

PILOT SOLENOID OPERATED



General Description

A range of compact 3/2 pilot solenoid operated poppet valves in Stainless Steel for use on gases and liquids.

- High flow.
- Hazardous area solenoids.
- Coil with 316 housing.
- ATEX
- UL / CSA
- Low temperature range.

Operating Medium

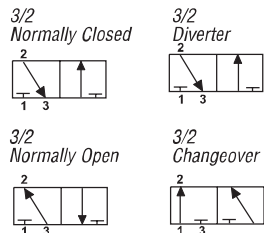
Gases

Filtered lubricated or non-lubricated air, inert gas, sweet (natural) gases.
sour gas option available.
(details on application)

Liquids

Low pressure hydraulic, mineral oil or water.
(details on application)

Functional Symbols



Technical Data

Ports

- 1/4" - 1-1/2" NPT (BSP option available)
- 1/4" NPT pilot ports

Working Pressure (gases & liquids)

- 3 to 12 bar (45 to 174 psi)

Cv (Kv)

- 1/4" - 1.75 (25) 3/8" - 2.2 (31)
- 1/2" - 4.00 (57) 3/4" - 10.2 (146)
- 1" - 15.0 (214) 1-1/4" - 20.0 (286)
- 1-1/2" - 28.0 (400)

Working Temperature

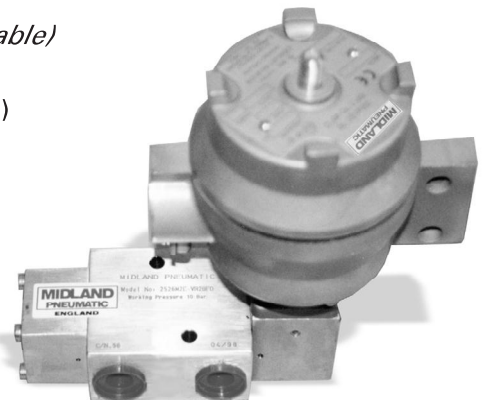
- Valve only version
-20°C to +180°C (-4°F to +356°F)
- Solenoid - Ambient temperature
-20°C to +65°C (-4°F to +149°F)
- Low temperature version
-50°C (-58°F) (optional)

Minimum Pilot Pressure

- At 6.3 bar (90 psi) body pressure
1/4" - 3/8" Spring return
4.0 bar (58.0 psi)
1/2" - 1-1/2" Spring return
3.0 bar (43.5 psi)

Maximum Flow

- 6 bar (87 psi), 1 bar (14.5 psi) differential
- 1/4" - 2668 L/min (94 SCFM)
- 3/8" - 3521 L/min (124 SCFM)
- 1/2" - 6402 L/min (226 SCFM)
- 3/4" - 16005 L/min (565 SCFM)
- 1" - 24008 L/min (848 SCFM)
- 1-1/4" - 32010 L/min (1130 SCFM)
- 1-1/2" - 44814 L/min (1583 SCFM)



Construction Materials

- Stainless Steel AISI 316L to NACE MR-01-75 Body
- Stainless Steel AISI 316L to NACE MR-01-75 Poppet
- 316 Stainless Steel Spring
- 1/4", 3/8" and 1/2" Fluoroelastomer
- 3/4", 1", 1-1/4" and 1-1/2" Nitrile

Solenoid

- Refer to solenoid specification

Model Code

1 **32**
 2 **-M2**
 3
 4 **C2B**
 5 **Solenoid Type**
 See Solenoid Model Codes on page 1500.2
 6 **Voltage Codes**

<p>Size</p> <p>2 = 1/4"</p> <p>3 = 3/8"</p> <p>4 = 1/2"</p> <p>6 = 3/4"</p> <p>8 = 1"</p> <p>5 = 1-1/4"</p> <p>7 = 1-1/2"</p>	<p>Function</p> <p>3 = N/C</p> <p>5 = Universal</p>	<p>Operator</p> <p>1 = Air</p> <p>3 = N/C solenoid</p> <p>4 = Univ solenoid</p> <p>E = End solenoid</p>	<p>Body Seals</p> <p>V = St St / Fluoroelastomer</p> <p>S = St St / Nitrile</p> <p>E = St St / Low Temp</p>	<p>C = 12v DC</p> <p>D = 24v DC</p> <p>M = 110v 50/60Hz AC</p> <p>N = 120v 60Hz AC</p> <p>Q = 240v 60Hz AC</p> <p>S = 220/230v 50/60Hz AC</p> <p>Y = 28v DC</p> <p>(solenoid type T only)</p> <p>other voltages special order</p>
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1750 Poppet Valves

POPPET VALVES • 1/4" - 1 1/2", 3/2, NPT (BSP)

1750 SERIES

1750 PNEUMATIC VALVES

PILOT SOLENOID OPERATED

SOLENOID MODEL CODES



Model Code	Safety Rating	Protection and Housing Material	Approved Area	Ingress Protection	Weight kg (lbs)
CL	NEMA 7 & 9	Flameproof. Stainless Steel Class H insulation	Class I, Groups C & D Class II, Groups E, F & G	NEMA 4	0.29 (0.65)
D	EExd IIC T5	Flameproof. Ferritic cast iron.	Zones 1 and 2	IP67	1.30 (2.87)
K	EExd IIC T6	Flameproof. 316 Stainless Steel or Aluminium.	Zones 1 and 2	IP67	1.62 (3.57)
P	EEx me II T4/T5	Increased encapsulation. Glass reinforced polyamid.	Zones 1 and 2	IP66	0.63 (1.39)
T	EEx ia IIC T6	Intrinsically safe. Glass reinforced polyamid.	Zones 0	IP66	0.53 (1.17)
4	None	32mm solenoid. Moulded Plastic.	Not approved	IP65	0.20 (0.44)

Preferred models

Model Number	Description	Weight kg (lbs)	Symbol
2323M23-VC2B*+	1/4" NPT 3/2 Pilot solenoid operated, spring return, N/C	0.65 (1.43) + Sol	
2325M24-VC2B*+	1/4" NPT 3/2 Pilot solenoid operated, spring return, UNIV	0.65 (1.98) + Sol	
3323M23-VC2B*+	3/8" NPT 3/2 Pilot solenoid operated, spring return, N/C	0.90 (3.31) + Sol	
3325M24-VC2B*+	3/8" NPT 3/2 Pilot solenoid operated, spring return, N/C	0.90 (3.31) + Sol	
4323M23-VC2B*+	1/2" NPT 3/2 Pilot solenoid operated, spring return, N/C	1.50 (19.97) + Sol	
4325M24-SC2B*+	1/2" NPT 3/2 Pilot solenoid operated, spring return, UNIV	1.50 (24.38) + Sol	
6325M24-SC2B*+	3/4" NPT 3/2 Pilot solenoid operated, spring return, UNIV	5.06 (24.38) + Sol	
8325M24-SC2B*+	1" NPT 3/2 Pilot solenoid operated, spring return, UNIV	5.06 (24.38) + Sol	
5325M24-SC2B*+	1 1/4" NPT 3/2 Pilot solenoid operated, spring return, UNIV	9.06 (24.38) + Sol	
7325M24-SC2B*+	1 1/2" NPT 3/2 Pilot solenoid operated, spring return, UNIV	11.06 (24.38) + Sol	

*Specify solenoid type

+ Specify solenoid voltage

Without solenoid fitted specify "Z" in position 13 (for Zones 0,1 & 2), 'A' in a position 13 (for NEMA 7 & 9).

1/4", 3/8" and 1/2" Normally Closed versions have internal air supply to the solenoid - Specify code 3 in position 4 and code 3 in position 7 of model number code.

1/4", 3/8" and 1/2" Normally Open and Universal versions require a separate air supply to the pilot solenoid - Specify code 5 in position 4 and code 4 in position 7 of model number code.

3/4" to 1 1/2" Normally Open, Normally closed and Universal versions always require a separate main air supply to be taken to the pilot solenoid - Specify code 5 in position 4 and code 4 of position 7 of model number code.

It is recommended that consideration be given to positioning a non-return valve in the separate supply line to the solenoid. This will help to prevent back-flow from the solenoid servo should a temporary/severe pressure drop occur across the main valve when it opens.

1750 Poppet Valves

POPPET VALVES • 1/4" - 1 1/2", 3/2, NPT (BSP)

1750 SERIES

PILOT SOLENOID OPERATED



SOLENOID ASSEMBLIES SOLENOID CODE K (EExd IIC T6), SOLENOID CODE KC (NEMA 7 & 9)

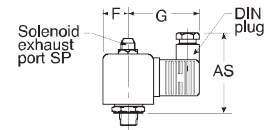
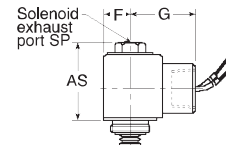
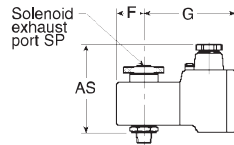
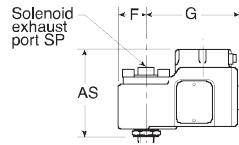
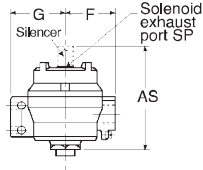
Solenoid code K
(EExd IIC T6)

Solenoid code D
(EExd IIC T5)

Solenoid code P
(EEx me II T4/T5)
Solenoid code T
(EEx ai IIC T6)

Solenoid code CL
(NEMA 7 & 9)

Solenoid code 4
(None/hazardous)



INSTALLATION DIMENSIONS mm (inches)

Model Code	AS	F	G	SP
CL	42(1.65)	18 (0.71)	40 (1.57)	1/8" NPT
D	76(2.99)	25 (0.71)	84 (1.57)	1/8" NPT
K	110(4.33)	52 (0.71)	58 (1.57)	M8
P & T	71.5(2.81)	25 (0.71)	81 (1.57)	1/8" NPT
4	57(2.24)	19.5 (0.71)	50 (1.57)	1/8" NPT

SOLENOID SPECIFICATIONS

Model Code	K	D	P	T	CL	4
Type of Protection	EExd IIC T6	EExd IIC T5	EEx me II T4/T5	EEx ia IIC T6	NEMA 7 & 9	None
Approved Area	Zones 1 and 2	Zones 1 and 2	Zones 1 and 2	Zone 0	Class I, Groups C & D, Class II Groups E, F & G	None
Degree of Protection	IP67	IP67	IP66	IP66	NEMA 4 (IP55)	IP65
Housing	316 Stainless Steel alt Aluminium Epoxy coated	Ferritic, Cast Iron Epoxy painted	Glass reinforced Polyamid (St St conduit hub)	Glass reinforced Polyamid	Chromate Steel Stainless Steel Coil potted	Molded Plastic
Cable entry (Alt cable entry available)	M20 x 1.5	M20 x 1.5	M20 x 1.5	M20 x 1.5	1/2" NPT 24" leads	DIN plug
Power Consumption	DC 5W AC 5W	8W	6W	0.3W	7.3W 1.8W 7.3W 1.8W 5.6W 1.8W 5.6W 1.8W	9W 9W(inrush 32VA)
Maximum Admissable Surface Temp	85°C (185°F)	100°C (212°F)	T4 135°C (275°F) T5 100°C (212°F)	85°C (185°F)	160°C (320°F)	N/A
Maximum Ambient Temperature	40°C (104°F)	40°C (104°F)	T4 75°C (167°F) T5 40°C (104°F)	65°C (149°F)	40°C (104°F)	55°C (131°F)
Maximum Fluid Temp	80°C (176°F)	75°C (167°F)	75°C (167°F)	75°C (167°F)	105°C (221°F)	75°C (167°F)
Approved Standard	ATEX	ATEX	ATEX	ATEX	UL Listed CSA Certified	N/A N/A
Certificate Number	SIRA03ATEX1319	02ATEX6008X	02ATEX6023X	02ATEX6066X	026894X0000	N/A

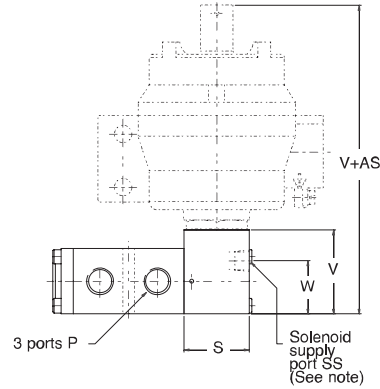
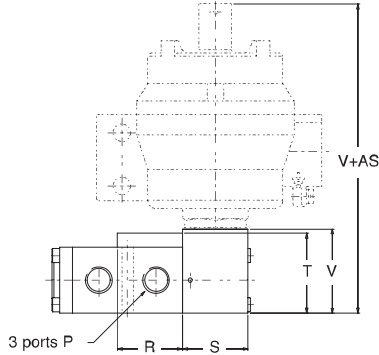
PILOT SOLENOID OPERATED
INSTALLATION DIMENSIONS mm (inches)



3/2 Pilot Solenoid Operated - Spring Return, 1/4", 3/8", 1/2" Valve Bases

2323M23-VC2B*+
 3323M23-VC2B*+
 4323M23-VC2B*+

2323M24-VC2B*+
 3323M24-VC2B*+
 4323M24-VC2B*+



For solenoid dimensions, see page 1750.3

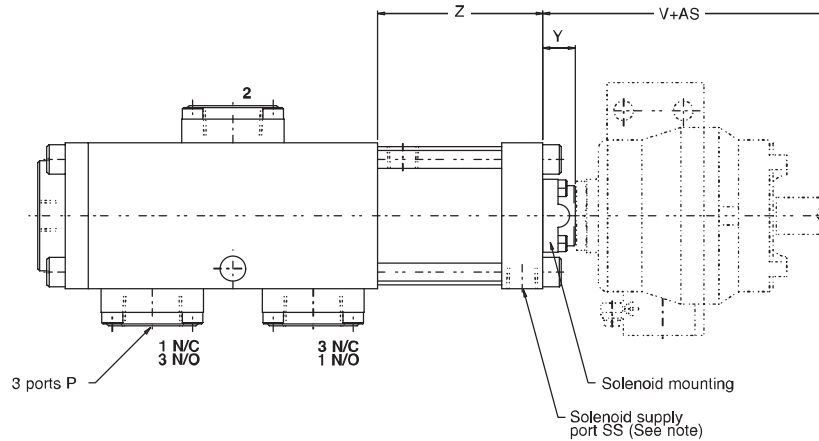
Model Number	P	R	S	T	V	VE	W	X	SS
2323M23-VC2B*+	1/4" NPT (1/4" NPT)	32 (1.26)	32(1.26)	39(1.54)	41(1.61)	-	-	-	-
2325M24-VC2B*+	1/4" NPT (1/4" NPT)	-	32(1.26)	-	41(1.61)	-	26(1.02)	-	1/8"NPT(1/8" NPT)
3323M23-VC2B*+	3/8" NPT (3/8" NPT)	32 (1.26)	32(1.26)	39(1.54)	41(1.61)	-	-	-	-
3325M24-VC2B*+	3/8" NPT (3/8" NPT)	-	32(1.26)	-	41(1.61)	-	26(1.02)	-	1/8"NPT(1/8" NPT)
4323M23-VC2B*+	1/2" NPT (1/2" NPT)	38 (1.50)	32(1.26)	45(1.77)	50(1.97)	-	-	-	-
4325M24-VC2B*+	1/2" NPT (1/2" NPT)	-	32(1.26)	-	50(1.97)	-	37(1.46)	-	1/8"NPT(1/8" NPT)

1/4", 3/8" and 1/2" Normally closed versions have internal air supply to the solenoid - Specify code 3 in position 4 and code 3 in position 7 of model number code.

1/4", 3/8" and 1/2" Normally open and Universal versions require a separate air supply to the pilot solenoid - Specify code 5 in position 4 and code 4 in position 7 of model number code.

3/2 Pilot Solenoid Operated - Spring Return, 3/4", 1", 1-1/4", 1-1/2" Valve Bases

6323M24-SC2B*+
 8323M24-SC2B*+
 5323M24-SC2B*+
 7323M24-SC2B*+



For basic valve dimensions, see page 1750.6 For Solenoid dimensions see page 1750.3

Model Number	P	Y	Z	SS
6325M24-SC2B*+	3/4" NPT (1/4" NPT)	14 (0.55)	72(2.83)	1/4"NPT(1/4" NPT)
8325M24-SC2B*+	1"NPT (1/4" NPT)	14 (0.55)	72(2.83)	1/4"NPT(1/4" NPT)
5325M24-SC2B*+	1 1/4" NPT (1 1/4" NPT)	14 (0.55)	73(2.87)	1/4"NPT(1/4" NPT)
7325M24-SC2B*+	1 1/2" NPT (1 1/2" NPT)	14 (0.55)	73(2.87)	1/4"NPT(1/4" NPT)

3/4" to 1 1/2" Normally open, normally closed and universal versions always require a separate mains air supply to be taken to the pilot solenoid. Specify code 5 in position 4 and code 4 of position 7 of model number code.

PILOT AIR OPERATED

General Description

A range of compact 3/2 pilot operated high flow poppet valves in stainless steel for use on gases.

- Compact
- High flow
- 3/2 N/O, N/C and Universal
- Meet NACE standard
- Non lube
- Low temperature range

Operating Medium

Gases

Filtered lubricated or non-lubricated air, inert, sweet (natural) gases. Sour gas option available. (details on application)

Liquids

Low pressure hydraulic, mineral oil or water. (details on application)

Technical Data

Ports

- 1/4" - 1-1/2" NPT (BSP option available)
- 1/4" NPT pilot ports

Working Pressure (gases & liquids)

- 2 to 12 bar (30 to 174 psi)

Cv (Kv)

- 1/4" - 1.75 (25) 3/8" - 2.2 (31)
- 1/2" - 4.00 (57) 3/4" - 10.2 (146)
- 1" - 15.0 (214) 1-1/4" - 20.0 (286)
- 1-1/2" - 28.0 (400)

Working Temperature

- -20°C to +180°C (-4°F to +356°F)
- Low temperature version
- -50°C (-58°F) (optional)

Minimum Pilot Pressure

- At 6.3 bar (90 psi) body pressure
- 1/4" - 3/8" Spring return
4.0 bar (58.0 psi)
- 1/2" - 1-1/2" Spring return
3.0 bar (43.5 psi)

Maximum Flow

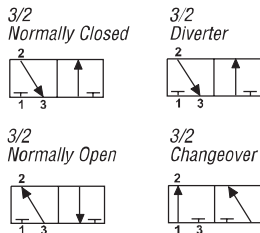
- 6 bar (87 psi), 1 bar (14.5 psi) differential
- 1/4" - 2668 L/min (94 SCFM)
- 3/8" - 3521 L/min (124 SCFM)
- 1/2" - 6402 L/min (226 SCFM)
- 3/4" - 16005 L/min (565 SCFM)
- 1" - 24008 L/min (848 SCFM)
- 1-1/4" - 32010 L/min (1130 SCFM)
- 1-1/2" - 44814 L/min (1583 SCFM)



Construction Materials

- Stainless Steel AISI 316L to NACE MR-01-75 Body
- Stainless Steel AISI 316L to NACE MR-01-75 Poppet
- 316 Stainless Steel Spring
- 1/4", 3/8" and 1/2" Fluoroelastomer seals
- 3/4", 1", 1-1/4" and 1-1/2" Nitrile seals

Functional Symbols



Preferred Models

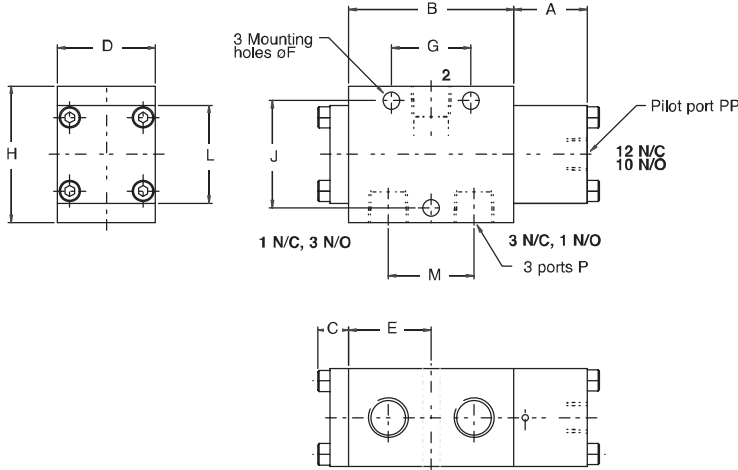
Model Number	Description	Weight kg (lbs)	Symbol
2325M21-VC2B	1/4" NPT 3/2 Pilot air operated, spring return, UNIV	0.65 (1.43)	
3325M21-VC2B	3/8" NPT 3/2 Pilot air operated, spring return, UNIV	0.90 (1.98)	
4325M21-VC2B	1/2" NPT 3/2 Pilot air operated, spring return, UNIV	1.50 (3.31)	
6325M21-SC2B	3/4" NPT 3/2 Pilot air operated, spring return, UNIV	5.00 (11.0)	
8325M21-SC2B	1" NPT 3/2 Pilot air operated, spring return, UNIV	5.00 (11.0)	
5325M21-SC2B	1-1/4" NPT 3/2 Pilot air operated, spring return, UNIV	9.00 (19.8)	
7325M21-SC2B	1-1/2" NPT 3/2 Pilot air operated, spring return, UNIV	11.0 (24.3)	

PILOT AIR OPERATED

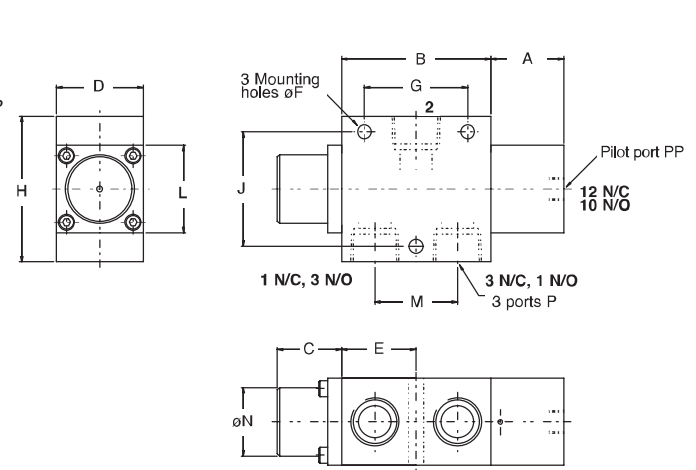
INSTALLATION DIMENSIONS mm (inches)

3/2 Pilot Air Operated - Spring Return, 1/4", 3/8", 1/2"

2325M21-VC2B
3325M21-VC2B



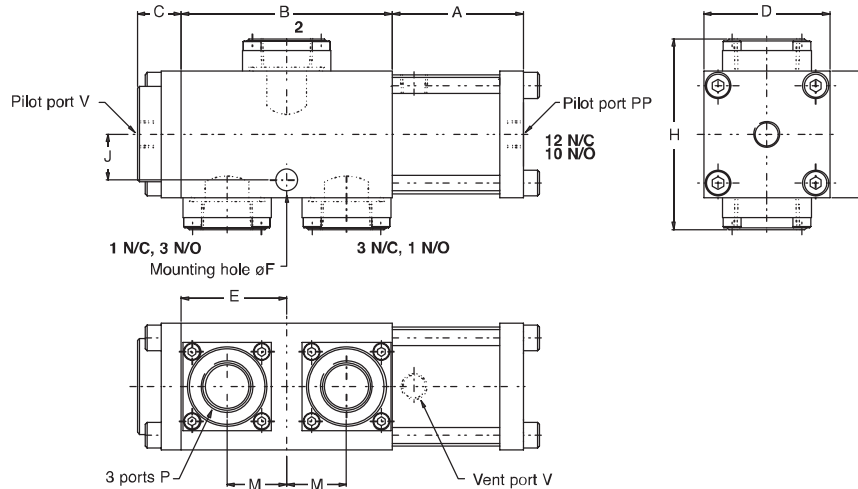
4325M21-VC2B



Model Number	A	B	C	D	E	F	G	H	J	L	M	N	P	PP
2325M21-VC2B	24 (0.94)	54 (2.13)	10 (0.39)	32 (1.26)	27 (1.06)	6.5 (0.26)	26 (1.02)	44.5 (1.75)	35 (1.38)	32 (1.26)	28 (1.10)	-	1/4" NPT 1/4" NPT	1/8" NPT 1/8" NPT
3325M21-VC2B	24 (0.94)	54 (2.13)	10 (0.39)	32 (1.26)	27 (1.06)	6.5 (0.26)	38 (1.50)	51 (2.00)	44 (1.73)	32 (1.26)	28 (1.10)	-	3/8" NPT 3/8" NPT	1/8" NPT 1/8" NPT
4325M21-VC2B	32 (1.26)	65 (2.56)	28 (1.10)	38 (1.50)	32.5 (1.28)	6.5 (0.26)	45 (1.77)	63.5 (2.50)	50 (1.97)	38 (1.50)	36 (1.42)	24 (0.94)	1/2" NPT 1/2" NPT	1/8" NPT 1/8" NPT

3/2 Pilot Air Operated - Spring Return, 3/4", 1", 1-1/4", 1-1/2"

6325M21-SC2B
8325M21-SC2B
5325M21-SC2B
7325M21-SC2B



Model Number	A	B	C	D	E	F	H	J	L	M	P	PP	V
6325M21-SC2B	66 (2.60)	106 (4.17)	22 (0.87)	63.5 (2.50)	53 (2.09)	11 (0.43)	96 (3.78)	23 (0.91)	63.5 (2.50)	30 (1.18)	3/4" NPT 3/4" NPT	1/4" NPT 1/4" NPT	1/4" NPT 1/4" NPT
8325M21-SC2B	66 (2.60)	126 (4.96)	22 (0.87)	63.5 (2.50)	63 (2.48)	11 (0.48)	96 (3.78)	23 (0.91)	63.5 (2.50)	35 (1.38)	1" NPT 1" NPT	1/4" NPT 1/4" NPT	1/4" NPT 1/4" NPT
5325M21-SC2B	67 (2.64)	155 (6.10)	18 (0.71)	76 (2.99)	77.5 (3.05)	11 (0.43)	116 (4.57)	28.5 (1.12)	76 (2.99)	42.5 (1.67)	1-1/4" NPT 1-1/4" NPT	1/4" NPT 1/4" NPT	1/4" NPT 1/4" NPT
7325M21-SC2B	67 (2.64)	180 (7.09)	18 (0.71)	76 (2.99)	90 (3.54)	11 (0.43)	116 (4.57)	28.5 (1.12)	76 (2.99)	50 (1.97)	1-1/2" NPT 1-1/2" NPT	1/4" NPT 1/4" NPT	1/4" NPT 1/4" NPT

PLUNGER OPERATED, LEVER ROLLER OPERATED

General Description

Compact 3/2 mechanically operated poppet valves in stainless steel for use on gases and liquids.

For N/O, N/C and universal operation.

Technical Data

Ports

- 1/8"NPT (BSP option available)

Working Pressure (gases & liquids)

- 10 bar (145 psi)

Cv (Kv)

- 0.26 (3.7)

Working Temperature

- -20°C to +180°C (-4°F to +356°F)

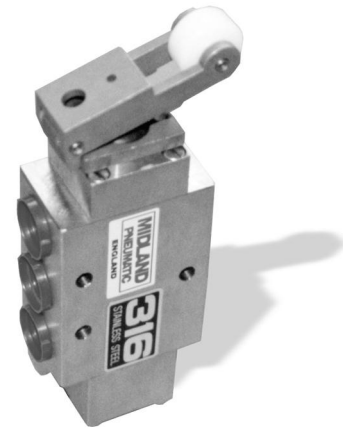
Operating force

- at 10 bar (145 psi) body pressure

	N/C	N/O
Plunger	44N (17lbf)	80N (20lbf)
Lever roller	20N (17lbf)	36N (20lbf)

Maximum Flow

- At 6 bar (87 psi), 1 bar (14.5 psi) differential
402 L/min (14.2 SCFM)



Construction Materials

- Body, operator and poppet
Stainless steel AISI 316L
to NACE MR-01-75
- 316 Stainless steel springs
- Fluoroelastomer seals

Preferred Models

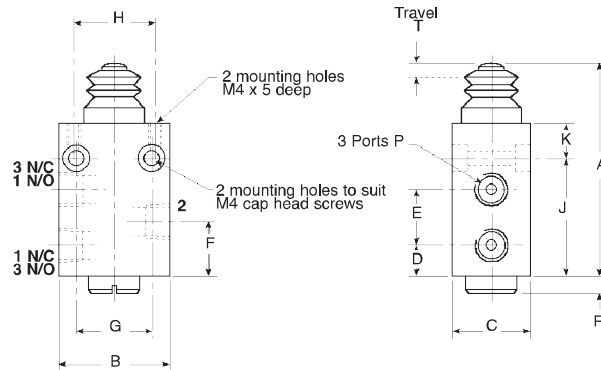
Model Number	Description	Weight kg (lbs)	Symbol
1323M62-SM2B	1/8" Plunger operated, spring return, N/C	0.21 (0.46)	
1324M62-SM2B	1/8" Plunger operated, spring return, N/O	0.22 (0.48)	
1323M82-SM2B	1/8" Lever operated, spring return, N/C	0.28 (0.62)	
1324M82-SM2B	1/8" Lever operated, spring return, N/O	0.29 (0.64)	

PLUNGER OPERATED, LEVER ROLLER OPERATED

INSTALLATION DIMENSIONS mm (inches)

3/2 Plunger Operated - Spring Return - 1/8"

1323M62-SM2B
1324M62-SM2B

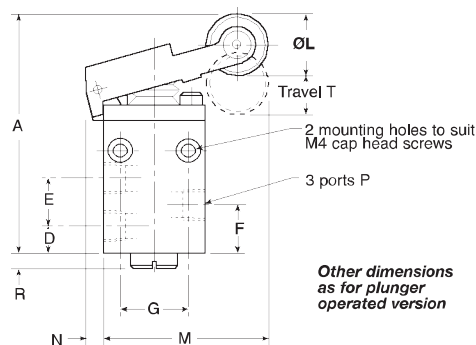


Model Number	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T
132*M62-SM2B	62	32	22	9	16	16	22	24	34	10	-	-	-	1/8" NPT	5	5
	(2.44)	(1.26)	(0.87)	(0.35)	(0.63)	(0.63)	(0.87)	(0.95)	(1.34)	(0.39)	-	-	-	1/8" NPT	(0.20)	(0.20)

Travel T = 2.5 (0.10) to operate, 5.0 (0.20) maximum

3/2 Lever Operated - Spring Return - 1/8"

1323M82-SM2B
1234M82-SM2B



Model Number	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T
132*M82-SM2B	78	32	22	9	16	16	22	-	34	-	20	52.5	6	1/8" NPT	5	12
	(3.07)	(1.26)	(0.87)	(0.35)	(0.63)	(0.63)	(0.87)	-	(1.34)	-	(0.79)	(2.07)	(0.24)	1/8" NPT	(0.20)	(0.47)

Travel T = 2.5 (0.10) to operate, 5.0 (0.20) maximum