

CHARACTERISTICS

The LMBD-Z series contains Z-axis Linear Units with toothed belt drive, integrated Ball rail system and compact dimensions. This Linear Units provide high performance features such as, high speed, good accuracy and repeatability by vertical applications.

They can easily be combined to multi-axis systems.

Excellent price-/performance ratio and quick delivery time are ensured.

The compact, precision-extruded aluminum Profile from 6063 AL with integrated Zero-backlash Ball rail guide system, allows high load capacities and optimal cycles for the movement of larger masses at high speed.

In the linear units LMBD-Z is used a pre-tensioned steel reinforced AT polyurethane timing toothed belt. In conjunction with a Zero-backlash drive pulley high moments with alternating loads with good positioning accuracy, low wear and low noise can be realized.

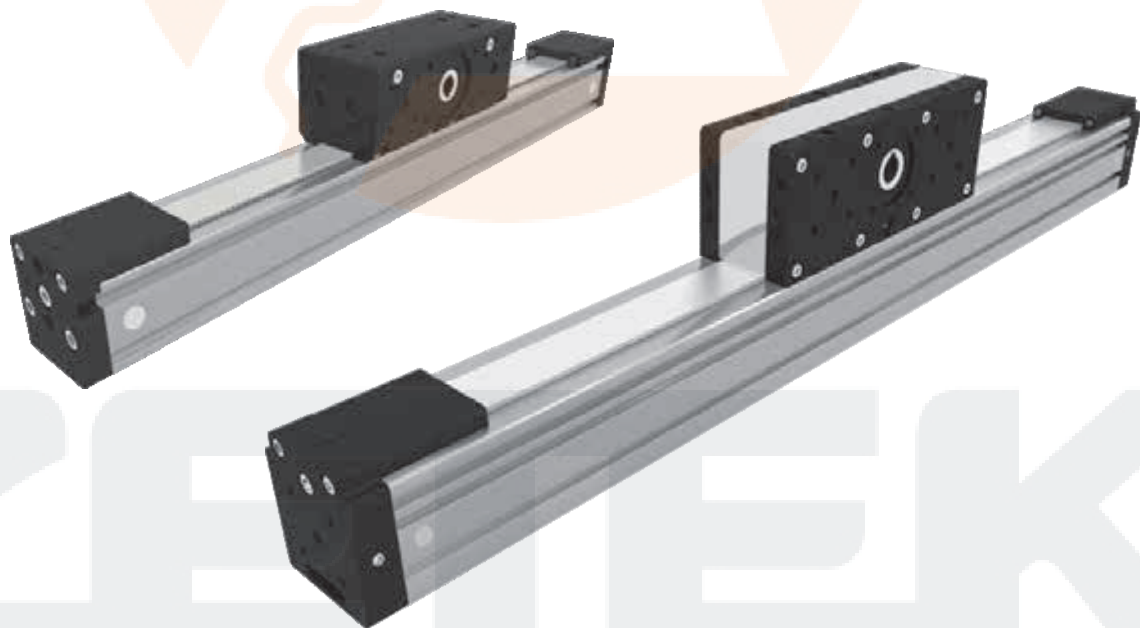
The in the Profile slot driving Polyurethane timing belt protects all the parts in the Profile from dust and other contaminations

The aluminum Profile includes T-slots for attaching sensors and switches. Also, a Reed switch can be used here.

The drive block provides the possibility to attach a Motor or Gearbox housing and additional accessories on it.

Central lubrication port on the drive block allows easy re-lubrication of the Ball rail guide.

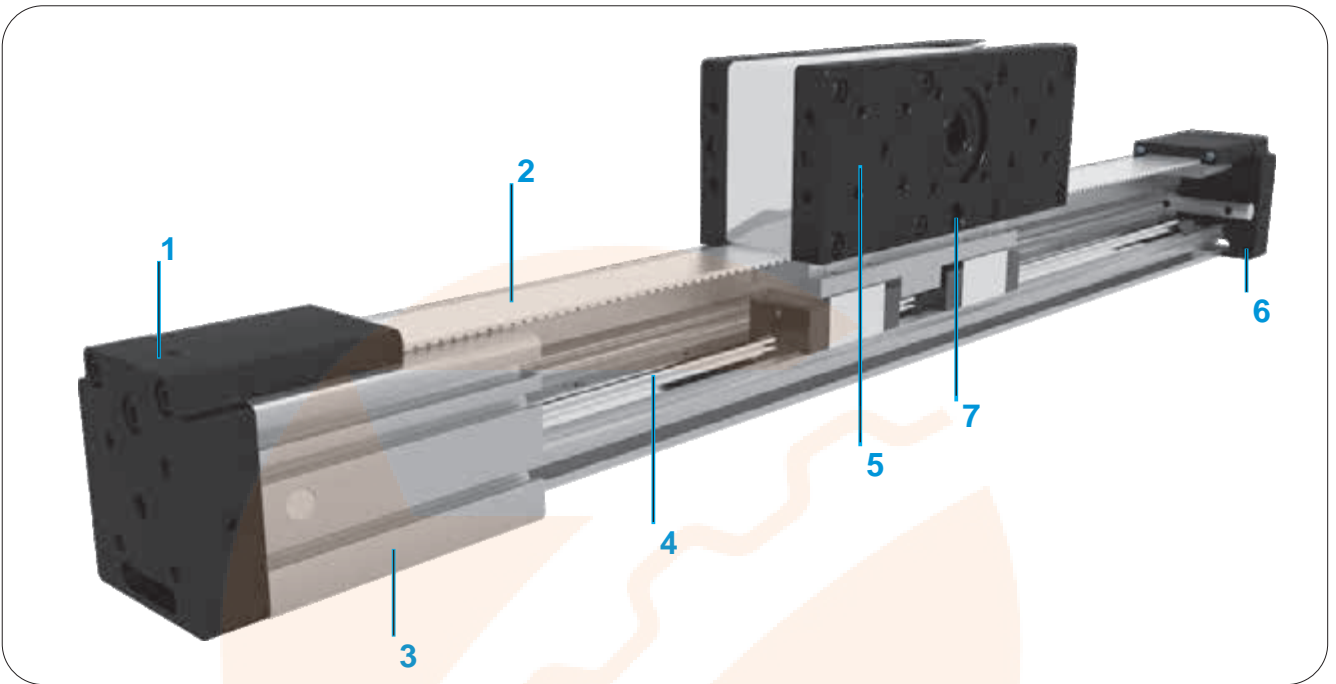
For the linear units LMBD-Z various adaptation options, for attaching (or redirecting), for Motors or Gearboxes are available.



The aluminium profiles are manufactured according to the medium EN 12020-2 standard

Straightness = 0,35 mm/m; Max. torsion = 0,35 mm/m; Angular torsion = 0,2 mm/40 mm; Parallelism = 0,2 mm

STRUCTURAL DESIGN



- 1 - Tension End with integrated belt tensionin system
- 2 - AT polyurethane toothed belt with steel tension cords.
- 3 - Aluminium profile-Hard anodized
- 4 - Linear Ball Guideway
- 5 - Drive block with pulley, Motor flange; with built in Magnets
- 6 - Tension End with integrated belt tensionin system
- 7 - Central lubrication port

HOW TO ORDER

LMBD-Z - 65 - 1000 - 1

Series :

LMBD-Z

Size :

40

65

80

Absolute Stroke (mm):

Type of drive pulley :

0 : Pulley with through hole

1 : Pulley with journal

10 : Pulley with journal (without Keyway)

2 : Pulley with journal on both sides

20 : Pulley with journal on both sides (without Keyway)

TECHNICAL DATA

General technical data for LMBD-Z series

Linear Unit	Drive block length Lv [mm]	Load capacity		Dynamic moment			Mass of drive block [kg]	Maximum Repeatability [mm]	* Maximum length Lmax [mm]	Planar moment of inertia	
		Dynamic C [N]	Static C0 [N]	Mx [Nm]	My [Nm]	Mz [Nm]				Iy [cm ⁴]	Iz [cm ⁴]
LMBD-Z 40	120	4616	6930	28,6	120	120	0,95	± 0,08	1000	9,8	11,6
LMBD-Z 65	200	13697	19508	136	712	712	3,2	± 0,08	1200	59,8	73,8
LMBD-Z 80	250	29933	42362	402	2245	2245	4,9	± 0,08	1500	129,4	173,5

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

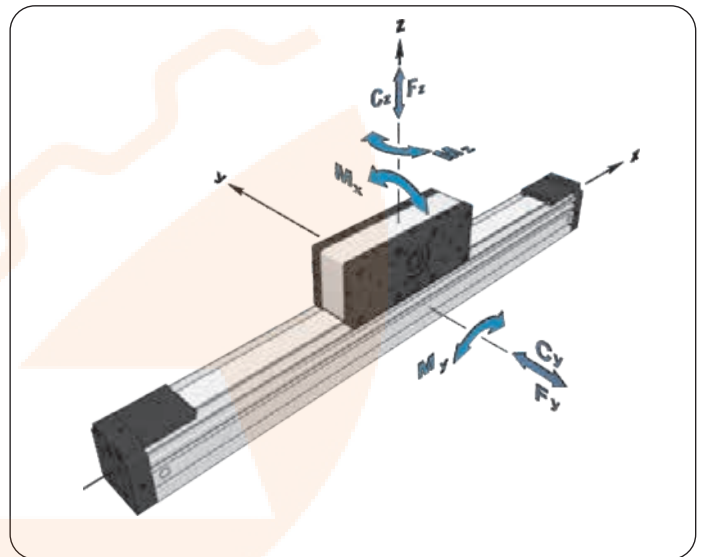


Recommended values of loads

All the data of static and 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 (fv =5.0)

Modulus of elasticity²

E = 70000 N / mm



Drive and belt data

Linear Unit	Maximum travel speed [m / s]	Maximum drive torque [Nm]	Puley drive ratio [mm / rev]	Pulley diameter [mm]	Belt type	Belt width [mm]	Max. force transmitted by belt [N]	Limit of belt elasticity [N]	Specific spring constant Cspec [N]·
LMBD-Z 40	6	3,6	99	31,51	AT3	20	230	900	225000
LMBD-Z 65	6	13,1	165	52,52	AT5	32	500	2400	600000
LMBD-Z 80	6	29,4	210	66,84	AT5	50	880	3840	960000

Mass and mass moment of inertia

Linear Unit	Mass of linear unit [kg]	Mass moment of inertia of drive block [10 ⁻⁴ kg·m ²]
LMBD-Z 40	1,65 + 0,0023 * Stroke [mm]	2,2 + 0,0058 * Stroke [mm]
LMBD-Z 65	5,3 + 0,0054 * Stroke [mm]	19,1 + 0,0374 * Stroke [mm]
LMBD-Z 80	9,1 + 0,0083 * Stroke [mm]	63,2 + 0,0922 * Stroke [mm]

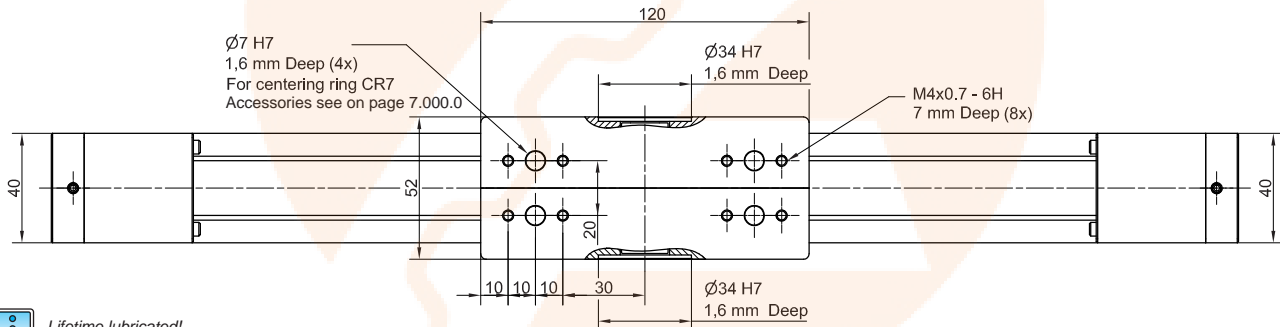
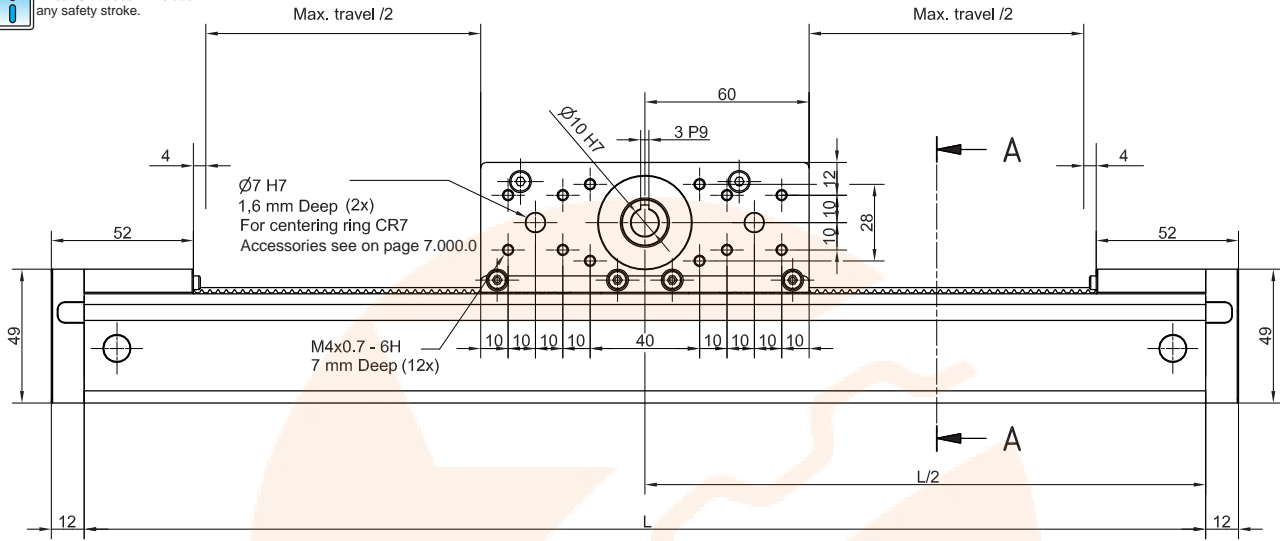


Mass calculation doesn't include mass of motor, reduction gear, switches and clamps.

DIMENSIONS



Linear Unit doesn't include any safety stroke.

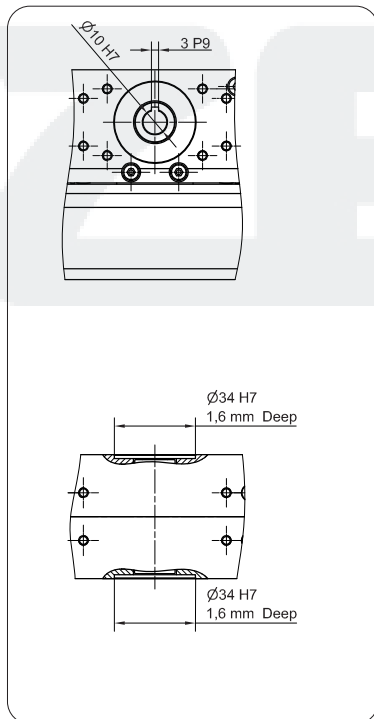


Lifetime lubricated!

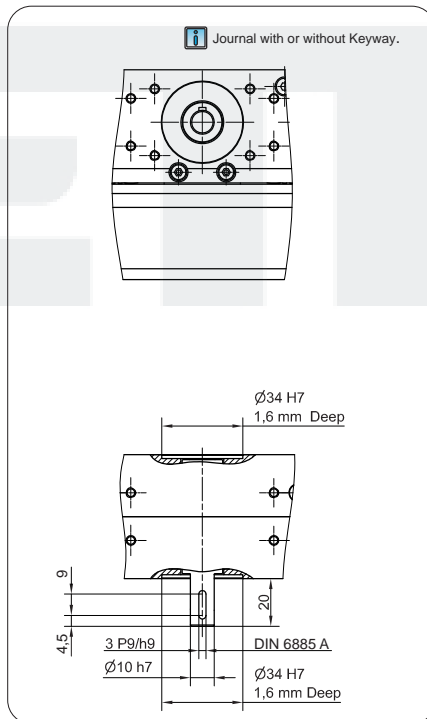


All dimensions in mm; Drawings scales are not equal.

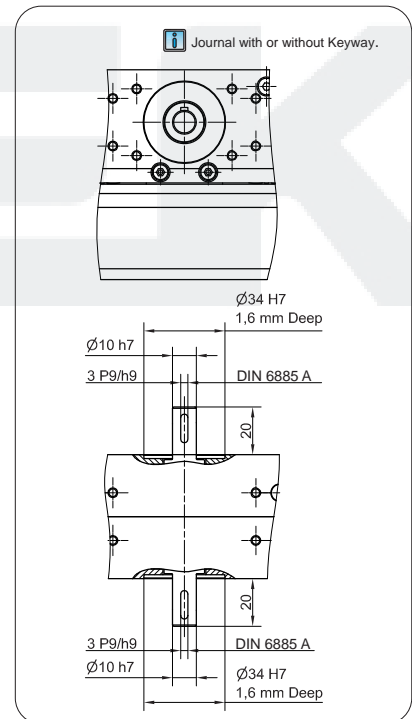
TYPE 0



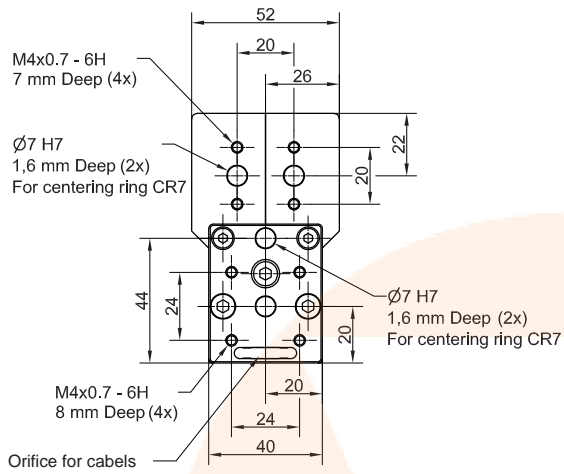
TYPE 1



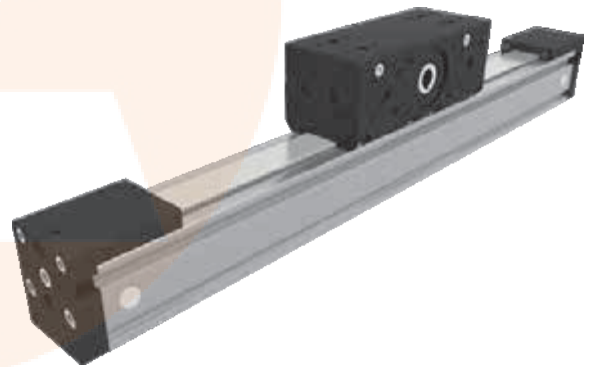
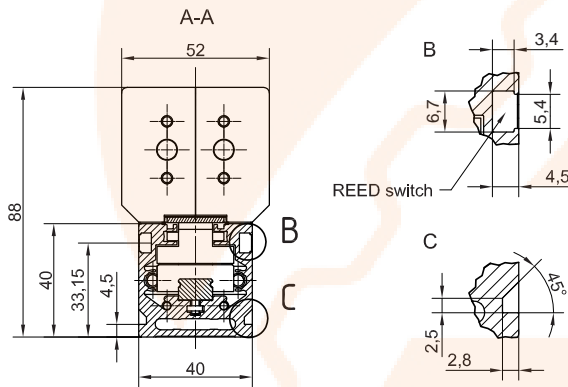
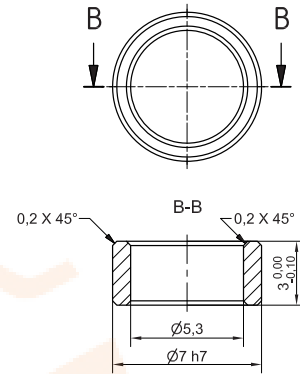
TYPE 2



DIMENSIONS



CENTERING RING CR7
Material: 1.4305 (AISI303)

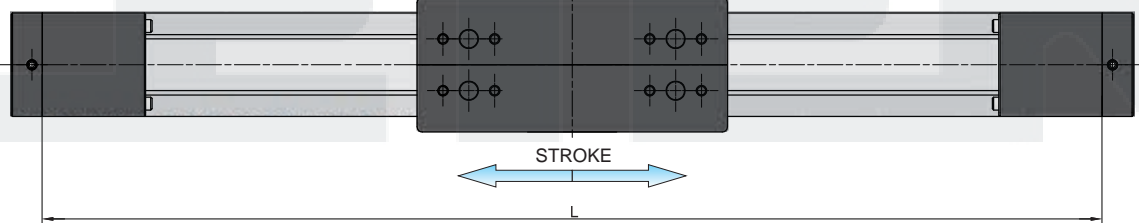


All dimensions in mm; Drawings scales are not equal.

Defining of the linear module length

$L = \text{Effective stroke} + 2 \times \text{Safety travel} + 208 \text{ mm}$

$L_{\text{total}} = L + 24 \text{ mm}$



MOTOR

LMBD-Z 40

Available on request

GEAR REDUCER + MOTOR

LMBD-Z 40

Available on request

GEAR REDUCER 90° + MOTOR

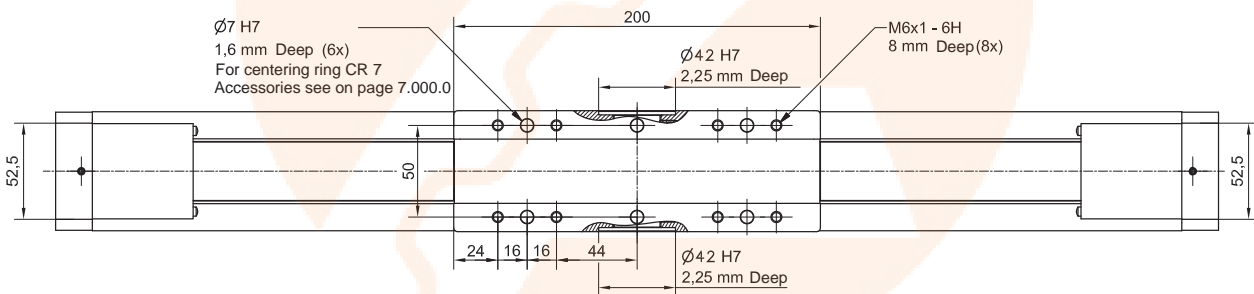
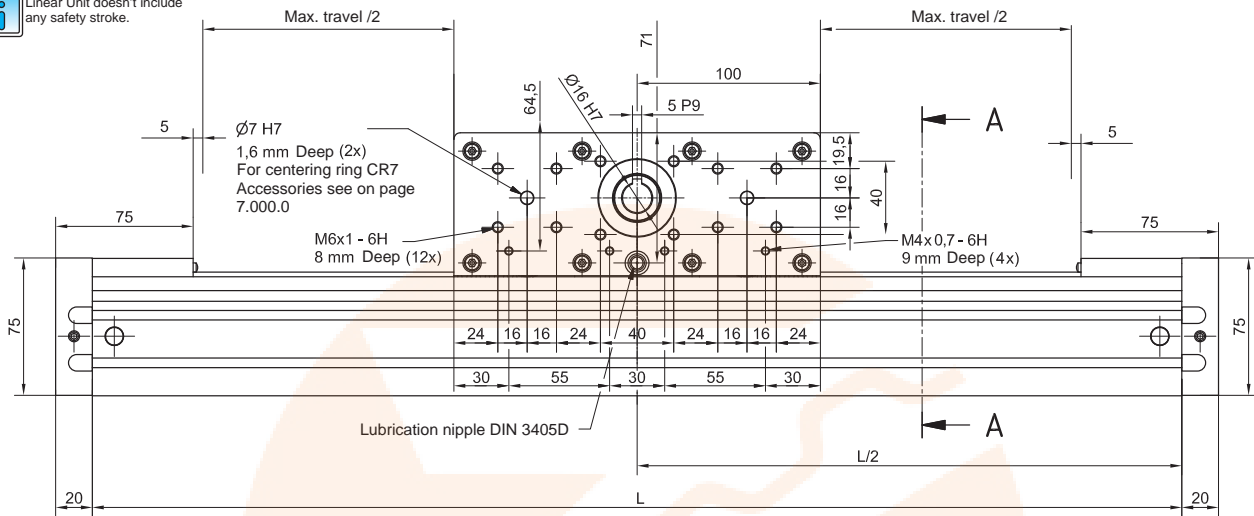
LMBD-Z 40

Available on request

DIMENSIONS

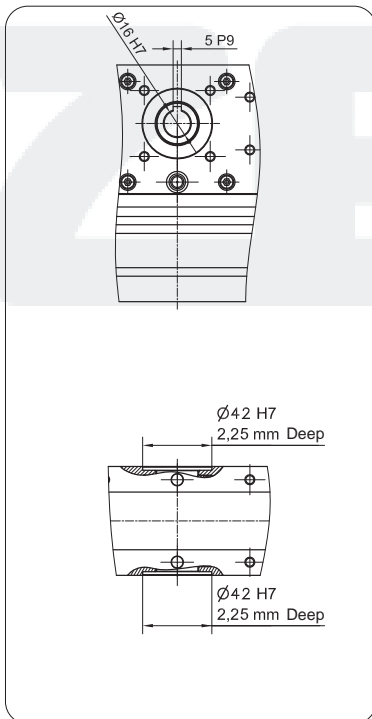


Linear Unit doesn't include any safety stroke.

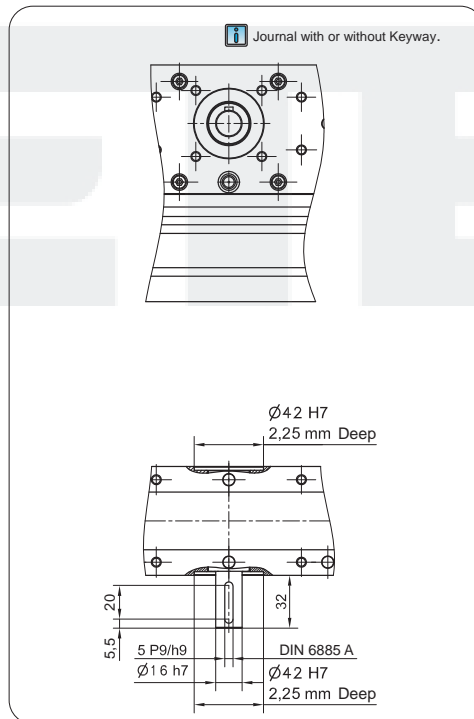


All dimensions in mm; Drawings scales are not equal.

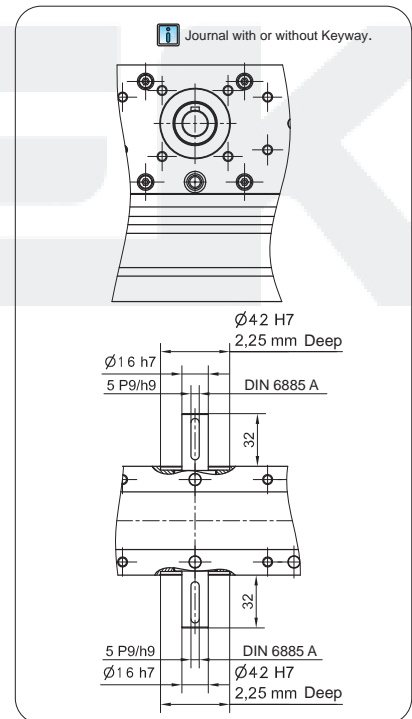
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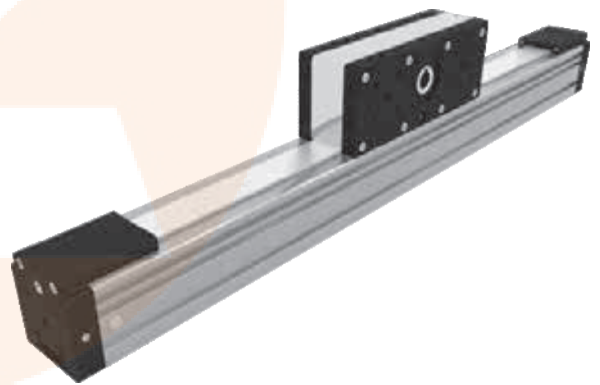
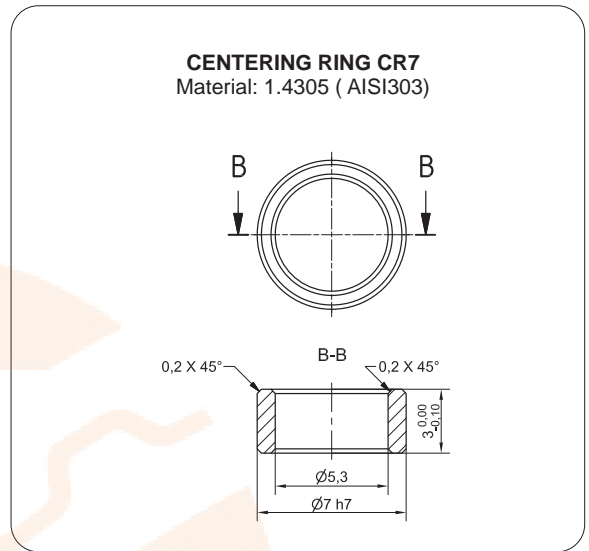
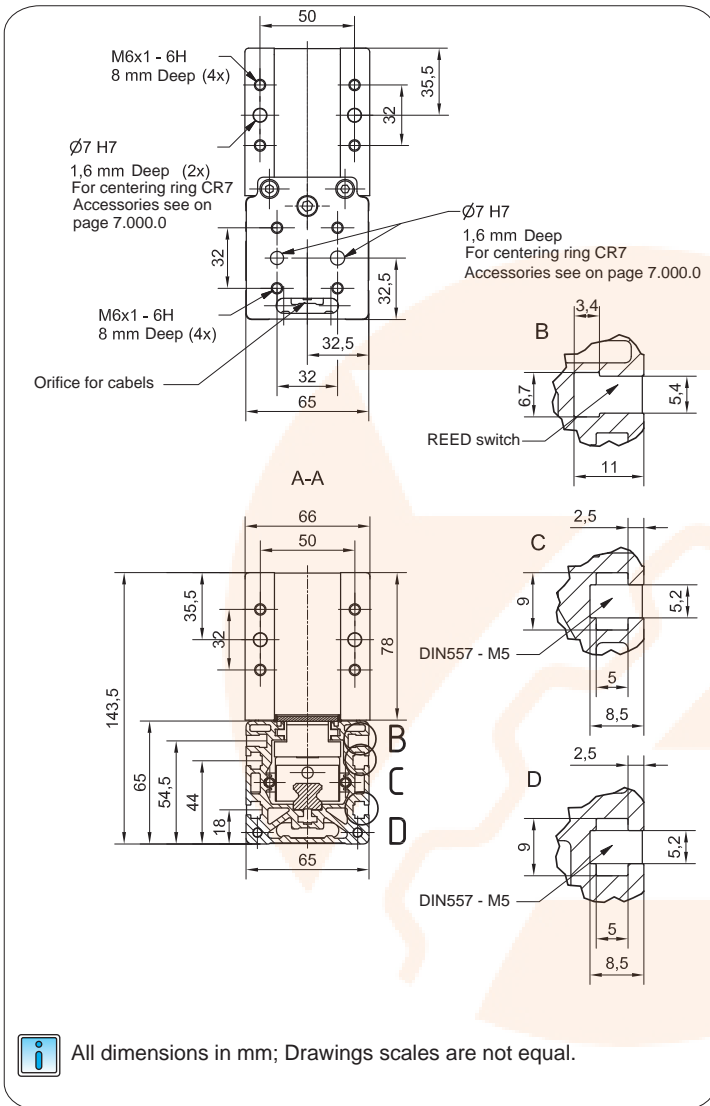
TYPE 1



TYPE 2



DIMENSIONS

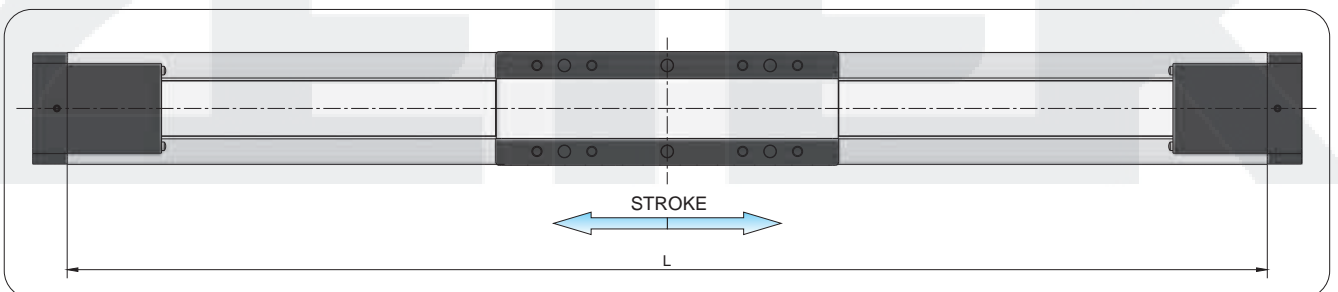


All dimensions in mm; Drawings scales are not equal.

Defining of the linear module length

$L = \text{Effective stroke} + 2 \times \text{Safety travel} + 320 \text{ mm}$

$L_{total} = L + 40 \text{ mm}$



MOTOR

LMBD-Z 65

Available on request

GEAR REDUCER + MOTOR

LMBD-Z 65

Available on request

GEAR REDUCER 90° + MOTOR

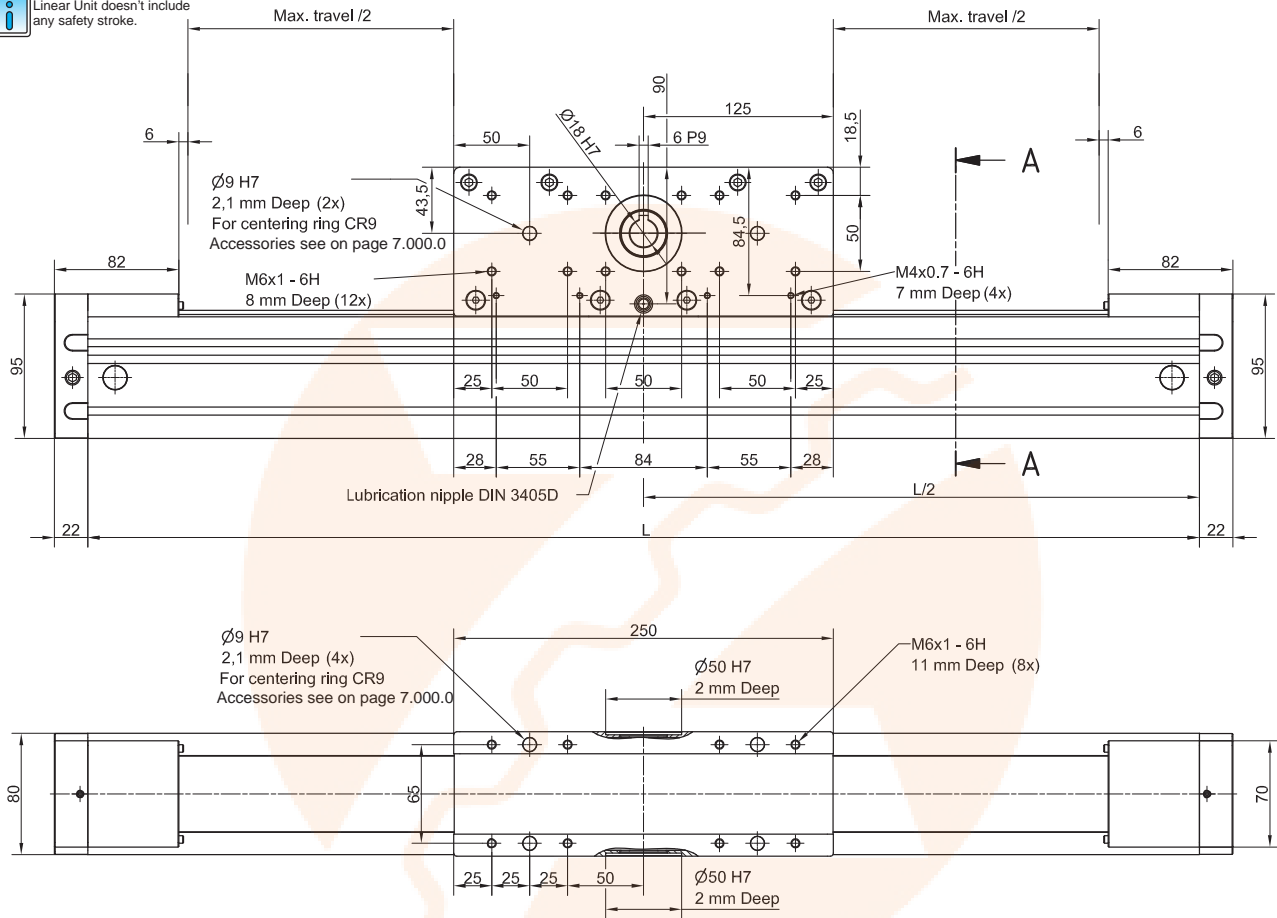
LMBD-Z 65

Available on request

DIMENSIONS

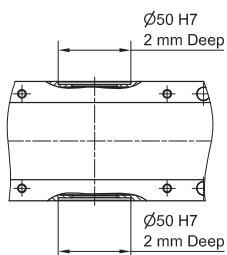
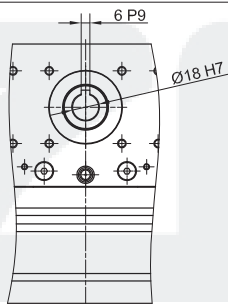


Linear Unit doesn't include any safety stroke.

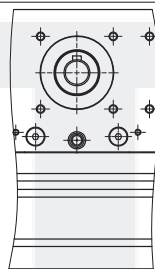


All dimensions in mm; Drawings scales are not equal.

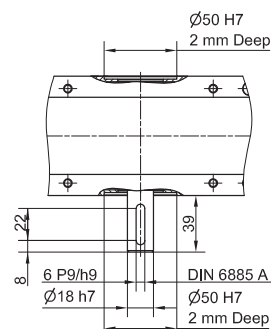
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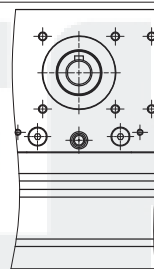
TYPE 1



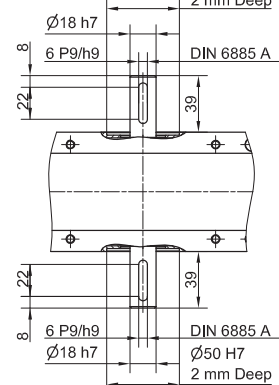
i Journal with or without Keyway.



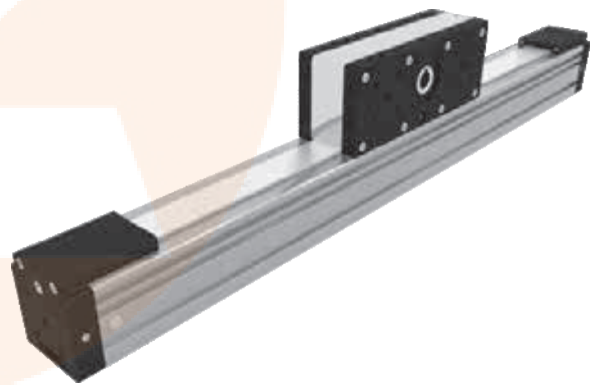
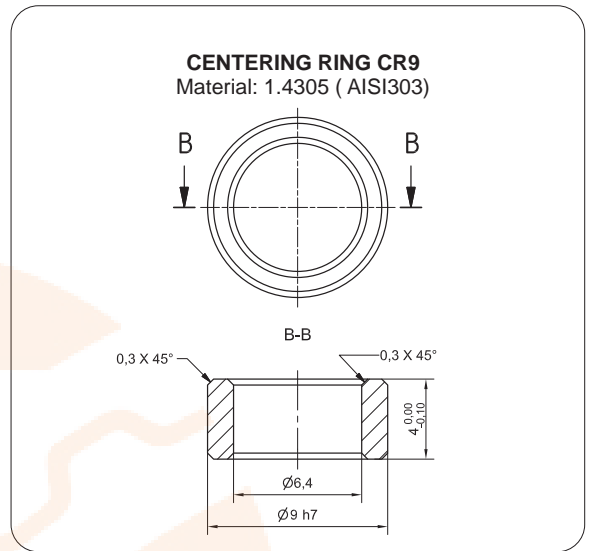
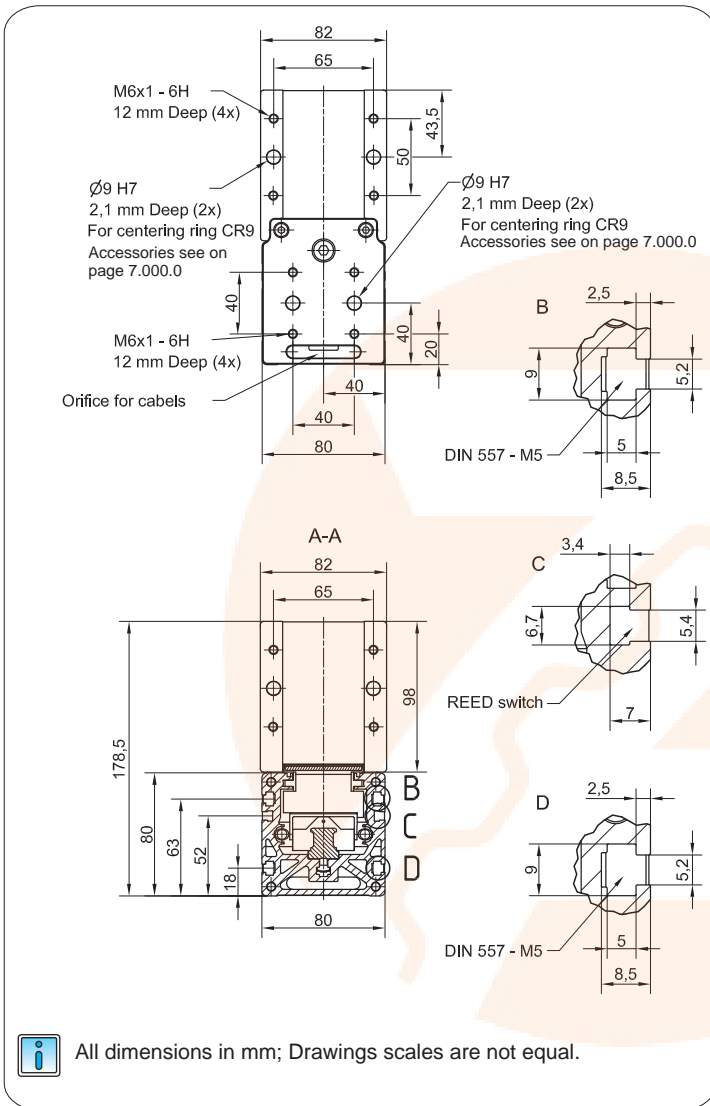
TYPE 2




i Journal with or without Keyway. Ø50 H7
2 mm Deep



DIMENSIONS

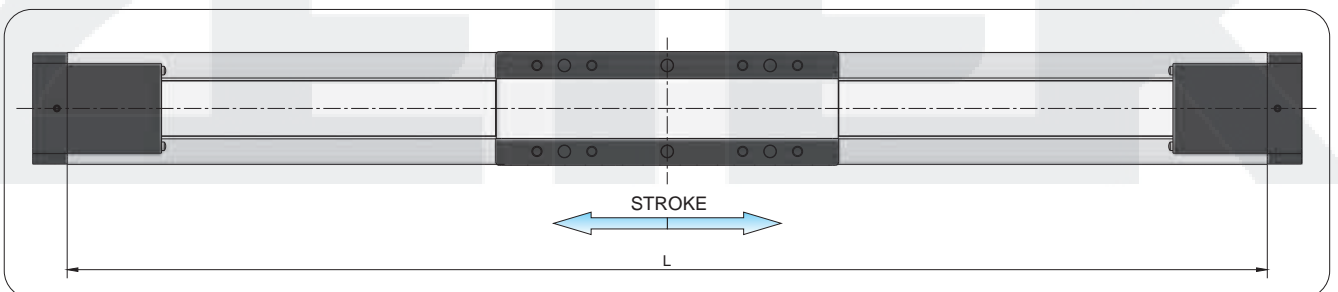


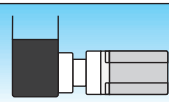
 All dimensions in mm; Drawings scales are not equal.

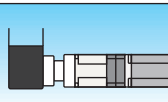
Defining of the linear module length


$L = \text{Effective stroke} + 2 \times \text{Safety travel} + 382 \text{ mm}$

$L_{total} = L + 44 \text{ mm}$



LMBD-Z 80

MOTOR
 Available on request

LMBD-Z 80

GEAR REDUCER + MOTOR
 Available on request

LMBD-Z 80

GEAR REDUCER 90° + MOTOR
 Available on request