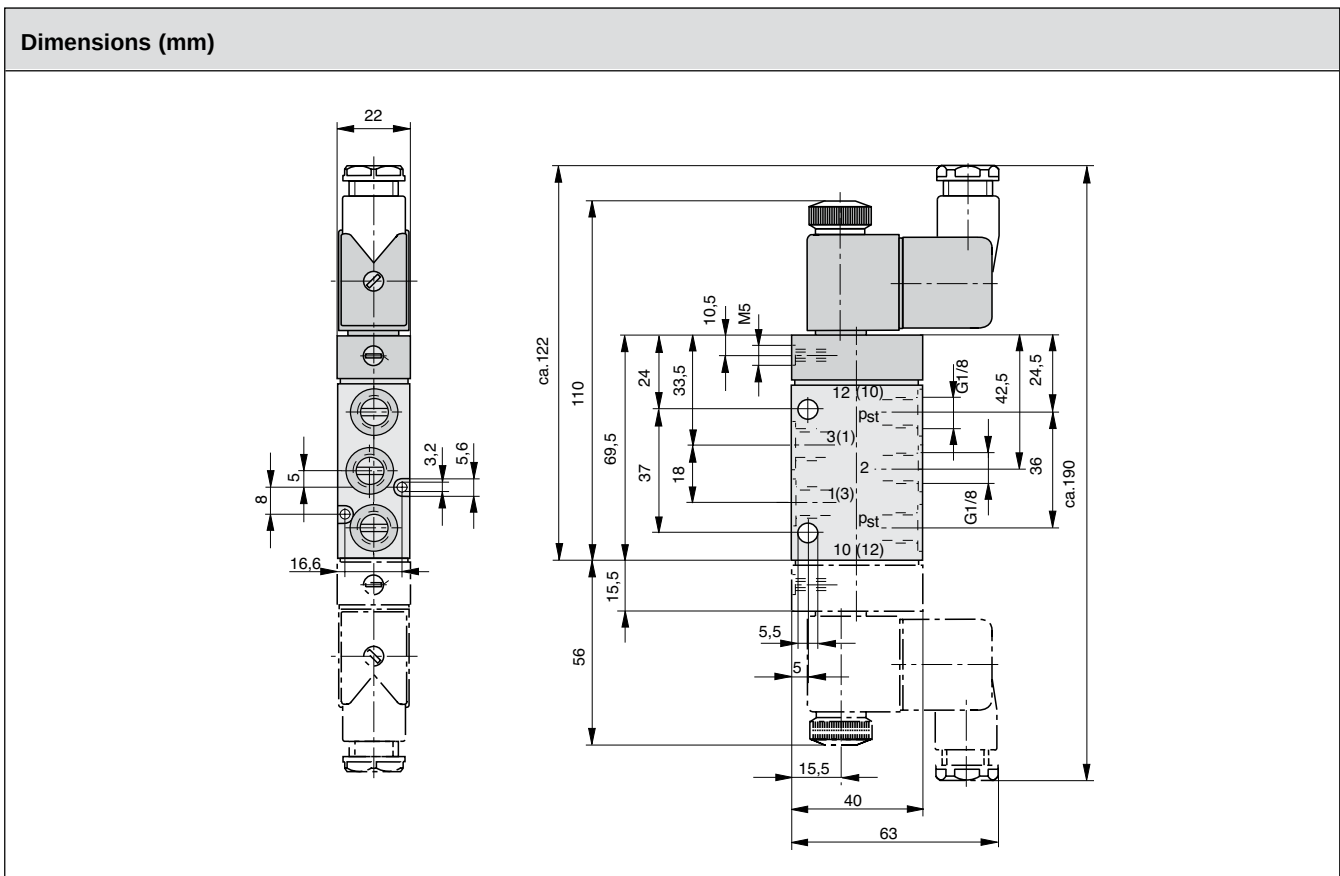


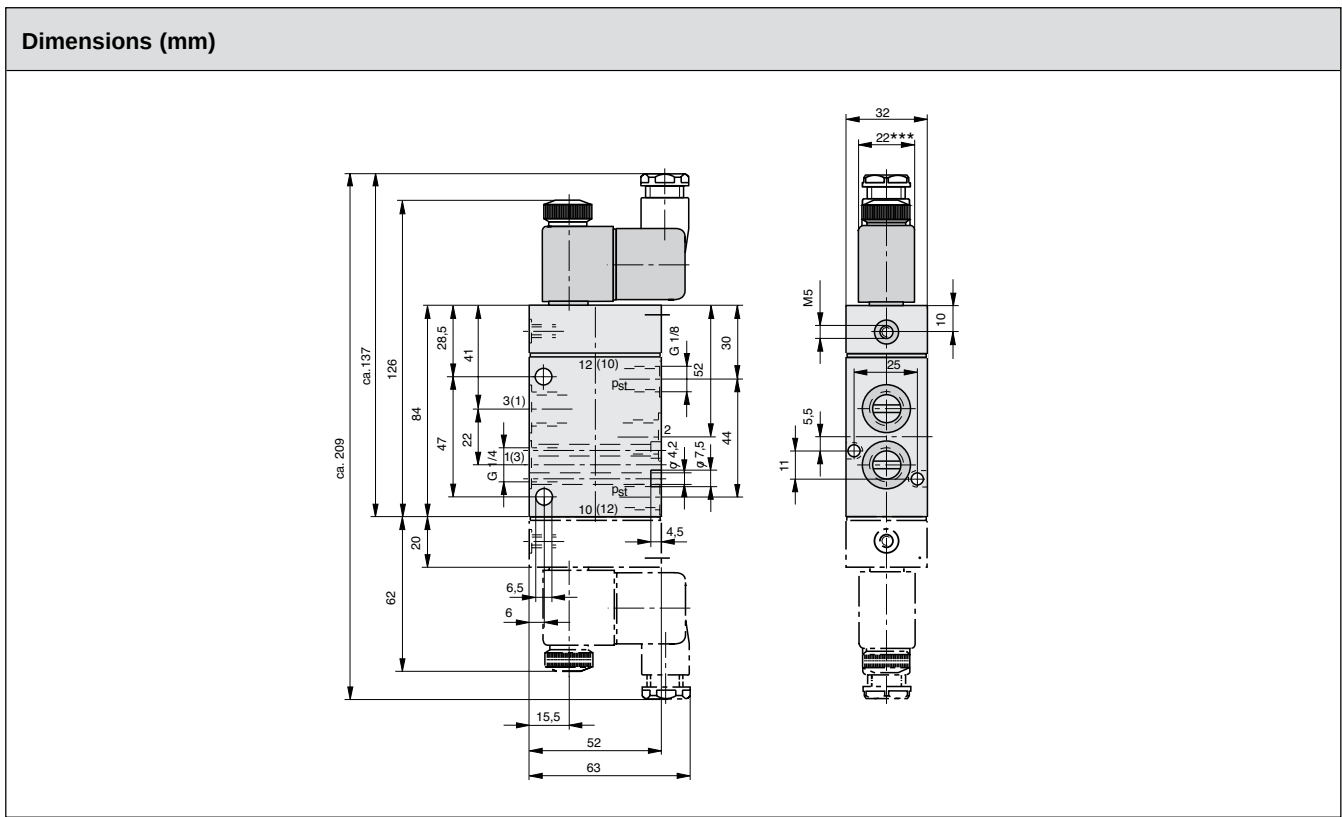


Version 1/8		Metric Version		NPT Version	
Actuation	Symbol	Type Number	Order Number	Type Number	Order Number
3/2 Single Solenoid/Spring Return		S9 381RF-1/8-NG-..	PA 10297-..33	S9 381RF-1/8U-NG-..	PD 43295-..33
3/2 Single Solenoid/Spring Return		S9 381RF-1/8-NO-..	PA 10298-..33	S9 381RF-1/8U-NO-..	PD 45459-..33
3/2 Double Solenoid		S9 381-1/8-..	PA 10299-..33	S9 381-1/8U-..	PD 45460-..33

Voltage Range		Coil Number	Order Code
Nominal	Secondary		
12 vDC	--	KZ 3674	01
24 vDC	60 50/60Hz	KZ 3673	02
110 50/60Hz	48 vDC	KZ 3669	57
220 50/60Hz	110 vDC	KZ 3672	61
24 50/60Hz	--	KZ 3675	51



- Other voltages available. Contact factory.
- Explosion proof coils available. Contact factory.
- UL/CSA rated coils available. Contact factory.

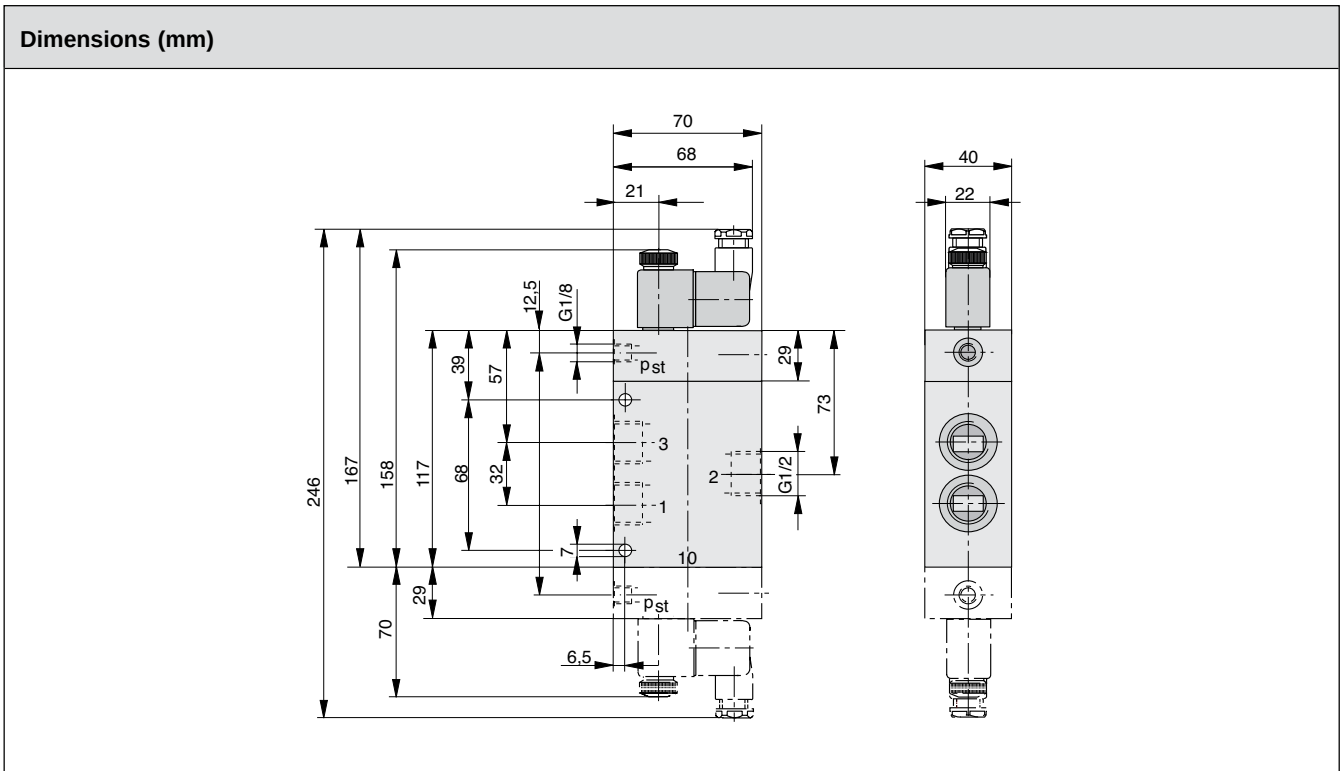


Version 1/4		Metric Version		NPT Version	
Actuation	Symbol	Type Number	Order Number	Type Number	Order Number
3/2 Single Solenoid/Spring Return		S9 381RF-1/4-NG-..	PA 12716-..33	S9 381RF-1/4U-NG-..	PD 45461-..33
3/2 Single Solenoid/Spring Return		S9 381RF-1/4-NO-..	PA 12717-..33	S9 381RF-1/4U-NO-..	PD 45462-..33
3/2 Double Solenoid		S9 381-1/4-..	PA 12718-..33	S9 381-1/4U-..	PD 45463-..33

Voltage Range		Coil Number	Order Code
Nominal	Secondary		
12 vDC	--	KZ 3674	01
24 vDC	60 50/60Hz	KZ 3673	02
110 50/60Hz	48 vDC	KZ 3669	57
220 50/60Hz	110 vDC	KZ 3672	61
24 50/60Hz	--	KZ 3675	51



- Other voltages available. Contact factory.
- Explosion proof coils available. Contact factory.
- UL/CSA rated coils available. Contact factory.



Version 1/2		Metric Version		NPT Version	
Actuation	Symbol	Type Number	Order Number	Type Number	Order Number
3/2 Single Solenoid/Spring Return		S9 381RF-1/2-NG-..	PA 16412-..33	S9 381RF-1/2U-NG-..	PD 45464-..33
3/2 Single Solenoid/Spring Return		S9 381RF-1/2-NO-..	PA 16413-..33	S9 381RF-1/2U-NO-..	PD 45465-..33
3/2 Double Solenoid		S9 381-1/2-..	PA 16414-..33	S9 381-1/2U-..	PD 45466-..33

Voltage Range		Coil Number	Order Code
Nominal	Secondary		
12 vDC	--	KZ 3518	01
24 vDC	60 50/60Hz	KZ 3519	02
110 50/60Hz	48 vDC	KZ 3521	57
220 50/60Hz	110 vDC	KZ 3522	61



- Other voltages available. Contact factory.
- Explosion proof coils available. Contact factory.
- UL/CSA rated coils available. Contact factory.

VERSION 1/8		Metric Version		NPT Version	
Actuation	Symbol	Type Number	Order Number	Type Number	Order Number
5/2 Single Solenoid/Spring Return		S9 581RF-1/8-..	PA 10312-..33	S9 581RF-1/8 U-..	PD 40663-..33
5/2 Double Solenoid		S9 581-1/8-..	PA 10313-..33	S9 581-1/8 U-..	PD 40664-..33
5/3 Double Solenoid/Center Blocked		S9 581RFG-1/8-..	PA 10333-..33	S9 581RFG-1/8 U-..	PD 40736-..33
5/3 Double Solenoid/Center Exhaust		S9 581RFE-1/8-..	PA 10334-..33	S9 581RFE-1/8 U-..	PD 40737-..33
5/3 Double Solenoid/Dual Center		S9 581RFB-1/8-..	PA 10335-..33	S9 581RFB-1/8 U-..	PD 40738-..33
VERSION 1/4		Metric Version		NPT Version	
Actuation	Symbol	Type Number	Order Number	Type Number	Order Number
5/2 Single Solenoid/Spring Return		S9 581RF-1/4-..	PA 12679-..33	S9 581RF-1/4 U-..	PD 40665-..33
5/2 Double Solenoid		S9 581-1/4-..	PA 12680-..33	S9 581-1/4 U-..	PD 40666-..33
5/3 Double Solenoid/Center Blocked		S9 581RFG-1/4-..	PA 12705-..33	S9 581RFG-1/4 U-..	PD 40739-..33
5/3 Double Solenoid/Center Exhaust		S9 581RFE-1/4-..	PA 12706-..33	S9 581RFE-1/4 U-..	PD 40740-..33
5/3 Double Solenoid/Dual Center		S9 581RFB-1/4-..	PA 12707-..33	S9 581RFB-1/4 U-..	PD 40741-..33

Voltage Range		Coil Number	Order Code
Nominal	Secondary		
12 vDC	--	KZ 3674	01
24 vDC	60 50/60Hz	KZ 3673	02
110 50/60Hz	48 vDC	KZ 3669	57
220 50/60Hz	110 vDC	KZ 3672	61
24 50/60Hz	--	KZ 3675	51

- Other voltages available. Contact factory.
- Explosion proof coils available. Contact factory.
- UL/CSA rated coils available. Contact factory.



VERSION 1/2		Metric Version		NPT Version	
Actuation	Symbol	Type Number	Order Number	Type Number	Order Number
5/2 Single Solenoid/Spring Return		S9 581RF-1/2-..	PA 16171-..33	S9 581RF-1/2U-..	PD 37950-..33
5/2 Double Solenoid		S9 581-1/2-..	PA 16172-..33	S9 581-1/2U-..	PD 37951-..33
5/3 Double Solenoid/Center Blocked		S9 581RFG-1/2-..	PA 16176-..33	S9 581RFG-1/2U-..	PD 37971-..33
5/3 Double Solenoid/Center Exhaust		S9 581RFE-1/2-..	PA 16177-..33	S9 581RFE-1/2U-..	PD 37972-..33
5/3 Double Solenoid/Dual Center		S9 581RFB-1/2-..	PA 16178-..33	S9 581RFB-1/2U-..	PD 37973-..33

Voltage Range		Coil Number	Order Code
Nominal	Secondary		
12 vDC	--	KZ 3518	01
24 vDC	60 50/60Hz	KZ 3519	02
110 50/60Hz	48 vDC	KZ 3521	57
220 50/60Hz	110 vDC	KZ 3522	61

- Other voltages available. Contact factory.
- Explosion proof coils available. Contact factory.
- UL/CSA rated coils available. Contact factory.



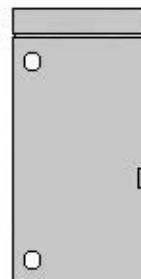
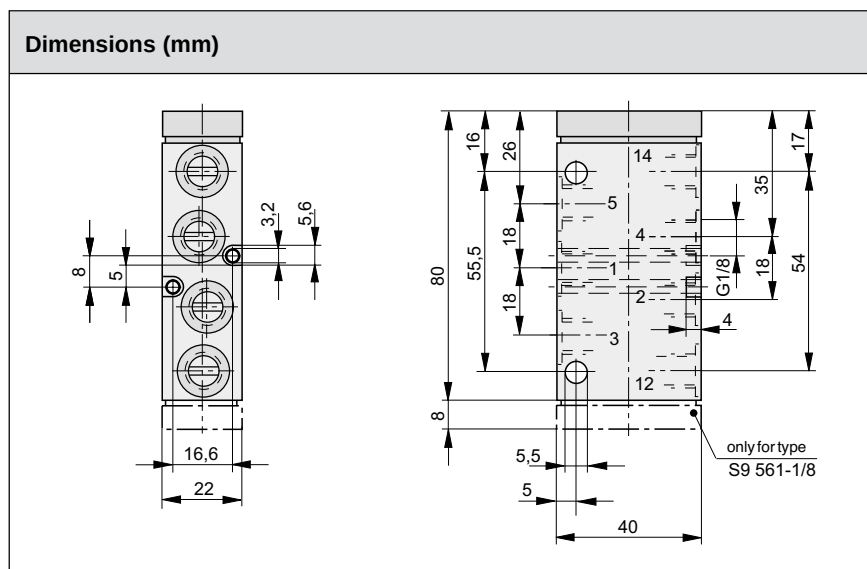
5/2-Way Valve 1/8

Actuation: Air Pilot

- Single Air Pilot
- Double Air Pilot

Characteristics to VDI 3290					Pressures quoted as gauge pressure	
Characteristics	Symbol	Unit	Description			
General Features						
Type			Spool valve			
Mounting			2 screws M5			
Tube connection			Thread			
Port size		NPT (G)	1/8			
Weight (mass)		lbs. (kg)	.35 (.160) Single Air Pilot .37 (.170) Double Air Pilot			
Installation			In any position			
Ambient temperature range	$\vartheta_{\min}$ $\vartheta_{\max}$	°F (°C)	14 (-10) 140 (+60)	Note: When using below freezing point it is necessary to consult factory.		
Medium temperature range	$\vartheta_{\min}$ $\vartheta_{\max}$	°F (°C)	14 (-10) 158 (+70)			
Medium			Filtered compressed air			
Lubrication			With or without oil mist lubrication ¹⁾			
Pneumatic Characteristics						
Nominal pressure	p _n	psi (bar)	87 (6)			
Operating pressure range	p _{min} p _{max}	psi (bar)	0 (0) 145 (10)			
Nominal flow	Q _N	Cv (l/min)	.5 (500)			
Actuation						
Air Pilot			Direct			
Actuation Pressure Range	p _{min} p _{max}	psi (bar)	30 (2) 145 (10)	Single Air Pilot		
	p _{min} p _{max}	psi (bar)	22 (1.5) 145 (10)	Double Air Pilot		

¹⁾ We recommend the use of mineral oil type VG32 to ISO 3448



Version 1/8	Metric Version		NPT Version	
Actuation	Type Number	Order Number	Type Number	Order Number
5/2 Single Air Pilot/Spring Return	S9 561RF-1/8	PA 10310	S9 561RF-1/8U	PD 47240
5/2 Double Air Pilot	S9 561-1/8	PA 10311	S9 561-1/8U	PD 47239

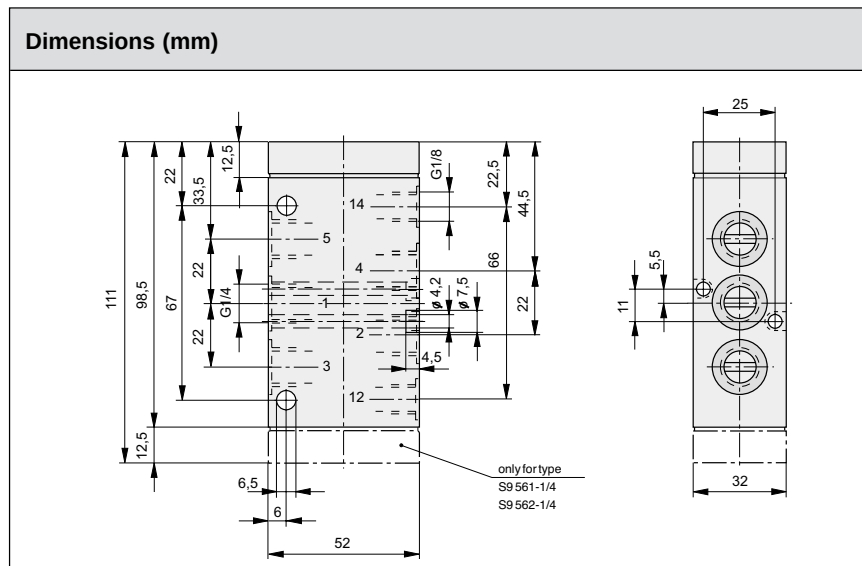
5/2-Way Valve 1/4

Actuation: Air Pilot

- Single Air Pilot
- Double Air Pilot

Characteristics to VDI 3290					Pressures quoted as gauge pressure	
Characteristics	Symbol	Unit	Description			
General Features						
Type			Spool valve			
Mounting			2 screws M5			
Tube connection			Thread			
Port size		NPT (G)	1/8			
Weight (mass)		lbs. (kg)	1.08 (.49) Single Air Pilot 1.12 (.51) Double Air Pilot			
Installation			In any position			
Ambient temperature range	$\vartheta_{\min}$ $\vartheta_{\max}$	°F (°C)	14 (-10) 140 (+60)	Note: When using below freezing point it is necessary to consult factory.		
Medium temperature range	$\vartheta_{\min}$ $\vartheta_{\max}$	°F (°C)	14 (-10) 158 (+70)			
Medium			Filtered compressed air			
Lubrication			With or without oil mist lubrication ¹⁾			
Pneumatic Characteristics						
Nominal pressure	p _n	psi (bar)	87 (6)			
Operating pressure range	p _{min} p _{max}	psi (bar)	0 (0) 145 (10)			
Nominal flow	Q _N	Cv (l/min)	1.3 (1300)			
Actuation						
Air Pilot			Direct			
Actuation Pressure Range	p _{min} p _{max}	psi (bar)	30 (2) 145 (10)	Single Air Pilot		
	p _{min} p _{max}	psi (bar)	22 (1.5) 145 (10)	Double Air Pilot		

¹⁾ We recommend the use of mineral oil type VG32 to ISO 3448



Version 1/4	Metric Version		NPT Version	
Actuation	Type Number	Order Number	Type Number	Order Number
5/2 Single Air Pilot/Spring Return	S9 561RF-1/4	PA 12676	S9 561RF-1/4U	PD 47242
5/2 Double Air Pilot	S9 561-1/4	PA 12677	S9 561-1/4U	PD 47241

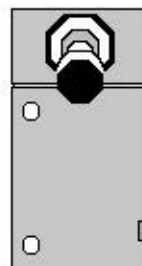
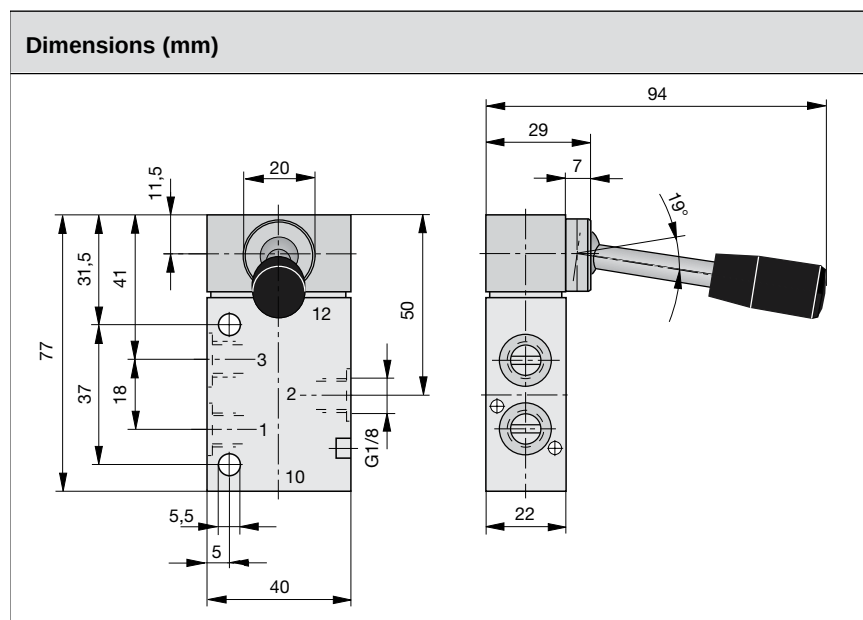
3/2-Way Valve 1/8

Actuation: Hand lever

- Detent
- Spring Return

Characteristics to VDI 3290					Pressures quoted as gauge pressure	
Characteristics	Symbol	Unit	Description			
General Features						
Type			Spool valve			
Mounting			2 screws M5			
Tube connection			Thread			
Port size		NPT (G)	1/8			
Weight (mass)		lbs. (kg)	.356 (.162)			
Installation			In any position			
Ambient temperature range	$\vartheta_{\min}$ $\vartheta_{\max}$	°F (°C)	14 (-10) 140 (+60)	Note: When using below freezing point it is necessary to consult factory.		
Medium temperature range	$\vartheta_{\min}$ $\vartheta_{\max}$	°F (°C)	14 (-10) 158 (+70)			
Medium			Filtered compressed air			
Lubrication			With or without oil mist lubrication ¹⁾			
Pneumatic Characteristics						
Nominal pressure	p _n	psi (bar)	131 (6)			
Operating pressure range	p _{min} p _{max}	psi (bar)	0 (0) 145 (10)			
Nominal flow	Q _N	Cv (l/min)	4.5 (450)			
Actuation						
Manual control			Direct			
Stroke		in (mm)	.177 (4.5)			
Actuation force	F _b	lbf (N)	1.57 (7) detent 2.25 (10) spring			

¹⁾ We recommend the use of mineral oil type VG32 to ISO 3448



Version 1/8	Metric Version		NPT Version	
Actuation	Type Number	Order Number	Type Number	Order Number
3/2 Hand Lever/Detent	S9 311-1/8	PA 10293	S9 311-1/8U	PD 45467
3/2 Hand Lever/Spring Return	S9 311RF-1/8	PA 10294	S9 311RF-1/8U	PD 45468

5/2-Way Valve 1/8

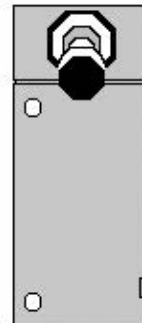
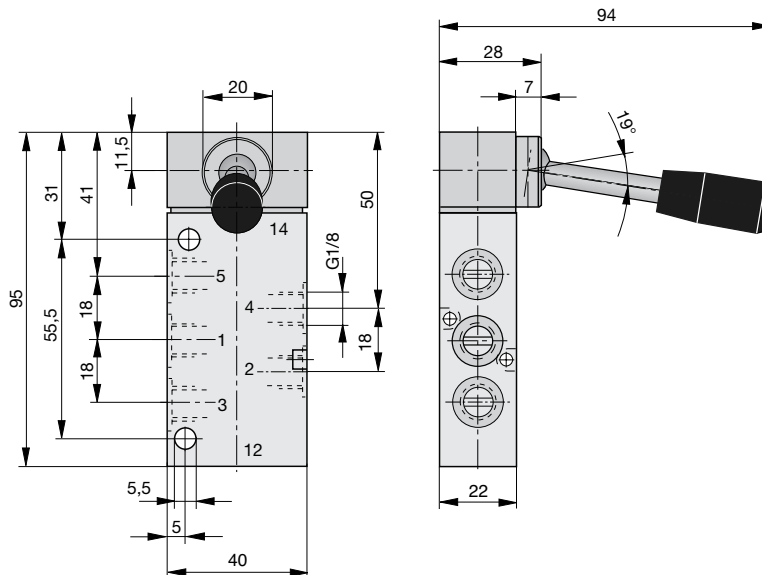
Actuation: Hand lever

- Detent
- Spring Return

Characteristics to VDI 3290		Pressures quoted as gauge pressure		
Characteristics	Symbol	Unit	Description	
General Features				
Type			Spool valve	
Mounting			2 screws M5	
Tube connection			Thread	
Port size		NPT (G)	1/8	
Weight (mass)		lbs. (kg)	.429 (.195)	
Installation			In any position	
Ambient temperature range	$\vartheta_{\min}$ $\vartheta_{\max}$	°F (°C)	14 (-10) 140 (+60)	Note: When using below freezing point it is necessary to consult factory.
Medium temperature range	$\vartheta_{\min}$ $\vartheta_{\max}$	°F (°C)	14 (-10) 158 (+70)	
Medium			Filtered compressed air	
Lubrication			With or without oil mist lubrication ¹⁾	
Pneumatic Characteristics				
Nominal pressure	p _n	psi (bar)	87 (6)	
Operating pressure range	p _{min} p _{max}	psi (bar)	0 (0) 145 (10)	
Nominal flow	Q _N	Cv (l/min)	.5 (500)	
Actuation				
Manual control			Direct	
Stroke		in (mm)	.177 (4.5)	
Actuation force	F _b	lbf (N)	1.57 (7) detent 2.25 (10) spring	

¹⁾ We recommend the use of mineral oil type VG32 to ISO 3448

Dimensions (mm)



Version 1/8	Metric Version		NPT Version	
Actuation	Type Number	Order Number	Type Number	Order Number
5/2 Hand Lever/Detent	S9 511-1/8	PA 10308	S9 511-1/8U	PD 45469
5/2 Hand Lever/Spring Return	S9 511RF-1/8	PA 10309	S9 511RF-1/8U	PD 45470

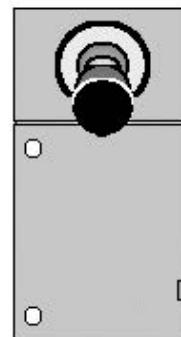
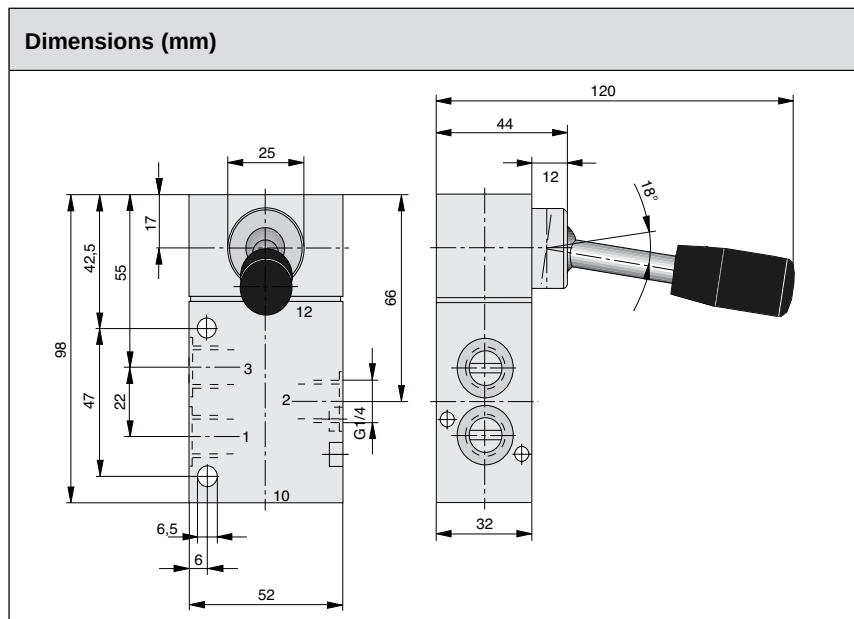
3/2-Way Valve 1/4

Actuation: Hand lever

- Detent
- Spring Return
- Safety Detent

Characteristics to VDI 3290		Pressures quoted as gauge pressure		
Characteristics	Symbol	Unit	Description	
General Features				
Type			Spool valve	
Mounting			2 screws M6	
Tube connection			Thread	
Port size		NPT (G)	1/4	
Weight (mass)		lbs. (kg)	.81 (.37)	
Installation			In any position	
Ambient temperature range	$\vartheta_{\min}$ $\vartheta_{\max}$	°F (°C)	14 (-10) 140 (+60)	Note: When using below freezing point it is necessary to consult factory.
Medium temperature range	$\vartheta_{\min}$ $\vartheta_{\max}$	°F (°C)	14 (-10) 158 (+70)	
Medium			Filtered compressed air	
Lubrication			With or without oil mist lubrication ¹⁾	
Pneumatic Characteristics				
Nominal pressure	p _n	psi (bar)	87 (6)	
Operating pressure range	p _{min} p _{max}	psi (bar)	0 (0) 145 (10)	
Nominal flow	Q _N	Cv (l/min)	1.3 (1300)	
Actuation				
Manual control			Direct	
Stroke		in (mm)	.256 (6.5)	
Actuation force	F _b	lbf (N)	2.25 (10) detent & safety detent 3.37 (15) spring	

¹⁾ We recommend the use of mineral oil type VG32 to ISO 3448



Version 1/4	Metric Version		NPT Version	
Actuation	Type Number	Order Number	Type Number	Order Number
3/2 Hand Lever/Detent	S9 311-1/4	PA 12708	S9 311-1/4U	PD 45477
3/2 Hand Lever/Spring Return	S9 311RF-1/4	PA 12709	S9 311RF-1/4U	PD 45478
3/2 Hand Lever/Detent (safety)	S9 311S-1/4	PA 12710	S9 311RF-1/4U	PD 45479

5/2-Way Valve

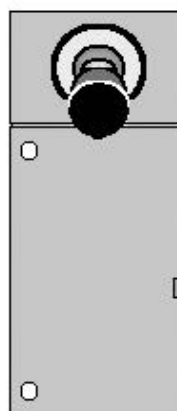
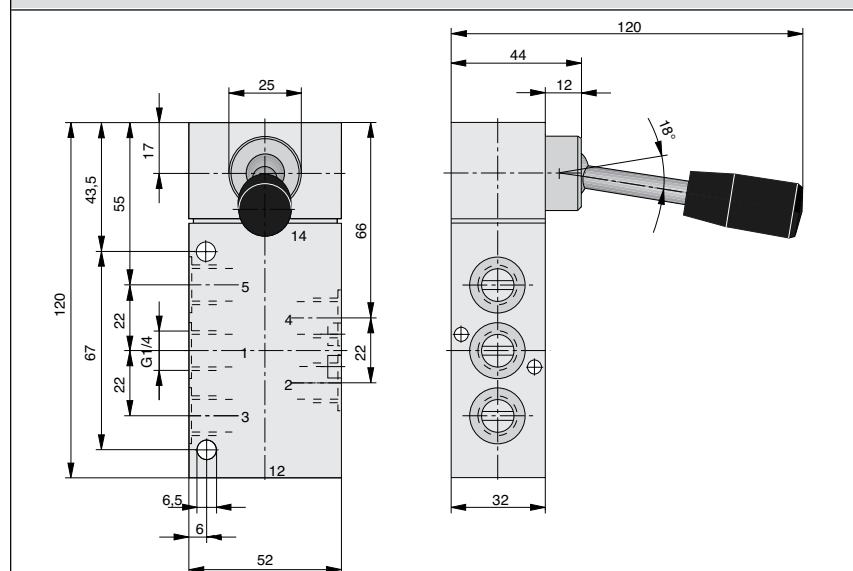
Actuation: Hand lever

- Detent
- Spring Return
- Safety Detent

Characteristics to VDI 3290					Pressures quoted as gauge pressure	
Characteristics	Symbol	Unit	Description			
General Features						
Type			Spool valve			
Mounting			2 screws M6			
Tube connection			Thread			
Port size		NPT (G)	1/4			
Weight (mass)		lbs. (kg)	1.14 (.52)			
Installation			In any position			
Ambient temperature range	$\vartheta_{\min}$ $\vartheta_{\max}$	°F (°C)	14 (-10) 140 (+60)	Note: When using below freezing point it is necessary to consult factory.		
Medium temperature range	$\vartheta_{\min}$ $\vartheta_{\max}$	°F (°C)	14 (-10) 158 (+70)			
Medium			Filtered compressed air			
Lubrication			With or without oil mist lubrication ¹⁾			
Pneumatic Characteristics						
Nominal pressure	p_n	psi (bar)	87 (6)			
Operating pressure range	$p_{\min}$ $p_{\max}$	psi (bar)	0 (0) 145 (10)			
Nominal flow	Q_N	Cv (l/min)	1.3 (1300)			
Actuation						
Manual control			Direct			
Stroke		in (mm)	.256 (6.5)			
Actuation force	F_b	lbf (N)	2.25 (10) detent 3.37 (15) spring			

¹⁾ We recommend the use of mineral oil type VG32 to ISO 3448

Dimensions (mm)



Version 1/4	Metric Version		NPT Version	
Actuation	Type Number	Order Number	Type Number	Order Number
5/2 Hand Lever/Detent	S9 511-1/4	PA 12671	S9 511-1/4U	PD 45480
5/2 Hand Lever/Spring Return	S9 511RF-1/4	PA 12672	S9 511RF-1/4U	PD 45481
5/2 Hand Lever/Detent (safety)	S9 511S-1/4	PA 12673	S9 511S-1/4U	PD 45482

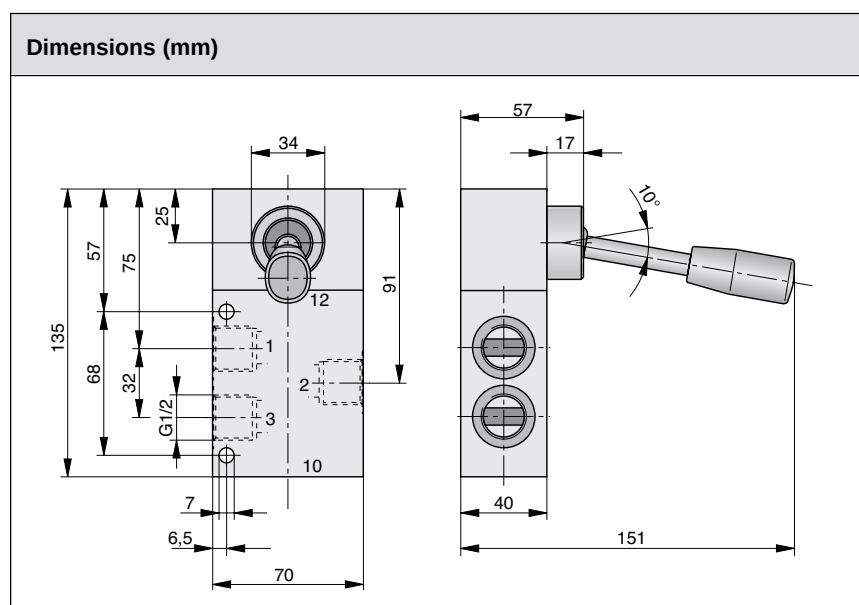
3/2-Way Valve 1/2

Actuation: Hand lever

- Detent
- Spring Return

Characteristics to VDI 3290					Pressures quoted as gauge pressure	
Characteristics	Symbol	Unit	Description			
General Features						
Type			Spool valve			
Mounting			2 screws M6			
Tube connection			Thread			
Port size		NPT (G)	1/2			
Weight (mass)		lbs. (kg)	1.98 (.9)			
Installation			In any position			
Ambient temperature range	$\vartheta_{\min}$ $\vartheta_{\max}$	°F (°C)	14 (-10) 140 (+60)	Note: When using below freezing point it is necessary to consult factory.		
Medium temperature range	$\vartheta_{\min}$ $\vartheta_{\max}$	°F (°C)	14 (-10) 158 (+70)			
Medium			Filtered compressed air			
Lubrication			With or without oil mist lubrication ¹⁾			
Pneumatic Characteristics						
Nominal pressure	p _n	psi (bar)	87 (6)			
Operating pressure range	p _{min} p _{max}	psi (bar)	0 (0) 145 (10)			
Nominal flow	Q _N	Cv (l/min)	3.5 (3500)			
Actuation						
Manual control			Direct			
Stroke		in (mm)	.370 (9.4)			
Actuation force	F _b	lbf (N)	3.37 (15) detent 8.99 (40) spring			

¹⁾ We recommend the use of mineral oil type VG32 to ISO 3448



Version 1/2	Metric Version		NPT Version	
Actuation	Type Number	Order Number	Type Number	Order Number
3/2 Hand Lever/Detent	S9 311-1/2	PA 16404	S9 311-1/2U	PD 45492
3/2 Hand Lever/Spring Return	S9 311RF-1/2	PA 16405	S9 311RF-1/2U	PD 45493

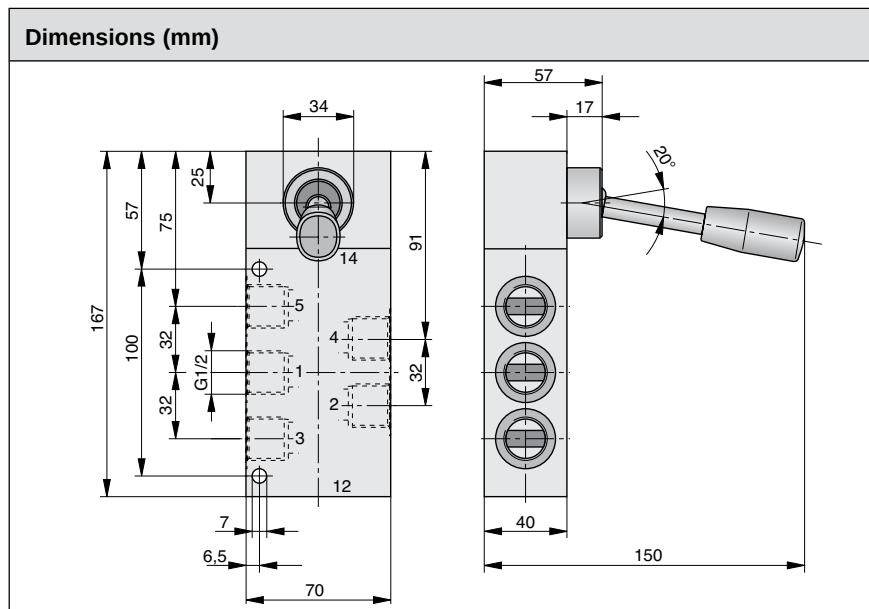
5/2-Way Valve 1/2

Actuation: Hand lever

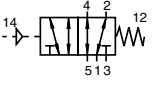
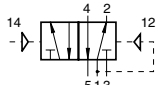
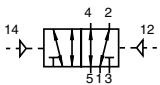
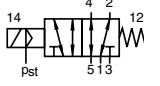
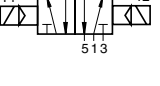
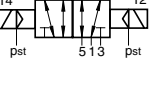
- Detent
- Spring Return

Characteristics to VDI 3290			Pressures quoted as gauge pressure	
Characteristics	Symbol	Unit	Description	
General Features				
Type			Spool valve	
Mounting			2 screws M6	
Tube connection			Thread	
Port size		NPT (G)	1/2	
Weight (mass)		lbs. (kg)	2.64 (1.20)	
Installation			In any position	
Ambient temperature range	$\vartheta_{\min}$ $\vartheta_{\max}$	°F (°C)	14 (-10) 140 (+60)	Note: When using below freezing point it is necessary to consult factory.
Medium temperature range	$\vartheta_{\min}$ $\vartheta_{\max}$	°F (°C)	14 (-10) 158 (+70)	
Medium			Filtered compressed air	
Lubrication			With or without oil mist lubrication ¹⁾	
Pneumatic Characteristics				
Nominal pressure	p _n	psi (bar)	87 (6)	
Operating pressure range	p _{min} p _{max}	psi (bar)	0 (0) 145 (10)	
Nominal flow	Q _N	Cv (l/min)	3.5 (3500)	
Actuation				
Manual control			Direct	
Stroke		in (mm)	.370 (9.4)	
Actuation force	F _b	lbf (N)	3.37 (15) detent 8.99 (40) spring	

¹⁾ We recommend the use of mineral oil type VG32 to ISO 3448



Version 1/2	Metric Version		NPT Version	
Actuation	Type Number	Order Number	Type Number	Order Number
5/2 Hand Lever/Detent	S9 511-1/2	PA 16367	S9 511-1/2U	PD 45495
5/2 Hand Lever/Spring Return	S9 511RF-1/2	PA 16366	S9 511RF-1/2U	PD 45494

ORDER INSTRUCTIONS: 5/2-Way Valves				
Actuation	Symbol	Type Number	Order Number	Size
5/2 Single Air Pilot Spring Return		S20561RF-01	PA 12891	VDMA 01
		S20561RF-1	PA 12869	Size 1
		S20561RF-2	PA 16425	Size 2
		S20561RF-3	PA 16426	Size 3
5/2 Single Air Pilot Air Spring Return		S20561R-01	PA 12892	VDMA 01
		S20561R-1	PA 12870	Size 1
		S20561R-2	PA 16428	Size 2
		S20561R-3	PA 16429	Size 3
5/2 Double Air Pilot		S20561-01	PA 12893	VDMA 01
		S20561-1	PA 12868	Size 1
		S20561-2	PA 16422	Size 2
		S20561-3	PA 16423	Size 3
5/2 Single Solenoid Spring Return		S20581RF-01-..	PA 12886-..33	VDMA 01
		S20581RF-1-..	PA 12875-..33	Size 1
		S20581RF-2-..	PA 16441-..33	Size 2
		S20581RF-3-..	PA 16442-..33	Size 3
5/2 Single Solenoid Spring Return with external pilot air		S20581S-RF-01-..	PA 12896-..33	VDMA 01
		S20581S-RF-1-..	PA 12882-..33	Size 1
		S20581S-RF-2-..	PA 16456-..33	Size 2
		S20581S-RF-3-..	PA 16462-..33	Size 3
5/2 Single Solenoid Air Spring Return		S20581R-01-..	PA 12887-..33	VDMA 01
		S20581R-1-..	PA 12876-..33	Size 1
		S20581R-2-..	PA 16444-..33	Size 2
		S20581R-3-..	PA 16445-..33	Size 3
5/2 Double Solenoid		S20581-01-..	PA 12888-..33	VDMA 01
		S20581-1-..	PA 12874-..33	Size 1
		S20581-2-..	PA 16438-..33	Size 2
		S20581-3-..	PA 16439-..33	Size 3
5/2 Double Solenoid with external pilot air		S20581S-01-..	PA 12898-..33	VDMA 01
		S20581S-1-..	PA 12880-..33	Size 1
		S20581S-2-..	PA 16454-..33	Size 2
		S20581S-3-..	PA 16460-..33	Size 3

Voltage Range		Coil Number	Order Code
Nominal	Secondary		
12 vDC	--	KZ 3518	01
24 vDC	60 50/60Hz	KZ 3519	02
110 50/60Hz	48 vDC	KZ 3521	57
220 50/60Hz	110 vDC	KZ 3522	61



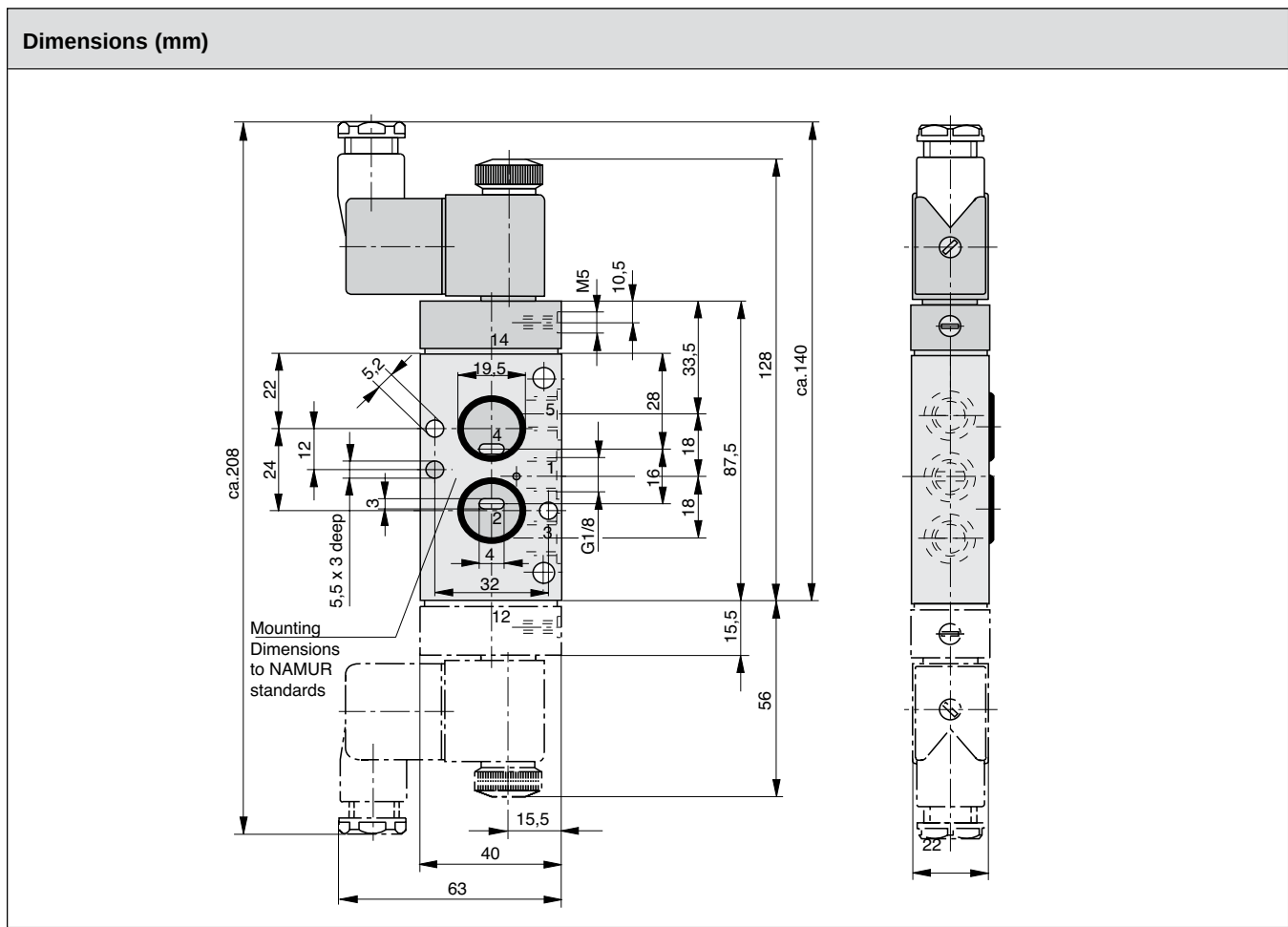
• Other voltages available. Contact factory.

ORDER INSTRUCTIONS: 5/3-Way Valves				
Actuation	Symbol	Type Number	Order Number	Size
5/3 Double Air Pilot Closed Center		S20561RFG-01	PA 12894	VDMA 01
		S20561RFG-1	PA 12871	Size 1
		S20561RFG-2	PA 16431	Size 2
		S20561RFG-3	PA 16432	Size 3
		S20561RFB-1	PA 12873	Size 1
		S20561RFB-2	PA 16437	Size 2
		S20561RFE-01	PA 12895	VDMA 01
		S20561RFE-1	PA 12872	Size 1
		S20561RFE-2	PA 16434	Size 2
5/3 Double Solenoid Closed Center		S20581RFG-01	PA 12889-..33	VDMA 01
		S20581RFG-1-..	PA 12877-..33	Size 1
		S20581RFG-2-..	PA 16447-..33	Size 2
		S20581RFG-3-..	PA 16448-..33	Size 3
		S20581RFB-1-..	PA 12879-..33	Size 1
		S20581RFB-2-..	PA 16453-..33	Size 2
		S20581RFE-01	PA 12890-..33	VDMA 01
		S20581RFE-1-..	PA 12878-..33	Size 1
		S20581RFE-2-..	PA 16450-..33	Size 2
		S20581RFE-3-..	PA 16451-..33	Size 3
5/3 Double Solenoid with external air pilot Closed Center		S20581S-RFG-01-..	PA 12900-..33	VDMA 01
		S20581S-RFG-1-..	PA 12883-..33	Size 1
		S20581S-RFG-2-..	PA 16457-..33	Size 2
		S20581S-RFG-3-..	PA 16463-..33	Size 3
		S20581S-RFB-1-..	PA 12885-..33	Size 1
		S20581S-RFB-2-..	PA 16459-..33	Size 2
		S20581S-RFE-01-..	PA 12899-..33	VDMA 01
		S20581S-RFE-1-..	PA 12884-..33	Size 1
		S20581S-RFE-2-..	PA 16458-..33	Size 2
		S20581S-RFE-3-..	PA 16464-..33	Size 3

Voltage Range		Coil Number	Order Code
Nominal	Secondary		
12 vDC	--	KZ 3518	01
24 vDC	60 50/60Hz	KZ 3519	02
110 50/60Hz	48 vDC	KZ 3521	57
220 50/60Hz	110 vDC	KZ 3522	61



• Other voltages available. Contact factory.



Version 1/8		Metric Version		NPT Version	
Actuation	Symbol	Type Number	Order Number	Type Number	Order Number
5/2 Single Solenoid/Spring Return		S9 581RF-1/8-SO	PD 34143-..33	S9 581RF-1/8U-SO	PD 45502-..33
5/2 Double Solenoid		S9 581-1/8-SO	PD 34984-..33	S9 581-1/8U-SO	PD 45503-..33

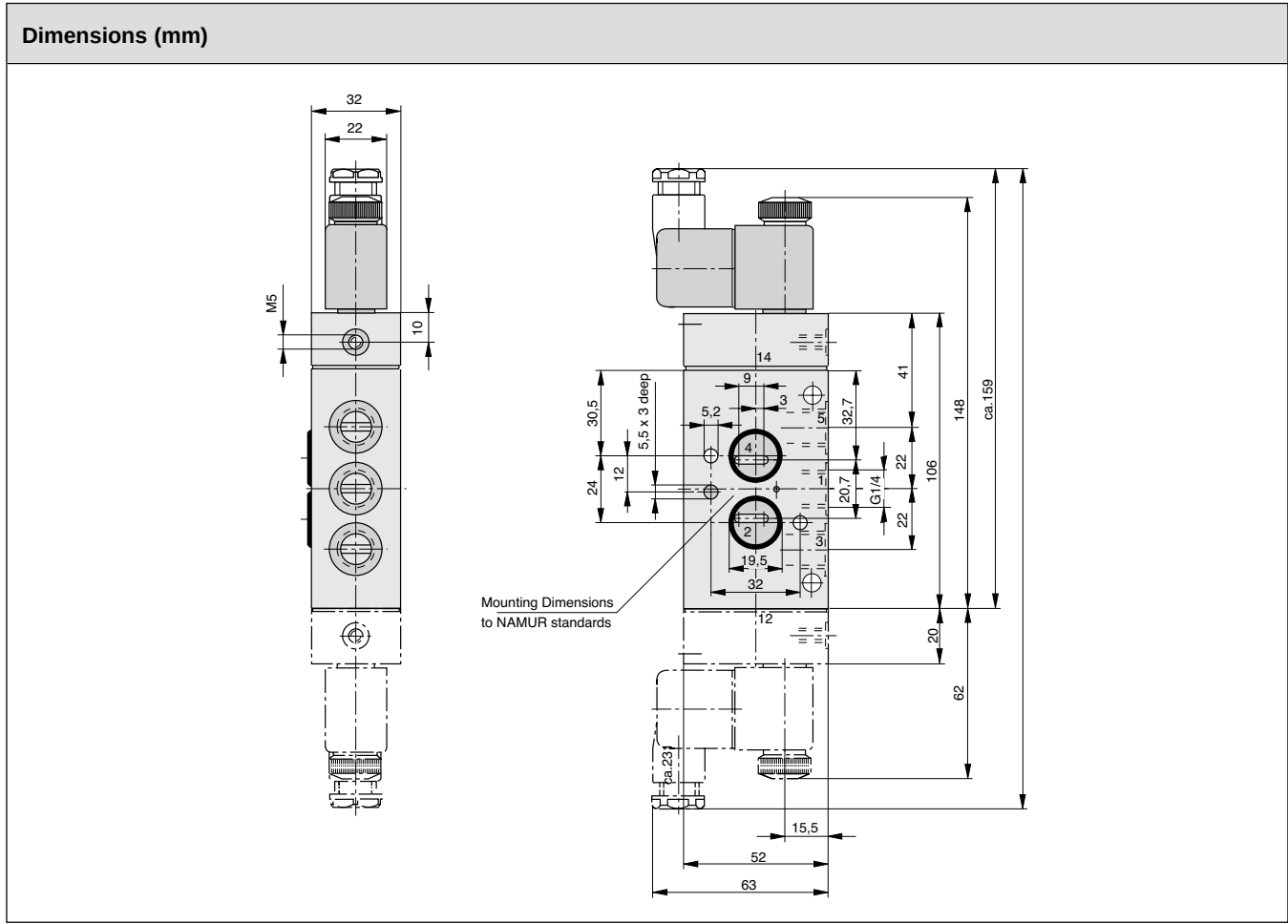
Voltage Range		Coil Number	Order Code
Nominal	Secondary		
12 vDC	--	KZ 3674	01
24 vDC	60 50/60Hz	KZ 3673	02
110 50/60Hz	48 vDC	KZ 3669	57
220 50/60Hz	110 vDC	KZ 3672	61
24 50/60Hz	--	KZ 3675	51

- Other voltages available. Contact factory.
- Explosion proof coils available. Contact factory.
- UL/CSA rated coils available. Contact factory.



Accessory:

Order #	Description
NAMURPLATE-1/8	Converts the 5/2-way valve to a 3/2-way valve



Version 1/4		Metric Version		NPT Version	
Actuation	Symbol	Type Number	Order Number	Type Number	Order Number
5/2 Single Solenoid/Spring Return		S9 581RF-1/4-SO	PD 34985-..33	S9 581RF-1/4U-SO	PD 45504-..33
5/2 Double Solenoid		S9 581-1/4-SO	PD 34986-..33	S9 581-1/4U-SO	PD 45505-..33

Voltage Range		Coil Number	Order Code
Nominal	Secondary		
12 vDC	--	KZ 3674	01
24 vDC	60 50/60Hz	KZ 3673	02
110 50/60Hz	48 vDC	KZ 3669	57
220 50/60Hz	110 vDC	KZ 3672	61
24 50/60Hz	--	KZ 3675	51

- Other voltages available. Contact factory.
- Explosion proof coils available. Contact factory.
- UL/CSA rated coils available. Contact factory.



Accessory:

Order #
NAMURPLATE-1/4

Description
Converts the 5/2-way valve to a 3/2-way valve

Characteristics to VDI 3290					Pressures quoted as gauge pressure	
Characteristics	Symbol	Unit	Description			
General Features						
Type			Spool valve			
Mounting			2 screws M5 (M3)			
Tube connection			Thread			
Port size		NPT (G)	1/8			
Weight (mass)		lbs. (kg)	.594 (.27)			
Installation			In any position			
Ambient temperature range	$\vartheta_{\min}$ $\vartheta_{\max}$	°F (°C)	14 (-10) 140 (+60)	Note: When using below freezing point it is necessary to consult factory.		
Medium temperature range	$\vartheta_{\min}$ $\vartheta_{\max}$	°F (°C)	14 (-10) 158 (+70)			
Medium			Filtered compressed air			
Lubrication			With or without oil mist lubrication ¹⁾			
Pneumatic Characteristics						
Nominal pressure	p _n	psi (bar)	87 (6)			
Operating pressure range	p _{min} p _{max}	psi (bar)	0 (0) 145 (10)			
Nominal flow	Q _N	Cv (l/min)	.5 (500)			
Actuation						
Pneumatic			Direct			
Actuating pressure range	p _{st min} p _{st max}	psi (bar)	29 (2) 145 (10)			

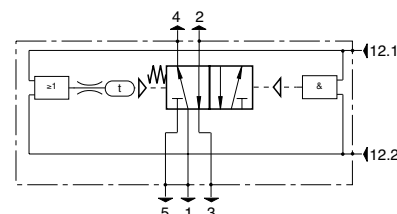
¹⁾ We recommend the use of mineral oil type VG32 to ISO 3448

5/2-Way Valve

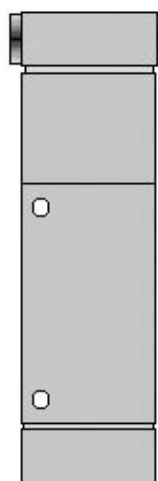
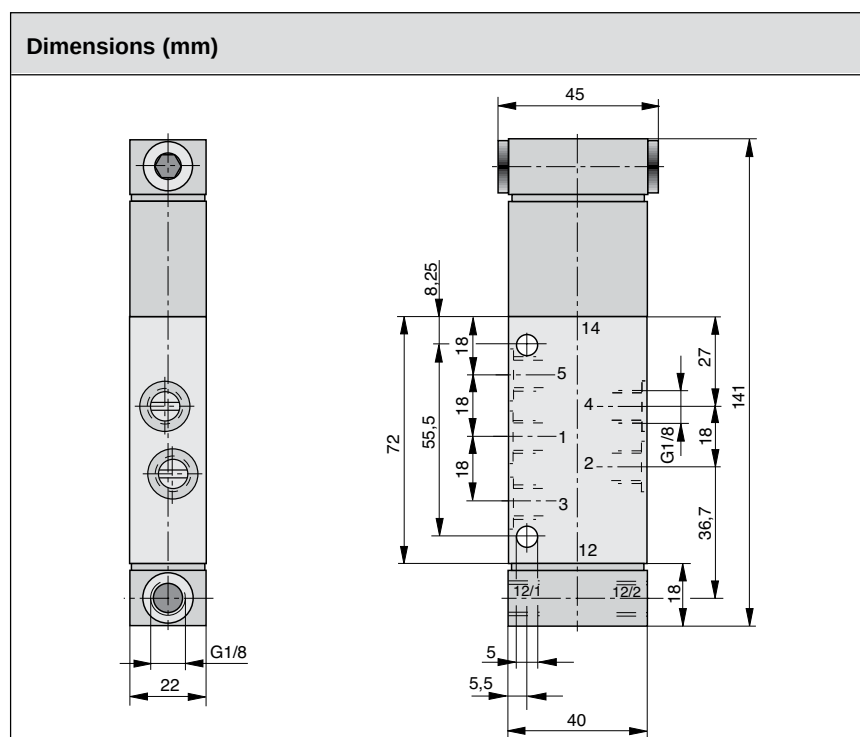
1/8

for two-hand safety operation

Actuation: Pneumatic



- The valve switches from outlet 4 to outlet 2 only if both signal inputs are actuated simultaneously or within 0.5 seconds.
- The valve will not switch again until both signal inputs are stopped.
- For the safety of operating personnel in manufacturing processes such as pressing, bending, stamping, deburring etc.
- Not suitable for control systems of eccentric or similar presses.



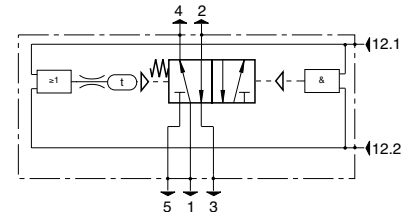
Version 1/8	Metric Version		NPT Version	
Description	Type Number	Order Number	Type Number	Order Number
Two-hand safety valve	S9 563/65RF-1/8-SO	PD 37673	S9 563/65RF-1/8U-SO	PD 45506

Characteristics to VDI 3290		Pressures quoted as gauge pressure		
Characteristics	Symbol	Unit	Description	
General Features				
Type			Spool valve	
Mounting			2 screws M6	
Tube connection			Thread	
Port size		NPT (G)	1/4	
Weight (mass)		lbs. (kg)	1.41 (.64)	
Installation			In any position	
Ambient temperature range	$\vartheta_{\min}$ $\vartheta_{\max}$	°F (°C)	14 (-10) 140 (+60)	Note: When using below freezing point it is necessary to consult factory.
Medium temperature range	$\vartheta_{\min}$ $\vartheta_{\max}$	°F (°C)	14 (-10) 158 (+70)	
Medium			Filtered compressed air	
Lubrication			With or without oil mist lubrication ¹⁾	
Pneumatic Characteristics				
Nominal pressure	p _n	psi (bar)	87 (6)	
Operating pressure range	p _{min} p _{max}	psi (bar)	0 (0) 145 (10)	
Nominal flow	Q _N	Cv (l/min)	1.3 (1300)	
Actuation				
Pneumatic			Directly	
Control pressure range	p _{st min} p _{st max}	psi (bar)	44 (3) 145 (10)	

5/2-Way Valve 1/4

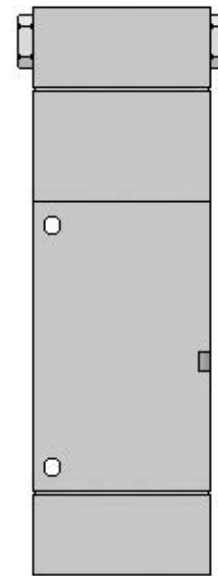
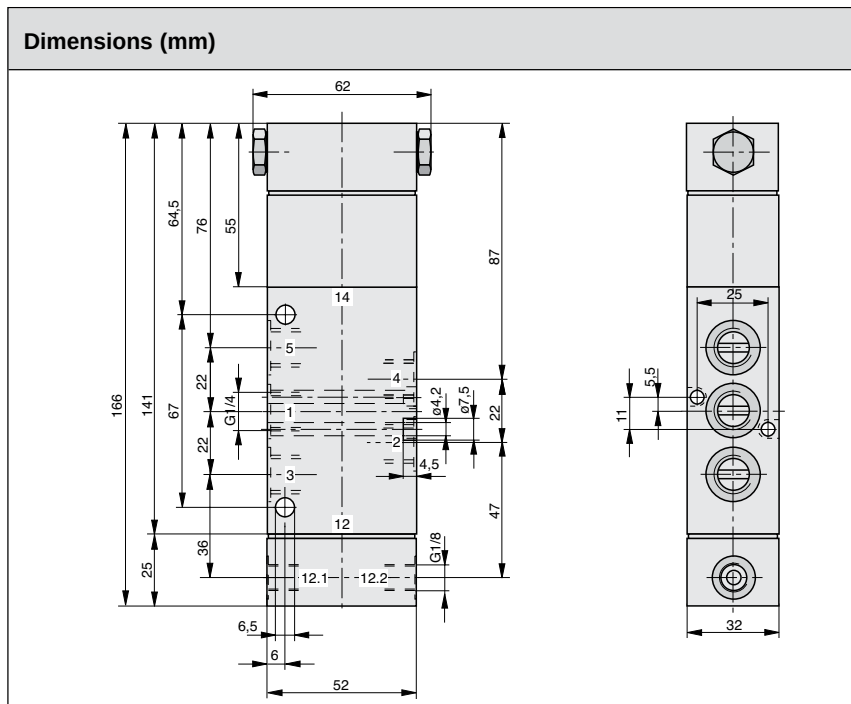
for two-hand safety operation

Actuation: Pneumatic



- The valve switches from outlet 4 to outlet 2 only if both signal inputs are actuated simultaneously or within 0.5 seconds.
- The valve will not switch again until both signal inputs are stopped.
- For the safety of operating personnel in manufacturing processes such as pressing, bending, stamping, deburring etc.
- Not suitable for control systems of eccentric or similar presses.

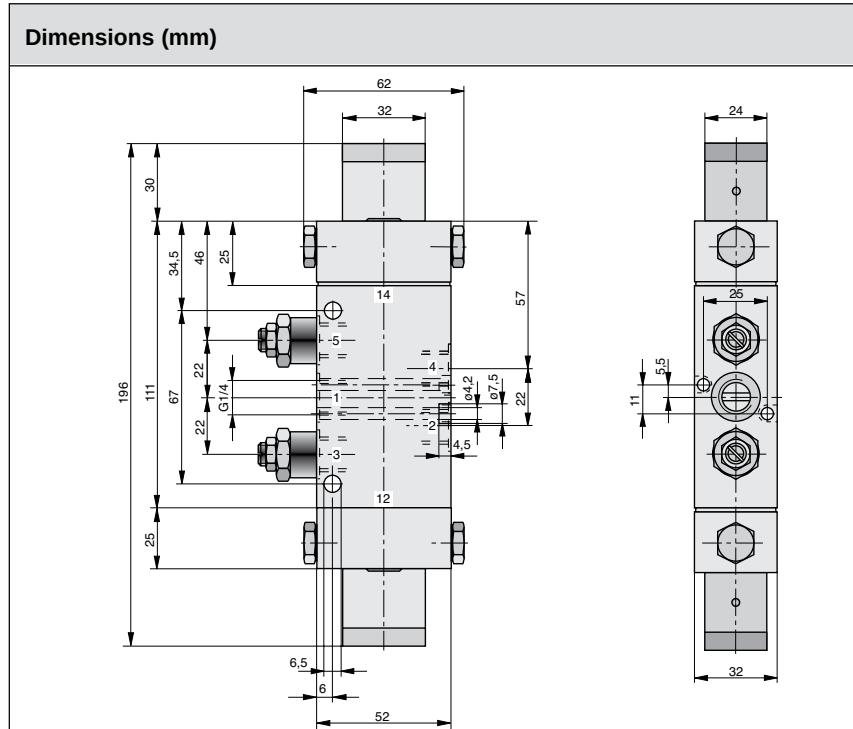
¹⁾ We recommend the use of mineral oil type VG32 to ISO 3448



Version 1/4	Metric Version		NPT Version	
Description	Type Number	Order Number	Type Number	Order Number
Two-hand safety valve	S9 563/65RF-1/4-SO	PD 37173	S9 563/65RF-1/4U-SO	PD 45507

Characteristics to VDI 3290		Pressures quoted as gauge pressure		
Characteristics	Symbol	Unit	Description	
General Features				
System			Spool valve	
Mounting			2 screws M6 (M4)	
Tube connection			Thread	
Port size		NPT (G)	1/4	
Weight (mass)		lbs. (kg)	1.43 (0.65)	
Installation			In any position	
Ambient temperature range	$\vartheta_{\min}$ $\vartheta_{\max}$	°F (°C)	14 (-10) 140 (+60)	Note: When using below freezing point it is necessary to consult factory.
Medium temperature range	$\vartheta_{\min}$ $\vartheta_{\max}$	°F (°C)	14 (-10) 158 (+70)	
Medium			Filtered compressed air	
Lubrication			With or without oil mist lubrication ¹⁾	
Pneumatic Characteristics				
Nominal pressure	p _n	psi (bar)	87 (6)	
Operating pressure range	p _{min} p _{max}	psi (bar)	36 (3) 118 (8)	
Nominal flow	Q _N	Cv (l/min)	1.3 (1300)	
Actuation				
Pneumatic			Direct	
Actuating pressure range	p _{st min} p _{st max}	psi (bar)	36 (3) 118 (8)	

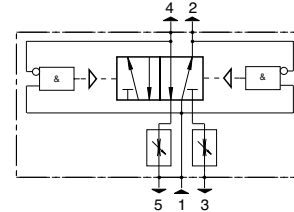
¹⁾ We recommend the use of mineral oil type VG32 to ISO 3448



5/2-Way Valve 1/4

oscillating valve

Actuation: Pneumatic

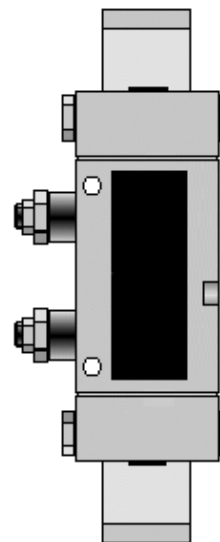


The oscillating valve automatically generates reciprocating movements, for applications such as shaking, feeding, hammering, plunging, scraping, wiping, winding, tensioning, raking, diverting, spraying, cleaning, and dipping.

The oscillating valve is supplied with two built-in flow control valves. This makes it easy to adjust the stroke frequency of the actuator.

Pneumatic Version:

If compressed air is introduced into inlet port 1, the outlet ports 4 and 2 are alternately supplied with air.



Version 1/4	Metric Version		NPT Version	
Description	Type Number	Order Number	Type Number	Order Number
Oscillating valve	S9 568/68-1/4-SO	PD 34796	S9 568/68-1/4U-SO	PD 45508

Accessories

Exhaust Mufflers	
Order Number	Port Size
KY 2010	G1/8
KY 2011	G1/4
KY 2012	G3/8
KY 2013	G1/2
KY-U2010	1/8" NPT
KY-U2011	1/4" NPT
KY-U2013	1/2" NPT

Metric Conversion Fittings	
Order Number	Port Size
2521-1/8-02	G1/8 to 1/8" NPT
2521-1/4-04	G1/4 to 1/4" NPT
2521-3/8-06	G3/8 to 3/8" NPT
2521-1/2-08	G1/2 to 1/2" NPT

Exhaust Flow Controls	
Order Number	Port Size
KY 6952	G1/8
KY 6953	G1/4
KY 6954	G1/2
ASP-1SC	1/8" NPT
ASP-2SC	1/4" NPT

Port Plugs	
Order Number	Port Size
0205-1000	G1/8
0205-1300	G1/4
0205-1600	G3/8
0205-2000	G1/2
0205-1100	1/8" NPT
0205-1400	1/4" NPT
0205-1800	3/8" NPT
0205-2200	1/2" NPT

Spare Parts

Replacement Solenoid Coils: 1/8" & 1/4" Body Ported Valves	
Order Number	Voltage
KZ 3674	12vDC
KZ 3673	24vDC
KZ 3669	110vAC
KZ 3672	220vAC
KZ 3675	24vAC

Replacement Solenoid Coils: 1/2" Body Ported Valves & ISO Valves	
Order Number	Voltage
KZ 3518	12vDC
KZ 3519	24vDC
KZ 3521	110vAC
KZ 3522	220vAC
KZ 3518	24vAC

Replacement DIN Connector Plugs	
Order Number	Description
KY 9393	Replacement DIN connector plug
C12213N21	DIN connector plug w/1/2" NPTF conduit entry
PD 34991	Solenoid retaining nut
KW 0766	Lighted wafer seal, for DIN connector plug, 24vDC
KZ 3759	DIN connector plug w/surge suppression, 12 & 24vDC
KX 5368	DIN connector plu w/surge suppression, 110 & 220vAC
KY 3018	DIN connector plug w/surge suppression, LED, 12 & 24vDC
KW 0718	DIN connector plug w/surge suppression, LED, 110 & 220vAC

Seal Kits: S9 Solenoid Valves			
Actuation	1/8"	1/4"	1/2"
5/2 Single	PD 35534	PD 35536	PD 35578
5/2 Double	PD 35520	PD 35526	PD 35577
5/3 Blocked	PD 35525	PD 35531	PD 35579
5/3 Exhaust	PD 35524	PD 35530	PD 35581
5/3 Dual	PD 35523	PD 35529	PD 35580

RPS Supply Manifolds: 1/8 PD 44813-....	
Order Number	Description
88-37H643-75	O-ring (10x2)
ZP 3986	Screws (M3x40)

RPS Supply Manifolds: 1/4 PD 44814-....	
Order Number	Description
88-52H643-75	O-ring (13x2)
ZP 3988	Screws (M4x55)