

M75D

Ball Screw Drive, Slide Guide, Double Ball Nuts

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General Specifications

Parameter	M75D
Profile size (w × h) [mm]	86 × 75
Type of screw	ball screw with double nut
Carriage sealing system	self-adjusting steel cover band
Screw supports	number of screw supports to be specified by customer at order
Lubrication	lubrication of ball screw
Included accessories	none

Performance Specifications

Parameter		M75D
Stroke length (S max), maximum	[mm]	3550
Linear speed, maximum	[m/s]	1,6
Acceleration, maximum	[m/s ²]	8
Repeatability	[± mm]	0,05
Input speed, maximum	[rpm]	5000
Operation temperature limits	[°C]	-20 – 70
Dynamic load (F _x), maximum	[N]	2500 ¹
Dynamic load (F _y), maximum	[N]	1485 ¹
Dynamic load (F _z), maximum	[N]	1485 ¹
Dynamic load torque (M _x), maximum	[Nm]	49 ¹
Dynamic load torque (M _y), maximum	[Nm]	85 ¹
Dynamic load torque (M _z), maximum	[Nm]	85 ¹
Drive shaft force (F _{rd}), maximum	[N]	600
Drive shaft torque (M _{ta}), maximum	[Nm]	30
Screw diameter (d ₀)	[mm]	20
Screw lead (p)	[mm]	5, 20
Weight	[kg]	
of unit with zero stroke		6,57
of every 100 mm of stroke		0,82
of carriage		1,70
of option single screw support		1,70
of option double screw supports		3,58

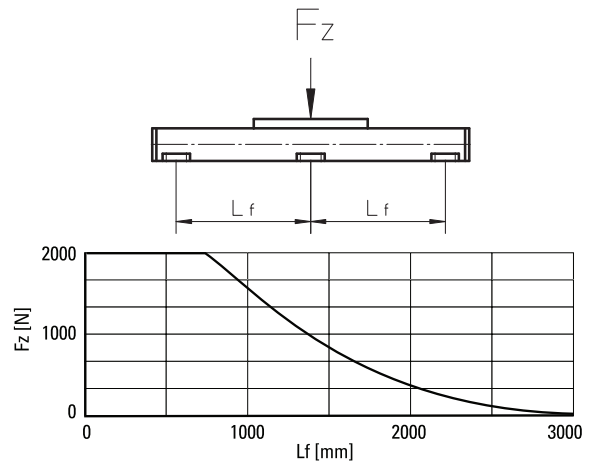
¹ Value for the complete unit

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

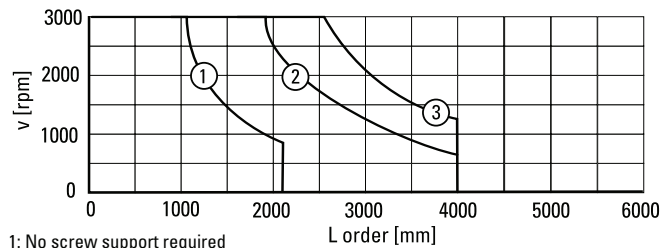
Input speed [rpm]	Screw lead [mm]	
	p = 5	p = 20
500 - no screw supports	0,15	0,5
500 - with screw supports	0,2	0,8

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

Deflection of the Profile

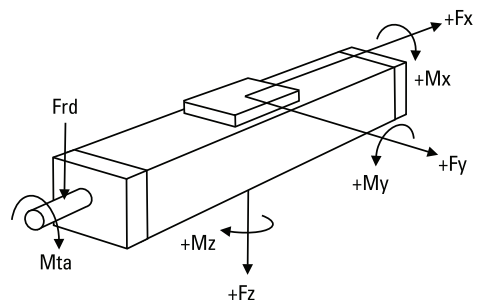


Critical Speed



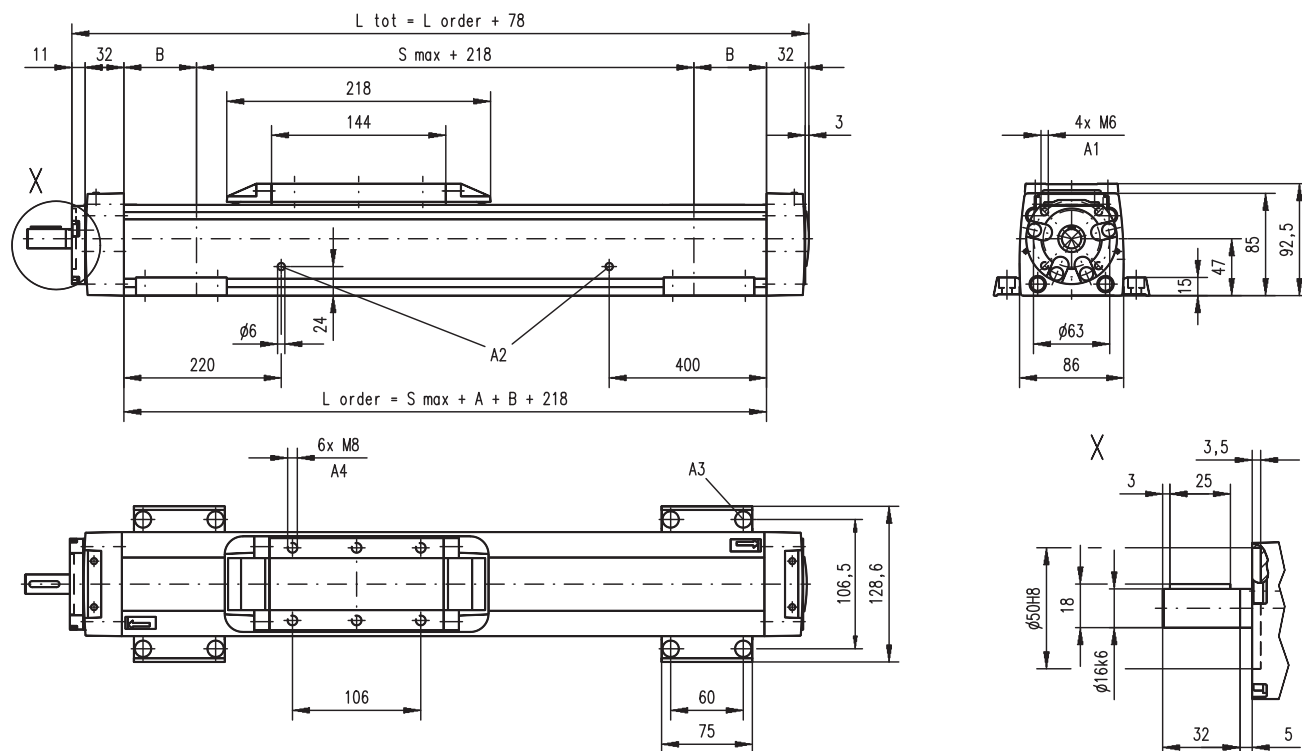
- 1: No screw support required
- 2: Single screw support required
- 3: Double screw supports required

Definition of Forces



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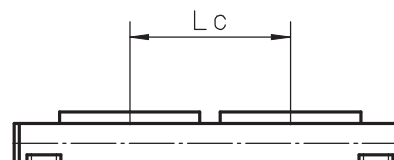
A1: depth 9, Heli coil
A2: lubrication holes

A3: ø13,5/ø8,5 for socket head cap screw M8
A4: depth 8, Heli coil

Screw support configuration	A [mm]	B [mm]	Ordering length (L order) [mm]	Total length (L tot) [mm]
No screw support	5	76	$L_{order} = S_{max} + A + B + 218$	$L_{tot} = L_{order} + 78$
Single screw support	60	151	$L_{order} = S_{max} + A + B + 218$	$L_{tot} = L_{order} + 78$
Double screw supports	126	216	$L_{order} = S_{max} + A + B + 218$	$L_{tot} = L_{order} + 78$

Double Carriages

Parameter	M75D	
Minimum distance between carriages (Lc) [mm]		250
Dynamic load (Fy), maximum [N]		2227
Dynamic load (Fz), maximum [N]		2227
Dynamic load torque (My), maximum [Nm]		$L_c^1 \times 1,114$
Dynamic load torque (Mz), maximum [Nm]		$L_c^1 \times 1,114$
Force required to move second carriage [N]		40
Weight of unit with zero stroke of carriages [kg]		6,92 3,4



Screw support configuration	A [mm]	B [mm]	Ordering length (L order) [mm]	Total length (L tot) [mm]
No screw support	5	76	$L_{order} = S_{max} + A + B + L_c + 218$	$L_{tot} = L_{order} + 78$
Single screw support	60	151	$L_{order} = S_{max} + A + B + L_c + 218$	$L_{tot} = L_{order} + 78$
Double screw supports	126	216	$L_{order} = S_{max} + A + B + L_c + 218$	$L_{tot} = L_{order} + 78$

¹ Value in mm