

# 2HBE20

## Ball Screw Drive, Ball Guide

- » Ordering key - see page 205
- » Accessories - see page 137
- » Additional data - see page 191

### General Specifications

Parameter	2HBE20
Profile size (w × h) [mm]	200 × 44
Type of screw	ball screw with double nut
Carriage sealing system	none
Screw supports	none
Lubrication	lubrication of screw and guides
Included accessories	none

### Performance Specifications

Parameter		2HBE20
Stroke length (S max), maximum	[mm]	2800
Linear speed, maximum	[m/s]	1,3
Acceleration, maximum	[m/s <sup>2</sup> ]	20
Repeatability	[± mm]	0,005
Input speed, maximum	[rpm]	3000
Operation temperature limits	[°C]	-20 – 70
Dynamic load (F <sub>x</sub> ), maximum	[N]	5000
Dynamic load (F <sub>y</sub> ), maximum	[N]	9515 <sup>1</sup> / 38000 <sup>2</sup>
Dynamic load (F <sub>z</sub> ), maximum	[N]	9515 <sup>1</sup> / 38000 <sup>2</sup>
Dynamic load torque (M <sub>x</sub> ), maximum	[Nm]	2760 <sup>1</sup> / 3770 <sup>2</sup>
Dynamic load torque (M <sub>y</sub> ), maximum	[Nm]	2130 <sup>1</sup> / 2910 <sup>2</sup>
Dynamic load torque (M <sub>z</sub> ), maximum	[Nm]	2130 <sup>1</sup> / 2910 <sup>2</sup>
Drive shaft force (F <sub>rd</sub> ), maximum	[N]	0
Drive shaft torque (M <sub>ta</sub> ), maximum	[Nm]	22
Ball screw diameter (d <sub>0</sub> )	[mm]	25
Ball screw lead (p)	[mm]	5, 10, 25
Weight	[kg]	
of unit with zero stroke		13,32
of every 100 mm of stroke		1,70
of each carriage		4,47

<sup>1</sup> Value for the complete unit

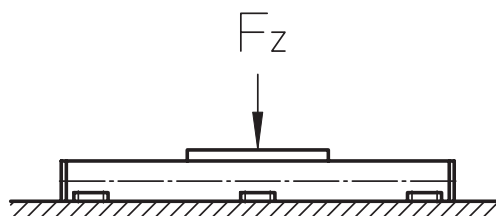
<sup>2</sup> Value for the ball guide only

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

Input speed [rpm]	Screw lead [mm]		
	p = 5	p = 10	p = 25
150	0,15	0,20	0,35
1500	0,16	0,21	0,38
3000	0,17	0,25	0,47

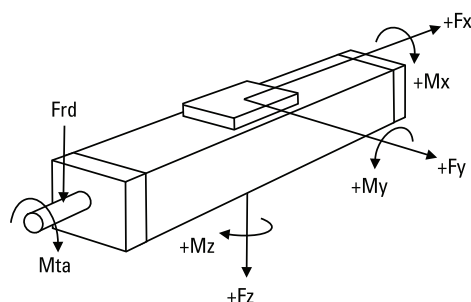
M<sub>idle</sub> = the input torque needed to move the carriage with no load on it.

### Deflection of the Profile



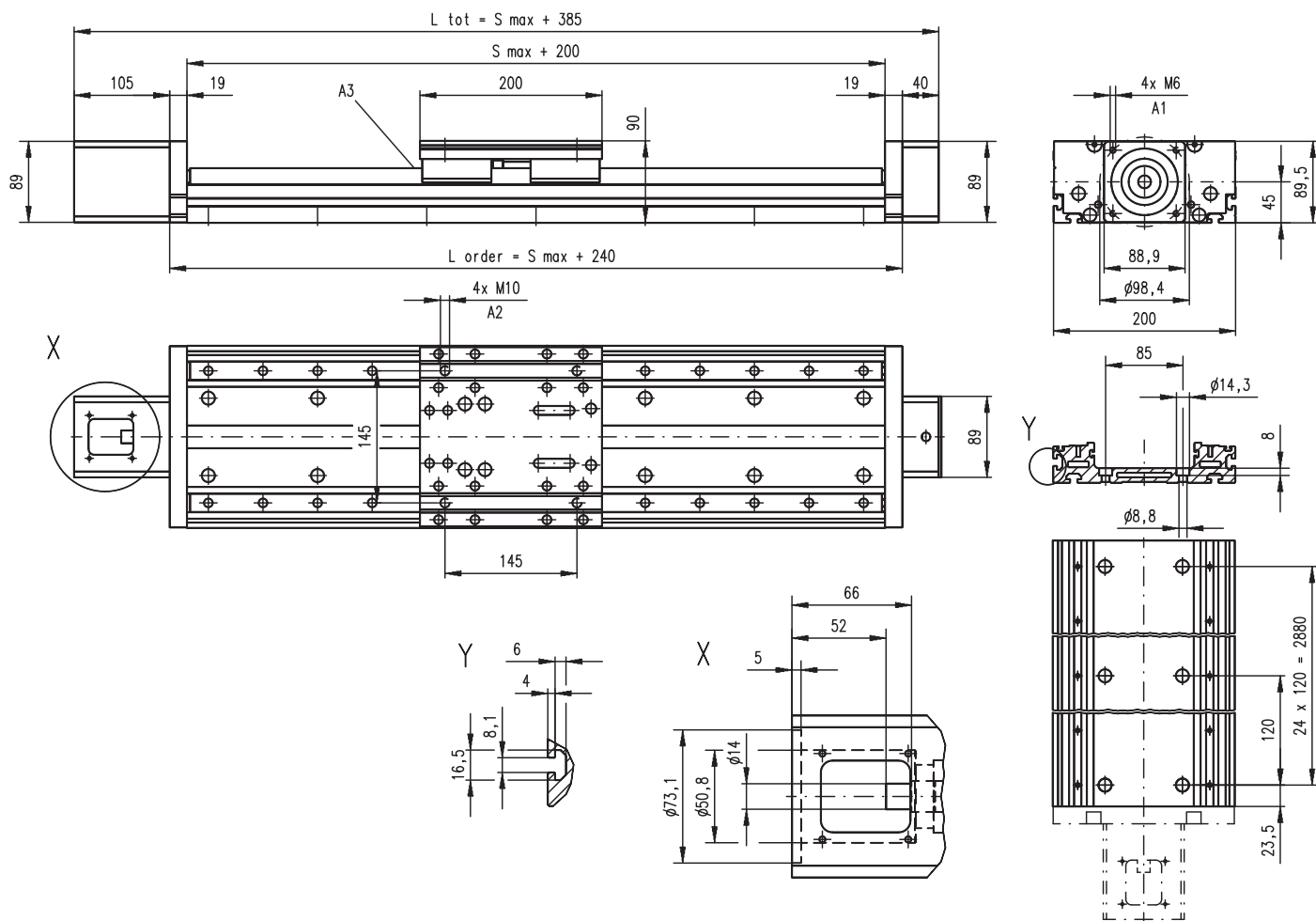
The unit must be continuously supported by a machined surface under its entire length.

### Definition of Forces



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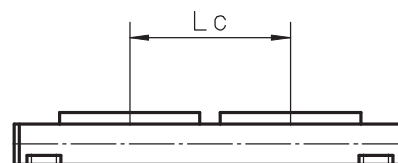


A1: depth 12  
A2: depth 15 Heli coil

A3: lubrication nipple (using the unit with the nipple mounted makes stroke 10 mm shorter)

### Double Carriages

Parameter		2HBE20
Minimum distance between carriages (Lc)	[mm]	210
Dynamic load (Fy), maximum	[N]	19030
Dynamic load (Fz), maximum	[N]	19030
Dynamic load torque (My), maximum	[Nm]	$Lc^1 \times 38$
Dynamic load torque (Mz), maximum	[Nm]	$Lc^1 \times 38$
Force required to move second carriage	[N]	17
Ordering length (L order)	[mm]	$S_{max} + Lc + 240$
Total length (L tot)	[mm]	$L_{order} + 145$
Weight of unit with zero stroke of carriages	[kg]	21,5 9,0



<sup>1</sup> Value in mm