HIWIN®

Positioning Systems

Linear Axes and Axis Systems HX

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Note:
The technical data in this catalogue may
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Positioning systems

Linear axes and axis systems HX

Linear axes and axis systems are used in many industrial areas, e.g. to transport or position components. HIWIN offers linear axes with toothed belt drive for applications requiring high dynamic responses and speeds. The HIWIN modular system is a flexible solution for combining belt axes into twin and multi-axis systems, depending on the application. HIWIN linear axes with ballscrew drive are available for applications requiring high feed forces and precision. HIWIN linear axes with linear motor drive fulfil the highest demands on dynamics, accuracy and synchronism. Due to their compact design and low moving mass the HIWIN cantilever axes are particularly suitable for vertical applications.

Assembly instructions and catalogue for download

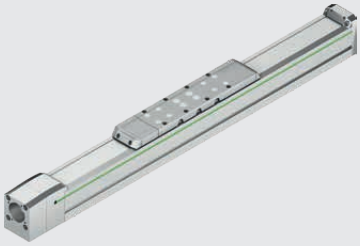
You can download the corresponding assembly instructions and the current catalogue as PDF files here.

Contents

1. Product overview

Linear modules HM-B with toothed belt drive Page 20

- High velocity
- High acceleration
- Long stroke lengths



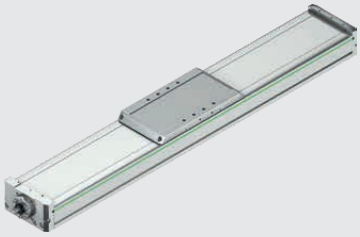
Linear modules HM-S with ballscrew Page 30

- High positioning accuracy
- High feed force
- High drive rigidity

Linear tables HT-B with toothed belt drive Page 40

- High velocity
- High acceleration
- High rigidity and torque load capacity

  due to double guide



Linear table HT-S with ballscrew Page 50

- High positioning accuracy
- High feed force
- High rigidity and torque load capacity

  due to double guide

Linear tables HT-L with linear motor Page 60

- Maximum positioning accuracy
- Maximum dynamics
- Wear-free drive

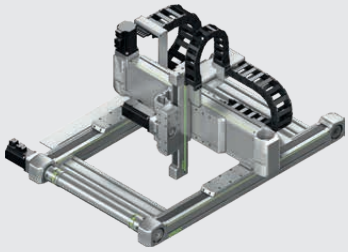
Cantilever axis HC with toothed belt drive Page 70

- Compact design
- Low moving mass
- High dynamism

Double axes HD

Page 82

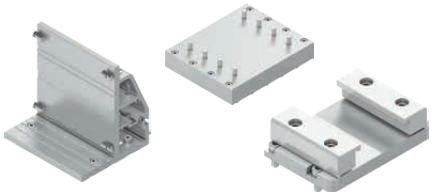
- Two belt axes HM-B connected to synchronous shaft
- Completely assembled unit
- Can be individually assembled



Multi-axis systems HS

Page 88

- X-Y-, X-Z- and X-Y-Z-systems with belt axes
- Individual stroke length
- Ready-to-install complete system



Adapters for cross tables and multi-axis systems

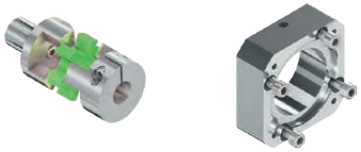
Page 124

- Flexible connection of two or more axes
- Components for building complete individual systems
- Secure positioning thanks to form and force closure

Adapters for robot axes

Page 133

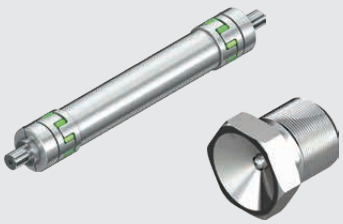
- For mounting lightweight robots on linear axes HT
- Quick and safe connection
- Sets include mounting material



Drive adaptation

Page 137

- Adapter for flexible motor connection
- Gearbox/Belt drive
- Energy supply



Accessories

Page 180

- Mounting and adaptation material
- Sensors and cables
- Lubrication accessories

2. General information

2.1 Properties of linear modules HM

HIWIN linear axes HM are compact positioning systems available with a toothed belt drive or with a ballscrew. They are based on a heavy-duty and low-wear linear guideway, combined with a sturdy and lightweight aluminium profile. Thanks to a freely adjustable stroke in millimetre increments as well as a variety of options (e.g. steel cover strip, limit switch, distance measuring system and additional carriages in various sizes), the linear axes can be individually adapted to the respective application requirements.

Advantages of linear modules HM

- Aluminium profile with large grooves for stable mounting of the linear axis on the machine frame
- Stable and reproducible mounting of the load capacity due to carriages with threaded holes and additional close-tolerance centring holes
- Convenient relubrication in any installation position thanks to grease nipples on both sides
- Limit switches can be mounted directly in a profile groove and positioned freely
- Options, such as belt cover, flexible mounting of the drive, adapters for all common motor types and distance measuring system are available as standard

2.2 Properties of linear tables HT

HIWIN linear stages HT are compact positioning systems with integrated double guide for high rigidity as well as high torque load capacity around the X-axis. Depending on the application requirements, three drive types are available: Toothed belt for dynamic applications, ballscrew for high feed forces and linear motor drive for the highest demands on speed and precision. The stroke can be freely selected in millimetre steps for all three drive types.

Advantages of linear tables HT

- High rigidity and high torque load capacity around the X-axis
- Integrated HIWIN double guide
- Very smooth running thanks to SynchMotion™ technology
- Sturdy steel cover strip, included as standard

2.3 Properties of cantilever axis HC

HIWIN cantilever axes HC are flexible linear units with an omega toothed belt drive. The compact drive block with motor and gearbox is stationary while the lightweight cantilever moves. Thanks to the sophisticated structure of the aluminium profile, the cantilever features high torsional rigidity despite its low weight and is therefore suitable for dynamic applications, especially vertical ones. The stroke can be freely selected in millimetre steps.

Advantages of cantilever axis HC

- Compact design
- High cantilever rigidity
- Low moving mass

2.4 Properties of double axes HD

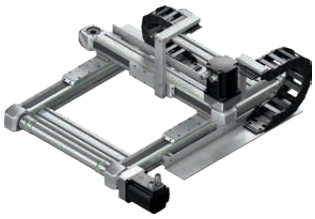
HIWIN double axes HD are positioning modules with two belt axes of the HM-B series, which are connected to each other via a synchronous shaft. The stroke and the distance between the two axes can be adjusted in millimetre steps. HIWIN double axes are particularly suitable for applications where a wide mounting surface or an additional carriage is required for support in the Y direction. They are also ideally suited as a basis for multi-axis systems.

Advantages of double axes HD

- Only minor design work needed thanks to standardised units with flexible configuration options
- Low assembly effort due to ready-to-install system
- Options, such as belt cover, flexible mounting of the drive, adapters for all common motor types and distance measuring system are available as standard

2.5 Properties of double axis systems HS2

HIWIN two-axis systems HS2 are flexible units for positioning along the X- and Y-axes. The X-axis is based on a HIWIN HD double axis. In the Y direction, you can choose between a HIWIN HM-B belt drive axis (module) or HT-B (table) for dynamic positioning. HIWIN two-axis systems are suitable for two-dimensional handling tasks.

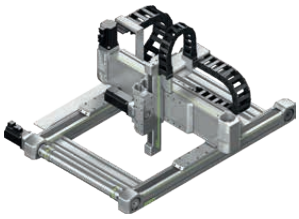


Advantages of double axis systems HS2

- Stroke in both axial directions can be freely selected in millimetre steps
- Low assembly effort due to ready-to-install complete system
- Optionally with drive adaptation and energy chains

2.6 Properties of three-axis systems HS3

HIWIN three-axis systems HS3 are flexible units for positioning along the X- Y- and Z-axis. The X-axis is based on a HIWIN HD double axis. In the Y direction, a linear table HT-B with toothed belt drive ensures dynamic positioning.
The cantilever axis HC with omega toothed belt drive and particularly light cantilever ensures fast and precise movements in the Z direction.

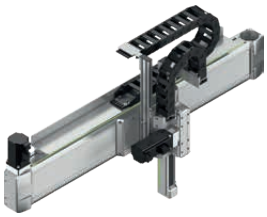


Advantages of three-axis systems HS3

- Stroke in all three axial directions can be freely selected in millimetre steps
- Low assembly effort due to ready-to-install complete system
- Optionally with drive adaptation and energy chains

2.7 Properties of linear gantries HS3

HIWIN linear gantries HSL are flexible units for positioning along the X- and Z-axis. The basis in the X-axis is a linear table HT-B with toothed belt drive. The cantilever axis HC with omega toothed belt drive and particularly light cantilever ensures dynamic positioning in the Z direction.

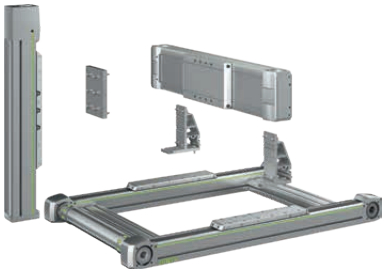


Advantages of linear gantries HSL

- Stroke in both axial directions can be freely selected in millimetre steps
- Low assembly effort due to ready-to-install complete system
- Optionally with drive adaptation and energy chains

2.8 Properties of adapters for cross tables and multi-axis systems

With the HIWIN adapters for cross tables and multi-axis systems, two or more axes can be flexibly combined. This allows individual multi-axis systems to be designed quickly and easily. Forces and torques are safely transmitted through force and form closure. Centring sleeves allow for precise and reproducible connection.



Advantages of the adapters

- Quick and easy assembly of individual multi-axis systems
- Rigid and safe power transmission
- Only minor construction work needed thanks to standardised sets including mounting material

2.9 Properties of adapters for robot axes

The HIWIN adapters for robot axes allow a lightweight robot and a HIWIN HT linear axis to be combined. This makes it quick and easy to design a 7th axis system. The adapters are designed so that the robots can rotate freely in the lower axis even with axes with an energy chain attached. Centring sleeves allow for precise and reproducible connection.

Advantages of the adapters

- Quick and easy robot mounting
- Only minor construction work needed thanks to standardised sets
- Including mounting material

2.10 Glossary

Positioning accuracy
The positioning accuracy describes the maximum deviation between the actual and target position.
For toothed belt axes HM-B, HT-B and HC-B, the positioning accuracy depends on the manufacturing accuracy of the toothed belt (tooth pitch) and the belt pre-tension. Since this deviation is largely linear, it can be easily measured and compensated for via a correction factor. The correction factor is determined as a target/actual deviation, multiplied by the feed constant of the axis and stored accordingly in the control unit. Please contact HIWIN for more information.

Repeatability
The repeat accuracy indicates how accurately the carriage is positioned when approaching a position several times from the same direction (unidirectional). The maximum deviation between the actual positions reached is indicated.

Static load rating C_0
Static load rating C_0 corresponds to a static load that causes a permanent deformation of 0.0001 × ball diameter at the contact point that is most heavily loaded. It is fundamental for the calculation of static applications.

Dynamic load rating C_{dyn}
Dynamic load rating C_{dyn} describes the load at which 90% of similar linear guideways reach the life expectancy of 50 km. It is fundamental for the calculation of dynamic applications.

Load capacity
The typical load capacity is used to pre-select the appropriate size based on experience and taking into account combined loads.

Feed constant
The feed constant corresponds to the distance in mm that the carriage travels during one revolution of the drive.

Flatness
Measure for the vertical straightness of a movement on the X-axis in X and Y direction. A deviation from absolute flatness is a displacement on the Z-axis when moving on the X-axis.

Straightness
Measure for the horizontal straightness of a movement on the X-axis. A deviation from absolute straightness is a displacement on the Y-axis when moving on the X-axis.

Continuous force F_c
Continuous force or nominal force that the linear motor of axes HT-L can deliver in continuous operation (duty cycle ED = 100%).

Peak force F_p
The peak force is the maximum force that a linear motor can generate for about one second when peak current I_p is applied.

Peak current I_p
Applied briefly to generate the peak force on linear axes with a linear motor. The maximum permissible duration of the peak current is one second. The linear motor must then cool down to the nominal temperature before the peak current can be applied again.

Stroke
The stroke is the travel distance that the carriage can cover between the two switching points of the limit switches.

Reserve stroke
Reserve stroke L_r corresponds to the distance that can be travelled in addition to the stroke on both sides of the end positions (stroke 0, stroke max.) before the carriage reaches the mechanical end position (mechanical 0) L_{C_mech0} at the built-in stop buffers. The reserve stroke is set at the factory for each axis size.
The reserve stroke for each axis size can be found in the "Dimensions and specifications" sections of the respective axis type.

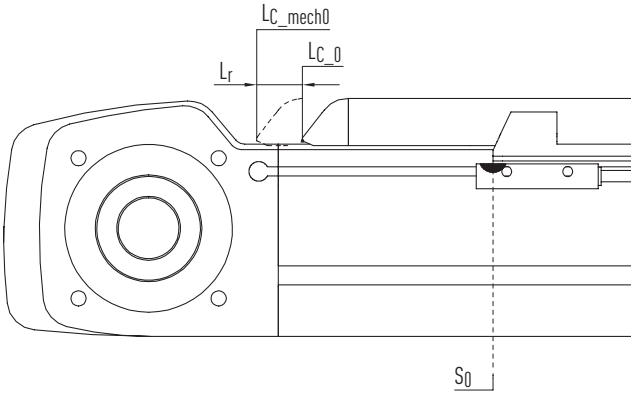


Fig. 2.1 **Illustration of reserve stroke (example: linear module HM-B)**

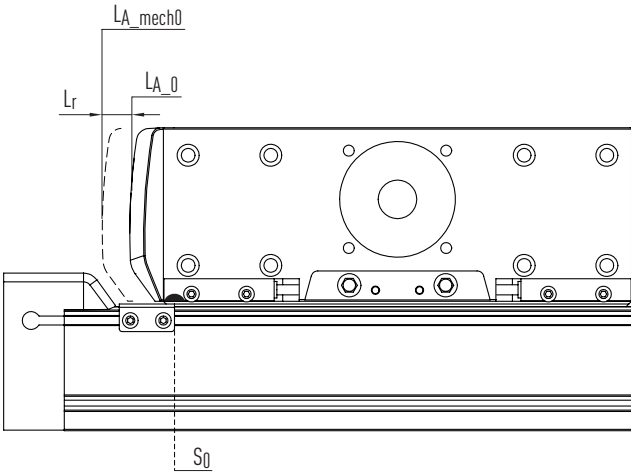


Fig. 2.2 **Illustration of reserve stroke (example: cantilever axis HC)**

L_{C_mech0}	Carriage position at mechanical 0 (rubber buffer stop)
L_{C_0}	Carriage position at stroke 0 (switching point sensor)
L_{A_mech0}	Position of the drive block at mechanical 0 (rubber buffer stop)
L_{A_0}	Position of the drive block at stroke 0 (switching point sensor)
S_0	Switching point sensor at stroke 0

2.11 Installation location requirements

- Temperature range: +5 °C to +40 °C
- Dry
- Non-explosive
- No vacuum

3. Calculation basis

3.1 Calculation of the required drive torque for HM-B, HM-S, HT-B, HT-S and HC

The maximum drive torque of axes HM-B, HM-S, HT-B, HT-S and HC is based on the technical data of the drive elements (toothed belt or ballscrew). Motors and gears must be dimensioned so that the maximum drive torque is not exceeded during operation. The required drive torque is calculated according to the formula F 3.1. Basically, all individual movements that the axis goes through in a cycle should be calculated and compared with the limit values of the axis. In simplified form, for preselection of the axis, the required drive torque M_A can be calculated from the travel movement with the highest load and compared with the maximum drive torque of the axis.

F 3.1

$$M_A = M_{dyn} + M_{stat} + M_{leer}$$

M_A Required drive torque [Nm]
M_{dyn} Dyn. Drive torque [Nm] (see formula F 3.2)
M_{stat} Stat. Drive torque [Nm] (see formula F 3.5)
M_{Leer} Idle torque [Nm] (see technical data of axis)

The dynamic drive torque M_{dyn} is calculated from the rotational moment of inertia of the axis and the translationally moved mass.

F 3.2

$$M_{dyn} = \frac{J_{rot} \times a}{10 \times r} + \frac{F_{x\_dyn} \times r}{1.000}$$

J_{rot} Rotational moment of inertia of the axis [kgcm²] (see technical data of the axis, at HM-S/HT-S: J_{rot} = J_{rot} 0-stroke + J_{rot} stroke)
a Max. acceleration [m/s²]
r Effective radius [mm] (see formula F 3.4)
F_{x_dyn} Dynamic feed force [N] (see formula F 3.3)

F 3.3

$$F_{x\_dyn} = (m_{Last} + m_{Schlitten}) \times a$$

m_{Load} Externally moving mass [kg]
$m_{Carriage}$ Mass of the moving carriage [kg]. (see technical data of the axis)

F 3.4

$$r = \frac{P}{2 \times \pi}$$

P Feed constant (HM-B/HT-B) [mm]; spindle pitch (HM-S/HT-S) [mm]

The static drive torque M_{stat} takes into account the drive torque required to hold the load when the axis is not horizontal.

F 3.5

$$M_{stat} = \frac{F_{x\_stat} \times r}{1.000}$$

F_{x_stat} Gravitational force [N] (see formula F 3.6) Is exerted on the drive element by the moving mass when not arranged horizontally

F 3.6

$$F_{x\_stat} = (m_{Last} + m_{Schlitten}) \times g \sin(A)$$

g Gravitational acceleration [m/s²]
A Angle by which the linear axis deviates horizontally in the direction of travel (see Fig. 3.1)

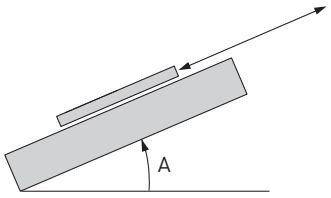


Fig. 3.1 **Angle A**

3.2 Calculation of the required feed force for HT-L

The required feed force F_v for applications with linear tables HT-L with linear motor drive is calculated according to the formula F 3.7. For an exact design, the travel profile must be recorded as a whole; the individual movements as well as the resulting effective force, which occurs over the entire cycle time, must be calculated. The effective force must not exceed the permanent force specified in chapter 9. In addition, it should be noted that the peak force must not be exceeded during the complete cycle and must not be generated for longer than 1 second for thermal reasons. To preselect the axis for an application, the required maximum feed force must be matched with the maximum peak force of the motor.

F 3.7

$$F_v = F_{x\_dyn} + F_{x\_stat} + F_l$$

F_v Required feed force [N]
F_{x_dyn} Dynamic feed force [N] (see formula F 3.8)
F_{x_stat} Gravitational force [N] (see formula F 3.9)
Is exerted on the drive element by the moving mass when not arranged horizontally
F_l Carriage displacement force [N]
(see technical data of the axis)

F 3.8

$$F_{x\_dyn} = (m_{Last} + m_{Schlitten}) \times a$$

m_{Load} Externally moving mass [kg]
$m_{Carriage}$ Mass of the moving carriage [kg].
(see technical data of the axis)
a Max. acceleration [m/s²]

F 3.9

$$F_{x\_stat} = (m_{Last} + m_{Schlitten}) \times g \sin(A)$$

g Gravitational acceleration [m/s²]
A Angle by which the linear axis deviates horizontally in the direction of travel (see Fig. 3.1)

3.3 Lifetime calculation

The lifetime of a linear axis is defined as the total mileage of the linear axis in kilometres until the first material fatigue occurs on the components of the linear axis (excluding wear parts).
For multi-axis systems HS, the lifetime must be calculated separately for each axis.

3.3.1 Load application point

The specified dynamic forces and torques are related to the linear axis carriage. The load application point is defined as the centre of the carriage surface.

3.3.2 Forces and torques on the linear axis

The specified maximum dynamic forces and torques for the respective axis type must not be exceeded during operation.

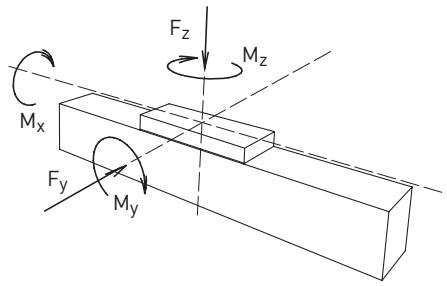


Fig. 3.2 **Illustration of the forces and torques on linear axes HM and HT**

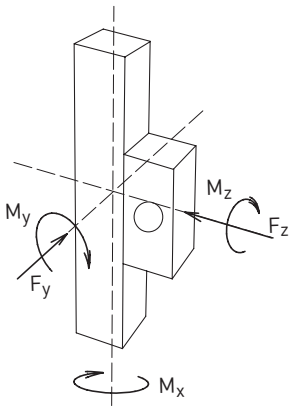


Fig. 3.3 **Illustration of the forces and torques on cantilever axis HC**

3.3.3 Lifetime reference value and load comparison factor

If there is a combined load from several forces and torques, the load comparison factor f_v is first calculated according to the formula F 3.10. With the load comparison factor, the application-specific lifetime can be calculated from the respective lifetime characteristic curves. (Fig. 3.4 to Fig. 3.11). At $f_v = 1$ the predefined reference lifetime is reached in each case.

F 3.10

$$f_v = \frac{|F_y|}{F_{ydynmax}} + \frac{|F_z|}{F_{zdynmax}} + \frac{|M_x|}{M_{xdynmax}} + \frac{|M_y|}{M_{ydynmax}} + \frac{|M_z|}{M_{zdynmax}}$$

f_v	Load comparison factor
F_y	Effective force in Y direction [N]
F_z	Effective force in Z direction [N]
L	Nominal lifetime [N]
M_x	Effective torque around the X-axis [Nm]
M_y	Effective torque around the Y-axis [Nm]
M_z	Effective torque around the Z-axis [Nm]
$F_{ydynmax}$	Maximum dynamic force in Y direction [N]
$F_{zdynmax}$	Maximum dynamic force in Z direction [N]
$M_{xdynmax}$	Maximum dynamic moment around the X-axis [Nm]
$M_{ydynmax}$	Maximum dynamic moment around the Y-axis [Nm]
$M_{zdynmax}$	Maximum dynamic moment around the Z-axis [Nm]

3.3.4 Lifetime characteristic curve of the linear axis with toothed belt drive HM-B, HT-B, HC and the linear axis with linear motor drive HT-L

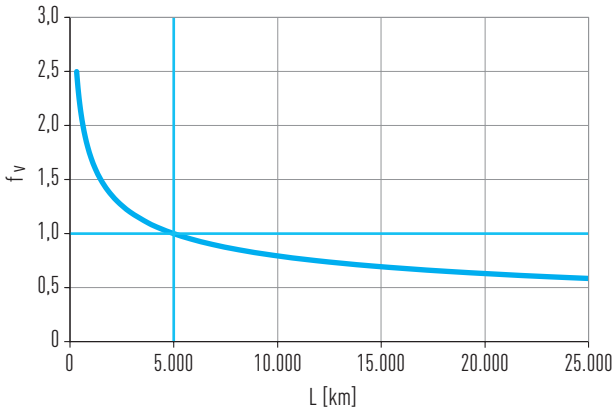


Fig. 3.4 **Lifetime characteristic curve HC025B**

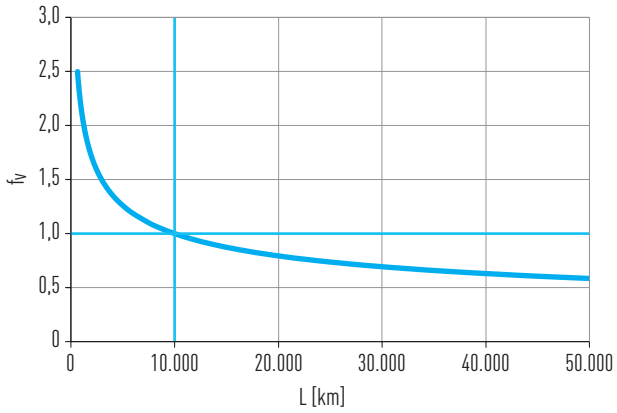


Fig. 3.5 **Lifetime characteristic curve HC040B, HT100L**

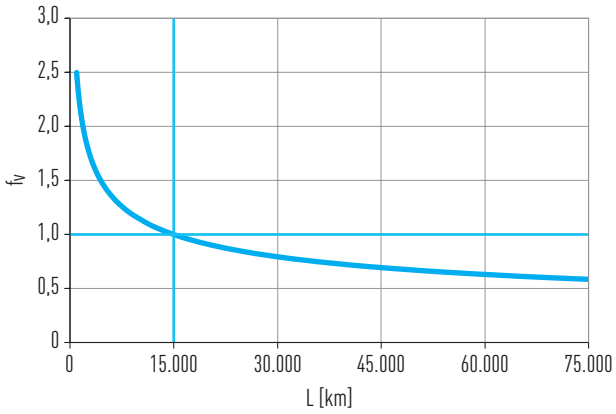


Fig. 3.6 **Lifetime characteristic curve HC060B, HC080B, HC100B**

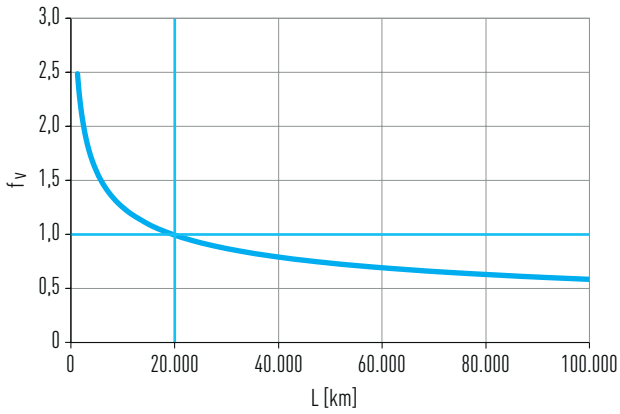


Fig. 3.7 **Lifetime characteristic curve HM-B, HT-B, HT150L, HT200L, HT250L**

At $f_v = 1$ the predefined reference lifetime is reached in each case.
Please contact HIWIN for more information.

3.3.5 Lifetime characteristic curve of linear axis with ballscrew HM-S and HT-S

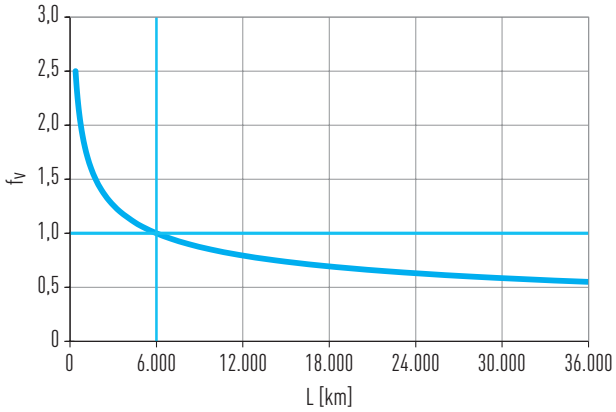


Fig. 3.8 **Lifetime characteristic curve HM040S, HT100S**

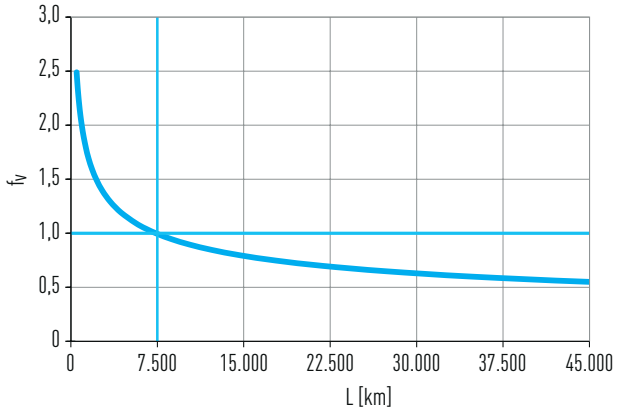


Fig. 3.9 **Lifetime characteristic curve HM060S, HM080S, HT150S**

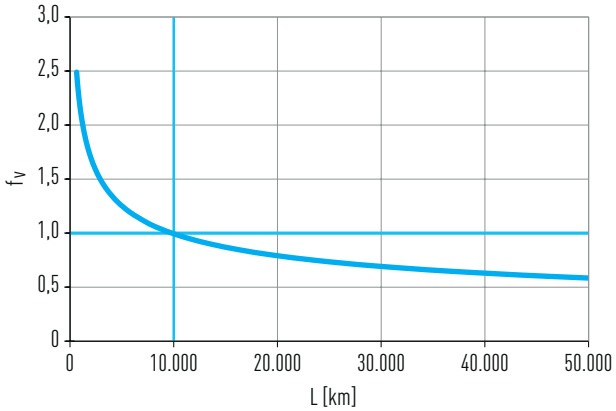


Fig. 3.10 **Lifetime characteristic curve HM120S, HT200S**

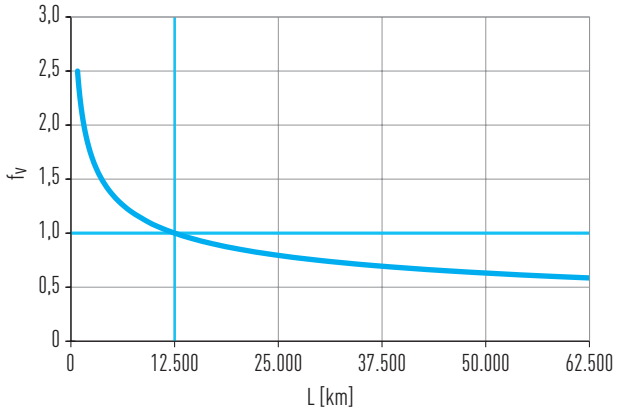


Fig. 3.11 **Lifetime characteristic curve HT250S**

At $f_v = 1$ the predefined reference lifetime is reached in each case.
Please contact HIWIN for more information.

3.4 Calculation of the support distance

The linear axes should ideally be mounted on a continuous, stable and level surface. If this is not possible, at least one support point must be provided on each side, in each case at the end of the profile. The max. permissible support distance L_{SUP} as a function of load F_y and F_z according to the following diagrams must not be exceeded. Additional support points may have to be provided to ensure this. For more information on mounting the linear axis, see the assembly instructions at www.hiwin.de.

3.4.1 Maximum support distance L_{SUP} of the linear modules with toothed belt drive HM-B in unsupported applications

Axis position lying horizontal:

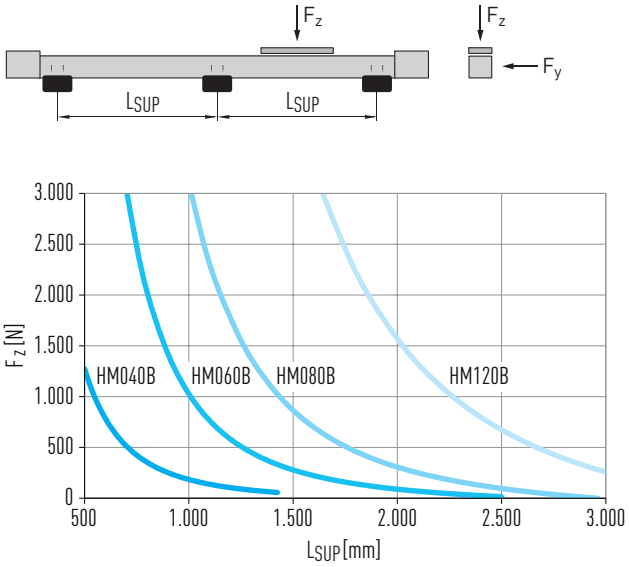


Fig. 3.12 **HM-B: Maximum support distance L_{SUP} as a function of force F_z**

Axis position standing horizontal:

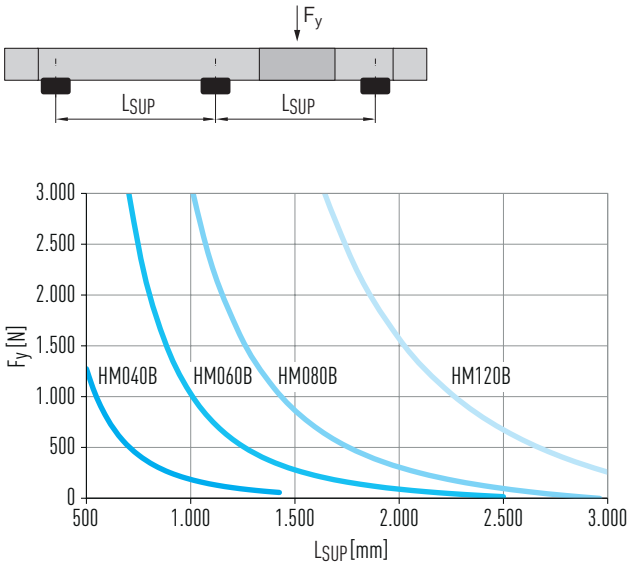


Fig. 3.13 **HM-B: Maximum support distance L_{SUP} as a function of force F_y**

3.4.2 Maximum support distance of the linear modules with ballscrew HM-B in unsupported applications

Axis position lying horizontal:

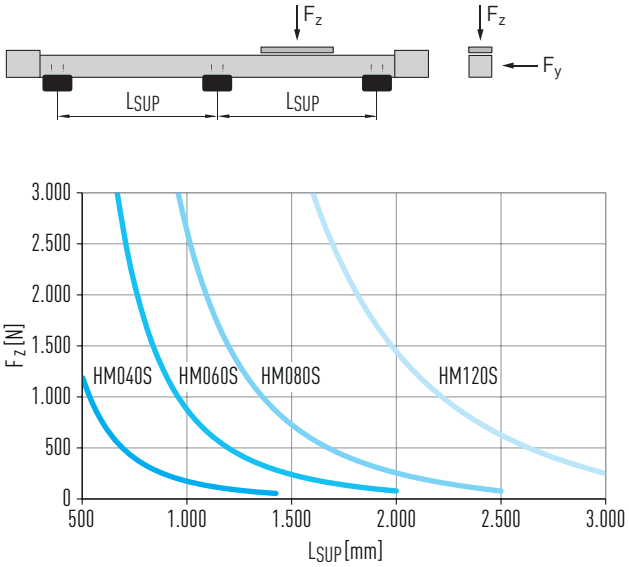


Fig. 3.14 **HM-S: Maximum support distance L_{SUP} as a function of force F_z**

Axis position standing horizontal:

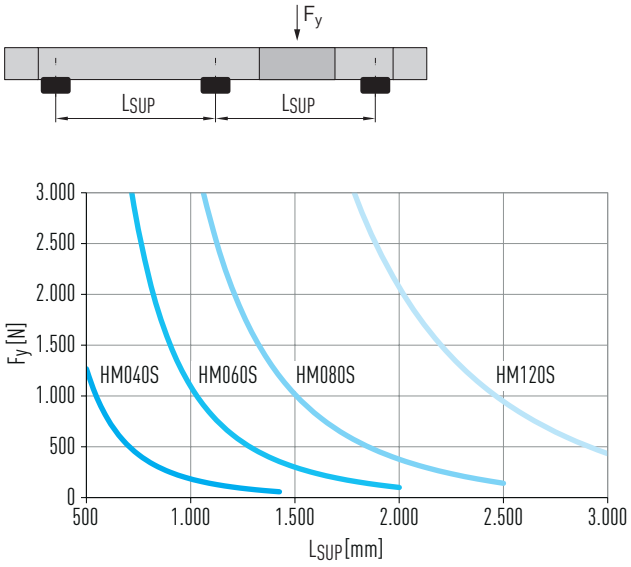
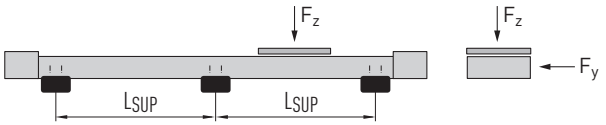


Fig. 3.15 **HM-S: Maximum support distance L_{SUP} as a function of force F_y**

3.4.3 Maximum support distance of linear tables HT-B, HT-S, HT-L in supported applications

Axis position lying horizontal:



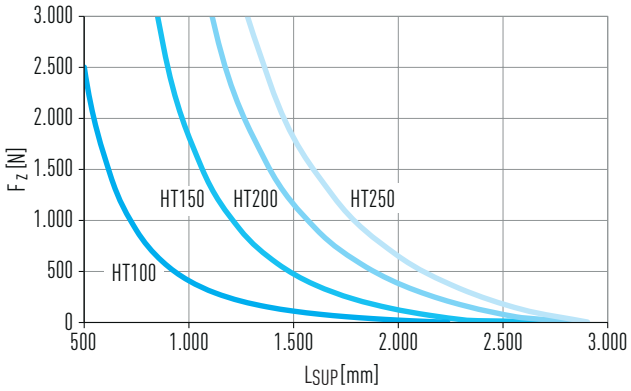
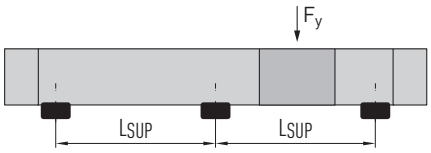


Fig. 3.16 **HT-B, HT-S: Maximum support distance L_{SUP} as a function of force F_z**

Axis position standing horizontal:



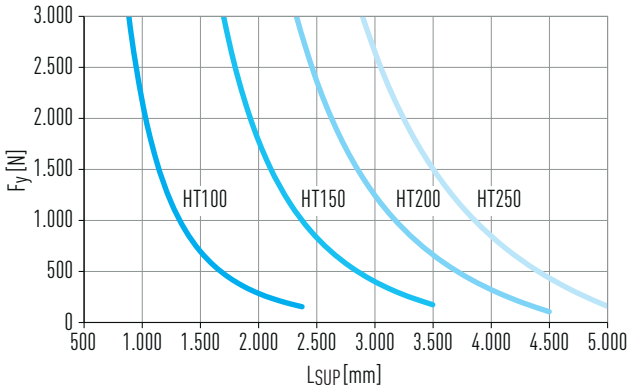


Fig. 3.17 **HT-B, HT-S: Maximum support distance L_{SUP} as a function of force F_y**

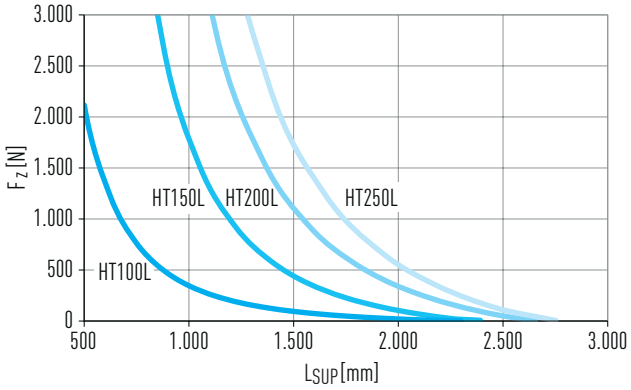


Fig. 3.18 **HT-L: Maximum support distance L_{SUP} as a function of force F_z**

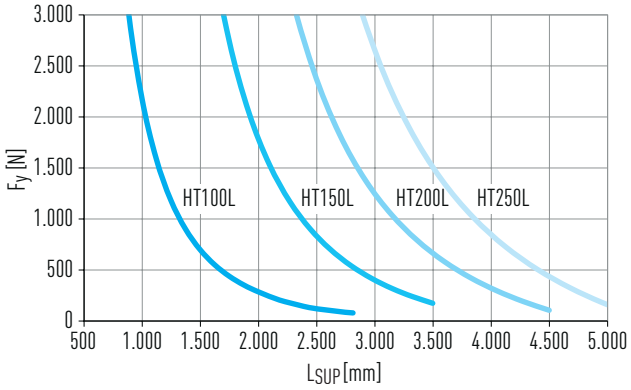
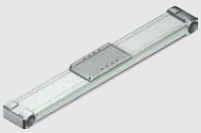
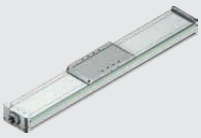
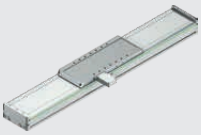
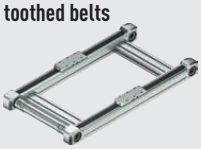


Fig. 3.19 **HT-L: Maximum support distance L_{SUP} as a function of force F_y**

4. Product selection

4.1 Linear axes:
Linear axes for positioning in one axis direction.

Table 4.1 **Product selection diagram**

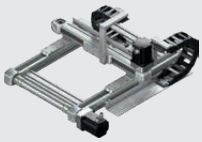
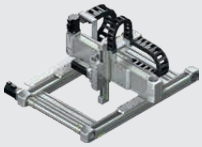
Drive element	Typical properties	Typical load capacity [kg]	Max. feed force [N]	Max. torque M_x [Nm]	Max. travel speed [m/s]	Max. standard stroke [1] [mm]	Repeatability [2] [mm]	Axis	Page
Module with toothed belt 	○ High velocity ○ High acceleration ○ Long stroke lengths	10	300	8	5.0	3,000	± 0.05	**HM040B**	Page 22
		25	895	21	5.0	5,700	± 0.05	**HM060B**	Page 24
		60	1,253	48	5.0	5,600	± 0.05	**HM080B**	Page 26
		120	4,000	110	5.0	5,500	± 0.05	**HM120B**	Page 28
Module with ballscrew 	○ High positioning accuracy ○ High feed force ○ High drive rigidity	10	1,271	12	0.5	1,200	± 0.02	**HM040S**	Page 32
		25	2,541	28	0.8	2,950	± 0.02	**HM060S**	Page 34
		60	3,186	67	1.0	4,050	± 0.02	**HM080S**	Page 36
		120	6,592	155	1.6	5,400	± 0.02	**HM120S**	Page 38
Table with toothed belt 	○ High velocity ○ High acceleration ○ Long stroke lengths ○ High torque load capacity	40	813	93	5.0	5,600	± 0.05	**HT100B**	Page 42
		80	1,300	246	5.0	5,550	± 0.05	**HT150B**	Page 44
		150	3,000	852	5.0	5,500	± 0.05	**HT200B**	Page 46
		250	4,500	1,496	5.0	5,500	± 0.05	**HT250B**	Page 48
Table with ballscrew 	○ High positioning accuracy ○ High feed force ○ High drive rigidity ○ High torque load capacity	40	2,541	139	0.8	3,000	± 0.02	**HT100S**	Page 52
		80	3,186	341	1.0	5,150	± 0.02	**HT150S**	Page 54
		150	3,535	1,073	1.25	5,050	± 0.02	**HT200S**	Page 56
		250	5,300	1,750	1.6	5,000	± 0.02	**HT250S**	Page 58
Table with linear motor 	○ Maximum positioning accuracy ○ Maximum dynamics ○ Wear-free drive ○ Largest stroke lengths	20	224 [3]	35	5.0	5,500	± 0.005	**HT100L**	Page 62
		80	868 [3]	201	5.0	5,450	± 0.005	**HT150L**	Page 64
		150	1,535 [3]	721	5.0	5,400	± 0.005	**HT200L**	Page 66
		250	2,469 [3]	1,249	5.0	5,450	± 0.005	**HT250L**	Page 68
Cantilever axis 	○ High velocity ○ Compact design ○ Low moving mass	2	241	3	5.0	300 [4]	± 0.05	**HC025B**	Page 72
		8	404	10	5.0	500 [4]	± 0.05	**HC040B**	Page 74
		16	997	33	5.0	800 [4]	± 0.05	**HC060B**	Page 76
		30	1,330	66	5.0	1,200 [4]	± 0.05	**HC080B**	Page 78
		60	2,667	110	5.0	1,800 [4]	± 0.05	**HC100B**	Page 80
Double axis with toothed belts 	○ High torque load capacity ○ Screw-on surface width ○ Synchronous axis movement	25	450	–	5.0	3,000	± 0.05	**HD1**	Page 84
		63	1,343	–	5.0	5,700	± 0.05	**HD2**	Page 85
		150	1,880	–	5.0	5,600	± 0.05	**HD3**	Page 86
		300	4,385	–	5.0	5,500	± 0.05	**HD4**	Page 87

[1] Restrictions due to energy chain and/or distance measuring system, if applicable. Larger strokes on request
[2] Repeatability depends on the selected distance measuring system (see chapter 17 from page 134)
[3] Peak force of the drive
[4] Applies to vertical installation position; for max. stroke for horizontal installation, see chapter 10

4.2 Multi-axis systems

Axis systems for positioning in two or three axis directions.

Table 4.2 **Product selection diagram**

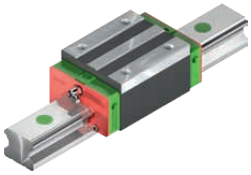
System	Typical properties	Typical load capacity [kg]	Max. travel speed [m/s]	Basis	Working space [mm]	Axis	Page :
Two-axis system 	○ Two-dimensional movements ○ Compact system ○ Large working space	5	5.0	X: HD1 Y: HM040B	X: 3,000 Y: 1,300	**HS21-D-M**	Page 90
		20	5.0	X: HD1 Y: HT100B	X: 3,000 Y: 1,300	**HS21-D-T**	Page 92
		12	5.0	X: HD2 Y: HM060B	X: 5,000 Y: 1,700	**HS22-D-M**	Page 94
		40	5.0	X: HD2 Y: HT150B	X: 5,000 Y: 1,700	**HS22-D-T**	Page 96
		30	5.0	X: HD3 Y: HM080B	X: 5,000 Y: 1,600	**HS23-D-M**	Page 98
		80	5.0	X: HD3 Y: HT200B	X: 5,000 Y: 1,600	**HS23-D-T**	Page 100
		130	5.0	X: HD4 Y: HT250B	X: 5,000 Y: 1,400	**HS24-D-T**	Page 102
Three-axis system 	○ Three-dimensional movements ○ Compact system ○ Large working space	2	5.0	X: HD1 Y: HT100B Z: HC025B	X: 3,000 Y: 1,300 Z: 300	**HS31-D-T-C**	Page 106
		8	5.0	X: HD2 Y: HT150B Z: HC040B	X: 5,000 Y: 1,650 Z: 500	**HS32-D-T-C**	Page 108
		16	5.0	X: HD3 Y: HT200B Z: HC060B	X: 5,000 Y: 1,550 Z: 800	**HS33-D-T-C**	Page 110
		30	5.0	X: HD4 Y: HT250B Z: HC080B	X: 5,000 Y: 1,400 Z: 1,200	**HS34-D-T-C**	Page 112
Linear gantry 	○ Two-dimensional movements ○ Compact system ○ Large working space	2	5.0	X: HT100B Z: HC025B	X: 5,000 Y: 300	**HSL1-T-C**	Page 116
		8	5.0	X: HT150B Z: HC040B	X: 5,000 Y: 500	**HSL2-T-C**	Page 118
		12	5.0	X: HT200B Z: HC060B	X: 5,000 Y: 800	**HSL3-T-C**	Page 120
		30	5.0	X: HT250B Z: HC080B	X: 5,000 Y: 1,200	**HSL4-T-C**	Page 122

5. Linear modules HM-B

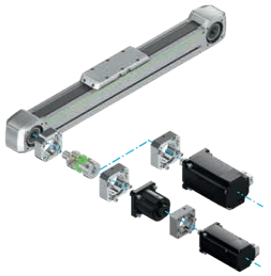
5.1 Properties of linear modules HM-B with toothed belt drive

The HIWIN linear axes with toothed belt drive are compact positioning modules that can be used flexibly. They are ideal in particular for applications requiring high dynamic responses and high speeds. In addition, large travel distances can be realised with these linear axes.

Linear guideway
High-quality HIWIN linear guideways safely transfer forces and torques from the carriage to the axis profile. Two blocks are used per carriage, which are guided on a high-precision profile rail. The SynchMotion™ technology with ball chain also ensures good synchronisation and smooth running in the HM060B, HM080B and HM120B sizes.

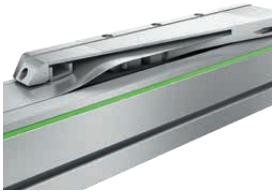


Drive connection
Thanks to its symmetrical design, the HIWIN toothed belt axis allows motors and gears to be mounted on all four sides of the drive blocks.
Additional journals, which are available as accessories (see Page 188), can be used to mount additional drives and outputs at any point.



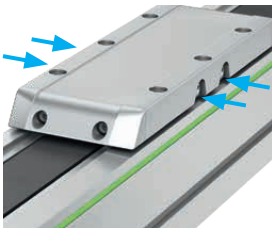
Toothed belt
The toothed belt with modern high performance profiles (HTD shape) and reinforced steel tension members enables high power transmission while offering high skip resistance.

Cover strip
The steel cover strip prevents dirt and dust from entering the axis interior. In addition, the cover strip allows the axes to be used in areas with coarse, sharp-edged or hot foreign bodies. The magnetic strips integrated in the axis profile hold the belt securely in position and increase the sealing effect.



Carriage
HIWIN toothed belt modules are available with three different carriage lengths depending on the size and dimensions of the load to be transported. In order to ensure ideal, reproducible alignment of the adjacent structure, each threaded hole has an additional bore hole via which the load capacity can be fixed with centring sleeves. You will find the matching centring sleeves in the accessories on Page 181.

Lubrication
For convenient maintenance of the linear axis, a separate grease nipple is fitted to the left and right of the carriage for each lubrication point. This ensures optimum accessibility for relubrication, even under difficult installation conditions.



5.2 Order code for linear modules HM-B

HM	060	B	155	N	0755	S	000

HIWIN linear module

Size (profile width):
040: 40 mm
060: 60 mm
080: 80 mm
120: 120 mm

Drive type:
B: Toothed belt drive

Feed constant [mm/rev]:
111: HM040B
155: HM060B
190: HM080B
288: HM120B

Clearance between two carriages [mm]:
(000: Only one carriage)

Carriage length:
E: Extra short[6]
S: Short
M: Medium
L: Long

Stroke length [mm]

Cover strip:
N: Without cover strip
C: With steel cover strip

Continuation, order code for linear modules HM-B

A	N	N	R	BR07	G0605

Axis limit switch[5]:
N: Without limit switch
A: 2 × normally closed, 100 mm cable, connector
B: 2 × normally open, 100 mm cable, connector
C: 2 × normally closed, 4 m open cable end
D: 2 × normally open, 5 m open cable end

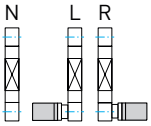
Toothed belt:
N: Standard belt

Distance measuring system option[1]:
N: Without distance measuring system
A: HIWIN MAGIC, analogue, 1 V_{SS} sin/cos, 5 m open cable end
D: HIWIN MAGIC, digital, TTL 5 V, 5 m open cable end

Gearbox[4]

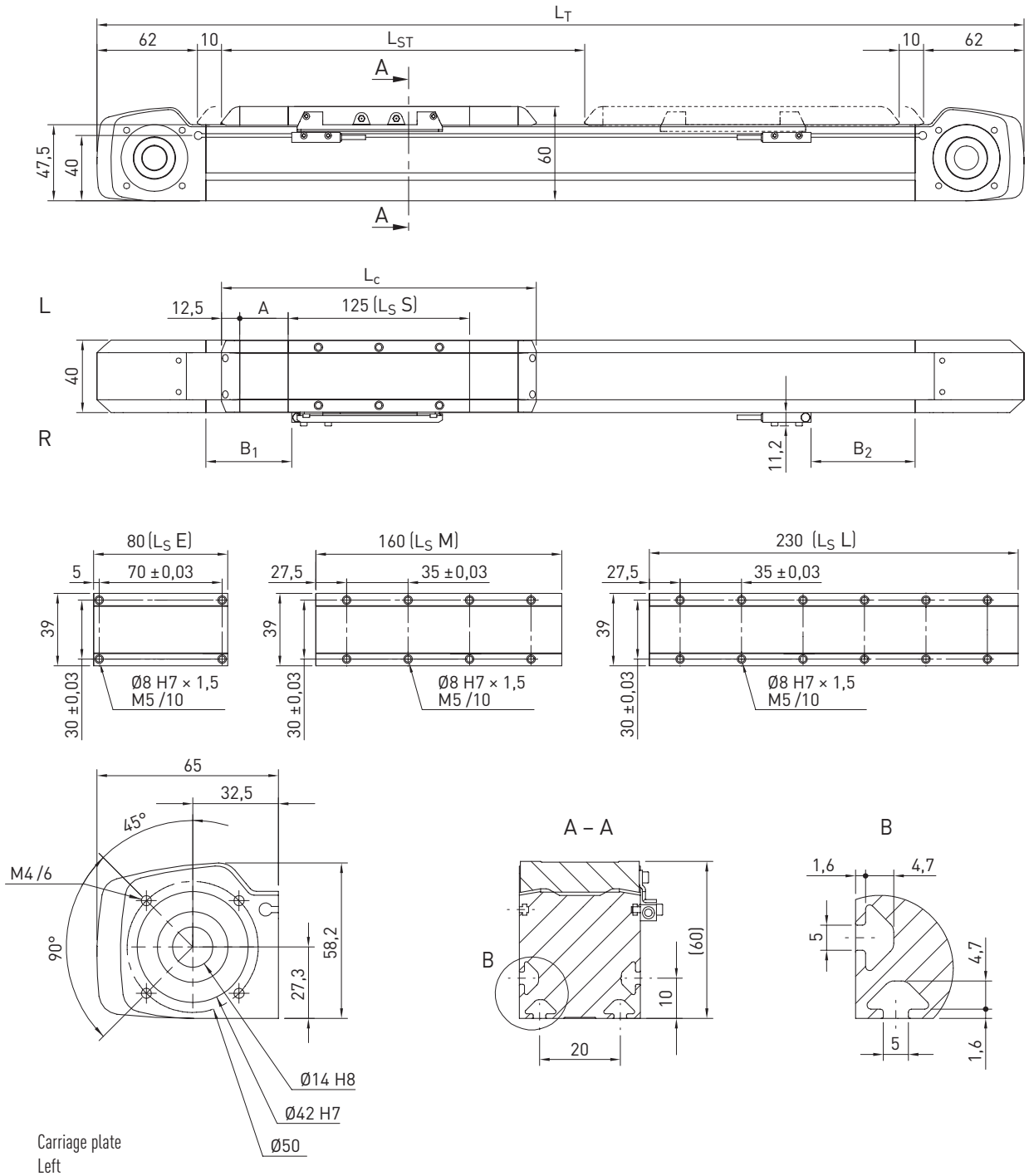
Flange type[3]

Drive interface[2]:
N: Without
L: Left
R: Right



[1] More detailed information in chapter 17 from page 134 or in the "HIWIN MAGIC Distance Measuring Systems" assembly instructions".
[2] If no drive interface is selected, the order code ends after this digit.
[3] You can find all flange types in Table 18.1 from page 138. If no gearbox is selected, the order code ends after this digit.
[4] You can find the right gearbox for the HIWIN axes in section 18.1.4.5 from page 158.
[5] Additional reference switches on request.
[6] Only available for HM040B.

5.3 Dimensions and specifications of HM040B



L_s Carriage plate
L Left
R Right

Table 5.1 **HM040B dimensions**

	Variant without cover				Variant with cover		
	Carriage type E	**Carriage type S**	**Carriage type M**	**Carriage type L**	**Carriage type S**	**Carriage type M**	**Carriage type L**
Total carriage length L_c [mm]	105	150	185	255	230	265	335
Cover strip deflection A [mm]	–	–	–	–	40	40	40
Switch distance B_1 [mm]	23	24	24	24	64	64	64
Switch distance B_2 [mm]	23	9	44	114	49	84	154
Max. stroke length L_{ST} [mm]	3,000	3,000	3,000	3,000	3,000	3,000	3,000
Total length L_T [mm]	$L_T = L_{ST} + 249$	$L_T = L_{ST} + 294$	$L_T = L_{ST} + 329$	$L_T = L_{ST} + 399$	$L_T = L_{ST} + 374$	$L_T = L_{ST} + 409$	$L_T = L_{ST} + 479$

Table 5.2 **Load data**

	Type of carriage			
	E	**S**	**M**	**L**
$F_{ydynmax}$ [1] [N]	665	963		
$F_{zdynmax}$ [1] [N]	665	963		
$M_{xdynmax}$ [Nm]	5	8		
$M_{ydynmax}$ [Nm]	4	35	52	85
$M_{zdynmax}$ [Nm]	4	35	52	85
z [2] [mm]	34.1			

[1] Force must only act free of torque
[2] Carriage upper edge – centre guide
See section 3.3.3 on page 14 (lifetime reference value)

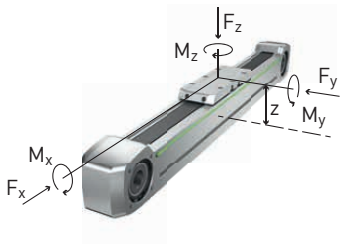


Table 5.3 **General technical data**

Repeatability [mm]	± 0.05
Max. feed force F_{x_max} [N]	300
Max. speed [m/s]	5
Max. acceleration [m/s²]	30
Max. drive torque M_{A_max} [Nm]	5
Typical load capacity [kg]	10 [1]
Maximum total length [mm]	3,479
Area moment of inertia of profile cross section I_x [mm⁴]	117,795
Area moment of inertia of profile cross section I_y [mm⁴]	122,922

[1] Carriage type E: 4 kg

Table 5.4 **Guide**

	Carriage type E	Carriage type S/M/L
Guide type	MGN15H	MGN15C
Static load rating C_0 [N]	9,110	5,590
Dynamic load rating C_{dyn} [N]	6,370	4,610

Table 5.5 **Drive**

Drive element	B15HTD3
Feed constant [mm/U]	111
Toothed belt effective diameter [mm]	35.33

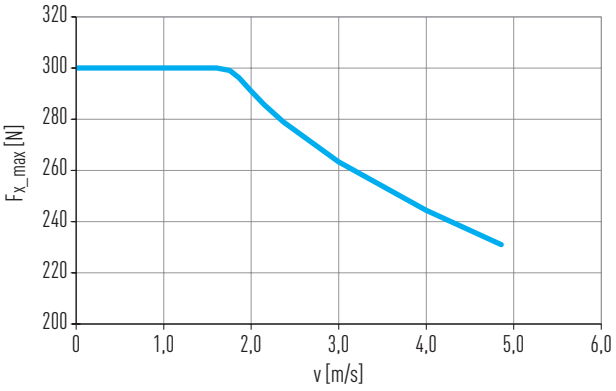


Fig. 5.1 **Max. feed force F_{x_max} as a function of axis speed v**

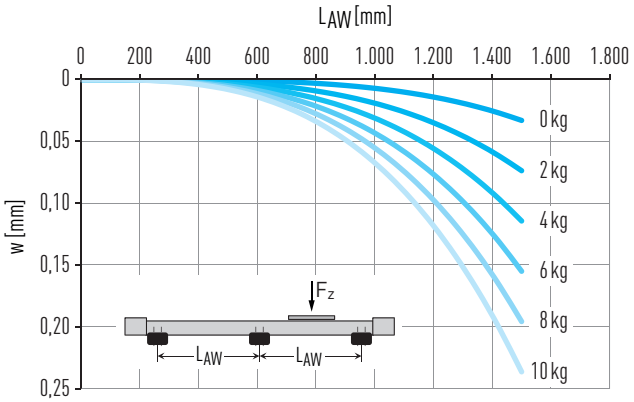


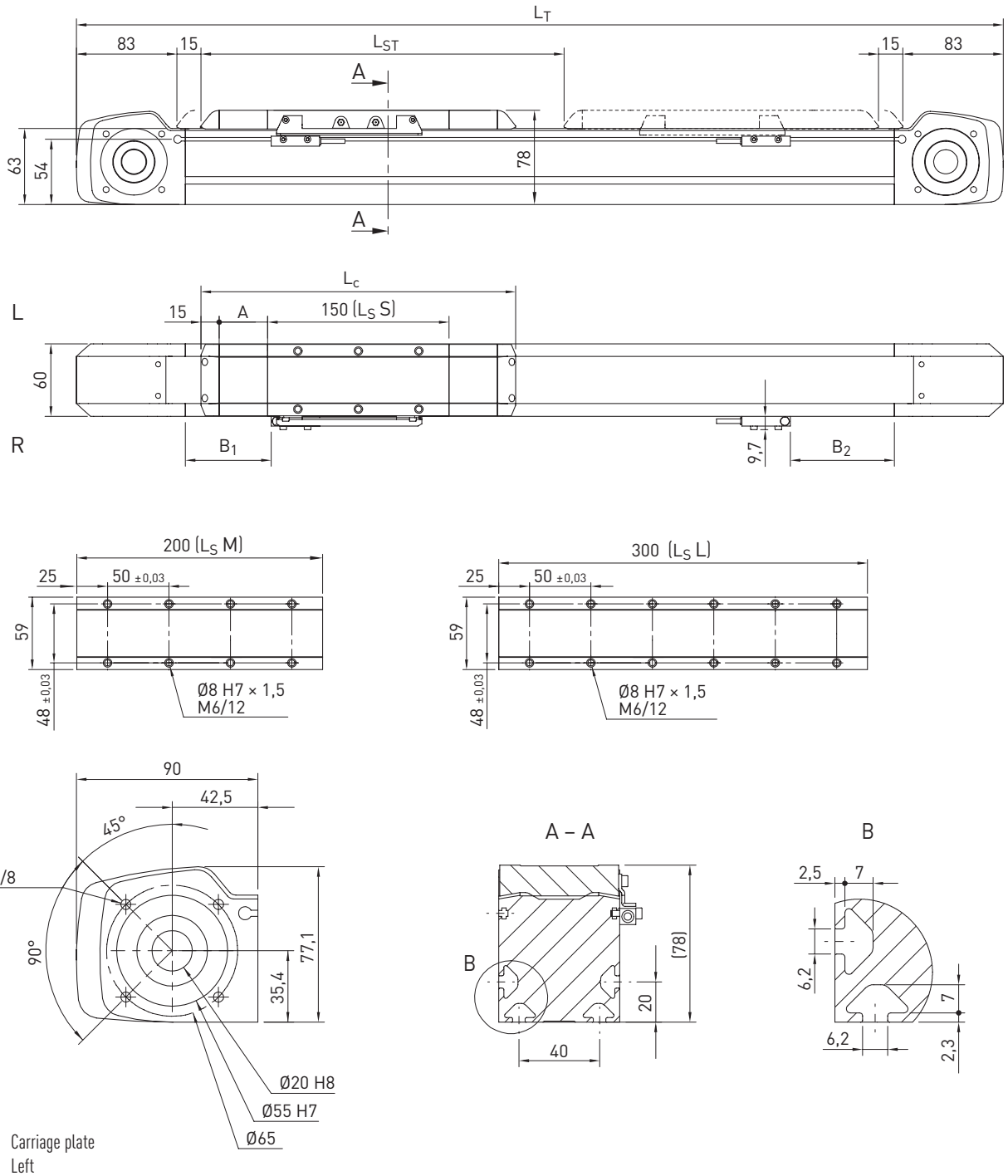
Fig. 5.2 **Deflection w over unsupported axis length L_{AW} under load capacity F_z**

Table 5.6 **Mechanical properties**

	Variant without cover				Variant with cover		
	Carriage type E	**Carriage type S**	**Carriage type M**	**Carriage type L**	**Carriage type S**	**Carriage type M**	**Carriage type L**
Mass of the carriage [kg]	0.23	0.33	0.38	0.50	0.37	0.43	0.54
Mass at 0-stroke [2] [kg]	1.18	1.42	1.58	1.91	1.72	1.89	2.22
Mass per 1 m stroke [kg/m]	3.02				3.04		
$J_{rot.}$ [1] [kgcm²]	0.34				0.34		
Idle torque at 0-stroke [Nm]	0.15	0.18			0.25		

[1] Rotational moment of inertia
[2] The values apply to axes with one carriage. For axes with 2 carriages, add the following: Mass of carriage + mass per 1 m stroke x (Clearance between the carriages (in m) + carriage length L_C (in m))

5.4 Dimensions and specifications of HM060B



L_S Carriage plate
L Left
R Right

Table 5.7 **HM060B dimensions**

	Variant without cover			Variant with cover		
	Carriage type S	**Carriage type M**	**Carriage type L**	**Carriage type S**	**Carriage type M**	**Carriage type L**
Total carriage length L_c [mm]	180	230	330	260	310	410
Cover strip deflection A [mm]	–	–	–	40	40	40
Switch distance B_1 [mm]	25	25	25	65	65	65
Switch distance B_2 [mm]	40	90	190	80	130	230
Max. stroke length L_{ST} [mm]	5,704	5,654	5,554	5,624	5,574	5,474
Total length L_T [mm]	$L_T = L_{ST} + 376$	$L_T = L_{ST} + 426$	$L_T = L_{ST} + 526$	$L_T = L_{ST} + 456$	$L_T = L_{ST} + 506$	$L_T = L_{ST} + 606$

Table 5.8 **Load data**

	Carriage type S	Carriage type M	Carriage type L
$F_{ydynmax}$ [1] [N]	2,152		
$F_{zdynmax}$ [1] [N]	2,616		
$M_{xdynmax}$ [Nm]	21		
$M_{ydynmax}$ [Nm]	98	164	294
$M_{zdynmax}$ [Nm]	81	135	242
z [2] [mm]	45.6		

[1] Force must only act free of torque
[2] Carriage upper edge – centre guide
See section 3.3.3 on page 14 (lifetime reference value)

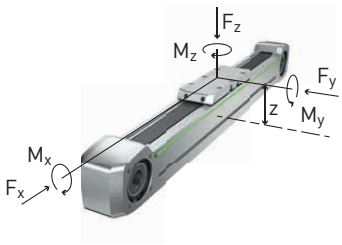


Table 5.9 **General technical data**

Repeatability [mm]	± 0.05
Max. feed force F_{x_max} [N]	895
Max. speed [m/s]	5
Max. acceleration [m/s²]	30
Max. drive torque M_{A_max} [Nm]	22
Typical load capacity [kg]	25
Maximum total length [1] [mm]	6,080
Area moment of inertia of profile cross section I_x [mm⁴]	507,521
Area moment of inertia of profile cross section I_y [mm⁴]	625,920

[1] Long axes on request

Table 5.10 **Guide**

Guide type	QEH15CA
Static load rating C_0 [N]	15,280
Dynamic load rating C_{dyn} [N]	12,530

Table 5.11 **Drive**

Drive element	B25HTD5
Feed constant [mm/U]	155
Toothed belt effective diameter [mm]	49.34

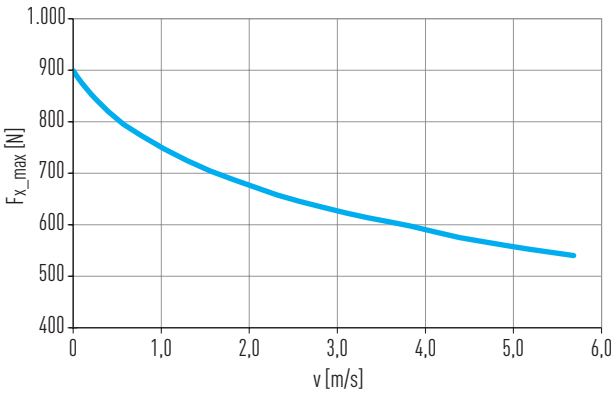


Fig. 5.3 **Max. feed force F_{x_max} as a function of axis speed v**

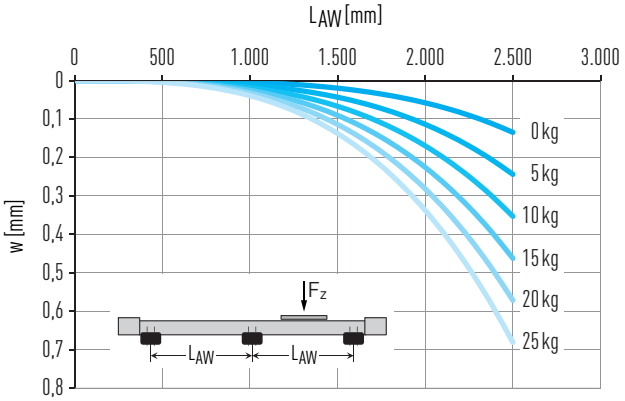


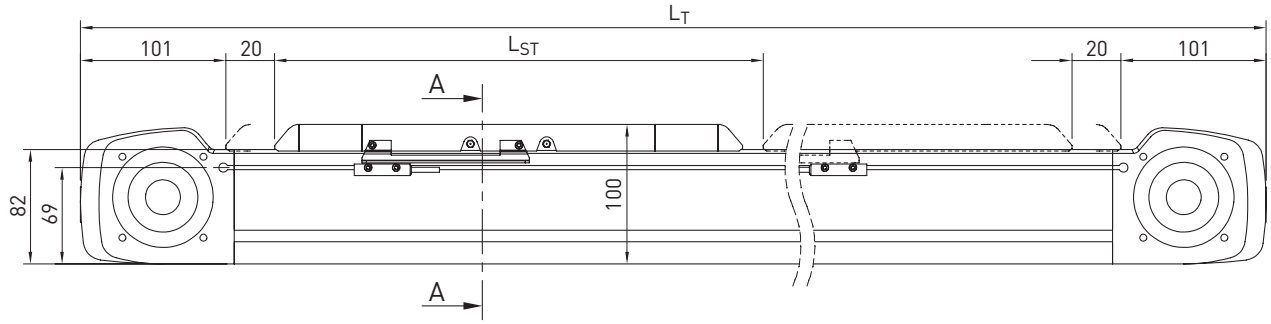
Fig. 5.4 **Deflection w over unsupported axis length L_{AW} under load capacity F_z**

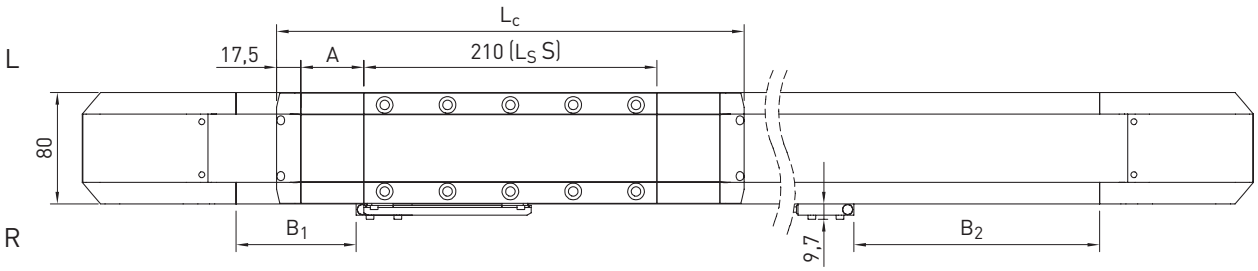
Table 5.12 **Mechanical properties**

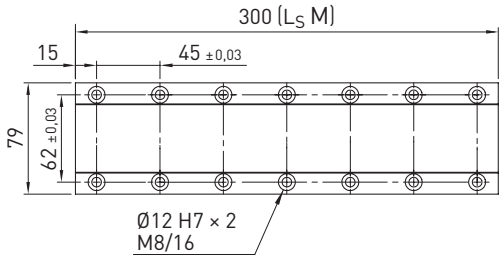
	Variant without cover			Variant with cover		
	Carriage type S	**Carriage type M**	**Carriage type L**	**Carriage type S**	**Carriage type M**	**Carriage type L**
Mass of the carriage [kg]	0.81	0.96	1.25	0.89	1.03	1.32
Mass at 0-stroke [2] [kg]	3.50	3.92	4.77	4.05	4.47	5.32
Mass per 1 m stroke [kg/m]	5.47			5.51		
$J_{rot.}$ [1] [kgcm²]	1.92			1.92		
Idle torque at 0-stroke [Nm]	0.47			0.80		

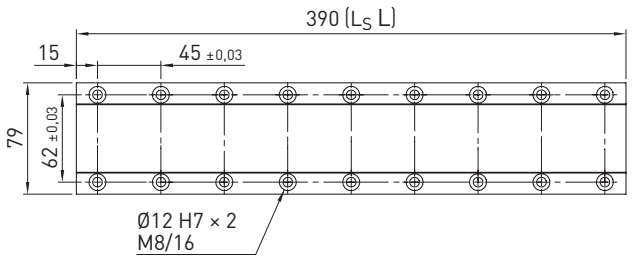
[1] Rotational moment of inertia
[2] The values apply to axes with one carriage. For axes with 2 carriages, add the following: Mass of carriage + mass per 1 m stroke x (Clearance between the carriages (in m) + carriage length L_C (in m))

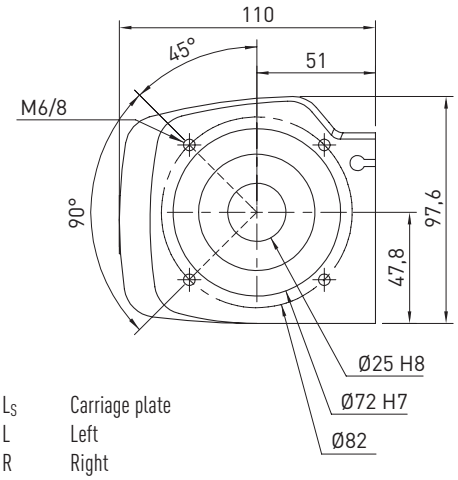
5.5 Dimensions and specifications of HM080B

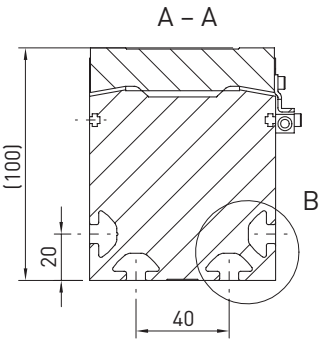


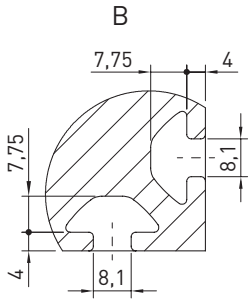












L_S Carriage plate
L Left
R Right

Table 5.13 **HM080B dimensions**

	Variant without cover			Variant with cover		
	Carriage type S	**Carriage type M**	**Carriage type L**	**Carriage type S**	**Carriage type M**	**Carriage type L**
Total carriage length L_c [mm]	245	335	425	335	425	515
Cover strip deflection A [mm]	–	–	–	45	45	45
Switch distance B_1 [mm]	23	23	23	68	68	68
Switch distance B_2 [mm]	113	203	293	158	248	338
Max. stroke length L_{ST} [mm]	5,633	5,543	5,453	5,543	5,453	5,363
Total length L_T [mm]	$L_T = L_{ST} + 487$	$L_T = L_{ST} + 577$	$L_T = L_{ST} + 667$	$L_T = L_{ST} + 577$	$L_T = L_{ST} + 667$	$L_T = L_{ST} + 757$

Table 5.14 **Load data**

	Carriage type S	Carriage type M	Carriage type L
$F_{ydynmax}$ [1] [N]	3,855		
$F_{zdynmax}$ [1] [N]	6,264		
$M_{xdynmax}$ [Nm]	48		
$M_{ydynmax}$ [Nm]	357	639	921
$M_{zdynmax}$ [Nm]	220	393	567
z [2] [mm]	53.4		

[1] Force must only act free of torque
[2] Carriage upper edge – centre guide
See section 3.3.3 on page 14 (lifetime reference value)

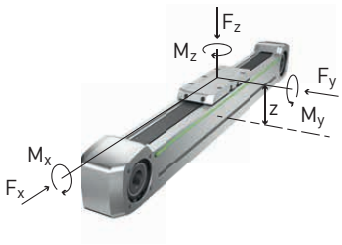


Table 5.15 **General technical data**

Repeatability [mm]	± 0.05
Max. feed force F_{x_max} [N]	1,253
Max. speed [m/s]	5
Max. acceleration [m/s²]	30
Max. drive torque M_{A_max} [Nm]	38
Typical load capacity [kg]	60
Maximum total length [1] [mm]	6,120
Area moment of inertia of profile cross section I_x [mm⁴]	1,522,057
Area moment of inertia of profile cross section I_y [mm⁴]	2,081,321

[1] Long axes on request

Table 5.16 **Guide**

Guide type	QHH20CA
Static load rating C_0 [N]	33,860
Dynamic load rating C_{dyn} [N]	30,000

Table 5.17 **Drive**

Drive element	B35HTD5
Feed constant [mm/U]	190
Toothed belt effective diameter [mm]	60.48

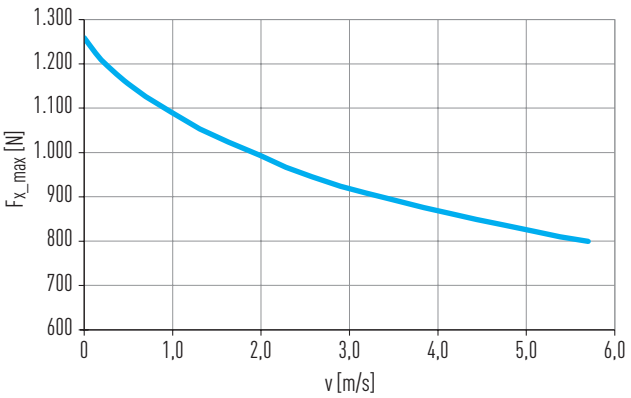


Fig. 5.5 **Max. feed force F_{x_max} as a function of axis speed v**

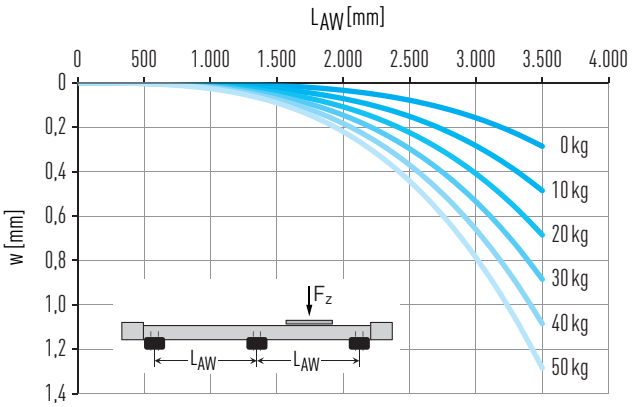


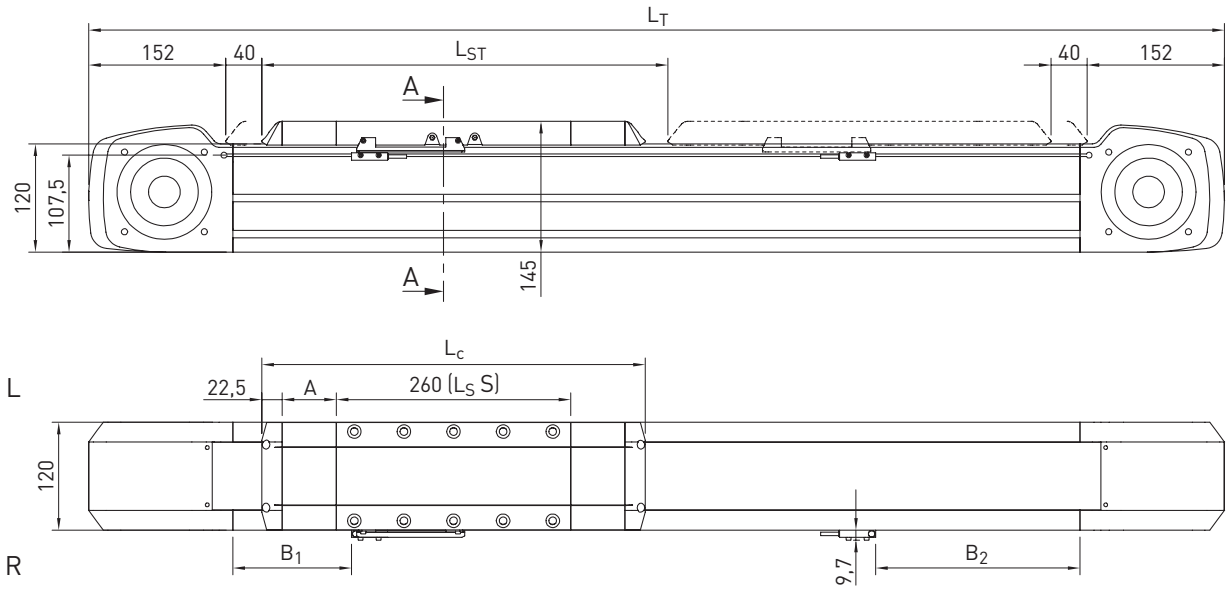
Fig. 5.6 **Deflection w over unsupported axis length L_{AW} under load capacity F_z**

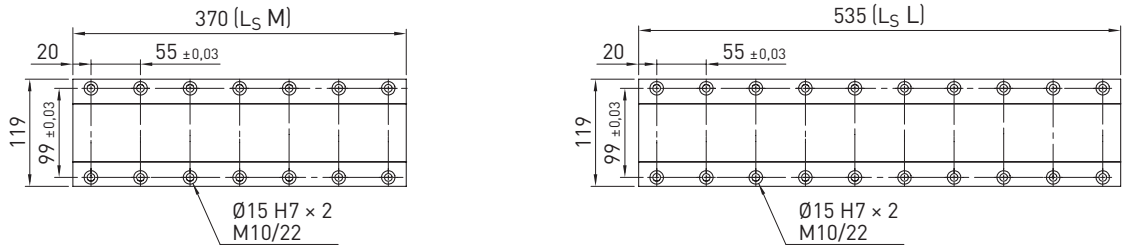
Table 5.18 **Mechanical properties**

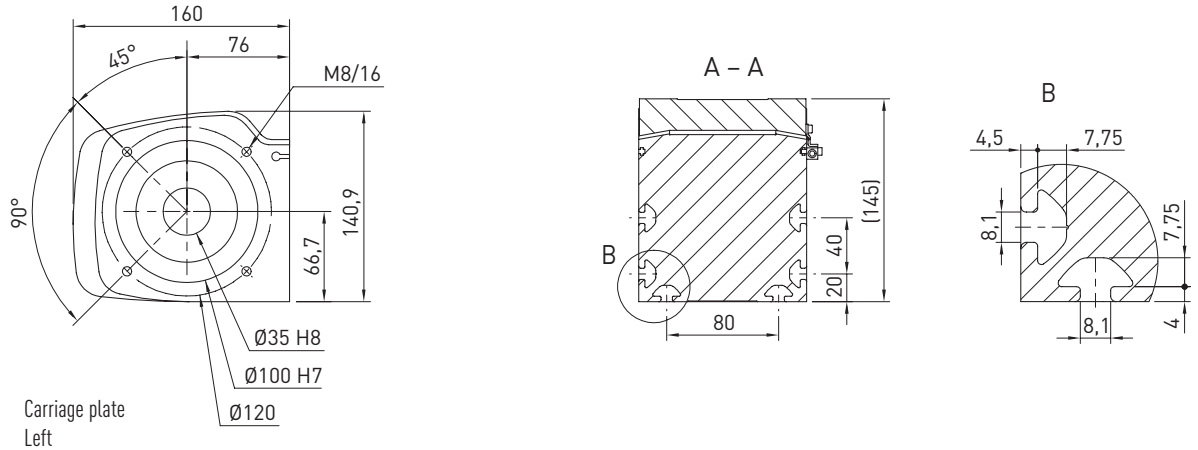
	Variant without cover			Variant with cover		
	Carriage type S	**Carriage type M**	**Carriage type L**	**Carriage type S**	**Carriage type M**	**Carriage type L**
Mass of the carriage [kg]	1.55	1.97	2.38	1.70	2.12	2.54
Mass at 0-stroke [2] [kg]	7.38	8.70	10.02	8.48	9.80	11.12
Mass per 1 m stroke [kg/m]	9.86			9.92		
$J_{rot.}$ [1] [kgcm²]	6.03			6.03		
Idle torque at 0-stroke [Nm]	1.20			1.30		

[1] Rotational moment of inertia
[2] The values apply to axes with one carriage. For axes with 2 carriages, add the following: Mass of carriage + mass per 1 m stroke x (Clearance between the carriages (in m) + carriage length L_C (in m))

5.6 Dimensions and specifications of HM120B







L_S Carriage plate
L Left
R Right

Table 5.19 **HM120B dimensions**

	Variant without cover			Variant with cover		
	Carriage type S	**Carriage type M**	**Carriage type L**	**Carriage type S**	**Carriage type M**	**Carriage type L**
Total carriage length L_c [mm]	305	415	580	425	535	700
Cover strip deflection A [mm]	–	–	–	60	60	60
Switch distance B_1 [mm]	71.5	71.5	71.5	131.5	131.5	131.5
Switch distance B_2 [mm]	166.5	276.5	441.5	226.5	336.5	501.5
Max. stroke length L_{ST} [mm]	5,531	5,421	5,256	5,411	5,301	5,136
Total length L_T [mm]	$L_T = L_{ST} + 689$	$L_T = L_{ST} + 799$	$L_T = L_{ST} + 964$	$L_T = L_{ST} + 809$	$L_T = L_{ST} + 919$	$L_T = L_{ST} + 1,084$

Table 5.20 **Load data**

	Carriage type S	Carriage type M	Carriage type L
$F_{ydynmax}$ [1] [N]	12,165		
$F_{zdynmax}$ [1] [N]	12,165		
$M_{xdynmax}$ [Nm]	110		
$M_{ydynmax}$ [Nm]	900	1,569	2,573
$M_{zdynmax}$ [Nm]	900	1,569	2,573
z [2] [mm]	77.1		

[1] Force must only act free of torque
[2] Carriage upper edge – centre guide
See section 3.3.3 on page 14 (lifetime reference value)

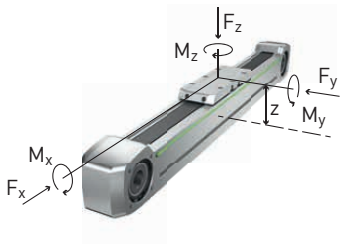


Table 5.21 **General technical data**

Repeatability [mm]	± 0.05
Max. feed force F_{x_max} [N]	4,000
Max. speed [m/s]	5
Max. acceleration [m/s²]	30
Max. drive torque M_{A_max} [Nm]	183
Typical load capacity [kg]	120
Maximum total length [1] [mm]	6,220
Area moment of inertia of profile cross section I_x [mm⁴]	6,791,541
Area moment of inertia of profile cross section I_y [mm⁴]	9,553,626

[1] Long axes on request

Table 5.22 **Guide**

Guide type	QHW30CC
Static load rating C_0 [N]	66,340
Dynamic load rating C_{dyn} [N]	58,260

Table 5.23 **Drive**

Drive element	B60HTD8
Feed constant [mm/U]	288
Toothed belt effective diameter [mm]	91.67

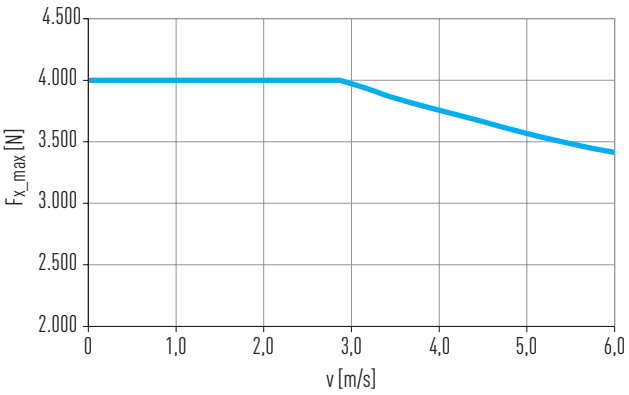


Fig. 5.7 **Max. feed force F_{x_max} as a function of axis speed v**

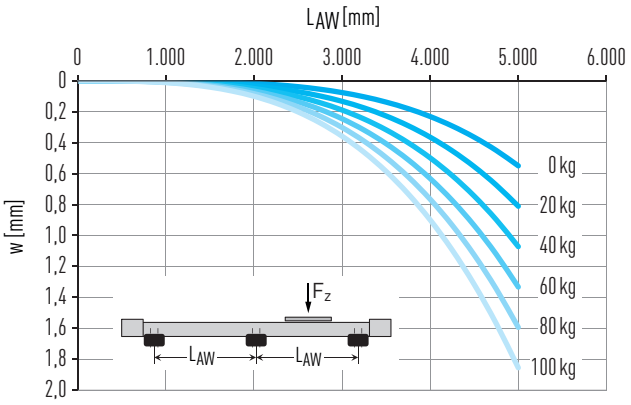


Fig. 5.8 **Deflection w over unsupported axis length L_{AW} under load capacity F_z**

Table 5.24 **Mechanical properties**

	Variant without cover			Variant with cover		
	Carriage type S	**Carriage type M**	**Carriage type L**	**Carriage type S**	**Carriage type M**	**Carriage type L**
Mass of the carriage [kg]	5.29	6.08	7.79	5.81	6.59	8.30
Mass at 0-stroke [2] [kg]	23.44	26.63	31.75	26.60	29.80	34.94
Mass per 1 m stroke [kg/m]	20.77			20.86		
$J_{rot.}$ [1] [kgcm²]	42.42			42.42		
Idle torque at 0-stroke [Nm]	3.10			3.50		

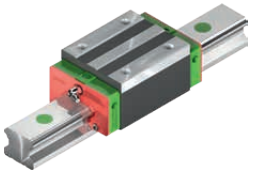
[1] Rotational moment of inertia
[2] The values apply to axes with one carriage. For axes with 2 carriages, add the following: Mass of carriage + mass per 1 m stroke x (Clearance between the carriages (in m) + carriage length L_C (in m))

6. Linear modules HM-S

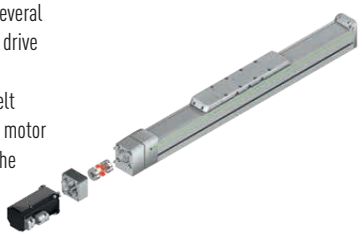
6.1 Properties of linear modules HM-S with ballscrew

The HIWIN linear axes with ballscrew are compact positioning modules that can be used flexibly. They are especially suitable for applications where high loads have to be moved with high precision.

Linear guideway
High-quality HIWIN linear guideways safely transfer forces and torques from the carriage to the axis profile. Two blocks are used per carriage, which are guided on a high-precision profile rail. The SynchMotion™ technology with ball chain also ensures good synchronisation and smooth running in the HM060S, HM080S and HM120S sizes.

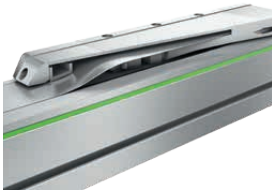


Motor connection and belt drive
The motor adapters are made up of several parts that offer an extremely flexible drive interface for attaching and modifying the drive installation. Optionally, a belt transmission can be used to turn the motor attachment through 180°, reducing the total length to a considerable extent.



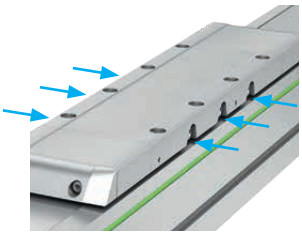
Ballscrew
The integrated HIWIN ballscrews ensure precise positioning thanks to their high pitch accuracy and rigidity. Different shaft pitches are available for each size in order to optimally meet the requirements for feed force and dynamics.

Cover strip
The steel cover strip prevents dirt and dust from entering the axis interior. In addition, the cover strip allows the axes to be used in areas with coarse, sharp-edged or hot foreign bodies. The magnetic strips integrated in the axis profile hold the belt securely in position and increase the sealing effect.



Carriage
HIWIN spindle axes are available with two different carriage lengths depending on the size and dimensions of the load to be transported. In order to ensure ideal, reproducible alignment of the adjacent structure, each threaded hole has an additional bore hole via which the load capacity can be fixed with centring sleeves. You will find the matching centring sleeves in the accessories on Page 181.

Lubrication
For convenient maintenance of the linear axis, a separate grease nipple is fitted to the left and right of the carriage for each lubrication point. This ensures optimum accessibility for relubrication, even under difficult installation conditions.



Spindle support
In applications with long travel distances and high velocity, the critical speed of the shaft is quickly reached, meaning an appropriate support is required to prevent the shaft from swinging up. In HIWIN spindle drive axes, up to three travelling shaft supports can be installed on each side of the carriage. This allows driving at full speed, even with large strokes.

6.2 Order code for linear modules HM-S

HM	060	S	010	C	0755	L	000

HIWIN linear module

Size (profile width):
040: 40 mm
060: 60 mm
080: 80 mm
120: 120 mm

Drive type:
S: Ballscrew

Spindle pitch [mm]:
005/010: HM040S
005/010/016: HM060S
005/010/020: HM080S
010/020/032: HM120S

Clearance between two carriages [mm]:
(000: Only one carriage)

Carriage length:
S: Short
L: Long

Stroke length [mm]

Cover strip:
C: With steel cover strip
N: Without cover strip

Continuation, order code for linear modules HM-S

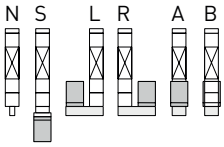
A	N	N	R	B002

Axis limit switch[4]**:**
N: Without limit switch
A: 2 × normally closed, 100 mm cable, connector
B: 2 × normally open, 100 mm cable, connector
C: 2 × normally closed, 4 m open cable end
D: 2 × normally open, 5 m open cable end

Spindle support:
N: Without spindle support
1: One spindle support per side (HM060/080/120)
2: Two spindle supports per side (HM060/080/120)
3: Three spindle supports per side (HM060/080/120)
4: Four spindle supports per side (HM120)

Motor flange type[3]

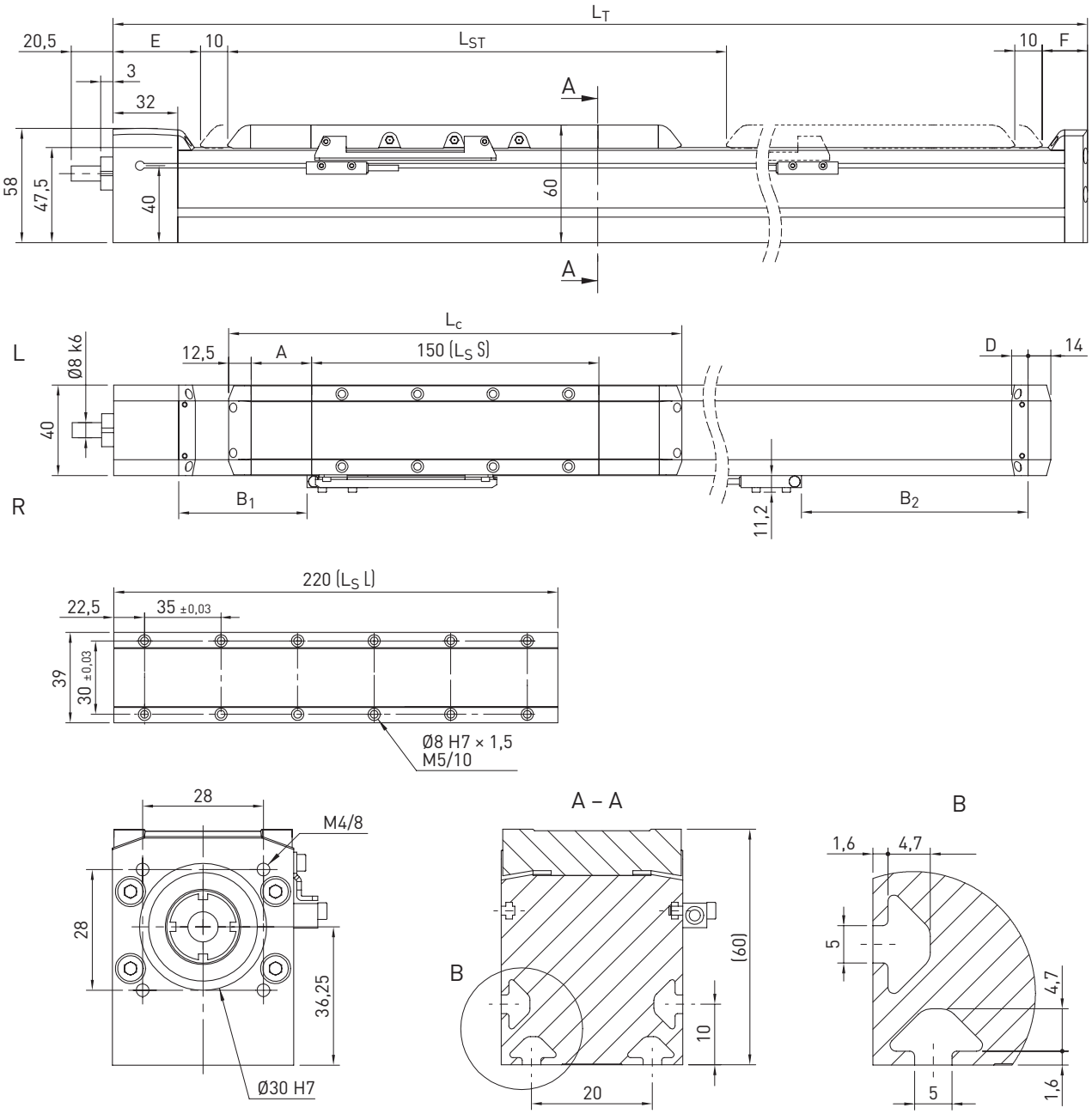
Drive interface[2]**:**
N: Without
S: Straight
L: Left
R: Right
A: Top
B: Bottom



Distance measuring system option[1]**:**
N: Without distance measuring system
A: HIWIN MAGIC, analogue, 1 V_{SS} sin/cos, 5 m open cable end
D: HIWIN MAGIC, digital, TTL 5 V, 5 m open cable end

[1] More detailed information in chapter 17 from page 134 or in the "HIWIN MAGIC Distance Measuring Systems" assembly instructions".
[2] If no drive interface is selected, the order code ends after this digit.
[3] You can find all flange types in Table 18.13 from page 163. If no gearbox is selected, the order code ends after this digit.
[4] Additional reference switches on request.

6.3 Dimensions and specifications of HM040S



L_S Carriage plate
L Left
R Right

Table 6.1 **HM040S dimensions**

	Variant without cover		Variant with cover	
	Carriage type S	**Carriage type L**	**Carriage type S**	**Carriage type L**
Total carriage length L_c [mm]	175	245	255	325
Cover strip deflection A [mm]	–	–	40	40
Switch distance B_1 [mm]	33.5	33.5	83.5	83.5
Switch distance B_2 [mm]	42.5	112.5	92.5	162.5
Terminal box D [mm]	–	–	10	10
End position at mechanical zero E [mm]	38		48	
End position at mechanical zero F [mm]	20		30	
Max. stroke length L_{ST} [mm]	1,231	1,161	1,131	1,061
Total length L_T [mm]	$L_T = L_{ST} + 253$	$L_T = L_{ST} + 323$	$L_T = L_{ST} + 353$	$L_T = L_{ST} + 423$

Table 6.2 **Load data**

	Carriage type S	Carriage type L
$F_{ydynmax}$ [1] [N]	1,438	
$F_{zdynmax}$ [1] [N]	1,438	
$M_{xdynmax}$ [Nm]	12	
$M_{ydynmax}$ [Nm]	80	130
$M_{zdynmax}$ [Nm]	80	130
z [2] [mm]	39.6	

[1] Force must only act free of torque
[2] Carriage upper edge – centre guide
See section 3.3.3 on page 14 (lifetime reference value)

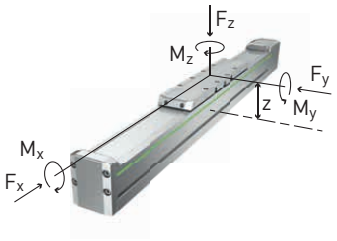


Table 6.3 **General technical data**

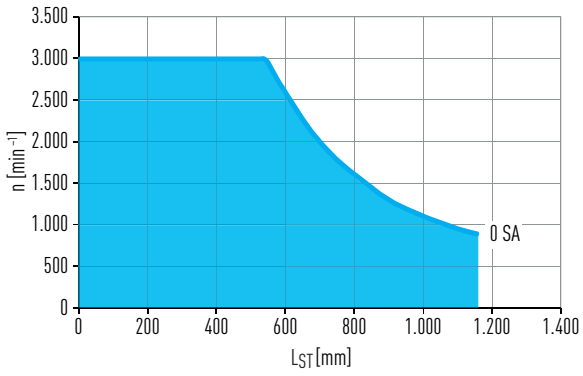
Repeatability [mm]	± 0.02
Max. acceleration [m/s²]	15
Typical load capacity [kg]	10
Maximum total length [mm]	1,484
Area moment of inertia of profile cross section I_x [mm⁴]	111,032
Area moment of inertia of profile cross section I_y [mm⁴]	116,769

Table 6.4 **Guide**

Guide type	MGN15C
Static load rating C_0 [N]	5,590
Dynamic load rating C_{dyn} [N]	4,610

Table 6.5 **Drive**

	Spindle lead	
	5 mm	**10 mm**
Spindle diameter [mm]	12	
Axial play [mm]	0.02	
Max. feed force F_{x_max} [N]	1,271	792
Max. speed [m/s]	0.25	0.50
Max. drive torque M_{A_max} [Nm]	1.16	1.41
Static load rating ballscrew C_0 [N]	12,000	6,500
Dynamic load rating ballscrew C_{dyn} [N]	6,900	4,300



SA Spindle support

Fig. 6.1 **Critical speed n over axis stroke length L_{ST}**

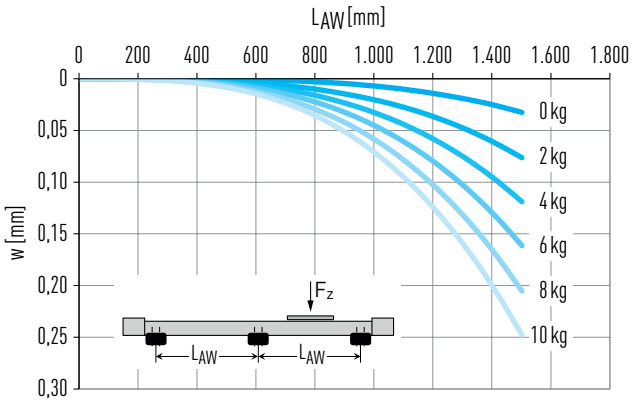


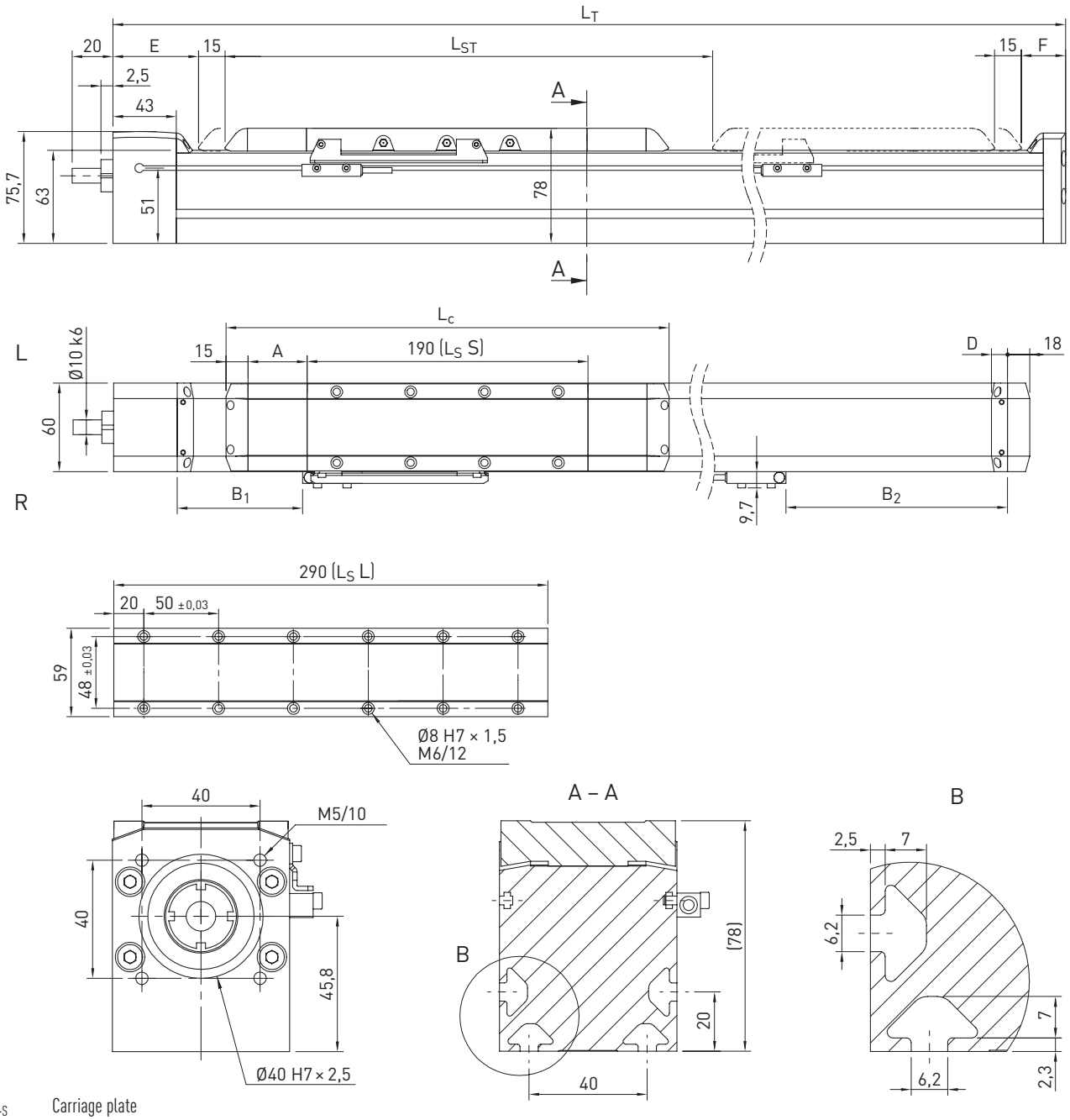
Fig. 6.2 **Deflection w over unsupported axis length L_{AW} under load capacity F_z**

Table 6.6 **Mechanical properties**

	Variant without cover				Variant with cover			
	Carriage type S		Carriage type L		Carriage type S		Carriage type L	
Spindle pitch [mm]	**5**	**10**	**5**	**10**	**5**	**10**	**5**	**10**
Mass of the carriage [kg]	0.43	0.43	0.55	0.55	0.48	0.48	0.60	0.60
Mass at 0-stroke [2] [kg]	1.49	1.49	1.86	1.86	1.91	1.91	2.28	2.28
Mass per 1 m stroke [kg/m]	3.61				3.63			
$J_{rot.}$ [1] at 0-stroke [kgcm²]	0.07	0.07	0.08	0.08	0.08	0.08	0.09	0.09
$J_{rot.}$ [1] Per 1 m stroke [kgcm²/m]	0.16				0.16			
Idle torque at 0-stroke [Nm]	0.15				0.20			

[1] Rotational moment of inertia
[2] The values apply to axes with one carriage. For axes with 2 carriages, add the following: Mass of carriage + mass per 1 m stroke x (Clearance between the carriages (in m) + carriage length L_C (in m))

6.4 Dimensions and specifications of HM060S



L_S Carriage plate
L Left
R Right

Table 6.7 **HM060S dimensions**

	Variant without cover		Variant with cover	
	Carriage type S	**Carriage type L**	**Carriage type S**	**Carriage type L**
Total carriage length L_c [mm]	220	320	300	400
Cover strip deflection A [mm]	–	–	40	40
Switch distance B_1 [mm]	35	35	86	86
Switch distance B_2 [mm]	98	198	149	249
Terminal box D [mm]	–	–	11	11
End position at mechanical zero E [mm]	50		61	
End position at mechanical zero F [mm]	25		36	
Max. stroke length L_{ST} [mm]	2,961	2,861	2,859	2,759
Total length L_T [mm]	$L_T = L_{ST} + 325$	$L_T = L_{ST} + 425$	$L_T = L_{ST} + 427$	$L_T = L_{ST} + 527$

Table 6.8 **Load data**

	Carriage type S	Carriage type L
$F_{ydynmax}$ [1] [N]	2,896	
$F_{zdynmax}$ [1] [N]	3,628	
$M_{xdynmax}$ [Nm]	28	
$M_{ydynmax}$ [Nm]	240	421
$M_{zdynmax}$ [Nm]	191	336
z [2] [mm]	57.4	

[1] Force must only act free of torque
[2] Carriage upper edge – centre guide
See section 3.3.3 on page 14 (lifetime reference value)

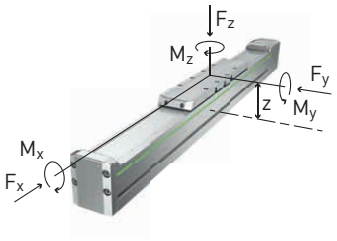


Table 6.9 **General technical data**

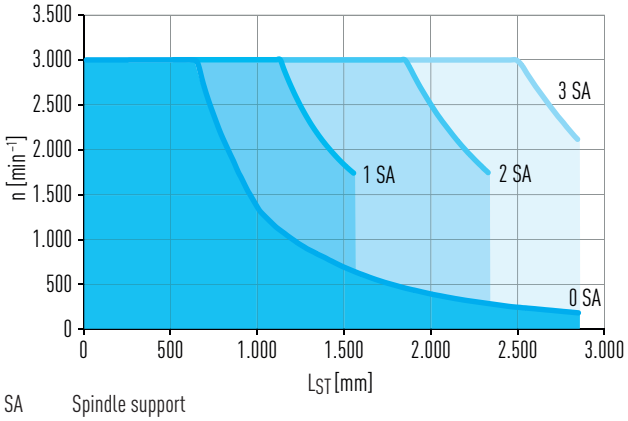
Repeatability [mm]	± 0.02
Max. acceleration [m/s²]	15
Typical load capacity [kg]	25
Maximum total length [mm]	3,286
Area moment of inertia of profile cross section I_x [mm⁴]	431,907
Area moment of inertia of profile cross section I_y [mm⁴]	539,706

Table 6.10 **Guide**

Guide type	QEH15CA
Static load rating C_0 [N]	15,280
Dynamic load rating C_{dyn} [N]	12,530

Table 6.11 **Drive**

	Spindle lead		
	5 mm	10 mm	16 mm
Spindle diameter [mm]	15		
Axial play [mm]	0.02		
Max. feed force F_{x_max} [N]	2,541	1,989	1,915
Max. speed [m/s]	0.25	0.50	0.80
Max. drive torque M_{A_max} [Nm]	2.29	3.44	5.15
Static load rating ballscrew C_0 [N]	23,800	18,300	17,900
Dynamic load rating ballscrew C_{dyn} [N]	13,800	10,800	10,400



SA Spindle support

Fig. 6.3 **Critical speed n over axis stroke length L_{ST}**

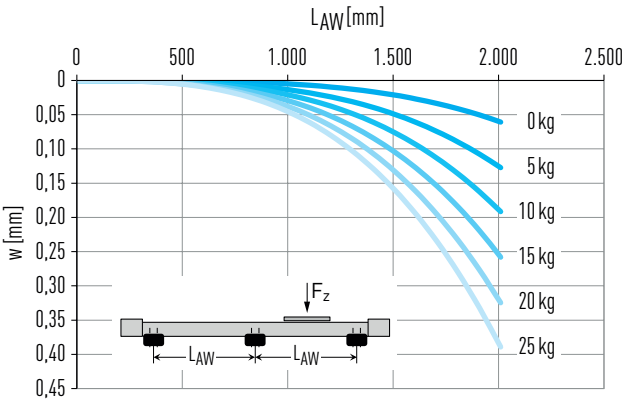


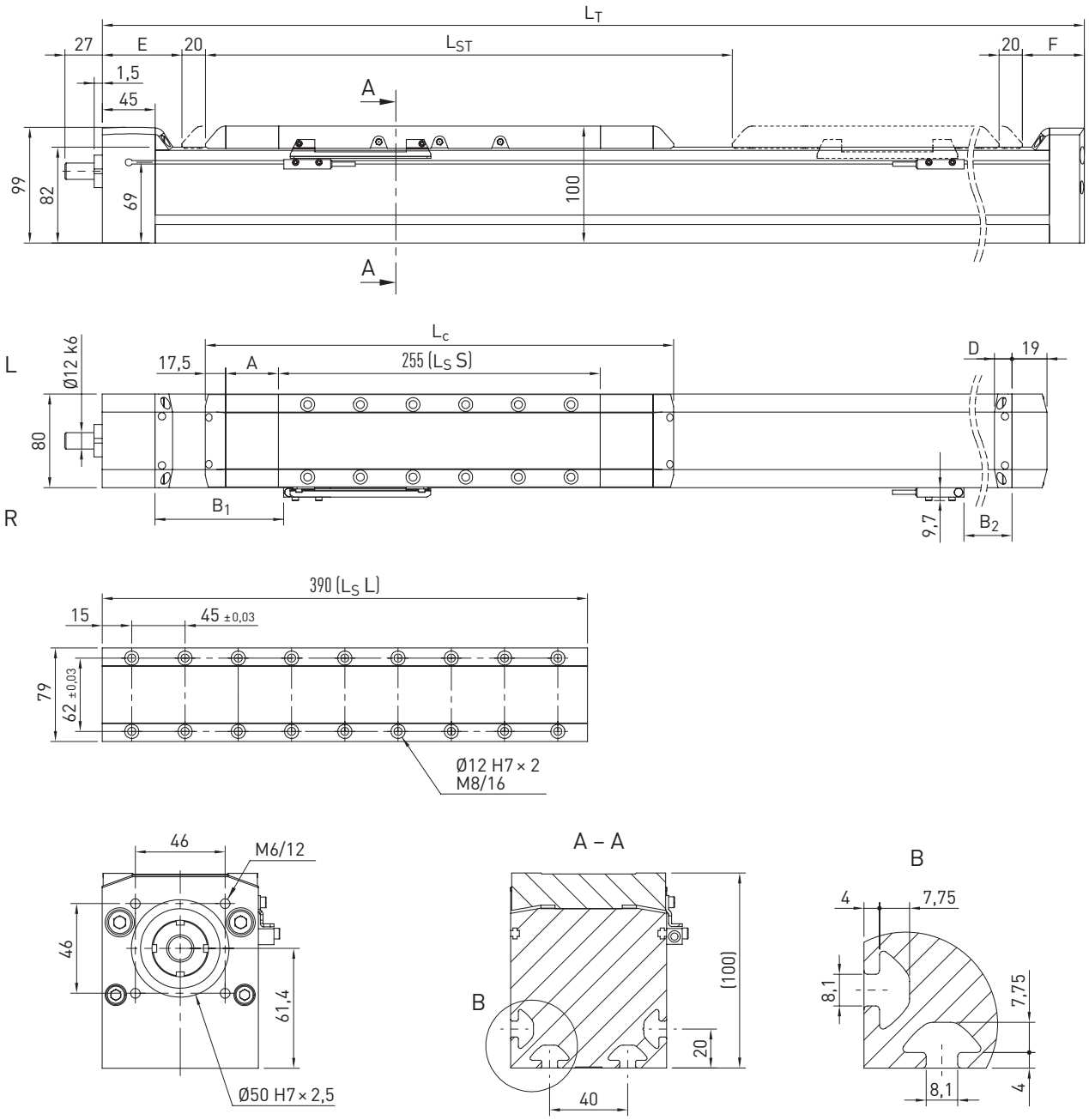
Fig. 6.4 **Deflection w over unsupported axis length L_{AW} under load capacity F_z**

Table 6.12 **Mechanical properties**

	Variant without cover						Variant with cover					
	Carriage type S			Carriage type L			Carriage type S			Carriage type L		
Spindle pitch [mm]	5	10	16	5	10	16	5	10	16	5	10	16
Mass of the carriage [kg]	1.05	1.15	1.15	1.37	1.47	1.47	1.13	1.23	1.23	1.45	1.55	1.55
Mass at 0-stroke [2] [kg]	3.31	3.41	3.41	4.22	4.32	4.32	4.03	4.13	4.13	4.95	5.05	5.05
Mass per 1 m stroke [kg/m]	5.88						5.93					
$J_{rot.}$ [1] at 0-stroke [kgcm²]	0.19			0.23			0.23			0.27		
$J_{rot.}$ [1] Per 1 m stroke [kgcm²/m]	0.39						0.39					
Idle torque at 0-stroke [Nm]	0.27						0.28					

[1] Rotational moment of inertia
[2] The values apply to axes with one carriage. For axes with 2 carriages, add the following: Mass of carriage + mass per 1 m stroke x (Clearance between the carriages (in m) + carriage length L_C (in m))

6.5 Dimensions and specifications of HM080S



L_S Carriage plate
L Left
R Right

Table 6.13 **HM080S dimensions**

	Variant without cover		Variant with cover	
	Carriage type S	**Carriage type L**	**Carriage type S**	**Carriage type L**
Total carriage length L_c [mm]	290	425	380	515
Cover strip deflection A [mm]	–	–	45	45
Switch distance B_1 [mm]	40	40	100	100
Switch distance B_2 [mm]	175	310	235	370
Terminal box D [mm]	–	–	15	15
End position at mechanical zero E [mm]	53		68	
End position at mechanical zero F [mm]	27		42	
Max. stroke length L_{ST} [mm]	4,090	3,955	3,970	3,835
Total length L_T [mm]	$L_T = L_{ST} + 410$	$L_T = L_{ST} + 545$	$L_T = L_{ST} + 530$	$L_T = L_{ST} + 665$

Table 6.14 **Load data**

	Carriage type S	Carriage type L
$F_{ydynmax}$ [1] [N]	4,000	
$F_{zdynmax}$ [1] [N]	8,686	
$M_{xdynmax}$ [Nm]	67	
$M_{ydynmax}$ [Nm]	766	1,352
$M_{zdynmax}$ [Nm]	353	623
z [2] [mm]	68.5	

[1] Force must only act free of torque
[2] Carriage upper edge – centre guide
See section 3.3.3 on page 14 (lifetime reference value)

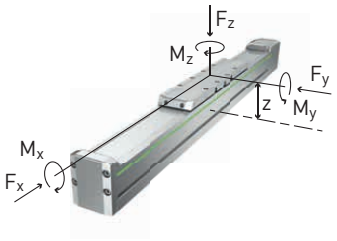


Table 6.15 **General technical data**

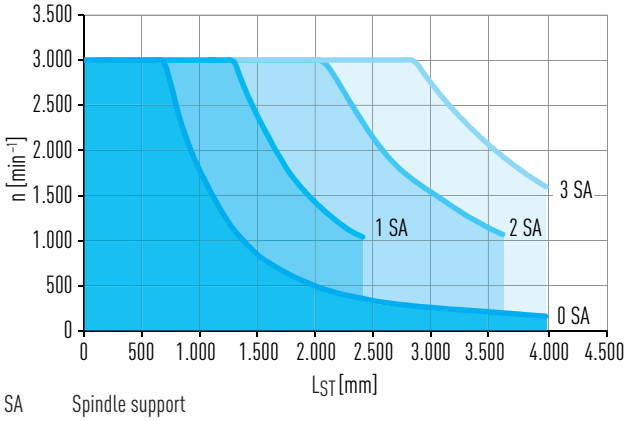
Repeatability [mm]	± 0.02
Max. acceleration [m/s²]	15
Typical load capacity [kg]	60
Maximum total length [mm]	4,500
Area moment of inertia of profile cross section I_x [mm⁴]	1,293,796
Area moment of inertia of profile cross section I_y [mm⁴]	1,759,898

Table 6.16 **Guide**

Guide type	QHH20CA
Static load rating C_0 [N]	33,860
Dynamic load rating C_{dyn} [N]	30,000

Table 6.17 **Drive**

	Spindle lead		
	5 mm	**10 mm**	**20 mm**
Spindle diameter [mm]	20		
Axial play [mm]	0.02		
Max. feed force F_{x_max} [N]	3,186	3,149	1,620
Max. speed [m/s]	0.25	0.50	1.00
Max. drive torque M_{A_max} [Nm]	2.89	5.36	5.51
Static load rating ballscrew C_0 [N]	33,800	33,600	16,000
Dynamic load rating ballscrew C_{dyn} [N]	17,300	17,100	8,800



SA Spindle support

Fig. 6.5 **Critical speed n over axis stroke length L_{ST}**

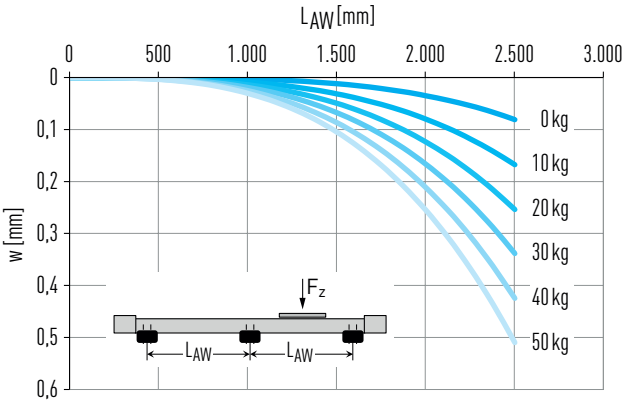


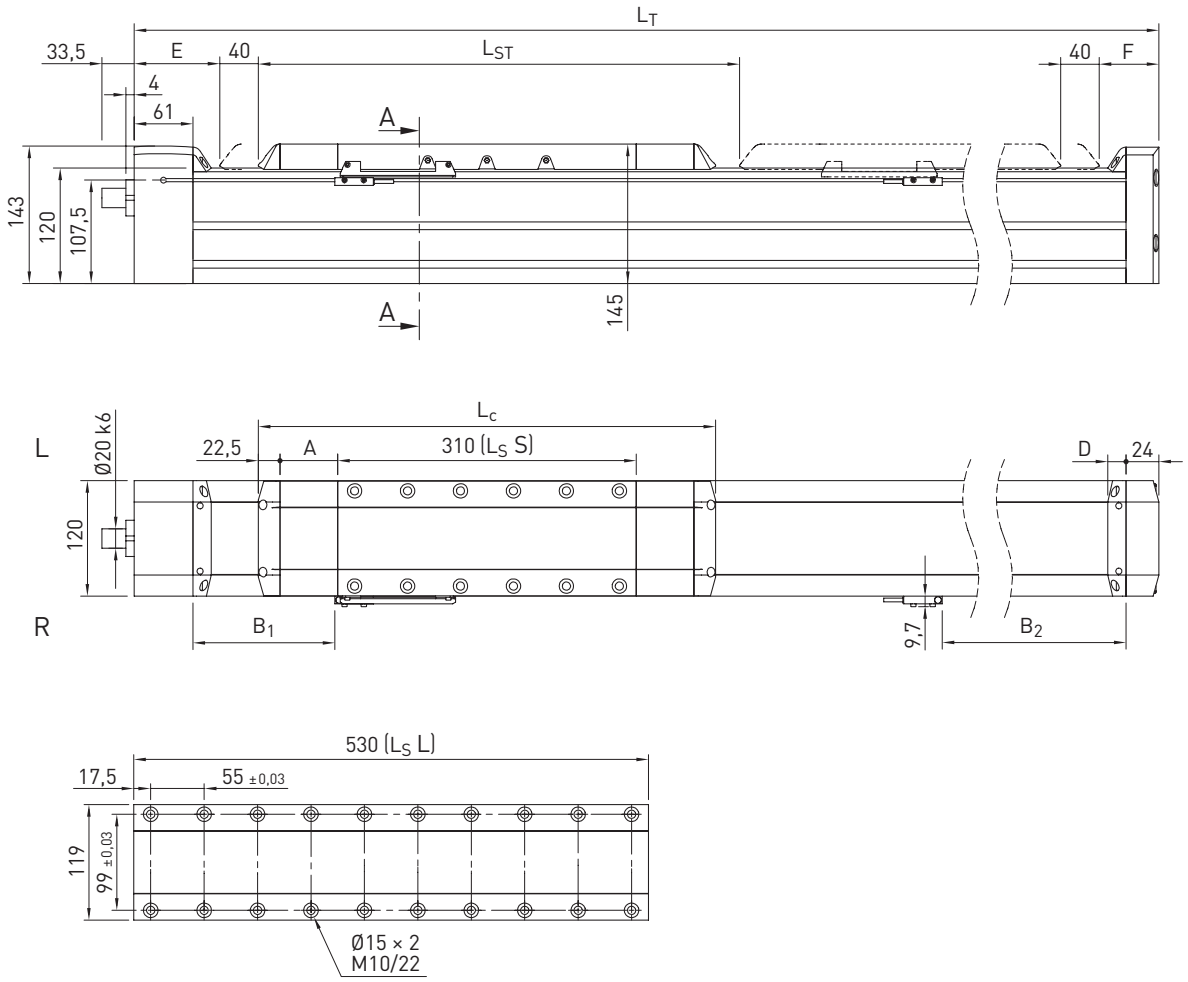
Fig. 6.6 **Deflection w over unsupported axis length L_{AW} under load capacity F_z**

Table 6.18 **Mechanical properties**

	Variant without cover						Variant with cover					
	Carriage type S			Carriage type L			Carriage type S			Carriage type L		
Spindle pitch [mm]	**5**	**10**	**20**	**5**	**10**	**20**	5	10	20	5	10	20
Mass of the carriage [kg]	1.91	2.11	2.21	2.73	2.93	3.03	2.07	2.27	2.37	2.88	3.08	3.18
Mass at 0-stroke [2] [kg]	6.94	7.14	7.24	9.19	9.39	9.49	8.46	8.66	8.76	10.72	10.92	11.02
Mass per 1 m stroke [kg/m]	10.67						10.72					
$J_{rot.}$ [1] at 0-stroke [kgcm²]	0.82			0.99			0.97			1.14		
$J_{rot.}$ [1] Per 1 m stroke [kgcm²/m]	1.23						1.23					
Idle torque at 0-stroke [Nm]	0.35						0.52					

[1] Rotational moment of inertia
[2] The values apply to axes with one carriage. For axes with 2 carriages, add the following: Mass of carriage + mass per 1 m stroke x (clearance between the carriages (in m) + carriage length L_C (in m))

6.6 Dimensions and specifications of HM120S



L_S Carriage plate
L Left
R Right

Table 6.19 **HM120S dimensions**

	Variant without cover		Variant with cover	
	Carriage type S	**Carriage type L**	**Carriage type S**	**Carriage type L**
Total carriage length L_c [mm]	355	575	475	695
Cover strip deflection A [mm]	–	–	60	60
Switch distance B_1 [mm]	68.5	68.5	147.5	147.5
Switch distance B_2 [mm]	253.5	473.5	332.5	552.5
Terminal box D [mm]	–	–	19	19
End position at mechanical zero E [mm]	70		89	
End position at mechanical zero F [mm]	33		52	
Max. stroke length L_{ST} [mm]	4,936	4,716	4,778	4,558
Total length L_T [mm]	$L_T = L_{ST} + 538$	$L_T = L_{ST} + 758$	$L_T = L_{ST} + 696$	$L_T = L_{ST} + 916$

Table 6.20 **Load data**

	Carriage type S	Carriage type L
$F_{ydynmax}$ [1] [N]	15,327	
$F_{zdynmax}$ [1] [N]	15,327	
$M_{xdynmax}$ [Nm]	139	
$M_{ydynmax}$ [Nm]	1,625	3,311
$M_{zdynmax}$ [Nm]	1,625	3,311
z [2] [mm]	99.1	

[1] Force must only act free of torque
[2] Carriage upper edge – centre guide
See section 3.3.3 on page 14 (lifetime reference value)

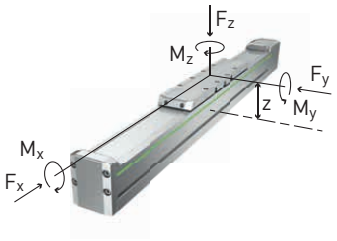


Table 6.21 **General technical data**

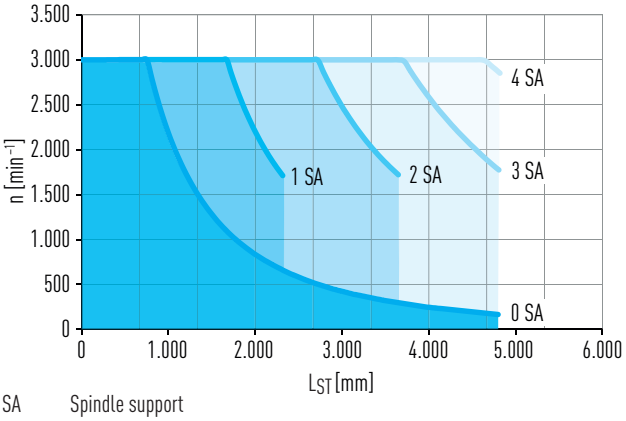
Repeatability [mm]	± 0.02
Max. acceleration [m/s²]	15
Typical load capacity [kg]	120
Maximum total length [mm]	5,473
Area moment of inertia of profile cross section I_x [mm⁴]	6,235,456
Area moment of inertia of profile cross section I_y [mm⁴]	8,646,933

Table 6.22 **Guide**

Guide type	QHW30CC
Static load rating C_0 [N]	66,340
Dynamic load rating C_{dyn} [N]	58,260

Table 6.23 **Drive**

	Spindle lead		
	10 mm	**20 mm**	**32 mm**
Spindle diameter [mm]	32		
Axial play [mm]	0.02		
Max. feed force F_{x_max} [N]	6,592	4,069	2,744
Max. speed [m/s]	0.5	1.0	1.6
Max. drive torque M_{A_max} [Nm]	11.34	13.80	14.82
Static load rating ballscrew C_0 [N]	88,000	50,600	32,800
Dynamic load rating ballscrew C_{dyn} [N]	35,800	22,100	14,900



SA Spindle support

Fig. 6.7 **Critical speed n over axis stroke length L_{ST}**

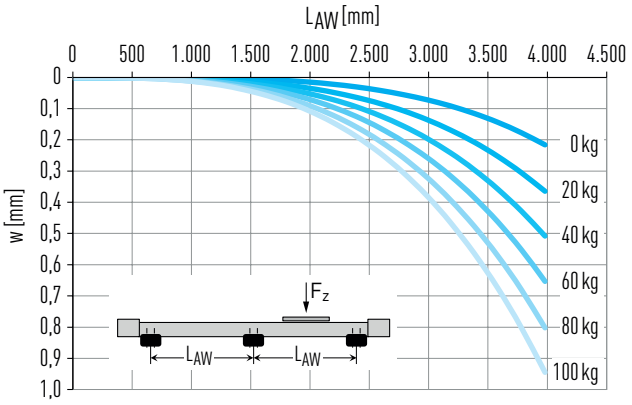


Fig. 6.8 **Deflection w over unsupported axis length L_{AW} under load capacity F_z**

Table 6.24 **Mechanical properties**

	Variant without cover						Variant with cover					
	Carriage type S			Carriage type L			Carriage type S			Carriage type L		
Spindle pitch [mm]	**10**	**20**	**32**	**10**	**20**	**32**	**10**	**20**	**32**	**10**	**20**	**32**
Mass of the carriage [kg]	6.18	6.08	6.08	8.61	8.51	8.51	6.70	6.60	6.60	9.13	9.03	9.03
Mass at 0-stroke [2] [kg]	20.85	20.75	20.75	28.57	28.47	28.47	25.32	25.22	25.22	33.05	32.95	32.95
Mass per 1 m stroke [kg/m]	24.01						24.10					
$J_{rot.}$ [1] at 0-stroke [kgcm²]	5.77			7.55			7.05			8.83		
$J_{rot.}$ [1] Per 1 m stroke [kgcm²/m]	8.08						8.08					
Idle torque at 0-stroke [Nm]	0.85						0.90					

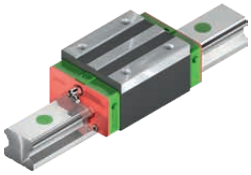
[1] Rotational moment of inertia
[2] The values apply to axes with one carriage. For axes with 2 carriages, add the following: Mass of carriage + mass per 1 m stroke x (Clearance between the carriages (in m) + carriage length L_C (in m))

7. Linear tables HT-B

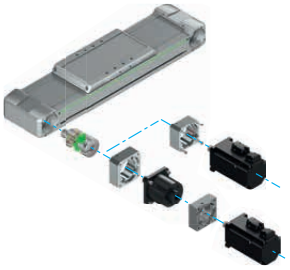
7.1 Properties of linear tables HT-B with toothed belt drive

The HIWIN linear tables with toothed belt drive are flexible positioning modules with integrated HIWIN double guide. They are ideal in particular for applications requiring high dynamic responses and high speeds.

Linear guideway
A high-quality HIWIN double guide safely transfers forces and torques from the carriage to the axis profile. Four blocks are used per carriage, which are guided on a two parallel, high-precision profile rails. The SynchMotion™ technology with ball chain also ensures good synchronisation and smooth running in all sizes.

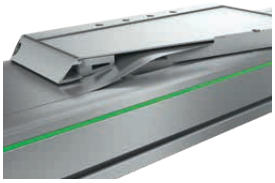


Drive adaptation
Thanks to its symmetrical design, the HIWIN linear table with toothed belt drive allows motors and gears to be mounted on all four sides of the drive blocks. You can find suitable adapters for all common motors in section 18.1.2 from page 141.



Toothed belt
The toothed belt with modern high performance profiles (HTD shape) and reinforced steel tension members enables high power transmission while offering high skip resistance.

Cover strip
The steel cover strip prevents dirt and dust from entering the axis interior. In addition, the cover strip allows the axes to be used in areas with coarse, sharp-edged or hot foreign bodies. The magnetic strips integrated in the axis profile hold the belt securely in position and increase the sealing effect.



Carriage
The carriages have additional bore holes on each mounting hole to ensure ideal, reproducible alignment of the adjacent construction. You will find the matching centring sleeves in the accessories on Page 181.
A grease nipple is provided on the carriage for each lubrication point for convenient maintenance of the linear axis.

Energy chain
Generously dimensioned energy chains provide space for safely carrying the supply lines. They are extremely compact and save space when attached to the axis. For details on the orientation of the energy chain, see section 18.3 from page 174.

7.2 Order code for linear tables HT-B

HT	150	B	155	C	1234	S

HIWIN linear table

Size (profile width):
100: 100 mm
150: 150 mm
200: 200 mm
250: 250 mm

Drive type:
B: Toothed belt drive

Carriage length:
S: Short

Stroke length [mm]

Cover strip:
C: With steel cover strip
N: Without cover strip

Feed constant [mm/rev]:
105: HT100B
155: HT150B
184: HT200B
208: HT250B

Continuation, order code for linear tables HM-B

A	N	N	R	BR13	G0805

Axis limit switch[5]:
N: Without limit switch
A: 2 × normally closed, 100 mm cable, connector
B: 2 × normally open, 100 mm cable, connector
C: 2 × normally closed, 4 m open cable end
D: 2 × normally open, 5 m open cable end

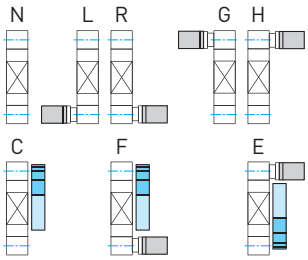
Toothed belt:
N: Standard belt

Distance measuring system option[1]:
N: Without distance measuring system
A: HIWIN MAGIC, analogue, 1 V_{SS} sin/cos, 5 m open cable end
D: HIWIN MAGIC, digital, TTL 5 V, 5 m open cable end

Gearbox[4]

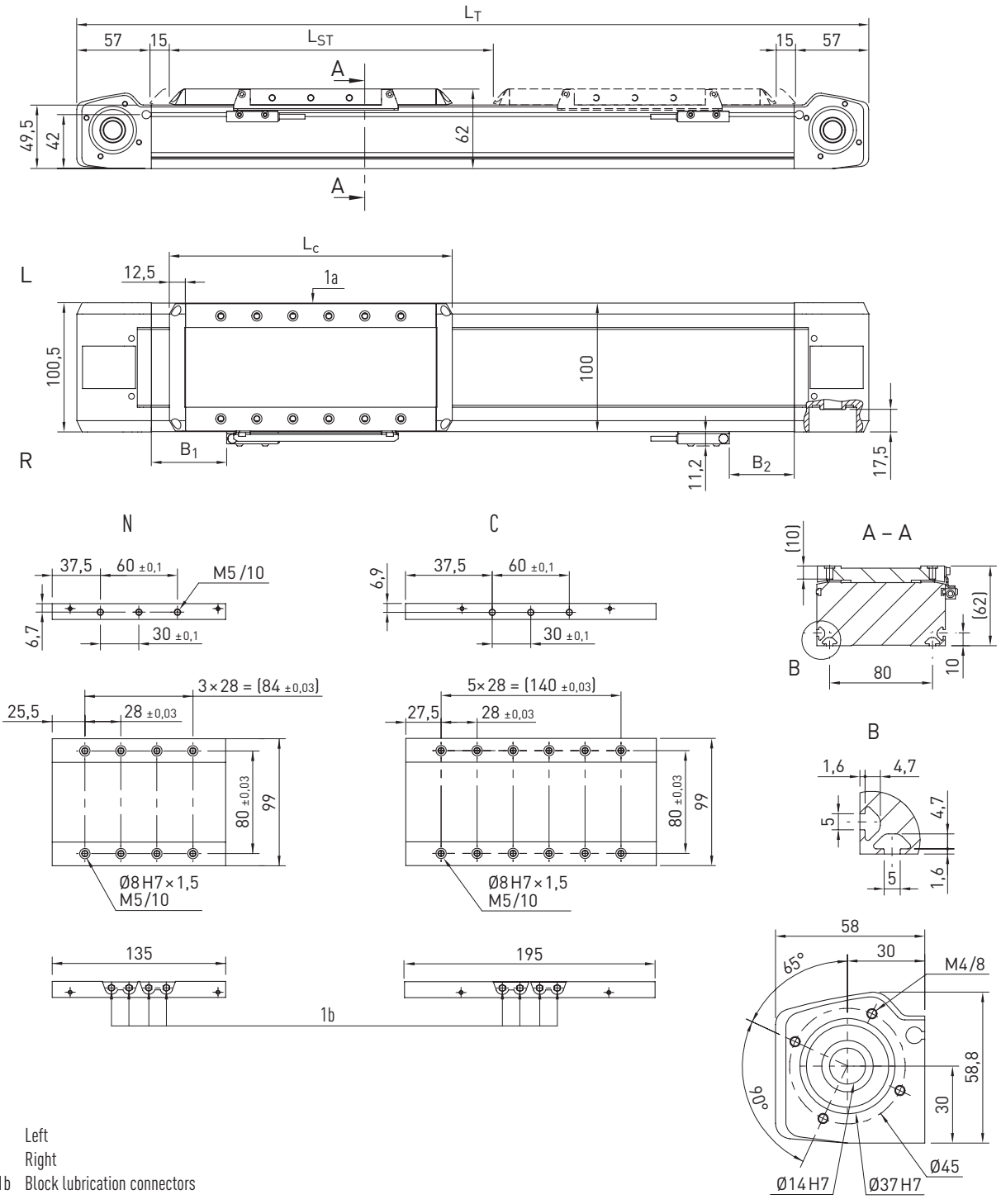
Flange type[3]

Drive interface[2] [6]:
N: Without
L: Left front
R: Right front
G: Left rear
H: Right rear
C: None, energy chain on the right
F: Right front, energy chain on the right
E: Right rear, energy chain on the right



[1] More detailed information in chapter 17 from page 134 or in the "HIWIN MAGIC Distance Measuring Systems" assembly instructions".
[2] If no drive interface is selected, the order code ends after this digit.
[3] You can find all flange types in Table 18.2 from page 142. If no gearbox is selected, the order code ends after this digit.
[4] You can find the right gearbox for the HIWIN axes in section 18.1.4.5 from page 158.
[5] Additional reference switches on request.
[6] Dimensions of the drive interface and the energy chain can be found on Page 174.

7.3 Dimensions and specifications of HT100B



L Left
R Right
1a + 1b Block lubrication connectors

Table 7.1 **HT100B dimensions**

	Variant without cover N	Variant with cover C
Total carriage length L_c [mm]	160	220
Switch distance B_1 [mm]	28.5	58.5
Switch distance B_2 [mm]	20.5	50.5
Max. stroke length L_{ST} [mm]	5,612	5,552
Total length L_T [mm]	$L_T = L_{ST} + 304$	$L_T = L_{ST} + 364$

Table 7.2 **Load data**		
	Variant without cover	Variant with cover
$F_{ydynmax}$ [1] [N]	3,350	
$F_{zdynmax}$ [1] [N]	3,575	
$M_{xdynmax}$ [Nm]	92.9	
$M_{ydynmax}$ [Nm]	159.1	205.5
$M_{zdynmax}$ [Nm]	149.1	192.6
z [2] [mm]	38.6	

[1] Force must only act free of torque
[2] Carriage upper edge – centre guide
See section 3.3.3 on page 14 (lifetime reference value)

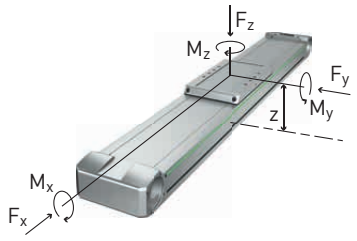


Table 7.3 **General technical data**	
Repeatability [mm]	± 0.05
Max. feed force F_{x_max} [N]	813
Max. speed [m/s]	5
Max. acceleration [m/s²]	30
Max. drive torque M_{A_max} [Nm]	14
Typical load capacity [kg]	40
Maximum total length [mm]	5,916
Area moment of inertia of profile cross section I_x [mm⁴]	299,377
Area moment of inertia of profile cross section I_y [mm⁴]	1,516,426

Table 7.4 **Guide**	
Guide type	QEH15CA
Static load rating C_0 [N]	15,280
Dynamic load rating C_{dyn} [N]	12,530

Table 7.5 **Drive**	
Drive element	B25HTD5
Feed constant [mm/U]	105
Toothed belt effective diameter [mm]	33.42

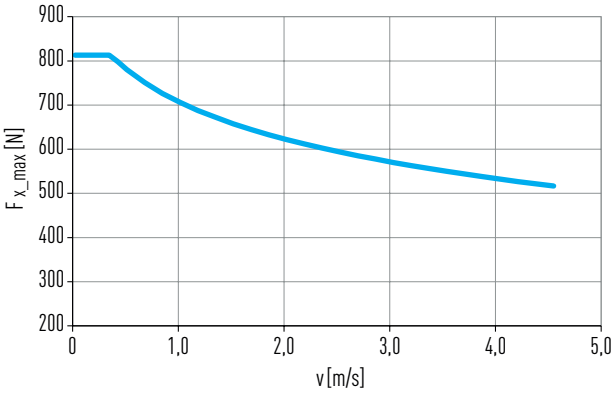


Fig. 7.1 **Max. feed force F_{x_max} as a function of axis speed v**

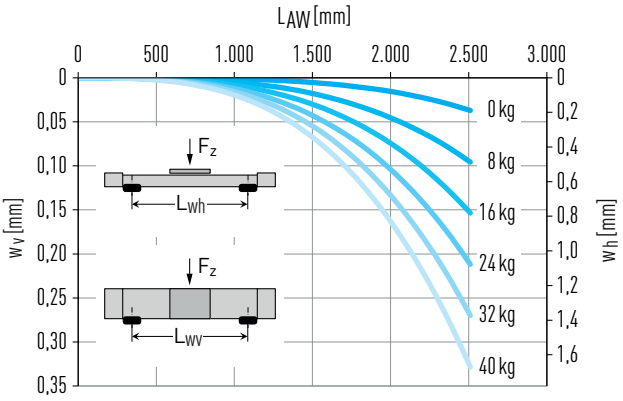
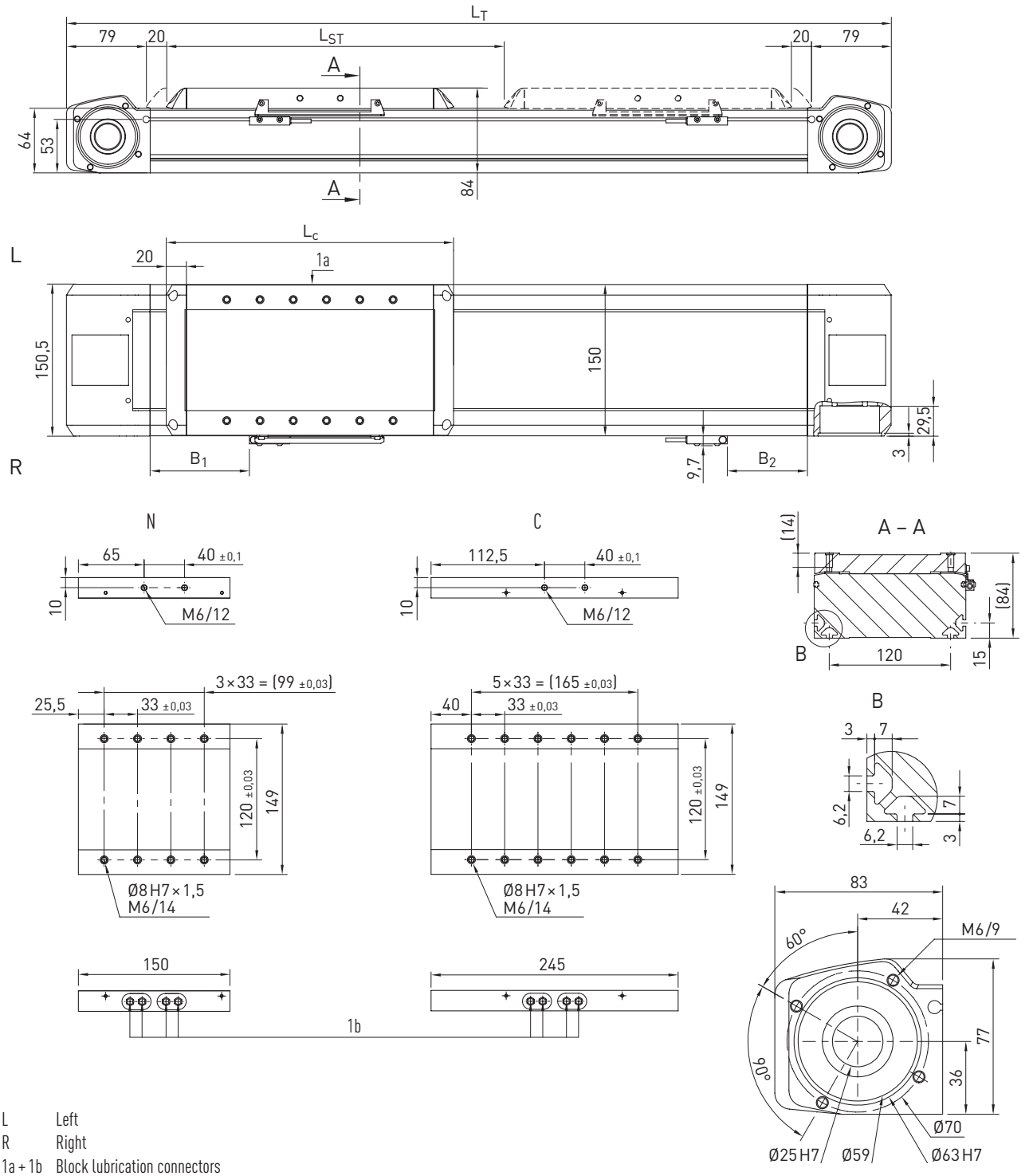


Fig. 7.2 **Deflection w over unsupported axis length L_{AW} under load capacity F_z**

Table 7.6 **Mechanical properties**		
	Variant without cover N	Variant with cover C
Mass of the carriage [kg]	1.34	1.53
Mass at 0-stroke [kg]	4.13	4.73
Mass per 1 m stroke [kg/m]	6.54	6.71
$J_{rot.}$ [1] [kgcm²]	0.63	0.63
Idle torque at 0-stroke [Nm]	1.00	1.50

[1] Rotational moment of inertia

7.4 Dimensions and specifications of HT150B



L Left
R Right
1a + 1b Block lubrication connectors

Table 7.7 **HT150B dimensions**

	Variant without cover N	Variant with cover C
Total carriage length L_c [mm]	190	285
Switch distance B_1 [mm]	51	98.5
Switch distance B_2 [mm]	32	79.5
Max. stroke length L_{ST} [mm]	5,578	5,483
Total length L_T [mm]	$L_T = L_{ST} + 388$	$L_T = L_{ST} + 483$

Table 7.8 **Load data**		
	Variant without cover	Variant with cover
$F_{ydynmax}$ [1] [N]	3,350	
$F_{zdynmax}$ [1] [N]	5,233	
$M_{xdynmax}$ [Nm]	245.9	
$M_{ydynmax}$ [Nm]	245.9	345.3
$M_{zdynmax}$ [Nm]	157.5	221.1
z [2] [mm]	51.48	

[1] Force must only act free of torque
[2] Carriage upper edge – centre guide
See section 3.3.3 on page 14 (lifetime reference value)

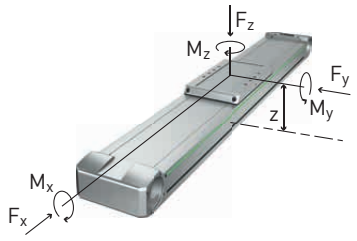


Table 7.9 **General technical data**	
Repeatability [mm]	± 0.05
Max. feed force F_{x_max} [N]	1,300
Max. speed [m/s]	5
Max. acceleration [m/s²]	30
Max. drive torque M_{A_max} [Nm]	32
Typical load capacity [kg]	80
Maximum total length [1] [mm]	5,966
Area moment of inertia of profile cross section I_x [mm⁴]	907,754
Area moment of inertia of profile cross section I_y [mm⁴]	7,417,610

[1] Long axes on request

Table 7.10 **Guide**	
Guide type	QEH15CA
Static load rating C_0 [N]	15,280
Dynamic load rating C_{dyn} [N]	12,530

Table 7.11 **Drive**	
Drive element	B40HTD5
Feed constant [mm/U]	155
Toothed belt effective diameter [mm]	49.34

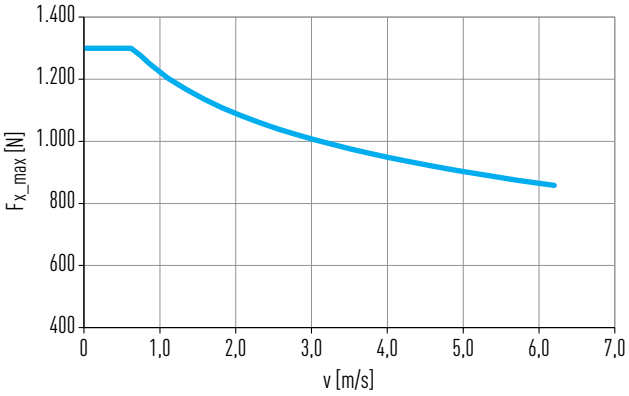


Fig. 7.3 **Max. feed force F_{x_max} as a function of axis speed v**

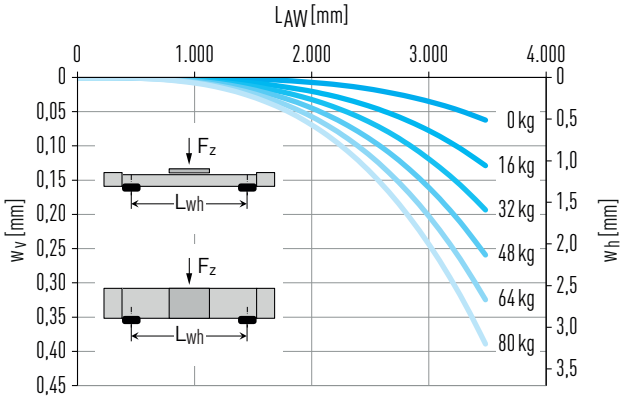
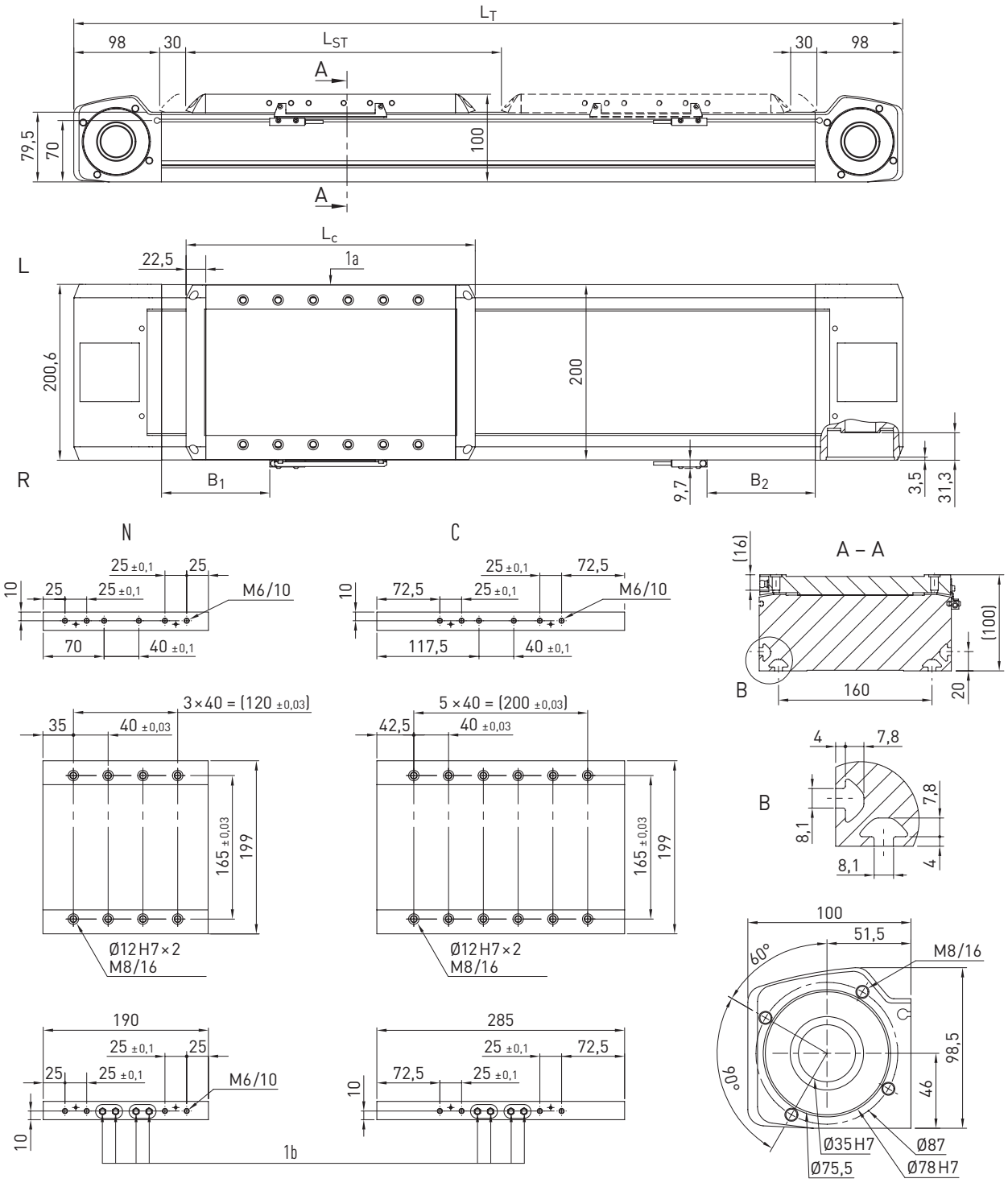


Fig. 7.4 **Deflection w over unsupported axis length L_{AW} under load capacity F_z**

Table 7.12 **Mechanical properties**		
	Variant without cover N	Variant with cover C
Mass of the carriage [kg]	2.33	2.94
Mass at 0-stroke [kg]	8.33	10.03
Mass per 1 m stroke [kg/m]	10.87	11.16
$J_{rot.}$ [1] [kgcm²]	5.09	5.09
Idle torque at 0-stroke [Nm]	1.00	1.50

[1] Rotational moment of inertia

7.5 Dimensions and specifications of HT200B



L Left
R Right
1a + 1b Block lubrication connectors

Table 7.13 **HT200B dimensions**

	Variant without cover N	Variant with cover C
Total carriage length L_c [mm]	235	330
Switch distance B_1 [mm]	76	123.5
Switch distance B_2 [mm]	76	123.5
Max. stroke length L_{ST} [mm]	5,509	5,414
Total length L_T [mm]	$L_T = L_{ST} + 491$	$L_T = L_{ST} + 586$

Table 7.14 **Load data**

	Variant without cover	Variant without cover
$F_{ydynmax}$ [1] [N]	7,800	
$F_{zdynmax}$ [1] [N]	12,528	
$M_{xdynmax}$ [Nm]	851.9	
$M_{ydynmax}$ [Nm]	707.8	1002.2
$M_{zdynmax}$ [Nm]	440.7	624.0
z [2] [mm]	58.48	

[1] Force must only act free of torque
[2] Carriage upper edge – centre guide
See section 3.3.3 on page 14 (lifetime reference value)

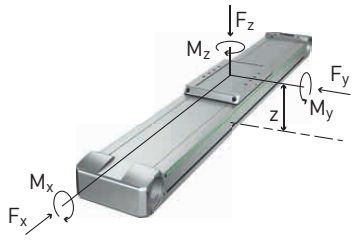


Table 7.15 **General technical data**

Repeatability [mm]	± 0.05
Max. feed force F_{x_max} [N]	3,000
Max. speed [m/s]	5
Max. acceleration [m/s²]	30
Max. drive torque M_{A_max} [Nm]	88
Typical load capacity [kg]	150
Maximum total length [1] [mm]	6,000
Area moment of inertia of profile cross section I_x [mm⁴]	2,071,928
Area moment of inertia of profile cross section I_y [mm⁴]	19,658,810

[1] Long axes on request

Table 7.16 **Guide**

Guide type	QHH20CA
Static load rating C_0 [N]	33,860
Dynamic load rating C_{dyn} [N]	30,000

Table 7.17 **Drive**

Drive element	B50HTD8
Feed constant [mm/U]	184
Toothed belt effective diameter [mm]	58.57

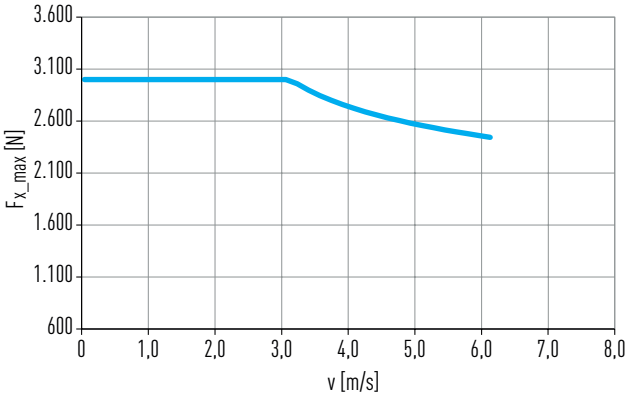


Fig. 7.5 **Max. feed force F_{x_max} as a function of axis speed v**

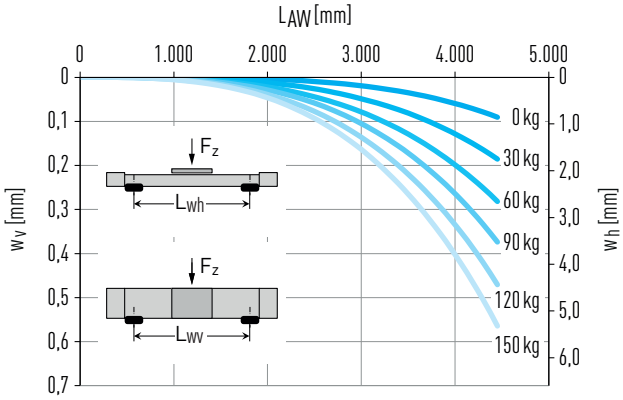


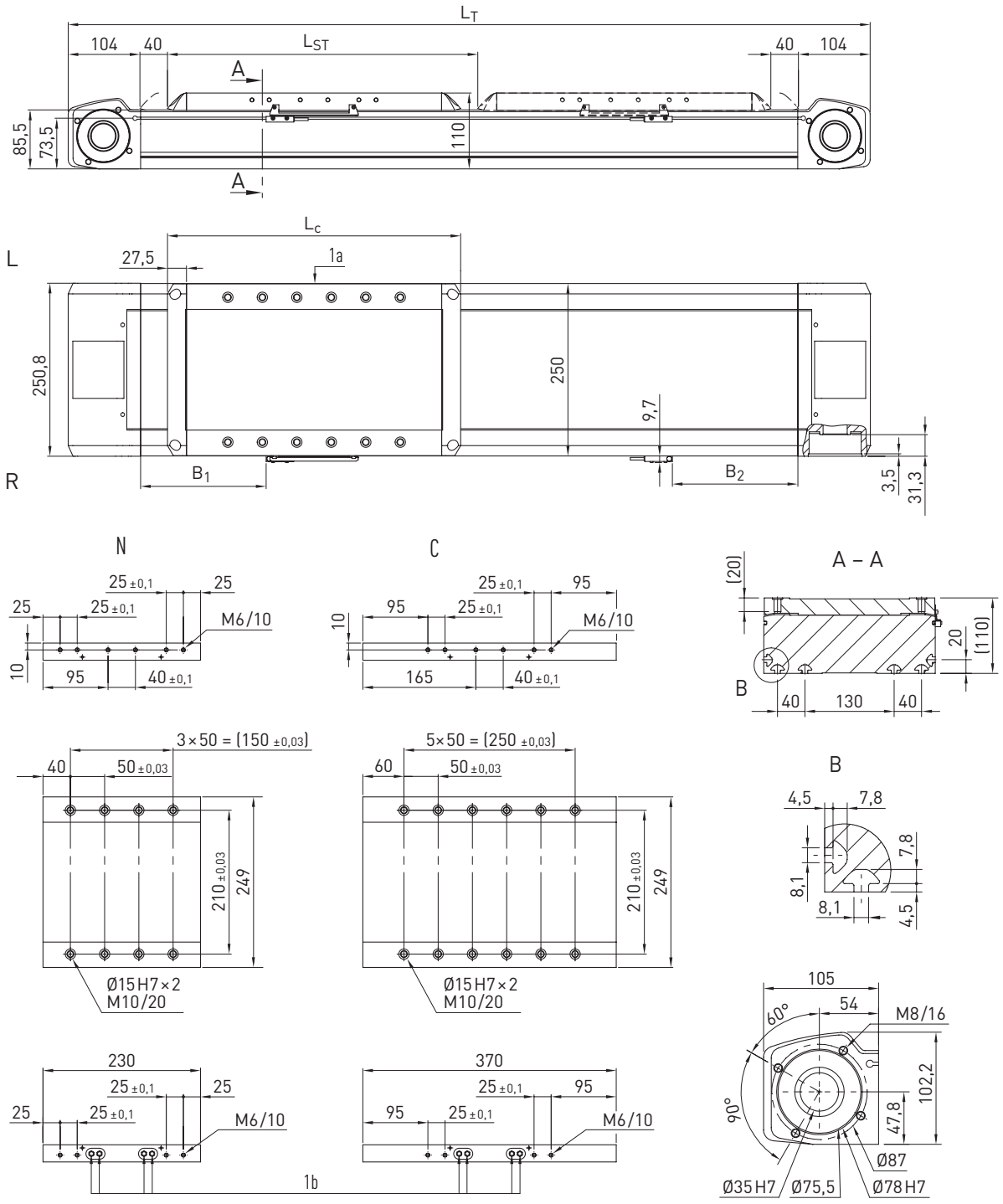
Fig. 7.6 **Deflection w over unsupported axis length L_{AW} under load capacity F_z**

Table 7.18 **Mechanical properties**

	Variant without cover N	Variant with cover C
Mass of the carriage [kg]	4.40	5.19
Mass at 0-stroke [kg]	17.15	19.65
Mass per 1 m stroke [kg/m]	17.25	17.57
$J_{rot.}$ [1] [kgcm²]	18.37	18.37
Idle torque at 0-stroke [Nm]	2.00	2.50

[1] Rotational moment of inertia

7.6 Dimensions and specifications of HT250B



L Left
R Right
1a + 1b Block lubrication connectors

Table 7.19 **HT250B dimensions**

	Variant without cover N	Variant with cover C
Total carriage length L_c [mm]	285	425
Switch distance B_1 [mm]	112	182
Switch distance B_2 [mm]	112	182
Max. stroke length L_{ST} [mm]	5,537	5,397
Total length L_T [mm]	$L_T = L_{ST} + 573$	$L_T = L_{ST} + 713$

Table 7.20 **Load data**

	Variant without cover	Variant with cover
$F_{ydynmax}$ [1] [N]	11,600	
$F_{zdynmax}$ [1] [N]	17,498	
$M_{xdynmax}$ [Nm]	1,496	
$M_{ydynmax}$ [Nm]	1,356.1	1,706.0
$M_{zdynmax}$ [Nm]	440.7	624.0
z [2] [mm]	68.07	

[1] Force must only act free of torque
[2] Carriage upper edge – centre guide
See section 3.3.3 on page 14 (lifetime reference value)

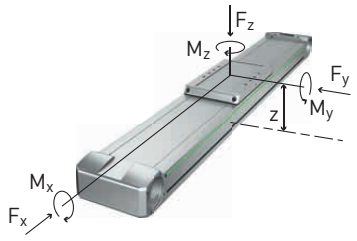


Table 7.21 **General technical data**

Repeatability [mm]	± 0.05
Max. feed force F_{x_max} [N]	4,500
Max. speed [m/s]	5
Max. acceleration [m/s²]	30
Max. drive torque M_{A_max} [Nm]	149
Typical load capacity [kg]	250
Maximum total length [1] [mm]	6,110
Area moment of inertia of profile cross section I_x [mm⁴]	3,265,771
Area moment of inertia of profile cross section I_y [mm⁴]	39,262,043

[1] Long axes on request

Table 7.22 **Guide**

Guide type	QHH25CA
Static load rating C_0 [N]	48,750
Dynamic load rating C_{dyn} [N]	41,900

Table 7.23 **Drive**

Drive element	B75HTD8
Feed constant [mm/U]	208
Toothed belt effective diameter [mm]	66.21

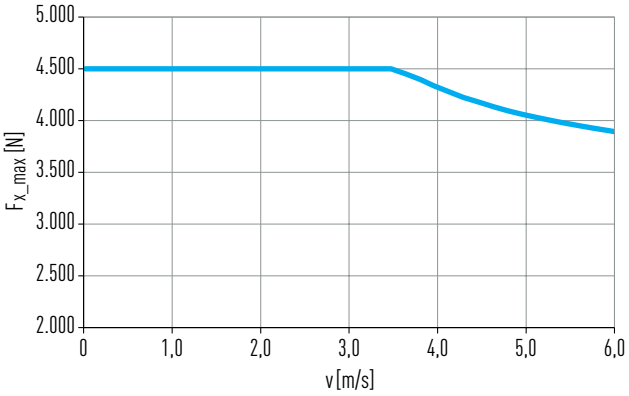


Fig. 7.7 **Max. feed force F_{x_max} as a function of axis speed v**

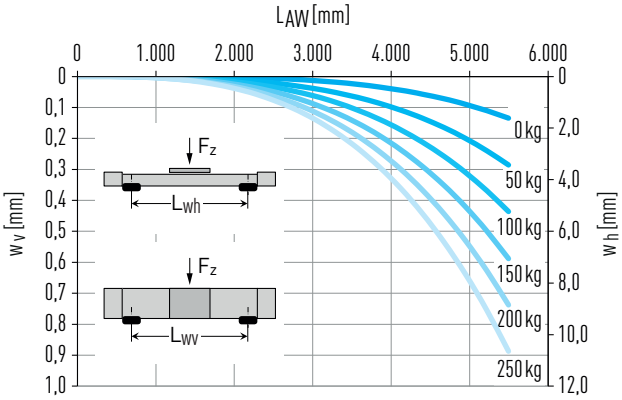


Fig. 7.8 **Deflection w over unsupported axis length L_{AW} under load capacity F_z**

Table 7.24 **Mechanical properties**

	Variant without cover N	Variant with cover C
Mass of the carriage [kg]	7.93	9.67
Mass at 0-stroke [kg]	28.71	33.69
Mass per 1 m stroke [kg/m]	22.48	22.87
$J_{rot.}$ [1] [kgcm²]	36.38	36.38
Idle torque at 0-stroke [Nm]	4.00	4.50

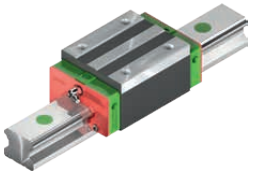
[1] Rotational moment of inertia

8. Linear tables HT-S

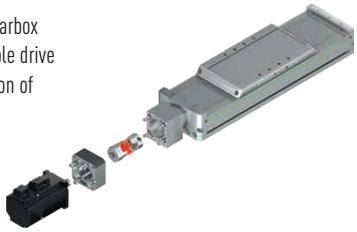
8.1 Properties of linear tables HT-S with ballscrew

The HIWIN linear tables with ballscrew are flexible positioning modules with integrated HIWIN double guide. They are especially suitable for applications where high loads are moved with high precision.

Linear guideway
A high-quality HIWIN double guide safely transfers forces and torques from the carriage to the axis profile. Four blocks are used per carriage, which are guided on a two parallel, high-precision profile rails. The SynchMotion™ technology with ball chain also ensures good synchronisation and smooth running in all sizes.

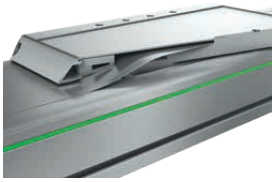


Motor connection and belt drive
The multi-part design of the motor/gearbox adaptation creates an extremely flexible drive interface for attachment and conversion of the drive technology.



Ballscrew
The integrated HIWIN ballscrews ensure precise positioning thanks to their high pitch accuracy and rigidity. Different shaft pitches are available for each size in order to optimally meet the requirements for feed force and dynamics.

Cover strip
The steel cover strip prevents dirt and dust from entering the axis interior. In addition, the cover strip allows the axes to be used in areas with coarse, sharp-edged or hot foreign bodies. The magnetic strips integrated in the axis profile hold the belt securely in position and increase the sealing effect.



Carriage
The carriages have additional bore holes on each mounting hole to ensure ideal, reproducible alignment of the adjacent construction. You will find the matching centring sleeves in the accessories on Page 181.
A grease nipple is provided on the carriage for each lubrication point for convenient maintenance of the linear axis.

Energy chain
Generously dimensioned energy chains provide space for safely carrying the supply lines. They are extremely compact and save space when attached to the axis. For details on the orientation of the energy chain, see section 18.3 from page 174.

Spindle support
In applications with long travel distances and high velocity, the critical speed of the shaft is quickly reached, meaning an appropriate support is required to prevent the shaft from swinging up. In HIWIN spindle axes, up to four travelling spindle supports can be installed on each side of the carriage. This allows driving at full speed, even with large strokes.

8.2 Order code for linear tables HT-S

HT	150	S	010	C	1234	S

HIWIN linear table

Size (profile width):
100: 100 mm
150: 150 mm
200: 200 mm
250: 250 mm

Drive type:
S: Ballscrew

Carriage length:
S: Short

Stroke length [mm]

Cover strip:
C: With steel cover strip
N: Without cover strip

Spindle pitch [mm]:
005/010/016: HT100S
005/010/020: HT150S
005/010/025: HT200S
010/020/032: HT250S

Continuation, order code for linear tables HT-B

A	N	N	S	BR04

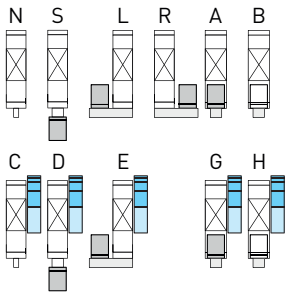
Axis limit switch[4]:
N: Without limit switch
A: 2 × normally closed, 100 mm cable, connector
B: 2 × normally open, 100 mm cable, connector
C: 2 × normally closed, 4 m open cable end
D: 2 × normally open, 5 m open cable end

Spindle support:
N: Without spindle support
1: One spindle support per side
2: Two spindle supports per side
3: Three spindle supports per side
4: Four spindle supports per side

Distance measuring system option[1]:
N: Without distance measuring system
A: HIWIN MAGIC, analogue, 1 V_{SS} sin/cos, 5 m open cable end
D: HIWIN MAGIC, digital, TTL 5 V, 5 m open cable end

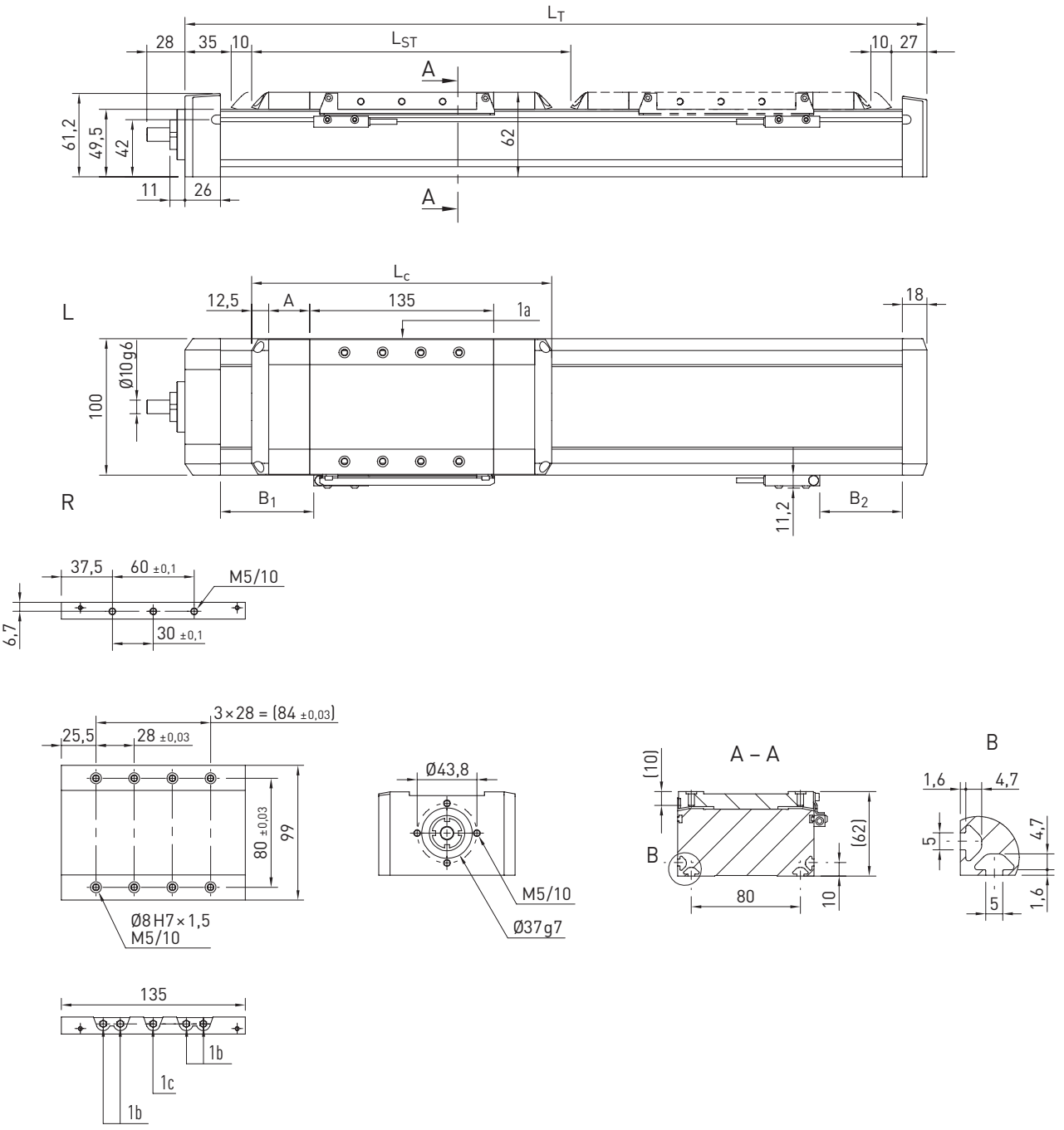
Motor flange type[3]

Drive interface[2] [5]:
N: Without
S: Straight
L: Left
R: Right
A: Top
B: Bottom
C: Without, energy chain right
D: Straight, energy chain right
E: Left, energy chain right
G: Top, energy chain right
H: Bottom, energy chain right



[1] More detailed information in chapter 17 from page 134 or in the "HIWIN MAGIC Distance Measuring Systems" assembly instructions".
[2] If no drive interface is selected, the order code ends after this digit.
[3] You can find all flange types in Table 18.13 from page 163. If no motor is selected, the order code ends after this digit.
[4] Additional reference switches on request.
[5] Dimensions of the drive interface and the energy chain can be found on Page 174.

8.3 Dimensions and specifications of HT100S



L	Left
R	Right
1a + 1b	Block lubrication connectors
1c	Ballscrew lubrication connectors

Table 8.1 **HT100S dimensions**

	Variant without cover	Variant with cover
Total carriage length L_c [mm]	160	220
Cover strip deflection A [mm]	–	30
Switch distance B_1 [mm]	33.5	63.5
Switch distance B_2 [mm]	25.5	55.5
Max. stroke length L_{ST} [mm]	3,036	2,976
Total length L_T [mm]	$L_T = L_{ST} + 242$	$L_T = L_{ST} + 302$

Table 8.2 **Load data**	
$F_{ydynmax}$ [1] [N]	3,350
$F_{zdynmax}$ [1] [N]	5,340
$M_{xdynmax}$ [Nm]	139
$M_{ydynmax}$ [Nm]	280
$M_{zdynmax}$ [Nm]	176
z [2] [mm]	36.6

[1] Force must only act free of torque
[2] Carriage upper edge – centre guide
See section 3.3.3 on page 14 (lifetime reference value)

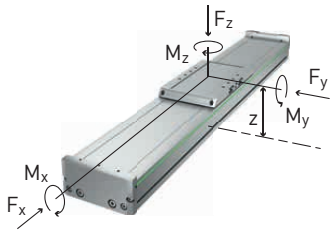
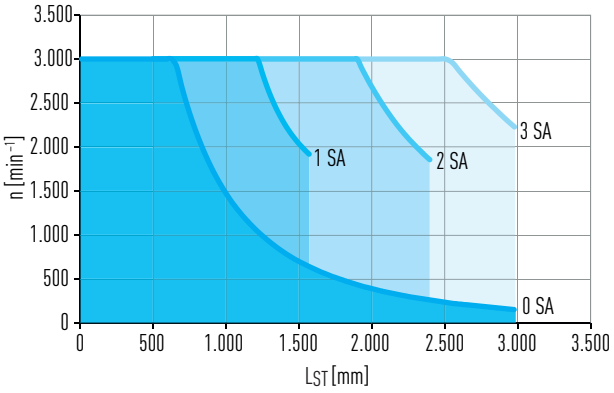


Table 8.3 **General technical data**	
Repeatability [mm]	± 0.02
Max. acceleration [m/s²]	15
Typical load capacity [kg]	40
Maximum total length [mm]	3,278
Area moment of inertia of profile cross section I_x [mm⁴]	299,377
Area moment of inertia of profile cross section I_y [mm⁴]	1,516,426

Table 8.4 **Guide**	
Guide type	QEH15SA
Static load rating C_0 [N]	8,790
Dynamic load rating C_{dyn} [N]	8,560

Table 8.5 **Drive**	Spindle lead		
	5 mm	**10 mm**	**16 mm**
Spindle diameter [mm]	15		
Axial play [mm]	0.02		
Max. feed force F_{x_max} [N]	2,541	1,989	1,915
Max. speed [m/s]	0.25	0.50	0.80
Max. drive torque M_{A_max} [Nm]	2.42	3.57	5.28
Static load rating ballscrew C_0 [N]	23,800	18,300	17,900
Dynamic load rating ballscrew C_{dyn} [N]	13,800	10,800	10,400



SA Spindle support

Fig. 8.1 **Critical speed n over axis stroke length L_{ST}**

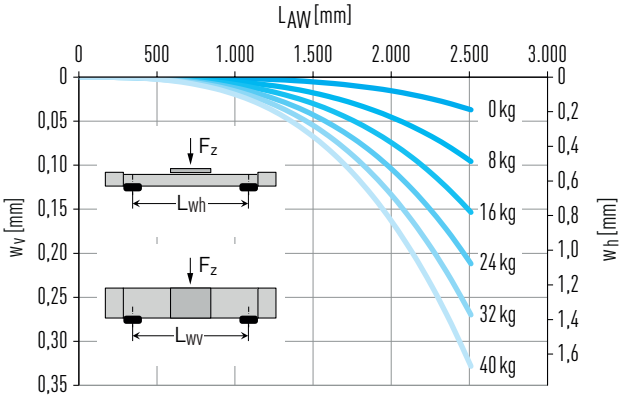
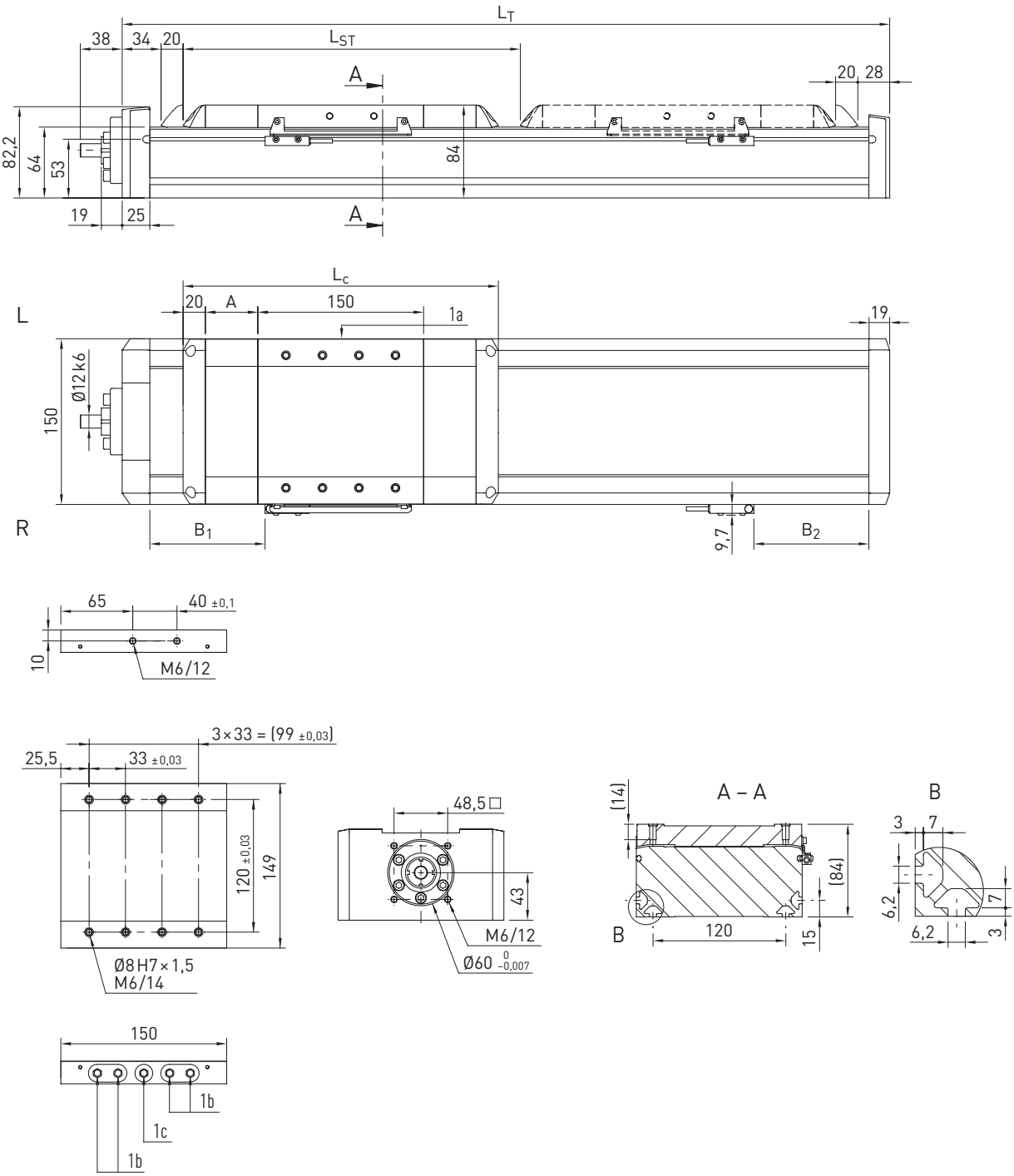


Fig. 8.2 **Deflection w over unsupported axis length L_{AW} under load capacity F_z**

Table 8.6 **Mechanical properties**	Variant without cover			Variant with cover		
Spindle pitch [mm]	**5**	**10**	**16**	**5**	**10**	**16**
Mass of the carriage [kg]	1.15	1.14	1.22	1.28	1.28	1.35
Mass at 0-stroke [kg]	3.79	3.79	3.86	4.26	4.25	4.33
Mass per 1 m stroke [kg/m]	7.67			7.85		
$J_{rot.}$ [1] at 0-stroke [kgcm²]	0.16			0.19		
$J_{rot.}$ [1] Per 1 m stroke [kgcm²/m]	0.39			0.39		
Idle torque at 0-stroke [Nm]	0.40			0.50		

[1] Rotational moment of inertia

8.4 Dimensions and specifications of HT150S



L	Left
R	Right
1a + 1b	Block lubrication connectors
1c	Ballscrew lubrication connectors

Table 8.7 **HT150S dimensions**

	Variant without cover	Variant with cover
Total carriage length L_c [mm]	190	285
Cover strip deflection A [mm]	–	47.5
Switch distance B_1 [mm]	54.5	102
Switch distance B_2 [mm]	54.5	102
Max. stroke length L_{ST} [mm]	5,176	5,081
Total length L_T [mm]	$L_T = L_{ST} + 292$	$L_T = L_{ST} + 387$

Table 8.8 **Load data**	
$F_{ydynmax}$ [1] [N]	3,350
$F_{zdynmax}$ [1] [N]	7,256
$M_{xdynmax}$ [Nm]	341
$M_{ydynmax}$ [Nm]	337
$M_{zdynmax}$ [Nm]	156
z [2] [mm]	54.5

[1] Force must only act free of torque
[2] Carriage upper edge – centre guide
See section 3.3.3 on page 14 (lifetime reference value)

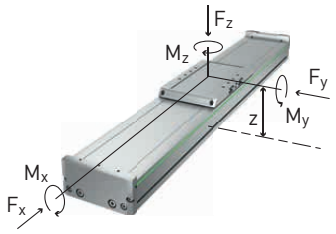
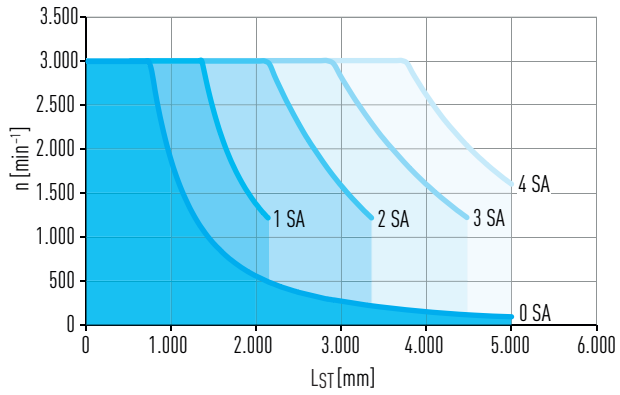


Table 8.9 **General technical data**	
Repeatability [mm]	± 0.02
Max. acceleration [m/s²]	15
Typical load capacity [kg]	80
Maximum total length [mm]	5,468 [3]
Area moment of inertia of profile cross section I_x [mm⁴]	907,754
Area moment of inertia of profile cross section I_y [mm⁴]	7,417,610

[3] Without cover strip 5,294

Table 8.10 **Guide**	
Guide type	QEH15CA
Static load rating C_0 [N]	15,280
Dynamic load rating C_{dyn} [N]	12,530

Table 8.11 **Drive**			
	Spindle lead		
	5 mm	**10 mm**	**20 mm**
Spindle diameter [mm]	20		
Axial play [mm]	0.02		
Max. feed force F_{x_max} [N]	3,186	3,149	1,620
Max. speed [m/s]	0.25	0.50	1.00
Max. drive torque M_{A_max} [Nm]	3.14	5.61	5.76
Static load rating ballscrew C_0 [N]	33,800	33,600	16,000
Dynamic load rating ballscrew C_{dyn} [N]	17,300	17,100	8,800



SA Spindle support

Fig. 8.3 **Critical speed n over axis stroke length L_{ST}**

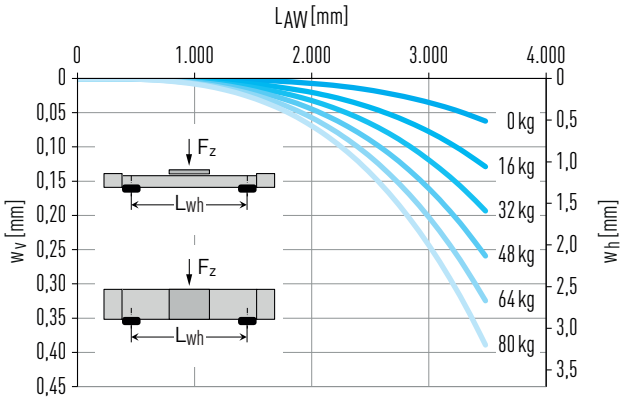
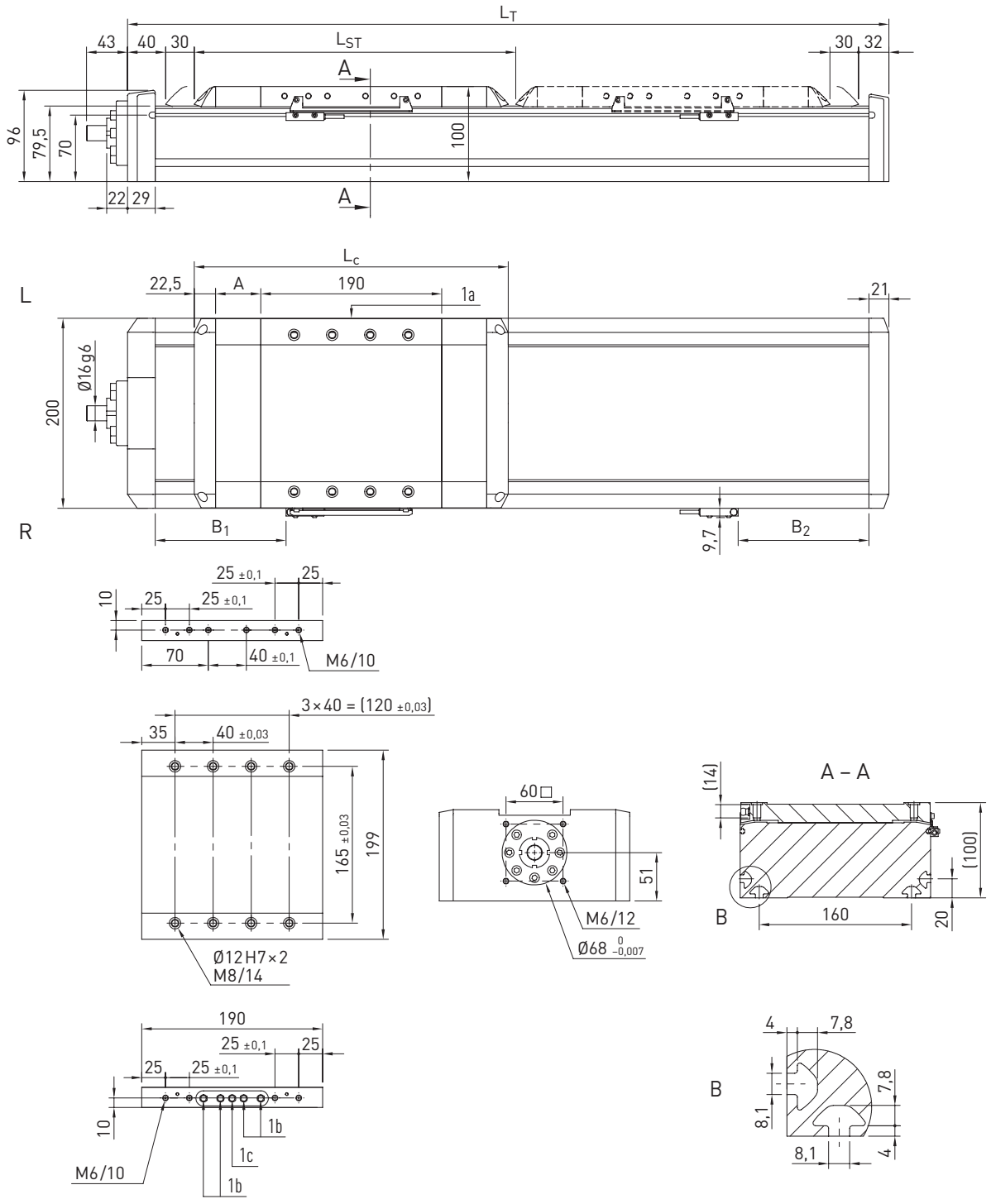


Fig. 8.4 **Deflection w over unsupported axis length L_{AW} under load capacity F_z**

Table 8.12 **Mechanical properties**						
	Variant without cover			Variant with cover		
Spindle pitch [mm]	**5**	**10**	**20**	**5**	**10**	**20**
Mass of the carriage [kg]	2.26	2.40	2.49	2.73	2.88	2.96
Mass at 0-stroke [kg]	7.66	7.80	7.88	9.29	9.43	9.52
Mass per 1 m stroke [kg/m]	12.89			13.17		
$J_{rot.}$ [1] at 0-stroke [kgcm²]	0.69			0.81		
$J_{rot.}$ [1] Per 1 m stroke [kgcm²/m]	1.23			1.23		
Idle torque at 0-stroke [Nm]	0.60			0.70		

[1] Rotational moment of inertia

8.5 Dimensions and specifications of HT200S



L Left
R Right

1a + 1b Block lubrication connectors
1c Ballscrew lubrication connectors

Table 8.13 **HT200S dimensions**

	Variant without cover	Variant with cover
Total carriage length L_c [mm]	235	330
Cover strip deflection A [mm]	–	47.5
Switch distance B_1 [mm]	89	136.5
Switch distance B_2 [mm]	89	136.5
Max. stroke length L_{ST} [mm]	5,098	5,003
Total length L_T [mm]	$L_T = L_{ST} + 367$	$L_T = L_{ST} + 462$

Table 8.14 **Load data**	
$F_{ydynmax}$ [1] [N]	7,800
$F_{zdynmax}$ [1] [N]	15,784
$M_{xdynmax}$ [Nm]	1,073
$M_{ydynmax}$ [Nm]	892
$M_{zdynmax}$ [Nm]	441
z [2] [mm]	58

[1] Force must only act free of torque
[2] Carriage upper edge – centre guide
See section 3.3.3 on page 14 (lifetime reference value)

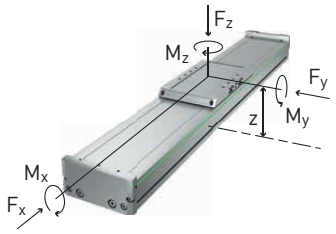
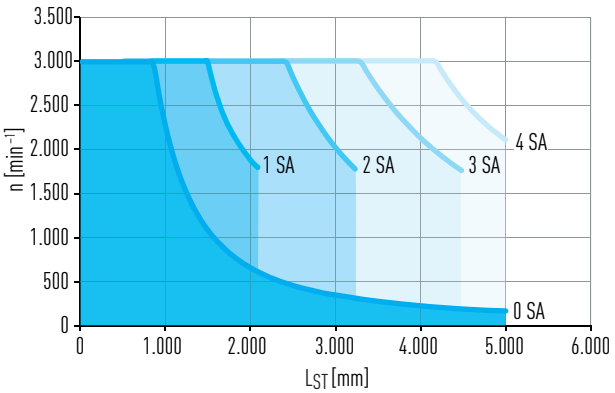


Table 8.15 **General technical data**	
Repeatability [mm]	± 0.02
Max. acceleration [m/s²]	15
Typical load capacity [kg]	150
Maximum total length [mm]	5,465 [3]
Area moment of inertia of profile cross section I_x [mm⁴]	2,071,928
Area moment of inertia of profile cross section I_y [mm⁴]	19,658,810

[3] Without cover strip 5,367

Table 8.16 **Guide**	
Guide type	QHH20CA
Static load rating C_0 [N]	33,860
Dynamic load rating C_{dyn} [N]	30,000

Table 8.17 **Drive**			
	Spindle lead		
	5 mm	**10 mm**	**25 mm**
Spindle diameter [mm]	25		
Axial play [mm]	0.02		
Max. feed force F_{x_max} [N]	3,535	3,499	1,786
Max. speed [m/s]	0.25	0.50	1.25
Max. drive torque M_{A_max} [Nm]	3.61	6.37	7.91
Static load rating ballscrew C_0 [N]	42,900	42,600	20,200
Dynamic load rating ballscrew C_{dyn} [N]	19,200	19,000	9,700



SA Spindle support

Fig. 8.5 **Critical speed n over axis stroke length L_{ST}**

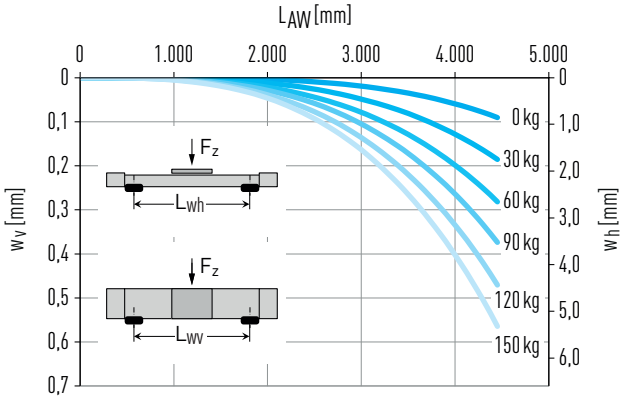
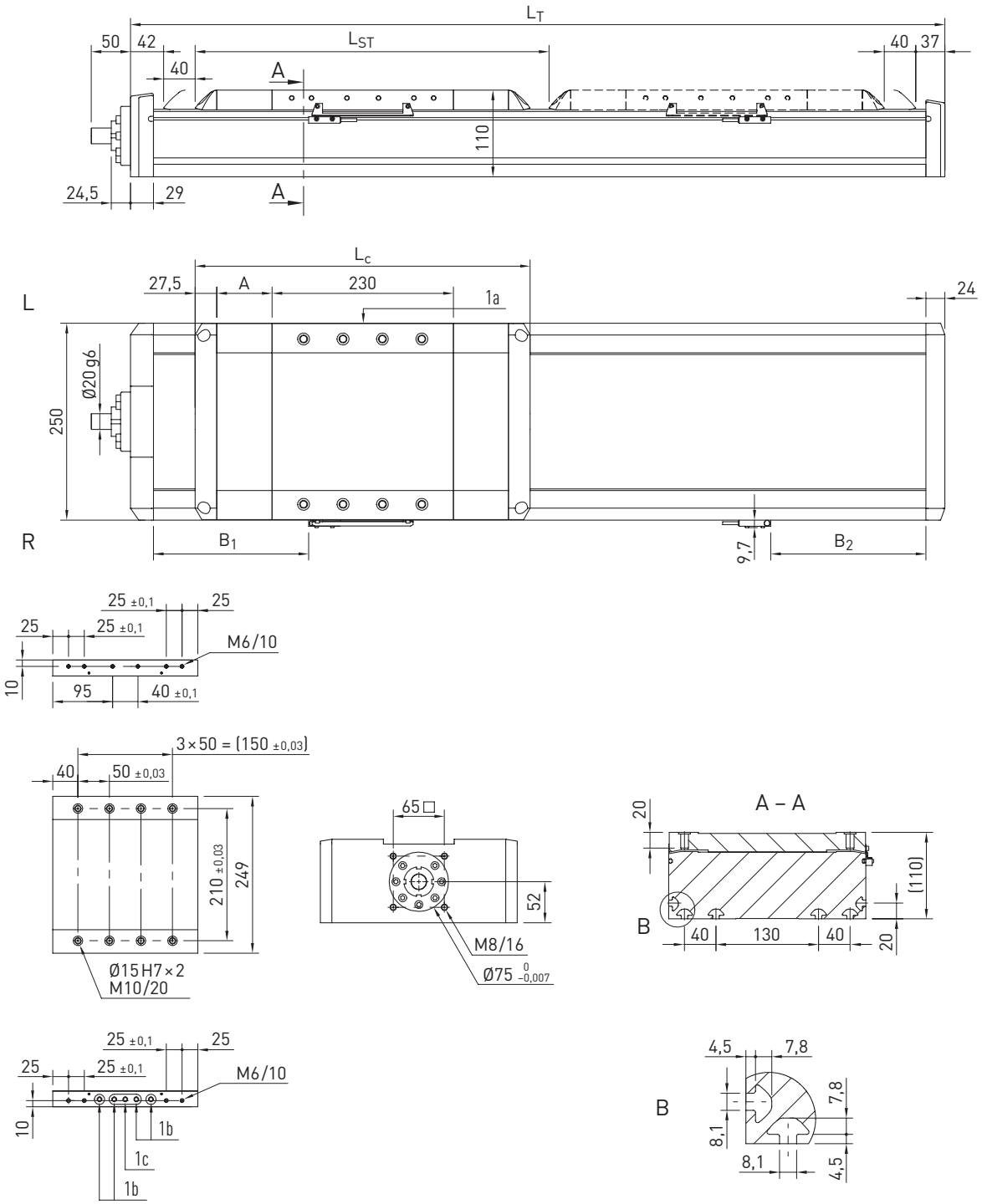


Fig. 8.6 **Deflection w over unsupported axis length L_{AW} under load capacity F_z**

Table 8.18 **Mechanical properties**						
	Variant without cover			Variant with cover		
Spindle pitch [mm]	**5**	**10**	**25**	**5**	**10**	**25**
Mass of the carriage [kg]	4.40	4.50	4.63	5.00	5.09	5.22
Mass at 0-stroke [kg]	14.24	14.33	14.46	16.90	16.99	17.12
Mass per 1 m stroke [kg/m]	20.30			20.61		
$J_{rot.}$ [1] at 0-stroke [kgcm²]	2.01			2.30		
$J_{rot.}$ [1] Per 1 m stroke [kgcm²/m]	3.01			3.01		
Idle torque at 0-stroke [Nm]	0.80			1.00		

[1] Rotational moment of inertia

8.6 Dimensions and specifications of HT250S



L Left
R Right

1a + 1b Block lubrication connectors
1c Ballscrew lubrication connectors

Table 8.19 **HT250S dimensions**

	Variant without cover	Variant with cover
Total carriage length L_c [mm]	285	425
Cover strip deflection A [mm]	–	70
Switch distance B_1 [mm]	126	196
Switch distance B_2 [mm]	126	196
Max. stroke length L_{ST} [mm]	5,013	4,873
Total length L_T [mm]	$L_T = L_{ST} + 444$	$L_T = L_{ST} + 584$

Table 8.20 **Load data**	
$F_{ydynmax}$ [1] [N]	11,600
$F_{zdynmax}$ [1] [N]	20,465
$M_{xdynmax}$ [Nm]	1,750
$M_{ydynmax}$ [Nm]	1,514
$M_{zdynmax}$ [Nm]	858
z [2] [mm]	68

[1] Force must only act free of torque
[2] Carriage upper edge – centre guide
See section 3.3.3 on page 14 (lifetime reference value)

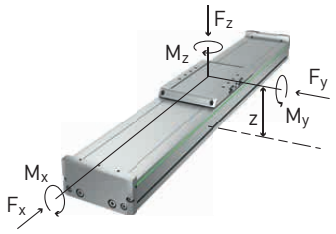
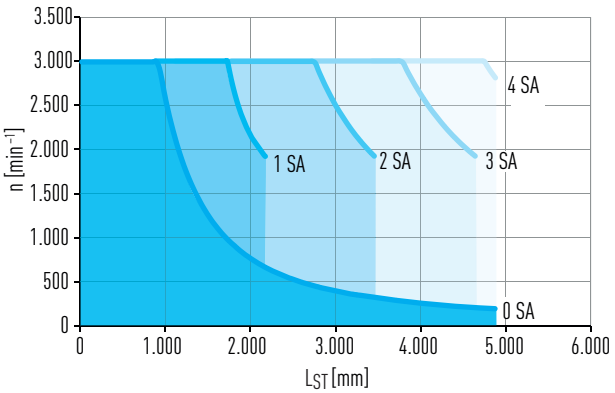


Table 8.21 **General technical data**	
Repeatability [mm]	± 0.02
Max. acceleration [m/s²]	15
Typical load capacity [kg]	250
Maximum total length [mm]	5,457 [3]
Area moment of inertia of profile cross section I_x [mm⁴]	3,265,771
Area moment of inertia of profile cross section I_y [mm⁴]	39,262,043

[3] Without cover strip 5,444

Table 8.22 **Guide**	
Guide type	QHH25CA
Static load rating C_0 [N]	48,750
Dynamic load rating C_{dyn} [N]	41,900

Table 8.23 **Drive**			
	Spindle lead		
	10 mm	**20 mm**	**32 mm**
Spindle diameter [mm]	32		
Axial play [mm]	0.02		
Max. feed force F_{x_max} [N]	5,300	4,069	2,744
Max. speed [m/s]	0.50	1.00	1.60
Max. drive torque M_{A_max} [Nm]	11.99	14.45	15.47
Static load rating ballscrew C_0 [N]	88,000	50,600	32,800
Dynamic load rating ballscrew C_{dyn} [N]	35,800	22,100	14,900



SA Spindle support

Fig. 8.7 **Critical speed n over axis stroke length L_{ST}**

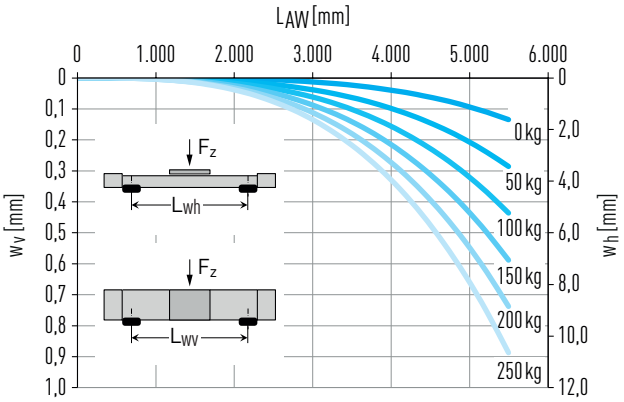


Fig. 8.8 **Deflection w over unsupported axis length L_{AW} under load capacity F_z**

Table 8.24 **Mechanical properties**						
	Variant without cover			Variant with cover		
Spindle pitch [mm]	**10**	**20**	**32**	**10**	**20**	**32**
Mass of the carriage [kg]	8.16	8.30	8.32	9.55	9.69	9.71
Mass at 0-stroke [kg]	23.86	24.00	24.02	29.49	29.63	29.64
Mass per 1 m stroke [kg/m]	27.73			28.12		
$J_{rot.}$ [1] At 0-stroke [kgcm²]	5.15			6.28		
$J_{rot.}$ [1] Per 1 m stroke [kgcm²/m]	8.08			8.08		
Idle torque at 0-stroke [Nm]	1.50			1.80		

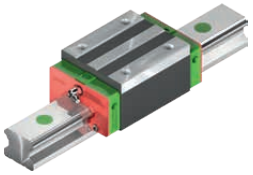
[1] Rotational moment of inertia

9. Linear tables HT-L

9.1 Properties of linear tables HT-S with linear motor

The HIWIN linear axes with linear motor are flexible positioning modules with integrated HIWIN double guide. They are especially suitable for precise positioning at high speed and with great dynamics.

Linear guideway
A high-quality HIWIN double guide safely transfers forces and torques from the carriage to the axis profile. Four blocks are used per carriage, which are guided on a two parallel, high-precision profile rails. The SynchMotion™ technology with ball chain also ensures good synchronisation and smooth running in the HT150L, HT200L and HT250L sizes.



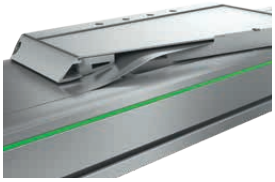
Electric interface
The quick-release connectors allow motor and encoder cables to be connected quickly and easily to the side of the carriage without tools. Depending on the installation situation and the desired cable routing, two different orientations of the connector are available as options.

Linear motor
The integrated HIWIN linear motors ensure dynamic and precise positioning. Two motor sizes are available for each size in order to optimally meet the requirements for the required feed force.

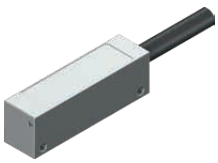
Energy chain
Generously dimensioned energy chains provide space for safely carrying the supply lines. They are extremely compact and save space when attached to the axis. For details on the orientation of the energy chain, see section 18.4 from page 176.

Carriage
The carriages have additional bore holes on each mounting hole to ensure ideal, reproducible alignment of the adjacent construction. You will find the matching centring sleeves in the accessories on Page 181.
A grease nipple is provided on the carriage for each lubrication point for convenient maintenance of the linear axis.

Cover strip
The steel cover strip prevents dirt and dust from entering the axis interior. In addition, the cover strip allows the axes to be used in areas with coarse, sharp-edged or hot foreign bodies. The magnetic strips integrated in the axis profile hold the belt securely in position and increase the sealing effect.



Positioning measuring systems
The distance measuring system is integrated into the inside of the axis to save space and determines the repeatability. Different measuring systems are available depending on the requirements for measuring method, interface and resolution. You can find more information on Page 134.



9.2 Order code for linear tables HT-L

HT	150	L	A12	C	1234	S

HIWIN linear table

Size (profile width):
100: 100 mm
150: 150 mm
200: 200 mm
250: 250 mm

Drive type:
L: Linear motor

Carriage length:
S: Standard (short)

Stroke length [mm]

Cover strip:
C: With steel cover strip
N: Without cover strip

Motor size:
A01/A02: HT100L
A12/A13: HT150L
A22/A23: HT200L
A32/A33: HT250L

Continuation, order code for linear tables HT-L

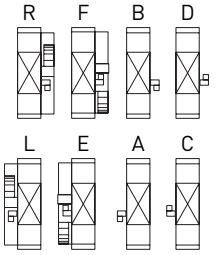
A	N	A	R

Axis limit switch [3]:
N: Without limit switch
A: 2 × normally closed, 100 mm cable, connector
B: 2 × normally open, 100 mm cable, connector
C: 2 × normally closed, 4 m open cable end
D: 2 × normally open, 5 m open cable end

Stator:
N: Standard

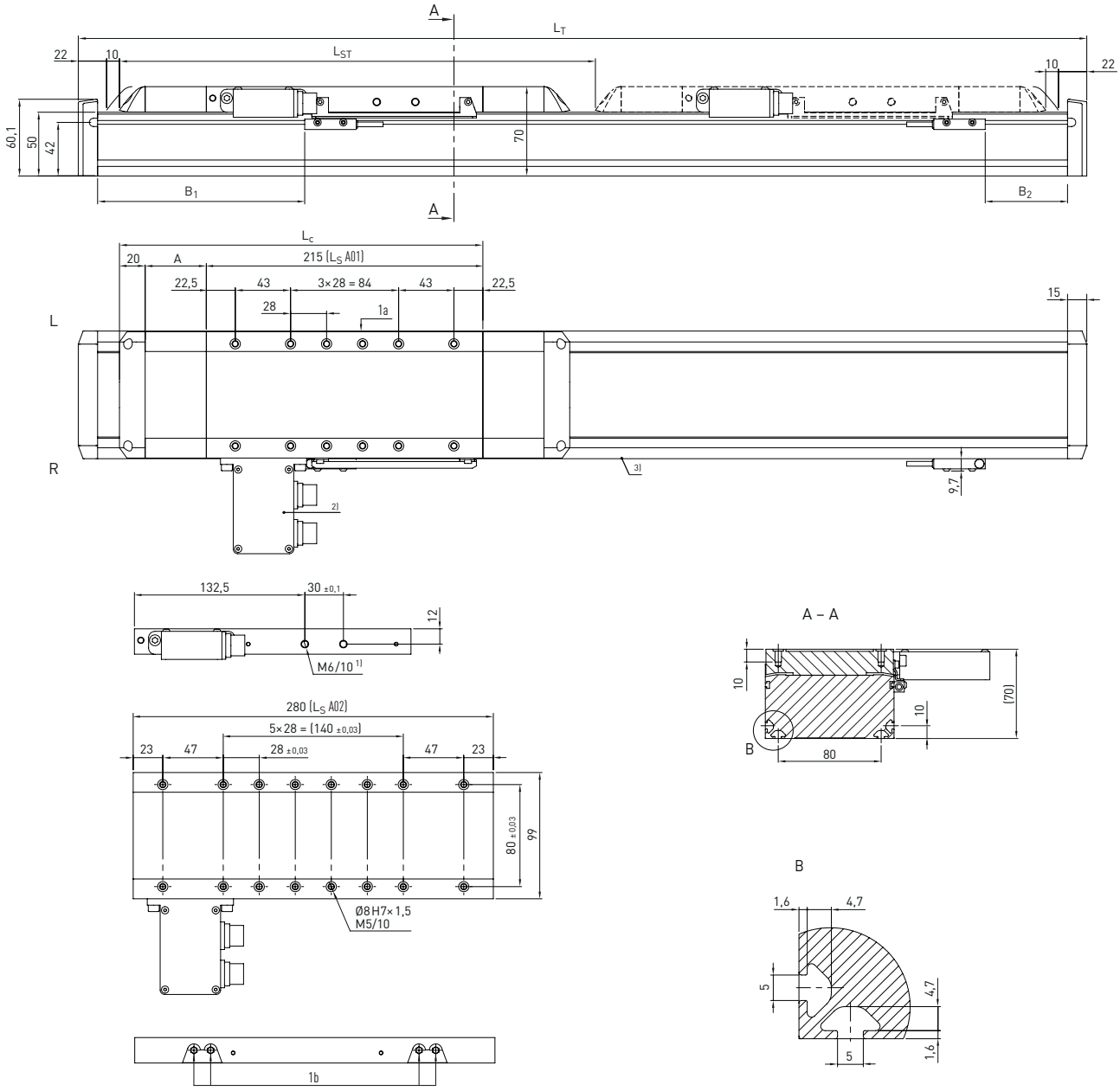
Distance measuring system option [1]:
A: HIWIN MAGIC, analogue, 1 V_{SS} sin/cos
B: HIWIN MAGIC, analogue, 1 V_{SS} sin/cos and digital hall sensor [8]
D: HIWIN MAGIC, digital, TTL 5 V
E: HIWIN MAGIC, digital, TTL 5 V and digital hall sensor [8]
H: LIC 211, absolute, EnDat 2.2 [4] [7]
R: BML-S1G0, absolute, BiSS-C, 1 V_{SS} sin/cos [5]
S: BML-S1G0, absolute, SSI [5]
T: TTK70, absolute, HIPERFACE, 1 V_{SS} sin/cos [4] [8]

Connection interface [2]:
R: With energy chain, connector right/front [6]
F: With energy chain, connector right/rear [6]
B: Without energy chain, connector right/front
D: Without energy chain, connector right/rear
L: With energy chain, connector left/front [6]
E: With energy chain, connector left/rear [6]
A: Without energy chain, connector left/front
C: Without energy chain, connector left/rear



[1] More detailed information in chapter 17 from page 134 or in the "HIWIN MAGIC Distance Measuring Systems" assembly instructions".
[2] Details on connector orientation and position of the energy chain in section 18.4 from page 176.
[3] Additional reference switches on request.
[4] Limitations of the maximum stroke possible, see Table 17.1 on page 134.
[5] The distance measuring system has a safety-related, analogue, incremental real-time signal.
[6] Max. possible stroke: 5,000 mm.
[7] If the installation position is horizontal, the axis must be arranged so that the distance measuring system is at the top.
[8] Option not available for HT100L.

9.3 Dimensions and specifications of HT100L



L_S	Carriage plate	R	Right
L	Left	1a + 1b	Block lubrication connectors

1) Omitted for variant with energy chain 2) Drive interface shown: Option "D"; for other series, see section 18.4 from page 176
3) Internal measuring system always on the right side of the axis. The positive direction of travel depends on the selected measuring system, see section 17.2 from page 136

Table 9.1 **HT100L dimensions**

	Variant without cover		Variant with cover	
Motor size	**A01**	**A02**	**A01**	**A02**
Total carriage length L_c [mm]	255	320	350	415
Cover strip deflection A [mm]	–	–	48	48
Switch distance B_1 [mm]	113.5	113.5	161	161
Switch distance B_2 [mm]	37	102	84	149
Max. stroke length L_{ST} [mm]	5,511	5,446	5,416	5,351
Total length L_T [mm]	$L_T = L_{ST} + 319$	$L_T = L_{ST} + 384$	$L_T = L_{ST} + 414$	$L_T = L_{ST} + 479$

Table 9.2 **Load data**

	Motor size A01	Motor size A02
$F_{ydynmax}$ [1] [N]	1,101	860
$F_{zdynmax}$ [1] [N]	1,101	860
$M_{xdynmax}$ [Nm]	35	27
$M_{ydynmax}$ [Nm]	96	103
$M_{zdynmax}$ [Nm]	96	103
z [2] [mm]	53.5	53.5

[1] Force must only act free of torque
[2] Carriage upper edge – centre guide
See section 3.3.3 on page 14 (lifetime reference value)

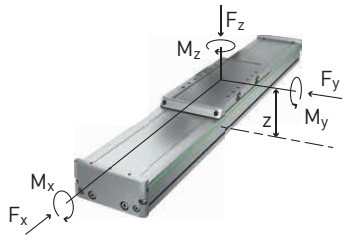


Table 9.3 **General technical data**

Repeatability [2] [mm]	± 0.005
Max. speed [m/s]	5
Typical load capacity [kg]	20
Maximum total length [2] [3] [mm]	5,830
Flatness [1] [mm/300 mm]	± 0.03
Straightness [1] (mm/300 mm]	± 0.03
Area moment of inertia of profile cross section I_x [mm⁴]	282,903
Area moment of inertia of profile cross section I_y [mm⁴]	1,541,419

[1] Values apply with specified screw-on surface or mounting plate
[2] Depending on distance measuring system (chapter 17) and energy chain (section 18.4)
[3] Long axes on request

Table 9.4 **Guide**

Guide type	MGN09H
Static load rating C_0 [N]	4,020
Dynamic load rating C_{dyn} [N]	2,550

Table 9.5 **Drive**

	Motor size A01	Motor size A02
Motor type	LMSA01	LMSA02
Continuous force [N]	52	104
Peak force [N]	112	224
Max. acceleration [m/s²]	50	50

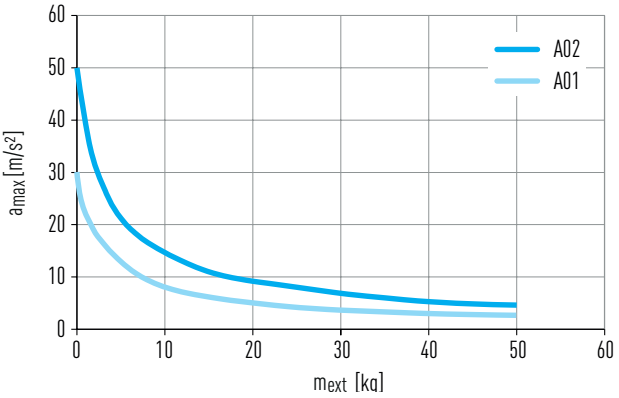


Fig. 9.1 **Max. acceleration a_{max} as a function of the external payload m_{ext}**

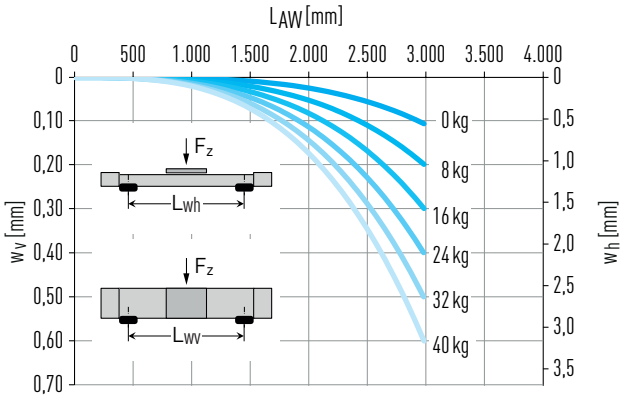
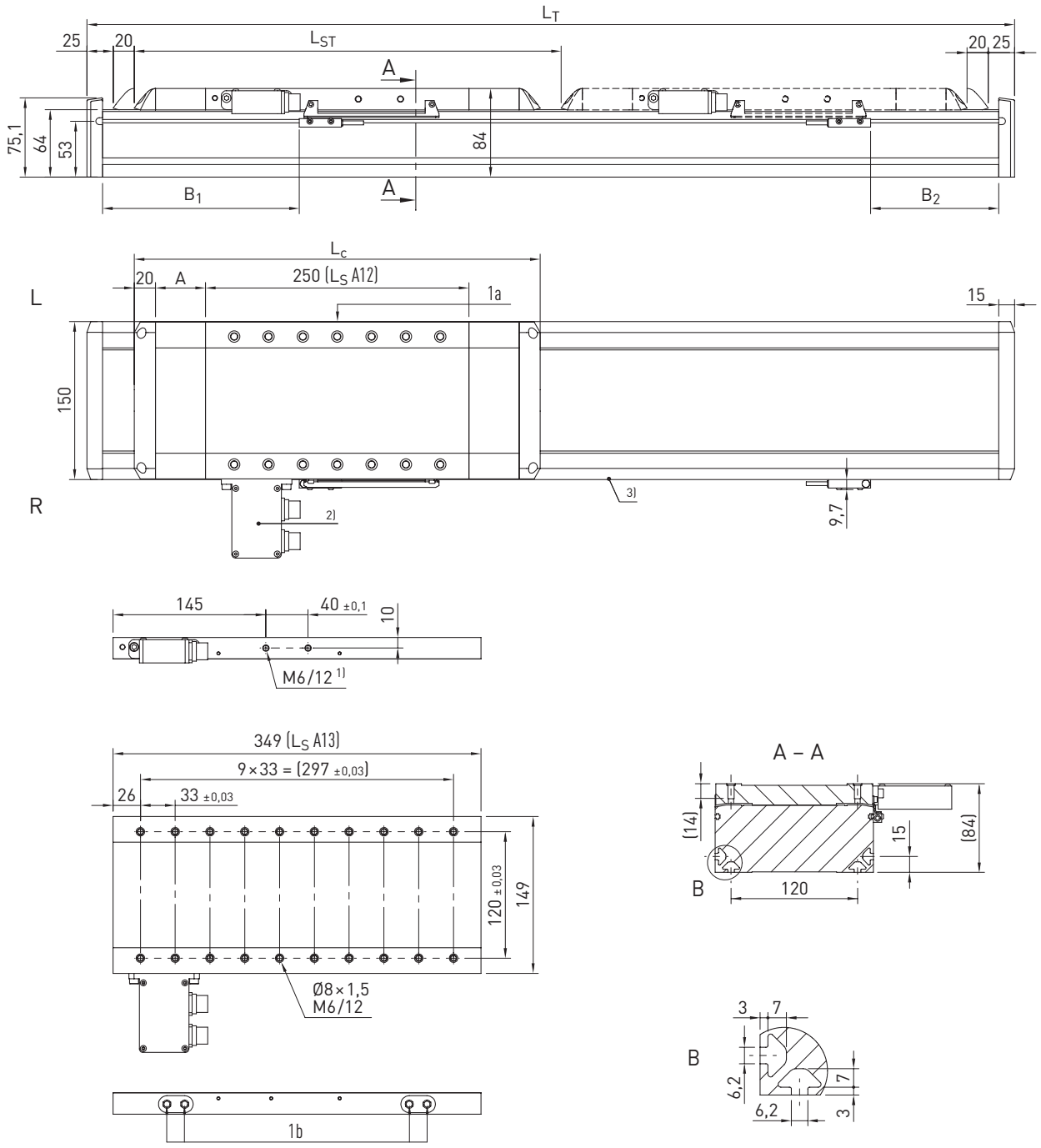


Fig. 9.2 **Deflection w over unsupported axis length L_{AW} under load capacity F_z**

Table 9.6 **Mechanical properties**

	Variant without cover		Variant with cover	
	Motor size A01	**Motor size A02**	**Motor size A01**	**Motor size A02**
Mass of the carriage [kg]	1.97	2.78	2.26	3.06
Mass at 0-stroke [kg]	4.15	5.42	5.02	6.30
Mass per 1 m stroke [kg/m]	6.45		6.61	
Breakaway force F_L [N]	2.00		3.00	

9.4 Dimensions and specifications of HT150L



L_S	Carriage plate	R	Right
L	Left	1a + 1b	Block lubrication connectors

[1] Does not apply to version with energy chain [2] Drive interface shown: Option "D"; for other versions, see section 18.4 from page 176
[3] Internal measuring system always on the right side of the axis. The positive direction of travel depends on the selected measuring system, see section 17.2 from page 136

Table 9.7 **HT150L dimensions**

	Variant without cover		Variant with cover	
Motor size	**A12**	**A13**	**A12**	**A13**
Total carriage length L_c [mm]	290	389	385	484
Cover strip deflection A [mm]	–	–	48	48
Switch distance B_1 [mm]	138	138	185.5	185.5
Switch distance B_2 [mm]	73	172	121	220
Max. stroke length L_{ST} [mm]	5,450	5,351	5,355	5,256
Total length L_T [mm]	$L_T = L_{ST} + 380$	$L_T = L_{ST} + 479$	$L_T = L_{ST} + 475$	$L_T = L_{ST} + 574$

Table 9.8 **Load data**

	Motor size A12	Motor size A13
$F_{ydynmax}$ [1] [N]	3,350	3,350
$F_{zdynmax}$ [1] [N]	4,270	3,789
$M_{xdynmax}$ [Nm]	201	178
$M_{ydynmax}$ [Nm]	414	555
$M_{zdynmax}$ [Nm]	325	491
z [2] [mm]	51.5	51.5

[1] Force must only act free of torque
[2] Carriage upper edge – centre guide
See section 3.3.3 on page 14 (lifetime reference value)

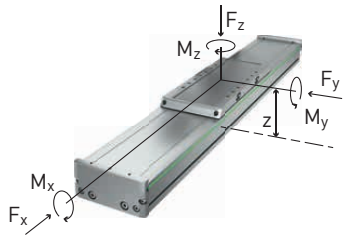


Table 9.9 **General technical data**

Repeatability [2] [mm]	± 0.005
Max. speed [m/s]	5
Typical load capacity [kg]	80
Maximum total length [2] [3] [mm]	5,830
Flatness [1] [mm/300 mm]	± 0.03
Straightness [1] (mm/300 mm]	± 0.03
Area moment of inertia of profile cross section I_x [mm⁴]	907,754
Area moment of inertia of profile cross section I_y [mm⁴]	7,417,610

[1] Values apply with correspondingly specified screw-on surface or mounting plate
[2] Depending on distance measuring system (chapter 17) and energy chain (section 18.4)
[3] Long axes on request

Table 9.10 **Guide**

Guide type	QEH15CA
Static load rating C_0 [N]	15,280
Dynamic load rating C_{dyn} [N]	12,530

Table 9.11 **Drive**

	Motor size A12	Motor size A13
Motor type	LMSA12	LMSA13
Continuous force [N]	205	308
Peak force [N]	579	868
Max. acceleration [m/s²]	60	80

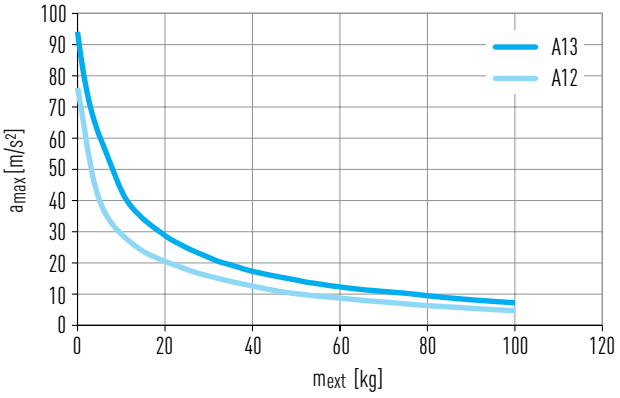


Fig. 9.3 **Max. acceleration a_{max} as a function of the external payload m_{ext}**

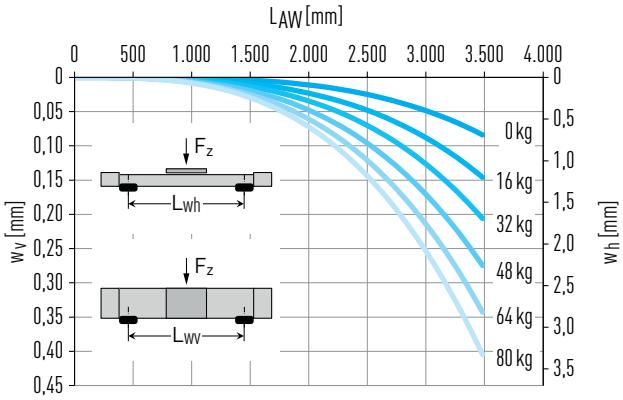
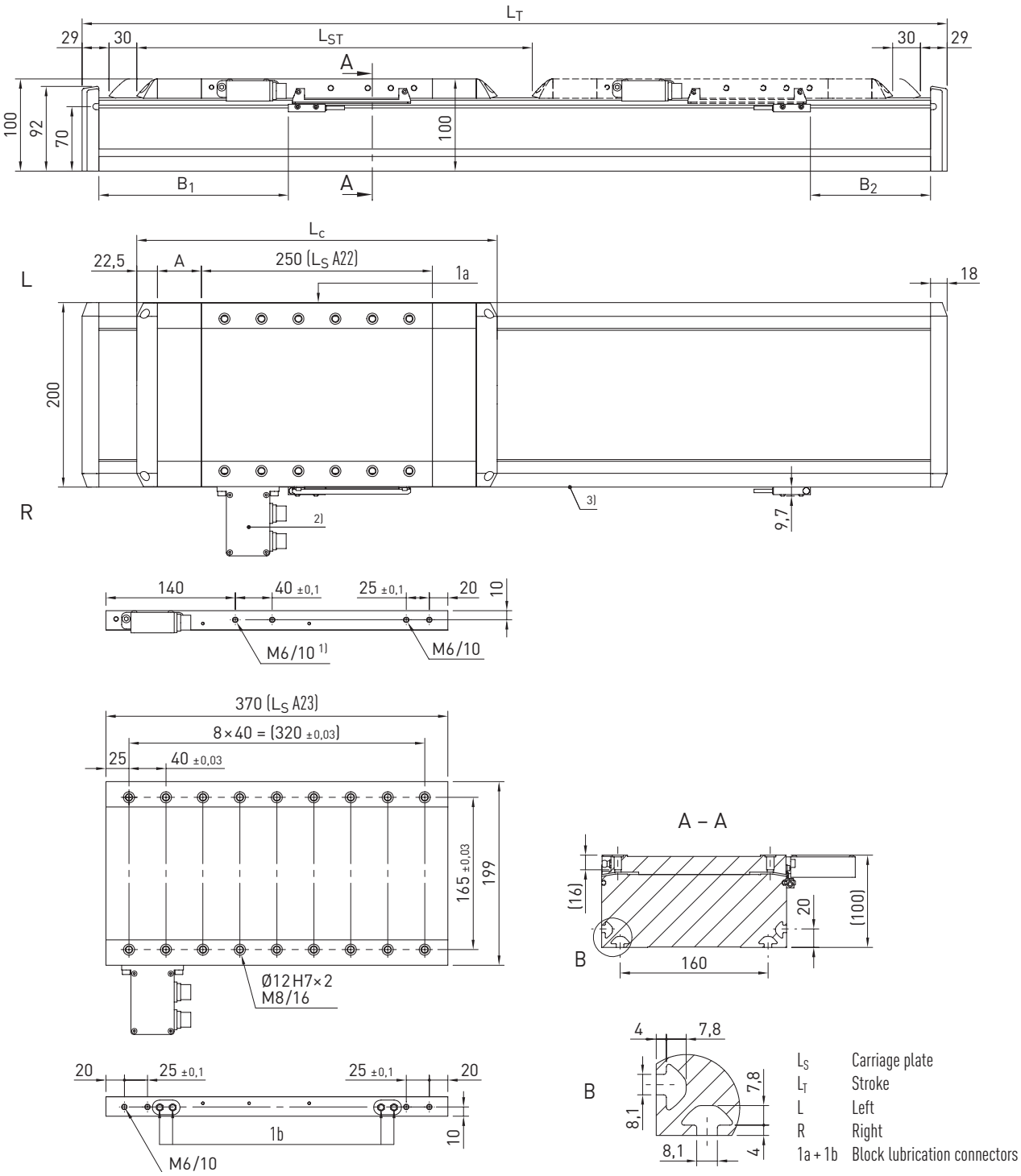


Fig. 9.4 **Deflection w over unsupported axis length L_{AW} under load capacity F_z**

Table 9.12 **Mechanical properties**

	Variant without cover		Variant with cover	
	Motor size A12	**Motor size A13**	**Motor size A12**	**Motor size A13**
Mass of the carriage [kg]	4.33	5.97	4.80	6.45
Mass at 0-stroke [kg]	9.80	12.77	11.56	14.57
Mass per 1 m stroke [kg/m]	13.31		13.59	
Breakaway force F_L [N]	3.00		4.00	

9.5 Dimensions and specifications of HT200L



1) Omitted for variant with energy chain 2) Drive interface shown: Option "D"; for other series, see section 18.4 from page 176

3) Internal measuring system always on the right side of the axis. The positive direction of travel depends on the selected measuring system, see section 17.2 from page 136

Table 9.13 **HT200L dimensions**

	Variant without cover		Variant with cover	
Motor size	**A22**	**A23**	**A22**	**A23**
Total carriage length L_c [mm]	295	415	390	510
Cover strip deflection A [mm]	–	–	48	48
Switch distance B_1 [mm]	156.5	156.5	204	204
Switch distance B_2 [mm]	82	202	129	249
Max. stroke length L_{ST} [mm]	5,423	5,303	5,328	5,208
Total length L_T [mm]	$L_T = L_{ST} + 413$	$L_T = L_{ST} + 533$	$L_T = L_{ST} + 508$	$L_T = L_{ST} + 628$

Table 9.14 **Load data**

	Motor size A22	Motor size A23
$F_{ydynmax}$ [1] [N]	7,800	7,800
$F_{zdynmax}$ [1] [N]	10,602	9,640
$M_{xdynmax}$ [Nm]	721	656
$M_{ydynmax}$ [Nm]	1,007	1,494
$M_{zdynmax}$ [Nm]	741	1,209
z [2] [mm]	58.5	58.5

[1] Force must only act free of torque
[2] Carriage upper edge – centre guide
See section 3.3.3 on page 14 (lifetime reference value)

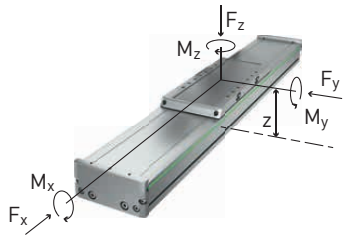


Table 9.15 **General technical data**

Repeatability [mm] [2]	± 0.005
Max. speed [m/s]	5
Typical load capacity [kg]	150
Maximum total length [2] [3] [mm]	5,836
Flatness [1] [mm/300 mm]	± 0.03
Straightness [1] [mm/300 mm]	± 0.03
Area moment of inertia of profile cross section I_x [mm⁴]	2,071,928
Area moment of inertia of profile cross section I_y [mm⁴]	19,658,810

[1] Values apply with specified screw-on surface or mounting plate
[2] Depending on distance measuring system (chapter 17) and energy chain (section 18.4)
[3] Long axes on request

Table 9.16 **Guide**

Guide type	QHH20CA
Static load rating C_0 [N]	33,860
Dynamic load rating C_{dyn} [N]	30,000

Table 9.17 **Drive**

	Motor size A22	Motor size A23
Motor type	LMSA22	LMSA23
Continuous force [N]	362	544
Peak force [N]	1,023	1,535
Max. acceleration [m/s²]	60	80

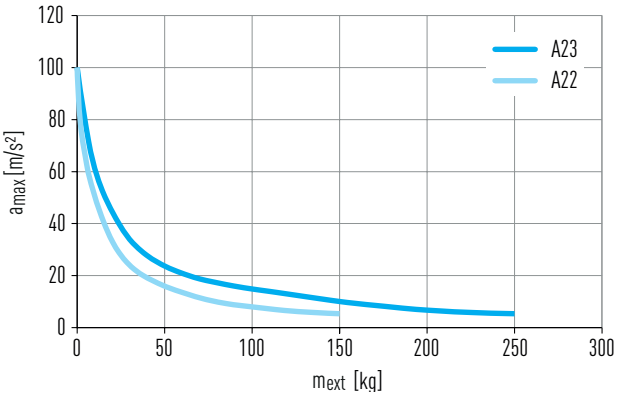


Fig. 9.5 **Max. acceleration a_{max} as a function of the external payload m_{ext}**

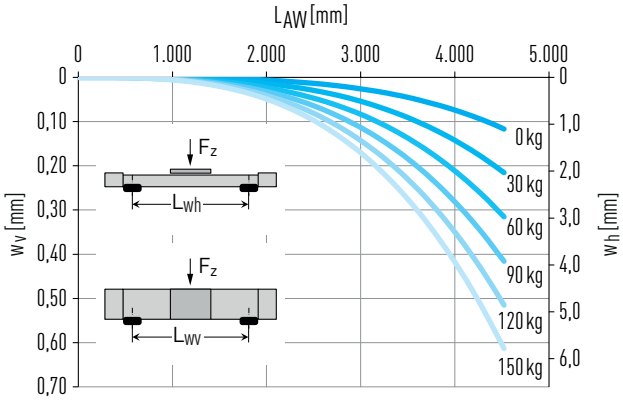
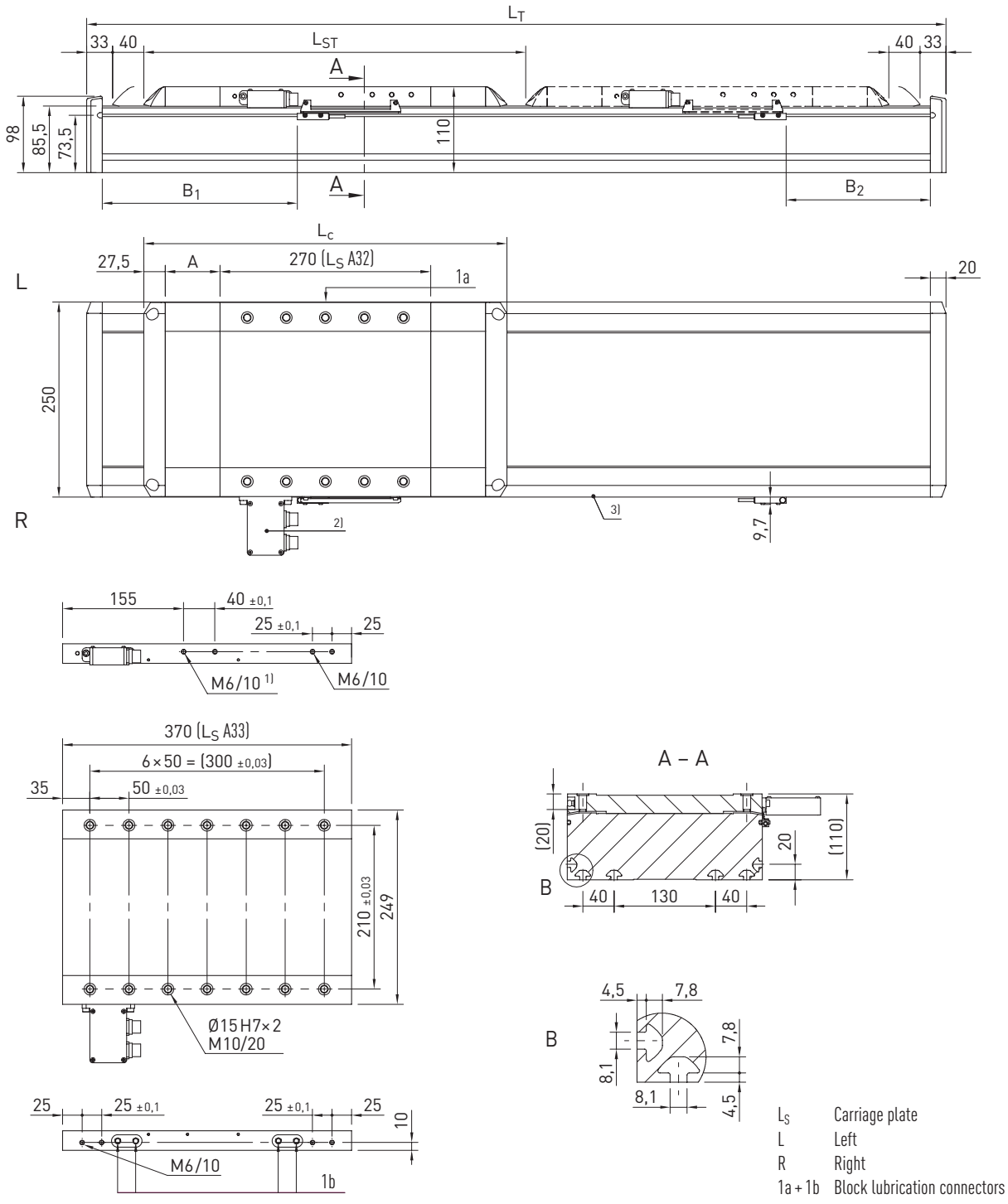


Fig. 9.6 **Deflection w over unsupported axis length L_{AW} under load capacity F_z**

Table 9.18 **Mechanical properties**

	Variant without cover		Variant with cover	
	Motor size A22	**Motor size A23**	**Motor size A22**	**Motor size A23**
Mass of the carriage [kg]	6.80	9.64	7.39	10.24
Mass at 0-stroke [kg]	16.33	21.71	18.85	24.28
Mass per 1 m stroke [kg/m]	21.49		21.81	
Breakaway force F_L [N]	5.00		7.00	

9.6 Dimensions and specifications of HT250L



L_S	Carriage plate
L	Left
R	Right
1a + 1b	Block lubrication connectors

1) Omitted for variant with energy chain 2) Drive interface shown: Option "D"; for other series, see section 18.4 from page 176
3) Internal measuring system always on the right side of the axis. The positive direction of travel depends on the selected measuring system, see section 17.2 from page 136

Table 9.19 **HT250L dimensions**

	Variant without cover		Variant with cover	
Motor size	**A32**	**A33**	**A32**	**A33**
Total carriage length L_c [mm]	325	425	465	565
Cover strip deflection A [mm]	–	–	70	70
Switch distance B_1 [mm]	178.5	178.5	248.5	248.5
Switch distance B_2 [mm]	114	214	184	284
Max. stroke length L_{ST} [mm]	5,469	5,369	5,329	5,229
Total length L_T [mm]	$L_T = L_{ST} + 471$	$L_T = L_{ST} + 571$	$L_T = L_{ST} + 611$	$L_T = L_{ST} + 711$

Table 9.20 **Load data**

	Motor size A32	Motor size A33
$F_{ydynmax}$ [1] [N]	11,600	11,600
$F_{zdynmax}$ [1] [N]	14,160	13,165
$M_{xdynmax}$ [Nm]	1,249	1,126
$M_{ydynmax}$ [Nm]	1,424	1,942
$M_{zdynmax}$ [Nm]	1,131	1,711
z [2] [mm]	68.0	68.0

[1] Force must only act free of torque
[2] Carriage upper edge – centre guide
See section 3.3.3 on page 14 (lifetime reference value)

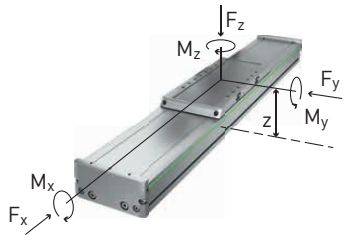


Table 9.21 **General technical data**

Repeatability [2] [mm]	± 0.005
Max. speed [m/s]	5
Typical load capacity [kg]	250
Maximum total length [2] [3] [mm]	5,940
Flatness [1] [mm/300 mm]	± 0.03
Straightness [1] [mm/300 mm]	± 0.03
Area moment of inertia of profile cross section I_x [mm⁴]	3,265,771
Area moment of inertia of profile cross section I_y [mm⁴]	39,262,043

[1] Values apply with correspondingly specified screw-on surface or mounting plate
[2] Depending on distance measuring system (chapter 17) and energy chain (section 18.4)
[3] Long axes on request

Table 9.22 **Guide**

Guide type	QHH25CA
Static load rating C_0 [N]	48,750
Dynamic load rating C_{dyn} [N]	41,900

Table 9.23 **Drive**

	Motor size A32	Motor size A33
Motor type	LMSA32	LMSA33
Continuous force [N]	583	875
Peak force [N]	1,646	2,469
Max. acceleration [m/s²]	60	80

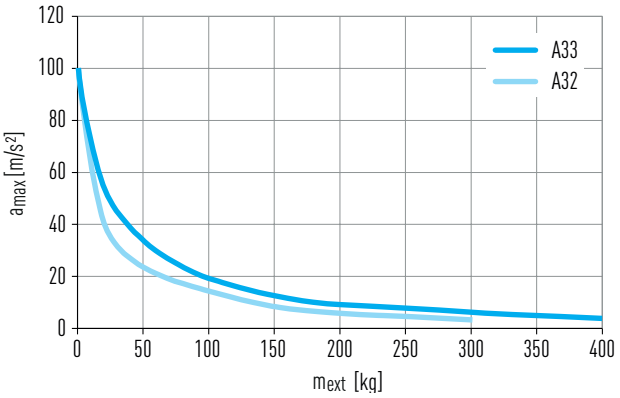


Fig. 9.7 **Max. acceleration a_{max} as a function of the external payload m_{ext}**

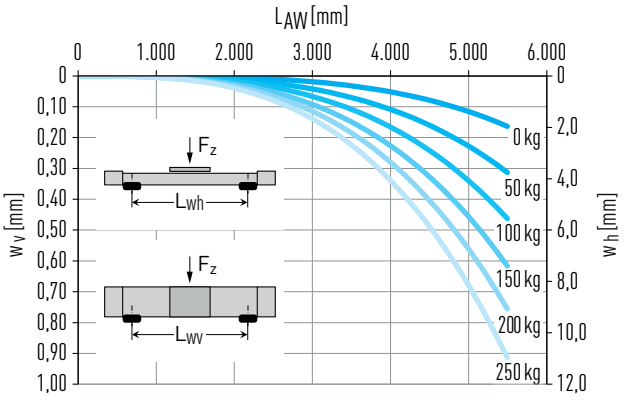


Fig. 9.8 **Deflection w over unsupported axis length L_{AW} under load capacity F_z**

Table 9.24 **Mechanical properties**

	Variant without cover		Variant with cover	
	Motor size A32	**Motor size A33**	**Motor size A32**	**Motor size A33**
Mass of the carriage [kg]	11.58	15.77	12.98	17.17
Mass at 0-stroke [kg]	26.35	33.57	31.58	38.85
Mass per 1 m stroke [kg/m]	30.15		30.54	
Breakaway force F_L [N]	8.00		10.00	

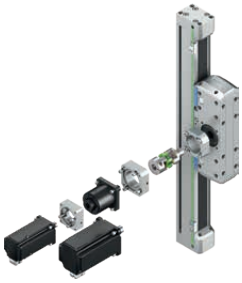
10. Cantilever axes HC-B

10.1 Properties of cantilever axes HC-B with toothed belt drive

The HIWIN cantilever axes with toothed belt drive are flexible linear units in which the drive block is stationary while the light cantilever moves. They are especially suitable for vertical applications where high dynamics and high speeds are required.

Linear guideway
High-quality HIWIN linear guideways with two blocks safely transfer forces and torques from the cantilever to the drive block.
The CG guide with O-arrangement of the ball track also ensures increased rigidity and high torque load capacity in the HC060B, HC080B and HC100B sizes.

Drive connection
Thanks to the symmetrical design, the HIWIN cantilever axis allows motors and gearboxes to be mounted on both sides of the drive block.
Additional journals, which are available as accessories (see Page 188), can be used to mount additional drives and outputs.

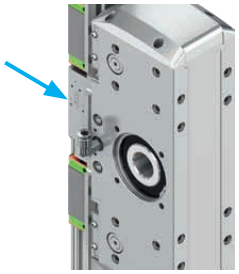


Toothed belt
The toothed belt with modern high performance profiles (HTD shape) and reinforced steel tension members enables high power transmission while offering high skip resistance.

Lubrication
For convenient maintenance of the linear axis, a separate grease nipple is installed on the left and right of the drive block for each lubrication point. This ensures optimum accessibility for relubrication, even under difficult installation conditions.

Mounting
The drive block as well as the interfaces for attaching the load capacity on both sides of the cantilever have additional bore holes on each mounting hole. This ensures ideal, reproducible alignment of the adjacent construction. You will find the matching centring sleeves in the accessories on Page 181.

Clamping and braking element
The clamping or braking element can be controlled via a pneumatic connection on the drive block. Clamping onto the profile rail is fail-safe as soon as there is no more compressed air at the connection. Particularly in vertical applications, clamping may be necessary to securely fix the axis at standstill.



10.2 Order code for cantilever axes HC-B

HC	060	B	170	N	1234	S

HIWIN cantilever axis

Size (profile width):
025: 25 mm
040: 40 mm
060: 60 mm
080: 80 mm
100: 100 mm

Drive type:
B: Toothed belt drive

Carriage length:
S: Short

Stroke length [mm]

Cover strip:
N: Without cover strip

Feed constant [mm/rev]:
081: HC025B
123: HC040B
170: HC060B
200: HC080B
280: HC100B

Continuation, order code for cantilever axes HC-B

A	N	N	R	HW01	G0608

Axis limit switch[6]:
N: Without limit switch
A: 2 × normally closed, 100 mm cable, connector[1]
B: 2 × normally open, 100 mm cable, connector[1]
C: 2 × normally closed, 4 m open cable end[1]
D: 2 × normally open, 5 m open cable end[1]

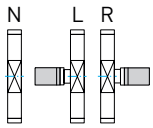
Clamping and braking element option:
N: Without holding brake (standard)
B: With pneumatic braking element (HC060B/HC080B/HC100B)
C: With pneumatic clamping element (HC060B/HC080B/HC100B)[7]

Distance measuring system option[2]:
N: Without distance measuring system
A: HIWIN MAGIC, analogue, 1 V_{SS} sin/cos, 5 m open cable end
D: HIWIN MAGIC, digital, TTL 5 V, 5 m open cable end

Gearbox[5]

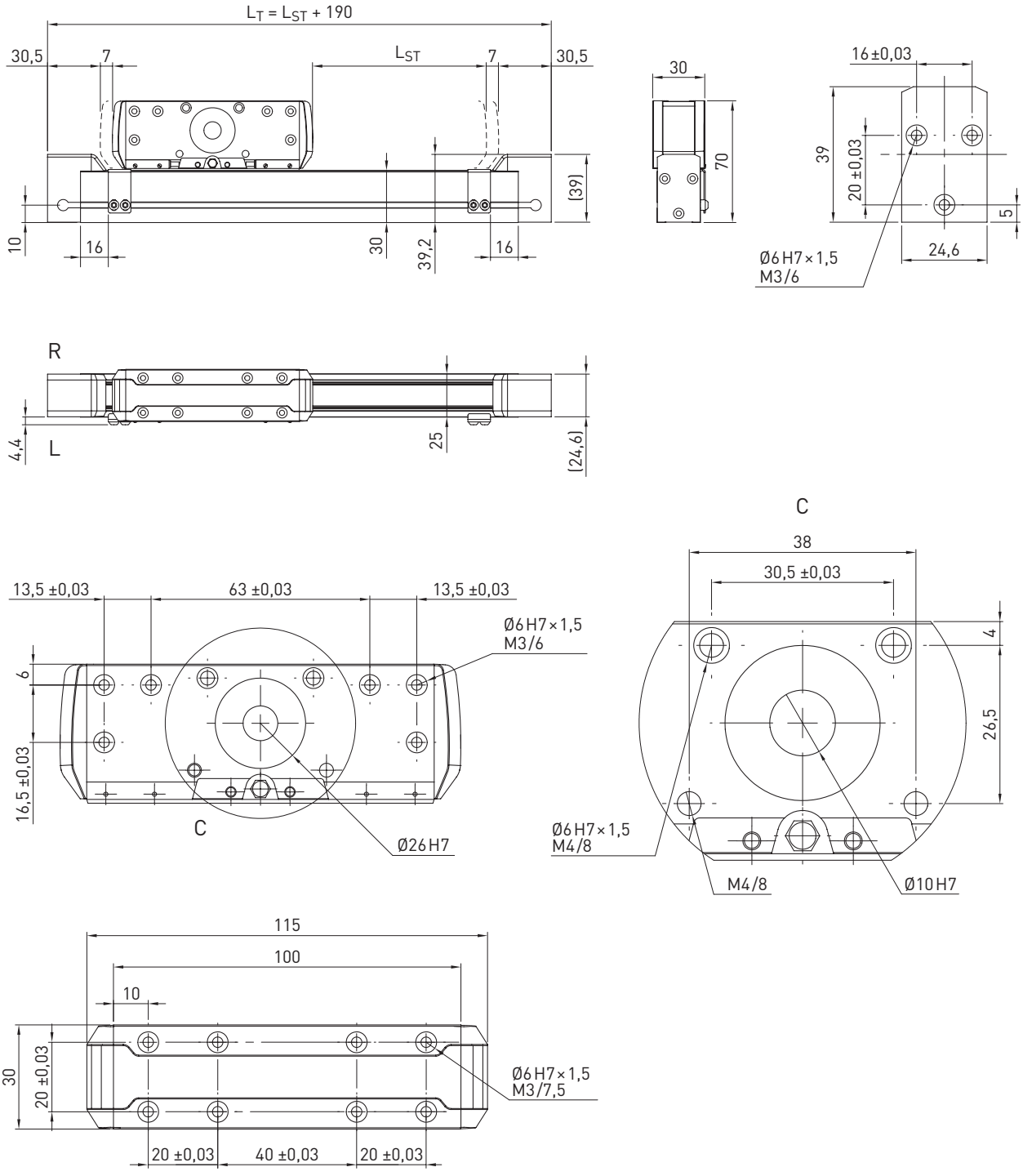
Motor flange type[4]

Drive interface[3]:
N: Without
L: Left
R: Right



[1] HC025B: A: 2 × normally closed, 200 mm cable, connector, C: 2 × normally closed, 2 m open cable end; B and D: not available.
[2] More detailed information in chapter 17 from page 134 or in the "HIWIN MAGIC Distance Measuring Systems" assembly instructions".
[3] If no drive interface is selected, the order code ends after this digit.
[4] You can find all flange types in Table 18.1 from page 138. If no gearbox is selected, the order code ends after this digit.
[5] You can find the right gearbox for the HIWIN axes in section 18.1.4.5 from page 158.
[6] Additional reference switches on request.
[7] The clamping element may only be used when the axis is stationary and not as a brake.

10.3 Dimensions and specifications of HC025B



L_{ST}	Stroke
L_T	Total length
L	Left
R	Right

Table 10.1 **Load data**	
$F_{ydynmax}$ [1] [N]	616
$F_{zdynmax}$ [1] [N]	616
$M_{xdynmax}$ [Nm]	2.65
$M_{ydynmax}$ [Nm]	20.65
$M_{zdynmax}$ [Nm]	20.65

[1] Force must only act free of torque
See section 3.3.3 on page 14 (lifetime reference value)

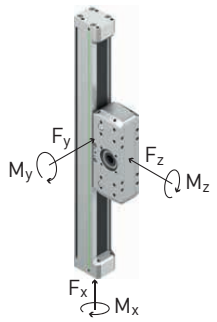


Table 10.2 **General technical data**	
Repeatability [mm]	± 0.05
Max. feed force F_{x_max} [N]	241
Max. speed [m/s]	5
Max. acceleration [m/s²]	30
Max. drive torque M_{A_max} [Nm]	3.1
Typical load capacity [kg]	2
Maximum vertical stroke length [mm]	300
Maximum horizontal stroke length [mm]	200
Area moment of inertia of profile cross section I_x [mm⁴]	18,706
Area moment of inertia of profile cross section I_y [mm⁴]	19,299

Table 10.3 **Guide**	
Guide type	MGN09C
Static load rating C_0 [N]	2,550
Dynamic load rating C_{dyn} [N]	1,860

Table 10.4 **Drive**	
Drive element	B12HTD3
Feed constant [mm/U]	81
Toothed belt effective diameter [mm]	25.78

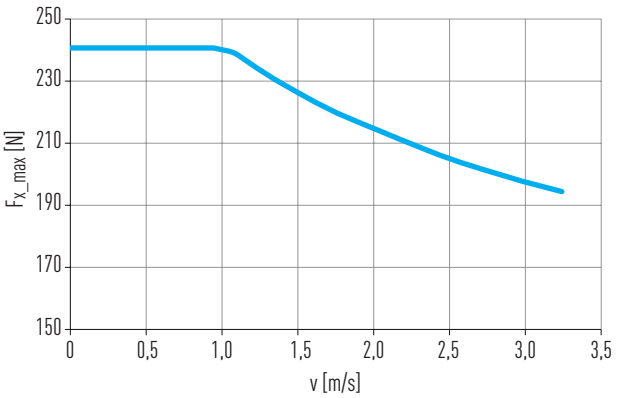


Fig. 10.1 **Max. feed force F_{x_max} depending on axis speed v**

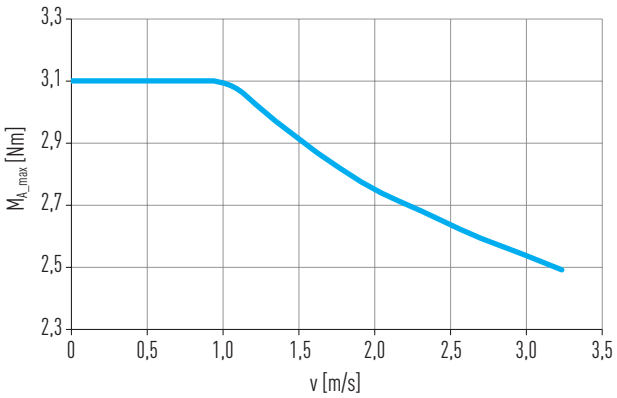
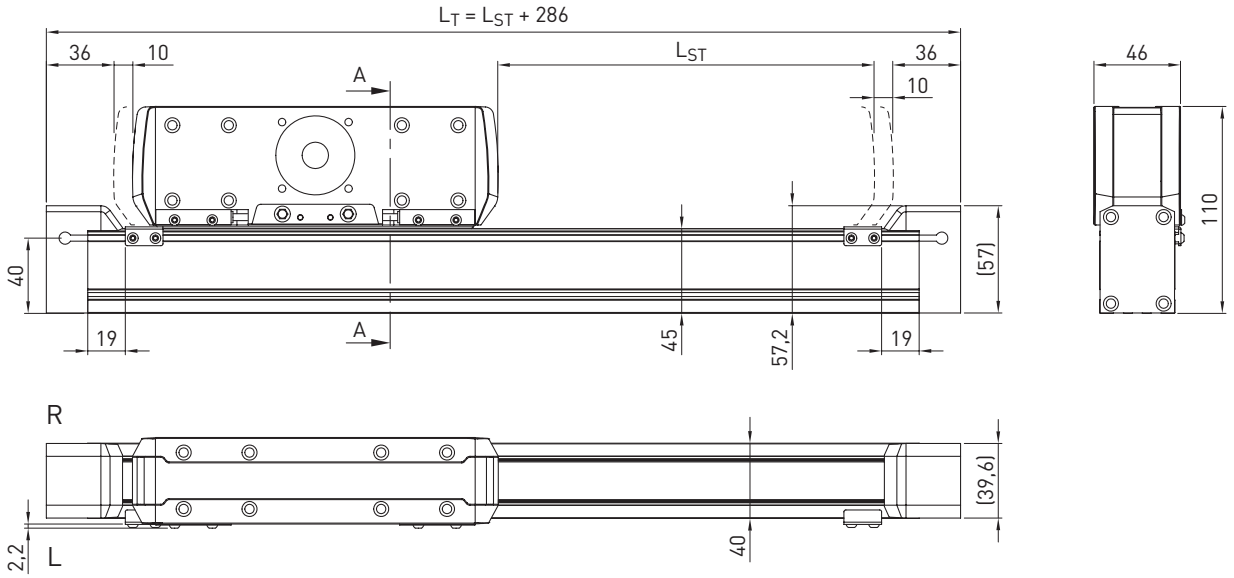


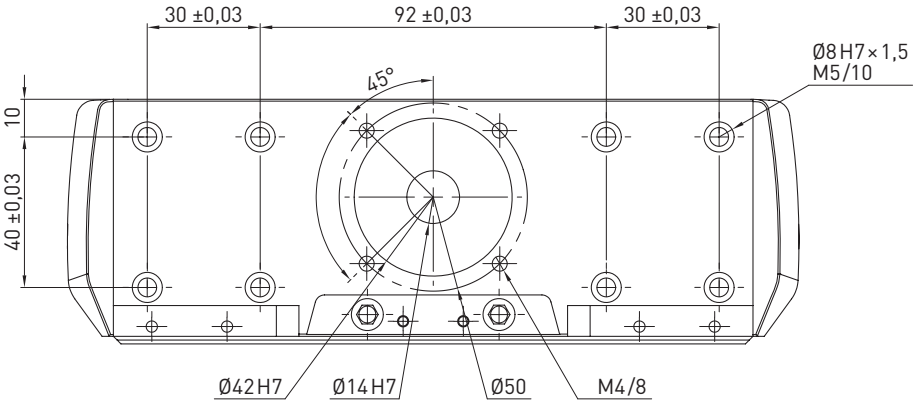
Fig. 10.2 **Max. drive force M_{A_max} depending on axis speed v**

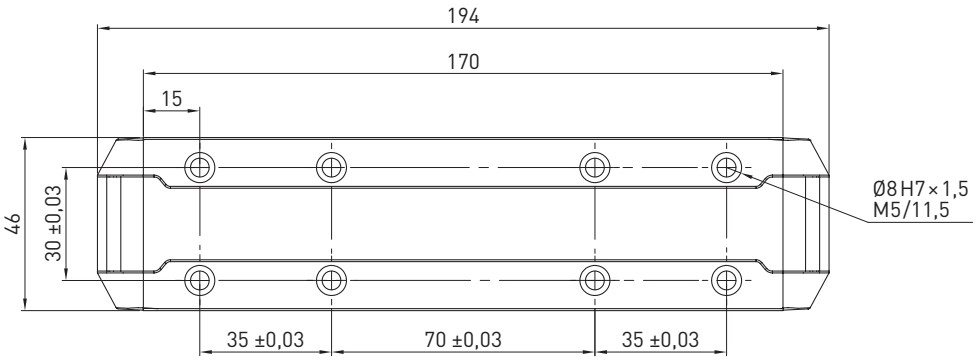
Table 10.5 **Mechanical properties**	
Mass at 0-stroke [kg]	0.63
Mass per 100 mm stroke [kg/100 mm]	0.13
Mass of cantilever at 0-stroke [kg]	0.30
Mass of cantilever per 100 mm stroke [kg/100 mm]	0.13
$J_{rot.}$ [1] [kgcm²]	0.16
Idle torque at 0-stroke [Nm]	0.15

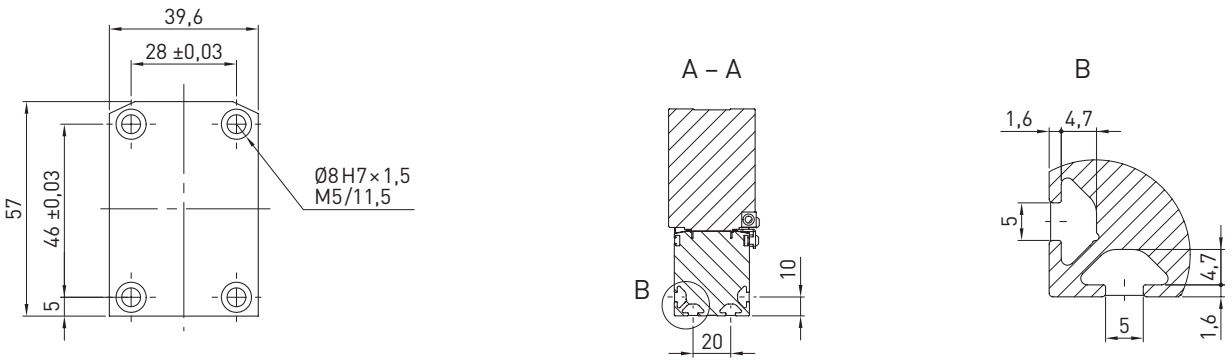
[1] Rotational moment of inertia

10.4 Dimensions and specifications of HC040B









L_{ST} Stroke L_T Total length L Left R Right

Table 10.6 **Load data**	
$F_{ydynmax}$ [1] [N]	1,213
$F_{zdynmax}$ [1] [N]	1,213
$M_{xdynmax}$ [Nm]	10
$M_{ydynmax}$ [Nm]	78
$M_{zdynmax}$ [Nm]	78

[1] Force must only act free of torque
See section 3.3.3 on page 14 (lifetime reference value)

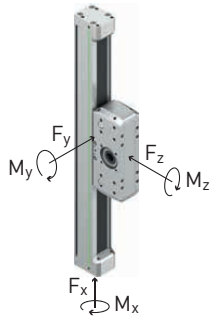


Table 10.7 **General technical data**	
Repeatability [mm]	± 0.05
Max. feed force F_{x_max} [N]	404
Max. speed [m/s]	5
Max. acceleration [m/s²]	30
Max. drive torque M_{A_max} [Nm]	7.9
Typical load capacity [kg]	8
Maximum vertical stroke length [mm]	500
Maximum horizontal stroke length [mm]	400
Area moment of inertia of profile cross section I_x [mm⁴]	94,400
Area moment of inertia of profile cross section I_y [mm⁴]	102,030

Table 10.8 **Guide**	
Guide type	MGN15C
Static load rating C_0 [N]	5,590
Dynamic load rating C_{dyn} [N]	4,610

Table 10.9 **Drive**	
Drive element	B20HTD3
Feed constant [mm/U]	123
Toothed belt effective diameter [mm]	39.15

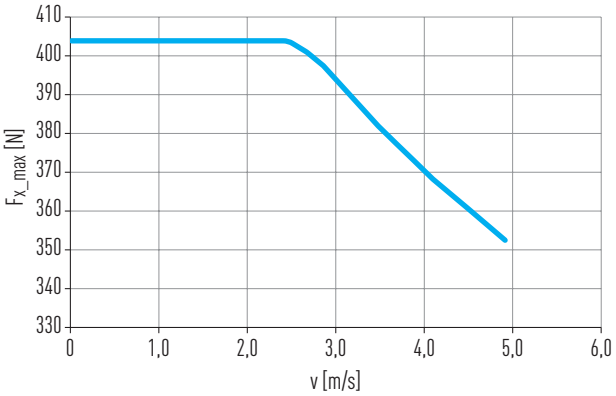


Fig. 10.3 **Max. feed force F_{x_max} depending on axis speed v**

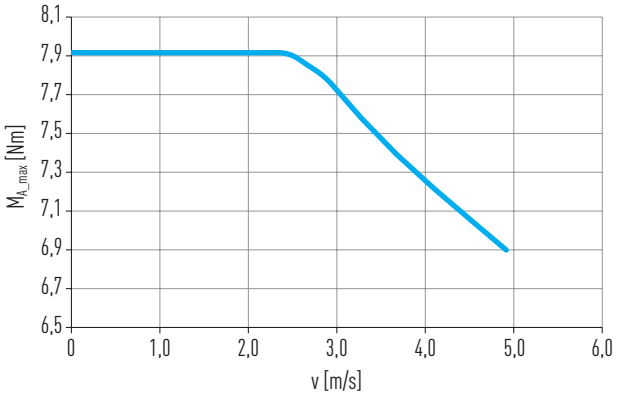
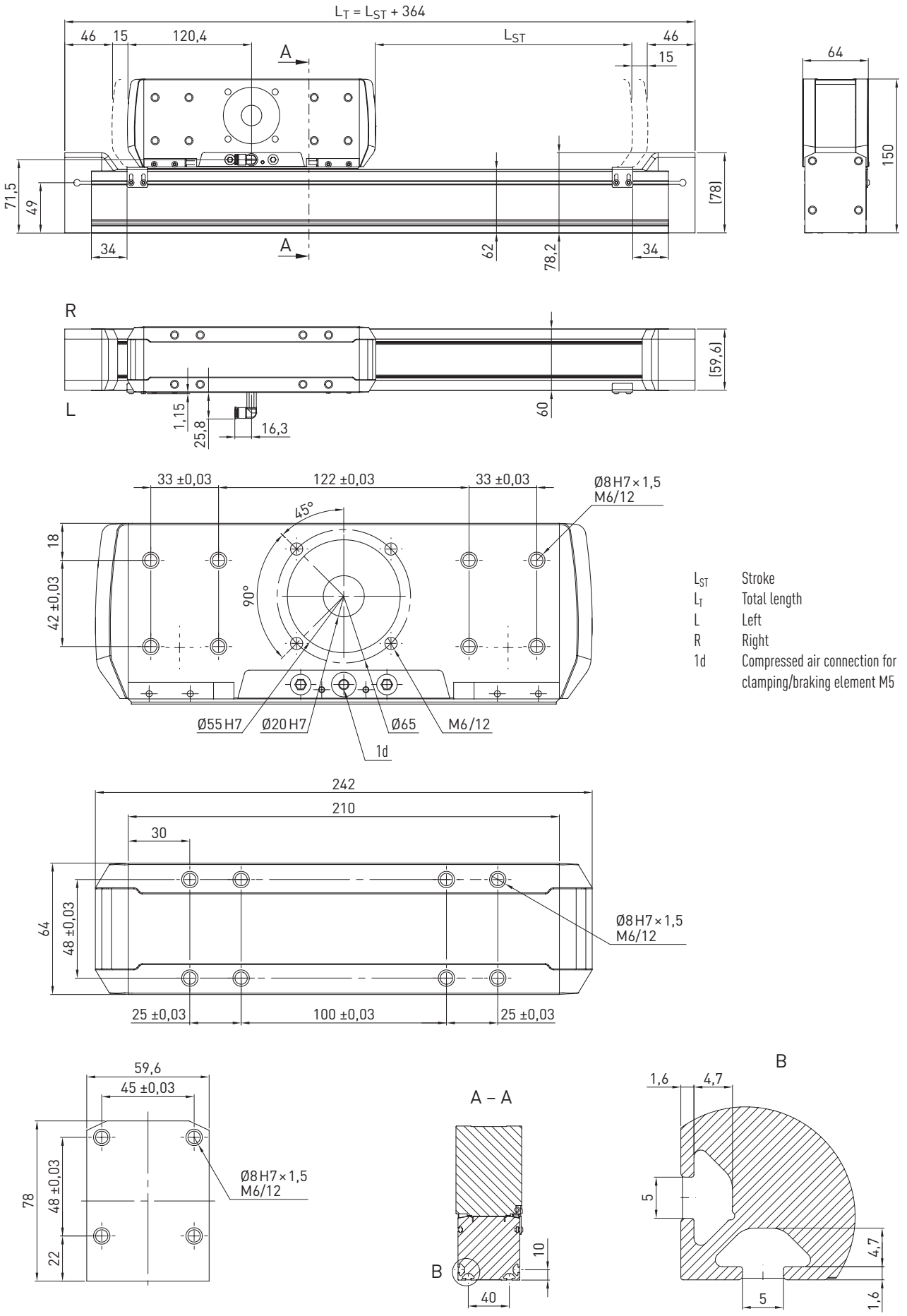


Fig. 10.4 **Max. drive force M_{A_max} depending on axis speed v**

Table 10.10 **Mechanical properties**	
Mass at 0-stroke [kg]	2.18
Mass per 100 mm stroke [kg/100 mm]	0.28
Mass of cantilever at 0-stroke [kg]	0.92
Mass of cantilever per 100 mm stroke [kg/100 mm]	0.28
$J_{rot.}$ [1] [kgcm²]	0.44
Idle torque at 0-stroke [Nm]	0.20

[1] Rotational moment of inertia

10.5 Dimensions and specifications of HC060B



L_{ST}	Stroke
L_T	Total length
L	Left
R	Right
1d	Compressed air connection for clamping/braking element M5

Table 10.11 **Load data**	
$F_{ydynmax}$ [1] [N]	2,152
$F_{zdynmax}$ [1] [N]	3,378
$M_{xdynmax}$ [Nm]	33
$M_{ydynmax}$ [Nm]	243
$M_{zdynmax}$ [Nm]	155

[1] Force must only act free of torque
See section 3.3.3 on page 14 (lifetime reference value)

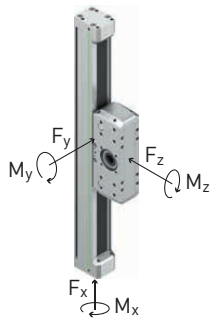


Table 10.12 **General technical data**	
Repeatability [mm]	± 0.05
Max. feed force F_{x_max} [N]	997
Max. speed [m/s]	5
Max. acceleration [m/s²]	30
Max. drive torque M_{A_max} [Nm]	27
Typical load capacity [kg]	16
Maximum vertical stroke length [mm]	800
Maximum horizontal stroke length [mm]	600
Area moment of inertia of profile cross section I_x [mm⁴]	431,271
Area moment of inertia of profile cross section I_y [mm⁴]	536,119

Table 10.13 **Guide**	
Guide type	CGL15CA
Static load rating C_0 [N]	19,520
Dynamic load rating C_{dyn} [N]	14,700

Table 10.14 **Drive**	
Drive element	B30HTD5
Feed constant [mm/U]	170
Toothed belt effective diameter [mm]	54.11

Table 10.15 **Clamping/Braking element** [1]	
Holding force [N]	400
Operating pressure [bar]	5.5–6.5

[1] The clamping element may only be used when the axis is stationary and not as a brake.

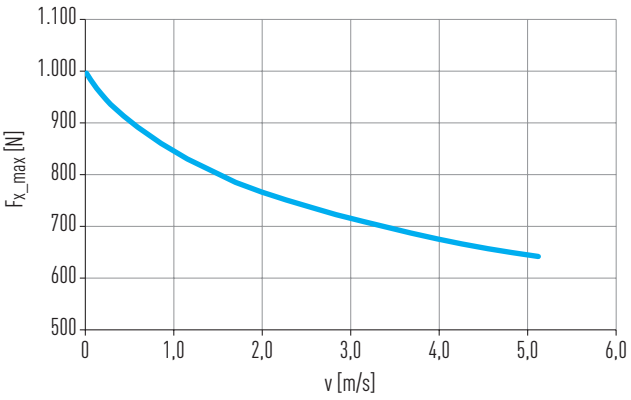


Fig. 10.5 **Max. feed force F_{x_max} depending on axis speed v**

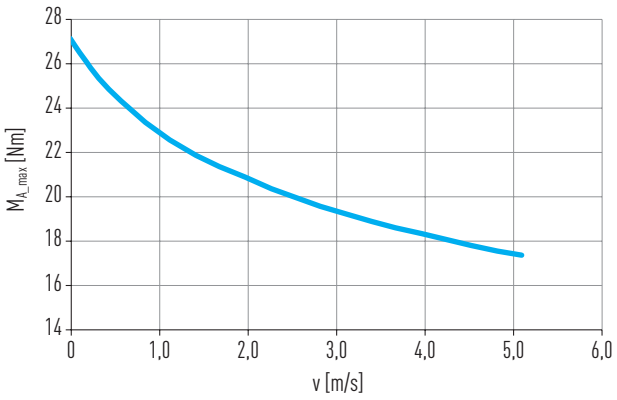
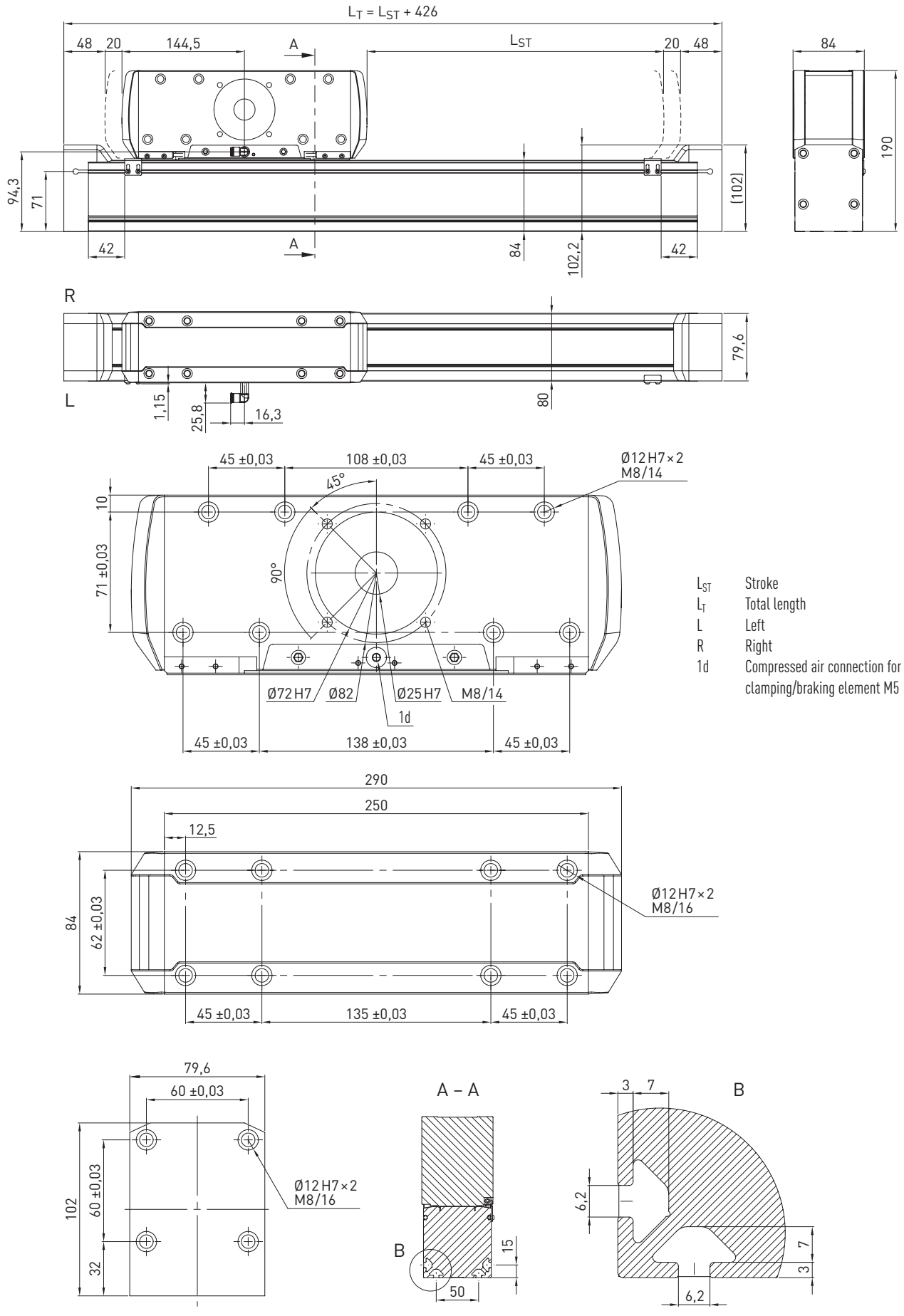


Fig. 10.6 **Max. drive force M_{A_max} depending on axis speed v**

Table 10.16 **Mechanical properties**	
Mass at 0-stroke [kg]	5.13
Mass per 100 mm stroke [kg/100 mm]	0.52
Mass of cantilever at 0-stroke [kg]	2.24
Mass of cantilever per 100 mm stroke [kg/100 mm]	0.52
$J_{rot.}$ [1] [kgcm²]	2.41
Idle torque at 0-stroke [Nm]	0.60

[1] Rotational moment of inertia

10.6 Dimensions and specifications of HC080B



L_{ST}	Stroke
L_T	Total length
L	Left
R	Right
1d	Compressed air connection for clamping/braking element M5

Table 10.17 **Load data**	
$F_{ydynmax}$ [1] [N]	3,855
$F_{zdynmax}$ [1] [N]	5,447
$M_{xdynmax}$ [Nm]	66
$M_{ydynmax}$ [Nm]	444
$M_{zdynmax}$ [Nm]	314

[1] Force must only act free of torque
See section 3.3.3 on page 14 (lifetime reference value)

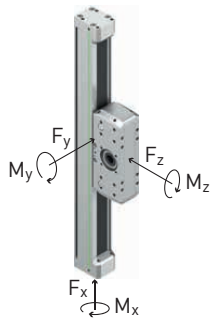


Table 10.18 **General technical data**	
Repeatability [mm]	± 0.05
Max. feed force F_{x_max} [N]	1,330
Max. speed [m/s]	5
Max. acceleration [m/s²]	30
Max. drive torque M_{A_max} [Nm]	42.3
Typical load capacity [kg]	30
Maximum vertical stroke length [mm]	1,200
Maximum horizontal stroke length [mm]	800
Area moment of inertia of profile cross section I_x [mm⁴]	1,394,922
Area moment of inertia of profile cross section I_y [mm⁴]	1,758,779

Table 10.19 **Guide**	
Guide type	CGH20CA
Static load rating C_0 [N]	30,510
Dynamic load rating C_{dyn} [N]	23,700

Table 10.20 **Drive**	
Drive element	B40HTD5
Feed constant [mm/U]	200
Toothed belt effective diameter [mm]	63.66

Table 10.21 **Clamping/Braking element** [1]	
Holding force [N]	650
Operating pressure [bar]	5.5–6.5

[1] The clamping element may only be used when the axis is stationary and not as a brake.

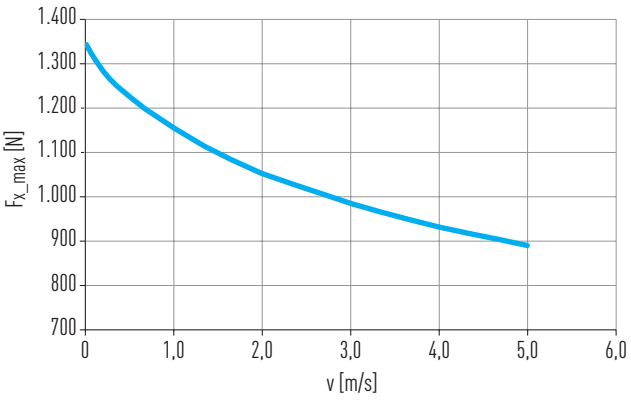


Fig. 10.7 **Max. feed force F_{x_max} as a function of axis speed v**

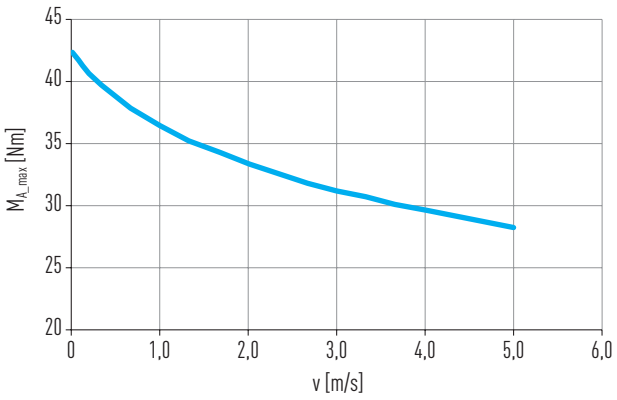
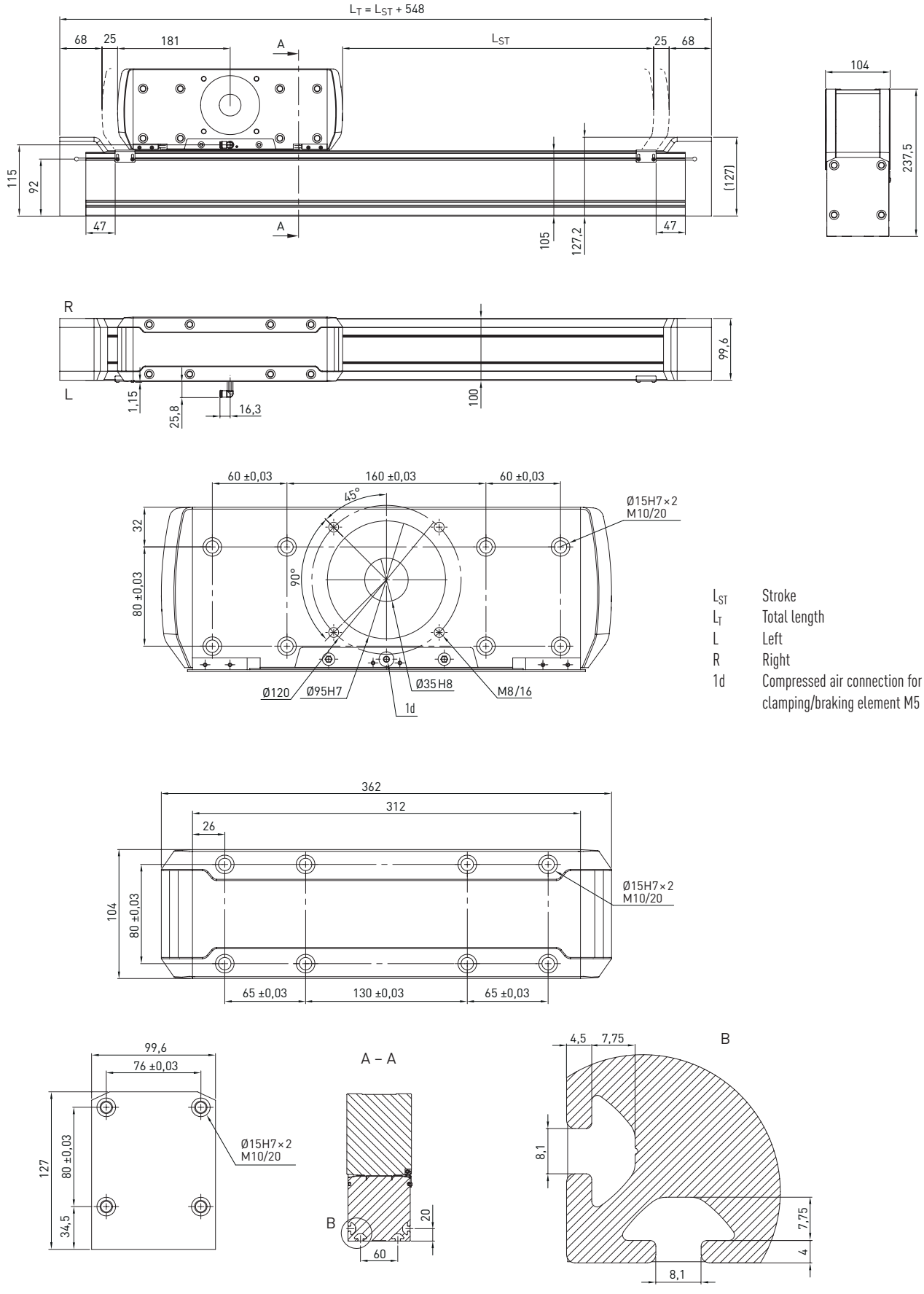


Fig. 10.8 **Max. drive force M_{A_max} as a function of axis speed v**

Table 10.22 **Mechanical properties**	
Mass at 0-stroke [kg]	9.72
Mass per 100 mm stroke [kg/100 mm]	0.90
Mass of cantilever at 0-stroke [kg]	4.51
Mass of cantilever per 100 mm stroke [kg/100 mm]	0.90
$J_{rot.}$ [1] [kgcm²]	5.49
Idle torque at 0-stroke [Nm]	1.40

[1] Rotational moment of inertia

10.7 Dimensions and specifications of HC100B



L_{ST}	Stroke
L_T	Total length
L	Left
R	Right
1d	Compressed air connection for clamping/braking element M5

Table 10.23 **Load data**	
$F_{ydynmax}$ [1] [N]	8,034
$F_{zdynmax}$ [1] [N]	8,034
$M_{xdynmax}$ [Nm]	110
$M_{ydynmax}$ [Nm]	844
$M_{zdynmax}$ [Nm]	844

[1] Force must only act free of torque
See section 3.3.3 on page 14 (lifetime reference value)

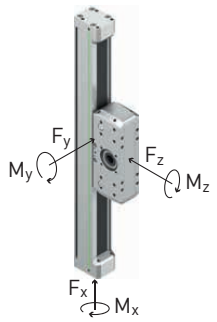


Table 10.24 **General technical data**	
Repeatability [mm]	± 0.05
Max. feed force F_{x_max} [N]	2,667
Max. speed [m/s]	5
Max. acceleration [m/s²]	30
Max. drive torque M_{A_max} [Nm]	118.8
Typical load capacity [kg]	60
Maximum vertical stroke length [mm]	1,800
Maximum horizontal stroke length [mm]	1,200
Area moment of inertia of profile cross section I_x [mm⁴]	3,290,845
Area moment of inertia of profile cross section I_y [mm⁴]	4,100,279

Table 10.25 **Guide**	
Guide type	CGL25CA
Static load rating C_0 [N]	43,940
Dynamic load rating C_{dyn} [N]	34,960

Table 10.26 **Drive**	
Drive element	B40HTD5
Feed constant [mm/U]	280
Toothed belt effective diameter [mm]	89.13

Table 10.27 **Clamping/Braking element** [1]	
Holding force [N]	750
Operating pressure [bar]	5.5–6.5

[1] The clamping element may only be used when the axis is stationary and not as a brake.

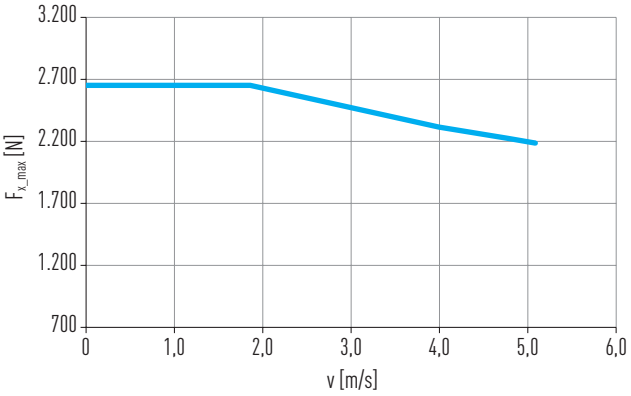


Fig. 10.9 **Max. feed force F_{x_max} depending on axis speed v**

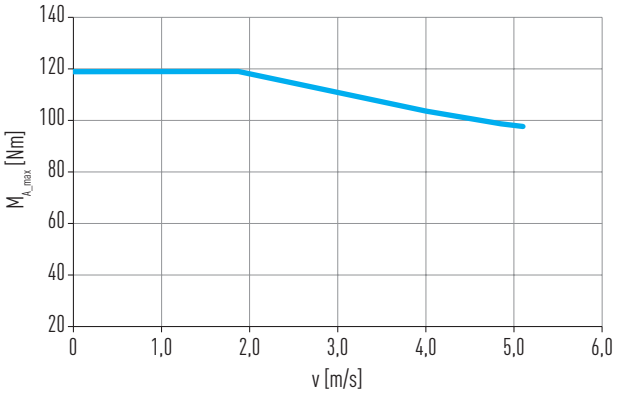


Fig. 10.10 **Max. drive force M_{A_max} depending on axis speed v**

Table 10.28 **Mechanical properties**	
Mass at 0-stroke [kg]	20.12
Mass per 100 mm stroke [kg/100 mm]	1.32
Mass of cantilever at 0-stroke [kg]	11.72
Mass of cantilever per 100 mm stroke [kg/100 mm]	1.32
$J_{rot.}$ [1] [kgcm²]	28.99
Idle torque at 0-stroke [Nm]	3.00

[1] Rotational moment of inertia

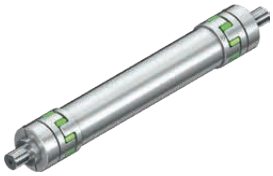
11. Double axes HD

11.1 Properties of double axes HD with toothed belt drive

The HIWIN double axes HD are linear modules for flexible use and consist of two belt axes HM-B, which are connected to each other via a synchronous shaft. They are preferably used in applications where a single axis is not sufficient due to high torque loads or the dimensions of the loads to be transported. HIWIN double axes HD are also ideally suited as a basis for multi-axis systems.

Synchronous shaft

The synchronous shaft ensures safe and rigid power transmission for parallel movement of both axes. Due to the generously dimensioned diameter, the synchronous shaft is very torsionally stiff, meaning no additional bearing is required, even at higher speeds and longer axis distances.



Critical speed of the synchronous shaft

The critical speed depends on the length and diameter of the synchronous shaft and must not be exceeded during operation. The resulting maximum centre distance depending on the size and the axis speed of the HIWIN double axes can be calculated using the diagram in Fig. 11.1.

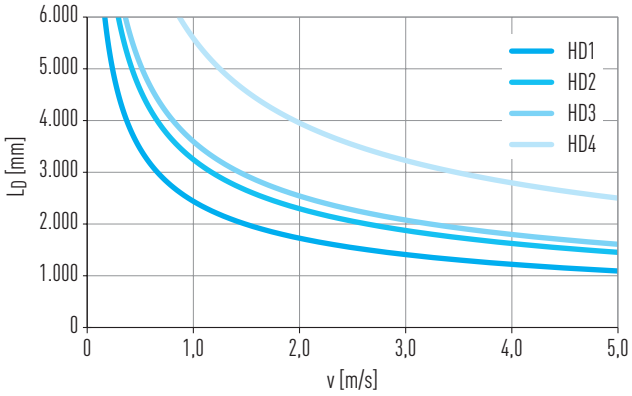


Fig. 11.1 **Maximum centre distance L_D as a function of axis speed v**

11.2 Order code for double axes HD

HD	2	N	1234	S	000	A

HIWIN double axis

Size (profile width of the individual axes):
1: 40 mm
2: 60 mm
3: 80 mm
4: 120 mm

Cover strip:
N: Without cover strip
C: With steel cover strip

Stroke length [mm]

Axis limit switch:
N: Without limit switch
A: 2 × normally closed, 100 mm cable, connector
B: 2 × normally open, 100 mm cable, connector
C: 2 × normally closed, 4 m open cable end
D: 2 × normally open, 5 m open cable end

Clearance between two carriages [mm]:
(000: Only one carriage)

Carriage length:
S: Short
M: Medium
L: Long

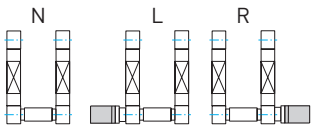
Continuation, order code for double axes HD

N	1234	R	BE04	G0608	-T

Distance measuring system ~~option~~ [1]:
N: Without distance measuring system
A: HIWIN MAGIC, analogue, 1 V_{SS} sin/cos, 5 m open cable end
D: HIWIN MAGIC, digital, TTL 5 V, 5 m open cable end

Centre distance D [mm]

Drive interface [2]:
N: Without
L: Left
R: Right



Delivery condition:
T: Partially assembled (standard)
None: Assembled

Gearbox [4]

Flange type [3]

[1] More detailed information in chapter 17 from page 134 or in the "HIWIN MAGIC Distance Measuring Systems" assembly instructions".
[2] If no drive interface is selected, the order code ends after this digit.
[3] You can find all flange types in Table 18.1 from page 138. If no gearbox is selected, the order code ends after this digit.
[4] You can finding matching gearboxes in section 18.1.4.5 from page 158.

11.3 Dimensions and specifications of HD1

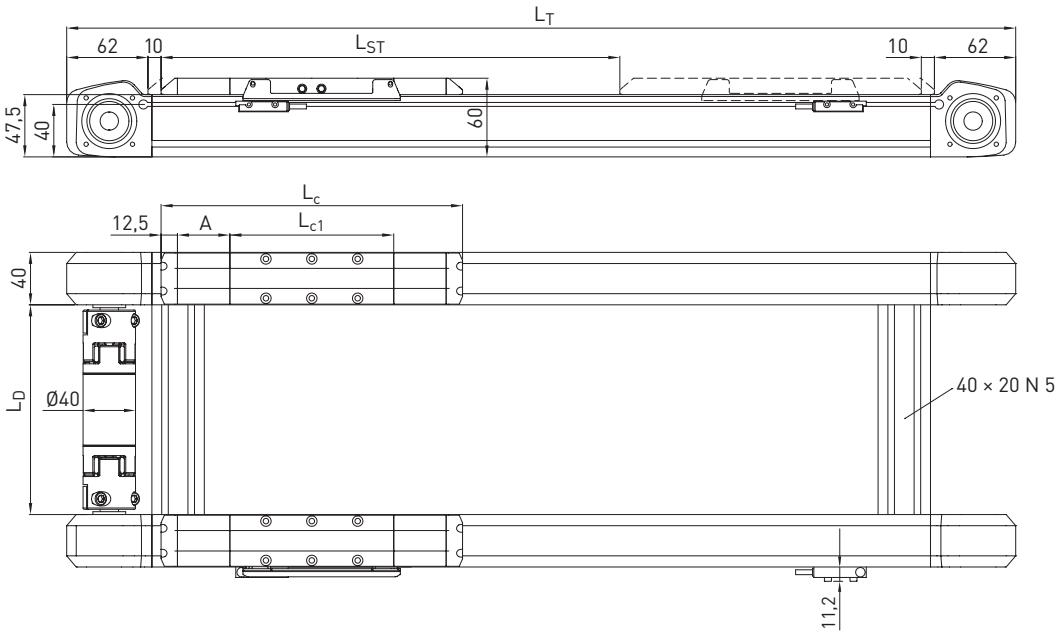


Table 11.1 **HD1 dimensions**

	Variant without cover			Variant with cover		
	Carriage type S	**Carriage type M**	**Carriage type L**	**Carriage type S**	**Carriage type M**	**Carriage type L**
Carriage profile length L_c [mm]	125	160	230	125	160	230
Total carriage length L_c [mm]	150	185	255	230	265	335
Cover strip deflection A [mm]	–	–	–	40	40	40
Max. stroke length L_{ST} [mm]	3,000	3,000	3,000	3,000	3,000	3,000
Total length L_T [mm]	$L_T = L_{ST} + 294$	$L_T = L_{ST} + 329$	$L_T = L_{ST} + 399$	$L_T = L_{ST} + 374$	$L_T = L_{ST} + 409$	$L_T = L_{ST} + 479$
Centre distance L_D min. [mm]	160	160	160	160	160	160
Centre distance L_D max. [mm]	1,500	1,500	1,500	1,500	1,500	1,500

Table 11.2 **General technical data**

Max. feed force F_{x_max} [N]	450
Max. speed [m/s]	5
Max. drive torque M_{A_max} [Nm]	8
Typical load capacity [1] [kg]	25
Single axis	HM040B

[1] With equal load distribution on both axes

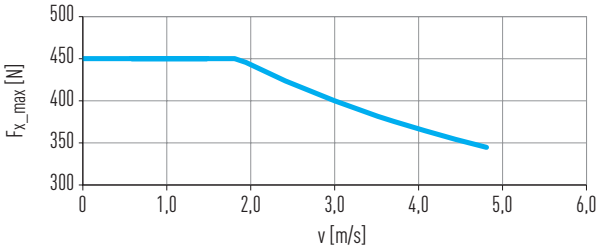


Fig. 11.2 **Max. feed force F_{x_max} as a function of axis speed v**

Table 11.3 **Mechanical properties**

	Variant without cover			Variant with cover		
	Carriage type S	**Carriage type M**	**Carriage type L**	**Carriage type S**	**Carriage type M**	**Carriage type L**
Mass of the carriage [kg]	0.66	0.77	1.00	0.74	0.86	1.09
Mass at 0-stroke and centre distance L_D = 0 [2] [kg]	3.33	3.65	4.32	3.93	4.26	4.92
Mass per 1 m stroke [kg/m]	6.04			6.09		
Mass per 1 m centre distance L_D [kg/m]	2.74			2.74		
$J_{rot.}$ [1] at 0-stroke and centre distance L_D = 0 [kgcm²]	1.40			1.40		
$J_{rot.}$ [1] per 1 m stroke centre distance [kgcm²/m]	3.24			3.24		
Idle torque at 0-stroke [Nm]	0.35			0.50		

[1] Rotational moment of inertia

[2] The values apply to axes with one carriage. For axes with 2 carriages, add the following: Mass of carriage + mass per 1 m stroke x (clearance between the carriages (in m) + carriage length L_C (in m))

Note: For further dimensions and data, see belt axis HM040B on Page 22.

11.4 Dimensions and specifications of HD2

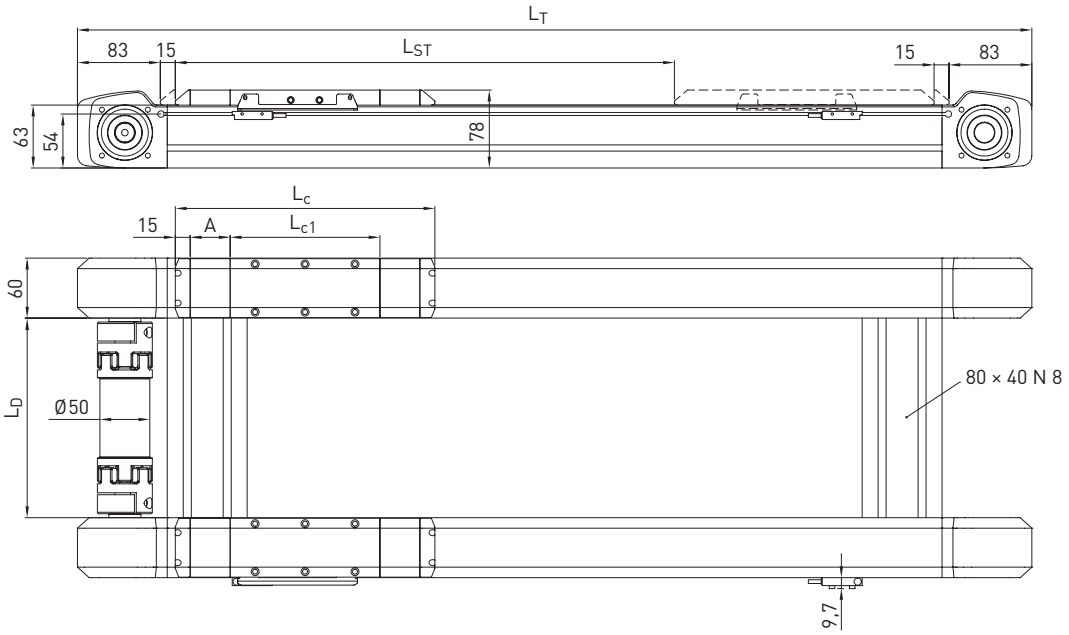


Table 11.4 **HD2 dimensions**

	Variant without cover			Variant with cover		
	Carriage type S	**Carriage type M**	**Carriage type L**	**Carriage type S**	**Carriage type M**	**Carriage type L**
Carriage profile length L_c [mm]	150	200	300	150	200	300
Total carriage length L_c [mm]	180	230	330	260	310	410
Cover strip deflection A [mm]	–	–	–	40	40	40
Max. stroke length L_{ST} [mm]	5,704	5,654	5,554	5,624	5,574	5,474
Total length L_T [mm]	$L_T = L_{ST} + 376$	$L_T = L_{ST} + 426$	$L_T = L_{ST} + 526$	$L_T = L_{ST} + 456$	$L_T = L_{ST} + 506$	$L_T = L_{ST} + 606$
Centre distance L_D min. [mm]	186	186	186	186	186	186
Centre distance L_D max. [mm]	2,000	2,000	2,000	2,000	2,000	2,000

Table 11.5 **General technical data**

Max. feed force F_{x_max} [N]	1,323
Max. speed [m/s]	5
Max. drive torque M_{a_max} [Nm]	33
Typical load capacity [1] [kg]	63
Single axis	HM060B

[1] With equal load distribution on both axes

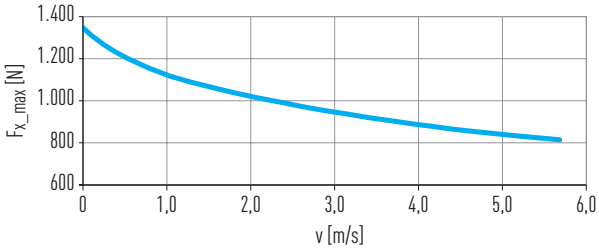


Fig. 11.3 **Max. feed force F_{x_max} as a function of axis speed v**

Table 11.6 **Mechanical properties**

	Variant without cover			Variant with cover		
	Carriage type S	**Carriage type M**	**Carriage type L**	**Carriage type S**	**Carriage type M**	**Carriage type L**
Mass of the carriage [kg]	1.62	1.91	2.49	1.78	2.07	2.65
Mass at 0-stroke and centre distance L_D = 0 [2] [kg]	8.19	9.04	10.73	9.29	10.14	11.84
Mass per 1 m stroke [kg/m]	10.93			11.02		
Mass per 1 m centre distance L_D [kg/m]	10.26			10.26		
$J_{rot.}$ [1] at 0-stroke and centre distance L_D = 0 [kgcm²]	6.53			6.53		
$J_{rot.}$ [1] Per 1 m stroke centre distance [kgcm²/m]	6.63			6.63		
Idle torque at 0-stroke [Nm]	0.94			2.00		

[1] Rotational moment of inertia

[2] The values apply to axes with one carriage. For axes with 2 carriages, add the following: Mass of carriage + mass per 1 m stroke x (clearance between the carriages (in m) + carriage length L_C (in m))

Note: For further dimensions and data, see belt axis HM060B on Page 24.

11.5 Dimensions and specifications of HD3

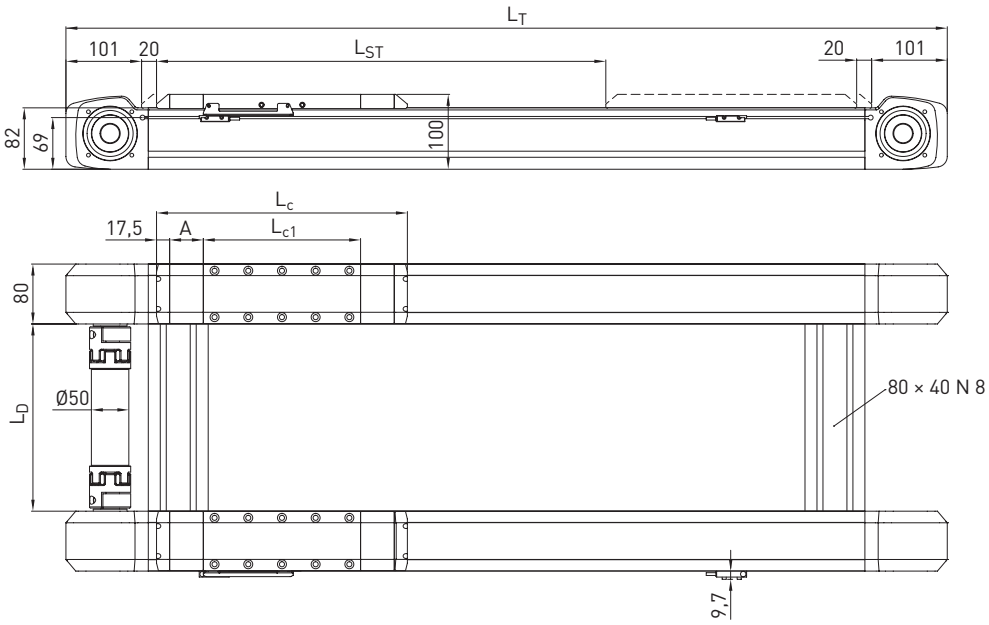


Table 11.7 **HD3 dimensions**

	Variant without cover			Variant with cover		
	Carriage type S	**Carriage type M**	**Carriage type L**	**Carriage type S**	**Carriage type M**	**Carriage type L**
Carriage profile length L_c [mm]	210	300	390	210	300	390
Total carriage length L_c [mm]	245	335	425	335	425	515
Cover strip deflection A [mm]	–	–	–	45	45	45
Max. stroke length L_{ST} [mm]	5,633	5,543	5,453	5,543	5,453	5,363
Total length L_T [mm]	$L_T = L_{ST} + 487$	$L_T = L_{ST} + 577$	$L_T = L_{ST} + 667$	$L_T = L_{ST} + 577$	$L_T = L_{ST} + 667$	$L_T = L_{ST} + 757$
Centre distance L_D min. [mm]	200	200	200	200	200	200
Centre distance L_D max. [mm]	2,400	2,400	2,400	2,400	2,400	2,400

Table 11.8 **General technical data**

Max. feed force F_{x_max} [N]	1,852
Max. speed [m/s]	5
Max. drive torque M_{a_max} [Nm]	56
Typical load capacity [kg] [1)]	150
Single axis	HM080B

[1)] With equal load distribution on both axes

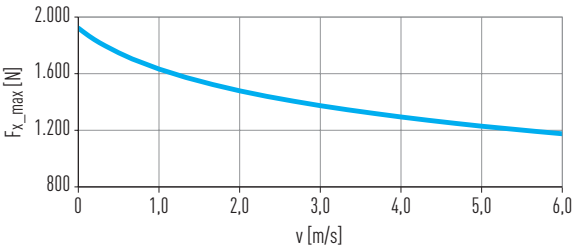


Fig. 11.4 **Max. feed force F_{x_max} as a function of axis speed v**

Table 11.9 **Mechanical properties**

	Variant without cover			Variant with cover		
	Carriage type S	**Carriage type M**	**Carriage type L**	**Carriage type S**	**Carriage type M**	**Carriage type L**
Mass of the carriage [kg]	3.10	3.94	4.77	3.40	4.24	5.07
Mass at 0-stroke and centre distance L_D = 0 [2)] [kg]	16.09	18.73	21.36	18.28	20.93	23.57
Mass per 1 m stroke [kg/m]	19.73			19.84		
Mass per 1 m centre distance L_D [kg/m]	10.26			10.26		
$J_{rot.}$ [1)] at 0-stroke and centre distance L_D = 0 [kgcm²]	15.00			15.00		
$J_{rot.}$ [1)] Per 1 m stroke centre distance [kgcm²/m]	6.63			6.63		
Idle torque at 0-stroke [Nm]	2.40			2.60		

[1)] Rotational moment of inertia

[2)] The values apply to axes with one carriage. For axes with 2 carriages, add the following: Mass of carriage + mass per 1 m stroke x (clearance between the carriages (in m) + carriage length L_C (in m))

Note: For further dimensions and data, see belt axis HM080B on Page 26.

11.6 Dimensions and specifications of HD4

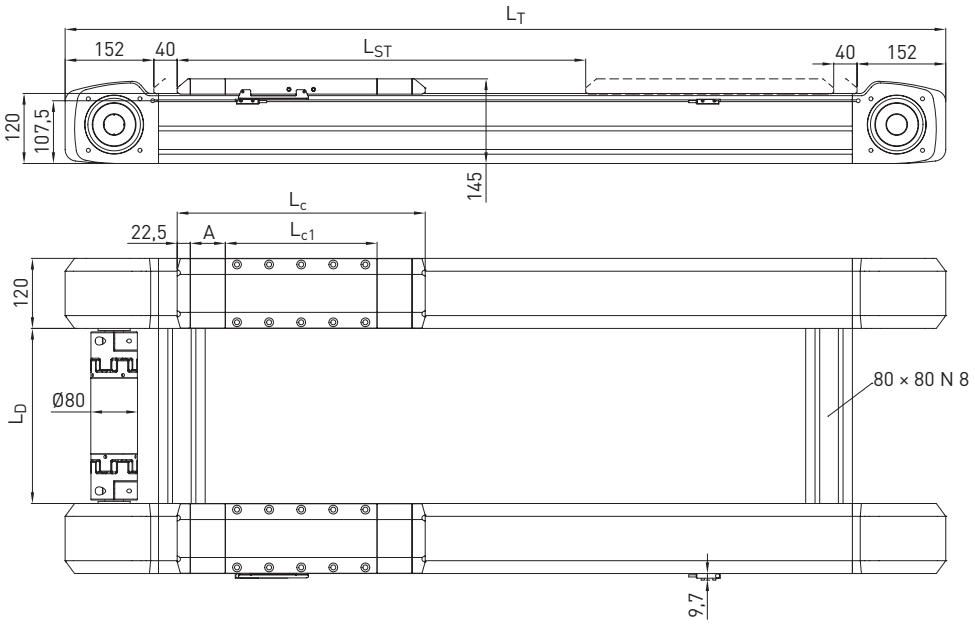


Table 11.10 **HD4 dimensions**

	Variant without cover			Variant with cover		
	Carriage type S	**Carriage type M**	**Carriage type L**	**Carriage type S**	**Carriage type M**	**Carriage type L**
Carriage profile length L_c [mm]	260	370	535	260	370	535
Total carriage length L_c [mm]	305	415	580	425	535	700
Cover strip deflection A [mm]	–	–	–	60	60	60
Max. stroke length L_{ST} [mm]	5,531	5,421	5,256	5,411	5,301	5,136
Total length L_T [mm]	$L_T = L_{ST} + 689$	$L_T = L_{ST} + 799$	$L_T = L_{ST} + 964$	$L_T = L_{ST} + 809$	$L_T = L_{ST} + 919$	$L_T = L_{ST} + 1,084$
Centre distance L_D min. [mm]	256	256	256	256	256	256
Centre distance L_D max. [mm]	3,000	3,000	3,000	3,000	3,000	3,000

Table 11.11 **General technical data**

Max. feed force F_{x_max} [N]	4,385
Max. speed [m/s]	5
Max. drive torque M_{a_max} [Nm]	201
Typical load capacity [kg] 1)	300
Single axis	HM120B

1) With equal load distribution on both axes

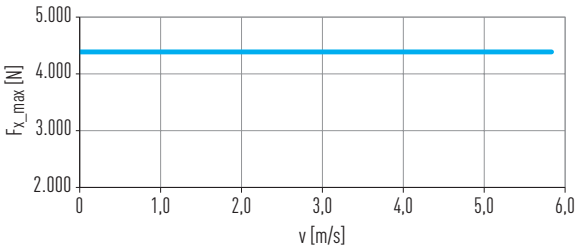


Fig. 11.5 **Max. feed force F_{x_max} as a function of axis speed v**

Table 11.12 **Mechanical properties**

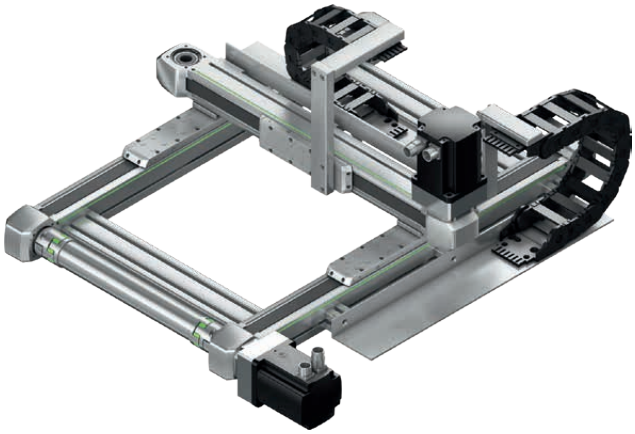
	Variant without cover			Variant with cover		
	Carriage type S	**Carriage type M**	**Carriage type L**	**Carriage type S**	**Carriage type M**	**Carriage type L**
Mass of the carriage [kg]	10.59	12.15	15.58	11.61	13.18	16.60
Mass at 0-stroke and centre distance L_D = 0 2) [kg]	50.31	56.68	66.93	56.63	63.02	73.30
Mass per 1 m stroke [kg/m]	41.54			41.72		
Mass per 1 m centre distance L_D [kg/m]	18.42			18.42		
$J_{rot.}$ 1) at 0-stroke and centre distance L_D = 0 [kgcm²]	104.30			104.30		
$J_{rot.}$ 1) Per 1 m stroke centre distance [kgcm²/m]	44.90			44.90		
Idle torque at 0-stroke [Nm]	6.20			9.00		

1) Rotational moment of inertia

2) The values apply to axes with one carriage. For axes with 2 carriages, add the following: Mass of carriage + mass per 1 m stroke x (clearance between the carriages (in m) + carriage length L_C (in m))

Note: For further dimensions and data, see belt axis HM120B on Page 28.

12. Two-axis systems HS2



12.1 Properties of the double axis systems HS2

HIWIN two-axis systems HS2 are flexible units for positioning along the X- and Y-axes. They consist of a HIWIN double axis HD in the X direction and a HIWIN belt axis HM-B or HT-B in the Y direction. HIWIN two-axis systems HS2 are especially suitable for two-dimensional or flat movements in one plane and form the basis for three-axis systems.

Energy chain

Generously dimensioned energy chains provide space for safely carrying the supply lines. The energy chains are integrated into the complete system in a particularly compact and space-saving way.

Maximum axis speed in X direction

The maximum axis speed in the X direction depends on the size and the centre distance, which in the two-axis system HS2 results from the selected stroke in the Y direction. The dependence of the maximum axis speed on stroke length Y can be determined from the diagram in Fig. 12.1.

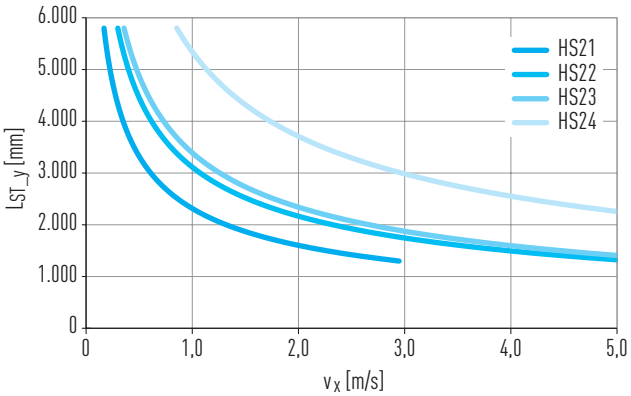


Fig. 12.1 **Max. axis speed v in X direction, as a function of stroke L_{ST} in Y direction**

12.2 Order code for two-axis systems HS2

HS	2	2	X	D2	Y	M2 –

HIWIN axis system

Axis system type:
2: Two-axis system

Size (profile width of the X-axis):
1: 40 mm
2: 60 mm
3: 80 mm
4: 120 mm

Axis 1 identifier:
X

Type and size of axis 2:
M1: HM040B
M2: HM060B
M3: HM080B
T1: HT100B
T2: HT150B
T3: HT200B
T4: HT250B

Axis 2 identifier:
Y

Type and size of axis 1:
D1: Double axis HD1
D2: Double axis HD2
D3: Double axis HD3
D4: Double axis HD4

Continuation, order code for two-axis systems HS2

1000 –	0800	A	2	R	BR04	G0803 –	BE04	G0608

Stroke axis 1 [mm]

Stroke axis 2 [mm]

Axis limit switch:
N: Without limit switch
A: 2 × normally closed, 100 mm cable, connector

Energy chain:
N: Without
1: Energy chain on X-axis
2: Energy chain on X- and Y-axis

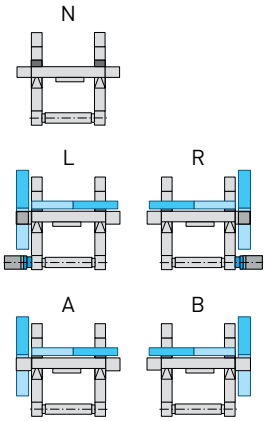
Gearbox, axis 2 [3]

Motor flange type, axis 2 [4]

Gearbox, axis 1 [3]

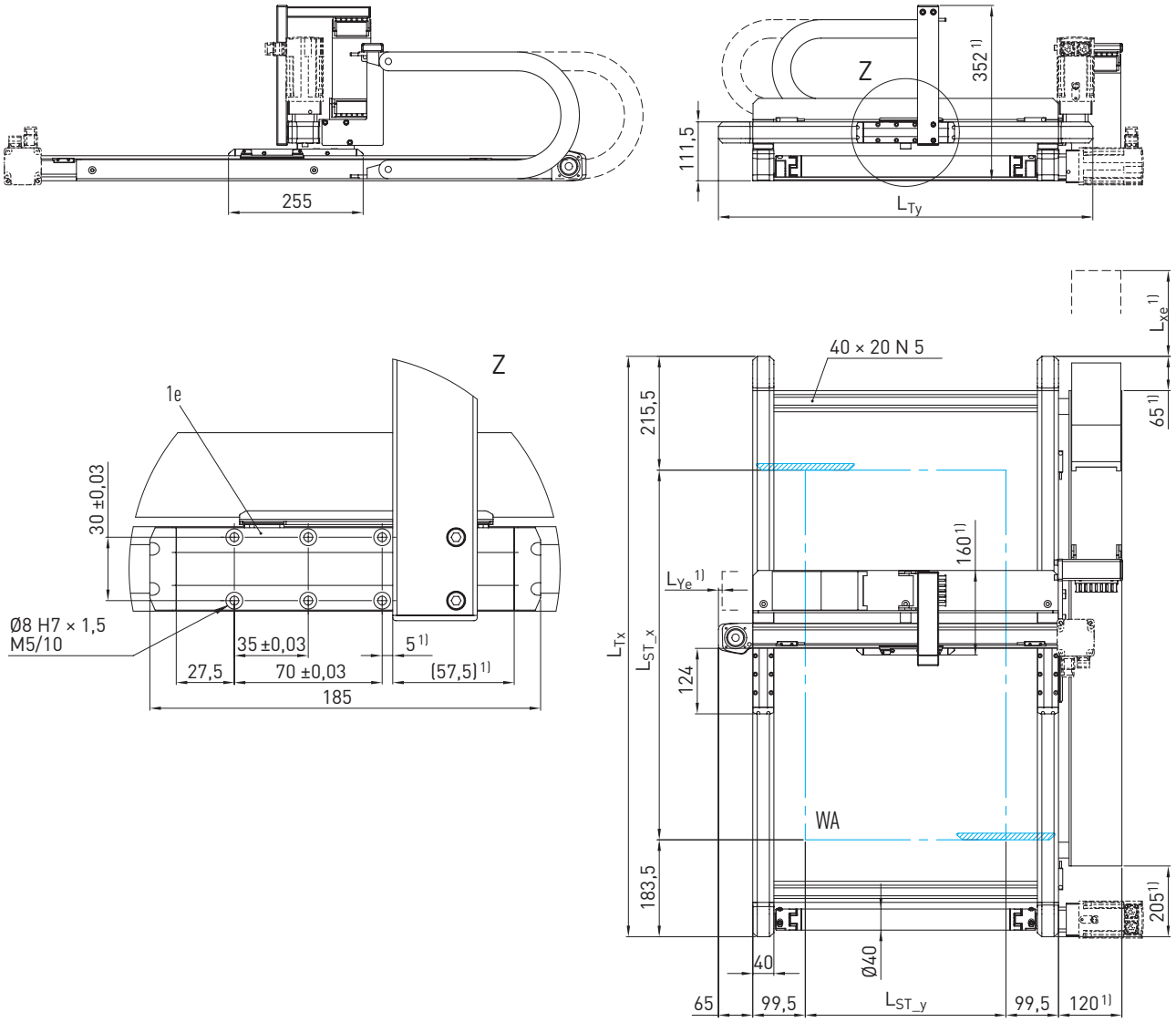
Motor flange type, axis 1 [2]

Drive interface [1]**:**
N: Without drive adapter/ without energy chain
L: Drive adapter left
R: Drive adapter right
A: Without drive adapter, Drive interface left
B: Without drive adapter, Drive interface right



[1] If no drive interface is selected, the order code ends after this digit.
[2] You can find all flange types in Table 18.1 from page 138. If no flange type is selected, the "Gearbox, axis 1" position is omitted.
[3] You can finding matching gearboxes in section 18.1.4.5 from page 158.
[4] All flange types for linear modules HM-B can be found in Table 18.1 from page 138, for linear tables HT-B in Table 18.2 from page 142 If no flange type is selected, the order code ends after this digit.

12.3 Dimensions and specifications of HS21-D-M



1) Omitted for variant without energy chain

L_{ST}	Stroke
WA	Working space
1e	Interface application

Table 12.1 **HS21-D-M dimensions**	
Total length X-axis L_{Tx} [mm]	$L_{Tx} = L_{ST\_x} + 399$
Total length Y-axis L_{Ty} [mm]	$L_{Ty} = L_{ST\_y} + 329$

Table 12.2 **Energy chain**		
	X-axis	Y-axis
Inner cross section W × H [mm]	77 × 25	57 × 25
Bending radius [mm]	100	75
End position at electrical zero F [mm]	$L_{Xe} = 190.5$	$L_{Ye} = 7.0$
End position at mechanical zero [mm]	$L_{Xe} = 195.5$	$L_{Ye} = 2.0$

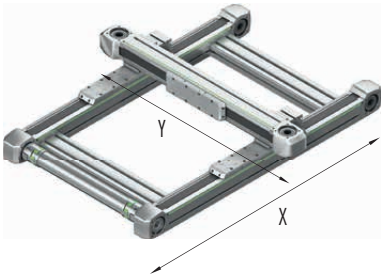


Table 12.3 **General technical data**

	X-axis	Y-axis
Axis type	HD1N	HM040B-N
Type of carriage	L	M
Max. feed force F_{x_max} [N]	450	300
Max. speed [1] [m/s]	5	
Max. acceleration [1] [m/s²]	30	
Max. drive torque M_{A_max} [Nm]	8	5
Max. stroke [mm]	3,000	1,300
Typical load capacity [kg]	5	

[1] Restrictions possible with variant with energy chain depending on the stroke
Note: Dimensions and specifications of double axis HD1 can be found in section 11.3 on page 84
Dimensions and specifications of single axis HM040B can be found in section 5.3 on page 22

Table 12.4 **Drive**

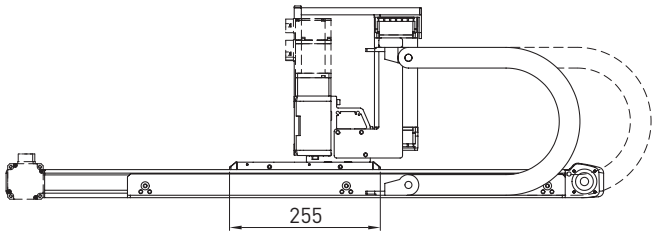
	X-axis	Y-axis
Toothed belt drive element	B15HTD3	
Feed constant [mm/U]	111	
Toothed belt effective diameter [mm]	35.33	

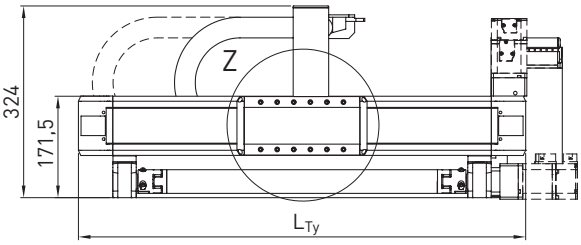
Table 12.5 **Mechanical properties**

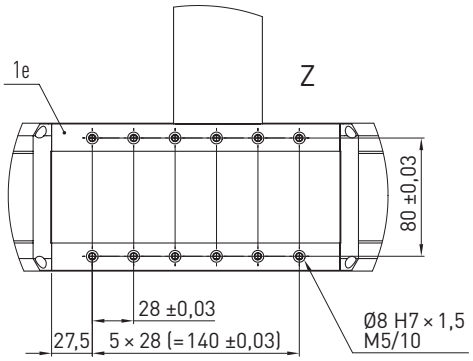
Moving mass Y-axis [kg]	0.41
Moving mass X-axis at 0-stroke Y-axis [kg]	2.92
Moving mass X-axis per 1 m stroke Y-axis [kg/m]	3.02
Mass of total system at 0-stroke X- and Y-axis [kg]	6.93
Mass of total system per 1 m stroke X-axis [kg/m]	6.04
Mass of total system per 1 m stroke Y-axis [kg/m]	5.36

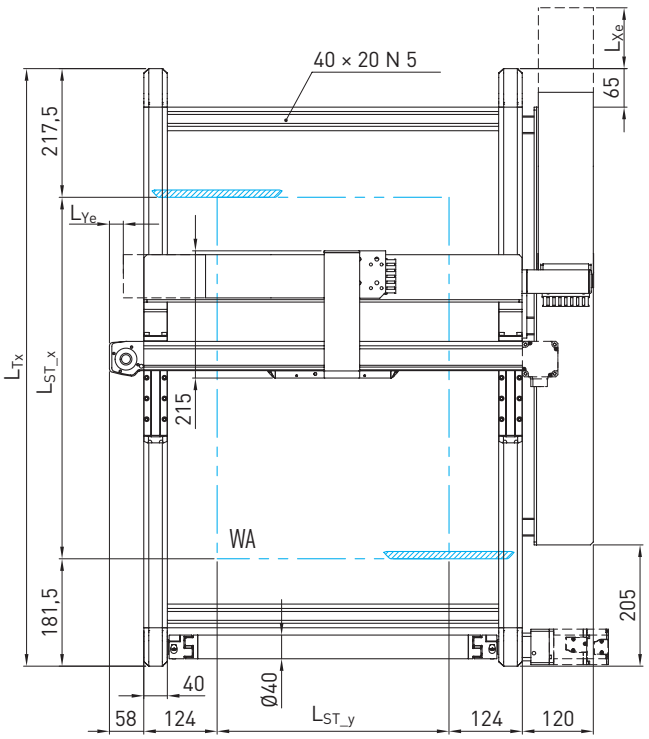
Note: All values without energy chain and without drive

12.4 Dimensions and specifications of HS21-D-T









L_{ST} Stroke
WA Working space
1e Interface application

Table 12.6 **HS21-D-T dimensions**

Total length X-axis L_{Tx} [mm]	$L_{Tx} = L_{ST\_x} + 399$
Total length Y-axis L_{Ty} [mm]	$L_{Ty} = L_{ST\_y} + 364$

Table 12.7 **Energy chain**

	X-axis	Y-axis
Inner cross section W × H [mm]	77 × 25	57 × 25
Bending radius [mm]	100	75
End position at electrical zero F [mm]	$L_{Xe} = 190.5$	$L_{Ye} = 23.5$
End position at mechanical zero [mm]	$L_{Xe} = 195.5$	$L_{Ye} = 11.0$

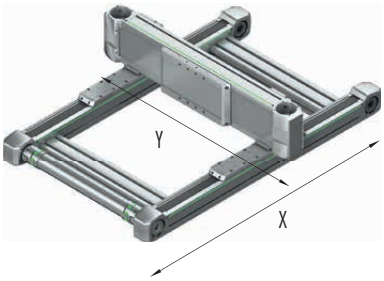


Table 12.8 **General technical data**

	X-axis	Y-axis
Axis type	HD1N	HT100B-C
Type of carriage	L	S
Max. feed force F_{x_max} [N]	450	813
Max. speed [1] [m/s]	5	
Max. acceleration [1] [m/s²]	30	
Max. drive torque M_{A_max} [Nm]	8	14
Max. stroke [mm]	3,000	1,300
Typical load capacity [kg]	20	

[1] Restrictions possible with variant with energy chain depending on the stroke

Note: Dimensions and specifications of double axis HD1 can be found in section 11.3 on page 84
Dimensions and specifications of linear table HT100B can be found in section 7.3 on page 42

Table 12.9 **Drive**

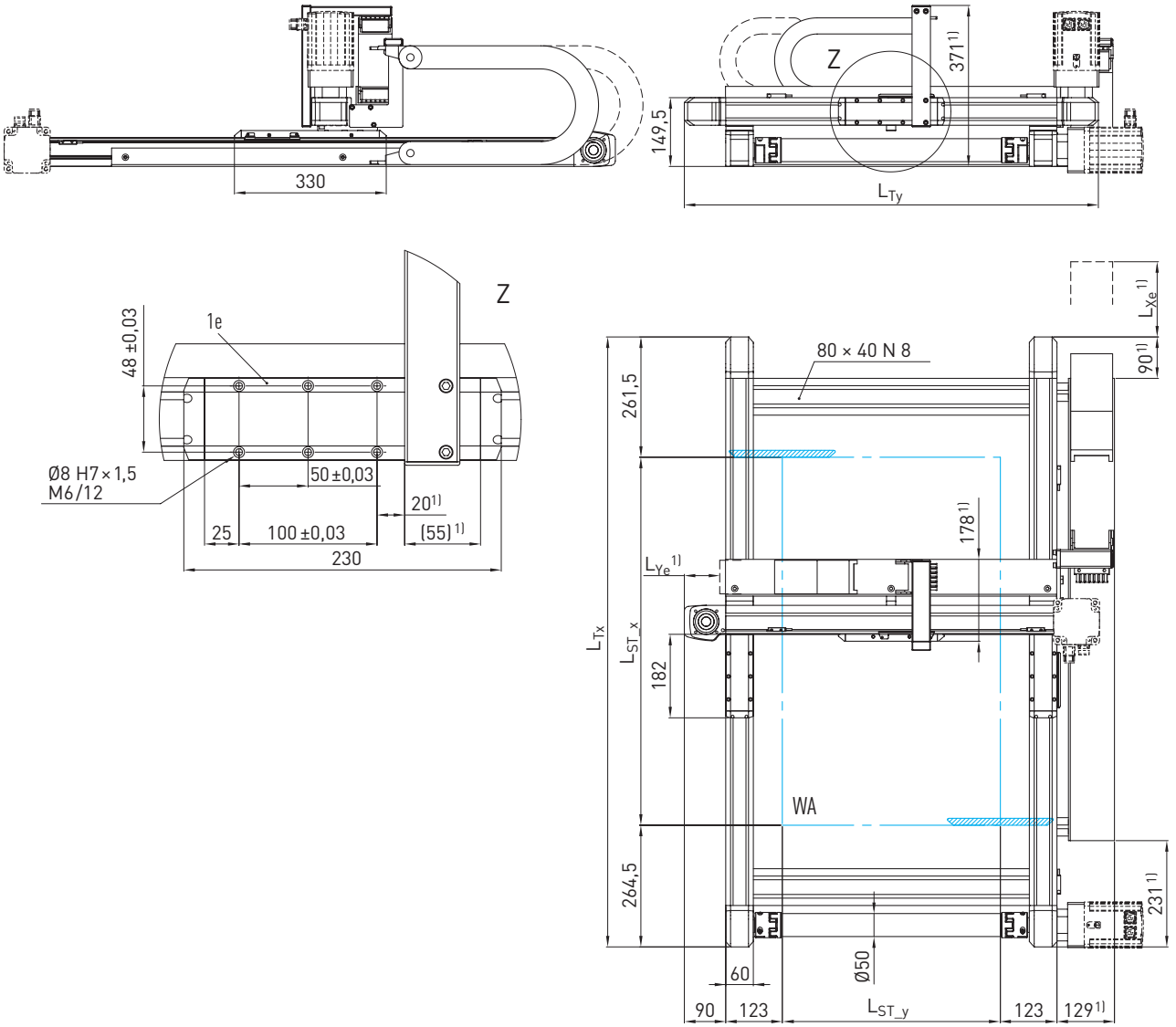
	X-axis	Y-axis
Toothed belt drive element	B15HTD3	B25HTD5
Feed constant [mm/U]	111	105
Toothed belt effective diameter [mm]	35.33	33.42

Table 12.10 **Mechanical properties**

Moving mass Y-axis [kg]	1.59
Moving mass X-axis at 0-stroke Y-axis [kg]	6.22
Moving mass X-axis per 1 m stroke Y-axis [kg/m]	6.71
Mass of total system at 0-stroke X- and Y-axis [kg]	10.48
Mass of total system per 1 m stroke X-axis [kg/m]	6.04
Mass of total system per 1 m stroke Y-axis [kg/m]	9.10

Note: All values without energy chain and without drive

12.5 Dimensions and specifications of HS22-D-M



1) Omitted for variant without energy chain

L_{ST} Stroke
WA Working space
1e Interface application

Table 12.11 **HS22-D-M dimensions**	
Total length X-axis L_{Tx} [mm]	$L_{Tx} = L_{ST\_x} + 526$
Total length Y-axis L_{Ty} [mm]	$L_{Ty} = L_{ST\_y} + 426$

Table 12.12 **Energy chain**		
	X-axis	Y-axis
Inner cross section W × H [mm]	75 × 35	57 × 25
Bending radius [mm]	100	75
End position at electrical zero F [mm]	L_{Xe} = 199.0	L_{Ye} = 45.5
End position at mechanical zero [mm]	L_{Xe} = 206.5	L_{Ye} = 38.0

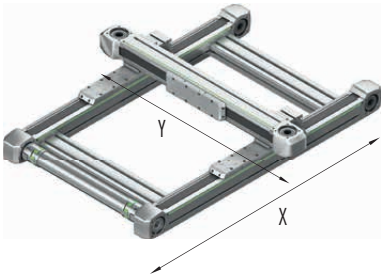


Table 12.13 **General technical data**

	X-axis	Y-axis
Axis type	HD2N	HM060B-N
Type of carriage	L	M
Max. feed force F_{x_max} [N]	1,323	882
Max. speed [1] [m/s]	5	
Max. acceleration [1] [m/s²]	30	
Max. drive torque M_{A_max} [Nm]	33	22
Max. stroke [mm]	5,000	1,700
Typical load capacity [kg]	12	

[1] Restrictions possible with variant with energy chain depending on the stroke

Note: Dimensions and specifications of double axis HD2 can be found in section 11.4 on page 85
Dimensions and specifications of single axes HM060B can be found in section 5.4 on page 24

Table 12.14 **Drive**

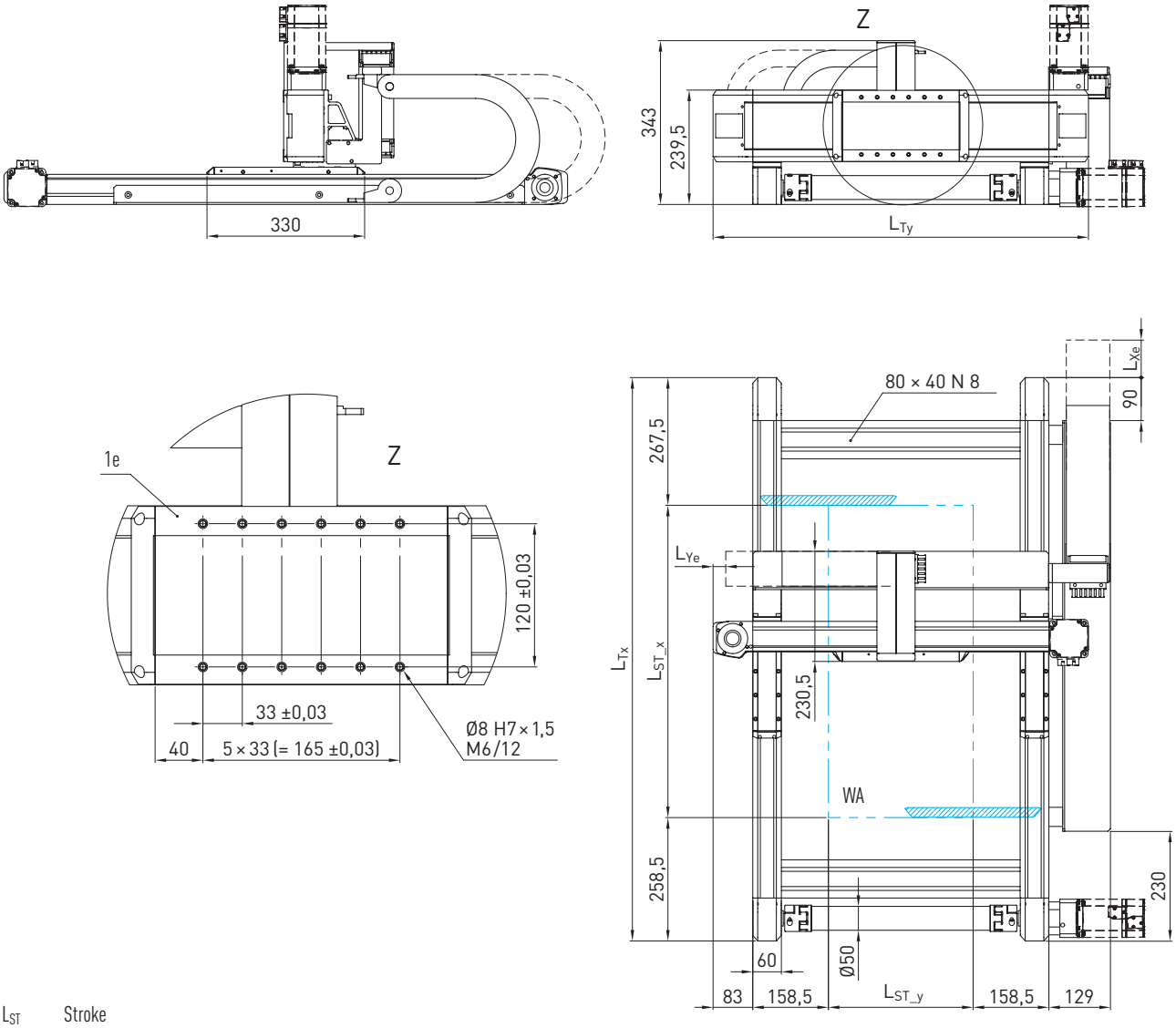
	X-axis	Y-axis
Toothed belt drive element	B25HTD5	
Feed constant [mm/U]	155	
Toothed belt effective diameter [mm]	49.34	

Table 12.15 **Mechanical properties**

Moving mass Y-axis [kg]	1.02
Moving mass X-axis at 0-stroke Y-axis [kg]	7.04
Moving mass X-axis per 1 m stroke Y-axis [kg/m]	5.47
Mass of total system at 0-stroke X- and Y-axis [kg]	17.23
Mass of total system per 1 m stroke X-axis [kg/m]	10.93
Mass of total system per 1 m stroke Y-axis [kg/m]	15.70

Note: All values without energy chain and without drive

12.6 Dimensions and specifications of HS22-D-T



L_{ST} Stroke
WA Working space
1e Interface application

Table 12.16 **HS22-D-T dimensions**

Total length X-axis L_{Tx} [mm]	$L_{Tx} = L_{ST\_x} + 526$
Total length Y-axis L_{Ty} [mm]	$L_{Ty} = L_{ST\_y} + 483$

Table 12.17 **Energy chain**

	X-axis	Y-axis
Inner cross section W × H [mm]	75 × 35	57 × 25
Bending radius [mm]	100	75
End position at electrical zero F [mm]	$L_{Xe} = 199.0$	$L_{Ye} = 26.5$
End position at mechanical zero [mm]	$L_{Xe} = 206.5$	$L_{Ye} = 16.5$

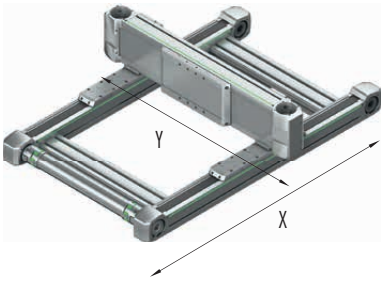


Table 12.18 **General technical data**

	X-axis	Y-axis
Axis type	HD2N	HT150B-C
Type of carriage	L	S
Max. feed force F_{x_max} [N]	1,323	1,300
Max. speed [1] [m/s]	5	
Max. acceleration [1] [m/s²]	30	
Max. drive torque M_{A_max} [Nm]	33	32
Max. stroke [mm]	5,000	1,650
Typical load capacity [kg]	40	

[1] Restrictions possible with variant with energy chain depending on the stroke
Note: Dimensions and specifications of double axis HD2 can be found in section 11.4 on page 85
Dimensions and specifications of linear table HT150B can be found in section 7.4 on page 44

Table 12.19 **Drive**

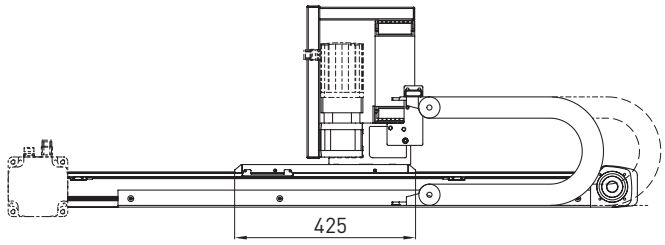
	X-axis	Y-axis
Toothed belt drive element	B25HTD5	B40HTD5
Feed constant [mm/U]	155	
Toothed belt effective diameter [mm]	49.34	

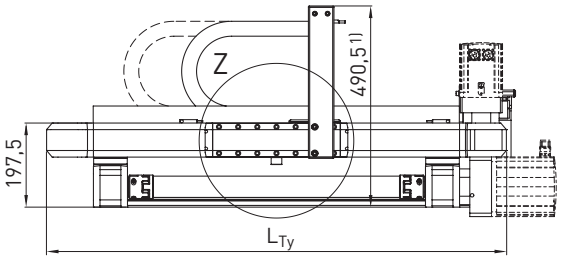
Table 12.20 **Mechanical properties**

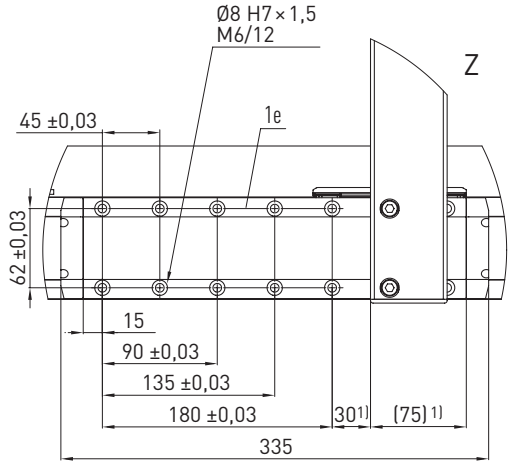
Moving mass Y-axis [kg]	3.08
Moving mass X-axis at 0-stroke Y-axis [kg]	13.48
Moving mass X-axis per 1 m stroke Y-axis [kg/m]	11.16
Mass of total system at 0-stroke X- and Y-axis [kg]	24.70
Mass of total system per 1 m stroke X-axis [kg/m]	10.93
Mass of total system per 1 m stroke Y-axis [kg/m]	21.48

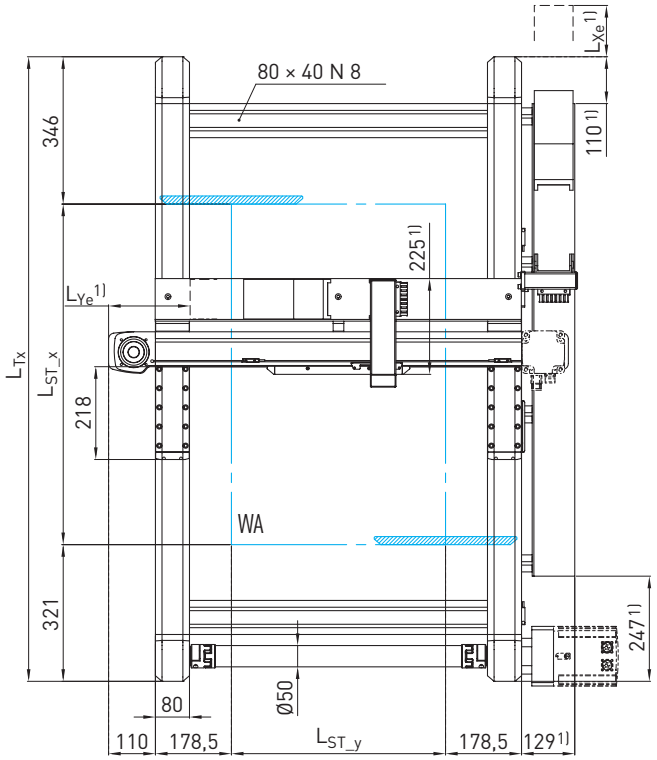
Note: All values without energy chain and without drive

12.7 Dimensions and specifications of HS23-D-M









1) Omitted for variant without energy chain

L_{ST} Stroke
WA Working space
1e Interface application

Table 12.21 **HS23-D-M dimensions**	
Total length X-axis L_{Tx} [mm]	$L_{Tx} = L_{ST\_x} + 667$
Total length Y-axis L_{Ty} [mm]	$L_{Ty} = L_{ST\_y} + 577$

Table 12.22 **Energy chain**		
	X-axis	Y-axis
Inner cross section W × H [mm]	75 × 35	77 × 25
Bending radius [mm]	100	100
End position at electrical zero F [mm]	$L_{Xe} = 159.5$	$L_{Ye} = 158.5$
End position at mechanical zero [mm]	$L_{Xe} = 169.5$	$L_{Ye} = 148.5$

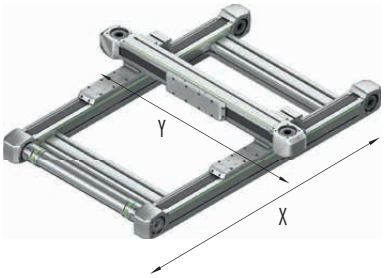


Table 12.23 **General technical data**

	X-axis	Y-axis
Axis type	HD3N	HM080B-N
Type of carriage	L	M
Max. feed force F_{x_max} [N]	1,852	1,235
Max. speed [1] [m/s]	5	
Max. acceleration [1] [m/s²]	30	
Max. drive torque M_{A_max} [Nm]	56	37
Max. stroke [mm]	5,000	1,600
Typical load capacity [kg]	30	

[1] Restrictions possible with variant with energy chain depending on the stroke
Note: Dimensions and specifications of double axis HD3 can be found in section 11.5 on page 86
Dimensions and specifications of single axis HM080B can be found in section 5.5 on page 26

Table 12.24 **Drive**

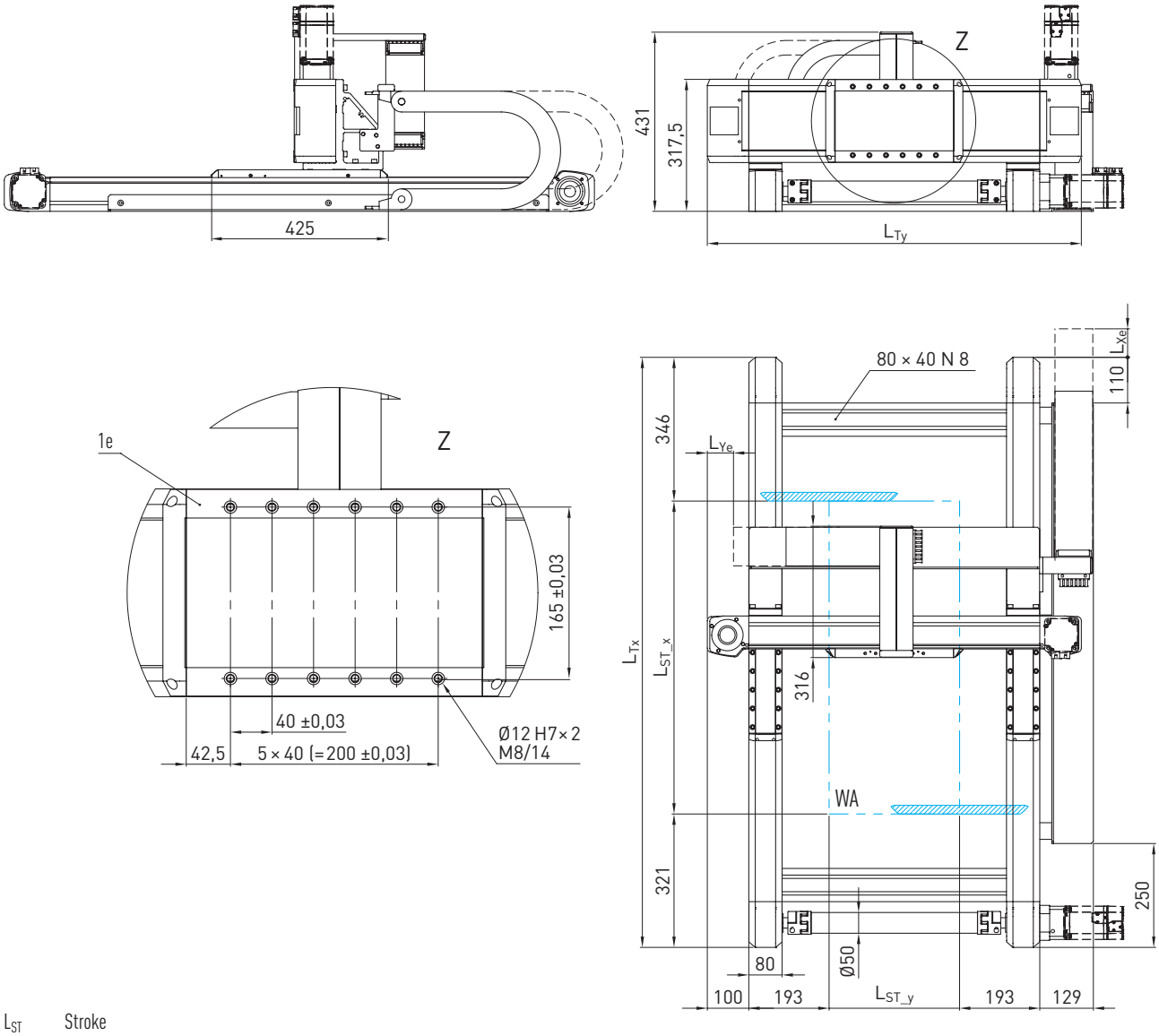
	X-axis	Y-axis
Toothed belt drive element	B35HTD5	
Feed constant [mm/U]	190	
Toothed belt effective diameter [mm]	60.48	

Table 12.25 **Mechanical properties**

Moving mass Y-axis [kg]	2.09
Moving mass X-axis at 0-stroke Y-axis [kg]	15.12
Moving mass X-axis per 1 m stroke Y-axis [kg/m]	9.86
Mass of total system at 0-stroke X- and Y-axis [kg]	35.39
Mass of total system per 1 m stroke X-axis [kg/m]	19.73
Mass of total system per 1 m stroke Y-axis [kg/m]	20.27

Note: All values without energy chain and without drive

12.8 Dimensions and specifications of HS23-D-T



L_{ST} Stroke
WA Working space
1e Interface application

Table 12.26 **HS23-D-T dimensions**

Total length X-axis L_{Tx} [mm]	$L_{Tx} = L_{ST\_x} + 667$
Total length Y-axis L_{Ty} [mm]	$L_{Ty} = L_{ST\_y} + 586$

Table 12.27 **Energy chain**

	X-axis	Y-axis
Inner cross section W × H [mm]	75 × 35	77 × 25
Bending radius [mm]	100	100
End position at electrical zero F [mm]	L_{Xe} = 159.5	L_{Ye} = 63.0
End position at mechanical zero [mm]	L_{Xe} = 169.5	L_{Ye} = 48.0

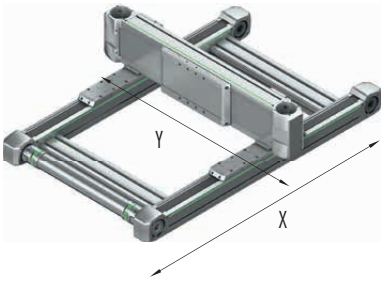


Table 12.28 **General technical data**

	X-axis	Y-axis
Axis type	HD3N	HT200B-C
Type of carriage	L	S
Max. feed force F_{x_max} [N]	1,852	3,000
Max. speed [1] [m/s]	5	
Max. acceleration [1] [m/s²]	30	
Max. drive torque M_{A_max} [Nm]	56	88
Max. stroke [mm]	5,000	1,550
Typical load capacity [kg]	80	

[1] Restrictions possible with variant with energy chain depending on the stroke
Note: Dimensions and specifications of double axis HD3 can be found in section 11.5 on page 86
Dimensions and specifications of linear table HT200B can be found in section 7.5 on page 46

Table 12.29 **Drive**

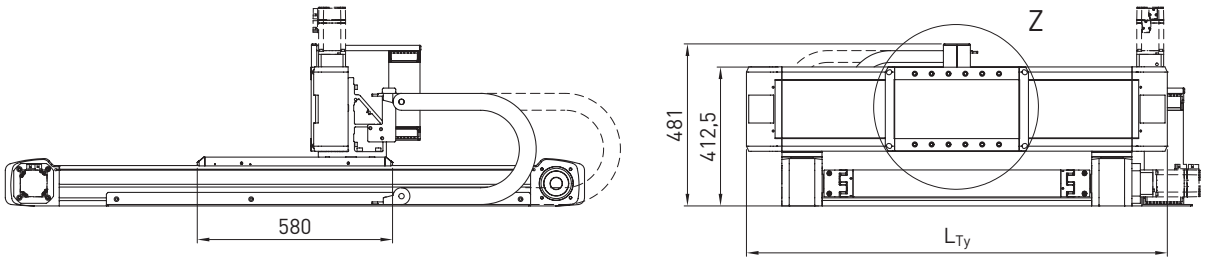
	X-axis	Y-axis
Toothed belt drive element	B35HTD5	B50HTD8
Feed constant [mm/U]	190	184
Toothed belt effective diameter [mm]	60.48	58.57

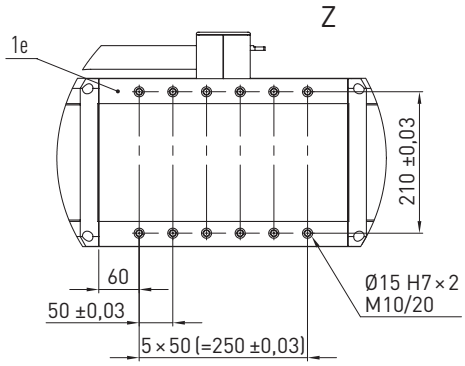
Table 12.30 **Mechanical properties**

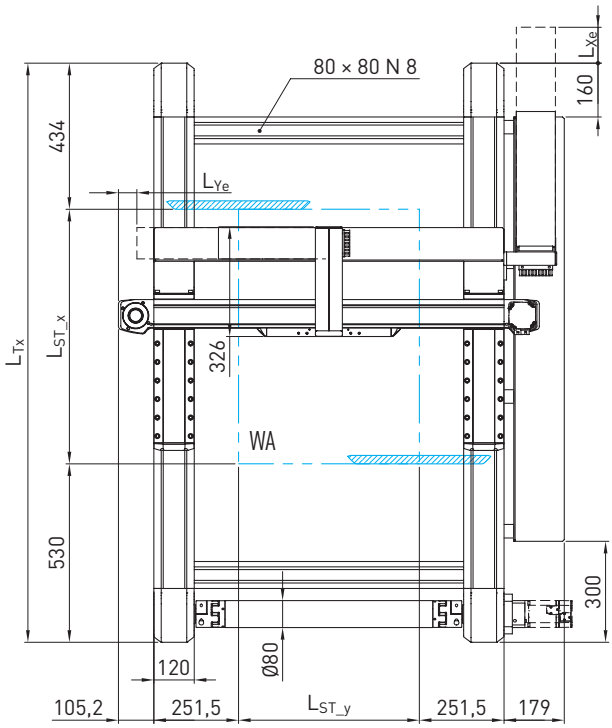
Moving mass Y-axis [kg]	5.52
Moving mass X-axis at 0-stroke Y-axis [kg]	26.89
Moving mass X-axis per 1 m stroke Y-axis [kg/m]	17.57
Mass of total system at 0-stroke X- and Y-axis [kg]	48.21
Mass of total system per 1 m stroke X-axis [kg/m]	19.73
Mass of total system per 1 m stroke Y-axis [kg/m]	28.01

Note: All values without energy chain and without drive

12.9 Dimensions and specifications of HS24-D-T







L_{ST} Stroke
WA Working space
1e Interface application

Table 12.31 **HS24-D-T dimensions**

Total length X-axis L_{Tx} [mm]	$L_{Tx} = L_{ST\_x} + 964$
Total length Y-axis L_{Ty} [mm]	$L_{Ty} = L_{ST\_y} + 713$

Table 12.32 **Energy chain**

	X-axis	Y-axis
Inner cross section W × H [mm]	100 × 35	77 × 25
Bending radius [mm]	125	100
End position at electrical zero F [mm]	$L_{Xe} = 116.5$	$L_{Ye} = 111.5$
End position at mechanical zero [mm]	$L_{Xe} = 136.5$	$L_{Ye} = 91.5$

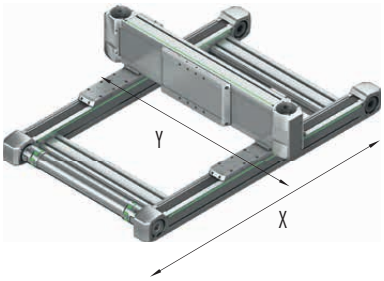


Table 12.33 **General technical data**

	X-axis	Y-axis
Axis type	HD4N	HT250B-C
Type of carriage	L	S
Max. feed force F_{x_max} [N]	4,385	4,500
Max. speed [1] [m/s]	5	
Max. acceleration [1] [m/s²]	30	
Max. drive torque M_{A_max} [Nm]	201	149
Max. stroke [mm]	5,000	1,400
Typical load capacity [kg]	130	

[1] Restrictions possible with variant with energy chain depending on the stroke
Note: Dimensions and specifications of double axis HD4 can be found in section 11.6 on page 87
Dimensions and specifications of linear table HT250B can be found in section 7.6 on page 48

Table 12.34 **Drive**

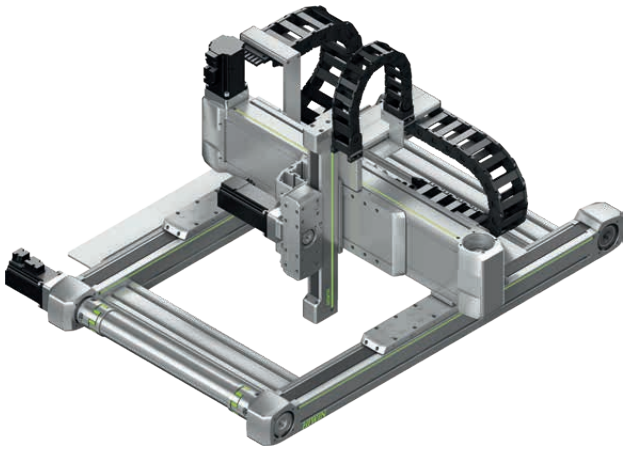
	X-axis	Y-axis
Toothed belt drive element	B60HTD8	B75HTD8
Feed constant [mm/U]	288	208
Toothed belt effective diameter [mm]	91.67	66.21

Table 12.35 **Mechanical properties**

Moving mass Y-axis [kg]	10.27
Moving mass X-axis at 0-stroke Y-axis [kg]	53.78
Moving mass X-axis per 1 m stroke Y-axis [kg/m]	22.87
Mass of total system at 0-stroke X- and Y-axis [kg]	114.13
Mass of total system per 1 m stroke X-axis [kg/m]	41.54
Mass of total system per 1 m stroke Y-axis [kg/m]	39.62

Note: All values without energy chain and without drive

13. Two-axis systems HS3



13.1 Properties of three-axis systems HS3

HIWIN three-axis systems HS3 are flexible units for positioning along the X- Y- and Z-axis. They consist of a HIWIN double axis HD in the X direction, a HIWIN belt axis HT-B in the Y direction and a HIWIN cantilever axis HC-B in the Z direction. HIWIN HS32 three-axis systems are particularly suitable for three-dimensional movements.

Energy chain

Generously dimensioned energy chains provide space for safely carrying the supply lines. The energy chains are integrated into the complete system in a particularly compact and space-saving way.

Maximum axis speed in X direction

The maximum axis speed in the X direction depends on the size and the centre distance, which in the three-axis system HS3 results from the selected stroke in the Y direction. The dependence of the maximum axis speed on stroke length Y can be determined from the diagram in Fig. 13.1.

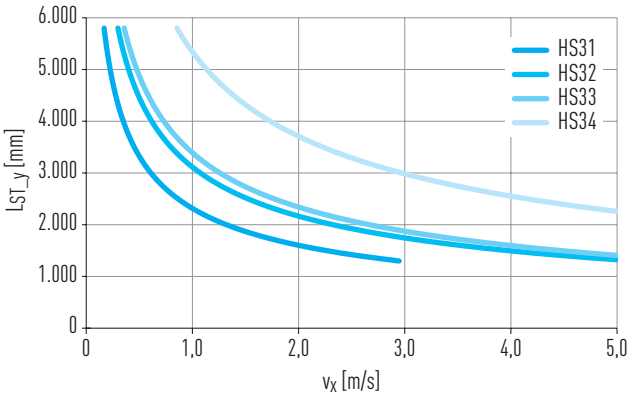


Fig. 13.1 **Max. axis speed v in X direction, as a function of stroke L_{ST} in Y direction**

13.2 Order code for three-axis systems HS3

HS	3	2	X	D2	Y	T2	Z	C1 –

HIWIN axis system

Axis system type:
3: Three-axis system

Size (profile width of the X-axis):
1: 40 mm
2: 60 mm
3: 80 mm
4: 120 mm

Axis 1 identifier:
X

Type and size of axis 1:
D1: Double axis HD1
D2: Double axis HD2
D3: Double axis HD3
D4: Double axis HD4

Type and size of axis 3:
C0: HC025B
C1: HC040B
C2: HC060B
C3: HC080B

Axis 3 identifier:
Z

Type and size of axis 2:
T1: HT100B
T2: HT150B
T3: HT200B
T4: HT250B

Axis 2 identifier:
Y

Continuation, order code for three-axis systems HS3

1000 –	0800 –	0600	A	3	R	BR04	G0803 –	BE04	G0608 –	B002	G0405

Stroke axis 1 [mm]

Stroke axis 2 [mm]

Stroke axis 3 [mm]

Axis limit switch:
N: Without limit switch
A: 2 × normally closed, 100 mm cable, connector

Energy chain:
N: Without
1: Energy chain on X-axis
2: Energy chain on X- and Y-axis
3: Energy chain on X-, Y- and Z-axis

Gearbox, axis 3 [3]

Motor flange type, axis 3 [5]

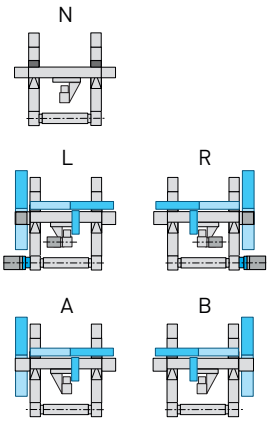
Gearbox, axis 2 [3]

Motor flange type, axis 2 [4]

Gearbox, axis 1 [3]

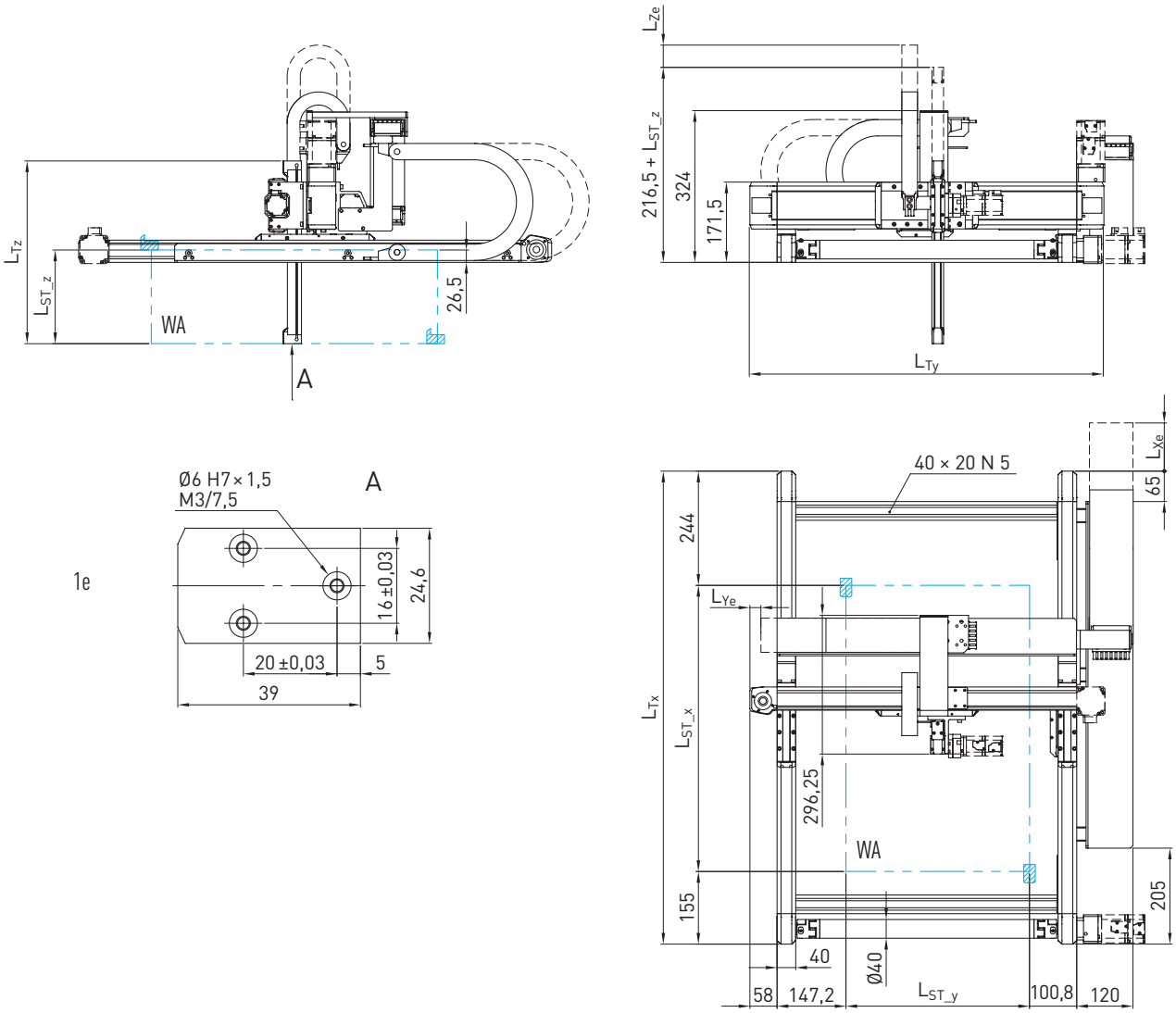
Motor flange type, axis 1 [2]

Drive interface [1]**:**
N: Without drive adapter/ Without energy chain
L: Drive adapter left
R: Drive adapter right
A: Without drive adapter, Drive interface left
B: Without drive adapter, Drive interface right



[1] If no drive interface is selected, the order code ends after this digit.
[2] You can find all flange types in Table 18.1 from page 138. If no flange type is selected, the "Gearbox, axis 1" position is omitted.
[3] You can finding matching gearboxes in section 18.1.4.5 from page 158.
[4] You can find all flange types in Table 18.2 from page 142. If no flange type is selected, the "Gearbox, axis 2" position is omitted.
[5] You can find all flange types in Table 18.3 from page 146. If no flange type is selected, the order code ends after this digit.

13.3 Dimensions and specifications of HS31-D-T-C



L_{ST} Stroke
WA Working space
1e Interface application

Table 13.1 **HS31-D-T-C dimensions**	
Total length X-axis L_{Tx} [mm]	$L_{Tx} = L_{ST\_x} + 399$
Total length Y-axis L_{Ty} [mm]	$L_{Ty} = L_{ST\_y} + 364$
Total length Z-axis L_{Tz} [mm]	$L_{Tz} = L_{ST\_z} + 190$

Table 13.2 **Energy chain**			
	X-axis	Y-axis	Z-axis
Inner cross section W × H [mm]	77 × 25	57 × 25	20 × 21
Bending radius [mm]	100	75	48
End position at electrical zero F [mm]	$L_{Xe} = 190.5$	$L_{Ye} = 23.5$	$L_{Ze} = 151.0 - L_{ST}/2$
End position at mechanical zero [mm]	$L_{Xe} = 195.5$	$L_{Ye} = 11.0$	$L_{Ze} = 147.5 - L_{ST}/2$

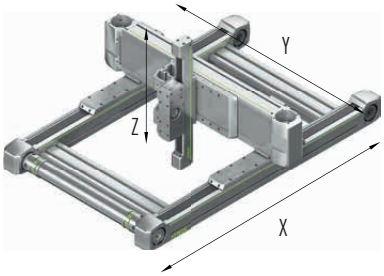


Table 13.3 **General technical data**

	X-axis	Y-axis	Z-axis
Axis type	HD1N	HT100B-C	HC025B
Type of carriage	L	S	
Max. feed force F_{x_max} [N]	450	813	241
Max. speed [1] [m/s]	5		
Max. acceleration [1] [m/s²]	30		
Max. drive torque M_{A_max} [Nm]	8	14	3
Max. stroke [mm]	3,000	1,300	300
Typical load capacity [kg]	2		

[1] Restrictions possible with variant with energy chain depending on the stroke

Note: Dimensions and specifications of double axis HD1 can be found in section 11.3 on page 84
Dimensions and specifications of single axis HT100B can be found in section 7.3 on page 42
Dimensions and specifications of single axis HC025B can be found in section 10.3 on page 72

Table 13.4 **Drive**

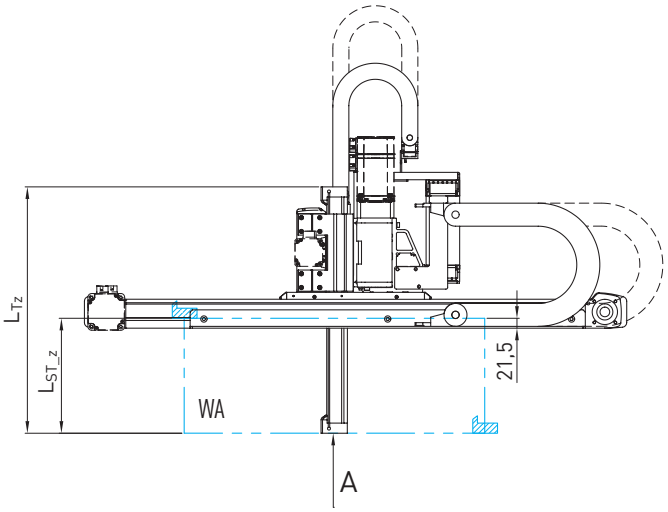
	X-axis	Y-axis	Z-axis
Toothed belt drive element	B15HTD3	B25HTD5	B12HTD3
Feed constant [mm/U]	111	105	81
Toothed belt effective diameter [mm]	35.33	33.42	25.78

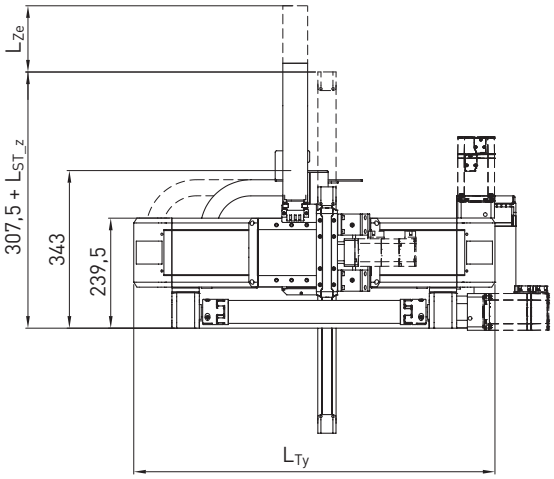
Table 13.5 **Mechanical properties**

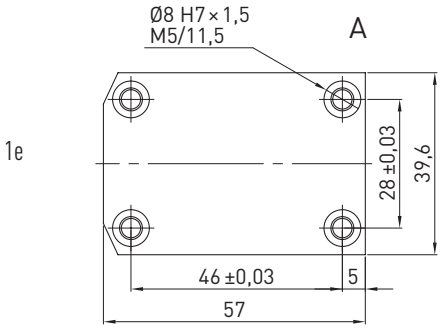
Moving mass Z-axis at 0-stroke [kg]	0.30
Moving mass Z-axis per 1 m stroke [kg/m]	1.27
Moving mass Y-axis at 0-stroke Z-axis [kg]	2.35
Moving mass X-axis at 0-stroke Y- and Z-axis [kg]	6.98
Moving mass X-axis per 1 m stroke Y-axis [kg/m]	6.71
Mass of total system at 0-stroke X-, Y- and Z-axis [kg]	11.24
Mass of total system per 1 m stroke X-axis [kg/m]	6.04
Mass of total system per 1 m stroke Y-axis [kg/m]	9.10
Mass of total system per 1 m stroke Z-axis [kg/m]	1.27

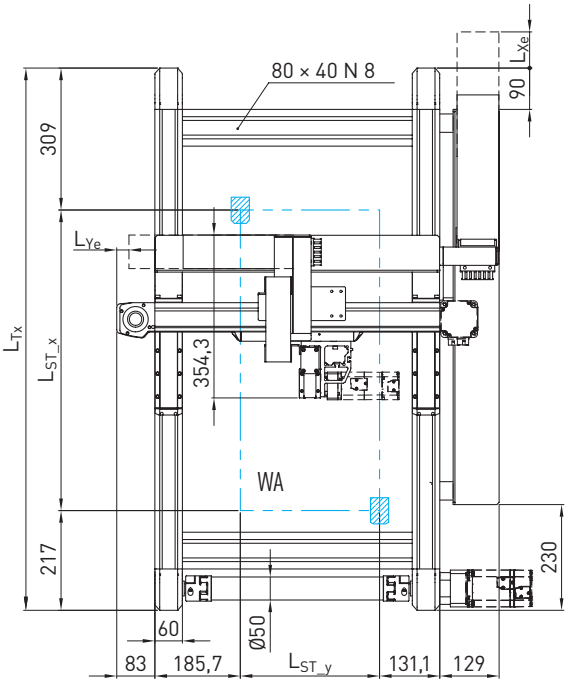
Note: All values without energy chain and without drive

13.4 Dimensions and specifications of HS32-D-T-C









L_{ST} Stroke
WA Working space
1e Interface application

Table 13.6 **HS32-D-T-C dimensions**	
Total length X-axis L_{Tx} [mm]	$L_{Tx} = L_{ST\_x} + 526$
Total length Y-axis L_{Ty} [mm]	$L_{Ty} = L_{ST\_y} + 483$
Total length Z-axis L_{Tz} [mm]	$L_{Tz} = L_{ST\_z} + 286$

Table 13.7 **Energy chain**			
	X-axis	Y-axis	Z-axis
Inner cross section W × H [mm]	75 × 35	57 × 25	38 × 25
Bending radius [mm]	100	75	75
End position at electrical zero F [mm]	$L_{Xe} = 199.0$	$L_{Ye} = 26.5$	$L_{Ze} = 274.0 - L_{ST}/2$
End position at mechanical zero [mm]	$L_{Xe} = 206.5$	$L_{Ye} = 16.5$	$L_{Ze} = 269.0 - L_{ST}/2$

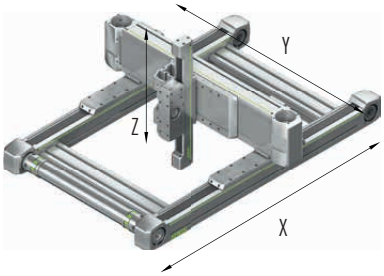


Table 13.8 **General technical data**

	X-axis	Y-axis	Z-axis
Axis type	HD2N	HT150B-C	HC040B
Type of carriage	L	S	
Max. feed force F_{x_max} [N]	1,323	1,300	404
Max. speed [1] [m/s]	5		
Max. acceleration [1] [m/s²]	30		
Max. drive torque M_{A_max} [Nm]	33	32	8
Max. stroke [mm]	5,000	1,650	500
Typical load capacity [kg]	8		

[1] Restrictions possible with variant with energy chain depending on the stroke

Note: Dimensions and specifications of double axis HD2 can be found in section 11.4 on page 85
Dimensions and specifications of single axis HT150B can be found in section 7.4 on page 44
Dimensions and specifications of single axes HC040B can be found in section 10.4 on page 74

Table 13.9 **Drive**

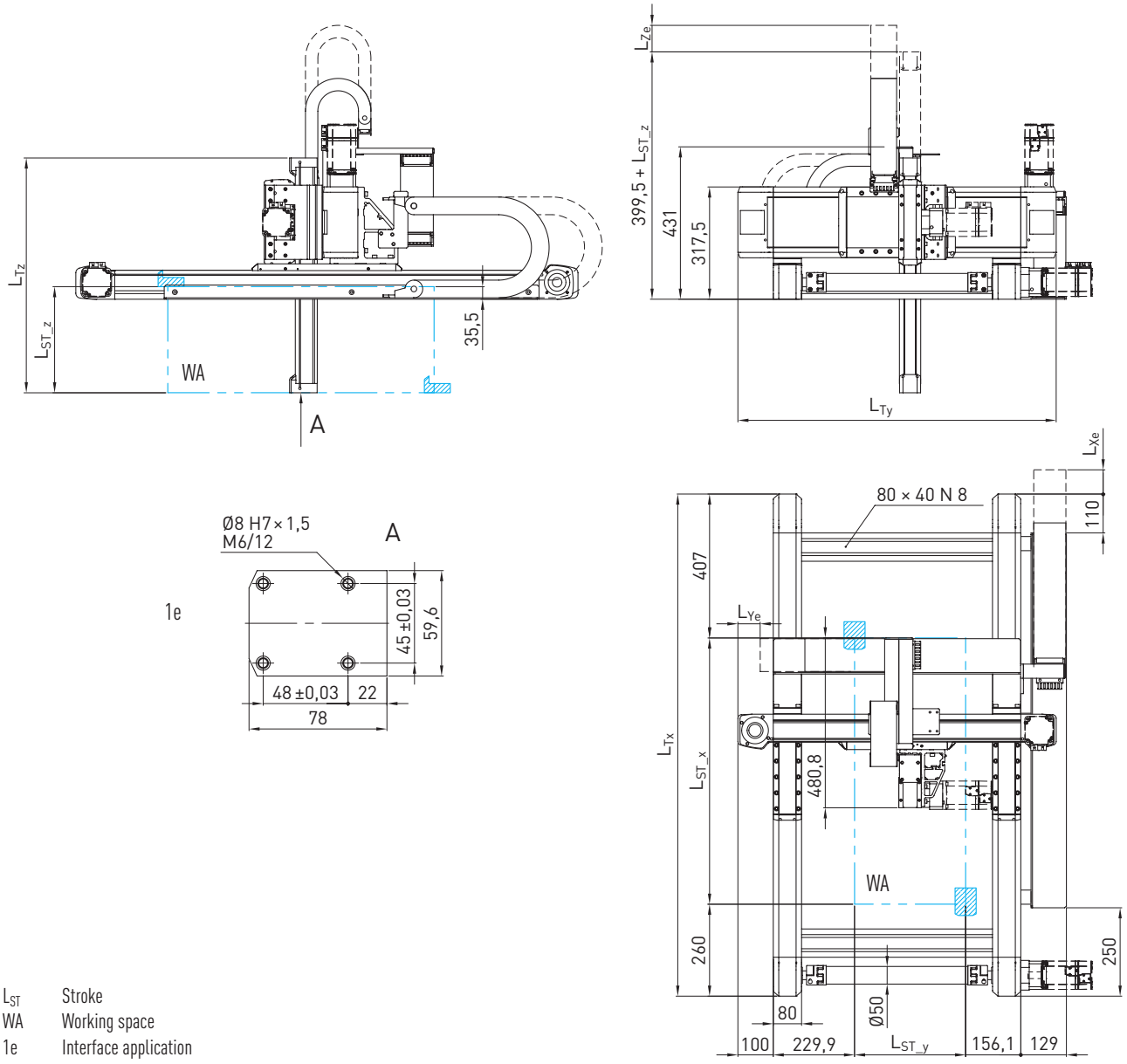
	X-axis	Y-axis	Z-axis
Toothed belt drive element	B25HTD5	B40HTD5	B20HDT3
Feed constant [mm/U]	155		123
Toothed belt effective diameter [mm]	49.34		39.15

Table 13.10 **Mechanical properties**

Moving mass Z-axis at 0-stroke [kg]	0.92
Moving mass Z-axis per 1 m stroke [kg/m]	2.76
Moving mass Y-axis at 0-stroke Z-axis [kg]	6.59
Moving mass X-axis at 0-stroke Y- and Z-axis [kg]	17.00
Moving mass X-axis per 1 m stroke Y-axis [kg/m]	11.16
Mass of total system at 0-stroke X-, Y- and Z-axis [kg]	28.21
Mass of total system per 1 m stroke X-axis [kg/m]	10.93
Mass of total system per 1 m stroke Y-axis [kg/m]	21.48
Mass of total system per 1 m stroke Z-axis [kg/m]	2.76

Note: All values without energy chain and without drive

13.5 Dimensions and specifications of HS33-D-T-C



L_{ST} Stroke
WA Working space
1e Interface application

Table 13.11 **HS33-D-T-C dimensions**	
Total length X-axis L_{Tx} [mm]	$L_{Tx} = L_{ST\_x} + 667$
Total length Y-axis L_{Ty} [mm]	$L_{Ty} = L_{ST\_y} + 586$
Total length Z-axis L_{Tz} [mm]	$L_{Tz} = L_{ST\_z} + 364$

Table 13.12 **Energy chain**			
	X-axis	Y-axis	Z-axis
Inner cross section W × H [mm]	75 × 35	77 × 25	57 × 25
Bending radius [mm]	100	100	75
End position at electrical zero F [mm]	$L_{Xe} = 159.5$	$L_{Ye} = 63.0$	$L_{Ze} = 282.5 - L_{ST}/2$
End position at mechanical zero [mm]	$L_{Xe} = 169.5$	$L_{Ye} = 48.0$	$L_{Ze} = 275.0 - L_{ST}/2$

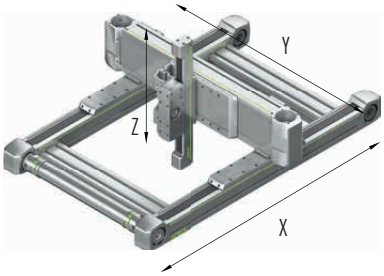


Table 13.13 **General technical data**

	X-axis	Y-axis	Z-axis
Axis type	HD3N	HT200B-C	HC060B
Type of carriage	L	S	
Max. feed force F_{x_max} [N]	1,852	3,000	983
Max. speed [1] [m/s]	5		
Max. acceleration [1] [m/s²]	30		
Max. drive torque M_{A_max} [Nm]	56	88	27
Max. stroke [mm]	5,000	1,550	800
Typical load capacity [kg]	16		

[1] Restrictions possible with variant with energy chain depending on the stroke

Note: Dimensions and specifications of double axis HD3 can be found in section 11.5 on page 86
Dimensions and specifications of single axis HT200B can be found in section 7.5 on page 46
Dimensions and specifications of single axes HC060B can be found in section 10.5 on page 76

Table 13.14 **Drive**

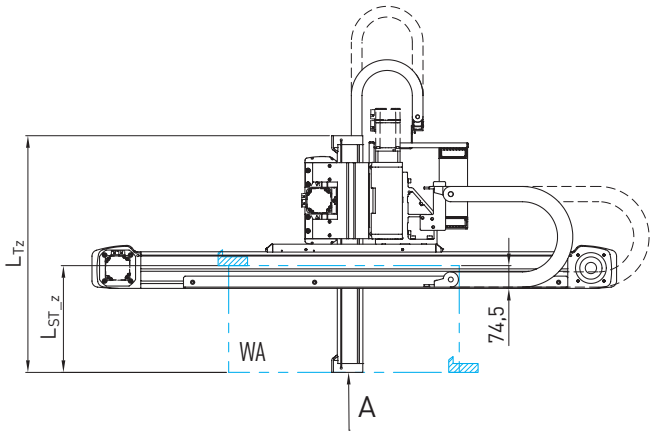
	X-axis	Y-axis	Z-axis
Toothed belt drive element	B35HTD5	B50HTD8	B30HTD5
Feed constant [mm/U]	190	184	170
Toothed belt effective diameter [mm]	60.48	58.57	54.11

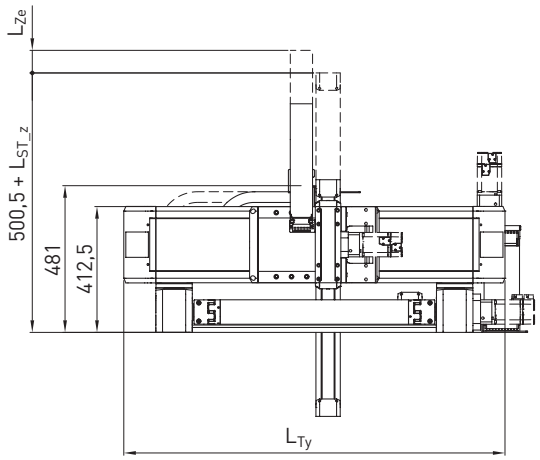
Table 13.15 **Mechanical properties**

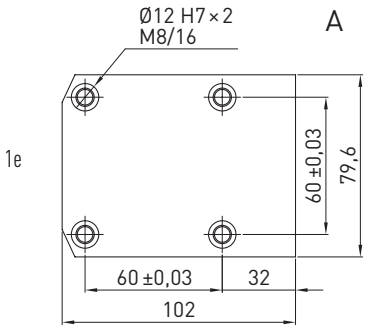
Moving mass Z-axis at 0-stroke [kg]	2.24
Moving mass Z-axis per 1 m stroke [kg/m]	5.17
Moving mass Y-axis at 0-stroke Z-axis [kg]	12.84
Moving mass X-axis at 0-stroke Y- and Z-axis [kg]	34.20
Moving mass X-axis per 1 m stroke Y-axis [kg/m]	17.57
Mass of total system at 0-stroke X-, Y- and Z-axis [kg]	55.52
Mass of total system per 1 m stroke X-axis [kg/m]	19.73
Mass of total system per 1 m stroke Y-axis [kg/m]	28.01
Mass of total system per 1 m stroke Z-axis [kg/m]	5.17

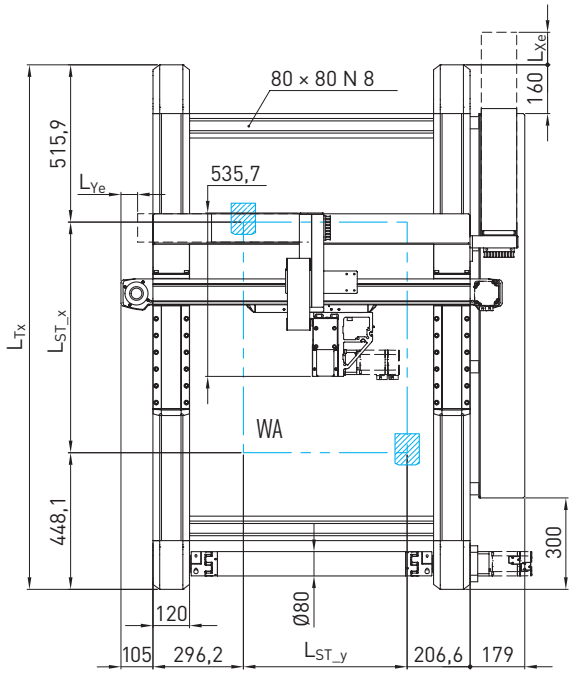
Note: All values without energy chain and without drive

13.6 Dimensions and specifications of HS34-D-T-C









L_{ST} Stroke
WA Working space
1e Interface application

Table 13.16 **HS34-D-T-C dimensions**	
Total length X-axis L_{Tx} [mm]	$L_{Tx} = L_{ST\_x} + 964$
Total length Y-axis L_{Ty} [mm]	$L_{Ty} = L_{ST\_y} + 713$
Total length Z-axis L_{Tz} [mm]	$L_{Tz} = L_{ST\_z} + 426$

Table 13.17 **Energy chain**			
	X-axis	Y-axis	Z-axis
Inner cross section W × H [mm]	100 × 35	77 × 25	57 × 25
Bending radius [mm]	125	100	100
End position at electrical zero F [mm]	$L_{Xe} = 116.5$	$L_{Ye} = 111.5$	$L_{Ze} = 259.0 - L_{ST}/2$
End position at mechanical zero [mm]	$L_{Xe} = 136.5$	$L_{Ye} = 91.5$	$L_{Ze} = 249.0 - L_{ST}/2$

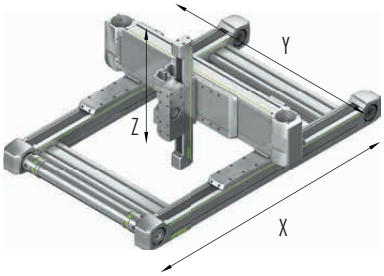


Table 13.18 **General technical data**

	X-axis	Y-axis	Z-axis
Axis type	HD4N	HT250B-C	HC080B
Type of carriage	L	S	
Max. feed force F_{x_max} [N]	4,385	4,500	1,310
Max. speed [1] [m/s]	5		
Max. acceleration [1] [m/s²]	30		
Max. drive torque M_{A_max} [Nm]	201	149	42
Max. stroke [mm]	5,000	1,400	1,200
Typical load capacity [kg]	30		

[1] Restrictions possible with variant with energy chain depending on the stroke

Note: Dimensions and specifications of double axis HD4 can be found in section 11.6 on page 87
Dimensions and specifications of single axis HT250B can be found in section 7.6 on page 48
Dimensions and specifications of single axes HC080B can be found in section 10.6 on page 78

Table 13.19 **Drive**

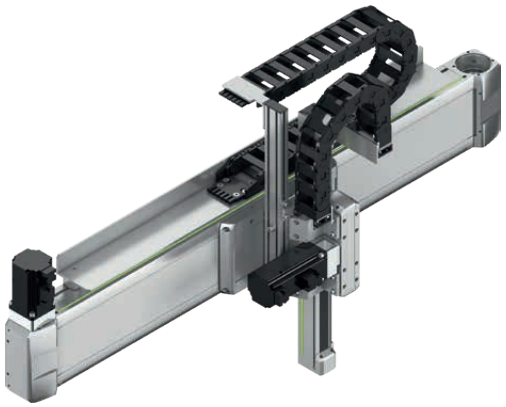
	X-axis	Y-axis	Z-axis
Toothed belt drive element	B60HTD8	B75HTD8	B40HTD5
Feed constant [mm/U]	288	208	200
Toothed belt effective diameter [mm]	91.67	66.21	63.66

Table 13.20 **Mechanical properties**

Moving mass Z-axis at 0-stroke [kg]	4.51
Moving mass Z-axis per 1 m stroke [kg/m]	8.99
Moving mass Y-axis at 0-stroke Z-axis [kg]	25.77
Moving mass X-axis at 0-stroke Y- and Z-axis [kg]	69.28
Moving mass X-axis per 1 m stroke Y-axis [kg/m]	22.87
Mass of total system at 0-stroke X-, Y- and Z-axis [kg]	129.63
Mass of total system per 1 m stroke X-axis [kg/m]	41.54
Mass of total system per 1 m stroke Y-axis [kg/m]	39.62
Mass of total system per 1 m stroke Z-axis [kg/m]	8.99

Note: All values without energy chain and without drive

14. Linear gantries HSL



14.1 Properties of the linear gantries HS3

HIWIN linear gantries HSL are flexible units for positioning along the X- and Z-axis. They consist of a HIWIN belt axis HT-B in the X direction and a HIWIN cantilever axis HC-B in the Z direction. HIWIN HSL linear gantries are particularly well suited for two-dimensional movements.

Energy chain

Generously dimensioned energy chains provide space for safely carrying the supply lines. The energy chains are integrated into the complete system in a particularly compact and space-saving way.

14.2 Order code for linear gantries HSL

HS	L	2	X	T2	Z	C1 –	1000 –

HIWIN axis system

Axis system type:
L: Linear gantry

Size (profile width of the X-axis):
1: 100 mm
2: 150 mm
3: 200 mm
4: 250 mm

Axis 1 identifier:
X

Stroke axis 1 [mm]

Type and size of axis 2:
C0: HC025B
C1: HC040B
C2: HC060B
C3: HC080B

Axis 2 identifier:
Z

Type and size of axis 1:
T1: HT100B
T2: HT150B
T3: HT200B
T4: HT250B

Continuation, order code for linear gantries HSL

0600	A	2	R	BE04	G0608 –	B002	G0405

Stroke axis 2 [mm]

Axis limit switch:
N: Without limit switch
A: 2 × normally closed, 100 mm cable, connector

Energy chain:
N: Without
1: Energy chain on X-axis
2: Energy chain on X- and Z-axis

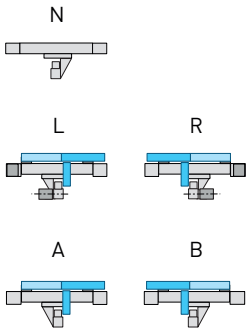
Gearbox, axis 2 [2]

Motor flange type, axis 2 [4]

Gearbox, axis 1 [2]

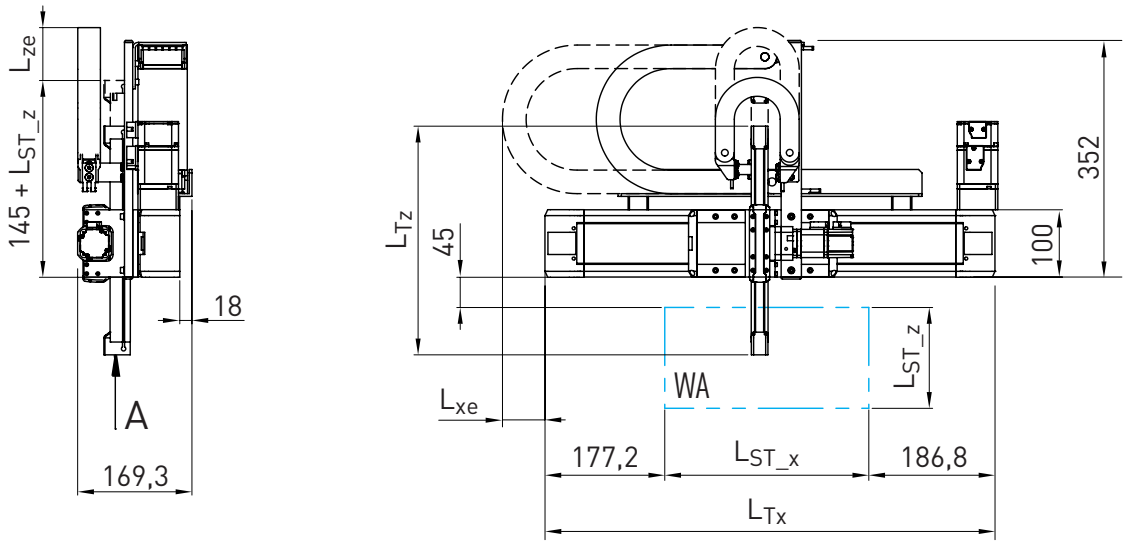
Motor flange type, axis 1 [3]

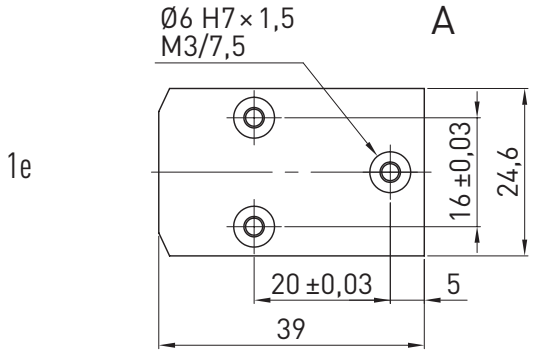
Drive interface [1]**:**
N: Without drive adapter/ Without energy chain
L: Drive adapter left
R: Drive adapter right
A: Without drive adapter, Drive interface left
B: Without drive adapter, Drive interface right



[1] If no drive interface is selected, the order code ends after this digit.
[2] You can finding matching gearboxes in section 18.1.4.5 from page 158.
[3] You can find all flange types in Table 18.2 from page 142. If no flange type is selected, the "Gearbox, axis 1" position is omitted.
[4] You can find all flange types in Table 18.3 from page 146. If no flange type is selected, the order code ends after this digit.

14.3 Dimensions and specifications of HSL1-T-C





L_{ST} Stroke
WA Working space
1e Interface application

Table 14.1 **HSL1-T-C dimensions**

Total length X-axis L_{Tx} [mm]	$L_{Tx} = L_{ST\_x} + 364$
Total length Z-axis L_{Tz} [mm]	$L_{Tz} = L_{ST\_z} + 190$

Table 14.2 **Energy chain**

	X-axis	Z-axis
Inner cross section W × H [mm]	57 × 25	20 × 21
Bending radius [mm]	75	48
End position at electrical zero F [mm]	$L_{Xe} = 7.5$	$L_{Ze} = 151.0 - L_{ST}/2$
End position at mechanical zero [mm]	$L_{Xe} = 15.0$	$L_{Ze} = 147.5 - L_{ST}/2$

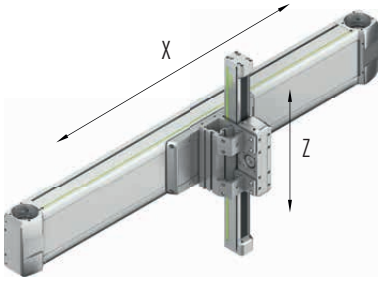


Table 14.3 **General technical data**

	X-axis	Z-axis
Axis type	HT100B-C	HC025B
Max. feed force F_{x_max} [N]	813	241
Max. speed [1] [m/s]	5	
Max. acceleration [1] [m/s²]	30	
Max. drive torque M_{A_max} [Nm]	14	3
Max. stroke [mm]	5,000	300
Typical load capacity [kg]	2	

[1] Restrictions possible with variant with energy chain depending on the stroke

Note: Dimensions and specifications of single axes HT100B can be found in section 7.3 on page 42
Dimensions and specifications of single axis HC025B can be found in section 10.3 on page 72

Table 14.4 **Drive**

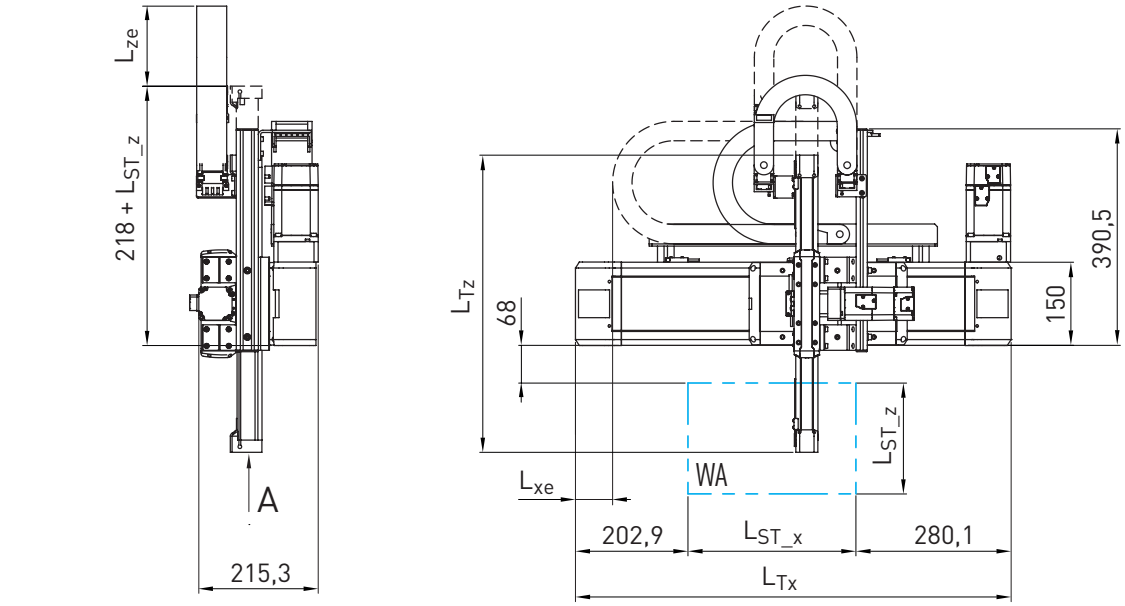
	X-axis	Z-axis
Toothed belt drive element	B25HTD5	B12HTD3
Feed constant [mm/U]	105	81
Toothed belt effective diameter [mm]	33.42	25.78

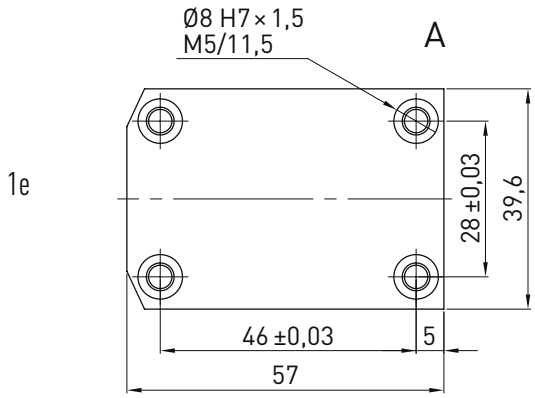
Table 14.5 **Mechanical properties**

Moving mass Z-axis at 0-stroke [kg]	0.30
Moving mass Z-axis per 1 m stroke [kg/m]	1.27
Moving mass X-axis at 0-stroke Z-axis [kg]	5.47
Moving mass X-axis per 1 m stroke Z-axis [kg/m]	1.27
Mass of total system at 0-stroke X- and Z-axis [kg]	5.49
Mass of total system per 1 m stroke X-axis [kg/m]	16.51
Mass of total system per 1 m stroke Z-axis [kg/m]	1.27

Note: All values without energy chain and without drive

14.4 Dimensions and specifications of HSL2-T-C





L_{ST} Stroke
WA Working space
1e Interface application

Table 14.6 **HSL2-T-C dimensions**	
Total length X-axis L_{Tx} [mm]	$L_{Tx} = L_{ST\_x} + 483$
Total length Z-axis L_{Tz} [mm]	$L_{Tz} = L_{ST\_z} + 286$

Table 14.7 **Energy chain**		
	X-axis	Z-axis
Inner cross section W × H [mm]	57 × 25	38 × 25
Bending radius [mm]	75	75
End position at electrical zero F [mm]	$L_{Xe} = -68.0$	$L_{Ze} = 274.0 - L_{ST}/2$
End position at mechanical zero [mm]	$L_{Xe} = -60.5$	$L_{Ze} = 169.0 - L_{ST}/2$

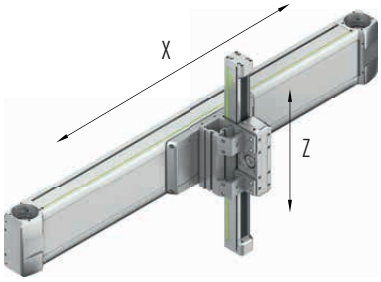


Table 14.8 **General technical data**

	X-axis	Z-axis
Axis type	HT150B-C	HC040B
Max. feed force F_{x_max} [N]	1,300	404
Max. speed [1] [m/s]	5	
Max. acceleration [1] [m/s²]	30	
Max. drive torque M_{A_max} [Nm]	32	8
Max. stroke [mm]	5,000	500
Typical load capacity [kg]	8	

[1] Restrictions possible with variant with energy chain depending on the stroke

Note: Dimensions and specifications of single axes HT150B can be found in section 7.4 on page 44
Dimensions and specifications of single axis HC040B can be found in section 10.4 on page 74

Table 14.9 **Drive**

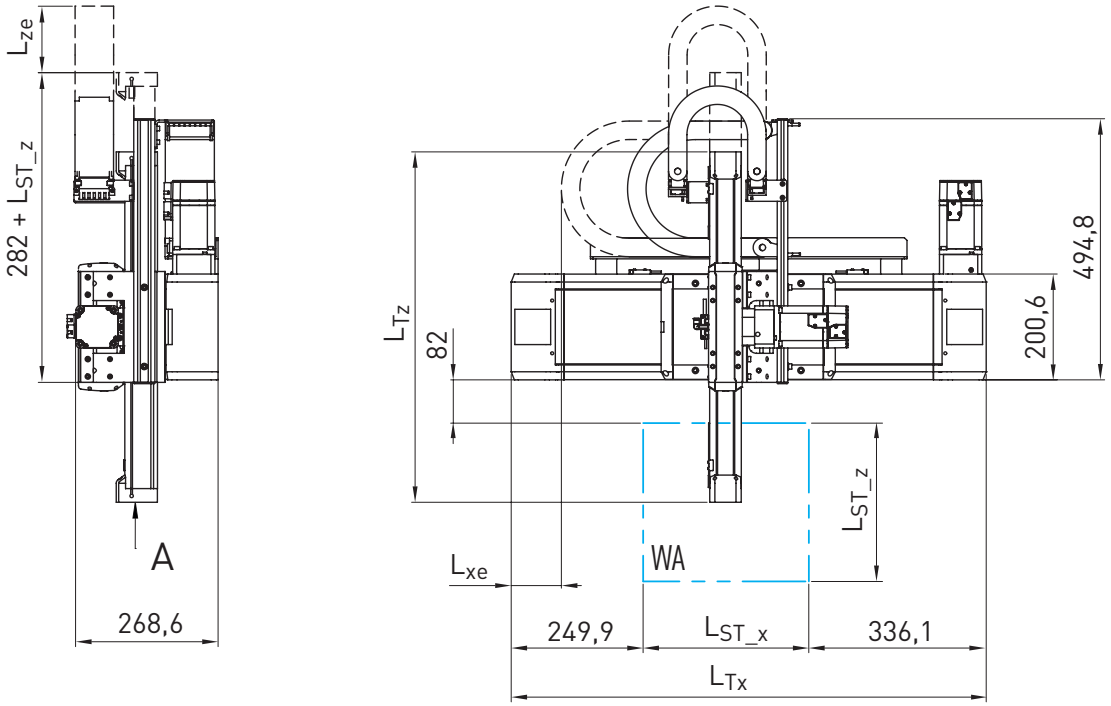
	X-axis	Z-axis
Toothed belt drive element	B40HTD5	B20HDT3
Feed constant [mm/U]	155	123
Toothed belt effective diameter [mm]	49.34	39.15

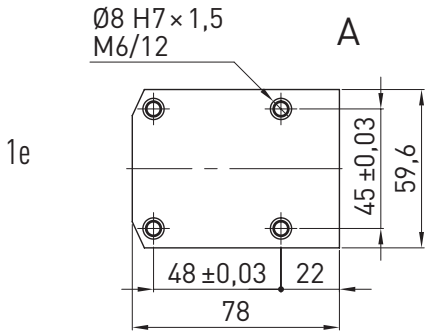
Table 14.10 **Mechanical properties**

Moving mass Z-axis at 0-stroke [kg]	0.92
Moving mass Z-axis per 1 m stroke [kg/m]	2.76
Moving mass X-axis at 0-stroke Z-axis [kg]	10.73
Moving mass X-axis per 1 m stroke Z-axis [kg/m]	2.76
Mass of total system at 0-stroke X- and Z-axis [kg]	13.54
Mass of total system per 1 m stroke X-axis [kg/m]	20.83
Mass of total system per 1 m stroke Z-axis [kg/m]	2.76

Note: All values without energy chain and without drive

14.5 Dimensions and specifications of HSL3-T-C





L_{ST} Stroke
WA Working space
1e Interface application

Table 14.11 **HSL3-T-C dimensions**	
Total length X-axis L_{Tx} [mm]	$L_{Tx} = L_{ST\_x} + 586$
Total length Z-axis L_{Tz} [mm]	$L_{Tz} = L_{ST\_z} + 364$

Table 14.12 **Energy chain**		
	X-axis	Z-axis
Inner cross section W × H [mm]	77 × 25	57 × 25
Bending radius [mm]	100	75
End position at electrical zero F [mm]	$L_{Xe} = -134.0$	$L_{Ze} = 282.5 - L_{ST}/2$
End position at mechanical zero [mm]	$L_{Xe} = -126.5$	$L_{Ze} = 275.0 - L_{ST}/2$

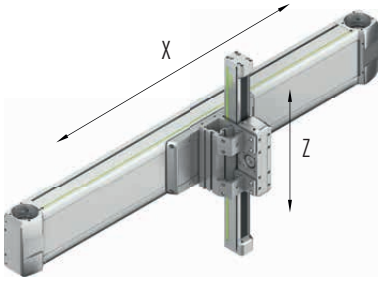


Table 14.13 **General technical data**

	X-axis	Z-axis
Axis type	HT200B-C	HC060B
Max. feed force F_{x_max} [N]	3,000	983
Max. speed [1] [m/s]	5	
Max. acceleration [1] [m/s²]	30	
Max. drive torque M_{A_max} [Nm]	88	27
Max. stroke [mm]	5,000	800
Typical load capacity [kg]	16	

[1] Restrictions possible with variant with energy chain depending on the stroke

Note: Dimensions and specifications of single axes HT200B can be found in section 7.5 on page 46
Dimensions and specifications of single axis HC060B can be found in section 10.5 on page 76

Table 14.14 **Drive**

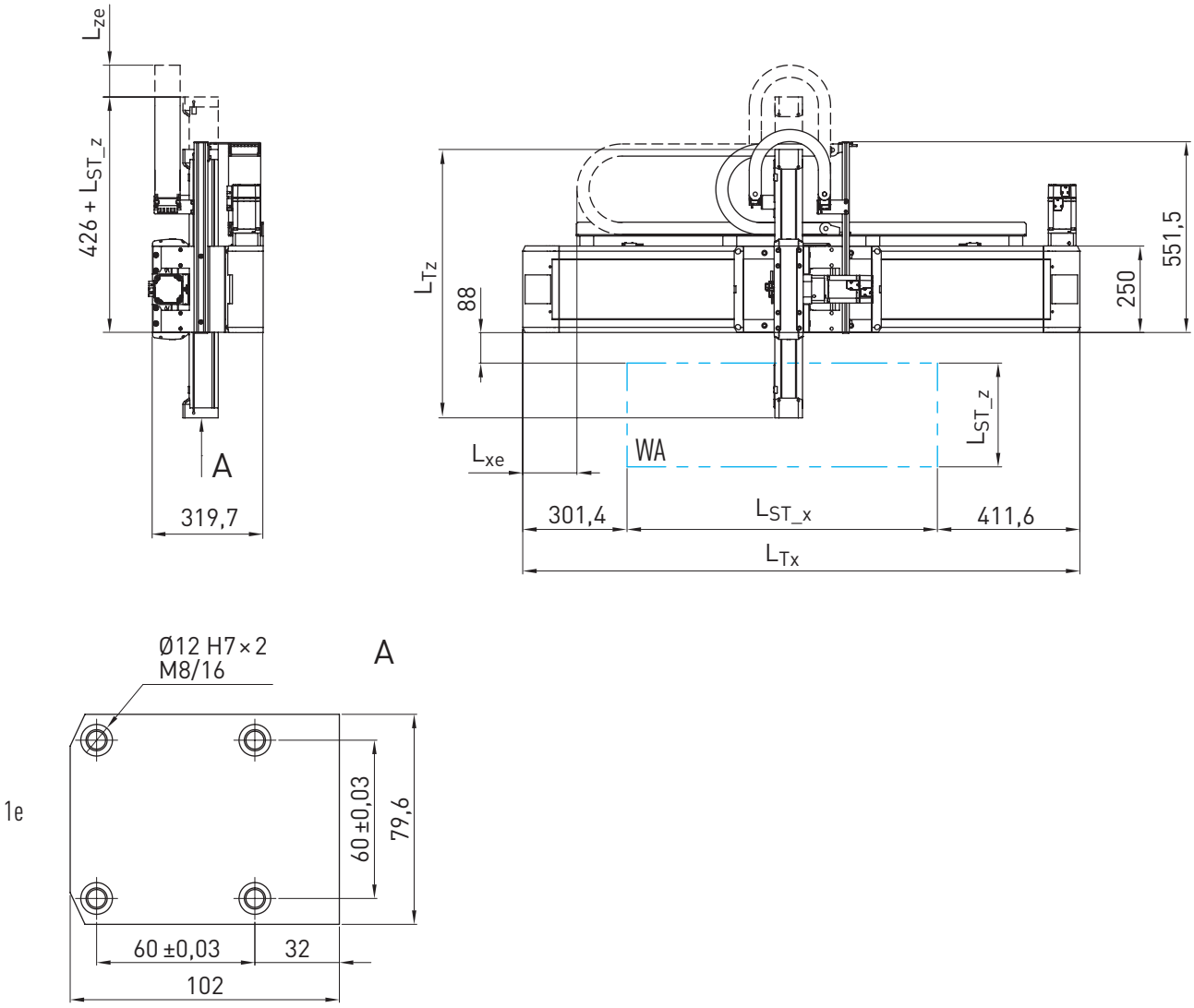
	X-axis	Z-axis
Toothed belt drive element	B50HTD8	B30HTD5
Feed constant [mm/U]	184	170
Toothed belt effective diameter [mm]	58.57	54.11

Table 14.15 **Mechanical properties**

Moving mass Z-axis at 0-stroke [kg]	2.24
Moving mass Z-axis per 1 m stroke [kg/m]	5.17
Moving mass X-axis at 0-stroke Z-axis [kg]	20.90
Moving mass X-axis per 1 m stroke Z-axis [kg/m]	5.17
Mass of total system at 0-stroke X- and Z-axis [kg]	26.96
Mass of total system per 1 m stroke X-axis [kg/m]	32.94
Mass of total system per 1 m stroke Z-axis [kg/m]	5.17

Note: All values without energy chain and without drive

14.6 Dimensions and specifications of HSL4-T-C



L_{ST} Stroke
WA Working space
1e Interface application

Table 14.16 **HSL4-T-C dimensions**	
Total length X-axis L_{Tx} [mm]	$L_{Tx} = L_{ST\_x} + 713$
Total length Z-axis L_{Tz} [mm]	$L_{Tz} = L_{ST\_z} + 426$

Table 14.17 **Energy chain**		
	X-axis	Z-axis
Inner cross section W × H [mm]	77 × 25	57 × 25
Bending radius [mm]	100	100
End position at electrical zero F [mm]	L_{Xe} = -197.5	$L_{Ze} = 259.0 - L_{ST}/2$
End position at mechanical zero [mm]	L_{Xe} = -190.0	$L_{Ze} = 249.0 - L_{ST}/2$

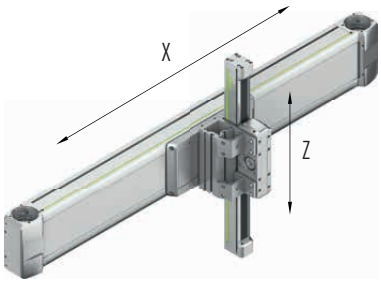


Table 14.18 **General technical data**

	X-axis	Z-axis
Axis type	HT250B-C	HC080B
Max. feed force F_{x_max} [N]	4,500	1,310
Max. speed [1] [m/s]	5	
Max. acceleration [1] [m/s²]	30	
Max. drive torque M_{A_max} [Nm]	149	42
Max. stroke [mm]	5,000	1200
Typical load capacity [kg]	30	

[1] Restrictions possible with variant with energy chain depending on the stroke

Note: Dimensions and specifications of single axes HT250B can be found in section 7.6 on page 48
Dimensions and specifications of single axis HC080B can be found in section 10.6 on page 78

Table 14.19 **Drive**

	X-axis	Z-axis
Toothed belt drive element	B75HTD8	B40HTD5
Feed constant [mm/U]	208	200
Toothed belt effective diameter [mm]	66.21	63.66

Table 14.20 **Mechanical properties**

Moving mass Z-axis at 0-stroke [kg]	4.51
Moving mass Z-axis per 1 m stroke [kg/m]	8.99
Moving mass X-axis at 0-stroke Z-axis [kg]	35.40
Moving mass X-axis per 1 m stroke Z-axis [kg/m]	8.99
Mass of total system at 0-stroke X- and Z-axis [kg]	49.19
Mass of total system per 1 m stroke X-axis [kg/m]	37.92
Mass of total system per 1 m stroke Z-axis [kg/m]	8.99

Note: All values without energy chain and without drive

15. Adapters for cross tables and multi-axis systems

HIWIN adapters for cross tables and multi-axis systems allow two and more axes to be flexibly combined. This allows individual multi-axis systems to be designed quickly and easily. Forces and torques are safely transmitted through force and form closure. Centring sleeves allow for precise and reproducible connection. All adapters are supplied ready for installation including mounting material.
Depending on the desired alignment of the axes to be connected, four basic adapter types are available:

CPN: Adapter for connecting the axis profile of the upper axis to the carriage of the lower axis. Both carriages point in the same direction.

CPR: Adapter for connecting the axis profile of the upper axis with the carriage of the lower axis, with the two carriage rotated 90° in relation to each other.

CCN: Adapter for connecting the carriage of the upper axis to the carriage of the lower axis.

CCR: Adapter for connecting the drive block of the upper axis to the carriage of the lower axis, with the carriage and the drive block rotated 90° in relation to each other.

15.1 Product selection

15.1.1 Axis combinations depending on the size

Table 15.1 **Overview of possible combinations as a function of the size**

			Y-axis																	
			HM				HT				HC				KK					
			040	060	080	120	100	150	200	250	25	40	60	80	30	40	50	60	86	100
X-axis	HM	040	●[1] ■[1]				●[1] ■[1]								●▲	●▲				
		060	●[1]	●[1] ■[1]			●[1]	●[1] ■[1]								●▲	●▲			
		080		●[1]	●[1] ■[1]			●[1]	●[1] ■[1]								●▲	●▲		
		120			●[1]	●[1]			●[1]	●[1] ■[1]										
	HT	100	●■▲				●■▲				✸	▲					●▲	●▲		
		150	●■▲	●■▲			●■▲	●■▲				✸▲	▲					●▲	●▲	
		200		●■▲	●■▲			●■▲	●■▲				✸▲	▲					●▲	●▲
		250			●■▲	●■▲			●■▲	●■▲				✸▲						

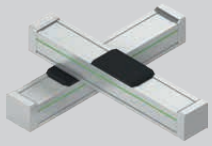
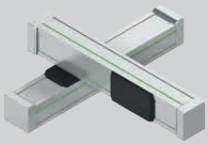
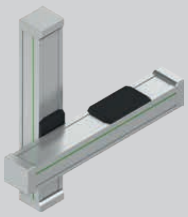
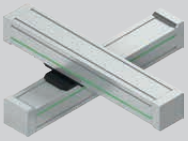
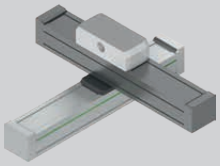
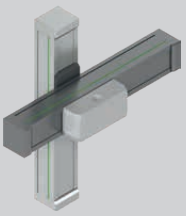
● CPN; ■ CPR; ▲ CCN; ✸ CCR

[1] Two single axes HM or one double axis HD are required in the X-axis.
Note: Depending on the selected axis configuration, collisions of attachments or covering of mounting holes may occur. This must be checked in each individual case.

15.1.2 Cross table

Cross table combinations made up of two single axes.

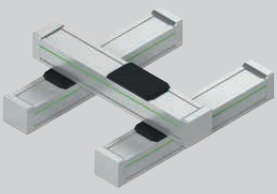
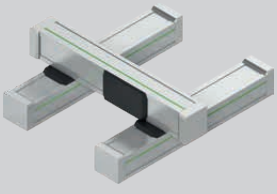
Table 15.2 **Product selection diagram**

Connection	X-Y	X-Z	Z-X	Page :
CPN adapter ● **Carriage – profile**				Page 127
CPR adapter ■ **Carriage – profile** **(rotated 90°)**				Page 129
CPN adapter ▲ **Carriage – carriage**				Page 131
CPN adapter ✸ **Carriage – drive block**				Page 132

15.1.3 Two-axis system

Two-axis systems with two single axis or one double axis as the foundation.

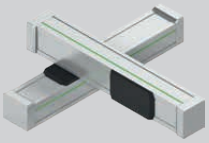
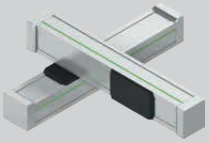
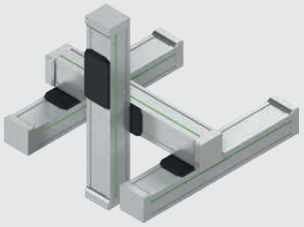
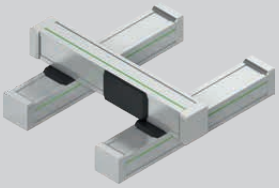
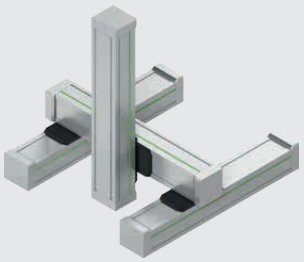
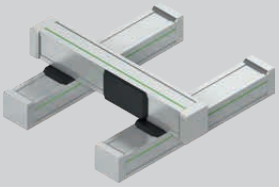
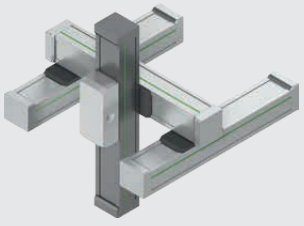
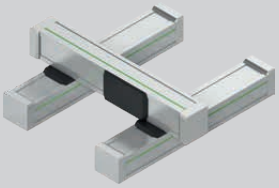
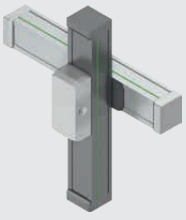
Table 15.3 **Product selection diagram**

Connection	X-Y	X-Z	Z-X	Page :
CPN adapter ● **Carriage – profile**				Page 128
CPR adapter ■ **Carriage – profile** **(rotated 90°)**				Page 130

15.1.4 Three- and multi-axis system

Three- and multi-axis systems can be created flexibly by combining several adapters from Table 15.2 and Table 15.3. Some examples follow.

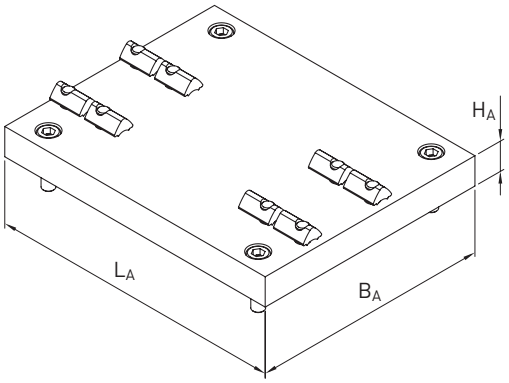
Table 15.4 **Example of multi-axis systems**

Complete system X-Y-Z	Adapter X-Y	Adapter Y-Z
	 Page 129	 Page 131
	 Page 129	 Page 132
	 Page 130	 Page 127
	 Page 130	 Page 131
	 Page 130	 Page 132

15.2 CPN adapters

15.2.1 CPN adapters for single axes

HIWIN adapters for combining two single axes (axis 1: HM/HT; axis 2: HM/HT/KK) via a carriage-profile connection.



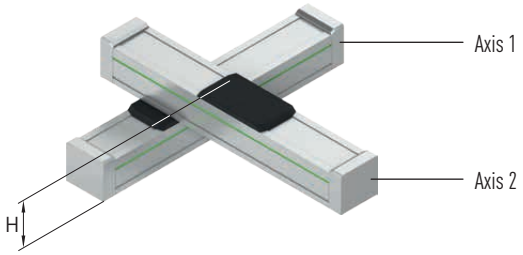
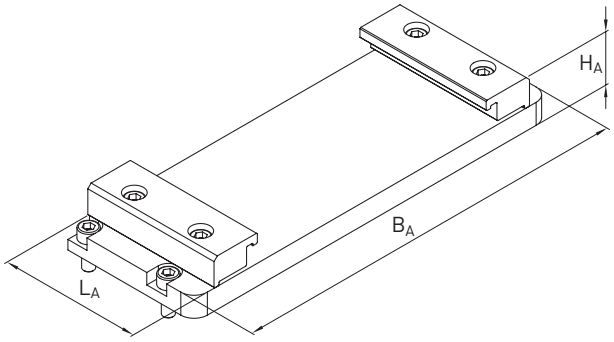


Table 15.5 **Specifications for CPN adapters for single axes**

Axis 1		Axis 2		L_A [mm]	B_A [mm]	H_A [mm]	H [mm]	Weight [kg]	Article number
Axis type	**Size (profile width)**	**Axis type**	**Size (profile width)**						
HM	040	**KK**	30	59	79	12	95.0	0.159	25-001622
	040		40	70	79	12	102.0	0.187	25-001623
	060		40	76	114	12	120.0	0.291	25-001626
	060		50	92	114	12	128.5	0.366	25-001627
	080		50	98	107	12	150.5	0.376	25-001630
	080		60	114	104	15	159.5	0.513	25-001631
HT	100B/100S	**HM**	040	99	72	12	134.0	0.266	25-001608
	100L		040	99	72	12	142.0	0.266	25-001608
	150		040	79	149	12	156.0	0.417	25-001609
	150		060	149	120	15	177.0	0.792	25-001610
	200		060	199	102	15	193.0	0.907	25-001611
	200		080	199	142	15	215.0	1.287	25-001612
	250		080	249	126	20	230.0	1.858	25-001613
	250		120	249	180	20	275.0	2.558	25-001614
	100B/100S	**HT**	100B/100S	158	100	12	136.0	0.548	25-001615
	100B/100S		100L	158	100	12	144.0	0.548	25-001615
	100L		100B/100S	158	100	12	144.0	0.548	25-001615
	100L		100L	158	100	12	152.0	0.548	25-001615
	150		100	210	100	15	161.0	0.882	25-001616
	150		150	222	150	15	183.0	1.420	25-001617
	200		150	274	150	15	199.0	1.756	25-001618
	200		200	294	200	15	215.0	2.519	25-001619
	250		200	348	200	20	230.0	3.919	25-001620
	250		250	296	250	20	240.0	4.146	25-001621
	100B/100S	**KK**	50	100	99	12	112.5	0.326	25-001624
	100L		50	100	99	12	120.5	0.326	25-001624
	100		60	108	99	12	118.5	0.371	25-001625
	150		60	149	118	15	143.5	0.724	25-001628
	150		86	149	118	15	163.0	0.732	25-001629
	200		86	199	142	15	179.0	1.170	25-001632
	200		100	199	142	15	187.0	1.193	25-001633

15.2.2 CPN adapters for double axes

HIWIN adapters for combining two single axes HM or a double axis HD with a single axis HM/HT via a carriage-profile connection.



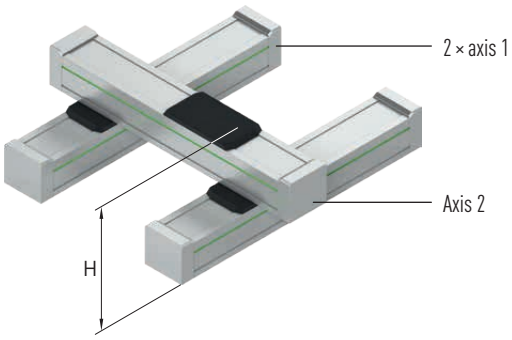


Table 15.6 **Specifications for CPN adapters for double axes**

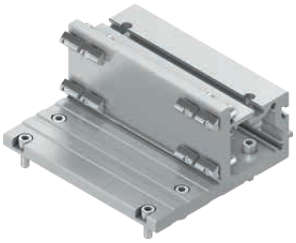
Axis 1		Axis 2		L_A [mm]	B_A [mm]	H_A [mm]	H [mm]	Weight [kg]	Article number
Axis type	**Size (profile width)**	**Axis type**	**Size (profile width)**						
HM (2 ×) [1]	040	**HM**	040	76	82	12	132	0.540	25-001594
	060		040	76	114	12	150	0.706	25-001595
	060		060	76	114	12	168	0.932	25-001596
	080		060	79	150	15	193	1.362	25-001597
	080		080	79	150	15	215	1.444	25-001598
	120		080	119	185	20	265	2.850	25-001599
	120		120	119	240	20	310	3.808	25-001600
	040 [2]	**HT**	100B/100S	76	151	12	134	0.876	25-001601
	040 [2]		100L	76	151	12	142	0.876	25-001601
	060 [3]		100B/100S	76	164	12	152	0.944	25-001602
	060 [3]		100L	76	164	12	160	0.944	25-001602
	060 [2]		150	76	214	12	174	1.324	25-001603
	080 [3]		150	79	244	12	196	1.568	25-001604
	080 [3]		200	110	287	15	215	3.188	25-001605
	120 [3]		200	119	296	20	265	4.498	25-001606
	120 [3]		250	119	351	20	275	5.180	25-001607

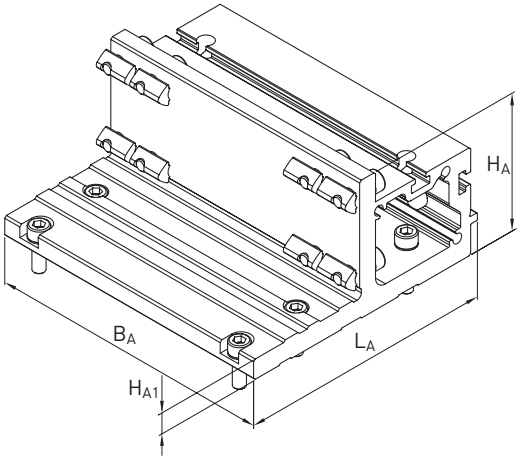
[1] Alternative: Double axis HD
[2] HM axis with carriage length L required
[3] HM axis with carriage length M or L required

15.3 CPN adapters

15.3.1 CPR adapters for single axes (rotated 90°)

HIWIN adapters for combining two single axes (axis 1: HT; axis 2: HM/HT) via a carriage-profile connection (axis 2 rotated 90°).





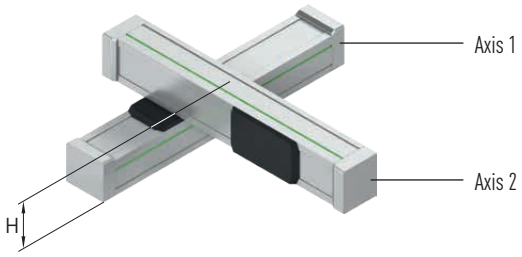
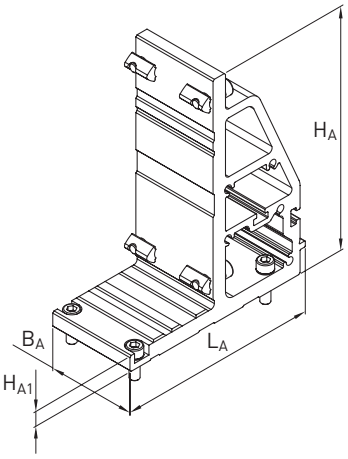


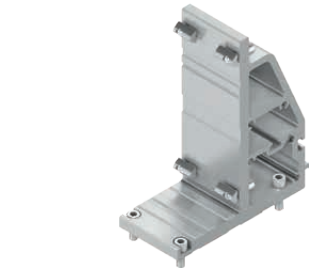
Table 15.7 **Specifications for CPR adapters for single axes**

Axis 1		Axis 2		L_A [mm]	B_A [mm]	H_A [mm]	H_{A1} [mm]	H [mm]	Weight [kg]	Article number
Axis type	**Size (profile width)**	**Axis type**	**Size (profile width)**							
HT	100B/100S	**HM**	040	122	99	56.0	11.5	118.0	0.685	25-001568
	100L		040	122	99	56.0	11.5	126.0	0.685	25-001568
	150		040	110	149	56.0	11.5	140.0	0.956	25-001569
	150		060	134	149	71.5	11.5	155.5	1.173	25-001570
	200		060	134	199	71.5	11.5	171.5	1.520	25-001571
	200		080	183	199	97.5	17.5	197.5	3.570	25-001572
	250		080	196	249	97.5	17.5	207.5	4.657	25-001573
	250		120	206	249	137.5	17.5	247.5	5.279	25-001574
	100B/100S	**HT**	100B/100S	122	99	111.5	11.5	173.5	0.962	25-001575
	100B/100S		100L	122	99	111.5	11.5	181.5	0.962	25-001575
	100L		100B/100S	122	99	111.5	11.5	181.5	0.962	25-001575
	100L		100L	122	99	111.5	11.5	189.5	0.962	25-001575
	150		100	111	149	111.5	11.5	195.5	1.375	25-001576
	150		150	134	149	161.5	11.5	245.5	1.871	25-001577
	200		150	190	199	167.5	17.5	267.5	4.115	25-001578
	200		200	190	199	217.5	17.5	317.5	5.462	25-001579
	250		200	196	249	217.5	17.5	327.5	6.946	25-001580
	250		250	206	249	236.0	17.5	377.5	7.257	25-001581

15.3.2 CPR adapters for double axes (rotated 90°)

HIWIN adapters for combining two single axes HM or a double axis HD with a single axis HM/HT (axis 2 rotated 90°) via a carriage-profile connection.





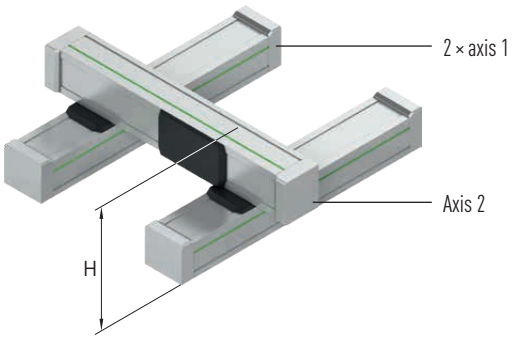


Table 15.8 **Specifications for CPR adapters for double axes**

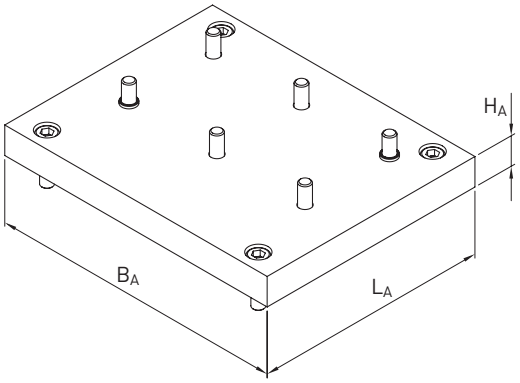
Axis 1		Axis 2		L_A [mm]	B_A [mm]	H_A [mm]	H_{A1} [mm]	H [mm]	Weight [kg]	Article number
Axis type	**Size (profile width)**	**Axis type**	**Size (profile width)**							
HM (2 ×)[1)]	040	**HM**	040	112	39	56.0	11.5	116.0	0.546	25-001561
	060		060	134	59	71.5	11.5	149.5	0.972	25-001562
	080		080	197	79	97.5	17.5	197.5	3.098	25-001563
	040	**HT**	100	112	39	111.5	11.5	171.5	0.764	25-001564
	060		150	134	59	161.5	11.5	239.5	1.534	25-001565
	080		200	197	79	217.0	17.5	317.5	4.282	25-001566
	120		250	207	119	236.0	17.5	412.5	7.206	25-001567

[1)] Alternative: Double axis HD

15.4 CCN adapters

15.4.1 CCN adapters for single axes

HIWIN adapters for combining two single axes (axis 1: HM/HT; axis 2: HM, HT, KK) via a carriage-carriage connection.



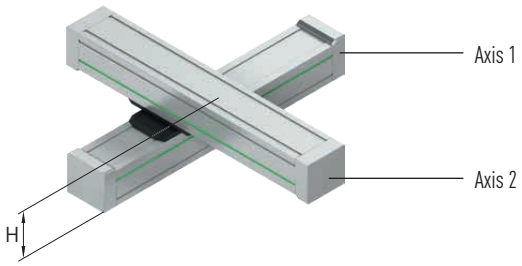


Table 15.9 **Specifications for CCN adapters for single axes**

Axis 1		Axis 2		L_A [mm]	B_A [mm]	H_A [mm]	H [mm]	Weight [kg]	Article number
Axis type	**Size (profile width)**	**Axis type**	**Size (profile width)**						
HM	040	**KK**	30	39	79	12	87	0.105	25-001634
	040		40	39	79	12	92	0.110	25-001635
	060		40	59	112	15	113	0.256	25-001638
	060		50	59	112	15	119	0.287	25-001639
	080		50	79	112	15	141	0.345	25-001642
	080		60	79	112	15	148	0.372	25-001643
HT	100B/100S	**HM**	040	97	99	12	134	0.335	25-001582
	100L		040	97	99	12	142	0.335	25-001582
	150		040	79	149	12	156	0.409	25-001583
	150		060	118	149	15	177	0.783	25-001584
	200		060	102	199	15	193	0.876	25-001585
	200		080	142	199	15	215	1.246	25-001586
	250		080	249	180	20	230	2.547	25-001587
	250		120	249	180	20	275	2.605	25-001646
	100B/100S	**HT**	100B/100S	99	134	12	148	0.894	25-001588
	100B/100S		100L	99	134	12	156	0.894	25-001588
	100L		100B/100S	99	134	12	156	0.894	25-001588
	100L		100L	99	134	12	164	0.894	25-001588
	150		100	149	142	15	176	1.758	25-001589
	150		150	149	182	15	198	2.257	25-001590
	200		150	199	194	15	214	3.196	25-001591
	200		200	199	240	15	230	3.958	25-001592
	250		200	249	249	20	250	6.803	25-001593
	250		250	249	296	20	260	8.109	25-001647
	100B/100S	**HC**	040	97	99	12	134	0.335	25-001582
	100L		040	97	99	12	142	0.335	25-001582
	150		040	79	149	12	156	0.409	25-001583
	150		060	118	149	15	177	0.783	25-001584
	200		060	102	199	15	193	0.876	25-001585
	200		080	142	199	15	215	1.246	25-001586
	250		080	249	180	20	230	2.547	25-001587

[1] KK axes with two blocks required

Table 15.9 **Specifications for CCN adapters for single axes**

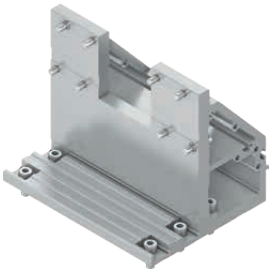
Axis 1		Axis 2		L_A [mm]	B_A [mm]	H_A [mm]	H [mm]	Weight [kg]	Article number
Axis type	**Size (profile width)**	**Axis type**	**Size (profile width)**						
HT	100B/100S	**KK**[1]	50	98	104	12	100	0.339	25-001636
	100L		50	98	104	12	108	0.339	25-001636
	100B/100S		60	98	113	12	107	0.369	25-001637
	100L		60	98	113	12	115	0.369	25-001637
	150		60	116	149	15	132	0.675	25-001640
	150		86	114	168	15	145	0.808	25-001641
	200		86	140	199	15	161	1.164	25-001644
	200		100	140	199	15	170	1.206	25-001645

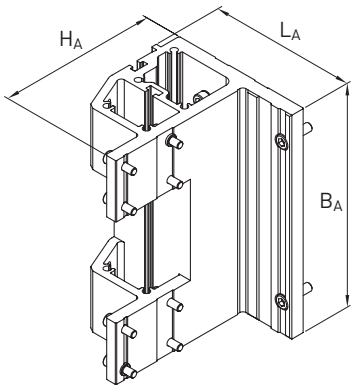
[1] KK axes with two blocks required

15.5 CCR adapters

15.5.1 CCR adapters for single axes

HIWIN adapters for combining linear tables HT with cantilever axes HC. The connection is made between the carriage of linear table HT and the drive block of cantilever axis HC.





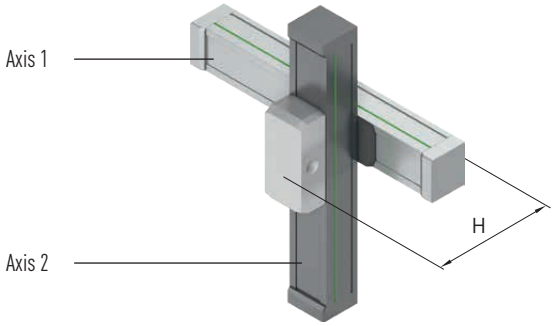


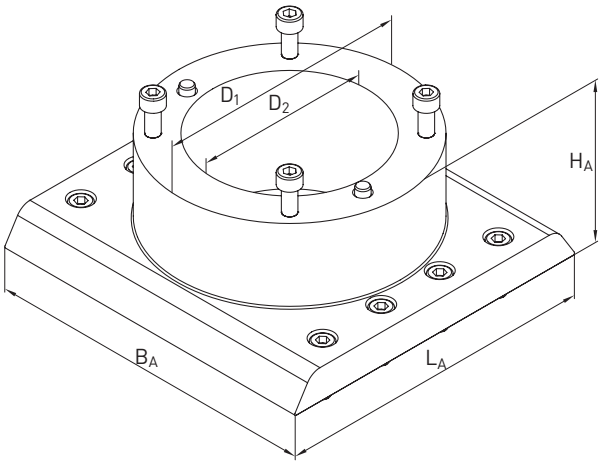
Table 15.10 **Specifications for CCR adapters for single axes**

Axis 1		Axis 2		L_A [mm]	B_A [mm]	H_A [mm]	H [mm]	Weight [kg]	Article number
Axis type	**Size (profile width)**	**Axis type**	**Size (profile width)**						
HT	100B/100S	**HC**	025	80	100	79.8	143.25	1.260	25-002359
	100L		025	80	100	79.8	151.25	1.260	25-002359
	150		040	112	168	120.8	207.3	1.336	25-002360
	200		060	131	210	161.3	264.8	2.185	25-002361
	250		080	198	249	209.7	319.7	5.779	25-002362
			100	207	312	237.5	365.7	7.610	80064588

16. Adapters for robot axes

With the HIWIN adapters for robot axes, a lightweight robot and a HIWIN linear axis HT can be combined. This makes it quick and easy to design a 7th axis system. The adapters are designed so that the robots can rotate freely in the lower axis even with axes with an energy chain attached. The HT linear axes with robot adapters are optimised for horizontal installation. Axes for vertical use on request.
All adapters are supplied ready for installation:

- Including mounting material for fastening the adapter on the carriage of the axis.
- Including mounting material for fastening the robot on the adapter



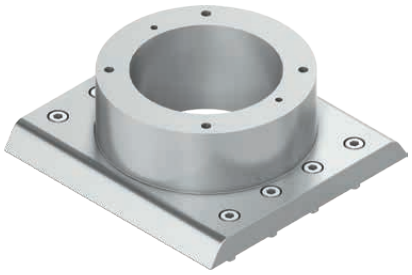


Table 16.1 **Specifications for adapters for robot axes**

Robot		Axis		L_A [mm]	W_A [mm]	H_A [mm]	Ø D_1 [mm]	Ø D_2 [mm]	Weight [kg]	Article number Adapter set
Manufacturer	**Size**	**Model**	**Size**							
Universal Robots	UR03	HTB, HTS	200	191	199	70	128	90	2.528	25-002658
	UR05			191	199	70	151	105	2.873	25-002657
	UR10 + UR16		250	231	249	60	190	95	5.100	25-002659
Techman	TM5-700 + TM5-900	HTB, HTS	200	190	199	90	177	120	4.242	25-002661
	TM12 + TM14		250	230	249	75	203	130	5.391	25-002664

17. Distance measuring system

If the precision of the linear axis given by the drive element is not sufficient for an application, the positioning and repeat accuracy of spindle and belt axes can be increased by using a distance measuring system. On the linear axes HM-B, HM-S, HT-B, HT-S and HC-B, the distance measuring system is located externally, on the side of the carriage. See Fig. 17.1, Fig. 17.2 and Fig. 17.3. Linear motor axes HT-L are supplied with distance measuring system as standard.
The distance measuring system is integrated inside the axis to save space. Different measuring systems are available depending on the requirements for measuring principle, interface and resolution, see Table 17.1. For motionless commutation of linear motor axes HT-L, the HIWIN MAGIC distance measuring system can also be combined with the HIWIN digital hall sensor.

Table 17.1 **Selection of distance measuring system**

Order code	Description	Repeatability [mm]			Signal period [mm]	Resolution [µm]	Interface		Measuring principle	Max. stroke [mm]
		H_B	H_S	H_L						
A	MAGIC	± 0.02	± 0.01	± 0.005	1	1	Incremental	1 V_{SS} (analogue) [1]	Magnetic	–
B [2] [6]	MAGIC	–	–	± 0.005	1	1	Incremental	1 V_{SS} (analogue) [1]	Magnetic	–
D	MAGIC	± 0.02	± 0.01	± 0.005	–	1	Incremental	TTL (digital) [1]	Magnetic	–
E [2] [6]	MAGIC	–	–	± 0.005	–	1	Incremental	TTL (digital) [1]	Magnetic	–
H	LIC 211	–	–	± 0.005	–	0.1	Absolute, EnDat 2.2	EnDat 22	Optical	5,200 [3]
R [4]	BML-S1G0	–	–	± 0.005	2	1	Absolute, 32-bit	BiSS-C, 1 V_{SS}	Magnetic	–
S [4]	BML-S1G0	–	–	± 0.005	2	1	Absolute, 26-bit	SSI	Magnetic	–
T [6]	TTK70	–	–	± 0.005	1	31.25	Absolute, 17-bit	HIPERFACE	Magnetic	3,600 [5]

Other distance measuring systems on request
[1] Compatible with all common servo drives and the HIWIN servo drive ED1. For more information on HIWIN servo drives, see the "Servo drives and servo motors" catalogue or visit www.hiwin.de.
[2] With digital hall sensor for motionless commutation.
[3] Depending on the size and option, up to 5,469 mm possible on request
[4] The distance measuring system has a safety-related, analogue, incremental real-time signal
[5] depending on the size and option up to max. 3,800 mm possible on request
[6] Is not available for HT100L

17.1 External distance measuring system HIWIN MAGIC for linear axes HM-B, HM-S, HT-B, HT-S and HC

The HIWIN MAGIC distance measuring system is located on the side of the carriage in linear modules HM-B and HM-S, linear tables HT-B and HT-S and cantilever axes HC-B. The dimensions can be found in Fig. 17.1, Fig. 17.2, Fig. 17.3 and Table 17.2. On linear modules HM-B and HM-S and on linear tables HT-B and HT-S, the distance measuring system is located on the opposite side of the drive adaptation or the limit switches. On linear axes without adaptation material and limit switches, the distance measuring system is located on the left-hand side by default. On cantilever axes HC, the distance measuring system is always located on the left-hand side by default, just like the limit switches. Other types are available on request.

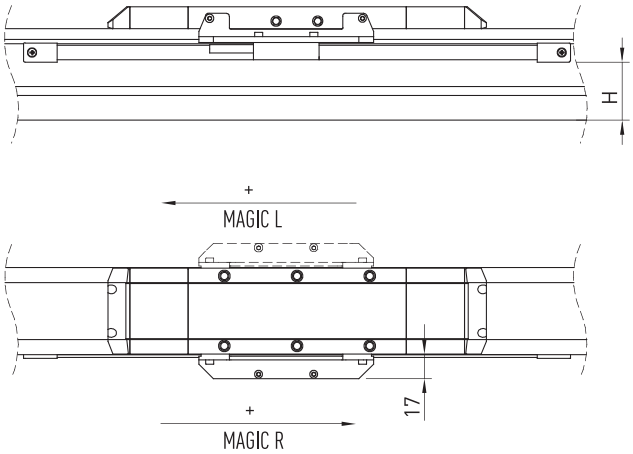


Fig. 17.1 **MAGIC distance measuring system – linear axes HM-B and HM-S**

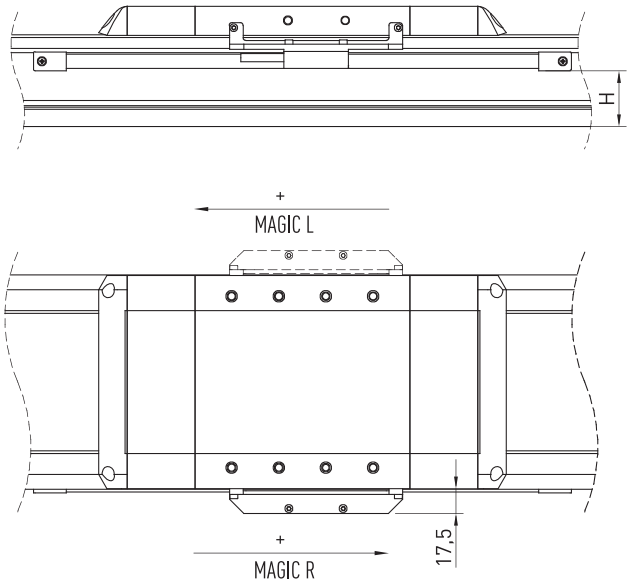


Fig. 17.2 **MAGIC distance measuring system – linear axes HT-B and HT-S**

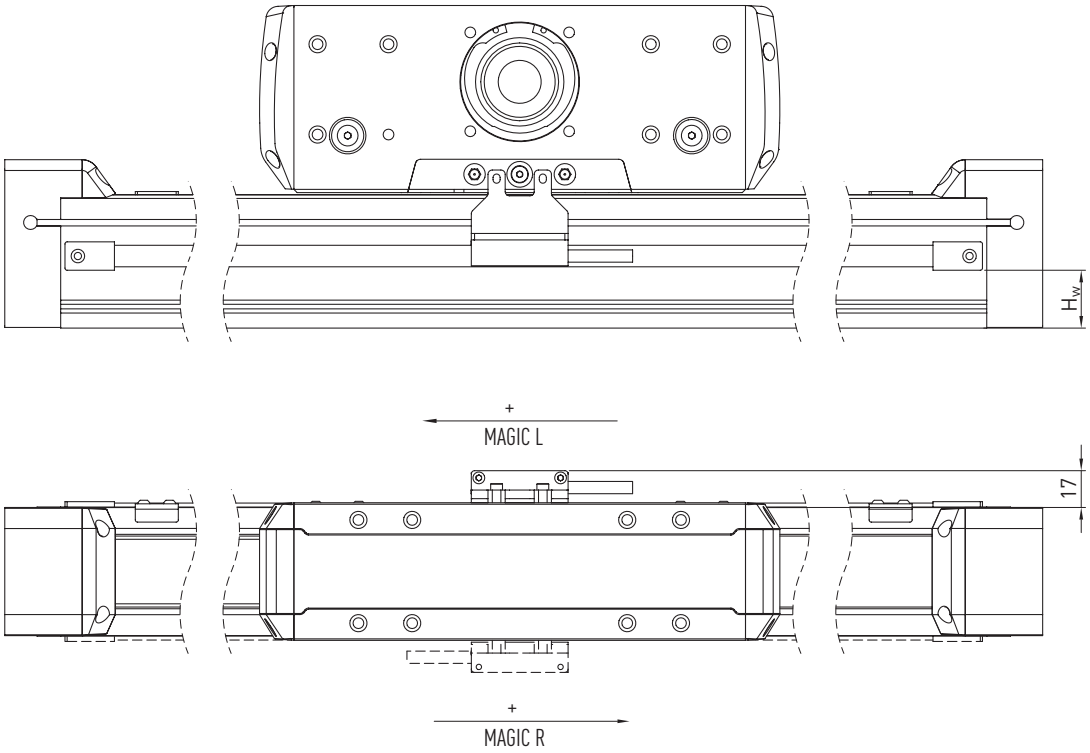


Fig. 17.3 **MAGIC distance measuring system – cantilever axes HC**

Table 17.2 **Dimensions of MAGIC distance measuring system for linear axes HM, HT and HC**

Linear axis	Distance H_w [mm]	Linear axis	Distance H_w [mm]	Linear axis	Distance H_w [mm]
HM040	25	**HT100**	27	**HC025B**	12
HM060	36	**HT150**	38	**HC040B**	22
HM080	54	**HT200**	55	**HC060B**	27
HM120	93	**HT250**	59	**HC080B**	49
				HC100B	71.5

17.2 Internal distance measuring system system for linear axes HT-L

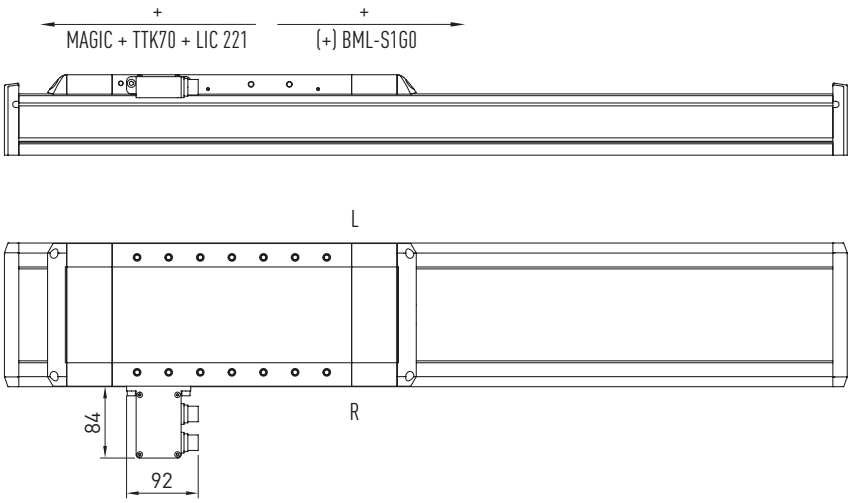


Fig. 17.4 **Linear axis HT-L: Connection interface "D" – connector right/rear**

18. Drive adaptation

18.1 Drive adaptation of linear modules HM-B, linear tables HT-B, cantilever axes HC and double axes HD

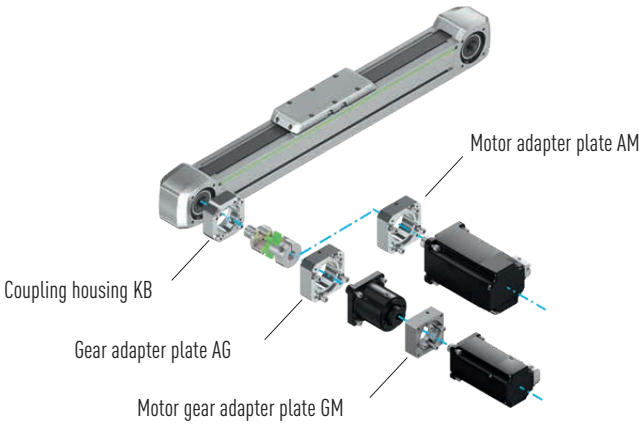
18.1.1 Motor adaptation of linear modules HM-B and double axes HD

Adaptation to the linear axis is of multi-sectional design to allow simple flange-mounting of all standard motors and gearboxes.
The flange type set comprises the following components:

- Coupling housing KB
- Coupling components
- Motor adapter plate AM or gearbox adapter plate AG and motor gearbox adapter plate GM (omitted in NG01 – NG07)

The dimensions of the coupling housing, motor adapter plate as well as the gear adapter plate can be found in section 18.1.4 from page 150.

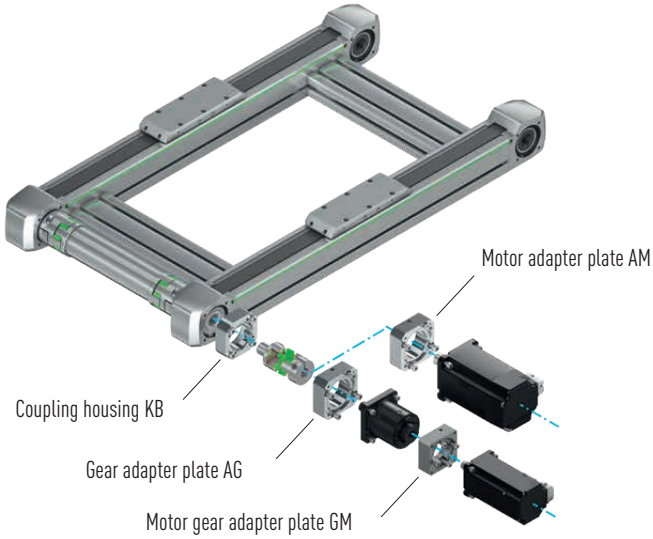
Motor adaptation of linear modules with toothed belt drive (HM-B)



Gear adapter plate AG: Adapter from axis to gearbox
Motor gear adapter plate GM: Adapter from gearbox to motor
Motor adapter plate AM: Adapter from axis to motor

Fig. 18.1 **Motor adaptation of linear modules HM-B**

Motor adaptation of double axes (HD)



Gear adapter plate AG: Adapter from axis to gearbox
Motor gear adapter plate GM: Adapter from gearbox to motor
Motor adapter plate AM: Adapter from axis to motor

Fig. 18.2 **Motor adaptation of double axes HD**

Motor adaptation of multi-axis systems (HS)

The suitable motor adapter for HIWIN multi-axis systems HS must be selected separately for each axis.

Table 18.1 **Order code for position flange type [1] – linear modules HM-B and double axes HD**

Drive Manufacturer/Type		HM040B/HD1			HM060B/HD2			HM080B/HD3			HM120B/HD4	
		Only motor	With PLE40	With PLQE60	Only motor	With PLQE60	With PLQE80	Only motor	With PLQE80	With PLQE120	Only motor	With PLQE120
Gearbox adapter			NG01	NG02		NG03	NG04		NG05	NG06		NG07
HIWIN	**EM1-C-M-20-2**	HW03		HW03		HW05	HW05		HW10			
	EM1-C-M-40-2	HW03		HW03		HW05	HW05		HW10			
	EM1-C-M-75-2				HW06		HW06		HW08			
	EM1-A-M-1K-2							HW13		HW13		HW14
B&R	**8LSA24**		BR02	BR02		BR07						
	8LSA25	BR02	BR02	BR02		BR07						
	8LSA33	BR03 [2]		BR03 [2]		BR04	BR04		BR13			
	8LSA34	BR03 [2]		BR03 [2]	BR04	BR04	BR04		BR13			
	8LSA35	BR03 [2]		BR03 [2]	BR04	BR04	BR04		BR13			
	8LSA43				BR05			BR10				
	8LSA44				BR05			BR10				
	8LSA45				BR05			BR10				
	8LSA46				BR05			BR10				
	8LSA53							BR12 [2]				
	8LSA54							BR12 [2]				
	8LSA55							BR12 [2]				
	8LSA56							BR12 [2]				
	8LSA57							BR12 [2]			BR14	
	8LSA64										BR15	
	8LSA65										BR15	
	8LSA66										BR15	
	8LSN43				BR06 [2]			BR11				
	8LSN44				BR06 [2]			BR11				
	8LSN45				BR06 [2]			BR11				
	8LSN46				BR06 [2]			BR11				
	8LSN54							BR12 [2]			BR14	
	8LSN55							BR12 [2]			BR14	
	8LSN56							BR12 [2]			BR14	
	8LSN57										BR14	
Beckhoff	**AM8022**	BE01	BE01	BE01		BE04						
	AM8023	BE01	BE01	BE01		BE04						
	AM8031	BE02		BE02		BE05	BE05		BE09			
	AM8032			BE03	BE05	BE05	BE05		BE09			
	AM8033			BE03	BE05	BE05	BE05		BE09			
	AM8531	BE02		BE02	BE05	BE05	BE05	BE09	BE09			
	AM8532			BE03	BE05	BE05	BE05	BE09	BE09			
	AM8533			BE03	BE05	BE05	BE05	BE09	BE09			
	AM8041				BE06		BE06		BE10	BE10		BE18
	AM8042				BE06		BE06	BE10	BE10	BE10		BE18
	AM8043				BE06		BE06	BE10	BE10	BE10		BE18
	AM8541				BE06		BE06	BE10	BE10	BE10		BE18
	AM8542				BE06		BE06	BE10	BE10	BE10		BE18
	AM8543				BE06		BE06	BE10	BE10	BE10		BE18
	AM8051				BE07			BE11		BE11		BE19

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[1] See order code Page 21 for linear modules HM-B and Page 83 double axes HD

[2] Drive not suitable for Y-axis of HIWIN multi-axis systems HS

Table 18.1 **Order code for position flange type [1] – linear modules HM-B and double axes HD**

Drive Manufacturer/Type		HM040B/HD1			HM060B/HD2			HM080B/HD3			HM120B/HD4	
		Only motor	With PLE40	With PLQE60	Only motor	With PLQE60	With PLQE80	Only motor	With PLQE80	With PLQE120	Only motor	With PLQE120
Beckhoff	AM8052				BE07			BE11		BE11		BE19
	AM8053							BE11		BE11		BE19
	AM8551				BE07			BE11		BE11		BE19
	AM8552				BE07			BE11		BE11		BE15
	AM8553							BE11		BE11	BE15	BE15
	AM8061							BE12 [2]				
	AM8062							BE12 [2]			BE16	
	AM8063										BE16	
	AM8561							BE12 [2]			BE16	
	AM8562										BE16	
	AM8563										BE16	
	AM8071										BE17	
	AM8072										BE17	
Bosch	MSK030B	B002	B002	B002		B009						
	MSK030C	B002	B002	B002		B009						
	MSK040B	B003 [2]		B003 [2]	B005	B005	B005		B010			
	MSK040C	B003 [2]		B003 [2]	B005	B005	B005		B010			
	MSK043C			B003 [2]	B005	B005	B005		B010			
	MSK050B				B006		B006	B011	B011	B011		B019
	MSK050C				B006		B006	B011	B011	B011		B019
	MSK060B				B008 [2]			B013		B013		B021
	MSK060C				B008 [2]			B013		B013		B021
	MSK061B				B007 [2]		B007 [2]	B012	B012	B012		B020
	MSK061C				B007 [2]		B007 [2]	B012	B012	B012		B020
	MSK070C							B015 [2]			B018	
	MSK070D							B015 [2]			B018	
	MSK070E							B015 [2]			B018	
	MSK071C							B015 [2]			B018	
	MSK071D							B015 [2]			B018	
	MSK071E										B018	
	MSK075C							B015 [2]			B018	
	MSK075D							B015 [2]			B018	
	MSK075E										B018	
	MSK076C							B014 [2]		B014 [2]	B017	B017
	MSK100A							B014 [2]		B014 [2]	B017	B017
Lenze	MCS06F	LE01		LE01		LE04	LE04		LE11			
	MCS06I	LE01		LE01		LE04	LE04		LE11			
	MCS09D	LE02 [2]		LE02 [2]	LE05	LE05	LE05		LE08			
	MCS09F			LE02 [2]	LE05	LE05	LE05		LE08			
	MCS09H				LE05		LE05	LE08	LE08			
	MCS09L				LE05		LE05	LE08	LE08			
	MCS12D				LE06 [2]		LE06 [2]	LE09	LE09	LE09		LE15
	MCS12H				LE06 [2]		LE06 [2]	LE09	LE09	LE09		LE15
	MCS12L						LE06 [2]	LE09	LE09	LE09		LE15
	MCS14D							LE10 [2]		LE10 [2]		LE13

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[1] See order code Page 21 for linear modules HM-B and Page 83 double axes HD

[2] Drive not suitable for Y-axis of HIWIN multi-axis systems HS

Table 18.1 **Order code for position flange type [1] – linear modules HM-B and double axes HD**

Drive Manufacturer/Type		HM040B/HD1			HM060B/HD2			HM080B/HD3			HM120B/HD4	
		Only motor	With PLE40	With PLQE60	Only motor	With PLQE60	With PLQE80	Only motor	With PLQE80	With PLQE120	Only motor	With PLQE120
Lenze	MCS14H							LE10 [2]		LE10 [2]	LE13	LE13
	MCS14L									LE10 [2]	LE13	LE13
	MCS14P										LE13	
	MCS19F										LE14	
Schneider	BSH0551		SE02	SE02		SE10						
	BSH0552		SE02	SE02		SE10						
	BSH0553		SE02	SE02		SE10						
	BSH0701	SE03		SE03		SE07	SE07		SE16			
	BSH0702	SE03		SE03		SE07	SE07		SE16			
	BSH0703			SE06		SE08	SE08		SE17			
	BSH1001				SE09		SE09		SE13	SE13		SE20
	BSH1002				SE09		SE09	SE13	SE13	SE13		SE20
	BSH1003				SE09		SE09	SE13	SE13	SE13		SE20
	BSH1004									SE14		SE21
	BSH1401							SE15 [2]		SE15 [2]		SE19
	BSH1402							SE15 [2]		SE15 [2]	SE19	SE19
	BSH1403									SE15 [2]	SE19	SE19
	BSH1404										SE19	
	BMH0701	SE03		SE03	SE07	SE07	SE07		SE16			
	BMH0702	SE03		SE03	SE07	SE07	SE07		SE16			
	BMH0703	SE04		SE04	SE08	SE08	SE08		SE12			
	BMH1001				SE09		SE09	SE13	SE13	SE13		SE20
	BMH1002				SE09		SE09	SE13	SE13	SE13		SE20
	BMH1003				SE09		SE09	SE13	SE13	SE13		SE20
	BMH1401							SE15 [2]		SE15 [2]	SE19	SE19
	BMH1402							SE15 [2]		SE15 [2]	SE19	SE19
	BMH1403									SE15 [2]	SE19	SE19
SEW	CMP40S		SW02	SW02		SW06						
	CMP40M	SW02	SW02	SW02		SW06						
	CMP50S	SW03		SW03		SW07	SW07		SW11			
	CMP50M	SW03		SW03	SW07	SW07	SW07		SW11			
	CMP50L			SW03	SW07	SW07	SW07		SW11			
	CMP63S			SW05	SW08	SW08	SW08		SW12			
	CMP63M			SW05	SW08	SW08	SW08	SW12	SW12			
	CMP63L				SW08		SW08	SW12	SW12			
	CMP71S				SW09			SW13		SW13		SW20
	CMP71M				SW09			SW13		SW13		SW20
	CMP71L							SW13		SW13		SW20
	CMP80S							SW14				
	CMP80M							SW14				
	CMP80L										SW18	
	CMP100S										SW19	
	CMP100M										SW19	
	CMP100L										SW19	
	CMPZ71S				SW09 [2]			SW13		SW13		SW17

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[1] See order code Page 21 for linear modules HM-B and Page 83 double axes HD

[2] Drive not suitable for Y-axis of HIWIN multi-axis systems HS

Table 18.1 **Order code for position flange type [1] – linear modules HM-B and double axes HD**

Drive Manufacturer/Type		HM040B/HD1			HM060B/HD2			HM080B/HD3			HM120B/HD4	
		Only motor	With PLE40	With PLQE60	Only motor	With PLQE60	With PLQE80	Only motor	With PLQE80	With PLQE120	Only motor	With PLQE120
SEW	CMPZ71M				SW09 [2]			SW13		SW13		SW17
	CMPZ71L							SW13		SW13	SW17	SW17
	CMPZ80S							SW14 [2]			SW18	
	CMPZ80M							SW14 [2]			SW18	
	CMPZ80L										SW18	
	CMPZ100S										SW19	
	CMPZ100M										SW19	
	CMPZ100L										SW19	
Siemens	1FK7022	SM02	SM02	SM02		SM07						
	1FK7032	SM03		SM03		SM04	SM04		SM11			
	1FK7034	SM03		SM03	SM04	SM04	SM04		SM11			
	1FK7040				SM05		SM05		SM08	SM08		SM15
	1FK7042				SM05		SM05	SM08	SM08	SM08		SM15
	1FK7060				SM06 [2]			SM09		SM09		SM12
	1FK7062				SM06 [2]			SM09		SM09		SM12
	1FK7063				SM06 [2]			SM09		SM09	SM12	SM12
	1FK7080							SM10 [2]			SM13	
	1FK7081							SM10 [2]			SM13	
	1FK7083							SM10 [2]			SM13	
	1FK7084							SM10 [2]			SM13	
	1FK7100										SM14	
	1FK7101										SM14	
	1FK7103										SM14	
	1FK7105										SM14	

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[1] See order code Page 21 for linear modules HM-B and Page 83 double axes HD

[2] Drive not suitable for Y-axis of HIWIN multi-axis systems HS

18.1.2 Drive adaptation of linear tables HT-B

The drive adaptation of linear table HT-B is of multi-sectional design to allow for simple flange-mounting of all standard motors and gearboxes.

The flange type set comprises the following components:

- Coupling components
- Motor adapter plate AM or gearbox adapter plate AG and motor gearbox adapter plate GM (omitted in NG11-NG15)

The dimensions of the coupling housing, motor adapter plate as well as the gear adapter plate can be found in section 18.1.4 from page 150.

Motor adaptation of linear tables with toothed belt drive (HT-B)

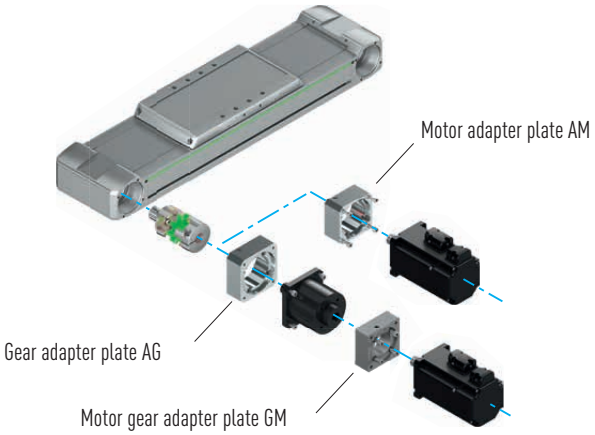

Fig. 18.3 **Motor adaptation of linear tables HT-B**

Gear adapter plate AG:	Adapter from axis to gearbox
Motor gear adapter plate GM:	Adapter from gearbox to motor
Motor adapter plate AM:	Adapter from axis to motor

Table 18.2 **Order code for position flange type [1] – linear tables HT-B**

Drive Manufacturer/Type		HT100B			HT150B			HT200B		HT250B	
		Only motor	With PLE40	With PLQE60	Only motor	With PLQE80	With PLQE120	Only motor	With PLQE120	Only motor	With PLQE120
Gearbox adapter			NG11	NG12		NG13	NG14		NG15		NG15
HIWIN	**EM1-C-M-05-2**		HW17	HW16							
	EM1-C-M-10-2		HW17	HW16							
	EM1-C-M-20-2			HW03		HW10					
	EM1-C-M-40-2	HW03		HW03		HW10					
	EM1-C-M-75-2					HW08					
	EM1-A-M-1K-2				HW13		HW13	HW20	HW14		HW14
B&R	**8LSA24**		BR02	BR02							
	8LSA25		BR02	BR02							
	8LSA33			BR03		BR13					
	8LSA34			BR03		BR13					
	8LSA35			BR03		BR13					
	8LSA43				BR10						
	8LSA44				BR10						
	8LSA45				BR10						
	8LSA46				BR10						
	8LSA53							BR14		BR14	
	8LSA54							BR14		BR14	
	8LSA55							BR14		BR14	
	8LSA56							BR14		BR14	
	8LSA57							BR14		BR14	
	8LSA63							BR15		BR15	
	8LSA64							BR15		BR15	
	8LSA65							BR15		BR15	
	8LSA66							BR15		BR15	
	8LSN43				BR11						
	8LSN44				BR11						
	8LSN45				BR11						
	8LSN46				BR11						
	8LSN54							BR14		BR14	

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[1] See order code Page 41

Table 18.2 **Order code for position flange type [1] – linear tables HT-B**

Drive Manufacturer/Type		HT100B			HT150B			HT200B		HT250B	
		Only motor	With PLE40	With PLQE60	Only motor	With PLQE80	With PLQE120	Only motor	With PLQE120	Only motor	With PLQE120
B&R	8LSN55							BR14		BR14	
	8LSN56							BR14		BR14	
	8LSN57							BR14		BR14	
Beckhoff	AM8022		BE01	BE01							
	AM8023	BE01	BE01	BE01							
	AM8031	BE02		BE02		BE09					
	AM8032			BE02	BE09	BE09					
	AM8033			BE02	BE09	BE09					
	AM8531	BE02		BE02	BE09	BE09					
	AM8532			BE02	BE09	BE09					
	AM8533			BE02	BE09	BE09					
	AM8041				BE10	BE10	BE10		BE18		BE18
	AM8042				BE10	BE10	BE10		BE18		BE18
	AM8043				BE10	BE10	BE10		BE18		BE18
	AM8541				BE10	BE10	BE10		BE18		BE18
	AM8542				BE10	BE10	BE10		BE18		BE18
	AM8543				BE10	BE10	BE10		BE18		BE18
	AM8051				BE11		BE11	BE15	BE15		BE15
	AM8052				BE11		BE11	BE15	BE15	BE15	BE15
	AM8053				BE11		BE11	BE15	BE15	BE15	BE15
	AM8551				BE11		BE11	BE15	BE15		BE15
	AM8552				BE11		BE11	BE15	BE15	BE15	BE15
	AM8553				BE11		BE11	BE15	BE15	BE15	BE15
	AM8061							BE16		BE16	
	AM8062							BE16		BE16	
	AM8063							BE16		BE16	
	AM8561							BE16		BE16	
	AM8562							BE16		BE16	
	AM8563							BE16		BE16	
	AM8071									BE17	
	AM8072									BE17	
	AM8073									BE17	
Bosch	MSK030B		B002	B002							
	MSK030C		B002	B002							
	MSK040B	B003		B003	B010	B010					
	MSK040C	B003		B003	B010	B010					
	MSK043C			B003	B010	B010					
	MSK050B				B011	B011	B011		B019		B019
	MSK050C				B011	B011	B011		B019		B019
	MSK060B				B013		B013		B021		B021
	MSK060C				B013		B013		B021		B021
	MSK061B				B012	B012	B012		B020		B020
	MSK061C				B012	B012	B012		B020		B020
	MSK070C							B018		B018	
	MSK070D							B018		B018	
	MSK070E							B018		B018	

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[1] See order code Page 41

Table 18.2 **Order code for position flange type [1] – linear tables HT-B**

Drive Manufacturer/Type		HT100B			HT150B			HT200B		HT250B	
		Only motor	With PLE40	With PLQE60	Only motor	With PLQE80	With PLQE120	Only motor	With PLQE120	Only motor	With PLQE120
Bosch	MSK071C							B018		B018	
	MSK071D							B018		B018	
	MSK071E							B018		B018	
	MSK075C							B018		B018	
	MSK075D							B018		B018	
	MSK075E							B018		B018	
	MSK076C						B014	B017	B017	B017	B017
	MSK100A						B014	B017	B017	B017	B017
Lenze	MCS06F			LE01		LE11					
	MCS06I	LE01		LE01		LE11					
	MCS09D			LE02	LE08	LE08					
	MCS09F			LE02	LE08	LE08					
	MCS09H				LE08	LE08					
	MCS09L				LE08	LE08					
	MCS12D				LE09	LE09	LE09		LE15		LE15
	MCS12H				LE09	LE09	LE09		LE15		LE15
	MCS12L				LE09	LE09	LE09		LE15		LE15
	MCS14D						LE10	LE13	LE13	LE13	LE13
	MCS14H						LE10	LE13	LE13	LE13	LE13
	MCS14L						LE10	LE13	LE13	LE13	LE13
	MCS14P							LE13		LE13	
	MCS19F									LE14	
Schneider	BSH0551		SE02	SE02							
	BSH0552		SE02	SE02							
	BSH0553		SE02	SE02							
	BSH0701			SE03		SE16					
	BSH0702	SE03		SE03		SE16					
	BSH0703			SE06		SE17					
	BSH1001				SE13	SE13	SE13		SE20		SE20
	BSH1002				SE13	SE13	SE13		SE20		SE20
	BSH1003				SE13	SE13	SE13		SE20		SE20
	BSH1004						SE14		SE21		SE21
	BSH1401						SE15	SE19	SE19	SE19	SE19
	BSH1402						SE15	SE19	SE19	SE19	SE19
	BSH1403						SE15	SE19	SE19	SE19	SE19
	BSH1404							SE19		SE19	
	BMH0701			SE03		SE16					
	BMH0702	SE03		SE03		SE16					
	BMH0703	SE04		SE04		SE12					
	BMH1001				SE13	SE13	SE13		SE20		SE20
	BMH1002				SE13	SE13	SE13		SE20		SE20
	BMH1003				SE13	SE13	SE13		SE20		SE20
	BMH1401						SE15	SE19	SE19	SE19	SE19
	BMH1402						SE15	SE19	SE19	SE19	SE19
	BMH1403						SE15	SE19	SE19	SE19	SE19

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[1] See order code Page 41

Table 18.2 **Order code for position flange type [1] – linear tables HT-B**

Drive Manufacturer/Type		HT100B			HT150B			HT200B		HT250B	
		Only motor	With PLE40	With PLQE60	Only motor	With PLQE80	With PLQE120	Only motor	With PLQE120	Only motor	With PLQE120
SEW	CMP40S		SW02	SW02							
	CMP40M		SW02	SW02							
	CMP50S	SW03		SW03		SW11					
	CMP50M	SW03		SW03		SW11					
	CMP50L			SW04	SW11	SW11					
	CMP63S			SW05	SW12	SW12					
	CMP63M			SW05	SW12	SW12					
	CMP63L				SW12	SW12		SW17			
	CMP71S				SW13		SW13	SW17	SW17		SW17
	CMP71M				SW13		SW13	SW17	SW17	SW17	SW17
	CMP71L				SW13		SW13	SW17	SW17	SW17	SW17
	CMP80S							SW18		SW18	
	CMP80M							SW18		SW18	
	CMP80L							SW18		SW18	
	CMP100S							SW19		SW19	
	CMP100M							SW19		SW19	
	CMP100L									SW19	
	CMPZ71S				SW13		SW13	SW17	SW17		SW17
	CMPZ71M				SW13		SW13	SW17	SW17	SW17	SW17
	CMPZ71L				SW13		SW13	SW17	SW17	SW17	SW17
	CMPZ80S							SW18		SW18	
	CMPZ80M							SW18		SW18	
	CMPZ80L							SW18		SW18	
	CMPZ100S							SW19		SW19	
	CMPZ100M							SW19		SW19	
	CMPZ100L									SW19	
Siemens	1FK7022		SM02	SM02							
	1FK7032			SM03		SM11					
	1FK7034	SM03		SM03		SM11					
	1FK7040				SM08	SM08	SM08		SM15		SM15
	1FK7042				SM08	SM08	SM08		SM15		SM15
	1FK7060				SM09		SM09	SM12	SM12		SM12
	1FK7062				SM09		SM09	SM12	SM12	SM12	SM12
	1FK7063				SM09		SM09	SM12	SM12	SM12	SM12
	1FK7080							SM13			
	1FK7081							SM13		SM13	
	1FK7083							SM13		SM13	
	1FK7084							SM13		SM13	
	1FK7100									SM14	
	1FK7101									SM14	
	1FK7103									SM14	
	1FK7105									SM14	

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[1] See order code Page 41

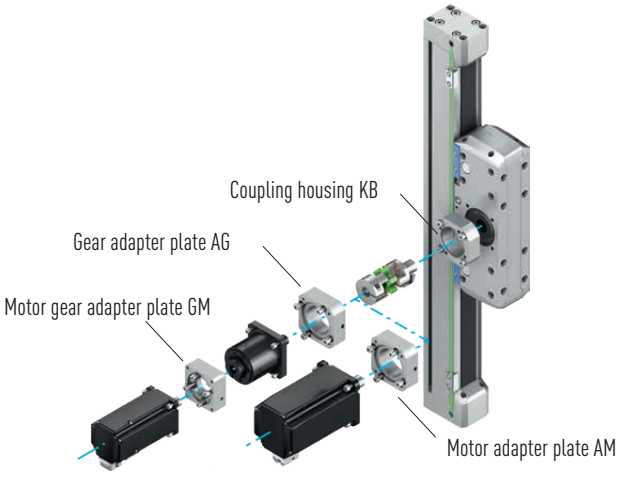
18.1.3 Drive adaptation of cantilever axis HC-B

Adaptation to the linear axis is of multi-sectional design to allow simple flange-mounting of all standard motors and gearboxes.
The flange type set comprises the following components:

- Coupling housing KB
- Coupling components
- Motor adapter plate AM or gearbox adapter plate AG and motor gearbox adapter plate GM (omitted in NG21–NG27)

The dimensions of the coupling housing, motor adapter plate as well as the gear adapter plate can be found in section 18.1.4 from page 150.

Motor adaptation of cantilever axes (HC-B)



Gear adapter plate AG: Adapter from axis to gearbox

Motor gear adapter plate GM: Adapter from gearbox to motor

Motor adapter plate AM: Adapter from axis to motor

Fig. 18.4 **Motor adaptation of cantilever axes HC-B**

Table 18.3 **Order code for position flange type [1] – cantilever axes HC-B**

Drive Manufacturer/Type		HC025B		HC040B			HC060B			HC060B		
		Only motor	With PLE40	Only motor	With PLE40	With PLQE60	Only motor	With PLQE60	With PLQE80	Only motor	With PLQE80	With PLQE120
Gearbox adapter			NG21		NG22	NG23		NG24	NG25		NG26	NG27
HIWIN	**EM1-C-M-20-2**					HW03		HW05	HW05		HW10	
	EM1-C-M-40-2			HW03		HW03		HW05	HW05		HW10	
	EM1-C-M-75-2								HW06		HW08	
	EM1-A-M-1K-2									HW13		HW13
B&R	**8LSA24**		BR01		BR02	BR02		BR07				
	8LSA25		BR01		BR02	BR02		BR07				
	8LSA33					BR03		BR04	BR04		BR13	
	8LSA34			BR03		BR03		BR04	BR04		BR13	
	8LSA35			BR03		BR03		BR04	BR04		BR13	
	8LSA43						BR05					
	8LSA44						BR05					
	8LSA45						BR05					
	8LSA46						BR05			BR10		
	8LSA54									BR12		
	8LSA55									BR12		
	8LSA56									BR12		
	8LSA57									BR12		
	8LSN43						BR06			BR11		
	8LSN44						BR06			BR11		

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[1] See order code Page 71

Table 18.3 **Order code for position flange type [1] – cantilever axes HC-B**

Drive Manufacturer/Type		HC025B		HC040B			HC060B			HC060B		
		Only motor	With PLE40	Only motor	With PLE40	With PLQE60	Only motor	With PLQE60	With PLQE80	Only motor	With PLQE80	With PLQE120
B&R	8LSN45						BR06			BR11		
	8LSN46						BR06			BR11		
	8LSN54									BR12		
	8LSN55									BR12		
	8LSN56									BR12		
	8LSN57									BR12		
Beckhoff	AM8022		BE19		BE01	BE01		BE04				
	AM8023		BE19	BE01	BE01	BE01		BE04				
	AM8031			BE02		BE02		BE05	BE05		BE09	
	AM8032			BE02		BE02		BE05	BE05		BE09	
	AM8033					BE02		BE05	BE05		BE09	
	AM8531			BE02		BE02	BE05	BE05	BE05		BE09	
	AM8532			BE02		BE02	BE05	BE05	BE05		BE09	
	AM8533					BE02	BE05	BE05	BE05		BE09	
	AM8041								BE06		BE10	BE10
	AM8042						BE06		BE06		BE10	BE10
	AM8043						BE06		BE06		BE10	BE10
	AM8541						BE06		BE06	BE10	BE10	BE10
	AM8542						BE06		BE06	BE10	BE10	BE10
	AM8543						BE06		BE06	BE10	BE10	BE10
	AM8051						BE07					BE11
	AM8052						BE07			BE11		BE11
	AM8053						BE07			BE11		BE11
	AM8551						BE07			BE11		BE11
	AM8552						BE07			BE11		BE11
	AM8553						BE07			BE11		BE11
	AM8061									BE12		
	AM8062									BE12		
	AM8561									BE12		
	AM8562									BE12		
Bosch	MSK030B		B001		B002	B002		B009				
	MSK030C		B001		B002	B002		B009				
	MSK040B			B003		B003		B005	B005		B010	
	MSK040C			B003		B003		B005	B005		B010	
	MSK043C			B003		B003		B005	B005		B010	
	MSK050B						B006		B006		B011	B011
	MSK050C						B006		B006		B011	B011
	MSK060B						B008			B013		B013
	MSK060C						B008			B013		B013
	MSK061B						B007		B007	B012	B012	B012
	MSK061C						B007		B007	B012	B012	B012
	MSK070C									B015		
	MSK070D									B015		
	MSK070E									B015		
	MSK071C									B015		
	MSK071D									B015		

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[1] See order code Page 71

Table 18.3 **Order code for position flange type [1] – cantilever axes HC-B**

Drive Manufacturer/Type		HC025B		HC040B			HC060B			HC060B		
		Only motor	With PLE40	Only motor	With PLE40	With PLQE60	Only motor	With PLQE60	With PLQE80	Only motor	With PLQE80	With PLQE120
Bosch	MSK071E									B015		
	MSK075C									B015		
	MSK075D									B015		
	MSK075E									B015		
	MSK076C									B014		B014
	MSK100A									B014		B014
Lenze	MCS06F					LE01		LE04	LE04		LE11	
	MCS06I					LE01		LE04	LE04		LE11	
	MCS09D			LE02		LE02		LE05	LE05		LE08	
	MCS09F					LE02		LE05	LE05		LE08	
	MCS09H						LE05		LE05		LE08	
	MCS09L						LE05		LE05		LE08	
	MCS12D						LE06		LE06		LE09	LE09
	MCS12H						LE06		LE06	LE09	LE09	LE09
	MCS12L						LE06		LE06	LE09	LE09	LE09
	MCS14D									LE10		LE10
	MCS14H									LE10		LE10
	MCS14L									LE10		LE10
Schneider	BSH0551		SE01		SE02	SE02		SE10				
	BSH0552		SE01		SE02	SE02		SE10				
	BSH0553		SE01		SE02	SE02		SE10				
	BSH0701					SE03		SE07	SE07		SE16	
	BSH0702					SE03		SE07	SE07		SE16	
	BSH0703			SE04		SE06		SE08	SE08		SE17	
	BSH1001								SE09		SE13	SE13
	BSH1002								SE09		SE13	SE13
	BSH1003								SE09		SE13	SE13
	BSH1004											SE14
	BSH1401									SE15		SE15
	BSH1402									SE15		SE15
	BSH1403											SE15
	BMH0701			SE03		SE03		SE07	SE07		SE16	
	BMH0702			SE03		SE03		SE07	SE07		SE16	
	BMH0703			SE04		SE04	SE08	SE08	SE08		SE12	
	BMH1001						SE09		SE09		SE13	SE13
	BMH1002						SE09		SE09	SE13	SE13	SE13
	BMH1003						SE09		SE09	SE13	SE13	SE13
	BMH1401									SE15		SE15
	BMH1402									SE15		SE15
	BMH1403									SE15		SE15
SEW	CMP40S		SW01		SW02	SW02		SW06				
	CMP40M		SW01		SW02	SW02		SW06				
	CMP50S			SW03		SW03		SW07	SW07		SW11	
	CMP50M			SW03		SW03		SW07	SW07		SW11	
	CMP50L			SW03		SW03		SW07	SW07		SW11	
	CMP63S					SW05		SW08	SW08		SW12	

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[1] See order code Page 71

Table 18.3 **Order code for position flange type [1] – cantilever axes HC-B**

Drive Manufacturer/Type		HC025B		HC040B			HC060B			HC060B		
		Only motor	With PLE40	Only motor	With PLE40	With PLQE60	Only motor	With PLQE60	With PLQE80	Only motor	With PLQE80	With PLQE120
SEW	CMP63M					SW05	SW08	SW08	SW08		SW12	
	CMP63L						SW08		SW08		SW12	
	CMP71S						SW09					SW13
	CMP71M						SW09			SW13		SW13
	CMP71L						SW09			SW13		SW13
	CMP80S									SW14		
	CMP80M									SW14		
	CMPZ71S						SW09			SW13		SW13
	CMPZ71M						SW09			SW13		SW13
	CMPZ71L						SW09			SW13		SW13
	CMPZ80S									SW14		
	CMPZ80M									SW14		
Siemens	1FK7022		SM01		SM02	SM02		SM07				
	1FK7032			SM03		SM03		SM04	SM04		SM11	
	1FK7034			SM03		SM03		SM04	SM04		SM11	
	1FK7040								SM05		SM08	SM08
	1FK7042						SM05		SM05		SM08	SM08
	1FK7060						SM06			SM09		SM09
	1FK7062						SM06			SM09		SM09
	1FK7063						SM06			SM09		SM09
	1FK7080									SM10		
	1FK7081									SM10		
	1FK7083									SM10		
	1FK7084									SM10		

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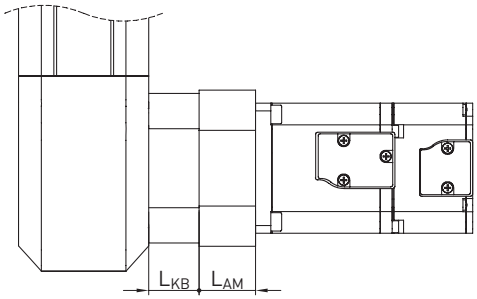
[1] See order code Page 71

18.1.4 Dimensions of motor adaptation of linear modules HM-B, linear tables HT-B, cantilever axes HC and double axes HD

The total width of linear axes with toothed belt drive depends on the following factors:

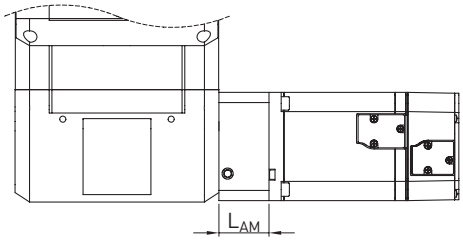
- Adaptation material (coupling housing KB, motor adapter plate AM, gear adapter plate AG, motor gear adapter plate GM)
- Gearbox
- Motor

Linear axis without gearbox



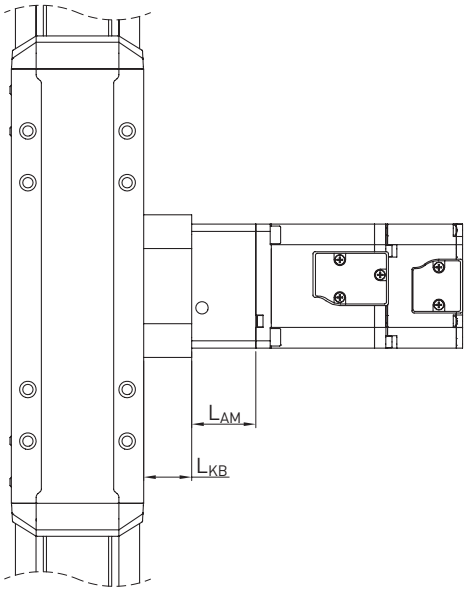
L_{KB} Length of coupling housing, see Table 18.4
L_{AM} Length of motor adapter plate, see Table 18.5

Fig. 18.5 **Motor connection of linear module HM-B without gearbox**



L_{AM} Length of motor adapter plate, see Table 18.6

Fig. 18.6 **Motor connection of linear table HT-B without gearbox**



L_{KB} Length of coupling housing, see Table 18.4
L_{AM} Length of motor adapter plate, see Table 18.5

Fig. 18.7 **Motor connection of cantilever axis HC without gearbox**

Linear axis with gearbox

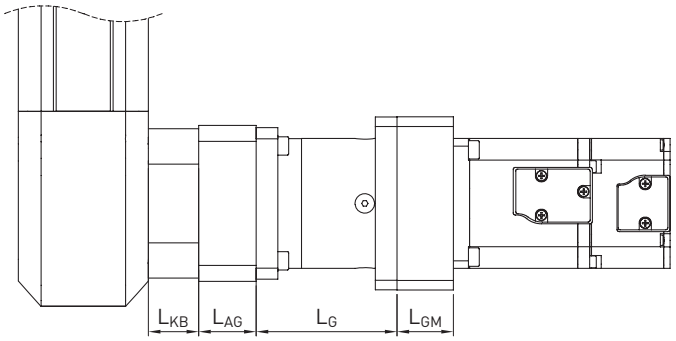


Fig. 18.8 **Motor connection of linear module HM-B with gearbox**

L_{KB} Length of coupling housing, see Table 18.4
L_{AG} Length of gearbox adapter plate, see Table 18.7
L_G Length of gearbox, see Table 18.9
L_{GM} Length of motor gearbox adapter plate, see Table 18.8

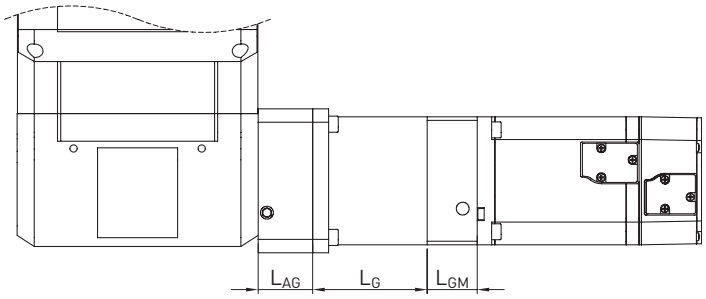


Fig. 18.9 **Motor connection of linear table HT-B with gearbox**

L_{AG} Length of gearbox adapter plate, see Table 18.7
L_G Length of gearbox, see Table 18.9
L_{GM} Length of motor gearbox adapter plate, see Table 18.8

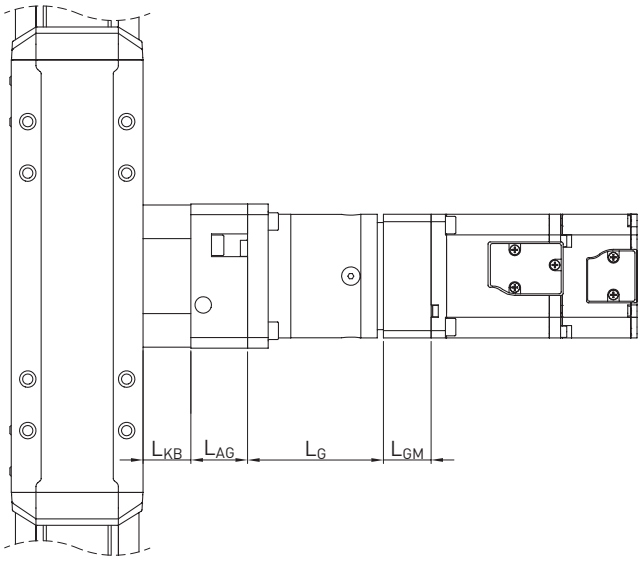


Fig. 18.10 **Motor connection of cantilever axis HC with gearbox**

L_{KB} Length of coupling housing, see Table 18.4
L_{AG} Length of gearbox adapter plate, see Table 18.7
L_G Length of gearbox, see Table 18.9
L_{GM} Length of motor gearbox adapter plate, see Table 18.8

18.1.4.1 Coupling housing KB for linear modules HM-B and cantilever axes HC

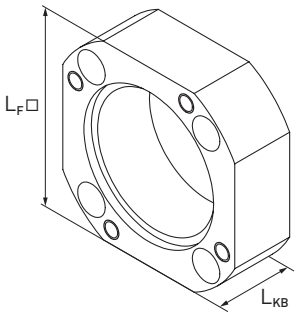


Fig. 18.11 **Coupling housing KB for linear modules HM-B and cantilever axes HC**

Table 18.4 **Dimensions of coupling housing KB for linear modules HM-B and cantilever axes HC**

Coupling housing for	L_F [mm]	L_{KB} [mm]	Article number
HC025B	50	17.0	25-002045
HM040B, HC040B	47	14.7	25-000798
HM060B, HC060B	69	23.2	25-000799
HM080B, HC080B	84	24.1	25-000800
HC100B	107	25.0	80043137
HM120B	118	25.0	25-000801

18.1.4.2 Motor adapter plate AM for linear modules HM-B, linear tables HT-B and cantilever axes HC without gearbox

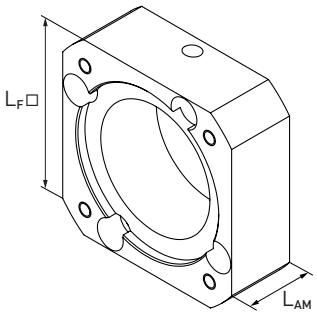


Fig. 18.12 **Motor adapter plate AM for linear modules HM-B, linear tables HT-B and cantilever axes HC without gearbox**

Table 18.5 **Motor adapter plate AM for linear modules HM-B and cantilever axes HC without gearbox**

Linear axis	Manufacturer	Motors	L_F [mm]	L_{AM} [mm]	Article number
HC025B	HIWIN	EM1-C-M-10-2	27	50	25-000404
HM040B	HIWIN	EM1-C-M-40-2	60	31	25-000404
HM040B, HC040B	B&R	8LSA25	58	25	25-000403
		8LSA33, 8LSA34, 8LSA35	82	31	25-000411
	Beckhoff	AM8022D, AM8022E, AM8023E, AM8023F	55	22	25-000402
		AM8031D, AM8031F, AM8531D, AM8531F, AM8032D, AM8032E, AM8032H, AM8532D, AM8532E, AM8532H	70	31	25-000407
	Bosch	MSK030B, MSK030C	54	22	25-000401
		MSK040B, MSK040C	82	31	25-000405
	Lenze	MCS06F41, MCS06F60, MCS06I41, MCS06I60	62	25	25-000406
		MCS09D41, MCS09D60	82	31	25-000411
	Schneider	BSH0701, BSH0702, BMH0701, BMH0702	62	25	25-000406
		BMH0703, BSH0703	70	31	25-000407

Table 18.5 **Motor adapter plate AM for linear modules HM-B and cantilever axes HC without gearbox**

Linear axis	Manufacturer	Motors	L_F [mm]	L_{AM} [mm]	Article number
HM040B, HC040B	SEW	CMP40M	54	22	25-000401
		CMP50S, CMP50M, CMP50L	62	25	25-000406
	Siemens	1FK7022	55	22	25-000402
		1FK7032, 1FK7034	72	31	25-000408
HM060B	HIWIN	EM1-C-M-75-2	80	37	25-000421
HM060B, HC060B	Bosch	MSK040B, MSK040C, MSK043B	82	27	25-000415
		MSK050B, MSK050C	98	37	25-000425
		MSK061B, MSK061C	116	37	25-000428
		MSK060B, MSK060C	116	47	25-000429
	B&R	8LSA35, 8LSA34	86	27	25-000423
		8LSA43, 8LSA44, 8LSA45, 8LSA46	100	37	25-000426
		8LSN43, 8LSN44, 8LSN45, 8LSN46	116	37	25-000430
	Beckhoff	AM8032D, AM8032E, AM8032H, AM8033E, AM8033F, AM8033J, AM8531F, AM8532D, AM8532E, AM8532H, AM8533E, AM8533F, AM8533J	70	27	25-000418
		AM8041D, AM8041E, AM8041H, AM8042E, AM8042F, AM8042J, AM8043E, AM8043H, AM8043K, AM8541D, AM8541E, AM8541H, AM8542E, AM8542F, AM8542J, AM8543E, AM8543H, AM8543K	87	37	25-000424
		AM8051E, AM8051G, AM8051K, AM8052F, AM8052J, AM8052L, AM8551E, AM8551G, AM8551K, AM8552F, AM8552J, AM8552L, AM8053G, AM8053K, AM8053N, AM8553G, AM8553K, AM8553N	104	47	25-000427
	Lenze	MCS09D41, MCS09D60, MCS09F38, MCS09F60, MCS09H41, MCS09H60, MCS09L41, MCS09L51	86	27	25-000423
		MCS12D20, MCS12D41, MCS12H15, MCS12H35, MCS12L20, MCS12L41	116	37	25-000430
	Schneider	BMH0701, BMH0702	72	21	25-000417
		BMH0703	70	27	25-000418
		BSH1001, BSH1002, BSH1003, BMH1001, BMH1002, BMH1003	98	37	25-000425
	SEW	CMP50M, CMP50L	72	21	25-000417
		CMP63S, CMP63M, CMP63SL	86	27	25-000423
		CMP71S, CMP71M, CMPZ71S, CMPZ71MCMP71L, CMPZ71L	116	47	25-000431
	Siemens	1FK7034	72	27	25-000419
		1FK7040, 1FK7042	87	37	25-000424
		1FK7060, 1FK7062, 1FK7063	116	47	25-000431
HM080B, HC080B	HIWIN	EM1-A-M-1K-2	130	51	25-000450
	Beckhoff	AM8532D, AM8532E, AM8532H, AM8533E, AM8533F, AM8533J, AM8531D, AM8531F	73	27	25-000436
		AM8042E, AM8042F, AM8042J, AM8043E, AM8043H, AM8043K, AM8541D, AM8541E, AM8541H, AM8542E, AM8542F, AM8542J, AM8543E, AM8543H, AM8543K	87	37	25-000441
		AM8051E, AM8051G, AM8051K, AM8052F, AM8052J, AM8052L, AM8053G, AM8053K, AM8053N, AM8551E, AM8551G, AM8551K, AM8552F, AM8552J, AM8552L, AM8553G, AM8553K, AM8553N	100	51	25-000444
		AM8061G, AM8061J, AM8061M, AM8062J, AM8062L, AM8062P, AM8561G, AM8561J, AM8561M, AM8562J, AM8562L, AM8562P	138	56	25-000453
	B&R	8LSA43, 8LSA44, 8LSA45, 8LSA46	100	37	25-000443
		8LSA53, 8LSA54, 8LSA55, 8LSA56, 8LSA57, 8LSN54, 8LSN55, 8LSN56, 8LSN57	142	51	25-000454
		8LSN43, 8LSN44, 8LSN45, 8LSN46	116	37	25-000447
	Bosch	MSK050B, MSK050C	98	37	25-000442
		MSK061B, MSK061C	116	37	25-000445
		MSK060B, MSK060C	116	51	25-000446
		MSK076C, MSK100A	139	51	25-000451
		MSK70C, MSK70D, MSK70E, MSK71C, MSK71D, MSK75C, MSK75D	138	56	25-000453
	Lenze	MCS09H41, MCS09H60, MCS09L41, MCS09L51	86	27	25-000440
		MCS12D20, MCS12D41, MCS12H15, MCS12H35, MCS12L20, MCS12L41	116	37	25-000447
		MCS14D15, MCS14D36, MCS14H15, MCS14H32, MCS14L15, MCS14L32	139	51	25-000452
	Schneider	BSH1002, BSH1003, BMH1001, BMH1002, BMH1003	98	37	25-000442
		BSH1401, BSH1402, BMH1401, BMH1402, BMH1403	139	51	25-000452

Table 18.5 **Motor adapter plate AM for linear modules HM-B and cantilever axes HC without gearbox**

Linear axis	Manufacturer	Motors	L_F [mm]	L_{AM} [mm]	Article number
HM080B, HC080B	SEW	CMP63M, CMP63L	86	27	25-000440
		CMP71S, CMP71M, CMP71L, CMPZ71S, CMPZ71M, CMPZ71L	116	51	25-000448
		CMP80S, CMP80M, CMPZ80S, CMPZ80M	138	56	25-000453
	Siemens	1FK7042	87	37	25-000441
		1FK7060, 1FK7062, 1FK7063	116	51	25-000448
		1FK7080, 1FK7081, 1FK7083, 1FK7084	138	56	25-000460
HM120B	Beckhoff	AM8553G, AM8553K, AM8553N	104	46	25-000456
		AM8062J, AM8062L, AM8062P, AM8063K, AM8063N, AM8063R, AM8561G, AM8561J, AM8561M, AM8562J, AM8562L, AM8562P, AM8563K, AM8563N, AM8563R	138	56	25-000460
		AM8071K, AM8071R, AM8072T	192	76	25-000466
	B&R	8LSA57, 8LSN54, 8LSN55, 8LSN56, 8LSN57	142	46	25-000461
		8LSA64, 8LSA65, 8LSA66	190	46	25-000464
	Bosch	MSK076C, MSK100A	140	46	25-000458
		MSK70C, MSK70D, MSK70E, MSK71C, MSK71D, MSK71E, MSK75C, MSK75D, MSK75E	138	56	25-000460
	Lenze	MCS14H15, MCS14H32, MCS14L15, MCS14L32, MCS14P14	140	46	25-000459
		MCS19F14	190	56	25-000465
	Schneider	BSH1402, BSH1403, BSH1404, BMH1401, BMH1402, BMH1403	140	46	25-000459
	SEW	CMPZ71L	116	46	25-000457
		CMP80L, CMPZ80S, CMPZ80M, CMPZ80L	138	56	25-000460
		CMP100S, CMP100M, CMP100L, CMPZ100S, CMPZ100M, CMPZ100L	163	56	25-000463
	Siemens	1FK7063	116	46	25-000457
		1FK7100, 1FK7101, 1FK7103, 1FK7105	192	76	25-000466
		1FK7080, 1FK7081, 1FK7083, 1FK7084	138	56	25-000460

Table 18.6 **Motor adapter plate AM for linear tables HT-B without gearbox**

Linear axis	Manufacturer	Motors	L_F [mm]	L_{AM} [mm]	Article number
HT100B	HIWIN	EM1-C-M-40-2	60	31	25-000404
	Beckhoff	AM8023E, AM8023F	55	22	25-000402
		AM8031D, AM8031F, AM8531D, AM8531F	70	31	25-000407
	Bosch	MSK040B, MSK040C	82	31	25-000405
	Lenze	MCS06I41, MCS06I60	62	25	25-000406
	Schneider	BSH0701, BMH0701, BMH0702	62	25	25-000406
	SEW	CMP50S, CMP50M	62	25	25-000406
	Siemens	1FK7034	72	31	25-000408
HT150B	HIWIN	EM1-A-M-1K-2	130	51	25-000450
	Beckhoff	AM8032D, AM8032E, AM8032H, AM8033E, AM8033F, AM8033J, AM8532D, AM8532E, AM8532H, AM8533E, AM8533F, AM8533J, AM8531D, AM8531F	73	27	25-000436
		AM8041D, AM8041E, AM8041H, AM8042E, AM8042F, AM8042J, AM8043E, AM8043H, AM8043K, AM8541D, AM8541E, AM8541H, AM8542E, AM8542F, AM8542J, AM8543E, AM8543H, AM8543K	87	37	25-000441
		AM8051E, AM8051G, AM8051K, AM8052F, AM8052J, AM8052L, AM8053G, AM8053K, AM8053N, AM8551E, AM8551G, AM8551K, AM8552F, AM8552J, AM8552L, AM8553G, AM8553K, AM8553N	100	51	25-000444
	B&R	8LSA43, 8LSA44, 8LSA45, 8LSA46	100	37	25-000443
		8LSN43, 8LSN44, 8LSN45, 8LSN46	116	37	25-000447
	Bosch	MSK050B, MSK050C	98	37	25-000442
		MSK040B, MSK040C, MSK43C	82	27	25-000433
		MSK061B, MSK061C	116	37	25-000445
		MSK060B, MSK060C	116	51	25-000446
	Lenze	MCS09D41, MCS09D60, MCS09F38, MCS09F60, MCS09H41, MCS09H60, MCS09L41, MCS09L51	86	27	25-000440
		MCS12D20, MCS12D41, MCS12H15, MCS12H35, MCS12L20, MCS12L41	116	37	25-000447

Table 18.6 **Motor adapter plate AM for linear tables HT-B without gearbox**

Linear axis	Manufacturer	Motors	L_F [mm]	L_{AM} [mm]	Article number
HT150B	Schneider	BSH1001, BSH1002, BSH1003, BMH1001, BMH1002, BMH1003	98	37	25-000442
	SEW	CMP63S, CMP63M, CMP63L	86	27	25-000440
		CMP50L	73	20	25-000435
		CMP71S, CMP71M, CMP71L, CMPZ71S, CMPZ71M, CMPZ71L	116	51	25-000448
	Siemens	1FK7040, 1FK7042	87	37	25-000441
		1FK7060, 1FK7062, 1FK7063	116	51	25-000448
HT200B	HIWIN	EM1-A-M-1K-2	130	56	25-000647
	Beckhoff	AM8051E, AM8051G, AM8051K, AM8052F, AM8052J, AM8052L, AM8053G, AM8053K, AM8551E, AM8551G, AM8551K, AM8552F, AM8552J, AM8552L, AM8053N, AM8553G, AM8553K, AM8553N	104	46	25-000456
		AM8061G, AM8061J, AM8061M, AM8062J, AM8062L, AM8062P, AM8063K, AM8063N, AM8063R, AM8561G, AM8561J, AM8561M, AM8562J, AM8562L, AM8562P, AM8563K, AM8563N, AM8563R	138	56	25-000460
	B&R	8LSN54, 8LSN55, 8LSN56, 8LSN57, 8LSA54, 8LSA55, 8LSA56, 8LSA57	142	46	25-000461
		8LSA63, 8LSA64, 8LSA65, 8LSA66	190	46	25-000464
	Bosch	MSK076C, MSK100A	140	46	25-000458
		MSK70C, MSK70D, MSK70E, MSK71C, MSK71D, MSK71E, MSK75C, MSK75D, MSK75E	138	56	25-000460
	Lenze	MCS14D15, MCS14D36, MCS14H15, MCS14H32, MCS14L15, MCS14L32	140	46	25-000459
	Schneider	BSH1401, BSH1402, BSH1403, BSH1404, BMH1401, BMH1402, BMH1403	140	46	25-000459
	SEW	CMP71S, CMP71M, CMP71L, CMPZ71S, CMPZ71M, CMPZ71L	116	46	25-000457
		CMP80S, CMP80M, CMP80L, CMPZ80S, CMPZ80M, CMPZ80L	138	56	25-000460
		CMP100S, CMP100M, CMPZ100S, CMPZ100M	163	56	25-000463
	Siemens	1FK7060, 1FK7062, 1FK7063	116	46	25-000457
		1FK7080, 1FK7081, 1FK7083, 1FK7084	138	56	25-000460
HT250B	Beckhoff	AM8052F, AM8052J, AM8052L, AM8053G, AM8053K, AM8552F, AM8552J, AM8552L, AM8053N, AM8553G, AM8553K, AM8553N	104	46	25-000456
		AM8061G, AM8061J, AM8061M, AM8062J, AM8062L, AM8062P, AM8063K, AM8063N, AM8063R, AM8561G, AM8561J, AM8561M, AM8562J, AM8562L, AM8562P, AM8563K, AM8563N, AM8563R	138	56	25-000460
		AM8071K, AM8071R, AM8072T, AM8073T	192	76	25-000466
	B&R	8LSN54, 8LSN55, 8LSN56, 8LSN57, 8LSA54, 8LSA55, 8LSA56, 8LSA57, 8LSA53	142	46	25-000461
		8LSA63, 8LSA64, 8LSA65, 8LSA66	190	46	25-000464
	Bosch	MSK076C, MSK100A	140	46	25-000458
		MSK70C, MSK70D, MSK70E, MSK71C, MSK71D, MSK71E, MSK75C, MSK75D, MSK75E	138	56	25-000460
	Lenze	MCS14D15, MCS14D36, MCS14H15, MCS14H32, MCS14L15, MCS14L32, MCS14P14	140	46	25-000459
		MCS19F14	190	56	25-000465
	Schneider	BSH1401, BSH1402, BSH1403, BSH1404, BMH1401, BMH1402, BMH1403	140	46	25-000459
	SEW	CMP71M, CMP71L, CMPZ71M, CMPZ71L	116	46	25-000457
		CMP80S, CMP80M, CMP80L, CMPZ80S, CMPZ80M, CMPZ80L	138	56	25-000460
		CMP100S, CMP100M, CMPZ100S, CMPZ100M, CMP100L, CMPZ100L	163	56	25-000463
	Siemens	1FK7062, 1FK7063	116	46	25-000457
		1FK7081, 1FK7083, 1FK7984	138	56	25-000460
		1FK7100, 1FK7101, 1FK7103, 1FK7105	192	76	25-000466

18.1.4.3 Gearbox adapter plate AG for linear modules HM-B, linear tables HT-B and cantilever axes HC

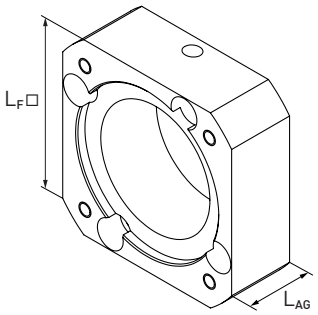


Fig. 18.13 **Gearbox adapter plate AG for linear modules HM-B, linear tables HT-B and cantilever axes HC**

Table 18.7 **Gearbox adapter plate AG for linear modules HM-B, linear tables HT-B and cantilever axes HC**

Linear axis	Gearbox [2]	L_F [mm]	L_{AG} [mm]	Article number
HC025B	PLE040 [1]	50	27.0	25-002609
HM040B, HT100B, HC040B	PLE040 [1]	50	23.0	25-000735
HM040B, HT100B, HC040B	PLQE60	70	32.8	25-000387
HM060B, HC060B	PLQE60	70	27.5	25-000388
HM060B, HC060B	PLQE80	90	37.0	25-000389
HM080B, HT150B, HC080B	PLQE80	90	35.0	25-000390
HM080B, HT150B, HC080B	PLQE120	115	47.5	25-000391
HM120B, HT200B, HT250B, HC100B	PLQE120	115	43.6	25-000392

[1] Adapter consists of two parts
[2] PLE and PLQE are registered trademarks of Neugart GmbH

18.1.4.4 Motor gearbox adapter plate GM for linear modules HM-B, linear tables HT-B and cantilever axes HC

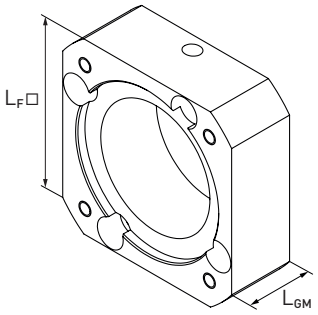


Fig. 18.14 **Motor gearbox adapter plate GM for linear modules HM-B, linear tables HT-B and cantilever axes HC**

Table 18.8 **Motor gearbox adapter plate GM for linear modules HM-B, linear tables HT-B and cantilever axes HC**

Gearbox	Manufacturer	Motors	L_F [mm]	L_{GM} [mm]	Article number
PLE40	HIWIN	EM1-C-M-05-2, EM1-C-M-10-2	40	19	25-002320
	B&R	8LSA24, 8LSA25	60	18.0	25-000481
	Beckhoff	AM8022D, AM8022E, AM8023E, AM8023F	60	15.0	25-000478
	Bosch	MSK030B, MSK030C	60	15.0	25-000480
	Schneider	BSH0551, BSH0552, BSH0553	60	15.0	25-000478
	SEW	CMP40S, CMP40M	60	15.0	25-000480
	Siemens	1FK7022	60	15.0	25-000478

PLE and PLQE are registered trademarks of Neugart GmbH

Table 18.8 **Motor gearbox adapter plate GM for linear modules HM-B, linear tables HT-B and cantilever axes HC**

Gearbox	Manufacturer	Motors	L_F [mm]	L_{GM} [mm]	Article number
PLQE60	HIWIN	EM1-C-M-05-2, EM1-C-M-10-2	60	18.1	25-002298
		EM1-C-M-20-2, EM1-C-M-40-2	60	23.1	25-000486
	B&R	8LSA24, 8LSA25	60	17.1	25-000490
		8LSA33, 8LSA34, 8LSA35	90	23.1	25-000487
	Beckhoff	AM8031D, AM8031F, AM8032D, AM8032E, AM8032H, AM8033E, AM8033F, AM8033J, AM8531D, AM8531F, AM8532D, AM8532E, AM8532H, AM8533E, AM8533F, AM8533J	70	23.1	25-000484
		AM8022D, AM8022E, AM8023E, AM8023F	60	16.0	25-000482
	Bosch	MSK040B, MSK040C, MSK043C	80	23.1	25-000489
		MSK030B, MSK030C	60	16.0	25-000488
	Lenze	MCS06F41, MCS06F60, MCS06I41, MCS06I60	70	16.1	25-000483
		MCS09D41, MCS09D60, MCS09F38, MCS09F60	90	23.1	25-000487
	Schneider	BSH0701, BSH0702, BMH0701, BMH0702	70	16.1	25-000483
		BSH0703, BMH0703	70	23.1	25-000484
		BSH0551, BSH0552, BSH0553	60	16.0	25-000482
	SEW	CMP50S, CMP50M, CMP50L	70	16.1	25-000483
		CMP63S, CMP63M	90	23.1	25-000487
		CMP40S, CMP40M	60	16.0	25-000488
	Siemens	1FK7022	60	16.0	25-000482
		1FK7032, 1FK7034	70	23.1	25-000485
PLQE80	HIWIN	EM1-C-M-20-2, EM1-C-M-40-2	80	21.2	25-000494
		EM1-C-M-75-2	80	31.2	25-000495
	B&R	8LSA33, 8LSA34, 8LSA35	90	21.2	25-000496
	Beckhoff	AM8041D, AM8041E, AM8041H, AM8042E, AM8042F, AM8042J, AM8043E, AM8043H, AM8043K, AM8541D, AM8541E, AM8541H, AM8542E, AM8542F, AM8542J, AM8543E, AM8543H, AM8543K	90	21.2	25-000493
		AM8031D, AM8031F, AM8032D, AM8032E, AM8032H, AM8033E, AM8033F, AM8033J, AM8531D, AM8531F, AM8532D, AM8532E, AM8532H, AM8533E, AM8533F, AM8533J	80	21.2	25-000498
	Bosch	MSK050B, MSK050C	100	31.2	25-000492
		MSK040B, MSK040C, MSK043C	80	21.2	25-000497
		MSK061B, MSK061C	115	31.2	25-000500
	Lenze	MCS09D41, MCS09D60, MCS09F38, MCS09F60, MCS09H41, MCS09H60, MCS09L41, MCS09L51	115	31.2	25-000499
		MCS06F41, MCS06F60, MCS06I41, MCS06I60	80	21.2	25-000498
		MCS12D20, MCS12D41, MCS12H15, MCS12H35, MCS12L20, MCS12L41	115	31.2	25-000499
	Schneider	BSH1001, BSH1002, BSH1003, BMH1001, BMH1002, BMH1003	100	31.2	25-000492
		BSH0701, BSH0702, BSH0703, BMH0701, BMH0702, BMH0703	80	21.2	25-000498
	SEW	CMP63S, CMP63M, CMP63L	90	21.2	25-000496
		CMP50S, CMP50M, CMP50L	80	21.2	25-000498
	Siemens	1FK7032, 1FK7034	80	21.2	25-000491
		1FK7040, 1FK7042	90	21.2	25-000493
PLQE120	HIWIN	EM1-A-M-1K-2	130	36.8	25-000690
	Beckhoff	AM8041D, AM8041E, AM8041H, AM8042E, AM8042F, AM8042J, AM8043E, AM8043H, AM8043K, AM8541D, AM8541E, AM8541H, AM8542E, AM8542F, AM8542J, AM8543E, AM8543H, AM8543K	115	21.8	25-000504
		AM8051E, AM8051G, AM8051K, AM8052F, AM8052J, AM8052L, AM8053G, AM8053K, AM8053N, AM8551E, AM8551G, AM8551K, AM8552F, AM8552J, AM8552L, AM8553G, AM8553K, AM8553N	115	31.8	25-000502
	Bosch	MSK060B, MSK060C	115	31.8	25-000509
		MSK061B, MSK061C	115	21.8	25-000508
		MSK076C, MSK100A	140	31.8	25-000506
		MSK050B, MSK050C	115	21.8	25-000501
	Lenze	MCS12D20, MCS12D41, MCS12H15, MCS12H35, MCS12L20, MCS12L41	115	21.8	25-000507
		MCS14D15, MCS14D36, MCS14H15, MCS14H32, MCS14L15, MCS14L32	140	31.8	25-000503

Table 18.8 **Motor gearbox adapter plate GM for linear modules HM-B, linear tables HT-B and cantilever axes HC**

Gearbox	Manufacturer	Motors	L_F [mm]	L_{GM} [mm]	Article number
PLQE120	Schneider	BSH1001, BSH1002, BSH1003, BMH1001, BMH1002, BMH1003	115	21.8	25-000501
		BSH1401, BSH1402, BSH1403, BMH1401, BMH1402, BMH1403	140	31.8	25-000503
		BSH1004	115	31.8	25-000502
	SEW	CMP71S, CMP71M, CMP71L, CMPZ71S, CMPZ71M, CMPZ71L	115	31.8	25-000505
	Siemens	1FK7060, 1FK7062, 1FK7063	115	31.8	25-000505
		1FK7040, 1FK7042	115	21.8	25-000504

PLE and PLQE are registered trademarks of Neugart GmbH

18.1.4.5 Gearboxes for linear modules HM-B, linear tables HT-B, cantilever axes HC and double axes HD

Gearbox[1] for optimal power transmission of the motor to the toothed belt drive.

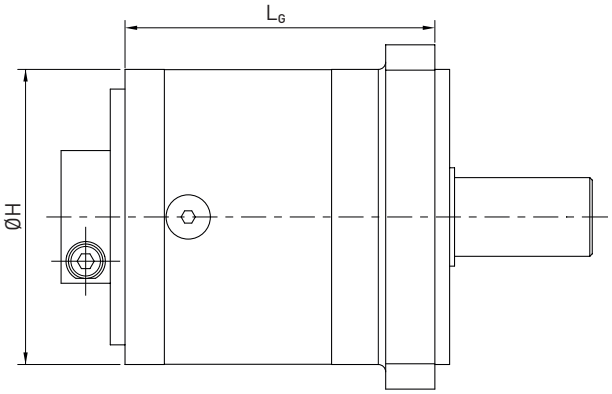


Fig. 18.15 **Gearbox dimensioned drawing for linear modules HM-B, linear tables HT-B, cantilever axes HC and double axes HD**

Table 18.9 **Gearbox for linear modules HM-B, linear tables HT-B, cantilever axes HC and double axes HD**

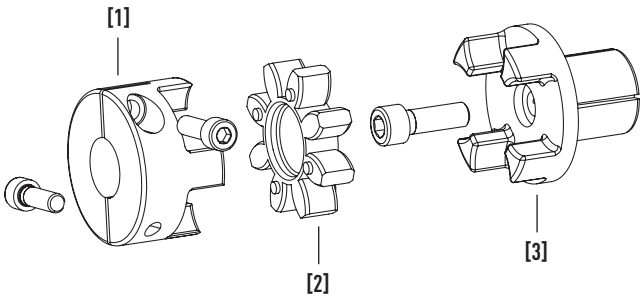
Linear axis	Ratio i	Ø H [mm]	L_G [mm]	Max. Ø motor shaft [mm]	Gearbox	Order code for position gearbox[2]
HM040B, HD1, HT100B, HC040B	3	40	48.5	9 (11)[3]	PLE40-3	G0403
	5	40	48.5	9 (11)[3]	PLE40-5	G0405
	8	40	48.5	9 (11)[3]	PLE40-8	G0408
	12	40	61.5	9 (11)[3]	PLE40-12	G0412
HM040B, HM060B, HD1, HD2, HT100B, HC040B, HC060B	3	60	63.0	14 (19)[3]	PLQE60-3	G0603
	5	60	63.0	14 (19)[3]	PLQE60-5	G0605
	8	60	63.0	14 (19)[3]	PLQE60-8	G0608
	12	60	75.5	14 (19)[3]	PLQE60-12	G0612
HM060B, HM080B, HD2, HD3, HT150B, HC060B, HC080B	3	80	83.5	19 (24)[3]	PLQE80-3	G0803
	5	80	83.5	19 (24)[3]	PLQE80-5	G0805
	8	80	83.5	19 (24)[3]	PLQE80-8	G0808
	12	80	101.0	19 (24)[3]	PLQE80-12	G0812
HM080B, HM120B, HD3, HD4, HT150B, HT200B, HT250B, HC080B, HC100B	3	115	124.5	24 (35)[3]	PLQE120-3	G1203
	5	115	124.5	24 (35)[3]	PLQE120-5	G1205
	8	115	124.5	24 (35)[3]	PLQE120-8	G1208
	12	115	152.5	24 (35)[3]	PLQE120-12	G1212

[1] Economy series PLE/PLQE, registered trademarks of Neugart GmbH

[2] See order code Page 21 for linear modules HM-B, Page 41 linear tables HT-B, Page 71 cantilever axes HC and Page 83 double axes HD

[3] Values in brackets possible on request.

18.1.4.6 Coupling component for linear modules HM-B, linear tables HT-B and cantilever axes HC



[1] Clamping hub for motor side
[2] Sprocket
[3] Expansion hub for axis side

Fig. 18.16 **Coupling component for linear modules HM-B, linear tables HT-B and cantilever axes HC**

Expansion hub
Coupling element for the axis side.

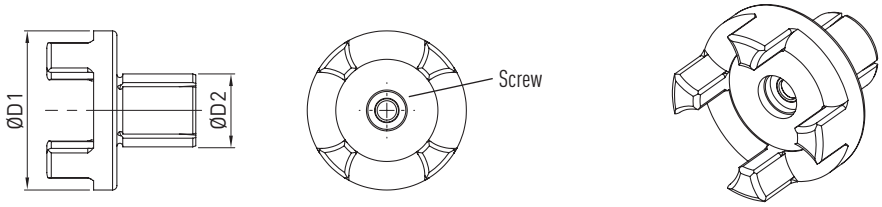


Fig. 18.17 **Expansion hub for linear modules HM-B, linear tables HT-B and cantilever axes HC**

Table 18.10 **Article numbers and dimensions of expansion hub**

Linear axis	Model	Ø D1 [mm]	Ø D2 [mm]	Thread size × length	Screw tightening torque [Nm]	Moment of inertia [kgmm²]	Frictional torque [Nm]	Article number
HC025B	Size 12	24.5	10	M4 × 14	4	2.9	11	25-002015
HM040B, HT100B, HC040B	Size 14	29.5	14	M5 × 18	10	4.4	31	25-002714
HM060B, HC060B	Size 19	39.5	20	M6 × 20	10	9.0	38	25-000199
HM080B, HT150B, HC080B	Size 24	54.5	25	M8 × 30	25	35.6	91	25-000200
HM120B, HT200B, HT250B, HC100B	Size 28	64.5	35	M10 × 35	49	77.0	201	25-000201

Sprocket

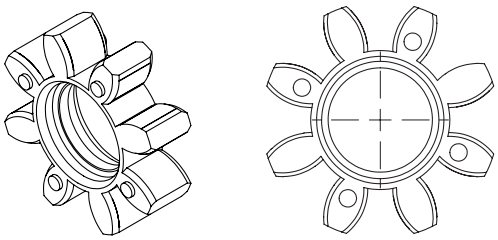


Fig. 18.18 **Sprocket for linear modules HM-B, linear tables HT-B and cantilever axes HC**

Table 18.11 **Sprocket article number**

Linear axis	Model	Article number
HC025B	Size 12	25-002709
HM040B, HT100B, HC040B	Size 14	25-002710
HM060B, HC060B	Size 19	25-002711
HM080B, HT150B, HC080B	Size 24	25-002712
HM120B, HT200B, HT250B, HC100B	Size 28	25-002713

Clamping hub
Coupling element for the motor side.

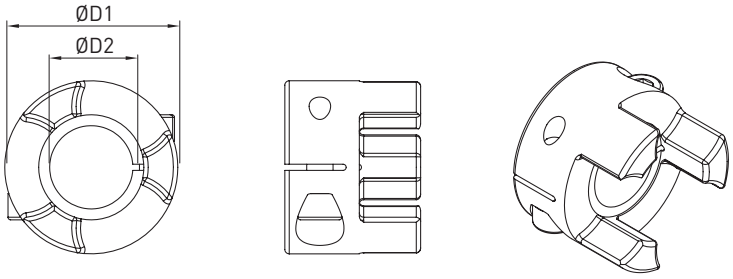


Fig. 18.19 **Clamping hub for linear modules HM-B, linear tables HT-B and cantilever axes HC**

Table 18.12 **Article numbers and specifications of clamping hub**

Linear axis	Model	Ø D1 [mm]	Ø D2 H7 [mm]	Thread size × length	Screw tightening torque [Nm]	Frictional torque [Nm]	Moment of inertia [kgmm²]	Article number
HC025B	Size 12	24.5	5	M3 × 12	2.1	5.2	1.46	25-002382
			6	M3 × 12	2.1	6.1	1.46	25-002384
			6.35	M3 × 12	2.1	6.4	1.46	25-002385
			8	M3 × 12	2.1	8.1	1.45	25-002386
			9	M3 × 12	2.1	9.1	1.45	25-002387
			10	M3 × 12	2.1	10.1	1.44	25-002388
			11	M3 × 12	2.1	11.1	1.43	25-002389
			12	M3 × 12	2.1	12.1	1.41	25-002390
			14	M3 × 12	2.1	14.1	1.41	25-002391
HM040B, HT100B, HC040B	Size 14	29.5	5	M4 × 12	5.0	10.1	2.70	25-002392
			6	M4 × 12	5.0	12.2	2.69	25-002393
			6.35	M4 × 12	5.0	13.2	2.69	25-002394
			8	M4 × 12	5.0	16.5	2.68	25-002395
			9	M4 × 12	5.0	18.6	2.68	25-002396
			10	M4 × 12	5.0	20.8	2.67	25-002397
			11	M4 × 12	5.0	23.0	2.66	25-002398
			12	M4 × 12	5.0	25.1	2.65	25-002399
			13	M4 × 12	5.0	27.2	2.63	25-002400
			14	M4 × 12	5.0	29.4	2.61	25-002401
			16	M4 × 12	4.0	28.0	6.11	25-002610
HM060B, HC060B	Size 19	39.5	6.35	M6 × 16	14.0	25.8	15.26	25-002403
			8	M6 × 16	14.0	32.5	15.25	25-002404
			9	M6 × 16	14.0	36.5	15.24	25-002405
			10	M6 × 16	14.0	40.6	15.23	25-002406
			11	M6 × 16	14.0	44.6	15.21	25-002407
			12	M6 × 16	14.0	48.7	15.18	25-002408

Table 18.12 **Article numbers and specifications of clamping hub**

Linear axis	Model	Ø D1 [mm]	Ø D2 H7 [mm]	Thread size × length	Screw tightening torque [Nm]	Frictional torque [Nm]	Moment of inertia [kgmm²]	Article number
HM060B, HC060B	Size 19	39.5	14	M6 × 16	14.0	56.8	15.11	25-002409
			16	M6 × 16	14.0	64.9	14.99	25-002410
			18	M6 × 16	14.0	73.1	14.82	25-002411
			19	M6 × 16	14.0	77.1	14.71	25-002412
			20	M6 × 16	14.0	81.2	14.58	25-002413
			22	M5 × 16	10.0	71.5	13.95	25-002414
			24	M5 × 16	10.0	75.6	13.52	25-002415
HM080B, HT150B, HC080B	Size 24	54.5	11	M6 × 20	15.0	46.0	53.30	25-002456
			14	M6 × 20	15.0	58.0	53.20	25-002416
			16	M6 × 20	15.0	66.0	53.10	25-002417
			19	M6 × 20	15.0	78.0	52.80	25-002418
			20	M6 × 20	15.0	82.0	52.70	25-002419
			22	M6 × 20	15.0	90.0	52.30	25-002420
			24	M6 × 20	15.0	98.0	51.90	25-002422
			25	M6 × 20	15.0	102.0	51.60	25-002423
			28	M6 × 20	15.0	114.0	50.50	25-002424
			32	M6 × 20	15.0	130.0	48.50	25-002425
HM120B, HT200B, HT250B, HC100B	Size 28	64.5	16	M8 × 25	35.0	130.0	125.45	25-002426
			19	M8 × 25	35.0	152.5	125.11	25-002427
			20	M8 × 25	35.0	160.0	124.95	25-002428
			22	M8 × 25	35.0	175.0	124.55	25-002429
			24	M8 × 25	35.0	190.0	124.02	25-002430
			25	M8 × 25	35.0	197.5	123.70	25-002431
			28	M8 × 25	35.0	220.0	122.47	25-002432
			32	M8 × 25	35.0	240.0	120.08	25-002433
			35	M8 × 25	35.0	262.5	117.59	25-002434
			38	M8 × 25	35.0	285.0	118.33	25-002435

18.2 Drive adaptation of linear modules HM-S and linear tables HT-S

18.2.1 Motor adaptation of linear modules HM-S and linear tables HT-S

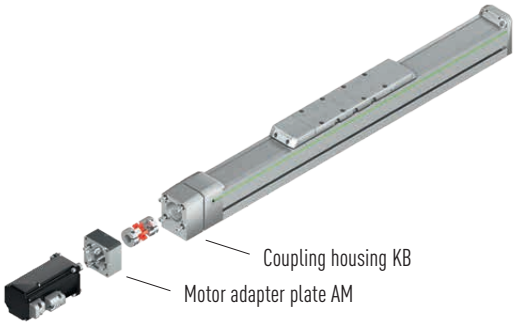
The drive adaptation of linear modules HM-S and linear tables HT-S is designed in two parts to ensure easy flange-mounting of all common motors.

The flange type set comprises the following components:

- Coupling housing KB
- Coupling components
- Motor adapter plate AM or belt drive RT

The dimensions of the coupling housing, motor adapter plate and belt drive can be found in section 18.2.2 from page 166.

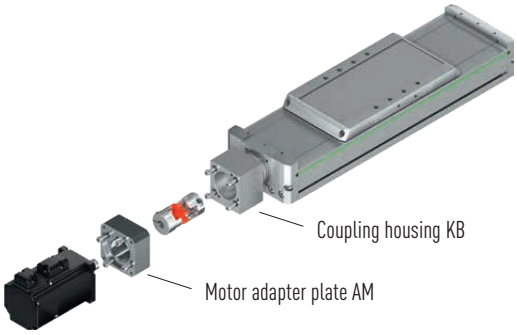
Motor adaptation of linear modules with ball screw – without belt drive



Motor adapter plate AM: Adapter from axis to motor

Fig. 18.20 **Motor adaptation of linear modules HM-S**

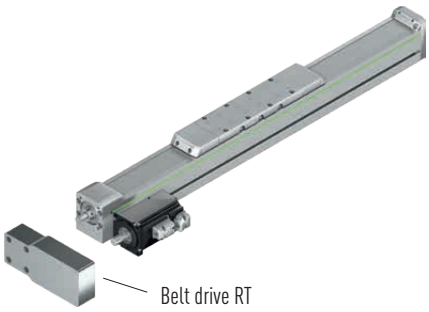
Motor adaptation of linear tables with ballscrew (HT-S)



Motor adapter plate AM: Adapter from axis to motor

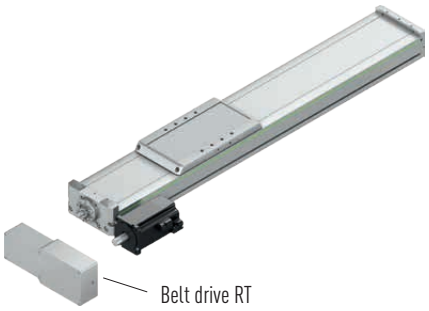
Fig. 18.21 **Motor adaptation of linear tables HT-S**

Motor adaptation of linear tables with ballscrew – with belt drive



Belt drive RT: For deflecting the drive 180°

Fig. 18.22 **Motor adaptation of linear modules HM-S with belt drive**



Belt drive RT: For deflecting the drive 180°

Fig. 18.23 **Motor adaptation of linear tables HT-S with belt drive**

Table 18.13 **Order code for position flange type [3] – linear modules HM-B and double axes HD**

Drive Manufacturer/Type		Linear module HM-S				Linear table HT-S			
		HM040S	HM060S	HM080S	HM120S	HT100S	HT150S	HT200S	HT250S
		Motor only	Motor only	Motor only	Motor only	Motor only	Motor only	Motor only	Motor only
HIWIN	EM1-C-M-05-2	HW22 [1]	HW19 [1]						
	EM1-C-M-10-2	HW22 [1]	HW19 [1]			HW19 [1]			
	EM1-C-M-20-2	HW21 [1]	HW03 [1]	HW05 [1]		HW03 [1]	HW05 [1]		
	EM1-C-M-40-2		HW03 [1]	HW05 [1]		HW03 [1]	HW05 [1]	HW05 [1]	
	EM1-C-M-75-2			HW06 [1]	HW08 [1]		HW06 [1]	HW06 [1]	HW08 [1]
	EM1-A-M-1K-2				HW13 [2]				HW13 [2]
B&R	8LSA24	BR01 [1]	BR02 [1]			BR02 [1]			
	8LSA25	BR01 [1]	BR02 [1]			BR02 [1]			
	8LSA33		BR03 [2]	BR04 [2]		BR03 [2]	BR04 [2]	BR04 [2]	
	8LSA34		BR03 [2]	BR04 [2]		BR03 [2]	BR04 [2]	BR04 [2]	
	8LSA35		BR03 [2]	BR04 [2]			BR04 [2]	BR04 [2]	
	8LSA43			BR05 [2]	BR10 [1]			BR05 [2]	BR10 [1]
	8LSA44				BR10 [1]				BR10 [1]
	8LSA45				BR10 [1]				BR10 [1]
	8LSA46				BR10 [1]				
	8LSA53				BR12 [2]				BR12 [2]
	8LSA54				BR12 [2]				BR12 [2]
	8LSA55				BR12 [2]				
	8LSN43				BR11 [2]				BR11 [2]
	8LSN44				BR11 [2]				BR11 [2]
	8LSN45				BR11 [2]				
	8LSN46				BR11 [2]				
	8LSN54				BR12 [2]				BR12 [2]
	8LSN55				BR12 [2]				
	8LSN56								
Beckhoff	AM8022		BE01 [1]	BE04 [1]		BE01 [1]	BE04 [1]		
	AM8023		BE01 [1]	BE04 [1]		BE01 [1]	BE04 [1]	BE04 [1]	
	AM8031		BE02 [2]	BE05 [1]		BE02 [2]	BE05 [1]	BE05 [1]	
	AM8032			BE05 [1]	BE09 [1]			BE05 [1]	BE09 [1]
	AM8033			BE05 [1]	BE09 [1]				BE09 [1]
	AM8531		BE02 [2]	BE05 [1]	BE09 [1]	BE02 [2]	BE05 [1]	BE05 [1]	BE09 [1]
	AM8532			BE05 [1]	BE09 [1]			BE05 [1]	BE09 [1]
	AM8533			BE05 [1]	BE09 [1]				BE09 [1]

[1] Possible belt drive V_1
[2] Possible belt drive V_2
[3] See order codes Page 31 for linear modules HM-S and Page 51 linear tables HT-S

Table 18.13 **Order code for position flange type [3] – linear modules HM-B and double axes HD**

Drive Manufacturer/Type		Linear module HM-S				Linear table HT-S			
		HM040S	HM060S	HM080S	HM120S	HT100S	HT150S	HT200S	HT250S
		Motor only	Motor only	Motor only	Motor only	Motor only	Motor only	Motor only	Motor only
Beckhoff	AM8041			BE06 [2]	BE10 [1]		BE06 [2]	BE06 [2]	BE10 [1]
	AM8042			BE06 [2]	BE10 [1]				BE10 [1]
	AM8043				BE10 [1]				BE10 [1]
	AM8541			BE06 [2]	BE10 [1]		BE06 [2]	BE06 [2]	BE10 [1]
	AM8542			BE06 [2]	BE10 [1]				BE10 [1]
	AM8543				BE10 [1]				BE10 [1]
	AM8051			BE07 [2]	BE11 [1]				BE11 [1]
	AM8052				BE11 [1]				
	AM8551			BE07 [2]	BE11 [1]				BE11 [1]
	AM8552				BE11 [1]				
	AM8061				BE12 [2]				
	AM8561				BE12 [2]				
Bosch	MSK030B	BO01 [1]	BO02 [1]			BO02 [1]			
	MSK030C		BO02 [1]			BO02 [1]			
	MSK040B		BO03 [2]	BO05 [1]	BO10 [1]	BO03 [2]	BO05 [1]	BO05 [1]	BO10 [1]
	MSK040C		BO03 [2]	BO05 [1]	BO10 [1]	BO03 [2]	BO05 [1]	BO05 [1]	BO10 [1]
	MSK043C			BO05 [1]	BO10 [1]			BO05 [1]	BO10 [1]
	MSK050B			BO06 [2]	BO11 [1]		BO06 [2]	BO06 [2]	BO11 [1]
	MSK050C			BO06 [2]	BO11 [1]			BO06 [2]	BO11 [1]
	MSK060B			BO08 [2]	BO13 [2]			BO08 [2]	BO13 [2]
	MSK060C				BO13 [2]				BO13 [2]
	MSK061B			BO07 [2]	BO12 [2]			BO07 [2]	BO12 [2]
	MSK061C				BO12 [2]				
	MSK070C				BO15 [2]				
	MSK071C				BO15 [2]				
	MSK075C				BO15 [2]				
	MSK076C				BO14 [2]				
Lenze	MCS06F		LE01 [2]	LE04 [1]		LE01 [2]	LE04 [1]		
	MCS06I		LE01 [2]	LE04 [1]		LE01 [2]	LE04 [1]	LE04 [1]	
	MCS09D		LE02 [2]	LE05 [2]	LE08 [1]		LE05 [2]	LE05 [2]	LE08 [1]
	MCS09F			LE05 [2]	LE08 [1]			LE05 [2]	LE08 [1]
	MCS09H				LE08 [1]				LE08 [1]
	MCS09L				LE08 [1]				
	MCS12D			LE06 [2]	LE09 [2]				LE09 [2]
	MCS12H				LE09 [2]				LE09 [2]
	MCS14D				LE10 [2]				LE10 [2]
Schneider	BSH0551	SE01 [1]	SE02 [1]			SE02 [1]			
	BSH0552	SE01 [1]	SE02 [1]			SE02 [1]			
	BSH0701		SE03 [2]	SE07 [1]		SE03 [2]	SE07 [1]		
	BSH0702		SE03 [2]	SE07 [1]		SE03 [2]	SE07 [1]	SE07 [1]	
	BSH0703			SE08 [1]			SE08 [1]	SE08 [1]	
	BSH1001			SE09 [2]	SE13 [1]		SE09 [2]	SE09 [2]	SE13 [1]
	BSH1002				SE13 [1]				SE13 [1]

[1] Possible belt drive V_1

[2] Possible belt drive V_2

[3] See order codes Page 31 for linear modules HM-S and Page 51 linear tables HT-S

Table 18.13 **Order code for position flange type [3] – linear modules HM-B and double axes HD**

Drive Manufacturer/Type		Linear module HM-S				Linear table HT-S			
		HM040S	HM060S	HM080S	HM120S	HT100S	HT150S	HT200S	HT250S
		Motor only	Motor only	Motor only	Motor only	Motor only	Motor only	Motor only	Motor only
Schneider	BSH1003				SE13 [1]				SE13 [1]
	BSH1401				SE15 [2]				SE15 [2]
	BMH0701		SE03 [2]	SE07 [1]		SE03 [2]	SE07 [1]	SE07 [1]	
	BMH0702		SE03 [2]	SE07 [1]		SE03 [2]	SE07 [1]	SE07 [1]	
	BMH0703			SE08 [1]	SE12 [1]		SE08 [1]	SE08 [1]	SE12 [1]
	BMH1001			SE09 [2]	SE13 [1]		SE09 [2]	SE09 [2]	SE13 [1]
	BMH1002			SE09 [2]	SE13 [1]				SE13 [1]
	BMH1003				SE13 [1]				SE13 [1]
	BMH1401				SE15 [2]				
SEW	CMP40S	SW01 [1]	SW02 [1]			SW02 [1]			
	CMP40M		SW02 [1]	SW06 [1]		SW02 [1]	SW06 [1]		
	CMP50S		SW03 [2]	SW07 [1]		SW03 [2]	SW07 [1]	SW07 [1]	
	CMP50M			SW07 [1]			SW07 [1]	SW07 [1]	
	CMP50L			SW07 [1]	SW11 [1]			SW07 [1]	SW11 [1]
	CMP63S			SW08 [2]	SW12 [1]		SW08 [2]	SW08 [2]	SW12 [1]
	CMP63M				SW12 [1]				SW12 [1]
	CMP63L				SW12 [1]				SW12 [1]
	CMP71S				SW13 [2]				SW13 [2]
	CMP71M				SW13 [2]				SW13 [2]
	CMP71L				SW13 [2]				
	CMP80S				SW14 [2]				
	CMPZ71S				SW13 [2]				SW13 [2]
	CMPZ71M				SW13 [2]				SW13 [2]
	CMPZ71L				SW13 [2]				
	CMPZ80S				SW14 [2]				
Siemens	1FK7022	SM01 [1]	SM02 [1]			SM02 [1]			
	1FK7032		SM03 [2]	SM04 [1]		SM03 [2]	SM04 [1]	SM04 [1]	
	1FK7034		SM03 [2]	SM04 [1]		SM03 [2]	SM04 [1]	SM04 [1]	
	1FK7040			SM05 [2]	SM08 [1]		SM05 [2]	SM05 [2]	SM08 [1]
	1FK7042			SM05 [2]	SM08 [1]		SM05 [2]	SM05 [2]	SM08 [1]
	1FK7060			SM06	SM09 [2]				SM09 [2]
	1FK7062				SM09 [2]				SM09 [2]
	1FK7063				SM09 [2]				
	1FK7080				SM10 [2]				SM10 [2]
	1FK7081				SM10 [2]				
	1FK7083				SM10 [2]				

[1] Possible belt drive V_1
[2] Possible belt drive V_2
[3] See order codes Page 31 for linear modules HM-S and Page 51 linear tables HT-S

18.2.2 Dimensions of motor adaptation of linear modules HM-S, linear tables HT-S

The total length of the spindle axis depends on the following factors:

- Adaptation material (coupling housing KB, motor adapter plate AM)
- Belt drive RT
- Motor

Linear axis without belt drive

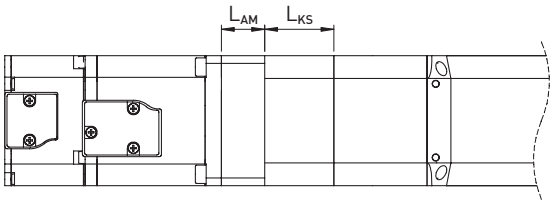


Fig. 18.24 **Motor connection of linear modules HM-S without belt drive**

L_{KS} Length of coupling housing, see Table 18.14
L_{AM} Length of motor adapter plate, see Table 18.15

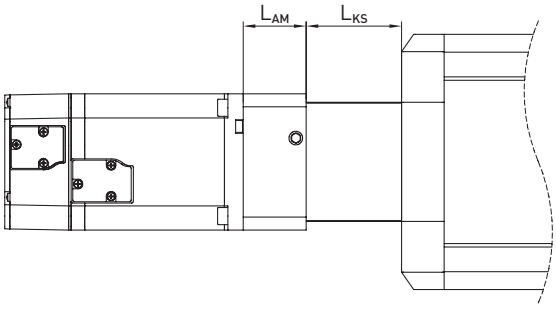


Fig. 18.25 **Motor connection of linear table HT-S without belt drive**

L_{KS} Length of coupling housing, see Table 18.14
L_{AM} Length of motor adapter plate, see Table 18.16

Linear axis with belt drive

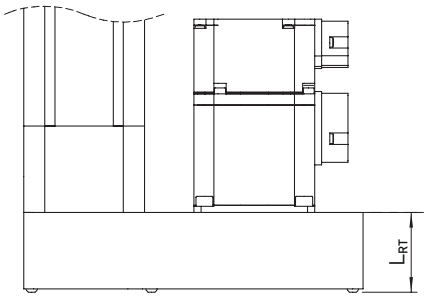


Fig. 18.26 **Motor connection of linear modules HM-S with belt drive**

L_{RT} Length of belt drive, see Table 18.17

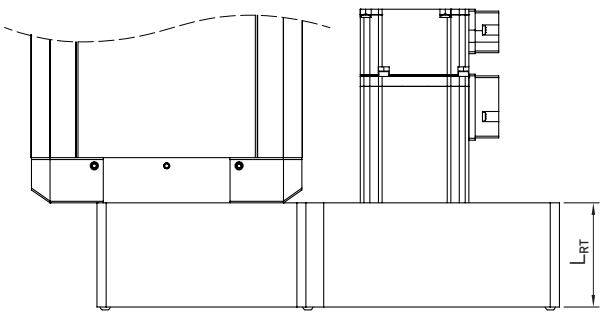


Fig. 18.27 **Motor connection of linear tables HT-S with belt drive**

L_{RT} Length of belt drive, see Table 18.17

18.2.2.1 Coupling housing KS for linear modules HM-S and linear tables HT-S

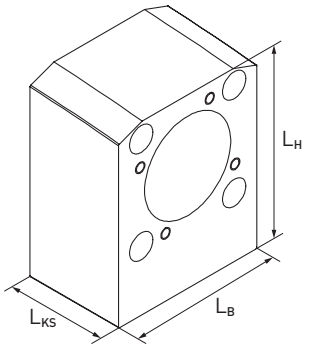


Fig. 18.28 **Coupling housing KS for linear modules HM-S**

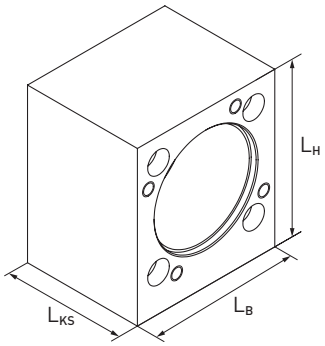


Fig. 18.29 **Coupling housing KS for linear tables HT-S**

Table 18.14 **Dimensions of coupling housing KS for linear modules HM-S and linear tables HT-S**

Coupling housing for	L_B [mm]	L_H [mm]	L_{KS} [mm]	Article number
HM040S	39.6	57.6	34	25-000305
HM060S	59.6	75.0	32	25-000306
HM080S	79.6	95.5	41	25-000307
HM120S	119.6	141.9	50	25-000308
HT100S	55.0	58.2	39	25-000952
HT150S	70.0	78.5	56	25-000951
HT200S	75.0	90.0	59	25-000950
HT250S	90.0	99.5	68	25-000949

18.2.2.2 Motor adapter plate AM for linear modules HM-S and linear tables HT-S

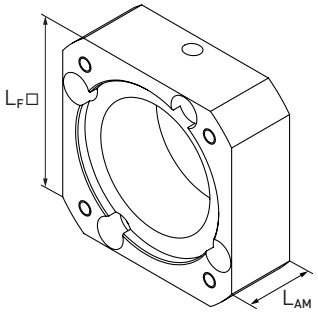


Fig. 18.30 **Motor adapter plate AM for linear modules HM-S and linear tables HT-S**

Table 18.15 **Motor adapter plate AM for linear modules HM-S**

Linear axis	Manufacturer	Motors	L_F [mm]	L_{AM} [mm]	Article number
HM040S	HIWIN	EM1-C-M-05-2, EM1-C-M-10-2	42	23	25-002721
		EM1-C-M-20-2	60	27.5	25-002871
	B&R	8LSA24, 8LSA25	58	24.5	25-000397
	Bosch	MSK030B	54	20.5	25-000395
	Schneider	BSH0551, BSH0552	55	20.5	25-000396
	SEW	CMP40S	54	20.5	25-000395
	Siemens	1FK7022	55	20.5	25-000396
HM060S	HIWIN	EM1-C-M-05-2, EM1-C-M-10-2	50	25.5	25-002736
		EM1-C-M-20-2, EM1-C-M-40-2	60	31	25-000404
	B&R	8LSA24, 8LSA25	58	25	25-000403
		8LSA33, 8LSA34, 8LSA35	82	31	25-000411
	Beckhoff	AM8022D, AM8022E, AM8023E, AM8023F	55	22	25-000402
		AM8031D, AM8031F, AM8531D, AM8531F	70	31	25-000407
	Bosch	MSK030B, MSK030C	54	22	25-000401
		MSK040B, MSK040C	82	31	25-000405
	Lenze	MCS06F41, MCS06F60, MCS06I41, MCS06I60	62	25	25-000406
		MCS09D41, MCS09D60	82	31	25-000411
	Schneider	BSH0551, BSH0552	55	22	25-000402
		BSH0701, BSH0702, BMH0701, BMH0702	62	25	25-000406
	SEW	CMP40S, CMP40M	54	22	25-000401
		CMP50S	62	25	25-000406
	Siemens	1FK7022	55	22	25-000402
		1FK7032, 1FK7034	72	31	25-000408
HM080S	HIWIN	EM1-C-M-20-2, EM1-C-M-40-2	72	27	25-000414
		EM1-C-M-75-2	80	37	25-000421
	B&R	8LSA33, 8LSA34, 8LSA35	86	27	25-000423
		8LSA43	100	37	25-000426
	Beckhoff	AM8022D, AM8022E, AM8023E, AM8023F	72	21	25-000413
		AM8031D, AM8031F, AM8032D, AM8032E, AM8032H, AM8033E, AM8033F, AM8033J, AM8531D, AM8531F, AM8532D, AM8532E, AM8532H, AM8533E, AM8533F, AM8533J	70	27	25-000418
		AM8041D, AM8041E, AM8041H, AM8042E, AM8042F, AM8042J, AM8541D, AM8541E, AM8541H, AM8542E, AM8542F, AM8542J,	87	37	25-000424
		AM8051E, AM8051G, AM8051K, AM8551E, AM8551G, AM8551K	104	47	25-000427
	Bosch	MSK040B, MSK040C, MSK043C	82	27	25-000415
		MSK050B, MSK050C	98	37	25-000425
		MSK061B	116	37	25-000428
		MSK060B	116	47	25-000429
	Lenze	MCS06F41, MCS06F60, MCS06I41, MCS06I60	72	21	25-000417
		MCS09D41, MCS09D60, MCS09F38, MCS09F60	86	27	25-000423
		MCS12D20, MCS12D41	116	37	25-000430
	Schneider	BSH0701, BSH0702, BMH0701, BMH0702	72	21	25-000417
		BSH0703, BMH0703	70	27	25-000418
		BSH1001, BMH1001, BMH1002	98	37	25-000425
	SEW	CMP40M	72	21	25-000412
		CMP63S	86	27	25-000423
		CMP50S, CMP50M, CMP50L	72	21	25-000417
	Siemens	1FK7032, 1FK7034	72	27	25-000419
		1KF7040, 1FK7042	87	37	25-000424
		1FK7060	116	47	25-000431

Table 18.15 **Motor adapter plate AM for linear modules HM-S**

Linear axis	Manufacturer	Motors	L_F [mm]	L_{AM} [mm]	Article number
HM120S	HIWIN	EM1-C-M-75-2	80	37	25-000438
		EM1-A-M-1K-2	130	51	25-000450
	B&R	8LSA43, 8LSA44, 8LSA45, 8LSA46	100	37	25-000443
		8LSN43, 8LSN44, 8LSN45, 8LNS46	116	37	25-000447
		8LSA53, 8LSA54, 8LSA55, 8LSN54, 8LSN55	142	51	25-000454
		AM8032D, AM8032E, AM8032H, AM8033E, AM8033F, AM8033J, AM8531D, AM8531F, AM8532D, AM8532E, AM8532H, AM8533E, AM8533F, AM8533J	73	27	25-000436
		AM8041D, AM8041E, AM8041H, AM8042E, AM8042F, AM8042J, AM8043E, AM8043H, AM8043K, AM8541D, AM8541E, AM8541H, AM8542E, AM8542F, AM8542J, AM8543E, AM8543H, AM8543K	87	37	25-000441
	Beckhoff	AM8051E, AM8051G, AM8051K, AM8052F, AM8052J, AM8052L, AM8551E, AM8551G, AM8551K, AM8552F, AM8552J, AM8552L	100	51	25-000444
		AM8061G, AM8061J, AM8061M, AM8561G, AM8561J, AM8561M	138	56	25-000453
	Bosch	MSK040B, MSK040C, MSK043C	82	27	25-000433
		MSK050B, MSK050C	98	37	25-000442
		MSK061B, MSK061C	116	37	25-000445
		MSK060B, MSK060C	116	51	25-000446
		MSK70C, MSK71C, MSK75C	138	56	25-000453
		MSK076C	139	51	25-000451
	Lenze	MCS09D41, MCS09D60, MCS09F38, MCS09F60, MCS09H41, MCS09H60, MCS09L41, MCS09L51	86	27	25-000440
		MCS12D20, MCS12D41, MCS12H15, MCS12H35	116	37	25-000447
		MCS14D15, MCS14D36	139	51	25-000452
	Schneider	BMH0703	73	27	25-000436
		BSH1001, BSH1002, BSH1003, BMH1001, BMH1002, BMH1003	98	37	25-000442
		BSH1401, BMH1401	139	51	25-000452
	SEW	CMP50L	73	20	25-000435
		CMP63S, CMP63M, CMP63L	86	27	25-000440
		CMP71S, CMP71M, CMP71L, CMPZ71S, CMPZ71M, CMPZ71L	116	51	25-000448
		CMP80S, CMPZ80S	138	56	25-000453
	Siemens	1FK7040, 1FK7042	87	37	25-000441
		1FK7060, 1FK7062, 1FK7063	116	51	25-000448
		1FK7080, 1FK7081, 1FK7083	138	56	25-000453

Table 18.16 **Motor adapter plate AM for linear tables HT-S**

Linear axis	Manufacturer	Motors	L_F [mm]	L_{AM} [mm]	Article number
HT100S	HIWIN	EM1-C-M-10-2	50	25.5	25-002736
		EM1-C-M-20-2, EM1-C-M-40-2	60	31	25-000404
	B&R	8LSA24, 8LSA25	58	25	25-000403
		8LSA33, 8LSA34	82	31	25-000411
	Beckhoff	AM8022D, AM8022E, AM8023E, AM8023F	55	22	25-000402
		AM8031D, AM8031F, AM8531D, AM8531F	70	31	25-000407
	Bosch	MSK030B, MSK030C	54	22	25-000401
		MSK040B, MSK040C	82	31	25-000405
	Lenze	MCS06F41, MCS06F60, MCS06I41, MCS06I60	62	25	25-000406
	Schneider	BSH0551, BSH0552	55	22	25-000402
		BSH0701, BSH0702, BMH0701, BMH0702	62	25	25-000406
	SEW	CMP40S, CMP40M	54	22	25-000401
		CMP50S	62	25	25-000406
	Siemens	1FK7022	55	22	25-000402
		1FK7032, 1FK7034	72	31	25-000408

Table 18.16 **Motor adapter plate AM for linear tables HT-S**

Linear axis	Manufacturer	Motors	L_F [mm]	L_{AM} [mm]	Article number
HT150S	Hiwin	EM1-C-M-20-2, EM1-C-M-40-2	72	27	25-000414
		EM1-C-M-75-2	80	37	25-000421
	B&R	8LSA33, 8LSA34, 8LSA35	86	27	25-000423
HT150S	Beckhoff	AM8022D, AM8022E, AM8023E, AM8023F	72	21	25-000413
		AM8031D, AM8031F, AM8531D, AM8531F	70	27	25-000418
		AM8041D, AM8041E, AM8041H, AM8541D, AM8541E, AM8541H	87	37	25-000424
	Bosch	MSK040B, MSK040C	82	27	25-000415
		MSK050B	98	37	25-000425
	Lenze	MCS06F41, MCS06F60, MCS06I41, MCS06I60	72	21	25-000417
		MCS09D41, MCS09D60	86	27	25-000423
	Schneider	BSH0701 , BSH0702, BMH0701, BMH0702	72	21	25-000417
	Schneider	BSH0703, BMH0703	70	27	25-000418
		BSH1001, BMH1001	98	37	25-000425
	SEW	CMP40M	72	21	25-000412
		CMP63S	86	27	25-000423
		CMP50S, CMP50M	72	21	25-000417
	Siemens	1FK7032, 1FK7034	72	27	25-000419
		1KF7040, 1FK7042	87	37	25-000424
HT200S	HIWIN	EM1-C-M-40-2	72	27	25-000414
		EM1-C-M-75-2	80	37	25-000421
	B&R	8LSA33, 8LSA34, 8LSA35	86	27	25-000423
		8LSA43	100	37	25-000426
	Beckhoff	AM8023E, AM8023F	72	21	25-000413
		AM8031D, AM8031F, AM8032D, AM8032E, AM8032H, AM8531D, AM8531F, AM8532D, AM8532E, AM8532H	70	27	25-000418
		AM8041D, AM8041E, AM8041H, AM8541D, AM8541E, AM8541H	87	37	25-000424
	Bosch	MSK040B, MSK040C, MSK043C	82	27	25-000415
		MSK050B, MSK050C	98	37	25-000425
		MSK061B	116	37	25-000428
		MSK060B	116	47	25-000429
	Lenze	MCS06I41, MCS06I60	72	21	25-000417
		MCS09D41, MCS09D60, MCS09F38, MCS09F60	86	27	25-000423
	Schneider	BSH0702, BMH0701, BMH0702	72	21	25-000417
		BSH0703, BMH0703	70	27	25-000418
		BSH1001, BMH1001	98	37	25-000425
	SEW	CMP63S	86	27	25-000423
		CMP50S, CMP50M, CMP50L	72	21	25-000417
	Siemens	1FK7032, 1FK7034	72	27	25-000419
		1KF7040, 1FK7042	87	37	25-000424
HT250S	HIWIN	EM1-C-M-75-2	80	37	25-000438
		EM1-A-M-1K-2	130	51	25-000450
	B&R	8LSA43, 8LSA44, 8LSA45	100	37	25-000443
		8LSN43, 8LSN44	116	37	25-000447
		8LSA53, 8LSA54, 8LSN54	142	51	25-000454
	Beckhoff	AM8032D, AM8032E, AM8032H, AM8033E, AM8033F, AM8033J, AM8531D, AM8531F, AM8532D, AM8532E, AM8532H, AM8533E, AM8533F, AM8533J	73	27	25-000436
		AM8041D, AM8041E, AM8041H, AM8042E, AM8042F, AM8042J, AM8043E, AM8043H, AM8043K, AM8541D, AM8541E, AM8541H, AM8542E, AM8542F, AM8542J, AM8543E, AM8543H, AM8543K	87	37	25-000441
		AM8051E, AM8051G, AM8051K, AM8551E, AM8551G, AM8551K	100	51	25-000444

Table 18.16 **Motor adapter plate AM for linear tables HT-S**

Linear axis	Manufacturer	Motors	L_F [mm]	L_{AM} [mm]	Article number
HT250S	Bosch	MSK040B, MSK040C, MSK043C	82	27	25-000433
		MSK050B, MSK050C	98	37	25-000442
		MSK060B, MSK060C	116	51	25-000446
	Lenze	MCS09D41, MCS09D60, MCS09F38, MCS09F60, MCS09H41, MCS09H60	86	27	25-000440
		MCS12D20, MCS12D41, MCS12H15, MCS12H35	116	37	25-000447
		MCS14D15, MCS14D36	139	51	25-000452
	Schneider	BMH0703	73	27	25-000436
		BSH1001, BSH1002, BSH1003, BMH1001, BMH1002, BMH1003	98	37	25-000442
		BSH1401	139	51	25-000452
	SEW	CMP50L	73	20	25-000435
		CMP63S, CMP63M, CMP63L	86	27	25-000440
		CMP71S, CMP71M, CMPZ71S, CMPZ71M	116	51	25-000448
	Siemens	1FK7040, 1FK7042	87	37	25-000441
		1FK7060, 1FK7062	116	51	25-000448
		1FK7080	138	56	25-000453

18.2.2.3 Belt drive RT for linear modules HM-S and linear tables HT-S

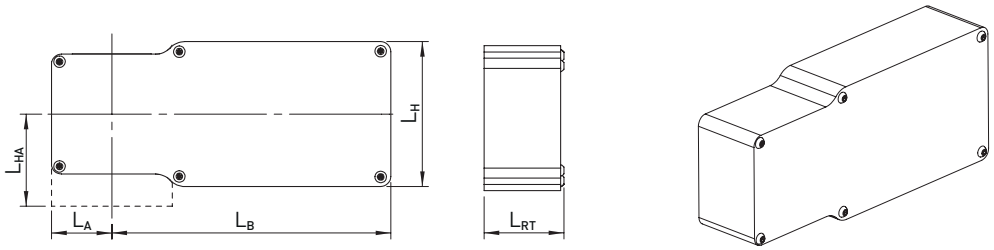


Fig. 18.31 **Belt drive for linear modules HM-S and linear tables HT-S**

Table 18.17 **Specifications of belt drive**

Linear axis	Type [1]	L_H	L_B	L_{RT}	L_A	L_{HA}	Translation
HM040S	V_1	72	138.5	40	30.0	36.25	1
HM060S	V_1	72	138.5	40	30.0	45.80	1
	V_2	102	171.5	40	30.0	45.80	1
HM080S	V_1	102	197.0	51	39.0	61.40	1
	V_2	131	226.0	61	39.0	61.40	1
HM120S	V_1	135	248.5	63	55.0	89.00	1
	V_2	175	288.0	73	55.0	89.00	1
HT100S	V_1	74	157.0	43	29.5	31.00	1
	V_2	102	196.0	43	29.5	31.00	1
HT150S	V_1	102	217.0	60	38.5	43.00	1
	V_2	131	251.0	70	38.5	43.00	1
HT200S	V_1	100	237.0	61	42.5	51.00	1
	V_2	131	268.5	71	42.5	51.00	1
HT250S	V_1	135	298.0	73	50.7	52.00	1
	V_2	175	349.5	83	50.7	52.00	1

[1] You can find the required type in Table 18.13

Note: Please note that the belt drive hangs over the lower edge of the axis if the following applies:

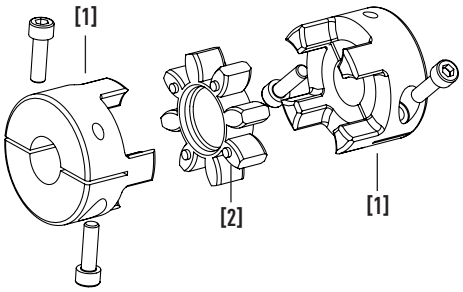
$$\frac{L_H}{2} > L_{HA}$$

Note: Please note that the belt drive can protrude over the side of the axis if the following applies:

$$L_A > \frac{L_B}{2}$$

L_B Axis profile width

18.2.2.4 Coupling component for linear modules HM-S and linear tables HT-S



[1] Clamping hubs (1 for axis side, 1 for motor side)
[2] Sprocket

Fig. 18.32 **Coupling component for linear modules HM-S, linear tables HT-S**

Clamping hub
Coupling element on motor and axis side.

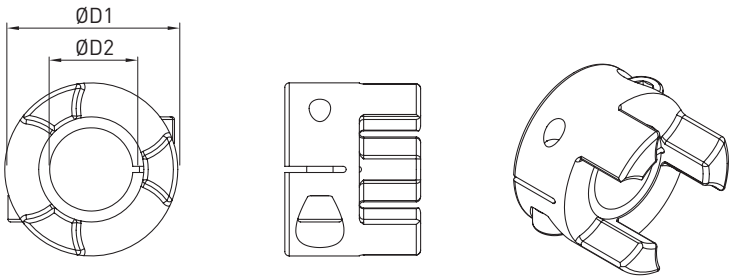


Fig. 18.33 **Clamping hub**

Table 18.18 **Article numbers and specifications of clamping hub**

Linear axis	Model	Ø D1 [mm]	Ø D2 H7 [mm]	Thread size × length	Screw tightening torque [Nm]	Frictional torque [Nm]	Moment of inertia [kgmm²]	Article number
HM040S	Size 12	24.5	5	M3 × 12	2.1	5.2	1.46	25-002382
			6	M3 × 12	2.1	6.1	1.46	25-002384
			6.35	M3 × 12	2.1	6.4	1.46	25-002385
			8	M3 × 12	2.1	8.1	1.45	25-002386
			9	M3 × 12	2.1	9.1	1.45	25-002387
			10	M3 × 12	2.1	10.1	1.44	25-002388
			11	M3 × 12	2.1	11.1	1.43	25-002389
			12	M3 × 12	2.1	12.1	1.41	25-002390
			14	M3 × 12	2.1	14.1	1.41	25-002391
HM060S, HT100S	Size 14	29.5	5	M4 × 12	5.0	10.1	2.70	25-002392
			6	M4 × 12	5.0	12.2	2.69	25-002393
			6.35	M4 × 12	5.0	13.2	2.69	25-002394
			8	M4 × 12	5.0	16.5	2.68	25-002395
			9	M4 × 12	5.0	18.6	2.68	25-002396
			10	M4 × 12	5.0	20.8	2.67	25-002397
			11	M4 × 12	5.0	23.0	2.66	25-002398
			12	M4 × 12	5.0	25.1	2.65	25-002399
			13	M4 × 12	5.0	27.2	2.63	25-002400
			14	M4 × 12	5.0	29.4	2.61	25-002401
			16	M4 × 12	4.0	28.0	6.11	25-002610

Table 18.18 **Article numbers and specifications of clamping hub**

Linear axis	Model	Ø D1 [mm]	Ø D2 H7 [mm]	Thread size × length	Screw tightening torque [Nm]	Frictional torque [Nm]	Moment of inertia [kgmm²]	Article number
HM080S, HT150S, HT200S	Size 19	39.5	6.35	M6 × 12	14.0	25.8	15.26	25-002403
			8	M6 × 12	14.0	32.5	15.25	25-002404
			9	M6 × 12	14.0	36.5	15.24	25-002405
			10	M6 × 12	14.0	40.6	15.23	25-002406
HM080S, HT150S, HT200S	Size 19	39.5	11	M6 × 12	14.0	44.6	15.21	25-002407
			12	M6 × 12	14.0	48.7	15.18	25-002408
			14	M6 × 12	14.0	56.8	15.11	25-002409
			16	M6 × 12	14.0	64.9	14.99	25-002410
			18	M6 × 12	14.0	73.1	14.82	25-002411
			19	M6 × 12	14.0	77.1	14.71	25-002412
			20	M6 × 12	14.0	81.2	14.58	25-002413
			22	M5 × 16	10.0	71.5	13.95	25-002414
			24	M5 × 16	10.0	75.6	13.52	25-002415
HM120S, HT250S	Size 24	54.5	11	M6 × 20	15.0	46.0	53.30	25-002456
			14	M6 × 20	15.0	58.0	53.20	25-002416
			16	M6 × 20	15.0	66.0	53.10	25-002417
			19	M6 × 20	15.0	78.0	52.80	25-002418
			20	M6 × 20	15.0	82.0	52.70	25-002419
			22	M6 × 20	15.0	90.0	52.30	25-002420
			24	M6 × 20	15.0	98.0	51.90	25-002422
			25	M6 × 20	15.0	102.0	51.60	25-002423
			28	M6 × 20	15.0	114.0	50.50	25-002424
			32	M6 × 20	15.0	130.0	48.50	25-002425

Sprocket

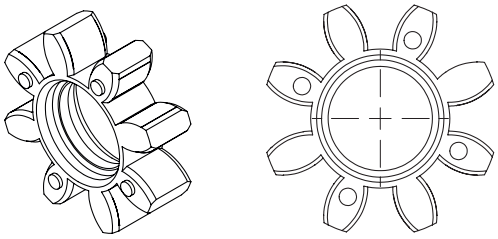


Fig. 18.34 **Sprocket**

Table 18.19 **Sprocket article number**

Linear axis	Model	Article number
HM040S	Size 12	25-000202
HM060S, HT100S	Size 14	25-000203
HM080S, HT150S, HT200S	Size 19	25-000204
HM120S, HT250S	Size 24	25-000205

18.3 Energy supply for linear tables HT-B and HT-S

For safe carrying of supply lines, linear tables HT-B and HT-S up to a maximum stroke of 5,000 mm [1] are optionally supplied with generously dimensioned energy chains. They are extremely compact and save space when attached to the axis. The orientation of the energy chain can be selected according to the order codes in section 7.2 and section 8.2. The linear tables with energy chain are optimised for horizontal installation. Axes with energy chain for vertical use on request.
The dimensions of the energy chain are listed in Fig. 18.35, Fig. 18.36, Fig. 18.37 and Table 18.20 as well as Table 18.21.

[1] For HT100B, the maximum stroke with energy chain is 4,000 mm

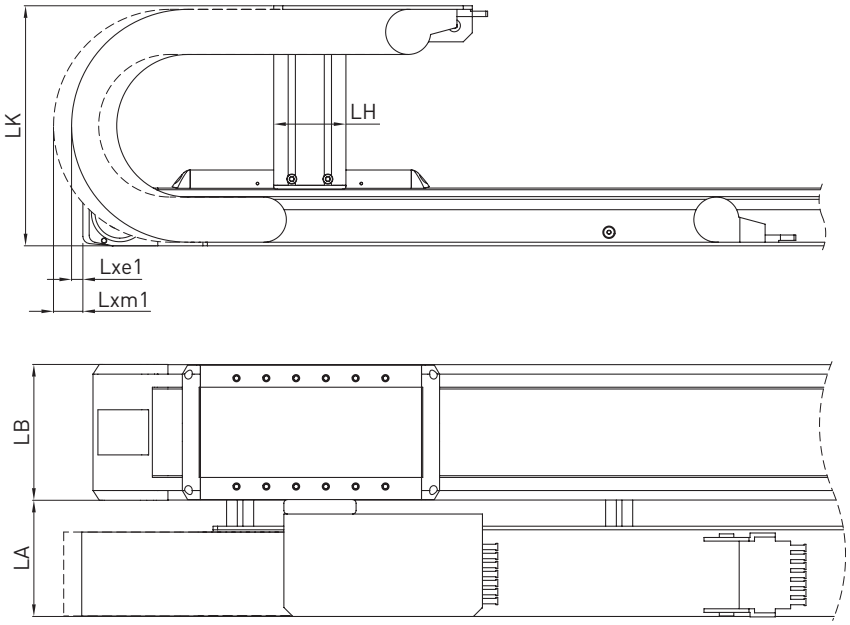


Fig. 18.35 **Linear axes HT-B: Option "E"**

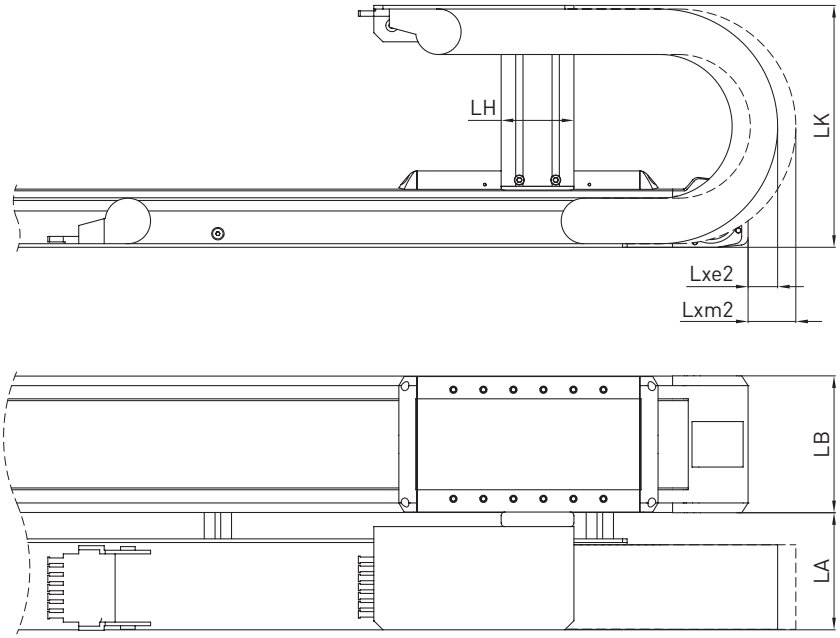


Fig. 18.36 **Linear axes HT-B: Option "C" and "F"**

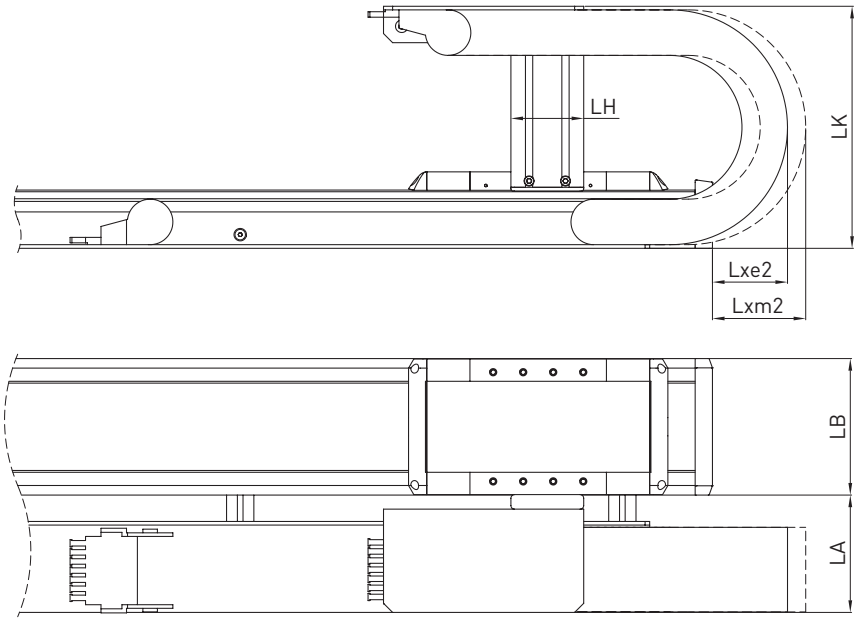


Fig. 18.37 **Linear axes HT-S: Option "C", "D", "E", "G" and "H"**

Table 18.20 **Dimensions of drive interface with energy chain for linear axes HT-B**

	Linear table – Variant without cover				Linear table – Variant with cover			
	HT100B	**HT150B**	**HT200B**	**HT250B**	**HT100B**	**HT150B**	**HT200B**	**HT250B**
LB [mm]	100	150	200	250	100	150	200	250
Inner cross section W × H [mm]	57 × 25	75 × 35	75 × 35	75 × 35	57 × 25	75 × 35	75 × 35	75 × 35
Bending radius [mm]	75	100	100	100	75	100	100	100
LK [mm]	198	266	266	266	198	266	266	266
LA [mm]	100	129	129	129	100	129	129	129
LH [mm]	60	80	80	80	60	80	80	80
Lxe1 [mm] 1)	3)	3)	3)	3)	3)	3)	3)	3)
Lxe2 [mm] 1)	3)	3)	3)	3)	3)	3)	3)	3)
Lxm1 [mm] 2)	15	3)	3)	3)	3)	3)	3)	3)
Lxm2 [mm] 2)	15	3)	3)	3)	3)	3)	3)	3)

1) At electrical zero
2) At mechanical zero
3) Energy chain without overhang

Table 18.21 **Dimensions of drive interface with energy chain for linear axes HT-S**

	Linear table – Variant without cover				Linear table – Variant with cover			
	HT100S	**HT150S**	**HT200S**	**HT250S**	**HT100S**	**HT150S**	**HT200S**	**HT250S**
LB [mm]	100	150	200	250	100	150	200	250
Inner cross section W × H [mm]	57 × 25	75 × 35	75 × 35	75 × 35	57 × 25	75 × 35	75 × 35	75 × 35
Bending radius [mm]	75	100	100	100	75	100	100	100
LK [mm]	198	266	266	266	198	266	266	266
LA [mm]	100	129	129	129	100	129	129	129
LH [mm]	60	80	80	80	60	80	80	80
Lxe1 [mm] 1)	3)	3)	3)	3)	3)	3)	3)	3)
Lxe2 [mm] 1)	40	3)	3)	3)	10	3)	3)	3)
Lxm1 [mm] 2)	3)	3)	3)	3)	3)	3)	3)	3)
Lxm2 [mm] 2)	50	15	3)	3)	20	3)	3)	3)

1) At electrical zero
2) At mechanical zero
3) Energy chain without overhang

18.4 Connection interface and energy supply for linear motor axes HT-L

Linear motor axes HT-L have an interface for motor and encoder cables. These are located on the side of the carriage and can be connected quickly and easily without tools. Depending on the the installation situation and the desired cable routing, two different orientations of the connector are available, see Fig. 18.38, Fig. 18.39, Fig. 18.40 and Fig. 18.41.

For safe carrying of the supply cables, linear motor axes HT100L and HT150L up to a maximum stroke of 4,000 mm and linear motor axes HT200L and HT250L up to a maximum stroke of 5,000 mm are optionally supplied with generously dimensioned energy chains. They are extremely compact and save space when attached to the axis. The orientation of the energy chain depends on the selected connector orientation. Linear tables HT-L with energy chain are optimised for horizontal installation. Axes with energy chain for vertical use on request.

Dimensions of the energy chain and the electrical interface are listed in Fig. 18.38, Fig. 18.39, Fig. 18.40, Fig. 18.41 and Table 18.22.

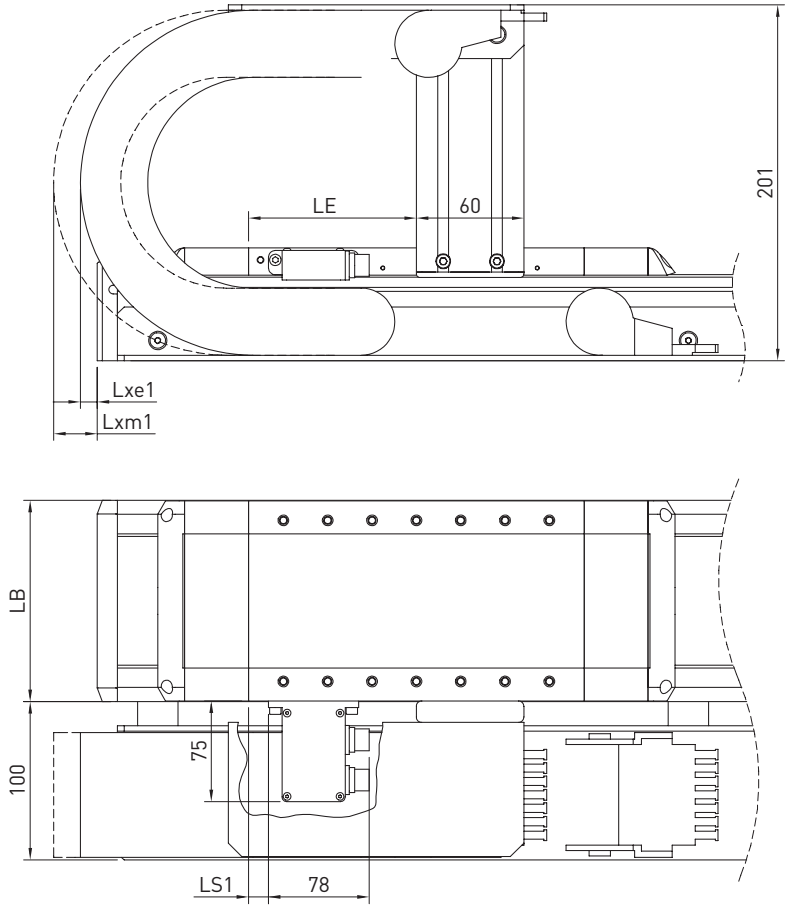


Fig. 18.38 **Linear motor axes HT100L: Option "D" and "F" – connector right/rear, also applies mirrored to option "C" and "E" – connector left/rear**

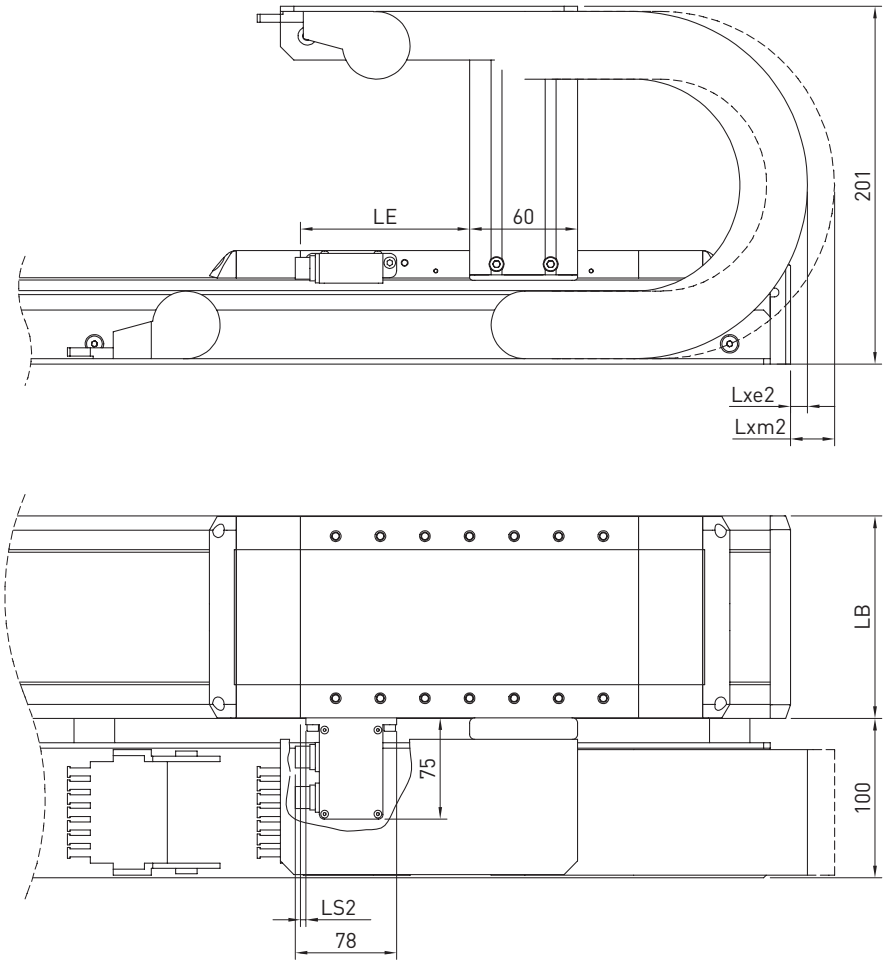


Fig. 18.39 **Linear motor axes HT100L: Option "R" and "B" – connector right/front, also applies mirrored to option "L" and "A" – connector left/front**

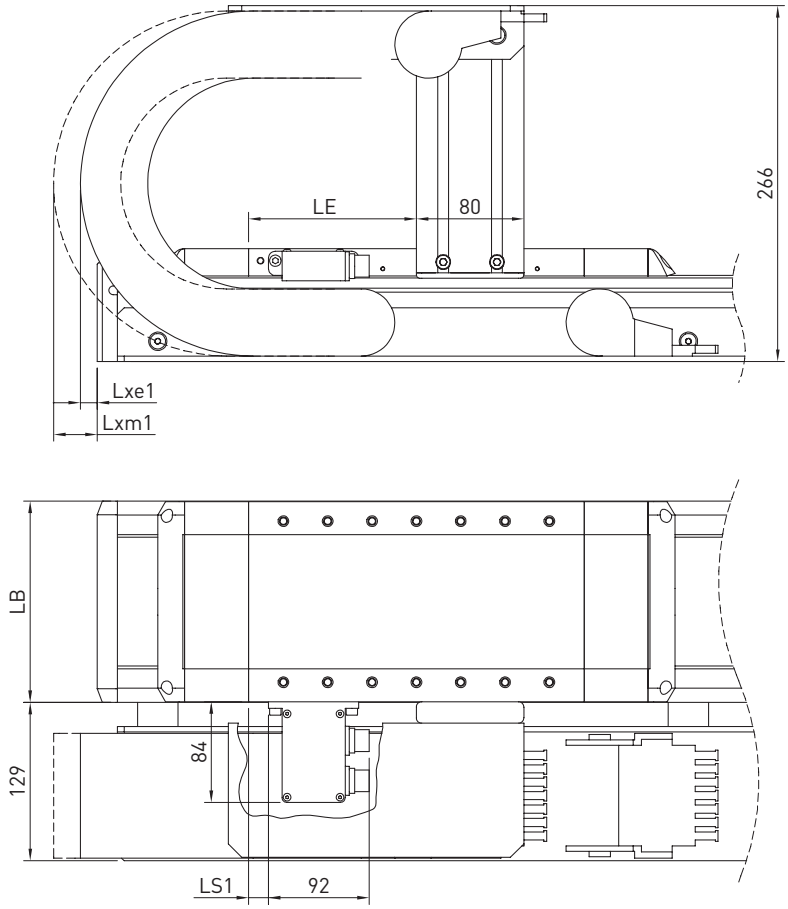


Fig. 18.40 **Linear motor axes HT150L, HT200L, HT250L: Option "D" and "F" – connector right/rear, also applies mirrored to option "C" and "E" – connector left/rear**

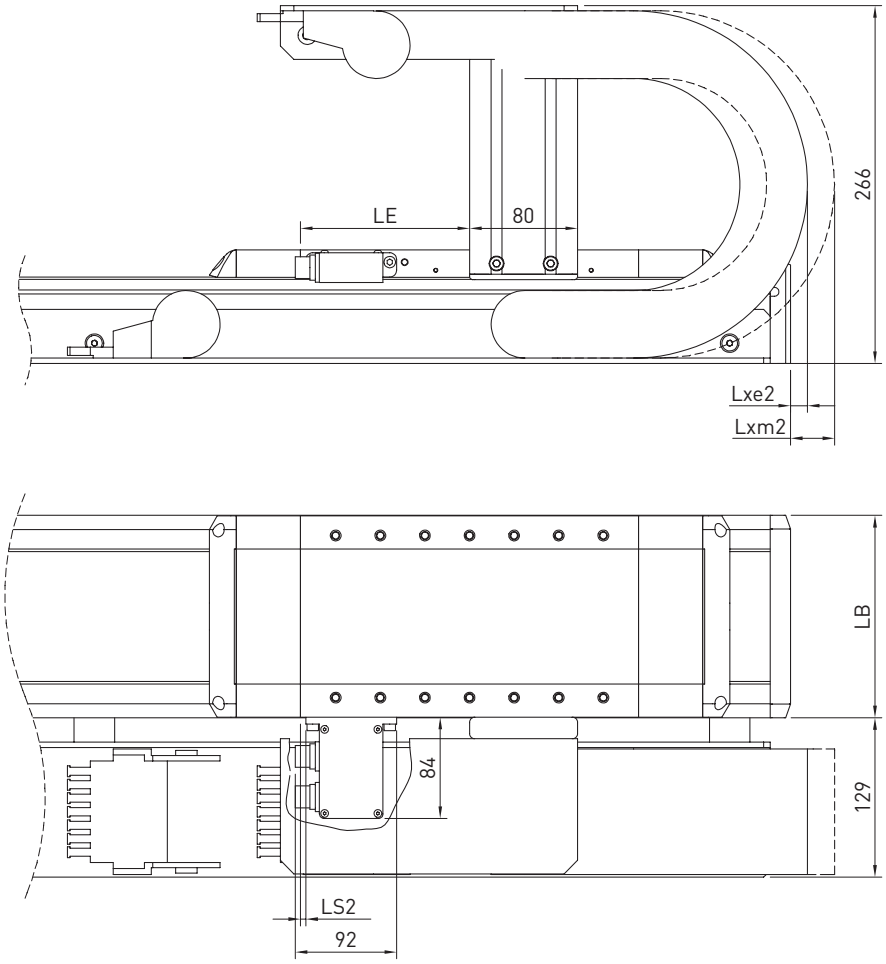


Fig. 18.41 **Linear motor axes HT150L, HT200L, HT250L: Option "R" and "B" – connector right/front, also applies mirrored to option "L" and "A" – connector left/front**

Table 18.22 **Dimensions of drive interface and energy chain for linear motor axes HT-L**

	Linear table – Variant without cover				Linear table – Variant with cover			
	HT100L	**HT150L**	**HT200L**	**HT250L**	**HT100L**	**HT150L**	**HT200L**	**HT250L**
LB [mm]	100	150	200	250	100	150	200	250
Inner cross section W × H [mm]	57 × 25	77 × 25	75 × 35	75 × 35	57 × 25	77 × 25	75 × 35	75 × 35
Bending radius [mm]	75	100	100	100	75	100	100	100
LE [mm][3]	117.5	125	120	135	117.5	125	120	135
Lxe1 [mm][1)3)]	15	20	30	–	–	–	–	–
Lxe2 [mm][1)3)]	50	–	–	–	–	–	–	–
Lxm1 [mm][2)3)]	25	30	60	35	–	–	10	–
Lxm2 [mm][2)3)]	60	–	–	–	10	–	–	–
LS1 [mm]	11	15	17	25	11	15	17	25
LS2 [mm]	0	4	6	14	0	4	6	14

[1)] At electrical zero
[2)] At mechanical zero
[3)] Not applicable for variant without energy chain
Suitable motor and encoder cables can be found in the accessories in sections 19.8 up to 19.10

19. Accessories

19.1 Clamping profiles

With the help of clamping profiles, the linear axis is attached to the machine frame from above. The clamping profiles can be swivelled laterally into the profile groove of the axis.

The required number of clamping profiles depends on the axis length and the load and can be found in the assembly instructions. Sets containing 4 clamping profiles are available.

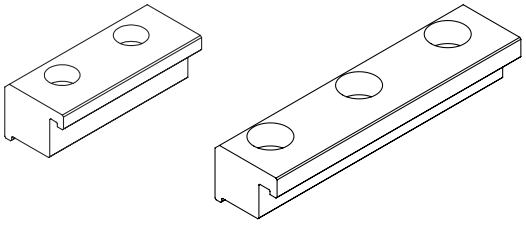


Fig. 19.1 **Clamping profiles short and long**

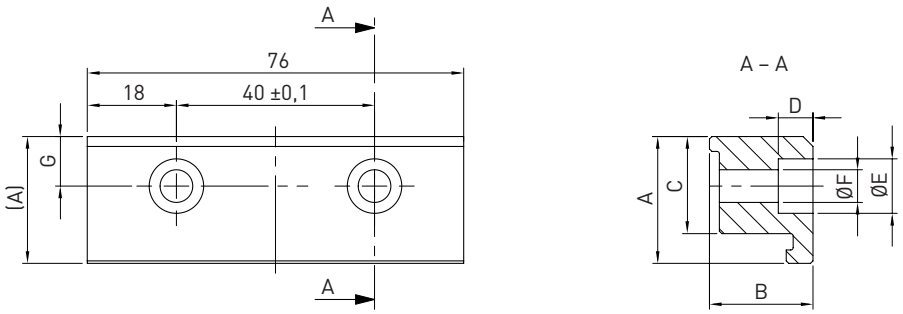


Fig. 19.2 **Dimensioned drawing of clamping profile short**

Table 19.1 **Article numbers and dimensions of clamping profiles short**

Suitable for linear axis	Model	A	B	C	D	Ø E	Ø F	G	Matching screw	Article number, 4 pieces
HM040/HT100	Size 5	18.0	10.5	14.1	6.0	10	5.5	6.85	DIN 912 M5	25-000517
HM060	Size 6	25.6	20.9	19.6	9.5	11	6.6	10.00	DIN 912 M6	25-000518
HT150	Size 6	26.1	15.9	19.6	8.5	11	6.6	10.00	DIN 912 M6	25-001023
HM080 [1]**/HM120/ HT200/HT250**	Size 8	28.0	22.0	19.5	8.0	15	9.0	10.00	DIN 912 M8	25-000519

[1] Standard
Unit: mm

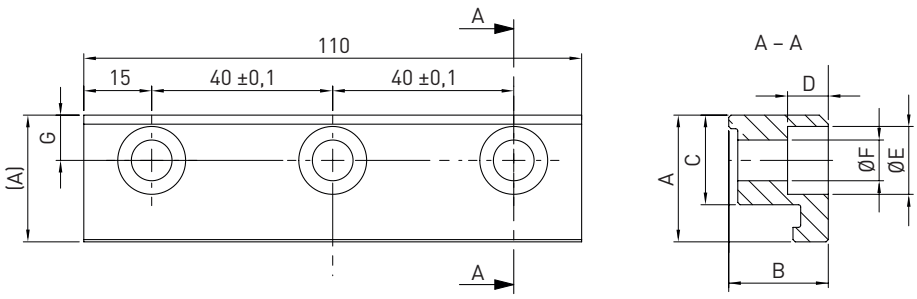


Fig. 19.3 **Dimensioned drawing of clamping profile long**

Table 19.2 **Article numbers and dimensions of clamping profiles long**

Suitable for linear axis	Model	A	B	C	D	Ø E	Ø F	G	Matching screw	Article number, 4 pieces
HM080/HM120 [1]**/ HT200** [1]**/HT250** [1]	Size 8	28.0	22.0	19.5	8.0	15.0	9.0	10.0	DIN 912 M8	25-000520

[1] Standard
unit: mm

19.2 T nut

T nut for force-fit mounting of the linear axis. Flexible fastening option via the grooves on the side and underside of the axis profile. The required number of T nuts depends on the axis length and the load and can be found in the assembly instructions. Sets containing 10 T nuts are available.

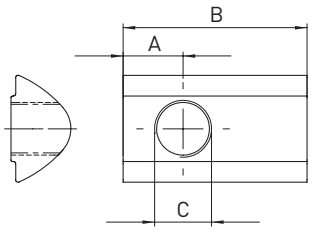


Fig. 19.4 **Dimensioned drawing of T nut**

Table 19.3 **Article numbers and dimensions of T nut**

Suitable for linear axis	Model	A	B	C	Article number, 10 pieces
HM040, HT100	Size 5 M4	3.5	12.0	M4	20-000528
HM040, HT100 [1)]	Size 5 M5	3.5	12.0	M5	20-000529
HM060, HT150	Size 6 M5	4.5	17.0	M5	20-000530
HM060, HT150 [1)]	Size 6 M6	5.5	17.0	M6	20-000531
HM080, HM120, HT200, HT250, HC100B	Size 8 M5	7.5	23.0	M5	20-000532
HM080, HM120, HT200, HT250, HC100B	Size 8 M6	6.5	23.0	M6	20-000533
HM080, HM120, HT200, HT250 [1)], **HC100B**	Size 8 M8	7.5	23.0	M8	20-000534

[1)] Preferred type for axis mounting
unit: mm

19.3 Centring sleeve

Centring sleeves for insertion into the mounting holes of the carriage for exact and reproducible load pick-up. Sets containing 10 centring sleeves are available.

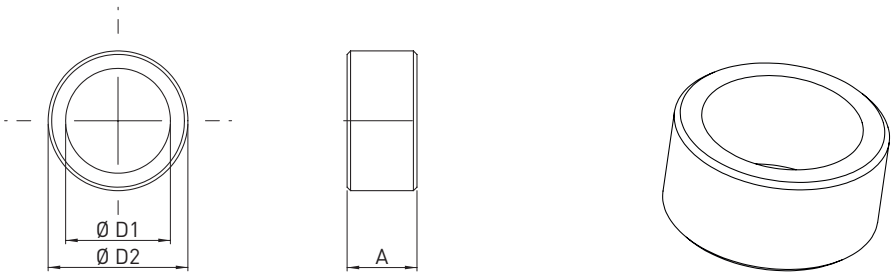


Fig. 19.5 **Dimensioned drawing of centring sleeve**

Table 19.4 **Article numbers and dimensions of centring sleeve**

Suitable for linear axis	A	Ø D1	Ø D2	Article number, 10 pieces
HC025	4	4.5	6 h6	25-002195
HM040, HM060, HT100, HT150, HC040, HC060	4	6.5	8 h6	25-000511
HM080, HT200, HC080	4	9.0	12 h6	25-000512
HM120, HT250, HC100B	4	11.0	15 h6	25-000513

Unit: mm

19.4 Groove cover

Groove cover for covering mounting groove. Length: 2 m. Sets of 5 groove covers are available.

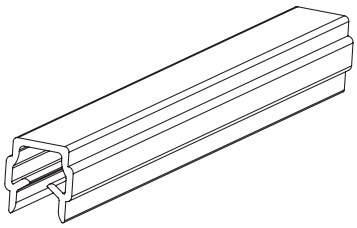


Fig. 19.6 **Groove cover for linear axes HM/HT/HC**

Table 19.5 **Article numbers for groove covers**

Suitable for linear axis	Model	Article number, 5 pieces
HM040, HT100, HC040, HC060	Size 5	25-000514
HM060, HT150, HC080	Size 6	25-000515
HM080, HM120, HT200, HT250, HC100B	Size 8	25-000516

19.5 Limit switches

Inductive proximity switch, available in either a normally closed or a normally open version. By default, the limit switch is available with connector or open cable end. Set including mounting material.

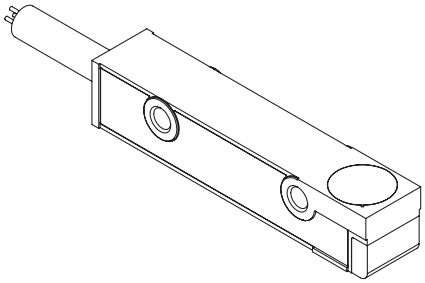


Fig. 19.7 **Limit switch for linear axes HM/HT/HC**

Table 19.6 **Options for limit switch**

Suitable for linear axis	Option	Article number
HM, HT, HC040B, HC060B, HC080B, HC100B	Limit switch with 100 mm cable, connector (normally open)	25-002766
HM, HT, HC040B, HC060B, HC080B, HC100B	Limit switch with 100 mm cable, connector (normally closed)	25-000786
HM, HT, HC040B, HC060B, HC080B, HC100B	Limit switch with 4 m cable (normally closed)	25-000787
HM, HT, HC040B, HC060B, HC080B, HC100B	Limit switch with 5 m cable (normally open)	25-000788
HC025B	Limit switch with 200 mm cable, connector (normally closed)	25-002204
HC025B	Limit switch with 2 m cable (normally closed)	25-002205

19.6 Extension cable for limit switches

Cable with 3-pin M8 round connector on the limit switch side and open wires at the other end of the cable.

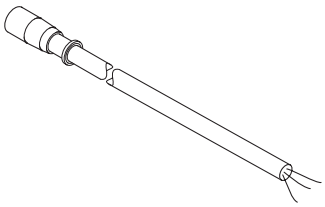


Fig. 19.8 **Extension cable for limit switch**

Table 19.7 **Extension cable for limit switch**

Length [m]	Max. cable diameter [mm]	Min. static bending radius [mm]	Min. dynamic bending radius [mm]	Article number
3	4.5	13.5	18.0	8-10-0275
5	4.5	13.5	18.0	8-10-0276
7	4.5	13.5	18.0	8-10-0277
10	4.5	13.5	18.0	8-10-0278
15	4.5	13.5	18.0	8-10-0279

19.7 Damping element

The damping element is used to switch the limit switch in the two carriage end positions (at stroke 0 and stroke max.). Set including mounting material.

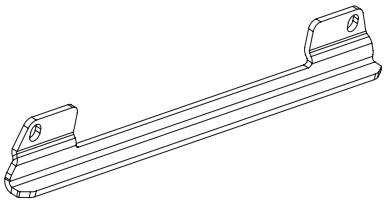


Fig. 19.9 **Damping element for linear axes HM/HT**

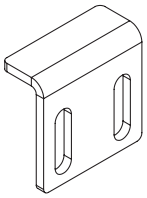


Fig. 19.10 **Damping element for cantilever axes HC**

Table 19.8 **Article numbers for damping element**

Suitable for linear axis	Article number
HM, carriage type E	25-001999
HM, carriage type S, M, L	25-000785
HT	25-001031
HC025	25-002196
HC040	25-002197
HC060, HC080	25-002198
HC100B	80056513

19.8 Motor cable for linear tables HT-L

Motor cable matching linear tables HT-L.

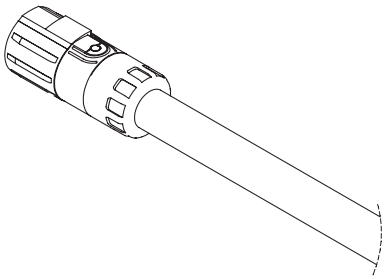


Fig. 19.11 **Motor cable for linear table HT100L**

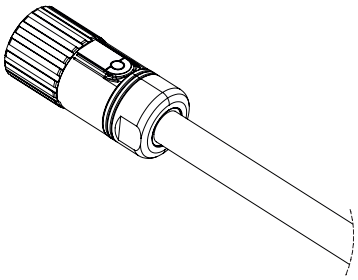


Fig. 19.12 **Motor cable for linear table HT150L, HT200L, HT250L**

Table 19.9 **Motor cable for linear table HT-L**

Suitable for linear axis	Length [m]	Connection axis-side	End of cable	Article number
HT100L	**3**	**Connector 915, 9-pin**	**Open**	8-10-1214
HT100L	**5**	**Connector 915, 9-pin**	**Open**	8-10-1215
HT100L	**10**	**Connector 915, 9-pin**	**Open**	8-10-1217
HT150L, HT200L, HT250L	**3**	**Connector M23**	**Open**	8-10-0069
HT150L, HT200L, HT250L	**5**	**Connector M23**	**Open**	8-10-0070
HT150L, HT200L, HT250L	**10**	**Connector M23**	**Open**	8-10-0072

19.9 Encoder cable for incremental distance measuring system for linear tables HT-L

Cable for incremental distance measuring system (option A, B, D, E) for linear axes HT-L.

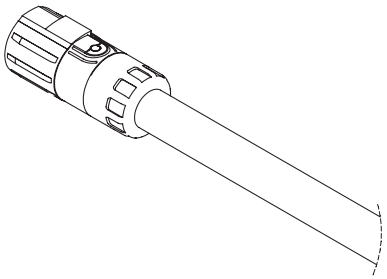


Fig. 19.13 **Encoder cable for incremental distance measuring system for linear tables HT100L**

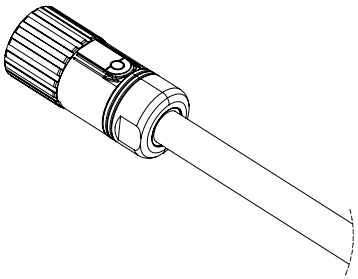


Fig. 19.14 **Encoder cable for incremental distance measuring system for linear tables HT150L, HT200L, HT250L**

Table 19.10 **Encoder cable for incremental distance measuring system (A, B, D, E option)**

Suitable for linear axis	Length [m]	Suitable for option	Connection axis-side	End of cable	Article number
HT100L	**3**	A, B	Connector 915, 15-pin	Connector suitable for ESC-SS for ED1	8-10-1838
HT100L	**5**	A, B	Connector 915, 15-pin	Connector suitable for ESC-SS for ED1	8-10-1839
HT100L	**8**	A, B	Connector 915, 15-pin	Connector suitable for ESC-SS for ED1	8-10-1840
HT100L	**10**	A, B	Connector 915, 15-pin	Connector suitable for ESC-SS for ED1	8-10-1841
HT100L	**12**	A, B	Connector 915, 15-pin	Connector suitable for ESC-SS for ED1	8-10-1842
HT100L	**15**	A, B	Connector 915, 15-pin	Connector suitable for ESC-SS for ED1	8-10-1843
HT100L	**3**	D, E	Connector 915, 15-pin	Connector suitable for ESC-SS for ED1	8-10-1844
HT100L	**5**	D, E	Connector 915, 15-pin	Connector suitable for ESC-SS for ED1	8-10-1845
HT100L	**8**	D, E	Connector 915, 15-pin	Connector suitable for ESC-SS for ED1	8-10-1846
HT100L	**10**	D, E	Connector 915, 15-pin	Connector suitable for ESC-SS for ED1	8-10-1847
HT100L	**12**	D, E	Connector 915, 15-pin	Connector suitable for ESC-SS for ED1	8-10-1848
HT100L	**15**	D, E	Connector 915, 15-pin	Connector suitable for ESC-SS for ED1	8-10-1849
HT100L	**3**	A, D	Connector 915, 15-pin	Open	8-10-1207
HT100L	**5**	A, D	Connector 915, 15-pin	Open	8-10-1208
HT100L	**10**	A, D	Connector 915, 15-pin	Open	8-10-1210
HT100L	**3**	B, E	Connector 915, 15-pin	Open	8-10-1201
HT100L	**5**	B, E	Connector 915, 15-pin	Open	8-10-1202
HT100L	**10**	B, E	Connector 915, 15-pin	Open	8-10-1204
HT150L, HT200L, HT250L	**3**	A, B	Connector M17	Connector suitable for ESC-SS for ED1	8-10-1856
HT150L, HT200L, HT250L	**5**	A, B	Connector M17	Connector suitable for ESC-SS for ED1	8-10-1857
HT150L, HT200L, HT250L	**8**	A, B	Connector M17	Connector suitable for ESC-SS for ED1	8-10-1858
HT150L, HT200L, HT250L	**10**	A, B	Connector M17	Connector suitable for ESC-SS for ED1	8-10-1859
HT150L, HT200L, HT250L	**12**	A, B	Connector M17	Connector suitable for ESC-SS for ED1	8-10-1860
HT150L, HT200L, HT250L	**15**	A, B	Connector M17	Connector suitable for ESC-SS for ED1	8-10-1861
HT150L, HT200L, HT250L	**3**	D, E	Connector M17	Connector suitable for ESC-SS for ED1	8-10-1862
HT150L, HT200L, HT250L	**5**	D, E	Connector M17	Connector suitable for ESC-SS for ED1	8-10-1863
HT150L, HT200L, HT250L	**8**	D, E	Connector M17	Connector suitable for ESC-SS for ED1	8-10-1864
HT150L, HT200L, HT250L	**10**	D, E	Connector M17	Connector suitable for ESC-SS for ED1	8-10-1865
HT150L, HT200L, HT250L	**12**	D, E	Connector M17	Connector suitable for ESC-SS for ED1	8-10-1866
HT150L, HT200L, HT250L	**15**	D, E	Connector M17	Connector suitable for ESC-SS for ED1	8-10-1867
HT150L, HT200L, HT250L	**3**	A, D	Connector M17	Open	8-10-0115
HT150L, HT200L, HT250L	**5**	A, D	Connector M17	Open	8-10-0116
HT150L, HT200L, HT250L	**10**	A, D	Connector M17	Open	8-10-0118
HT150L, HT200L, HT250L	**3**	B, E	Connector M17	Open	80028093
HT150L, HT200L, HT250L	**5**	B, E	Connector M17	Open	80028203
HT150L, HT200L, HT250L	**10**	B, E	Connector M17	Open	80028218

19.10 Encoder cable for absolute distance measuring system for linear tables HT-L

Cable for absolute distance measuring system (option H, R, S, T) for linear axes HT-L.

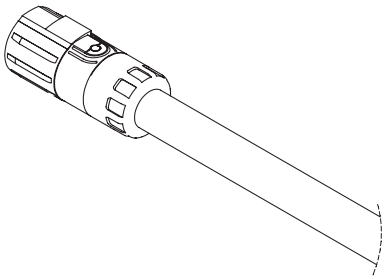


Fig. 19.15 **Encoder cable for absolute distance measuring system for linear tables HT100L**

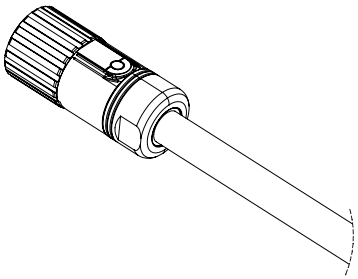


Fig. 19.16 **Encoder cable for absolute distance measuring system for linear tables HT150L, HT200L, HT250L**

Table 19.11 **Encoder cable for absolute distance measuring system (H, T, R, S option)**

Suitable for linear axis	Length [m]	Suitable for option	Connection axis-side	End of cable	Article number
HT100L	**3**	H, R	Connector 915, 15-pin	Connector suitable for ESC-SS for ED1	8-10-1850
HT100L	**5**	H, R	Connector 915, 15-pin	Connector suitable for ESC-SS for ED1	8-10-1851
HT100L	**8**	H, R	Connector 915, 15-pin	Connector suitable for ESC-SS for ED1	8-10-1852
HT100L	**10**	H, R	Connector 915, 15-pin	Connector suitable for ESC-SS for ED1	8-10-1853
HT100L	**12**	H, R	Connector 915, 15-pin	Connector suitable for ESC-SS for ED1	8-10-1854
HT100L	**15**	H, R	Connector 915, 15-pin	Connector suitable for ESC-SS for ED1	8-10-1855
HT100L	**3**	H, R, S, T	Connector 915, 15-pin	Open	8-10-1207
HT100L	**5**	H, R, S, T	Connector 915, 15-pin	Open	8-10-1208
HT100L	**10**	H, R, S, T	Connector 915, 15-pin	Open	8-10-1210
HT150L, HT200L, HT250L	**3**	H, R	Connector M17	Connector suitable for ESC-SS for ED1	8-10-1868
HT150L, HT200L, HT250L	**5**	H, R	Connector M17	Connector suitable for ESC-SS for ED1	8-10-1869
HT150L, HT200L, HT250L	**8**	H, R	Connector M17	Connector suitable for ESC-SS for ED1	8-10-1870
HT150L, HT200L, HT250L	**10**	H, R	Connector M17	Connector suitable for ESC-SS for ED1	8-10-1871
HT150L, HT200L, HT250L	**12**	H, R	Connector M17	Connector suitable for ESC-SS for ED1	8-10-1872
HT150L, HT200L, HT250L	**15**	H, R	Connector M17	Connector suitable for ESC-SS for ED1	8-10-1873
HT150L, HT200L, HT250L	**3**	H, T, R, S	Connector M17	Open	8-10-0315
HT150L, HT200L, HT250L	**5**	H, T, R, S	Connector M17	Open	8-10-0316
HT150L, HT200L, HT250L	**10**	H, T, R, S	Connector M17	Open	8-10-0318

19.11 Partitions for energy chain

Partitions for separating cables in the energy chain By default, the energy chain is equipped with a partition in every second chain link. Additional partitions are available in a set of 20.

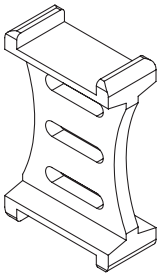


Fig. 19.18 **Partition for energy chains**

Table 19.12 **Article numbers for partitions**

Suitable for linear axis				Article number, 20 pcs.
HT	**HS (X-axis)**	**HS (Y-axis)**	**HS (Z-axis)**	
—	—	—	31, L1	8-05-0393
100, 150L	21, 31, L1, L2, L3, L4	21, 22, 23, 24, 31, 32, 33, 34	32, 33, 34, L2, L3, L4	8-05-0336
150B, 150S, 200, 250	22, 23, 24, 32, 33, 34	—	—	8-05-0337

19.12 Belt for noise reduction of the energy chain

Cellular rubber tape, self-adhesive on one side, for attachment to the contact surface of the energy chain in order to reduce noise emissions. Suitable for all linear axes HT-B, HT-S, HT-L and HS with energy chain (exception HT150L with drive interface E or F).
Roll of 10 m
Article number: 25-002485

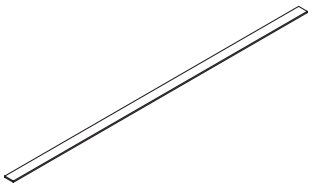


Fig. 19.17 **Belt for reduction of noise emissions from the energy chain**

19.13 Drive block cover

Cover plate for closing unneeded drives/outputs on linear axes with toothed belt drive HM-B and HT-B as well as cantilever axes HC-B.
Set including mounting material.

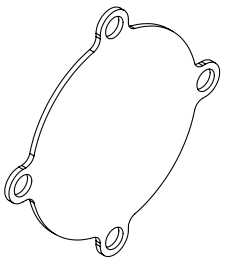


Fig. 19.19 **Cover for drive block**

Table 19.14 **Article numbers for drive block cover**

Suitable for linear axis	Article number
HC025B	25-002379
HM040B, HC040B	25-002375
HM060B, HC060B	25-002376
HM080B, HC080B	25-002377
HM120B, HC100B	25-002378
HT100B	25-002372
HT150B	25-002373
HT200B, HT250B	25-002374

19.14 Journals for linear axes HM-B and cantilever axes HC

The journal can be clamped to each side of the drive wheel. It can be used to adapt the drive/output, synchronous drive, encoder attachment or the like.

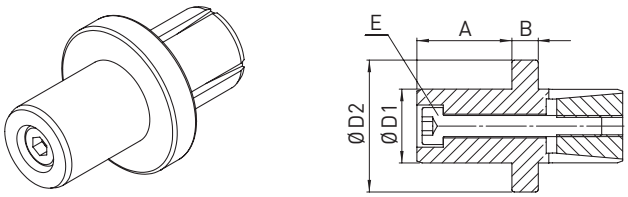


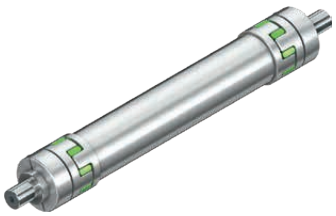
Fig. 19.20 **Journal dimensions**

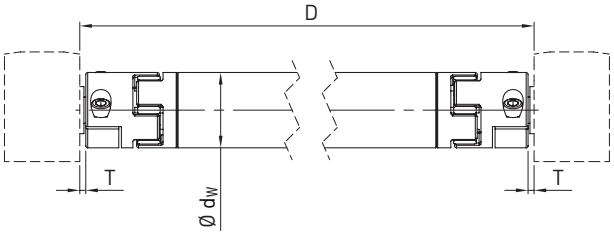
Table 19.13 **Article numbers and dimensions of journals**

Suitable for linear axis	A [mm]	B [mm]	E (screw)	Ø D1 [mm]	Ø D2 [mm]	Screw tightening torque [Nm]	Moment of inertia [kgmm²]	Transmittable torque (arithmetic) [Nm]	Article number
HC025B	12	5.5	ISO 4762 M4 × 25	12 h7	17 h9	2.9	0.24	7.7	25-002514
HM040B, HC040B	18	5.0	ISO 4762 M4 × 30	14 h7	25 h9	4.5	1.21	17.0	25-000174
HM060B, HC060B	22	8.0	ISO 4762 M6 × 45	20 h7	32 h9	10.0	5.37	36.0	25-000175
HM080B, HC080B	30	8.0	ISO 4762 M8 × 55	25 h7	45 h9	25.0	17.70	81.0	25-000176
HM120B, HC100B	30	10.0	ISO 4762 M10 × 60	32 h7	55 h9	55.0	55.70	213.0	25-000177

19.15 Synchronous shaft

The synchronous shaft is used on double axes to transmit the drive torque from the driven axis to the rotating axis. In addition to the actual synchronous shaft, the set also includes the coupling elements and the adaptation material.





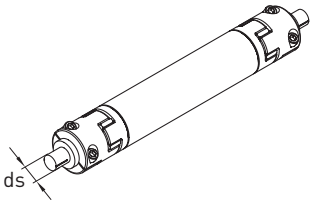
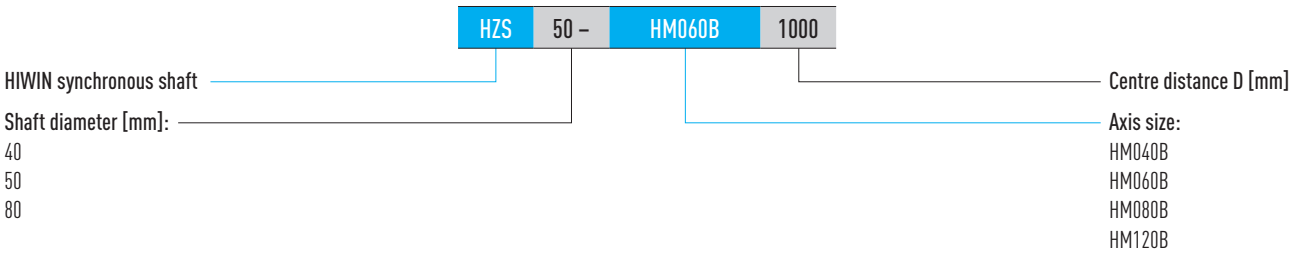


Table 19.16 **Dimensions of synchronous shaft**

Suitable for double axis	D min.	D max.	T	Ø shaft	Ø ds
HD1/HM040B	160	1,500	3.2	40	14
HD2/HM060B	186	2,000	7.2	50	20
HD3/HM080B	200	2,400	14.2	50	25
HD4/HM120B	256	3,000	5.7	80	35

Unit: mm

19.15.1 Order code for synchronous shaft



19.15.2 Spacer

The spacer is required when the synchronous shaft is not installed horizontally to prevent metal-on-metal contact in the lower coupling.

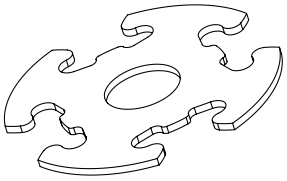


Table 19.15 **Article numbers for spacer**

Suitable for double axis	Suitable for synchronous shaft	Article number
HD1/HM040B	HZS40HM040Bxxxx [1)]	25-000730
HD2/HM060B	HZS50HM060Bxxxx [1)]	25-000731
HD3/HM080B	HZS50HM080Bxxxx [1)]	25-000731
HD4/HM120B	HZS80HM120Bxxxx [1)]	25-000733

[1)] xxxx = centre distance D

19.17 HIWIN lubricants

Table 19.18 **Recommended HIWIN grease**

Grease type	Area of application	Unit of measure	Article number
G04	High velocity	Cartridge 400 g	20-000345

Table 19.19 **Recommended HIWIN grease gun**

Article number	Description	Scope of delivery	Comment
20-000333	Grease gun type GN-400C including lubrication adapter and nozzle set (see Fig. 19.21)	Grease gun type GN-400-C consisting of: ○ Grease gun ○ Hydraulic gripping coupling A1 suitable for conical grease nipples according to DIN 71412, outer diameter 15 mm ○ Hollow mouthpiece A2 for conical and ball grease nipples according to DIN 71412/ DIN 3402, outer diameter 10 mm ○ Set of lubrication adapters and nozzles	Suitable for 400 g cartridge or direct filling

Fig. 19.21 **Grease gun GN-400C**

19.16 HIWIN grease nipple

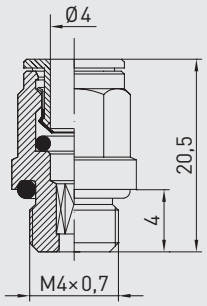
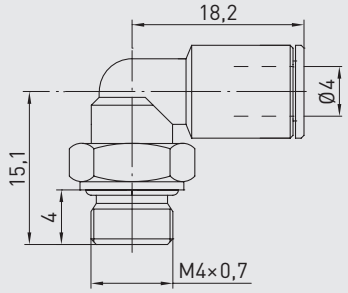
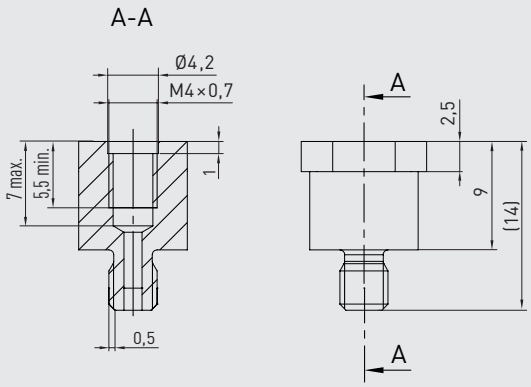
Grease nipple suitable for HM, HT and HC, all sizes, all drive types.

Table 19.17 **Grease nipple M4 × 0.7**

Article number	Linear axes HM	Linear tables HT	Cantilever axes HC	Figure
20-000325	Standard	Standard: HT100B Option: HT150B, HT200B, HT250B	Standard	
20-000538	Option	Standard: HT150B, HT200B, HT250B Option: HT100B	Option	
20-000272	Option	Option	Option	

19.18 Lubrication connectors and push-in fittings

Table 19.20 **Lubrication connectors and push-in fittings**

Article number	Description	Figure
8-12-0186	Push-in fitting straight Ø 4	
20-002116	Push-in fitting angled Ø 4	
20-002108	Lubrication adapter M4/M4 for extending the push-in fittings to avoid collisions (e.g. damping element)	

Notes

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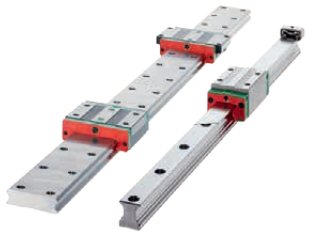
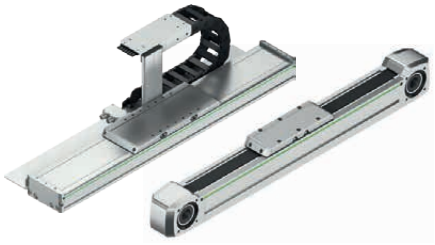
We live motion.

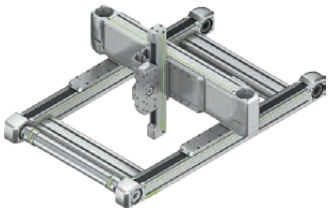


Linear Guideways

Ballscrews



Linear Axes



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Linear Motors

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