

WM40D

Ball Screw Drive, Ball Guide, Double Ball Nuts, Long Carriage

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General Specifications

| Parameter | WM40D |
|---------------------------|---|
| Profile size (w × h) [mm] | 40 × 40 |
| 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 | | WM40D |
|--|---------------------|--------------------------------------|
| Stroke length (S max), maximum | [mm] | 1950 |
| Linear speed, maximum | [m/s] | 0,25 |
| Acceleration, maximum | [m/s ²] | 20 |
| Repeatability | [± mm] | 0,01 |
| Input speed, maximum | [rpm] | 3000 |
| Operation temperature limits | [°C] | 0 – 80 |
| Dynamic load (Fx), maximum | [N] | 1000 |
| Dynamic load (Fy), maximum | [N] | 450 ¹ / 5300 ² |
| Dynamic load (Fz), maximum | [N] | 600 ¹ / 6790 ² |
| Dynamic load torque (Mx), maximum | [Nm] | 10 ¹ / 30 ² |
| Dynamic load torque (My), maximum | [Nm] | 30 ¹ / 230 ² |
| Dynamic load torque (Mz), maximum | [Nm] | 30 ¹ / 230 ² |
| Drive shaft force (Frd), maximum | [N] | 100 |
| Drive shaft torque (Mta), maximum | [Nm] | 3 |
| Ball screw diameter (d ₀) | [mm] | 12 |
| Ball screw lead (p) | [mm] | 5 |
| Weight of unit with zero stroke of every 100 mm of stroke of each carriage | [kg] | 1,90 0,30 0,60 |

¹ Value for the complete unit

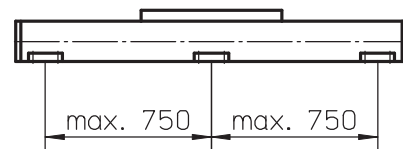
² Value for the ball guide only

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

| Input speed [rpm] | Screw lead [mm] |
|-------------------|-----------------|
| | p = 5 |
| 150 | 0,4 |
| 1500 | 0,6 |
| 3000 | 0,9 |

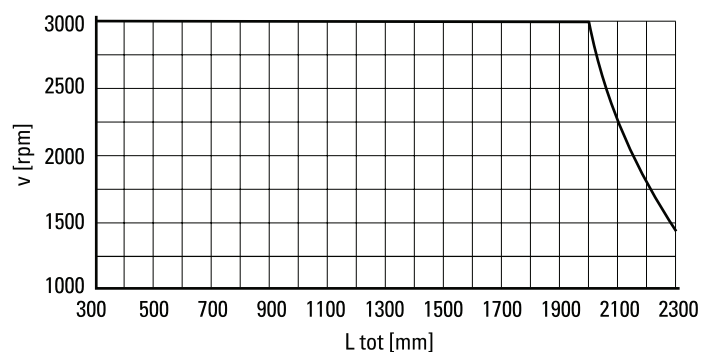
M_{idle} = the input torque needed to move the carriage with no load on it.

Deflection of the Profile

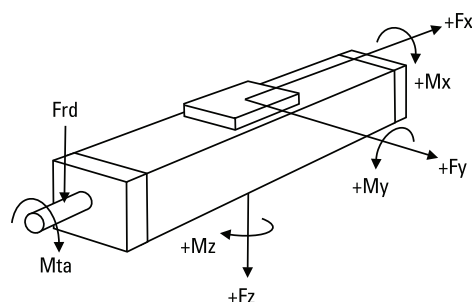


A mounting clamp must be installed at least at every 750 mm to be able to operate the maximum load. Less clamps may be required if less load is being operated, see the additional technical data for more information.

Critical Speed

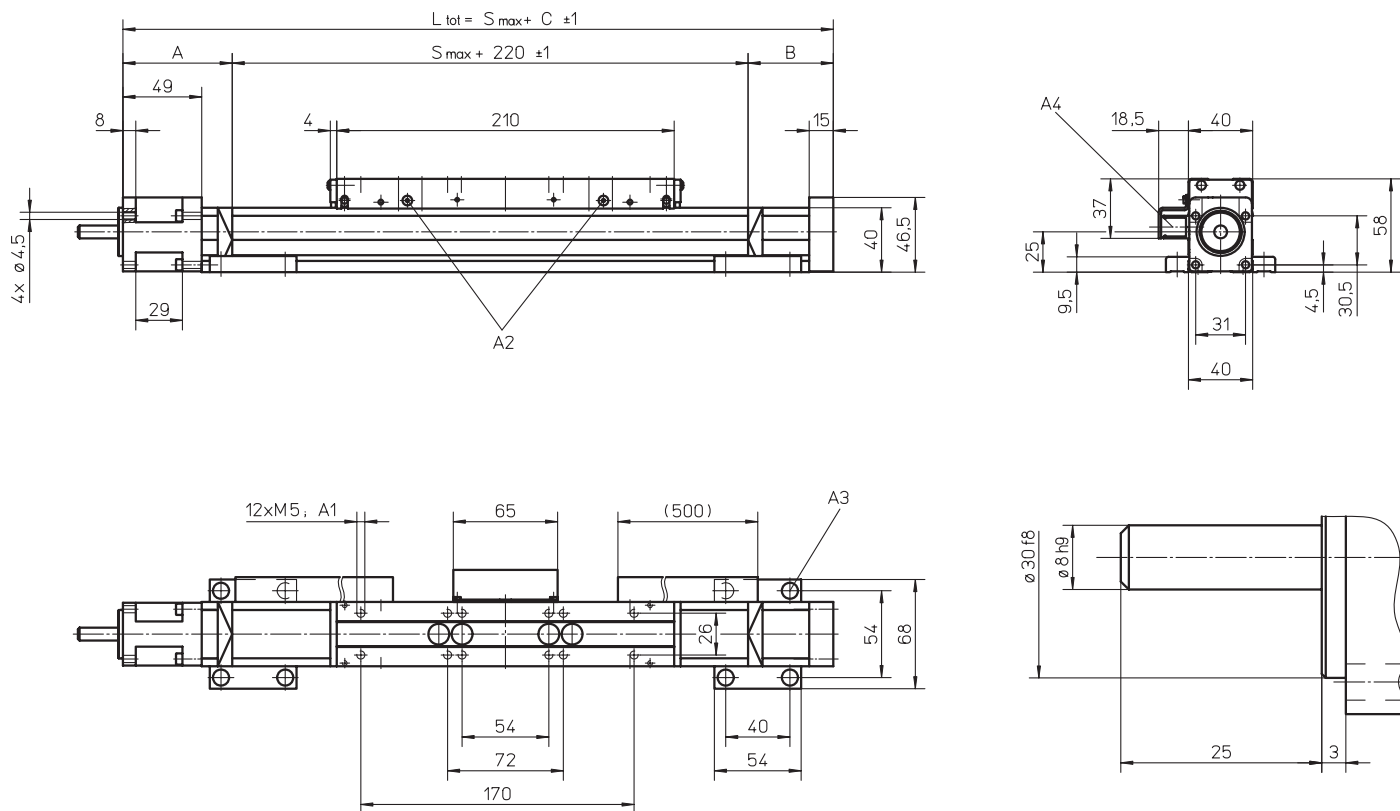


Definition of Forces



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A1: depth 6
 A2: lubricating nipple on both sides DIN3405 D 1/A

A3: socket cap screw ISO4762-M5×12 8.8
 A4: ENF inductive sensor rail option kit (optional)

| Stroke length (S max) [mm] | A [mm] | B [mm] | C [mm] |
|----------------------------|--------|--------|--------|
| 0 – 500 | 65 | 35 | 320 |
| 501 – 1100 | 65 | 45 | 330 |
| 1101 – 2000 | 70 | 60 | 350 |

Double Long Carriages

| Parameter | WM40D |
|---|------------------------------------|
| Minimum distance between carriages (L _A) [mm] | 225 |
| Dynamic load (F _y), maximum [N] | 900 |
| Dynamic load (F _z), maximum [N] | 1200 |
| Dynamic load torque (M _y), maximum [Nm] | L _A ¹ × 0,45 |
| Dynamic load torque (M _z), maximum [Nm] | L _A ¹ × 0,6 |
| Force required to move second carriage [N] | 40 |
| Total length (L _{tot}) [mm] | S max + C + L _A |

¹ Value in mm

