

MIDLAND-ACS PNEUMATIC PRODUCT GUIDE

MIDLAND-ACS
PNEUMATIC PRODUCT GUIDE

AIR SERVICE, SPOOL, POPPET, FLUOSLIDE,
DIRECT ACTING, ANCILLARIES



AIR SERVICE UNITS 3500/3550 SERIES

SPOOL VALVES 1500/1600 SERIES

POPPET VALVES 1750 SERIES

**FLUOSLIDE DIRECTIONAL
CONTROL VALVES** 1800 SERIES

DIRECT ACTING VALVES 1750 SERIES

ANCILLARY VALVES 4500 SERIES

SELF RELIEVING • NON RELIEVING

General Description

A 316 Stainless Steel combination unit for filtration and pressure regulation of compressed air for the offshore, food, pharmaceutical and allied industries.

- 316 Stainless Steel throughout.
- Large flow paths minimise pressure drop.
- Rolling diaphragm design.
- Precision adjustment.

Filter Unit

Large 40 micron standard element with manual or automatic drain for the removal of liquids and solids.

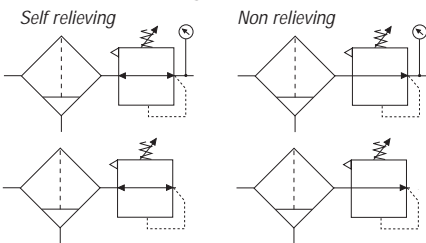
Operating Medium

Gases, air, inert gas, sweet (natural) and sour gases.

Ingress Protection

Heavy seas/on deck rating.

Functional Symbols



Technical Data

Ports NPT (BSP option available)

- 1/4", 1/2", 3/4"

Gauge Ports (BSP option available)

- 1/8" NPT
- 1/4" NPT (option available)

Relief/Vent Port

- 1/8" NPT (Fitted with bug screen)

Working Temperature

Ambient temperature

- -20°C to +80°C (-4°F to +176°F)

Low temperature version

- -50°C (-58°F) (optional)

Maximum Inlet Pressure

- Manual drain - 20 bar (290 psi)
- Automatic drain - 17 bar (247 psi)

Regulated Pressure

- 0.50 to 2 bar (7.2 to 29 psi)
- 0.50 to 4 bar (7.2 to 58 psi)
- 0.50 to 8 bar (7.2 to 116 psi)
- 0.50 to 12 bar (7.2 to 174 psi)

Maximum Relief Flow

at 2 bar (29psi) secondary pressure

- 0.5cc/sec (0.03 cu in/sec)

Bowl Retention Capacity

- 21cc (1.28cu ins)

Flow capacity

10 bar (145 psi) inlet pressure,

6 bar (87 psi) secondary pressure

with 1 bar (14.5 psi) pressure drop

- 1/4" - 3720 L/min (130 SCFM)

- 1/2" - 600 L/min (212 SCFM)

Cv (Kv)

- 1/4" - 2.4 (34.0)

- 1/2" - 4.4 (63.0) 3/4" - 5.0 (71.0)



Construction Materials

- Body/Bonnet/Bowl and Internals Stainless Steel AISI 316 S11 to NACE MR-0175
- 40 Micron 316 Stainless Steel (5 & 25 Micron option) Element
- Fluoroelastomer and 316 Stainless Steel Diaphragm and Valve Assembly
- Inconel X750 Valve Spring
- 316 Stainless Steel Adjustment Spring
- Fluoroelastomer Seals
- Acetal resin, stainless steel and Buna N Auto drain

Preferred Models Flow Characteristics

Model Number	Description	Weight kg (lbs)
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Self Relieving

2FRMSV**2A+	1/4" NPT Filter regulator, manual drain	1.75 (3.86)
2FRASV**2A+	1/4" NPT Filter regulator, automatic drain	2.05 (4.52)
4FRMSV**2A+	1/2" NPT Filter regulator, manual drain	1.75 (3.86)
4FRASV**2A+	1/2" NPT Filter regulator, automatic drain	2.05 (4.52)
6FRMSV**2A+	3/4" NPT Filter regulator, manual drain	1.95 (4.30)
6FRASV**2A+	3/4" NPT Filter regulator, automatic drain	2.25 (4.96)

Non Relieving

Specify model code 'FRN' in place of 'FRM' for manual drain versions.

Specify model code 'FRB' in place of 'FRA' for manual drain versions.

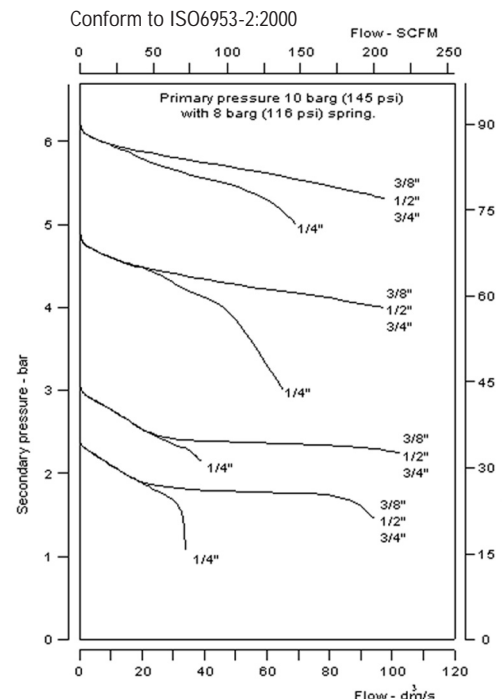
** For regulated pressure add code:

- 0.50 to 2 bar (7.2 to 29 psi) -code 02
- 0.50 to 4 bar (7.2 to 58 psi) -code 04
- 0.50 to 8 bar (7.2 to 116 psi) -code 08
- 0.50 to 12 bar (7.2 to 174 psi) -code 12

+ For 5 micron element add 05 to model number

For BSP replace '2' in position 9 with '1'

For 1/4" gauge port add 'X' to end of model number



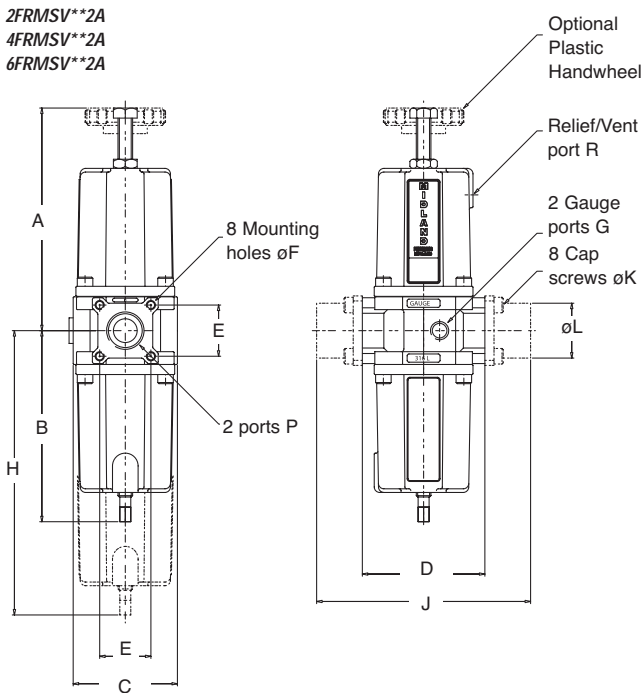
SELF RELIEVING • NON RELIEVING

INSTALLATION DIMENSIONS mm (inches)

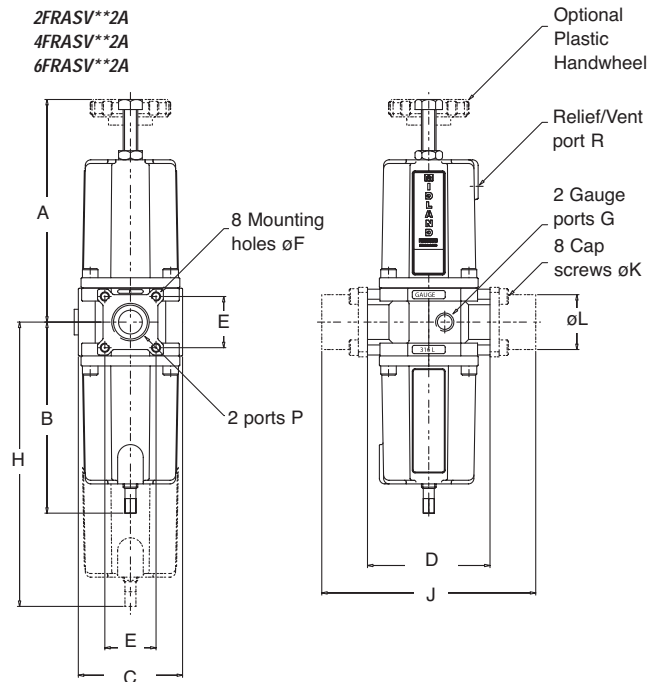
Filter Regulators - Self Relieving and Non Relieving with Manual Drain

Filter Regulators - Self Relieving and Non Relieving with Auto Drain

2FRMSV**2A
4FRMSV**2A
6FRMSV**2A



2FRASV**2A
4FRASV**2A
6FRASV**2A



Model Number	Ports P	Ports G	Port R	A	B	C	D	E	F	H	J	K	L
With manual drain													
2FRMSV**2A	1/4" NPT	1/8" NPT	1/8" NPT	123.5	104	55	67	24	M4	155	-	-	-
	1/4" NPT	1/8" NPT	1/8" NPT	(4.86)	(4.09)	(2.17)	(2.64)	(0.94)	M4	(6.10)	-	-	-
4FRMSV**2A	1/2" NPT	1/8" NPT	1/8" NPT	123.5	104	55	67	28	M5	155	-	-	-
	1/2" NPT	1/8" NPT	1/8" NPT	(4.86)	(4.09)	(2.17)	(2.64)	(1.10)	M5	(6.10)	-	-	-
6FRMSV**2A	3/4" NPT	1/8" NPT	1/8" NPT	123.5	104	55	-	28	-	155	117	M5	30
	3/4" NPT	1/8" NPT	1/8" NPT	(4.86)	(4.09)	(2.17)	-	(1.10)	-	(6.10)	(4.61)	M5	(1.18)
With automatic drain													
2FRASV**2A	1/4" NPT	1/8" NPT	1/8" NPT	123.5	141.50	55	67	24	M4	192.50	-	-	-
	1/4" NPT	1/8" NPT	1/8" NPT	(4.86)	(4.09)	(2.17)	(2.64)	(0.94)	M4	(6.10)	-	-	-
4FRASV**2A	1/2" NPT	1/8" NPT	1/8" NPT	123.5	141.50	55	67	28	M5	192.50	-	-	-
	1/2" NPT	1/8" NPT	1/8" NPT	(4.86)	(4.09)	(2.17)	(2.64)	(1.10)	M5	(6.10)	-	-	-
6FRASV**2A	3/4" NPT	1/8" NPT	1/8" NPT	123.5	141.50	55	-	28	-	192.50	117	M5	30
	3/4" NPT	1/8" NPT	1/8" NPT	(4.86)	(4.09)	(2.17)	-	(1.10)	-	(6.10)	(4.61)	M5	(1.18)

Dimensions for non relieving models are same as self relieving models above.

Dimension H = clearance required below pipe centerline to enable bowl removal.

For optional handwheel, tamper proof cap, gauges and mounting accessories see details on page 3550.6

General Description

A 316 Stainless Steel filter for filtration of compressed air in the offshore, food, pharmaceutical and allied industries.

Large 40 micron standard element with manual or automatic drain for the removal of liquids and solids

- 316 Stainless Steel throughout.
- Large flow paths minimise pressure drop.
- Large stainless steel element.

Operating Medium

Gases, air, inert gas, sweet (natural) and sour gases.

Ingress Protection

Heavy seas/on deck rating

Functional Symbols

Filter with manual drain



Filter with automatic drain



Technical Data

Ports NPT (BSP option available)

- 1/4", 1/2", 3/4"

Gauge Ports (BSP option available)

- 1/8" NPT
- 1/4" NPT (option available)

Automatic Drain Port

- 1/8" NPT

Working Pressure

- Manual drain 20 bar (290 psi)
- Automatic drain 17 bar (247 psi)

Working Temperature

Ambient temperature

- -20°C to +80°C (-4°F to +176°F)

Low temperature version

- -50°C (-58°F) (optional)

Bowl retention capacity

- 21cc (1.28 cu ins)

Flow Capacity

At 7 bar (102 psi) supply pressure,

0.35 bar (5 psi) pressure drop

- 1/4" - 1380 L/min (49 SCFM)
- 1/2" - 2940 L/min (104 SCFM)

Cv (Kv)

- 1/4" - 2.4 (34.0)
- 1/2" - 4.4 (63.0) 3/4" - 5.0 (71.0)



Construction Materials

- Body/Bonnet/Bowl and Internals Stainless Steel AISI 316 S11 to NACE MR-0175
- 40 micron 316 Stainless steel (5 and 225 micron option) element
- Fluoroelastomer Seals

Preferred Models

Model Number	Description	Weight kg (lbs)
2FLMSV202A+	1/4" NPT Filter with manual drain	1.30 (2.86)
2FLASV172A+	1/4" NPT Filter with automatic drain	1.60 (3.53)
4FLMSV202A+	1/2" NPT Filter with manual drain	1.30 (2.86)
4FLASV172A+	1/2" NPT Filter with automatic drain	1.60 (3.53)
6FLMSV202A+	3/4" NPT Filter with manual drain	1.50 (3.31)
6FLASV172A+	3/4" NPT Filter with automatic drain	1.80 (3.97)

+ For 5 micron element add 05 to model number

+ For 25 micron element add 25 to model number

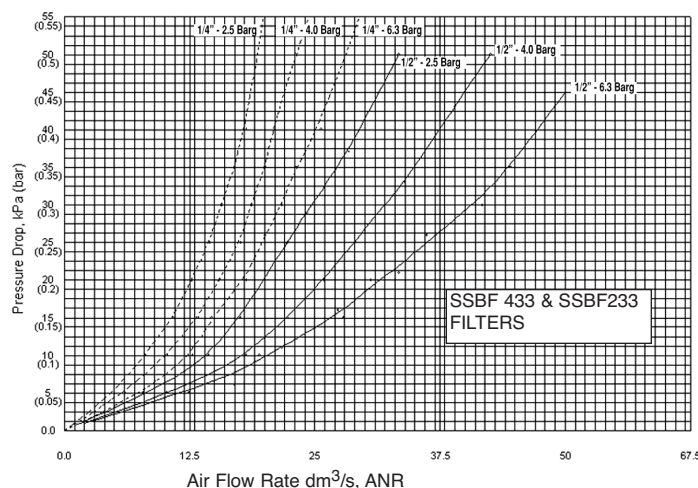
For BSP replace '2' in position 9 with '1'

For 1/4" gauge port add 'X' to end of model number

Flow Characteristics

Conform to ISO6953-2:2000

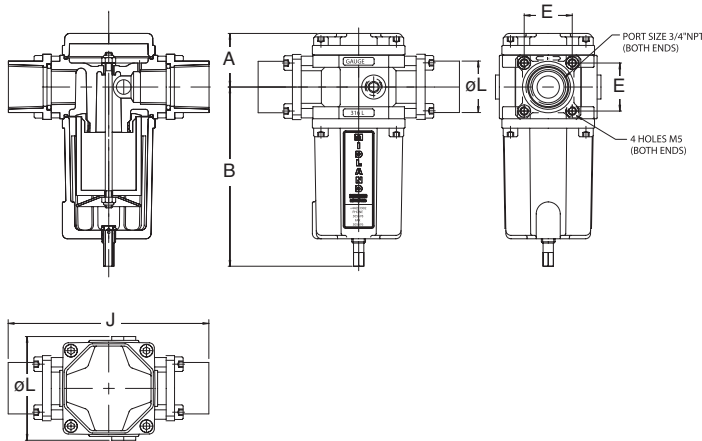
1/4" & 1/2" FILTER



INSTALLATION DIMENSIONS mm (inches)

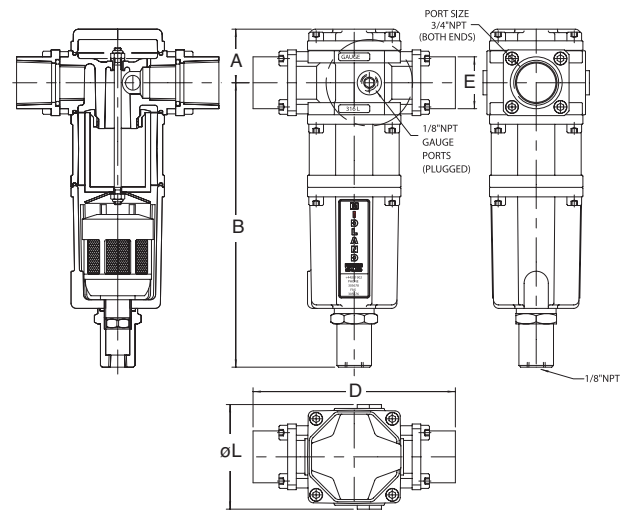
Filters with Manual Drain

2FLMSV202A
4FLMSV202A
6FLMSV202A



Filters with Automatic Drain

2FLASV172A
4FLASV172A
6FLASV172A



Model Number	Ports P	Ports G	A	B	C	D	E	F	H	J	K	L
With manual drain												
2FLMSV202A	1/4" NPT	1/8" NPT	31.2	104.5	55	67	24	M4	155	-	-	-
	1/4" NPT	1/8" NPT	(1.12)	(4.09)	(2.17)	(2.64)	(0.94)	M4	(6.10)	-	-	-
4FLMSV202A	1/2" NPT	1/8" NPT	31.2	104.5	55	67	28	M5	155	-	-	-
	1/2" NPT	1/8" NPT	(1.12)	(4.09)	(2.17)	(2.64)	(1.10)	M5	(6.10)	-	-	-
6FLMSV202A	3/4" NPT	1/8" NPT	31.2	104.5	55	-	28	-	155	117	M5	30
	3/4" NPT	1/8" NPT	(1.12)	(4.09)	(2.17)	-	(2.64)	-	(6.10)	(4.61)	M5	(1.18)
With automatic drain												
2FLASV172A	1/4" NPT	1/8" NPT	31.2	164.5	55	67	24	M4	215.5	-	-	-
	1/4" NPT	1/8" NPT	(1.12)	(6.47)	(2.17)	(2.64)	(0.94)	M4	(8.48)	-	-	-
4FLASV172A	1/2" NPT	1/8" NPT	31.2	164.5	55	67	28	M5	215.5	-	-	-
	1/2" NPT	1/8" NPT	(1.12)	(6.47)	(2.17)	(2.64)	(1.10)	M5	(8.48)	-	-	-
6FLASV172A	3/4" NPT	1/8" NPT	31.2	164.5	55	-	28	-	215.5	117	M5	30
	3/4" NPT	1/8" NPT	(1.12)	(6.47)	(2.17)	-	(1.10)	-	(8.48)	(4.61)	M5	(1.18)

Dimension H = clearance required below pipe centerline to enable bowl removal.
For mounting accessories see details on page 3500.6

SELF RELIEVING • NON RELIEVING

General Description

A 316 Stainless Steel pressure regulator for pressure regulation of compressed gases for the offshore, food, pharmaceutical and allied industries.

- 316 Stainless Steel throughout.
- Large flow characteristics.
- Rolling diaphragm design.
- High relief flow.
- Precision adjustment.
- Full range of accessories

Operating Medium

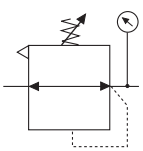
Gases, air, inert gas, sweet (natural) and sour gases.

Ingress Protection

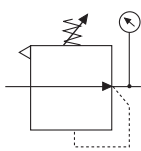
Heavy seas/on deck rating

Functional Symbols

Self relieving



Non relieving



Technical Data

Ports NPT (*BSP option available*)

- 1/4", 1/2", 3/4"

Gauge Ports (*BSP option available*)

- 1/8" NPT
- 1/4" NPT (*option available*)

Relief/Vent Port

- 1/8" NPT (Fitted with bug screen)

Maximum Inlet Pressure

- 20 bar (290 psi)

Regulated Pressure

- 0.50 to 2 bar (7.2 to 29 psi)
- 0.50 to 4 bar (7.2 to 58 psi)
- 0.50 to 8 bar (7.2 to 116 psi)
- 0.50 to 12 bar (7.2 to 174 psi)

Maximum Relief Flow at 2 bar (29psi) secondary pressure

- 0.5cc/sec (0.03 cu in/sec)

Working Temperature

- Ambient temperature
- -20°C to +80°C (-4°F to +176°F)

Low temperature version

- -50°C (-58°F) (optional)

contact customer services for details

Flow Capacity

10 bar (145 psi) inlet pressure,
6 bar (87 psi) secondary pressure
with 1 bar (14.5 psi) pressure drop

- 1/4" - 3720 L/min (130 SCFM)
 - 1/2" - 6000 L/min (212 SCFM)
- Cv (Kv)
- 1/4" - 2.4 (34.0)
 - 1/2" - 4.6 (65.5) 3/4" - 5.2 (74.0)



Construction Materials

- Body/Bonnet/Bowl and Internals Stainless Steel AISI 316 S11 to NACE MR-01-75
- Fluoroelastomer and 316 Stainless Steel Diaphragm and Valve Assembly
- Inconel X750 Valve spring
- Fluoroelastomer Seals
- 316 Stainless Steel Adjustment Spring

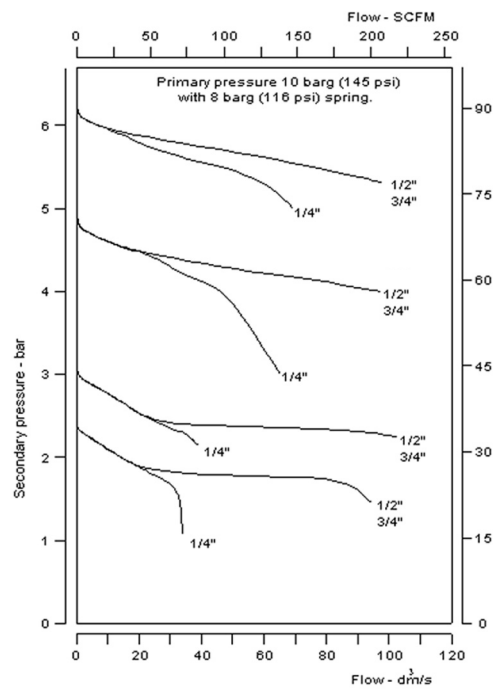
Preferred Models Flow Characteristics

Model Number	Description	Weight kg (lbs)
Self Relieving		
2PRVSV**2A	1/4" NPT Pressure Regulator	1.60 (3.53)
4PRVSV**2A	1/2" NPT Pressure Regulator	1.60 (3.53)
6PRVSV**2A	3/4" NPT Pressure Regulator	1.80 (3.97)
Non Relieving		
2PRNSV**2	1/4" NPT Pressure Regulator	1.60 (3.53)
4PRNSV**2	1/2" NPT Pressure Regulator	1.60 (3.53)
6PRNSV**2A	3/4" NPT Pressure Regulator	1.80 (3.97)

** For regulated pressure add code:
 0.50 to 2 bar (7.2 to 29 psi) -code 02
 0.50 to 4 bar (7.2 to 58 psi) -code 04
 0.50 to 8 bar (7.2 to 116 psi) -code 08
 0.50 to 12 bar (7.2 to 116 psi) -code 12

- For BSP replace '2' in position 9 with '1'
 For 1/4" gauge port add 'X' to end of model number

Flow Characteristics

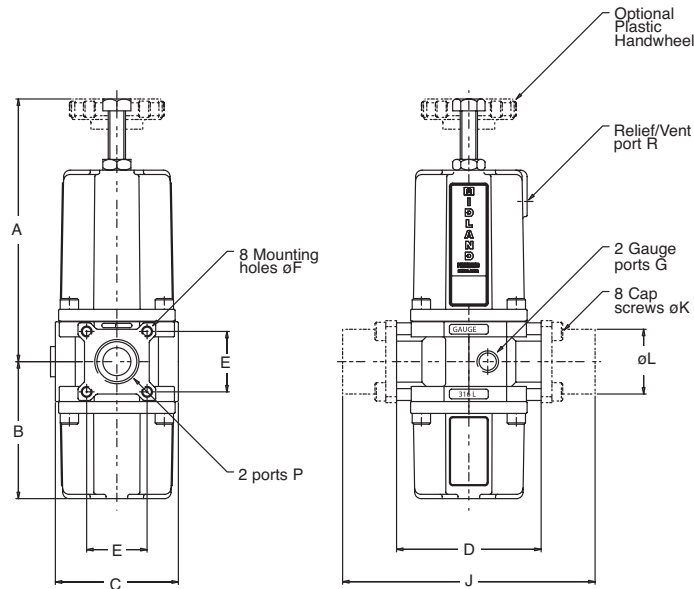


SELF RELIEVING • NON RELIEVING

INSTALLATION DIMENSIONS mm (inches)

Pressure Regulators - Self Relieving and Non Relieving

2PRVSV**2A 2PRNSV**2A
 4PRVSV**2A 4PRNSV**2A
 6PRVSV**2A 6PRNSV**2A



Model Number	Ports P	Ports G	Port R	A	B	C	D	E	F	J	K	L
2PRVSV**2A	1/4" NPT	1/8" NPT	1/8" NPT	123.5	64	55	67	24	M4	-	-	-
	1/4" NPT	1/8" NPT	1/8" NPT	(4.86)	(2.52)	(2.17)	(2.64)	(0.94)	M4	-	-	-
4PRVSV**2A	1/2" NPT	1/8" NPT	1/8" NPT	123.5	64	55	67	28	M5	-	-	-
	1/2" NPT	1/8" NPT	1/8" NPT	(4.86)	(2.52)	(2.17)	(2.64)	(1.10)	M5	-	-	-
6PRVSV**2A	3/4" NPT	1/8" NPT	1/8" NPT	123.5	64	55	-	28	-	117	M5	30
	3/4" NPT	1/8" NPT	1/8" NPT	(4.86)	(2.52)	(2.17)	-	(1.10)	-	(4.61)	M5	(1.18)

Dimensions for non relieving models are same as self relieving models above.

ACCESSORIES

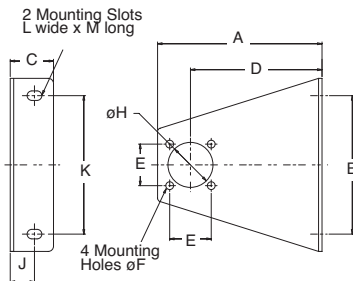
Mounting Bracket

Mounting bracket kit complete with fixing screws

SSF2110-7S (for 1/4" units-short)

SSF2110-7 (for 1/4" units-long)

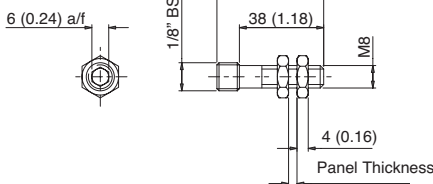
SSF4110-7 (for 1/2" and 3/4" units)



Model Number	A	B	C	D	E
SSF2110-7S	79(3.11)	100(3.94)	25(0.98)	60(2.36)	24(0.94)
SSF2110-7	95(3.74)	100(3.94)	25(0.98)	76(2.99)	24(0.94)
SSF4110-7	95(3.74)	100(3.94)	25(0.98)	76(2.99)	28(1.10)
J	K				
14(0.55)	80(3.15)				
14(0.55)	80(3.15)				
14(0.55)	80(3.15)				

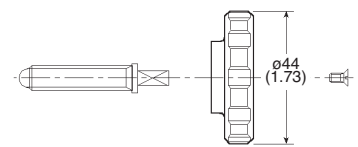
Stud Mounting Kit

Stud mounting kit SSBF238-21



Plastic Handwheel Kit

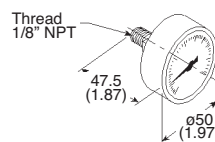
Plastic handwheel kit SSAF238-23



Pressure Gauge

50mm pressure gauge - glycerine filled
 SSF153N/11GLY (0-11 bar)
 SSF153N/4GLY (0-4 bar)

SSF153N/2GLY (0-2 bar)
 SSF153N/16GLY (0-16 bar)



TECHNICAL DATA

General Description

A full range of 316 Stainless Steel large flow air service unit for the offshore, food, pharmaceutical and allied industries.

- 316 Stainless Steel throughout.
- Large flow paths minimise pressure drop.
- Clean lines.
- Integral mounting holes.

Operating Medium

Gases, air, inert gas, sweet (natural) and sour gases.

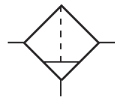
Ingress Protection

Heavy seas/on deck rating

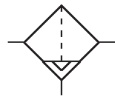
Functional Symbols

Filters

Filter with manual drain

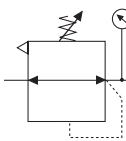


Filter with automatic drain

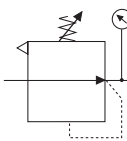


Regulators

Self relieving

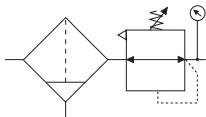


Non relieving

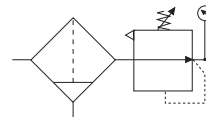


Filter/Regulators

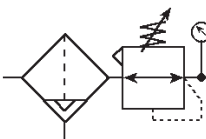
Self relieving with manual drain



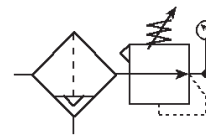
Non relieving with manual drain



Self relieving with automatic drain



Non relieving with automatic drain



Technical Data

Ports NPT (*BSP option available*)

- 3/4", 1"

Gauge ports (*BSP option available*)

- 1/8" NPT
- 1/4" NPT (*option available*)

Relief/Vent Port

- 1/8" NPT (Fitted with bug screen)

Working Temperature

Ambient Temperature

- -20°C to +80°C (-4°F to +176°F)

Filtration

- 5 micron

Working Pressure

Filters and Filter regulators

- Manual drain 20 bar (290 psi)
- Automatic drain 17 bar (247 psi)
- Regulators maximum inlet pressure 20 bar (290 psi)

Bowl Retention

- 260cc (15.87cu ins)

Regulated Pressure

- 0.1 to 2 bar (1.45 to 29 psi)
- 0.2 to 4 bar (2.90 to 58 psi)
- 0.3 to 7 bar (4.35 to 102 psi)
- 0.5 to 10 bar (7.25 to 145 psi)
- 0.8 to 16 bar (11.60 to 232 psi)

Maximum Relief Flow

at 2 bar (29 psi) secondary pressure

- 0.5 cc/sec (0.03cu in/sec)

Flow Capacity

Filter

at 7 bar (102 psi) supply pressure, 0.35 bar (5psi) pressure drop

- 10020 L/min (353 SCFM)

Regulator

at 7 bar (102 psi) inlet pressure, 6 bar (87 psi) secondary pressure, 1 bar (14.5 psi) pressure drop

- 7800 L/min (274 SCFM)

Filter Regulator

at 7 bar (102 psi) inlet pressure, 6 bar (87 psi) secondary pressure, 1 bar (14.5 psi) pressure drop

- 7800 L/min (274 SCFM)

Cv (Kv)

- 3/4" - 7.8 (117)
- 1" - 8.0 (120)

Construction Materials

- Body/Bonnet/Bowl and Internals Stainless Steel AISI 316 S11 to NACE MR-01-75
- Sintered Polypropylene Element
- Nitrile and 316 Stainless Steel Diaphragm
- Inconel X750 Valve Spring
- 316 Stainless Steel Adjustment spring
- Fluoroelastomer Seals and Valve Assembly

Flow Characteristics

Conform to ISO6953-2:2000

For filter pressure drops characteristics see graphs on page 3500.3

For pressure regulator characteristics see graphs on page 3500.4

SELF RELIEVING • NON RELIEVING

General Description

A 316 Stainless Steel combination unit for filtration and pressure regulation of compressed air for the offshore, petrochemical, pharmaceutical and allied industries.

- Large flow paths minimise pressure drop.
- 5 micron element.
- 5 pressure ranges.

Operating Medium, Ingress Protection Functional Symbols, Technical Data and Construction Materials. See details on page 3500.1

Flow Characteristics

- For filter pressure drop characteristics see graphs on page 3500.3
- For pressure regulator characteristics see graphs on page 3500.4



Preferred Models

Model Number	Description	Weight kg (lbs)
Self Relieving		
6FRMSV**2	3/4" NPT Filter with manual drain	5.75 (12.7)
6FRASV**2	3/4" NPT Filter with automatic drain	5.75 (12.7)
8FRMSV**2	1" NPT Filter with manual drain	5.75 (12.7)
8FRMSV**2	1" NPT Filter with automatic drain	5.75 (12.7)

Non Relieving

Specify model code "FRN" in place of "FRM" for manual drain versions.

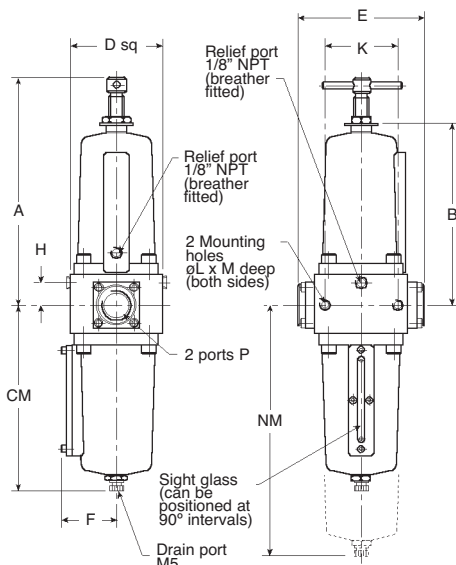
Specify model code "FRB" in place of "FRA" for automatic drain versions.

** For regulated pressure add code:
 0.1 to 2 bar (1.45 to 29 psi) -code 02
 0.2 to 4 bar (2.90 to 58 psi) -code 04
 0.3 to 7 bar (4.35 to 102 psi) -code 07
 0.5 to 10 bar (7.25 to 145 psi) -code 10
 0.8 to 16 bar (11.60 to 232 psi) -code 16
 - For BSP replace '2' in position 9 with '1'
 - For 1/4" gauge port add 'X' to end of model number

INSTALLATION DIMENSIONS mm (inches)

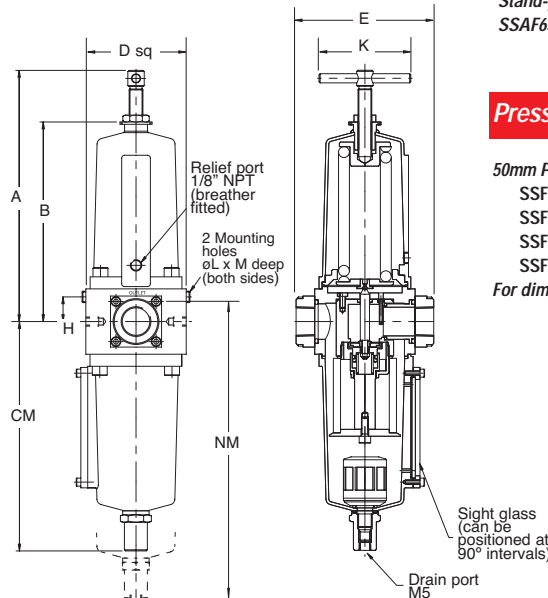
Filter Regulators with Manual Drain

6FRMSV**2, 8FRMSV**2, 6FRNSV**2, 8FRNSV**2



Filter Regulators with Automatic Drain

6FRASV**2, 8FRASV**2, 6FRBSV**2, 8FRBSV**2



Mounting Brackets

Stand-pipe Mounting Kit
SSAF638-28

Pressure Gauge

50mm Pressure gauge - glycerine filled
 SSF153N/11GLY (0 - 11 bar)
 SSF153N/4GLY (0 - 4 bar)
 SSF153N/2GLY (0 - 2 bar)
 SSF153N/16GLY (0 - 16 bar)
 For dimensional details see page 3500.4

Model Number	Ports P	Ports G	A	B	CA†	CM	D	E	F	H	K	L	M	NA†	NM
6FRMSV**2A	3/4" NPT	1/8" NPT	219	174	201	180	87.5	120	52	21.5	70	M8	12	281	260
	3/4" NPT	1/8" NPT	(8.62)	(6.85)	(7.91)	(7.09)	(3.44)	(4.72)	(2.05)	(0.85)	(2.76)	M8	(0.47)	(11.06)	(10.24)
8FRMSV**2A	1" NPT	1/8" NPT	219	174	201	180	87.5	120	52	21.5	70	M8	12	281	260
	1" NPT	1/8" NPT	(8.62)	(6.85)	(7.91)	(7.09)	(3.44)	(4.72)	(2.05)	(0.85)	(2.76)	M8	(0.47)	(11.06)	(10.24)

Dimension NA or NM = clearance required below pipe centreline to enable bowl to be removed.

Dimensions for non relieving models (6FRNSV**2, 8FRNSV**2, 6FRBSV**2 and 8FRBSV**2) are same as self relieving models above.

† = Dimensions CA and NA relate to models with automatic drain (6FRASV**2, 8FRASV**2, 6FRBSV**2 and 8FRBSV**2)

MANUAL DRAIN • AUTOMATIC DRAIN

General Description

316 stainless steel compressed air filters to provide clean dry air for the offshore, petro-chemical and allied industries.

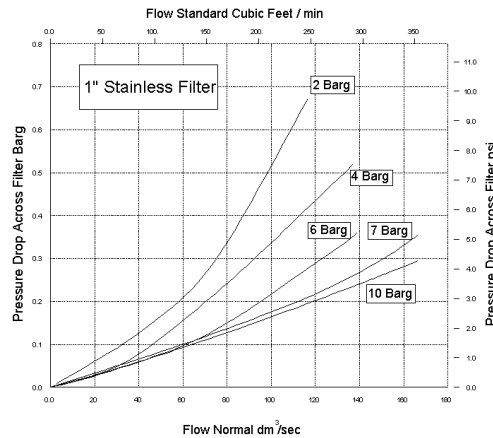
- 5 micron element.
- Manual / auto drain.
- Large flow paths minimise pressure drop.

Functional symbols,

Technical data and

Construction Materials

See details on page 3500.1



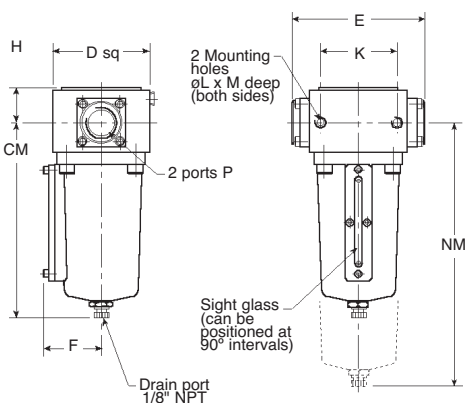
Preferred Models

Model Number	Description	Weight kg (lbs)
6FLMSV202	3/4" NPT Filter with manual drain	3.75 (8.27)
6FLASV172	3/4" NPT Filter with automatic drain	3.75 (8.27)
8FLMSV202	1" NPT Filter with manual drain	3.75 (8.27)
8FLASV172	1" NPT Filter with automatic drain	3.75 (8.27)

INSTALLATION DIMENSIONS mm (inches)

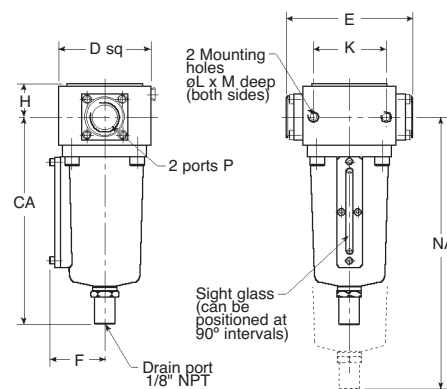
Filters with Manual Drain

6FLMSV202, 8FLMSV202



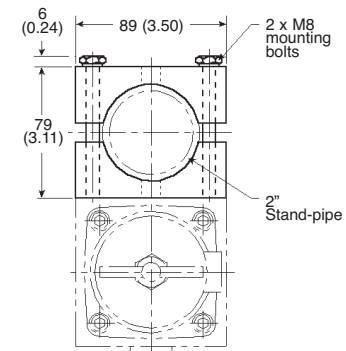
Filters with Automatic Drain

6FLASV172, 8FLASV172



Mounting Brackets

Stand-pipe mounting kit
SSAF 638-28



Model Number	Ports P	Ports G	A	B	C	D	E	H	K	L	M	
With manual drain												
6FLMSV202	3/4" NPT	-	180	87.5	120	52	30.5	70	M8	12	-	260
	3/4" NPT	-	(7.09)	(3.44)	(4.72)	(2.05)	(1.20)	(2.76)	M8	(0.47)	-	(10.24)
8FLMSV202	1" NPT	-	180	87.5	120	52	30.5	70	M8	12	-	260
	1" NPT	-	(7.09)	(3.44)	(4.72)	(2.05)	(1.20)	(2.76)	M8	(0.47)	-	(10.24)
With automatic drain												
6FLASV172	3/4" NPT	201	-	87.5	120	52	30.5	70	M8	12	281	-
	3/4" NPT	(7.91)	-	(3.44)	(4.72)	(2.05)	(1.20)	(2.76)	M8	(0.47)	(11.06)	-
8FLASV172	1" NPT	201	-	87.5	120	52	30.5	70	M8	12	281	-
	1" NPT	(7.91)	-	(3.44)	(4.72)	(2.05)	(1.20)	(2.76)	M8	(0.47)	(11.06)	-

SELF RELIEVING • NON RELIEVING

General Description

A 316 Stainless Steel unit for pressure regulation of compressed air in the offshore, petrochemical, and allied industries.

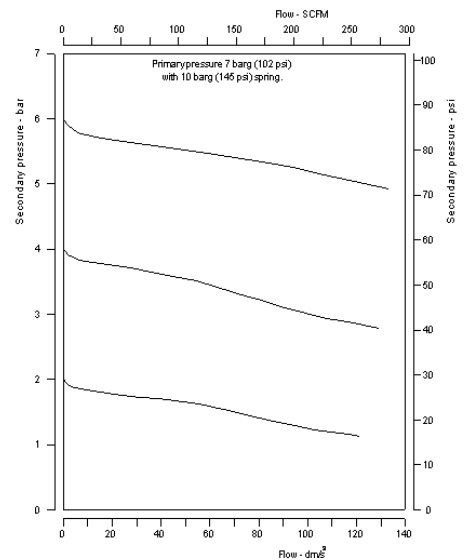
- Large flow
- 4 pressure ranges.
- High relief flow.

** For regulated pressure add code:
 0.1 to 2 bar (1.45 to 29 psi) -code 02
 0.2 to 4 bar (2.90 to 58 psi) -code 04
 0.3 to 7 bar (4.35 to 102 psi) -code 07
 0.5 to 10 bar (7.25 to 145 psi) -code 10
 0.8 to 16 bar (11.60 to 232 psi) -code 16

Operating Medium, Ingress Protection, Functional Symbols, Technical Data and Construction Materials. See details on page 3500.1



Flow Characteristics
 Secondary pressure vs. Flow
 Conforms to ISO6953-2:2000



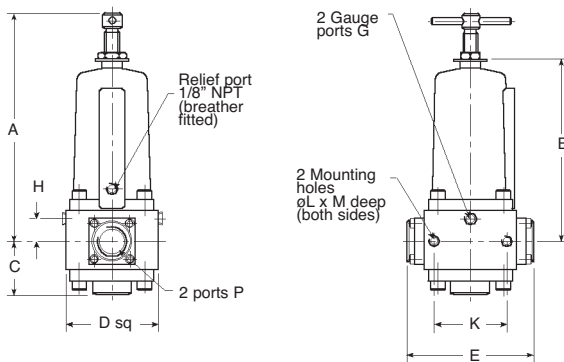
Preferred Models

Model Number	Description	Weight kg (lbs)
Self Relieving		
6PRVSV**2A	3/4" NPT Pressure regulator	5.00 (11.0)
8PRVSV**2A	1" NPT Pressure regulator	5.00 (11.0)
Non Relieving		
6PRNSV**2A	3/4" NPT Pressure regulator	5.00 (11.0)
8PRNSV**2A	1" NPT Pressure regulator	5.00 (11.0)

for BSP replace '2' in position 9 with '1'
 Models available with ANSI flanges - Contact customer service for further details.

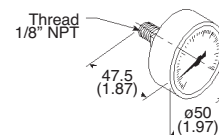
INSTALLATION DIMENSIONS mm (inches)

Pressure Regulators - Self Relieving and Non Relieving



Pressure Gauge

- 50mm pressure gauge - glycerine filled
- SSF153N/11GLY (0-11 bar)
- SSF153N/4GLY (0-4 bar)
- SSF153N/2GLY (0-2 bar)
- SSF153N/16GLY (0-16 bar)



Other ranges of pressure gauge are available - details upon request

Model Number	Ports P	Ports G	A	B	C	D	E	H	K	L	M
6PRVSV**2	3/4" NPT	1/8" NPT	219	174	53	87.5	120	21.5	70	M8	12
	3/4" NPT	1/8" NPT	(8.62)	(6.85)	(2.09)	(3.44)	(3.44)	(0.85)	(2.76)	M8	(0.47)
8PRVSV**2	1" NPT	1/8" NPT	219	174	53	87.5	120	21.5	70	M8	12
	1" NPT	1/8" NPT	(8.62)	(6.85)	(2.09)	(3.44)	(3.44)	(0.85)	(2.76)	M8	(0.47)

Dimensions for non relieving models (6FRNSV**2, 8FRNSV**) are same as self relieving models above.

General Description

316 stainless steel for the offshore, food, pharmaceutical and allied industries.

Provides lubrication of compressed air for use in these industries.

- Accurate drip rate adjustment.
- Can be filled under pressure.
- Transparent sight feed dome gives clear visibility of oil supply.
- Built in flow sensor automatically adjusts lubrication delivery to meet wide air flow demand.

Functional Symbols



Technical data

Ports NPT (*BSP option available*)

- 1/2"

Working temperature

Ambient temperature

- -20°C to +80°C (-4°F to +176°F)

Working pressure

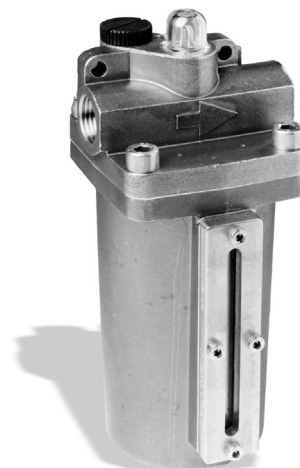
- 17 bar (247 psi)

Capacity

- 380cc (23.2cu in)

Construction Materials

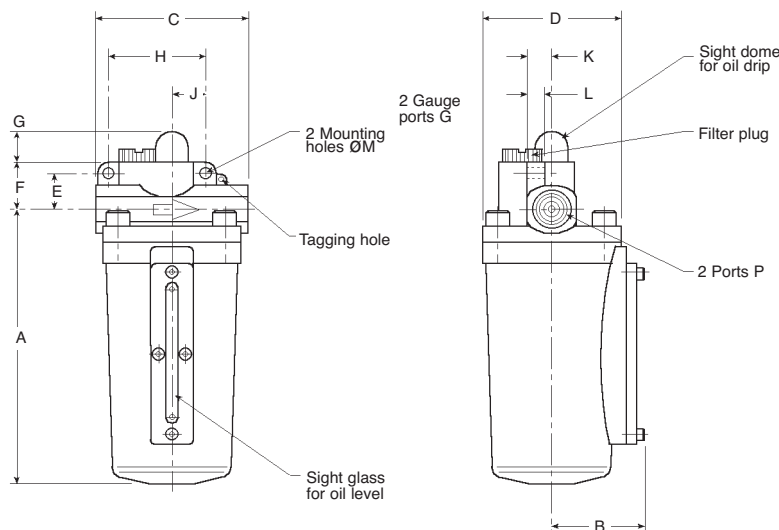
- Body Stainless steel AISI 316
- S11to NACE MR-0175
- Bowl 316 Stainless steel
- Flow and sight glass Acryl
- Seals Nitrile and Fluoroelastomer



Preferred Models		
Model Number	Description	Weight kg (lbs)
Self Relieving		
4LUBSN172	1/2" NPT Lubricator	1.80 (3.97)

INSTALLATION DIMENSIONS mm (inches)

4LUBSN172



Model Number	Ports	P	A	B	C	D	E	F	G	H	J	K	M
4LUBSN172	1/2" NPT	156	52	85	80	20	26	17.5	55	19	14	10	6.5
	1/2" NPT	(6.14)	(2.05)	(3.35)	(3.15)	(0.79)	(1.02)	(6.89)	(2.17)	(0.75)	(0.55)	(0.39)	(0.26)

PILOT SOLENOID OPERATED

General Description

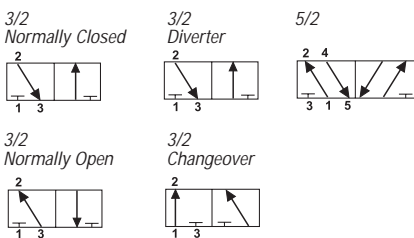
A range of compact 3/2 and 5/2 pilot solenoid operated spool valves in Stainless Steel for use on gases.

- Hazardous area solenoids
- Closed centre
- ATEX, UL, CSA Approved
- EExd, NEMA 7&9
- Lightweight

Operating Medium

Filtered non-lubricated air, inert gas, sweet (natural) gases.

Functional Symbols



Technical Data

Ports

- 1/4" NPT (BSP option available)

Working Temperature

- Valve version -20°C to +180°C (-4°F to +356°F)
- Solenoid version -20°C to +65°C (-4°F to +149°F)

Low temperature version

- -50°C (-58°F) (optional)

Working Pressure

- Single solenoid valve 3 to 12 bar (45 to 174 psi)
- Double solenoid valves 2 to 12 bar (30 to 174 psi)

Minimum Pilot Pressure

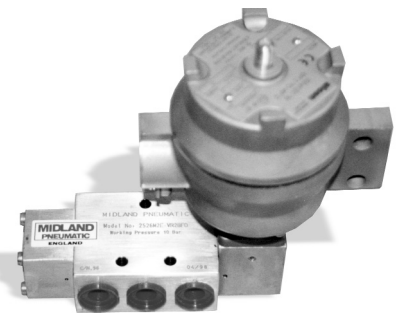
- At 6.3 bar (90 psi) body pressure Pilot return 1.5 bar (22 psi)

Maximum Flow

- 6.3 bar (87 psi), 1 bar (14.5 psi) differential
- 3/2 valves - 1000 L/min (35.3 SCFM)
- 5/2 valves - 1200 L/min (42.4 SCFM)

Cv (Kv)

- 3/2 valves - 1.0 (15)
- 5/2 valves - 1.2 (17)



Construction Materials

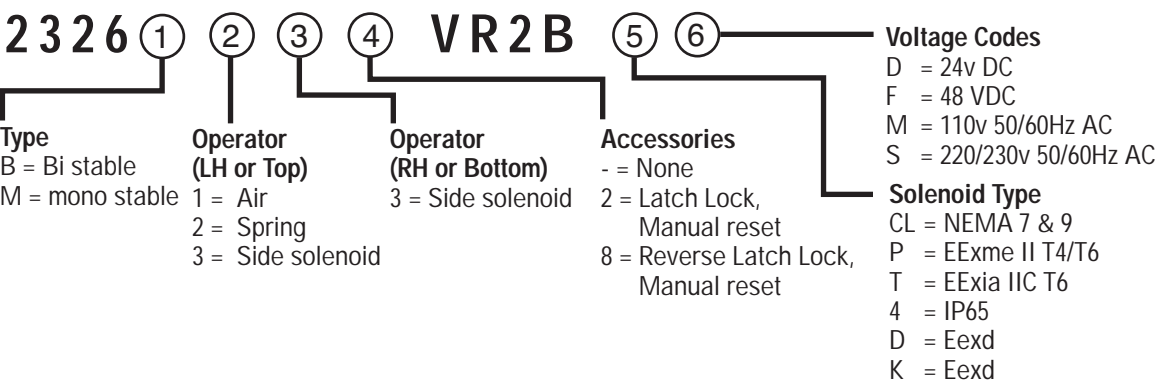
- Stainless Steel AISI 316L to NACE MR-0175 Body
- Stainless Steel AISI 316L to NACE MR-01-75 Spool
- 316 Stainless Steel Spring
- Fluoroelastomer Seals
- Solenoid (refer to solenoid specifications)

Instrument Signals

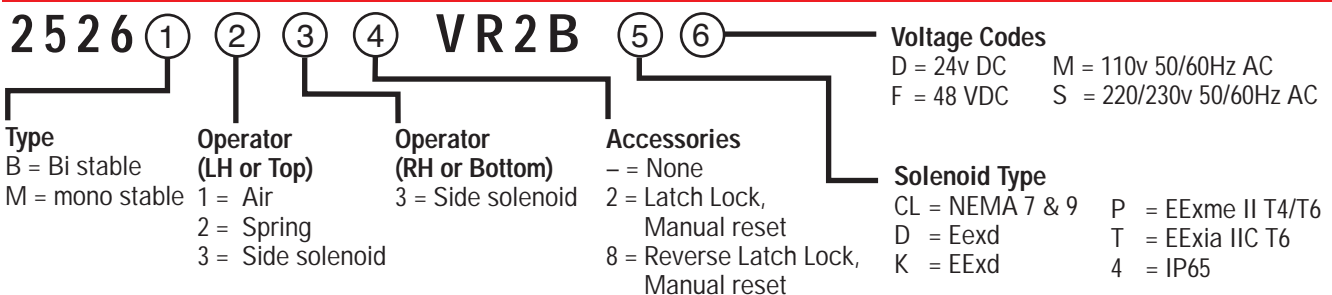
Valves with side mounted solenoids can be supplied to operate on instrument signals, typically 0 to 1.5 bar (0 to 21 psi). A separate supply to this pilot solenoid is necessary. This supply is 2 bar (30 psi) minimum for the double pilot and 3 bar (45 psi) minimum for the single pilot.

MODEL CODES

3/2 Valves



5/2 Valves



PILOT SOLENOID OPERATED

SOLENOID MODEL CODES



Model Code	Safety Rating	Protection and Housing Material	Approved Area	Ingress Protection	Weight kg (lbs)
D	EExd II T5	Flameproof, Cast Iron	Zones 1 & 2	IP65	1.30 (2.86)
CL	NEMA 7 & 9	Flameproof, 316 Stainless Steel Class H Insulation	Class I, Groups C & D Class II, Groups E, F & G	NEMA 4	0.29 (0.65)
K	EExdIIC T6	Flameproof, 316 Stainless Steel	Zones 1 and 2	IP67	1.62 (3.57)
P	EEme II T4/T5	Increased Encapsulation, Glass Reinforced Polyamid.	Zones 1 and 2	IP66	0.63 (1.39)
T	EExia IIC T6	Intrinsically Safe. Glass Reinforced Polyamid.	Zones 0	IP66	0.53 (1.17)
4	IP65	Solenoid	Not Approved	IP65	0.085 (0.19)

The model code shown appears in the 13th position of the model number.

Preferred Models - 3/2 Pilot Solenoid Operated

Model Number	Description	Weight kg (lbs)	Symbol
2326M23-VR2B*+	1/4" NPT 3/2 Pilot solenoid operated, spring return	0.56 (1.23) + Sol	
2326M232VR2B*+	1/4" NPT 3/2 Pilot solenoid operated, spring return with latch lock, manual reset	0.94 (2.07) + Sol	
2326M238VR2B*+	1/4" NPT 3/2 Pilot solenoid operated, spring return with reverse latch lock, manual reset	0.94 (2.07) + Sol	
2326B13-VR2B*+	1/4" NPT 3/2 Pilot solenoid operated, pilot air return	0.71 (1.56) + Sol	
2326B33-VR2B*+	1/4" NPT 3/2 Double pilot solenoid operated	0.71 (1.56) + Sol	

Preferred Models - 5/2 Pilot Solenoid Operated

Model Number	Description	Weight kg (lbs)	Symbol
2526M23-VR2B*+	1/4" NPT 5/2 Pilot solenoid operated, spring return	1.01 (2.23) + Sol	
2526M232VR2B*+	1/4" NPT 5/2 Pilot solenoid operated, spring return with latch lock, manual reset	1.39 (3.06) + Sol	
2526M238VR2B*+	1/4" NPT 5/2 Pilot solenoid operated, spring return with reverse latch lock, manual reset	1.43 (3.15) + Sol	
2526B13-VR2B*+	1/4" NPT 5/2 Pilot solenoid operated, pilot air return	1.01 (2.23) + Sol	
2526B33-VR2B*+	1/4" NPT 5/2 Double pilot solenoid operated	1.02 (2.25) + Sol	

+ Specify solenoid voltage.

Without solenoid fitted, specify 'Z' in position 13 (for Zones 0, 1 and 2).

* Specify solenoid type.

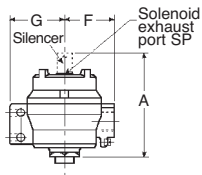
Without solenoid fitted, specify 'A' in position 13 (for NEMA 7 and 9).

PILOT SOLENOID OPERATED

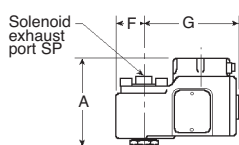
SOLENOID ASSEMBLIES



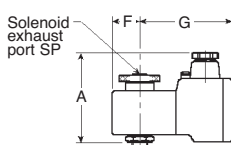
Solenoid code K
(EExd IIC T6)



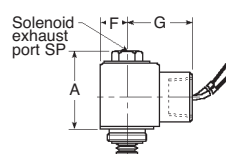
Solenoid code D
(EExd IIC T5)



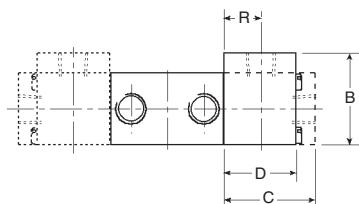
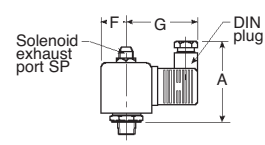
Solenoid code P (EEx me II T4/T5) Solenoid code T (EEx ai IIC T6)



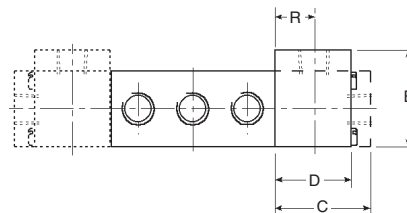
CL (NEMA 7 & 9)



Solenoid code 4
(None/hazardous)



3/2 valve base. For basic valve dimensions see page 1500.4



5/2 valve base. For basic valve dimensions see page 1500.4

INSTALLATION DIMENSIONS mm (inches)

Model Code	A	B	C	D	F	G	R	SP
CL	42 (1.65)	41 (1.61)	32 (1.26)	32 (1.26)	18 (0.71)	40 (1.57)	16 (0.63)	1/8" NPT
D	76 (2.99)	41 (1.61)	32 (1.26)	32 (1.26)	25 (0.98)	84 (3.31)	16 (0.63)	1/8" NPT
K	110 (4.33)	41 (1.61)	32 (1.26)	32 (1.26)	52 (2.05)	58 (2.28)	16 (0.63)	M8
P & T	71.5 (2.81)	41 (1.61)	32 (1.26)	32 (1.26)	25 (0.98)	81 (3.19)	16 (0.63)	1/8" NPT
4	57 (2.24)	39 (1.54)	26 (1.02)	21 (0.83)	19.5 (0.77)	50 (1.97)	11 (0.43)	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	IP65	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 Polyamid	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 AC	5W 5W	8W	6W	0.3W	1.8W 1.8W	9W 9W(holding)
Maximum Admissible 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	

1500 Spool Valves

INSTALLATION DIMENSIONS • 1/4", 3/2, 5/2, NPT (BSP)

1500 SERIES

1500 PNEUMATIC VALVES

PILOT SOLENOID OPERATED

INSTALLATION DIMENSIONS mm (inches)



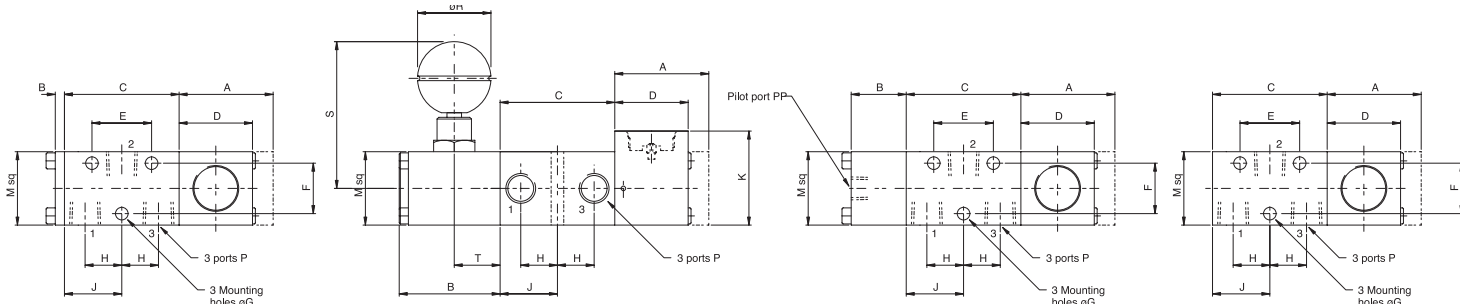
3/2 Pilot Solenoid Operated - Valve Bases

Spring Return
2326M23-VR2B**

Spring Return with Latch Lock
2326M232VR2B** 2326M238VR2B**

Pilot Air Return
2326B13-VR2B**

Pilot Solenoid Return
2326B33-VR2B**



Dimensions 'E', 'F', and 'G' as for spring return base

Model Number	A	B	C	D	E	F	G	H	J	K	M	P	PP	R	S	T
2326M23-VR2B**	42 (1.65)	4 (0.16)	50 (1.97)	32 (1.26)	26 (1.02)	22 (0.87)	5.5 (0.22)	16 (0.63)	25 (0.98)	41 (1.61)	32 (1.26)	1/4"NPT 1/4"NPT	- -	- -	- -	- -
2326M232VR2B**	42 (1.65)	44 (1.73)	50 (1.97)	32 (1.26)	26 (1.02)	22 (0.87)	5.5 (0.22)	16 (0.63)	25 (0.98)	41 (1.61)	32 (1.26)	1/4"NPT 1/4"NPT	- -	32 (1.26)	64 (2.52)	20 (0.79)
2326M238VR2B**	42 (1.65)	44 (1.73)	50 (1.97)	32 (1.26)	26 (1.02)	22 (0.87)	5.5 (0.22)	16 (0.63)	25 (0.98)	41 (1.61)	32 (1.26)	1/4"NPT 1/4"NPT	- -	32 (1.26)	64 (2.52)	20 (0.79)
2326B13-VR2B**	42 (1.65)	24 (0.94)	50 (1.97)	32 (1.26)	26 (1.02)	22 (0.87)	5.5 (0.22)	16 (0.63)	25 (0.98)	41 (1.61)	32 (1.26)	1/4"NPT 1/4"NPT	1/8"NPT 1/8"NPT	- -	- -	- -
2326B33-VR2B**	42 (1.65)	-	50 (1.97)	32 (1.26)	26 (1.02)	22 (0.87)	5.5 (0.622)	16 (0.63)	25 (0.98)	41 (1.61)	32 (1.26)	1/4"NPT 1/4"NPT	- -	- -	- -	- -

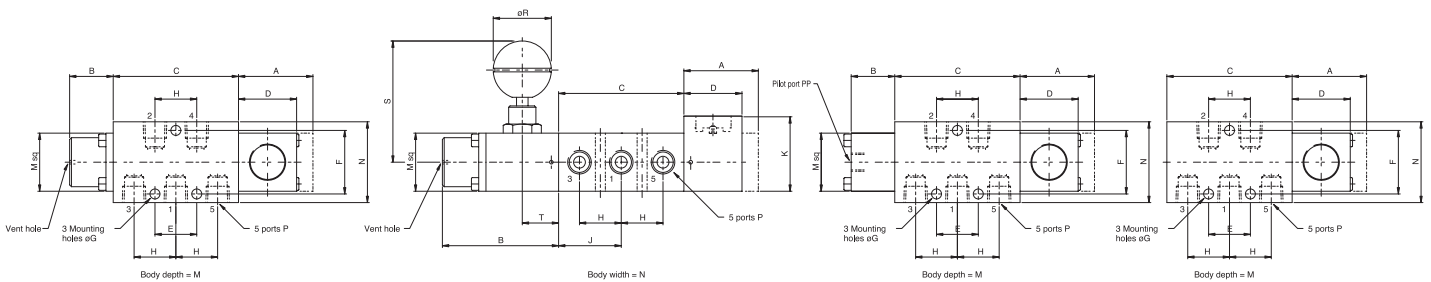
5/2 Pilot Solenoid Operated - Valve Bases

Spring Return
2526M23-VR2B**

Spring Return with Latch Lock
2526M232VR2B** 2526M238VR2B**

Pilot Air Return
2526B13-VR2B**

Pilot Solenoid Return
2526B33-VR2B**



Body width = N (over dimension 'C')
Dimensions 'E', 'F', and 'G' as for spring return base

Model Number	A	B	C	D	E	F	G	H	J	K	M	P	PP	R	S	T
2526M23-VR2B**	42 (1.65)	24 (0.16)	69 (2.72)	32 (1.26)	23 (0.91)	35 (1.38)	5.5 (0.22)	23 (0.91)	34.5 (1.36)	41 (1.61)	32 (1.26)	1/4"NPT 1/4"NPT	- -	- -	- -	- -
2526M232VR2B**	42 (1.65)	64 (2.52)	69 (2.72)	32 (1.26)	23 (0.91)	35 (1.38)	5.5 (0.22)	23 (0.91)	34.5 (1.36)	41 (1.61)	32 (1.26)	1/4"NPT 1/4"NPT	- -	32 (1.26)	64 (2.52)	20 (0.79)
2526M238VR2B**	42 (1.65)	64 (2.52)	69 (2.72)	32 (1.26)	23 (0.91)	35 (1.38)	5.5 (0.22)	23 (0.91)	34.5 (1.36)	41 (1.61)	32 (1.26)	1/4"NPT 1/4"NPT	- -	32 (1.26)	64 (2.52)	20 (0.79)
2526B13-VR2B**	42 (1.65)	24 (0.94)	69 (2.72)	32 (1.26)	23 (0.91)	35 (1.38)	5.5 (0.22)	23 (0.91)	34.5 (1.36)	41 (1.61)	32 (1.26)	1/4"NPT 1/4"NPT	1/8"NPT 1/8"NPT	- -	- -	- -
2526B33-VR2B**	42 (1.65)	-	69 (2.72)	32 (1.26)	23 (0.91)	35 (1.38)	5.5 (0.622)	23 (0.91)	34.5 (1.36)	41 (1.61)	32 (1.26)	1/4"NPT 1/4"NPT	- -	- -	- -	- -

1500 Direct Acting Valves

DIRECT ACTING VALVES • 1/4", 3/2, NPT (BSP)

1500 SERIES

SOLENOID OPERATED



1500 PNEUMATIC VALVES

General Description

Direct acting solenoid operated valves in stainless steel for use on gases and liquids.

- Solenoid options
- ATEX, UL, CSA

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.

Technical Data

Ports

- 1/4" NPT (BSP option available)
- 1/8" NPT exhaust ports

Orifice

- 2.5mm

Working Temperature

- -20°C to +180°C (-4°F to +356°F)

Low temperature version

- -50°C (-58°F) (optional)

Working Pressure

- 12 bar (174 psi)

Maximum Flow

- 6 bar (87 psi), 1 bar (14.5 psi) differential

- 220 L/min (7.77 SCFM)

Cv (Kv)

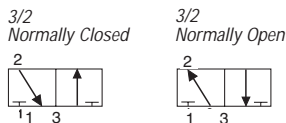
- 0.22 (3.4)



Construction Materials

- Stainless Steel AISI 316L to NACE MR-01-75 Body
- 316 Stainless Steel Spring
- Fluoroelastomer Seals

Functional Symbols



Preferred Models

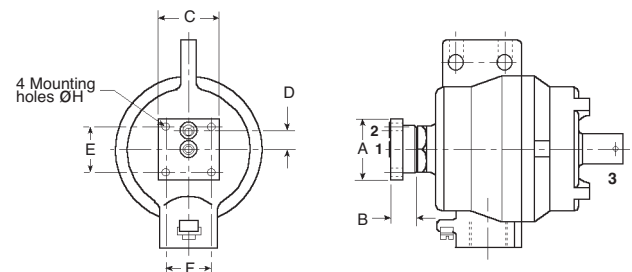
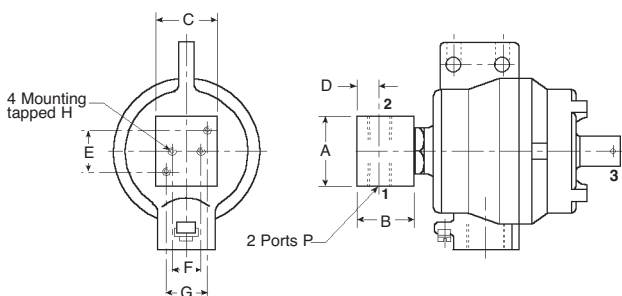
Model Number	Description	Weight kg (lbs)	Symbol
2323M23-SD2U * +	1/4" NPT 3/2 Direct acting solenoid, spring return	0.28 (0.62) + Sol	
1323M23-SD-F * +	Sub base mounted direct acting solenoid, sp return	0.06 (1.13) + Sol	

* Specify solenoid type, + Specify solenoid voltage

INSTALLATION DIMENSIONS mm (inches)

3/2 Direct Acting Solenoid, Spring Return

Sub Base Mounted Direct Acting Solenoid, Spring Return



Model Number	A	B	C	D	E	F	G	H	P
2323M23-SD2U * +	38 (1.50)	30(1.18)	32(1.26)	12(0.47)	22(0.87)	15(0.59)	22(0.87)	M4 x 6 deep	1/4" NPT
1323M23-SD-F * +	32(1.26)	14(0.55)	32(1.26)	10(0.39)	24(0.94)	24(0.94)	-	4.2 (0.16)	-

1500 Spool Valves

SPOOL VALVES • 1/4", 3/2, 5/2, NPT (BSP)

1500 SERIES

1500 PNEUMATIC VALVES

PILOT OPERATED

General Description

A range of compact 3/2 and 5/2 pilot operated spool valves in Stainless Steel for use on gases and liquids

- Compact
- 3/2 and 5/2 versions
- Meet NACE standard
- Stainless Steel internals

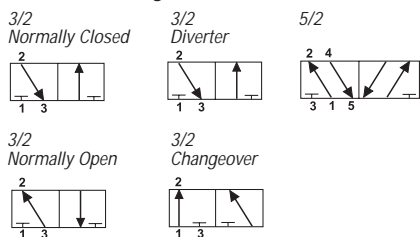
Operating Medium

Gases

Filtered lubricated or non-lubricated air, inert gas, sweet (natural) gases.

Sour gas option available (details on application)

Functional Symbols



Technical Data

Ports

- 1/4" NPT (BSP option available)
- 1/8" NPT pilot ports

Working Temperature

- -20°C to +180°C (-4°F to +356°F)

Low temperature version

- -50°C (-58°F) (optional)

Working Pressure (gases & liquids)

- 12 bar (174 psi) Maximum

Minimum Pilot Pressure

- 6.3 bar (90 psi) body pressure

3/2 5/2

Spring Return 2.3 bar (33 psi) 3.5 bar (51 psi)

Pilot Return 1.3 bar (19 psi) 2.3 bar (33 psi)

Pilot Servo 0.8 bar (12 psi) 1.2 bar (17 psi)

Pilot Reset 3.0 bar (44 psi) 5.0 bar (72 psi)

Maximum Flow

- 6.3 bar (87 psi), 1 bar (14.5 psi) differential
- 3/2 valves - 1000 L/min (35.3 SCFM)
- 5/2 valves - 1200 L/min (42.4 SCFM)

Cv (Kv)

- 3/2 valves - 1.0 (15)
- 5/2 valves - 1.2 (17)

Construction Materials

- Stainless Steel AISI 316L to NACE MR-01-75 Body
- Stainless Steel AISI 316L to NACE MR-01-75 Spool
- 316 Stainless Steel Spring
- Fluoroelastomer Seals



Preferred Models

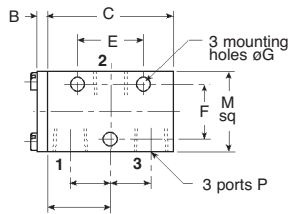
Model Number	Description	Weight kg (lbs)	Symbol
2326M21-VR2B	1/4" NPT 3/2 Pilot operated, spring return	0.55 (1.21)	
2326M212VR2B	1/4" NPT 3/2 Pilot operated, spring return with latch lock, manual reset	0.93 (2.05)	
2326M218VR2B	1/4" NPT 3/2 Pilot operated, spring return with reverse latch lock, manual reset	0.93 (2.05)	
2326B11-VR2B	1/4" NPT 3/2 Pilot operated, pilot return	0.70 (1.54)	
2526M21-VR2B	1/4" NPT 5/2 Pilot operated, spring return	1.00 (2.20)	
2526M212VR2B	1/4" NPT 5/2 Pilot operated, pilot return with latch lock, manual reset	1.38 (3.04)	
2526M218VR2B	1/4" NPT 5/2 Pilot operated, spring return with reverse latch lock, manual reset	1.38 (3.04)	
2526B11-VR2B	1/4" NPT 5/2 Pilot operated, pilot return	1.00 (2.20)	

PILOT OPERATED

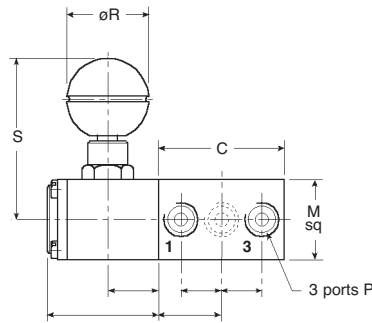
INSTALLATION DIMENSIONS mm (inches)

3/2 Pilot Operated, Spring or Pilot Return

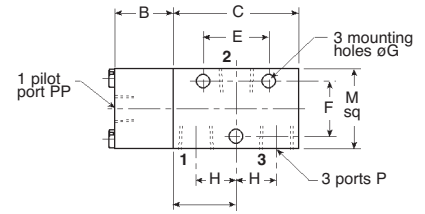
Pilot Operated - Spring Return
2326M21-VR2B



Pilot Operated - Spring Return with latch lock
2326M212VR2B, 2326M218VR2B



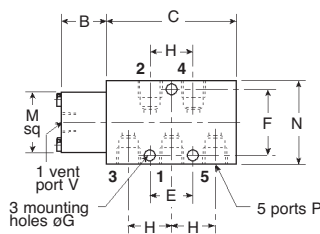
Pilot Operated - Pilot Return
2326B11-VR2B



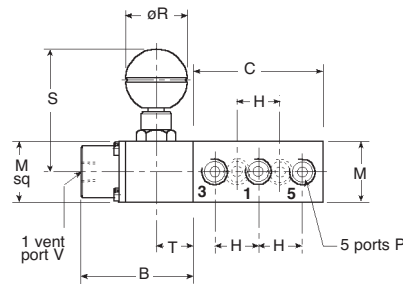
Model Number	A	D	K	L	P	PP
2326M21-VR2B	78 (3.07)	24 (0.94)	-	-	1/4" NPT 1/4" NPT	1/8" NPT 1/8" NPT
2326B11-VR2B	98 (3.86)	24 (0.94)	-	-	1/4" NPT 1/4" NPT	1/8" NPT 1/8" NPT
2326M212VR2B	118 (4.65)	24 (0.94)	-	-	1/4" NPT 1/4" NPT	1/8" NPT 1/8" NPT
2326M218VR2B	118 (4.65)	24 (0.94)	-	-	1/4" NPT 1/4" NPT	1/8" NPT 1/8" NPT

5/2 Pilot Operated, Spring or Pilot Return

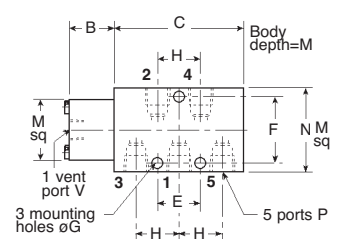
Pilot Operated - Spring Return
2526M21-VR2B



Pilot Operated - Spring Return with Latch Lock
2526M212VR2B, 2526M218VR2B



Pilot Operated - Pilot Return
2526B11-VR2B



Model Number	A	D	K	L	P	PP	V
2526M21-VR2B	117 (4.61)	24 (0.94)	-	-	1/4" NPT 1/4" NPT	1/8" NPT 1/8" NPT	1/8" NPT 1/8" NPT
2526B11-VR2B	117 (4.61)	24 (0.94)	-	-	1/4" NPT 1/4" NPT	1/8" NPT 1/8" NPT	-
2526M212VR2B	157 (6.18)	24 (0.94)	-	-	1/4" NPT 1/4" NPT	1/8" NPT 1/8" NPT	-
2526M218VR2B	157 (6.18)	24 (0.94)	-	-	1/4" NPT 1/4" NPT	1/8" NPT 1/8" NPT	-

MECHANICALLY OPERATED (ROLLER/LEVER, ROLLER, PLUNGER)

General Description

A range of compact 3/2 and 5/2 spool valves in Stainless Steel for use on gases.

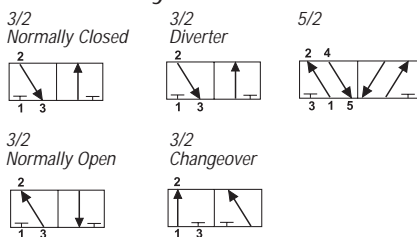
- Closed centre
- All 316L
- Compact

Operating Medium

Gases

Filtered non-lubricated air, inert, sweet (natural) gases.

Functional Symbols



Technical Data

Ports

- 1/4" NPT (BSP option available)

Working Temperature

- -20°C to +75°C (-4°F to +167°F)

Low temperature version

- -50°C (-58°F) (optional)

Working Pressure

- 12 bar (174 psi) maximum

Maximum Flow

- 6 bar (87 psi), 1 bar (14.5 psi) differential

differential

- 3/2 valves - 1000 L/min (35.3 SCFM)

- 5/2 valves - 1200 L/min (42.4 SCFM)

Cv (Kv)

- 3/2 valves - 1.0 (15)

- 5/2 valves - 1.2 (17)

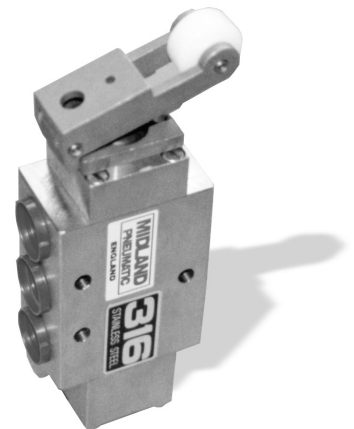
Operating Force

- 10 bar (145 psi) differential

	3/2	5/2
Roller/lever	35 N (8 lbf)	40 N (9 lbf)
Roller	76 N (17 lbf)	89 N (20 lbf)
Plunger	76 N (17 lbf)	89 N (20 lbf)

Construction Materials

- Stainless Steel AISI 316L to NACE MR-01-75 Body
- Stainless Steel AISI 316L to NACE MR-0175 Spool
- 316 Stainless Steel Spring
- Fluoroelastomer Seals
- 316 Stainless Steel Roller/Lever



Preferred Models

Model Number	Description	Weight kg (lbs)	Symbol
2326M28-VR2B	1/4" NPT 3/2 Roller/lever operated, spring return	0.55 (1.21)	
2326M2CVR2B	1/4" NPT 3/2 Roller operated, spring return	0.48 (1.06)	
2326M26-VR2B	1/4" NPT 3/2 Plunger operated, spring return	0.46 (1.01)	
2526M28-VR2B	1/4" NPT 5/2 Roller/lever operated, spring return	1.00 (2.20)	
2526M2CVR2B	1/4" NPT 5/2 Roller operated, spring return	1.12 (2.47)	
2526M26-VR2B	1/4" NPT 5/2 Plunger operated, spring return	1.10 (2.42)	

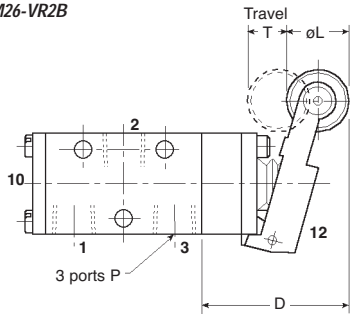
For panel mounted versions of roller operated and plunger operated models, substitute code 5 for - in position 8. (i.e. 2326M26-VR2B becomes 2326M265VR2B, 2526M2CVR2B becomes 2526M2C5-ER2B, 2526M26-VR2B becomes 2526M265 VR2B)

MECHANICALLY OPERATED (ROLLER/LEVER, ROLLER, PLUNGER)

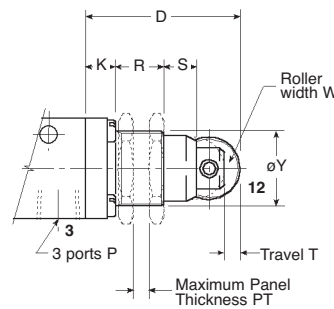
INSTALLATION DIMENSIONS mm (inches)

3/2 Roller/Lever, Roller, Plunger Operated, Spring Return

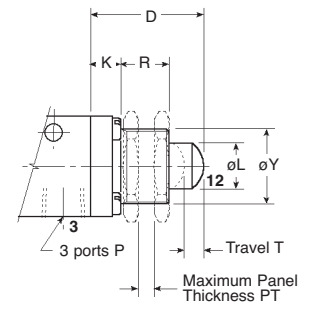
Roller/Lever Operated
2326M26-VR2B



Roller Operated
2326M2C-VR2B, 2326M2C5VR2B



Plunger Operated
2326M26-VR2B, 2326M265VR2B



Travel T = 11.75 (0.46) to operate, 12.5 (0.49) maximum
For basic valve dimensions see 3/2 spring return bases on page 1500.7

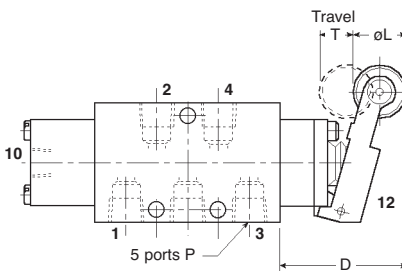
Model Number	D	K	L	P	R	S	T	V	W	X	PT
2326M28-VR2B	47 (1.85)	-	20 (0.79)	1/4" NPT 1/4" NPT	-	-	12.5 (0.49)	22 (0.87)	-	37 (1.46)	-
2326M2C-VR2B	50 (1.97)	10 (0.39)	-	1/4" NPT 1/4" NPT	15 (0.59)	10.5 (0.41)	5 (0.20)	-	5 (0.20)	-	5 (0.20)
2326M26-VR2B	35 (1.38)	10 (0.39)	13 (0.51)	1/4" NPT 1/4" NPT	15 (0.59)	-	5 (0.20)	-	-	-	5 (0.20)

Panel mounting thread øY is 15/16" dia. x 26 TPI Whit Form.

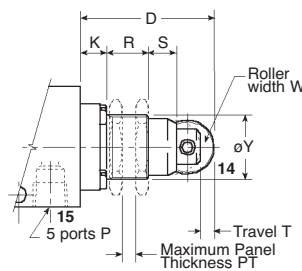
Panel mounted models 2326M2C5VR2B and 2326M265VR2B are supplied with 2 off locknuts as indicated.

5/2 Roller/Lever, Roller, Plunger Operated, Spring Return

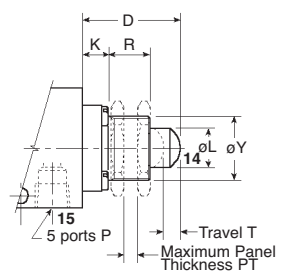
Roller/Lever Operated
2526M28-VR2B



Roller Operated
2526M2C-VR2B, 2526M2C5VR2B



Plunger Operated
2526M26-VR2B, 2526M265VR2B



Travel T = 14.5 (0.57) to operate, 15.25 (0.60) maximum
For basic valve dimensions see 5/2 spring return bases on page 1500.7

Model Number	D	K	L	P	R	S	T	V	W	X	PT
2526M28-VR2B	51 (2.00)	-	20 (0.79)	1/4" NPT 1/4" NPT	-	-	15.25 (0.60)	22 (0.87)	-	37 (1.46)	-
2526M2C-VR2B	50 (1.97)	10 (0.39)	-	1/4" NPT 1/4" NPT	15 (0.59)	10.5 (0.41)	6 (0.24)	-	5 (0.20)	-	5 (0.20)
2526M26-VR2B	35 (1.38)	10 (0.39)	13 (0.51)	1/4" NPT 1/4" NPT	15 (0.59)	-	6 (0.24)	-	-	-	5 (0.20)

Panel mounting thread øY is 15/16" dia. x 26 TPI Whit Form.

Panel mounted models 2526M2C5VR2B and 2526M265VR2B are supplied with 2 off locknuts as indicated.

MANUALLY OPERATED (PAD)

General Description

A range of compact 3/2 and 5/2 manually operated spool valves in Stainless Steel for use on gases.

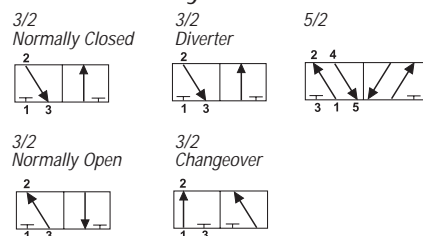
- Panel mounted option
- Closed centre
- Compact

Operating Medium

Gases

Filtered non-lubricated air, inert, sweet (natural) gases.

Functional Symbols



Technical Data

Ports

- 1/4" NPT (BSP option available)
- 1/8" NPT pilot ports

Working Temperature

- -20°C to +180°C (-4°F to +356°F)

Low temperature version

- -50°C (-58°F) (optional)

Working Pressure (gases & liquids)

- 12 bar (174 psi) Maximum

Maximum Flow

- 6 bar (87 psi), 1 bar (14.5 psi) differential
- 3/2 valves - 1000 L/min (35.3 SCFM)
- 5/2 valves - 1200 L/min (42.4 SCFM)

Cv (Kv)

- 3/2 valves - 1.0 (15)
- 5/2 valves - 1.2 (17)

Operating Force

- 10 bar (145 psi) differential
- 3/2 valves 76 N (17 lbf)
- 5/2 valves 89 N (20 lbf)

Construction Materials

- Stainless Steel AISI 316L to NACE MR-01-75 Body
- Stainless steel AISI 316L to NACE MR-01-75 Spool
- 316 Stainless Steel Spring
- Fluoroelastomer Seals
- Phenolic Resin Pad



Preferred Models

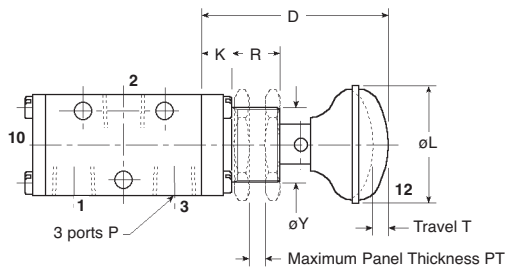
Model Number	Description	Weight kg (lbs)	Symbol
2326M27-VR2B	1/4" NPT 3/2 Pad operated, spring return	0.50 (1.10)	
2326B77-VR2B	1/4" NPT 3/2 Pad operated, push - pull	0.61 (1.34)	
2326B773VR2B	1/4" NPT 3/2 Pad operated, push - pull with detent	0.63 (1.39)	
2326B17-VR2B	1/4" NPT 3/2 Pad operated, pilot air return	0.63 (1.39)	
2526M27-VR2B	1/4" NPT 5/2 Pad operated, spring return	0.95 (2.09)	
2526B77-VR2B	1/4" NPT 5/2 Pad operated, push - pull	0.93 (2.05)	
2526B773VR2B	1/4" NPT 5/2 Pad operated, push - pull with detent	0.95 (2.09)	
2526B17-VR2B	1/4" NPT 5/2 Pad operated, pilot air return	0.95 (2.09)	

MANUALLY OPERATED PAD

INSTALLATION DIMENSIONS mm (inches)

3/2 Pad Operated, Spring Return

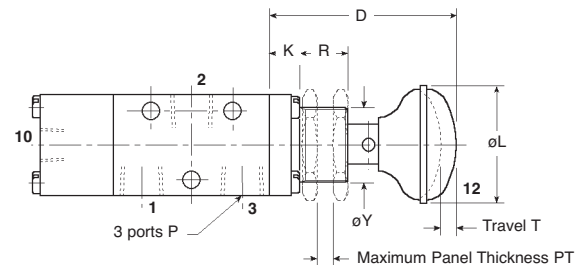
Pad Operated
2326M27-VR2B, 2326M275VR2B



For basic valve dimensions, see 3/2 spring return bases on page 1500.7

3/2 Pad Operated (Push-Pull) 3/2 Pad Operated, Pilot Air Return

Pad Operated (Push-Pull) 2326B77VR2B, 2326MB775VR2B
Pad Operated (Push-Pull) 2326B773VR2B
Pad Operated, Pilot Air Return 2326B17VR2B, 2326B175VR2B



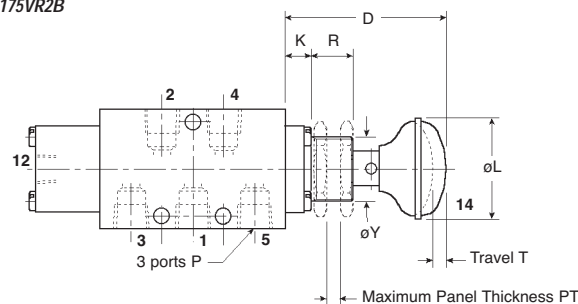
For basic valve dimensions, see 3/2 spring return bases on page 1500.7

Model Number	D	K	L	P	R	T	PT
2326M27-VR2B	60 (2.36)	10 (0.39)	38 (1.50)	1/4" NPT (0.59)	15 (0.59)	5 (0.20)	5 (0.20)
2326B77-VR2B	60 (2.36)	10 (0.39)	38 (1.50)	1/4" NPT (0.59)	15 (0.59)	5 (0.20)	5 (0.20)
2326B773VR2B	60 (2.36)	10 (0.39)	38 (1.50)	1/4" NPT (0.59)	15 (0.59)	5 (0.20)	5 (0.20)
2326B17-VR2B	60 (2.36)	10 (0.39)	38 (1.50)	1/4" NPT (0.59)	15 (0.59)	5 (0.20)	5 (0.20)

Panel mounting thread øY is 15/16" dia. x 26 TPI Whit Form. Panel mounted models 2326M275VR2B, 2326B775VR2B and 2326B175VR2B are supplied with 2 off locknuts as indicated.

5/2 Pad Operated, Spring Return, 5/2 Pad Operated (Push-Pull), 5/2 Pad Operated, Pilot Air Return

Pad Operated (Push-Pull) 2526M27-VR2B, 2526M275VR2B
Pad Operated (Push-Pull) 2526B77-VR2B, 2526B775VR2B
Pad Operated (Push-Pull) with detent 2526B773VR2B
Pad Operated, pilot air return 2526B17-VR2B, 2526B175VR2B



For basic valve dimensions, see 5/2 spring return or 5/2 pilot return bases on page 1500.7

Model Number	D	K	L	P	R	T	PT
2526M27-VR2B	60 (2.36)	10 (0.39)	38 (1.50)	1/4" NPT (0.59)	15 (0.59)	6 (0.24)	5 (0.20)
2526B77-VR2B	60 (2.36)	10 (0.39)	38 (1.50)	1/4" NPT (0.59)	15 (0.59)	6 (0.24)	5 (0.20)
2526B773VR2B	60 (2.36)	10 (0.39)	38 (1.50)	1/4" NPT (0.59)	15 (0.59)	6 (0.24)	5 (0.20)
2526B17-VR2B	60 (2.36)	10 (0.39)	38 (1.50)	1/4" NPT (0.59)	15 (0.59)	6 (0.24)	5 (0.20)

Panel mounting thread øY is 15/16" dia. x 26 TPI Whit Form. Panel mounted models 2526M275VR2B, 2526B775VR2B and 2526B175VR2B are supplied with 2 off locknuts as indicated.

MANUALLY OPERATED (PAD) AND PILOT OPERATED

General Description

A range of compact 3/2 and 5/2 manually operated spool valves in stainless steel for use on liquids and gases.

- Panel mounted option
- Closed centre
- Compact

Operating Medium

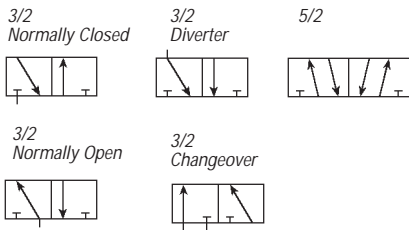
Gases

- 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

Functional Symbols



Technical Data

Ports

- 1/4" NPT (BSP option available)
- 1/8" NPT pilot ports

Working Temperature

- -20°C to +180°C (-4°F to +356°F)

Low temperature version

- -50°C (-58°F) (optional)

Working Pressure

(gases & liquids)

- 12 bar (174 psi) Maximum

Working Pressure

(gases and liquids)

- 12 bar (174 psi)

Operating Force

- 10 bar (145 psi) body pressure

- 3/2 valves 76 N (17 lbf)

- 5/2 valves 89 N (20 lbf)

Cv (Kv)

- 3/2 valves - 1.0 (15)

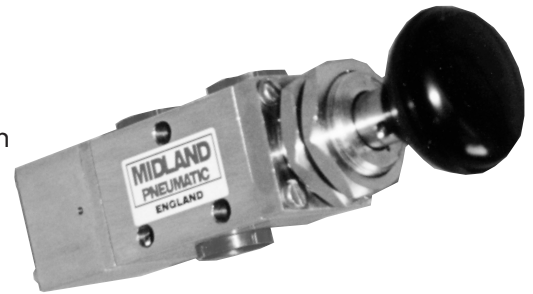
- 5/2 valves - 1.2 (17)

Maximum Flow

- 6 bar (87 psi), 1 bar (14.5 psi) differential

- 3/2 valves - 1000 L/min (35.3 SCFM)

- 5/2 valves - 1200 L/min (42.4 SCFM)



Construction Materials

- Stainless Steel AISI 316L to NACE MR-01-75 Body
- Stainless Steel AISI 316L to NACE MR-01-75 Spool
- 316 Stainless Steel Spring
- Fluoroelastomer Seals
- Phenolic Resin Pad

Preferred Models

Model Number	Description	Weight kg (lbs)	Symbol
2326M2F-VR2B	1/4" NPT 3/2 Pad or pilot operated, spring return	0.65 (1.54)	
2526M2F-VR2B	1/4" NPT 5/2 Pad or pilot operated, spring return	1.00 (2.20)	

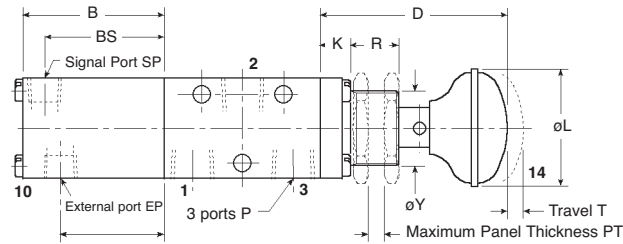
These models are supplied with 2 off locknuts for mounting.

MANUALLY OPERATED (PAD) AND PILOT LATCH

INSTALLATION DIMENSIONS mm (inches)

3/2 Pad or Pilot Operated, Spring Return

2326M2F-VR2B



For basic valve dimensions, see 3/2 pilot air return bases on page 1500.7

Model Number	B	D*	K	L	P	R	T	PT
2326M2F-VR2B	34	60	10	38	1/4" NPT	15	5	5
	(1.34)	(2.36)	(0.39)	(1.50)	1/4" NPT	(0.59)	(0.20)	(0.20)

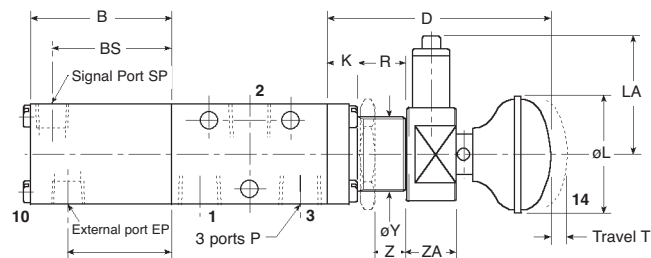
Panel mounting thread øY is 15/16" dia. x 26 TPI Whit Form.

Panel mounted model 2326M2F5VR2B, 2526M2F5VR2B are supplied with 2 off locknuts for mounting.

For above model in Brass specify 'R' in position 9 (in place of 'V')

5/2 Pad or Pilot Operated, Spring Return

2526M2F-VR2B



For basic valve dimensions, see 3/2 pilot air return bases on page

Model Number	B	D*	K	L	P	R	T	PT
2526M2F-VR2B	34	60	10	38	1/4" NPT	15	5	5
	(1.34)	(2.36)	(0.39)	(1.50)	1/4" NPT	(0.59)	(0.20)	(0.20)

Panel mounting thread øY is 15/16" dia. x 26 TPI Whit Form.

Panel mounted model 2326M2F5VR2B, 2526M2F5VR2B are supplied with 2 off locknuts for mounting.

For above model in Brass specify 'R' in position 9 (in place of 'V')

1500 PNEUMATIC VALVES MANUALLY OPERATED (PAD) AND PILOT LATCH

INSTALLATION DIMENSIONS mm (inches)

General Description

A range of compact 3/2 manually operated spool valves in Stainless Steel for use on gases.

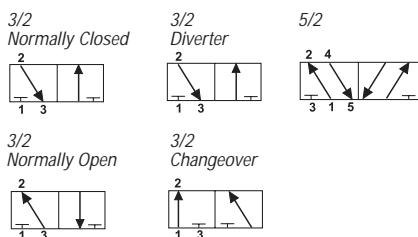
- Mechanical latch
- Pilot latch

Operating Medium

Gases

Filtered non-lubricated, air, inert, sweet (natural) gases.

Functional Symbols



Technical Data

Ports

- 1/4" NPT (BSP option available)

Working Temperature

- -20°C to +180°C (-4°F to +356°F)

Low temperature version

- -50°C (-58°F) (optional)

Working Pressure (gases and liquids)

- 10 bar (145 psi) maximum



Maximum Flow

- 6 bar (87 psi), 1 bar (14.5 psi) differential
- 3/2 valves - 1000 L/min (35.3 SCFM)

Cv (Kv)

- 3/2 valves - 1.0 (15)

Operating Force

- 10 bar (145 psi) body pressure Button Operated

- 3/2 valves - 76 N (17 lbf)

- 5/2 valves - 89 N (20 lbf)

Construction Materials

- Stainless Steel AISI 316L to NACE MR-01-75 Body
- Stainless Steel AISI 316L to NACE MR-01-75 Spool
- 316 Stainless Steel Spring
- Fluoroelastomer Seals

Function

PAD OPERATED, SPRING RETURN WITH PILOT LATCH

If a pilot pressure of 1.5 to 10 bar (21 to 145 psi) is present at pilot ports when the knob is pulled out, the pilot pressure will hold the valve in the operated position against the return spring. If the pilot pressure falls to 0.5 bar (7 psi) or less, the valve will be reset to its unoperated position. The valve cannot be operated by pilot pressure alone, manual operation must take place first.

PAD OPERATED, SPRING RETURN WITH PILOT LATCH AND MANUAL LATCH PIN

If a pilot pressure of 1.5 to 10 bar (21 to 145 psi) is present at pilot ports when the knob is pulled out, the pilot pressure will hold the valve in the operated position against the return spring. If the pilot pressure falls to 2 to 10 bar (29 to 145 psi) this will simultaneously allow the latch to release whilst holding the valve in the operated position. The valve will reset to its unoperated position. The valve cannot be operated by pilot pressure alone, manual operation must take place first.

Preferred Models

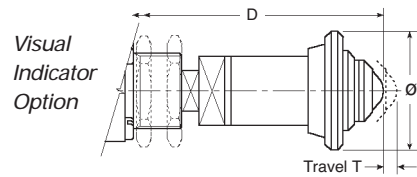
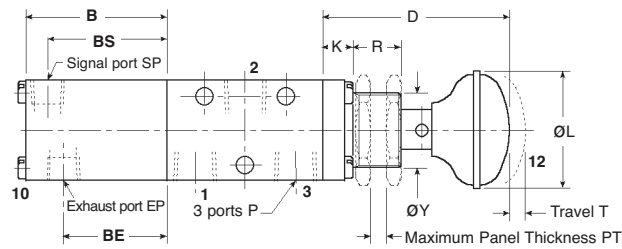
Model Number	Description	Weight kg (lbs)	Symbol
2326M276VR2B	1/4" NPT 3/2 Pad operated, spring return with pilot latch	0.75 (1.65)	
2326M2JVR2B	1/4" NPT 3/2 Pad operated, spring return, pilot latch, manual pin	0.85 (1.87)	
2326M27AVR2B	1/4" NPT 3/2 Pad operated, spring return, pilot latch, manual pin	0.85 (1.87)	
2326M27HVR2B	1/4" NPT 3/2 Pad operated, spring return, pilot latch, manual pin	0.85 (1.87)	
2526M276VR2B	1/4" NPT 3/2 Pad operated, spring return, pilot latch, manual pin	0.85 (1.87)	
2526M27JVR2B	1/4" NPT 3/2 Pad operated, spring return, pilot latch, manual pin	0.85 (1.87)	
2526M27AVR2B	1/4" NPT 3/2 Pad operated, spring return, pilot latch, manual pin	0.85 (1.87)	
2526M27HVR2B	1/4" NPT 3/2 Pad operated, spring return, pilot latch, manual pin	0.85 (1.87)	

MANUALLY OPERATED (PAD)

INSTALLATION DIMENSIONS mm (inches)

3/2 Pad Operated, Spring Return with Pilot Latch (Visual Indicator Option).

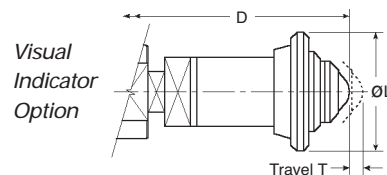
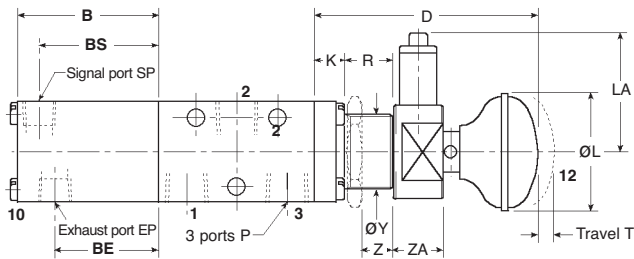
2326M276VR2B (Visual Indicator Option 2326M27JVR2B)



For basic valve dimensions, see 3/2 spring return bases on page 1500.7

3/2 Pad Operated, Spring Return with Pilot Latch and Manual Latch Pin (Visual Indicator Option).

2326M27AVR2B (Visual Indicator Option 2326M27HVR2B)



For basic valve dimensions, see 3/2 spring return bases on page 1500.7

Model Number	B	BE	BS	D*	K	L	LA	P	SP	EP	R	T	PT	Z	ZA
2326M276VR2B	45 (1.77)	33 (1.30)	38 (1.50)	60 (2.36)	10 (0.39)	38 (1.50)	-	1/4" NPT	1/8" NPT	1/8" NPT	15 (0.59)	5 (0.20)	5 (0.20)	-	-
2326M27AVR2B	45 (1.77)	33 (1.30)	38 (1.50)	72.5 (2.86)	10 (0.39)	38 (1.50)	38 (1.50)	1/4" NPT	1/8" NPT	1/8" NPT	15 (0.59)	5 (0.20)	-	10 (0.39)	16 (0.63)
2326M27JVR2B	45 (1.77)	33 (1.30)	38 (1.50)	89/105 (3.50)/(4.13)	10 (0.39)	38 (1.50)	38 (1.50)	1/4" NPT	1/8" NPT	1/8" NPT	15 (0.59)	5 (0.20)	-	10 (0.39)	16 (0.63)

Panel mounting thread ØY is 15/16" dia. x 26 TPI Whit Form.

Visual Indicator - Red (Off) / Green (On)

* D dimension for visual indicator option code 'J' = 89 (3.50), code 'H' = 105 (4.13). These models are supplied with 2 off locknuts for mounting.

MANUALLY OPERATED (BUTTON), MANUALLY OPERATED (KEY)

General Description

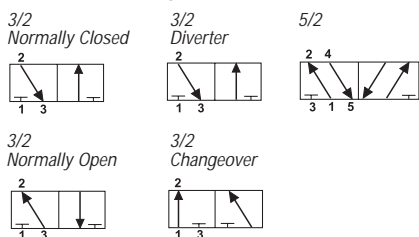
A range of compact 3/2 and 5/2 manually operated spool valves in Stainless Steel for use on gases.

- Unique key
- Fully guarded button
- Closed centre

Operating Medium

Filtered non-lubricated air, inert, sweet (natural) gases.

Functional Symbols



Technical Data

Ports

- 1/4" NPT (BSP option available)

Working Temperature

- -20°C to +180°C (-4°F to +356°F)

Working Pressure (gases and liquids)

- 10 bar (145 psi) maximum

Operating Force

- 10 bar (145 psi) body pressure

Button Operated

- 3/2 valves - 76 N (17 lbf)

- 5/2 valves - 89 N (20 lbf)

Maximum Flow

- 6 bar (87 psi), 1 bar (14.5 psi) differential

- 3/2 valves - 1000 L/min (35.3 SCFM)

- 5/2 valves - 1200 L/min (42.4 SCFM)

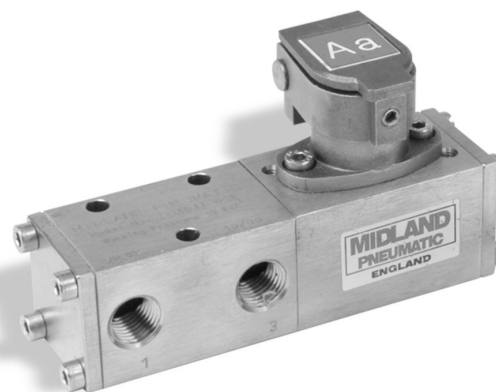
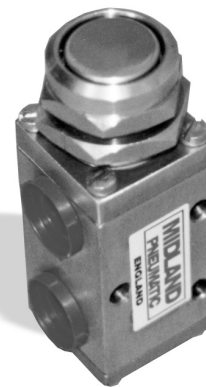
Cv (Kv)

- 3/2 valves - 1.0 (15)

- 5/2 valves - 1.2 (17)

Construction Materials

- Stainless Steel AISI 316L to NACE MR-01-75 Body
- Stainless Steel AISI 316L to NACE MR-01-75 Spool
- 316 Stainless Steel Spring
- Fluoroelastomer Seals



Preferred Models

Model Number	Description	Weight kg (lbs)	Symbol
2326M2G-VR2B	1/4" NPT 3/2 Button operated, spring return	0.50 (1.10)	
2326M2GGVR2B	1/4" NPT 3/2 Guarded button operated, spring return	0.55 (1.21)	
2326BRR-VR2B	1/4" NPT 3/2 Key operated (positive). Key removable in unoperated position	0.97 (2.14)	
2326M2R-VR2B	1/4" NPT 3/2 Key operated (spring return). Key removable in unoperated position	0.97 (2.14)	
2326BRK-VR2B	1/4" NPT 3/2 Key operated (positive). Key removable in both positions	0.97 (2.14)	
2526BRR-VR2B	1/4" NPT 5/2 Key operated (positive). Key removable in unoperated position	1.47 (3.24)	
2526M2R-VR2B	1/4" NPT 5/2 Key operated (spring return). Key removable in unoperated position	1.47 (3.24)	
2526BRK-VR2B	1/4" NPT 5/2 Key operated (positive). Key removable in both positions	1.47 (3.24)	

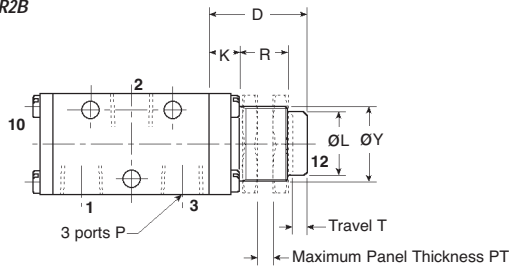
For panel mounted version of model 2326M2G-VR2B, substitute code 5 for - in position 8. All other models are supplied with panel mounting facilities.

MANUALLY OPERATED (BUTTON), MANUALLY OPERATED (KEY)

INSTALLATION DIMENSIONS mm (inches)

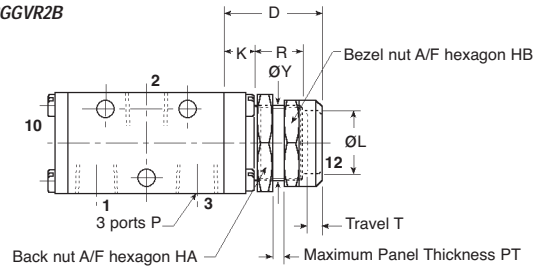
3/2 Button Operated, Spring Return

2326M2G-VR2B



3/2 Button Operated, Spring Return

2326M2GGVR2B

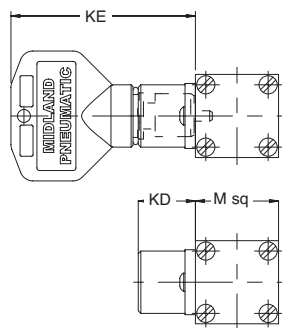


Model Number	D	K	L	P	R	T	PT	HA	HB
2326M2G-VR2B	31 (1.22)	10 (0.39)	20 (0.79)	1/4" NPT 1/4" NPT	15 (0.59)	5 (0.20)	5 (0.20)	-	-
2326M2GGVR2B	31 (1.22)	10 (0.39)	20 (0.79)	1/4" NPT 1/4" NPT	15 (0.59)	5 (0.20)	4 (0.16)	30.5 (1.20)	28 (1.10)

Panel mounting thread ØY is 15/16" dia x 26 TPI Whit Form

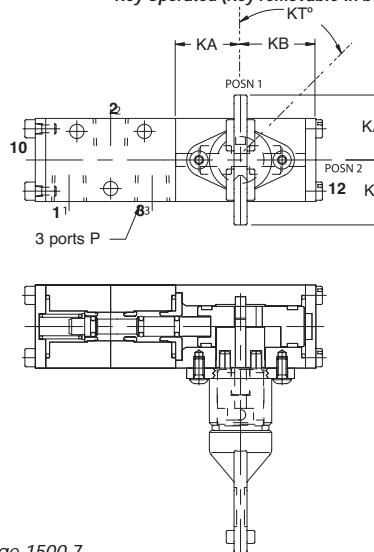
3/2 Key Operated

Key Operated (Key retained in operated position) 2326BRR-VR2B
 Key Operated, spring return (Key retained in ordered position) 2326M2R-VR2B
 Key Operated (Key removable in both positions) 2326BRK-VR2B



5/2 Key Operated

Key Operated (Key retained in operated position) 2526BRR-VR2B
 Key Operated, spring return (Key retained in ordered position) 2526M2R-VR2B
 Key Operated (Key removable in both positions) 2526BRK-VR2B



For basic valve dimensions see 3/2 and 5/2 spring return bases on page 1500.7

Model Number	P	M	KA	KB	KD	KE	KT
2326BRR-VR2B	1/4" NPT 1/4" NPT	32 (1.26)	25 (0.98)	29 (1.14)	22 (1.14)	71 (2.60)	90° 90°
2326M2R-VR2B	1/4" NPT 1/4" NPT	32 (1.26)	25 (0.98)	29 (1.14)	22 (1.14)	71 (2.60)	60° 60°
2326BRKVR2B	1/4" NPT 1/4" NPT	32 (1.26)	25 (0.98)	29 (1.14)	22 (1.14)	71 (2.60)	90° 90°
2526BRR-VR2B	1/4" NPT 1/4" NPT	32 (1.26)	25 (0.98)	29 (1.14)	22 (1.14)	71 (2.60)	90° 90°
2526M2R-VR2B	1/4" NPT 1/4" NPT	32 (1.26)	25 (0.98)	29 (1.14)	22 (1.14)	71 (2.60)	60° 60°
2526BRKVR2B	1/4" NPT 1/4" NPT	32 (1.26)	25 (0.98)	29 (1.14)	22 (1.14)	71 (2.60)	90° 90°

MANUALLY OPERATED (SWITCH), MANUALLY OPERATED (LEVER)

General Description

A range of compact 3/2 and 5/2 manually operated spool valves in Stainless Steel for use on gases.

- Panel mounted switch operated
- Closed centre
- Compact

Operating Medium

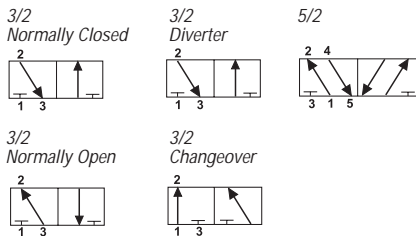
Gases

Filtered non-lubricated air, inert, sweet (natural) gases.

Liquids

Low pressure hydraulic, mineral oil or water.

Functional Symbols



Technical Data

Ports

- 1/4" NPT (BSP option available)
- 1/8" NPT vent port

Working Temperature

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

Working Pressure

- 12 bar (174 psi) maximum

Maximum Flow

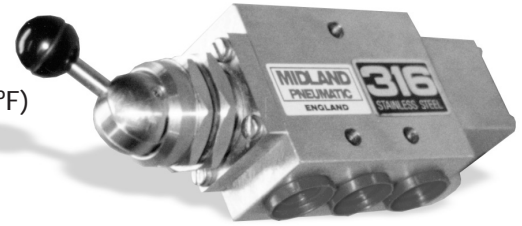
- 6 bar (87 psi), 1 bar (14.5 psi) differential
- 3/2 valves - 1000 L/min (35.3 SCFM)
- 5/2 valves - 1200 L/min (42.4 SCFM)

Cv (Kv)

- 3/2 valves - 1.0 (15)
- 5/2 valves - 1.2 (17)

Operating Force

- 10 bar (145 psi) body pressure
- Switch Operated
- 3/2 valves - 13 N (2.9 lbf)
- 5/2 valves - 16 N (3.5 lbf)



Construction Materials

- Stainless Steel AISI 316L to NACE MR-01-75 Body
- Stainless Steel AISI 316L to NACE MR-01-75 Spool
- 316 Stainless Steel Spring
- Fluoroelastomer Seals

Preferred Models

Model Number	Description	Weight kg (lbs)	Symbol
2326B00-VR2B	1/4" NPT 3/2 Switch operated, spring return with detent	0.80 (1.76)	
2326B553VR2B	1/4" NPT 3/2 Lever operated, with detent	0.80 (1.76)	
2326M25-VR2B	1/4" NPT 3/2 Lever operated, spring return	0.65 (1.43)	
2526B00-VR2B	1/4" NPT 5/2 Switch operated, spring return with detent	1.10 (2.43)	
2526B553VR2B	1/4" NPT 5/2 Lever operated, with detent	1.10 (2.43)	
2526M25-VR2B	1/4" NPT 5/2 Lever operated, spring return	1.10 (2.43)	

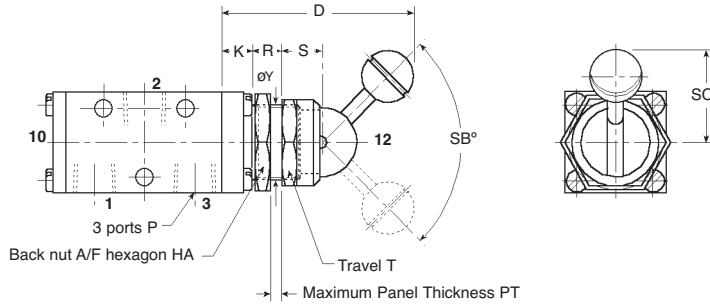
Models 2326B00-VR2B and 2526B00-VR2B are supplied with 2 off locknuts for mounting.

MANUALLY OPERATED (SWITCH), MANUALLY OPERATED (LEVER)

INSTALLATION DIMENSIONS mm (inches)

3/2 Switch Operated, Spring Return with Detent

2326B00-VR2B
2326B20-VR2B



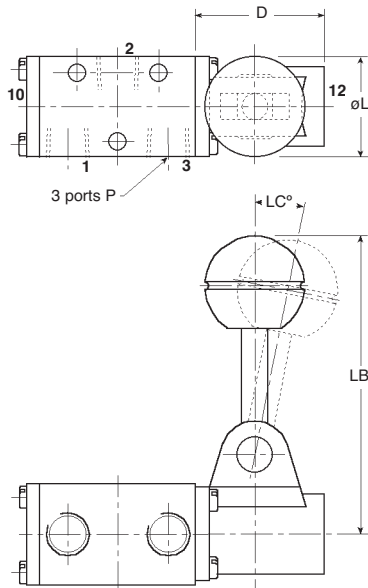
For basic valve dimensions, see 3/2 spring return bases on page 1500.7

Model Number	D	K	P	R	HA	HB	PT	SA	SB	SC
2326B00-VR2B	61	10	1/4" NPT	10	30.5	28	5	13	95°	28
	(2.40)	(0.39)	1/4" NPT	(0.39)	(1.20)	(1.10)	(0.20)	(0.51)	95°	(1.10)

Panel mounting thread ϕY is 15/16" dia. x 26 TPI Whit Form.

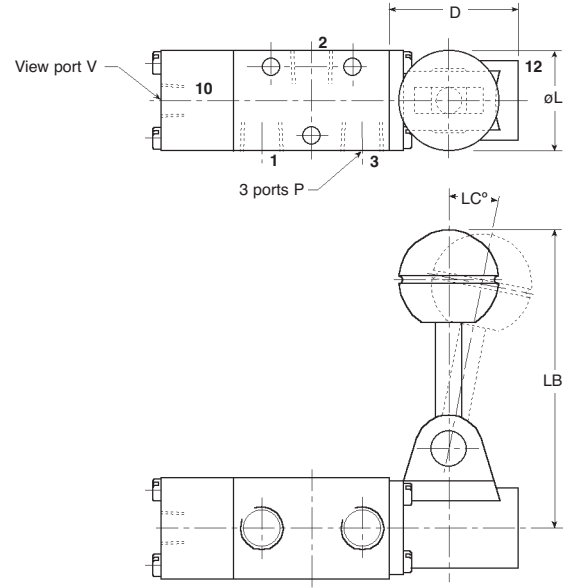
3/2 Lever Operated, Spring Return

2326M25-VR2B



3/2 Lever Operated, with Detent

2326B553VR2B



For basic valve dimensions, see 3/2 spring return and pilot air return bases on page 1500.7

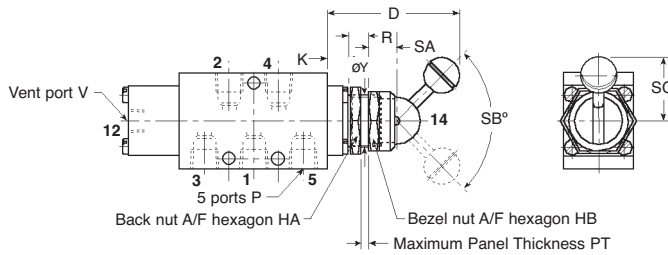
Model Number	D	L	LB	LC	P	V
2326M25-VR2B	41.25	32	96	11.3°	1/4" NPT	-
	(1.62)	(1.26)	(3.78)	11.3°	1/4" NPT	-
2326B553VR2B	41.25	32	96	11.3°	1/4" NPT	1/8" NPT
	(1.62)	(1.26)	(3.78)	11.3°	1/4" NPT	1/8" NPT

MANUALLY OPERATED (SWITCH), MANUALLY OPERATED (LEVER)

INSTALLATION DIMENSIONS mm (inches)

5/2 Switch Operated, Spring Return with Detent.
5/2 Switch Operated, Spring Return.

2526B00-VR2B
2526B20-VR2B



For basic valve dimensions, see 5/2 spring return bases on page 1500.7

Model Number	D	K	P	R	HA	HB	PT	SA	SB	SC	V
2526B00-VR2B	61	10	1/4" NPT	10	30.5	28	5	13	95°	28	1/8" NPT
	(2.40)	(0.39)	1/4" NPT	(0.39)	(1.20)	(1.10)	(0.20)	(0.51)	95°	(1.10)	1/8" NPT

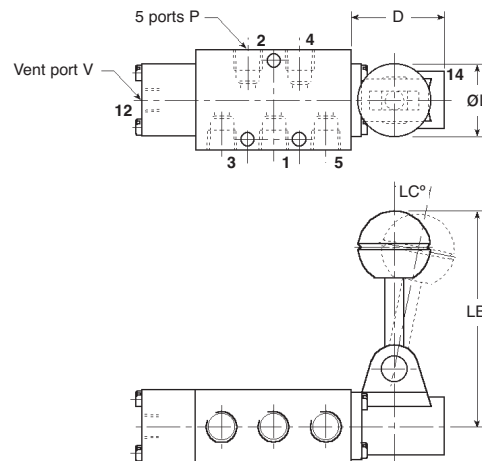
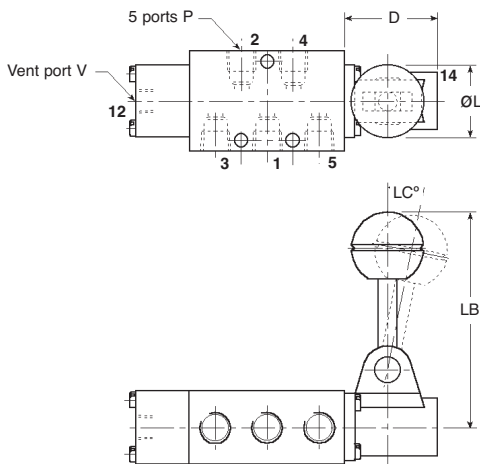
Panel mounting thread øY is 15/16" dia. x 26 TPI Whit Form.

5/2 Lever Operated, Spring Return.

2526M25-VR2B

5/2 Lever Operated, with Detent.

2526B553VR2B



For basic valve dimensions, see 5/2 spring return bases on page 1500.7

Model Number	D	L	LB	LC	P	V
2526M25-VR2B	41.25	32	96	11.3°	1/4" NPT	1/8" NPT
	(1.62)	(1.26)	(3.78)	11.3°	1/4" NPT	1/8" NPT
2526B553VR2B	41.25	32	96	11.3°	1/4" NPT	1/8" NPT
	(1.62)	(1.26)	(3.78)	11.3°	1/4" NPT	1/8" NPT

PILOT SOLENOID OPERATED

General Description

A range of compact 3/2 and 5/2 pilot solenoid operated spool valves in Stainless Steel for use on gases and liquids.

- Hazardous area solenoids.
- Coil with 316 or aluminium housing
- Block before bleed.
- ATEX approved.
- UL Listed CSA approvals.

Operating Medium

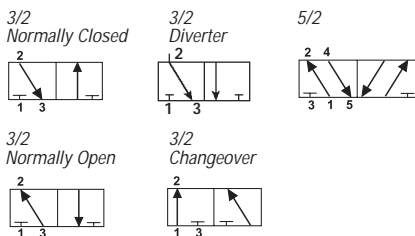
Gases

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

Liquids

Low pressure hydraulic, mineral oil or water.

Functional Symbols



Technical Data

Ports

- 1/2" NPT (BSP option available)
- 1/8" NPT pilot ports

Working Pressure (gases & liquids)

- Single Solenoid Valves
3 to 12 bar (45 to 174 psi)
- Double Solenoid Valves
2 to 12 bar (30 to 174 psi)

Cv (Kv)

- 3/2 valves - 3.5 (53)
- 5/2 valves - 3.5 (53)

Working Temperature

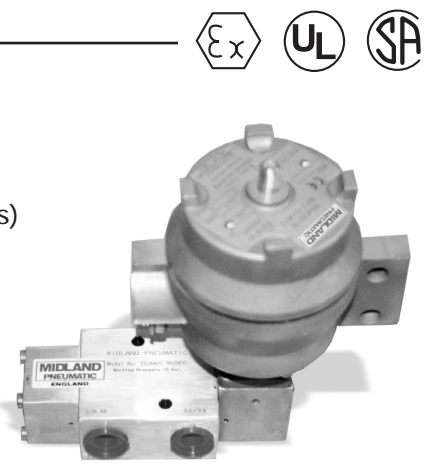
- Valve only
-20°C to +180°C (-4°F to +356°F)
- Solenoid - Ambient temperature
-20°C to +180°C (-4°F to +149°F)

Minimum Pilot Pressure

- At 6.3 bar (90 psi) body pressure
Pilot Return - 2.0 bar (30.0 psi)

Maximum Flow

- 6 bar (87 psi), 1 bar (14.5 psi) differential
- 3/2 valves - 3500 L/min (123 SCFM)
- 5/2 valves - 3500 L/min (123 SCFM)



Construction Materials

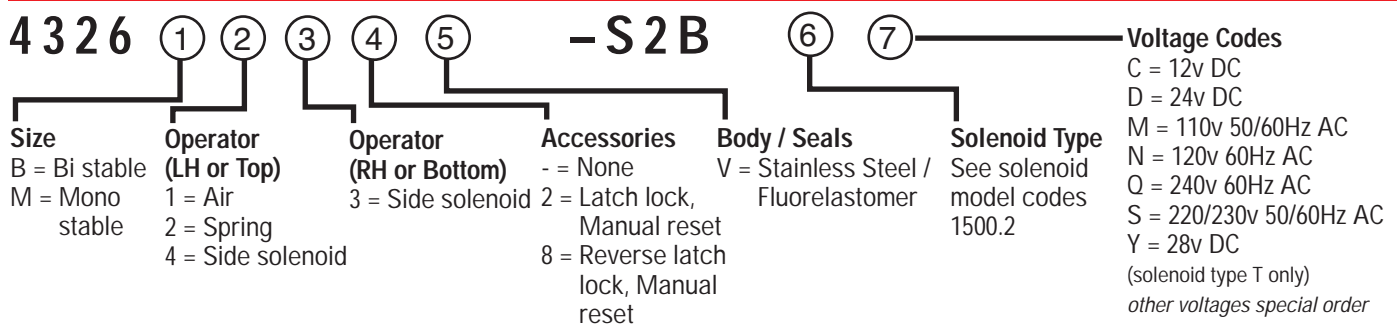
- Stainless Steel AISI 316L to NACE MR-01-75 Body
- Stainless Steel AISI 316L to NACE MR-01-75 Spool
- 316 Stainless Steel Spring
- Fluoroelastomer Seals
- Refer to solenoid specification

Instrument Signals

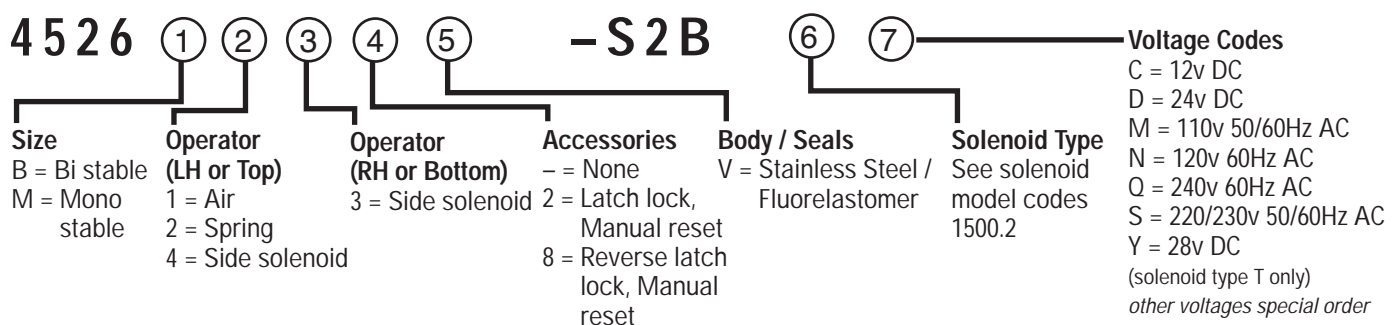
Valves with side mounted solenoids can be supplied to operate on instrument signals, typically 0 to 1.5 bar (0 to 21 psi). A separate supply to the pilot solenoid is necessary. This supply is 2 bar (30 psi) minimum for the double pilot and 3 bar (45 psi) minimum for the single pilot.

MODEL CODES

3/2 Valves



5/2 Valves



1600 Spool Valves

SPOOL VALVES • 1/2", 3/2, 5/2, NPT (BSP)

1600 SERIES

1600 SPOOL VALVES

PILOT SOLENOID OPERATED

SOLENOID MODEL CODES



Model Code	Safety Rating	Protection and Housing Material	Approved Area	Ingress Protection	Weight kg (lbs)
D	EExd II T5	Flameproof Cast Iron	Zones 1 & 2	IP65	1.30 (2.86)
CL	NEMA 7 & 9	Flameproof, 3316 Stainless Steel Class H Insulation	Class I, Groups C & D Class III Groups E, F & G	NEMA 4	0.29 (0.65)
K	EExdIIC T6	Flameproof, 316 Stainless Steel	Zones 1 and 2	IP67	1.62 (3.57)
P	EEme II T4/T5	Increased Encapsulation, Glass Reinforced Polyamid.	Zones 1 and 2	IP66	0.63 (1.39)
T	EExia IIC T6	Intrinsically Safe. Glass Reinforced Polyamid.	Zones 0	IP66	0.53 (1.17)
4	IP65	Solenoid	Not Approved	IP65	0.085 (0.19)

The model code shown appears in the 13th position of the model number.

Preferred models

Model Number	Description	Weight kg (lbs)	Symbol
4326M23-VS2B * +	1/2" NPT 3/2 Pilot solenoid operated, spring return	1.50 (3.31) + Sol	
4326M232VS2B * +	1/2" NPT 3/2 Pilot solenoid operated, spring return with latch lock, manual reset	2.10 (4.63) + Sol	
4326M238VS2B * +	1/2" NPT 3/2 Pilot solenoid operated, spring return with reverse latch lock, manual reset	2.10 (4.63) + Sol	
4326B13-VS2B * +	1/2" NPT 3/2 Pilot solenoid operated, pilot air return	1.60 (3.53) + Sol	
4326B33-VS2B * +	1/2" NPT 3/2 Double pilot solenoid operated	1.70 (3.75) + Sol	

Preferred models

Model Number	Description	Weight kg (lbs)	Symbol
4526M23-VS2B * +	1/2" NPT 5/2 Pilot solenoid operated, spring return	2.10 (4.63) + Sol	
4526M232VS2B * +	1/2" NPT 5/2 Pilot solenoid operated, spring return with latch lock, manual reset	2.70 (5.95) + Sol	
4526M238VS2B * +	1/2" NPT 5/2 Pilot solenoid operated, spring return with reverse latch lock, manual reset	2.70 (5.95) + Sol	
4526B13-VS2B * +	1/2" NPT 5/2 Pilot solenoid operated, pilot air return	2.20 (4.85) + Sol	
4526B33-VS2B * +	1/2" NPT 5/2 Double pilot solenoid operated	2.30 (5.07) + Sol	

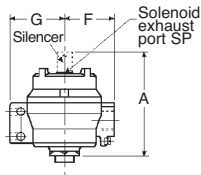
* Specify solenoid type, + Specify solenoid voltage, Without solenoid fitted specify "Z" in position "13" (for Zones 0, 1 & 2)
Without solenoid fitted specify "A" in position "13" (for NEMA 7 & 9)

PILOT SOLENOID OPERATED

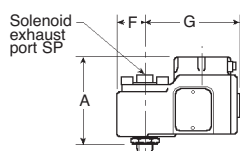


3/2 and 5/2 Spool Valves

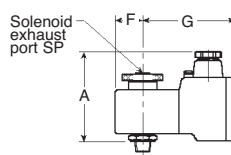
Solenoid code K
(EExd IIC T6)



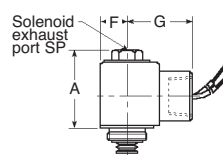
Solenoid code D
(EExd IIc T5)



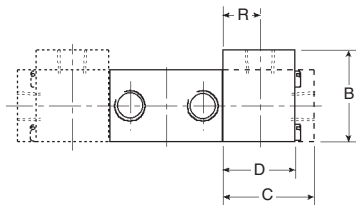
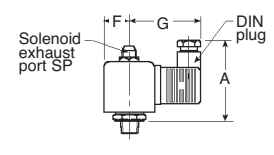
Solenoid code P (EEx me II T4/T5) Solenoid code T (EEx ia IIC T6)



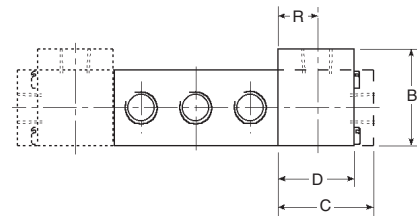
CL (NEMA 7 & 9)



Solenoid code 4
(None hazardous)



3/2 valve base. For basic valve dimensions see page 1600.4



5/2 valve base. For basic valve dimensions see page 1600.4

INSTALLATION DIMENSIONS mm (inches)

Model Code	A	B	C	D	F	G	R	SP
CL	42 (1.65)	41 (1.61)	32 (1.26)	32 (1.26)	18 (0.71)	40 (1.57)	16 (0.63)	1/8" NPT
D	76 (2.99)	41 (1.61)	32 (1.26)	32 (1.26)	25 (0.98)	84 (3.31)	16 (0.63)	1/8" NPT
K	110 (4.33)	41 (1.61)	32 (1.26)	32 (1.26)	52 (2.05)	58 (2.28)	16 (0.63)	M8
P & T	71.5 (2.81)	41 (1.61)	32 (1.26)	32 (1.26)	25 (0.98)	81 (3.19)	16 (0.63)	1/8" NPT
4	57 (2.24)	39 (1.54)	26 (1.02)	21 (0.83)	19.5 (0.77)	50 (1.97)	11 (0.43)	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 Polyamid	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 AC	5W 5W	8W	6W	0.3W	1.8W 1.8W	9W 9W(holding)
Maximum Admissible 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	

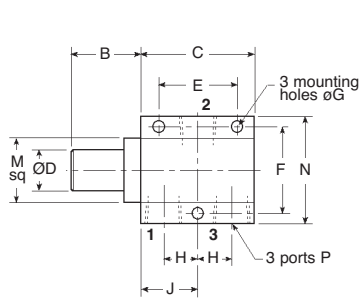
PILOT SOLENOID OPERATED

INSTALLATION DIMENSIONS mm (inches)



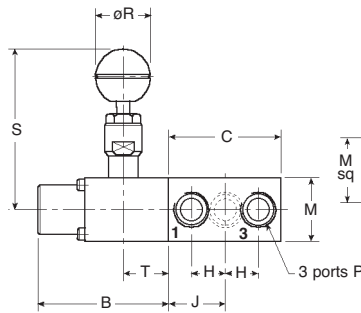
3/2 Pilot Solenoid Operated - Valve Bases

Spring Return
4326M23-VS2B**



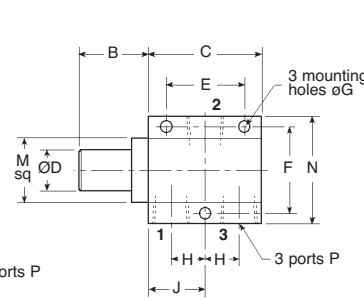
Body Thickness = 'M'

Spring Return with Latch Lock
4326M232VS2B** 4326M238VS2B**



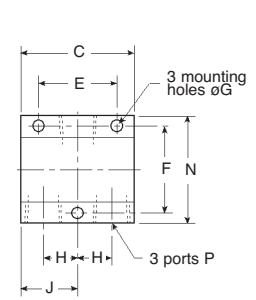
Dimensions 'E', 'F', and 'G' and 'N' as for spring return base

Pilot Air Return
4326B13-VS2B**



Body Thickness = 'M'

Pilot Solenoid Return
4326B33-VS2B**

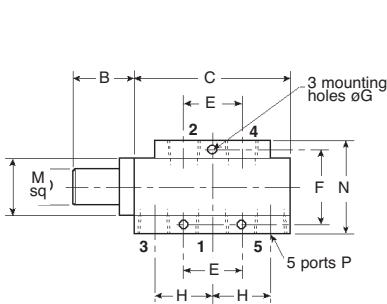


Body Thickness = 'M'

Model Number	B	C	D	E	F	G	H	J	M	N	P	PP	R	S	T
4326M23-VS2B**	40 (1.57)	65 (2.56)	24 (0.94)	45 (1.77)	50 (1.97)	6.5 (0.26)	19.5 (0.77)	32.5 (1.28)	38 (1.50)	62 (2.44)	1/2" NPT 1/2" NPT	- -	- -	- -	- -
4326M232VS2B**	75 (2.95)	65 (2.56)	-	45 (1.77)	50 (1.97)	6.5 (0.26)	19.5 (0.77)	32.5 (1.28)	38 (1.50)	62 (2.44)	1/2" NPT 1/2" NPT	- -	32 (1.26)	93 (3.66)	26 (1.02)
4326M238VS2B**	75 (2.95)	65 (2.56)	-	45 (1.77)	50 (1.97)	6.5 (0.26)	19.5 (0.77)	32.5 (1.28)	38 (1.50)	62 (2.44)	1/2" NPT 1/2" NPT	- -	32 (1.26)	93 (3.66)	26 (1.02)
4326B13-VS2B**	32 (1.26)	65 (2.56)	-	45 (1.77)	50 (1.97)	6.5 (0.26)	19.5 (0.77)	32.5 (1.28)	38 (1.50)	62 (2.44)	1/2" NPT 1/2" NPT	1/8" NPT 1/8" NPT	- -	- -	- -
4326B33-VS2B**	-	65 (2.56)	-	45 (1.77)	50 (1.97)	6.5 (0.26)	19.5 (0.77)	32.5 (1.28)	38 (1.50)	62 (2.44)	1/2" NPT 1/2" NPT	- -	- -	- -	- -

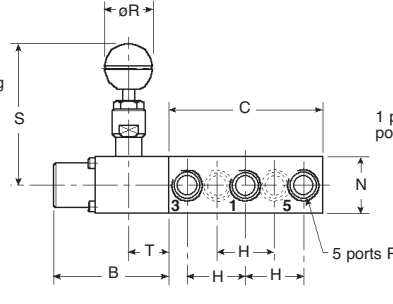
5/2 Pilot Solenoid Operated - Valve Bases

Spring Return
4526M23-VS2B**



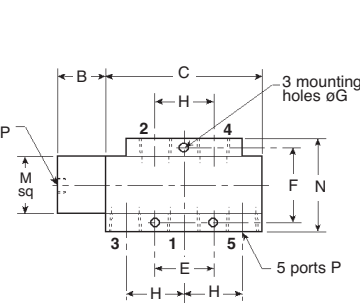
Body Thickness = 'M'

Spring Return with Latch Lock
4526M232VS2B** 4526M238VS2B**



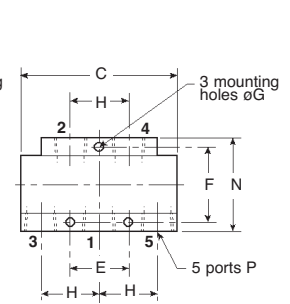
Dimensions 'E', 'F', and 'G' and 'N' as for spring return base

Pilot Air Return
4526B13-VS2B**



Body Thickness = 'M'

Pilot Solenoid Return
4526B33-VS2B**



Body Thickness = 'M'

Model Number	B	C	D	E	F	G	H	M	N	P	PP	R	S	T
4526M23-VS2B**	40 (1.57)	103 (4.06)	24 (0.94)	38 (1.50)	50 (1.97)	6.5 (0.26)	38.5 (1.52)	38 (1.50)	62 (2.44)	1/2" NPT 1/2" NPT	- -	- -	- -	- -
4526M232VS2B**	75 (2.95)	103 (4.06)	-	38 (1.50)	50 (1.97)	6.5 (0.26)	38.5 (1.52)	38 (1.50)	62 (2.44)	1/2" NPT 1/2" NPT	- -	32 (1.26)	93 (3.66)	26 (1.02)
4526M238VS2B**	75 (2.95)	103 (4.06)	-	38 (1.50)	50 (1.97)	6.5 (0.26)	38.5 (1.52)	38 (1.50)	62 (2.44)	1/2" NPT 1/2" NPT	- -	32 (1.26)	93 (3.66)	26 (1.02)
4526B13-VS2B**	32 (1.26)	103 (4.06)	-	38 (1.50)	50 (1.97)	6.5 (0.26)	38.5 (1.52)	38 (1.50)	62 (2.44)	1/2" NPT 1/2" NPT	1/8" NPT 1/8" NPT	- -	- -	- -
4526B33-VS2B**	-	103 (4.06)	-	38 (1.50)	50 (1.97)	6.5 (0.26)	38.5 (1.52)	38 (1.50)	62 (2.44)	1/2" NPT 1/2" NPT	- -	- -	- -	- -

PILOT OPERATED

General Description

A range of compact 3/2 and 5/2 pilot operated spool valves in stainless steel for use on gases and liquids.

- Compact.
- 3/2 and 5/2 versions.
- Non lube.
- Meet NACE standard.
- Stainless steel internals.

Operating Medium

Gases

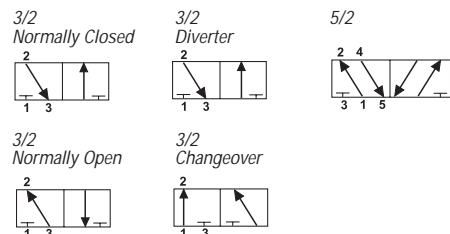
Filtered lubricated or non-lubricated air, inert gas, sweet (*natural*) gases.

Sour gas option available
(details on application)

Liquids

Low pressure hydraulic, mineral oil or water.

Functional Symbols



Technical Data

Ports

- 1/2" NPT (*BSP option available*)
- 1/8" NPT pilot ports

Working Pressure (gases & liquids)

- 12 bar (174 psi)

Cv (Kv)

- 3/2 valves 3.5 (53)
- 5/2 valves 3.5 (53)

Working Temperature

- -20°C to +180°C (-4°F to +356°F)

Minimum Pilot Pressure

- At 6.3 bar (90psi) body pressure
3/2 and 5/2

Spring return 3 bar (45psi)

Pilot return 2 bar (30psi)

Maximum Flow

- 6 bar (87 psi), 1 bar (14.5 psi) differential
- 3/2 - 3500 L/min (123 SCFM)
- 5/2 - 3500 L/min (123 SCFM)



Construction Materials

- Stainless Steel AISI 316L to NACE MR-01-75 Body
- Stainless Steel AISI 316L to NACE MR-01-75 Spool
- 316 Stainless Steel Spring
- Fluoroelastomer Seals

Preferred Models

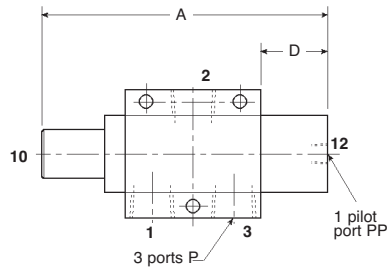
Model Number	Description	Weight kg (lbs)	Symbol
4326M21-VS2B	1/2" NPT 3/2 Pilot operated, spring return	1.40 (3.09)	
4326M212VS2B	1/2" NPT 3/2 Pilot operated, spring return with latch lock, manual reset	2.00 (4.41)	
4326M218VS2B	1/2" NPT 3/2 Pilot operated, spring return with reverse latch lock, manual reset	2.00 (4.41)	
4326B11-VS2B	1/2" NPT 3/2 Pilot operated, pilot return	1.50 (3.31)	
4526M21-VS2B	1/2" NPT 5/2 Pilot operated, spring return	2.00 (4.41)	
4526M212VS2B	1/2" NPT 5/2 Pilot operated, spring return with latch lock, manual reset	2.60 (5.73)	
4526M218VS2B	1/2" NPT 5/2 Pilot operated, spring return with reverse latch lock, manual reset	2.60 (5.73)	
4526B11-VS2B	1/2" NPT 5/2 Pilot operated, pilot return	2.10 (4.63)	

PILOT OPERATED

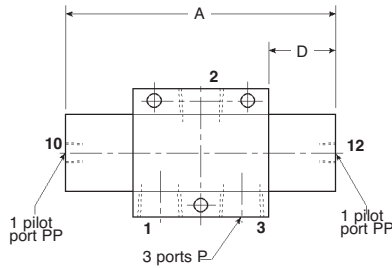
INSTALLATION DIMENSIONS mm (inches)

3/2 Pilot Solenoid Operated - Spring or Pilot Return

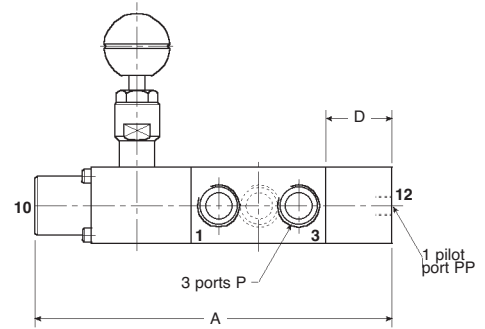
Pilot Operated, Spring Return
4326M21-VS2B



Pilot Operated, Pilot Return
4326B11-VS2B



Pilot Operated, Spring Return with Latch Lock
4326M212VS2B, 4326M218VS2B

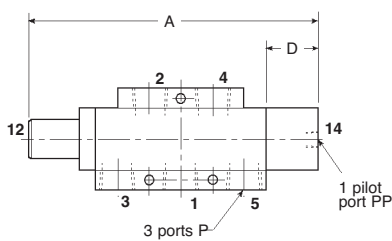


For basic valve dimensions, see 3/2 pilot return bases on page 1600.4

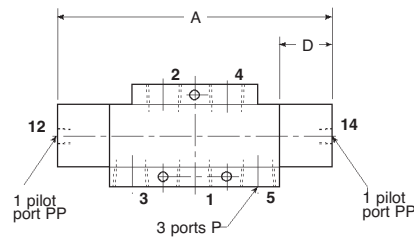
Model Number	A	D	P	PP
4326M21-VS2B	137 (5.39)	32 (1.26)	1/2" NPT 1/2" NPT	1/8" NPT 1/8" NPT
4326B11-VS2B	129 (5.08)	32 (1.26)	1/2" NPT 1/2" NPT	1/8" NPT 1/8" NPT
4326M212VS2B & 4326M218VS2B	172 (6.77)	32 (1.26)	1/2" NPT 1/2" NPT	1/8" NPT 1/8" NPT

5/2 Pilot Solenoid Operated - Spring or Pilot Return

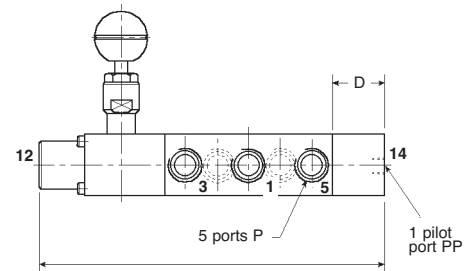
Pilot Operated, Spring Return
4526M21-VS2B



Pilot Operated, Pilot Return
4526B11-VS2B



Pilot Operated, Spring Return with Latch Lock
4526M212VS2B, 4526M218VS2B



For basic valve dimensions, see 3/2 pilot return bases on page 1600.4

Model Number	A	D	P	PP
4526M21-VS2B	175 (6.89)	32 (1.26)	1/2" NPT 1/2" NPT	1/8" NPT 1/8" NPT
4526B11-VS2B	167 (6.57)	32 (1.26)	1/2" NPT 1/2" NPT	1/8" NPT 1/8" NPT
4526M212VS2B & 4526M218VS2B	210 (8.27)	32 (1.26)	1/2" NPT 1/2" NPT	1/8" NPT 1/8" NPT

MANUALLY OPERATED (PAD)

General Description

A range of compact 3/2 and 5/2 manually operated spool valves in stainless steel for use on gases and liquids.

- Closed Center
- Compact
- Meets NACE

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.



Technical Data

Ports

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

Working Pressure (gases & liquids)

- 12 bar (174 psi)

Cv (Kv)

- 3/2 valves 3.5 (53)
- 5/2 valves 3.5 (53)

Working Temperature

- -20°C to +160°C (-4°F to +356°F)

Operating Force

- 10 bar (145 psi), body pressure
- 3/2 112N (25 lbf)
- 5/2 112N (25 lbf)

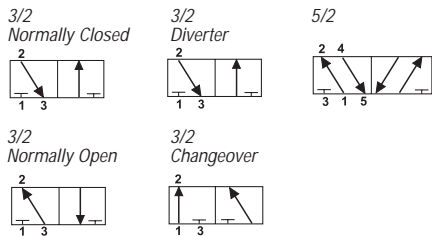
Maximum Flow

- 6 bar (87 psi), 1 bar (14.5 psi) differential
- 3/2 - 3500 L/min (94 SCFM)
- 5/2 - 3500 L/min (124 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
- Fluoroelastomer Seals

Functional Symbols



Preferred Models

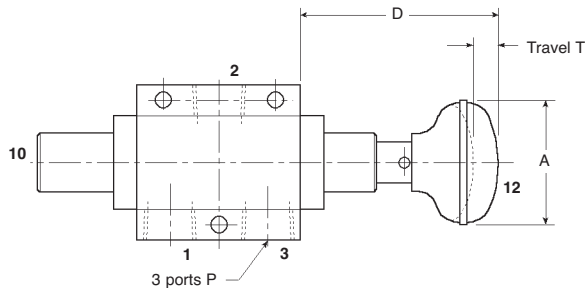
Model Number	Description	Weight kg (lbs)	Symbol
4326M27-VS2B	1/2" NPT 3/2 Pad operated, spring return	1.35 (2.98)	
4326B77-VS2B	1/2" NPT 3/2 Pad operated, push - pull	1.30 (2.87)	
4326B773VS2B	1/2" NPT 3/2 Pad operated, push-pull with detent	1.40 (3.09)	
4326B17-VS2B	1/2" NPT 3/2 Pad operated, pilot air return	1.50 (3.31)	
4526M27-VS2B	1/2" NPT 5/2 Pad operated, spring return	1.95 (4.30)	
4526B77-VS2B	1/2" NPT 5/2 Pad operated, push-pull	1.90 (4.19)	
4526B773VS2B	1/2" NPT 5/2 Pad operated, push-pull with detent	2.00 (4.41)	
4526B17-VS2B	1/2" NPT 5/2 Pad operated, pilot air return	2.10 (4.63)	

PILOT SOLENOID OPERATED

INSTALLATION DIMENSIONS mm (inches)

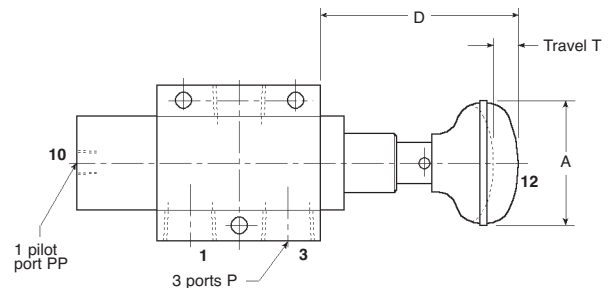
3/2 Pad Operated - Spring Return, Pad Operated (Push-Pull), Pad Operated Pilot Air Return

Pad Operated, Spring Return
4326M27-VS2B



For basic valve dimensions, see 3/2 spring return bases on page 1600.4

Pad Operated (Push-Pull) 4326B77-VS2B
Pad Operated (Push-Pull) with detent 4326B773VS2B
Pad Operated, Pilot Air Return 4326B17-VS2B

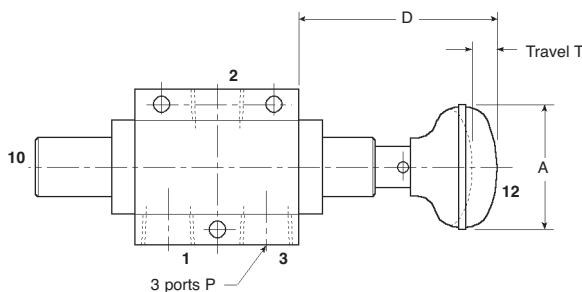


For basic valve dimensions, see 3/2 pilot air return bases on page 1600.4

Model Number	A	D	P	PP	T
4326M27-VS2B	51 (2.00)	78 (3.07)	1/2" NPT 1/2" NPT	- -	9.5 (0.37)
4326B77-VS2B	51 (2.00)	78 (3.07)	1/2" NPT 1/2" NPT	1/8" NPT 1/8" NPT	9.5 (0.37)
4326B773VS2B	51 (2.00)	78 (3.07)	1/2" NPT 1/2" NPT	1/8" NPT 1/8" NPT	9.5 (0.37)
4326B17-VS2B	51 (2.00)	78 (3.07)	1/2" NPT 1/2" NPT	1/8" NPT 1/8" NPT	9.5 (0.37)

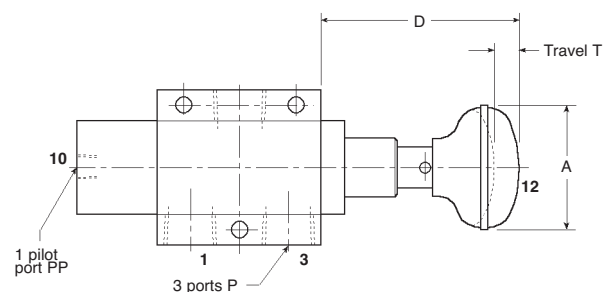
5/2 Pad Operated - Spring Return, Pad Operated (Push-Pull), Pad Operated Pilot Air Return

Pad Operated, Spring Return
4526M27-VS2B



For basic valve dimensions, see 5/2 spring return bases on page 1600.4

Pad Operated (Push-Pull) 4526B77-VS2B
Pad Operated (Push-Pull) with Detent 4526B773VS2B
Pad Operated, Pilot Air Return 4526B17-VS2B



For basic valve dimensions, see 5/2 pilot air return bases on page 1600.4

Model Number	A	D	P	PP	T
4526M27-VS2B	51 (2.00)	78 (3.07)	1/2" NPT 1/2" NPT	- -	9.5 (0.37)
4526B77-VS2B	51 (2.00)	78 (3.07)	1/2" NPT 1/2" NPT	1/8" NPT 1/8" NPT	9.5 (0.37)
4526B773VS2B	51 (2.00)	78 (3.07)	1/2" NPT 1/2" NPT	1/8" NPT 1/8" NPT	9.5 (0.37)
4526B17-VS2B	51 (2.00)	78 (3.07)	1/2" NPT 1/2" NPT	1/8" NPT 1/8" NPT	9.5 (0.37)

MANUALLY OPERATED (LEVER)

General Description

A range of compact 3/2 and 5/2 pilot operated spool valves in stainless steel for use on gases and liquids.

- Closed Center
- Compact
- Unique Key

Operating Medium

Gases

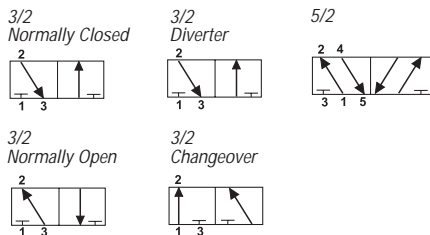
Filtered lubricated or non-lubricated air, inert gas, sweet (*natural*) gases.

Sour gas option available (*details on application*)

Liquids

Low pressure hydraulic, mineral oil or water.

Functional Symbols



Technical Data

Ports

- 1/2" NPT (*BSP option available*)
- 1/8" NPT vent port

Working Pressure (*gases & liquids*)

- 12 bar (174 psi)

Cv (Kv)

- 3/2 valves 3.5 (53)
- 5/2 valves 3.5 (53)

Working Temperature

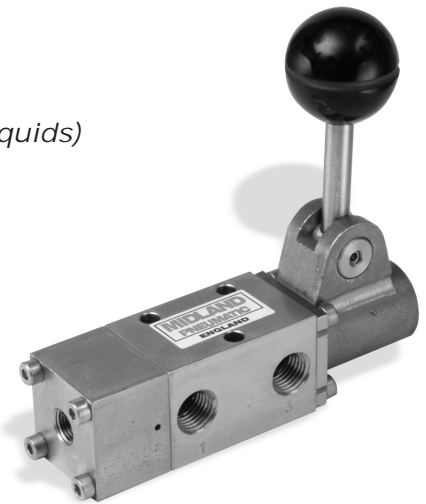
- -20°C to +180°C (-4°F to +356°F)

Operating Force

- 10 bar (145 psi), body pressure
- 3/2 61N (13.7 lbf)
- 5/2 61N (13.7 lbf)

Maximum Flow

- 6 bar (87 psi), 1 bar (14.5 psi) differential
- 3/2 - 3500 L/min (123 SCFM)
- 5/2 - 3500 L/min (123 SCFM)



Construction Materials

- Stainless Steel AISI 316L to NACE MR-01-75 Body
- Stainless Steel AISI 316L to NACE MR-01-75 Spool
- 316 Stainless Steel Spring
- Fluoroelastomer Seals

Preferred Models

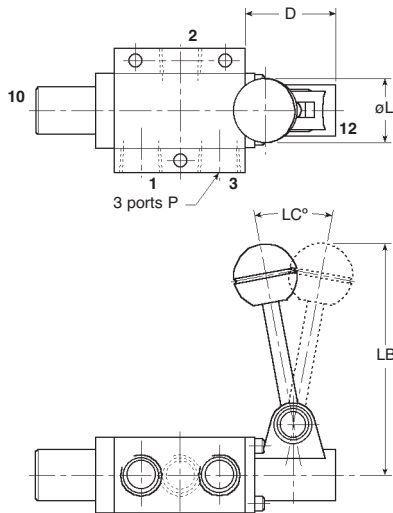
Model Number	Description	Weight kg (lbs)	Symbol
4326M25-VS2B	1/2" NPT 3/2 Lever operated, spring return	1.40 (3.09)	
4326B553VS2B	1/2" NPT 3/2 Lever operated with detent	1.50 (3.31)	
4526M25-VS2B	1/2" NPT 5/2 Lever operated, spring return	2.00 (4.41)	
4526B553VS2B	1/2" NPT 5/2 Lever operated with detent	2.10 (4.63)	

MANUALLY OPERATED LEVER

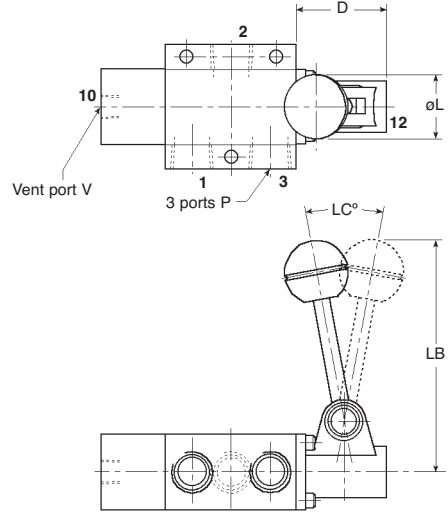
INSTALLATION DIMENSIONS mm (inches)

3/2 Lever Operated - Spring Return, Lever Operated with Detent

Lever Operated, Spring Return
4326M25-VS2B



Lever Operated with Detent
4326B553VS2B



For basic valve dimensions, see 3/2 spring return bases on page 1600.4

Model Number	D	L	LB	LC	P	V
4326M25-VS2B	46 (1.81)	32 (1.26)	117 (4.61)	210 210	1/2" NPT 1/2" NPT	- -
4326B553VS2B	46 (1.81)	32 (1.26)	117 (4.61)	210 210	1/2" NPT 1/2" NPT	1/8" NPT 1/8" NPT

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

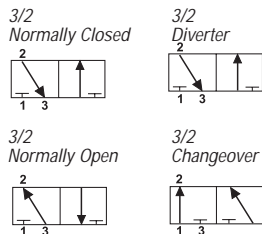
Gases

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

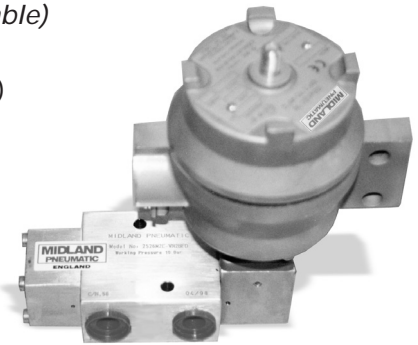
- Valve only version
-20°C to +180°C (-4°F to +356°F)
- Solenoid - Ambient temperature
-20°C to +65°C (-4°F to +149°F)
- Low temperature version
-50°C (-58°F) (optional)

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>Voltage Codes</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)

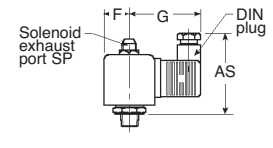
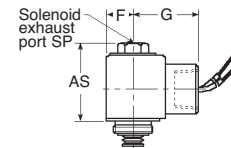
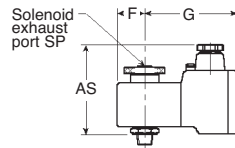
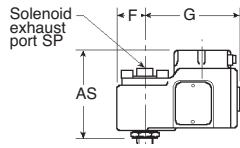
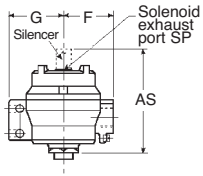
Solenoid code K
(EExd IIC T6)

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 Coil potted	Stainless Steel 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 5.6W 1.8W	7.3W 1.8W 5.6W 1.8W 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

1750 PNEUMATIC VALVES

PILOT SOLENOID OPERATED

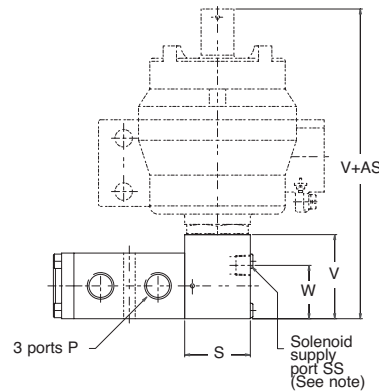
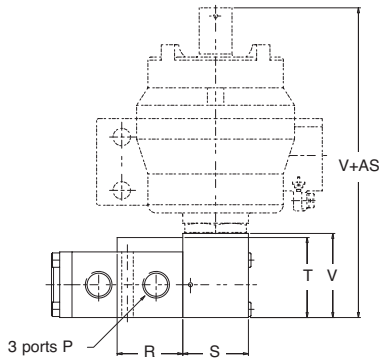
INSTALLATION DIMENSIONS mm (inches)



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

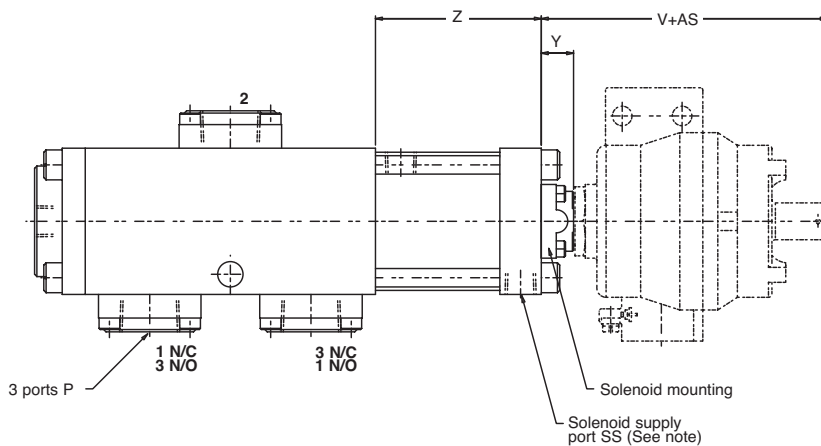
Model Number	P	R	S	T	V	VE	W	X	SS
2323M23-VC2B*+	1/4" NPT (1/4" NPT)	32 (1.26)	32 (1.26)	39 (1.54)	41 (1.61)	-	-	-	-
2325M24-VC2B*+	1/4" NPT (1/4" NPT)	-	32 (1.26)	-	41 (1.61)	-	26 (1.02)	-	1/8" NPT (1/8" NPT)
3323M23-VC2B*+	3/8" NPT (3/8" NPT)	32 (1.26)	32 (1.26)	39 (1.54)	41 (1.61)	-	-	-	-
3325M24-VC2B*+	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.

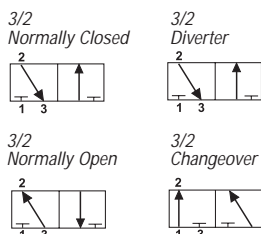
Sour gas option available. (details on application)

Liquids

Low pressure hydraulic, mineral oil or water.

(details on application)

Functional Symbols



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

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)	

1750 Poppet Valves

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

1750 SERIES

1750 PNEUMATIC VALVES

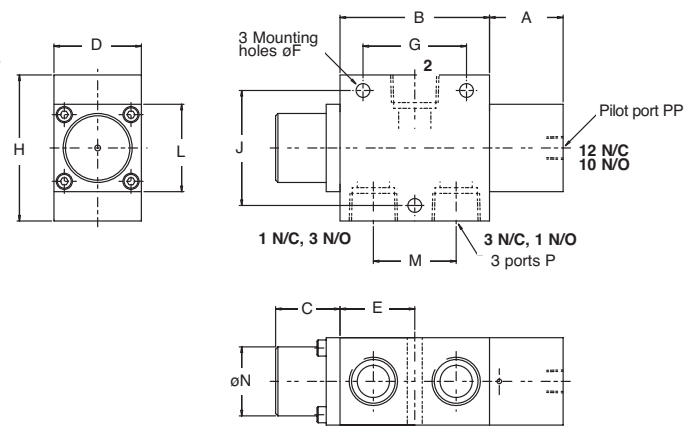
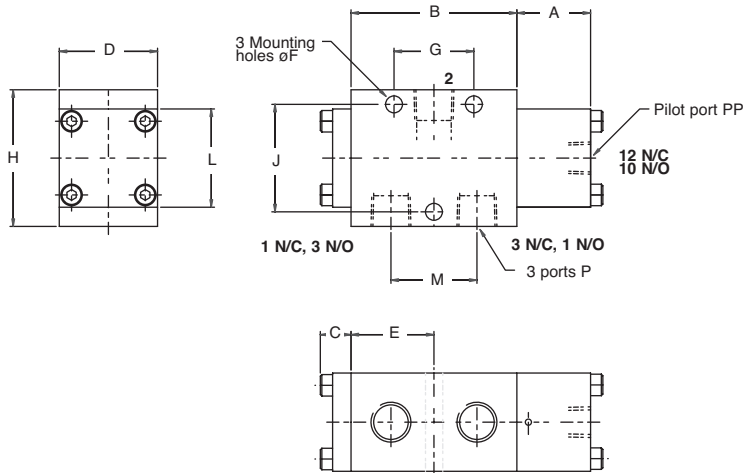
PILOT AIR OPERATED

INSTALLATION DIMENSIONS mm (inches)

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

2325M21-VC2B
3325M21-VC2B

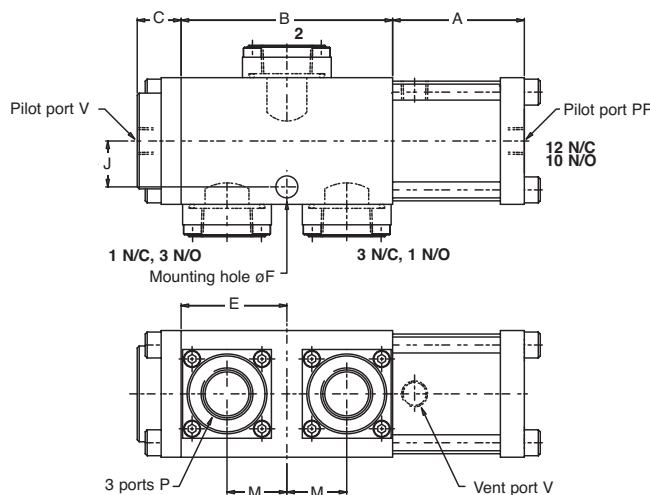
4325M21-VC2B



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	1/8" 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	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	1/8" 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	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	1/4" 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	1/4" 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	1/4" 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)

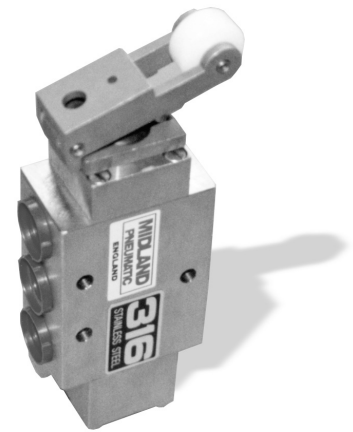
Operating force

- 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

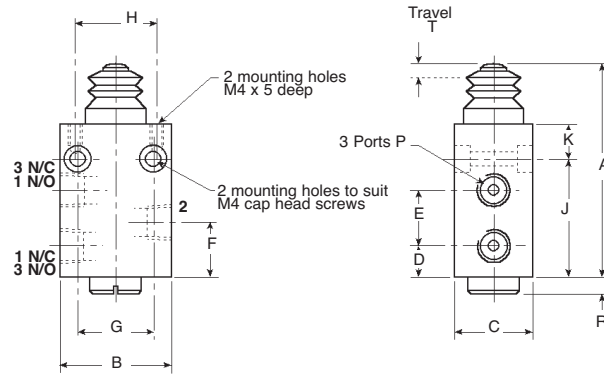
Model Number	Description	Weight kg (lbs)	Symbol
1323M62-SM2B	1/8" Plunger operated, spring return, N/C	0.21 (0.46)	
1324M62-SM2B	1/8" Plunger operated, spring return, N/O	0.22 (0.48)	
1323M82-SM2B	1/8" Lever operated, spring return, N/C	0.28 (0.62)	
1324M82-SM2B	1/8" Lever operated, spring return, N/O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

1750 PNEUMATIC VALVES PLUNGER OPERATED, LEVER ROLLER OPERATED

INSTALLATION DIMENSIONS mm (inches)

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

1323M62-SM2B
1324M62-SM2B

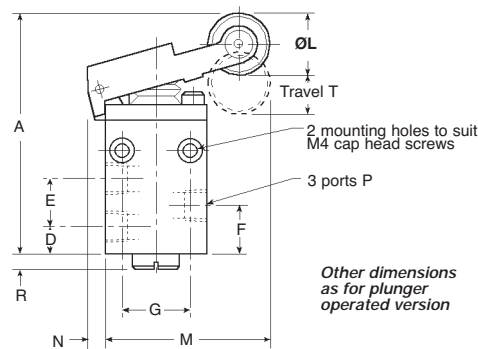


Model Number	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T
132*M62-SM2B	62	32	22	9	16	16	22	24	34	10	-	-	-	1/8" NPT	5	5
	(2.44)	(1.26)	(0.87)	(0.35)	(0.63)	(0.63)	(0.87)	(0.95)	(1.34)	(0.39)	-	-	-	1/8" NPT	(0.20)	(0.20)

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

MANUALLY OPERATED

General Description

4 way semi-rotary slide valves with either lever or switch operation and 4 way linear slide valves in all stainless steel construction for onshore and offshore applications.

- Heavy duty
- Lever direct coupled
- 2 and 3 positions available
- For gases and liquids

Operating Medium

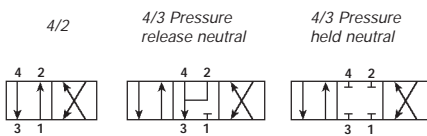
Gases

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

Semi-rotary valves

- 1/4" NPT (BSP option available)

Cv (Kv)

- 1/4" - 1.96 (10)

Working pressure (gases)

- 0 to 10 bar (43.5 to 145 psi)

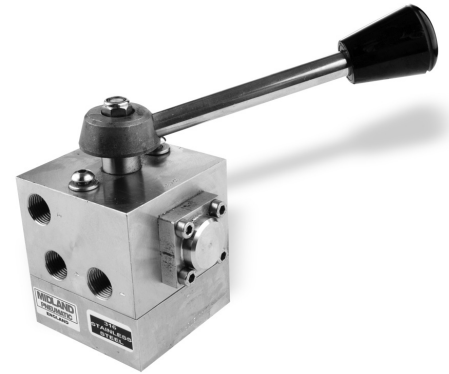
Working temperature

- -20°C to +70°C (-4°F to +158°F)

Flow

at 6 bar (87 psi), 1 bar (14.5 psi) differential

- 1/4" - 646 L/min (23 SCFM)



Construction Materials

- Stainless Steel AISI 316L to NACE MR-01-75 Body
- Stainless Steel AISI 316L to NACE MR-01-75 Slide Carrier
- 316 Stainless Steel Springs
- Nitrile Seals
- Graphite filled PTFE Slide

MANUALLY OPERATED (LEVER), MANUALLY OPERATED (SWITCH)

Preferred Models

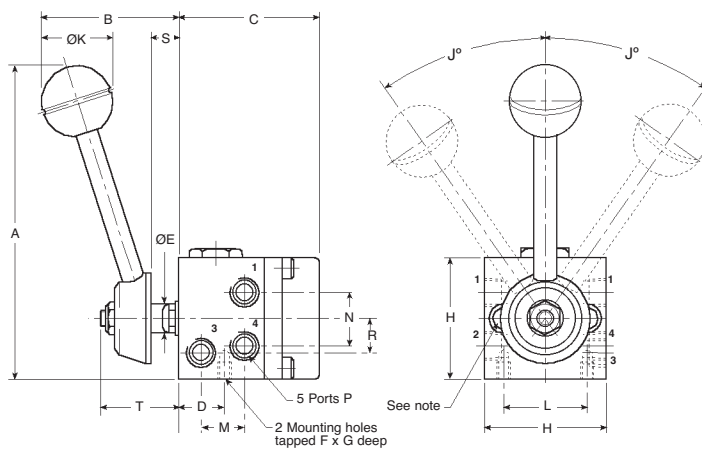
Model No	Description	Mass kg (lbs)	Symbol
2422B555SA2B	1/4"NPT 4/2 Lever operated, 2 position positive	1.27 (2.80)	
2422M525SA2B	1/4"NPT 4/2 Lever operated, spring return	1.27 (2.80)	
2432E555SA2B	1/4"NPT 4/3 Lever operated, positive, pressure release neutral	1.27 (2.80)	
2432D555SA2B	1/4"NPT 4/3 Lever operated, positive, pressure held neutral	1.27 (2.80)	
2432R555SA2B	1/4"NPT 4/3 Lever operated, self centre, pressure release neutral	1.27 (2.80)	
2432H555SA2B	1/4"NPT 4/3 Lever operated, self centre, pressure held neutral	1.27 (2.80)	

For switch operated versions specify code 0 in positions 6 and 7 of model number code for positive and self centre versions and in position 6 for spring return versions. For Rear flange mounted versions specify code 7 in position 8 of model number code.

INSTALLATION DIMENSIONS mm (inches)

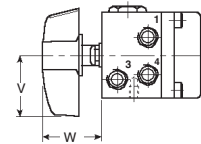
4/2, 4/3 Lever operated

2422B555SA2B
2422M525SA2B
2432*555SA2B



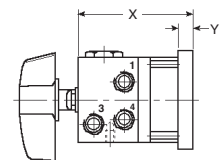
4/2, 4/3 Switch operated

2422B005SA2B
2422M025SA2B
2432*005SA2B



Rear flange mounting

2422B007SA2B
2422M027SA2B
2432*007SA2B



NOTE: 2 Mounting holes $\text{\O}6.3(0.25)$ with screws to suit 6 (0.24) thick panel

Model No	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	V	W	X	Y
24*2*5*5SA2B	140	59	63.5	20	12.7	M6	8	54	34.75°	32	38.1	19	24	1/4"NPT	15	13	35	40	38	73	9.5
	(5.51)	(2.32)	(2.50)	(0.79)	(0.50)	M6	(0.31)	(2.13)	34.75°	(1.26)	(1.50)	(0.75)	(0.94)	1/4"NPT	(0.59)	(0.51)	(1.38)	(1.57)	(1.50)	(2.87)	(0.37)



SOLENOID OPERATED

General Description

A range of direct acting 3/2 universal hazardous area solenoid valves for the oil, gas and petrochemical industries.

- Lightweight
- Manual override, reset and latch versions
- EExd IIC T6
- 316 Stainless Steel throughout
- ATEX, UL
- Universal operation

Operating Medium

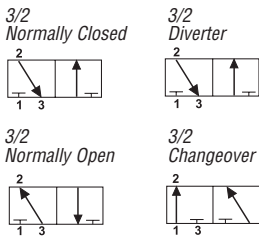
Gases

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.

Functional Symbols



Technical Data

Ports

- 1/4", 3/8", 1/2" NPT (BSP option available)

Orifice

- 8.8mm (0.35")

Cv (Kv)

- 0.86 (12.25)

Working pressure (gases and liquids)

- Maximum body pressure 20 bar (290 psi)
- Maximum operating pressure differential 10 bar (145 psi)

Working temperature

Ambient temperature

- -50°C to +40°C (-58°F to +104°F)

Construction Materials

- Stainless Steel AISI 316 S11 to NACE MR-01-75 Body
- 316 Stainless Steel Spindle
- 316 Stainless Steel Springs
- Nitrile (Buna N) Seals options: Fluoroelastomer and EPDM

Solenoid Specifications

- Flameproof EExd IIC T6 to ATEX standard

Degree of Protection

- IP67



Housing

- 316 Stainless Steel

Cable Entry

- M20 x 1.5

Coil Voltages

- DC - 12v, 24v, 110v
- AC - (50/60 Hz) 24v, 110v, 120v, 220v

Voltage Tolerance

- +10% to -15%

Power Consumption

- DC - 6 Watts
- AC units fitted with DC rectifier

Coil Insulation

- Class H

Duty Cycle

- 100% Continuously Rated

Earth Connections

- Internal and External

1900 Direct Acting Valves

1/4", 3/8", 1/2", 3/2 NPT (BSP)

1900 SERIES

1900 DIRECT ACTING VALVES

SOLENOID OPERATED



MODEL CODES

3/2 Valves

1 **325M23** **2** **SD** **3** **D** **4** **5**

Valve Size
 2 = 1/4"
 3 = 3/8"
 4 = 1/2"

Valve Type
 - = Standard
 M = with manual override
 U = with manual latch
 X = with manual reset

Port type
 1 = BSP
 2 = NPT

Solenoid Type
 K = EExd IIC T6

Voltage Codes
 C = 12v DC
 D = 24v DC
 G = 110v DC
 J = 24v 50/60Hz AC
 M = 110v 50/60Hz AC
 N = 120v 50/60Hz AC
 S = 220v 50/60Hz AC

Preferred Models

Model No	Description	Mass kg (lbs)	Symbol
2325M23-SD2DK +	1/4" NPT 3/2 Direct acting solenoid operated, spring return	2.00 (4.41)	
2325M23MSD2DK +	1/4" NPT 3/2 Direct acting solenoid operated, spring return with manual override	2.10 (4.63)	
2325M23USD2DK +	1/4" NPT 3/2 Direct acting solenoid operated, spring return with manual latch	2.10 (4.63)	
2325M23XSD2DK +	1/4" NPT 3/2 Direct acting solenoid operated, spring return with manual reset	2.10 (4.63)	
3325M23-SD2DK +	3/8" NPT 3/2 Direct acting solenoid operated, spring return	2.10 (4.63)	
3325M23MSD2DK +	3/8" NPT 3/2 Direct acting solenoid operated, spring return with manual override,	2.20 (4.85)	
3325M23USD2DK +	3/8" NPT 3/2 Direct acting solenoid operated, spring return with manual latch	2.20 (4.85)	
3325M23XSD2DK +	3/8" NPT 3/2 Direct acting solenoid operated, spring return with manual reset	2.20 (4.85)	
4325M23-SD2DK +	1/2" NPT 3/2 Direct acting solenoid operated, spring return	2.10 (4.63)	
4325M23MSD2DK +	1/2" NPT 3/2 Direct acting solenoid operated, spring return with manual override	2.20 (4.85)	
4325M23USD2DK +	1/2" NPT 3/2 Direct acting solenoid operated, spring return with manual latch	2.20 (4.85)	
4325M23XSD2DK +	1/2" NPT 3/2 Direct acting solenoid operated, spring return with manual reset	2.20 (4.85)	

+ Specify solenoid voltage

1900 Direct Acting Valves

1/4", 3/8", 1/2", 3/2 NPT (BSP)

1900 SERIES

SOLENOID OPERATED

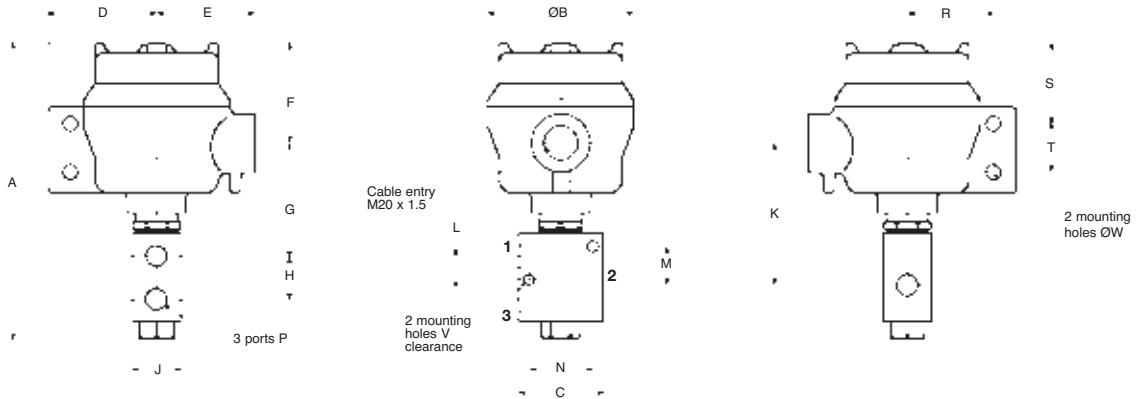


1900 DIRECT ACTING VALVES

INSTALLATION DIMENSIONS mm (inches)

3/2 Direct Solenoid Operated, Spring Return

2325M23-SD2DK +
3325M23-SD2DK +
4325M23-SD2DK +



Coil housing can be rotated 360° to facilitate wiring.

Model No	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	V	W
2325M23-SD2K+	150 (5.90)	78 (3.07)	45 (1.77)	58 (2.28)	52 (2.05)	54 (2.13)	52 (2.05)	23 (0.91)	25.4 (1.00)	66 (2.60)	12 (0.47)	20 (0.79)	34 (1.34)	1/4" (0.63)	46 (1.81)	42 (1.65)	26 (1.02)	M4 (0.31)	8.5 (0.33)
3325M23-SD2K+	164 (6.46)	78 (3.07)	65 (2.56)	58 (2.28)	52 (2.05)	54 (2.13)	52 (2.05)	34 (1.34)	32 (1.26)	71 (2.80)	17 (0.67)	24 (0.94)	42 (1.65)	3/8" (0.94)	46 (1.81)	42 (1.65)	26 (1.02)	M4 (0.31)	8.5 (0.33)
4325M23-SD2K+	164 (6.46)	78 (3.07)	65 (2.56)	58 (2.28)	52 (2.05)	54 (2.13)	52 (2.05)	34 (1.34)	32 (1.26)	71 (2.80)	17 (0.67)	24 (0.94)	42 (1.65)	1/2" (1.27)	46 (1.81)	42 (1.65)	26 (1.02)	M4 (0.31)	8.5 (0.33)

3/2 Direct Solenoid Operated, Spring Return with Manual Override.

2325M23MSD2DK +
3325M23MSD2DK +
4325M23MSD2DK +

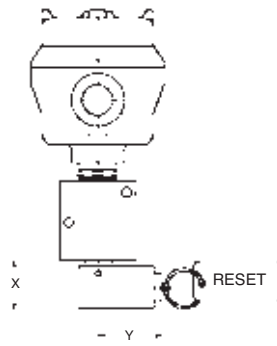


Model No	X
2325M23MSD2K+	54 (2.13)
3325M23MSD2K+	54 (2.13)
4325M23MSD2K+	54 (2.13)

All other dimensions as above

3/2 Direct Solenoid Operated, Spring Return with Manual Latch.

2325M23USD2DK +
3325M23USD2DK +
4325M23USD2DK +

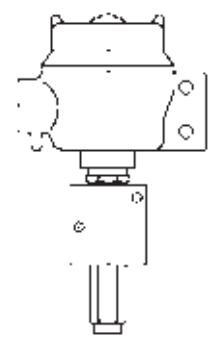


Model No	X	Y
2325M23USD2K+	30 (1.18)	40 (1.57)
3325M23USD2K+	30 (1.18)	40 (1.57)
4325M23USD2K+	30 (1.18)	40 (1.57)

All other dimensions as above

3/2 Direct Solenoid Operated, Spring Return with Manual Reset.

2325M23XSD2DK +
3325M23XSD2DK +
4325M23XSD2DK +



Model No	X
2325M23XSD2K+	54 (2.13)
3325M23XSD2K+	54 (2.13)
4325M23XSD2K+	54 (2.13)

All other dimensions as above

AIR PRESSURE SWITCH

General Descriptions

A compact fully adjustable pneumatically operated 316 Stainless Steel pressure switch with operating pressures up to 16 bar (232 psi).

For use on failsafe systems.

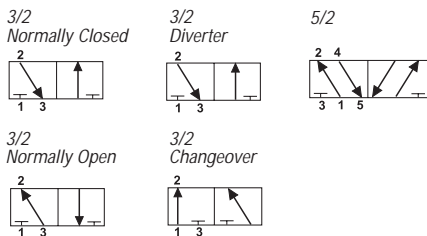
- Compact / Lightweight.
- 5 pressure ratings.
- Integrated tagging facility.
- Fluoroelastomer seals.
- 3/2 and 5/2 versions.

Operating Medium

Gases

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

Functional Symbols



Technical Data

Ports

- 1/4"NPT (BSP option available)
- 1/8"NPT Pilot port

Cv (Kv)

- 3/2 valves 0.5 (7.5)
- 5/2 valves 0.7 (10.5)

Working Pressure

- For main directional valve 12 bar (174 psi)

Maximum Pilot Pressure Inlet

- 16 bar (232 psi)

Regulated Pressure (adjustable)

- For main directional valve
- 1.0 to 2.0 bar (14.5 to 29 psi)
- 1.0 to 4.0 bar (14.5 to 58 psi)
- 1.0 to 7.0 bar (14.5 to 102 psi)
- 1.0 to 10 bar (14.5 to 145 psi)
- 1.0 to 16 bar (14.5 to 232 psi)
- (Note 16 bar regulated pressure must be fed from independent supply to main directional valve)

Working Temperature

- -20°C to +80°C (-4°F to +176°F)

Maximum Flow

- 6 bar (87 psi), 1 bar (14.5 psi) differential
- 3/2 valves - 480 L/min (17 SCFM)
- 5/2 valves - 680 L/min (24 SCFM)

Pressure Setting Hysteresis

- 0.25 bar (3.63 psi)

Function

APPLICATION FOR SPRING RETURN ACTUATORS 3/2
 1) Airfail stay put For this application port 3 is plugged. When pilot air is applied to port 1 or 2 in the Normally Closed mode and pilot air is greater than set pressure, air can flow in either direction. When pilot pressure falls below set pressure, the integral spool valve closes therefore block port 1 to 2 and the output from 2 remains blocked, leaving the actuator or downstream signal in the last controlled position. 2) Venting By not plugging port 3 the valve can be used in the Normally Open, Closed, Diverter or Changeover mode and the actuator will vent to atmosphere.

APPLICATION FOR DOUBLE ACTING ACTUATORS 5/2
 1) Airfail open or close For this application when air is applied to ports 1 and 3 (N/C) or 1 and 5 (N/O) and the actuator is connected to the outlets 2 and 4 and pilot air is greater than set pressure, air from another 5/2 solenoid or air operated valve will control the double acting actuator. The pressure switch can be piped Normally Closed or Normally Open and can detect air falling below the set pressure to either open or close the actuator, via a volume tank.



Construction Materials

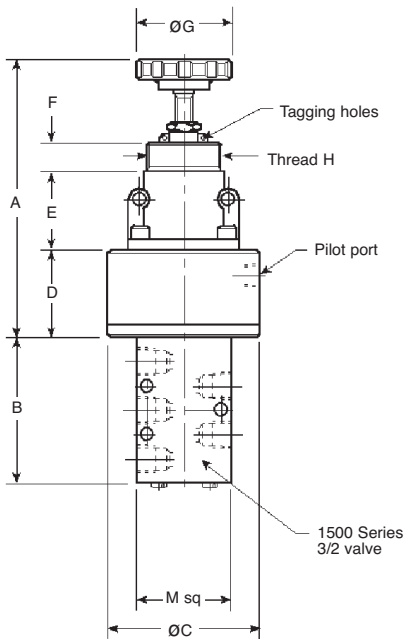
- Stainless steel AISI 316L to NACE MR-0175 Body
- Stainless steel AISI 316L to NACE MR-0175 Spool
- 316 Stainless Steel Springs
- Fluoroelastomer Seals
- Fluoroelastomer Diaphragm

AIR PRESSURE SWITCH

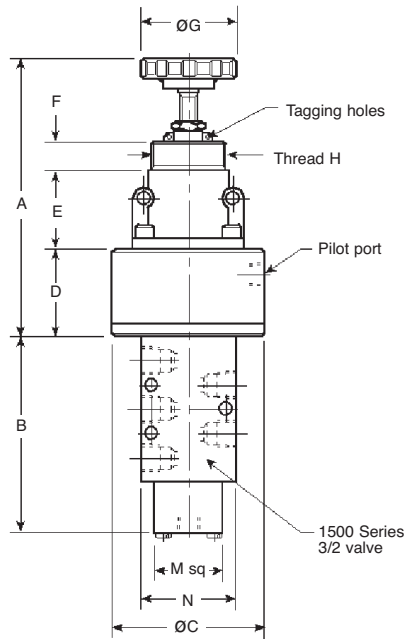
Model Number	Ports P		Weight kg (lbs)	Symbol
2PS3SV022	1/4" NPT	3/2 Adjustable pressure switch 2 bar (29 psi)	1.60 (3.53)	
2PS3SV042	1/4" NPT	3/2 Adjustable pressure switch 4 bar (58 psi)	1.60 (3.53)	
2PS3SV072	1/4" NPT	3/2 Adjustable pressure switch 7 bar (102 psi)	1.60 (3.53)	
2PS3SV102	1/4" NPT	3/2 Adjustable pressure switch 10 bar (145 psi)	1.60 (3.53)	
2PS3SV162	1/4" NPT	3/2 Adjustable pressure switch 16 bar (232 psi)	1.60 (3.53)	
2PS5SV022	1/4" NPT	5/2 Adjustable pressure switch 2 bar (29 psi)	2.05 (4.52)	
2PS5SV042	1/4" NPT	5/2 Adjustable pressure switch 4 bar (58 psi)	2.05 (4.52)	
2PS5SV072	1/4" NPT	5/2 Adjustable pressure switch 7 bar (102 psi)	2.05 (4.52)	
2PS5SV102	1/4" NPT	5/2 Adjustable pressure switch 10 bar (145 psi)	2.05 (4.52)	
2PS5SV162	1/4" NPT	5/2 Adjustable pressure switch 16 bar (232 psi)	2.05 (4.52)	

INSTALLATION DIMENSIONS mm (inches)

3/2 Pressure Switch



5/2 Pressure Switch

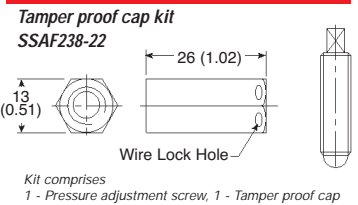


For basic dimensions of 3/2 and 5/2 valves see pg 1500.7 (Spring Return Bases)

Model Number	A	B	C	D	E	F	G	H	M	N
2PS3SV**2	127.5(5.02)	54(2.13)	70(2.76)	40(1.57)	36(1.42)	13(0.51)	44(1.73)	M34X1.5	32(1.26)	-
2PS5SV**2	127.5(5.02)	93(3.66)	70(2.76)	40(1.57)	36(1.42)	13(0.51)	44(1.73)	M34X1.5	32(1.26)	45(1.77)

ACCESSORIES

Tamper Proof Cap Kit



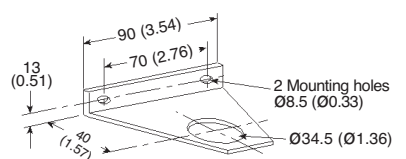
Panel Mounting Kit

Panel mounting kit
SSAF238-20



Mounting Bracket

Mounting bracket kit: SSAF238-25



Kit comprises
1 - Bracket 1 - Panel nut

4500 Ancillary Valves

1/4", 3/8", 1/2", 3/4", 1", NPT (BSP)

4500 SERIES

4500 ACCESSORIES

UNI-DIRECTIONAL FLOW REGULATORS • BI-DIRECTIONAL FLOW REGULATORS

General Description

Uni-directional
316 Stainless Steel in-line flow regulators for uni-directional operation (free flow return).
Bi-directional
316 Stainless Steel in-line flow regulators for bi-directional operation (separate flow control in each direction).

Operating Medium

Gases

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

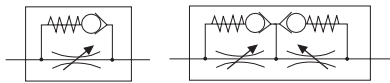
Liquids

Low pressure hydraulic, mineral oil or water.

Functional Symbols

Uni-directional

Bi-directional



Technical Data

Working Pressure

- 10 bar (145 psi)

Working Temperature

- -20°C to +70°C (-4°F to +158°F)

Low temperature version

- -50°C (-58°F) (optional)

Maximum Flow L/min

(SCFM) Cv(Kv)

- 6 bar (87 psi), 1 bar (14.5 psi) differential

Uni-directional

- 1/4" 1000(35) -1.0(15.5)
- 3/8" 1680(59) -1.7(26)
- 1/2" 2520(89) -2.5(39)
- 3/4" 5428(192) -5.4(84)
- 1" 9820(347) -9.8(152)

Bi-directional

- 1/4" 620(22) -0.6(9.6)
- 3/8" 1290(45) -1.3(20)
- 1/2" 2000(71) -2.0(31)

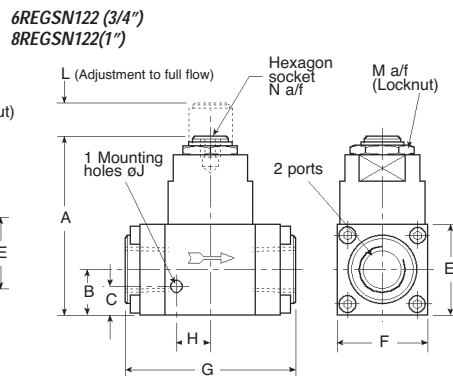
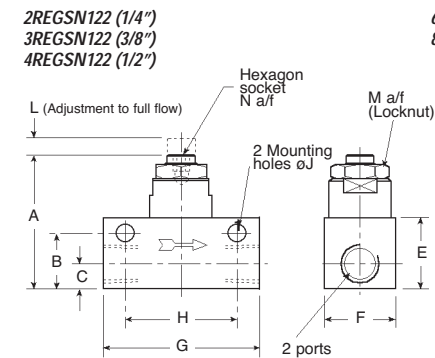


Construction Materials

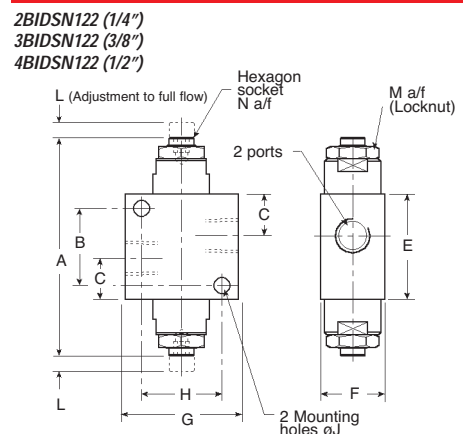
- Stainless Steel AISI 316L to NACE MR-01-75 Body
- Stainless Steel AISI 316L to NACE MR-01-75 Internals
- 316 Stainless Steel Springs
- Nitrile Seals

MODEL CODES, INSTALLATION DIMENSIONS mm (inches) and WEIGHT kg (lbs)

Uni-Directional Flow Regulators



Bi-Directional Flow Regulators



Model Number	Ports	A	B	C	E	F	G	H	J	L	M	N	WEIGHT
Uni-Directional													
2REGSN122	1/4" NPT	48(1.89)	20(0.79)	9(0.35)	25.4(1.00)	25.4(1.00)	56(2.20)	40(1.57)	6.35(0.25)	6(0.24)	18(0.71)	5(0.20)	0.26(0.57)
3REGSN122	3/8" NPT	70(2.76)	29(1.14)	14.5(0.57)	35(1.38)	35(1.38)	76(2.99)	45(1.77)	6.35(0.25)	12(0.47)	23.3(0.92)	6(0.24)	0.75(1.65)
4REGSN122	1/2" NPT	70(2.76)	29(1.14)	13.5(0.57)	35(1.38)	35(1.38)	76(2.99)	45(1.77)	6.35(0.25)	12(0.47)	23.3(0.92)	6(0.24)	0.75(1.65)
6REGSN122	3/4" NPT	100(3.94)	16(0.63)	25.4(1.00)	50.8(2.00)	50.8(2.00)	95(3.74)	19(0.75)	6.35(0.25)	19(0.75)	30.5(1.20)	10(0.39)	1.75(3.86)
8REGSN122	1" NPT	125(4.92)	19(0.75)	31.75(1.25)	63.5(2.50)	63.5(2.50)	95(3.74)	24(0.94)	6.35(0.25)	19(0.75)	36(1.42)	12(0.47)	2.75(6.06)
Bi-Directional													
2BIDSN122	1/4" NPT	85(3.35)	28(1.10)	15.5(0.61)	40(1.57)	25.4(1.00)	44.5(1.75)	32(1.26)	6.35(0.25)	6(0.24)	18(0.71)	5(0.20)	0.43(0.95)
3BIDSN122	3/8" NPT	121(4.76)	35(1.38)	21(0.83)	51(2.00)	35(1.38)	63.5(2.50)	45(1.77)	6.35(0.25)	12(0.47)	23.3(0.92)	6(0.24)	1.40(3.09)
4BIDSN122	1/2" NPT	121(4.76)	35(1.38)	21(0.83)	51(2.00)	35(1.38)	63.5(2.50)	45(1.77)	6.35(0.25)	12(0.47)	23.3(0.92)	6(0.24)	1.40(3.09)

NEEDLE VALVES • EXHAUST PORT FLOW REGULATORS

General Description

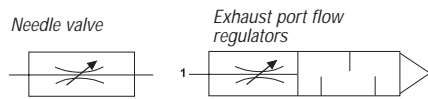
Needle Valve
316 Stainless Steel Needle Valve with 3mm or 6mm orifice.

Exhaust Port Flow Regulators
316 Stainless Steel exhaust flow regulator/breather supplied complete with tamper proof cap.

Operating Medium

Gases
Filtered non-lubricated air, inert, sweet (natural) gases.

Functional Symbols



Technical Data

Working Pressure

- 12 bar (145 psi) maximum

Working Temperature

- -20°C to +70°C (-4°F to +158°F)
- Low temperature version*
- -50°C (-58°F) (optional)

Maximum Flow L/min (SCFM) - Cv (Kv)

- 6 bar (87 psi), 1 bar (14.5 psi) differential

Needle Valve (3mm orifice)

- 1/4" 290(10.5) -0.30(4.6)

Needle Valve (6mm orifice)

- 1/4" 640(23) -0.64(10)

Exhaust Port Flow Regulators

- 1/4" 646(23) -0.65(10)

- 3/8" 1100(39) -1.10(17)

- 1/2" 1800(64) -1.80(28)



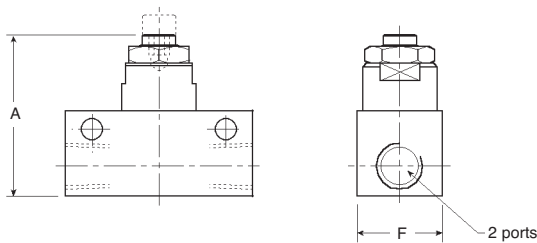
Construction Materials

- Stainless Steel AISI 316L to NACE MR-01-75 Body
- Stainless Steel AISI 316L to NACE MR-01-75 Internals
- 316 Stainless Steel Spring
- Nitrile Seals

MODEL CODES, INSTALLATION DIMENSIONS mm (inches) and WEIGHT kg (lbs)

Needle Valve

- 2NDVSN12203 (1/4"-3mm orifice)
- 2NDVSN12206 (1/4"-6mm orifice)

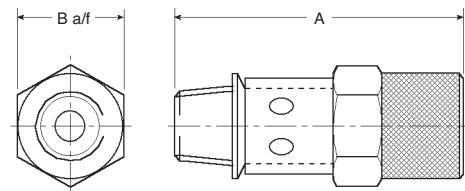


All dimensions as for uni-directional flow regulators
Model 2REGSN122 on page 4500.3

Model Number	Ports	A	F	Weight
2NDVSN12203	1/4" NPT	48 (1.89)	25.4 (1.00)	0.26 (0.57)
2NDVSN12206	1/4" NPT	48 (1.89)	25.4 (1.00)	0.26 (0.57)

Exhaust Port Flow Regulators

- 2EFRSN102 (1/4")
- 3EFRSN102 (3/8")
- 4EFRSN102 (1/2")



All units have 0.4mm (0.016") diameter minimum orifice to eliminate complete shut off. Units supplied complete with tamper proof cap.

Model Number	Thread	A	B	Weight
2EFRSN102	1/4" NPT	47.5 (1.87)	17 (0.67)	0.05 (0.11)
3EFRSN102	3/8" NPT	66 (2.60)	23.4 (0.92)	0.15 (0.33)
4EFRSN102	1/2" NPT	87.5 (3.44)	23.4 (0.92)	0.20 (0.44)

4500 Ancillary Valves

NON RETURN VALVES • 1/4", 3/8", 1/2", 3/4", 1", NPT (BSP)

4500 SERIES

4500 ACCESSORIES

NON RETURN VALVES

General Descriptions

Non Return Valves
316 Stainless Steel non return valves in two ranges - one for pressures up to 12 bar (174psi) and one for pressures up to 25 bar (362 psi).

Operating Medium

Gases

Filtered lubricated or non lubricated air, inert gas, sweet (natural) gases.

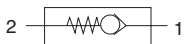
Sour gas option available. (details on application)

Liquids

Low pressure hydraulic, mineral oil or water.

Functional Symbols

Non return valves



Technical Data

Working Pressure (gases & liquids)

- 12 bar (174 psi)
- 25 bar (362 psi)

Minimum Opening Pressure

- 0.2 bar (2.90 psi)

Working Temperature

- -20°C to +70°C (-4°F to +158°F)

Low temperature version

- -50°C (-58°F) (optional)

Maximum Flow L/min (SCFM) - Cv(Kv)

- 6 bar (87 psi), 1 bar (14.5 psi) differential

Non return valves (12 bar)

- 1/4" 1600(57) 1.6(25)
- 3/8" 2200(80) 2.3(35)
- 1/2" 3800(137) 3.9(60)
- 3/4" 5800(205) 5.8(90)
- 1" 7700(274) 7.8(120)

Non return valves (25 bar)

- 1/4" 736(26) 0.74(11.4)
- 3/8" 1840(65) 1.85(28.5)
- 1/2" 2600(91) 2.60(40)



Construction Materials

- Stainless Steel AISI 316L to NACE MR-01-75 Body
- Stainless Steel AISI 316L to NACE MR-01-75 Internals
- Acetal poppet
- 316 Stainless Steel Spring
- Nitrile Seals

MODEL CODES, INSTALLATION DIMENSIONS mm (inches) and WEIGHT kg (lbs)

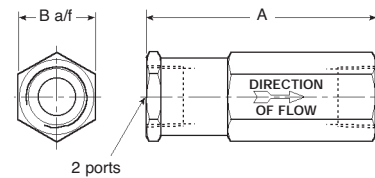
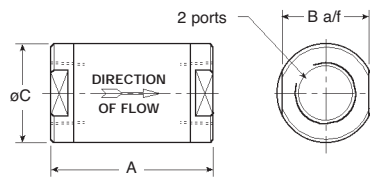
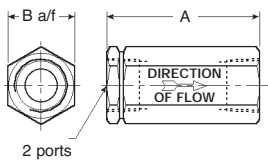
Non Return Valves (12 bar)

2NRVSN122 (1/4")
3NRVSN122 (3/8")
4NRVSN122 (1/2")

6NRVSN122 (3/4")
8NRVSN122 (1")

Non Return Valves (25 bar)

2NRVSN252 (1/4")
3NRVSN252 (3/8")
4NRVSN252 (1/2")



Model Number	Ports	A	B	C	Weight
12 bar					
2NRVSN122	1/4" NPT	50(1.97)	22.2(0.87)	-	0.12(0.26)
3NRVSN122	3/8" NPT	65(2.56)	30.5(1.20)	-	0.30(0.66)
4NRVSN122	1/2" NPT	65(2.56)	30.5(1.20)	-	0.30(0.66)
6NRVSN122	3/4" NPT	85(3.35)	45(1.77)	50.8(2.00)	1.00(2.20)
8NRVSN122	1" NPT	85(3.35)	45(1.77)	50.8(2.00)	1.00(2.20)
25 bar					
2NRVSN252	1/4" NPT	70(2.76)	23.4(0.87)	-	0.19(0.42)
3NRVSN252	3/8" NPT	80(3.15)	33(1.30)	-	0.46(1.01)
4NRVSN252	1/2" NPT	90(3.54)	41.3(1.63)	-	0.76(1.68)

QUICK EXHAUST VALVES • SHUTTLE VALVES

General Descriptions

Quick Exhaust Valves
316 Stainless Steel quick exhaust valves in 5 sizes.

Shuttle Valves
316 Stainless Steel shuttle valves for three way "OR" function.

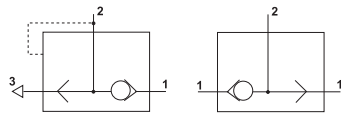
Operating Medium

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.

Functional Symbols

Quick exhaust valve Shuttle valve



Technical Data

Working Pressure (gases & liquids)

- 12 bar (174 psi)

Working Temperature

- -20°C to +70°C (-4°F to +158°F)

Low temperature version

- -50°C (-58°F) (optional)

Maximum Flow L/min (SCFM) - Cv(Kv)

- 6 bar (87 psi), 1 bar (14.5 psi) differential

Quick Exhaust Valve (supply to outlet)

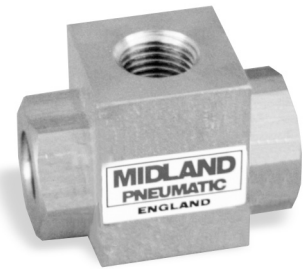
- 1/4" 1290(46) 1.3(20)
- 3/8" 1810(64) 1.8(28)
- 1/2" 3810(135) 3.8(59)
- 3/4" 4520(160) 4.5(70)
- 1" 7700(274) 7.8(120)

Quick Exhaust Valve (outlet to exhaust)

- 1/4" 2780(98) 2.8(43)
- 3/8" 3810(135) 3.8(59)
- 1/2" 5490(194) 5.5(85)
- 3/4" 6460(228) 6.5(100)
- 1" 11000(388) 11.0(170)

Shuttle Valve

- 1/4" 1350(45) 1.36(21)



Construction Materials

- Stainless Steel AISI 316L to NACE MR-01-75 Body
- Stainless Steel AISI 316L to NACE MR-01-75 Internals
- 316 Stainless Steel Spring
- Nitrile Seals

MODEL CODES, INSTALLATION DIMENSIONS mm (inches) and WEIGHT kg (lbs)

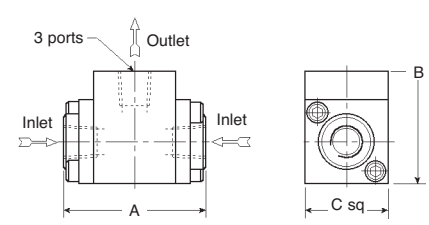
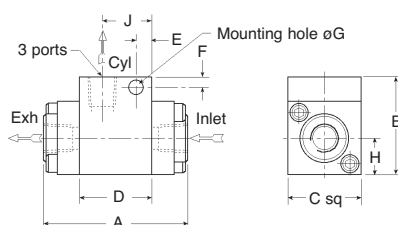
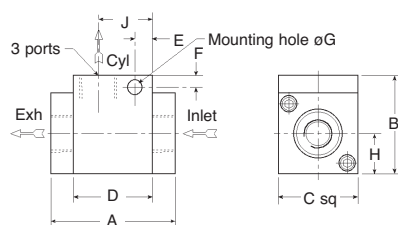
Quick Exhaust Valves

2QEVS122 (1/4")
3QEVS122 (3/8")
4QEVS122 (1/2")

6QEVS122 (3/4")
8QEVS122 (1")

Shuttle Valves

2SHVS122 (1/4")



Model Number	Ports	A	B	C	D	E	F	G	H	J	Weight
2QEVS122	1/4" NPT	52	38	32	32	-	-	-	16	22	0.34
		(2.05)	(1.50)	(1.26)	(1.26)	-	-	-	(0.63)	(0.87)	(0.75)
3QEVS122	3/8" NPT	60	42	35	35	-	-	-	17.5	23	0.48
		(2.36)	(1.65)	(1.38)	(1.38)	-	-	-	(0.69)	(0.91)	(1.06)
4QEVS122	1/2" NPT	70	55	45	45	10	6.5	8.5	22.5	31	0.80
		(2.76)	(2.17)	(1.77)	(1.77)	(0.39)	(0.26)	(0.33)	(0.88)	(1.22)	(1.76)
6QEVS122	3/4" NPT	102	70	54	54	10	12	8.5	27	35	1.60
		(4.02)	(2.76)	(2.13)	(2.13)	(0.39)	(0.47)	(0.33)	(1.06)	(1.38)	(3.53)
8QEVS122	1" NPT	114	99	74	74	16	12	11	37	52	3.6
		(4.49)	(3.90)	(2.91)	(2.91)	(0.63)	(0.47)	(0.43)	(1.46)	(2.05)	(7.94)

Model Number	Ports	A	B	C	Weight
2SHVS122	1/4" NPT	56	43	32	0.40
		(2.20)	(1.69)	(1.26)	(0.88)

4500 THERMAL FUSES AND VISUAL INDICATOR

4500 ACCESSORIES

General Descriptions

Thermal Fuses

316 Stainless Steel thermal fuses for fire release. Available for 6 temperature settings.

Visual Indicators

Compact 316 Stainless Steel panel mounted visual indicator with various colour options.

Operating Medium

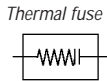
Gases

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.

Functional Symbols



Technical Data

Working pressure (gases & liquids)

- Thermal Fuses
12 bar (174 psi)
- Visual Indicator
1 to 12 bar (14.5 to 174 psi)

Working temperature

- Thermal Fuses
-20°C to + 70°C (-4°F to +158°F)
-20°C to + 96°C (-4°F to +205°F)
-20°C to +102°C (-4°F to +216°F)
-20°C to +124°C (-4°F to +255°F)
-20°C to +137°C (-4°F to +279°F)
-20°C to +200°C (-4°F to +392°F)

- Visual Indicator
20°C to +65°C (36°F to +149°F)

Maximum flow

L/min (SCFM) -Cv(Kv)

- 6 bar (87 psi), 1 bar (14.5 psi) differential
- Thermal Fuses
1/2" 5800 (205) - 5.8 (90)



Construction Materials

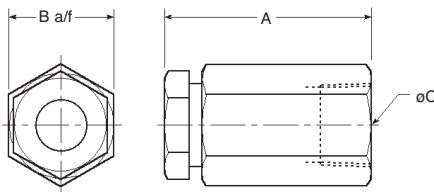
- Stainless Steel AISI 316L to NACE MR-0175 Body
- Stainless steel AISI 316L to NACE MR-0175 Internals
- 316 Stainless Steel Springs
- Nitrile Seals
- Visual Indicator piston Acetal
- Visual Indicator assembly Acetal with acrylic lens

MODEL CODES, INSTALLATION DIMENSIONS mm (inches) and WEIGHT kg (lbs)

Thermal Fuses

4THFSN102070 (70°C)
4THFSN102096 (96°C)
4THFSN102102 (102°C)

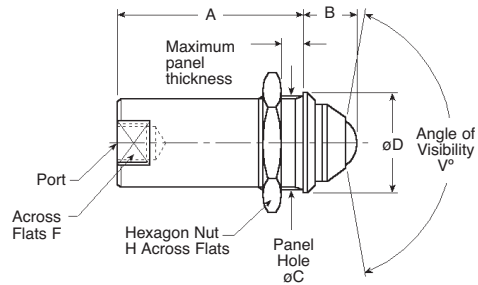
4THFSN102124 (124°C)
4THFSN102137 (137°C)
4THFSN102200 (200°C)



IMPORTANT:
Fuse opening must be directed towards deck to safe guard personnel from shot accident by fire release.

Visual indicator

1VISSN122G (1/8"NPT Red/Green)
1VISSN121G (1/8"BSP Red/Green)



Alternative colours available in:
RED - GREEN - AMBER - BLACK.
Specify colour combination required.

Model Number	Ports	A	B	Weight
4THFSN102070	1/2" NPT	51 (2.00)	25.6 (1.01)	0.15 (0.33)
4THFSN102096	1/2" NPT	51 (2.00)	25.6 (1.01)	0.15 (0.33)
4THFSN102102	1/2" NPT	51 (2.00)	25.6 (1.01)	0.15 (0.33)
4THFSN102124	1/2" NPT	51 (2.00)	25.6 (1.01)	0.15 (0.33)
4THFSN102137	1/2" NPT	51 (2.00)	25.6 (1.01)	0.15 (0.33)
4THFSN102200	1/2" NPT	51 (2.00)	25.6 (1.01)	0.15 (0.33)

Model Number	Ports	Weight
1VISSN122G	1/8" NPT	0.1 (0.22)
1VISSN121G	1/8" BSP	0.1 (0.22)

A	B	C	D	F	H	T	V
46	13.25	24	25.4	19	30.5	6	1600
(1.81)	(0.52)	(0.94)	(1.00)	(0.75)	(1.20)	(0.24)	1600

N.R.V. BREATHERS AND BREATHER (SILENCERS)

General Descriptions

N.R.V. Breathers

316 Stainless Steel non return breather to prevent ingress into exhaust and vent ports.

Breathers (Silencers)

316 Stainless Steel or Brass sintered element silencers used to protect ports open to the atmosphere.

'Bug Screen' Port Vent 316 Stainless Steel sintered element used to protect vent ports to atmosphere.

Operating Medium

Gases

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

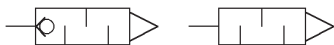
Liquids

Low pressure hydraulic, mineral oil or water.

Functional Symbols

N.R.V. Breather

Breather (Silencer)



Technical Data

Working pressure (gases & liquids)

- 12 bar (174 psi)

Working temperature

- -20°C to +70°C (-4°F to +158°F)

Maximum flow

L/min (SCFM) - Cv(Kv)

- at 6 bar (87 psi),
1 bar (14.5 psi) differential

N.R.V. Breathers

- 1/4" 646 (23) - 0.65 (10)
- 3/8" 1300 (45) - 1.3 (20)
- 1/2" 1550 (54) - 1.6 (24)

Breathers (Silencers)

- 1/4" 1550 (55) - 1.5 (24)
- 3/8" 1940 (68) - 2.0 (30)
- 1/2" 3410 (123) - 3.5 (54)
- 3/4" 5500 (194) - 5.5 (85)
- 1" 5700 (201) - 5.7 (88)

Construction Materials

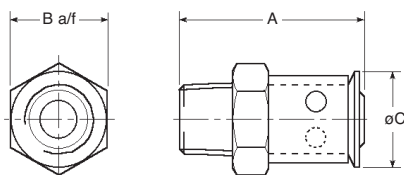
- Stainless steel AISI 316L to NACE MR-0175
- Stainless steel AISI 316L to NACE MR-0175 Internals
- Stainless Steel Spring
- Nitrile Seals



MODEL CODES, INSTALLATION DIMENSIONS mm (inches) and WEIGHT kg (lbs)

N.R.V. Breathers

2NRBSN102(1/4")
3NRBSN102(3/8")
4NRBSN102(1/2")



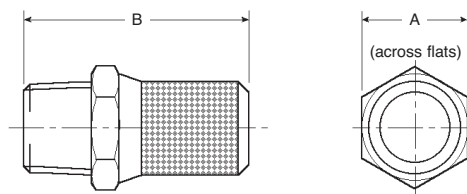
Model Number	Thread	A	B	C	Weight
2NRBSN102	1/4" NPT	34 (1.34)	17 (0.67)	17 (0.67)	0.028 (0.062)
3NRBSN102	3/8" NPT	40 (1.57)	23.4 (0.92)	21 (0.83)	0.059 (0.130)
4NRBSN102	1/2" NPT	45 (1.77)	23.4 (0.92)	21 (0.83)	0.063 (0.139)

Bug Screen	Thread	Weight
1VPBSN122	1/8" NPT	0.01 (0.026)
2VPBSN122	1/4" NPT	0.01 (0.026)

Breathers (Silencers)

1BRESN102 (1/8")
2BRESN102 (1/4")
3BRESN102 (3/8")
4BRESN102 (1/2")

6BRESN102 (3/4")
8BRESN102 (1")



Model Number	Thread	A	B	Weight
1BRESN102	1/8" NPT	31 (1.22)	14 (0.55)	0.012 (0.026)
2BRESN102	1/4" NPT	38 (1.50)	17 (0.67)	0.022 (0.048)
3BRESN102	3/8" NPT	44 (1.73)	22 (0.87)	0.034 (0.075)
4BRESN102	1/2" NPT	55 (2.16)	24 (0.94)	0.045 (0.099)
6BRESN102	3/4" NPT	70 (2.76)	32 (1.26)	0.10 (0.22)
8BRESN102	1" NPT	75 (2.95)	36 (1.42)	0.15 (0.33)