

# WM80D

## Ball Screw Drive, Ball Guide, Double Ball Nuts

- » Ordering key - see page 202
- » Accessories - see page 137
- » Additional data - see page 191

### General Specifications

Parameter	WM80D
Profile size (w × h) [mm]	80 × 80
Type of screw	ball screw with double nuts
Carriage sealing system	self-adjusting plastic cover band
Screw supports	included in all units that require screw supports
Lubrication	central lubrication of all parts that require lubrication
Included accessories	4 × mounting clamps

### Performance Specifications

Parameter		WM80D
Stroke length (S max), maximum screw lead 5, 10, 20 mm screw lead 50 mm	[mm]	11000 5000
Linear speed, maximum	[m/s]	2,5
Acceleration, maximum	[m/s <sup>2</sup> ]	20
Repeatability	[± mm]	0,01
Input speed, maximum	[rpm]	3000
Operation temperature limits	[°C]	0 – 80
Dynamic load (F <sub>x</sub> ), maximum	[N]	5000
Dynamic load (F <sub>y</sub> ), maximum	[N]	3000 <sup>1</sup> / 57420 <sup>2</sup>
Dynamic load (F <sub>z</sub> ), maximum	[N]	3000 <sup>1</sup> / 54950 <sup>2</sup>
Dynamic load torque (M <sub>x</sub> ), maximum	[Nm]	350 <sup>1</sup> / 1360 <sup>2</sup>
Dynamic load torque (M <sub>y</sub> ), maximum	[Nm]	300 <sup>1</sup> / 4230 <sup>2</sup>
Dynamic load torque (M <sub>z</sub> ), maximum	[Nm]	300 <sup>1</sup> / 4220 <sup>2</sup>
Drive shaft force (F <sub>rd</sub> ), maximum	[N]	700
Drive shaft torque (M <sub>ta</sub> ), maximum	[Nm]	55
Ball screw diameter (d <sub>0</sub> )	[mm]	25
Ball screw lead (p)	[mm]	5, 10, 20, 50
Weight	[kg]	
of unit with zero stroke		11,57
of every 100 mm of stroke		1,08
of each carriage		4,26

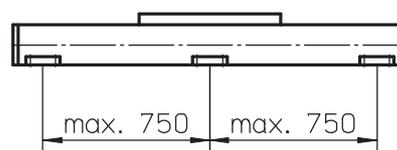
<sup>1</sup> Value for the complete unit  
<sup>2</sup> Value for the ball guide only

### Carriage Idle Torque (M<sub>idle</sub>) [Nm]

Input speed [rpm]	Screw lead [mm]			
	p = 5	p = 10	p = 20	p = 50
150	1,1	1,5	1,8	2,3
1500	1,7	2,1	2,3	3,0
3000	2,1	2,5	2,6	3,6

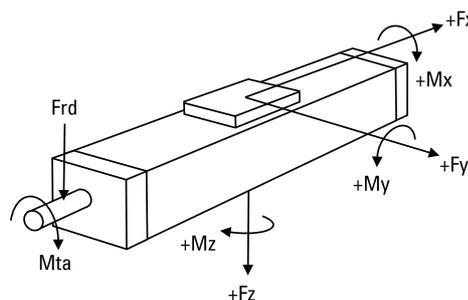
M<sub>idle</sub> = the input torque needed to move the carriage with no load on it.

### Deflection of the Profile



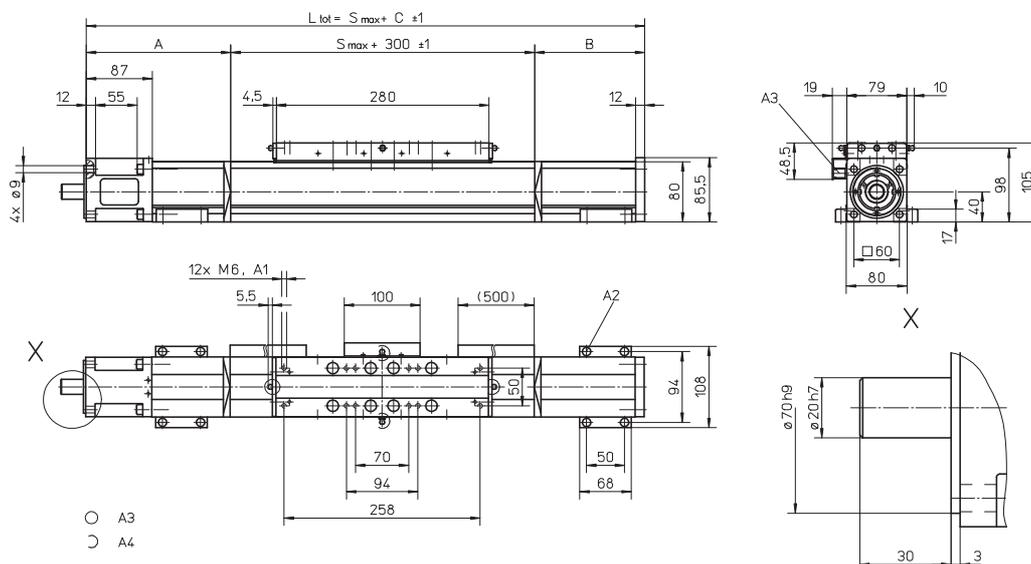
A mounting clamp must be installed at least at every 750 mm to be able to operate the maximum load. Less clamps may be required if less load is being operated, see the additional technical data for more information. Units with a profile length over 6300 mm consists of two profiles where the joint between the two profiles must be adequately supported on both sides.

### Definition of Forces



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A1: depth 12 mm  
 A2: socket cap screw ISO4762-M6x20 8.8  
 A3: ENF inductive sensor rail option kit (optional)

A4: tapered lubricating nipple to DIN71412 AM6 on fixed-bearing side as standard feature  
 A5: can be changed over to one of three alternative lubrication points by customer

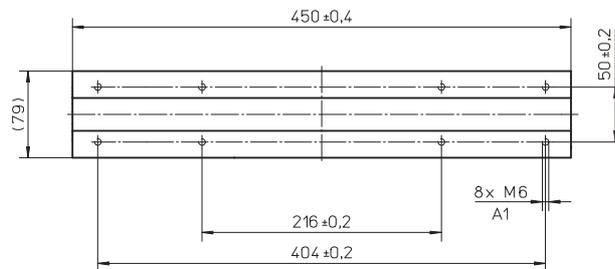
Stroke length (S max) [mm]	A [mm]	B [mm]	C [mm]
0 - 780 (0 - 610)	120	80	500 (670)
781 - 1535 (611 - 1365)	170	125	595 (765)
1536 - 2375 (1366 - 2205)	190	145	635 (805)
2376 - 3205 (2206 - 3035)	215	170	685 (855)

Stroke length (S max) [mm]	A [mm]	B [mm]	C [mm]
3206 - 4045 (3036 - 3875)	235	190	725 (895)
4046 - 4885 (3876 - 4715)	255	210	765 (935)
4886 - 5000 (4716 - 4830)	280	235	815 (985)
5001 - 11000 (4717 - 10830)	contact customer service		

Values between brackets = for units with long carriage

### Long Carriage

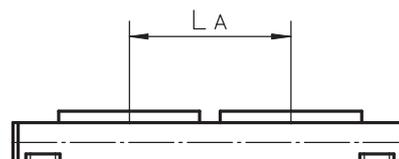
Parameter	WM80D
Carriage length [mm]	450
Dynamic load torque (My), maximum [Nm]	750
Dynamic load torque (Mz), maximum [Nm]	750
Weight [kg]	6,4



A1: depth 12 mm

### Double Carriages

Parameter	WM80D
Minimum distance between carriages (LA) [mm]	360
Dynamic load (Fy), maximum [N]	6000
Dynamic load (Fz), maximum [N]	6000
Dynamic load torque (My), maximum [Nm]	LA <sup>1</sup> × 3
Dynamic load torque (Mz), maximum [Nm]	LA <sup>1</sup> × 3
Force required to move second carriage [N]	250
Total length (L tot) [mm]	S max + C + L A



<sup>1</sup> Value in mm