# Linear Unit MTJZ 65

The MTJZ 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.

In the linear units MTJZ 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 timing belt protects all the parts in the profile from dust and other contaminations. The drive block provides the possibility to attach a motor or gearbox housing and additional accessories on it.

For CAD-files please contact Rollco.

Dimensions in mm.

Modulus of Elasticity: E = 70000 N / mm2 Operating Temperature (°C): 0 ~ +60 For operating temperature out of the presented range, please contact Rollco. Duty Cycle: 100% Max. Acceleration (m/s<sup>2</sup>): 70

Max. Acceleration (m/s<sup>2</sup>): 70 Max. Travel Speed (m/s): 5



Transion Rud with integrated bit transionine rystem All polyurchmes lacobade bid with test lamsion cords Aluminum portiles - hard anothered Linner had guideway Clansping and braking element for linear guideway Drive block with burles, Mort Range with built in magne Central lubrication port, both sides Transion end with integrated bit tensioning system



#### Deflection of the linear unit

MTJZ



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The maximum permissible deflection 3max must not be exceeded, in the case that maximum deflection 3 exceeds the maximum permissible deflection Imax additional profile supports are needed.

### Deflection of the linear unit





The linear units do not include any safetey stroke



All dimensions in mm. Drawings scales are not equal

Every care has been taken to ensure the accuracy of the information in this document, but we take no liability for any errors or omissions. We reserve the right to make changes without prior notice

The linear units do not include any safetey stroke. Absolut stroke = Effective stroke + 2 x safety stroke.



All dimensions in mm. Drawings scales are not equal.

# Linear Unit MTJZ 65





TYPE 1 ① Journal with or without keyway.





TYPE 2

③ Journal with or without keyway.



5 Pang DIN 6885 A Ø16 h7 Ø42 H7 2,25 mm Deep

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# Linear Unit MTJZ 65





Defining of the linear unit length

L = Effective stroke + 2 × Safety stroke + 320 mm Ltotal = L + 40 mm

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Multi drive block



L = Effective stroke + 2 × Safety stroke + 200 ×  $n_b$  + 120 mm Ltotal = L + 40 mm n<sub>b</sub> - number of drive blocks

### **General Data**



For minimum stroke below the stated value, please contact Rollco.

For length/stroke over the stated value, please contact Rollco. Values for max. stroke are not valid for multi drive box (equation of defining the linear unit length for particular size of the linear unit needs to be used).

#### Recommended values of loads

All the data of static and dynamic moments and load capacities stated are theoretical without considering any safety factor. The safety factor depends on the application and its requested safety. We recommend a minimum safety factor (fs =5.0).

Version 1: Mounting by the drive block, profile travels

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On request, multi drive blocks, which travel independently of each other, can be applied.

Designation	Dynamic Load Capacity C (N)	I Static Lo Capacity C	ad Dyna 0 (N)	mic Moment Mx (Nm)	Dyna	mic Moment My (Nm)	Dynamic Moment Mz (Nm)
MTJZ 65	19800	35000		158		1025	1025
Designation	Mass of Drive Block (kg)	Max. Permissible Loads Forces Fpy (N)	Max. Permissible Loads Force Fpz (N)	e Permise s Loads Mo Mpx (N	sible ments Im)	Max. Permissible Loads Moment Mpy (Nm)	Max. Permissible s Loads Moments Mpz (Nm)
MTJZ 65	3.2	6540	5870	60		305	340
Designation	Max. Repeatability (mm)	Max. Length Version 1 Lmax (mm)	Max. Lengt Version 2 Lm (mm)	n Max. St ax Version 1	roke (mm)	Max. Stroke Version 2 (mm	Min. Stroke (mm)
MTJZ 65	± 0.08	1200	6000	880		5680	40

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## **Drive Data**



Max. acceleration (m/s2): 70\*

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For acceleration over the stated value, please contact Rollco.

Version 1: Mounting by the drive block, profile travels



On request, multi drive blocks, which travel independently of each other, can be applied.

Designation	Max. Drive Torque (Nm)	Pulley Drive Ratio (mm/rev)	Pulley Diameter	Planar Moment of Inertia ly (cm⁴)	Planar Moment of Inertia Iz (cm⁴)
MTJZ 65	13.1	165	52.52	59.7	74.4

Designation	Belt Type	Belt Width	Max. Force Transmitted by Belt (N)	Specific Spring Constant Cspec (N)
MTJZ 65	AT5	32	500	600000

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## **Mass and Mass Moment**



Mass calculation does not include mass of motor, reduction gear, switches and clamps.

Version 1: Mounting by the drive block, profile travels

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Version 2: Mounting by the profile, drive block travels

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On request, multi drive blocks, which travel independently of each other, can be applied.

Abs. stroke	Absolute stroke [mm]
А	Distance between two drive blocks [mm]
nb	Number of drive blocks

Designation	Mass of Linear Unit (kg)	Mass Moment of Inertia Version 1 (10⁻⁴ kg m²)	Mass Moment of Inertia of Drive Block Version 2 (10 <sup>-4</sup> kg m <sup>2</sup> )	Planar Moment of Inertia ly (cm⁴)	Planar Moment of Inertia Iz (cm⁴)
MTJZ 65	5.7 + 0.0054 × (Abs. Stroke + (nb - 1) × A) + 3.2 × (nb - 1)	18.9 + 0.0374 × (Abs. Stroke + (nb - 1) × A) + 1.7 × (nb - 1)	23.8	59.7	74.4

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