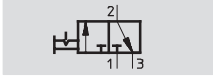


HE Manual On/Off Valves – D Series, NPT

Technical Data

Function



Flow rate

1000 ... 6500 l/min

Temperature range

-10 ... +60 °C

Operating pressure

0 ... 16 bar



- 3/2-way manual shut-off valve
- The unit is vented when switched off
- Ducted exhaust possible via a threaded connection
- The switching position is immediately recognizable
- Commercially available padlock can be used for security

General technical data								
Size	Mini			Midi			Maxi	
Pneumatic connection	1/8 NPT	1/4 NPT	3/8 NPT	3/8 NPT	1/2 NPT	3/4 NPT	3/4 NPT	1 NPT
Operating medium	Filtered compressed air, lubricated or unlubricated, grade of filtration 40 µm							
Design	Piston spool valve							
Type of mounting	Via accessories							
	In-line installation							
Assembly position	Any							
Operating pressure [bar]	0 ... 16							
Valve function	3/2-way valve, single solenoid							
Exhaust function	Without flow control							
Reset method	Mechanical spring							
C value [l/sbar]	4.4	7.2	7.5	15.7	17.0	17.3	26.8	25.9
b value	0.44	0.28	0.27	0.30	0.30	0.42	0.35	0.37
Direction of flow	Non-reversible							

Note: This product conforms to ISO 1179-1 and ISO 228-1

Standard nominal flow rate ¹⁾ qnN [l/min]						
Connection	1/8 NPT	1/4 NPT	3/8 NPT	1/2 NPT	3/4 NPT	1 NPT
Mini						
HE	1000	1500	1600	–	–	–
Midi						
HE	–	–	3200	3600	3800	–
Maxi						
HE	–	–	–	–	6000	6500

1) Measured at p1 = 6 bar and Δp = 1 bar.

Ambient conditions		
Ambient temperature [°C]		-10 ... +60
Temperature of medium [°C]		-10 ... +60
Corrosion resistance class CRC ¹⁾		2

1) Corrosion resistance class 2 according to Festo standard 940 070
 Components requiring moderate corrosion resistance. 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.

HE Manual On/Off Valves – D Series, NPT

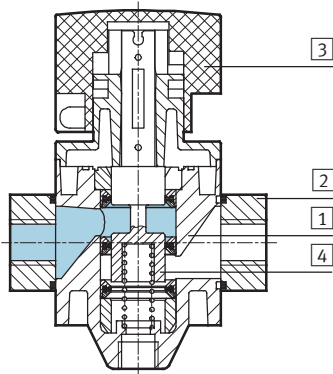
Technical Data

FESTO

Weight [g]			
Size	Mini	Midi	Maxi
HE	192	511	796

Materials

Sectional view



On-off valve		
1	Housing	Die-cast aluminum
2	Port blocks	Wrought aluminum alloy
3	Rotary knob	Polyamide
4	Piston	Stainless steel
-	Seals	Nitrile rubber
Note on materials		Free of copper, PTFE and silicone

HE Manual On/Off Valves – D Series, NPT

Technical Data – Dimensional Drawings

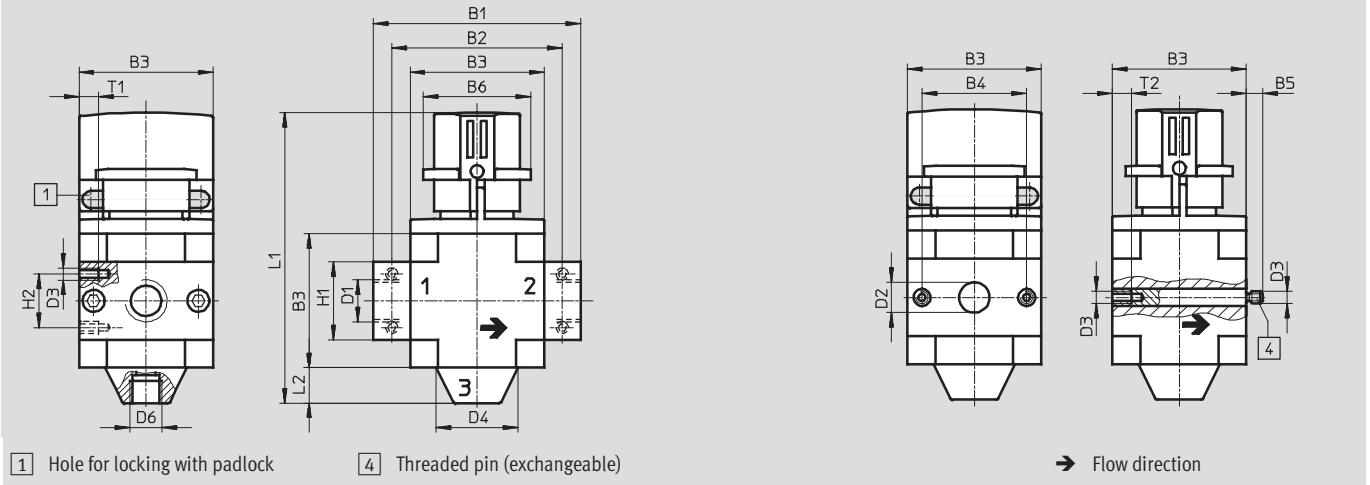


Dimensions Download CAD Data → www.festo.com/us/cad

Mini/Midi/Maxi

With threaded port blocks

Without threaded port blocks



Type	B1	B2	B3	B4	B5	B6	D1	D2	D3	D4	D6	H1	H2	L1	L2	T1	T2
Mini																	
HE-1/8-D-MINI	64	52	40	30	-	32	1/8 NPT	-	M4	24	G1/8	20	11	98	11	7	-
HE-1/4-D-MINI							1/4 NPT										
HE-3/8-D-MINI	70						3/8 NPT										
HE-D-MINI	-	-			5.8		-	11				-	-			-	10
Midi																	
HE-3/8-D-MIDI	85	70	55	43	-	44	3/8 NPT	-	M5	34	G1/4	32	22	119	14	8	-
HE-1/2-D-MIDI							1/2 NPT										
HE-3/4-D-MIDI							3/4 NPT										
HE-D-MIDI	-	-			6.8		-	24				-	-			-	11
Maxi																	
HE-3/4-D-MAXI	96	80	66	46	-	44	3/4 NPT	-	M5	38	G3/8	32	22	132	16	8	-
HE-1-D-MAXI	116	91					40										
HE-D-MAXI	-	-			6.8		-	30				-	-			-	11

Note: This product conforms to ISO 1179-1 and ISO 228-1

HE Manual On/Off Valves – D Series, NPT

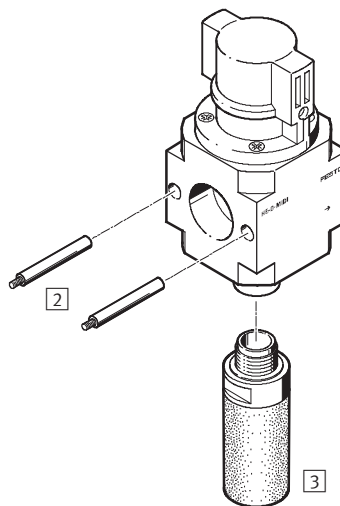
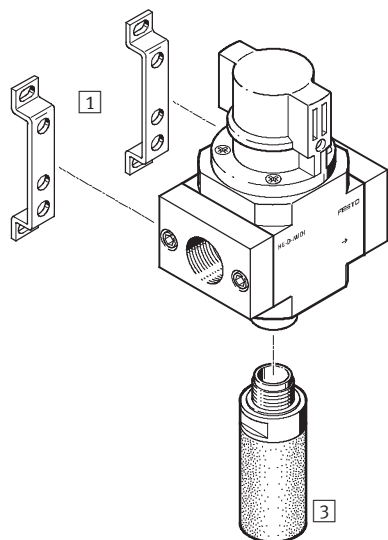
Accessories Overview



Mini/Midi/Maxi

Individual unit with port blocks

Individual unit without port blocks, for combination unit



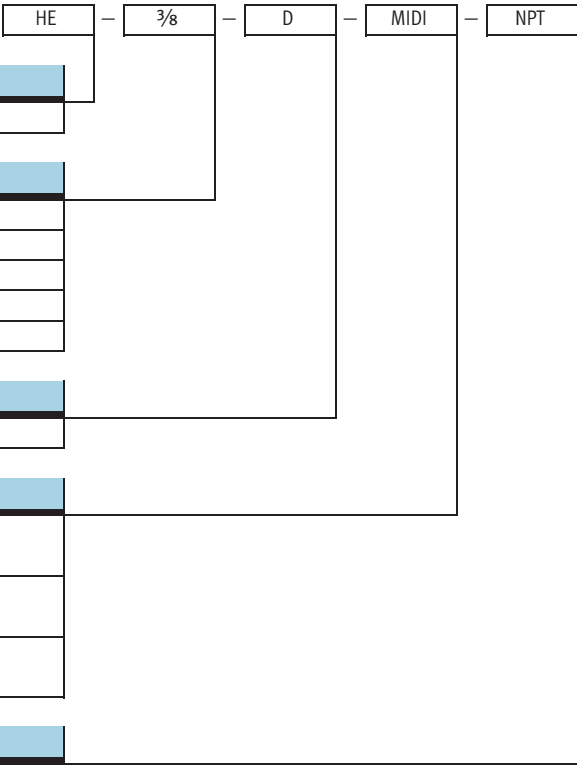
Mounting attachments and accessories					
	Individual unit		Combination		→ Page/Internet
	with port blocks	without port blocks	with port blocks	without port blocks	
1 Mounting bracket HFOE	■	–	■	–	hfoe
2 Threaded pin (included in scope of delivery) FRB	–	–	■	■	frb
3 Silencer U	■	■	■	■	u

Note

For Custom Combinations → FAST Program Selector Guide starting page 7

HE Manual On/Off Valves D Series, NPT

Type Codes



Basic function	
HE	On-of valve, manual

Pneumatic connection	
1/8	1/8 NPT Thread
1/4	1/4 NPT Thread
3/8	3/8 NPT Thread
3/4	3/4 NPT Thread
1	1 NPT Thread

Series	
D	Series

Size	
MINI	Grid dimension 40 mm (without port blocks)
MIDI	Grid dimension 55 mm (without port blocks)
MAXI	Grid dimension 60 mm (without port blocks)

NPT connection (where available)	
NPT	NPT threaded connection

HE Manual On/Off Valves – D Series, NPT



Ordering Data

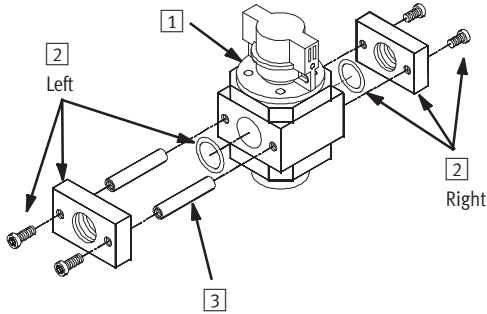
Ordering data		
3/2-way valve, operating pressure 0 ... 16 bar, normally closed		
Size	Part No.	Type
Without threaded port blocks		
Mini	170681	HE-D-MINI
Midi	170682	HE-D-MIDI
Maxi	170683	HE-D-MAXI

Ordering data			
3/2-way valve, operating pressure 0 ... 16 bar, normally closed			
Size	Connection	Part No.	Type
With threaded port blocks			
Mini	1/8 NPT	173892	HE-1/8-D-MINI-NPT
	1/4 NPT	173893	HE-1/4-D-MINI-NPT
	3/8 NPT	173894	HE-3/8-D-MINI-NPT
Midi	3/8 NPT	173895	HE-3/8-D-MIDI-NPT
	1/2 NPT	173896	HE-1/2-D-MIDI-NPT
	3/4 NPT	173897	HE-3/4-D-MIDI-NPT
Maxi	3/4 NPT	173898	HE-3/4-D-MAXI-NPT
	1 NPT	173899	HE-1-D-MAXI-NPT

FAST* Program – HE Manual On/Off Valve Selector Guide

HE Manual On/Off Valves – D Series, NPT

*FAST = Festo Assured Shipping Time. Ordering via the FAST program means same day / next day shipping from our warehouse of the parts required to assemble a complete air preparation unit.



A complete valve assembly consists of the following items:

Item	Description	Qty Required per Assy
1	Main Unit	1
2	Port Block Kit	2 (one left, one right)
3	Single Unit Joining Rod	2
4	Mounting Bracket Kit (Not shown)	1

Step 1: Based upon the required Port Size, Maximum Flow, and Thread Type, select the Main Unit (Item 1) and the Left and Right Port Block Kits (Item 2).

Port size	Max. Flow (l/min/scfm)	Product Type / Description	Item				
			1 Main Unit	2 NPT Thread		BSP Thread	
				Left Port Block Kit	Right Port Block Kit	Left Port Block Kit	Right Port Block Kit
1/8	1000/35.3	HE...-D-MINI-...	170681	546520	546521	546495	546496
1/4	1500/52.9	HE...-D-MIDI-...	170682	546522	546523	546497	546498
	2600/91.8			546536	546537	546532	543533
3/8	1600/56.5	HE...-D-MINI-...	170681	546524	546525	546499	546500
	3200/113.0	HE...-D-MIDI-...	170682	546530	546531	546501	546502
1/2	3600/127.1	HE...-D-MIDI-...	170683	546526	546527	546503	546504
	5600/197.8	HE...-D-MAXI-...		546538	546539	546534	546535
3/4	3800/134.2	HE...-D-MIDI-...	170682	546528	546529	546505	546506
	6000/211.9	HE...-D-MAXI-...	170683	546490	546492	546507	546508
1	6500/229.5			546491	546493	546509	546510

Step 2: Based upon the Product Type/Description from Step 1, select the Joining Rods (Item 3) and the Mounting Bracket Kit (Item 4).

Product Type / Description	Item	
	3 Single Unit Joining Rod	4 [Not shown] Mounting Bracket Kit
HE...-D-MINI-...	546483	159 638
HE...-D-MIDI-...	546489	159 593
HE...-D-MAXI-...	546494	

Step3: Determine the appropriate quantity of each Item.

Ordering Example:

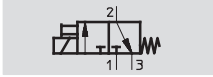
Required: 3/8 port size, 3000 l/min flow, BSP threads, and mounting bracket.

Order:	Item	Part No.	Qty	Description
	1	170682	1	Main Unit
	2	546501	1	Left Port Block Kit
		546502	1	Right Port Block Kit
	3	546489	2	Single Unit Joining Rod
	4	159593	1	Mounting Bracket Kit

HEE Electrical On/Off Valves – D Series, NPT

Technical Data

Function



Flow rate

1000 ... 6500 l/min

Temperature range

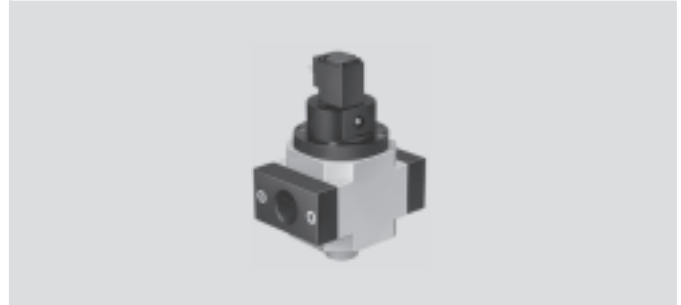
-10 ... +60 °C

Operating pressure

2.5 ... 16 bar

Selected types according to ATEX directive for explosive atmospheres

→ www.festo.com/en/ex



- Electrical on-off valve for pressurising and venting pneumatic installations
- With solenoid coil without plug socket
- Three voltage ranges can be selected
- Manual override via pushing and detenting (using override tool AHB-MD/MF/MV)
- Solenoid head can be repositioned by 4 x 90°

General technical data								
Size	Mini			Midi			Maxi	
Pneumatic connection	1/8 NPT	1/4 NPT	3/8 NPT	3/8 NPT	1/2 NPT	3/4 NPT	3/4 NPT	1 NPT
Operating medium	Filtered compressed air, lubricated or unlubricated, grade of filtration 50 µm							
Design	Piston spool valve							
Type of mounting	Via accessories In-line installation							
Assembly position	Any							
Operating pressure [bar]	2.5 ... 16							
Valve function	3/2-way valve, single solenoid							
Exhaust function	Without flow control							
Type of actuation	Mechanical spring							
Direction of flow	Non-reversible							
Supply voltage [V DC/AC]	24, 110, 230							
Electrical connection	Plug to DIN 43 650, type C							
Duty cycle	100%							
Protection class	IP65							

Note: This product conforms to ISO 1179-1 and ISO 228-1

Standard nominal flow rate ¹⁾ qnN [l/min]						
Connection	1/8 NPT	1/4 NPT	3/8 NPT	1/2 NPT	3/4 NPT	1 NPT
Mini						
HEE	1000	1500	1600	–	–	–
Midi						
HEE	–	–	3200	3600	3800	–
Maxi						
HEE	–	–	–	–	6000	6500

1) Measured at p1 = 6 bar and Δp = 1 bar.

HEE Electrical On/Off Valves – D Series, NPT

Technical Data

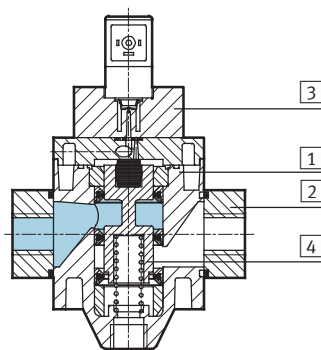
Ambient conditions				
Size		Mini	Midi	Maxi
Ambient temperature	[°C]	-10 ... +60		
Temperature of medium	[°C]	-10 ... +60		
Corrosion resistance class	CRC ¹⁾	2		

1) Corrosion resistance class 2 according to Festo standard 940 070
 Components requiring moderate corrosion resistance. 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.

Weight [g]				
Size		Mini	Midi	Maxi
HEE		223	500	800

Materials

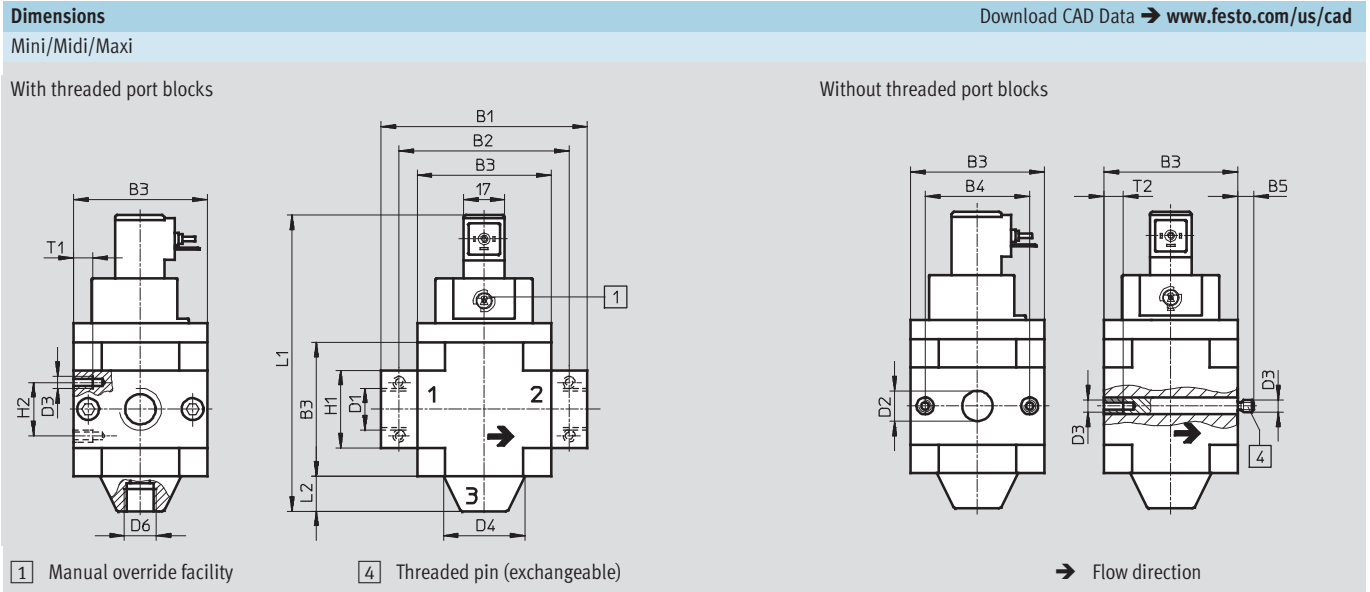
Sectional view



On-off valve		
1	Housing	Die-cast aluminum
2	Port blocks	Wrought aluminum alloy
3	Solenoid and intermediate plate	Polyamide
4	Piston	Stainless steel
-	Seals	Nitrile rubber
Note on materials		Free of copper, PTFE and silicone

HEE Electrical On/Off Valves – D Series, NPT

Technical Data – Dimensional Drawings



Type	B1	B2	B3	B4	B5	D1	D2	D3	D4	D6	H1	H2	L1	L2	T1	T2
Mini																
HEE-1/8-D-MINI	64	52	40	30	-	1/8 NPT	-	M4	24	G1/8	20	11	104	11	7	-
HEE-1/4-D-MINI	70					3/8 NPT										
HEE-3/8-D-MINI	-	-	-	-	5.8	-	11	-	-	-	-	-	-	-	-	10
Midi																
HEE-3/8-D-MIDI	85	70	55	43	-	3/8 NPT	-	M5	34	G1/4	32	22	122	14	8	-
HEE-1/2-D-MIDI						1/2 NPT										
HEE-3/4-D-MIDI	-	-	-	-	6.8	-	24	-	-	-	-	-	-	-	-	11
Maxi																
HEE-3/4-D-MAXI	96	80	66	46	-	3/4 NPT	-	M5	38	G3/8	32	22	135	16	8	-
HEE-1-D-MAXI	116	91				1 NPT					40					
HEE-D-MAXI	-	-	-	-	6.8	-	30	-	-	-	-	-	-	-	-	11

Note: This product conforms to ISO 1179-1 and ISO 228-1

HEE Electrical On/Off Valves – D Series, NPT

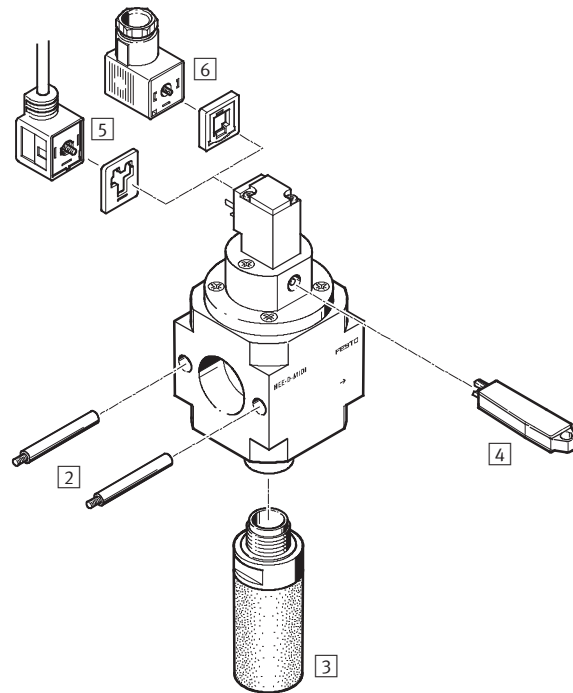
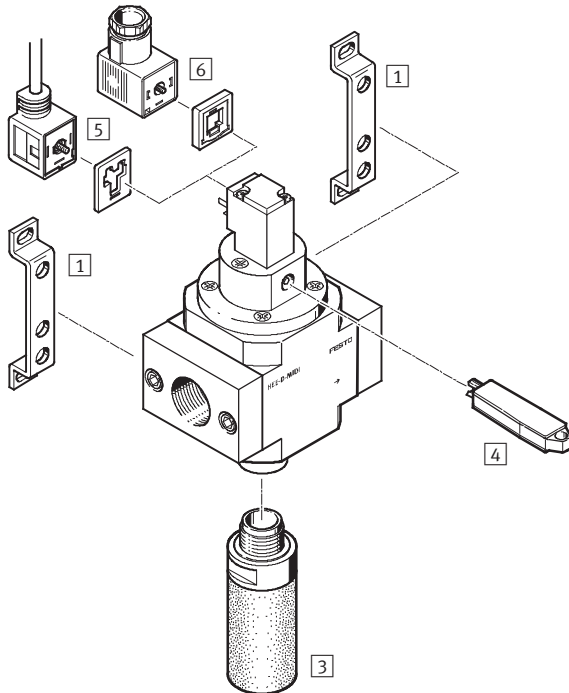
Accessories Overview



Mini/Midi/Maxi

Individual unit with port blocks

Individual unit without port blocks, for air preparation unit combination



Mounting attachments and accessories

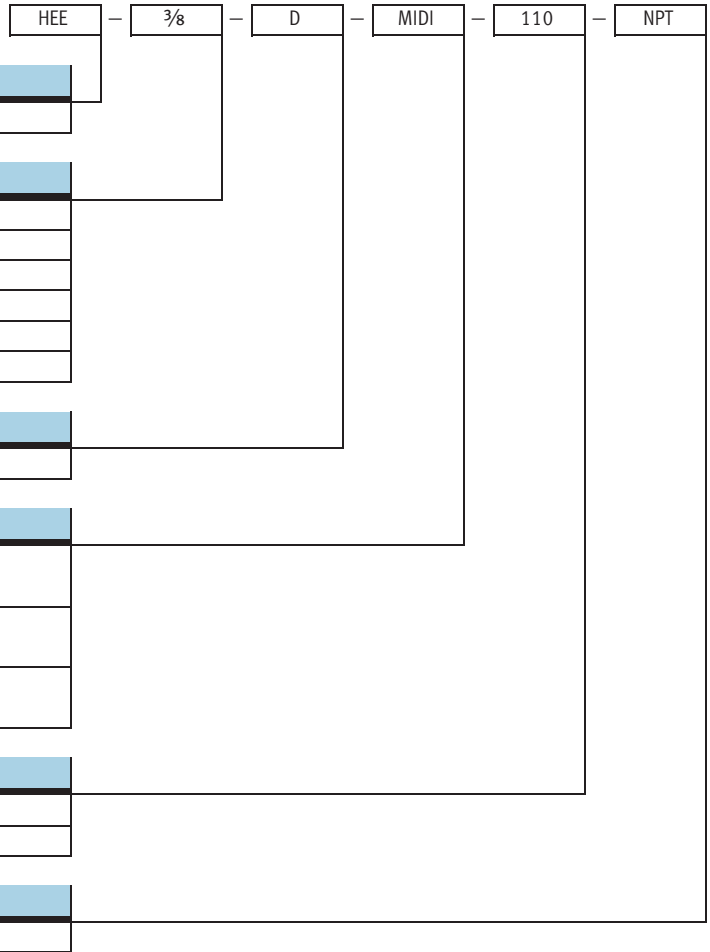
	Individual unit		Combination		→ Page/Internet
	with port blocks	without port blocks	with port blocks	without port blocks	
1 Mounting bracket HFOE	■	-	■	-	hfoe
2 Threaded pin (included in scope of delivery) FRB	-	-	■	■	frb
3 Silencer U	■	■	■	■	u
4 Manual override tool, non-detenting AHB-MD/MF/MY	■	■	■	■	ahb
5 Plug socket with cable KMEB-1	■	■	■	■	kmeb
6 Plug socket MSSD-EB	■	■	■	■	mssd

Note

For Custom Combinations → FAST Program Selector Guide starting page 14

HEE Electrical On/Off Valves – D Series, NPT

Type Codes



Basic function	
LFMBA	Filter combination

Pneumatic connection	
1/8	1/8 NPT Thread
1/4	1/4 NPT Thread
3/8	3/8 NPT Thread
1/2	1/2 NPT Thread
3/4	3/4 NPT Thread
1	1 NPT Thread

Series	
D	Series

Size	
MINI	Grid dimension 40 mm (without port blocks)
MIDI	Grid dimension 55 mm (without port blocks)
MAXI	Grid dimension 60 mm (without port blocks)

Voltage	
24	24 V DC supply voltage
110	110 V DC supply voltage

NPT Connection (where available)	
NPT	NPT threaded connection

HEE Electrical On/Off Valves – D Series, NPT

Ordering Data

Ordering data							
3/2-way valve, operating pressure 2.5 ... 16 bar, normally closed							
Size	Connection	24 V DC		110 V AC		230 V AC	
		Part No.	Type	Part No.	Type	Part No.	Type
Without threaded port blocks							
Mini		172956	HEE-D-MINI-24	172957	HEE-D-MINI-110	172958	HEE-D-MINI-230
Midi		172959	HEE-D-MIDI-24	172960	HEE-D-MIDI-110	172961	HEE-D-MIDI-230
Maxi		172962	HEE-D-MAXI-24	172963	HEE-D-MAXI-110	172964	HEE-D-MAXI-230

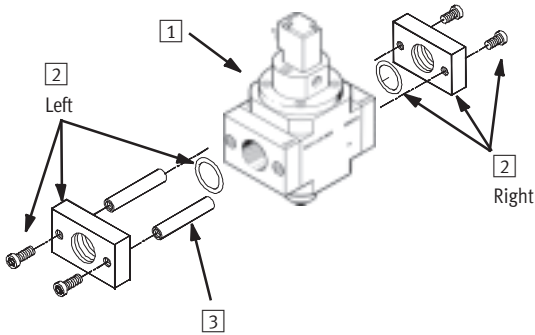
Ordering data							
3/2-way valve, operating pressure 2.5 ... 16 bar, normally closed							
Size	Connection	24 V DC		110 V AC		230 V AC	
		Part No.	Type	Part No.	Type	Part No.	Type
With threaded port blocks							
Mini	1/8 NPT	173900	HEE-1/8-D-MINI-24-NPT	173901	HEE-1/8-D-MINI-110-NPT	-	
	1/4 NPT	173902	HEE-1/4-D-MINI-24-NPT	173903	HEE-1/4-D-MINI-110-NPT		
	3/8 NPT	173904	HEE-3/8-D-MINI-24-NPT	176905	HEE-3/8-D-MINI-110-NPT		
Midi	3/8 NPT	173906	HEE-3/8-D-MIDI-24-NPT	173907	HEE-3/8-D-MIDI-110-NPT	-	
	1/2 NPT	173908	HEE-1/2-D-MIDI-24-NPT	173909	HEE-1/2-D-MIDI-110-NPT		
	3/4 NPT	173910	HEE-3/4-D-MIDI-24-NPT	173911	HEE-3/4-D-MIDI-110-NPT		
Maxi	3/4 NPT	173912	HEE-3/4-D-MAXI-24-NPT	173913	HEE-3/4-D-MAXI-110-NPT	-	
	1 NPT	173914	HEE-1-D-MAXI-24-NPT	173915	HEE-1-D-MAXI-110-NPT		

FAST* Program – HEE Electric On/Off Valve Selector Guide



HEE Electric On/Off Valves – D Series, NPT

*FAST = Festo Assured Shipping Time. Ordering via the FAST program means same day / next day shipping from our warehouse of the parts required to assemble a complete air preparation unit.



A complete valve assembly consists of the following items:

Item	Description	Qty Required per Assy
1	Main Unit	1
2	Port Block Kit	2 (one left, one right)
3	Single Unit Joining Rod	2
4	Mounting Bracket Kit (Optional) (Not shown)	1

Step 1: Based upon the required Port Size, Maximum Flow, and Thread Type, select the Main Unit (Item 1) and the Left and Right Port Block Kits (Item 2).

				Item					
				1	2				
Port size	Max. Flow (l/min/scfm)	Coil Voltage	Product Type / Description	Main Unit	NPT Thread		BSP Thread		
					Left Port Block	Right Port Block	Left Port Block	Right Port Block	
1/8	1000/35.3	24	HE-...-D-MINI-...	172956	546520	546521	546495	546496	
		110		172957					
		230		172958					
1/4	1500/52.9	24	HE-...-D-MINI-...	172956	546522	546523	546497	546498	
		110		172957					
		230		172958					
	2600/91.8	24	HE-...-D-MIDI-...	172959	546536	546537	546532	546533	
		110		172960					
		230		172961					
3/8	1600/56.5	24	HE-...-D-MINI-...	172956	546524	546525	546499	546500	
		110		172957					
		230		172958					
	3200/113.0	24	HE-...-D-MIDI-...	172959	546530	546531	546501	546502	
		110		172960					
		230		172961					
1/2	3600/127.1	24	HE-...-D-MINI-...	172959	546526	546527	546503	546504	
		110		172960					
		230		172961					
	5600/197.8	24	HE-...-D-MAXI-...	172962	546538	546539	546534	546535	
		110		172963					
		230		172963					
3/4	3800/134.2	24	HE-...-D-MIDI-...	172959	546528	546529	546505	546506	
		110		172960					
		230		172961					
	6000/211.9	24	HE-...-D-MAXI-...	172962	546490	546492	546507	546508	
		110		172963					
		230		172964					
1	6500/229.5	24	HE-...-D-MAXI-...	172962	546491	546493	546509	546510	
		110		172963					
		230		172964					

FAST Program – HEE Electric On/Off Valve Selector Guide

HEE Electric On/Off Valves – D Series, NPT



Step 2: Based upon the Product Type/Description from Step 1, select the Joining Rods (Item) and the (optional) Mounting Bracket Kit (Item)

	Item <input type="text" value="3"/>	<input type="text" value="4"/> (Not shown)
Product Type / Description	Single Unit Joining Rod	Mounting Bracket Kit (Optional)
HE-...-D-MINI-...	546483	159638
HE-...-D-MIDI-...	546489	159593
HE-...-D-MAXI-...	546494	

Step 3: Determine the appropriate quantity of each Item.

Ordering Example:

Required: 3/8 port size, 3000 l/min flow, BSP threads, and mounting bracket kit.

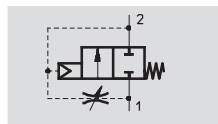
	Item	Part No.	Qty	Description
Order:	<input type="text" value="1"/>	172960	1	Main Unit
	<input type="text" value="2"/>	546501	1	Left Port Block Kit
		546502	1	Right Port Block Kit
	<input type="text" value="3"/>	546489	2	Single Unit Joining Rod
	<input type="text" value="4"/>	159593	1	Mounting Bracket Kit

HEL Soft-Start Valves – D Series, NPT

Technical Data



Function



Flow rate

1000 ... 6500 l/min

Temperature range

-10 ... +60 °C

Operating pressure

3 ... 16 bar



- Soft-start valve for gradual pressure build-up (for use with HE, HEE, and HEP on/off valves)
- Air cylinders etc. are moved slowly and safely to their initial positions
- Sudden and erratic movements are avoided
- Pressure switching approx. 50% of input pressure
- Adjustable switching time delay

General technical data								
Size	Mini			Midi			Maxi	
Pneumatic connection	1/8 NPT	1/4 NPT	3/8 NPT	3/8 NPT	1/2 NPT	3/4 NPT	3/4 NPT	1 NPT
Operating medium	Filtered compressed air, lubricated or unlubricated, grade of filtration 50 µm							
Design	Piston spool valve							
Type of mounting	Via accessories In-line installation							
Assembly position	Any							
Operating pressure [bar]	3 ... 16							
Valve function	2/2-way valve, air operated, closed							
Exhaust function	Flow control							
Reset method	Mechanical spring							
C value [l/sbar]	4.4	7.9	9.1	18.4	21.0	22.5	31.0	29.0
b value	0.46	0.38	0.29	0.33	0.29	0.36	0.30	0.38
Type of actuation	Direct							
Direction of flow	Nonreversible							

Note: This product conforms to ISO 1179-1 and to ISO 228-1

Standard nominal flow rate ¹⁾ qnN [l/min]						
Connection	1/8 NPT	1/4 NPT	3/8 NPT	1/2 NPT	3/4 NPT	1NPT
Mini						
HEL	1000	1500	1600	–	–	–
Midi						
HEL	–	–	3200	3600	3800	–
Maxi						
HEL	–	–	–	–	6000	6500

1) Measured at p1 = 6 bar and Δp = 1 bar.

Ambient conditions		
Ambient temperature [°C]		-10 ... +60
Temperature of medium [°C]		-10 ... +60
Corrosion resistance class CRC ¹⁾		2

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. 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.

HEL Soft-Start Valves – D Series, NPT

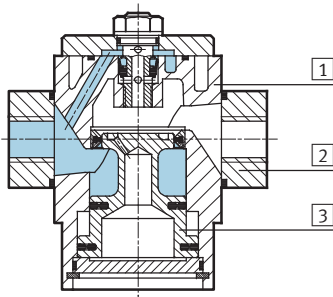
Technical Data

FESTO

Weight [g]			
Size	Mini	Midi	Maxi
HEL	184	586	850

Materials

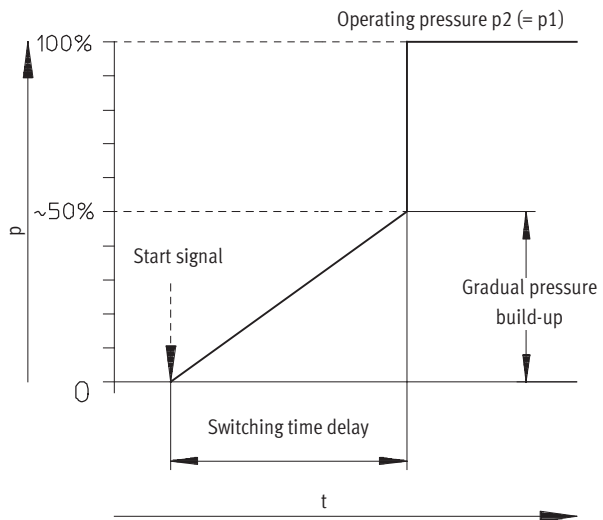
Sectional view



On-off valve		
1	Housing	Die-cast aluminum
2	Port blocks	Wrought aluminum alloy
3	Piston	Stainless steel
-	Seals	Nitrile rubber
Note on materials		Free of copper, PTFE and silicone

Switching point

Pressure p as a function of time t



HEL Soft-Start Valves – D Series, NPT

Technical Data – Dimensional Drawings



Dimensions Download CAD Data → www.festo.com/us/cad

Mini/Midi

With threaded port blocks Without threaded port blocks

1 Regulating screw for flow control 4 Threaded pin (exchangeable)

→ Flow direction

Maxi

With threaded port blocks Without threaded port blocks

1 Regulating screw in housing 4 Threaded pin (exchangeable)

→ Flow direction

Type	B1	B2	B3	B4	B5	D1	D2 ∅	D3	D6	H1	H2	L1	L2	T1	T2
Mini															
HEL-1/8-D-MINI (NPT)	64	52	40	30	-	1/8 NPT	-	M4	30	20	11	66	16	7	-
HEL-1/4-D-MINI (NPT)	70					1/4 NPT									
HEL-3/8-D-MINI (NPT)						3/8 NPT									
HEL-D-MINI	-	-	-	-	5.8	-	11	-	-	-	-	-	-	-	10
Midi															
HEL-3/8-D-MIDI (NPT)	85	70	55	43	-	3/8 NPT	-	M5	50	32	22	91	22	8	-
HEL-1/2-D-MIDI (NPT)						1/2 NPT									
HEL-3/4-D-MIDI (NPT)						3/4 NPT									
HEL-D-MIDI	-	-	-	-	6.8	-	24	-	-	-	-	-	-	-	11
Maxi															
HEL-3/4-D-MAXI (NPT)	96	80	66	46	-	3/4 NPT	-	M5	50	32	22	89	23	8	-
HEL-1-D-MAXI (NPT)	116	91				40									
HEL-D-MAXI	-	-				-				6.8					

Note: This product conforms to ISO 1179-1 and ISO 228-1

HEL Soft-Start Valves – D Series, NPT

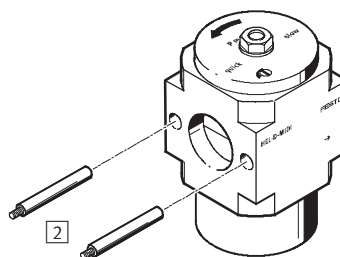
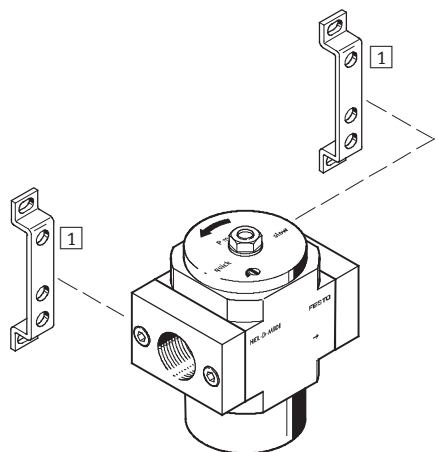
Accessories Overview



Mini/Midi/Maxi

Individual unit with port blocks

Individual unit without port blocks, for combination unit



Mounting attachments and accessories

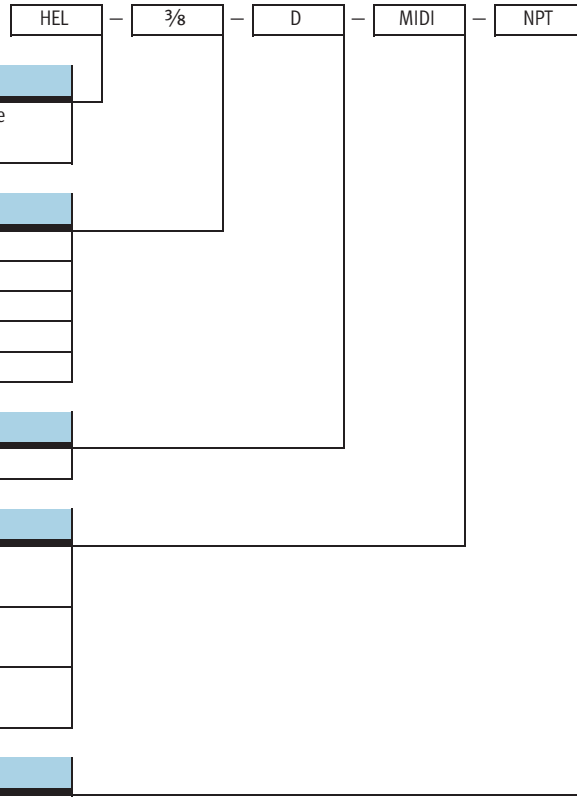
	Individual unit		Combination		→ Page/Internet
	with port blocks	without port blocks	with port blocks	without port blocks	
1 Mounting bracket HFOE	■	–	■	–	hfoe
2 Threaded pin (included in scope of delivery) FRB	–	–	■	■	frb

Note

For Custom Combinations → FAST Program Selector Guide starting page 22

HEL Soft-Start Valves – D Series, NPT

Type Codes



Basic function

HEL	Soft-start valve, gradual pressure buildup
-----	--

Pneumatic connection

1/8	1/8 NPT Thread
1/4	1/4 NPT Thread
3/8	3/8 NPT Thread
3/4	3/4 NPT Thread
1	1 NPT Thread

Series

D	Series
---	--------

Size

MINI	Grid dimension 40 mm (without port blocks)
MIDI	Grid dimension 55 mm (without port blocks)
MAXI	Grid dimension 60 mm (without port blocks)

NPT connection (where available)

NPT	NPT threaded connection
-----	-------------------------

HEL Soft-Start Valves – D Series, NPT

Ordering Data

FESTO

Ordering data		
Gradual pressure build-up, 2/2-way valve, operating pressure 3 ... 16 bar, normally closed		
Size	Part No.	Type
Without threaded port blocks		
Mini	170690	HEL-D-MINI
Midi	170691	HEL-D-MIDI
Maxi	170692	HEL-D-MAXI

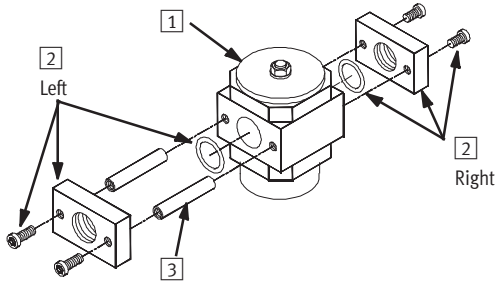
Ordering data			
Gradual pressure build-up, 2/2-way valve, operating pressure 3 ... 16 bar, normally closed			
Size	Connection	Part No.	Type
With threaded port blocks			
Mini	1/8NPT	173916	HEL-1/8-D-MINI-NPT
	1/4NPT	173917	HEL-1/4-D-MINI-NPT
	3/8NPT	173918	HEL-3/8-D-MINI-NPT
Midi	3/8NPT	173919	HEL-3/8-D-MIDI-NPT
	1/2NPT	173920	HEL-1/2-D-MIDI-NPT
	3/4NPT	173921	HEL-3/4-D-MIDI-NPT
Maxi	3/4NPT	173922	HEL-3/4-D-MAXI-NPT
	1NPT	173923	HEL-1-D-MAXI-NPT

FAST* Program – HEL Soft-Start Valve Selector Guide



HEL Soft-Start Valves – D Series, NPT

*FAST = Festo Assured Shipping Time. Ordering via the FAST program means same day / next day shipping from our warehouse of the parts required to assemble a complete air preparation unit.



A complete valve assembly consists of the following items:

Item	Description	Qty Required per Assy
1	Main Unit	1
2	Port Block Kit	2 [one left, one right]
3	Single Unit Joining Rod	2
4	Mounting Bracket Kit (Not shown) (Optional)	1

Step 1: Based upon the required Port Size, Maximum Flow, and Thread Type, select the Main Unit (Item 1) and the Left and Right Port Block Kits (Item 2).

		Item					
		1	2				
Port size	Max. Flow (l/min/scfm)	Product Type / Description	Main Unit	NPT Thread		BSP Thread	
				Left Port Block Kit	Right Port Block Kit	Left Port Block Kit	Right Port Block Kit
1/8	1000/35.3	HEL-...-D-MINI-...	170690	546520	546521	546495	546496
1/4	1500/52.9			546522	546523	546497	546498
	2600/91.8	HEL-...-D-MIDI-...	170691	546536	546537	546532	546533
3/8	1600/56.5	HEL-...-D-MINI-...	170690	546524	546525	546499	546500
	3200/113.0	HEL-...-D-MIDI-...	170691	546530	546531	546501	546502
1/2	3600/127.1	HEL-...-D-MIDI-...		546526	546527	546503	546504
	5600/197.8	HEL-...-D-MAXI-...	170692	546538	546539	546534	546535
3/4	3800/134.2	HEL-...-D-MIDI-...	170691	546528	546529	546505	546506
	6000/211.9	HEL-...-D-MAXI-...	170692	546490	546492	546507	546508
1	6500/229.5			546491	546493	546509	546510

Step 2: Based upon the Product Type/Description from Step 1, select the Joining Rods (Item 3), and the Mounting Bracket Kit (Item 4).

		Item	
		3	4 (Not shown)
Product Type/Description		Single Unit Joining Rod	Mounting Bracket Kit (Optional)
HEL-...-D-MINI-...	546483		159638
HEL-...-D-MIDI-...	546489		159593
HEL-...-D-MAXI-...	546494		

Step 3: Determine the appropriate quantity of each Item.

Ordering Example:

Required: 3/8 port size, 3000 l/min flow, BSP threads, and mounting bracket kit.

	Item	Part No.	Qty	Description
Order:	1	170691	1	Main Unit
	2	546501	1	Left Port Block Kit
		546502	1	Right Port Block Kit
	3	546489	2	Single Unit Joining Rod
	4	159593	1	Mounting Bracket Kit

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