BULLETIN V316-2007

Series V-316

STAINLESS STEEL VALVES AND ACCESSORIES

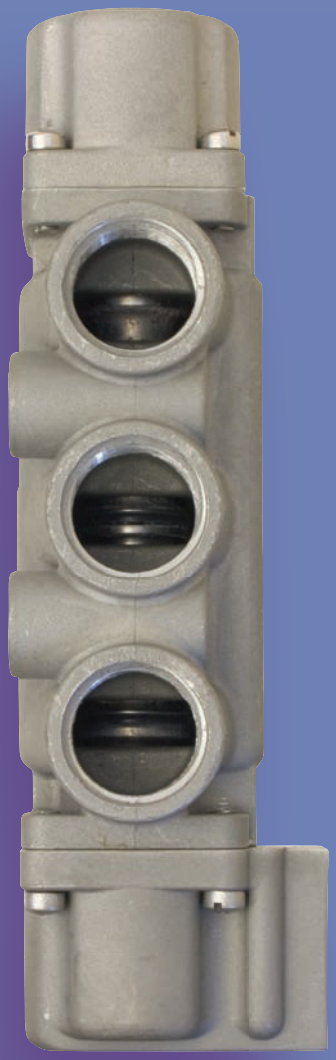
ISO 9001 CERTIFIED

















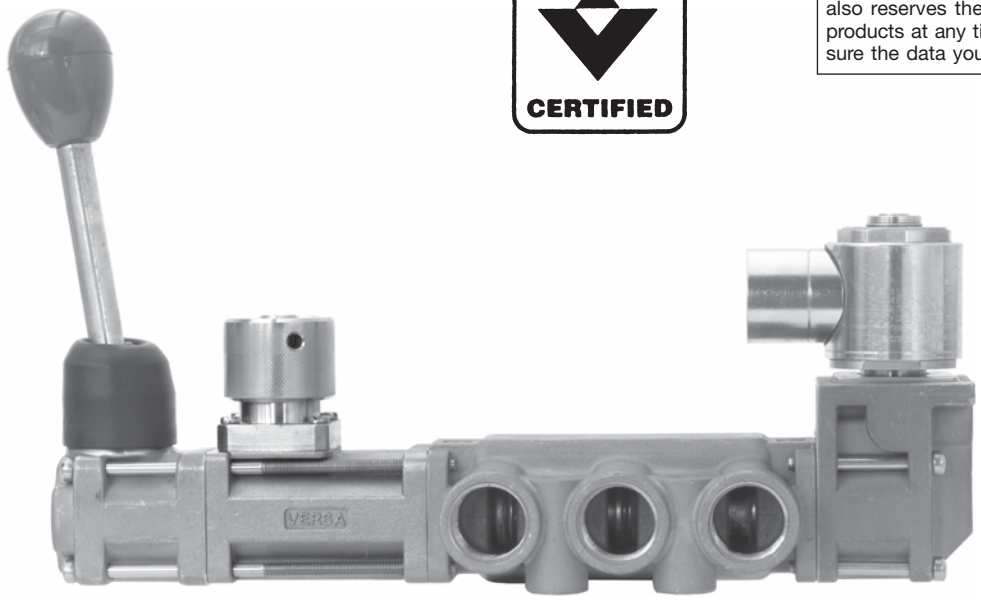


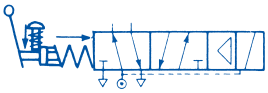
VERSA® Valves

MODULAR CONCEPT

ISO 9001 CERTIFIED

Versa exercises diligence to assure that information contained in this catalog is correct, but does not accept responsibility for any errors or omissions. Versa also reserves the right to change or delete data or products at any time without prior notification. To be sure the data you require is correct, consult factory.





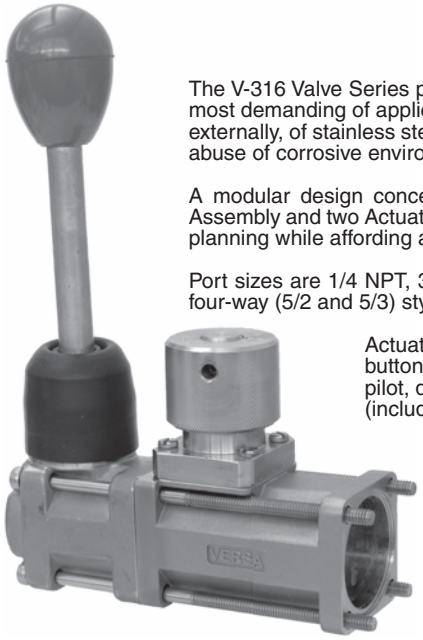
VAG-4522-316-181DE-XX-(specify voltage)

The V-316 Valve Series provides a full range of control valves suited to the most demanding of applications. Ruggedly constructed, both internally and externally, of stainless steel, these valves are able to withstand the physical abuse of corrosive environments and controlled media.

A modular design concept utilizing three basic sub-assemblies: a Body Assembly and two Actuator Assemblies (active or passive), simplifies circuit planning while affording almost unlimited combination possibilities.

Port sizes are 1/4 NPT, 3/8 NPT and 1/2 NPT in three-way (3/2, 3/3), and four-way (5/2 and 5/3) styles.

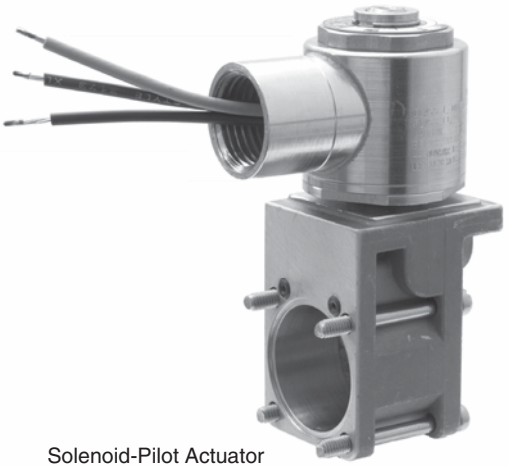
Actuation types include manual (hand lever, palm button, latching detent & manual reset), pilot (pressure pilot, diaphragm pilot, “air-latch” pilot), and solenoid-pilot (including several approved hazardous service types).



Manual Actuator

‘A’-181DE 

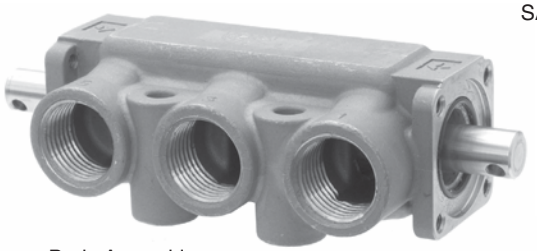
Sub-Assembly Nr.: CA-4302-65-316-181DE

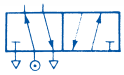


Solenoid-Pilot Actuator

‘G’-XX 

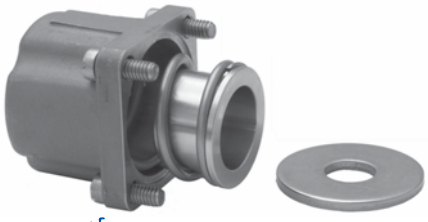
Sub-Assembly Nr.:
SA-4322-84-316-XX (specify voltage)



Body Assembly 

‘4522’

Sub-Assembly Nr.: SA-4522-71-316

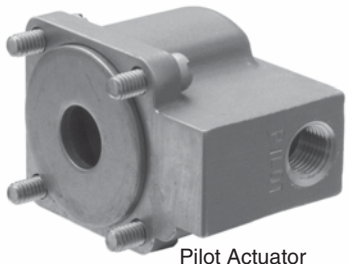


‘S’ 

Spring Return Actuator

Sub-Assembly Nr.: SA-4302-65-316

Other functions can be easily accomplished as shown with these Pilot and Spring Return actuators.



Pilot Actuator

‘P’ 

Sub-Assembly Nr.: SA-4302-64-316

This Bulletin only gives the Actuator Sub-Assemblies and Body Sub-Assemblies. This gives the design engineer maximum versatility as these modules can be combined to complete valves with functions as needed.

VERSA

TECHNICAL DATA

MATERIALS:

Metal Parts:	316 stainless steel (except solenoid parts, ask factory) conforms to NACE standard MR-01-75.
Hand Knob:	plastic
Seals:	FKM (Fluorocarbon) is standard. Exceptions: diaphragm-pilot seal is NBR (Buna N) or with suffix -31 Teflon coated Buna N; other seal materials are available. See 'TEMPERATURES/SEALS' below.

PRESSURES:

Valve type	Pneumatic* psi	Pneumatic* bar (Mpa = $\frac{bar}{10}$)
VALVE BODY (inlet/system)		
Manual or Pilot — Standard Seals Single Solenoid EXPilot (2-position) — Standard Seals Double Solenoid EXPilot (2-position) — Standard Seals Double Solenoid EXPilot (3-position) — Standard Seals	Vacuum to 200	Vacuum to 14
Single Solenoid INPilot (2-position) — Standard Seals	40 to 175	2.8 to 12
Double Solenoid INPilot (2-position) — Standard Seals	20 to 175	1.4 to 12
Double Solenoid INPilot (3-position) — Standard Seals	40 to 175	2.8 to 12
PILOT (signal)		
Some restrictions concerning maximum pressures may apply. See specific actuator.		
Pilot (2-position "VSP" or 3-position "VJJ")	40 to 200	2.8 to 14
Pilot (2-position "VPP")	20 to 200	1.4 to 14
Diaphragm (2-position "VSW" or 3-position "VYY")	10 to 50	0.7 to 3.4
Diaphragm (2-position "VSW" or 3-position "VYY") w/Suffix -31	10 to 200	0.7 to 14
Diaphragm (2-position VWW")	5 to 50	0.34 to 3.4
Diaphragm (2-position "VWW") w/Suffix -31	5 to 200	0.34 to 14
Solenoid EXPilot (2-position "VSG" or 3-position "VXX")	40 to 175	2.8 to 12
Solenoid EXPilot (2 position (VGG")	20 to 175	1.4 to 12

Notes: — When application involves temperatures below freezing or when shifting intervals are relatively long, it is recommended that suffix -S be specified for valves with spring actuation. Minimum pilot pressure must be increased by 40%.
— The following suffixes include the use of suffix -S in all cases: -181AAE, -181CE, -181DE, -3358AE, -3358E.
*Consult factory for hydraulic service.

TEMPERATURES/SEALS:

The table below lists suggested suffix options for various temperature ranges and/or types of service. For temperatures or conditions not listed, consult factory.

Temperature Range (Medium/Ambient Temperature)	Type of Service					
	Intermittent Duty Service		Continuous Duty Service			
	AC or DC		AC		DC	
	Coil	Solenoid Plunger	Coil	Solenoid Plunger	Coil	Solenoid Plunger
150°F to 200°F (65°C) (95°C)	Suffix -HT	Suffix -3 (may be inclusive in other suffix options as it is in -HT)	Suffix -HT	Suffix -3 (may be inclusive in other suffix options as it is in -HT)	Suffix -HT	Suffix -3 (may be inclusive in other suffix options as it is in -HT)
120°F to 150°F (50°C) (65°C)	Standard	Suffix -3 (may be inclusive in other suffix options)	Standard	Suffix -3 (may be inclusive in other suffix options)	Suffix -HT	Suffix -3 (may be inclusive in other suffix options as it is in -HT)
-10°F to 120°F (-23°C) (50°C)	Standard	Standard	Standard	Suffix -3 (may be inclusive in other suffix options)	Standard	Suffix -3 (may be inclusive in other suffix options)

FLOW CALCULATION:

$$\text{Air Flow} = f\sqrt{\frac{(p1-p2)(p2)}{(T)(SG)}}$$

	English	Metric
Air flow	SCFM	Nm^3/h
f = Conversion factor	22.5 × Cv	30.8 × Kv
p1 = Upstream pressure p2 = Downstream pressure	p1 - p2 < 0.5 × p2 psi absolute	bar absolute
T = Temperature upstream absolute	460° + F°	273° + C°
SG = Specific gravity	1.0	1.0

Note: 0.59 SCFM = 1 Nm^3/h
14.5 psi = 1 bar

FLOW:

Port Size of Valve Body For details see page 8.1 through 8.6	Flow Diameter inch	Flow Diameter mm	Flow Factor Cv	Flow Factor Kv
1/4 NPT	3/8	9.5	1.8	26
3/8 NPT	3/8	9.5	2.0	29
1/2 NPT	5/8	16.0	5.5	80

TECHNICAL DATA

ELECTRICAL:

Solenoid-Pilot actuated V316 valves are available with a variety of different solenoids for both nonhazardous and hazardous locations. Basic details of these actuators are listed below. Dimensions, product numbers, and other details may be found on pages 5.1 through 5.6. For additional data consult factory.

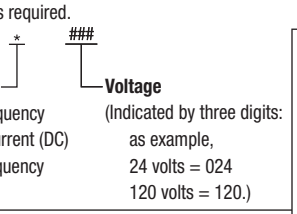
NON HAZARDOUS LOCATION SOLENOIDS

Suffix Identification	Protection Classification	Area Classification and (Gas Grouping)	Certification- (Conformance)	Ingress Protection
-U	General Purpose	Indoor & Outdoor	CSA	NEMA 1, 2, 3
-HC -U	General Purpose	Indoor & Outdoor	CSA	NEMA 4; IP65 per IEC 529

HAZARDOUS LOCATION SOLENOIDS

Suffix Identification	Protection Classification	Area Classification and (Gas Grouping)	Certification- (Conformance)	Ingress Protection
-XX Page 5.3	Hazardous Locations	Class I, Division 2 (A & B) Class I, Division 1 (C & D) Class II, Division 1 (E, F, & G)	UL CSA	NEMA 7 & 9
-LB-XX Page 5.4	Hazardous Locations	Class I, Division 2 (A & B) Class I, Division 1 (C & D) Class II, Division 1 (E, F, & G)	UL CSA	NEMA 7 & 9
-XN Page 5.3	(d) Flameproof	Zones 1 and 2 (IIB+H_2) Category 2G T4	ATEX	IP66
-LB-XN Page 5.4	(d) Flameproof	Zones 1 and 2 (IIB+H_2) Category 2G T6	ATEX	IP66
-XDAS or -XDAT Page 5.3	(d) Flameproof	Zones 1 and 2 (IIC) Category 2G	ATEX	IP66 and IP67
-XMAA or -XMAE or -XMAF or -XMAG Page 5.5	(m) Encapsulation (e) Increased Safety	Zones 1 and 2 (II) Category 2G	ATEX	IP66 and IP67
-XMFA or -XMFE or -XMFF or -XMFG Page 5.5	(m) Encapsulation (e) Increased Safety	Zones 1 and 2 (II) Category 2G	ATEX	IP66 and IP67
-HC-XISC -HCC-XISC Page 5.6	Hazardous Locations	Class I, Groups (A, B, C & D) Class II, Groups (E, F & G) Class III, Division 1	Factory Mutual CSA	NEMA 4
-HC-XISX6 -HCC-XISX6 Page 5.6	(ia) Intrinsic Safe	Zones 0, 1 and 2 (IIC) Category 1G T6	ATEX	IP65
-XIFA or -XIFE or -XIFF Page 5.6	(ib) Intrinsic Safe	Zones 1 and 2 (IIB) Category 1G	ATEX	IP66 and IP67

PRODUCT NUMBER COIL CODES: Complete product numbers require, when applicable, a coil code that represents the desired coil current type, frequency and voltage. The coil code takes the form shown below, with ratings and voltage substituted as required.



A = 60Hz frequency
D = Direct Current (DC)
E = 50Hz frequency

(Indicated by three digits: as example, 24 volts = 024, 120 volts = 120.)

	Voltage (Power)	Electrical Characteristics	Miscellaneous
	All usual 50 Hz & 60 Hz AC (6W) All usual DC (7W)	Class F epoxy molded coil (155ºC). Continuous duty 2 leads 24" (60 cm).	Steel cover with 1/2 NPT conduit entry. Page 5.1
	24V60, 120V60, 240V60 (8.5W) 24V50, 110V50, 220V50 (8.5W) 12VDC, 24VDC, 48VDC (10.5W)	Class F epoxy molded coil (155ºC), with 3 spade terminals and mini DIN socket with PG9 cable gland. Continuous duty.	Page 5.1

	Voltage (Power)	Electrical Characteristics	Miscellaneous
	All usual 50 Hz & 60 Hz AC (5.6W) All usual DC (7.2W)	Class F epoxy molded coil (155ºC). Continuous duty. 3 leads 24" (60 cm).	Steel chromate coated coil housing with 1/2 NPT conduit entry. For stainless steel (182FM) coil housing add: (-ST)
	12V60, 24V60, 48V60, 120V60, 240V60 (1.8W) 6VDC, 12VDC, 24VDC, 48VDC (1.8W)	Class F epoxy molded coil (155ºC). Continuous duty. 3 leads 24" (60 cm).	Steel chromate coated coil housing with 1/2 NPT conduit entry. For stainless steel (182FM) coil housing add: (-ST) Maximum pilot pressure 120 psi (8 bar). 1.8W nominal power.
	All usual 50 Hz & 60 Hz AC (5.6W) All usual DC (7.2W)	Class F epoxy molded coil (155ºC). Continuous duty. 3 leads 24" (60 cm).	Steel chromate coated coil housing with M20 x 1.5 conduit entry. Ground terminal on cover. For stainless steel (182FM) coil housing add: (-ST)
	12V60, 24V60, 48V60, 120V60, 240V60 (1.8W) 6VDC, 12VDC, 24VDC, 48VDC (1.8W)	Class F epoxy molded coil (155ºC). Continuous duty. 3 leads 24" (60 cm).	Steel chromate coated coil housing with M20 x 1.5 conduit entry. Ground terminal on cover. For stainless steel (182FM) coil housing add: (-ST) Maximum pilot pressure 120 psi (8 bar) 1.8W nominal power.
	24V50, 230V50 (6W); 127V50 (10W) 24V60, 120V60, 240V60 (10W) 12VDC, 24VDC, 28VDC, 48VDC, 110VDC, 125VDC (10W)	Class F epoxy molded coil (155ºC). Continuous duty.	Stainless steel coil housing with internal Junction Box. Internal and external ground screw. M20 x 1.5 conduit entry: (-XDAS) 1/2 NPT conduit entry: (-XDAT)
	24VDC (4W) (Consult factory for other voltage options)	Continuous duty. Coil & Rectifier, including surge suppression, potted within housing.	Thick wall epoxy coil housing with integral junction box. Internal ground terminal. M20 x 1.5 conduit entry: (-XMAA) Cable gland for 6-12 mm ø cable: (-XMAE) 1/2 NPT conduit entry with adapter: (-XMAF) Cable gland for 9-16 mm ø cable: (-XMAG)
	24VDC (10W inrush, 2.6W holding) (Consult factory for other voltages)	Continuous duty. Coil & Power Controller potted within housing.	Thick wall epoxy coil housing with integral junction box. Internal ground terminal. M20 x 1.5 conduit entry: (-XMFA) Cable gland for 6-12 mm ø cable: (-XMFE) 1/2 NPT conduit entry with adapter: (-XMFF) Cable gland for 9-16 mm ø cable: (-XMFG)
	24VDC system voltage prior to barrier (1.6 watt max.)	Class F epoxy molded coil (155ºC). Continuous duty.	Requires the use of an approved barrier or isolator. Maximum operating system voltage before barrier 28VDC. Maximum pilot pressure 115 psi (8 bar). 3 spade terminals & DIN connector with PG9 cable gland: (-HC) 1/2 NPT conduit entry: (-HCC)
	24VDC system voltage prior to barrier (1.6 watt max.)	Class F epoxy molded coil (155ºC). Continuous duty.	Requires the use of an approved barrier or isolator. Maximum operating system voltage before barrier 28VDC. Maximum pilot pressure 115 psi (8 bar). 3 spade terminals & DIN connector with PG9 cable gland: (-HC) 1/2 NPT conduit entry: (-HCC)
	24VDC (0.8W) (Consult factory for other voltages)	Continuous duty. Coil and power controller potted within housing.	Requires the use of an approved safety barrier or isolator. Thick wall epoxy coil housing and integral junction box. Internal ground terminal. M20 x 1.5 conduit entry: (-XIFA) Cable gland for 6-12 mm ø cable: (-XIFE) 1/2 NPT conduit entry with adapter: (-XIFF)

Each letter and digit in the product number of a Versa Valve has a significant meaning, as explained below.
Letters or numbers shown in black in the example below do not change.

V	S	P	–	3	3	0	1	–	316	–	Suffix
	ACTUATING DEVICES			BODY DETAILS							
Valve Series	At left end of valve	At right end of valve		Function (also see Spool Details)	Port Size	Type of Body	Spool Details (flow pattern*)				
	when looking at inlet port of body*										

Valve Series

Series V-316 Valves Pneumatic Service (Nominal Pressure Range Vacuum to 200 psi (14 bar). Some restrictions apply. See specific actuators.)

ACTUATING DEVICES — At left end of valve / At right end of valve (when looking at inlet port of body*)

A		Combination - or Special Actuator
B		Spring centering (for 3 position manually operated valves)
G		Solenoid-pilot
I		Hand Button (for panel mounting)
J		Pilot-Spring Centering
L		Hand-Lever
N		Non-return end-cap
P		Pressure-Pilot
R		Reverse Spring Return (spring pulls valve spool)
S		Spring Return (spring pushes valve spool)
U		3-Position Detent (For 3 position manually operated valves)
W		Diaphragm-Pilot (low pressure-pilot)
X		Solenoid-Pilot Spring Centering (for 3 position solenoid pilot valves)
Y		Diaphragm-Pilot Spring Centering (for 3 position Diaphragm-Pilot valves)
Z		2-Position Detent (for 2-position manually operated valves)

*3-way NC function requires actuator device on right. 3-way NO function requires actuator device on left.

Function (also see Spool Details)

3*		Three-Way 3/2 or 3/3
4		Four-Way 5/2 or 5/3
7		Two Outlet (Diverter) 3/2 or 3/3
8		Two Inlet (Selector) 3/2 or 3/3

* Two-Way may be accomplished by plugging the exhaust port of three-way valve bodies

Port Size

3	1/4 NPT
4	3/8 NPT
5	1/2 NPT

Type of Body

Sideported EXPilot

0 Body with threaded side-ports (for Manual, Pilot and EX-Pilot solenoid actuated valves)

Sideported INPilot

2 Body with threaded side-ports and internal drilling to supply inlet pressure to INPilot act. of Solenoid-Pilot

Spool Details (flow pattern*)

Three-Way 3/2 Valves

1		Norm. Closed
2		Norm. Open
2		Two Outlet (See Function column for flow)
2		Two Inlet (See Function column for flow)

Three-Way 3/3 Valves

3		
4		

For 3/3 Two-inlet or Two-outlet see pg. 8.3

Four-Way 5/2 Valves

2		

Four-Way 5/3 Valves

3		
4		

*Left and Right Flow Diagrams indicate 2-position valve. Center Flow Diagram shows 3-position. For other Center Flow patterns, see pages 8.1 thru 8.6

316

'316' indicates that the basic construction material for valve parts is AISI 316 Stainless Steel (Conforms to NACE Standard MR-01-75)

Suffix

Suffix Detail numbers indicate modifications or variations of the basic Valve. When specifying, simply add the Suffix Details required in alphabetical and numerical following order.

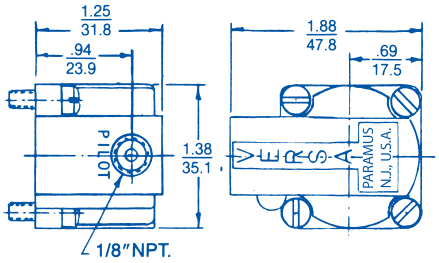
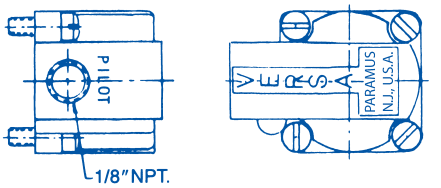
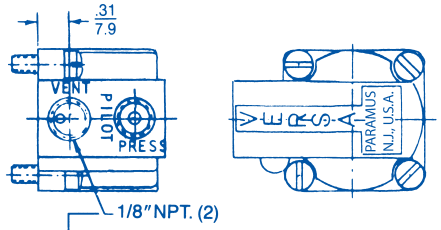
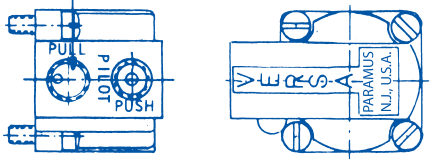
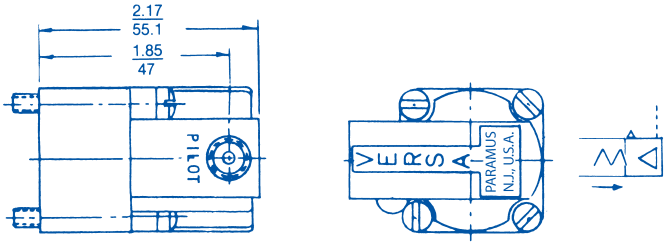
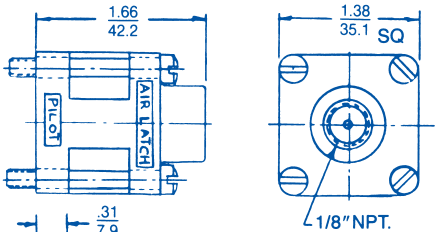
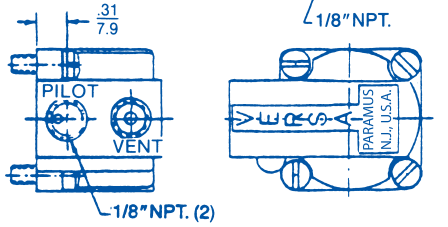
In this bulletin many Suffix Details are described. For more: see Suffix Detail Product Bulletin, or consult factory.

Coil voltages are indicated here. For specific voltage, use coil code number listed on page 3.3.

VERSA Series V-316 Valves consist of three Sub-Assemblies: one Body-Assembly and two Actuator-Assemblies, mounted at the LH side and the RH side of the Body. All the Actuators can be mounted at either side, are fully interchangeable and can be combined to suit the function desired. See Pages 4.1 through 8.6 for those Sub-Assemblies.

PILOT ACTUATORS*

DIMENSIONS SHOWN IN INCH
MM

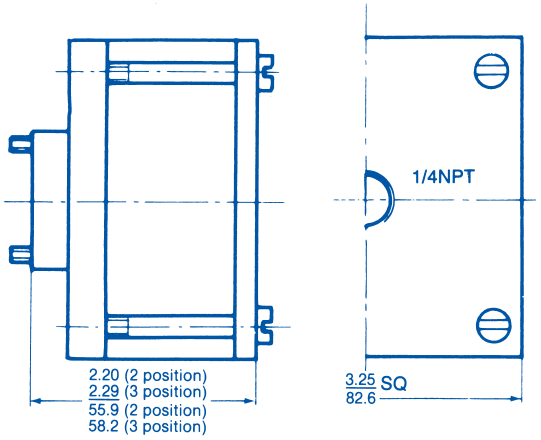
	Symbol	Designation In Product Number Prefix	Suffix	Title and Sub-assembly Number
		P		(PRESSURE) PILOT SA-4302-64-316
		A	and -PTP	PULL TYPE (PRESSURE) PILOT CA-4302-64-316-PTP
		P	and -107E	(PRESSURE) PILOT with Threaded Vent port SA-4302-64-316-107E
		A	and -PPP	PUSH-PULL (PRESSURE) PILOT CA-4302-64-316-PPP
		J		(PRESSURE) PILOT-SPRING CENTERED (for 3 position pilot operated valves) SA-4302-83-316
		A	and -301E	"AIR LATCH" (PRESSURE) PILOT 'hold function' only CA-4302-64-316-301E
		A	and -301RE	"AIR LATCH" (PRESSURE) PILOT-PULL TYPE 'hold function' only CA-4302-64-316-301RE

*For Pilot Pressure ranges see page 3.1

PILOT ACTUATORS*

DIMENSIONS SHOWN IN INCH
MM

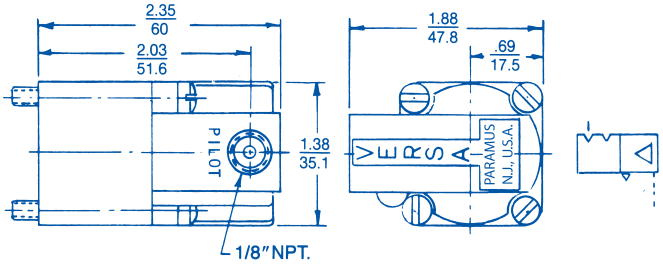
Symbol	Designation In Product Number Prefix	Suffix	Title and Sub-assembly Number
W			DIAPHRAGM PILOT (for 2 position diaphragm pilot operated valves) SA-4302-87-316 For low pressure pilot signals
Y			DIAPHRAGM PILOT-SPRING CENTERED (for 3 position diaphragm pilot operated valves) For low pressure pilot signals SA-4302-88-316



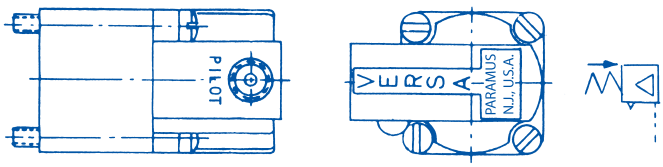
NOTE: Diaphragm piston can be equipped with Teflon coated Buna N "U" cup. Add suffix "-31" to complete valve number or sub-assembly number.

PILOT-COMBINATION ACTUATORS*

DIMENSIONS SHOWN IN INCH
MM



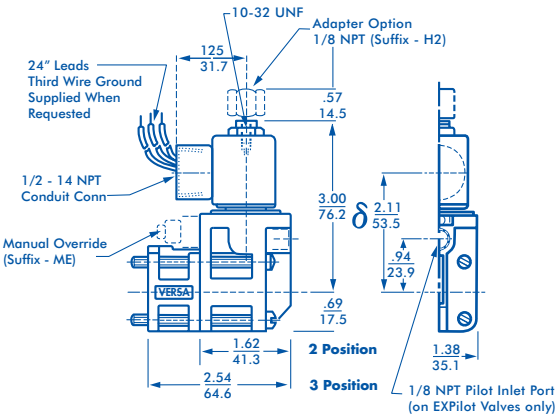
A	and -150E	(PRESSURE) PILOT-TWO DETENT CA-4302-64-316-150E
A	and -159E	(PRESSURE) PILOT-REVERSE SPRING RETURN CA-4302-64-316-159E



*For Pilot Pressure ranges see page 3.1

SOLENOID-PILOT ACTUATORS

DIMENSIONS SHOWN IN INCH
MM



δ Height dimensions shown are for Nonhazardous solenoids. Dimension for Hazardous solenoids depend upon type of solenoid selected.

	Suffix	
+options:	-HT	High Temperature Class H coil
	-H2	adapter with 1/8 NPT thread
	-L14	Dust Excluder Solenoid Nut
	-ME	manual override
	-PC	potted coil; NEMA 4/4X, IP65
	-243	wire leads with grommet type housing

2 Position — GENERAL SERVICE (NONHAZARDOUS SERVICE)

Symbol	Designation In Product Number Prefix	Suffix	Title and Sub-assembly Number
			SOLENOID PILOT (with threads for conduit connection)
	G	and -U	SA-4302-84-316-U-.+.-(**) (EXPilot type)
	G	and -U	SA-4322-84-316-U-.+.-(**) (INPilot type)

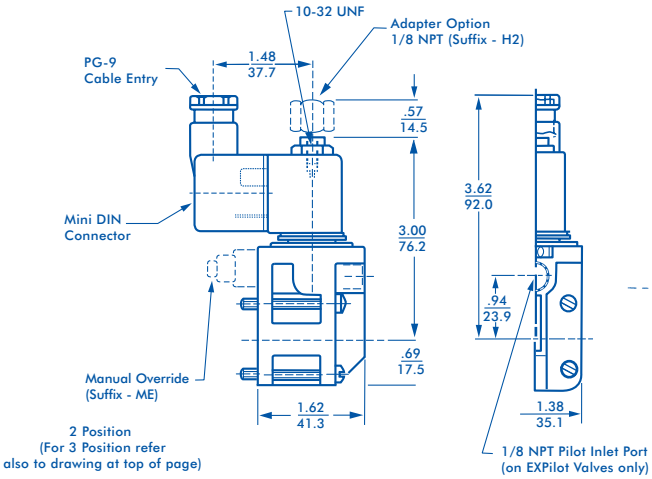
3 Position — GENERAL SERVICE (NONHAZARDOUS SERVICE)

3 Position — HAZARDOUS SERVICE

Any of the solenoids shown on pages 5.3, 5.4, 5.5, and 5.6 can be used on this actuator.

Symbol	Designation In Product Number Prefix	Suffix	Title and Sub-assembly Number
			SOLENOID-PILOT SPRING CENTERING (for 3 posiition solenoid operated valves) Available for any of the solenoids and respective options shown on pages 5.1, 5.3, 5.4, 5.5 and 5.6.
	X	and -.U.	SA-4302-85-316-.U.-.+.-(**) (EXPilot type)
	X	and -.U.	SA-4322-85-316-.U.-.+.-(**) (INPilot type)

(**) Specify coil code on page 3.3, to complete number



	Suffix	
+options:	-HT	adapter with 1/8 NPT thread
	-L14	Dust Excluder Solenoid Nut
	-ME	manual override

2 Position — GENERAL SERVICE (NONHAZARDOUS SERVICE)

Symbol	Designation In Product Number Prefix	Suffix	Title and Sub-assembly Number
			SOLENOID-PILOT (with DIN type connector-spade terminal coil)
	G	and -HC-U	SA-4302-84-316-HC-U-.+.-(**) (EXPilot type)
	G	and -HC-U	SA-4322-84-316-HC-U-.+.-(**) (INPilot type)

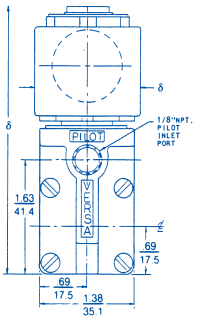
3 Position (For 3 Position also refer to drawing at top of page) — GENERAL SERVICE (NONHAZARDOUS SERVICE)

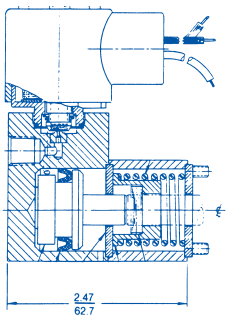
Symbol	Designation In Product Number Prefix	Suffix	Title and Sub-assembly Number
			SOLENOID-PILOT SPRING CENTERING (with DIN type connector-spade terminal coil)
	X	and -HC-U	SA-4302-85-316-HC-U-.+.-(**) (EXPilot type)
	X	and -HC-U	SA-4322-85-316-HC-U-.+.-(**) (INPilot type)

(**) Specify coil code on page 3.3, to complete number

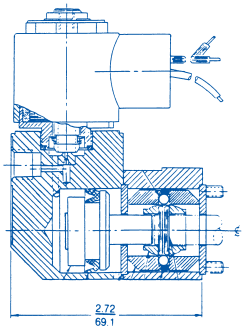
SOLENOID-PILOT COMBINATION ACTUATORS — 2 Position GENERAL (NONHAZARDOUS) OR HAZARDOUS SERVICE

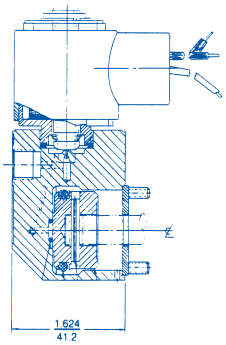
DIMENSIONS SHOWN IN INCH
MM





Any of the solenoids shown on pages 5.1, 5.3, 5.4, 5.5, and 5.6 can be used on this actuator



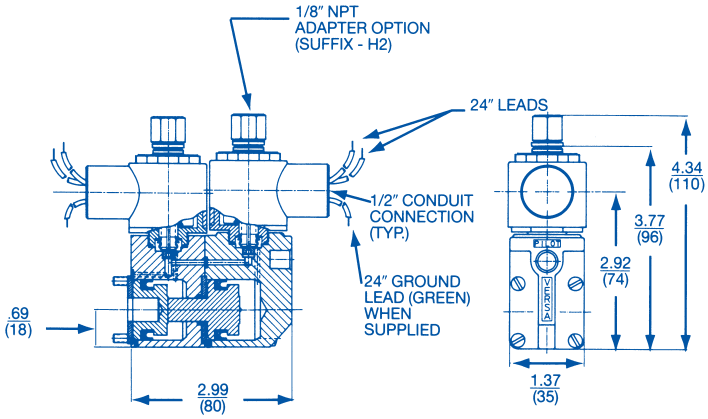


Designation In Product Number Prefix		Suffix	Title and Sub-assembly Number
			SOLENOID-PILOT and 'REVERSE' SPRING RETURN
A	and	-138E-.?.-	CA-4302-84-316-138E-.?.-.+.-(**) (EXPilot type)
A	and	-138E-.?.-	CA-4322-84-316-138E-.?.-.+.-(**) (INPilot type)
			SOLENOID-PILOT TWO DETENT
A	and	-173E-.?.-	CA-4302-84-316-173E-.?.-.+.-(**) (EXPilot type)
A	and	-173E-.?.-	CA-4322-84-316-173E-.?.-.+.-(**) (INPilot type)
			SOLENOID 'AIR-LATCH' PILOT 'hold function only'
A	and	-301GE-.?.-	CA-4302-84-316-301GE-.?.-.+.-(**) (EXPilot type)
A	and	-301GE-.?.-	CA-4322-84-316-301GE-.?.-.+.-(**) (INPilot type)

? Specify suffix on page 3.2, which solenoid operator is required.
\+ Specify Options
(**) Specify coil code to complete number.

REDUNDANT SOLENOID ACTUATOR — 2 Position GENERAL SERVICE (NONHAZARDOUS) OR HAZARDOUS SERVICE

DIMENSIONS SHOWN IN INCH
MM



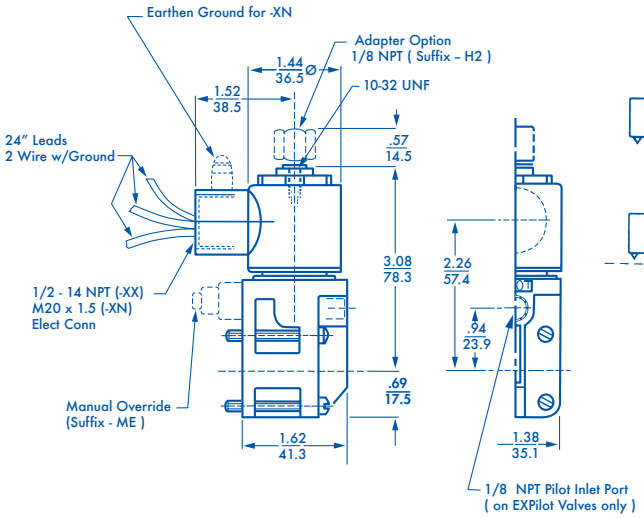
Designation In Product Number Prefix		Suffix	Title and Sub-assembly Number
			SOLENOID-PILOT and REDUNDANT SOLENOID-PILOT
A	and	-RS-.?.-	CA-4302-84-316-RS-.?.-.+.-(**) (EXPilot type)
A	and	-RS-.?.-	CA-4322-84-316-RS-.?.-.+.-(**) (INPilot type)

? Specify suffix on page 3.2, which solenoid operator is required.
\+ Specify Options
(**) Specify coil code to complete number.

SOLENOID-PILOT ACTUATORS — 2 Position (for 3 Position also refer to Drawing at top of page 5.1)

DIMENSIONS SHOWN IN INCH
MM

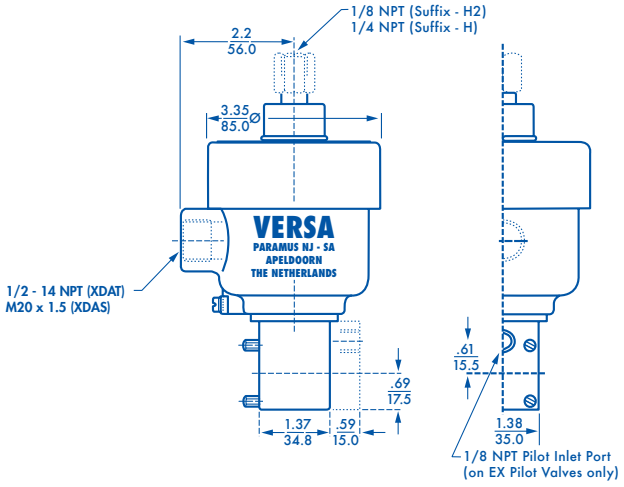
HAZARDOUS SERVICE



Symbol	Designation In Product Number Prefix		Suffix	Title and Sub-assembly Number
				SOLENOID-PILOT Hazardous Locations {-XX: UL listed & CSA approved for Hazardous Locations; Class I, Div 2 (A & B); Class I, Div 1 (C & D); Class II, Div 1 (E, F & G).} (d) Flameproof {-XN: ATEX approved; Zones 1 and 2, (IIB + H_2) Category 2G.}
	G	and	-XX	SA-4302-84-316-XX-.+.-(**)
	G	and	-XN	SA-4302-84-316-XN-.+.-(**) (EXPilot type)
	G	and	-XX	SA-4322-84-316-XX-.+.-(**)
	G	and	-XN	SA-4322-84-316-XN-.+.-(**) (INPilot type)

	Suffix	
+options:	-HT	High Temperature Class H coil (For UL or CSA approved, consult factory)
	-H2	adapter with 1/8 NPT thread
	-L14	Dust Excluder Solenoid Nut
	-ME	manual override
	-ST	#182FM stainless steel coil housing
	-PC	potted coil; NEMA 4/4X, IP65

(**) Specify coil code on page 3.3, to complete number



Symbol	Designation In Product Number Prefix		Suffix	Title and Sub-assembly Number
				SOLENOID-PILOT (d) Flameproof {-XDAS or –XDAT; ATEX approved; Zones 1 and 2, (IIC) Category 2G.}
	G	and	-XDA*	SA-4302-84-316-XDA..*.-.+.-(**) (EXPilot type)
	G	and	-XDA*	SA-4322-84-316-XDA..*.-.+.-(**) (INPilot type)

*Specify identification detail. Detail
S: M20 x 1.5 conduit entry
T: 1/2 NPT conduit entry

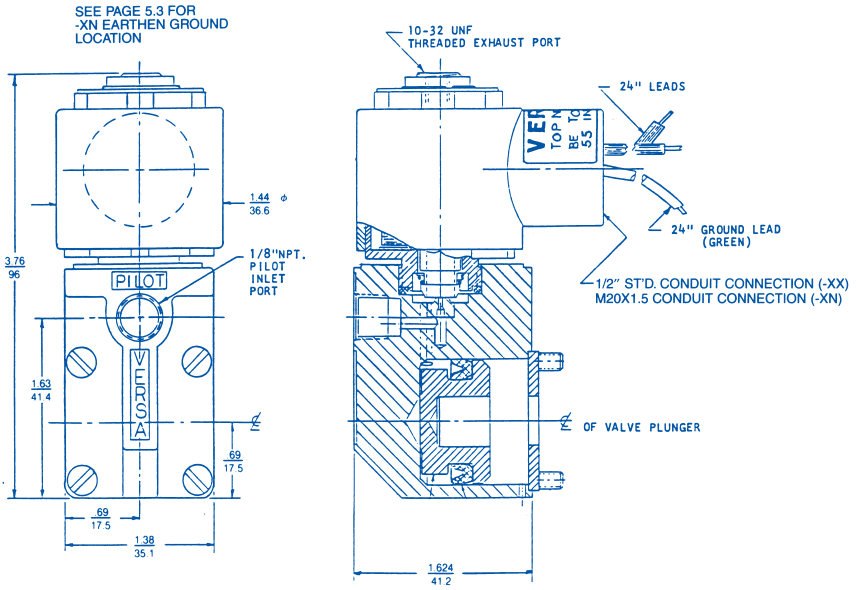
	Suffix	
+options:	-HT	High Temperature Class H coil
	-H2	adapter with 1/8 NPT thread
	-H	adapter with 1/4 NPT thread
	-303	Varistor for suppression purposes included

(**) Specify coil code on page 3.3, to complete number

SOLENOID-PILOT ACTUATORS — 2 Position (for 3 Position also refer to Drawing at top of page 5.1)

DIMENSIONS SHOWN IN INCH / MM

HAZARDOUS SERVICE



NOTE: 2 position shown. Refer to Drawing page 5.1 for 3 position.

SOLENOID-PILOT LOW-WATT TYPE- Nominal Power 1.8W

Hazardous Locations
{-LB-XX: UL listed & CSA approved for Hazardous Locations; Class I, Division 2 (A & B); Class I, Division 1 (C & D); Class II, Division 1 (E, F & G).}

(d) Flameproof
{-LB-XN: ATEX approved; Zones 1 and 2, (IIB + H_2) Category 2G.}

Max pilot pressure 120 psi (8 bar); air only.

Symbol	Designation In Product Number Prefix		Suffix	Title and Sub-assembly Number
	G	and	-LB-XX	SA-4302-84-316-LB-XX-.+.-(**)
	G	and	-LB-XN	SA-4302-84-316-LB-XN-.+.-(**) (EXPilot type)
	G	and	-LB-XX	SA-4322-84-316-LB-XX-.+.-(**)
	G	and	-LB-XN	SA-4322-84-316-LB-XN-.+.-(**) (INPilot type)
	X	and	-LB-XX	SA-4302-85-316-LB-XX-.+.-(**)
	X	and	-LB-XN	SA-4302-85-316-LB-XN-.+.-(**) (EXPilot type)
	X	and	-LB-XX	SA-4322-85-316-LB-XX-.+.-(**)
	X	and	-LB-XN	SA-4322-85-316-LB-XN-.+.-(**) (INPilot type)

	Suffix	
+options:	-H2	Adapter with 1/8 NPT thread
	-L14	Dust Excluder Solenoid Nut
	-ME	Manual Override
	-ST	#182 FM stainless steel coil housing

(**) Specify coil code on page 3.3, to complete number

SOLENOID-PILOT ACTUATORS — 2 Position (for 3 Position also refer to Drawing at top of page 5.1)

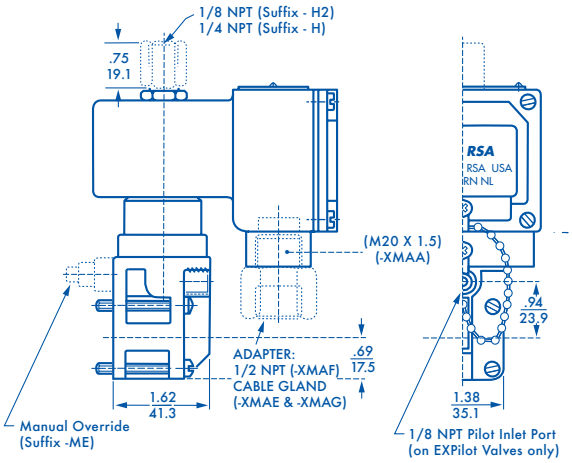
DIMENSIONS SHOWN IN INCH / MM

HAZARDOUS SERVICE

Symbol	Designation In Product Number Prefix	Suffix	Title and Sub-assembly Number

SOLENOID-PILOT

(m) Encapsulation, (e) Increased Safety
{-XMA*: ATEX approved; Zones 1 and 2, (II) Category 2G.}
Max. pilot pressure 175 psi [12 bar]



	G	and -XMA*	SA-4302-84-316-XMA*-.+.-(**) (EXPilot type)
	G	and -XMA*	SA-4322-84-316-XMA*-.+.-(**) (INPilot type)

*Specify identification detail.

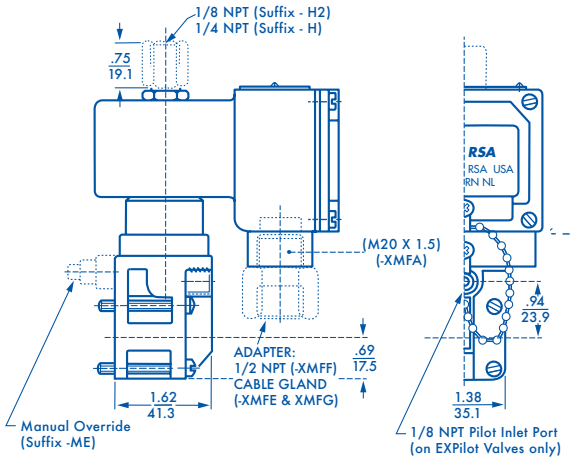
Detail
A: M20 x 1.5 conduit entry.
E: Cable gland for 6-12mm ø cable
F: 1/2 NPT conduit entry with adapter.
G: Cable gland for 9-16 mm ø cable

	Suffix	
+options:	-H	Adapter with 1/4 NPT thread
	-H2	Adapter with 1/8 NPT thread
	-L14	Dust Excluder Solenoid Nut

(**) Specify coil code on page 3.3, to complete number.

SOLENOID-PILOT

(m) Encapsulation, (e) Increased Safety
{-XMF*: ATEX approved; Zones 1 and 2, (II) Category 2G.}
Max. pilot pressure 175 psi [12 bar]



	G	and -XMF*	SA-4302-84-316-XMF*-.+.-D024 (EXPilot type)
	G	and -XMF*	SA-4322-84-316-XMF*-.+.-D024 (INPilot type)

*Specify identification detail.

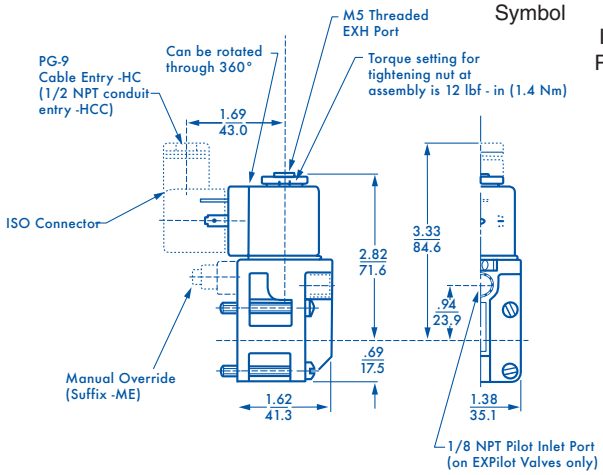
Detail
A: M20 x 1.5 conduit entry.
E: Cable gland for 6-12mm ø cable.
F: 1/2 NPT conduit entry with adapter.
G: Cable gland for 9-16mm ø cable.

	Suffix	
+options:	-H	Adapter with 1/4 NPT thread
	-H2	Adapter with 1/8 NPT thread
	-L14	Dust Excluder Solenoid Nut

SOLENOID-PILOT ACTUATORS — 2 Position (for 3 Position also refer to Drawing at top of page 5.1)

DIMENSIONS SHOWN IN INCH
MM

HAZARDOUS SERVICE

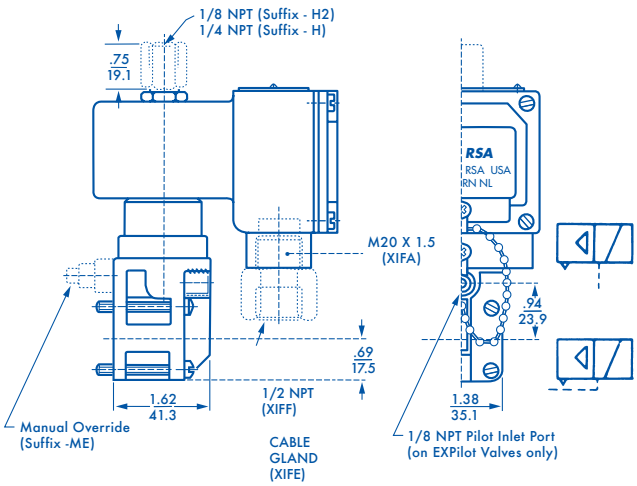


Symbol	Designation Prefix		Suffix	Title and Sub-assembly Number
				SOLENOID-PILOT Hazardous Locations {-HC-XISC or –HCC-XISC: Factory Mutual & CSA approved; Class I, Groups (A, B, C, & D); Class II, Groups (E, F, & G); Class III, Div. 1)} (ia) Intrinsic Safe {-HC-XISX6 or –HCC-XISX6: ATEX approved; Zones 0, 1 & 2; (IIC) Category 1G} Approved Safety Barrier or isolator required. Max. pilot pressure 115 psi [8 bar].
	G	and	-*-XISC	SA-4302-84-316-*-XISC-.+.-D024
	G	and	-*-XISX6	SA-4302-84-316-*-XISX6-.+.-D024 (EXPilot type)
	G	and	-*-XISC	SA-4322-84-316-*-XISC-.+.-D024
	G	and	-*-XISX6	SA-4322-84-316-*-XISX6-.+.-D024 (INPilot type)

*Specify identification detail.

Detail
-HC: 3 spade terminals and mini DIN connector with PG9 cable gland
-HCC: 1/2 NPT conduit entry

	Suffix	
+options:	-H2	Adapter with 1/8 NPT thread
	-ME	Manual Override
	-L14	Dust Excluder Solenoid Nut



Symbol	Designation Prefix		Suffix	Title and Sub-assembly Number
				SOLENOID-PILOT (ib) Intrinsic Safe {-XIF*: ATEX approved; Zones 1 & 2; (IIB) Category 1G} Approved Safety Barrier or isolator required. Max. pilot pressure 175 psi [12 bar]
	G	and	-XIF*	SA-4302-84-316-XIF*-.+.-D024 (EXPilot type)
	G	and	-XIF*	SA-4322-84-316-XIF*-.+.-D024 (INPilot type)

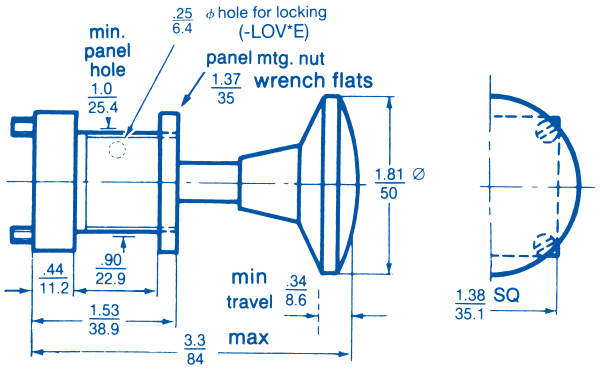
*Specify identification detail.

Detail
A: M20 x 1.5 conduit entry.
E: Cable gland for 6-12mm ø cable.
F: 1/2 NPT conduit entry with adapter.

	Suffix	
+options:	-H	Adapter with 1/4 NPT thread
	-H2	Adapter with 1/8 NPT thread
	-L14	Dust Excluder Solenoid Nut

MANUAL ACTUATORS

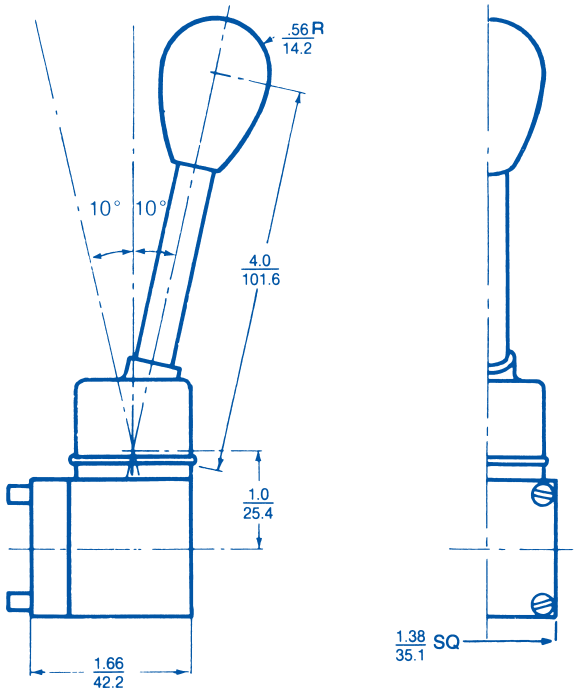
DIMENSIONS SHOWN IN INCH / MM



Symbol	Designation In Product Number Prefix	Designation In Product Number Suffix	Title and Sub-assembly Number
			HAND BUTTON
	I		SA-4302-86-316
			HAND BUTTON with 2 Panel Nuts
	I	and –43E	SA-4302-86-316-43E (Reduces max. panel thickness from 0.90 to 0.58)
			HAND BUTTON With Protective Boot
	I	and -NV93E	SA-4302-86-316-NV93E
	I	and -LOV*E	HAND BUTTON With Lockout Provision

*Specify identification detail.

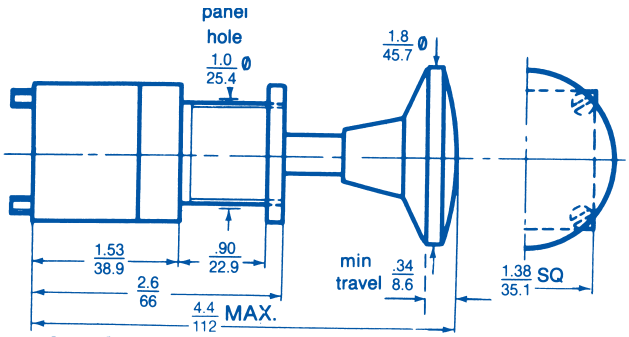
Detail
B: Lockout in exhaust position only
SA-4302-86-316-LOVBE
E: Lockout in either offset position
SA-4302-86-316-LOVEE



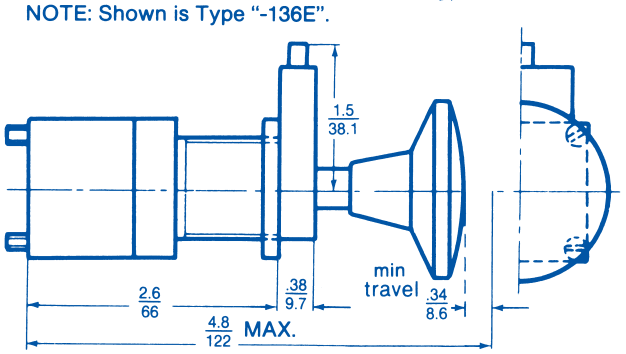
Symbol	Designation In Product Number Prefix	Designation In Product Number Suffix	Title and Sub-assembly Number
			HAND LEVER (with protective boot)
	L		SA-4302-69L-316

MANUAL COMBINATION ACTUATORS

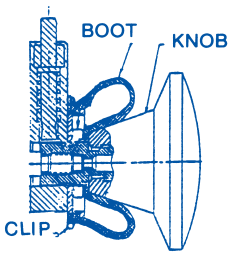
DIMENSIONS SHOWN IN INCH / MM



NOTE: Shown is Type "-136E".

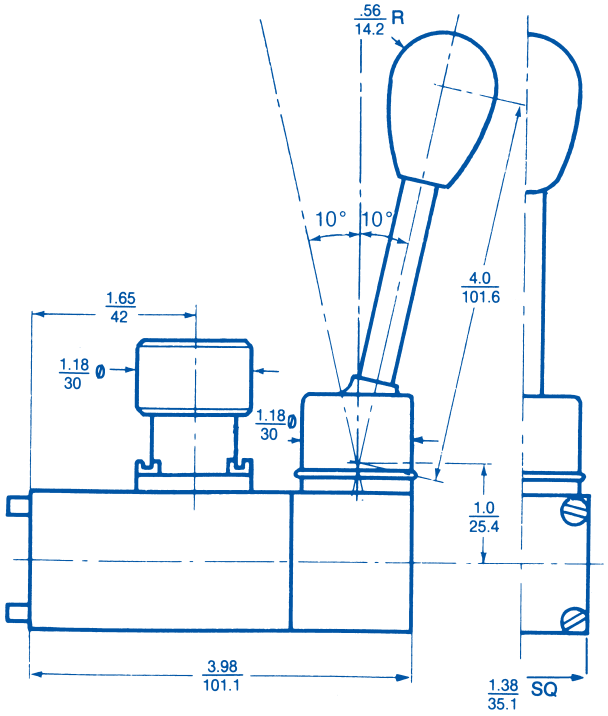


NOTE: Shown is Type "-181DRE"



Symbol	Designation In Product Number Prefix		Suffix	Title and Sub-assembly Number
				HAND BUTTON and 'REVERSE' SPRING RETURN (Push to operate)
	A	and	-136E	CA-4302-86-316-136E
				HAND BUTTON and SPRING RETURN (Pull to operate)
	A	and	-136PE	CA-4302-86-316-136PE
				HAND BUTTON and 'REVERSE' SPRING RETURN with MANUAL LATCH (Push to operate)
	A	and	136DRE	CA-4302-86-316-136DRE
				HAND BUTTON and SPRING RETURN With MANUAL LATCH (Pull to operate)
	A	and	181DRE	CA-4302-86-316-181DRE

NOTE: Both actuator types with manual latch, listed above, can be provided with a protective boot per detail shown. Indicate by using suffix "-294" in addition to all other suffix designations.



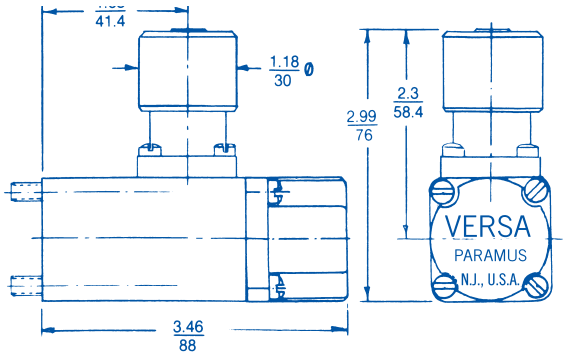
				HAND LEVER and SPRING RETURN with LATCHING DETENT And MANUAL RESET
	A	and	-181CE	CA-4302-65-316-181CE Latches automatically when valve spool has been shifted on signal or manually against the spring. Unlatching allows the spring to return the valve spool automatically.
	A	and	-181DE	CA-4302-65-316-181DE Unlatching allows valve spool to be shifted manually or on signal. Spring returns valve spool automatically when signal is removed, and valve latches.

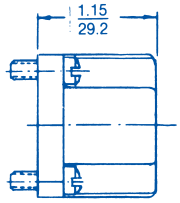
Note: Other latching sequences are available, consult factory for details.

RETURN AND NON-ACTIVE DEVICES

DIMENSIONS SHOWN IN INCH / MM

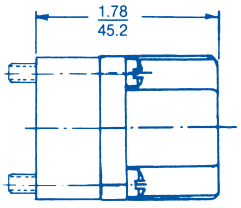
Symbol	Designation In Product Number Prefix	Suffix	Title and Sub-assembly Number
			SPRING RETURN and LATCHING DETENT
	A	and -3358E	CA-4302-65-316-3358E Unlatching allows valve spool to shift on signal. Spring returns valve spool automatically when signal is removed, and valve latches.
	A	and -3358AE	CA-4302-65-316-3358AE Latches automatically when valve spool shifts on signal. Unlatching allows the spring to return valve spool automatically.





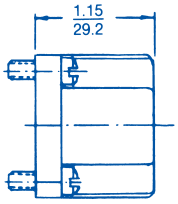


Symbol	Designation In Product Number Prefix	Suffix	Title and Sub-assembly Number
no symbol	N		**NON-RETURN** SA-4302-71-316 (Empty cap – for manually operated valves or where combination actuators are used on one end of valve)
	R		**REVERSE SPRING RETURN** SA-4302-70-316 (Spring pulls valve spool – for manually operated or pull type pilot valves)
	S		**SPRING RETURN** SA-4302-65-316 (Spring pushes valve spool — for all valves except pull type pilot and valves with combination actuators on one end of valve)



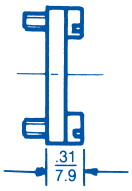


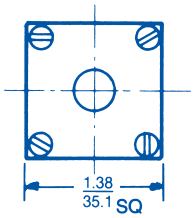
Symbol	Designation In Product Number Prefix	Suffix	Title and Sub-assembly Number
	B		**SPRING CENTERING** SA-4302-72-316 (For 3 position manually operated valves)





Symbol	Designation In Product Number Prefix	Suffix	Title and Sub-assembly Number
	U		**THREE-DETENT** SA-4302-81-316 (For 3 position manually operated valves)
	Z		**TWO-DETENT** SA-4302-82-316 (For 2 position manually operated valves)





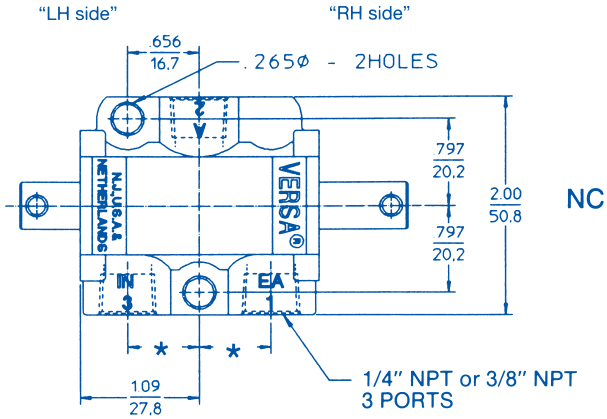
Symbol	Designation In Product Number Prefix	Suffix	Title and Sub-assembly Number
no symbol	A	and -33E	**PLAIN END-CAP** CA-4302-32-316-33E For position indication of valves with hand combination actuator on other end of valve. Also for tandem mounting of valves; a connector (for coupling of valve spools) and a mounting plate (for correct alignment of valves) can be supplied.

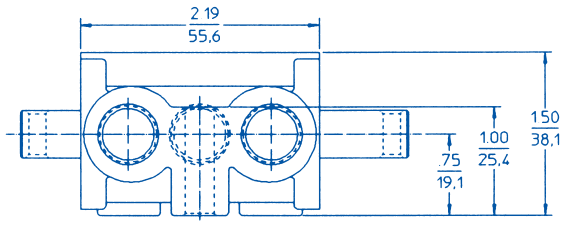
*THREE-WAY (3 port-2 position & 3 port-3 position) BODY ASSEMBLIES

*Two-way function may be provided by plugging the exhaust port (EA or 1) of Three-way Body Assembly. Body Assemblies with 2-outlet or 2-inlet function, see page 8.3.

1/4 NPT & 3/8 NPT

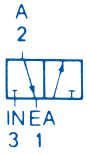
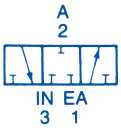
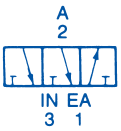
DIMENSIONS SHOWN IN INCH / MM





*1/4" NPT = .66/16.7

*3/8" NPT = .62/15.8

Symbol	Designation In Product Number	Title and Sub-assembly Number	
		**3/2 (three-port 2-position) BODY ASSEMBLY	
NC 	-3301-	SA-3301-62-316	1/4 NPT
	-3401-	SA-3401-72-316	3/8 NPT
NO 	-3302-		
	-3402-		
		3/3 (three-port 3-position) BODY ASSEMBLY	
	-3303-	SA-3303-62-316	1/4 NPT
	-3403-	SA-3403-72-316	3/8 NPT
	-3304-	SA-3304-62-316	1/4 NPT
	-3404-	SA-3404-72-316	3/8 NPT

**Body Assemblies for NC and NO functions are identical. For NC function the Return Device should be mounted at the "LH side"; for NO function at the "RH side".

Dimensions for 3/3 (Three-Port 3-position) Body Assemblies are the same as for 2-position Body Assemblies shown above.

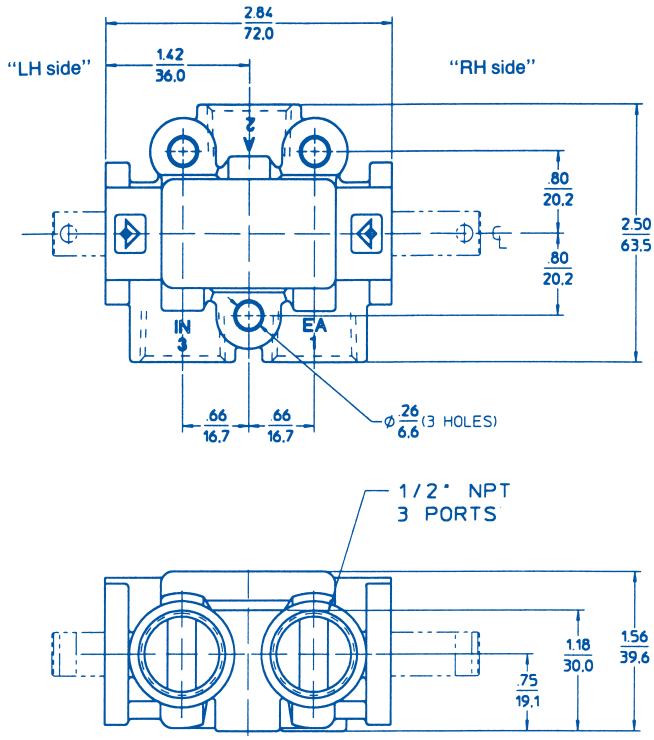
NOTE: Product number designations and subassembly numbers that are listed are for EXPilot type valves; for INPilot type valves the third digit "0" is exchanged for "2."

*THREE-WAY (3 port-2 position & 3 port-3 position) BODY ASSEMBLIES

*Two-way function may be provided by plugging the exhaust port $\binom{EA}{1}$ of Three-way Body Assembly.
Body Assemblies with 2-outlet or 2-inlet function, see page 8.4.

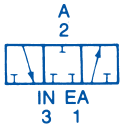
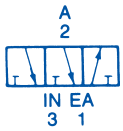
1/2 NPT

DIMENSIONS SHOWN IN INCH
MM



Symbol	Designation In Product Number	Title and Sub-assembly Number	
		**3/2 (three-port 2-position) BODY ASSEMBLY	
NC 	-3501-	SA-3501-72-316	1/2 NPT
NO 			

**Body Assemblies for NC and NO functions are identical. For NC function the Return Device should be mounted at the "LH side"; for NO function at the "RH side".

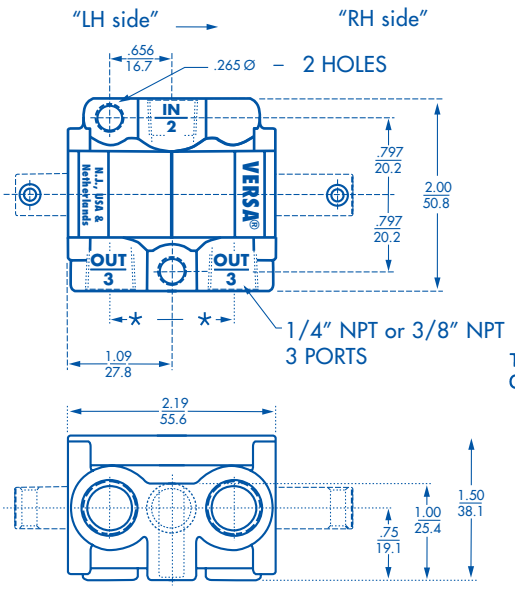
		3/3 (three-port 3-position) BODY ASSEMBLY	
	-3503-	SA-3503-72-316	1/2 NPT
	-3504-	SA-3504-72-316	1/2 NPT

Dimensions for 3/3 (Three-Port 3-position) Body Assemblies are the same as for 2-position Body Assemblies shown above.

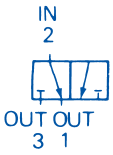
NOTE: Product number designations and subassembly numbers that are listed are for EXPilot type valves; for INPilot type valves the third digit "0" exchanged for "2."

TWO-INLET or TWO-OUTLET FUNCTION (3/2 & 3/3) BODY ASSEMBLIES
1/4 NPT & 3/8 NPT

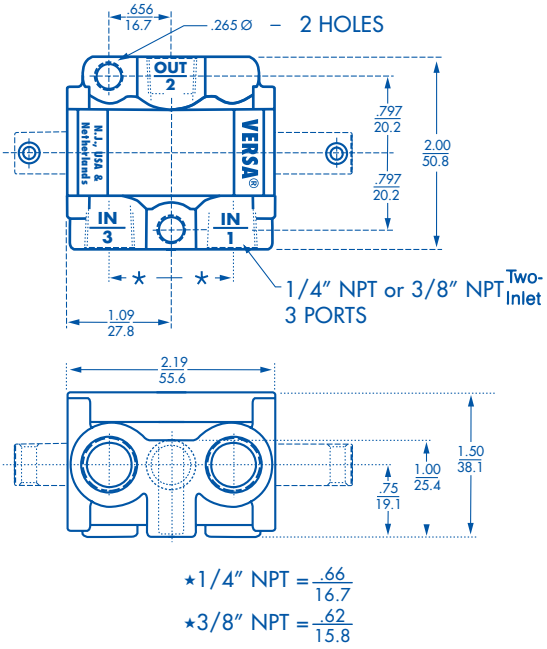
DIMENSIONS SHOWN IN INCH / MM



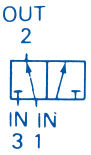
Two-Outlet



Symbol	Designation In Product Number	Title and Sub-assembly Number	
		3/2 (three-port 2-position) BODY ASSEMBLY	
Two-Outlet	-7302-	SA-7302-62-316	1/4 NPT
	-7402-	SA-7402-72-316	3/8 NPT



Two-Inlet



Symbol	Designation In Product Number	Title and Sub-assembly Number	
Two-Inlet	-8302-	SA-8302-62-316	1/4 NPT
	-8402-	SA-8402-72-316	3/8 NPT

★1/4" NPT = .66 / 16.7

★3/8" NPT = .62 / 15.8

Dimensions for 3/3 (Two-Inlet & Two-Outlet) Body Assemblies are the same as for 2-position Body Assemblies shown above.

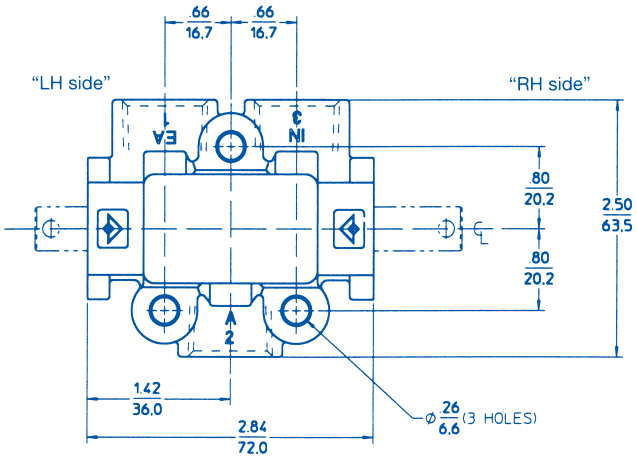
3/3 (three-port 3-position) BODY ASSEMBLY

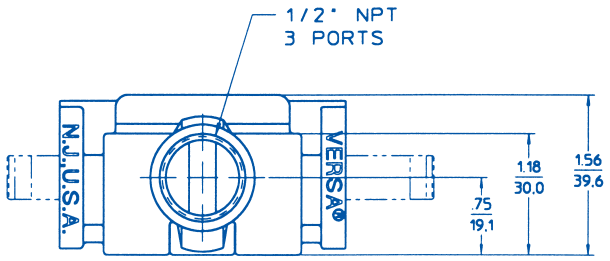
Body Assemblies with 3-position function: change fourth digit "2" in sub-assembly number into "3" for all ports blocked in center position.

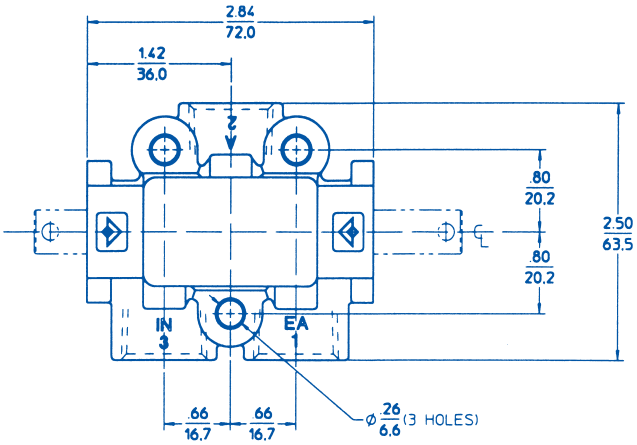
NOTE: Product number designations and subassembly numbers that are listed are for ExPilot type valves; for INPilot type valves the third digit "0" is exchanged for "2."

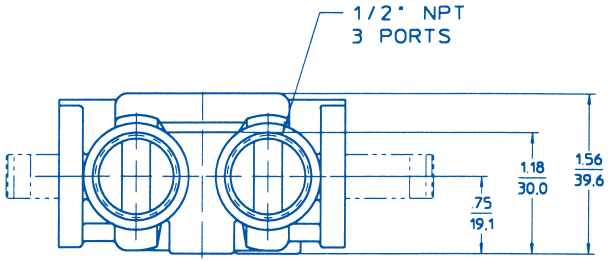
TWO-INLET or TWO-OUTLET FUNCTION (3/2 & 3/3) BODY ASSEMBLIES
1/2 NPT

DIMENSIONS SHOWN IN INCH
MM









Dimensions for 3/3 (Two-Inlet & Two-Outlet) Body Assemblies are the same as for 2-position Body Assemblies shown above.

Symbol	Designation In Product Number	Title and Sub-assembly Number	
		3/2 (three-port 2-position) BODY ASSEMBLY	
IN 2 / OUT 3 OUT 1 — Two-outlet	-7502-	SA-7502-72-316	1/2 NPT
	(A/2 = INLET; IN/3 + EA/1 = OUTLET)		
OUT 2 / IN 3 IN 1 — Two-inlet	-8502-	SA-8502-72-316	1/2 NPT
	(IN/3 + EA/1 = INLET: A/2 = OUTLET)		

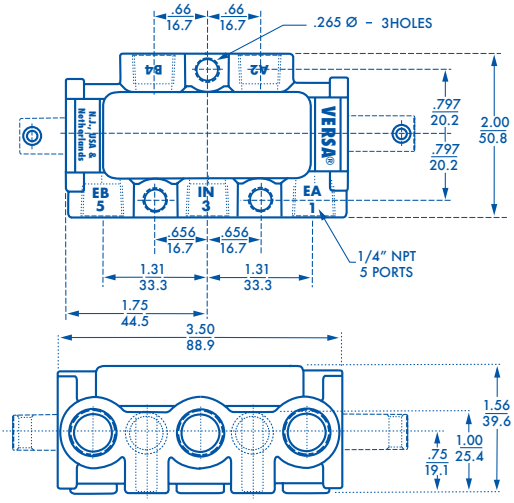
3/3 (three-port 3-position) BODY ASSEMBLY

Body Assemblies with 3-position function: change fourth digit "2" in sub-assembly number into "3" for all ports blocked in center position.

NOTE: Product number designations and subassembly numbers that are listed are for ExPilot type valves; for INPilot type valves the third digit "0" is exchanged for "2."

FOUR-WAY (5 port-2 position & 5 port-3 position) BODY ASSEMBLIES 1/4 NPT & 3/8 NPT

DIMENSIONS SHOWN IN INCH
MM



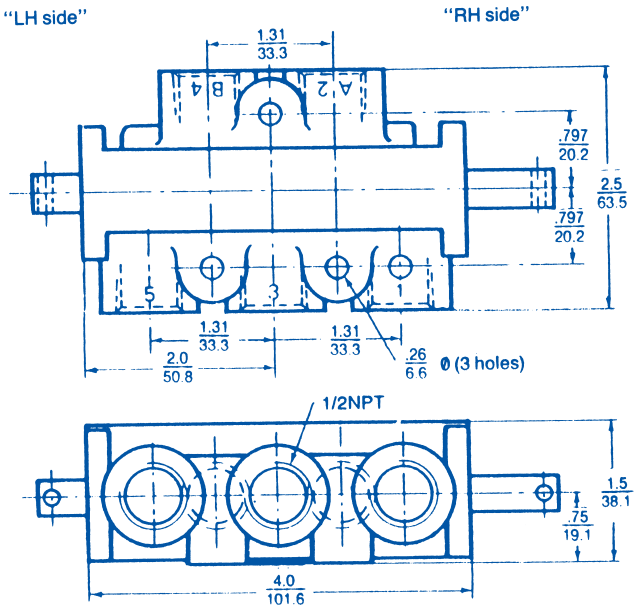
Symbol	Designation In Product Number	Title and Sub-assembly Number	
		5/2 (five-port 2-position) BODY ASSEMBLY	
B A 4 2 / EB IN EA 5 3 1	-4302-	SA-4302-61-316	1/4 NPT
	-4402-	SA-4402-71-316	3/8 NPT
		5/3 (five-port 3-position) BODY ASSEMBLY	
B A 4 2 / EB IN EA 5 3 1	-4303-	SA-4303-61-316	1/4 NPT
	-4403-	SA-4403-71-316	3/8 NPT
B A 4 2 / EB IN EA 5 3 1	-4304-	SA-4304-61-316	1/4 NPT
	-4404-	SA-4404-71-316	3/8 NPT

Dimensions for 5/3 (Five-Port 3-position) Body Assemblies are the same as for 2-position Body Assemblies shown above.

NOTE: Product number designations and subassembly numbers that are listed are for EXPilot type valves; for INPilot type valves the third digit “0” is exchanged for “2.”

FOUR-WAY (5 port-2 position & 5 port-3 position) BODY ASSEMBLIES 1/2 NPT

DIMENSIONS SHOWN IN INCH / MM



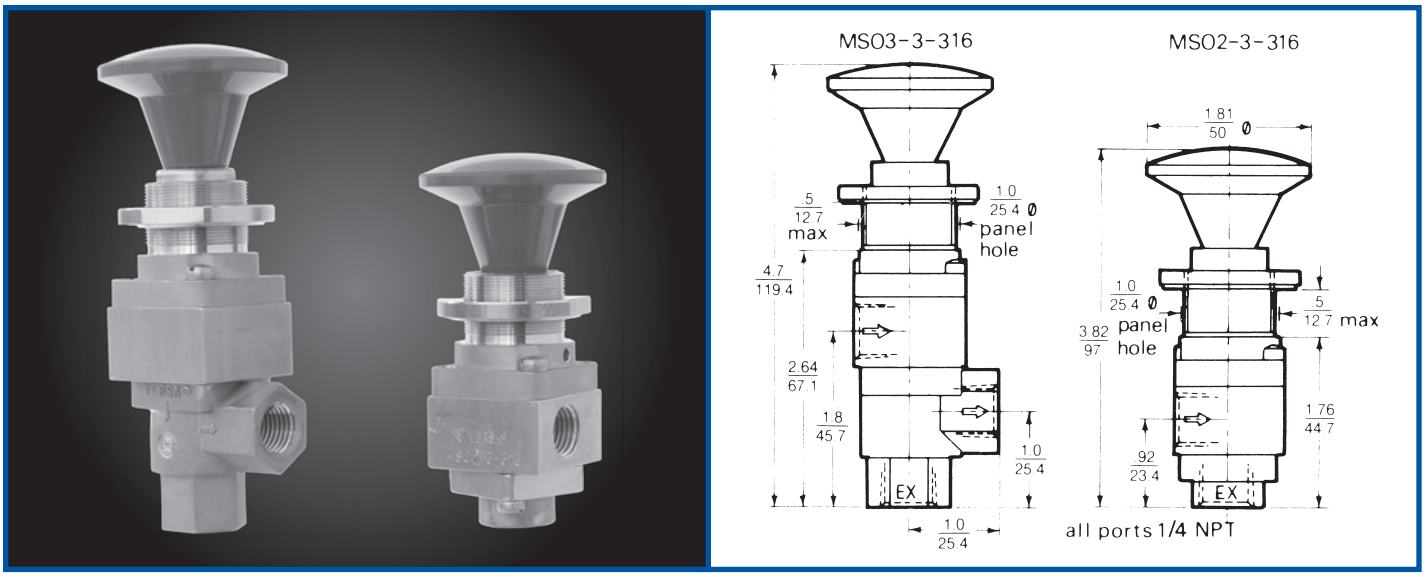
Symbol	Designation In Product Number	Title and Sub-assembly Number	
		5/2 (five-port 2-position) BODY ASSEMBLY	
B A 4 2 EB IN EA 5 3 1	-4502-	SA-4502-71-316	1/2 NPT
		5/3 (five-port 3-position) BODY ASSEMBLY	
B A 4 2 EB IN EA 5 3 1	-4503-	SA-4503-71-316	1/2 NPT
B A 4 2 EB IN EA 5 3 1	-4504-	SA-4504-71-316	1/2 NPT

Dimensions for 5/3 (Five-Port 3-position) Body Assemblies are the same as for 2-position Body Assemblies shown above.

NOTE: Product number designations and subassembly numbers that are listed are for EXPilot type valves; for INPilot type valves the third digit "0" is exchanged for "2."

316 STAINLESS STEEL ACCESSORIES
Manual Shut Off Valves

DIMENSIONS SHOWN IN INCH / MM



General Description

For Emergency Shut Down Systems, a Manual Bleed Valve designated MSO2-3-316, and a Manual Block and Bleed Valve designated MS03-3-316.

Both valves, constructed of 316 Stainless Steel, are used as panic valves to quickly depressurize the system to get immediate shut-down.

Even from remote locations, they enable the user to shut-down various processes in case of an emergency.

Manual Bleed Valve

The valve MS02-3-316 is a 2-way valve that is closed during normal operation. By pulling the red panel knob out, the valve opens and the Emergency Shutdown system pressure is dumped to atmosphere. Although compact and light weight, an internal orifice of 3/8" assures quick shut-down of the system.

Because the valve is designed to work as a bleed type device only, any backpressure to the exhaust port will cause the valve to shift and open the inlet gate as if the panel knob were pulled out.

Manual Block and Bleed Valve

The valve MSO3-3-316 is a 3-way valve that can be used in the Emergency Shutdown system loop. During normal operation the inlet port is open to the outlet port, and the exhaust port is closed. By pulling the panel knob out, the inlet port is blocked and the outlet port is opened to exhaust port, so that the downstream system pressure is dumped to the atmosphere.

Like the manual bleed valve, any backpressure to the exhaust port of the valve will cause the valve to shift, dumping downstream pressure, as if the panel knob were pulled out.

Materials (Conform to NACE Standard MR-01-75)

- 316 Stainless Steel
- FKM (Fluorocarbon) 'O' ring seals
- Plastic palm button

Weights

MS02-3-316	0.77 lbs.	(.35 kg)
MS03-3-316	1.00 lbs.	(.45 kg)

Pressures

On inlet port :0 to 150 psi (10 bar) air

On exhaust port :0 psi (0 bar) backpressure

Porting & Flow

Valve ports 1/4 NPT

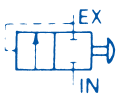
MS02-3-316: Cv=2.0 (Kv=29)

MS03-3-316: Cv=1.0 (Kv=14.5)

Installation

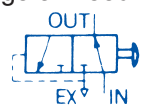
The valves can be panel mounted. Panel hole is 1" (25.4 mm) ø

TWO-WAY (2/2)
Block & Bleed



Product Number	Knob Color
MS02-3-316	Red
MS02-3-316-125B	Black

THREE-WAY (3-2)
Charge & Bleed

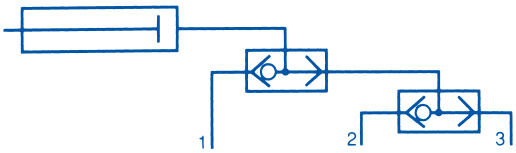


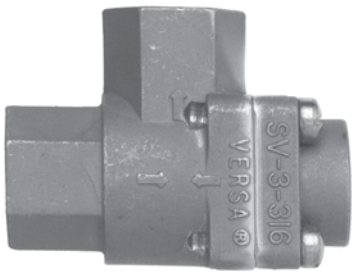
Product Number	Knob Color
MS03-3-316	Black
MS03-3-316-125R	Red

316 STAINLESS STEEL ACCESSORIES
Shuttle Valve

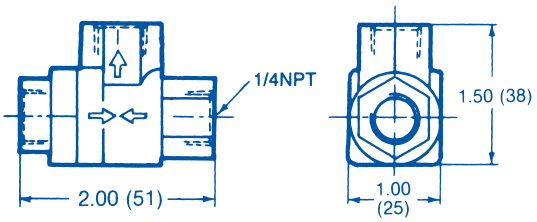
Shuttle valves provide the simplest way of pressurizing and exhausting a pilot chamber through the actuation of any one of two or more three-way valves. If two remote stations are required, one shuttle valve (in place of a tee) is required between the two three-way valves. For each additional remote station another shuttle valve is required. The shuttle valve prevents pressure from the actuated valve from being exhausted through the unactuated valve.

In logic terms a shuttle valve is an 'OR' – function.
A typical schematic is shown below:





DIMENSIONS IN INCHES (mm)



Materials (Conform to NACE Standard MR-01-75)

Body:	316 stainless steel
Shuttle:	316 stainless steel
Seals:	FKM (Fluorocarbon)
Screws:	316 stainless steel
Weight:	0.33 lbs. (0.15 kg)
Porting:	1/4 NPT

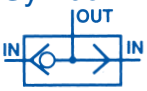
Pressures and Flow

Pneumatic:	3 to 200 psi (0.2 to 14 bar)
Hydraulic:	3 to 500 psi (0.2 to 35 bar)
	C_V=0.5 (K_V = 7)

Installation

Preferably with the centerline of the two inlet ports horizontal. As shown in the drawing above.

Symbol



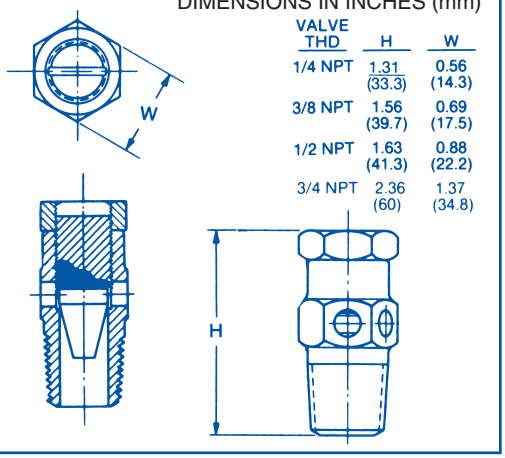
Product Number

SV-3-316

Bleed Control Valves



DIMENSIONS IN INCHES (mm)



VALVE THD	H	W
1/4 NPT	1.31 (33.3)	0.56 (14.3)
3/8 NPT	1.56 (39.7)	0.69 (17.5)
1/2 NPT	1.63 (41.3)	0.88 (22.2)
3/4 NPT	2.36 (60)	1.37 (34.8)

The VERSA Bleed Control Valve has a precision machined needle that provides an economical, effective flow control in pneumatic applications. They can be threaded into the exhaust port of any VERSA directional control valve to provide speed control.

The flow area, through which the air passes to the atmosphere, can be finely adjusted by screwing the needle in or out. After the Bleed Control Valve has been adjusted to suit, it can be securely locked at its setting with the lock nut provided.

Materials (Conform to NACE Standard MR-01-75)

316 stainless steel

Pressures

0 to 200 psi (0 to 14 bar) air

Symbol

valve exhaust port

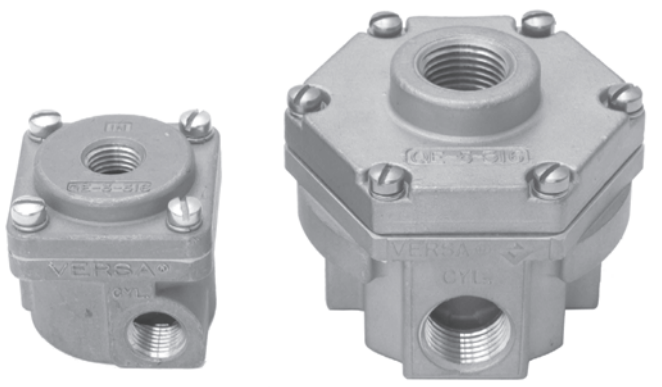


Product Number

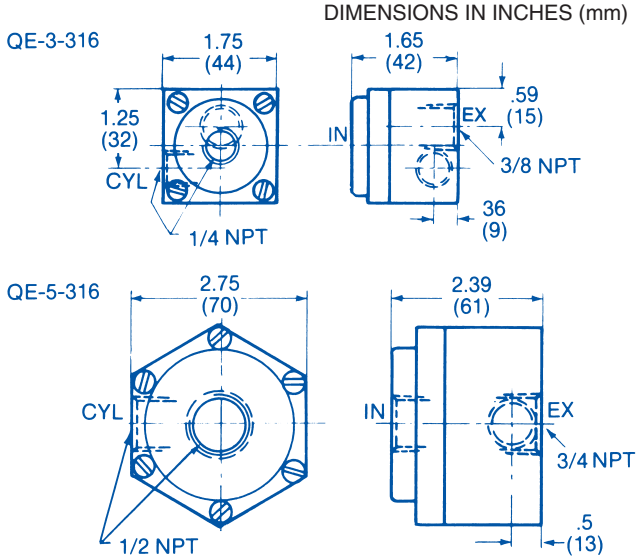
BC-3-316	1/4 NPT
BC-4-316	3/8 NPT
BC-5-316	1/2 NPT
BC-6-316	3/4 NPT

316 STAINLESS STEEL ACCESSORIES

Quick Exhaust Valves (See Bulletin ACC for Electric Quick Exhaust Valves)



DIMENSIONS IN INCHES (mm)



QE-6-316 Consult Factory

A Quick Exhaust Valve is a 3/2 (three-way) valve with extra large exhaust orifice, to be fitted directly at a cylinder port connection.

When pressure decreases at the inlet of the Quick Exhaust Valve, the outlet is automatically opened to the exhaust and the cylinder is quickly depressurized.

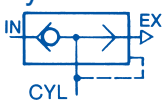
Materials (Conform to NACE Standard MR-01-75)

Body:	316 stainless steel
Seals:	FKM (Fluorocarbon) 'O' ring seals and CR (Neoprene) coated Nylon flapper.
Other parts:	316 Stainless Steel

Weights

QE-3-316	0.81 lbs (0.37 Kg)
QE-5-316	2.16 lbs (0.98 Kg)
QE-6-316	2.44 lbs (1.11 Kg)

Symbol



Pressures

5-150 psi (0.34 to 10 bar)

Temperature:

QE-3-316 & QE-5-316:-20°F to 200°F (-29°C to 93°C)
QE-6-316: -30°F to 350°F (-34°C to 177°C)

Porting

Type	Inlet/Outlet	Exhaust
QE-3-316	1/4 NPT	3/8 NPT
QE-5-316	1/2 NPT	3/4 NPT
QE-6-316	3/4 NPT	1 NPT

Flow

Type	IN to CYL	CYL to EX
QE-3-316	Cv=3.0(Kv=43.5)	Cv=3.3 (Kv=48)
QE-5-316	Cv=3/8 (Kv=55)	Cv=8.8 (Kv=128)
QE-6-316	Cv=4.6 (Kv=66)	Cv=13.6 (Kv=195)

Product Number

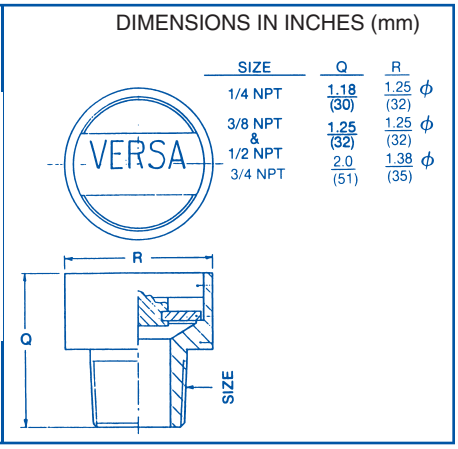
QE-3-316	1/4 NPT
QE-5-316	1/2 NPT
QE-6-316	3/4 NPT

Dust Excluders

Dust Excluders may be threaded into the exhaust ports in order to keep out dirt or dust in the atmosphere or surrounding the valve, that might enter through an otherwise open port.



DIMENSIONS IN INCHES (mm)



Materials

(Conform to NACE Standard MR-01-75)

Body:	316 Stainless Stell
Seal:	CR Chloroprene (Neoprene)

Pressures

0 to 200 psi (0 to 14 bar)

Installation

Dust Excluders are preferably mounted in a vertical position with the wide outlet opening down.

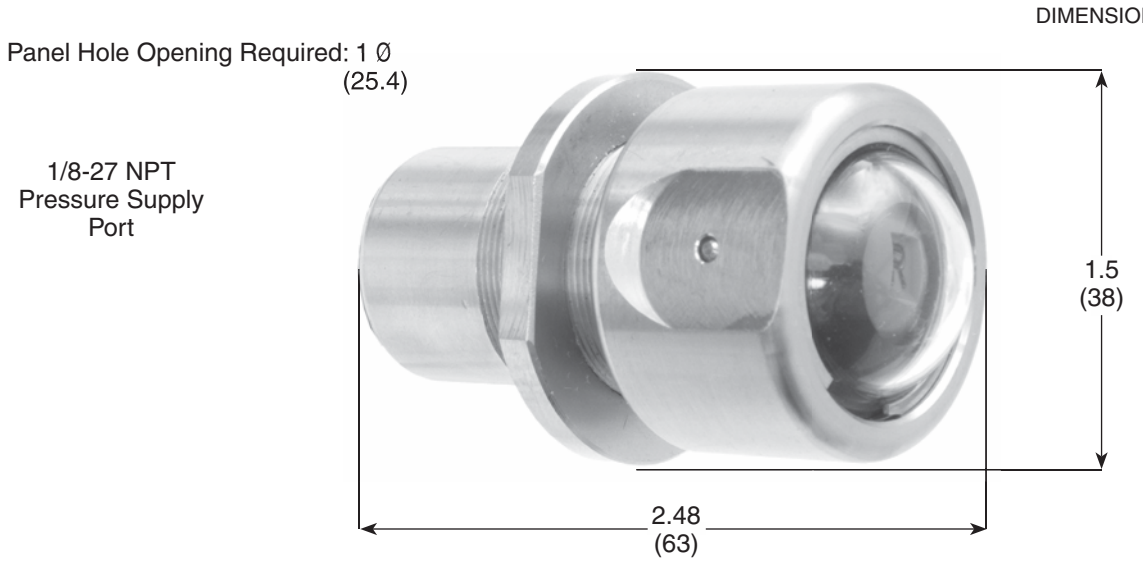
Symbol Valve exhaust port



Product Number

DE-3-316	1/4 NPT	DE-5-316	1/2 NPT
DE-4-316	3/8 NPT	DE-6-316	3/4 NPT

316 STAINLESS STEEL ACCESSORIES
Status Indicator



General Description

Some applications require visual indication, when a system is pressurized or when a system has lost pressure. The Versa Status Indicator provides such a display within a stainless steel shell that can be mounted as an integral part of a panel. Viewing the panel provides the operator with an instantaneous evaluation of the pressure condition in the system or systems being monitored.

Functional Description

Versa's Status Indicator provides visual indication of pressure in a system. The standard product displays a green field when a minimum of 8 psi (0.55 bar) to a maximum of 200 psi (14 bar) is present. Complete loss of pressure causes the indicator to display a red field, marked with the recognition character "R". Other field colors are available. See TYPES below.

Materials:

Body and internal wetted metal parts – 316 Stainless Steel+

Working seals – FKM (Fluorocarbon)

Lens-polycarbonate (seal to prevent moisture intrusion), resistant to ultraviolet rays

Porting:

1/8 NPT pressure supply port

Pressures

Operating pressure range: 0 to 200 psi (14 bar) air*

Mounting

Panel hole opening 1″ (25.4mm) ø

Can be mounted in any orientation with maximum panel thickness 0.50″ (12.7mm) with one panel nut; maximum panel thickness 0.21″ (5.3mm) with two panel nuts. (suffix -43E).

Type/Weights

	Operating Pressure Range		
	Depressurized	Pressurized	
Product Number	0 psi (0 bar)	8 psi (0.55 bar) to 200 psi (14 bar)	Weights
SI-2-316	Red (R)	Green	0.50 lbs. (0.23 kg)
SI-2-316-403GR	Green (G)	Red	
SI-2-316-403YG	Yellow (Y)	Green	
SI-2-316-403GY	Green (G)	Yellow	

*For hydraulic service consult factory.

†Conforms to NACE standard MR-01-75