

# WM60Z

## Belt Drive, Ball Guide, Short Carriage

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### General Specifications

Parameter	WM60Z
Profile size (w × h) [mm]	60 × 60
Type of belt	20 ATL 5
Carriage sealing system	self-adjusting plastic cover band
Adjustable belt tensioning	the belt can be retensioned by the customer if necessary
Lubrication	central lubrication of all parts that require lubrication
Included accessories	4 × mounting clamps

### Performance Specifications

Parameter		WM60Z
Stroke length (S max), maximum	[mm]	4000
Linear speed, maximum	[m/s]	2,5
Acceleration, maximum	[m/s <sup>2</sup> ]	20
Repeatability	[± mm]	0,05
Input speed, maximum	[rpm]	1250
Operation temperature limits	[°C]	0 – 80
Dynamic load (Fx), maximum	[N]	850
Dynamic load (Fy), maximum	[N]	1400 <sup>1</sup> / 25930 <sup>2</sup>
Dynamic load (Fz), maximum	[N]	1400 <sup>1</sup> / 23870 <sup>2</sup>
Dynamic load torque (Mx), maximum	[Nm]	25 <sup>1</sup> / 420 <sup>2</sup>
Dynamic load torque (My), maximum	[Nm]	50 <sup>1</sup> / 330 <sup>2</sup>
Dynamic load torque (Mz), maximum	[Nm]	50 <sup>1</sup> / 360 <sup>2</sup>
Drive shaft force (Frd), maximum	[N]	150
Drive shaft torque (Mta), maximum	[Nm]	17
Pulley diameter	[mm]	38,20
Stroke per shaft revolution	[mm]	120
Weight	[kg]	
of unit with zero stroke		4,30
of every 100 mm of stroke		0,45
of each carriage		1,25

<sup>1</sup> Value for the complete unit, also see diagram Force Fx

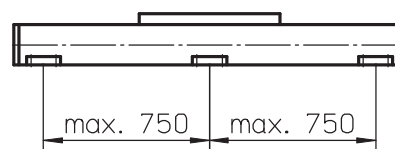
<sup>2</sup> Value for the ball guide only

### Carriage Idle Torque, (M idle) [Nm]

Input speed [rpm]	Idle torque [Nm]
150	1,6
600	2,5
1250	3,0

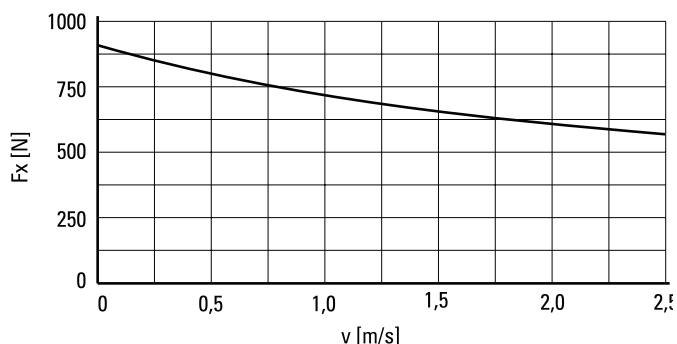
M idle = the input torque needed to move the carriage with no load on it.

### Deflection of the Profile

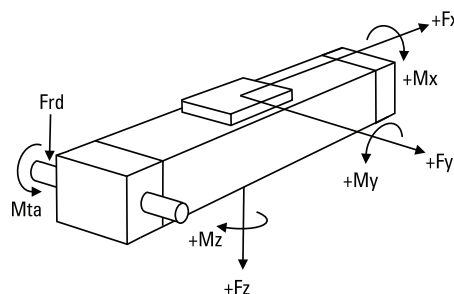


A mounting clamp must be installed at least at every 750 mm to be able to operate the maximum load. Less clamps may be required if less load is being operated, see the additional technical data for more information.

### Force Fx as a Function of the Speed

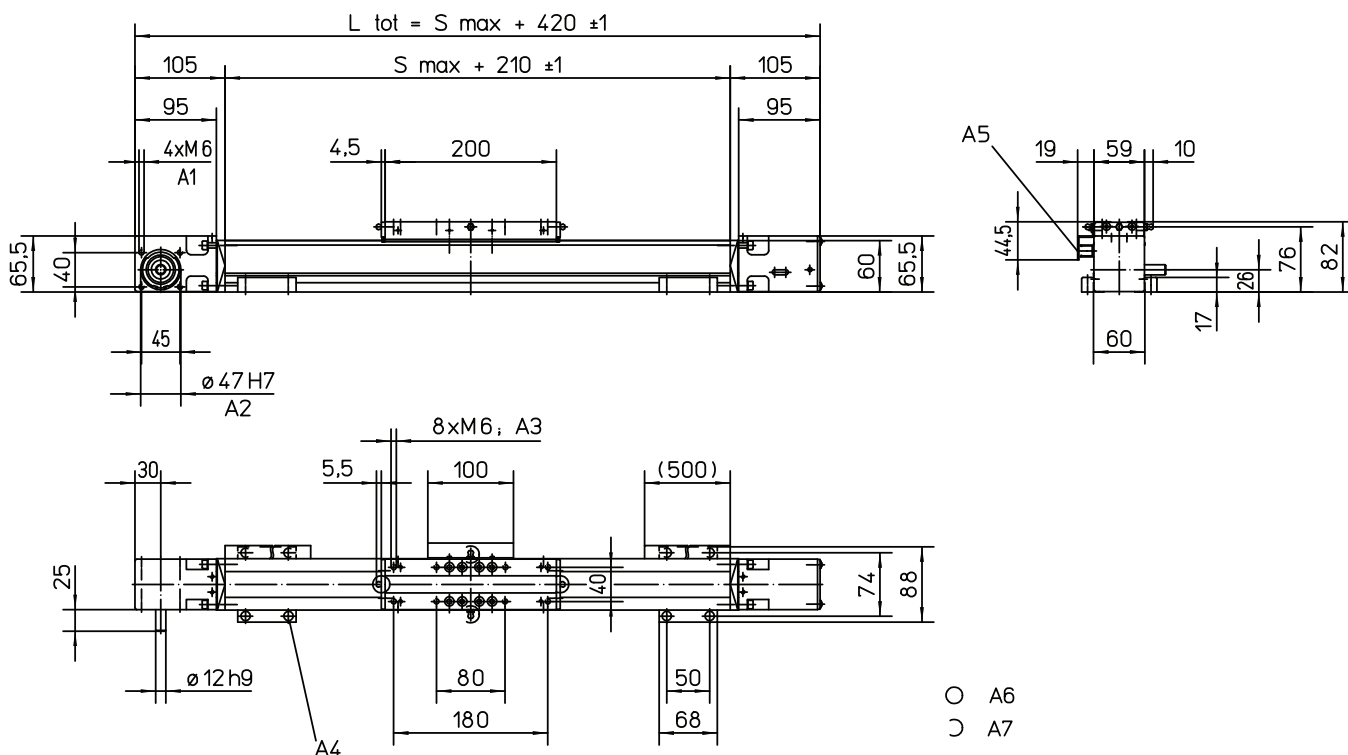


### Definition of Forces



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A1: depth 15  
 A2: depth 4  
 A3: depth 11  
 A4: socket cap screw ISO4762-M6x20 8.8

A5: ENF inductive sensor rail option kit (optional)  
 A6: tapered lubricating nipple to DIN71412 AM6 on fixed-bearing side as standard feature  
 A7: can be changed over to one of three alternative lubrications points by the customer

### Double Short Carriages

Parameter		WM60Z
Minimum distance between carriages (L <sub>A</sub> )	[mm]	255
Dynamic load (F <sub>y</sub> ), maximum	[N]	2800
Dynamic load (F <sub>z</sub> ), maximum	[N]	2800
Dynamic load torque (M <sub>y</sub> ), maximum	[Nm]	L A <sup>1</sup> × 1,4
Dynamic load torque (M <sub>z</sub> ), maximum	[Nm]	L A <sup>1</sup> × 1,4
Force required to move second carriage	[N]	180
Total length (L <sub>tot</sub> )	[mm]	S <sub>max</sub> + 420 + L A

<sup>1</sup> Value in mm

