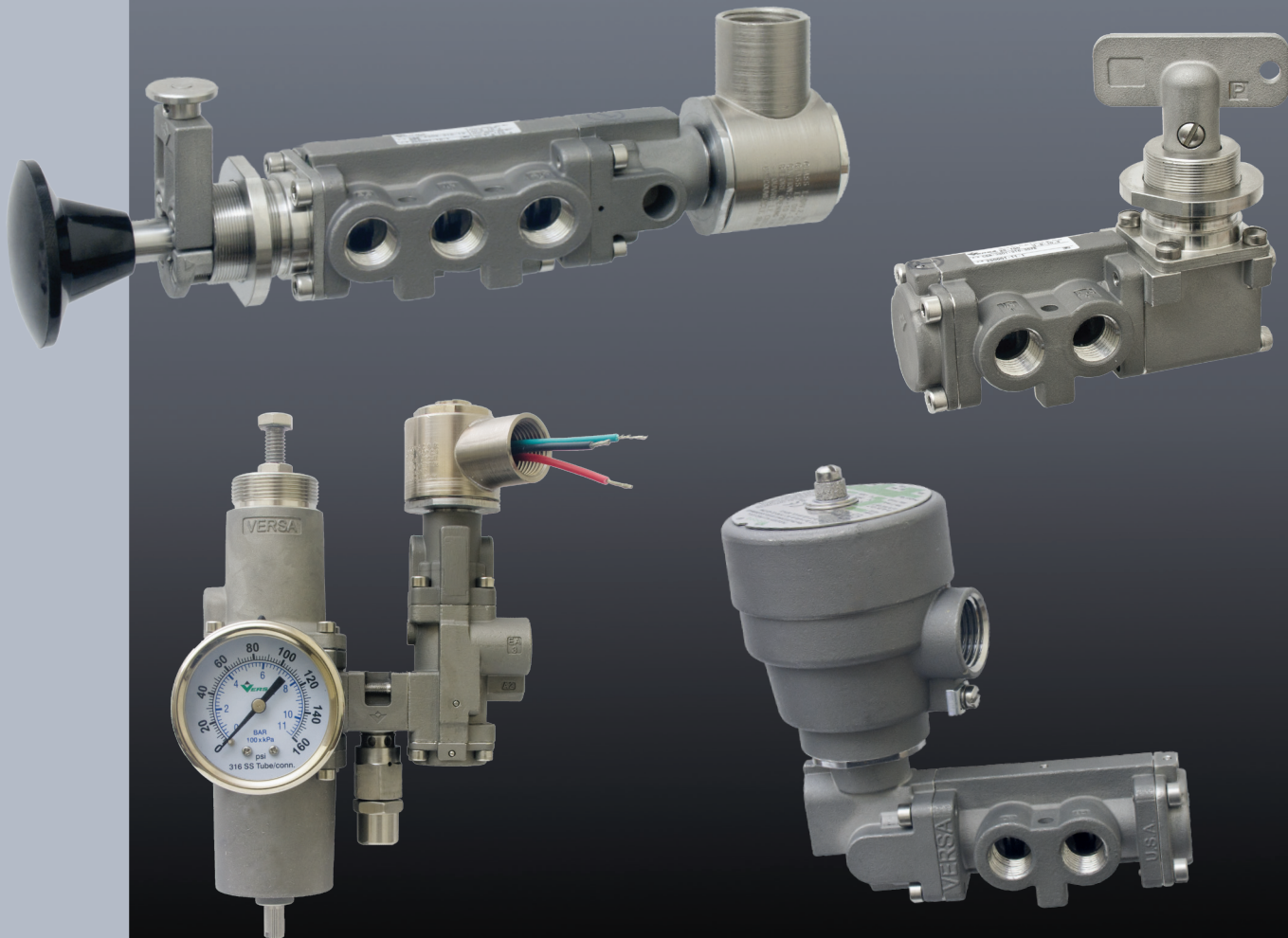




C-316 SERIES



THE C-316 FAMILY

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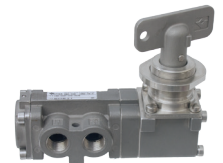


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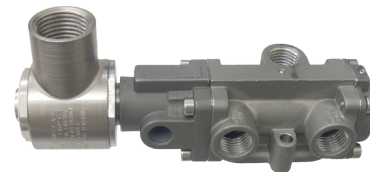


THE C-316 FAMILY

THE C-316 NAMUR

NAMUR – Direct Mount

Solenoid Operated.....Page 16



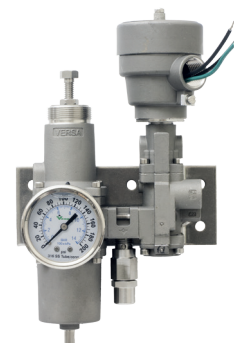
Latching.....Page 16



CMAP

CMAP – Modular Air Package

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THE C-316 SERIES

GENERAL DESCRIPTION

Series "C-316"

The C-316 Series consists of 3-Way 3/2 and 4-Way 5/2 investment cast, 316 stainless steel valves, in three categories: Side Ported, NAMUR style direct mount and CMAP, an integral stainless steel regulator and valve.

"C-316" Body Ported Valves

The C-316 Series is available as either a 4-way, for double acting devices or a 3-way, for spring return devices. The 3-way function can be specified as either normally closed or opened.

All solenoid actuators are solenoid/pilot type, which allows the use of the smallest solenoids available resulting in low power consumption. This design also assures a positive shifting force which makes certain the valve shifts when energized and reduces the chance of coil burnout. Single solenoid spring return models utilize an air assisted spring return feature assuring a positive return. Double solenoid models are equipped with a detent that maintains the valve in the last shifted position, even in high vibration environments.

A complete selection of electrical connections, power requirements and area classifications are available. See page 18 & 19.

"C-316" Namur Valves

The Versa C-316 Series stainless steel NAMUR mount actuator control valve is a high flow, bubble-tight, 5-port, Pilot valve. It is designed to mount directly to any NAMUR actuator, thus reducing actuator response time and space.

Installed costs are also lower as the need for tubing, fittings, brackets and assembly labor are greatly reduced. All mounting screws and seals are included with valve.

The 5-port design allows the C-316 NAMUR to be ordered as either a 4-way, for double acting actuators or a 3-way, for spring return actuators. When the 3-way function is utilized, the unused exhaust port becomes an actuator vent where a filter/ muffler can be installed to prevent contaminants from entering either the valve or the actuator.

The 5-port design allows the user to independently control actuator speed in either the open or close direction. Speed or bleed controls are optional. See page 16.

CMAP Modular Air Package

A CMAP system consists of a filter/regulator, gauge and directional control valve all in one.

CMAP is based on Versa's field proven C-316 and AR Series. All inter-component connections utilize "O"-ring interface sealing reducing potential leakage points. The combination of C-316 & AR reliability, "O" ring sealing and a simple design principal all provide a reliable and easily maintained product. CMAP is the sensible choice.

The basic CMAP system is made of two configurable modules. Module one is the air preparation module consisting of filter/regulators, gauges and drains. Module two is the control valve module consisting of many different variations of 3-way control valves. See page 17.

CONSTRUCTION:

Balanced Spool

The forces required to actuate the plunger are unaffected by pressures being controlled assuring positive shifting throughout the entire range.

Wafer Sealing

Wafer type elastomer sealing provides leakproof operation throughout entire pressure range. The wafer/wiper style seal also provides a low friction profile.

Large Diameter Pilot

Large diameter pilot piston produces high shifting forces in Versa C-316 pilot and Solenoid actuated applications assuring a positive shifting force. The U cup offers friction free sealing for a positive shift.

Epoxy Molded Coil

Epoxy molding offers moisture resistance and heat dissipation in the toughest applications.

Air-Assisted Spring Return

Air boosts spring for positive valve return.

Investment Cast Stainless Steel

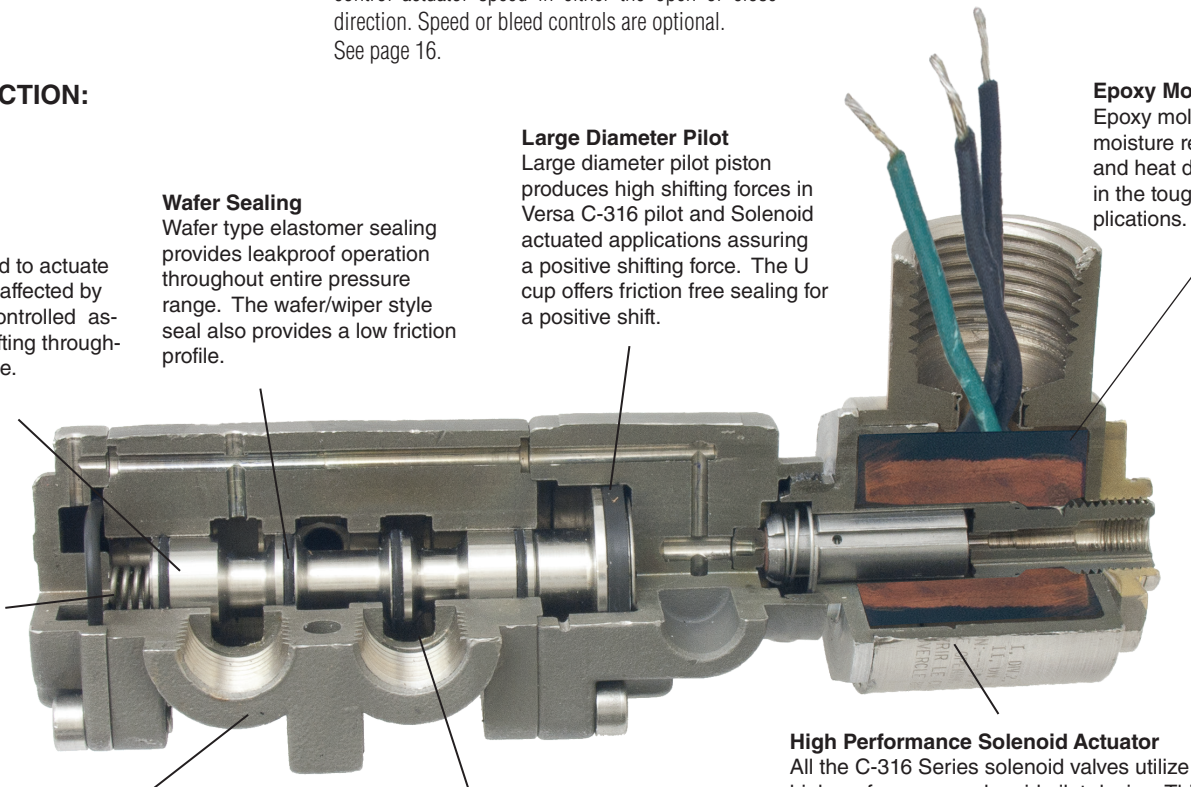
316 stainless steel components utilized for superior corrosion protection in the harshest environments. Investment cast components offer a first class finish while providing weight savings.

Fully Ported – High Flow

Internal flow area equal to or greater than the area of the corresponding pipe/tube size.

High Performance Solenoid Actuator

All the C-316 Series solenoid valves utilize a high performance solenoid pilot design. This design utilizes available media pressure/force to shift valve assuring positive shifting. This design also produces the lowest wattage requirements in the industry.



THE C-316 SERIES

Specifications

Flow Rate:	Cv = 2.0 (Kv = 29.3)
NAMUR	Cv = 1.6 (Kv = 23.9)
CMAP	Cv = 1.5 (Kv = 22.4)
Port Size:	Inlet, cylinder and exhaust: 1/4" NPT
Media: C-316	Pneumatic*
CMAP:	Pneumatic
Pilot:	Inpilot & Expilot solenoid valves
Temperature:	-5 to 200°F (-20 to 93°C), Media and ambient
Low Temp (-44 option) Manual:	-20 to 200°F (-29 to 93°C), Media and ambient
Pilot:	-55 to 200°F (-48 to 93°C), Media and ambient
Solenoid:	-40 (-40°C) to Max based on solenoid type
Response Time	45 msec. Max

*For hydraulic service consult factory

Materials:	
Valve body and internal parts:	316L stainless steel
Actuator caps:	316L stainless steel
Valve seals:	FKM (fluorocarbon)
Option	Low Temp Nitrile (" -44")
Screws:	Stainless steel
Solenoid internal parts:	304, 430F and 302 stainless steel
Solenoid Coil housing:	Depends on coil selected, see page 18

Operating Pressure		
Valve Function	Minimum psi (bar)	Maximum psi (bar)
Single Solenoid Spring Return	25 (1.8)	150* (10.3)
Dual Solenoid Detent	15 (1.0)	150* (10.3)
Expilot Spring Return (with and without strong spring -S)	See Controlled (inlet) Pressure chart below	

*Exhaust restriction recommended for operating pressures over 125 psi (8.6 bar)

Pilot Operated Spring Return	Controlled (inlet) Pressure															
	psi		bar		psi		bar		psi		bar		psi		bar	
	25	1.7	30	1.2	50	3.4	70	4.8	90	6.2	110	7.6	130	9.0	150	10.3
Minimum Pilot Pressure Required	19	1.3	20	1.4	27	1.9	33	2.3	40	2.8	46	3.2	52	3.6	59	4.1

Repair kits		Repair Kit Number		
Prefix No.	Suffix No.	3-Way	4-Way	NAMUR
CAG, CGA CAP, CPA	136PE	C-3301-316-356AN	C-4302-316-356AN	*
CZA, CAZ	314E 357E	C-3301-316-AZ	C-4302-316-AZ	*
CSI, CIS CSA, CAS CSG, CCS	Standard 357E Standard	C-3301-316-S	C-4302-316-S	*
CAI, CIA CZI, CIZ CAI, CIA	150E Standard 173E	C-3301-316-ZI	C-4302-316-ZI	*
CAG, CGA CAG, CGA CAP, CPA	356B 356BN	C-3321-316-356AN C-3321-316-356BN	C-4322-316-356AN C-4322-316-356BN	*
CGG, CPP		C-3321-316-GG	C-4322-316-GG	C-4322-316-GG-NE
CSP,CPS CSG, CGS	Standard	C-3321-316-SG	C-4322-316-SP	C-4322-316-SG-NE
CAP, CPA CSA, CAS CIZ	314E 314E LOV	C-3301-316-AP C-3301-316-SI C-3301-316-ZI-LOV	C-4302-316-AP C-4302-316-SI C-4302-316-ZI-LOV	*

*For NAMUR valve repair kits contact factory.

SELECTOR CHART & PRODUCT NUMBERING

Each letter and digit in the product number of a Versa Valve has a significant meaning, as explained below.

Valve Series	ACTUATING DEVICES		Function (see Spool Details)	Port Size	Type of Body	Spool Details (flow pattern)	Material	Suffix Details		Electrical
	Left Side*	Right Side*						Mechanical	Electrical	
Series C-316 Valves	Combination Actuators 136PE, -150E, -173E, -314E, -356B, -356BN, -357E see suffix column		2* Two-Way 2/2 3 Three-Way 3/2 4 Four-Way 5/2	3 1/4" NPT	0 Expilot Body with threaded side-ports (for Manual, Pilot and Expilot solenoid actuated valves)	Three-Way 3/2 Valves 1 Normally Closed 2 Normally Open	'316' indicates that the basic construction material for valve parts is AISI 316 Stainless Steel (Conforms to NACE Standard MR-01-75)	-CA3 CMAP identifier	-NE1 NAMUR valve with 10-24 14 316 mounting screws	-HT High Temp coil -LA 0.85 Watt coil -LB 1.8 Watt coil -PC NEMA 4/4X -ST Stainless steel coil housing
C Cam Operator	G Solenoid-pilot	I Hand Button (for panel mounting)	*Two-Way may be created by plugging the exhaust port of three-way valve bodies	2 Inpilot Body with threaded side-ports with internal drilling to supply inlet pressure to Solenoid-pilot actuator	Four-Way 5/2 Valves 2 2-Position	-44 Low Temperature seals -U Up Right coil housing		-NE2 NAMUR valve with 10-32 14 316 mounting screws -NE3 NAMUR valve with M5 22 316 mounting screws	-U Upright solenoid end cap -XDB_ Stainless Steel housing, multi agency approvals	
P Pressure-Pilot	S Spring Return (spring pushes valve spool)	Z 2-Position Detent (for 2-position manually operated valves)		3 Inpilot Manifold mounted with internal drilling to supply inlet pressure to Solenoid-pilot actuator. NAMUR Valve		Combination Actuators -136PE Palm Button, Spring Return Page 7 & 9 -150E Pilot-2-Position Detent Page 10 -173E Solenoid, 2-Position Detent Page 7 -314E Key Operated Actuator Page 13-14 -356B Button Actuator W/ Latch - Reset Page 8 -356BN Actuator W/ Latch - Reset No Button Page 8, 10 & 16 -357E Rotary Switch-2-Position Detent Page 12-13	-44 Low Temperature seals -U Up Right coil housing	-NE2 NAMUR valve with 10-32 14 316 mounting screws -NE3 NAMUR valve with M5 22 316 mounting screws	-U Upright solenoid end cap -XDB_ Stainless Steel housing, multi agency approvals	
	*NOTE "S" above is on left end of valve looking at inlet "G" above is on right end of valve looking at inlet							Rating Code: A= 60Hz frequency D= Direct Current (DC) E= 50Hz frequency Three numbers follow the Rating Code to indicate voltage: Examples: Voltage Code 24V60 = 024 120V60 = 120 24VDC = 024		See Page 19 for specific coil and codes.

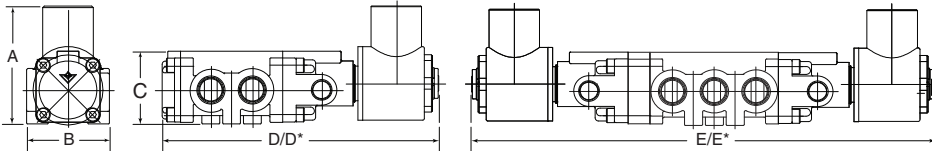
THE C-316 SERIES

Body Ported Valves

SOLENOID OPERATED

Side Ported	Function	Actuation	Pilot Type	Part Number	Weight	Flow Symbol
	3-Way 2-Position Normally Closed 3/2	Single Solenoid Spring Return	Inpilot	CSG-3321-316-(*)	1.6 lbs 0.7 kg	
			Exipilot	CSG-3301-316-(*)		
	3-Way 2-Position- Normally Open 3/2	Single Solenoid Spring Return	Inpilot	CGS-3322-316-(*)	1.6 lbs 0.7 kg	
			Exipilot	CGS-3302-316-(*)		
	3-Way 2-Position 3/2	Double Solenoid Detent	Inpilot	CGG-3321-316-(*)	2.5 lbs 1.1 kg	
			Exipilot	CGG-3301-316-(*)		
	4-Way 2-Position 5/2	Single Solenoid Spring Return	Inpilot	CSG-4322-316-(*)	1.7 lbs 0.8 kg	
			Exipilot	CSG-4302-316-(*)		
	4-Way 2-Position 5/2	Double Solenoid Detent	Inpilot	CGG-4322-316-(*)	2.6 lbs 1.2 kg	
			Exipilot	CGG-4302-316-(*)		

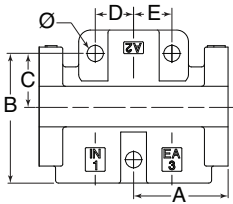
* Add solenoid/coil voltages (page 19) & Suffix from Selector Chart (page 5)



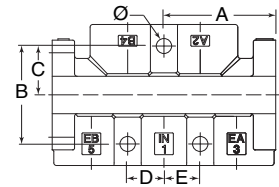
	A	B	C	D 3-Way	D* 4-Way	E 3-Way	E* 4-Way
Inches	2.8	1.62	1.42	5.41	5.91	8.53	9.0
mm	72.1	41.1	10.3	137.5	150.1	217	288.6

Solenoid shown is hazardous location type -XX. For more options see page 18.

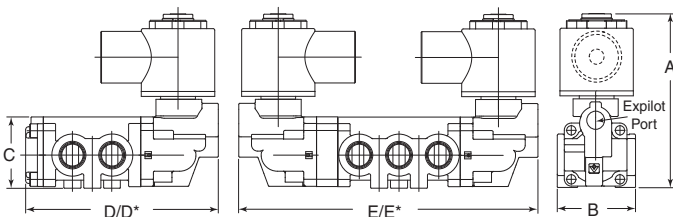
Mounting Hole Dimensions Side Ported Valves



Mounting Hole Dimensions	A 3-Way	A 4-Way	B	C	D	E	Ø
Inches	1.0	1.25	1.13	0.56	0.41	0.41	0.17
mm	25.4	31.8	28.6	14.3	10.3	10.3	4.4



Optional Upright Coil Housing



Available as an option on side ported valves.

Recommended for use with -XDB_, -XMA_, -XMF_ & XIF_ coils on NAMUR valves for mounting clearance.

Solenoid shown is hazardous location type -XX. For more options see page 18.

	A	B	C	D 3-Way	D* 4-Way	E 3-Way	E* 4-Way
Side Ported							
Inches	2.8	1.62	1.42	5.41	5.91	8.53	9.0
mm	72.1	41.1	36.1	137.5	150.1	217	288.6
NAMUR							
Inches	2.8	1.63	1.44	4.14	4.14	7.25	7.25
mm	72.1	41.3	36.6	105.2	105.2	184.2	184.2

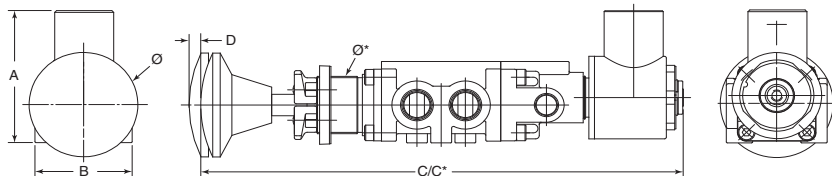
THE C-316 SERIES

Body Ported Valves

SOLENOID, PALM BUTTON with SPRING RETURN

Side Ported	Function	Actuation	Pilot Type	Part Number	Weight	Flow Symbol
	3-Way 2-Position Normally Closed 3/2	Single Solenoid Palm Button Spring Return	Inpilot	CAG-3321-316-136PE-(*)	2.0 lbs 0.9 kg	
			Expilot	CAG-3301-316-136PE-(*)		
	3-Way 2-Position Normally Open 3/2	Single Solenoid Palm Button Spring Return	Inpilot	CGA-3322-316-136PE-(*)	2.0 lbs 0.9 kg	
			Expilot	CGA-3302-316-136PE-(*)		
	4-Way 2-Position 5/2	Single Solenoid Palm Button Spring Return	Inpilot	CAG-4322-316-136PE-(*)	2.1 lbs 1.0 kg	
			Expilot	CAG-4302-316-136PE-(*)		

* Add solenoid/coil voltages (page 19) & Suffix from Selector Chart (page 5)



	A	B	C	C*	D	Ø	Ø*
Inches	2.8	1.62	8.08	8.58	.20	1.81	1.0
mm	72.1	41.2	205.2	217.9	5.08	46	25.4

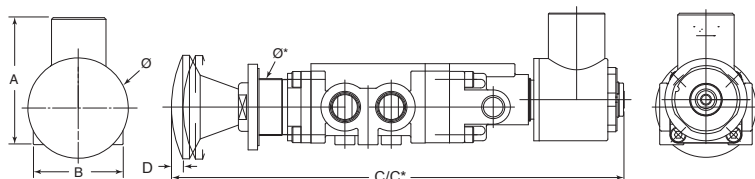
For mounting hole dimensions see page 6

Solenoid shown is hazardous location type -XX. For more options see page 18.

SINGLE SOLENOID, PALM BUTTON with DETENT

Side Ported	Function	Actuation	Pilot Type	Part Number	Weight	Flow Symbol
	3-Way 2-Position Normally Closed 3/2	Single Solenoid Detent with Button	Inpilot	CIA-3321-316-173E-(*)	2.1 lbs 1.0 kg	
			Expilot	CIA-3301-316-173E-(*)		
	3-Way 2-Position- Normally Open 3/2	Single Solenoid Detent with Button	Inpilot	CAI-3322-316-173E-(*)	2.1 lbs 1.0 kg	
			Expilot	CAI-3302-316-173E-(*)		
	4-Way 2-Position 5/2	Single Solenoid Detent with Button	Inpilot	CAI-4322-316-173E-(*)	2.2 lbs 1.0 kg	
			Expilot	CAI-4302-316-173E-(*)		

* Add solenoid/coil voltages (page 19) & Suffix from Selector Chart (page 5)



	A	B	C	C*	D	Ø	Ø*
Inches	2.8	1.62	8.08	8.58	.20	1.81	1.0
mm	72.1	41.2	205.2	217.9	5.08	46	25.4

For mounting hole dimensions see page 6

Solenoid shown is hazardous location type -XX. For more options see page 18.

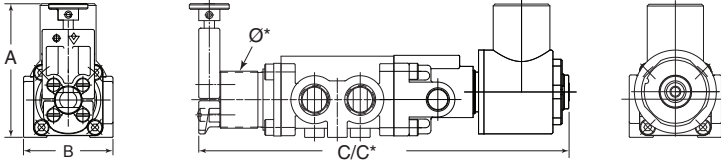
THE C-316 SERIES

Body Ported Valves

LATCHING, SINGLE SOLENOID, SPRING RETURN without PALM BUTTON

Side Ported	Function	Actuation	Pilot Type	Pilot		Flow Symbol
				Part Number	Weight	
	3-Way 2-Position Normally Closed 3/2	Single Solenoid Spring Return	Inpilot	CAG-3321-316-356BN-(*)	1.9 lbs 0.9 kg	
				Expilot		
	3-Way 2-Position- Normally Open 3/2	Single Solenoid, Latching Reset	Inpilot	CGA-3322-316-356BN-(*)	1.9 lbs 0.9 kg	
				Expilot		
	4-Way 2-Position 5/2	Single Solenoid Latching Reset	Inpilot	CAG-4322-316-356BN-(*)	2.0 lbs 0.9 kg	
				Expilot		

* Add solenoid/coil voltages (page 19) & Suffix Details from Selector Chart (page 5)



	A	B	C 3-Way	C* 4-Way	Ø*
Inches	2.3	1.62	6.5	7.0	1.0
mm	58.4	41.2	165	177.8	25.4

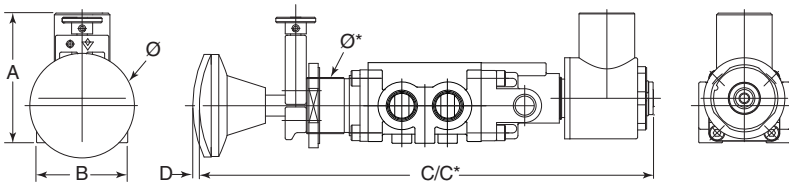
Solenoid shown is hazardous location type -XX. For more options see page 18.

For mounting hole dimensions see page 6

LATCHING, SINGLE SOLENOID, SPRING RETURN with PALM BUTTON

Side Ported	Function	Actuation	Pilot Type	Pilot		Flow Symbol
				Part Number	Weight	
	3-Way 2-Position Normally Closed 3/2	Single Sole- noid, Latching Reset with Button	Inpilot	CAG-3321-316-356B-(*)	2.0 lbs 0.9 kg	
				Expilot		
	3-Way 2-Position- Normally Open 3/2	Single Sole- noid, Latching Reset with Button	Inpilot	CGA-3322-316-356B-(*)	2.0 lbs 0.9 kg	
				Expilot		
	4-Way 2-Position 5/2	Single Sole- noid, Latching Reset with Button	Inpilot	CAG-4322-316-356B-(*)	2.1 lbs 1.0 kg	
				Expilot		

* Add solenoid/coil voltages (page 19) & Suffix from Selector Chart (page 5)



	A	B	C 3-Way	C* 4-Way	D Travel	Ø	Ø*
Inches	2.3	1.62	8.08	8.58	.20	1.81	1.0
mm	58.4	41.2	205.2	217.9	5.08	46	25.4

Solenoid shown is hazardous location type -XX. For more options see page 18.

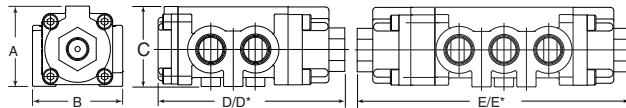
For mounting hole dimensions see page 6

THE C-316 SERIES

Body Ported Valves

PILOT OPERATED

Side Ported	Function	Actuation	Pilot Type	Part Number	Weight	Flow Symbol
	3-Way 2-Position Normally Closed 3/2	Single Pilot Spring Return	Expilot	CSP-3301-316	1.0 lbs 0.5 kg	
	3-Way 2-Position- Normally Open 3/2	Single Pilot Spring Return	Expilot	CPS-3302-316	1.0 lbs 0.5 kg	
	3-Way 2-Position 3/2	Double Pilot Detent	Expilot	CPP-3301-316	1.3 lbs 0.6 kg	
	4-Way 2-Position 5/2	Single Pilot Spring Return	Expilot	CSP-4302-316	1.0 lbs 0.5 kg	
	4-Way 2-Position 5/2	Double Pilot Detent	Expilot	CPP-4302-316	1.4 lbs 0.6 kg	

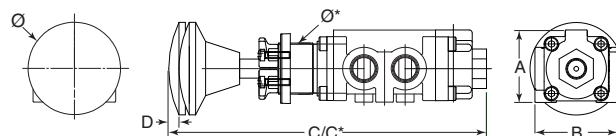


	A	B	C	D 3-Way	D* 4-Way	E 3-Way	E* 4-Way
Inches	2.8	1.62	1.42	3.36	3.86	4.43	4.94
mm	72.1	41.1	10.3	85	98	112.4	125.4

For mounting hole dimensions see page 6

PILOT, PALM BUTTON with SPRING RETURN

Side Ported	Function	Actuation	Pilot Type	Part Number	Weight	Flow Symbol
	3-Way 2-Position Normally Closed 3/2	Single Pilot Palm Button Spring Return	Expilot	CAP-3301-316-136PE	1.3 lbs 0.6 kg	
	3-Way 2-Position- Normally Open 3/2	Single Pilot Palm Button Spring Return	Expilot	CPA-3302-316-136PE	1.3 lbs 0.6 kg	
	4-Way 2-Position 5/2	Single Pilot Palm Button Spring Return	Expilot	CAP-4302-316-136PE	1.4 lbs 0.6 kg	



	A	B	C 3-Way	C* 4-Way	D Travel	Ø	Ø*
Inches	2.3	1.62	8.08	8.58	.20	1.81	1.0
mm	58.4	41.2	205.2	217.9	5.08	46	25.4

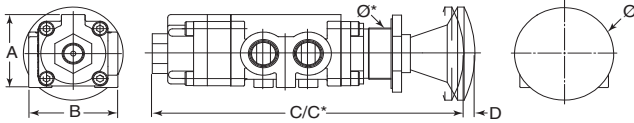
For mounting hole dimensions see page 6

THE C-316 SERIES

Body Ported Valves

PILOT, PALM BUTTON with DETENT

Side Ported	Function	Actuation	Pilot Type	Part Number	Weight	Flow Symbol
	3-Way 2-Position Normally Closed 3/2	Single Pilot Detent with Button	Expilot	CAI-3301-316-150E	1.5 lbs 0.7 kg	
	3-Way 2-Position- Normally Open 3/2	Single Pilot Detent with Button	Expilot	CIA-3302-316-150E	1.5 lbs 0.7 kg	
	4-Way 2-Position 5/2	Single Pilot Detent with Button	Expilot	CAI-4302-316-150E	1.6 lbs 0.7 kg	

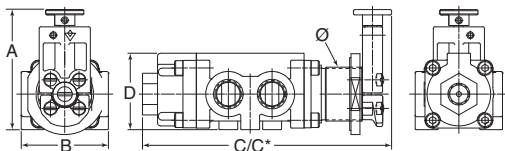


	A	B	C 3-Way	C* 4-Way	D Travel	Ø	Ø*
Inches	1.42	1.62	5.86	6.36	.20	1.81	1.0
mm	36.1	41.2	149	161.4	5.08	46	25.4

For mounting hole dimensions see page 6

LATCHING, PILOT, SPRING RETURN without PALM BUTTON

Side Ported	Function	Actuation	Pilot Type	Part Number	Weight	Flow Symbol
	3-Way 2-Position Normally Closed 3/2	Pilot, Latching, Spring Return	Expilot	CAP-3301-316-356BN	1.3 lbs 0.6 kg	
	3-Way 2-Position- Normally Open 3/2	Pilot, Latching Spring Return	Expilot	CPA-3302-316-356BN	1.3 lbs 0.6 kg	
	4-Way 2-Position 5/2	Pilot, Latching Spring Return	Expilot	CAP-4302-316-356BN	1.4 lbs 0.6 kg	



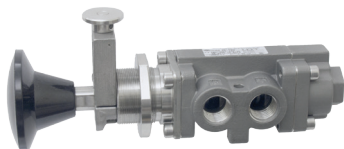
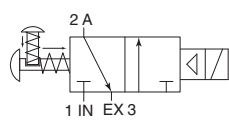

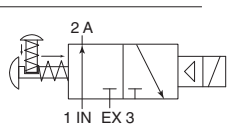
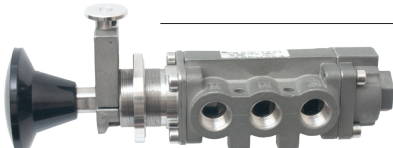
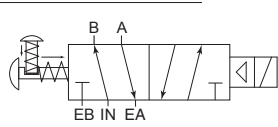
	A	B	C 3-Way	C* 4-Way	Ø
Inches	2.23	1.42	4.36	4.86	1.0
mm	56.6	36.1	117.5	123.4	25.4

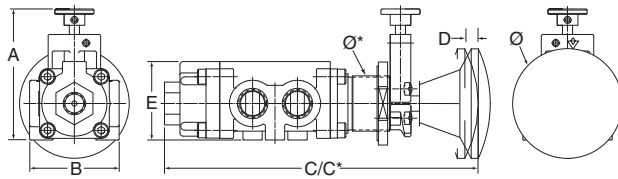
For mounting hole dimensions see page 6

THE C-316 SERIES

Body Ported Valves

LATCHING, PILOT, SPRING RETURN with PALM BUTTON

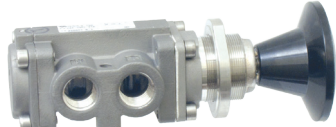
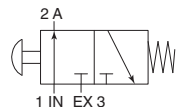

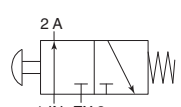

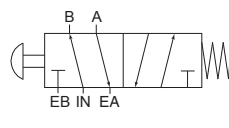
Side Ported	Function	Actuation	Pilot Type	Part Number	Weight	Flow Symbol
	3-Way 2-Position Normally Closed 3/2	Pilot, Latching Reset with Palm Button	Expilot	CAP-3301-316-356B	1.4 lbs 0.6 kg	
	3-Way 2-Position- Normally Open 3/2	Pilot, Latching Reset with Palm Button	Expilot	CPA-3302-316-356B	1.4 lbs 0.6 kg	
	4-Way 2-Position 5/2	Pilot, Latching Reset with Palm Button	Expilot	CAP-4302-316-356B	1.5 lbs 0.7 kg	

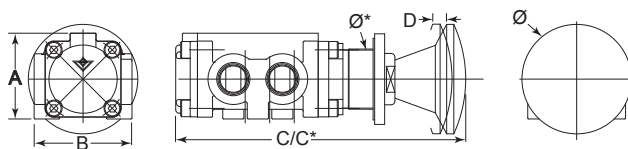


	A	B	C 3-Way	C* 4-Way	D Travel	E	Ø	Ø*
Inches	2.23	1.62	8.08	8.58	.20	2.3	1.81	1.0
mm	56.6	41.2	205.2	217.9	5.08	58.4	46	25.4

For mounting hole dimensions see page 6

MANUAL, PALM BUTTON, SPRING RETURN

Side Ported	Function	Actuation	Pilot Type	Part Number	Weight	Flow Symbol
	3-Way 2-Position Normally Closed 3/2	Palm Button Spring Return	Expilot	CSI-3301-316	1.1 lbs 0.5 kg	
	3-Way 2-Position- Normally Open 3/2	Palm Button Spring Return	Expilot	CIS-3302-316	1.1 lbs 0.5 kg	
	4-Way 2-Position 5/2	Palm Button Spring Return	Expilot	CSI-4302-316	1.3 lbs 0.6 kg	




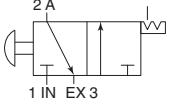
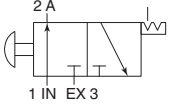
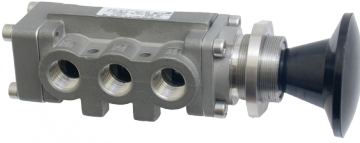
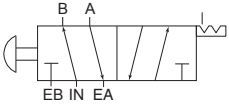
	A	B	C 3-Way	C* 4-Way	D Travel	Ø	Ø*
Inches	2.3	1.62	8.08	8.58	.20	1.81	1.0
mm	58.4	41.2	205.2	217.9	5.08	46	25.4

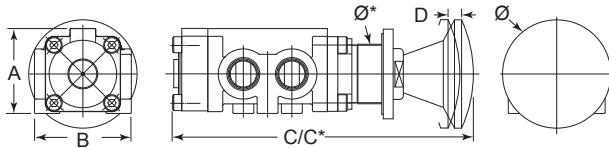
For mounting hole dimensions see page 6

THE C-316 SERIES

Body Ported Valves

MANUAL, PALM BUTTON, DETENTED

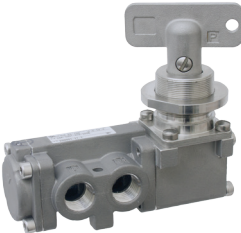
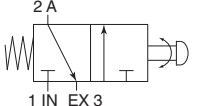
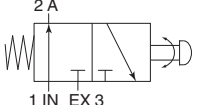
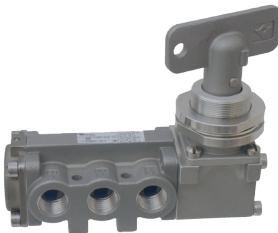
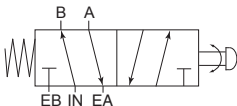
Side Ported	Function	Actuation	Pilot Type	Part Number	Weight	Flow Symbol
	3-Way 2-Position Normally Closed 3/2	Palm Button Detent	Expilot	CZI-3301-316	1.3 lbs 0.6 kg	
	3-Way 2-Position- Normally Open 3/2	Palm Button Detent	Expilot	CIZ-3302-316	1.3 lbs 0.6 kg	
	4-Way 2-Position 5/2	Palm Button Detent	Expilot	CZI-4302-316	1.4 lbs 0.6 kg	

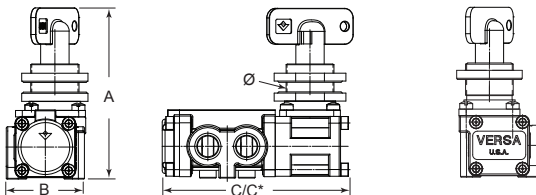


	A	B	C 3-Way	C* 4-Way	D Travel	Ø	Ø*
Inches	1.42	1.62	4.8	5.3	.20	1.81	1.0
mm	36.1	41.2	122	135	5.1	46	25.4

For mounting hole dimensions see page 6

MANUAL, ROTARY, SPRING RETURN

Side Ported	Function	Actuation	Pilot Type	Part Number	Weight	Flow Symbol
	3-Way 2-Position Normally Closed 3/2	Rotary Spring Return	Expilot	CSA-3301-316-357E	1.6 lbs 0.7 kg	
	3-Way 2-Position Normally Open 3/2	Rotary Spring Return	Expilot	CAS-3302-316-357E	1.6 lbs 0.7 kg	
	4-Way 2-Position 5/2	Rotary Spring Return	Expilot	CSA-4302-316-357E	1.8 lbs 0.8 kg	



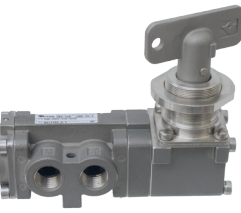
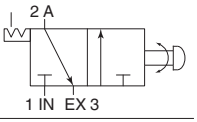
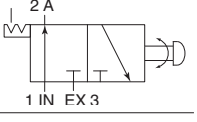
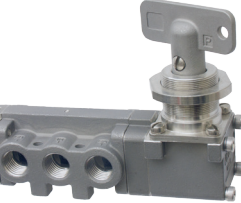
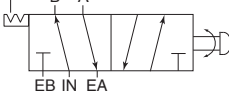
	A	B	C 3-Way	C* 4-Way	Ø
Inches	3.5	1.62	3.73	4.23	1.0
mm	90	41.2	95	107.4	25.4

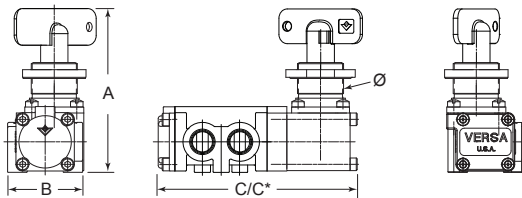
For mounting hole dimensions see page 6

THE C-316 SERIES

Body Ported Valves

MANUAL, ROTARY, DETENTED

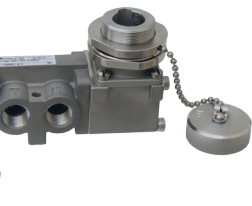
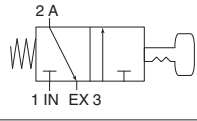
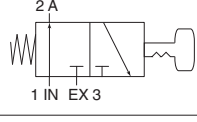
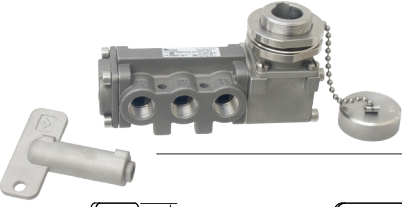
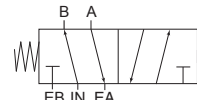
Side Ported	Function	Actuation	Pilot Type	Part Number	Weight	Flow Symbol
	3-Way 2-Position- Normally Closed 3/2	Rotary Spring Return	Expilot	CZA-3301-316-357E(*)	1.8 lbs 0.8 kg	
	3-Way 2-Position- Normally Open 3/2	Rotary Spring Return	Expilot	CAZ-3302-316-357E(*)	1.8 lbs 0.8 kg	
	4-Way 2-Position 5/2	Rotary Spring Return	Expilot	CZA-4302-316-357E(*)	2.0 lbs 0.9	



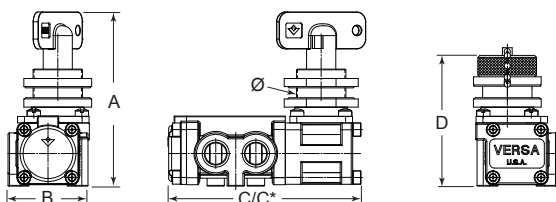
	A	B	C 3-Way	C* 4-Way	Ø
Inches	3.5	1.62	4.2	4.7	1.0
mm	90	41.2	105	119.3	24.5

For mounting hole dimensions see page 6

MANUAL, KEY, SPRING RETURN

Side Ported	Function	Actuation	Pilot Type	Part Number	Weight	Flow Symbol
	3-Way 2-Position Normally Closed 3/2	Key Spring Return	Expilot	CSA-3301-316-314E(*)	1.8 lbs 0.8 kg	
	3-Way 2-Position- Normally Open 3/2	Key Spring Return	Expilot	CAS-3302-316-314E(*)	1.8 lbs 0.8 kg	
	4-Way 2-Position 5/2	Key Spring Return	Expilot	CSA-4302-316--314E(*)	2 lbs 0.9 kg	

*Key Number - Key number assigned by Versa



	A	B	C 3-Way	C* 4-Way	D	Ø
Inches	3.5	1.62	3.73	4.23	2.8	1.0
mm	90	41.2	95	107.4	71.3	24.5

For mounting hole dimensions see page 6

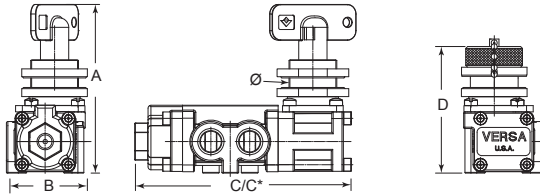
THE C-316 SERIES

Body Ported Valves

MANUAL, KEY, PILOT RETURN

Side Ported	Function	Actuation	Pilot Type	Part Number	Weight	Flow Symbol
	3-Way 2-Position Normally Closed 3/2	Key Pilot Return	Expilot	CPA-3301-316-314E(*)	2 lbs 0.9 kg	
	3-Way 2-Position Normally Open 3/2	Key Pilot Return	Expilot	CAP-3302-316-314E(*)	2 lbs 0.9 kg	
	4-Way 2-Position 5/2	Key Pilot Return	Expilot	CPA-4302-316-314E(*)	2 lbs 0.9 kg	

*Key Number - Key number assigned by Versa



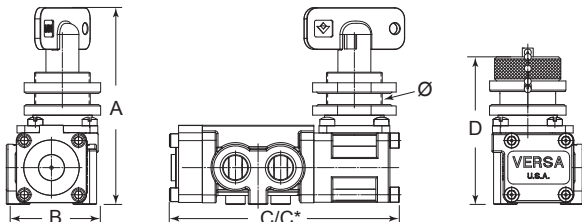
	A	B	C 3-Way	C* 4-Way	D	Ø
Inches	3.53	1.62	8.08	8.58	2.8	1.0
mm	90	41.2	205.2	217.9	71.3	24.5

For mounting hole dimensions see page 6

MANUAL, KEY, DETENT

Side Ported	Function	Actuation	Pilot Type	Part Number	Weight	Flow Symbol
	3-Way 2-Position Normally Closed 3/2	Key Pilot Return	Expilot	CZA-3301-316-314E(*)	1.9 lbs 0.9 kg	
	3-Way 2-Position Normally Open 3/2	Key Pilot Return	Expilot	CAZ-3301-316-314E(*)	1.9 lbs 0.9 kg	
	4-Way 2-Position 5/2	Key Pilot Return	Expilot	CAZ-4302-316-314E(*)	2 lbs 0.9 kg	

*Key Number - Key number assigned by Versa



	A	B	C 3-Way	C* 4-Way	D	Ø
Inches	3.53	1.62	4.2	4.7	2.8	1.0
mm	90	41.2	105	217.9	71.3	24.5

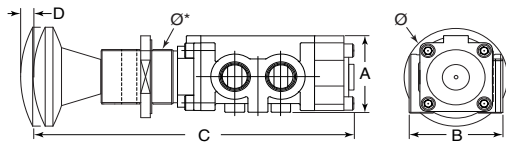
For mounting hole dimensions see page 6

THE C-316 SERIES

Body Ported Valves

MANUAL, LOCK - OUT

Side Ported	Function	Actuation	Pilot Type	Part Number	Weight	Flow Symbol
	3-Way 2-Position Normally Closed 3/2	Palm Button Detent	Expilot	CIZ-3301-316-LOVBE	1.3 lbs 0.6	
	4-Way 2-Position 5/2	Palm Button Detent	Expilot	CIZ-4302-316-LOVEE	1.4 lbs 0.6	

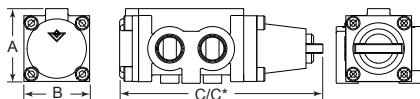


	A	B	C	C*	D	Ø	Ø*
	3-Way	4-Way	Travel				
Inches	2.3	1.62	8.08	8.58	.20	1.81	1.0
mm	58.4	41.2	205.2	217.9	5.08	46	25.4

For mounting hole dimensions see page 6

MANUAL, CAM

Side Ported	Function	Actuation	Pilot Type	Part Number	Weight	Flow Symbol
	3-Way 2-Position Normally Closed 3/2	Cam Spring Return	Expilot	CSC-3301-316	1.0 lbs 0.5 kg	
	3-Way 2-Position Normally Open 3/2	Cam Spring Return	Expilot	CCS-3302-316	1.0 lbs 0.5 kg	
	4-Way 2-Position 5/2	Cam Spring Return	Expilot	CSC-4302-316	1.0 lbs 0.5 kg	



	A	B	C	C*	D
	3-Way	4-Way	Travel		
Inches	1.42	1.62	3.87	4.37	.88
mm	58.4	41.2	98.2	110.9	22.2

For mounting hole dimensions see page 6

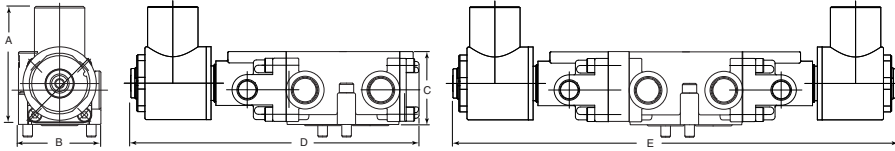
THE C-316 SERIES NAMUR

NAMUR, SOLENOID OPERATED

Note:
3-Way & 4-Way
NAMUR valves
look the same
externally.

NAMUR	Function	Actuation	Pilot Type	Part Number	Weight	Flow Symbol
	3-Way 2-Position Normally Closed 3/2	Single Solenoid Spring Return	Inpilot	CGS-3331-316-NE†(*)	1.7 lbs 0.8 kg	
	3-Way 2-Position- Normally Open 3/2	Single Solenoid Spring Return	Inpilot	CSG-3332-316-NE†(*)	1.7 lbs 0.8 kg	
	3-Way 2-Position 3/2	Double Solenoid Detent	Inpilot	CGG-3331-316-NE†(*)	2.3 lbs 1.0 kg	
	4-Way 2-Position 5/2	Single Solenoid Spring Return	Inpilot	CGS-4332-316-NE†(*)	1.7 lbs 0.8 kg	
	4-Way 2-Position 5/2	Double Solenoid Detent	Inpilot	CGG-4332-316-NE†(*)	2.3 lbs 1.0 kg	

† Add mounting screw type from Selector Chart "Suffix" column (page 5). * Add solenoid/coil voltages (page 19) & Suffix from Selector Chart (page 5).

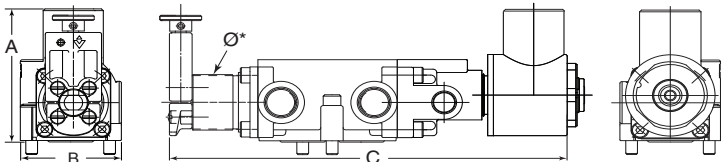


	A	B	C	D
Inches	2.3	1.62	5.7	8.8
mm	58.4	41.2	144	223

NAMUR LATCHING, SOLENOID, SPRING RETURN without PALM BUTTON

NAMUR	Function	Actuation**	Pilot Type	Part Number	Weight	Flow Symbol
	3-Way 2-Position Normally Closed 3/2	Pilot, Latching Reset without Button	Expilot	CAG-3331-316-356BN-NE†(*)	1.5 lbs 0.7 kg	
	3-Way 2-Position- Normally Open 3/2	Pilot, Latching Reset without Button	Expilot	CGA-3332-316-356BN-NE†(*)	1.5 lbs 0.7 kg	
	4-Way 2-Position 5/2	Single Solenoid, Latching Reset without Button	Expilot	CAG-4332-316-356BN-NE†(*)	1.5 lbs 0.7 kg	

† Add mounting screw type from Selector Chart "Suffix" column (page 5). * Add solenoid/coil voltages (page 19) & Suffix from Selector Chart (page 5).

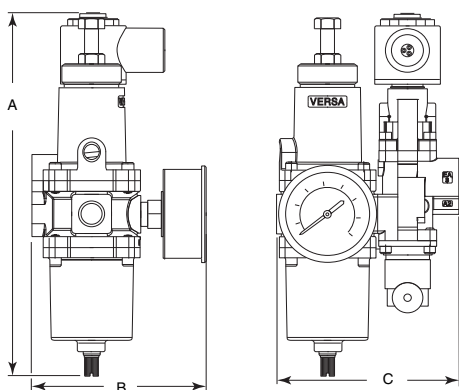


**Consult
factory for other
configurations

	A	B	C	Ø*
Inches	2.23	1.62	5.7	1
mm	56.6	41.2	144	25.4

THE C-316 SERIES

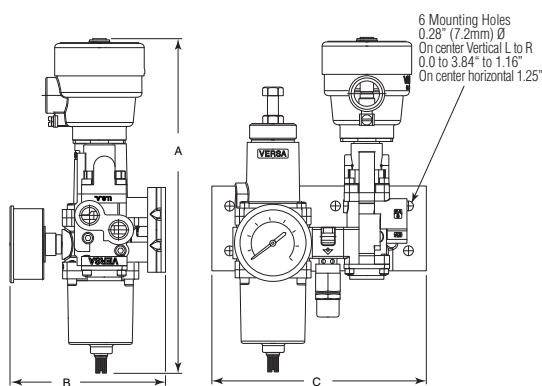
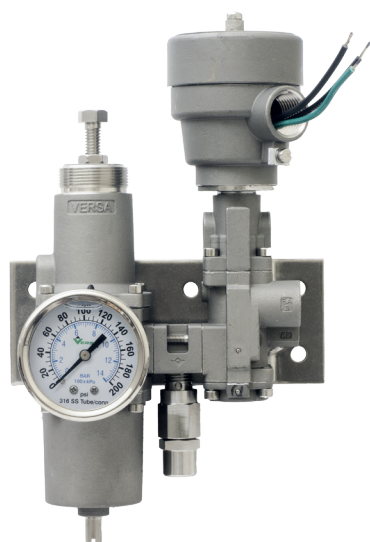
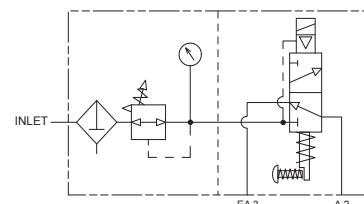
CMAP Modular Air Package



	A	B	C
Inches	8.44	3.85	4.0
mm	214	97.9	101.6

Bill of Materials

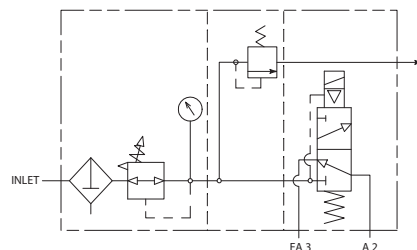
Description	Part Number
Regulator	ARFA-3111-316-CA3-GBG
Valve	CAG-3321-316-356BN-CA3-XX-A120



	A	B	C
Inches	9.39	3.85	6.0
mm	238	97.9	152.4

Bill of Materials

Description	Part Number
Regulator	ARFA-3111-316-CA3-GBG
Valve	CSG-3321-316-CA3-XDBS1-A120
Spacer	CY-3209-32-316-CA3
Bracket	4302-99-316-CA3
Relief Valve	RV-3-316-100



Air Prep Selection

Regulator, Filter and manual drain*	Description	Part Number		Weights	
		0-100 psi	0-150 psi	lbs	kg
	No gauge	ARFA-3112-316-CA3	ARFA-3111-316-CA3	2.7	1.22
	2" gauge liquid filled	ARFA-3112-316-CA3-GBG	ARFA-3111-316-CA3-GBG	2.9	1.32
	2 1/2" gauge liquid filled	ARFA-3112-316-CA3-GAG	ARFA-3111-316-CA3-GAG	2.9	1.32

Valve Selection

Description	Part Number		Weights ††	
	3-way, normally closed †	3-way, normally open †	lbs	Kg
3/2 Pilot, Spring Return	CSG-3321-316-CA3-**	CGS-3322-316-CA3-**	1.9	0.86
3/2 Double Pilot, detented	CGG-3321-316-CA3-**	CGG-3322-316-CA3-**	2.5	1.13
3/2 Pilot, spring return w/ latch	CAG-3321-316-CA3-356BN-**	CGA-3322-316-CA3-356BN-**	2.2	0.99
3/2 Pilot, spring return w/ latch and button	CAG-3321-316-CA3-356B-**	CGA-3322-316-CA3-356B-**	2.3	1.04
3/2 Pilot, spring return	CSP-3301-316-CA3	CPS-3302-316-CA3	1.3	0.59

Accessories



Description	Part Number	Weights	
		lbs	kg
Mounting bracket	Add 4302-99-316-CA3 to bill of Material	0.5	0.23
Auxiliary port plate	Add CY-3209-32-316-CA3 to bill of Material	0.2	0.09
Relief Valve (also specify Aux port plate)	Add RV-3-316-*** to bill of Material	0.2	0.09
Speed Control, close only	Add suffix -BC3 to Control Valve p/n	0.1	0.05
Speed Control, both open closed	Add FCV-3-316 to bill of Material	0.5	0.23

Notes:

- * For regulator auto drain, consult factory
- ** Add voltage and Pilot options. See page 18
- † For expilot change 3321 to 3301
- †† Weight are for -XX type Pilots
- *** Add set pressure, for example RV-3-316-080 for 80 psi

Electrical

NON HAZARDOUS LOCATIONS OPERATORS

	Suffix Identification	Protection Classification	Area Classification and (Gas Grouping)	Certification-(Conformance)	Ingress Protection
	None or -HT, PC	General Purpose	Indoor & Outdoor	CSA	NEMA 1,2, 3 & 4
	-HC -HCC (Shown)	General Purpose	Indoor & Outdoor	CSA	NEMA 4; IP65

HAZARDOUS LOCATION OPERATORS

	Suffix Identification	Protection Classification	Area Classification and (Gas Grouping)	Certification-(Conformance)	Ingress Protection
	-XX -LB-XX	Hazardous Locations	CLASS I, DIV. 2 (A & B) CLASS I, DIV. 1 (C & D) CLASS II, DIV. 1 (E, F & G)	UL - CSA	NEMA 7 & 9
	-XN -LB-XN	(d) Flameproof	Ex d IIB+H2 T3 to T6 Gb II 2 G Ex d IIB+H2 T3 to T6	IECEX IECEX ATEX	P65 & IP66
	-XDBS* -XDBT*	(d) Flameproof (e) Increased Safety	EX II 2 G D Ex d e IIC T* Gb EX tb IIIC T* °C Db Class I Div I Grp B, C & D Class I Div II Grp E, F & G EX d IIC DIP A21 T6 T4	ATEX IECEX -INMETRO CSA	IP66, IP67, & IP68
See "Miscellaneous" column page 19 for ordering information.					
	-XMAA -XMAE -XMAF -XMAG -XMFA -XMFE -XMFF -XMFG	(mb) Encapsulation (e) Increased Safety (tD) Tight Dust	Ex e mb II T5, T6 Gb Ex tD A21 T100°C, T85°C Db II 2 G Ex e mb II T5, T6 II 2D Ex tD A21 T100°C, T85°C	IECEX ATEX	IP66 & IP67
	-XIFA -XIFE -XIFF	(ia) Intrinsic Safe	Ex (ia) IIC T4...T6 Gb Ex (ia) IIIC T130°C, T80°C Db II 2 G Ex ia IIC T4...T6 II 2 D Ex iaD 21 T130°C, T80°C	IECEX ATEX	IP66 & IP67
	-XISX6 -XISC	Intrinsic Safe	II 2 G EEx ia IIC T6 Class I, Groups (A, B, C & D) Class II, Groups (E, F, & G) Class III	ATEX Factory Mutual CSA	IP65

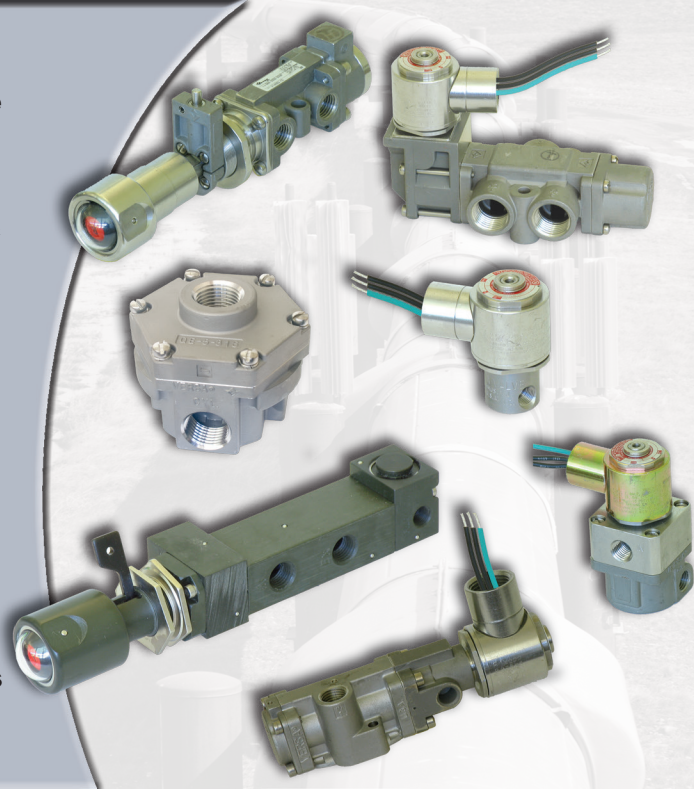
* -U (up right coil cap) Recommended for use with -XDB_, -XMA_, -XMF_ & XIF_ coils on NAMUR valves for mounting clearance. See page 6 for dimensions.

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.

Rating Code Voltage
 A = 60Hz frequency Indicated by three digits:
 D = Direct Current (DC) e.g. 24 volts = 024
 E = 50Hz frequency 120 volts = 120.
 A120 = AC, 120Volts/60hz

	Voltage (Power)	Electrical Characteristics	Miscellaneous																																	
	All usual 50 Hz & 60 Hz AC (6W) All usual DC (7W)	Class F epoxy molded coil (155°C). Continuous duty, 2 leads 24" (60 cm).	Steel cover with 1/2 NPT conduit entry.																																	
	24V60, 120V60, 240V60 (8.5W) 24V50, 110V50, 220V50 (8.5W) 12VDC, 24VDC, 48VDC (10.5W)	Class F epoxy molded coil (155°C), with 3 spade terminals. Continuous duty.	Mini DIN socket with PG9 cable gland (-HC) or 1/2" conduit connection (-HCC).																																	
	Voltage (Power)	Electrical Characteristics	Miscellaneous																																	
	All usual 50 Hz & 60 Hz AC (5.6W) All usual DC (7.2W)	Class F epoxy molded coil (155°C). 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)		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)		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)		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.																																	
	24VDC (D024) 120V60 (A120) 110V50 (E110) 230V50 (E230) 1.8 Watt standard, for lower watt contact factory.	Epoxy molded coils rated for continuous duty, Class H, 180°C.	<table border="1"> <thead> <tr> <th rowspan="3"></th> <th colspan="4">Suffix Detail Ordering Code</th> </tr> <tr> <th colspan="2">M 20 Connection</th> <th colspan="2">1/2" Connection</th> </tr> <tr> <th>No Diode</th> <th>Diode</th> <th>No Diode</th> <th>Diode</th> </tr> </thead> <tbody> <tr> <td>Standard (vent to atmosphere)</td> <td>XDBS1</td> <td>XDBS5</td> <td>XDBT1</td> <td>XDBT5</td> </tr> <tr> <td>1/8" Adapter (-H2E)</td> <td>XDBS2</td> <td>XDBS6</td> <td>XDBT2</td> <td>XDBT6</td> </tr> <tr> <td>1/4" Adapter (-HE)</td> <td>XDBS3</td> <td>XDBS7</td> <td>XDBT3</td> <td>XDBT7</td> </tr> <tr> <td>Dust Nut (-L14)</td> <td>XDBS4</td> <td>XDBS8</td> <td>XDBT4</td> <td>XDBT8</td> </tr> </tbody> </table>		Suffix Detail Ordering Code				M 20 Connection		1/2" Connection		No Diode	Diode	No Diode	Diode	Standard (vent to atmosphere)	XDBS1	XDBS5	XDBT1	XDBT5	1/8" Adapter (-H2E)	XDBS2	XDBS6	XDBT2	XDBT6	1/4" Adapter (-HE)	XDBS3	XDBS7	XDBT3	XDBT7	Dust Nut (-L14)	XDBS4	XDBS8	XDBT4	XDBT8
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Dust Nut (-L14)	XDBS4	XDBS8	XDBT4	XDBT8																																
	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), (-XMFA), Cable gland for 6-12 mm ø cable: (-XMAE), (-XMFE) 1/2 NPT conduit entry with adapter: (-XMAF), (-XMFF) Cable gland for 9-16 mm ø cable: (-XMAG), (-XMFG)																																	
	24VDC (10W inrush, 4 W holding) (Consult factory for other voltages)	Continuous duty. Coil & power controller potted with in housing.																																		
	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)																																	
	24VDC system voltage prior to barrier (1.6 watt max.)	Class F epoxy molded coil (155°C). 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)																																	

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Supplying the
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have built a
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and pilot
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**WARNINGS REGARDING THE DESIGN APPLICATION,
INSTALLATION AND SERVICE OF VERSA PRODUCTS**

The warnings below must be read and reviewed before designing a system utilizing, installing, servicing, or removing a Versa product. Improper use, installation or servicing of a Versa product could create a hazard to personnel and property.

DESIGN APPLICATION WARNINGS

Versa products are intended for use where compressed air or industrial hydraulic fluids are present. For use with media other than specified or for non-industrial applications or other applications not within published specifications, consult Versa.

Versa products are not inherently dangerous. They are only a component of a larger system. The system in which a Versa product is used must include adequate safeguards to prevent injury or damage in the event of system or product failure, whether this failure be of switches, regulators, cylinders, valves or any other system component. System designers must provide adequate warnings for each system in which a Versa product is utilized. These warnings, including those set forth herein, should be provided by the designer to those who will come in contact with the system.

Where questions exist regarding the applicability of a Versa product to a given use, inquiries should be addressed directly to the manufacturer. Confirmation should be obtained directly from the manufacturer regarding any questioned application prior to proceeding.

INSTALLATION, OPERATION AND SERVICE WARNINGS

Do not install or service any Versa product on a system or machine without first depressurizing the system and turning off any air, fluid, or electricity to the system or machine. All applicable electrical, mechanical, and safety codes, as well as applicable governmental regulations and laws must be complied with when installing or servicing a Versa product.

Versa products should only be installed or serviced by qualified, knowledgeable personnel who understand how these specific products are to be installed and operated. The individual must be familiar with the particular specifications, including specifications for temperature, pressure, lubrication, environment and filtration for the Versa product which is being installed or serviced. Specifications may be obtained upon request directly from Versa. If damages should occur to a Versa product, do not Operate the system containing the Versa product. Consult Versa for technical information.

**LIMITED WARRANTY DISCLAIMER
AND LIMITATION OF REMEDIES**

Versa's Series products are warranted to be free from defective material and workmanship for a period of ten years from the date of manufacture, provided said products are used in accordance with Versa specifications. Versa's liability pursuant to that warranty is limited to the replacement of the Versa product proved to be defective provided the allegedly defective product is returned to Versa or its authorized distributor. Versa provides no other warranties, expressed or implied, except as stated above. There are no implied warranties of merchantability or fitness for a particular purpose. Versa's liability for breach of warranty as herein stated is the only and exclusive remedy and in no event shall Versa be responsible or liable for incidental or consequential damages.

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