



- Electrically or pneumatically actuated valves
- With internal or external pilot air
- Sturdy and reliable

Specified types in accordance with ATEX directive for potentially explosive atmospheres

➔ www.festo.com/en/ex

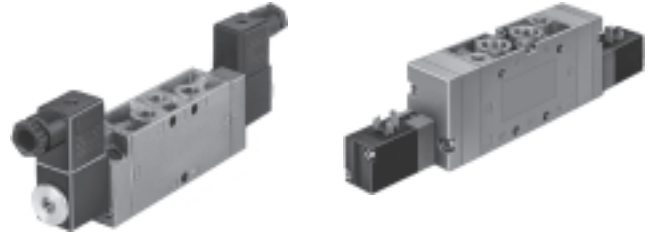
Solenoid/pneumatic valves, Tiger 2000

Key features

FESTO

General information

- A complete and comprehensive range with 5/2- and 5/3-way valves
- Poppet valve for single solenoid functions or piston spool for more complex versions with air spring, and 5/3-way valves
- Optimised for increased flow rates without increasing size
- Tubing connection threads in sizes G $\frac{1}{8}$, G $\frac{1}{4}$, G $\frac{3}{8}$
- Diverse and flexible, side and front mounting
- Pneumatic or electrical actuation
- Versatile electrical connection with F or V solenoid coil with minimal power consumption, can also be used with valve terminals
- Functional and timeless design, enclosed front housing



Solenoid coils

F solenoid coils

Voltage:

- 12 to 230 V DC
- 12 to 240 V AC (50 to 60 Hz)

Power consumption:

- 4.5 W

- For all MFH valves
- Selected types conform to the ATEX directive for explosive atmospheres
→ www.festo.com

- Easily interchangeable solenoid coils
- Solenoid coil not included in scope of delivery

V solenoid coils

Voltage:

- 24 V DC

Power consumption:

- 2.5 W

- For all MVH valves
- Minimal heat-up

- Solenoid coil included in scope of delivery

Manifold mounting

With PAL manifold strip



With PRS manifold



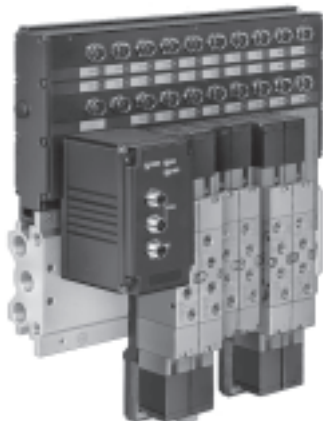
The Tiger 2000 valves can be mounted on PAL manifold strips with common supply port or on PRS manifolds with common supply port and common exhausts. Manifold strips and manifolds have 2 to 10 valve positions.

Solenoid/pneumatic valves, Tiger 2000

Key features

FESTO

Valve terminals



Ready to connect, completely assembled type 02 valve terminal, available with Tiger 2000 valves (V solenoid).

Connection options:

- Central multi-pin plug
- Fieldbus interface for all common fieldbus protocols
- Autonomous with integrated controller (PLC)
- For G $\frac{1}{8}$ and G $\frac{1}{4}$

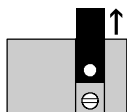
Manual override for valves with V solenoid coil

Resetting (standard)

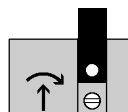


Press on the aluminium plate

Conversion to detenting actuation

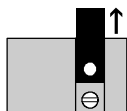


1 Pull out the aluminium plate

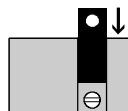


2 Using a screwdriver, simultaneously push and turn the exposed manual override

Blocking the manual override



1 Pull out the aluminium plate

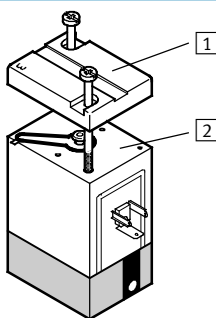


2 Rotate the aluminium plate by 180° and replace



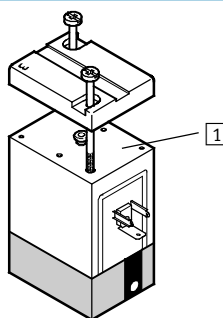
3 The manual override is now blocked

Pilot exhaust air for valves with V solenoid coil



- 1 The cap may not be turned when removing the seal
- 2 Seal installed

Free pilot exhaust air
Unducted by removing the seal in the top cover, the 3 on the cap must always be aligned with valve port 84 or 82.

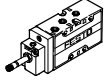
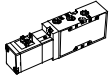
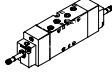
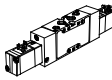


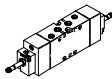
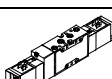
- 1 Seal removed

Solenoid valves, Tiger 2000

Product range overview

FESTO

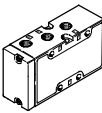
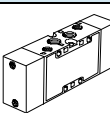
Function	Version	Type	Pneumatic connection	Operating voltage		Pilot air supply		Type of reset		→ Page/ Internet
				[V DC]	[V AC]	Internal	External	Pneumatic spring	Mechanical spring	
5/2-way valves	Solenoid valve									
		MFH	G1/8	12, 24, 42, 48	12, 24, 42, 48, 110, 230, 240	■	■	■	■	11
			G1/4			■	■	■	■	
			G3/8			■	■	■	■	
		MVH	G1/8	24	–	■	■	■	■	29
			G1/4			■	■	■	■	
			G3/8			■	■	■	■	
	Double solenoid valve									
		JMFH	G1/8	12, 24, 42, 48	12, 24, 42, 48, 110, 230, 240	■	■	–	–	18
			G1/4			■	■	–	–	
			G3/8			■	■	–	–	
		JMVH	G1/8	24	–	■	■	–	–	35
			G1/4			■	■	–	–	
			G3/8			■	■	–	–	

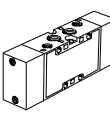
Function	Version	Type	Pneumatic connection	Operating voltage		Pilot air supply		Normal position			→ Page/ Internet
				[V DC]	[V AC]	Internal	External	Closed	Exhausted	Pressur- ised	
5/3-way valves	Solenoid valve										
		MFH-5/3	G1/8	12, 24, 42, 48	12, 24, 42, 48, 110, 230, 240	■	■	■	■	■	23
			G1/4			■	■	■	■	■	
			G3/8			■	■	■	■	■	
		MVH-5/3	G1/8	24	—	■	■	■	■	■	41
			G1/4			■	■	■	■	■	
			G3/8			■	■	■	■	■	

Pneumatic valves, Tiger 2000

Product range overview

FESTO

Function	Version	Type	Pneumatic connection	Type of reset		→ Page/Internet
				Pneumatic spring	Mechanical spring	
5/2-way valves	Pneumatic valve					
		VL	G1/8	–	■	49
			G1/4	–	■	
			G3/8	–	■	
	Double pilot valve					
		J	G1/8	–	–	53
			G1/4	–	–	
			G3/8	–	–	

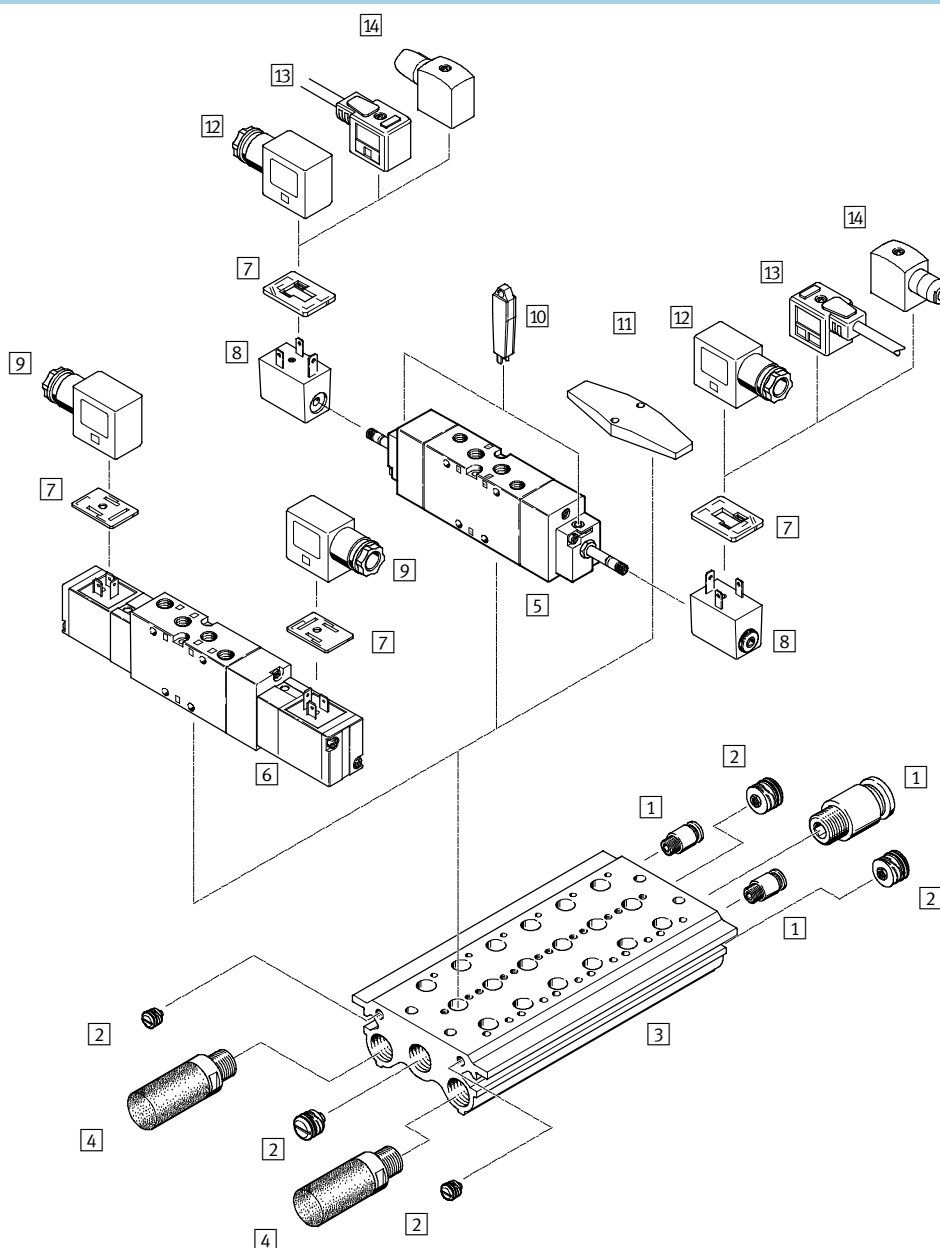
Function	Version	Type	Pneumatic connection	Normal position			→ Page/Internet
				Closed	Exhausted	Pressurised	
5/3-way valves	Pneumatic valve						
		VL	G1/8	■	■	■	56
			G1/4	■	■	■	
			G3/8	■	■	■	

Solenoid valves, Tiger 2000

Peripherals overview

FESTO

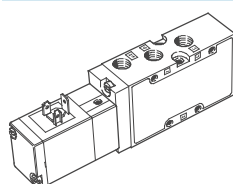
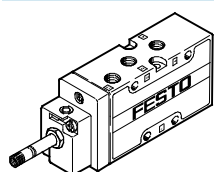
Mounting on manifold



Variants

MFH-5-...-B

MVH-5-...-B



Solenoid valves, Tiger 2000

Peripherals overview

FESTO

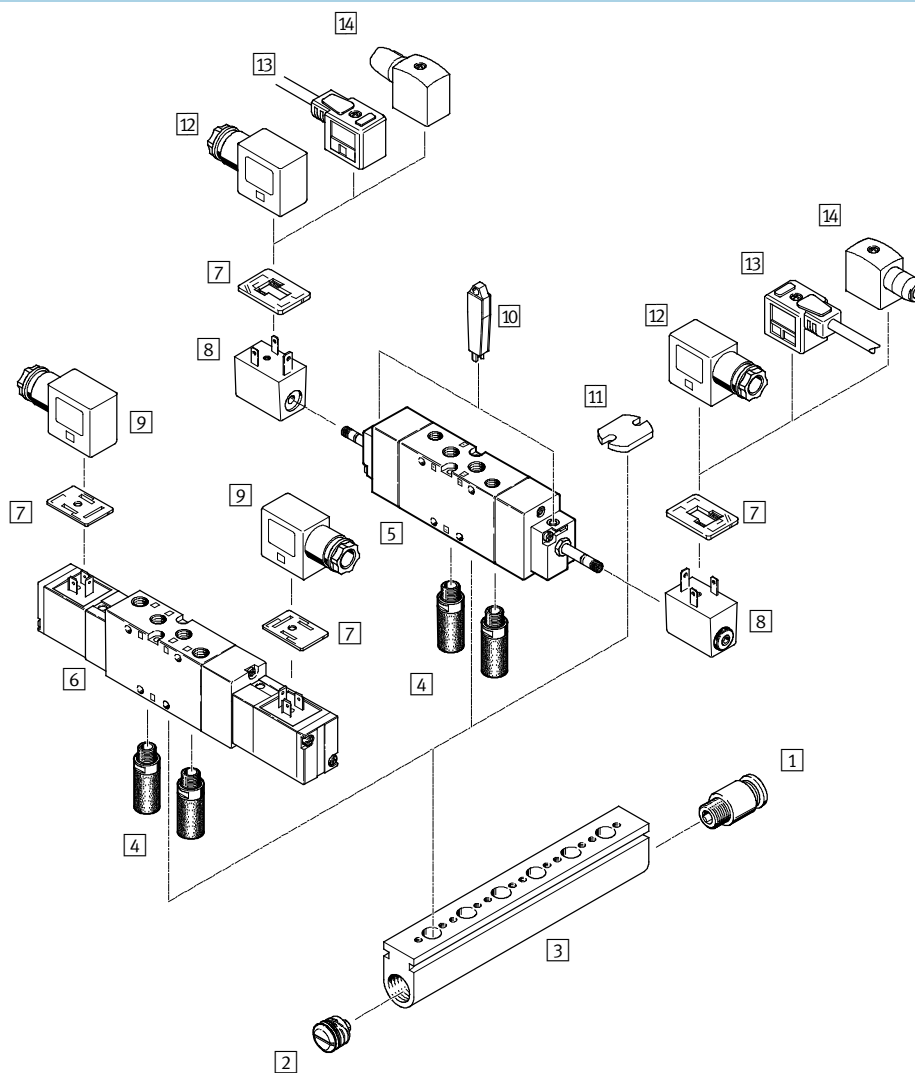
Accessories		
	Brief description	→ Page/Internet
1 Push-in fitting QS	For connecting compressed air tubing with standard O.D.	quick star
2 Sealing plug PRSV		64
3 Manifold PRS		62
4 Silencer	For fitting in exhaust ports	u
5 Solenoid valve MFH	For F solenoid coil	4
6 Solenoid valve MVH	With V solenoid coil	4
7 Illuminating seal M...-LD	For displaying the switching status	66
8 F solenoid coil MSFG, MSFW		65
9 Plug socket MSSD-V	For valves MVH, JMVH	66
10 Manual override tool AHB		65
11 Blanking plate PRSB	For covering vacant positions	64
12 Plug socket MSSD-F	For valves MFH, JMFH	66
13 Plug socket cable KMF	For valves MFH, JMFH	66
14 Plug socket MSSD-F-S	For valves MFH, JMFH	66

Solenoid valves, Tiger 2000

Peripherals overview

FESTO

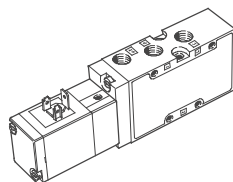
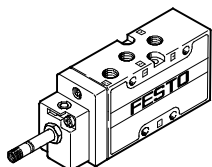
Mounting on manifold strip



Variants

MFH-5-...-B

MVH-5-...-B



Solenoid valves, Tiger 2000

Peripherals overview

FESTO

Accessories		
	Brief description	→ Page/Internet
1 Push-in fitting QS	For connecting compressed air tubing with standard O.D.	quick star
2 Sealing plug PRSV		64
3 Manifold strip PAL		60
4 Silencer	For fitting in exhaust ports	u
5 Solenoid valve MFH	For F solenoid coil	4
6 Solenoid valve MVH	With V solenoid coil	4
7 Illuminating seal M...-LD	For displaying the switching status	66
8 F solenoid coil MSFG, MSFW	For solenoid valves MFH, JMFH	65
9 Plug socket MSSD-V	For solenoid valves MVH, JMVH	66
10 Manual override tool AHB		65
11 Blanking plate PALB	For covering vacant positions	64
12 Plug socket MSSD-F	For solenoid valves MFH, JMFH	66
13 Plug socket cable KMF	For solenoid valves MFH, JMFH	66
14 Plug socket MSSD-F-S	For solenoid valves MFH, JMFH	66

Solenoid valves, Tiger 2000

Type code

FESTO

MFH – 5/3 G – 1/8 – – – B

Type	
MFH	Single solenoid, for F solenoid coil
MVH	Single solenoid, with V solenoid coil
JMFH	Double solenoid, for F solenoid coil
JMVH	Double solenoid, with V solenoid coil

Valve function	
5	5/2-way valve
5/3	5/3-way valve

Normal position	
G	Closed
E	Exhausted
B	Pressurised

Pneumatic connection	
1/8	G1/8
1/4	G1/4
3/8	G3/8

Type of reset	
	Mechanical spring
L	Pneumatic spring

Pilot air supply	
	Internal
S	External

Generation	
B	Series B

Solenoid valves MFH-B, Tiger 2000

FESTO

Technical data – 5/2-way valves

-  - Flow rate
750 ... 2000 l/min
-  - Voltage
12, 24, 42, 48 V DC
24, 42, 48, 110, 230,
240 V AC
Wearing parts kits
→ 16



General technical data						
Pneumatic connection	G1/8		G1/4		G3/8	
Type of reset	Mechanical	Pneumatic	Mechanical	Pneumatic	Mechanical	Pneumatic
Valve function	5/2-way, single solenoid					
Constructional design	Poppet	Piston spool	Poppet	Piston spool		
Sealing principle	Soft					
Actuation type	Electrical					
Type of pilot control	Piloted					
Pilot air supply	Internal or external					
Direction of flow	Non-reversible	Reversible	Non-reversible	Reversible		
Exhaust function	With flow control					
Manual override	Via accessory, detenting					
Type of mounting	Via through-holes					
Mounting position	Any					
Nominal size [mm]	5	8	7	10	12	
Standard nominal flow rate [l/min]	750	1000	1300	1600	2000	
Grid dimension [mm]	27		33		41	
Product weight [g]	220	280	300	380	630	

Operating and environmental conditions							
Pneumatic connection	G1/8		G1/4		G3/8		
Type of reset	Pneumatic	Mechanical	Pneumatic	Mechanical	Pneumatic	Mechanical	
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]						
Pilot medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]						
Note on operating/ pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)						
Operating pressure	Internal pilot air supply [bar]	3 ... 10	2 ... 10	3 ... 10	2 ... 10	2 ... 10	2 ... 10
	External pilot air supply [bar]	-0.9 ... +10	0 ... 10	-0.9 ... +10	0 ... 10	-0.9 ... +10	-0.9 ... +10
Pilot pressure [bar]		3 ... 10	2 ... 10	3 ... 10	1.5 ... 10	2 ... 10	2 ... 10
Ambient temperature [°C]	-5 ... +40						
Temperature of medium [°C]	-10 ... +60						

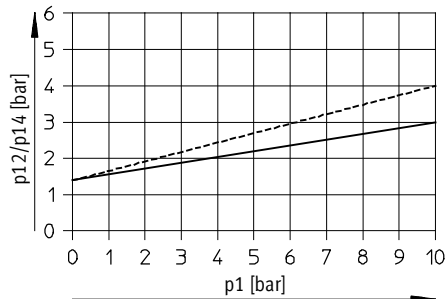
Solenoid valves MFH-B, Tiger 2000

Technical data – 5/2-way valves

FESTO

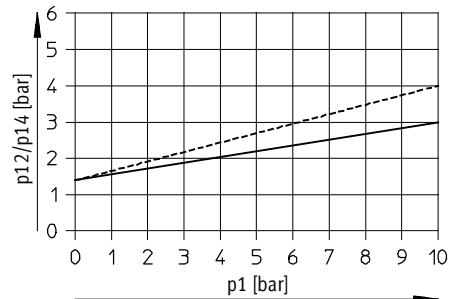
Minimum pilot pressure p_{12} , p_{14} as a function of the operating pressure p_1 (external pilot air supply)

MFH-5-1/8-S-B



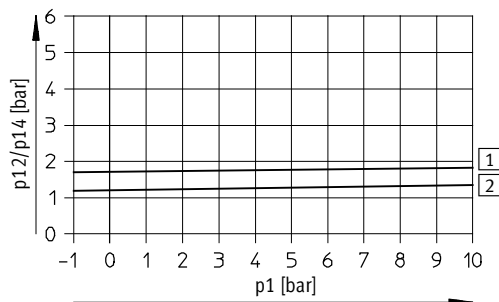
----- Exhaust throttled
 ————— Exhaust unthrottled

MFH-5-1/4-S-B



----- Exhaust throttled
 ————— Exhaust unthrottled

MFH-5-3/8-S-B



1 On
 2 Off

Valve response times [ms]

Pneumatic connection	G1/8		G1/4		G3/8	
Type of reset	Pneumatic	Mechanical	Pneumatic	Mechanical	Pneumatic	Mechanical
On	10	10	25	12	28	20
Off	30	30	44	36	55	56

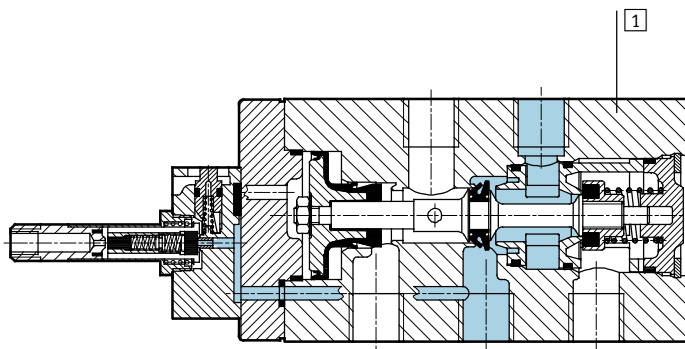
Solenoid valves MFH-B, Tiger 2000

FESTO

Technical data – 5/2-way valves

Electrical data			
F solenoid coil			
Electrical connection		Plug vanes for plug sockets MSSD-F, KMF	
Operating voltage	D.C. voltage	[V DC]	12, 24, 42, 48
	A.C. voltage	[V AC]	24, 42, 48, 110, 230, 240 (50 ... 60 Hz)
Coil characteristics	D.C. voltage	[W]	4.5
	A.C. voltage	[VA]	Pull: 7.5 Hold: 6
Protection class to EN 60 529		IP65 (in combination with plug socket)	

Materials	
Sectional view	



1	Housing	Die-cast aluminium
–	Seals	Nitrile rubber

Solenoid valves MFH-B, Tiger 2000

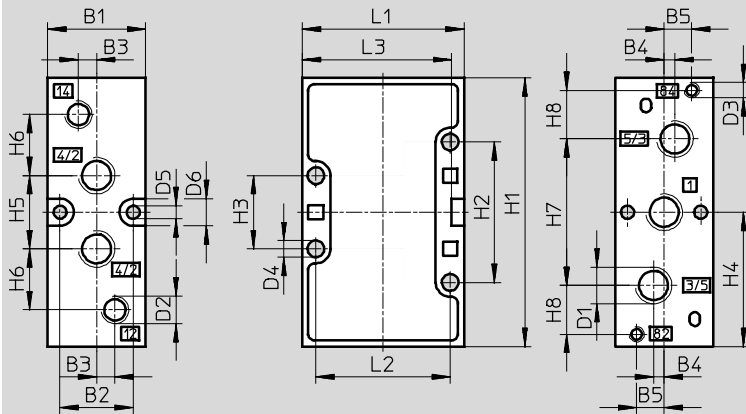
Technical data – 5/2-way valves

FESTO

Dimensions – Pneumatic connection G $\frac{1}{8}$, G $\frac{1}{4}$

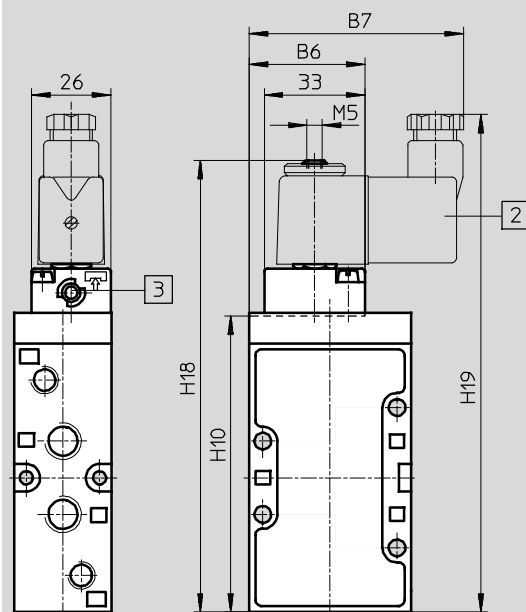
Download CAD data → www.festo.com

Basic valve

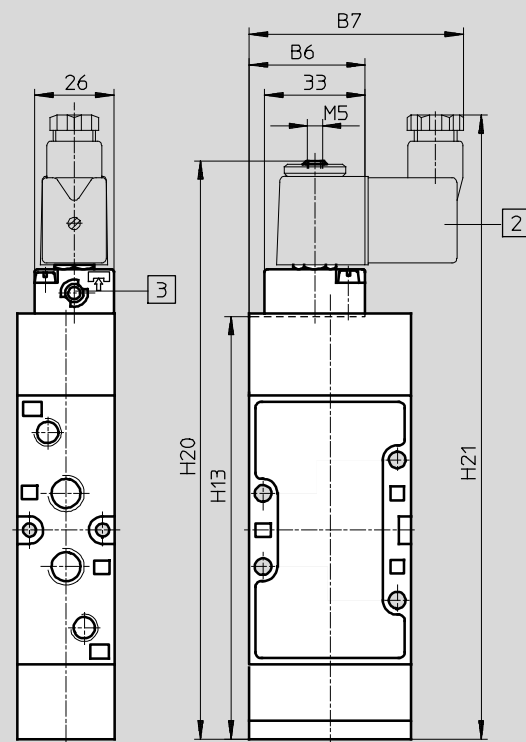


Installation dimensions with F solenoid coil

Mechanical reset



Pneumatic reset



2 Solenoid coil is 360° rotatable

3 Manual override can be repositioned by 180°

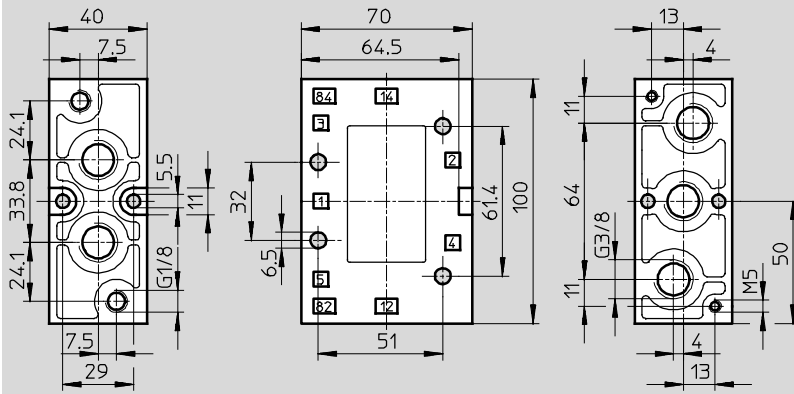
Pneumatic connection	B1	B2	B3	B4	B5	B6	B7	D1	D2	D3	D4	D5	D6	H1	H2
G $\frac{1}{8}$	26	19.5	5	3.5	8	36.8	67	G $\frac{1}{8}$	G $\frac{1}{8}$	M5	4.5	4.3	9	77	41
G $\frac{1}{4}$	32	24	6	3.5	9	38	70	G $\frac{1}{4}$	G $\frac{1}{8}$	M5	5.5	4.3	9	88	46

Pneumatic connection	H3	H4	H5	H6	H7	H8	H10	H13	H18	H19	H20	H21	L1	L2	L3
G $\frac{1}{8}$	21	38.5	22	19	42	12	86.5	126.2	136	152	175	192	47	40	43
G $\frac{1}{4}$	24	44	24	20	48	16	97.5	139	147	163	188	205	53	44	49

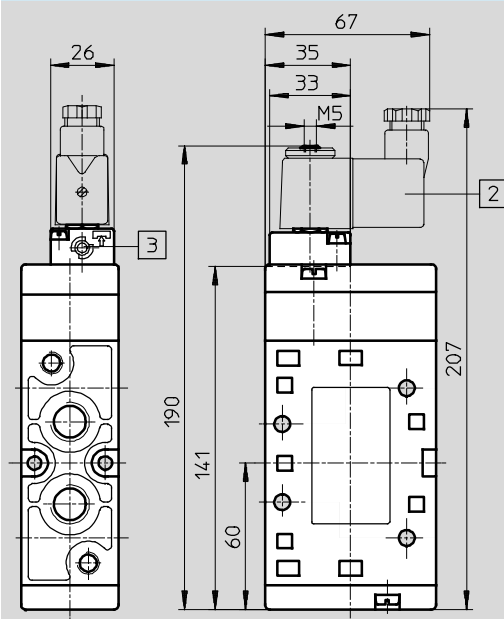
Technical data – 5/2-way valves

Dimensions – Pneumatic connection G3/8

Basic valve



Mechanical or pneumatic reset

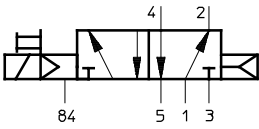
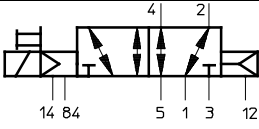
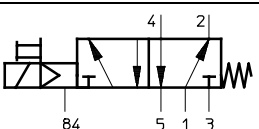
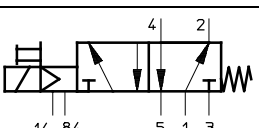
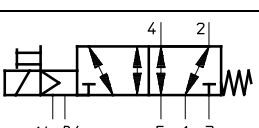


- 2 Solenoid coil is 360° rotatable
- 3 Manual override can be repositioned by 180°

Solenoid valves MFH-B, Tiger 2000

FESTO

Technical data – 5/2-way valves

Ordering data				
Circuit symbol	Description	Pneumatic connection	Part No.	Type
	Without F solenoid coil ¹⁾ , pneumatic reset, internal pilot air supply	G1/8	30991	MFH-5-1/8-L-B
		G1/4	31010	MFH-5-1/4-L-B
		G3/8	14946	MFH-5-3/8-L-B
	Without F solenoid coil ¹⁾ , pneumatic reset, external pilot air supply	G1/8	30992	MFH-5-1/8-L-S-B
		G1/4	33185	MFH-5-1/4-L-S-B
		G3/8	33181	MFH-5-3/8-L-S-B
	Without F solenoid coil ¹⁾ , mechanical reset, internal pilot air supply	G1/8	19758	MFH-5-1/8-B
		G1/4	15901	MFH-5-1/4-B
		G3/8	19705	MFH-5-3/8-B
	Without F solenoid coil ¹⁾ , mechanical reset, external pilot air supply	G1/8	19759	MFH-5-1/8-S-B
		G1/4	15902	MFH-5-1/4-S-B
	Without F solenoid coil ¹⁾ , mechanical reset, external pilot air supply	G3/8	19706	MFH-5-3/8-S-B

1) F solenoid coils → 65

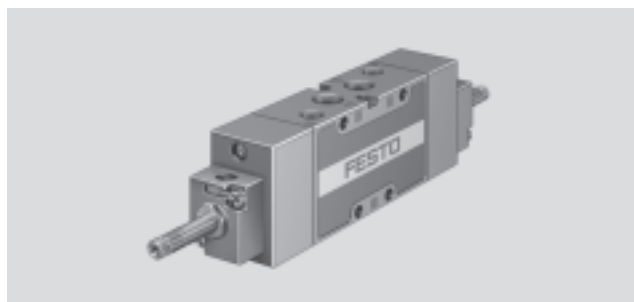
Ordering data – Wearing parts kits		
Pneumatic connection	Part No.	Type
G1/8	125710	MFH-5-1/8-B
G1/4	115580	MFH-5-1/4-B
G3/8	115074	MFH-5-3/8-B

Solenoid valves JMFH-B, Tiger 2000

FESTO

Technical data – 5/2-way valves, double solenoid

-  - Flow rate
1000 ... 2000 l/min
-  - Voltage
12, 24, 42, 48 V DC
24, 42, 48, 110, 230,
240 V AC



General technical data			
Pneumatic connection	G $\frac{1}{8}$	G $\frac{1}{4}$	G $\frac{3}{8}$
Valve function	5/2-way, double solenoid		
Constructional design	Piston spool		
Sealing principle	Soft		
Actuation type	Electrical		
Type of pilot control	Piloted		
Pilot air supply	Internal or external		
Direction of flow	Non-reversible		
Exhaust function	With flow control		
Manual override	Via accessory, detenting		
Type of mounting	Via through-holes		
Mounting position	Any		
Nominal size	[mm]	8	10
Standard nominal flow rate	[l/min]	1000	1600
Grid dimension	[mm]	27	33
Product weight	[g]	400	460

Operating and environmental conditions			
Pneumatic connection	G $\frac{1}{8}$	G $\frac{1}{4}$	G $\frac{3}{8}$
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]		
Pilot medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]		
Note on operating/ pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)		
Operating pressure	Internal pilot air supply [bar]	2 ... 10	
	External pilot air supply [bar]	-0.9 ... +10	
Pilot pressure	[bar]	2 ... 10	
Ambient temperature	[°C]	-5 ... +40	
Temperature of medium	[°C]	-10 ... +60	

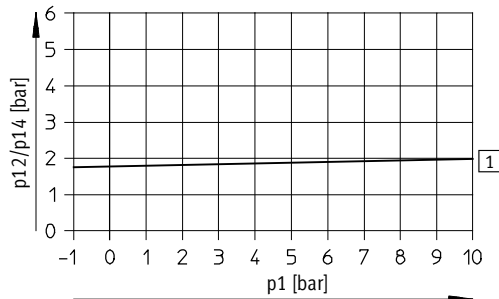
Solenoid valves JMFH-B, Tiger 2000

Technical data – 5/2-way valves, double solenoid

FESTO

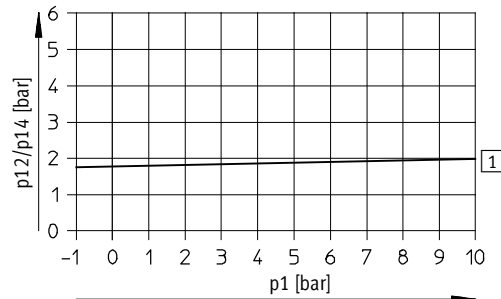
Minimum pilot pressure p_{12}/p_{14} as a function of the operating pressure p_1 (external pilot air supply)

JMFH-5- $\frac{1}{8}$ -S-B



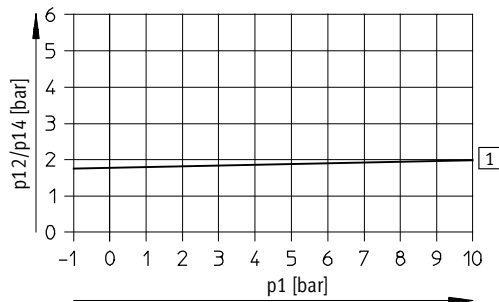
1 On

JMFH-5- $\frac{1}{4}$ -S-B



1 On

JMFH-5- $\frac{3}{8}$ -S-B



1 On

Valve response times [ms]

Pneumatic connection	G $\frac{1}{8}$	G $\frac{1}{4}$	G $\frac{3}{8}$
Changeover	12	14	12

Electrical data

F solenoid coil			
Electrical connection		Plug vanes for plug sockets MSSD-F, KMF	
Operating voltage	D.C. voltage	[V DC]	12, 24, 42, 48
	A.C. voltage	[V AC]	24, 42, 48, 110, 230, 240 (50 ... 60 Hz)
Coil characteristics	D.C. voltage	[W]	4.5
	A.C. voltage	[VA]	Pull: 7.5 Hold: 6
Protection class to EN 60 529		IP65 (in combination with plug socket)	

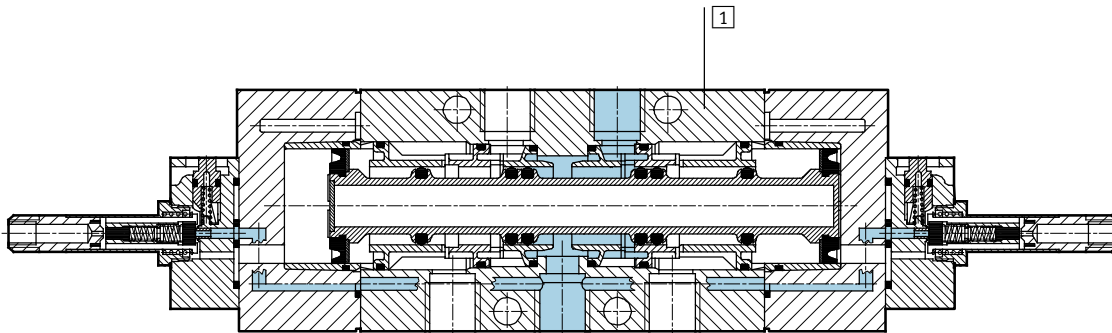
Solenoid valves JMFH-B, Tiger 2000

Technical data – 5/2-way valves, double solenoid

FESTO

Materials

Sectional view



1	Housing	Die-cast aluminium
–	Seals	Nitrile rubber

Solenoid valves JMFH-B, Tiger 2000

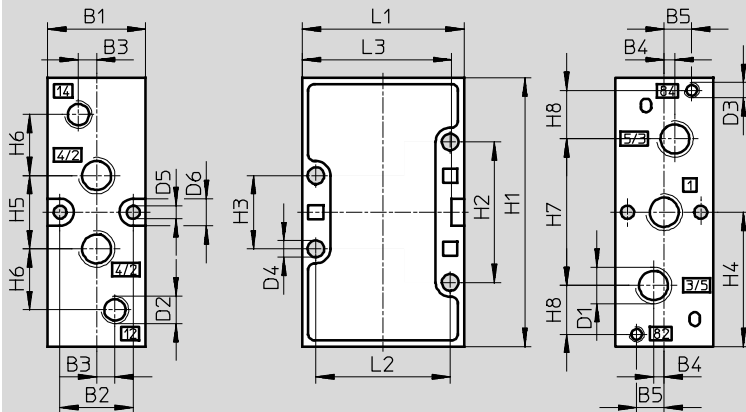
Technical data – 5/2-way valves, double solenoid

FESTO

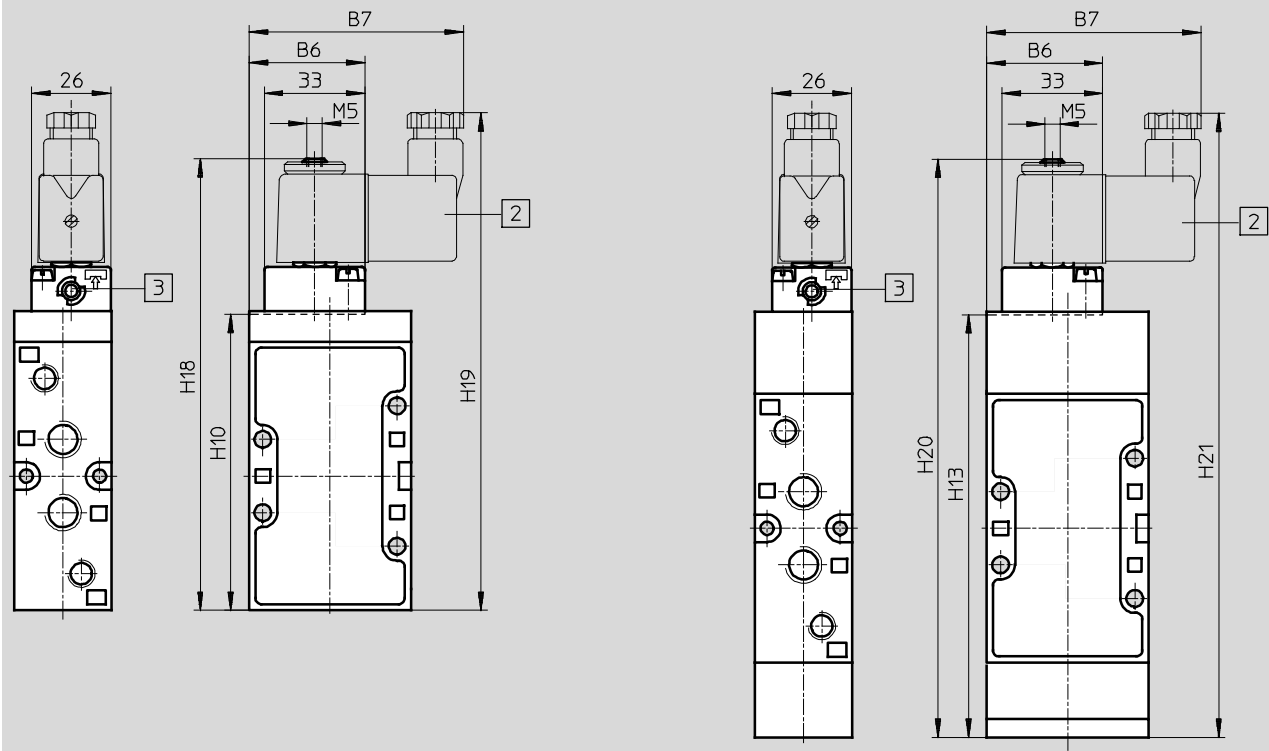
Dimensions – Pneumatic connection G $\frac{1}{8}$, G $\frac{1}{4}$

Download CAD data → www.festo.com

Basic valve



Installation dimensions with F solenoid coil, mechanical or pneumatic reset



Pneumatic connection	B1	B2	B3	B4	B5	B6	B7	D1	D2	D3	D4 Ø	D5 Ø	D6	H1
G $\frac{1}{8}$	26	19.5	5	3.5	8	36.8	67	G $\frac{1}{8}$	G $\frac{1}{8}$	M5	4.5	4.3	9	77
G $\frac{1}{4}$	32	24	6	3.5	9	38	70	G $\frac{1}{4}$	G $\frac{1}{8}$	M5	5.5	4.3	9	88

Pneumatic connection	H2	H3	H4	H5	H6	H7	H8	H16	H22	H23	L1	L2	L3
G $\frac{1}{8}$	41	21	38.5	22	19	42	12	129	227	260	47	40	43
G $\frac{1}{4}$	46	24	44	24	20	48	16	141.5	240	273	53	44	49

Solenoid valves JMFH-B, Tiger 2000

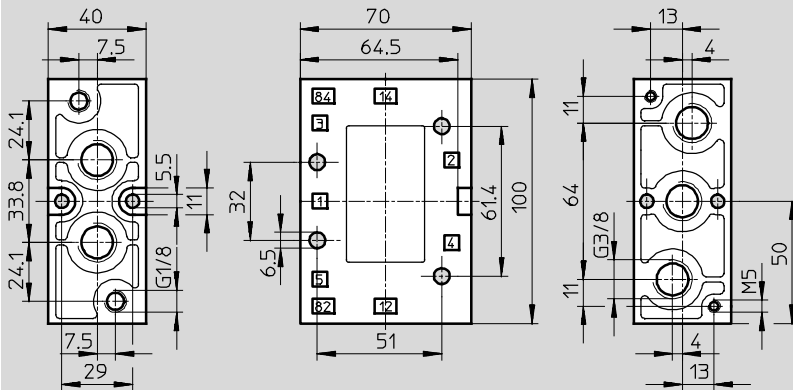
Technical data – 5/2-way valves, double solenoid

FESTO

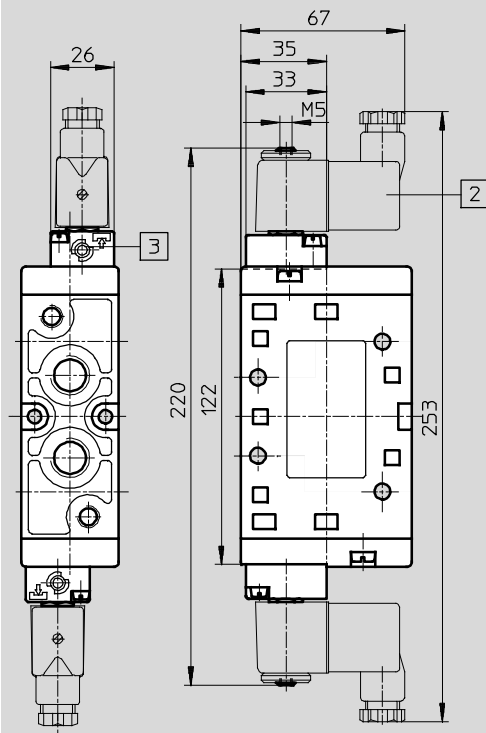
Dimensions – Pneumatic connection G $\frac{3}{8}$

Download CAD data → www.festo.com

Basic valve



Installation dimensions with F solenoid coil, mechanical or pneumatic reset

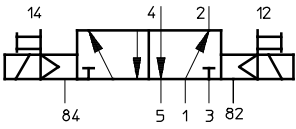
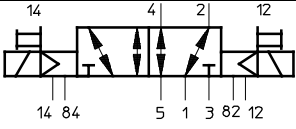


- ② Solenoid coil is 360° rotatable
- ③ Manual override can be repositioned by 180°

Solenoid valves JMFH-B, Tiger 2000

FESTO

Technical data – 5/2-way valves, double solenoid

Ordering data				
Circuit symbol	Description	Pneumatic connection	Part No.	Type
	Without F solenoid coil ¹⁾ , internal pilot air supply	G1/8	30486	JMFH-5-1/8-B
		G1/4	19789	JMFH-5-1/4-B
		G3/8	19700	JMFH-5-3/8-B
	Without F solenoid coil ¹⁾ , external pilot air supply	G1/8	30487	JMFH-5-1/8-S-B
		G1/4	19790	JMFH-5-1/4-S-B
		G3/8	19702	JMFH-5-3/8-S-B

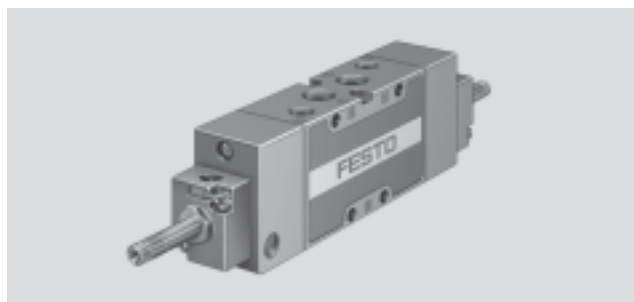
1) F solenoid coils → 65

Solenoid valves MFH-B, Tiger 2000

FESTO

Technical data – 5/3-way valves

-  - Flow rate
1000 ... 2600 l/min
-  - Voltage
12, 24, 42, 48 V DC
24, 42, 48, 110, 230,
240 V AC



General technical data				
Pneumatic connection			G $\frac{1}{8}$	G $\frac{1}{4}$
			G $\frac{3}{8}$	
Valve function			5/3-way, double solenoid	
Constructional design			Piston spool	
Sealing principle			Soft	
Actuation type			Electrical	
Type of reset			Mechanical spring	
Type of pilot control			Piloted	
Pilot air supply			Internal or external	
Direction of flow			Non-reversible	
Exhaust function			With flow control	
Manual override			Via accessory, detenting	
Type of mounting			Via through-holes	
Mounting position			Any	
Nominal size		[mm]	5	7
Standard nominal flow rate	Closed	[l/min]	1000	1600
	Exhausted	[l/min]		2200
	Pressurised	[l/min]		2600
Grid dimension		[mm]	27	33
Product weight		[g]	400	500

Operating and environmental conditions				
Pneumatic connection			G $\frac{1}{8}$	G $\frac{1}{4}$
			G $\frac{3}{8}$	
Operating medium			Compressed air in accordance with ISO 8573-1:2010 [7:4:4]	
Pilot medium			Compressed air in accordance with ISO 8573-1:2010 [7:4:4]	
Note on operating/ pilot medium			Operation with lubricated medium possible (in which case lubricated operation will always be required)	
Operating pressure	Internal pilot air supply	[bar]	3 ... 10	3 ... 10
	External pilot air supply	[bar]	-0.9 ... +10	-0.9 ... +10
Pilot pressure		[bar]	3 ... 10	3 ... 10
Ambient temperature		[°C]	-5 ... +40	
Temperature of medium		[°C]	-10 ... +60	

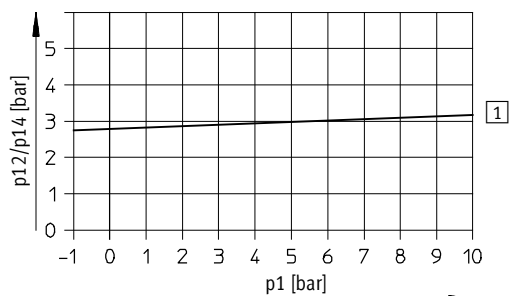
Solenoid valves MFH-B, Tiger 2000

Technical data – 5/3-way valves

FESTO

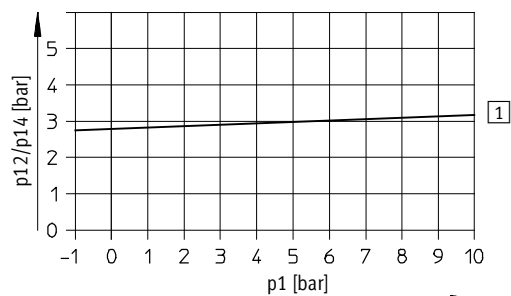
Minimum pilot pressure p_{12}/p_{14} as a function of the operating pressure p_1 (external pilot air supply)

MFH-5/3...-1/8-S-B



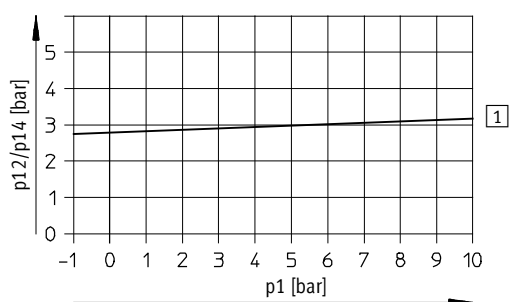
1 On

MFH-5/3...-1/4-S-B



1 On

MFH-5/3...-3/8-S-B



1 On

Valve response times [ms]

Pneumatic connection	G1/8		G1/4		G3/8	
	On	Off	On	Off	On	Off
Closed	18	20	20	22	24	80
Exhausted	20	20	24	36	36	85
Pressurised	24	24	34	30	30	82

Solenoid valves MFH-B, Tiger 2000

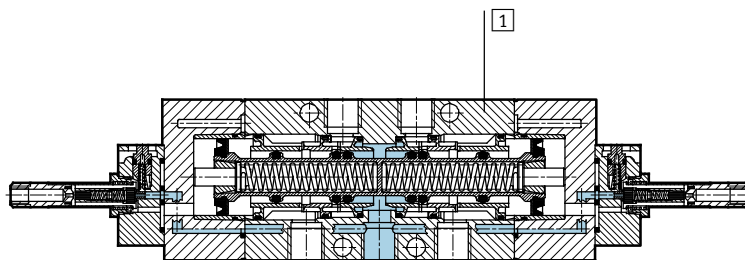
FESTO

Technical data – 5/3-way valves

Electrical data			
F solenoid coil			
Electrical connection		Plug vanes for plug sockets MSSD-F, KMF	
Operating voltage	D.C. voltage	[V DC]	12, 24, 42, 48
	A.C. voltage	[V AC]	24, 42, 48, 110, 230, 240 (50 ... 60 Hz)
Coil characteristics	D.C. voltage	[W]	4.5
	A.C. voltage	[VA]	Pull: 7.5 Hold: 6
Protection class to EN 60 529		IP65 (in combination with plug socket)	

Materials

Sectional view



1	Housing	Die-cast aluminium
–	Seals	Nitrile rubber

Solenoid valves MFH-B, Tiger 2000

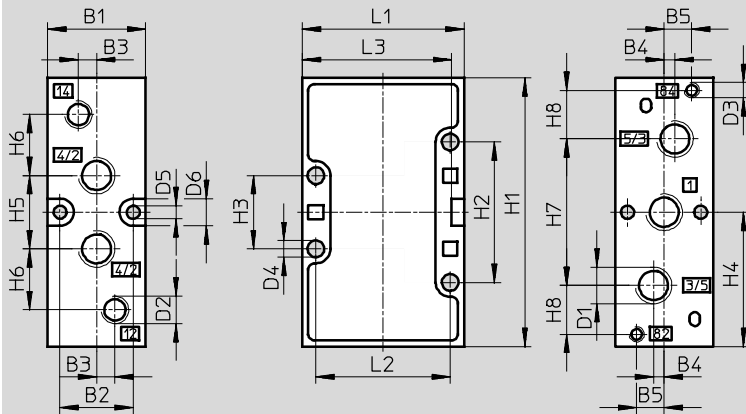
Technical data – 5/3-way valves

FESTO

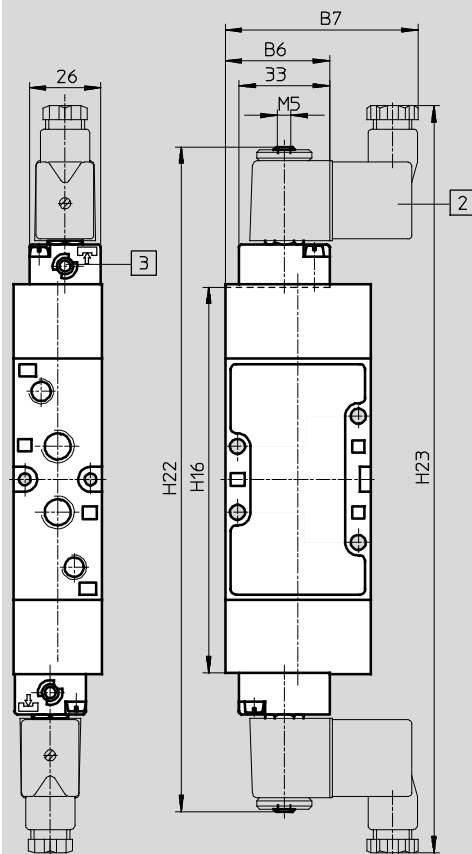
Dimensions – Pneumatic connection $G^{1/8}$, $G^{1/4}$

Download CAD data → www.festo.com

Basic valve



Installation dimensions with F solenoid coil, mechanical or pneumatic reset



- 2 Solenoid coil is 360° rotatable
- 3 Manual override can be repositioned by 180°

Pneumatic connection	B1	B2	B3	B4	B5	B6	B7	D1	D2	D3	D4	D5	D6	H1
$G^{1/8}$	26	19.5	5	3.5	8	36.8	67	$G^{1/8}$	$G^{1/8}$	M5	4.5	4.3	9	77
$G^{1/4}$	32	24	6	3.5	9	38	70	$G^{1/4}$	$G^{1/8}$	M5	5.5	4.3	9	88

Pneumatic connection	H2	H3	H4	H5	H6	H7	H8	H16	H22	H23	L1	L2	L3
$G^{1/8}$	41	21	38.5	22	19	42	12	129	227	260	47	40	43
$G^{1/4}$	46	24	44	24	20	48	16	141.5	240	273	53	44	49

Solenoid valves MFH-B, Tiger 2000

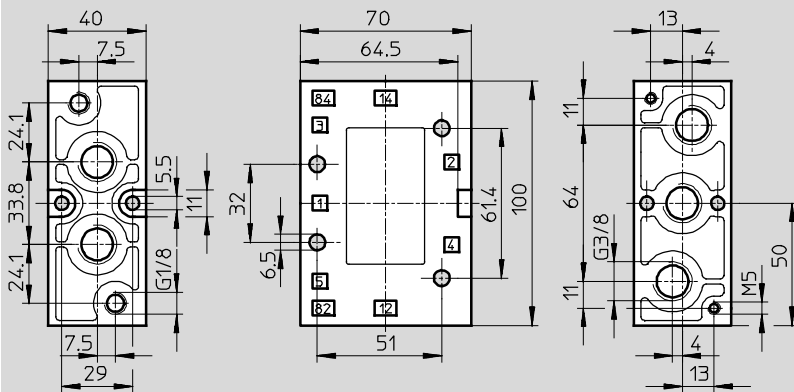
Technical data – 5/3-way valves

FESTO

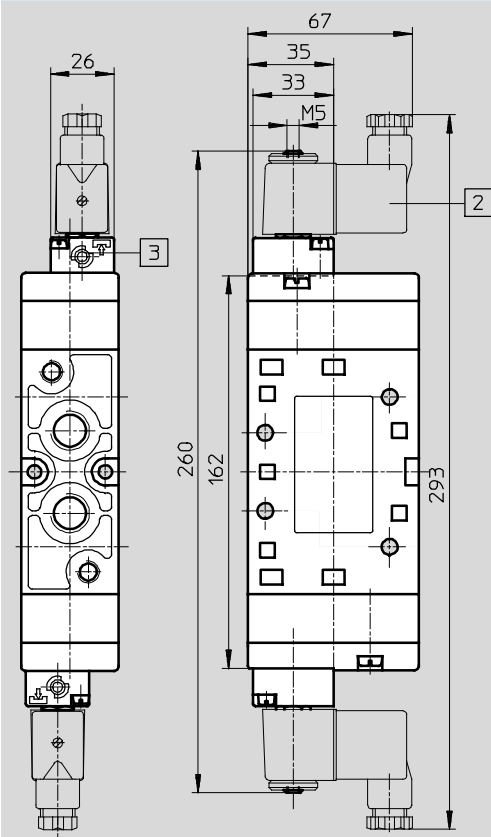
Dimensions – Pneumatic connection G $\frac{3}{8}$

Download CAD data → www.festo.com

Basic valve



Installation dimensions with F solenoid coil, mechanical or pneumatic reset



- 2 Solenoid coil is 360° rotatable
- 3 Manual override can be repositioned by 180°

Solenoid valves MFH-B, Tiger 2000

FESTO

Technical data – 5/3-way valves

Ordering data				
Circuit symbol	Description	Pneumatic connection	Part No.	Type
	Without F solenoid coil ¹⁾ , normally closed, internal pilot air supply	G1/8	30484	MFH-5/3G-1/8-B
		G1/4	19787	MFH-5/3G-1/4-B
		G3/8	19707	MFH-5/3G-3/8-B
	Without F solenoid coil ¹⁾ , normally closed, external pilot air supply	G1/8	30993	MFH-5/3G-1/8-S-B
		G1/4	31001	MFH-5/3G-1/4-S-B
		G3/8	31317	MFH-5/3G-3/8-S-B
	Without F solenoid coil ¹⁾ , normally exhausted, internal pilot air supply	G1/8	30483	MFH-5/3E-1/8-B
		G1/4	19786	MFH-5/3E-1/4-B
		G3/8	19708	MFH-5/3E-3/8-B
	Without F solenoid coil ¹⁾ , normally exhausted, external pilot air supply	G1/8	30994	MFH-5/3E-1/8-S-B
		G1/4	31002	MFH-5/3E-1/4-S-B
		G3/8	31318	MFH-5/3E-3/8-S-B
	Without F solenoid coil ¹⁾ , normally pressurised, internal pilot air supply	G1/8	30485	MFH-5/3B-1/8-B
		G1/4	19788	MFH-5/3B-1/4-B
		G3/8	19709	MFH-5/3B-3/8-B
	Without F solenoid coil ¹⁾ , normally pressurised, external pilot air supply	G1/8	30995	MFH-5/3B-1/8-S-B
		G1/4	31003	MFH-5/3B-1/4-S-B
		G3/8	31319	MFH-5/3B-3/8-S-B

1) F solenoid coils → 65

Solenoid valves MVH-B, Tiger 2000

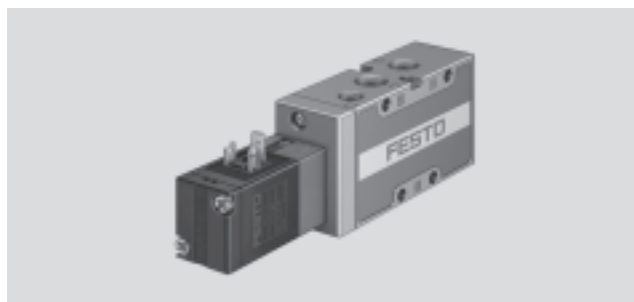
FESTO

Technical data – 5/2-way valves

-  - Flow rate
750 ... 2000 l/min

-  - Voltage
24 V DC

Wearing parts kits
→ 34



General technical data						
Pneumatic connection	G1/8		G1/4		G3/8	
Type of reset	Mechanical	Pneumatic	Mechanical	Pneumatic	Mechanical	Pneumatic
Valve function	5/2-way, single solenoid					
Constructional design	Poppet	Piston spool	Poppet	Piston spool	Piston spool	
Sealing principle	Soft					
Actuation type	Electrical					
Type of pilot control	Piloted					
Pilot air supply	Internal or external					
Direction of flow	Non-reversible					
Exhaust function	With flow control					
Manual override	Resetting, detenting, covered					
Type of mounting	Via through-holes					
Mounting position	Any					
Nominal size [mm]	5	8	7	10	12	
Standard nominal flow rate [l/min]	750	1000	1300	1600	2000	
Grid dimension [mm]	27		33		41	
Product weight [g]	230	290	360	495	750	

Operating and environmental conditions							
Pneumatic connection	G1/8		G1/4		G3/8		
Type of reset	Pneumatic	Mechanical	Pneumatic	Mechanical	Pneumatic	Mechanical	
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]						
Pilot medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]						
Note on operating/ pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)						
Operating pressure	Internal pilot air supply [bar]	3 ... 10	2 ... 10	3 ... 10	2 ... 10	2 ... 10	2 ... 10
	External pilot air supply [bar]	–0.9 ... +10	0 ... 10	–0.9 ... +10	0 ... 10	–0.9 ... +10	–0.9 ... +10
Pilot pressure [bar]		3 ... 10	2 ... 10	3 ... 10	1.5 ... 10	2 ... 10	2 ... 10
Ambient temperature [°C]	–5 ... +50						
Temperature of medium [°C]	–5 ... +50						

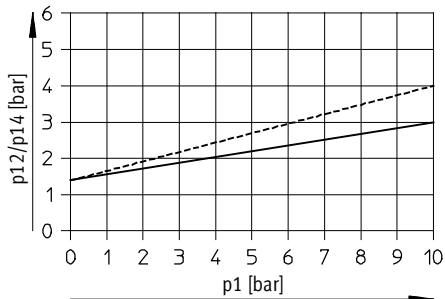
Solenoid valves MVH-B, Tiger 2000

Technical data – 5/2-way valves

FESTO

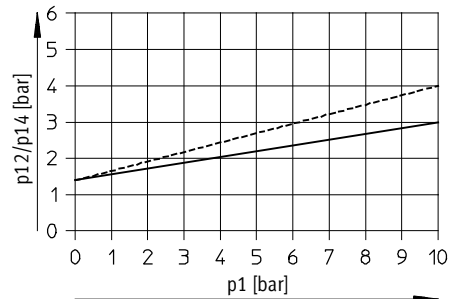
Minimum pilot pressure p_{12}/p_{14} as a function of the operating pressure p_1 (external pilot air supply)

MVH-5-1/8-S-B



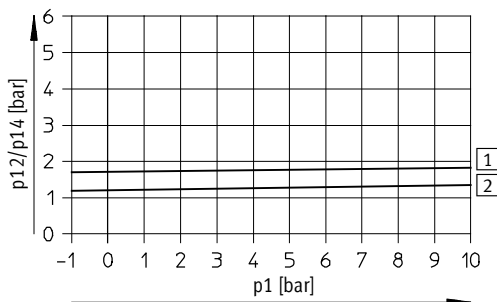
----- Exhaust throttled
 ————— Exhaust unthrottled

MVH-5-1/4-S-B



----- Exhaust throttled
 ————— Exhaust unthrottled

MVH-5-3/8-S-B



1 On
 2 Off

Valve response times [ms]

Pneumatic connection	G1/8		G1/4		G3/8	
Type of reset	Pneumatic	Mechanical	Pneumatic	Mechanical	Pneumatic	Mechanical
On	31	20	33	15	22	22
Off	18	36	40	36	60	60

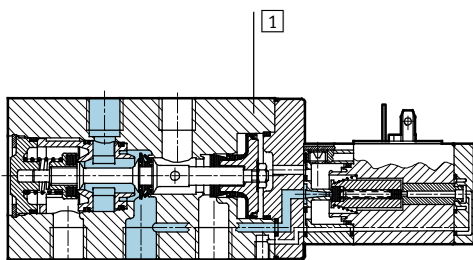
Solenoid valves MVH-B, Tiger 2000

FESTO

Technical data – 5/2-way valves

Electrical data			
V solenoid			
Electrical connection		To EN 175301-803 type B	
Operating voltage	D.C. voltage	[V DC]	24
Coil characteristics	D.C. voltage	[W]	2.5
Protection class to EN 60 529		IP65 (in combination with plug socket)	

Materials	
Sectional view	



1 Housing		Die-cast aluminium, plastic
– Seals		Nitrile rubber

Solenoid valves MVH-B, Tiger 2000

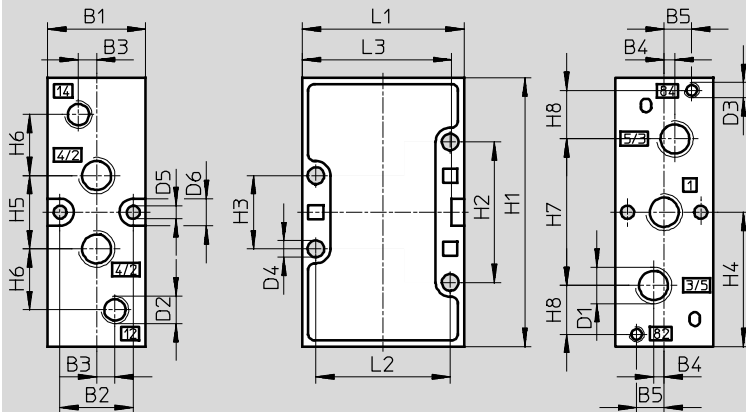
Technical data – 5/2-way valves

FESTO

Dimensions – Pneumatic connection G $\frac{1}{8}$, G $\frac{1}{4}$

Download CAD data → www.festo.com

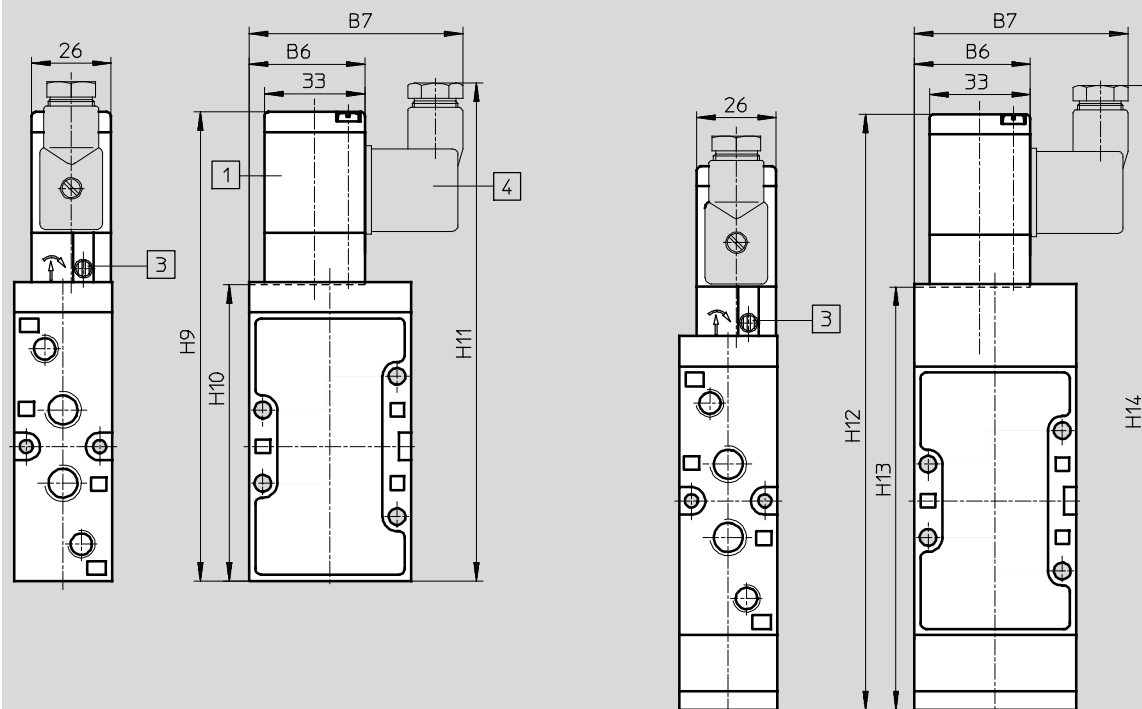
Basic valve



Installation dimensions with V solenoid coil

Mechanical reset

Pneumatic reset



1 Solenoid coil can be repositioned by 180°

3 Manual override can be repositioned by 180°

4 Plug socket connection to EN 175301-803 type B

Pneumatic connection	B1	B2	B3	B4	B5	B6	B7	D1	D2	D3	D4 Ø	D5 Ø	D6	H1	H2	H3	H4
G $\frac{1}{8}$	26	19.5	5	3.5	8	36.8	67	G $\frac{1}{8}$	G $\frac{1}{8}$	M5	4.5	4.3	9	77	41	21	38.5
G $\frac{1}{4}$	32	24	6	3.5	9	38	70	G $\frac{1}{4}$	G $\frac{1}{8}$	M5	5.5	4.3	9	88	46	24	44

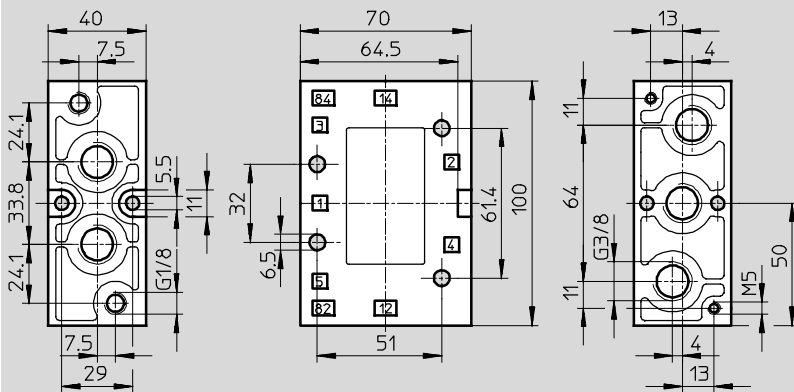
Pneumatic connection	H5	H6	H7	H8	H9	H10	H11	H12	H13	H14	H18	H19	H20	H21	L1	L2	L3
G $\frac{1}{8}$	22	19	42	12	143	86.5	153	183	126.2	193	136	152	175	192	47	40	43
G $\frac{1}{4}$	24	20	48	16	154	97.5	163	196	139	206	147	163	188	205	53	44	49

Technical data – 5/2-way valves

Dimensions – Pneumatic connection G³/₈

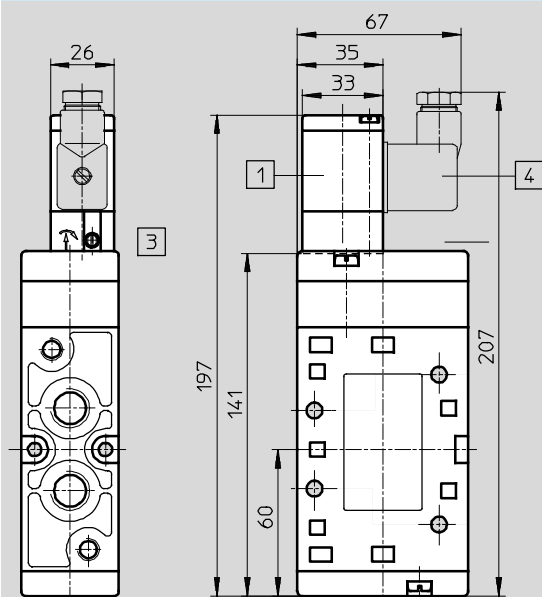
Download CAD data → www.festo.com

Basic valve



Installation dimensions with V solenoid coil

Mechanical or pneumatic reset

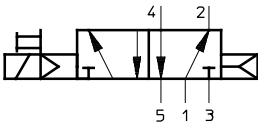
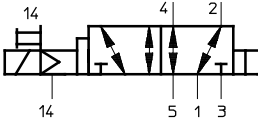
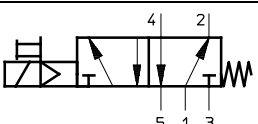
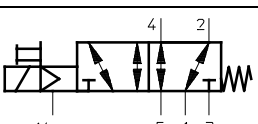


- 1 Solenoid coil is 360° rotatable
- 3 Manual override can be repositioned by 180°
- 4 Plug socket connection to EN 175301-803 type B

Solenoid valves MVH-B, Tiger 2000

FESTO

Technical data – 5/2-way valves

Ordering data					
Circuit symbol	Description	Voltage	Pneumatic connection	Part No.	Type
	With V solenoid coil, pneumatic reset, internal pilot air supply	24 V DC	G $\frac{1}{8}$	19749	MVH-5- $\frac{1}{8}$ -L-B
			G $\frac{1}{4}$	31009	MVH-5- $\frac{1}{4}$ -L-B
			G $\frac{3}{8}$	14947	MVH-5- $\frac{3}{8}$ -L-B
	With V solenoid coil, pneumatic reset, external pilot air supply	24 V DC	G $\frac{1}{8}$	19750	MVH-5- $\frac{1}{8}$ -L-S-B
			G $\frac{1}{4}$	33184	MVH-5- $\frac{1}{4}$ -L-S-B
			G $\frac{3}{8}$	33180	MVH-5- $\frac{3}{8}$ -L-S-B
	With V solenoid coil, mechanical reset, internal pilot air supply	24 V DC	G $\frac{1}{8}$	19779	MVH-5- $\frac{1}{8}$ -B
			G $\frac{1}{4}$	19701	MVH-5- $\frac{1}{4}$ -B
			G $\frac{3}{8}$	14945	MVH-5- $\frac{3}{8}$ -B
	With V solenoid coil, mechanical reset, external pilot air supply	24 V DC	G $\frac{1}{8}$	30996	MVH-5- $\frac{1}{8}$ -S-B
			G $\frac{1}{4}$	15903	MVH-5- $\frac{1}{4}$ -S-B
			G $\frac{3}{8}$	15342	MVH-5- $\frac{3}{8}$ -S-B

Ordering data – Wearing parts kits		
Pneumatic connection	Part No.	Type
G $\frac{1}{8}$	125071	MVH-5- $\frac{1}{8}$ -B
G $\frac{1}{4}$	115588	MVH-5- $\frac{1}{4}$ -B
G $\frac{3}{8}$	115074	MVH-5- $\frac{3}{8}$ -B

Solenoid valves JMVH-B, Tiger 2000

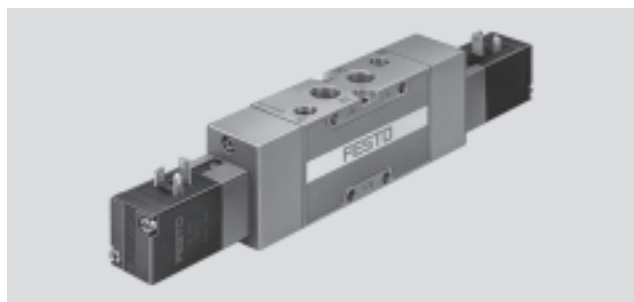
Technical data – 5/2-way valves, double solenoid

FESTO

-  - Flow rate
1000 ... 2000 l/min

-  - Voltage
24 V DC

Wearing parts kits
→ 40



General technical data				
Pneumatic connection		G1/8	G1/4	G3/8
Valve function		5/2-way, double solenoid		
Constructional design		Piston spool		
Sealing principle		Soft		
Actuation type		Electrical		
Type of pilot control		Piloted		
Pilot air supply		Internal or external		
Direction of flow		Non-reversible		
Exhaust function		With flow control		
Manual override		Resetting, detenting, covered		
Type of mounting		Via through-holes		
Mounting position		Any		
Nominal size	[mm]	5	7	12
Standard nominal flow rate	[l/min]	750	1300	2000
Grid dimension	[mm]	27	33	41
Product weight	[g]	560	615	900

Operating and environmental conditions				
Pneumatic connection		G1/8	G1/4	G3/8
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]		
Pilot medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]		
Note on operating/ pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)		
Operating pressure	Internal pilot air supply	[bar]	2 ... 10	2 ... 10
	External pilot air supply	[bar]	–0.9 ... +10	–0.9 ... +10
Pilot pressure		[bar]	2 ... 10	2 ... 10
Ambient temperature		[°C]	–5 ... +50	
Temperature of medium		[°C]	–5 ... +50	

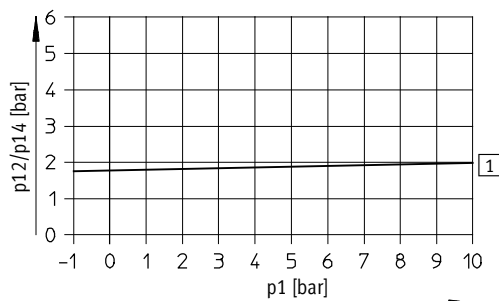
Solenoid valves JMVH-B, Tiger 2000

Technical data – 5/2-way valves, double solenoid

FESTO

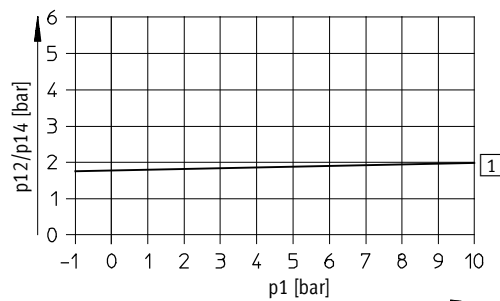
Minimum pilot pressure p_{12}/p_{14} as a function of the operating pressure p_1 (external pilot air supply)

JMVH-5-1/8-S-B



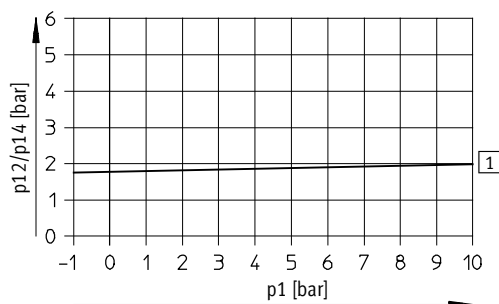
1 On

JMVH-5-1/4-S-B



1 On

JMVH-5-3/8-S-B



1 On

Valve response times [ms]

Pneumatic connection	G1/8	G1/4	G3/8
Changeover	18	16	17

Solenoid valves JMVH-B, Tiger 2000

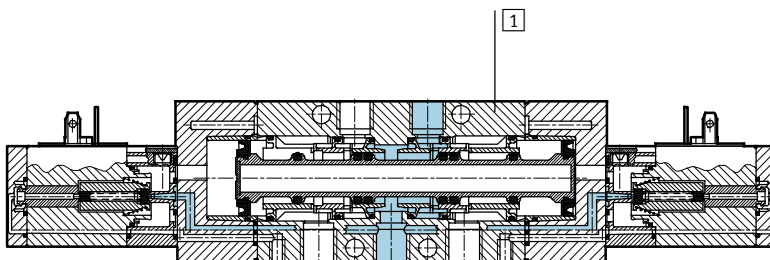
FESTO

Technical data – 5/2-way valves, double solenoid

Electrical data			
V solenoid			
Electrical connection	To EN 175301-803 type B		
Operating voltage	D.C. voltage	[V DC]	24
Coil characteristics	D.C. voltage	[W]	2.5
Protection class to EN 60 529	IP65 (in combination with plug socket)		

Materials

Sectional view



1	Housing	Die-cast aluminium, plastic
–	Seals	Nitrile rubber

Solenoid valves JMVH-B, Tiger 2000

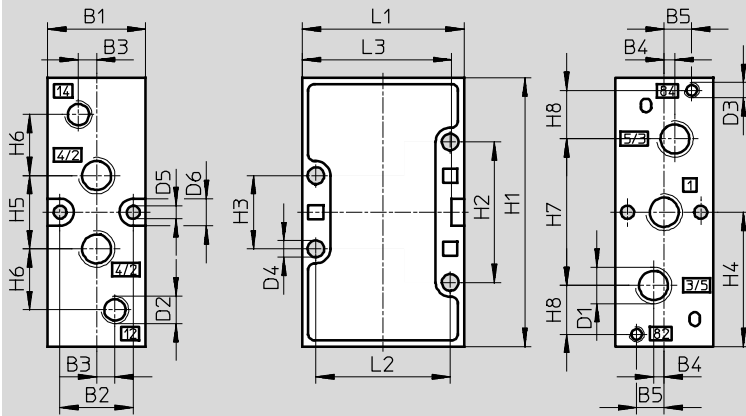
Technical data – 5/2-way valves, double solenoid

FESTO

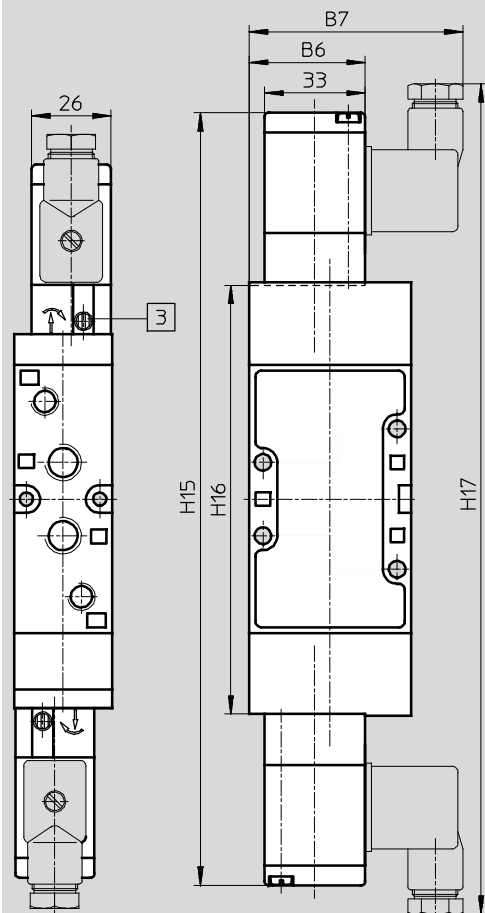
Dimensions – Pneumatic connection G $\frac{1}{8}$, G $\frac{1}{4}$

Download CAD data → www.festo.com

Basic valve



Installation dimensions with V solenoid coil, mechanical or pneumatic reset



3 Manual override can be repositioned by 180°

Pneumatic connection	B1	B2	B3	B4	B5	B6	B7	D1	D2	D3	D4 Ø	D5 Ø	D6	H1
G $\frac{1}{8}$	26	19.5	5	3.5	8	36.8	67	G $\frac{1}{8}$	G $\frac{1}{8}$	M5	4.5	4.3	9	77
G $\frac{1}{4}$	32	24	6	3.5	9	38	70	G $\frac{1}{4}$	G $\frac{1}{8}$	M5	5.5	4.3	9	88

Pneumatic connection	H2	H3	H4	H5	H6	H7	H8	H15	H16	H17	L1	L2	L3
G $\frac{1}{8}$	41	21	38.5	22	19	42	12	242	129	262	47	40	43
G $\frac{1}{4}$	46	24	44	24	20	48	16	255	141.5	275	53	44	49

Solenoid valves JMVH-B, Tiger 2000

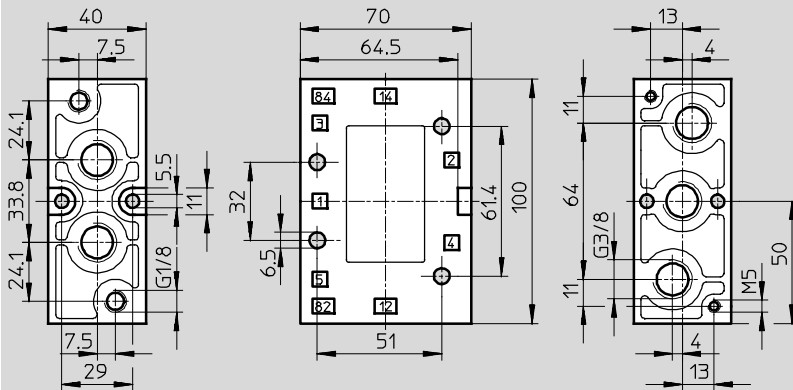
Technical data – 5/2-way valves, double solenoid

FESTO

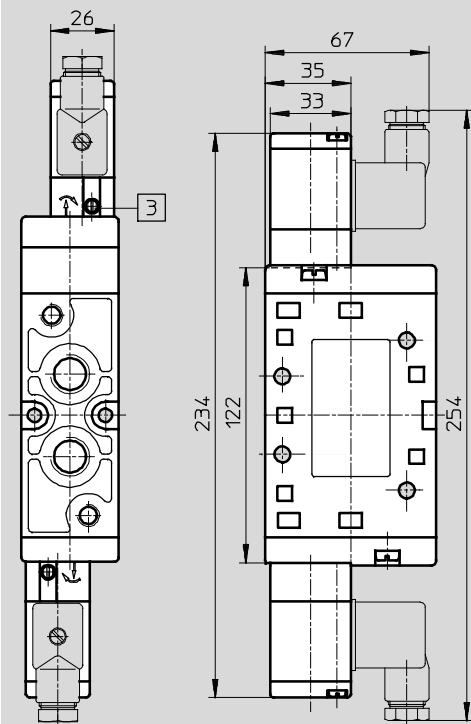
Dimensions – Pneumatic connection G $\frac{3}{8}$

Download CAD data → www.festo.com

Basic valve



Installation dimensions with V solenoid coil, mechanical or pneumatic reset

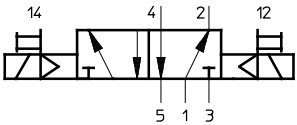
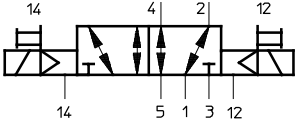


3 Manual override can be repositioned by 180°

Solenoid valves JMVH-B, Tiger 2000

FESTO

Technical data – 5/2-way valves, double solenoid

Ordering data					
Circuit symbol	Solenoid coil	Voltage	Pneumatic connection	Part No.	Type
	With V solenoid coil, internal pilot air supply	24 V DC	G $\frac{1}{8}$	30475	JMVH-5- $\frac{1}{8}$ -B
			G $\frac{1}{4}$	19136	JMVH-5- $\frac{1}{4}$ -B
			G $\frac{3}{8}$	14948	JMVH-5- $\frac{3}{8}$ -B
	With V solenoid coil, external pilot air supply	24 V DC	G $\frac{1}{8}$	30476	JMVH-5- $\frac{1}{8}$ -S-B
			G $\frac{1}{4}$	19137	JMVH-5- $\frac{1}{4}$ -S-B
			G $\frac{3}{8}$	15343	JMVH-5- $\frac{3}{8}$ -S-B

Ordering data – Wearing parts kits		
Pneumatic connection	Part No.	Type
G $\frac{1}{8}$	115590	JMVH-5- $\frac{1}{8}$ -B-(SB)
G $\frac{1}{4}$	115589	JMVH-5- $\frac{1}{4}$ -B-(SB)

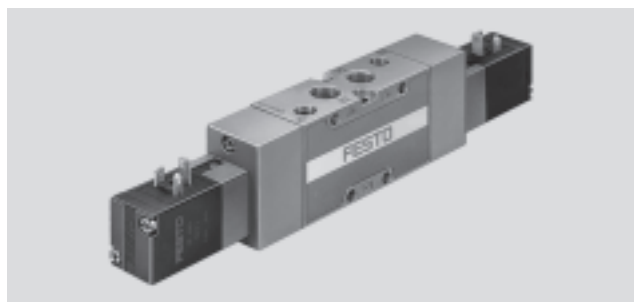
Solenoid valves MVH-B, Tiger 2000

FESTO

Technical data – 5/3-way valves

-  - Flow rate
1000 ... 2600 l/min

-  - Voltage
24 V DC



General technical data					
Pneumatic connection			G1/8	G1/4	G3/8
Valve function			5/3-way, double solenoid		
Constructional design			Piston spool		
Sealing principle			Soft		
Actuation type			Electrical		
Type of reset			Mechanical spring		
Type of pilot control			Piloted		
Pilot air supply			Internal or external		
Direction of flow			Non-reversible		
Exhaust function			With flow control		
Manual override			Resetting, detenting, covered		
Type of mounting			Via through-holes		
Mounting position			Any		
Nominal size		[mm]	5	7	12
Standard nominal flow rate	Closed	[l/min]	1000	1600	2000
	Exhausted	[l/min]			2200
	Pressurised	[l/min]			2600
Grid dimension		[mm]	27	33	41
Product weight		[g]	575	660	1000

Operating and environmental conditions					
Pneumatic connection			G1/8	G1/4	G3/8
Operating medium			Compressed air in accordance with ISO 8573-1:2010 [7:4:4]		
Pilot medium			Compressed air in accordance with ISO 8573-1:2010 [7:4:4]		
Note on operating/ pilot medium			Operation with lubricated medium possible (in which case lubricated operation will always be required)		
Operating pressure	Internal pilot air supply	[bar]	3 ... 10	3 ... 10	3 ... 10
	External pilot air supply	[bar]	−0.9 ... +10	−0.9 ... +10	−0.9 ... +10
Pilot pressure		[bar]	3 ... 10	3 ... 10	3 ... 10
Ambient temperature		[°C]	−5 ... +50		
Temperature of medium		[°C]	−5 ... +50		

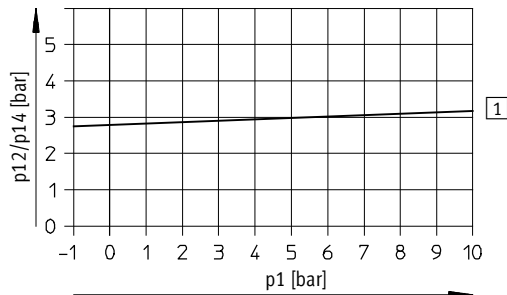
Solenoid valves MVH-B, Tiger 2000

FESTO

Technical data – 5/3-way valves

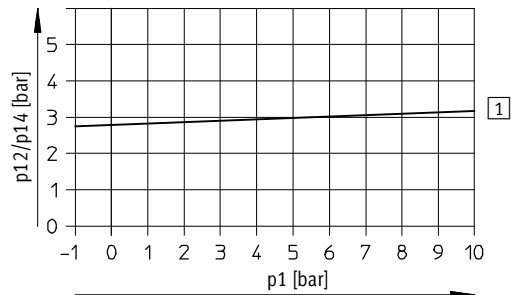
Minimum pilot pressure p_{12}/p_{14} as a function of the operating pressure p_1 (external pilot air supply)

MVH-5/3...-1/8-S-B



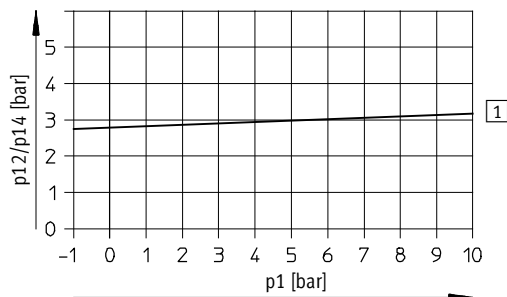
1 On

MVH-5/3...-1/4-S-B



1 On

MVH-5/3...-3/8-S-B



1 On

Valve response times [ms]

Pneumatic connection	G1/8		G1/4		G3/8	
	On	Off	On	Off	On	Off
Closed	18	20	20	22	24	80
Exhausted	20	20	24	36	36	85
Pressurised	24	24	34	30	30	82

Solenoid valves MVH-B, Tiger 2000

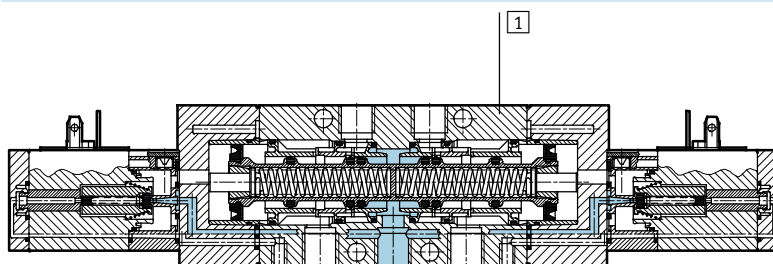
FESTO

Technical data – 5/3-way valves

Electrical data			
V solenoid			
Electrical connection		To EN 175301-803 type B	
Operating voltage	D.C. voltage	[V DC]	24
Coil characteristics	D.C. voltage	[W]	2.5
Protection class to EN 60 529		IP65 (in combination with plug socket)	

Materials

Sectional view



1 Housing		Die-cast aluminium, plastic
– Seals		Nitrile rubber

Solenoid valves MVH-B, Tiger 2000

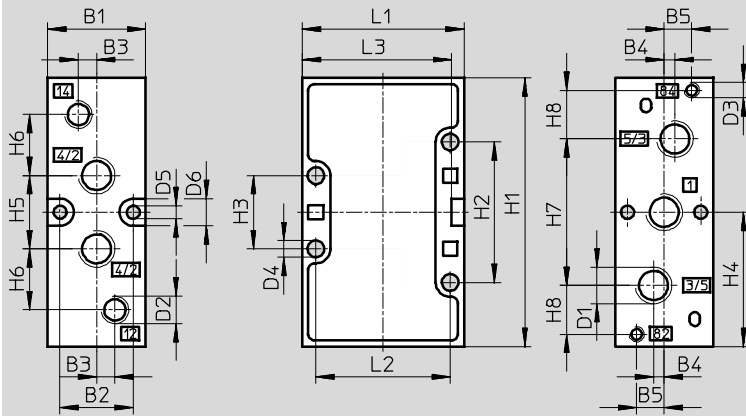
Technical data – 5/3-way valves

FESTO

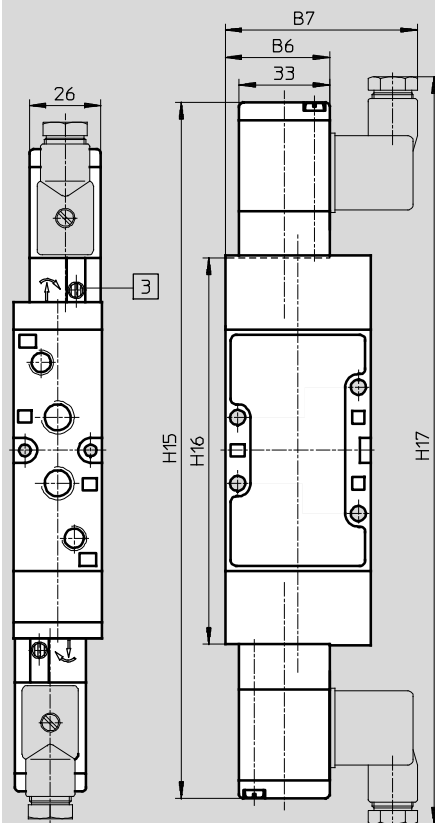
Dimensions – Pneumatic connection G $\frac{1}{8}$, G $\frac{1}{4}$

Download CAD data → www.festo.com

Basic valve



Installation dimensions with V solenoid coil, mechanical or pneumatic reset



3 Manual override can be repositioned by 180°

Pneumatic connection	B1	B2	B3	B4	B5	B6	B7	D1	D2	D3	D4	D5	D6	H1
G $\frac{1}{8}$	26	19.5	5	3.5	8	36.8	67	G $\frac{1}{8}$	G $\frac{1}{8}$	M5	4.5	4.3	9	77
G $\frac{1}{4}$	32	24	6	3.5	9	38	70	G $\frac{1}{4}$	G $\frac{1}{8}$	M5	5.5	4.3	9	88

Pneumatic connection	H2	H3	H4	H5	H6	H7	H8	H15	H16	H17	L1	L2	L3
G $\frac{1}{8}$	41	21	38.5	22	19	42	12	242	129	262	47	40	43
G $\frac{1}{4}$	46	24	44	24	20	48	16	255	141.5	275	53	44	49

Solenoid valves MVH-B, Tiger 2000

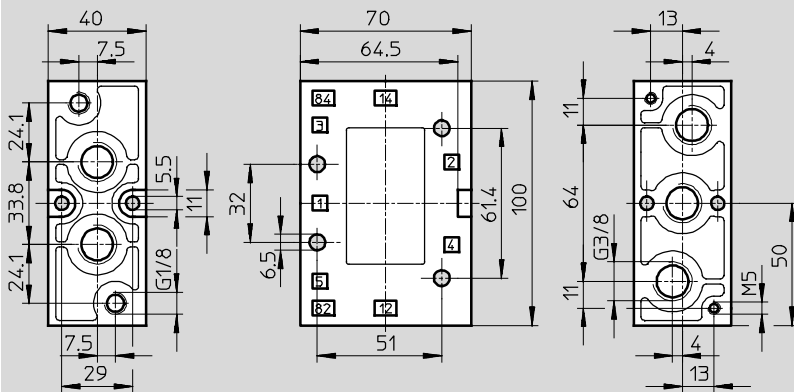
Technical data – 5/3-way valves

FESTO

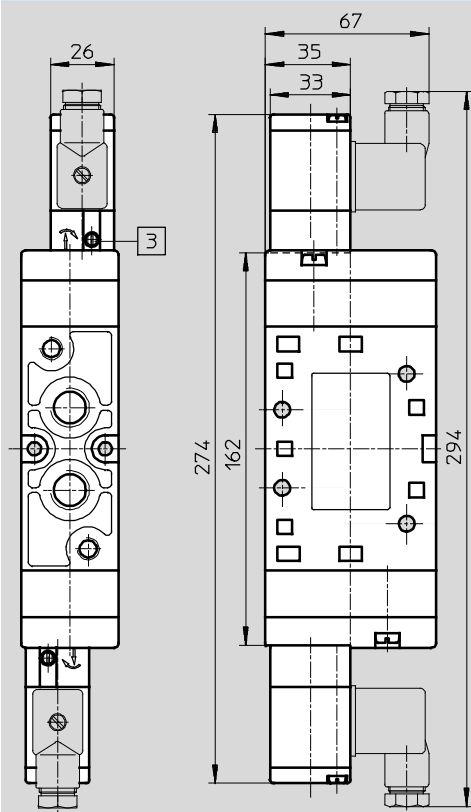
Dimensions – Pneumatic connection G $\frac{3}{8}$

Download CAD data → www.festo.com

Basic valve



Installation dimensions with V solenoid coil, mechanical or pneumatic reset

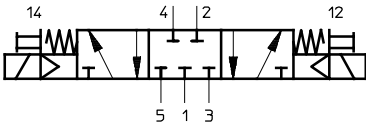
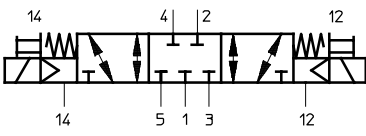
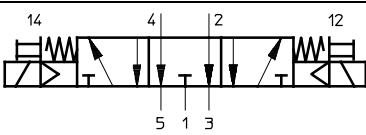
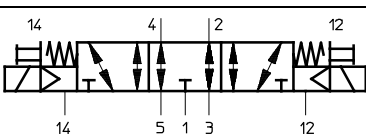
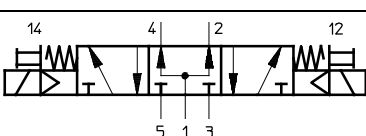
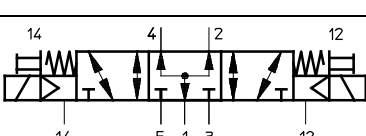


[3] Manual override can be repositioned by 180°

Solenoid valves MVH-B, Tiger 2000

FESTO

Technical data – 5/3-way valves

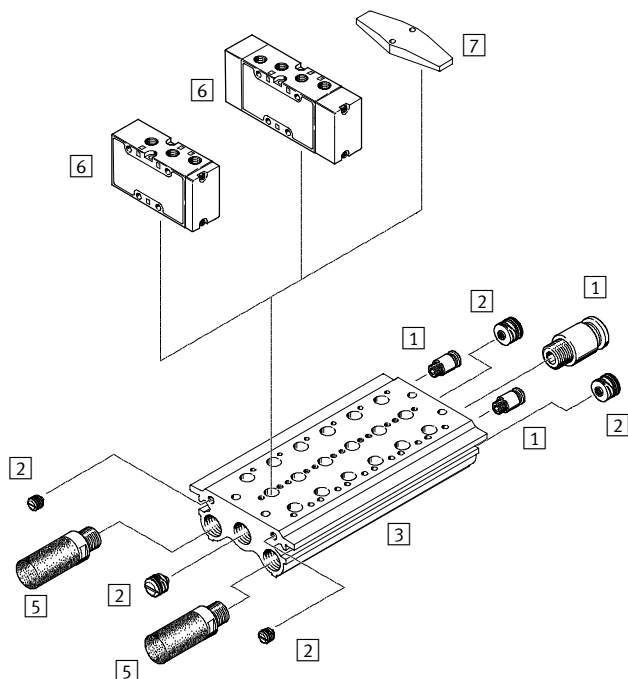
Ordering data					
Circuit symbol	Description	Voltage	Pneumatic connection	Part No.	Type
	With V solenoid coil, normally closed, internal pilot air supply	24 V DC	G $\frac{1}{8}$	30477	MVH-5/3G-1/8-B
			G $\frac{1}{4}$	19138	MVH-5/3G-1/4-B
			G $\frac{3}{8}$	14944	MVH-5/3G-3/8-B
	With V solenoid coil, normally closed, external pilot air supply	24 V DC	G $\frac{1}{8}$	30997	MVH-5/3G-1/8-S-B
			G $\frac{1}{4}$	31004	MVH-5/3G-1/4-S-B
			G $\frac{3}{8}$	15346	MVH-5/3G-3/8-S-B
	With V solenoid coil, normally exhausted, internal pilot air supply	24 V DC	G $\frac{1}{8}$	30478	MVH-5/3E-1/8-B
			G $\frac{1}{4}$	19139	MVH-5/3E-1/4-B
			G $\frac{3}{8}$	14943	MVH-5/3E-3/8-B
	With V solenoid coil, normally exhausted, external pilot air supply	24 V DC	G $\frac{1}{8}$	30998	MVH-5/3E-1/8-S-B
			G $\frac{1}{4}$	31005	MVH-5/3E-1/4-S-B
			G $\frac{3}{8}$	15344	MVH-5/3E-3/8-S-B
	With V solenoid coil, normally pressurised, internal pilot air supply	24 V DC	G $\frac{1}{8}$	30480	MVH-5/3B-1/8-B
			G $\frac{1}{4}$	19140	MVH-5/3B-1/4-B
			G $\frac{3}{8}$	19699	MVH-5/3B-3/8-B
	With V solenoid coil, normally pressurised, external pilot air supply	24 V DC	G $\frac{1}{8}$	30999	MVH-5/3B-1/8-S-B
			G $\frac{1}{4}$	31006	MVH-5/3B-1/4-S-B
			G $\frac{3}{8}$	15345	MVH-5/3B-3/8-S-B

Pneumatic valves, Tiger 2000

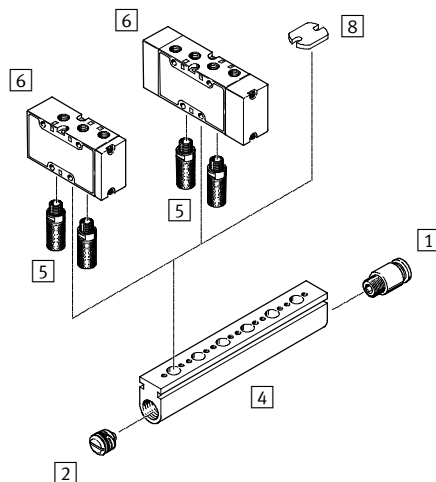
Peripherals overview

FESTO

Mounting on manifold



Mounting on manifold strip



Accessories		
	Brief description	→ Page/Internet
1	Push-in fitting QS	For connecting compressed air tubing with standard O.D. quick star
2	Sealing plug PRSV	64
3	Manifold PRS	62
4	Manifold strip PAL	60
5	Silencer	For fitting in exhaust ports u
6	Pneumatic valve VL, J	5
7	Blanking plate PRSB	For covering vacant positions 64
8	Blanking plate PALB	For covering vacant positions 64

Pneumatic valves, Tiger 2000

Type code

FESTO

		VL	–	5/3	G	–	1/8	–	B
Type									
VL	Single pilot								
J	Double pilot								
Valve function									
5	5/2-way valve								
5/3	5/3-way valve								
Normal position									
G	Closed								
E	Exhausted								
B	Pressurised								
Pneumatic connection									
1/8	G1/8								
1/4	G1/4								
3/8	G3/8								
Generation									
B	Series B								

Pneumatic valves VL, Tiger 2000

FESTO

Technical data – 5/2-way valves

-  - Flow rate
750 ... 2000 l/min

Wearing parts kits
→ 52



General technical data			
Pneumatic connection	G1/8	G1/4	G3/8
Valve function	5/2-way, single pilot		
Constructional design	Poppet		Piston spool
Sealing principle	Soft		
Actuation type	Pneumatic		
Type of reset	Mechanical spring		
Type of pilot control	Direct		
Direction of flow	Non-reversible		Reversible
Exhaust function	With flow control		
Manual override	None		
Type of mounting	Via through-holes		
Mounting position	Any		
Nominal size	[mm]	5	7
Standard nominal flow rate	[l/min]	750	1300
Grid dimension	[mm]	27	33
Product weight	[g]	170	240

Operating and environmental conditions			
Pneumatic connection	G1/8	G1/4	G1/4
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]		
Pilot medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]		
Note on operating/ pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)		
Operating pressure	[bar]	0 ... 10	0 ... 10
Pilot pressure	[bar]	1.5 ... 10	1.5 ... 10
Ambient temperature	[°C]	-10 ... +60	
Temperature of medium	[°C]	-10 ... +60	

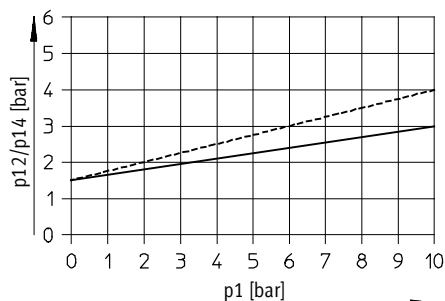
Pneumatic valves VL, Tiger 2000

Technical data – 5/2-way valves

FESTO

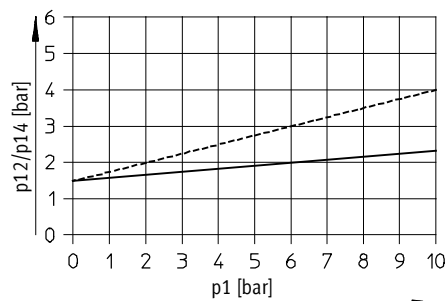
Minimum pilot pressure p_{12} , p_{14} as a function of the operating pressure p_1

VL-5-1/8-B



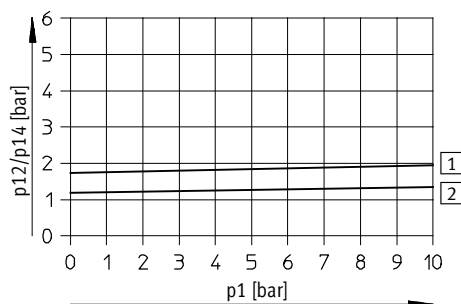
----- Exhaust throttled
 ————— Exhaust unthrottled

VL-5-1/4-B



----- Exhaust throttled
 ————— Exhaust unthrottled

VL-5-3/8-B



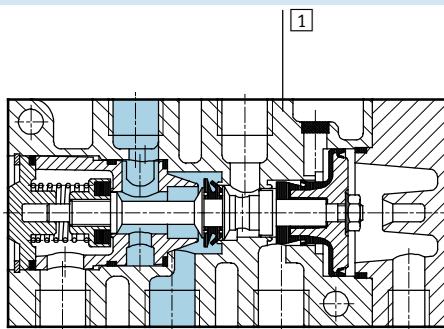
1 On
 2 Off

Valve response times [ms]

Pneumatic connection	G1/8	G1/4	G3/8
On	2	2	4
Off	10	12	16

Materials

Sectional view



1	Housing	Die-cast aluminium
–	Seals	Nitrile rubber

Pneumatic valves VL, Tiger 2000

FESTO

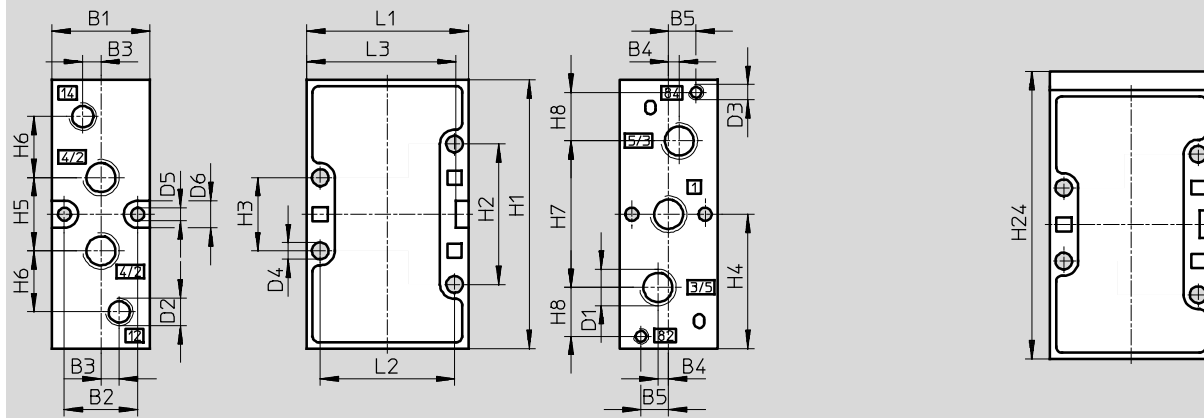
Technical data – 5/2-way valves

Dimensions – Pneumatic connection G $\frac{1}{8}$, G $\frac{1}{4}$

Download CAD data → www.festo.com

Basic valve

VL-5-...-B



Pneumatic connection	B1	B2	B3	B4	B5	D1	D2	D3	D4	D5	D6	H1
G $\frac{1}{8}$	26	19.5	5	3.5	8	G $\frac{1}{8}$	G $\frac{1}{8}$	M5	4.5	4.3	9	77
G $\frac{1}{4}$	32	24	6	3.5	9	G $\frac{1}{4}$	G $\frac{1}{8}$	M5	5.5	4.3	9	88

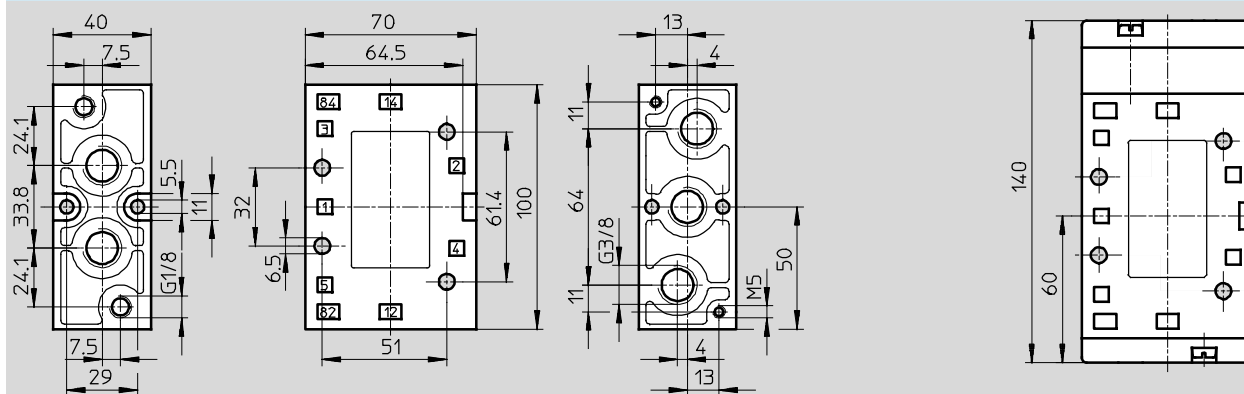
Pneumatic connection	H2	H3	H4	H5	H6	H7	H8	H24	L1	L2	L3
G $\frac{1}{8}$	41	21	38.5	22	19	42	12	83	47	40	43
G $\frac{1}{4}$	46	24	44	24	20	48	16	94	53	44	49

Dimensions – Pneumatic connection G $\frac{3}{8}$

Download CAD data → www.festo.com

Basic valve

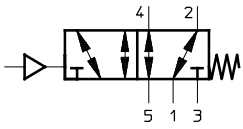
VL-5- $\frac{3}{8}$ -B



Pneumatic valves VL, Tiger 2000

FESTO

Technical data – 5/2-way valves

Ordering data				
Circuit symbol	Description	Pneumatic connection	Part No.	Type
	Mechanical reset	G1/8	31000	VL-5-1/8-B
		G1/4	14294	VL-5-1/4-B
		G3/8	14952	VL-5-3/8-B

Ordering data – Wearing parts kits		
Pneumatic connection	Part No.	Type
G1/8	125710	VL-5-1/8-B
G1/4	115580	VL-5-1/4-B

Pneumatic valves J, Tiger 2000

Technical data – 5/2-way valves, double pilot

FESTO

-  - Flow rate
800 ... 2000 l/min



General technical data				
Pneumatic connection		G $\frac{1}{8}$	G $\frac{1}{4}$	G $\frac{3}{8}$
Valve function		5/2-way, double pilot		
Constructional design		Piston spool		
Sealing principle		Soft		
Actuation type		Pneumatic		
Type of pilot control		Direct		
Direction of flow		Reversible		
Exhaust function		With flow control		
Manual override		None		
Type of mounting		Via through-holes		
Mounting position		Any		
Nominal size	[mm]	8	10	12
Standard nominal flow rate	[l/min]	800	1600	2000
Grid dimension	[mm]	27	33	41
Product weight	[g]	320	375	550

Operating and environmental conditions				
Pneumatic connection		G $\frac{1}{8}$	G $\frac{1}{4}$	G $\frac{1}{4}$
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]		
Pilot medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]		
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)		
Operating pressure	[bar]	–0.9 ... +10	–0.9 ... +10	–0.9 ... +10
Pilot pressure	[bar]	3 ... 10	3 ... 10	3 ... 10
Ambient temperature	[°C]	–10 ... +60		
Temperature of medium	[°C]	–10 ... +60		

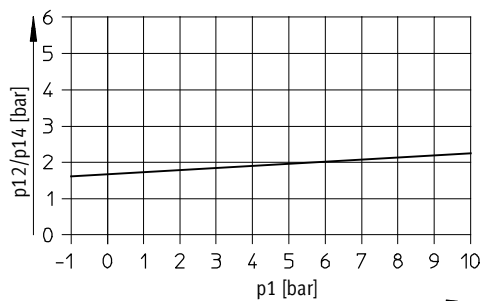
Pneumatic valves J, Tiger 2000

Technical data – 5/2-way valves, double pilot

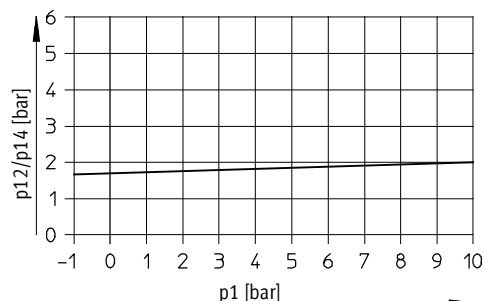
FESTO

Minimum pilot pressure p_{12}/p_{14} as a function of the operating pressure p_1

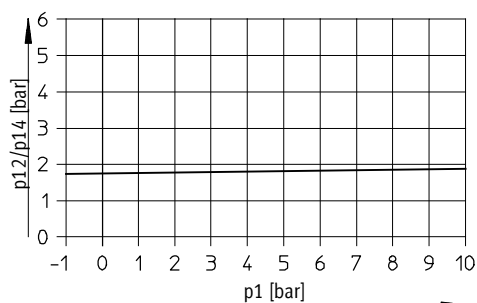
J-5- $\frac{1}{8}$ -B



J-5- $\frac{1}{4}$ -B



J-5- $\frac{3}{8}$ -B

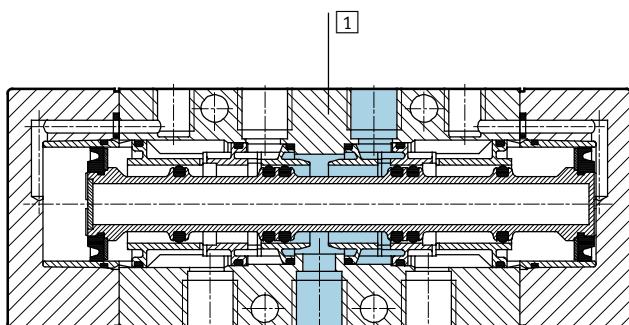


Valve response times [ms]

Pneumatic connection	G $\frac{1}{8}$	G $\frac{1}{4}$	G $\frac{3}{8}$
Changeover	3	3	3

Materials

Sectional view



1	Housing	Die-cast aluminium
–	Seals	Nitrile rubber

Pneumatic valves J, Tiger 2000

Technical data – 5/2-way valves, double pilot

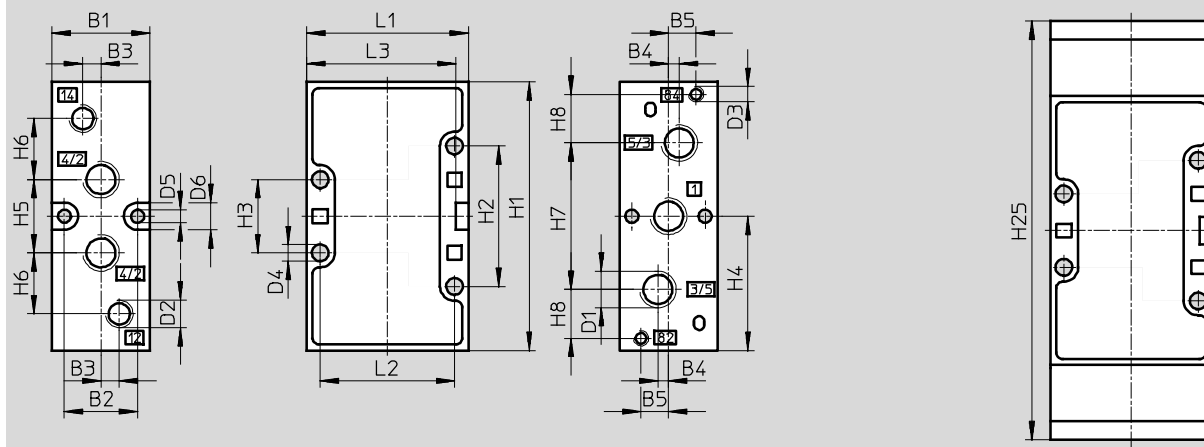
FESTO

Dimensions – Pneumatic connection G $\frac{1}{8}$, G $\frac{1}{4}$

Download CAD data → www.festo.com

Basic valve

J-5-...-B



Pneumatic connection	B1	B2	B3	B4	B5	D1	D2	D3	D4 Ø	D5 Ø	D6	H1
G $\frac{1}{8}$	26	19.5	5	3.5	8	G $\frac{1}{8}$	G $\frac{1}{8}$	M5	4.5	4.3	9	77
G $\frac{1}{4}$	32	24	6	3.5	9	G $\frac{1}{4}$	G $\frac{1}{8}$	M5	5.5	4.3	9	88

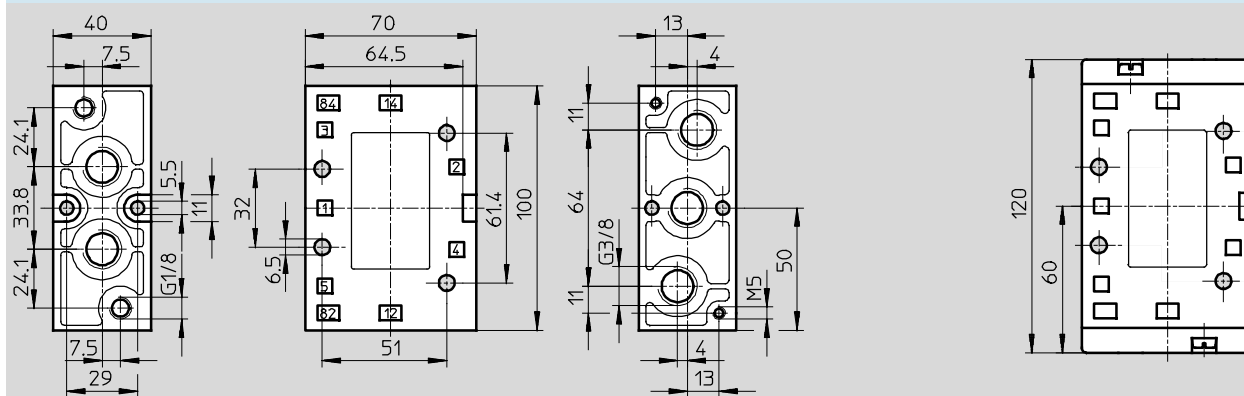
Pneumatic connection	H2	H3	H4	H5	H6	H7	H8	H25	L1	L2	L3
G $\frac{1}{8}$	41	21	38.5	22	19	42	12	124	47	40	43
G $\frac{1}{4}$	46	24	44	24	20	48	16	137	53	44	49

Dimensions – Pneumatic connection G $\frac{3}{8}$

Download CAD data → www.festo.com

Basic valve

J-5- $\frac{3}{8}$ -B



Ordering data

Circuit symbol	Pneumatic connection	Part No.	Type
	G $\frac{1}{8}$	30988	J-5- $\frac{1}{8}$ -B
	G $\frac{1}{4}$	14295	J-5- $\frac{1}{4}$ -B
	G $\frac{3}{8}$	14953	J-5- $\frac{3}{8}$ -B

Pneumatic valves VL, Tiger 2000

Technical data – 5/3-way valves

FESTO

-  - Flow rate
800 ... 2000 l/min



General technical data				
Pneumatic connection		G $\frac{1}{8}$	G $\frac{1}{4}$	G $\frac{3}{8}$
Valve function		5/3-way, double pilot		
Constructional design		Piston spool		
Sealing principle		Soft		
Actuation type		Pneumatic		
Type of reset		Mechanical spring		
Type of pilot control		Direct		
Direction of flow		Reversible		
Exhaust function		With flow control		
Manual override		None		
Type of mounting		Via through-holes		
Mounting position		Any		
Nominal size	[mm]	8	10	12
Standard nominal flow rate	[l/min]	800	1600	2000
Grid dimension	[mm]	27	33	41
Product weight	[g]	320	375	680

Operating and environmental conditions				
Pneumatic connection		G $\frac{1}{8}$	G $\frac{1}{4}$	G $\frac{3}{8}$
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]		
Pilot medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]		
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)		
Operating pressure	[bar]	-0.9 ... +10	-0.9 ... +10	-0.9 ... +10
Pilot pressure	[bar]	3 ... 10	3 ... 10	3 ... 10
Ambient temperature	[°C]	-10 ... +60		
Temperature of medium	[°C]	-10 ... +60		

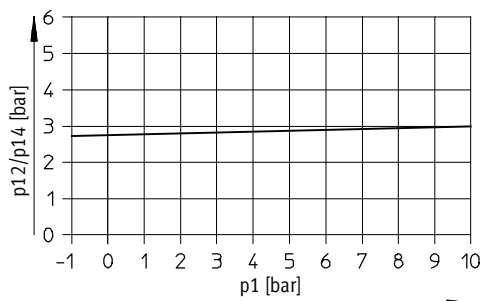
Pneumatic valves VL, Tiger 2000

FESTO

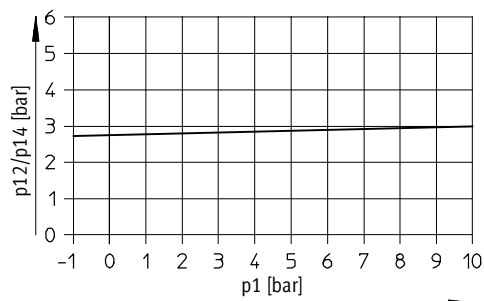
Technical data – 5/3-way valves

Minimum pilot pressure p_{12}/p_{14} as a function of the operating pressure p_1

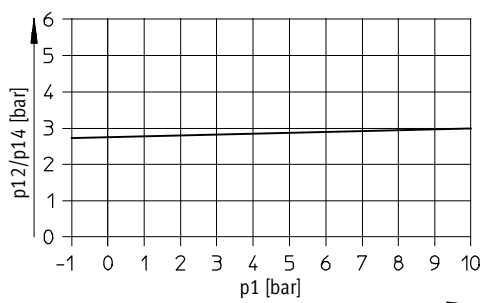
VL-5/3...-1/8-B



VL-5/3...-1/4-B



VL-5/3...-3/8-B

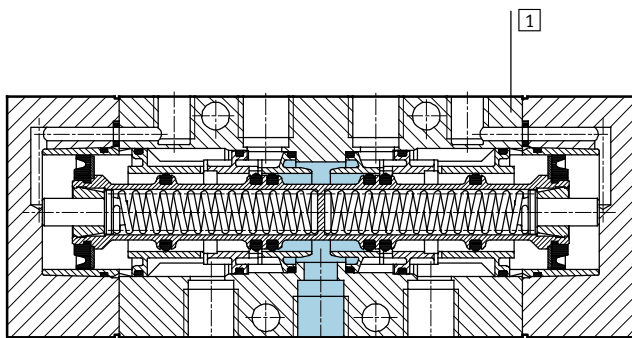


Valve response times [ms]

Pneumatic connection	G1/8	G1/4	G3/8
On	5	6	7
Off	14	26	28

Materials

Sectional view



1	Housing	Die-cast aluminium
-	Seals	Nitrile rubber

Pneumatic valves VL, Tiger 2000

Technical data – 5/3-way valves

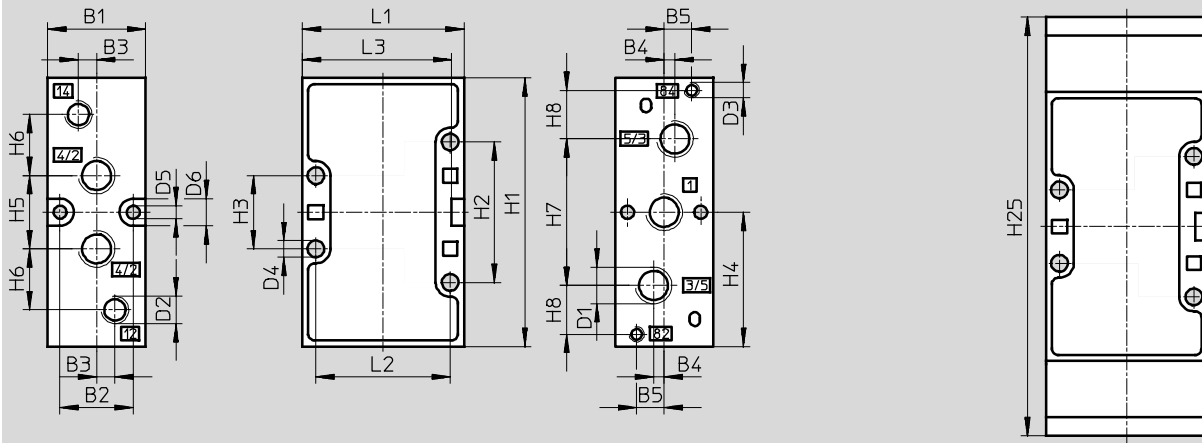
FESTO

Dimensions – Pneumatic connection G $\frac{1}{8}$, G $\frac{1}{4}$

Download CAD data → www.festo.com

Basic valve

J-5-...-B



Pneumatic connection	B1	B2	B3	B4	B5	D1	D2	D3	D4 Ø	D5 Ø	D6	H1
G $\frac{1}{8}$	26	19.5	5	3.5	8	G $\frac{1}{8}$	G $\frac{1}{8}$	M5	4.5	4.3	9	77
G $\frac{1}{4}$	32	24	6	3.5	9	G $\frac{1}{4}$	G $\frac{1}{8}$	M5	5.5	4.3	9	88

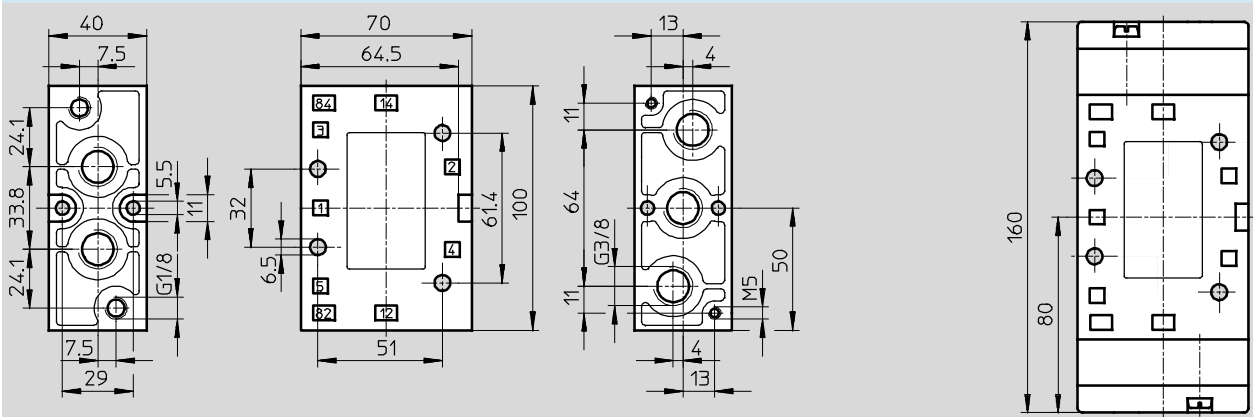
Pneumatic connection	H2	H3	H4	H5	H6	H7	H8	H25	L1	L2	L3
G $\frac{1}{8}$	41	21	38.5	22	19	42	12	124	47	40	43
G $\frac{1}{4}$	46	24	44	24	20	48	16	137	53	44	49

Dimensions – Pneumatic connection G $\frac{3}{8}$

Download CAD data → www.festo.com

Basic valve

VL-5/3...- $\frac{3}{8}$ -B



Pneumatic valves VL, Tiger 2000

Technical data – 5/3-way valves

Ordering data				
Circuit symbol	Description	Pneumatic connection	Part No.	Type
	Normally closed	G1/8	30990	VL-5/3G-1/8-B
		G1/4	14298	VL-5/3G-1/4-B
		G3/8	14950	VL-5/3G-3/8-B
	Normally exhausted	G1/8	31309	VL-5/3E-1/8-B
		G1/4	14297	VL-5/3E-1/4-B
		G3/8	14949	VL-5/3E-3/8-B
	Normally pressurised	G1/8	31310	VL-5/3B-1/8-B
		G1/4	14298	VL-5/3B-1/4-B
		G3/8	14951	VL-5/3B-3/8-B

Solenoid/pneumatic valves, Tiger 2000

FESTO

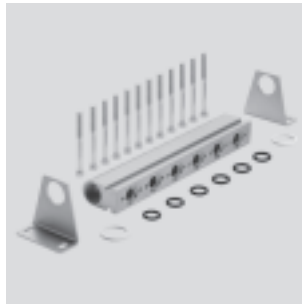
Accessories

Manifold strip

PAL-...-B

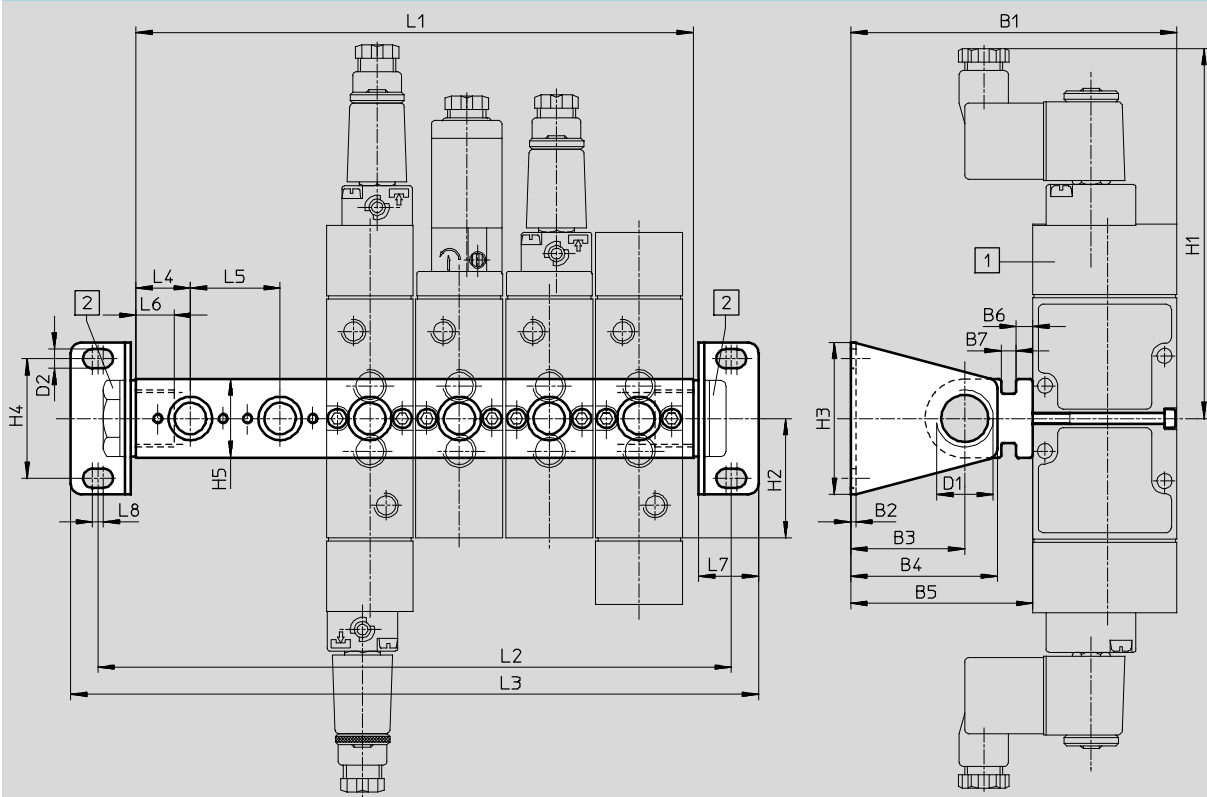
Material:

Anodised aluminium



Dimensions

Download CAD data → www.festo.com



1 The caps on all valves can be repositioned by 180°

2 Blanking plugs and reducing nipples are not included in the scope of delivery

Type	B1	B2	B3	B4	B5	B6	B7	D1	D2	H1	H2	H3	H4	L4	L5	L6	L7	L8
PAL-1/8-...	104	2	33.5	44.5	57	5	5.5	G3/8	5.2	130	38.5	44	32	18	27	12	20	4
PAL-1/4-...	120	2	42	54	67	6.1	5.5	G1/2	7	136	44	56	44	20	33	14	22	4
PAL-3/8-...	176	3	75	93	106	4	14	G3/4	9	147	50	80	60	25	41	17	30	5

Solenoid/pneumatic valves, Tiger 2000

FESTO

Accessories

Dimensions and ordering data						
Number of valve ports	L1	L2	L3	Weight [g]	Part No.	Type
Pneumatic connection G $\frac{1}{8}$						
2	63	89	107	150	30552	PAL- $\frac{1}{8}$ -2-B
3	90	116	134	190	30553	PAL- $\frac{1}{8}$ -3-B
4	117	143	161	230	30554	PAL- $\frac{1}{8}$ -4-B
5	144	170	188	260	30555	PAL- $\frac{1}{8}$ -5-B
6	171	197	215	290	30556	PAL- $\frac{1}{8}$ -6-B
7	198	224	242	340	30557	PAL- $\frac{1}{8}$ -7-B
8	225	251	269	370	30558	PAL- $\frac{1}{8}$ -8-B
9	252	278	296	410	30559	PAL- $\frac{1}{8}$ -9-B
10	279	305	323	450	30560	PAL- $\frac{1}{8}$ -10-B
Pneumatic connection G $\frac{1}{4}$						
2	73	101	121	230	30280	PAL- $\frac{1}{4}$ -2-B
3	106	134	154	290	30281	PAL- $\frac{1}{4}$ -3-B
4	139	167	187	350	30282	PAL- $\frac{1}{4}$ -4-B
5	172	200	220	420	30283	PAL- $\frac{1}{4}$ -5-B
6	205	233	253	480	30284	PAL- $\frac{1}{4}$ -6-B
7	238	266	286	540	30285	PAL- $\frac{1}{4}$ -7-B
8	271	299	319	600	30286	PAL- $\frac{1}{4}$ -8-B
9	304	322	352	660	30287	PAL- $\frac{1}{4}$ -9-B
10	337	365	385	730	30288	PAL- $\frac{1}{4}$ -10-B
Pneumatic connection G $\frac{3}{8}$						
2	91	127	155	510	30692	PAL- $\frac{3}{8}$ -2-B
3	132	168	196	610	30693	PAL- $\frac{3}{8}$ -3-B
4	173	209	237	720	30694	PAL- $\frac{3}{8}$ -4-B
5	214	250	278	830	30695	PAL- $\frac{3}{8}$ -5-B
6	255	291	319	960	30696	PAL- $\frac{3}{8}$ -6-B
7	296	332	360	1060	30697	PAL- $\frac{3}{8}$ -7-B
8	337	373	401	1160	30698	PAL- $\frac{3}{8}$ -8-B
9	378	414	442	1260	30699	PAL- $\frac{3}{8}$ -9-B
10	419	455	483	1360	30680	PAL- $\frac{3}{8}$ -10-B

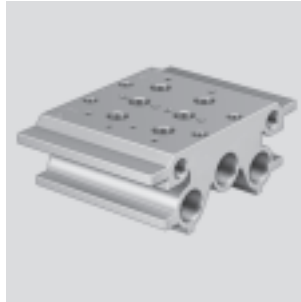
Solenoid/pneumatic valves, Tiger 2000

Accessories

FESTO

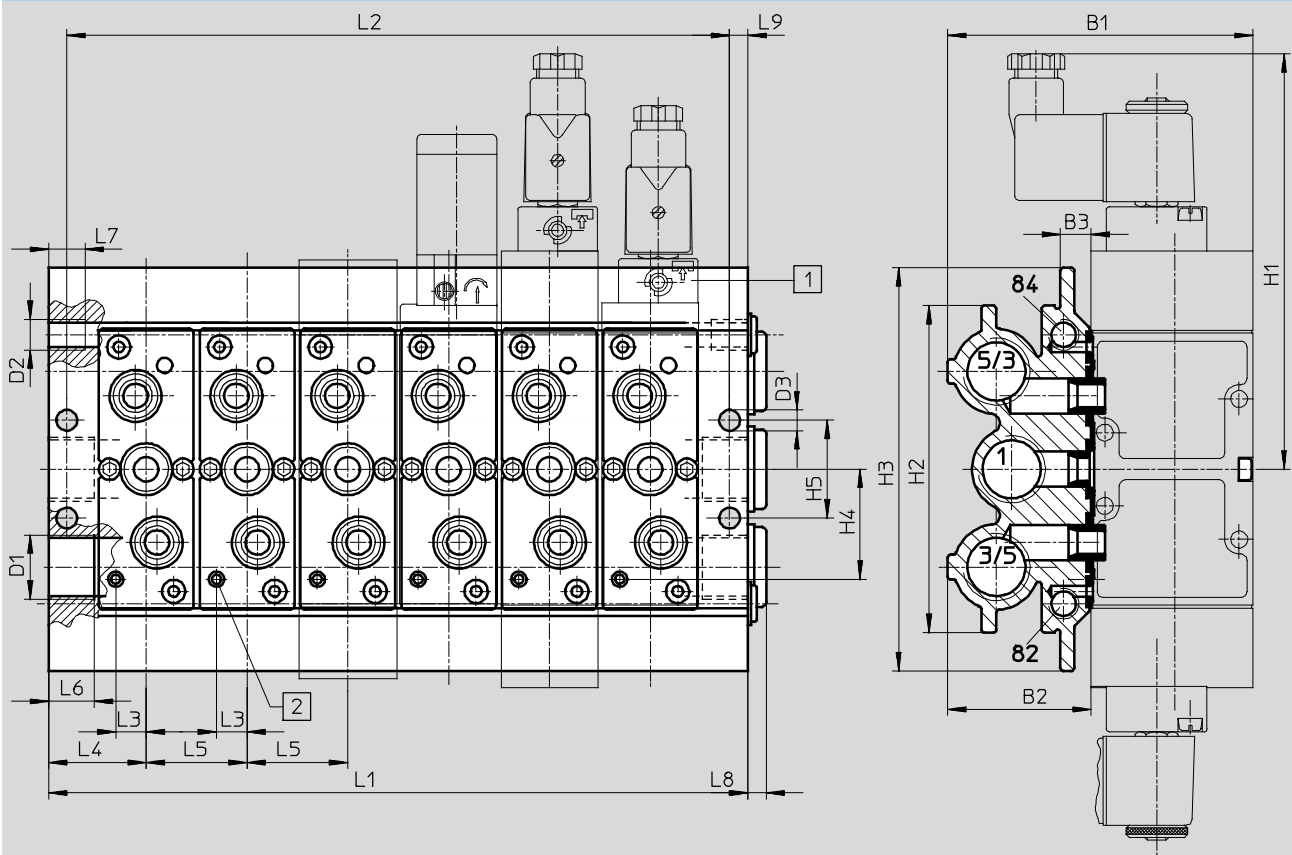
Manifold
PRS

Material:
Anodised aluminium



Dimensions

Download CAD data → www.festo.com



- 1 The caps on all valves can be repositioned by 180°
- 2 Hole for dowel pin to DIN 7346
Ø 3 mm

Type	B1	B2	B3	D1	D2	D3	H1	H2	H3	H4	H5	L3	L4	L5	L6	L7	L8	L9
PRS-1/8-...	93	45.5	11.2	G3/8	G1/8	6.8	130	95	120	27	27.5	9.4	25.5	27	14	8	5	6
PRS-1/4-...	100	47	10	G1/2	G1/8	6.8	136	107	132	36	32	10	32	33	15	12	6	9
PRS-3/8-...	131	60.5	12.5	G3/4	G1/8	9	147	128	153	44	44	15.2	36.5	41	16	12	6	7.5

Solenoid/pneumatic valves, Tiger 2000

FESTO

Accessories

Dimensions and ordering data					
Number of valve ports	L1	L2	Weight [g]	Part No.	Type
Pneumatic connection G $\frac{1}{8}$					
2	78	66	700	30542	PRS- $\frac{1}{8}$ -2-BB
3	105	93	920	30543	PRS- $\frac{1}{8}$ -3-BB
4	132	120	1150	30544	PRS- $\frac{1}{8}$ -4-BB
5	159	147	1320	30545	PRS- $\frac{1}{8}$ -5-BB
6	186	174	1520	30546	PRS- $\frac{1}{8}$ -6-BB
7	213	201	1750	30547	PRS- $\frac{1}{8}$ -7-BB
8	240	228	2010	30548	PRS- $\frac{1}{8}$ -8-BB
9	267	255	2200	30549	PRS- $\frac{1}{8}$ -9-BB
10	294	282	2400	30550	PRS- $\frac{1}{8}$ -10-BB
Pneumatic connection G $\frac{1}{4}$					
2	97	85	1050	15861	PRS- $\frac{1}{4}$ -2-B
3	130	118	1310	15862	PRS- $\frac{1}{4}$ -3-B
4	163	151	1610	15863	PRS- $\frac{1}{4}$ -4-B
5	196	184	1900	15864	PRS- $\frac{1}{4}$ -5-B
6	229	217	2200	15865	PRS- $\frac{1}{4}$ -6-B
7	262	250	2500	15866	PRS- $\frac{1}{4}$ -7-B
8	259	283	2800	15867	PRS- $\frac{1}{4}$ -8-B
9	328	316	3100	15868	PRS- $\frac{1}{4}$ -9-B
10	361	349	3360	15869	PRS- $\frac{1}{4}$ -10-B
Pneumatic connection G $\frac{3}{8}$					
2	114	99	1600	30682	PRS- $\frac{3}{8}$ -2-B
3	155	140	2100	30683	PRS- $\frac{3}{8}$ -3-B
4	196	181	2630	30684	PRS- $\frac{3}{8}$ -4-B
5	237	222	3100	30685	PRS- $\frac{3}{8}$ -5-B
6	278	263	3500	30686	PRS- $\frac{3}{8}$ -6-B
8	360	345	4620	30688	PRS- $\frac{3}{8}$ -8-B
10	442	427	5600	30690	PRS- $\frac{3}{8}$ -10-B

Solenoid/pneumatic valves, Tiger 2000

Accessories

FESTO

Blanking plate for vacant positions PRSB

Material:
Die-cast aluminium



Ordering data			
Pneumatic connection	Weight [g]	Part No.	Type
G $\frac{1}{8}$	33	15909	PRBS- $\frac{1}{8}$ -B
G $\frac{1}{4}$	40	30666	PRSB- $\frac{1}{4}$ -B
G $\frac{3}{8}$	72	30681	PRSB- $\frac{3}{8}$ -B

Blanking plate for vacant positions PALB

Material:
Steel



Ordering data			
Pneumatic connection	Weight [g]	Part No.	Type
G $\frac{1}{8}$	14	30903	PALB- $\frac{1}{8}$ -B
G $\frac{1}{4}$	22	30904	PALB- $\frac{1}{4}$ -B
G $\frac{3}{8}$	32	30905	PALB- $\frac{3}{8}$ -B

Sealing plug PRSV

Material:
Steel



Ordering data			
Pneumatic connection	Weight [g]	Part No.	Type
G $\frac{1}{8}$	18	160997	PRSV- $\frac{1}{8}$
G $\frac{1}{4}$	27	160996	PRSV- $\frac{1}{4}$

Solenoid/pneumatic valves, Tiger 2000

FESTO

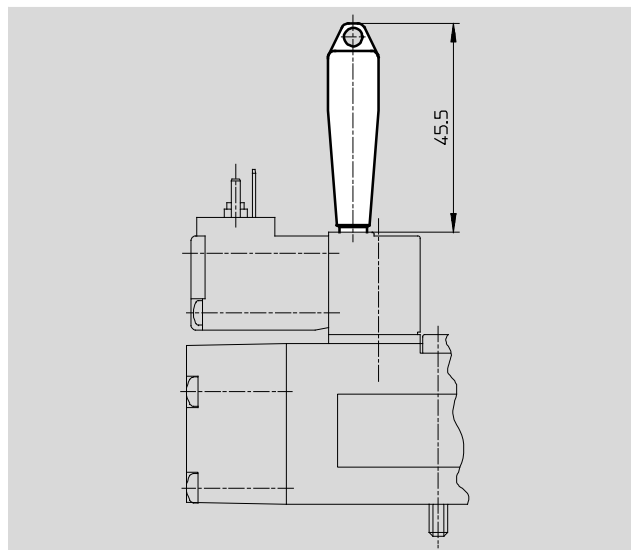
Accessories

Manual override tool

AHB

Material:

Polymer



Ordering data				
For valve	Weight [g]	CRC ¹⁾	Part No.	Type
MFH/JMFH	10	2	157651	AHB-MD/MF/MV

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

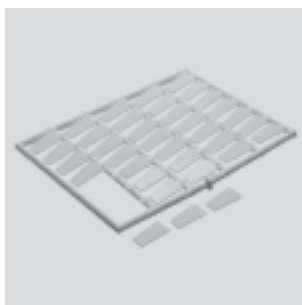
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents.

Inscription labels

KMC/F/V-BZ-35X

Material:

Polymer



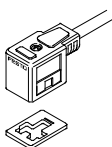
Ordering data			
	Weight [g]	Part No.	Type
Inscription labels for valves (35 in frames included in scope of delivery)	20	33362	KMC/F/V-BZ-35x

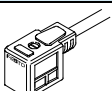
Ordering data – Solenoid coils			Technical data → Internet: msf	
	Voltage	Cable length [m]	Part No.	Type
F solenoid coils for valves MFH, JMFH				
	12 V DC	–	34410	MSFG-12DC-OD
	24 V DC and 42 V AC, 50 ... 60 Hz	–	34411	MSFG-24/42-50/60-OD
	42 V DC	–	34413	MSFG-42DC-OD
	24 V AC	–	34415	MSFG-24AC-OD
	48 V AC, 50 ... 60 Hz	–	34418	MSFW-48AC-OD
	110 V AC, 50 ... 60 Hz and 120 V AC, 60 Hz	–	34420	MSFW-110AC-OD
	230 V AC, 50 ... 60 Hz and 240 V AC, 60 Hz	–	34422	MSFW-230AC-OD
	240 V AC, 50 ... 60 Hz	–	34424	MSFW-240AC-OD

Solenoid/pneumatic valves, Tiger 2000

Accessories

FESTO

Ordering data – Plug sockets, plug sockets with cable for F solenoid coils					
	Voltage	Cable length [m]	Switching status display with LED	Part No.	Type
Plug socket without cable				Technical data → Internet: mssd	
	–	–	–	34431	MSSD-F
	–	–	–	539710	MSSD_F-M16
Plug socket without cable with insulation displacement technology				Technical data → Internet: mssd	
	–	–	–	192746	MSSD-F-S-M16
Plug socket with cable				Technical data → Internet: kmf	
	24 V DC	2.5	■	30935	KMF-1-24DC-2,5-LED
		5	■	30937	KMF-1-24DC-5-LED
		10	■	193458	KMF-1-24DC-10-LED
	Up to 240 V	2.5	–	30936	KMF-1-230AC-2,5
		5	–	30938	KMF-1-230AC-5

Ordering data – Plug sockets, plug sockets with cable for V solenoid coils					
	Voltage	Cable length [m]	Switching status display with LED	Part No.	Type
Plug socket without cable				Technical data → Internet: mssd	
	–	–	–	33295	MSSD-V
	–	–	–	539713	MSSD-V-M16
Plug socket with cable				Technical data → Internet: kmv	
	24 V DC	2.5	■	30939	KMV-1-24DC-2,5-LED
		5	■	30941	KMV-1-24DC-5-LED
		10	■	193456	KMV-1-24-10-LED

Ordering data – Illuminating seal				Technical data → Internet: illuminating seal	
	Voltage			Part No.	Type
For F solenoid coils					
	12 ... 24 V DC			19143	MF-LD-12-24DC
	230 V DC/V AC			19144	MF-LD-230AC
For V solenoid coils					
	12 ... 24 V DC			35558	MV-LD-12-24DC