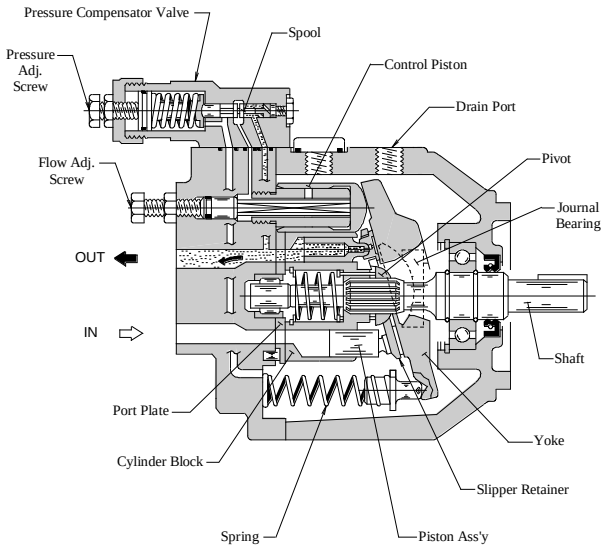
YUKEN

"AR" SERIES PISTON PUMPS
Variable Displacement-Single Pumps
Pressure Compensator Type,AR16 / AR22-FR01

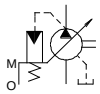
PISTON PUMPS

A

Up to 16 MPa (2320 PSI), 22.2 cm^3/rev (1.35 CU.IN./rev)



Graphic Symbol



Features

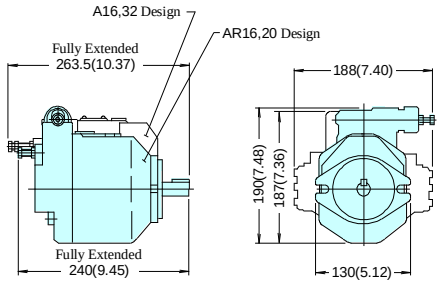
● Smaller in Size and Lighter in Mass

As indicated in the dimensional comparison presented below, the AR16 is smaller than the A16 (32 design). Also, the mass of AR16 is substantially lighter than the A16.

● Low Noise

The noise level of AR16 has been reduced by 1-2 dB (A) at full flow and full cut-off compared with that of the excellent A16 quiet pump.

[Comparison of "AR16" with "A16"]



DIMENSIONS IN MILLIMETRES (INCHES)

Model	Approx. Mass (Flange Mtg.)	Ratio of Mass (AR16/A16)
AR16	9.8 kg (21.6 lbs.)	60 %
A16	16.5 kg (36.4 lbs.)	

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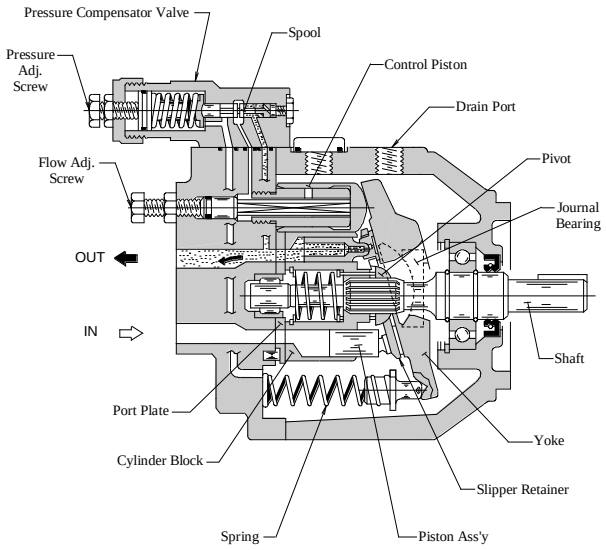
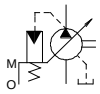


Graphic Symbol



Features

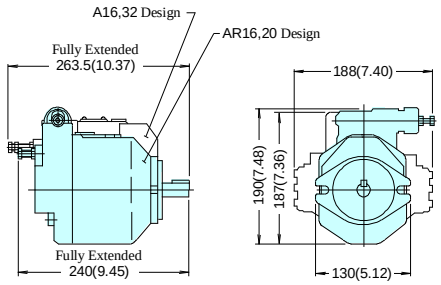
● Smaller in Size and Lighter in Mass

As indicated in the dimensional comparison presented below, the AR16 is smaller than the A16 (32 design). Also, the mass of AR16 is substantially lighter than the A16.

● Low Noise

The noise level of AR16 has been reduced by 1-2 dB (A) at full flow and full cut-off compared with that of the excellent A16 quiet pump.

[Comparison of "AR16" with "A16"]



DIMENSIONS IN MILLIMETRES (INCHES)

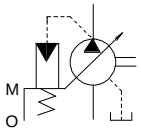
Model	Approx. Mass (Flange Mtg.)	Ratio of Mass (AR16/A16)
AR16	9.8 kg (21.6 lbs.)	60 %
A16	16.5 kg (36.4 lbs.)	

"AR" Series Piston Pumps
AR16 / AR22-FR01

Specifications / Model Number Designation / Pipe FlangeKits

PISTON PUMPS

Graphic Symbol



Specifications

Model Numbers	Geometric Displacement cm^3/rev (cu.in./rev)	Operating Pres. MPa (PSI)		Shaft Speed Range r/min.		Approx. Mass kg (lbs.)
		Rated	Intermittent ★1	Max.	Min.	
AR16-FR01∗-20/2080/2090	15.8 (.964)	16 (2320)		1800	600	9.8 (21.6)
AR22-FR01∗-20/2080/2090	22.2 (1.355)			1800	600	

★1. When setting the pressure, make sure the full cut-off pressure never exceeds the maximum intermittent pressure.

Model Number Designation

AR16	-F	R	01	B	-20	∗
Series Number	Mounting	Direction of Rotation	Control Type	Pres. Adj. Range MPa (PSI)	Design Number	Design Std.
AR16 (15.8 cm^3/rev)	**F:** Flange Mtg.	(Viewed from Shaft End) **R:** ★1 Clockwise (Normal)	**01:** Pressure Compensator Type	**B:** 1.2 - 7 {170 - 1020} **C:** 2.0 - 16 {290 - 2330}	**20**	Refer to ★2
AR22 (22.2 cm^3/rev)					**20**	

★1. Available to supply pump with anti-clockwise rotation. Consult Yuken for details.

★2. Design Standards:
None..... Japanese Standard "JIS"
80..... European Design Standard
90..... N. American Design Standard

Pipe Flange Kits

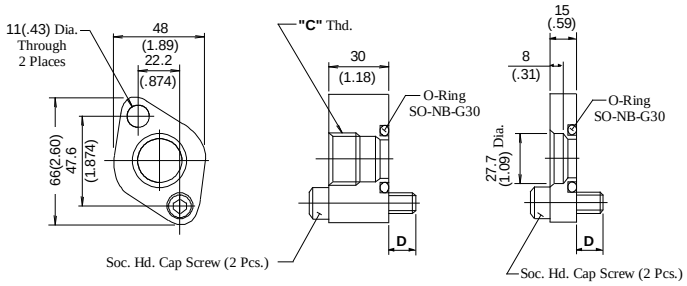
Pipe flange kits are available.
When ordering, specify the kit number from the table below.

Pump Model Numbers	Name of Port	Pipe Flange Kit Numbers				
		Threaded Connection			Socket Welding	
		Japanese Standard "JIS"	European Design Standard	N. American Design Standard	Japanese Standard "JIS" European Design Standard	N. American Design Standard
AR16-FR01	Suction	F5-06-A-1021	F5-06-A-10801	F5-06-A-10901	F5-06-B-1021	F5-06-B-10901
AR22-FR01	Discharge ★	————	————	————	————	————

★ Discharge port is available only for the threaded connections.

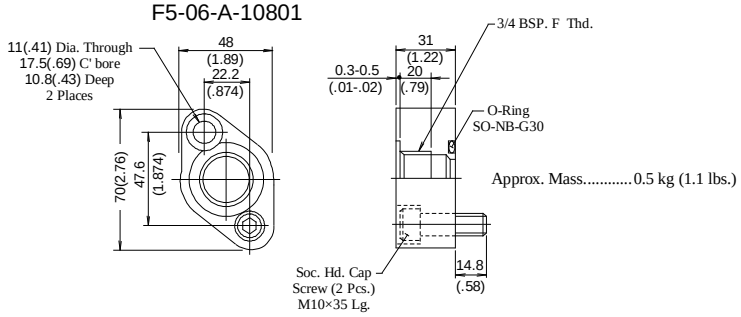
Pipe Flange Kit for Suction Port

F5-06-A-1021/10901 F5-06-B-1021/10901



Kit Numbers	"C" Thd.	D mm (IN.)	Soc. Hd. Cap Screw	Approx. Mass kg (lbs.)
F5-06-A-1021	Rc 3/4	15 (.59)	M10 × 45 Lg.	0.5 (1.1)
F5-06-A-10901	3/4 NPT	14.45 (.57)	3/8-16UNC × 1-3/4 Lg.	
F5-06-B-1021	——	15 (.59)	M10 × 30 Lg.	0.3 (.66)
F5-06-B-10901	——	16.75 (.66)	3/8-16UNC × 1-1/4 Lg.	

F5-06-A-10801



DIMENSIONS IN MILLIMETRES (INCHES)

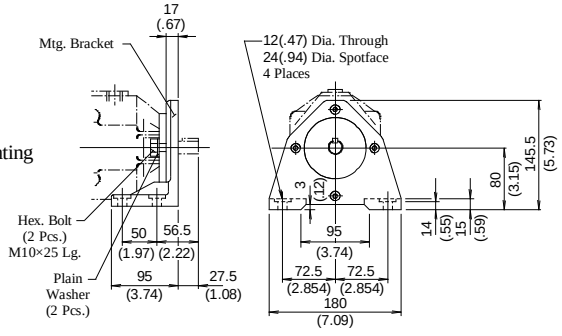
Mounting Bracket Kits

Mounting bracket available on separate order.

Pump Model Numbers	Mtg. Bracket Kit Numbers	Approx. Mass kg (lbs.)
AR16/AR22-FR01	LP-1A-10	2.2 (4.9)

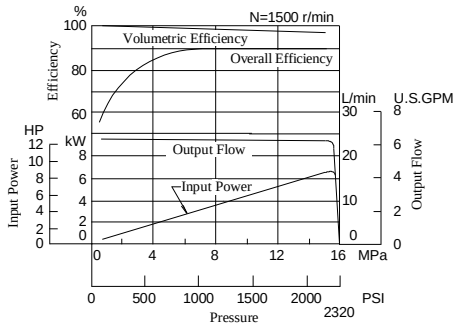
Note: The mounting bracket kit consists of a mounting bracket, 2 hex. bolts and 2 plain washers.

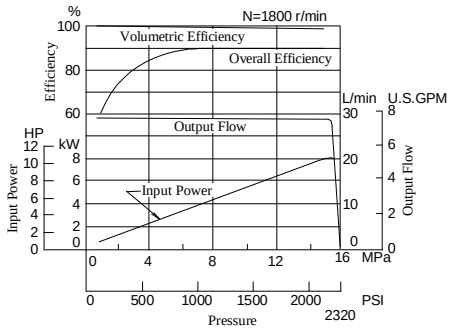
Mtg. Bracket Kit: LP-1A-10



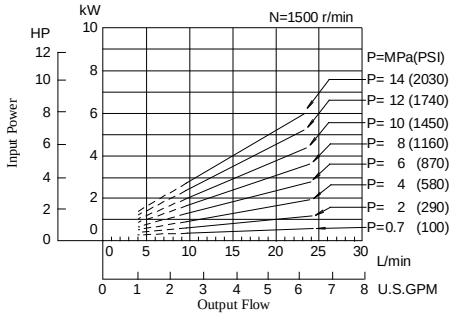
Type "AR 16" Viscosity 20 mm^2/s (100 SSU) [ISO VG32 Oils,50°C (122°F)]

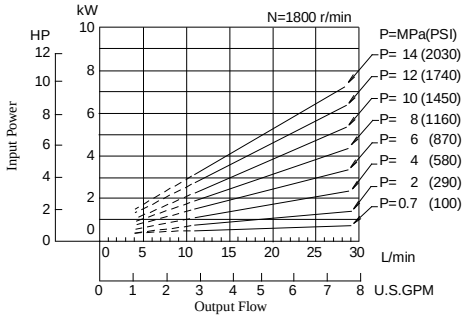
Performance Characteristic Curve



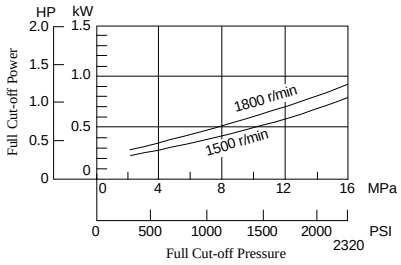


Input Power

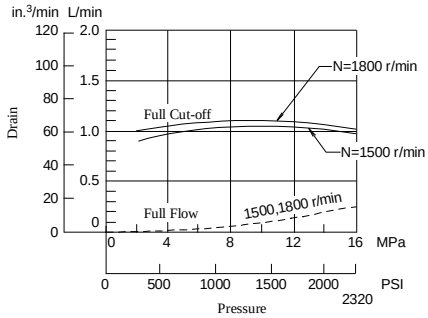




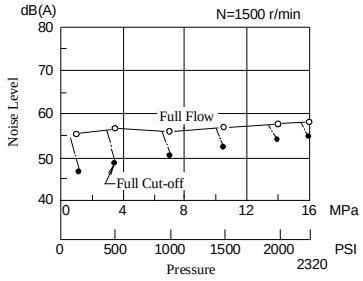
Full Cut-off Power

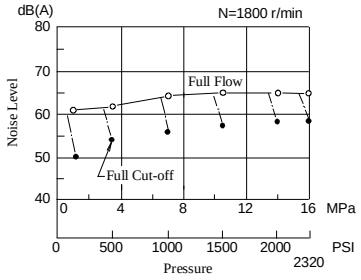


Drain



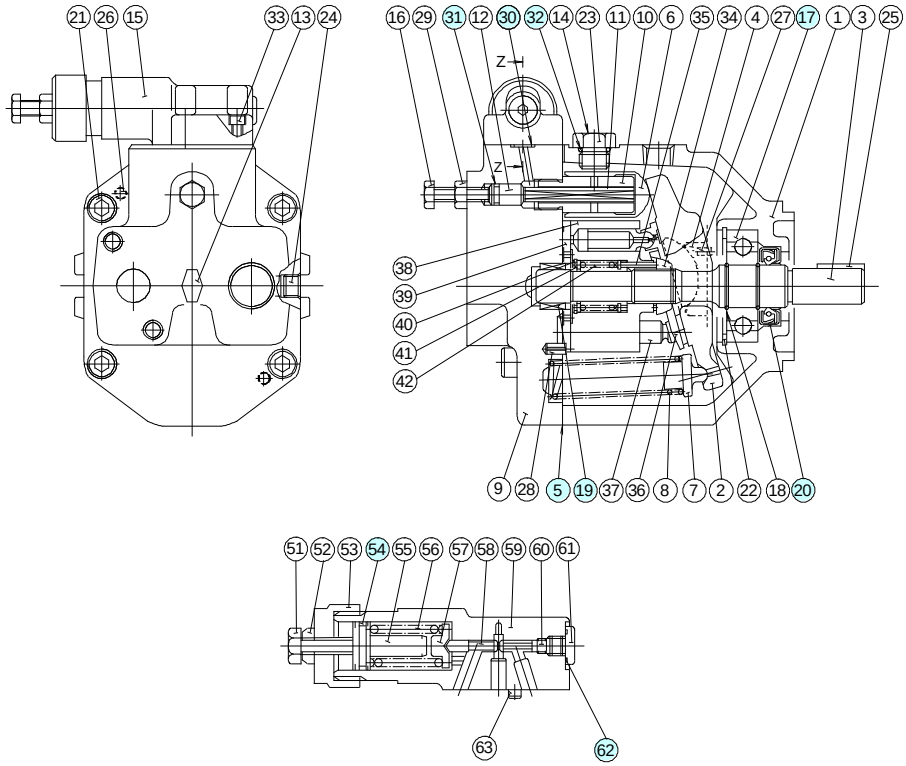
Noise Level [One metre (3.3 ft.) horizontally away from pump head cover]





AR16-FR01∗-20/2080/2090
AR22-FR01∗-20/2080/2090

⚠ CAUTION
When making replacement of seals or bearing, please do it carefully after reading through the relevant instructions in the Operator's Manual.



Section Z-Z

Item	Name of Parts	Part Numbers		Qty.
		AR16-FR01	AR22-FR01	
5*	Gasket	1302-PK312891-5		1
17	Bearing	6305		1
19	Bearing	HMK 1715 V2	Z30-1303-PK410300-8	1
20*	Oil Seal	TCN 254511		1
30*	O-Ring	SO-NB-P9		3
31*	O-Ring	SO-NA-P8		1
32*	O-Ring	SO-NB-P14		1
54*	O-Ring	SO-NA-A018		1
62*	O-Ring	SO-NB-P10		1

★When ordering seals, please specify the seal kit number from the table below.

Pump Model Numbers	Seal Kit Number
AR16-FR01∗-20/2080/2090	KS-AR16-01-20
AR22-FR01∗-20/2080/2090	

"AR" Series Piston Pumps
AR16 / AR22 - FR01

Interchangeability in Installation between "A" Series and "AR" Series

PISTON PUMPS

Specifications

Description \ Model		A16-∗-R-01-∗-K-32∗	AR16-FR01∗-20∗	A22-∗-R-01-∗-K-32∗	AR22-FR01∗-20∗
Geometric Displacement		15.8 cm^3/rev (.964 cu.in./rev)		22.2 cm^3/rev (1.355 cu.in./rev)	
Operating Pres.	Rated	16 MPa (2320 PSI)		16 MPa (2320 PSI)	
	Intermittent	21 MPa (3050 PSI)	16 MPa (2320 PSI)	16 MPa (2320 PSI)	
Shaft Speed Range		600 -1800 r/min		600 -1800 r/min	
Approx. Mass (Flange Mtg.)		16.5 kg (36.4 lbs.)	9.8 kg (21.6 lbs.)	16.5 kg (36.4 lbs.)	9.8 kg (21.6 lbs.)

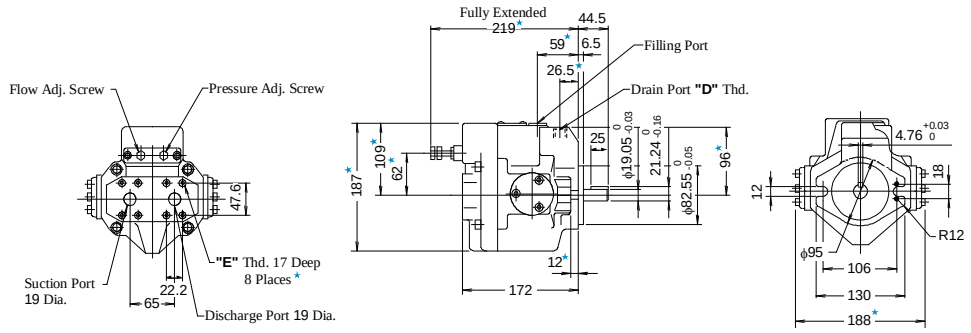
Interchangeability in Installation

Model Numbers		Interchangeability in Installation			
"A" Series	"AR" Series	Mtg. Flange & Shaft End	Piping		
			Suction Port	Discharge Port	Drain Port
A16-∗-R-01-∗-K-32∗	AR16-FR01∗-20∗	Yes	Yes	No	No
A22-∗-R-01-∗-K-32∗	AR22-FR01∗-20∗				

● Comparison of dimensions between "A" series and "AR" series are shown below.

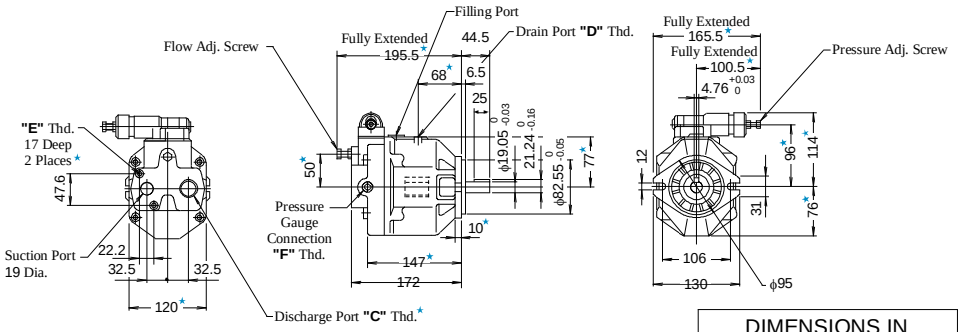
A16/A22-F-R-01-∗-K

Note: Dimensions with star mark ★are identical to each other.



Model Numbers	"C" Thd.	"D" Thd.	"E" Thd.	"F" Thd.
A16/A22-F-R-01-∗-K-32	—	Rc 3/8	M10	—
A16/A22-F-R-01-∗-K-3280	—	3/8 BSP.F		—
A16/A22-F-R-01-∗-K-3290	—	3/8 NPT	3/8-16 UNC	—
AR16/22-FR01∗-20	Rc 3/4	Rc 3/8	M10	Rc 1/4
AR16/22-FR01∗-2080	3/4 BSP.F	3/8 BSP.F		1/4 BSP.Tr
AR16/22-FR01∗-2090	3/4 NPT	3/8 NPT	3/8-16 UNC	1/4 NPT

AR16/AR22-FR01



DIMENSIONS IN MILLIMETRES