

# WM80S

## Ball Screw Drive, Ball Guide, Single Ball Nut, Short Carriage

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» Accessories - see page 131  
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### General Specifications

Parameter	WM80S
Profile size (w × h) [mm]	80 × 80
Type of screw	ball screw with single nut
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

for Units with Single Short Carriage (S)<sup>1</sup>

Parameter		WM80S
Stroke length (S <sub>max</sub> ), maximum	[mm]	10540
screw lead 5, 10, 20 mm		5000
screw lead 50 mm		
Total length (L <sub>tot</sub> ), maximum	[mm]	11495
screw lead 5, 10, 20 mm		5645
screw lead 50 mm		
Linear speed, maximum	[m/s]	2,5
Acceleration, maximum	[m/s <sup>2</sup> ]	20
Repeatability	[± mm]	0,02
Input speed, maximum	[rpm]	3000
Operation temperature limits	[°C]	0 – 80
Dynamic load (F <sub>x</sub> ), maximum	[N]	3500
Dynamic load (F <sub>y</sub> ), maximum	[N]	2100
Dynamic load (F <sub>z</sub> ), maximum	[N]	2100
Dynamic load torque (M <sub>x</sub> ), maximum	[Nm]	150
Dynamic load torque (M <sub>y</sub> ), maximum	[Nm]	180
Dynamic load torque (M <sub>z</sub> ), maximum	[Nm]	180
Drive shaft force (F <sub>rd</sub> ), maximum <sup>2</sup>	[N]	700
Input/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		7,0
of every 100 mm of stroke		1,1
of each carriage		1,6

<sup>1</sup> See next page for deviating values of units with other carriage types.

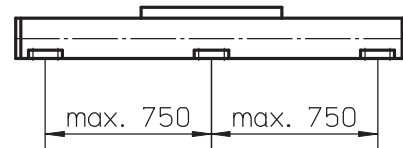
<sup>2</sup> Only relevant for units without RediMount flange.

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

Input speed [rpm]	Screw lead [mm]			
	p = 5	p = 10	p = 20	p = 50
150	0,9	1,1	1,3	2,0
1500	1,3	1,5	1,8	2,4
3000	1,7	1,8	2,0	2,9

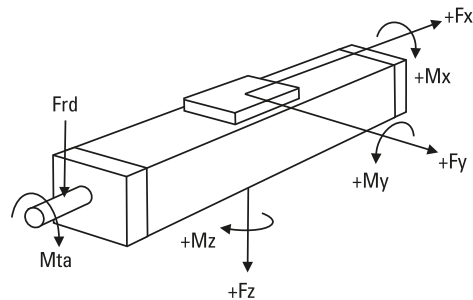
M<sub>idle</sub> = the input torque needed to move the carriage with no load on it.

### Deflection of the Profile



A mounting clamp must be installed at least every 750 mm to be able to operate at 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 consist of two profiles where the joint between the two profiles must be adequately supported on both sides.

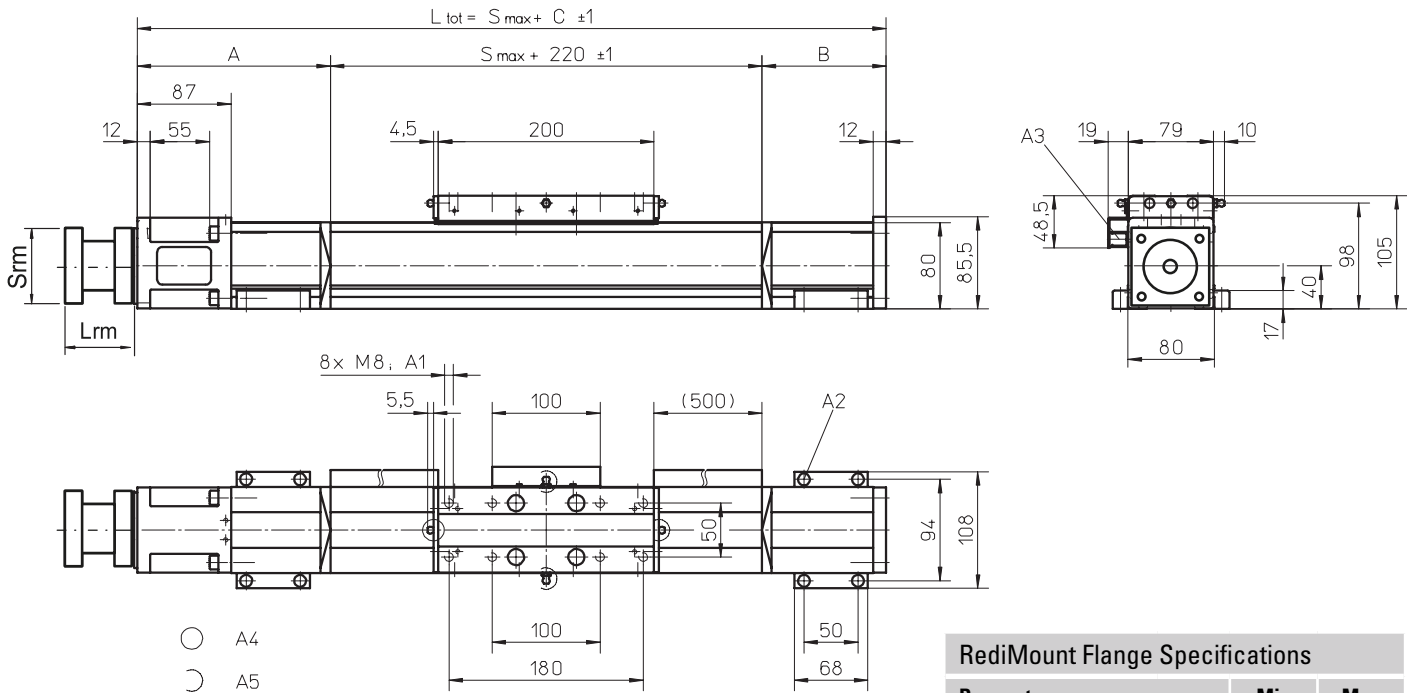
### Definition of Forces



# WM80S

<b>Dimensions</b>	<b>Projection</b>	<b>Online Sizing &amp; Selection!</b>
METRIC		<a href="http://www.LinearMotioneering.com">www.LinearMotioneering.com</a>

## Ball Screw Drive, Ball Guide, Single Ball Nut, Short Carriage



Parameter	Min	Max
Flange length (Lrm) [mm]	83	145
Flange square (Srm) [mm]	90	200
Flange weight * [kg]	5,64	

\* Max. weight including coupling and fastening screws

- A1: depth 12 mm
- A2: socket cap screw ISO4762-M6x20 8.8
- A3: ENF inductive sensor rail kit (optional - see page 166)

- 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 (Smax) [mm]	A [mm]	B [mm]	C [mm]
0 - 680	95	35	350
681 - 1310	125	80	425
1311 - 2065	150	105	475
2066 - 2830	170	125	515
2831 - 3590	195	150	565
3591 - 4355	215	170	605
4356 - 5000	235	190	645

## Performance Specifications

for Units with Double Short Carriage (Y)

Parameter	WM80S
Stroke length (Smax), maximum screw lead 5, 10, 20 mm screw lead 50 mm	10260 4720
Total length (L tot), maximum screw lead 5, 10, 20 mm screw lead 50 mm	11495 5645
Minimum distance between carriages (Lc)	280
Dynamic load (Fy), maximum	4200
Dynamic load (Fz), maximum	4200
Dynamic load torque (My), maximum	L c <sup>1</sup> × 2,1
Dynamic load torque (Mz), maximum	L c <sup>1</sup> × 2,1
Force required to move second carriage	22,5
Total length (L tot)	Smax + C + Lc

<sup>1</sup> Value in mm

