

TECHNICAL DATA

General technical data

Linear Unit	Carriage length Lv [mm]	 Dynamic load capacity C [N]	 Dynamic moment			Max. permissible loads					Moved mass [kg]	* Max. length Lmax [mm]	* Max. stroke [mm]
			Mx [Nm]	My [Nm]	Mz [Nm]	Forces		Moments					
						Fpy [N]	Fpz [N]	Mpx [Nm]	Mpy [Nm]	Mpz [Nm]			
CTV 110 S	39	19800	650	118	235	4670	9390	310	90	90	0,63	1500	1410
CTV 110 L	124	39600	1305	1680	1680	13080	18800	620	800	550	1,36		1325

* For lengths / stroke over the stated value in the table above please contact us.

Values for max. stroke are not valid for double carriage.

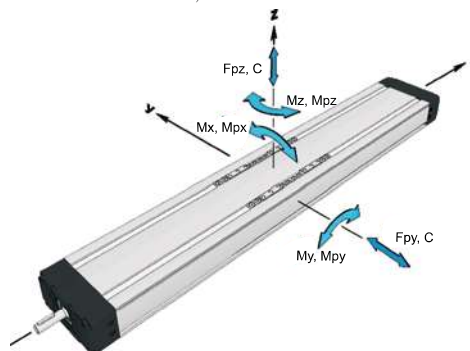
(equation of defining the linear unit length for particular size of the linear unit needs to be used).

i Recommended values of loads:

All the data of dynamic moments and load capacities stated in the upper table are theoretical without considering any safety factor. The safety factor depends on the application and its requested safety. We recommend a minimum safety factor ($f_s = 5,0$)

Modulus of elasticity

$$E = 70000 \text{ N / mm}^2$$



Operating conditions

Operating temp.	0°C ~ +60°C
Duty cycle	100%

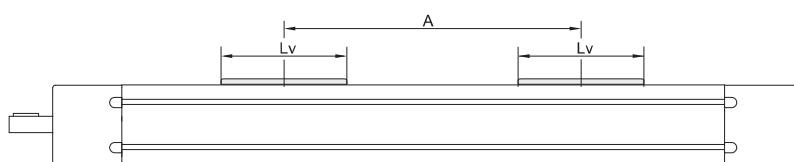
For operating temperature out of the presented range, please contact us.

General technical data for double carriage

Linear Unit	Carriage version	Dynamic load capacity C [N]	Dynamic moment			Max. permissible loads				
			Mx [Nm]	My [Nm]	Mz [Nm]	Forces		Moments		
						Fpy [N]	Fpz [N]	Mpx [Nm]	Mpy [Nm]	Mpz [Nm]
CTV 110	S2	39600	1300	19,8 * A [mm]	19,8 * A [mm]	12940	18790	620	9,4 * A [mm]	6,5 * A [mm]

* A - Distance between carriages. More info on following pages.

i Presented values are for informational purposes only. Exact values can be calculated using our sizing selection tool on Unimotion web site.
For grater number of carriages please contact us.



Ball Screw Drive data

Linear Unit	Ball screw [d × l]	Max. rotational speed [rev / min]	1 Max. travel speed [m / s]	2 No load torque		Lead constant [mm / rev]	3 Max. repeatability precision [mm]		Dynamic load capacity BS Ca [N]	Max. Axial load Fx [N]	Max. drive torque Ma [Nm]	4 Min. stroke [mm]	1 Max. acceleration [m/s²]
				Carriage: S [Nm]	Carriage: L [Nm]		STANDARD ISO7	ISO5					
CTV 110	16 × 5	4200	0,35	0,11	0,13	5	± 0,02	± 0,01	13150	8700	5,5 with Keyway 7,7 without Keyway	40	20
	16 × 10		0,70	0,12	0,16	10	± 0,02	± 0,01	11550	6730	5,5 with Keyway 11,9 without Keyway		
	16 × 16		1,12	0,14	0,18	16	± 0,02	± 0,01	8170	4200			

1 Max. travel speed depends of the length of the linear unit, see diagram for particular size of the linear unit.
For travel speed and acceleration over the stated value in the table above or diagrams please contact us.

2 The stated values are for strokes up to 500mm.
No Load Torque value increases with stroke elongation

3 For the ball nut with the preload of 2% please contact us

4 For minimum stroke below the stated value in the table above please contact us.

TECHNICAL DATA
Mass moment inertia of Linear unit

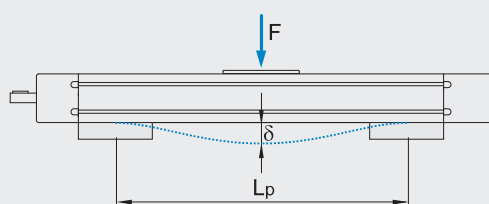
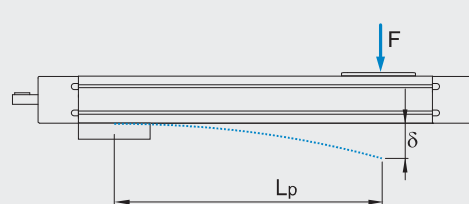
Linear unit	Carriage version	Ball screw [d × l]	Mass moment of inertia [10 ⁻⁵ kg · m ²]	Planar moment of inertia I _y [cm ⁴] I _z [cm ⁴]	
CTV 110	S	16 × 5	0,70 + 0,005 * Stroke [mm]	29,1	196,0
		16 × 10	0,82 + 0,005 * Stroke [mm]		
		16 × 16	1,07 + 0,005 * Stroke [mm]		
	L	16 × 5	1,19 + 0,005 * Stroke [mm]		
		16 × 10	1,45 + 0,005 * Stroke [mm]		
		16 × 16	1,99 + 0,005 * Stroke [mm]		

Mass of Linear unit

Linear unit	Carriage Length L _v [mm]	Mass of Linear unit [kg]
CTV 110 S	39	3,3 + 0,008 * Stroke [mm]
CTV 110 L	124	4,6 + 0,008 * Stroke [mm]



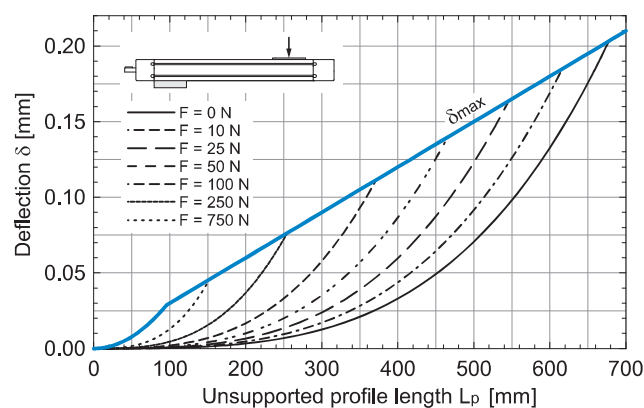
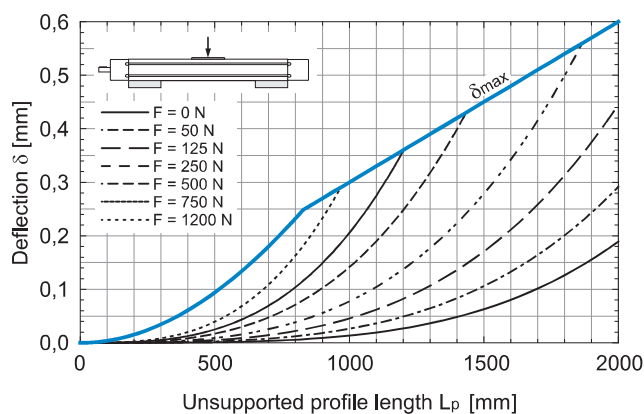
Mass calculation doesn't include mass of motor, reduction gear, switches and clamps.

Deflection of the linear unit
Fixed - fixed mounting

Fixed - free mounting


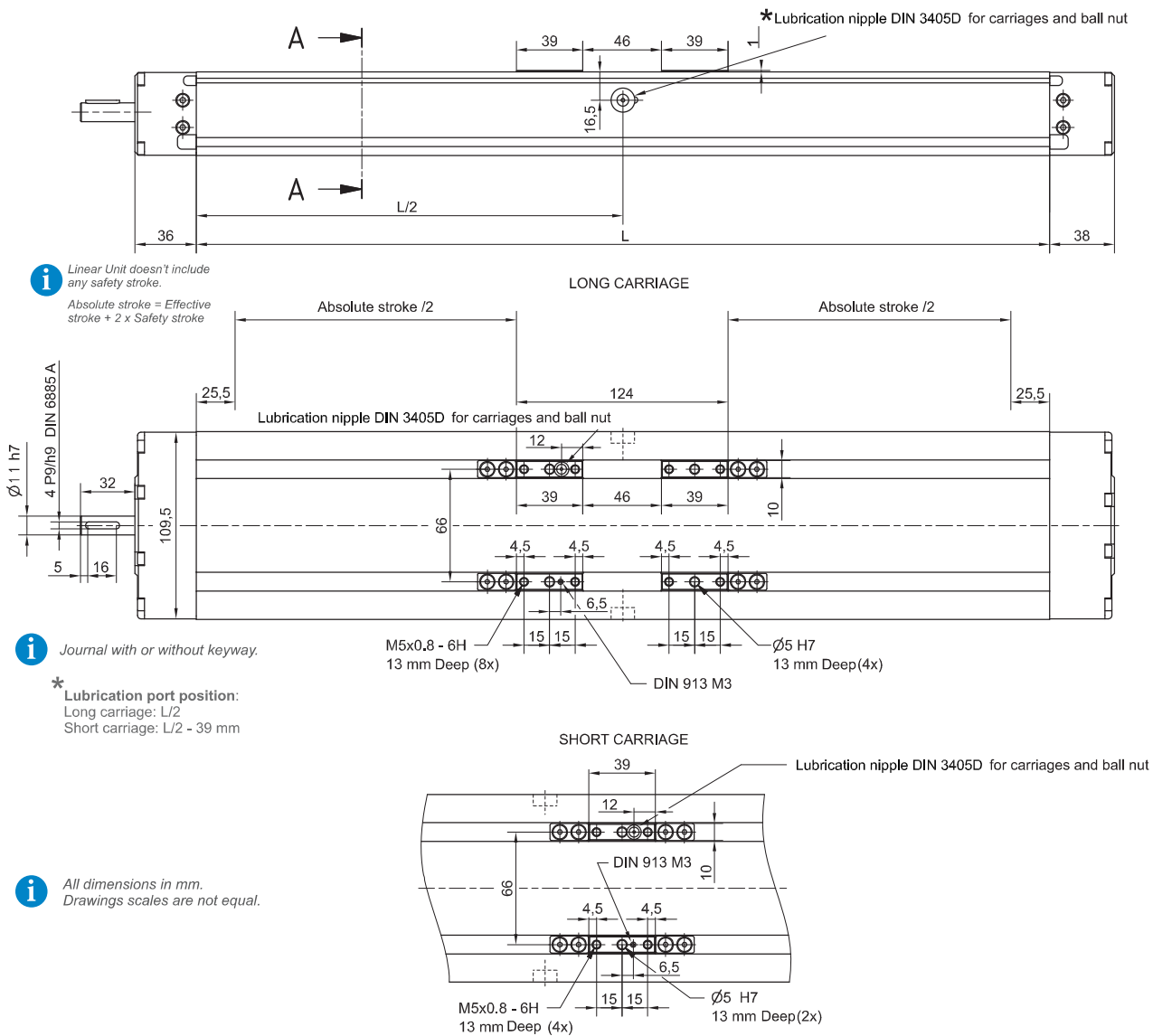
δ Maximum deflection of the linear unit [mm]
 δ_{max} Maximum permissible deflection of the linear unit [mm]
 F Applied force [N]
 L_p Unsupported profile length [mm]



The maximum permissible deflection δ_{max} must not be exceeded. In the case that maximum deflection δ exceeds the maximum permissible deflection δ_{max} additional profile supports are needed.

CTV 110


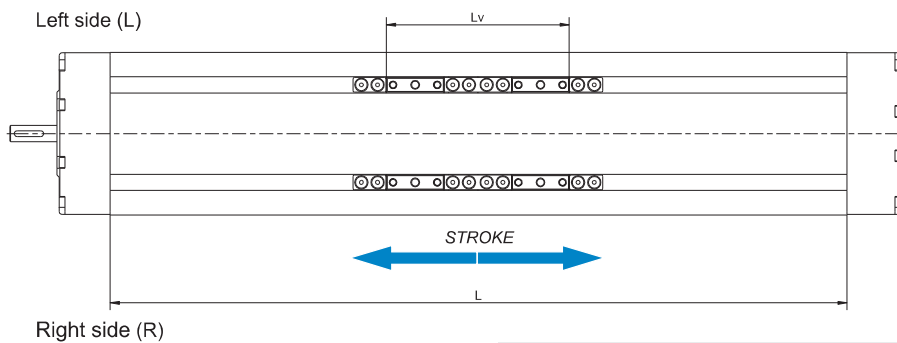
DIMENSIONS



Defining of the linear unit length

$$L = \text{Effective stroke} + 2 \times \text{Safety stroke} + L_v + 51 \text{ mm}$$

$$L_{\text{total}} = L + 74 \text{ mm}$$

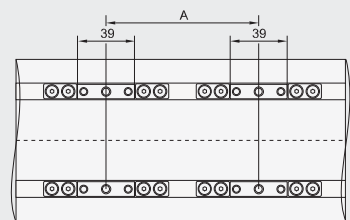


Lv - Long carriage = 124 mm
Lv - Short carriage = 39 mm

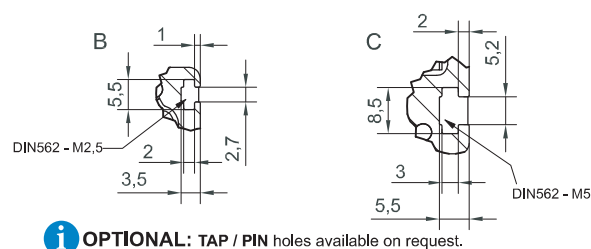
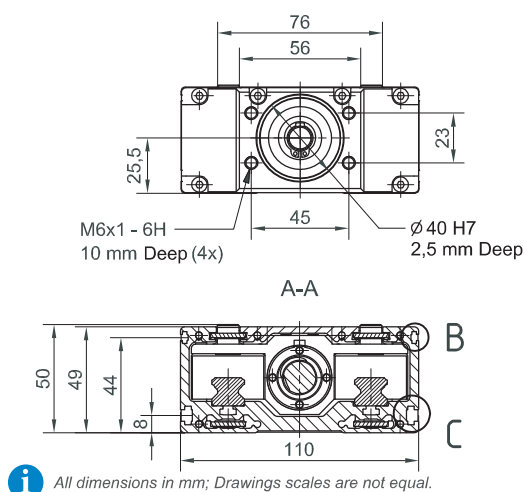
$$\left. \begin{aligned} L &= \text{Effective stroke} + 2 \times \text{Safety stroke} + A + 90 \text{ mm} \\ L_{\text{total}} &= L + 74 \text{ mm} \end{aligned} \right\} A \geq 85 \text{ mm} \quad \text{!}$$

Double-Carriage

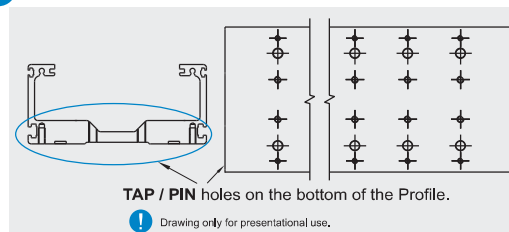
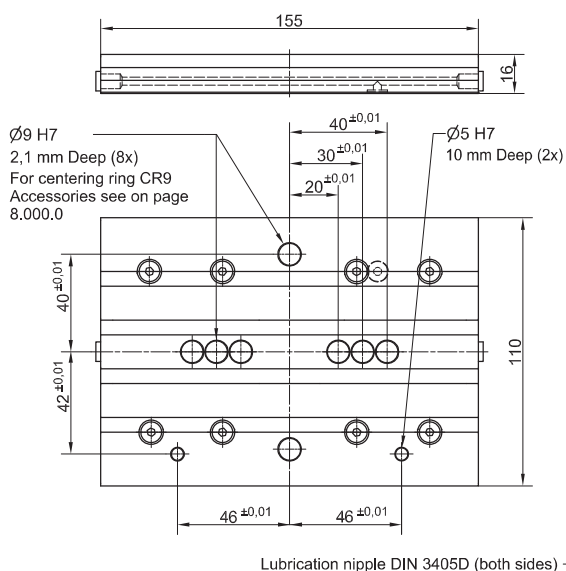
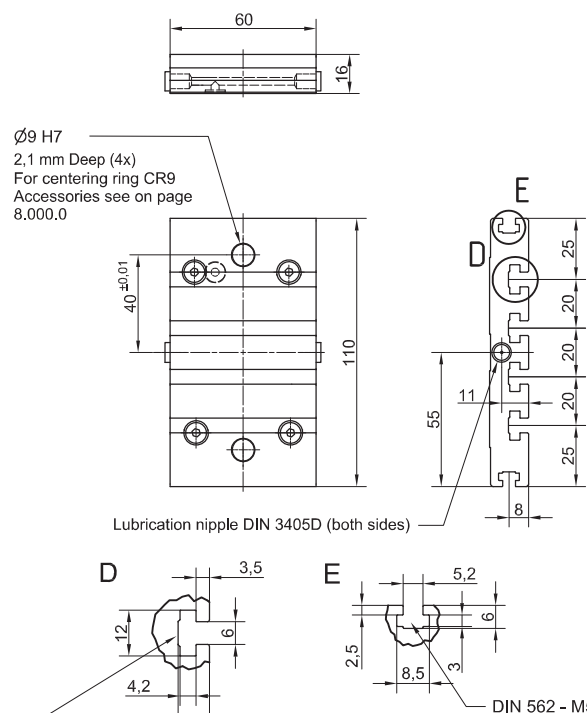
 Only with **short** carriage version.



 For ordering code please contact us.

DIMENSIONS


i OPTIONAL: TAP / PIN holes available on request.


CONNECTION PLATE
CTV 110 L

CTV 110 S


Linear Unit	Plate length [mm]	Weight [kg]	Code
CTV 110 S	60	0,37	48348
CTV 110 L	155	0,74	48349

i Mounting elements for mounting the connection plate on the Linear unit are included.

Mounting the drive

- by the **MOTOR SIDE DRIVE - MSD** (Page 7.095.0)
- by the **MOTOR ADAPTER WITH COUPLING** (Page 8.020.0)

i Available on request.

Maximum travel speed as a function of the profile length (V_{max} - L curves)
