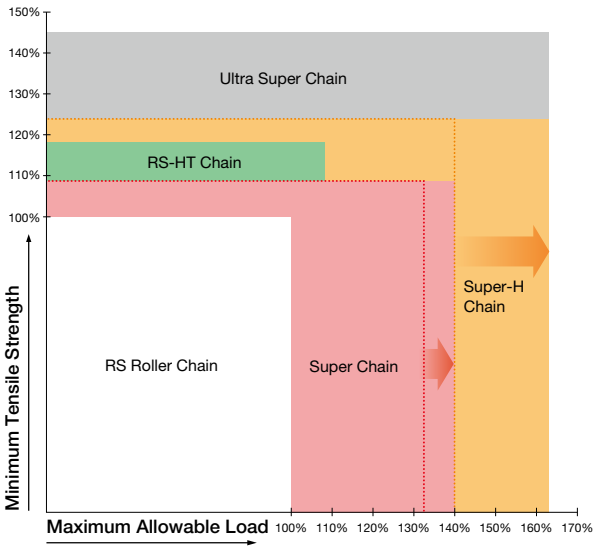


Twice
the wear life of the previous series.
M type connecting links now available



20% higher max. allowable load than the previous series

Comparison of min. tensile strengths and max. allowable loads



Note : With RS Roller Chain mim. tensile strength and max. allowable load as benchmark (100).

Super Chain — Previous Super Chain
Super-H Chain — Previous Super Chain
RS-HT Chain — Ultra Super Chain

Stainless Steel Chain

SS Series / HS Series

p.99–



SS Series

Seamless bushes improve wear life and maximum allowable load

HS Series

13Cr stainless steel pins, bushes, and rollers give the chain longer life and higher strength

Surface-Treated Chain

NEP Series Neptune™

p.99–



NEP Series

Combining our newly developed special coating and special resin coating gives superb resistance to corrosion and chemicals

Tsubaki RS Sprockets

RS Sprockets are perfect for G8 Series RS Roller Chain

RS Sprockets

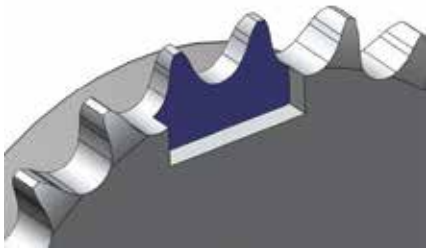
p.30–



High-quality sprockets with overwhelmingly superior tooth surface hardness and hardened layer depth

Sprockets for general-use drive chain are strong enough to handle the chain, while the wear resistance of the teeth is as important as the chain itself.
Tsubaki offers standard pilot bore sprockets and sprockets with hardened teeth.

Comparison of tooth hardening

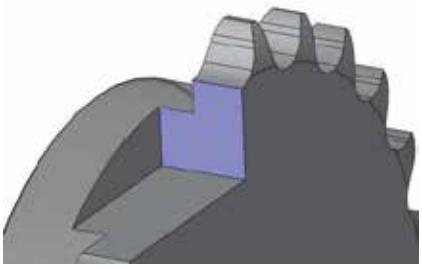


Cross-sectional observation of tooth hardening (hardened layer is gray)



Tsubaki sprocket | Company A sprocket | Company B sprocket

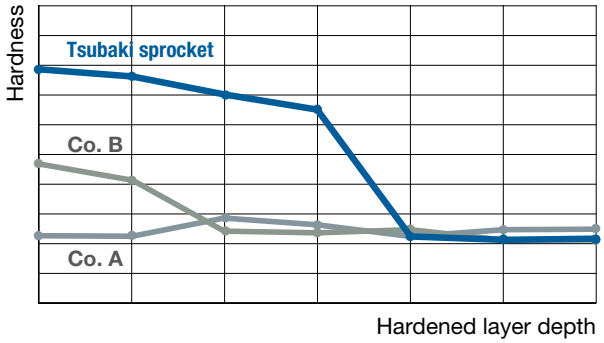
Comparison of tooth hardness and hardened layer depth



Cross-sectional observation of tooth hardened layer depth (hardened layer is gray)

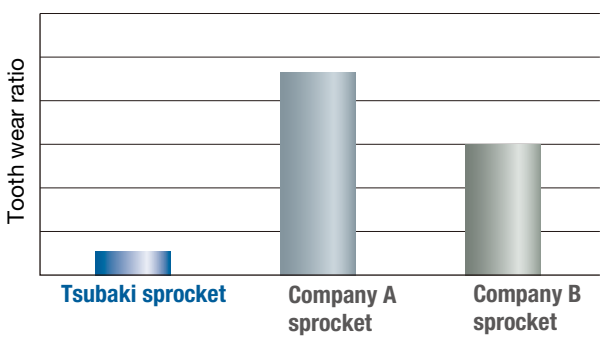


Tsubaki sprocket | Company A sprocket | Company B sprocket



Comparison of tooth wear under load tests

Wear on RS40 sprockets after 500 hrs running time.
The Tsubaki sprocket has superior wear resistance.



Recommended for Heavy Duty Drive Chain

RS Tough Tooth Sprockets

p.122–



Stronger, more durable sprocket

Durable Teeth are hardened

Strong Welded hub is 43% stronger than standard pilot bore hubs

Wear resistant Optional special surface coating available

Recommended for HS Series Stainless Steel Chain

Stainless Steel Sprockets Wear-Resistant Series

p.127–



Special surface treatment gives the sprocket better wear resistance

Wear life 2.5 times longer than the previous stainless steel sprocket

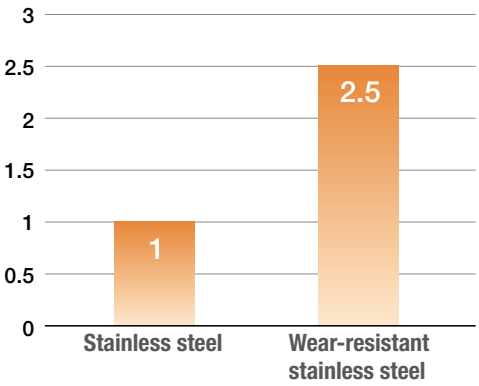
Comparing sprocket wear life



Stainless steel sprocket wear-resistant series



Standard stainless steel sprocket



In-house test conditions

Size: RS50 No. of links: 66
Working load: 1.85 kN
Sprockets: 17 teeth (drive/driven) RPM: 185 r/min
Environment: Ambient temperature, dry condition

Before Use

Read through this catalog before use to ensure proper selection and usage. Also, carefully inform persons involved in installation and maintenance of all pertinent matters.

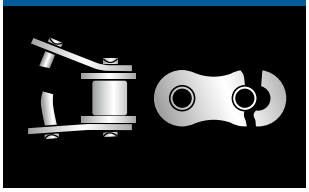
Numerical figures are indicated in both SI and gravimetric units.
(Gravimetric units are for reference.)

Dimensions in this catalog are nominal dimensions and may differ from the actual dimensions.

All photos and artwork in this catalog are for illustrative purposes only.

The external diagrams of the chain, connecting link, offset link, and other parts are provided as examples. Therefore, depending on chain size, the shape of the pin ends and offset pins and the assembly methods of the offset pins and connecting plates may differ from the diagrams.

NOTE



1. Inspect and replace worn roller chain periodically.
2. Roller chains can break and jump up on the sprocket from wear elongation.
3. Overload may cause roller chain to break. Avoid breakage by properly selecting products with consideration of inertia, impact, etc.
4. Roller chains can break due to corrosion and other environmental conditions.
5. The chain may have a shorter life or break if the sprockets are not centered properly or if there are changes in the usage environment or other conditions.
6. Wear dust is generated as a result of wear on chain parts. Lubricant oil may also splatter during operation.
7. When guidelines or legal considerations impose constraints on the selection of roller chain, first make a selection based on these constraints and then make another selection based on the methods given in this catalog. Then choose the roller chain that provides the greater margin of safety.
8. Always install hazard protection devices (safety covers, etc.) for the chain and sprocket.
9. When using a chain and sprocket in lifting applications, install a safety fence and strictly prevent entry to the area directly below the lifted object.
10. Contact a Tsubaki representative regarding whether a product contains substances restricted for use in specific industries and applications.

When You Do Not Know the Roller Chain Number

1 Verification of the roller chain specifications (strength type, material, etc.) is important. Check with the equipment manufacturer.

2 Check the roller chain size and specifications that are stamped on the roller chain plate.

3 Measure the pitch, roller diameter, inner width of inner link, and plate thickness of the roller chain.

4 Check the sprocket size and specifications that are stamped on the sprocket. Also measure the sprocket's tooth width.

General Comparison of Transmission Elements

The following table compares roller chains to other power transmission mechanisms such as toothed belts, V-belts, and gears. Generally speaking, roller chains are often used as economical power transmission suited to low speed and high loads. However, it is also possible to use the chain in high-speed applications such as camshaft drives for automobiles, as long as you consider usage and lubrication methods.

Transmission mechanism		Roller chain	Toothed belt	V-belt	Gear
Synchronicity		◎	◎	×	◎
Transmission efficiency		◎	◎	△	◎
Anti-shock		△	○	◎	×
Noise & vibration		△	◎	◎	×
Ambient conditions		Avoid water and dust (Corrosion-resistant drive chains available)	Avoid heat, oil, water, and dust	Avoid heat, oil, water, and dust	Avoid water and dust
Space, weight	High speed, light load	×	◎	○	○
	Low speed, heavy load	◎ Compact, lightweight	△ Slightly heavy pulleys	× Wide with heavy pulleys	○ Needs high strength due to low number of engaging teeth
Lubrication		× Required	◎ Not required	◎ Not required	× Required
Layout freedom		◎	○	△	×
Excess load on shaft		◎	△	×	◎

◎Excellent ○Good △Fair ×Poor

Features and Points to Remember of Roller Chain Transmissions

Features

1. Allows large speed reductions/increases (usually up to 1:7).
2. Chains can accommodate long shaft center distances (normally less than 4 m), and are more versatile.
3. It is possible to use chain with multiple shafts or drives with both sides of the chain.
4. Easy installation and replacement (easy to cut and connect chains).
5. Drive use is possible even when shafts are vertical, as long as the chain receives support in short distances between the shafts.
6. The sprocket diameter for a chain system can be smaller than a belt pulley while transmitting the same torque.
7. Sprockets are subject to less wear than gears because sprockets distribute the load over their many teeth.
8. High shock absorbency compared to gears.
9. High transmission efficiency.

Points to Remember

1. Chains have speed variation, called chordal action, which is caused by the polygonal effect of the sprockets. (The effect can be reduced by increasing the number of sprocket teeth.)
2. During transmission, a method of lubrication suitable to the chain's speed is necessary.
3. Chains wear and elongate. Measures for adjusting chain slack need to be considered.
4. Chains are weak when subjected to loads from the side. They need proper alignment.
5. Chains need to be held firm so they do not get twisted or tangled during unpacking and installation.

Glossary

1. JIS Standard Minimum Tensile Strength (Tensile Breakage Strength)

This is the minimum tensile strength determined by JIS standards, which are compatible with ASME standards. If a roller chain breaks from a tensile load below this value, then it is non-compliant. With multi-strand roller chain, the single strand value is multiplied by the number of strands. (JIS B 1801:2020)

2. Minimum Tensile Strength

This is a minimum value determined by statistical processing at Tsubaki. If any roller chain fractures by a tensile load below this value, then it is non-compliant. This value varies depending on the manufacturer.

Testing Method

As shown in Fig. 1, a roller chain with over five links is fixed at both ends by clevises and is stretched until breakage occurs (JIS B 1801:2020). The type of fracture is indicated by breakage of the roller chain or failure of its parts (Fig. 2.)

Fig. 1 Tensile strength test

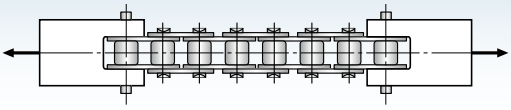
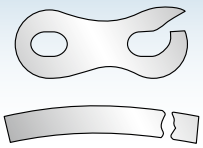


Fig. 2 Shape of fracture



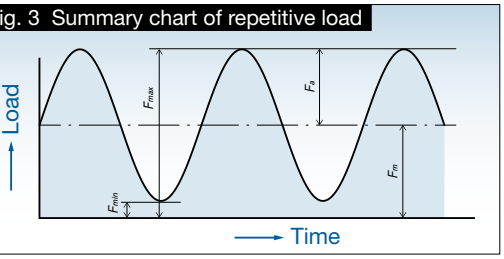
3. Maximum Allowable Load

The maximum allowable load of roller chain (excluding Stainless Steel Chain and Engineering Plastic Chain*) is the value derived from the lowest fatigue limit. When a load lower than this value is repetitively applied to the roller chain, fatigue failure will never occur.

Under the JIS B 1811:2023 standard, the maximum allowable load indicates a test load of Fd, which has been corrected by having minimum load set at zero. The minimum load is calculated based on a fracture probability of 0.135% when a load is repetitively applied 10 million times (Fig. 3) to a straight-running roller chain having five or more effective links.

* Stainless steel and engineered plastic chains: Maximum allowable load is determined from specifying the surface pressure between pins and bushes based on wear performance.

Fig. 3 Summary chart of repetitive load



Note that strength of offset links may be lower than the chain itself.

$$F_d = \frac{F_u(F_{max} - F_{min})}{F_u - F_{min}}$$

F_u : JIS B 1801 min. tensile strength

4. Kilowatt Ratings Table

RS Roller Chain, Super Roller Chain, Heavy Duty Chain, and Low Noise Drive Chain kilowatt ratings tables show kW values for 15,000 hours of operation using a two-shaft drive and 100 pitches of roller chain under conditions 1 to 5 below.

1) The chains are operated under ordinary conditions where the ambient temperature is -10°C to 60°C (14°F to 140°F) and there is no abrasive dust.
2) There are no negative effects from corrosive gasses or high humidity.
3) The two shafts are level and the chains are properly installed.
4) There is minimal fluctuation in load during transmission.
5) The recommended lubrication system and lubricant shown in the kW ratings tables is used for RS Roller Chain, Super Roller Chain, Heavy Duty Chain, and Low Noise Drive Chain.

5. Moment of Inertia

Moment of inertia is used to show the degree of inertia in rotational movement; in other words, “rotation difficulty” or “rotation ease.” This is equivalent to the mass (weight) of the object being used for straight-line transmission.
Moment of inertia is shown in the SI units table as:

$I = M\kappa^2$ (kg·m^2 M : mass of rotating body κ : turning radius)

It is shown in the gravimetric units table as:

$I = \frac{G \cdot \kappa^2}{\underline{G}}$ (kgf·m·s^2 G : mass of rotating body $\underline{G}$: gravitational acceleration)

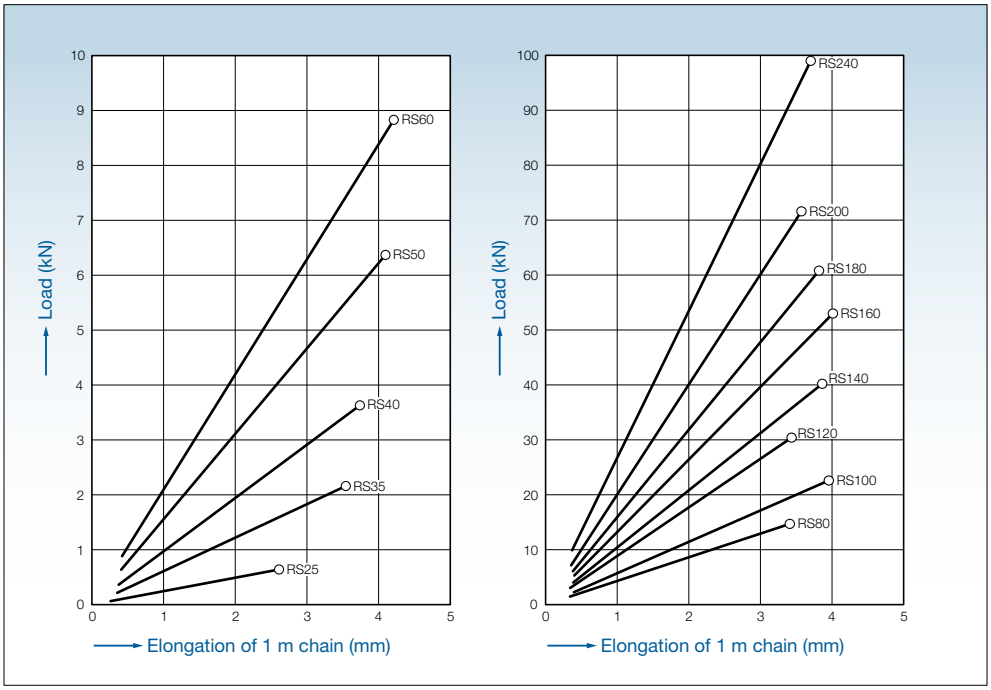
Although, $GD^2 = 4GI$ (D : diameter of rotating body) is generally being used now in place of moment of inertia.

6. Total Length Tolerance of Roller Chain

Length test method and length tolerance are specified in JIS B 1801-2020. The length tolerance of any individual size when subjected to a measured load (e.g. 500 N [50.99 kgf] for RS 80-1) specified in JIS is 0 to +0.15% of the reference length. The reference length is calculated by multiplying the reference pitch (P) by the number of links. (Applicable to products bearing an identification number.)

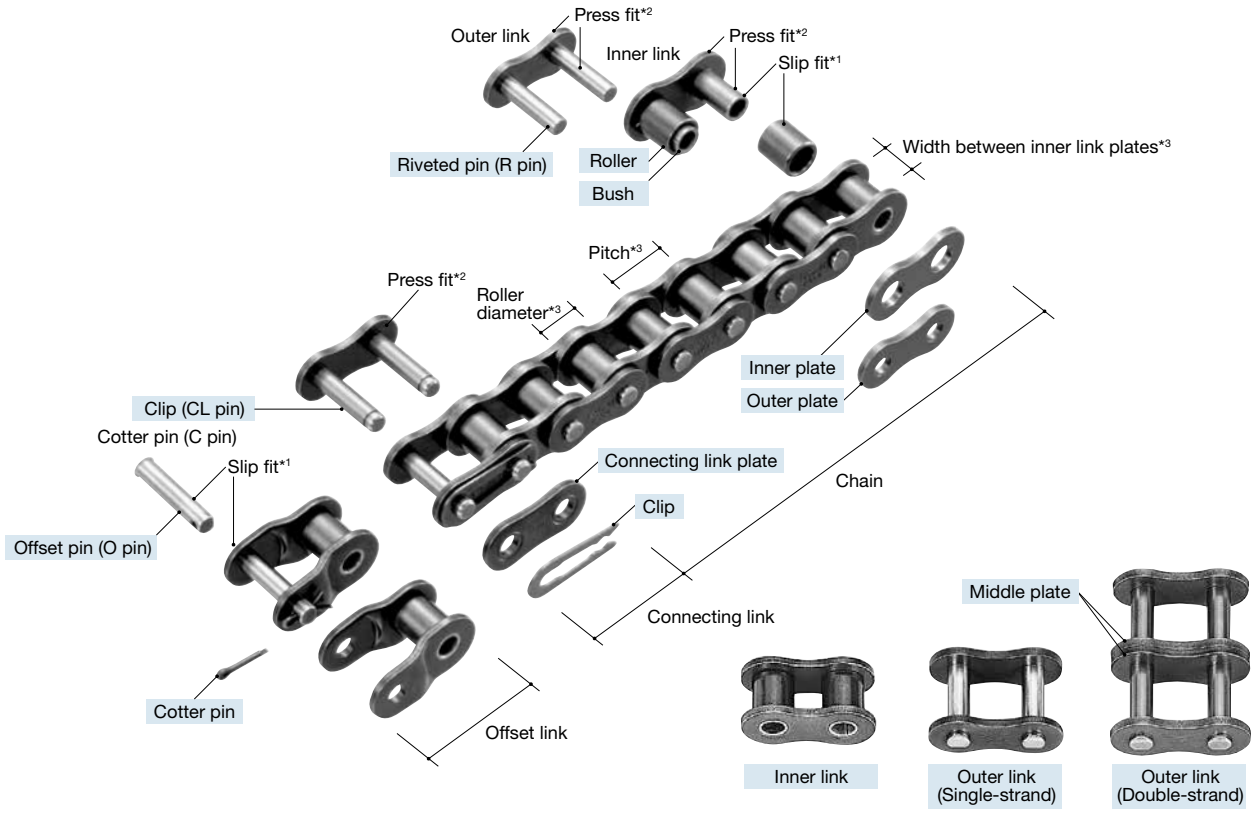
7. Elastic Elongation of Chain under Load

An elastic elongation curve of a chain under load looks as shown below. Values shown here are the standard references for single-strand RS Roller Chains.
Do not apply loads greater than the maximum allowable load to roller chains.



Roller Chain Construction

1. Basic Structure (Photo: RS60 Roller Chain)



Plate

The plate bears the tension placed on the chain. Usually this is a repetitive load, but sometimes it is accompanied by shock. Therefore, the plate must have not only great static tensile strength, but also must hold up to the dynamic forces of load and shock.

Pin

The pin is subject to shearing and bending forces transmitted by the plate. At the same time, it forms a load-bearing part, together with the bush, when the chain flexes during sprocket engagement. Therefore, the pin needs high tensile and shear strength, resistance to bending, and sufficient endurance against shock and wear.

Bush

The bush is subject to complex forces from all parts, especially from the repetition of shock loads when the chain engages the sprocket. Therefore, the bush needs extremely high shock resistance. In addition, the bush forms a load-bearing part together with the pin, and as such requires great wear resistance.

Roller

The roller is subject to impact load as it strikes the sprocket teeth during chain engagement with the sprocket. After engagement, the roller changes its point of contact and balance. It is held between the sprocket teeth and bush, and moves on the tooth face while receiving a compression load. Therefore, it must be resistant to wear and still have strength against shock, fatigue, and compression.

Inner Link

Two bushes are press fit into two inner plates, and rollers are inserted to allow rotation around the outside of the bush. This is the same for single-strand and multi-strand chain.

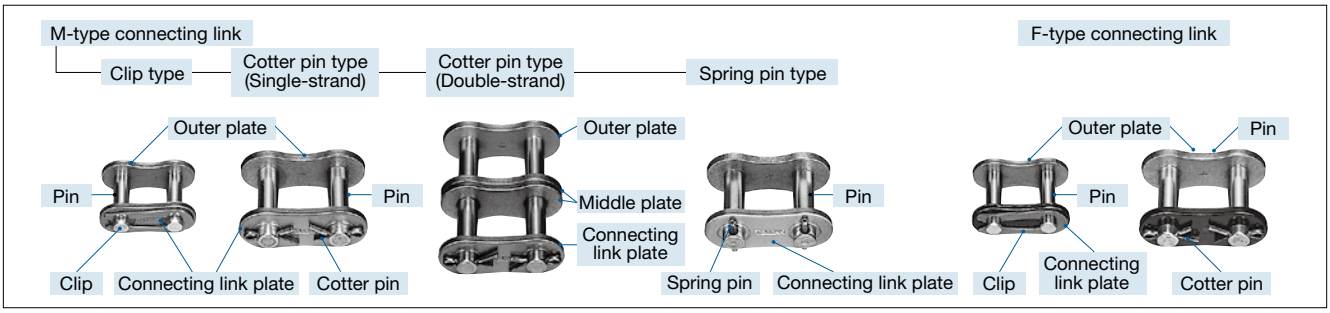
Outer Link and Middle Plate

The pin link consists of two pins that have been press fit into two outer plates. With multi-strand roller chain, a middle plate is added to the pin link. The middle plate is slip fit*1 for standard RS Roller Chain and press fit*2 for Super Roller Chain.

◆ Glossary *1 Slip fit: When the shafts (pins and bushes) and holes are fitted together, there is a continuous loose fit. This is a fit where the range of tolerance for the hole is larger than the range of tolerance for the shaft.
*2 Press fit: When the shafts (pins and bushes) and holes are fitted together, there is a continuous interferential fit. This is a fit where the range of tolerance for the hole is smaller than the range of tolerance for the shaft.
*3 The pitch, roller diameter, and inner width of the inner link are considered the basic three dimensions of a roller chain. When these dimensions are identical, a roller chain and sprocket are dimensionally compatible.

2. Connecting Links

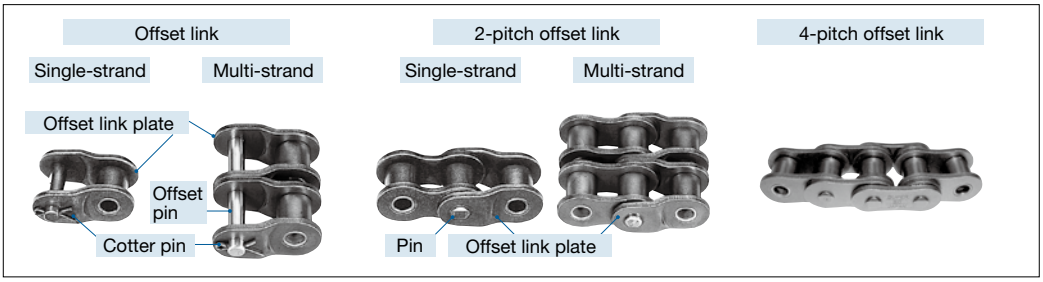
Roller Chains are usually made up of a number of connected links in an endless formation, or used by fixing the chain ends. Either way, connecting links are needed.



	Connecting link	Pin–connecting link plate fitting	Connecting link plate fastening	Note
RS Roller Chain	M-type connecting link	Slip fit	Clip Cotter pin Spring pin	◆ M-type connecting link plates are ring coined*. ◆ For multi-strand chain using M-type connecting links, make sure the plate with ring coining* is on the outermost side when assembling RS35 chain or larger. ◆ F-type connecting links are recommended for the shaded areas of the kW ratings tables and for lifting applications. ◆ F-type connecting link plates are black.
	F-type connecting link	Press fit	Clip Cotter pin Spring pin, T-pin	
Lambda Chain	M-type connecting link	Slip fit	Clip Cotter pin	◆ Can be used in all areas of the kW ratings table for Lambda Chain. ◆ Connecting link plates are ring coined*.
Super Roller Chain Super-H Chain	M-type connecting link	Slip fit	Spring pin	◆ Connecting link plates and middle plates are ring coined*.
	F-type connecting link	Press fit	Spring pin	◆ Use under extreme conditions (e.g., high shock, very high load, or possible side force).
Ultra Super Chain	F-type connecting link	Press fit	Spring pin	◆ Use exclusive connecting links.
RS-HT Chain	M-type connecting link	Slip fit	Cotter pin Spring pin	◆ M-type connecting link plates are ring coined*.
	F-type connecting link	Press fit	Cotter pin Spring pin	◆ Use under extreme conditions (e.g., high shock, very high load, or possible side force). ◆ F-type connecting link plates are black.
Other Roller Chains in Catalog	M-type connecting link	Slip fit	Cotter pin, Clip Spring pin T-pin, Z-pin	◆ Refer to the product pages. ◆ NP, NEP, KT, and SNS chains are ring coined*.

3. Offset Links

Offset links are to be used for roller chains with an odd number of links. This will not decrease minimum tensile strength. However, note that certain models will have decreased kW ratings and maximum allowable loads. Therefore, whenever possible, use a design that requires an even number of links.





◆ Glossary *Ring coining: This Tsubaki original processing adds an area of plastic deformation around pin holes to generate residual stress around the holes. Connecting link plates achieve the same strength as the chain itself even if they are slip fit.

Roller Chain and Specialty Chain Lineup

Product line	Product name	Series	Features/applications	Operating temperature*1 range (°C)	Lubrication*1
Standard Roller Chains	RS Roller Chain	–	JIS-compliant; general purpose	–10 to 60	Anti-rust pre-lube
	RS Roller Chain B Series	–	B Series; general purpose		
Lube-Free Roller Chains	Lambda Chain	LMD	Lube-free, long life (special oil-impregnated bush)	–10 to 150	Volatile corrosion inhibitor
	RS Double Strand Compatible Lambda Chain	LMDS*	Unlike 2-strand Lambda Chain, sprockets for 2-strand standard roller chain can be used		
	Surface Treated Lambda Chain	LMDNP	Lube-free, long life (special oil-impregnated bush); surface treated		
	X-Lambda Chain	LMDX	Super long life via special oil-impregnated bush and felt seal	–10 to 60	
	Lambda Chain KF Series	LMDKF	High lubrication and wear resistance under high temperatures	–10 to 230*2	
	Lambda Chain Cold Resistant Series	LMDKT	Can be used in colder temperatures than can standard Lambda chain	–30 to 150	
	Heavy Duty Lambda Chain	LMDH*	Lube-free, long life (special oil-impregnated bush); heavy-duty; double-strand only	–10 to 150	
	Curved Lambda Chain	LMCCU	Lube-free, long life (special oil-impregnated bush); curved conveyance		
	Lambda Chain B Series	LM	Lube-free, long life (special oil-impregnated bush); B Series		
Heavy Duty Drive Chains	Super Chain	SUP	High fatigue strength (40% higher than RS Chain)	–10 to 60	Anti-rust pre-lube
	RS-HT Chain	HT	High tensile strength (20% higher than RS Chain)		
	Super-H Chain	SUPH	High fatigue strength and high tensile strength (65% and 25% higher than RS chain, respectively)		
	Ultra Super Chain	USN	Highest tensile strength among all drive chains		
Miniature Drive Chains	Stainless Steel Epsilon Chain	ESS	Smallest size*6 Corrosion resistance equivalent to SS	Contact a Tsubaki representative.	Contact a Tsubaki representative.
Corrosion Resistant Roller Chains	Stainless Steel Roller Chain	SS	High corrosion resistance, high heat resistance	–20 to 400	Not lubed*3
		HS	Longer life than SS; 1.8x maximum allowable load of SS	–20 to 150	Volatile corrosion inhibitor
		NS	Higher corrosion resistance and higher heat resistance than SS	–20 to 400	Not lubed*3
		AS	Slightly less corrosion resistance than SS		Chain lubricant
	Surface Treated Roller Chain	NP	Low corrosion resistance, special nickel plating	–10 to 60*4	Anti-rust pre-lube
		NEP	High corrosion resistance		
		APP	Anti-pitting corrosion on pins		
	Titanium Roller Chain	TI	Made of nonmagnetic titanium, high corrosion resistance	–20 to 400	Not lubed*3
	Cold Resistant Roller Chain	KT	Cold resistance	–60 to 60*5	Chain lubricant
	Low Noise Roller Chain	SNS	Spring rollers, low noise	–10 to 60	Anti-rust pre-lube
	Poly Steel Chain	PC	Corrosion resistance, wear resistance, low noise, lightweight	–20 to 80	Not lubed*3
		PCSY	Better chemical resistance than PC		
	Curved Stainless Steel Roller Chain	CUSS	Stainless steel, curved conveyance	–20 to 400	
Specialty Roller Chains	Leaf Chain	–	Plate and pin construction; for lifting applications	–10 to 60	Anti-rust pre-lube
	Curved Roller Chain	CU	Side-flexing chain, curved conveyance		Chain lubricant

* NP, KF, and KT specifications can be selected for LMDS, and NP specifications for LMDH.

Note: *1. When using chain outside the operating temperature range, consider using the appropriate lubricant oil and select the chain by taking into account strength degradation caused by temperature. (See page 218.)
*2. KF Series Lambda Chain is lubricated with oil that provides enhanced lubrication in temperatures from room temperature to 230°C. When using in temperatures of 150°C to 230°C, select chain by taking into account strength degradation caused by temperature. (See page 218.)
*3. Oil is applied during assembly. RS11-SS, RS25-SS, and RS25-NS are lubricated.
*4. Using the right lubricant oil for the operating temperature will allow the chain to be used in temperatures up to 150°C.
*5. When using cold resistant chain in temperatures of –60°C to –40°C, select chain by taking into account strength degradation caused by temperature. (See page 218.)
*6. Tsubaki in-house comparison.

Identification number (Pitch: mm)																	See page
6 (1.905)	11 (3.7465)	15 (4.7625)	25 (6.35)	35 (9.525)	40 (12.70)	50 (15.875)	60 (19.05)	80 (25.40)	100 (31.75)	120 (38.10)	140 (44.45)	160 (50.80)	180 (57.15)	200 (63.50)	240 (76.20)	Other large sizes	
		●	●	●	●	●	●	●	●	●	●	●	●	●	●	RF320-T ● RF400-T ●	29
				RF06B ●	RS08B ●	RS10B ●	RS12B ●	RS16B ●	RS20B ●	RS24B ●	RS28B ●	RS32B ●		RS40B ●	RS48B ●	RS56B ●	
					●	●	●	●	●	●	●	●					76
					●	●	●	●	●	●	●	●					
					●	●	●	●	●	●	●	●					
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					●	●	●										
				RF06B ●	RS08B ●	RS10B ●	RS12B ●	RS16B ●	RS20B ●	RS24B ●							
								●	●	●	●	●	●	●	●		86
							●	●	●	●	●	●		●	●		
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					●	●	●	●									
					4 ●	5 ●	6 ●	8 ●	10 ●	12 ●	14 ●	16 ●					113
					●	●	●	●									

Sizes marked with ● are available as standard. We can also provide sizes in the blank cells as well. Contact a Tsubaki representative for details.

Connecting Link Lineup

Product line	Product name	Series	Series			
			Part name	Old model number	Features	
					Pin–connecting link plate fitting	Plate fastening
Standard Roller Chains	RS Roller Chain	–	MCJL	JL	Slip fit	Clip
			MWJL	JL	Slip fit	Cotter pin
			MSJL	JL	Slip fit	Spring pin
			FTJL	JL	Press fit	T-pin
	RS Roller Chain B Series	–	MCJL	JL	Slip fit	Clip
			MWJL	JL	Slip fit	Cotter pin
Lube-Free Roller Chains	Lambda Chain	LMD	MCJL	JL	Slip fit	Clip
			MWJL	JL	Slip fit	Cotter pin
	RS Double Strand Compatible Lambda Chain	LMDS	MCJL	JL	Slip fit	Clip
			MWJL	JL	Slip fit	Cotter pin
	Surface Treated Lambda Chain	LMDNP	MCJL	JL	Slip fit	Clip
			MWJL	JL	Slip fit	Cotter pin
	X-Lambda Chain	LMDX	MCJL	JL	Slip fit	Clip
			MWJL	JL	Slip fit	Cotter pin
	Lambda Chain KF Series	LMDKF	MCJL	JL	Slip fit	Clip
			MWJL	JL	Slip fit	Cotter pin
	Lambda Chain Cold Resistant Series	LMDKT	MWJL	JL	Slip fit	Cotter pin
	Heavy Duty Lambda Chain	LMDH	MCJL	JL	Slip fit	Clip
			MWJL	JL	Slip fit	Cotter pin
	Curved Lambda Chain	LMCCU	MWJL	JL	Slip fit	Cotter pin
	Lambda Chain B Series	LM	MCJL	JL	Slip fit	Clip
			MWJL	JL	Slip fit	Cotter pin
Heavy Duty Drive Chains	Super Chain	SUP	MSJL	MJL	Slip fit	Spring pin
			FSJL	FJL	Press fit	Spring pin
	RS-HT Chain	HT	MWJL	MJL	Slip fit	Cotter pin
			FWJL	FJL	Press fit	Cotter pin
	Super-H Chain	SUPH	MSJL	MJL	Slip fit	Spring pin
			FSJL	FJL	Press fit	Spring pin
	Ultra Super Chain	USN	FSJL	JL	Press fit	Spring pin
Miniature Drive Chains	Stainless Steel Epsilon Chain	ESS	MCJL	—	Slip fit	Clip
Corrosion Resistant Roller Chains	Stainless Steel Roller Chain	SS	MCJL	JL	Slip fit	Clip
			MWJL	JL	Slip fit	Cotter pin
		HS	MCJL	JL	Slip fit	Clip
			MWJL	JL	Slip fit	Cotter pin
		NS	MCJL	JL	Slip fit	Clip
			MWJL	JL	Slip fit	Cotter pin
		AS	MCJL	JL	Slip fit	Clip
			MWJL	JL	Slip fit	Cotter pin
	Surface Treated Roller Chain	NP	MCJL	JL	Slip fit	Clip
			MWJL	JL	Slip fit	Cotter pin
		NEP	MCJL	JL	Slip fit	Clip
			MWJL	JL	Slip fit	Cotter pin
		APP	MWJL	JL	Slip fit	Cotter pin
	Titanium Roller Chain	TI	MZJL	JL	Slip fit	Z-pin
	Cold Resistant Roller Chain	KT	MWJL	JL	Slip fit	Cotter pin
	Low Noise Roller Chain*4	SNS	MCJL	JL	Slip fit	Clip
			MWJL	JL	Slip fit	Cotter pin
	Poly Steel Chain	PC	MCJL	JL	Slip fit	Clip
		PCSY	MZJL	JL	Slip fit	Z-pin
	Curved Stainless Steel Roller Chain	CUSS	MWJL	JL	Slip fit	Cotter pin
Specialty Roller Chains	Leaf Chain	–	MLJL	JL	Slip fit	Long cotter pin
	Curved Roller Chain	CU	MWJL	JL	Slip fit	Cotter pin

Note: 1. The above table shows an overview of connecting links. Cotter pins can be selected for certain series of chain RS60 and smaller.
F type connecting links can be selected for RS drive chain.
2. For single-strand chain. May differ for multi-strand chain.
*3. E type retaining ring.
*4. Uses RS roller chain connecting links.

Identification number (Pitch: mm)																
6 (1.905)	11 (3.7465)	15 (4.7625)	25 (6.35)	35 (9.525)	40 (12.70)	50 (15.875)	60 (19.05)	80 (25.40)	100 (31.75)	120 (38.10)	140 (44.45)	160 (50.80)	180 (57.15)	200 (63.50)	240 (76.20)	Other large sizes
		●	●	●	●	●	●									
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																RF320-T RF400-T
				RF06B	RS08B	RS10B	RS12B	RS16B								
									RS20B	RS24B	RS28B	RS32B		RS40B		RS56B
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					●	●	●									
				RF06B	RS08B	RS10B	RS12B	RS16B								
									RS20B	RS24B						
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			4 ●	5 ●	6 ●	8 ●	10 ●	12 ●	14 ●	16 ●						
			●	●	●	●										

Ordering RS Roller Chain

To order roller chain, you need to specify chain size, series, length (number of links), and both ends (termination).
The following pages show general ordering examples and points to keep in mind. For custom-made chains, please contact a Tsubaki representative.

1. Basic Structure of Model Numbers

When ordering, be sure to order by model number to avoid any errors in the chain main unit, series, and number of links.

1. Chains ordered by specifying the number of links, etc.

◆ Model numbering example: Chain

RS60	–	LMD	–	1	–	RP	+	100L	–	MCJR	–	P		2	(H)
①		②		③		④		⑤		⑥		⑦		Quantity	Unit (chain)

2. Individual parts, such as connecting links and offset links, ordered by quantity

◆ Model numbering example: Connecting link

RS80	–	NEP	–	1	–	MWJL		10	(K)
①		②		③		⑧		Quantity	Unit (piece)

◆ Model numbering example: Offset link

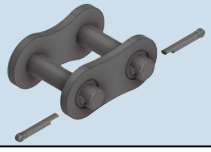
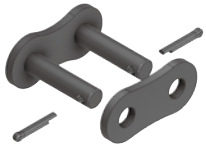
RS80	–	LMDNP	–	1	–	OL		5	(K)
①		②		③		⑧		Quantity	Unit (piece)

① Size	Indicates chain size.
② Series	Select the series under each product line such as Lube-free or Corrosion Resistant. There is no need to specify the series for RS Roller Chain and RS Roller Chain B Series in the Standard Roller Chain line.
③ Number of strands	Indicates the number of strands.
④ Pin type	There are two types of chain pins: RP and CP. RP: Pin is riveted. CP: One end of the pin is riveted, and the other end is fixed using a cotter pin or spring pin.
⑤ Number of links	Specify the number of links. Chains are configured in standard-length units plus (if necessary) one fractional length having the number of links needed to make up the total chain length. Note: Formations that join a standard-length chain with a fractional length of 1/4 or less of the standard length have been discontinued. Add the option code “T” when you need this type of formation.
⑥ End link	Indicates the configuration of the chain ends.
⑦ Options	Indicates options available for meeting special user requirements.
⑧ Part name	Select individual items such as connecting links and offset links.

2. End Links and Part Names

◆ Connecting links

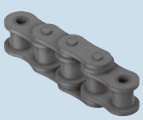
Upper row: End link (Use when ordering chains)
Lower row: End link (Use when ordering individual parts)

	**MWJ** MWJL	M-type connecting link*1 with cotter pin	Assembled to the chain before shipment*3 ↓ Add "K" to the end. Example: MWJK FWJK
	**MCJ** MCJL	M-type connecting link*1 with clip	
	**MSJ** MSJL	M-type connecting link*1 with spring pin	
	**FWJ** FWJL	F-type connecting link*2 with cotter pin	
	**FCJ** FCJL	F-type connecting link*2 with clip	
	**FSJ** FSJL	F-type connecting link*2 with spring pin	

Note: *1. M-type connecting link: Connecting link with slip fit
*2. F-type connecting link: Connecting link with press fit
*3. Add "E" when you need an endless formation.

◆ Offset links

Upper row: End link (Use when ordering chains)
Lower row: End link (Use when ordering individual parts)

	**O** OL	1-pitch offset link	Assembled to the chain before shipment ↓ Add "K" to the end. Example: 2OK
	**2O** 2POL	2-pitch offset link	
	**4O** 4POL	4-pitch offset link	

Ordering RS Roller Chain

3. End Link Examples

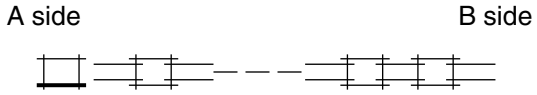
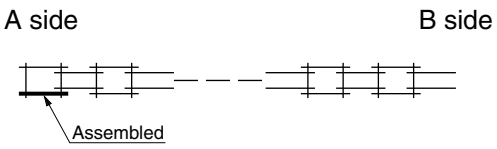
The following are examples of typical end links you can select. Some end link combinations may not be available depending on items such as chain size, number of strands, and specifications.

◆ Symbols for simple configurations

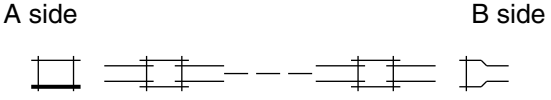
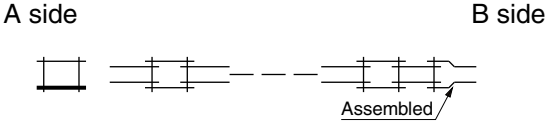
Symbol	Name	Description
	Connecting link	M type has plate slip-fit with pin; F type has plate press-fit with pin. Plates are fastened via clip, cotter pin, or spring pin.
	Outer link	Two pins are press-fit into two plates.
	Inner link	Two bushes are press-fit into two plates. Rollers are on the outside of the bushes.

Symbol	Name	Description
	Offset link	To be used when there is an odd number of links in the chain. Maximum allowable load will decrease.
	2-pitch offset link	To be used when there is an odd number of links in the chain. Maximum allowable load may decrease on certain roller chain models.

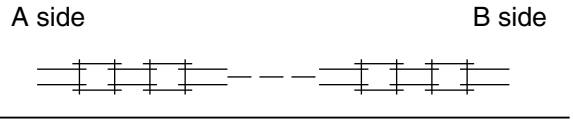
◆ When using an even number of links

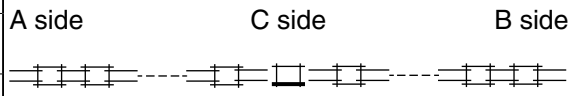
End link					A side				B side	Chain configuration
M	C	J	R		M-type	Clip	Connecting link		Inner link	
F	C	J	R		F-type	Clip	Connecting link		Inner link	
M	W	J	R		M-type	Cotter pin	Connecting link		Inner link	
F	W	J	R		F-type	Cotter pin	Connecting link		Inner link	
M	S	J	R		M-type	Spring pin	Connecting link		Inner link	
F	S	J	R		F-type	Spring pin	Connecting link		Inner link	
M	C	J	K	R	M-type	Clip	Connecting link	Assembled	Inner link	
M	W	J	K	R	M-type	Cotter pin	Connecting link	Assembled	Inner link	
M	S	J	K	R	M-type	Spring pin	Connecting link	Assembled	Inner link	

◆ When ordering an odd number of links (offset link)

End link					A side			B side		Chain configuration
M	C	J	O		M-type	Clip	Connecting link	Offset link		
M	W	J	O		M-type	Cotter pin	Connecting link	Offset link		
M	S	J	O		M-type	Spring pin	Connecting link	Offset link		
M	C	J	O	K	M-type	Clip	Connecting link	Offset link	Assembled	
M	W	J	O	K	M-type	Cotter pin	Connecting link	Offset link	Assembled	
M	S	J	O	K	M-type	Spring pin	Connecting link	Offset link	Assembled	

◆ When ordering an odd number of links (inner link on each end)

End link			A side	B side	Chain configuration
R	R		Inner link	Inner link	

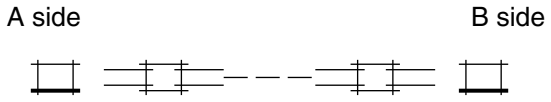
End link*					A side	C side			B side	Chain configuration
R	M	C	J	R	Inner link	M-type	Clip	Connecting link	Inner link	
R	M	W	J	R	Inner link	M-type	Cotter pin	Connecting link	Inner link	
R	M	S	J	R	Inner link	M-type	Spring pin	Connecting link	Inner link	

*To be used when the number of links exceeds the standard length and when there is no long-length formation option (T) available.

◆ When ordering an odd number of links (connecting link on each end)

End link						A side			B side		
M	C	J	M	C	J	M-type	Clip	Connecting link	M-type	Clip	Connecting link
F	C	J	F	C	J	F-type	Clip	Connecting link	F-type	Clip	Connecting link
M	W	J	M	W	J	M-type	Cotter pin	Connecting link	M-type	Cotter pin	Connecting link
F	W	J	F	W	J	F-type	Cotter pin	Connecting link	F-type	Cotter pin	Connecting link
M	S	J	M	S	J	M-type	Spring pin	Connecting link	M-type	Spring pin	Connecting link
F	S	J	F	S	J	F-type	Spring pin	Connecting link	F-type	Spring pin	Connecting link

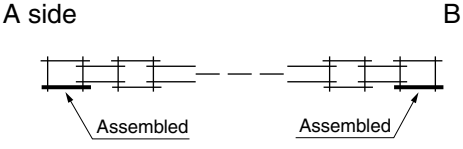
Chain configuration



◆ When ordering an odd number of links (connecting link on each end; assembled)

End link								A side				B side			
M	C	J	K	M	C	J	K	M-type	Clip	Connecting link	Assembled	M-type	Clip	Connecting link	Assembled
M	W	J	K	M	W	J	K	M-type	Cotter pin	Connecting link	Assembled	M-type	Cotter pin	Connecting link	Assembled
M	S	J	K	M	S	J	K	M-type	Spring pin	Connecting link	Assembled	M-type	Spring pin	Connecting link	Assembled

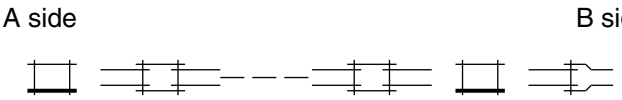
Chain configuration



Ordering RS Roller Chain

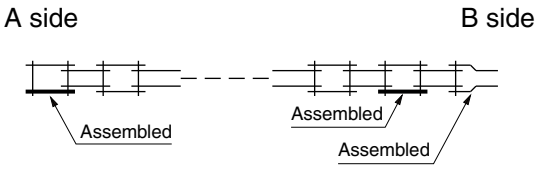
◆ When ordering an odd number of links (2-pitch offset link)

End link								A side			B side			
M	C	J	M	C	J	2	O	M-type	Clip	Connecting link	M-type	Clip	Connecting link	2-pitch offset link
M	W	J	M	W	J	2	O	M-type	Cotter pin	Connecting link	M-type	Cotter pin	Connecting link	2-pitch offset link
M	S	J	M	S	J	2	O	M-type	Spring pin	Connecting link	M-type	Spring pin	Connecting link	2-pitch offset link
Chain configuration														



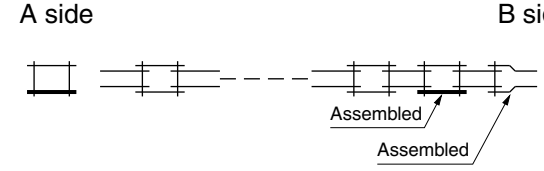
◆ When ordering an odd number of links (connecting link and 2-pitch offset link assembled)

End link											A side				B side					
M	C	J	K	M	C	J	K	2	O	K	M-type	Clip	Connecting link	Assembled	M-type	Clip	Connecting link	Assembled	2-pitch offset link	Assembled
M	W	J	K	M	W	J	K	2	O	K	M-type	Cotter pin	Connecting link	Assembled	M-type	Cotter pin	Connecting link	Assembled	2-pitch offset link	Assembled
M	S	J	K	M	S	J	K	2	O	K	M-type	Spring pin	Connecting link	Assembled	M-type	Spring pin	Connecting link	Assembled	2-pitch offset link	Assembled
Chain configuration																				



◆ When ordering an odd number of links (connecting link not assembled on one end; 2-pitch offset link and its connecting link assembled on other end)

End link										A side			B side					
M	C	J	M	C	J	K	2	O	K	M-type	Clip	Connecting link	M-type	Clip	Connecting link	Assembled	2-pitch offset link	Assembled
M	W	J	M	W	J	K	2	O	K	M-type	Cotter pin	Connecting link	M-type	Cotter pin	Connecting link	Assembled	2-pitch offset link	Assembled
M	S	J	M	S	J	K	2	O	K	M-type	Spring pin	Connecting link	M-type	Spring pin	Connecting link	Assembled	2-pitch offset link	Assembled
Chain configuration																		



4. Options

<table>
<tr><th>Option symbol</th><th>Option name</th><th>Description</th></tr>
<tr><td>T</td><td>Long-length formation</td><td>A chain with an overall length that exceeds the standard length (3,048 mm, 1 unit) is called a long-length chain.
Chains that exceed the lengths shown in the table below have a super long-length formation. Contact a Tsubaki representative for more information.
<table>
<tr><th></th><th>RS25</th><th>RS35–RS180</th><th>RS200</th><th>RS240</th></tr>
<tr><td>Single strand</td><td>3 units</td><td>2.5 units</td><td>100 links (approx. 6.3 m)</td><td>70 links (approx. 5.3 m)</td></tr>
</table></td></tr>
<tr><td>E</td><td>Endless formation</td><td>The chain is delivered in a loop. Additional fees apply.
Note: The end link symbol “K” denoting “assembled” does not mean “endless formation.” If you need an endless formation, select this option.

Model numbering example when ordering an endless formation
1. When using connecting links
RS60-1-RP+50L-MCJKR-E
Assembled with MCJL (colored portion)
Note: The actual product is not colored.

2. When using outer links (RP)
RS60-1-RP-50L-PRPKR-E
Assembled with PRPL (colored portion)
Note: The actual product is not colored.

</td></tr>
<tr><td>R</td><td>Reel formation</td><td>Single-strand RS25 to RS80 chain and Leaf Chain are available on long-length reels. Additional fees apply. (Contact a Tsubaki representative for other sizes.)

Model numbering example when ordering a reel formation
RS80-1-RP+350L-MWJR-R</td></tr>
<tr><td>P</td><td>Pre-stretched</td><td>Roller chains will stretch a little from the start of use to after several dozen hours of use due to the chain parts adapting to operation. This option mitigates this elongation. Additional fees apply.

Note: The time it takes for the chain parts to adapt depends on usage conditions. This option is not designed to eliminate all initial elongations.</td></tr>
<tr><td>2
3
4</td><td>Matched and tagged chain</td><td>Deviations in chain length exist due to the manufacturing tolerances of the parts (0 to +0.15% under JIS standards). When chains are to be used in parallel and minimizing the relative difference in the lengths is necessary, request a matched and tagged chain. Additional fees apply.

2: Two parallel strands. Place orders in a quantity multiplied by two.
3: Three parallel strands. Place orders in a quantity multiplied by three.
4: Four parallel strands. Place orders in a quantity multiplied by four.</td></tr>
</table>

Ordering RS Roller Chain

5. Units

The unit for ordering roller chains are as follows.
"U" is for stock items.
"H" is for non-stock items.
"L" is discontinued.
"K" means "piece".

Current	New	Notes
U	U	Stock items
	H	Non-stock items
L	H	
K	K	

6. Ordering Examples

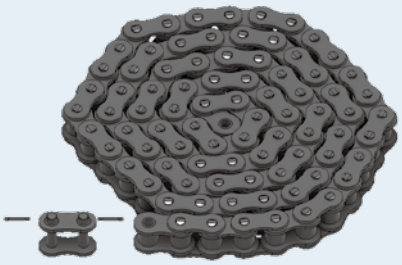
1. Chain (ordering by unit)

Roller chains are stocked on a unit basis. One connecting link is included in one unit. Connecting links must be ordered separately when dividing a chain into two or more pieces or connecting more chains.

➡ Ordering example

Ordering five units of RS100-1-RP chain

Model number	Quantity	Unit
RS100-1-RP-U	5	U



2. Chain (ordering by specified length)

You can order roller chains with a specified length. Convert the length of the chain you want to use into the number of links when placing an order.

◆ Example of converting chain length into number of links

When ordering RS60-1-RP chain with a length of 150 mm (including connecting links)

150 mm ÷ 19.05 mm (chain pitch)≒ 7.9 links ⇒ 8 links (including connecting links)

Note: The chain length is 152.4 mm.

➡ Ordering example

Ordering five pieces of 8-link RS60-1-RP chain (including M-type connecting link with clip)

Model number	Quantity	Unit
RS60-1-RP+8L- MCJ R	5	H

MC: M-type connecting link with clip

R: Inner link



The product will be delivered without a connecting link pre-assembled.
If you need a pre-assembled connecting link as shown above, use "MCJKR" for the end link symbol.

3. Chain (ordering chain with connecting links or offset links on both ends)

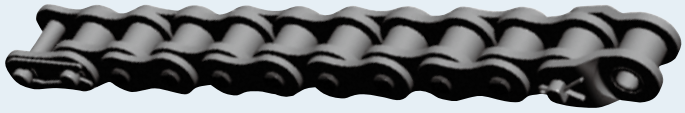
➡ Ordering example

Ordering 10 pieces of 11-link RS50-LMD-1-RP chain (connecting link and 1-pitch offset link are arranged as shown in the figure)

Model number	Quantity	Unit
RS50-LMD-1-RP+11L-MCJ O	10	H

MC: M-type connecting link with clip

O: Offset link



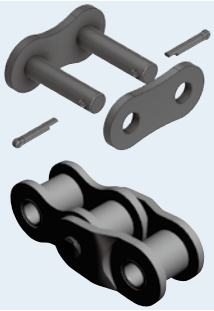
The product will be delivered without a connecting link and an offset link pre-assembled.
If you need a pre-assembled connecting link and offset link as shown above, use “MCJKOK” for the end link symbol.

4. Individual parts, such as connecting links and offset links

➡ Ordering example

Ordering 10 F-type connecting links with cotter pins and one 2-pitch offset link for RS160-1 chain

Model number	Quantity	Unit
RS160-1-FWJL	10	K
RS160-1-2POL	1	K



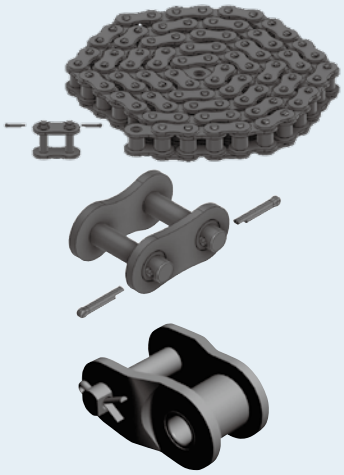
5. Adding options to an order

➡ Ordering example

Adding the pre-stretched option to 10 pieces of 80-link RS100-NEP-1-RP chain (including one M-type connecting link with cotter pins).
Plus, ordering two M-type connecting links with cotter pins and two offset links as spare parts.

Model number	Quantity	Unit
RS100-NEP-1-RP+80L-MWJR-P	10	H
RS100-NEP-1-MWJL	2	K
RS100-NEP-1-OL	2	K

P: Pre-stretched



Note: Options such as pre-stretched cannot be specified for individual parts.

6. Other orders

- ◆ Chain that has a connecting link or offset link configured in a specified location of the chain, instead of at the end
- ◆ Chain longer than the standard-length unit (2.5 units or more) but configured in a single chain without using connecting links (super long-length formation)

Tsubaki can manufacture special formations and chains in customer-specific specifications.
Please contact a Tsubaki representative.

Ordering RS Sprockets

The following pages show general ordering examples and points to keep in mind when ordering RS sprockets.

1. Basic Structure of Model Numbers

When ordering, be sure to order by model number to avoid any errors in sprocket specifications.
Refer to the product pages for sizes, processing/machining, and other details.

◆ Model numbering example: Standard pilot bore sprocket

RS60	–	1	B	30T		–	SS		1	(K)
①		②	③	④	⑤		⑥		Quantity	Unit (piece)

Single Dual sprocket

RS60	–	SD	25T	Q			3	(K)
①		③	④	⑤			Quantity	Unit (piece)

◆ Model numbering example: S-type Lock Sprocket

RS80	–	1	B	22T		–	S51045B	2	(K)
①		②	③	④	⑤		❶	Quantity	Unit (piece)

◆ Model numbering example: N-type Lock Sprocket

RS50	–	1	B	13T	Q	–	N316A	3	(K)
①		②	③	④	⑤		❶	Quantity	Unit (piece)

◆ Model numbering example: Fit Bore

RS40	–	1	B	25T	Q	–	H030N-J08D2M06-K	5	(K)
①		②	③	④	⑤		❷	Quantity	Unit (piece)

① Size	Indicates chain size.	
② Number of strands	Indicates the number of chain strands. This is not needed for Single Dual sprockets.	
③ Hub type	Indicates the type of hub.	See page 28.
④ Number of teeth	Indicates the number of sprocket teeth.	
⑤ Teeth hardening	Indicates whether teeth are hardened or not. [Blank]: Non-hardened teeth Q: Hardened teeth	
⑥ Material	Indicates sprocket material. [Blank]: Steel SS: Stainless steel P: Engineering plastic	See page 28.
❶ Sleeve model	Indicates lock sleeve specifications	See page 139.
❷ Additional machining	Indicates the type of additional machining on the sprocket.	See page 133.

The RS sprocket model is determined by the following six elements.
When selecting your sprocket, carefully examine the model and usage conditions of the chain that you will be using and select the optimal sprocket.

2. Chain Used

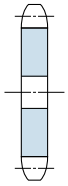
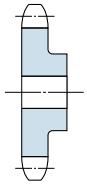
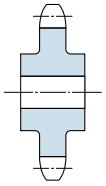
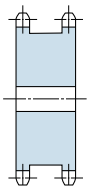
RS sprockets are manufactured with a tooth profile and dimensional precision to bring out the maximum performance of the chain you will use.

3. Number of Teeth

RS sprockets are available with small and large numbers of teeth to match your usage conditions.

4. Construction

RS sprockets are manufactured in four types.

Model code	A type (flat plate)	B type (single side hub)	C type (dual side hub)	SD type (single dual)
Construction				
		Multi-strand Heavy Duty Chain (Super-H, RS-HT, etc.)		For using two single-strand chains at the same time
		HB type	HC type	

5. Material

RS sprockets are available in the following material as standard.

Material	Description
Carbon steel	Carbon steel for machine structural use
Rolled steel	Rolled steel for general structural use
Stainless steel	Austenitic stainless steel
Plastic	Engineering plastic
Sintered alloy	Ferrous sintered alloy (used for some RS25 sprockets)

6. Tooth Tips

	Specifications
Hardened teeth	Use sprockets with hardened teeth when tooth strength and wear resistance need to be increased. All Tough Tooth sprockets use hardened teeth.
Non-heat treated	Teeth are not hardened. The teeth on RS sprockets in the large tooth range are not heat treated.

7. Bores

The following three types of bores for attaching the sprocket to a shaft are available for RS sprockets.

Series	Appearance	Specifications
Standard pilot bore		You will need to further finish the bore when using.
Fit Bore		Uses a code for the type of bore finishing. Allows for accurate ordering with just the model number. Can be used as-is right after delivery.
Lock Sprocket		Tightening a bolt firmly locks the sprocket to the shaft by means of frictional force from the tapered sleeve. Can be attached simply with no troublesome keyway processing on the shaft side for easy phase matching. Removal is also easy.

Standard Roller Chain Model Numbering

Chain No. p.19 | p.30 | p.15 | p.188

This page shows the series, number of strands, as well as types of pins and connecting links that can be selected for each size. Also refer to “Ordering RS Roller Chain” on page 19.
Customized items are also available. Please contact a Tsubaki representative.

1. Chains ordered by specifying the number of links, etc.

Size – Series – Number of strands – Pin type + Number of links – End link – Options

◆ Model numbering example

RS60–1–RP+80L–MCJR

2. Individual parts, such as connecting links and offset links, ordered by quantity

Size – Series – Number of strands – Part name

◆ Model numbering example

RS140–1–MWJL
RS160–3–2POL

Note: Standard roller chains do not require series selection. However, for the series code, be sure to indicate H for BF25, and T for RF320 and RF400.

■ Pin type

(column = size; row = no. of strands)

	1	2	3	4	5	6
RS15	RP	×	×	×	×	×
RS25	RP	RP	RP	×	×	×
RS35	RP/CP	RP	RP	×	×	×
RS40	RP/CP	RP/CP	RP	RP	RP	RP
RS50	RP/CP	RP/CP	RP	RP	RP	RP
RS60	RP/CP	RP/CP	RP/CP	RP	RP	RP
RS80	RP/CP	RP/CP	RP/CP	RP/CP	RP/CP	RP/CP
RS100	RP/CP	RP/CP	RP/CP	RP/CP	RP/CP	RP/CP
RS120	RP/CP	RP/CP	RP/CP	RP/CP	RP/CP	RP/CP
RS140	RP/CP	RP/CP	RP/CP	RP/CP	RP/CP	RP/CP
RS160	RP/CP	RP/CP	RP/CP	RP/CP	RP/CP	RP/CP
RS180	RP/CP	RP/CP	RP/CP	RP/CP	RP/CP	RP/CP
RS200	RP/CP	RP/CP	RP/CP	RP/CP	RP/CP	RP/CP
RS240	RP	RP	RP	RP	RP	RP

	1
BF25	RP
RS37	RP
RS38	RP
RS41	RP

	1 to 4
RF320	RP
RF400	

■ End link symbol for connecting links and part names

(column = size; row = no. of strands)

	1	2	3	4	5	6	All strands
RS15	MCJ	×	×	×	×	×	×
RS25	MCJ	MCJ	MCJ	×	×	×	×
RS35	MCJ	MCJ	MCJ	×	×	×	F
RS40	MCJ	MCJ	MWJ	MWJ	MWJ	MWJ	F
RS50	MCJ	MCJ	MWJ	MWJ	MWJ	MWJ	F
RS60	MCJ	MCJ	MWJ	MWJ	MWJ	MWJ	F
RS80	MWJ	MWJ	MWJ	MWJ	MWJ	MWJ	F
RS100	MWJ	MWJ	MWJ	MWJ	MWJ	MWJ	F
RS120	MWJ	MWJ	MWJ	MWJ	MWJ	MWJ	F
RS140	MWJ	MWJ	MWJ	MWJ	MWJ	MWJ	F
RS160	MWJ	MWJ	MWJ	MWJ	MWJ	MWJ	F
RS180	MWJ	MWJ	MWJ	MWJ	MWJ	MWJ	F
RS200	MWJ	MWJ	MWJ	MWJ	MWJ	MWJ	F
RS240	MSJ	MSJ	MSJ	MSJ	MSJ	MSJ	F

	1
BF25	MCJ
RS37	MCJ
RS38	MCJ
RS41	MCJ

	1 to 4
RF320	FTJ
RF400	

■ Offset link types and part names

(column = size; row = no. of strands)

	1	2	3	4	5	6
RS15	×	×	×	×	×	×
RS25	2O	2O	2O	×	×	×
RS35	O/2O	O/2O	O/2O	×	×	×
RS40	O/2O	O/2O	O/2O	O	O	O
RS50	O/2O	O/2O	O/2O	O	O	O
RS60	O/2O	O/2O	O/2O	O	O	O
RS80	O/2O	O/2O	O/2O	O	O	O
RS100	O/2O	O/2O	O/2O	O	O	O
RS120	O/2O	O/2O	O/2O	O	O	O
RS140	O/2O	O/2O	O/2O	O	O	O
RS160	O/2O	O/2O	O/2O	O	O	O
RS180	O/2O	O/2O	O/2O	O	O	O
RS200	O/2O	O/2O	O/2O	O	O	O
RS240	O/2O	O/2O	O/2O	O	O	O

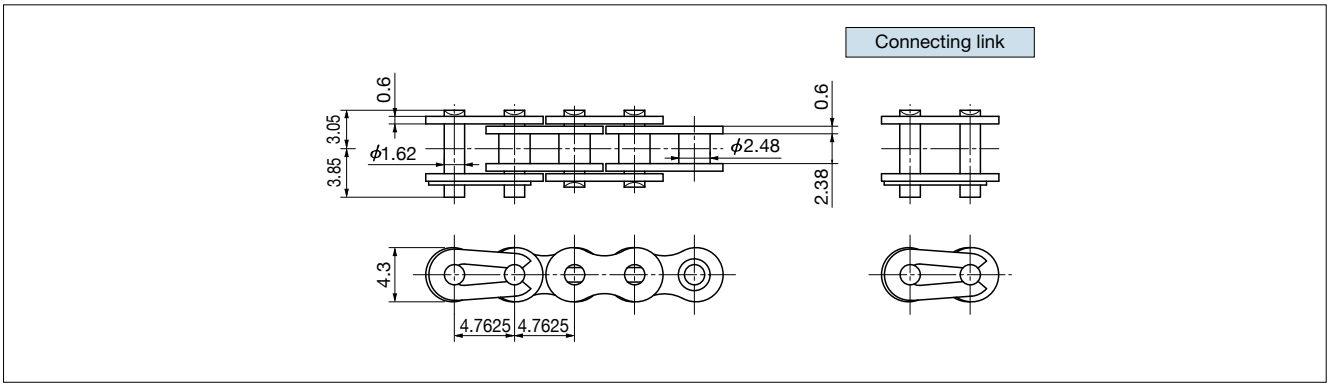
	1
BF25	×
RS37	O
RS38	O
RS41	O

- Offset links are not available for RF320and RF400.
- Part names: O is offset link; 2O is 2-pitch offset link.

How to read chart

RP/CP	Select from RP or CP
RP	RP only
MWJ	M-type connecting link with cotter pin only
MCJ	M-type connecting link with clip only
MSJ	M-type connecting link with spring pin only
FTJ	F-type connecting link with T-pin only
O/2O	Select from offset link or 2-pitch offset link
O	Offset link only
2O	2-pitch offset link only
×	Not available

RS Roller Chain RS15



Specifications

Tsubaki chain number	Min. tensile strength kN{kgf}	Max. allowable load*3 kN{kgf}	Approx. mass kg/m
RS15-1-RP	1.77{180}	0.31{32}	0.075

Note: 1. Rollerless bushed chain.
2. Offset links are not available.
*3. The maximum allowable load when using an M-type connecting link is 0.25 kN.
4. Number of links per unit = 210. Items in bold are stocked in units.

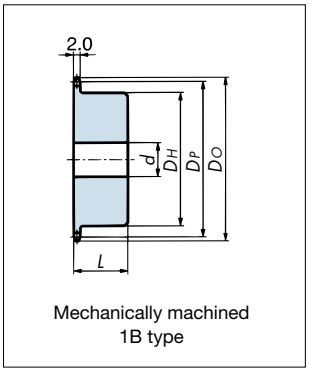
Model numbering example **RS15 -1 -RP + 200L -MCJR**

- RS15: Size
- -1: Number of strands
- -RP: Pin type
- 200L: Number of links
- -MCJR: End link

Note: Standard roller chains do not require series selection.

RS Sprocket RS15





Mechanically machined
1B type

Number of teeth	Pitch circle dia. D_P	Outer dia. (D_O)	Bore dia. d		Hub		Approx. mass g	Material
			Pilot bore	Max.	Dia. D_H	Length L		
11	16.90	19.0	4	7	11	10	9	Machine-structural carbon steel
12	18.40	20.5	4	8	12	10	10	
13	19.90	22.0	4	9	14	10	14	
14	21.40	23.5	6	10	15	12	17	
15	22.91	25.0	6	12	17	12	22	
16	24.41	26.5	8	12	18	12	23	
17	25.92	28.0	8	14	20	14	32	
18	27.43	29.5	8	14	22	14	40	
19	28.93	31.0	8	15	23	14	44	
20	30.44	32.5	8	15	24	14	49	
21	31.95	34.0	8	17	26	14	57	
22	33.46	35.5	8	17	27	14	62	
23	34.98	37.5	8	17	28	14	68	
24	36.49	39.0	8	20	30	16	88	
25	38.00	40.5	8	20	32	16	100	
26	39.51	42.0	10	22	33	16	104	
27	41.02	43.5	10	25	35	16	117	
28	42.54	45.0	10	25	37	16	131	
29	44.05	46.5	10	25	38	16	139	
30	45.56	48.0	10	25	39	16	147	
31	47.08	49.5	10	25	40	18	175	
32	48.59	51.0	10	25	40	18	176	
33	50.10	52.5	10	25	40	18	178	
34	51.62	54.0	10	25	40	18	180	
35	53.13	55.5	10	25	40	18	182	

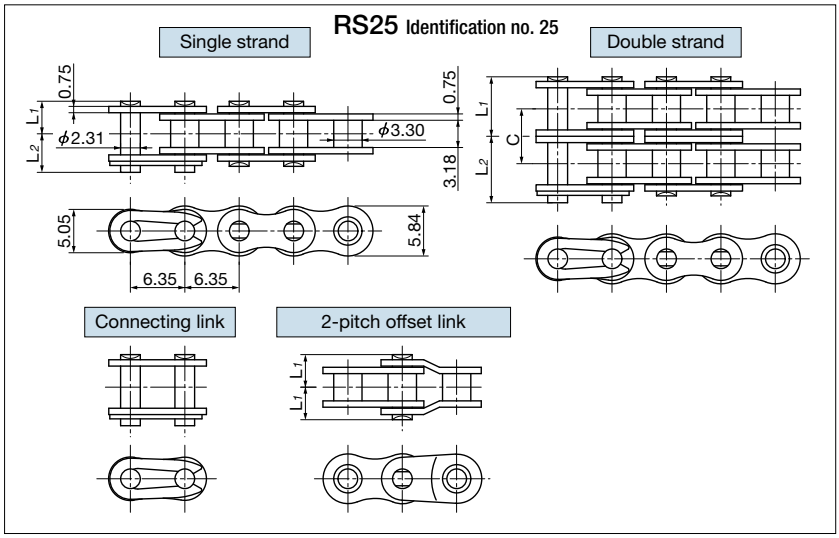
Note: 1. Bore diameters shown are standard figures. Determine bore diameter and key bearing pressure based on general mechanical design.
2. All models stocked.

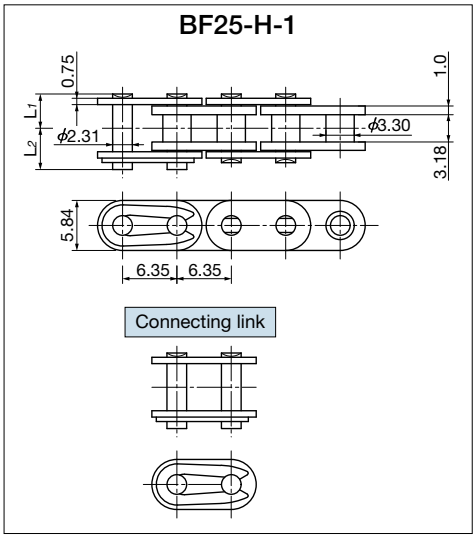
Model numbering example **RS15-1 B 15T**

- RS15-1: Size–Number of strands
- B: Hub type
- 15T: Number of teeth

RS Roller Chain RS25, BF25-H-1

(Identification no. 25)





■ Specifications

Size	Number of strands	Dimensions L_1	Dimensions L_2	Transverse pitch C	JIS standard min. tensile strength kN{kgf}	Min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
RS25	**1**	3.8	4.5	–	3.5 {357}	4.12{420}	0.64 {65}	0.14
	2	7.0	7.7	6.4	7.0 {714}	8.24{840}	1.08{110}	0.27
	3	10.2	10.9	6.4	10.5{1071}	12.4{1260}	1.57{160}	0.42
BF25-H	**1**	4.01	4.81	–	–	4.9 {500}	0.78 {80}	0.17

Note: 1. Rollerless bushed chain.
2. Offset links for RS25 only available as 2-pitch offset links. Offset links for BF25-H-1 are not available.
3. Maximum allowable load when using an M-type connecting link is 80% of the above. When using 2-pitch offset links, minimum tensile strength for RS25-1 is 3.82kN, RS25-2 is 7.65kN, and RS25-3 is 11.5kN.
4. Number of links per unit = 160. Items in bold are stocked in units.

■ RS25 Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth \ Lubrication	Small sprocket max rpm																								
	50	100	300	500	700	900	1200	1500	1800	2100	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	9000	10000
	AI						AII					B													
9	0.02	0.03	0.08	0.13	0.18	0.23	0.30	0.36	0.43	0.49	0.57	0.67	0.78	0.76	0.64	0.55	0.47	0.41	0.37	0.33	0.30	0.27	0.25	0.23	0.19
10	0.02	0.04	0.10	0.15	0.20	0.26	0.33	0.41	0.48	0.55	0.64	0.76	0.87	0.89	0.75	0.64	0.55	0.49	0.43	0.39	0.35	0.32	0.29	0.26	0.23
11	0.02	0.04	0.11	0.17	0.23	0.28	0.37	0.45	0.53	0.61	0.71	0.84	0.96	1.03	0.86	0.74	0.64	0.56	0.50	0.44	0.40	0.36	0.33	0.30	0.26
12	0.02	0.04	0.12	0.18	0.25	0.31	0.40	0.49	0.58	0.67	0.78	0.92	1.06	1.17	0.98	0.84	0.73	0.64	0.57	0.51	0.46	0.41	0.38	0.35	0.30
13	0.03	0.05	0.13	0.20	0.27	0.34	0.44	0.54	0.63	0.73	0.85	1.00	1.15	1.30	1.11	0.95	0.82	0.72	0.64	0.57	0.52	0.47	0.43	0.39	0.33
14	0.03	0.05	0.14	0.22	0.29	0.37	0.48	0.58	0.69	0.79	0.92	1.09	1.25	1.41	1.24	1.06	0.92	0.80	0.71	0.64	0.58	0.52	0.48	0.44	0.37
15	0.03	0.05	0.15	0.23	0.32	0.40	0.51	0.63	0.74	0.85	0.99	1.17	1.35	1.52	1.37	1.17	1.02	0.89	0.79	0.71	0.64	0.58	0.53	0.49	0.41
16	0.03	0.06	0.16	0.25	0.34	0.43	0.55	0.67	0.79	0.91	1.07	1.26	1.44	1.63	1.51	1.29	1.12	0.98	0.87	0.78	0.70	0.64	0.58	0.54	0.46
17	0.03	0.06	0.17	0.27	0.36	0.45	0.59	0.72	0.85	0.97	1.14	1.34	1.54	1.74	1.66	1.42	1.23	1.08	0.95	0.85	0.77	0.70	0.64	0.59	0.50
18	0.04	0.07	0.18	0.28	0.39	0.48	0.63	0.76	0.90	1.04	1.21	1.43	1.64	1.85	1.81	1.54	1.34	1.17	1.04	0.93	0.84	0.76	0.70	0.64	0.55
19	0.04	0.07	0.19	0.30	0.41	0.51	0.66	0.81	0.96	1.10	1.28	1.51	1.74	1.96	1.96	1.67	1.45	1.27	1.13	1.01	0.91	0.83	0.75	0.69	0.59
20	0.04	0.07	0.20	0.32	0.43	0.54	0.70	0.86	1.01	1.16	1.36	1.60	1.84	2.07	2.11	1.81	1.57	1.37	1.22	1.09	0.98	0.89	0.81	0.75	0.64
21	0.04	0.08	0.21	0.34	0.45	0.57	0.74	0.90	1.06	1.22	1.43	1.69	1.94	2.18	2.28	1.94	1.68	1.48	1.31	1.17	1.06	0.96	0.88	0.80	0.69
22	0.04	0.08	0.22	0.35	0.48	0.60	0.78	0.95	1.12	1.29	1.50	1.77	2.04	2.30	2.44	2.08	1.81	1.58	1.41	1.26	1.13	1.03	0.94	0.86	0.74
23	0.05	0.09	0.23	0.37	0.50	0.63	0.82	1.00	1.17	1.35	1.58	1.86	2.14	2.41	2.61	2.23	1.93	1.69	1.50	1.34	1.21	1.10	1.00	0.92	0.79
24	0.05	0.09	0.25	0.39	0.53	0.66	0.85	1.04	1.23	1.41	1.65	1.95	2.24	2.52	2.78	2.37	2.06	1.81	1.60	1.43	1.29	1.17	1.07	0.98	0.84
25	0.05	0.10	0.26	0.41	0.55	0.69	0.89	1.09	1.28	1.48	1.73	2.03	2.34	2.64	2.93	2.52	2.19	1.92	1.70	1.52	1.37	1.25	1.14	1.04	0.89
26	0.05	0.10	0.27	0.42	0.57	0.72	0.93	1.14	1.34	1.54	1.80	2.12	2.44	2.75	3.06	2.68	2.32	2.04	1.81	1.62	1.46	1.32	1.21	1.11	0.95
28	0.06	0.11	0.29	0.46	0.62	0.78	1.01	1.23	1.45	1.67	1.95	2.30	2.64	2.98	3.31	2.99	2.59	2.28	2.02	1.81	1.63	1.48	1.35	1.24	1.06
30	0.06	0.12	0.31	0.49	0.67	0.84	1.09	1.33	1.56	1.80	2.10	2.48	2.85	3.21	3.57	3.32	2.88	2.52	2.24	2.00	1.81	1.64	1.50	1.37	1.17
32	0.07	0.12	0.33	0.53	0.72	0.90	1.16	1.42	1.68	1.93	2.25	2.66	3.05	3.44	3.83	3.65	3.17	2.78	2.47	2.21	1.99	1.81	1.65	1.51	1.29
35	0.07	0.14	0.37	0.58	0.79	0.99	1.28	1.57	1.85	2.12	2.48	2.93	3.36	3.79	4.21	4.18	3.62	3.18	2.82	2.52	2.28	2.07	1.89	1.73	1.48
40	0.08	0.16	0.43	0.67	0.91	1.14	1.48	1.81	2.13	2.45	2.87	3.38	3.88	4.38	4.87	5.11	4.43	3.89	3.45	3.08	2.78	2.52	2.30	2.11	1.81
45	0.10	0.18	0.48	0.77	1.04	1.30	1.68	2.06	2.42	2.78	3.26	3.84	4.41	4.97	5.53	6.08	5.28	4.64	4.11	3.68	3.32	3.01	2.75	2.52	2.15

C

Note: Please contact a Tsubaki representative prior to use of kW ratings in the shaded area of the table.

■ Multi-strand factors

Number of chain strands	Two strands	Three strands
Multi-strand factor	1.7	2.5

■ Lubrication systems and methods

Lubrication system	AI	AII	B	C
Method	Manual lubrication	Drip lubrication	Oil bath or slinger disc lubrication	Forced pump lubrication

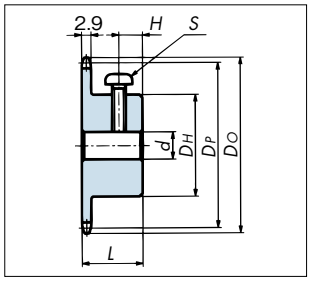
Details on p. 222

Model numbering example **RS25 -1 -RP + 150L -MCJR**

- RS25: Size
- -1: Number of strands
- -RP: Pin type
- 150L: Number of links
- -MCJR: End link

Note: Standard roller chains do not require series selection.

RS Sprocket RS25, BF25-H-1



Note: 1. Bores are finished and fitted with a screw.
2. All models stocked.

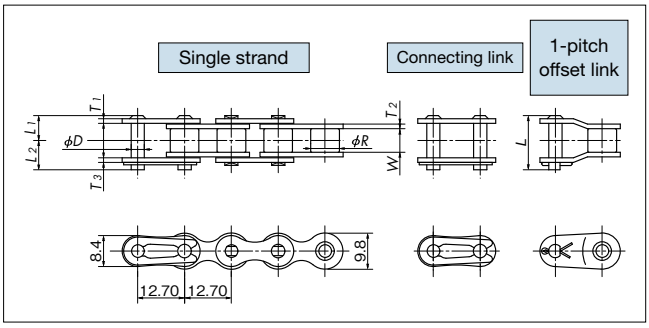
Number of teeth	Pitch circle dia. D_P	Outer dia. (D_O)	Bore dia. d(H8)	Hub		Cross-recessed head machine screw		Approx. mass g	Material
				Dia. D_H	Length L	Position H	S		
10	20.55	23.5	6・8	13	14	4	M3X6	13	Sintered alloy
11	22.54	25.5	6・8	15	14	4	M3X8	16	
12	24.53	27.5	8・10	17	14	4	M4X8	20	
13	26.53	29.5	8・10	18	14	4	M4X8	23	
14	28.54	31.5	8・10	19	14	4	M4X8	26	
15	30.54	33.5	8・10	20	14	4	M4X10	31	
16	32.55	35.5	8・10	21	16	5	M4X10	38	
17	34.56	37.5	8・10	23	16	5	M4X10	45	
18	36.57	39.5	8・10	25	16	5	M4X12	52	
19	38.58	41.5	8・10	26	16	5	M4X12	60	
20	40.59	43.5	8・10	28	16	5	M4X14	68	
21	42.61	45.5	8・10	30	18	7	M4X14	80	
22	44.62	48.0	8・10	30	18	7	M4X14	84	Machine-structural carbon steel
23	46.63	50.0	8・10	30	18	7	M4X14	88	
24	48.65	52.0	8・10	30	18	7	M4X14	93	
25	50.66	54.0	8・10	30	18	7	M4X14	98	
26	52.68	56.0	10・12	30	18	7	M4X14	98	
28	56.71	60.0	10・12	30	18	7	M4X14	103	
30	60.75	64.0	10・12	30	18	7	M4X14	110	
32	64.78	68.0	10・12	30	18	7	M4X14	117	

Model numbering example

RS25 -1 B 10T -6

Size — Number of strands — Hub type — Number of teeth — Bore diameter d

RS37-1, RS38-1, RS41-1



Specifications

Tsubaki chain no.	Pitch P	Roller dia. R	Inner width of inner link W	Plates			Pins			
				T_1	T_2	T_3	D	L_1	L_2	L
RS37-1-RP	12.70	7.80	3.40	1.0	1.0	1.2	3.63	5.1	5.9	11.85
RS38-1-RP	12.70	7.80	4.80	1.1	1.1	1.2	3.63	6.0	7.1	14.1
RS41-1-RP	12.70	7.77	6.38	1.25	1.25	1.25	3.59	6.75	7.95	15.1

Tsubaki chain no.	JIS standard min. tensile strength kN{kgf}	Min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
RS37-1-RP	—	8.14{830}	1.37{140}	0.29
RS38-1-RP	—	8.14{830}	1.37{140}	0.35
RS41-1-RP	6.7{684}	10.3{1050}	2.26{230}	0.41

Note: 1. Maximum allowable load when using an M type connecting link is 80% of the above. Maximum allowable load when using a one-pitch offset link is 65% of the above.
2. Number of links per unit = 240. Items in bold are stocked in units.

Sprockets

Sprockets are made-to-order. Contact a Tsubaki representative.

RS41 Maximum kilowatt ratings table (kW ratings for single strand chain)

Lubrication / Small sprocket no. of teeth	Small sprocket max rpm																									
	10	25	50	100	200	300	400	500	700	900	1000	1200	1400	1600	1800	2100	2400	2700	3000	3500	4000	5000	6000	7000	8000
	AI						AII			B												C			
9	0.02	0.05	0.10	0.18	0.34	0.49	0.64	0.78	1.05	1.32	1.24	0.95	0.75	0.61	0.52	0.41	0.33	0.28	0.24	0.19	0.16	0.11	0.08	0.07	0.05
10	0.03	0.06	0.11	0.20	0.38	0.55	0.71	0.87	1.18	1.48	1.46	1.11	0.88	0.72	0.60	0.48	0.39	0.33	0.28	0.22	0.18	0.13	0.10	0.08	0.06
11	0.03	0.07	0.12	0.23	0.42	0.61	0.79	0.96	1.31	1.64	1.68	1.28	1.01	0.83	0.70	0.55	0.45	0.38	0.32	0.26	0.21	0.15	0.11	0.09	0.07
12	0.03	0.07	0.13	0.25	0.46	0.67	0.87	1.06	1.43	1.80	1.91	1.46	1.16	0.95	0.79	0.63	0.52	0.43	0.37	0.29	0.24	0.17	0.13	0.10	0.08
13	0.03	0.08	0.15	0.27	0.51	0.73	0.95	1.16	1.56	1.96	2.16	1.64	1.30	1.07	0.89	0.71	0.58	0.49	0.42	0.33	0.27	0.19	0.15	0.12	0.10
14	0.04	0.08	0.16	0.29	0.55	0.79	1.02	1.25	1.69	2.12	2.34	1.84	1.46	1.19	1.00	0.79	0.65	0.54	0.46	0.37	0.30	0.22	0.16	0.13	0.11
15	0.04	0.09	0.17	0.32	0.59	0.85	1.10	1.35	1.83	2.29	2.52	2.04	1.62	1.32	1.11	0.88	0.72	0.60	0.52	0.41	0.33	0.24	0.18	0.14	0.12
16	0.04	0.10	0.18	0.34	0.63	0.91	1.18	1.45	1.96	2.45	2.70	2.24	1.78	1.46	1.22	0.97	0.79	0.66	0.57	0.45	0.37	0.26	0.20	0.16	0.13
17	0.05	0.10	0.19	0.36	0.68	0.97	1.26	1.54	2.09	2.62	2.88	2.46	1.95	1.60	1.34	1.06	0.87	0.73	0.62	0.49	0.40	0.29	0.22	0.17	0.14
18	0.05	0.11	0.21	0.39	0.72	1.04	1.34	1.64	2.22	2.79	3.06	2.68	2.12	1.74	1.46	1.16	0.95	0.79	0.68	0.54	0.44	0.31	0.24	0.19	
19	0.05	0.12	0.22	0.41	0.76	1.10	1.42	1.74	2.36	2.95	3.25	2.90	2.30	1.89	1.58	1.25	1.03	0.86	0.73	0.58	0.48	0.34	0.26	0.21	
20	0.05	0.12	0.23	0.43	0.81	1.16	1.51	1.84	2.49	3.12	3.43	3.13	2.49	2.04	1.71	1.35	1.11	0.93	0.79	0.63	0.52	0.37	0.28	0.22	
21	0.06	0.13	0.24	0.46	0.85	1.22	1.59	1.94	2.63	3.29	3.62	3.37	2.68	2.19	1.84	1.46	1.19	1.00	0.85	0.68	0.55	0.40	0.30	0.24	
22	0.06	0.14	0.26	0.48	0.89	1.29	1.67	2.04	2.76	3.46	3.81	3.62	2.87	2.35	1.97	1.56	1.28	1.07	0.91	0.73	0.59	0.43	0.32	0.26	
23	0.06	0.14	0.27	0.50	0.94	1.35	1.75	2.14	2.90	3.63	3.99	3.87	3.07	2.51	2.10	1.67	1.37	1.15	0.98	0.78	0.64	0.45	0.35	0.27	
24	0.07	0.15	0.28	0.53	0.98	1.41	1.83	2.24	3.03	3.80	4.18	4.12	3.27	2.68	2.24	1.78	1.46	1.22	1.04	0.83	0.68	0.48	0.37	0.29	
25	0.07	0.16	0.29	0.55	1.03	1.48	1.92	2.34	3.17	3.97	4.37	4.38	3.48	2.85	2.38	1.89	1.55	1.30	1.11	0.88	0.72	0.52	0.39		
26	0.07	0.16	0.31	0.57	1.07	1.54	2.00	2.44	3.31	4.15	4.56	4.65	3.69	3.02	2.53	2.01	1.64	1.38	1.18	0.93	0.76	0.55	0.42		
28	0.08	0.18	0.33	0.62	1.16	1.67	2.16	2.65	3.58	4.49	4.94	5.19	4.12	3.37	2.83	2.24	1.84	1.54	1.31	1.04	0.85	0.61	0.46		
30	0.08	0.19	0.36	0.67	1.25	1.80	2.33	2.85	3.86	4.84	5.32	5.76	4.57	3.74	3.13	2.49	2.04	1.71	1.46	1.16	0.95	0.68	0.52		
32	0.09	0.21	0.38	0.72	1.34	1.93	2.50	3.06	4.14	5.19	5.70	6.34	5.03	4.12	3.45	2.74	2.24	1.88	1.60	1.27	1.04	0.75			
35	0.10	0.23	0.42	0.79	1.48	2.13	2.75	3.37	4.56	5.72	6.28	7.26	5.76	4.71	3.95	3.13	2.57	2.15	1.84	1.46	1.19	0.85			
40	0.12	0.26	0.49	0.91	1.71	2.46	3.18	3.89	5.27	6.60	7.26	8.55	7.04	5.76	4.83	3.83	3.13	2.63	2.24	1.78	1.46	1.04			
45	0.13	0.30	0.56	1.04	1.94	2.79	3.61	4.42	5.98	7.50	8.24	9.71	8.39	6.87	5.76	4.57	3.74	3.13	2.68	2.12	1.74				

Note: Please contact a Tsubaki representative prior to use of kW ratings in the shaded area of the table.

Lubrication systems and methods

Lubrication system	AI	AII	B	C
Method	Manual lubrication	Drip lubrication	Oil bath or slinger disc lubrication	Forced pump lubrication

Details on p. 222

Model numbering example

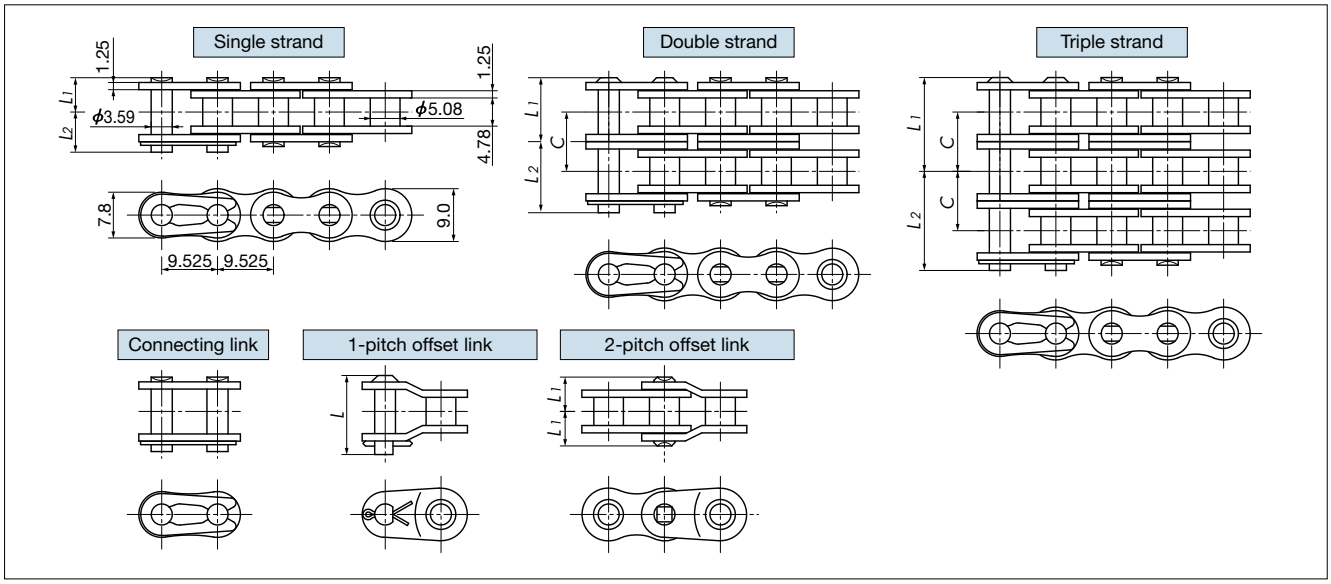
RS41 -1 -RP + 230L -MCJR

Size — Number of strands — Pin type — Number of links — End link

Note: Standard roller chains do not require series selection.

Standard Roller Chains and Sprockets RS Roller Chain RS35

(Identification no. 35)



■ Specifications

Size	Number of strands	Dimensions L_1	Dimensions L_2	Offset pin length L	Transverse pitch C	JIS standard min. tensile strength kN{kgf}	Min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
RS35	**1**	5.85	6.85	13.5	10.1	7.9 {806}	9.81{1000}	2.16{220}	0.33
	2	10.9	11.9	24.5		15.8{1612}	19.6 {2000}	3.63{370}	0.69
	3	16.0	16.9	34.6		23.7{2417}	29.4 {3000}	5.39{550}	1.05

Note: 1. Rollerless bushed chain.
2. Maximum allowable load when using a one-pitch offset link is 65% of the above.
3. Number of links per unit = 320. Items in bold are stocked in units.

■ RS35 Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth \ Lubrication	Small sprocket max rpm																								
	50	100	300	500	700	900	1200	1500	1800	2100	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	9000	10000
	AI				AII			B												C					
9	0.09	0.17	0.47	0.74	1.00	1.26	1.63	1.99	2.34	2.69	2.13	1.62	1.29	1.05	0.88	0.75	0.65	0.57	0.51	0.46	0.41	0.37	0.34	0.31	0.27
10	0.10	0.19	0.52	0.83	1.12	1.41	1.82	2.23	2.63	3.02	2.50	1.90	1.51	1.23	1.03	0.88	0.77	0.67	0.60	0.53	0.48	0.44	0.40	0.37	0.31
11	0.12	0.22	0.58	0.92	1.24	1.56	2.02	2.47	2.91	3.34	2.88	2.19	1.74	1.42	1.19	1.02	0.88	0.77	0.69	0.61	0.55	0.50	0.46	0.42	0.36
12	0.13	0.24	0.64	1.01	1.37	1.71	2.22	2.71	3.20	3.67	3.28	2.50	1.98	1.62	1.36	1.16	1.01	0.88	0.78	0.70	0.63	0.57	0.52	0.48	0.41
13	0.14	0.26	0.70	1.10	1.49	1.87	2.42	2.96	3.49	4.01	3.70	2.82	2.23	1.83	1.53	1.31	1.13	1.00	0.88	0.79	0.71	0.65	0.59	0.54	0.46
14	0.15	0.28	0.75	1.19	1.61	2.02	2.62	3.21	3.78	4.34	4.14	3.15	2.50	2.04	1.71	1.46	1.27	1.11	0.99	0.88	0.80	0.72	0.66	0.61	0.52
15	0.16	0.30	0.81	1.29	1.74	2.18	2.83	3.45	4.07	4.68	4.59	3.49	2.77	2.27	1.90	1.62	1.41	1.23	1.09	0.98	0.88	0.80	0.73	0.67	0.57
16	0.17	0.32	0.87	1.38	1.87	2.34	3.03	3.70	4.36	5.01	5.05	3.85	3.05	2.50	2.09	1.79	1.55	1.36	1.21	1.08	0.97	0.88	0.81	0.74	0.63
17	0.19	0.35	0.93	1.47	1.99	2.50	3.23	3.95	4.66	5.35	5.54	4.21	3.34	2.74	2.29	1.96	1.70	1.49	1.32	1.18	1.07	0.97	0.88	0.81	0.69
18	0.20	0.37	0.99	1.56	2.12	2.66	3.44	4.21	4.96	5.69	6.03	4.59	3.64	2.98	2.50	2.13	1.85	1.62	1.44	1.29	1.16	1.05	0.96	0.88	0.75
19	0.21	0.39	1.05	1.66	2.25	2.82	3.65	4.46	5.25	6.04	6.54	4.98	3.95	3.23	2.71	2.31	2.00	1.76	1.56	1.40	1.26	1.14	1.04	0.96	0.82
20	0.22	0.41	1.11	1.75	2.37	2.98	3.86	4.71	5.55	6.38	7.06	5.37	4.26	3.49	2.93	2.50	2.16	1.90	1.69	1.51	1.36	1.23	1.13	1.03	0.88
21	0.23	0.43	1.17	1.85	2.50	3.14	4.06	4.97	5.85	6.72	7.60	5.78	4.59	3.76	3.15	2.69	2.33	2.04	1.81	1.62	1.46	1.33	1.21	1.11	0.95
22	0.24	0.46	1.23	1.94	2.63	3.30	4.27	5.22	6.16	7.07	8.15	6.20	4.92	4.03	3.37	2.88	2.50	2.19	1.94	1.74	1.57	1.42	1.30	1.19	1.02
23	0.26	0.48	1.29	2.04	2.76	3.46	4.48	5.48	6.46	7.42	8.68	6.63	5.26	4.30	3.61	3.08	2.67	2.34	2.08	1.86	1.68	1.52	1.39	1.28	1.09
24	0.27	0.50	1.35	2.13	2.89	3.62	4.69	5.74	6.76	7.77	9.09	7.06	5.61	4.59	3.85	3.28	2.85	2.50	2.21	1.98	1.79	1.62	1.48	1.36	1.16
25	0.28	0.52	1.41	2.23	3.02	3.79	4.91	6.00	7.07	8.12	9.50	7.51	5.96	4.88	4.09	3.49	3.03	2.66	2.35	2.11	1.90	1.72	1.57	1.45	1.23
26	0.29	0.55	1.47	2.33	3.15	3.95	5.12	6.26	7.37	8.47	9.91	7.97	6.32	5.17	4.34	3.70	3.21	2.82	2.50	2.23	2.02	1.83	1.67	1.53	1.31
28	0.32	0.59	1.59	2.52	3.41	4.28	5.54	6.78	7.99	9.18	10.7	8.90	7.06	5.78	4.85	4.14	3.59	3.15	2.79	2.50	2.25	2.04	1.87	1.71	1.46
30	0.34	0.64	1.72	2.72	3.68	4.61	5.97	7.30	8.60	9.89	11.6	9.87	7.83	6.41	5.37	4.59	3.98	3.49	3.10	2.77	2.50	2.27	2.07	1.90	1.62
32	0.37	0.68	1.84	2.91	3.94	4.94	6.40	7.83	9.23	10.6	12.4	10.9	8.63	7.06	5.92	5.05	4.38	3.85	3.41	3.05	2.75	2.50	2.28	2.09	
35	0.40	0.75	2.03	3.21	4.34	5.45	7.06	8.63	10.2	11.7	13.7	12.4	9.87	8.08	6.77	5.78	5.01	4.40	3.90	3.49	3.15	2.86	2.61	2.39	
40	0.47	0.87	2.34	3.71	5.02	6.29	8.15	9.96	11.7	13.5	15.8	15.2	12.1	9.87	8.27	7.06	6.12	5.37	4.77	4.26	3.85	3.49			
45	0.53	0.99	2.66	4.21	5.70	7.14	9.26	11.3	13.3	15.3	17.9	18.1	14.4	11.8	9.87	8.43	7.31	6.41	5.69	5.09					

Note: 1. kW ratings when using-one pitch offset links are 80% of the above.
2. Please contact a Tsubaki representative prior to use of kW ratings in the shaded area of the table.

■ Multi-strand factors

Number of chain strands	Two strands	Three strands
Multi-strand factor	1.7	2.5

■ Lubrication systems and methods

Lubrication system	AI	AII	B	C
Method	Manual lubrication	Drip lubrication	Oil bath or slinger disc lubrication	Forced pump lubrication

Details on p. 222

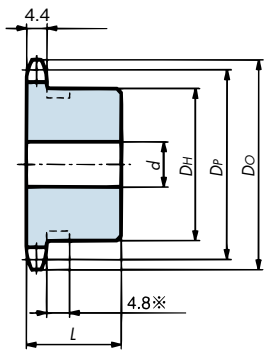
Model numbering example **RS35 -1 -RP + 310L -MCJR**

Size: RS35 | Number of strands: -1 | Pin type: -RP | Number of links: 310L | End link: -MCJR

Note: Standard roller chains do not require series selection.

RS Sprocket RS35





Mechanically machined (1B type)

Number of teeth	Pitch circle dia. D_P	Outer dia. (D_O)	1B type				Approx. mass kg	Material	Number of teeth
			Bore dia. d		Hub				
			Pilot bore	Max.	Dia. D_H	Length L			
9	27.85	32	8	11	22	20	0.05	*	**9**
10	30.82	35	8	12	25	20	0.07	*	**10**
11	33.81	38	8	14	27	20	0.08	*	**11**
12	36.80	41	8	16.5	31	20	0.11	*	**12**
13	39.80	44	9.5	18	32	20	0.12	*	**13**
14	42.80	47	9.5	16.5	30	20	0.12		**14**
15	45.81	51	9.5	19	35	20	0.16		**15**
16	48.82	54	9.5	20	37	20	0.18		**16**
17	51.84	57	9.5	24	41	20	0.22		**17**
18	54.85	60	9.5	24.5	44	20	0.25		**18**
19	57.87	63	9.5	28.5	47	20	0.29		**19**
20	60.89	66	9.5	30	50	20	0.32		**20**
21	63.91	69	9.5	32	53	20	0.36		**21**
22	66.93	72	9.5	32	53	20	0.37		**22**
23	69.95	75	9.5	32	53	20	0.38		**23**
24	72.97	78	9.5	32	53	22	0.43		**24**
25	76.00	81	12.7	32	53	22	0.43		**25**
26	79.02	84	12.7	32	53	22	0.44		**26**
27	82.05	87	12.7	32	53	22	0.45		**27**
28	85.07	90	12.7	32	53	22	0.47		**28**
30	91.12	96	12.7	32	53	22	0.50		**30**
32	97.18	102	12.7	32	53	22	0.53		**32**
34	103.23	109	12.7	32	53	22	0.56		**34**
35	106.26	112	12.7	32	53	22	0.58		**35**
36	109.29	115	12.7	32	53	22	0.59		**36**
38	115.34	121	13	42	63	25	0.82		**38**
40	121.40	127	13	42	63	25	0.86		**40**
42	127.46	133	13	42	63	25	0.90		**42**
45	136.55	142	13	42	63	25	0.96		**45**
48	145.64	151	13	42	63	25	1.0		**48**
50	151.69	157	13	42	63	25	1.1		**50**
54	163.82	169	13	42	63	25	1.2		**54**
60	182.00	187	13	42	63	25	1.4		**60**
65	197.15	203	16	45	68	25	1.6		**65**
70	212.30	218	16	45	68	25	1.7		**70**
75	227.46	233	16	45	68	25	1.9		**75**

Mechanically machined: machine-structural carbon steel

Note: 1. Maximum bore diameters shown are standard figures. Determine bore diameter and key bearing pressure based on general mechanical design.
2. Models marked with an * above have a groove around the periphery of the hub. Groove outer diameter is 16 for 9T, 18 for 10T, 22 for 11T, 24 for 12T, and 28 for 13T.
3. Models in shaded areas have hardened teeth.
4. Sprockets with 42 or more teeth do not have hardened teeth, but they can be manufactured with hardened teeth (quick delivery).
5. All models stocked.

Model numbering example

RS35 -1 B 50T

- RS35: Size
- -1: Number of strands
- B: Hub type
- 50T: Number of teeth

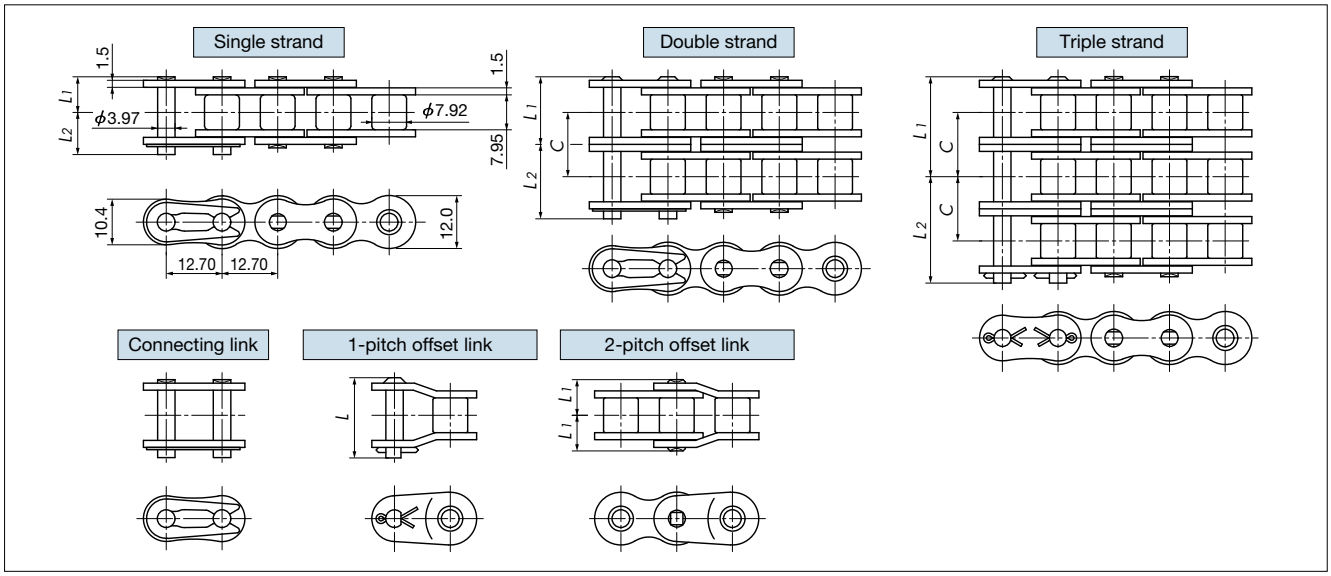
Hardened teeth model numbering example

RS35 -1 B 15T Q

- RS35: Size
- -1: Number of strands
- B: Hub type
- 15T: Number of teeth
- Q: Hardened teeth

Standard Roller Chains and Sprockets RS Roller Chain RS40

(Identification no. 40)



■ Specifications

Size	Number of strands	Dimensions L_1	Dimensions L_2	Offset pin length L	Transverse pitch C	JIS standard min. tensile strength kN{kgf}	Min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
RS40	**1**	8.25	9.95	18.2	14.4	13.9{1418}	17.7{1800}	3.63{370}	0.64
	2	15.45	17.15	33.5		27.8{2835}	35.3{3600}	6.18{630}	1.27
	3	22.65	24.15	47.9		41.7{4253}	53.0{5400}	9.12{930}	1.90
	4	29.9	31.3	62.3		–	70.6{7200}	12.0{1220}	2.53
	5	37.1	38.6	76.8		–	88.3{9000}	14.1{1440}	3.16
	6	44.3	45.8	91.2		–	106 {10800}	16.7{1700}	3.79

Note: 1. Maximum allowable load when using a one-pitch offset link is 65% of the above.
2. Number of links per unit = 240. Items in bold are stocked in units.

■ RS40 Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth \ Lubrication	Small sprocket max rpm																								
	10	25	50	100	200	300	400	500	700	900	1000	1200	1400	1600	1800	2100	2400	2700	3000	3500	4000	5000	6000	7000	8000
	AI						AII			B												C			
9	0.07	0.15	0.28	0.52	0.97	1.40	1.81	2.21	3.00	3.75	3.75	3.75	3.75	3.07	2.58	2.04	1.67	1.40	1.20	0.95	0.78	0.56	0.42	0.34	0.27
10	0.07	0.17	0.31	0.58	1.09	1.57	2.03	2.48	3.36	4.21	4.40	4.40	4.40	3.60	3.02	2.39	1.96	1.64	1.40	1.11	0.91	0.65	0.50	0.39	0.32
11	0.08	0.19	0.35	0.65	1.21	1.74	2.25	2.75	3.72	4.67	5.07	5.07	5.07	4.15	3.48	2.76	2.26	1.89	1.62	1.28	1.05	0.75	0.57	0.45	0.37
12	0.09	0.20	0.38	0.71	1.32	1.91	2.47	3.02	4.09	5.13	5.64	5.67	5.67	4.73	3.97	3.15	2.58	2.16	1.84	1.46	1.20	0.86	0.65	0.52	0.42
13	0.10	0.22	0.41	0.77	1.44	2.08	2.69	3.29	4.46	5.59	6.15	6.18	6.18	5.34	4.47	3.55	2.90	2.43	2.08	1.65	1.35	0.97	0.73	0.58	0.48
14	0.11	0.24	0.45	0.84	1.56	2.25	2.92	3.57	4.83	6.06	6.66	6.70	6.70	5.96	5.00	3.97	3.25	2.72	2.32	1.84	1.51	1.08	0.82	0.65	0.53
15	0.11	0.26	0.48	0.90	1.69	2.43	3.14	3.84	5.20	6.52	7.17	7.21	7.21	6.61	5.54	4.40	3.60	3.02	2.58	2.04	1.67	1.20	0.91	0.72	0.59
16	0.12	0.28	0.52	0.97	1.81	2.60	3.37	4.12	5.58	7.00	7.69	7.74	7.74	7.28	6.10	4.84	3.97	3.32	2.84	2.25	1.84	1.32	1.00	0.80	0.65
17	0.13	0.30	0.55	1.03	1.93	2.78	3.60	4.40	5.96	7.47	8.21	8.26	8.26	7.98	6.69	5.31	4.34	3.64	3.11	2.47	2.02	1.44	1.10	0.87	0.71
18	0.14	0.32	0.59	1.10	2.05	2.96	3.83	4.68	6.34	7.94	8.73	8.79	8.79	8.69	7.28	5.78	4.73	3.97	3.39	2.69	2.20	1.57	1.20	0.95	
19	0.15	0.33	0.62	1.17	2.18	3.13	4.06	4.96	6.72	8.42	9.26	9.43	9.43	9.43	7.90	6.27	5.13	4.30	3.67	2.91	2.38	1.71	1.30	1.03	
20	0.15	0.35	0.66	1.23	2.30	3.31	4.29	5.24	7.10	8.90	9.79	10.2	10.2	10.2	8.53	6.77	5.54	4.64	3.97	3.15	2.58	1.84	1.40	1.11	
21	0.16	0.37	0.70	1.30	2.42	3.49	4.52	5.53	7.48	9.38	10.3	11.0	11.0	11.0	9.18	7.28	5.96	5.00	4.27	3.39	2.77	1.98	1.51	1.20	
22	0.17	0.39	0.73	1.37	2.55	3.67	4.76	5.81	7.87	9.87	10.8	11.7	11.7	11.7	9.84	7.81	6.39	5.36	4.57	3.63	2.97	2.13	1.62	1.28	
23	0.18	0.41	0.77	1.43	2.67	3.85	4.99	6.10	8.26	10.4	11.4	12.6	12.6	12.6	10.5	8.35	6.83	5.73	4.89	3.88	3.18	2.27	1.73	1.37	
24	0.18	0.43	0.80	1.50	2.80	4.03	5.22	6.39	8.65	10.8	11.9	13.4	13.4	13.4	11.2	8.90	7.28	6.10	5.21	4.14	3.39	2.42	1.84	1.46	
25	0.19	0.45	0.84	1.57	2.93	4.21	5.46	6.67	9.03	11.3	12.5	14.1	14.1	14.1	11.9	9.46	7.74	6.49	5.54	4.40	3.60	2.58	1.96		
26	0.20	0.47	0.88	1.64	3.05	4.40	5.70	6.96	9.43	11.8	13.0	14.7	14.7	14.7	12.6	10.0	8.21	6.88	5.88	4.66	3.82	2.73	2.08		
28	0.22	0.51	0.95	1.77	3.31	4.76	6.17	7.54	10.2	12.8	14.1	16.0	16.0	16.0	14.1	11.2	9.18	7.69	6.57	5.21	4.27	3.05	2.32		
30	0.23	0.55	1.02	1.91	3.56	5.13	6.65	8.13	11.0	13.8	15.2	17.2	17.2	17.2	15.7	12.4	10.2	8.53	7.28	5.78	4.73	3.39	2.58		
32	0.25	0.59	1.10	2.05	3.82	5.50	7.13	8.71	11.8	14.8	16.3	18.4	18.4	18.4	17.3	13.7	11.2	9.40	8.03	6.37	5.21	3.73			
35	0.27	0.65	1.21	2.26	4.21	6.06	7.85	9.60	13.0	16.3	17.9	20.3	20.3	20.3	19.8	15.7	12.8	10.8	9.18	7.28	5.96	4.27			
40	0.31	0.75	1.40	2.60	4.86	7.00	9.07	11.1	15.0	18.8	20.7	24.1	24.1	24.1	24.1	19.2	15.7	13.1	11.2	8.90	7.28	5.21			
45	0.35	0.85	1.59	2.96	5.52	7.95	10.3	12.6	17.0	21.4	23.5	27.7	28.8	28.8	28.8	22.9	18.7	15.7	13.4	10.6	8.69				

Note: 1. kW ratings when using one-pitch offset links are 65% of the above.
2. Please contact a Tsubaki representative prior to use of kW ratings in the shaded area of the table.

■ Multi-strand factors

Number of chain strands	Two strands	Three strands	Four strands	Five strands	Six strands
Multi-strand factor	1.7	2.5	3.3	3.9	4.6

■ Lubrication systems and methods

Lubrication system	AI	AII	B	C
Method	Manual lubrication	Drip lubrication	Oil bath or slinger disc lubrication	Forced pump lubrication

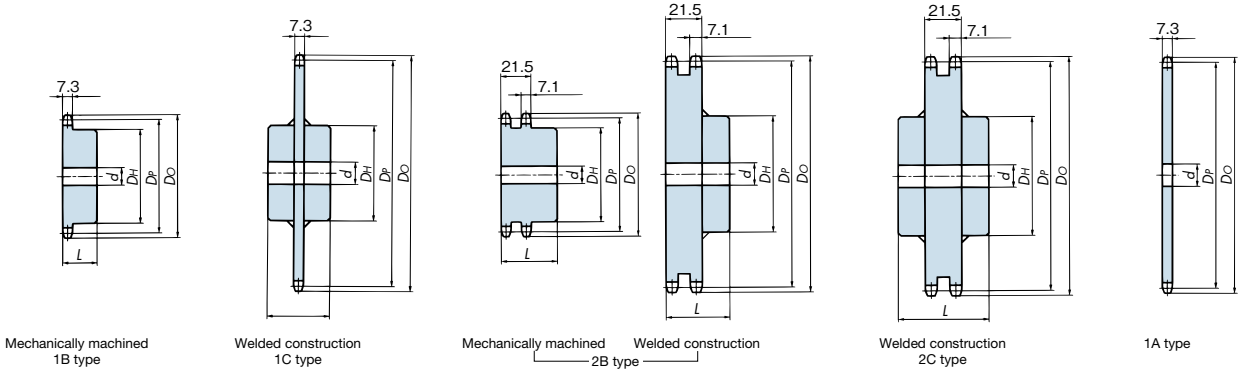
Details on p. 222

Model numbering example **RS40 -1 -RP + 230L -MCJR**

RS40: Size; -1: Number of strands; -RP: Pin type; 230L: Number of links; -MCJR: End link

Note: Standard roller chains do not require series selection.

RS Sprocket RS40

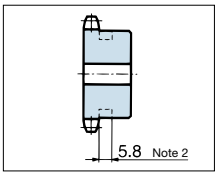


Number of teeth	Pitch circle dia. D_P	Outer dia. (D_O)	1B type						1C type						2B type						2C type						1A type			Number of teeth
			Bore dia. d		Hub		Approx. mass	Material	Bore dia. d		Hub		Approx. mass	Material	Bore dia. d		Hub		Approx. mass	Material	Bore dia. d		Hub		Approx. mass	Material	Pilot bore dia. d	Approx. mass	Material	
			Pilot bore	Max.	Dia. D_H	Length L	kg		Pilot bore	Max.	Dia. D_H	Length L	kg		Pilot bore	Max.	Dia. D_H	Length L	kg		Pilot bore	Max.	Dia. D_H	Length L	kg			kg		
9	37.13	43	9.5	15	28	22	0.10	*																						**9**
10	41.10	47	9.5	16.5	32	22	0.13	*																						**10**
11	45.08	51	9.5	20	37	22	0.17	*																						**11**
12	49.07	55	9.5	22	40	22	0.21	*							9.5	18	32	35	0.29								16	0.08		**12**
13	53.07	59	9.5	20	37	22	0.22								12.7	20	37	35	0.36								16	0.10		**13**
14	57.07	63	9.5	24	42	22	0.28								12.7	24	42	35	0.44								16	0.12		**14**
15	61.08	67	9.5	28.5	46	22	0.33								12.7	29	46	35	0.53								16	0.14		**15**
16	65.10	71	12.7	30	50	22	0.37								12.7	30	50	35	0.62								16	0.16		**16**
17	69.12	76	12.7	32	54	22	0.44								12.7	32	54	35	0.71								16	0.18		**17**
18	73.14	80	12.7	35	57	22	0.49								12.7	35	57	35	0.80								16	0.21		**18**
19	77.16	84	12.7	39.5	62	22	0.57								12.7	40	62	35	0.93								16	0.24		**19**
20	81.18	88	12.7	45.5	67	25	0.73								12.7	46	67	40	1.2								16	0.26		**20**
21	85.21	92	12.7	45.5	71	25	0.82								12.7	47	71	40	1.3								16	0.29		**21**
22	89.24	96	12.7	50	75	25	0.91								12.7	50	75	40	1.5								16	0.32		**22**
23	93.27	100	12.7	50	77	25	0.98								12.7	50	77	40	1.6								16	0.35		**23**
24	97.30	104	12.7	42	63	25	0.80								12.7	55	83	40	1.8								16	0.39		**24**
25	101.33	108	12.7	42	63	25	0.83								12.7	59	87	40	2.0								16	0.42		**25**
26	105.36	112	12.7	42	63	25	0.87								12.7	62	91	40	2.2								16	0.46		**26**
27	109.40	116	12.7	42	63	25	0.91								12.7	65	95	40	2.4								16	0.50		**27**
28	113.43	120	12.7	42	63	25	0.95		16	48	73	45	1.7		12.7	67	99	40	2.6								16	0.53		**28**
30	121.50	128	12.7	42	63	25	1.0		16	48	73	45	1.8		12.7	73	106	40	3.0								16	0.62		**30**
32	129.57	137	16	45	68	28	1.3		16	48	73	45	1.9		12.7	78	115	50	4.2								16	0.71		**32**
34	137.64	145	16	45	68	28	1.4		16	48	73	45	2.0		12.7	84	124	50	4.9								16	0.80		**34**
35	141.68	149	16	45	68	28	1.4		16	48	73	45	2.1		16	63	93	50	3.9		16	63	93	70	4.9		16	0.85		**35**
36	145.72	153	16	45	68	28	1.5		16	48	73	45	2.1		16	63	93	50	4.0		16	63	93	70	5.1		16	0.90		**36**
38	153.79	161	16	45	68	28	1.6		16	48	73	45	2.2		16	63	93	50	4.3		16	63	93	70	5.4		16	1.0		**38**
40	161.87	169	16	45	68	28	1.7		16	48	73	45	2.3		16	63	93	50	4.6		16	63	93	70	5.7		16	1.1		**40**
42	169.94	177	18	48	73	32	2.0		18	48	73	45	2.4		16	63	93	50	5.0		16	63	93	70	6.0		18	1.2		**42**
45	182.06	189	18	48	73	32	2.2		18	48	73	45	2.6		18	63	93	50	5.5		18	63	93	70	6.5		18	1.4		**45**
48	194.18	201	18	48	73	32	2.4		18	48	73	45	2.8		18	63	93	50	6.0		18	63	93	70	7.1		18	1.6		**48**
50	202.26	209	18	48	73	32	2.5		18	48	73	45	3.0		18	63	93	50	6.5		18	63	93	70	7.5		18	1.8		**50**
54	218.42	226	18	48	73	32	2.8		18	48	73	45	3.3		18	63	93	50	7.3		18	63	93	70	8.4		18	2.1		**54**
60	242.66	250	18	48	73	32	3.3		18	48	73	45	3.8		18	63	93	50	8.8		18	63	93	70	9.8		18	2.6		**60**
65	262.87	270	23	55	83	32	4.0		23	55	83	50	4.7														23	3.0		**65**
70	283.07	290	23	55	83	32	4.5		23	55	83	50	5.2														23	3.5		**70**
75	303.28	311	23	55	83	32	5.0		23	55	83	50	5.7														23	4.0		**75**

Material: Mechanically machined: machine-structural carbon steel; Welded construction: machine-structural carbon steel (teeth and hub); Mechanically machined: machine-structural carbon steel; Machine-structural carbon steel

Note 3

Note: 1. Maximum bore diameters shown are standard figures. Determine bore diameter and key bearing pressure based on general mechanical design.
2. Models marked with an * above have a groove around the periphery of the hub (shown in the diagram on the right). Groove outer diameter is 21 for 9T, 25 for 10T, 30 for 11T, and 32 for 12T.
3. Weld construction: carbon steel for machine structural use.
4. Models in shaded areas have hardened teeth.
5. Models with unhardened teeth as standard can be manufactured with hardened teeth (quick delivery).
6. Models with dimensions in thin font are made-to-order. All other items are stocked.



Model numbering example

RS40 -2 B 50T

- RS40: Size
- -2: Number of strands
- B: Hub type
- 50T: Number of teeth

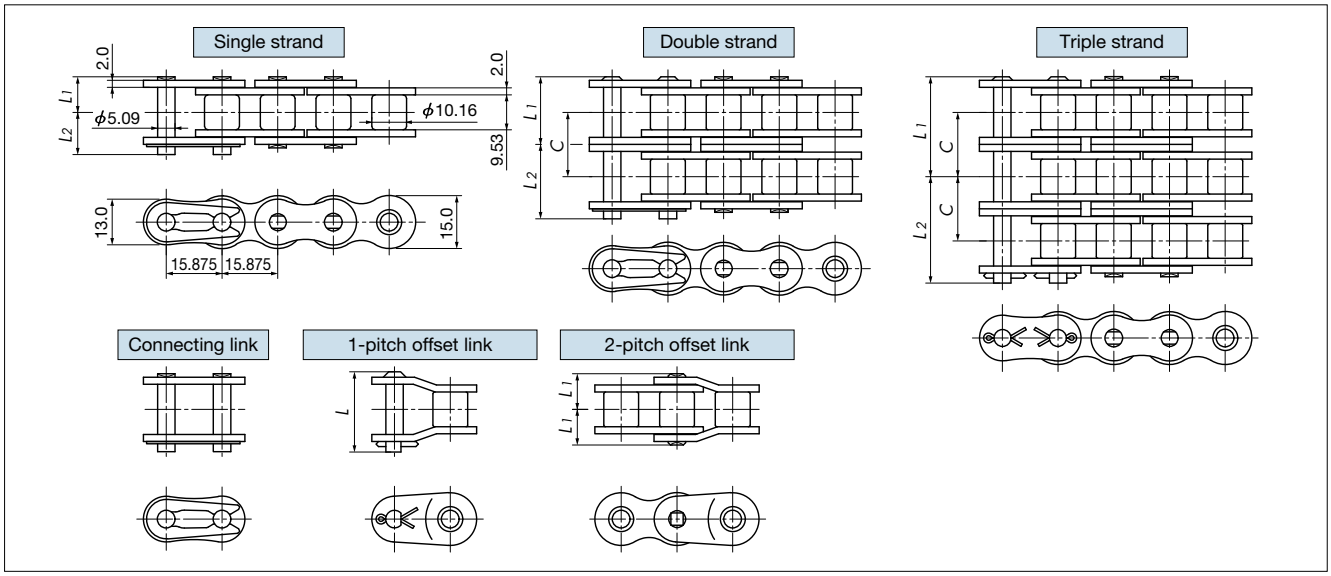
Hardened teeth model numbering example

RS40 -2 B 15T Q

- RS40: Size
- -2: Number of strands
- B: Hub type
- 15T: Number of teeth
- Q: Hardened teeth

Standard Roller Chains and Sprockets RS Roller Chain RS50

(Identification no. 50)



■ Specifications

Size	Number of strands	Dimensions L_1	Dimensions L_2	Offset pin length L	Transverse pitch C	JIS standard min. tensile strength kN{kgf}	Min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
RS50	**1**	10.3	11.9	22.6	18.1	21.8{2223}	28.4{2900}	6.37{650}	1.04
	2	19.35	21.15	41.8		43.6{4446}	56.9{5800}	10.8{1100}	2.07
	3	28.4	30.2	59.9		65.4{6669}	85.3{8700}	16.0{1630}	3.09
	4	37.45	39.25	78.1		–	114 {11600}	21.1{2150}	4.11
	5	46.5	48.3	96.2		–	142 {14500}	24.9{2540}	5.14
	6	55.6	57.4	114.4		–	171 {17400}	29.3{2990}	6.16

Note: 1. Maximum allowable load when using a one-pitch offset link is 65% of the above.
2. Number of links per unit = 192. Items in bold are stocked in units.

■ RS50 Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth \ Lubrication	Small sprocket max rpm																									
	10	25	50	100	200	300	400	500	700	900	1000	1200	1400	1600	1800	2100	2400	2700	3000	3500	4000	4500	5000	5500	6000
	AI					AII			B											C					
9	0.14	0.33	0.61	1.14	2.13	3.07	3.97	4.86	6.35	6.35	6.35	5.66	4.49	3.67	3.08	2.44	2.00	1.68	1.43	1.14	0.93	0.78	0.67	0.58	0.51
10	0.16	0.37	0.69	1.28	2.39	3.44	4.45	5.44	7.11	7.11	7.11	6.62	5.26	4.30	3.61	2.86	2.34	1.96	1.68	1.33	1.09	0.91	0.78	0.68	0.59
11	0.18	0.41	0.76	1.42	2.64	3.81	4.93	6.03	7.88	7.88	7.88	7.64	6.07	4.96	4.16	3.30	2.70	2.26	1.93	1.53	1.26	1.05	0.90	0.78	0.68
12	0.20	0.45	0.83	1.56	2.90	4.18	5.42	6.63	8.71	8.71	8.71	8.71	6.91	5.66	4.74	3.76	3.08	2.58	2.20	1.75	1.43	1.20	1.02	0.89	0.78
13	0.21	0.49	0.91	1.70	3.17	4.56	5.91	7.22	9.78	9.82	9.82	9.82	7.79	6.38	5.34	4.24	3.47	2.91	2.48	1.97	1.61	1.35	1.15	1.00	
14	0.23	0.53	0.99	1.84	3.43	4.94	6.40	7.83	10.6	11.0	11.0	11.0	8.71	7.13	5.97	4.74	3.88	3.25	2.78	2.20	1.80	1.51	1.29	1.12	
15	0.25	0.57	1.06	1.98	3.70	5.32	6.90	8.43	11.4	12.2	12.2	12.2	9.66	7.90	6.62	5.26	4.30	3.61	3.08	2.44	2.00	1.68	1.43	1.24	
16	0.27	0.61	1.14	2.12	3.96	5.71	7.40	9.04	12.2	13.4	13.4	13.4	10.6	8.71	7.30	5.79	4.74	3.97	3.39	2.69	2.20	1.85	1.58	1.37	
17	0.29	0.65	1.22	2.27	4.23	6.10	7.90	9.65	13.1	14.7	14.7	14.7	11.7	9.54	7.99	6.34	5.19	4.35	3.71	2.95	2.41	2.02	1.73	1.50	
18	0.30	0.69	1.29	2.41	4.50	6.48	8.40	10.3	13.9	15.8	15.8	15.8	12.7	10.4	8.71	6.91	5.66	4.74	4.05	3.21	2.63	2.20	1.88		
19	0.32	0.73	1.37	2.56	4.77	6.87	8.90	10.9	14.7	16.8	16.8	16.8	13.8	11.3	9.44	7.49	6.13	5.14	4.39	3.48	2.85	2.39	2.04		
20	0.34	0.78	1.45	2.70	5.04	7.26	9.41	11.5	15.6	17.7	17.7	17.7	14.9	12.2	10.2	8.09	6.62	5.55	4.74	3.76	3.08	2.58	2.20		
21	0.35	0.82	1.53	2.85	5.32	7.66	9.92	12.1	16.4	18.7	18.7	18.7	16.0	13.1	11.0	8.71	7.13	5.97	5.10	4.05	3.31	2.78	2.37		
22	0.37	0.86	1.61	3.00	5.59	8.05	10.4	12.8	17.3	19.6	19.6	19.6	17.2	14.0	11.8	9.34	7.64	6.41	5.47	4.34	3.55	2.98	2.54		
23	0.39	0.90	1.68	3.14	5.87	8.45	10.9	13.4	18.1	20.6	20.6	20.6	18.3	15.0	12.6	9.98	8.17	6.85	5.85	4.64	3.80	3.18			
24	0.40	0.95	1.76	3.29	6.14	8.85	11.5	14.0	19.0	21.6	21.6	21.6	19.5	16.0	13.4	10.6	8.71	7.30	6.23	4.94	4.05	3.39			
25	0.42	0.99	1.84	3.44	6.42	9.24	12.0	14.6	19.8	22.5	22.5	22.5	20.8	17.0	14.3	11.3	9.26	7.76	6.62	5.26	4.30	3.61			
26	0.44	1.03	1.92	3.59	6.70	9.64	12.5	15.3	20.7	23.5	23.5	23.5	22.0	18.0	15.1	12.0	9.82	8.23	7.03	5.58	4.56	3.82			
28	0.47	1.12	2.08	3.89	7.25	10.4	13.5	16.5	22.4	25.5	25.5	25.5	24.6	20.2	16.9	13.4	11.0	9.20	7.85	6.23	5.10	4.27			
30	0.51	1.20	2.24	4.19	7.81	11.3	14.6	17.8	24.1	27.5	27.5	27.5	27.3	22.4	18.7	14.9	12.2	10.2	8.71	6.91	5.66				
32	0.54	1.29	2.41	4.49	8.38	12.1	15.6	19.1	25.9	30.1	30.1	30.1	30.1	24.6	20.6	16.4	13.4	11.2	9.59	7.61	6.23				
35	0.59	1.42	2.65	4.95	9.23	13.3	17.2	21.1	28.5	34.4	34.4	34.4	34.4	28.2	23.6	18.7	15.3	12.9	11.0	8.71	7.13				
40	0.67	1.64	3.06	5.71	10.7	15.4	19.9	24.3	32.9	41.3	42.1	42.1	42.1	34.4	28.8	22.9	18.7	15.7	13.4	10.6					
45	0.76	1.86	3.48	6.49	12.1	17.4	22.6	27.6	37.4	46.9	48.9	48.9	48.9	41.1	34.4	27.3	22.4	18.7	16.0						

Note: 1. kW ratings when using one-pitch offset links are 65% of the above.
2. Please contact a Tsubaki representative prior to use of kW ratings in the shaded area of the table.

■ Multi-strand factors

Number of chain strands	Two strands	Three strands	Four strands	Five strands	Six strands
Multi-strand factor	1.7	2.5	3.3	3.9	4.6

■ Lubrication systems and methods

Lubrication system	AI	AII	B	C
Method	Manual lubrication	Drip lubrication	Oil bath or slinger disc lubrication	Forced pump lubrication

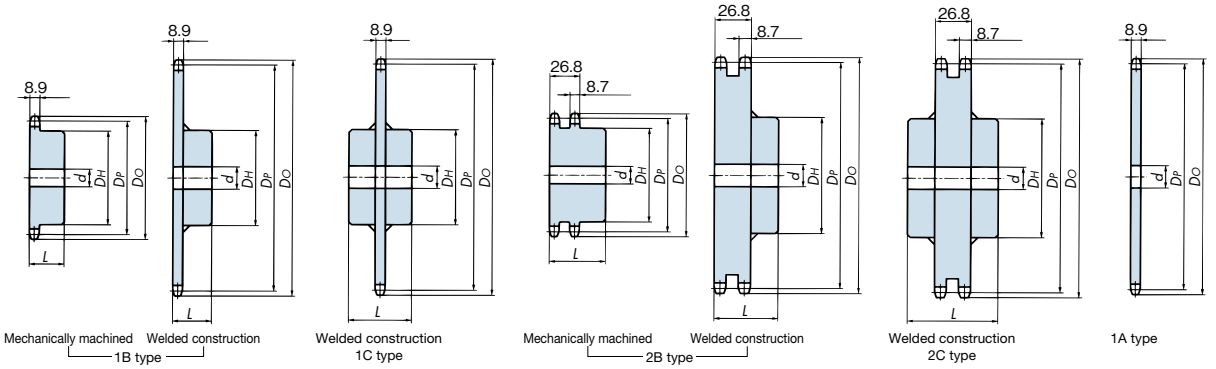
Details on p. 222

Model numbering example **RS50 -1 -RP + 182L -MCJR**

- RS50: Size
- -1: Number of strands
- -RP: Pin type
- 182L: Number of links
- -MCJR: End link

Note: Standard roller chains do not require series selection.

RS Sprocket RS50



Number of teeth	Pitch circle dia. D_P	Outer dia. (D_O)	1B type Bore dia. d Pilot bore	1B type Bore dia. d Max.	1B type Hub Dia. D_H	1B type Hub Length L	1B type Approx. mass kg	1B type Material	1C type Bore dia. d Pilot bore	1C type Bore dia. d Max.	1C type Hub Dia. D_H	1C type Hub Length L	1C type Approx. mass kg	1C type Material	2B type Bore dia. d Pilot bore	2B type Bore dia. d Max.	2B type Hub Dia. D_H	2B type Hub Length L	2B type Approx. mass kg	2B type Material	2C type Bore dia. d Pilot bore	2C type Bore dia. d Max.	2C type Hub Dia. D_H	2C type Hub Length L	2C type Approx. mass kg	2C type Material	1A type Pilot bore dia. d	1A type Approx. mass kg	1A type Material	Number of teeth
9	46.42	53	9.5	19	34	25	0.18	*																						**9**
10	51.37	58	9.5	22	40	25	0.24	*																						**10**
11	56.35	64	12.7	25	46	25	0.30	*																						**11**
12	61.34	69	12.7	32	51	25	0.37	*							12.7	24	42	40	0.55								18	0.16		**12**
13	66.33	74	12.7	32	51	25	0.42	*							12.7	28.5	47	40	0.68								18	0.19		**13**
14	71.34	79	12.7	32	52	25	0.49								12.7	32	52	40	0.81								18	0.23		**14**
15	76.35	84	12.7	35	57	25	0.58								12.7	35	57	40	0.96								18	0.27		**15**
16	81.37	89	12.7	40	62	25	0.68								12.7	40	62	45	1.2								18	0.31		**16**
17	86.39	94	12.7	45.5	67	25	0.78								12.7	45.5	67	45	1.4								18	0.35		**17**
18	91.42	100	12.7	47.5	72	28	0.99								12.7	47.5	72	45	1.6								18	0.40		**18**
19	96.45	105	12.7	48	73	28	1.1								15.9	52	79	45	1.9								18	0.45		**19**
20	101.48	110	12.7	48	73	28	1.1								15.9	55	82	45	2.1								18	0.50		**20**
21	106.51	115	15.9	48	73	28	1.2								15.9	60	89	45	2.4								18	0.56		**21**
22	111.55	120	15.9	48	73	28	1.2								15.9	63	92	50	2.8								18	0.61		**22**
23	116.59	125	15.9	48	73	28	1.3								15.9	67	99	50	3.2								18	0.67		**23**
24	121.62	130	15.9	48	73	28	1.3								15.9	70	102	50	3.5								18	0.74		**24**
25	126.66	135	15.9	48	73	28	1.4								15.9	75	109	50	3.9								18	0.80		**25**
26	131.70	140	18	48	73	28	1.5								18	63	93	50	3.6		18	63	93	75	4.9		18	0.87		**26**
27	136.74	145	18	48	73	28	1.5								18	63	93	50	3.8		18	63	93	75	5.2		18	0.94		**27**
28	141.79	150	18	48	73	28	1.6		18	55	83	50	2.7		18	63	93	50	4.0		18	66	98	80	6.0		18	1.0		**28**
30	151.87	161	18	48	73	28	1.8		18	55	83	50	2.9		18	63	93	50	4.5		18	66	98	80	6.5		18	1.2		**30**
32	161.96	171	18	48	73	28	1.9		18	55	83	50	3.0		18	63	93	50	5.0		18	66	98	80	7.0		18	1.3		**32**
34	172.05	181	18	48	73	28	2.1		18	55	83	50	3.2		18	63	93	50	5.5		18	66	98	80	7.5		18	1.5		**34**
35	177.10	186	18	48	73	28	2.2		18	55	83	50	3.3		18	63	93	50	5.8		18	66	98	80	7.7		18	1.6		**35**
36	182.15	191	23	55	83	35	2.7		23	55	83	50	3.3		18	63	93	50	6.1		18	66	98	80	8.0		23	1.7		**36**
38	192.24	201	23	55	83	35	2.9		23	55	83	50	3.5		18	63	93	50	6.7		18	66	98	80	8.6		23	1.9		**38**
40	202.33	211	23	55	83	35	3.2		23	55	83	50	3.8		23	66	98	56	7.7		23	66	98	80	9.1		23	2.1		**40**
42	212.43	221	23	55	83	35	3.4		23	55	83	50	4.0		23	66	98	56	8.4		23	66	98	80	9.8		23	2.3		**42**
45	227.58	237	23	55	83	35	3.7		23	55	83	50	4.3		23	66	98	56	9.4		23	66	98	80	10.8		23	2.7		**45**
48	242.73	252	23	55	83	35	4.1		23	55	83	50	4.7		23	66	98	56	10.6		23	66	98	80	12.0		23	3.1		**48**
50	252.82	262	23	55	83	35	4.4		23	55	83	50	5.0		23	66	98	56	11.4		23	66	98	80	12.8		23	3.4		**50**
54	273.03	282	23	55	83	35	5.0		23	55	83	50	5.6		23	66	98	63	13.4		23	66	98	80	14.4		23	3.9		**54**
60	303.33	312	23	55	83	35	5.9		23	63	93	60	7.4		23	66	98	63	16.2		23	66	98	80	17.2		23	4.9		**60**
65	328.58	338	23	63	93	40	7.3		23	63	93	60	8.3														23	5.7		**65**
70	353.84	363	23	63	93	40	8.2		23	63	93	60	9.2														23	6.6		**70**
75	379.10	388	23	63	93	40	9.2		23	63	93	60	10.2														23	7.6		**75**

Mechanically machined: machine-structural carbon steel (1B type)

Note 3 (1B type)

Welded construction: machine-structural carbon steel (teeth and hub) (1C type)

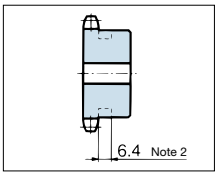
Mechanically machined: machine-structural carbon steel (2B type)

Note 3 (2B type)

Welded construction: machine-structural carbon steel (teeth and hub) (2C type)

Machine-structural carbon steel (1A type)

Note: 1. Maximum bore diameters shown are standard figures. Determine bore diameter and key bearing pressure based on general mechanical design.
2. Models marked with an * above have a groove around the periphery of the hub (shown in the diagram on the right). Groove outer diameter is 27 for 9T, 32 for 10T, 37 for 11T, 42 for 12T, and 47 for 13T.
3. Weld construction: carbon steel for machine structural use.
4. Models in shaded areas have hardened teeth.
5. Models with unhardened teeth as standard can be manufactured with hardened teeth (quick delivery).
6. Models with dimensions in thin font are made-to-order. All other items are stocked.



Model numbering example

RS50 -2 B 50T

- RS50: Size
- -2: Number of strands
- B: Hub type
- 50T: Number of teeth

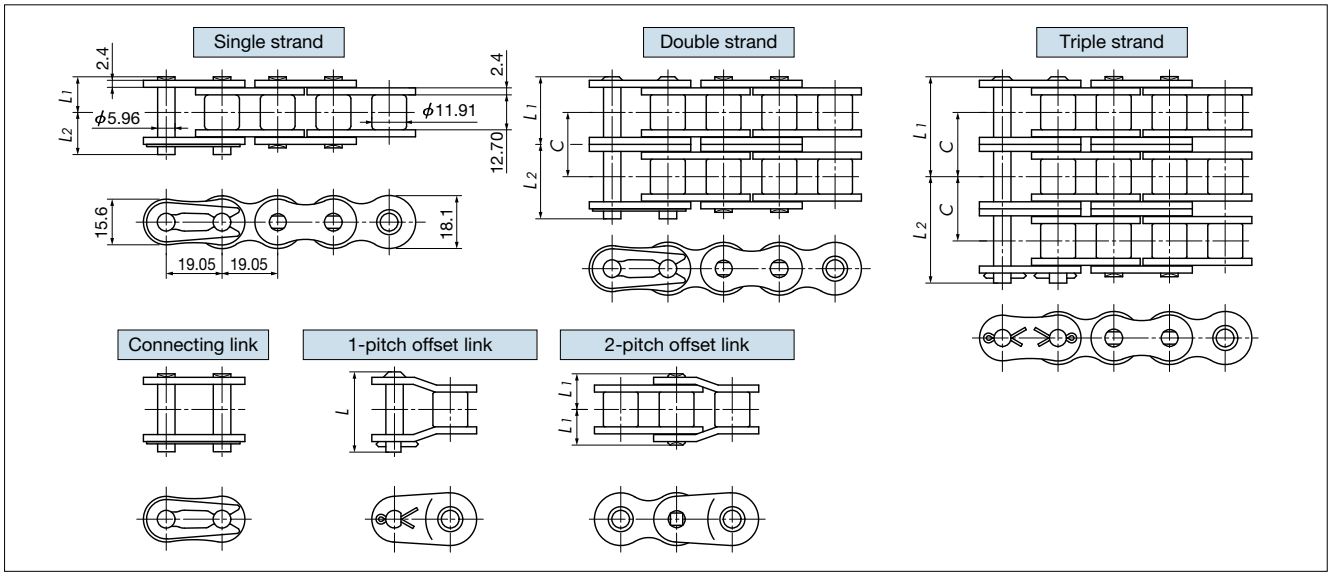
Hardened teeth model numbering example

RS50 -2 B 15T Q

- RS50: Size
- -2: Number of strands
- B: Hub type
- 15T: Number of teeth
- Q: Hardened teeth

Standard Roller Chains and Sprockets RS Roller Chain RS60

(Identification no. 60)



■ Specifications

Size	Number of strands	Dimensions L_1	Dimensions L_2	Offset pin length L	Transverse pitch C	JIS standard min. tensile strength kN{kgf}	Min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
RS60	**1**	12.85	14.75	28.2	22.8	31.3{3192}	40.2{4100}	8.83{900}	1.53
	2	24.25	26.25	52.6		62.6{6384}	80.4{8200}	15.0{1530}	3.04
	3	35.65	38.15	75.5		93.9{9576}	121 {12300}	22.1{2250}	4.54
	4	47.05	49.55	98.3		–	161 {16400}	29.1{2970}	6.04
	5	58.5	61.0	121.2		–	201 {20500}	34.4{3510}	7.54
	6	69.9	72.5	144.0		–	241 {24600}	40.6{4140}	9.05

Note: 1. Maximum allowable load when using a one-pitch offset link is 65% of the above.
2. Number of links per unit = 160. Items in bold are stocked in units.

■ RS60 Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth \ Lubrication	Small sprocket max rpm																								
	10	25	50	100	150	200	300	400	500	600	700	800	900	1000	1100	1200	1400	1600	1800	2000	2500	3000	3500	4000	4500
	AI					AII			B												C				
9	0.24	0.55	1.02	1.90	2.73	3.54	5.10	6.61	8.08	9.52	10.1	10.1	10.1	8.6	7.46	6.54	5.19	4.25	3.56	3.04	2.18	1.66	1.31	1.08	0.90
10	0.27	0.61	1.14	2.13	3.06	3.97	5.72	7.41	9.05	10.7	11.4	11.4	11.4	10.1	8.73	7.66	6.08	4.98	4.17	3.56	2.55	1.94	1.54	1.26	1.06
11	0.30	0.68	1.26	2.36	3.40	4.40	6.34	8.21	10.0	11.8	12.7	12.7	12.7	11.6	10.1	8.84	7.02	5.74	4.81	4.11	2.94	2.24	1.78	1.45	1.22
12	0.33	0.74	1.39	2.59	3.73	4.83	6.96	9.02	11.0	13.0	13.9	13.9	13.9	13.2	11.5	10.1	8.00	6.54	5.48	4.68	3.35	2.55	2.02	1.66	1.39
13	0.36	0.81	1.51	2.82	4.07	5.27	7.59	9.83	12.0	14.2	15.2	15.2	15.2	14.9	12.9	11.4	9.02	7.38	6.18	5.28	3.78	2.87	2.28	1.87	
14	0.39	0.88	1.64	3.06	4.41	5.71	8.22	10.7	13.0	15.3	16.7	16.7	16.7	16.7	14.5	12.7	10.1	8.25	6.91	5.90	4.22	3.21	2.55	2.09	
15	0.41	0.95	1.77	3.30	4.75	6.15	8.86	11.5	14.0	16.5	18.5	18.5	18.5	18.5	16.0	14.1	11.2	9.15	7.66	6.54	4.68	3.56	2.83	2.31	
16	0.44	1.01	1.89	3.53	5.09	6.59	9.50	12.3	15.0	17.7	20.4	20.4	20.4	20.4	17.7	15.5	12.3	10.1	8.44	7.21	5.16	3.92	3.11	2.55	
17	0.47	1.08	2.02	3.77	5.43	7.04	10.1	13.1	16.1	18.9	21.7	22.3	22.3	22.3	19.4	17.0	13.5	11.0	9.25	7.90	5.65	4.30	3.41	2.79	
18	0.50	1.15	2.15	4.01	5.78	7.49	10.8	14.0	17.1	20.1	23.1	23.7	23.7	23.7	21.1	18.5	14.7	12.0	10.1	8.60	6.16	4.68	3.72	3.04	
19	0.53	1.22	2.28	4.25	6.13	7.94	11.4	14.8	18.1	21.3	24.5	25.1	25.1	25.1	22.9	20.1	15.9	13.0	10.9	9.33	6.68	5.08	4.03	3.30	
20	0.56	1.29	2.41	4.50	6.48	8.39	12.1	15.7	19.1	22.6	25.9	26.6	26.6	26.6	24.7	21.7	17.2	14.1	11.8	10.1	7.21	5.48	4.35		
21	0.59	1.36	2.54	4.74	6.83	8.84	12.7	16.5	20.2	23.8	27.3	28.0	28.0	28.0	26.6	23.3	18.5	15.2	12.7	10.8	7.76	5.90	4.68		
22	0.62	1.43	2.67	4.98	7.18	9.30	13.4	17.4	21.2	25.0	28.7	29.5	29.5	29.5	28.5	25.0	19.8	16.2	13.6	11.6	8.32	6.33	5.02		
23	0.64	1.50	2.80	5.23	7.53	9.76	14.1	18.2	22.3	26.2	30.1	30.9	30.9	30.9	30.5	26.7	21.2	17.4	14.6	12.4	8.89	6.76	5.37		
24	0.67	1.57	2.93	5.47	7.89	10.2	14.7	19.1	23.3	27.5	31.5	32.5	32.5	32.5	32.5	28.5	22.6	18.5	15.5	13.2	9.48	7.21	5.72		
25	0.70	1.64	3.07	5.72	8.24	10.7	15.4	19.9	24.4	28.7	33.0	34.5	34.5	34.5	34.5	30.3	24.0	19.7	16.5	14.1	10.1	7.66	6.08		
26	0.73	1.71	3.20	5.97	8.60	11.1	16.0	20.8	25.4	29.9	34.4	36.6	36.6	36.6	36.6	32.1	25.5	20.9	17.5	14.9	10.7	8.13	6.45		
28	0.78	1.86	3.47	6.47	9.31	12.1	17.4	22.5	27.5	32.4	37.3	40.9	40.9	40.9	40.9	35.9	28.5	23.3	19.5	16.7	11.9	9.09			
30	0.84	2.00	3.73	6.97	10.0	13.0	18.7	24.3	29.7	34.9	40.1	44.9	44.9	44.9	44.9	39.8	31.6	25.9	21.7	18.5	13.2	10.1			
32	0.90	2.14	4.00	7.47	10.8	13.9	20.1	26.0	31.8	37.5	43.0	48.1	48.1	48.1	48.1	43.9	34.8	28.5	23.9	20.4	14.6	11.1			
35	0.98	2.36	4.41	8.23	11.9	15.4	22.1	28.7	35.0	41.3	47.4	53.0	53.0	53.0	53.0	50.2	39.8	32.6	27.3	23.3	16.7	12.7			
40	1.12	2.73	5.09	9.50	13.7	17.7	25.5	33.1	40.5	47.7	54.8	61.3	61.3	61.3	61.3	61.3	48.7	39.8	33.4	28.5	20.4				
45	1.26	3.10	5.78	10.8	15.5	20.1	29.0	37.6	45.9	54.1	62.2	70.1	73.2	73.2	73.2	73.2	58.1	47.5	39.8	34.0	24.3				

Note: 1. kW ratings when using one-pitch offset links are 65% of the above.
2. Please contact a Tsubaki representative prior to use of kW ratings in the shaded area of the table.

■ Multi-strand factors

Number of chain strands	Two strands	Three strands	Four strands	Five strands	Six strands
Multi-strand factor	1.7	2.5	3.3	3.9	4.6

■ Lubrication systems and methods

Lubrication system	AI	AII	B	C
Method	Manual lubrication	Drip lubrication	Oil bath or slinger disc lubrication	Forced pump lubrication

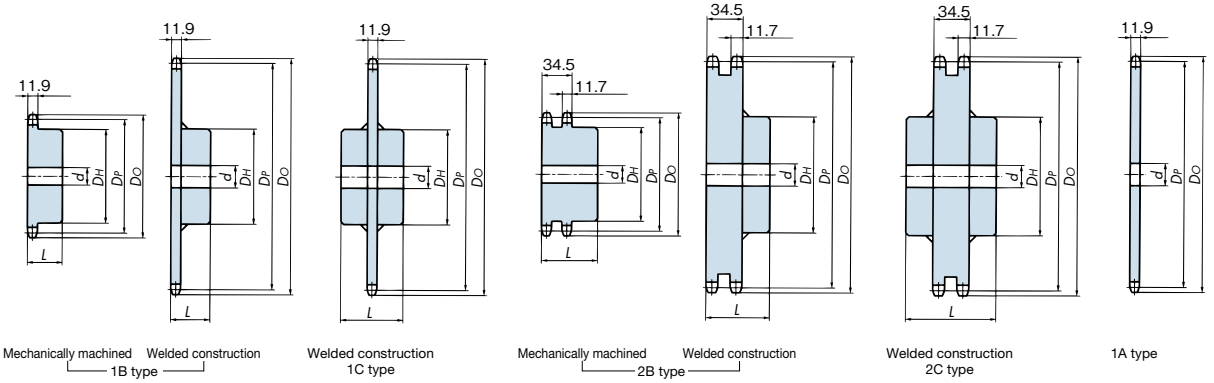
Details on p. 222

Model numbering example **RS60 -1 -RP + 150L -MCJR**

Size: RS60 | Number of strands: -1 | Pin type: -RP | Number of links: 150L | End link: -MCJR

Note: Standard roller chains do not require series selection.

RS Sprocket RS60

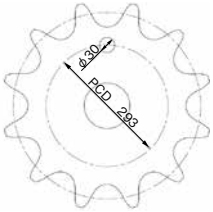


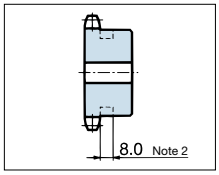
Number of teeth	Pitch circle dia. D_P	Outer dia. (D_O)	1B type Bore dia. d Pilot bore	1B type Bore dia. d Max.	1B type Hub Dia. D_H	1B type Hub Length L	1B type Approx. mass kg	1B type Material	1C type Bore dia. d Pilot bore	1C type Bore dia. d Max.	1C type Hub Dia. D_H	1C type Hub Length L	1C type Approx. mass kg	1C type Material	2B type Bore dia. d Pilot bore	2B type Bore dia. d Max.	2B type Hub Dia. D_H	2B type Hub Length L	2B type Approx. mass kg	2B type Material	2C type Bore dia. d Pilot bore	2C type Bore dia. d Max.	2C type Hub Dia. D_H	2C type Hub Length L	2C type Approx. mass kg	2C type Material	1A type Pilot bore dia. d	1A type Approx. mass kg	1A type Material	Number of teeth
9	55.70	64	9.5	24.5	43	32	0.36	*																						9
10	61.65	70	12.7	30	49	32	0.45	*																						10
11	67.62	76	12.7	32	51	32	0.55	*																						11
12	73.60	83	12.7	32	51	32	0.63								12.7	32	51	50	1.1								18	0.33		12
13	79.60	89	15.9	35	57	32	0.76								15.9	35	57	50	1.3								18	0.39		13
14	85.61	95	15.9	39.5	62	32	0.90								15.9	39.5	62	56	1.6								18	0.46		14
15	91.63	101	15.9	45.5	68	32	1.1								15.9	45.5	68	56	1.9								18	0.53		15
16	97.65	107	15.9	47.5	73	32	1.2								15.9	50	76	56	2.3								18	0.61		16
17	103.67	113	15.9	47.5	73	32	1.3								15.9	55	82	56	2.7								18	0.69		17
18	109.70	119	15.9	55	83	40	1.9								15.9	59	87	56	3.0								18	0.78		18
19	115.74	126	15.9	55	83	40	2.0								15.9	63	95	56	3.5								18	0.88		19
20	121.78	132	15.9	55	83	40	2.1								15.9	69	101	56	3.9								18	0.98		20
21	127.82	138	15.9	55	83	40	2.2								15.9	75	107	56	4.4								18	1.1		21
22	133.86	144	15.9	55	83	40	2.3								15.9	78	113	56	4.9								18	1.2		22
23	139.90	150	18	55	83	40	2.4								18	66	98	56	4.8		18	66	98	80	6.2		18	1.3		23
24	145.95	156	18	55	83	40	2.6								18	66	98	56	5.1		18	66	98	80	6.6		18	1.4		24
25	151.99	162	18	55	83	40	2.7								18	66	98	56	5.4		18	66	98	80	6.9		18	1.6		25
26	158.04	168	18	55	83	40	2.8								18	66	98	56	5.8		18	66	98	80	7.3		18	1.7		26
27	164.09	174	18	55	83	40	3.0								18	66	98	56	6.2		18	66	98	80	7.7		18	1.8		27
28	170.14	181	18	55	83	40	3.1		18	55	83	50	3.6		18	66	98	56	6.6		18	66	98	80	8.1		18	2.0		28
30	182.25	193	18	55	83	40	3.4		18	55	83	50	3.9		18	66	98	56	7.5		18	66	98	80	8.9		18	2.3		30
32	194.35	205	18	55	83	40	3.8		18	55	83	50	4.2		18	66	98	56	8.4		18	66	98	80	9.9		18	2.6		32
34	206.46	217	18	55	83	40	4.1		18	55	83	50	4.5		18	66	98	56	9.4		18	66	98	80	10.8		18	3.0		34
35	212.52	223	18	55	83	40	4.3		18	55	83	50	4.7		18	66	98	56	9.9		18	75	107	85	12.2		18	3.1		35
36	218.57	229	18	55	83	40	4.5		18	55	83	50	4.9		18	66	98	56	10.4		18	75	107	85	12.7		18	3.3		36
38	230.69	241	18	55	83	40	4.9		18	63	93	55	6.0		18	66	98	56	11.5		18	75	107	85	13.8		18	3.7		38
40	242.80	253	18	55	83	40	5.3		18	63	93	55	6.4		18	66	98	56	12.7		18	75	107	85	15.0		18	4.1		40
42	254.92	266	23	63	93	45	6.2		23	63	93	55	6.7		23	75	107	71	15.1		23	75	107	85	16.1		23	4.5		42
45	273.09	284	23	63	93	45	6.9		23	63	93	55	7.4		23	75	107	71	17.1		23	75	107	85	18.1		23	5.2		45
48	291.27	302	23	63	93	45	7.6		23	63	93	55	8.2		23	75	107	71	19.1		23	75	107	85	20.1		23	6.0		48
50	303.39	314	23	63	93	45	8.2		23	63	93	55	8.7		23	75	107	71	20.6		23	75	107	85	21.6		23	6.5		50
54	327.63	339	23	63	93	45	9.3		23	63	93	55	9.8		23	75	107	71	23.7		23	75	107	85	24.7		23	7.6		54
60	363.99	375	23	63	93	45	11.1		23	75	107	70	13.3		23	75	107	71	**28.7**		23	75	107	90	**30.1**		23	9.4		60
65	394.30	405	28	75	107	45	13.2		28	75	107	70	14.9														28	11.0		65
70	424.61	436	28	75	107	45	15.0		28	75	107	70	16.7														28	12.8		70
75	454.92	466	28	75	107	45	16.9		28	75	107	70	18.6														28	14.7		75

Material: Mechanically machined: machine-structural carbon steel; Welded construction: machine-structural carbon steel (teeth and hub); Welded construction: machine-structural carbon steel (teeth and hub); Mechanically machined: machine-structural carbon steel; Welded construction: machine-structural carbon steel (teeth and hub); Welded construction: machine-structural carbon steel (teeth and hub); Machine-structural carbon steel

Note: 1. Maximum bore diameters shown are standard figures. Determine bore diameter and key bearing pressure based on general mechanical design.
2. Models marked with an * above have a groove around the periphery of the hub (shown in the diagram on the right). Groove outer diameter is 32 for 9T, 37 for 10T, and 45 for 11T.
3. Models in the dimensional chart whose approximate mass is in bold font have one hanging hole. See the diagram on the right for more information.
4. Models in shaded areas have hardened teeth.
5. Models with unhardened teeth as standard can be manufactured with hardened teeth (quick delivery)
6. Models with dimensions in thin font are made-to-order. All other items are stocked.

■ Hanging hole dimensions





The phase relationship between the hanging hole and teeth may vary.

Model numbering example

RS60 -2 B 50T

- RS60: Size
- -2: Number of strands
- B: Hub type
- 50T: Number of teeth

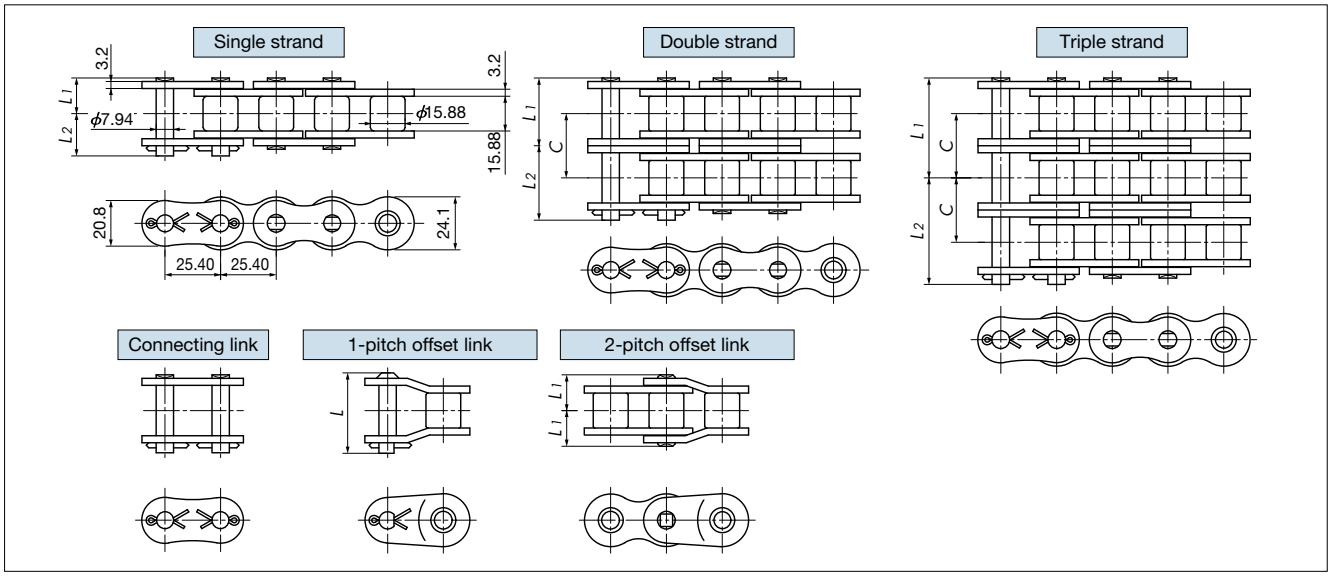
Hardened teeth model numbering example

RS60 -2 B 15T Q

- RS60: Size
- -2: Number of strands
- B: Hub type
- 15T: Number of teeth
- Q: Hardened teeth

Standard Roller Chains and Sprockets RS Roller Chain RS80

(Identification no. 80)



■ Specifications

Size	Number of strands	Dimensions L_1	Dimensions L_2	Offset pin length L	Transverse pitch C	JIS standard min. tensile strength kN{kgf}	Min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
RS80	**1**	16.25	19.25	36.6	29.3	55.6 {5670}	71.6{7300}	14.7{1500}	2.66
	2	30.9	33.9	67.5		111.2{11340}	143 {14600}	25.0{2550}	5.27
	3	45.6	48.5	96.9		166.8{17009}	215 {21900}	36.8{3750}	7.89
	4	60.25	63.25	126.3		–	286 {29200}	48.5{4950}	10.50
	5	74.95	77.95	155.6		–	358 {36500}	57.4{5850}	13.11
	6	89.6	92.5	184.9		–	430 {43800}	67.7{6900}	15.73

Note: 1. Maximum allowable load when using a one-pitch offset link is 65% of the above.
2. Number of links per unit = 120. Items in bold are stocked in units.

■ RS80 Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth \ Lubrication	Small sprocket max rpm																									
	10	25	50	100	150	200	300	400	500	600	700	800	900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2700	3000	3400
	AI				AII			B										C							
9	0.53	1.21	2.26	4.21	6.07	7.86	11.3	14.7	17.9	18.2	18.2	15.1	12.7	10.8	9.39	8.24	6.54	5.35	4.48	3.83	3.32	2.91	2.44	2.08	1.73
10	0.59	1.36	2.53	4.72	6.80	8.81	12.7	16.4	20.1	20.4	20.4	17.7	14.9	12.7	11.0	9.65	7.66	6.27	5.25	4.48	3.89	3.41	2.86	2.44	2.02
11	0.66	1.50	2.80	5.23	7.54	9.76	14.1	18.2	22.3	22.6	22.6	20.4	17.1	14.6	12.7	11.1	8.83	7.23	6.06	5.17	4.48	3.94	3.30	2.82	1.27
12	0.72	1.65	3.08	5.75	8.28	10.7	15.4	20.0	24.5	24.9	24.9	23.3	19.5	16.7	14.5	12.7	10.1	8.24	6.90	5.89	5.11	4.48	3.76	3.21	
13	0.79	1.80	3.36	6.27	9.03	11.7	16.8	21.8	26.7	27.1	27.1	26.3	22.0	18.8	16.3	14.3	11.3	9.29	7.78	6.65	5.76	5.06	4.24	3.62	
14	0.85	1.95	3.64	6.79	9.78	12.7	18.2	23.6	28.9	29.4	29.4	29.4	24.6	21.0	18.2	16.0	12.7	10.4	8.70	7.43	6.44	5.65	4.74	4.04	
15	0.92	2.10	3.92	7.31	10.5	13.6	19.7	25.5	31.1	32.6	32.6	32.6	27.3	23.3	20.2	17.7	14.1	11.5	9.65	8.24	7.14	6.27	5.25	4.48	
16	0.99	2.25	4.20	7.84	11.3	14.6	21.1	27.3	33.4	35.9	35.9	35.9	30.1	25.7	22.2	19.5	15.5	12.7	10.6	9.08	7.87	6.90	5.79	4.94	
17	1.05	2.40	4.49	8.37	12.1	15.6	22.5	29.2	35.6	39.3	39.3	39.3	32.9	28.1	24.4	21.4	17.0	13.9	11.6	9.94	8.62	7.56	6.34	5.41	
18	1.12	2.56	4.77	8.91	12.8	16.6	23.9	31.0	37.9	42.8	42.8	42.8	35.9	30.6	26.5	23.3	18.5	15.1	12.7	10.8	9.39	8.24	6.90	5.89	
19	1.18	2.71	5.06	9.44	13.6	17.6	25.4	32.9	40.2	46.0	46.0	46.0	38.9	33.2	28.8	25.3	20.1	16.4	13.8	11.7	10.2	8.93	7.49	6.39	
20	1.24	2.87	5.35	9.98	14.4	18.6	26.8	34.8	42.5	48.7	48.7	48.7	42.0	35.9	31.1	27.3	21.7	17.7	14.9	12.7	11.0	9.65	8.09		
21	1.31	3.02	5.64	10.5	15.2	19.6	28.3	36.6	44.8	51.3	51.3	51.3	45.2	38.6	33.5	29.4	23.3	19.1	16.0	13.6	11.8	10.4	8.70		
22	1.37	3.18	5.93	11.1	15.9	20.6	29.7	38.5	47.1	53.9	53.9	53.9	48.5	41.4	35.9	31.5	25.0	20.4	17.1	14.6	12.7	11.1	9.33		
23	1.43	3.33	6.22	11.6	16.7	21.7	31.2	40.4	49.4	56.6	56.6	56.6	51.8	44.2	38.3	33.7	26.7	21.9	18.3	15.6	13.6	11.9	9.97		
24	1.49	3.49	6.51	12.2	17.5	22.7	32.7	42.3	51.7	59.3	59.3	59.3	55.2	47.2	40.9	35.9	28.5	23.3	19.5	16.7	14.5	12.7	10.6		
25	1.56	3.65	6.81	12.7	18.3	23.7	34.1	44.2	54.1	61.9	61.9	61.9	58.7	50.1	43.5	38.1	30.3	24.8	20.8	17.7	15.4	13.5	11.3		
26	1.62	3.80	7.10	13.2	19.1	24.7	35.6	46.1	56.4	64.6	64.6	64.6	62.3	53.2	46.1	40.5	32.1	26.3	22.0	18.8	16.3	14.3	12.0		
28	1.74	4.12	7.69	14.4	20.7	26.8	38.6	50.0	61.1	70.0	70.0	70.0	69.6	59.4	51.5	45.2	35.9	29.4	24.6	21.0	18.2	16.0			
30	1.87	4.44	8.29	15.5	22.3	28.9	41.6	53.8	65.8	77.2	77.2	77.2	77.2	65.9	57.1	50.1	39.8	32.6	27.3	23.3	20.2	17.7			
32	1.99	4.76	8.88	16.6	23.9	30.9	44.6	57.7	70.6	83.2	85.0	85.0	85.0	72.6	62.9	55.2	43.8	35.9	30.1	25.7	22.2	19.5			
35	2.18	5.24	9.79	18.3	26.3	34.1	49.1	63.6	77.7	91.6	97.3	97.3	97.3	83.0	72.0	63.2	50.1	41.0	34.4	29.4	25.5				
40	2.49	6.06	11.3	21.1	30.4	39.4	56.7	73.5	89.8	106	114	114	114	101	87.9	77.2	61.3	50.1	42.0	35.9	14.9				
45	2.80	6.88	12.8	24.0	34.5	44.7	64.4	83.4	102	120	130	130	130	121	105	92.1	73.1	59.8	50.1	40.4					

Note: 1. kW ratings when using one-pitch offset links are 65% of the above.
2. Please contact a Tsubaki representative prior to use of kW ratings in the shaded area of the table.

■ Multi-strand factors

Number of chain strands	Two strands	Three strands	Four strands	Five strands	Six strands
Multi-strand factor	1.7	2.5	3.3	3.9	4.6

■ Lubrication systems and methods

Lubrication system	AI	AII	B	C
Method	Manual lubrication	Drip lubrication	Oil bath or slinger disc lubrication	Forced pump lubrication

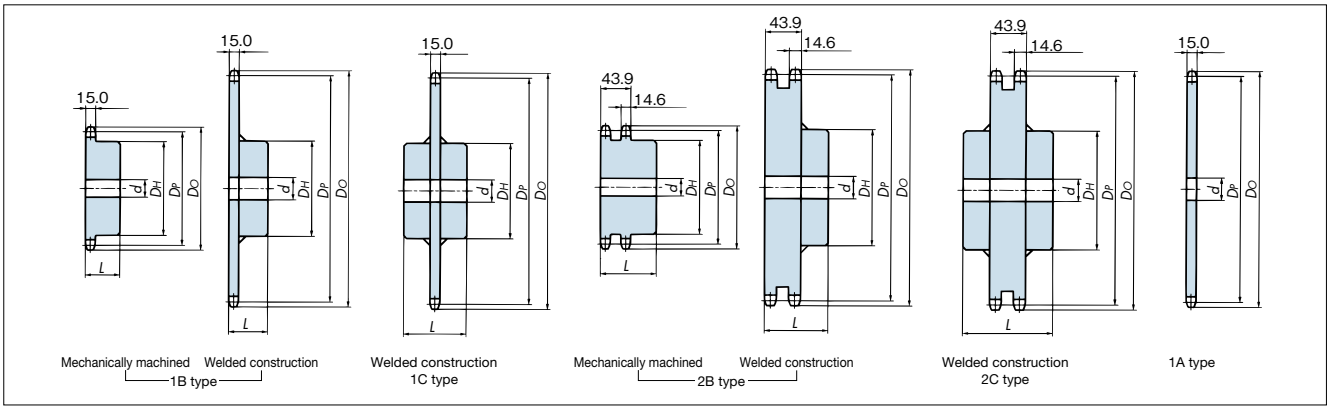
Details on p. 222

Model numbering example **RS80 -1 -RP + 110L -MWJR**

Size | Number of strands | Pin type | Number of links | End link

Note: Standard roller chains do not require series selection.

RS Sprocket RS80



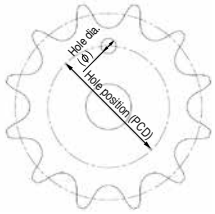
Number of teeth	Pitch circle dia. D_P	Outer dia. (D_O)	1B type Bore dia. d Pilot bore	1B type Bore dia. d Max.	1B type Hub Dia. D_H	1B type Hub Length L	1B type Approx. mass kg	1B type Material	1C type Bore dia. d Pilot bore	1C type Bore dia. d Max.	1C type Hub Dia. D_H	1C type Hub Length L	1C type Approx. mass kg	1C type Material	2B type Bore dia. d Pilot bore	2B type Bore dia. d Max.	2B type Hub Dia. D_H	2B type Hub Length L	2B type Approx. mass kg	2B type Material	2C type Bore dia. d Pilot bore	2C type Bore dia. d Max.	2C type Hub Dia. D_H	2C type Hub Length L	2C type Approx. mass kg	2C type Material	1A type Pilot bore dia. d	1A type Approx. mass kg	1A type Material	Number of teeth
9	74.26	85	15.9	35	58	40	0.79	*																						**9**
10	82.20	93	15.9	32	52	40	0.88																							**10**
11	90.16	102	15.9	38	60	40	1.1																							**11**
12	98.14	110	19	46	67	40	1.4								19	46	67	63	2.3								23	0.73		**12**
13	106.14	118	19	50	77	40	1.7								19	50	77	63	2.9								23	0.87		**13**
14	114.15	127	19	50	77	40	1.9								19	58	86	63	3.5								23	1.0		**14**
15	122.17	135	19	63	93	40	2.5								19	64	94	63	4.1								23	1.2		**15**
16	130.20	143	19	63	93	40	2.7								19	70	102	71	5.3								23	1.4		**16**
17	138.23	151	19	63	93	40	2.8								19	76	110	71	6.1								23	1.6		**17**
18	146.27	159	19	63	93	40	3.0								23	66	98	71	6.1		23	75	98	89	7.2		23	1.8		**18**
19	154.32	167	23	63	93	40	3.2								23	66	98	71	6.7		23	75	107	94	8.6		23	2.0		**19**
20	162.37	176	23	63	93	40	3.4								23	75	107	71	7.7		23	75	107	94	9.4		23	2.2		**20**
21	170.42	184	23	63	93	40	3.7								23	75	107	71	8.3		23	75	107	94	10.1		23	2.4		**21**
22	178.48	192	28	75	107	45	4.7		28	75	107	60	5.7		28	80	117	71	9.3		28	80	117	100	11.8		28	2.7		**22**
23	186.54	200	28	75	107	45	4.9		28	75	107	60	5.9		28	80	117	71	10.0		28	80	117	100	12.6		28	2.9		**23**
24	194.60	208	28	75	107	45	5.2		28	75	107	60	6.2		28	80	117	80	11.6		28	80	117	100	13.3		28	3.2		**24**
25	202.66	216	28	75	107	45	5.5		28	75	107	60	6.5		28	80	117	80	12.4		28	80	117	100	14.1		28	3.5		**25**
26	210.72	224	28	75	107	45	5.8		28	75	107	60	6.8		28	80	117	80	13.2		28	80	117	100	15.0		28	3.8		**26**
27	218.79	233	28	75	107	45	6.1		28	75	107	60	7.1		28	80	117	80	14.1		28	80	117	100	15.8		28	4.1		**27**
28	226.86	241	28	75	107	45	6.4		28	75	107	65	7.7		28	80	117	80	15.0		28	80	117	100	16.7		28	4.4		**28**
30	243.00	257	28	75	107	45	7.1		28	75	107	65	8.4		28	80	117	80	17.0		28	80	117	100	18.7		28	5.1		**30**
32	259.14	273	28	75	107	45	7.8		28	75	107	65	9.1		28	80	117	80	19.0		28	80	117	100	20.7		28	5.8		**32**
34	275.28	289	28	75	107	45	8.6		28	75	107	65	9.9		28	80	117	80	21.2		28	80	117	100	22.9		28	6.6		**34**
35	283.36	297	28	75	107	45	9.0		28	75	107	65	10.3		28	80	117	80	22.4		28	89	127	105	25.4		28	7.0		**35**
36	291.43	306	33	80	117	50	10.1		33	80	117	65	11.3		28	80	117	80	23.6		28	89	127	105	26.6		33	7.4		**36**
38	307.58	322	33	80	117	50	11.0		33	80	117	80	13.3		28	80	117	80	26.0		28	89	127	105	29.1		33	8.3		**38**
40	323.74	338	33	80	117	50	12.0		33	80	117	80	14.3		33	89	127	90	**29.8**		33	89	127	105	**31.3**		33	9.2		**40**
42	339.89	354	33	80	117	50	12.9		33	80	117	80	15.2		33	89	127	90	**32.5**		33	89	127	105	**34.1**		33	10.2		**42**
45	364.12	378	33	80	117	50	14.5		33	80	117	80	16.8		33	89	127	90	**36.9**		33	89	127	105	**38.4**		33	11.7		**45**
48	388.36	403	33	80	117	50	16.1		33	80	117	80	18.4		33	89	127	90	**41.6**		33	89	127	105	**43.2**		33	13.4		**48**
50	404.52	419	33	80	117	50	17.3		33	80	117	80	19.6		33	89	127	90	**45.0**		33	89	127	105	**46.5**		33	14.5		**50**
54	436.84	451	33	80	117	50	19.8		33	80	117	80	22.0		33	89	127	90	**52.2**		33	89	127	105	**53.6**		33	17.0		**54**
60	485.33	500	33	80	117	50	23.9		33	80	117	80	26.1		33	89	127	90	**63.9**		33	89	127	105	**65.3**		33	21.0		**60**
65	525.73	540	33	89	127	63	29.3		33	89	127	90	31.7														33	24.7		**65**
70	566.15	581	33	89	127	63	33.3		33	89	127	90	35.7														33	28.8		**70**
75	606.56	621	33	89	127	63	37.7		33	89	127	90	40.0														33	33.1		**75**

Material: 1B type, 1C type — Mechanically machined: machine-structural carbon steel; Welded construction: machine-structural carbon steel (teeth and hub). 2B type — Welded construction: machine-structural carbon steel (teeth and hub). 2C type — Mechanically machined: machine-structural carbon steel; Welded construction: machine-structural carbon steel (teeth and hub). 1A type — Machine-structural carbon steel.

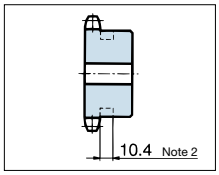
Note 6: Welded construction: machine-structural carbon steel (teeth and hub)

Note: 1. Maximum bore diameters shown are standard figures. Determine bore diameter and key bearing pressure based on general mechanical design.
2. Models marked with an * above have a groove around the periphery of the hub (shown in the diagram on the right). Groove outer diameter is 44 for 9T.
3. Models in the dimensional chart whose approximate mass is in bold font have one hanging hole. See the diagram on the right for more information.
4. Models with unhardened teeth as standard can be manufactured with hardened teeth (quick delivery).
5. Models in shaded areas have hardened teeth.
6. Models with welded construction, rolled steel for general structural use (teeth), carbon steel for machine structural use (hub), and hardened teeth are made-to-order.
7. Models with dimensions in thin font are made-to-order. All other items are stocked.

■ Hanging hole dimensions



The phase relationship between the hanging hole and teeth may vary.



No. of teeth	2B/2C bore dia. (ϕ30) Hole position (PCD)
40	242
42	258
45	283
48	307
50	323
54	355
60	404

Model numbering example

RS80 -2 B 18T

Size — Number of strands — Hub type — Number of teeth

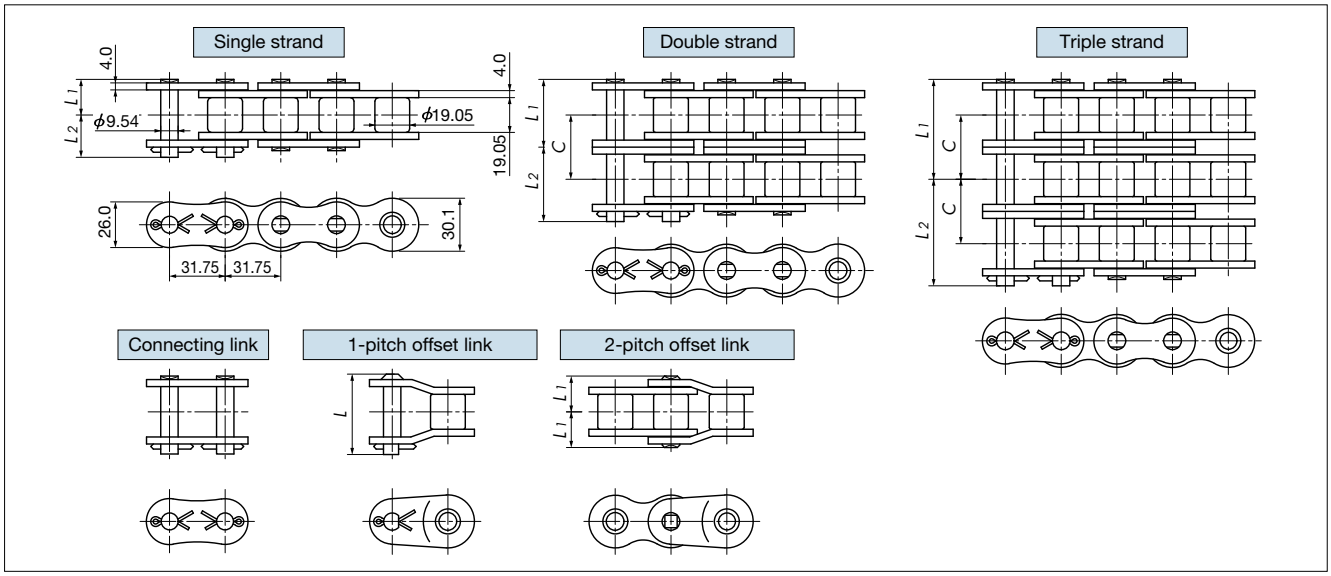
Hardened teeth model numbering example

RS80 -2 B 40T Q

Size — Number of strands — Hub type — Number of teeth — Hardened teeth

Standard Roller Chains and Sprockets RS Roller Chain RS100

(Identification no. 100)



■ Specifications

Size	Number of strands	Dimensions L_1	Dimensions L_2	Offset pin length L	Transverse pitch C	JIS standard min. tensile strength kN{kgf}	Min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
RS100	**1**	19.75	22.85	43.7	35.8	87.0 {8872}	107{10900}	22.6{2300}	3.99
	2	37.7	40.8	81.5		174.0{17744}	214{21800}	38.3{3910}	7.85
	3	55.65	58.75	117.3		261.0{26615}	321{32700}	56.4{5750}	11.77
	4	73.55	76.65	153.1		–	428{43600}	74.4{7590}	15.70
	5	91.5	94.6	188.9		–	534{54500}	88.0{8970}	19.53
	6	109.45	112.55	224.7		–	641{65400}	104 {10580}	23.48

Note: 1. Maximum allowable load when using a one-pitch offset link is 65% of the above.
2. Number of links per unit = 96. Items in bold are stocked in units.

■ RS100 Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth \ Lubrication	Small sprocket max rpm																							
	10	25	50	100	150	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1600	1800	2000	2200	2400	2600
	AI			AII			B								C									
9	1.02	2.33	4.34	8.10	11.7	15.1	21.8	26.4	26.4	26.4	22.1	18.1	15.2	12.9	11.2	9.85	8.73	7.82	6.40	5.36	4.58	3.97	3.48	3.09
10	1.14	2.61	4.86	9.07	13.1	16.9	24.4	29.6	29.6	29.6	25.9	21.2	17.8	15.2	13.1	11.5	10.2	9.15	7.49	6.28	5.36	4.65	4.08	3.62
11	1.27	2.89	5.39	10.1	14.5	18.8	27.0	32.8	32.8	32.8	29.9	24.4	20.5	17.5	15.2	13.3	11.8	10.6	8.64	7.24	6.18	5.36	4.70	0.96
12	1.39	3.17	5.92	11.0	15.9	20.6	29.7	36.1	36.1	36.1	34.0	27.9	23.3	19.9	17.3	15.2	13.4	12.0	9.85	8.25	7.05	6.11	5.36	
13	1.52	3.46	6.45	12.0	17.3	22.5	32.4	39.3	39.3	39.3	38.4	31.4	26.3	22.5	19.5	17.1	15.2	13.6	11.1	9.31	7.95	6.89	6.04	
14	1.64	3.75	6.99	13.0	18.8	24.3	35.1	42.9	42.9	42.9	42.9	35.1	29.4	25.1	21.8	19.1	16.9	15.2	12.4	10.4	8.88	7.70	6.76	
15	1.77	4.04	7.53	14.1	20.2	26.2	37.8	47.6	47.6	47.6	47.6	38.9	32.6	27.9	24.1	21.2	18.8	16.8	13.8	11.5	9.85	8.54	7.49	
16	1.90	4.33	8.08	15.1	21.7	28.1	40.5	52.4	52.4	52.4	52.4	42.9	35.9	30.7	26.6	23.3	20.7	18.5	15.2	12.7	10.8	9.40	8.25	
17	2.03	4.62	8.62	16.1	23.2	30.0	43.3	56.0	57.4	57.4	57.4	47.0	39.4	33.6	29.1	25.6	22.7	20.3	16.6	13.9	11.9	10.3		
18	2.15	4.92	9.17	17.1	24.7	31.9	46.0	59.6	62.5	62.5	62.5	51.2	42.9	36.6	31.7	27.9	24.7	22.1	18.1	15.2	12.9	11.2		
19	2.27	5.21	9.72	18.1	26.1	33.9	48.8	63.2	67.8	67.8	67.8	55.5	46.5	39.7	34.4	30.2	26.8	24.0	19.6	16.4	14.0	12.2		
20	2.39	5.51	10.3	19.2	27.6	35.8	51.5	66.8	71.9	71.9	71.9	59.9	50.2	42.9	37.2	32.6	28.9	25.9	21.2	17.8	15.2	13.1		
21	2.51	5.81	10.8	20.2	29.1	37.7	54.3	70.4	75.8	75.8	75.8	64.5	54.0	46.1	40.0	35.1	31.1	27.9	22.8	19.1	16.3	14.1		
22	2.63	6.10	11.4	21.3	30.6	39.7	57.1	74.0	79.7	79.7	79.7	69.1	57.9	49.5	42.9	37.6	33.4	29.9	24.4	20.5	17.5	15.2		
23	2.75	6.40	12.0	22.3	32.1	41.6	59.9	77.7	83.7	83.7	83.7	73.9	61.9	52.9	45.8	40.2	35.7	31.9	26.1	21.9	18.7	5.77		
24	2.89	6.71	12.5	23.4	33.6	43.6	62.8	81.3	87.6	87.6	87.6	78.8	66.0	56.4	48.9	42.9	38.0	34.0	27.9	23.3	19.9			
25	2.99	7.01	13.1	24.4	35.2	45.5	65.6	85.0	91.5	91.5	91.5	83.8	70.2	59.9	51.9	45.6	40.4	36.2	29.6	24.8	21.2			
26	3.11	7.31	13.6	25.5	36.7	47.5	68.4	88.7	95.5	95.5	95.5	88.8	74.4	63.6	55.1	48.4	42.9	38.4	31.4	26.3	22.5			
28	3.35	7.92	14.8	27.6	39.7	51.5	74.1	96.0	103	103	103	99.3	83.2	71.0	61.6	54.0	47.9	42.9	35.1	29.4	25.1			
30	3.59	8.53	15.9	29.7	42.8	55.5	79.9	103	111	111	111	110	92.3	78.8	68.3	59.9	53.2	47.6	38.9	32.6	7.50			
32	3.83	9.15	17.1	31.9	45.9	59.5	85.6	111	121	121	121	121	102	86.8	75.2	66.0	58.6	52.4	42.9	33.7				
35	4.19	10.1	18.8	35.1	50.6	65.5	94.3	122	139	139	139	139	116	99.3	86.1	75.5	67.0	59.9	49.1	41.1				
40	4.78	11.6	21.7	40.5	58.4	75.7	109	141	170	170	170	170	142	121	105	92.3	81.8	73.2	59.9					
45	5.38	13.2	24.7	46.0	66.3	85.9	124	160	196	196	196	196	170	145	125	110	97.6	87.4	33.8					

Note: 1. kW ratings when using one-pitch offset links are 65% of the above.
2. Please contact a Tsubaki representative prior to use of kW ratings in the shaded area of the table.

■ Multi-strand factors

Number of chain strands	Two strands	Three strands	Four strands	Five strands	Six strands
Multi-strand factor	1.7	2.5	3.3	3.9	4.6

■ Lubrication systems and methods

Lubrication system	AI	AII	B	C
Method	Manual lubrication	Drip lubrication	Oil bath or slinger disc lubrication	Forced pump lubrication

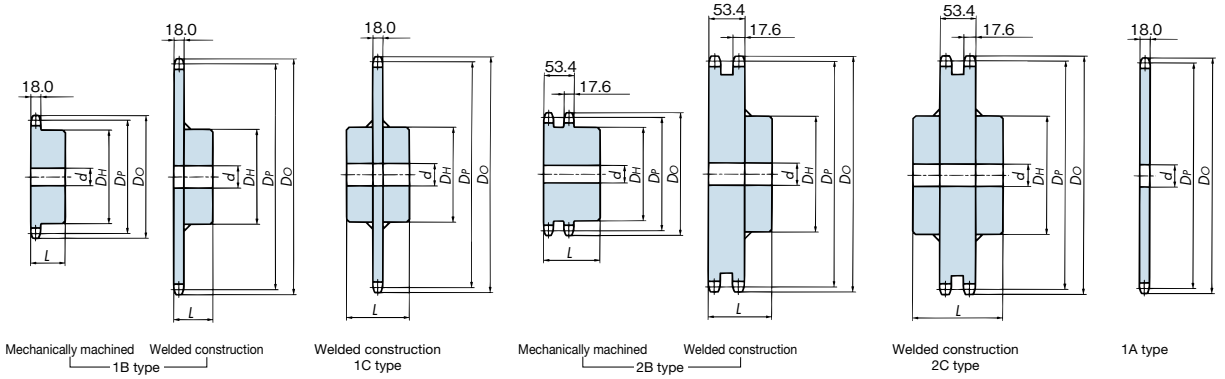
Details on p. 222

Model numbering example **RS100 -1 -RP + 86L -MWJR**

Size | Number of strands | Pin type | Number of links | End link

Note: Standard roller chains do not require series selection.

RS Sprocket RS100

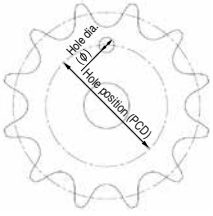


Number of teeth	Pitch circle dia. D_P	Outer dia. (D_O)	1B type Bore dia. d Pilot bore	1B type Bore dia. d Max.	1B type Hub Dia. D_H	1B type Hub Length L	1B type Approx. mass kg	1B type Material	1C type Bore dia. d Pilot bore	1C type Bore dia. d Max.	1C type Hub Dia. D_H	1C type Hub Length L	1C type Approx. mass kg	1C type Material	2B type Bore dia. d Pilot bore	2B type Bore dia. d Max.	2B type Hub Dia. D_H	2B type Hub Length L	2B type Approx. mass kg	2B type Material	2C type Bore dia. d Pilot bore	2C type Bore dia. d Max.	2C type Hub Dia. D_H	2C type Hub Length L	2C type Approx. mass kg	2C type Material	1A type Pilot bore dia. d	1A type Approx. mass kg	1A type Material	Number of teeth
10	102.75	117	18	43	65	50	1.8	Mechanically machined: machine-structural carbon steel						Welded construction: machine-structural carbon steel (teeth and hub)						Mechanically machined: machine-structural carbon steel						Welded construction: machine-structural carbon steel (teeth and hub)				Machine-structural carbon steel			**10**
11	112.70	127	23	50	75	50	2.2																							**11**
12	122.67	138	23	57	86	50	2.8								23	58	86	80	4.7								28	1.4		**12**
13	132.67	148	23	59	88	50	3.1								23	65	95	80	5.7								28	1.7		**13**
14	142.68	158	23	59	88	50	3.4								23	72	105	80	6.8								28	2.0		**14**
15	152.71	168	28	66	98	50	4.0								28	66	98	80	7.3		28	66	98	99	8.4		28	2.3		**15**
16	162.75	179	28	66	98	50	4.3								28	66	98	80	8.3		28	75	107	104	10.2		28	2.6		**16**
17	172.79	189	28	75	107	50	5.1								28	75	107	80	9.6		28	75	107	104	11.3		28	3.0		**17**
18	182.84	199	28	75	107	50	5.4								28	75	107	80	10.7		28	75	107	104	12.4		28	3.4		**18**
19	192.90	209	28	75	107	50	5.8								28	89	127	90	13.6		28	89	127	115	16.0		28	3.8		**19**
20	202.96	220	28	75	107	50	6.3								28	89	127	90	14.8		28	89	127	115	17.2		28	4.2		**20**
21	213.03	230	28	75	107	50	6.7								28	89	127	90	16.0		28	89	127	115	18.5		28	4.6		**21**
22	223.10	240	33	80	117	56	8.1		33	80	117	80	9.9		33	95	137	90	17.8		33	95	137	110	20.1		33	5.1		**22**
23	233.17	250	33	80	117	56	8.6		33	80	117	80	10.4		33	95	137	90	19.2		33	95	137	110	21.5		33	5.6		**23**
24	243.25	260	33	80	117	56	9.1		33	80	117	80	10.9		33	95	137	90	20.7		33	95	137	110	23.0		33	6.1		**24**
25	253.32	270	33	80	117	56	9.6		33	80	117	80	11.4		33	95	137	90	22.2		33	95	137	110	24.5		33	6.6		**25**
26	263.41	281	33	80	117	56	10.2		33	80	117	80	12.0		33	95	137	90	23.8		33	95	137	110	26.1		33	7.2		**26**
27	273.49	291	33	80	117	56	10.8		33	80	117	80	12.6		33	95	137	90	25.4		33	95	137	110	27.8		33	7.8		**27**
28	283.57	301	33	80	117	56	11.4		33	80	117	80	13.2		33	95	137	90	27.2		33	95	137	110	29.5		33	8.4		**28**
30	303.75	321	33	80	117	56	12.7		33	80	117	80	14.5		33	95	137	90	30.9		33	95	137	110	33.2		33	9.6		**30**
32	323.92	341	33	80	117	56	14.1		33	89	127	90	17.7		33	95	137	90	**34.4**		33	95	137	110	**36.7**		33	11.0		**32**
34	344.10	362	33	89	127	63	16.8		33	89	127	90	19.1		33	95	137	90	**38.6**		33	95	137	110	**40.9**		33	12.5		**34**
35	354.20	372	33	89	127	63	17.5		33	89	127	90	19.9		33	95	137	90	**40.8**		33	95	137	110	**43.1**		33	13.2		**35**
36	364.29	382	33	89	127	63	18.3		33	89	127	90	20.7		33	95	137	90	**43.0**		33	95	137	110	**45.3**		33	14.0		**36**
38	384.48	402	33	89	127	63	20.0		33	89	127	90	22.3		33	95	137	90	**47.8**		33	103	147	120	**52.4**		33	15.7		**38**
40	404.67	422	33	89	127	63	21.7		33	89	127	90	24.1		33	103	147	100	**54.7**		33	103	147	120	**57.4**		33	17.4		**40**
42	424.86	443	33	89	127	63	23.6		33	89	127	90	25.9		33	103	147	100	**60.0**		33	103	147	120	**62.6**		33	19.2		**42**
45	455.15	473	33	89	127	63	26.5		33	89	127	90	28.8		33	103	147	100	**68.5**		33	103	147	120	**71.1**		33	22.1		**45**
48	485.45	503	33	89	127	63	**29.3**		33	89	127	90	**31.7**		33	103	147	115	**79.4**		33	103	147	120	**80.0**		33	**25.0**		**48**
50	505.65	524	33	89	127	63	**31.5**		33	89	127	90	**33.9**		33	103	147	115	**85.8**		33	103	147	120	**86.4**		33	**27.2**		**50**
54	546.05	564	33	103	147	80	**39.7**		33	103	147	90	**40.9**		33	103	147	115	**99.4**		33	103	147	120	**99.9**		33	**31.9**		**54**
60	606.66	625	33	103	147	80	**47.4**		33	103	147	100	**49.8**		33	103	147	115	**121.6**		33	103	147	120	**122.1**		33	**39.5**		**60**
65	657.17	675	38	103	147	80	**54.1**		38	103	147	100	**56.6**														38	**46.4**		**65**
70	707.68	726	38	103	147	80	**61.8**		38	103	147	100	**64.1**														38	**53.9**		**70**
75	758.20	777	38	103	147	80	**70.0**		38	103	147	100	**72.2**														38	**62.0**		**75**

Note 5: Welded construction: structural rolled steel (teeth) and machine-structural carbon steel (hub)

Note: 1. Maximum bore diameters shown are standard figures. Determine bore diameter and key bearing pressure based on general mechanical design.
2. Models in the dimensional chart whose approximate mass is in bold font have one hanging hole. See the diagram on the right for more information.
3. Models in shaded areas have hardened teeth.
4. Models with unhardened teeth as standard can be manufactured with hardened teeth (quick delivery).
5. Models with hardened teeth are made-to-order.
6. Models with dimensions in thin font are made-to-order. All other items are stocked.

Hanging hole dimensions



The phase relationship between the hanging hole and teeth may vary.

No. of teeth	1B/1C/1A bore dia. (ϕ40) Hole position (PCD)	2B/2C bore dia. (ϕ35) Hole position (PCD)
32		224
34		245
35		255
36		265
38		285
40		305
42		326
45		356
48	392	386
50	412	407
54	453	447
60	513	508
65	564	
70	614	
75	665	

Model numbering example

RS100 -2 B 15T

- RS100: Size
- -2: Number of strands
- B: Hub type
- 15T: Number of teeth

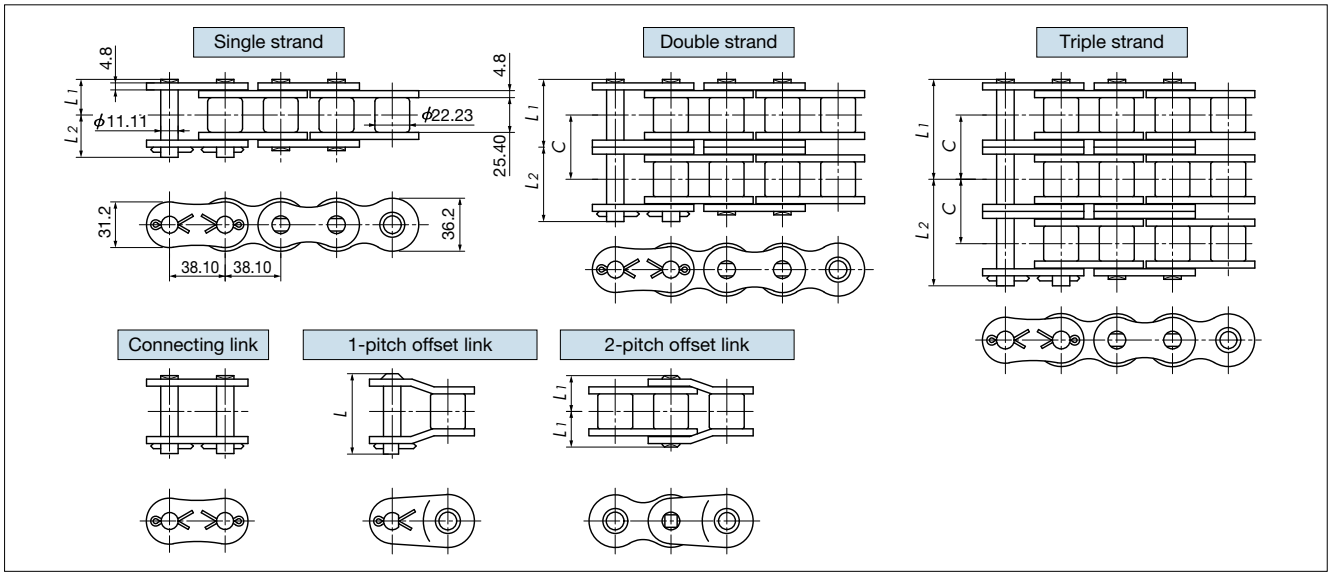
Hardened teeth model numbering example

RS100 -2 B 20T Q

- RS100: Size
- -2: Number of strands
- B: Hub type
- 20T: Number of teeth
- Q: Hardened teeth

Standard Roller Chains and Sprockets RS Roller Chain RS120

(Identification no. 120)



■ Specifications

Size	Number of strands	Dimensions L_1	Dimensions L_2	Offset pin length L	Transverse pitch C	JIS standard min. tensile strength kN{kgf}	Min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
RS120	**1**	24.9	28.9	55.0	45.4	125.0{12747}	148{15100}	30.4{3100}	5.93
	2	47.6	51.6	103.2		250.0{25493}	296{30200}	51.7{5270}	11.70
	3	70.4	74.4	148.6		375.0{38240}	444{45300}	76.0{7750}	17.53
	4	93.1	97.1	194.0		–	592{60400}	100 {10230}	23.36
	5	115.85	119.85	239.4		–	740{75500}	119 {12090}	29.16
	6	138.55	142.55	284.8		–	888{90600}	140 {14260}	34.96

Note: 1. Maximum allowable load when using a one-pitch offset link is 65% of the above.
2. Number of links per unit = 80. Items in bold are stocked in units.

■ RS120 Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth \ Lubrication	Small sprocket max rpm																								
	10	25	50	100	150	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100
	AI			AII		B						C													
9	1.65	3.75	7.00	13.1	18.8	24.4	35.1	41.1	41.1	32.2	25.6	20.9	17.5	15.0	13.0	11.4	10.1	9.04	8.15	7.40	6.76	6.20	5.72	5.30	4.92
10	1.84	4.21	7.85	14.6	21.1	27.3	39.4	46.1	46.0	37.7	30.0	24.5	20.5	17.5	15.2	13.3	11.8	10.6	9.55	8.67	7.91	7.26	6.70	6.20	5.76
11	2.04	4.66	8.70	16.2	23.4	30.3	43.6	51.0	51.0	43.5	34.6	28.3	23.7	20.2	17.5	15.4	13.7	12.2	11.0	10.0	9.13	8.38	7.73	7.16	
12	2.24	5.12	9.56	17.8	25.7	33.3	47.9	56.1	56.1	49.6	39.4	32.2	27.0	23.1	20.0	17.5	15.6	13.9	12.6	11.4	10.4	9.55	8.81	8.15	
13	2.45	5.58	10.4	19.4	28.0	36.3	52.3	61.1	61.1	55.9	44.4	36.3	30.5	26.0	22.5	19.8	17.5	15.7	14.2	12.8	11.7	10.8	9.93	9.19	
14	2.65	6.05	11.3	21.1	30.3	39.3	56.6	66.2	66.2	62.5	49.6	40.6	34.0	29.1	25.2	22.1	19.6	17.5	15.8	14.4	13.1	12.0	11.1	6.67	
15	2.86	6.52	12.2	22.7	32.7	42.3	61.0	71.3	71.3	69.3	55.0	45.0	37.7	32.2	27.9	24.5	21.7	19.5	17.5	15.9	14.5	13.3	12.3		
16	3.06	6.99	13.0	24.3	35.0	45.4	65.4	76.5	76.5	76.4	60.6	49.6	41.6	35.5	30.8	27.0	24.0	21.4	19.3	17.5	16.0	14.7	13.6		
17	3.27	7.46	13.9	26.0	37.4	48.5	69.8	83.7	83.7	83.7	66.4	54.3	45.5	38.9	33.7	29.6	26.2	23.5	21.2	19.2	17.5	16.1	14.8		
18	3.47	7.93	14.8	27.6	39.8	51.6	74.3	91.2	91.2	91.2	72.3	59.2	49.6	42.4	36.7	32.2	28.6	25.6	23.1	20.9	19.1	17.5	8.43		
19	3.67	8.41	15.7	29.3	42.2	54.7	78.7	98.9	98.9	98.9	78.4	64.2	53.8	45.9	39.8	35.0	31.0	27.7	25.0	22.7	20.7	19.0			
20	3.86	8.89	16.6	31.0	44.6	57.8	83.2	107	107	107	84.7	69.3	58.1	49.6	43.0	37.7	33.5	30.0	27.0	24.5	22.4	20.5			
21	4.05	9.37	17.5	32.6	47.0	60.9	87.7	114	115	115	91.2	74.6	62.5	53.4	46.3	40.6	36.0	32.2	29.1	26.4	24.1	22.1			
22	4.25	9.85	18.4	34.3	49.4	64.0	92.2	119	123	123	97.7	80.0	67.0	57.2	49.6	43.5	38.6	34.6	31.2	28.3	25.8	12.4			
23	4.44	10.3	19.3	36.0	51.9	67.2	96.8	125	132	132	104	85.5	71.7	61.2	53.0	46.6	41.3	36.9	33.3	30.2	27.6				
24	4.63	10.8	20.2	37.7	54.3	70.3	101	131	140	140	111	91.2	76.4	65.2	56.5	49.6	44.0	39.4	35.5	32.2	29.4				
25	4.83	11.3	21.1	39.4	56.7	73.5	106	137	146	146	118	96.9	81.2	69.3	60.1	52.8	46.8	41.9	37.7	34.3	30.8				
26	5.02	11.8	22.0	41.1	59.2	76.7	110	143	152	152	126	103	86.1	73.5	63.7	55.9	49.6	44.4	40.0	36.3	19.8				
28	5.41	12.8	23.9	44.5	64.1	83.1	120	155	165	165	140	115	96.3	82.2	71.2	62.5	55.5	49.6	44.7	40.6					
30	5.79	13.8	25.7	48.0	69.1	89.5	129	167	178	178	156	127	107	91.2	79.0	69.3	61.5	55.0	49.6	31.6					
32	6.18	14.8	27.6	51.4	74.1	96.0	138	179	191	191	171	140	118	100	87.0	76.4	67.8	60.6	54.7						
35	6.76	16.3	30.4	56.7	81.6	106	152	197	210	210	196	161	135	115	99.6	87.4	77.5	69.3	35.6						
40	7.72	18.8	35.1	65.4	94.3	122	176	228	242	242	240	196	164	140	122	107	94.7	44.4							
45	8.69	21.3	39.8	74.3	107	139	200	259	286	286	286	234	196	167	145	127	59.7								

Note: 1. kW ratings when using one-pitch offset links are 65% of the above.
2. Please contact a Tsubaki representative prior to use of kW ratings in the shaded area of the table.

■ Multi-strand factors

Number of chain strands	Two strands	Three strands	Four strands	Five strands	Six strands
Multi-strand factor	1.7	2.5	3.3	3.9	4.6

■ Lubrication systems and methods

Lubrication system	AI	AII	B	C
Method	Manual lubrication	Drip lubrication	Oil bath or slinger disc lubrication	Forced pump lubrication

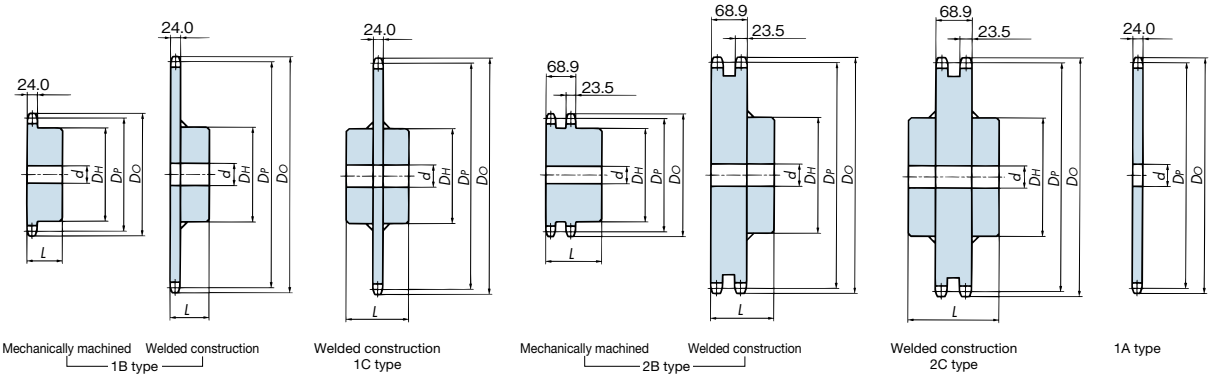
Details on p. 222

Model numbering example **RS120 -1 -RP + 70L -MWJR**

Size | Number of strands | Pin type | Number of links | End link

Note: Standard roller chains do not require series selection.

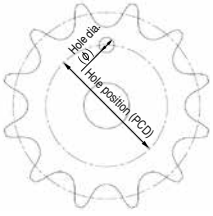
RS Sprocket RS120



Number of teeth	Pitch circle dia. D_P	Outer dia. (D_O)	1B type Bore dia. d Pilot bore	1B type Bore dia. d Max.	1B type Hub Dia. D_H	1B type Hub Length L	1B type Approx. mass kg	1B type Material	1C type Bore dia. d Pilot bore	1C type Bore dia. d Max.	1C type Hub Dia. D_H	1C type Hub Length L	1C type Approx. mass kg	1C type Material	2B type Bore dia. d Pilot bore	2B type Bore dia. d Max.	2B type Hub Dia. D_H	2B type Hub Length L	2B type Approx. mass kg	2B type Material	2C type Bore dia. d Pilot bore	2C type Bore dia. d Max.	2C type Hub Dia. D_H	2C type Hub Length L	2C type Approx. mass kg	2C type Material	1A type Pilot bore dia. d	1A type Approx. mass kg	1A type Material	Number of teeth
10	123.29	140	23	51	78	56	3.0	Mechanically machined: machine-structural carbon steel												Mechanically machined: machine-structural carbon steel										**10**
11	135.23	153	28	60	91	56	3.8																							**11**
12	147.21	165	28	66	98	56	4.5								28	71	103	100	8.6								28	2.8		**12**
13	159.20	177	28	66	98	56	5.0								28	80	115	100	10.5								28	3.3		**13**
14	171.22	190	28	75	107	56	6.0								28	75	107	100	11.8		28	75	107	114	12.6		28	3.9		**14**
15	183.25	202	33	80	117	63	7.4								33	80	117	100	13.6		33	80	117	119	15.1		33	4.4		**15**
16	195.29	214	33	80	117	63	8.1								33	80	117	100	15.4		33	80	117	119	17.0		33	5.1		**16**
17	207.35	227	33	80	117	63	8.8								33	80	117	100	17.3		33	80	117	119	18.9		33	5.8		**17**
18	219.41	239	33	80	117	63	9.5								33	89	127	100	19.7		33	89	127	125	22.2		33	6.5		**18**
19	231.48	251	33	80	117	63	10.3								33	89	127	100	21.8		33	89	127	125	24.3		33	7.3		**19**
20	243.55	263	33	89	127	63	11.7								33	89	127	100	24.1		33	89	127	125	26.5		33	8.1		**20**
21	255.63	276	33	89	127	63	12.5								33	89	127	100	26.5		33	89	127	125	28.9		33	9.0		**21**
22	267.72	288	33	89	127	63	13.6		33	89	127	80	15.1		33	110	157	100	30.6		33	110	157	135	35.8		33	9.9		**22**
23	279.80	300	33	89	127	63	14.6		33	89	127	80	16.1		33	110	157	100	33.2		33	110	157	135	38.4		33	10.8		**23**
24	291.90	312	33	89	127	63	15.6		33	89	127	80	17.0		33	110	157	100	36.0		33	110	157	135	41.2		33	11.8		**24**
25	303.99	324	33	89	127	63	16.6		33	89	127	80	18.1		33	110	157	100	38.8		33	110	157	135	44.0		33	12.9		**25**
26	316.09	337	33	89	127	63	17.7		33	89	127	80	19.2		33	110	157	100	41.8		33	110	157	135	47.1		33	14.0		**26**
27	328.19	349	33	89	127	63	18.8		33	89	127	80	20.3		33	110	157	100	44.9		33	110	157	135	50.1		33	15.1		**27**
28	340.29	361	33	103	147	71	22.3		33	95	137	100	24.5		33	110	157	100	48.1		33	110	157	135	53.4		33	16.2		**28**
30	364.49	385	33	103	147	71	24.8		33	95	137	100	27.0		33	110	157	100	**54.5**		33	110	157	135	**59.7**		33	18.7		**30**
32	388.71	410	33	103	147	71	27.4		33	95	137	100	29.6		33	110	157	100	**61.9**		33	110	157	135	**67.1**		33	21.3		**32**
34	412.93	434	33	103	147	71	30.2		33	95	137	100	32.5		33	110	157	100	**69.7**		33	110	157	135	**74.9**		33	24.1		**34**
35	425.04	446	33	103	147	71	**31.4**		33	95	137	100	**33.7**		33	110	157	100	**73.7**		33	110	157	135	**79.0**		33	**25.4**		**35**
36	437.15	458	33	103	147	71	**33.0**		33	95	137	100	**35.2**		38	110	157	100	**77.8**		33	110	157	135	**83.3**		33	**26.9**		**36**
38	461.37	483	38	103	147	80	**37.1**		38	103	147	100	**39.5**		38	110	157	100	**86.7**		33	110	157	135	**92.1**		38	**30.0**		**38**
40	485.60	507	38	103	147	80	**40.4**		38	103	147	100	**42.8**		38	120	177	110	**99.1**		38	120	177	160	**108.4**		38	**33.3**		**40**
42	509.83	531	38	103	147	80	**43.9**		38	103	147	110	**47.5**		38	120	177	110	**109.0**		38	120	177	160	**118.3**		38	**36.8**		**42**
45	546.19	568	38	103	147	80	**49.5**		38	103	147	110	**53.1**		38	120	177	110	**124.7**		38	120	177	160	**134.0**		38	**42.4**		**45**
48	582.54	604	38	103	147	80	**55.4**		38	103	147	110	**59.1**		38	120	177	110	**141.4**		38	120	177	160	**150.7**		38	**48.4**		**48**
50	606.78	628	38	103	147	80	**59.6**		38	103	147	110	**63.3**		38	120	177	110	**153.3**		38	120	177	160	**162.6**		38	**52.6**		**50**
54	655.26	677	38	110	157	90	**71.1**		38	103	147	110	**72.2**		38	120	177	110	**178.5**		38	120	177	160	**187.6**		38	**61.5**		**54**
60	727.99	750	38	110	157	90	**85.8**		38	118	167	120	**91.8**		38	120	177	110	**219.9**		38	120	177	160	**229.3**		38	**76.1**		**60**
65	788.60	811	38	118	167	94	**101.2**		38	118	167	120	**105.2**														38	**89.6**		**65**
70	849.22	871	38	118	167	94	**115.7**		38	118	167	120	**119.7**														38	**104.0**		**70**
75	909.84	932	38	118	167	94	**131.3**		38	118	167	120	**135.2**														38	**119.6**		**75**

Note: 1. Maximum bore diameters shown are standard figures. Determine bore diameter and key bearing pressure based on general mechanical design.
2. Models in the dimensional chart whose approximate mass is in bold font have one hanging hole. See the diagram on the right for more information.
3. Models in shaded areas have hardened teeth.
4. Models with unhardened teeth as standard can be manufactured with hardened teeth (quick delivery).
5. Models with hardened teeth are made-to-order.
6. Models with dimensions in thin font are made-to-order. All other items are stocked.

Hanging hole dimensions



The phase relationship between the hanging hole and teeth may vary.

No. of teeth	1B/1C/1A bore dia. (ϕ40) Hole position (PCD)	2B/2C bore dia. (ϕ35) Hole position (PCD)
30		258
32		282
34		307
35	322	319
36	344	331
38	359	355
40	383	380
42	407	404
45	443	440
48	480	477
50	504	501
54	553	550
60	625	623
65	686	
70	746	
75	807	

Model numbering example

RS120 -2 B 15T

- RS120: Size
- -2: Number of strands
- B: Hub type
- 15T: Number of teeth

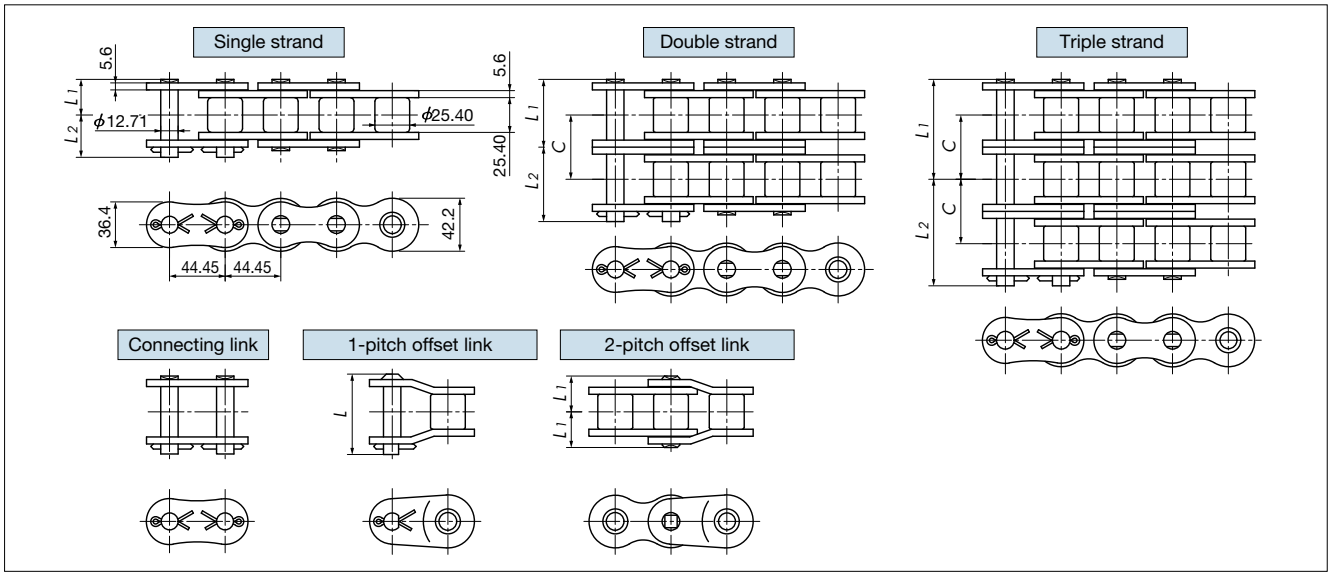
Hardened teeth model numbering example

RS120 -2 B 20T Q

- RS120: Size
- -2: Number of strands
- B: Hub type
- 20T: Number of teeth
- Q: Hardened teeth

RS Roller Chain RS140

(Identification no. 140)



■ Specifications

Size	Number of strands	Dimensions L_1	Dimensions L_2	Offset pin length L	Transverse pitch C	JIS standard min. tensile strength kN{kgf}	Min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
RS140	**1**	26.9	31.7	59.5	48.9	170.0{17336}	193 {19700}	40.2{4100}	7.49
	2	51.35	56.15	112.3		340.0{34671}	386 {39400}	68.4{6970}	14.83
	3	75.85	80.75	161.3		510.0{52006}	580 {59100}	101 {10250}	22.20
	4	100.3	105.2	210.2		–	773 {78800}	133 {13530}	28.52
	5	124.8	129.6	259.1		–	966 {98500}	157 {15990}	36.97
	6	149.3	154.2	308.0		–	1160{118200}	185 {18860}	44.30

Note: 1. Maximum allowable load when using a one-pitch offset link is 65% of the above.
2. Number of links per unit = 68. Items in bold are stocked in units.

■ RS140 Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth \ Lubrication	Small sprocket max rpm																								
	10	25	50	100	150	200	250	300	350	400	450	500	550	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700
	AI			AII	B										C										
9	2.54	5.79	10.8	20.2	29.0	37.6	46.0	54.2	56.1	56.1	56.1	47.9	41.5	36.5	28.9	23.7	19.8	16.9	14.7	12.9	11.4	10.2	9.22	8.37	7.64
10	2.84	6.49	12.1	22.6	32.5	42.2	51.5	60.7	65.6	65.6	65.6	56.1	48.7	42.7	33.9	27.7	23.2	19.8	17.2	15.1	13.4	12.0	10.8	9.81	
11	3.15	7.19	13.4	25.0	36.1	46.7	57.1	67.3	72.7	72.7	72.7	64.8	56.1	49.3	39.1	32.0	26.8	22.9	19.8	17.4	15.4	13.8	12.5	11.3	
12	3.46	7.90	14.7	27.5	39.6	51.3	62.7	73.9	79.9	79.9	79.9	73.8	64.0	56.1	44.5	36.5	30.6	26.1	22.6	19.8	17.6	15.7	14.2	12.9	
13	3.78	8.61	16.1	30.0	43.2	56.0	68.4	80.6	87.1	87.1	87.1	83.2	72.1	63.3	50.2	41.1	34.5	29.4	25.5	22.4	19.8	17.8	16.0	14.5	
14	4.09	9.33	17.4	32.5	46.8	60.6	74.1	87.3	94.4	94.4	94.4	93.0	80.6	70.7	56.1	45.9	38.5	32.9	28.5	25.0	22.2	19.8	17.9	16.2	
15	4.41	10.1	18.8	35.0	50.4	65.3	79.8	94.1	103	103	103	103	89.4	78.4	62.3	51.0	42.7	36.5	31.6	27.7	24.6	22.0	19.8		
16	4.72	10.8	20.1	37.5	54.1	70.0	85.6	101	114	114	114	114	98.5	86.4	68.6	56.1	47.0	40.2	34.8	30.6	27.1	24.2	21.9		
17	5.04	11.5	21.5	40.1	57.7	74.8	91.4	108	124	124	124	124	108	94.6	75.1	61.5	51.5	44.0	38.1	33.5	29.7	26.6	23.9		
18	5.36	12.2	22.8	42.6	61.4	79.5	97.2	115	132	136	136	136	117	103	81.8	67.0	56.1	47.9	41.5	36.5	32.3	28.9	26.1		
19	5.66	13.0	24.2	45.2	65.1	84.3	103	121	140	144	144	144	127	112	88.7	72.6	60.9	52.0	45.1	39.5	35.1	31.4	28.3		
20	5.96	13.7	25.6	47.8	68.8	89.1	109	128	147	152	152	152	138	121	95.8	78.4	65.7	56.1	48.7	42.7	37.9	33.9			
21	6.25	14.5	27.0	50.3	72.5	93.9	115	135	155	161	161	161	148	130	103	84.4	70.7	60.4	52.3	45.9	40.7	36.5			
22	6.55	15.2	28.4	52.9	76.3	98.8	121	142	163	169	169	169	159	139	111	90.5	75.8	64.8	56.1	49.3	43.7	39.1			
23	6.85	15.9	29.8	55.5	80.0	104	127	149	172	177	177	177	170	149	118	96.7	81.1	69.2	60.0	52.7	46.7	41.8			
24	7.15	16.7	31.2	58.2	83.8	109	133	156	180	186	186	186	181	159	126	103	86.4	73.8	64.0	56.1	49.8	44.5			
25	7.45	17.5	32.6	60.8	87.5	113	139	163	188	194	194	194	192	169	134	110	91.9	78.4	68.0	59.7	52.9	47.4			
26	7.74	18.2	34.0	63.4	91.3	118	145	170	196	204	204	204	204	179	142	116	97.4	83.2	72.1	63.3	56.1				
28	8.34	19.7	36.8	68.7	98.9	128	157	185	212	228	228	228	228	200	159	130	109	93.0	80.6	70.7	62.7				
30	8.93	21.3	39.7	74.0	107	138	169	199	229	253	253	253	253	222	176	144	121	103	89.4	78.4	69.6				
32	9.53	22.8	42.5	79.3	114	148	181	213	245	276	276	276	276	244	194	159	133	114	98.5	86.4					
35	10.4	25.1	46.8	87.4	126	163	199	235	270	304	304	304	304	280	222	182	152	130	113	98.9					
40	11.9	29.0	54.1	101	145	188	230	271	312	351	351	351	351	342	271	222	186	159	133						
45	13.4	32.9	61.4	115	165	214	262	308	354	399	408	408	408	408	323	265	222	177	69.2						

Note: 1. kW ratings when using one-pitch offset links are 65% of the above.
2. Please contact a Tsubaki representative prior to use of kW ratings in the shaded area of the table.

■ Multi-strand factors

Number of chain strands	Two strands	Three strands	Four strands	Five strands	Six strands
Multi-strand factor	1.7	2.5	3.3	3.9	4.6

■ Lubrication systems and methods

Lubrication system	AI	AII	B	C
Method	Manual lubrication	Drip lubrication	Oil bath or slinger disc lubrication	Forced pump lubrication

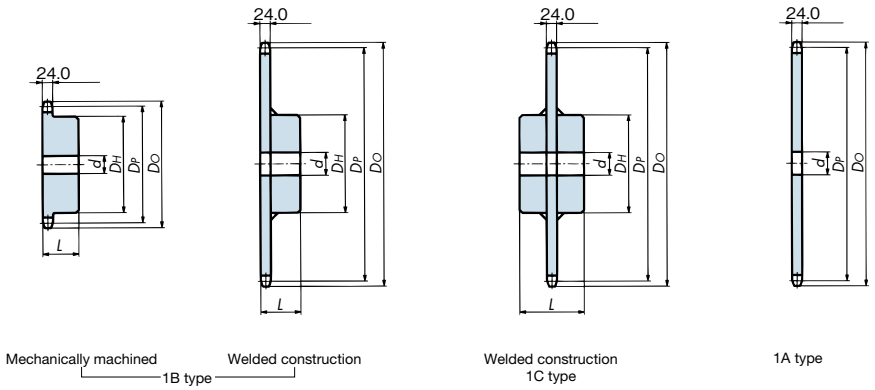
Details on p. 222

Model numbering example **RS140 -1 -RP + 58L -MWJR**

Size | Number of strands | Pin type | Number of links | End link

Note: Standard roller chains do not require series selection.

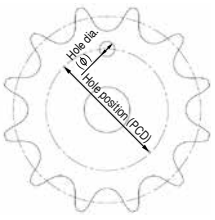
RS Sprocket RS140



Number of teeth	Pitch circle dia. D_P	Outer dia. (D_O)	1B type Bore dia. d Pilot bore	1B type Bore dia. d Max.	1B type Hub Dia. D_H	1B type Hub Length L	1B type Approx. mass kg	1B type Material	1C type Bore dia. d Pilot bore	1C type Bore dia. d Max.	1C type Hub Dia. D_H	1C type Hub Length L	1C type Approx. mass kg	1C type Material	1A type Pilot bore dia.	1A type Approx. mass kg	1A type Material	Number of teeth
10	143.84	163	28	60	91	56	4.1	Mechanically machined: machine-structural carbon steel							28	2.6	Machine-structural carbon steel	**10**
11	157.77	178	33	73	106	56	5.1								33	3.2		**11**
12	171.74	193	33	80	117	56	6.3								33	3.8		**12**
13	185.74	207	33	80	117	63	7.5								33	4.5		**13**
14	199.76	221	33	89	127	63	8.9								33	5.3		**14**
15	213.79	236	33	89	127	63	9.7								33	6.1		**15**
16	227.84	250	33	89	127	63	10.6								33	7.0		**16**
17	241.91	264	33	89	127	63	11.5								33	7.9		**17**
18	255.98	279	33	89	127	63	12.5								33	9.0		**18**
19	270.06	293	33	95	137	71	15.1								33	10.0		**19**
20	284.14	307	33	95	137	71	16.2								33	11.1		**20**
21	298.24	322	33	95	137	71	17.4								33	12.3		**21**
22	312.34	336	33	103	147	71	19.6	Welded construction: machine-structural carbon steel (teeth and hub)	33	103	147	115	25.1	Welded construction: machine-structural carbon steel (teeth and hub)	33	13.6		**22**
23	326.44	350	33	103	147	71	21.0		33	103	147	115	26.4		33	14.8		**23**
24	340.54	364	33	103	147	71	22.3		33	103	147	115	27.7		33	16.2		**24**
25	354.65	379	38	103	147	80	24.7		38	103	147	115	28.9		38	17.6		**25**
26	368.77	393	38	103	147	80	**26.0**		38	103	147	115	**30.1**		38	**18.8**		**26**
27	382.88	407	38	103	147	80	**27.6**		38	103	147	115	**31.7**		38	**20.3**		**27**
28	397.00	421	38	103	147	80	**29.2**		38	103	147	115	**33.2**		38	**21.9**		**28**
30	425.24	450	38	103	147	80	**32.6**		38	103	147	115	**36.6**		38	**25.3**		**30**
32	453.49	478	38	103	147	80	**36.3**		38	103	147	115	**40.2**		38	**28.9**		**32**
34	481.75	506	38	103	147	80	**40.1**		38	103	147	115	**44.0**		38	**32.7**		**34**
35	495.88	521	38	110	157	90	**44.6**		38	110	157	125	**49.2**		38	**34.7**		**35**
36	510.01	535	38	110	157	90	**46.7**		38	110	157	125	**51.2**		38	**36.8**		**36**
38	538.27	563	38	110	157	90	**51.1**		38	110	157	125	**55.5**		38	**41.1**		**38**
40	566.54	591	38	110	157	90	**55.6**		38	118	167	130	**62.9**		38	**45.6**		**40**
42	594.81	620	38	118	167	94	**62.3**		38	118	167	130	**67.6**		38	**50.4**		**42**
45	637.22	662	38	118	167	94	**70.0**		38	118	167	130	**75.2**		38	**58.0**		**45**
48	679.63	705	38	118	167	94	**78.3**		38	118	167	130	**83.4**		38	**66.1**		**48**
50	707.91	733	38	118	167	94	**84.0**		38	118	167	130	**89.1**		38	**71.8**		**50**
54	764.47	790	38	118	167	94	**96.7**		38	118	167	130	**101.2**		38	**84.0**		**54**
60	849.32	875	38	118	167	94	**116.6**		38	118	167	155	**125.2**		38	**103.9**		**60**

Note: 1. Maximum bore diameters shown are standard figures. Determine bore diameter and key bearing pressure based on general mechanical design.
2. Models in the dimensional chart whose approximate mass is in bold font have one hanging hole. See the diagram on the right for more information.
3. Models in shaded areas have hardened teeth.
4. Models with unhardened teeth as standard can be manufactured with hardened teeth (quick delivery).
5. Models with dimensions in thin font are made-to-order. All other items are stocked.

■ Hanging hole dimensions



The phase relationship between the hanging hole and teeth may vary.

No. of teeth	1B/1C/1A bore dia. (ϕ40) Hole position (PCD)
26	263
27	277
28	291
30	319
32	348
34	376
35	390
36	404
38	432
40	461
42	489
45	531
48	574
50	602
54	659
60	743

Model numbering example

RS140 -1 B 25T

- RS140: Size
- -1: Number of strands
- B: Hub type
- 25T: Number of teeth

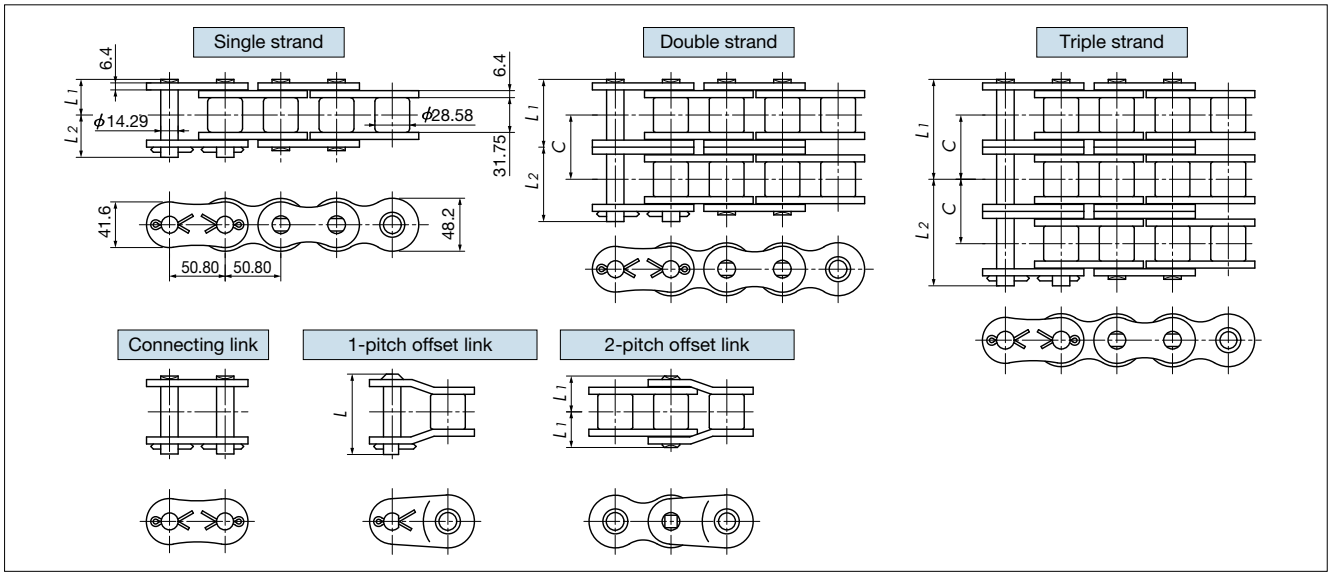
Hardened teeth model numbering example

RS140 -1 B 30T Q

- RS140: Size
- -1: Number of strands
- B: Hub type
- 30T: Number of teeth
- Q: Hardened teeth

RS Roller Chain RS160

(Identification no. 160)



■ Specifications

Size	Number of strands	Dimensions L_1	Dimensions L_2	Offset pin length L	Transverse pitch C	JIS standard min. tensile strength kN{kgf}	Min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
RS160	**1**	31.85	36.85	70.2	58.5	223.0{22740}	255 {26000}	53.0{5400}	10.10
	2	61.15	66.15	132.2		446.0{45480}	510 {52000}	90.0{9180}	20.04
	3	90.45	95.45	190.7		669.0{68220}	765 {78000}	132 {13500}	30.02
	4	119.75	124.65	249.2		–	1020{104000}	175 {17820}	40.06
	5	149.05	153.95	307.7		–	1270{130000}	207 {21060}	49.89
	6	178.3	183.3	366.2		–	1530{156000}	244 {24840}	59.93

Note: 1. Maximum allowable load when using a one-pitch offset link is 65% of the above.
2. Number of links per unit = 60. Items in bold are stocked in units.

■ RS160 Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth \ Lubrication	Small sprocket max rpm																							
	10	25	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	1000	1100	1200	1300
	AI		AII		B								C											
9	3.82	8.72	16.3	30.4	43.8	56.7	69.3	74.5	74.5	74.5	62.5	53.3	46.2	40.6	36.0	32.2	29.0	26.4	24.1	22.1	18.9	16.3	14.3	12.7
10	4.29	9.78	18.2	34.0	49.0	63.5	77.6	87.3	87.3	87.3	73.2	62.5	54.1	47.5	42.1	37.7	34.0	30.9	28.2	25.9	22.1	19.1	16.8	14.9
11	4.75	10.8	20.2	37.7	54.3	70.4	86.1	98.5	98.5	98.5	84.4	72.1	62.5	54.8	48.6	43.5	39.2	35.6	32.5	29.8	25.5	22.1	19.4	17.2
12	5.22	11.9	22.2	41.4	59.7	77.3	94.5	108	108	108	96.2	82.1	71.2	62.5	55.4	49.6	44.7	40.6	37.0	34.0	29.0	25.2	22.1	19.6
13	5.69	13.0	24.2	45.2	65.1	84.3	103	118	118	118	108	92.6	80.2	70.4	62.5	55.9	50.4	45.7	41.8	38.3	32.7	28.4	24.9	22.1
14	6.16	14.1	26.2	49.0	70.5	91.4	112	128	128	128	121	103	89.7	78.7	69.8	62.5	56.3	51.1	46.7	42.8	36.6	31.7	27.8	24.7
15	6.64	15.1	28.3	52.7	76.0	98.4	120	138	138	138	134	115	99.5	87.3	77.4	69.3	62.5	56.7	51.8	47.5	40.6	35.2	30.9	
16	7.12	16.2	30.3	56.6	81.5	106	129	148	148	148	148	126	110	96.2	85.3	76.3	68.8	62.5	57.0	52.3	44.7	38.7	34.0	
17	7.60	17.3	32.4	60.4	87.0	113	138	162	162	162	162	138	120	105	93.4	83.6	75.4	68.4	62.5	57.3	48.9	42.4	37.2	
18	8.08	18.4	34.4	64.2	92.5	120	146	173	177	177	177	151	131	115	102	91.1	82.1	74.5	68.1	62.5	53.3	46.2	40.6	
19	8.53	19.6	36.5	68.1	98.1	127	155	183	192	192	192	164	142	124	110	98.8	89.0	80.8	73.8	67.7	57.8	50.1	44.0	
20	8.97	20.7	38.6	72.0	104	134	164	193	207	207	207	177	153	134	119	107	96.2	87.3	79.7	73.2	62.5	54.1	47.5	
21	9.42	21.8	40.6	75.9	109	142	173	204	220	220	220	190	165	145	128	115	103	93.9	85.8	78.7	67.2	58.3	51.1	
22	9.87	22.9	42.7	79.8	115	149	182	214	231	231	231	204	177	155	138	123	111	101	92.0	84.4	72.1	62.5		
23	10.3	24.0	44.8	83.7	121	156	191	225	243	243	243	218	189	166	147	132	119	108	98.3	90.2	77.0	66.8		
24	10.8	25.2	47.0	87.6	126	164	200	236	254	254	254	232	201	177	157	140	126	115	105	96.2	82.1	71.2		
25	11.2	26.3	49.1	91.6	132	171	209	246	266	266	266	247	214	188	167	149	134	122	111	102	87.3	75.4		
26	11.7	27.4	51.2	95.5	138	178	218	257	277	277	277	262	227	199	177	158	143	129	118	108	92.6	80.2		
28	12.6	29.7	55.5	103	149	193	236	278	300	300	300	293	254	223	197	177	159	145	132	121	103	89.7		
30	13.5	32.0	59.8	112	161	208	254	300	325	325	325	325	281	247	219	196	177	160	146	134	115			
32	14.4	34.3	64.1	120	172	223	273	321	358	358	358	358	310	272	241	216	195	177	161	148	126			
35	15.7	37.8	70.6	132	190	246	300	354	407	409	409	409	354	311	276	247	223	202	185	169	134			
40	17.9	43.7	81.5	152	219	284	347	409	470	485	485	485	433	380	337	302	272	247	225	192				
45	20.2	49.6	92.6	173	249	322	394	464	533	551	551	551	517	454	402	360	312	260	202	141				

Note: 1. kW ratings when using one-pitch offset links are 65% of the above.
2. Please contact a Tsubaki representative prior to use of kW ratings in the shaded area of the table.

■ Multi-strand factors

Number of chain strands	Two strands	Three strands	Four strands	Five strands	Six strands
Multi-strand factor	1.7	2.5	3.3	3.9	4.6

■ Lubrication systems and methods

Lubrication system	AI	AII	B	C
Method	Manual lubrication	Drip lubrication	Oil bath or slinger disc lubrication	Forced pump lubrication

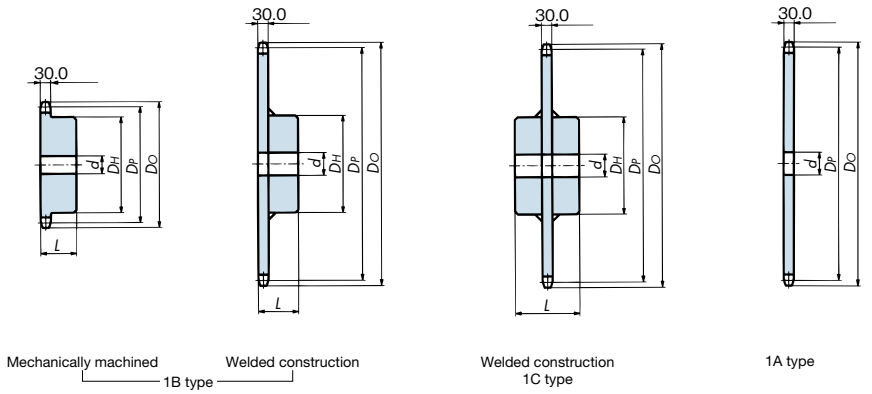
Details on p. 222

Model numbering example **RS160 -1 -RP + 50L -MWJR**

Size | Number of strands | Pin type | Number of links | End link

Note: Standard roller chains do not require series selection.

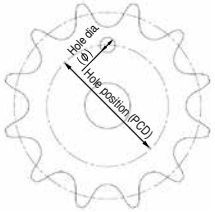
RS Sprocket RS160



Number of teeth	Pitch circle dia. D_P	Outer dia. (D_O)	1B type Bore dia. d Pilot bore	1B type Bore dia. d Max.	1B type Hub Dia. D_H	1B type Hub Length L	1B type Approx. mass kg	1B type Material	1C type Bore dia. d Pilot bore	1C type Bore dia. d Max.	1C type Hub Dia. D_H	1C type Hub Length L	1C type Approx. mass kg	1C type Material	1A type Pilot bore dia.	1A type Approx. mass kg	1A type Material	Number of teeth
10	164.39	187	33	70	105	63	6.3	Mechanically machined: machine-structural carbon steel							33	4.3	Machine-structural carbon steel	**10**
11	180.31	203	33	80	117	63	7.8								33	5.3		**11**
12	196.28	220	33	89	127	63	9.4								33	6.3		**12**
13	212.27	237	33	95	137	71	11.9								33	7.5		**13**
14	228.29	253	33	95	137	71	13.2								33	8.8		**14**
15	244.33	269	33	95	137	71	14.5								33	10.1		**15**
16	260.39	286	33	103	147	71	16.7								33	11.6		**16**
17	276.46	302	33	103	147	71	18.2								33	13.1		**17**
18	292.55	319	33	103	147	71	19.9								33	14.8		**18**
19	308.64	335	33	103	147	71	21.6								33	16.5		**19**
20	324.74	351	33	103	147	71	23.4								33	18.3		**20**
21	340.84	368	33	103	147	71	25.4								33	20.3		**21**
22	356.96	384	38	118	167	80	30.6	Welded construction: machine-structural carbon steel (teeth and hub)	38	118	167	125	37.8	Welded construction: machine-structural carbon steel (teeth and hub)	38	22.2		**22**
23	373.07	400	38	118	167	80	**32.4**		38	118	167	125	**39.6**		38	**24.0**		**23**
24	389.19	416	38	118	167	80	**34.6**		38	118	167	125	**41.8**		38	**26.2**		**24**
25	405.32	433	38	118	167	80	**37.0**		38	118	167	125	**44.2**		38	**28.6**		**25**
26	421.45	449	38	118	167	80	**39.5**		38	118	167	125	**46.6**		38	**31.0**		**26**
27	437.58	465	38	118	167	80	**42.0**		38	118	167	125	**49.1**		38	**33.5**		**27**
28	453.72	481	38	118	167	80	**44.6**		38	118	167	125	**51.7**		38	**36.1**		**28**
30	485.99	514	38	118	167	100	**53.5**		38	118	167	125	**57.2**		38	**41.6**		**30**
32	518.28	546	38	118	167	100	**59.5**		38	118	167	125	**63.0**		38	**47.4**		**32**
34	550.57	579	38	118	167	100	**65.8**		38	118	167	125	**69.3**		38	**53.7**		**34**
35	566.72	595	38	118	167	100	**69.2**		38	118	167	135	**74.2**		38	**57.0**		**35**
36	582.86	611	38	118	167	100	**72.6**		38	118	167	135	**77.6**		38	**60.3**		**36**
38	615.17	644	38	118	167	100	**80.1**		38	118	167	135	**84.6**		38	**67.4**		**38**
40	647.47	676	38	132	187	121	**94.4**		38	132	187	150	**99.7**		38	**74.8**		**40**
42	679.78	708	38	132	187	121	**102.2**		38	132	187	150	**107.5**		38	**82.6**		**42**
45	728.25	757	38	132	187	121	**115.2**		38	132	187	150	**119.9**		38	**95.0**		**45**
48	776.72	806	38	132	187	121	**128.5**		38	132	187	150	**133.2**		38	**108.4**		**48**
50	809.04	838	38	132	187	121	**137.9**		38	132	187	150	**142.5**		38	**117.7**		**50**
54	873.68	903	38	132	187	121	**157.7**		38	132	187	150	**162.4**		38	**137.5**		**54**
60	970.65	1000	38	132	187	121	**190.7**		38	132	187	160	**197.0**		38	**170.1**		**60**

Note: 1. Maximum bore diameters shown are standard figures. Determine bore diameter and key bearing pressure based on general mechanical design.
2. Models in the dimensional chart whose approximate mass is in bold font have one hanging hole. See the diagram on the right for more information.
3. Models in shaded areas have hardened teeth.
4. Models with unhardened teeth as standard can be manufactured with hardened teeth (quick delivery).
5. Models with dimensions in thin font are made-to-order. All other items are stocked.

■ Hanging hole dimensions



The phase relationship between the hanging hole and teeth may vary.

No. of teeth	1B/1C/1A bore dia. (ϕ40) Hole position (PCD)
23	261
24	277
25	293
26	309
27	326
28	342
30	374
32	406
34	438
35	455

No. of teeth	1B/1C/1A bore dia. (ϕ40) Hole position (PCD)
36	471
38	503
40	535
42	568
45	616
48	665
50	697
54	762
60	859

Model numbering example

RS160 -1 B 25T

- RS160: Size
- -1: Number of strands
- B: Hub type
- 25T: Number of teeth

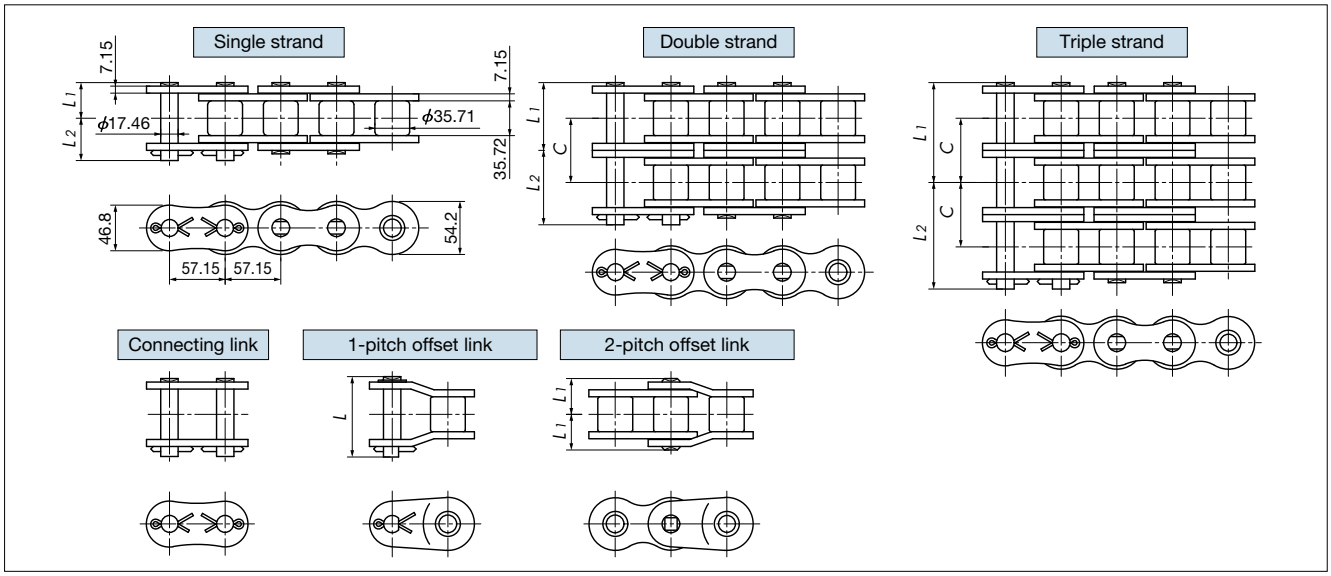
Hardened teeth model numbering example

RS160 -1 B 30T Q

- RS160: Size
- -1: Number of strands
- B: Hub type
- 30T: Number of teeth
- Q: Hardened teeth

RS Roller Chain RS180

(Identification no. 180)



■ Specifications

Size	Number of strands	Dimensions L_1	Dimensions L_2	Offset pin length L	Transverse pitch C	JIS standard min. tensile strength kN{kgf}	Min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
RS180	**1**	35.65	42.45	80.6	65.8	281.0{28655}	336 {34300}	60.8{6200}	13.45
	2	68.75	75.35	151.1		562.0{57309}	673 {68600}	103 {10540}	26.52
	3	101.7	108.5	216.9		843.0{85963}	1010{102900}	152 {15500}	38.22
	4	134.65	141.45	282.8		–	1350{137200}	201 {20460}	50.90
	5	167.6	174.4	348.6		–	1680{171500}	237 {24180}	63.59
	6	200.55	207.35	414.4		–	2020{205800}	280 {28520}	76.27

Note: 1. Maximum allowable load when using a one-pitch offset link is 65% of the above.
2. Number of links per unit = 54. Items in bold are stocked in units.

■ RS180 Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth \ Lubrication	Small sprocket max rpm																								
	10	25	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
	AI		AII	B							C													
9	4.94	11.3	21.0	39.2	56.5	73.2	89.4	90.8	90.8	81.9	68.6	58.6	50.8	44.6	39.5	35.4	31.9	29.0	26.4	24.3	22.4	20.7	19.3	18.0
10	5.53	12.6	23.5	43.9	63.3	82.0	100	102	102	95.9	80.4	68.6	59.5	52.2	46.3	41.4	37.4	33.9	31.0	28.4	26.2	24.3	22.6	21.0
11	6.13	14.0	26.1	48.7	70.1	90.9	111	113	113	111	92.7	79.2	68.6	60.2	53.4	47.8	43.1	39.1	35.7	32.8	30.2	28.0	26.0	24.3
12	6.73	15.4	28.7	53.5	77.0	99.8	122	126	126	126	106	90.2	78.2	68.6	60.9	54.5	49.1	44.6	40.7	37.4	34.4	31.9	29.6	27.6
13	7.34	16.7	31.3	58.3	84.0	109	133	142	142	142	119	102	88.2	77.4	68.6	61.4	55.4	50.3	45.9	42.1	38.8	36.0	33.4	
14	7.95	18.1	33.9	63.2	91.0	118	144	159	159	159	133	114	98.5	86.5	76.7	68.6	61.9	56.2	51.3	47.1	43.4	40.2	37.4	
15	8.57	19.5	36.5	68.1	98.0	127	155	176	176	176	148	126	109	95.9	85.1	76.1	68.6	62.3	56.9	52.2	48.1	44.6	41.4	
16	9.19	21.0	39.1	73.0	105	136	166	191	191	191	163	139	120	106	93.7	83.9	75.6	68.6	62.7	57.5	53.0	49.1	45.6	
17	9.81	22.4	41.8	77.9	112	145	178	201	201	201	178	152	132	116	103	91.8	82.8	75.2	68.6	63.0	58.1	53.8		
18	10.4	23.8	44.4	82.9	119	155	189	216	216	216	194	166	144	126	112	100	90.2	81.9	74.8	68.6	63.3	58.6		
19	11.0	25.2	47.1	87.9	127	164	200	229	229	229	211	180	156	137	121	109	97.8	88.8	81.1	74.4	68.6	63.5		
20	11.6	26.7	49.8	92.9	134	173	212	243	243	243	227	194	168	148	131	117	106	95.9	87.6	80.4	74.1	68.6		
21	12.2	28.1	52.5	97.9	141	183	223	256	256	256	245	209	181	159	141	126	114	103	94.2	86.5	79.7	73.8		
22	12.7	29.6	55.2	103	148	192	235	269	269	269	262	224	194	170	151	135	122	111	101	92.7	85.5			
23	13.3	31.0	57.9	108	156	202	246	282	282	282	280	239	208	182	162	145	130	118	108	99.1	91.4			
24	13.9	32.5	60.6	113	163	211	258	299	299	299	299	255	221	194	172	154	139	126	115	106	97.4			
25	14.5	33.9	63.3	118	170	221	270	318	318	318	318	271	235	206	183	164	148	134	122	112	104			
26	15.1	35.4	66.1	123	178	230	281	331	337	337	337	288	249	219	194	174	157	142	130	119				
28	16.2	38.4	71.6	134	192	249	305	359	377	377	377	322	279	245	217	194	175	159	145	133				
30	17.4	41.3	77.1	144	207	269	328	387	418	418	418	357	309	271	241	215	194	176	161	148				
32	18.5	44.3	82.7	154	222	288	352	415	448	448	448	393	341	299	265	237	214	194	177					
35	20.3	48.8	91.1	170	245	317	388	457	494	494	494	449	390	342	303	271	245	217	164					
40	23.2	56.4	105	196	283	366	448	504	504	504	504	463	429	391	347	297	242	182						
45	26.1	64.0	119	223	321	416	509	551	551	551	507	471	431	383	329	269	202							

Note: 1. kW ratings when using one-pitch offset links are 65% of the above.
2. Please contact a Tsubaki representative prior to use of kW ratings in the shaded area of the table.

■ Multi-strand factors

Number of chain strands	Two strands	Three strands	Four strands	Five strands	Six strands
Multi-strand factor	1.7	2.5	3.3	3.9	4.6

■ Lubrication systems and methods

Lubrication system	AI	AII	B	C
Method	Manual lubrication	Drip lubrication	Oil bath or slinger disc lubrication	Forced pump lubrication

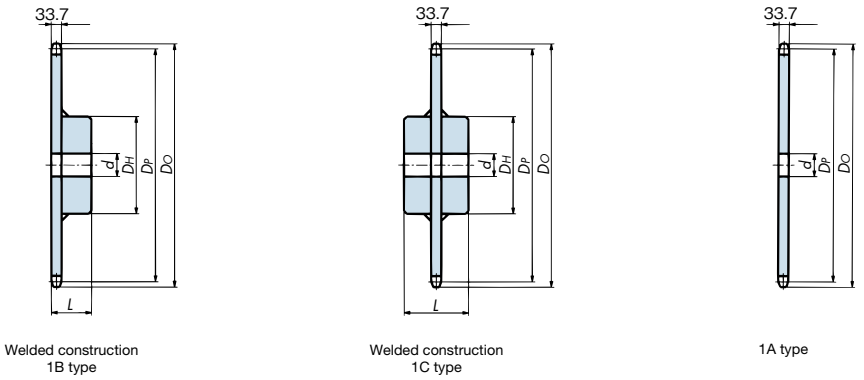
Details on p. 222

Model numbering example **RS180 -1 -RP + 44L -MWJR**

Size | Number of strands | Pin type | Number of links | End link

Note: Standard roller chains do not require series selection.

RS Sprocket RS180

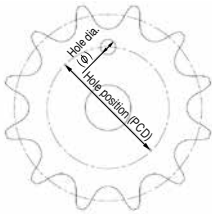


Welded construction 1B type | Welded construction 1C type | 1A type

Number of teeth	Pitch circle dia. D_P	Outer dia. (D_O)	1B type						1C type						1A type			Number of teeth
			Bore dia. d		Hub		Approx. mass kg	Material	Bore dia. d		Hub		Approx. mass kg	Material	Pilot bore dia.	Approx. mass kg	Material	
			Pilot bore	Max.	Dia. D_H	Length L			Pilot bore	Max.	Dia. D_H	Length L						
11	202.85	229	43	75	110	55	8.6	Welded construction: machine-structural carbon steel (teeth and hub)						Welded construction: machine-structural carbon steel (teeth and hub)	43	7.0	Machine-structural carbon steel	**11**
12	220.81	248	43	85	130	65	11.6								43	8.5		**12**
13	238.81	266	43	95	150	75	15.6								43	10.1		**13**
14	256.83	285	43	105	170	80	19.7								43	11.9		**14**
15	274.88	303	43	110	180	80	22.6								43	13.8		**15**
16	292.94	322	43	110	180	80	24.6								43	15.8		**16**
17	311.02	340	43	115	180	80	26.8								43	17.9		**17**
18	329.11	358	43	115	180	80	29.2								43	20.2		**18**
19	347.22	377	43	115	180	80	31.6								43	22.7		**19**
20	365.33	395	43	115	180	80	34.2								43	25.2		**20**
21	383.45	413							63	120	190	85	37.8		63	27.5		**21**
22	401.57	432							63	120	190	85	**40.4**		63	**30.0**		**22**
23	419.71	450							63	120	200	90	**45.7**		63	**33.0**		**23**
24	437.84	468							63	125	200	90	**48.8**		63	**36.1**		**24**
25	455.98	487							63	125	200	90	**52.0**		63	**39.4**		**25**
26	474.13	505							63	125	200	90	**55.4**		63	**42.8**		**26**
27	492.28	523							63	125	200	90	**58.9**		63	**46.3**		**27**
28	510.43	542							63	125	200	90	**62.6**		63	**50.0**		**28**
30	546.74	578							63	135	220	110	**78.7**		63	**57.7**		**30**
32	583.06	615							63	135	220	110	**86.9**		63	**65.9**		**32**
34	619.39	651							63	135	220	110	**95.8**		63	**74.8**		**34**
35	637.56	669							63	135	220	110	**100.4**		63	**79.4**		**35**
36	655.72	688							63	135	220	110	**105.1**		63	**84.1**		**36**
38	692.06	724							63	135	220	110	**115.0**		63	**94.0**		**38**
40	728.41	760							63	150	240	125	**134.7**		63	**104.5**		**40**
42	764.75	797							63	150	240	125	**145.8**		63	**115.6**		**42**
45	819.28	852							63	150	240	125	**163.3**		63	**133.1**		**45**
48	873.81	906							63	150	240	125	**182.1**		63	**151.8**		**48**
50	910.17	943							63	150	240	125	**195.3**		63	**165.1**		**50**
54	982.89	1016							63	150	240	125	**223.3**		63	**193.1**		**54**
60	1091.98	1125							63	150	240	125	**269.5**		63	**239.2**		**60**

Note: 1. Maximum bore diameters shown are standard figures. Determine bore diameter and key bearing pressure based on general mechanical design.
2. Models in the dimensional chart whose approximate mass is in bold font have one hanging hole. See the diagram on the right for more information.
3. Made-to-order.

Hanging hole dimensions



The phase relationship between the hanging hole and teeth may vary.

No. of teeth	1B/1C/1A bore dia. (ϕ40) Hole position (PCD)	No. of teeth	1B/1C/1A bore dia. (ϕ40) Hole position (PCD)
22	276	**35**	512
23	294	**36**	531
24	313	**38**	567
25	331	**40**	603
26	349	**42**	640
27	367	**45**	694
28	385	**48**	749
30	422	**50**	785
32	458	**54**	858
34	464	**60**	967

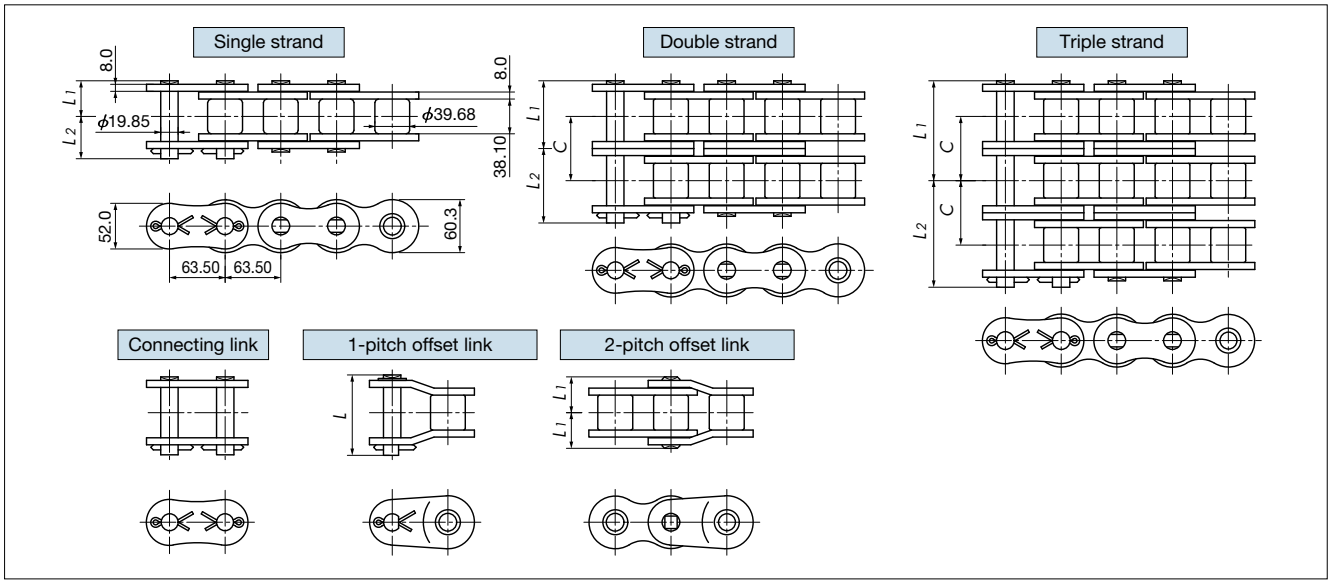
Model numbering example

RS180 -1 B 15T

- RS180: Size
- -1: Number of strands
- B: Hub type
- 15T: Number of teeth

RS Roller Chain RS200

(Identification no. 200)



■ Specifications

Size	Number of strands	Dimensions L_1	Dimensions L_2	Offset pin length L	Transverse pitch C	JIS standard min. tensile strength kN{kgf}	Min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
RS200	**1**	39.0	44.8	87.3	71.6	347.0 {35385}	427 {43500}	71.6{7300}	16.49
	2	74.85	80.65	161.2		694.0 {70769}	853 {87000}	122 {12410}	32.63
	3	110.75	116.45	233.0		1041.0{106153}	1280{130500}	179 {18250}	49.02
	4	146.6	152.3	304.7		–	1710{174000}	236 {24090}	65.16
	5	182.4	188.2	376.3		–	2130{217500}	279 {28470}	81.32
	6	218.25	224.05	448.0		–	2560{261000}	329 {33580}	97.59

Note: 1. Maximum allowable load when using a one-pitch offset link is 65% of the above.
2. Number of links per unit = 48. Items in bold are stocked in units.

■ RS200 Maximum kilowatt ratings table (kW ratings for single strand chain)

Lubrication / Small sprocket no. of teeth	Small sprocket max rpm																		
	10	**15**	**20**	**30**	**40**	**50**	**70**	**100**	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**500**	**550**	**600**	**650**
	AI			AII				B						C					
9	6.46	9.30	12.1	17.4	22.5	27.5	37.2	51.3	73.9	95.7	108	108	108	89.1	74.7	63.8	55.3	48.5	43.0
10	7.24	10.4	13.5	19.5	25.2	30.8	41.7	57.5	82.8	107	122	122	122	104	87.5	74.7	64.7	56.8	50.4
11	8.02	11.6	15.0	21.6	27.9	34.1	46.2	63.7	91.8	119	135	135	135	120	101	86.1	74.7	65.5	58.1
12	8.81	12.7	16.4	23.7	30.7	37.5	50.8	70.0	101	131	148	148	148	137	115	98.2	85.1	74.7	
13	9.61	13.8	17.9	25.8	33.5	40.9	55.4	76.3	110	142	161	161	161	155	130	111	95.9	84.2	
14	10.4	15.0	19.4	28.0	36.2	44.3	60.0	82.7	119	154	175	175	175	173	145	124	107	94.1	
15	11.2	16.2	20.9	30.1	39.0	47.7	64.6	89.1	128	166	192	192	192	192	161	137	119	104	
16	12.0	17.3	22.4	32.3	41.9	51.2	69.3	95.5	138	178	211	211	211	211	177	151	131	115	
17	12.8	18.5	24.0	34.5	44.7	54.6	74.0	102	147	190	231	231	231	231	194	166	143	126	
18	13.6	19.7	25.5	36.7	47.5	58.1	78.7	108	156	202	247	252	252	252	211	180	156	137	
19	14.4	20.8	27.0	38.9	50.4	61.6	83.4	115	166	215	262	273	273	273	229	196	170	149	
20	15.2	22.0	28.5	41.1	53.3	65.1	88.2	122	175	227	277	290	290	290	247	211	183		
21	15.9	23.2	30.1	43.3	56.2	68.6	92.9	128	185	239	292	305	305	305	266	227	197		
22	16.7	24.4	31.6	45.6	59.0	72.2	97.7	135	194	251	307	321	321	321	285	244	211		
23	17.4	25.6	33.2	47.8	62.0	75.7	103	141	204	264	322	337	337	337	305	260	226		
24	18.2	26.8	34.8	50.1	64.9	79.3	107	148	213	276	338	353	353	353	325	278	241		
25	18.9	28.0	36.3	52.3	67.8	82.9	112	155	223	289	353	369	369	369	346	295	256		
26	19.7	29.3	37.9	54.6	70.7	86.5	117	161	232	301	368	385	385	385	367	313	271		

Note: 1. kW ratings when using one-pitch offset links are 65% of the above.
2. Please contact a Tsubaki representative prior to use of kW ratings in the shaded area of the table.

■ Multi-strand factors

Number of chain strands	Two strands	Three strands	Four strands	Five strands	Six strands
Multi-strand factor	1.7	2.5	3.3	3.9	4.6

■ Lubrication systems and methods

Lubrication system	AI	AII	B	C
Method	Manual lubrication	Drip lubrication	Oil bath or slinger disc lubrication	Forced pump lubrication

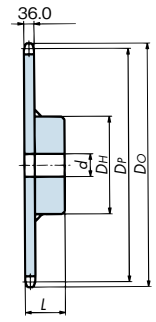
Details on p. 222

Model numbering example **RS200 -1 -RP + 38L -MWJR**

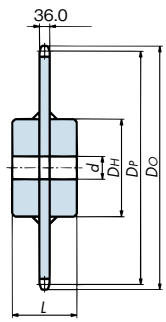
Size | Number of strands | Pin type | Number of links | End link

Note: Standard roller chains do not require series selection.

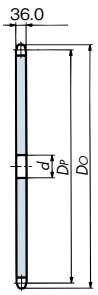
RS Sprocket RS200



Welded construction
1B type



Welded construction
1C type

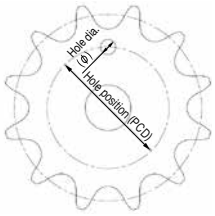


1A type

Number of teeth	Pitch circle dia. D_P	Outer dia. (D_O)	1B type						1C type						1A type			Number of teeth
			Bore dia. d		Hub		Approx. mass kg	Material	Bore dia. d		Hub		Approx. mass kg	Material	Pilot bore dia.	Approx. mass kg	Material	
			Pilot bore	Max.	Dia. D_H	Length L			Pilot bore	Max.	Dia. D_H	Length L						
11	225.39	254	43	80	130	65	12.3	Welded construction: machine-structural carbon steel (teeth and hub)						Welded construction: machine-structural carbon steel (teeth and hub)	43	9.4	Machine-structural carbon steel	**11**
12	245.35	275	43	90	150	75	16.6								43	11.3		**12**
13	265.34	296	43	100	170	80	21.0								43	13.4		**13**
14	285.37	316	43	110	180	80	24.3								43	15.7		**14**
15	305.42	337	43	115	180	80	26.8								43	18.2		**15**
16	325.49	357	43	115	180	80	29.5								43	20.9		**16**
17	345.58	378	43	120	190	85	34.5								43	23.7		**17**
18	365.68	398	43	120	190	85	37.5								43	26.8		**18**
19	385.80	419							63	125	200	90	41.7		63	29.5		**19**
20	405.92	439							63	125	200	90	45.1		63	32.9		**20**
21	426.05	459							63	135	220	110	**56.5**		63	**36.1**		**21**
22	446.19	480							63	135	220	110	**60.2**		63	**39.9**		**22**
23	466.34	500							63	140	230	110	**66.2**		63	**43.8**		**23**
24	486.49	520							63	140	230	110	**70.3**		63	**47.8**		**24**
25	506.65	541							63	140	230	110	**74.6**		63	**52.2**		**25**
26	526.81	561							63	140	230	110	**79.1**		63	**56.7**		**26**
27	546.98	581							63	140	230	110	**83.7**		63	**61.3**		**27**
28	567.14	602							63	140	230	110	**88.5**		63	**66.1**		**28**
30	607.49	642							63	150	240	125	**105.8**		63	**76.3**		**30**
32	647.85	683							63	150	240	125	**116.7**		63	**87.2**		**32**
34	688.21	723							63	150	240	125	**128.3**		63	**98.8**		**34**
35	708.39	744							63	150	240	125	**134.5**		63	**104.9**		**35**
36	728.58	764							63	150	240	125	**140.7**		63	**111.2**		**36**
38	768.96	804							63	150	240	125	**153.8**		63	**124.2**		**38**
40	809.34	845							63	170	270	140	**182.3**		63	**138.1**		**40**
42	849.72	885							63	170	270	140	**196.8**		63	**152.6**		**42**
45	910.31	946							63	170	270	140	**219.9**		63	**175.8**		**45**
48	970.90	1007							68	170	270	140	**244.1**		68	**200.4**		**48**
50	1011.30	1047							68	170	270	140	**261.5**		68	**217.8**		**50**
54	1092.10	1128							68	170	270	140	**298.5**		68	**254.7**		**54**
60	1213.31	1250							68	170	270	140	**359.4**		68	**315.6**		**60**

Note: 1. Maximum bore diameters shown are standard figures. Determine bore diameter and key bearing pressure based on general mechanical design.
2. Models in the dimensional chart whose approximate mass is in bold font have one hanging hole. See the diagram on the right for more information.
3. Made-to-order.

Hanging hole dimensions



The phase relationship between the hanging hole and teeth may vary.

No. of teeth	1B/1C/1A bore dia. (ϕ40) Hole position (PCD)
21	291
22	311
23	331
24	351
25	371
26	392
27	412
28	432
30	472
32	513

No. of teeth	1B/1C/1A bore dia. (ϕ40) Hole position (PCD)
34	553
35	573
36	593
38	634
40	673
42	715
45	775
48	836
50	876
54	957
60	1078

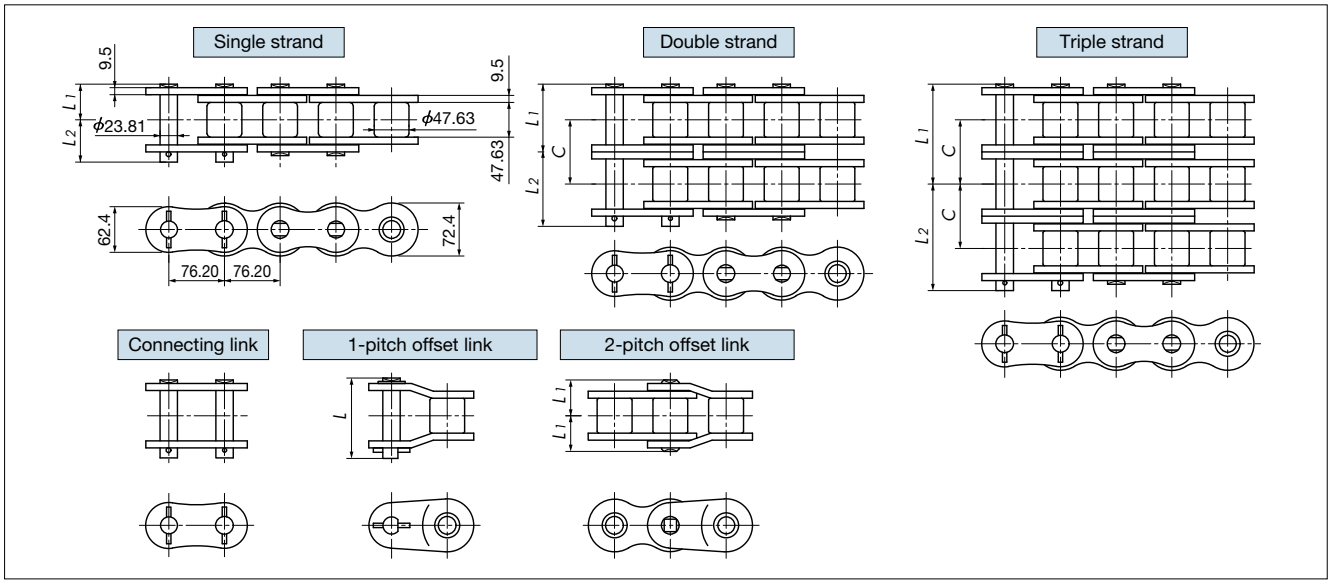
Model numbering example

RS200 -1 B 15T

- RS200: Size
- -1: Number of strands
- B: Hub type
- 15T: Number of teeth

Standard Roller Chains and Sprockets RS Roller Chain RS240

(Identification no. 240)



■ Specifications

Size	Number of strands	Dimensions L_1	Dimensions L_2	Offset pin length L	Transverse pitch C	JIS standard min. tensile strength kN{kgf}	Min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
RS240	**1**	47.9	55.5	106.7	87.8	500.0 {50986}	623 {63500}	99.0{10100}	24.5
	2	91.65	99.15	198.4		1000.0{101972}	1250{127000}	168 {17170}	48.1
	3	135.55	143.05	286.3		1500.0{152958}	1870{190500}	248 {25250}	71.6
	4	179.45	186.95	374.2		–	2490{254000}	327 {33330}	95.1
	5	223.4	230.8	462.0		–	3110{317500}	386 {39390}	118.6
	6	267.3	274.7	550.1		–	3740{381000}	456 {46460}	142.1

Note: 1. Maximum allowable load when using a one-pitch offset link is 65% of the above.
2. Number of links per unit = 40. Items in bold are stocked in units.

■ RS240 Maximum kilowatt ratings table (kW ratings for single strand chain)

Lubrication / Small sprocket no. of teeth	Small sprocket max rpm																			
	5	10	15	20	25	30	40	50	60	80	100	125	150	175	200	250	300	350	400	450
	AI				AII				B								C			
9	5.66	10.7	15.4	20.0	24.4	28.8	37.3	45.6	53.7	69.6	85.1	104	123	141	159	159	159	126	103	86.4
10	6.29	12.0	17.3	22.4	27.4	32.3	41.8	51.1	60.2	78.0	95.4	117	137	158	178	183	183	148	121	101
11	6.92	13.3	19.2	24.8	30.4	35.8	46.3	56.7	66.8	86.5	106	129	152	175	197	202	202	170	139	117
12	7.54	14.6	21.1	27.3	33.4	39.3	50.9	62.2	73.3	95.0	116	142	167	192	217	222	222	194	159	
13	8.17	15.9	23.0	29.7	36.4	42.8	55.5	67.9	80.0	104	127	155	182	210	236	242	242	219	179	
14	8.80	17.3	24.9	32.2	39.4	46.4	60.1	73.5	86.6	112	137	168	198	227	256	263	263	244	200	
15	9.43	18.6	26.8	34.7	42.4	50.0	64.8	79.2	93.3	121	148	181	213	245	276	283	283	271	222	
16	10.1	19.9	28.7	37.2	45.5	53.6	69.5	84.9	100	130	158	194	228	262	296	299	299	269	244	
17	10.7	21.3	30.7	39.7	48.6	57.2	74.2	90.7	107	138	169	207	244	280	300	300	300	281	268	
18	11.3	22.6	32.6	42.3	51.7	60.9	78.9	96.4	114	147	180	220	259	298	303	303	303	291	281	
19	11.9	23.9	34.6	44.8	54.8	64.6	83.6	102	120	156	191	233	275	316	317	317	317	304	291	
20	12.6	25.0	36.6	47.4	57.9	68.2	88.4	108	127	165	202	246	290	330	330	330	330	316	304	
21	13.2	26.4	38.5	49.9	61.0	71.9	93.2	114	134	174	213	260	306	345	345	345	345	328	316	
22	13.8	27.7	40.5	52.5	64.2	75.6	98.0	120	141	183	223	273	322	346	346	346	342	339	315	
23	14.5	28.4	42.5	55.1	67.3	79.3	103	126	148	192	234	287	338	370	370	370	359	350	334	
24	15.1	30.2	44.5	57.7	70.5	83.1	108	132	155	201	246	300	354	396	396	396	376	360		
25	15.7	31.4	46.5	60.3	73.7	86.8	112	137	162	210	257	314	370	410	410	410	388	370		
26	16.3	32.7	48.5	62.9	76.9	90.6	117	143	169	219	268	327	386	418	418	418	397	380		

Note: 1. kW ratings when using one-pitch offset links are 65% of the above.
2. Please contact a Tsubaki representative prior to use of kW ratings in the shaded area of the table.

■ Multi-strand factors

Number of chain strands	Two strands	Three strands	Four strands	Five strands	Six strands
Multi-strand factor	1.7	2.5	3.3	3.9	4.6

■ Lubrication systems and methods

Lubrication system	AI	AII	B	C
Method	Manual lubrication	Drip lubrication	Oil bath or slinger disc lubrication	Forced pump lubrication

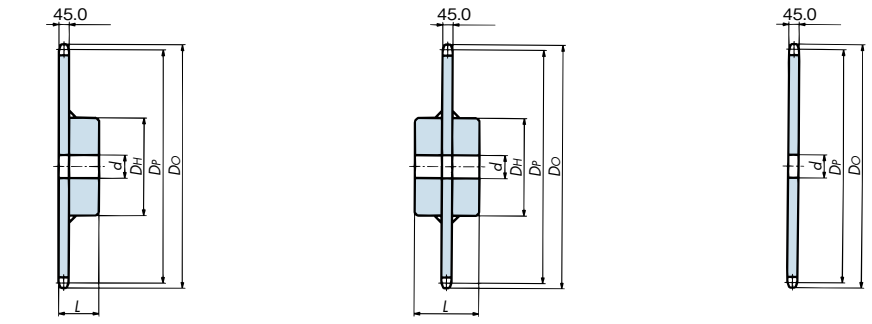
Details on p. 222

Model numbering example **RS240 -1 -RP + 30L -MSJR**

Size | Number of strands | Pin type | Number of links | End link

Note: Standard roller chains do not require series selection.

RS Sprocket RS240

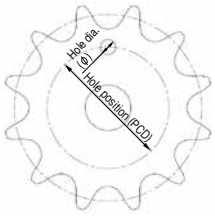


Welded construction 1B type | Welded construction 1C type | 1A type

Number of teeth	Pitch circle dia. D_P	Outer dia. (D_O)	1B type						1C type						1A type			Number of teeth
			Bore dia. d		Hub		Approx. mass kg	Material	Bore dia. d		Hub		Approx. mass kg	Material	Pilot bore dia.	Approx. mass kg	Material	
			Pilot bore	Max.	Dia. D_H	Length L			Pilot bore	Max.	Dia. D_H	Length L						
11	270.47	305	43	90	150	75	21.3	Welded construction: machine-structural carbon steel (teeth and hub)						Welded construction: machine-structural carbon steel (teeth and hub)	43	17.1	Machine-structural carbon steel	**11**
12	294.41	330	43	100	170	85	27.8								43	20.6		**12**
13	318.41	355	43	120	200	100	37.7								43	24.4		**13**
14	342.44	380	43	130	210	110	46.0								43	28.6		**14**
15	366.50	404							63	140	230	110	52.4		63	32.5		**15**
16	390.59	429							63	140	230	110	57.2		63	37.3		**16**
17	414.69	453							63	145	230	110	62.3		63	42.4		**17**
18	438.82	478							63	145	230	110	67.8		63	47.9		**18**
19	462.96	502							63	150	240	120	78.7		63	53.6		**19**
20	487.10	527							63	150	240	120	**84.3**		63	**59.2**		**20**
21	511.26	551							63	155	240	120	**90.7**		63	**65.6**		**21**
22	535.43	576							63	155	240	120	**97.4**		63	**72.3**		**22**
23	559.61	600							63	160	260	140	**116.9**		63	**79.4**		**23**
24	583.79	625							63	160	260	140	**124.3**		63	**86.8**		**24**
25	607.98	649							63	160	260	140	**132.0**		63	**94.5**		**25**
26	632.17	673							63	160	260	140	**140.1**		63	**102.6**		**26**
27	656.37	698							63	160	260	140	**148.5**		63	**111.0**		**27**
28	680.57	722							63	160	260	140	**157.1**		63	**119.6**		**28**
30	728.99	771							63	165	260	140	**175.5**		63	**138.0**		**30**
32	777.42	819							63	165	260	140	**195.1**		63	**157.6**		**32**
34	825.86	868							63	165	260	140	**216.1**		63	**178.5**		**34**
35	850.07	892							63	165	260	140	**227.0**		63	**189.4**		**35**
36	874.30	917							63	165	260	140	**238.3**		63	**200.8**		**36**
38	922.75	965							63	165	260	140	**261.8**		63	**224.3**		**38**
40	971.21	1014							68	170	270	140	**289.3**		68	**248.9**		**40**
42	1019.67	1063							68	170	270	140	**315.4**		68	**275.2**		**42**
45	1092.37	1135							68	170	270	140	**357.0**		68	**316.8**		**45**
48	1165.08	1208							68	170	270	140	**401.6**		68	**361.4**		**48**
50	1213.56	1257							68	170	270	140	**432.9**		68	**392.7**		**50**
54	1310.52	1354							68	170	270	140	**499.5**		68	**459.2**		**54**
60	1455.98	1500							68	170	270	140	**609.3**		68	**568.8**		**60**

Note: 1. Maximum bore diameters shown are standard figures. Determine bore diameter and key bearing pressure based on general mechanical design.
2. Models in the dimensional chart whose approximate mass is in bold font have one hanging hole. See the diagram on the right for more information.
3. Made-to-order.

■ Hanging hole dimensions



The phase relationship between the hanging hole and teeth may vary.

No. of teeth	1B/1C/1A bore dia. (φ40) Hole position (PCD)	No. of teeth	1B/1C/1A bore dia. (φ40) Hole position (PCD)
20	355	**34**	681
21	378	**35**	704
22	401	**36**	726
23	424	**38**	773
24	447	**40**	821
25	470	**42**	867
26	494	**45**	938
27	517	**48**	1009
28	540	**50**	1054
30	587	**54**	1148
32	635	**60**	1291

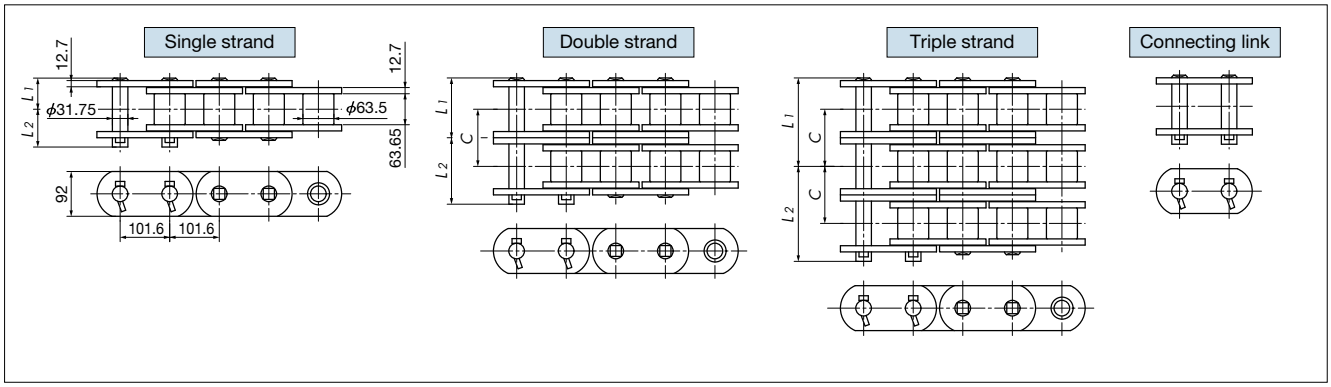
Model numbering example

RS240 -1 B 14T

- RS240: Size
- -1: Number of strands
- B: Hub type
- 14T: Number of teeth

Standard Roller Chains and Sprockets

RS Roller Chain RF320-T



Specifications

Size & series	Number of strands	Dimensions L_1	Dimensions L_2	Offset pin length L	Transverse pitch C	Min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
RF320-T	1	63.8	77.6	–	117.1	1000{102000}	123{12500}	47.6
	2	122.4	136.3	–		2000{204000}	208{21250}	94.6
	3	181.0	194.9	–		3000{306000}	306{31250}	141.5
	4	239.7	253.5	–		4000{408000}	405{41250}	188.5

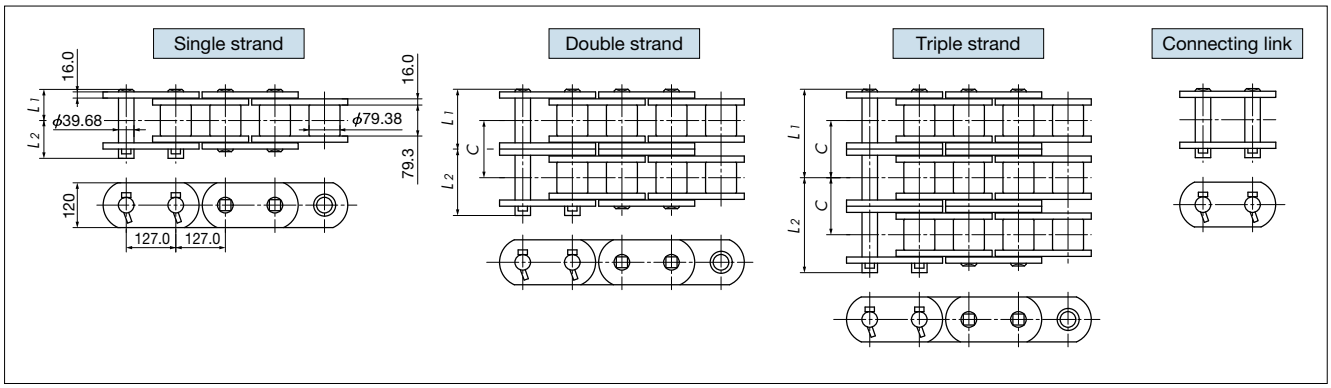
Note: 1. Offset links are not available.
2. Number of links per unit = 30

Model numbering example **RF320 -T -1 -RP + 20L -FTJR**

RF320: Size; -T: Series; -1: Number of strands; -RP: Pin type; 20L: Number of links; -FTJR: End link

Standard Roller Chains and Sprockets

RS Roller Chain RF400-T



Specifications

Size & series	Number of strands	Dimensions L_1	Dimensions L_2	Offset pin length L	Transverse pitch C	Min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
RF400-T	1	79.65	92.65	–	146.8	1730{176000}	188{19200}	83.9
	2	153.05	165.95	–		3450{352000}	320{32640}	166.8
	3	226.45	239.25	–		5180{528000}	471{48000}	249.7
	4	299.8	312.5	–		6900{704000}	621{63360}	332.7

Note: 1. Offset links are not available.
2. Number of links per unit = 24

Model numbering example **RF400 -T -1 -RP + 14L -FTJR**

RF400: Size; -T: Series; -1: Number of strands; -RP: Pin type; 14L: Number of links; -FTJR: End link

Roller Chain Model Numbering

B Series

Chain No. p.19 | p.60 | p.15 | p.188

This page shows the series, number of strands, as well as types of pins and connecting links that can be selected for each size. Also refer to “Ordering RS Roller Chain” on page 19.
Customized items are also available. Please contact a Tsubaki representative.

1. Chains ordered by specifying the number of links, etc.

Size – Series – Number of strands – Pin type + Number of links – End link – Options

◆ Model numbering example

RS10B–1–RP+100L–MCJR

2. Individual parts, such as connecting links and offset links, ordered by quantity

Size – Series – Number of strands – Part name

◆ Model numbering example

RS20B–1–MWJL
RS24B–3–OL

Note: Standard roller chains do not require series selection.

■ Pin type

(column = size; row = number of strands)

	1	2	3
RF06B	RP	RP	RP
RS08B	RP	RP	RP
RS10B	RP	RP	RP
RS12B	RP	RP	RP
RS16B	RP	RP	RP
RS20B	RP	RP	RP
RS24B	RP	RP	RP
RS28B	RP	RP	RP
RS32B	RP	RP	RP
RS40B	RP	RP	RP
RS48B	RP	RP	RP
RS56B	RP	RP	RP

■ Offset link types and part names

(column = size; row = number of strands)

	1	2	3
RF06B	O/2O	O/2O	O/2O
RS08B	O/2O	O/2O	O/2O
RS10B	O/2O	O/2O	O/2O
RS12B	O/2O	O/2O	O/2O
RS16B	O/2O	O/2O	O/2O
RS20B	O/2O	O/2O	O/2O
RS24B	O/2O	O/2O	O/2O
RS28B	O/2O	O/2O	O/2O
RS32B	O/2O	O/2O	O/2O
RS40B	O/2O	O/2O	O/2O
RS48B	O	O	O
RS56B	×	×	×

• Part names: O is offset link; 2O is 2-pitch offset link.

■ End link symbol for connecting links and part names

(column = size; row = number of strands)

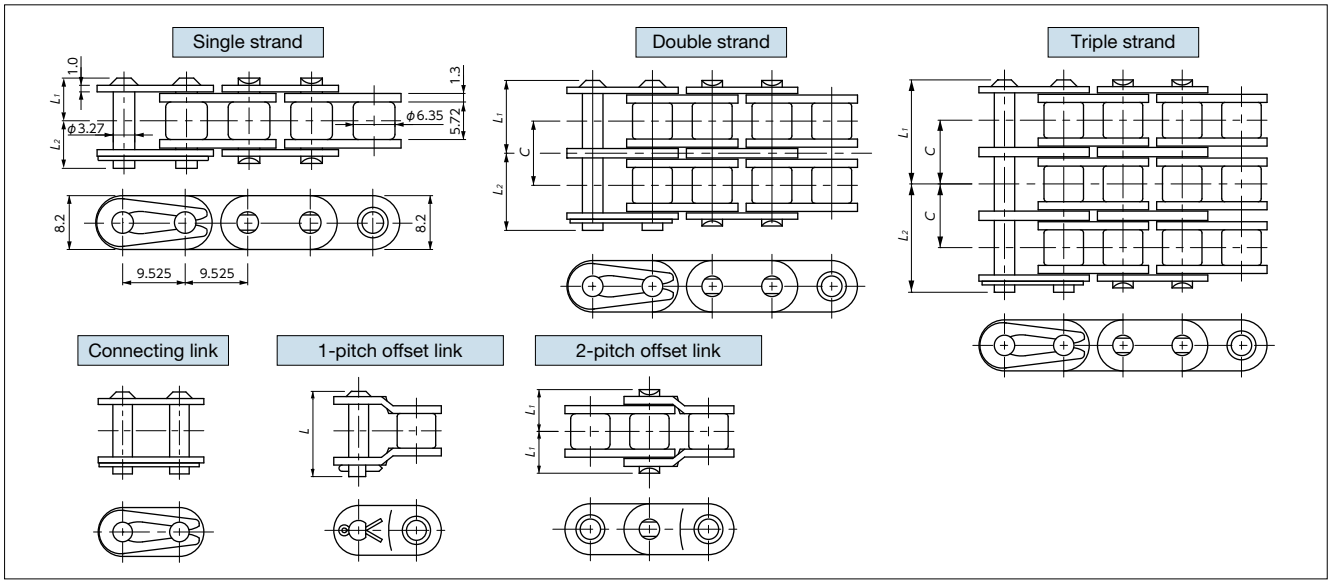
	1	2	3
RF06B	MCJ	MCJ	MCJ
RS08B	MCJ	MCJ	MCJ
RS10B	MCJ	MCJ	MCJ
RS12B	MCJ	MCJ	MCJ
RS16B	MCJ	MCJ	MCJ
RS20B	MWJ	MWJ	MWJ
RS24B	MWJ	MWJ	MWJ
RS28B	MWJ	MWJ	MWJ
RS32B	MWJ	MWJ	MWJ
RS40B	MWJ	MWJ	MWJ
RS48B	MWJ	MWJ	MWJ
RS56B	MWJ	MWJ	MWJ

How to read chart

RP	RP only
MWJ	M-type connecting link with cotter pin only
MCJ	M-type connecting link with clip only
O/2O	Select from offset link or 2-pitch offset link
O	Offset link only
2O	2-pitch offset link only
×	Not available

Standard Roller Chains and Sprockets RS Roller Chain RF06B

B Series
(Identification no. 06B)



■ Specifications

Size	Number of strands	Dimensions L_1	Dimensions L_2	Offset pin length L	Transverse pitch C	Min. tensile strength kN{kgf}	ISO 606 min. tensile strength kN{kgf}	Max. allowable load kN{kgf}
RF06B	**1**	6.1	7.7	14.5	10.24	9.00 {920}	8.90 {910}	1.95 {199}
	2	11.2	12.8	25.9		17.0 {1730}	16.9 {1720}	3.32 {339}
	3	16.4	17.9	36.1		24.9 {2540}	24.9 {2540}	4.88 {498}

Note: 1. Plates are flat. 
Multi-strand chains have one middle plate. (The thickness of the middle plate differs from the outer plate and the inner plate due to the C dimension.)
2. Maximum allowable load when using connecting links is 80% of the above.
Maximum allowable load when using one-pitch and two-pitch offset links is 60% of the above.
3. Number of links per unit = 320. Items in bold are stocked in units.

■ RF06B Maximum kilowatt ratings table (kW ratings for single strand chain)

Lubrication / Small sprocket no. of teeth	Small sprocket max rpm																								
	50	100	300	500	700	900	1200	1500	1800	2100	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	9000	10000
	AI				AII			B												C					
9	0.07	0.13	0.34	0.54	0.72	0.91	1.18	1.44	1.70	1.62	1.25	0.95	0.75	0.62	0.52	0.44	0.38	0.34	0.30	0.27	0.24	0.22	0.20	0.18	0.16
10	0.08	0.14	0.38	0.60	0.81	1.02	1.32	1.61	1.90	1.90	1.46	1.11	0.88	0.72	0.61	0.52	0.45	0.39	0.35	0.31	0.28	0.26	0.23	0.21	0.18
11	0.08	0.16	0.42	0.66	0.90	1.13	1.46	1.79	2.11	2.19	1.69	1.28	1.02	0.83	0.70	0.60	0.52	0.45	0.40	0.36	0.33	0.30	0.27	0.25	0.21
12	0.09	0.17	0.46	0.73	0.99	1.24	1.61	1.96	2.31	2.50	1.92	1.46	1.16	0.95	0.80	0.68	0.59	0.52	0.46	0.41	0.37	0.34	0.31	0.28	0.24
13	0.10	0.19	0.50	0.80	1.08	1.35	1.75	2.14	2.52	2.82	2.17	1.65	1.31	1.07	0.90	0.77	0.67	0.58	0.52	0.46	0.42	0.38	0.35	0.32	0.27
14	0.11	0.20	0.54	0.86	1.17	1.46	1.90	2.32	2.73	3.14	2.43	1.84	1.46	1.20	1.00	0.86	0.74	0.65	0.58	0.52	0.47	0.42	0.39	0.36	0.30
15	0.12	0.22	0.59	0.93	1.26	1.58	2.04	2.50	2.94	3.38	2.69	2.05	1.62	1.33	1.11	0.95	0.82	0.72	0.64	0.57	0.52	0.47	0.43	0.39	0.34
16	0.13	0.23	0.63	1.00	1.35	1.69	2.19	2.68	3.16	3.63	2.96	2.25	1.79	1.46	1.23	1.05	0.91	0.80	0.71	0.63	0.57	0.52	0.47	0.43	0.37
17	0.13	0.25	0.67	1.06	1.44	1.81	2.34	2.86	3.37	3.87	3.25	2.47	1.96	1.60	1.34	1.15	0.99	0.87	0.77	0.69	0.62	0.57	0.52	0.48	0.41
18	0.14	0.27	0.71	1.13	1.53	1.92	2.49	3.04	3.58	4.12	3.54	2.69	2.13	1.75	1.46	1.25	1.08	0.95	0.84	0.75	0.68	0.62	0.56	0.52	0.44
19	0.15	0.28	0.76	1.20	1.62	2.04	2.64	3.22	3.80	4.36	3.83	2.92	2.31	1.89	1.59	1.36	1.18	1.03	0.91	0.82	0.74	0.67	0.61	0.56	0.48
20	0.16	0.30	0.80	1.27	1.72	2.15	2.79	3.41	4.02	4.61	4.14	3.15	2.50	2.05	1.71	1.46	1.27	1.11	0.99	0.88	0.80	0.72	0.66	0.61	0.52
21	0.17	0.31	0.84	1.34	1.81	2.27	2.94	3.59	4.23	4.86	4.46	3.39	2.69	2.20	1.84	1.58	1.37	1.20	1.06	0.95	0.86	0.78	0.71	0.65	0.56
22	0.18	0.33	0.89	1.41	1.90	2.39	3.09	3.78	4.45	5.11	4.78	3.63	2.88	2.36	1.98	1.69	1.46	1.28	1.14	1.02	0.92	0.83	0.76	0.70	0.60
23	0.19	0.35	0.93	1.47	2.00	2.50	3.24	3.96	4.67	5.36	5.11	3.88	3.08	2.52	2.11	1.81	1.56	1.37	1.22	1.09	0.98	0.89	0.81	0.75	0.64
24	0.19	0.36	0.97	1.54	2.09	2.62	3.39	4.15	4.89	5.62	5.44	4.14	3.29	2.69	2.25	1.92	1.67	1.46	1.30	1.16	1.05	0.95	0.87	0.80	0.68
25	0.20	0.38	1.02	1.61	2.18	2.74	3.55	4.34	5.11	5.87	5.79	4.40	3.49	2.86	2.40	2.05	1.77	1.56	1.38	1.24	1.11	1.01	0.92	0.85	0.72
26	0.21	0.40	1.06	1.68	2.28	2.86	3.70	4.52	5.33	6.12	6.14	4.67	3.71	3.03	2.54	2.17	1.88	1.65	1.46	1.31	1.18	1.07	0.98	0.90	0.77
28	0.23	0.43	1.15	1.82	2.47	3.09	4.01	4.90	5.78	6.63	6.86	5.22	4.14	3.39	2.84	2.43	2.10	1.84	1.64	1.46	1.32	1.20	1.09	1.00	0.86
30	0.25	0.46	1.24	1.96	2.66	3.33	4.32	5.28	6.22	7.15	7.61	5.79	4.59	3.76	3.15	2.69	2.33	2.05	1.81	1.62	1.46	1.33	1.21	1.11	0.95
32	0.27	0.49	1.33	2.11	2.85	3.58	4.63	5.66	6.67	7.66	8.38	6.38	5.06	4.14	3.47	2.96	2.57	2.25	2.00	1.79	1.61	1.46	1.34	1.23	1.05
35	0.29	0.55	1.47	2.32	3.14	3.94	5.10	6.24	7.35	8.44	9.59	7.29	5.79	4.74	3.97	3.39	2.94	2.58	2.29	2.05	1.84	1.67	1.53	1.40	
40	0.34	0.63	1.69	2.68	3.63	4.55	5.89	7.20	8.49	9.75	11.4	8.91	7.07	5.79	4.85	4.14	3.59	3.15	2.79	2.50	2.25	2.05			
45	0.38	0.72	1.92	3.04	4.12	5.17	6.69	8.18	9.64	11.1	13.0	10.6	8.44	6.91	5.79	4.94	4.28	3.76	3.33	2.98					

Note: 1. kW ratings when using offset links are 80% of the above.
2. Please contact a Tsubaki representative prior to use of kW ratings in the shaded area of the table.

■ Multi-strand factors

Number of chain strands	Two strands	Three strands
Multi-strand factor	1.7	2.5

■ Lubrication systems and methods

Lubrication system	AI	AII	B	C	Details on p. 222
Method	Manual lubrication	Drip lubrication	Oil bath or slinger disc lubrication	Forced pump lubrication	

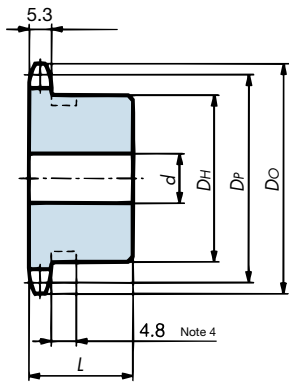
Model numbering example **RF06B -1 -RP + 310L -MCJR**

- RF06B: Size
- -1: Number of strands
- -RP: Pin type
- 310L: Number of links
- -MCJR: End link

Note: Standard roller chains do not require series selection.

RS Sprocket RF06B

B Series



Mechanically machined 1B type

No. of teeth	Outer dia. D_O	Pitch circle dia. D_P	1B type				Approx. mass kg	Construction/ material	No. of teeth
			Bore dia. d		Hub				
			Pilot bore	Max.	Dia. D_H	Length L			
9	30	27.85	8	11	21	20	0.06	*	**9**
10	33	30.82	8	12	24	20	0.08	*	**10**
11	36	33.81	8	13	26	20	0.09	*	**11**
12	39	36.80	8	16	30	20	0.12	*	**12**
13	42	39.80	9.53	18	32	20	0.12	* Note 4	**13**
14	45	42.80	9.53	16.5	30	20	0.12		**14**
15	48	45.81	9.53	19	35	20	0.16		**15**
16	51	48.82	9.53	20	37	20	0.19		**16**
17	54	51.84	9.53	24	41	20	0.22		**17**
18	57	54.85	9.53	24.5	44	20	0.25		**18**
19	60	57.87	9.53	28.5	47	20	0.28		**19**
20	63	60.89	9.53	30	50	20	0.32		**20**
21	66	63.91	9.53	32	53	20	0.36		**21**
22	69	66.93	9.53	32	53	20	0.37		**22**
23	72	69.95	9.53	32	53	20	0.40		**23**
24	75	72.97	9.53	32	53	22	0.43		**24**
25	78	76.00	12.7	32	53	22	0.44		**25**
26	81	79.02	12.7	32	53	22	0.45		**26**
27	84	82.05	12.7	32	53	22	0.46		**27**
28	87	85.07	12.7	32	53	22	0.48		**28**
30	93	91.12	12.7	32	53	22	0.51		**30**
32	99	97.18	12.7	32	53	22	0.54		**32**
34	105	103.23	12.7	32	53	22	0.57		**34**
35	108	106.26	12.7	32	53	22	0.59		**35**
36	111	109.29	12.7	32	53	22	0.61		**36**
38	117	115.34	13	42	63	25	0.82		**38**
40	123	121.40	13	42	63	25	0.85		**40**
42	129	127.46	13	42	63	25	0.91		**42**
45	138	136.55	13	42	63	25	0.95		**45**
48	148	145.64	13	42	63	25	1.0		**48**
50	154	151.69	13	42	63	25	1.1		**50**
54	167	163.82	13	42	63	25	1.2		**54**
60	185	182.00	13	42	63	25	1.3		**60**

Mechanically machined: machine-structural carbon steel

Note: 1. Maximum bore diameters shown are standard figures. Determine bore diameter and key bearing pressure based on general mechanical design.
2. Models in shaded areas have hardened teeth.
3. Models with unhardened teeth as standard can be manufactured with hardened teeth.
4. Models marked with an * above have a groove around the periphery of the hub. Groove outer diameter is 16 for 9T, 18 for 10T, 22 for 11T, 24 for 12T, and 28 for 13T.
5. Made-to-order.

Model numbering example

RF06B -1 B 42T

- RF06B: Size
- -1: Number of strands
- B: Hub type
- 42T: Number of teeth

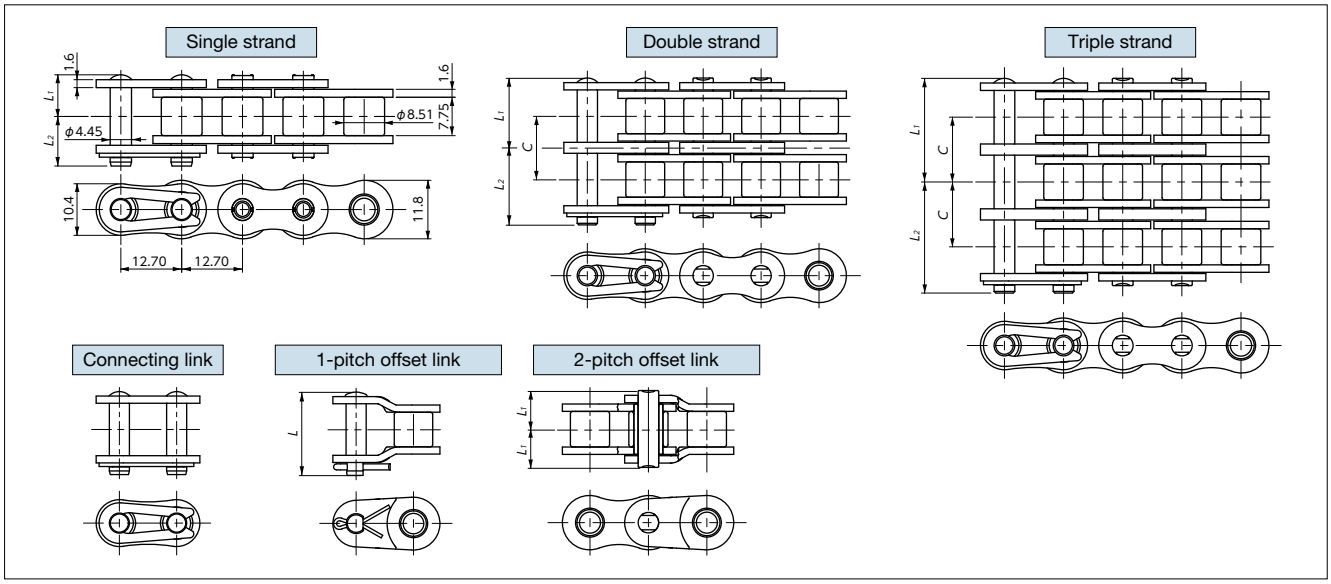
Hardened teeth model numbering example

RF06B -1 B 9T Q

- RF06B: Size
- -1: Number of strands
- B: Hub type
- 9T: Number of teeth
- Q: Hardened teeth

Standard Roller Chains and Sprockets RS Roller Chain RS08B

B Series
(Identification no. 08B)



■ Specifications

Size	Number of strands	Dimensions L_1	Dimensions L_2	Offset pin length L	Transverse pitch C	Min. tensile strength kN{kgf}	ISO 606 min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
RS08B	**1**	8.4	10.0	18.6	13.92	19.0 {1930}	17.8 {1820}	3.80 {387}	0.70
	2	15.3	16.9	34.5		32.0 {3260}	31.1 {3170}	6.46 {659}	1.35
	3	22.25	23.85	48.4		47.5 {4840}	44.5 {4540}	9.50 {969}	2.00

Note: 1. Specially shaped pins and a center-sink rivet on chains allow for easy chain cutting without grinding the rivet.
Multi-strand chains have one middle plate. (The thickness of the middle plate differs from the outer plate and the inner plate due to the C dimension.)
2. Maximum allowable load when using one-pitch and two-pitch offset links is 60% of the above.
3. Number of links per unit = 240. Items in bold are stocked in units.

■ RS08B Maximum kilowatt ratings table (kW ratings for single strand chain)

Lubrication / Small sprocket no. of teeth	Small sprocket max rpm																								
	10	25	50	100	200	300	400	500	700	900	1000	1200	1400	1600	1800	2100	2400	2700	3000	3500	4000	5000	6000	7000	8000
	AI						AII			B												C			
9	0.05	0.12	0.22	0.41	0.76	1.10	1.42	1.74	2.35	2.95	3.24	3.75	3.75	3.07	2.58	2.04	1.67	1.40	1.20	0.95	0.78	0.56	0.42	0.34	0.27
10	0.06	0.13	0.25	0.46	0.85	1.23	1.59	1.95	2.64	3.31	3.63	4.28	4.40	3.60	3.02	2.39	1.96	1.64	1.40	1.11	0.91	0.65	0.50	0.39	0.32
11	0.06	0.15	0.27	0.51	0.95	1.36	1.77	2.16	2.92	3.66	4.03	4.75	5.07	4.15	3.48	2.76	2.26	1.89	1.62	1.28	1.05	0.75	0.57	0.45	0.37
12	0.07	0.16	0.30	0.56	1.04	1.50	1.94	2.37	3.21	4.03	4.43	5.22	5.67	4.73	3.97	3.15	2.58	2.16	1.84	1.46	1.20	0.86	0.65	0.52	0.42
13	0.08	0.17	0.33	0.61	1.13	1.63	2.12	2.59	3.50	4.39	4.83	5.69	6.18	5.34	4.47	3.55	2.90	2.43	2.08	1.65	1.35	0.97	0.73	0.58	0.48
14	0.08	0.19	0.35	0.66	1.23	1.77	2.29	2.80	3.79	4.75	5.23	6.16	6.70	5.96	5.00	3.97	3.25	2.72	2.32	1.84	1.51	1.08	0.82	0.65	0.53
15	0.09	0.20	0.38	0.71	1.32	1.91	2.47	3.02	4.09	5.12	5.63	6.64	7.21	6.61	5.54	4.40	3.60	3.02	2.58	2.04	1.67	1.20	0.91	0.72	0.59
16	0.10	0.22	0.41	0.76	1.42	2.04	2.65	3.24	4.38	5.49	6.04	7.12	7.74	7.28	6.10	4.84	3.97	3.32	2.84	2.25	1.84	1.32	1.00	0.80	0.65
17	0.10	0.23	0.43	0.81	1.51	2.18	2.83	3.46	4.68	5.86	6.45	7.60	8.26	7.98	6.69	5.31	4.34	3.64	3.11	2.47	2.02	1.44	1.10	0.87	0.71
18	0.11	0.25	0.46	0.86	1.61	2.32	3.01	3.68	4.97	6.24	6.86	8.08	8.79	8.69	7.28	5.78	4.73	3.97	3.39	2.69	2.20	1.57	1.20	0.95	
19	0.12	0.26	0.49	0.92	1.71	2.46	3.19	3.90	5.27	6.61	7.27	8.57	9.43	9.43	7.90	6.27	5.13	4.30	3.67	2.91	2.38	1.71	1.30	1.03	
20	0.12	0.28	0.52	0.97	1.81	2.60	3.37	4.12	5.57	6.99	7.68	9.05	10.2	10.2	8.53	6.77	5.54	4.64	3.97	3.15	2.58	1.84	1.40	1.11	
21	0.13	0.29	0.55	1.02	1.90	2.74	3.55	4.34	5.88	7.37	8.10	9.54	11.0	11.0	9.18	7.28	5.96	5.00	4.27	3.39	2.77	1.98	1.51	1.20	
22	0.13	0.31	0.57	1.07	2.00	2.88	3.73	4.56	6.18	7.75	8.52	10.0	11.5	11.7	9.84	7.81	6.39	5.36	4.57	3.63	2.97	2.13	1.62	1.28	
23	0.14	0.32	0.60	1.13	2.10	3.02	3.92	4.79	6.48	8.13	8.94	10.5	12.1	12.6	10.5	8.35	6.83	5.73	4.89	3.88	3.18	2.27	1.73	1.37	
24	0.15	0.34	0.63	1.18	2.20	3.17	4.10	5.01	6.79	8.51	9.36	11.0	12.7	13.4	11.2	8.90	7.28	6.10	5.21	4.14	3.39	2.42	1.84	1.46	
25	0.15	0.35	0.66	1.23	2.30	3.31	4.29	5.24	7.09	8.89	9.78	11.5	13.2	14.1	11.9	9.46	7.74	6.49	5.54	4.40	3.60	2.58	1.96		
26	0.16	0.37	0.69	1.28	2.40	3.45	4.47	5.47	7.40	9.28	10.2	12.0	13.8	14.7	12.6	10.0	8.21	6.88	5.88	4.66	3.82	2.73	2.08		
28	0.18	0.40	0.75	1.39	2.60	3.74	4.84	5.92	8.02	10.1	11.1	13.0	15.0	16.0	14.1	11.2	9.18	7.69	6.57	5.21	4.27	3.05	2.32		
30	0.19	0.43	0.80	1.50	2.80	4.03	5.22	6.38	8.64	10.8	11.9	14.0	16.1	17.2	15.7	12.4	10.2	8.53	7.28	5.78	4.73	3.39	2.58		
32	0.20	0.46	0.86	1.61	3.00	4.32	5.60	6.84	9.26	11.6	12.8	15.0	17.3	18.4	17.3	13.7	11.2	9.40	8.03	6.37	5.21	3.73	0.86		
35	0.22	0.51	0.95	1.77	3.30	4.76	6.17	7.54	10.2	12.8	14.1	16.6	19.0	20.3	19.8	15.7	12.8	10.8	9.18	7.28	5.96	4.27			
40	0.26	0.59	1.10	2.05	3.82	5.50	7.12	8.71	11.8	14.8	16.2	19.1	22.0	24.1	24.1	19.2	15.7	13.1	11.2	8.90	7.28	5.21			
45	0.29	0.67	1.24	2.32	4.33	6.24	8.09	9.89	13.4	16.8	18.4	21.7	25.0	28.2	28.8	22.9	18.7	15.7	13.4	10.6	8.69				

Note: 1. kW ratings when using offset links are 80% of the above.
2. Please contact a Tsubaki representative prior to use of kW ratings in the shaded area of the table.

■ Multi-strand factors

Number of chain strands	Two strands	Three strands
Multi-strand factor	1.7	2.5

■ Lubrication systems and methods

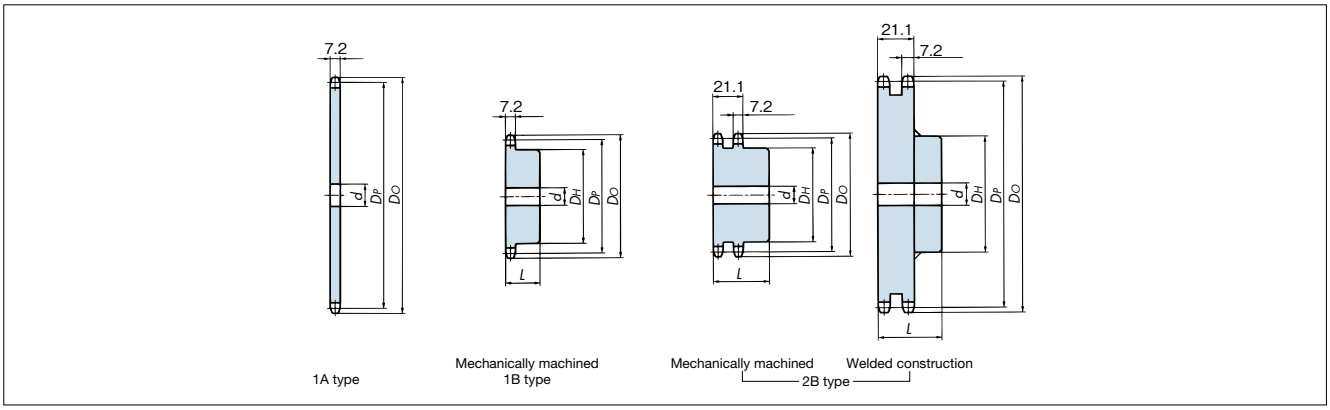
Lubrication system	AI	AII	B	C	Details on p. 222
Method	Manual lubrication	Drip lubrication	Oil bath or slinger disc lubrication	Forced pump lubrication	

Model numbering example **RS08B -1 -RP + 230L -MCJR**

Size | Number of strands | Pin type | Number of links | End link

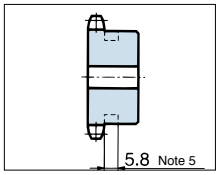
Note: Standard roller chains do not require series selection.

RS Sprocket RS08B



Number of teeth	Note 4 Outer dia. D_O	Pitch circle dia. D_P	1A type Pilot bore d	1A type Approx. mass kg	1A type Construction/ material	1B type Bore dia. d Pilot bore	1B type Bore dia. d Max.	1B type Hub Dia. D_H	1B type Hub Length L	1B type Approx. mass kg	1B type Construction/ material	2B type Bore dia. d Pilot bore	2B type Bore dia. d Max.	2B type Hub Dia. D_H	2B type Hub Length L	2B type Approx. mass kg	2B type Construction/ material	Number of teeth
9	41	37.13			Mechanically machined: structural carbon steel	9.53	15	28	22	0.12	Mechanically machined: machine-structural carbon steel *						Mechanically machined: machine-structural carbon steel	9
10	45	41.10				9.53	16.5	32	22	0.16	*							10
11	49	45.08				9.53	18	36	22	0.20	*							11
12	53	49.07	16	0.10		9.53	22	40	22	0.24	* Note 5	9.53	18	32	35	0.34		12
13	57	53.07	16	0.11		9.53	20	37	22	0.24		12.7	20	37	35	0.39		13
14	61	57.07	16	0.13		9.53	24	42	22	0.29		12.7	24	42	35	0.47		14
15	65	61.08	16	0.14		9.53	28.5	46	22	0.34		12.7	29	46	35	0.56		15
16	69	65.10	16	0.16		12.7	30	50	22	0.39		12.7	30	50	35	0.65		16
17	73	69.12	16	0.19		12.7	32	54	22	0.45		12.7	32	54	35	0.75		17
18	77	73.14	16	0.21		12.7	35	57	22	0.51		12.7	35	57	35	0.85		18
19	81	77.16	16	0.24		12.7	39.5	62	22	0.59		12.7	40	62	35	0.98		19
20	85	81.18	16	0.26		12.7	45.5	67	25	0.76		12.7	46	67	40	1.3		20
21	89	85.21	16	0.29		12.7	45.5	71	25	0.85		12.7	47	71	40	1.4		21
22	93	89.24	16	0.32		12.7	50	75	25	0.95		12.7	50	75	40	1.6		22
23	97	93.27	16	0.35		12.7	50	77	25	1.0		12.7	50	77	40	1.7		23
24	102	97.30	16	0.38		12.7	42	63	25	0.84		12.7	55	83	40	1.9		24
25	106	101.33	16	0.41		12.7	42	63	25	0.88		12.7	59	87	40	2.1		25
26	110	105.36	16	0.45		12.7	42	63	25	0.92		12.7	62	91	40	2.3		26
27	114	109.40	16	0.52		12.7	42	63	25	0.96		12.7	65	95	40	2.4		27
28	118	113.43	16	0.56		12.7	42	63	25	1.00		12.7	67	99	40	2.6		28
30	126	121.50	16	0.60		12.7	42	63	25	1.10		12.7	73	106	40	3.0		30
32	134	129.57	16	0.68		16	45	68	28	1.30		12.7	78	115	50	4.3		32
34	142	137.64	16	0.77		16	45	68	28	1.30		12.7	84	124	50	5.0		34
35	146	141.68	16	0.82		16	45	68	28	1.40		16	63	93	50	3.9		35
36	150	145.72	16	0.87		16	45	68	28	1.40		16	63	93	50	4.0		36
38	158	153.79	16	0.96		16	45	68	28	1.5		16	63	93	50	4.3		38
40	166	161.87	16	1.1		16	45	68	28	1.6		16	63	93	50	4.7		40
42	174	169.94	18	1.2		18	48	73	32	2.0		16	63	93	50	5.0		42
45	186	182.06	18	1.4		18	48	73	32	2.1		18	63	93	50	5.5		45
48	198	194.18	18	1.5		18	48	73	32	2.3		18	63	93	50	6.1		48
50	206	202.26	18	1.7		18	48	73	32	2.5		18	63	93	50	6.7	Welded construction Note 6	50
54	223	218.42	18	2.0		18	48	73	32	2.8		18	63	93	50	7.4		54
60	247	242.66	18	2.4		18	48	73	32	3.2		18	63	93	50	8.9		60

Note: 1. Maximum bore diameters shown are standard figures. Determine bore diameter and key bearing pressure based on general mechanical design.
2. Models in shaded areas have hardened teeth.
3. Models with unhardened teeth as standard can be manufactured with hardened teeth.
4. The outer diameters shown above are for 1B. The outer diameters for other models may differ.
5. Models marked with an * above have a groove around the periphery of the hub (shown in the diagram on the right). Groove outer diameter is 21 for 9T, 25 for 10T, 30 for 11T, and 32 for 12T.
6. Welded construction: Carbon steel for machine structural use (teeth and hub).
7. Made-to-order.



Model numbering example

RS08B -1 B 9T

- RS08B: Size
- -1: Number of strands
- B: Hub type
- 9T: Number of teeth

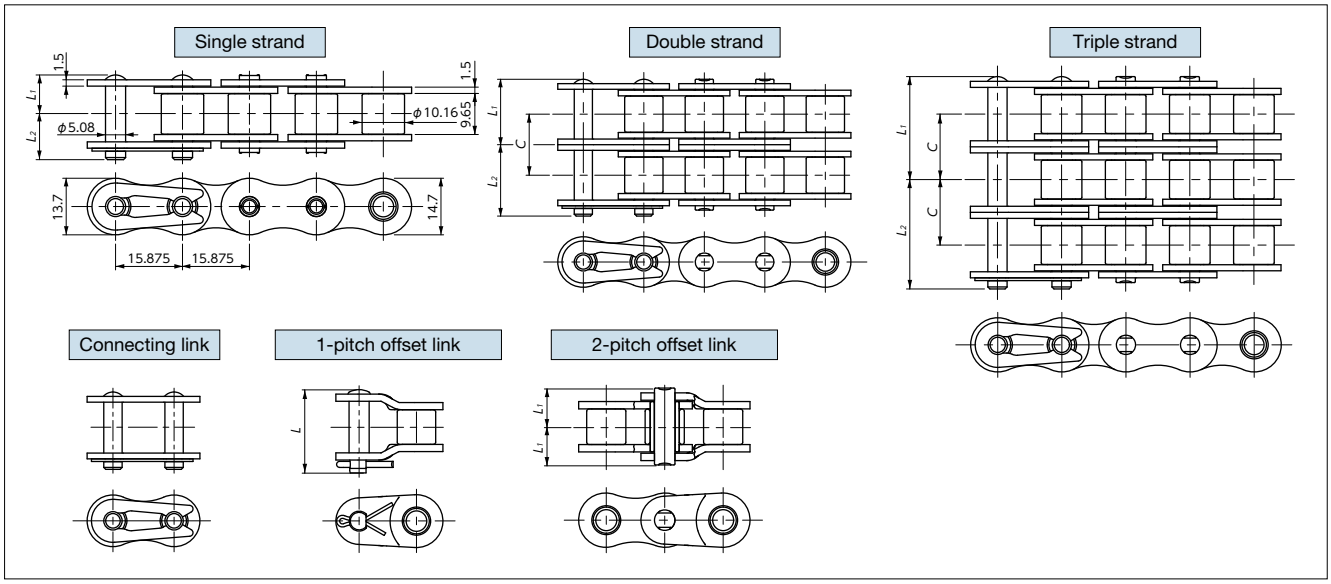
Hardened teeth model numbering example

RS08B -1 B 9T Q

- RS08B: Size
- -1: Number of strands
- B: Hub type
- 9T: Number of teeth
- Q: Hardened teeth

Standard Roller Chains and Sprockets RS Roller Chain RS10B

B Series
(Identification no. 10B)



■ Specifications

Size	Number of strands	Dimensions L_1	Dimensions L_2	Offset pin length L	Transverse pitch C	Min. tensile strength kN{kgf}	ISO 606 min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
RS10B	**1**	9.55	11.25	20.8	16.59	23.0 {2340}	22.2 {2260}	4.52 {461}	0.95
	2	17.85	19.55	39.4		44.5 {4540}	44.5 {4540}	7.68 {783}	1.85
	3	26.15	27.85	56.0		66.8 {6810}	66.7 {6800}	11.3 {1150}	2.80

Note: 1. Specially shaped pins and a center-sink rivet on chains allow for easy chain cutting without grinding the rivet.
2. Maximum allowable load when using one-pitch and two-pitch offset links is 60% of the above.
3. Number of links per unit = 192. Items in bold are stocked in units.

■ RS10B Maximum kilowatt ratings table (kW ratings for single strand chain)

Lubrication / Small sprocket no. of teeth	Small sprocket max rpm																								
	10	25	50	100	200	300	400	500	700	900	1000	1200	1400	1600	1800	2100	2400	2700	3000	3500	4000	4500	5000	5500	6000
	AI					AII			B											C					
9	0.08	0.17	0.33	0.61	1.13	1.63	2.11	2.58	3.50	4.39	4.82	5.66	4.49	3.67	3.08	2.44	2.00	1.68	1.43	1.14	0.93	0.78	0.67	0.58	0.51
10	0.09	0.20	0.36	0.68	1.27	1.83	2.37	2.90	3.92	4.92	5.40	6.37	5.26	4.30	3.61	2.86	2.34	1.96	1.68	1.33	1.09	0.91	0.78	0.68	0.59
11	0.09	0.22	0.40	0.75	1.41	2.03	2.63	3.21	4.35	5.45	5.99	7.06	6.07	4.96	4.16	3.30	2.70	2.26	1.93	1.53	1.26	1.05	0.90	0.78	0.68
12	0.10	0.24	0.44	0.83	1.55	2.23	2.88	3.53	4.77	5.99	6.58	7.75	6.91	5.66	4.74	3.76	3.08	2.58	2.20	1.75	1.43	1.20	1.02	0.89	0.78
13	0.11	0.26	0.48	0.90	1.69	2.43	3.15	3.84	5.20	6.53	7.17	8.45	7.79	6.38	5.34	4.24	3.47	2.91	2.48	1.97	1.61	1.35	1.15	1.00	
14	0.12	0.28	0.52	0.98	1.83	2.63	3.41	4.17	5.64	7.07	7.77	9.16	8.71	7.13	5.97	4.74	3.88	3.25	2.78	2.20	1.80	1.51	1.29	1.12	
15	0.13	0.30	0.56	1.05	1.97	2.83	3.67	4.49	6.07	7.62	8.37	9.87	9.66	7.90	6.62	5.26	4.30	3.61	3.08	2.44	2.00	1.68	1.43	1.24	
16	0.14	0.32	0.61	1.13	2.11	3.04	3.94	4.81	6.51	8.17	8.98	10.6	10.6	8.71	7.30	5.79	4.74	3.97	3.39	2.69	2.20	1.85	1.58	1.37	
17	0.15	0.35	0.65	1.21	2.25	3.24	4.20	5.14	6.95	8.72	9.59	11.3	11.7	9.54	7.99	6.34	5.19	4.35	3.71	2.95	2.41	2.02	1.73	1.50	
18	0.16	0.37	0.69	1.28	2.40	3.45	4.47	5.46	7.40	9.27	10.2	12.0	12.7	10.4	8.71	6.91	5.66	4.74	4.05	3.21	2.63	2.20	1.88		
19	0.17	0.39	0.73	1.36	2.54	3.66	4.74	5.79	7.84	9.83	10.8	12.7	13.8	11.3	9.44	7.49	6.13	5.14	4.39	3.48	2.85	2.39	2.04		
20	0.18	0.41	0.77	1.44	2.68	3.87	5.01	6.12	8.29	10.4	11.4	13.5	14.9	12.2	10.2	8.09	6.62	5.55	4.74	3.76	3.08	2.58	2.20		
21	0.19	0.44	0.81	1.52	2.83	4.08	5.28	6.45	8.74	11.0	12.0	14.2	16.0	13.1	11.0	8.71	7.13	5.97	5.10	4.05	3.31	2.78	2.37		
22	0.20	0.46	0.85	1.59	2.98	4.29	5.55	6.79	9.19	11.5	12.7	14.9	17.1	14.0	11.8	9.34	7.64	6.41	5.47	4.34	3.55	2.98	2.54		
23	0.21	0.48	0.90	1.67	3.12	4.50	5.82	7.12	9.64	12.1	13.3	15.7	18.0	15.0	12.6	9.98	8.17	6.85	5.85	4.64	3.80	3.18			
24	0.22	0.50	0.94	1.75	3.27	4.71	6.10	7.46	10.1	12.7	13.9	16.4	18.8	16.0	13.4	10.6	8.71	7.30	6.23	4.94	4.05	3.39			
25	0.23	0.53	0.98	1.83	3.42	4.92	6.37	7.79	10.5	13.2	14.5	17.1	19.7	17.0	14.3	11.3	9.26	7.76	6.62	5.26	4.30	3.61			
26	0.24	0.55	1.02	1.91	3.56	5.13	6.65	8.13	11.0	13.8	15.2	17.9	20.5	18.0	15.1	12.0	9.82	8.23	7.03	5.58	4.56	3.82			
28	0.26	0.59	1.11	2.07	3.86	5.56	7.20	8.81	11.9	14.9	16.4	19.4	22.2	20.2	16.9	13.4	11.0	9.20	7.85	6.23	5.10	4.27			
30	0.28	0.64	1.19	2.23	4.16	5.99	7.76	9.49	12.8	16.1	17.7	20.9	24.0	22.4	18.7	14.9	12.2	10.2	8.71	6.91	5.66				
32	0.30	0.69	1.28	2.39	4.46	6.42	8.32	10.2	13.8	17.3	19.0	22.4	25.7	24.6	20.6	16.4	13.4	11.2	9.59	7.61	6.23				
35	0.33	0.76	1.41	2.63	4.91	7.08	9.17	11.2	15.2	19.0	20.9	24.6	28.3	28.2	23.6	18.7	15.3	12.9	11.0	8.71	6.92				
40	0.38	0.87	1.63	3.04	5.67	8.17	10.6	12.9	17.5	22.0	24.2	28.5	32.7	34.4	28.8	22.9	18.7	15.7	13.4	10.6					
45	0.43	0.99	1.85	3.45	6.44	9.28	12.0	14.7	19.9	24.9	27.4	32.3	37.1	41.1	34.4	27.3	22.4	18.7	16.0						

Note: 1. kW ratings when using offset links are 80% of the above.
2. Please contact a Tsubaki representative prior to use of kW ratings in the shaded area of the table.

■ Multi-strand factors

Number of chain strands	Two strands	Three strands
Multi-strand factor	1.7	2.5

■ Lubrication systems and methods

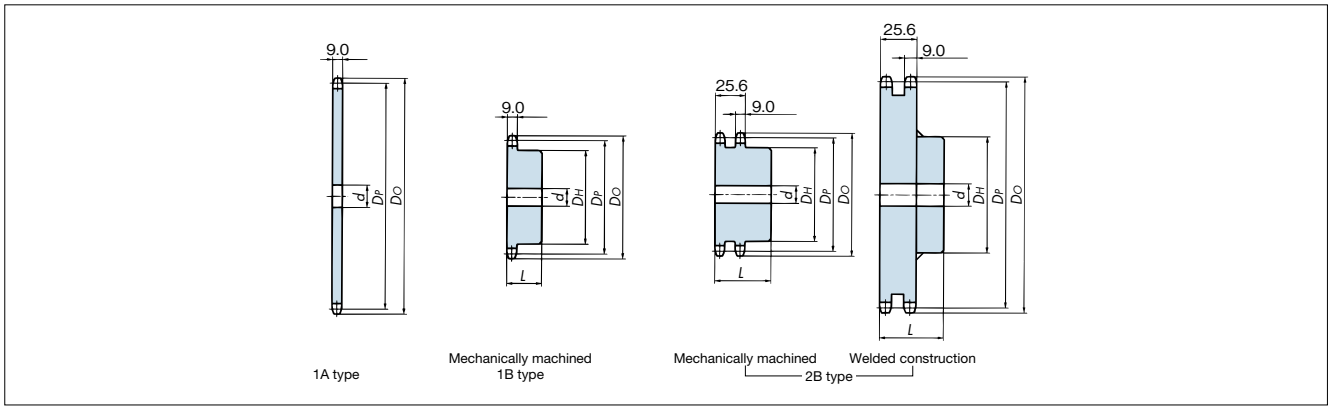
Lubrication system	AI	AII	B	C	Details on p. 222
Method	Manual lubrication	Drip lubrication	Oil bath or slinger disc lubrication	Forced pump lubrication	

Model numbering example **RS10B -1 -RP + 182L -MCJR**

- RS10B: Size
- -1: Number of strands
- -RP: Pin type
- 182L: Number of links
- -MCJR: End link

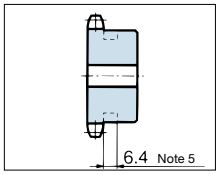
Note: Standard roller chains do not require series selection.

RS Sprocket RS10B



Number of teeth	Note 4 Outer dia. D_O	Pitch circle dia. D_P	1A type Pilot bore d	1A type Approx. mass kg	1A type Construction/material	1B type Bore dia. d Pilot bore	1B type Bore dia. d Max.	1B type Hub Dia. D_H	1B type Hub Length L	1B type Approx. mass kg	1B type Construction/material	2B type Bore dia. d Pilot bore	2B type Bore dia. d Max.	2B type Hub Dia. D_H	2B type Hub Length L	2B type Approx. mass kg	2B type Construction/material	Number of teeth
9	52	46.42			Mechanically machined: structural carbon steel	9.53	19	34	25	0.20	*						Mechanically machined: machine-structural carbon steel	**9**
10	57	51.37				9.53	22	40	25	0.27	*							**10**
11	62	56.35				12.7	25	45	25	0.33	*							**11**
12	67	61.34	18	0.18		12.7	32	50	25	0.41	*	12.7	24	42	40	0.6		**12**
13	72	66.33	18	0.22		12.7	32	51	25	0.46	* Note 5	12.7	28.5	47	40	0.7		**13**
14	77	71.34	18	0.24		12.7	32	52	25	0.52		12.7	32	52	40	0.9		**14**
15	82	76.35	18	0.27		12.7	35	57	25	0.62		12.7	35	57	40	1.0		**15**
16	87	81.37	18	0.31		12.7	40	62	25	0.72		12.7	40	62	45	1.3		**16**
17	92	86.39	18	0.35		12.7	45.5	67	25	0.83		12.7	47.5	67	45	1.5		**17**
18	97	91.42	18	0.40		12.7	47.5	72	28	1.0		12.7	47.5	72	45	1.7		**18**
19	103	96.45	18	0.44		12.7	47.5	73	28	1.1		15.88	52	79	45	2.0		**19**
20	108	101.48	18	0.49		12.7	47.5	73	28	1.2		15.88	55	82	45	2.2		**20**
21	113	106.51	18	0.54		15.88	47.5	73	28	1.2		15.88	60	89	45	2.5		**21**
22	118	111.55	18	0.60		15.88	47.5	73	28	1.3		15.88	63	92	50	2.9		**22**
23	123	116.59	18	0.66		15.88	47.5	73	28	1.3		15.88	67	99	50	3.3		**23**
24	128	121.62	18	0.71		15.88	47.5	73	28	1.4		15.88	70	102	50	3.6		**24**
25	133	126.66	18	0.78		15.88	47.5	73	28	1.5		15.88	75	109	50	4.0		**25**
26	138	131.70	18	0.84		18	48	73	28	1.5		18	63	93	50	3.7		**26**
27	143	136.74	18	0.91		18	48	73	28	1.5		18	63	93	50	3.9		**27**
28	148	141.79	18	0.98		18	48	73	28	1.6		18	63	93	50	4.1		**28**
30	158	151.87	18	1.1		18	48	73	28	1.8		18	63	93	50	4.6		**30**
32	168	161.96	18	1.3		18	48	73	28	1.9		18	63	93	50	5.1		**32**
34	178	172.05	18	1.4		18	48	73	28	2.1		18	63	93	50	5.6		**34**
35	183	177.10	18	1.5		18	48	73	28	2.2		18	63	93	50	5.9		**35**
36	188	182.15	23	1.6		23	55	83	35	2.7		18	63	93	50	6.2		**36**
38	198	192.24	23	1.8		23	55	83	35	2.9		18	63	93	50	6.8	Welded construction Note 6	**38**
40	208	202.33	23	2.0		23	55	83	35	3.1		23	66	98	56	7.8		**40**
42	218	212.43	23	2.2		23	55	83	35	3.3		23	66	98	56	8.5		**42**
45	234	227.58	23	2.5		23	55	83	35	3.6		23	66	98	56	9.5		**45**
48	249	242.73	23	2.9		23	55	83	35	4.0		23	66	98	56	10.7		**48**
50	259	252.82	23	3.1		23	55	83	35	4.3		23	66	98	56	11.5		**50**
54	279	273.03	23	3.6		23	55	83	35	4.8		23	66	98	63	13.5		**54**
60	309	303.33	23	4.6		23	55	83	35	5.6		23	66	98	63	16.3		**60**

Note: 1. Maximum bore diameters shown are standard figures. Determine bore diameter and key bearing pressure based on general mechanical design.
2. Models in shaded areas have hardened teeth.
3. Models with unhardened teeth as standard can be manufactured with hardened teeth.
4. The outer diameters shown above are for 1B. The outer diameters for other models may differ.
5. Models marked with an * above have a groove around the periphery of the hub (shown in the diagram on the right). Groove outer diameter is 27 for 9T, 32 for 10T, 37 for 11T, 42 for 12T, and 47 for 13T.
6. Welded construction: Carbon steel for machine structural use (teeth and hub).
7. Made-to-order.



Model numbering example

RS10B -1 B 36T

- RS10B: Size
- -1: Number of strands
- B: Hub type
- 36T: Number of teeth

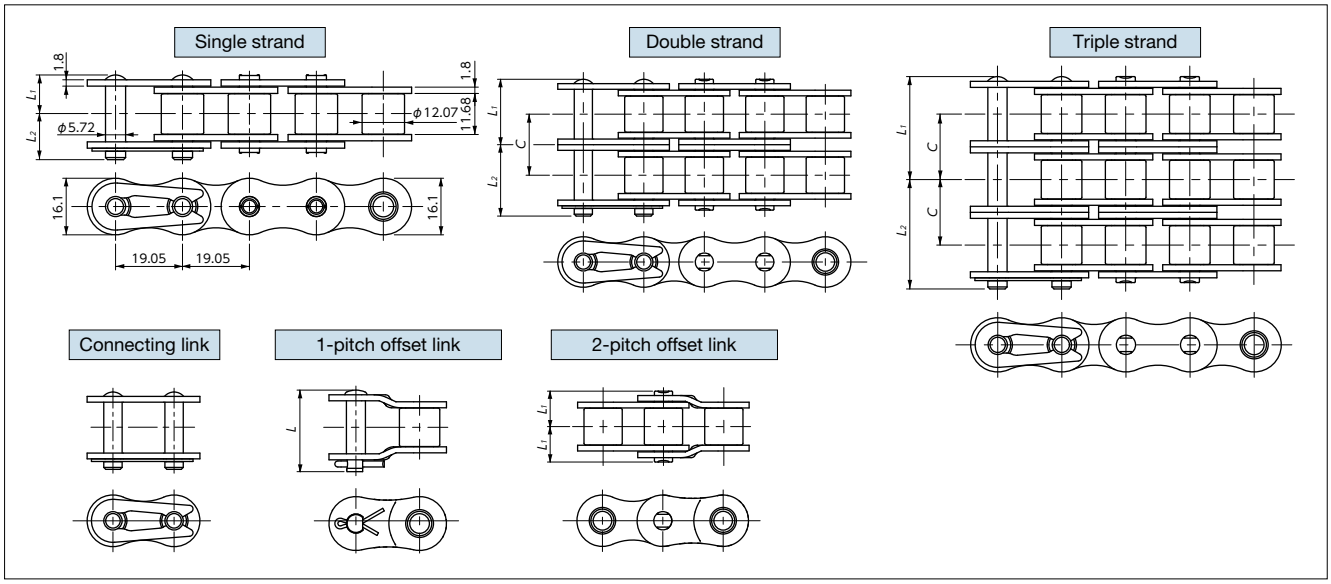
Hardened teeth model numbering example

RS10B -1 B 9T Q

- RS10B: Size
- -1: Number of strands
- B: Hub type
- 9T: Number of teeth
- Q: Hardened teeth

Standard Roller Chains and Sprockets RS Roller Chain RS12B

B Series
(Identification no. 12B)



■ Specifications

Size	Number of strands	Dimensions L_1	Dimensions L_2	Offset pin length L	Transverse pitch C	Min. tensile strength kN{kgf}	ISO 606 min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
RS12B	**1**	11.1	13.0	24.4	19.46	31.0 {3160}	28.9 {2950}	5.28 {538}	1.25
	2	20.85	22.75	45.9		61.0 {6220}	57.8 {5890}	8.98 {916}	2.50
	3	30.6	32.5	65.4		92.0 {9400}	86.7 {8840}	13.2 {1350}	3.80

Note: 1. Specially shaped pins and a center-sink rivet on chains allow for easy chain cutting without grinding the rivet.
2. Maximum allowable load when using one-pitch and two-pitch offset links is 60% of the above.
3. Number of links per unit = 160. Items in bold are stocked in units.

■ RS12B Maximum kilowatt ratings table (kW ratings for single strand chain)

Lubrication / Small sprocket no. of teeth	Small sprocket max rpm																								
	10	25	50	100	150	200	300	400	500	600	700	800	900	1000	1100	1200	1400	1600	1800	2000	2500	3000	3500	4000	4500
	AI					AII			B												C				
9	0.11	0.24	0.46	0.85	1.23	1.59	2.29	2.96	3.62	4.27	4.90	5.53	6.15	6.76	7.37	6.54	5.19	4.25	3.56	3.04	2.18	1.66	1.31	1.08	0.90
10	0.12	0.27	0.51	0.95	1.37	1.78	2.56	3.32	4.06	4.78	5.50	6.20	6.89	7.58	8.25	7.66	6.08	4.98	4.17	3.56	2.55	1.94	1.54	1.26	1.06
11	0.13	0.30	0.57	1.06	1.52	1.97	2.84	3.68	4.50	5.30	6.09	6.87	7.64	8.40	9.15	8.84	7.02	5.74	4.81	4.11	2.94	2.24	1.78	1.45	1.22
12	0.15	0.33	0.62	1.16	1.67	2.17	3.12	4.04	4.94	5.82	6.69	7.55	8.39	9.22	10.1	10.1	8.00	6.54	5.48	4.68	3.35	2.55	2.02	1.66	1.39
13	0.16	0.36	0.68	1.27	1.82	2.36	3.40	4.41	5.39	6.35	7.30	8.23	9.15	10.1	11.0	11.4	9.02	7.38	6.18	5.28	3.78	2.87	2.28	1.87	
14	0.17	0.39	0.74	1.37	1.98	2.56	3.69	4.78	5.84	6.88	7.90	8.91	9.91	10.9	11.9	12.7	10.1	8.25	6.91	5.90	4.22	3.21	2.55	2.09	
15	0.19	0.42	0.79	1.48	2.13	2.76	3.97	5.15	6.29	7.41	8.52	9.60	10.7	11.7	12.8	13.8	11.2	9.15	7.66	6.54	4.68	3.56	2.83	2.31	
16	0.20	0.46	0.85	1.58	2.28	2.96	4.26	5.52	6.74	7.95	9.13	10.3	11.4	12.6	13.7	14.8	12.3	10.1	8.44	7.21	5.16	3.92	3.11	2.55	
17	0.21	0.49	0.91	1.69	2.44	3.16	4.55	5.89	7.20	8.49	9.75	11.0	12.2	13.4	14.6	15.8	13.5	11.0	9.25	7.90	5.65	4.30	3.41	2.79	
18	0.23	0.52	0.96	1.80	2.59	3.36	4.84	6.27	7.66	9.03	10.4	11.7	13.0	14.3	15.6	16.8	14.7	12.0	10.1	8.60	6.16	4.68	3.72	3.04	
19	0.24	0.55	1.02	1.91	2.75	3.56	5.13	6.64	8.12	9.57	11.0	12.4	13.8	15.2	16.5	17.9	15.9	13.0	10.9	9.33	6.68	5.08	4.03	3.30	
20	0.25	0.58	1.08	2.02	2.90	3.76	5.42	7.02	8.58	10.1	11.6	13.1	14.6	16.0	17.5	18.9	17.2	14.1	11.8	10.1	7.21	5.48	4.35		
21	0.27	0.61	1.14	2.13	3.06	3.97	5.71	7.40	9.05	10.7	12.2	13.8	15.4	16.9	18.4	19.9	18.5	15.2	12.7	10.8	7.76	5.90	4.68		
22	0.28	0.64	1.20	2.23	3.22	4.17	6.01	7.78	9.51	11.2	12.9	14.5	16.1	17.8	19.3	20.9	19.8	16.2	13.6	11.6	8.32	6.33	5.02		
23	0.30	0.67	1.26	2.34	3.38	4.38	6.30	8.17	10.0	11.8	13.5	15.2	16.9	18.6	20.3	21.9	21.2	17.4	14.6	12.4	8.89	6.76	5.37		
24	0.31	0.71	1.32	2.46	3.54	4.58	6.60	8.55	10.5	12.3	14.1	16.0	17.7	19.5	21.2	23.0	22.6	18.5	15.5	13.2	9.48	7.21	5.72		
25	0.32	0.74	1.37	2.57	3.70	4.79	6.90	8.93	10.9	12.9	14.8	16.7	18.5	20.4	22.2	24.0	24.0	19.7	16.5	14.1	10.1	7.66	6.08		
26	0.34	0.77	1.43	2.68	3.86	5.00	7.19	9.32	11.4	13.4	15.4	17.4	19.3	21.3	23.2	25.1	25.5	20.9	17.5	14.9	10.7	8.13	6.45		
28	0.37	0.83	1.55	2.90	4.18	5.41	7.79	10.1	12.3	14.5	16.7	18.8	21.0	23.0	25.1	27.1	28.5	23.3	19.5	16.7	11.9	9.09			
30	0.39	0.90	1.67	3.12	4.50	5.83	8.40	10.9	13.3	15.7	18.0	20.3	22.6	24.8	27.0	29.2	31.6	25.9	21.7	18.5	13.2	10.1			
32	0.42	0.96	1.80	3.35	4.82	6.25	9.00	11.7	14.3	16.8	19.3	21.8	24.2	26.6	29.0	31.4	34.8	28.5	23.9	20.4	14.6	11.1			
35	0.46	1.06	1.98	3.69	5.32	6.89	9.92	12.8	15.7	18.5	21.3	24.0	26.7	29.3	31.9	34.5	39.7	32.6	27.3	23.3	16.7	12.7			
40	0.54	1.22	2.28	4.26	6.14	7.95	11.5	14.8	18.1	21.4	24.6	27.7	30.8	33.9	36.9	39.9	45.8	39.8	33.4	28.5	20.4				
45	0.61	1.39	2.59	4.84	6.97	9.03	13.0	16.9	20.6	24.3	27.9	31.5	35.0	38.5	41.9	45.3	52.1	47.5	39.8	34.0	24.3				

Note: 1. kW ratings when using offset links are 80% of the above.
2. Please contact a Tsubaki representative prior to use of kW ratings in the shaded area of the table.

■ Multi-strand factors

Number of chain strands	Two strands	Three strands
Multi-strand factor	1.7	2.5

■ Lubrication systems and methods

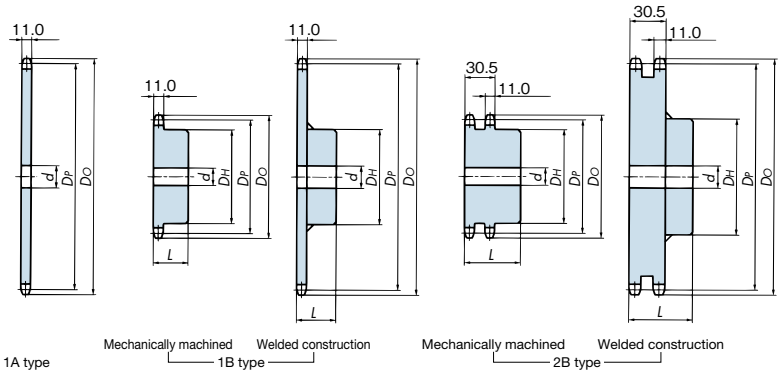
Lubrication system	AI	AII	B	C	Details on p. 222
Method	Manual lubrication	Drip lubrication	Oil bath or slinger disc lubrication	Forced pump lubrication	

Model numbering example **RS12B -1 -RP + 150L -MCJR**

RS12B: Size
-1: Number of strands
-RP: Pin type
150L: Number of links
-MCJR: End link

Note: Standard roller chains do not require series selection.

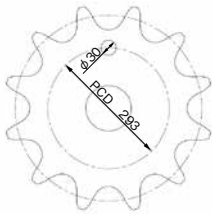
RS Sprocket RS12B



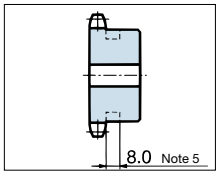
Number of teeth	Note 4 Outer dia. D_O	Pitch circle dia. D_P	1A type Pilot bore d	1A type Approx. mass kg	1A type Construction/material	1B type Bore dia. d Pilot bore	1B type Bore dia. d Max.	1B type Hub Dia. D_H	1B type Hub Length L	1B type Approx. mass kg	1B type Construction/material	2B type Bore dia. d Pilot bore	2B type Bore dia. d Max.	2B type Hub Dia. D_H	2B type Hub Length L	2B type Approx. mass kg	2B type Construction/material	Number of teeth
9	63	55.70			Mechanically machined: structural carbon steel	9.53	24.5	43	32	0.40	*						Mechanically machined: machine-structural carbon steel	**9**
10	69	61.65				12.7	30	49	32	0.49	*							**10**
11	75	67.62				12.7	32	51	32	0.60	* Note 5							**11**
12	81	73.60	18	0.37		12.7	32	51	32	0.69		12.7	32	51	50	1.1		**12**
13	87	79.60	18	0.42		15.88	35	57	32	0.81		15.88	35	57	50	1.3		**13**
14	93	85.61	18	0.48		15.88	39.5	62	32	1.0		15.88	39.5	62	56	1.7		**14**
15	99	91.63	18	0.56		15.88	45.5	68	32	1.1		15.88	45.5	68	56	2.0		**15**
16	105	97.65	18	0.64		15.88	47.5	73	32	1.3		15.88	50	76	56	2.4		**16**
17	111	103.67	18	0.72		15.88	47.5	73	32	1.4		15.88	55	82	56	2.8		**17**
18	117	109.70	18	0.81		15.88	55	83	40	2.0		15.88	59	87	56	3.1		**18**
19	123	115.74	18	0.90		15.88	55	83	40	2.1		15.88	63	95	56	3.6		**19**
20	129	121.78	18	1.0		15.88	55	83	40	2.2		15.88	69	101	56	4.1		**20**
21	135	127.82	18	1.1		15.88	55	83	40	2.3		15.88	75	107	56	4.5		**21**
22	141	133.86	18	1.2		15.88	55	83	40	2.5		15.88	78	113	56	5.0		**22**
23	147	139.90	18	1.3		18	55	83	40	2.5		18	66	98	56	4.9		**23**
24	153	145.95	18	1.4		18	55	83	40	2.6		18	66	98	56	5.2		**24**
25	159	151.99	18	1.6		18	55	83	40	2.7		18	66	98	56	5.6		**25**
26	165	158.04	18	1.7		18	55	83	40	2.9		18	66	98	56	6.0		**26**
27	171	164.09	18	1.8		18	55	83	40	3.0		18	66	98	56	6.3		**27**
28	178	170.14	18	1.9		18	55	83	40	3.1		18	66	98	56	6.8		**28**
30	190	182.25	18	2.3		18	55	83	40	3.4		18	66	98	56	7.6		**30**
32	202	194.35	18	2.6		18	55	83	40	3.7		18	66	98	56	8.5		**32**
34	214	206.46	18	2.8		18	55	83	40	4.0		18	66	98	56	9.5		**34**
35	220	212.52	18	3.1		18	55	83	40	4.2		18	66	98	56	10.0		**35**
36	226	218.57	18	3.3		18	55	83	40	4.4		18	66	98	56	10.6		**36**
38	238	230.69	18	3.6		18	55	83	40	4.8		18	66	98	56	11.7		**38**
40	250	242.80	18	4.0		18	55	83	40	5.1		18	66	98	56	12.8		**40**
42	262	254.92	23	4.3		23	63	93	45	6.0	Welded construction	23	75	107	71	15.2		**42**
45	280	273.09	23	5.1		23	63	93	45	6.7		23	75	107	71	17.2		**45**
48	299	291.27	23	5.8		23	63	93	45	7.4		23	75	107	71	19.3	Welded construction Note 6	**48**
50	311	303.39	23	6.3		23	63	93	45	8.0		23	75	107	71	20.8		**50**
54	335	327.63	23	7.4		23	63	93	45	8.9		23	75	107	71	23.9		**54**
60	371	363.99	23	9.1		23	63	93	45	10.6	Note 6	23	75	107	71	29.1		**60**

Note: 1. Maximum bore diameters shown are standard figures. Determine bore diameter and key bearing pressure based on general mechanical design.
2. Models in shaded areas have hardened teeth.
3. Models with unhardened teeth as standard can be manufactured with hardened teeth.
4. The outer diameters shown above are for 1B. The outer diameters for other models may differ.
5. Models marked with an * above have a groove around the periphery of the hub (shown in the diagram on the right). Groove outer diameter is 32 for 9T, 37 for 10T, and 45 for 11T.
6. Welded construction: Carbon steel for machine structural use (teeth and hub).
7. Models in the dimensional chart whose approximate mass is in bold font have one hanging hole. See the diagram on the right for more information.
8. Made-to-order.

■ Hanging hole dimensions



The phase relationship between the hanging hole and teeth may vary.



Model numbering example

RS12B -1 B 32T

- RS12B: Size
- -1: Number of strands
- B: Hub type
- 32T: Number of teeth

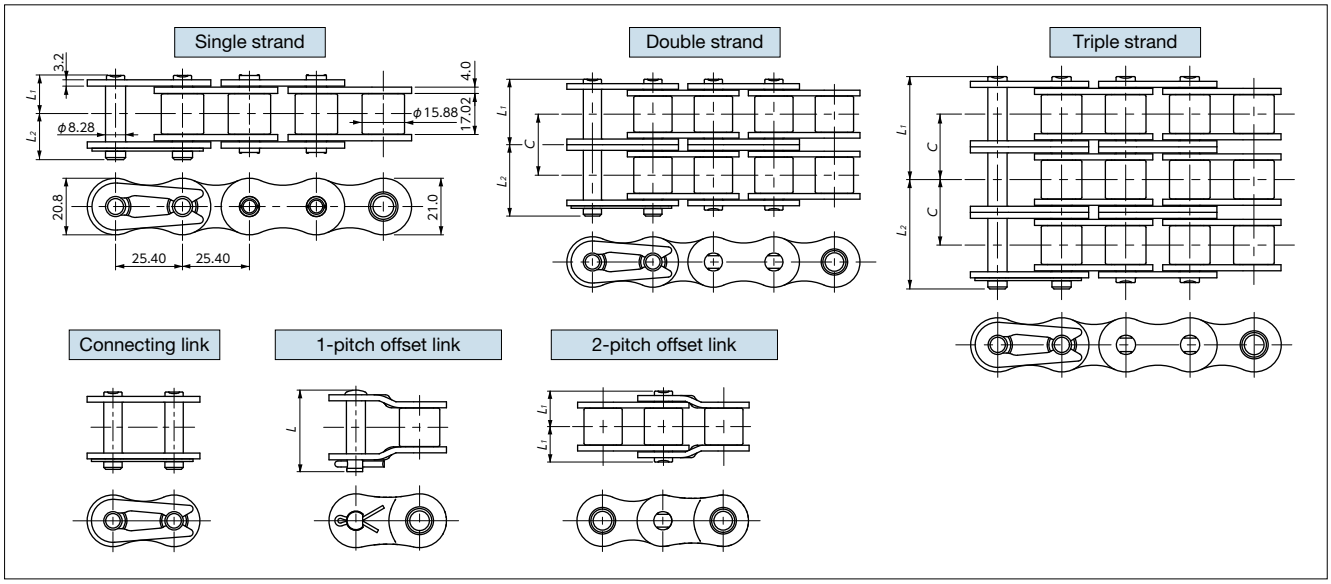
Hardened teeth model numbering example

RS12B -1 B 9T Q

- RS12B: Size
- -1: Number of strands
- B: Hub type
- 9T: Number of teeth
- Q: Hardened teeth

Standard Roller Chains and Sprockets RS Roller Chain RS16B

B Series
(Identification no. 16B)



■ Specifications

Size	Number of strands	Dimensions L_1	Dimensions L_2	Offset pin length L	Transverse pitch C	Min. tensile strength kN{kgf}	ISO 606 min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
RS16B	**1**	17.75	19.95	41.1	31.88	70.0 {7100}	60.0 {6120}	13.1 {1340}	2.70
	2	33.55	35.75	75.2		128 {13000}	106 {10800}	22.3 {2270}	5.40
	3	49.5	51.7	107.1		192 {19600}	160 {16300}	32.8 {3340}	8.00

Note: 1. Specially shaped pins and a center-sink rivet on chains allow for easy chain cutting without grinding the rivet.
2. Maximum allowable load when using one-pitch and two-pitch offset links is 60% of the above.
3. Number of links per unit = 120. Items in bold are stocked in units.

■ RS16B Maximum kilowatt ratings table (kW ratings for single strand chain)

Lubrication / Small sprocket no. of teeth	Small sprocket max rpm																								
	10	25	50	100	150	200	300	400	500	600	700	800	900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2700	3000	3400
	AI				AII			B										C							
9	0.35	0.81	1.51	2.82	4.06	5.25	7.57	9.81	12.0	14.1	16.2	15.1	12.7	10.8	9.39	8.24	6.54	5.35	4.48	3.83	3.32	2.91	2.44	2.08	1.73
10	0.40	0.91	1.69	3.16	4.54	5.89	8.48	11.0	13.4	15.8	18.2	17.7	14.9	12.7	11.0	9.65	7.66	6.27	5.25	4.48	3.89	3.41	2.86	2.44	2.02
11	0.44	1.00	1.87	3.50	5.04	6.53	9.40	12.2	14.9	17.5	20.2	20.4	17.1	14.6	12.7	11.1	8.83	7.23	6.06	5.17	4.48	3.94	3.30	2.82	2.33
12	0.48	1.10	2.06	3.84	5.53	7.17	10.3	13.4	16.4	19.3	22.1	23.3	19.5	16.7	14.5	12.7	10.1	8.24	6.90	5.89	5.11	4.48	3.76	3.21	2.66
13	0.53	1.20	2.24	4.19	6.03	7.82	11.3	14.6	17.8	21.0	24.1	26.3	22.0	18.8	16.3	14.3	11.3	9.29	7.78	6.65	5.76	5.06	4.24	3.62	3.00
14	0.57	1.30	2.43	4.54	6.54	8.47	12.2	15.8	19.3	22.8	26.1	29.4	24.6	21.0	18.2	16.0	12.7	10.4	8.70	7.43	6.44	5.65	4.74	4.04	3.35
15	0.62	1.40	2.62	4.89	7.04	9.12	13.1	17.0	20.8	24.5	28.2	31.8	27.3	23.3	20.2	17.7	14.1	11.5	9.65	8.24	7.14	6.27	5.25	4.48	3.72
16	0.66	1.51	2.81	5.24	7.55	9.78	14.1	18.3	22.3	26.3	30.2	34.1	30.1	25.7	22.2	19.5	15.5	12.7	10.6	9.08	7.87	6.90	5.79	4.94	4.09
17	0.70	1.61	3.00	5.60	8.06	10.4	15.0	19.5	23.8	28.1	32.2	36.4	32.9	28.1	24.4	21.4	17.0	13.9	11.6	9.94	8.62	7.56	6.34	5.41	0.01
18	0.75	1.71	3.19	5.95	8.57	11.1	16.0	20.7	25.3	29.9	34.3	38.7	35.9	30.6	26.5	23.3	18.5	15.1	12.7	10.8	9.39	8.24	6.90	5.89	
19	0.79	1.81	3.38	6.31	9.09	11.8	17.0	22.0	26.9	31.7	36.4	41.0	38.9	33.2	28.8	25.3	20.1	16.4	13.8	11.7	10.2	8.93	7.49	6.39	
20	0.84	1.92	3.57	6.67	9.61	12.4	17.9	23.2	28.4	33.5	38.4	43.3	42.0	35.9	31.1	27.3	21.7	17.7	14.9	12.7	11.0	9.65	8.09	6.90	
21	0.89	2.02	3.77	7.03	10.1	13.1	18.9	24.5	29.9	35.3	40.5	45.7	45.2	38.6	33.5	29.4	23.3	19.1	16.0	13.6	11.8	10.4	8.70	7.43	
22	0.93	2.12	3.96	7.39	10.6	13.8	19.9	25.7	31.5	37.1	42.6	48.0	48.5	41.4	35.9	31.5	25.0	20.4	17.1	14.6	12.7	11.1	9.33	7.96	
23	0.98	2.23	4.16	7.76	11.2	14.5	20.8	27.0	33.0	38.9	44.7	50.4	51.8	44.2	38.3	33.7	26.7	21.9	18.3	15.6	13.6	11.9	9.97	8.51	
24	1.02	2.33	4.35	8.12	11.7	15.2	21.8	28.3	34.6	40.7	46.8	52.8	55.2	47.2	40.9	35.9	28.5	23.3	19.5	16.7	14.5	12.7	10.6	9.08	
25	1.07	2.44	4.55	8.49	12.2	15.8	22.8	29.6	36.1	42.6	48.9	55.2	58.7	50.1	43.5	38.1	30.3	24.8	20.8	17.7	15.4	13.5	11.3	6.15	
26	1.11	2.54	4.75	8.85	12.8	16.5	23.8	30.8	37.7	44.4	51.0	57.5	62.3	53.2	46.1	40.5	32.1	26.3	22.0	18.8	16.3	14.3	12.0		
28	1.21	2.75	5.14	9.59	13.8	17.9	25.8	33.4	40.8	48.1	55.3	62.3	69.3	59.4	51.5	45.2	35.9	29.4	24.6	21.0	18.2	16.0	13.4		
30	1.30	2.97	5.54	10.3	14.9	19.3	27.8	36.0	44.0	51.8	59.6	67.2	74.7	65.9	57.1	50.1	39.8	32.6	27.3	23.3	20.2	17.7	14.9		
32	1.40	3.18	5.94	11.1	16.0	20.7	29.8	38.6	47.2	55.6	63.9	72.0	80.1	72.6	62.9	55.2	43.8	35.9	30.1	25.7	22.2	19.5	9.65		
35	1.54	3.51	6.54	12.2	17.6	22.8	32.8	42.5	52.0	61.2	70.3	79.3	88.2	83.0	72.0	63.2	50.1	41.0	34.4	29.4	25.5	22.3			
40	1.78	4.05	7.56	14.1	20.3	26.3	37.9	49.1	60.0	70.7	81.3	91.6	102	101	87.9	77.2	61.3	50.1	42.0	35.9	31.1	11.5			
45	2.02	4.60	8.58	16.0	23.1	29.9	43.0	55.8	68.2	80.3	92.3	104	116	121	105	92.1	73.1	59.8	50.1	42.8	25.6				

Note: 1. kW ratings when using offset links are 80% of the above.
2. Please contact a Tsubaki representative prior to use of kW ratings in the shaded area of the table.

■ Multi-strand factors

Number of chain strands	Two strands	Three strands
Multi-strand factor	1.7	2.5

■ Lubrication systems and methods

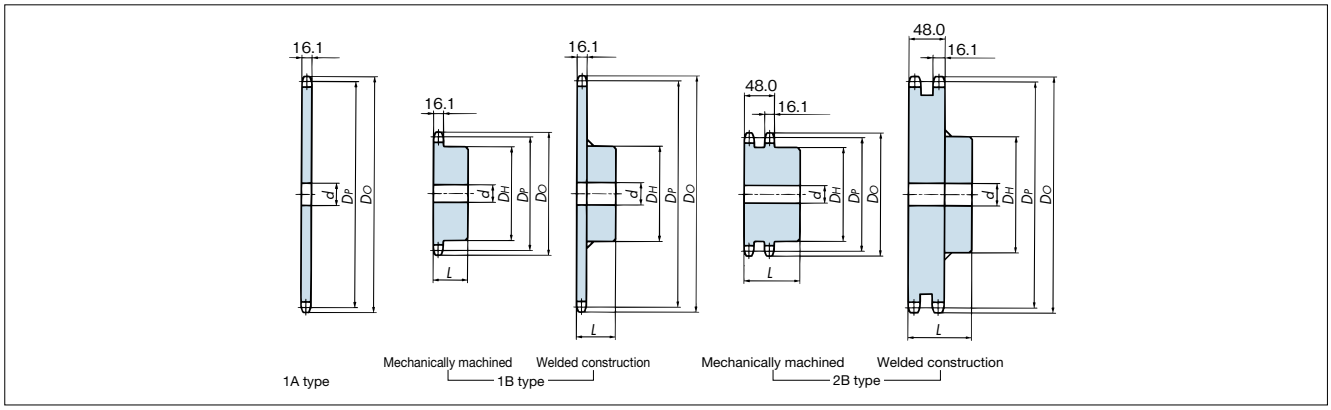
Lubrication system	AI	AII	B	C	Details on p. 222
Method	Manual lubrication	Drip lubrication	Oil bath or slinger disc lubrication	Forced pump lubrication	

Model numbering example **RS16B -1 -RP + 110L -MCJR**

RS16B: Size
-1: Number of strands
-RP: Pin type
110L: Number of links
-MCJR: End link

Note: Standard roller chains do not require series selection.

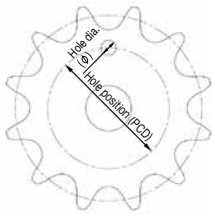
RS Sprocket RS16B



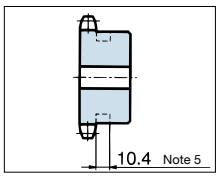
Number of teeth	Note 4 Outer dia. D_O	Pitch circle dia. D_P	1A type Pilot bore d	1A type Approx. mass kg	1A type Construction/material	1B type Bore dia. d Pilot bore	1B type Bore dia. d Max.	1B type Hub Dia. D_H	1B type Hub Length L	1B type Approx. mass kg	1B type Construction/material	2B type Bore dia. d Pilot bore	2B type Bore dia. d Max.	2B type Hub Dia. D_H	2B type Hub Length L	2B type Approx. mass kg	2B type Construction/material	Number of teeth
9	84	74.26			Mechanically machined: structural carbon steel	15.9	34	57	40	0.87	* Note 5						Mechanically machined: machine-structural carbon steel	**9**
10	92	82.20				15.9	32	52	40	0.97								**10**
11	100	90.16				15.9	38	60	40	1.2								**11**
12	108	98.14	23	0.82		19.05	46	67	40	1.5		19.05	46	67	63	2.5		**12**
13	116	106.14	23	0.93		19.05	50	77	40	1.9		19.05	50	77	63	3.1		**13**
14	124	114.15	23	1.1		19.05	50	77	40	2.0		19.05	58	86	63	3.7		**14**
15	132	122.17	23	1.2		19.05	63	93	40	2.6		19.05	64	94	63	4.3		**15**
16	140	130.20	23	1.4		19.05	63	93	40	2.8		19.05	70	102	71	5.5		**16**
17	148	138.23	23	1.6		19.05	63	93	40	3.0		19.05	76	110	71	6.4		**17**
18	156	146.27	23	1.8		19.05	63	93	40	3.2		23	66	98	71	6.4		**18**
19	164	154.32	23	2.0		23	63	93	40	3.4		23	66	98	71	7.0		**19**
20	172	162.37	23	2.2		23	63	93	40	3.6		23	75	107	71	7.9		**20**
21	180	170.42	23	2.5		23	63	93	40	3.8		23	75	107	71	8.6		**21**
22	188	178.48	28	2.7		28	75	107	45	4.8		28	80	117	71	9.6		**22**
23	196	186.54	28	2.9		28	75	107	45	5.1		28	80	117	71	10.3		**23**
24	205	194.60	28	3.2		28	75	107	45	5.4		28	80	117	80	11.8	Welded construction	**24**
25	213	202.66	28	3.5		28	75	107	45	5.6		28	80	117	80	12.6		**25**
26	221	210.72	28	3.8		28	75	107	45	5.9		28	80	117	80	13.5		**26**
27	229	218.79	28	4.0		28	75	107	45	6.1		28	80	117	80	14.4		**27**
28	237	226.86	28	4.3		28	75	107	45	6.5		28	80	117	80	15.3		**28**
30	253	243.00	28	5.0		28	75	107	45	7.1		28	80	117	80	17.2		**30**
32	269	259.14	28	5.8		28	75	107	45	7.8		28	80	117	80	19.3		**32**
34	285	275.28	28	6.4		28	75	107	45	8.5		28	80	117	80	21.5		**34**
35	293	283.36	28	6.9		28	75	107	45	8.9		28	80	117	80	22.7		**35**
36	301	291.43	33	7.3		33	80	117	50	10.1		28	80	117	80	23.9		**36**
38	318	307.58	33	8.0		33	80	117	50	10.9	Welded construction	28	80	117	80	26.4		**38**
40	334	323.74	33	9.0		33	80	117	50	11.8		33	89	127	90	30.4		**40**
42	350	339.89	33	9.8		33	80	117	50	12.7		33	89	127	90	33.2		**42**
45	374	364.12	33	11.0		33	80	117	50	14.2		33	89	127	90	37.6		**45**
48	398	388.36	33	13.0		33	80	117	50	15.8		33	89	127	90	42.3		**48**
50	414	404.52	33	14.0		33	80	117	50	16.8		33	89	127	90	45.7		**50**
54	447	436.84	33	16.0		33	80	117	50	19.2		33	89	127	90	52.8		**54**
60	495	485.33	33	20.0		33	80	117	50	23.1	Note 6	33	89	127	90	64.5	Note 6	**60**

Note: 1. Maximum bore diameters shown are standard figures. Determine bore diameter and key bearing pressure based on general mechanical design.
2. Models in shaded areas have hardened teeth.
3. Models with unhardened teeth as standard can be manufactured with hardened teeth.
4. The outer diameters shown above are for 1B. The outer diameters for other models may differ.
5. Models marked with an * above have a groove around the periphery of the hub (shown in the diagram on the right). Groove outer diameter is 44 for 9T.
6. Welded construction: Carbon steel for machine structural use (teeth and hub).
7. Models in the dimensional chart whose approximate mass is in bold font have one hanging hole. See the diagram on the right for more information.
8. Made-to-order.

■ Hanging hole dimensions



The phase relationship between the hanging hole and teeth may vary.



No. of teeth	2B/2C bore dia. (ϕ30) Hole position (PCD)
40	242
42	258
45	283
48	307
50	323
54	355
60	404

Model numbering example

RS16B -1 B 22T

- RS16B: Size
- -1: Number of strands
- B: Hub type
- 22T: Number of teeth

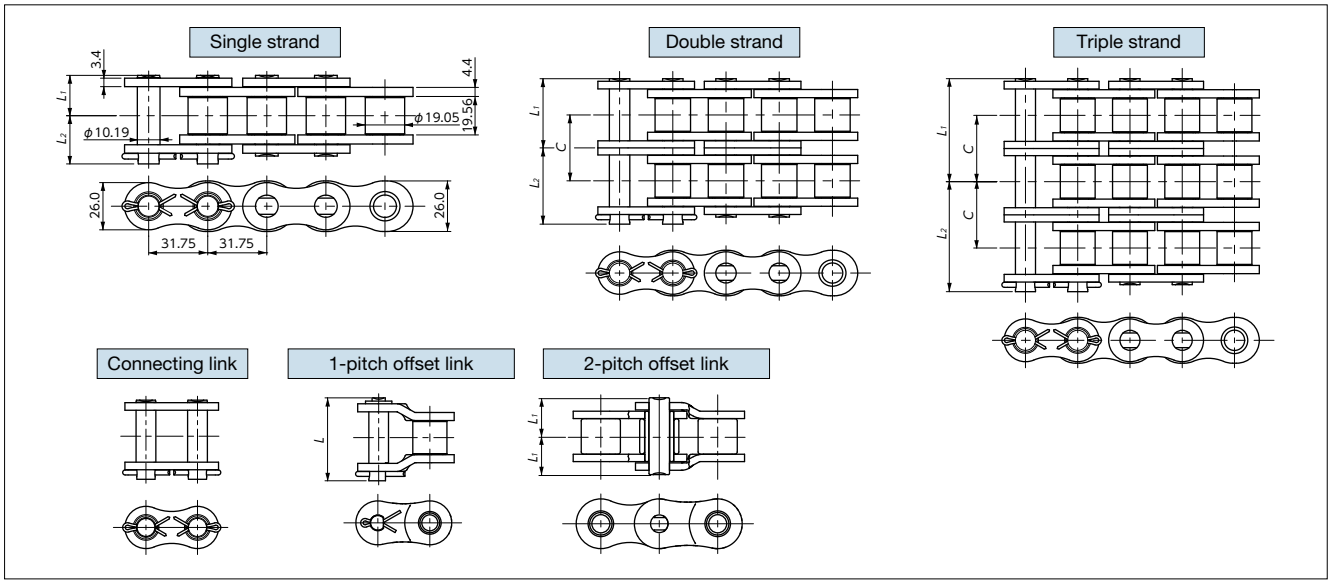
Hardened teeth model numbering example

RS16B -1 B 9T Q

- RS16B: Size
- -1: Number of strands
- B: Hub type
- 9T: Number of teeth
- Q: Hardened teeth

RS Roller Chain RS20B

B Series
(Identification no. 20B)



■ Specifications

Size	Number of strands	Dimensions L_1	Dimensions L_2	Offset pin length L	Transverse pitch C	Min. tensile strength kN{kgf}	ISO 606 min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
RS20B	**1**	19.9	23.1	46.6	36.45	98.1 {10000}	95.0 {9690}	18.4 {1880}	3.85
	2	38.25	41.45	84.6		197 {20100}	170 {17300}	31.3 {3190}	7.65
	3	56.5	59.7	121.0		295 {30100}	250 {25500}	46.0 {4690}	11.45

Note: 1. Maximum allowable load when using one-pitch and two-pitch offset links is 60% of the above.
2. Number of links per unit = 96. Items in bold are stocked in units.

■ RS20B Maximum kilowatt ratings table (kW ratings for single strand chain)

Lubrication / Small sprocket no. of teeth	Small sprocket max rpm																							
	10	25	50	100	150	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1600	1800	2000	2200	2400	2600
	AI			AII			B								C									
9	0.62	1.42	2.65	4.94	7.12	9.23	13.3	17.2	21.0	24.8	22.1	18.1	15.2	12.9	11.2	9.85	8.73	7.82	6.40	5.36	4.58	3.97	3.48	3.09
10	0.70	1.59	2.97	5.54	7.98	10.3	14.9	19.3	23.6	27.8	25.9	21.2	17.8	15.2	13.1	11.5	10.2	9.15	7.49	6.28	5.36	4.65	4.08	3.62
11	0.77	1.76	3.29	6.14	8.84	11.5	16.5	21.4	26.1	30.8	29.9	24.4	20.5	17.5	15.2	13.3	11.8	10.6	8.64	7.24	6.18	5.36	4.70	4.17
12	0.85	1.94	3.61	6.75	9.72	12.6	18.1	23.5	28.7	33.8	34.0	27.9	23.3	19.9	17.3	15.2	13.4	12.0	9.85	8.25	7.05	6.11	5.36	1.76
13	0.93	2.11	3.94	7.35	10.6	13.7	19.8	25.6	31.3	36.9	38.4	31.4	26.3	22.5	19.5	17.1	15.2	13.6	11.1	9.31	7.95	6.89	6.04	
14	1.00	2.29	4.27	7.97	11.5	14.9	21.4	27.7	33.9	40.0	42.9	35.1	29.4	25.1	21.8	19.1	16.9	15.2	12.4	10.4	8.88	7.70	6.76	
15	1.08	2.46	4.60	8.58	12.4	16.0	23.1	29.9	36.5	43.1	47.6	38.9	32.6	27.9	24.1	21.2	18.8	16.8	13.8	11.5	9.85	8.54	7.49	
16	1.16	2.64	4.93	9.20	13.3	17.2	24.7	32.0	39.2	46.2	52.4	42.9	35.9	30.7	26.6	23.3	20.7	18.5	15.2	12.7	10.8	9.40	8.25	
17	1.24	2.82	5.27	9.83	14.2	18.3	26.4	34.2	41.8	49.3	56.6	47.0	39.4	33.6	29.1	25.6	22.7	20.3	16.6	13.9	11.9	10.3	9.04	
18	1.32	3.00	5.60	10.5	15.1	19.5	28.1	36.4	44.5	52.4	60.2	51.2	42.9	36.6	31.7	27.9	24.7	22.1	18.1	15.2	12.9	11.2	1.81	
19	1.39	3.18	5.94	11.1	16.0	20.7	29.8	38.6	47.2	55.6	63.8	55.5	46.5	39.7	34.4	30.2	26.8	24.0	19.6	16.4	14.0	12.2		
20	1.47	3.36	6.28	11.7	16.9	21.9	31.5	40.8	49.8	58.7	67.5	59.9	50.2	42.9	37.2	32.6	28.9	25.9	21.2	17.8	15.2	13.1		
21	1.55	3.54	6.62	12.3	17.8	23.0	33.2	43.0	52.5	61.9	71.1	64.5	54.0	46.1	40.0	35.1	31.1	27.9	22.8	19.1	16.3	14.1		
22	1.63	3.73	6.96	13.0	18.7	24.2	34.9	45.2	55.3	65.1	74.8	69.1	57.9	49.5	42.9	37.6	33.4	29.9	24.4	20.5	17.5	15.2		
23	1.71	3.91	7.30	13.6	19.6	25.4	36.6	47.4	58.0	68.3	78.5	73.9	61.9	52.9	45.8	40.2	35.7	31.9	26.1	21.9	18.7	15.5		
24	1.80	4.09	7.64	14.3	20.5	26.6	38.3	49.7	60.7	71.5	82.2	78.8	66.0	56.4	48.9	42.9	38.0	34.0	27.9	23.3	19.9	6.46		
25	1.88	4.28	7.99	14.9	21.5	27.8	40.1	51.9	63.4	74.7	85.9	83.8	70.2	59.9	51.9	45.6	40.4	36.2	29.6	24.8	21.2			
26	1.96	4.46	8.33	15.5	22.4	29.0	41.8	54.1	66.2	78.0	89.6	88.8	74.4	63.6	55.1	48.4	42.9	38.4	31.4	26.3	22.5			
28	2.12	4.84	9.03	16.8	24.3	31.4	45.3	58.6	71.7	84.5	97.0	99.3	83.2	71.0	61.6	54.0	47.9	42.9	35.1	29.4	25.1			
30	2.28	5.21	9.72	18.1	26.1	33.9	48.8	63.2	77.2	91.0	105	110	92.3	78.8	68.3	59.9	53.2	47.6	38.9	32.6	19.0			
32	2.45	5.59	10.4	19.5	28.0	36.3	52.3	67.7	82.8	97.6	112	121	102	86.8	75.2	66.0	58.6	52.4	42.9	35.9				
35	2.70	6.15	11.5	21.4	30.9	40.0	57.6	74.6	91.2	107	123	139	116	99.3	86.1	75.5	67.0	59.9	49.1	41.1				
40	3.12	7.11	13.3	24.8	35.7	46.2	66.5	86.2	105	124	143	161	142	121	105	92.3	81.8	73.2	59.9					
45	3.54	8.07	15.1	28.1	40.5	52.5	75.6	97.9	120	141	162	183	170	145	125	110	97.6	87.4	42.7					

Note: 1. kW ratings when using offset links are 80% of the above.
2. Please contact a Tsubaki representative prior to use of kW ratings in the shaded area of the table.

■ Multi-strand factors

Number of chain strands	Two strands	Three strands
Multi-strand factor	1.7	2.5

■ Lubrication systems and methods

Lubrication system	AI	AII	B	C	Details on p. 222
Method	Manual lubrication	Drip lubrication	Oil bath or slinger disc lubrication	Forced pump lubrication	

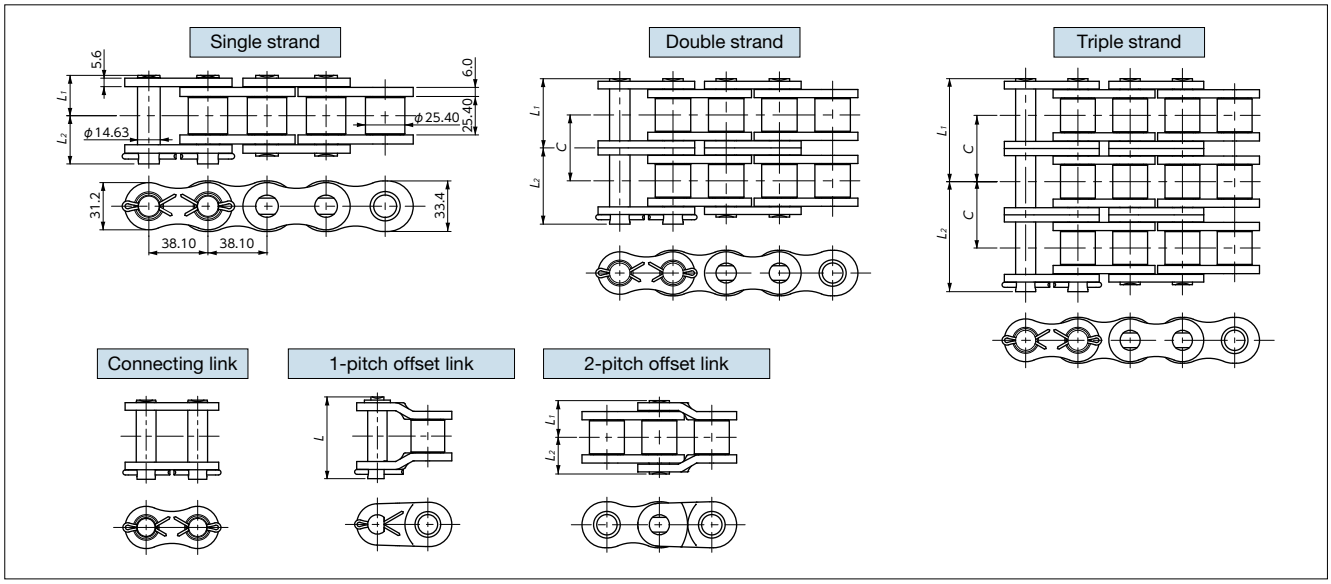
Model numbering example **RS20B -1 -RP + 86L -MWJR**

- RS20B: Size
- -1: Number of strands
- -RP: Pin type
- 86L: Number of links
- -MWJR: End link

Note: Standard roller chains do not require series selection.

RS Roller Chain RS24B

B Series
(Identification no. 24B)



■ Specifications

Size	Number of strands	Dimensions L_1	Dimensions L_2	Offset pin length L	Transverse pitch C	Min. tensile strength kN{kgf}	ISO 606 min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
RS24B	**1**	26.65	31.85	61.7	48.36	167 {17000}	160 {16300}	27.1 {2760}	7.45
	2	50.8	56.0	112.8		335 {34100}	280 {28600}	46.1 {4700}	14.65
	3	75.1	80.2	161.1		500 {51000}	425 {43300}	67.8 {6910}	21.75

Note: 1. The thickness of the middle plate differs from the outer plate and the inner plate due to the C dimension.
2. Maximum allowable load when using one-pitch and two-pitch offset links is 60% of the above.
3. Number of links per unit = 80. Items in bold are stocked in units.

■ RS24B Maximum kilowatt ratings table (kW ratings for single strand chain)

Lubrication / Small sprocket No. of teeth	Small sprocket max rpm																								
	10	25	50	100	150	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100
	AI			AII		B						C													
9	1.10	2.51	4.68	8.74	12.6	16.3	23.5	30.4	37.2	32.2	25.6	20.9	17.5	15.0	13.0	11.4	10.1	9.04	8.15	7.40	6.76	6.20	5.72	5.30	3.57
10	1.23	2.81	5.25	9.79	14.1	18.3	26.3	34.1	41.7	37.7	30.0	24.5	20.5	17.5	15.2	13.3	11.8	10.6	9.55	8.67	7.91	7.26	6.70	6.20	
11	1.37	3.12	5.82	10.9	15.6	20.3	29.2	37.8	46.2	43.5	34.6	28.3	23.7	20.2	17.5	15.4	13.7	12.2	11.0	10.0	9.13	8.38	7.73	7.16	
12	1.50	3.42	6.39	11.9	17.2	22.2	32.0	41.5	50.7	49.6	39.4	32.2	27.0	23.1	20.0	17.5	15.6	13.9	12.6	11.4	10.4	9.55	8.81	8.15	
13	1.64	3.73	6.97	13.0	18.7	24.3	34.9	45.3	55.3	55.9	44.4	36.3	30.5	26.0	22.5	19.8	17.5	15.7	14.2	12.8	11.7	10.8	9.93	4.00	
14	1.77	4.04	7.55	14.1	20.3	26.3	37.8	49.0	59.9	62.5	49.6	40.6	34.0	29.1	25.2	22.1	19.6	17.5	15.8	14.4	13.1	12.0	11.1		
15	1.91	4.36	8.13	15.2	21.9	28.3	40.8	52.8	64.6	69.3	55.0	45.0	37.7	32.2	27.9	24.5	21.7	19.5	17.5	15.9	14.5	13.3	12.3		
16	2.05	4.67	8.72	16.3	23.4	30.4	43.7	56.6	69.2	76.4	60.6	49.6	41.6	35.5	30.8	27.0	24.0	21.4	19.3	17.5	16.0	14.7	11.3		
17	2.19	4.99	9.31	17.4	25.0	32.4	46.7	60.5	73.9	83.7	66.4	54.3	45.5	38.9	33.7	29.6	26.2	23.5	21.2	19.2	17.5	16.1	5.18		
18	2.33	5.30	9.90	18.5	26.6	34.5	49.6	64.3	78.6	91.2	72.3	59.2	49.6	42.4	36.7	32.2	28.6	25.6	23.1	20.9	19.1	17.5			
19	2.47	5.62	10.5	19.6	28.2	36.5	52.6	68.2	83.4	98.2	78.4	64.2	53.8	45.9	39.8	35.0	31.0	27.7	25.0	22.7	20.7	19.0			
20	2.61	5.94	11.1	20.7	29.8	38.6	55.6	72.1	88.1	104	84.7	69.3	58.1	49.6	43.0	37.7	33.5	30.0	27.0	24.5	22.4	15.3			
21	2.75	6.27	11.7	21.8	31.4	40.7	58.6	76.0	92.9	109	91.2	74.6	62.5	53.4	46.3	40.6	36.0	32.2	29.1	26.4	24.1	8.05			
22	2.89	6.59	12.3	22.9	33.0	42.8	61.7	79.9	97.7	115	97.7	80.0	67.0	57.2	49.6	43.5	38.6	34.6	31.2	28.3	25.8	0.02			
23	3.03	6.91	12.9	24.1	34.7	44.9	64.7	83.8	102	121	104	85.5	71.7	61.2	53.0	46.6	41.3	36.9	33.3	30.2	27.6				
24	3.17	7.24	13.5	25.2	36.3	47.0	67.7	87.8	107	126	111	91.2	76.4	65.2	56.5	49.6	44.0	39.4	35.5	32.2	21.6				
25	3.32	7.56	14.1	26.3	37.9	49.1	70.8	91.7	112	132	118	96.9	81.2	69.3	60.1	52.8	46.8	41.9	37.7	34.3	13.5				
26	3.46	7.89	14.7	27.5	39.6	51.3	73.9	95.7	117	138	126	103	86.1	73.5	63.7	55.9	49.6	44.4	40.0	36.3	4.6				
28	3.75	8.55	16.0	29.8	42.9	55.5	80.0	104	127	149	140	115	96.3	82.2	71.2	62.5	55.5	49.6	44.7	31.0					
30	4.04	9.21	17.2	32.1	46.2	59.8	86.2	112	137	161	156	127	107	91.2	79.0	69.3	61.5	55.0	49.6	12.8					
32	4.33	9.87	18.4	34.4	49.5	64.2	92.4	120	146	172	171	140	118	100	87.0	76.4	67.8	60.6	44.1						
35	4.77	10.9	20.3	37.9	54.6	70.7	102	132	161	190	196	161	135	115	99.6	87.4	77.5	69.3	14.8						
40	5.51	12.6	23.4	43.8	63.0	81.6	118	152	186	219	240	196	164	140	122	107	83.7	20.8							
45	6.26	14.3	26.6	49.7	71.6	92.7	134	173	212	249	286	234	196	167	145	102	32.0								

Note: 1. kW ratings when using offset links are 80% of the above.
2. Please contact a Tsubaki representative prior to use of kW ratings in the shaded area of the table.

■ Multi-strand factors

Number of chain strands	Two strands	Three strands
Multi-strand factor	1.7	2.5

■ Lubrication systems and methods

Lubrication system	AI	AII	B	C	Details on p. 222
Method	Manual lubrication	Drip lubrication	Oil bath or slinger disc lubrication	Forced pump lubrication	

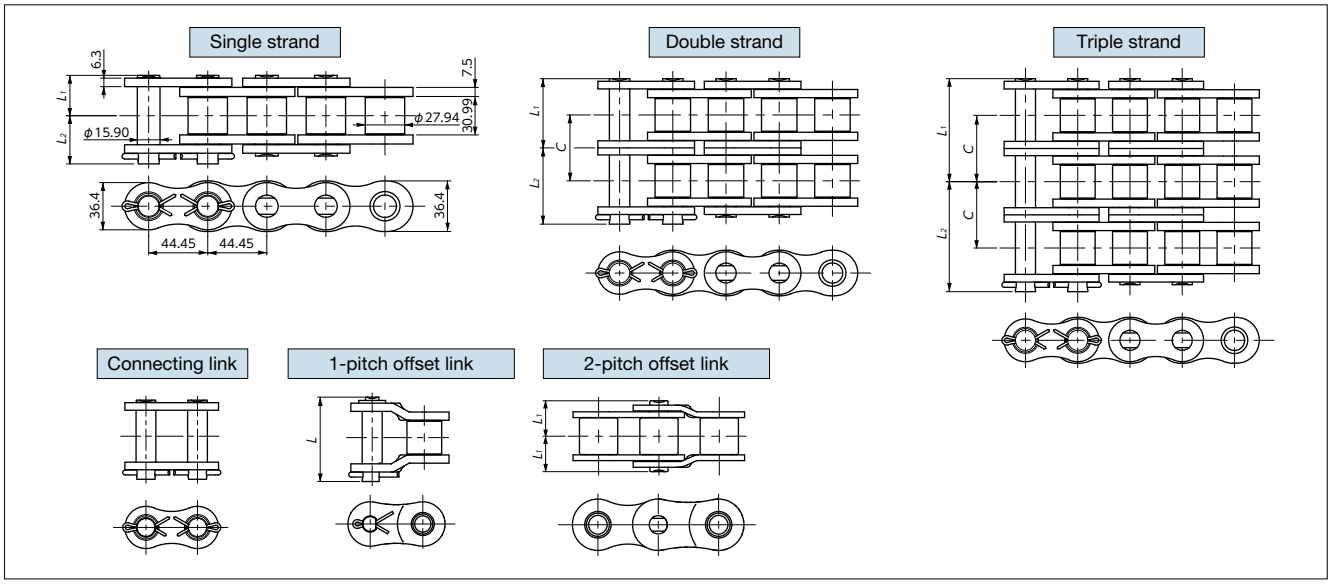
Model numbering example **RS24B -1 -RP + 70L -MWJR**

- RS24B: Size
- -1: Number of strands
- -RP: Pin type
- 70L: Number of links
- -MWJR: End link

Note: Standard roller chains do not require series selection.

Standard Roller Chains and Sprockets RS Roller Chain RS28B

B Series
(Identification no. 28B)



■ Specifications

Size	Number of strands	Dimensions L_1	Dimensions L_2	Offset pin length L	Transverse pitch C	Min. tensile strength kN{kgf}	ISO 606 min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
RS28B	**1**	32.45	37.45	74.4	59.56	200 {20400}	200 {20400}	37.5 {3820}	9.45
	2	62.15	67.15	136.6		374 {38100}	360 {36700}	63.8 {6510}	18.80
	3	91.95	96.95	195.9		560 {57100}	530 {54000}	93.8 {9570}	28.20

Note: 1. Maximum allowable load when using one-pitch and two-pitch offset links is 60% of the above.
2. Number of links per unit = 68. Items in bold are stocked in units.

■ RS28B Maximum kilowatt ratings table (kW ratings for single strand chain)

Lubrication / Small sprocket no. of teeth	Small sprocket max rpm																								
	10	25	50	100	150	200	250	300	350	400	450	500	550	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700
	AI			AII	B										C										
9	1.78	4.05	7.56	14.1	20.3	26.3	32.2	37.9	43.6	49.1	54.6	47.9	41.5	36.5	28.9	23.7	19.8	16.9	14.7	12.9	11.4	10.2	9.22	8.37	2.37
10	1.99	4.54	8.47	15.8	22.8	29.5	36.1	42.5	48.8	55.0	61.2	56.1	48.7	42.7	33.9	27.7	23.2	19.8	17.2	15.1	13.4	12.0	10.8	9.81	
11	2.21	5.03	9.39	17.5	25.2	32.7	40.0	47.1	54.1	61.0	67.8	64.8	56.1	49.3	39.1	32.0	26.8	22.9	19.8	17.4	15.4	13.8	12.5	11.3	
12	2.42	5.53	10.3	19.2	27.7	35.9	43.9	51.7	59.4	67.0	74.5	73.8	64.0	56.1	44.5	36.5	30.6	26.1	22.6	19.8	17.6	15.7	14.2	12.1	
13	2.64	6.03	11.2	21.0	30.2	39.2	47.9	56.4	64.8	73.1	81.2	83.2	72.1	63.3	50.2	41.1	34.5	29.4	25.5	22.4	19.8	17.8	16.0	8.18	
14	2.86	6.53	12.2	22.7	32.7	42.4	51.9	61.1	70.2	79.2	88.0	93.0	80.6	70.7	56.1	45.9	38.5	32.9	28.5	25.0	22.2	19.8	17.9	3.47	
15	3.08	7.03	13.1	24.5	35.3	45.7	55.9	65.8	75.6	85.3	94.8	103	89.4	78.4	62.3	51.0	42.7	36.5	31.6	27.7	24.6	22.0	19.8		
16	3.31	7.54	14.1	26.3	37.8	49.0	59.9	70.6	81.1	91.4	102	112	98.5	86.4	68.6	56.1	47.0	40.2	34.8	30.6	27.1	24.2	21.9		
17	3.53	8.05	15.0	28.0	40.4	52.3	64.0	75.4	86.6	97.6	109	119	108	94.6	75.1	61.5	51.5	44.0	38.1	33.5	29.7	26.6	18.1		
18	3.75	8.56	16.0	29.8	43.0	55.6	68.0	80.2	92.1	104	115	127	117	103	81.8	67.0	56.1	47.9	41.5	36.5	32.3	28.9	12.7		
19	3.98	9.08	16.9	31.6	45.5	59.0	72.1	85.0	97.6	110	122	135	127	112	88.7	72.6	60.9	52.0	45.1	39.5	35.1	31.4	6.60		
20	4.21	9.60	17.9	33.4	48.1	62.4	76.2	89.8	103	116	129	142	138	121	95.8	78.4	65.7	56.1	48.7	42.7	37.9	33.9			
21	4.43	10.1	18.9	35.2	50.7	65.7	80.3	94.7	109	123	136	150	148	130	103	84.4	70.7	60.4	52.3	45.9	40.7	32.7			
22	4.66	10.6	19.8	37.0	53.3	69.1	84.5	100	114	129	143	158	159	139	111	90.5	75.8	64.8	56.1	49.3	43.7	26.9			
23	4.89	11.2	20.8	38.9	56.0	72.5	88.6	104	120	135	150	165	170	149	118	96.7	81.1	69.2	60.0	52.7	46.7	20.4			
24	5.12	11.7	21.8	40.7	58.6	75.9	92.8	109	126	142	158	173	181	159	126	103	86.4	73.8	64.0	56.1	49.8	13.3			
25	5.35	12.2	22.8	42.5	61.2	79.3	97.0	114	131	148	165	181	192	169	134	110	91.9	78.4	68.0	59.7	52.5	5.51			
26	5.58	12.7	23.8	44.4	63.9	82.8	101	119	137	154	172	189	204	179	142	116	97.4	83.2	72.1	63.3	46.6				
28	6.05	13.8	25.8	48.1	69.2	89.7	110	129	148	167	186	205	223	200	159	130	109	93.0	80.6	70.7	32.8				
30	6.52	14.9	27.7	51.8	74.6	96.6	118	139	160	180	200	220	240	222	176	144	121	103	89.4	71.9	16.5				
32	6.99	15.9	29.7	55.5	80.0	104	127	149	171	193	215	236	257	244	194	159	133	114	98.5	58.4					
35	7.70	17.6	32.8	61.2	88.1	114	139	164	189	213	237	260	284	280	222	182	152	130	96.9	33.8					
40	8.89	20.3	37.9	70.6	102	132	161	190	218	246	273	301	328	318	271	222	186	128	58.2						
45	10.1	23.0	43.0	80.2	116	150	183	216	248	279	311	341	341	326	284	230	165	90.3	6.45						

Note: 1. kW ratings when using offset links are 80% of the above.
2. Please contact a Tsubaki representative prior to use of kW ratings in the shaded area of the table.

■ Multi-strand factors

Number of chain strands	Two strands	Three strands
Multi-strand factor	1.7	2.5

■ Lubrication systems and methods

Lubrication system	AI	AII	B	C	Details on p. 222
Method	Manual lubrication	Drip lubrication	Oil bath or slinger disc lubrication	Forced pump lubrication	

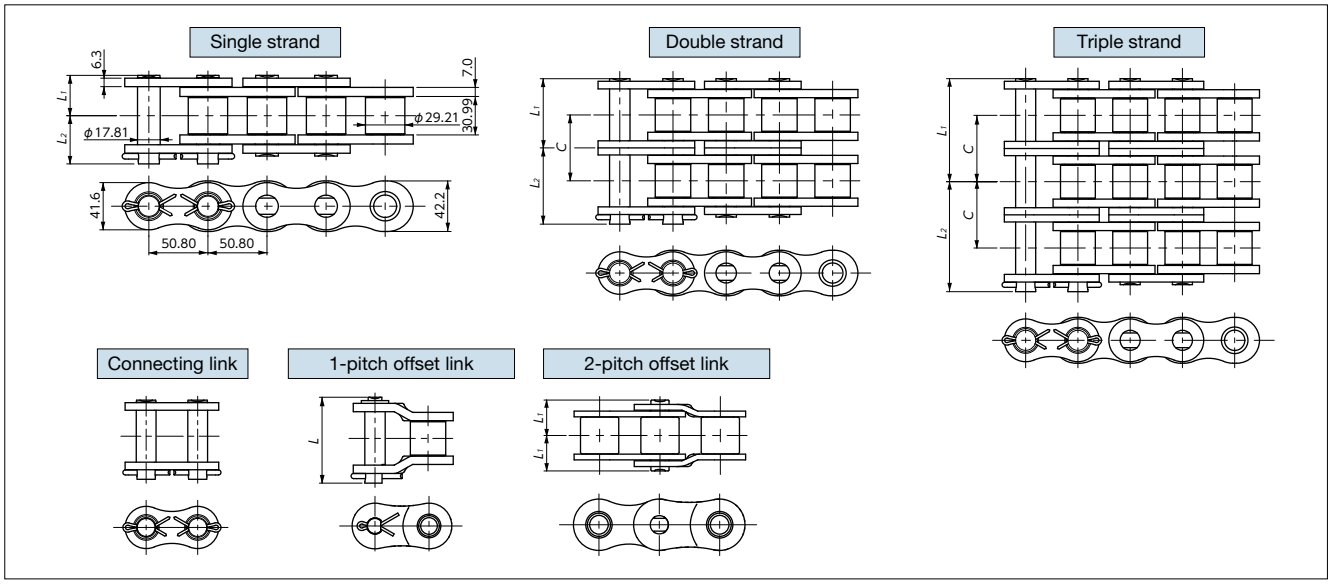
Model numbering example **RS28B -1 -RP + 58L -MWJR**

- RS28B: Size
- -1: Number of strands
- -RP: Pin type
- 58L: Number of links
- -MWJR: End link

Note: Standard roller chains do not require series selection.

RS Roller Chain RS32B

B Series
(Identification no. 32B)



■ Specifications

Size	Number of strands	Dimensions L_1	Dimensions L_2	Offset pin length L	Transverse pitch C	Min. tensile strength kN{kgf}	ISO 606 min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
RS32B	**1**	32.1	37.7	73.3	58.55	255 {26000}	250 {25500}	41.0 {4180}	10.25
	2	61.25	66.85	134.5		485 {49500}	450 {45900}	69.7 {7110}	20.10
	3	90.5	96.1	192.6		729 {74300}	670 {68300}	103 {10500}	29.90

Note: 1. Maximum allowable load when using one-pitch and two-pitch offset links is 60% of the above.
2. Number of links per unit = 60. Items in bold are stocked in units.

■ RS32B Maximum kilowatt ratings table (kW ratings for single strand chain)

Lubrication / Small sprocket no. of teeth	Small sprocket max rpm																							
	10	25	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	1000	1100	1200	1300
	AI		AII		B								C											
9	2.22	5.06	9.45	17.6	25.4	32.9	40.2	47.4	54.4	61.4	62.5	53.3	46.2	40.6	36.0	32.2	29.0	26.4	24.1	22.1	18.9	16.3	14.3	12.7
10	2.49	5.67	10.6	19.7	28.4	36.9	45.1	53.1	61.0	68.8	73.2	62.5	54.1	47.5	42.1	37.7	34.0	30.9	28.2	25.9	22.1	19.1	16.8	14.9
11	2.76	6.29	11.7	21.9	31.5	40.8	49.9	58.8	67.6	76.2	84.4	72.1	62.5	54.8	48.6	43.5	39.2	35.6	32.5	29.8	25.5	22.1	19.4	17.2
12	3.03	6.91	12.9	24.0	34.6	44.9	54.9	64.6	74.3	83.7	93.1	82.1	71.2	62.5	55.4	49.6	44.7	40.6	37.0	34.0	29.0	25.2	22.1	16.8
13	3.30	7.53	14.1	26.2	37.8	48.9	59.8	70.5	81.0	91.3	102	92.6	80.2	70.4	62.5	55.9	50.4	45.7	41.8	38.3	32.7	28.4	24.9	13.8
14	3.58	8.16	15.2	28.4	40.9	53.0	64.8	76.3	87.7	98.9	110	103	89.7	78.7	69.8	62.5	56.3	51.1	46.7	42.8	36.6	31.7	27.8	10.1
15	3.85	8.79	16.4	30.6	44.1	57.1	69.8	82.3	94.5	107	118	115	100	87.3	77.4	69.3	62.5	56.7	51.8	47.5	40.6	35.2	30.9	5.67
16	4.13	9.42	17.6	32.8	47.3	61.2	74.8	88.2	101	114	127	126	110	96.2	85.3	76.3	68.8	62.5	57.0	52.3	44.7	38.7	34.0	0.57
17	4.41	10.1	18.8	35.0	50.5	65.4	79.9	94.2	108	122	136	138	120	105	93.4	83.6	75.4	68.4	62.5	57.3	48.9	42.4	32.1	
18	4.69	10.7	20.0	37.3	53.7	69.5	85.0	100	115	130	144	151	131	115	102	91.1	82.1	74.5	68.1	62.5	53.3	46.2	28.3	
19	4.97	11.3	21.2	39.5	56.9	73.7	90.1	106	122	138	153	164	142	124	110	98.8	89.0	80.8	73.8	67.7	57.8	50.1	23.8	
20	5.26	12.0	22.4	41.8	60.1	77.9	95.2	112	129	145	162	177	153	134	119	107	96.2	87.3	79.7	73.2	62.5	54.1	18.8	
21	5.54	12.6	23.6	44.0	63.4	82.1	100	118	136	153	170	187	165	145	128	115	103	93.9	85.8	78.7	67.2	57.4	13.1	
22	5.83	13.3	24.8	46.3	66.7	86.4	106	124	143	161	179	197	177	155	138	123	111	101	92.0	84.4	72.1	53.7	6.77	
23	6.11	13.9	26.0	48.6	69.9	90.6	111	131	150	169	188	207	189	166	147	132	119	108	98.3	90.2	77.0	49.5		
24	6.40	14.6	27.2	50.8	73.2	94.9	116	137	157	177	197	216	201	177	157	140	126	115	105	96.2	82.1	44.7		
25	6.69	15.3	28.5	53.1	76.5	99.1	121	143	164	185	206	226	214	188	167	149	134	122	111	102	87.3	39.4		
26	6.98	15.9	29.7	55.4	79.8	103	126	149	171	193	215	236	227	199	177	158	143	129	118	108	86.3	33.4		
28	7.56	17.2	32.2	60.0	86.5	112	137	161	185	209	232	256	251	223	197	177	159	145	132	121	78.2	19.8		
30	8.14	18.6	34.7	64.7	93.2	121	148	174	200	225	250	269	260	247	219	196	177	160	146	125	68.0	3.84		
32	8.73	19.9	37.2	69.4	100	129	158	186	214	242	269	278	268	255	239	216	195	174	147	119	55.7			
35	9.6	21.9	40.9	76.4	110	143	174	205	236	266	296	291	278	262	243	221	195	168	137	105	33.3			
40	11.1	25.3	47.3	88.3	127	165	201	237	273	307	318	306	289	268	243	215	184	150	112	72.6				
45	12.6	28.8	53.7	100	144	187	229	269	310	342	331	314	293	266	235	201	163	121	76.2	28.4				

Note: 1. kW ratings when using offset links are 80% of the above.
2. Please contact a Tsubaki representative prior to use of kW ratings in the shaded area of the table.

■ Multi-strand factors

Number of chain strands	Two strands	Three strands
Multi-strand factor	1.7	2.5

■ Lubrication systems and methods

Lubrication system	AI	AII	B	C	Details on p. 222
Method	Manual lubrication	Drip lubrication	Oil bath or slinger disc lubrication	Forced pump lubrication	

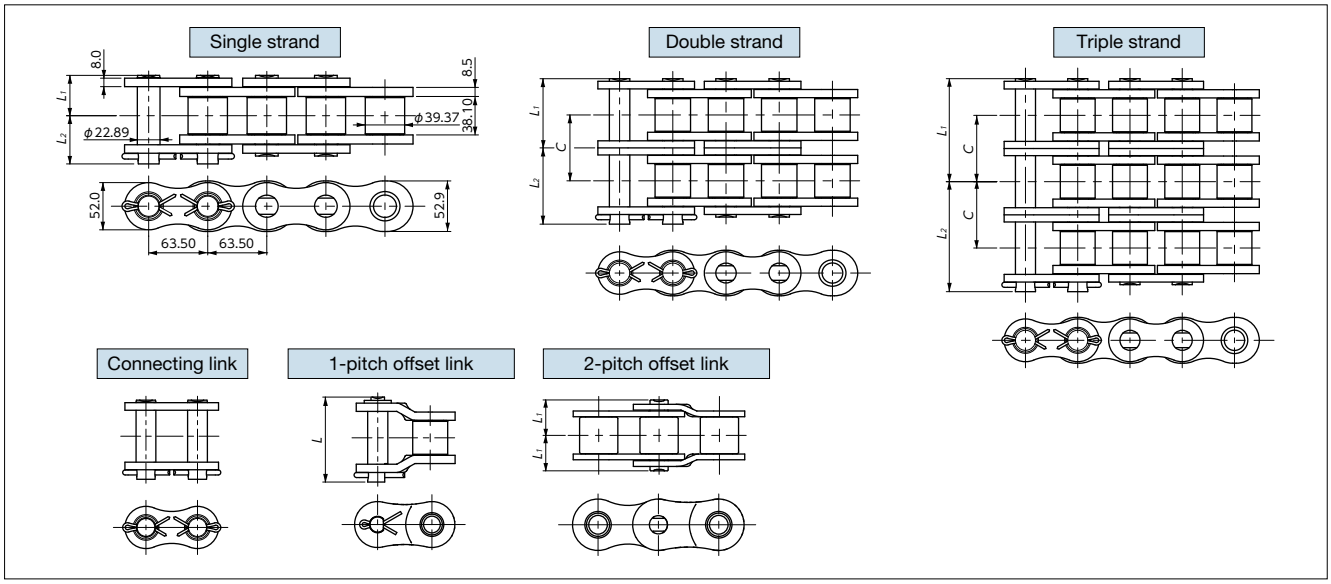
Model numbering example **RS32B -1 -RP + 50L -MWJR**

- RS32B: Size
- -1: Number of strands
- -RP: Pin type
- 50L: Number of links
- -MWJR: End link

Note: Standard roller chains do not require series selection.

Standard Roller Chains and Sprockets RS Roller Chain RS40B

B Series
(Identification no. 40B)



■ Specifications

Size	Number of strands	Dimensions L_1	Dimensions L_2	Offset pin length L	Transverse pitch C	Min. tensile strength kN{kgf}	ISO 606 min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
RS40B	1	39.25	45.05	88.6	72.29	373 {38000}	355 {36200}	51.0{5200}	16.35
	2	75.4	81.2	163.2		716 {73000}	630 {64200}	86.7{8840}	32.00
	3	111.5	117.3	235.3		1080{110000}	950 {96900}	128 {13100}	47.75

Note: 1. Maximum allowable load when using one-pitch and two-pitch offset links is 60% of the above.
2. Number of links per unit = 48.

■ RS40B Maximum kilowatt ratings table (kW ratings for single strand chain)

Lubrication / Small sprocket no. of teeth	Small sprocket max rpm																		
	10	15	20	30	40	50	70	100	150	200	250	300	350	400	450	500	550	600	650
	AI			AII				B						C					
9	3.45	4.97	6.44	9.27	12.0	14.7	19.9	27.4	39.5	51.1	62.5	73.7	84.6	89.1	74.7	63.8	55.3	48.5	43.0
10	3.87	5.57	7.21	10.4	13.5	16.5	22.3	30.7	44.2	57.3	70.0	82.5	94.8	101	87.5	74.7	64.7	56.8	50.4
11	4.29	6.17	8.00	11.5	14.9	18.2	24.7	34.0	49.0	63.5	77.6	91.5	105	110	101	86.1	74.7	65.5	58.1
12	4.71	6.78	8.78	12.7	16.4	20.0	27.1	37.4	53.9	69.8	85.3	101	116	118	115	98.2	85.1	74.7	66.2
13	5.13	7.39	9.58	13.8	17.9	21.8	29.6	40.8	58.7	76.1	93.0	110	126	127	122	111	95.9	84.2	74.7
14	5.56	8.01	10.4	14.9	19.4	23.7	32.0	44.2	63.6	82.4	101	119	136	135	130	123	107	94.1	83.4
15	5.99	8.63	11.2	16.1	20.9	25.5	34.5	47.6	68.5	88.8	109	128	145	142	137	129	119	104	92.5
16	6.42	9.25	12.0	17.3	22.4	27.3	37.0	51.0	73.5	95.2	116	137	153	150	144	135	125	112	96.7
17	6.86	9.88	12.8	18.4	23.9	29.2	39.5	54.5	78.5	102	124	146	160	157	150	141	129	115	99.2
18	7.29	10.5	13.6	19.6	25.4	31.0	42.0	57.9	83.5	108	132	156	168	164	157	147	134	119	101
19	7.73	11.1	14.4	20.8	26.9	32.9	44.6	61.4	88.5	115	140	165	175	171	163	152	138	122	103
20	8.17	11.8	15.3	22.0	28.5	34.8	47.1	64.9	93.5	121	148	175	182	177	168	156	142	124	104
21	8.61	12.4	16.1	23.2	30.0	36.7	49.6	68.4	98.6	128	156	184	189	183	174	161	145	126	105
22	9.06	13.0	16.9	24.3	31.5	38.6	52.2	72.0	104	134	164	193	195	189	179	165	148	128	106
23	9.50	13.7	17.7	25.5	33.1	40.5	54.8	75.5	109	141	172	203	202	195	184	169	151	130	106
24	10.0	14.3	18.6	26.7	34.7	42.4	57.3	79.0	114	148	180	210	208	200	188	173	153	131	105
25	10.4	15.0	19.4	28.0	36.2	44.3	59.9	82.6	119	154	188	217	214	205	193	176	155	132	105
26	10.8	15.6	20.2	29.2	37.8	46.2	62.5	86.2	124	161	197	223	219	210	197	179	157	132	104

Note: 1. kW ratings when using offset links are 80% of the above.
2. Please contact a Tsubaki representative prior to use of kW ratings in the shaded area of the table.

■ Multi-strand factors

Number of chain strands	Two strands	Three strands
Multi-strand factor	1.7	2.5

■ Lubrication systems and methods

Lubrication system	AI	AII	B	C	Details on p. 222
Method	Manual lubrication	Drip lubrication	Oil bath or slinger disc lubrication	Forced pump lubrication	

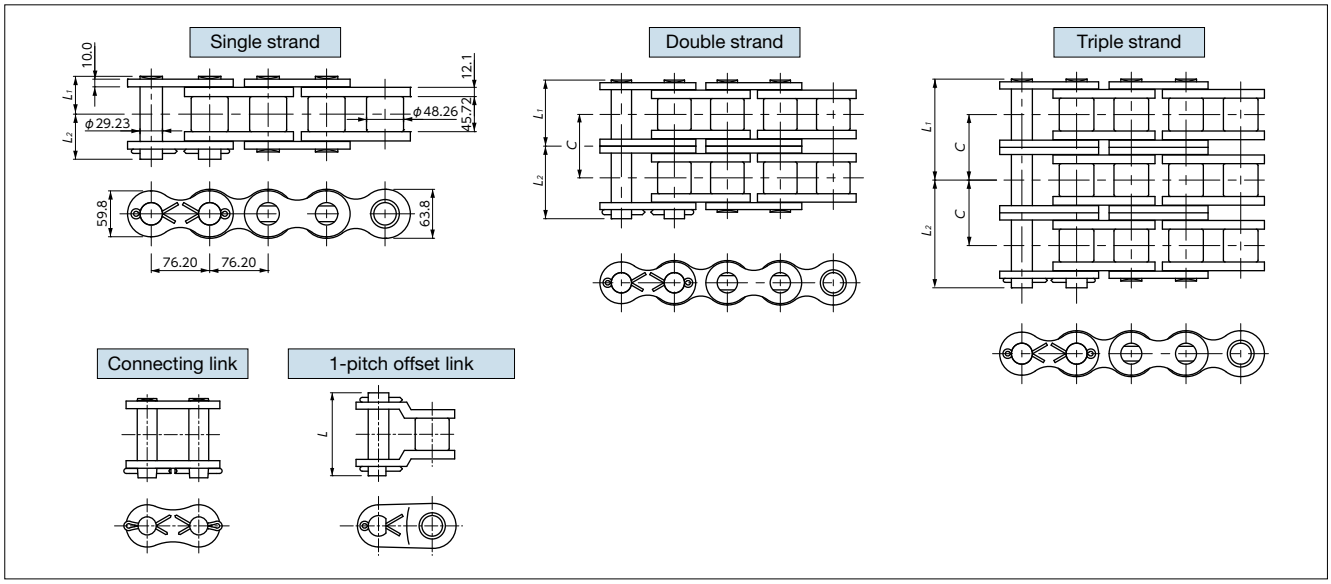
Model numbering example **RS40B -1 -RP + 38L -MWJR**

- RS40B: Size
- -1: Number of strands
- -RP: Pin type
- 38L: Number of links
- -MWJR: End link

Note: Standard roller chains do not require series selection.

RS Roller Chain RS48B

B Series
(Identification no. 48B)



■ Specifications

Size	Number of strands	Dimensions L_1	Dimensions L_2	Offset pin length L	Transverse pitch C	Min. tensile strength kN{kgf}	ISO 606 tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
RS48B	1	49.3	58.8	117.7	91.21	565 {57600}	560 {57100}	77.0{7850}	25.00
	2	95.0	104.4	209.0		1000{102000}	1000{102000}	131 {13400}	50.00
	3	140.6	150.0	300.2		1520{155000}	1500{153000}	193 {19700}	75.00

Note: 1. Maximum allowable load when using one-pitch and two-pitch offset links is 60% of the above.
Maximum allowable load when using connecting links is 80% of the above.
2. Number of links per unit = 40.

■ RS48B Maximum kilowatt ratings table (kW ratings for single strand chain)

Lubrication / Small sprocket no. of teeth	Small sprocket max rpm																			
	5	10	15	20	25	30	40	50	60	80	100	125	150	175	200	250	300	350	400	450
	AI				AII				B								C			
9	3.35	6.25	9.00	11.7	14.3	16.8	21.8	26.6	31.4	40.6	49.7	60.7	71.5	76.2	78.6	80.5	79.2	75.2	69.0	60.7
10	3.75	7.00	10.1	13.1	16.0	18.8	24.4	29.8	35.1	45.5	55.6	68.0	80.1	84.1	86.6	88.5	86.9	82.3	75.2	65.8
11	4.16	7.76	11.2	14.5	17.7	20.9	27.0	33.0	38.9	50.4	61.7	75.4	87.6	91.7	94.5	96.4	94.4	89.1	81.1	70.6
12	4.57	8.53	12.3	15.9	19.5	22.9	29.7	36.3	42.8	55.4	67.7	82.8	94.9	99.3	102	104	102	95.7	86.7	75.0
13	4.98	9.30	13.4	17.4	21.2	25.0	32.4	39.6	46.6	60.4	73.9	90.3	102	107	110	112	109	102	92.0	79.1
14	5.40	10.1	14.5	18.8	23.0	27.1	35.1	42.9	50.5	65.5	80.0	97.8	109	114	117	119	115	108	97.0	82.9
15	5.82	10.9	15.6	20.3	24.8	29.2	37.8	46.2	54.4	70.5	86.2	105	116	121	124	126	122	114	102	86.3
16	6.24	11.6	16.8	21.7	26.5	31.3	40.5	49.5	58.4	75.6	92.4	113	123	128	132	133	128	119	106	89.4
17	6.66	12.4	17.9	23.2	28.3	33.4	43.3	52.9	62.3	80.7	98.7	121	130	135	138	140	135	125	110	92.2
18	7.08	13.2	19.0	24.7	30.1	35.5	46.0	56.3	66.3	85.9	105	128	136	142	145	146	141	130	114	94.6
19	7.51	14.0	20.2	26.1	32.0	37.7	48.8	59.6	70.3	91.0	111	134	143	149	152	152	146	134	118	96.7
20	7.93	14.8	21.3	27.6	33.8	39.8	51.6	63.0	74.3	96.2	118	141	149	155	158	159	152	139	121	98.5
21	8.36	15.6	22.5	29.1	35.6	42.0	54.4	66.4	78.3	101	124	147	156	162	165	165	157	143	124	100
22	8.80	16.4	23.6	30.6	37.4	44.1	57.2	69.9	82.3	107	130	153	162	168	171	170	162	147	126	101
23	9.23	17.2	24.8	32.1	39.3	46.3	60.0	73.3	86.4	112	137	159	168	174	177	176	167	151	129	102
24	9.66	18.0	26.0	33.6	41.1	48.5	62.8	76.7	90.4	117	143	164	174	180	183	182	171	154	131	102
25	10.1	18.8	27.1	35.2	43.0	50.6	65.6	80.2	94.5	122	150	170	180	186	189	187	176	157	133	102
26	10.5	19.7	28.3	36.7	44.8	52.8	68.5	83.7	98.6	128	156	176	186	192	195	192	180	160	134	102

Note: 1. kW ratings when using offset links are 80% of the above.
2. Please contact a Tsubaki representative prior to use of kW ratings in the shaded area of the table.

■ Multi-strand factors

Number of chain strands	Two strands	Three strands
Multi-strand factor	1.7	2.5

■ Lubrication systems and methods

Lubrication system	AI	AII	B	C	Details on p. 222
Method	Manual lubrication	Drip lubrication	Oil bath or slinger disc lubrication	Forced pump lubrication	

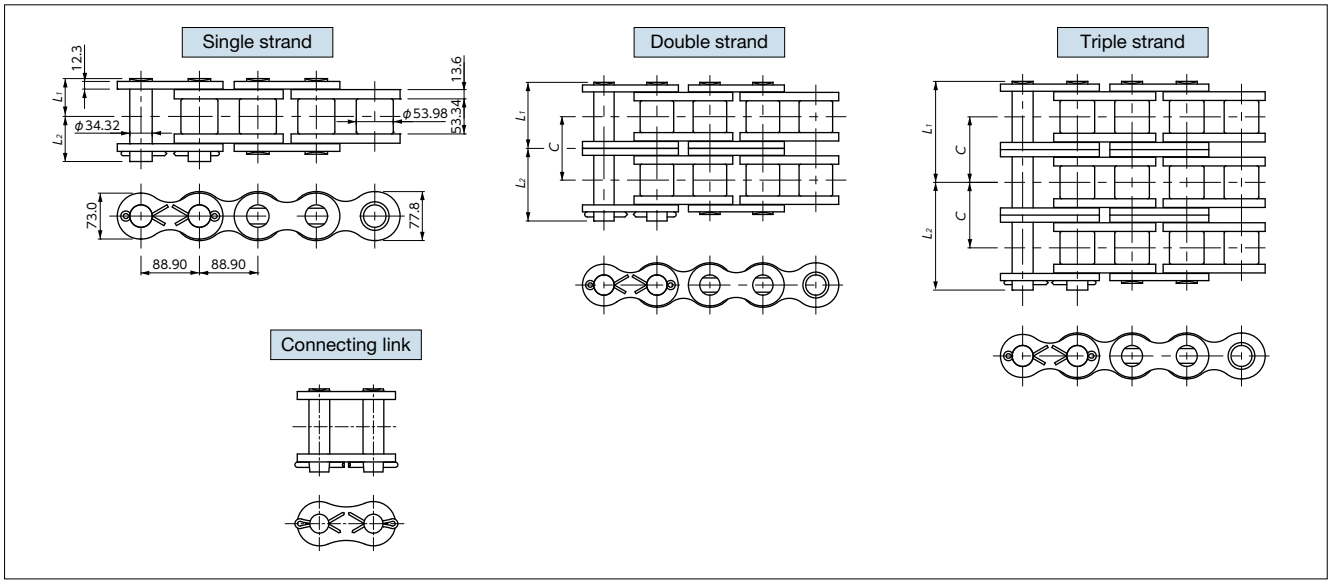
Model numbering example **RS48B -1 -RP + 30L -MWJR**

- RS48B: Size
- -1: Number of strands
- -RP: Pin type
- 30L: Number of links
- -MWJR: End link

Note: Standard roller chains do not require series selection.

RS Roller Chain RS56B

B Series
(Identification no. 56B)



■ Specifications

Size	Number of strands	Dimensions L_1	Dimensions L_2	Offset pin length L	Transverse pitch C	Min. tensile strength kN{kgf}	ISO 606 min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
RS56B	1	57.3	69.0	–	106.6	850 {86700}	850 {86700}	103 {10500}	33.90
	2	110.6	122.3	–		1700{173000}	1600{163000}	175 {17800}	67.18
	3	163.9	175.6	–		2250{229000}	2240{228000}	257 {26200}	100.40

Note: 1. Offset links are not available.
2. Maximum allowable load when using connecting links is 80% of the above.
3. Number of links per unit = 34.

■ RS56B Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth \ Lubrication	Small sprocket max rpm																			
	5	10	15	20	25	30	40	50	60	80	100	125	150	175	200	250	300	350	400	450
	AI			AII				B								C				
9	5.23	9.76	14.1	18.2	22.3	26.2	34.0	41.5	48.5	55.7	61.0	65.5	68.1	69.0	68.5	64.1	55.8	44.2	29.9	13.2
10	5.86	10.9	15.7	20.4	24.9	29.4	38.1	46.5	53.6	61.6	67.4	72.3	75.0	75.9	75.3	70.1	60.7	47.6	31.5	12.7
11	6.49	12.1	17.5	22.6	27.6	32.6	42.2	51.6	58.7	67.4	73.7	78.9	81.8	82.7	81.9	76.0	65.3	50.8	32.8	11.8
12	7.13	13.3	19.2	24.8	30.4	35.8	46.3	56.7	63.7	73.1	79.8	85.4	88.4	89.3	88.3	81.6	69.7	53.6	33.7	10.6
13	7.78	14.5	20.9	27.1	33.1	39.0	50.5	61.8	68.7	78.7	85.9	91.9	95.0	95.7	94.5	87.0	73.9	56.1	34.3	8.98
14	8.42	15.7	22.6	29.3	35.9	42.3	54.7	66.8	73.6	84.3	91.9	98.2	101	102	101	92.2	77.7	58.3	34.5	6.96
15	9.08	16.9	24.4	31.6	38.6	45.5	59.0	71.3	78.5	89.8	97.9	104	108	108	106	97.2	81.4	60.2	34.4	4.56
16	9.73	18.2	26.2	33.9	41.4	48.8	63.2	75.7	83.3	95.2	104	110	114	114	112	102	84.7	61.8	33.9	1.77
17	10.4	19.4	27.9	36.2	44.2	52.1	67.5	80.0	88.0	101	109	116	120	120	118	106	87.8	63.1	33.1	
18	11.1	20.6	29.7	38.5	47.0	55.4	71.8	84.3	92.8	106	115	122	126	126	123	111	90.7	64.1	32.0	
19	11.7	21.9	31.5	40.8	49.9	58.8	76.1	88.6	97.4	111	121	128	131	131	128	115	93.3	64.8	30.5	
20	12.4	23.1	33.3	43.1	52.7	62.1	80.5	92.9	102	116	126	134	137	137	133	119	95.6	65.2	28.7	
21	13.1	24.4	35.1	45.5	55.6	65.5	84.8	97.0	107	121	132	139	143	142	138	122	97.7	65.3	26.5	
22	13.7	25.6	36.9	47.8	58.4	68.8	89.2	101	111	126	137	145	148	147	143	126	100	65.1	24.0	
23	14.4	26.9	38.7	50.1	61.3	72.2	93.1	105	116	131	142	150	153	152	147	129	101	64.6	21.1	
24	15.1	28.1	40.5	52.5	64.2	75.6	96.7	109	120	136	147	155	158	157	152	132	102	63.8	17.9	
25	15.8	29.4	42.4	54.9	67.1	79.0	100	113	124	141	152	161	163	162	156	135	103	62.7	14.4	
26	16.4	30.7	44.2	57.2	70.0	82.5	104	117	129	146	157	166	168	166	160	138	104	61.3	10.5	

Note: Please contact a Tsubaki representative prior to use of kW ratings in the shaded area of the table.

■ Multi-strand factors

Number of chain strands	Two strands	Three strands
Multi-strand factor	1.7	2.5

■ Lubrication systems and methods

Lubrication system	AI	AII	B	C	Details on p. 222
Method	Manual lubrication	Drip lubrication	Oil bath or slinger disc lubrication	Forced pump lubrication	

Model numbering example **RS56B -1 -RP + 24L -MWJR**

- RS56B: Size
- -1: Number of strands
- -RP: Pin type
- 24L: Number of links
- -MWJR: End link

Note: Standard roller chains do not require series selection.

Lube-Free Roller Chain Model Numbering

Chain No. p.19 p.36 p.15 p.188

This page shows the series, number of strands, as well as types of pins and connecting links that can be selected for each size. Also refer to “Ordering RS Roller Chain” on page 19.
Customized items are also available. Please contact a Tsubaki representative.

1. Chains ordered by specifying the number of links, etc.

Size – Series – Number of strands – Pin type + Number of links – End link – Options

◆ Model numbering example **RS40–LMD–1–RP+230L–MCJR**

2. Individual parts, such as connecting links and offset links, ordered by quantity

Size – Series – Number of strands – Part name

◆ Model numbering examples **RS80–LMDNP–1–MWJL**
RS10B–LM–2–OL

■ Series

(column = size; row = series)

	LMD	LMDS	LMDX	LMDKF	LMDKT	LMDH	LMDNP	LMDSNP	LMDHNP	LMCCU
RS40	○	○	○	○	○	○	○	○	○	○
RS50	○	○	○	○	○	○	○	○	○	○
RS60	○	○	○	○	○	○	○	○	○	○
RS80	○	○	○	○	○	○	○	○	○	–
RS100	○	○	○	–	○	○	○	○	○	–
RS120	○	○	○	–	–	–	○	○	–	–
RS140	○	○	–	–	–	–	○	○	–	–
RS160	○	○	–	–	–	–	○	○	–	–

	LM*1
RS08B	○
RS10B	○
RS12B	○
RS16B	○
RS20B	○
RS24B	○

Note: *1: LM series is a B series chain. RF06B chain size is also available.

■ Number of strands

(row = series)

	LMD	LMDS	LMDX	LMDKF	LMDKT	LMDH	LMDNP	LMDSNP	LMDHNP	LMCCU	LM
All sizes	1	2	1	1	1	2	1	2	2	1	1/2

■ Pin type

(column = size; row = series)

	LMD	LMDS	LMDX	LMDKF	LMDKT	LMDH	LMDNP	LMDSNP	LMDHNP	LMCCU	LM*1
RS40 to RS80 (RS08B to RS16B)	RP	RP	RP	RP	RP	RP	RP	RP	RP	RP	RP
RS100 to RS160 (RS20B to RS24B)	RP/CP	RP/CP	RP/CP	–	RP	CP	RP/CP	RP/CP	CP	–	RP

Note: *1. RF06B is RP.
*2. RS160 are all RP.

■ End link symbol for connecting links and part names

(column = size; row = series)

	LMD	LMDS	LMDX	LMDKF	LMDKT	LMDH	LMDNP	LMDSNP	LMDHNP	LMCCU	LM*2
RS40 to RS60 (RS08B to RS16B)	MCJ*1	MCJ	MCJ	MCJ	MWJ	MCJ	MCJ	MCJ	MCJ	MWJ	MCJ
RS80 and larger (RS20B and larger)	MWJ	MWJ	MWJ	MWJ	MWJ	MWJ	MWJ	MWJ	MWJ	–	MWJ

Note: *1. For single-strand RS60 chain, connecting links with cotter pins can also be selected.
*2. RF06B is MCJ.

■ Offset link types and part names

	LMD	LMDKF	LMDKT	LMDH	LMDNP	LM
All sizes	O	2O	O	O	O	O/2O

Note: 1. Offset links are not available for 2-strand chains.
2. Offset links are not available for RS Double Strand Compatible Lambda Chain, X-Lambda Chain, and Curved Lambda Chain.

• Part names: O is offset link; 2O is 2-pitch offset link.

How to read chart

○	Available
–	Contact a Tsubaki representative
1/2	Select from 1 or 2 strands
1	1-strand only
2	2-strand only

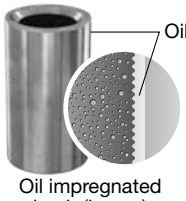
RP/CP	Select from RP or CP
RP	RP only
CP	CP only
MWJ	M-type connecting link with cotter pin only
MCJ	M-type connecting link with clip only

O	Offset link only
O/2O	Select from offset link or 2-pitch offset link

Lube-Free Roller Chains

LAMBDA Chain — Series code: LMD

Tsubaki is a pioneer in the industry, being the first to develop a lube-free roller chain that uses special oil-impregnated bushes. Since first being introduced in 1988, Lambda Chain has gained an outstanding reputation in a variety of industries and applications. It is capable of meeting a wide range of customer needs for long life in a lubrication-free environment, resulting in a reduction in overall long-term costs. It uses NSF-H1 food grade lubricant in its bushes.



Oil impregnated bush (image)

The impregnated oil flows smoothly from pores in the bushes, creating a uniform oil film layer on the sliding areas



Long life without additional lubrication	Special oil-impregnated bushes provide lube-free operation.
Food grade oil	Uses NSF-H1 food grade oil in its bushes.
Interchangeability	Compatible*1 with RS roller chain. Can use RS sprockets*2.
Operating temperature range	-10°C to 150°C

Note: *1. Kilowatt ratings and dimensions will differ in part.
*2. RS sprockets may be used if the 2-strand chain is RS Compatible Chain.

Long Life LAMBDA Chain (X-Λ) [X-Lambda] — Series code: LMDX

The inclusion of an oil-impregnated felt seal in the construction of X-Lambda Chain significantly improves the anti-wear performance of standard Lambda Chain. Ideal for environments where even longer replacement intervals compared to standard Lambda Chain are required.

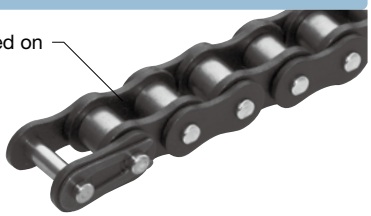


Long life without additional lubrication	The combination of a special oil-impregnated bush and felt seal*1 further extends service life.
Food grade oil	Uses NSF-H1 food grade oil in its bushes and felt seal.
Interchangeability	Compatible*2 with RS roller chain. Can use RS sprockets.
Operating temperature range	-10°C to 60°C

Note: *1. Felt seal is impregnated with oil. As a result, more oil adheres to the surface compared to Lambda Chain.
*2. Kilowatt ratings and dimensions will differ in part.

LAMBDA Chain KF Series (Heat Resistant Series) — Series code: LMDKF

Special lubricant demonstrates performance in high-temperature environments and resists degradation. It boosts the chain's wear resistance in the high-temperature range.



Operating temperature range	-10°C to 230°C*1
High-temperature food grade oil	Bushes use a high-temperature NSF-H1 food grade oil.

Note: *1. Do not use in environments over 230°C. This will lead to a serious decrease in wear life.
Harmful gases may be emitted in temperatures over 280°C.

LAMBDA Chain Cold Resistant Series — Series code: LMDKT

A lube-free roller chain that can be used in low temperature ranges. Has the same kilowatt ratings as the Lambda chain standard series.

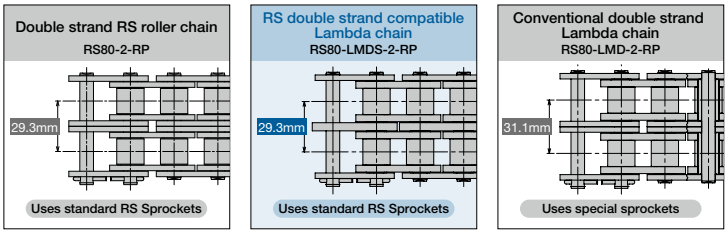


Operating temperature range	-30°C to 150°C
High-temperature food grade oil	Uses NSF-H1 food grade oil in its bushes.

Note: Applying silicone oil may result in reduced wear performance.

RS Double Strand Compatible LAMBDA Chain — Series code: LMDS

When changing from two strands of RS Roller Chain to Lambda Chain (series/no. of strands: LMD-2), special sprockets are required because the horizontal pitch is different. Therefore, RS Double Strand Compatible Lambda Chain should have the same horizontal pitch as 2-strand RS Roller Chain, and consequently 2-strand RS sprockets can be used. The kilowatt rating will be higher than that of LMD-2.



Interchangeability	Compatible*1 with RS roller chain. Can use double-strand RS sprockets*2.

Note: *1. Kilowatt ratings and dimensions will differ in part. *2. LMD-2 sprockets cannot be used. Use 2-strand RS sprockets.

Other LAMBDA Chains

Lambda Chain B Series
Series code: LM
Lambda Chain that conforms to the B series standards. The dimensions are interchangeable*1 with existing ISO 606 B chains.

Surface-Treated Lambda Chain NP Series
Series code: LMDNP
Standard Lambda Chain with corrosion-resistant surface treatments on the plates and rollers.

Heavy Duty Lambda Chain
Series code: LMDH
The outer plates are one size thicker than standard Lambda Chain to give the chain higher kilowatt ratings*2 than double-strand Lambda Chain.
Note: The transverse pitch on standard RS Roller Chain and Lambda Chain differ. Multi-strand sprockets are made-to-order items.

Heavy Duty Lambda Chain NP Series
Series code: LMDHNP
Heavy Duty Lambda Chain with corrosion-resistant surface treatments on the plates and rollers.

Curved Lambda Chain
Series code: LMCCU
This sideflexing roller chain features large lateral bending capabilities thanks to large clearance between individual components. RS sprockets can be used without modification.

Note: *1. Kilowatt ratings, strength, and dimensions differ in part from RS Roller Chain B Series.
*2. When using press fit connecting links.

Precautions When Considering and Adopting LAMBDA Chains

1. Preventing contamination

Lambda Chains have special nickel-plated pins and plates with black oxide treatment. Surface-treated Lambda Chains have different surface treatments for each series. Do not use Lambda Chain if the chain will come in direct contact with food, or where coating flakes or wear dust may contaminate food. In non-food applications, take measures to prevent entry of foreign matter, for example, installing an appropriate cover when used in environments where coating flakes or wear dust may present a problem. Though nickel is not subject to the Japan Food Sanitation Act or the Industrial Safety and Health Act, use the chain with caution.

2. Lubricating oil used on products

Depending on usage conditions, the lubricating oil contained in impregnated bushings may spatter. A small amount of oil that is not compliant with NSF H1 requirements is used in the manufacturing process of Lambda Chain. If a bushing runs out of impregnating oil, it should be quickly re-oiled, leading to a longer wear life.

3. Usage environment

If debris or dust is allowed to enter between chain parts, wear elongation may result and the chain may reach the end of its service life prematurely. Avoid using chains in a chemical, solvent, or degreasing medium, or in water or under vacuum in a way that may cause the lubricating oil impregnating the bushings to become depleted.
Lambda Chain is not coated with anti-rust oil. Keep away from hot or humid places, and avoid dusty locations.

4. Double-strand chain

Double-strand Lambda Chain and Heavy Duty Lambda Chain (including Surface-treated Series and KF Series) have different horizontal pitches compared to RS Roller Chain. Use dedicated sprockets instead of RS sprockets.
RS Double-strand Compatible Lambda Chain has the same horizontal pitch as RS Roller Chain. Double-strand RS sprockets may be used.
Double-strand chains cannot be used together with LMD-2 and LMDS-2 chains, including their connecting components such as connecting links. The entire chain should be replaced and compatible sprockets selected.

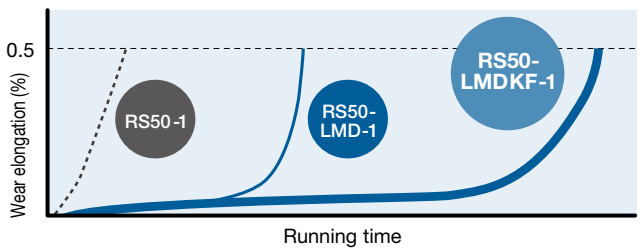
5. Checking for interference on the equipment side

The length of pins for lube-free chains varies depending on the thickness of the outer and inner plates and the presence or absence of a felt seal. Since the pins extend beyond the RS roller chain itself, check for interference with equipment at the time of chain replacement.

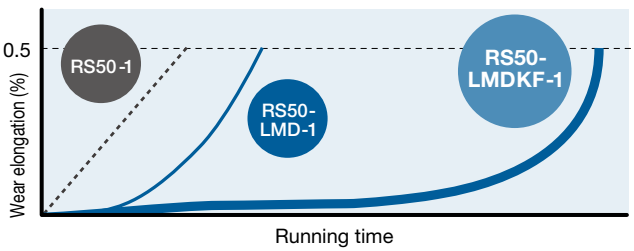
Comparison of Wear Life in the High-Temperature Range (Reference)

A roller chain's wear life varies depending on the chain speed and load acting on it, the number of teeth on the sprocket, operating conditions and temperature, and so on. The graphs below provide a rough guide to roller chain wear life.
Note: Wear life for Lambda Chain is +0.5% elongation.

◆ 150°C range
RS50 (in-house test comparison with no additional lubrication)

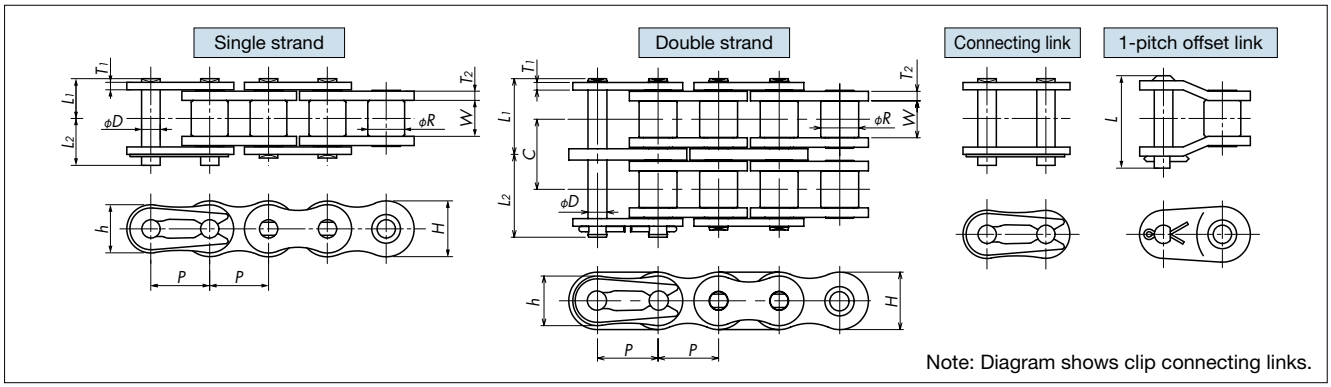


◆ 230°C range
RS50 (in-house test comparison with no additional lubrication)



Note: 1. The operating temperature range for Lambda Chain is -10°C to 150°C.
2. Chain temperature may rise to be higher than ambient temperature. Make sure that chain temperature does not exceed allowable operating temperature.
3. Kilowatt ratings will drop to 3/4 of the listed catalog values when using in the 150°C to 200°C range. Select a chain to match your operating temperature.
4. Kilowatt ratings will drop to 1/2 of the listed catalog values when using in the 200°C to 230°C range. Select a chain to match your operating temperature.

Lube-Free Roller Chains LAMBDA Chain (Surface Treated LAMBDA Chain NP Series / RS Double Strand Compatible LAMBDA Chain)



Note: Diagram shows clip connecting links.

Specifications (common to Lambda Chain and Surface Treated Lambda Chain NP Series)

Tsubaki chain number		Pitch	Roller dia.	Inner width of inner link	Plates				Pins					Offset pin length	Transverse pitch	Min. tensile strength kN{kgf}		Approx. mass kg/m		Links per unit	Allowable speed m/min
					Thickness		Height		Dia.	L_1		L_2									
1-strand	2-strand	P	R	W	T_1	T_2	H	h	D	1-strand	2-strand	1-strand	2-strand	L	C	1-strand	2-strand	1-strand	2-strand		
RS40-LMD-1	RS40-LMDS-2	12.70	7.92	7.55	1.5	2.0	12.0	10.4	3.97	8.75	15.95	10.45	17.65	20.0	14.4	17.7{1800}	30.0{3060}	0.70	1.4	240	150
RS50-LMD-1	RS50-LMDS-2	15.875	10.16	9.26	2.0	2.4	15.0	13.0	5.09	10.75	19.85	12.45	21.55	24.0	18.1	28.4{2900}	48.3{4930}	1.11	2.2	192	135
RS60-LMD-1	RS60-LMDS-2	19.05	11.91	12.28	2.4	3.2	18.1	15.6	5.96	13.70	25.15	15.70	26.95	32.0	22.8	40.2{4100}	68.4{6970}	1.72	3.4	160	120
RS80-LMD-1	RS80-LMDS-2	25.40	15.88	15.48	3.2	4.0	24.1	20.8	7.94	17.15	31.75	20.25	34.75	39.9	29.3	71.6{7300}	122{12400}	2.77	5.5	120	90
RS100-LMD-1	RS100-LMDS-2	31.75	19.05	18.70	4.0	4.8	30.1	26.0	9.54	20.65	38.50	23.85	41.60	47.5	35.8	107 {10900}	181{18500}	4.30	8.6	96	80
RS120-LMD-1	RS120-LMDS-2	38.10	22.23	24.75	4.8	5.6	36.2	31.2	11.11	25.75	48.55	29.95	52.55	59.0	45.4	148 {15000}	252{25700}	6.4	13.0	80	50
RS140-LMD-1	RS140-LMDS-2	44.45	25.40	24.75	5.6	6.4	42.2	36.4	12.71	27.70	52.20	32.20	56.60	63.7	48.9	193 {19700}	329{33500}	8.1	16.5	68	50
RS160-LMD-1	RS160-LMDS-2	50.80	28.58	31.2	6.4	7.15	48.2	41.6	14.29	32.75	62.05	37.65	66.85	74.1	58.5	255 {26000}	433{44200}	10.5	21.4	60	50

Note: 1. Single strand or double strand. Offset links are not available for double-strand chain.
2. Items in bold are stocked in units. Surface-treated Lambda Chain (NP Series) is stocked in single-strand in sizes from RS40 to RS100.
3. RS Double Strand Compatible Chain uses a flat middle plate . RS40 to RS100 use one middle plate, while RS120 to RS160 use two middle plates.

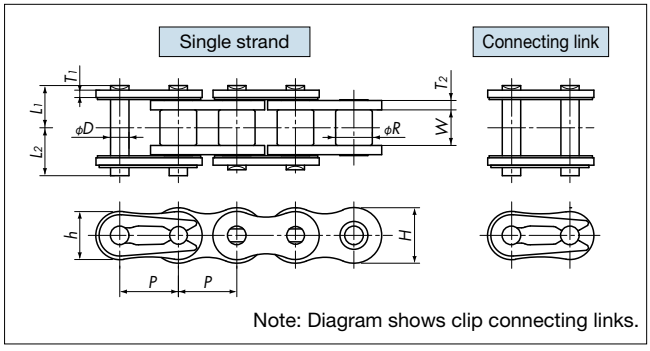
Model numbering example **RS80 -LMD -1 -RP + 110L -MWJR**

Size / Series / Number of strands / Pin type / Number of links / End link

Model numbering example **RS100 -LMDS -2 -RP + 86L -MWJR**

Size / Series / Number of strands / Pin type / Number of links / End link

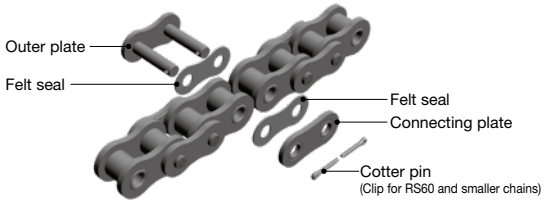
Lube-Free Roller Chains LAMBDA Chain (X-Λ)



Note: Diagram shows clip connecting links.

◆ Connecting

Use a connecting link (with felt seal) to connect X-Lambda Chains. Set the felt seals on the inside of both the outer plate and connecting plate (as shown below).



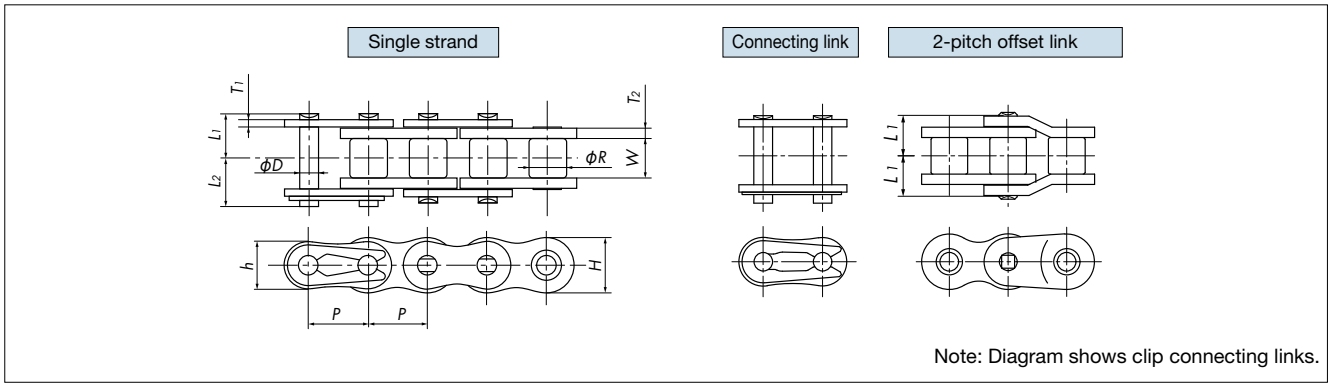
Tsubaki chain number	Pitch	Roller dia.	Inner width of inner link	Plates				Pins			Min. tensile strength kN{kgf}	Approx. mass kg/m	Links per unit	Allowable speed m/min
				Thickness		Height		Dia.	L_1	L_2				
	P	R	W	T_1	T_2	H	h	D						
RS40-LMDX-1	12.70	7.92	7.55	1.5	2.0	12.0	10.4	3.97	9.4	11.1	17.7{1800}	0.70	240	150
RS50-LMDX-1	15.875	10.16	9.26	2.0	2.4	15.0	13.0	5.09	11.4	13.1	28.4{2900}	1.11	192	135
RS60-LMDX-1	19.05	11.91	12.28	2.4	3.2	18.1	15.6	5.96	14.8	16.5	40.2{4100}	1.72	160	120
RS80-LMDX-1	25.40	15.88	15.48	3.2	4.0	24.1	20.8	7.94	18.3	20.9	71.6{7300}	2.77	120	90
RS100-LMDX-1	31.75	19.05	18.70	4.0	4.8	30.1	26.0	9.54	21.8	24.5	107 {10900}	4.30	96	80
RS120-LMDX-1	38.10	22.23	24.75	4.8	5.6	36.2	31.2	11.11	26.7	30.8	148 {15000}	6.40	80	50

Note: Offset links are not available.

Model numbering example **RS80 -LMDX -1 -RP + 110L -MWJR**

Size / Series / Number of strands / Pin type / Number of links / End link

Lube-Free Roller Chains LAMBDA Chain KF Series (Heat Resistant Series)



Note: Diagram shows clip connecting links.

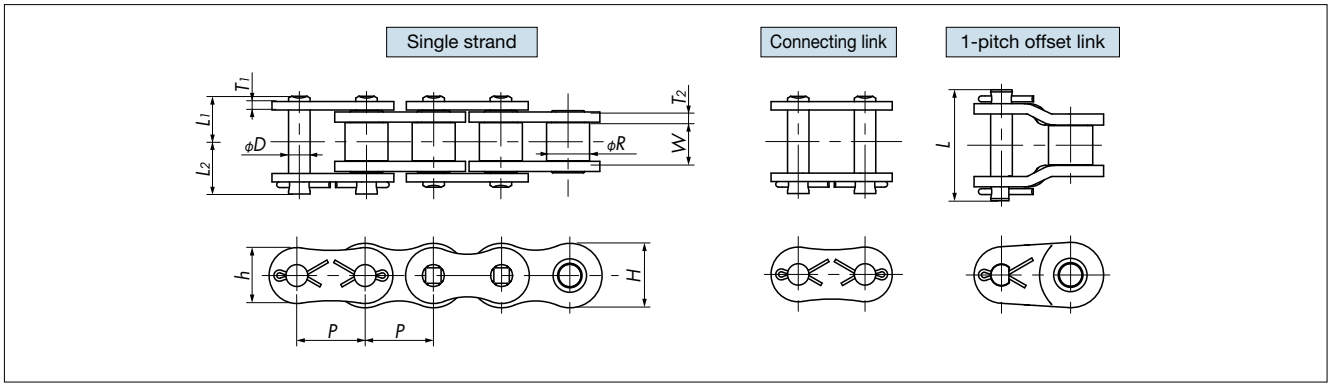
Tsubaki chain number	Pitch P	Roller dia. R	Inner width of inner link W	Plates				Pins			Min. tensile strength kN{kgf}	Approx. mass kg/m	Links per unit	Allowable speed m/min
				Thickness		Height		Dia.						
				T_1	T_2	H	h	D	L_1	L_2				
RS40-LMDKF-1	12.70	7.92	7.55	1.5	2.0	12.0	10.4	3.97	8.75	10.45	17.7 {1800}	0.70	240	150
RS50-LMDKF-1	15.875	10.16	9.26	2.0	2.4	15.0	13.0	5.09	10.75	12.45	28.4 {2900}	1.11	192	135
RS60-LMDKF-1	19.05	11.91	12.28	2.4	3.2	18.1	15.6	5.96	13.70	15.70	40.2 {4100}	1.72	160	120
RS80-LMDKF-1	25.40	15.88	15.48	3.2	4.0	24.1	20.8	7.94	17.15	20.25	71.6 {7300}	2.77	120	90

Note: Single strand or double strand. Single-strand chains have two-pitch offset links only. Offset links are not available for double-strand chain.

Model numbering example **RS80 -LMDKF -1 -RP + 110L -MWJR**

RS80: Size; -LMDKF: Series; -1: Number of strands; -RP: Pin type; 110L: Number of links; -MWJR: End link

Lube-Free Roller Chains LAMBDA Chain Cold Resistant Series



Tsubaki chain number	Pitch P	Roller dia. R	Inner width of inner link W	Plates				Pins			Offset pin length L	Min. tensile strength kN{kgf}	Approx. mass kg/m	Links per unit	Allowable speed m/min
				Thickness T_1	Thickness T_2	Height H	Height h	Dia. D	L_1	L_2					
RS40-LMDKT-1	12.70	7.92	7.55	1.5	2.0	12.0	10.4	3.97	8.75	10.45	20.0	17.7{1800}	0.70	240	150
RS50-LMDKT-1	15.875	10.16	9.26	2.0	2.4	15.0	13.0	5.09	10.75	12.45	24.0	28.4{2900}	1.11	192	135
RS60-LMDKT-1	19.05	11.91	12.28	2.4	3.2	18.1	15.6	5.96	13.70	15.70	32.0	40.2{4100}	1.72	160	120
RS80-LMDKT-1	25.40	15.88	15.48	3.2	4.0	24.1	20.8	7.94	17.15	20.25	39.9	71.6{7300}	2.77	120	90
RS100-LMDKT-1	31.75	19.05	18.70	4.0	4.8	30.1	26.0	9.54	20.65	23.85	47.5	107 {10900}	4.30	96	80

Model numbering example **RS80 -LMDKT -1 -RP + 110L -MWJR**

RS80: Size; -LMDKT: Series; -1: Number of strands; -RP: Pin type; 110L: Number of links; -MWJR: End link

Lube-Free Roller Chains Kilowatt Ratings Tables

LAMBDA Chain / Surface Treated LAMBDA Chain / X-LAMBDA Chain / LAMBDA Chain KF Series / LAMBDA Chain Cold Resistant Series / RS Double Strand Compatible LAMBDA Chain

■ RS40 lube-free roller chain

Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth	Small sprocket max rpm											
	10	25	50	100	200	300	400	500	700	900	1000	1200
9	0.05	0.11	0.21	0.39	0.72	1.04	1.35	1.65	2.23	2.79	3.07	3.62
10	0.05	0.12	0.23	0.43	0.81	1.16	1.51	1.84	2.50	3.13	3.44	
11	0.06	0.14	0.26	0.48	0.90	1.29	1.67	2.04	2.77	3.47	3.81	
12	0.07	0.15	0.28	0.53	0.98	1.42	1.84	2.24	3.04	3.81		
13	0.07	0.17	0.31	0.57	1.07	1.55	2.00	2.45	3.31	4.15		
14	0.08	0.18	0.33	0.62	1.16	1.67	2.17	2.65	3.59			
15	0.08	0.19	0.36	0.67	1.25	1.80	2.34	2.86	3.87			
16	0.09	0.21	0.39	0.72	1.34	1.93	2.51	3.06	4.15			
17	0.10	0.22	0.41	0.77	1.43	2.06	2.67	3.27				
18	0.10	0.23	0.44	0.82	1.52	2.20	2.84	3.48				
19	0.11	0.25	0.46	0.87	1.62	2.33	3.02	3.69				
20	0.12	0.26	0.49	0.92	1.71	2.46	3.19	3.90				
21	0.12	0.28	0.52	0.97	1.80	2.59	3.36	4.11				
22	0.13	0.29	0.54	1.01	1.89	2.73	3.53	4.32				
23	0.13	0.31	0.57	1.06	1.99	2.86	3.71	4.53				
24	0.14	0.32	0.60	1.11	2.08	3.00	3.88					
25	0.15	0.33	0.62	1.16	2.17	3.13	4.06					
26	0.15	0.35	0.65	1.22	2.27	3.27	4.23					
28	0.17	0.38	0.71	1.32	2.46	3.54	4.58					
30	0.18	0.41	0.76	1.42	2.65	3.81						
32	0.19	0.44	0.82	1.52	2.84	4.09						
35	0.21	0.48	0.90	1.68	3.13	4.50						
40	0.24	0.56	1.04	1.94	3.61							
45	0.28	0.63	1.18	2.20	4.10							

■ RS50 lube-free roller chain

Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth	Small sprocket max rpm											
	10	25	50	100	200	300	400	500	600	700	800	900
9	0.10	0.23	0.43	0.80	1.49	2.15	2.78	3.40	4.01	4.61	5.19	5.77
10	0.11	0.26	0.48	0.90	1.67	2.41	3.12	3.81	4.49	5.16	5.82	
11	0.12	0.29	0.53	0.99	1.85	2.67	3.46	4.23	4.98	5.72		
12	0.14	0.31	0.58	1.09	2.03	2.93	3.80	4.64	5.47	6.28		
13	0.15	0.34	0.64	1.19	2.22	3.20	4.14	5.06	5.96			
14	0.16	0.37	0.69	1.29	2.40	3.46	4.49	5.48	6.46			
15	0.17	0.40	0.74	1.39	2.59	3.73	4.83	5.91				
16	0.19	0.43	0.80	1.49	2.78	4.00	5.18	6.33				
17	0.20	0.46	0.85	1.59	2.96	4.27	5.53	6.76				
18	0.21	0.49	0.91	1.69	3.15	4.54	5.88					
19	0.23	0.51	0.96	1.79	3.34	4.81	6.24					
20	0.24	0.54	1.01	1.89	3.53	5.09	6.59					
21	0.25	0.57	1.07	2.00	3.72	5.36	6.95					
22	0.26	0.60	1.12	2.10	3.92	5.64						
23	0.28	0.63	1.18	2.20	4.11	5.92						
24	0.29	0.66	1.24	2.31	4.30	6.20						
25	0.30	0.69	1.29	2.41	4.50	6.48						
26	0.32	0.72	1.35	2.51	4.69	6.76						
28	0.34	0.78	1.46	2.72	5.08	7.32						
30	0.37	0.84	1.57	2.93	5.47							
32	0.40	0.90	1.69	3.15	5.87							
35	0.44	1.00	1.86	3.46	6.47							
40	0.50	1.15	2.14	4.00	7.47							
45	0.57	1.31	2.44	4.55								

■ RS60 lube-free roller chain

Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth	Small sprocket max rpm											
	10	25	50	100	150	200	250	300	400	500	600	700
9	0.18	0.41	0.76	1.41	2.03	2.64	3.22	3.80	4.92	6.01	7.08	8.14
10	0.20	0.45	0.85	1.58	2.28	2.95	3.61	4.25	5.51	6.74	7.94	
11	0.22	0.50	0.94	1.75	2.53	3.27	4.00	4.71	6.11	7.47		
12	0.24	0.55	1.03	1.93	2.78	3.60	4.40	5.18	6.71	8.20		
13	0.26	0.60	1.13	2.10	3.03	3.92	4.79	5.65	7.32			
14	0.29	0.65	1.22	2.28	3.28	4.25	5.19	6.12	7.92			
15	0.31	0.70	1.31	2.45	3.53	4.58	5.59	6.59	8.54			
16	0.33	0.75	1.41	2.63	3.79	4.91	6.00	7.07				
17	0.35	0.81	1.50	2.81	4.04	5.24	6.40	7.54				
18	0.38	0.86	1.60	2.99	4.30	5.57	6.81	8.02				
19	0.40	0.91	1.70	3.16	4.56	5.91	7.22	8.51				
20	0.42	0.96	1.79	3.35	4.82	6.24	7.63	8.99				
21	0.44	1.01	1.89	3.53	5.08	6.58	8.04	9.48				
22	0.47	1.06	1.99	3.71	5.34	6.92	8.46					
23	0.49	1.12	2.08	3.89	5.60	7.26	8.87					
24	0.51	1.17	2.18	4.07	5.87	7.60	9.29					
25	0.54	1.22	2.28	4.26	6.13	7.94	9.71					
26	0.56	1.28	2.38	4.44	6.40	8.29						
28	0.61	1.38	2.58	4.81	6.93	8.98						
30	0.65	1.49	2.78	5.18	7.47	9.67						
32	0.70	1.60	2.98	5.56	8.00							
35	0.77	1.76	3.28	6.12	8.82							
40	0.89	2.03	3.79	7.07	10.2							
45	1.01	2.31	4.30	8.03								

■ RS80 lube-free roller chain

Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth	Small sprocket max rpm										
	10	25	50	75	100	125	150	200	250	300	350
9	0.40	0.91	1.69	2.44	3.16	3.86	4.55	5.90	7.21	8.50	9.76
10	0.45	1.02	1.90	2.73	3.54	4.33	5.10	6.61	8.08	9.52	10.9
11	0.49	1.13	2.10	3.03	3.93	4.80	5.66	7.33	8.96	10.6	
12	0.54	1.24	2.31	3.33	4.31	5.27	6.21	8.05	9.84		
13	0.59	1.35	2.52	3.63	4.70	5.75	6.77	8.78	10.7		
14	0.64	1.46	2.73	3.93	5.10	6.23	7.34	9.51	11.6		
15	0.69	1.58	2.94	4.24	5.49	6.71	7.91	10.2			
16	0.74	1.69	3.15	4.54	5.89	7.19	8.48	11.0			
17	0.79	1.80	3.37	4.85	6.28	7.68	9.05	11.7			
18	0.84	1.92	3.58	5.16	6.68	8.17	9.63				
19	0.89	2.03	3.80	5.47	7.09	8.66	10.2				
20	0.94	2.15	4.01	5.78	7.49	9.16	10.8				
21	0.99	2.27	4.23	6.09	7.89	9.65	11.4				
22	1.05	2.38	4.45	6.41	8.30	10.1	12.0				
23	1.10	2.50	4.67	6.72	8.71	10.6	12.5				
24	1.15	2.62	4.89	7.04	9.12	11.1					
25	1.20	2.74	5.11	7.36	9.53	11.7					
26	1.25	2.86	5.33	7.67	9.94	12.2					
28	1.36	3.09	5.77	8.31	10.8	13.2					
30	1.46	3.33	6.22	8.96	11.6						
32	1.57	3.57	6.67	9.60	12.4						
35	1.73	3.94	7.35	10.6	13.7						
40	1.99	4.55	8.48	12.2							
45	2.26	5.16	9.64	13.9							

Note: 1. kW ratings when using a one-pitch offset link are 80% of the above values.
2. For double-strand chain, multiply the kilowatt ratings in the tables above by the multi-strand factor in Table 1.
3. X-Lambda Chain provides a kilowatt rating with a wear life several times longer than that of standard Lambda Chain.
4. For Lambda Chain KF Series, multiply by the temperature factor for KF Series in Table 2 based on the ambient temperature for your application.

■ Table 1. Multi-strand factor for double-strand Lambda Chain

RS Double Strand Compatible Lambda Chain Heavy Duty Lambda Chain* Heavy Duty Lambda Chain NP Series*
1.7

*The multi-strand factor for Heavy Duty Lambda Chain and Heavy Duty Lambda Chain NP Series is the coefficient when using F-type connecting links. If M-type connecting links are used, the kilowatt rating will be reduced.

■ Table 2. Temperature factors for KF Series Chain

Expect a reduction in strength due to operating temperatures. Calculate based on the maximum operating temperature of your equipment.

Max. operating temperature	KF Series kW ratings
150°C or less	kW rating in above table × 1
150°C to 200°C	kW rating in above table × 3/4
200°C to 230°C	kW rating in above table × 1/2

■ RS100 lube-free roller chain

Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth	Small sprocket max rpm											
	10	25	50	75	100	125	150	175	200	225	250	275
9	0.66	1.51	2.82	4.07	5.27	6.44	7.59	8.72	9.83	10.9	12.0	13.1
10	0.74	1.70	3.16	4.56	5.90	7.22	8.51	9.77	11.0	12.3	13.5	
11	0.82	1.88	3.51	5.05	6.54	8.00	9.43	10.8	12.3	13.4		
12	0.91	2.06	3.85	5.55	7.19	8.79	10.4	11.9	13.4			
13	0.99	2.25	4.20	6.05	7.84	9.58	11.3	13.0				
14	1.07	2.44	4.55	6.56	8.49	10.4	12.2	14.1				
15	1.15	2.63	4.90	7.06	9.15	11.2	13.2					
16	1.23	2.82	5.26	7.57	9.81	12.0	14.1					
17	1.32	3.01	5.61	8.08	10.5	12.8						
18	1.40	3.20	5.97	8.60	11.1	13.6						
19	1.49	3.39	6.33	9.12	11.8	14.4						
20	1.57	3.58	6.69	9.64	12.5	15.3						
21	1.66	3.78	7.05	10.2	13.2							
22	1.74	3.97	7.41	10.7	13.8							
23	1.83	4.17	7.78	11.2	14.5							
24	1.91	4.36	8.15	11.7	15.2							
25	2.00	4.56	8.51	12.3	15.9							
26	2.09	4.76	8.88	12.8								
28	2.26	5.16	9.62	13.9								
30	2.43	5.55	10.4	14.9								
32	2.61	5.96	11.1	16.0								
35	2.88	6.56	12.2									
40	3.32	7.58	14.1									
45	3.77	8.61	16.1									

■ RS120 lube-free roller chain

Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth	Small sprocket max rpm											
	5	10	15	20	25	30	40	50	60	80	100	125
9	0.65	1.22	1.75	2.27	2.77	3.27	4.23	5.17	6.10	7.90	9.65	11.8
10	0.73	1.36	1.96	2.54	3.11	3.66	4.74	5.80	6.83	8.85	10.8	13.2
11	0.81	1.51	2.17	2.82	3.44	4.06	5.25	6.43	7.57	9.81	12.0	
12	0.89	1.66	2.39	3.09	3.78	4.46	5.77	7.06	8.32	10.8	13.2	
13	0.97	1.81	2.60	3.37	4.12	4.86	6.29	7.70	9.07	11.7	14.4	
14	1.05	1.96	2.82	3.65	4.47	5.26	6.82	8.34	9.82	12.7		
15	1.13	2.11	3.04	3.94	4.81	5.67	7.35	8.98	10.6	13.7		
16	1.21	2.26	3.26	4.22	5.16	6.08	7.88	9.63	11.3	14.7		
17	1.29	2.42	3.48	4.51	5.51	6.49	8.41	10.3	12.1			
18	1.38	2.57	3.70	4.79	5.86	6.91	8.94	10.9	12.9			
19	1.46	2.72	3.92	5.08	6.21	7.32	9.48	11.6	13.7			
20	1.54	2.88	4.15	5.37	6.57	7.74	10.0	12.3	14.4			
21	1.63	3.03	4.37	5.66	6.92	8.16	10.6	12.9	15.2			
22	1.71	3.19	4.60	5.95	7.28	8.58	11.1	13.6				
23	1.79	3.35	4.82	6.25	7.64	9.00	11.7	14.3				
24	1.88	3.51	5.05	6.54	8.00	9.42	12.2	14.9				
25	1.96	3.66	5.28	6.84	8.36	9.85	12.8	15.6				
26	2.05	3.82	5.51	7.13	8.72	10.3	13.3	16.3				
28	2.22	4.14	5.96	7.72	9.45	11.1	14.4					
30	2.39	4.46	6.43	8.32	10.2	12.0	15.5					
32	2.56	4.78	6.89	8.92	10.9	12.9	16.7					
35	2.82	5.27	7.59	9.83	12.0	14.2						
40	3.26	6.09	8.77	11.4	13.9	16.4						
45	3.70	6.91	9.96	12.9	15.8							

■ RS140 lube-free roller chain

Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth	Small sprocket max rpm											
	5	10	15	20	25	30	40	50	60	80	100	125
9	1.02	1.90	2.74	3.55	4.34	5.12	6.63	8.10	9.55	12.4	15.1	18.5
10	1.14	2.13	3.07	3.98	4.87	5.73	7.43	9.08	10.7	13.9	16.9	
11	1.27	2.36	3.41	4.41	5.39	6.36	8.23	10.1	11.9	15.4	18.8	
12	1.39	2.60	3.74	4.85	5.93	6.98	9.05	11.1	13.0	16.9		
13	1.52	2.83	4.08	5.29	6.46	7.61	9.86	12.1	14.2	18.4		
14	1.64	3.07	4.42	5.73	7.00	8.25	10.7	13.1	15.4	19.9		
15	1.77	3.31	4.76	6.17	7.54	8.89	11.5	14.1	16.6			
16	1.90	3.54	5.11	6.61	8.08	9.53	12.3	15.1	17.8			
17	2.03	3.78	5.45	7.06	8.63	10.2	13.2	16.1	19.0			
18	2.16	4.03	5.80	7.51	9.18	10.8	14.0	17.1	20.2			
19	2.29	4.27	6.15	7.96	9.73	11.5	14.9	18.2				
20	2.42	4.51	6.50	8.42	10.3	12.1	15.7	19.2				
21	2.55	4.75	6.85	8.87	10.8	12.8	16.6	20.2				
22	2.68	5.00	7.20	9.33	11.4	13.4	17.4	21.3				
23	2.81	5.25	7.55	9.79	12.0	14.1	18.3					
24	2.94	5.49	7.91	10.2	12.5	14.8	19.1					
25	3.08	5.74	8.27	10.7	13.1	15.4	20.0					
26	3.21	5.99	8.62	11.2	13.7	16.1	20.8					
28	3.48	6.49	9.34	12.1	14.8	17.4	22.6					
30	3.74	6.99	10.1	13.0	15.9	18.8						
32	4.02	7.49	10.8	14.0	17.1	20.1						
35	4.42	8.25	11.9	15.4	18.8	22.2						
40	5.11	9.53	13.7	17.8	21.7							

■ RS160 lube-free roller chain

Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth	Small sprocket max rpm										
	5	10	15	20	25	30	40	50	60	80	100
9	1.54	2.87	4.13	5.35	6.54	7.70	9.98	12.2	14.4	18.6	22.8
10	1.72	3.21	4.63	5.99	7.33	8.63	11.2	13.7	16.1	20.9	
11	1.91	3.56	5.13	6.64	8.12	9.57	12.4	15.2	17.9	23.1	
12	2.10	3.91	5.63	7.30	8.92	10.5	13.6	16.6	19.6	25.4	
13	2.28	4.26	6.14	7.96	9.73	11.5	14.8	18.1	21.4		
14	2.48	4.62	6.65	8.62	10.5	12.4	16.1	19.7	23.2		
15	2.67	4.98	7.17	9.29	11.4	13.4	17.3	21.2	25.0		
16	2.86	5.34	7.68	9.96	12.2	14.3	18.6	22.7	26.8		
17	3.05	5.70	8.20	10.6	13.0	15.3	19.8	24.2			
18	3.25	6.06	8.73	11.3	13.8	16.3	21.1	25.8			
19	3.44	6.42	9.25	12.0	14.7	17.3	22.4	27.3			
20	3.64	6.79	9.78	12.7	15.5	18.2	23.6				
21	3.83	7.16	10.3	13.4	16.3	19.2	24.9				
22	4.03	7.52	10.8	14.0	17.2	20.2	26.2				
23	4.23	7.90	11.4	14.7	18.0	21.2	27.5				
24	4.43	8.27	11.9	15.4	18.9	22.2	28.8				
25	4.63	8.64	12.4	16.1	19.7	23.2					
26	4.83	9.01	13.0	16.8	20.6	24.2					
28	5.23	9.76	14.1	18.2	22.3	26.2					
30	5.64	10.5	15.2	19.6	24.0	28.3					
32	6.04	11.3	16.2	21.0	25.7	30.3					
35	6.66	12.4	17.9	23.2	28.3						
40	7.69	14.4	20.7	26.8							

Note: 1. kW ratings when using a one-pitch offset link are 80% of the above values.
2. For double-strand chain, multiply the kilowatt ratings in the tables above by the multi-strand factor in Table 1.
3. X-Lambda Chain provides a kilowatt rating with a wear life several times longer than that of standard Lambda Chain.
4. For Lambda Chain KF Series, multiply by the temperature factor for KF Series in Table 2 based on the ambient temperature for your application.

■ Table 1. Multi-strand factor for double-strand Lambda Chain

RS Double Strand Compatible Lambda Chain Heavy Duty Lambda Chain* Heavy Duty Lambda Chain NP Series*
1.7

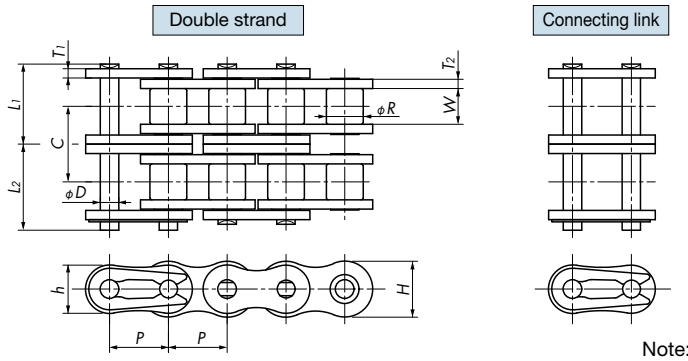
*The multi-strand factor for Heavy Duty Lambda Chain and Heavy Duty Lambda Chain NP Series is the coefficient when using F-type connecting links. If M-type connecting links are used, the kilowatt rating will be reduced.

■ Table 2. Temperature factors for KF Series Chain

Expect a reduction in strength due to operating temperatures. Calculate based on the maximum operating temperature of your equipment.

Max. operating temperature	KF Series kW ratings
150°C or less	kW rating in above table × 1
150°C to 200°C	kW rating in above table × 3/4
200°C to 230°C	kW rating in above table × 1/2

Lube-Free Roller Chains Heavy Duty LAMBDA Chain / Heavy Duty LAMBDA Chain NP Series



Note: Diagram shows clip connecting links.

Specifications (common to Heavy Duty Lambda Chain and Heavy Duty Lambda Chain NP Series)

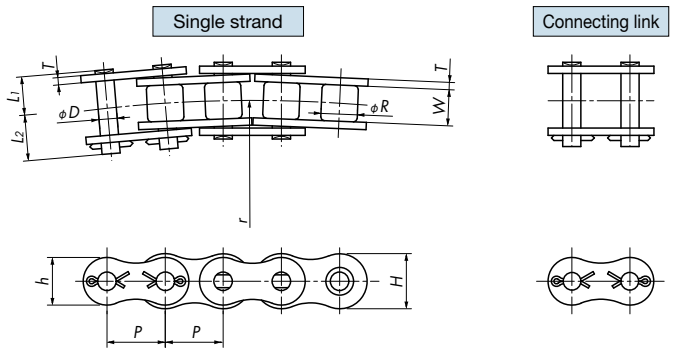
Tsubaki chain number	Pitch P	Roller dia. R	Inner width of inner link W	Plates				Pins			Transverse pitch C	Min. tensile strength kN{kgf}	Approx. mass kg/m	Links per unit	Allowable speed m/min
				Thickness		Height		Dia.							
				T_1	T_2	H	h	D	L_1	L_2					
RS40-LMDH-2	12.70	7.92	7.55	2.0	2.0	12.0	10.4	3.97	17.5	19.15	16.4	35.3{3600}	1.57	240	150
RS50-LMDH-2	15.875	10.16	9.26	2.4	2.4	15.0	13.0	5.09	20.95	22.65	19.7	56.9{5800}	2.35	192	135
RS60-LMDH-2	19.05	11.91	12.28	3.2	3.2	18.1	15.6	5.96	27.55	29.45	26.1	80.4{8200}	3.59	160	120
RS80-LMDH-2	25.40	15.88	15.48	4.0	4.0	24.1	20.8	7.94	34.6	37.2	32.6	143 {14600}	6.18	120	90
RS100-LMDH-2	31.75	19.05	18.70	4.8	4.8	30.1	26.0	9.54	41.4	44.1	39.1	214 {21800}	9.03	96	80

Note: 1. For heavy duty Lambda chain, multiply the kilowatt ratings for Lambda chain by the multi-strand factor for double-strand Lambda chain in Table 1 on pages 81 and 82.
2. Use an F-type connecting link for heavy duty Lambda chain. If M-type connecting links are used, the kilowatt rating will be reduced.

Model numbering example **RS80 -LMDH -2 -RP + 110L -FWJR**

RS80: Size; -LMDH: Series; -2: Number of strands; -RP: Pin type; 110L: Number of links; -FWJR: End link

Lube-Free Roller Chains Curved LAMBDA Chain



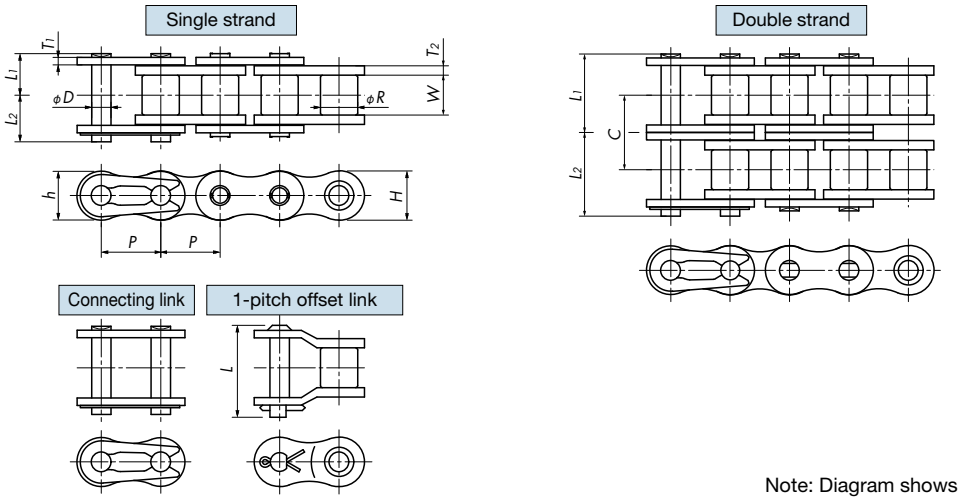
Specifications

Tsubaki chain number	Pitch P	Roller dia. R	Inner width of inner link W	Plates			Pins			Min. hor. bending radius r	Min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m	Links per unit
				Thickness	Height		Dia.							
				T	H	h	D	L_1	L_2					
RS40-LMCCU-1	12.70	7.92	7.95	1.5	12.0	10.4	3.59	8.45	9.75	400	11.1{1130}	1.86 {190}	0.61	240
RS50-LMCCU-1	15.875	10.16	9.53	2.0	15.0	13.0	4.45	10.3	11.7	500	17.3{1760}	2.84 {290}	1.01	192
RS60-LMCCU-1	19.05	11.91	12.70	2.4	18.1	15.6	5.35	12.95	14.55	600	25.1{2560}	4.02 {410}	1.40	160

Note: 1. RS sprockets can be used. See the “Handling Roller Chains and Sprockets” for installation.
2. Attachment chains are also available. Contact a Tsubaki representative.

Model numbering example **RS40 -LMCCU -1 -RP + 230L -MWJR**

RS40: Size; -LMCCU: Series; -1: Number of strands; -RP: Pin type; 230L: Number of links; -MWJR: End link



Note: Diagram shows clip connecting links.

■ Specifications

Tsubaki chain number		Identification no.	Pitch P	Roller dia. R	Inner width of inner link W	Plates				Pins				
						Thickness		Height		Dia. D	L_1		L_2	
1-strand	2-strand					T_1	T_2	H	h		1-strand	2-strand	1-strand	2-strand
RF06B-LM-1	RF06B-LM-2	06B	9.525	6.35	5.72	1.0	1.3	8.2	8.2	3.28	6.1	11.2	7.7	12.8
RS08B-LM-1	RS08B-LM-2	08B	12.70	8.51	7.75	1.6	1.6	11.8	10.4	4.45	8.4	15.3	10.0	16.9
RS10B-LM-1	RS10B-LM-2	10B	15.875	10.16	9.65	1.5	1.5	14.7	13.7	5.08	9.55	17.85	11.25	19.55
RS12B-LM-1	RS12B-LM-2	12B	19.05	12.07	11.68	1.7	1.8	16.1	16.1	5.72	11.1	20.85	13.0	22.75
RS16B-LM-1	RS16B-LM-2	16B	25.40	15.88	17.02	3.2	4.0	21.0	20.8	8.28	17.75	33.55	19.95	35.75
RS20B-LM-1	RS20B-LM-2	20B	31.75	19.05	19.56	3.4	4.4	26.4	26.0	10.19	19.9	38.25	23.1	41.45
RS24B-LM-1	RS24B-LM-2	24B	38.10	25.40	25.40	5.6	6.0	33.4	31.2	14.63	26.65	50.8	31.85	56.0

Tsubaki chain number		Offset pin length L	Transverse pitch C	Min. tensile strength kN{kgf}		Approx. mass kg/m		Links per unit	Allowable speed m/min
1-strand	2-strand			1-strand	2-strand	1-strand	2-strand		
RF06B-LM-1	RF06B-LM-2	14.5	10.24	8.90{910}	16.9{1720}	0.39	0.75	320	160
RS08B-LM-1	RS08B-LM-2	18.6	13.92	17.8{1820}	31.1{3170}	0.70	1.35	240	150
RS10B-LM-1	RS10B-LM-2	20.8	16.59	22.2{2260}	44.5{4540}	0.95	1.85	192	135
RS12B-LM-1	RS12B-LM-2	24.4	19.46	28.9{2950}	57.8{5890}	1.25	2.50	160	120
RS16B-LM-1	RS16B-LM-2	41.1	31.88	60.0{6120}	106 {10800}	2.70	5.40	120	90
RS20B-LM-1	RS20B-LM-2	46.6	36.45	95.0{9690}	170 {17300}	3.85	7.65	96	80
RS24B-LM-1	RS24B-LM-2	61.7	48.36	160 {16300}	280 {28600}	7.45	14.65	80	50

Note: 1. Cutting and connecting the chain is easy thanks to special pins and rivets that eliminate the need to remove the rivets (on single-strand chains from RS08B to RS16B). Use RS Sprockets B Series. Multi-strand RF06B and RS08B chains have one middle plate. RF06B plate is flat: 
2. Various types of surface treatments are also available.
3. Items in bold are stocked in units.
4. Lambda Chain B Series is dimensionally interchangeable with general-purpose RS Roller Chain B Series; however, be aware that the kW ratings and allowable speed differ. It cannot be used with previous-specifications chain series (stamped with RSD○○BΛ), including connecting parts such as connecting links and offset links. When replacing a chain, replace the entire chain.

Model numbering example

RS08B -LM -1 -RP + 230L -MCJR

- RS08B: Size
- -LM: Series
- -1: Number of strands
- -RP: Pin type
- 230L: Number of links
- -MCJR: End link

■ RF06B lube-free roller chain

Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth	Small sprocket max rpm								
	50	100	300	500	700	900	1200	1500	1800
9	0.06	0.11	0.31	0.49	0.66	0.83	1.07	1.31	1.55
10	0.07	0.13	0.35	0.55	0.74	0.93	1.20	1.47	
11	0.08	0.14	0.38	0.61	0.82	1.03	1.33	1.63	
12	0.08	0.16	0.42	0.67	0.90	1.13	1.47		
13	0.09	0.17	0.46	0.73	0.98	1.23	1.60		
14	0.10	0.18	0.50	0.79	1.07	1.34			
15	0.11	0.20	0.54	0.85	1.15	1.44			
16	0.11	0.21	0.57	0.91	1.23	1.54			
17	0.12	0.23	0.61	0.97	1.31	1.65			
18	0.13	0.24	0.65	1.03	1.40	1.75			
19	0.14	0.26	0.69	1.09	1.48				
20	0.15	0.27	0.73	1.16	1.57				
21	0.15	0.29	0.77	1.22	1.65				
22	0.16	0.30	0.81	1.28	1.74				
23	0.17	0.32	0.85	1.35	1.82				
24	0.18	0.33	0.89	1.41					
25	0.19	0.35	0.93	1.47					
26	0.19	0.36	0.97	1.54					

Note: 1. KW ratings when using a one-pitch offset link are 80% that of the above values.
2. For double-strand chain, multiply the kilowatt ratings in the table above by a multi-strand factor of 1.7.

■ RS08B lube-free roller chain

Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth	Small sprocket max rpm											
	10	25	50	100	200	300	400	500	700	900	1000	1200
9	0.05	0.11	0.20	0.38	0.71	1.02	1.32	1.62	2.19	2.75	3.02	3.56
10	0.05	0.12	0.23	0.43	0.80	1.15	1.48	1.81	2.46	3.08	3.39	
11	0.06	0.14	0.25	0.47	0.88	1.27	1.65	2.01	2.72	3.41	3.75	
12	0.07	0.15	0.28	0.52	0.97	1.40	1.81	2.21	2.99	3.75		
13	0.07	0.16	0.30	0.57	1.06	1.52	1.97	2.41	3.26	4.09		
14	0.08	0.18	0.33	0.61	1.14	1.65	2.13	2.61	3.53			
15	0.08	0.19	0.35	0.66	1.23	1.78	2.30	2.81	3.81			
16	0.09	0.20	0.38	0.71	1.32	1.90	2.47	3.01	4.08			
17	0.10	0.22	0.41	0.76	1.41	2.03	2.63	3.22				
18	0.10	0.23	0.43	0.80	1.50	2.16	2.80	3.42				
19	0.11	0.24	0.46	0.85	1.59	2.29	2.97	3.63				
20	0.11	0.26	0.48	0.90	1.68	2.42	3.14	3.84				
21	0.12	0.27	0.51	0.95	1.77	2.55	3.31	4.04				
22	0.13	0.29	0.54	1.00	1.86	2.68	3.48	4.25				
23	0.13	0.30	0.56	1.05	1.96	2.82	3.65	4.46				
24	0.14	0.32	0.59	1.10	2.05	2.95	3.82					
25	0.14	0.33	0.61	1.15	2.14	3.08	3.99					
26	0.15	0.34	0.64	1.20	2.23	3.22	4.17					

■ RS10B lube-free roller chain

Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth	Small sprocket max rpm									
	10	25	50	100	200	300	400	500	700	900
9	0.07	0.16	0.30	0.55	1.03	1.48	1.92	2.35	3.18	3.99
10	0.08	0.18	0.33	0.62	1.15	1.66	2.15	2.63	3.56	
11	0.09	0.20	0.37	0.69	1.28	1.84	2.39	2.92	3.95	
12	0.09	0.22	0.40	0.75	1.41	2.02	2.62	3.21	4.34	
13	0.10	0.24	0.44	0.82	1.53	2.21	2.86	3.50		
14	0.11	0.26	0.48	0.89	1.66	2.39	3.10	3.79		
15	0.12	0.28	0.51	0.96	1.79	2.58	3.34	4.08		
16	0.13	0.30	0.55	1.03	1.92	2.76	3.58	4.38		
17	0.14	0.32	0.59	1.10	2.05	2.95	3.82	4.67		
18	0.15	0.34	0.63	1.17	2.18	3.14	4.06			
19	0.16	0.36	0.66	1.24	2.31	3.33	4.31			
20	0.16	0.38	0.70	1.31	2.44	3.52	4.55			
21	0.17	0.40	0.74	1.38	2.57	3.71	4.80			
22	0.18	0.42	0.78	1.45	2.71	3.90				
23	0.19	0.44	0.82	1.52	2.84	4.09				
24	0.20	0.46	0.85	1.59	2.97	4.28				
25	0.21	0.48	0.89	1.66	3.11	4.47				
26	0.22	0.50	0.93	1.74	3.24	4.67				

■ RS12B lube-free roller chain

Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth	Small sprocket max rpm										
	10	25	50	100	150	200	300	400	500	600	700
9	0.10	0.23	0.42	0.79	1.13	1.47	2.11	2.74	3.35	3.95	4.53
10	0.11	0.25	0.47	0.88	1.27	1.64	2.37	3.07	3.75	4.42	
11	0.12	0.28	0.52	0.98	1.41	1.82	2.63	3.40	4.16		
12	0.14	0.31	0.58	1.07	1.55	2.00	2.89	3.74	4.57		
13	0.15	0.34	0.63	1.17	1.69	2.18	3.15	4.08			
14	0.16	0.36	0.68	1.27	1.83	2.37	3.41	4.41			
15	0.17	0.39	0.73	1.37	1.97	2.55	3.67	4.76			
16	0.18	0.42	0.78	1.46	2.11	2.73	3.94				
17	0.20	0.45	0.84	1.56	2.25	2.92	4.20				
18	0.21	0.48	0.89	1.66	2.40	3.10	4.47				
19	0.22	0.51	0.94	1.76	2.54	3.29	4.74				
20	0.23	0.54	1.00	1.86	2.68	3.48	5.01				
21	0.25	0.56	1.05	1.96	2.83	3.67					
22	0.26	0.59	1.11	2.07	2.98	3.85					
23	0.27	0.62	1.16	2.17	3.12	4.04					
24	0.29	0.65	1.22	2.27	3.27	4.23					
25	0.30	0.68	1.27	2.37	3.42	4.43					
26	0.31	0.71	1.33	2.47	3.56	4.62					

■ RS16B lube-free roller chain

Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth	Small sprocket max rpm							
	10	25	50	100	150	200	300	350
9	0.32	0.73	1.36	2.54	3.65	4.73	6.82	7.83
10	0.36	0.82	1.52	2.84	4.09	5.30	7.64	8.78
11	0.40	0.90	1.69	3.15	4.54	5.88	8.47	
12	0.44	0.99	1.85	3.46	4.98	6.46		
13	0.47	1.08	2.02	3.77	5.43	7.04		
14	0.51	1.17	2.19	4.09	5.89	7.63		
15	0.55	1.26	2.36	4.40	6.34	8.22		
16	0.59	1.36	2.53	4.72	6.80	8.81		
17	0.63	1.45	2.70	5.04	7.26	9.41		
18	0.68	1.54	2.87	5.36	7.72			
19	0.72	1.63	3.05	5.68	8.19			
20	0.76	1.73	3.22	6.01	8.65			
21	0.80	1.82	3.39	6.33	9.12			
22	0.84	1.91	3.57	6.66	9.59			
23	0.88	2.01	3.74	6.99	10.1			
24	0.92	2.10	3.92	7.32				
25	0.96	2.20	4.10	7.65				
26	1.00	2.29	4.27	7.98				

■ RS20B lube-free roller chain

Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth	Small sprocket max rpm						
	10	25	50	100	150	200	275
9	0.54	1.23	2.30	4.30	6.19	8.02	10.7
10	0.61	1.38	2.58	4.82	6.94	8.99	
11	0.67	1.53	2.86	5.34	7.69	9.96	
12	0.74	1.68	3.14	5.87	8.45	10.9	
13	0.81	1.84	3.43	6.39	9.21		
14	0.87	1.99	3.71	6.93	9.98		
15	0.94	2.14	4.00	7.46	10.8		
16	1.01	2.30	4.29	8.00	11.5		
17	1.08	2.45	4.58	8.54			
18	1.14	2.61	4.87	9.09			
19	1.21	2.77	5.16	9.63			
20	1.28	2.92	5.46	10.2			
21	1.35	3.08	5.75	10.7			
22	1.42	3.24	6.05	11.3			
23	1.49	3.40	6.35	11.8			
24	1.56	3.56	6.64	12.4			
25	1.63	3.72	6.94	13.0			
26	1.70	3.88	7.24				

■ RS24B lube-free roller chain

Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth	Small sprocket max rpm				
	10	25	50	100	125
9	0.97	2.20	4.11	7.67	9.38
10	1.08	2.47	4.61	8.60	10.5
11	1.20	2.74	5.11	9.53	
12	1.32	3.01	5.61	10.5	
13	1.44	3.28	6.12	11.4	
14	1.56	3.55	6.63		
15	1.68	3.83	7.14		
16	1.80	4.10	7.65		
17	1.92	4.38	8.17		
18	2.04	4.66	8.69		
19	2.17	4.94	9.22		
20	2.29	5.22	9.74		
21	2.41	5.50	10.3		
22	2.54	5.79	10.8		
23	2.66	6.07	11.3		
24	2.79	6.36	11.9		
25	2.91	6.64	12.4		
26	3.04	6.93	12.9		

Note: 1. KW ratings when using a one-pitch offset link are 80% of the above values.
2. For double-strand chain, multiply the kilowatt ratings in the table above by a multi-strand factor of 1.7.

Heavy Duty Roller Chain Model Numbering

Chain No. p.19 p.120 p.15 p.188

This page shows the series, number of strands, as well as types of pins and connecting links that can be selected for each size. Also refer to “Ordering RS Roller Chain” on page 19.
Customized items are also available. Please contact a Tsubaki representative.

1. Chains ordered by specifying the number of links, etc.

Size – Series – Number of strands – Pin type + Number of links – End link – Options

◆ Model numbering example

RS80–SUP–1–RP+110L–MSJR

2. Individual parts, such as connecting links and offset links, ordered by quantity

Size – Series – Number of strands – Connecting link

◆ Model numbering example

RS120–SUPH–2–FSJL

■ Series (column = size; row = series)

	SUP	HT	SUPH	USN
RS60	×	○	×	×
RS80	○	○	○	×
RS100 to RS160	○	○	○	○
RS180	○	×	×	×
RS200	○	○	○	○
RS240	○	○	○	○

■ Number of strands (column = size; row = series)

	SUP	HT	SUPH	USN
RS60	×	1–3	×	×
RS80 to RS240	1–6	1–3	1–3	1

■ Pin type (column = size; row = series)

	SUP	HT	SUPH	USN
All sizes	RP	RP	RP	RP

■ Offset link types and part names*1

	SUP
All sizes	4O

Note: *1. Offset links available for single-strand Super Chain only. Not manufactured for other series.
• Part name: 4O is 4-pitch offset link.

■ End link symbol for connecting links and part names (column = size; row = series)

	SUP	HT	SUPH	USN
All sizes	MSJ/FSJ	MWJ/FWJ*1	MSJ/FSJ	FSJ

Note: *1. RS240-HT is MSJ/FSJ.

How to read chart

○	Available
1	1-strand only
1–3	Select from 1 to 3 strands
1–6	Select from 1 to 6 strands
RP	RP only
MWJ/FWJ	Cotter pins can be selected for M-type and F-type connecting links
MSJ/FSJ	Spring pins can be selected for M-type and F-type connecting links
FSJ	Clips only for F-type connecting links
4O	4-pitch offset link only
×	Not available

Heavy Duty Roller Chains

Tsubaki's Heavy Duty Roller Chains come in a wide array of products. Their high maximum allowable load make them commonly used in compact transmission systems. Use Tsubaki Heavy Duty Roller Chains when capacity exceeds that of RS Roller Chains, such as in:

1. Harsh environments where the chain will be subjected to heavy impact.

2. Compact drives for equipment or machines that must work in tight spaces.

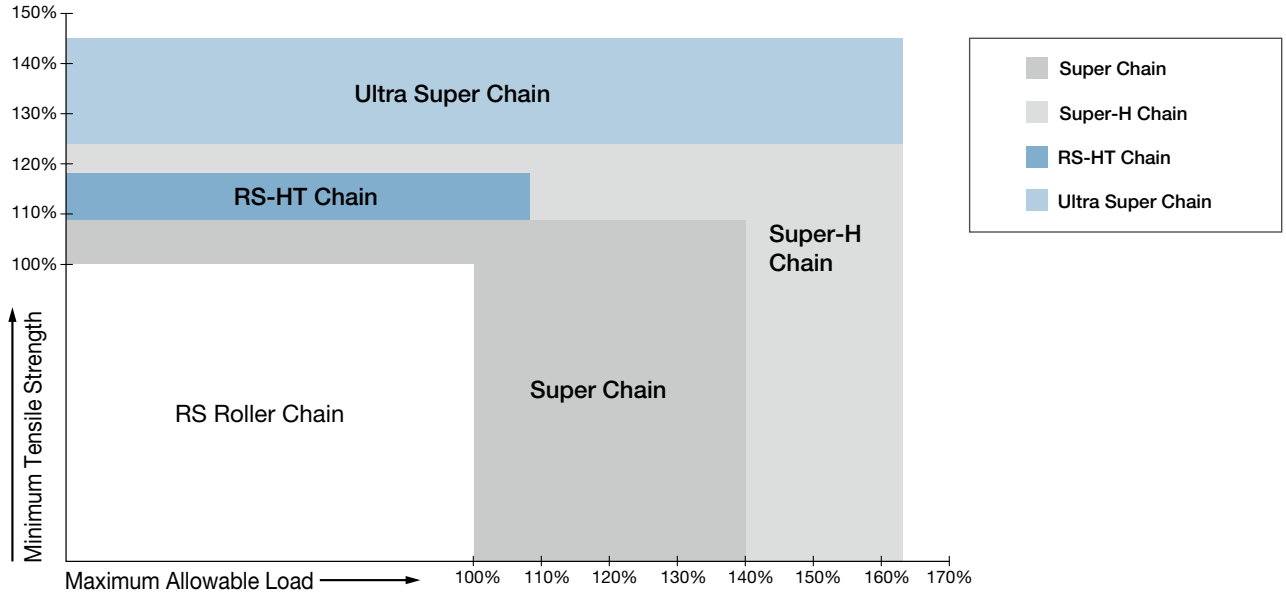
3. When higher transmission power, allowable load, or tensile strength is required.

4. When a lower rate of elastic elongation is required.

Ex.: Construction equipment, agricultural equipment, port equipment, vertical parking structures, etc.

Comparison of Min. Tensile Strengths and Max. Allowable Loads

With RS Roller Chain min. tensile strength and max. allowable load as benchmark (100).



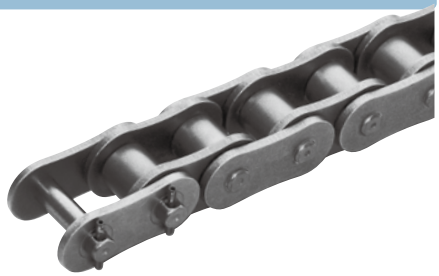
Features

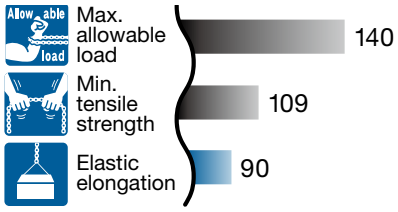
Point \ Model	Super Chain	RS-HT Chain	Super-H Chain	Ultra Super Chain
Features	■ High kW ratings ■ High shock absorption ■ Users can go one size down from RS Roller Chain	■ High kW ratings ■ High tensile strength ■ High shock absorption	■ High fatigue strength ■ High tensile strength ■ High shock absorption ■ Same maximum allowable load as double strand RS Roller Chain ■ Has the highest maximum allowable load of any Tsubaki roller chain	■ Has the highest tensile strength of any Tsubaki roller chain ■ Users can go two sizes down from RS Roller Chain
	For low to medium speed heavy duty drives. Use RS Roller Chain when using in the high speed range not shown in the kW ratings table.			
Offset links	■ 4-pitch offset links available for single-strand chain.	■ Offset links are not available. Use an even number of links.		
Sprockets	■ Both single and multi-strand chains can use RS sprockets	■ Single-strand chains can use RS sprockets ■ Multi-strand RS-HT and Super-H chains have a different transverse pitch from that of RS roller chain, requiring the use of dedicated sprockets.		
	■ Small sprockets must have hardened teeth ■ Use sprockets made of S35C or higher carbon steel ■ Tsubaki provides Tough Tooth sprockets ideal for use with Heavy Duty chain			

Super Chain

Series code: SUP

Super Chain has the same three basic dimensions of RS Roller Chain, but it has a thicker waist that provides a 40% increase in maximum allowable load over RS Roller Chain. Suitable for situations where RS Roller Chain would suffer fatigue breakage. It also allows users to go one size down.





■ Connecting link with same strength as base chain



Uses M-type connecting links with ring coining, which allows for easy attachment and removal of the connecting link but provides the same strength as the base chain links.

■ Four pitch offset links (4POL)

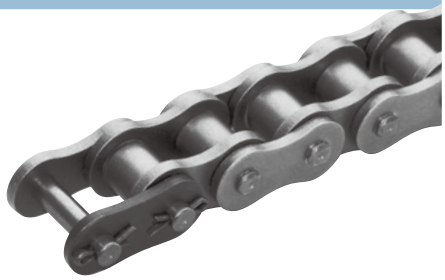


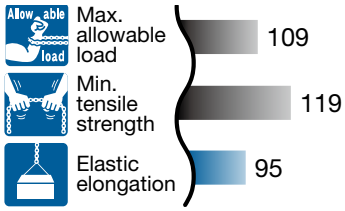
Can be used with an odd number links. (Max. allowable load and kW ratings are 85% of the base chain. Only available for single strand chain.)

RS-HT Chain

Series code: HT

The outer and inner plates are one size thicker than on RS Roller Chains. RS-HT Chain has 20% greater tensile strength than RS Roller Chain. Ideal for applications requiring high tensile strength and low elastic elongation.





■ Connecting link with same strength as base chain

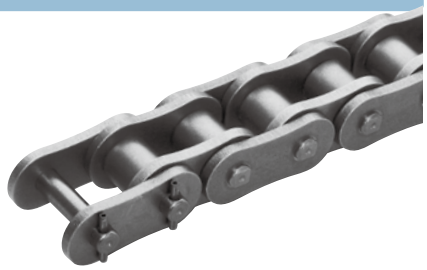


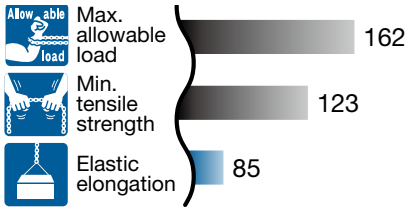
Uses M-type connecting links with ring coining, which allows for easy attachment and removal of the connecting link but provides the same strength as the base chain links.

Super-H Chain

Series code: SUPH

Features inner and outer link plates shaped the same way as Super Chain that are one size thicker than RS Roller Chain. This gives Super-H Chains a higher allowable load and fatigue strength for applications requiring shock absorption.



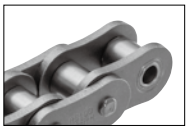


■ Connecting link with same strength as base chain



Uses M-type connecting links with ring coining, which allows for easy attachment and removal of the connecting link but provides the same strength as the base chain links.

■ Strengthening of inner plate



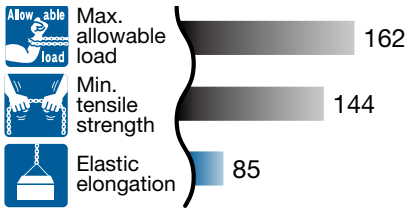
The inner plate is also subjected to ring coining to increase the maximum allowable load.

Ultra Super Chain

Series code: USN

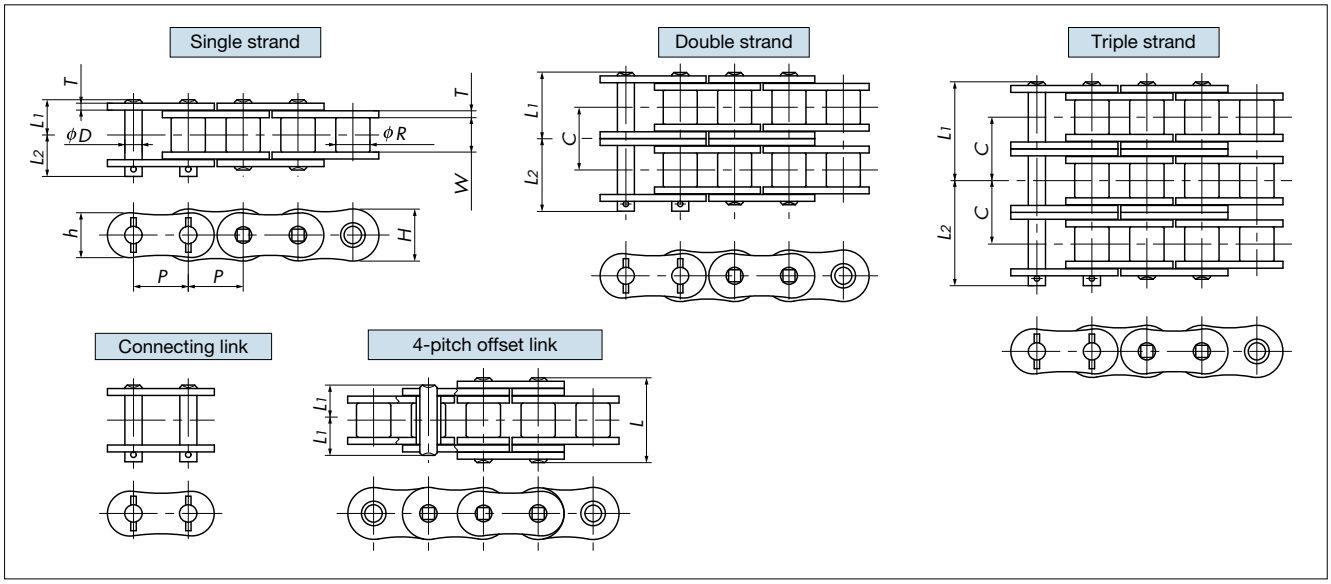
Inner and outer link plates are oval and one size thicker than RS Roller Chains. These chains have the highest tensile strength of any Tsubaki drive chain.





Note: The values in each graph are shown in relation to RS Roller Chain with a benchmark of 100. (Comparison with RS100.)

Heavy Duty Roller Chains Super Roller Chain



■ Specifications

Size & series	Number of strands	Pitch P	Roller dia. R	Inner width of inner link W	Plates Thickness T	Plates Height H	Plates Height h	Pins Dia. D	Pins L1	Pins L2	Transverse pitch C	Min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
RS80-SUP	**1**	25.40	15.88	15.88	3.2	24.1	20.8	7.94	16.25	19.25	29.3	74.2 { 7570}	20.1 { 2050}	2.81
	2								30.9	33.9		148 { 15140}	34.2 { 3490}	5.62
	3								45.6	48.5		223 { 22710}	50.3 { 5130}	8.40
RS100-SUP	**1**	31.75	19.05	19.05	4.0	30.1	26.0	9.54	19.75	22.85	35.8	111 { 11300}	32.4 { 3300}	4.25
	2								37.7	40.8		222 { 22600}	55.0 { 5610}	8.38
	3								55.65	58.75		332 { 33900}	80.9 { 8250}	12.57
RS120-SUP	**1**	38.10	22.23	25.40	4.8	36.2	31.2	11.11	24.9	28.9	45.4	162 { 16500}	42.2 { 4300}	6.3
	2								47.6	51.6		324 { 33000}	71.7 { 7310}	12.44
	3								70.4	74.4		485 { 49500}	105 {10750}	18.64
RS140-SUP	**1**	44.45	25.40	25.40	5.6	42.2	36.4	12.71	26.9	31.7	48.9	213 { 21700}	56.9 { 5800}	8.04
	2								51.35	56.15		426 { 43400}	96.7 { 9860}	15.92
	3								75.85	80.75		638 { 65100}	142 {14500}	23.84
RS160-SUP	**1**	50.80	28.58	31.75	6.4	48.2	41.6	14.29	31.85	36.85	58.5	273 { 27800}	73.5 { 7500}	10.79
	2								61.15	66.15		545 { 55600}	125 {12750}	21.43
	3								90.45	95.45		818 { 83400}	184 {18750}	32.10
RS180-SUP	1	57.15	35.71	35.72	7.15	54.2	46.8	17.46	35.65	42.45	65.8	358 { 36500}	85.7 { 8740}	14.23
	2								68.75	75.35		716 { 73000}	146 {14860}	28.08
	3								101.7	108.5		1070 {109500}	214 {21850}	40.56
RS200-SUP	1	63.50	39.68	38.10	8.0	60.3	52.0	19.85	39.0	44.8	71.6	439 { 44800}	100 {10200}	17.63
	2								74.85	80.65		879 { 89600}	170 {17340}	34.91
	3								110.75	116.45		1320 {134400}	250 {25500}	52.44
RS240-SUP	1	76.20	47.63	47.63	9.5	72.4	62.4	23.81	47.9	55.5	87.8	639 { 65200}	139 {14200}	25.63
	2								91.65	99.15		1280 {130400}	237 {24140}	50.88
	3								135.55	143.05		1920 {195600}	348 {35500}	76.11

	RS80-SUP	RS100-SUP	RS120-SUP	RS140-SUP	RS160-SUP	RS180-SUP	RS200-SUP	RS240-SUP
4 pitch offset links Pin Length L	39.3	48.0	59.9	65.7	77.2	86.4	94.9	116.0
Links Per Unit	120	96	80	68	60	54	48	40

Note: 1. Four-pitch offset links available for single strand only.
For dimensions and specifications of four strands or more, contact a Tsubaki representative.
2. Maximum allowable load when using a four-pitch offset link is 85% that of the above values.
3. Items in bold are stocked in units.

Model numbering example **RS160 -SUP -1 -RP + 50L -MSJR**

- RS160: Size
- -SUP: Series
- -1: Number of strands
- -RP: Pin type
- 50L: Number of links
- -MSJR: End link

Kilowatt Ratings Tables

■ RS80-SUP Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth \ Lubrication	Small sprocket max rpm											
	10	25	50	100	150	200	300	400	500	600	700	800
	AII			B			C					
13	1.08	2.46	4.59	8.57	12.3	16.0	23.0	29.8	32.1	32.1	32.1	
14	1.17	2.67	4.97	9.28	13.4	17.3	25.0	32.3	35.9	35.9	35.9	
15	1.26	2.87	5.36	10.0	14.4	18.7	26.9	34.8	39.8	39.8	39.8	
16	1.35	3.08	5.75	10.7	15.4	20.0	28.8	37.3	43.8	43.8	43.8	
17	1.44	3.29	6.14	11.4	16.5	21.4	30.8	39.9	48.0	48.0	48.0	
18	1.53	3.50	6.53	12.2	17.5	22.7	32.7	42.4	51.4	51.4	51.4	
19	1.62	3.71	6.92	12.9	18.6	24.1	34.7	45.0	54.4	54.4	54.4	
20	1.70	3.92	7.31	13.6	19.7	25.5	36.7	47.5	57.5	57.5	57.5	
21	1.79	4.13	7.71	14.4	20.7	26.8	38.7	50.1	60.7	60.7	60.7	
22	1.87	4.34	8.11	15.1	21.8	28.2	40.7	52.7	63.8	63.8	63.8	
23	1.96	4.56	8.50	15.9	22.9	29.6	42.7	55.3	66.9	66.9	66.9	
24	2.04	4.77	8.90	16.6	23.9	31.0	44.7	57.9	70.1	70.1	70.1	
25	2.13	4.99	9.31	17.4	25.0	32.4	46.7	60.5	73.2	73.2	73.2	
26	2.21	5.20	9.71	18.1	26.1	33.8	48.7	63.1	76.4	76.4	76.4	
28	2.38	5.64	10.5	19.6	28.3	36.6	52.7	68.3	83.0	83.0	83.0	83.0
30	2.55	6.07	11.3	21.1	30.5	39.5	56.8	73.6	90.0	92.1	92.1	92.1
32	2.72	6.51	12.1	22.7	32.7	42.3	60.9	78.9	96.5	101	101	101
35	2.98	7.17	13.4	25.0	36.0	46.6	67.1	87.0	106	116	116	116
40	3.40	8.28	15.5	28.8	41.6	53.8	77.5	101	123	137	137	137
45	3.83	9.41	17.6	32.8	47.2	61.1	88.1	114	139	156	156	156

■ RS100-SUP Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth \ Lubrication	Small sprocket max rpm										
	10	25	50	100	150	200	300	400	500	600	700
	AII			B	C						
13	2.17	4.96	9.25	17.3	24.9	32.2	46.4	48.9	48.9		
14	2.35	5.37	10.0	18.7	26.9	34.9	50.3	54.0	54.0	54.0	
15	2.54	5.79	10.8	20.2	29.0	37.6	54.2	59.9	59.9	59.9	
16	2.72	6.20	11.6	21.6	31.1	40.3	58.1	66.0	66.0	66.0	
17	2.90	6.62	12.4	23.1	33.2	43.0	62.0	72.3	72.3	72.3	
18	3.09	7.05	13.1	24.5	35.3	45.8	66.0	78.8	78.8	78.8	
19	3.26	7.47	13.9	26.0	37.5	48.5	69.9	85.4	85.4	85.4	
20	3.43	7.90	14.7	27.5	39.6	51.3	73.9	91.8	91.8	91.8	
21	3.60	8.32	15.5	29.0	41.7	54.1	77.9	96.8	96.8	96.8	
22	3.77	8.75	16.3	30.5	43.9	56.9	81.9	102	102	102	
23	3.94	9.18	17.1	32.0	46.1	59.7	85.9	107	107	107	
24	4.11	9.61	17.9	33.5	48.2	62.5	90.0	112	112	112	
25	4.29	10.1	18.7	35.0	50.4	65.3	94.0	117	117	117	
26	4.46	10.5	19.6	36.5	52.6	68.1	98.1	122	122	122	
28	4.80	11.4	21.2	39.5	57.0	73.8	106	132	132	132	
30	5.14	12.2	22.8	42.6	61.4	79.5	115	142	142	142	
32	5.49	13.1	24.5	45.7	65.8	85.2	123	153	153	153	
35	6.00	14.5	27.0	50.3	72.5	93.9	135	170	170	170	170
40	6.86	16.7	31.1	58.1	83.7	108	156	202	207	207	207
45	7.72	19.0	35.4	66.0	95.1	123	177	230	247	247	247

■ RS120-SUP Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth \ Lubrication	Small sprocket max rpm									
	10	25	50	100	150	200	300	400	500	600
	AII		B		C					
13	3.40	7.75	14.5	27.0	38.9	50.4	72.5	73.5	73.5	
14	3.68	8.40	15.7	29.2	42.1	54.6	78.6	82.2	82.2	
15	3.97	9.05	16.9	31.5	45.4	58.8	84.7	91.2	91.2	
16	4.25	9.70	18.1	33.8	48.6	63.0	90.8	100	100	
17	4.54	10.4	19.3	36.1	51.9	67.3	96.9	110	110	
18	4.82	11.0	20.6	38.4	55.2	71.6	103	118	118	
19	5.09	11.7	21.8	40.7	58.6	75.9	109	125	125	
20	5.36	12.3	23.0	43.0	61.9	80.2	116	132	132	
21	5.63	13.0	24.3	45.3	65.2	84.5	122	139	139	
22	5.90	13.7	25.5	47.6	68.6	88.9	128	146	146	
23	6.16	14.4	26.8	50.0	72.0	93.3	134	153	153	
24	6.43	15.0	28.0	52.3	75.4	97.6	141	160	160	
25	6.70	15.7	29.3	54.7	78.8	102	147	168	168	
26	6.97	16.4	30.6	57.1	82.2	107	153	175	175	
28	7.50	17.7	33.1	61.8	89.0	115	166	190	190	
30	8.04	19.1	35.7	66.6	95.9	124	179	204	204	
32	8.58	20.5	38.3	71.4	103	133	192	219	219	
35	9.38	22.6	42.1	78.6	113	147	211	247	247	247
40	10.7	26.1	48.7	90.8	131	170	244	302	302	302
45	12.1	29.6	55.3	103	149	193	277	359	360	360

■ RS140-SUP Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth \ Lubrication	Small sprocket max rpm												
	10	25	50	100	150	200	250	300	350	400	450	500	550
	AII		B	C									
13	5.34	12.2	22.7	42.5	61.1	79.2	96.8	96.8	96.8	96.8			
14	5.79	13.2	24.6	46.0	66.2	85.8	105	109	109	109	109		
15	6.24	14.2	26.6	49.5	71.4	92.5	113	121	121	121	121		
16	6.69	15.3	28.5	53.1	76.5	99.1	121	133	133	133	133		
17	7.14	16.3	30.4	56.7	81.7	106	129	144	144	144	144		
18	7.59	17.3	32.3	60.3	86.9	113	138	153	153	153	153		
19	8.01	18.4	34.3	64.0	92.1	119	146	162	162	162	162		
20	8.43	19.4	36.2	67.6	97.4	126	154	171	171	171	171		
21	8.85	20.5	38.2	71.3	103	133	163	181	181	181	181		
22	9.27	21.5	40.2	74.9	108	140	171	190	190	190	190		
23	9.70	22.6	42.1	78.6	113	147	179	199	199	199	199		
24	10.1	23.6	44.1	82.3	119	154	188	209	209	209	209		
25	10.5	24.7	46.1	86.0	124	161	196	222	222	222	222	222	
26	11.0	25.8	48.1	89.7	129	167	205	235	235	235	235	235	
28	11.8	27.9	52.1	97.2	140	181	222	261	263	263	263	263	
30	12.6	30.1	56.1	105	151	195	239	282	292	292	292	292	
32	13.5	32.3	60.2	112	162	210	256	302	313	313	313	313	
35	14.8	35.5	66.3	124	178	231	282	333	345	345	345	345	
40	16.9	41.0	76.6	143	206	267	326	384	398	398	398	398	
45	19.0	46.6	87.0	162	234	303	370	436	464	464	464	464	464

Note: 1. Use standard RS Roller Chain for rpm higher than those shown in the tables.
2. kW ratings when using a four-pitch offset link are 85% of the above values.

■ Multi-strand factors

Number of chain strands	Multi-strand factor
Two strands	1.7
Three strands	2.5
Four strands	3.3
Five strands	3.9
Six strands	4.6

■ Lubrication systems and methods

Lubrication system	Method	
AII	Drip lubrication	Details on p. 222
B	Oil bath or slinger disc lubrication	
C	Forced pump lubrication	

Kilowatt Ratings Tables

■ RS160-SUP Maximum kilowatt ratings table (kW ratings for single strand chain)

Lubrication / Small sprocket no. of teeth	Small sprocket max rpm										
	10	25	50	100	150	200	250	300	350	400	450
	AⅡ		B	C							
13	7.89	18.0	33.6	62.7	90.3	117	129	129	129		
14	8.55	19.5	36.4	67.9	97.8	127	145	145	145	145	
15	9.21	21.0	39.2	73.1	105	136	160	160	160	160	
16	9.87	22.5	42.0	78.4	113	146	177	177	177	177	
17	10.5	24.0	44.9	83.7	121	156	191	193	193	193	
18	11.2	25.6	47.7	89.1	128	166	203	207	207	207	
19	11.8	27.1	50.6	94.4	136	176	215	219	219	219	
20	12.4	28.7	53.5	99.8	144	186	228	232	232	232	
21	13.1	30.2	56.4	105	152	196	240	244	244	244	
22	13.7	31.8	59.3	111	159	206	252	257	257	257	
23	14.3	33.3	62.2	116	167	217	265	270	270	270	
24	14.9	34.9	65.1	122	175	227	277	282	282	282	
25	15.6	36.5	68.1	127	183	237	290	295	295	295	
26	16.2	38.0	71.0	132	191	247	302	308	308	308	
28	17.4	41.2	76.9	144	207	268	327	343	343	343	343
30	18.7	44.4	82.9	155	223	289	353	380	380	380	380
32	19.9	47.6	88.8	166	239	309	378	419	419	419	419
35	21.8	52.4	97.9	183	263	341	417	472	472	472	472
40	24.9	60.6	113	211	304	394	481	545	545	545	545
45	28.0	68.8	128	240	345	447	547	619	619	619	619

■ RS180-SUP Maximum kilowatt ratings table (kW ratings for single strand chain)

Lubrication / Small sprocket no. of teeth	Small sprocket max rpm									
	10	25	50	100	150	200	250	300	350	400
	AⅡ	B		C						
13	10.3	23.6	44.1	82.2	118	153	173	173	173	
14	11.2	25.6	47.7	89.1	128	166	187	187	187	
15	12.1	27.6	51.4	95.9	138	179	202	202	202	
16	13.0	29.5	55.1	103	148	192	216	216	216	
17	13.8	31.5	58.9	110	158	205	231	231	231	
18	14.7	33.5	62.6	117	168	218	245	245	245	
19	15.5	35.6	66.4	124	178	231	260	260	260	
20	16.3	37.6	70.2	131	189	244	275	275	275	
21	17.1	39.6	73.9	138	199	257	290	290	290	
22	18.0	41.7	77.8	145	209	271	305	305	305	
23	18.8	43.7	81.6	152	219	284	320	320	320	
24	19.6	45.8	85.4	159	230	297	335	335	335	
25	20.4	47.8	89.3	167	240	311	350	350	350	
26	21.2	49.9	93.1	174	250	324	365	365	365	
28	22.9	54.1	101	188	271	351	429	446	446	446
30	24.5	58.2	109	203	292	378	463	481	481	481
32	26.1	62.5	117	217	313	406	496	515	515	515
35	28.6	68.8	128	240	345	447	546	568	568	568
40	32.7	79.5	148	277	399	516	631	656	656	656
45	36.7	90.3	168	314	453	586	717	745	745	745

■ RS200-SUP Maximum kilowatt ratings table (kW ratings for single strand chain)

Lubrication / Small sprocket no. of teeth	Small sprocket max rpm													
	10	15	20	30	40	50	70	100	150	200	250	300	350	
	AⅡ		B			C								
13	13.4	19.3	25.0	36.1	46.7	57.1	77.3	107	154	194	194	194		
14	14.5	20.9	27.1	39.1	50.6	61.9	83.8	115	166	211	211	211	211	
15	15.7	22.6	29.2	42.1	54.5	66.7	90.2	124	179	232	234	234	234	
16	16.8	24.2	31.3	45.1	58.5	71.5	96.8	133	192	249	258	258	258	
17	17.9	25.8	33.5	48.2	62.4	76.3	103	142	205	266	283	283	283	
18	19.1	27.5	35.6	51.3	66.4	81.2	110	151	218	283	308	308	308	
19	20.1	29.1	37.7	54.3	70.4	86.0	116	161	231	300	334	334	334	
20	21.2	30.8	39.9	57.4	74.4	91.0	123	170	244	317	355	355	355	
21	22.2	32.4	42.0	60.5	78.4	95.9	130	179	258	334	374	374	374	
22	23.3	34.1	44.2	63.7	82.5	101	136	188	271	351	393	393	393	
23	24.3	35.8	46.4	66.8	86.5	106	143	197	284	368	412	412	412	
24	25.4	37.5	48.5	69.9	90.6	111	150	207	298	386	432	432	432	
25	26.5	39.2	50.7	73.1	94.7	116	157	216	311	403	451	451	451	
26	27.5	40.9	52.9	76.2	98.8	121	163	225	325	420	471	471	471	

■ RS240-SUP Maximum kilowatt ratings table (kW ratings for single strand chain)

Lubrication / Small sprocket no. of teeth	Small sprocket max rpm																	
	5	10	15	20	25	30	40	50	60	80	100	125	150	175	200	250	300	
	AⅡ		B				C											
13	11.5	22.4	32.2	41.8	51.1	60.2	77.9	95.3	112	145	178	217	256	276	276	276	276	
14	12.4	24.2	34.9	45.2	55.3	65.2	84.4	103	122	158	193	235	277	308	308	308	308	
15	13.2	26.1	37.6	48.7	59.6	70.2	91.0	111	131	170	207	254	299	341	341	341	341	
16	14.1	28.0	40.3	52.3	63.9	75.3	97.5	119	140	182	222	272	320	368	376	376	376	
17	15.0	29.9	43.1	55.8	68.2	80.4	104	127	150	194	238	290	342	393	412	412	412	
18	15.9	31.8	45.8	59.4	72.6	85.5	111	135	160	207	253	309	364	418	449	449	449	
19	16.8	33.5	48.6	62.9	76.9	90.6	117	144	169	219	268	327	386	443	483	483	483	
20	17.7	35.3	51.3	66.5	81.3	95.8	124	152	179	232	283	346	408	468	510	510	510	
21	18.5	37.1	54.1	70.1	85.7	101	131	160	188	244	298	365	430	494	538	538	538	
22	19.4	38.8	56.9	73.7	90.1	106	138	168	198	257	314	384	452	519	565	565	565	
23	20.3	40.6	59.7	77.3	94.5	111	144	176	208	269	329	402	474	545	593	593	593	
24	21.2	42.4	62.5	81.0	99.0	117	151	185	218	282	345	421	497	570	621	621	621	
25	22.1	44.1	65.3	84.6	104	122	158	193	227	295	360	440	519	596	649	649	649	
26	22.9	45.9	68.2	88.3	108	127	165	201	237	307	376	459	541	622	677	677	677	

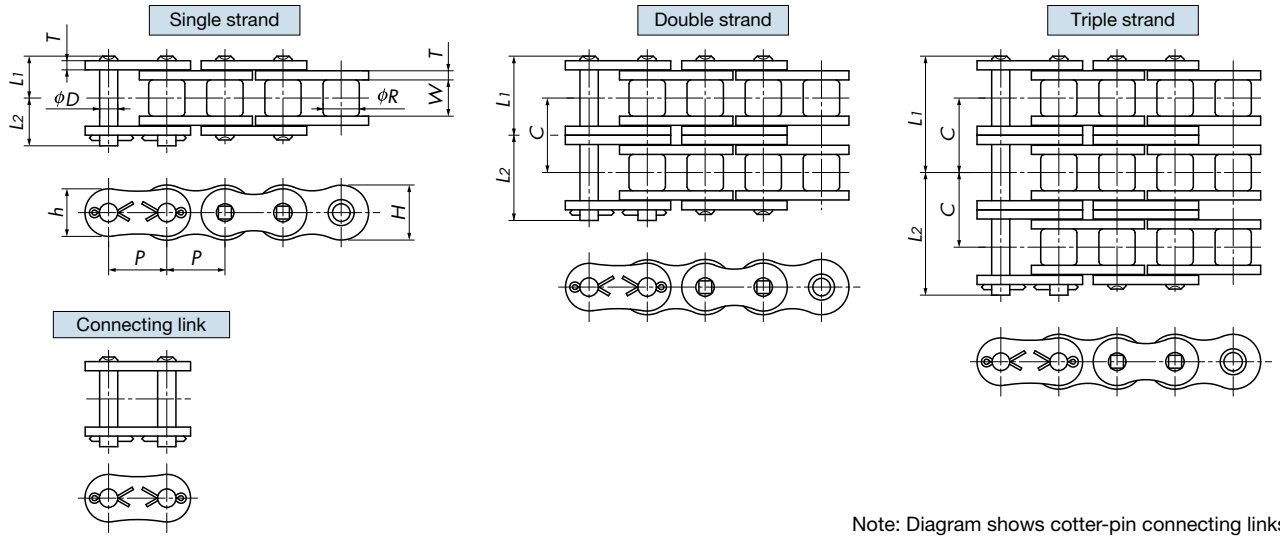
Note: 1. Use standard RS Roller Chain for rpm higher than those shown in the tables.
2. kW ratings when using a four-pitch offset link are 85% of the above values.

■ Multi-strand factors

Number of chain strands	Multi-strand factor
Two strands	1.7
Three strands	2.5
Four strands	3.3
Five strands	3.9
Six strands	4.6

■ Lubrication systems and methods

Lubrication system	Method	
AⅡ	Drip lubrication	Details on p. 222
B	Oil bath or slinger disc lubrication	
C	Forced pump lubrication	

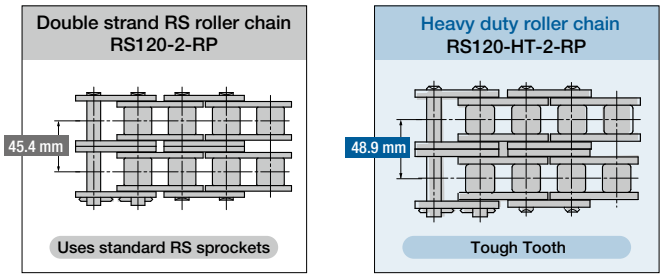


Note: Diagram shows cotter-pin connecting links.

■ Specifications

Size & series	Number of strands	Pitch *P*	Roller dia. *R*	Inner width of inner link *W*	Plates			Pins			Transverse pitch *C*	Min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
					Thickness *T*	Height *H*	Height *h*	Dia. *D*	*L*1	*L*2				
RS60-HT	1	19.05	11.91	12.70	3.2	18.1	15.6	5.96	14.8	17.0	26.1	48.1{ 4900}	9.81{ 1000}	1.80
	2								27.8	29.9		96.1{ 9800}	16.7 { 1700}	3.59
	3								40.85	42.95		144 { 14700}	24.5 { 2500}	5.36
RS80-HT	1	25.40	15.88	15.88	4.0	24.1	20.8	7.94	18.3	20.9	32.6	81.4{ 8300}	16.2 { 1650}	3.11
	2								34.6	37.2		163 { 16600}	27.6 { 2810}	6.18
	3								50.95	53.55		244 { 24900}	40.5 { 4130}	9.24
RS100-HT	1	31.75	19.05	19.05	4.8	30.1	26.0	9.54	21.8	24.5	39.1	124 { 12600}	24.5 { 2500}	4.58
	2								41.4	44.1		247 { 25200}	41.7 { 4250}	9.03
	3								61.0	63.6		371 { 37800}	61.3 { 6250}	13.54
RS120-HT	1	38.10	22.23	25.40	5.6	36.2	31.2	11.11	26.95	30.55	48.9	167 { 17000}	32.4 { 3300}	6.53
	2								51.4	55.0		333 { 34000}	55.0 { 5610}	12.90
	3								75.9	79.4		500 { 51000}	80.9 { 8250}	19.33
RS140-HT	1	44.45	25.40	25.40	6.4	42.2	36.4	12.71	28.9	33.1	52.2	218 { 22200}	42.7 { 4350}	8.27
	2								55.0	59.5		435 { 44400}	72.6 { 7400}	16.38
	3								81.15	85.25		653 { 66600}	107 {10880}	24.54
RS160-HT	1	50.80	28.58	31.75	7.15	48.2	41.6	14.29	33.95	38.45	61.9	278 { 28300}	55.9 { 5700}	10.97
	2								64.9	69.6		555 { 56600}	95 { 9690}	21.78
	3								95.95	100.45		833 { 84900}	140 {14250}	32.63
RS200-HT	1	63.50	39.68	38.10	9.5	60.3	52.0	19.85	42.9	48.1	78.3	486 { 49600}	78.5 { 8000}	18.41
	2								82.05	87.3		973 { 99200}	133 {13600}	36.47
	3								121.25	126.55		1460 {148800}	196 {20000}	54.77
RS240-HT	1	76.20	47.63	47.63	12.7	72.4	62.4	23.81	54.8	62.3	101.2	768 { 78300}	113 {11500}	29.13
	2								105.3	112.9		1540 {156600}	192 {19550}	57.35
	3								156.05	163.55		2300 {234900}	282 {28750}	85.47

Note: 1. No offset links available.
2. Multi-strand chains have a different transverse pitch from that of RS roller chain so RS sprockets cannot be used. Use dedicated sprockets.



Model numbering example **RS120 -HT -2 -RP + 70L -MWJR**

RS120: Size; -HT: Series; -2: Number of strands; -RP: Pin type; 70L: Number of links; -MWJR: End link

When using multi-strand chains, please specify Tough Tooth RS sprockets.

Model numbering example **RS120 -2HB 22T Q -T**

RS120: Size; -2HB: Number of strands and hub type; 22T: Number of teeth; Q: Hardened teeth; -T: Tough Tooth

Heavy Duty Roller Chains Kilowatt Ratings Tables

■ RS60-HT Maximum kilowatt ratings table (kW ratings for single strand chain)

Lubrication / Small sprocket no. of teeth	Small sprocket max rpm															
	10	25	50	100	150	200	300	400	500	600	700	800	900	1000	1100	1200
	AI					AII			B							C
9	0.27	0.61	1.13	2.11	3.04	3.93	5.67	7.34	8.98	10.1	10.1	10.1	10.1			
10	0.30	0.68	1.27	2.36	3.40	4.41	6.35	8.23	10.1	11.4	11.4	11.4	11.4			
11	0.33	0.75	1.40	2.62	3.77	4.89	7.04	9.12	11.1	12.7	12.7	12.7	12.7			
12	0.36	0.83	1.54	2.88	4.14	5.37	7.73	10.0	12.2	13.9	13.9	13.9	13.9			
13	0.39	0.90	1.68	3.14	4.52	5.85	8.43	10.9	13.4	15.2	15.2	15.2	15.2			
14	0.43	0.98	1.82	3.40	4.89	6.34	9.13	11.8	14.5	16.7	16.7	16.7	16.7	16.7		
15	0.46	1.05	1.96	3.66	5.27	6.83	9.84	12.7	15.6	18.4	18.5	18.5	18.5	18.5		
16	0.49	1.13	2.10	3.93	5.65	7.32	10.6	13.7	16.7	19.7	20.4	20.4	20.4	20.4		
17	0.53	1.20	2.25	4.19	6.04	7.82	11.3	14.6	17.8	21.0	22.3	22.3	22.3	22.3		
18	0.56	1.28	2.39	4.46	6.42	8.32	12.0	15.5	19.0	22.4	23.7	23.7	23.7	23.7		
19	0.59	1.36	2.53	4.73	6.81	8.82	12.7	16.5	20.1	23.7	25.1	25.1	25.1	25.1		
20	0.62	1.43	2.68	4.99	7.19	9.32	13.4	17.4	21.3	25.1	26.6	26.6	26.6	26.6		
21	0.65	1.51	2.82	5.27	7.58	9.83	14.2	18.3	22.4	26.4	28.0	28.0	28.0	28.0		
22	0.69	1.59	2.97	5.54	7.97	10.3	14.9	19.3	23.6	27.8	29.5	29.5	29.5	29.5		
23	0.72	1.67	3.11	5.81	8.37	10.8	15.6	20.2	24.7	29.1	30.9	30.9	30.9	30.9		
24	0.75	1.75	3.26	6.08	8.76	11.3	16.3	21.2	25.9	30.5	32.5	32.5	32.5	32.5	32.5	
25	0.78	1.83	3.41	6.36	9.16	11.9	17.1	22.1	27.1	31.9	34.5	34.5	34.5	34.5	34.5	
26	0.81	1.90	3.55	6.63	9.55	12.4	17.8	23.1	28.2	33.3	36.6	36.6	36.6	36.6	36.6	
28	0.87	2.06	3.85	7.18	10.3	13.4	19.3	25.0	30.6	36.0	40.9	40.9	40.9	40.9	40.9	
30	0.93	2.22	4.15	7.74	11.1	14.4	20.8	26.9	32.9	38.8	44.6	44.9	44.9	44.9	44.9	
32	1.00	2.38	4.45	8.30	12.0	15.5	22.3	28.9	35.3	41.6	47.8	48.1	48.1	48.1	48.1	
35	1.09	2.63	4.90	9.14	13.2	17.1	24.6	31.8	38.9	45.9	52.7	53.0	53.0	53.0	53.0	
40	1.25	3.03	5.66	10.6	15.2	19.7	28.4	36.8	44.9	53.0	60.8	61.3	61.3	61.3	61.3	61.3
45	1.40	3.44	6.43	12.0	17.3	22.4	32.2	41.8	51.0	60.1	69.1	73.2	73.2	73.2	73.2	73.2

■ RS80-HT Maximum kilowatt ratings table (kW ratings for single strand chain)

Lubrication / Small sprocket no. of teeth	Small sprocket max rpm										
	10	25	50	100	150	200	300	400	500	600	700
	AI				AII			B			C
9	0.58	1.33	2.49	4.64	6.69	8.66	12.5	16.2	18.2	18.2	
10	0.65	1.49	2.79	5.20	7.49	9.71	14.0	18.1	20.4	20.4	
11	0.73	1.66	3.09	5.77	8.31	10.8	15.5	20.1	22.6	22.6	
12	0.80	1.82	3.39	6.33	9.12	11.8	17.0	22.1	24.9	24.9	
13	0.87	1.98	3.70	6.91	9.95	12.9	18.6	24.0	27.1	27.1	
14	0.94	2.15	4.01	7.48	10.8	14.0	20.1	26.1	29.4	29.4	
15	1.01	2.31	4.32	8.06	11.6	15.0	21.7	28.1	32.6	32.6	
16	1.09	2.48	4.63	8.64	12.4	16.1	23.2	30.1	35.9	35.9	
17	1.16	2.65	4.94	9.23	13.3	17.2	24.8	32.1	39.3	39.3	
18	1.23	2.82	5.26	9.82	14.1	18.3	26.4	34.2	41.8	42.8	
19	1.30	2.99	5.58	10.4	15.0	19.4	28.0	36.2	44.3	46.0	
20	1.37	3.16	5.89	11.0	15.8	20.5	29.6	38.3	46.8	48.7	
21	1.44	3.33	6.21	11.6	16.7	21.6	31.2	40.4	49.3	51.3	
22	1.51	3.50	6.53	12.2	17.6	22.7	32.8	42.4	51.9	53.9	
23	1.58	3.67	6.85	12.8	18.4	23.9	34.4	44.5	54.4	56.6	
24	1.65	3.85	7.18	13.4	19.3	25.0	36.0	46.6	57.0	59.3	
25	1.71	4.02	7.50	14.0	20.2	26.1	37.6	48.7	59.6	61.9	
26	1.78	4.19	7.82	14.6	21.0	27.2	39.2	50.8	62.2	64.6	
28	1.92	4.54	8.48	15.8	22.8	29.5	42.5	55.1	67.3	70.0	
30	2.06	4.89	9.13	17.0	24.5	31.8	45.8	59.3	72.5	77.2	
32	2.19	5.25	9.79	18.3	26.3	34.1	49.1	63.6	77.8	85.0	85.0
35	2.40	5.78	10.8	20.1	29.0	37.6	54.1	70.1	85.7	97.3	97.3
40	2.74	6.68	12.5	23.2	33.5	43.4	62.5	81.0	99.0	114	114
45	3.09	7.58	14.1	26.4	38.0	49.3	71.0	91.9	112	130	130

■ RS100-HT Maximum kilowatt ratings table (kW ratings for single strand chain)

Lubrication / Small sprocket no. of teeth	Small sprocket max rpm									
	10	25	50	100	150	200	300	400	500	
	AI			AII			B			
9	1.10	2.52	4.70	8.78	12.6	16.4	23.6	26.4		
10	1.24	2.82	5.27	9.83	14.2	18.4	26.4	29.6		
11	1.37	3.13	5.84	10.9	15.7	20.3	29.3	32.8		
12	1.51	3.44	6.42	12.0	17.2	22.3	32.2	36.1		
13	1.64	3.75	7.00	13.1	18.8	24.4	35.1	39.3		
14	1.78	4.06	7.58	14.1	20.4	26.4	38.0	42.9		
15	1.92	4.38	8.17	15.2	21.9	28.4	41.0	47.6		
16	2.06	4.69	8.76	16.3	23.5	30.5	43.9	52.4		
17	2.20	5.01	9.35	17.4	25.1	32.6	46.9	57.4	57.4	
18	2.33	5.33	9.94	18.6	26.7	34.6	49.9	62.5	62.5	
19	2.46	5.65	10.5	19.7	28.3	36.7	52.9	67.8	67.8	
20	2.59	5.97	11.1	20.8	29.9	38.8	55.9	71.9	71.9	Lubrication method "C" range
21	2.72	6.29	11.7	21.9	31.6	40.9	58.9	75.8	75.8	
22	2.85	6.62	12.3	23.0	33.2	43.0	61.9	79.7	79.7	
23	2.98	6.94	13.0	24.2	34.8	45.1	65.0	83.7	83.7	
24	3.11	7.27	13.6	25.3	36.5	47.2	68.0	87.6	87.6	
25	3.24	7.60	14.2	26.5	38.1	49.4	71.1	91.5	91.5	
26	3.37	7.93	14.8	27.6	39.8	51.5	74.2	95.5	95.5	
28	3.63	8.59	16.0	29.9	43.1	55.8	80.4	103	103	
30	3.89	9.25	17.3	32.2	46.4	60.1	86.6	111	111	
32	4.15	9.92	18.5	34.5	49.8	64.5	92.8	120	121	
35	4.54	10.9	20.4	38.0	54.8	71.0	102	132	139	
40	5.19	12.6	23.6	44.0	63.3	82.0	118	153	170	
45	5.83	14.3	26.7	49.9	71.9	93.1	134	174	196	

■ RS120-HT Maximum kilowatt ratings table (kW ratings for single strand chain)

Lubrication / Small sprocket no. of teeth	Small sprocket max rpm								
	10	25	50	100	150	200	300	400	500
	AI			AII		B			C
9	1.75	4.00	7.46	13.9	20.1	26.0	37.4	41.1	
10	1.96	4.48	8.36	15.6	22.5	29.1	41.9	46.1	
11	2.18	4.97	9.27	17.3	24.9	32.3	46.5	51.0	
12	2.39	5.46	10.2	19.0	27.4	35.5	51.1	56.1	
13	2.61	5.95	11.1	20.7	29.8	38.7	55.7	61.1	
14	2.83	6.45	12.0	22.4	32.3	41.9	60.3	66.2	
15	3.04	6.94	13.0	24.2	34.8	45.1	65.0	71.3	
16	3.26	7.45	13.9	25.9	37.3	48.4	69.7	76.5	
17	3.49	7.95	14.8	27.7	39.9	51.7	74.4	83.7	
18	3.70	8.46	15.8	29.4	42.4	54.9	79.1	91.2	
19	3.91	8.96	16.7	31.2	45.0	58.3	83.9	98.9	
20	4.11	9.47	17.7	33.0	47.5	61.6	88.7	107	
21	4.32	9.99	18.6	34.8	50.1	64.9	93.5	115	115
22	4.53	10.5	19.6	36.6	52.7	68.2	98.3	123	123
23	4.73	11.0	20.6	38.4	55.3	71.6	103	132	132
24	4.94	11.5	21.5	40.2	57.9	75.0	108	140	140
25	5.14	12.1	22.5	42.0	60.5	78.3	113	146	146
26	5.35	12.6	23.5	43.8	63.1	81.7	118	152	152
28	5.76	13.6	25.4	47.5	68.3	88.5	128	165	165
30	6.17	14.7	27.4	51.1	73.6	95.4	137	178	178
32	6.58	15.7	29.4	54.8	79.0	102	147	191	191
35	7.20	17.3	32.4	60.4	87.0	113	162	210	210
40	8.23	20.0	37.4	69.7	100	130	187	242	242
45	9.26	22.7	42.4	79.2	114	148	213	276	286

Note: Use standard RS Roller Chain for rpm higher than those shown in the tables.

■ Multi-strand factors

Number of chain strands	Multi-strand factor
Two strands	1.7
Three strands	2.5

■ Lubrication systems and methods

Lubrication system	Method
AI	Manual lubrication
AII	Drip lubrication
B	Oil bath or slinger disc lubrication
C	Forced pump lubrication

Details on p. 222

Kilowatt Ratings Tables

■ RS140-HT Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth \ Small sprocket max rpm	10	25	50	100	150	200	250	300	350	400	450
Lubrication	AI			AII	B						C
9	2.70	6.15	11.5	21.4	30.8	40.0	48.9	56.1	56.1		
10	3.02	6.89	12.9	24.0	34.6	44.8	54.7	64.5	65.6		
11	3.35	7.64	14.3	26.6	38.3	49.6	60.7	71.5	72.7		
12	3.68	8.39	15.7	29.2	42.1	54.5	66.7	78.5	79.9		
13	4.01	9.15	17.1	31.9	45.9	59.4	72.7	85.6	87.1		
14	4.34	9.91	18.5	34.5	49.7	64.4	78.7	92.8	94.4		
15	4.68	10.7	19.9	37.2	53.6	69.4	84.8	100	103		
16	5.02	11.4	21.4	39.9	57.4	74.4	90.9	107	114		
17	5.36	12.2	22.8	42.6	61.3	79.4	97.1	114	124		
18	5.69	13.0	24.3	45.3	65.2	84.5	103	122	136	136	
19	6.01	13.8	25.7	48.0	69.1	89.6	109	129	144	144	
20	6.33	14.6	27.2	50.7	73.1	94.7	116	136	152	152	
21	6.64	15.4	28.7	53.5	77.0	100	122	144	161	161	
22	6.96	16.1	30.1	56.2	81.0	105	128	151	169	169	
23	7.28	16.9	31.6	59.0	85.0	110	135	159	177	177	
24	7.59	17.7	33.1	61.8	89.0	115	141	166	186	186	
25	7.91	18.5	34.6	64.6	93.0	120	147	174	194	194	
26	8.22	19.3	36.1	67.3	97.0	126	154	181	204	204	
28	8.86	21.0	39.1	73.0	105	136	166	196	225	228	
30	9.49	22.6	42.1	78.6	113	147	179	211	243	253	
32	10.1	24.2	45.2	84.3	121	157	192	227	260	276	
35	11.1	26.7	49.8	92.8	134	173	212	250	287	304	
40	12.7	30.8	57.5	107	154	200	245	288	331	351	
45	14.2	35.0	65.3	122	175	227	278	327	376	408	408

■ RS160-HT Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth \ Small sprocket max rpm	10	25	50	100	150	200	250	300	350	400
Lubrication	AI		AII		B				C	
9	4.03	9.20	17.2	32.0	46.2	59.8	73.1	74.5		
10	4.52	10.3	19.2	35.9	51.7	67.0	81.9	87.3		
11	5.01	11.4	21.3	39.8	57.3	74.3	90.8	98.5		
12	5.50	12.6	23.4	43.7	63.0	81.6	100	108		
13	6.00	13.7	25.5	47.7	68.7	88.9	109	118		
14	6.50	14.8	27.7	51.6	74.4	96.4	118	128		
15	7.00	16.0	29.8	55.6	80.1	104	127	138		
16	7.51	17.1	32.0	59.6	85.9	111	136	148		
17	8.02	18.3	34.1	63.7	91.7	119	145	162		
18	8.52	19.5	36.3	67.7	97.6	126	155	177	177	
19	8.99	20.6	38.5	71.8	103	134	164	192	192	
20	9.47	21.8	40.7	75.9	109	142	173	204	207	
21	9.94	23.0	42.9	80.0	115	149	183	215	220	
22	10.4	24.2	45.1	84.1	121	157	192	226	231	
23	10.9	25.3	47.3	88.3	127	165	201	237	243	
24	11.4	26.5	49.5	92.4	133	172	211	248	254	
25	11.8	27.7	51.8	96.6	139	180	220	260	266	
26	12.3	28.9	54.0	101	145	188	230	271	277	
28	13.3	31.3	58.5	109	157	204	249	293	300	
30	14.2	33.8	63.0	118	169	219	268	316	325	
32	15.1	36.2	67.6	126	182	235	288	339	358	
35	16.6	39.9	74.4	139	200	259	317	373	409	409
40	18.9	46.1	86.0	160	231	299	366	431	485	485
45	21.3	52.3	97.6	182	262	340	416	490	551	551

■ RS200-HT Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth \ Small sprocket max rpm	10	15	20	30	40	50	70	100	150	200	250	300
Lubrication	AI			AII				B				C
9	7.08	10.2	13.2	19.0	24.7	30.1	40.8	56.2	81.0	105	108	
10	7.93	11.4	14.8	21.3	27.6	33.8	45.7	63.0	90.8	118	122	
11	8.79	12.7	16.4	23.6	30.6	37.4	50.7	69.9	101	130	135	
12	9.66	13.9	18.0	26.0	33.6	41.1	55.7	76.7	111	143	148	
13	10.5	15.2	19.7	28.3	36.7	44.8	60.7	83.7	121	156	161	
14	11.4	16.4	21.3	30.7	39.7	48.6	65.8	90.6	131	169	175	
15	12.3	17.7	22.9	33.0	42.8	52.3	70.8	97.6	141	182	192	
16	13.2	19.0	24.6	35.4	45.9	56.1	76.0	105	151	195	211	
17	14.1	20.3	26.3	37.8	49.0	59.9	81.1	112	161	209	231	
18	15.0	21.6	27.9	40.2	52.1	63.7	86.3	119	171	222	252	252
19	15.8	22.9	29.6	42.7	55.3	67.5	91.4	126	182	235	273	273
20	16.6	24.2	31.3	45.1	58.4	71.4	96.6	133	192	249	290	290
21	17.4	25.5	33.0	47.5	61.6	75.3	102	140	202	262	305	305
22	18.3	26.8	34.7	50.0	64.7	79.1	107	148	213	276	321	321
23	19.1	28.1	36.4	52.4	67.9	83.0	112	155	223	289	337	337
24	19.9	29.4	38.1	54.9	71.1	86.9	118	162	234	303	353	353
25	20.8	30.7	39.8	57.4	74.3	90.9	123	170	244	316	369	369
26	21.6	32.1	41.6	59.9	77.5	94.8	128	177	255	330	385	385

■ RS240-HT Maximum kilowatt ratings table (kW ratings for single strand chain)

Small sprocket no. of teeth \ Small sprocket max rpm	5	10	15	20	25	30	40	50	60	80	100	125	150	175	200	250
Lubrication	AI				AII				B							
9	6.46	12.2	17.6	22.8	27.9	32.9	42.6	52.1	61.3	79.5	97.2	119	140	159	159	
10	7.18	13.7	19.7	25.6	31.3	36.8	47.7	58.3	68.7	89.1	109	133	157	180	183	183
11	7.89	15.2	21.9	28.3	34.7	40.8	52.9	64.7	76.2	98.7	121	148	174	200	202	202
12	8.61	16.7	24.0	31.1	38.1	44.9	58.1	71.0	83.7	108	133	162	191	219	222	222
13	9.33	18.2	26.2	34.0	41.5	48.9	63.4	77.4	91.3	118	145	177	208	239	242	242
14	10.0	19.7	28.4	36.8	45.0	53.0	68.6	83.9	98.9	128	157	191	226	259	263	263
15	10.8	21.2	30.6	39.6	48.4	57.1	73.9	90.4	107	138	169	206	243	279	283	283
16	11.5	22.8	32.8	42.5	51.9	61.2	79.3	96.9	114	148	181	221	261	299	299	299
17	12.2	24.3	35.0	45.4	55.5	65.3	84.6	103	122	158	193	236	278	300	300	
18	12.9	25.8	37.2	48.3	59.0	69.5	90.0	110	130	168	205	251	296	303	303	
19	13.6	27.3	39.5	51.2	62.5	73.7	95.5	117	137	178	218	266	314	317	317	
20	14.4	28.7	41.7	54.1	66.1	77.9	101	123	145	188	230	281	330	330		
21	15.1	30.1	44.0	57.0	69.7	82.1	106	130	153	198	243	297	345	345		
22	15.8	31.6	46.3	59.9	73.3	86.3	112	137	161	209	255	312	346	346		
23	16.5	33.0	48.5	62.9	76.9	90.6	117	143	169	219	268	327	370	370		
24	17.2	34.4	50.8	65.8	80.5	94.8	123	150	177	229	280	343	396	396		
25	17.9	35.9	53.1	68.8	84.1	99.1	128	157	185	240	293	358	410	410		
26	18.7	37.3	55.4	71.8	87.7	103	134	164	193	250	306	373	418	418		

Lubrication method "C" range

Note: Use standard RS Roller Chain for rpm higher than those shown in the tables.

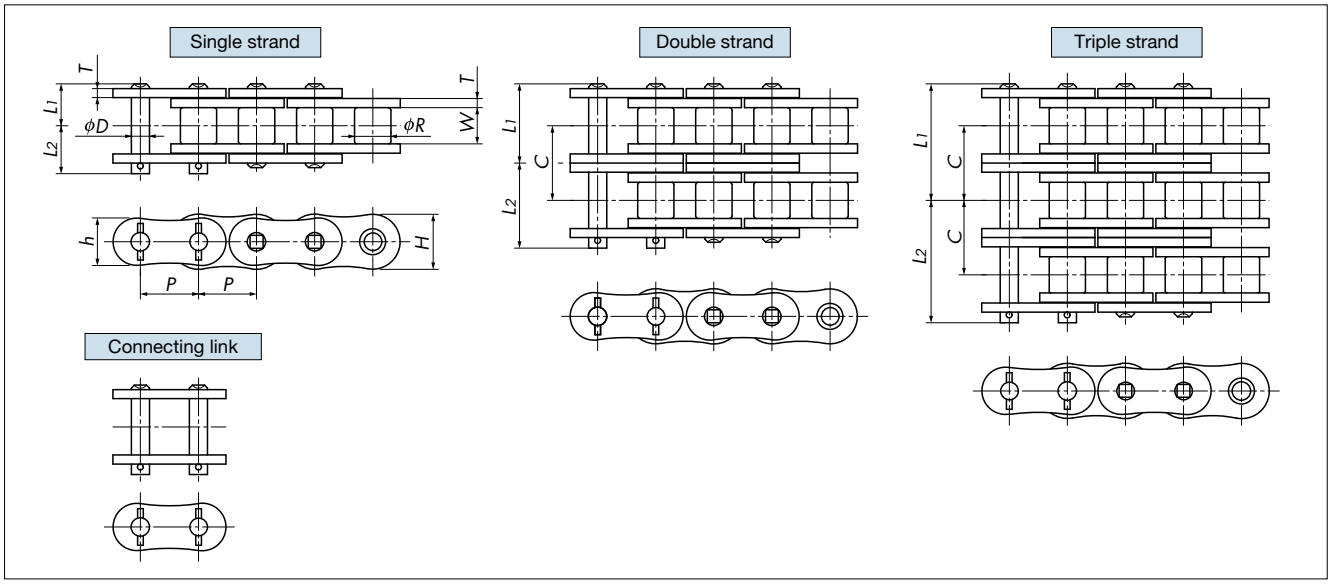
■ Multi-strand factors

Number of chain strands	Multi-strand factor
Two strands	1.7
Three strands	2.5

■ Lubrication systems and methods

Lubrication system	Method	
AI	Manual lubrication	Details on p. 222
AII	Drip lubrication	
B	Oil bath or slinger disc lubrication	
C	Forced pump lubrication	

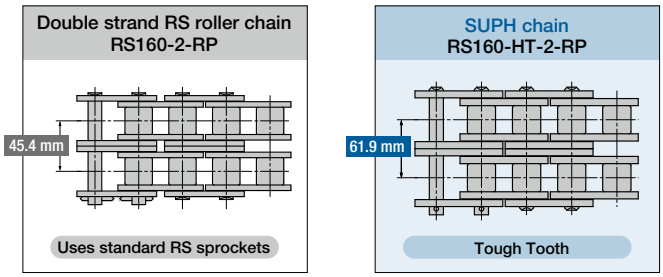
Heavy Duty Roller Chains Super-H Roller Chain



Specifications

Size & series	Number of strands	Pitch P	Roller dia. R	Inner width of inner link W	Plates Thickness T	Plates Height H	Plates Height h	Pins Dia. D	Pins L1	Pins L2	Transverse pitch C	Min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
RS80-SUPH	1	25.40	15.88	15.88	4.0	24.1	20.8	7.94	18.3	20.9	32.6	85.3{ 8700}	25.0 { 2550}	3.29
	2								34.6	37.2		171 { 17400}	42.0 { 4280}	6.52
	3								50.95	53.55		256 { 26100}	61.8 { 6300}	9.75
RS100-SUPH	1	31.75	19.05	19.05	4.8	30.1	26.0	9.54	21.8	24.5	39.1	127 { 12900}	39.2 { 4000}	4.88
	2								41.4	44.1		253 { 25800}	66.7 { 6800}	9.51
	3								61.0	63.6		380 { 38700}	98.1 {10000}	14.14
RS120-SUPH	1	38.10	22.23	25.40	5.6	36.2	31.2	11.11	26.95	30.55	48.9	171 { 17400}	53.9 { 5500}	6.94
	2								51.4	55.0		341 { 34800}	91.7 { 9350}	13.51
	3								75.9	79.4		512 { 52200}	135 {13750}	20.09
RS140-SUPH	1	44.45	25.40	25.40	6.4	42.2	36.4	12.71	28.9	33.1	52.2	222 { 22600}	68.4 { 6970}	8.88
	2								55.0	59.5		443 { 45200}	108 {11050}	17.38
	3								81.15	85.25		665 { 67800}	159 {16250}	25.88
RS160-SUPH	1	50.80	28.58	31.75	7.15	48.2	41.6	14.29	33.95	38.45	61.9	281 { 28700}	90.0 { 9180}	11.72
	2								64.9	69.6		563 { 57400}	145 {14790}	22.97
	3								95.95	100.45		844 { 86100}	213 {21750}	34.22
RS200-SUPH	1	63.50	39.68	38.10	9.5	60.3	52.0	19.85	42.9	48.1	78.3	520 { 53000}	122 {12410}	19.68
	2								82.05	87.3		1040 {106000}	183 {18700}	38.48
	3								121.25	126.55		1560 {159000}	270 {27500}	57.29
RS240-SUPH	1	76.20	47.63	47.63	12.7	72.4	62.4	23.81	54.8	62.3	101.2	802 { 81800}	168 {17170}	30.47
	2								105.3	112.9		1600 {163600}	257 {26180}	59.77
	3								156.05	163.55		2410 {245400}	378 {38500}	89.09

Note: 1. No offset links available.
2. Use lubrication method AII, B, or C on page 223.
3. Multi-strand chains have a different transverse pitch from that of RS roller chain so RS sprockets cannot be used. Use dedicated sprockets.



Model numbering example RS160 -SUPH -2 -RP + 50L -FSJR

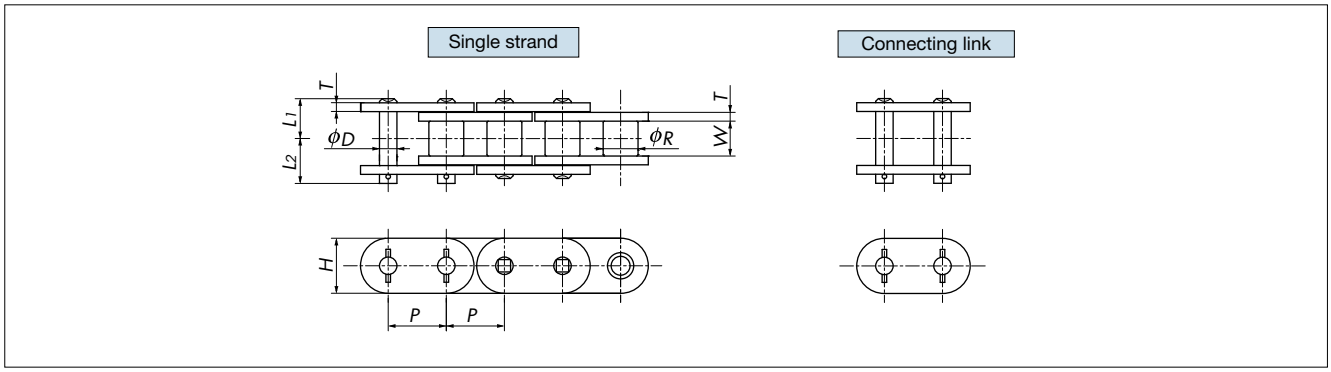
- RS160: Size
- -SUPH: Series
- -2: Number of strands
- -RP: Pin type
- 50L: Number of links
- -FSJR: End link

When using multi-strand chains, please specify Tough Tooth RS sprockets.

Model numbering example RS160 -2HB 22T Q -T

- RS160: Size
- -2HB: Number of strands and hub type
- 22T: Number of teeth
- Q: Hardened teeth
- -T: Tough Tooth

Ultra Super Roller Chain



■ Specifications

Tsubaki chain number	Pitch P	Roller dia. R	Inner width of inner link W	Plates		Pins			Min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
				Thickness T	Height H	Dia. D	L_1	L_2			
RF100-USN-1	31.75	19.05	19.05	4.8	30.1	9.54	21.8	24.5	149 {15200}	39.2 { 4000}	5.07
RF120-USN-1	38.10	22.23	25.40	5.6	36.2	11.11	26.95	30.55	213 {21700}	53.9 { 5500}	7.22
RF140-USN-1	44.45	25.40	25.40	6.4	42.2	12.71	28.9	33.1	273 {27800}	68.4 { 6970}	9.24
RF160-USN-1	50.80	28.58	31.75	7.15	48.2	14.29	33.95	38.45	341 {34800}	90.0 { 9180}	12.19
RF200-USN-1	63.50	39.68	38.10	9.5	60.3	19.85	42.9	48.1	580 {59100}	122 { 12410}	20.47
RF240-USN-1	76.20	47.63	47.63	12.7	72.4	23.81	54.8	62.3	853 {87000}	168 { 17170}	31.69

Note: 1. Features: Cannot be used with previous-specifications chain series, including connecting links. Pin diameter differs from previous-specifications chains (stamped with TSUBAKI___US). When replacing the chain, use a complete chain including end fittings.
2. No offset links available.
3. Use lubrication method AⅡ, B, or C on page 223.

Model numbering example

RF240 -USN -1 -RP + 30L -FSJR

- RF240: Size
- USN: Series
- 1: Number of strands
- RP: Pin type
- 30L: Number of links
- FSJR: End links

Miniature Drive Chain Model Numbering

Chain No. p.19 | p.98 | p.15 | p.188

Leveraging our precise component manufacturing and assembly technology, we achieved an extremely small size for our miniature chain. Not only can they take the place of conventional larger chains, but they also accommodate compact layouts where chain power transmission was not previously feasible.

1. Chains ordered by specifying the number of links, etc.

Size – Series – Number of strands – Pin type + Number of links – End link – Options

◆ Model numbering example

RS6–ESS–1–RP+151L–RR

2. Individual parts, such as connecting links and offset links, ordered by quantity

Size – Series – Number of strands – Part name

◆ Model numbering example

RS6–ESS–1–MCJL

Note: Due to the chain's extremely small size, it is difficult to install connecting links. We therefore do not recommend the use of connecting links.

■ Series

	ESS
RS6	○

■ Number of stands

	ESS
RS6	1

■ Pin type

	ESS
RS6	RP

■ End link symbol for connecting links and part names

	ESS
RS6	MCJ

How to read chart

○	Available
1	1-strand only
RP	RP only
MCJ	M-type connecting link with clip only

Miniature Drive Chains

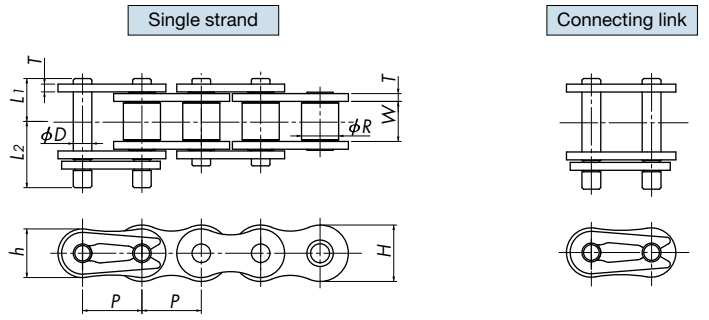
Epsilon Chain ESS Series — Series code: ESS

◆ Features Tsubaki's smallest roller chain.
Can be used in layouts where conventional chains are not feasible.
Corrosion resistance equivalent to SS series chains.

◆ Material 18-8 stainless steel



Epsilon Chain™ ESS Series



Note: Diagram shows clip connecting links.

Specifications

Tsubaki chain number	Pitch P	Roller dia. R	Inner width of inner link W	Plates			Pins			Min. tensile strength kN{kgf}	Approx. mass kg/m	Links per unit
				Thickness T	Width H	Width h	Dia. D	L_1	L_2			
RS6-ESS-1	1.905	1.19	1.27	0.25	1.81	1.56	0.596	1.4	2.1	0.36 {37}	0.017	532

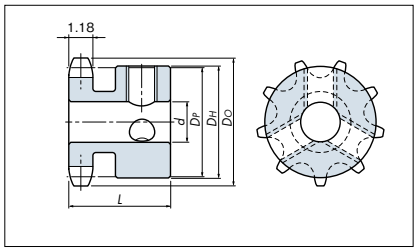
Model numbering example **RS6 -ESS -1 -RP + 151L -RR**

RS6: Size; -ESS: Series; -1: Number of strands; -RP: Pin type; 151L: Number of links; -RR: End link

Note: 1. This chain requires different handling than standard-sized chains. For appropriate selecting and handling of this chain, contact a Tsubaki representative. Some of the information in the "Selection and Handling" section does not apply to this chain, due to its extremely small size.
2. There are no stamps on the plates.
3. The pins are not riveted.
4. Offset links are not available.
5. Long-length formations of more than one standard-length unit are not available.
6. Chains in an endless formation and with fewer than 40 links use connecting links. Chains with an odd number of links will have inner links on both ends. Contact a Tsubaki representative regarding endless formations or if you require other configurations.

Epsilon Chain™ ESS Series Sprockets

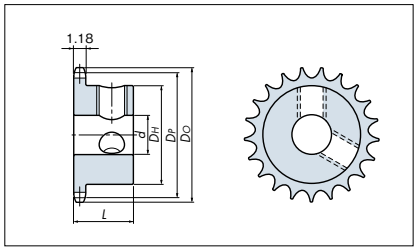
Number of teeth: 9 or 15



Specifications

Model number	Number of teeth	Pitch circle dia. Dp	Outer dia. Do	Bore dia. d	Hub		Set screw hole	Approx. mass g
					Dia. D_H	Length L		
RS6-1B9T-ESS-2	9	5.57	6.3	2	5.5	5	3-M1.6	0.6
RS6-1B15T-ESS-3	15	9.16	10.1	3	7.8	6.5	3-M2.5	1.8
RS6-1B21T-ESS-4	21	12.78	13.7	4	10	6	2-M3	3.2
Material	Stainless steel							

Number of teeth: 21



Model numbering example **RS6 -1 B 9T -ESS -2**

RS6 -1: Size–number of strands; B: Hub type; 9T: Number of teeth; -ESS: Series; -2: Bore diameter d

Note: 1. The minimum number of sprocket teeth is nine.
Contact a Tsubaki representative for number of teeth and specifications other than the above.
2. The sprocket has a finished bore and is supplied with a set screw.
3. Surface treatments to improve wear resistance are also available. Contact a Tsubaki representative.

Corrosion Resistant Roller Chain Model Numbering

This page shows the series, number of strands, as well as types of pins and connecting links that can be selected for each size. Also refer to “Ordering RS Roller Chain” on page 19.
Customized items are also available. Please contact a Tsubaki representative.

1. Chains ordered by specifying the number of links, etc.

Size – Series – Number of strands – Pin type + Number of links – End link – Options

◆ Model numbering example

RS50–SS–1–RP+182L–MCJR

2. Individual parts, such as connecting links and offset links, ordered by quantity

Size – Series – Number of strands – Part name

◆ Model numbering example

RS80–NEP–1–MWJL
RS160–NP–1–OL

■ Series

(column = size; row = series)

	SS	HS	NS	AS	NP	NEP	APP	TI	KT	SNS	PC	PCSY	CUSS
RS25	○	×	○	–	○	×	×	×	×	×	○	×	×
RS35	○	×	○	–	○	○	–	○	○	×	○	×	×
RS40	○	○	○	○	○	○	–	○	○	○	○	○	○
RS50	○	○	○	○	○	○	–	–	○	○	○	○	○
RS60	○	○	○	○	○	○	–	–	○	○	○	○	○
RS80	○	○	○	○	○	○	○	–	○	○	×	×	○
RS100	○	×	–	–	○	○	○	×	○	×	×	×	–
RS120	○	×	–	–	○	○	○	×	○	×	×	×	–
RS140	○	×	–	–	○	○	○	×	○	×	×	×	–
RS160	○	×	–	–	○	○	○	×	○	×	×	×	–
RS180	○	×	–	–	○	–	○	×	–	×	×	×	–
RS200	○	×	–	–	○	–	○	×	–	×	×	×	–
RS240	○	×	–	–	○	–	○	×	–	×	×	×	–

	SS
RS11	○
RS15	○
RS37	○

	ESS
RS6	○

Note: This chain is a miniature drive chain. See page 97 for more about miniature drive chain model numbering.

■ Number of strands

(column = size; row = series)

	SS*1	HS	NS	AS	NP	NEP	APP	TI	KT	SNS	PC	PCSY	CUSS
RS25	1–3	×	1	–	1/2	×	×	×	×	×	1	×	×
RS35	1–3	×	1	–	1/2	1	–	1	1	×	1	×	×
RS40	1–3*2	1	1/2	1/2	1/2	1/2	–	1	1/2	1	1	1	1
RS50	1–3	1	1/2	1/2	1/2	1–3	–	–	1/2	1	1	1	1
RS60	1–3	1	1/2	1/2	1–3	1–3	–	–	1/2	1	1	1	1
RS80	1–3	1	1	1	1/2	1/2	1/2	–	1	1	×	×	1
RS100	1/2	×	–	–	1/2	1/2	1/2	×	1	×	×	×	–
RS120	1/2	×	–	–	1/2	1/2	1/2	×	1	×	×	×	–
RS140	1/2	×	–	–	1/2	1/2	1/2	×	1	×	×	×	–
RS160	1/2	×	–	–	1/2	1/2	1/2	×	1	×	×	×	–
RS180	1	×	–	–	1/2	–	1/2	×	–	×	×	×	–
RS200	1	×	–	–	1/2	–	1/2	×	–	×	×	×	–
RS240	1	×	–	–	1/2	–	1/2	×	–	×	×	×	–

	ESS
RS6	1

Note: This chain is a miniature drive chain. See page 97 for more about miniature drive chain model numbering.

Note: *1. RS11, RS15, and RS37 sizes are single-strand only.
*2. 4-strand also available.

■ Pin type

(column = size; row = series)

	SS	HS	NS	AS	NP	NEP	APP
RS25	RP	×	RP	–	RP	×	×
RS35	RP/CP*2	×	RP	–	RP	RP	–
RS40	RP/CP*3	RP	RP	RP	RP	RP	–
RS50	RP/CP*4	RP	RP	RP	RP	RP	–
RS60	RP/CP*4	RP	RP	RP	RP	RP	–
RS80	RP/CP*2	RP	RP	RP	RP	RP	RP
RS100	RP	×	–	–	RP/CP	RP	RP
RS120	RP	×	–	–	RP/CP	RP	RP
RS140	RP	×	–	–	RP/CP	RP	RP
RS160	RP	×	–	–	RP/CP	RP	RP
RS180	RP	×	–	–	RP/CP	–	RP
RS200	RP	×	–	–	RP/CP	–	RP
RS240	RP	×	–	–	RP	–	RP

How to read chart

O	Available
–	Contact a Tsubaki representative
1–3	Select from 1 to 3 strands
1/2	Select from 1 or 2 strands
1	1-strand only
RP/CP	Select from RP or CP
RP	RP only
MWJ	M-type connecting link with cotter pin only
MCJ	M-type connecting link with clip only
MEJ	M-type connecting link with E-type retaining ring only
MZJ	M-type connecting link with Z-pin only
MSJ	M-type connecting link with spring pin only
O	Offset link only
2O	2-pitch offset link only
×	Not available

	SS
RS11	RP
RS15	RP
RS37	RP

	ESS
RS6	RP

Note: This chain is a miniature drive chain. See page 97 for more about miniature drive chain model numbering.

Note: *1. Titanium Chain, Cold Resistant Chain, Low-Noise Chain, Poly Steel Chain, and Curved Stainless Steel Chain are RP only.
*2. 2-strand and 3-strand chains are RP only.
*3. 3-strand and 4-strand chains are RP only.
*4. 3-strand chain is RP only.

■ End link symbol for connecting links and part names

(column = size; row = series)

	SS	HS	NS	AS	NP	NEP	APP	TI	KT	SNS	PC	PCSY	CUSS
RS25	MCJ	×	MCJ	–	MCJ	×	×	×	×	×	MCJ	×	×
RS35	MCJ*1	×	MWJ	–	MCJ	MCJ	–	MZJ	MWJ	×	MCJ	×	×
RS40	MCJ*2	MCJ	MWJ	MCJ	MCJ	MCJ	–	MZJ	MWJ	MCJ	MCJ	MZJ	MWJ
RS50	MCJ*1	MCJ	MWJ	MCJ	MCJ	MCJ*1	–	–	MWJ	MCJ	MCJ	MZJ	MWJ
RS60	MCJ*1	MCJ	MWJ	MCJ	MCJ*1	MCJ*1	–	–	MWJ	MCJ	MCJ	MZJ	MWJ
RS80	MWJ	MWJ	MWJ	MWJ	MWJ	MWJ	MWJ	–	MWJ	MWJ	×	×	MWJ
RS100	MWJ	×	–	–	MWJ	MWJ	MWJ	×	MWJ	×	×	×	–
RS120	MWJ	×	–	–	MWJ	MWJ	MWJ	×	MWJ	×	×	×	–
RS140	MWJ	×	–	–	MWJ	MWJ	MWJ	×	MWJ	×	×	×	–
RS160	MWJ	×	–	–	MWJ	MWJ	MWJ	×	MWJ	×	×	×	–
RS180	MWJ	×	–	–	MWJ	–	MWJ	×	–	×	×	×	–
RS200	MWJ	×	–	–	MWJ	–	MWJ	×	–	×	×	×	–
RS240	MWJ	×	–	–	MWJ	–	MSJ	×	–	×	×	×	–

	SS
RS11	MCJ
RS15	MEJ
RS37	MWJ

	ESS
RS6	MCJ

Note: This chain is a miniature drive chain. See page 97 for more about miniature drive chain model numbering.

Note: *1. 3-strand chain uses cotter pins only.
*2. 3-strand and 4-strand chains use cotter pins only.

■ Offset link types and part names*1

(column = size; row = series)

	SS*2	HS	NS*3	AS*3	NP	NEP	APP*3	KT*3	SNS
RS25	2O	×	2O	–	2O	×	×	×	×
RS35	O*4	×	O	–	O	O	–	O	×
RS40	O	O	O	O	O	O	–	O	O
RS50	O	O	O	O	O	O*4	–	O	O
RS60	O	O	O	O	O*4	O*4	–	O	O
RS80	O*4	O	O	O	O	O	O	O	O
RS100	O*4	×	–	–	O	O	O	O	×
RS120	O*4	×	–	–	O	O	O	O	×
RS140	O*3	×	–	–	O	O	O	O	×
RS160	O*3	×	–	–	O	O	O	O	×
RS180	O*3	×	–	–	O	–	O	–	×
RS200	O*3	×	–	–	O	–	O	–	×
RS240	O*3	×	–	–	O	–	O	–	×

	ESS
RS6	×

Note: This chain is a miniature drive chain. See page 97 for more about miniature drive chain model numbering.

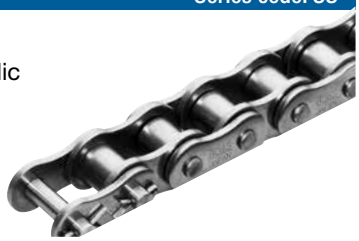
Note: *1. Offset links are not available for Titanium Chain, Poly Steel Chain, or Curved Stainless Steel Chain.
*2. Offset links are not available for RS11 and RS15 chains. Only offset links are available for RS37.
*3. Single-strand only.
*4. Single-strand or 2-strand only.

• Part names: O is offset link; 2O is two-pitch offset link.

Corrosion Resistant Roller Chain

Stainless Steel Roller Chain

SS Series — Series code: SS



◆ **Features** These chains offer greater corrosion resistance than Surface Treated Roller Chains. They can be used in water and in corrosive atmospheres that are acidic or alkaline, as well as in low or high temperatures.

◆ **Material** 18-8 stainless steel*

Note: *Slightly magnetic due to cold working. If connecting links are secured with clips, the clip material will be 17-7 stainless steel.

HS Series — Series code: HS



◆ **Features** The pins, bushes, and rollers are made of 13Cr stainless steel. Corrosion resistance is slightly less than that of SS chains, but maximum allowable load is 1.8 times than that of SS chains. It also has longer life than SS chains.

◆ **Material** Pins, bushes, and rollers are 13Cr stainless steel; plates are 18-8 stainless steel

Note: 1. Magnetic. If connecting links are secured with clips, the clip material will be 17-7 stainless steel. If secured with cotter pins, cotter pins will be 18-8 stainless steel.
2. In applications where the chain is continuously exposed to water, such as underwater use, HS chains may wear out faster than SS chains. HS chains are therefore not recommended when long service life is required.

NS Series — Series code: NS



◆ **Features** These chains are suited for applications that require higher corrosion resistance than SS chains.

◆ **Material** 18-12 stainless steel*

Note: *If connecting links are secured with clips, the clip material will be 17-7 stainless steel. If secured with cotter pins, cotter pins will be 18-8 stainless steel on RS80-NS chain. Non-magnetic except for clips and cotter pins.

AS Series — Series code: AS



◆ **Features** The pins and rollers of these chains are made of precipitation-hardened stainless steel. Corrosion resistance is slightly less than that of SS chains.

◆ **Material** Pins and rollers are precipitation-hardened stainless steel
Plates and bushes are 18-8 stainless steel

Note: Magnetic. If connecting links are secured with clips, the clip material will be 17-7 stainless steel. If secured with cotter pins, cotter pins will be 18-8 stainless steel.

Surface Treated Roller Chain

NP Series

Series code: NP



◆ **Features** These chains are RS Roller Chains with nickel plating. The nickel plating not only improves the appearance, but also adds a small degree of corrosion resistance. Therefore, they can be used in applications where there is exposure to water.

◆ **Specs** Nickel-plated RS Roller Chain*1*2

Note: *1. Maximum allowable load is approximately 15% lower than that of RS Roller Chain.
*2. Stainless steel may be used for fasteners such as cotter pins and clips.

NEP Series

Series code: NEP



◆ **Features** Surface-treated chains that use a base RS Roller Chain with a special coating and top coating. They have the strength of RS Roller Chain and offer superb saltwater, weather, and chemical resistance. The amount of specific hazardous substances contained, such as hexavalent chromium, is below the permissible amount as specified by the RoHS directive.

◆ **Specs** RS Roller Chain with a special coating and top coating*1

Note: *1. Stainless steel is used for fasteners such as cotter pins and clips.
2. Contact a Tsubaki representative when using in a high-temperature steam environment.
3. Galvanic corrosion may occur when steel chains are used with stainless steel sprockets, promoting premature roller wear. Consider the use of coated steel sprockets.

APP Series

Series code: APP

◆ **Features** Pins are treated with a non-strength degrading surface treatment to protect against pitting corrosion that leads to fatigue breakage, making it highly effective in environments that readily promote corrosion, such as outdoor or coastal applications.

◆ **Specs** RS Roller Chain* with special surface treatment on the pins

Note: *Heavy Duty Roller Chains can also be manufactured. Contact a Tsubaki representative for more information.

Other Corrosion Resistant Roller Chains

Titanium Roller Chains

Series code: TI



◆ **Features** These chains are non-magnetic and offer high corrosion resistance.

◆ **Material** Titanium alloy

Cold Resistant Roller Chains

Series code: KT



◆ **Features** These chains can be used in lower temperatures than RS Roller Chains.

Note: 1. Uses M-type connecting links with ring coining, which allows for easy attachment and removal of the connecting link but provides the same strength as the base chain links.
2. Chains are coated with an anti-rust oil when shipped. Chain should be lubricated with an oil suitable for the ambient temperature during actual use. Customized models coated with low-temperature silicone oil are also available. Contact a Tsubaki representative.

Low Noise Roller Chains

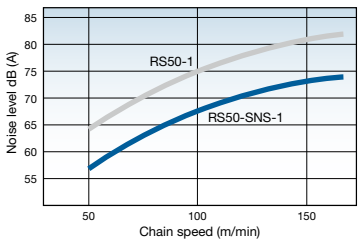
Series code: SNS



◆ **Features** A specially shaped roller absorbs shock and reduces noise when engaging the sprocket. These chains emit 6 to 8 dB less noise*1 compared to standard RS Roller Chain. Can be used with standard RS sprockets*2.

■ **In-house comparison of noise levels*1**

Test conditions
Chain load: 3.29 kN
Lubrication: Pre-lubrication only
Measurement position:
300 mm from drive sprocket



Note: *1. Based on the results of in-house testing with anti-rust lubricating oil applied at time of shipment.
*2. If it is not possible to provide sufficient lubrication, the use of sprockets with hardened teeth is recommended. Although dimensional specifications are the same as general-purpose drive chains, the kilowatt rating will be different.
3. Oil may spatter depending on usage conditions.

Corrosion Resistant Roller Chain

Poly Steel Chain PC (Standard Series)

Series code: PC



◆ **Features** Can be used without lubrication. Can also reduce noise by 5 dB*1 and reduce weight by 50% compared to standard RS Roller Chain.

◆ **Material** Outer plates and pins are 18-8 stainless steel*2
Inner links are engineering plastic (white)

Note: *1. Based on in-house testing.
*2. Magnetic except for engineering plastic parts. Connecting link clips are 17-7 stainless steel.

Poly Steel Chain PC-SY (Super Chemical Resistant Series)

Series code: PCSY



◆ **Features** Improved corrosion resistance compared to standard PC series.*

◆ **Material** Outer plates, pins, and fasteners are titanium alloy
Inner links are engineering plastic (matte white)

Note: *Maximum allowable load is 60% that of standard PC chains.

Curved Stainless Steel Roller Chain

Series code: CUSS



◆ **Features** A roller chain that can make large lateral curves*1 thanks to its special pin and bush construction and the large clearance between link plates. Allows for curved transmission using stainless steel RS sprockets. Ideal for curved conveyors and drives on curved roller conveyors.

◆ **Material** 18-8 stainless steel*2

Note: *1. A guide is needed in the curved sections.
*2. Magnetic due to cold working.

Precautions When Considering and Adopting Corrosion Resistant Drive Chains

1. Preventing contamination

The coating on Surface Treated Drive Chains may flake off when sliding or when engaging the sprocket. Do not use if the chain will come into direct contact with food, or where coating flakes or wear dust may contaminate food.

In non-food applications, take measures to prevent entry of foreign matter, for example, installing an appropriate cover when used in environments where coating flakes or wear dust may present a problem.

Flaked NEP film has a specific gravity lighter than that of water and will float. Nickel plating is not regulated under the Japan Food Sanitation Act or the Industrial Safety and Health Act.

2. Lubricating oil used on products

SS and NS Series Stainless Steel Drive Chains, Titanium Chain, and Curved Stainless Steel Chain are not lubricated with anti-rust oil or lubricating oil at the time of shipment.

However, oil is applied during assembly. When possible, lubricate before use.

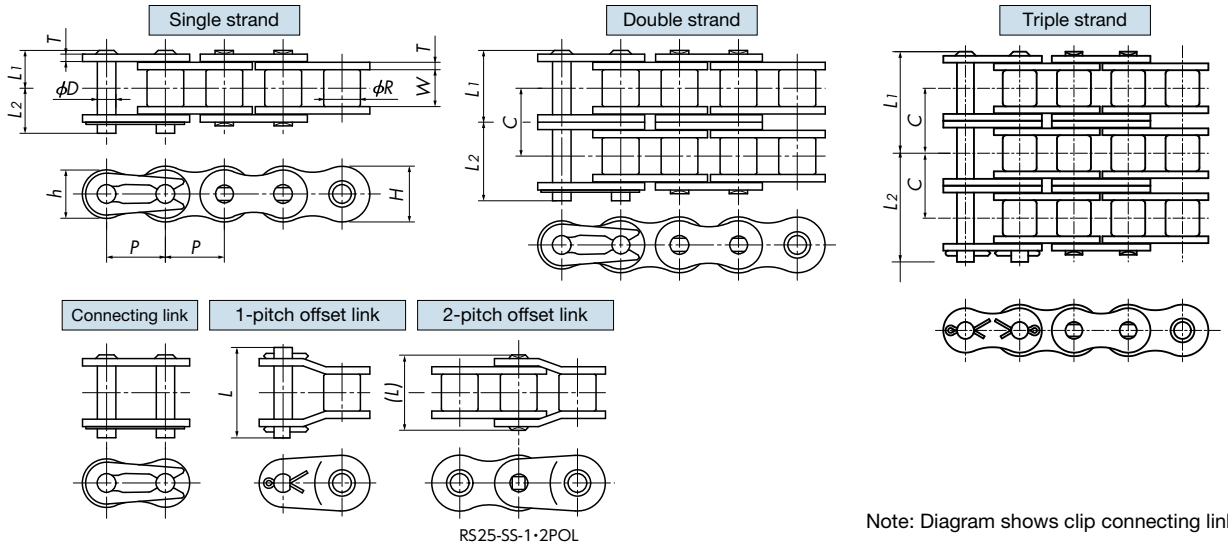
If used degreased or in a similar dry condition or without lubrication, early bending failure may occur, or the chain may reach the end of its wear elongation life prematurely.

Note: Lubricating oil is applied to RS11-SS, RS25-SS and RS25-NS chain.

3. Strength

Maximum allowable load is the value under lubricated conditions including water lubrication.

SS Series Stainless Steel Drive Chain



Note: Diagram shows clip connecting links.

■ Specifications

Tsubaki chain number	Pitch P	Roller dia. R	Inner width of inner link W	Plates			Pins				Transverse pitch C	Max. allowable load kN{kgf}	Approx. mass kg/m	Links per unit
				Thickness T	Height H	Height h	Dia. D	L_1	L_2	Offset pin length L				
RS11-SS-1	3.7465	*2.285	1.83	0.38	3.5	3.5	1.57	2.275	3.165	—	—	0.05 {5}	0.052	134
RS15-SS-1	4.7625	*2.48	2.38	0.6	4.3	4.3	1.62	3.05	3.85	—	—	0.06 {6}	0.075	210
RS25-SS-1	6.35	*3.30	3.18	0.75	5.84	5.05	2.31	3.8	4.8	(7.6)	—	0.12 {12}	0.14	160
RS35-SS-1	9.525	*5.08	4.78	1.25	9.0	7.8	3.59	6.05	6.85	14.5	—	0.26 {27}	0.33	320
RS40-SS-1	12.70	7.92	7.95	1.5	12.0	10.4	3.97	8.25	9.65	18.6	14.4	0.69 {70}	0.64	240
RS40-SS-2								15.45	17.15	33.5		1.37 {140}	1.27	
RS40-SS-3								22.65	24.15	47.9		2.06 {210}	1.90	
RS50-SS-1	15.875	10.16	9.53	2.0	15.0	13.0	5.09	10.3	12.0	23.9	18.1	1.03 {105}	1.04	192
RS50-SS-2								19.35	21.05	41.8		2.06 {210}	2.07	
RS50-SS-3								28.40	30.2	59.9		3.09 {315}	3.09	
RS60-SS-1	19.05	11.91	12.70	2.4	18.1	15.6	5.96	12.85	14.75	29.4	22.8	1.57 {160}	1.53	160
RS60-SS-2								24.25	26.15	52.6		3.14 {320}	3.04	
RS60-SS-3								35.65	38.15	75.5		4.71 {480}	4.54	
RS80-SS-1	25.40	15.88	15.88	3.2	24.1	20.8	7.94	16.25	19.45	39.0	29.3	2.65 {270}	2.66	120
RS80-SS-2								30.90	33.90	67.5		5.30 {540}	5.30	
RS80-SS-3								45.60	48.50	96.9		7.94 {810}	7.89	
RS100-SS-1	31.75	19.05	19.05	4.0	30.1	26.0	9.54	19.75	22.85	45.7	35.8	3.82 {390}	3.99	96
RS100-SS-2								37.70	40.80	81.6		7.65 {780}	7.99	
RS120-SS-1	38.10	22.23	25.40	5.0	36.2	31.2	11.11	25.75	29.80	59.7	45.4	3.82 {390}	6.13	80
RS120-SS-2								48.35	52.25	104.9		7.65 {780}	12.22	
RS140-SS-1	44.45	25.40	25.40	6.0	42.2	36.4	12.71	28.15	32.95	66.2	48.9	4.61 {470}	7.91	68
RS140-SS-2								52.70	57.30	117.4		9.22 {940}	15.77	
RS160-SS-1	50.80	28.58	31.75	7.0	48.2	41.6	14.29	33.55	38.55	77.3	58.5	6.37 {650}	10.86	60
RS160-SS-2				6.4				61.15	66.15	132.2		12.7 {1300}	21.66	
RS180-SS-1	57.15	35.71	35.72	7.15	54.2	46.8	17.46	35.65	42.45	84.4	—	8.55 {872}	13.45	54
RS200-SS-1	63.50	39.68	38.10	8.0	60.3	52.0	19.85	39.5	45.3	90.8	—	10.8 {1100}	16.54	48
RS240-SS-1	76.20	47.63	47.63	10.0	72.4	62.4	23.81	49.0	56.5	113.2	—	15.7 {1600}	24.50	40

Note: 1. Chains marked with an asterisk (*) are rollerless; bush diameters are given instead.
Chain sizes greater than RS120-SS have a different plate thickness and pin length from RS Roller Chains.
2. Offset links are not available for RS11-SS-1 and RS15-SS-1 chain. RS25-SS-1 uses only two-pitch offset links.
Contact a Tsubaki representative regarding dimensions and specifications of RS37-SS-1.
3. Items in bold are stocked in units.

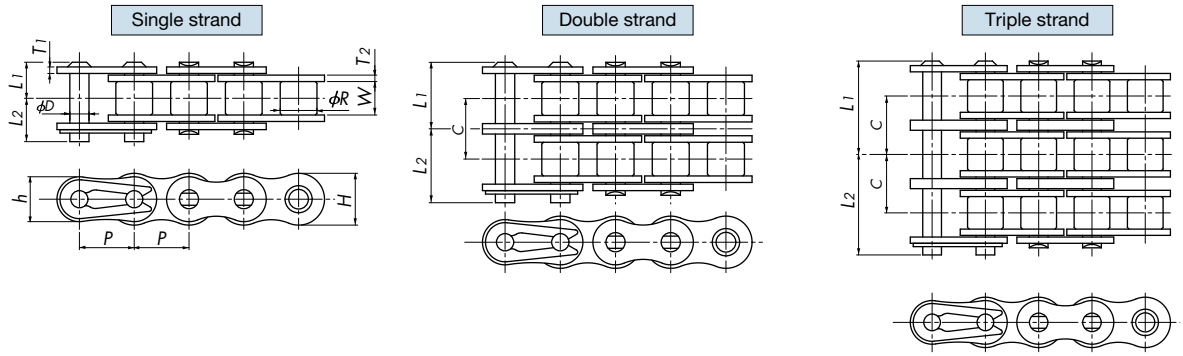
Model numbering example **RS80 -SS -1 -RP + 110L -MWJR**

- RS80: Size
- -SS: Series
- -1: Number of strands
- -RP: Pin type
- 110L: Number of links
- -MWJR: End link

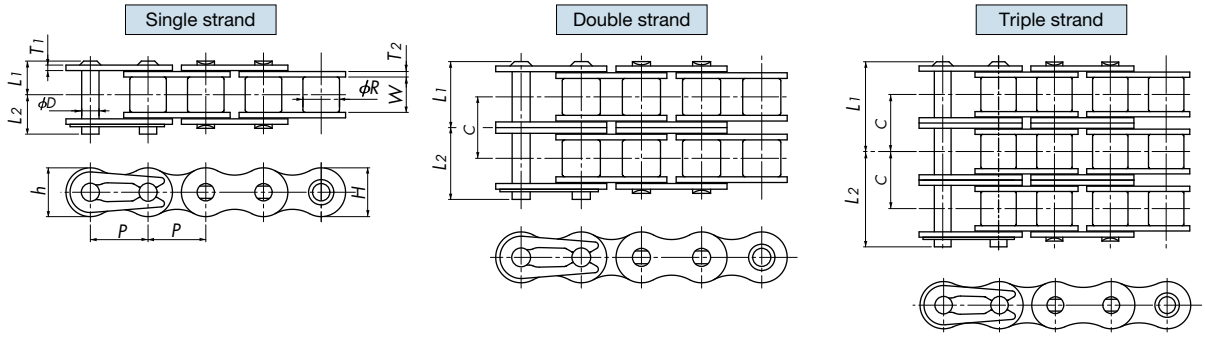
Corrosion Resistant Roller Chains SS Series Stainless Steel Drive Chain

B Series

RS08B



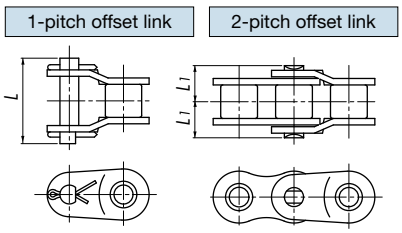
RS10B/RS12B/RS16B



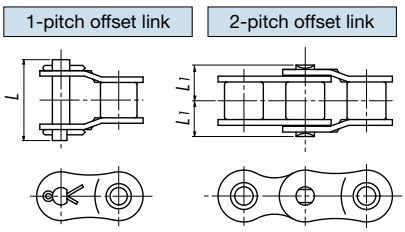
All sizes



RS08B



RS10B/RS12B/RS16B



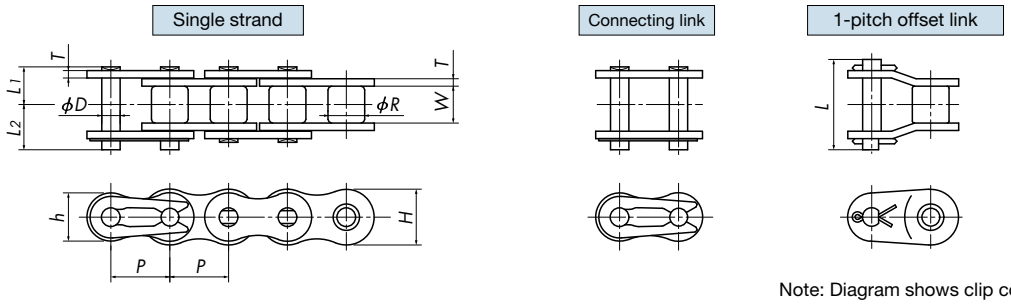
Specifications

Tsubaki chain number	Pitch P	Roller dia. R	Inner width of inner link W	Plates				Pins				Transverse pitch C	Max. allowable load kN{kgf}	Approx. mass kg/m	Links per unit
				Thickness T_1	Thickness T_2	Height H	Height h	Dia. D	L_1	L_2	Offset pin length L				
RS08B-SS-1	12.70	8.51	7.75	1.5	1.5	11.8	10.4	4.45	8.35	10.05	20.05	—	0.73 {74}	0.70	240
RS08B-SS-2									15.3	17.0	34.6	13.92	1.45 {148}	1.35	
RS08B-SS-3									22.25	23.95	48.6		2.18 {222}	2.00	
RS10B-SS-1	15.875	10.16	9.65	1.5	1.5	14.7	13.7	5.08	9.55	11.25	22.9	—	0.99 {101}	0.95	192
RS10B-SS-2									17.85	19.55	39.4	16.59	1.98 {202}	1.85	
RS10B-SS-3									26.15	27.85	56.0		2.97 {303}	2.80	
RS12B-SS-1	19.05	12.07	11.68	1.8	1.8	16.1	16.1	5.72	11.1	13.0	26.7	—	1.31 {134}	1.25	160
RS12B-SS-2									20.9	22.7	46.1	19.46	2.63 {268}	2.50	
RS12B-SS-3									30.6	32.5	65.4		3.94 {402}	3.80	
RS16B-SS-1	25.40	15.88	17.02	3.2	4.0	21.0	20.8	8.28	17.75	19.95	43.5	—	3.09 {315}	2.70	120
RS16B-SS-2									33.55	35.75	75.2	31.88	6.18 {630}	5.40	
RS16B-SS-3									49.5	51.7	107.1		9.27 {945}	8.00	

Model numbering example **RS16B -SS -1 -RP + 110L -MCJR**

- RS16B: Size
- -SS: Series
- -1: Number of strands
- -RP: Pin type
- 110L: Number of links
- -MCJR: End link

Corrosion Resistant Roller Chains HS Series Stainless Steel Drive Chain



Note: Diagram shows clip connecting links.

Specifications

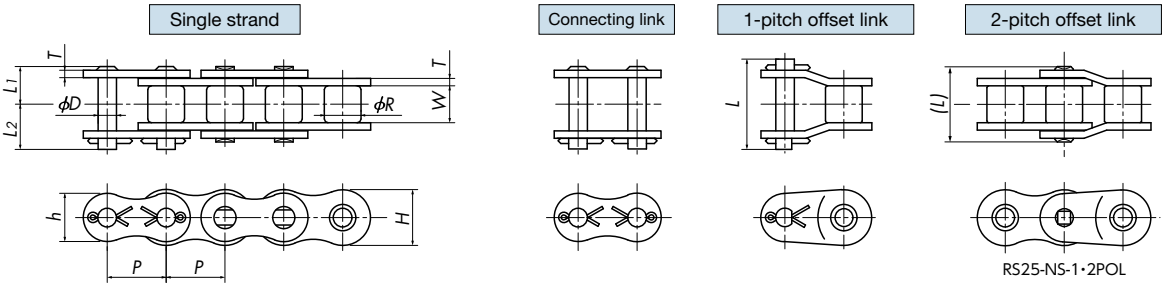
Tsubaki chain number	Pitch P	Roller dia. R	Inner width of inner link W	Plates			Pins				Max. allowable load kN{kgxf}	Approx. mass kg/m	Links per unit
				Thickness T	Height H	Height h	Dia. D	L_1	L_2	Offset pin length L			
RS40-HS-1	12.70	7.92	7.95	1.5	12.0	10.4	3.97	8.25	9.95	18.6	1.19 {121}	0.64	240
RS50-HS-1	15.875	10.16	9.53	2.0	15.0	13.0	5.09	10.3	12.0	23.9	1.85 {189}	1.04	192
RS60-HS-1	19.05	11.91	12.70	2.4	18.1	15.6	5.96	12.85	14.75	29.4	2.78 {283}	1.53	160
RS80-HS-1	25.40	15.88	15.88	3.2	24.1	20.8	7.94	16.25	19.45	39.0	4.77 {486}	2.66	120

Note: Items in bold are stocked in units.

Model numbering example **RS50 -HS -1 -RP + 182L -MCJR**

RS50: Size; -HS: Series; -1: Number of strands; -RP: Pin type; 182L: Number of links; -MCJR: End link

Corrosion Resistant Roller Chains NS Series Stainless Steel Drive Chain



Note: Diagram shows cotter-pin connecting links.

Specifications

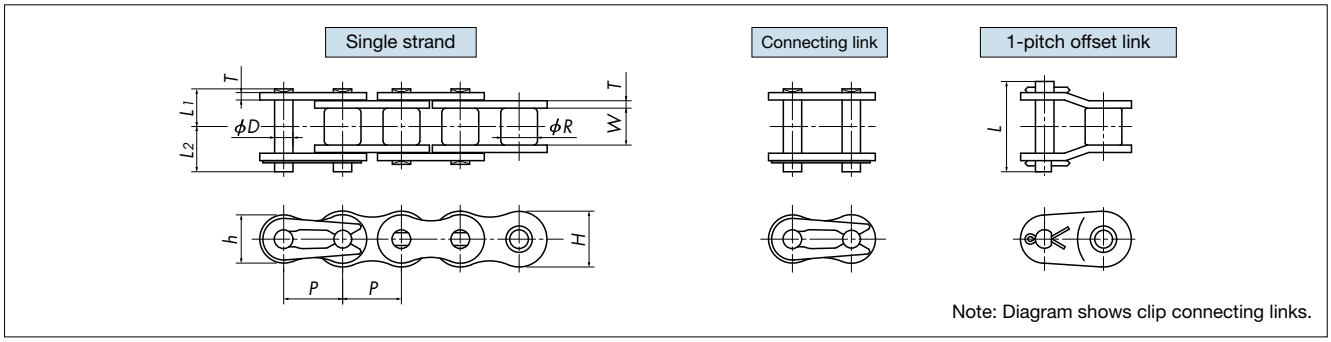
Tsubaki chain number	Pitch P	Roller dia. R	Inner width of inner link W	Plates			Pins				Max. allowable load kN{kgf}	Approx. mass kg/m
				Thickness T	Height H	Height h	Dia. D	L_1	L_2	Offset pin length L		
RS25-NS-1	6.35	*3.30	3.18	0.75	5.84	5.05	2.31	3.8	4.8	(7.6)	0.12 {12}	0.14
RS35-NS-1	9.525	*5.08	4.78	1.25	9.0	7.8	3.59	5.85	7.15	14.7	0.26 {27}	0.33
RS40-NS-1	12.70	7.92	7.95	1.5	12.0	10.4	3.97	8.25	9.65	18.6	0.44 {45}	0.64
RS50-NS-1	15.875	10.16	9.53	2.0	15.0	13.0	5.09	10.3	11.9	23.9	0.69 {70}	1.04
RS60-NS-1	19.05	11.91	12.70	2.4	18.1	15.6	5.96	12.85	15.25	29.4	1.03 {105}	1.53
RS80-NS-1	25.40	15.88	15.88	3.2	24.1	20.8	7.94	16.25	19.45	39.0	1.77 {180}	2.66

Note: 1. Chains marked with an asterisk (*) are rollerless; bush diameters are given instead.
2. Only two-pitch offset links are available for RS25-NS-1.

Model numbering example **RS60 -NS -1 -RP + 150L -MWJR**

RS60: Size; -NS: Series; -1: Number of strands; -RP: Pin type; 150L: Number of links; -MWJR: End link

Corrosion Resistant Roller Chains AS Series Stainless Steel Drive Chain



Note: Diagram shows clip connecting links.

■ Specifications

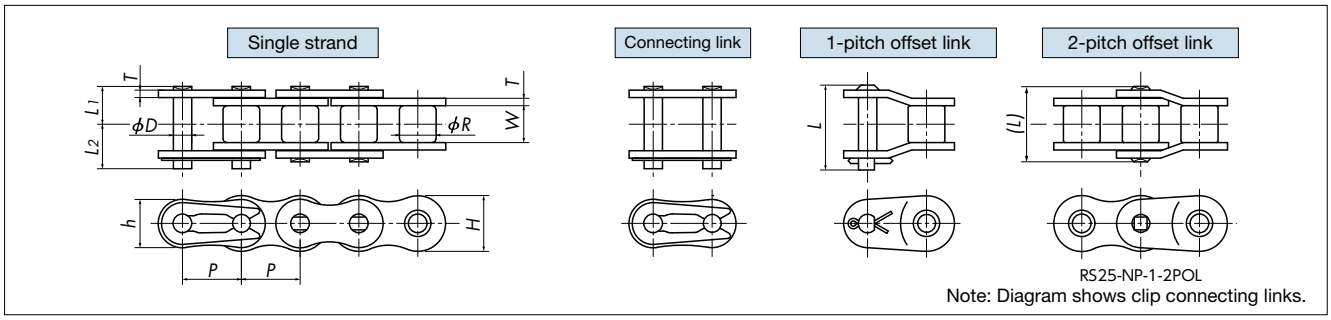
Tsubaki chain number	Pitch P	Roller dia. R	Inner width of inner link W	Plates			Pins				Max. allowable load kN{kgxf}	Approx. mass kg/m	Links per unit
				Thickness T	Height H	Height h	Dia. D	L_1	L_2	Offset pin length L			
RS40-AS-1	12.70	7.92	7.95	1.5	12.0	10.4	3.97	8.25	9.95	18.6	0.69 {70}	0.64	240
RS50-AS-1	15.875	10.16	9.53	2.0	15.0	13.0	5.09	10.3	12.0	23.9	1.03 {105}	1.04	192
RS60-AS-1	19.05	11.91	12.70	2.4	18.1	15.6	5.96	12.85	14.75	29.4	1.57 {165}	1.53	160
RS80-AS-1	25.40	15.88	15.88	3.2	24.1	20.8	7.94	16.25	19.45	39.0	2.65 {270}	2.66	120

Note: Items in bold are stocked in units.

Model numbering example **RS50 -AS -1 -RP + 182L -MCJR**

RS50: Size; -AS: Series; -1: Number of strands; -RP: Pin type; 182L: Number of links; -MCJR: End link

Corrosion Resistant Roller Chains NP Series Surface-Treated Drive Chain



RS25-NP-1-2POL

Note: Diagram shows clip connecting links.

■ Specifications

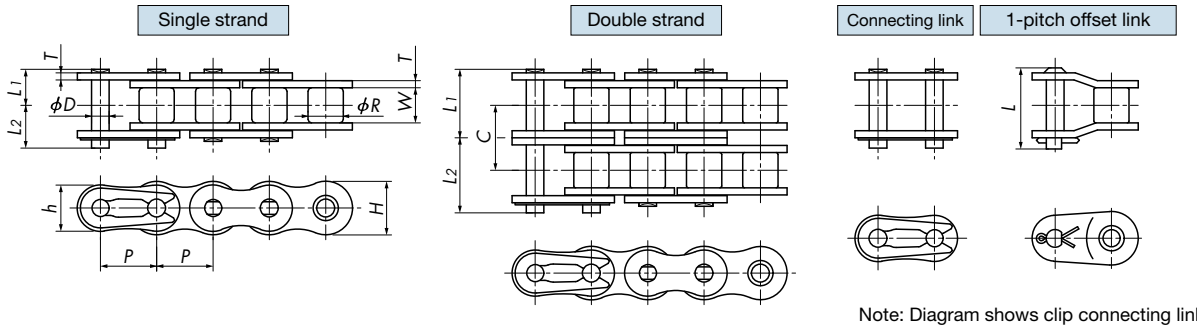
Tsubaki chain number	Pitch P	Roller dia. R	Inner width of inner link W	Plates			Pins				Min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m	Links per unit
				Thickness T	Height H	Height h	Dia. D	L_1	L_2	Offset pin length L				
RS25-NP-1	6.35	*3.30	3.18	0.75	5.84	5.05	2.31	3.8	4.5	(7.6)	4.12 {420}	0.64 {65}	0.14	160
RS35-NP-1	9.525	*5.08	4.78	1.25	9.0	7.8	3.59	5.85	6.85	13.5	9.81 {1000}	1.86 {190}	0.33	320
RS40-NP-1	12.70	7.92	7.95	1.5	12.0	10.4	3.97	8.25	9.95	18.2	17.7 {1800}	3.04 {310}	0.64	240
RS50-NP-1	15.875	10.16	9.53	2.0	15.0	13.0	5.09	10.3	11.9	22.6	28.4 {2900}	5.39 {550}	1.04	192
RS60-NP-1	19.05	11.91	12.70	2.4	18.1	15.6	5.96	12.85	14.75	28.2	40.2 {4100}	7.26 {740}	1.53	160
RS80-NP-1	25.40	15.88	15.88	3.2	24.1	20.8	7.94	16.25	19.25	36.6	71.6 {7300}	12.7 {1300}	2.66	120
RS100-NP-1	31.75	19.05	19.05	4.0	30.1	26.0	9.54	19.75	22.85	43.7	107 {10900}	19.1 {1950}	3.99	96
RS120-NP-1	38.10	22.23	25.40	4.8	36.2	31.2	11.11	24.9	28.9	55.0	148 {15100}	25.5 {2600}	5.93	80

Note: 1. Chains marked with an asterisk (*) are rollerless; bush diameters are given instead.
2. Only two-pitch offset links are available for RS25-NP-1. For dimensions and specifications of RS140-NP-1 and above chains, contact a Tsubaki representative.
3. Maximum allowable load when using an M-type connecting link on the RS25-NP-1 is 80% of the above. Minimum tensile strength when using a two-pitch offset link on the RS25-NP-1 is 3.82 kN. Maximum allowable load when using a one-pitch offset link is 65% of the above.
4. Items in bold are stocked in units.

Model numbering example **RS80 -NP -1 -RP + 110L -MWJR**

RS80: Size; -NP: Series; -1: Number of strands; -RP: Pin type; 110L: Number of links; -MWJR: End link

NEP Series Surface-Treated Drive Chain



Note: Diagram shows clip connecting links.

■ Specifications

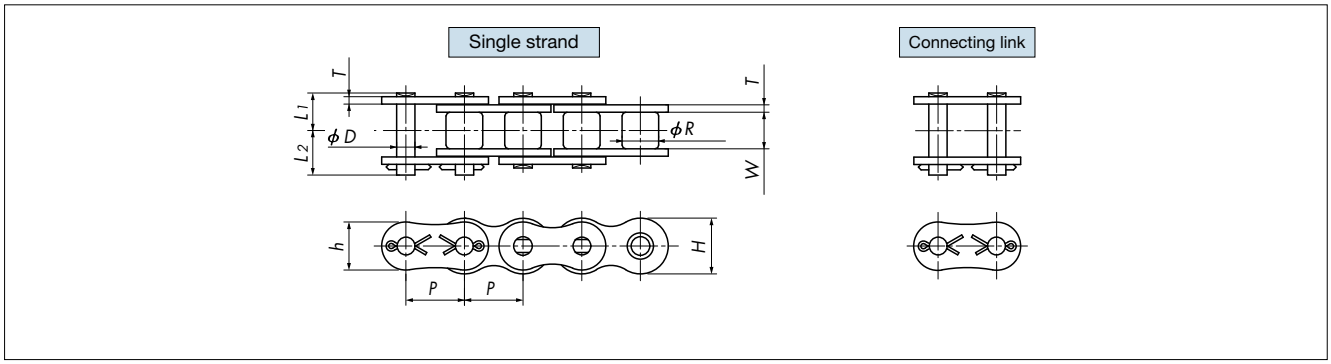
Size & series	No.of strands	Pitch P	Roller dia. R	Inner width of inner link W	Plates			Pins				Transverse pitch C	Min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m	Links per unit
					Thickness T	Height H	Height h	Dia. D	L_1	L_2	Offset pin length L					
RS35-NEP	**1**	9.525	*5.08	4.78	1.25	9.0	7.8	3.59	5.85	6.85	13.5	—	9.81 {1000}	2.16 {220}	0.33	320
RS40-NEP	**1**	12.70	7.92	7.95	1.5	12.0	10.4	3.97	8.25	9.95	18.2	14.4	17.7 {1800}	3.63 {370}	0.64	240
	2								15.45	17.15	33.5		35.3 {3600}	6.18 {630}	1.27	
RS50-NEP	**1**	15.875	10.16	9.53	2.0	15.0	13.0	5.09	10.3	11.9	22.6	18.1	28.4 {2900}	6.37 {650}	1.04	192
	2								19.35	21.15	41.8		56.9 {5800}	10.8 {1100}	2.07	
RS60-NEP	**1**	19.05	11.91	12.70	2.4	18.1	15.6	5.96	12.85	14.75	28.2	22.8	40.2 {4100}	8.83 {900}	1.53	160
	2								24.25	26.25	52.6		80.4 {8200}	15.0 {1530}	3.04	
RS80-NEP	**1**	25.40	15.88	15.88	3.2	24.1	20.8	7.94	16.25	19.25	38.2	29.3	71.6 {7300}	14.7 {1500}	2.66	120
	2								30.9	33.9	67.5		143 {14600}	25.0 {2550}	5.27	
RS100-NEP	**1**	31.75	19.05	19.05	4.0	30.1	26.0	9.54	19.75	22.85	45.7	35.8	107 {10900}	22.6 {2300}	3.99	96
	2								37.7	40.8	81.5		214 {21800}	38.3 {3910}	7.85	
RS120-NEP	1	38.10	22.23	25.40	4.8	36.2	31.2	11.11	24.9	28.9	57.8	—	148 {15100}	30.4 {3100}	5.93	80
RS140-NEP	1	44.45	25.40	25.40	5.6	42.2	36.4	12.71	26.9	31.7	63.4	—	193 {19700}	40.2 {4100}	7.49	68
RS160-NEP	1	50.80	28.58	31.75	6.4	48.2	41.6	14.29	31.85	36.85	73.6	—	255 {26000}	53.0 {5400}	10.1	60

Note: 1. Chains marked with an asterisk (*) are rollerless; bush diameters are given instead.
2. Two-pitch offset links are not available. Multi-strand RS35-NEP is not available.
Contact a Tsubaki representative for information regarding RS180 and above chains.
3. Maximum allowable load when using a one-pitch offset link is 65% of the above.
4. Items in bold are stocked in units.

Model numbering example **RS100 -NEP -1 -RP + 86L -MWJR**

- RS100: Size
- NEP: Series
- 1: Number of strands
- RP: Pin type
- 86L: Number of links
- MWJR: End link

Corrosion Resistant Roller Chains APP Series Surface-Treated Drive Chain



Specifications

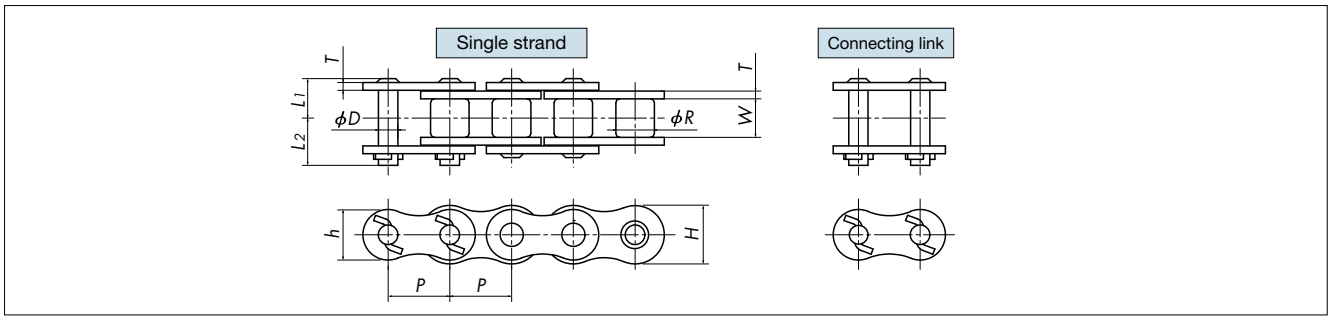
Tsubaki chain number	Pitch P	Roller dia. R	Inner width of inner link W	Plates			Pins			Min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
				Thickness T	Height H	Height h	Dia. D	L_1	L_2			
RS80-APP-1	25.40	15.88	15.88	3.2	24.1	20.8	7.94	16.25	19.25	71.6 {7300}	14.7 {1500}	2.66
RS100-APP-1	31.75	19.05	19.05	4.0	30.1	26.0	9.54	19.75	22.85	107 {10900}	22.6 {2300}	3.99
RS120-APP-1	38.10	22.23	25.40	4.8	36.2	31.2	11.11	24.9	28.9	148 {15100}	30.4 {3100}	5.93
RS140-APP-1	44.45	25.4	25.40	5.6	42.2	36.4	12.71	26.9	31.7	193 {19700}	40.2 {4100}	7.49
RS160-APP-1	50.80	28.58	31.75	6.4	48.2	41.6	14.29	31.85	36.85	255 {26000}	53.0 {5400}	10.10
RS180-APP-1	57.15	35.71	35.72	7.15	54.2	46.8	17.46	35.65	42.45	336 {34300}	60.8 {6200}	13.45
RS200-APP-1	63.50	39.68	38.10	8.0	60.3	52.0	19.85	39.0	44.8	193 {43500}	71.6 {7300}	16.49
RS240-APP-1	76.20	47.63	47.63	9.5	72.4	62.4	23.81	47.9	55.5	623 {63500}	99.0 {10100}	24.5

Note: 1. Maximum allowable load when using a one-pitch offset link is 65% of the above.
2. Contact a Tsubaki representative regarding dimensions and specifications of offset links.
Other sizes and other series such as Heavy Duty Roller Chain can also be manufactured with APP specifications.
Contact a Tsubaki representative.

Model numbering example **RS80 -APP -1 -RP + 110L -MWJR**

Size: RS80 | Series: -APP | Number of strands: -1 | Pin type: -RP | Number of links: 110L | End link: -MWJR

Corrosion Resistant Roller Chains Titanium Roller Chain



Specifications

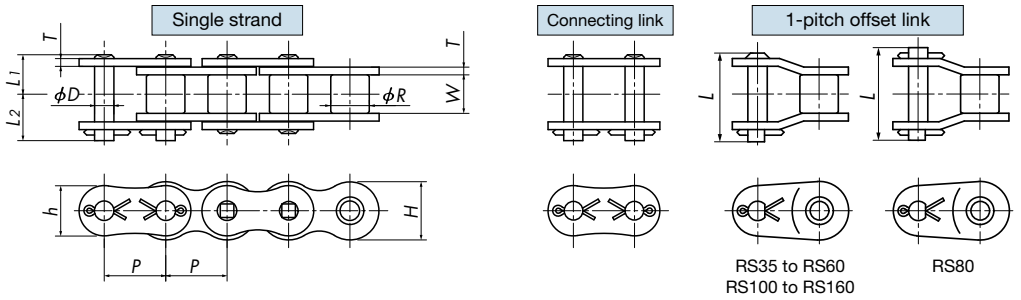
Tsubaki chain number	Pitch P	Roller dia. R	Inner width of inner link W	Plates			Pins			Max. allowable load kN{kgf}	Approx. mass kg/m
				Thickness T	Height H	Height h	Dia. D	L_1	L_2		
RS35-TI-1	9.525	*5.08	4.78	1.25	9.0	7.8	3.59	6.05	7.15	0.26 {27}	0.19
RS40-TI-1	12.70	7.92	7.95	1.5	12.0	10.4	3.97	8.25	10.1	0.44 {45}	0.37

Note: 1. Chains marked with an asterisk (*) are rollerless; bush diameters are given instead.
2. Offset links are not available.

Model numbering example **RS35 -TI -1 -RP + 310L -MZJR**

Size: RS35 | Series: -TI | Number of strands: -1 | Pin type: -RP | Number of links: 310L | End link: -MZJR

Cold Resistant Roller Chain



Specifications

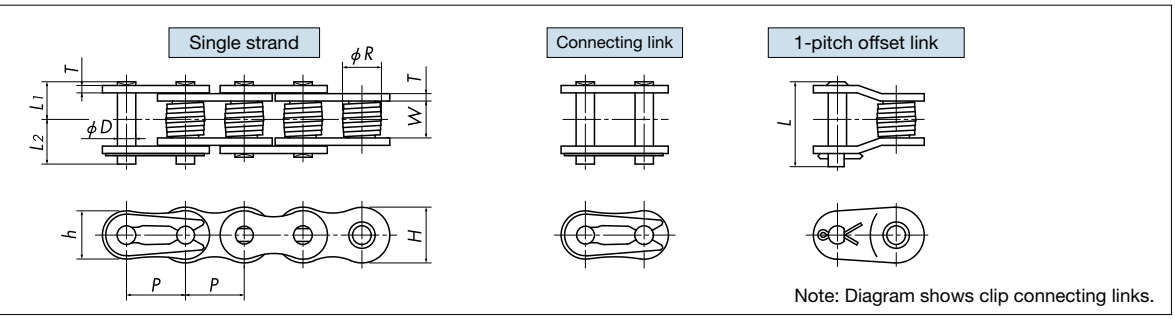
Tsubaki chain number	Pitch P	Roller dia. R	Inner width of inner link W	Plates			Pins				Min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m
				Thickness T	Height H	Height h	Dia. D	L_1	L_2	Offset pin length L			
RS35-KT-1	9.525	*5.08	4.78	1.25	9.0	7.8	3.59	5.85	7.05	13.5	9.81{1000}	2.16 {220}	0.33
RS40-KT-1	12.70	7.92	7.95	1.5	12.0	10.4	3.97	8.25	9.65	18.0	17.7 {1800}	3.63 {370}	0.64
RS50-KT-1	15.875	10.16	9.53	2.0	15.0	13.0	5.09	10.3	11.9	22.6	28.4 {2900}	6.37 {650}	1.04
RS60-KT-1	19.05	11.91	12.70	2.4	18.1	15.6	5.96	12.85	15.25	28.2	40.2 {4100}	8.83 {900}	1.53
RS80-KT-1	25.40	15.88	15.88	3.2	24.1	20.8	7.94	16.25	19.25	38.8	71.6 {7300}	14.7 {1500}	2.66
RS100-KT-1	31.75	19.05	19.05	4.0	30.1	26.0	9.54	19.75	22.85	43.7	107 {10900}	22.6 {2300}	3.99
RS120-KT-1	38.10	22.23	25.40	4.8	36.2	31.2	11.11	24.9	28.9	55.0	148 {15100}	30.4 {3100}	5.93
RS140-KT-1	44.45	25.40	25.40	5.6	42.2	36.4	12.71	26.9	31.7	59.5	193 {19700}	40.2 {4100}	7.49
RS160-KT-1	50.80	28.58	31.75	6.4	48.2	41.6	14.29	31.85	36.85	70.2	255 {26000}	53.0 {5400}	10.10

Note: 1. Chains marked with an asterisk (*) are rollerless; bush diameters are given instead.
2. Maximum allowable load when using a one-pitch offset link is 65% of the above.

Model numbering example **RS140 -KT -1 -RP + 58L -MWJR**

- RS140: Size
- -KT: Series
- -1: Number of strands
- -RP: Pin type
- 58L: Number of links
- -MWJR: End link

Low Noise Roller Chain



Note: Diagram shows clip connecting links.

Specifications

Tsubaki chain number	Pitch P	Roller dia. R	Inner width of inner link W	Plates			Pins				Min. tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m	Links per unit
				Thickness T	Height H	Height h	Dia. D	L_1	L_2	Offset pin length L				
RS40-SNS-1	12.70	8.5	7.95	1.5	12.0	10.4	3.97	8.25	9.95	18.2	17.7 {1800}	3.63 {370}	0.64	240
RS50-SNS-1	15.875	10.8	9.53	2.0	15.0	13.0	5.09	10.3	11.9	22.6	28.4 {2900}	6.37 {650}	1.04	192
RS60-SNS-1	19.05	12.6	12.70	2.4	18.1	15.6	5.96	12.85	14.75	28.2	40.2 {4100}	8.83 {900}	1.53	160
RS80-SNS-1	25.40	16.8	15.88	3.2	24.1	20.8	7.94	16.25	19.25	36.6	71.6 {7300}	14.7 {1500}	2.66	120

Note: 1. Allowable speed 200 m/min
2. Uses the same connecting link as standard RS Roller Chain.
3. Maximum allowable load when using a one-pitch offset link is 65% of the above.
4. Items in bold are stocked in units.

Model numbering example **RS40 -SNS -1 -RP + 230L -MCJR**

- RS40: Size
- -SNS: Series
- -1: Number of strands
- -RP: Pin type
- 230L: Number of links
- -MCJR: End link

Kilowatt Ratings Tables

■ RS40-SNS Maximum kilowatt ratings table (kW ratings for single strand chain)

Lubrication / Small sprocket no. of teeth	Small sprocket max rpm													
	10	25	50	100	200	300	400	500	700	900	1000	1200	1400	1600
	AI						AII			B				
9	0.05	0.11	0.21	0.39	0.72	1.04	1.35	1.64	1.06	0.73	0.62	0.47	0.38	0.31
10	0.05	0.12	0.23	0.43	0.81	1.16	1.51	1.84	1.25	0.85	0.73	0.55	0.44	
11	0.06	0.14	0.26	0.48	0.90	1.29	1.67	2.04	1.44	0.99	0.84	0.64	0.51	
12	0.07	0.15	0.28	0.53	0.98	1.42	1.84	2.24	1.64	1.12	0.96	0.73		
13	0.07	0.17	0.31	0.57	1.07	1.54	2.00	2.45	1.85	1.27	1.08	0.82		
14	0.08	0.18	0.33	0.62	1.16	1.67	2.17	2.65	2.06	1.42	1.21			
15	0.08	0.19	0.36	0.67	1.25	1.80	2.34	2.86	2.29	1.57	1.34			
16	0.09	0.21	0.39	0.72	1.34	1.93	2.50	3.06	2.52	1.73				
17	0.10	0.22	0.41	0.77	1.43	2.06	2.67	3.27	2.76	1.89				
18	0.10	0.23	0.44	0.82	1.52	2.20	2.84	3.48	3.01					
19	0.11	0.25	0.46	0.87	1.62	2.33	3.02	3.69	3.26					
20	0.12	0.26	0.49	0.92	1.71	2.46	3.19	3.90	3.52					
21	0.12	0.28	0.52	0.96	1.80	2.59	3.36	4.11	3.79					
22	0.13	0.29	0.54	1.01	1.89	2.73	3.53	4.32	4.06					
23	0.13	0.31	0.57	1.06	1.99	2.86	3.71	4.53						
24	0.14	0.32	0.60	1.11	2.08	3.00	3.88	4.74						
25	0.15	0.33	0.62	1.16	2.17	3.13	4.06	4.96						
26	0.15	0.35	0.65	1.21	2.27	3.27	4.23	5.17						
28	0.17	0.38	0.71	1.32	2.46	3.54	4.58	5.60						
30	0.18	0.41	0.76	1.42	2.65	3.81	4.94	6.04						
32	0.19	0.44	0.81	1.52	2.84	4.09	5.29							
35	0.21	0.48	0.90	1.67	3.13	4.50	5.83							
40	0.24	0.56	1.04	1.93	3.61	5.20								
45	0.28	0.63	1.18	2.20	4.10	5.91								

■ RS50-SNS Maximum kilowatt ratings table (kW ratings for single strand chain)

Lubrication / Small sprocket no. of teeth	Small sprocket max rpm											
	10	25	50	100	200	300	400	500	700	900	1000	1200
	AI					AII			B			
9	0.10	0.23	0.43	0.80	1.49	2.15	2.78	2.11	1.27	0.87	0.74	0.57
10	0.11	0.26	0.48	0.90	1.67	2.41	3.12	2.47	1.49	1.02	0.87	0.66
11	0.12	0.28	0.53	0.99	1.85	2.67	3.46	2.85	1.72	1.18	1.01	
12	0.14	0.31	0.58	1.09	2.03	2.93	3.80	3.24	1.96	1.34	1.15	
13	0.15	0.34	0.64	1.19	2.22	3.19	4.14	3.66	2.21	1.51		
14	0.16	0.37	0.69	1.29	2.40	3.46	4.48	4.09	2.47			
15	0.17	0.40	0.74	1.39	2.59	3.73	4.83	4.53	2.74			
16	0.19	0.43	0.80	1.49	2.78	4.00	5.18	4.99	3.01			
17	0.20	0.46	0.85	1.59	2.96	4.27	5.53	5.47	3.30			
18	0.21	0.49	0.91	1.69	3.15	4.54	5.88	5.96				
19	0.23	0.51	0.96	1.79	3.34	4.81	6.24	6.46				
20	0.24	0.54	1.01	1.89	3.53	5.09	6.59	6.98				
21	0.25	0.57	1.07	2.00	3.72	5.36	6.95	7.51				
22	0.26	0.60	1.12	2.10	3.91	5.64	7.31	8.05				
23	0.28	0.63	1.18	2.20	4.11	5.92	7.66	8.60				
24	0.29	0.66	1.24	2.30	4.30	6.19	8.03	9.17				
25	0.30	0.69	1.29	2.41	4.49	6.47	8.39	9.75				
26	0.32	0.72	1.35	2.51	4.69	6.75	8.75					
28	0.34	0.78	1.46	2.72	5.08	7.32	9.48					
30	0.37	0.84	1.57	2.93	5.47	7.88	10.2					
32	0.40	0.90	1.69	3.14	5.87	8.45						
35	0.44	0.99	1.86	3.46	6.46	9.31						
40	0.50	1.15	2.14	4.00	7.47	10.8						
45	0.57	1.30	2.44	4.54	8.48							

■ RS60-SNS Maximum kilowatt ratings table (kW ratings for single strand chain)

Lubrication / Small sprocket no. of teeth	Small sprocket max rpm														
	10	25	50	100	150	200	300	400	500	600	700	800	900	1000	1100
	AI					AII			B						
9	0.18	0.41	0.76	1.41	2.03	2.63	3.79	3.41	2.44	1.85	1.47	1.20	1.01	0.86	0.75
10	0.20	0.45	0.85	1.58	2.28	2.59	4.25	3.99	2.85	2.17	1.72	1.41	1.18	1.01	
11	0.22	0.50	0.94	1.75	2.53	3.27	4.71	4.60	3.29	2.50	1.99	1.63	1.36		
12	0.24	0.55	1.03	1.93	2.77	3.59	5.18	5.24	3.79	2.85	2.26	1.85			
13	0.26	0.60	1.13	2.10	3.03	3.92	5.65	5.91	4.23	3.22	2.55	2.09			
14	0.29	0.65	1.22	2.28	3.28	4.25	6.12	6.61	4.73	3.60	2.85				
15	0.31	0.70	1.31	2.45	3.53	4.57	6.59	7.33	5.24	3.99					
16	0.33	0.75	1.41	2.63	3.79	4.90	7.06	8.07	5.78	4.39					
17	0.35	0.81	1.50	2.81	4.04	5.24	7.54	8.84	6.33	4.81					
18	0.38	0.86	1.60	2.98	4.30	5.57	8.02	9.63	6.89						
19	0.40	0.91	1.70	3.16	4.56	5.90	8.51	10.4	7.47						
20	0.42	0.96	1.79	3.34	4.82	6.24	8.99	11.3	8.07						
21	0.44	1.01	1.89	3.53	5.08	6.58	9.48	12.1							
22	0.47	1.06	1.99	3.71	5.34	6.92	9.96	12.9							
23	0.49	1.12	2.08	3.89	5.60	7.26	10.5	13.5							
24	0.51	1.17	2.18	4.07	5.87	7.60	10.9	14.2							
25	0.54	1.22	2.28	4.26	6.13	7.94	11.4	14.8							
26	0.56	1.28	2.38	4.44	6.40	8.29	11.9	15.5							
28	0.61	1.38	2.58	4.81	6.93	8.98	12.9								
30	0.65	1.49	2.78	5.18	7.46	9.67	13.9								
32	0.70	1.60	2.98	5.56	8.00	10.4	14.9								
35	0.77	1.76	3.28	6.12	8.82	11.4									
40	0.89	2.03	3.79	7.07	10.2	13.2									
45	1.01	2.31	4.30	8.03	11.6	15.0									

■ RS80-SNS Maximum kilowatt ratings table (kW ratings for single strand chain)

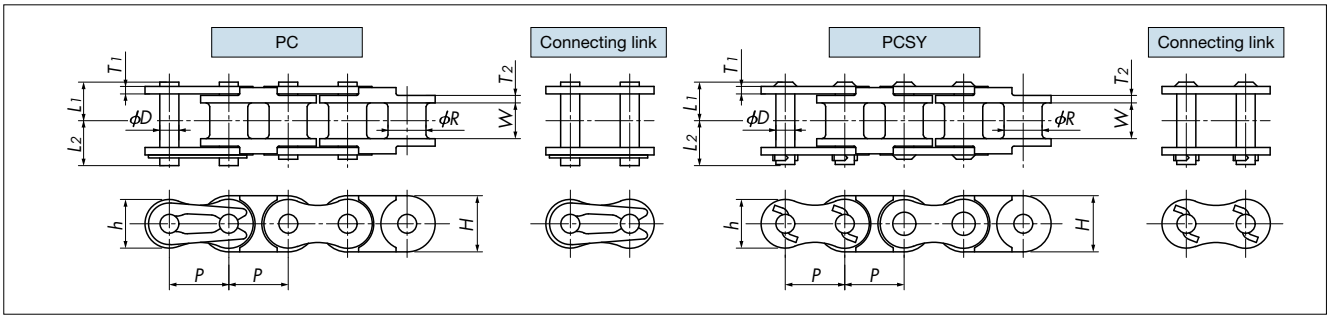
Lubrication / Small sprocket no. of teeth	Small sprocket max rpm											
	10	25	50	100	150	200	300	400	500	600	700	800
	AI				AII			B				
9	0.40	0.91	1.69	3.16	4.55	5.90	6.60	4.29	3.07	2.33	1.85	1.52
10	0.45	1.02	1.90	3.54	5.10	6.61	7.73	5.02	3.59	2.73	2.17	
11	0.49	1.13	2.10	3.93	5.65	7.33	8.92	5.79	4.14	3.15	2.50	
12	0.54	1.24	2.31	4.31	6.21	8.05	10.2	6.60	4.72	3.59		
13	0.59	1.35	2.52	4.70	6.77	8.77	11.5	7.44	5.33	4.05		
14	0.64	1.46	2.73	5.09	7.34	9.51	12.8	8.32	5.95			
15	0.69	1.58	2.94	5.49	7.90	10.2	14.2	9.22	6.60			
16	0.74	1.69	3.15	5.88	8.48	11.0	15.6	10.2				
17	0.79	1.80	3.37	6.28	9.05	11.7	16.9	11.1				
18	0.84	1.92	3.58	6.68	9.63	12.5	18.0	12.1				
19	0.89	2.03	3.80	7.08	10.2	13.2	19.0	13.1				
20	0.94	2.15	4.01	7.49	10.8	14.0	20.1					
21	0.99	2.27	4.23	7.89	11.4	14.7	21.2					
22	1.04	2.38	4.45	8.30	12.0	15.5	22.3					
23	1.10	2.50	4.67	8.71	12.5	16.2	23.4					
24	1.15	2.62	4.89	9.12	13.1	17.0	24.5					
25	1.20	2.74	5.11	9.53	13.7	17.8	25.6					
26	1.25	2.85	5.33	9.94	14.3	18.5	26.7					
28	1.36	3.09	5.77	10.8	15.5	20.1						
30	1.46	3.33	6.22	11.6	16.7	21.6						
32	1.57	3.57	6.67	12.4	17.9	23.2						
35	1.73	3.94	7.34	13.7	19.7	25.6						
40	1.99	4.55	8.48	15.8	22.8							
45	2.26	5.16	9.63	18.0	25.9							

Note: kW ratings when using a one-pitch offset link are 80% of the above values.

■ Lubrication systems and methods

Lubrication system	AI	AII	B	Details on
Method	Manual lubrication	Drip lubrication	Oil bath or slinger disc lubrication	p. 222

Poly Steel Chains



■ PC (Standard series) specifications

Tsubaki chain number	Pitch P	Roller dia. R	Inner width of inner link W	Plates				Pins			Max. allowable load kN{kgf}	Approx. mass kg/m	Links per unit
				Thickness		Height		Dia.					
				T_1	T_2	H	h	D	L_1	L_2			
RS25-PC-1	6.35	3.30	3.18	0.75	1.3	6.0	5.05	2.31	4.5	5.5	0.08 {8}	0.095	160
RS35-PC-1	9.525	5.08	4.78	1.25	2.2	9.0	7.8	3.59	6.85	7.85	0.18 {18}	0.22	320
RS40-PC-1	12.70	7.92	7.95	1.5	1.5	12.0	10.4	3.97	8.25	9.95	0.44 {45}	0.39	240
RS50-PC-1	15.875	10.16	9.53	2.0	2.0	15.0	13.0	5.09	10.3	12.0	0.69 {70}	0.58	192
RS60-PC-1	19.05	11.91	12.70	2.4	2.4	18.1	15.6	5.96	12.85	14.75	0.88 {90}	0.82	160

■ PC-SY (Super chemical resistant series) specifications

Tsubaki chain number	Pitch P	Roller dia. R	Inner width of inner link W	Plates				Pins			Max. allowable load kN{kgf}	Approx. mass kg/m	Links per unit
				Thickness		Height		Dia.					
				T_1	T_2	H	h	D	L_1	L_2			
RS40-PCSY-1	12.70	7.92	7.95	1.5	1.5	12.0	10.4	3.97	8.25	10.1	0.25 {25}	0.39	240
RS50-PCSY-1	15.875	10.16	9.53	2.0	2.0	15.0	13.0	5.09	10.3	12.0	0.39 {40}	0.58	192
RS60-PCSY-1	19.05	11.91	12.70	2.4	2.4	18.1	15.6	5.96	12.85	15.25	0.49 {50}	0.82	160

■ Poly Steel Chain rivet specifications

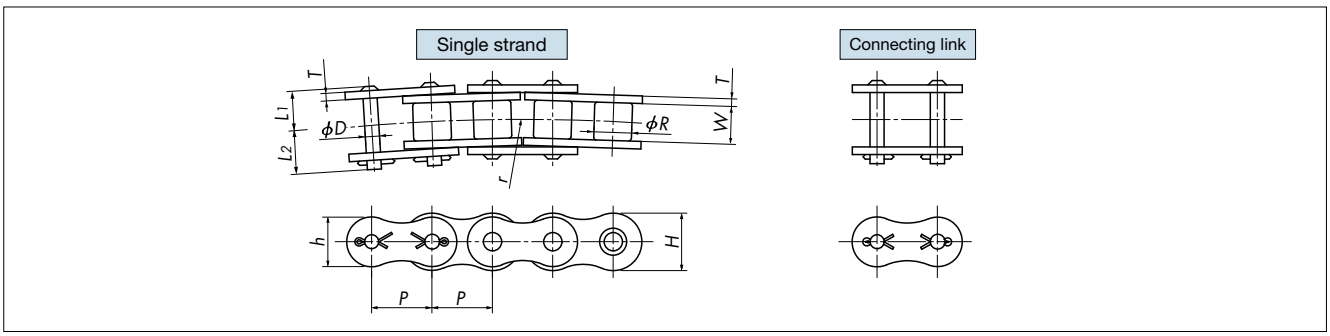
Chain	No rivet	PC Series, all sizes
	Button head rivet	PC-SY Series, all sizes
Connecting links	No rivet	RS35-PC-1
	Double-sided rivet	RS25-PC-1
	Button head rivet	RS40-PC-1, RS50-PC-1, RS60-PC-1 PC-SY Series, all sizes

Note: PC, PC-SY Series common features
1. To facilitate cutting, no pins are not riveted on the PC Series chain. This chain has no rollers.
2. No multi-strands and offset links. Can also be manufactured with attachments. Refer to the Small Size Conveyor Chain catalog. B series chain is also available. Contact a Tsubaki representative.
3. The PC-SY Series differs from the PC Series in maximum allowable load.
4. Items in bold are stocked in units.

Model numbering example **RS40 -PC -1 -RP + 230L -MCJR**

RS40: Size; -PC: Series; -1: Number of strands; -RP: Pin type; 230L: Number of links; -MCJR: End link

Curved Stainless Steel Roller Chain



■ Specifications

Tsubaki chain number	Pitch P	Roller dia. R	Inner width of inner link W	Plates			Pins			Min. radius r	Max. allowable load kN{kgf}	Approx. mass kg/m	Links per unit
				Thickness	Height		Dia.						
				T	H	h	D	L_1	L_2				
RS40-CUSS-1	12.70	7.92	7.95	1.5	12.0	10.4	3.59	8.35	9.75	400	0.26 {27}	0.61	240
RS50-CUSS-1	15.875	10.16	9.53	2.0	15.0	13.0	3.97	10.15	12.05	500	0.44 {45}	1.01	192
RS60-CUSS-1	19.05	11.91	12.70	2.4	18.1	15.6	5.09	13.25	15.05	600	0.69 {70}	1.40	160
RS80-CUSS-1	25.40	15.88	15.88	3.2	24.1	20.8	5.96	16.5	18.5	800	1.03{105}	2.47	120

Note: Attachment chains are available. Contact a Tsubaki representative.

Model numbering example **RS50 -CUSS -1 -RP + 182L -MWJR**

RS50: Size; -CUSS: Series; -1: Number of strands; -RP: Pin type; 182L: Number of links; -MWJR: End link

Specialty Roller Chain Model Numbering

Chain No. p.19 p.15 p.188

This page shows the series, number of strands, as well as types of pins and connecting links that can be selected for each size. Also refer to “Ordering RS Roller Chain” on page 19.
Customized items are also available. Please contact a Tsubaki representative.

1. Chains ordered by specifying the number of links, etc.

Size – Series – Number of strands – Pin type + Number of links – End link – Options

2. Individual parts, such as connecting links and offset links, ordered by quantity

Size – Series – Number of strands – Part name

◆ Leaf Chain model numbering example

AL844–RP+110L–MLJR
BL534–MLJL

Note: Not necessary to select “Series” or “Number of strands” for Leaf Chain.

■ **Size** (column = size number prefix; row = number of outer and inner plates in stack)

	22	44	66	23	34	46
4	AL	AL	AL	BL	BL	BL
5	AL	AL	AL	BL	BL	BL
6	AL	AL	AL	BL	BL	BL
8	AL/BL	AL/BL	AL/BL	BL	BL	BL
10	AL/BL	AL/BL	AL/BL	BL	BL	BL
12	AL/BL	AL/BL	AL/BL	BL	BL	BL
14	–	AL/BL	AL/BL	BL	BL	BL
16	–	AL/BL	AL/BL	BL	BL	BL

Note: Pin type RP only.

■ **End link symbol for connecting links and part names**

	MLJ MLJL	M-type connecting link Long cotter pin
	E –	End link (End link pre-assembled on chain only) One end pin and two cotter pins included
	A –	End link (End link pre-assembled on chain only) End pin and cotter pin not included
	– WEDP	End pin with cotter pins (Parts only) One end pin and two cotter pins included

Note: End links AL8 and BL8 and larger can also be manufactured.

How to read chart

AL/BL	Select from AL or BL
BL	BL only
–	Contact a Tsubaki representative

◆ Curved Chain model numbering example

RS80–CU–1–RP+110L–MWJR
RS60–CU–1–MWJL

■ **Pin type and number of strands** (column = pin type, number of strands; rows = size)

	RS40	RS50	RS60	RS80
Pin type	RP	RP	RP	RP
No. of strands	1	1	1	1

■ **Termination symbol for connecting links and part names**

RS40	RS50	RS60	RS80
MWJ	MWJ	MWJ	MWJ

How to read chart

RP	RP only
MWJ	M-type connecting link with cotter pin only

Note: No offset links available.

Specialty Roller Chains

Leaf Chain



Leaf Chain, also commonly called balance chains, is a steel chain composed of just plates and pins. Conforming to the JIS B 1804:2021 standard, this chain is mainly used for lifting, counterweights, and motion drives. There are two types of Leaf Chain: AL for light loads and BL for heavy loads. Their dimensions and plate lacings differ. They require special clevises and sheaves.

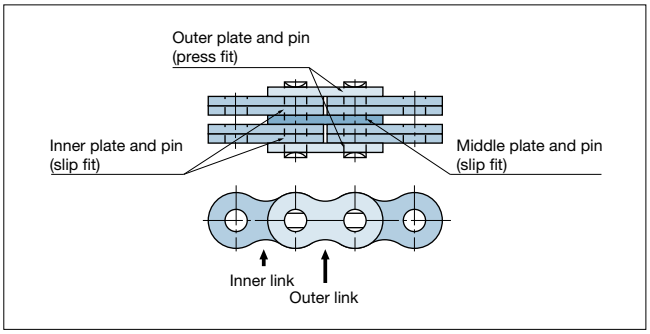
AL type External plate dimensions and thickness are the same as for the outer plates of RS Roller Chain with the same pitch, while the pin diameter is almost the same.

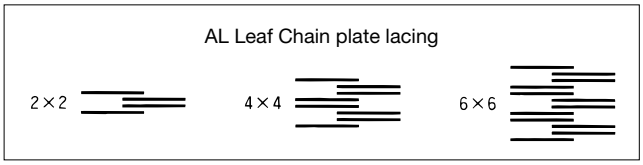
BL type Plate height (H dimension) is the same as for the inner plates of RS Roller Chain of the same pitch. Plate thickness is the same as for one pitch larger RS roller chain, as is pin diameter.

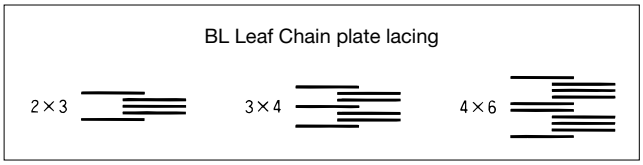
◆ Basic construction

The plates are connected by pins and take the strain when load is applied. Pins are press fitted to outer plates and riveted. However, a slip fit is used with middle and inner plates and pins. The pins pass between the plates and have to withstand the bulk of the shear forces resulting when the chain is under tension and move freely within the inner plate holes when the chain articulates.

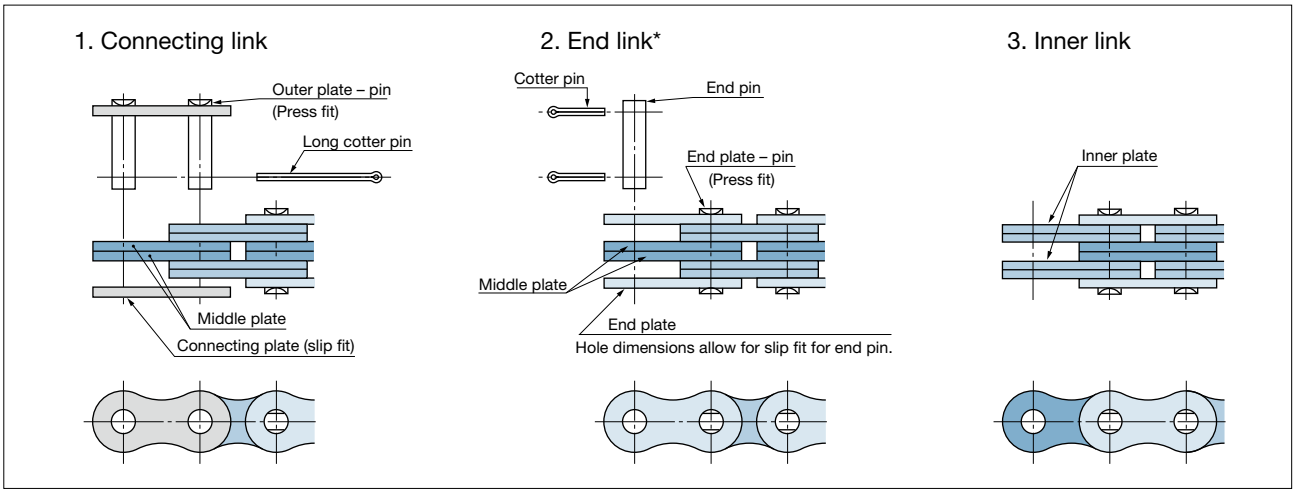
◆ Main chain







◆ End links



Note: *End links AL8 and BL8 and larger can also be manufactured.

RS Curved Chain

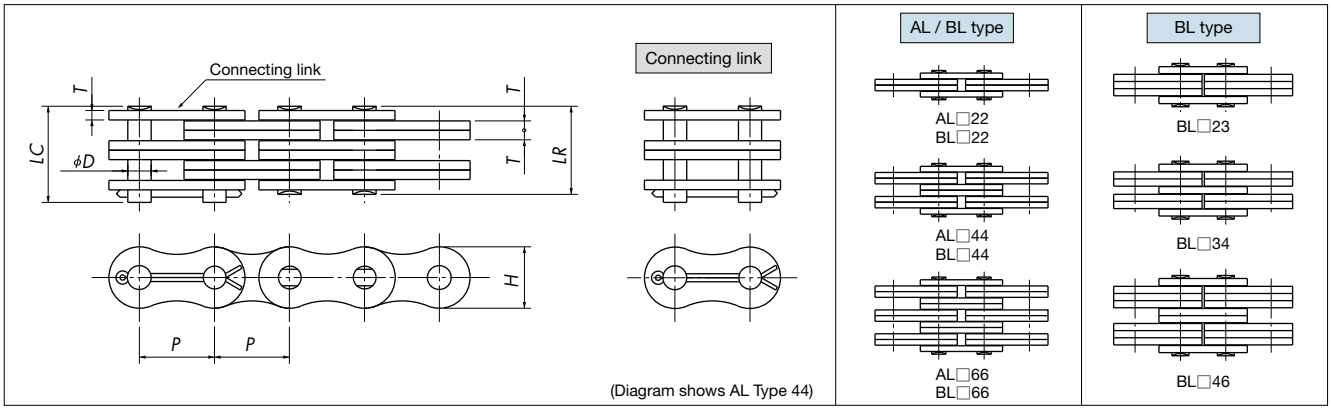
Series code: CU



A roller chain that can make large lateral curves thanks to its special pin and bush construction and the large clearance between link plates. Allows for curved transmission using RS sprockets. Ideal for curved conveyors and drives on curved roller conveyors.

Note: A guide is needed in the curved sections.

Leaf Chain



■ AL type specifications

Size	Pitch P	Plate configuration	Plates H	Plates T	Pins D	Pins LR	Pins LC	Min. tensile strength kN{kgf}	Approx. mass kg/m
AL422	12.70	2×2	10.4	1.5	3.96	8.30	9.80	16.7{ 1700}	0.38
AL444		4×4				14.70	16.20	33.3{ 3400}	0.74
AL466		6×6				20.80	22.70	50.0{ 5100}	1.10
AL522	15.875	2×2	13.0	2.0	5.08	10.80	12.30	27.5{ 2800}	0.62
AL544		4×4				18.90	20.90	54.9{ 5600}	1.22
AL566		6×6				27.40	29.35	82.4{ 8400}	1.81
AL622	19.05	2×2	15.6	2.4	5.95	12.90	14.55	38.2{ 3900}	0.87
AL644		4×4				22.70	24.45	76.5{ 7800}	1.71
AL666		6×6				32.80	34.35	115 {11700}	2.54
AL822	25.40	2×2	20.8	3.2	7.90	16.35	19.15	64.7{ 6600}	1.51
AL844		4×4				29.80	32.60	129 {13200}	2.98
AL866		6×6				43.20	46.00	194 {19800}	4.44
AL1022	31.75	2×2	26.0	4.0	9.48	20.05	23.25	98.1{10000}	2.69
AL1044		4×4				36.70	39.90	196 {20000}	5.31
AL1066		6×6				53.30	56.50	294 {30000}	7.93
AL1222	38.10	2×2	31.2	4.8	11.04	24.20	27.90	141 {14400}	3.57
AL1244		4×4				44.00	47.70	282 {28800}	7.07
AL1266		6×6				63.85	67.55	424 {43200}	10.56
AL1444	44.45	4×4	36.4	5.6	12.64	51.30	55.80	373 {38000}	10.34
AL1466		6×6				74.55	79.05	559 {57000}	15.16
AL1644	50.80	4×4	41.6	6.4	14.21	58.05	63.05	471 {48000}	12.98
AL1666		6×6				84.45	89.45	706 {72000}	19.41

■ BL type specifications

Size*	Pitch P	Plate configuration	Plates H	Plates T	Pins D	Pins LR	Pins LC	Min. tensile strength kN{kgf}	Approx. mass kg/m
BL423	12.70	2×3	12.0	2.0	5.08	12.95	14.50	23.5{ 2400}	0.84
BL434		3×4				17.30	18.75	35.3{ 3600}	1.13
BL446		4×6				23.60	25.15	47.1{ 4800}	1.65
BL523	15.875	2×3	15.0	2.4	5.94	15.10	17.00	39.2{ 4000}	1.27
BL534		3×4				20.10	22.00	58.8{ 6000}	1.69
BL546		4×6				27.50	29.40	78.5{ 8000}	2.40
BL623	19.05	2×3	18.1	3.2	7.90	19.75	22.55	63.7{ 6500}	2.04
BL634		3×4				26.45	29.25	95.6{ 9750}	2.83
BL646		4×6				36.50	39.30	127 {13000}	4.01
BL823	25.40	2×3	24.1	4.0	9.48	24.20	27.40	103 {10500}	3.20
BL834		3×4				32.55	35.75	155 {15800}	4.44
BL846		4×6				45.00	48.20	206 {21000}	6.32
BL1023	31.75	2×3	30.1	4.8	11.04	28.90	32.60	141 {14400}	4.69
BL1034		3×4				38.85	42.55	216 {22000}	6.55
BL1046		4×6				53.70	57.40	282 {28800}	9.29
BL1223	38.10	2×3	36.2	5.6	12.64	33.90	38.40	186 {19000}	6.54
BL1234		3×4				45.50	50.00	299 {30500}	9.10
BL1246		4×6				62.95	67.45	373 {38000}	12.01
BL1423	44.45	2×3	42.2	6.4	14.21	38.20	43.20	235 {24000}	9.06
BL1434		3×4				51.40	56.40	387 {39500}	11.32
BL1446		4×6				71.25	76.25	471 {48000}	18.00
BL1623	50.80	2×3	48.2	7.2	17.38	43.25	49.85	353 {36000}	12.16
BL1634		3×4				58.40	65.00	554 {56500}	16.95
BL1646		4×6				81.05	87.65	706 {72000}	24.09

Note: *Please contact us for dimensions and specifications not listed above for BL_22,BL_44, and BL_66, if the part number in _ is 8 or above.

Model numbering example **BL834 -RP + 110L -MLJR**

- BL834: Size
- -RP: Pin type
- 110L: Number of links
- -MLJR: End link

Clevises

Connecting links, end links, and inner links can all be used for Leaf Chain end fittings. When connecting end links (outer link, inner link), use the types of clevises shown below. AL8 and BL8 and larger are also available. Contact a Tsubaki representative.

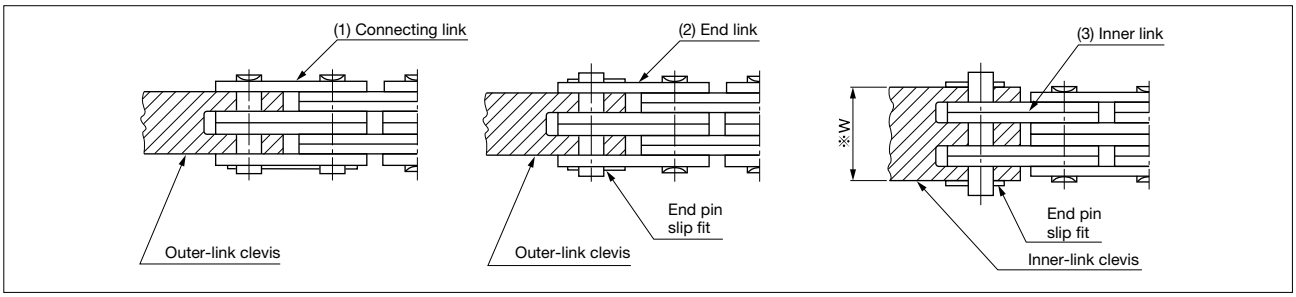
◆ Connecting Leaf Chain to a clevis

1. Connecting the chain end to a (1) connecting link or (2) end link.

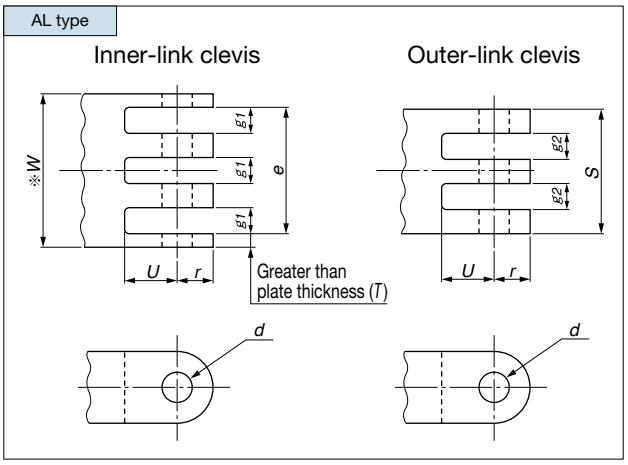
Connect an outer-link clevis to the connecting link or end link.

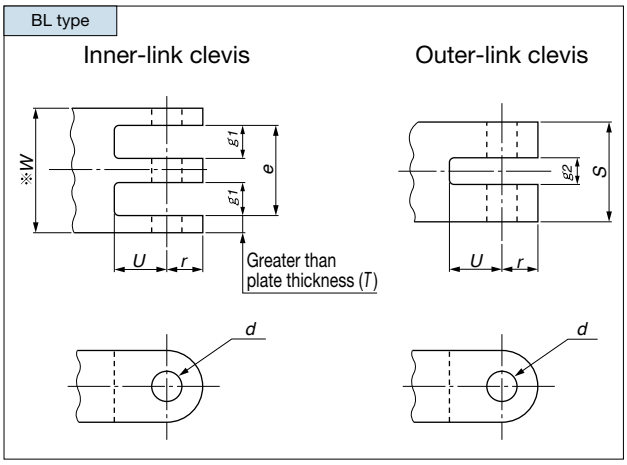
2. Connecting the chain end to a (3) inner link.

Connect an inner-link clevis to the end pin. The end pin length varies according to the external width (W) of the clevis. Tsubaki can also manufacture end pins to your specifications. When requesting a quote, specify the W dimension (total width when parts other than metal fittings are sandwiched in-between).



◆ Clevis dimensions





■ AL type dimensions

Size	d	r (max.)	U (min.)	e $^{+0.2}_{0}$	g_1 $^{+0.1}_{0}$	S $^{0}_{-0.2}$	g_2 $^{+0.1}_{0}$
AL422	$^{+0.05}_{0}$ 4.02	6.3	6.0	—	3.4	3.1	—
AL444				9.8		9.5	3.4
AL466				16.2		15.9	3.4
AL522	$^{+0.05}_{0}$ 5.13	7.9	7.2	—	4.4	4.1	—
AL544				12.9		12.6	4.4
AL566				21.3		21.0	4.4
AL622	$^{+0.05}_{0}$ 6.00	9.5	9.0	—	5.1	4.8	—
AL644				15.0		14.7	5.1
AL666				24.8		24.5	5.1
AL822	$^{+0.1}_{0}$ 7.97	12.7	11.5	—	6.9	6.4	—
AL844				20.3		19.8	6.9
AL866				33.7		33.2	6.9
AL1022	$^{+0.1}_{0}$ 9.57	15.8	14.5	—	8.5	8.0	—
AL1044				25.1		24.6	8.5
AL1066				41.7		41.2	8.5
AL1222	$^{+0.1}_{0}$ 11.14	19.0	17.5	—	10.1	9.6	—
AL1244				29.9		29.4	10.1
AL1266				49.7		49.2	10.1
AL1444	$^{+0.1}_{0}$ 12.74	22.2	20.0	35.1	11.9	34.5	11.9
AL1466				58.3		57.7	11.9
AL1644	$^{+0.1}_{0}$ 14.32	25.4	23.0	39.9	13.5	39.2	13.5
AL1666				66.3		65.6	13.5

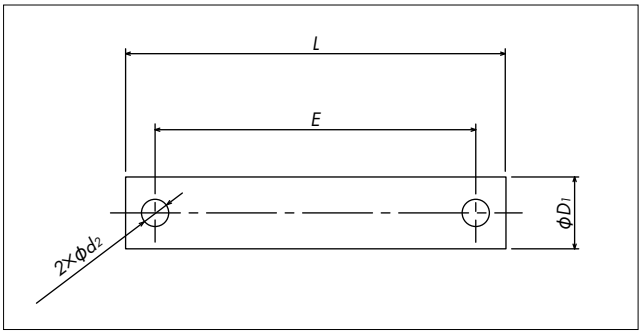
Note: Use an alloy steel material (SCM435, etc.) and sufficiently heat-treat to the core to attain a hardness of HRC40 to 45. For clevises with screws, however, the hardness must be HRC30 to 35 in order to reduce any hazard due to delayed fractures.

■ BL type dimensions

Size	d	r (max.)	U (min.)	e $^{+0.2}_{0}$	g_1 $^{+0.1}_{0}$	S $^{0}_{-0.2}$	g_2 $^{+0.1}_{0}$
BL423	$^{+0.05}_{0}$ 5.13	6.3	6.3	—	6.5	6.2	—
BL434				10.7	4.4	10.4	2.3
BL446				17.1	6.5	16.8	4.4
BL523	$^{+0.05}_{0}$ 6.00	7.9	7.9	—	7.6	7.3	—
BL534				12.5	5.1	12.2	2.6
BL546				19.9	7.6	19.6	5.1
BL623	$^{+0.1}_{0}$ 7.97	9.5	9.5	—	10.3	9.8	—
BL634				17.0	6.9	16.5	3.6
BL646				27.0	10.3	26.5	6.9
BL823	$^{+0.1}_{0}$ 9.57	12.7	12.7	—	12.7	12.2	—
BL834				21.0	8.5	20.5	4.4
BL846				33.4	12.7	32.9	8.5
BL1023	$^{+0.1}_{0}$ 11.14	15.8	15.8	—	15.1	14.6	—
BL1034				25.0	10.1	24.5	5.2
BL1046				39.8	15.1	39.3	10.1
BL1223	$^{+0.1}_{0}$ 12.74	19.0	19.0	—	17.7	17.1	—
BL1234				29.3	11.9	28.7	6.1
BL1246				46.7	17.7	46.1	11.9
BL1423	$^{+0.1}_{0}$ 14.32	22.2	22.2	—	20.1	19.4	—
BL1434				33.3	13.5	32.6	6.9
BL1446				53.1	20.1	52.4	13.5
BL1623	$^{+0.1}_{0}$ 17.49	25.4	25.4	—	23.1	22.1	—
BL1634				38.2	15.6	37.2	8.0
BL1646				60.9	23.1	59.9	15.6

Note: For sizes not listed in this table, contact a Tsubaki representative.

End Pins (For End Links)



■ AL type dimensions

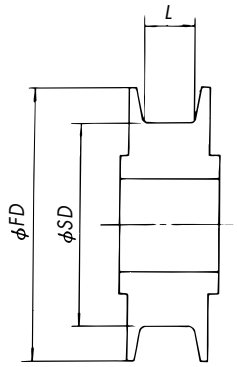
Size	E (min.)	L (max.)	D_1 (max.)	d_2
AL422	7.4	11.2	3.96	1.2
AL444	13.9	17.7		
AL466	20.4	24.2		
AL522	10.0	14.0	5.06	1.6
AL544	18.5	22.5		
AL566	27.0	31.0		
AL622	11.8	16.5	5.92	2.0
AL644	21.7	26.4		
AL666	31.6	36.3		
AL822	15.85	22.1	7.88	2.5
AL844	29.25	35.5		
AL866	42.7	49.0		
AL1022	19.05	26.6	9.48	2.5
AL1044	35.7	43.3		
AL1066	52.3	59.9		
AL1222	22.7	31.5	11.04	3.0
AL1244	42.55	51.4		
AL1266	62.35	71.2		
AL1444	50.25	60.3	12.64	4.0
AL1466	73.45	83.5		
AL1644	56.65	68.0	14.21	4.0
AL1666	83.05	94.4		

■ BL type dimensions

Size*	E (min.)	L (max.)	D_1 (max.)	d_2
BL423	12.15	16.1	5.06	1.6
BL434	16.4	20.4		
BL446	22.75	26.8		
BL523	14.3	19.0	5.92	2.0
BL534	19.25	24.0		
BL546	26.65	31.4		
BL623	19.2	25.5	7.88	2.5
BL634	25.9	32.2		
BL646	36.0	42.3		
BL823	23.2	30.8	9.48	2.5
BL834	31.5	39.1		
BL846	44.0	51.6		
BL1023	27.65	36.4	11.04	3.0
BL1034	37.6	46.4		
BL1046	52.45	61.3		
BL1223	32.8	42.9	12.64	4.0
BL1234	44.45	54.6		
BL1246	61.85	72.0		
BL1423	36.85	48.2	14.21	4.0
BL1434	50.05	61.4		
BL1446	69.85	81.2		
BL1623	42.6	56.5	17.38	5.0
BL1634	57.7	71.6		
BL1646	80.35	94.3		

Note: Contact a Tsubaki representative for dimensions for BL_22, BL_44, and BL_66 Leaf Chain.

Sheaves



SD = Minimum external sheave diameter = chain pitch x 5
L = Minimum groove width = pin length x 1.05
FD = Flange external diameter
= SD + maximum plate height (H)

■ AL type dimensions (examples)

Chain pitch	Min. external sheave dia. *SD*	Flange external dia. *FD*	Min. groove width *L*		
			2×2	4×4	6×6
12.70	63.50	73.90	8.85	15.60	22.40
15.875	79.38	92.38	11.40	20.35	29.20
19.05	95.25	110.85	13.30	23.70	34.10
25.40	127.00	147.80	17.20	31.30	45.40
31.75	158.75	184.75	21.10	38.55	56.00
38.10	190.50	221.70	25.45	46.20	67.05
44.45	222.25	258.65	—	53.90	78.30
50.80	254.00	295.60	—	61.00	88.70

Note: 1. Dimensions for L in the table above assume that only the chain riveting pin is wound around the sheave. If a connecting link pin is wound around the sheave, use L ≧ 2 (L2) x 1.05. Design L with an appropriate width while minding the installation precision of the sheave.
2. Use sheaves made of machine-structural carbon copper. (S45C, etc.)
3. Use heat-treated HRC (35 to 40) for high-repetition applications.

■ BL type dimensions (examples)

Chain pitch	Min. external sheave dia. *SD*	Flange external dia. *FD*	Min. groove width *L*		
			2×2	4×4	6×6
12.70	63.50	75.50	13.60	18.10	24.80
15.875	79.38	94.38	15.90	21.15	28.90
19.05	95.25	113.35	20.75	27.80	38.35
25.40	127.00	151.10	25.45	34.20	47.25
31.75	158.75	188.85	30.35	40.80	56.40
38.10	190.50	226.70	35.60	47.80	66.10
44.45	222.25	264.45	40.15	54.00	74.85
50.80	254.00	302.20	45.45	61.35	85.15

Note: 1. Contact a Tsubaki representative for dimensions for BL_22, BL_44, and BL_66 Leaf Chain.
2. Dimensions for L in the table above assume that only the chain riveting pin is wound around the sheave. If a connecting link pin is wound around the sheave, use L ≧ 2 (L2) x 1.05. Design L with an appropriate width while minding the installation precision of the sheave.
3. Use sheaves made of machine-structural carbon copper. (S45C, etc.)
4. Use heat-treated HRC (35 to 40) for high-repetition applications.

Precautions for Use

1. Lubricate regularly to prevent pin rotation and improve wear life.

   Recommended lubrication:
   ISO VG 100 to 150 (SAE30 to SAE40)

   Lubrication method:
   With the chain loose, use a brush or oil stick to sufficiently lubricate the outer chain, making sure that oil also penetrates between plates.

   Lubrication period:
   Lubricate regularly so that sliding sections between pins and inner plates do not dry out.

2. Avoid use in corrosive environments. Wipe immediately when there is contact with water and lubricate well. When there is a possibility of corrosion, apply a large amount of grease to the surface of the chain. (To lubricate, wipe off grease and reapply after lubricating between plates.)

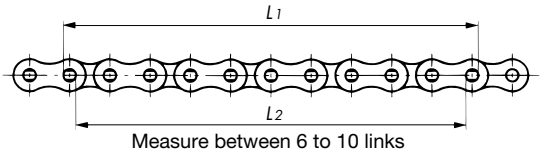
3. Check for elongation.
   Replace chain when elongation reaches allowable elongation limit (3%).

Guidelines for checking chain elongation

In order to prevent chain backlash, measure with slight tension on the chain. Use calipers to measure the distance between the outside L_1 and inside L_2 of the pins for the portion of the chain articulating around the sheave as shown in the illustration to obtain
$L=(L_1+L_2)/2$
Obtain chain elongation percentage using the following formula.

$$\text{Chain elongation} = \frac{L - \text{Standard length}}{\text{Standard length}} \times 100(\%)$$

$$\text{Standard length} = \text{Chain pitch} \times \text{No. of links}$$



Measure between 6 to 10 links

Note: Pitch elongation limit can be quickly checked with a chain elongation scale. For details, refer to the Accessories pages.

Selection

1. Determine the following based on usage conditions.
   - ◆ **Chain speed**
   - ◆ **Number of repetitions per day**
   - ◆ **Work load (including inertia and impact strength)**
     When a chain speed of 30 m/min or 1,000 cycles/day is exceeded, Leaf Chains may be inappropriate due to wear. Consider using an RS Roller Chain.

2. Determine the type of chain.
   - ◆ **BL type is recommended.**
   - ◆ **Limit use of AL type to applications with no impact load or wear considerations (under 100 cycles/day).**

3. Determine required minimum tensile strength using the following formula.

Work load × Usage coefficient (Table 1) × Safety ratio (Table 2) ≦ Minimum tensile strength

■ Table 1: Usage coefficient

Type of impact	Applications	Usage coefficient
Smooth power transmission	Starts and stops are smooth, and load changes are slight (balance weight suspension, etc.)	1.0
Slight impact	Repeated starts and stops, load changes, and reverse operation (forklifts, etc.)	1.3
Impact	Violent starts and stops, load changes, and reverse operation (mining and construction, etc.)	1.5

■ Table 2: Safety ratio

	Plate combinations / No. of cycles	Safety ratio	
		2×2, 3×4 2×3, 4×4	4×6 6×6
BL type	1,000 cycles/day or less	8 or more	9 or more
AL type	10 cycles/day or less	8 or more	9 or more
	100 cycles/day or less	11 or more	12 or more

Note: It is dangerous to use above the safety ratio in Table 2 as it may result in pin rotation and a reduction in strength. In addition, even if the safety ratio in Table 2 is followed, insufficient lubrication may also cause the pins to rotate. Always lubricate the chain regularly. Where determining a chain's safety ratio is established by law, select a chain with some leeway using that method and this catalog.

Specialty Roller Chains Leaf Chain

Standard Packaging for Super Long-Length Formations

The following packaging will be used unless otherwise specified.

■ AL type

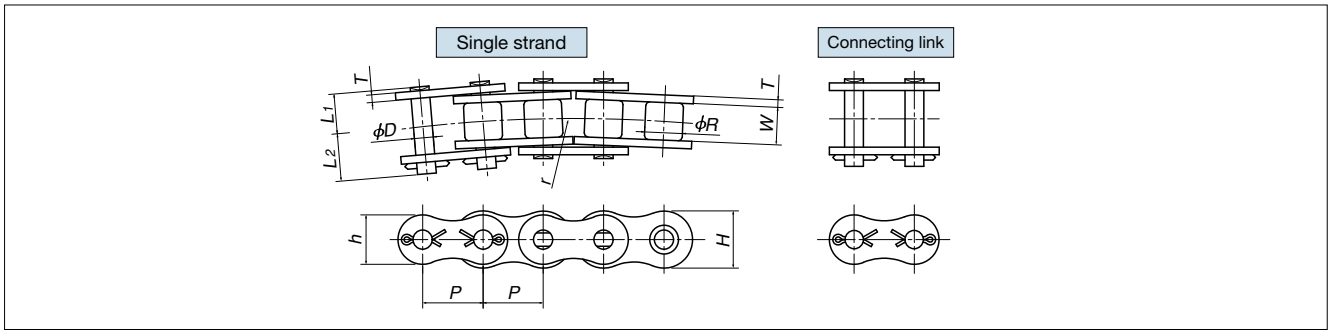
Size	Packaging			
	Reel		Cardboard or CP packaging	
	Min. no. of links	Max. no. of links	Min. no. of links	Max. no. of links
AL422 AL444 AL466	601	7200 4800	—	—
AL522 AL544 AL566	481	3840 1920	—	—
AL622 AL644 AL666	401	1600	—	—
AL822 AL844 AL866	301	600	601	1100
AL1022 AL1044 AL1066	241	480	481	750
AL1222 AL1244 AL1266	—	—	201	550
AL1444 AL1466	—	—	171	380
AL1644 AL1666	—	—	151	300

Note: 1. Super long-length formations become easily twisted. Handle with care. Tsubakimoto Chain is not responsible for any chain twisting after shipment.
2. Contact a Tsubaki representative for packaging of sizes not shown in the table.
3. CP packaging: Carton pallet packaging
Packed inside a corrugated cardboard carton (large box) fastened to a wooden pallet.

■ BL type

Size	Packaging			
	Reel		Cardboard or CP packaging	
	Min. no. of links	Max. no. of links	Min. no. of links	Max. no. of links
BL423 BL434 BL446 BL466	601	4800 2400 1200	—	—
BL523 BL534 BL544 BL546 BL566	481	1920 960	—	—
BL622 BL623 BL634 BL644 BL646 BL666	401	1600 800	—	—
BL823 BL834 BL844 BL846 BL866	301	1200 600	— 601	— 1100
BL1023 BL1034 BL1044 BL1046 BL1066	241	480	481	750
BL1223 BL1234 BL1246	—	—	201	550
BL1423 BL1434 BL1446	—	—	171	380
BL1623 BL1634 BL1646	—	—	151	300

Specialty Roller Chains RS Curved Chain



■ Specifications

Tsubaki chain number	Pitch P	Roller dia. R	Inner width of inner link W	Plates			Pins			Min. radius r	Average tensile strength kN{kgf}	Max. allowable load kN{kgf}	Approx. mass kg/m	Links per unit
				Thickness T	Height H	Height h	Dia. D	L_1	L_2					
RS40-CU-1	12.70	7.92	7.95	1.5	12.0	10.4	3.97	8.45	9.75	350	15.5 {1580}	1.86 {190}	0.61	240
RS50-CU-1	15.875	10.16	9.53	2.0	15.0	13.0	5.09	10.6	12.4	400	24.1 {2460}	2.84 {290}	1.01	192
RS60-CU-1	19.05	11.91	12.70	2.4	18.1	15.6	5.96	13.25	15.05	500	34.9 {3560}	4.02 {410}	1.40	160
RS80-CU-1	25.40	15.88	15.88	3.2	24.1	20.8	7.94	16.75	20.05	600	61.6 {6280}	6.96 {710}	2.47	120

Note: 1. To select a chain, use the allowable load selection method.
2. Can use RS sprockets.
3. No offset links available. Attachment chains are available. Refer to the Small Size Conveyor Chain catalog.
4. Items in bold are stocked in units.

Model numbering example **RS80 -CU -1 -RP + 110L -MWJR**

RS80: Size; -CU: Series; -1: Number of strands; -RP: Pin type; 110L: Number of links; -MWJR: End link

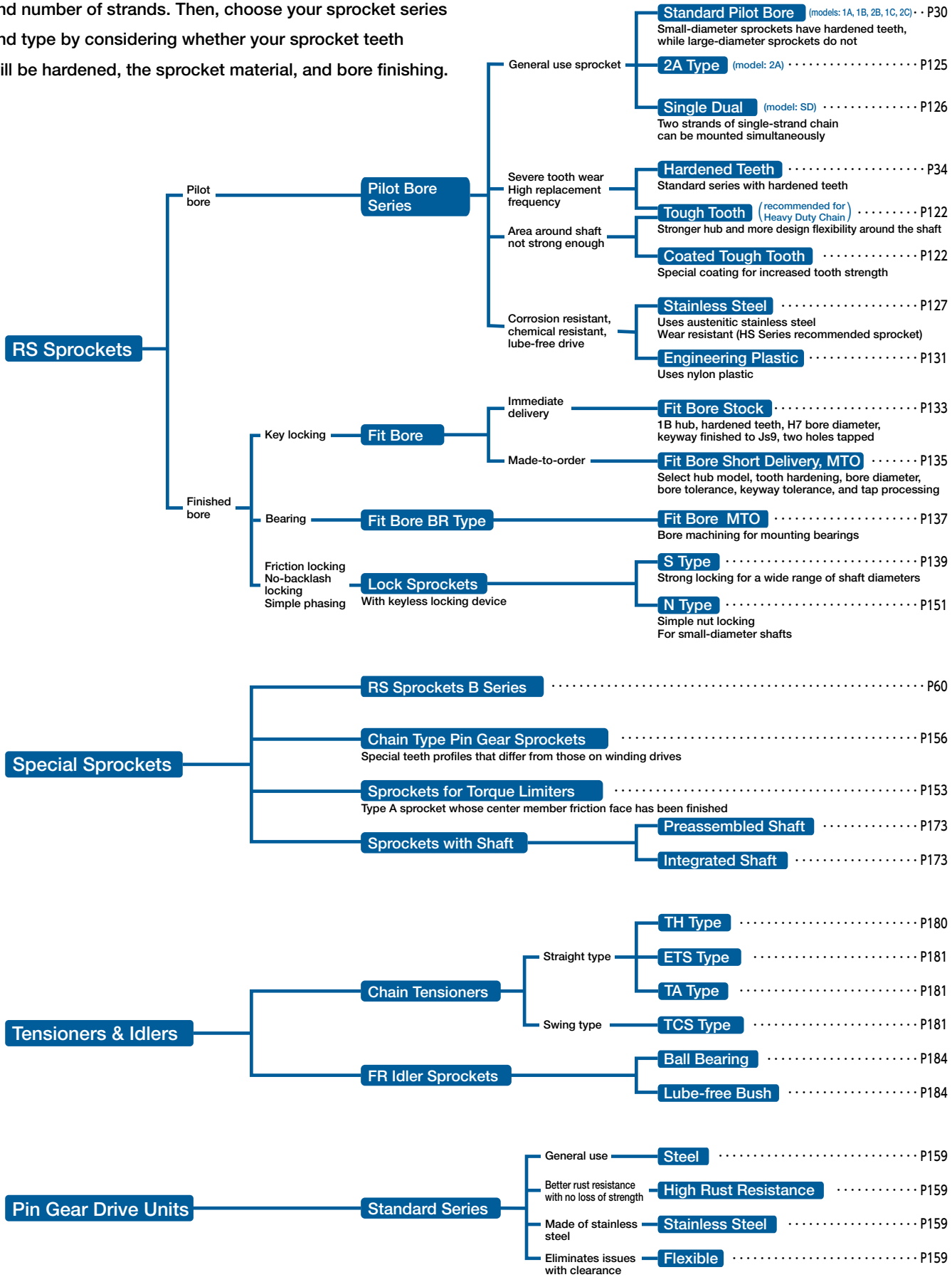
RS Sprocket
Selection Guide

Chain No. p.27
p.15
p.217



RS Sprocket Selection Guide

Determine sprocket number of teeth and hub type in light of strength and space once you've determined your chain size and number of strands. Then, choose your sprocket series and type by considering whether your sprocket teeth will be hardened, the sprocket material, and bore finishing.



RS Sprocket TOUGH TOOTH



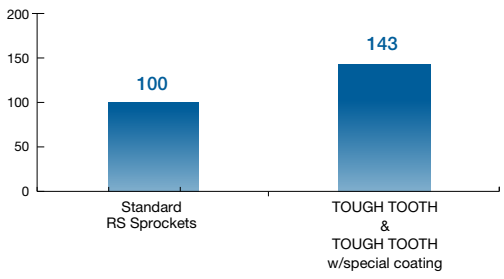
Tough Tooth sprockets have increased strength and durability to bring out the best in Tsubaki's Heavy Duty Drive Chains.

RS Sprocket TOUGH TOOTH

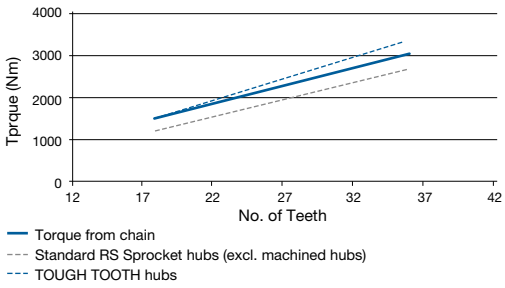
Features

- Offers ample tooth strength for chains, and features a reinforced hub. Bore keyway has 43% higher allowable surface pressure.
- All models feature hardened teeth to give the sprocket more wear resistance.
- A special coating that further increases tooth hardness is optionally available. Ideal for harsh operating environments where users want to reduce chain and sprocket replacement frequency.

Comparision of Hub Strength



Comparision of Hub kW Ratings



Note: 1. Torque is calculated from keyway allowable surface pressure using a JIS parallel key at the maximum shaft hub diameter.
2. Comparsion using RS80-SUP-H-1.

Specifications

- B and C types standardized for single and double strand RS-HT Series RS60 and above.
- RS-HT Chains and Super-H Chains in multi-strand configurations have a different tooth transverse pitch than RS Roller Chain sprockets.
- Other multi-strand configurations, hub types, and numbers of teeth are made-to-order. Other shaft hub finishing also available.
- Both teeth and hubs use carbon steel for machine structural use (high-tensile steel).
- Made-to-order product.

Model Numbering Example

RS80 – 1B 22T Q – T – K1

- RS80: Chain size
- 1B: Number of strands and hub type
  - 2B
  - 1C
  - 2C
  - 2HB*
  - 2HC*
- 22T: Number of teeth
- Q: Hardened teeth
- T: TOUGH TOOTH
- K1: Blank : Standard pilot bore; K1 : Special coating

*2HB and 2HC are for Super-H and RS-HT chain use.

RS Sprocket TOUGH TOOTH

Available Range

RS Sprocket TOUGH TOOTH | Use standard RS Sprocket with pilot bore | Made-to-order

■ 1B (single strand B type)

No. of teeth/size	RS60	RS80	RS100	RS120	RS140	RS160	RS180	RS200	RS240
9T									
10T									
11T									
12T									
13T									
14T									
15T									
16T									
17T									
18T									
19T									
20T									
21T									
22T									
23T									
24T									
25T									
26T									
27T									
28T									
30T									
32T									
34T									
35T									
36T									
38T									
40T or more									

■ 1C (single strand C type)

No. of teeth/size	RS60	RS80	RS100	RS120	RS140	RS160	RS180	RS200	RS240
9T									
10T									
11T									
12T									
13T									
14T									
15T									
16T									
17T									
18T									
19T									
20T									
21T									
22T									
23T									
24T									
25T									
26T									
27T									
28T									
30T									
32T									
34T									
35T									
36T									
38T									
40T or more									

See pages 40 to 56 for mass and dimensions.

■ Contact a Tsubaki representative regarding models with dimensions not shown in this catalog.

■ Sizes, numbers of strands, numbers of teeth, and hub dimensions other than those shown above available.

See page 86 and beyond for Heavy Duty Roller Chain.

Available Range

RS Sprocket TOUGH TOOTH　Use standard RS Sprocket with pilot bore　Made-to-order

■ 2B (double strand B type)

No. of teeth/size	RS60	RS80	RS100	RS120	RS140-240
9T					
10T					
11T					
12T					
13T					
14T					
15T					
16T					
17T					
18T					
19T					
20T					
21T					
22T					
23T					
24T					
25T					
26T					
27T					
28T					
30T					
32T					
34T					
35T					
36T					
38T					
40T or more					

■ 2C (double strand C type)

No. of teeth/size	RS60	RS80	RS100	RS120	RS140-240
9T					
10T					
11T					
12T					
13T					
14T					
15T					
16T					
17T					
18T					
19T					
20T					
21T					
22T					
23T					
24T					
25T					
26T					
27T					
28T					
30T					
32T					
34T					
35T					
36T					
38T					
40T or more					

See pages 40 to 56 for mass and dimensions.

■ Contact a Tsubaki representative regarding models with dimensions not shown in this catalog.
■ Sizes, numbers of strands, numbers of teeth, and hub dimensions other than those shown above available.

Optional (made-to-order)

RS Sprocket TOUGH TOOTH Special Coating Specifications

A special coating gives the teeth better wear resistance. Effective in harsh operating environments where sprocket replacement frequency is high.

Shaft Bore Finishing

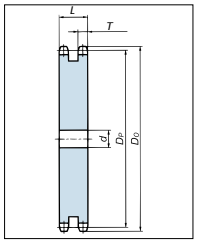
Optional shaft bore finishing is available.

Sprocket with Pre-assembled Shaft

We can quote you for a shaft based on your drawings, manufacture it, and supply it together with your sprocket pre-assembled. By also requesting inspection records, you can reduce inspection/assembly man-hours and cost. (See page 177.)



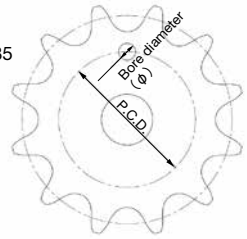
Sprockets RS Sprocket 2A Type



2A Sprocket Teeth and Lateral Width Dimensions

Type	Width L	Tooth width T
RS40-2A	21.5	7.1
RS50-2A	26.8	8.7
RS60-2A	34.5	11.7
RS80-2A	43.9	14.6
RS100-2A	53.4	17.6
RS120-2A	68.9	23.5

Hanging hole dimensions
Bore diameter: RS60/RS80: ϕ30,
RS100, RS120: ϕ35



The phase relationship between hanging hole and teeth may differ from the drawing.

RS40

Model number	Pitch circle dia. Dp	Outer dia. (Do)	Pilot bore dia. d	Approx. mass kg	Material
RS40-2A35T	141.68	149	16	2.4	Machine-structural carbon steel*3
RS40-2A36T	145.72	153	16	2.5	
RS40-2A38T	153.79	161	16	2.8	
RS40-2A40T	161.87	169	16	3.1	
RS40-2A42T	169.94	177	16	3.5	
RS40-2A45T	182.06	189	18	4.0	
RS40-2A48T	194.18	201	18	4.6	
RS40-2A50T	202.26	209	18	5.0	
RS40-2A54T	218.42	226	18	5.8	
RS40-2A60T	242.66	250	18	7.3	

RS60

Model number	Pitch circle dia. Dp	Outer dia. (Do)	Pilot bore dia. d	Approx. mass kg	Material	Bore phase (PCD)
RS60-2A23T	139.90	150	18	3.5	Machine-structural carbon steel*3	
RS60-2A24T	145.95	156	18	3.8		
RS60-2A25T	151.99	162	18	4.2		
RS60-2A26T	158.04	168	18	4.6		
RS60-2A27T	164.09	174	18	4.9		
RS60-2A28T	170.14	180	18	5.4		
RS60-2A30T	182.25	193	18	6.2		
RS60-2A32T	194.35	205	18	7.1		
RS60-2A34T	206.46	217	18	8.1		
RS60-2A35T	212.52	223	18	8.6		
RS60-2A36T	218.57	229	18	9.1		
RS60-2A38T	230.69	241	18	10.2		
RS60-2A40T	242.80	253	18	11.4		
RS60-2A42T	254.92	266	23	12.6		
RS60-2A45T	273.09	284	23	14.5		
RS60-2A48T	291.27	302	23	16.6		
RS60-2A50T	303.39	314	23	18.1		
RS60-2A54T	327.63	338	23	21.2		
RS60-2A60T	363.99	375	23	26.2		293

RS100

Model number	Pitch circle dia. Dp	Outer dia. (Do)	Pilot bore dia. d	Approx. mass kg	Material	Bore phase (PCD)
RS100-2A15T	152.71	168	28	5.8	Machine-structural carbon steel*3	
RS100-2A16T	162.75	179	28	6.8		
RS100-2A17T	172.79	189	28	7.8		
RS100-2A18T	182.84	199	28	8.8		
RS100-2A19T	192.90	209	28	10.0		
RS100-2A20T	202.96	220	28	11.2		
RS100-2A21T	213.03	230	28	12.4		
RS100-2A22T	223.10	240	33	13.7		
RS100-2A23T	233.17	250	33	15.0		
RS100-2A24T	243.25	260	33	16.5		
RS100-2A25T	253.32	270	33	18.1		
RS100-2A26T	263.41	281	33	19.7		
RS100-2A27T	273.49	291	33	21.3		
RS100-2A28T	283.57	301	33	23.0		
RS100-2A30T	303.75	321	33	26.8		
RS100-2A32T	323.92	341	33	30.3		224
RS100-2A34T	344.10	362	33	34.5		245
RS100-2A35T	354.20	372	33	36.7		255
RS100-2A36T	364.29	382	33	38.9	Rolled steel*4	365
RS100-2A38T	384.48	402	33	43.7		285
RS100-2A40T	404.67	422	33	48.7		305
RS100-2A42T	424.86	443	33	53.9		326
RS100-2A45T	455.15	473	33	62.4		356
RS100-2A48T	485.45	503	33	71.4		386
RS100-2A50T	505.65	524	33	77.7		407
RS100-2A54T	546.05	564	33	91.2		447
RS100-2A60T	606.66	625	33	113.4		508

RS50

Model number	Pitch circle dia. Dp	Outer dia. (Do)	Pilot bore dia. d	Approx. mass kg	Material
RS50-2A26T	131.70	140	18	2.4	Machine-structural carbon steel*3
RS50-2A27T	136.74	145	18	2.6	
RS50-2A28T	141.79	150	18	2.8	
RS50-2A30T	151.87	161	18	3.3	
RS50-2A32T	161.96	171	18	3.8	
RS50-2A34T	172.05	181	18	4.3	
RS50-2A35T	177.10	186	18	4.6	
RS50-2A36T	182.15	191	18	4.9	
RS50-2A38T	192.24	201	18	5.5	
RS50-2A40T	202.33	211	23	6.0	
RS50-2A42T	212.43	221	23	6.7	
RS50-2A45T	227.58	237	23	7.7	
RS50-2A48T	242.73	252	23	8.9	
RS50-2A50T	252.82	262	23	9.7	
RS50-2A54T	273.03	282	23	11.3	
RS50-2A60T	303.33	312	23	14.1	

RS80

Model number	Pitch circle dia. Dp	Outer dia. (Do)	Pilot bore dia. d	Approx. mass kg	Material	Bore phase (PCD)
RS80-2A18T	146.27	159	23	4.6	Machine-structural carbon steel*3	
RS80-2A19T	154.32	167	23	5.2		
RS80-2A20T	162.37	176	23	5.8		
RS80-2A21T	170.42	184	23	6.5		
RS80-2A22T	178.48	192	28	7.1		
RS80-2A23T	186.54	200	28	7.9		
RS80-2A24T	194.60	208	28	8.6		
RS80-2A25T	202.66	216	28	9.4		
RS80-2A26T	210.72	224	28	10.2		
RS80-2A27T	218.79	233	28	11.1		
RS80-2A28T	226.86	241	28	12.0		
RS80-2A30T	243.00	257	28	14.0		
RS80-2A32T	259.14	273	28	16.0		
RS80-2A34T	275.28	289	28	18.2		
RS80-2A35T	283.36	297	28	19.4		
RS80-2A36T	291.43	306	28	20.6		
RS80-2A38T	307.58	322	28	23.0		
RS80-2A40T	323.74	338	33	25.4		242
RS80-2A42T	339.89	354	33	28.1		258
RS80-2A45T	364.12	378	33	32.5		283
RS80-2A48T	388.36	403	33	37.3	Rolled steel*4	307
RS80-2A50T	404.52	419	33	40.6		323
RS80-2A54T	436.84	451	33	47.7		355
RS80-2A60T	485.33	500	33	59.4		404

RS120

Model number	Pitch circle dia. Dp	Outer dia. (Do)	Pilot bore dia. d	Approx. mass kg	Material	Bore phase (PCD)
RS120-2A14T	171.22	190	28	9.6	Machine-structural carbon steel*3	
RS120-2A15T	183.25	202	33	11.1		
RS120-2A16T	195.29	214	33	12.9		
RS120-2A17T	207.35	227	33	14.7		
RS120-2A18T	219.41	239	33	16.7		
RS120-2A19T	231.48	251	33	18.8		
RS120-2A20T	243.55	263	33	21.1		
RS120-2A21T	255.63	276	33	23.5		
RS120-2A22T	267.72	288	33	25.9		
RS120-2A23T	279.80	300	33	28.5		
RS120-2A24T	291.90	312	33	31.3		
RS120-2A25T	303.99	324	33	34.2		
RS120-2A26T	316.09	337	33	37.2		
RS120-2A27T	328.19	349	33	40.3		
RS120-2A28T	340.29	361	33	43.5		
RS120-2A30T	364.49	385	33	49.9		258
RS120-2A32T	388.71	410	33	57.2	Rolled steel*4	382
RS120-2A34T	412.93	434	33	65.0		307
RS120-2A35T	425.04	446	33	69.1		319
RS120-2A36T	437.15	458	38	73.2		331
RS120-2A38T	461.37	483	38	82.1		355
RS120-2A40T	485.60	507	38	91.3		380
RS120-2A42T	509.83	531	38	101.2		404
RS120-2A45T	546.19	568	38	116.9		440
RS120-2A48T	582.54	604	38	133.6		477
RS120-2A50T	606.78	628	38	145.5		501
RS120-2A54T	655.26	677	38	170.6		550
RS120-2A60T	727.99	750	38	212.0		623

Model numbering example

RS40 -2A 35T

- RS40: Size
- -2A: Number of strands and hub type
- 35T: Number of teeth

Model numbering example (hardened teeth)

RS40 -2A 35T Q

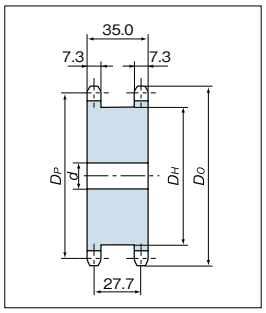
- RS40: Size
- -2A: Number of strands and hub type
- 35T: Number of teeth
- Q: Hardened teeth

Note: 1. Maximum bore diameters shown are standard figures. Determine bore diameter and key bearing pressure based on general mechanical design.
2. Sprockets shown with hole positions come with a hanging hole on the sprocket plate. Refer to the diagram above for hanging hole dimensions.
*3. Hardened teeth are also available. *4. Hardened teeth are made-to-order. 5. All items are made-to-order.

RS Sprocket Single Dual Type

Two strands of single strand chain can be mounted simultaneously

RS40 SD Type



Model numbering example

RS40-SD 15T Q

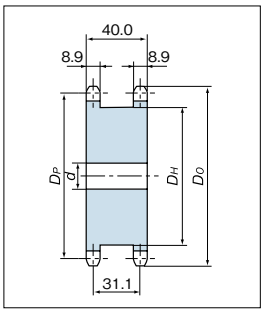
- RS40-SD: Single Dual
- 15T: Number of teeth
- Q: Hardened teeth

All models have hardened teeth.

Model number	Pitch circle dia. Dp	(Outer dia.) (Do)	Bore dia. d		Hub		Approx. mass kg
			Pilot bore	Max.	Diameter DH	Length L	
RS40-SD12T Q	49.07	55	9.5	19	34	35	0.34
RS40-SD13T Q	53.07	59	12.7	22	38	35	0.40
RS40-SD14T Q	57.07	63	12.7	24	42	35	0.48
RS40-SD15T Q	61.08	67	12.7	27	46	35	0.56
RS40-SD16T Q	65.10	71	12.7	31	50	35	0.66
RS40-SD17T Q	69.12	76	12.7	34	54	35	0.76
RS40-SD18T Q	73.14	80	12.7	38	59	35	0.88
RS40-SD19T Q	77.16	84	12.7	41	63	35	0.99
RS40-SD20T Q	81.18	88	12.7	44	67	35	1.12
RS40-SD21T Q	85.21	92	12.7	47	71	35	1.24
RS40-SD22T Q	89.24	96	12.7	50	75	35	1.38
RS40-SD23T Q	93.27	100	12.7	51	78	35	1.50
RS40-SD24T Q	97.30	104	12.7	55	83	35	1.67
RS40-SD25T Q	101.33	108	12.7	58	87	35	1.83
Material/specifications	Machine-structural carbon steel, machined						

Contact a Tsubaki representative for teeth numbers not shown above.

RS50 SD Type



Model numbering example

RS50-SD 15T Q

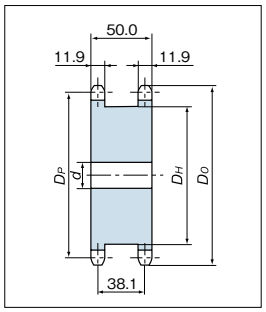
- RS50-SD: Single Dual
- 15T: Number of teeth
- Q: Hardened teeth

All models have hardened teeth.

Model number	Pitch circle dia. Dp	(Outer dia.) (Do)	Bore dia. d		Hub		Approx. mass kg
			Pilot bore	Max.	Diameter DH	Length L	
RS50-SD12T Q	61.34	69	12.7	25	43	40	0.62
RS50-SD13T Q	66.33	74	12.7	29	48	40	0.75
RS50-SD14T Q	71.34	79	12.7	33	53	40	0.90
RS50-SD15T Q	76.35	84	12.7	37	58	40	1.05
RS50-SD16T Q	81.37	89	12.7	41	63	40	1.22
RS50-SD17T Q	86.39	94	12.7	44	68	40	1.40
RS50-SD18T Q	91.42	100	12.7	48	73	40	1.60
RS50-SD19T Q	96.45	105	15.9	52	79	40	1.80
RS50-SD20T Q	101.48	110	15.9	56	84	40	2.02
RS50-SD21T Q	106.51	115	15.9	60	89	40	2.25
RS50-SD22T Q	111.55	120	15.9	62	92	40	2.44
RS50-SD23T Q	116.59	125	15.9	67	99	40	2.75
RS50-SD24T Q	121.62	130	15.9	70	102	40	2.96
RS50-SD25T Q	126.66	135	15.9	75	109	40	3.30
Material/specifications	Machine-structural carbon steel, machined						

Contact a Tsubaki representative for teeth numbers not shown above.

RS60 SD Type



Model numbering example

RS60-SD 15T Q

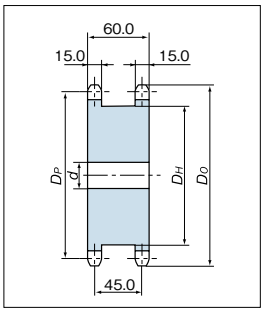
- RS60-SD: Single Dual
- 15T: Number of teeth
- Q: Hardened teeth

All models have hardened teeth.

Model number	Pitch circle dia. Dp	(Outer dia.) (Do)	Bore dia. d		Hub		Approx. mass kg
			Pilot bore	Max.	Diameter DH	Length L	
RS60-SD12T Q	73.60	83	12.7	31	51	50	1.16
RS60-SD13T Q	79.60	89	15.9	36	57	50	1.37
RS60-SD14T Q	85.61	95	15.9	42	64	50	1.65
RS60-SD15T Q	91.63	101	15.9	46	70	50	1.93
RS60-SD16T Q	97.65	107	15.9	50	76	50	2.24
RS60-SD17T Q	103.67	113	15.9	55	82	50	2.57
RS60-SD18T Q	109.70	119	15.9	59	88	50	2.92
RS60-SD19T Q	115.74	126	15.9	64	94	50	3.29
RS60-SD20T Q	121.78	132	15.9	68	100	50	3.69
RS60-SD21T Q	127.82	138	15.9	74	107	50	4.14
RS60-SD22T Q	133.86	144	15.9	78	113	50	4.58
RS60-SD23T Q	139.90	150	18	82	119	50	5.02
RS60-SD24T Q	145.95	156	18	87	125	50	5.51
RS60-SD25T Q	151.99	162	18	91	130	50	5.98
Material/specifications	Machine-structural carbon steel, machined						

Contact a Tsubaki representative for teeth numbers not shown above.

RS80 SD Type



Model numbering example

RS80-SD 15T Q

- RS80-SD: Single Dual
- 15T: Number of teeth
- Q: Hardened teeth

All models have hardened teeth.

Model number	Pitch circle dia. Dp	(Outer dia.) (Do)	Bore dia. d		Hub		Approx. mass kg
			Pilot bore	Max.	Diameter DH	Length L	
RS80-SD12T Q	98.14	110	20	45	69	60	2.5
RS80-SD13T Q	106.14	118	20	50	77	60	3.0
RS80-SD14T Q	114.15	127	20	55	85	60	3.6
RS80-SD15T Q	122.17	135	20	63	93	60	4.2
RS80-SD16T Q	130.20	143	20	70	102	60	4.9
RS80-SD17T Q	138.23	151	20	74	110	60	5.6
RS80-SD18T Q	146.27	159	20	80	118	60	6.4
Material/specifications	Machine-structural carbon steel, machined						

Contact a Tsubaki representative for teeth numbers not shown above.

All models stocked.

Note: Maximum bore diameters shown are standard figures. Determine bore diameter and key bearing pressure based on general mechanical design.

Sprockets RS Sprocket Stainless Steel Type



Stainless steel type

Uses stainless steel for superb corrosion resistance.
Also highly resistant to high and low temperatures for use in special environments.

Applicable chain sizes : RS11, RS25 to RS80
Hub type : 1B (single hub)

Wear-resistant Series

Recommended sprocket for HS Series stainless steel chain
Please consider using this sprocket when the load exceeds the maximum allowable load of the SS Series.

Better wear resistance thanks to special surface treatment
This sprocket is suitable for when using stainless steel chain and sprocket wear needs to be avoided.

Applicable chain sizes : RS40 to RS80
Hub type : 1B (single hub)

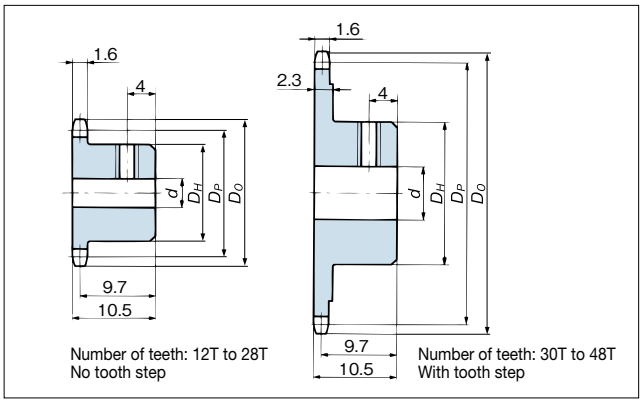
Note: The surface treatment may flake off when the sprocket engages the chain. Take measures like installing an appropriate cover when using in environments where such flakes may present a problem.

Model numbering example **RS35-1 B 13T - SS**

- RS35-1: Size and Number of strands
- B: Hub type — B : Single hub; C : Dual hub (RS11 only)
- 13T: Number of teeth
- SS: Series — SS : Stainless steel; SST : Wear resistant

RS11 1B Type

Applicable chain pitch: 3.7465mm Roller dia.: 2.285mm

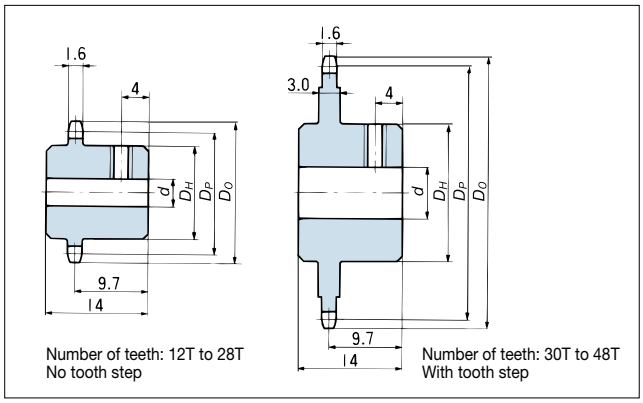


Number of teeth: 12T to 28T
No tooth step

Number of teeth: 30T to 48T
With tooth step

RS11 1C Type

Applicable chain pitch: 3.7465mm Roller dia.: 2.285mm



Number of teeth: 12T to 28T
No tooth step

Number of teeth: 30T to 48T
With tooth step

(Be aware that no set screws are provided.)

Model number	Number of teeth	Pitch circle dia. *Dp*	Outer dia. *Do*	Bore dia. *d*		Hub dia. D_H	Set screw hole	1B Approx. mass g	1C Approx. mass g
				Pilot bore	Max.				
RS11-1■12T-SS	12	14.475	16.2	4	6	9.4	M3×0.5	5.9	7.4
RS11-1■15T-SS	15	18.020	19.9	4	9	13		11.5	14.7
RS11-1■16T-SS	16	19.204	21.1	4	9	14		13.5	17.3
RS11-1■18T-SS	18	21.575	23.5	4	11	16		17.7	22.8
RS11-1■20T-SS	20	23.949	25.9	6	13	19	M4×0.7	23.3	30.8
RS11-1■24T-SS	24	28.703	30.7	6	13	19		25.7	32.7
RS11-1■28T-SS	28	33.462	35.5	6	13	19		28.7	35.7
RS11-1■30T-SS	30	35.842	37.9	6	13	19		29.7	39.3
RS11-1■34T-SS	34	40.604	42.7	6	13	19		37.9	48.9
RS11-1■36T-SS	36	42.986	45.1	6	13	19		40.7	52.4
RS11-1■40T-SS	40	47.751	49.8	6	13	19		46.5	59.9
RS11-1■48T-SS	48	57.283	59.4	6	13	19		60.5	77.8
Material/specifications	Machined stainless steel								

Indicate hub type (B or C) in the ■ in the table above.

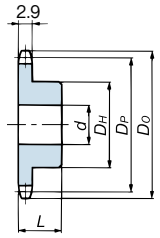
All models stocked.

Note: 1. Maximum bore diameters shown are standard figures. Determine bore diameter and key bearing pressure based on general mechanical design.
2. Bore machining is required before use.

See page 99 and beyond for Corrosion Resistant Roller Chain.

RS25 1B Type

Applicable chain pitch: 6.35mm Roller dia.: 3.3mm

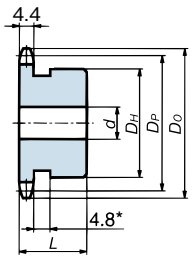


Model number	No. of teeth	Pitch circle dia. Dp	Outer dia. Do	Bore dia. d		Hub		Approx. mass kg
				Pilot bore	Max.	Dia. DH	Length L	
RS25-1B10T-SS	10	20.55	23	6	9	14	15	0.02
RS25-1B11T-SS	11	22.54	25	6	10	16	15	0.03
RS25-1B12T-SS	12	24.53	28	6	11	18	15	0.04
RS25-1B13T-SS	13	26.53	30	6	12	20	15	0.05
RS25-1B14T-SS	14	28.54	32	6	12	20	15	0.06
RS25-1B15T-SS	15	30.54	34	6	12	20	20	0.07
RS25-1B16T-SS	16	32.55	36	8	15	25	20	0.08
RS25-1B17T-SS	17	34.56	38	8	15	25	20	0.09
RS25-1B18T-SS	18	36.57	40	8	15	25	20	0.10
RS25-1B19T-SS	19	38.58	42	8	15	25	20	0.10
RS25-1B20T-SS	20	40.59	44	8	15	25	20	0.10
RS25-1B21T-SS	21	42.61	46	10	18	30	20	0.12
RS25-1B22T-SS	22	44.62	48	10	18	30	20	0.13
RS25-1B23T-SS	23	46.63	50	10	18	30	20	0.13
RS25-1B24T-SS	24	48.65	52	10	21	35	20	0.15
RS25-1B25T-SS	25	50.66	54	10	21	35	20	0.16
RS25-1B26T-SS	26	52.68	56	10	25	40	20	0.17
RS25-1B27T-SS	27	54.70	58	10	25	40	20	0.20
RS25-1B28T-SS	28	56.71	60	10	25	40	20	0.21
RS25-1B30T-SS	30	60.75	64	12	28	45	20	0.23
RS25-1B32T-SS	32	64.78	68	12	31	50	20	0.40
RS25-1B34T-SS	34	68.82	72	12	31	50	20	0.41
RS25-1B35T-SS	35	70.84	74	12	31	50	20	0.41
RS25-1B36T-SS	36	72.86	76	12	31	50	20	0.42
RS25-1B38T-SS	38	76.90	80	12	31	50	22	0.43
RS25-1B40T-SS	40	80.93	84	12	31	50	22	0.45
Material/specifications	Machined stainless steel							

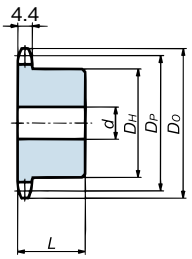
RS35 1B Type

Applicable chain pitch: 9.525mm Roller dia.: 5.08mm

Hub with groove (10T to 13T)



Hub without groove (14T and over)



No. of teeth	:	Hub dia.	:	Groove dia.
10T	:	ϕ25	:	ϕ18
11T	:	ϕ27	:	ϕ22
12T	:	ϕ31	:	ϕ24
13T	:	ϕ32	:	ϕ28

*The groove is provided on the hub perimeter to prevent sprocket–chain interference.

Model number	No. of Teeth	Pitch circle dia. Dp	Outer dia. Do	Bore dia. d		Hub		Approx. mass kg
				Pilot bore	Max.	Dia. DH	Length L	
RS35-1B10T-SS	10	30.82	35	8	12	25	20	0.08
RS35-1B11T-SS	11	33.81	38	8	14	27	20	0.09
RS35-1B12T-SS	12	36.80	41	8	16.5	31	20	0.12
RS35-1B13T-SS	13	39.80	44	9.5	18	32	20	0.12
RS35-1B14T-SS	14	42.80	47	9.5	16.5	30	20	0.12
RS35-1B15T-SS	15	45.81	51	9.5	19	35	20	0.16
RS35-1B16T-SS	16	48.82	54	9.5	20	37	20	0.19
RS35-1B17T-SS	17	51.84	57	9.5	24	41	20	0.22
RS35-1B18T-SS	18	54.85	60	9.5	24.5	44	20	0.25
RS35-1B19T-SS	19	57.87	63	9.5	28.5	47	20	0.28
RS35-1B20T-SS	20	60.89	66	9.5	30	50	20	0.32
RS35-1B21T-SS	21	63.91	69	9.5	32	53	20	0.36
RS35-1B22T-SS	22	66.93	72	9.5	32	53	20	0.37
RS35-1B23T-SS	23	69.95	75	9.5	32	53	20	0.40
RS35-1B24T-SS	24	72.97	78	9.5	32	53	22	0.43
RS35-1B25T-SS	25	76.00	81	12.7	32	53	22	0.44
RS35-1B26T-SS	26	79.02	84	12.7	32	53	22	0.45
RS35-1B27T-SS	27	82.05	87	12.7	32	53	22	0.46
RS35-1B28T-SS	28	85.07	90	12.7	32	53	22	0.48
RS35-1B30T-SS	30	91.12	96	12.7	32	53	22	0.51
RS35-1B32T-SS	32	97.18	102	12.7	32	53	22	0.54
RS35-1B34T-SS	34	103.23	109	12.7	32	53	22	0.57
RS35-1B35T-SS	35	106.26	112	12.7	32	53	22	0.59
RS35-1B36T-SS	36	109.29	115	12.7	32	53	22	0.61
RS35-1B38T-SS	38	115.34	121	13	42	63	25	0.82
RS35-1B40T-SS	40	121.40	127	13	42	63	25	0.85
Material/specifications	Machined stainless steel							

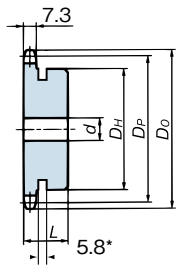
All models stocked.

Sprockets RS Sprocket Stainless Steel Type

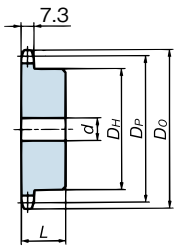
RS40 1B Type

Applicable chain pitch: 12.70mm Roller dia.: 7.92mm

Hub with groove (10T to 12T)



Hub without groove (13T and over)



No. of teeth	Hub dia.	Groove dia.
10T	ϕ32	ϕ25
11T	ϕ37	ϕ30
12T	ϕ40	ϕ32

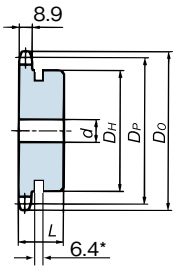
*The groove is provided on the hub perimeter to prevent sprocket–chain interference.

Model number	No. of teeth	Pitch circle dia. *Dp*	Outer dia. *Do*	Bore dia. *d*		Hub		Approx. mass kg
				Pilot bore	Max.	Dia. *DH*	Length *L*	
RS40-1B10T-SS	10	41.10	47	9.5	16.5	32	22	0.14
RS40-1B11T-SS	11	45.08	51	9.5	20	37	22	0.19
RS40-1B12T-SS	12	49.07	55	9.5	22	40	22	0.22
RS40-1B13T-SS	13	53.07	59	9.5	20	37	22	0.23
RS40-1B14T-SS	14	57.07	63	9.5	24	42	22	0.28
RS40-1B15T-SS	15	61.08	67	9.5	28.5	46	22	0.34
RS40-1B16T-SS	16	65.10	71	12.7	30	50	22	0.40
RS40-1B17T-SS	17	69.12	76	12.7	32	54	22	0.46
RS40-1B18T-SS	18	73.14	80	12.7	35	57	22	0.51
RS40-1B19T-SS	19	77.16	84	12.7	39.5	62	22	0.59
RS40-1B20T-SS	20	81.18	88	12.7	45.5	67	25	0.76
RS40-1B21T-SS	21	85.21	92	12.7	45.5	71	25	0.85
RS40-1B22T-SS	22	89.24	96	12.7	50	75	25	0.95
RS40-1B23T-SS	23	93.27	100	12.7	50	77	25	1.0
RS40-1B24T-SS	24	97.30	104	12.7	42	63	25	0.84
RS40-1B25T-SS	25	101.33	108	12.7	42	63	25	0.88
RS40-1B26T-SS	26	105.36	112	12.7	42	63	25	0.92
RS40-1B27T-SS	27	109.40	116	12.7	42	63	25	0.96
RS40-1B28T-SS	28	113.43	120	12.7	42	63	25	1.0
RS40-1B30T-SS	30	121.50	128	12.7	42	63	25	1.1
RS40-1B32T-SS	32	129.57	137	16	45	68	28	1.3
RS40-1B34T-SS	34	137.64	145	16	45	68	28	1.3
RS40-1B35T-SS	35	141.68	149	16	45	68	28	1.4
RS40-1B36T-SS	36	145.72	153	16	45	68	28	1.4
RS40-1B38T-SS	38	153.79	161	16	45	68	28	1.5
RS40-1B40T-SS	40	161.87	169	16	45	68	28	1.6
Material/specifications	Machined stainless steel							

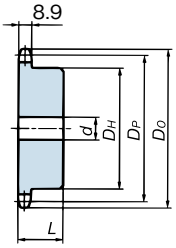
RS50 1B Type

Applicable chain pitch: 15.875mm Roller dia.: 10.16mm

Hub with groove (10T to 13T)



Hub without groove (14T to 40T)



No. of teeth	Hub dia.	Groove dia.
10T	ϕ40	ϕ32
11T	ϕ46	ϕ37
12T	ϕ51	ϕ42
13T	ϕ51	ϕ47

*The groove is provided on the hub perimeter to prevent sprocket–chain interference.

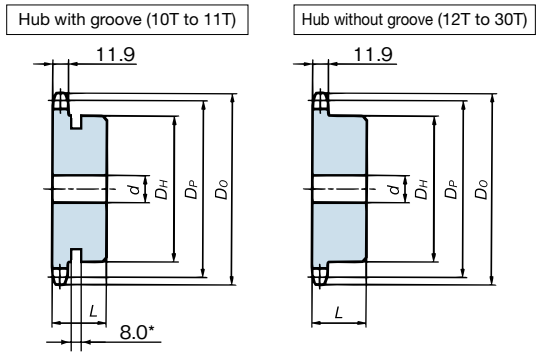
Model number	No. of teeth	Pitch circle dia. *Dp*	Outer dia. *Do*	Bore dia. *d*		Hub		Approx. mass kg
				Pilot bore	Max.	Dia. *DH*	Length *L*	
RS50-1B10T-SS	10	51.37	58	9.5	22	40	25	0.27
RS50-1B11T-SS	11	56.35	64	12.7	25	46	25	0.33
RS50-1B12T-SS	12	61.34	69	12.7	32	51	25	0.41
RS50-1B13T-SS	13	66.33	74	12.7	32	51	25	0.46
RS50-1B14T-SS	14	71.34	79	12.7	32	52	25	0.52
RS50-1B15T-SS	15	76.35	84	12.7	35	57	25	0.62
RS50-1B16T-SS	16	81.37	89	12.7	40	62	25	0.72
RS50-1B17T-SS	17	86.39	94	12.7	45.5	67	25	0.83
RS50-1B18T-SS	18	91.42	100	12.7	47.5	72	28	1.0
RS50-1B19T-SS	19	96.45	105	12.7	47.5	73	28	1.1
RS50-1B20T-SS	20	101.48	110	12.7	47.5	73	28	1.2
RS50-1B21T-SS	21	106.51	115	15.9	47.5	73	28	1.2
RS50-1B22T-SS	22	111.55	120	15.9	47.5	73	28	1.3
RS50-1B23T-SS	23	116.59	125	15.9	47.5	73	28	1.3
RS50-1B24T-SS	24	121.62	130	15.9	47.5	73	28	1.4
RS50-1B25T-SS	25	126.66	135	15.9	47.5	73	28	1.5
RS50-1B26T-SS	26	131.70	140	18	48	73	28	1.5
RS50-1B27T-SS	27	136.74	145	18	48	73	28	1.5
RS50-1B28T-SS	28	141.79	150	18	48	73	28	1.6
RS50-1B30T-SS	30	151.87	161	18	48	73	28	1.8
RS50-1B32T-SS	32	161.96	171	18	48	73	28	1.9
RS50-1B34T-SS	34	172.05	181	18	48	73	28	2.1
RS50-1B35T-SS	35	177.10	186	18	48	73	28	2.2
RS50-1B36T-SS	36	182.15	191	23	55	83	35	2.7
RS50-1B38T-SS	38	192.24	201	23	55	83	35	2.9
RS50-1B40T-SS	40	202.33	211	23	55	83	35	3.1
Material/specifications	Machined stainless steel							

All stainless steel models, except for wear-resistant items (made-to-order), are stocked.

See page 99 and beyond for Corrosion Resistant Roller Chain.

RS60 1B Type

Applicable chain pitch: 19.05mm Roller dia.: 11.91mm



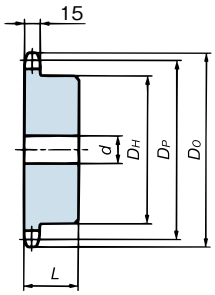
No. of teeth : Hub dia. : Groove dia.
10T : ϕ49 : ϕ37
11T : ϕ51 : ϕ45

*The groove is provided on the hub perimeter to prevent sprocket–chain interference.

Model number	No. of teeth	Pitch circle dia. *Dp*	Outer dia. *Do*	Bore dia. *d*		Hub		Approx. mass kg
				Pilot bore	Max.	Dia. *DH*	Length *L*	
RS60-1B10T-SS	10	61.65	70	12.7	30	49	32	0.49
RS60-1B11T-SS	11	67.62	76	12.7	32	51	32	0.60
RS60-1B12T-SS	12	73.60	83	12.7	32	51	32	0.69
RS60-1B13T-SS	13	79.60	89	15.9	35	57	32	0.81
RS60-1B14T-SS	14	85.61	95	15.9	39.5	62	32	0.96
RS60-1B15T-SS	15	91.63	101	15.9	45.5	68	32	1.1
RS60-1B16T-SS	16	97.65	107	15.9	47.5	73	32	1.3
RS60-1B17T-SS	17	103.67	113	15.9	47.5	73	32	1.4
RS60-1B18T-SS	18	109.70	119	15.9	55	83	40	2.0
RS60-1B19T-SS	19	115.74	126	15.9	55	83	40	2.1
RS60-1B20T-SS	20	121.78	132	15.9	55	83	40	2.2
RS60-1B21T-SS	21	127.82	138	15.9	55	83	40	2.3
RS60-1B22T-SS	22	133.86	144	15.9	55	83	40	2.5
RS60-1B23T-SS	23	139.90	150	18	55	83	40	2.5
RS60-1B24T-SS	24	145.95	156	18	55	83	40	2.6
RS60-1B25T-SS	25	151.99	162	18	55	83	40	2.7
RS60-1B26T-SS	26	158.04	168	18	55	83	40	2.9
RS60-1B27T-SS	27	164.09	174	18	55	83	40	3.0
RS60-1B28T-SS	28	170.14	180	18	55	83	40	3.1
RS60-1B30T-SS	30	182.25	193	18	55	83	40	3.4
Material/specifications	Machined stainless steel							

RS80 1B Type

Applicable chain pitch: 25.40mm Roller dia.: 15.88mm



Model number	No. of teeth	Pitch circle dia. *Dp*	Outer dia. *Do*	Bore dia. *d*		Hub		Approx. mass kg
				Pilot bore	Max.	Dia. *DH*	Length *L*	
RS80-1B10T-SS	10	82.20	93	15.9	32	52	40	0.97
RS80-1B11T-SS	11	90.16	102	15.9	38	60	40	1.2
RS80-1B12T-SS	12	98.14	110	19	46	67	40	1.5
RS80-1B13T-SS	13	106.14	118	19	50	77	40	1.9
RS80-1B14T-SS	14	114.15	127	19	50	77	40	2.0
RS80-1B15T-SS	15	122.17	135	19	63	93	40	2.6
RS80-1B16T-SS	16	130.20	143	19	63	93	40	2.8
RS80-1B17T-SS	17	138.23	151	19	63	93	40	3.0
RS80-1B18T-SS	18	146.27	159	19	63	93	40	3.2
RS80-1B19T-SS	19	154.32	167	23	63	93	40	3.4
RS80-1B20T-SS	20	162.37	176	23	63	93	40	3.6
RS80-1B21T-SS	21	170.42	184	23	63	93	40	3.8
RS80-1B22T-SS	22	178.48	192	28	75	107	45	4.8
RS80-1B23T-SS	23	186.54	200	28	75	107	45	5.1
RS80-1B24T-SS	24	194.60	208	28	75	107	45	5.4
RS80-1B25T-SS	25	202.66	216	28	75	107	45	5.6
Material/specifications	Machined stainless steel							

All stainless steel models, except for wear-resistant items (made-to-order), are stocked.

Sprockets RS Sprocket Engineering Plastic Type

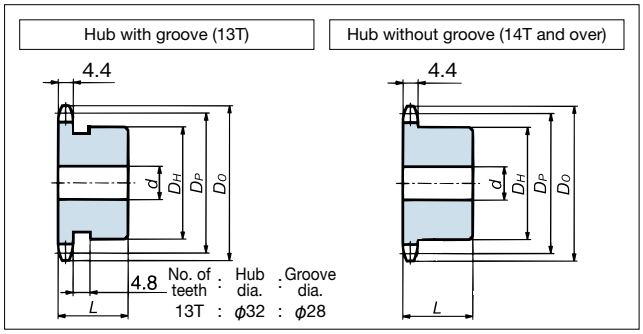


Engineering plastic type

Uses MC901 nylon (blue). Allows for lube-free operation.
(Chain speed less than 70 m/min recommended. Can be used up to 150 m/min in lubricated conditions.)

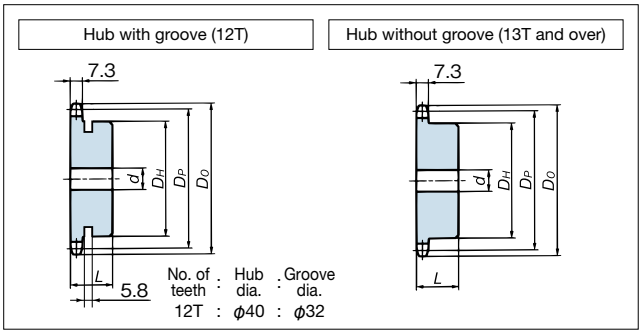
Available chain sizes : RS35 to RS60
Hub type : 1B

RS35



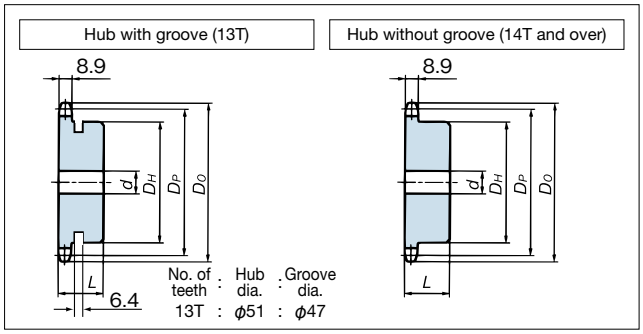
Model number	No. of teeth	Allowable transmission torque N·m	Pitch circle dia. Dp	Outer dia. Do	Bore dia. d		Hub		Approx. mass kg
					Pilot bore	Max.	Dia. DH	Length L	
RS35-1B13T-P	13	5.30	39.80	44	9.5	14	32	20	0.02
RS35-1B14T-P	14	5.69	42.80	46	9.5	15	30	20	0.02
RS35-1B15T-P	15	6.08	45.81	51	9.5	17	35	20	0.02
RS35-1B16T-P	16	6.47	48.82	53	9.5	19	37	20	0.03
RS35-1B17T-P	17	6.86	51.84	57	9.5	22	41	20	0.03
RS35-1B18T-P	18	7.26	54.85	60	12.7	22	44	20	0.04
RS35-1B20T-P	20	8.04	60.89	66	12.7	27	50	20	0.05
RS35-1B22T-P	22	8.83	66.93	72	12.7	28	53	20	0.06
RS35-1B24T-P	24	9.71	72.97	78	12.7	32	60	22	0.08
RS35-1B25T-P	25	10.1	76.00	81	12.7	32	60	22	0.08
RS35-1B26T-P	26	10.5	79.02	83	12.7	35	65	22	0.09
RS35-1B28T-P	28	11.3	85.07	90	12.7	40	70	22	0.10
RS35-1B30T-P	30	12.1	91.12	96	12.7	42	75	22	0.12

RS40



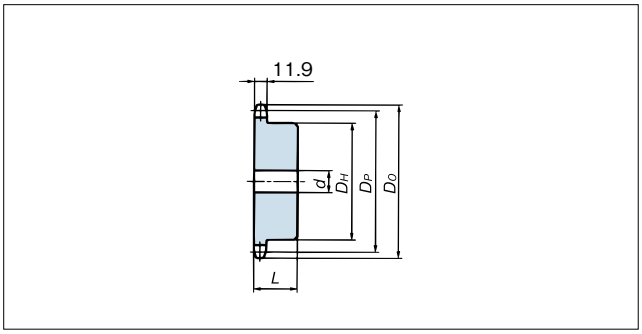
Model number	No. of teeth	Allowable transmission torque N·m	Pitch circle dia. Dp	Outer dia. Do	Bore dia. d		Hub		Approx. mass kg
					Pilot bore	Max.	Dia. DH	Length L	
RS40-1B12T-P	12	10.8	49.07	53	9.5	16	40	22	0.03
RS40-1B13T-P	13	11.7	53.07	58	12.7	18	37	22	0.04
RS40-1B14T-P	14	12.6	57.07	63	12.7	22	42	22	0.04
RS40-1B15T-P	15	13.4	61.08	67	12.7	25	46	22	0.05
RS40-1B16T-P	16	14.3	65.10	71	12.7	27	50	22	0.06
RS40-1B17T-P	17	15.3	69.12	75	12.7	28	54	22	0.07
RS40-1B18T-P	18	16.2	73.14	78	12.7	30	57	22	0.08
RS40-1B20T-P	20	17.9	81.18	88	12.7	35	67	25	0.11
RS40-1B22T-P	22	19.6	89.24	96	12.7	42	75	25	0.14
RS40-1B24T-P	24	21.5	97.30	104	12.7	50	80	25	0.16
RS40-1B25T-P	25	22.4	101.33	108	12.7	50	80	25	0.17
RS40-1B26T-P	26	23.2	105.36	112	12.7	52	85	25	0.18
RS40-1B28T-P	28	25.0	113.43	120	12.7	55	90	25	0.21
RS40-1B30T-P	30	26.8	121.50	128	12.7	60	100	25	0.26

RS50



Model number	No. of teeth	Allowable transmission torque N·m	Pitch circle dia. Dp	Outer dia. Do	Bore dia. d		Hub		Approx. mass kg
					Pilot bore	Max.	Dia. DH	Length L	
RS50-1B13T-P	13	22.8	66.34	73	12.7	25	51	25	0.07
RS50-1B14T-P	14	24.5	71.34	78	12.7	28	52	25	0.08
RS50-1B15T-P	15	26.2	76.35	83	12.7	30	57	25	0.09
RS50-1B16T-P	16	27.9	81.37	89	12.7	32	62	25	0.11
RS50-1B17T-P	17	29.6	86.39	93	12.7	35	67	25	0.12
RS50-1B18T-P	18	31.4	91.42	98	12.7	40	72	28	0.15
RS50-1B20T-P	20	34.8	101.48	110	15.9	50	80	28	0.20
RS50-1B22T-P	22	38.2	111.55	120	15.9	55	90	28	0.24
RS50-1B24T-P	24	41.8	121.62	130	15.9	60	100	28	0.29
RS50-1B25T-P	25	43.4	126.66	135	15.9	60	100	28	0.31
RS50-1B26T-P	26	45.2	131.70	140	18	65	110	28	0.34
RS50-1B28T-P	28	48.6	141.79	150	18	70	120	28	0.40
RS50-1B30T-P	30	52.2	151.87	161	18	70	120	28	0.43

RS60



Model number	No. of teeth	Allowable transmission torque N·m	Pitch circle dia. Dp	Outer dia. Do	Bore dia. d		Hub		Approx. mass kg
					Pilot bore	Max.	Dia. DH	Length L	
RS60-1B13T-P	13	41.0	79.60	88	15.9	30	57	32	0.12
RS60-1B14T-P	14	44.1	85.61	93	15.9	32	62	32	0.14
RS60-1B15T-P	15	47.2	91.62	99	15.9	35	68	32	0.16
RS60-1B16T-P	16	50.3	97.65	107	15.9	42	73	32	0.19
RS60-1B17T-P	17	53.3	103.67	113	15.9	50	80	32	0.21
RS60-1B18T-P	18	56.5	109.71	119	15.9	52	85	40	0.30
RS60-1B20T-P	20	62.7	121.78	132	15.9	60	95	40	0.38
RS60-1B22T-P	22	68.9	133.86	144	15.9	65	110	40	0.51
RS60-1B24T-P	24	75.1	145.95	156	18	70	120	40	0.57
RS60-1B25T-P	25	78.3	151.99	162	18	70	120	40	0.59
RS60-1B26T-P	26	81.4	158.04	168	18	70	120	40	0.62
RS60-1B28T-P	28	87.6	170.14	180	18	70	120	40	0.65
RS60-1B30T-P	30	93.8	182.25	193	18	70	120	40	0.70

All items are made-to-order.

Sprockets RS Sprocket Fit Bore



Features

Smart There are codes for the types of finishing, making ordering by model number accurate.

Smooth The customer does not need to create a drawing when ordering. We can also provide drawings for checking specifications.

Speedy Can be used as-is when received.

Steps to Take in Considering Additional Bore Finishing

1. Check for Fit Bore stocked products (page 134).
2. Check for Fit Bore short-delivery or made-to-order products (from pages 135 to 136).
3. Customized shaft bore machining other than the above is also available. Contact a Tsubaki representative for a quote.

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Sprockets RS Sprocket Fit Bore

Fit Bore Model Number and Machining Designations

Chain model number	Shaft bore machining		Keyway/tap				Surface treatment
RS80-1B20TQ -	H	030	N -	J	08	D2 M06 -	B
	①	②	③	④	⑤	⑥ ⑦	⑧

Chain model number (available sizes)

RS sprockets

- 1-strand RS35 to RS240
- SD RS40 to RS80
- RS sprockets B series
- 2-strand (2B) RS35 to RS240
- 1-strand stainless steel RS35 to RS80

Shaft bore machining

① Shaft bore tolerance

Tsubaki standard

G ➡ G7 H ➡ H7

M ➡ M7 Note: Grade 7 only.



Bore machining

② Shaft bore diameter

③ Chamfer symbol

N ➡ Tsubaki standard (see table below)

A ➡ C1

B ➡ C2

C ➡ C3

Applicable shaft bore dia. (mm)	Chamfer amount
10 – 20	C1
21 – 32	C1.2
33 – 50	C1.6
51 – 80	C2.5
81 – 170	C3

Note: For type A sprockets with no keyway, the shaft bore chamfer amount is half the values shown above.

Available chamfers

Shaft bore dia.	Available chamfer amounts			
10 – 17	N	A	—	—
18 – 44	N	A	B	—
45 – 170	N	A	B	C

Note: Some chamfer amounts may not be available depending on size and hub type. Check the Tsubaki power transmission products information site.

Keyway/tap

④ Keyway width tolerance and grade

Tsubaki standard

J ➡ Js9 F ➡ F7 P ➡ P9

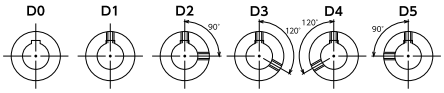
E ➡ E9 W ➡ No keyway

⑤ Keyway width

Specify using a 2-digit integer

• For no keyway, specify W 00.

⑥ Number of taps and arrangement





Keyway machining



Tapped hole drilling

⑦ Tapped hole size

Specify using a 2-digit integer • With set screw

• For no taps, specify D0 M00.
• Tapped hole sizes larger or smaller than Tsubaki standard size are available. However, for size M4 or larger, make sure not to exceed keyway width (details below).

For Js9/P9 (new JIS standards)

Applicable shaft bore dia. (mm)	Keyway width (mm)	**Tsubaki standard size**	Available sizes
10 – 12	4	M4	–
12 – 17	5	M5	M4
17 – 22	6	M6	M5
22 – 30	8	M6	M5, M8
30 – 38	10	M8	M6, M10
38 – 44	12	M8	M6, M10
44 – 50	14	M8	M6, M10
50 – 58	16	M10	M8, M12
58 – 65	18	M10	M8, M12
65 – 75	20	M12	M10, M16
75 – 85	22	M12	M10, M16
85 – 95	25	M16	M12, M20
95 – 110	28	M16	M12, M20
110 – 130	32	M20	M16
130 – 150	36	M20	M16
150 – 170	40	M20	M16
170 – (200)	45	M24	M20

For F7/E9 (old JIS standards)

Applicable shaft bore dia. (mm)	Keyway width (mm)	**Tsubaki standard size**	Available sizes
10 – 13	4	M4	–
14 – 20	5	M5	M4
21 – 30	7	M6	M5
31 – 40	10	M8	M6, M10
41 – 50	12	M8	M6, M10
51 – 60	15	M8	M6, M10
61 – 70	18	M10	M8, M12
71 – 80	20	M12	M10, M16
81 – 95	24	M12	M10, M16
96 – 110	28	M16	M12, M20
111 – 125	32	M20	M16
126 – 140	35	M20	M16
141 – 160	38	M20	M16
161 – 170	42	M20	M16

⑧ Surface treatment

B ➡ Black oxide treatment

K ➡ Electroless nickel-phosphorous plating

C ➡ Electrogalvanized trivalent chromate

Note: Black oxide treatment is also applied to additionally machined portions (bore, keyway, tap hole).

Set Screw Specifications



- Steel cup point set screws with hexagonal hole
- Use plated set screws, or stainless steel screws with stainless steel sprockets

Fit Bore Products ① — Stock Items

Selected Fit Bore sprockets are pre-processed with frequently requested machining options and maintained as stock items available for immediate delivery.

Specifications (Refer to page 133 for machining based on Tsubaki standard specifications)

Tooth hardening — All models have hardened teeth.

Bore — Features bore diameters often required by motors, reducers, etc. Finished to H7 tolerance.

Surface treatment — No surface treatment is applied to any model.

Keyway — Finished to tooth valley standards based on (JIS B1301-2009 new JIS standards) normal type parallel key (Js9).

Tapped hole drilling — All models come with set screws in two locations (above the keyway and at 90°, or at 120° if bore hole is finished to over ϕ40 mm).

RS35

No. of teeth	Finished bore dia. ϕ d mm Tolerance (H7)																
	10	12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38
9	◇																
10	◇	◇															
11	◇	◇	◇														
12	◇	◇	◇	◇	◇												
13	◇	◇	◇	◇		◇	◇										
14	◇	◇	◇	◇	◇												
15	◇	◇	◇	◇	◇	◇	◇	◇									
16	◇	◇	◇	◇	◇	◇	◇	◇	◇								
17		◇	◇	◇	◇	◇	◇	◇	◇	◇	◇						
18		◇	◇	◇	◇	◇	◇	◇	◇	◇	◇						
19		◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇				
20		◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇			
21		◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		
22		◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		
23		◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		
24		◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		
25				◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		
26				◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		
27				◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		
28				◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		
30				◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		
32				◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		
34				◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		
35				◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		
36				◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		
38									◇	◇	◇	◇	◇	◇	◇	◇	◇
40									◇	◇	◇	◇	◇	◇	◇	◇	◇

RS40

No. of teeth	Finished bore dia. ϕ d mm Tolerance (H7)																						
	10	12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48
9	◇	◇	◇	◇																	
10	◇	◇	◇	◇	◇																
11	◇	◇	◇	◇	◇	◇	◇	◇	◇												
12	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇											
13		◇	◇	◇	◇	◇	◇	◇	◇												
14		◇	◇	◇	◇	◇	◇	◇	◇	◇	◇										
15		◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇								
16			◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇							
17			◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇						
18			◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇					
19			◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇				
20			◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	
21			◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	
22			◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
23			◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
24			◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		
25			◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		
26			◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		
27			◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		
28			◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		
30			◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		
32									◇	◇	◇	◇	◇	◇	◇	◇		◇			
34									◇	◇	◇	◇	◇	◇	◇	◇		◇			
35									◇	◇	◇	◇	◇	◇	◇	◇		◇			
36									◇	◇	◇	◇	◇	◇	◇	◇		◇			
38											◇	◇	◇	◇	◇	◇		◇			
40											◇	◇	◇	◇	◇	◇		◇			

RS50

No. of teeth	Finished bore dia. ϕ d mm Tolerance (H7)																
	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45
9			◇	◇	◇	◇												
10		◇	◇	◇	◇	◇	◇	◇										
11		◇	◇	◇	◇	◇	◇	◇	◇	◇								
12		◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇					
13	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇					
14	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇					
15	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇				
16	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		
17	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
18	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
19	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
20	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
21				◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
22				◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
23				◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
24				◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
25				◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
26										◇	◇	◇	◇	◇	◇	◇		◇
27										◇	◇	◇	◇	◇	◇	◇		◇
28										◇	◇	◇	◇	◇	◇	◇	◇	◇
30										◇	◇	◇	◇	◇	◇	◇		◇
32										◇	◇	◇	◇	◇	◇	◇		◇
34										◇	◇	◇	◇	◇	◇	◇		◇
35										◇	◇	◇	◇	◇	◇	◇		◇

RS60

No. of teeth	Finished bore dia. ϕ d mm Tolerance (H7)															
	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55
9	◇	◇	◇	◇												
10	◇	◇	◇	◇	◇	◇	◇									
11	◇	◇	◇	◇	◇	◇	◇	◇								
12	◇	◇	◇	◇	◇	◇	◇	◇								
13	◇	◇	◇	◇	◇	◇	◇	◇	◇							
14	◇	◇	◇	◇	◇	◇	◇	◇	◇							
15	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇				
16	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇				
17	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇				
18	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
19	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
20	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
21		◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
22		◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
23		◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
24		◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
25		◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
26		◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
27			◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	
28			◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	
30			◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	

RS80

No. of teeth	Finished bore dia. ϕ d mm Tolerance (H7)												
	24	25	28	30	32	35	38	40	42	45	48	50	55	60
9		◇	◇	◇	◇	◇								
10		◇	◇	◇	◇									
11		◇	◇	◇	◇	◇	◇							
12		◇	◇	◇	◇	◇	◇	◇	◇	◇				
13		◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		
14		◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		
15		◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
16	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
17		◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
18		◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
19		◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
20		◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
21		◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇

RS100

No. of teeth	Finished bore dia. ϕ d mm Tolerance (H7)												
	25	28	30	32	35	38	40	42	45	48	50	55	60
10	◇	◇	◇	◇	◇	◇	◇	◇					
11	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		
12	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	
13	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	
14	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	
15				◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
16						◇			◇		◇	◇	◇
17						◇			◇		◇		◇
18						◇			◇		◇		◇
19						◇			◇		◇		◇
20						◇			◇		◇		◇
21									◇		◇		◇

RS Sprocket Fit Bore

Fit Bore Products ② — Quick Delivery Items

Stock items with standard pilot bores to which additional processes can be applied.
When ordering, confirm that the model with your desired pilot bore is in stock.

◎…Models to which a surface treatment can be applied ○…Models for which shaft bores can be machined (no surface treatments)

Models with hardened teeth

Models without hardened teeth (and not suitable for teeth to be hardened)

Models without hardened teeth (but optional teeth hardening can be applied)

■ RS sprockets

Model/ no. of teeth	Steel																													Stainless steel					Model/ no. of teeth
	35	40					50					60					80					100				120			140	160	35	40	50	60	80	
	1B	1A	1B	1C	SD	2B	1A	1B	1C	SD	2B	1A	1B	1C	SD	2B	1A	1B	1C	SD	2B	1A	1B	1C	2B	1A	1B	2B	1B	1B	1B	1B	1B	1B	1B	
9	◎		◎					◎					◎					○																	9
10	◎		◎					◎					◎					○					○				○		○	○	○	○	○	○	○	10
11	◎		◎					◎					◎					○					○				○		○	○	○	○	○	○	○	11
12	◎	◎	◎		◎	◎	◎	◎		◎	◎	◎	◎		◎	◎	○	○		○	○	○	○		○		○	○	○	○	○	○	○	○	○	12
13	◎	◎	◎		◎	◎	◎	◎		◎	◎	◎	◎		◎	◎	○	○		○	○	○	○		○	○	○	○	○	○	○	○	○	○	○	13
14	◎	◎	◎		◎	◎	◎	◎		◎	◎	◎	◎		◎	◎	○	○		○	○	○	○		○	○	○	○	○	○	○	○	○	○	○	14
15	◎	◎	◎		◎	◎	◎	◎		◎	◎	◎	◎		◎	◎	○	○		○	○	○	○		○	○	○	○	○	○	○	○	○	○	○	15
16	◎	◎	◎		◎	◎	◎	◎		◎	◎	◎	◎		◎	◎	○	○		○	○	○	○		○	○	○	○	○	○	○	○	○	○	○	16
17	◎	◎	◎		◎	◎	◎	◎		◎	◎	◎	◎		◎	◎	○	○		○	○	○	○		○	○	○	○	○	○	○	○	○	○	○	17
18	◎	◎	◎		◎	◎	◎	◎		◎	◎	◎	◎		◎	◎	○	○		○	○	○	○		○	○	○	○	○	○	○	○	○	○	○	18
19	◎	◎	◎		◎	◎	◎	◎		◎	◎	◎	◎		◎	◎	○	○			○	○	○		○	○	○	○	○	○	○	○	○	○	○	19
20	◎	◎	◎		◎	◎	◎	◎		◎	◎	◎	◎		◎	◎	○	○			○	○	○		○	○	○	○	○	○	○	○	○	○	○	20
21	◎	◎	◎		◎	◎	◎	◎		◎	◎	◎	◎		◎	◎	○	○			○	○	○		○	○	○	○	○	○	○	○	○	○	○	21
22	◎	◎	◎		◎	◎	◎	◎		◎	◎	◎	◎		◎	◎	○	○	○		○	○	○	○			○		○	○	○	○	○	○	○	22
23	◎	◎	◎		◎	◎	◎	◎		◎	◎	◎	◎		◎	○	○	○	○		○	○	○								○	○	○	○	○	23
24	◎	◎	◎		◎	◎	◎	◎		◎	◎	◎	◎		◎	○	○	○	○		○	○	○	○	○		○	○	○	○	○	○	○	○	○	24
25	◎	◎	◎		◎	◎	◎	◎		◎	◎	◎	◎		◎	○	○	○	○		○	○	○	○			○		○	○	○	○	○	○	○	25
26	◎	◎	◎			◎	◎	◎			◎	◎	◎			○	○	○	○		○	○	○	○			○		○	○	○	○	○	○		26
27	◎	◎	◎				◎	◎				◎	◎				○	○	○			○	○								○	○	○	○		27
28	◎	◎	◎				◎	◎				◎	◎	◎			○	○	○			○	○	○			○				○	○	○	○		28
30	◎	◎	◎			◎	◎	◎			◎	◎	◎	◎		◎	○	○	○		○	○	○	○	○		○	○	○	○	○	○	○	○		30
32	◎	◎	◎				◎	◎				◎	◎	◎			○	○	○			○	○	○			○				○	○	○			32
34	◎	◎	◎				◎	◎				◎	◎	◎			○	○	○			○									○	○	○			34
35	◎	◎	◎			◎	◎	◎			◎	◎	◎	◎		◎	○	○	○		○	○	○	○	○		○	○	○	○	○	○	○			35
36	◎	◎	◎	◎			◎	◎	◎			◎	◎	◎			○	○	○			○	○	○			○				○	○	○			36
38	◎	◎	◎	◎			◎	◎	◎			◎	◎	◎			○	○	○												○	○	○			38
40	◎	◎	◎	◎		◎	◎	◎	◎		◎	◎	◎	◎		◎	○	○	○		○	○	○	○	○		○		○		○	○	○			40
42	◎	◎	◎	◎			◎	◎	◎			◎	◎	◎			○	○	○																	42
45	◎	◎	◎	◎		◎	◎	◎	◎		◎	◎	◎	◎		◎	○	○	○		○	○	○	○	○		○									45
48	◎	◎	◎	◎			◎	◎	◎			○	○	○			○	○	○			○	○	○			○									48
50	◎	◎	◎	◎			◎	◎	◎			○	○	○			○	○	○																	50
54	◎	◎	◎	◎		◎	◎	◎	◎		◎	○	○	○		○	○	○	○		○	○	○	○												54
60	◎	◎	◎	◎		◎	○	○	○		○	○	○	○		○	○	○	○		○	○	○	○												60
65	◎	◎	◎	◎			○	○	○			○	○	○			○	○	○																	65
70	◎	◎	◎	◎			○	○	○			○	○	○			○	○	○			○		○												70
75	◎	○	○	○			○	○	○			○	○	○			○	○	○			○		○												75

Fit Bore Products ③ — Made-to-Order Items

○…Models for which shaft bores can be machined (no surface treatments)
△…Models for which shaft bores can be machined (limited machining options apply)
Models with hardened teeth
Models without hardened teeth (and not suitable for teeth to be hardened)
Models without hardened teeth (but optional teeth hardening can be applied)

■ RS sprockets

Model/ no. of teeth	Steel																																											Model/ no. of teeth
	40				50				60			80			100						120						140			160			180			200			240			
	1C	2A	2B	2C	1C	2A	2B	2C	2A	2B	2C	2A	2B	2C	1A	1B	1C	2A	2B	2C	1A	1B	1C	2A	2B	2C	1A	1B	1C	1A	1B	1C	1A	1B	1C	1A	1B	1C	1A	1B	1C	
10																											○			○														10
11																											○			○			○	△		○	△		○	△		11
12																					○						○			○			○	△		○	○		○	○		12
13																											○			○			○	○		○	○		○	○		13
14																								○		△	○			○			○	○		○	○		○	○		14
15																		○		△				○		△	○			○			○	○		○	○		○		△	15
16																		○		△				○		△	○			○			○	○		○	○		○		△	16
17																		○		△				○		△	○			○			○	○		○	○		○		△	17
18												○		△				○		△				○		△	○			○			○	○		○	○		○		△	18
19												○		△				○		△				○		△	○			○			○	○		○		△	○		○	19
20												○		△				○		△				○		△	○			○			○	○		○		△	○		○	20
21												○		△				○		△				○		△	○			○		△	○			○	○		○		○	21
22												○		△				○	○	△	○		△	○	△	△	○		○	○		△	○			○	○		○		○	22
23								○		△	○		△			○		○	○	△	○	○	△	○	△	△	○	○	○	○	○	△	○		○	○		○		○	23
24								○		△	○		△					○		△	○		△	○		△	○		○	○		△	○		○	○		○		○	24
25								○		△	○		△					○	○	△	○		△	○	△	△	○		○	○		△	○		○	○		○		○	25
26						○		○	○		△	○		△				○	○	△	○		△	○	△	△	○		○	○		△	○		○	○		○		○	26
27			△			○	○	○	○	△	△	○	○	△			○	○	○	△	○	○	△	○	△	△	○	○	○	○	○	△	○		○	○		○		○	27
28	○		△		△	○	○	△	○	△	△	○	○	△				○	○	△	○		△	○	○	△	○	○	○	○	○	△	○		○	○		○		○	28
30	○				△	○		△	○		△	○		△				○		△	○		△	○		△	○		○	○		△	○		○	○		○		○	30
32	○		○		△	○	○	△	○	△	△	○	○	△				○	○	△	○		○	○	△	△	○	○	○	○	○	○	○		○	○		○		○	32
34	○		○		△	○	○	△	○	△	△	○	○	△	○	○	○	○	○	△	○	○	○	○	△	△	○	○	○	○	○	○	○		○	○		○		○	34
35	○	○		○	△	○		△	○		△	○		△				○		△	○		○	○		△	○		○	○		○	○		○	○		○		○	35
36		○	○	○		○	○	△	○	△	△	○	○	△				○	○	△	○		○	○	△	△	○	○	○	○		○	○		○	○		○		○	36
38		○	○	○		○	△	△	○	△	△	○	○	△	○	○	○	○	○	△	○	○	○	○	△	△	○	○	○	○		○	○		○	○		○		○	38
40		○		○		○		△	○		△	○		△				○	○	△	○		○	○	○	○	○		○	○		○	○		○	○		○		○	40
42		○	○	○		○	○	△	○	○	△	○	○	△	○	○	○	○	○	△	○	○	○	○	○	○	○	○	○	○		○	○		○	○		○		○	42
45		○		○		○		△	○		△	○		△				○	○	△	○		○	○	○	○	○		○	○		○	○		○	○		○		○	45
48		○	○	○		○	○	△	○	○	△	○	○	△				○	○	△	○		○	○	○	○	○		○	○		○	○		○	○		○		○	48
50		○	○	○		○	○	△	○	○	△	○	○	△	○	○	○	○	○	△	○	○	○	○	○	○	○	○	○	○		○	○		○	○		○		○	50
54		○		○		○		△	○		△	○		△				○	○	△	○	○	○	○	○	○	○	○	○	○		○	○		○	○		○		○	54
60		○		○		○		△	○		△	○		△				○	○	△	○	○	○	○	○	○	○	○	○	○		○	○		○	○		○		△	60
65															○	○	○				○	○	○																			65
70																○					○	○	○																			70
75																○					○	○	○																			75

■ RS sprockets B series

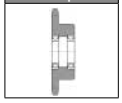
Model/ no. of teeth	Steel													
	06B	08B			10B			12B			16B			
	1B	1A	1B	2B	1A	1B	2B	1A	1B	2B	1A	1B	2B	
9	△		○			○			△			○		
10	○		○			△			△			○		
11	○		○			△			○			○		
12	○	○	△	○	○	△	○	○	○	○	○	○	○	△
13	○	○	○	○	○	△	○	○	○	○	○	○	○	△
14	○	○	○	○	○	○	○	○	○	○	○	○	○	△
15	○	○	○	○	○	○	○	○	○	○	○	○	○	△
16	○	○	○	○	○	○	○	○	○	○	○	○	○	○
17	○	○	○	○	○	○	○	○	○	○	○	○	○	△
18	○	○	○	○	○	○	○	○	○	○	○	○	○	○
19	○	○	○	○	○	○	○	○	○	○	○	○	○	○
20	○	○	○	○	○	○	○	○	○	○	○	○	○	△
21	○	○	○	○	○	○	○	○	○	○	○	○	○	△
22	○	○	○	△	○	○	○	○	○	○	○	○	○	△
23	○	○	○	△	○	○	○	○	○	○	○	○	○	△
24	○	○	○	△	○	○	○	○	○	○	○	○	○	△
25	○	○	○	△	○	○	○	○	○	○	○	○	○	△

Model/ no. of teeth	Steel													
	06B	08B			10B			12B			16B			
	1B	1A	1B	2B	1A	1B	2B	1A	1B	2B	1A	1B	2B	
26	○	○	○	△	○	○	○	○	○	○	○	○	△	
27	○	○	○	△	○	○	○	○	○	○	○	○	△	
28	○	○	○	△	○	○	○	○	○	○	○	○	△	
30	○	○	○	△	○	○	○	○	○	○	○	○	△	
32	○	○	○	○	○	○	○	○	○	△	○	○	△	
34	○	○	○	○	○	○	○	○	○	△	○	○	△	
35	○	○	○	○	○	○	○	○	○	△	○	○	△	
36	○	○	○	○	○	○	○	○	○	△	○	○	△	
38	○	○	○	○	○	○	○	○	○	△	○	○	△	
40	○	○	○	○	○	○	○	○	○	△	○	○	○	
42	○	○	○	○	○	○	○	○	○	○	○	○	○	
45	○	○	○	○	○	○	○	○	○	○	○	○	○	
48	○	○	○	○	○	○	○	○	○	○	○	○	○	
50	○	○	○	○	○	○	○	○	○	○	○	○	○	
54	○	○	○	○	○	○	○	○	○	○	○	○	○	
60	○	○	○	○	○	○	○	○	○	○	○	○	○	

Sprockets RS Sprocket Fit Bore BR Type

Fit Bore Model Number and Machining Designations

Chain model number: **RS60-1B20TQ** - Additional machining: **BR001 - H 06007 W N - K**

- Shape: 
- Housing bore tolerance: H: H7
- Bearing nominal number: "0" + bearing nominal number
- Number of bearings: W: Two
- With/without bearing: N: Without bearing
- Surface treatment: [Blank]: None; B: Blackening; K: Autocatalytic nickel-phosphorous coating; C: Electroplated zinc coating

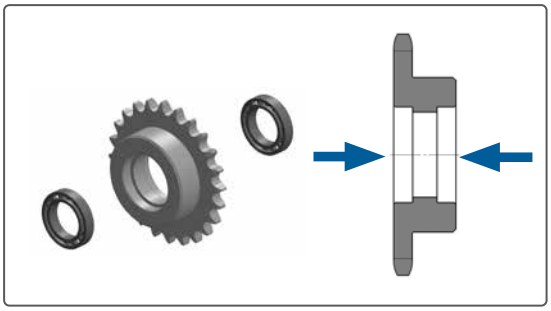
Chain model number (available sizes)

RS sprockets ▶ 1-strand B type **RS35** to **RS160**

Machining

The sprocket bore is machined so that single-row deep-groove ball bearings can be inserted from both ends (right diagram).

Note: Bearings are not included. Please purchase them separately.



Available sprockets

How to designate a model number

❶ Select the sprocket model number.

❷ Confirm the shaft diameter.

❸ Select the bearing nominal number.
RS60-1B□TQ-BR001-H0□□□□WN
Note: Fill in the four-digit bearing nominal number in the blank squares □.

Model no.	No. of teeth	Bearing inner diameter 10	12	15	17	20	25	30	35	40	45	50
RS35	14		6901									
	15	6000	6001	6902	6903							
	16											
	17					6804						
	18			6002								
	19											
	20					6904	6805					
	21											
RS40	13		6001									
	14				6903							
	15		6201	6002	6003	6904						
	16						6805					
	17							6806				
	18						6905					
	19							6906	6807	6808		
	20											
	21											
RS50	14			6202	6003	6904						
	15						6905	6906				
	16											
	17											
	18			6302	6203	6004	6005	6006	6907			
	19											
	20											
	21											
RS60	13				6203	6004						
	14				6303		6005					
	15					6204	6205	6006	6907			
	16											
	17							6206	6007	6908	6909	
	18											
	19											
	20											
	21											
RS80	12						6205					
	13								6007			
	14						6305	6206				
	15								6207	6008	6009	6910
	16											
	17											
	18											
	19											
	20											
	21											

Model no.	No. of teeth	Bearing inner diameter 30	35	40	45	50	55	60	65	70
RS100	13	6206								
	14									
	15	6306	6207	6208	6009	6010				
	16									
	17									
	18		6307		6209					
	19									
	20									
	21						6911			
RS120	11	6306	6207							
	12			6208						
	13									
	14		6307		6209					
	15			6308		6210	6011	6012		
	16									
	17									
	18									
	19									
	20						6211		6013	6914
	21									
RS140	12		6307	6308	6209					
	13									
	14		6407		6309	6210	6211	6012		
	15									
	16									
	17									
	18									
	19									
	20			6408		6310		6212	6013	
	21									
RS160	11			6308						
	12									
	13				6309					
	14						6211			
	15									
	16									
	17			6408		6310		6212		
	18									
	19				6409		6311		6213	6014
	20									
	21									

Reference

■ Allowable bore dimensional tolerances (Taken from JIS B0401-2:2016)

Unit: μm

Bore classification mm		G7		H6		H7		H8		M7		N7		P7		R7	
More than	Up to	Above	Below	Above	Below	Above	Below	Above	Below	Above	Below	Above	Below	Above	Below	Above	Below
3	6	+ 16	+ 4	+ 8	0	+ 12	0	+ 18	0	+ 0	− 12	− 4	− 16	− 8	− 20	− 11	− 23
6	10	+ 20	+ 5	+ 9	0	+ 15	0	+ 22	0	+ 0	− 15	− 4	− 19	− 9	− 24	− 13	− 28
10	18	+ 24	+ 6	+ 11	0	+ 18	0	+ 27	0	+ 0	− 18	− 5	− 23	− 11	− 29	− 16	− 34
18	30	+ 28	+ 7	+ 13	0	+ 21	0	+ 33	0	+ 0	− 21	− 7	− 28	− 14	− 35	− 20	− 41
30	40	+ 34	+ 9	+ 16	0	+ 25	0	+ 39	0	+ 0	− 25	− 8	− 33	− 17	− 42	− 25	− 50
40	50																
50	65	+ 40	+ 10	+ 19	0	+ 30	0	+ 46	0	+ 0	− 30	− 9	− 39	− 21	− 51	− 30	− 60
65	80															− 32	− 62
80	100	+ 47	+ 12	+ 22	0	+ 35	0	+ 54	0	+ 0	− 35	− 10	− 45	− 24	− 59	− 38	− 73
100	120															− 41	− 76
120	140	+ 54	+ 14	+ 25	0	+ 40	0	+ 63	0	+ 0	− 40	− 12	− 52	− 28	− 68	− 48	− 88
140	160															− 50	− 90
160	180															− 53	− 93
180	200	+ 61	+ 15	+ 29	0	+ 46	0	+ 72	0	+ 0	− 46	− 147	− 60	− 33	− 79	− 60	− 106
200	225															− 63	− 109
225	250															− 67	− 113
250	280	+ 69	+ 17	+ 32	0	+ 52	0	+ 81	0	+ 0	− 52	− 14	− 66	− 36	− 88	− 74	− 126
280	315															− 78	− 130
315	355	+ 75	+ 18	+ 36	0	+ 57	0	+ 89	0	+ 0	− 57	− 16	− 73	− 41	− 98	− 87	− 144
355	400															− 93	− 150
400	450	+ 83	+ 20	+ 40	0	+ 63	0	+ 97	0	+ 0	− 63	− 17	− 80	− 45	− 108	− 103	− 166
450	500															− 109	− 172

■ Tsubaki standard keyway dimensions and tolerances

Unit: mm

Applicable shaft dia.	Keyway width	Tolerance (Js9)	Tolerance (P9)	Keyway depth	Tolerance	Set screw
d	KW			KH		MX
10 and up to 12	4	± 0.0150	− 0.012 − 0.042	1.8	+ 0.1 0	M4
More than 12 up to 17	5			2.3		M5
More than 17 up to 22	6			2.8		M6
More than 22 up to 30	8	± 0.0180	− 0.015 − 0.051	3.3	+ 0.2 0	
More than 30 up to 38	10			3.3		M8
More than 38 up to 44	12	± 0.0215	− 0.018 − 0.061	3.3		
More than 44 up to 50	14			3.8		
More than 50 up to 58	16			4.3		M10
More than 58 up to 65	18			4.4		
More than 65 up to 75	20	± 0.0260	− 0.022 − 0.074	4.9		M12
More than 75 up to 85	22			5.4		
More than 85 up to 95	25			5.4		M16
More than 95 up to 110	28			6.4		
More than 110 up to 130	32	± 0.0310	− 0.026 − 0.088	7.4		M20
More than 130 up to 150	36			8.4	+ 0.3 0	
More than 150 up to 170	40			9.4		
More than 170 up to 200	45			10.4		M24
More than 200 up to 230	50			11.4		
More than 230 up to 260	56	± 0.0370	− 0.032 − 0.106	12.4		—
More than 260 up to 290	63			12.4		—
More than 290 up to 330	70			14.4		—
More than 330 up to 380	80			15.4		—
More than 380 up to 440	90	± 0.0435	− 0.037 − 0.124	17.4		—
More than 440 up to 500	100			19.5		—

Applicable shaft dia.	Keyway width	Tolerance (F7)	Tolerance (P9)	Keyway depth	Tolerance	Set screw
d	KW			KH		MX
10 and up to 13	4	+ 0.022 + 0.010	+ 0.050 + 0.020	1.5	+ 0.1 0	M4
More than 13 up to 20	5			2.0		M5
More than 20 up to 30	7	+ 0.028 + 0.013	+ 0.061 + 0.025	3.0		M6
More than 30 up to 40	10			3.5		
More than 40 up to 50	12	+ 0.034 + 0.016	+ 0.075 + 0.032	3.5		M8
More than 50 up to 60	15			5.0		
More than 60 up to 70	18			6.0		M10
More than 70 up to 80	20	+ 0.041 + 0.020	+ 0.092 + 0.040	6.0		M12
More than 80 up to 95	24			8.0		
More than 95 up to 110	28			9.0		M16
More than 110 up to 125	32	+ 0.050 + 0.025	+ 0.112 + 0.050	10.0		M20
More than 125 up to 140	35			11.0	+ 0.15 0	
More than 140 up to 160	38			12.0		
More than 160 up to 180	42			13.0		
More than 180 up to 200	45			14.0		M24
More than 200 up to 224	50			15.5		
More than 224 up to 250	56	+ 0.060 + 0.030	+ 0.134 + 0.060	17.5		
More than 250 up to 280	63			20.0		—
More than 280 up to 315	71			22.5	+ 0.2 0	—
More than 315 up to 355	80			25.0		—
More than 355 up to 400	90	+ 0.071 + 0.036	+ 0.159 + 0.072	28.0		—
More than 400 up to 450	100			31.5		—
More than 450 up to 500	112			35.5		—

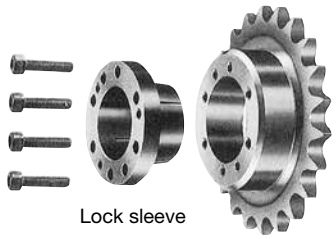
Note: Based on new JIS standards (B1301-2009) and old JIS standards (B1301-1959).

Sprockets Lock Sprocket (with keyless locking device) S Type

Lock Sprockets are sprockets with integrated keyless friction type integrated couplings.

Available models: RS35 to RS100 1B type RS sprockets Note: All models are made-to-order.

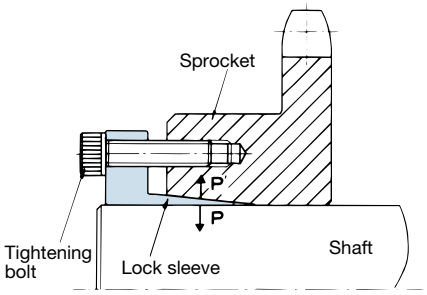
Features



- No wobbling after mounting (tightening)
- Easy phase alignment
- Easy mounting and dismounting
- No retainers required

Tightening Principle

The inner diameter of the sprocket and the outer diameter of the lock sleeve are tapered. When the mounting bolts are tightened, the sprocket will slide and move up on the tapered surface. A wedge action will generate force P and force P' in the radial direction to press on the shaft and tapered inner side, and frictional force will tightly secure the sprocket and shaft.

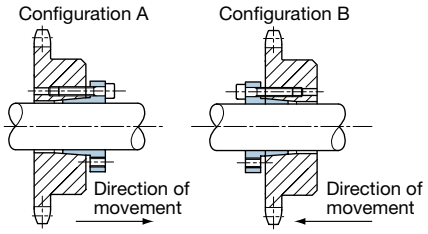


Bolt Tightening Positions

The same sleeve is used for all models, so some holes may not be used. Check the installation guide that comes with the product before attaching the mounting bolts for use.

Direction of Sprocket Movement when Tightening Bolts

When mounting an S Type Lock Sprocket, the sprocket will move 0.5 to 1.0mm in the direction of the shaft between the time the sprocket is initially secured and the time the sprocket is tightened. Therefore, take this movement into consideration when centering the sprocket. The amount of sprocket movement varies with the type. (See the illustration on the right.)

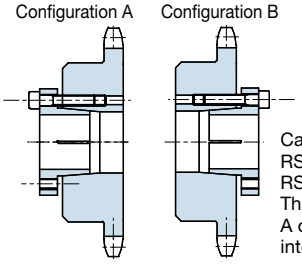


General Precautions

1) Allowable transmission torque:
Ensure that the load torque does not exceed the specified transmission torque in the dimension table.
2) Shaft diameter tolerance and surface roughness:
Use a shaft diameter tolerance of h8 and a surface roughness of 3.2 μm Ra as your standards.
3) Mounting to shafts provided with keyways or D-shaped shafts:
The allowable transmission torque will decrease by 10% when mounting the sprocket to a shaft provided with a finished keyway, such as a motor shaft, or to a D-shaped shaft.
4) Mounting to cold finished carbon steel bars:
The allowable transmission torque will decrease by 10% when mounting the sprocket to a cold finished carbon steel bar (drawn steel with an allowable diameter of 8 to 10 class).
5) Ensure that the shaft is a solid shaft using S35C grade or higher steel.
6) Operating temperature range: -20 to 200°C
7) Always use a torque wrench when tightening the bolts. (Refer to the torque wrench operation manual for proper use.)
8) Do not use any locking bolt other than the ones provided with this product, or it could cause an accident, such as breakage of the bolt. If you need new bolts due to loss, replacement, etc., please contact a Tsubaki representative.

Ordering S Type Lock Sprockets

Sleeve mounting configuration



Caution regarding sleeve mounting:
RS35-1B19TQ-S33□□
RS40-1B15TQ-S33□□
The above models can use configuration A only, as configuration B will cause interference with the chain.

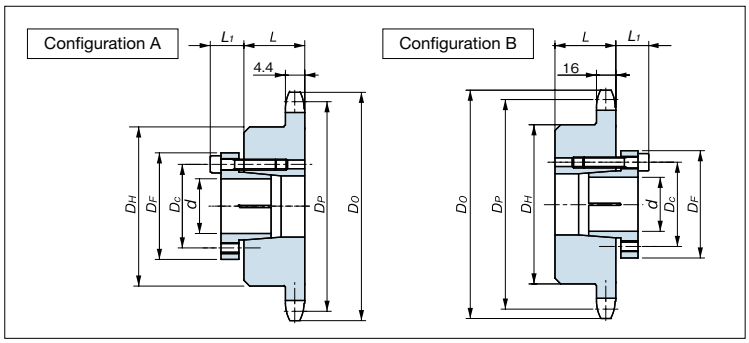
Model numbering example

RS40 - 1B 21T Q - S4825 A

- RS40 - 1B: Size; Number of strands; Hub type
- 21T: Number of teeth
- Q: Teeth — Q: Hardened teeth; Blank: Non-hardened teeth
- S4825: Sleeve model number — Bore dia. (ϕ25mm); Number of mounting bolts (8); Sleeve model (S4)
- A: Configuration

RS35

Applicable chain pitch: 9.525mm Roller dia.: 5.08mm



■ S Type lock sleeve dimensions

Sleeve model	ϕD_F mm	ϕD_C mm	L_1 mm	Bolt size (M×S)	Tightening torque (N·m)
S1	32.0	24.0	12.0	M4×16	4.2
S2	42.0	32.0	14.0	M5×18	8.3
S3	48.5	38.5	15.5	M5×20	8.3
S4	56.0	46.0	15.5	M5×20	8.3
S5	66.0	56.0	17.5	M5×22	8.3
S6	80.0	68.0	21.0	M6×25	16.8
S7	101.0	86.0	24.5	M8×30	40.5

All models feature hardened teeth.

Model number	Pitch circle dia. D_P	(Outer dia.) (D_O)	Hub dia. D_H	Hub length L	Applicable bore dia. ϕd												No. of teeth
					10	11	12	14	15	16	17	18	19	20	21	22	
RS35-1B15TQ-S14□□■	45.81	51	35	20	●	●	●	●	●	●							15
RS35-1B16TQ-S14□□■	48.82	54	37	20	●	●	●	●	●	●							16
RS35-1B17TQ-S14□□■	51.84	57	41	20	●	●	●	●	●	●							17
RS35-1B17TQ-S24□□■											●	●	●	●	●	●	
RS35-1B18TQ-S14□□■	54.85	60	44	20		●	●	●	●	●							18
RS35-1B18TQ-S24□□■											●	●	●	●	●	●	
RS35-1B19TQ-S14□□■	57.87	63	47	20		●	●	●	●	●							19
RS35-1B19TQ-S24□□■											●	●	●	●	●	●	
RS35-1B20TQ-S14□□■	60.89	66	50	20			●	●	●	●							20
RS35-1B20TQ-S24□□■											●	●	●	●	●	●	
RS35-1B21TQ-S16□□■	63.91	69	53	20				●	●	●							21
RS35-1B21TQ-S24□□■											●	●	●	●	●	●	
RS35-1B22TQ-S16□□■	66.93	72	53	20				●	●	●							22
RS35-1B22TQ-S24□□■											●	●	●	●	●	●	
RS35-1B23TQ-S16□□■	69.95	75	53	20				●	●	●							23
RS35-1B23TQ-S24□□■											●	●	●	●	●	●	
RS35-1B24TQ-S16□□■	72.97	78	53	20				●	●	●							24
RS35-1B24TQ-S24□□■											●	●	●	●	●	●	
RS35-1B25TQ-S16□□■	76.00	81	53	20				●	●	●							25
RS35-1B25TQ-S24□□■											●	●	●	●	●	●	
RS35-1B26TQ-S16□□■	79.02	84	53	22				●	●	●							26
RS35-1B26TQ-S24□□■											●	●	●	●	●	●	
RS35-1B27TQ-S16□□■	82.05	87	53	22				●	●	●							27
RS35-1B27TQ-S24□□■											●	●	●	●	●	●	
RS35-1B28TQ-S16□□■	85.07	90	53	22				●	●	●							28
RS35-1B28TQ-S24□□■											●	●	●	●	●	●	
RS35-1B30TQ-S16□□■	91.12	96	53	22				●	●	●							30
RS35-1B30TQ-S24□□■											●	●	●	●	●	●	
RS35-1B32TQ-S16□□■	97.18	102	53	22				●	●	●							32
RS35-1B32TQ-S24□□■											●	●	●	●	●	●	
RS35-1B34TQ-S16□□■	103.23	109	53	22				●	●	●							34
RS35-1B34TQ-S24□□■											●	●	●	●	●	●	
RS35-1B35TQ-S16□□■	106.26	112	53	22				●	●	●							35
RS35-1B35TQ-S24□□■											●	●	●	●	●	●	
RS35-1B36TQ-S16□□■	109.29	115	53	22				●	●	●							36
RS35-1B36TQ-S24□□■											●	●	●	●	●	●	
RS35-1B38TQ-S16□□■	115.34	121	63	25				●	●	●							
RS35-1B38TQ-S24□□■											●	●	●	●	●	●	38
RS35-1B40TQ-S16□□■	121.40	127	63	25				●	●	●							40
RS35-1B40TQ-S24□□■											●	●	●	●	●	●	

Input the bore diameter in the white □□ boxes after the model number, and configuration A or B in the black ■ box. ● circles indicate applicable bore diameters.

Model numbering example **RS35 - 1B 23T Q - S1616 ■**

- RS35 — Size
- 1 — Number of strands
- B — Hub type
- 23T — Number of teeth
- Q — Hardened teeth
- S1 — Sleeve model (S1)
- 16 — Number of mounting bolts (6)
- 16 — Bore dia. (φ16mm)
- Sleeve model number
- ■ — Configuration A/B

Sprockets Lock Sprocket S Type

RS35

All models feature hardened teeth.

Model number	Pitch circle dia. *Dp*	(Outer dia.) *(Do)*	Hub dia. D_H	Hub length *L*	Applicable bore dia. *ϕd*						No. of teeth
					24	25	28	30	32	35	
*RS35-1B19TQ-S33□□A	57.87	63	47	20	●	●	●				19
RS35-1B20TQ-S33□□■	60.89	66	50	20	●	●	●				20
RS35-1B21TQ-S34□□■	63.91	69	53	20	●	●	●				21
RS35-1B22TQ-S44□□■	66.93	72	53	20	●	●	●	●	●	●	22
RS35-1B23TQ-S44□□■	69.95	75	53	20	●	●	●	●	●	●	23
RS35-1B24TQ-S44□□■	72.97	78	53	20	●	●	●	●	●	●	24
RS35-1B25TQ-S44□□■	76.00	81	53	20	●	●	●	●	●	●	25
RS35-1B26TQ-S44□□■	79.02	84	53	22	●	●	●	●	●	●	26
RS35-1B27TQ-S44□□■	82.05	87	53	22	●	●	●	●	●	●	27
RS35-1B28TQ-S44□□■	85.07	90	53	22	●	●	●	●	●	●	28
RS35-1B30TQ-S44□□■	91.12	96	53	22	●	●	●	●	●	●	30
RS35-1B32TQ-S44□□■	97.18	102	53	22	●	●	●	●	●	●	32
RS35-1B34TQ-S44□□■	103.23	109	53	22	●	●	●	●	●	●	34
RS35-1B35TQ-S44□□■	106.26	112	53	22	●	●	●	●	●	●	35
RS35-1B36TQ-S44□□■	109.29	115	53	22	●	●	●	●	●	●	36
RS35-1B38TQ-S44□□■	115.34	121	63	25	●	●	●	●	●	●	38
RS35-1B40TQ-S44□□■	121.40	127	63	25	●	●	●	●	●	●	40

Input the bore diameter in the white □□ boxes after the model number, and configuration A or B in the black ■ box. ● circles indicate applicable bore diameters.
Note: Models with asterisks * indicate that only configuration A is available.

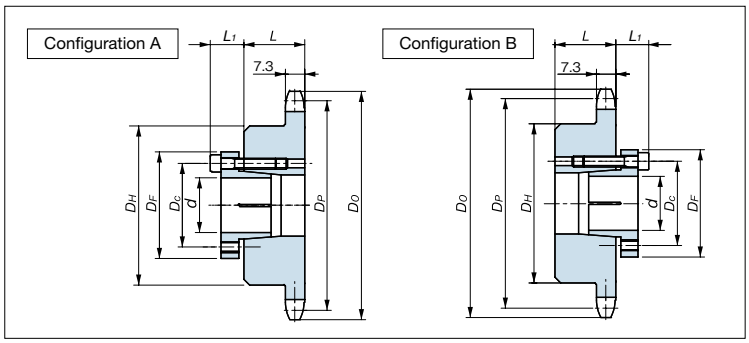
■ RS35 Lock Sprocket (S Type) maximum allowable torque

(Unit: N·m)

Bore dia. / No. of teeth	10	11	12	14	15	16	17	18	19	20	22	24	25	28	30	32	35
15T	58	63	69	81	86	92	158	167	177	186	205	167	174	195			
16T																	
17T																	
18T																	
19T																	
20T																	
21T				121	130	138						223	232	260	279	298	325
22T to 40T																	

RS40

Applicable chain pitch: 12.7mm Roller dia.: 7.92mm



■ S Type lock sleeve dimensions

Sleeve model	ϕD_F mm	ϕD_C mm	L_1 mm	Bolt size (M×S)	Tightening torque (N·m)
S1	32.0	24.0	12.0	M4×16	4.2
S2	42.0	32.0	14.0	M5×18	8.3
S3	48.5	38.5	15.5	M5×20	8.3
S4	56.0	46.0	15.5	M5×20	8.3
S5	66.0	56.0	17.5	M5×22	8.3
S6	80.0	68.0	21.0	M6×25	16.8
S7	101.0	86.0	24.5	M8×30	40.5

All models feature hardened teeth.

Model number	Pitch circle dia. *Dp*	(Outer dia.) *(Do)*	Hub dia. D_H	Hub length *L*	Applicable bore dia. ϕd								No. of teeth
					14	15	16	17	18	19	20	22	
RS40-1B14TQ-S16□□■	57.07	63	42	22	●								14
RS40-1B14TQ-S24□□■						●	●	●	●	●	●	●	
RS40-1B15TQ-S16□□■	61.08	67	46	22	●								15
RS40-1B15TQ-S24□□■						●	●	●	●	●	●	●	
RS40-1B16TQ-S16□□■	65.10	71	50	22	●								16
RS40-1B16TQ-S24□□■						●	●	●	●	●	●	●	
RS40-1B17TQ-S24□□■	69.12	76	54	22		●	●	●	●	●	●	●	17
RS40-1B18TQ-S24□□■	73.14	80	57	22		●	●	●	●	●	●	●	18
RS40-1B19TQ-S24□□■	77.16	84	62	22		●	●	●	●	●	●	●	19
RS40-1B20TQ-S25□□■	81.18	88	67	25		●	●	●	●	●	●	●	20
RS40-1B21TQ-S25□□■	85.21	92	71	25		●	●	●	●	●	●	●	21
RS40-1B22TQ-S25□□■	89.24	96	75	25		●	●	●	●	●	●	●	22
RS40-1B23TQ-S25□□■	93.27	100	77	25		●	●	●	●	●	●	●	23
RS40-1B24TQ-S25□□■	97.30	104	63	25		●	●	●	●	●	●	●	24
RS40-1B25TQ-S25□□■	101.33	108	63	25			●	●	●	●	●	●	25
RS40-1B26TQ-S25□□■	105.36	112	63	25				●	●	●	●	●	26
RS40-1B27TQ-S25□□■	109.40	116	63	25				●	●	●	●	●	27
RS40-1B28TQ-S25□□■	113.43	120	63	25				●	●	●	●	●	28
RS40-1B30TQ-S25□□■	121.50	128	63	25						●	●	●	30
RS40-1B32TQ-S25□□■	129.57	137	68	28							●	●	32

Input the bore diameter in the white □□ boxes after the model number, and configuration A or B in the black ■ box. ● circles indicate applicable bore diameters.

Model numbering example **RS40 - 1B 21T Q - S4825 ■**

- RS40 — Size
- 1B — Number of strands, Hub type
- 21T — Number of teeth
- Q — Hardened teeth
- S4825 — Sleeve model number
  - S4 — Sleeve model (S4)
  - 8 — Number of mounting bolts (8)
  - 25 — Bore dia. (φ25mm)
- ■ — Configuration A/B

Sprockets Lock Sprocket S Type

RS40

All models feature hardened teeth.

Model number	Pitch circle dia. *Dp*	(Outer dia.) *(Do)*	Hub dia. D_H	Hub length *L*	Applicable bore dia. *ϕd*										No. of teeth
					24	25	28	30	32	35	38	40	42	45	
*RS40-1B15TQ-S33□□A	61.08	67	46	22	●	●	●								15
RS40-1B16TQ-S33□□■	65.10	71	50	22	●	●	●								16
RS40-1B17TQ-S44□□■	69.12	76	54	22	●	●	●	●	●	●					17
RS40-1B18TQ-S44□□■	73.14	80	57	22	●	●	●	●	●	●					18
RS40-1B19TQ-S44□□■	77.16	84	62	22	●	●	●	●	●	●					19
RS40-1B20TQ-S48□□■	81.18	88	67	25	●	●	●	●	●	●					20
RS40-1B20TQ-S56□□■											●	●	●	●	
RS40-1B21TQ-S48□□■	85.21	92	71	25	●	●	●	●	●	●					21
RS40-1B21TQ-S56□□■											●	●	●	●	
RS40-1B22TQ-S48□□■	89.24	96	75	25	●	●	●	●	●	●					22
RS40-1B22TQ-S56□□■											●	●	●	●	
RS40-1B23TQ-S48□□■	93.27	100	77	25	●	●	●	●	●	●					23
RS40-1B23TQ-S56□□■											●	●	●	●	
RS40-1B24TQ-S48□□■	97.30	104	63	25	●	●	●	●	●	●					24
RS40-1B24TQ-S56□□■											●	●	●	●	
RS40-1B25TQ-S48□□■	101.33	108	63	25	●	●	●	●	●	●					25
RS40-1B25TQ-S56□□■											●	●	●	●	
RS40-1B26TQ-S48□□■	105.36	112	63	25	●	●	●	●	●	●					26
RS40-1B26TQ-S56□□■											●	●	●	●	
RS40-1B27TQ-S48□□■	109.40	116	63	25	●	●	●	●	●	●					27
RS40-1B27TQ-S56□□■											●	●	●	●	
RS40-1B28TQ-S48□□■	113.43	120	63	25	●	●	●	●	●	●					28
RS40-1B28TQ-S56□□■											●	●	●	●	
RS40-1B30TQ-S48□□■	121.50	128	63	25	●	●	●	●	●	●					30
RS40-1B30TQ-S56□□■											●	●	●	●	
RS40-1B32TQ-S48□□■	129.57	137	68	28	●	●	●	●	●	●					32
RS40-1B32TQ-S56□□■											●	●	●	●	
RS40-1B34TQ-S48□□■	137.64	145	68	28	●	●	●	●	●	●					34
RS40-1B34TQ-S56□□■											●	●	●	●	
RS40-1B35TQ-S48□□■	141.68	149	68	28	●	●	●	●	●	●					35
RS40-1B35TQ-S56□□■											●	●	●	●	
RS40-1B36TQ-S48□□■	145.72	153	68	28	●	●	●	●	●	●					36
RS40-1B36TQ-S56□□■											●	●	●	●	
RS40-1B38TQ-S48□□■	153.79	161	68	28	●	●	●	●	●	●					38
RS40-1B38TQ-S56□□■											●	●	●	●	
RS40-1B40TQ-S48□□■	161.87	169	68	28	●	●	●	●	●	●					40
RS40-1B40TQ-S56□□■											●	●	●	●	

Input the bore diameter in the white □□ boxes after the model number, and configuration A or B in the black ■ box. ● circles indicate applicable bore diameters.
Note: Models with asterisks * indicate that only configuration A is available.

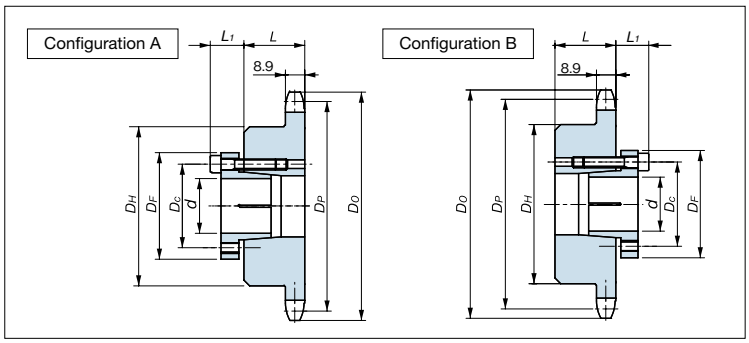
■ RS40 Lock Sprocket (S Type) maximum allowable torque

(Unit: N·m)

Bore dia. / No. of teeth	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45
14T	121	139	149	158	167	177	186	205	167	174	195	223	232	260	279	298	325			
15T																		
16T																		
17T																		
18T																		
19T																		
20T		174	186	198	209	221	232	256	446	465	521	558	595	651	530	558	586	628
21T																		
22T																		
23T																		
24T																		
25T																		
26T																		
27T																		
28T																		
30T																		
32T																		
34T to 40T																		

RS50

Applicable chain pitch: 15.875mm Roller dia.: 10.16mm



■ S Type lock sleeve dimensions

Sleeve model	ϕD_F mm	ϕD_C mm	L_1 mm	Bolt size (M×S)	Tightening torque (N·m)
S1	32.0	24.0	12.0	M4×16	4.2
S2	42.0	32.0	14.0	M5×18	8.3
S3	48.5	38.5	15.5	M5×20	8.3
S4	56.0	46.0	15.5	M5×20	8.3
S5	66.0	56.0	17.5	M5×22	8.3
S6	80.0	68.0	21.0	M6×25	16.8
S7	101.0	86.0	24.5	M8×30	40.5

Teeth hardened up to 35T.

Model number	Pitch circle dia. *Dp*	(Outer dia.) *(Do)*	Hub dia. D_H	Hub length *L*	Applicable bore dia. ϕd											No. of teeth
					15	16	17	18	19	20	22	24	25	28	30	
RS50-1B14TQ-S25□□■	71.34	79	52	25	●	●										14
RS50-1B14TQ-S26□□■							●	●	●	●	●					
RS50-1B15TQ-S25□□■	76.35	84	57	25	●	●										15
RS50-1B15TQ-S26□□■							●	●	●	●	●					
RS50-1B15TQ-S44□□■												●	●	●	●	
RS50-1B16TQ-S25□□■	81.37	89	62	25	●	●										16
RS50-1B16TQ-S26□□■							●	●	●	●	●					
RS50-1B16TQ-S44□□■												●	●	●	●	
RS50-1B17TQ-S26□□■	86.39	94	67	25						●	●					17
RS50-1B17TQ-S48□□■												●	●	●	●	
RS50-1B18TQ-S26□□■	91.42	100	72	28							●					18
RS50-1B18TQ-S48□□■												●	●	●	●	
RS50-1B19TQ-S26□□■	96.45	105	73	28							●					19
RS50-1B19TQ-S48□□■												●	●	●	●	
RS50-1B20TQ-S48□□■	101.48	110	73	28								●	●	●	●	20
RS50-1B21TQ-S48□□■	106.51	115	73	28								●	●	●	●	21
RS50-1B22TQ-S48□□■	111.55	120	73	28								●	●	●	●	22
RS50-1B23TQ-S48□□■	116.59	125	73	28								●	●	●	●	23
RS50-1B24TQ-S48□□■	121.62	130	73	28								●	●	●	●	24
RS50-1B25TQ-S48□□■	126.66	135	73	28								●	●	●	●	25
RS50-1B26TQ-S48□□■	131.70	140	73	28								●	●	●	●	26
RS50-1B27TQ-S48□□■	136.74	145	73	28								●	●	●	●	27
RS50-1B28TQ-S48□□■	141.79	150	73	28									●	●	●	28
RS50-1B30TQ-S48□□■	151.87	161	73	28									●	●	●	30
RS50-1B32TQ-S48□□■	161.96	171	73	28									●	●	●	32
RS50-1B34TQ-S48□□■	172.05	181	73	28											●	34

Input the bore diameter in the white □□ boxes after the model number, and configuration A or B in the black ■ box. ● circles indicate applicable bore diameters.

Model numbering example **RS50 - 1B 20T Q - S4828 ■**

- RS50 - Size
- 1B - Number of strands; Hub type
- 20T - Number of teeth
- Q - Teeth: Q: Hardened teeth; Blank: Non-hardened teeth
- S4828 - Sleeve model number
  - S4 - Sleeve model (S4)
  - 8 - Number of mounting bolts (8)
  - 28 - Bore dia. (φ28mm)
- ■ - Configuration A/B

Sprockets Lock Sprocket S Type

RS50

Teeth hardened up to 35T.

Model number	Pitch circle dia. *Dp*	(Outer dia.) *(Do)*	Hub dia. D_H	Hub length *L*	Applicable bore dia. *ϕd*									No. of teeth
					32	35	38	40	42	45	48	50	55	
RS50-1B15TQ-S44□□■	76.35	84	57	25	●	●								15
RS50-1B16TQ-S44□□■	81.37	89	62	25	●	●								16
RS50-1B17TQ-S48□□■	86.39	94	67	25	●	●								17
RS50-1B17TQ-S56□□■							●	●	●	●				
RS50-1B18TQ-S48□□■	91.42	100	72	28	●	●								18
RS50-1B18TQ-S56□□■							●	●	●	●				
RS50-1B19TQ-S48□□■	96.45	105	73	28	●	●								19
RS50-1B19TQ-S56□□■							●	●	●	●				
RS50-1B20TQ-S48□□■	101.48	110	73	28	●	●								20
RS50-1B20TQ-S56□□■							●	●	●	●				
RS50-1B21TQ-S48□□■	106.51	115	73	28	●	●								21
RS50-1B21TQ-S56□□■							●	●	●	●				
RS50-1B22TQ-S48□□■	111.55	120	73	28	●	●								22
RS50-1B22TQ-S56□□■							●	●	●	●				
RS50-1B23TQ-S48□□■	116.59	125	73	28	●	●								23
RS50-1B23TQ-S56□□■							●	●	●	●				
RS50-1B24TQ-S48□□■	121.62	130	73	28	●	●								24
RS50-1B24TQ-S56□□■							●	●	●	●				
RS50-1B25TQ-S48□□■	126.66	135	73	28	●	●								25
RS50-1B25TQ-S56□□■							●	●	●	●				
RS50-1B26TQ-S48□□■	131.70	140	73	28	●	●								26
RS50-1B26TQ-S56□□■							●	●	●	●				
RS50-1B27TQ-S48□□■	136.74	145	73	28	●	●								27
RS50-1B27TQ-S56□□■							●	●	●	●				
RS50-1B28TQ-S48□□■	141.79	150	73	28	●	●								28
RS50-1B28TQ-S56□□■							●	●	●	●				
RS50-1B30TQ-S48□□■	151.87	161	73	28	●	●								30
RS50-1B30TQ-S56□□■							●	●	●	●				
RS50-1B32TQ-S48□□■	161.96	171	73	28	●	●								32
RS50-1B32TQ-S56□□■							●	●	●	●				
RS50-1B34TQ-S48□□■	172.05	181	73	28	●	●								34
RS50-1B34TQ-S56□□■							●	●	●	●				
RS50-1B35TQ-S48□□■	177.10	186	73	28	●	●								35
RS50-1B35TQ-S56□□■							●	●	●	●				
RS50-1B36T-S510□□■	182.15	191	83	35			●	●	●	●				36
RS50-1B36T-S66□□■											●	●	●	
RS50-1B38T-S510□□■	192.24	201	83	35			●	●	●	●				38
RS50-1B38T-S66□□■											●	●	●	
RS50-1B40T-S510□□■	202.33	211	83	35			●	●	●	●				40
RS50-1B40T-S66□□■											●	●	●	

Input the bore diameter in the white □□ boxes after the model number, and configuration A or B in the black ■ box. ● circles indicate applicable bore diameters.

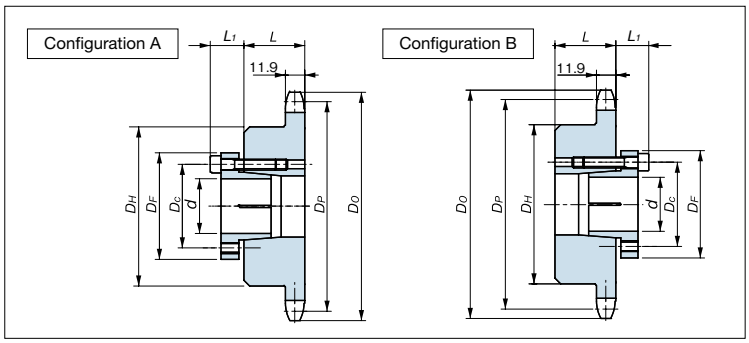
■ RS50 Lock Sprocket (S Type) maximum allowable torque

(Unit: N·m)

Bore dia. / No. of teeth	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55
14T	174	186	237	251	265	279	307	223	232	260	279	298	325	530	558	586	628	1116	1162	1279
15T																				
16T																				
17T								446	465	521	558	595	651							
18T																				
19T																				
20T																				
21T																				
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27T																				
28T																				
30T																				
32T																				
34T																				
35T																				
36T to 40T																				

RS60

Applicable chain pitch: 19.05mm Roller dia.: 11.91mm



■ S Type lock sleeve dimensions

Sleeve model	ϕD_F mm	ϕD_C mm	L_1 mm	Bolt size (M×S)	Tightening torque (N·m)
S1	32.0	24.0	12.0	M4×16	4.2
S2	42.0	32.0	14.0	M5×18	8.3
S3	48.5	38.5	15.5	M5×20	8.3
S4	56.0	46.0	15.5	M5×20	8.3
S5	66.0	56.0	17.5	M5×22	8.3
S6	80.0	68.0	21.0	M6×25	16.8
S7	101.0	86.0	24.5	M8×30	40.5

Teeth hardened up to 30T.

Model number	Pitch circle dia. *Dp*	(Outer dia.) *(Do)*	Hub dia. D_H	Hub length *L*	Applicable bore dia. ϕd										No. of teeth
					18	19	20	22	24	25	28	30	32	35	
RS60-1B12TQ-S26□□■	73.60	83	51	32	●	●	●	●							12
RS60-1B13TQ-S26□□■	79.60	89	57	32	●	●	●	●							13
RS60-1B13TQ-S46□□■									●	●	●	●	●	●	
RS60-1B14TQ-S26□□■	85.61	95	62	32	●	●	●	●							14
RS60-1B14TQ-S46□□■									●	●	●	●	●	●	
RS60-1B15TQ-S48□□■	91.63	101	68	32					●	●	●	●	●	●	15
RS60-1B16TQ-S48□□■	97.65	107	73	32					●	●	●	●	●	●	16
RS60-1B17TQ-S48□□■	103.67	113	73	32						●	●	●	●	●	17
RS60-1B18TQ-S48□□■	109.70	119	83	40							●	●	●	●	18
RS60-1B19TQ-S48□□■	115.74	126	83	40							●	●	●	●	19
RS60-1B20TQ-S48□□■	121.78	132	83	40								●	●	●	20
RS60-1B21TQ-S48□□■	127.82	138	83	40									●	●	21
RS60-1B22TQ-S48□□■	133.86	144	83	40									●	●	22
RS60-1B23TQ-S48□□■	139.90	150	83	40										●	23
RS60-1B24TQ-S48□□■	145.95	156	83	40										●	24
RS60-1B25TQ-S48□□■	151.99	162	83	40										●	25

Input the bore diameter in the white □□ boxes after the model number, and configuration A or B in the black ■ box. ● circles indicate applicable bore diameters.

Model numbering example **RS60 - 1B 16T Q - S4828 ■**

- RS60 — Size
- 1B — Number of strands, Hub type
- 16T — Number of teeth
- Q — Teeth: Q: Hardened teeth; Blank: Non-hardened teeth
- S4828 — Sleeve model number
  - 28 — Bore dia. (ϕ28mm)
  - 8 — Number of mounting bolts (8)
  - S4 — Sleeve model (S4)
- ■ — Configuration A/B

Sprockets Lock Sprocket S Type

RS60

Teeth hardened up to 30T.

Model number	Pitch circle dia. *Dp*	(Outer dia.) *(Do)*	Hub dia. D_H	Hub length *L*	Applicable bore dia. *ϕd*							No. of teeth
					38	40	42	45	48	50	55	
RS60-1B15TQ-S56□□■	91.63	101	68	32	●	●	●	●				15
RS60-1B16TQ-S56□□■	97.65	107	73	32	●	●	●	●				16
RS60-1B17TQ-S56□□■	103.67	113	73	32	●	●	●	●				17
RS60-1B18TQ-S510□□■	109.70	119	83	40	●	●	●	●				18
RS60-1B18TQ-S66□□■									●	●	●	
RS60-1B19TQ-S510□□■	115.74	126	83	40	●	●	●	●				19
RS60-1B19TQ-S66□□■									●	●	●	
RS60-1B20TQ-S510□□■	121.78	132	83	40	●	●	●	●				20
RS60-1B20TQ-S66□□■									●	●	●	
RS60-1B21TQ-S510□□■	127.82	138	83	40	●	●	●	●				21
RS60-1B21TQ-S66□□■									●	●	●	
RS60-1B22TQ-S510□□■	133.86	144	83	40	●	●	●	●				22
RS60-1B22TQ-S66□□■									●	●	●	
RS60-1B23TQ-S510□□■	139.90	150	83	40	●	●	●	●				23
RS60-1B23TQ-S66□□■									●	●	●	
RS60-1B24TQ-S510□□■	145.95	156	83	40	●	●	●	●				24
RS60-1B24TQ-S66□□■									●	●	●	
RS60-1B25TQ-S510□□■	151.99	162	83	40	●	●	●	●				25
RS60-1B25TQ-S66□□■									●	●	●	
RS60-1B26TQ-S510□□■	158.04	168	83	40	●	●	●	●				26
RS60-1B26TQ-S66□□■									●	●	●	
RS60-1B27TQ-S510□□■	164.09	174	83	40	●	●	●	●				27
RS60-1B27TQ-S66□□■									●	●	●	
RS60-1B28TQ-S510□□■	170.14	180	83	40	●	●	●	●				28
RS60-1B28TQ-S66□□■									●	●	●	
RS60-1B30TQ-S510□□■	182.25	193	83	40	●	●	●	●				30
RS60-1B30TQ-S66□□■									●	●	●	
RS60-1B32T-S510□□■	194.35	205	83	40	●	●	●	●				32
RS60-1B32T-S66□□■									●	●	●	
RS60-1B34T-S510□□■	206.46	217	83	40		●	●	●				34
RS60-1B34T-S66□□■									●	●	●	
RS60-1B35T-S510□□■	212.52	223	83	40				●				35
RS60-1B35T-S66□□■									●	●	●	
RS60-1B36T-S510□□■	218.57	229	83	40				●				36
RS60-1B36T-S66□□■									●	●	●	
RS60-1B38T-S510□□■	230.69	241	83	40				●				38
RS60-1B38T-S66□□■								●	●	●	●	
RS60-1B40T-S66□□■	242.80	253	83	40					●	●	●	40

Input the bore diameter in the white □□ boxes after the model number, and configuration A or B in the black ■ box. ● circles indicate applicable bore diameters.

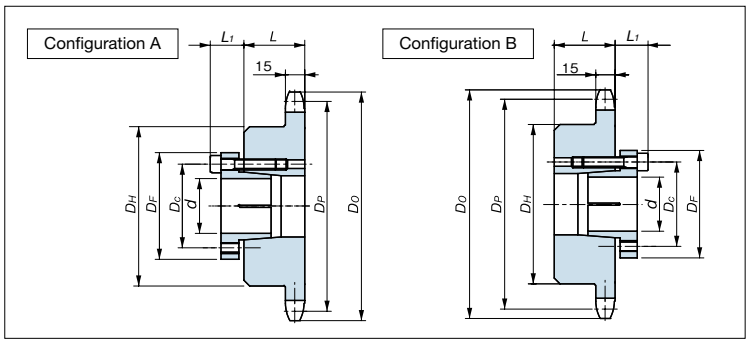
■ RS60 Lock Sprocket (S Type) maximum allowable torque

(Unit: N·m)

No. of teeth \ Bore dia.	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55
12T																	
13T	251	265	279	307													
14T					335	349	391	418	446	488							
15T																	
16T					446	465					530	558	586	628			
17T							521	558									
18T									595								
19T																	
20T										651							
21T																	
22T																	
23T																	
24T											883	930	976				
25T																	
26T														1046	1116	1162	1279
27T																	
28T																	
30T																	
32T																	
34T																	
35T																	
36T																	
38T																	
40T																	

RS80

Applicable chain pitch: 25.4mm Roller dia.: 15.88mm



■ S Type lock sleeve dimensions

Sleeve model	ϕD_F mm	ϕD_C mm	L_1 mm	Bolt size (M×S)	Tightening torque (N·m)
S1	32.0	24.0	12.0	M4×16	4.2
S2	42.0	32.0	14.0	M5×18	8.3
S3	48.5	38.5	15.5	M5×20	8.3
S4	56.0	46.0	15.5	M5×20	8.3
S5	66.0	56.0	17.5	M5×22	8.3
S6	80.0	68.0	21.0	M6×25	16.8
S7	101.0	86.0	24.5	M8×30	40.5

Teeth hardened up to 21T.

Model number	Pitch circle dia. *Dp*	(Outer dia.) *(Do)*	Hub dia. D_H	Hub length *L*	Applicable bore dia. ϕd										No. of teeth
					24	25	28	30	32	35	38	40	42	45	
RS80-1B12TQ-S48□□■	98.14	110	67	40	●	●	●	●	●	●					12
RS80-1B13TQ-S48□□■	106.14	118	77	40	●	●	●	●	●	●					13
RS80-1B13TQ-S510□□■											●	●	●	●	
RS80-1B14TQ-S48□□■	114.15	127	77	40	●	●	●	●	●	●					14
RS80-1B14TQ-S510□□■											●	●	●	●	
RS80-1B15TQ-S510□□■	122.17	135	93	40						●	●	●	●	●	15
RS80-1B16TQ-S510□□■	130.20	143	93	40						●	●	●	●	●	16
RS80-1B17TQ-S510□□■	138.23	151	93	40						●	●	●	●	●	17
RS80-1B18TQ-S510□□■	146.27	159	93	40						●	●	●	●	●	18
RS80-1B19TQ-S510□□■	154.32	167	93	40						●	●	●	●	●	19
RS80-1B20TQ-S510□□■	162.37	176	93	40						●	●	●	●	●	20
RS80-1B21TQ-S510□□■	170.42	184	93	40						●	●	●	●	●	21

Input the bore diameter in the white □□ boxes after the model number, and configuration A or B in the black ■ box. ● circles indicate applicable bore diameters.

Model numbering example **RS80 - 1B 18T Q - S51038 ■**

- RS80 — Size
- 1 — Number of strands
- B — Hub type
- 18T — Number of teeth
- Q — Teeth: Q: Hardened teeth; Blank: Non-hardened teeth
- S5 — Sleeve model (S5)
- 10 — Number of mounting bolts (10)
- 38 — Bore dia. (ϕ38mm)
- Sleeve model number
- ■ — Configuration A/B

Sprockets Lock Sprocket S Type

RS80

Teeth hardened up to 21T.

Model number	Pitch circle dia. *Dp*	(Outer dia.) *(Do)*	Hub dia. D_H	Hub length *L*	Applicable bore dia. *ϕd*						No. of teeth
					48	50	55	60	65	70	
RS80-1B15TQ-S66□□■	122.17	135	93	40	●	●	●				15
RS80-1B16TQ-S66□□■	130.20	143	93	40	●	●	●				16
RS80-1B17TQ-S66□□■	138.23	151	93	40	●	●	●				17
RS80-1B18TQ-S66□□■	146.27	159	93	40	●	●	●				18
RS80-1B19TQ-S66□□■	154.32	167	93	40	●	●	●				19
RS80-1B20TQ-S68□□■	162.37	176	93	40	●	●	●				20
RS80-1B21TQ-S68□□■	170.42	184	93	40	●	●	●				21
RS80-1B22T-S612□□■	178.48	192	107	45	●	●	●				22
RS80-1B22T-S75□□■								●	●	●	
RS80-1B23T-S612□□■	186.54	200	107	45	●	●	●				23
RS80-1B23T-S75□□■								●	●	●	
RS80-1B24T-S612□□■	194.60	208	107	45	●	●	●				24
RS80-1B24T-S75□□■								●	●	●	
RS80-1B25T-S612□□■	202.66	216	107	45	●	●	●				25
RS80-1B25T-S75□□■								●	●	●	
RS80-1B26T-S612□□■	210.72	224	107	45	●	●	●				26
RS80-1B26T-S75□□■								●	●	●	
RS80-1B27T-S612□□■	218.79	233	107	45	●	●	●				27
RS80-1B27T-S75□□■								●	●	●	
RS80-1B28T-S612□□■	226.86	241	107	45	●	●	●				28
RS80-1B28T-S75□□■								●	●	●	
RS80-1B30T-S612□□■	243.00	257	107	45	●	●	●				30
RS80-1B30T-S75□□■								●	●	●	
RS80-1B32T-S612□□■	259.14	273	107	45	●	●	●				32
RS80-1B32T-S75□□■								●	●	●	
RS80-1B34T-S612□□■	275.28	289	107	45	●	●	●				34
RS80-1B34T-S75□□■								●	●	●	
RS80-1B35T-S612□□■	283.36	297	107	45	●	●	●				35
RS80-1B35T-S75□□■								●	●	●	

Input the bore diameter in the white □□ boxes after the model number, and configuration A or B in the black ■ box. ● circles indicate applicable bore diameters.

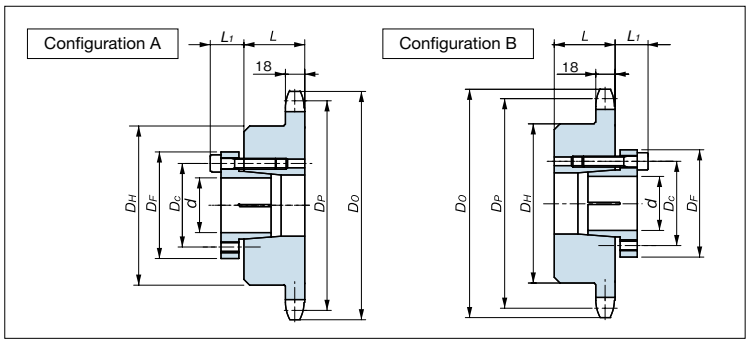
■ RS80 Lock Sprocket (S Type) maximum allowable torque

(Unit: N·m)

Bore dia. / No. of teeth	24	25	28	30	32	35	38	40	42	45	48	50	55	60	65	70
12T	446	465	521	558	595	651	883	930	976	1046	1116	1162	1279			
13T																
14T																
15T						814					1275	1329	1461			
16T																
17T																
18T																
19T																
20T																
21T																
22T to 35T											2232	2325	2557	2140	2319	2497

RS100

Applicable chain pitch: 31.75mm Roller dia.: 19.05mm



■ S Type lock sleeve dimensions

Sleeve model	ϕD_F mm	ϕD_C mm	L_1 mm	Bolt size (M×S)	Tightening torque (N·m)
S1	32.0	24.0	12.0	M4×16	4.2
S2	42.0	32.0	14.0	M5×18	8.3
S3	48.5	38.5	15.5	M5×20	8.3
S4	56.0	46.0	15.5	M5×20	8.3
S5	66.0	56.0	17.5	M5×22	8.3
S6	80.0	68.0	21.0	M6×25	16.8
S7	101.0	86.0	24.5	M8×30	40.5

All models feature hardened teeth.

Model number	Pitch circle dia. *Dp*	(Outer dia.) *(Do)*	Hub dia. D_H	Hub length *L*	Applicable bore dia. ϕd						No. of teeth
					48	50	55	60	65	70	
RS100-1B13TQ-S68□□■	132.67	148	88	50	●	●	●				13
RS100-1B14TQ-S68□□■	142.68	158	88	50	●	●	●				14
RS100-1B15TQ-S68□□■	152.71	168	98	50	●	●	●				15
RS100-1B16TQ-S68□□■	162.75	179	98	50	●	●	●				16
RS100-1B17TQ-S612□□■	172.79	189	107	50	●	●	●				17
RS100-1B17TQ-S75□□■								●	●	●	
RS100-1B18TQ-S612□□■	182.84	199	107	50	●	●	●				18
RS100-1B18TQ-S75□□■								●	●	●	
RS100-1B19TQ-S612□□■	192.90	209	107	50	●	●	●				19
RS100-1B19TQ-S75□□■								●	●	●	
RS100-1B20TQ-S612□□■	202.96	220	107	50	●	●	●				20
RS100-1B20TQ-S75□□■								●	●	●	
RS100-1B21TQ-S612□□■	213.03	230	107	50	●	●	●				21
RS100-1B21TQ-S75□□■								●	●	●	

Input the bore diameter in the white □□ boxes after the model number, and configuration A or B in the black ■ box. ● circles indicate applicable bore diameters.

Model numbering example **RS100 - 1B 16T Q - S6848■**

- RS100 — Size
- 1B — Number of strands / Hub type
- 16T — Number of teeth
- Q — Hardened teeth
- S6 — Sleeve model (S6)
- 8 — Number of mounting bolts (8)
- 48 — Bore dia. (ϕ48mm)
- S6 — Sleeve model number
- ■ — Configuration A/B

■ RS100 Lock Sprocket (S Type) maximum allowable torque

(Unit: N·m)

No. of teeth \ Bore dia.	48	50	55	60	65	70
13T	1488	1550	1705			
14T						
15T						
16T						
17T	2232	2325	2257	2140	2319	2497
18T						
19T						
20T						
21T						

Sprockets Lock Sprocket (with keyless locking device) N Type

Lock Sprockets are sprockets with integrated keyless friction type integrated couplings.

Available models: RS35 to RS60 1B type RS sprockets Note: All models are made-to-order.

Features



1. Greatly increases work efficiency

Unlike conventional products that require a number of tightening bolts, this type can be simply tightened with a nut and coupled to a shaft with ease. Furthermore, it can be easily dismounted for fine adjustment and mounted again.

2. Suitable for small shaft diameters

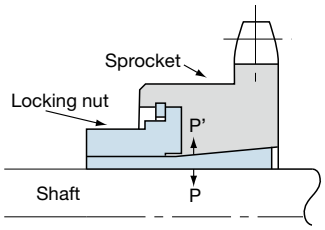
Tsubaki offers standard models with diameters ranging from 7 to 28mm to match a wide variety of customer needs.

3. Compact design

Features a compact design with strength calculations that take the maximum allowable load of the chain in mind while eliminating any waste.

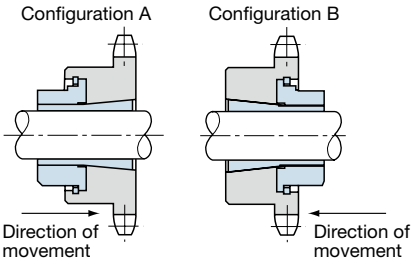
Tightening Principle

The inner diameter of the sprocket and the outer diameter of the lock sleeve are tapered. When the mounting bolts are tightened, the sprocket will slide and move up on the tapered surface. A wedge action will generate force P and force P' in the radial direction to press on the shaft and tapered inner side, and frictional force will tightly secure the sprocket and shaft.



Direction of Sprocket Movement when Tightening Nut

When mounting an N Type Lock Sprocket, the sprocket will move 0.2 to 2.0mm in the direction of the shaft between the time the sprocket is initially secured and the time the sprocket is tightened. Therefore, take this movement into consideration when centering the sprocket. The amount of sprocket movement varies with type. (See the illustration on the right.)

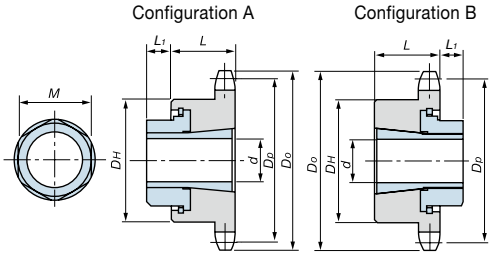


General Precautions

See the General Precautions for S Type on page 139.

Ordering N Type Lock Sprockets

Sleeve mounting configuration



Model numbering example

RS40 - 1B 21T Q - N417 A

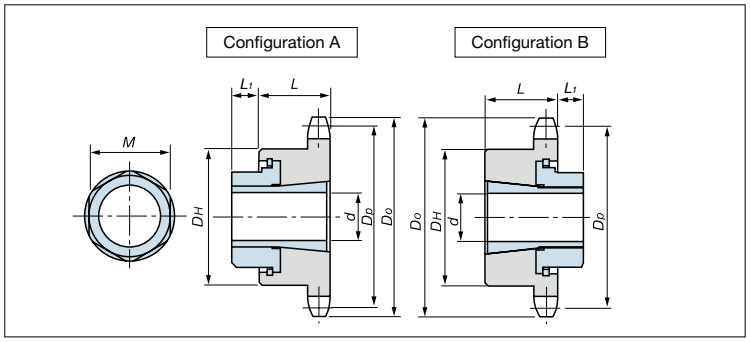
- RS40: Size
- 1: Number of strands
- B: Hub type
- 21T: Number of teeth
- Q: Hardened teeth
- N417: Sleeve model number
- A: Configuration
- Bore dia. (ϕ17mm)
- Sleeve model (N4)

■ RS35 Applicable chain pitch: 9.525mm Roller dia.: 5.08mm All models feature hardened teeth.

No. of teeth	Basic dimensions: Pitch circle dia. Dp	Basic dimensions: Outer dia. Do	Hub: Dia. DH	Hub: Length L	Bore dia.d: Max. allowable transmission torque (N·m)	7	8	9	10	11	12	14	15	16	17	18	19
						23	26	29	42	46	50	104	111	119	161	171	180
12	36.80	41	31	20		※	※	※									
13	39.80	44	32	20		N1XX											
14	42.80	47	30	20													
15	45.81	51	35	20						Example							
16	48.82	54	37	20	Suitable sleeve model and dimensions												
17	51.84	57	41	20													
18	54.85	60	44	20													
19	57.87	63	47	20													
20	60.89	66	50	20					N2XX								
21	63.91	69	53	20													
22	66.93	72	53	20													
23	69.95	75	53	20													
24	72.97	78	53	22													
25	76.00	81	53	22													
26	79.02	84	53	22													
27	82.05	87	53	22													
28	85.07	90	53	22													
30	91.12	96	53	22													
32	97.18	102	53	22								N3XX					
34	103.23	109	53	22													
35	106.26	112	53	22													
36	109.29	115	53	22													
38	115.34	121	63	25													
40	121.40	127	63	25											N4XX		

Models with 12T and asterisks ※ indicate that only configuration A is available.

■ Understanding the table Example RS35 chain with 15 teeth and bore diameter of 11 mm: Use an N211 sleeve.
"XX" in the table refers to bore diameter. Maximum transmission torque will be 46N·m.



N Type lock sleeve dimensions

Sleeve model	Sleeve protrusion L_1	Nut width across flats M	Nut tightening torque (N·m)
N1	5	18	18
N2	6	22	28
N3	8	30	65
N4	10	36	100
N5	11	41	130
N6	11	46	200

RS40 Applicable chain pitch: 12.7mm Roller dia.: 7.92mm

All models feature hardened teeth.

No. of teeth	Basic dimensions: Pitch circle dia. Dp	Basic dimensions: Outer dia. Do	Hub: Dia. D_H	Hub: Length L	Bore dia. d	10	11	12	14	15	16	17	18	19	20	22	24
					Max. allowable transmission torque (N·m)	42	46	50	104	111	119	161	171	180	214	236	257
11	45.08	51	37	22	Suitable sleeve model and dimensions	※	※	※									
12	49.07	55	40	22		※	※	※									
13	53.07	59	37	22		N2XX											
14	57.07	63	42	22					N3XX								
15	61.08	67	46	22													
16	65.10	71	50	22													
17	69.12	76	54	22													
18	73.14	80	57	22													
19	77.16	84	62	22													
20	81.18	88	67	25								N4XX					
21	85.21	92	71	25													
22	89.24	96	75	25													
23	93.27	100	77	25													
24	97.30	104	63	25													
25	101.33	108	63	25													
26	105.36	112	63	25													
27	109.40	116	63	25													
28	113.43	120	63	25													
30	121.50	128	63	25													
32	129.57	137	68	28											N5XX		
34	137.64	145	68	28													
35	141.68	149	68	28													
36	145.72	153	68	28													
38	153.79	161	68	28													
40	161.87	169	68	28													

Models with 11T and 12T and asterisks ※ indicate that only configuration A is available.

RS50 Applicable chain pitch: 15.875mm Roller dia.: 10.16mm

All models feature hardened teeth.

No. of teeth	Basic dimensions: Pitch circle dia. Dp	Basic dimensions: Outer dia. Do	Hub: Dia. D_H	Hub: Length L	Bore dia. d	14	15	16	17	18	19	20	22	24
					Max. allowable transmission torque (N·m)	42	46	50	104	111	119	161	171	257
11	56.35	64	46	25	Suitable sleeve model and dimensions	※	※	※						
12	61.34	69	51	25		※	※	※	※	※	※			
13	66.33	74	51	25		N3XX			※	※	※			
14	71.34	79	52	25					N4XX					
15	76.35	84	57	25										
16	81.37	89	62	25										
17	86.39	94	67	25										
18	91.42	100	72	28										
19	96.45	105	73	28								N5XX		
20	101.48	110	73	28										
21	106.51	115	73	28										
22	111.55	120	73	28										
23	116.59	125	73	28										
24	121.62	130	73	28										
25	126.66	135	73	28										

Models with 11T, 12T, and 13T and asterisks ※ indicate that only configuration A is available.

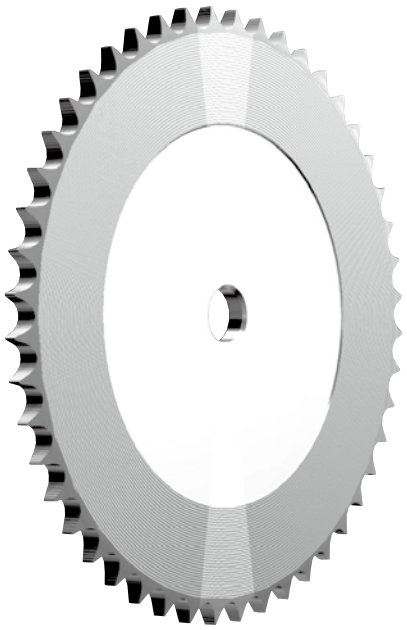
RS60 Applicable chain pitch: 19.05mm Roller dia.: 11.91mm

All models feature hardened teeth.

No. of teeth	Basic dimensions: Pitch circle dia. Dp	Basic dimensions: Outer dia. Do	Hub: Dia. D_H	Hub: Length L	Bore dia. d	14	15	16	17	18	19	20	22	24	25	26	28
					Max. allowable transmission torque (N·m)	105	111	119	161	171	180	214	236	257	370	385	415
9	55.70	64	43	32	Suitable sleeve model and dimensions	※	※	※									
10	61.65	70	49	32		※	※	※									
11	67.62	76	51	32		N3XX			※	※	※						
12	73.60	83	51	32					N4XX								
13	79.60	89	57	32													
14	85.61	95	62	32								N5XX					
15	91.63	101	68	32													
16	97.65	107	73	32													
17	103.67	113	73	32													
18	109.70	119	83	40											N6XX		
19	115.74	126	83	40													
20	121.78	132	83	40													
21	127.82	138	83	40													
22	133.86	144	83	40													
23	139.90	150	83	40													
24	145.95	156	83	40													
25	151.99	162	83	40													

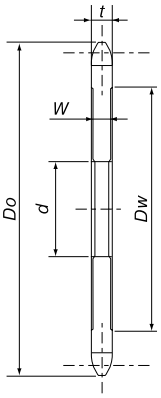
Models with 9T, 10T, and 11T and asterisks ※ indicate that only configuration A is available.

Sprockets Torque Limiter Sprockets



Made-to-order

Torque limiters are typical mechanical devices for overload protection, and as such it is essential that the friction surface of the center member be finished properly to ensure the precise, accurate overload detection of the torque limiter.
Dedicated sprockets for torque limiters are provided with special surface processing to realize the ideal surface finish.



Model numbering example

RS40 - 1A 20T - CM 30

- RS40: Size
- 1A: Number of strands
- 20T: Number of teeth
- CM: Hub type
- 30: Finished bore dia. *d*
- CM: Torque limiter sprocket

Size	RS40	RS50	RS60	RS80	RS100
W	6.5	8.0	10.5	13.5	16.5
t	7.3	8.9	11.9	15.0	18.0

- Operating conditions: Sprocket width > Torque limiter bush width (The sprocket width must be larger than the bush width.)
- All other dimensions are the same as those for standard 1A Type sprockets.
- Refer to the following table for the *d* and *Dw* ranges.
- Uses an H7 finished bore diameter (*d*).

Note: Be sure to check with the torque limiter manufacturer's catalog for the dimensions of each part. Specify the model number of the torque limiter when placing your order.

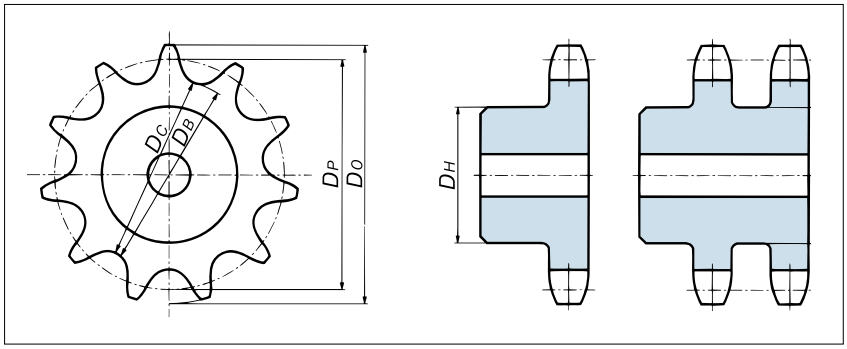
Torque limiter lompatibility table (Ref.)

Applicable sprocket range *d* × *Dw*

Number of teeth		16	17	18	19	20	21	22	23	24	25	26	27	28	30	32	34	35	36	38	40	42	45	48	50
RS40	TL200	30×53																							
	TL250					41×68																			
	TL350											49×92													
RS50	TL250		41×68																						
	TL350						49×92																		
	TL500														74×132										
RS60	TL350			49×92																					
	TL500										74×132														
	TL700																	105×184							
RS80	TL500				74×132																				
	TL700											105×184													
RS100	TL700						105×184																		

Sprockets compatible with torque limiters from every major manufacturer are available. We also offer made-to-order sprockets. Contact a Tsubaki representative for more information.
Note: Check the bush width if TL250 or TL350 are used with RS40 sprockets.

1. Part Names and Standard Dimensional Formulae



D_P = Pitch circle diameter
D_O = Standard outer diameter
D_B = Tooth root diameter
D_C = Tooth root distance
D_H = Max. hub diameter and max. groove diameter
P = Chain pitch
d_1 = Roller outer diameter
N = Number of teeth

$$D_P = P / \sin\frac{180^\circ}{N}$$

$$D_O = P\left(0.6 + \cot\frac{180^\circ}{N}\right)$$

$$D_B = D_P - d_1$$

$$D_C = D_B \quad \text{[When number of teeth is even]}$$

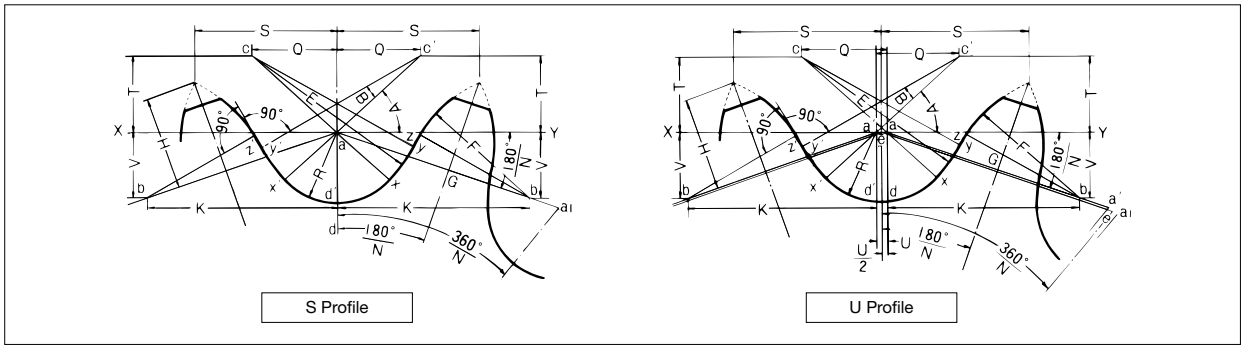
$$D_C = D_P \cos\frac{90^\circ}{N} - d_1 \quad \text{[When number of teeth is odd]}$$

$$D_H = P\left(\cot\frac{180^\circ}{N} - 1\right) - 0.76$$

2. Tooth Profile Specifications

2-1 Tooth profile

Tsubaki sprocket teeth profiles use S profiles from JIS standards, and are machine hobbed.
We currently are partially combining these with JIS standard U profiles. (JIS B 1801:2020)

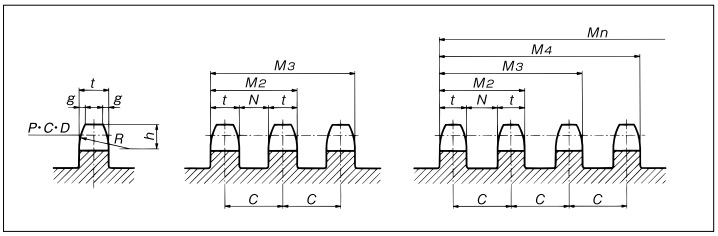


$pa = p\left(1 + \frac{DS - d_1}{DP}\right)$
$Ds = 2R = 1.005d_1 + 0.076$
$U = 0.07(p - d_1) + 0.051$
$R = Ds/2 = 0.5025d_1 + 0.038$
$A = 35^\circ + 60^\circ/N$
$B = 18^\circ - 56^\circ/N$
$ac = 0.8d_1$
$Q = 0.8d_1 \cos(35^\circ + 60^\circ/N)$
$T = 0.8d_1 \sin(35^\circ + 60^\circ/N)$
$E = cy = 1.3025d_1 + 0.038$
$\overline{xy} = (2.605d_1 + 0.076)\sin(9^\circ - 28^\circ/N)$
$yz = d_1\{1.4\sin(17^\circ - 64^\circ/N) - 0.8\sin(18^\circ - 56^\circ/N)\}$
$G = ab = 1.4d_1$ [Point b forms a line from point a on the XY line to the 180°/N angle on the XY line.]
$K = 1.4d_1 \cos 180^\circ/N$
$V = 1.4d_1 \sin 180^\circ/N$

$F = d_1\{0.8\cos(18^\circ - 56^\circ/N) + 1.4\cos(17^\circ - 64^\circ/N) - 1.3025\} - 0.038$
$H = \sqrt{F^2 - \left(1.4d_1 - \frac{pa}{2} + \frac{U}{2}\cos 180^\circ/N\right)^2} + \frac{U}{2}\sin 180^\circ/N$
[Assuming that U = 0 for the S profile]
$S = \frac{pa}{2}\cos 180^\circ/N + H\sin 180^\circ/N$
Outer diameter when teeth profiles taper = $pa\cot 180^\circ/N + 2H$
Max. pressure angle = $x_ab = 35^\circ - 120^\circ/N$
Min. pressure angle = $x_ab - B = 17^\circ - 64^\circ/N$
Ave. pressure angle = $26^\circ - 92^\circ/N$

N = Number of teeth, d_1 = Roller outer dia., DP = Pitch circle diameter, p = Chain pitch, pa = Tooth profile pitch (a-a1 for S profiles, e-e1 for U profiles)

2-2 Tooth width dimensions



Size	Each strand			t (Max.)			C 2 or more strands	2/3 strands			4 or more strands					
	g (ref.)	h	R (min.)	1 strand	2/3 strands	4 or more strands		M2	M3	N	M2	M3	M4	M5	M6	N
RS11	0.5	1.9	4.0	1.6	—	—	—	—	—	—	—	—	—	—	—	—
RS15	0.6	2.4	5.1	2.0	—	—	—	—	—	—	—	—	—	—	—	—
RS25	0.8	3.2	6.8	2.9	2.8	2.8	6.4	9.2	15.6	3.6	9.2	15.6	22.0	28.4	34.8	3.6
RS35	1.2	4.8	10.1	4.4	4.3	4.2	10.1	14.4	24.5	5.8	14.3	24.4	34.5	44.6	54.7	5.9
RS41	1.6	6.4	13.5	5.8	—	—	—	—	—	—	—	—	—	—	—	—
RS40	1.6	6.4	13.5	7.3	7.1	7.0	14.4	21.5	35.9	7.3	21.4	35.8	50.2	64.6	79.0	7.4
RS50	2.0	7.9	16.9	8.9	8.7	8.6	18.1	26.8	44.9	9.4	26.7	44.8	62.9	81.0	99.1	9.5
RS60	2.4	9.5	20.3	11.9	11.7	11.4	22.8	34.5	57.3	11.1	34.2	57.0	79.8	102.6	125.4	11.4
RS80	3.2	12.7	27.0	15.0	14.6	14.3	29.3	43.9	73.2	14.7	43.6	72.9	102.2	131.5	160.8	15.0
RS100	4.0	15.9	33.8	18.0	17.6	17.2	35.8	53.4	89.2	18.2	53.0	88.8	124.6	160.4	196.2	18.6
RS120	4.7	19.0	40.5	24.0	23.5	23.0	45.4	68.9	114.3	21.9	68.4	113.8	159.2	204.6	250.0	22.4
RS140	5.5	22.2	47.3	24.0	23.5	23.0	48.9	72.4	121.3	25.4	71.9	120.8	169.7	218.6	267.5	25.9
RS160	6.3	25.4	54.0	30.0	29.3	28.7	58.5	87.8	146.3	29.2	87.2	145.7	204.2	262.7	321.2	29.8
RS180	7.1	28.6	60.8	33.7	33.0	32.3	65.8	98.8	164.6	32.8	98.1	163.9	229.7	295.5	361.3	33.5
RS200	8.0	31.8	67.5	36.0	35.2	34.4	71.6	106.8	178.4	36.4	106.0	177.6	249.2	320.8	392.4	37.2
RS240	9.5	38.1	81.0	45.0	44.0	43.1	87.8	131.8	219.6	43.8	130.9	218.7	306.5	394.3	482.1	44.7

■ Maximum sprocket hub diameter and standard maximum bore diameter

Size	RS25		RS35		RS40·41		RS50		RS60		RS80		RS100		RS120		RS140		RS160		RS180		RS200		RS240	
Chain pitch	6.35		9.525		12.70		15.875		19.05		25.40		31.75		38.10		44.45		50.80		57.15		63.50		76.20	
No. of teeth	Hub dia.	Max. bore dia.	Hub dia.	Max. bore dia.	Hub dia.	Max. bore dia.	Hub dia.	Max. bore dia.	Hub dia.	Max. bore dia.	Hub dia.	Max. bore dia.	Hub dia.	Max. bore dia.	Hub dia.	Max. bore dia.	Hub dia.	Max. bore dia.	Hub dia.	Max. bore dia.	Hub dia.	Max. bore dia.	Hub dia.	Max. bore dia.	Hub dia.	Max. bore dia.
10	13	3.2	19	8.8	26	14	32	18	39	22	52	32	65	42	78	50	92	60	105	70	118	78	131	88	158	108
11	15	5.6	22	11	30	18	37	22	45	27	60	38	76	50	91	60	106	71	121	80	137	92	152	103	183	126
12	17	7.2	25	13	34	20	43	26	51	31	69	45	86	57	103	69	121	80	138	93	155	106	173	118	207	144
13	19	8.8	28	15	38	22	48	30	57	36	77	51	96	64	116	79	135	91	155	105	174	119	193	132	232	162
14	21	10	31	17	42	26	53	33	64	41	85	57	107	72	128	85	150	101	171	117	192	132	214	148	257	180
15	23	12	35	20	46	28	58	37	70	46	93	61	117	80	140	95	164	111	187	129	211	146	235	163	282	199
16	25	13	38	21	50	31	63	41	76	51	102	68	127	85	153	104	178	122	204	141	229	159	255	179	306	216
17	27	14	41	24	54	34	68	45	82	53	110	74	137	93	165	112	193	132	220	152	248	173	275	193	331	232
18	29	16	44	26	59	37	73	49	88	59	118	80	148	100	177	121	207	144	237	165	266	186	296	208	355	252
19	31	17	47	29	63	41	79	51	94	62	126	84	158	108	189	129	221	153	253	177	284	199	316	224	380	268
20	33	19	50	30	67	44	84	55	100	66	134	90	168	114	202	140	235	163	269	188	303	213	337	238	404	283
21	35	20	53	33	71	47	89	59	107	72	142	95	178	122	214	148	250	175	285	200	321	226	357	254	429	303
22	37	21	56	35	75	50	94	62	113	77	150	101	188	128	226	157	264	185	302	212	339	239	377	266	453	318
23	39	22	59	37	79	51	99	65	119	80	159	109	199	137	238	165	278	196	318	224	358	254	398	278	477	338
24	41	24	62	40	83	54	104	70	125	83	167	113	209	144	251	176	292	205	334	235	376	265	418	294	502	354
25	43	25	65	42	87	57	109	73	131	88	175	120	219	152	263	184	307	217	351	249	394	275	438	310	526	372

Note: When selecting max. bore diameter, select a hub wall thickness that matches the operating conditions based on standard machine design. Standard-type max. bore diameters for standard situations (SS400 sprocket, JIS keyway) are shown for your reference. The values in the table have been calculated using the formula for maximum hub diameter and maximum groove diameter shown in “1. Part Names and Standard Dimensional Formulae” on page 154.

Pin Gear Drives Chain-type Pin Gears

For linear drive and large radius rotary drives, a chain gear drive is used by a drive source (motor, etc.) through a reducer. Chains require a large space, and gears need precision machining, which can lead to high costs and other issues. Pin gears are perfect in these situations.
An attachment chain is wound around the outside of a drum in place of a gear drive wheel, and a specially machined sprocket is used for the pinion gear. For linear drives, the attachment chain is attached linearly and used in place of a rack.

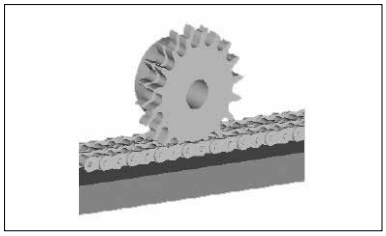
The following is a rough comparison of pin gears and gear racks.

	Freedom of layout	Precision	Cost	Durability
Pin gears	Excellent	OK	Good	Good
Gear racks	Poor	Good	OK	OK

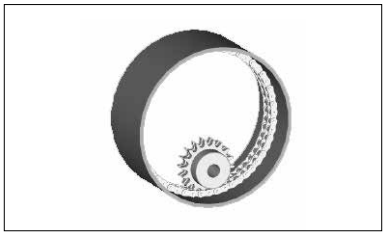
◆ Pin gear drive types

There are linear, inner rotary, and outer rotary pin gear drives.

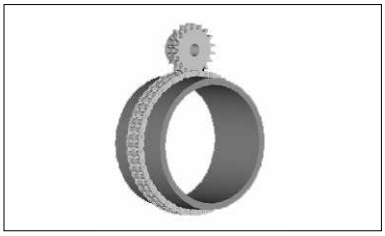
Linear



Inner rotary



Outer rotary



Pin Gear Drives Sprockets for Chain-type Pin Gears

Unlike sprockets where the chain wraps around them, sprockets for pin gears engage the chain, which requires them to have special teeth profiles. Using a unique principle, Tsubaki's special tooth profiles are designed for the lowest possible backlash and enable smooth engagement. Especially, the tooth profile changes to match the mounting diameter of the pin gear chain in inner/outer rotary applications for the optimal pin gear drive. Teeth have been hardened to increase their strength and wear resistance. Note: These products are made-to-order. Contact a Tsubaki representative for details.

◆ Reference dimensions

■ Pin gear sprockets by number of teeth

(The table below shows reference dimensions. They will vary depending on the drive system and number of chain links.) (Unit : mm)

Size	RS40		RS50		RS60		RS80		RS100		RS120		RS140		RS160	
Tooth width	7.3		8.9		11.9		15.0		18.0		24.0		24.0		30.0	
No. of teeth	Pitch dia. D_P	Outer dia. D_O	Pitch dia. D_P	Outer dia. D_O	Pitch dia. D_P	Outer dia. D_O	Pitch dia. D_P	Outer dia. D_O	Pitch dia. D_P	Outer dia. D_O	Pitch dia. D_P	Outer dia. D_O	Pitch dia. D_P	Outer dia. D_O	Pitch dia. D_P	Outer dia. D_O
15	62.29	70.9	77.77	88.1	93.32	106.3	124.17	141.8	155.09	177.9	186.11	212.8	216.94	247.7	247.94	282.2
16	66.33	75.1	82.82	93.3	99.38	112.6	132.26	150.1	165.19	188.1	198.23	224.9	231.09	261.6	264.11	298.4
17	70.37	79.3	87.87	98.6	105.45	119.0	140.34	158.6	175.30	198.2	210.36	237.0	245.24	275.7	280.28	314.6
18	74.42	83.5	92.93	103.9	111.51	125.3	148.43	167.1	185.41	208.3	222.49	249.2	259.39	289.9	296.45	330.7
19	78.46	87.8	97.98	109.1	117.57	131.5	156.51	175.4	195.51	218.4	234.62	261.3	273.54	304.0	312.62	346.9
20	82.50	92.0	103.03	114.3	123.64	137.9	164.60	183.7	205.62	228.5	246.74	273.4	287.69	318.2	328.79	363.1
21	86.54	96.0	108.09	119.6	129.70	144.0	172.68	191.7	215.73	238.6	258.87	285.5	301.84	332.3	344.96	379.3
22	90.56	100.1	113.14	124.9	135.77	150.1	180.77	199.8	225.83	248.7	271.00	297.7	315.99	346.5	361.13	395.4
23	94.63	104.1	118.19	130.2	141.83	156.1	188.85	207.9	235.94	258.8	283.13	309.8	330.14	360.6	377.30	411.6
24	98.67	108.2	123.24	135.4	147.89	162.2	196.94	216.0	246.04	268.9	295.25	321.9	344.28	374.8	393.47	427.8
25	102.71	112.2	128.30	140.5	153.96	168.2	205.02	224.1	256.15	279.0	307.38	334.1	358.43	388.9	409.64	443.9

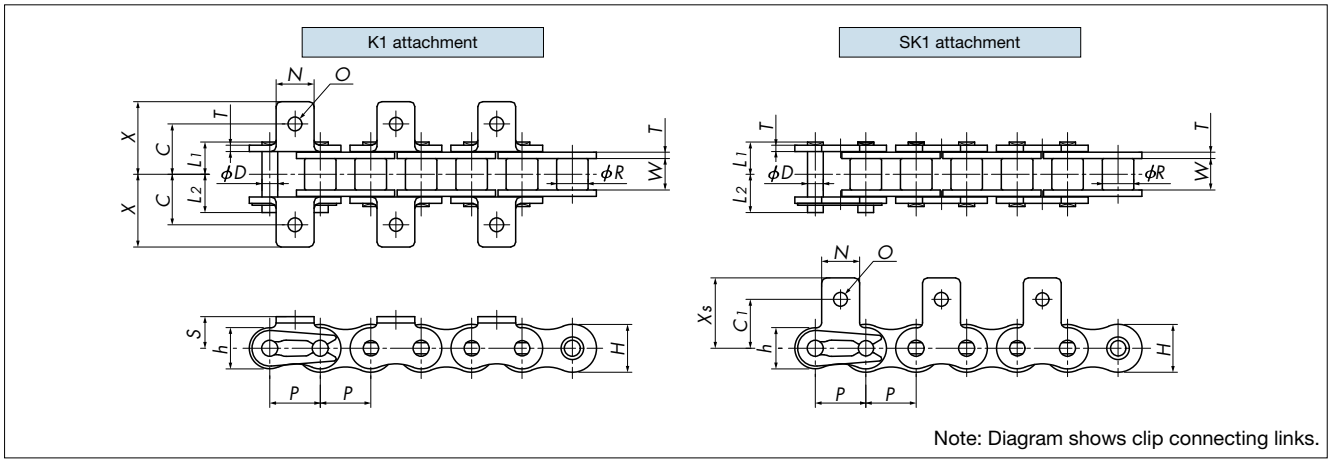
Model numbering example RS80 - 1B 18T Q - G - TK

- RS80: Size
- 1B: Number of strands / Hub type
- 18T: Number of teeth
- Q: Hardened teeth
- G: Chain-type pin gear
- TK: Made-to-order

Selection

See page 213 for selection.

Pin Gear Drives Attachment Chains for Chain-type Pin Gears



Note: Diagram shows clip connecting links.

■ Specifications

Size	Pitch *P*	Roller dia. *R*	Inner link inner width *W*	Plate			Pin			Pin gear max. allowable load kN{kgf}	Approx. mass kg/m
				Thickness *T*	Width *H*	Width *h*	Dia. *D*	L_1	L_2		
RS40	12.70	7.92	7.95	1.5	12.0	10.4	3.97	8.25	9.95	2.16{220}	0.64
RS50	15.875	10.16	9.53	2.0	15.0	13.0	5.09	10.3	12.0	4.12{420}	1.04
RS60	19.05	11.91	12.70	2.4	18.1	15.6	5.96	12.85	14.75	4.90{500}	1.53
RS80	25.40	15.88	15.88	3.2	24.1	20.8	7.94	16.25	19.25	9.41{960}	2.66
RS100	31.75	19.05	19.05	4.0	30.1	26.0	9.54	19.75	22.85	15.7{1600}	3.99
RS120	38.10	22.23	25.40	4.8	36.2	31.2	11.11	24.9	28.90	20.6{2100}	5.93
RS140	44.45	25.40	25.40	5.6	42.2	36.4	12.71	26.9	31.70	29.4{3000}	7.49
RS160	50.80	28.58	31.75	6.4	48.2	41.6	14.29	31.85	36.85	37.3{3800}	10.10
RS200	63.50	39.68	38.10	8.0	60.3	52.0	19.85	39.0	44.80	46.1{4700}	16.49
RS240	76.20	47.63	47.63	9.5	72.4	62.4	23.81	47.9	55.50	68.6{7000}	24.50

Size	Attachment							K1/SK1 additional mass per attachment location kg	Number of links per unit
	C	C_1	*N*	*O*	*S*	*X*	X_S		
RS40	12.7	12.7	9.5	3.6	8.0	17.8	17.40	0.004	240
RS50	15.9	15.9	12.7	5.2	10.3	23.4	23.05	0.006	192
RS60	19.05	18.3	15.9	5.2	11.9	28.2	26.85	0.014	160
RS80	25.4	24.6	19.1	6.8	15.9	36.6	35.45	0.026	120
RS100	31.75	31.8	25.4	8.7	19.8	44.9	44.00	0.052	96
RS120	38.1	36.5	28.6	10.3	23.0	55.8	52.85	0.088	80
RS140	44.5	44.5	34.9	11.9	28.6	63.1	63.50	0.142	68
RS160	50.8	50.8	38.1	14.3	31.8	71.8	70.10	0.194	60
RS200	63.5	63.5	48.0	17.5	42.9	83.5	85.50	0.356	48
RS240	76.2	76.2	57.2	21.0	47.7	97.9	106.70	0.553	40

Note: Use mounting bolts of strength class 8.8 or higher. Maximum allowable load is specific to pin gear applications and will differ from values shown in the table for Small Size Conveyor Chain.

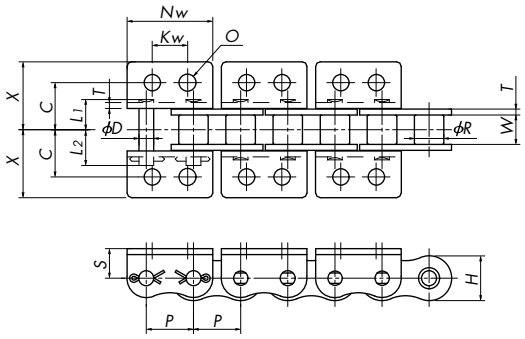
Model numbering example **RS80 - 2L K1 + 120L - JR**

- RS80 — Size
- 2L — Attachment spacing
- K1 — Attachment type
- 120L — Number of links
- JR — End link

Refer to the Small Size Conveyor Chain catalog for ordering information.

Note: For RF320 and RF400 chains, select “T” for the series code.

WK2 attachment



Note: Diagram shows cotter-pin connecting links.

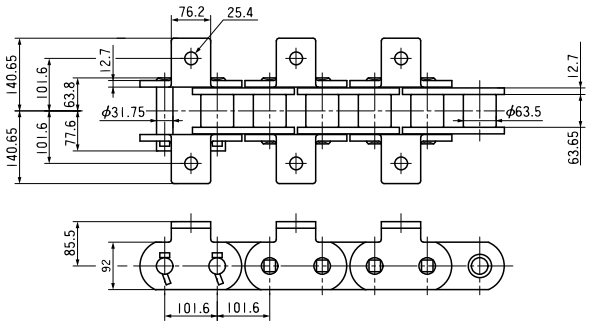
■ Specifications

Size	Pitch *P*	Roller dia. *R*	Inner link inner width *W*	Plate		Pin			Max. allowable load kN{kgf}	Approx. mass kg/m
				Thickness *T*	Width *H*	Dia. *D*	L_1	L_2		
RS40	12.70	7.92	7.95	1.5	12.0	3.97	8.25	9.95	2.65{270}	0.64
RS50	15.875	10.16	9.53	2.0	15.0	5.09	10.3	12.0	4.31{440}	1.04
RS60	19.05	11.91	12.70	2.4	18.1	5.96	12.85	14.75	6.28{640}	1.53
RS80	25.40	15.88	15.88	3.2	24.1	7.94	16.25	19.25	10.7{1090}	2.66
RS100	31.75	19.05	19.05	4.0	30.1	9.54	19.75	22.85	17.1{1740}	3.99
RS200	63.50	39.68	38.10	8.0	60.3	19.85	39.0	44.8	46.1{4700}	16.49
RS240	76.20	47.63	47.63	9.5	72.4	23.81	47.9	55.5	68.6{7000}	24.15

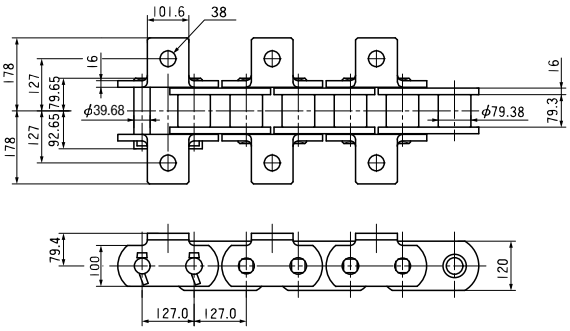
Size	Attachment						WK2 additional mass per attachment location kg	Number of links per unit
	C	*X*	*Nw*	*Kw*	*O*	*S*		
RS40	12.7	17.8	23.0	9.5	4.5	8.0	0.006	240
RS50	15.9	23.4	28.8	11.9	5.5	10.3	0.014	192
RS60	19.05	28.2	34.6	14.3	6.6	11.9	0.024	160
RS80	25.4	36.6	46.1	19.1	9.0	15.9	0.056	120
RS100	31.75	44.9	57.7	23.8	11.0	19.8	0.110	96
RS200	63.5	83.5	115.4	63.5	17.5	42.9	0.857	48
RS240	76.2	97.9	138.5	57.0	21.0	47.7	1.338	40

Note: Use mounting bolts of strength class 8.8 or higher. Maximum allowable load is specific to pin gear applications and will differ from values shown in the table for Small Size Conveyor Chain.

RF320-T K1 attachment chain



RS400-T K1 attachment chain



■ Specifications

Size & series	Max. allowable load kN{kgf}	Approx. mass kg/m	K1 additional mass per attachment location kg	Number of links per unit
RF320-T	104{10600}	47.6	1.732	30
RF400-T	176{17900}	83.9	3.136	24

Note: Use mounting bolts of strength class 8.8 or higher.

Pin Gear Drives Pin Gear Drive Units

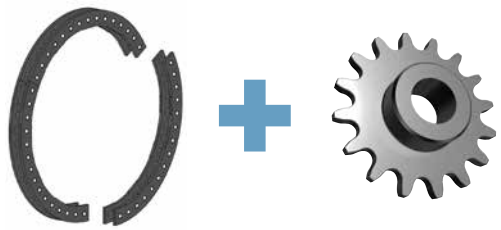
A new drive system to replace gears and racks.

Configuration

A pin gear drive unit is a drive unit with a pin gear and engaging pin rack (or pin wheel) set.

Rotary drives

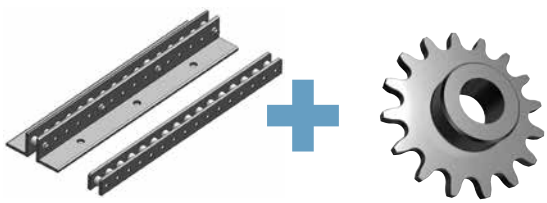
Pin wheel | Pin gear



Pin wheel diameter (number of pins) can be selected freely.

Linear drives

Pin rack | Pin gear

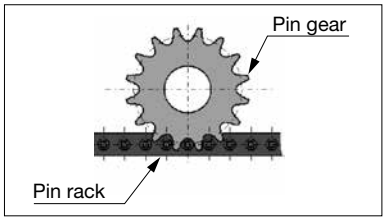


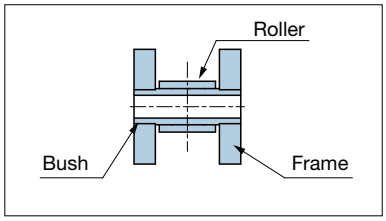
Pin rack length (number of pins) can be selected freely.

Pin gear and pin wheel/rack are sold together as a unit. Combine pin gear and pin wheel/rack to bring out its full functions and performance.

Structure

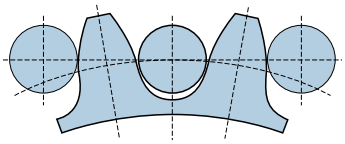
The pin rack and pin wheel comprise a frame, bush, and roller. The bush uses hollow pins, which can serve as mounting holes for installing on other equipment. On steel pin gear drive units, teeth have been hardened to increase their strength and wear resistance.





Unique Pin Gear Tooth Profile

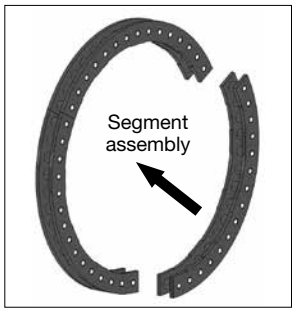
The pin gear tooth profiles incorporate a unique Tsubaki design to give them smooth engagement and power transmission between the pin rack and pin wheel. Tooth profile will vary depending on the drive method and the total number of pins on the pin wheel.



Unique pin gear drive unit tooth profile

Features

Drive method	Pin gear drive	Standard gear	Chain type pin gear
Installation time	Good	OK	OK
Wide variety	Good	OK	OK
Large equipment	Good	OK	Good
Transmission torque	Good	Good	Good



■ Space-saving and easy to install

Pin gear drive units help make the entire equipment more compact. They also allow flexible installation precision, making installation easy.

■ Wide variety for use on larger equipment

A wide variety of models flexibly accommodates various needs, from small to large equipment.

■ Withstands wear and buildup of foreign matter

The rotating rollers minimize wear and prevent foreign matter from building up in the engaging section.

■ Cost reductions and improved efficiency

Segmented design allows selection of required lengths and angles, thus enabling cost reductions and efficient equipment design.

Specifications

■ Standard specifications

Frame no.	Pitch mm	Allowable tangential load Fp kN {kgf}		
		Steel models	Flexible models	Stainless steel models
PDU020	20	4.7 {480}	—	0.8 {80}
PDU022	22	7.7 {780}	—	1.1 {110}
PDU030	30	12.8 {1300}	—	1.9 {190}
PDU035	35	19.5 {1990}	—	2.6 {270}
PDU040	40	27.3 {2780}	—	4.1 {420}
PDU050	50	31.7 {3230}	25.3 {2580}	5.1 {520}
PDU055	55	52.9 {5390}	37.0 {3770}	7.0 {710}
PDU070	70	60.7 {6190}	48.5 {4950}	9.9{1010}
PDU080	80	71.5 {7290}	57.2 {5830}	12.0{1220}
PDU090	90	98.9{10100}	79.1 {8070}	16.8{1710}
PDU120	120	122.5{12490}	—	—
PDU150	150	240 {24500}	—	—
PDU180	180	347 {35400}	—	—
PDU240	240	525 {53400}	—	—

• Pin wheel pitch notation indicates circular arc pitch.
• Tangential load may be reduced for some specifications or in certain applications.

		Steel models	Flexible models	Stainless steel models
Maximum speed		Tangential speed: 50 m/min		
Usage environment		Indoors (not exposed to rain or water)		Corrosive atmospheres
Usage temperature		-10 to 150°C		-20 to 400°C
Material	Frame	Rolled steel		Austenitic stainless steel
	Bush	Alloy steel		Precipitation hardened stainless steel
	Roller	Alloy steel		Austenitic stainless steel
	Pin Gear	Carbon steel (with hardened teeth)		Austenitic stainless steel

■ Backlash (reference) and center distance precision

Frame no.	Backlash (mm)			Center distance precision (mm)		
	Steel models	Flexible models	Stainless steel models	Steel models	Flexible models	Stainless steel models
PDU020	0.26 to 0.47	—	0.26 to 0.47	±0.25	—	±0.25
PDU022	0.32 to 0.57	—	0.32 to 0.57	±0.3	—	±0.3
PDU030	0.32 to 0.66	—	0.32 to 0.67	±0.4	—	±0.4
PDU035	0.33 to 0.88	—	0.33 to 0.88	±0.5	—	±0.5
PDU040	0.41 to 0.86	—	0.41 to 0.86	±0.6	—	±0.6
PDU050	0.53 to 0.98	0.77 to 1.22	0.53 to 1.08	±0.7	±1.57	±0.7
PDU055	0.61 to 1.06	1.01 to 1.46	0.61 to 1.26	±0.75	±1.72	±0.75
PDU070	0.86 to 1.24	1.36 to 1.74	0.86 to 1.61	±0.9	±2.02	±0.9
PDU080	0.89 to 1.20	1.49 to 1.80	0.89 to 1.74	±1	±2.2	±1
PDU090	0.97 to 1.42	1.57 to 2.02	0.97 to 1.92	±1.2	±2.7	±1.2
PDU120	1.30 to 1.57	—	—	±1.6	—	—
PDU150	1.63 to 1.96	—	—	±2	—	—
PDU180	1.95 to 2.36	—	—	±2.4	—	—
PDU240	2.60 to 3.14	—	—	±3.2	—	—

• Backlash amounts are calculated figures and are not guaranteed values.

■ Frame numbers by model type and specification

Product type \ Frame no.	PDU020	PDU022	PDU030	PDU035	PDU040	PDU050	PDU055	PDU070	PDU080	PDU090	PDU120	PDU150	PDU180	PDU240
Steel	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Electroless nickel plated	○	○	○	○	○									
High anti-rust	○	○	○	○	○	○	○	○	○*	○*				
Flexible						○	○	○	○	○				
Stainless steel	○	○	○	○	○	○	○	○	○	○				

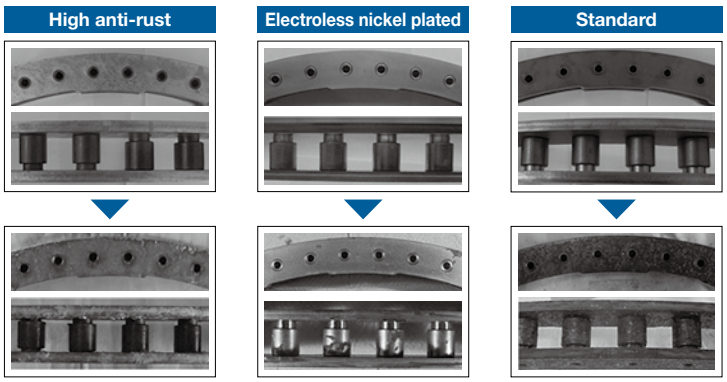
*Models with frame numbers PDU080 and above do not support vertical (angle) installation.

Lineup

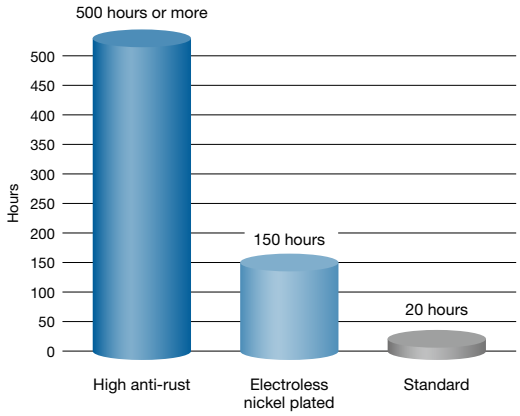
■ Standard steel models

- **Electroless nickel plated steel models** Applicable frames: PDU020 to PDU040
- **High anti-rust steel models** Applicable frames: PDU020 to PDU090

Salt spray test results



No rusting even after 500 hours | Partial rusting after 150 hours | Rusting after 20 hours



Note: Based on in-house tests.

■ Flexible models

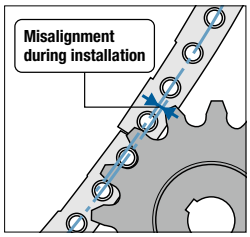
Applicable frames: PDU050 to PDU090

◆ **Features**

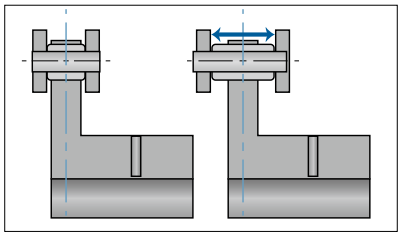
Flexible models have a larger center-to-center distance tolerance and a wider clearance between the pin rack/pin wheel and pin gear. Effective for equipment that requires strict installation accuracy and for when the installation position changes during operation due to thermal expansion.

◆ **Specifications**

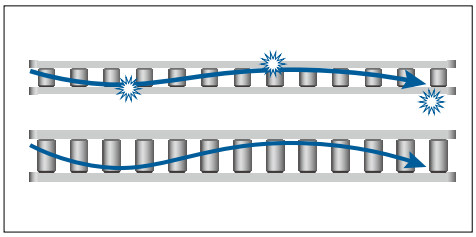
Some models have different dimensions from steel models. See the dimensions tables starting on page 163.



Eliminates clearance issues caused by misalignment and thermal expansion



Wider clearance between the pin rack/pin wheel and pin gear



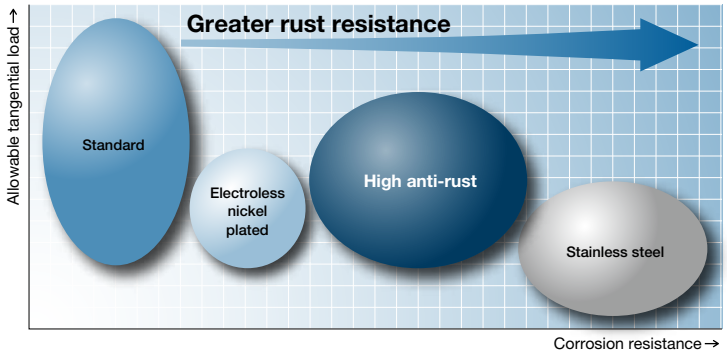
Allows for a certain amount of meandering caused by the presence or absence of workpieces and uneven loads

■ Stainless steel models

Applicable frames: PDU020 to PDU090

Some models have different dimensions from steel models. See the dimensions tables starting on page 163.

■ Selection guide



Special Specifications

Made-to-order models are also available.

Black oxide coating	• Attractive appearance, some rust prevention
Locking pin gear	• Pin gear with keyless locking device —— Easy phasing (Not available for stainless steel models.)
Large backlash specifications	• Increased backlash improves ease of installation (Contact a Tsubaki representative for details.)
Small backlash specifications	• Models with less backlash are also available (Contact a Tsubaki representative for details.)



Locking pin gear

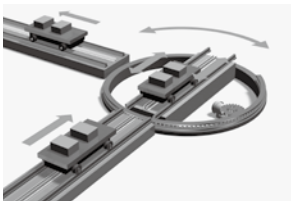
Standard steel models



Standard model that can be used on a wide range of industrial machinery

- Suitable for a wide range of applications
- Easy installation and adjustment
- Stable power transmission

Conveyor



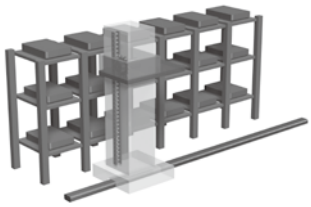
Electroless nickel plated steel models



Highly reliable surface treatment

- Uniform surface treatment provides stable corrosion resistance
- Regular maintenance allows long-term use
- Superb rust resistance under general usage environments

Pallet pool system



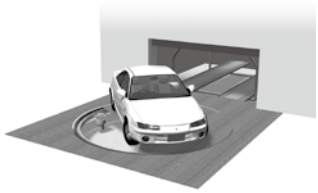
High anti-rust steel models



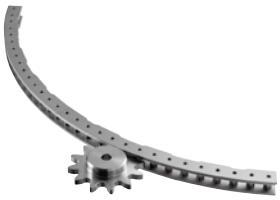
Advanced surface treatment makes it suitable for outdoor use

- Superb rust resistance and high strength
- High corrosion resistance allows long-term use
- Stable performance even in harsh environments

Multi-story carpark



Flexible models



High installation flexibility and rough adjustments are possible

- Wide center-to-center distance tolerance range
- Adapts to thermal expansion and environments with vibrations
- High tolerance during installation

Rotary kiln



Stainless steel models



For industries that prioritize hygiene and chemical resistance

- Superb corrosion resistance and cleanliness
- Ideal for the food and pharmaceutical industries
- Stable operation in high- and low-temperature environments
- Low maintenance requirements

Food washing machine



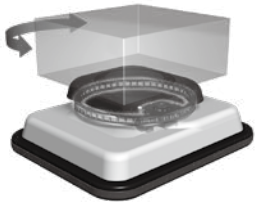
Special specifications



Locking pin gear (with keyless locking device) Special backlash specifications; sluice/movable weir specifications; other

- Made-to-order based on customer specifications
- Compatible with existing equipment and machinery
- Can accommodate non-standard sizes and materials

Robot



Contact a Tsubaki representative for design and technical assistance.

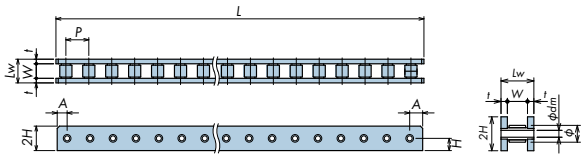
Pin Rack (Linear Drive) Dimensions Table 1 (PDU020 to PDU040)

Model numbering example ■ Pin rack **PDU020 - S P A 040P - R**

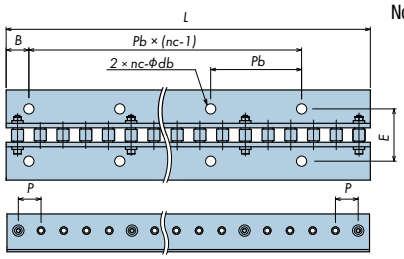
- PDU020: Frame no.
- S: Drive system — S : Linear drive
- P: Pin rack
- A: Installation — F : Horizontal (flat), A : Vertical (angle)
- 040P: Overall pin count
- R: [Blank] : Standard steel; K : Electroless nickel plated; R : High anti-rust; S : Standard stainless steel

The number of pins can be selected as desired so long as it is greater than the minimum number of pins.

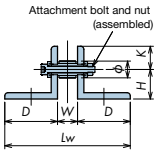
Horizontal (flat) installation: SPF



Vertical (angle) installation: SPA



Note: Hollow pins for vertical (angle) installation are pre-fastened with bolts and nuts to secure the rack.



■ Horizontal (flat) installation

Frame no.		Pin count NT	Pitch P	Roller dia. Φ	Length L	Inside width W	Center height H	Overall height 2H	Overall width Lw	Plate thickness t	Pin position A	Bolt hole dia. Φdm	Mounting bolt size	Mass kg
PDU020	Standard	40	20	10.16	800	12	11	22	21 (22)	4.5 (5)	10	4.5	M4	1.4 (1.5)
	Min.	8	20	10.16	160	12	11	22	21 (22)	4.5 (5)	10	4.5	M4	0.3 (0.3)
PDU022	Standard	36	22	11.91	792	16	12.5	25	25 (26)	4.5 (5)	11	4.5	M4	1.7 (1.9)
	Min.	13	22	11.91	286	16	12.5	25	25 (26)	4.5 (5)	11	4.5	M4	0.6 (0.7)
PDU030	Standard	26	30	15.88	780	19	16	32	31 (31)	6 (6)	15	6.5	M6	2.8 (2.8)
	Min.	10	30	15.88	300	19	16	32	31 (31)	6 (6)	15	6.5	M6	1.1 (1.1)
PDU035	Standard	22	35	19.05	770	22	19	38	40 (34)	9 (6)	17.5	8.8	M8	4.7 (3.4)
	Min.	8	35	19.05	280	22	19	38	40 (34)	9 (6)	17.5	8.8	M8	1.7 (1.2)
PDU040	Standard	20	40	22.23	800	28	22.5	45	46 (44)	9 (8)	20	10.8	M10	6 (5.5)
	Min.	7	40	22.23	280	28	22.5	45	46 (44)	9 (8)	20	10.8	M10	2.1 (1.9)

■ Vertical (angle) installation

Frame no.		Pin count NT	Pitch P	Roller dia. Φ	Length L	Inside width W	Center height H	Center height K	Overall height H+K	Overall width Lw	Angle leg width D	End surface B	Mounting hole dia. Φdb	Mounting bolt size	Mounting hole position E	Mounting hole pitch Pb	Mounting hole count (1 side) nc	Distance between mounting holes Pb× (nc-1)	Mass kg
PDU020	Standard	40	20	10.16	800	12	20	10	30	72	30	20	9	M8	56	120	7	720	2.4 (2.4)
	Min.	8	20	10.16	160	12	20	10	30	72	30	20	9	M8	56	120	2	120	0.5 (0.5)
PDU022	Standard	36	22	11.91	792	16	27	13	40	96	40	22	11	M10	60	88	9	704	3.3 (3.3)
	Min.	6	22	11.91	132	16	27	13	40	96	40	22	11	M10	60	88	2	88	0.6 (0.6)
PDU030	Standard	26	30	15.88	780	19	28	22	50	119	50	30	13.5	M12	69	120	7	720	7.5 (7.5)
	Min.	6	30	15.88	180	19	28	22	50	119	50	30	13.5	M12	69	120	2	120	1.7 (1.7)
PDU035	Standard	22	35	19.05	770	22	30	20	50	122	50	35	13.5	M12	76	140	6	700	7.7 (7.5)
	Min.	6	35	19.05	210	22	30	20	50	122	50	35	13.5	M12	76	140	2	140	2.1 (2)
PDU040	Standard	20	40	22.23	800	28	28	22	50	128	50	40	13.5	M12	88	120	7	720	8.6 (8.5)
	Min.	8	40	22.23	320	28	28	22	50	128	50	40	13.5	M12	88	120	3	240	3.4 (3.4)

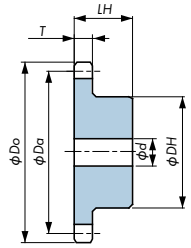
Note: 1. Figures in parentheses ( ) are the dimensions/mass for stainless steel models.
2. The standard pin count is based on the number of pins used in segments with lengths that make them easy to handle. In addition, the minimum length and minimum number of pins are set based on manufacturing limitations.
3. If the total number of pins exceeds the standard number of pins, the standard number of pins and the number of pins less than the standard length (equal to or more than the minimum number of pins) is used for configuration.
4. See page 176 for installation instructions.
5. Mounting bolts are not included.

Pin Gear (Linear Drive) Dimensions Table 1 (PDU020 to PDU040)

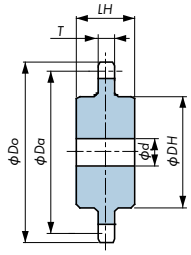
Model numbering example ■ Pin gear **PDU020 - S G B 014T - R**

- PDU020: Frame no.
- S: Drive system — S : Linear drive
- G: Pin gear
- B: Pin gear type — B : Single hub, C : Dual hub
- 014T: Number of teeth
- R: [Blank] : Standard steel, K : Electroless nickel plated, R : High anti-rust, S : Standard stainless steel

Single hub: SGB



Dual hub: SGC



■ Pin gear

Frame no.	Number of teeth NT	Pitch circle dia. ϕDa	Outer dia. ϕDo	Hub dia. ϕDH	Hub length LH	Pin gear tooth width T	Shaft bore dia. ϕd Pilot bore	Shaft bore dia. ϕd Max.	Mass kg
PDU020	13	84.76	100	50	30	9	12.7	31	0.7
	14	91.13	106	50	30	9	12.7	31	0.8
	15	97.29	111	50	30	9	12.7	31	0.8
	16	103.66	117	50	30	9	12.7	31	0.9
	17	109.83	123	50	30	9	12.7	31	1
	18	116.19	129	60	30	9	12.7	37	1.2
	19	122.36	135	60	30	9	12.7	37	1.3
	20	128.72	141	60	30	9	12.7	37	1.4
	21	135.09	148	60	40	9	15.9	37	1.7
	22	141.46	154	60	40	9	15.9	37	1.8
	23	147.62	160	60	40	9	15.9	37	1.9
	24	153.99	167	60	40	9	15.9	37	2
PDU022	13	93.44	110	60	40	12	15.9	37	1.2
	14	100.44	117	60	40	12	15.9	37	1.3
	15	107.04	122	60	40	12	15.9	37	1.4
	16	114.05	129	70	40	12	15.9	43	1.8
	17	120.85	136	70	50	12	15.9	43	2.2
	18	127.85	143	70	50	12	15.9	43	2.3
	19	134.65	149	70	50	12	15.9	43	2.4
	20	141.66	156	70	50	12	15.9	43	2.6
	21	148.66	163	70	50	12	15.9	43	2.7
	22	155.66	170	70	50	12	15.9	43	2.9
	23	162.46	177	70	50	12	18	43	3
	24	169.47	184	70	50	12	18	43	3.2
PDU030	13	126.94	150	80	50	15	19	50	2.8
	14	136.49	158	80	50	15	19	50	3
	15	145.84	167	80	50	15	19	50	3.3
	16	155.39	175	80	60	15	19	50	3.9
	17	164.74	184	90	60	15	19	56	4.7
	18	174.29	194	90	60	15	19	56	5
	19	183.44	203	90	60	15	23	56	5.2
	20	192.99	213	90	70	15	23	56	6
	21	202.54	222	90	70	15	23	56	6.4
	22	212.08	232	90	70	15	23	56	6.7
	23	221.43	241	100	70	15	23	62	7.8
	24	230.98	251	100	70	15	23	62	8.2

Frame no.	Number of teeth NT	Pitch circle dia. ϕDa	Outer dia. ϕDo	Hub dia. ϕDH	Hub length LH	Pin gear tooth width T	Shaft bore dia. ϕd Pilot bore	Shaft bore dia. ϕd Max.	Mass kg
PDU035	13	148.43	175	95	80	18	23	59	5.7
	14	159.57	185	110	90	18	23	68	8
	15	170.51	194	110	90	18	28	68	8.2
	16	181.65	205	120	100	18	28	75	10.5
	17	192.59	216	120	100	18	28	75	11
	18	203.74	227	120	100	18	28	75	11.5
	19	214.68	238	120	100	18	28	75	12
	20	225.82	249	130	100	18	28	81	13.8
	21	236.76	260	130	100	18	28	81	14.4
	22	247.90	271	130	110	18	33	81	15.8
	23	258.44	282	130	110	18	33	81	16.4
	24	269.58	293	130	110	18	33	81	17
PDU040	13	169.92	200	110	90	24	28	68	8.8
	14	182.65	211	120	100	24	28	75	11.3
	15	194.99	222	120	100	24	33	75	11.8
	16	207.72	235	120	100	24	33	75	12.5
	17	219.85	247	120	100	24	33	75	13.3
	18	232.58	260	130	100	24	33	81	15.4
	19	245.12	272	130	110	24	33	81	17.2
	20	257.85	285	130	110	24	33	81	18.2
	21	270.58	298	130	110	24	33	81	19.2
	22	283.31	310	140	120	24	33	87	22.8
	23	295.45	323	140	120	24	33	87	23.9
	24	308.18	335	140	120	24	33	87	25

Note: Though there are limits due to specifications and size, we can manufacture models with numbers of teeth other than those listed above. See page 175 for the applicable number of teeth.

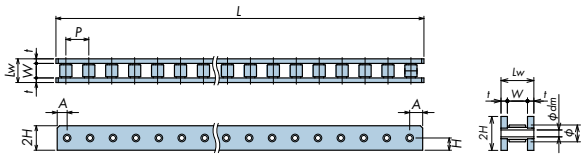
Pin Rack (Linear Drive) Dimensions Table 2 (PDU050 to PDU090)

Model numbering example ■ Pin rack **PDU050 - S P A 080P - R**

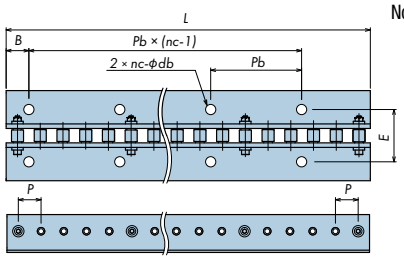
- PDU050: Frame no.
- S: Drive system — S : Linear drive
- P: Pin rack
- A: Installation — F : Horizontal (flat), A : Vertical (angle)
- 080P: Overall pin count
- R: [Blank] : Standard steel, R : High anti-rust, S : Standard stainless steel, Y : Flexible

The number of pins can be selected as desired so long as it is greater than the minimum number of pins.

Horizontal (flat) installation: SPF



Vertical (angle) installation: SPA



Note: Hollow pins for vertical (angle) installation are pre-fastened with bolts and nuts to secure the rack.

■ Horizontal (flat) installation

Frame no.		Type	Pin count NT	Pitch P	Roller dia. φ	Length L	Inside width W	Center height H	Overall height H+K	Overall width Lw	Plate thickness t	Pin position A	Bolt hole dia. φdm	Mounting bolt size	Mass kg
PDU050	Standard	Steel	20	50	25.4	1000	28	32.5	65	52 (46)	12 (9)	25	12.8	M12	13.2 (10.3)
	Min.		6	50	25.4	300	28	32.5	65	52 (46)	12 (9)	25	12.8	M12	4 (3.1)
	Standard	Flexible	20	50	25.4	1000	40	32.5	65	64	12	25	12.8	M12	13.9
	Min.		6	50	25.4	300	40	32.5	65	64	12	25	12.8	M12	4.2
PDU055	Standard	Steel	18	55	28.58	990	36	32.5	65	60 (54)	12 (9)	27.5	12.8	M12	14.0 (11.2)
	Min.		9	55	28.58	495	36	32.5	65	60 (54)	12 (9)	27.5	12.8	M12	7.0 (5.6)
	Standard	Flexible	18	55	28.58	990	50	32.5	65	74	12	27.5	12.8	M12	15
	Min.		9	55	28.58	495	50	32.5	65	74	12	27.5	12.8	M12	7.5
PDU070	Standard	Steel	14	70	35.71	980	40	37.5	75	72 (60)	16 (10)	35	17	M16	20.6 (14.3)
	Min.		6	70	35.71	420	40	37.5	75	72 (60)	16 (10)	35	17	M16	8.8 (6.1)
	Standard	Flexible	14	70	35.71	980	72	37.5	75	104	16	35	17	M16	23.3
	Min.		6	70	35.71	420	72	37.5	75	104	16	35	17	M16	10
PDU080	Standard	Steel	12	80	39.68	960	42	45	90	74 (66)	16 (12)	40	17	M16	24.6 (19.6)
	Min.		7	80	39.68	560	42	45	90	74 (66)	16 (12)	40	17	M16	14.3 (11.4)
	Standard	Flexible	12	80	39.68	960	84	45	90	116	16	40	17	M16	28.4
	Min.		7	80	39.68	560	84	45	90	116	16	40	17	M16	16.6
PDU090	Standard	Steel	11	90	47.63	990	52	50	100	90 (76)	19 (12)	45	22	M20	33.9 (24)
	Min.		6	90	47.63	540	52	50	100	90 (76)	19 (12)	45	22	M20	18.5 (13.1)
	Standard	Flexible	11	90	47.63	990	100	50	100	138	19	45	22	M20	39.4
	Min.		6	90	47.63	540	100	50	100	138	19	45	22	M20	21.5

■ Vertical (angle) installation

Frame no.		Type	Pin count NT	Pitch P	Roller dia. φ	Length L	Inside width W	Center height H	Center height K	Overall height H+K	Overall width Lw	Angle leg width D	End surface B	Mounting hole dia. φdb	Mounting bolt size	Mounting hole position E	Mounting hole pitch Pb	Mounting hole count (1 side) nc	Distance between mounting holes Pb× (nc-1)	Mass kg
PDU050	Standard	Steel	20	50	25.4	1000	28	40	25	65	158	65	50	17.5	M16	104	150	7	900	17.2 (13.8)
	Min.		5	50	25.4	250	28	40	25	65	158	65	50	17.5	M16	104	150	2	150	4.3 (3.5)
	Standard	Flexible	20	50	25.4	1000	40	40	25	65	170	65	50	17.5	M16	104	150	7	900	18.1
	Min.		5	50	25.4	250	40	40	25	65	170	65	50	17.5	M16	104	150	2	150	4.5
PDU055	Standard	Steel	18	55	28.58	990	36	37	28	65	166	65	55	17.5	M16	112	165	6	825	18 (14.8)
	Min.		8	55	28.58	440	36	37	28	65	166	65	55	17.5	M16	112	165	3	330	8 (6.6)
	Standard	Flexible	18	55	28.58	990	50	37	28	65	180	65	55	17.5	M16	112	165	6	825	19.2
	Min.		8	55	28.58	440	50	37	28	65	180	65	55	17.5	M16	112	165	3	330	8.5
PDU070	Standard	Steel	14	70	35.71	980	40	43	32	75	190	75	70	17.5	M16	130	210	5	840	29
	Min.		8	70	35.71	560	40	43	32	75	190	75	70	17.5	M16	130	210	3	420	16.6
	Standard	Flexible	14	70	35.71	980	72	43	32	75	222	75	70	17.5	M16	130	210	5	840	32.3
	Min.		8	70	35.71	560	72	43	32	75	222	75	70	17.5	M16	130	210	3	420	18.5
PDU080	Standard	Steel	12	80	39.68	960	42	55	35	90	222	90	80	22	M20	142	160	6	800	37
	Min.		6	80	39.68	480	42	55	35	90	222	90	80	22	M20	142	160	3	320	18.5
	Standard	Flexible	12	80	39.68	960	84	55	35	90	264	90	80	22	M20	142	160	6	800	41.6
	Min.		6	80	39.68	480	84	55	35	90	264	90	80	22	M20	142	160	3	320	20.8
PDU090	Standard	Steel	11	90	47.63	990	52	55	45	100	252	100	90	22	M20	162	180	5	720	44.6
	Min.		6	90	47.63	540	52	55	45	100	252	100	90	22	M20	162	180	3	360	24.3
	Standard	Flexible	11	90	47.63	990	100	55	45	100	300	100	90	22	M20	162	180	5	720	51.5
	Min.		6	90	47.63	540	100	55	45	100	300	100	90	22	M20	162	180	3	360	28.1

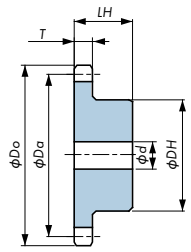
Note: 1. Figures in parentheses ( ) are the dimensions/mass for stainless steel models.
2. The standard pin count is based on the number of pins used in segments with lengths that make them easy to handle. In addition, the minimum length and minimum number of pins are set based on manufacturing limitations.
3. If the total number of pins exceeds the standard number of pins, the standard number of pins and the number of pins less than the standard length (equal to or more than the minimum number of pins) is used for configuration.
4. See page 176 for installation instructions. 5. Mounting bolts are not included.

Pin Gear (Linear Drive) Dimensions Table 2 (PDU050 to PDU090)

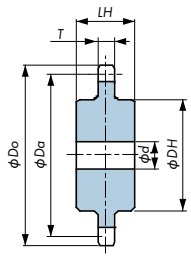
Model numbering example ■ Pin gear **PDU050 - S G B 014T - R**

- PDU050: Frame no.
- S: Drive system — S : Linear drive
- G: Pin gear
- B: Pin gear type — B : Single hub, C : Dual hub
- 014T: Number of teeth
- R: [Blank] : Standard steel, R : High anti-rust, S : Standard stainless steel, Y : Flexible

Single hub: SGB



Dual hub: SGC



■ Pin gear

Frame no.	Number of teeth NT	Pitch circle dia. ϕDa	Outer dia. ϕDo	Hub dia. ϕDH	Hub length LH	Pin gear tooth width T	Pin gear tooth width Flexible	Shaft bore dia. ϕd Pilot bore	Shaft bore dia. ϕd Max.	Mass kg
PDU050	13	211.7	250	130	100	24	20	33	81	14
	14	227.62	264	130	110	24	20	33	81	16
	15	243.13	277	130	110	24	20	33	81	17.1
	16	259.05	292	140	120	24	20	33	87	20.9
	17	274.56	306	140	120	24	20	33	87	22.1
	18	290.48	322	140	130	24	20	33	87	24.6
	19	305.99	337	140	130	24	20	33	87	26
	20	321.91	353	150	140	24	20	33	93	30.7
	21	337.83	369	150	140	24	20	33	93	32.2
	22	353.74	385	150	140	24	20	33	93	33.9
	23	369.06	400	150	140	24	20	33	93	35.5
	24	384.97	416	160	140	24	20	33	100	39.6
PDU055	13	232.79	275	150	140	30	26	33	93	24.5
	14	250.3	290	160	140	30	26	33	100	28.2
	15	267.41	305	160	140	30	26	33	100	29.8
	16	284.91	320	170	150	30	26	33	106	35.6
	17	302.02	337	170	150	30	26	33	106	37.5
	18	319.53	354	170	160	30	26	33	106	41.2
	19	336.63	372	170	160	30	26	33	106	43.3
	20	354.14	389	180	160	30	26	33	112	48.4
	21	371.65	406	180	160	30	26	33	112	50.8
	22	389.15	424	180	160	30	26	38	112	52.9
	23	406.06	441	190	170	30	26	38	118	60.5
	24	423.57	458	190	170	30	26	38	118	63.3
PDU070	13	295.66	349	180	160	34	32	43	112	41.9
	14	317.94	368	180	160	34	32	43	112	44.8
	15	339.83	388	180	160	34	32	43	112	47.9
	16	362.11	407	190	160	34	32	43	118	54.1
	17	383.79	427	190	170	34	32	43	118	59.6
	18	406.07	450	190	170	34	32	43	118	63.3
	19	428.15	472	200	190	34	32	43	125	75.2
	20	450.43	494	200	190	34	32	43	125	79.3
	21	472.72	516	200	190	34	32	63	125	81.2
	22	495.00	538	210	190	34	32	63	131	89.7
	23	516.48	560	210	190	34	32	63	131	94.3
	24	538.76	582	210	190	34	32	63	131	99.2

Frame no.	Number of teeth NT	Pitch circle dia. ϕDa	Outer dia. ϕDo	Hub dia. ϕDH	Hub length LH	Pin gear tooth width T	Pin gear tooth width Flexible	Shaft bore dia. ϕd Pilot bore	Shaft bore dia. ϕd Max.	Mass kg
PDU080	13	337.64	399	190	160	36	34	43	118	51.4
	14	363.11	421	200	180	36	34	43	125	63.1
	15	388.17	443	200	180	36	34	43	125	67.3
	16	413.64	465	210	200	36	34	43	131	80.8
	17	438.50	488	210	200	36	34	43	131	85.5
	18	463.97	512	220	200	36	34	43	137	95
	19	489.03	537	220	200	36	34	63	137	97.7
	20	514.50	563	230	200	36	34	63	143	108
	21	539.96	588	230	210	36	34	63	143	117.1
	22	565.43	614	230	210	36	34	63	143	123.4
	23	590.09	638	230	210	36	34	63	143	129.7
	24	615.55	664	240	230	36	34	63	150	148.3
PDU090	13	380.42	449	220	190	45	40	43	137	81.8
	14	409.07	474	230	210	45	40	43	143	98.5
	15	437.32	498	230	210	45	40	63	143	102.4
	16	465.97	524	240	230	45	40	63	150	121.1
	17	494.01	552	240	230	45	40	63	150	128.6
	18	522.66	580	250	240	45	40	63	156	146
	19	550.91	609	250	240	45	40	63	156	154.5
	20	579.56	637	260	250	45	40	63	162	173.6
	21	608.21	666	260	250	45	40	63	162	183.1
	22	636.85	695	270	260	45	40	63	168	204.1
	23	664.30	722	270	260	45	40	63	168	214.1
	24	692.95	751	270	260	45	40	63	168	224.9

Note: 1. Though there are limits due to specifications and size, we can manufacture models with numbers of teeth other than those listed above. See page 175 for the applicable number of teeth.
2. Flexible models have different tooth widths.

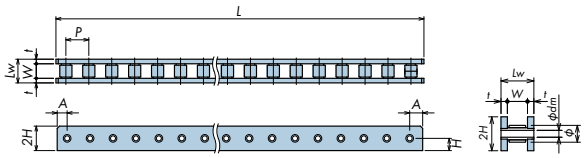
Pin Rack (Linear Drive) Dimensions Table 3 (PDU120 to PDU240)

Model numbering example ■ Pin rack **PDU120 - S P A 080P**

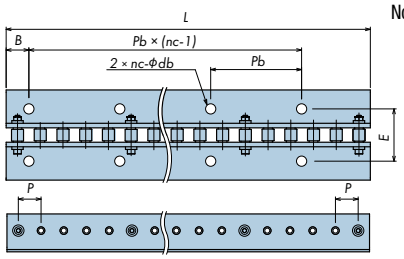
- PDU120: Frame no.
- S: Drive system — S : Linear drive
- P: Pin rack
- A: Installation — F : Horizontal (flat), A : Vertical (angle)
- 080P: Overall pin count

The number of pins can be selected as desired so long as it is greater than the minimum number of pins.

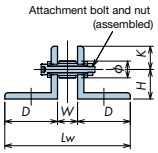
Horizontal (flat) installation: SPF



Vertical (angle) installation: SPA



Note: Hollow pins for vertical (angle) installation are pre-fastened with bolts and nuts to secure the rack.



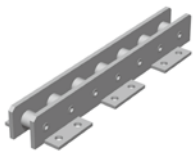
■ Horizontal (flat) installation

Frame no.		Pin count *NT*	Pitch *P*	Roller dia. *φ*	Length *L*	Inside width *W*	Center height *H*	Overall height *2H*	Overall width *Lw*	Plate thickness *t*	Pin position *A*	Bolt hole dia. *φdm*	Mounting bolt size	Mass kg
PDU120	Standard	8	120	63.5	960	68	75	150	112	22	60	32	M30	56.6
	Min.	4	120	63.5	480	68	75	150	112	22	60	32	M30	28.3
PDU150	Standard	8	150	79.38	1200	94	75	150	138	22	75	39	M36	82.5
	Min.	6	150	79.38	900	94	75	150	138	22	75	39	M36	61.9
PDU180	Standard	7	180	95.25	1260	112	100	200	172	30	90	45	M42	148.6
	Min.	6	180	95.25	1080	112	100	200	172	30	90	45	M42	127.4
PDU240	Standard	5	240	127	1200	150	125	250	226	38	120	52	M48	235.6
	Min.	5	240	127	1200	150	125	250	226	38	120	52	M48	235.6

■ Vertical (angle) installation

Frame no.		Pin count *NT*	Pitch *P*	Roller dia. *φ*	Length *L*	Inside width *W*	Center height *H*	Center height *K*	Overall height *H+K*	Overall width *Lw*	Angle leg width *D*	End surface *B*	Mounting hole dia. *φdb*	Mounting bolt size	Mounting hole position *E*	Mounting hole pitch *Pb*	Mounting hole count (1 side) *nc*	Distance between mounting holes *Pb*× (*nc*-1)	Mass kg
PDU120	Standard	8	120	63.5	960	68	85	65	150	368	150	120	33	M30	232	240	4	720	91
	Min.	4	120	63.5	480	68	85	65	150	368	150	120	33	M30	232	240	2	240	45.5
PDU150	Standard	8	150	79.38	1200	94	85	65	150	394	150	150	39	M36	270	300	4	900	134
	Min.	6	150	79.38	900	94	85	65	150	394	150	150	39	M36	270	300	3	600	100.5
PDU180	Standard	7	180	95.25	1260	112	125	95	220	462	175	Contact a Tsubaki representative.		M42	Contact a Tsubaki representative.				233
	Min.	7	180	95.25	1260	112	125	95	220	462	175			M42					233
PDU240	Standard	5	240	127	1200	150	157	119	276	554	202	Contact a Tsubaki representative.		M48	Contact a Tsubaki representative.				362
	Min.	5	240	127	1200	150	157	119	276	554	202			M48					362

Note: 1. The standard pin count is based on the number of pins used in segments with lengths that make them easy to handle. In addition, the minimum length and minimum number of pins are set based on manufacturing limitations.
2. If the total number of pins exceeds the standard number of pins, the standard number of pins and the number of pins less than the standard length (equal to or more than the minimum number of pins) is used for configuration.
3. See page 176 for installation instructions.
4. Mounting bolts are not included.



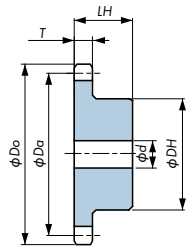
The angle shapes of vertically (angle) installed PDU180 and PDU240 differ.

Pin Gear (Linear Drive) Dimensions Table 3 (PDU120 to PDU240)

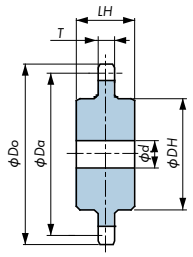
Model numbering example ■ Pin gear **PDU120 - S G B 014T**

- PDU120: Frame no.
- S: Drive system — S : Linear drive
- G: Pin gear
- B: Pin gear type — B : Single hub, C : Dual hub
- 014T: Number of teeth

Single hub: SGB



Dual hub: SGC



■ Pin gear

Frame no.	Number of teeth NT	Pitch circle dia. φDa	Outer dia. φDo	Hub dia. φDH	Hub length LH	Pin gear tooth width T	Shaft bore dia. φd		Mass kg
							Pilot bore	Max.	
PDU120	13	508.56	599	270	250	60	63	160	177
	14	546.76	632	270	250	60	63	160	192
	15	582.96	664	280	260	60	63	170	218
	16	621.15	698	280	260	60	63	170	235
	17	658.75	735	290	280	60	63	180	270
	18	696.95	774	290	280	60	63	180	289
PDU150	13	635.7	749	260	250	75	120	160	238
	14	683.45	790	280	270	75	120	170	287
	15	728.7	830	290	290	75	120	170	332
	16	776.44	873	310	310	75	160	190	370
	17	823.44	919	320	320	75	160	190	418
	18	871.19	967	340	340	75	160	200	487
PDU180	13	762.85	899	310	300	90	160	190	400
	14	820.14	948	360	320	90	160	220	507
	15	874.44	996	360	340	90	160	220	571
	16	931.73	1047	370	370	90	160	220	660
	17	988.13	1103	390	390	90	160	230	762
	18	1045.42	1160	410	400	90	160	250	865
PDU240	13	1017.13	1198	460	400	120	160	280	1068
	14	1093.52	1264	460	400	120	160	280	1187
	15	1165.92	1328	460	400	120	160	280	1308
	16	1242.31	1396	490	400	120	160	300	1494
	17	-	-	-	-	120	-	-	-
	18	-	-	-	-	120	-	-	-

Note: Though there are limits due to specifications and size, we can manufacture models with numbers of teeth other than those listed above. See page 175 for the applicable number of teeth.

Pin Wheel (Rotary Drive) Dimensions Table 1 (PDU020 to PDU040)

Model numbering example

■ Pin wheel

Complete circumference

PDU020 - G P F 300P - S

- PDU020: Frame no.
- G: Drive system — G : Outer rotary drive, N : Inner rotary drive
- P: Pin wheel
- F: Horizontal (flat) installation
- 300P: Overall pin count
- S: [Blank] : Standard steel, K : Electroless nickel plated, R : High anti-rust, S : Standard stainless steel

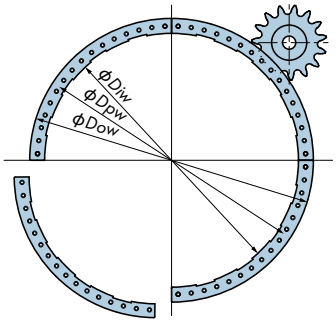
Partial circumference (less than 360°)

PDU020 - GPF 300P 090P - S

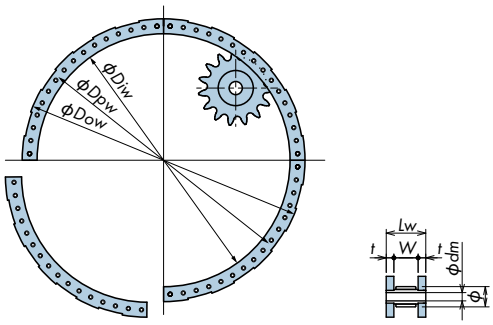
- 300P: Overall pin count
- 090P: Required number of pins
- S: [Blank] : Standard steel, K : Electroless nickel plated, R : High anti-rust, S : Standard stainless steel

The number of pins can be selected as desired so long as the total number of pins is 60 or more.
Pin wheels for partial circumferences are also available.

Outer drive pin wheel: GPF (4-segment model)



Inner drive pin wheel: NPF (4-segment model)



■ Pin wheel

Frame no.	Number of segments	Overall pin count NT	Pitch circle dia. ϕDpw	Outer dia. ϕDow	Inner dia. ϕDiw	Pitch P	Roller dia. ϕ	Inside width W	Overall width LW	Plate thickness t	Hollow pin hole dia. ϕdb	Mounting bolt size	Mass kg
PDU020	1	80	509.3	532	487	20	10.16	12	21 (22)	4.5 (5)	4.5	M4	2.8 (3.2)
	4	160	1018.59	1041	996	20	10.16	12	21 (22)	4.5 (5)	4.5	M4	5.6 (6.4)
	6	240	1527.89	1550	1505	20	10.16	12	21 (22)	4.5 (5)	4.5	M4	8.4 (9.6)
	8	320	2037.18	2060	2015	20	10.16	12	21 (22)	4.5 (5)	4.5	M4	11.2 (12.8)
	12	480	3055.77	3078	3033	20	10.16	12	21 (22)	4.5 (5)	4.5	M4	16.8 (19.2)
PDU022	1	72	504.2	529	480	22	11.91	16	25 (26)	4.5 (5)	4.5	M4	3.4 (3.7)
	4	144	1008.41	1033	984	22	11.91	16	25 (26)	4.5 (5)	4.5	M4	6.8 (7.2)
	6	216	1512.61	1537	1488	22	11.91	16	25 (26)	4.5 (5)	4.5	M4	10.2 (10.8)
	8	288	2016.81	2041	1992	22	11.91	16	25 (26)	4.5 (5)	4.5	M4	13.6 (14.4)
	12	432	3025.22	3050	3001	22	11.91	16	25 (26)	4.5 (5)	4.5	M4	20.4 (21.3)
PDU030	1	–	–	–	–	–	–	–	–	–	–	–	–
	4	104	993.13	1026	961	30	15.88	19	31 (31)	6 (6)	6.5	M6	11.2 (11.2)
	6	156	1489.69	1522	1457	30	15.88	19	31 (31)	6 (6)	6.5	M6	16.8 (16.8)
	8	208	1986.25	2019	1954	30	15.88	19	31 (31)	6 (6)	6.5	M6	22.4 (22.4)
	12	312	2979.38	3012	2947	30	15.88	19	31 (31)	6 (6)	6.5	M6	33.6 (33.6)
PDU035	1	–	–	–	–	–	–	–	–	–	–	–	–
	4	88	980.39	1021	940	35	19.05	22	40 (34)	9 (6)	8.8	M8	19.6 (14.4)
	6	132	1470.59	1511	1430	35	19.05	22	40 (34)	9 (6)	8.8	M8	29.4 (21.6)
	8	176	1960.79	2001	1920	35	19.05	22	40 (34)	9 (6)	8.8	M8	39.2 (28.8)
	12	264	2941.18	2982	2901	35	19.05	22	40 (34)	9 (6)	8.8	M8	58.8 (43.2)
PDU040	1	–	–	–	–	–	–	–	–	–	–	–	–
	4	80	1018.59	1067	970	40	22.23	28	46 (44)	9 (8)	10.8	M10	25.6 (23.2)
	6	120	1527.89	1576	1479	40	22.23	28	46 (44)	9 (8)	10.8	M10	38.4 (34.8)
	8	160	2037.18	2086	1989	40	22.23	28	46 (44)	9 (8)	10.8	M10	51.2 (46.4)
	12	240	3055.77	3104	3007	40	22.23	28	46 (44)	9 (8)	10.8	M10	76.8 (69.6)

Note: 1. Figures in parentheses ( ) are the dimensions/mass for stainless steel models.
2. Pin wheels are divided into segments. The number of segments depends on the frame number and the overall pin count.
3. There are projections on the inner rim of outer drive pin wheel segments and on the outer rim of inner drive pin wheel segments. These projections serve as the reference surface when installing the pin wheel on the device with which it is to be used.
4. The inner diameter (Diw) of the outer drive pin wheel and the outer diameter (Dow) of the inner drive pin wheel should be used respectively as the outer/inner diameter of the device with which the pin wheel is to be used.
5. See page 176 for installation instructions.
6. Mounting bolts are not included.

Pin Gear (Rotary Drive) Dimensions Table 1 (PDU020 to PDU040)

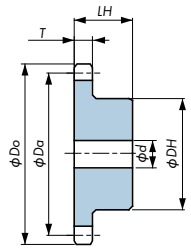
Model numbering example

■ **Pin gear** (Tooth shape varies depending on drive system and total number of pins on pin wheel)

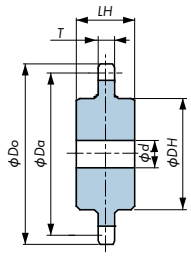
PDU020 - G G C 017T 300P - S

- Drive system: G : Outer drive; N : Inner drive
- Pin gear
- Pin gear type: B : Single hub; C : Dual hub
- Number of teeth: 017T
- Total number of pins on pin wheel: 300P
- [Blank] : Standard steel; K : Electroless nickel plated; R : High anti-rust; S : Standard stainless steel

Single hub: □GB



Dual hub: □GC



■ Pin gear

Frame no.	Number of teeth NT	Pitch circle dia. ϕDa	Reference outer dia.*2 ϕDo	Hub dia. ϕDH	Hub length LH	Pin gear tooth width T	Shaft bore dia. ϕd Pilot bore	Shaft bore dia. ϕd Max.	Mass kg
PDU020	12	78.59	95	49	20	9	12.7	30	0.5
	13	84.76	101	50	30	9	12.7	31	0.7
	14	91.13	108	50	30	9	12.7	31	0.8
	15	97.29	114	50	30	9	12.7	31	0.8
	16	103.66	120	50	30	9	12.7	31	0.9
	17	109.83	126	50	30	9	12.7	31	1
	18	116.19	131	60	30	9	12.7	37	1.2
	19	122.36	137	60	30	9	12.7	37	1.3
	20	128.72	143	60	30	9	12.7	37	1.4
	21	135.09	149	60	40	9	15.9	37	1.7
	22	141.46	155	60	40	9	15.9	37	1.8
	23	147.62	161	60	40	9	15.9	37	1.9
	24	153.99	167	60	40	9	15.9	37	2
PDU022	12	86.83	104	50	40	12	12.7	31	1
	13	93.44	111	60	40	12	15.9	37	1.2
	14	100.44	119	60	40	12	15.9	37	1.3
	15	107.04	126	60	40	12	15.9	37	1.4
	16	114.05	132	70	40	12	15.9	43	1.8
	17	120.85	138	70	50	12	15.9	43	2.2
	18	127.85	145	70	50	12	15.9	43	2.3
	19	134.65	151	70	50	12	15.9	43	2.4
	20	141.66	157	70	50	12	15.9	43	2.6
	21	148.66	164	70	50	12	15.9	43	2.7
	22	155.66	170	70	50	12	15.9	43	2.9
	23	162.46	177	70	50	12	18	43	3
	24	169.47	184	70	50	12	18	43	3.2
PDU030	12	117.79	142	75	50	15	19	46	2.4
	13	126.94	151	80	50	15	19	50	2.8
	14	136.49	162	80	50	15	19	50	3
	15	145.84	171	80	50	15	19	50	3.3
	16	155.39	180	80	60	15	19	50	3.9
	17	164.74	188	90	60	15	19	56	4.7
	18	174.29	197	90	60	15	19	56	5
	19	183.44	205	90	60	15	23	56	5.2
	20	192.99	214	90	70	15	23	56	6
	21	202.54	223	90	70	15	23	56	6.4
	22	212.08	232	90	70	15	23	56	6.7
	23	221.43	241	100	70	15	23	62	7.8
	24	230.98	251	100	70	15	23	62	8.2

Frame no.	Number of teeth NT	Pitch circle dia. ϕDa	Reference outer dia.*2 ϕDo	Hub dia. ϕDH	Hub length LH	Pin gear tooth width T	Shaft bore dia. ϕd Pilot bore	Shaft bore dia. ϕd Max.	Mass kg
PDU035	12	137.49	166	85	80	18	23	53	4.6
	13	148.43	177	95	80	18	23	59	5.7
	14	159.57	189	110	90	18	23	68	8
	15	170.51	200	110	90	18	28	68	8.2
	16	181.65	210	120	100	18	28	75	10.5
	17	192.59	220	120	100	18	28	75	11
	18	203.74	230	120	100	18	28	75	11.5
	19	214.68	240	120	100	18	28	75	12
	20	225.82	250	130	100	18	28	81	13.8
	21	236.76	261	130	100	18	28	81	14.4
	22	247.90	271	130	110	18	33	81	15.8
	23	258.44	282	130	110	18	33	81	16.4
	24	269.58	293	130	110	18	33	81	17
PDU040	12	157.79	189	100	90	24	28	62	7.4
	13	169.92	202	110	90	24	28	68	8.8
	14	182.65	216	120	100	24	28	75	11.3
	15	194.99	228	120	100	24	33	75	11.8
	16	207.72	240	120	100	24	33	75	12.5
	17	219.85	251	120	100	24	33	75	13.3
	18	232.58	262	130	100	24	33	81	15.4
	19	245.12	274	130	110	24	33	81	17.2
	20	257.85	286	130	110	24	33	81	18.2
	21	270.58	298	130	110	24	33	81	19.2
	22	283.31	310	140	120	24	33	87	22.8
	23	295.45	323	140	120	24	33	87	23.9
	24	308.18	335	140	120	24	33	87	25

Note: 1. Though there are limits due to specifications and size, we can manufacture models with numbers of teeth other than those listed above. See page 175 for the applicable number of teeth.

*2: For reference only because the tooth shape varies depending on the drive system and the total number of pins on the pin wheel.

Pin Wheel (Rotary Drive) Dimensions Table 2 (PDU050 to PDU090)

Model numbering example

■ Pin wheel

Complete circumference

PDU050 - G P F 300P - S

- Frame no.
- Drive system: G : Outer drive; N : Inner drive
- Pin wheel
- Horizontal (flat) installation
- Overall pin count
- [Blank] : Standard steel; R : High anti-rust; S : Standard stainless steel; Y : Flexible

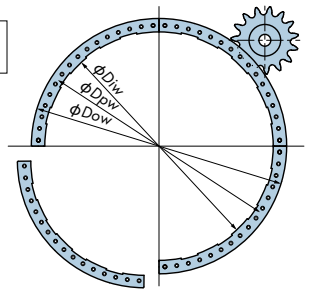
Partial circumference (less than 360°)

PDU050 - GPF 300P 090P - S

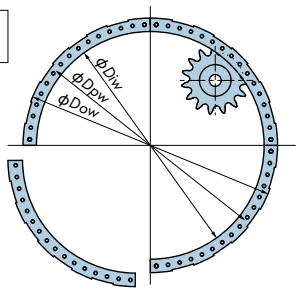
- Overall pin count
- Required number of pins
- [Blank] : Standard steel; R : High anti-rust; S : Standard stainless steel; Y : Flexible

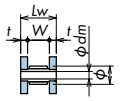
The number of pins can be selected as desired so long as the total number of pins is 60 or more. Pin wheels for partial circumferences are also available.

Outer drive pin wheel: GPF (4-segment model)



Inner drive pin wheel: NPF (4-segment model)





■ Pin wheel

Frame no.	Type	Number of segments	Overall pin count NT	Pitch circle dia. ϕDpw	Outer dia. ϕDow	Inner dia. ϕDiw	Pitch P	Roller dia. ϕ	Inside width W	Overall width LW	Plate thickness t	Hollow pin hole dia. ϕdb	Mounting bolt size	Mass kg
PDU050	Steel	5	100	1591.55	1647	1536	50	25.4	28	52 (46)	12 (9)	12.8	M12	57 (45)
		6	120	1909.86	1965	1854	50	25.4	28	52 (46)	12 (9)	12.8	M12	68.4 (54)
		9	180	2864.79	2920	2809	50	25.4	28	52 (46)	12 (9)	12.8	M12	102.6 (81)
		13	260	4138.03	4194	4083	50	25.4	28	52 (46)	12 (9)	12.8	M12	148.2 (117)
		16	320	5092.96	5148	5037	50	25.4	28	52 (46)	12 (9)	12.8	M12	182.4 (144)
	Flexible	5	100	1591.55	1647	1536	50	25.4	40	64	12	12.8	M12	60.3
		6	120	1909.86	1965	1854	50	25.4	40	64	12	12.8	M12	72.4
		9	180	2864.79	2920	2809	50	25.4	40	64	12	12.8	M12	108.5
		13	260	4138.03	4194	4083	50	25.4	40	64	12	12.8	M12	156.8
		16	320	5092.96	5148	5037	50	25.4	40	64	12	12.8	M12	193
PDU055	Steel	5	90	1575.63	1640	1511	55	28.58	36	60 (54)	12 (9)	12.8	M12	69.5 (55.5)
		6	108	1890.76	1955	1826	55	28.58	36	60 (54)	12 (9)	12.8	M12	83.4 (66.6)
		9	162	2836.14	2901	2772	55	28.58	36	60 (54)	12 (9)	12.8	M12	125.1 (99.9)
		13	234	4096.65	4161	4032	55	28.58	36	60 (54)	12 (9)	12.8	M12	180.7 (144.3)
		16	288	5042.03	5107	4978	55	28.58	36	60 (54)	12 (9)	12.8	M12	222.4 (177.6)
	Flexible	5	90	1575.63	1640	1511	55	28.58	50	74	12	12.8	M12	74.5
		6	108	1890.76	1955	1826	55	28.58	50	74	12	12.8	M12	89.3
		9	162	2836.14	2901	2772	55	28.58	50	74	12	12.8	M12	134
		13	234	4096.65	4161	4032	55	28.58	50	74	12	12.8	M12	193.6
		16	288	5042.03	5107	4978	55	28.58	50	74	12	12.8	M12	238.2
PDU070	Steel	5	70	1559.72	1632	1487	70	35.71	40	72 (60)	16 (10)	17	M16	100 (70)
		6	84	1871.66	1944	1799	70	35.71	40	72 (60)	16 (10)	17	M16	120 (84)
		9	126	2807.49	2880	2735	70	35.71	40	72 (60)	16 (10)	17	M16	180 (126)
		13	182	4055.27	4128	3983	70	35.71	40	72 (60)	16 (10)	17	M16	260 (182)
		16	224	4991.1	5064	4919	70	35.71	40	72 (60)	16 (10)	17	M16	320 (224)
	Flexible	5	70	1559.72	1632	1487	70	35.71	72	104	16	17	M16	112.6
		6	84	1871.66	1944	1799	70	35.71	72	104	16	17	M16	135.1
		9	126	2807.49	2880	2735	70	35.71	72	104	16	17	M16	202.7
		13	182	4055.27	4128	3983	70	35.71	72	104	16	17	M16	292.8
		16	224	4991.1	5064	4919	70	35.71	72	104	16	17	M16	360.3
PDU080	Steel	5	60	1527.89	1608	1447	80	39.68	42	74 (66)	16 (12)	17	M16	111.5 (89.5)
		6	72	1833.46	1914	1753	80	39.68	42	74 (66)	16 (12)	17	M16	133.8 (107.4)
		9	108	2750.2	2831	2670	80	39.68	42	74 (66)	16 (12)	17	M16	200.7 (161.1)
		13	156	3972.51	4053	3892	80	39.68	42	74 (66)	16 (12)	17	M16	289.9 (232.7)
		16	192	4889.24	4970	4809	80	39.68	42	74 (66)	16 (12)	17	M16	356.8 (286.4)
	Flexible	5	60	1527.89	1608	1447	80	39.68	84	116	16	17	M16	130
		6	72	1833.46	1914	1753	80	39.68	84	116	16	17	M16	156
		9	108	2750.2	2831	2670	80	39.68	84	116	16	17	M16	234
		13	156	3972.51	4053	3892	80	39.68	84	116	16	17	M16	337.9
		16	192	4889.24	4970	4809	80	39.68	84	116	16	17	M16	415.9
PDU090	Steel	5	–	–	–	–	–	–	–	–	–	–	–	–
		6	66	1890.76	1987	1794	90	47.63	52	90 (76)	19 (12)	22	M20	196.8 (140.4)
		9	99	2836.14	2933	2740	90	47.63	52	90 (76)	19 (12)	22	M20	295.2 (210.6)
		13	143	4096.65	4193	4000	90	47.63	52	90 (76)	19 (12)	22	M20	426.4 (304.2)
		16	176	5042.03	5139	4946	90	47.63	52	90 (76)	19 (12)	22	M20	524.8 (374.4)
	Flexible	5	–	–	–	–	–	–	–	–	–	–	–	–
		6	66	1890.76	1987	1794	90	47.63	100	138	19	22	M20	228.6
		9	99	2836.14	2933	2740	90	47.63	100	138	19	22	M20	342.9
		13	143	4096.65	4193	4000	90	47.63	100	138	19	22	M20	495.3
		16	176	5042.03	5139	4946	90	47.63	100	138	19	22	M20	609.6

Note: 1. Figures in parentheses ( ) are the dimensions/mass for stainless steel models.
2. Pin wheels are divided into segments. The number of segments depends on the frame number and the overall pin count.
3. There are projections on the inner rim of outer drive pin wheel segments and on the outer rim of inner drive pin wheel segments. These projections serve as the reference surface when installing the pin wheel on the device with which it is to be used.
4. The inner diameter (Diw) of the outer drive pin wheel and the outer diameter (Dow) of the inner drive pin wheel should be used respectively as the outer/inner diameter of the device with which the pin wheel is to be used. 5. See page 176 for installation instructions. 6. Mounting bolts are not included.

Pin Gear (Rotary Drive) Dimensions Table 2 (PDU050 to PDU090)

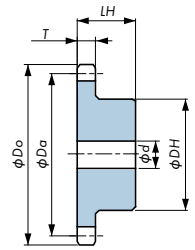
Model numbering example

■ **Pin gear** (Tooth shape varies depending on drive system and total number of pins on pin wheel)

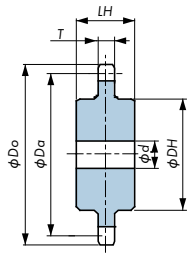
PDU050 - G G C 017T 300P - S

- Drive system: G : Outer drive, N : Inner drive
- Pin gear
- Pin gear type: B : Single hub, C : Dual hub
- Number of teeth: 017T
- Total number of pins on pin wheel: 300P
- [Blank] : Standard steel, R : High anti-rust, S : Standard stainless steel, Y : Flexible

Single hub: □GB



Dual hub: □GC



■ Pin gear

Frame no.	Number of teeth NT	Pitch circle dia. ϕDa	Reference outer dia.*2 ϕDo	Hub dia. ϕDH	Hub length LH	Pin gear tooth width T	Pin gear tooth width Flexible T	Shaft bore dia. ϕd Pilot bore	Shaft bore dia. ϕd Max.	Mass kg
	12	196.59	237	110	100	24	20	33	68	10.8
	13	211.7	252	130	100	24	20	33	81	14
	14	227.62	269	130	110	24	20	33	81	16
	15	243.13	285	130	110	24	20	33	81	17.1
	16	259.05	299	140	120	24	20	33	87	20.9
	17	274.56	313	140	120	24	20	33	87	22.1
PDU050	18	290.48	328	140	130	24	20	33	87	24.6
	19	305.99	342	140	130	24	20	33	87	26
	20	321.91	357	150	140	24	20	33	93	30.7
	21	337.83	372	150	140	24	20	33	93	32.2
	22	353.74	387	150	140	24	20	33	93	33.9
	23	369.06	401	150	140	24	20	33	93	35.5
	24	384.97	416	160	140	24	20	33	100	39.6
	12	216.08	261	135	140	30	26	33	84	20.2
	13	232.79	277	150	140	30	26	33	93	24.5
	14	250.3	296	160	140	30	26	33	100	28.2
	15	267.41	313	160	140	30	26	33	100	29.8
	16	284.91	329	170	150	30	26	33	106	35.6
	17	302.02	344	170	150	30	26	33	106	37.5
PDU055	18	319.53	360	170	160	30	26	33	106	41.2
	19	336.63	376	170	160	30	26	33	106	43.3
	20	354.14	393	180	160	30	26	33	112	48.4
	21	371.65	409	180	160	30	26	33	112	50.8
	22	389.15	426	180	160	30	26	38	112	52.9
	23	406.06	442	190	170	30	26	38	118	60.5
	24	423.57	458	190	170	30	26	38	118	63.3
	12	273.98	331	170	160	34	32	43	106	36.6
	13	295.66	352	180	160	34	32	43	112	41.9
	14	317.94	376	180	160	34	32	43	112	44.8
	15	339.83	398	180	160	34	32	43	112	47.9
	16	362.11	418	190	160	34	32	43	118	54.1
	17	383.79	438	190	170	34	32	43	118	59.6
PDU070	18	406.07	458	190	170	34	32	43	118	63.3
	19	428.15	478	200	190	34	32	43	125	75.2
	20	450.43	499	200	190	34	32	43	125	79.3
	21	472.72	520	200	190	34	32	63	125	81.2
	22	495.00	541	210	190	34	32	63	131	89.7
	23	516.48	562	210	190	34	32	63	131	94.3
	24	538.76	583	210	190	34	32	63	131	99.2

Frame no.	Number of teeth NT	Pitch circle dia. ϕDa	Reference outer dia.*2 ϕDo	Hub dia. ϕDH	Hub length LH	Pin gear tooth width T	Pin gear tooth width Flexible T	Shaft bore dia. ϕd Pilot bore	Shaft bore dia. ϕd Max.	Mass kg
	12	312.78	378	190	160	36	34	43	118	47.8
	13	337.64	402	190	160	36	34	43	118	51.4
	14	363.11	430	200	180	36	34	43	125	63.1
	15	388.17	455	200	180	36	34	43	125	67.3
	16	413.64	478	210	200	36	34	43	131	80.8
	17	438.50	500	210	200	36	34	43	131	85.5
PDU050	18	463.97	524	220	200	36	34	43	137	95
	19	489.03	547	220	200	36	34	63	137	97.7
	20	514.50	570	230	200	36	34	63	143	108
	21	539.96	594	230	210	36	34	63	143	117.1
	22	565.43	618	230	210	36	34	63	143	123.4
	23	590.09	642	230	210	36	34	63	143	129.7
	24	615.55	666	240	230	36	34	63	150	148.3
	12	352.77	425	220	190	45	40	43	137	76.1
	13	380.42	453	220	190	45	40	43	137	81.8
	14	409.07	484	230	210	45	40	43	143	98.5
	15	437.32	512	230	210	45	40	63	143	102.4
	16	465.97	538	240	230	45	40	63	150	121.1
	17	494.01	563	240	230	45	40	63	150	128.6
PDU055	18	522.66	589	250	240	45	40	63	156	146
	19	550.91	615	250	240	45	40	63	156	154.5
	20	579.56	642	260	250	45	40	63	162	173.6
	21	608.21	669	260	250	45	40	63	162	183.1
	22	636.85	696	270	260	45	40	63	168	204.1
	23	664.30	722	270	260	45	40	63	168	214.1
	24	692.95	751	270	260	45	40	63	168	224.9

Note: 1. Though there are limits due to specifications and size, we can manufacture models with numbers of teeth other than those listed above. See page 175 for the applicable number of teeth.
*2: For reference only because the tooth shape varies depending on the drive system and the total number of pins on the pin wheel.
3. Flexible models have different tooth widths.

Pin Wheel (Rotary Drive) Dimensions Table 3 (PDU120 to PDU240)

Model numbering example

■ Pin wheel

Complete circumference

PDU120 - G P F 300P

- PDU120: Frame no.
- G: Drive system — G : Outer drive, N : Inner drive
- P: Pin wheel
- F: Horizontal (flat) installation
- 300P: Overall pin count

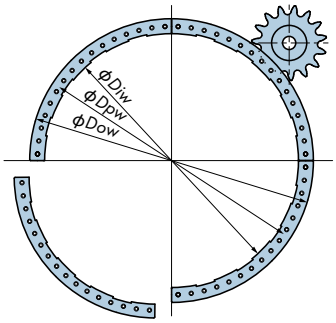
Partial circumference (less than 360°)

PDU120 - GPF 300P 090P

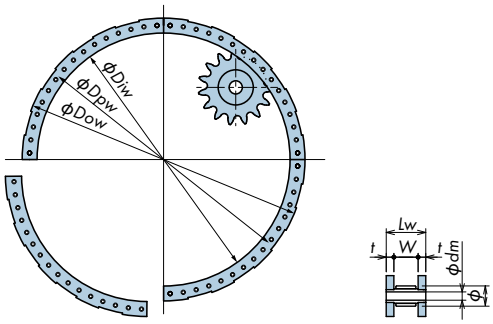
- 300P: Overall pin count
- 090P: Required number of pins

The number of pins can be selected as desired so long as the total number of pins is 60 or more.
Pin wheels for partial circumferences are also available.

Outer drive pin wheel: GPF (4-segment model)



Inner drive pin wheel: NPF (4-segment model)



■ Pin wheel

Frame no.	Number of segments	Overall pin count *NT*	Pitch circle dia. *ϕDpw*	Outer dia. *ϕDow*	Inner dia. *ϕDiw*	Pitch *P*	Roller dia. *ϕ*	Inside width *W*	Overall width *LW*	Plate thickness *t*	Hollow pin hole dia. *ϕdb*	Mounting bolt size	Mass kg
PDU020	9	72	2750.2	2901	2600	120	63.5	68	112	22	32	M30	511.2
	10	80	3055.77	3206	2905	120	63.5	68	112	22	32	M30	568
	13	104	3972.51	4123	3822	120	63.5	68	112	22	32	M30	738.4
	16	128	4889.24	5040	4739	120	63.5	68	112	22	32	M30	908.8
	20	160	6111.55	6262	5961	120	63.5	68	112	22	32	M30	1136
PDU022	9	72	3437.75	3588	3287	150	79.38	94	138	22	39	M36	744.3
	10	80	3819.72	3970	3669	150	79.38	94	138	22	39	M36	827
	13	104	4965.63	5116	4815	150	79.38	94	138	22	39	M36	1075.1
	16	128	6111.55	6262	5961	150	79.38	94	138	22	39	M36	1323.2
	20	160	7639.44	7790	7489	150	79.38	94	138	22	39	M36	1654
PDU030	9	63	3609.63	3810	3409	180	95.25	112	172	30	45	M42	1340.1
	10	70	4010.71	4211	3810	180	95.25	112	172	30	45	M42	1489
	13	91	5213.92	5414	5013	180	95.25	112	172	30	45	M42	1935.7
	16	112	6417.13	6618	6217	180	95.25	112	172	30	45	M42	2382.4
	20	140	8021.41	8222	7821	180	95.25	112	172	30	45	M42	2978
PDU035	9	-	-	-	-	-	-	-	-	-	-	-	-
	10	-	-	-	-	-	-	-	-	-	-	-	-
	13	65	4965.63	5216	4715	240	127	150	226	38	52	M48	3066.7
	16	80	6111.55	6362	5861	240	127	150	226	38	52	M48	3774.4
	20	100	7639.44	7890	7389	240	127	150	226	38	52	M48	4718

Note: 1. Pin wheels are divided into segments. The number of segments depends on the frame number and the overall pin count.
2. There are projections on the inner rim of outer drive pin wheel segments and on the outer rim of inner drive pin wheel segments. These projections serve as the reference surface when installing the pin wheel on the device with which it is to be used.
3. The inner diameter (Diw) of the outer drive pin wheel and the outer diameter (Dow) of the inner drive pin wheel should be used respectively as the outer/inner diameter of the device with which the pin wheel is to be used.
4. See page 176 for installation instructions.
5. Mounting bolts are not included.

Pin Gear (Rotary Drive) Dimensions Table 3 (PDU120 to PDU240)

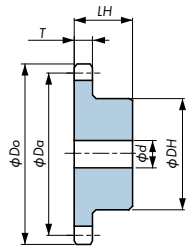
Model numbering example

■ **Pin gear** (Tooth shape varies depending on drive system and total number of pins on pin wheel)

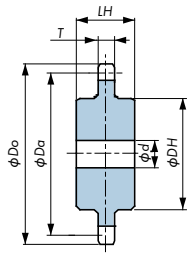
PDU120 - G G C 017T 300P

- Drive system: G : Outer drive, N : Inner drive
- Pin gear
- Pin gear type: B : Single hub, C : Dual hub
- Number of teeth
- Total number of pins on pin wheel

Single hub: □GB



Dual hub: □GC



■ Pin gear

Frame no.	Number of teeth NT	Pitch circle dia. ϕDa	Reference outer dia.*2 ϕDo	Hub dia. ϕDH	Hub length LH	Pin gear tooth width T	Shaft bore dia. ϕd		Mass kg
							Pilot bore	Max.	
PDU120	12	472.37	569	260	240	60	63	150	153
	13	508.56	599	270	250	60	63	160	177
	14	546.76	650	270	250	60	63	160	192
	15	582.96	682	280	260	60	63	170	218
	16	621.15	717	280	260	60	63	170	235
	17	658.75	751	290	280	60	63	180	270
	18	696.95	786	290	280	60	63	180	289
PDU150	12	590.46	711	250	230	75	120	150	201
	13	635.7	749	260	250	75	120	160	238
	14	683.45	813	280	270	75	120	170	287
	15	728.7	853	290	290	75	120	170	332
	16	776.44	896	310	310	75	160	190	370
	17	823.44	938	320	320	75	160	190	418
	18	871.19	982	340	340	75	160	200	487
PDU180	12	708.55	853	310	280	90	120	190	367
	13	762.85	899	310	300	90	160	190	400
	14	820.14	975	360	320	90	160	220	507
	15	874.44	1023	360	340	90	160	220	571
	16	931.73	1075	370	370	90	160	220	660
	17	988.13	1126	390	390	90	160	230	762
	18	1045.42	1178	410	400	90	160	250	865
PDU240	12	944.73	1137	460	370	120	160	280	929
	13	1017.13	1233	460	400	120	160	280	1068
	14	1093.52	1300	460	400	120	160	280	1187
	15	1165.92	1364	460	400	120	160	280	1308
	16	1242.31	1433	490	400	120	160	300	1494
	17	-	-	-	-	120	-	-	-
	18	-	-	-	-	120	-	-	-

Note: 1. Though there are limits due to specifications and size, we can manufacture models with numbers of teeth other than those listed above. See page 175 for the applicable number of teeth.

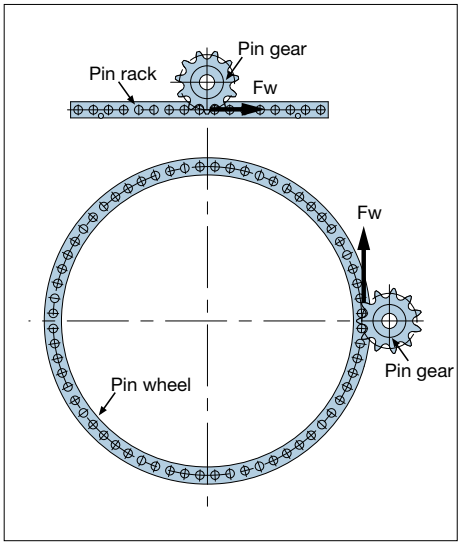
*2: For reference only because the tooth shape varies depending on the drive system and the total number of pins on the pin wheel.

Selection Procedure

1. Pre-select the pitch circle diameter of the Pin Gear Drive Unit

For linear operation: Pre-select the pitch circle diameter of the pin gear based on the equipment layout.

For rotational operation: Pre-select the pitch circle diameter of the pin wheel to suit the size of the equipment. Determine the reduction gear ratio required, then pre-select the pitch circle diameter of the pin gear.



2. Calculate the applied tangential load (Fw)

Calculate the applied tangential load (Fw) that will act on the pin wheel or pin rack based on load conditions.

3. Calculate the corrected tangential load (Ft)

To calculate the corrected tangential load (**Ft**), obtain the service factor (**Ks**, Table 1) based on operating conditions, obtain the speed factor (**Kv**, Table 2) based on the tangential speed, and then multiply the product thereof by the applied tangential load (**Fw**).

$$Ft = Ks \times Kv \times Fw$$

4. Select the frame number of the Pin Gear Drive Unit

Using the allowable tangential load (**Fp**) of each pin wheel/pin rack frame number and the corrected tangential load (**Ft**), select the appropriate Pin Gear Drive Unit that satisfies the following condition:

Allowable tangential load (Fp) > Corrected tangential load (Ft)

■ **Table 1: Service factor (Ks)**

Operation status	Operating hours/day		
	Up to 3 hrs	Up to 12 hrs	Up to 24 hrs
Even load	1.00(1.25)	1.15(1.40)	1.25(1.50)
Load with small impacts	1.25(1.50)	1.40(1.70)	1.60(2.00)
Load with large impacts	1.50(1.80)	1.75(2.15)	2.00(2.50)

Note: Use values in parentheses if operation stops 10 or more times an hour.

■ **Table 2: Speed factor (Kv)**

Tangential speed m/min								
0	10	15	20	25	30	35	40	50
1.02	1.04	1.05	1.06	1.06	1.07	1.08	1.1	1.2

5. Select the model number

Pin wheels: From the selected frame number and the pre-selected pin wheel pitch circle diameter, choose the quantity of pins of the pin wheel closest to the pitch circle diameter.

Pin racks: From the selected frame number and the total running distance (or total movement distance), calculate the quantity of rack pins.

Pin gears: From the selected frame number and the pre-selected pin gear pitch circle diameter, choose the model number of the pin gear with the number of teeth closest to the pitch circle diameter.

Note: There are limits to the extent to which numbers of pin gear teeth can be used. (See table below.)
If a pin gear does not have enough teeth, select a pin gear with a larger number of teeth.

■ **Applicable number of teeth range for pin gears**

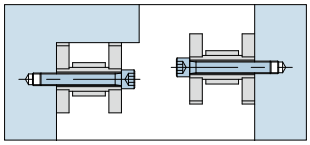
○: Applicable △: Applicable, but tangential load may be reduced in certain applications. Consult Tsubaki for details.
×: Not applicable due to insufficient contact ratio

Number of pins / Number of teeth	Linear rack	Outer drive pin wheel								Inner drive pin wheel						
		60P	70P	80P	100P	150P	200P	250P	300P	60P	70P	80P	100P	150P	200P	250P
11	×	×	×	×	×	×	×	×	×	○	○	○	○	×	×	×
12	△	×	×	×	×	×	×	×	×	○	○	○	○	○	○	○
13	○	×	×	×	×	×	△	△	△	○	○	○	○	○	○	○
14	○	×	×	△	△	△	△	△	△	○	○	○	○	○	○	○
15	○	△	△	△	△	△	△	△	△	○	○	○	○	○	○	○
16	○	△	△	△	△	△	△	△	△	○	○	○	○	○	○	○
17	○	△	△	△	△	△	△	△	○	○	○	○	○	○	○	○
18	○	△	△	△	△	△	△	○	○	○	○	○	○	○	○	○
19	○	△	△	△	△	○	○	○	○	○	○	○	○	○	○	○
20	○	△	△	△	○	○	○	○	○	○	○	○	○	○	○	○
21	○	△	△	○	○	○	○	○	○	○	○	○	○	○	○	○
22	○	△	○	○	○	○	○	○	○	○	○	○	○	○	○	○
23	○	△	○	○	○	○	○	○	○	○	○	○	○	○	○	○
24 or more	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Installation

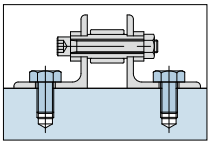
■ Installation method

Horizonal (flat) pin rack/pin wheel



The side of the rack/wheel can be attached to the device with a bolt using the hole in the hollow pin. When installing, a stopper or guide can be fixed to the projected surface to position the wheel.

Vertical (angle) pin rack



Angle racks can be attached to the device using the mounting bolt holes on the feet of the rack.

■ Mounting bolt position

At least the minimum number of bolts (see table below) must be used at both ends of each segment and at regularly spaced intervals in between.

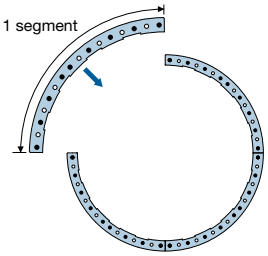
■ Minimum mounting bolt quantity per segment (for horizontal (flat) installation)

Type	Frame no.	Mounting bolt size	Minimum qty
Steel	PDU020	M4	8
	PDU022	M4	13
	PDU030	M6	10
	PDU035	M8	8
	PDU040	M10	7
	PDU050	M12	6
	PDU055	M12	9
	PDU070	M16	6
	PDU080	M16	7
	PDU090	M20	6
	PDU120	M30	4
	PDU150	M36	6
	PDU180	M42	6
	PDU240	M48	5

Type	Frame no.	Mounting bolt size	Minimum qty
Stainless steel	PDU020	M4	8
	PDU022	M4	13
	PDU030	M6	10
	PDU035	M8	8
	PDU040	M10	7
	PDU050	M12	6
	PDU055	M12	9
	PDU070	M16	6
	PDU080	M16	7
	PDU090	M20	6

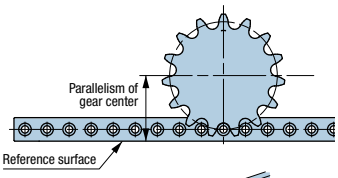
Example:
Bolt mounting: PDU050-GPF064P 4-segment model
Mounting position: See figure below (Mounting bolt positions indicated by black dots.)

PDU050 requires a minimum of six M12 mounting bolts. Install at least six bolts per segment as evenly as possible. Contact Tsubaki if you are unsure about installation.

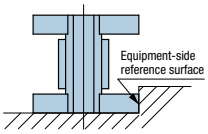


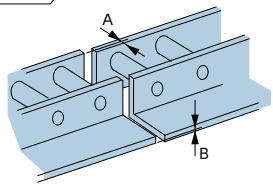
Installation Precision

Pin wheels: Projections on the pin wheel frame share the same centers as the roller mounting holes, so projections can be used as a reference surface for centering when fitting the pin wheel into the pilot section on the equipment. The precision of equipment pilot section must be finished within the precision of pilot section runout indicated in the table below.



Pin racks: Ensure that the parallelism of the equipment-side reference surface of the pin rack and the pin gear center is equal to or less than the indicated gear center parallelism in the table below by ensuring that the machine is correctly aligned in advance. Ensure that the alignment along the A and B axes of adjoining pin racks is within the tolerance indicated in the table below.





Note: Always read the instruction manual before installing.

(Unit: mm)

Frame no.		PDU020	PDU022	PDU030	PDU035	PDU040	PDU050	PDU055	PDU070	PDU080	PDU090	PDU120	PDU150	PDU180	PDU240
Linear drive	Parallelism of gear center	0.3	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.2	1.6	2.0	2.4	3.2
	Misalignment tolerance of A and B axes	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.8	1.0	1.2	1.5
Rotary drive	Precision of pilot section runout	0.3	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.2	1.6	2.0	2.4	3.2

Lubrication

Lubrication is very important in pin gear drives. Molybdenum disulfide grease has been applied to the inner surfaces of the pin rack and the pin wheel rollers, but no grease has been applied to the roller outer surfaces. Coat all roller outer surfaces with an extreme-pressure grease before operation. Refer to the instruction manual for details.

Corrosion Resistance Guide for Stainless Steel Pin Gear Drive Units

Refer to the “AS” column under “Corrosion-resistant drive chain” of the table on page 219. Corrosion resistance varies depending on application conditions. The table on page 219 should not be considered as a guarantee. Using this table as a reference, be sure to check the corrosion resistance of the product in advance according to the actual operating conditions determining product type.

Pin Gear Drives Sprocket & Shaft Sets

We manufacture the sprocket together with the shaft and deliver them as a set.
There is no need for the customer to assemble them together, leading to higher cost effectiveness.

Features

- No need to assemble the shaft into the sprocket.
- No need to inspect the shaft upon receipt.
  We can also provide an inspection report with the inspection results. (Separate fee required.)
- Can be attached as-is to your equipment after receipt.
  (Bearings and the like can also be included in the assembly upon request.)
- Sprocket and shaft are sourced from the same supplier, which can reduce management man-hours compared to ordering from separate suppliers.

Comparison of time needed to install in equipment



There is no need to assemble the shaft into the sprocket, saving 30 to 35% in mounting time.

Specifications

Shaft pre-assembled	Shaft integrated
Shaft and sprocket are manufactured together and delivered assembled	Shaft is machined as part of the sprocket





- Available for Lock Sprockets as well.
- Phasing and other assembly conditions available.

Indicate the Following on Your Request for Quotation

- Sprocket specifications
- Phasing or other assembly instructions
- Shaft drawing or other material that indicates dimensions
- Parts included in assembly (shaft, keys, bearings, etc.)
  (Contact a Tsubaki representative regarding bearings.)
- Coatings, plating, etc.
- Documents needed from Tsubaki: Delivery drawings, inspection results, etc.

Accessories

Chain Tensioners

The Tsubaki Chain Tensioner adjusts slackness in the chain to enable continuous and proper chain operation.



TCS Type

FR Idler Sprockets

Bearing with hub that reliably transmits rotation.



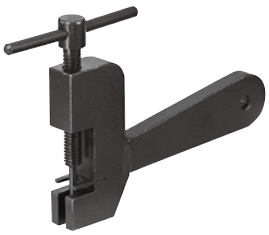
FR Idler Sprocket

Chain Cutting Tools

These tools enable chains to be cut to the desired length.



Chain Vise

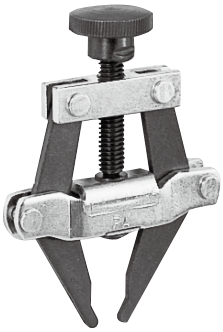


Chain Breaker



Punch

Chain Connecting Tools



Chain Puller

This tool pulls the two ends of the chain together when installing the chain on a machine.

End Fixtures

The end fitting bolts and end-fitting-bolt connecting links are designed to be stronger than those of RS Roller Chains.



End Fitting Bolt



End-Fitting-Bolt Connecting Link

Automatic Lubricators for Roller Chain

1. Highly safe and highly reliable
2. Operational period can be freely set
3. Reduces maintenance time



Automatic Lubricator for Roller Chain

Easy-Laser

Easy-Laser makes it easy to check for misalignments in the sprocket installation and make adjustments just by shining the laser beam on the sprockets.



Easy-Laser

Chain Elongation Scales

Allows quick checks of pitch elongation limit.



Chain Elongation Scale

Accessories Chain Tensioners

Model numbering example

◆ TH type

Tensioner main unit **CT - TH1**

Chain tensioner — Tensioner type

Dedicated idler sprocket **RS40 - TH B 15T**

Size — For TH — Specifications (B: Ball bearing, L: Lube-free bushing) — Number of teeth

◆ TCS/ETS/TA type **CT - TCS 40**

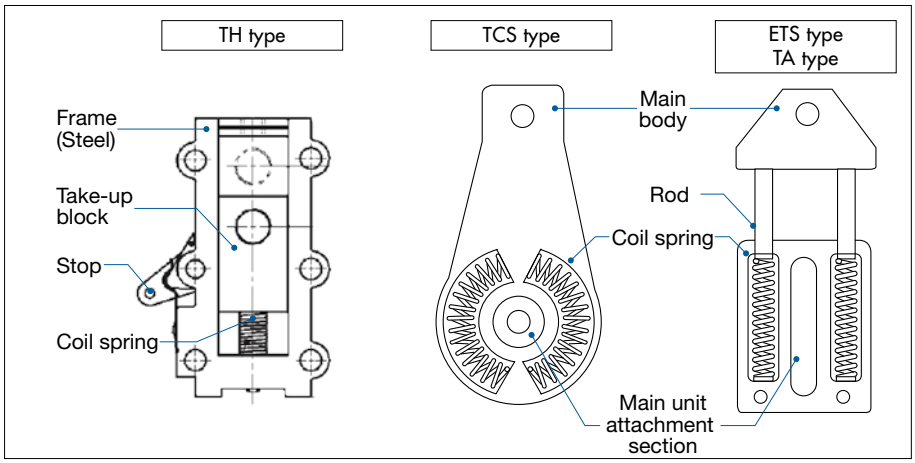
Chain tensioner — Tensioner type — Applicable size
40: RS40-1
50: RS50-1
60: RS60-1
80: RS80-1

Slackness in the chain can cause chain vibration and noise, and improper engagement with the sprocket, as well as preventing the chain from operating properly. The Tsubaki Chain Tensioner adjusts slackness in the chain to enable continuous and proper chain operation. There are four types of Tsubaki Chain Tensioners: Our new TH Type (straight type, with idler sprocket), the TCS Type (swing type, with idler sprocket), the ETS Type (straight type, with idler sprocket), and the TA Type (straight type, with plastic shoe).

Note: Customized models are not available.

Construction

◆ Main unit



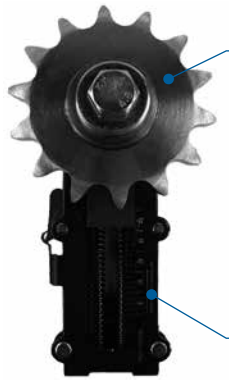
The Tsubaki Chain Tensioner is composed of a main unit and an idler sprocket. (The TA Type is a unitized construction with plastic shoe.) The tensioner's main unit employs the elasticity of a built-in coil spring to tension.

◆ Idler sprocket

The idler sprocket is composed of a sprocket with a built-in bearing (TH Type provided with a lube-free bush upon request), an attachment bolt, and a washer. The sprocket teeth undergo induction hardening. TCS and ETS Types are given a black coating, while TH Type is plated.

Product Type

TH type: Straight type, with idler sprocket



Choose your idler sprocket



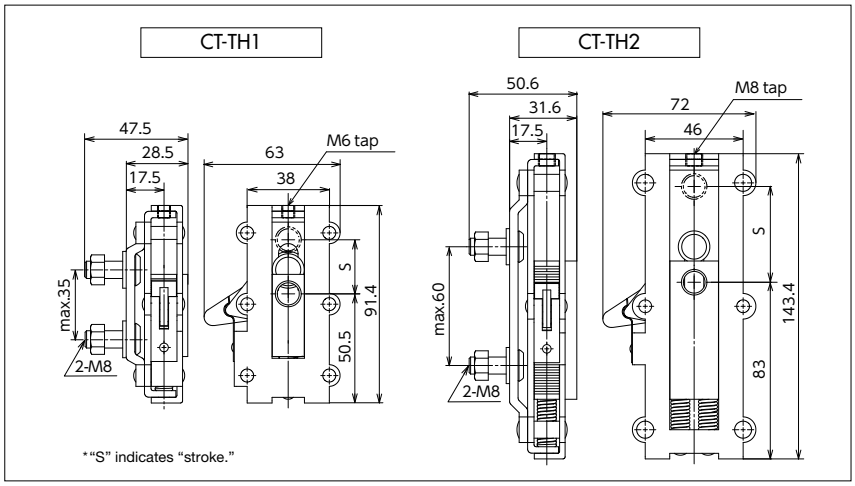
Ball bearing type
(Standard type)



Lube-free bush type
(Optional type)

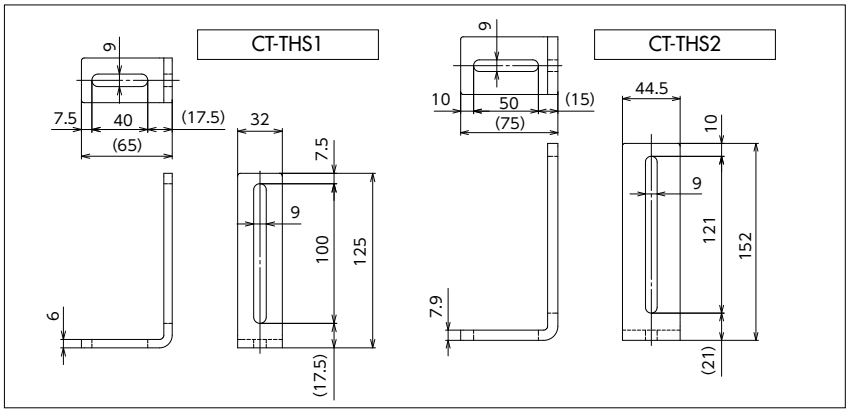
Unique ratchet and spring construction

The spring automatically controls chain sag and excessive vibration. The ratchet construction makes installation a snap.

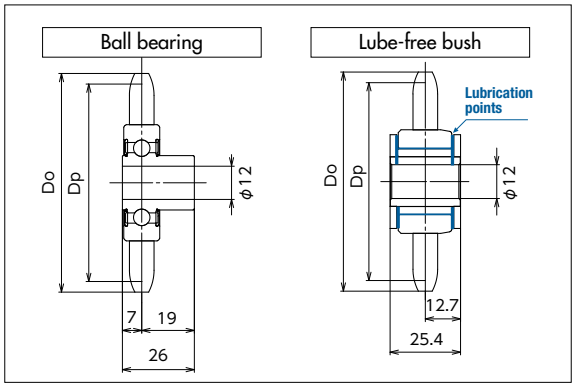


*"S" indicates "stroke."

Adapter (fixed washer)



Idler sprocket for TH Series



Applicable chain

CT-TH1: For RS35-1 and RS40-1

CT-TH2: For RS50-1, RS60-1, and RS80-1

TH type main unit attachment bolt

Model number	Applicable size	Sprocket no. of teeth	Sprocket attachment bolt	
			Size	Length
CT-TH1	RS35-1	20	M12	45
	RS40-1	15		
CT-TH2	RS50-1	15	M12	55
	RS60-1	14		
	RS80-1	11		

Note: All models stocked.

Specifications

Model number	Stroke S (mm)	Plunge force (N)	
		Min.	Max.
CT-TH1	25	39.2	117.6
CT-TH2	45	98.0	294.0

Accessories

Each package will contain the following.
Adapter and dedicated idler sprocket are not included.

Contains	Dimensions	CT-TH1	CT-TH2
Hexagonal bolt	M12×45L	1	–
	M12×55L	–	1
Hexagonal screw	M6×35L	1	–
	M8×55L	–	1
Round head screw	M8×23L	2	2
Hex key		1	1
Spacer	Thickness: 3mm	1	3

Model number	Chain tensioner
CT-THS1	CT-TH1
CT-THS2	CT-TH2

Specifications

	Model number	Idler no. of teeth	Pitch dia. (Dp)	Outer dia. (Do)	Max. RPM	Allowable bearing load (N)
Ball bearing type	RS35-THB20T	20	60.89	66	3000	3300
	RS40-THB15T	15	61.08	67		
	RS50-THB15T	15	76.35	84		
	RS60-THB14T	14	85.61	95		
	RS80-THB11T	11	90.16	102		
Lube-free bush type	RS35-THL20T	20	60.89	66	2500	343
	RS40-THL15T	15	61.08	67		
	RS50-THL15T	15	76.35	84		
	RS60-THL14T	14	85.61	95		

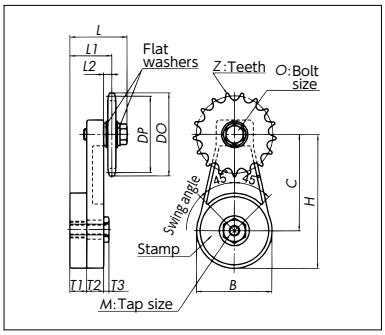
Note: All models stocked. Thoroughly lubricate sliding areas of lube-free bush type idler sprockets before use.

Accessories Chain Tensioners

Product Type

TCS type: Swing type, with idler sprocket





■ TCS type main unit attachment bolt

Model number	Sprocket no. of teeth	Sprocket mounting bolt				Flat washer		Tensioner mounting bolt
		Size	Length	Strength classification	Quantity	Nominal	Quantity	
CT-TCS40	17	M10	30	10.9	1	10	2	M10
CT-TCS50	15	M10	30	10.9	1	10	2	M10
CT-TCS60	13	M12	35	10.9	1	12	2	M12
CT-TCS80	11	M12	35	10.9	1	12	4	M12

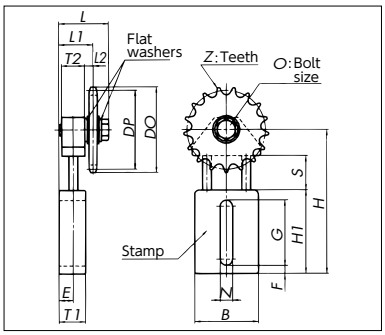
Note: 1. Only the CT-TCS80 has two washers installed on each side.
2. The swing angle of CT-TCS60 and CT-TCS80 is 30°.
3. Tensioner mounting bolt not included with tensioner.
4. Operating temperature: –10°C to 100°C

Model number	Applicable chain	B	C	H	M	T1	T2	T3	Z	DP	DO	O	L	L1	L2	Plunge force kN{kgf}	Approx. mass kg/unit
CT-TCS40	RS40-1	69	86.5	121	M10	15.5	15.5	5	17	69.12	76	M10	50.5	37.5	6.5	0{0} to 0.15{15}	0.74
CT-TCS50	RS50-1	69	86.5	121	M10	15.5	15.5	5	15	76.35	84	M10	50.5	37.5	6.5	0{0} to 0.15{15}	0.82
CT-TCS60	RS60-1	90	100	145	M12	18	18	7	13	79.60	89	M12	60.5	44.5	8.5	0{0} to 0.39{40}	1.30
CT-TCS80	RS80-1	90	100	145	M12	18	18	7	11	90.16	102	M12	65.5	47	11	0{0} to 0.39{40}	1.52

Note: All models stocked.

ETS type: Straight type, with idler sprocket





■ ETS type main unit attachment bolt

Model number	Sprocket no. of teeth	Sprocket mounting bolt				Flat washer		Tensioner mounting bolt
		Size	Length	Strength classification	Quantity	Nominal	Quantity	
CT-ETS40	17	M10	35	10.9	1	10	2	M10
CT-ETS50	15	M10	35	10.9	1	10	2	M10
CT-ETS60	13	M12	45	10.9	1	12	2	M12
CT-ETS80	11	M12	45	10.9	1	12	4	M12

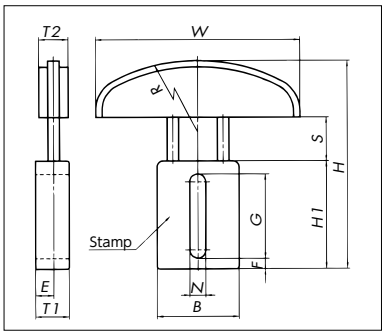
Note: 1. Only the CT-ETS80 has two washers installed on each side.
2. Tensioner mounting bolt not included with tensioner.
3. Lubricate the rod section regularly.
4. Operating temperature: –10°C to 100°C

Model number	Applicable chain	S	H	H1	F	G	B	N	T1	T2	E	Z	DP	DO	O	L	L1	L2	Plunge force kN{kgf}	Approx. mass kg/unit
CT-ETS40	RS40-1	30	129	74	7	58	56.2	11	23	20	12.5	17	69.12	76	M10	42	29	6.5	0.10{10} to 0.25{25}	0.60
CT-ETS50	RS50-1	30	129	74	7	58	56.2	11	23	20	12.5	15	76.35	84	M10	42	29	6.5	0.10{10} to 0.25{25}	0.69
CT-ETS60	RS60-1	38	163	87	9	70	70.5	12.5	28	25	15	13	79.60	89	M12	52	36	8.5	0.15{15} to 0.39{40}	1.15
CT-ETS80	RS80-1	38	163	87	9	70	70.5	12.5	28	25	15	11	90.16	102	M12	57	38.5	11	0.15{15} to 0.39{40}	1.37

Note: All models stocked.

TA type: Straight type, with plastic shoe





■ TA type main unit attachment bolt

Model number	Main unit attachment bolt	Model number	Main unit attachment bolt
CT-TA40	M10	CT-TA60	M12
CT-TA50	M12	CT-TA80	M14

Note: 1. Tensioner mounting bolt not included with tensioner.
2. Lubricate the rod section regularly.
3. Operating temperature: –10°C to 60°C

Model number	Applicable chain	S	H	H1	F	G	B	N	T1	E	W	R	T2	Plunge force kN{kgf}	Approx. mass kg/unit
CT-TA40	RS40-1/ RS08B-1	30	143	74	7	58	56.2	11	23	12.5	140	120	20	0.10{10} to 0.25{25}	0.39
CT-TA50	RS50-1/ RS10B-1	38	164	87	9	70	70.5	12.5	28	15	140	140	22	0.15{15} to 0.39{40}	0.65
CT-TA60	RS60-1/ RS12B-1	38	164	87	9	70	70.5	12.5	28	15	140	140	22	0.15{15} to 0.39{40}	0.65
CT-TA80	RS80-1/ RS16B-1	44	187	104	9	86	82	14.5	33	17.5	140	160	25	0.29{30} to 0.59{60}	0.99

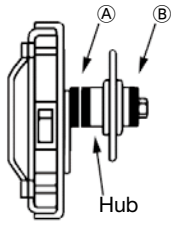
Note: All models stocked.

Note: Always install chain tensioners on the roller chain sag side. Tensioners cannot be installed on the tension side or used when the chain is run backwards.

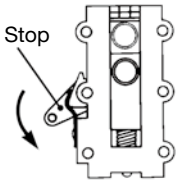
Installation

◆ Attaching the TH type tensioner

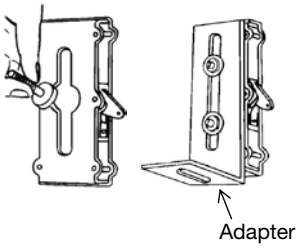
1. Always insert the spacer where indicated (positions A & B) as shown to the right when installing the idler sprocket on the tensioner. (Failure to insert the spacer will result in tensioner contact with the roller chain. See the table below.)
   Attach the hub so that it faces the tensioner when installing ball bearing type idler sprockets. When attaching on the opposite side, install the number of spacers indicated in parentheses in the table below.



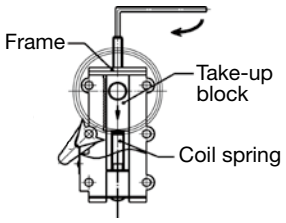
2. The tensioner stop should be positioned facing down (spring facing down) as per the figure on the right.



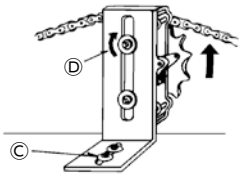
3. Once the round head bolts are attached to the tensioner as shown, attach the adapter and tighten the nuts just until snug.



4. Attach a hexagonal screw to the tap hole on the end of the tensioner. Use the hex key to tighten the screw, and push the take-up block down as far as possible.
   (Caution: Failure to perform action "2." above will prevent the take-up block from being pushed down.)



5. Once the drive and driven sprockets have been aligned, fix the adapter to the attachment area using a commercially available mounting bolt ("C" in figure).



6. Once the chain is engaging the sprocket, tighten the adapter mounting nuts ("D" in figure). Next, after inverting the tensioner stop as shown by the arrow in the figure above, removing the hexagonal screw will activate the spring. Installation is now complete. Check the condition of the roller chain sag and the installation itself.

■ Number of spacers

Idler sprocket		Number of spacers	
Type	Model number	"A" side in figure	"B" side in figure
Ball bearing	RS35-THB20T	0 (1)	1 (0)
	RS40-THB15T	0	1
	RS50-THB15T	0 (3)	3 (0)
	RS60-THB14T	0	3
	RS80-THB11T	2	1
Lube-free bush	RS35-THL20T	0	1
	RS40-THL15T	1	0
	RS50-THL15T	2	1
	RS60-THL14T	3	0

■ Attachment bolt locking torque

(Unit: N·m {kgf·m})

	Idler sprocket attachment bolt	Tensioner attachment bolt
CT-TH-1	40 {4.0}	12{1.2}
CT-TH-2	40 {4.0}	12{1.2}

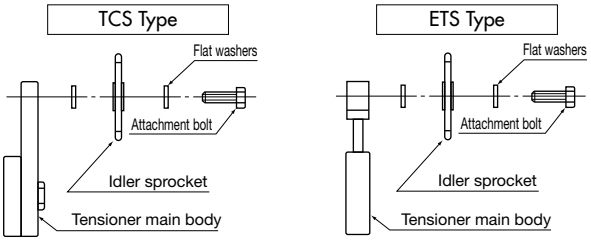
Note: Always install chain tensioners on the roller chain sag side. Tensioners cannot be installed on the tension side or used when the chain is run backwards.

Accessories Chain Tensioners

Installation

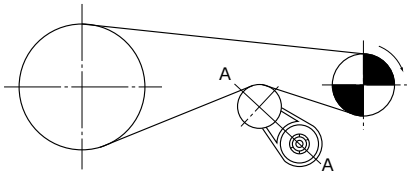
◆ TCS and ETS type assembly

Remove the main unit of the TCS or ETS type tensioner, the idler sprocket, attachment bolt and washers from their packaging, and assemble them as shown in the diagram on the right. The plastic shoe for the TA type comes as part of the main unit and no assembly is required.
One flat washer should be installed on each side of the idler sprocket. However, the CT-TCS80 and CT-ETS80 should have two washers installed on each side. The idler sprocket attachment bolt and flat washers are included with the idler sprocket.

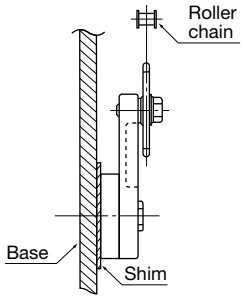


◆ Attaching the TCS type tensioner

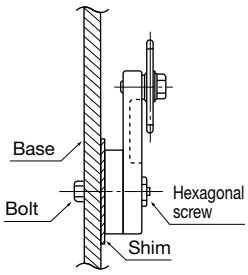
1. Attach the roller chain to the drive and driven sprockets.
2. In order to attach the tensioner to the slack side of the roller chain as shown in the figure below, first push in on the roller chain with the idler sprocket and determine the attachment position (bolt hole) for the tensioner.



3. Then, within a range where the roller chain does not contact the tensioner unit, ensure the force of the roller chain moves as perpendicular as possible to the A-A line. (Tensioner is a swing type unit.)
4. Adjust with a shim, as shown to the right, so that the center of the roller chain and idler sprocket are aligned.



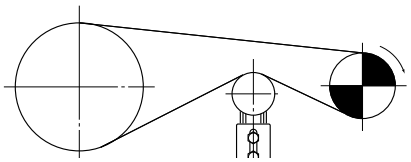
5. Open a hole in the base that holds the tensioner. (A slotted hole is convenient.)
6. Push in on the chain with the tensioner and temporarily tighten the tensioner to the base with a bolt. (Right figure) Then tighten the hexagonal screw and anchor so that the swing angle is about 15°.



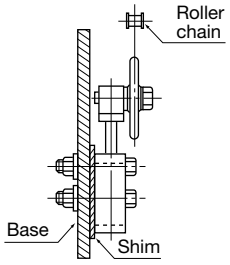
7. Perform a test operation and check whether the tensioner works properly. If any of the following occurs, reset the tensioner.
   - **Contacts the side of the idler sprocket: Not centered properly**
   - **Vertical or traverse vibration: Insufficient initial tension**
   - **Increased noise: Excessive initial tension**

◆ Attaching the ETS and TA type tensioners

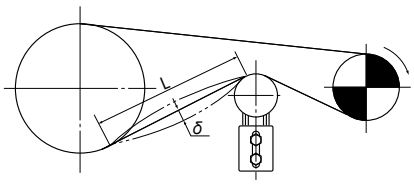
1. Push in on the roller chain with the tensioner's idler sprocket (see figure below) and determine the position of the hole on the attachment base.
   Note: Cannot be used for horizontal drive configurations where shafts are perpendicular to the floor.



2. Open a hole in the attachment base. In this case, two bolt holes are required, but a hole that is as long as possible will make positioning simpler, and the re-tensioning operation will be easier when the chain elongates.
3. Temporarily tighten the tensioner with two bolts. At this time, adjust with a shim, etc., so that the center of the idler sprocket and roller chain are aligned. (Right figure)



4. Push in on the chain with the tensioner and, if the amount of slack is appropriate (δ), tighten the nut and anchor the tensioner. Aim for a value less than $\delta = 0.02 \times L$. (Figure below)



5. Perform a test operation and check whether the tensioner works properly. If any of the following occurs, reset the tensioner.
   - **Contacts the side of the idler sprocket: Not centered properly**
   - **Vertical or traverse vibration: Insufficient initial tension**
   - **Increased noise: Excessive initial tension**

■ Attachment bolt locking torque

(Unit: N·m {kgf·m})

	Idler sprocket attachment bolt	Tensioner attachment bolt
CT-TCS40,50	20 {2.0}	40 {4.0}
CT-TCS60,80	30 {3.0}	50 {5.0}
CT-ETS40,50	30 {3.0}	30 {3.0}
CT-ETS60,80	40 {4.0}	40 {4.0}
CT-TA40	–	30 {3.0}
CT-TA50,60	–	40 {4.0}
CT-TA80	–	50 {5.0}

Note: Always install chain tensioners on the roller chain sag side. Tensioners cannot be installed on the tension side or used when the chain is run backwards.

Free Running

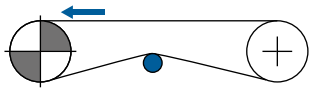
Bearing units with hubs provide stable rotation!

Idler sprockets are a must with chain drives, and Tsubaki offers a wide variety of idler sprockets to choose from.

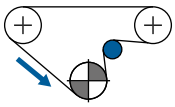


Application Examples

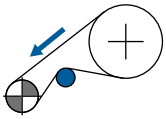
◆ Take up slack on long center distances



◆ Function as a center idler on drives with multiple shafts



◆ When chain wrap angle is insufficient



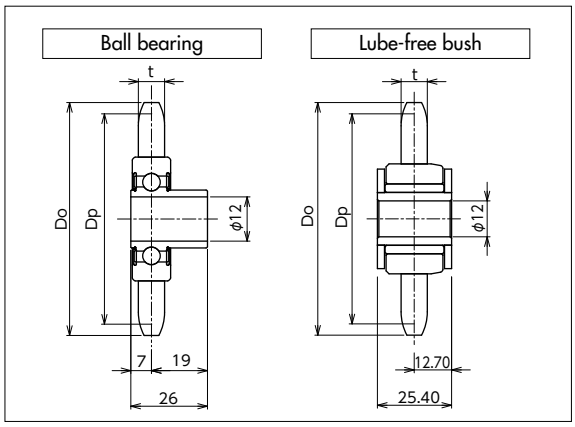
Model/Series

1. Chain number and number of teeth (all teeth hardened)

	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
RS35										●	●	●	●	●	●	●	●
RS40						●	●	●	●	●	●	●					
RS50				●	●	●	●	●	●								
RS60			●	●	●	●											
RS80	●	●	●	●	●												

2. Bearing series
   - ◆ Ball bearing series (B)
   - ◆ Lube-free bush series (L)

3. Surface treated series (photos above show plated idlers)
   - ◆ No plating (N)
   - ◆ Electroless nickel phosphorous plating (K)



List of Model Numbers and Dimensions

All models have hardened teeth

Model number	Chain	No. of teeth N	Pitch dia. Dp (mm)	Outer dia. Do (mm)	Tooth width t (mm)
FR□ - RS35 -18TQ - ■	RS35	18	54.85	60	4.4
FR□ - RS35 - 19TQ - ■		19	57.87	63	
FR□ - RS35 - 20TQ - ■		20	60.89	66	
FR□ - RS35 - 21TQ - ■		21	63.91	69	
FR□ - RS35 - 22TQ - ■		22	66.93	72	
FR□ - RS35 - 23TQ - ■		23	69.95	75	
FR□ - RS35 - 24TQ - ■		24	72.97	78	
FR□ - RS35 - 25TQ - ■		25	76.00	81	
FR□ - RS40 - 14TQ - ■	RS40	14	57.07	63	7.3
FR□ - RS40 - 15TQ - ■		15	61.08	67	
FR□ - RS40 - 16TQ - ■		16	65.10	71	
FR□ - RS40 - 17TQ - ■		17	69.12	75	
FR□ - RS40 - 18TQ - ■		18	73.14	78	
FR□ - RS40 - 19TQ - ■		19	77.16	83	
FR□ - RS40 - 20TQ - ■		20	81.18	88	
FR□ - RS50 - 12TQ - ■	RS50	12	61.34	68	8.9
FR□ - RS50 - 13TQ - ■		13	66.33	73	
FR□ - RS50 - 14TQ - ■		14	71.34	79	
FR□ - RS50 - 15TQ - ■		15	76.35	84	
FR□ - RS50 - 16TQ - ■		16	81.37	89	
FR□ - RS50 - 17TQ - ■		17	86.39	94	
FR□ - RS60 - 11TQ - ■	RS60	11	67.62	76	11.9
FR□ - RS60 - 12TQ - ■		12	73.60	82	
FR□ - RS60 - 13TQ - ■		13	79.60	89	
FR□ - RS60 - 14TQ - ■		14	85.61	95	
FR□ - RS80 - 9TQ - ■	RS80	9	74.26	85	15.0
FR□ - RS80 - 10TQ - ■		10	82.20	93	
FR□ - RS80 - 11TQ - ■		11	90.16	101	
FR□ - RS80 - 12TQ - ■		12	98.14	108	
FR□ - RS80 - 13TQ - ■		13	106.14	118	

Enter the bearing code (B/L) in the white boxes and surface treatment code (N/K) in the black boxes.
All models are made-to-order.

Model numbering example

FR B - RS40 - 15T Q - N

- FR: FR idler sprocket
- B: B : Ball bearing; L : Lube-free bush
- RS40: Size
- 15T: Number of teeth
- Q: Hardened teeth
- N: N : No plating; K : Electroless nickel phosphorous plating

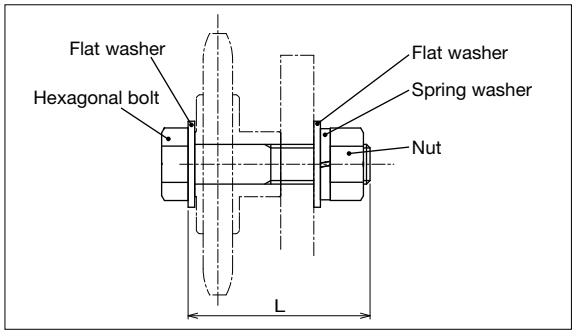
Idler Bolt Set Models



Model no.	Size	L(mm)
FR-PS45	M12	45
FR-PS55		55
FR-PS70		70

Accessories
Comes with one (1) bolt, one (1) nut, three (3) flat washers, and one (1) spring washer.
(Surface treatment: trivalent chromate)
All models are made-to-order.

Example of Idler Sprocket Mounting



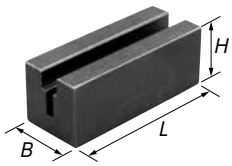
Accessories Chain Cutting/Connecting Tools

Chain Cutting Tools

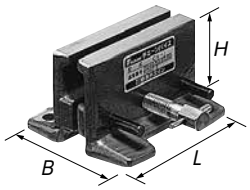
Tsubaki provides roller chains in either unit lengths (3048 mm) or reels. The following tools are available for cutting the chain to a desired length. See "Handling Roller Chains and Sprockets" for use.

Chain Vises

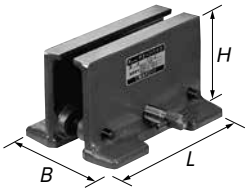
RS-CR1 to RS-CR3



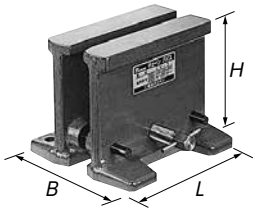
RS-CV1



RS-CV2



RS-CV3

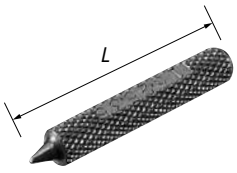


Model number	Applicable chain			Dimensions		
	1-strand	2-strand	3-strand	*L*	*H*	*B*
RS-CR1	RS15	—	—	50	16.4	20
RS-CR2	RS25	—	—	50	19	20
RS-CR3	RS35	—	—	60	30	30
RS-CV1	RS40 to 80	RS40	—	100	65	94 to 115
RS-CV2	RS40 to 160	RS40 to 100	RS40 to 100	180	110	120 to 151
RS-CV3	RS80 to 240	RS80 to 160	RS80 to 100	200	170	180 to 220

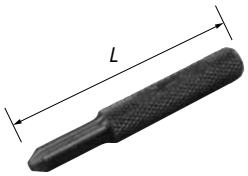
Note: Items in bold are stocked.

Punches

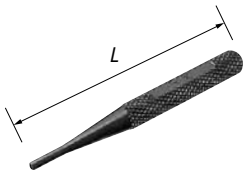
RS-P11



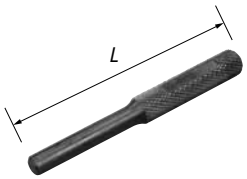
RS-P14 to RS-P16



RS-P21 to RS-P24



RS-P25 to RS-P26

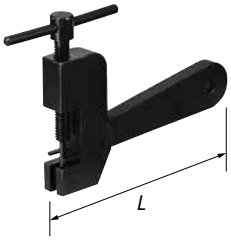


Primary punch		Secondary punch		Applicable chain
Model number	*L*	Model number	*L*	
RS-P11	52	**RS-P21**	65	RS15
		RS-P22	70	RS25
		RS-P23	80	RS35
RS-P14	60	**RS-P24**	80	RS40 to 60
RS-P15	70	**RS-P25**	90	RS80 to 120
RS-P16	80	**RS-P26**	120	RS140 to 240

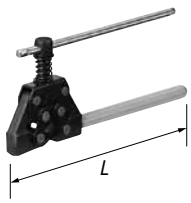
Note: 1. Items in bold are stocked.
2. RS-P11 is for RS15, RS25, and RS35 chains.

Chain Breakers

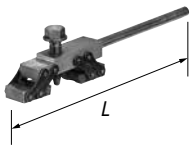
RS-CS-A



RS-CS-B



RS-CS-C



Model number	*L*	Applicable chain (1-strand)
RS-CS-A1	116	RS25
RS-CS-A2	119	RS35
RS-CS-A3	119	RS371/RS38/RS41
RS-CS-A4	119	RF06B

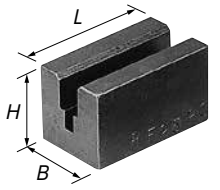
Model number	*L*	Applicable chain (1-strand & multi-strand)
RS-CS-B1	185	RS40 to 60
RS-CS-C1	222	RS80/100
RS-CS-C2	290	RS120/140
RS-CS-C3	708	RS160 to 240

Note: 1. Items in bold are stocked.
2. Chain breakers for RS roller chain B series also available.
3. Not for use with RS35-LMC chain.
4. RS-CS-A3 cannot be used on RS40 chain.

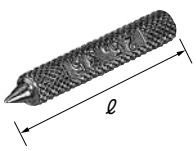
Poly Steel Chain Cutting Tools

A special punch and vise for Poly Steel Chains are required.

Chain vise



Special punch



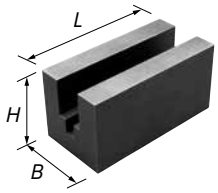
Model number	*L*	*H*	*B*	*ℓ*	Applicable chain
RS-PC01-AST	35	20	20	52	RS25-PC-1
RS-PC02-AST	50	30	30	52	RS35-PC-1
RS-PC03-AST	65	35	35	56	RS40-PC-1
RS-PC04-AST	80	40	35	56	RS50-PC-1
RS-PC05-AST	100	45	40	56	RS60-PC-1

Note: Special punch and vise are included as a set.

LAMBDA Chain Cutting Tools

A special vise and a primary and secondary punch are required to disassemble Lambda Chains.

Chain vise



Primary punch



Secondary punch



Model number	*L*	*H*	*B*	Applicable chain
RS-LMD01-AST	65	32	32	RS40-LMD-1
RS-LMD02-AST	80	40	40	RS50-LMD-1
RS-LMD03-AST	95	48	48	RS60-LMD-1
RS-LMD04-AST	130	60	60	RS80-LMD-1
RS-LMD05-AST	160	73	73	RS100-LMD-1
RS-LMD06-AST	160	88	88	RS120-LMD-1
RS-LMD07-AST	180	98	98	RS140-LMD-1
RS-LMD08-AST	200	114	114	RS160-LMD-1

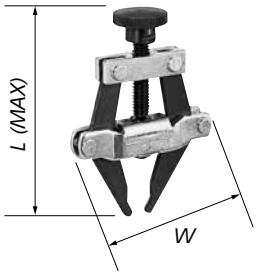
Note: Special punch and vise are included as a set. Punch dimensions are the same as for punches on page 185.

Chain Connecting Tools

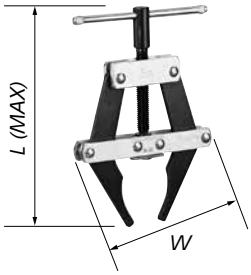
Chain Puller

This tool pulls the two ends of the chain together when installing the chain on a machine.

RS-CP01



RS-CP02 / RS-CP03

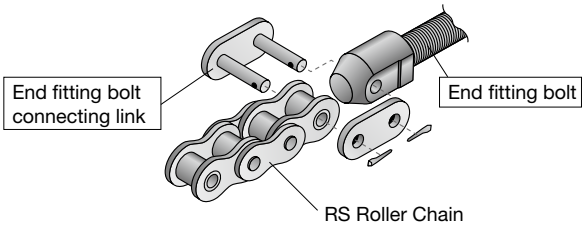


Model number	*L*	*W*	Applicable chain (1-strand)
RS-CP01	118	70	RS35 to RS60
RS-CP02	185	112	RS60 to RS100
RS-CP03	250	145	RS80 to RS240

Note: Items in bold are stocked.

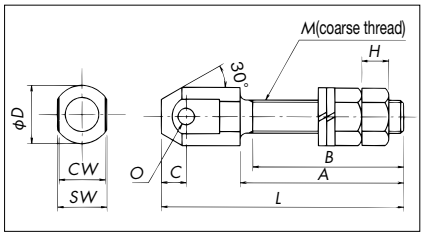
Accessories End Fixtures

An end fitting bolt can be mounted on RS Roller Chains and Super Series Chains. It has strength equal to or greater than that of the RS Roller Chain or Super Series Chain, and is connected to the chain with appropriate clearance to enable the full performance of the roller chain to manifest.
Strength when the end fitting bolt and the special connecting link are connected is the same as the main chain.



End Fitting Bolts



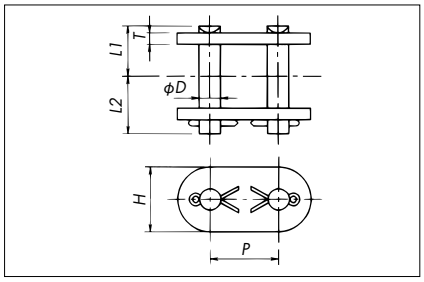


Model number	Applicable chain	L	A	B	C	M	O	D	CW	SW	H	Approx. weight kg/unit
RS40EB	RS40-1	61.0	41.5	38	6.0	M8	4.00	15	11.2	13.0	6.5	0.04
RS50EB	RS50-1	72.5	48.5	44	7.5	M10	5.12	19	13.8	17.0	8.0	0.07
RS60EB	RS60-1	89.1	60.0	55	9.1	M12	5.99	21	17.8	19.0	10.0	0.12
RS80EB	RS80-1	117.1	79.0	73	12.1	M16	7.98	28	22.6	24.0	13.0	0.27
RS100EB	RS100-1	145.1	98.0	91	15.1	M20	9.58	34	27.5	30.0	16.0	0.51
RS120EB	RS120-1	173.1	117.0	108	18.1	M24	11.15	40	35.5	35.5	19.0	0.86

Note: 1. SW dimensions are designed for wrench use.
2. Uses JIS B1181-2014 nuts and JIS B1251-2018 spring washers.
3. Black coating.
4. Items in bold are stocked.
5. Customized models are also available for multi-strand roller chains as well as chains with other specifications. Please contact a Tsubaki representative with your desired A, B, (L-A-B), and M dimensions. Separate safety checks are required for hanging applications.

End Fitting Bolt Connecting Links





Model number	Applicable chain	P	H	D	T	L1	L2	Approx. weight kg/unit
RS40EB-JL	RS40-1	12.70	12.0	3.97	2.0	8.8	10.2	0.01
RS50EB-JL	RS50-1	15.875	15.0	5.09	2.4	10.7	12.3	0.02
RS60EB-JL	RS60-1	19.05	18.1	5.96	3.2	13.95	16.05	0.04
RS80EB-JL	RS80-1	25.40	24.0	7.94	4.0	17.45	20.05	0.09
RS100EB-JL	RS100-1	31.75	28.6	9.54	4.8	20.95	23.65	0.156
RS120EB-JL	RS120-1	38.10	34.4	11.11	5.6	26.05	29.55	0.264

Note: 1. Use an F-type connecting link if there is a risk of lateral forces acting on the end bolt.
2. Contact a Tsubaki representative regarding connecting/end links with different shapes.
3. Items in bold are stocked.

Safety Precautions

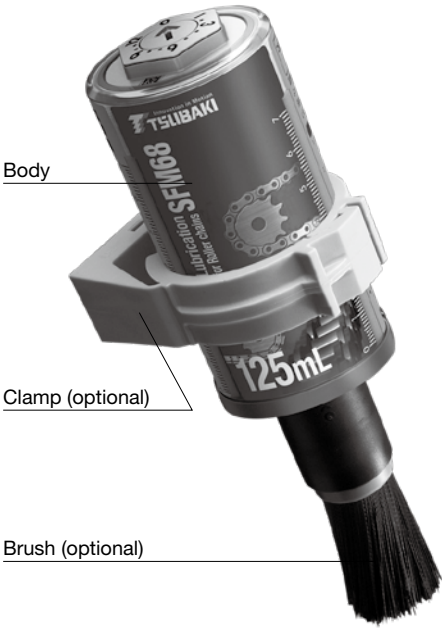
- Use RS Roller Chains or Super Chains with these end fixtures. For other chains, use corresponding F-type connecting links.
- Do not use M-type connecting links for RS Roller Chains or offset links.
- Use only F-type connecting links when attaching end fitting bolts to Super Chains.
- Grease the surface of the connecting link pin in advance when attaching the end fitting bolt and RS Roller Chain. Take care to attach precisely and avoid twisting the chain.
- Attach so that there is no bending load on the end fitting bolt.
- Do not subject the threads or head of the end fitting bolt to impacts or cause them to become distorted.
- Tsubaki recommends periodically disassembling, inspecting, and lubing your end fixtures.

Automatic Lubricators for Roller Chain

Features

1. High safety and reliability

The lubricator is filled with grease that satisfies FDA federal regulations and that has been certified for H1 from NSF, making it safe to use in food processing. Tsubaki auto lubricators help you increase safety in HACCP systems and contribute to your product liability countermeasures.



2. Usable in explosion-proof applications

Passed screening by DEKRA, an independent testing, inspection, and certification organization recognized by the Minister of Health, Labor, and Welfare of Japan, and is certified as an explosion-protected electrical apparatus. There is no risk of explosion or fire from sparks or high temperatures from electrical apparatuses in environments with explosive gas, proving its safety.

3. Service life adjustable

You can easily set the service life to between 1 to 12 months with just a flathead screwdriver. Once set, the unit automatically operates by means of a gas generator.

4. Reduced maintenance time

Automatic lubrication eliminates the need for frequent manual lubrication, which simplifies your lubrication schedule. The transparent PET plastic lubricator also features an inspection window so you can always check remaining lube and operating condition.

5. Compact

Compact, with a diameter of ϕ50 and a height of 104 mm (125 mL).

6. Can be installed in any direction

The lubricator can be installed facing up, down, or horizontally. Note: If a brush is used it must be installed facing down.

7. Dust and waterproof

Certified IP68 as dust and waterproof for use in dusty or watery environments.

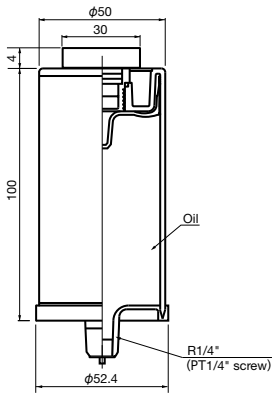
Specifications

Operation	H2 gas pressure (dry battery type)
Operational pressure	Max. 0.5 MPa
Volume	125ml
Discharge period	1 to 12 months, stepless (at an ambient temperature of 20°C)
Operating temperature range	–20 to 55°C
Oil	Food grade oil

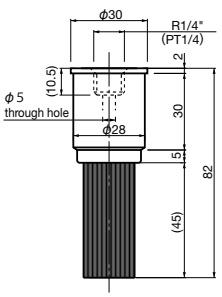
Note: This product is designed for use within Japan. Consequently, preparation of export documentation to comply with the requirements of the destination country and/or shipping conditions may not be possible.

Dimensions

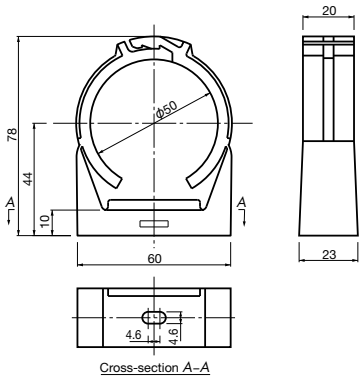
Lubricator
Model no. **SFM68**



Brush (optional)
Model no. **SFM-ST2034**



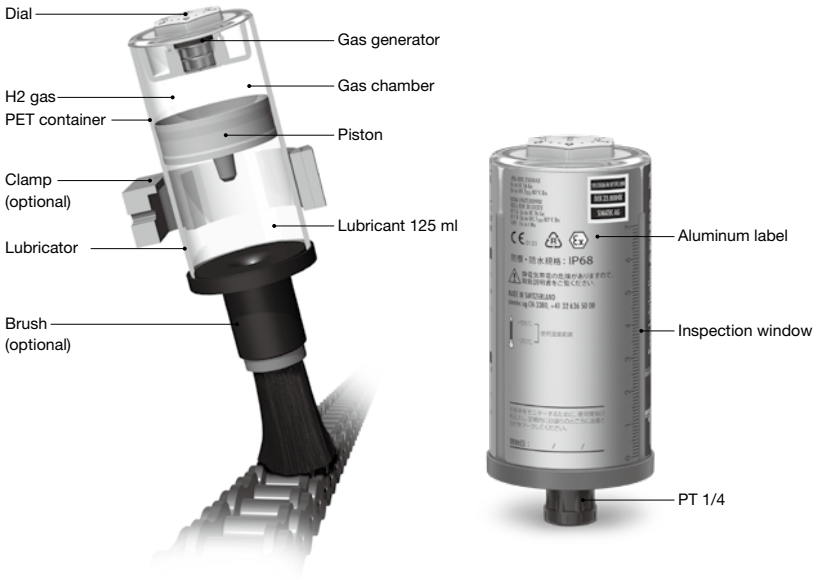
Clamp (optional)
Model no. **SFM-ST2010**



Accessories Automatic Lubricators for Roller Chain

Operating Principle

Turning on the gas generator switch generates H_2 gas, the pressure of which pushes down on a piston and releases oil from the bottom of the lubricator. Setting the time adjustment dial allows users to control the amount of H_2 gas generated for 1 to 12 months, thereby adjusting lubricant flow in one single step.



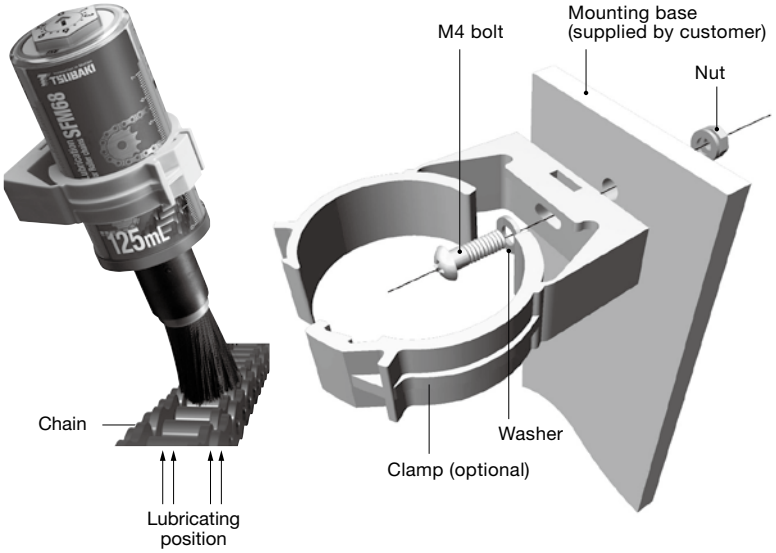
Installation

Position the lubricator with the optional brush attached on the chain sag side so that oil can penetrate between the outer and inner plates.
This will ensure the area between bushes and rollers are lubricated as well. The lubricator brush should lightly touch the chain plates. (See diagram on right.)
Secure the optional clamp by drilling a tap hole in a bar or the like and securing with an M4 bolt, or by drilling a hole that an M4 bolt can pass through and securing with a nut.

Recommended Usage Range

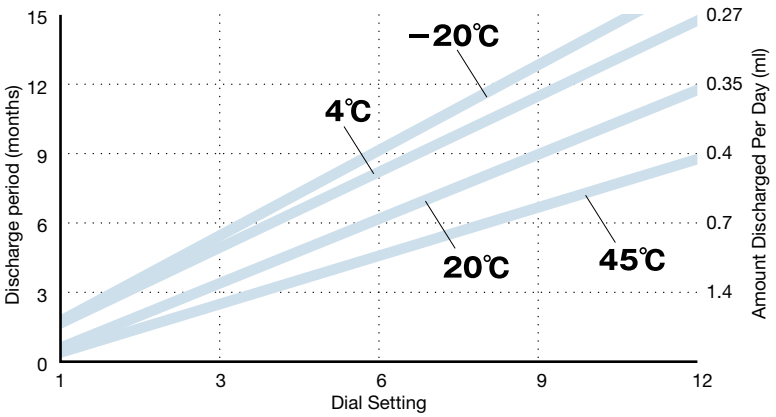
- Chain sizes
  - Drive chains : #40 to #100 (example)
  - Small size conveyor chains: #40 to #100
    #2040 to #2100
- Chain speed : Less than 50m/min
- Current lubrication method : Brush or drip lubrication

Caution: This product will not provide enough lubrication for roller chains used in the “oil bath” or “forced lubrication” range and should not be used.



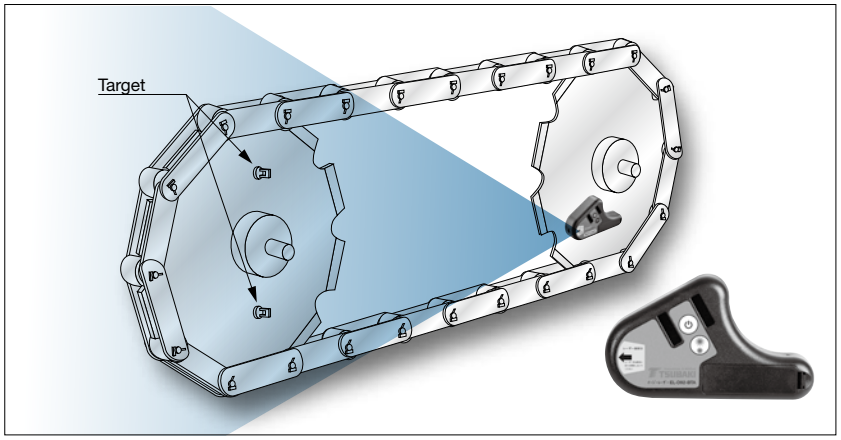
Notes on Usage

- The amount of oil dispensed varies with ambient temperature. Especially, the amount of oil released will be lower in lower temperatures, so the dial should be set to a lower value (shorter than your desired discharge time). (See diagram on right.)
- The length of the lubrication path (piping) should be less than 0.5m, with an inner diameter greater than 6mm. The path should also not be segmented.
- When stopping oil discharge midway, be sure to set the dial to zero “0.”
- CAUTION: Do not use where exposed to flame or direct sunlight.

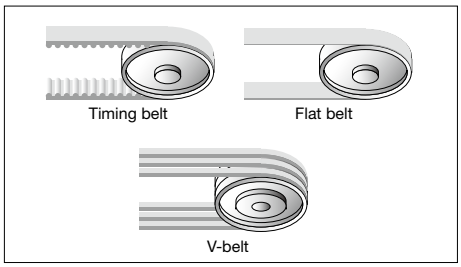


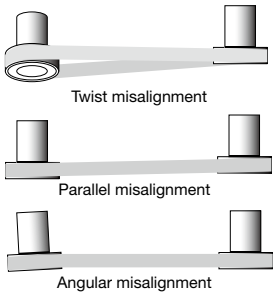
Accessories Easy-Laser

The mounting accuracy of the sprockets has a major impact on smooth chain drive and conveyance. Easy-Laser makes it easy to check and adjust any misalignment simply by shining the laser beam on the sprockets.
Note: Actual laser beam divergence angle is 55°.



◆ Can be used on belts as well as chains





Features

◆ Rapid accuracy check: Thanks to the high degree of linearity of the laser beam.
◆ Simple operation: Easy to use; just shine the laser on the targets.
◆ Mounting on non-magnetic materials possible: Can be attached to non-magnetic materials using double-sided tape.

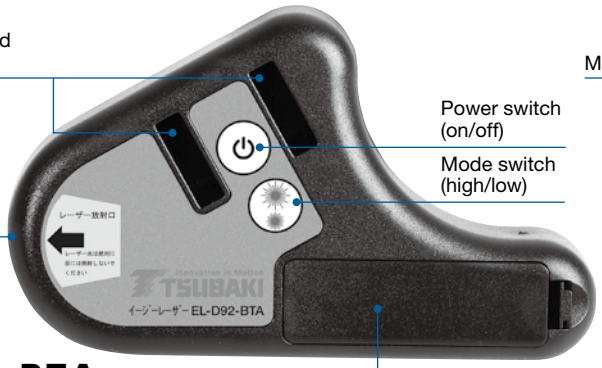


Target (Attached)

Targets (two) are stored in the main unit

The position set at the time of purchase is the target reference position.

Laser light aperture



Magnet





Dedicated carrying case

AA battery (one, attached)

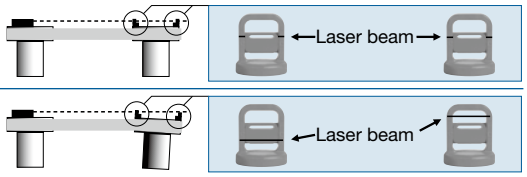
Model numbering example **EL-D92-BTA**

Easy-Laser is a registered trademark of Easy-Laser AB.

Adjust centering while checking the position of the laser beam shining on the targets.
Easy operation at a glance.

◆ Correct alignment:
Laser beam shines through the centers

◆ Misaligned:
Laser beam deviates from the centers



Specifications

Laser wavelength: 630 to 680 nm
Laser output: Low mode 0.6 mW or less
High mode 4.8 mW or less
Laser class: 2 (JIS C6802: 2025)
Beam angle: 55°
Sprocket (pulley) diameter: 60 mm or more
Sprocket (pulley) width: Regardless of width
Accuracy: Angular margin of error between targets is within 0.05°

Measuring distance: Up to 10 m (when used indoors)
Material: ABS plastic, hard anodized aluminum
Dimensions (W x H x D): 147 x 87 x 31 mm
Weight: 265 g
Power source: One AA battery
Continuous operation: 8 hours
Operating temperature: –10 to 50°C

Safety Precautions

Important Easy-Laser is a precision instrument. Dropping or striking the unit may cause it to malfunction.

◆ Always switch off any equipment, devices, or machinery and make sure that operation has come to a complete stop before using the Easy-Laser.
◆ Ensure the power switch on the equipment is locked to Off, or pull the fuse, until adjustments are finished.
◆ Never point the laser beam directly into the eyes.
◆ Never look directly into the laser beam or point the laser beam at any part of the body.
◆ Never disassemble the Easy-Laser. The product quality cannot be guaranteed if the unit has been disassembled.
◆ Do not use on machinery with high operating temperatures, as magnets may be weakened by heat. (Operating temperature range: –10 to 50°C)
◆ Remove the batteries from the unit if it will not be used for a lengthy period of time.
◆ Clean the main unit and laser light aperture with a dry cotton cloth.
◆ For handling instructions and further details, refer to the instruction manual included with the unit.

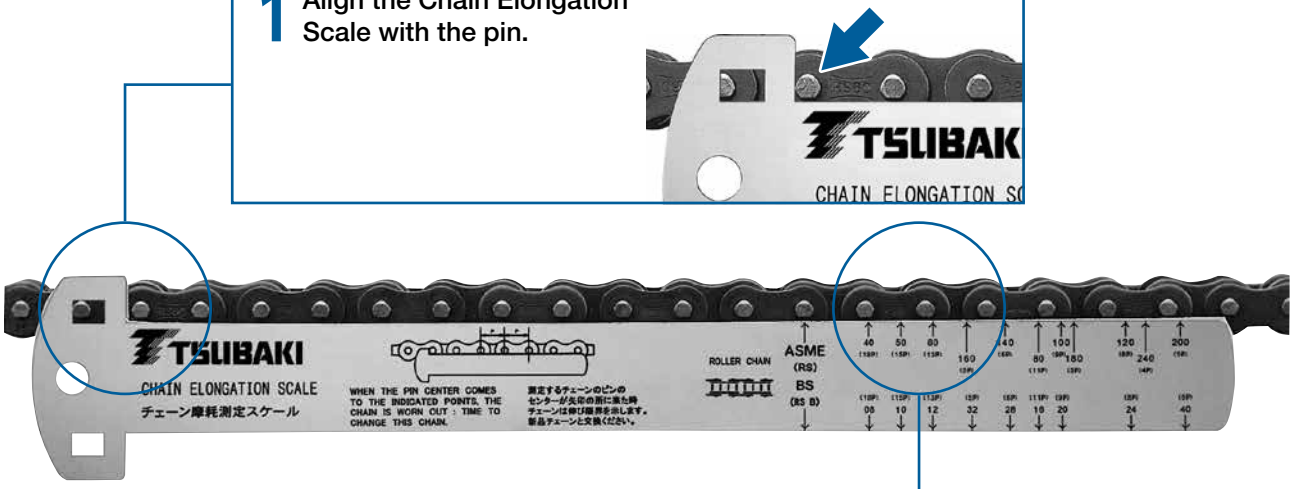
Accessories Chain Elongation Scales

The chain elongation scale allows for quick checks of a chain's pitch elongation limit. Use it to check chain elongation on RS Roller Chains, RS Roller Chain B Series, and Leaf Chains to determine when it is time for the chain to be replaced.

Applicable Chain Sizes
Roller Chains: RS40 to RS240, RS08B to RS40B
Leaf Chains (AL/BL): #4 to #16
Small Size Conveyor Chains: RF2040 to RF2120

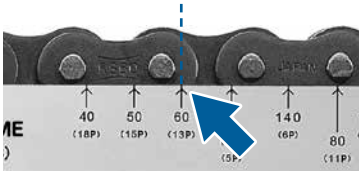
Measurement Procedure

1 Align the Chain Elongation Scale with the pin.

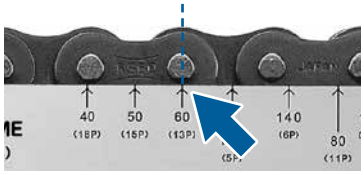


2 Check where along the scale the pin is positioned (pitch indicated in parentheses).

◆ Scale positioning on a new product



◆ Wear elongation limit



If the point or the scale is past the center of the pin, the chain has reached its elongation limit and should be replaced.

Model numbering example **RS-CES** Note: 10 items per case.

Safety Precautions

- ◆ Depending on the attachment and chain size, there may be interference with the Elongation Scale for specialty attachment chains or K2 attachment chains.
- ◆ Check chain elongation at the location on the chain where the sprocket teeth engage the most.
- ◆ Check chain elongation at a location on the chain where tensile force is applied.
- ◆ Do not use the scale for any purpose other than measuring chain elongation.
- ◆ Always turn off the power switch to the equipment and confirm that it has come to a complete stop before checking chain elongation.
- ◆ Cannot be used with Lambda Chain or X-Lambda Chain because their criteria for end of service life differs.

Selection and Handling

■ Roller Chain Selection

1. Selection Guide ····· p193
2. Service Factors ····· p195
3. Provisional Selection Graph ····· p196
4. Selection Formulae ····· p198
5. General Selection Method ····· p201
6. Allowable Load Selection Method ····· p203
7. Lifting Transmission Examples ····· p208
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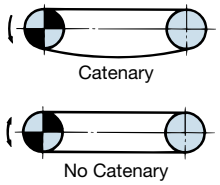
■ Handling Roller Chains and Sprockets

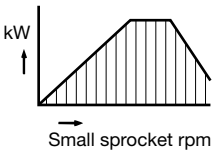
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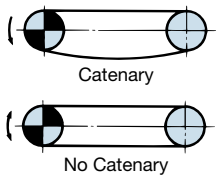
Roller Chain Selection

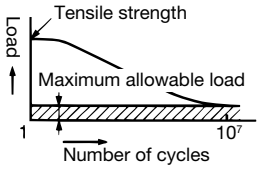
1. Selection Guide

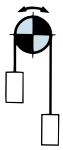
Application	Key points for selection	Selection method
Ordinary transmission	Selection using kilowatt ratings tables	**General selection method**
		Page 201
Ordinary transmission	Selection based on maximum allowable load	**Allowable load selection method**
		Starting frequency 6 times/day (8 hrs.) or more Page 203
Lifting transmissions	Selection based on maximum allowable load	**Lifting transmission examples**
	For connecting links, use F-type connecting links or connecting links for end fitting bolts. (Standard roller chain only)	Page 208
Shuttle traction	Selection based on maximum allowable load	**Shuttle traction examples**
		Page 210
Pin gear drive	Selection based on maximum allowable load (Chain speed V = 50 m/min or less)	**Pin gear drive selection**
		Page 213

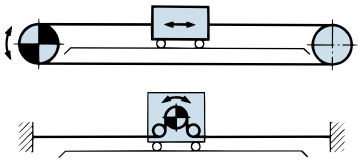


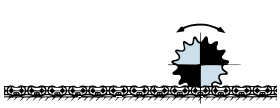


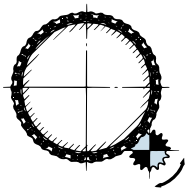












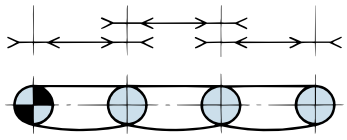
	Connecting parts that can be used in a normal atmosphere from -10°C to 60°C			
	Connecting link		Offset link	
	M type	F type	2-pitch	1-pitch
RS	○	○	○	□
RS B series	○	◌	□	□
LMD	○	◌	—	□
LMDNP	○	—	—	□
LMDX	○	—	—	—
LMDS	○	—	—	—
LMDKF	○	◌	—	□
LMDKT	○	◌	—	□
LM	○	—	—	□
SUP	○	○	—	—
HT	○	○	—	—
SNS	○	◌	○	□
RS	○	○	○	△
RS B series	○	○	△	△
SUP	○	○	—	—
HT	○	○	—	—
SUPH	○	○	—	—
USN	—	◌	—	—
NP	○	○	—	△
NEP (APP)	○	○	—	△
SS, HS, AS	○	—	—	○
PC	○	—	—	—
PCSY	○	—	—	—
NS	○	—	—	○
TI	○	—	—	○
KT	○	○	—	△
CU	○	○	—	—
CUSS	○	—	—	—
RS attachment	○	—	—	—

Symbols in the table ○ : Usable □ : Allow for a reduction in kilowatt ratings △ : Allow for a reduction in strength
— : Manufacturing not possible ◌ : Made-to-order product

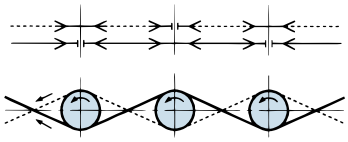
◆ Other selections

Roller drive

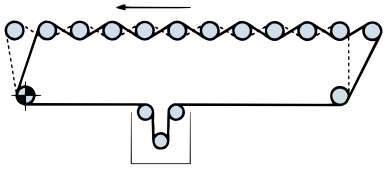
1



2

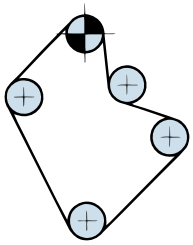


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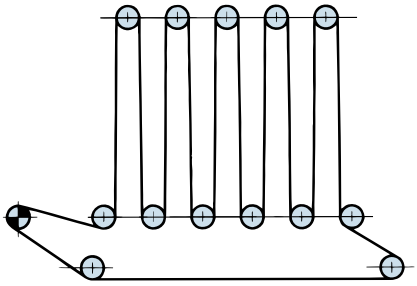


Multi-shaft drive

1

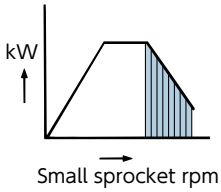


2

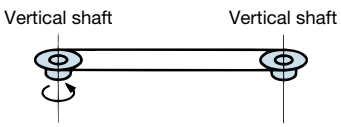


High-speed drive

Right side from peak of kW ratings tables (shaded area)



Vertical shaft drive



◆ Required information for roller chain selection

1) Machine used
2) Type of impact
3) Motor type
4) Rated power of motor
5) Bore diameter of high-speed shaft and RPM
6) Bore diameter of low-speed shaft and RPM
7) Distance between shafts

◆ Motor characteristics required for chain selection

When using the allowable load selection method or the pin gear drive selection method, check the following characteristics of the motor.

1) Moment of inertia of motor
2) Rated torque of motor, or motor shaft RPM
3) Starting torque of motor
4) Maximum (stalling) torque of motor
5) Motor braking torque

⚠ Precautions when selecting roller chain

The roller chain selection conditions provided here are only applicable to the selection of roller chain model and size. Environmental deterioration including corrosion, aging, and the like, is not taken into account.
When guidelines or legal considerations impose constraints on the selection of roller chain, first make a selection based on these constraints and then make another selection based on the methods given in this catalog. Then choose the roller chain that provides the greater margin of safety.
Ancillary equipment such as safety devices and lubrication devices should be selected separately.

2. Service Factors

◆ Multi-strand factor

The load borne by multi-strand roller chain is unequal across the width of the chain, and thus it cannot be expected that the transmission capacity will be equal to the capacity of a single-strand roller chain multiplied by the number of strands. For this reason, the transmission capacity of multi-strand roller chain is obtained by multiplying the transmission capacity of single-strand roller chain by a multi-strand factor.

Table 1: Multi-strand factor

Number of roller chain strands	Multi-strand factor
Two	1.7
Three	2.5
Four	3.3
Five	3.9
Six	4.6

◆ Service factor Ks

The kW ratings are based on conditions of minimal load fluctuation. Depending on the degree of load fluctuation, it may be necessary to correct the kilowatt ratings using the service factor Ks.
Use Table 2 below to determine the appropriate service factor based on the type of machine and the source of power.
The design kW value is obtained by multiplying the kilowatt ratings by the service factor.

Table 2: Service factor Ks

Type of impact	Example machines / Power source	Motor or turbine	Internal combustion engine	
			With hydraulic drive	Without hydraulic drive
Smooth	Belt conveyors with little load fluctuation, chain conveyors, centrifugal pumps, centrifugal blowers, ordinary textile machines, and ordinary machines with little load fluctuation.	1.0	1.0	1.2
Moderate	Centrifugal compressors, marine engines, conveyors with moderate load fluctuation, automatic furnaces, dryers, pulverizers, general machine tools, compressors, general construction machines, general paper mill machines.	1.3	1.2	1.4
Large	Presses, crushers, construction and mining equipment, vibration machines, oil well rigs, rubber mixers, rolls, roll gangs, general machines with reverse or large-impact loads.	1.5	1.4	1.7

◆ RPM factor Kn and teeth factor Kz

Table 3: RPM factor Kn and number of teeth factor Kz

RPM r/min	RPM factor Kn
Less than 27	1.00
27 or more, less than 37	1.03
37 or more, less than 50	1.07
50 or more, less than 70	1.10
70 or more, less than 100	1.14
100 or more, less than 150	1.19
150 or more, less than 300	1.27
300 or more, less than 500	1.34
500 or more, less than 1000	1.44
1000 or more, less than 2000	1.54
2000 or more, less than 4000	1.65

Number of teeth	Teeth factor Kz
9 or more, less than 12	1.16
12 or more, less than 15	1.14
15 or more, less than 18	1.12
18 or more, less than 24	1.10
24 or more, less than 30	1.08
30 or more, less than 38	1.06
38 or more, less than 47	1.04
47 or more, less than 60	1.02
60 or higher	1.00

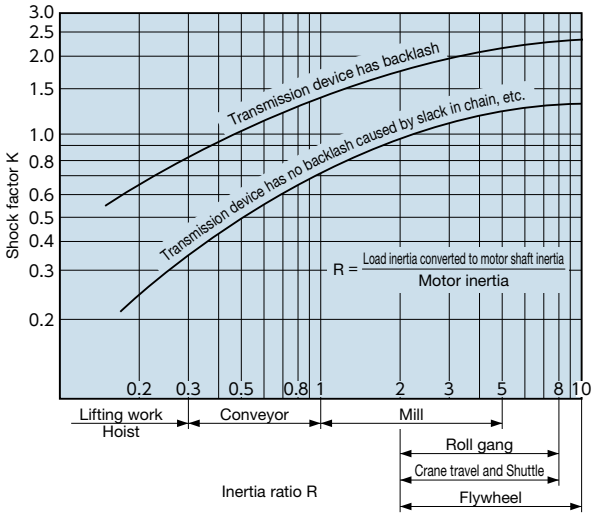
◆ Shock factor K

This coefficient is determined by the ratio of the converted moments of inertia between the prime mover and the load on the same shaft (ratio of I, GD^2), and the amount of backlash in the transmission device.

When the inertia ratio R is greater than 10, use R = 10. When the inertia ratio R is less than 0.2, use R = 0.2.

If I or GD^2 of the prime mover or load is unknown, use the value of R in Figure 1.

Figure 1: Shock factor K



◆ Imbalance load factor Ku

When using two or four chains for lifting or shuttle traction drive, the chain load will not be uniform. This must be accounted for by multiplying the following imbalance load coefficient Ku to adjust the left-and-right load imbalance.

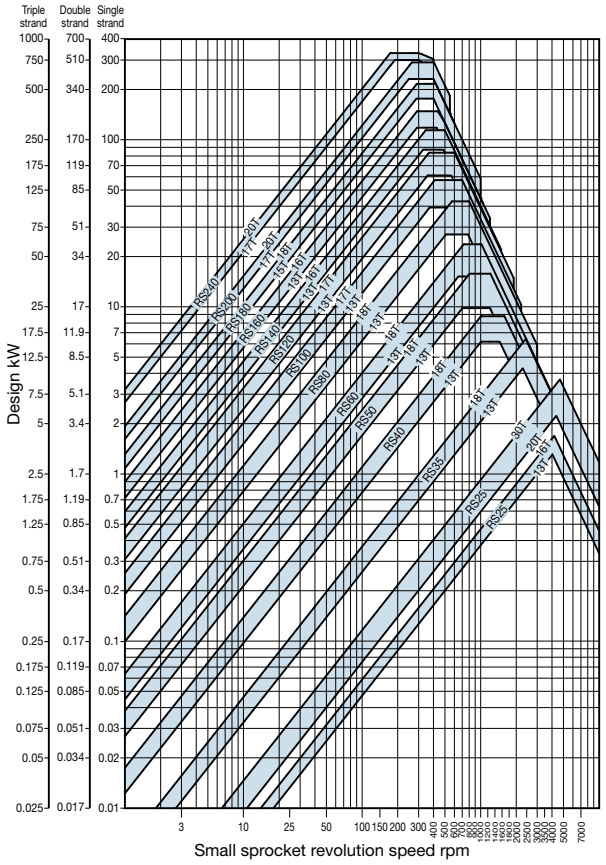
Example: For four lifting strands, the imbalance load factor for one strand Ku= 0.6 × 0.6 = 0.36

Table 4: Imbalance load factor Ku

2 lifting strands	0.6
4 lifting strands	0.36

3. Provisional Selection Graph

Figure 2: RS Standard Roller Chain provisional selection graph



■ How to use this table (Fig. 2)

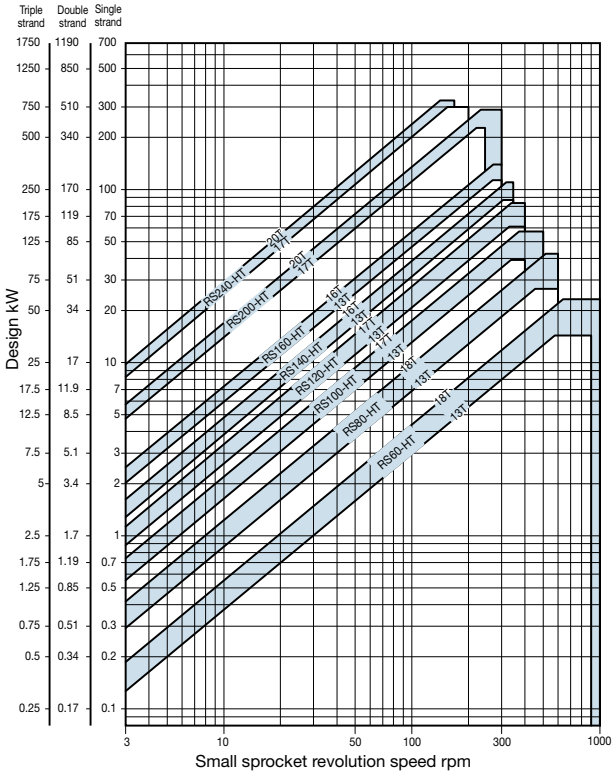
Example: Single-strand chain, design kW=7kW

1. Assume that the speed of the small sprocket is 100 rpm. Judging from the intersecting point of design kW value of 7 kW (vertical axis) and the speed value of 100 rpm (horizontal axis), RS80 and a sprocket with between 13 and 18 teeth would be appropriate. Therefore, based on the position of the intersection, we can see that a 15T sprocket can be used.

2. Assume that the speed of the small sprocket is 200 rpm. Following the same procedure shown in the above example, RS80 and a sprocket with less than 13 teeth or RS60 and a sprocket with more than 18 teeth would be appropriate. This table is used for tentative selections only. The kW ratings tables should be used to confirm the chain sizes.

3. Please allow for a drop in the kW rating values shown in the design kW ratings chart (Fig.2) when 1-pitch offset links or Super Chain 4-pitch offset links are used.

Figure 3: Heavy Duty RS-HT Roller Chain provisional selection graph



Roller Chain Selection

Figure 4: RS Super Roller Chain provisional selection graph

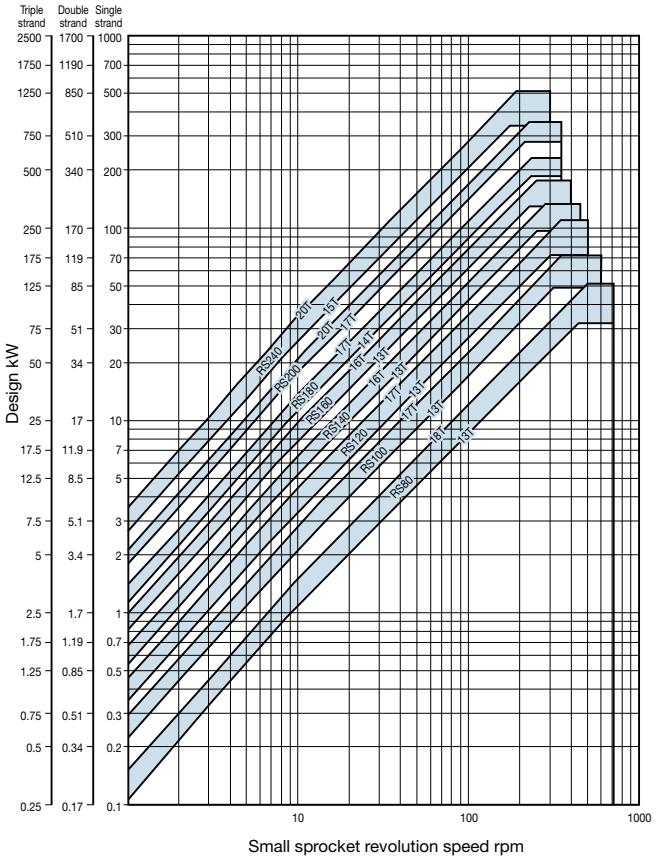
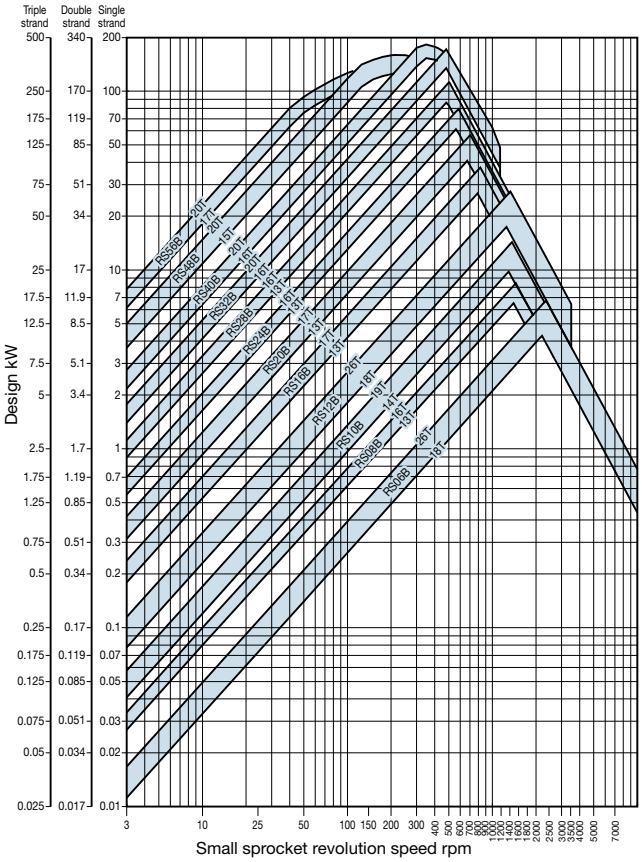


Figure 5: RS Roller Chain B Series provisional selection graph



4. Selection Formulae

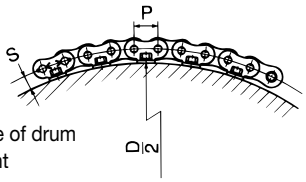
4.1 Symbols and units used in formulae

SI units and gravimetric units are both indicated

Symbol	Description	SI units	Gravimetric units
α_b	Load deceleration	m/s^2	m/s^2
α_s	Load acceleration	m/s^2	m/s^2
C	Center distance in pitches	—	—
C′	Center distance between shafts	m	m
d	Pitch circle diameter of the reducer output shaft sprocket	mm	mm
d_1	Pitch circle diameter of the small sprocket	mm	mm
d_2	Pitch circle diameter of the large sprocket	mm	mm
D	Outer diameter of the drum	mm	mm
F_b	Chain tension when decelerating	kN	kgf
F'_b	Design chain tension when decelerating	kN	kgf
F_C	Chain tension of shuttle drive	kN	kgf
F'_C	Design chain tension of shuttle drive	kN	kgf
F_ℓ	Chain tension from torque on load side (actual load)	kN	kgf
F'_ℓ	Design chain tension from torque on load side (actual load)	kN	kgf
Fm	Chain tension from prime mover rated output	kN	kgf
F′m	Design chain tension from prime mover rated output	kN	kgf
Fms	Chain tension from starting torque of prime mover	kN	kgf
F′ms	Design chain tension from starting torque of prime mover	kN	kgf
Fmb	Chain tension from braking torque of prime mover	kN	kgf
F′mb	Design chain tension from braking torque of prime mover	kN	kgf
F_S	Chain tension when accelerating	kN	kgf
F'_S	Design chain tension when accelerating	kN	kgf
F_W	Chain tension from load (actual load)	kN	kgf
F'_W	Design chain tension from load (actual load)	kN	kgf
f_1	Coefficient of friction between roller and rail (with lubrication 0.14, without lubrication 0.21)	—	—
G	Standard acceleration from gravity G = 9.80665 m/s2	—	—
i	Speed ratio (example) if ratio is 1/30 than i = 30	—	—
$I_\ell\{GD^2_\ell\}$	Converted moment of inertia of the loaded prime mover shaft	kg·m^2	kgf·m^2
Im{GD^{2}m}	Moment of inertia of the prime mover shaft	kg·m^2	kgf·m^2
K	Shock factor	—	—
Kn	RPM factor	—	—
Ks	Service factor	—	—
Ku	Imbalance load factor	—	—
Kv	Speed factor	—	—
Kz	Number of teeth factor	—	—
L	Chain length (number of links)	—	—
m	Unit mass of chain	kg/m	kgf/m
M{W}	Mass of load (weight)	kg	kgf
n	RPM of the small sprocket	r/min	rpm
n_1	RPM of driver shaft	r/min	rpm
n_2	RPM of driven shaft	r/min	rpm
P	Chain pitch	mm	mm
R	Inertia ratio	—	—
S	Attachment height for RS attachment chain (distance from the drum surface to the chain pitch center)	mm	mm
t_b	Deceleration time	s	s
t_S	Acceleration time	s	s
T_b	Braking torque of the prime mover	%(kN·m)	%(kgf·m)
Tmax	Maximum (stalling) torque of the prime mover	%(kN·m)	%(kgf·m)
T_S	Starting torque of the prime mover	%(kN·m)	%(kgf·m)
T_ℓ	Load torque	kN·m	kgf·m
Tm	Working torque	kN·m	kgf·m
Tn	Rated torque of the prime mover	kN·m	kgf·m
V	Chain speed	m/min	m/min
V_ℓ	Load speed	m/min	m/min
Z	Number of teeth of large sprocket	—	—
Z′	Number of teeth of small sprocket	—	—
ω	Angular velocity of the prime mover shaft	rad/min	rad/min
ω_b	Angular deceleration of the prime mover shaft	rad/s^2	rad/s^2
ω_S	Angular acceleration of the prime mover shaft	rad/s^2	rad/s^2

4.2 Formulae

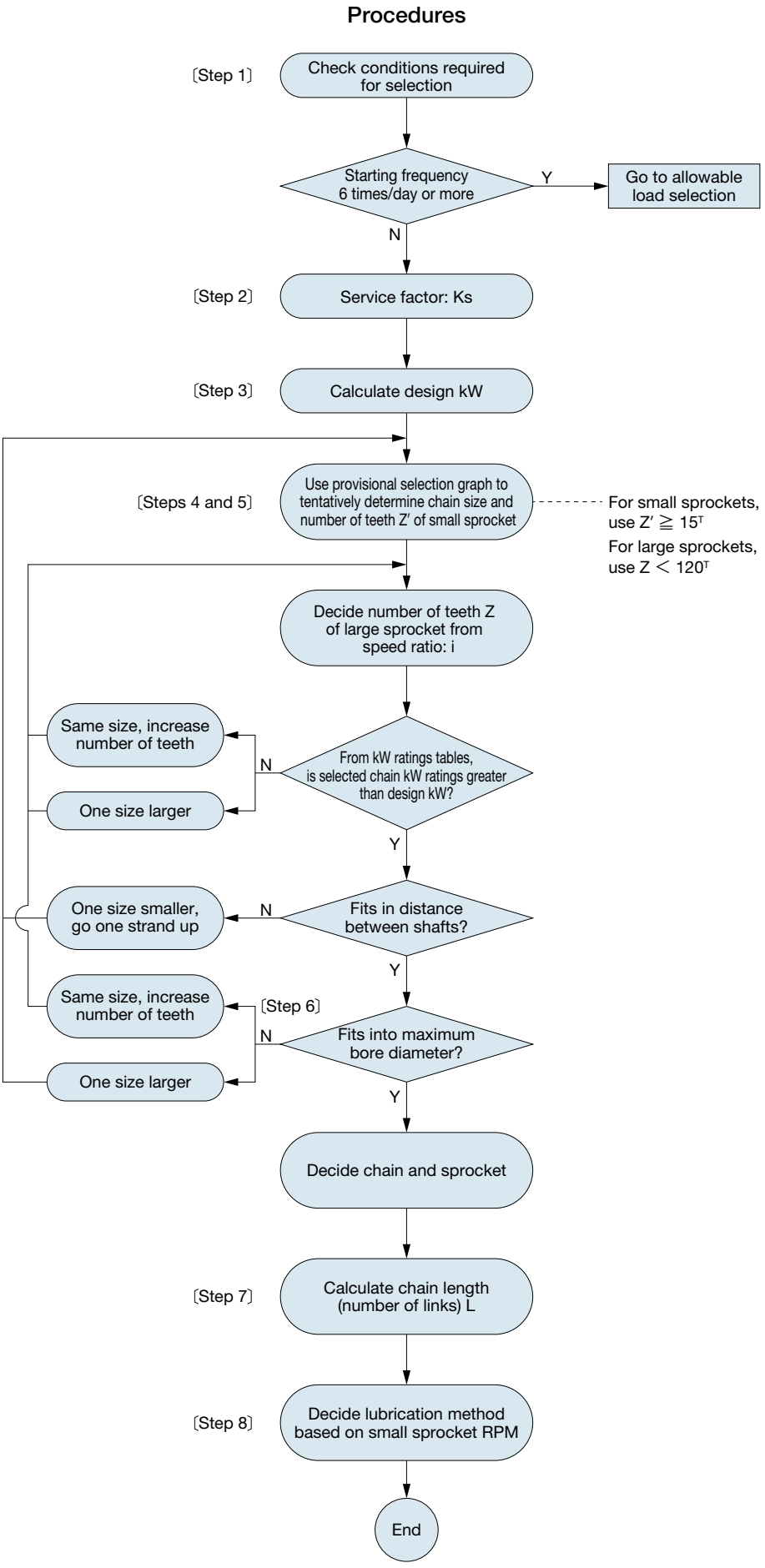
1) Perform all selections using a transmission efficiency, including the chain, of $\eta = 1$.
2) Use the valuezs calculated in items 13 and 14 of this table for the tension and kW ratings used for selection.

Item	SI units	Gravimetric units
1. Chain length (number of links): L Ordinary transmission	Ordinary transmission between two shafts (1) When the number of teeth and distance between shafts has been decided for both sprockets: $L = \frac{Z + Z'}{2} + 2C + \frac{\left(\frac{Z - Z'}{6.28}\right)^2}{C}$ (2) When the number of links of chain and the number of teeth has been decided: $C = \frac{1}{8}\left\{2L - Z - Z' + \sqrt{(2L - Z - Z')^2 - \frac{8}{9.86}(Z-Z')^2}\right\}$ Even if the fractional part of the value found for L (below that of the decimal point) is small, round it up to the nearest integer and add a link. An offset link must be used when an odd number of links exist. However, if possible, change the number of teeth on the sprocket or the distance between shafts so that an even number of links may be used.	
Pin gear drive	When using a chain with attachment around a drum $L = \frac{180°}{\tan^{-1}\left(\frac{P}{D+2S}\right)}$ P : Chain pitch D : Outer circumference of drum S : Height of attachment  Round L up to an even number of links. When attaching the chain attachment around the drum, insert shims at equal intervals for adjustment.	
2. Chain speed: V	$V = \frac{P \times Z' \times n}{1000}$ (m/min)	
3. Chain tension from rated output (kW) and rated RPM of motor: Fm	$Fm = \frac{60 \times kW}{V}$ (kN)	$Fm = \frac{6120 \times kW}{V}$ (kgf)
4. Moment of inertia where the prime mover shaft converts the moment of inertia of the load I (GD^2) : I_ℓ (GD^2_ℓ)	$I_\ell = M \times \left(\frac{V}{2\pi n_1}\right)^2$ (kg·m²)	$GD^2_\ell = W \times \left(\frac{V}{\pi n_1}\right)^2$ (kgf·m²)
5. Rated torque of motor: Tn	$Tn = 9.55 \times \frac{kW}{n_1}$ (kN·m)	$Tn = 974 \times \frac{kW}{n_1}$ (kgf·m)
6. Working torque: Tm	$Tm = \frac{Ts(\%)+T_{max}(\%)}{2 \times 100} \times Tn$ (kN·m) Or $Tm = \frac{Ts(kN·m)+T_{max}(kN·m)}{2}$ (kN·m)	$Tm = \frac{Ts(\%)+T_{max}(\%)}{2 \times 100} \times Tn$ (kgf·m) Or $Tm = \frac{Ts(kgf·m)+T_{max}(kgf·m)}{2}$ (kgf·m)
7. Chain tension from starting torque: Fms	$Fms = \frac{Ts(\%) \times i}{\{d/(2\times1000)\}\times100} \times Tn \times 1$ (kN) Or $Fms = \frac{Ts(kN·m) \times i}{d/(2 \times 1000)} \times 1$ (kN)	$Fms = \frac{Ts(\%) \times i}{\{d/(2\times1000)\}\times100} \times Tn \times 1$ (kgf) Or $Fms = \frac{Ts(kgf·m) \times i}{d/(2 \times 1000)} \times 1$ (kgf)
Chain tension from braking torque: Fmb	$Fmb = \frac{T_b(\%) \times i}{\{d/(2\times1000)\}\times100} \times Tn \times 1.2^{※}$ (kN) Or $Fmb = \frac{T_b(kN·m) \times i}{d/(2 \times 1000)} \times 1.2^{※}$ (kN) ※ : Constants	$Fmb = \frac{T_b(\%) \times i}{\{d/(2\times1000)\}\times100} \times Tn \times 1.2^{※}$ (kgf) Or $Fmb = \frac{T_b(kgf·m) \times i}{d/(2 \times 1000)} \times 1.2^{※}$ (kgf) ※ : Constants
8. Acceleration time: ts If acceleration time is already known, use that.	$ts = \frac{(Im + I_\ell) \times n_1}{9550 \times (Tm - T_\ell)}$ (s)	$ts = \frac{(GD^2m + GD^2_\ell) \times n_1}{375 \times (Tm - T_\ell)}$ (s)
9. Deceleration time: tb If deceleration time is already known, use that. ±: When there is a negative load, such as a hanging load, use $-T_\ell$.	$t_b = \frac{(Im + I_\ell) \times n_1}{9550 \times (Tb \pm T_\ell)}$ (s)	$t_b = \frac{(GD^2m + GD^2_\ell) \times n_1}{375 \times (Tb \pm T_\ell)}$ (s)

Item	SI units	Gravimetric units
10. Acceleration Linear motion: αs Rotating motion: ωs Assuming linear acceleration. In other situations, calculate using maximum acceleration.	Linear motion (load acceleration) $\alpha s = \frac{V_\ell}{ts \times 60}$ Rotating motion (angular speed of motor shaft) $\omega = 2\pi \times n1$ Rotating motion (angular acceleration of motor shaft) $\omega s = \frac{\omega}{ts \times 60}$	
11. Deceleration Linear motion: αb Rotating: ωb Assuming linear deceleration. In other situations, calculate using maximum acceleration.	Linear motion (load acceleration) $\alpha b = \frac{V_\ell}{tb \times 60}$ Rotating motion (angular speed of motor shaft) $\omega = 2\pi \times n1$ Rotating motion (angular acceleration of motor shaft) $\omega b = \frac{\omega}{tb \times 60}$	
12. Chain tension during acceleration: Fs	Linear motion $Fs = \frac{M \times \alpha s}{1000} + Fw$ Rotating motion $Fs = \frac{I_\ell \times \omega s \times i}{1000 \times \left(\frac{d}{2 \times 1000}\right)} + Fw$	Linear motion $Fs = \frac{M \times \alpha s}{G} + Fw$ Rotating motion $Fs = \frac{GD^2_\ell/4 \times \omega s \times i}{\left(\frac{d}{2 \times 1000}\right) \times G} + Fw$
Chain tension during deceleration: Fb	Linear motion $Fb = \frac{M \times \alpha b}{1000} + Fw$ Rotating motion $Fb = \frac{I_\ell \times \omega b \times i}{1000 \times \left(\frac{d}{2 \times 1000}\right)} + Fw$	Linear motion $Fb = \frac{M \times \alpha b}{G} + Fw$ Rotating motion $Fb = \frac{GD^2_\ell/4 \times \omega b \times i}{\left(\frac{d}{2 \times 1000}\right) \times G} + Fw$
13. Design kW (for general selection)	Design kW = Rated kW of motor x Ks (kW)	
14. Design chain tension		
Design chain tension from motor: $F'm$	$F'm = Fm \times Ks \times Kn \times Kz$ (kN) {kgf}	
Design chain tension from starting torque: $F'ms$	$F'ms = Fms \times K \times Kn \times Kz$ (kN) {kgf}	
Design chain tension from stalling torque: $F'mb$	$F'mb = Fmb \times K \times Kn \times Kz$ (kN) {kgf}	
Design chain tension from shuttle drive: $F'c$	$F'c = Fc \times Ks \times Kn \times Kz$ (kN) {kgf}	
Design chain tension during acceleration: $F's$	$F's = Fs \times Kn \times Kz$ (kN) {kgf}	
Design chain tension during deceleration: $F'b$	$F'b = Fb \times Kn \times Kz$ (kN) {kgf}	
Design chain tension from load: $F'w$	$F'w = M \times Ks \times Kn \times Kz \times \frac{G}{1000}$ (kN)	$F'w = W$ (Or Fw) $\times Ks \times Kn \times Kz$ (kgf)
	If the mass M (weight W) is not known, use the rated torque Tn of the motor to calculate the shaft torque T = Tn x i kN·m {kgf·m}, and use F = 2T/d in place of W.	
15. Inertia ratio: R	$R = \frac{I_\ell}{Im}$	$R = \frac{GD^2_\ell}{GD^2m}$
16. Conversion of the flywheel effect (GD^2) to moment of inertia (I)	$1kg \cdot m^2 \cdots (I)$	$4kgf \cdot m^2 \cdots (GD^2)$

All chain tensions in the above formulae are the tensions when one strand of chain is used.
When using two or more strands of chain, calculate the chain tension for one strand and multiply it by the imbalance load factor Ku (Table 4) for the number of strands used.

5. General Selection Method



Ordinary transmission (forward/reverse), continual revolution transmission

〔Steps 4 and 5〕

Select chain and number of teeth of small sprocket

Use the provisional selection graphs or the kW ratings tables to obtain a chain and small sprocket number of teeth that satisfy the revolution speed of the high-speed shaft and the transmission kW. Select a chain with the smallest pitch that has the required kW ratings.

If a single-strand chain does not have sufficient power, select a multi-strand chain. If site restrictions require a short distance between shafts and the smallest possible sprocket outer diameter, use a multi-strand roller chain with a small pitch.

〔Step 6〕

Select number of teeth for large sprocket

Once the number of teeth of the small sprocket has been decided, the number of teeth of the large sprocket is determined by multiplying the number of teeth of the small sprocket by the speed ratio.

The number of teeth of the small sprocket should be at least 15.

However, it is not desirable if this causes the number of teeth of the large sprocket to exceed 120. In this event, the number of teeth of the small sprocket must be reduced; however, it is recommended to use more than 13 teeth.

〔Step 7〕

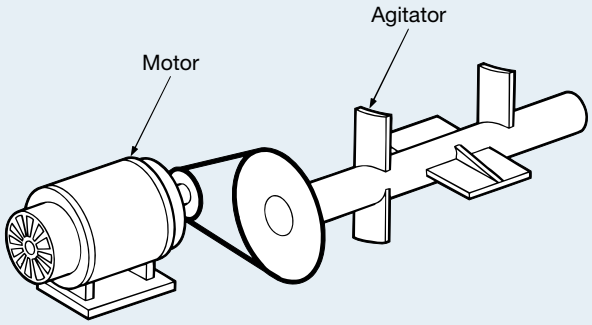
When the number of links is odd

If the number of links is odd, it is best to avoid using an offset link and instead change the distance between shafts so that the number of links is even. If the one-pitch offset link of RS roller chain or the four-pitch offset link of Super Chain is used, allow for a decrease of transmission power as explained in the notes in the kW ratings tables.

◆ Selection example using the general selection method

〔Step 1〕 Required conditions

Machine used : Agitator
Type of shock : Moderate shock
Source of power : Motor
Rated power : 11 kW 1800 rpm
High-speed shaft : Shaft diameter 45 mm 90 rpm
Low-speed shaft : Shaft diameter 60 mm 30 rpm
Distance between shafts : 350 mm
Space limitation : 700 mm



〔Step 2〕 Determine the service factor

Service factor Ks = 1.3 from Table 2 Service Factor

〔Step 3〕 Determine the design kW

Design kW = 11 kW X 1.3 = 14.3 kW

〔Steps 4 and 5〕 Determine the chain and the number of teeth for the sprocket

Decide on the chain number and number of teeth of the small sprocket derived from the speed of the high speed shaft, at 90 rpm, and the design kW (14.3 kW).

(1) 17T for RS100-1 is derived from the provisional selection graph and the kilowatt ratings table. Since the speed ratio is 1/3, the number of teeth will be 17T and 51T for RS100. But, with an outer diameter of 17T at 189 mm and 51T at 534 mm, these are not adequate because they do not fit in the required space. ∵189 + 534 > 700

(2) Checking multi-strand chains:
- 19T and 57T for RS80-2 is derived with double-strand chain, and the outer diameter of its sprockets are 167 mm and 476 mm, which is within space limitations. Check RS80 kilowatt ratings table for the kW ratings of 19T for RS80-2.
- The kW ratings for the small sprocket number of teeth (19T) is 5.06 kW at 50 rpm, and 9.44 kW at 100 rpm. By calculating proportionally using the differences in their tables, drive kW for 90 rpm is 8.56 kW.

(3) This 8.56 kW is the kilowatt rating of single-strand chain, and the kilowatt rating of double-strand chain that will be used is derived from the multi-strand factor in Table 1.
8.56 kW X 1.7 = 14.6 kW

(4) This kW rating, 14.6 kW, satisfies the design kW (14.3 kW).

〔Step 6〕 Check the bore diameter

Check the bore diameter on the dimension table. Maximum bore diameter for RS80-2-19T is 66 mm, and it can be used for the required bore diameter of 45 mm. Maximum bore diameter for RS80-2-57T is 89 mm, and it can be used for the 60 mm.

〔Step 7〕 Determine the distance between shafts

With a distance between shafts of 350 mm,

$\frac{(167+476)}{2} < 350$, and it will fit into the required space.

Number of the links is calculated as

$$L = \frac{57+19}{2} + 2 \times \frac{350}{25.4} + \frac{\left(\frac{57-19}{6.28}\right)^2}{\frac{350}{25.4}} = 68.2$$

In order to have an even number of links, raise the value to the right of the decimal point to an integer to get 70.

〔Step 8〕 Check lubrication method

Since the small sprocket is RS80-2-19T at a speed of 90 rpm, according to the kilowatt ratings table, drip lubrication will be used.

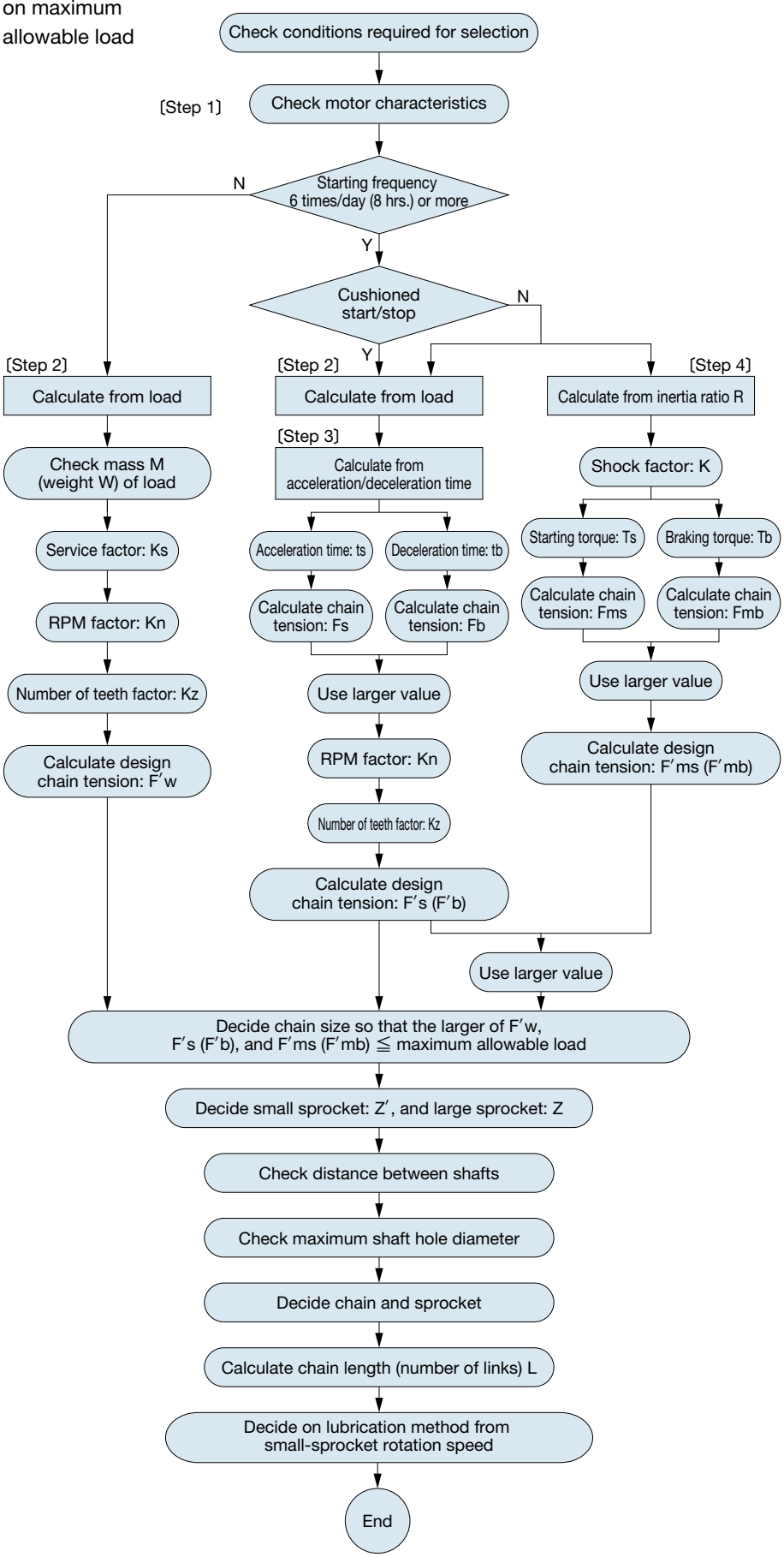
Note: Selection of roller chains for lifting applications or shuttle traction applications

When using balance weights, it is assumed that motor capacity will be reduced and only braking force will increase. In this case, for applications where maximum allowable load is indicated, also make a chain selection using the Allowable Load Selection Method. Then choose the roller chain that provides the greater margin of safety.

6. Allowable Load Selection Method

Selection based on maximum allowable load

Procedures



1. Speed considerations

This selection method is used when the roller chain will be used within the range of speeds shown in Table 1. When using at speeds higher than the upper limit shown in the table, use the General Selection Method to select the chain.

Table 1: Selection speed limit

Pitch mm	Speed limit m/min
Under 12.70	120
12.70	100
15.875	90
19.05	80
25.40	70
31.75	60
38.10	50
44.45	50
50.80	50
57.15	40
63.50	40
76.20	40
101.60	30
127.00	30

The speed limit for Poly Steel Chain is 70 m/min.

2. Impact considerations

For transmission with large impacts and other extreme conditions, in particular large-load transmission and transmission where a thrust load may operate, use F-type connecting links or two-pitch offset links.

3. Strength of connecting links and offset links

When using M-type connecting links or offset links for roller chains shown in Tables 2 and 3, multiply the maximum allowable load by the percentage given in the tables.

Table 2: Strength of M-type connecting links

RS roller chain	RS15, RS25, RS37, RS38, RS41,BF25-H	80%
RS roller chain B series	RF06B, RS48B, RS56B	80%
Cold resistant roller chain KT series	All sizes	100%

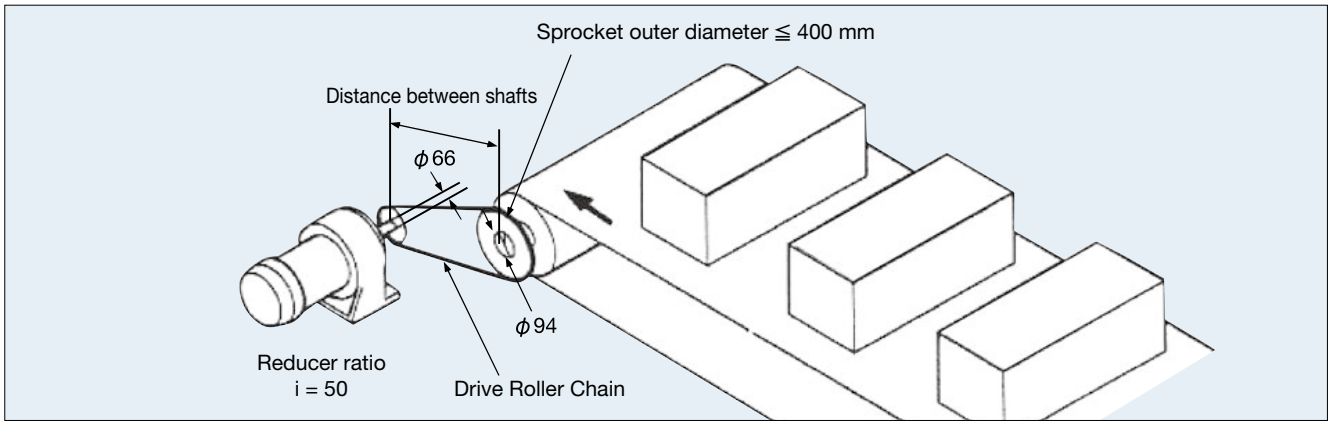
Table 3: Strength of offset links

	Offset link		
	1-pitch	2-pitch	4-pitch
RS roller chain	65%	100%	—
RS roller chain B series	60%	60%	—
Super Chain	—	—	85%
RS roller chain NP series	65%	—	—
RS roller chain NEP/APP series	65%	—	—
Low noise chain	65%	—	—

4. Sprocket considerations

When heavy-duty drive chain is used, chain tension will increase. For this reason, commercially available cast iron sprockets may not have sufficient rim or hub strength. Use S35C or equivalent material. RS sprockets have the strength capable of handling heavy-duty drive chain. For heavy-duty drive chain, use sprockets with hardened teeth.

◆ Selection example using the allowable load selection method



Conditions

Machine used : Conveyor drive
Mass of load M : 6000 kg
Load speed V_ℓ : 30 m/min
Conveyor roller diameter : 380 mm
Belt thickness : 10 mm
Conveyor roller rotation torque : 3.3 kN/m (337 kg/m)
Motor : 11 kW n_1 = 1800 rpm
Starting torque Ts 200%
Maximum (stalling) torque Tmax 210%
Braking torque Tb 200%
Moment of inertia Im 0.088 kg·m^2
(flywheel effect GD^2 0.352 kgf·m^2)

Reducer ratio : 1/50 (i = 50)
Drive shaft diameter : 66 mm
Driven shaft diameter : 94 mm
Distance b/w shafts : 500 mm
Driven sprocket diameter ≦ 400 mm
Starting frequency : 10 times/day
Type of shock : Moderate shock
Soft start/stop : None

SI units

〔Step 1〕 Check motor characteristics

Rated torque $Tn = 9.55 \times \frac{kW}{n_1} = 9.55 \times \frac{11}{1800} = 0.058$ (kN·m)

Starting torque $Ts = Tn \times 2 = 0.058 \times 2 = 0.116$ (kN·m)

Maximum (stalling) torque $Tmax = Tn \times 2.1 = 0.058 \times 2.1 = 0.122$ (kN·m)

Braking torque $Tb = Tn \times 2.0 = 0.058 \times 2.0 = 0.116$ (kN/m)

Motor moment of inertia Im=0.088 (kg·m^2)

〔Step 2〕 Calculate from load

Driven shaft revolution

$$n_2 = V_\ell \times \frac{1000}{(\text{Outer diameter of conveyor roller} + 2 \times \text{Belt thickness}) \times \pi}$$

$$= 30 \times \frac{1000}{(380+20) \times \pi} = 23.9\,(\text{r/min})$$

Drive shaft revolution

$$n = n_1/i = \frac{1800}{50} = 36\,(\text{r/min})$$

$$\text{Chain reducer ratio} = \frac{23.9}{36} = \frac{1}{1.51}$$

If the driven sprocket PCD d_2 = 400mm

$$\text{Chain tension } Fw = \text{Conveyor roller rotation torque} \times 1000 \times \frac{2}{d_2}$$

$$= 3.3 \times 1000 \times \frac{2}{400} = 16.5\,(\text{kN})$$

Tentatively select the chain.

With moderate shock····· Service factor Ks = 1.3

Tentative design chain tension = Fw×Ks = 16.5×1.3 = 21.5 (kN)

Tentatively select RS120-1 with a maximum allowable load of 30.4 kN.

{Gravimetric units}

〔Step 1〕 Check motor characteristics

Rated torque $Tn = 974 \times \frac{kW}{n_1} = 974 \times \frac{11}{1800} = 5.95$ (kgf·m)

Starting torque $Ts = Tn \times 2 = 5.95 \times 2 = 11.9$ (kgf·m)

Maximum (stalling) torque $Tmax = Tn \times 2.1 = 5.95 \times 2.1 = 12.5$ (kgf·m)

Braking torque $Tb = Tn \times 2.0 = 5.95 \times 2.0 = 11.9$ (kgf·m)

GD^2 of the motor $GD^2m = 0.352$ (kgf·m^2)

〔Step 2〕 Calculate from load

Driven shaft revolution

$$n_2 = V_\ell \times \frac{1000}{(\text{Outer diameter of conveyor roller} + 2 \times \text{Belt thickness}) \times \pi}$$

$$= 30 \times \frac{1000}{(380+20) \times \pi} = 23.9\,(\text{r/min})$$

Drive shaft revolution

$$n = n_1/i = \frac{1800}{50} = 36\,(\text{r/min})$$

$$\text{Chain reducer ratio} = \frac{23.9}{36} = \frac{1}{1.51}$$

If the driven sprocket PCD d_2 = 400mm

$$\text{Chain tension } Fw = \text{Conveyor roller rotation torque} \times 1000 \times \frac{2}{d_2}$$

$$= 337 \times 1000 \times \frac{2}{400} = 1690\,(\text{kgf})$$

Tentatively select the chain.

With moderate shock····· Service factor Ks = 1.3

Tentative design chain tension = Fw×Ks =1690×1.3 = 2200 (kgf)

Tentatively select RS120-1 with a maximum allowable load of 3100 kgf.

Roller Chain Selection

SI units

31T from driven sprocket < 400mm

Outer diameter 398 mm PCD d_2 = 376.60 (mm)

Number of teeth of drive sprocket = $\frac{31}{1.51}$ = 21T PCD d = 255.63 (mm)

Chain speed = $\frac{P \times Z' \times n}{1000} = \frac{38.1 \times 21 \times 36}{1000}$

= 28.8m/min < 50 m/min,

so it is possible to select by allowable load.

Small sprocket revolution 36r/min···· RPM factor Kn=1.03

Number of teeth of small sprocket 21T·····Number of teeth factor Kz=1.10

Chain tension Fw = Conveyor roller rotation torque × 1000 × $\frac{2}{d_2}$

= $3.3 \times 1000 \times \frac{2}{376.6}$ = 17.5 (kN)

Design chain tension F'w = Fw × Ks × Kn × Kz

= 17.5 × 1.3 × 1.03 × 1.10=25.8 (kN) ···· ❶

RS120-1 (Max. allowable load: 30.4kN) can be used.

Check the conveyance speed (selection conditions, 30 m/min)

$V_\ell = n_2 \times \frac{(\text{Conveyor roller outer diameter} + 2 \times \text{Belt thickness}) \times \pi}{1000}$

$= n_1 \times \frac{21}{31} \times \frac{(\text{Conveyor roller outer diameter} + 2 \times \text{Belt thickness}) \times \pi}{1000}$

$= 36 \times \frac{21}{31} \times \frac{(380 + 2 \times 10) \times \pi}{1000}$

= 30.6 (m/min)

〔Step 3〕 Calculate from acceleration/deceleration time

The small sprocket (reducer output shaft sprocket) was decided as RS120 21T from the calculations in Step 2. Thus, calculate using the same pitch and number of teeth. If the acceleration/deceleration time is known, use that value for the calculation.

The following is calculated assuming it is unknown.

Working torque Tm = $\frac{Ts + Tmax}{2} = \frac{0.116 + 0.122}{2}$ = 0.119 (kN·m)

Load torque T_ℓ = Fw × $\frac{d}{2 \times 1000 \times i}$ = $17.5 \times \frac{255.63}{2 \times 1000 \times 50}$

= 0.045 (kN·m)

Motor shaft conversion moment of inertia I_ℓ of load side

$I_\ell = M \times \left(\frac{V_\ell}{2 \times \pi \times n_1}\right)^2$

$= 6000 \times \left(\frac{30.6}{2 \times \pi \times 1800}\right)^2$

= 0.044 (kg·m²)

Moment of inertia of the motor = Im 0.088 (kg·m²)

Acceleration time of the motor

$ts = (Im + I_\ell) \times \frac{n_1}{9550 \times (Tm - T_\ell)}$

$= (0.088 + 0.044) \times \frac{1800}{9550 \times (0.119 - 0.045)}$

= 0.34 (s)

Deceleration time of the motor

$tb = \frac{(Im + I_\ell) \times n_1}{9550 \times (Tb + T_\ell)}$

$= \frac{(0.088 + 0.044) \times 1800}{9550 \times (0.116 + 0.045)}$

= 0.15 (s)

{Gravimetric units}

31T from driven sprocket < 400mm

Outer diameter 398 mm PCD d_2 = 376.60 (mm)

Number of teeth of drive sprocket = $\frac{31}{1.51}$ = 21T PCD d = 255.63 (mm)

Chain speed = $\frac{P \times Z' \times n}{1000} = \frac{38.1 \times 21 \times 36}{1000}$

= 28.8m/min < 50 m/min,

so it is possible to select by allowable load.

Small sprocket revolution 36r/min···· RPM factor Kn=1.03

Number of teeth of small sprocket 21T·····Number of teeth factor Kz=1.10

Chain tension Fw = Conveyor roller rotation torque × 1000 × $\frac{2}{d_2}$

= $337 \times 1000 \times \frac{2}{376.6}$ = 1790 (kgf)

Design chain tension F'w = Fw × Ks × Kn × Kz

= 1790 × 1.3 × 1.03 × 1.10=2640 (kgf) ·· ❶

RS120-1 (Max. allowable load: 3100kgf) can be used.

Check the conveyance speed (selection conditions, 30 m/min)

$V_\ell = n_2 \times \frac{(\text{Conveyor roller outer diameter} + 2 \times \text{Belt thickness}) \times \pi}{1000}$

$= n_1 \times \frac{21}{31} \times \frac{(\text{Conveyor roller outer diameter} + 2 \times \text{Belt thickness}) \times \pi}{1000}$

$= 36 \times \frac{21}{31} \times \frac{(380 + 2 \times 10) \times \pi}{1000}$

= 30.6 (m/min)

〔Step 3〕 Calculate from acceleration/deceleration time

The small sprocket (reducer output shaft sprocket) was decided as RS120 21T from the calculations in Step 2. Thus, calculate using the same pitch and number of teeth. If the acceleration/deceleration time is known, use that value for the calculation.

The following is calculated assuming it is unknown.

Working torque Tm = $\frac{Ts + Tmax}{2} = \frac{11.9 + 12.5}{2}$ = 12.2 (kgf·m)

Load torque T_ℓ = Fw × $\frac{d}{2 \times 1000 \times i}$ = $1790 \times \frac{255.63}{2 \times 1000 \times 50}$

= 4.58 (kgf·m)

Motor shaft conversion GD^2 of the load side

$GD^2_\ell = M \times \left(\frac{V_\ell}{\pi \times n_1}\right)^2$

$= 6000 \times \left(\frac{30.6}{\pi \times 1800}\right)^2$

= 0.176 (kgf·m²)

GD^2 of the motor GD^2m=0.352 (kgf·m²)

Acceleration time of the motor

$ts = (GD^2m + GD^2_\ell) \times \frac{n_1}{375 \times (Tm - T_\ell)}$

$= (0.352 + 0.176) \times \frac{1800}{375 \times (12.2 - 4.58)}$

= 0.34 (s)

Deceleration time of the motor

$tb = \frac{(GD^2m + GD^2_\ell) \times n_1}{375 \times (Tb + T_\ell)}$

$= \frac{(0.352 + 0.176) \times 1800}{375 \times (11.9 + 4.58)}$

= 0.15 (s)

SI units

As tb < ts, chain tension during deceleration Fb is larger than chain tension during acceleration Fs. Thus, use the following.

Deceleration

$$\alpha b = \frac{V_\ell}{tb \times 60} = \frac{30.6}{0.15 \times 60}$$

$$= 3.40\ (m/s^2)$$

Chain tension during deceleration

$$Fb = \frac{M \times \alpha b}{1000} \times \frac{(\text{Conveyor roller outer diameter} + 2 \times \text{Belt thickness})}{d_2} + Fw$$

$$= \frac{6000 \times 3.40}{1000} \times \frac{(380 + 2 \times 10)}{376.6} + 17.5$$

$$= 39.2\ (kN)$$

Design chain tension

F′b=Fb×Kn×Kz=39.2×1.03×1.10=44.4 (kN) ····· ❷

RS120-2 (maximum allowable load 51.7 kN) or RS120-SUP-2 (maximum allowable load 71.7 kN) can be used because F′b=44.4(kN).

Considering RS140 18T (outer diameter 279 mm d_1 = 255.98) and 27T (outer diameter 407 mm d_2 = 382.88) with similar PCD results conflict with the driven sprocket outer diameter ≦ 400 mm, they cannot be used.

Chain reduction ratio becomes $\frac{26}{18}$ from the required $\frac{36}{23.9}$, and

conveyance speed = $30 \times \frac{36}{23.9} \times \frac{26}{18}$ = 31.3m/min

but upon examination 26T (outer diameter 393mm d_2=368.77) ❷ is F′b=46.3(kN)

RS140-1 cannot be used because its maximum allowable load is 40.2 kN.

RS140-SUP-1 can be used because its maximum allowable load is 56.9 kN.

Since the sprocket bore diameter of 18T is up to 89 mm, and for 26T is up to 103 mm, it can be used with a drive shaft diameter of 66 mm and driven shaft diameter of 94 mm.

With the distance between shafts at 500 mm, a sprocket with 18T (d_1=255.98) and 26T (d_2=368.77) can be used.

Number of links will be 46 links.

〔Step 4〕 Calculate from inertia ratio R

$$\text{Inertia ratio } R = \frac{I_\ell}{Im} = \frac{0.044}{0.088} = 0.5$$

There is clearance in the drive equipment ····Shock factor K=1.0

Starting torque Ts = 0.116 (kN·m)

Chain tension from starting torque

$$Fms = Ts \times i \times 1000 \times \frac{2}{d}$$

$$= 0.116 \times 50 \times 1000 \times \frac{2}{255.63} = 45.4\ (kN)$$

Braking torque Ts = 0.116 (kN·m)

Chain tension from braking torque

$$Fmb = Tb \times i \times 1.2 \times 1000 \times \frac{2}{d}$$

$$= 0.116 \times 50 \times 1.2 \times 1000 \times \frac{2}{255.63} = 54.5\ (kN)$$

Since Fmb>Fms, use the larger Fmb.

Design chain tension

$$F'mb = Fmb \times K \times Kn \times Kz$$

$$= 54.5 \times 1.0 \times 1.03 \times 1.10 = 61.7\ (kN)$$ ····· ❸

{Gravimetric units}

As tb < ts, chain tension during deceleration Fb is larger than chain tension during acceleration Fs. Thus, use the following.

Deceleration

$$\alpha b = \frac{V_\ell}{tb \times 60} = \frac{30.6}{0.15 \times 60}$$

$$= 3.40\ (m/s^2)$$

Chain tension during deceleration

$$Fb = \frac{M \times \alpha b}{G} \times \frac{(\text{Conveyor roller outer diameter} + 2 \times \text{Belt thickness})}{d_2} + Fw$$

$$= \frac{6000 \times 3.40}{G} \times \frac{(380 + 2 \times 10)}{376.6} + 1790$$

$$= 4000\ (kgf)$$

Design chain tension

F′b=Fb×Kn×Kz=4000×1.03×1.10=4530 (kgf) ····· ❷

RS120-2 (maximum allowable load 5270 kgf) or RS120-SUP-2 (maximum allowable load 7310 kgf) can be used because F′b=4530(kgf).

Considering RS140 18T (outer diameter 279 mm d_1 = 255.98) and 27T (outer diameter 407 mm d_2 = 382.88) with similar PCD results conflict with the driven sprocket outer diameter ≦ 400 mm, they cannot be used.

Chain reduction ratio becomes $\frac{26}{18}$ from the required $\frac{36}{23.9}$, and

conveyance speed = $30 \times \frac{36}{23.9} \times \frac{26}{18}$ = 31.3m/min

but upon examination 26T (outer diameter 393mm d_2=368.77) ❷ is F′b=4520(kgf)

RS140-1 cannot be used because its maximum allowable load is 4100 kgf.

RS140-SUP-1 can be used because its maximum allowable load is 5800 kgf.

Since the sprocket bore diameter of 18T is up to 89 mm, and for 26T is up to 103 mm, it can be used with a drive shaft diameter of 66 mm and driven shaft diameter of 94 mm.

With the distance between shafts at 500 mm, a sprocket with 18T (d_1=255.98) and 26T (d_2=368.77) can be used.

Number of links will be 46 links.

〔Step 4〕 Calculate from inertia ratio R

$$\text{Inertia ratio } R = \frac{GD^2_\ell}{GD^2m} = \frac{0.176}{0.352} = 0.5$$

There is clearance in the drive equipment ····Shock factor K=1.0

Starting torque Ts = 11.9 (kgf·m)

Chain tension from starting torque

$$Fms = Ts \times i \times 1000 \times \frac{2}{d}$$

$$= 11.9 \times 50 \times 1000 \times \frac{2}{255.63} = 4660\ (kgf)$$

Braking torque Ts = 11.9 (kgf·m)

Chain tension from braking torque

$$Fmb = Tb \times i \times 1.2 \times 1000 \times \frac{2}{d}$$

$$= 11.9 \times 50 \times 1.2 \times 1000 \times \frac{2}{255.63} = 5590\ (kgf)$$

Since Fmb>Fms, use the larger Fmb.

Design chain tension

$$F'mb = Fmb \times K \times Kn \times Kz$$

$$= 5590 \times 1.0 \times 1.03 \times 1.10 = 6330\ (kgf)$$ ····· ❸

Roller Chain Selection

SI units

Comparing ❶, ❷, and ❸, ❸ has the largest design chain tension.
Since F′mb=61.7 (kN), RS120-3 (maximum allowable load 76.0 kN) or RS120-SUP-2 (maximum allowable load 71.7 kN) is usable.
With the distance between shafts at 500mm, a sprocket with 21T (d_1=255.63) and 31T (d_2=376.60) can be used.
Number of links will be 54 links.

Considering RS160 15T (outer diameter 269mm d_1=244.33) and 23T (outer diameter 400mm d_2=373.07) with similar PCD,
❸ F'mb=64.6 (kN) will be largest.
RS160-1 cannot be used because its maximum allowable load is 53.0 kN.
RS160-SUP-1 can be used because its maximum allowable load is 73.5 kN.
Since a sprocket bore diameter with 15T is up to 95mm, and 23T is up to 118mm, it can be used for a drive shaft diameter of 66mm, and driven shaft diameter of 94mm.
With the distance between shafts at 500mm, a sprocket with 15T (d_1=244.33) and 23T (d_2=373.07) can be used.
Number of links will be 40 links.

{Gravimetric units}

Comparing ❶, ❷, and ❸, ❸ has the largest design chain tension.
Since F′mb=6330 (kgf), RS120-3 (maximum allowable load 7550 kgf) or RS120-SUP-2 (maximum allowable load 7310 kgf) is usable.
With the distance between shafts at 500mm, a sprocket with 21T (d_1=255.63) and 31T (d_2=376.60) can be used.
Number of links will be 54 links.

Considering RS160 15T (outer diameter 269mm d_1=244.33) and 23T (outer diameter 400mm d_2=373.07) with similar PCD,
❸ F'mb=6620 (kgf) will be largest.
RS160-1 cannot be used because its maximum allowable load is 5400 kgf.
RS160-SUP-1 can be used because its maximum allowable load is 7500 kgf.
Since a sprocket bore diameter with 15T is up to 95mm, and 23T is up to 118mm, it can be used for a drive shaft diameter of 66mm, and driven shaft diameter of 94mm.
With the distance between shafts at 500mm, a sprocket with 15T (d_1=244.33) and 23T (d_2=373.07) can be used.
Number of links will be 40 links.

◆ Selection results

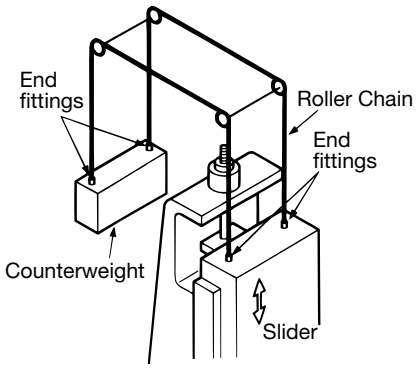
Condition	Step	Model Number	Sprocket	Number of links	Lubrication method
Starting frequency 6 times or less	Step 2	RS120-1	21T×31T	54 links	AⅡ
Staring frequency 6 times or more with cushioned start	Step 3	RS120-2	21T×31T	54 links	AⅡ
		RS140-SUP-1	18T×26T	46 links	B
Starting frequency 6 times or more without cushioned start	Step 3	RS120-3	21T×31T	54 links	AⅡ
	Step 4	RS120-SUP-2			B
		RS160-SUP-1	15T×23T	40 links	B

Note: 1. Refer to the kilowatt ratings tables for the lubrication method of each chain size and type.
2. All shaft distances need to be adjusted.

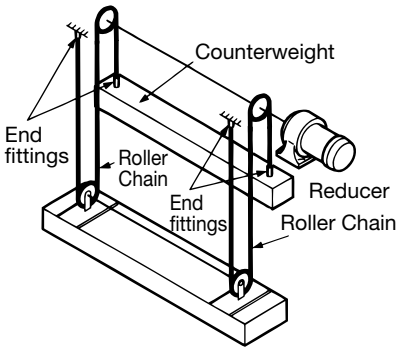
7. Lifting Transmission Examples

There are many examples of where chain is used for lifting. By making use of Roller Chain features, choosing the right chain, and following some important points, it is possible to use Roller Chain for lifting transmissions. Typical lifting applications are illustrated below. (Please give special consideration to safety devices.)

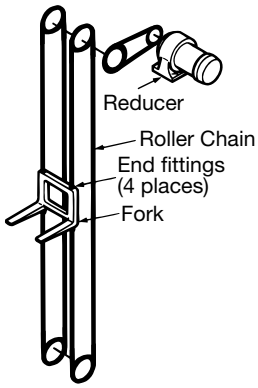
◆ Balancing



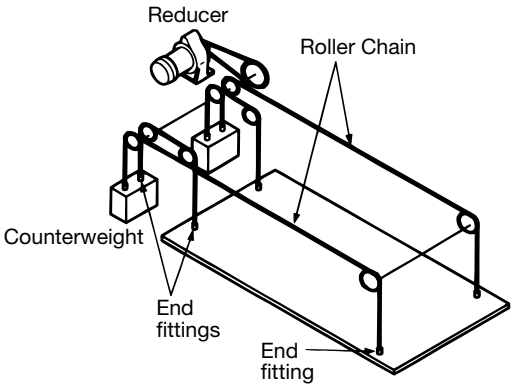
◆ Lifting equipment (1)



◆ Lifting equipment (2)



◆ Lifting equipment (3)



Precautions for When Selecting Roller Chain for Lifting Applications

1. Regulations

If there are any laws or guidelines for chain selection, check and calculate accordingly. Make sure to follow the manufacturer's selections and select the safer of the two selections.

2. Connecting links

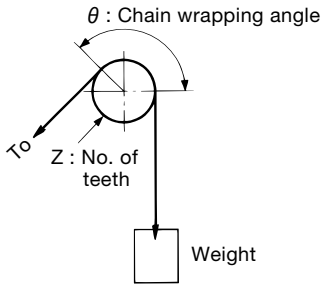
Use F-type (press-fit) connecting links. Offset links cannot be used.

3. Lubrication

Remove as much as possible the load that acts on the chain joints before lubing the chain. Sufficient lubrication is also required at end fittings (end bolts and connecting links, etc.) and connecting parts.

◆ Weight required for counterweight to prevent sprocket tooth-jumping when using Roller Chain in lifting transmission applications

$$Tk = To \times \{\sin\phi / \sin(\phi + 2\alpha)\}^{K-1}$$



Tk : Minimum weight tension (minimum back-tension)

To : Roller Chain tension

ϕ : Sprocket minimum pressure angle $\phi = 17° - \frac{64°}{Z}$

2α : Sprocket dividing angle $2\alpha = \frac{360°}{Z}$

K : Engaging no. of teeth $K = \frac{\theta}{360} \times Z$ ··· Round up to the nearestwhole number to be safe.

If To = 10.8 kN {1100 kgf}, Z = 13T, and $\theta = 120°$, then

$$\phi = 17° - \frac{64°}{Z} = 17° - \frac{64°}{13} = 12.077$$

$$2\alpha = \frac{360°}{Z} = \frac{360°}{13} = 27.692$$

$$K = \frac{\theta}{360°} \times Z = \frac{120°}{360°} \times 13 = 4.33 \cdots K = 4$$

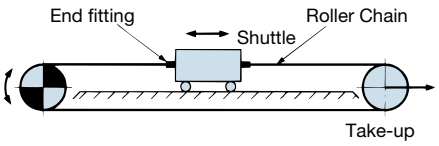
$$Tk = 1100 \times \{\sin 12.077 / \sin(12.077 + 27.692)\}^{4-1} = 38.5 (kg)$$

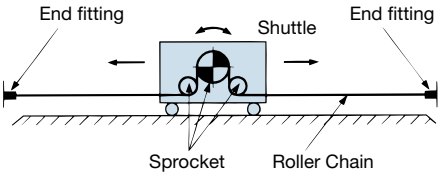
Accordingly, tooth-jumping will not occur if a 39 kg weight is used. However, this will change depending on the layout and amount of wear on the Roller Chain and sprocket teeth. Please use the above as a reference.

8. Shuttle Traction Examples

The following are typical examples of using Roller Chain for shuttle traction. The roller chain can be attached to the shutttle with an end fitting and towed using a sprocket on one end (left figure), or the driving unit can be attached to the shuttle, with a roller chain fixed to both ends using end fittings (right figure).
There are similar ways to tow a shuttle at an angle. With the left figure the drive sprocket would be set at the top of the incline.

: Drive side





Precautions for When Selecting Roller Chain for Shuttle Traction

1. Regulations

If there are any laws or guidelines for chain selection, check and calculate accordingly. Make sure to follow the manufacturer's selections and select the safer of the two selections.

2. Connecting links

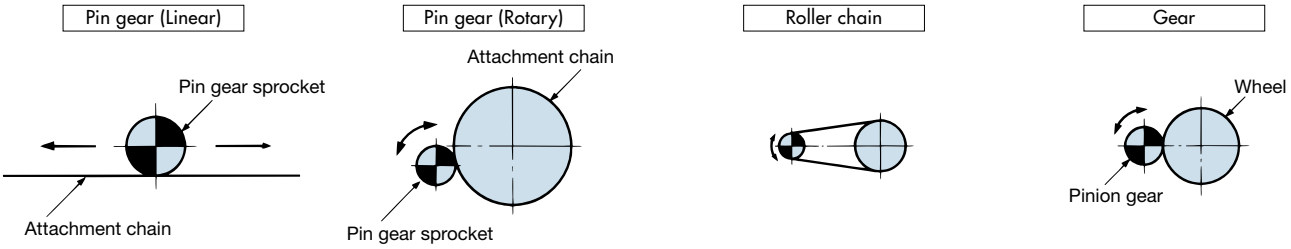
Use F-Type (press-fit) connecting links. M-Type connecting links can only be used if there is minimal shock with no lateral force. Offset links cannot be used.

3. Lubrication

Remove as much as possible the load that acts on the chain joints before lubing the chain. Sufficient lubrication is also required at end fittings (end bolts and connecting links, etc.) and connecting parts.

9. Chain Type Pin Gears

Generally, linear movement or large radius rotation is made possible by a roller chain and gear through a transmission source (motor, etc.) via a reducer.
A roller chain, however, needs a lot of space, and gears require precision machining, which increases the cost. A pin gear is ideal in these situations.



For pin gear drives, a roller chain is wrapped around the perimeter of a drum to make a wheel, and special sprockets are used instead of pinion gears.
For linear motion, a roller chain is attached and used linearly instead of a rack.

Item	Pin gear drive	Roller chain transmission	Gear transmission
Restrictions on distance between shafts	Yes	No	Yes
Number of engaged teeth	Low	High	Low
Speed ratio range	No limit	Up to 1:7	No limit
Tooth shape	Special teeth	Sprocket teeth	Involute
Engagement accuracy	Normal	Normal	Precise

9.1 Characteristics of pin gears

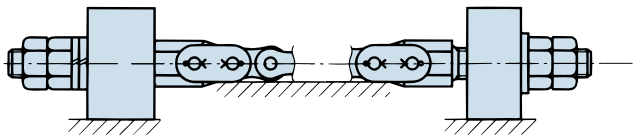
1. Economical at large speed ratios (1:5 or larger), especially when the drum has a large diameter.
2. Roller chain attachments are bolted onto the drum for easy installation and maintenance.
3. Design freedom in drum diameter, linear length, etc.
4. A pin gear is not suitable for ultra precise drives, and the noise level is high compared to gears. However, they do not require high installation accuracy nor precision machining as with gears.
5. Grease lubrication can be used.

9.2 Chain installation and precautions

1. When used linearly (rack) with rollers facing up:

◆ **Use standard roller chain.**

Connecting links are used on both ends, and fittings are attached and bolts and nuts are fastened to remove any slack. Both ends need to be secured snugly with double nuts.
Do not use a rail for the rollers, as the teeth of the pin gear sprocket may interfere with the rail.
Using RS roller chains is not recommended as tooth slipping and interference can occur.

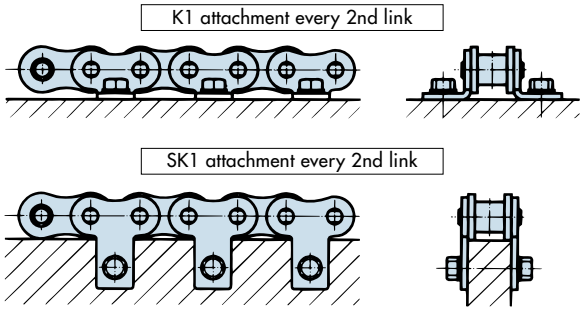


◆ **Use an attachment roller chain.**

Attach K1 or SK1 attachments every 2nd link and fasten with bolts and nuts every 2nd or 4th link with chain pulled taut so there is no slack or meandering. K attachments are recommended. The attachment holes are processed on-site.

Note: Do not use a rail for the rollers when using SK1 attachments, as the teeth of the pin gear sprocket may interfere with the rail.

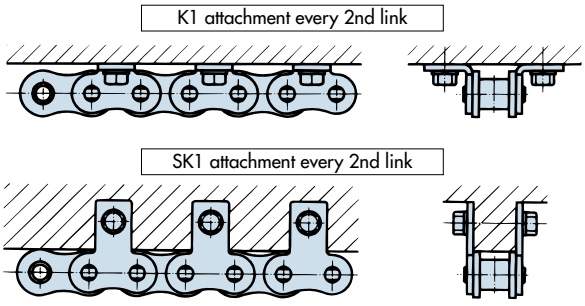
Use bolts with a strength class 8.8 or higher (JIS B 1051 : 2014, nominal tensile strength 800 MPa or higher). (SCM435 heat treated bolts, etc.)



Note: Chain length should be designed to be longer than the travel distance to accommodate overrun based on usage conditions.

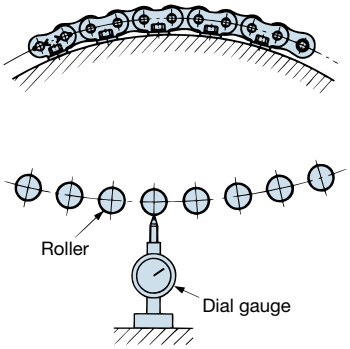
2. When used linearly (rack) with rollers facing down:

Attach K1 or SK1 attachments every 2nd link and fasten with bolts and nuts every 2nd link with chain pulled taut so there is no slack or meandering. Do not use a rail for the rollers.



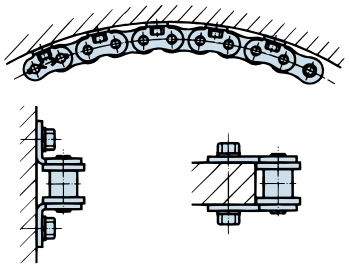
3. When wrapped partially or totally around the outside of a drum:

- Attachment chain length is in the range of -0.05 to 0.15% of standard length (nominal pitch x number of links). When the chain is wrapped around a drum, shims need to be used between the drum and the chain attachments to eliminate slack.
- Since K attachments can be adjusted with shims, they can be attached onto the drum more easily than SK attachments.
- When the drum is not perfectly round, the thickness of the shims needs to be adjusted while the chain is wrapped around the drum so the radius is circular.
  As shown to the right, a dial gauge or a surface gauge can be used for adjustment.
- Process drum-side tap holes to fit the holes of the chain attachments.



4. When wrapped partially or totally around the inside of a drum:

- The sprockets have specially shaped teeth. Contact a Tsubaki representative.

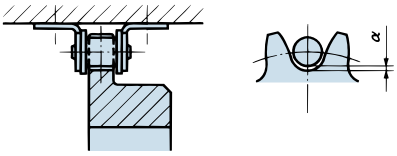


5. When used for lateral wrapping (horizontal drive):

- See section 3.
- Contact a Tsubaki representative for internal fits.

6. Sprocket attachment

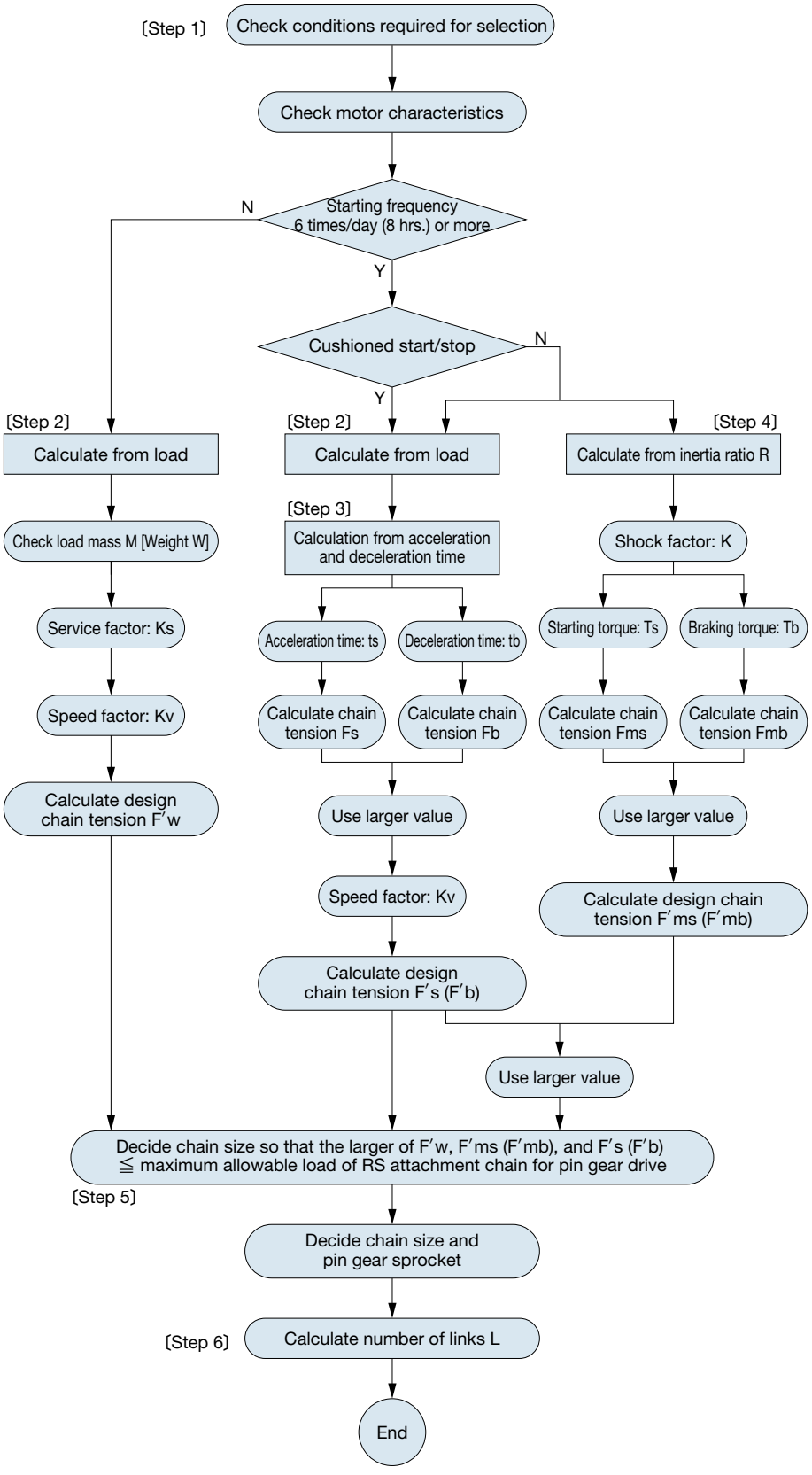
- Use a chain-type pin gear sprocket.
- Adjust the sprocket mounting shaft so that unwanted strong contact with the sprocket tooth face does not occur. RS curved chain will make contact with the sprocket tooth face because the chain bends sideways.
- The clearance α between the rollers and the bottom of the sprocket teeth should be less than the dimensions shown in the right table. The bottom of the teeth and rollers should not touch each other.
- If there is a possibility that the clearance mentioned above cannot be guaranteed during operation due to drive or environmental conditions, a tooth profile design having a large α will be required. Contact a Tsubaki representative.



Chain size	α
RS80 or less	1.0mm
RS100 to RS180	1.5mm
RS200 or more	2.0mm

10. Chain Type Pin Gear Drive Selection Method

Procedures



1. Speed considerations

This selection method can be applied when the relative chain speed is 50 m/min or less.
(Examples: 50 m/min or less)

- When a linear application is being considered:
  Switch to a winding method such as a roll drive
- When a wrapping application is being considered:
  Change the chain mounting diameter to a smaller value

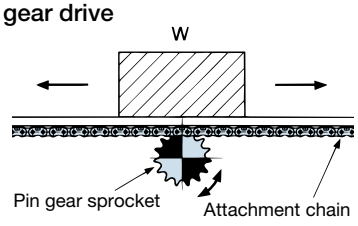
Pin gear speed factor Kv

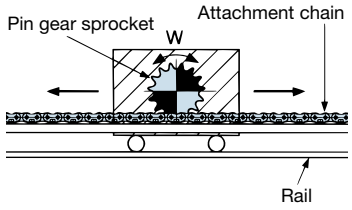
Relative chain speed m/min	Pin gear speed factor
0 to 15	1.0
15 to 30	1.2
30 to 50	1.4

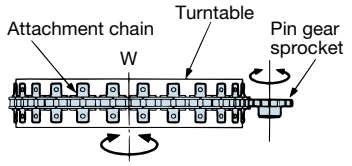
2. Sprocket considerations

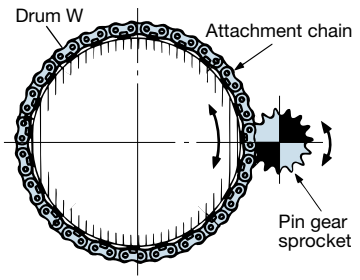
Use a chain-type pin gear sprocket with 13 or more teeth; 18 teeth are recommended.

3. Examples of chain-type pin gear drive

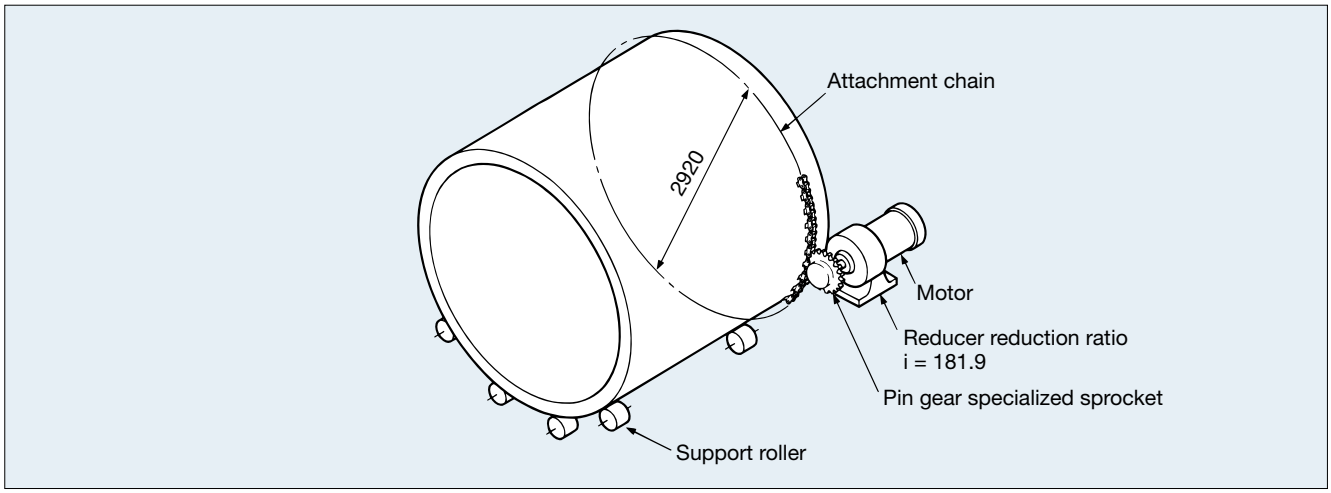








◆ Pin gear drive selection example



SI units

〔Step 1〕 Check machine and motor characteristics

Machine ····· Cutting machine
Motor ····· 15 kW, 4P, 1750 rpm

Motor moment of inertia I　Im=0.00425kg·m^2

Starting torque Ts ····· 290%
Maximum (stalling) torque Tmax ····· 305%
Braking torque Tb ····· 180%
Reducer reduction ratio i ····· 181.9
Forward and reverse operation frequency ····· Max. 900 times/hour
Sprocket pitch circle diameter (PCD) ····· Approx. ϕ220 mm

Moment of inertia for the motor shaft converted load I　I$_\ell$=0.00072kg·m^2

There is no slack in the chain.

〔Step 2〕 Calculation from load

Rated torque of the motor $Tn = 9.55 \times \frac{kW}{n_1}$

$= 9.55 \times \frac{1.5}{1750}$

$= 0.00819$ (kN·m)

Pin gear drive sprocket shaft torque

$T = Tn \times i = 0.00819 \times 181.9$

$= 1.49$ (kN·m)

Chain working tension $F = \frac{2T}{\frac{d}{1000}} = \frac{2 \times 1.49}{\frac{220}{1000}}$

$= 13.6$ (kN)

Design chain tension $F'w = F \times Ks \times Kv = 13.6 \times 1.3 \times 1.0$

$= 17.7$ (kN) ····· ❶

{Gravimetric units}

〔Step 1〕 Check machine and motor characteristics

Machine ····· Cutting machine
Motor ····· 15 kW, 4P, 1750 rpm

GD^2 of the motor　GD^2 = 0.017kgf·m^2

Starting torque Ts ····· 290%
Maximum (stalling) torque Tmax ····· 305%
Braking torque Tb ····· 180%
Reducer reduction ratio i ····· 181.9
Forward and reverse operation frequency ····· Max. 900 times/hour
Sprocket pitch circle diameter (PCD) ····· Approx. ϕ220 mm

GD^2 of the motor shaft converted load　GD$^2_\ell$=0.00288kgf·m^2

There is no slack in the chain.

〔Step 2〕 Calculation from load

Rated torque of the motor $Tn = 974 \times \frac{kW}{n_1}$

$= 974 \times \frac{1.5}{1750}$

$= 0.835$ (kgf·m)

Pin gear drive sprocket shaft torque

$T = Tn \times i = 0.835 \times 181.9$

$= 152$ (kgf·m)

Chain working tension $F = \frac{2T}{\frac{d}{1000}} = \frac{2 \times 152}{\frac{220}{1000}}$

$= 1380$ (kgf)

Design chain tension $F'w = F \times Ks \times Kv = 1380 \times 1.3 \times 1.0$

$= 1790$ (kgf) ····· ❶

Revolution speed of the pin gear drive sprocket $n = 1750 \times \frac{1}{181.9} = 9.6$ (r/min)

Relative chain speed $V = \frac{220 \times \pi \times 9.6}{1000} = 6.6$ (m/min) ··· Speed factor Kv = 1.0

Some impact assumed from cutting machine ····· Service factor Ks = 1.3

Load is calculated from the torque on the drive side as the mass of the load is unknown.

SI units

〔Step 3〕 Calculation based on acceleration and deceleration time

$$\text{Working torque } Tm = \frac{Ts+T_b}{2\times100}\times Tn = \frac{290+305}{2\times100}\times0.00819$$
$$= 0.0244\ (kN\cdot m)$$

As the load is unknown, the rated torque of the motor is $Tn = T_\ell$ and the load torque $T_\ell = 0.00819(kN\cdot m)\{0.835kgf\cdot m\}$

$$\text{Acceleration time } ts = \frac{(Im+I_\ell)\times n_1}{9550\times(Tm-T_\ell)} = \frac{(0.00425+0.00072)\times1750}{9550\times(0.0244-0.00819)}$$
$$= 0.056\ (s)$$

$$\text{Motor braking torque } Tb = 0.00819\times1.8 = 0.0147(kN\cdot m)$$

$$\text{Deceleration time } tb = \frac{(Im+I_\ell)\times n_1}{9550\times(Tb+T_\ell)} = \frac{(0.00425+0.00072)\times1750}{9550\times(0.0147+0.00819)}$$
$$= 0.040\ (s)$$

Moment of inertia I for the motor shaft converted load $I_\ell = 0.00072(kg\cdot m^2)$

$Fw = F = 13.6(kN)$ [value from Step 2]

tb<ts, so find the chain tension during deceleration.

$$\text{Motor shaft angular velocity } \omega = 2\pi\times n_1 = 2\pi\times1750 = 11000\ (rad)$$

$$\text{Motor shaft angular deceleration } \omega b = \frac{\omega}{60\times tb} = \frac{11000}{60\times0.040}$$
$$= 4580\ (rad/s^2)$$

$$\text{Chain tension during deceleration } Fb = \frac{I_\ell\times\omega b\times i}{1000\times\left\{\frac{d}{(2\times1000)}\right\}} + Fw$$
$$= \frac{0.00072\times4580\times181.9}{1000\times\left\{\frac{220}{(2\times1000)}\right\}} + 13.6$$
$$= 19.1\ (kN)$$

Design chain tension during deceleration

$$F'b = Fb\times Kv = 19.1\times1.0$$
$$= 19.1\ (kN) \cdots\cdots ②$$

〔Step 4〕 Calculation based on the inertia ratio R

$$\text{Inertia ratio } R = \frac{I_\ell}{Im} = \frac{0.00072}{0.00425}$$
$$= 0.17$$

According to Table 4, impact factor K = 0.23 (There is no play in the drive transmission equipment as R < 0.2, R = 0.2.)

$$\text{Chain tension at start-up } Fms = \frac{Ts\times i}{\left(\frac{d}{2\times1000}\right)\times100}\times Tn$$
$$= \frac{290\times181.9}{\left(\frac{220}{2\times1000}\right)\times100}\times0.00819$$
$$= 39.3\ (kN)$$

$$\text{Chain tension at stop } Fmb = \frac{Tb\times i}{\left(\frac{d}{2\times1000}\right)\times100}\times Tn\times1.2$$
$$= \frac{180\times181.9}{\left(\frac{220}{2\times1000}\right)\times100}\times0.00819\times1.2$$
$$= 29.3\ (kN)$$

As Fms > Fmb,

$$\text{Design chain tension } F'ms = Fms\times K\times Kv = 39.3\times0.23\times1.0$$
$$= 9.04\ (kN) \cdots\cdots ③$$

{Gravimetric units}

〔Step 3〕 Calculation based on acceleration and deceleration time

$$\text{Working torque } Tm = \frac{Ts+T_b}{2\times100}\times Tn = \frac{290+305}{2\times100}\times0.835$$
$$= 2.48\ (kgf\cdot m)$$

$$\text{Acceleration time } ts = \frac{(GD^2m+GD^2_\ell)\times n_1}{375\times(Tm-T_\ell)} = \frac{(0.017+0.00288)\times1750}{375\times(2.48-0.835)}$$
$$= 0.056\ (s)$$

$$\text{Motor braking torque } Tb = 0.835\times1.8 = 1.50(kgf\cdot m)$$

$$\text{Deceleration time } tb = \frac{(GD^2m+GD^2_\ell)\times n_1}{375\times(Tb+T_\ell)} = \frac{(0.017+0.00288)\times1750}{375\times(1.5+0.835)}$$
$$= 0.040\ (s)$$

GD^2 for the motor shaft converted load $GD^2_\ell = 0.00288(kgf\cdot m^2)$

$Fw = F = 1380(kgf)$ [value from Step 2]

tb<ts, so find the chain tension during deceleration.

$$\text{Motor shaft angular velocity } \omega = 2\pi\times n_1 = 2\pi\times1750 = 11000\ (rad)$$

$$\text{Motor shaft angular deceleration } \omega b = \frac{\omega}{60\times tb} = \frac{11000}{60\times0.040}$$
$$= 4580\ (rad/s^2)$$

$$\text{Chain tension during deceleration } Fb = \frac{GD^2_\ell/4\times\omega b\times i}{\left\{\frac{d}{(2\times1000)}\right\}\times\underline{G}} + Fw$$
$$= \frac{0.00288/4\times4580\times181.9}{\left\{\frac{220}{(2\times1000)}\right\}\times9.80665} + 1380$$
$$= 1940\ (kgf)$$

Design chain tension during deceleration

$$F'b = Fb\times Kv = 1940\times1.0$$
$$= 1940\ (kgf) \cdots\cdots ②$$

〔Step 4〕 Calculation based on the inertia ratio R

$$\text{Inertia ratio } R = \frac{GD^2_\ell}{GD^2m} = \frac{0.00288}{0.017}$$
$$= 0.17$$

According to Table 4, impact factor K = 0.23 (There is no play in the drive transmission equipment as R < 0.2, R = 0.2.)

$$\text{Chain tension at start-up } Fms = \frac{Ts\times i}{\left(\frac{d}{2\times1000}\right)\times100}\times Tn$$
$$= \frac{290\times181.9}{\left(\frac{220}{2\times1000}\right)\times100}\times0.835$$
$$= 4000\ (kgf)$$

$$\text{Chain tension at stop } Fmb = \frac{Tb\times i}{\left(\frac{d}{2\times1000}\right)\times100}\times Tn\times1.2$$
$$= \frac{180\times181.9}{\left(\frac{220}{2\times1000}\right)\times100}\times0.835\times1.2$$
$$= 2980\ (kgf)$$

As Fms > Fmb,

$$\text{Design chain tension } F'ms = Fms\times K\times Kv = 4000\times0.23\times1.0$$
$$= 920\ (kgf) \cdots\cdots ③$$

SI units

〔Step 5〕 Comparison of ❶, ❷, and ❸

Comparing ❶, ❷, and ❸, an attachment chain for pin gears that meets 19.1kN {1940 kgf}, the maximum working load ❷ is selected.
The maximum allowable load for RS120 attachment chain with pin gear use is 20.6 kN {2100 kgf}, which is acceptable.
A sprocket with 18 teeth (PCD = 222.49 mm) is selected as tentative from the pitch circle diameter of the pin gear sprocket approx. ϕ220.

Steps 2, 3, and 4 are calculated again here.

〔Step 2〕

$$F = \frac{2T}{\frac{d}{1000}} = \frac{2\times1.49}{\frac{222.49}{1000}} = 13.4 \text{ (kN)}$$

$$F'w = F\times Ks\times Kv = 13.4\times1.3\times1.0 = 17.4 \text{ (kN)}$$

〔Step 3〕

$$Fb = \frac{I_\ell\times\omega b\times i}{1000\times\left\{\frac{d}{(2\times1000)}\right\}} + Fw$$

$$= \frac{0.00072\times4580\times181.9}{1000\times\left\{\frac{220}{(2\times1000)}\right\}} + 13.4$$

$$= 18.8 \text{ (kN)}$$

Design chain tension during deceleration

$$F'b = Fb\times Kv$$
$$= 18.8\times1.0$$
$$= 18.8 \text{ (kN)}$$

〔Step 4〕

$$Fms = \frac{Ts\times i}{\left(\frac{d}{2\times1000}\right)\times100}\times Tn$$

$$= \frac{290\times181.9}{\left(\frac{222.49}{2\times1000}\right)\times100}\times0.00819$$

$$= 38.8 \text{ (kN)}$$

Design chain tension

$$F'ms = Fms\times K\times Kv$$
$$= 38.8\times0.23\times1.0$$
$$= 8.92 \text{ (kN)}$$

{Gravimetric units}

〔Step 5〕 Comparison of ❶, ❷, and ❸

Steps 2, 3, and 4 are calculated again here.

〔Step 2〕

$$F = \frac{2T}{\frac{d}{1000}} = \frac{2\times152}{\frac{222.49}{1000}} = 1370 \text{ (kgf)}$$

$$F'w = F\times Ks\times Kv = 1370\times1.3\times1.0 = 1780 \text{ (kgf)}$$

〔Step 3〕

$$Fb = \frac{GD^2_\ell/4\times\omega b\times i}{\left\{\frac{d}{(2\times1000)}\right\}\times\underline{G}} + Fw$$

$$= \frac{0.00288/4\times4580\times181.9}{\left\{\frac{222.49}{(2\times1000)}\right\}\times9.80665} + 1380$$

$$= 1930 \text{ (kgf)}$$

Design chain tension during deceleration

$$F'b = Fb\times Kv$$
$$= 1930\times1.0$$
$$= 1930 \text{ (kgf)}$$

〔Step 4〕

$$Fms = \frac{Ts\times i}{\left(\frac{d}{2\times1000}\right)\times100}\times Tn$$

$$= \frac{290\times181.9}{\left(\frac{222.49}{2\times1000}\right)\times100}\times0.835$$

$$= 3960 \text{ (kgf)}$$

Design chain tension

$$F'ms = Fms\times K\times Kv$$
$$= 3960\times0.23\times1.0$$
$$= 911 \text{ (kgf)}$$

Either design chain tension is within the maximum allowable load,
so a chain with pin gear attachments and a pin gear sprocket can be used.

〔Step 6〕 Calculation of the number of links L

$$\text{Calculating number of links } L = \frac{180°}{\tan^{-1}\left(\frac{P}{D+2S}\right)} = \frac{180°}{\tan^{-1}\left(\frac{38.1}{2920}\right)} = 240.8 \rightarrow 242 \text{ links}$$

Corresponding standard length for 242 links (38.1×242 = 9220.2mm) D+2S = 2935 mm

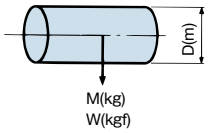
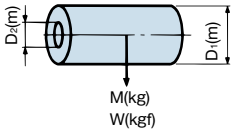
◆ Selection results

Chain model number: **RS120-2LK1+242L-JR**

Sprocket model number: **RS120-1□18TQ-G** (Enter hub model in the blank.)

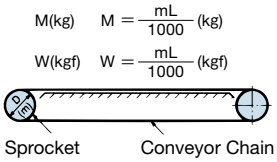
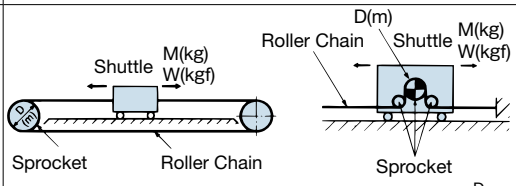
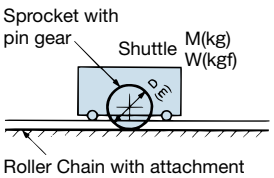
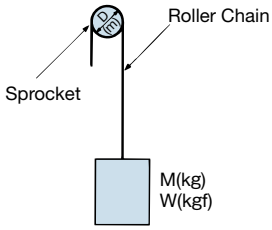
11. Calculating Moment of Inertia

◆ Rotating body

Shape	Outline	I (moment of inertia) calculation method (SI unit)	{GD² calculation method (gravimetric unit)}
Right cylinder	 $r=\frac{D}{2}$(m)	$I=\frac{1}{2}Mr^2$ (kg·m²)	$GD^2=\frac{1}{2}WD^2$ (kgf·m²)
Hollow right cylinder	 $r=\frac{D}{2}$(m)	$I=\frac{1}{2}M(r_1^2+r_2^2)$ (kg·m²)	$GD^2=\frac{1}{2}W(D_1^2+D_2^2)$ (kgf·m²)

	SI unit	{Gravimetric unit}
Moment of inertia (I) and fly wheel effect (GD^2)	1 kg·m² (I)	4 kgf·m²(GD^2)

◆ Linear body

Drive	Outline	I (moment of inertia) calculation method (SI unit)	{GD² calculation method (gravimetric unit)}
Chain	 $r=\frac{D}{2}$(m)	$I=Mr^2$(kg·m²)	$GD^2=WD^2$(kgf·m²)
Shuttle traction	 $r=\frac{D}{2}$(m)	$I=Mr^2$(kg·m²)	$GD^2=WD^2$(kgf·m²)
Pin gear drive	 $r=\frac{D}{2}$(m)	$I=Mr^2$(kg·m²)	$GD^2=WD^2$(kgf·m²)
Lifting transmission	 $r=\frac{D}{2}$(m)	$I=Mr^2$(kg·m²)	$GD^2=WD^2$(kgf·m²)
To convert moment of inertia load to motor shaft n_1: Motor shaft rotating speed n_2: Load shaft rotating speed		Moment of inertia load I $I_\ell=\left(\frac{n_2}{n_1}\right)^2 I$ $=\frac{I}{i^2}$ (kg·m²) $I_\ell=M\left(\frac{V}{2\pi n_1}\right)^2$(kg·m²)	Moment of inertia GD^2 load $GD^2{}_\ell=\left(\frac{n_2}{n_1}\right)^2 GD^2$ $=\frac{GD^2}{i^2}$ (kgf·m²) $GD^2{}_\ell=W\left(\frac{V}{\pi n_1}\right)^2$(kgf·m²)

Note: The above does not include the mass of the sprocket and chain.

12. Temperature Selection Method

12.1 RS Roller Chain temperature selection method

Allow for chain strength degradation from temperature.
Lubrication should be carried out using a suitable lubricant according to the operating temperatures.

◆ **Problems with roller chain transmission at high temperatures**

1. Increased wear due to hardness reduction
2. Increased elongation due to softening
3. Poor articulation and increased wear due to oil degradation and carburization
4. Increased wear and poor articulation due to scaling

◆ **Problems with roller chain transmission at low temperatures**

1. Reduction of impact strength due to low temperature brittleness
2. Solidification of lubricant or deterioration of fluidity
3. Poor articulation due to frost and ice adhesion

Maximum allowable load of RS Roller Chain at high and low temperatures

Temperature	RS roller chain		Cold resistant chain
	RS60 or under	RS80 or over	
Below –60°C	–	–	Unusable
–60°C to –50°C	–	–	Catalog value×1/2
–50°C to –40°C	–	Unusable	Catalog value×2/3
–40°C to –30°C	Unusable	Catalog value×1/4	Catalog value
–30°C to –20°C	Catalog value×1/4	Catalog value×1/3	Catalog value
–20°C to –10°C	Catalog value×1/3	Catalog value×1/2	Catalog value
–10°C to 60°C	Catalog value	Catalog value	Catalog value
60°C to 150°C	Catalog value	Catalog value	Catalog value
150°C to 200°C	Catalog value×3/4	Catalog value×3/4	Unusable
200°C to 250°C	Catalog value×1/2	Catalog value×1/2	–
Over 250°C	Unusable	Unusable	–

Note: 1. Select using allowable load selection method.
2. The ambient temperature is different from the temperature of the roller chain itself. We recommend selection based on the roller chain's temperature.

12.2 Lambda Chain KF Series selection method

Use the general selection method based on kilowatt ratings tables.
Allow for chain strength degradation from temperature.
Multiply the values in the lube-free drive chain kilowatt ratings table by the coefficients below. Use a chain speed lower than the allowable speed shown in the table of dimensions and specifications for lube-free drive chains.

Kilowatt ratings of lube-free drive chains at high temperatures

Temperature	Kilowatt ratings
150°C to 200°C	Catalog value×3/4
200°C to 230°C	Catalog value×1/2

12.3 Selection method for Stainless Steel Roller Chain (SS and NS series) at high temperatures (400°C or higher)

As the temperature of a chain increases, its strength decreases. The usage limit at high temperatures is determined by the temperature of the chain itself. Contact a Tsubaki representative when using stainless steel chain at ambient temperatures of 400°C or higher. However, chain cannot be used at 700°C or higher. When a chain is selected using the temperature selection method, the chain speed must be below 50 m/min. The speed of chains having a pitch of 57.15 mm or greater must not exceed the upper limit speed determined under the Allowable Load Selection Method.

Cautions associated with high-temperature environments are:
1. All clearances need to be adjusted to prevent poor articulation and poor roller rotation due to thermal expansion.
2. The chain may break (creep rupture) under low loads as the temperature increases.

13. Special Selection Method for Corrosion Resistant Roller Chain

When selecting Corrosion Resistant Chain use the allowable load selection method.
1. The maximum allowable load for certain Corrosion Resistant Chain models is low compared to standard RS Roller Chain.
2. Avoid using offset links when possible.
3. Refer to the following page when acid or alkali solutions or chemicals will come in direct contact with the chain.

13.1 Selection formula

Maximum working load applied to the chain × Service factor Ks × RPM Kn × Number of teeth factor Kz ≦ Maximum allowable load of the chain

14. Corrosion Resistance Guide for Corrosion Resistant Chains and Sprockets

Corrosion resistance varies accordingly depending on application conditions. This table should not be considered as a guarantee. Using this chart as a reference, be sure to check the corrosion resistance of the chain in advance according to the actual operating conditions determining chain type.

○: Sufficient corrosion resistance △: Corrosion resistance in some applications ×: No corrosion resistance —: Unknown

Chemical/ food product			Corrosion-resistant drive chain						Sprocket	
			SS	AS	NS	TI	PC	PCSY	Engineering plastic	SS
Acetic acid	10%	20°C	○	○	○	○	○	○	△	○
Acetone		20°C	○	○	○	○	○	×	○	○
Alcohol (Methyl, ethyl, propyl, and butyl)			○	○	○	○	○	○	○	○
Aluminum sulfate	Saturated	20°C	○	×	○	○	—	—	—	○
Ammonia water		20°C	○	○	○	○	○	○	○	○
Ammonium chloride	50%	Boiling point	△	×	○	○	—	—	—	△
Ammonium nitrate	Saturated	Boiling	○	○	○	○	△	○	○	○
Ammonium sulfate	Saturated	20°C	○	△	○	○	—	—	—	○
Beer		20°C	○	○	○	○	○	○	○	○
Benzene		20°C	○	○	○	○	○	○	○	○
Boric acid	50%	100°C	○	○	○	○	—	—	—	○
Butyric acid		20°C	○	○	○	○	○	—	○	○
Calcium chloride	Saturated	20°C	△	×	○	○	△	○	○	△
Calcium hydroxide	20%	Boiling	○	○	○	○	○	○	—	○
Calcium hypochlorite (bleaching powder) Available chlorine 11–14%		20°C	○	×	○	○	×	○	△	○
Carbolic acid		20°C	○	○	○	○	×	○	×	○
Carbon tetrachloride (Dry)		20°C	○	○	○	○	○	○	○	○
Carbonated water			○	○	○	○	—	—	—	○
Chlorine gas (Dry)		20°C	△	×	△	○	—	○	×	△
Chlorine gas (Wet)		20°C	×	×	△	○	—	○	×	×
Chlorine water			×	×	○	○	×	—	×	×
Chromic acid	5%	20°C	○	△	○	○	×	○	×	○
Citric acid	50%	20°C	○	○	○	○	—	○	○	○
Coffee		Boiling	○	○	○	○	○	○	○	○
Cola syrup			○	○	○	○	○	○	○	○
Concentrated nitric acid	65%	20°C	○	×	○	○	×	○	×	○
Concentrated nitric acid	65%	Boiling	△	×	△	○	×	×	×	△
Creosote		20°C	○	○	○	○	—	—	—	○
Developing solution (Photo)		20°C	○	△	○	○	○	○	○	○
Ether (Ethyl ether)		20°C	○	○	○	○	○	○	○	○
Ferric chloride	5%	20°C	△	×	△	○	—	—	×	△
Formalin (Formaldehyde)	40%	20°C	○	○	○	○	—	—	△	○
Formic acid	50%	20°C	○	○	○	○	×	○	×	○
Fruit juice		20°C	○	△	○	○	○	○	○	○
Gasoline		20°C	○	○	○	○	○	○	○	○
Glycerine		20°C	○	○	○	○	○	○	○	○
Honey, syrup			○	○	○	○	○	○	○	○
Hydrochloric acid	2%	20°C	×	×	×	○	×	○	×	×
Hydrogen peroxide	30%	20°C	○	△	○	○	×	○	×	○
Hydrogen sulfide (Dry)			○	○	○	○	○	○	○	○
Hydrogen sulfide (Wet)			×	×	×	○	×	—	—	×
Kerosene		20°C	○	○	○	○	—	○	—	○
Ketchup		20°C	○	○	○	○	○	○	○	○
Lactic acid	10%	20°C	○	△	○	○	○	—	○	○
Lard			○	○	○	○	—	—	—	○
Linseed oil	100%	20°C	○	△	○	○	○	—	○	○

Chemical/ food product			Corrosion-resistant drive chain						Sprocket	
			SS	AS	NS	TI	PC	PCSY	Engineering plastic	SS
Malic acid	50%	50°C	○	○	○	○	○	○	○	○
Mayonnaise		20°C	○	△	○	○	○	○	○	○
Milk		20°C	○	○	○	○	○	○	○	○
Nitric acid	5%	20°C	○	△	○	○	×	○	×	○
Oil (Plant and mineral)		20°C	○	○	○	○	○	○	○	○
Oleic acid		20°C	○	○	○	○	○	—	○	○
Oxalic acid	10%	20°C	○	△	○	○	—	○	○	○
Paraffin		20°C	○	○	○	○	○	○	○	○
Petroleum		20°C	○	○	○	○	○	—	○	○
Phosphoric acid	5%	20°C	○	△	○	○	×	○	×	○
Phosphoric acid	10%	20°C	△	△	△	○	×	○	×	△
Picric acid	Saturated	20°C	○	○	○	○	—	—	—	○
Potassium chloride	Saturated	20°C	○	△	○	○	—	—	○	○
Potassium dichromate	10%	20°C	○	○	○	○	○	—	○	○
Potassium hydroxide	20%	20°C	○	○	○	○	○	○	○	○
Potassium nitrate	25%	20°C	○	○	○	○	○	—	○	○
Potassium nitrate	25%	Boiling point	○	×	○	○	—	—	—	○
Potassium permanganate	Saturated	20°C	○	○	○	○	—	○	×	○
Seawater		20°C	△	×	○	○	△	○	○	△
Soapy water		20°C	○	○	○	○	○	○	○	○
Sodium carbonate	Saturated	Boiling point	○	○	○	○	—	○	△	○
Sodium chloride	5%	20°C	○	△	○	○	○	○	○	○
Sodium cyanide		20°C	○	—	○	○	—	—	—	○
Sodium hydrogen carbonate		20°C	○	○	○	○	○	—	○	○
Sodium hydroxide	25%	20°C	○	○	○	○	○	○	○	○
Sodium hypochlorite	10%	20°C	×	×	○	○	×	○	△	×
Sodium perchlorate	10%	Boiling point	○	×	○	○	—	—	—	○
Sodium sulfate	Saturated	20°C	○	○	○	○	—	—	—	○
Sodium thiosulfate	25%	Boiling point	○	○	○	○	—	—	—	○
Soft drink		20°C	○	○	○	○	○	○	○	○
Stearic acid	100%	Boiling point	×	×	○	○	×	—	○	×
Sugar solution		20°C	○	○	○	○	○	○	○	○
Sulfur dioxide (Wet)		20°C	○	×	○	○	—	—	—	○
Sulfuric acid	5%	20°C	×	×	○	○	×	○	×	×
Synthetic detergent			○	○	○	○	○	○	○	○
Tartaric acid	10%	20°C	○	○	○	○	○	○	○	○
Turpentine oil		35°C	○	○	○	○	—	—	—	○
Varnish			○	○	○	○	—	—	—	○
Vegetable juice		20°C	○	○	○	○	○	○	○	○
Vinegar		20°C	△	×	○	○	△	○	△	△
Water			○	○	○	○	○	○	○	○
Whiskey		20°C	○	○	○	○	○	○	○	○
Wine		20°C	○	○	○	○	○	○	○	○
Zinc chloride	50%	20°C	△	×	△	○	△	○	×	△
Zinc sulfate	25%	Saturated 20°C	○	○	○	○	—	○	—	○

Note: Refer to the AS column under corrosion-resistant drive chain for stainless steel pin gear drive units.

1. How to Cut Roller Chain

The chain needs to be cut to the necessary length.

1.1 Using a chain vise and punch

1. For RP (riveted pin) roller chain, grind down one end of the outer plate's two pins (same side) to the surface of the plate. Be careful of the chain overheating during the grinding process.This process is unnecessary for Poly Steel Chain as there are no rivets. As RS08B-1 to RS16B-1 use easy cutting pins, the rivets do not need to be ground.
2. Remove the cotter pins for CP (cotter pin) roller chain.

Fig. 1 Rivet-type roller chain

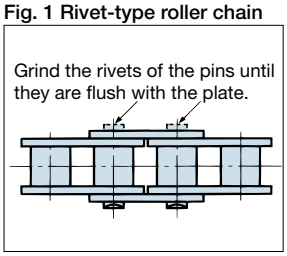
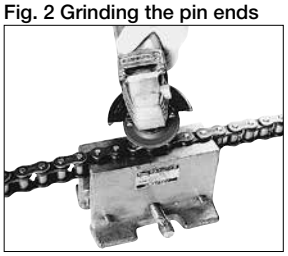
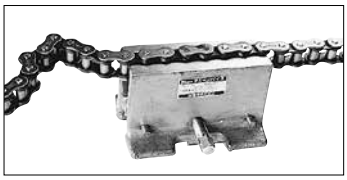


Fig. 2 Grinding the pin ends

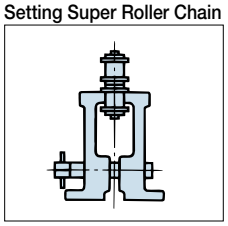


3. Place the roller chain into the groove of the chain vise and tighten the vise to secure the roller to be disassembled. Follow 1.3 and 1.4 for Poly Steel Chain and Lambda chain. For multi-strand Super Roller Chain, place the lowest roller into the groove of the chain vise.

Fig. 3 Setting the roller chain in the chain vise

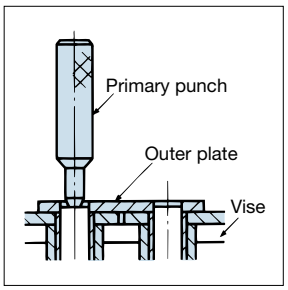


Setting Super Roller Chain



4. Place a primary punch, according to chain size, on the head of the ground pin, and then hit the head of the primary punch with a hammer. Make sure to hit the pins alternatively to ensure the pins are removed evenly and at the same time. Continue to tap the pin until just before the pin is removed from the outer plate.

Fig. 4 Tapping the pin with the primary punch



5. Use a secondary punch to remove the pin completely from the outer link plate.

1.2 Using a chain breaker

1. For RP (riveted pin) roller chain, grind down one end of the outer plate's two pins (same side) to the surface of the link plate. (Same as 1.1) Remove the cotter pins for CP (cotter pin) roller chain.
2. Remove the two pins from the same outer plate.

Fig. 5 How to cut a chain using a chain screw1 Rivet-type roller chain



1.3 How to cut Poly Steel Chain

1. Support the outer plate of the chain in the cradle and push down on the pinhead with the exclusive punch. Then lightly hit the head of the punch using a hammer.
2. Be careful not to damage the inner links by using excessive force.

Fig. 6 Poly Steel Chain set in a cradle

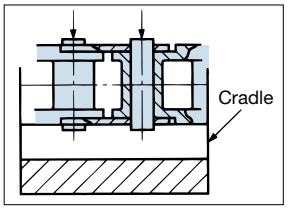
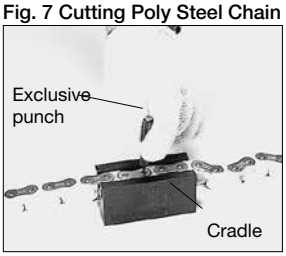


Fig. 7 Cutting Poly Steel Chain



1.4 How to cut Lambda Chain

1. For RP (riveted pin) roller chain, grind down one end of the outer plate's two pins (same side) to the surface of the link plate. (Same as 1.1) Remove the cotter pins for CP (cotter pin) roller chain.
2. Then cut the chain using an exclusive cradle and an RS Roller Chain punch. Important points for cutting are outlined in 1.1. However, use an exclusive cradle instead of a vise.
3. Hit the pins alternatively when removing the pins with a punch.

⚠ Precautions when cutting chain

1. Make sure to use a grinder when grinding the riveted portion of one end of the rivet-type pin. If it is extracted without being ground first, more time and effort will be spent, and will damage the chain.
2. A chain breaker is a tool made for cutting chain, and can cut roller chain that is set on a machine. In this case, it is necessary beforehand to support the load on the roller chain and the weight of the roller chain itself to prevent it from falling after being cut.
3. Check to make sure that the bush where the pin was removed has not come loose or deformed. Do not use if loose or deformed.
4. Do not reuse any removed parts.

2. How to Connect Roller Chain

2.1 When connecting chain on sprocket teeth

When connecting roller chain, it is convenient to use the sprocket teeth. Please carry out the following steps.

1. Wind the chain around one of the sprockets so that both ends of the chain are facing each other on the sprocket.
2. Insert the connecting link in the two end links of the chain.
3. Insert the connecting link plate of the connecting link and fasten the plate using the clips/cotter pins or spring pins provided.
4. When using an F-type (press-fit) connecting link, insert the connecting link plate by tapping it with a hammer until it moves into position. Then fasten it using the clips/cotter pins or spring pins provided.
5. Use protective measures to prevent damage to the teeth when hammering.



Fig. 8 Connecting on a sprocket

2.2 When connecting between shafts

If a sprocket cannot be used due to layout, follow the procedures below.

1. Wind the chain around the sprockets and pull the chain ends together using a chain puller (see Accessories section) or wire.
2. Insert the connecting link in the two end links of the chain.
3. Insert the connecting link plate of the connecting link and fasten the plate using the clips/cotter pins or spring pins provided.

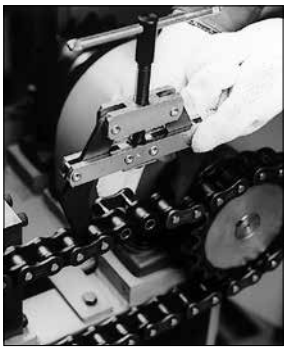


Fig. 9 Connecting between shafts

2.3 Clips and cotter pins

1. Clips

Clips are used for roller chain (under RS60) connecting links. When connecting the chain, the clip should be inserted securely into the slot of the pin on the connecting link after the connecting plate has been inserted on the pin. If the legs of the clips are spread too far they will not catch properly and will fall off during operation of the chain. The clip is generally installed opposite to the direction of travel for the chain as shown in Fig. 10.

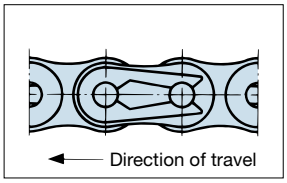


Fig. 10 Direction in which the clip is installed

2. Cotter pins

Tsubaki cotter pins are heat treated, except for on certain corrosion-resistant chains and specialty roller chains. The legs of the cotter pin should be bent approx. 60 degrees. Cotter pins should not be reused, and commercially available cotter pins other than those produced by Tsubaki should be avoided.

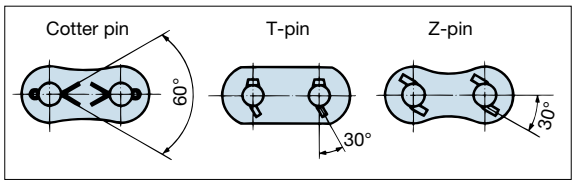


Fig. 11 Attaching clips and pins

RS Roller Chain cotter pin dimensions (Exclusively for roller chain)

Chain size	Nominal cotter pin dimension	Chain size	Nominal cotter pin dimension
RS35	1 × 6	RS100	2.5 × 20
RS40	1 × 6	RS120	3 × 23
RS50	1.6 × 8	RS140·RS160	4 × 24.5
RS60	2 × 10	RS180	5 × 32
RS80	2.5 × 14	RS200	5 × 37

Note: Cotter pins unavailable for RS240.

⚠ Precautions when connecting chain

1. Avoid using offset links wherever possible. Adjust slack by varying the center distance between shafts or using an idler.
2. Avoid adjusting chain length by cutting out links from chains that have stretched as a result of elongation wear.
3. In the case of pins and connecting link plate holes being press-fit type with F-type or other connecting links, widening the connecting link plate hole or narrowing the pin diameter will result in a reduction in roller chain strength. Avoid any additional work.
4. Do not reuse outer plates that have been detached, as the detachment results in a reduction in strength.
5. Normally, only an anti-rust oil is applied to individual parts such as connecting links and offset links. When assembling these into the chain, apply lubricant to the surface of pins and bushing holes.

3. Roller Chain Lubrication

Lubrication is very important in roller chain transmission, and becomes especially important when stringent demands are placed on chain performance.
When lubrication is not complete, even the most advanced transmission device will not realize its full service life. Under some conditions the device may wear out within a very short period of time.

1. The main reason for lubing and greasing roller chain is to minimize wear elongation of the chain and prevent corrosion. Wear elongation is caused by wear between the pin and bush in articulating parts.
2. The oil used for certain roller chain models is a high-grade oil that prevents rust and provides lubrication. The lube prevents the wear that frequently occurs in the initial stage of operation, and it works well with other lubricants to maintain a high wear resistance.
3. Avoid wiping the lube coating off of delivered roller chain, and avoid washing the chain with detergent or other cleaning agents.

3.1 Oil application locations

1. Roller chain wear occurs from wear between each pin and bush, and thus oil is applied to these parts.
2. On the slack part of the chain, apply lubricant to the gap between each outer plate and inner plate. At the same time, apply lubricant between the bushes and rollers.

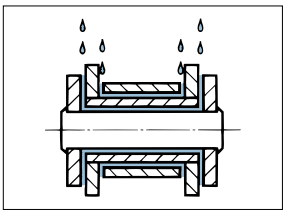


Fig. 12 Lubrication locations

3.2 Chain used for lifting

1. In general the chain has no catenary parts. If possible, remove the load that acts on the roller chain before lubing the chain.
2. For roller chain that does not articulate, lube the chain sufficiently and then apply a thick layer of grease around the roller chain to prevent corrosion. Sufficiently lube end fitting connections.
3. For roller chain that is used outdoors, contact with rain and snow will remove the lubricant and cause harmful corrosion, and thus a cover or other protection should be installed.
   If rain or snow does fall on the chain, remove the moisture and then promptly lube the chain and coat it with a thick layer of grease.

3.3 Recommended lubricants

1. SAE numbers

Lubricant type	A Ⅰ・A Ⅱ・B				C			
Ambient temperature / Chain number	−10°C to 0°C	0°C to 40°C	40°C to 50°C	50°C to 60°C	−10°C to 0°C	0°C to 40°C	40°C to 50°C	50°C to 60°C
RS50 or lower small pitch chain	SAE10W	SAE20	SAE30	SAE40	SAE10W	SAE20	SAE30	SAE40
RS60/80	SAE20	SAE30	SAE40	SAE50				
RS100					SAE20	SAE30	SAE40	SAE50
RS120 or higher large pitch chain	SAE30	SAE40	SAE50					

2. Commercially available lubricants Regarding other brands, use an equivalent.

Manufacturer names are shown in no particular order.

SAE / ISOVG(cSt40°C) / Manufacturer name	SAE10W	SAE20	SAE30	SAE40	SAE50
	32	68	100	150	220
Idemitsu Kosan	Daphne Mechanic Oil 32	Daphne Mechanic Oil 68	Daphne Super Mechanic Oil 100	Daphne Super Mechanic Oil 150	Daphne Super Mechanic Oil 220
ExxonMobil Japan	Mobil DTE Oil Named Series Mobil DTE Light	Mobil DTE Oil Named Series Mobil DTE Heavy Medium	Mobil DTE Oil Named Series Mobil DTE Heavy	Mobil Vacuoline 500 Series 528	Mobil Vacuoline 500 Series 533
ENEOS	Super Mulpus DX32	Super Mulpus DX68	Super Mulpus DX100	Super Mulpus DX150	Super Mulpus DX220
	FBK Oil RO32	FBK Oil RO68	FBK Oil RO100	FBK Oil RO150	FBK Oil RO220

3. Examples of lubrication at low and high temperatures

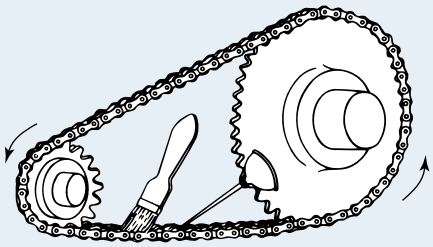
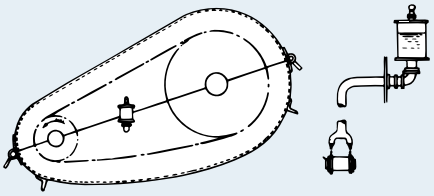
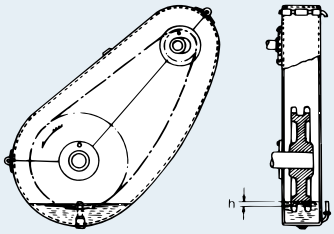
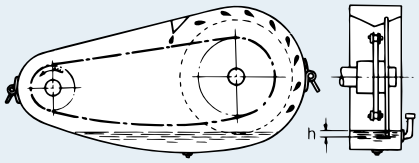
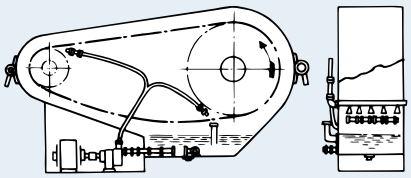
The following lubricants are available when roller chain is used at low or high temperatures. Regarding other brands, use an equivalent.

Ambient and operating temperature	−50°C to −25°C	−25°C to 0°C	−10°C to 60°C	60°C to 200°C	150°C to 250°C
Manufacturer name Lubricant name	Dow Toray SH510 Shin-Etsu Chemical KF50	Japan Sun Oil Suniso 4GS	See above	ExxonMobil Japan Mobil Vacuoline 500 Series 546 MORESCO Moresukohai Lube L-150	MORESCO Moresukohai Lube R-220 Sumico Lubricant Hightemp Oil ES Sato Special Oil Hot Oil No.75

Note: Lubrication methods are drip, manual, and brush.

3.4 Lubrication systems and methods

Stop operation before oiling. To verify sufficient lubrication is taking place, remove the chain and inspect the connecting pins and bushes. If the contact surfaces of the pins or bushes show tearing or a red or dark brown color, lubrication is generally not sufficient.

<table>
<tr><th colspan="2">Lubrication system</th><th>Method</th><th>Quantity</th></tr>
<tr><td rowspan="2">A</td><td>I</td><td>
Apply oil to the gaps in the pins and inner links on the slack side of the chain. A brush can also be used.</td><td>Oil with sufficient frequency (in general about once every 8 hours) so that the roller chain bearings do not dry out.</td></tr>
<tr><td>II</td><td>Drip lubrication

Using a simple case, this method drips oil supplied from an oil cup or other oil reservoir.</td><td>For one strand of chain, drip about 5 to 20 drops of oil each minute. Drip more oil on higher speed chains.</td></tr>
<tr><td rowspan="2">B</td><td colspan="2">Oil bath

The chain is run through oil in a leakfree casing.</td><td>If depth h from the surface of the oil to the lowest point the chain reaches is too deep, the oil may heat up (80°C or higher) and deteriorate. The depth (h) to which the chain descends in the oil should be about 6 to 12 mm.</td></tr>
<tr><td colspan="2">Lubrication using a slinger disc

Use a slinger disc attached to a leak-free case to splash oil on the chain. The peripheral velocity of the disc should be 200 m/min or higher. If the width of the chain is greater than 125 mm, attach discs to both sides.</td><td>The lowest point h reached by the slinger disc should be about 12 to 25 mm below the surface of the oil. The roller chain should not enter the oil.</td></tr>
<tr><td>C</td><td colspan="2">Forced lubrication

The oil is circulated in a leak-free case and cooled by a pump. When there are n strands of chain, n+1 oiling holes are required, targeting the gaps between each part.</td><td>Approximate oiling quantity per oiling hole (L/min)
<table>
<tr><th>Name</th><th>Size
Chain speed (m/min)</th><th>#60 or smaller</th><th>#80 #100</th><th>#120 #140</th><th>#160 or larger</th></tr>
<tr><td>RS</td><td>500 to 800</td><td rowspan="2">1.0</td><td rowspan="2">1.5</td><td rowspan="2">2.5</td><td rowspan="2">4.0</td></tr>
<tr><td>SUP</td><td>300 or less</td></tr>
<tr><td>RS</td><td>800 to 1,100</td><td rowspan="2">2.0</td><td rowspan="2">2.5</td><td rowspan="2">3.5</td><td rowspan="2">5.0</td></tr>
<tr><td>SUP</td><td>300 to 500</td></tr>
<tr><td>RS</td><td>1,100 to 1,400</td><td rowspan="2">3.0</td><td rowspan="2">3.5</td><td rowspan="2">4.5</td><td rowspan="2">6.0</td></tr>
<tr><td>SUP</td><td>500 or more</td></tr>
</table></td></tr>
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4. Layout and Installation of Roller Chain

4.1 Speed ratio and chain wrap

A roller chain transmission speed ratio up to 7:1 is normally suitable; however, at very slow speeds a ratio up to about 10:1 is possible. The chain wrap between the small sprocket and chain must be 120° or more.
For lifting applications, the angle must be 90° or more.

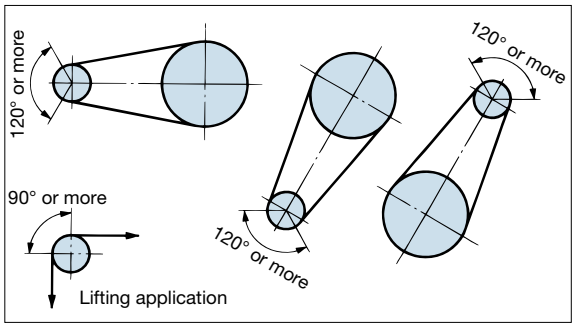


Fig. 13 Chain wrap

4.2 Distance between shafts

The minimum distance can be as short as desired as long as the teeth of the two sprockets are not in contact. The optimum center-to-center distance between the shafts is 30 to 50 times the pitch of the roller chain. However, if the load is variable, a distance of 20 times or less is suitable.

4.3 Amount of slack

1. Unlike V or flat-belt transmission, there is no need to apply an initial tension in roller chain transmission; roller chain is normally used with a suitable amount of slack. If too much tension is applied to roller chain, the oil film between the pins and bushes will break, causing increased wear and damage on the roller chain and bearings. If there is too much slack in the roller chain, the chain will vibrate and ride up the sprocket, damaging both chain and sprocket.

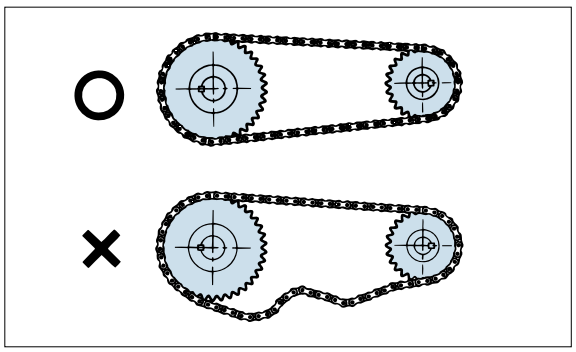


Fig. 14 Slack example

2. If possible, the lower side should be the slack side in roller chain transmission. The amount of slack is appropriate when the distance SS' that the chain can be moved perpendicularly by hand at the center of the slack side is 4% of the span AB. (For example, when the span is 800 mm, the amount of slack should be 800 mm x 0.04 = 32 mm.)

   In the following situations, this should be 2%:
   - ◆ When the transmission is vertical or close to vertical.
   - ◆ When the distance between the shafts is more than 1 m.
   - ◆ When frequent starts are made with a heavy load.
   - ◆ When sudden reverse motion takes place.

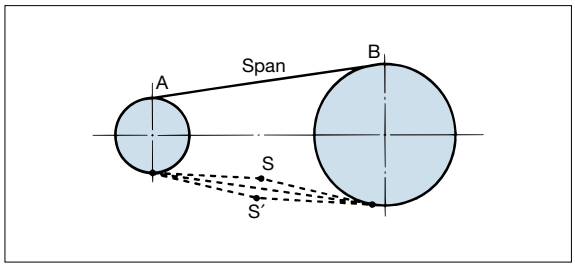


Fig. 15 Amount of slack

3. Roller chain will stretch slightly during the first few dozen hours of use as the contact surfaces wear in about 0.05%. This may require adjustment of the slack.
   A tensioner can be used if the layout is designed for it. If you do not have a tensioner, move the shafts to adjust the amount of slack. Once the chain is worn in, very little stretching will occur.

4.4 Horizon precision and parallelism of the shafts

The installation precision of the sprocket has an effect on the smoothness of roller chain transmission. It also affects roller chain life.
Install the sprockets correctly as described below.

1. Verify horizontal precision with a level.
   Adjust the precision to within ±1/300.

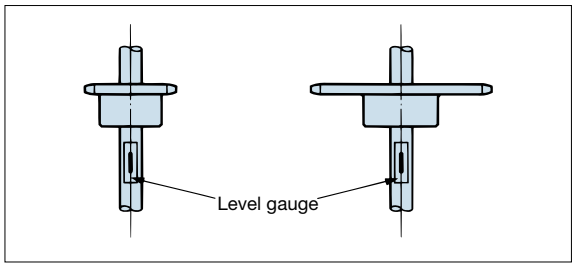


Fig. 16 Horizontal precision

2. Use a scale to correct the degree of parallelism of the shafts.
   Adjust the shafts so that they are parallel to within ±1/300 ≧ (A-B)/L.

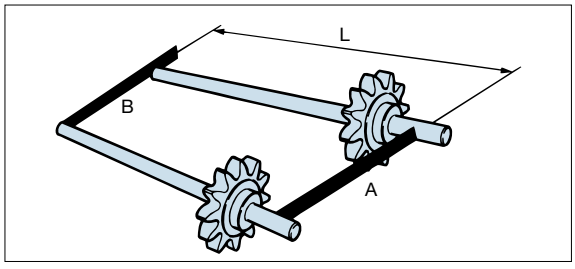


Fig. 17 Degree of parallelism of the shafts

3. Using a straightedge or Easy-Laser, adjust the two sprockets so that they are parallel. Adjust to within the following values based on the distance between the shafts.

Up to 1 m : ±1mm

1 m to 10m : $\pm \frac{\text{Distance between shafts (mm)}}{1{,}000}$

10m or more : ±10mm

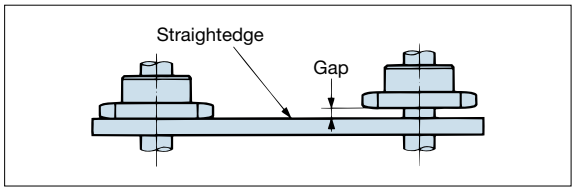


Fig. 18 Sprocket alignment

4. Secure each sprocket to the shaft with a power lock, lock sprocket, or key.
If needed use a collar, set bolt, or other adjustment component.

4.5 Layout

1. General layout
Ideally, the line connecting the sprocket centers in the roller chain transmission equipment should be close to level. In a layout that is close to vertical, the roller chain may stretch and fall off the sprocket. Thus, an idler or tensioner should be used. If possible keep the angle of inclination within 60°.

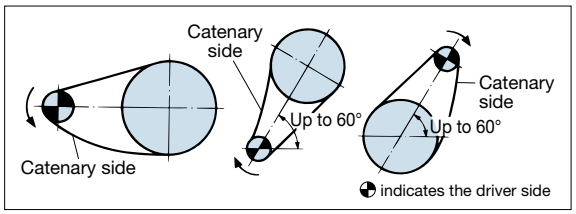


Fig. 19 General layout

2. Layouts requiring caution

◆ When the slack is on the upper side

When the center-to-center distance between the shafts is short, move the shafts to adjust the distance and slightly increase the tension.

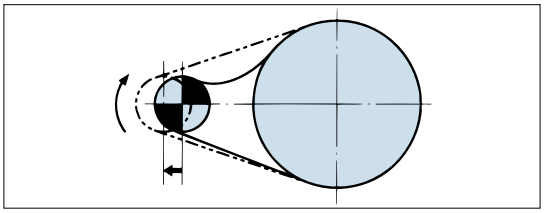


Fig. 20 Layout when the center-to-center distance is short

When the center-to-center distance is long, insert an intermediate idler under the slack part to support the roller chain.

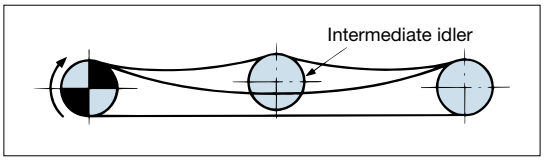


Fig. 21 Layout when the center-to-center distance is long

◆ When the chain speed is fast and the load varies

Roller chain may vibrate if the natural vibration frequency of the chain, shock frequency of the driven machine, or chordal action of the chain (vertical pulsation of the chain due to the polygon effect) synchronize. In this event, use a guide shoe (made of NBR or ultra-high polymer polyethylene) or other device to stop the vibration.

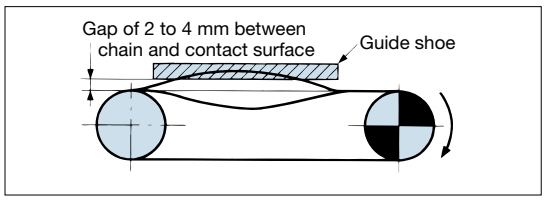


Fig. 22 Guide shoe to prevent vibration

◆ When the centerline is vertical

Install a tensioner that can automatically eliminate excess slack to ensure the sprockets engage. This is particularly necessary when the drive shaft is on the bottom.

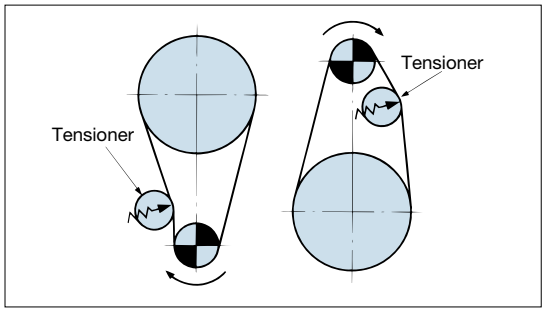


Fig. 23 Layout for vertical transmission

4.6 Curved chain installation

1. Installing the guide
Compared to RS roller chain, a curved chain has a greater degree of freedom. For this type of chain, install a guide on the chain so that it engages straight onto the sprocket.

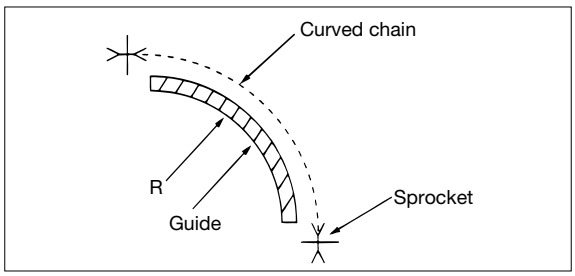


Fig. 24 Guide

2. Minimum lateral bending radius (r)
Install the guide so that its minimum lateral bending radius is equal to or greater than the specifications shown below.

Product number	Minimum lateral bending radius (r)
RS40-CU-1	350
RS50-CU-1	400
RS60-CU-1	500
RS80-CU-1	600
RS40-LMCCU-1	400
RS50-LMCCU-1	500
RS60-LMCCU-1	600

Product number	Minimum lateral bending radius (r)
RS40-CUSS-1	400
RS50-CUSS-1	500
RS60-CUSS-1	600
RS80-CUSS-1	800

5. Sprockets

5.1 Hardening the teeth

When a sprocket is used under the following conditions, the sprocket teeth must be hardened.

1. When there is a small number of teeth (24 or less), and the speed is 1/8 or higher of the maximum rotation speed indicated on the kilowatt ratings tables.
2. When using small sprockets with a speed ratio of greater than 4:1.
3. When a large load is used at low speed.
4. When using under conditions that will cause the teeth to wear.

5.2 Number of teeth

As many teeth as possible should be used on the sprocket on the high-speed shaft side to help ensure smooth drive transmission. Generally, 15 or more teeth should be used. However, when the speed ratio is high and the number of teeth on the low-speed sprocket exceeds 120, chain engagement problems can occur when there is even slight chain wear. In this case, decrease the number of teeth on the highspeed sprocket, but the number of teeth should still be kept to 13 or higher. However, if the sprocket will be used at extremely low speed and not subjected to shock, a sprocket with 12 or fewer teeth can be used.

5.3 Precautions related to additional processing

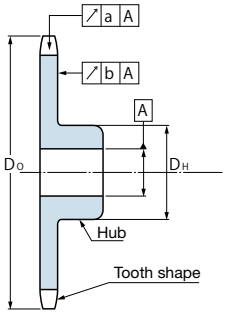
1. Shaft bore processing

◆ Maximum shaft bore processing dimensions

The maximum finished shaft bore size should be at or below the size shown in the specifications for each model number. Please contact a Tsubaki representative if using standards other than the JIS standards key.

◆ Finishing standards

When finishing, verify the standards for the tooth outer diameter D_O and the hub outer diameter D_H.
Also, verify that the deflection on the tooth root *a* and the deflection on the end surface of the tooth *b* are at or below the values shown below.



When using machine specifications

Dia. of tooth root cylinder (df)	90 or less	> 90 but ≦ 190	> 190 but ≦ 850	> 850 but ≦ 1180	Greater than 1180
Deflection at tooth root a	0.15	0.0008df+0.08		0.76	
Face runout b	0.25		0.0009df+0.08		1.14

2. Sprocket welding

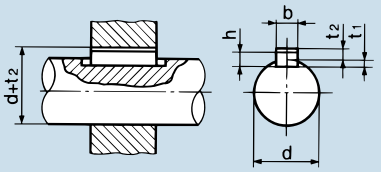
When welding a hub to Type A sprockets for use, the welding can cause deformation or deflection of the tooth and surface, making it impossible to maintain product quality. As such, welding should be avoided. With Type A Strong Series sprockets, welding can also decrease the hardness of the sprockets, so again, welding should be avoided.

3. Processing on the hub outer diameter

Do not perform any additional processing to the outer diameter of the hub. If processing needs to be performed, please first contact a Tsubaki representative.

New JIS key

Parallel key
(JIS B 1301-2009)

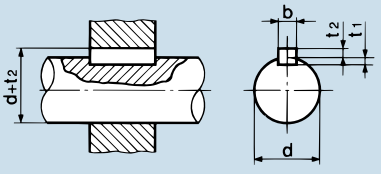


Shaft bore diameter d	Designated key diameter Width×Height b×h	Keyway depth t1	Keyway depth d+t2
More than 6 up to 8	2×2	1.2	d+ 1.0
More than 8 up to 10	3×3	1.8	d+ 1.4
More than 10 up to 12	4×4	2.5	d+ 1.8
More than 12 up to 17	5×5	3.0	d+ 2.3
More than 17 up to 22	6×6	3.5	d+ 2.8
More than 20 up to 25	(7×7)	4.0	d+ 2.3
More than 22 up to 30	8×7	4.0	d+ 3.3
More than 30 up to 38	10×8	5.0	d+ 3.3
More than 38 up to 44	12×8	5.0	d+ 3.3
More than 44 up to 50	14×9	5.5	d+ 3.8
More than 50 up to 55	(15×10)	5.0	d+ 5.3
More than 50 up to 58	16×10	6.0	d+ 4.3
More than 58 up to 65	18×11	7.0	d+ 4.4
More than 65 up to 75	20×12	7.5	d+ 4.9
More than 75 up to 85	22×14	9.0	d+ 5.4
More than 80 up to 90	(24×16)	8.0	d+ 8.4
More than 85 up to 95	25×14	9.0	d+ 5.4
More than 95 up to 110	28×16	10.0	d+ 6.4
More than 110 up to 130	32×18	11.0	d+ 7.4
More than 125 up to 140	(35×22)	11.0	d+ 11.4
More than 130 up to 150	36×20	12.0	d+ 8.4
More than 140 up to 160	(38×24)	12.0	d+ 12.4
More than 150 up to 170	40×22	13.0	d+ 9.4
More than 160 up to 180	(42×26)	13.0	d+ 13.4
More than 170 up to 200	45×25	15.0	d+ 10.4
more than 200 up to 230	50×28	17.0	d+ 11.4
More than 230 up to 260	56×32	20.0	d+ 12.4
More than 260 up to 290	63×32	20.0	d+ 12.4
More than 290 up to 330	70×36	22.0	d+ 14.4
More than 330 up to 380	80×40	25.0	d+ 15.4
More than 380 up to 440	90×45	28.0	d+ 17.4
More than 440 up to 500	100×50	31.0	d+ 19.5

Note: The nominal dimensions shown in parentheses are not defined in international standards.

Old JIS key

Parallel key
(JIS B 1301-1959)



Shaft bore diameter d	Designated key diameter Width×Height b×h(t2+t1)	Keyway depth t1	Keyway depth d+t2
10 and up to 13	4×4	2.5	d+ 1.5
More than 13 up to 20	5×5	3.0	d+ 2.0
More than 20 up to 30	7×7	4.0	d+ 3.0
More than 30 up to 40	10×8	4.5	d+ 3.5
More than 40 up to 50	12×8	4.5	d+ 3.5
More than 50 up to 60	15×10	5	d+ 5
More than 60 up to 70	18×12	6	d+ 6
More than 70 up to 80	20×13	7	d+ 6
More than 80 up to 95	24×16	8	d+ 8
More than 95 up to 110	28×18	9	d+ 9
More than 110 up to 125	32×20	10	d+ 10
More than 125 up to 140	35×22	11	d+ 11
More than 140 up to 160	38×24	12	d+ 12
More than 160 up to 180	42×26	13	d+ 13
More than 180 up to 200	45×28	14	d+ 14
More than 200 up to 224	50×31.5	16	d+ 15.5
More than 224 up to 250	56×35.5	18	d+ 17.5

5.4 Sprocket surface treatment

When a surface treatment will be applied to standard sprockets such as plating, blackening, or other surface treatments, strictly adhere to the following:

- ◆ Anti-rust oil and/or anti-rust paint have been applied to the sprocket, and must be completely removed.
- ◆ If a hardened tooth sprocket will be subjected to a treatment that may cause hydrogen embrittlement, for example, electrolytic plating, sufficient measures must be taken to prevent this from occurring.

6. Chain Test Run

After installing the chain, carry out a test run and check the following items before you actually start running the chain.

6.1 Pre-test run

1. Connecting link plates, clips, and cotter pins are installed correctly.
2. Chain slack has been properly adjusted.
3. Adequate lubrication is available.
4. The chain is not touching the chain case or other objects.
5. The roller chain path is clean and free from obstructions.

6.2 Test run

1. There should be no strange noises. Make sure the chain does not touch the chain case or other objects.
2. Look for excessive chain vibration.
3. Make sure the chain does not run up on the sprockets.
4. Ensure that the chain is not jammed into the sprockets.
5. The chain should bend smoothly.

Check the inspection checklist if there are any problems, and ensure roller chain and sprocket are correctly installed.

7. Roller Chain Inspection

1. In general, roller chain life is said to be reached when parts are damaged or when 1.5% wear elongation occurs. Try to replace the chain before these conditions occur.
2. Wear will progress between the pins and bushes after long periods of use.

7.1 Inspection checklist

Procedures	Method	Inspection items	Reference page for details
Step Ⅰ	Visually check the chain during operation and look for any abnormalities.	1. There should be no strange noises. 2. Look for excessive chain vibration. 3. Make sure the chain does not run up on the sprockets. 4. The chain is not jammed into the sprockets. 5. The chain should bend smoothly. 6. Adequate lubrication is available (lubricating system and quantity of oil). 7. Make sure the chain does not touch other objects.	Inspection points are on the following pages and on the troubleshooting pages.
Step Ⅱ	Stop the chain and carefully inspect each part of the chain and sprocket.	1. Check the external cleanliness, corrosion, and lubrication conditions; also, look for dirt, scratches, corrosion, or other damage to the plate side and edge surfaces, pin edges, and roller surfaces. 2. Inspect for pin rotation and inspect the clearance between plates and pins. 3. Inspect the sprocket teeth surfaces and teeth side surfaces for scratches or marks. 4. Measure the wear elongation of the chain. 5. Check the articulation of the chain and rotation of the rollers. 6. When using an end fitting for lifting applications, inspect the wear of the end bolts and the wear of the connecting plate pins. Also, check for proper installation at the same time.	
Step Ⅲ	In order to investigate in more detail, remove the roller chain and inspect it visuallly or check it with measuring instruments.	1. The inspection items are identical to those in Step Ⅱ except in more detail.	

7.2 Inspection intervals

Regular inspection of roller chain is recommend at one month intervals. Inspection should be carried out at shorter intervals in:

1. Special or corrosive environments.
2. High speeds with sudden stoppage.
3. Lifting or indexing operations.

7.3 Inspection requirements for ordinary transmission

1. Inspection lubrication conditions

1-1. During operation, check to see if there is lubrication in the clearance between the outer plate and inner plate. Also, check if the chain or rotating disc is immersed in lubricating oil.

1-2 The chain surface will generally appear dirty from wear dust if lubrication is unsatisfactory. This is especially the case between the link plates.

1-3. When the chain is removed, connecting link pins and the edge of the inside of the bushes should be checked. If there are any scratches, or red or reddish-brown coloration, lubrication is improper or insufficient.

2. Inspecting link plates

2-1. If repeat loads over the maximum allowable load are put on the chain, there is a strong possibility of fatigue breakage of the link plates. It is difficult to notice initial cracking from fatigue breakage simply from external observation.

2-2. Usually, a crack develops at the edge of a hole or at the side of the link plate, as shown in Fig. 25. The presence of cracks should be checked carefully. Fatigue breakage progresses little by little, so it can be noticed with close attention.

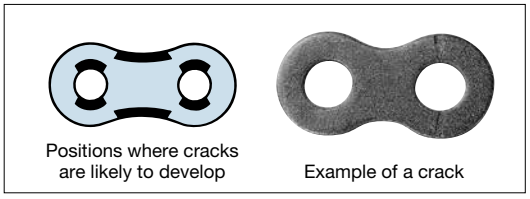


Fig. 25 Cracks on the link plates

2-2. When wear occurs from sliding between the edges of the plates and the guides, it is necessary to adjust the position of either the chain or the guides. The allowable wear on the link plates is limited to 5% of their height. (Fig. 26)

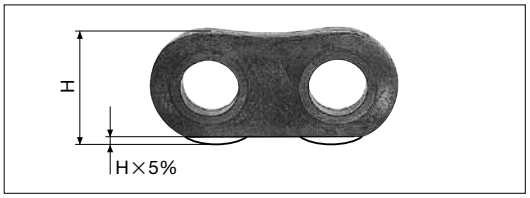


Fig. 26 Wear on the edges of the link plates

3. Inspecting pins

When the pins rotate (Fig. 27), the roller chain must be completely replaced with new chain. This also applies to the connecting pins. By removing the connecting parts it is possible to see the conditions of wear and rust on the surfaces of the pins.

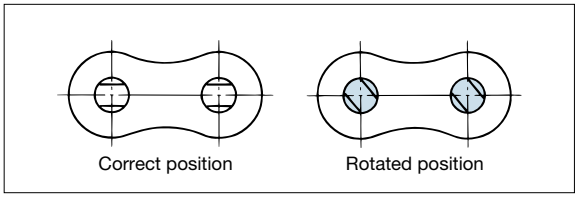


Fig. 27 Rotation of the pins

4. Inspecting rollers

4-1. As with the link plates, if rollers are also subjected to loads over the maximum allowable load, the repeated impact load between the chain and the sprockets may cause fatigue breakage to occur. (Fig. 28) The roller should be checked in the same way as the link plate.

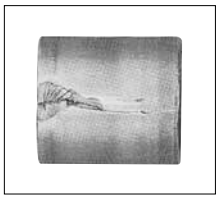


Fig. 28 Cracks on the rollers

4-2. If foreign objects interfere with the engagement of the roller and sprocket, the roller may be damaged and a crack may develop. Careful attention should be paid to the above. Furthermore, with high-speed operations, even if foreign objects do not interfere with engagement, cracks may appear from the impact with the sprocket teeth.

4-3. Chains damaged by fatigue breakage from the rollers must be completely replaced, as each part has received the same amount of repeated load.

4-4. Also check for poor roller rotation.

5. Inspecting sprockets

5-1. Chain and sprocket engagement can be checked by observing the roller and teeth surface. Proper engagement is when the contact area is uniform with point A in Fig. 29. If the contact area is lopsided or the sides of the teeth are wearing away (point B), this may have been caused from improper installation of the sprockets or twisting of the roller chain. In this case, rechecking/readjustment is necessary.

5-2. The normal point of impact is slightly up from the tooth root. As shown in Fig. 29, point A receives the strongest impact. However, when initial tension is applied to the chain and tension remains on the slack side, the roller will slightly touch the tooth root.

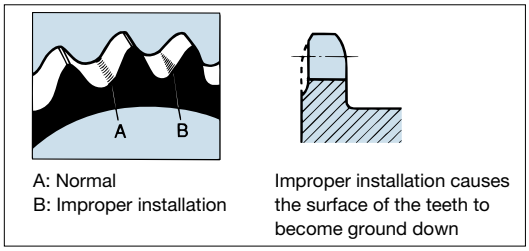


Fig. 29 Contact area of the sprocket teeth

5-3. When idlers or tensioners are used, the contact area will be the center of the tooth root.

5-4. When wear on the teeth reaches the values in the following table, the lifespan of the sprocket has been reached.
For a sprocket with induction hardned teeth, the lifespan is reached when the hardned layer has been removed.

Limit of usage based on tooth thickness/Dimension B

Size of RS roller chain	Dimension B	
	Normal	Pin-gear
RS11-SS	0.6	–
RS15	1.1	–
RS25	1.5	–
RS35	2.5	–
RS41	2.6	–
RS40	2.5	3.1
RS50	2.9	3.6
RS60	3.7	4.6
RS80	5.0	6.3
RS100	6.9	8.6
RS120	8.7	10.9
RS140	10.6	13.3
RS160	12.4	15.5
RS180	11.3	14.1
RS200	12.6	15.8
RS240	15.1	18.9
RF320-T	19.9	24.9
RF400-T	24.9	31.2

Size of RS roller chain B series	Dimension B Normal
RF06B	1.6
RS08B	2.1
RS10B	2.9
RS12B	3.6
RS16B	5.0
RS20B	6.8
RS24B	7.2
RS28B	8.6
RS32B	11.9
RS40B	12.7

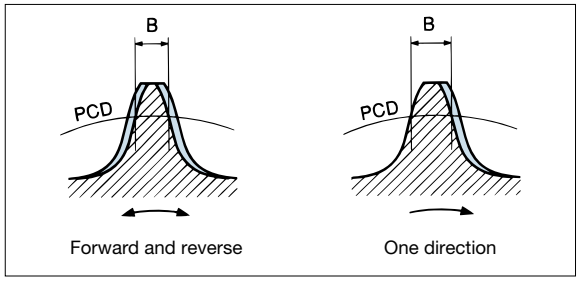


Fig. 30 Dimension B

5-5. If a new roller chain is run on a worn sprocket, the chain will wear at a faster rate than normal. In this case, when replacing the chain, replacement of the sprocket is also recommended.

6. Inspection of chain elongation

6-1. Chain elongation is caused not by deformation of the link plate, but by wear on the pin and bush. Therefore, the remaining chain life can be estimated by periodically measuring the chain elongation.

6-2. Measuring chain elongation

(1) The chain should be measured whilst stretching it slightly to eliminate any slack.

(2) Measure the distance of the inside (L_1) and outside (L_2) of the rollers at both ends of the measured links to get measurement (L).

$$L = \frac{L_1 + L_2}{2}$$

(3) When measuring, use at least 6 to 10 links to help keep any measuring error down to a minimum.

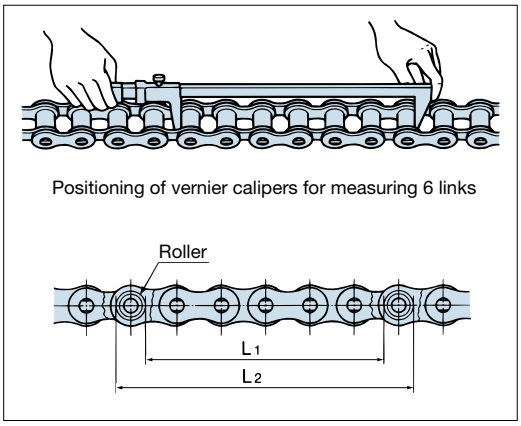


Fig. 31 Measuring length

(4) Finding chain elongation

$$\text{Chain elongation (\%)} = \frac{\text{Measured length} - \text{Standard length}}{\text{Standard length}} \times 100$$

Standard length = Chain pitch × Number of links

(5) For multi-strand roller chain, the measurement is carried out in the same way as for single strand roller chain of the same pitch.

(6) The limit of usage based on roller chain elongation for a smooth transmission is as follows.

Limit of usage based on elongation

Large sprocket number of teeth	Chain elongation
Up to 60 teeth	1.5%
61 to 80 teeth	1.2%
81 to 100 teeth	1.0%
101 to 110 teeth	0.8%

(7) Dimensions for evaluating standard length (chain pitch × number of links) and 1.5% elongation are shown in the table below.

(8) When the length of the roller chain cannot be measured with calipers, a tape measure may be used; however, measurements need to be taken over as many links as possible to reduce measuring error.

(9) When chain elongation of Lambda/X-Lambda Roller Chain reaches about 0.5% it may be losing its lubricating properties. This may be determined by the adhesion of red wear particles between the plates and the occurrence of articulation stiffness. When this occurs, the life of the chain has been reached.

Standard length and 1.5% elongation

	6 links measured		10 links measured	
	Standard length	1.5% elongation	Standard length	1.5% elongation
RS25	38.10	38.67	63.50	64.45
RS35	57.15	58.01	95.25	96.68
RS41	76.20	77.34	127.00	128.91
RS40	76.20	77.34	127.00	128.91
RS50	95.25	96.68	158.75	161.13
RS60	114.30	116.01	190.50	193.36
RS80	152.40	154.69	254.00	257.81
RS100	190.50	193.36	317.50	322.26
RS120	228.60	232.03	381.00	386.72
RS140	266.70	270.70	444.50	451.17
RS160	304.80	309.37	508.00	515.62
RS180	342.90	348.04	571.50	580.07
RS200	381.00	386.72	635.00	644.53
RS240	457.20	464.06	762.00	773.43

7.4 Inspection of lifting and shuttle traction

1. This should be carried out with the same requirements as for ordinary transmission shown in item 7.3.
2. It is important to check the lubrication of the connecting parts between the roller chain and end brackets where end brackets are installed, as well as the parts where the roller chain winds around the sprocket.
3. The parts where the roller chain bends around the sprocket should be checked when inspecting the wear elongation of the roller chain.
4. Inspect for twisting and side bending of the roller chain. If partial twisting or side bending of the chain occurs, the complete roller chain should be replaced. (Fig. 32)

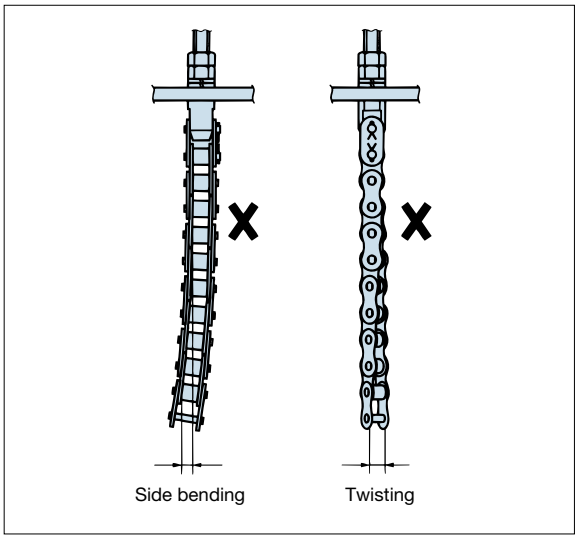


Fig. 32 Twisting of the roller chain

5. End fittings
Check for wear, deformation, or other damage to the connecting-part holes. If the hole is damaged or deformed, replace the end bracket immediately.
The clearance on the pinhole of the bracket affects the life of the roller chain and should be kept to a minimum.

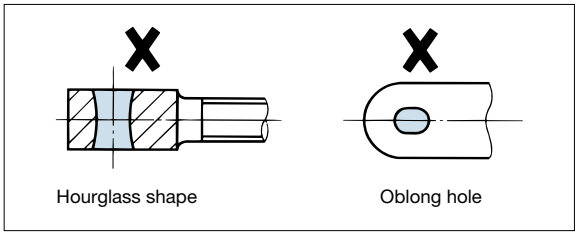


Fig. 33 Wear on the end fitting hole

7.5 Storage

Avoid storing spare parts, such as roller chains, sprockets, and end brackets, in high temperature/high humidity and dusty environments.
Also, when storing roller chain that has been removed, wash the roller chain and then apply lubrication. After the roller chain clearances have been supplied with a sufficient amount of lubricant, wrap the chain in grease paper completely before storing away.

8. Cautions on Use in Special Environments

As a general rule, roller chain should be used in a clean air flow; however, when used in special atmospheres, refer to the various items that follow.

8.1 Use in wet conditions

If the chain is used in a sterilizing machine or water screen, for example, where the chain is splashed with water or goes through heated vapor, the following problems may occur.

1. An increase in wear elongation due to improper or insufficient lubrication.
2. Decrease in fatigue strength from rust and corrosion (pitting) of the chain.

Countermeasures

- ◆ Reduce bearing pressure by using a larger sized chain to improve wear resistance.
- ◆ Use corrosion resistant roller chain for rust prevention.

8.2 Use in acidic or alkaline conditions

If roller chain is exposed to acidic or alkaline conditions, such as battery acid and liquid used in plating processes, the following problems may occur.

1. Embrittlement fracture of link plates and pins.
2. Fatigue breakage of link plates and pins due to rust and pitting corrosion.
3. Wear from usual mechanical wear and corrosion.
4. Reduction in volume of the whole chain from corrosion.
5. In special cases where the chain is underwater (immersed in liquid), electrochemical corrosion may occur.
6. There are also circumstances where even stainless steel roller chain will corrode. Fig. 34 shows an example of chain that was used in a plating apparatus. The chain fell to pieces within one month due to the effects of the acid.



Fig. 34 Corrosion of stainless steel roller chain

Countermeasures for embrittlement fractures (stress corrosion cracking)

- ◆ Adopt a brittleness countermeasure that lowers crack susceptibility.
- ◆ Install a cover or casing to prevent acids or alkalis from contacting the chain.
- ◆ Adopt a high-grade material with anti-corrosive properties.

Countermeasures for corrosion

- ◆ Use surface-treated chain.
- ◆ Install a cover or casing to prevent acids or alkalis from contacting the chain.
- ◆ Adopt a high-grade material with anti-corrosive properties.

In general, embrittlement fractures (stress corrosion cracking) occur around link plate holes. This is the area where the pin and bush are press-fitted to the link plate, and with the highest concentration of stress. Cracks are generated even when there is no tension on the chain. Roller chain in general is more susceptible to acids than alkalis, and in special cases, embrittlement fractures (stress corrosion cracking) are generated by seawater or pit water.



Fig. 35 Hydrogen embrittlement cracking

8.3 Use under conditions where wear is a problem

If the chain is exposed to highly abrasive materials that promote wear such as sand, coke, and metal particles, the following problems may occur.

1. When abrasive materials penetrate between the pins and bushes, chain wear is promoted and poor articulation occurs.
2. When abrasive materials penetrate between the bushes and rollers, chain wear is promoted and poor roller rotation occurs.
3. When the abrasive materials penetrate between the link plates, poor articulation occurs.

Countermeasures

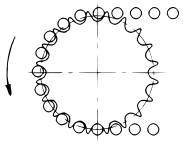
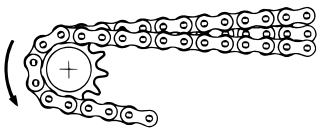
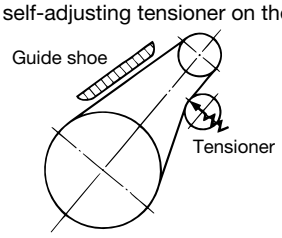
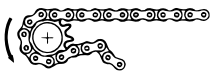
- ◆ Install a protective casing against dust.
- ◆ Remove foreign particles by regularly washing the roller chain.
- ◆ Reduce bearing pressure by using a larger sized chain to improve wear resistance.
- ◆ Increase wear resistance by applying special processing to the parts of the chain where wear is a problem.

⚠ **Caution** Contact a Tsubaki representative regarding whether a product contains substances restricted for use in specific industries and applications.

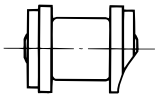
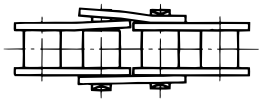
9. Troubleshooting

When there is significant damage and breakage to the roller chain and sprockets, please carry out the following remedies and replace with new chain and sprockets as necessary.

9.1 General

Symptom	Possible causes	Remedy
Chain is riding up on the sprocket 	The roller chain and sprocket do not match.	Replace the chain or sprocket with the correct size.
	Excessive load.	Decrease the load, or increase the number of strands or size of the chain.
	Elongation of the chain due to wear or excessively worn sprocket teeth.	Replace with new chain and sprockets.
Unusual noises	Improper installation of the sprocket or shaft.	Inspect and correct.
	Chain casing or bearings are loose.	Tighten all bolts and nuts.
	Excessive or insufficient slack in the chain.	Adjust the distance between shafts to obtain the proper amount of slack.
	Excessively worn chain or sprocket.	Replace the chain and sprocket with new chain and sprocket.
	Lack of or unsuitable lubrication.	Provide proper lubrication according to the operating conditions.
Excessive vibrations in chain	Chain is resonating with periodic external force. 	Change the chain's mode of vibration. 1. Preventing resonance a. Change the natural frequency of the chain. • Alter the effective tension either by applying an initial tension or adjusting the existing one. • Install a tensioner to change the chain span. • Replace the chain. Choose a different mass and spring coefficient. b. Change the vibration frequency. • Change the speed of rotation of the sprocket. • Re-evaluate the device set-up. 2. Mechanically reducing the vibrations • Install a guide shoe. • Install a self-adjusting tensioner on the slack side. 
	Load fluctuations are excessively large.	Reduce fluctuations with a fluid coupling or similar technique.
The chain winds onto the sprocket (Poor separation from the sprocket teeth) 	Span between shafts is too large.	Install an idler.
	Excessive slack in chain.	Adjust the chain length or distance between shafts. Install a tensioner.
	Elongation of the chain due to chain wear or excessively worn sprocket teeth.	Replace with new chain and sprocket.

Handling Roller Chains and Sprockets

Symptom	Possible causes	Remedy
Rusting of the chain	Improper lubrication or poor enviroment.	Replace chain and protect it from the environment with chain casing or proper lubrication.
Excessive wear on the inside surface of the link plates and sides of the sprocket teeth	Improper installation. 	Correct sprocket and shaft installation.
Excessive wear on the link plate side surfaces and pin heads	Improper installation of guides, etc. 	Check the condition of the guides, and increase the gap between the guides and the chain.
Poor articulation of the chain 	Chain is not installed correctly.	Inspect the installation and correct as necessary.
	Contamination from wear debris or dirt because of improper lubrication.	Remove the chain, clean it thoroughly, and provide proper lubrication.
	Excessive load, pin bending, or bush cracking.	Reduce the load or increase the number of or size of chains.
	Corrosion or rusting.	Install a chain casing to protect the chain.
	Seizing from improper lubrication.	Provide proper lubrication according to the operating conditions.
	Seizing of pin and bush.  Pins and bushes may seize due to high speed operation, causing poor articulation and leading to chain breakage.	Provide the proper operating conditions.
Spreading of link plates	Uneven or excessive loading caused by improper installation. 	Replace with new chain and correct installation.

9.2 Link plate related

Symptom	Possible causes	Remedy
Breakage of link plate	Excessively large shock load.	Reduce shock loads by making the start-up, stopping, and other actions smoother (installing a shock absorber, etc.). Increase the size or number of chains.
	Vibration in the chain.	Install an anti-vibration device (for example, a tensioner or idler). Refer to the section on excessive chain vibration.
	Large inertia in the driven machine (excessive load).	Reselect the chain. (Increase the chain size or number of chain strands.)
	Corrosion.	Replace with a new chain. Install a casing to protect the chain. Periodically clean the chain.



① **Static fracture**
Applying load to a link plate beyond its breaking load will cause it to stretch and then break.



② **Fatigue fracture**
By repeatedly applying a load past its fatigue limit (fatigue strength), the fatigue will start at holes and then cause sudden chain breakage.



③ **Offset link plate fatigue breakage**
Offset link plates are bent at the center, and the resulting concentration of stress at the bend can cause a fatigue break. Avoid using offset links in high-stress applications.

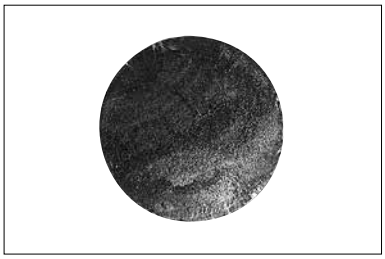
Crackes in the link plates, which are perpendicular to the direction of pull (fatigue fracture)	Load is are greater than the allowable load.	Remove all large or excessive repeat loads. Otherwise, increase the chain size or number of chain strands. Replace with a new chain.
Deformation of link plate holes 	Excessive load.	Remove the cause of the excessive load. Replace with a new chain.
Corrosion stress cracks appear, usually as bow-shaped cracks in the link plate 	The chain is being used in an acidic or alkaline enviroment. (This is not caused by a repetitive load.)	Replace with a new chain. Install a casing to protect the chain from the environment. Consider a chain with a high resistance to corrosion stress cracks. Please contact a Tsubaki representative.

9.3 Pin related

Symptom	Possible causes	Remedy
Breakage of pin	Large shock loads.	Reduce shock loads by making the start-up, stopping, and other actions smoother.
	Subject to a repetitive load greater than the fatigue limit of the pin.	Remove the large repetitive load. Otherwise, increase the size or number of chains.
	Corrosion.	Install a casing to protect the chain. Periodically clean and lubricate the chains.



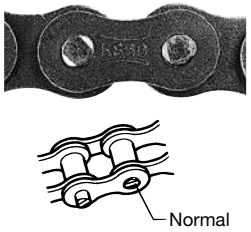
① **Static fracture**
The type of fracture found when subjecting the chain to the breakage test. Occurs when chain is subjected to a load greater than its breakage strength.



② **Fatigue fracture**
Occurs when the pin is repetitively subjected to loads greater than its fatigue limit. Recheck maximum load and formulate a countermeasure.



③ **Shock-induced bending fracture**
The pin is subjected to a large shock load and breaks. The side with the initiating point receives tensile load, and the fracture progresses from this point. A pin is especially susceptible to becoming weak with regard to bending when the surface of the pin has corroded. This type of phenomenon occurs quite easily.

Pin rotates or begins to stick out	Excessive load or improper lubrication.	Replace with new chain. Improve the lubrication or loading conditions.
 Normal	Operating a chain at high load without proper lubrication can create friction between the pin and bush, causing the pin to rotate. In this situation, the pin may come out, leading to chain breakage.	Replace with new chain immediately. Do not weld or reuse the pins. (Dispose of the old chain to be sure that it is not used again by mistake.) Also, if the pin head or link plate surface is worn, check the installation.
Wear or rust occurs only at the connecting pin	Improper initial lubrication during installation.	Replace the connecting link. If pin wear is excessive, replace the chain also. Lubricate the connecting sections of end brackets when installing.

9.4 Bush/roller related

Symptom	Possible causes	Remedy
Roller and/or bush splits (falls off)	Excessive load or speed of rotation.	Choose a different chain according to the kW ratings table.
	Inadequate lubrication.	Replace the chain. Provide adequate lubrication according to the operating conditions.
	**Fatigue fracture.** Reached the point of fatigue during operation and eventually broke. Occurs when there is impact with the sprocket teeth at a force exceeding the chain's transmission capacity.	
Roller does not rotate	Bushed chains such as RS11-SS, RS15, RS25, and RS35	A bushed chain does not have rollers.
	The inner link plate is moving inward, or the bush is cracked.	Replace with a new chain. Re-inspect the installation and load conditions.
	Foreign particles have gotten between the bush and roller.	Periodically clean the chain. Install a casing to protect the chain.
Roller is opening up	Excessive load. 	Reduce the load. Provide adequate lubrication.
Roller is becoming hourglass shaped	Excessive load or inadequate lubrication.	Replace with new chain. Improve the lubrication or loading conditions.

Roller Chain and Sprocket Inquiry Sheet (for new installation or replacement)

Enter information for items 1 – 3 if known.		**1**	Chain number
2	Sprocket no. of teeth (drive × driven)	**3**	Number of links
4	Machine used	**5**	Type of impact (load fluctuation) Smooth Moderate impact Large impact
6	Do you have fluid couplings? Yes No	**7**	Motor type
8	Motor rated output	**9**	Motor rated torque
10	Motor rated RPM	**11**	Reduction gear ratio of reducer
12	RPM of reducer output shaft	**13**	Reducer output shaft allowable torque
14	RPM of driven shaft	**15**	Shaft diameter (drive shaft x driven shaft)
16	Distance between shafts		Provide the RPM of the motor used and a torque diagram when the RPM is controlled by frequency (inverter, etc.).
17	Frequency of starting (stopping) times/day (8hrs/day)		Note: Complete item 18 if starting (stopping) frequency is more than 6 times or more a day. Skip to item 26 if less than 6 times a day.
18	Are there soft starts/stops? Yes No		Note: Complete items 19 and 20 if there are soft starts/stops, otherwise skip to item 21.
19	Acceleration (acceleration time)	**20**	Deceleration (deceleration time)
21	Moment of inertia or GD^2 of motor (circle one)	**22**	Converted moment of inertia or GD^2 of motor shaft load (circle one)
23	Starting torque of motor	**24**	Maximum (stalling) torque of motor
25	Braking torque		
26	Atmosphere Temp (°C) Abrasive dust (Yes / No) Corrosive liquid or gas (Yes / No)		

27 Simple diagram of layout from motor to chain/sprocket section

Note: Provide the conveyor specifications if this is for a conveyor drive. Include a diagram of the layout that includes conveyed load, speed, sprocket PCD, distance between shafts, etc. as well as the load torque.

Company name	Department
Your name	Tel
Date	Fax
	Email

MEMO

For Safe Use

Warning Observe the following points to prevent hazardous situations.

- Do not use chains or accessories (peripheral devices and parts) for anything other than their original purpose.
- Never perform additional work on the chain.
  - Do not anneal the various parts of the chain.
  - Do not clean the chain with acids or alkalis, as they may cause cracking.
  - Never electroplate the chain or its parts, as this may cause cracking due to hydrogen embrittlement.
  - Do not weld the chain, as the heat may cause cracking or a reduction in strength.
  - When heating or cutting the chain with a torch, remove the links immediately adjacent and do not use them again.
- When there is a need to replace a damaged (fractured) portion of a chain, always replace the whole chain with a new product rather than replacing only the damaged or fractured portion.
- When using a chain and sprocket on suspension equipment, establish a safety fence and strictly prevent entry to the area directly below the suspended object.
- Always install hazard protection devices (safety covers, etc.) for the chain and sprocket.
- Immediately stop using the chain if it comes into contact with a substance that can cause embrittlement cracking (acid, strong alkali, battery fluid, etc.) and replace with a new chain.
- When installing, removing, inspecting, maintaining, and lubricating the chain:
  - Perform the work according to the instruction manual or this catalog.
  - Always turn off the power switch to the equipment beforehand and make sure that it cannot be turned on accidentally.
  - Secure the chain and sprocket so that they cannot move freely.
  - Use a press or other special tool to cut and connect chain, and cut and connect using the proper procedures.
  - Wear clothing and protective gear (safety glasses, gloves, safety shoes, etc.) that are appropriate for the work.
  - Only experienced personnel should replace chains and sprockets.
- Install hazard protection devices (safety equipment, etc.) on suspension equipment using Leaf Chain to prevent hazard or injury in the event of chain failure.
- Install protection equipment for safety on the equipment side when using chain on personnel transport devices or lifting equipment.

Caution Observe the following points to prevent accidents.

- Only handle chains and sprockets after thoroughly understanding their structure and specifications.
- When installing chains and sprockets, inspect them in advance to confirm that they have not been damaged in transport.
- Always regularly inspect and maintain your chains and sprockets.
- Chain strength varies according to manufacturer. When selecting a chain based on a Tsubaki catalog always use the corresponding Tsubaki product.
- Minimum tensile strength refers to the failure point when a load is applied to the chain once and does not refer to the allowable operational load.
- Lubricate connecting links (CL/OL) before assembling onto the base chain.
- Always ensure that the final customer receives the instruction manual.
  - If you do not have the instruction manual, contact a Tsubaki representative with the product name, series name, and chain/model number to receive the appropriate manual.
- The product information given in this catalog is mainly for selection purposes. Thoroughly read the instruction manual before actually using this product, and use the product properly.

Warranty

1. Warranty Period

Products manufactured by Tsubakimoto Chain Co. (“Products”) are warranted against defects in materials and workmanship for eighteen (18) months from the date of shipment from the factory or twelve (12) months from the date the Products are first placed into operation (calculated from the date the Products have been installed on the customer’s equipment), whichever comes first.

2. Scope of Warranty

During the warranty period, if defects arise in the Products when installed, used, and maintained correctly in accordance to Tsubakimoto Chain’s catalogs, installation manuals (including any documents specially prepared and provided to the customer) and the like, Tsubakimoto Chain will repair or replace such defective Products thereof free of charge upon confirmation of said defect by Tsubakimoto Chain. This warranty shall only apply to Products received, and Tsubakimoto Chain shall not be liable for the following costs and/or damages (including installation manuals or other documents specially prepared and provided to the customer):

(1) Costs required for removing the defective Products from or re-installing the replacement Products on the customer’s equipment for replacement or repair of the defective Product, as well as any associated installation costs.
(2) Costs required to transport the customer’s equipment, if needed, to a repair shop or the like.
(3) Any consequential or indirect damages or loss of profits or benefits the customer may incur due to the defects or repair of the Products.

3. Out of Warranty Service and Repair

Regardless of the warranty period, Tsubakimoto Chain will provide investigation, repair, and/or manufacture of the Products for a fee should the Products experience problems or anomalies under the following situations.

(1) Placement, installation (including connecting and disconnecting), lubrication, or maintenance of the Products not in accordance with Tsubakimoto Chain’s catalogs, installation manuals (including documents specially prepared and provided to the customer), or the like.
(2) Use of the Products (including operating conditions, environment, and allowances) not in accordance with Tsubakimoto Chain’s catalogs, installation manuals (including documents specially prepared and provided to the customer), or the like.
(3) Inappropriate disassembly, modification, or processing of the Products by the customer.
(4) Use of the Products with damaged or worn products. (Example: Use of the Products with a worn sprocket, drum, rail, or the like.)
(5) When the operating conditions exceed the performance of the Products as selected using the Tsubakimoto Chain selection method.
(6) Use of the Products in conditions other than what have been discussed.
(7) When consumables such as bearings, oil seals, and lubricant in the Products deplete, wear, or degrade.
(8) When secondary damage occurs to the Products due to initial or primary damage or failure to the customer’s equipment.
(9) Damage or failure of the Products due to forces majeure such as natural disasters.
(10) Damage or failure of the Products due to unlawful conduct by third parties.
(11) Damage or failure of the Products due to causes not attributable to Tsubakimoto Chain

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