New – HMPL handling axis

FESTO

Quick, slim and made to measure. The professional axis HMPL

The new basic drive for handling and assembly technology

Info 109 →→

The slim handling pro

With diameters from 12, 16 and 20 mm and strokes of 30 to 200 mm, the HMPL is ideally suited for processes in small parts assembly, palletising and parts sorting.

The small, slim design HMPL axis achieves high cycle rates thanks to minimal traversing times and offers maximum repetition accuracy at extremely high speeds.

At the same time, installation is simple and the visual motion display via LEDs keeps you in the picture at all times. Additional functions such as the adaptable clamping unit or the intermediate position module ensure maximum flexibility and significant cost and time savings and maximum reliability.

Pay per function
The HMPL is available made to measure. In other words, it is equipped with adaptable functions and features to precisely the degree required for your optimum solution. Further options are, for instance, an intermediate position, or an adaptable clamping unit, and much more besides.

A pro in combination
Individual axes can be directly intercombined into an axis system and, with matching profile elements, made into complete Pick-and-Place units in less than no time. Retooling too is no longer laborious thanks to the flexible connection facilities on the mechanical interfaces.

With the HMPL handling axis and the additional components of the modular system, the processes involved in small parts assembly, palletising and parts sorting are firmly under your control – be it in handling technology, electronics, the packaging industry or any other branch of industry in over 170 countries.

The new basic drive the tried and tested modular system

The comprehensive Festo modular system for handling and assembly technology has had a new addition to the family – HMPL. With its quite unique profile, it fits ideally between the traditional slide units and the large HMP linear module.

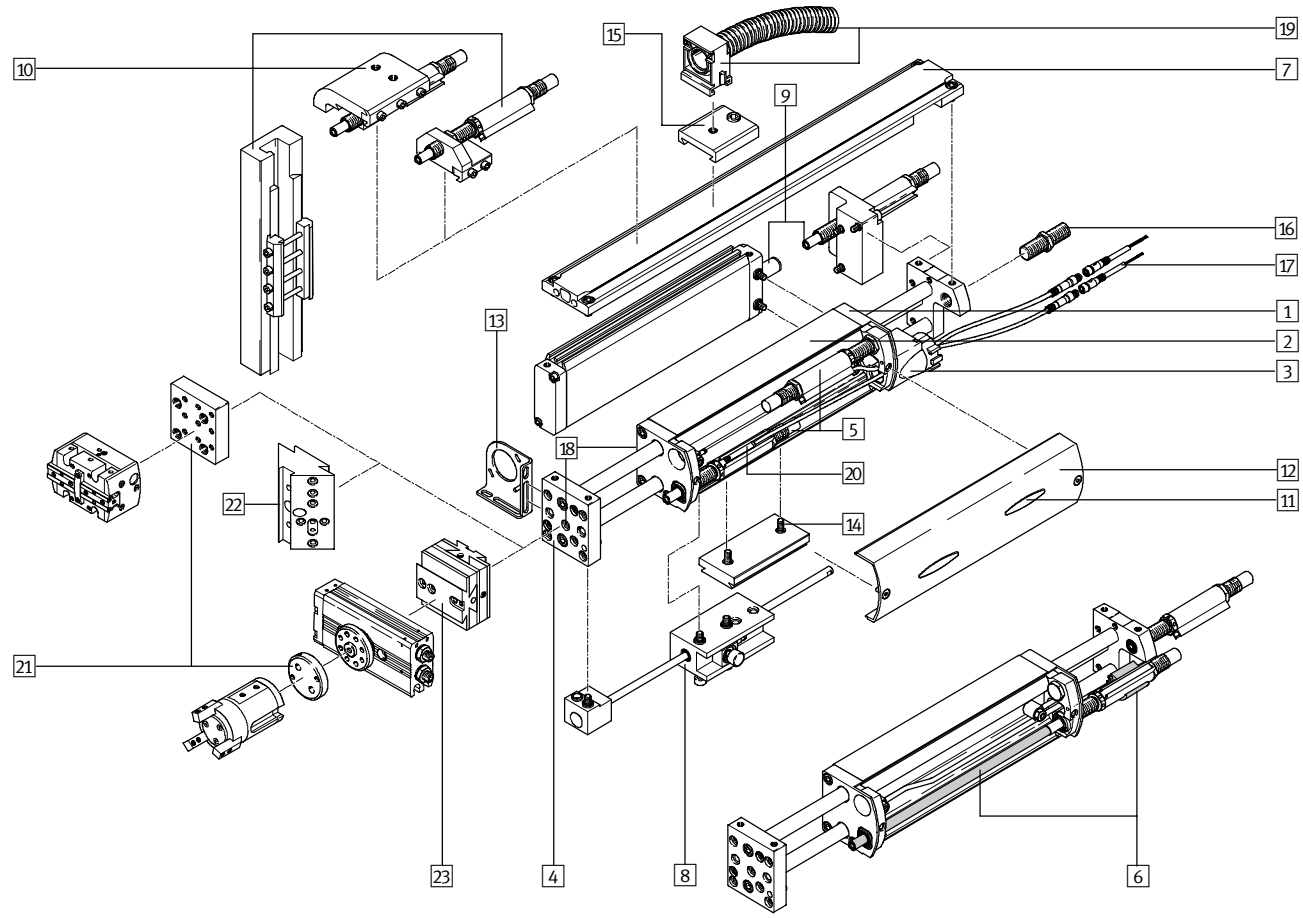
Extremely slim and stable with 2 guided barrels, the HMPL can be used as a high precision individual module or readily combined with components from the modular system into a pick-and-place or gantry unit. And as is expected with Festo, there is no limit to any possible additional combinations: grippers, rotary drives, pneumatic and electrical axes - everything fits!

Its advanced and functional design not only saves time and costs thanks to its quick and simple configuration and installation. It is also very clearly laid out and has been awarded the IF Product Design Award 2000. An added bonus for you!

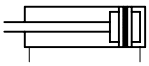
HMPL – for an even quicker optimum solution.

Linear modules HMPL

Key features at a glance



HMPL



- Ø - Diameters
  12 ... 20 mm
- | - Stroke lengths
  30 ... 200 mm

Drive combinations
➔ 28

System product for handling and assembly tasks

High precision
- The drive unit demonstrates high precision and good rigidity thanks to four press-fitted recirculating ball bearing guides and two guide rods.
- Exceptional end position accuracy results from the metallic inserts in the limit stops.

Highly dynamic
- The linear module HMPL is capable of cycle times down to < 0.5 seconds with integrated shock absorbers, exhaust air flow control and a very rigid housing.

Lightweight
- Thanks to minimal dead-weight, the linear module HMPL is exceptionally well suited as a front-end axis for the Festo modular system for handling and assembly.

Modular functionality
- By means of versatile and accurate mounting options.
- Important handling functions can be conveniently adapted to linear module HMPL.

User-friendly installation system
- Centrally arranged and protected cables and tubing.

Linear modules HMPL

Key features at a glance

The HMPL linear module – the modular system

1 Basic profile
The rigid, sealed housing contains both guide and cylinder. High precision and load capacity is achieved by means of the large spacing between the recirculating ball bearing guides.

2 Pneumatic drive
Maximum force and dynamics are assured by drive design, especially for vertical operation.

3 Connector cap
With mounting option for sensor identification plates.
Cables and tubing are arranged centrally in a centralised, safe and convenient fashion.

4 Front plate
With precision mounting options for attachment components, for example:
– Twin-piston rotary actuators DRQD-... (➔ www.festo.com)
– Grippers HG...
(➔ www.festo.com).

5 Internal limit stop AI
Self-adjusting soft shock absorbers with metallic inserts are used in both end positions. The limit stop combines important handling technology functions including position sensing, cushioning stroke adjustment and drive stroke adjustment. Depending upon the size of the limit stops, the end positions can be precision adjusted within a range of up to 20 mm.

6 External limit stop AE
If required, the internal limit stop can be attached externally with a mounting kit. This has no effect on the function of the limit stop.

7 Reinforcing plate VP
For additional stability, especially for multi-axis operation. The reinforcing plate is attached via the front plate and the yoke plate. Additional functions include a dovetail for flexible adaptation, and three through holes through which tubing or cables can be fed, or which can be used for direct air connection.

8 Clamping unit KP
A clamping cartridge holds the clamping rod by means of friction (for safety in the event of pressure failure). The clamping rod is attached to the front plate. When the clamping cartridge is pressurised, the guide rods move freely along with the front plate and the yoke plate. The clamping cartridge can be released by means of an integrated manual override.

9 Active intermediate position ...M
Travel to any desired position between the end positions of the linear module is made possible with an additionally attached cylinder and an additional limit stop. The intermediate position can be approached from either the rear or the front end position. Furthermore, continued travel in the original direction is also possible from the intermediate position.

Systematic handling

10 Passive intermediate position
The passive intermediate position is offered as an alternative to the active intermediate position for intermediate positions in direct combination with the HMP linear module, or for customer-specific solutions.

11 Position sensing
Sensor slots for proximity sensor SME/SMT-8 20 are included in the limit stops 5. The proximity sensor's LED position display can be viewed at the two display windows in the housing cover, even when the linear module is closed.

12 Housing cover
For protection against contamination of internal components.
With integrated display windows.

Accessories
(order with modular system code)

13 Adapter plate (code H)
For the attachment of protective conduit components
(➔ www.festo.com). The plate is attached to the front plate 4.

14 Dovetail adapter (code I)
For attachment of the linear module to existing product components from the Festo modular system for handling and assembly, e.g. the linear module HMP.

15 Dovetail clamping component (code J)
For attaching protective conduit MKR 19 by means of retaining clip MKRS 19. The clamping component is attached to the reinforcing plate VP 7.

16 Stop bolt (code K)
For extending precision adjustment of the stroke length in the forward end position by approximately 15 to 20 mm.

17 Plug socket with cable (code V)
For lengthening the electrical cables of proximity sensors SME/SMT-8 20 by 2.5 m.
If servicing is required, the protective conduit connector MKRT (access) allows fast access or replacement.

18 Centring sleeve (code Z)
For centring the linear module on the housing, or for centring loads and attachment components on the front plate.

Accessories
(to be ordered separately)

19 Protective conduits MKR, protective conduit connectors MKRT, Y distributors MKY and retaining clips MKRS
➔www.festo.com

20 Proximity sensors SME-/SMT-8
➔ www.festo.com

21 Adapter kits for grippers
➔www.festo.com

22 Angle adapters HMSV
➔www.festo.com

23 Adjustment unit HMXY
➔www.festo.com

Linear modules HMPL

Ordering data

M Mandatory data					O Options					
Module No.	**Type**	**Piston ∅**	**Stroke**	**Stop element**	**Reinforcement**	**Clamping unit**	**Active intermediate position**	**Proximity sensor**	**Accessories**	**Accessories**
191 181 191 182 191 183	HMPL	12 16 20	30 ... 200	AI AE	VP	KP	...M	2A1 2A2 2A3 2A4 2A5 2A6	ZUB	...H ...I ...J ...K ...V ...Z
Order example										
191 182	**HMPL**	**16**	**100**	**AI**	**VP**	**KP**		**2A1**	**ZUB**	**2H5I2V**

Order table

	Size		12	16	20	Conditions	Code		Enter code
M	Module No.		191 181	181 182	191 183				
	Type		Linear module				**HMPL**		HMPL
	Piston ∅	[mm]	12	16	20		**-...**		
	Stroke	[mm]	30	–	–		**-30**		
			50	50	50		**-50**		
			80	80	80		**-80**		
			100	100	100		**-100**		
			–	125	125		**-125**		
			–	160	160		**-160**		
			–	–	200		**-200**		
	Stop element		Integrated				**-AI**		
			External				**-AE**		
O	Reinforcement		Reinforcing plate (required for multi-axis operation)				**-VP**		
	Clamping unit		Clamping cartridge (supplied separately)				**-KP**		
	Active intermediate position	[mm]	1 ... 99	1 ... 159	1 ... 199	1	**-...M**		
	Proximity sensor, magnetic, assembled		With cable 2.5 m				**-2A1**		
			Contactless, with cable, 2.5 m, NPN				**-2A2**		
			Contactless, with cable, 2.5 m, PNP				**-2A3**		
			With plug				**-2A4**		
			Contactless, with plug, NPN				**-2A5**		
			Contactless, with plug, PNP				**-2A6**		
	Accessories		Supplied separately				**ZUB-**		ZUB-
	Mounting bracket		Front plate PG21, 1 ... 10				**...H**		
	Adapter		Dovetail adapter, basic profile, 1 ... 10				**...I**		
	Clamping component		Dovetail clamping component, 1 ... 10				**...J**		
	Stop bolt		1 ... 10				**...K**		
	Plug socket with cable, 2.5 m		1 ... 10				**...V**		
	Centring sleeves (pack of 10)		10, 20, 30, 40, 50, 60, 70, 80, 90				**...Z**		

1 **M** The dimension selected must be at least 1 mm smaller than the specified stroke length

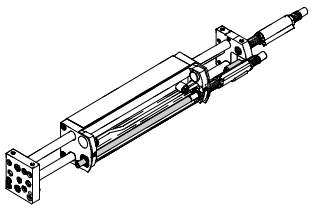
Transfer order code

	HMPL	–		–		–		–		–		–		**ZUB**	–	

Retrofit kits

External stop element kit

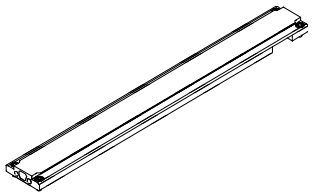
For HMPL ∅ [mm]	Stroke [mm]	Part No.	Type	Stroke [mm]	Part No.	Type
12	30	193 765	BAE-HMPL-12-30	80	193 767	BAE-HMPL-12-80
	50	193 766	BAE-HMPL-12-50	100	193 768	BAE-HMPL-12-100
16	50	193 769	BAE-HMPL-16-50	125	193 772	BAE-HMPL-16-125
	80	193 770	BAE-HMPL-16-80	160	193 773	BAE-HMPL-16-160
	100	193 771	BAE-HMPL-16-100	–	–	
20	50	193 774	BAE-HMPL-20-50	125	193 777	BAE-HMPL-20-125
	80	193 775	BAE-HMPL-20-80	160	193 778	BAE-HMPL-20-160
	100	193 776	BAE-HMPL-20-100	200	193 779	BAE-HMPL-20-200



Scope of delivery: grey background

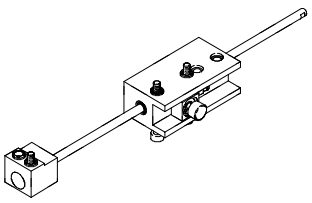
Reinforcing plate kit

For HMPL ∅ [mm]	Stroke [mm]	Part No.	Type	Stroke [mm]	Part No.	Type
12	30	193 369	BVP-HMPL-12-30	80	193 371	BVP-HMPL-12-80
	50	193 370	BVP-HMPL-12-50	100	193 372	BVP-HMPL-12-100
16	50	193 364	BVP-HMPL-16-50	125	193 367	BVP-HMPL-16-125
	80	193 365	BVP-HMPL-16-80	160	193 368	BVP-HMPL-16-160
	100	193 366	BVP-HMPL-16-100	–	–	
20	50	193 358	BVP-HMPL-20-50	125	193 361	BVP-HMPL-20-125
	80	193 359	BVP-HMPL-20-80	160	193 362	BVP-HMPL-20-160
	100	193 360	BVP-HMPL-20-100	200	193 363	BVP-HMPL-20-200



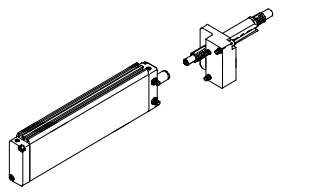
Clamping unit kit

For HMPL ∅ [mm]	Stroke [mm]	Part No.	Type	Stroke [mm]	Part No.	Type
12	30	193 110	BKP-HMPL-12-30	80	193 112	BKP-HMPL-12-80/100
	50	193 111	BKP-HMPL-12-50	100		
16	50	193 114	BKP-HMPL-16/20-50	125	193 116	BKP-HMPL-16/20-125/160
	80	193 115	BKP-HMPL-16/20-80/100	160		
	100			–	–	
20	50	193 114	BKP-HMPL-16/20-50	125	193 116	BKP-HMPL-16/20-125/160
	80	193 115	BKP-HMPL-16/20-80/100	160		
	100			200	193 117	BKP-HMPL-20-200



Active intermediate position kit[3)]

For HMPL ∅ [mm]	Part No.	Type	Stroke (through to intermediate position) [mm]
12	193 022	BM-HMPL-12-...[1)]-...[2)]	1 ... 99
16	193 021	BM-HMPL-16-...[1)]-...[2)]	1 ... 159
20	193 020	BM-HMPL-20-...[1)]-...[2)]	1 ... 199



1) Indicate stroke length of the existing HMPL linear module.

2) Indicate desired intermediate position measured from the retracted end position.

3) The mid-position cylinder should be throttled during the following motion sequence: From HMPL advanced, to HMPL mid-position.

Order example
Existing:
HMPL-16-100-Al
Desired intermediate position:
25 mm advance
Required kit:
193 021 BM-HMPL-16-100-25M

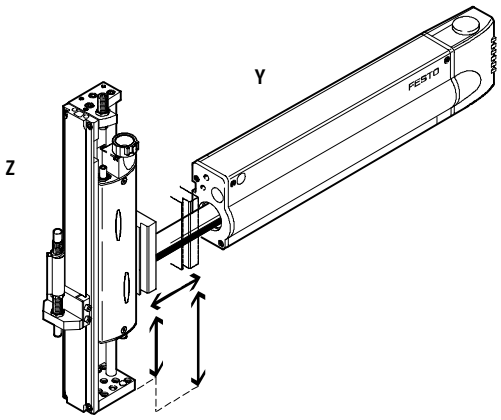
Linear modules HMPL

Overview and ordering data

Supplementary functions
Passive intermediate position for pick & place attachments

External passive intermediate position

The intermediate position in the Z axis is approached with extended Y axis. A counter-stop for the stop element (in this case mounted on the reinforcing plate VP on the linear module HMPL) must be provided by the user.



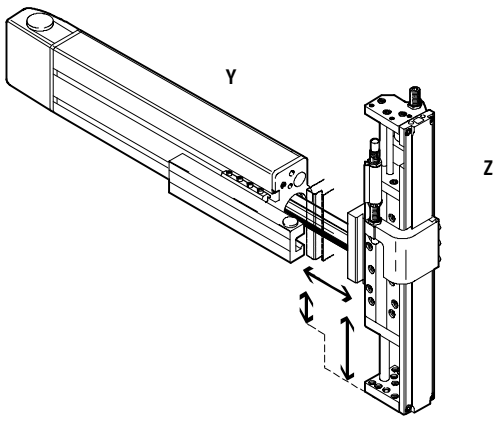
HMMP-E

Drive ∅ [mm]	Z axis HMPL-12-...[1]	HMPL-16-...[1]	HMPL-20-...[1]
Y axis			
HMP-16	196 168 HMMP-12-E	196 167 HMMP-16-E	196 166 HMMP-20-E
HMP-20	–		
HMP-25		–	
HMPL-12	196 168 HMMP-12-E	196 167 HMMP-16-E	–
HMPL-16			
HMPL-20			196 166 HMMP-20-E

1) Reinforcing plate VP is required for this function, or, in the event of retrofitting, kit BVP-HMPL-...

Passive intermediate position combined with linear module HMP

The intermediate position in the Z axis is approached with retracted Y axis. The counter-stop for the stop element (in this case mounted on the reinforcing plate VP on the linear module HMPL) is attached to the linear module HMP and is included in the scope of delivery.

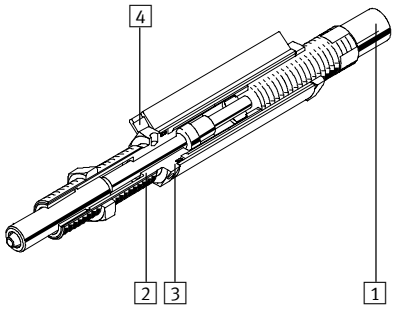


HMMP-HMP

Drive ∅ [mm]	Z axis HMPL-12-...[1]	HMPL-16-...[1]	HMPL-20-...[1]
Y axis			
HMP-16	193 726 HMMP-12-HMP	193 725 HMMP-16-HMP	193 724 HMMP-20-HMP
HMP-20	–		
HMP-25		–	

1) Reinforcing plate VP is required for this function, or, in the event of retrofitting, kit BVP-HMPL-...

1 Soft cushioning characteristics. Cushioning stroke is adjustable
2 Precision end-position thanks to internal, metallic inserts
3 Precision end-position adjustment
4 End-position sensing via attachable proximity sensor SME/SMT-8



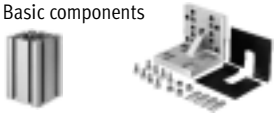
Supplementary functions

Stop element

YSRWJ

For HMPL ∅ [mm]	Part No.	Type
12	192 968	YSRWJ-5-8-A
16	192 967	YSRWJ-7-10-A
20	192 966	YSRWJ-8-14-A

Accessories and spare parts

Accessories	For HMPL ∅ 12 Part No. Type	∅ 16 Part No. Type	∅ 20 Part No. Type
Magnetic proximity sensors SME-/SMT-8 	For end-position sensing ➔ www.festo.com		
Sensor identification plates	193 125 SBS-8x10 (sheet of 44)		
Centring sleeves ZBH 	150 927 ZBH-9 (10 per pack)		
Shock absorber YSRW	191 192 YSRW-5-8	191 193 YSRW-7-10	191 194 YSRW-8-14
Stop bolt (code K)	192 683 HMPL-12-K	192 684 HMPL-16-K	192 685 HMPL-20-K
Adapter kits 	Drive combinations ➔ 28 Adapter kits for grippers ➔ 34		
Dovetail adapter (code I)	193 923 HMSV-46		
Angle adapter HMSVS-1 	➔ www.festo.com		
Adjustment unit HMXY-1 	➔ www.festo.com		
Basic components 	Basic installation and connection kits ➔ www.festo.com		
Installation components 	Protective plastic conduit, fittings, junction boxes, cable ducts, adapter plates ➔ www.festo.com		
Adapter plate (code H)	193 124 HMZAS-PG21		
Clamping component (code J)	193 126 HMPL-J		
Grease gun	647 958		

Linear modules HMPL

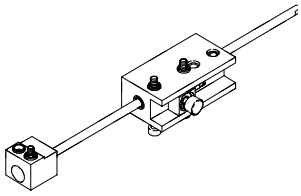
Linear module			Type	HMPL		
			Size	12	16	20
Pneumatic data	Operating pressure		[bar]	4 ... 8		
	Connection			M5 (for 2 already integrated one-way flow control valves with 2 4 mm diameter tubing and push-in connectors QSM-4		
Mechanical data	Design			Double-acting piston cylinder with front plate and yoke plate		
Size	Piston ∅		[mm]	12	16	20
Nominal stroke	30 mm				–	
(= effective stroke)	50 mm					
	80 mm					
	100 mm					
	125 mm			–		
	160 mm					
	200 mm				–	
	Stroke adjustment per end position		[mm]	15	20	
Force at 6 bar[1]	Thrust		[N]	51	104	158
	Return force		[N]	68	121	188
Max. repetition accuracy[2]			[mm]	0.02		
Weight	Drive/moving load	30 mm	[g]	610/244	–	
	HMPL-...-AI	50 mm	[g]	658/272	975/401	1439/584
	for nominal stroke	80 mm	[g]	770/326	1090/467	1591/679
		100 mm	[g]	843/362	1194/521	1739/758
		125 mm	[g]	–	1318/587	1888/856
		160 mm	[g]		1499/681	2179/993
		200 mm	[g]		–	2471/1150
	Stop element	YSRWJ-...-A	[g]	45	75	110
	Reinforcing plate	30 mm	[g]	177	–	
	HMPL-...-VP	50 mm	[g]	208	240	283
	for nominal stroke	80 mm	[g]	272	297	343
		100 mm	[g]	314	342	395
		125 mm	[g]	–	398	457
		160 mm	[g]		478	547
		200 mm	[g]		–	648
	Clamping unit/	30 mm	[g]	255/60	–	
	moving load	50 mm	[g]	260/65	270/74	
	HMPL-...-KP	80 mm	[g]	270/75	280/84	
	for nominal stroke	100 mm	[g]			
		125 mm	[g]	–	290/95	
		160 mm	[g]			
		200 mm	[g]		–	300/105
	Active intermediate	Total	[g]	420	700	840
	position HMPL-...M	Per 10 mm stroke	[g]	18	24	
	Passive intermediate	HMMP-E	[g]	115	145	205
	position	HMMP-HMP	[g]	845	945	995
Materials/drive	Housing, front and yoke plate, reinforcing plate			Anodised aluminium		
	Guide rods			Tempered steel		
	Seals			NBR, PUR		
Ambient conditions	Temperature range		[°C]	0 ... +60 °C		
	Noise level L_{pEq}		[dB(A)]	62	57	56

1) Theoretical values, please note: Degree of efficiency approx. 90%

2) Variation of end position for 100 successive strokes under constant operating conditions

Clamping unit (not suitable for positioning)		HMPL-12-...-KP	HMPL-16-...-KP	HMPL-20-...-KP
Operating pressure[1]	[bar]	4 ... 8		
Temperature range	[°C]	0 ... +60		
Connection[2]		M3		
Max applied load, vertical	[kg]	1	2.5	5
Max. holding force	[N]	100		

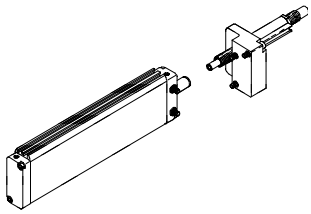
Clamping unit



1) Clamping is released within the operating pressure range.
2) Pneumatic connection is accomplished with a pre-assembled push-in connector QSM-M3-4-I for 4 mm ∅ tubing.

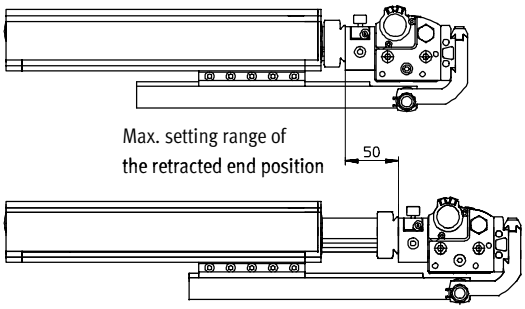
Active intermediate position[3]		HMPL-12-...M	HMPL-16-...M	HMPL-20-...M
Operating pressure[1]	[bar]	4 ... 8		
Temperature range	[°C]	0 ... +60		
Connection		M5		
		Selectable stroke range X for the mid-position [mm]		
Stroke	30 mm	1 ... 29	–	
	50 mm	1 ... 49		
	80 mm	1 ... 79		
	100 mm	1 ... 99		
	125 mm	–	1 ... 124	
	160 mm		1 ... 159	
	200 mm		–	1 ... 199
Setting range for the intermediate position	[mm]	±7.5[2]	±10[2]	

Active intermediate position



1) Operating pressure of the mid-position cylinder must be greater than or equal to operating pressure of the linear module HMPL.
2) Valid for stroke range 7.5 or 10 mm to max. stroke –7.5 or –10 mm.
3) The mid-position cylinder should be throttled during the following motion sequence: From HMPL advanced, to HMPL mid-position.

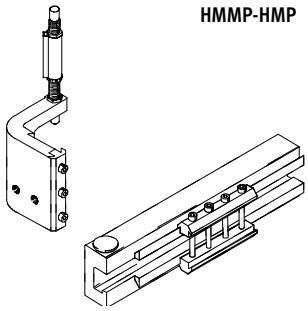
Passive intermediate position



Note

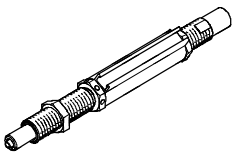
For reasons of rigidity, the retracted end position may not be moved forward more than 50 mm.

Passive intermediate position
HMMP-HMP



Stop element			YSRWJ-5-8-A	YSRWJ-7-10-A	YSRWJ-8-14-A
	∅	[mm]	5	7	8
Temperature range		[°C]	0 ... +60		
Stroke length		[mm]	8	10	14
Max. energy absorption	per stroke	[Nm]	1	2	3
	per hour	[Nm]	10 000	15 000	21 000
Mass range		[kg]	2	5	10
Reset time[1]		[s]	< 0.2		
Max. residual impact force[2]		[N]	200	300	500

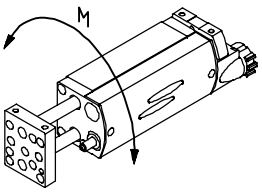
Stop element



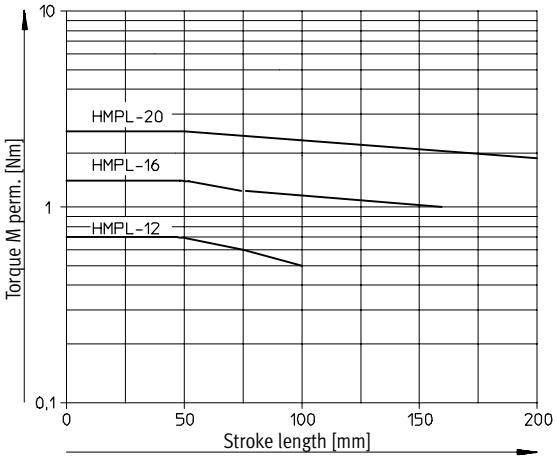
1) Longer reset times must be expected at low temperatures (0 °C).
2) Impact force may not exceed the maximum specified value.

Linear module HMPL

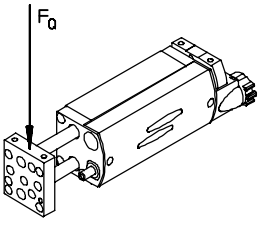
Permissible torque at front plate as a function of stroke length



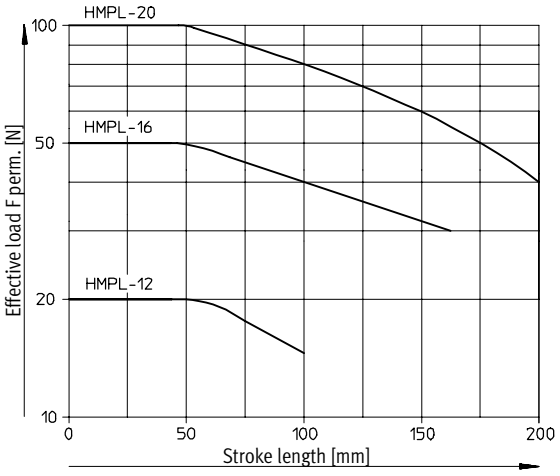
HMPL-12/16/20



Permissible static lateral force on front plate as a function of stroke length



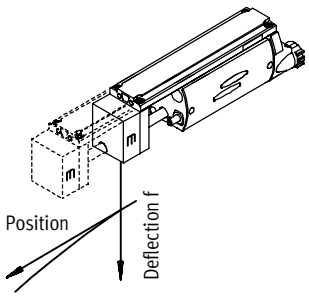
HMPL-12/16/20



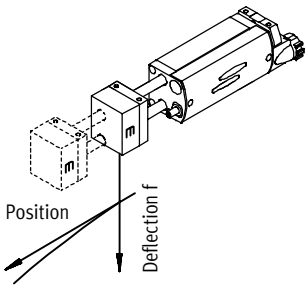
Deflection/deformation as a function of lateral force (applied load) and position (stroke)

Linear module HMPL

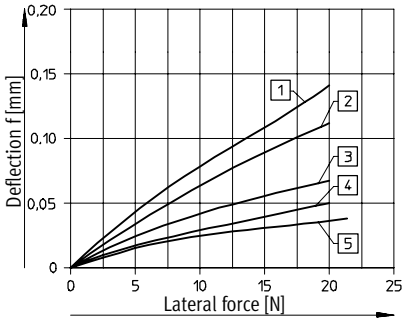
Primary direction with reinforcing plate



Primary direction without reinforcing plate

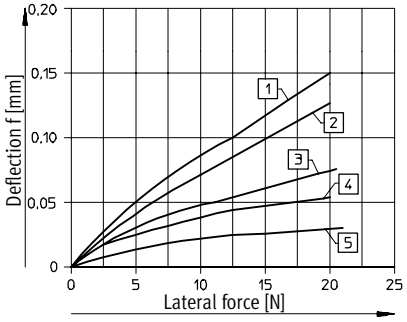


HMPL-12
Primary direction with reinforcing plate



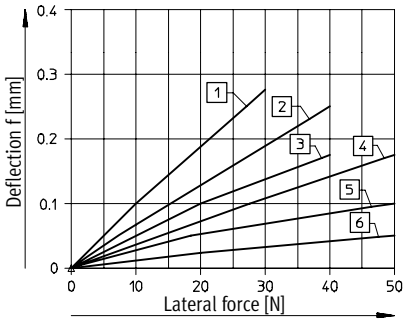
1 100 mm stroke
2 80 mm stroke
3 50 mm stroke
4 30 mm stroke
5 0 mm stroke

HMPL-12
Primary direction without reinforcing plate



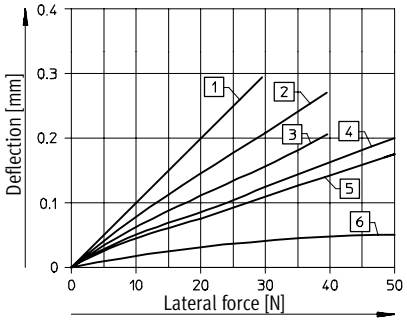
1 100 mm stroke
2 80 mm stroke
3 50 mm stroke
4 30 mm stroke
5 0 mm stroke

HMPL-16
Primary direction with reinforcing plate



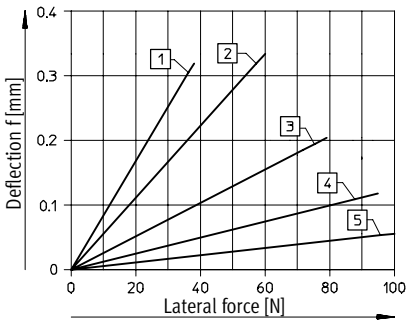
1 160 mm stroke
2 125 mm stroke
3 100 mm stroke
4 80 mm stroke
5 50 mm stroke
6 0 mm stroke

HMPL-16
Primary direction without reinforcing plate



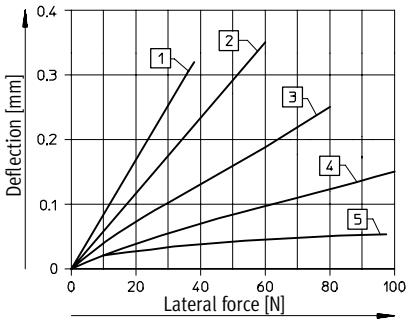
1 160 mm stroke
2 125 mm stroke
3 100 mm stroke
4 80 mm stroke
5 50 mm stroke
6 0 mm stroke

HMPL-20
Primary direction with reinforcing plate



1 200 mm stroke
2 160 mm stroke
3 100 mm stroke
4 50 mm stroke
5 0 mm stroke

HMPL-20
Primary direction without reinforcing plate

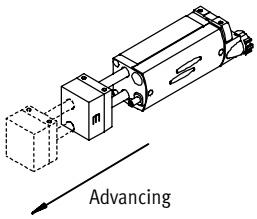


1 200 mm stroke
2 160 mm stroke
3 100 mm stroke
4 50 mm stroke
5 0 mm stroke

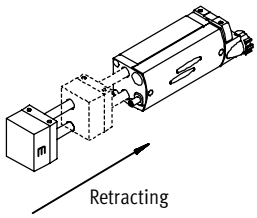
Linear modules HMPL

Linear module HMPL

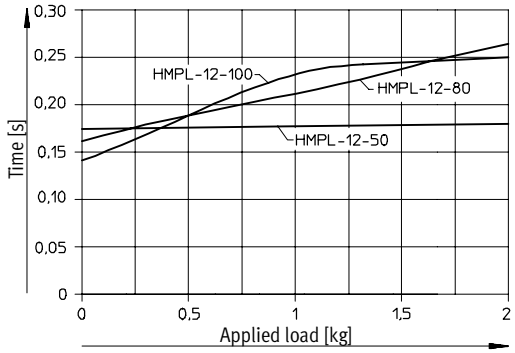
Permissible horizontal advancing times at 6 bar as a function of stroke length (mm) and applied load



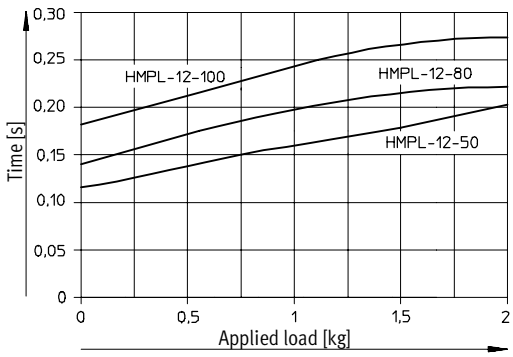
Permissible horizontal retracting times at 6 bar as a function of stroke length (mm) and applied load



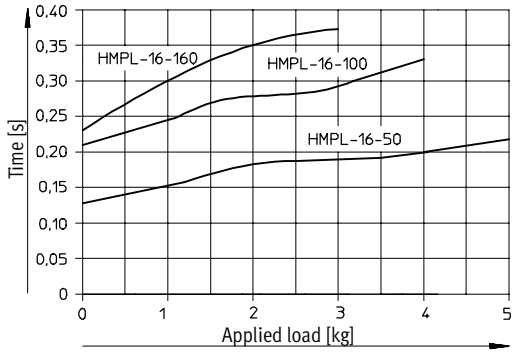
HMPL-12



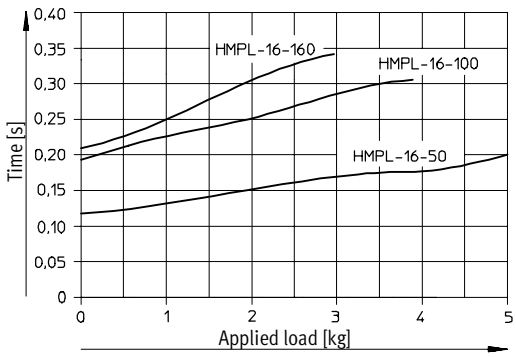
HMPL-12



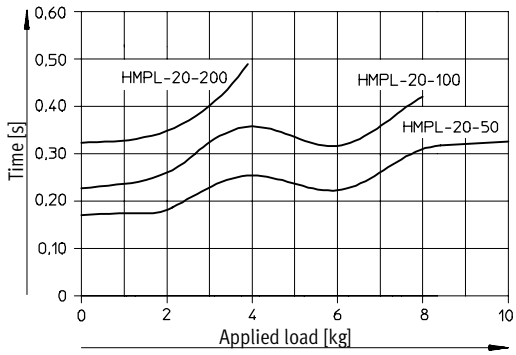
HMPL-16



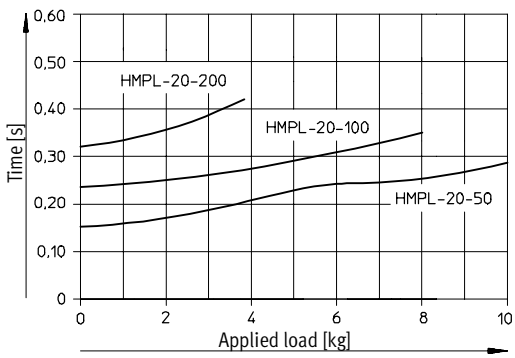
HMPL-16



HMPL-20

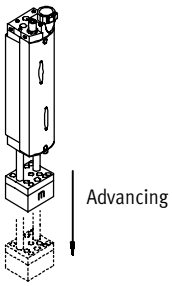


HMPL-20

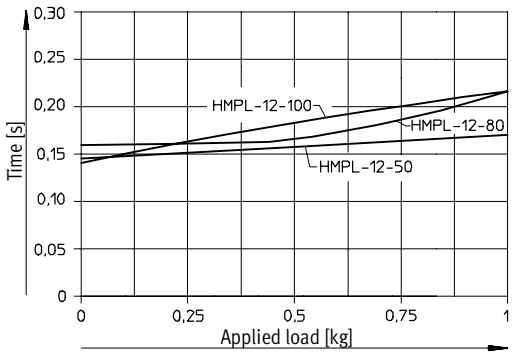


Linear module HMPL

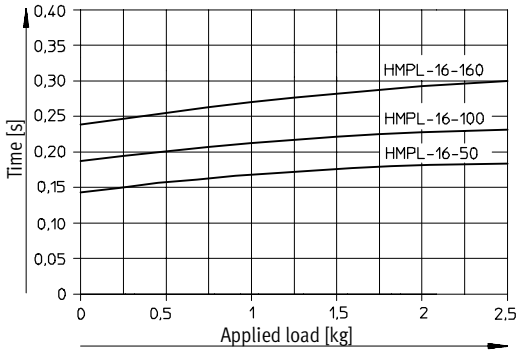
Permissible vertical advancing times at 6 bar as a function of stroke length (mm) and applied load



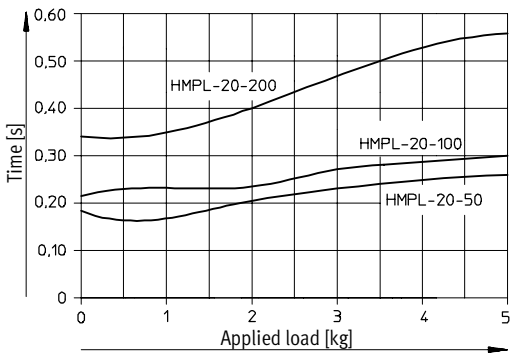
HMPL-12



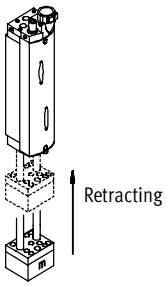
HMPL-16



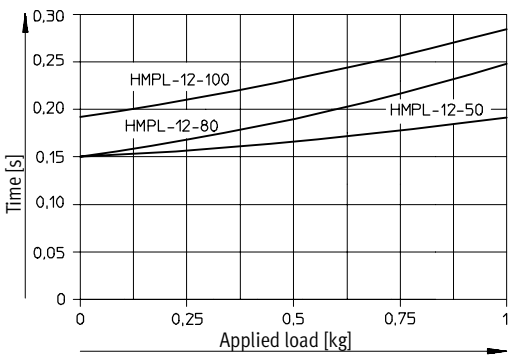
HMPL-20



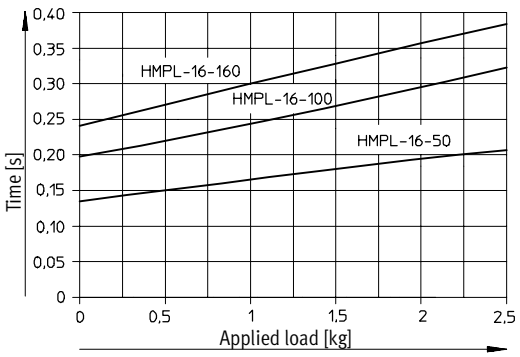
Permissible vertical retracting times at 6 bar as a function of stroke length (mm) and applied load



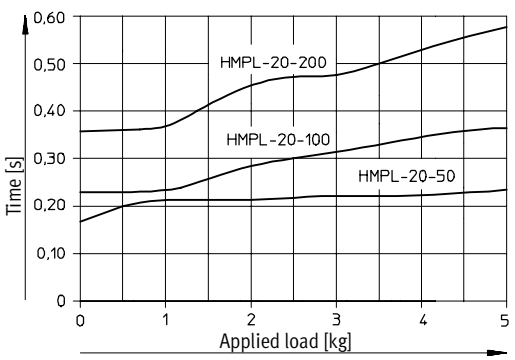
HMPL-12



HMPL-16



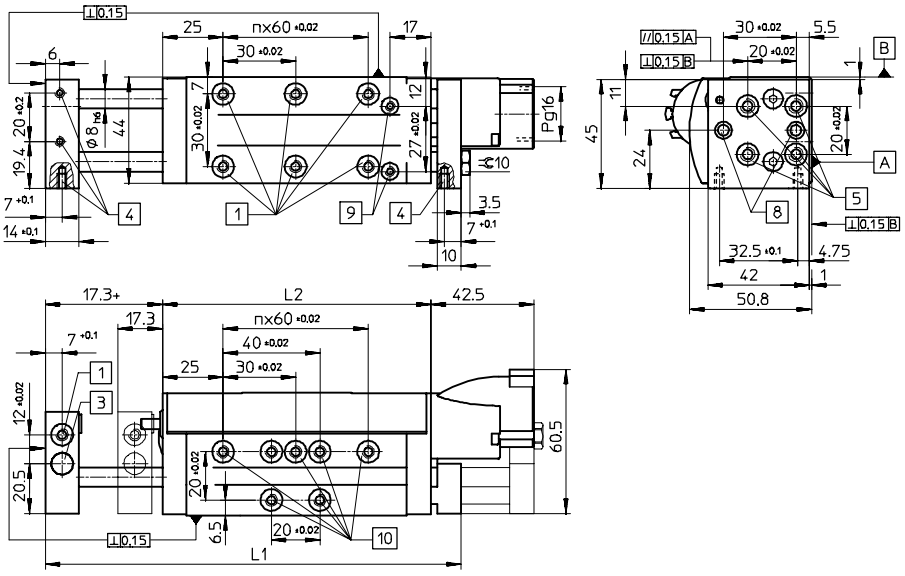
HMPL-20



Linear modules HMPL

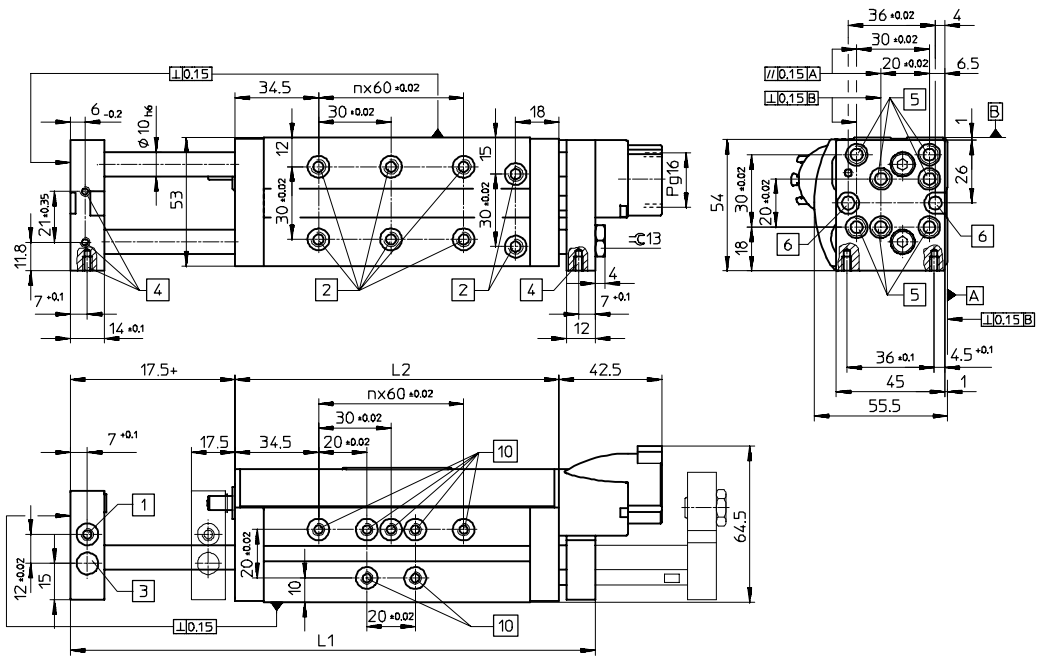
Dimensions

HMPL-12



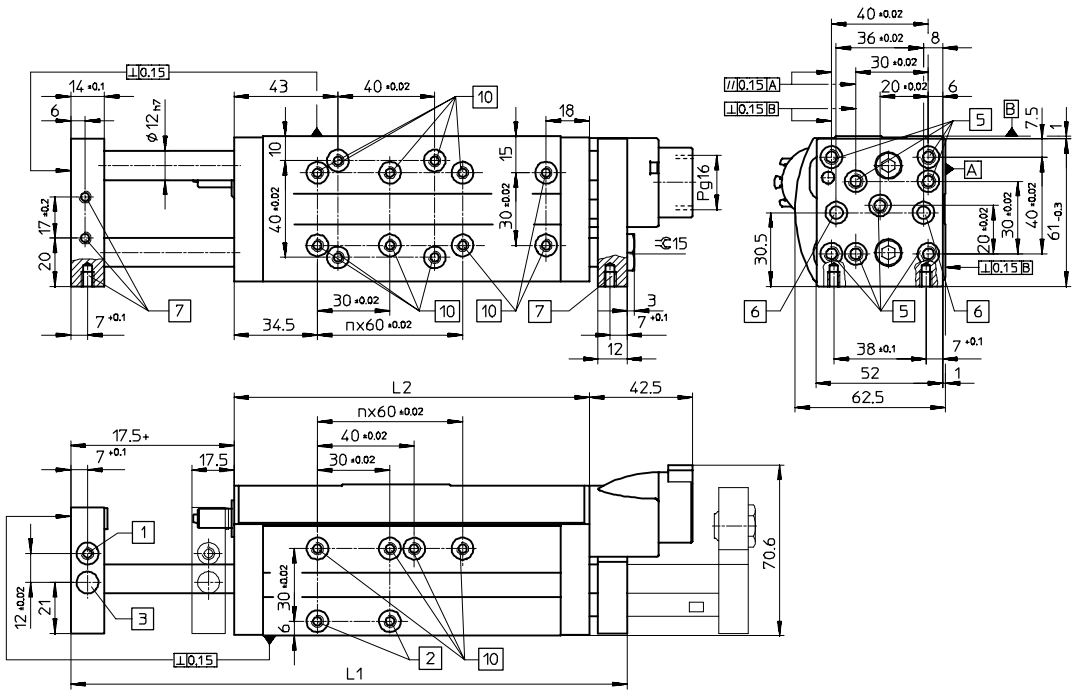
A and B are mounting surfaces + = plus stroke length

HMPL-16



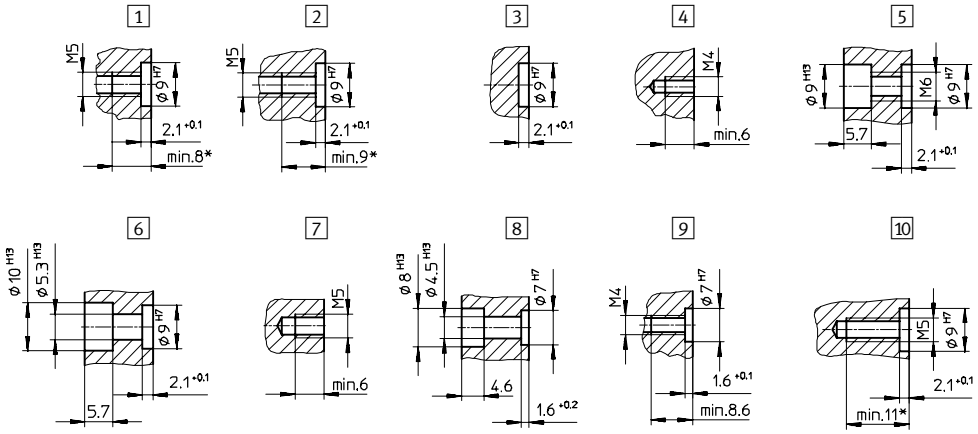
A and B are mounting surfaces + = plus stroke length

HMPL-20



A and B are mounting surfaces + = plus stroke length

Hole patterns on the housing and the flange plate

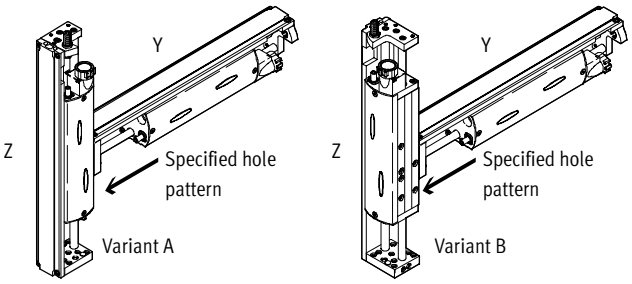


* Max. screw-in depth

HMPL-12-...			
Stroke [mm]	L1 +0.25/–0.1	L2 +0.2/–0.4	n
–	172	111	1
50	202	121	
80	262	151	
100	302	171	2
–			
–			
–			

HMPL-16-...			
Stroke [mm]	L1 +0.25/–0.1	L2 +0.2/–0.4	n
–			
50	217	134	1
80	267	154	
100	307	174	
125	357	199	2
160	427	234	
–			

HMPL-20-...			
Stroke [mm]	L1 +0.25/–0.1	L2 +0.2/–0.4	n
–			
50	230	147	1
80	267	154	
100	307	174	
125	357	199	2
160	427	234	
200	507	274	

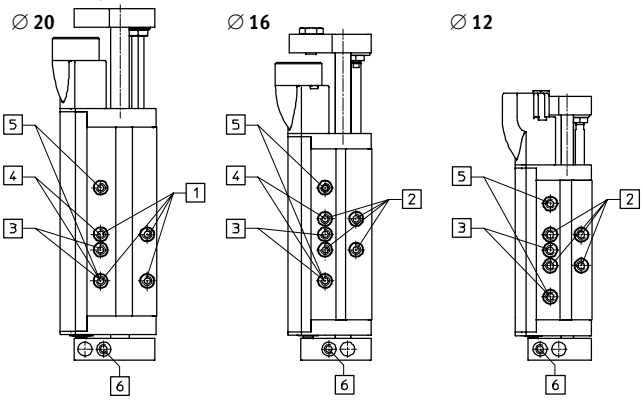


Linear modules HMPL

Mounting options

Mounting options, variant A

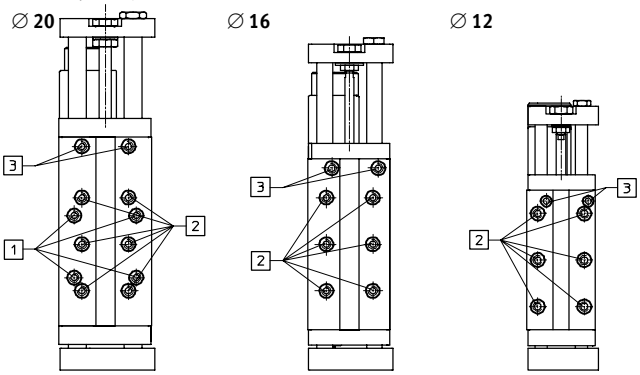
(Y/Z axes in primary direction)



No.	Y axis	Z axis	Grid dimensions [mm]	Mounting thread	Centring sleeve
1	HMPL-20	HMPL-20	30x30	M5	ZBH-9
2	HMPL-16	HMPL-12/-16	20x20	M5	ZBH-9
	HMPL-12	HMPL-12			
	Clamping unit HMPL-12-...-KP		20	M5	ZBH-9
3	Clamping unit HMPL-16/-20-...-KP		30	M5	ZBH-9
4	Mounting bracket HMBV		40	M5	ZBH-9
5	HMP-16/-20/-25	–	60	M5	ZBH-9
	Dovetail adapter		2x60 as of 125 mm stroke		
	Clamping unit HMPL-...-KP for attachment to HMP front plate				
6	Clamping unit mounting		–	M5	2xZBH-9

Mounting options, variant B

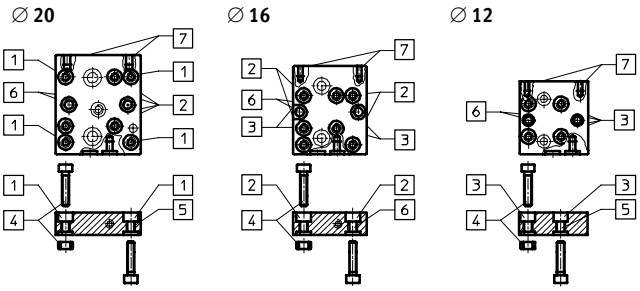
(Y axis in primary direction)



No.	Y axis	Z axis	Grid dimensions [mm]	Mounting thread	Centring sleeve
1	HMPL-20	HMPL-20	40x40	M5	ZBH-9
	Mounting bracket HMBV				
2	HMPL-20	HMPL-12/-16/-20	30x30	M5	ZBH-9
	HMPL-16	HMPL-12/-16			
3	Active intermediate position HMPL-16/-20		–	2xM5	ZBH-9
	Active intermediate position HMPL-12			2xM4	ZBH-7

Mounting options on the front plate

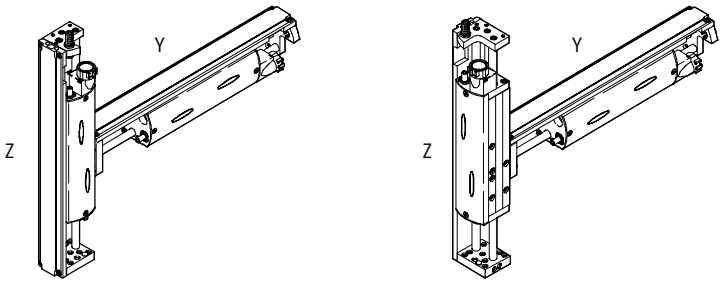
(Y/Z axes in primary direction)



No.	Y axis	Z axis	Grid dimensions [mm]	Mounting thread	Centring sleeve
1	HMPL-20	HMPL-20 B*	40x40	M6	ZBH-9
2	HMPL-20	HMPL-20 A*	30x30	M6	ZBH-9
	HMPL-16	HMPL-12/-16 B*			
	Gripper adapter kits HAPG-36/-37/-38				
3	HMPL-16	HMPL-12/-16 B*	20x20	M6	ZBH-9
	HMPL-12	HMPL-12 A*			
	HMPL-12: Gripper adapter kits HAPG-39/-60				
	Adjustment unit HMXY-1				
4	Attachment of all Z axes HMPL		–	M5**	ZBH-9
5	Individual mounting		–	M6	–
6	HMPL-12: Direct mounting DRQD-6		–	M4**	ZBH-7
	HMPL-16/-20: Direct mounting DRQD-8/-12		–	M5**	ZBH-9
7	HMPL-12/16: Reinforcing plate		–	2xM4	–
	HMPL-20: Reinforcing plate		–	2xM5	–

* Mounting option variants

** Through-holes for socket head screws



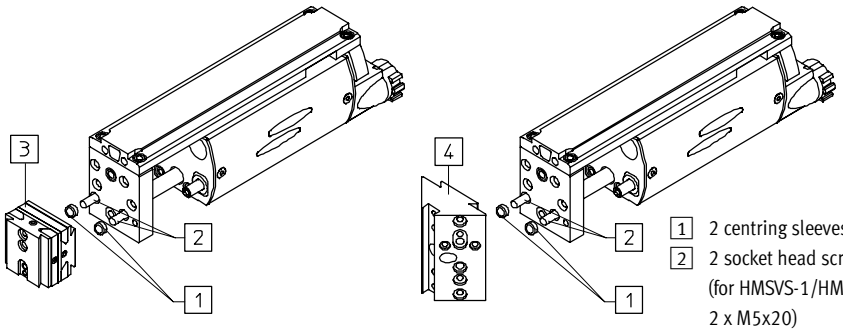
Direct mounting
HMPL/HMPL
HMPL/HMP

	HMPL-... Y/Z axes in primary direction*			Y axis in primary direction*		
	HMPL-12	HMPL-16	HMPL-20	HMPL-12	HMPL-16	HMPL-20
HMPL-12	2x M5x16 2x ZBH-9	–		–		
HMPL-16	2x M5x16 2x ZBH-9	2x M5x16 2x ZBH-9	–	2x M5x16 2x ZBH-9	2x M5x16 2x ZBH-9	–
HMPL-20	2x M5x16 2x ZBH-9	2x M5x16 2x ZBH-9	2x M5x16 2x ZBH-9	2x M5x16 2x ZBH-9	2x M5x16 2x ZBH-9	2x M5x16 2x ZBH-9
HMP-16	2x M5x22 2x ZBH-9	2x M5x22 2x ZBH-9	2x M5x22 2x ZBH-9	–		
HMP-20	2x M5x22 2x ZBH-9	2x M5x22 2x ZBH-9	2x M5x22 2x ZBH-9	–		
HMP-25	–	2x M5x30 2x ZBH-9	2x M5x30 2x ZBH-9	–		

Possible combinations

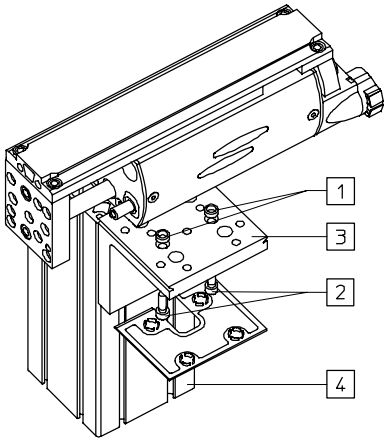
* Screws and centring sleeves are not included with the drives.

Mounting of the adjustment unit HMXY-1 and angle adapter HMSVS-1 to the front plate of the linear module HMPL



1 2 centring sleeves ZBH-9
2 2 socket head screws M5x16 (for HMSVS-1/HMPL-16/-20: 2 x M5x20)
3 Adjustment unit HMXY-1
4 Angle adapter HMSVS-1

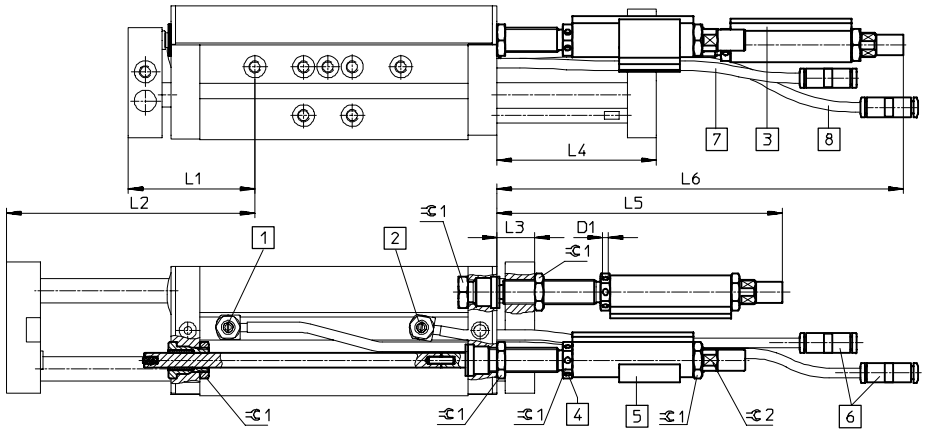
Mounting of the linear module HMPL to the profile column HMBS using the connecting kit HMBV-ND



1 2 centring sleeves ZBH-9
2 2 socket head screws M5x16
3 Connecting kit HMBV-ND
4 Profile column HMBS

Linear modules HMPL

External limit stop
HMPL-...-AE



1 Speed adjustment via one-way flow control valve, advancing
2 Speed adjustment via one-way flow control valve, retracting
3 Slot for proximity sensors SME-8 and SMT-8, and identification labels
4 Drilled hole for precision stroke adjustment with internal hex
5 Tubing clip for attaching cables, proximity sensors and tubing
6 Push-in connector QSM-4
7 Tubing, silver = return stroke air connection
8 Tubing, black = forward stroke air connection

HMPL-12-...- AE

Stroke	D1 ∅	L1	L2	L3	L4	L5	L6	⌀ 1	⌀ 2
[mm]	+0.1	+15*/–0.5	+0.5/–15**	+15*/–0.5	+0.5/–15**	+2	+2/–15**		
30	2	42.3	72.3	13.7	43.7	98.9	131.1	10	7
50			92.3		63.7		151.1		
80			122.3		93.7		181.1		
100			142.3		113.7		201.1		

HMPL-16-...- AE

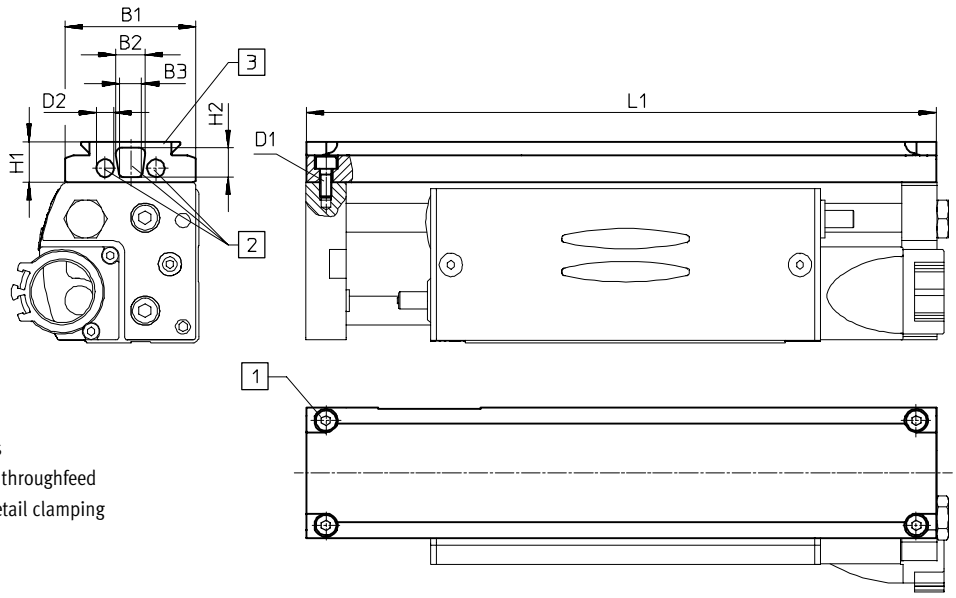
Stroke	D1 ∅	L1	L2	L3	L4	L5	L6	⌀ 1	⌀ 2
[mm]	+0.1	+20*/–0.5	+0.5/–20**	+20*/–0.5	+0.5/–20**	+2	+2/–20**		
50	2.4	52	102	15.5	65.5	116.3	168.3	13	9
80			132		95.5		198.3		
100			152		115.5		218.3		
125			177		140.5		243.3		
160			212		175.5		278.3		

HMPL-20-...- AE

Stroke	D1 ∅	L1	L2	L3	L4	L5	L6	⌀ 1	⌀ 2
[mm]	+0.1	+20*/–0.5	+0.5/–20**	+20*/–0.5	+0.5/–20**	+2	+2/–20**		
50	2.4	52	102	15.5	65.5	134.8	210.8	15	11
80			132		95.5		240.8		
100			152		115.5		260.8		
125			177		140.5		285.8		
160			212		175.5		320.8		
200			252		215.5		360.8		

* Precision stroke adjustment, retracted end position
** Precision stroke adjustment, advanced end position

Reinforcing plate
HMPL-...-VP



1 Mounting screws
2 Space for tubing throughfeed
3 Suitable for dovetail clamping

HMPL-12-...-VP

Stroke [mm]	B1	B2	B3	D1	D2 ∅	H1	H2	L1
30	42	11	6.2	M4	4.2	14	10	171.6
50								201.6
80								261.6
100								301.6

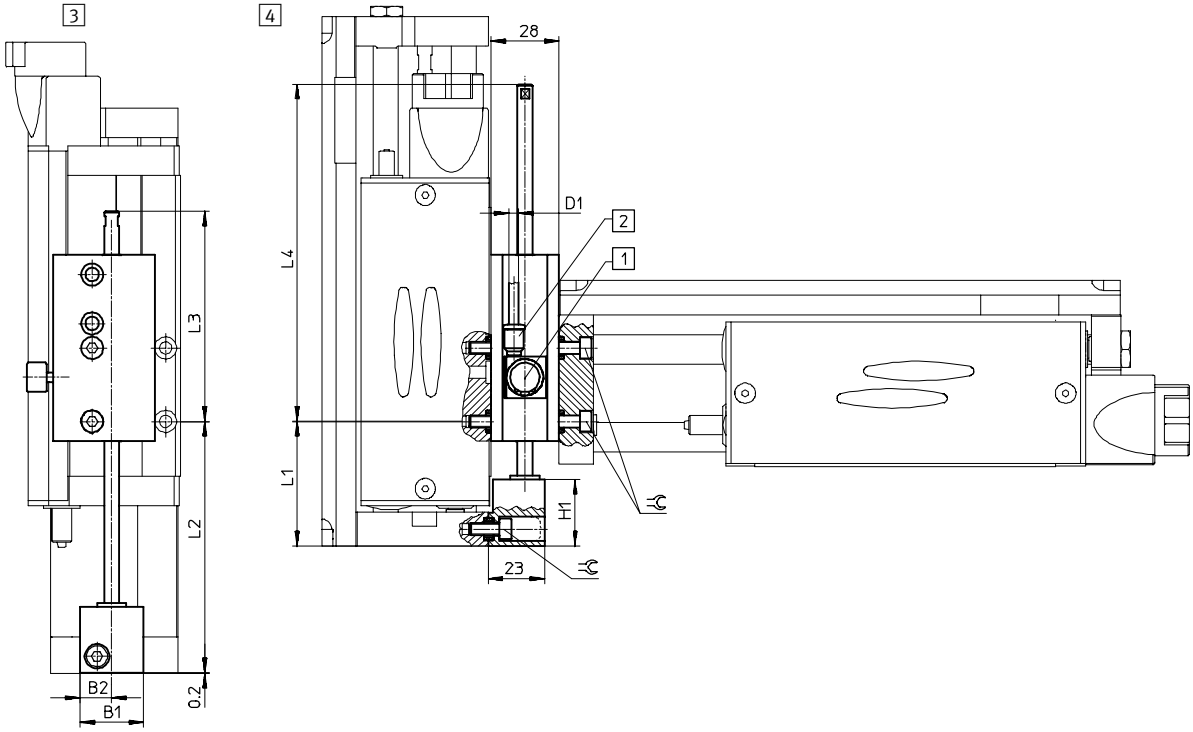
HMPL-16-...-VP

Stroke [mm]	B1	B2	B3	D1	D2 ∅	H1	H2	L1
50	45	10	7.6	M4	6	14	10	216.6
80								266.6
100								306.6
125								356.6
160								426.6

HMPL-20-...-VP

Stroke [mm]	B1	B2	B3	D1	D2 ∅	H1	H2	L1
50	52	12	8.4	M5	6	14	10	229.6
80								266.6
100								306.6
125								356.6
160								426.6
200								506.6

Clamping unit
HMPL-...-.KP



1 Manual override
2 M3 compressed air connection (push-in connector QSM-M3-4-I for 4 mm ∅ tubing included)
3 Advanced end position
4 Retracted end position

Clamping unit
HMPL-...-.KP

HMPL-12-...-KP

Stroke [mm]	B1	B2	D1 ∅	L1 +15*/–0.5	L2 +0.5/–15*	L3 +15*/–0.5	L4 +0.5/–15*	H1	⌯
30	30	22	4	42.1	72.1	80	110	15.5	4
50					92.1	85	135		
80					122.1	105	185		
100					142.1	85	185		

HMPL-16-...-KP

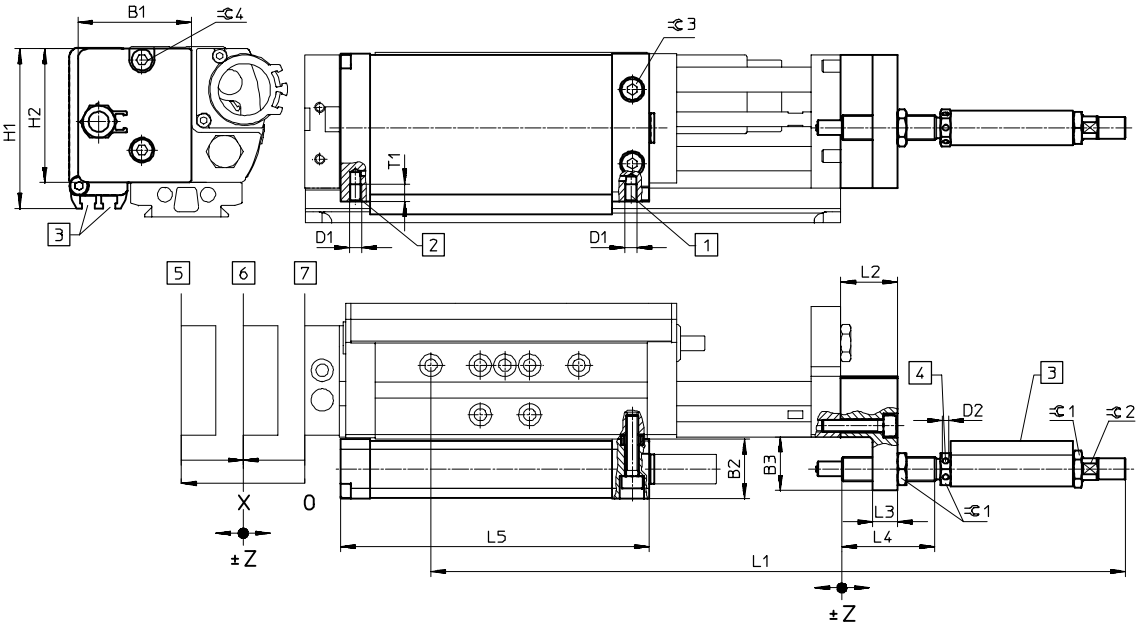
Stroke [mm]	B1	B2	D1 ∅	L1 +20*/–0.5	L2 +0.5/–20*	L3 +20*/–0.5	L4 +0.5/–20*	H1	⌯
50	26	13	4	51.8	101.8	86.8	136.8	27	4
80					131.8	106.8	186.8		
100					151.8	86.8	186.8		
125					176.8	111.8	236.8		
160					211.8	76.8	236.8		

HMPL-20-...-KP

Stroke [mm]	B1	B2	D1 ∅	L1 +20*/–0.5	L2 +0.5/–20*	L3 +20*/–0.5	L4 +0.5/–20*	H1	⌯
50	26	13	4	51.8	101.8	86.8	136.8	27	4
80					131.8	106.8	186.8		
100					151.8	86.8	186.8		
125					176.8	111.8	236.8		
160					211.8	76.8	236.8		
200					251.8	86.8	286.8		

* Stroke setting range of the HMPL axis

Active intermediate position
HMPL-...-...M



1 Supply port, retracting
2 Supply port, advancing
3 Slot for proximity sensors SME-8 and SMT-8
4 Drilled hole for precision stroke adjustment with internal hex
5 Extended position (max. stroke)
6 Intermediate position
7 Retracted position

Active intermediate position
HMPL-...-...M

HMPL-12-...-...M																		Intermediate position	
Stroke	B1	B2	B3	D1	D2 ∅	H1	H2	L1	L2	L3	L4	L5	T1	⫧C1	⫧C2	⫧C3	⫧C4	Stroke X	Setting range Z **
[mm]	±0.3	–0.6	±0.5		+0.1	±0.3	±0.3	+2/–15*	±0.2			+0.6							
30	38	20	17.5	M5	2	55	45	238	18	8	30	Stroke HMPL	6	10	7	3	4	1 ... 29	±7.5
50								268				+ 81.5						1 ... 49	
80								328				– X						1 ... 79	
100								368										1 ... 99	

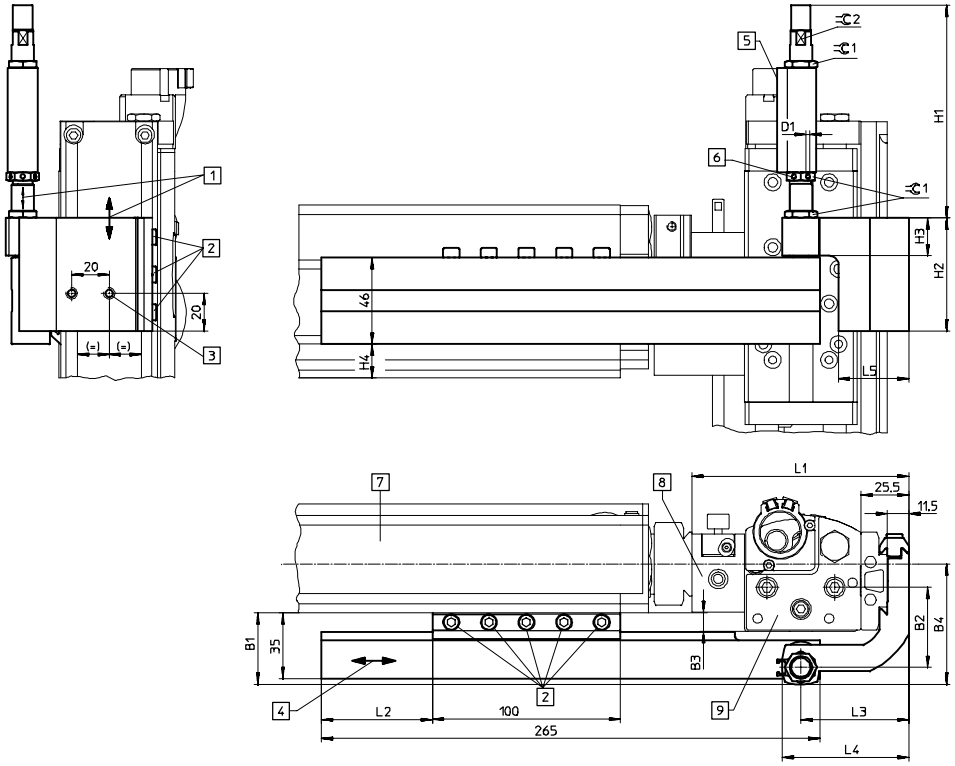
HMPL-16-...-...M																		Intermediate position	
Stroke	B1	B2	B3	D1	D2 ∅	H1	H2	L1	L2	L3	L4	L5	T1	⫧C1	⫧C2	⫧C3	⫧C4	Stroke X	Setting range Z ***
[mm]	±0.3	–0.6	±0.5		+0.1	±0.3	±0.3	+2/–20*	±0.2			+0.6							
50	46	24	21.5	M5	2.4	64.5	54	294	23	10	37	Stroke HMPL	7	13	9	4	4	1 ... 49	±10
80								344				+ 86						1 ... 79	
100								384				– X						1 ... 99	
125								434										1 ... 124	
160								504										1 ... 159	

HMPL-20-...-...M																		Intermediate position	
Stroke	B1	B2	B3	D1	D2 ∅	H1	H2	L1	L2	L3	L4	L5	T1	⫧C1	⫧C2	⫧C3	⫧C4	Stroke X	Setting range Z ***
[mm]	±0.3	–0.6	±0.5		+0.1	±0.3	±0.3	+2/–20*	±0.2			+0.6							
50	51.5	24	22	M5	2.4	64.5	61	321	23	10	37	Stroke HMPL	7	15	11	4	4	1 ... 49	±10
80								361				+ 86						1 ... 79	
100								401				– X						1 ... 99	
125								451										1 ... 124	
160								521										1 ... 159	
200								561										1 ... 199	

* Precision stroke adjustment, advanced end position
** Valid within a range of 7.5 mm to max. stroke –7.5 mm
*** Valid within a range of 10 mm to max. stroke –10 mm
X = Selected intermediate position

Passive intermediate position

HMMP-HMP



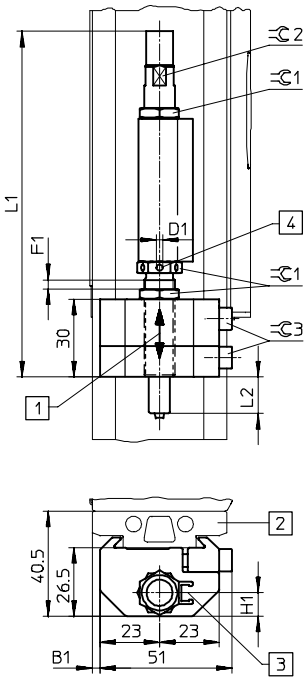
1 Stop position can be adjusted by sliding across the reinforcing plate
2 Clamping by means of M5 socket head screws with internal hexagon socket
3 M5 holes, 6 mm deep: for attaching adapter plate HMZAS or retaining clip MKRS
4 Horizontal adjusting range for stop position in the retracted end position
5 Slot for proximity sensors SME-8 and SMT-8-B
6 Drilled hole for precision end-position adjustment with internal hexagon socket
7 Linear module HMP-...
8 Clamping unit HMPL-...-KP
9 Linear module HMPL-...

Type	Horizontal X axis	Vertical Z axis	B1	B2	B3	B4	D1 ∅	H1	H2	H3	H4
HMMP-12-HMP	HMP-16	HMPL-12-...	26.5	35	0.5	52.5	2	82.4 +0.5/-12*	40	15	18
HMMP-16-HMP	HMP-16	HMPL-16-...	30.5	37	4	56.5	2.4	94.8	60	20	18
	HMP-20		26.5		0			+0.5/-14*			23.5
HMMP-20-HMP	HMP-16	HMPL-20-...	38	42.5	10	64	2.4	113.3	60	20	18
	HMP-20		34		6			+0.5/-14*			23.5

Type	Horizontal X axis	Vertical Z axis	L1	L1 with KP	L2	L2 with KP	L3	L4	L5	⊂ 1	⊂ 2
HMMP-12-HMP	HMP-16	HMPL-12-...	71.5	99.5	95	67	49.5	56.5	29.5	10	7
HMMP-16-HMP	HMP-16	HMPL-16-...	80.5	108.5	90	62	53.5	61.5	33.5	13	9
	HMP-20										
HMMP-20-HMP	HMP-16	HMPL-20-...	87.5	115.5	87	59	57.5	67.5	37.5	15	11
	HMP-20										

* Setting range via stop element

External intermediate position
HMMP-...-E



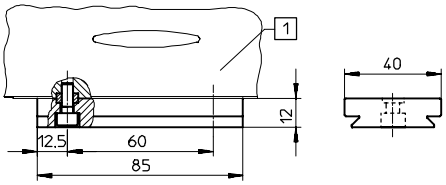
1 Stop position can be adjusted by sliding across the reinforcing plate.
Precision end-position adjustment (F1) via thread on stop element

2 Reinforcing plate
3 Slot for proximity sensors SME-8 and SMT-8-B
4 Drilled hole for precision end-position adjustment with internal hexagon socket

Type	B1	D1 +0. 1	F1	H1	L1	L2	⌭ 1	⌭ 2	⌭ 3
HMMP-12-E	–1	2	15	7	97.4	8	10	7	4
HMMP-16-E	0.5	2.4	22	7	114.8	10	13	9	4
HMMP-20-E	4	2.4	35	9	133.3	14	15	11	4

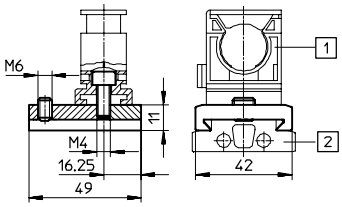
Accessories

Dovetail adapter
HMPL-...-I
(code I)



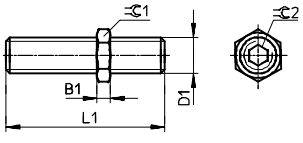
1 Linear module HMPL

Clamping component
HMPL-J
(code J)



1 Retaining clip
MKRS-16,5-B, MKRS-23-B or MKRS-29-B
2 Reinforcing plate HMPL-...-VP

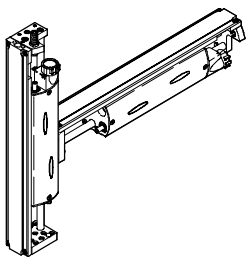
Stop bolt
HMPL-K
(code K)



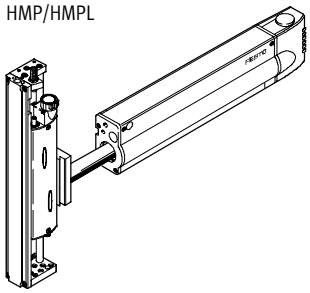
Type	B1	D1	L1	⌭1	⌭2
HMPL-12-K	3	M8x1	35	10	4
HMPL-16-K	3.5	M10x1	40	13	5
HMPL-20-K	4	M12x1	43	15	6

Combination of linear module HMP with linear module HMPL

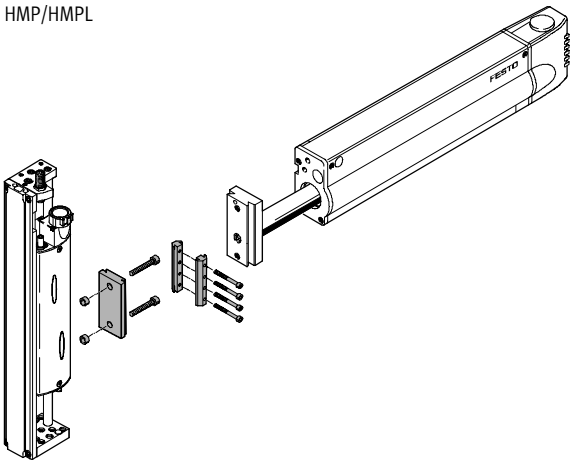
Direct mounting
HMPL/HMPL

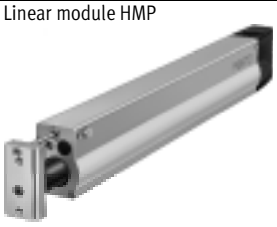


HMP/HMPL



Dovetail connection
HMP/HMPL

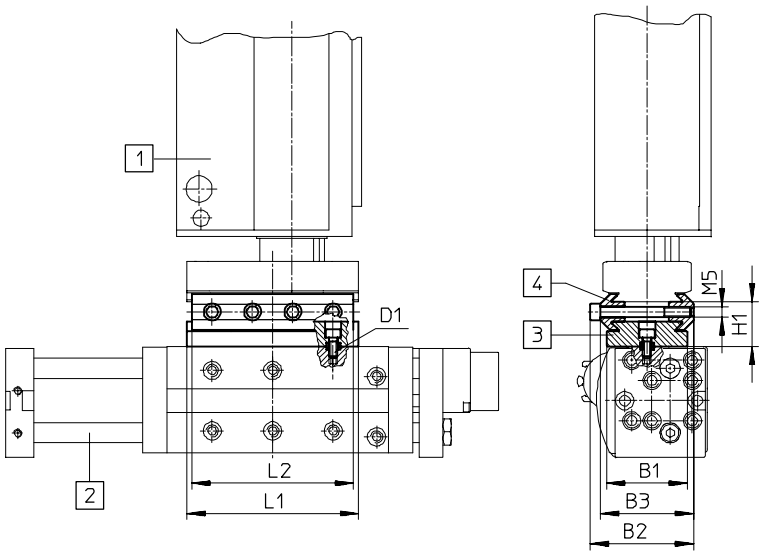


		Types of connection*		Linear module HMPL-...		
		DB	SV**	12	16	20
Linear module HMP 	HMP-16			2 x M5x22 DIN 912*** 2 x ZBH-9	2 x M5x22 DIN 912*** 2 x ZBH-9	2 x M5x22 DIN 912*** 2 x ZBH-9
	HMP-20			2 x M5x22 DIN 912*** 2 x ZBH-9	2 x M5x22 DIN 912*** 2 x ZBH-9	2 x M5x22 DIN 912*** 2 x ZBH-9
	HMP-25			–	2 x M5x30 DIN 912*** 2 x ZBH-9	2 x M5x30 DIN 912*** 2 x ZBH-9
	HMP-16			193 923 HMSV-46 177 647 HMSV-1	193 923 HMSV-46 177 647 HMSV-1	193 923 HMSV-46 177 647 HMSV-1
	HMP-20			193 923 HMSV-46 177 647 HMSV-1	193 923 HMSV-46 177 647 HMSV-1	193 923 HMSV-46 177 647 HMSV-1
	HMP-25			–	193 923 HMSV-46 177 647 HMSV-1	193 923 HMSV-46 177 647 HMSV-1
	HMP-32			–	–	193 923 HMSV-46 177 647 HMSV-1
Linear module HMPL 	HMPL-12			2 x M5x16 DIN 912*** 2 x ZBH-9	–	–
	HMPL-16			2 x M5x16 DIN 912*** 2 x ZBH-9	2 x M5x16 DIN 912*** 2 x ZBH-9	–
	HMPL-20			2 x M5x16 DIN 912*** 2 x ZBH-9	2 x M5x16 DIN 912*** 2 x ZBH-9	2 x M5x16 DIN 912*** 2 x ZBH-9

* Types of connection: DB = direct mounting (➔ 19); SV = dovetail connection
** The respective kits listed are required for mounting.
*** The screws listed are not included with the drives.

Linear modules HMPL

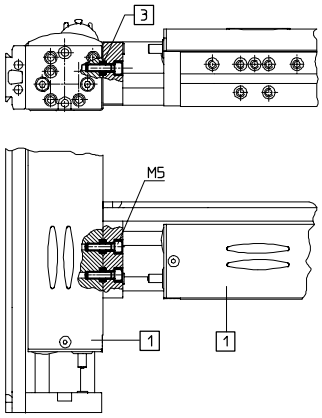
HMSV-1
HMSV-46



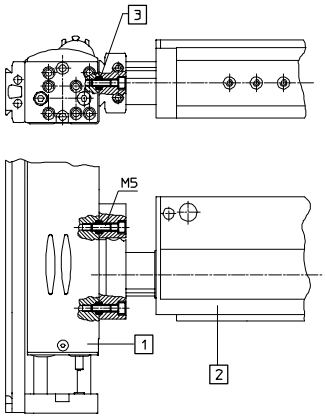
1 Linear module HMP
2 Linear module HMPL
3 Adapter kit HMSV-46
4 Connecting kit HMSV-1

Type	B1	B2	B3	D1	L1	L2	H1
HMSV-1	40	51	46	M3	85	80	22
HMSV-46							

HMPL/HMPL



HMP/HMPL

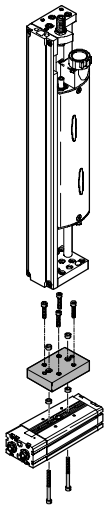


Direct mounting

1 Linear module HMPL
2 Linear module HMP
3 Centring sleeve ZBH-9

Combination of linear module HMPL with semi-rotary drive DRQD

Direct mounting



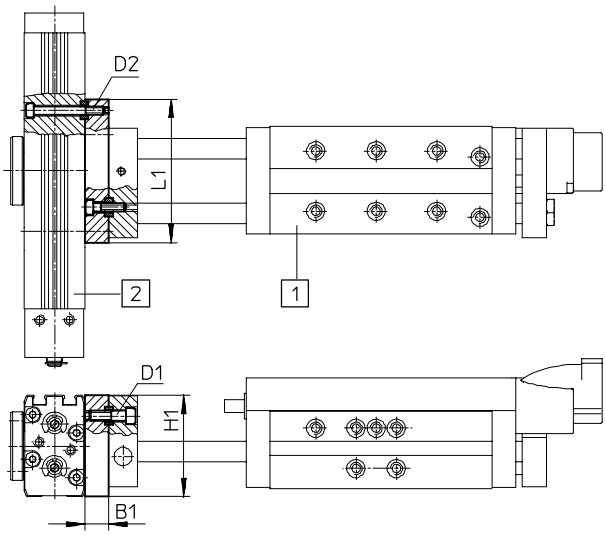
		Type of connection*	Semi-rotary drive DRQD-...				
		DB	6	8**	12**	16	20
Linear module HMPL	HMPL-12		2x M4x16 DIN 912***	–	–	–	–
	HMPL-16		193 920 HAPG-36-S2	2x M5x20 DIN 912***	2x M5x20 DIN 912***	192 707 HAPG-38	192 707 HAPG-38
	HMPL-20		193 920 HAPG-36-S2	2x M5x20 DIN 912***	2x M5x20 DIN 912***	192 707 HAPG-38	192 707 HAPG-38

* Type of connection: DB = direct mounting

** If DRQD-8 and 12 are used with tubing throughfeed SD32, connection type DRQD-...-B2 must be selected.

*** The screws listed are not included with the drives.

HAPG-36-S2
HAPG-38

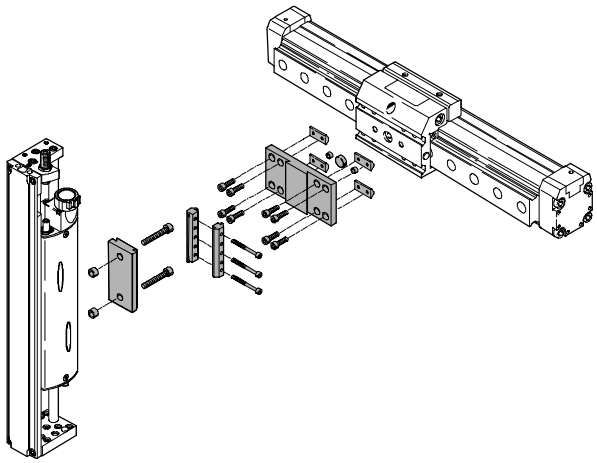


1 Linear module HMPL
2 Semi-rotary drive DRQD
2 Adapter kit HAPG

	B1	D1	D2	H1	L1
HAPG-36-S2	12	M5	M4	42	50
HAPG-38				50	71

Combination of linear drives DGPL/DGPIL/DGE-KF with linear module HMPL

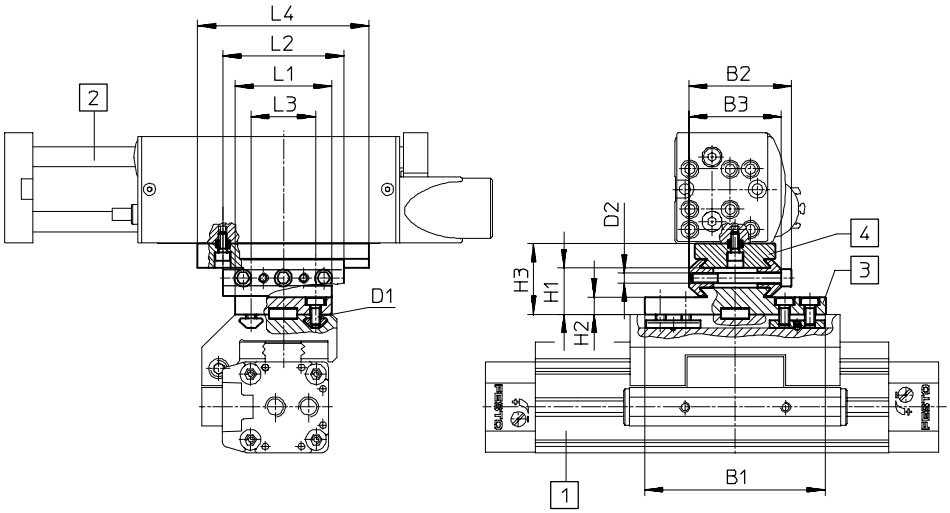
Dovetail connection



		Type of connection*	Linear module HMPL-...		
		SV**	12	16	20
Linear drives DGPL/DGPIL/DGE-KF 	DGPL-25 DGPIL-25 DGE-25-KF		176 005 HMAV-DL25 193 923 HMSV-46	176 005 HMAV-DL25 193 923 HMSV-46	176 005 HMAV-DL25 193 923 HMSV-46
	DGPL-32 DGPIL-32		–	176 006 HMAV-DL32 193 923 HMSV-46	176 006 HMAV-DL32 193 923 HMSV-46
	DGPL-40 DGPIL-40 DGE-40-KF		–	–	176 007 HMAV-DL40 193 923 HMSV-46

* Type of connection: SV = dovetail connection
** The respective kits listed are required for mounting.

HMAV-DL25
HMAV-DL32
HMAV-DL40
HMSV-46

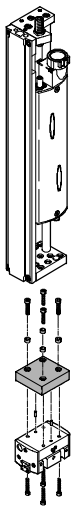


1 Linear drives DG...
2 Linear module HMPL
3 Adapter kit HMAV-DL
4 Connecting kit HMSV-46

Type	B1	B2	B3	D1	D2	H1	H2	H3	L1	L2	L3	L4
HMAV-DL25 HMSV-46	90	51	46	M5	M5	23	8.5	35	48	60	32	85
HMAV-DL32 HMSV-46									63.5		47	
HMAV-DL40 HMSV-46									78	64	55	

For combining linear modules HMPL with precision gripper HGPP

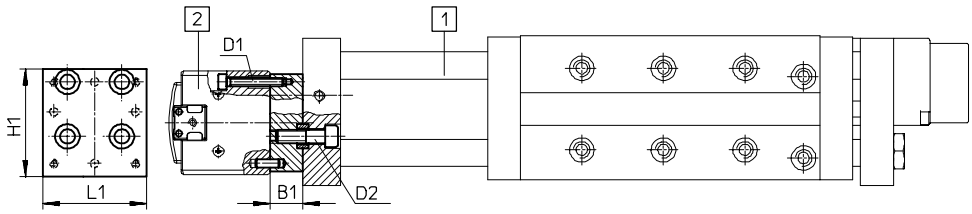
Direct mounting



		Type of connection*	Precision gripper					
		DB	HGPP					
			10	12	16	20	25	32
Linear module HMPL 	HMPL-12		529 016 HAPG-56	191 899 HAPG-53	–	–	–	–
	HMPL-16				191 901 HAPG-55	–	–	–
	HMPL-20		–	191 900 HAPG-54		–	–	–

* Type of connection: DB = direct mounting

HAPG-53 ... 56



1 Linear module HMPL
2 Precision gripper HGPP

Adapter kits	Drives	Grippers	Type of connection* DB	B1	D1	D2	H1	L1
HAPG-53	HMPL-12 HMPL-16	HGPP-12		12	M3	M5	38	39.5
HAPG-54	HMPL-20	HGPP-12		12	M3	M5	52	44
HAPG-55	HMPL-20	HGPP-16		12	M3	M5	62	40
HAPG-56	HMPL-12 HMPL-16	HGPP-10		12	M3	M5	42	38

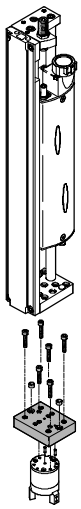
* Type of connection: DB = direct mounting

Linear modules HMPL

Overview and ordering data

For combining linear modules HMPL with standard grippers HGD/HGP/HGR/HGW

Direct mounting



HGD

HGP

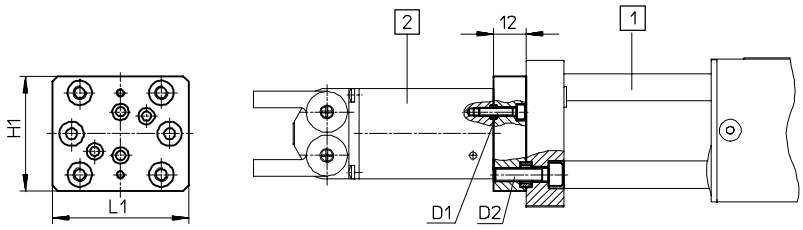
HGR

HGW

		Type of connection*	Standard gripper			
		DB	HGP-06 HGR-10 HGW-10	HGP-10 HGR-16 HGW-16	HGP-16 HGP-20 HGR-25 HGW-25	HGD-16
Linear module HMPL 	HMPL-12		192 709 HAPG-60-S1	192 708 HAPG-39-S1	–	–
	HMPL-16		192 706 HAPG-37-S1	192 705 HAPG-36-S1	193 922 HAPG-37-S4	193 921 HAPG-36-S3
	HMPL-20					

* Type of connection: DB = direct mounting

HAPG-36-S1
HAPG-36-S3
HAPG-37-S1
HAPG-37-S4
HAPG-39-S1
HAPG-60-S1



1 Linear module HMPL
2 Standard gripper HG...

Adapter kits	Drives	Grippers	Type of connection* DB	D1	D2	H1	L1
HAPG-36-S1	HMPL-16 HMPL-20	HGP-10 HGR-16 HGW-16		M3	M5	42	50
HAPG-36-S3	HMPL-16 HMPL-20	HGD-16		M3	M5	42	50
HAPG-37-S1	HMPL-16 HMPL-20	HGP-06 HGR-10 HGW-10		M3	M5	42	50
HAPG-37-S4	HMPL-16 HMPL-20	HGP-16 HGP-20 HGR-25 HGW-25		M4	M5	42	50
HAPG-39-S1	HMPL-12	HGP-10 HGR-16 HGW-16		M3	M5	30	30
HAPG-60-S1	HMPL-12	HGP-06 HGR-10 HGW-10		M3	M5	30	30

* Type of connection: DB = direct mounting

100 % Service for 100 % Partnership

Welcome to Festo's world of service. We live out our philosophy of customer orientation on a daily basis. And this creates a foundation for the future, and for successful cooperation with our customers.

On-Site Global Presence
- Online contact to 52 independent Festo companies around the world
- Present in 176 countries with a total of 10,500 employees
- Worldwide networks for uniform consultation, sales and service standards

Personalized Advice – Worldwide
- Worldwide support with more than 1,000 highly qualified technical advisors and project consultants
- 24-hour technical advice available from hotlines at many of our sales offices

Software Service
Electronic catalogue.
Complete catalogue on CD ROM in 16 languages offers a variety of advantages:
- Quick reliable search function for locating products
- Automatic accessory selection
- Pneumatic circuit dimensioning
- Calculation and layout programs with direct link to search functions

Take advantage of this true alternative to conventional paper catalogues. Available online as well in three languages at www.festo.com.

Festo DesignTool/datagraphic – supports design engineers with 2D and 3D geometric configura-tions for in-house CAD systems.

FluidDraw – allows for quick and easy generation of schematic diagrams with direct data transfer from the electronic catalogue.

Information Service
– Comprehensive documentation with detailed technical information
– Attractive, periodic customer magazines
– Up-to-date information available from the Internet at http://www.festo.com

Everything from a Single Source
– More than 20,000 products are included in our catalogue
– All components are matched together ideally to function
– Designed for maximum productivity and efficiency
– Drives and drive accessories
– Handling and vacuum technology
– Positioning
– Valves and valve accessories
– Valve terminals and bus systems
– Proportional technology
– Compressed air preparation
– Tubing, fittings, mounting accessories
– Sensors and pressure switches
– Pneumatic control technology
– Electronic control technology

Customer Service
– Hotlines available for technical advice
– Quick on-site assistance
– Reliable maintenance service and complaints department

Replacement Parts Service
– Quick response times thanks to on-site replacement parts service throughout the world
– Delivery from Festo service points and well-stocked parts warehouses
– On-time delivery of original replacement parts
– Practically all accessory and standard components are immediately available from well-stocked warehouses at the Festo sales offices for especially urgent requirements.

Delivery Service
– Quick delivery of catalogue products direct from the ware-house
– Custom manufacturing (SMS) in 28 countries
– Fully automated manufacturing and logistics at the Customer Service Centre in St. Ingbert-Rohrbach, Germany
– Minimal turnaround times
– International manufacturing controls are maintained for product quality
– 7,400 orders with a total of 16,000 units processed each day
– 6,500 cases with a total weight of 50,000 kg shipped each day
– Shipments dispatched direct to the customer throughout Europe

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All technical data subject to change according to technical update.

Less is often more!

**Do you always only pay for what you really need?
With the HMPL definitely.
Why not see for yourself:**

Industrie Forum Design Hannover iF Product Design Award 2000

	Benefits for designers	Benefits for buyers
1. Adaptive functions	– Intermediate positions which can be traversed or approached in any direction – Greater flexibility thanks to defined interfaces and variable connection technology – Maximum reliability thanks to optional clamping cartridge	– Cost saving thanks to high flexibility and simple retooling for new tasks – Essentials principle when equipping with functions – Pay per Function
2. Small design and productive	– Space saving during system design – Reduced weight minimizes oscillation decay time with resulting maximized cycle rates – Quick, smooth and gentle in the end position thanks to special handling shock absorbers	– Less space requirement saves costs – Reduced costs thanks to increased speeds with fewer rejects
3. The modular assembly principle	– Harmonized individual components – High operational reliability – Reduced planning time – User-friendly, quick installation – High retooling flexibility	– Reduced downtimes – One-stop shopping – Reduced component costs – Adapter kits and accessories from a single source – Time saving during design and installation

Summary of further components

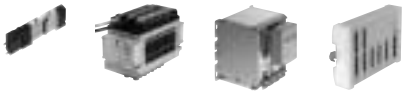
Important components in our product range

Compressed air preparation

- Service units D series

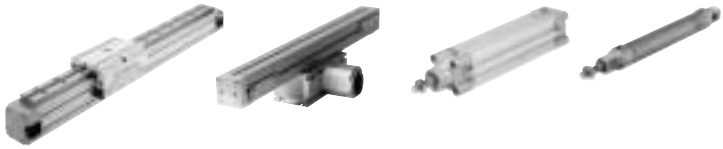
Control technology

- Individual valves type CPE
- Valve terminal type CPV
- Smart Positioning Controller type SPC200
- Front-End Controller IPC FEC Standard type FC640



Long linear movement

- Rodless cylinder type DGPL
- Electric toothed-belt drive type DGE
- Standard cylinder type DNC and type DSNU



Short linear movement

- Linear module type HMP
- Guide unit type DFM
- Mini slide type SLT
- Flat slide type SLG
- Linear module type HMPL
- Short-stroke cylinder type ADVC

Rotary movement

- Rotary drive type DRQD
- Swivel module type DSM
- Swivel/linear module type DSL

Gripping, mechanical ...

- Precision gripper type HGPP
- Micro gripper type HGWM
- Three-point gripper type HGD

... or with vacuum

- Suction gripper type ESG
- Vacuum generator type VADMI
- Vacuum generator type VAD New Line

Connecting and installing

- Basic elements
- Screw connectors
- Restrictors
- Tubing

Parts sorting and testing

- Checkbox family

Further products and details: http://catalog.festo.com or consult your Festo technical advisor.

Pneumatic Pictograms


Stroke length


Flow rate


Voltage


Force


Pressure


Temperature range


Diameter


Vacuum


Width


Service


Repair service

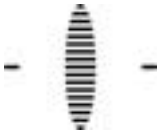

Worldwide service


Hotline


Collection facility


Delivery time


In stock


Important


Type discontinued


New


Repairable