

WM120D

Ball Screw Drive, Ball Guide, Double Ball Nuts

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General Specifications

Parameter	WM120D
Profile size (w × h) [mm]	120 × 120
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

for Units with Single Standard Carriage (N)¹

Parameter		WM120D
Stroke length (S _{max}), maximum	[mm]	11000
screw lead 5, 10, 20 mm		4765
screw lead 40 mm		
Total length (L _{tot}), maximum	[mm]	12415
screw lead 5, 10, 20 mm		5780
screw lead 40 mm		
Linear speed, maximum	[m/s]	2,0
Acceleration, maximum	[m/s ²]	20
Repeatability	[± mm]	0,01
Input speed, maximum	[rpm]	3000
Operation temperature limits	[°C]	0 – 80
Dynamic load (F _x), maximum	[N]	12000
screw lead 5, 10, 20 mm		8000
screw lead 40 mm		
Dynamic load (F _y), maximum	[N]	6000
Dynamic load (F _z), maximum	[N]	6000
Dynamic load torque (M _x), maximum	[Nm]	500
Dynamic load torque (M _y), maximum	[Nm]	600
Dynamic load torque (M _z), maximum	[Nm]	600
Drive shaft force (F _{rd}), maximum ²	[N]	1000
Input/drive shaft torque (M _{ta}), maximum	[Nm]	80
Ball screw diameter (d ₀)	[mm]	32
Ball screw lead (p)	[mm]	5, 10, 20, 40
Weight	[kg]	
of unit with zero stroke		25,91
of every 100 mm of stroke		1,93
of each carriage		9,25

¹ See next page for deviating values of units with other carriage types.

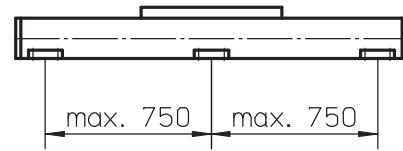
² Only relevant for units without RediMount flange.

Carriage Idle Torque (M_{idle}) [Nm]

Input speed [rpm]	Screw lead [mm]			
	p = 5	p = 10	p = 20	p = 40
150	1,4	2,0	2,3	2,4
1500	2,5	3,0	3,3	3,8
3000	3,0	3,7	4,0	4,3

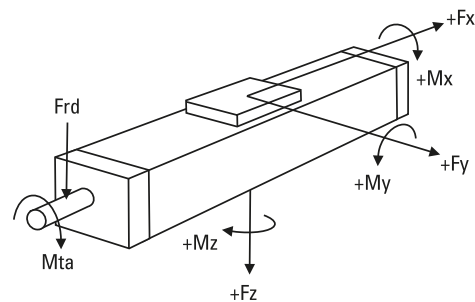
M_{idle} = the input torque needed to move the carriage with no load on it.

Deflection of the Profile



A mounting clamp must be installed at least 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 5400 mm consist of two profiles where the joint between the two profiles must be adequately supported on both sides.

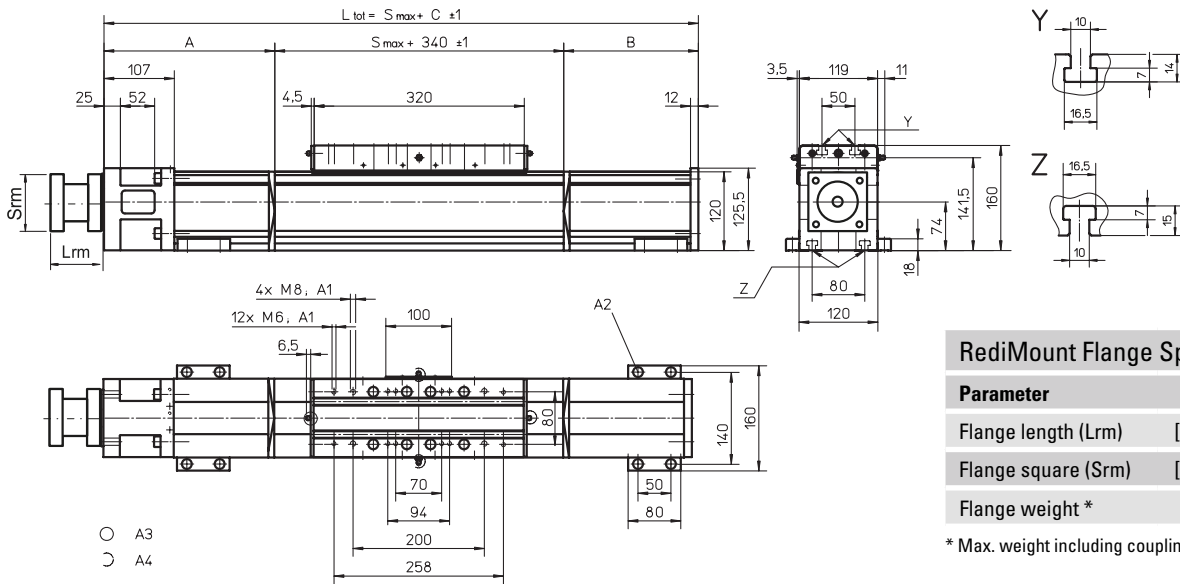
Definition of Forces



WM120D

Dimensions	Projection	Online Sizing & Selection!
METRIC		www.LinearMotioneering.com

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RediMount Flange Specifications

Parameter	Min	Max
Flange length (Lrm) [mm]	87	149
Flange square (Srm) [mm]	90	200
Flange weight * [kg]	6,03	

* Max. weight including coupling and fastening screws

A1: depth 22
 A2: socket cap screw ISO4762-M8x20 8.8

A3: tapered lubricating nipple to DIN71412 M8x1 on fixed-bearing side as standard feature
 A4: can be changed over to one of the three alternative lubricating points by the customer

Stroke length (Smax) [mm]	A [mm]	B [mm]	C [mm]
0 - 890 (0 - 710)	155	100	595 (775)
891 - 1695 (711 - 1515)	225	170	735 (915)
1696 - 2625 (1516 - 2445)	260	205	805 (985)
2626 - 3555 (2446 - 3375)	295	240	875 (1055)

Stroke length (Smax) [mm]	A [mm]	B [mm]	C [mm]
3556 - 4485 (3376 - 4305)	330	275	945 (1125)
4486 - 5000 (4306 - 4820)	365	310	1015 (1195)
5001 - 11000 (4307 - 10820)	contact customer service		

Values between brackets = for units with long carriage

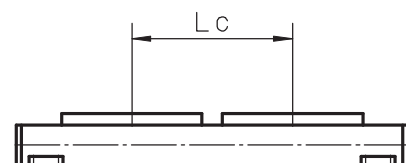
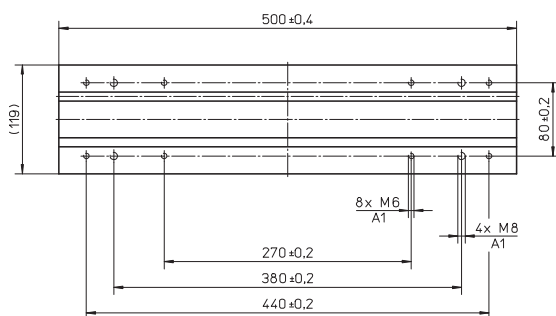
Performance Specifications for Units with Single Long Carriage (L)

Parameter	WM120D
Stroke length (Smax), maximum screw lead 5, 10, 20 mm screw lead 40 mm	11000 4585
Total length (L tot), maximum screw lead 5, 10, 20 mm screw lead 40 mm	12595 5780
Carriage length	500
Dynamic load torque (My), maximum	1500
Dynamic load torque (Mz), maximum	1500
Weight	14,2

Performance Specifications for Units with Double Standard Carriage (Z)

Parameter	WM120D
Stroke length (Smax), maximum screw lead 5, 10, 20 mm screw lead 40 mm	10730 4385
Total length (L tot), maximum screw lead 5, 10, 20 mm screw lead 40 mm	12595 5780
Minimum distance between carriages (Lc)	450
Dynamic load (Fy), maximum	12000
Dynamic load (Fz), maximum	12000
Dynamic load torque (My), maximum	L C ¹ × 6
Dynamic load torque (Mz), maximum	L C ¹ × 6
Force required to move second carriage	30
Total length (L tot)	Smax + C + Lc

¹ Value in mm



A1: depth 22