


Heavy-duty guides HD, without drive



-  - Type discontinued  
Available up until 2009

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## Heavy-duty guides HD, without drive

Key features

### At a glance

- Driveless linear guide unit with guide and freely movable slide
- The passive guide axis/heavy-duty guide is designed to increase force and torque capacities in multi-axis applications
- Higher torsional resistance
- Reduced vibrations with dynamic loads
- Drive axis and passive guide axis/heavy-duty guide can be arranged adjacent to or above one another

### Guide axes and the corresponding drives

#### Passive guide axis DGC-FA



- Can be combined with:
  - Linear drive DGC-KF
- For size 8 ... 63
- Load capacity to max. 6,890 N or 380 Nm

#### Passive guide axis EGC-FA



- Can be combined with:
  - Toothed belt axis EGC-TB
  - Spindle axis EGC-BS
- For size 70 ... 185
- Load capacity to max. 15,200 N or 1,820 Nm

#### Passive guide axis FDG-ZR-RF



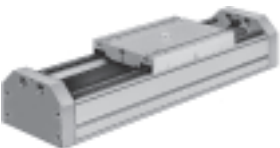
- Can be combined with:
  - Toothed belt axis DGE-ZR-KF
- For size 25 ... 63
- Load capacity to max. 1,500 N or 600 Nm

#### Passive guide axis FDG-P/-ZR/-SP



- Can be combined with:
  - Linear drive DGPL
  - Toothed belt axis DGE-ZR-KF
  - Spindle axis DGE-SP-KF
- For size 18 ... 63
- Load capacity to max. 14,050 N or 1,820 Nm

#### Heavy-duty guide HD



- Size HD8 ... HD40
- Stroke lengths of 10 ... 2,160 mm
- Load capacity to max. 5,600 N or 560 Nm

## Heavy-duty guides HD, without drive

Type codes

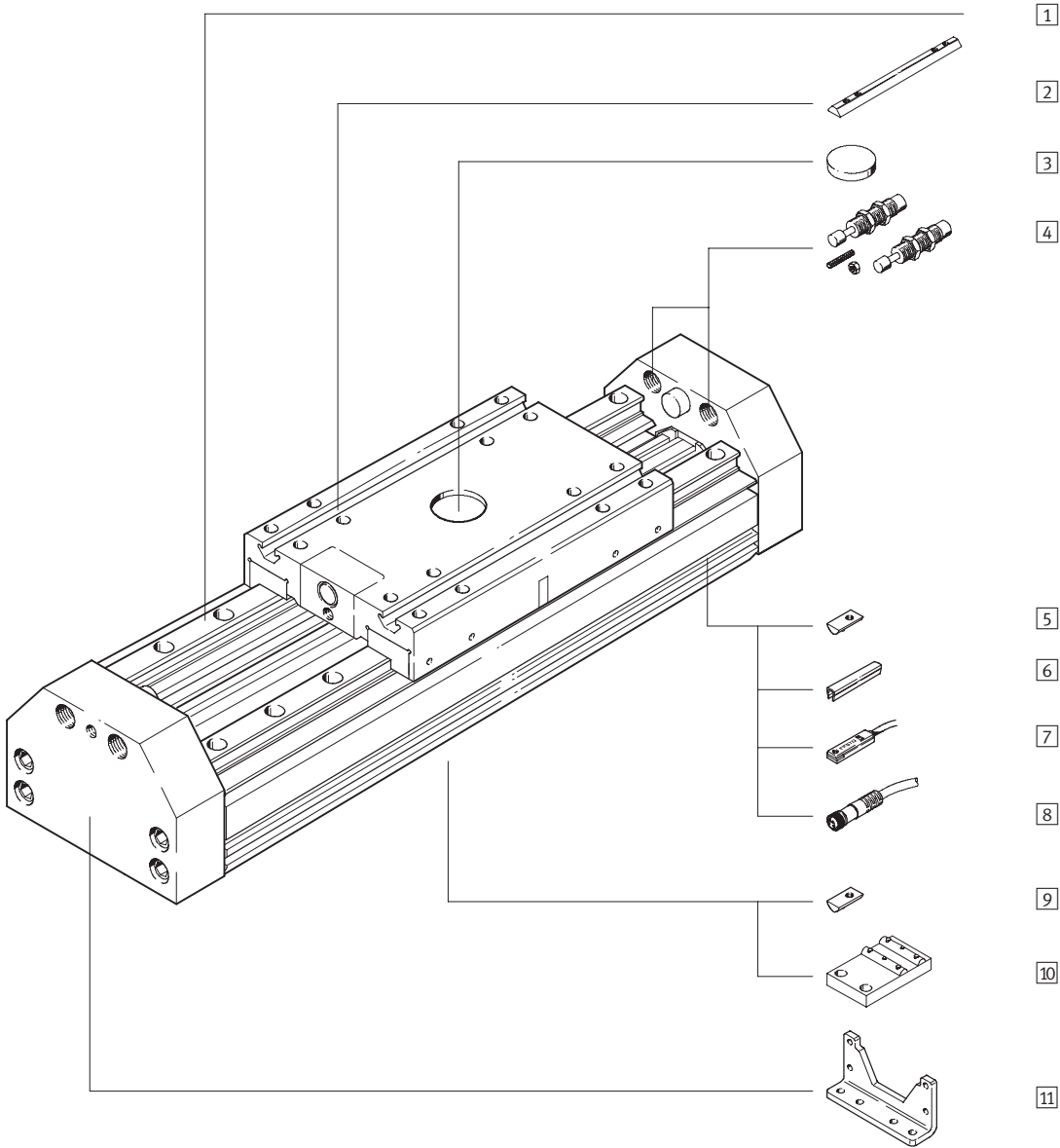
		HD	-	25	-	600	-	GK	-	ZUB	-	S	2X		Q	F	2G		D	
<b>Type</b>																				
HD	Heavy-duty guide																			
<b>Size</b>																				
<b>Stroke [mm]</b>																				
<b>Slide</b>																				
GK	Standard slide																			
<b>Accessories supplied loose</b>																				
<b>Slot cover</b>																				
...S	Sensor slot																			
...B	Mounting slot																			
<b>Slot nut</b>																				
...X	For slide																			
...Y	For profile barrel, at side																			
...U	For profile barrel, underneath																			
<b>Central support</b>																				
...M	Central support																			
<b>Central mounting</b>																				
...Q	For slide																			
<b>Foot mounting</b>																				
...F	Foot mounting																			
<b>Proximity sensors</b>																				
...G	NO contact, with cable																			
...H	NO contact, with plug																			
...I	NO contact, contactless with cable																			
...J	NO contact, contactless with plug																			
<b>Cable with socket</b>																				
...V	2.5 m																			
<b>Shock absorber</b>																				
...D	Kit for HD																			

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## Heavy-duty guides HD, without drive

Peripherals overview


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## Heavy-duty guides HD, without drive

Peripherals overview



Variants and accessories		
Type	Brief description	→ Page/Internet
1 Heavy-duty guide HD	Guide without drive	3
2 Slot nut for slide X	For mounting loads and attachments on the slide	13
3 Central mounting Q	For centring loads and attachments on the slide	13
4 Shock absorber kit D	Absorbs the energy created by the movement of the slide when it reaches the end position	13
5 Slot nut for profile barrel at side Y	For mounting attachments	13
6 Slot cover B/S	To protect against the ingress of dirt	13
7 Proximity sensors G/H/I/J/N	For providing a proximity signal or safety check	14
8 Cable with socket V	For proximity sensor	14
9 Slot nut for profile barrel underneath U	For mounting attachments	13
10 Central support M	To mount the axis	12
11 Foot mounting F	To mount the axis	12

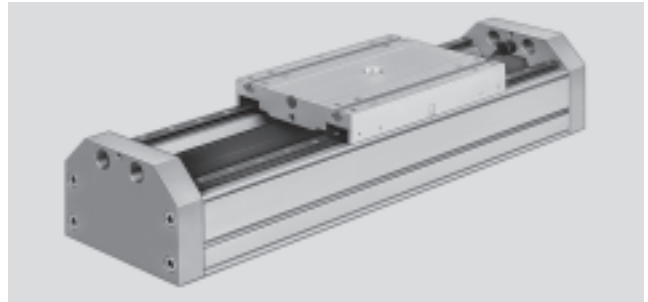
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## Heavy-duty guides HD, without drive

Technical data

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-  - Size  
8 ... 40
-  - Stroke length  
10 ... 2,110 mm

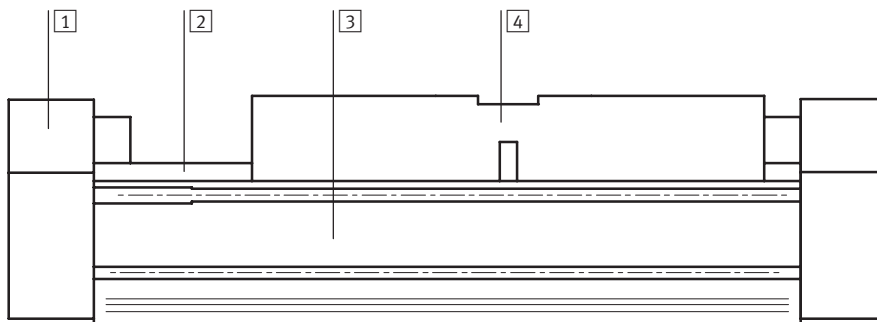


General technical data						
Size		HD8	HD12	HD18	HD25	HD40
Max. stroke	[mm]	10 ... 1,080	10 ... 1,550	10 ... 1,810	10 ... 2,160	10 ... 2,110
Guide		External recirculating ball bearing guide				
Fitting position		Any				
Cushioning		Not adjustable at either end				
		Self-adjusting at both ends				
Type of mounting		Profile mounting				
		Foot mounting				
Max. speed	[m/s]	3				
Ambient temperature	[°C]	-10 ... +60				

Weights [kg]						
Size		HD8	HD12	HD18	HD25	HD40
Basic weight at 0 mm stroke		0.86	1.37	2.95	3.6	11.8
Additional weight per 100 mm stroke		0.33	0.46	0.72	1.16	1.76
Moving load		0.195	0.33	0.45	1.78	3.3

### Materials

Sectional view



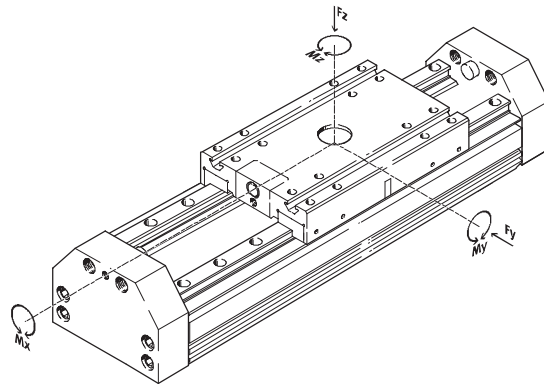
Axis	
1	End cap Anodised aluminium
2	Guide Rolled steel
3	Profile Anodised aluminium
4	Slide Anodised aluminium

## Heavy-duty guides HD, without drive

Technical data

### Characteristic load values

The forces and torques specified refer to the centre of the guide rails. They must not be exceeded during dynamic operation.



If the heavy-duty guide is simultaneously subjected to several of the forces and torques listed below, the following equations must be satisfied in addition to the indicated maximum loads.

$$\frac{F_y}{F_{y_{\max}}} + \frac{F_z}{F_{z_{\max}}} + \frac{M_x}{M_{x_{\max}}} + \frac{M_y}{M_{y_{\max}}} + \frac{M_z}{M_{z_{\max}}} \leq 1$$

Permissible forces and torques						
Size		HD8	HD12	HD18	HD25	HD40
F <sub>y<sub>max.</sub></sub>	[N]	518	1 120	1 820	5 400	5 400
F <sub>z<sub>max.</sub></sub>	[N]	518	1 120	1 820	5 600	5 600
M <sub>x<sub>max.</sub></sub>	[Nm]	12.6	33.6	70	260	375
M <sub>y<sub>max.</sub></sub>	[Nm]	16.8	50.4	115	415	560
M <sub>z<sub>max.</sub></sub>	[Nm]	16.8	49	112	400	540

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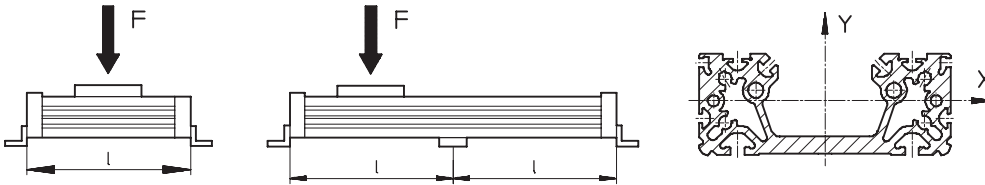
Technical data

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### Maximum permissible support span $l$ as a function of the force $F$

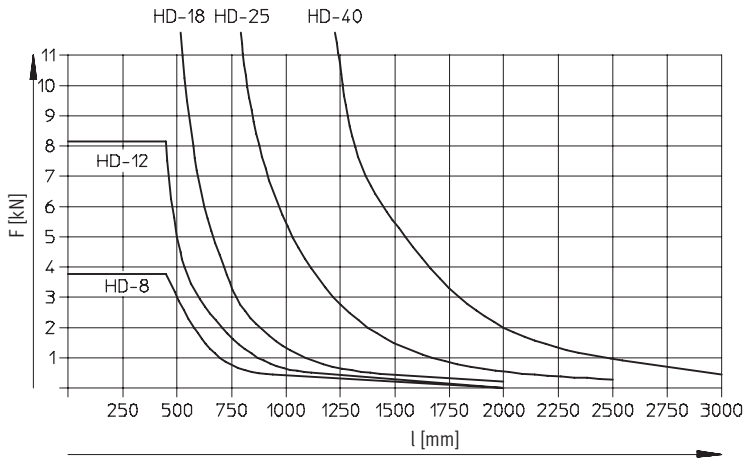
The drive may need to be supported with central supports MUP in order to limit deflection in the case of large strokes. The following diagrams serve to determine the maximum permissible support span  $l$  as a function of the force  $F$ .

#### Load on the surface of the slide

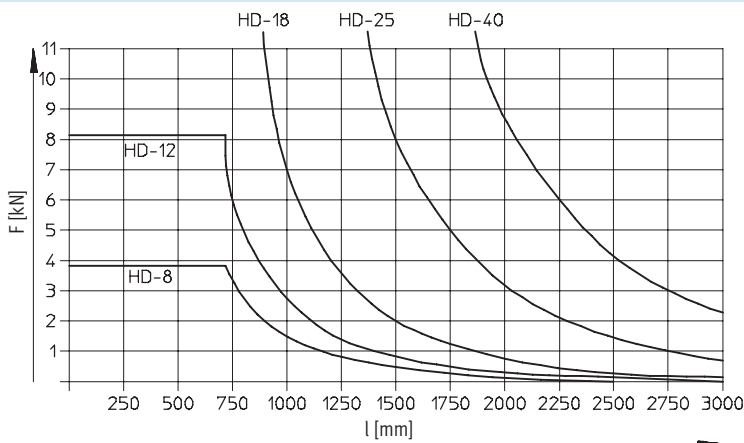


### Maximum permissible support span $l$ (without central support) as a function of the force $F$

Deflection around the X axis



Deflection around the Y axis



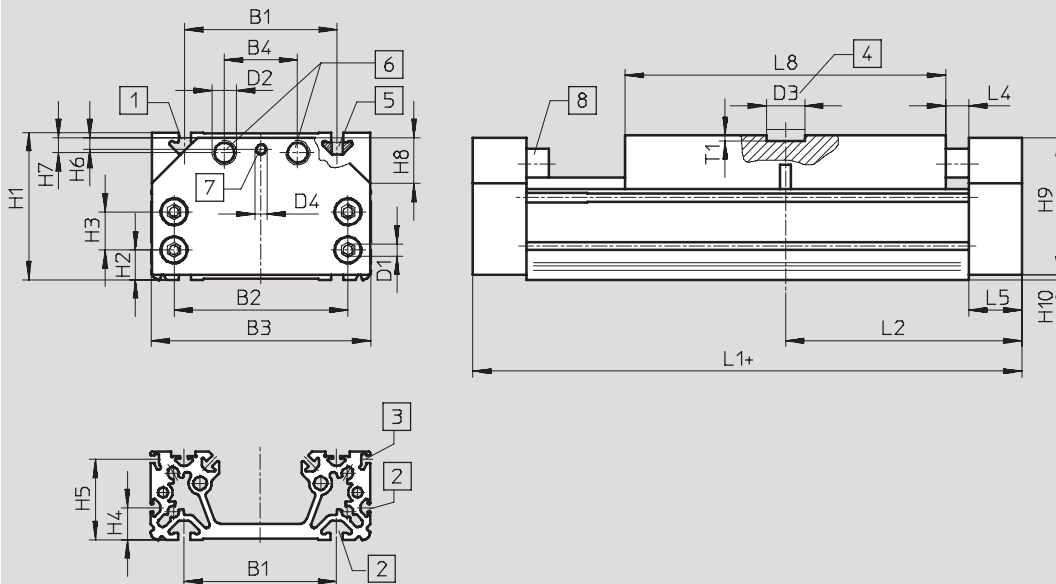


# Heavy-duty guides HD, without drive

Technical data

## Dimensions


Download CAD data → [www.festo.com](http://www.festo.com)



- |   |  |   |  |                        |
|---|--|---|--|------------------------|
| 1 | Mounting slot for slot nut NSTH            | 4 | Central mounting SLZZ                        | + = plus stroke length |
| 2 | Mounting slot for slot nut NST             | 5 | Slot nut NSTH                                |                        |
| 3 | Sensor slot for proximity sensor SME/SMT-8 | 6 | Thread for shock absorber YHD or YSR...-C    |                        |
|   |  | 7 | Thread for threaded pin (shock absorber kit) |                        |
|   |  | 8 | Rubber buffer                                |                        |

Size	B1	B2	B3	B4	D1	D2	D3 Ø G7	D4	H1	H2	H3	H4
8	50 ±0.2	46 ±0.1	75	26	M5	M10x1	25	M3	48.2	9.5	14 ±0.1	8.5
12	60 ±0.3	65 ±0.1	89	30		M12x1		M4	59.5	11	19 ±0.1	12
18	80 ±0.3	85 ±0.2	116	40	M8	M16x1	M8	M6	69.9	12.8	19.5 ±0.1	14
25	100 ±0.3	114 ±0.2	144	48		M22x1.5		M8	93.5	18.5	25 ±0.2	21
40	140 ±0.35	156 ±0.2	185	54					124.5	21	48 ±0.2	35

Size	H5	H6	H7	H8	H9	H10	L1	L2	L4	L5	L8	T1
8	29.3	2.4	8	15x45°	47	0.5	160	80	15	20	90	-
12	35.3	4	6.5	18x45°	58		190	95			120	
18	42.3	5.9	8.7	20x45°	68	0.8	240	120	35	25	160	-
25	52.8	9	9.75	30x45°	90		310	155			210	
40	82.8	5.5	15.5	35x45°	120	2.0	354	177	32	260	260	4

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## Heavy-duty guides HD, without drive

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Ordering data – Modular product system

**M** Mandatory data →

Module No.	Guide	Size	Stroke	Basic variant
170 023	HD	8	10 ... 2,160	GK
170 024		12		
170 025		18		
170 026		25		
170 027		40		
<b>Ordering example</b>				
<b>170 026</b>	<b>HD</b>	<b>25</b>	<b>500</b>	<b>GK</b>

**Ordering table**

Size	8	12	18	25	40	Condi- tions	Code	Enter code
<b>M</b> Module No.	<b>170 023</b>	<b>170 024</b>	<b>170 025</b>	<b>170 026</b>	<b>170 027</b>			
Guide	Heavy-duty guide						<b>HD</b>	HD
Size	8	12	18	25	40		-...	
Stroke [mm]	10 ... 1,080	10 ... 1,550	10 ... 1,810	10 ... 2,160	10 ... 2,110		-...	
<b>↓</b> Basic variant	Standard slide						<b>-GK</b>	-GK

Transfer order code

	<b>HD</b>	-		-		-	<b>GK</b>
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## Heavy-duty guides HD, without drive

Ordering data – Modular product system

Options								
Accessories	Slot cover	Slot nut	Central support	Central mounting	Foot mounting	Proximity sensors	Plug socket	Shock absorber kit
ZUB	...S ...B	...X ...Y ...U	...M	...Q	...F	...G ...H ...I ...J	...V	...D
ZUB	- 2S2B	2X		Q	F			2D

Ordering table											
Size			8	12	18	25	40	Condi- tions	Code	Enter code	
Options	Accessories		Supplied separately						ZUB-		ZUB-
Slot cover (x2, 0.5 m)	Sensor slot		1 ... 10						...S		
	Mounting slot underneath			1 ... 10						...B	
Slot nut for	slide		1 ... 10						...X		
	profile barrel, side				1 ... 10				...Y		
	profile barrel, bottom			1 ... 10						...U	
Central support			1 ... 10						...M		
Central mounting for	slide			1 ... 10						...Q	
Foot mounting (kit)			1 ... 10						...F		
Magnetic proximity sensor	with cable 2.5 m		1 ... 10						...G		
	with plug		1 ... 10						...H		
	Contactless, with cable 2.5 m		1 ... 10						...I		
	Contactless, with plug		1 ... 10						...J		
Cable with socket 2.5 m		1 ... 10						...V			
Shock absorber kit		1 ... 10						...D			

Transfer order code

ZUB -

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## Heavy-duty guides HD, without drive

Accessories

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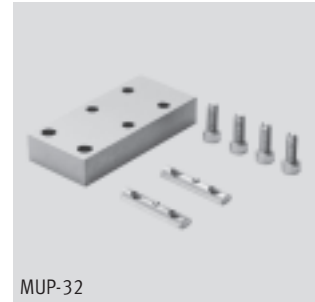
**Foot mounting HHP**  
(Order code: F)

Material:  
Galvanised steel  
Free of copper, PTFE and silicone

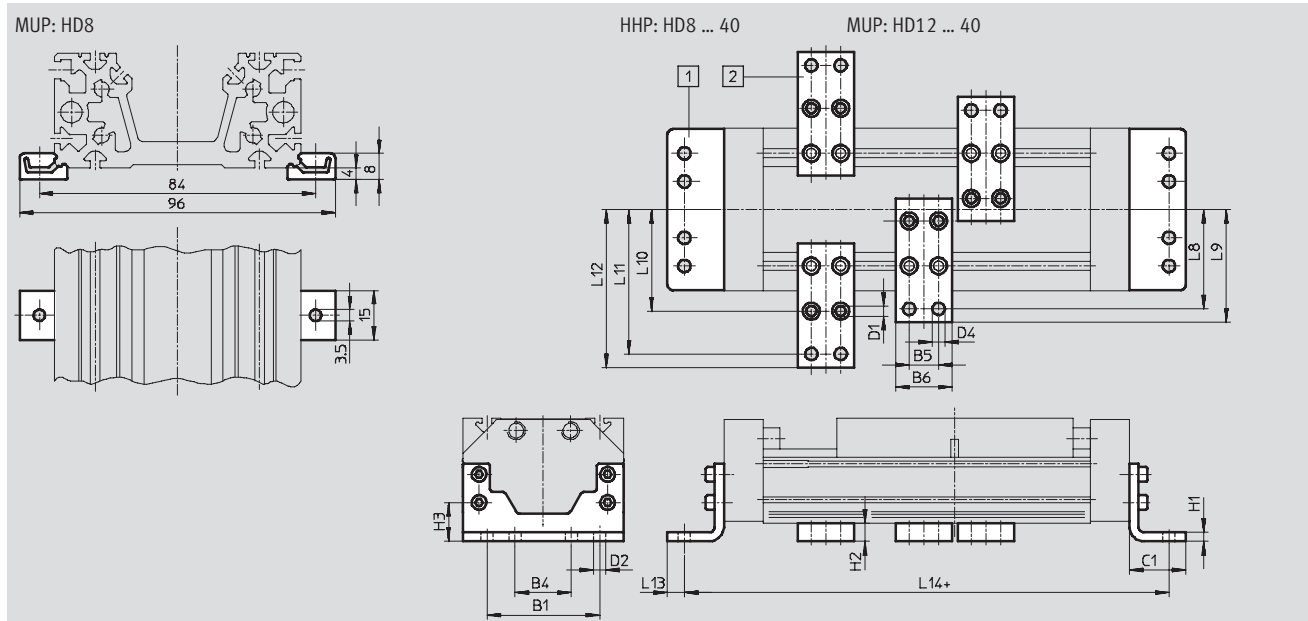


**Central support MUP**  
(Order code: M)

Material:  
Galvanised steel  
Free of copper, PTFE and silicone



MUP-32



Dimensions and ordering data											
For size	B1	B4	B5	B6	C1	D1 Ø	D2 Ø	D4 Ø	H1	H2	H3
8	50	25	-	-	23	-	5.5	-	5	-	13.5
12	60	30	22	35	28	5.5	6.6	6.6	6	10	21
18	80	40	22	35	34	5.5	6.6	6.6	8	14	26.8
25	100	50	26	50	50	9	11	11	8	16	34.5
40	140	70	26	50	50	9	11	11	10	16	37

For size	L8	L9	L10	L11	L12	L13	L14	Weight [g]	Part No.	Type
8	-	-	-	-	-	6	194	105	161 991	HHP-8
								8	160 909	MUP-8/12
12	54	60.5	52	76	82.5	8	230	186	161 992	HHP-12
								89	150 737	MUP-32
18	68	75	64	92	99	9	290	357	161 993	HHP-18
								126	150 738	MUP-40
25	88	100	90	128	140	15	380	794	161 994	HHP-25
								347	150 739	MUP-50
40	108	120	110	148	160	15	424	1,318	161 995	HHP-40
								347	150 739	MUP-50

## Heavy-duty guides HD, without drive

Accessories

### Shock absorber kit YHD

(Order code: D)

Material:


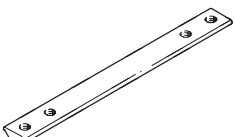



Galvanised steel housing

TPE-U(PU) NBR seals

Free of copper, PTFE and silicone



Ordering data						
For size	Weight [g]	Part No.		Type		
8	168	174 542	YHD-8			
12	170	174 543	YHD-12			
18	203	174 544	YHD-18			
25	293	174 545	YHD-25			
40	515	174 546	YHD-40			

Ordering data						
	For size	Remarks	Order code	Part No.	Type	PU <sup>1)</sup>
Slot nut NST <span style="float: right;">Technical data → Internet: nst</span>						
	18	For profile barrel, at side	Y	150 914	NST-5-M5	1
	25			150 914	NST-5-M5	1
	40			150 915	NST-8-M6	1
	12	For profile barrel, underneath	U	150 914	NST-5-M5	1
	18			150 914	NST-5-M5	1
	25			150 915	NST-8-M6	1
40	150 915			NST-8-M6	1	
Slot nut NSTH <span style="float: right;">Technical data → Internet: nstl</span>						
	8	For slide	X	161 018	NSTH-8	1
	12			161 019	NSTH-12	1
	18			161 020	NSTH-18	1
	25			161 021	NSTH-25	1
	40			161 022	NSTH-40	1
Central mounting SLZZ <span style="float: right;">Technical data → Internet: slzz</span>						
	12 ... 40	For slide	Q	150 901	SLZZ-25/16	1
Slot cover ABP <span style="float: right;">Technical data → Internet: abp</span>						
	12	For mounting slot, side and underneath	B	151 681	ABP-5	2
	18			151 681	ABP-5	
	25 underneath	0.5 m each		151 681	ABP-5	
	25 lateral	151 682		ABP-8		
	40	151 682		ABP-8		
Slot cover ABP-S <span style="float: right;">Technical data → Internet: abp</span>						
	8 ... 40	For sensor slot 0.5 m each	S	151 680	ABP-5-S	2



1) Packaging unit quantity



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## Heavy-duty guides HD, without drive

Accessories

Ordering data – Proximity sensors for T-slot, magneto-resistive					Technical data → Internet: smt	
	Type of mounting	Switch output	Electrical connection	Cable length [m]	Part No.	Type
N/O contact						
	Insertable in the slot lengthwise, flush with the cylinder profile	PNP	Cable, 3-wire	2.5	175 436	SMT-8-PS-K-LED-24-B
			Plug M8x1, 3-pin	0.3	175 484	SMT-8-PS-S-LED-24-B
N/C contact						
	Insertable in the slot from above, flush with cylinder profile	PNP	Cable, 3-wire	7.5	543 873	SMT-8M-PO-24V-K7,5-OE

Ordering data – Proximity sensors for T-slot, magnetic reed					Technical data → Internet: sme	
	Type of mounting	Switch output	Electrical connection	Cable length [m]	Part No.	Type
N/O contact						
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	2.5	150 855	SME-8-K-LED-24
			Plug M8x1, 3-pin	0.3	150 857	SME-8-S-LED-24
N/C contact						
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	7.5	160 251	SME-8-O-K-LED-24

Ordering data – Connecting cables				Technical data → Internet: nebu	
	Electrical connection, left	Electrical connection, right	Cable length [m]	Part No.	Type
	Straight socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	541 333	NEBU-M8G3-K-2.5-LE3
			5	541 334	NEBU-M8G3-K-5-LE3
	Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	541 338	NEBU-M8W3-K-2.5-LE3
			5	541 341	NEBU-M8W3-K-5-LE3