

Feed separators HPVS

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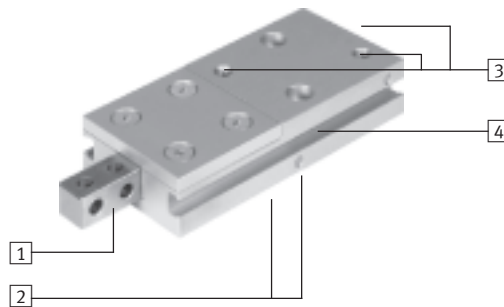
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Key features and peripherals overview

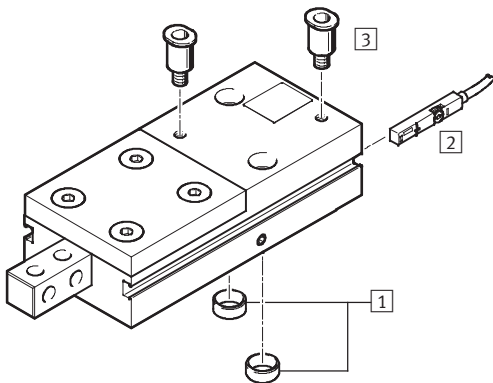
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At a glance

- 1 Corrosion-resistant thanks to stainless steel plunger
- 2 Optimum and precise adaption options using centring sleeves
- 3 Supply ports optionally on top or at rear
- 4 Supports proximity sensors that can be integrated in the housing (SME/SMT-8)



Peripherals overview



Accessories		
	Brief description	➔ Page/Internet
1 Centring sleeve ZBH	For centring when mounting	10
2 Proximity sensor SMT-/SME-8	For position sensing, can be integrated in the sensor slot	10
3 Push-in fitting QS	For connecting compressed air tubing with standard O.D.	quick star

Feed separators HPVS

Type codes

Type codes

		HPVS	–	14	–	20	–	A
Type								
Double-acting								
HPVS	Feed separator							
Size [mm]								
Stroke [mm]								
Position sensing								
A	Via proximity sensor							


Feed separators HPVS


Technical data

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Function



- Ø - 
10 ... 22

- I - 
10 ... 60 mm



General technical data			
Size	10	14	22
Pneumatic connection	M5/M3	M5/M5	
Design	Twin piston		
	Piston rod		
	Non-rotating		
Protection against rotation/guide	Square		
Max. interchangeability [mm]	0.3		
Repetition accuracy [mm]	0.05	0.15	0.25
Cushioning	None		
Position sensing	Via proximity sensor		
Type of mounting	Via through-hole		
	Via female thread		
Mounting position	Any		

Operating and environmental conditions	
Operating medium	Compressed air according to ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Operating pressure [bar]	3 ... 8
Ambient temperature [°C]	+5 ... +60
Protection class	IP40
Corrosion resistance class CRC ¹⁾	2

1) Corrosion resistance class 2 according to Festo standard 940 070

Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Forces [N]			
	10	14	22
Theoretical force at 6 bar, advancing	45	90	225
Theoretical force at 6 bar, retracting	35	75	180

Weight [g]					
Size	10	14	22		
Stroke [mm]	10	20	40	30	60
Product weight	90	183	290	630	1,000

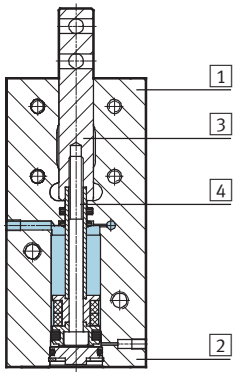
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Technical data

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Materials

Sectional view



Feed separator		
1	Housing	Wrought aluminium alloy (with CompCoat)
2	End cap	High-alloy steel
3	Plunger	High-alloy steel
4	Piston rod	High-alloy steel
-	Seals	Nitrile rubber
Note on materials		Free of copper, PTFE and silicone
		RoHS-compliant

 Note

The plunger slideways in the housing are determined by the appropriate fit selected and cannot be adjusted. The

necessary basic lubrication is performed during assembly. We recom-

mend that the feed separator be re-lubricated after 2 million cycles.

Max. permissible weight [g] of the add-on plunger separator for unrestricted operation

Size	10	14		22	
Stroke	10	20	40	30	60
External add-on plunger separator ¹⁾	56	150	150	395	395

1) If the max. permissible weight of the external add-on plunger separator is exceeded, the retracting and advancing times must be adapted in accordance with the table below using one-way flow control valves. Failure to do so may result in components of the feed separator being damaged.

Retracting and advancing times [s] with add-on plunger separators as a function of the weight force [N] of the plunger separators

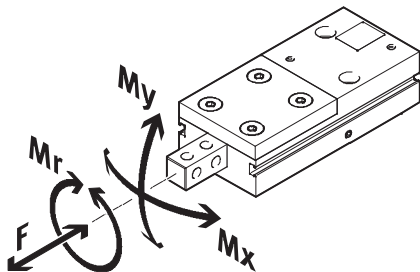
Size		10	14		22	
Stroke		10	20	40	30	60
Weight force	1 N	0.03	–	–	–	–
	2 N	0.04	0.03	0.05	–	–
	3 N	0.05	0.04	0.08	–	–
	4 N	0.06	0.05	0.11	0.24	0.48
	5 N	–	0.07	0.13	0.30	0.60
	6 N	–	–	–	0.36	0.72
	7 N	–	–	–	0.42	0.84
	8 N	–	–	–	0.48	0.96

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Technical data

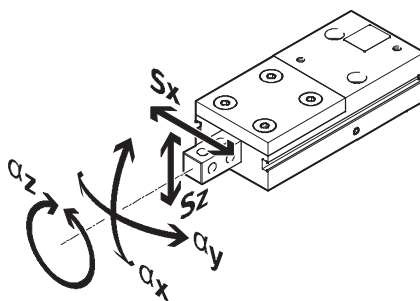
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Permissible characteristic static load values at the plungers



Size	10	14	22
Force F [N]	75	100	180
Torque M_x [Nm]	3	5	9
Torque M_y [Nm]	3	5	9
Torque M_r [Nm]	3	5	9

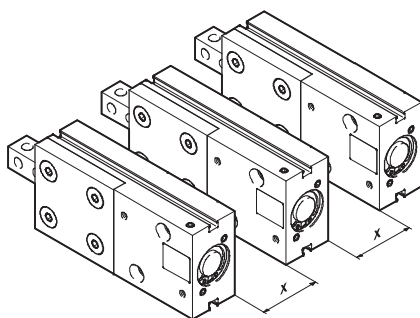
Plunger backlash



Size	10	14	22
Stroke [mm]	10	20	40
S_x [mm]	0.03	0.03	0.03
S_z [mm]	0.05	0.05	0.05
α_x [°]	0.12	0.12	0.07
α_y [°]	0.20	0.20	0.12
α_z [°]	0.262	0.175	0.175

Minimum clearances

To prevent malfunctioning of the proximity sensors, the feed separators must comply with the minimum clearances specified in the table.



Size	10	14	22
For SME-8-...	60	59	73
For SMT-8-...-B	60	54	69

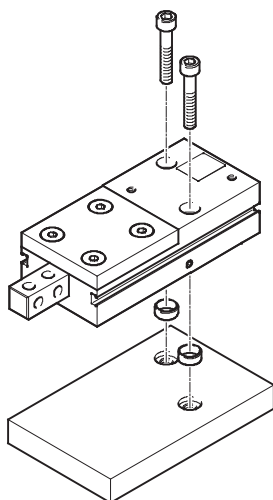
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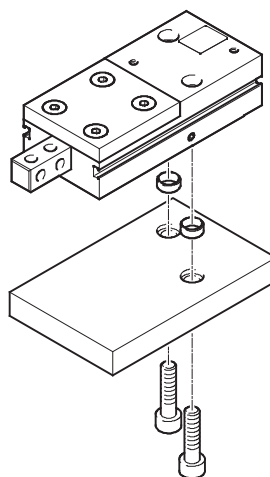
Mounting options

Only the mounting surface on the underside (opposite the supply ports) may be used.

From above via through-hole



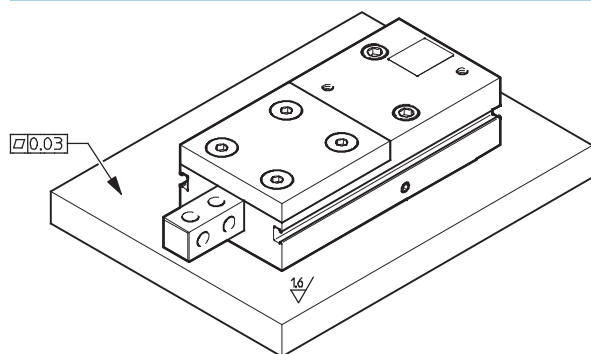
From below via female thread



Size	10	14	22
Screw	M3	M4	M6
Permitted tightening torque [Nm]	1.2	2.9	9.9
Centring sleeve	ZBH-7	ZBH-7	ZBH-12

Size	10	14	22
Screw	M4	M5	M8
Permitted tightening torque [Nm]	2.9	5.9	24
Centring sleeve	ZBH-7	ZBH-7	ZBH-12

Surface finish and positional accuracy of bearing surface



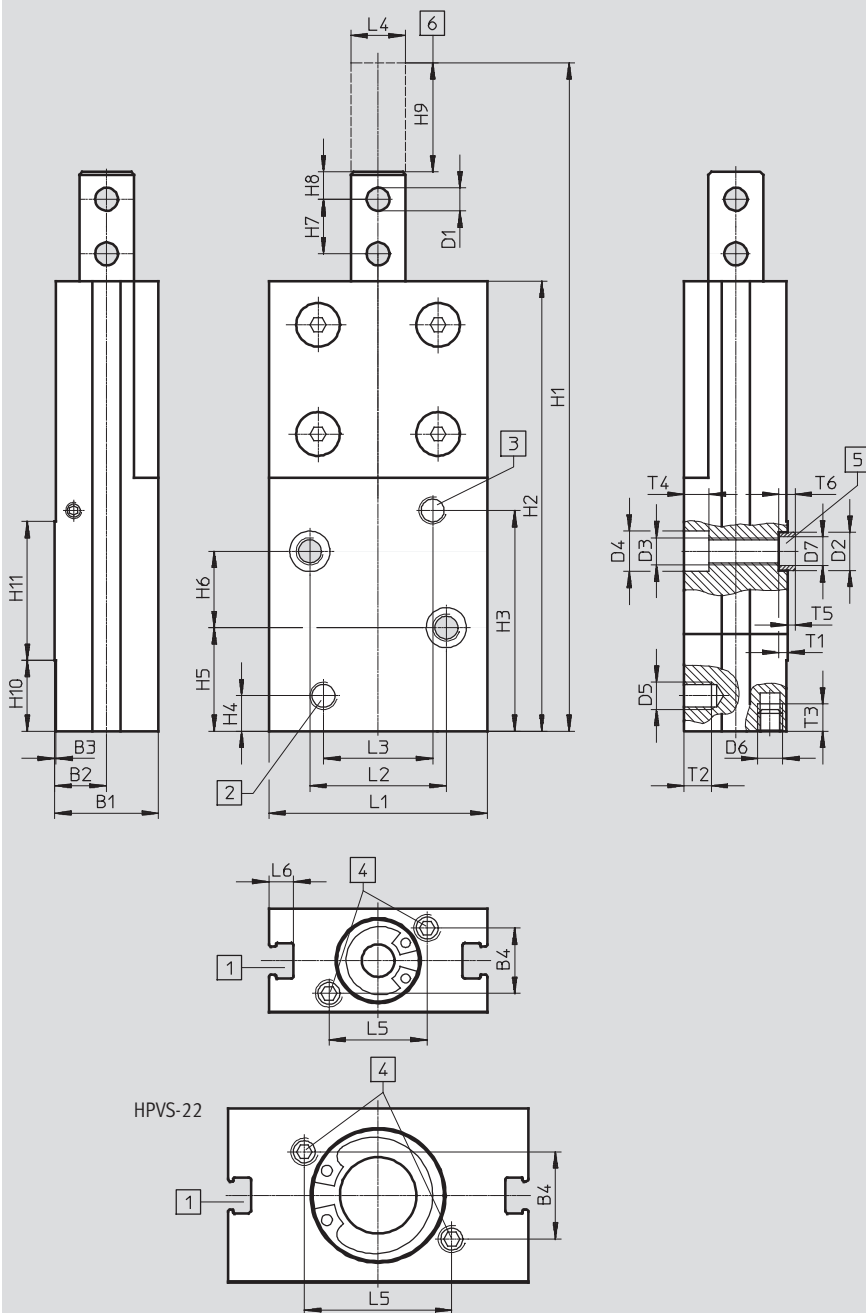
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Technical data

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Dimensions

Download CAD data → www.festo.com



- 1 Sensor slot for proximity sensor
- 2 Supply port, advancing
- 3 Supply port, retracting
- 4 Alternative supply port
- 5 Centring sleeves
(2 included in the scope of delivery)
- 6 Stroke

Feed separators HPVS

Technical data

Type	B1 ±0.02	B2	B3 +0.05	B4	D1 Ø H13	D2 Ø H8/h7	D3	D4 Ø H13	D5	D6	D7 Ø	H1 ±0.5
HPVS-10-10-A	18	8	0.2	11	3.2	7	M4	6	M5	M3	5.3	82
HPVS-14-20-A	19	9.5	0.2	12	4.2	7	M5	7.4	M5	M5	5.3	122.5
HPVS-14-40-A	19	9.5	0.2	12	4.2	7	M5	7.4	M5	M5	5.3	192.5
HPVS-22-30-A	32	16	0.2	16	6.2	12	M8	10.4	M5	M5	10.3	178.5
HPVS-22-60-A	32	16	0.2	16	6.2	12	M8	10.4	M5	M5	10.3	283.5

Type	H2	H3	H4	H5	H6 ¹⁾ ±0.02	H7 ±0.2	H8 ±0.1	H9 ±0.5	H10	H11	L1
HPVS-10-10-A	57	27.5	5.5	10	12	7	4	10	4	24	33
HPVS-14-20-A	82.5	40.5	6.5	19	14	10	5	20	13	25.5	40
HPVS-14-40-A	132.5	60.5	6.5	19	34	10	5	40	13	45.5	40
HPVS-22-30-A	118.5	51.5	7.5	22	20	14	8	30	13	37.5	55
HPVS-22-60-A	193.5	81.5	7.5	22	50	14	8	60	13	67.5	55

Type	L2 ¹⁾ ±0.02	L3	L4 ±0.02	L5	L6	T1 +0.1	T2 min.	T3 min.	T4	T5 -0.3	T6 -0.2
HPVS-10-10-A	20	16	7	12	4.2	1.6	4	4	3.1	1.4	3
HPVS-14-20-A	25	20	10	18	4.5	1.6	5	5	4.6	1.4	3
HPVS-14-40-A	25	20	10	18	4.5	1.6	5	5	4.6	1.4	3
HPVS-22-30-A	37	29	14	27	4.2	2.6	5	5	6.1	2.4	5
HPVS-22-60-A	37	29	14	27	4.2	2.6	5	5	6.1	2.4	5


- 1) Tolerance for centring hole ±0.02
Tolerance for thread and through-hole ±0.1

Ordering data			
Size	Stroke [mm]	Part No.	Type
10	10	2095359	HPVS-10-10-A
14	20	2095360	HPVS-14-20-A
	40	2095361	HPVS-14-40-A
22	30	2095362	HPVS-22-30-A
	60	2095363	HPVS-22-60-A


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
Accessories



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Ordering data			Technical data ➔ Internet: zbh		
	For size	Part No.	Type	PU ¹⁾	
Centring sleeve ZBH					
	10, 14	186717	ZBH-7	10	
	22	189653	ZBH-12	10	


1) Packaging unit

Ordering data – Proximity sensor for T-slot, magneto-resistive					Technical data → Internet: smt	
	Type of mounting	Switching output	Electrical connection	Cable length [m]	Part No.	Type
N/O contact						
	Insertable in the slot from above, flush with the cylinder profile, short design	PNP	Cable, 3-wire	2.5	574335	SMT-8M-A-PS-24V-E-2,5-OE
			Plug M8x1, 3-pin	0.3	574334	SMT-8M-A-PS-24V-E-0,3-M8D
		PNP	Plug M12x1, 3-pin	0.3	574337	SMT-8M-A-PS-24V-E-0,3-M12

Ordering data – Proximity sensor for T-slot, magnetic reed					Technical data → Internet: sme	
	Type of mounting	Switching output	Electrical connection	Cable length [m]	Part No.	Type
N/O contact						
	Insertable in the slot from above, flush with the cylinder profile	Contacting	Cable, 3-wire	2.5	543862	SME-8M-DS-24V-K-2,5-OE
				5.0	543863	SME-8M-DS-24V-K-5,0-OE
			Plug M8x1, 3-pin	0.3	543861	SME-8M-DS-24V-K-0,3-M8D

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	541333	NEBU-M8G3-K-2.5-LE3
			5	541334	NEBU-M8G3-K-5-LE3
	Straight socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	541363	NEBU-M12G5-K-2.5-LE3
			5	541364	NEBU-M12G5-K-5-LE3
	Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	541338	NEBU-M8W3-K-2.5-LE3
			5	541341	NEBU-M8W3-K-5-LE3
	Angled socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	541367	NEBU-M12W5-K-2.5-LE3
			5	541370	NEBU-M12W5-K-5-LE3

Ordering data – Slot cover			
	Assembly	Length [m]	Part No. Type
	Insertable from above	2 x 0.5	151680 ABP-5-S

Ordering data – One-way flow control valves				Technical data → Internet: grla-m5-qs	
	Connection		Material	Part No.	Type
	Thread	For tubing O.D.			
	M5	3	Metal design	193137	GRLA-M5-QS-3-D
		4		193138	GRLA-M5-QS-4-D
		6		193139	GRLA-M5-QS-6-D

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