

WM80S

Ball Screw Drive, Ball Guide, Singel Ball Nut, Short Carriage

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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

Parameter		WM80S
Stroke length (S max), maximum	[mm]	5000
Linear speed, maximum	[m/s]	2,5
Acceleration, maximum	[m/s ²]	20
Repeatability	[± mm]	0,02
Input speed, maximum	[rpm]	3000
Operation temperature limits	[°C]	0 – 80
Dynamic load (F _x), maximum	[N]	3500
Dynamic load (F _y), maximum	[N]	2100 ¹ / 37440 ²
Dynamic load (F _z), maximum	[N]	2100 ¹ / 35830 ²
Dynamic load torque (M _x), maximum	[Nm]	150 ¹ / 890 ²
Dynamic load torque (M _y), maximum	[Nm]	180 ¹ / 580 ²
Dynamic load torque (M _z), maximum	[Nm]	180 ¹ / 600 ²
Drive shaft force (F _{rd}), maximum	[N]	700
Drive shaft torque (M _{ta}), maximum	[Nm]	55
Ball screw diameter (d ₀)	[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

¹ Value for the complete unit

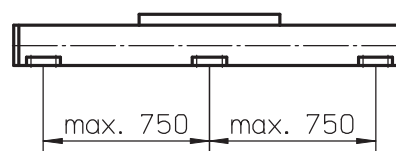
² Value for the ball guide only

Carriage Idle Torque (M_{idle}) [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

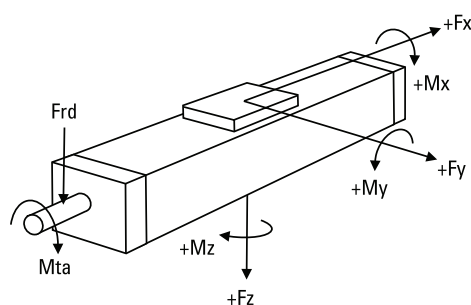
M_{idle} = the input torque needed to move the carriage with no load on it.

Deflection of the Profile



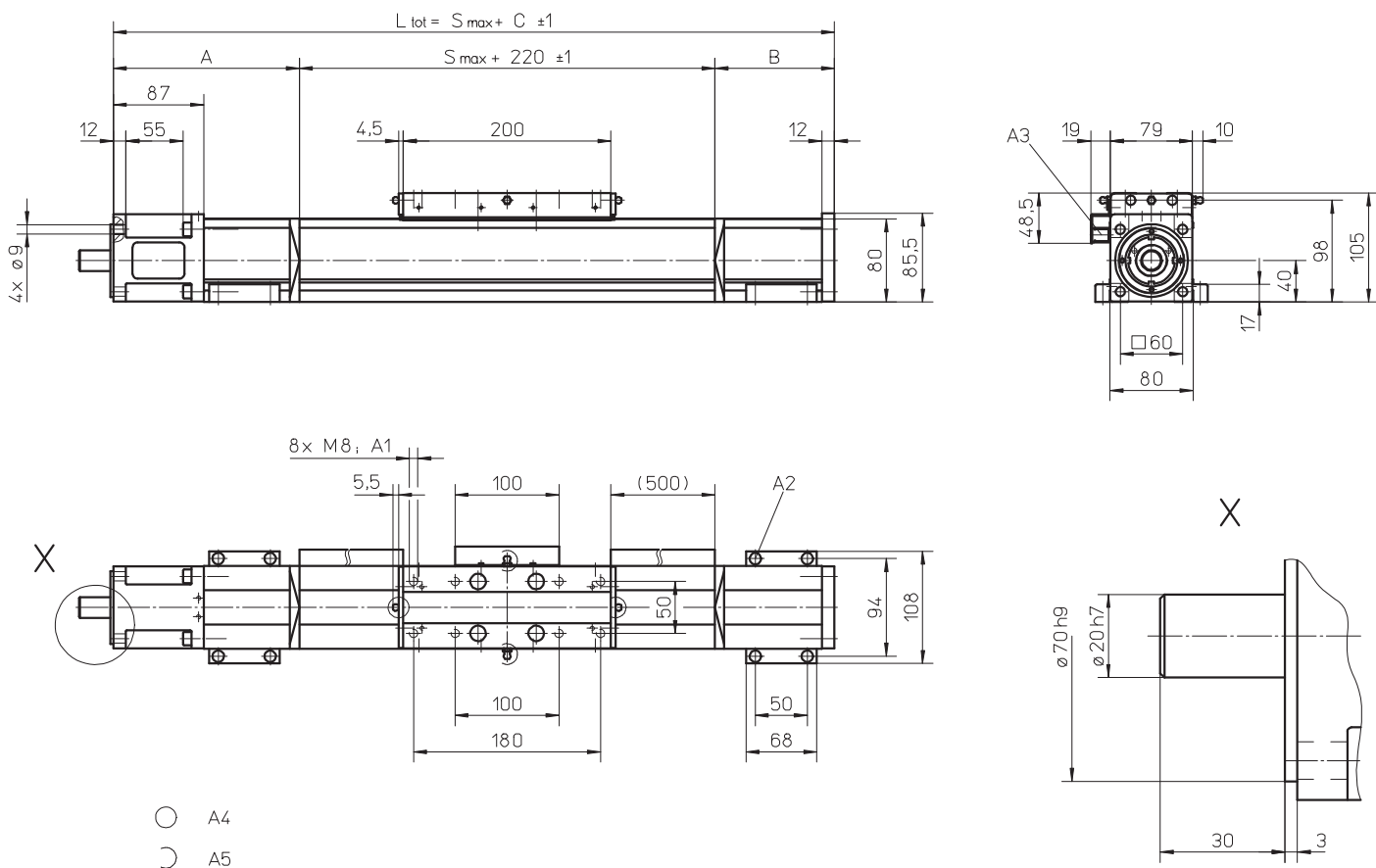
A mounting clamp must be installed at least at every 750 mm to be able to operate the maximum load. Less clamps may be required if less load is being operated, see the additional technical data for more information.

Definition of Forces



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- A4
- ◐ A5

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 - 680	95	35	350
681 - 1310	125	80	425
1311 - 2065	150	105	475
2066 - 2830	170	125	515

Stroke length (S max) [mm]	A [mm]	B [mm]	C [mm]
2831 - 3590	195	150	565
3591 - 4355	215	170	605
4356 - 5000	235	190	645

Double Carriages

Parameter		WM80S
Minimum distance between carriages (L _A)	[mm]	280
Dynamic load (F _y), maximum	[N]	4200
Dynamic load (F _z), maximum	[N]	4200
Dynamic load torque (M _y), maximum	[Nm]	L A ¹ × 2,1
Dynamic load torque (M _z), maximum	[Nm]	L A ¹ × 2,1
Force required to move second carriage	[N]	225
Total length (L _{tot})	[mm]	S max + C + L A

¹ Value in mm

