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Limited Warranty

p. 367

Dixon Sanitary, a division of Dixon Valve and Coupling Company, (herein called Dixon Sanitary) warrants the products described herein, and manufactured by Dixon Sanitary to be free from defects in material and workmanship for a period of one (1) year from date of shipment by Dixon Sanitary under normal use and service. It's sole obligation under this warranty being limited to repairing or replacing, as hereinafter provided, at its option any product found to Dixon Sanitary's satisfaction to be defective upon examination by it, provided that such product shall be returned for inspection to Dixon Sanitary within three (3) months after discovery of the defect. The repair or replacement of defective products will be made without charge for parts or labor. This warranty shall not apply to: (a) parts or products not manufactured exclusively for Dixon Sanitary, the warranty of such items being limited to the actual warranty extended to Dixon Sanitary by its supplier; (b) any product that has been subject to abuse, negligence, accident, or misapplication; (c) any product altered or repaired by others than Dixon Sanitary; and (d) to normal maintenance services and the replacement of service items (such as gaskets and seats) made in connection with such services. To the extent permitted by State law, this limited warranty shall extend only to the buyer and any other person reasonably expected to use or consume the goods who is injured in person by any breach of the warranty. No action may be brought against Dixon Sanitary for an alleged breach of warranty unless such action is instituted within one (1) year from the date the cause of action accrues. This limited warranty shall be construed and enforced to the fullest extent allowable by applicable State law.

OTHER THAN THE OBLIGATION OF DIXON SANITARY SET FORTH HEREIN, DIXON SANITARY DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND ANY OTHER OBLIGATION OR LIABILITY. THE FOREGOING CONSTITUTES 'S SOLE OBLIGATION WITH RESPECT TO DAMAGES, WHETHER DIRECT, INCIDENTAL OR CONSEQUENTIAL, RESULTING FROM THE USE OR PERFORMANCE OF THE PRODUCT.

Some products and sizes may be discontinued when stock is depleted, or may require a minimum quantity for ordering.

NOTE: Reasonable care has been taken in preparing this catalog. Dixon Sanitary, a division of Dixon Valve & Coupling Company, reserves the right to make corrections and any dimensional changes.



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U

Q

S

X





Seat Valves

The SV-series single seat valves offer a true hygienic design to meet your most demanding process applications. The SV-series valves are offered in 316L stainless steel with a variety of body configurations and seat and stem seal materials to fit your specific needs. This valve series is designed to shut off or divert the flow in your process either remotely by using air or locally using a manual operating device. The rugged design of the actuator and valve body allow the valve to stand up to the harsh environments often found in the sanitary industry.





Product Specifications

Sizes:

• 1", 1½", 2", 2½", 3", 4", 6"

Materials:

Body
Actuator
Manual Operating Device
Stem Seal
Seat Seal
Buna, EPDM, FKM
Buna, EPDM, FKM, PTFE

Options:

- Manual
- Actuated (spring return, double acting)
- Control Tops

Body Types:

• L, T, Y, F, L/L, T/L, L/T, T/T, Tank Bottom

Technical Data:

Temperature range
 Surface Finish
 Air pressure
 Air connections
 -50°F to 212°F
 32R_a standard
 80 to 120 PSI
 1/8" FNPT











SV-Series I & O Manual can be viewed/downloaded at dixonvalve.com. This manual covers the complete line of valves including videos on assembly and disassembly of all valves.

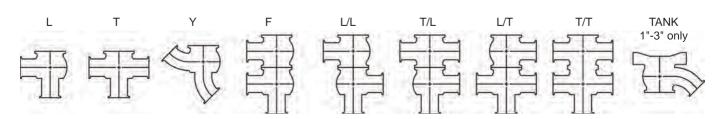


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Ordering Information

Valve Series (1-2)	Type (3)	Body Config. (4)		Ports (5)	5 ((Size 6-7)	А	ctuator (8)		Seat laterial (9)	Сс	ontrol Top (10)	Sw	ritches (11)		Solenoid (12) *	Со	mmunication (13)		Conduit onnectors (14)	Options (15)
sv Seat Valve	S Shut Off	А Т	С	Clamp	10	1"	А	Manual	А	PTFE seats / FKM seals	N	None	N	None	N	None	N	None	N	None	N None
	D Divert	B L	В	Buttweld	15	1.5"	В	Spring Return (Air To Raise)	В	Buna	В	Basic Control Top	М	Mechanical	1	120V AC Standard	Α	Device Net	1	(1) M12 Poly Cable Gland	Tank, A up to open
	T Tank Bottom	СΥ	F	Female I-Line	20	2"	С	Spring Return (Air To Lower)	E	EPDM	С	Communication Module	Р	Proximity	2	24V DC 3W Standard	В	Foundation Fieldbus	2	(2) 1/2" NPT	Tank, B up to close
		D Tanl	M	Male I-Line	25	2.5"	D	Double Acting	Р	PTFE seats / EPDM seals			S	Solid State	3	3-Way Piezo	С	Foundation Fieldbus (Externally Powered)	3	(2) M20	
		E F	Т	Threaded Bevel	30	3"			V	FKM			R	Namur	4	3-Way Poppet Style 24V DC 1.8W	D	Modbus	4	(2) Cable Glands	
		F L-l	P	Plain Bevel	40	4"									5	3-Way Poppet Style 120V AC 7.2W		As-Interface	5	(1) 5 Pin Connector	
		G T-l	Q	Q-Line	60	6"									6	3-Way Poppet Style 24V DC 0.5W		As-Interface (W/ Extended Addressing)	6	(1) 4 Pin Connector	
		H L-1	J	John Perry Plain											7	3-Way Intrinsically Safe 12V DC			7	(2) 4 Pin Connectors	
		T-1	Н	John Perry Threaded																	
			Е	Extended Weld																	
			Z	Combination (Add Note)																	
			Α	Female NPT																	

Body Configurations







Holding Pressure (PSI)

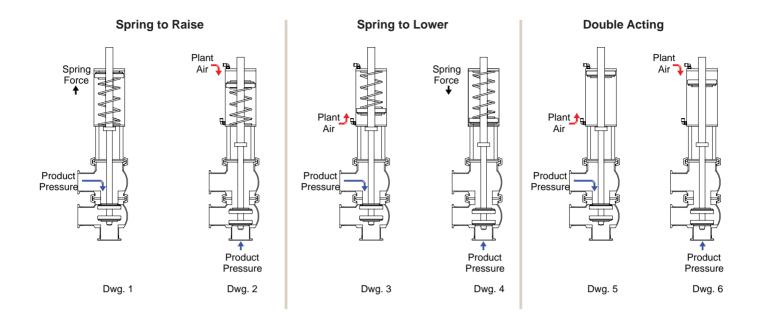


Illustration of seating surface, product pressure direction, air pressure location and direction of spring force.

		Drawing 1	Draw	ing 2	Draw	ing 3	Drawing 4	Draw	ing 5	Draw	ing 6
Plant Air	Supply (PSI)	NA	80	120	80	120	NA	80	120	80	120
Seatir	ng Surface	Upper	Lov	wer	Up	per	Lower	Up	per	Lov	wer
Actuate	or Function	В	E	3	(2	С	[)	[)
1"	Elastomer	100	100	100	100	100	100	130	130	130	130
1"	PTFE	95	95	95	95	95	95	125	125	125	125
1-1/2"	Elastomer	75	75	100	75	75	100	115	115	115	115
1-1/2	PTFE	65	65	90	65	65	90	110	110	110	110
2"	Elastomer	75	68	83	75	75	70	115	115	115	115
2	PTFE	65	58	73	65	65	60	110	110	110	120
0.4/0!	Elastomer	60	55	68	55	55	50	125	125	125	125
2-1/2"	PTFE	50	45	58	45	45	45	120	120	120	120
3"	Elastomer	60	55	68	55	55	50	125	125	125	125
3"	PTFE	50	45	58	45	45	45	120	120	120	120
4"	Elastomer	60	55	68	55	55	50	110	110	110	110
4	PTFE	50	45	58	45	45	45	100	100	100	100

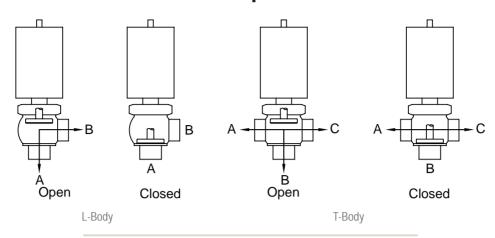
Actuator function codes:

- B spring to raise
- C spring to lower
- D double acting (air to air)

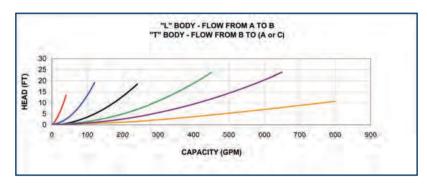


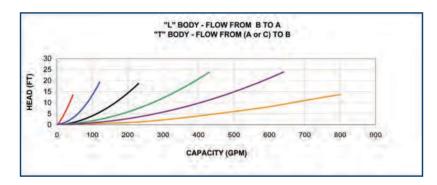
A

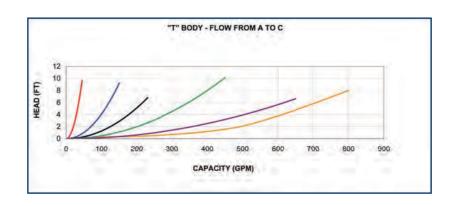
Pressure Drop Flow Paths



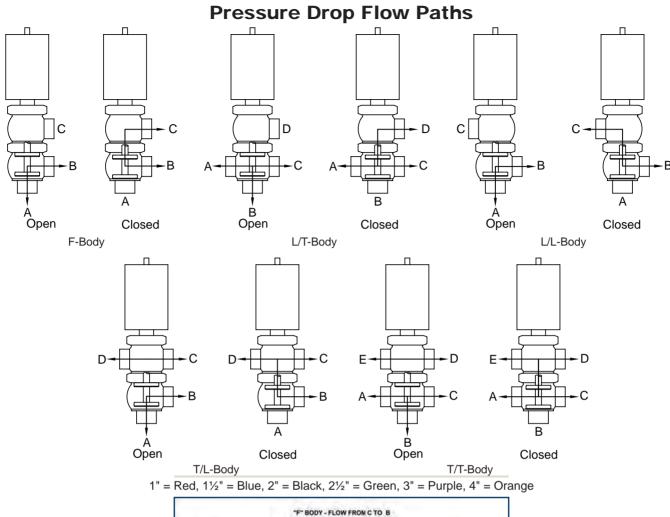
1" = Red, 11/2" = Blue, 2" = Black, 21/2" = Green, 3" = Purple, 4" = Orange

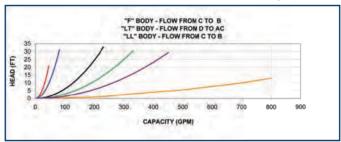


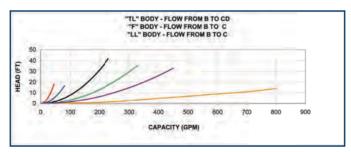


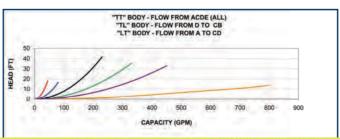












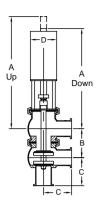


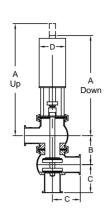
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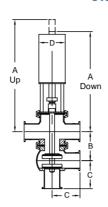


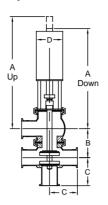
Double Body with Actuator 🔊

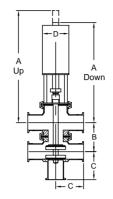


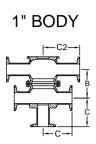




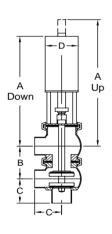


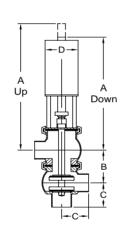


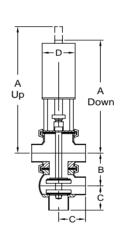


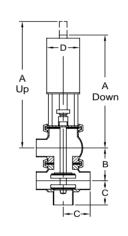


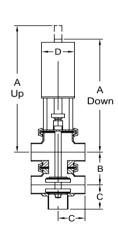
Weld











Size	A (Down)	A (Up)	В	C (Clamp)	C (Weld)	C2	D
1"	6.05	6.69	2.23	2.50	2.00	3.2	2.36
1-1/2"	11.41	12.40	3.15	2.75	2.25		3.35
2"	11.67	12.65	3.64	3.50	3.00		3.35
2-1/2"	14.40	15.66	4.72	3.50	3.00		5.24
3"	14.50	15.94	5.04	3.75	3.25		5.24
4"	15.10	16.17	5.94	4.50	3.87		5.24

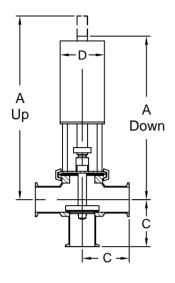


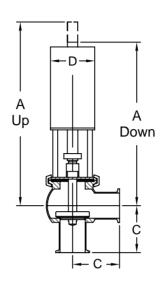


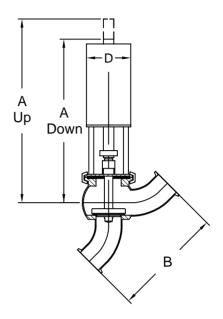
3

Single Body with Actuator

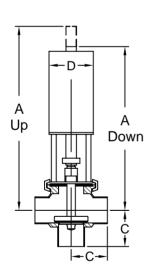
Clamp

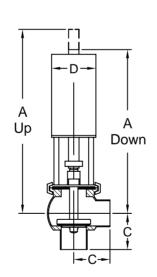


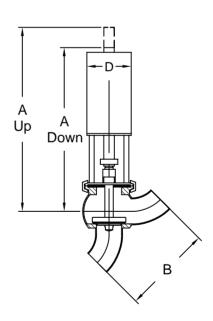




Weld







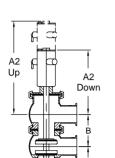
Size	A (Down)	A (Up)	C (Clamp)	C (Weld)	D	B (Y-Body) Clamp	B (Y-Body) Weld
1"	6.05	6.69	2.50	2.00	2.36	4.78	3.78
1-1/2"	11.41	12.40	2.75	2.25	3.35	6.60	5.60
2"	11.67	12.65	3.50	3.00	3.35	7.64	6.64
2-1/2"	14.40	15.66	3.50	3.00	5.24	9.33	8.33
3"	14.50	15.94	3.75	3.25	5.24	10.63	9.63
4"	15.10	16.17	4.50	3.87	5.24	13.18	11.93

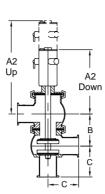


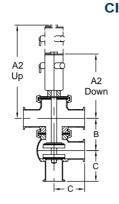
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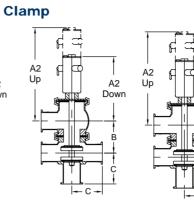


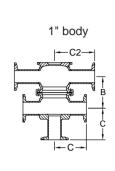
Double Body with Manual Handle 🔊



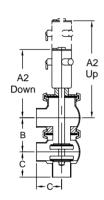


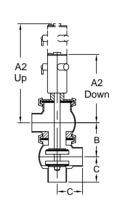


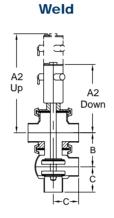


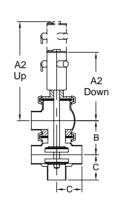


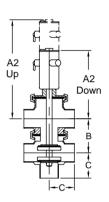
A2 Down









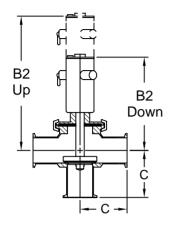


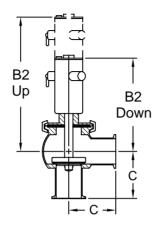
Size	A2 (Down)	A2 (Up)	В	C (Clamp)	C (Weld)	C2
1"	3.98	4.65	2.23	2.50	2.00	3.20
1-1/2"	4.96	5.94	3.15	2.75	2.25	
2"	5.31	6.30	3.64	3.50	3.00	
2-1/2"	6.57	7.83	4.72	3.50	3.00	
3"	6.69	8.11	5.04	3.75	3.25	

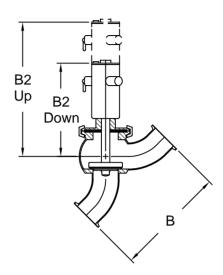


Single Body with Manual Handle

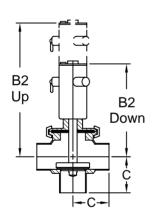
Clamp

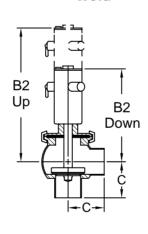


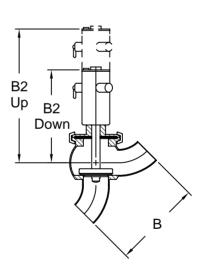




Weld



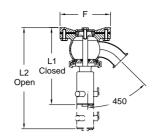


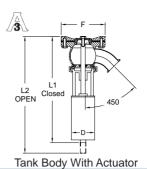


Size	B2 (Down)	B2 (Up)	C (Clamp)	C (Weld)	B (Y-Body) Clamp	B (Y-Body) Weld
1"	3.98	4.88	2.50	2.00	4.78	3.78
1-1/2"	4.96	6.34	2.75	2.25	6.60	5.60
2"	5.31	6.69	3.50	3.00	7.64	6.64
2-1/2"	6.57	8.54	3.50	3.00	9.33	8.33
3"	6.69	8.66	3.75	3.25	10.63	9.63



Dimensions





Tank Body with Manual Handle

	Tarik Body With	Mariaar Flariare	
Size(In)	L1	L2	F
1"	7.13	8.31	4.33
1-1/2"	9.17	10.55	5.51
2"	9.53	10.91	5.91
2-1/2"	11.34	13.11	7.09
3"	11.81	13.58	7.87
4 "	N/A	N/A	N/A

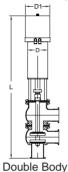
Size(In)	L1	L2	F	D
1"	7.48	8.66	4.33	2.36
1-1/2"	13.94	15.31	5.51	3.35
2"	14.17	15.55	5.91	3.35
2-1/2"	17.56	19.33	7.09	5.24
3"	17.72	19.49	7.87	5.24

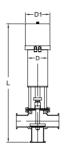
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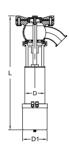
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N/A

Valves With Actuator And CT Series Control Top

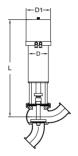






Tank

4"



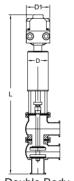
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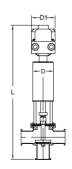
e Body Single Body

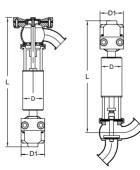
Y-Body

			Double Body	Single Body	lank	Y-Body
Size(In)	D1	D		I	=	
1"		2.36	15.15	13.00	12.60	10.34
1-1/2"		3.35	21.44	18.30	18.60	15.60
2"	4.09	3.35	22.91	19.30	20.17	15.85
2-1/2"	4.09	5.24	27.00	22.27	20.39	18.50
3"		5.24	27.65	22.60	20.39	18.60
4"		5.24	29.90	25.00	N/A	19.20

Valves With Actuator And CM Series Control Module







Double Body

Single Body

Tank Y-Body

		,	Double Body	Single Body	Tank	Y-Body
Size(In)	D1	D				
1"		2.36	17.55	15.34	15.00	12.75
1-1/2"		3.35	24.63	21.49	21.79	18.78
2"	4.09	3.35	23.41	22.49	21.94	19.04
2-1/2"	4.09	5.24	26.10	25.46	23.58	21.69
3"		5.24	30.84	25.79	23.58	21.79
A !!	1	F 04	24.70	25.05	NI/A	22.20



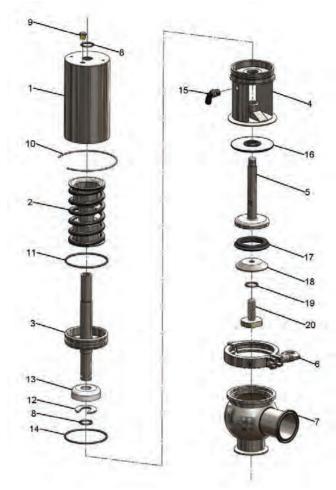
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Seat Valve Bill of Materials

(Standard Materials)
Single Body



Item #	Description	Material	Qua	Quantity		
item#	Description	Material	Spring Return	Double Acting		
1	Actuator Body	304 SS	1	1		
2	Spring	304 SS	1	0		
3	Actuator Piston	304 SS	1	1		
4	Adapter	304 SS	1	1		
5	Valve Stem	316L	1	1		
6	Single Pin Clamp	304 SS	1	1		
7	Valve Body - Lower	316L	1	1		
8	Stem O-Ring *	EPDM	2	2		
9	Filter	Nickel Plated Brass	1	0		
10	Actuator Adapter Wire Clip	304 SS	1	1		
11	Piston O-Ring	EPDM	1	1		
12	Stem U-Clip	304 SS	1	1		
13	Actuator Ring	PTFE	1	1		
14	Adapter O-Ring	EPDM	1	1		
15	Air Fitting	Nickel Plated Brass	1	2		
16	Lip Seal *	304/EPDM	1	1		
17	Seat Seal Ring *	EPDM	1	1		
18	Seat Washer	316L	1	1		
19	Seat Bolt O-Ring *	EPDM	1	1		
20	Seat Bolt	316L	1	1		

^{*} wetted repair parts



A

Seat Valve Bill of Materials



(Standard Materials)



Item #	Description	Material	Qua	Quantity		
nem #	Description	Material	Spring Return	Double Acting		
1	Actuator Body	304 SS	1	1		
2	Spring	304 SS	1	0		
3	Actuator Piston	304 SS	1	1		
4	Adapter	304 SS	1	1		
5	Valve Stem	316L	1	1		
6	Single Pin Clamp	304 SS	2	2		
7	Valve Body - Lower	316L	1	1		
8	Stem O-Ring *	EPDM	2	2		
9	Filter	Nickel Plated Brass	1	0		
10	Actuator Adapter Wire Clip	304 SS	1	1		
11	Piston O-Ring	EPDM	1	1		
12	Stem U-Clip	304 SS	1	1		
13	Actuator Ring	PTFE	1	1		
14	Adapter O-Ring	EPDM	1	1		
15	Air Fitting	Nickel Plated Brass	1	2		
16	Lip Seal *	304/EPDM	1	1		
17	Seat Seal Ring *	EPDM	2	2		
18	Seat Washer	316L	1	1		
19	Seat Bolt O-Ring *	EPDM	1	1		
20	Seat Bolt	316L	1	1		
21	Stem Gland	316L	1	1		
22	Valve Body Seal Ring *	EPDM	1	1		
23	Valve Body - Upper	316L	1	1		
24	Set Screw	304SS	1	1		



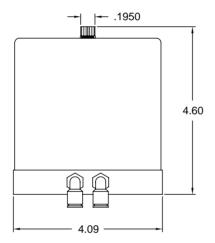
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CT-Series Control Top



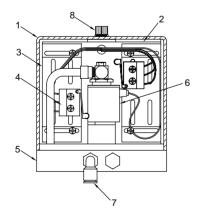


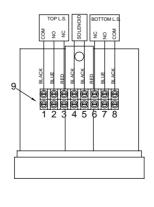
The CT-series control top mounts directly to the SV series spring return actuator offering two position feedback and control

- Nema 4/4X water proof / dust proof, class IP 67 enclosure
- 304SS enclosure
- 110VAC and 24VDC solenoid options
- Mechanical and proximity (PNP, NPN, NO & NC) switching options

Part Number	Description
SV-CT1	Micro Switch 24Vdc, Air To Lower
SV-CT2	Prox Npn Nc 24Vdc, Air To Lower
SV-CT3	Prox Npn No 24Vdc, Air To Lower
SV-CT4	Prox Pnp Nc 24Vdc, Air To Lower
SV-CT5	Prox Pnp No 24Vdc, Air To Lower
SV-CT6	Micro Switch 24Vdc, Air To Rise
SV-CT7	Prox Npn Nc 24Vdc, Air To Rise
SV-CT8	Prox Npn No 24Vdc, Air To Rise
SV-CT9	Prox Pnp Nc 24Vdc, Air To Rise
SV-CT10	Prox Pnp No 24Vdc, Air To Rise
SV-CT11	Micro Switch 110Vac, Air To Lower
SV-CT12	Prox Npn Nc 110Vac, Air To Lower
SV-CT13	Prox Npn No 110Vac, Air To Lower
SV-CT14	Prox Pnp Nc 110Vac, Air To Lower
SV-CT15	Prox Pnp No 110Vac, Air To Lower
SV-CT16	Micro Switch 110Vac, Air To Rise
SV-CT17	Prox Npn Nc 110Vac, Air To Rise
SV-CT18	Prox Npn No 110Vac, Air To Rise
SV-CT19	Prox Pnp Nc 110Vac, Air To Rise
SV-CT20	Prox Pnp No 110Vac, Air To Rise

Control Top Bill of Materials





Item #	Description	Qty	Material
1	Cover	1	304 SS
2	Switch Plate	1	304 SS
3	Switch Hanger	2	P.O.M.
4	Limit Switch	2	Various *
5	Manifold	1	304 SS
6	Solenoid	1	AL
7	Air Fitting	1	N.P. Brass
8	Cover Bolt	1	304 SS
9	Terminal Strip	1	P.O.M.

^{*} Dependent on switch type



CM-Series Control Module

The CM-Series Control Communication Module, designed for corrosive process environments, attaches directly to the Sanitary Divert Valves. This platform offers a full array of communication and switching options as well as discrete integral pneumatic control for spring return actuator operation.

Features and Benefits:

- The CM-Series may be washed down and temporarily submersed with no adverse affects. It is rated NEMA 4, 4x, and 6. It may be used in Div. 2/Zone 2 areas (Nonincendive) or Div.1/Zones 0 & 1 (Intrinsically Safe) hazardous applications
- · Enclosure features high strength polycarbonate with excellent corrosion resistance and exceptional temperature stability.
- Visual electronic and mechanical position indication confirm valve and switch status for added safety.
- Solid state proximity sensors monitor Open/Closed discrete valve position with precision and reliability.
- Integral pneumatic valve is isolated from environmental contamination, offers high tolerance to dirty air and enables rapid valve
 operation.
- Solenoid options available for 120VAC and 24VDC. Select Piezo option for bus powered Foundation Fieldbus Applications.
- · Self Adjusting triggering system provides consistent Open and Closed indication. No resetting is required.
- Manual override enables valve operation without electrically energizing.
- Dual module system seals all position sensing, communication and control electronics in a compact vibration proof package.
- NPT port connections are stainless steel reinforced for long life sealing under high torque stress conditions.
- Water proof quick connectors, compression fittings or conduit connections are available for convenient, reliable attachment to plant electrical systems.



Part Number Key

Series	Function	Pneumatic Valve	Conduit / Connectors	Visual Indicator	Stroke	Mounting Kit
CM	Sensor Modules	11 no pneumatic valve	S02 (2) ½" NPT	R red closed/ green open	-L long	N none
	33 (2) SST N.O. switching sensors	1A 3-way Piezo (use with function option 93)	S05 (2) M20	G green closed/red open	-S short	L long
	44 (2) NAMUR sensors (I.S.; EN 60947-5-6)		S09(2) cable glands			S short
	Valve Communication Terminals (VCT)	1C 3-way 120 VAC 7.2 W (use with function option 33)	S11 (1) 5-pin mini connector			
	92 DeviceNet VCT	1D 3-way 24 VDC 0.5 W (use with function option 97)	S13(1) 4-pin micro connector			
-	93 Foundation Fieldbus VCT (bus powered: I.S.)	1E 3-way (I.S. 12 VDC (use with function opton 44)	S14(2) 4-pin micro connector			
	94 Foundation Fieldbus VCT (externally powered)		S15(1) 5-pin micro connector			
	95 Modbus VCT					
	96 AS-Interface VCT					
	97 AS-Interface VCT (with extended					



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Part Number Key

SST Switching Sensors (33)

Configuration (2) SST Switching Sensors (2) Wire Terminations (Solenoid)

Output Select either NO or NC Models

Maximum Current

Inrush 2.0 Amps
Continuous 0.3 Amps
Minimum On Current 2.0 mA
Maximum Leakage Current 0.5 mA

Voltage Range
 8 to 125VDC / 24 to 125VAC

Maximum Voltage Drop
 7.0 Volts @ 100 mA

Namur Sensors (44)

Configuration (2) NAMUR Sensors (2) Wire Terminations (Solenoid)

Output Conforms to EN 60947-5-6

Current Ratings
 Target On I<1.0 mA Target Off I>3.0 mA

Voltage Range
 5 to 25 VDC

AS-Interface VCT (96)

Configuration
 Maximum Current
 (2) Sensor Inputs (2) Auxiliary Inputs (2) Power Outputs (Solenoids)
 Modern Maximum Current (Current Limited to 200mA)

Outputs, Maximum Power
 4 Watts, Both Outputs Combined

Outputs, Voltage
 25 to 30 VDC

AS-Interface VCT (97) with Extended Addressing

Configuration
 (2) Sensor Inputs (2) Auxiliary Discrete Inputs (1) Power Output (Solenoid)

Maximum Current
Outputs, Maximum Power
Outputs, Voltage
2.4 Watts
25 to 30 VDC

DeviceNet VCT (92)

Configuration
 (2) Discrete Inputs (Open & Closed) (2) Power Outputs (Solenoids) (1) 4-20 mA Auxiliary

Input

Outputs, Maximum Power
 4 Watts, Both Outputs Combined

Outputs, Voltage 24 VDC

Bus Powered Foundation Fieldbus VCT (93)

Configuration
 (2) Discrete Inputs, DI (Open & Closed) (2) Discrete Outputs, DO (Piezo Valves)

Outputs 2mA @ 6.5 VDC each; Current Limited to 2mA (Bus Powered)

Temperature Range -40° to 80°C (40°F to 176°F)

Externally Powered Foundation Fieldbus VCT (94)

Configuration
 (2) Discrete Inputs, DI (Open & Closed) (2) Power Outputs, DO (Solenoids)

Outputs 4 Watts @ 24VDC Both Outputs Combined; Current Limited to 200mA (Externally Powered)

Temperature Range -40° to 80°C (40°F to 176°F)

Modbus VCT (95)

Configuration
 (2) Discrete Inputs (Open & Closed) (2) Power Outputs (Solenoids) (1) 4-20 mA Auxiliary

Input

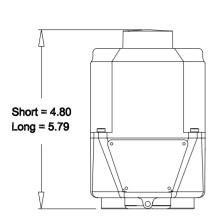
Outputs 4 Watts @ 24VDC Both Outputs Combined (Current Limited 200mA)

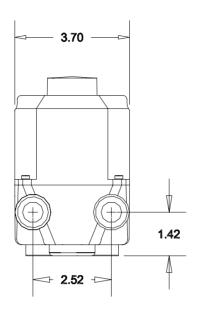
Temperature Range -40° to 80° C (40°F to 176°F)

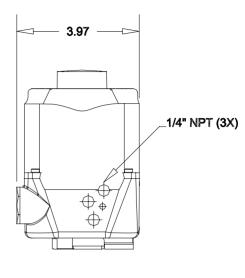
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A

Control Top Dimensions







Technical Specifications

Materials of Construction

- Housing and Cover: Polycarbonate
- · Fasteners: Stainless Steel
- · Triggering Cams: Stainless Steel Banded Polycarbonate
- · Shaft: Stainless Steel
- · Valve Manifold: Polysulfone with Stainless Steel Reinforced NPT

Temperature Range: -40° C to 80° C (-40° F to 176° F)

with solenoid: Maximum Ambient 50° C (120° F)

Operating Life: 1 Million Cycles

Nonincendive Ratings

• NEC/CEC: Classes I and II, All Groups, Div. 2

Intrinsically Safe Ratings

• NEC/CEC: Classes I and II, All Groups, Div. 1 & 2

Enclosure Protection

NEMA: 4/4X water proof / dust proof, class IP 67 Enclosure



Valve Troubleshooting

Dixon Sanitary SV-Series seat valves are engineered and manufactured to meet 3A sanitary standards. Occasional issues may arise during the valves lifecycle. The following chart was developed to determine a possible cause and offer a suggested action. Any additional questions or comments you have that are not covered by this chart can be directed to Dixon Sanitary.

Problem	Possible Cause	Suggested Action
Valve is not opening or closing completely	Plant supply air not at specified operating pressure	Set plant supply air properly as specified in the Dixon Sanitary Engineering Products Catalog
	An obstruction at the sealing surface	Inspect valve and remove any possible obstruction or blockage
	Abrassive product running through the valve	Contact Dixon Sanitary (800) 789-1718
Rapid seal wear	Large pressure surges as produced by water hammer	Correct system by eliminating any sudden starts or stops
	Operating temperatures above what is reccomended for the seat material	Contact Dixon Sanitary (800) 789-1718
Valve is leaking between the the valve bodies.	Valve body seal ring damaged or worn	Replace damaged or worn seal ring
(Double body only)	Valve body clamp is loose	Tighten clamp
	Valve stem is loose	Tighten stem
Internal product leakage	Actuator loose at adapter	Contact Dixon Sanitary (800) 789-1718
	Worn seat bolt O-ring	Replace O-ring
Valve is leaking at valve port	Loose connection at the port (Clamp ends only)	Tighten clamp
valve is leaking at valve port	Missing or worn union gasket (Clamp ends only)	Install missing union gasket or replace worn gasket
External product leakage	Worn tank body flange gasket (Tank bodies only)	Replace flange gasket
Material escaping past seating surface	Excessive product pressure	Lower the product pressure as not to exceed specified holding pressure listed in Dixon Sanitary Engineered Products Catalog
Material escaping past seating surface	Supply air pressure below specified air pressure	Increase plant supply air to correct pressure as specified in Dixon Sanitary Engineering Products Catalog
Control Top is not signaling an open or closed postion. (CT series only)	Switches may be out of alignment due to excessive vibration	Contact Dixon Sanitary for information on proper alignment (800) 789-1718
Valve is not actuating when control top is energized. (CT series only)	Wrong voltage to the control top	Confirm the input voltage correctly corresponds to the voltage of the control top
Any other issue		Contact Dixon Sanitary (800) 789-1718



A

Seat Valve Check List

Contact Name:	Company Name:
Date: Phone:	Email:
Customer ID#:	
	Process Background
Process Temp:	CIP Temperature:
Product:	71
Product Pressure:	
	Type/Size
Shut Off	Divert Tank
1" 1-1/2" 2"	2-1/2" 3" 4" Other:
	Body
	L/L T/L L/T T/T Tank
	Connections
Clamp	Combination
Weld	Other:
	Seat Material
EPDM	Buna
FKM	PTFE w/FKM
PTFE w/EPDM	Actuator
Manual	Pneumatic Spring Return Air Up
Pneumatic Double Acting	Pneumatic Spring Return Air Down
Tank Up Open	Tank Up Close
Mana	Controls
None Basic Control Top	Communication Module
Basio Control Top	Switch Type
None	Proximity For Basic Top
Mechanical For Basic Top	Namur For Communication Top
Solid State For Communication Top	
Solenoid	Communication/Conduit Connection Conduit
Communication	Conduit
	Options
	Οριίστο
Special Instru	uctions (Desired Flow Path see page 5-6)





Long Stroke Valves - Technical Information

53-06





Applications:

 Used in dairy, beverage and food plants where the product contains particles, has high viscosity or pressure differential is an issue.

Features:

- valve body from solid bar; no dead space; drainable when mounted in various positions
- high-grade inner surfaces; no dome or sump in product space
- change of seals without special tools; optimum cleanability
- · modular assembly; system low spare part costs

Technical Data

Material:

- product wetted: 1.4404/AISI316L
- optional: 1.4435/AISI316L
- non product contact: 1.4301/AISI304

Product contact seals:

O-rings: EPDM (FDA)

Temperatures:

- maximum standard operating temperature: 130°C (266°F)
- sterilization temperature: 150°C (300°F) short time* (approx. 20 min)

Standard operating pressure:

- standard pressure: max. 6 bar (87 PSI)
- actuator air pressure: min. 6 bar (87 PSI) max. 10 bar (145 PSI)

Surfaces:

- product wetted surfaces: R_a<= 0.8 µm(32) mechanically polished optional surfaces available
- non product contact: R_a<=1.6 μm

Standard connections:

 O.D.-Tube (DIN 11866 C) Weld Optional connections on request

*dependent upon operating conditions

See Section A for Control Options See Seat Valve Check List page 19 for all options.



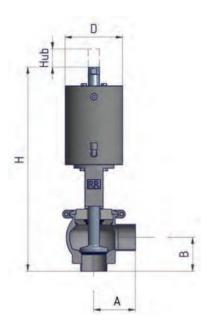
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Ordering Information

Valve Series (1-2)	Type (3)	Body Config. (4)	Ports (5)	Size (6-7)	Actuator (8)	Seat Material (9)	Control Top (10)	Switches (11)	Solenoid (12) *	Communication (13)	Conduit Connectors (14)	Options (15)
sv Seat Valve	J Stroke Shut Off	A T	C Clamp	10 1"	A Manual	E EPDM	N None	N None	N None	N None	N None	N None
	Long K Stroke Divert	B L	Buttweld B Other:	15 1.5"	B Spring Return (Air To Raise)	v FKM	c Communication Module	s Solid State	3 3-Way Piezo	A Device Net	(1) M12 1 Poly Cable Gland	
		E F	Combination (Add Note) Z Specify Ports	20 2"	Spring Return (Air To Lower)			R Namur	3-Way Poppe 4 Style 24V DC 1.8W	B Foundation B Fieldbus	2 (2) 1/2" NPT	
		F LL		25 2.5"	D Double Acting				3-Way Poppe 5 Style 120V AC 7.2W	Foundation Fieldbus (Externally Powered)	3 (2) M20	
		G TL		30 3"					3-Way Poppe 6 Style 24V DC 0.5W	t D Modbus	4 (2) Cable Glands	
		H LT		40 4"					3-Way 7 Intrinsically Safe 12V DC	E As-Interface	5 (1) 5 Pin Connector	
		ı TT								As-Interface F (W/ Extended Addressing)	6 (1) 4 Pin Connector	
		J 3 Port									7 (2) 4 Pin Connectors	
		K 4 Port										
		L Tank										
		M Tank										
		N Angle										

Long Stroke Angle Valve L-Type

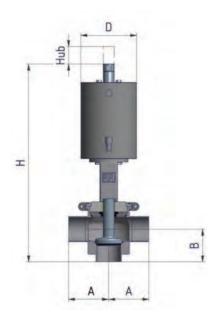
Pneumatic - Air to Open/Spring to Close NC



Size	Nominal Wall	А	В	D	Н	Stroke	lbs.
1"	1 x 0.065	1.97	1.97	3.54	11.97	0.71	11.9
1-1/2"	1.5 x 0.065	3.15	2.16	3.54	13.35	0.98	14.6
2"	2 x 0.065	3.15	2.56	4.37	16.85	1.38	23.8
2-1/2"	2.5 x 0.065	3.94	2.76	5.3	19.53	1.81	34.4
3"	3 x 0.065	4.72	3.15	6.77	23.03	2.28	55.3
4"	4 x 0.083	4.13	3.54	6.77	23.90	2.95	63.9

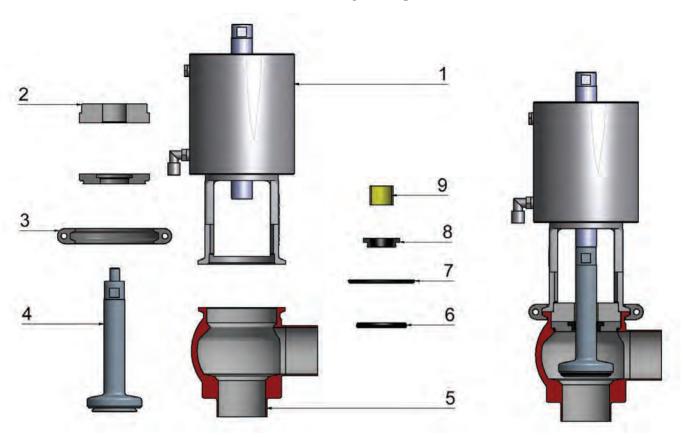
Long Stroke Double Angle Valve T-Type

Pneumatic - Air to Open/Spring to Close NC



Size	Nominal Wall	А	В	D	Н	Stroke (mm)	lbs.
1"	1 x 0.065	1.97	1.97	3.54	11.97	0.71	11.9
1-1/2"	1.5 x 0.065	3.15	2.16	3.54	13.35	0.98	14.6
2"	2 x 0.065	3.15	2.56	4.37	16.85	1.38	23.8
2-1/2"	2.5 x 0.065	3.94	2.76	5.32	19.53	1.81	34.4
3"	3 x 0.065	4.72	3.15	6.77	23.03	2.28	55.3
4"	4 x 0.083	4.130	3.54	6.77	23.90	2.95	63.9

Bill of Materials for L-Body Long Stroke - Valves

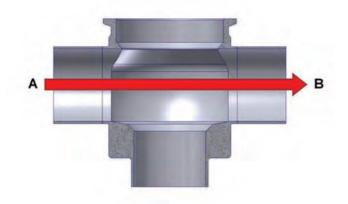


Repair Kit contains: #6 (1) EPDM O-ring #7 (1) EPDM O-ring #8 (1) EPDM gasket #9 (1) plastic bushing

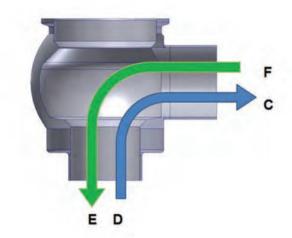
Valve	Repair Kit
Size	Part #
1"	SV-100-RKLS-E
1-1/2"	SV-150-RKLS-E
2"	SV-200-RKLS-E
2-1/2"	SV-250-RKLS-E
3"	SV-300-RKLS-E
4"	SV-400-RKLS-E

Item	Description	Quantity
1	actuator	1
2	mounting for spindle seals	1
3	clamp	1
4	spindle	1
5	housing	1
6	EPDM O-ring	1
7	EPDM O-ring	1
8	EPDM gasket	1
9	plastic bushing	1

C_v Values



Flow Direction							
Inch	A-B	C-D	E-F				
1"	12.2	11.9	11.6				
1-1/2"	30.2	29.7	28.8				
2"	56.2	55.3	53.6				
2-1/2"	90.3	88.8	86.1				
3"	132.4	130.2	126.2				
4"	236.2	232.4	225.2				



Calculation Formula for Q

$$Q = C_v \sqrt{\frac{\triangle P}{S.G.}}$$

 $Q = flow (m^3/h)$

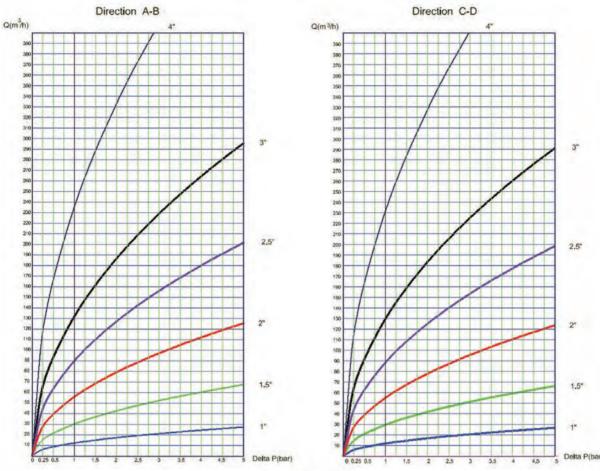
S.G.= Specific Gravity (1.0 for water)

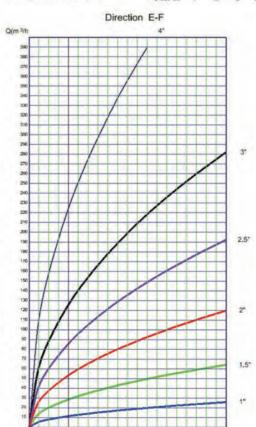


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Pressure Loss Diagrams for Hygienic L-Body Valves

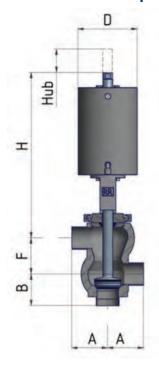






Long Stroke Change - Over Valve - 3/2-Ways

Pneumatic - Air to Open/Spring to Close NC - 3/2-Ways - One-Piece Valve Body

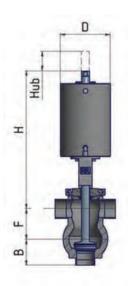


Size	Nominal Wall	А	В	F	D	Н	Stroke (Hub)
1"	1 x 0.065	2.36	1.97	1.97	2.54	11.10	1.22
1-1/2"	1.5 x 0.065	3.15	2.17	2.48	3.54	13.62	1.69
2"	2 x 0.065	3.94	2.56	75.5	4.37	16.97	2.20
2-1/2"	2.5 x 0.065	3.94	2.84	3.39	5.32	18.58	2.36
3"	3 x 0.065	4.92	3.15	3.98	6.77	19.92	2.99
4"	4 x 0.083	5.91	3.74	4.86	6.77	24.09	3.94

NC = if air fails, lower line is closed

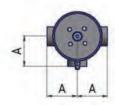
Long Stroke Change - Over Valve - 4/2-Ways

Pneumatic - Air to Open/Spring to Close NC - 4/2-Ways - One-Piece Valve Body



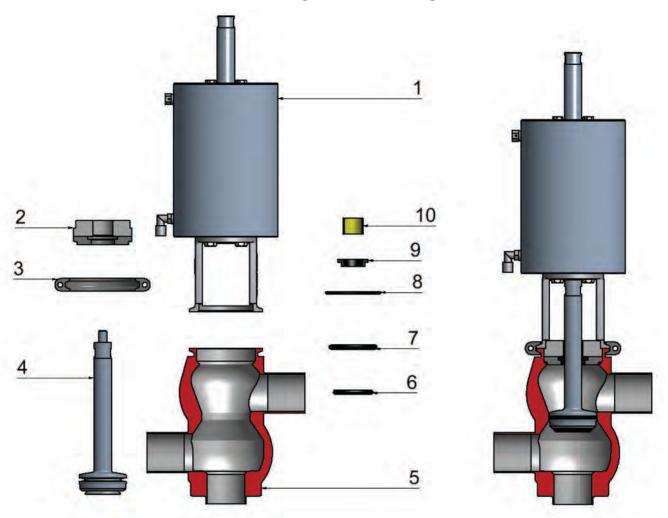
Size	Nominal Wall	А	В	F	D	Н	Stroke mm (Hub)
1"	1 x 0.065	2.36	1.97	1.97	3.54	11.10	1.22
1-1/2"	1.5 x 0.065	3.15	2.17	2.48	3.54	13.62	1.69
2"	2 x 0.065	3.94	2.56	75.5	4.37	16.97	2.20
2-1/2"	2.5 x 0.065	3.94	2.84	3.39	5.32	18.58	2.36
3"	3 x 0.065	4.92	3.15	3.98	6.77	19.92	2.99
4"	4 x 0.083	5.91	3.74	4.86	6.77	24.09	3.94

NC = if air fails, lower line is closed





Bill of Materials for Long Stroke Change - Over Valves

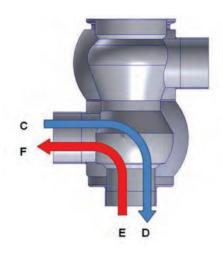


Repair Kit contains: #6 (1) O-ring #7 (1) O-ring #8 (1) O-ring #9 (1) gasket #10 (1) plastic bushing

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Ε
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Item	Description	Quantity
1	actuator	1
2	Mounting for spindle seals	1
3	clamp	1
4	spindle	1
5	housing	1
6	EPDM O-ring	1
7	EPDM O-ring	1
8	EPDM O-ring	1
9	EPDM gasket	1
10	plastic bushing	1

C_v Values for Change - Over Valves

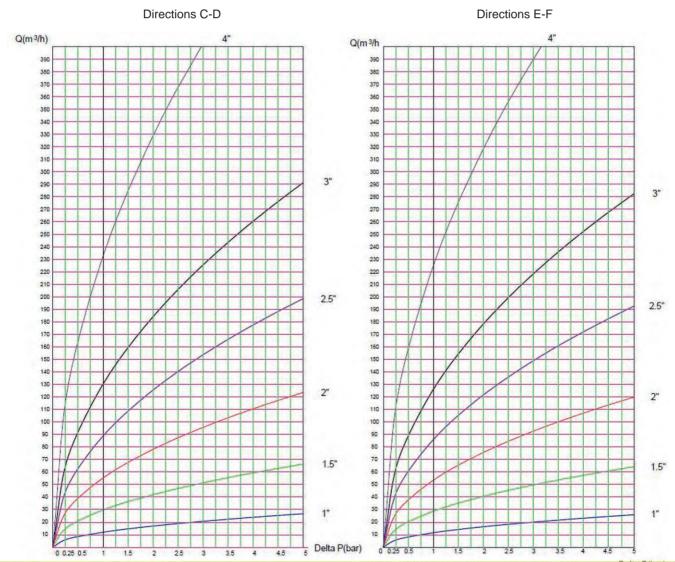


Flow Direction

Size	C-D	E-F
1"	11.9	11.6
1-1/2"	29.7	28.7
2"	55.3	53.6
2-1/2"	88.8	86.1
3"	130.2	126.2
4"	232.4	225.2

Flow Direction C-D = product pressure 6 bar maximum Flow Direction E-F = product pressure upon request

Pressure Loss Diagrams for Change - Over Valves





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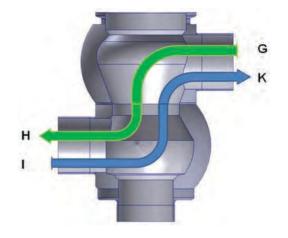
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C_v Values for Change - Over Valves

Flow Direction

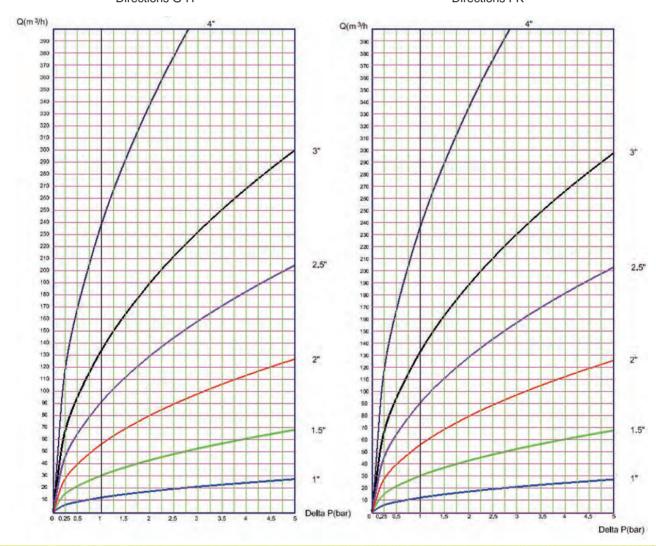
Size	G-H	I-K
1"	12.3	12.2
1-1/2"	30.5	30.3
2"	56.9	56.4
2-1/2"	91.4	90.7
3"	134.0	133.0
4"	239.0	237.2

Flow Direction I-K = product pressure 6 bar maximum Flow Direction G-H = product pressure upon request



Pressure Loss Diagrams for Change - Over Valves







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Aseptic Type Valves - Technical Information

Applications:

 For sterile process engineering the valve body is hermetically sealed against the environment and provides security for your products.

Features:

- solid housing
- · no dead spaces
- · completely draining
- many built-in positions possible
- · complete separation from environment
- no dome or sump in product space
- change of seals without special tools less standing times optimum cleanability
- · long life PTFE bellows
- low spare parts costs



Technical Data

Material:

product wetted: 1.4404/AISI316L

optional: 1.4435/AISI316L

non product contact: 1.4301/AISI304

Seals:

· bellows: PTFE

Temperatures:

- maximum standard operating temperature: 121 °C (250 °F)
- sterilization temperature: 135 °C (275 °F) short time* (approx. 20 min)

Operating pressure:

- closure pressure: max. 6 bar (87 PSI)
- actuator air pressure: min. 6 bar (87 PSI) max. 10 bar (145 PSI)

Surfaces:

- In product contact: R_a<= 0.8 μm electro polished, other surfaces upon request
- not in contact with product: R₂<=1.6 μm

Connections:

O.D.-Tube (DIN 11866 C)

*dependent upon operating conditions

See Section A for Control Options See Seat Valve Check List page 19 for all options.





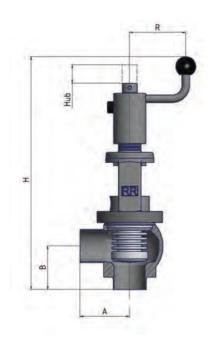
Ordering Information

Valve Series (1-2)	Type (3)	Body Config. (4)	Ports (5)	Size (6-7)	Actuator (8)	Seat Material (9)	Control Top (10)	Switches (11)	Solenoid (12) *	Communication (13)	Conduit Connectors (14)	Options (15)
sv Seat Valve	Aseptic A Shut Off	А Т	C Clamp	1/2" see section G/ Bio check	A Manual	E PTFE/	N None	N None	N None	N None	N None	N None
	E Aseptic Divert	B L	B Weld	10 1"	B Spring Return (Air To Raise)	v PTFE/ FKM	C Communication Module	S Solid State	3 3-Way Piezo	A Device Net	(1) M12 1 Poly Cable Gland	
	Aseptic I Tank Bottom	E F	Combination Note: Specify Ports	15 1.5"	C Spring Return (Air To Lower)		B Burkert Top	R Namur	3-Way Popper 4 Style 24V DC 1.8W	B Foundation Fieldbus	2 (2) 1/2" NPT	
	o Aseptic Angle	F LL	Other:	. 20 2"	D Double Acting				3-Way Poppel 5 Style 120V AC 7.2W	Foundation Fieldbus (Externally Powered)	3 (2) M20	
		G TL		25 2.5"					3-Way Poppel 6 Style 24V DC 0.5W	D Modbus	4 (2) Cable Glands	
		H LT		30 3"					3-Way 7 Intrinsically Safe 12V DC	E As-Interface	(1) 5 Pin Connector	
		I TT		40 4"						As-Interface (W/ Extended Addressing)	6 (1) 4 Pin Connector	
		J 3 Port		Combination C Divert, specify sizes							7 (2) 4 Pin Connectors	
		K 4 Port										
		L Tank										
		M Tank										
		N Angle										



Aseptic L - Body Valve

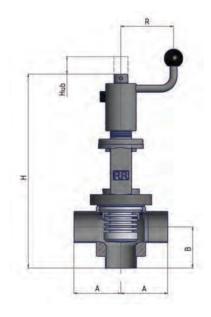
Manual with Crank Handle



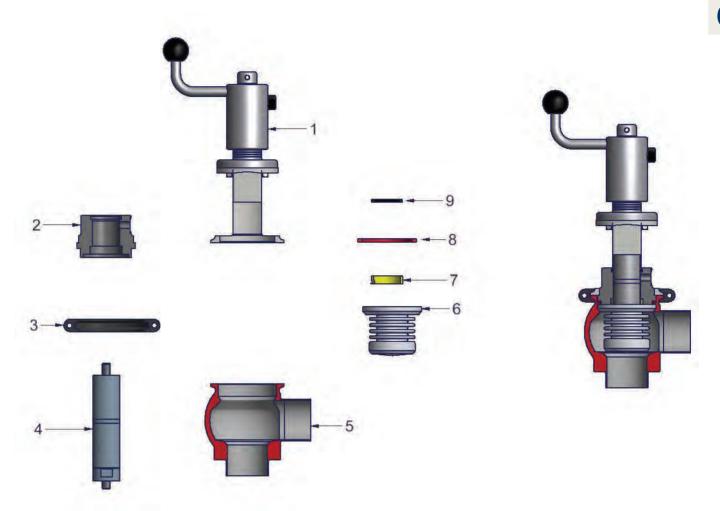
Size	Nominal Wall	А	В	R	Н	Stroke	lbs.
1"	1 x 0.065	1.97	1.97	2.87	11.81	0.28	6.8
1-1/2"	1.5 x 0.065	3.15	2.17	2.87	11.81	0.35	11.7
2"	2 x 0.065	3.15	2.56	3.54	14.96	0.47	12.6
2-1/2"	2.5 x 0.065	3.94	2.76	3.54	15.55	0.59	16.8
3"	3 x 0.065	4.72	3.15	3.54	17.13	0.71	22.7
4"	4 x 0.083	5.91	3.54	3.54	17.52	0.91	31.5

Aseptic T - Body Valve

Manual with Crank Handle



Size	Nominal Wall	А	В	R	L	Stroke	lbs.
1"	1 x 0.065	1.97	1.97	2.87	11.81	0.28	6.8
1-1/2"	1.5 x 0.065	3.15	2.17	2.87	11.81	0.35	11.7
2"	2 x 0.065	3.15	2.56	3.54	14.96	0.47	12.6
2-1/2"	2.5 x 0.065	3.94	2.76	3.54	15.55	0.59	16.8
3"	3 x 0.065	4.72	3.15	3.54	17.13	0.71	22.7
4"	4 x 0.083	5.91	3.54	3.54	17.52	0.91	31.5



Repair Kit contains:

#6 (1) PTFE-bellows

(1) guide

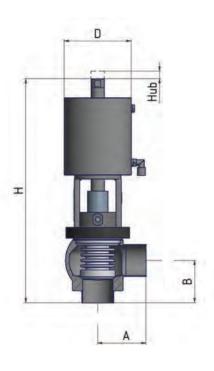
#8 (1) O-ring for bellows #9 (1) O-ring for spindle

Repair Kit
Part #
SVAL-100-RK
SVAL-150-RK
SVAL-200-RK
SVAL-250-RK
SVAL-300-RK
SVAL-400-RK

Item	Description	Quantity
1	crank handle	1
2	Mounting for spindle seals	1
3	clamp	1
4	spindle	1
5	housing	1
6	PTFE-bellows	1
7	guide	1
8	O-ring for bellows	1
9	O-ring for spindle	1

Aseptic L - Body Valve

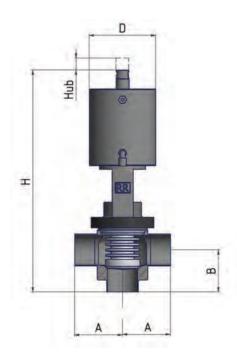
Pneumatic - Spring Closing / Air Opening NC



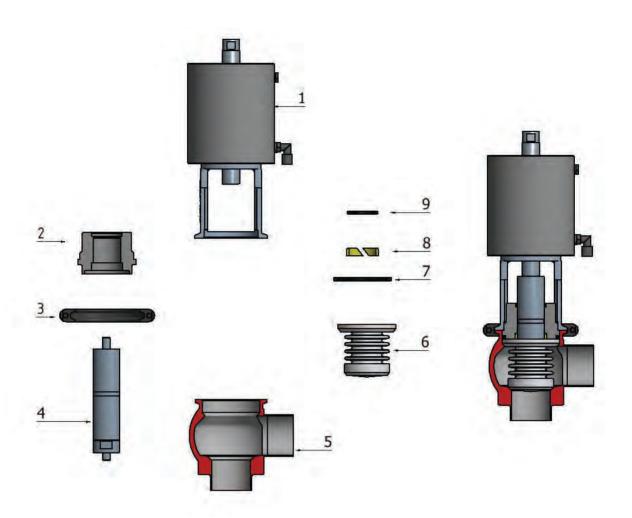
Size	Nominal Wall	А	В	D	Н	Stroke	lbs.
1"	1 x 0.065	1.97	1.97	3.54	12.01	0.28	11.2
1-1/2"	1.5 x 0.065	3.15	2.17	3.54	12.40	0.35	13.7
2"	2 x 0.065	3.15	2.56	4.33	14.96	0.47	22.9
2-1/2"	2.5 x 0.065	3.94	2.76	5.24	16.93	0.59	33.5
3"	3 x 0.065	4.72	3.15	6.77	19.88	0.71	54.5
4"	4 x 0.083	5.91	3.54	6.77	20.67	0.91	63.1

Aseptic T - Body Valve

Pneumatic - Spring Closing / Air Opening NC



Siz	e Nominal Wall	А	В	D	Н	Stroke	lbs.
1"	1 x 0.065	1.97	1.97	3.54	12.01	0.28	11.2
1-1/	2" 1.5 x 0.065	3.15	2.17	3.54	12.40	0.35	13.7
2"	2 x 0.065	3.15	2.56	4.33	14.96	0.47	22.9
2-1/	2" 2.5 x 0.065	3.94	2.76	5.24	16.93	0.59	33.5
3"	3 x 0.065	4.72	3.15	6.77	19.88	0.71	54.5
4"	4 x 0.083	5.91	3.54	6.77	20.67	0.91	63.1



Repair Kit contains:

#6 (1) PTFE-bellows

#7 (1) O-ring for bellows

#8 (1) guide

#9 (1) O-ring for spindle

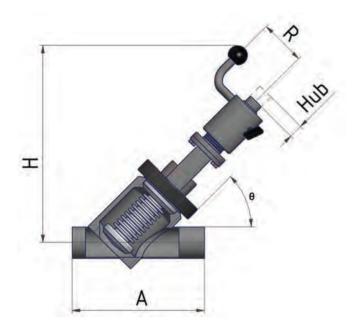
Repair Kit
Part #
SVAL-100-RK
SVAL-150-RK
SVAL-200-RK
SVAL-250-RK
SVAL-300-RK
SVAL-400-RK

Item	Description	Quantity
1	actuator	1
2	mounting for spindle seals	1
3	clamp	1
4	spindle	1
5	housing	1
6	PTFE-bellows	1
7	O-ring for bellows	1
8	guide	1
9	O-ring for bellows	1

Aseptic Y - Body Angle Valve

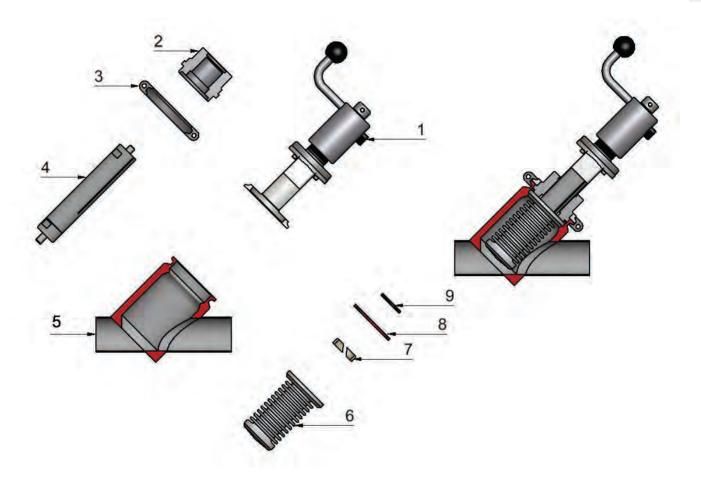
C

Manual with Crank Handle



Size	Nominal Wall	А	θ	R	Н	Stroke	lbs.
1"	1 x 0.065	5.51	45°	2.87	10.83	0.55	11.0
1-1/2"	1.5 x 0.065	6.69	45°	2.87	11.02	0.55	12.1
2"	2 x 0.065	8.07	45°	3.54	13.98	0.79	23.2
2-1/2"	2.5 x 0.065	9.84	40°	3.54	13.78	0.87	30.9
3"	3 x 0.065	11.81	40°	3.54	14.37	1.18	50.7
4"	4 x 0.083	13.78	40°	3.54	15.35	1.26	57.3

Bill of Materials for Aseptic Y- Body Valves



Repair Kit contains: #6 (1) PTFE-bellows

(1) guide

(1) O-ring for bellows

#9 (1) O-ring for spindle

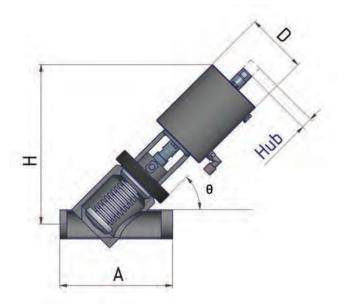
Valve	Repair Kit
Size	Part #
1"	SVAY-100-RK
1-1/2"	SVAY-150-RK
2"	SVAY-200-RK
2-1/2"	SVAY-250-RK
3"	SVAY-300-RK
4"	SVAY-400-RK

Item	Description	Quantity
1	crank handle	1
2	mounting for spindle seals	1
3	clamp	1
4	spindle	1
5	housing	1
6	PTFE-bellows	1
7	guide	1
8	O-ring for bellows	1
9	O-ring for spindle	1

Aseptic Y- Body Angle Valve

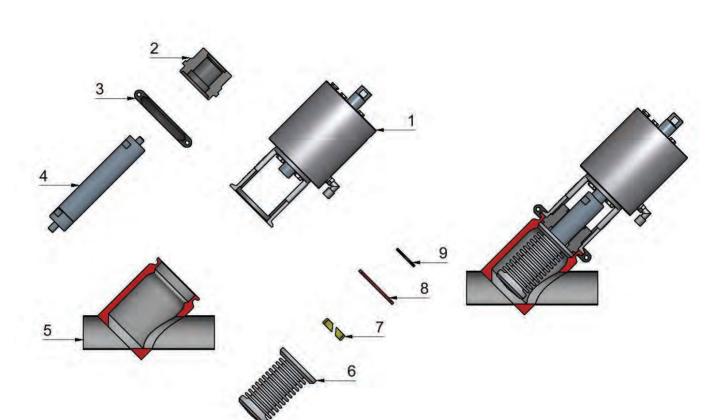
C

Pneumatic - Spring Opening / Air Closing NC



Size	Nominal Wall	А	θ	D	Н	Stroke	lbs.
1"	1 x 0.065	5.51	45°	3.54	9.25	0.55	11.9
1-1/2"	1.5 x 0.065	6.69	45°	3.54	9.45	0.55	13.7
2"	2 x 0.065	8.07	45°	4.33	11.57	0.79	24.3
2-1/2"	2.5 x 0.065	9.84	40°	5.24	12.80	0.87	33.1
3"	3 x 0.065	11.81	40°	6.30	15.12	1.18	54.0
4"	4 x 0.083	13.78	40°	6.61	15.43	1.26	61.7

Bill of Materials for Aseptic Y- Body Valves



Repair Kit contains: #6 (1) PTFE-bellows

(1) guide

#8 (1) O-ring for bellows

#9 (1) O-ring for spindle

Valve	Repair Kit
Size	Part #
1"	SVAY-100-RK
1-1/2"	SVAY-150-RK
2"	SVAY-200-RK
2-1/2"	SVAY-250-RK
3"	SVAY-300-RK
4"	SVAY-400-RK

1 actuator 1 2 Mounting for spindle seals 1 3 clamp 1 4 spindle 1 5 housing 1 6 PTFE-bellows 1 7 quide 1	
3 clamp 1 4 spindle 1 5 housing 1 6 PTFE-bellows 1	
4 spindle 1 5 housing 1 6 PTFE-bellows 1	
5 housing 1 6 PTFE-bellows 1	
6 PTFE-bellows 1	
7 guido 1	
7 guide 1	
8 O-ring for bellows 1	
9 O-ring for spindle 1	



Mix Proof Valves - Technical Information

Applications:

 In food and beverage industries when the need to separate non-compatible liquids is required.

Features:

- · vacuum safe
- · balanced valve disks
- radial sealing of both valve seats
- no impact between valve disk and body
- no need of impact buffering cylinder
- · no soiling behind the O-rings
- waterhammer safe up to 30 bar (435 PSI)
- change of seals without special tools
- service without danger (spring in cage)
- service possible without compressed air
- lower requirement for controlled air pressure
- valve insert completely removable
- · easy cleaning by lifting of both disks
- standard O-rings
- · standard-actuator with lift function
- only 4 seals
- K₁-value cleaning 1,4 m³/h
- low pressure loss: 0,8 PSI

Technical Data

Material:

- product wetted: 1.4404/AISI316L
- non product contact: 1.4301/AISI304L

Product Contact Seals:

· EPDM - others upon request

Temperatures:

- maximum standard operating temperature: 130 °C (266 °F)
- sterilization temperature: 150 °C (300 °F) short time* (approx. 20 min)

Operating pressure:

- closure: max. 10 bar (145 PSI)
- actuator air pressure: min. 6 bar (87 PSI) max. 10 bar (145 PSI)

Surfaces:

- wetted product surfaces: R_a<= 0.8 μm (32) other surfaces available
- non product contact: R₃<=1.6 μm

*dependent upon operating conditions



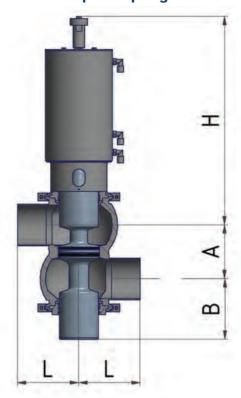




Mix Proof Valve



Pneumatic - Air to Open / Spring to Close NC



Valve Body Combinations

1(A-E)	2(A-B-C)	3(A-C-D)	4(A-B-C-D)	5(A-C)
A E	АВ	A	A B	A
ADDE	A B	A C	A D B	A C

Size	Nominal Wall	Α	В	L	Н	kg	lbs.		
1"	1 x 0.065	3.11	2.87	2.76	13.78	12	26.5		
1-1/2"	1.5 x 0.065	3.13	3.11	3.94	14.76	16	35.3		
2"	2 x 0.065	3.21	3.78	3.94	15.75	18	39.7		
2-1/2"	2.5 x 0.065	3.94	3.94	3.94	16.14	19	41.9		
3"	3 x 0.065	6.65	5.12	4.92	16.54	29	63.9		
4"	4 x 0.083	5.08	5.43	5.91	16.73	33	72.8		
6"	6" Linon request								

Upon request

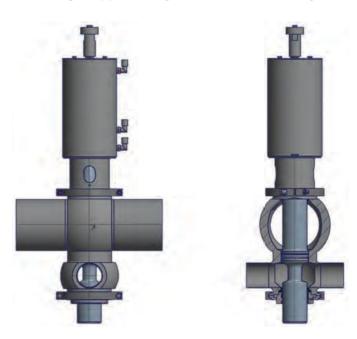


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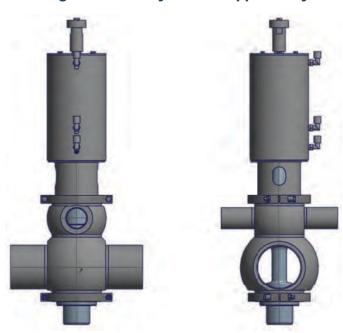
Mix Proof Valve

Pneumatic - Air to Open / Spring to Close NC Large Upper Body - Small Lower Body



Mix Proof Valve

Pneumatic - Air to Open / Spring to Close NC Large Lower Body - Small Upper Body





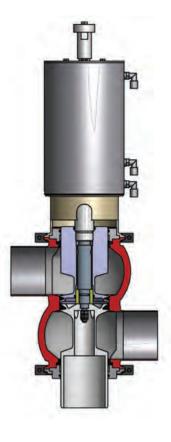


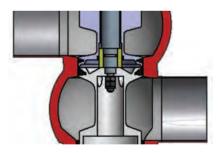
Mix Proof Valve

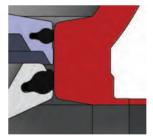










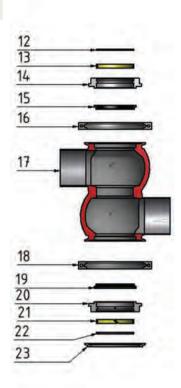


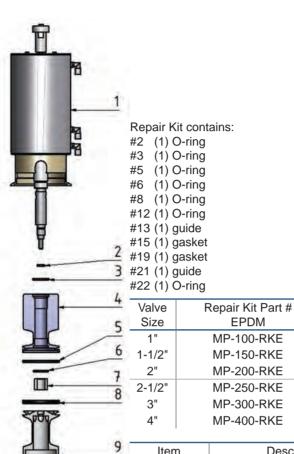
When the valve is closed, the leakage chamber is open. This ensures that, if one of the two O-rings is defective, the leakage is discharged through the downward opening of the lower valve disc in a depressurized manner. The leakage is thus immediately apparent during the ongoing visual inspection of the plant.

D

Bill of Materials for Mix Proof Valves







9	Item	Description	Quantity
	1	actuator	1
10	2	O-ring	1
11	3	O-ring	1
	4	valve disc upper part	1
	5	O-ring	1
	6	O-ring	1
	7	guide	1
	8	O-ring	1
	9	valve disc lower part	1
	10	safety nut	1
	11	cap nut	1
	12	o-ring	1
	13	guide	1
	14	mounting for spindle seals	1
	15	gasket	1
	16	clamp	1
	17	housing	1
	18	clamp	1
	19	gasket	1
	20	mounting for spindle seals	1
	21	guide	1
	22	O-ring	1
	23	cover	1

Repair Kit Part #

Viton®

MP-100-RKV

MP-150-RKV

MP-200-RKV

MP-250-RKV

MP-300-RKV

MP-400-RKV



Mix Proof Piggable Double Seal Valves - Technical Information

Applications:

 Mix Proof Valve designed to be piggable. Used In food and beveage industries when the need to separate noncompatible liquids is required.

Features:

- · one-part valve body made of solid bar
- · no weld torsion
- in product space only 3 seals
- · safe CIP/SIP cleaning
- · exchange of gaskets without special tools
- service without danger (spring in cage)
- service possible without compressed air
- · low need of control air pressure
- · valve insert completely removable upwards
- standard O-rings
- standard actuator with 2 lift functions
- · few gaskets
- · minimal maintenance costs



Technical Data

Material:

- in product contact: 1.4404/AISI316L
- optional: 1.4435/AISI316L
- non product contact: 1.4301/AISI304

Product Contact Seals:

• EPDM and PEEK - other materials upon request

Temperatures:

- maximum standard operating temperature: 130 °C (265 °F)
- sterilization temperature: 150 °C (300 °F) short time* (approx. 20 min)

Operating pressure:

- · closing pressure: max. 9 bar
- · compressed air pressure: min. 6 bar max. 10 bar
- water-hammer safe: up to 30 bar

Surfaces:

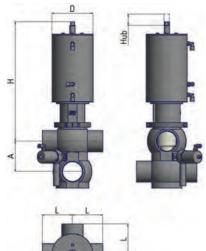
- product contact optional: R_a<= 0.8 μm electro polished, other surfaces on request
- non product contact: R₃<=1.6 μm

*dependent upon operating conditions

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Hygienic Double Seal Valve Liftable - Piggable

Pneumatic - Air to Open / Spring to Close



Size	Nominal Wall	Α	L	Н	D	Stroke	Max. Bar
1"	25.4 x 1.65						
1-1/2"	38.1 x 1.65	69	100	352	110	42.0	13.0
2"	50.8 x 1.65	85	100	357	110	42.0	8.5
2-1/2"	63.5 x 1.65	93	100	394	136	44.5	9.0
3"	76.2 x 1.65	107	125	436	174	46.0	10.0
4"	101.6 x 2.11	132	150	450	174	46.0	7.0

Mix Proof Piggable Double Seal Valves - Technical Information



Features:

- maximal product efficiency
- lower waste water costs and environmental burden
- reduced cleaning periods and costs
- minimization of cleaning water consumption
- · minimization of cleaning agent consumption

Switching Between Main and CIP Valve





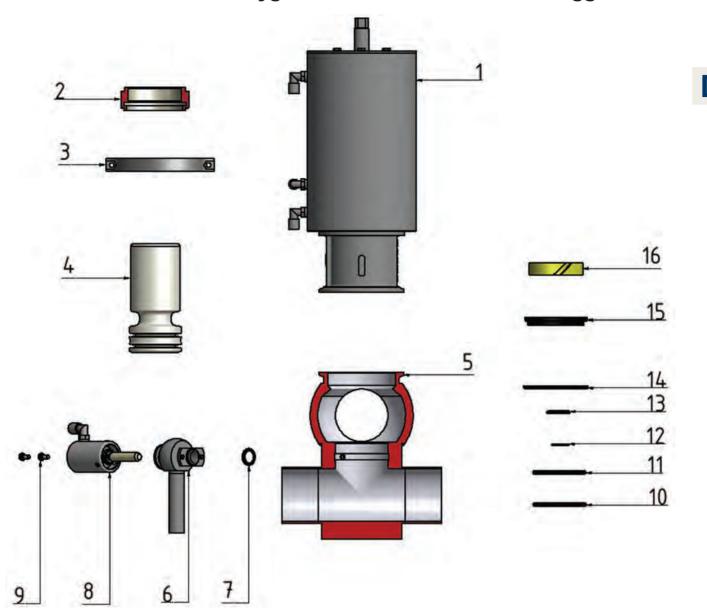








Bill of Materials for Hygienic Double Seal Valves - Piggable



Repair Kit contains:
#10 (1) O-ring
#11 (1) O-ring
#12 (1) nord lock screw
#13 (1) O-ring
#14 (1) O-ring
#15 (1) gasket
#16 (1) plastic bushing

Valve	Repair Kit
Size	Part #
1"	MPP-100-RKE
1-1/2"	MPP-150-RKE
2"	MPP-200-RKE
2-1/2"	MPP-250-RKE
3"	MPP-300-RKE
4"	MPP-400-RKE

Item	Description				
1	actuator				
2	mounting for spindle seals	1			
3	clamp	1			
4	spindle	1			
5	housing	1			
6	housing CIP valve	1			
7	O-ring housing CIP valve	1			
8	actuator CIP valve	1			
9	hexagonal screw	2			
10	O-ring	1			
11	O-ring	1			
12	nord lock screw	1			
13	O-ring	1			
14	O-ring	1			
15	gasket	1			
16	plastic bushing	1			



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PMO Valves - Technical Information

Applications:

 For processes that require a Mix Proof Valve to meet the Pasteurized Milk Ordinance specifications in dairies.

Features:

- vacuum safe
- · balanced valve disks
- radial sealing of both valve seats
- no impact between valve disk and body
- no need of impact buffering cylinder
- no soiling behind the O-rings
- waterhammer safe up to 30 bar (435 PSI)
- · change of seals without special tools
- service without danger (spring in cage)
- service possible without compressed air
- · lower requirement for controlled air pressure
- · valve insert completely removable
- easy cleaning by lifting of both disks
- standard O-rings
- · standard-actuator with lift function
- only 4 seals
- K₁-value cleaning 1,4 m³/h
- low pressure loss: 0,8 PSI

Technical Data

Material:

in product contact: 1.4404/AISI316L

• non product contact: 1.4301/AISI304L

Product Contact Seals:

EPDM – others upon request

Temperatures:

- maximum standard operating temperature: 130 °C (266 °F)
- sterilization temperature: 150 °C (300 °F) short time* (approx. 20 min)

Operating pressure:

- closing: max. 10 bar (145 PSI)
- actuator air pressure: min. 6 bar (87 PSI) max. 10 bar (145 PSI)

Surfaces:

- wetted product surfaces: R_a<= 0.8 μm (32) optional surfaces available
- non product contact: R_a<=1.6 μm

*dependent upon operating conditions



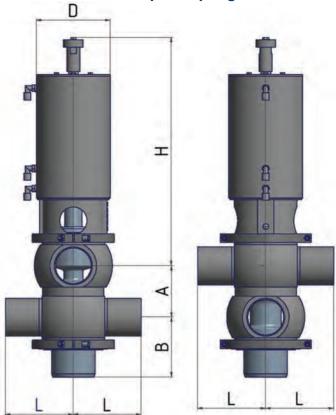




PMO Valve Housing

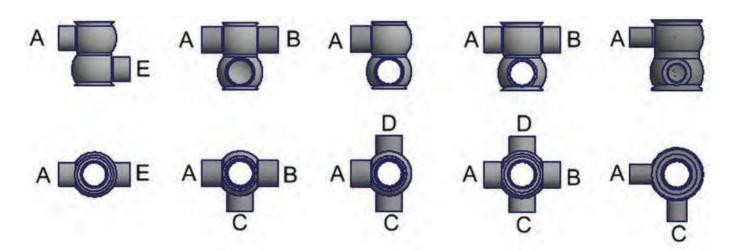


Pneumatic - Air to Open / Spring to Close NC



Valve Body Combinations

1(A-E)	2(A-B-C)	3(A-C-D)	4(A-B-C-D)	5(A-C)	
--------	----------	----------	------------	--------	--



Size	Nominal Wall	Α	В	L	Н	Stroke	kg	lbs
1-1/2"	1.5 x 0.065	3.11	3.35	3.94	15.04	1.30	16	35.3
2"	2 x 0.065	3.11	3.62	4.92	15.28	1.30	18	39.7
2-1/2"	2.5 x 0.065	3.94	4.37	4.92	16.42	1.57	19	41.9
3"	3 x 0.065	4.65	4.41	5.91	16.73	1.73	29	63.9
4"	4 x 0.083	5.08	5.59	6.89	20.67	2.13	33	72.8

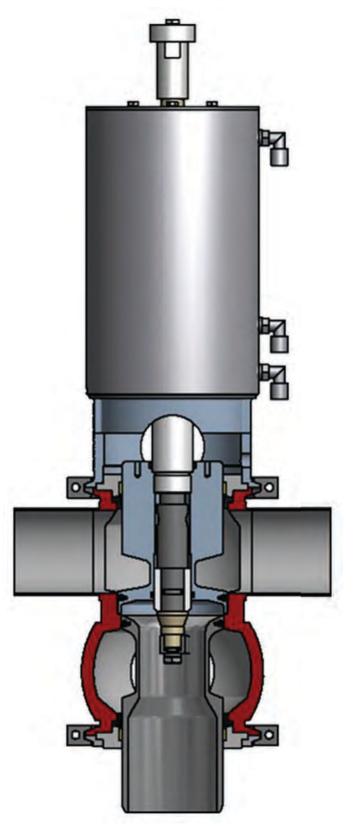


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PMO Valves



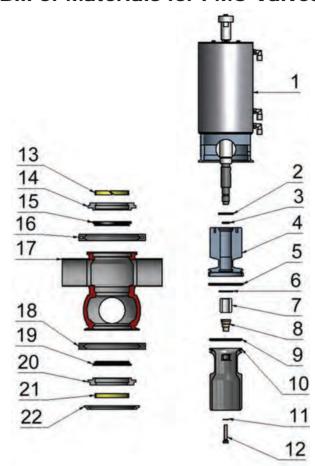
When the valve is closed, the leakage chamber is open.
This ensures that, if one of the two O-rings is defective, the leakage is discharged through the downward opening of the lower valve disc in a depressurized manner. The leakage is thus immediately apparent during the ongoing visual inspection of the plant.



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F

Bill of Materials for PMO Valves



Repair Kit contains:

#2 (1) O-ring

#3 (1) O-ring

#5 (1) O-ring

#6 (1) O-ring

#9 (1) O-ring

#13 (1) guide

#15 (1) gasket

#19 (1) gasket

#21 (1) guide

Valve	Repair Kit Part #
Size	EPDM
1"	PMO-100-RKE
1-1/2"	PMO-150-RKE
2"	PMO-200-RKE
2-1/2"	PMO-250-RKE
3"	PMO-300-RKE
4"	PMO-400-RKE
Valve	Repair Kit Part #
Size	Viton®
1"	PMO-100-RKV
1-1/2"	PMO-150-RKV
2"	PMO-200-RKV
2-1/2"	PMO-250-RKV
3"	PMO-300-RKV

Item	Description	Quantity		
1	actuator			
2	O-ring	1		
3	O-ring	1		
4	valve disc upper part	1		
5	O-ring	1		
6	O-ring	1		
7	guide	1		
8	adaption	1		
9	O-ring	1		
10	valve disc lower part	1		
11	nord lock disc	1		
12	hexagonal screw	1		
13	guide	1		
14	mounting for spindle seals	1		
15	gasket	1		
16	clamp	1		
17	housing	1		
18	clamp	1		
19	gasket	1		
20	mounting for spindle seals	1		
21	guide	1		
22	cover	1		

High Purity BioPharm Aseptic Diaphragm Valve

Our product offering of standard 2-way valves, innovative custom fabrications and modular block body designs solve the more demanding process problems.

Bio Series 1/4" - 1/2"	Fractional	Sterile Access and L Pattern Fabrications	Standard 1" - 4"	Zero Static Tees and U Bends	Multi-Port Divert Valves	Multi-Cluster Valve Assemblies
				9		
			900			
res: ck turn around models						

Feature

- quick
- application engineering service

Applications: pharmaceutical, bio-processing, cosmetics, food and beverage, fine chemicals and semi-conductor industries where aseptic and hygienic conditions are required.

Processes: highly sterile media, ultra-pure water, WFI (Water for Injection), ultra-pure chemicals, intermediate and end products in the pharmaceutical and bio-processing industries.

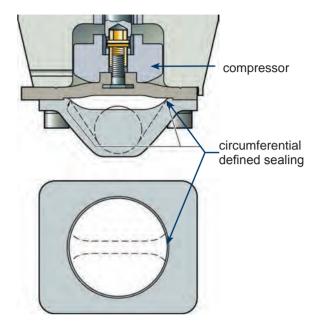
Features: sterility, reduced contact surface and hold up volume, optimized drainability, elimination of cross contamination and customer-specific process designs



Innovative Design

Optimized internal cleaning because of Circumferential Defined Sealing Angle (CDSA-Design) between the process diaphragm and valve body.

- Product entrapment reduced or eliminated on the body bonnet flange.
- Better sealing performance and evenly distributed closing force.
- · Diaphragm lifetime is extended.



Bodies

- 316L manufactured to ASME BPE Table DT-3
- · full material traceability standard
- · standard 316L bodies are forged or machined
- · cast bodies are available when acceptable
- · manual and actuated
- · three different styles
 - manual hand wheel
 - piston actuator
 - diaphragm actuator
- available in:
 - stainless steel
 - thermoplastic
 - combination of both



Diaphragms

- EPDM
- Modified PTFE (TFM)/EPDM
- All diaphragms are FDA Compliant and conform to USP Class VI.





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Innovative Design

L Pattern



Sterile Access



Utilized in a vertical piping system to eliminate dead legs in point of use applications of high purity water systems or any other distribution systems.

See page 77 for more detailed information.

Utilized in a horizontal piping system where the main valve is oriented at the self-draining angle and the access port is at the lower drainable point of the water way.

Multiport Advantages



- · customer's specific design
- combination of many different nominal diameters
- optimized drainability
- minimized dead leg
- reduces surface contact, hold up volume and cross contamination of the product
- · reduction of fittings, tubing and field welds in the system
- reduces qualification and validation documentation requirement
- all end connections and materials are available according to the customer's specification

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Specialty Valves and Process Solutions

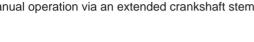
Tank Valves

- · tank body valves machined from solid bar stock material
- · other alloy options available as specified
- · minimized dead leg and internal sump
- · suitable for mounting with piston and diaphragm actuators
- optional manual operation via an extended crankshaft stem









See pages 79-81 for more detailed information.

Sterile Sampling Unit

- · suitable to take sterile samples from all liquids in aseptic
- · sample can be taken with pneumatically controlled diaphragm valves or typically as a system with manual valves and a handle
- · bring the complete unit in the laboratory for analyzing the sample in sterile conditions



Purified Steam Sampling Unit

- · high condensation performance
- · time saving sampling
- · compact design
- · tube end or clamp end connection
- integrated sampling and control valve for cooling circuit
- easy installation due to standardized compact unit
- · unit for mobile use





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Diaphragms

MA8



EPDM

PTFE/EPDM one-piece

Molded Open

MA10



EPDM



PTFE/EPDM one-piece

Molded Open

MA25-80



EPDM Molded Open



PTFE/EPDM two-piece Molded Closed

MA100



EPDM Molded Open



EPDM Molded Closed

EPDM

Ethylene-propylene elastomer peroxide cured. EPDM is a specifically developed compound reinforced with a vulcanized woven fabric inlay and is always manufactured in the molded open position. This diaphragm construction achieves higher stability for the diaphragm at elevated temperatures and pressures. In addition, the woven fabric inlay is vulcanized over the embedded compressor stud in order to strengthen the elastomer-metal connection. Thus, the EPDM diaphragm is ideal for vacuum applications.

PTFE (TFM)

These PTFE diaphragms have been designed and offer the highest degree of chemical resistance, increased stability, longer flex life, less porosity, reduced cold flow and superior performance through temperature fluctuations between hot and cold and steam sterilization cycles.

MA8 and MA10

The diaphragm dimensions MA8 and MA10 are designed as one-piece diaphragms: This means that the EPDM back is bonded with the PTFE.

The diaphragm is always manufactured in the molded open position. These one-piece diaphragms have less surface area and are subject to shorter linear strokes which explain the excellent performance that has proved itself over time.

MA8 diaphragm incorporates an elastomer button for assembly with the valve operating mechanism. The MA10 utilizes a threaded stud assembly with the valve operating mechanism. Both these features eliminate the potential for point loading at the center of the diaphragm.

MA25 to MA100

The diaphragm dimensions MA25 to MA100 are designed as two-piece diaphragms consisting of a separate EPDM backing cushion and PTFE diaphragm. The diaphragm is always manufactured in the molded closed position. The advantage of this design for the MA25 to MA100 is that the diaphragm is in its molded shape while in the closed position of the valve. This reduces the force to close the valve and increases the life of the diaphragm.

In the two-piece diaphragms the threaded stud connection is embedded in the PTFE of the diaphragm. To eliminate the potential of point loading at the center of the diaphragm, a floating suspension connection to the valve operating mechanism is utilized.

Code		18	30 51		44		
MA		8-100	8, 25, 40, 50 10				25-100
Material		EPDM	PTFE/	EPDM	PTFE/EPDM		
Design	sign One-piece One-piece Molded open Molded oper		piece d open	Two-piece Molded closed			
Temperature Range	(°C)	-40 to 150 *	-20 to 150		-20 to 160		
Tempe Ra r	(°F)	-40 to 300 *	-20 to	o 300	-20 to 320		

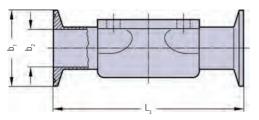
^{*} The listed temperatures may apply to clean steam sterilization protocols and may not apply to continuous steam service. Upon request, other diaphragms are available with other materials, bigger



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Clamp Dimensions and C, Factors

Clamps



Valve Size	AS	ASME BPE SME BPE DT-	V-1		
Size	L ₃	b_2	b_1		
1/4"	2.5	0.18	0.992	D:-	
3/8"	2.5	0.31	0.992	Bio Series	
1/2"	2.5	0.37	0.992	Selles	
3/8"				Ctondond	
1/2"	3.5	0.37	0.992	Standard Fractional	
3/4"	4.0	0.62	0.992	Tactional	
1/2"	4.0	0.37	0.992		
3/4"	4.0	0.62	0.992		
1"	4.5	0.87	1.984		
1-1/4"					
1-1/2"	5.5	1.37	1.984	Standard	
2"	6.25	1.87	2.516		
2-1/2"	8.75 *	2.37	3.047		
3"	8.75	2.87	3.579		
4"	11.5	3.83	4.682		

length differing from standard; other lengths available on request

The clamp connection is the most popular connection for easy assembly and breakdown of process lines and valves. The clamp end connection is designed for a face-to-face joint that is leak proof and free of crevices.

The clamp end has a machined beveled seat and is used with specifically formed sealing gaskets made of EPDM or PTFE.

The gasket is inserted between the opposing clamp ends and is compressed tight with a wing nut quick disconnect clamp.

In general, the valve clamp ends are welded to the valve butt weld ends and polished according to the specified interior valve body surface finish.

The welded clamp ends are 100% visually inspected and compression tested. The clamp connections are available for all current pipe standard diameters.

If the connecting clamp ends are not identical and of the same diameter standard, there may result a reduction or step in the process piping system or the ability of self draining ends is not guaranteed.

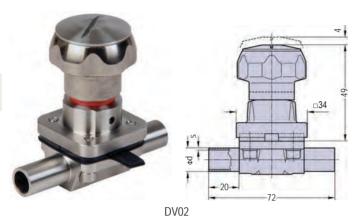
If assembled correctly, the clamp end process system offers a smooth, crevice-free, self-aligning joint that reduces the hazards of contamination but minimizes turbulence and pressure drop through the system.

C_v Factor

In order to design valves for a process system correctly, the valve size is determined by the required flow rate. The C_v value is stated in the following table with regard to the nominal diameter. The C, value is a parameter defining the flow rate in gallons per minute of water from 41-85°F which flows through the valve at a pressure loss of 1 PSI. This applies when the valve is 100% open.

Valve Size	C _v Value	Valve Type
1/4"	0.8	
3/8"	1.6	Bio Series
1/2"	2.3	
1/2"	2.6	Otan dand Frantisca d
3/4"	5.4	Standard Fractional
1"	14.0	
1-1/2"	46.8	
2"	56.2	Chandard
2-1/2"	99.5	Standard
3"	128.7	
4"	216.5	





Specific Features

Type DV02

- stainless steel bonnet and hand wheel
- autoclavable

Type DV01

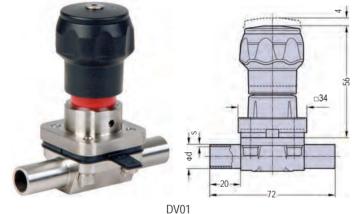
- · stainless steel bonnet and thermoplastic hand wheel
- autoclavable

General Features

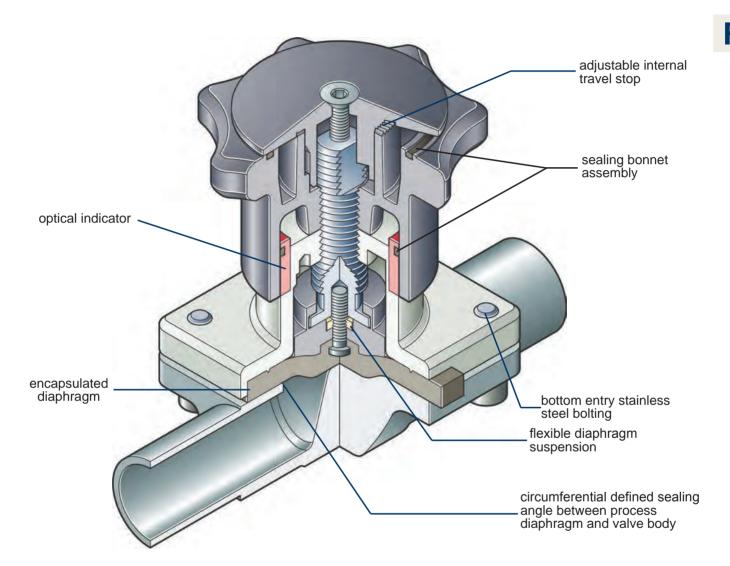
- · rising hand wheel
- · sealed bonnet with optical indicator
- · adjustable internal travel stop
- circumferential defined sealing angle between process diaphragm and valve body
- · flexible diaphragm suspension

Technical Data

- · control function: manually operated
- maximum working pressure: 145 PSI (10 BAR)
- maximum working temperature: 320°F (160°C) dependent on application
- · diaphragm material: EPDM or PTFE
- body material: forged 1.4435/316L ASME/BPE, investment cast 1.4435/316L, other alloys
- end connection: weld ends, clamps (see page 57), special ends
- bonnets suitable for: two-way bodies, welded configurations,
 T-bodies, multiport bodies, tank bottom bodies
- flow rate: C_v in GPM, see page 57
- · diaphragm size: MA 8 for all body sizes



DV05 / DV04 / DV03 Manual Valve DN 8-20 mm (3/8" - 3/4")



57x52

DV03

Specific Features

Type DV05

- · stainless steel bonnet and hand wheel
- autoclavable

Type DV04

- · stainless steel bonnet and thermoplastic hand wheel
- autoclavable

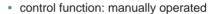
Type DV03

· thermoplastic bonnet and hand wheel

General Features

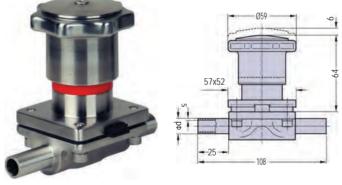
- rising hand wheel
- · sealed bonnet with optical indicator
- · adjustable internal travel stop
- circumferential defined sealing angle between process diaphragm and valve body
- flexible diaphragm suspension
- encapsulated diaphragm

Technical Data



maximum working pressure: 145 PSI (10 BAR)

- maximum working temperature: 320°F (160°C) dependent on application
- · diaphragm material: EPDM or PTFE
- body material: forged 1.4435/316L ASME/BPE, investment cast 1.4435/316L, other alloys
- end connection: weld ends, clamps (see page 57), special ends
- bonnets suitable for: two-way bodies, welded configurations,
 T-bodies, multiport bodies, tank bottom bodies
- flow rate: C, in GPM, see page 57
- · diaphragm size: MA 10 for all body sizes

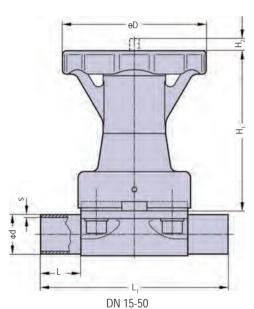


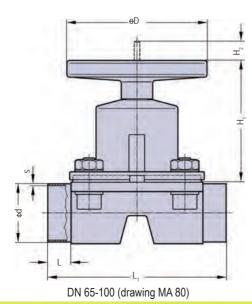
DV05



sealing angle between process diaphragm and valve







Features

- · stainless steel bonnet and hand wheel
- sealed bonnet
- autoclavable
- circumferential defined sealing angle between process diaphragm and valve body
- flexible diaphragm suspension
- encapsulated diaphragm

Optional

· adjustable internal travel stop or stroke limiter

Technical Data

- · control function: manually operated
- maximum working pressure: 145 PSI (10 BAR) DN 65-100 diaphragm PTFE 116 PSI (8 BAR)
- maximum working temperature: 320°F (175°C) dependent on application
- · diaphragm material: EPDM or PTFE
- valve body material: forged 1.4435/316L ASME/BPE, investment cast 1.4435/316L, other alloys
- end connection: weld ends, clamps (see page 57), special
- · bonnets suitable for: two-way bodies, welded configurations, T-bodies, multiport bodies, tank bottom bodies
- flow rate: C_v in GPM, see page 57
- diaphragm size: MA see table

DN	Dimensions (mm)						
(mm)	MA	L	L ₁	H ₁	H ₂	D	
15-25	25	25	120	103	10	92	
32-40	40	25	153	135	17	135	
50	50	30	173	135	24	135	
65	80	30	216	180	38	198	
80	80	30	254	180	38	198	
100	100	30	305	220	50	252	



DV08 Manual Valve DN 15-100 mm (1/2" - 4")

Features

- · stainless steel bonnet and thermoplastic hand wheel
- · non rising hand wheel with optical indicator
- circumferential defined sealing angle between process diaphragm and valve body up to DN 50
- · flexible diaphragm suspension
- · encapsulated diaphragm

Optional

- · adjustable travel stop or stroke limiter
- sealed bonnet
- autoclavable
- · locking device

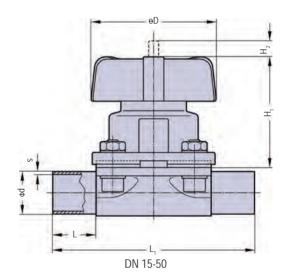
Technical Data

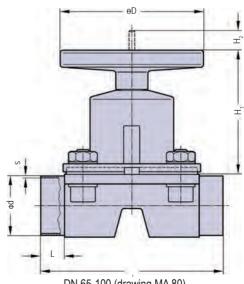
- · control function: manually operated
- maximum working pressure: 145 PSI (10 BAR) DN 65-100 diaphragm PTFE 116 PSI (8 BAR)
- maximum working temperature: 320°F (175°C) dependent on application
- · diaphragm material: EPDM or PTFE
- valve body material: forged 1.4435/316L ASME/BPE, investment cast 1.4435/316L, other alloys
- end connection: weld ends, clamps (see page 57), special ends
- · bonnets suitable for: two-way bodies, welded configurations, T-bodies, multiport bodies, tank bottom bodies
- flow rate: C_y in GPM, see page 57
- · diaphragm size: MA see table

DN	Dimensions (mm)							
(mm)	MA	L	L ₁	H ₁	H ₂	D		
15-25	25	25	120	71	10	90		
32-40	40	25	153	91	14	114		
50	50	30	173	110	23	140		
65	80	30	216	180	38	198		
80	80	30	254	180	38	198		
100	100	30	305	220	50	252		









DN 65-100 (drawing MA 80)

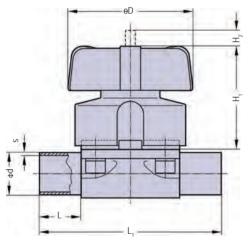


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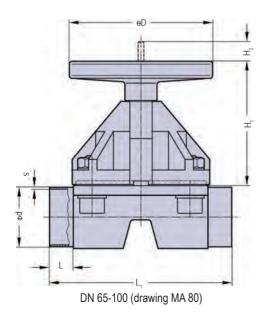
DV06 Manual Valve DN 15-100 mm (1/2" - 4")



DV06



DN 15-50



Features

- · thermoplastic bonnet and plastic hand wheel
- · non rising hand wheel with optical indicator
- · flexible diaphragm suspension
- · encapsulated diaphragm
- circumferential defined sealing angle between process diaphragm and valve body up to DN 50

Optional

- · adjustable travel stop or stroke limiter on top
- · sealed bonnet
- · locking device

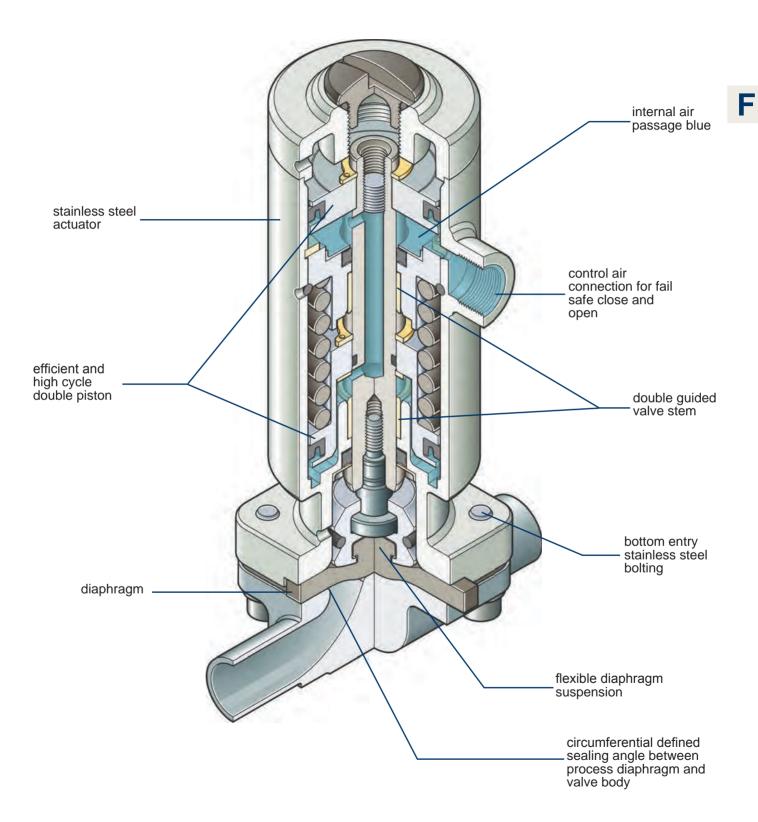
Technical Data

- · control function: manually operated
- maximum working pressure: 145 PSI (10 BAR)
 DN 65-100 diaphragm PTFE 116 PSI (8 BAR)
- maximum working temperature: standard 176°F (80°C), HS-version DN ≤ 50 300°F (150°C) dependent on application
- · diaphragm material: EPDM or PTFE
- valve body material: forged 1.4435/316L ASME/BPE, investment cast 1.4435/316L, other alloys
- end connection: weld ends, clamps (see page 57), special ends
- suitable for:
 bonnets up to DN 50: two-way bodies
 bonnets bigger DN 50: two-way bodies, welded
 configurations, T-bodies, multiport bodies, tank bottom
 bodies
- flow rate: C, in GPM, see page 57
- · diaphragm size: MA see table

DN	Dimensions (mm)								
(mm)	MA	L	L ₁	H ₁	H ₂	D			
15-25	25	25	120	71	10	90			
32-40	40	25	153	91	14	114			
50	50	30	173	110	23	140			
65	80	30	216	180	38	198			
80	80	30	254	180	38	198			
100	100	30	305	220	50	252			

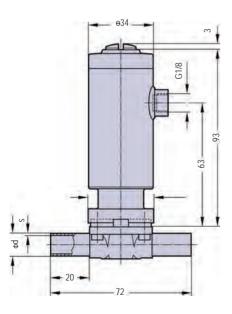


DV13 Pneumatically Operated Valve DN 4-15 mm (1/4" - 1/2")





DV13A



- high cycle double piston stainless steel actuator
- · compact design, the outside diameter of the actuator is the same size as the bonnet flange connecting the diaphragm
- advantages in multiport bodies and manifold valve assemblies
- control air connection on the top, away from the process product line
- direction of control air connection is mountable in 90° rotations
- circumferential defined sealing angle between process diaphragm and valve body
- flexible diaphraam suspension
- clean and polished exterior design ideal for sterile washdowns

Optional

- available with a wide range of control equipment and accessories, see pages 82-83
- autoclavable

Technical Data

control function: pneumatically operated

DV13A: fail safe close (NC)

DV13J: fail safe close (NC)

fail safe open (NO)

double acting (DA)

maximum working pressure: unidirectional (delta p=100%)

DV13A: fail safe close

EPDM diaphragm 116 PSI (8 BAR)

PTFE diaphragm 101 PSI, (7 BAR)

DV13J: fail safe close

EPDM diaphragm 65 PSI (4.5 BAR)

PTFE diaphragm 60 PSI (4 BAR)

fail safe open and double acting

EPDM diaphragm 116 PSI (8 BAR)

PTFE diaphragm 101 PSI (7 BAR)

Higher working pressures may be achieved with a different actuator.

- maximum working temperature: 320°F (160°C) dependent on application
- control pressure:

NC: DV13A: 60-101 PSI (4-7 BAR)

NC: DV13J: 80-101 PSI (5.5-7 BAR)

NO, DA: 80-101 PSI (5.5-7BAR)

- · diaphragm material: EPDM or PTFE
- valve body material: forged 1.4435/316L ASME/BPE, investment cast 1.4435/316L, other alloys
- end connection: butt weld ends, clamps (see page 57),
- actuators suitable for: two-way bodies, welded configurations, T-bodies, multiport bodies, tank bottom
- flow rate: C, in GPM, see page 57
- diaphragm size: MA 8 all sizes





DV20 Pneumatically Operated Valve DN 4-15 mm (1/4" - 1/2")

Features

- efficient thermoplastic piston actuator with stainless steel distance piece
- direction of control air connection is mountable in 90° rotations
- circumferential defined sealing angle between process diaphragm and valve body
- · flexible diaphragm suspension
- · optical indicator

Optional

 available with a wide range of control equipment and accessories, see pages 82-83

Technical Data

- control function: pneumatically operated fail safe close (NC) fail safe open (NO) double acting (DA)
- · direction control connection:

90° to flow direction, standard

maximum working pressure: unidirectional (delta p=100%)

EPDM diaphragm 116 PSI (8 BAR) PTFE diaphragm 101 PSI, (7 BAR)

Higher working pressures may be achieved with a different actuator.

- maximum working temperature: 320°F (160°C) dependent on application
- · control pressure:

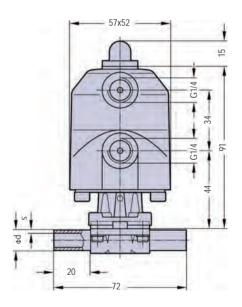
NC: 60-101 PSI (4-7 BAR)

NO, DA: 50-65 PSI (3.5-4.5 BAR)

- diaphragm material: EPDM or PTFE
- valve body material: forged 1.4435/316L ASME/BPE, investment cast 1.4435/316L, other alloys
- end connection: butt weld ends, clamps (see page 57), special ends
- actuators suitable for: two-way bodies, welded configurations, T-bodies, multiport bodies, tank bottom bodies
- flow rate: C, in GPM, see page 57
- · diaphragm size: MA 8 all sizes

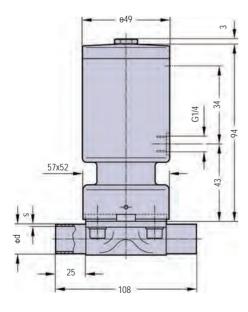


DV20





DV23



Features

- · high cycle piston stainless steel actuator
- · compact design, the outside diameter of the actuator is the same size as the bonnet flange
- · available in multiport bodies and manifold valve assemblies
- · control air connection in flow direction
- circumferential, defined sealing angle between process diaphragm and valve body
- · flexible diaphragm suspension
- encapsulated diaphragm
- clean and polished exterior design ideal for sterile washdowns

Optional

- available with a wide range of control equipment and accessories, see pages 82-83, also for retrofitting
- control air connection 90° to flow direction
- autoclavable

Technical Data

- control function: pneumatically operated
 - fail safe close (NC)
 - fail safe open (NO)
 - double acting (DA)
- · direction control connection:
 - 90° in flow direction, standard
 - 90° to flow direction, optional
- maximum working pressure: unidirectional (delta p = 100%), EPDM diaphragm 116 PSI (8 BAR), PTFE diaphragm 101 PSI (7 BAR), a higher working pressure may be achieved with a different actuator
- maximum working temperature: 320°F (160°C), dependent on application
- control pressure: NC: 60-101 PSI (4-7 BAR), NO, DA: 60-72 PSI (4-5 BAR)
- diaphragm material: EPDM or PTFE
- valve body material: forged 1.4435/316L ASME/BPE, investment cast 1.4435/316L, other alloys
- end connection: weld ends, clamps (see page 57), special
- · actuators suitable for: two-way bodies, welded configurations, T-bodies, multiport bodies, tank bottom
- flow rate: C, in GPM, see page 57
- diaphragm size: MA 10 all sizes



DV12 (3/8" - 3/4") Pneumatically Operated Valve DN 8-20mm

Features

- efficient thermoplastic piston actuator with stainless steel distance piece
- · control air connection 90° to flow direction
- · flexible diaphragm suspension
- · encapsulated diaphragm
- · optical indicator
- compact design, the outside diameter of the actuator is the same size as the bonnet flange

Optional

- available with a wide range of control equipment and accessories, see pages 82-83, also for retrofitting
- · control air connection in flow direction

Technical Data

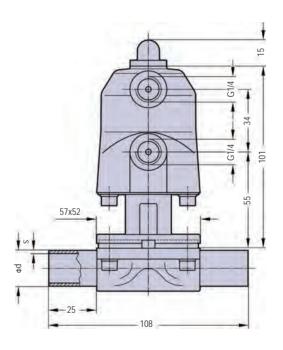
- control function: pneumatically operated
 fail safe close (NC)
 fail safe open (NO)
 double acting (DA)
- · direction control connection:

90° to flow direction, standard

- maximum working pressure: unidirectional (delta p = 100%), EPDM diaphragm 116 PSI (8 BAR), PTFE diaphragm 101 PSI (7 BAR), a higher working pressure may be achieved with a different actuator
- maximum working temperature: 320°F (160°C), dependent on application
- control pressure: NC:, 60-101 PSI (4-7 BAR), NO, DA: 60-72 PSI (4-5 BAR)
- diaphragm material: EPDM or PTFE
- valve body material: forged 1.4435/316L ASME/BPE, investment cast 1.4435/316L, other alloys
- end connection: weld ends, clamps (see page 57), special ends
- actuators suitable for: two-way bodies, welded configurations, T-bodies, multi port bodies, tank bottom bodies
- flow rate: C_v in GPM, see page 57
 diaphragm size: MA 10 all sizes



DV12



DV14 Pneumatically Operated Valve DN 8-20 mm (3/8"-3/4")

Features

- efficient thermoplastic piston actuator direct assembled with the valve body
- control air connection 90° to flow direction for side by side or other installations saving space
- compact design, the outside diameter of the actuator is the same size as the bonnet flange
- · actuator high resistance to heat transfer
- · smooth exterior design ideal for washdowns
- · encapsulated diaphragm
- optical indicator

Optional

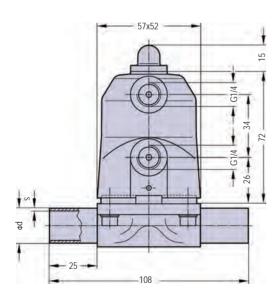
- available with a wide range of control equipment and accessories, see pages 82-83, also for retrofitting
- · control air connection in flow direction

Technical Data

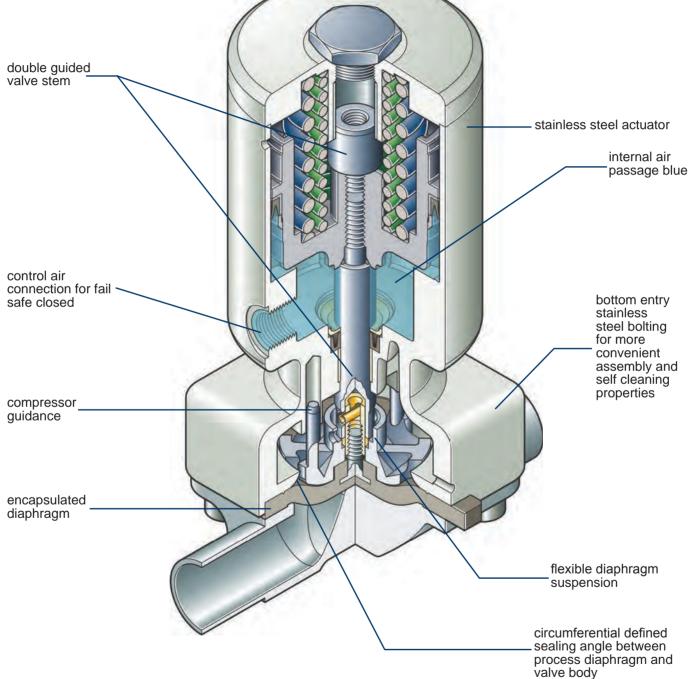
- control function: pneumatically operated
 - fail safe close (NC)
 - fail safe open (NO)
 - double acting (DA)
- · direction control connection:
 - 90° to flow direction, standard
- maximum working pressure: unidirectional (delta p = 100%), EPDM diaphragm 116 PSI (8 BAR), PTFE diaphragm 101 PSI (7 BAR), a higher working pressure may be achieved with a different actuator
- maximum working temperature: 176°F (80°C) standard, 300°F (150°C) HS-version, dependent on application
- control pressure: NC: 60-101 PSI (4-7 BAR), NO, DA: 60-72 PSI (4-5 BAR)
- diaphragm material: EPDM or PTFE
- valve body material: forged 1.4435/316L ASME/BPE, investment cast 1.4435/316L, other alloys
- end connection: weld ends, clamps (see page 57), special ends
- actuators suitable for: two-way bodies, welded configurations
- flow rate: C_v in GPM, see page 57
- · diaphragm size: MA 10 all sizes



DV14







DV21

Pneumatically Operated Valve DN 15-100 mm (1/2"-4")

Features

- · high cycle piston stainless steel actuator
- compact design, the outside diameter of the actuator is the same size as the bonnet flange
- · available in multiport bodies and manifold valve assemblies
- · control air connection in flow direction
- circumferential defined sealing angle between process diaphragm and valve body
- · flexible diaphragm suspension
- encapsulated diaphragm
- clean and polished exterior design ideal for sterile washdowns

Optional

- available with a wide range of control equipment and accessories, see pages 82-83, also for retrofitting
- control air connection 90° to flow direction
- autoclavable

Technical Data

 control function: pneumatically operated fail safe close (NC) fail safe open (NO)

double acting (DA)

- direction control connection:
 in flow direction, standard
 90° to flow direction, optional
- maximum working pressure: unidirectional (delta p = 100%), a higher working pressure may be achieved with a different actuator

Diaphragm	DN 15-50 (2")	DN 65-80 (2.5"-3")	DN100 (4")
EPDM	145 PSI (10 BAR)	101 PSI (7 BAR)	87 PSI (6 BAR)
PTFE	116 PSI (8 BAR)	87 PSI (6 BAR)	72 PSI (5 BAR)

- maximum working temperature: 350°F (175°C), dependent on application
- · control pressure:

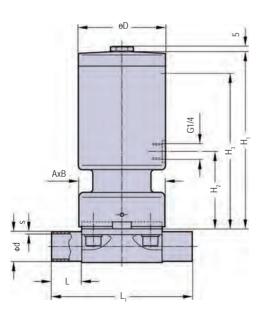
NC: DN 15-80, 72-116 PSI (5-8 BAR) NC: DN100, 87-116 PSI (6-8 BAR) NO, DA DN 15-80, 65-87 PSI (4.5-6 BAR) NO, DA DN 100, 80-101 PSI (5.5-7 BAR)

- · diaphragm material: EPDM or PTFE
- valve body material: forged 1.4435/316L ASME/BPE, investment cast 1.4435/316L, other alloys
- end connection: weld ends, clamps (see page 57), special ends
- actuators suitable for: two-way bodies, welded configurations, T-bodies, multiport bodies and tank bottom bodies
- flow rate: C_y in GPM, see page 57
- diaphragm size: MA see table below

DN	Dimensions (mm)								
(mm)	MA	L	L	AxB	H ₁	H ₂	H ₃	D	
15-25	25	25	120	73x79	146	66	133	75	
32-40	40	25	153	96x105	180	75	160	105	
50	50	30	173	111x130	216	77	180	105	
65	80	30	216	190x170	309	135	285	175	
80	80	30	254	190x170	309	135	285	175	
400	400		225	***	040	4.40	225	475	



DV21



DV12 (1/2" - 4") Pneumatically Operated Valve DN 15-100 mm

Features

- thermoplastic diaphragm actuator with stainless steel distance piece
- control air connection 90° to flow direction
- · flexible diaphragm suspension
- · encapsulated diaphragm

Optional

 available with a wide range of control equipment and accessories, see pages 82-83, also for retrofitting

Technical Data

· control function: pneumatically operated

fail safe close (NC) fail safe open (NO) double acting (DA)

· direction control connection:

90° to flow direction, standard

 maximum working pressure: unidirectional (delta p = 100%), a higher working pressure may be achieved with a different actuator

Diaphragm	DN 15-50 (2")	DN 65-80 (2.5", 3")	DN100 (4")
EPDM	145 PSI (10 BAR)	101 PSI (7 BAR)	87 PSI (6 BAR)
PTFE	116 PSI (8 BAR)	87 PSI (6 BAR)	72 PSI (5 BAR)

- maximum working temperature: 350°F (175°C), dependent on application
- · control pressure:

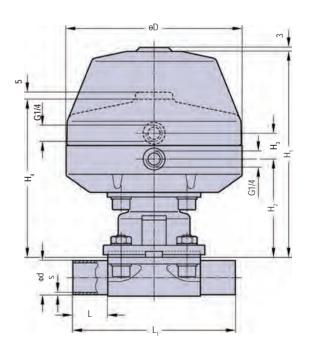
NC: DN 15-50, 65-87 PSI (4.5-6 BAR)
NC: DN 65-80, 65-101 PSI (4.5-7 BAR)
NC: DN 100, 80-101 PSI (5.5-7 BAR)
NO, DA DN 15-80, 60-80 PSI (4-5.5 BAR)
NO, DA DN 100, 72-93 PSI (5-6.5 BAR)

- · diaphragm material: EPDM or PTFE
- valve body material: forged 1.4435/316L ASME/BPE, investment cast 1.4435/316L, other alloys
- end connection: weld ends, clamps (see page 57), special ends
- actuators suitable for: two-way bodies, welded configurations, T bodies, multi port bodies, tank bottom bodies
- flow rate: C_v in GPM, see page 57
- diaphragm size: MA see table below

DN		m)						
(mm)	MA	L	L ₁	H ₁	H_2	H ₃	H ₄	D
15-25	25	25	120	148	71	31	120	130
32-40	40	25	153	194	95	31	144	161
50	50	30	173	233	109	31	177	217
65	80	30	216	314	166	41	275	265
80	80	30	254	314	166	41	275	265
100	100	30	305	314	166	41	284	265



DV12



DV15 Pneumatically Operated Valve DN 15-100 mm (1/2"-3")

Features

- · thermoplastic diaphragm actuator direct assembled with the valve body
- · actuator high resistance to heat transfer
- smooth exterior design ideal for washdowns
- control air connection 90° to flow direction
- flexible diaphragm suspension
- encapsulated diaphragm

Optional

 available with a wide range of control equipment and accessories, see pages 82-83, also for retrofitting

Technical Data

control function: pneumatically operated

fail safe close (NC)

fail safe open (NO)

double acting (DA)

direction control connection:

90° to flow direction, standard

maximum working pressure: unidirectional (delta p = 100%), a higher working pressure may be achieved with a different actuator

Diaphragm	DN 15-50 (2")	DN 65-80 (2.5"-3")		
EPDM	145 PSI (10 BAR)	101 PSI (7 BAR)		
PTFE	116 PSI (8 BAR)	87 PSI (6 BAR)		

- maximum working temperature: 176°F (80°C)
- control pressure:

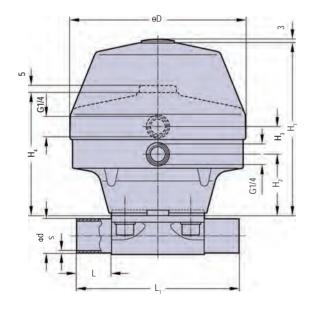
NC DN 15-50, 65-87 PSI (4.5-6 BAR) NC DN 65-80, 65-101 PSI (4.5-7 BAR) NO, DA DN 15-80, 60-80 PSI (4-5.5 BAR)

- · diaphragm material: EPDM or PTFE
- valve body material: forged 1.4435/316L ASME/BPE, investment cast 1.4435/316L, other alloys
- end connection: weld ends, clamps (see page 57), special
- actuators suitable for: two-way bodies, welded configurations
- flow rate: C_v in GPM, see page 57
- diaphragm size: MA see table below

DN	Dimensions (mm)										
(mm)	MA	L	L,	H ₁	H ₂	H ₃	H ₄	D			
15-25	25	25	120	153	49	31	97	130			
32-40	40	25	153	176	77	31	131	161			
50	50	30	173	214	91	31	161	217			
65	80	30	216	269	121	41	229	265			
80	80	30	216	269	121	41	229	265			







DV16 Pneumatically Operated Valve DN 15-50 mm (1/2"-2")

Features

- · thermoplastic piston actuator
- · compact design
- · actuator high resistance to heat transfer
- · control air connection in flow direction
- circumferential defined sealing angle between process diaphragm and valve body
- · flexible diaphragm suspension
- · encapsulated diaphragm
- · smooth exterior design ideal for washdowns

Optional

- available with a wide range of control equipment and accessories, see pages 82-83, also for retrofitting
- · control air connection 90° to flow direction

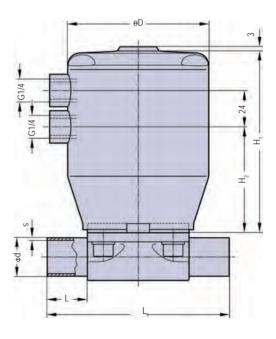
Technical Data

- control function: pneumatically operated fail safe close (NC)
 - fail safe close (NC) fail safe open (NO) double acting (DA)
- · direction control connection:
 - in flow direction, standard 90° to flow direction, optional
- maximum working pressure: unidirectional (delta p = 100%), EPDM diaphragm, 145 PSI (10 BAR), PTFE diaphragm, 116 PSI (8 BAR), a higher working pressure may be achieved with a different actuator.
- maximum working temperature: HS-version 300°F (150°C), dependent on application
- · control pressure:
 - NC 65-101 PSI (4.5-7 BAR) NO, DA 60-72 PSI (4-5 BAR)
- · diaphragm material: EPDM or PTFE
- valve body material: forged 1.4435/316L ASME/BPE, investment cast 1.4435/316L, other alloys
- end connection: weld ends, clamps (see page 57), special ends
- actuators suitable for: two-way bodies, welded configurations
- flow rate: C, in GPM, see page 57
- diaphragm size: MA see table below

DN	Dimensions (mm)										
(mm)	MA	L	L ₁	H ₁	H ₂	D					
15-25	25	25	120	120	70	92					
32-40	40	25	153	133	75	112					
50	50	30	173	173	111	143					

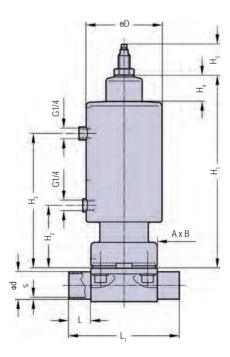


DV16









Features

- · two stage stainless steel actuator
- · second position adjustable with reduced flow for filling
- compact design, the outside diameter of the actuator is the same size as the bonnet flange
- available in multi port bodies and manifold valve assemblies
- · control air connection in flow direction
- circumferential defined sealing angle between process diaphragm and valve body
- · flexible diaphragm suspension
- encapsulated diaphragm
- clean and polished exterior design ideal for sterile washdowns
- · optical indicator

Optional

- available with a wide range of control equipment and accessories, see pages 82-83, also for retrofitting
- control air connection 90° to flow direction
- autoclavable

Technical Data

- control function: pneumatically operated fail safe close (NC)
- direction control connection:

in flow direction, standard 90° to flow direction, optional

- maximum working pressure: unidirectional (delta p = 100%), EPDM diaphragm, 145 PSI (10 BAR), PTFE diaphragm, 116 PSI (8 BAR), a higher working pressure may be achieved with a different actuator.
- maximum working temperature: 320°F (160°C), dependent on application
- control pressure:

NC: 72-116 PSI (5-8 BAR)

- diaphragm material: EPDM or PTFE
- valve body material: forged 1.4435/316L ASME/BPE, investment cast 1.4435/316L, other alloys
- end connection: weld ends, clamps (see page 57), special ends
- actuators suitable for: two-way bodies, welded configurations, T-bodies, multiport bodies, tank bottom bodies
- flow rate: C_y in GPM, see page 57
- diaphragm size: MA see table below

DN	Dimensions (mm)									
(mm)	MA	L	L	AxB	H ₁	H ₂	H ₃	H_4	H ₅	D
15-25	25	25	120	73 x 79	220	66	150	-	35	75
32-40	40	25	153	96 x 105	250	75	185	28	40	105
50	50	30	173	110 x 130	294	77	221	28	47	105



Welded Valve Configurations

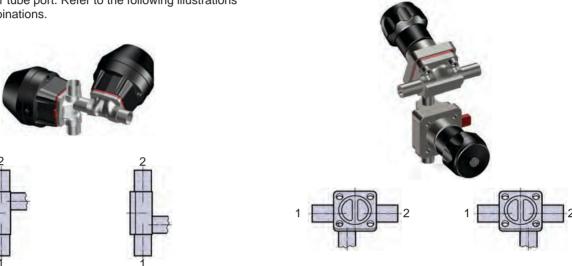
The main valve orientation distinguishes between the two different principles:

SL or GMP

The SL Fabrication is utilized in a vertical piping system to eliminate dead legs in point of use applications of high purity water systems or any other distribution systems. This valve design serves as a 90° elbow for the piping system or as a valve by valve configuration. In a valve by valve configuration the horizontal valve is orientated at the self-draining angle. When the vertical main valve is opened it provides a sample untainted by bacterial growth or process contamination. Available in sizes up to DN 100 (4") for both the main valve and the L valve or tube port. Refer to the following illustrations for possible combinations.

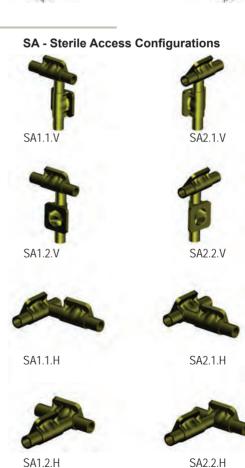
SA or SAP

The Sterile Access Fabrication is utilized in a horizontal piping system where the main valve is orientated at the self-draining angle and the access port is at the lowest drainable point of the waterway. The sterile access may be used for applications including sampling, steam, condensate or as a divert port. The Sterile Access Fabrication is available with either a tube port or a vertical or horizontal valve port. Available in sizes up to DN 100 (4") for both the main valve and access valve or tube port. Refer to the following illustrations for possible combinations.





SL1.2.H



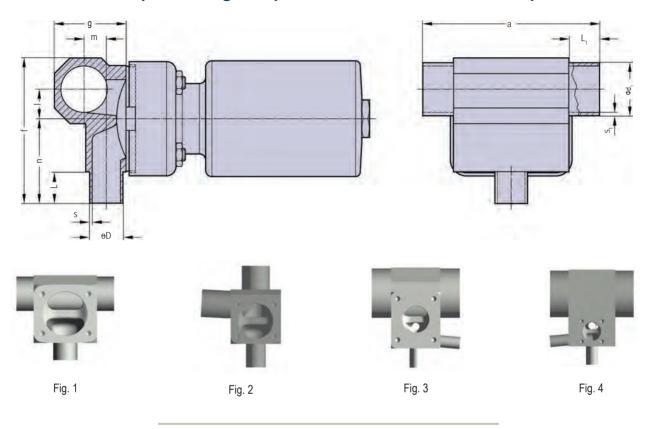


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Multiport Valves

Multiport valves up to size DN100 (4") and larger nominal diameters and nominal diameter combinations are available. Within this range, all tube standards, tube end orientations and other application specific customized blocks can be specified.

Example Drawing Multiport Block Valve with Main Line Open



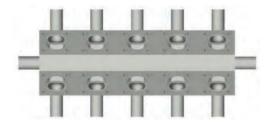






Fig. 6



Fig. 7



Fig. 8



Fig. 9

Tank Bottom Valves

The tank bottom valve is designed for applications in the aseptic process industry offering a pocket-free interior surface, minimized sump, eliminating entrapment areas and minimizing flow resistance thus reducing the potential for process contamination. The tank bottom valve incorporates the same features and performance of a standard diaphragm valve utilizing the same valve components for a flush mounted tank bottom valve or side mounted tank and sample valve.

The tank valve body is machined as standard from solid bar stock material 1.4435/316L ASME BPE and other alloy materials are available according to the specification. The standard design offers one valve port outlet. There are a number of different options available for sampling, sterilization and multi-outlet configurations that are standard in the product range of customized solutions.

It is preferred to weld in the tank valve directly in the vessel. Mounting the valve directly to the tank minimizes the hold up volume, the most important criteria for this application. If removal of the tank valve from the tank is required, versions are offered with flange or clamp connections.

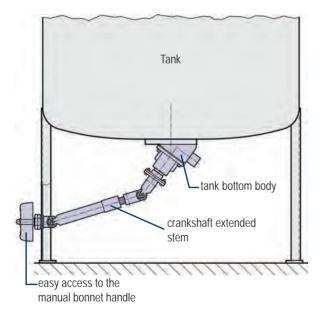
Tank bottom valves are typically used for tank discharge, draining, sampling, cleaning and/or sterilizing, rinsing and isolation of down stream processing.

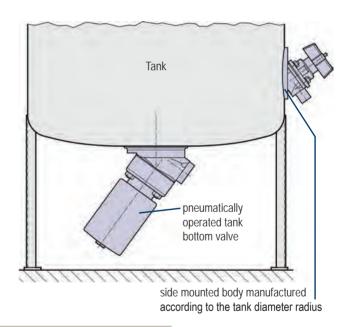
The outlet port of the tank valve is available with all weld tube end standards, aseptic clamp (see page 57) or other special ends. The size range available is the same as the two-way valve.

Features

- tank body machined from a solid bar stock material
- material 1.4435/316L ASME BPE
- · other alloy options available as specified

- · minimized dead leg and internal sump
- · optional manual operation via an extended crankshaft stem













manual

pneumatically operated

manual

pneumatically operated

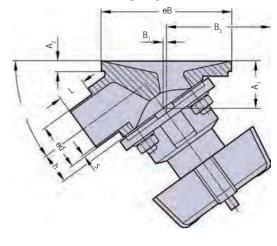


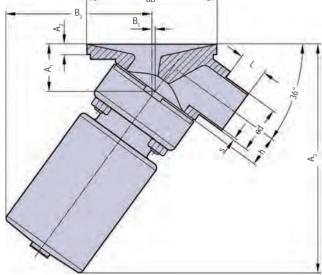
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Pneumaticaly Operated

Example Drawing: Manually Operated



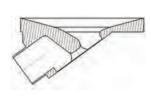


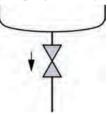
The following two pages show examples of standard and customized designs of tank diaphragm valves. These include options for sampling, sterilization and multi-outlet configurations.

> flow direction drain direction

Position One: 1x Valve Port







- standard tank bottom body
- · tank body for the tank bottom

Position Two: 1x Valve Machined From Bar Stock



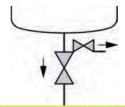
- 3/1 with one welded valve, tank side left
- 3/1 with one welded valve, tank side right
- 3/1 with one welded valve, outlet left
- 3/1 with one welded valve, outlet right
- 4/1 with one welded valve, tank side left and one welded valve, outlet right

Note: For all options the welded valve is rotated into the self-draining position and extended to eliminate interference with the tank bottom.

Position Three: 3/2







- 1x main valve
- 1x sample valve, tank side right

Note: Like position two but includes an integral sample valve tank side. Right side and left side options are available and are fully drainable.



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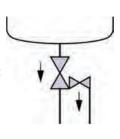
Tank Bottom Valves





- 1x main valve
- 1x sample valve, outlet left

Note: Like position two but includes an integral outlet valve. Right side and left side options are available and are fully drainable.





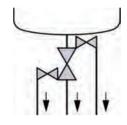


F

Position Five: 4/3

- 1x main valve
- · 1x sample valve, tank side right
- 1x CIP / SIP cleaning outlet, valve left

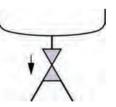
Note: Like position two but includes an integral valves that are fully drainable.





Position Six: 3/1

- 1x main valve
- 2x outlet port for loop installation or as two access ports



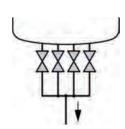




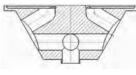
Position Seven: 5/4

- · 4x main valves
- 1x port

Note: Application with four internal tank partitions.

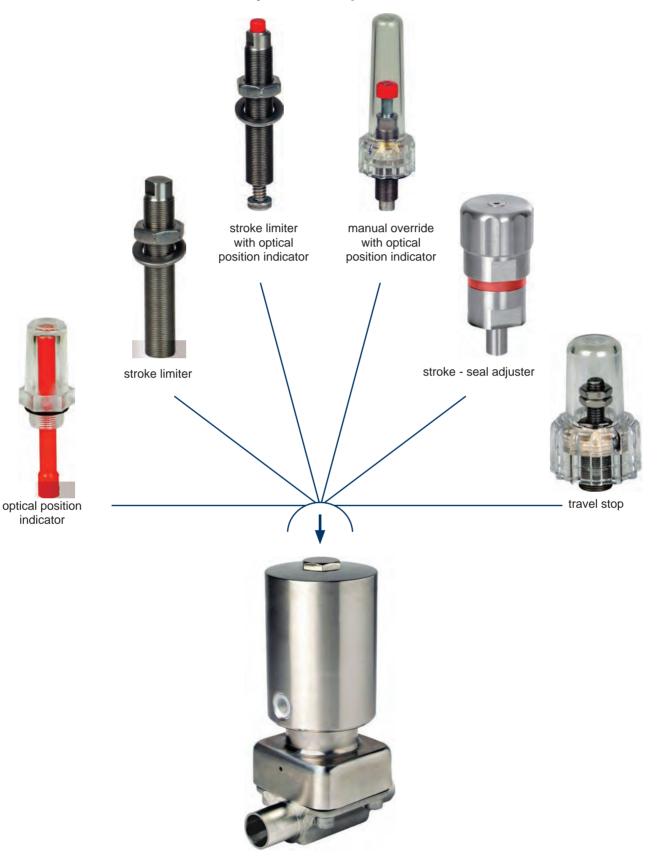






System Components and Accessories

Manual Adjustment - Optical Indication



· Combination of manual adjustments with switch boxes are available upon request

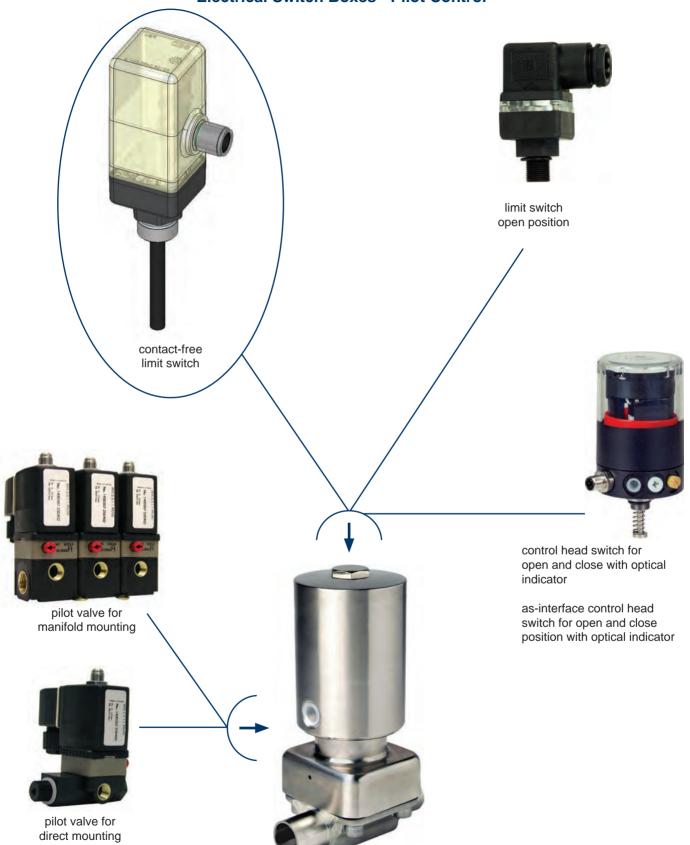


indicator

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System Components and Accessories

Electrical Switch Boxes - Pilot Control



· Combination of manual adjustments with switch boxes are available upon request



		Diaphrag	m Valves				
Contact Name:	_	C	Ive Check ompany Name:				
Date:	Phone:	E	Email:				
Customer ID#:							
		Process Ba	_				
Process Temp:			Plant Air Supply				
			Autoclavable:	Yes No			
Plant Air Supply (PSI):							
		Во	dy				
For	ged Other:			Cast			
		Bon	net				
Thermo	oplastic			Stainless Steel			
		Actua	ation				
Thermoplastic Manual Handwheel No				Stainless Steel Pneumatic DA NC			
1/4" 3/8" 1	1/2" 3/4"	1"	ze 2" 3"	4" 6"	Other		
Surface Finis		Conne		Visual Indic			
SF1 SF2 SF3 SF4 SF5 SF6	4	Clamp x Clar Weld x Wel	d	with 30° V-port Other:			
		Opti	ons				
	Special In	structions (Body Configurat	ions)			



Sample Valves

BSVA and **BSVI** sample valves come in both angle and in-line styles with clamp ends in 316L stainless steel construction.



BSVW sample valves are available with NPT, clamp or weld connections in 304 stainless steel construction.



BCSV series of BioCheck Sampling valves allow easy and safe sampling of liquids from closed systems such as vessels and pipelines.



Sample Valves



Product Specifications

Size range:

• 1/2" - 4" OD

Materials:

- G = 304 stainless steel
- N = 316L stainless steel

Finish:

· 3A sanitary finish ID and OD

Ordering Information

BSVACV-N100050 - angle valve, 1" clamp x 1/2" barb, 316 SS with PTFE seat

Valve (1-3)	Type (4)	End (5)	Seat (6)	(7)	Material (8)	Size (9-11)	Barb Siz	ze (12-14)
BSV	A angle	C clamp	V PTFE	-	N 316L stainless	050 1/2"	025	1/4"
	I in-line					075 3/4"	375	3/8"
						100 1"	050	1/2"
						150 1-1/2'	1	
						200 2"		
						250 2-1/2'	'	
						300 3"		
						400 4"		

W series sample valves

BSVWBS-G100 - sample valve, 1" butt-weld, 304 stainless steel

8 9 10 11 12 13 14 G 1 0 0

Valve (1-4)	End (5)	Seat (6)	(7)	Material (8)	Size (9-11)	
BSVW	N FNPT	S silicone	-	G 304 stainless	375 *	3/8"
	C clamp	P PTFE			100	1"
	B butt-weld				200	2"

^{*} FNPT only



Sample Valves

Angle and In-line Sample Valves - BSVA & BSVI

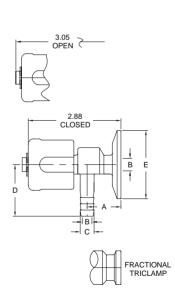
Features:

- all 316L stainless wetted part construction
- standard finish to 20 R_a ID / 32 R_a OD
- FKM O-ring
- fully traceable (material test reports)
- · virgin PTFE seat for positive closure
- · minimal internal dead-leg area
- sizes available: 1/2" thru 4"
- temperature rating: 300°F at 200 PSI



Angle Sample Valves Dimensions

Valve Size	А	В	BarbØ C	D	FerruleØ E	Part Number
1/2"	0.93	0.21	1/4"	1.76	0.99	BSVACV-N050025
1/2"	0.92	0.28	3/8"	1.78	0.99	BSVACV-N050375
1/2"	0.85	0.37	1/2"	1.76	0.99	BSVACV-N050050
3/4"	0.93	0.21	1/4"	1.76	0.99	BSVACV-N075025
3/4"	0.92	0.28	3/8"	1.78	0.99	BSVACV-N075375
3/4"	0.85	0.37	1/2"	1.76	0.99	BSVACV-N075050
1"	0.96	0.21	1/4"	2.04	1.98	BSVACV-N100025
1"	0.95	0.28	3/8"	2.03	1.98	BSVACV-N100375
1"	0.88	0.37	1/2"	2.03	1.98	BSVACV-N100050
1-1/2"	0.96	0.21	1/4"	2.04	1.98	BSVACV-N150025
1-1/2"	0.95	0.28	3/8"	2.03	1.98	BSVACV-N150375
1-1/2"	0.88	0.37	1/2"	2.03	1.98	BSVACV-N150050
2"	0.96	0.21	1/4"	2.31	2.52	BSVACV-N200025
2"	0.95	0.28	3/8"	2.31	2.52	BSVACV-N200375
2"	0.88	0.37	1/2"	2.29	2.52	BSVACV-N200050
2-1/2"	0.96	0.21	1/4"	2.57	3.05	BSVACV-N250025
2-1/2"	0.95	0.28	3/8"	2.57	3.05	BSVACV-N250375
2-1/2"	0.88	0.37	1/2"	2.56	3.05	BSVACV-N250050
3"	0.96	0.21	1/4"	2.84	3.58	BSVACV-N300025
3"	0.95	0.28	3/8"	2.37	3.58	BSVACV-N300375
3"	0.88	0.37	1/2"	2.83	3.58	BSVACV-N300050
4"	0.96	0.21	1/4"	3.39	4.68	BSVACV-N400025
4"	0.95	0.28	3/8"	3.39	4.68	BSVACV-N400375
4"	0.88	0.37	1/2"	3.38	4.68	BSVACV-N400050





Sample Valves

Angle Sample Valves - BSVAC

Bill of Materials



Item #	Description	Material	Quantity
1	body	316L stainless steel	1
2	knob	ULTEM (FDA)	1
3	stem	316L stainless / PTFE	1
4	E-clip	18-8 stainless steel	1
5	O-ring	FKM	1
6	body pin	316L stainless steel	1

repair kits

Size	Part Number
1/4"	BSVA-NRKS025
3/8"	BSVA-NRKS038
1/2"	BSVA-NRKS050

Repair Kit contains:

#3 (1) PTFE seat

#4 (1) 18-8 stainless steel E-clip

#5 (1) FKM O-ring

#6 (1) 316 stainless steel stop pin



Sample Valves

Inline Sample Valves - BSVICV

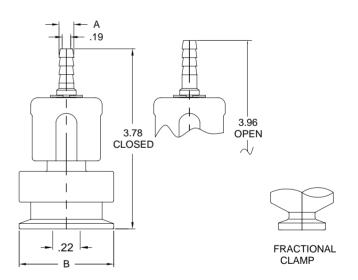
Features:

- all 316L stainless wetted part construction
- standard finish to 20 R_a ID / 32 R_a OD
- FKM O-ring
- fully traceable (material test reports)
- · virgin PTFE seat for positive closure
- · minimal internal dead-leg area
- sizes available: 1/2" thru 4"
- temperature rating: 300°F at 200 PSI



Inline Sample Valve Dimensions

	,			
Valve	BarbØ	FerruleØ	Part Number	
Size	A	В		
1/2"	1/4"	0.99	BSVICV-N050025	
1/2"	3/8"	0.99	BSVICV-N050375	
1/2"	1/2"	0.99	BSVICV-N050050	
3/4"	1/4"	0.99	BSVICV-N075025	
3/4"	3/8"	0.99	BSVICV-N075375	
3/4"	1/2"	0.99	BSVICV-N075050	
1"	1/4"	1.98	BSVICV-N100025	
1"	3/8"	1.98	BSVICV-N100375	
1"	1/2"	1.98	BSVICV-N100050	
1-1/2"	1/4"	1.98	BSVICV-N150025	
1-1/2"	3/8"	1.98	BSVICV-N150375	
1-1/2"	1/2"	1.98	BSVICV-N150050	
2"	1/4"	2.52	BSVICV-N200025	
2"	3/8"	2.52	BSVICV-N200375	
2"	1/2"	2.52	BSVICV-N200050	
2-1/2"	1/4"	3.05	BSVICV-N250025	
2-1/2"	3/8"	3.05	BSVICV-N250375	
2-1/2"	1/2"	3.05	BSVICV-N250050	
3"	1/4"	3.58	BSVICV-N300025	
3"	3/8"	3.58	BSVICV-N300375	
3"	1/2"	3.58	BSVICV-N300050	
4"	1/4"	4.68	BSVICV-N400025	
4"	3/8"	4.68	BSVICV-N400375	
4"	1/2"	4.68	BSVICV-N400050	



Sample Valves

Inline Sample Valves - BSVICV Bill of Materials



Item #	Description	Material	Quantity
1	body	316L stainless steel	1
2	knob	ULTEM (FDA)	1
3	stem	316L stainless / PTFE	1
4	E-clip	18-8 stainless steel	1
5	O-ring	FKM	1
6	body pin	316L stainless steel	1

repair kits

Size	Part Number
1/4"	BSVI-NRKS025
3/8"	BSVI-NRKS03
1/2"	BSVI-NRKS050

Repair Kit contains:

#3 (1) stem assembly

#4 (1) 18-8 stainless steel E-clip

#5 (1) FKM O-ring

#6 (1) 316 stainless steel stop pin

Sample Valves

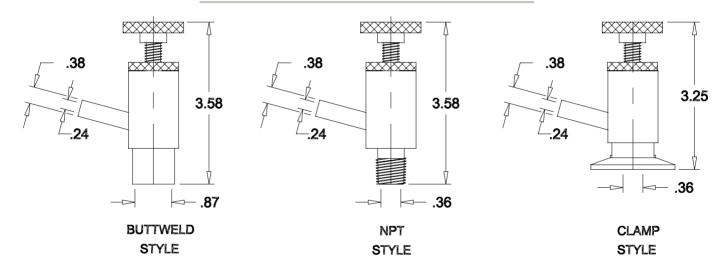
W Series Sample Valves - BSVW

Features:

- 304 stainless steel silicone or PTFE seat ensrues a leak-proof shut-off
- · double silicone O-rings
- · silicone or PTFE seat ensures a leak-proof shut-off
- · surface finish polished to sanitary standards
- temperature rating: 300°F at 200 PSI

Size	Style	Seat Material	Weight (lbs)	304 Stainless Steel Part Number
3/8"	NPT	silicone	0.72	BSVWNS-G375
3/8"	NPT	PTFE	0.72	BSVWNP-G375
1"	clamp	silicone	0.88	BSVWCS-G100
1"	clamp	PTFE	0.88	BSVWCP-G100
1"	weld	silicone	0.72	BSVWBS-G100
1"	weld	PTFE	0.72	BSVWBP-G100





ALL VALVES ARE SHOWN FULLY OPEN

W Series Sample Valves - BSVW*S **Bill of Materials**







i i		<u> </u>	1
Item #	Description	Material	Quantity
1	body - clamp	304 stainless steel	1
1	body - NPT	304 stainless steel	1
1	body - weld	304 stainless steel	1
2	knob / stem assembly	304 stainless steel	1
2A	knob / stem assembly	304 stainless steel	1
3	seat	silicone	1
3A	seat	PTFE	1
4	O-rings	silicone	2

repair kits

BSVW-RKS Repair Kit contains:

#3 (1) silicone seat

#4 (2) silicone O-rings

BSVW-RKP Repair Kit contains:

#3A (1) PTFE seat

#4 (2) silicone O-rings



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BioCheck Sampling Valves - Technical Information



Applications:

 The BioCheck sampling valves allow easy and safe sampling of liquids from closed systems such as vessels and pipelines.

Features:

- · valve body made from solid bar
- · no dead space
- drainable
- · connections suitable for orbital welding
- · also available with only 1 port same price -
- · hermetically sealed against environment
- · optimum cleanability
- · change of seals without special tools
- · long life of the PTFE-bellows
- · low spare part costs
- pharmaceutical, bio-pharmaceutical, biochemical, cosmetic, food and dairy and beverage



Technical Data

Material:

 in product contact: 1.4404/AISI316L non product contact: 1.4301/AISI304

Product Contact Seals:

FKM bellows – PTFE

Temperatures:

- maximum standard operating temperature: 121 °C (250 °F)
- sterilization temperature: 135 °C (275 °F) short time* (approx. 20 min)

Operating pressure:

- · closing tension: max. 8 bar (116 PSI)
- version "hand wheel": up to 16 bar (232 PSI) min. 6 bar (87 PSI)
- controlled air pressure: max.10 bar (145 PSI)

Surfaces:

- wetted product surfaces: R₂<= 0.8 μm (32), optional surfaces available
- non product contact: R₃=1.6 μm

Versions:

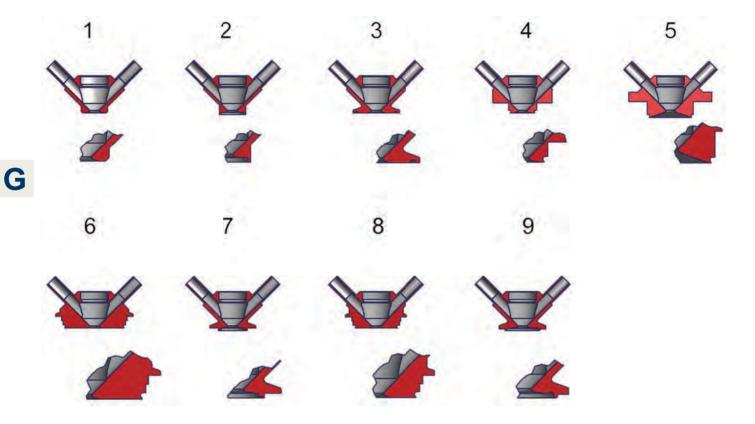
- S = with self-closing lever
- O = lever for open position
- P = without lever
- H = with hand wheel

Dimensions:

Pipe ø13mm x1,5mm (1 mm = 0.0394 Inch)

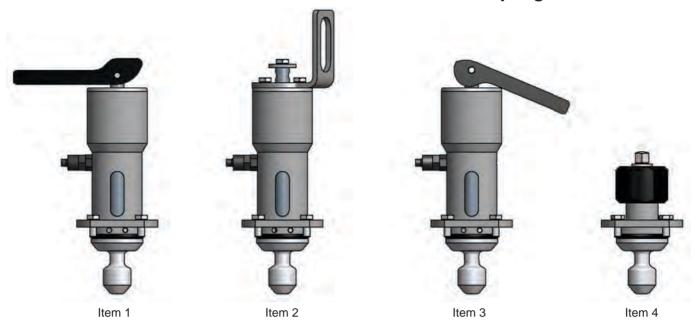
*dependent on operating parameters

Housing for BioCheck Sampling Valves

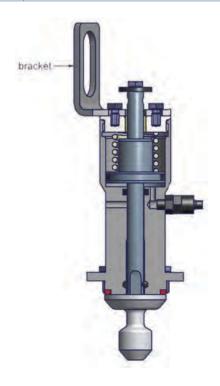


Item #	Description	
1	BioCheck housing for tank	
2	BioCheck housing for piping	
3	BioCheck housing forTri-Clamp	
4	BioCheck housing for connection BioControl	
5	BioCheck housing for connection BioControl	
6	BioCheck housing for Varivent-Inline body	
7	BioCheck housing for clamp BioConnect Form V	
8	BioCheck housing for Varivent-Inline body	
9	BioCheck housing for clamp nut connection	

Bill of Materials for Pneumatic BioCheck Sampling Valves



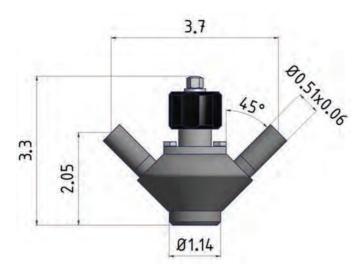
Item #	Description	Quantity
1	with self-closing lever	1
2	without lever	1
3	lever for open position	1
4	with handwheel	1



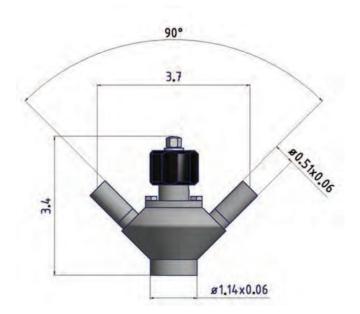


BioCheck Sampling Valves with Handwheel

for Tanks

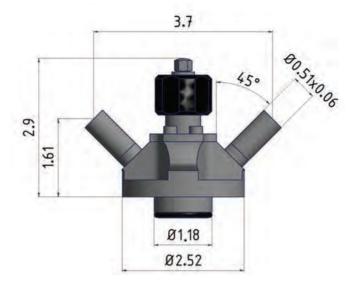


BioCheck Sampling Valves with Handwheel for Piping



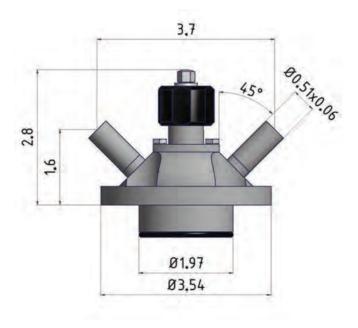
BioCheck Sampling Valves with Handwheel

for Connection BioControl



BioCheck Sampling Valves with Handwheel

for Connection BioControl



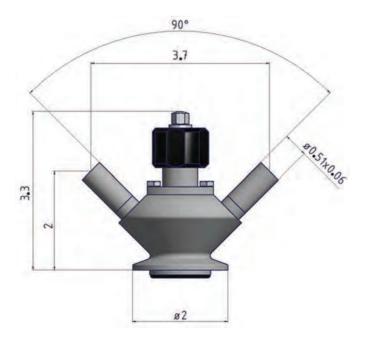
BioCheck Sampling Valves with Handwheel

for Tri-Clamp

3.7 450 Ø1.99

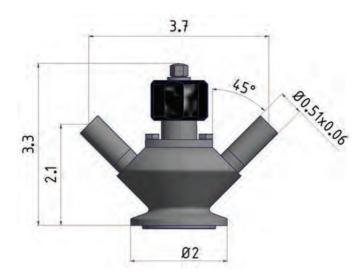
BioCheck Sampling Valves with Handwheel

for Connection BioControl



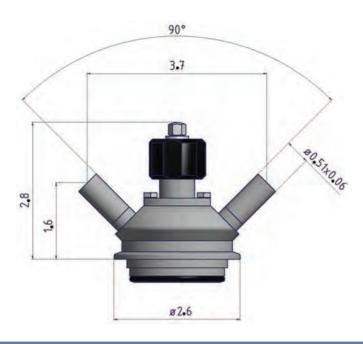
BioCheck Sampling Valves with Handwheel

for Clamp Nut Connection



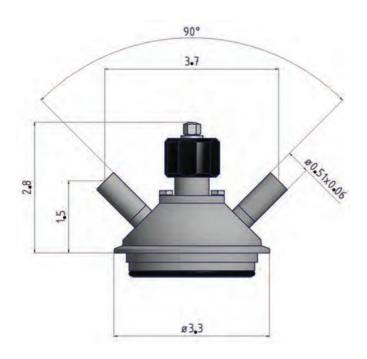
BioCheck Sampling Valves with Handwheel

for Varivent-Inline Body



BioCheck Sampling Valves with Handwheel

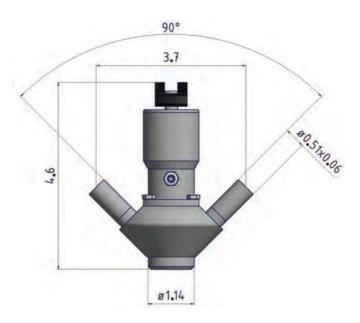
for Varivent-Inline Body





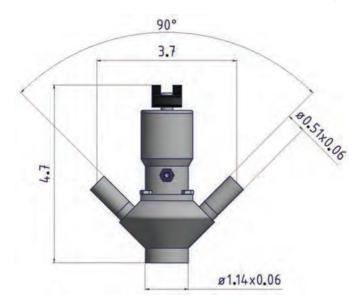
BioCheck Pneumatic Sampling Valves with Lever

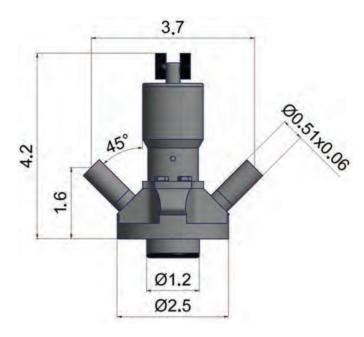
Air to Open / Spring to Close NC - for Tank



BioCheck Pneumatic Sampling Valves with Lever

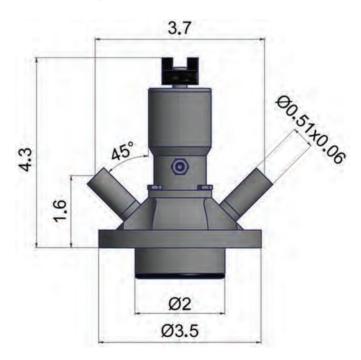
Air to Open / Spring to Close NC - for Piping





BioCheck Pneumatic Sampling Valves with Lever

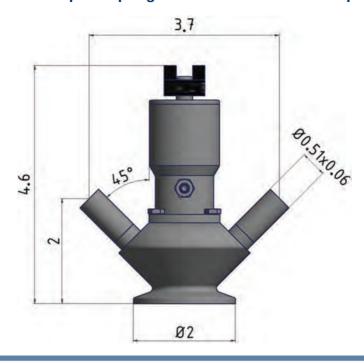
Air to Open / Spring to Close NC - for Connection BioControl





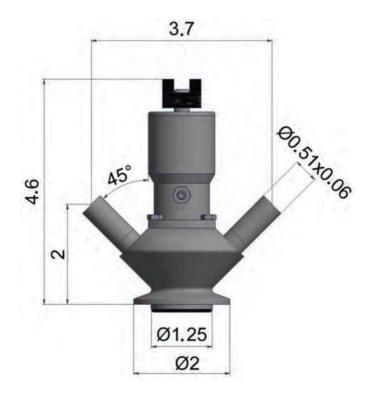
BioCheck Pneumatic Sampling Valves with Lever

Air to Open / Spring to Close NC - for Tri-Clamp



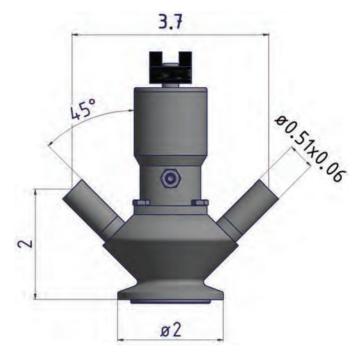
BioCheck Pneumatic Sampling Valves with Lever

Air to Open / Spring to Close NC - for Clamp BioConnect



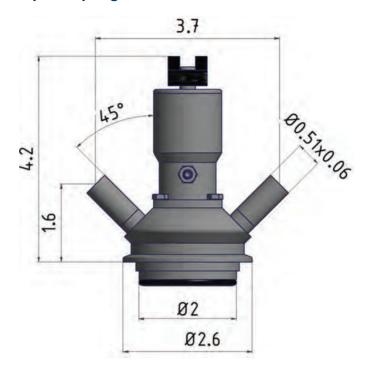
BioCheck Pneumatic Sampling Valves with Lever

Air to Open / Spring to Close NC - for Clamp Nut Connection



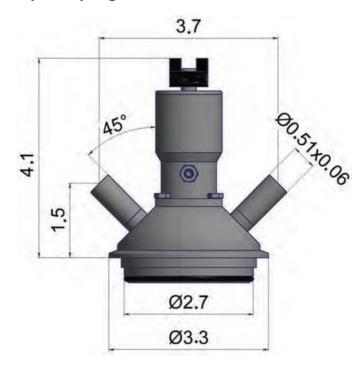
BioCheck Pneumatic Sampling Valves with Lever

Air to Open / Spring to Close NC - for Varivent-Inline Body

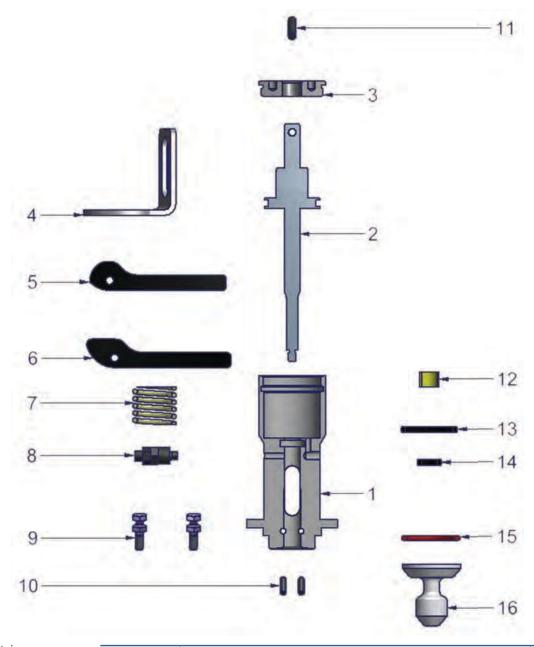


BioCheck Pneumatic Sampling Valves with Lever

Air to Open / Spring to Close NC - for Varivent-Inline Body



Bill of Materials for Pneumatic BioCheck Sampling Valves



Repair Kit contains: #15 (1) O-ring (Silicone) #16 (1) O-ring PTFE-bellows

G

Repair Kit Part #	
BCSV-RK	

Item	Description	Quantity
1	housing	1
2	spindle	1
3	cover	1
4	bracket	1
5	Lever	1
6	Lever	1
7	spring	1
8	screwing	1
9	hexagonal screw	4
10	Cylindric pin for spindle	2
11	Cylindric pin for lever	1
12	plastic bushing	1
13	O-Ring	1
14	O-Ring for spindle	1
15	O-Ring for bellows	1

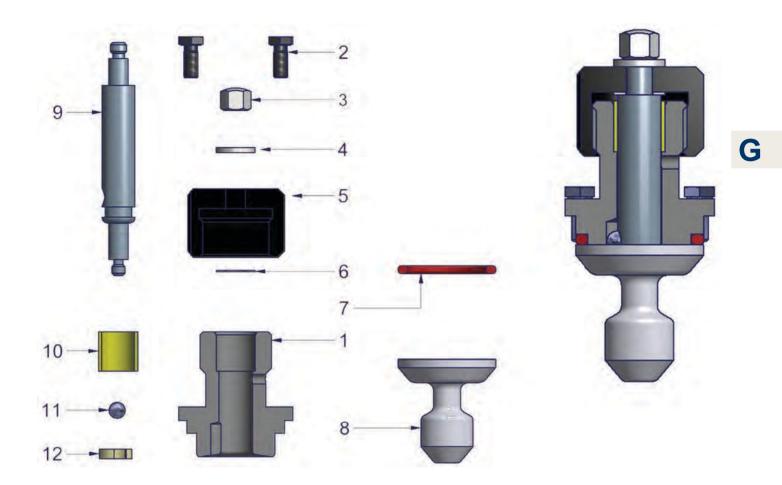


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Bill of Materials for BioCheck Sampling Valves with Handwheel



Repair Kit contains: #7 (1) O-ring (Silicone) #8 (1) O-ring PTFE-bellows

Repair Kit	
Part #	
BCSV-RK	

Item	Description	Quantity
1	housing	1
2	hexagonal screw	4
3	hex nut	1
4	washer	1
5	handle	1
6	wave spring washer	1
7	O-Ring for bellows	1
8	PTFE-Bellows	1
9	spindle	1
10	plastic bushing	2
11	ball	1
12	guide	1



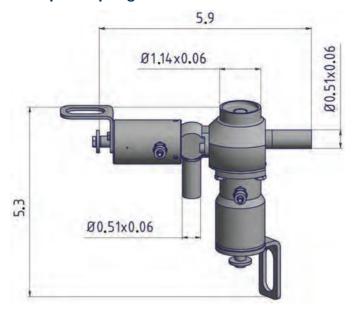
Call Toll Free: 1-866-711-4673

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BioCheck Combi Sampling Valves with Steam Valve

TYPE EL - CLASS I

Air to Open / Spring to Close NC - with 1 CIP Valve

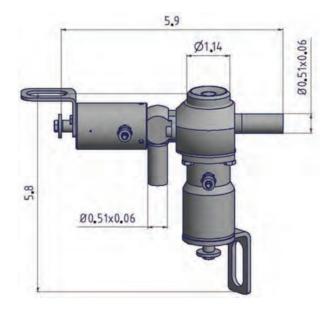


3-A version not available.

BioCheck Combi Sampling Valves with Steam Valve

Air to Open / Spring to Close NC - with 1 CIP Valve





3-A version not available.



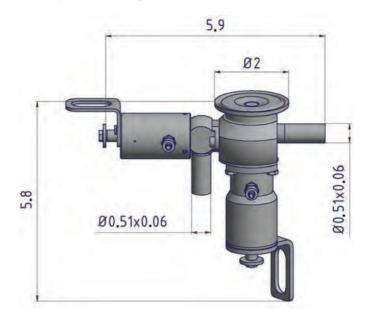
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TYPE EL - CLASS I

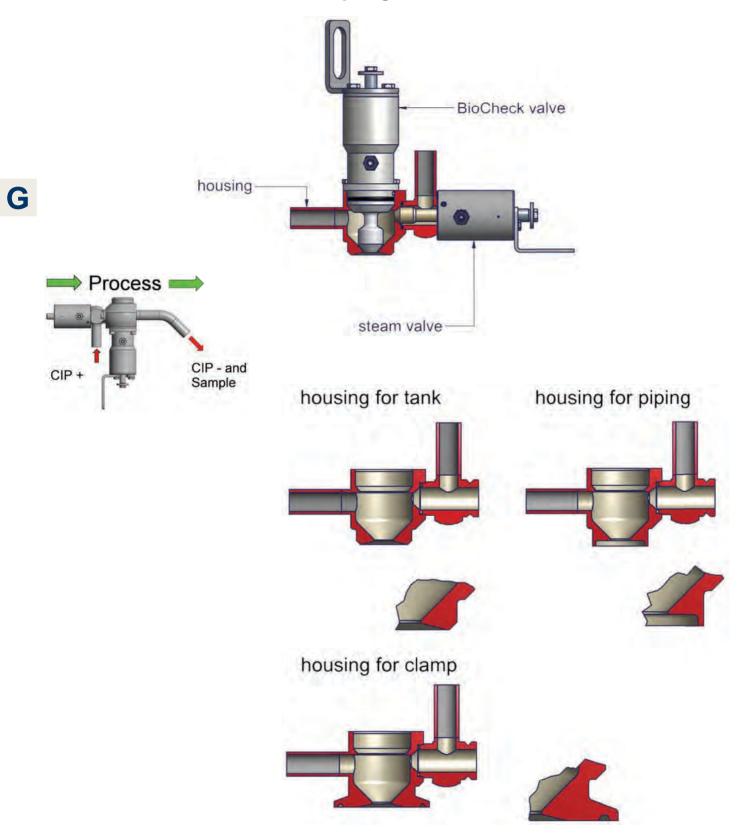
BioCheck Combi Sampling Valves with Steam Valve

Air to Open / Spring to Close NC - with 1 CIP Valve





BioCheck Combi Sampling Valves with Steam Valve

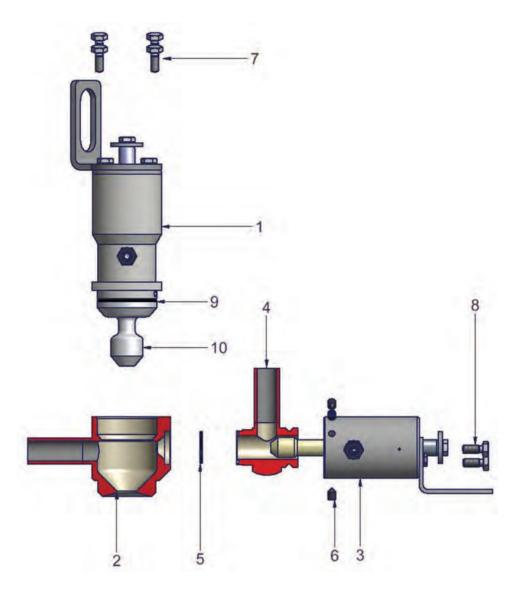




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Bill of Materials for BioCheck Combi Sampling Valves with Steam Valves

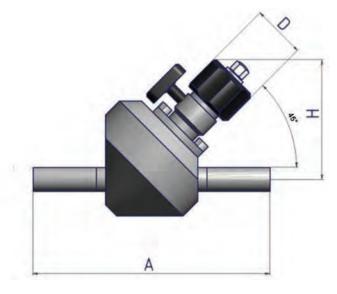


Repair Kit contains: #9 (1) O-ring #10 (1) PTFE-bellows

Repair Kit Part #	
BCSV-RK	

Item	Description	Quantity
1	Actuator BioCheck valve NC	1
2	Housing BioCheck valve	1
3	Actuator steam valve	1
4	Housing steam valve	1
5	O-Ring	1
6	screw	1
7	hexagonal screw	1
8	hexagonal screw	1
9	O-ring	4
10	PTFE-bellows	2

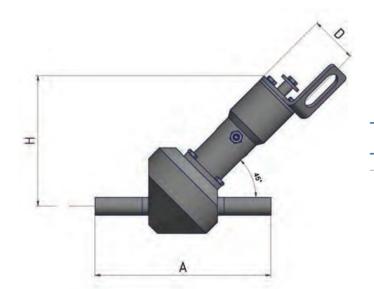
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Size	Nominal Wall	А	Н	D
1/2"	13 x 1.5	130	65	30

BioCheck Inclined Seat Valve

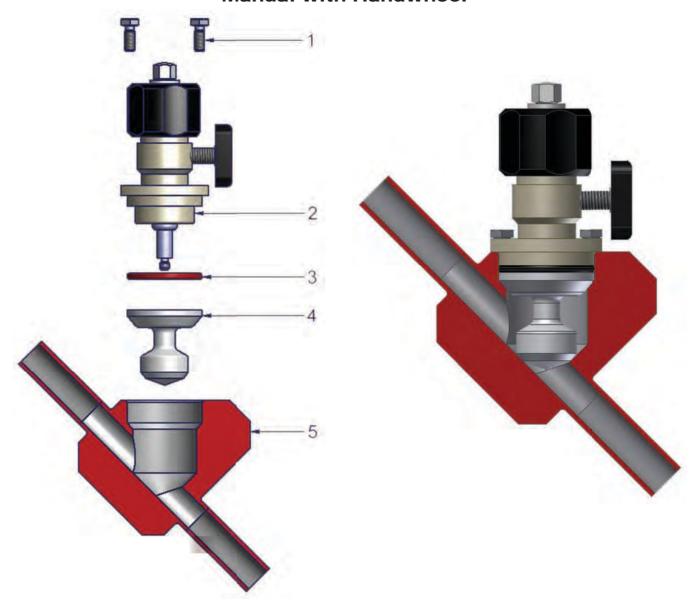
Pneumatic - Air to Open / Spring to Close NC



Size	Nominal Wall	А	Н	D
1/2"	13 x 1.5	130	82	35

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Bill of Materials for BioCheck Inclined Seat Valve Manual with Handwheel

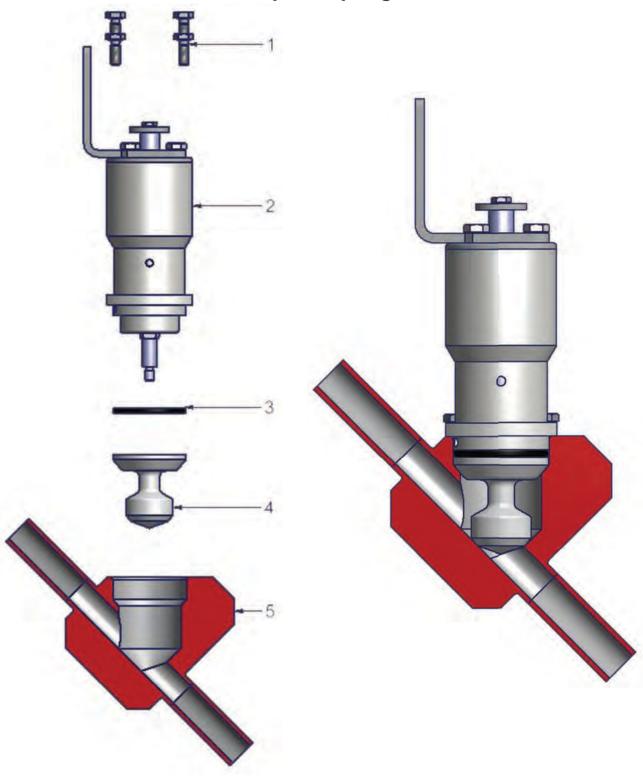


Repair Kit contains: #4 (1) O-ring #5 (1) PTFE-bellows

Repair Kit
Part #
BCSV-MIS-RK

Item	Description	Quantity
1	hexagonal screw	1
2	handwheel	1
3	O-Ring	1
4	PTFE-bellows	1
5	housing	1

Bill of Materials for BioCheck Inclined Seat Valve Pneumatic Air to Open / Spring to Close NC



Repair Kit contains: #4 (1) O-ring #5 (1) PTFE-bellows

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Rep	air Kit
Pa	art #
BCSV-	MIS-RK

Item	Description	Quantity
1	hexagonal screw	1
2	actuator	1
3	O-Ring	1
4	PTFE-bellows	1
5	housing	1



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BioCheck Sampling Into Bottle







Features:

- · for all usual lab bottles
- · connection threading GL45 ISO
- for bottles from 100 ml to 2000 ml
- · no contamination by air
- · absolutely aseptic system
- with connection thread for lab air filter NPT 1/8"
- weight approx. 1.7 kg = 3.7 lb
- · 3A version with hexagonal screws

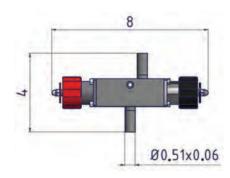
Sampling procedure:

- · both valves are closed
- open valve 2 (black handle)
- sterilize or rinse valve 2 (black handle)
- close valve 2 (black handle)
- open valve 1 (red handle) = sample flows into bottle

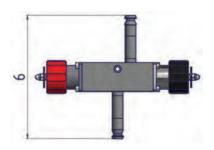
Dismantling from system

- close valve 1
- · dismantle sampling head from bypass

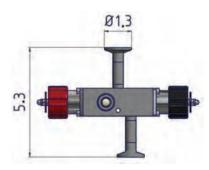
Sampling head with 2 weld on ends Ø0.51x0.06



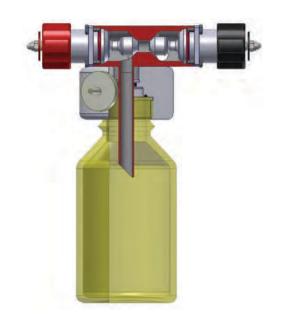
Sampling head with 2 nozzles for quick coupling



Sampling head with 2 clamps

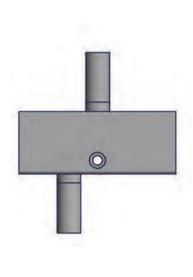


BioCheck Sampling Into Bottle Manually

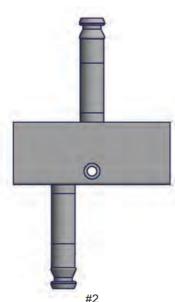




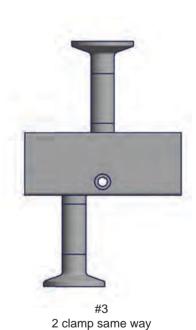
Housing List



#1 2 weld ends 13 x 1.5

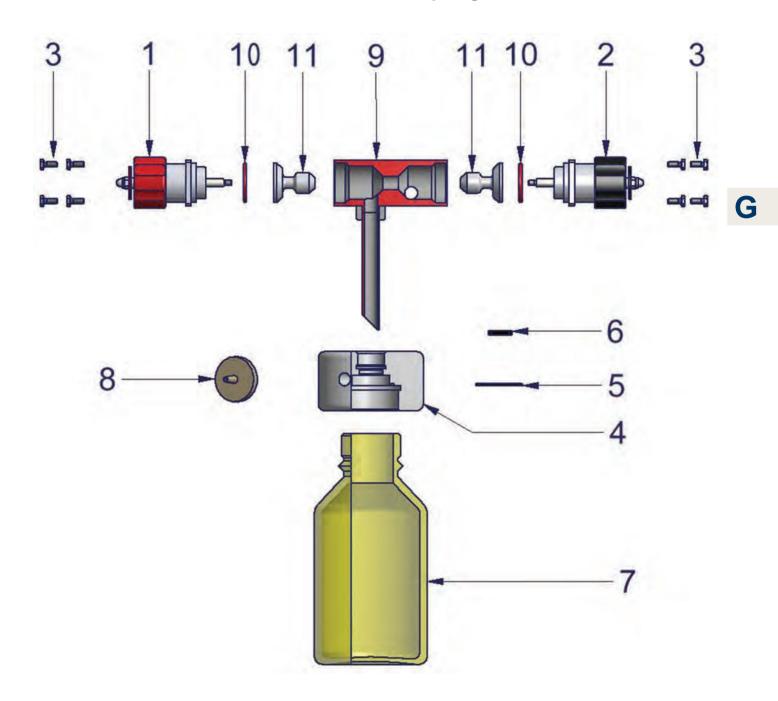


2 nozzles for quick coupling



Item	Description
1	2 weld ends 13 x 1.5
2	2 nozzles for quick coupling
3	2 clamp same way

Bill of Materials for BioCheck Sampling Valves Into Bottle



Repair Kit contains: #10 (2) O-ring #11 (2) PTFE-bellows

Repair Kit	
Part #	
BCSV-SB-RK	

Item	Description	Quantity
1	Actuator red handle 1 (sample flows into bottle)	1
2	Actuator black handle 2 (dismantle sampling head from bypass)	1
3	Hexagonal screw	8
4	Adaptor for bottle	1
5	O-Ring for pipe	1
6	O-Ring for bottle	1
7	Laboratory bottle GL45-500ml	1
8	sterile air filters	1
9	housing	1
10	O-ring	2

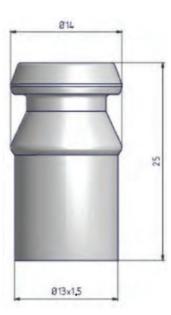


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Weld Nozzle

For Quick Coupling



Including: welding and inner surface $\rm R_{\rm a}$ 0.8 μm mechanically polished.

G

Quick Coupling

For Nozzle



BioShut - Quick Release Cap

For Nozzle



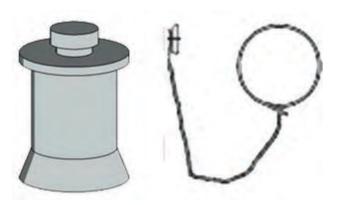
G

BioCap - Protection Cap Set

For Nozzle for Quick Coupling

Features:

- 2 rubber caps
- 2 hooks for rubber caps
- · 2 small chains with loop



BioCap S - Weld Closure

With Cap

Features:

- 1 Nipple 3/8"
- 1 cap with knob and gasket
- 1 small chain with loop
- including welding and inner surface Ra 0,8 μm mechanically polished



Manual Drive

With Handwheel



Pneumatic Actuator

With Self Closing Lever



Lever

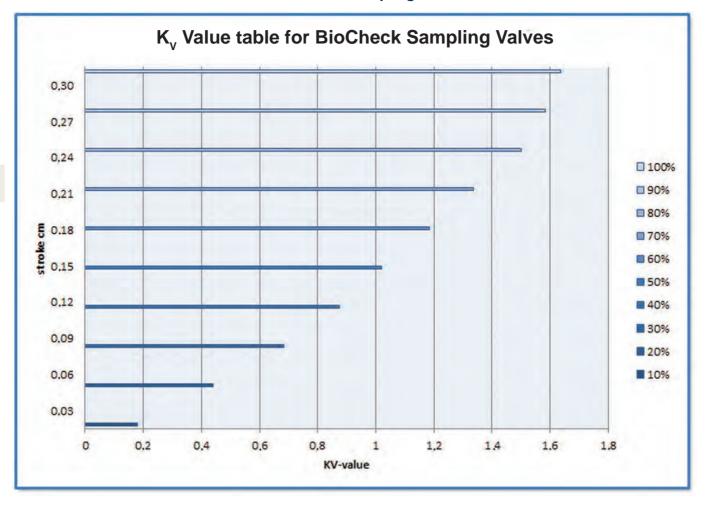
For Pneumatic Cylinder



Position Open

KV Value Table

For Standard Sampling Valve



$$C_{v} = K_{v}/0.86$$

G



Control Valves - Technical Information

3\ 53-06

Applications:

 The process control head is fitted for the controlling of pneumatically operated process valves. Used in dairies, food & beverage, pharmaceutical and chemical industries.

Features:

- · valve body from solid bar
- · no dead space
- · drainable when mounted in various positions
- · high-grade inner surfaces
- no dome or sump in product space
- change of seals without special tools
- optimum cleanability
- · modular assembly system
- low spare part costs



Material:

- product wetted: 1.4404/AISI316L
- optional: 1.4435/AISI316L
- non product contact: 1.4301/AISI304

Product Contact Seals:

O-rings and profile washer: EPDM (other materials upon request

Temperatures:

- maximum standard operating temperature: 130 °C (266 °F)
- sterilization temperature: 150 °C (300 °F) short time* (approx. 20 min)

Standard Operating Pressure:

- standard pressure: max. 6 bar (87 PSI)
- actuator air pressure: min. 6 bar (87 PSI) max. 10 bar (145 PSI)
- controlled air pressure: max.10 bar (145 PSI)

Surfaces:

- wetted product surfaces: R_a<= 0.8 μm (32), optional surfaces available
- non product contact: R_a=1.6 μm

Standard Connections:

 O.D.-Tube (DIN 11866 C) weld optional connections on request

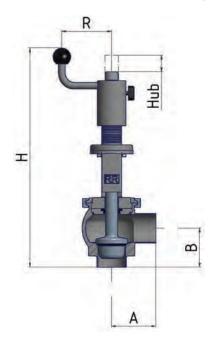
*dependent on operating parameters



Valves can only be quoted when full application data is supplied: product viscosity, temperature, inlet and outlet pressure or process pressure, line size and desired product flow.

Hygienic Control Angle Valve

Manual with Crank Handle

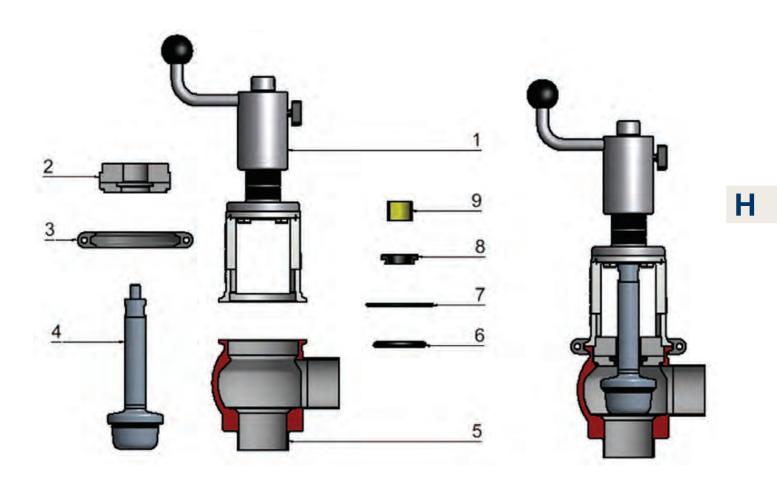


Size	Nominal Wall	Α	В	R	Н	Hub	lbs
1"	1 x 0.065	1.97	1.97	2.87	12.21	0.63	6.8
1-1/2"	1.5 x 0.065	2.36	2.36	2.87	12.99	0.63	11.7
2"	2 x 0.065	3.15	2.76	3.54	15.75	0.81	12.6
2-1/2"	2.5 x 0.065	3.94	3.15	3.54	16.34	0.87	16.8
3"	3 x 0.065	4.92	3.54	3.54	17.52	1.18	22.7
4"	4 x 0.083	5.91	3.94	3.54	18.31	1.30	31.5

At time of order please provide us with the following information: product viscosity, temperature, inlet and outlet pressure or process pressure and desired product flow.



Bill of Materials for Hygienic Control Angle Valves



Repair Kit contains:

#6 (1) O-ring

#7 (1) O-ring

#8 (1) gasket

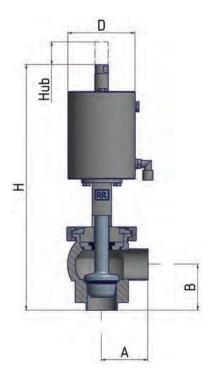
#9 (1) plastic bushing

Repair Kits will be quoted depending upon the application of the valve.

Item	Description	Quantity
1	crank handle	1
2	mounting for spindle seals	1
3	clamp	1
4	spindle	1
5	housing	1
6	O-ring	1
7	O-ring	1
8	gasket	1
9	plastic bushing	1

Hygienic Control Angle Valve

Pneumatic - Air to Open / Spring to Close NC



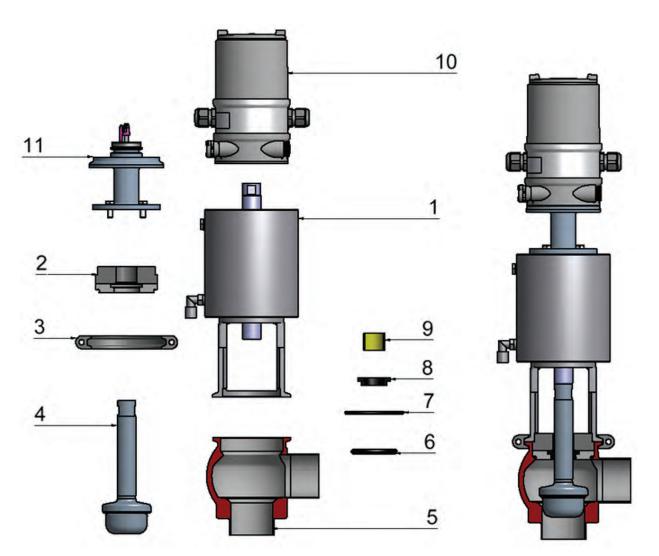
Size	Nominal Wall	Α	В	R	Н	Hub	lbs
1"	1 x 0.065	1.97	1.97	3.54	12.01	0.63	11.2
1-1/2"	1.5 x 0.065	2.36	2.36	3.54	12.40	0.63	13.7
2"	2 x 0.065	3.15	2.76	4.33	14.96	0.81	22.9
2-1/2"	2.5 x 0.065	3.94	3.15	5.24	16.93	0.87	33.5
3"	3 x 0.065	4.92	3.54	6.77	19.88	1.18	54.5
4"	4 x 0.083	5.91	3.94	6.77	20.67	1.30	63.1

At time of order please provide us with the following information: product viscosity, temperature, inlet and outlet pressure or process pressure and desired product flow.





Bill of Materials for Hygienic Control Angle Valves



Repair Kit contains:

#6 (1) EPDM O-ring

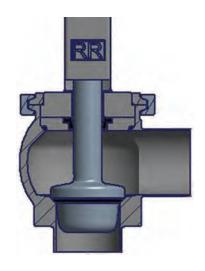
#7 (1) EPDM gasket

#8 (1) guide

#9 (1) plastic bushing

Repair Kits will be quoted depending upon the application of the valve.

Item	Description	Quantity
1	actuator	1
2	mounting for spindle seals	1
3	clamp	1
4	spindle	1
5	housing	1
6	EPDM O-ring	1
7	EPDM gasket	1
8	guide	1
9	plastic bushing	1
10	positioner	1
11	adapter	1



		m³/h		gall	on/h
Size	Nominal Wall	10%	100%	10%	100%
1"	1 x 0.065	2.2	10.6	581	2800
1-1/2"	1.5 x 0.065	1.7	15.0	449	3963
2"	2 x 0.065	3.1	43.8	819	11571
2-1/2"	2.5 x 0.065	3.5	28.3	925	7476
3"	3 x 0.065	4.9	48.5	1294	12812
4"	upon request				

Standard values are calculated on: water, 20 °C (68 °F) temperature, 1 bar (14.5 PSI) pressure loss, +/ 10 % tolerance

With each order a drawing of the $\mathrm{K}_{_{\mathrm{V}}}$ table will be submitted for approval.

C_v Values - Hygienic Size 1"

Opening	m³/h	Gallon/h
10%	2.2	581
20%	3.4	898
30%	5.1	1347
40%	5.4	1427
50%	5.9	1559
60%	6.5	1717
70%	7.3	1928
80%	8.5	2245
90%	9.7	2562
100%	10.6	2800

 $1 \text{ m}^3/\text{h} = 264.17 \text{ gallon}$

The above mentioned $\mathrm{C}_{_{\mathrm{V}}}$ values are not binding, they are examples for possible control modes. Depending upon customer's operating conditions requested in place the regulating cone will be adapted and thus the control modes.





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Control Angle Valve - C_v Table

C_v Values - Hygienic Size 1-1/2"

Ī	Opening	m³/h	Gallon/h
ľ	10%	1.7	449
	20%	3.6	951
	30%	5.0	1321
	40%	5.9	1559
	50%	6.6	1744
	60%	7.4	1955
	70%	8.1	2140
	80%	8.6	2272
	90%	8.9	2351
	100%	10.1	2668

 $1 \text{ m}^3/\text{h} = 264.17 \text{ gallon}$

C_v Values - Hygienic Size 2"

Opening	m³/h	Gallon/h
10%	3.1	819
20%	6.7	1770
30%	10.1	2668
40%	12.7	3355
50%	16.3	4306
60%	21.8	5759
70%	28.2	7450
80%	35.2	9299
90%	39.8	10514
100%	43.8	11571

 $1 \text{ m}^3/\text{h} = 264.17 \text{ gallon}$

The above mentioned C_v values are not binding, they are examples for possible control modes. Depending upon customer's operating conditions requested in place the regulating cone will be adapted and thus the control modes.

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Control Angle Valve - C_v Table

C_v Values - Hygienic Size 2-1/2"

Opening	m³/h	Gallon/h
10%	3.5	925
20%	6.6	1744
30%	9.5	2510
40%	11.6	3064
50%	13.3	3513
60%	15.1	3989
70%	16.7	4412
80%	19.8	5231
90%	23.8	6287
100%	28.3	7476

1 m³/h = 264.17 gallon

C_v Values - Hygienic Size 3"

Opening	m³/h	Gallon/h
10%	4.9	1294
20%	9.8	2589
30%	14.4	3804
40%	17.9	4729
50%	20.5	5416
60%	23.2	6129
70%	26.2	6921
80%	32.2	8506
90%	40.0	10567
100%	48.5	12812

 $1 \text{ m}^3/\text{h} = 264.17 \text{ gallon}$

The above mentioned $\mathrm{C_v}$ values are not binding, they are examples for possible control modes. Depending upon customer's operating conditions requested in place the regulating cone will be adapted and thus the control modes.

RIEGER

53-06

Control Valves in Aseptic Version - Technical Information

Applications:

 The process control head is fitted for the controlling of pneumatically operated process valves. The design of the valve body eleminates dead space, a prerequisite for sterile process engineering. When working with high sterilization temperatures this valve fulfills demands for operational security and reliable function.

Features:

- · valve body made from solid bar
- no dead spaces
- drainable when mounted in various positions
- complete separation from environment
- · no dome or sump in product space
- · change of seals without special tools
- minimum 500,000 strokes
- · optimum cleanability
- long life of the PTFE bellows
- low spare part costs



Material:

- in product contact: 1.4404/AISI316L
- optional: 1.4435/AISI316L
- non product contact: 1.4301/AISI304

Product Contact Seals:

bellows: PTFE

Temperatures:

- maximum standard operating temperature: 121 °C (250 °F)
- sterilization temperature: 135 °C (275 °F) short time* (approx. 20 min)

Standard Operating Pressure:

- standard pressure: max. 6 bar (87 PSI)
- actuator air pressure: min. 6 bar (87 PSI) max. 10 bar (145 PSI)

Surfaces:

- wetted product surfaces: R₃<= 0.8 μm (32), optional surfaces available
- non product contact: R₃=1.6 μm

Standard Connections:

· O.D.-Tube (DIN 11866 C) weld optional connections on request

*dependent on operating parameters

outlet pressure or process pressure, line size and desired product flow.

Contact Dixon Sanitary Engineering Department for all inquiries.

Valves can only be quoted when full application data is supplied: product viscosity, temperature, inlet and



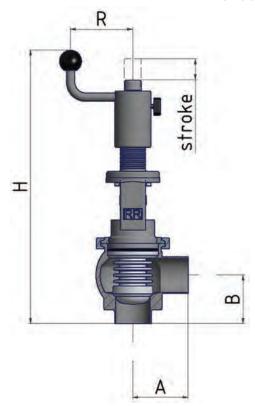
WebSales@GoodyearRubberProducts.com

We Ship **World Wide**



Aseptic Control Angle Valve

Manual with Crank Handle



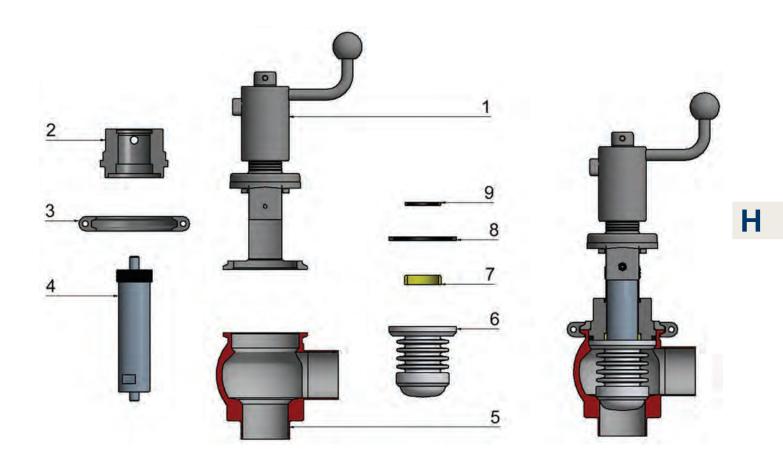
Size	Nominal Wall	А	В	R	Н	Stroke	lbs
1"	1 x 0.065	1.97	1.97	2.87	12.21	0.28	6.8
1-1/2"	1.5 x 0.065	2.36	2.36	2.87	12.99	0.35	11.7
2"	2 x 0.065	3.15	2.76	3.54	15.75	0.47	12.6
2-1/2"	2.5 x 0.065	3.94	3.15	3.54	16.34	0.59	16.8
3"	3 x 0.065	4.92	3.54	3.54	17.52	0.71	22.7
4"	4 x 0.083	5.91	3.94	3.54	18.31	0.91	31.5

At time of order please provide us with the following information: product viscosity, temperature, inlet and outlet pressure or process pressure and desired product flow.





Bill of Materials for Aseptic Control Angle Valves



Repair Kit contains:

#6 (1) PTFE-bellows

#7 (1) guide

#8 (1) O-ring for bellows

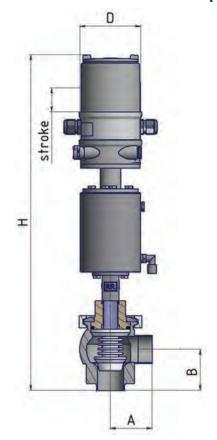
#9 (1) O-ring for spindle

Repair Kits will be quoted depending upon the applications of the valve.

Item	Description	Quantity
1	crank handle	1
2	mounting for spindle seals	1
3	clamp	1
4	spindle	1
5	housing	1
6	PTFE-bellows	1
7	guide	1
8	O-Ring for bellows	1
9	O-Ring for spindle	1

Aseptic Control Angle Valve

Pneumatic - Air to Open / Spring to Close NC - with Positioner



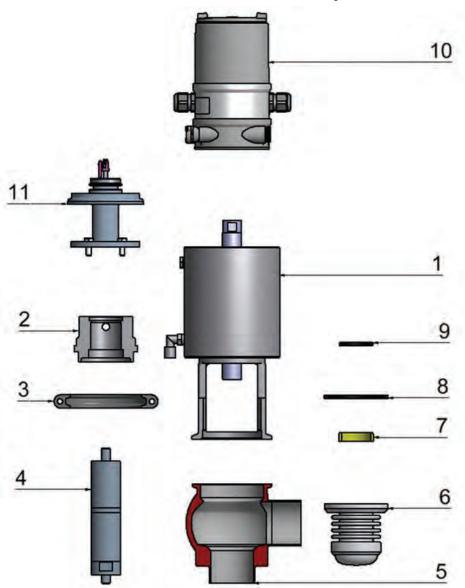
Size	Nominal Wall	А	В	R	D	Stroke	lbs
1"	1 x 0.065	1.97	1.97	3.54	17.91	0.28	11.2
1-1/2"	1.5 x 0.065	2.36	2.36	3.54	18.31	0.35	13.7
2"	2 x 0.065	3.15	2.76	4.33	20.87	0.47	22.9
2-1/2"	2.5 x 0.065	3.94	3.15	5.24	22.83	0.59	33.5
3"	3 x 0.065	4.92	3.54	6.77	25.79	0.71	54.5
4"	4 x 0.083	5.91	3.94	6.77	26.57	0.91	63.1

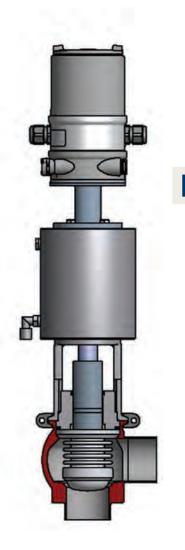
At time of order please provide us with the following information: product viscosity, temperature, inlet and outlet pressure or process pressure and desired product flow.





Bill of Materials for Aseptic Control Angle Valves





Repair Kit contains:

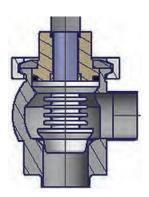
#6 (1) PTFE-bellows

#7 (1) guide

#8 (1) O-ring for bellows #9 (1) O-ring for spindle

Repair Kits will be quoted depending upon the application of the valve.

Item	Description	Quantity
1	actuator	1
2	mounting for spindle seals	1
3	clamp	1
4	spindle	1
5	housing	1
6	PTFE-bellows	1
7	guide	1
8	O-Ring for bellows	1
9	O-Ring for spindle	1
10	positioner	1
11	adapter	1



		m³/h		gallon/h	
Size	Nominal Wall	10%	100%	10%	100%
1"	1 x 0.065	1.4	6.4	370	1691
1-1/2"	1.5 x 0.065	3.1	13.4	819	3540
2"	2 x 0.065	4.3	27.3	1136	7212
2-1/2"	2.5 x 0.065	1.9	35.2	502	9299
3"	3 x 0.065	10.1	54	2668	14265
4"	4 x 0.083	upon request			

 $1 \text{ m}^3/\text{h} = 264.17 \text{ gallon}$

Values are calculated on: water, 20 °C (68 °F) temperature, 1 bar (14.50 PSI) pressure loss, +/ 10 % tolerance

With each order a drawing of the K_v table will be submitted for approval.

C_v Values - Aseptic Size 1"

Opening	m³/h	Gallon/h
10%	1.4	370
20%	3.5	925
30%	5.3	1400
40%	5.4	1427
50%	5.5	1453
60%	5.7	1506
70%	5.9	1559
80%	6.2	1638
90%	6.3	1664
100%	6.4	1691

 $1 \text{ m}^3/\text{h} = 264.17 \text{ gallon}$

The above mentioned $C_{_{\boldsymbol{v}}}$ values are not binding, they are examples for possible control modes. Depending upon customer's operating conditions requested in place the regulating cone will be adapted and thus the control modes.



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Control Angle Valve - C_v Table

C_v Values - Aseptic Size 1-1/2"

Opening	m³/h	Gallon/h
10%	3.1	819
20%	6.1	1611
30%	7.1	1876
40%	7.6	2008
50%	7.8	2061
60%	8.2	2166
70%	9.2	2430
80%	10.4	2747
90%	11.3	2985
100%	13.4	3540

 $1 \text{ m}^3/\text{h} = 264.17 \text{ gallon}$

C_v Values - Aseptic Size 2"

Opening	m³/h	Gallon/h
10%	4.3	1136
20%	10.2	2695
30%	13.2	3487
40%	15.0	3963
50%	17.7	4676
60%	20.5	5415
70%	22.5	5944
80%	25.0	6604
90%	26.4	6974
100%	27.3	7212

 $1 \text{ m}^3/\text{h} = 264.17 \text{ gallon}$

The above mentioned $\mathrm{C}_{_{\mathrm{V}}}$ values are not binding, they are examples for possible control modes. Depending upon customer's operating conditions requested in place the regulating cone will be adapted and thus the control modes.

Control Angle Valve - C_v Table

C_v Values - Aseptic Size 2-1/2"

Opening	m³/h	Gallon/h
10%	7.4	1955
20%	13.4	3540
30%	17.4	4597
40%	20.0	5283
50%	21.8	5759
60%	24.3	6419
70%	27.5	7265
80%	30.8	8136
90%	33.2	8770
100%	35.2	9299

 $1 \text{ m}^3/\text{h} = 264.17 \text{ gallon}$

C_v Values - Aseptic Size 3"

Opening	m³/h	Gallon/h
10%	10.1	2668
20%	17.5	4623
30%	22.0	5812
40%	25.0	6604
50%	28.5	7529
60%	33.8	8929
70%	40.0	10567
80%	46.0	12152
90%	50.4	13314
100%	54.0	14265

 $1 \text{ m}^3/\text{h} = 264.17 \text{ gallon}$

The above mentioned $\mathrm{C_v}$ values are not binding, they are examples for possible control modes. Depending upon customer's operating conditions requested in place the regulating cone will be adapted and thus the control modes.

Applications:

 Digital electro pneumatic positioner for the integrated mounting on process control valves.

Features:

- · compact stainless steel design
- · graphic display with backlight
- easy start-up
- · comprehensive range of additional software functions
- · internal control air channel





Adaptor Kits For Positionaer Type 8692

Size	Part #	lbs.
1" - 1-1/2"	CV-AK100-150	2.4
2" - 4"	CV-AK200-400	2.6

Positioner Type 8694

For Pneumatic Control Angle Valves

Applications:

 electro pneumatic positioner for the integrated mounting on process control valves.

Features:

- · compact stainless steel design
- easy start-up
- · comprehensive range of additional software functions
- · internal control air channel



Adaptor Kits For Positionaer Type 8694

Size	Part #	lbs.
1" - 1-1/2"	CV-AK100-150	2.4
2" - 4"	CV-AK200-400	2.6



Characterized V Seat 2-Way Sanitary Stainless Steel Control Valves







L = 60° V seat

M = 30° V seat

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Features and Benefits

- · compact design for areas with tight space restrictions
- · full port design offer high flow capacity
- balanced encapsulated construction minimizes cold-flow of seats
- precise control
- bubble tight shut off
- interchangeable V port characterized seats
- precision stainless steel balls reduce torque and friction losses while extending seat life
- · other characterized seats available
- blow-out proof stem
- · live-loaded stem packing
- ISO 5211 mounting pad
- · lock out, tag out
- ID polish is R_a 32 minimum
- maximum pressure rating: ½" 2" 1000 PSI WOG,
 2½" 4" 800 PSI WOG
- sizes ½" thru 4"

Ordering Information

When ordering please list part number along with description. Example:

BV2CL-200CC-A characterized V seat ball valve, virgin PTFE, 2" clamp ends, standard handle

Valve (1-4)	Seat Material (5)	(6)	Size (7-9)	End (10-11)	(12)	Actuation (13-15)
BV2L 60°	V virgin PTFE	-	050 ½"	C Clamp	-	manual (13)
BV2M 30°	G RTFE		075 ¾"	B Weld		A standard
	C 25% carbon PTFE		100 1"	F Female I-Line		All others (13-15)
	S 50% stainless PTFE		150 1½"	M Male I-Line		Contact Dixon Sanitary
	U UHMW		200 2"	T Threaded Bevel		
			250 21/2"	P Plain Bevel		
			300 3"	Q Q-Line		
			400 4"	J John Perry Plain		
				H John Perry Threaded		
				E Extended Weld		
				1 Female NPT		
				2 Male NPT		
				3 Socket Weld		

The BV2 series control valve has all the features and benefits of the BV2C sanitary encapsulated ball valve including complete interchangeability of all components. The BV2 "V" port control valve utilizes all the components of the BV2C including the full port ball. has introduced a special encapsulated characterized "V" port seat that replaces one end of the standard full port encapsulated seat. All five seat material options are available.

The throttling part of the valve is based on an encapsulated 60° "V" port. Characterized seat technology provides accurate modulating control. The characterized seat control valve gives you extremely precise control through the complete valve rotation. This design gives efficient laminar flow with bubble tight closure. Combine this with our wide variety of pneumatic or electric actuators, positioners and accessories and will provide a modulating control valve package that can match a multitude of performance requirements. 60° "V" port is standard. 30° "V" port is available on request. A simple change of the seat style and/ or seat material allows a modification of valve $C_{_{\rm V}}$ characteristic and fluid compatibility to match your process requirements.



Call Toll Free: 1-866-711-4673
WebSales@GoodyearRubberProducts.com

F10/F12

F10/F12

1155

1680

Characterized V Seat 2-Way Sanitary Stainless Steel Control Valves Specifications

ISO 5211
F03/F04
F03/F04
F04/F05
F05/F07
F05/F07
F07/F10

^{*} see chart material options chart below

BV2"L or M"*-300CC-A

BV2"L or M"*-400CC-A

29.7

43.6

Seat Material Codes

239

266

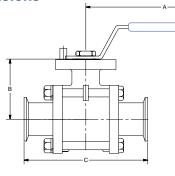
Code	Description Food Grade Material		
V	virgin PTFE	yes	
G	RTFE	yes	
С	25% carbon PTFE	no	
S	stainless reinforced PTFE	yes	
U	UHMW	yes	

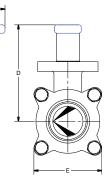
Flow Coefficient (C,)

Percent and Angle of Ball Rotation												
Valve Size	V Port Angle	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
1/2"	30°	0	.04	.23	.47	.77	1.19	1.83	2.47	3.43	4.65	5.55
	60°	0	.04	.28	.73	1.11	1.83	2.92	4.29	7.00	9.43	12.78
3/4"	30°	0	.07	.30	.61	.99	1.57	2.42	3.25	4.52	6.12	7.30
74	60°	0	.07	.35	.93	1.46	2.42	3.85	5.64	9.21	12.41	16.25
1"	30°	0	.08	.45	1.25	2.06	3.54	5.30	7.70	10.49	12.84	15.48
1	60°	0	.09	.68	1.74	2.78	5.13	8.00	11.88	18.71	23.22	32.81
41/"	30°	0	.07	.65	1.88	3.39	5.66	8.36	12.12	16.17	20.44	23.88
1½"	60°	0	.09	.92	2.81	4.69	8.89	14.85	21.16	30.73	45.88	59.74
2"	30°	0	.09	1.18	3.79	7.53	12.26	17.83	26.44	36.45	48.09	55.85
2	60°	0	.11	1.51	5.80	10.39	20.60	33.98	48.75	69.04	104.23	135.75
21/2"	30°	0	.09	1.15	4.42	7.91	13.39	20.05	30.43	41.92	56.30	76.95
	60°	0	.13	1.46	5.91	11.90	23.24	37.92	59.31	83.29	113.65	162.50
3"	30°	0	.12	1.20	4.15	9.49	15.96	26.78	38.91	53.31	69.77	85.91
	60°	0	.15	2.89	6.70	15.82	29.36	46.32	73.60	106.74	149.88	193.20
4"	30°	0	.16	1.75	7.84	18.59	35.21	58.60	87.89	124.21	158.53	196.35
	60°	0	.26	2.20	12.44	33.67	62.98	106.26	160.49	233.96	329.50	437.29

Dimensions

Size	Α	В	С	D	Е
1/2"	4.9	1.5	4.3	3.0	1.9
3/4"	4.9	1.8	4.7	3.3	2.2
1"	5.6	2.1	4.9	3.6	2.4
1½"	9.5	2.7	5.6	4.4	3.1
2"	9.5	3.1	6.4	4.8	3.7
21/2"	18.0	3.8	7.8	5.2	4.8
3"	18.0	4.2	9.0	5.7	5.4
4"	18.0	5.3	9.5	6.8	8.8





All dimensions are in inches, unless noted. Dimensions are approximate.



We Ship **World Wide**



Safety Valves - Technical Information



Applications:

 Safety valve prevents excess pressure of gaseous media in pipelines and vessels. The set pressure is always higher than the operating pressure. As soon as the pressure is reached, the valve opens against the force of the spring. The pressure excess is relieved as soon as the pressure is 10 % higher than the set pressure.

Features:

- · valve body made from solid bar
- no dead spaces
- drainable
- · high-grade inner surfaces
- · no sump, no dome
- · change of seals without special tools
- safety: closed spring cap
- optimum cleanability
- modular assembly systems
- connections suitable for orbital welding
- · low spare part cost
- · adjustable set pressure

Technical Data

Material:

- product contact: 1.4404/AISI316L
- optional: 1.4435/AISI316L
- non product contact: 1.4301/AISI304

Product Contact Seals:

· O-rings: EPDM or FKM

Temperatures:

- maximum standard operating temperature: 130 °C (266 °F)
- sterilization temperature: 150 °C (300 °F) short time* (approx. 20 min)

Pressure:

- set pressure: 22 PSI to 116 PSI resp. 29 PSI to 116 PSI
- controlled air pressure: min. 87 PSI max. 145 PSI

Surfaces

- wetted product surfaces: R_a<= 0.8 μm (32), optional surfaces available
- non product contact: R_a=1.6 μm

Connections:

 weld ends combined with concentrically reduced inch clamp ferrules

*dependent on operating conditions

3A versions not available

Contact Dixon Sanitary Engineering Department for all inquiries.



Call Toll Free: 1-866-711-4673
WebSales@GoodyearRubberProducts.com

Safety Valves Certificate

Applications:

• RIEGER safety valves prevent pressure excesses because of their design: the inlet size is smaller than the outlet size.

Features:

- Passed the EC type-examination (Module B) according to Directive 97/23/EG for steam and gas for the set ranges from 22 PSI to 116 PSI, but for 1" / 1 ½" from 29 PSI to 116 PSI
- The corresponding certificate issued by: TÜV Industries Service GmbH TÜV SÜD Group AbteilungDruckbehälter Dudenstraße 28 D-68167 Mannheim





ZERTIFIKAT Certificate

EG-Baumusterprüfung (Modul B) nach Richtlinie 97/23/EG

Zertifikat-Nr.: Z-IS-DDB-MAN-07-01-13086879-001

Gultigkeit / Validity: 10 Jahre / 10 Years

Name und Anschrift Gebr. Rieger GmbH & Co. KG
des Herstellers: Maschinenfabrik
Name and gostal address of manufacturer: Kochestalistraße 32

Kochertalstraße 32 73406 Aalen

Hiermit wird bescheinigt, daß das unten genannte EG-Baumuster die Anforderungen der Richtlinie 97/23/EG erfüllt.

We herewith certify that the type mentioned below meets the requirements of the Directive 97/23/EC

Prüfbericht Nr.: P-IS-DDB-MAN-07-01-13086879-001
Test report No.: P-IS-DDB-MAN-06-01-13086879-001
P-IS-DDB-MAN-07-01-13086879-002

Geltungsbereich: Sicherheitsventile der Typen
Scope of examination: SH 01, SH 04 und SH 14 in den BaugröBen NW 10x15, 15x20, 20x25, 40x50 und
50x65 (Einstelldruck 1,5 – 8 bar) sowie

Fertigungsstätte: 25x40 (Einstelldruck 2 – 8 bar)

Gebr, Rieger GmbH & Co. KG Maschinenfabrik
Kochertalstraße 32

73406 Aalen TÜV SÜD Industrie Service GmbH

TÜV-CERT-Zertifizierungsstelle für Druckgeräte

(Ort, Datum)
(Place, date)
(Dr. M. Michael Arras)

Bittle beachten Sie die Hinweise auf der zweiten Seite.

Benannte Stelle, Kennnummer 0036.

Please note the remarks on the second page... Notified Body, No. 0036

TÜV Industrie Service GmbH TÜV SÜD Gruppe Abteilung Druckbehälter Dudenstraße 28 68167 Mannheim

Tel.: (06.21) 3 95-2 57 Fax: (06.21) 3 95-5 94 www.luev-sued.de CEOC
D'ORGANISMES DE CONTROLE

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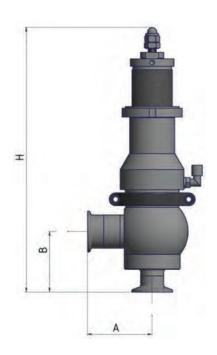
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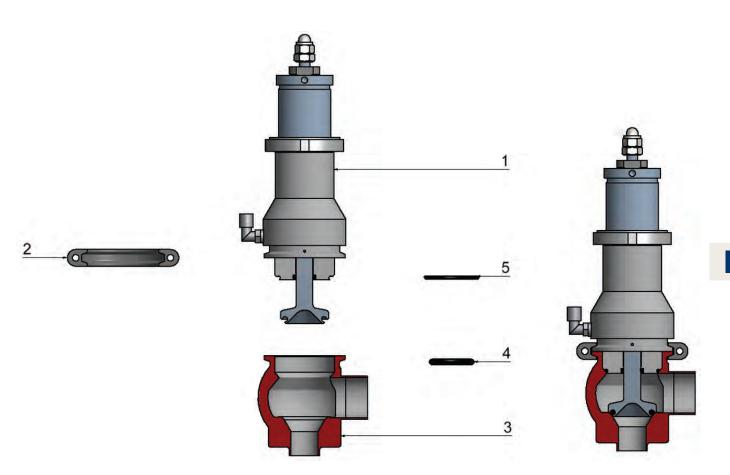
Safety Valve

With Pneumatic Connection for Cleaning - Inch Clamp Ferrule



Ciza	_	D	ш	PSI		lba
Size	A	В	H	min	max	lbs
1" / 1-1/2"	3.15	3.15	13.15	29	116	12.5
1-1/2" / 2"	3.94	3.54	14.96	22	116	15.8
2" / 2-1/2"	4.72	3.94	16.06	22	116	20.2

Bill of Materials for Safety Valves



Repair Kit contains: #4 (1) O-ring #5 (1) O-ring

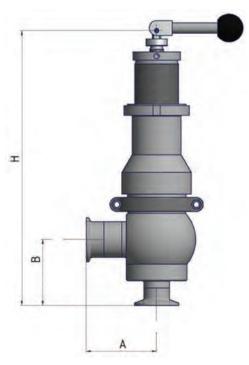
Valve Size	Repair Kit Part # EPDM
1" - 1-1/2"	SH-100150-RKE
1-1/2" - 2"	SH-150200-RKE
2" - 2-1/2"	SH-200250-RKE

Valve Size	Repair Kit Part # FKM
1" - 1-1/2"	SH-100150-RKV
1-1/2" - 2"	SH-150200-RKV
2" - 2-1/2"	SH-200-250-RKV

Item	Description	Quantity
1	actuator	1
2	clamp	1
3	housing	1
4	O-ring O-ring	1
5	O-ring	1

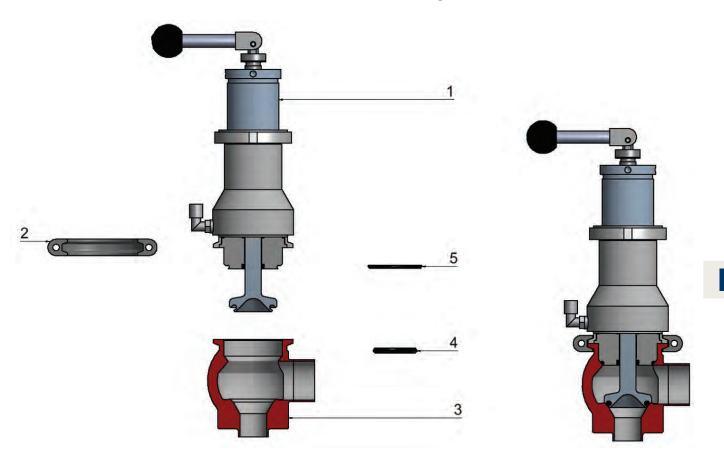
Safety Valve

With Lever for Cleaning - Inch Clamp Ferrule



Size	Α	в н ғ		P	SI	lbs
Size	A	Ь	П	min	max	105
1" / 1-1/2"	3.15	3.15	13.15	29	116	12.8
1-1/2" / 2"	3.94	3.54	14.96	22	116	16.1
2" / 2-1/2"	4.72	3.94	16.06	22	116	20.5

Bill of Materials for Safety Valves



Repair Kit contains:

#4 (1) O-ring #5 (1) O-ring

Valve Size	Repair Kit Part # EPDM
1" - 1-1/2"	SH-100150-RKE
1-1/2" - 2"	SH-150200-RKE
	000_00
2" - 2-1/2"	SH-200250-RKE
'	
Valve Size	Repair Kit Part #

1" - 1-1/2" SH-100150-RKV 1-1/2" - 2" SH-150200-RKV 2" - 2-1/2" SH-200-250-RKV

Item	Description	Quantity
1	actuator	1
2	clamp	1
3	housing	1
4	O-ring	1
5	O-ring	1



Manual Overflow Valves - Technical Information



Applications:

 Valve opens when the set pressure is reached to prevent excess pressure in piping or systems. The lever allows lifting by hand for seat cleaning purposes. They are suitable for liquids, steam and gas.

Features:

- · valve body made from solid bar
- · no dead spaces
- · drainable when mounted in various positions
- high-grade inner surfaces
- no sump, no dome
- · clamp union between housing and actuator
- optimum cleanability
- · low spare part cost

Technical Data

Material:

- product contact: 1.4404/AISI316L
- optional: 1.4435/AISI316L
- non product contact: 1.4301/AISI304

Product Contact Seals:

O-rings: EPDM or FKM

Temperatures:

- maximum standard operating temperature: 130 °C (266 °F)
- sterilization temperature: 150 °C (300 °F) short time* (approx. 20 min)

Pressure:

 set pressure: 0.5 to 6 bar (8 PSI to 87 PSI) higher pressures on request

Surfaces:

- wetted product surfaces: R_a<= 0.8 μm (32), optional surfaces available
- non product contact: R_a=1.6 μm

Standard Connections:

 O.D.-Tube (DIN 11866 C) weld optional connections on request

*dependent on operating conditions

3A versions not available

Contact Dixon Sanitary Engineering Department for all inquiries.

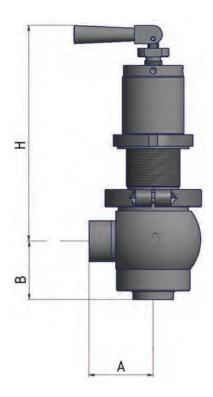


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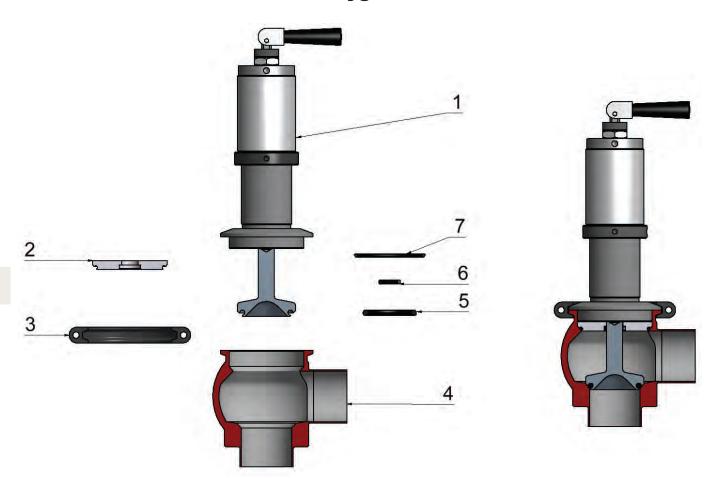
Overflow Valve

With Weld Ends

Size	Nominal Wall	А	В	Н	lbs
1"	1 x 0.065	1.97	1.97	7.68	5.7
1-1/2"	1.5 x 0.065	2.36	2.36	8.07	8.8
2"	2 x 0.065	3.15	2.76	10.04	11.1
2-1/2"	2.5 x 0.065	3.86	3.15	12.20	22
3"	3 x 0.065	4.92	3.74	13.39	29.1
4"	4 x 0.083	5.00	3.86	13.78	36.4



Bill of Materials for Hygienic Overflow Valves



Repair Kit contains: #5 (1) O-ring #6 #7

Valve Size	Repair Kit Part #
	EPDIVI
1"	MOV-100-RKE
1-1/2"	MOV-150-RKE
2"	MOV-200-RKE
2-1/2"	MOV-250-RKE
3"	MOV-300-RKE
4"	MOV-400-RKE

(1) O r	0	1	actuator	1
6 (1) O-ring 7 (1) O-ring		2	mounting for spindle seals	1
(1)01	mig	3	clamp	1
		4	housing	1
alve Size	Repair Kit Part #	5	O-ring	1
EPDM	6	O-ring	1	
1" 1-1/2"	MOV-100-RKE MOV-150-RKE	7	O-ring	1
2"	MOV-200-RKE			
	.			

Description

Item

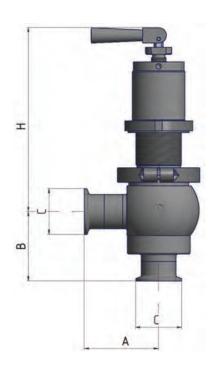
Valve Size	Repair Kit Part # FKM			
1"	MOV-100-RKV			
1-1/2"	MOV-150-RKV			
2"	MOV-200-RKV			
2-1/2"	MOV-250-RKV			
3"	MOV-300-RKV			
4"	MOV-400-RKV			

Quantity

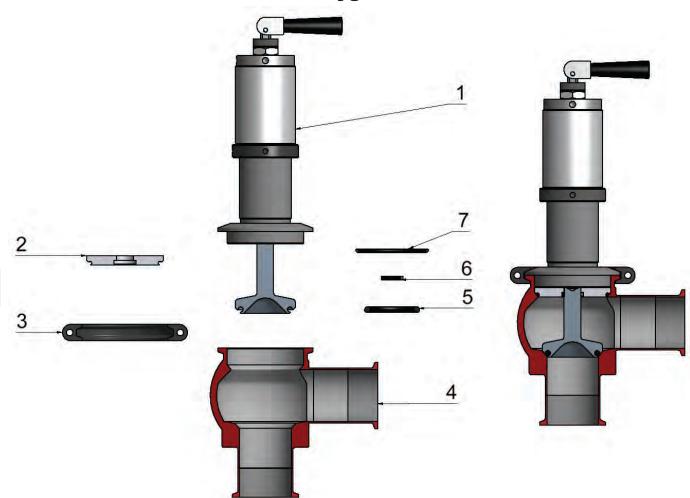
Overflow Valve

With Tri-Clamps

Size	Nominal Wall	С	Α	В	Н	lbs
1"	1 x 0.065	1.99	3.07	3.07	8.07	6.2
1-1/2"	1.5 x 0.065	1.99	3.46	3.46	8.27	9.3
2"	2 x 0.065	2.52	4.25	3.86	10.63	11.5
2-1/2"	2.5 x 0.065	3.05	4.96	4.25	12.79	22.5
3"	3 x 0.065	3.58	6.02	4.84	14.17	30.0
4"	4 x 0.083	4.69	6.10	4.96	14.57	37.5



Bill of Materials for Hygienic Overflow Valves



Repair Kit contains:

#5 (1) O-ring

#6 (1) O-ring #7 (1) O-ring

Valve Size	Repair Kit Part # EPDM
1"	MOV-100-RKE
1-1/2"	MOV-150-RKE
2"	MOV-200-RKE
2-1/2"	MOV-250-RKE
3"	MOV-300-RKE
4"	MOV-400-RKE

Repair Kit Part # FKM
MOV-100-RKV
MOV-150-RKV
MOV-200-RKV
MOV-250-RKV
MOV-300-RKV
MOV-400-RKV

Item	Description	Quantity
1	actuator	1
2	mounting for spindle seals	1
3	clamp	1
4	housing	1
5	O-ring	1
6	O-ring	1
7	O-ring	1



Pneumatic Overflow Valves - Technical Information

Applications:

 Valve opens when the set pressure is reached to prevent excess pressure in piping or systems. They are suitable for liquids, steam and gas.

Features:

- · valve body made from solid bar
- no dead spaces
- · drainable when mounted in various positions
- · high-grade inner surfaces
- · no sump, no dome
- · clamp union between valve body and actuator
- · easily and perfectly cleanable
- modular assembly system easy change between hygienic and aseptic type
- standards seals
- · spare parts out of right angle program

Technical Data

Material:

- product contact: 1.4404/AISI316L
- optional: 1.4435/AISI316L
- non product contact: 1.4301/AISI304

Seals:

- Hygeniec EPDM O-rings
- Aseptic PTFE Bellows

Temperatures:

- maximum standard operating temperature EPDM: 130 °C (266 °F)
- maximum standard operating temperature PTFE: 121 °C (250 °F)
- sterilization temperature EPDM: 150 °C (300 °F) short time* (approx. 20 min)
- sterilization temperature PTFE: 135 °C (275 °F) short time* (approx. 20 min)

Set Range:

- possible set pressure for O-ring version: 0.5 to 6 bar (8 PSI to 87 PSI) 1.5 to 6 bar (22 PSI to 87 PSI)
- PTFE-bellows version pressure range depends on spring control air pressure: min 6 bar - max 10 bar (min. 87 PSI max 145 PSI)

Surfaces:

- product contact optional: R_a<= 0.8 μm electro polished
- non product contact: R_a=1.6 μm

Standard Connections:

 O.D.-Tube (DIN 11866 C) weld optional connections on request

*dependent on operating conditions

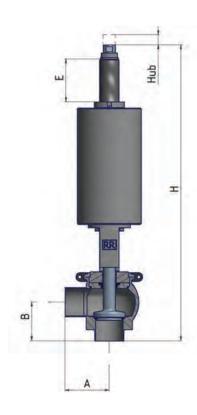






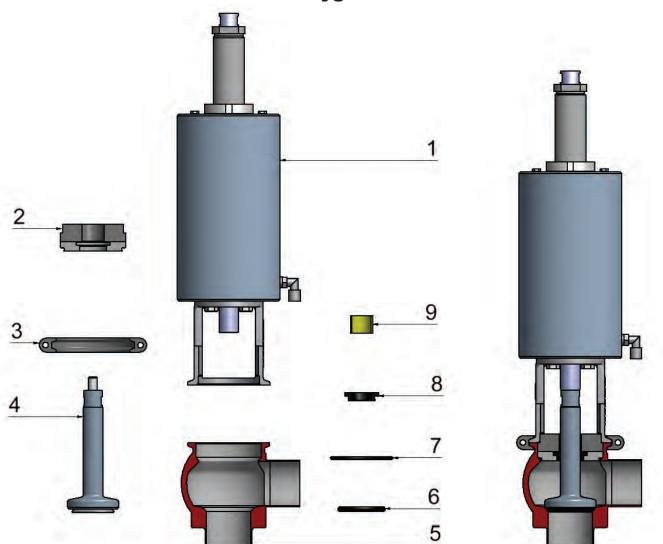
Overflow Valve

Hygienic



Size	Nominal Wall	Е	А	В	Н	Stroke	lbs
1"	1 x 0.065	1.5	1.97	1.97	15.0	0.27	17.6
1-1/2"	1.5 x 0.065	1.97	3.15	2.16	16.89	0.35	24.3
2"	2 x 0.065	3.07	3.15	2.55	21.49	0.47	28.7
2-1/2"	2.5 x 0.065	3.62	3.97	2.75	24.92	0.63	35.3
3"	3 x 0.065	3.62	4.72	3.15	26.38	0.75	46.3

Bill of Materials for Hygienic Overflow Valves



Repair Kit contains:

#6 (1) O-ring

#7 (1) O-ring

#8 (1) gasket

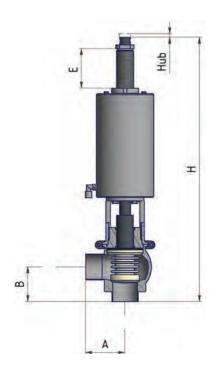
#9 (1) plastic bushing

Valve Size	Repair Kit Part #
1"	OVPH-100-RK
1-1/2"	OVPH-150-RK
2"	OVPH-200-RK
2-1/2"	OVPH-250-RK
3"	OVPH-300-RK

Item	Description	Quantity
1	actuator	1
2	mounting for spindle seals	1
3	clamp	1
4	spindle	1
5	housing	1
6	O-ring	1
7	O-ring	1
8	gasket	1
9	plastic bushing	1

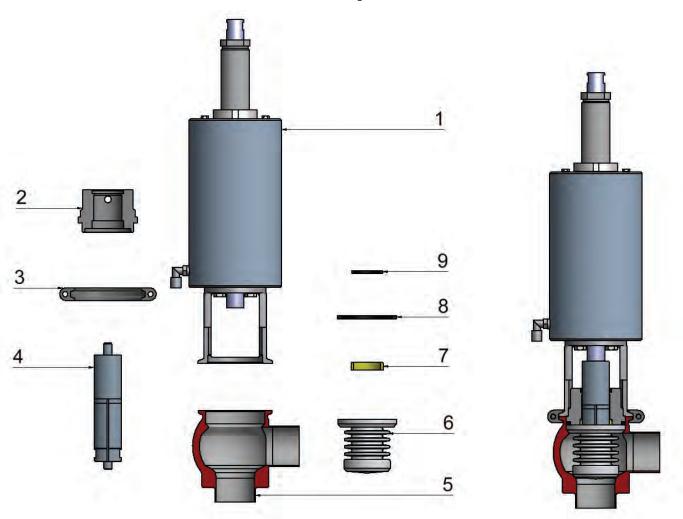
Overflow Valve

Aseptic



Size	Nominal Wall	Е	А	В	Н	Stroke	lbs
1"	1 x 0.065	1.5	1.97	1.97	15.0	0.27	17.6
1-1/2"	1.5 x 0.065	1.97	3.15	2.16	16.89	0.35	24.3
2"	2 x 0.065	3.07	3.15	2.55	21.49	0.47	28.7
2-1/2"	2.5 x 0.065	3.62	3.97	2.75	24.92	0.63	35.3
3"	3 x 0.065	3.62	4.72	3.15	26.38	0.75	46.3

Bill of Materials for Aseptic Overflow Valves



Repair Kit contains:

#6 (1) PTFE-bellows

(1) guide (1) O-ring for bellows

#9 (1) O-ring for spindle

Valve Size	Repair Kit Part #
1"	OVPA-100-RK
1-1/2"	OVPA-150-RK
2"	OVPA-200-RK
2-1/2"	OVPA-250-RK
3"	OVPA-300-RK

Item	Description	Quantity
1	actuator	1
2	mounting for spindle seals	1
3	clamp	1
4	spindle	1
5	housing	1
6	PTFE-bellows	1
7	guide	1
8	O-Ring for bellows	1
9	O-Ring for spindle	1

Sanitary Breakaway Coupling



Applications:

· Minimizes spillage and damage associated with pull away and drive away incidents

Features:

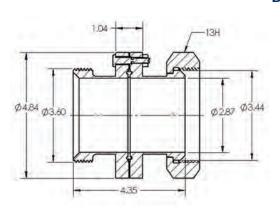
- designed to be installed between a fixed point and a hose
- coupling breaks away with an excessive load
- bevel seat connection standard, optional sanitary ends avaliable
- EPDM standard clamp gasket, optional material available
- working pressure: 350 PSI @ 70°F
- 13kN break load bolts standard, other break loads available
- 316 stainless steel polished to standard <32R_a, 3A finish
- · EPDM standard clamp gasket

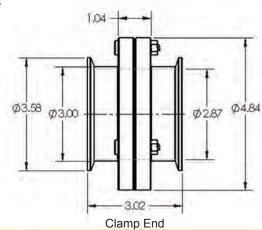
Ordering Information

Series (1-3)	(1)		sket Material (5)	aterial Size (6-9)			End (10-11)		Break Load kN (12-13)	
SBC Sanitary Breakaway Coupling	-	E*	EPDM	200	2"	С	Clamp	09	9kN	
		V	FKM	300*	3"	В	Weld	13*	13kN	
		S	Silicone	400	4"	F	Female I-Line	15	15kN	
		В	Buna			М	Male I-Line	24	24kN	
						Т	Threaded Bevel	33	33kN	
						Р	Plain Bevel			
						Q	Q-Line			
						J	John Perry Plain			
						Н	John Perry Threaded			
						Е	Extended Weld			
						Z	Combination (Add Note)			

Standard Configuration

Dimensions





Bevel Seat End

WebSales@GoodyearRubberProducts.com

BV2N ball valve is manufactured of CF8M (316) stainless steel. It is a three piece non-encapsulated valve with clamp ends and ISO 5211 mounting pad.



BV3S ball valve is manufactured of CF8M (316) stainless steel. It is a 3-way encapsulated valve with clamp ends and ISO 5211 mounting pad.

BV4S ball valve is manufactured of CF8M (316) stainless steel. It is a 4-way encapsulated valve with clamp ends and ISO 5211 mounting pad.



BV2G ball valve is manufactured of CF8M (316) stainless steel. It is a three piece non-encapsulated valve with clamp ends. There is no ISO mounting pad; for manual actuation only.



BV2L and BV2M ball valves are characterized V Seat 2-Way CF8M (316) sanitary stainless steel control valves. It is a three piece encapsulated valve with clamps end and ISO 5211 mounting pad.



Private label valve handles covers are available. See page 215



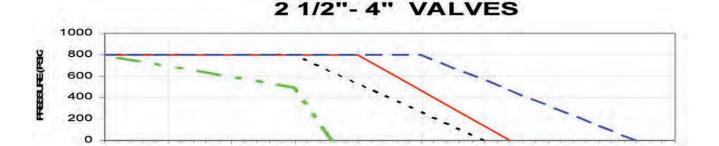
Sanitary Ball Valves

Seat Materials for Ball Valves

Code	Designation	Material	Applications
V	virgin PTFE	Virgin polytetrafluoroethylene	100% PTFE Our standard seat material. Ideal for most sanitary services. Specified for applications requiring a low co-efficient of friction. Food Grade Material
G	RTFE	15% Glass reinforced tetrafluoroethylene	15% Glass filled + 85% PTFE Slightly higher temperature and pressure rating than PTFE. Specified for applications requiring higher cycle life than PTFE. Food Grade Material
С	25% carbon PTFE	25% Carbon reinforced tetrafluoroethylene	25% Carbon +75% PTFE Specified for higher temperature pressure applications. Ideal for steam and thermal fluid applications. Higher cycle life than RTFE.
S	stainless steel PTFE	50% Stainless steel filled tetrafluoroethylene	50% Stainless steel + 50% PTFE Specified for higher temperature pressure applications in a sanitary process. Food Grade Material
U	UHMW	Ultra-high molecular weight polyethylene	Specified for its low modulus of abrasion and minimal property degradation when exposed to moderate levels of radiation. Ideal for applications where fluorocarbons are not acceptable. Food Grade Material

Pressure Temperature Charts

1/2" - 2" VALVES HESSURE(PSIG TEMPERATURE (F) 25% CARBON & 50% SS FILLED TFE



Sanitary Ball Valves Features and Benefits

- · compact design for areas with tight space restrictions
- full port design offers lower pressure drop and a less turbulent flow
- balanced encapsulated construction minimizes cold- flow of seats
- precision stainless steel balls reduce torque and friction losses while extending seat life
- blow-out proof stem
- live-loaded stem packing
- ISO 5211 mounting pad
- · lockable handle can prevent accidental actuation when used
- ID polish is R₃ 32 minimum
- pressure rating: ½" 2" 1000 PSI WOG, 2½" 4" 800 PSI WOG
- see seat material ratings on page ?? for applicable temperature ranges
- sizes ½" thru 4"



Ordering Information

BV2C Encapsulated 2-way Sanitary Stainless Steel Ball Valve BV2N Non-Encapsulated 2-way Sanitary Stainless Steel Ball Valve

When ordering please list part number along with description. Example:

BV2CV-200CC-A encapsulated ball valve, virgin PTFE, 2" clamp ends, standard handle

Valve (1-4)	Seat Material (5)	(6)	Size (7-9)	End (10-11)	(12)	Actuation (13-15)
BV2C	V Virgin PTFE	-	050 1/2"	C Clamp	-	Manual
Encapsulated	G RTFE		075 3/4"	B Weld		A - Standard
BV2N	C 25% Carbon PTFE		100 1"	F Female I-Line		All others (13-15)
Non-Encapsulated	S 50% SS PTFE		150 1-1/2"	M Male I-Line		Contact Dixon Sanitary
	U UHMW		200 2"	T Threaded Bevel		
			250 2-1/2"	P Plain Bevel		
			300 3"	Q Q-Line		
			400 4"	J John Perry Plain		
				H John Perry Threaded		
				E Extended Weld		
				1 Female NPT		
				2 Male NPT		
				3 Socket Weld		

Specifications

Information supplied based on water media at 68°F

Size	Part#	Weight (lbs.)	Assembly Torque (in. lbs.)	Non-Encapsulated Break Torque ** (in. lbs.)	Encapsulated Break Torque ** (in. lbs.)	ISO 5211
1/2"	BV2C*-050CC-A	1.5	160	55	105	F03/F04
3/4"	BV2C*-075CC-A	1.9	160	71	116	F03/F04
1"	BV2C*-100CC-A	2.7	160	101	336	F04/F05
1½"	BV2C*-150CC-A	4.8	200	221	420	F05/F07
2"	BV2C*-200CC-A	8.9	212	345	473	F05/F07
21/2"	BV2C*-250CC-A	18.7	221	683	788	F07/F10
3"	BV2C*-300CC-A	29.7	239	830	1155	F10/F12
4"	BV2C*-400CC-A	43.6	266	1323	1680	F10/F12

^{*} Refer to seat material codes on the next page.

^{**} Torque is measured at the valve stem with virgin PTFE seats, 100 PSI differential pressure, ambient temperature and fluid with a specific gravity of 1.0. For varying conditions or other seat options, please contact Dixon Sanitary. When the valve is not factory actuated by Dixon Sanitary, an additional safety factor is recommended.



J

Sanitary Ball Valves

Specifications

Vacuum Testing (virgin PTFE seats)

Valve Size	Body Leakage (atm-cc/sec)	Helium Leak Rate Test		
1/2" - 11/2"	1 x 10 ⁻⁹	10 ⁻⁵ Torr		
2" - 4"	1 x 10 ⁻⁷	10⁻⁴ Torr		

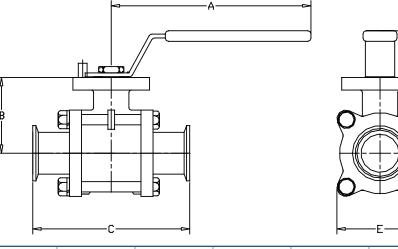
Flow Data

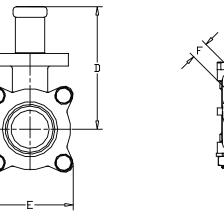
Valve Size	Encapsulated and Non-encapsulated C _v
1/2"	8
3/4"	29
1"	66
1½"	192
2"	434
2½"	723
3"	1124
4"	2100

Seat Material Codes

Code	Description	Food Grade Materials		
V	virgin PTFE	yes		
G	RTFE	yes		
С	25% carbon PTFE	no		
S	stainless reinforced PTFE	yes		
U	UHMW	yes		

Dimensions





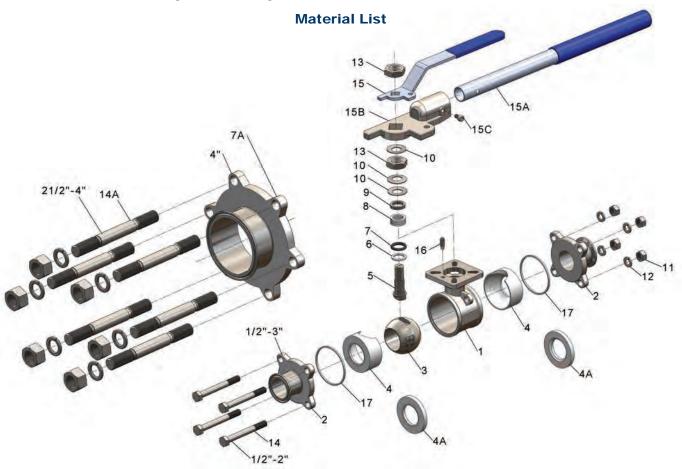
Size	А	В	С	D	Е	F (mm)	G	Н
1/2"	4.9	1.5	4.3	3.0	1.9	9	F04	F03
3/4"	4.9	1.8	4.7	3.3	2.2	9	F04	F03
1"	5.6	2.1	4.9	3.6	2.4	11	F05	F04
1½"	9.5	2.7	5.6	4.4	3.1	14	F07	F05
2"	9.5	3.1	6.4	4.8	3.7	14	F07	F05
21/2"	18.0	3.8	7.8	5.2	4.8	17	F10	F07
3"	18.0	4.2	9	5.7	5.4	17	F12	F10
4"	18.0	5.3	9.5	6.8	8.8	22	F12	F10

All dimensions are in inches, unless noted. Dimensions are approximate.



Call Toll Free: 1-866-711-4673

Encapsulated and Non-Encapsulated 2-Way Sanitary Stainless Steel Ball Valves



Repair Kit contains:

#4 (2) seats (encapsulated) or

#4A (2) seats (non-encapsulated)

#6 (1) thrust washer

#7 (1) O-ring

#8 (3) stem packings

#17 (2) body seals

. ,				
Valve	Repair Kit			
Size	Part #			
1/2"	BV-2"C or N"-*K050			
3/4"	BV-2"C or N"-*K075			
1"	BV-2"C or N"-*K100			
1½"	BV-2"C or N"-*K150			
2"	BV-2"C or N"-*K200			
21/2"	BV-2"C or N"-*K250			
3"	BV-2"C or N"-*K300			
4"	BV-2"C or N"-*K400			
Code *	Description			

Code *	Description		
V	virgin PTFE		
G	RTFE		
С	25% carbon PTFE		
S	stainless rein. PTFE		
U	UHMW		

		Marketal		Quantity				
Item	Description	Material	½" to 2"	2½"	3"	4"		
1	body	CF8M	1	1	1	1		
2	end (4-bolt)	CF8M	2	2	2	n/a		
2A	end (6-bolt)	CF8M	n/a	n/a	n/a	2		
3	ball	CF8M	1	1	1	1		
4	seat (encapsulated)	V, G, C, S or U	2	2	2	2		
4A	seat (non-encapsulated)	V, G, C, S or U	2	2	2	2		
5	stem	316	1	1	1	1		
6	thrust washer	V, G, C, S or U	1	1	1	1		
7	O-ring	FKM	1	1	1	1		
8	stem packing	V, G, C, S or U	3	3	3	3		
9	gland ring	316	1	1	1	1		
10	bevel washer	301	3	3	3	3		
11	hex nut	304	4	4	8	12		
12	bolt washer	304	4	4	8	12		
13	nut	304	2	2	2	2		
14	bolt	304	4	4	n/a	n/a		
14A	bolt (double thread)	304	n/a	n/a	4	6		
15	handle	304/Vinyl	1	n/a	n/a	n/a		
15A	handle (rod)	304/Vinyl	n/a	1	1	1		
15B	handle head	304	n/a	1	1	1		
15C	handle nut	304	n/a	1	1	1		
16	stop pin	316	1	1	1	1		



Call Toll Free: 1-866-711-4673

WebSales@GoodyearRubberProducts.com

Multi-Port Sanitary Stainless Steel Ball Valves

Features and Benefits



- · compact design for areas with tight space restrictions
- full port design (1/2" 3") offers lower pressure drop and a less turbulent flow
- reduced port design on 4"
- balanced encapsulated construction minimizes cold-flow of
- precision stainless steel balls reduce torque and friction losses while extending seat life
- blow-out proof stem
- · live-loaded stem packing
- ISO 5211 mounting pad
- lockable handle can prevent accidental actuation (when
- ID polish is R_a 32 or better
- pressure rating: 1/2" 2" 1000 PSI WOG, 21/2" - 4" 800 PSI WOG
- materials: CF8M (316) stainless steel
- sizes: ½" 4"



Ordering Information

When ordering please list part number along with description. Example:

BV3SVTF200C-A 3-way, PTFE, T port, full port, 2", clamp ends, standard handle

Valve (1-4)	Seat Material (5)	Ball Config (6)	Port Size (7)	Size (8-10)	End (11)	(12)	Actuation (13-15)
BV3S 3 way	V Virgin PTFE	T T port	F full	050 ½"	C Clamp	-	manual (13)
BV4S 4 way	G RTFE	L L port	R reduced *	075 ¾"	B Weld		A standard
	C 25% carbon PTFE			100 1"	F Female I-Line		All others (13-15)
	S 50% stainless PTFE			150 1½"	M Male I-Line		Contact Dixon Sanitary
	U UHMW			200 2"	T Threaded Bevel		
				250 21/2"	P Plain Bevel		
				300 3"	Q Q-Line		
				400 4"	J John Perry Plain		
					H John Perry		
					Threaded		
					E Extended Weld		
					1 Female NPT		
					2 Male NPT		
					3 Socket Weld		

^{*} reduced port 4" only

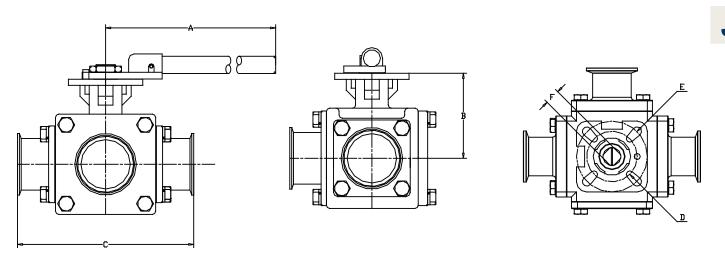


Multi-Port Sanitary Stainless Steel Ball Valves

Specifications (Virgin PTFE Seats and Seals)

Si-a Weight		Assembly Torque	Break Torque (in. lbs.)		ICO 5244	Flow Coefficient (C _v) (gpm) port configurations			Vacuum Testing	
Size (lbs.)	(in. lbs.)	L style	T style	ISO 5211	L	T thru	T branched	Body Leakage (atm-cc/sec)	Helium Leak Rate Test	
1/2"	3.6	160	62	50	F03/F04	3.5	5.3	3	1 x 10 ⁻⁹	10⁻⁵ Torr
3/4"	4.3	160	75	60	F03/F04	10	14	8	1 x 10 ⁻⁹	10⁻⁵ Torr
1"	6.8	160	100	80	F04/F05	20	30	14	1 x 10 ⁻⁹	10⁻⁵ Torr
1½"	12.6	200	262	210	F05/F07	52	80	44	1 x 10 ⁻⁹	10⁻⁵ Torr
2"	21.6	212	535	425	F05/F07	100	150	83	1 x 10 ⁻⁷	10 ⁻⁴ Torr
21/2"	33.7	221	1250	1000	F07/F10	148	176	108	1 x 10 ⁻⁷	10 ⁻⁴ Torr
3"	56.4	239	1625	1300	F10/F12	250	380	200	1 x 10 ⁻⁷	10 ⁻⁴ Torr
4"	85.4	266	1875	1500	F10/F12	450	650	350	1 x 10 ⁻⁷	10 ⁻⁴ Torr

Dimensions



Size	А	В	С	D	E	F (mm)	Weight (lbs.)
1/2"	4.9	3.2	4.6	F03	F04	9	3.6
3/4"	5.0	3.4	5.1	F03	F04	9	4.3
1"	5.3	3.8	6.0	F04	F05	11	6.8
1½"	9.3	4.5	6.9	F05	F07	14	12.6
2"	9.4	5.0	7.5	F05	F07	14	21.6
21/2"	18.0	5.3	8.4	F07	F10	17	33.7
3"	18.3	6.4	9.6	F10	F12	22	56.4
4"	18.3	6.8	11.5	F10	F12	22	85.4

All dimensions are in inches, unless noted. Dimensions are approximate. Engineering dimensions are available upon request. Specifications are subject to change without notice.



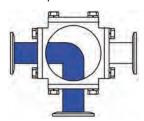
Flow path position number must be specified at the time of order if valve is actuated.

Seat Material Codes

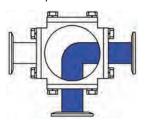
Code	Description	Food Grade Materials
V	virgin PTFE	yes
G	RTFE	yes
С	25% carbon PTFE	no
S	stainless reinforced PTFE	yes
U	UHMW	ves

3-Way Side Entry Flow Paths

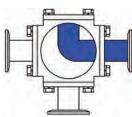
3-way 'L'-port position A



3-way 'L'-port position B

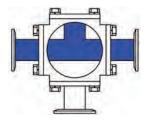


3-way 'L'-port position C

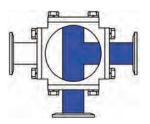


Number	Rotation	Flow Plan Options
1	90°	A, B
2	180°	A, B, C

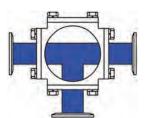
3-way 'T'-port position A



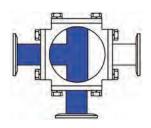
3-way 'T'-port position B



3-way 'T'-port position C



3-way 'T'-port position D



Number	Rotation	Flow Plan Options	Number	Rotation	Flow Plan Options
1	90°	A, B	5	180°	A, B, C
2	90°	B, C	6	180°	B, C, D
3	90°	C, D	7	180°	A, C, D
	000		^	4000	4 5 5

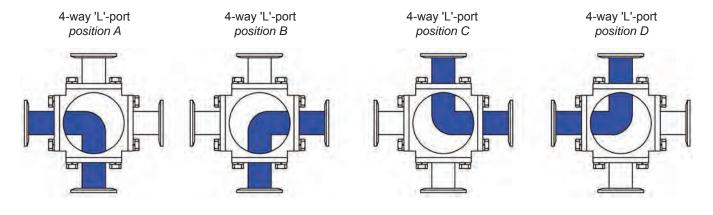
GOODYEAR RUBBER PRODUCTS INC. Call Toll Free: 1-866-711-4673
WebSales@GoodyearRubberProducts.com

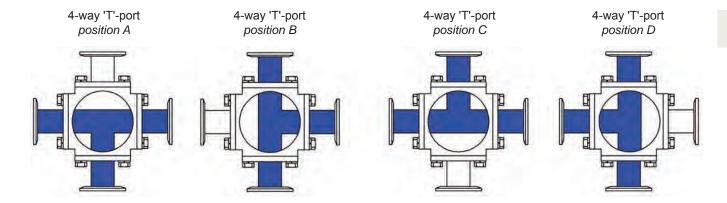
^{*} see seat material options chart below.

Multi-Port Sanitary Stainless Steel Ball Valves

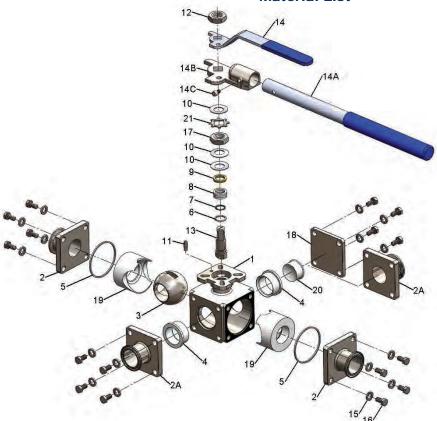
4-Way Side Entry Flow Paths

Flow path position number must be specified at the time of order if valve is actuated.





Number	Rotation	Flow Plan Options		
1	90°	A, B		
2	90°	B, C		
3	90°	C, D		
4	90°	A, D		
5	180°	A, B, C		
6	180°	B, C, D		
7	180°	A, C, D		
8	180°	A, B, D		



	Qua			Qua	antity		
Item	Description	Material	3-v	vay	4-v	-way	
			½" to 2"	2½" to 4"	½" to 2"	2½" to 4"	
1	body	CF8M	1	1	1	1	
2	end (large)	CF8M	3	2	4	2	
2A	end (small)	CF8M	n/a	1	n/a	2	
3	ball	CF8M	1	1	1	1	
4	encapsulated seat (small)	V, G, C, S or U	2	2	2	2	
5	body seals	V, G, C, S or U	2	2	2	2	
6	thrust washer	V, G, C, S or U	1	1	1	1	
7	o-ring	FKM	1	1	1	1	
8	stem packing	V, G, C, S or U	*	*	*	*	
9	gland ring	316	1	1	1	1	
10	spring washer	301	2	2	2	2	
11	stop pin	304	1	1	1	1	
12	nut	304	1	1	1	1	
13	stem	316	1	1	1	1	
14	handle w/ cover	304 / PLASTIC	1	n/a	1	n/a	
14A	handle (rod) w/ cover	304 / PLASTIC	n/a	1	n/a	1	
14B	handle head	304	n/a	1	n/a	1	
14C	handle screw	304	n/a	1	n/a	1	
15	lock washer	304	16	16	16	16	
16	bolt	304	16	16	16	16	
17	nut (stem packing)	304	1	1	1	1	
18	cover plate	CF8M	1	1	n/a	n/a	
19	encapsulated seat (large)	V, G, C, S or U	2	2	2	2	
20	plug	V, G, C, S or U	1	1	n/a	n/a	
04	la alcona ala an	004	l		/-		

Repair Kit contains:

#4 (2) encapsulated seat small

(2) body seals

#6 (1) thrust washer

#7 (1) O-ring

#8 (see chart) stem packing

 size
 qty

 ½"
 1

 ¾"
 2

 1" thru 4"
 3

#19 (2) encapsulated seat large

#20 (1) plug * * 3-way only

Valve	3-Way and 4-Way
Size	Repair Kit Part #
1/2"	BV-3S*RK050
3/4"	BV-3S*RK075
1"	BV-3S*RK100
1½"	BV-3S*RK150
2"	BV-3S*RK200
21/2"	BV-3S*RK250
3"	BV-3S*RK300
4"	BV-3S*RK400

Code *	Description
V	virgin PTFE
G	RTFE
С	25% carbon PTFE
S	stain. rein. PTFE



Call Toll Free: 1-866-711-4673

Ball Valve Automation

Manual Ball Valves with Limit Switch

Dixon Sanitary offers remote indication on manual valves. This allows an operator to see valve position from a central panel in the plant, saving labor costs.

Features and Benefits

- signal back equipment can be provided for information on open / close positions, intermediate and proportional feedback
- position detection can be determined using mechanical switches, proximity switches, or 4-20 mA signal transmission in NEMA 4 or NEMA 7 enclosures

Manual ball valve with NEMA 4 SPDT limit switches. Remote indication is also available on butterfly valves.



3 Piece Stainless Steel Sanitary Ball Valves

Dixon Sanitary offers various configurations of automated sanitary 2-way ball valves. Call for price and delivery of different options.

Automated encapsulated 2-way ball valve weld ends spring return actuator and NEMA 7 (explosion proof) SPDT limit switch with two proximity switches and NEMA 7 NAMUR mount 24VDC solenoid valve.



Automated encapsulated ball valve with direct mount double acting, actuator and NEMA 7 (explosion proof with 2 mechanical switches) SPDT limit switch.



Automated 2-way encapsulated ball valve with spring return fail close actuator and NEMA 4/4X limit switch with two SPDT mechanical switches.





Non-Encapsulated 2-Way 3 Piece Stainless Steel Ball Valves

Features and Benefits



- compact design for areas with tight space restrictions
- full port design offers lower pressure drop and a less turbulent flow
- · balanced non-encapsulated construction minimizes cold flow
- precision stainless steel balls reduce torque and friction losses while extending seat life
- blow-out proof stem
- · lockable handle can prevent accidental actuation when used
- ID polish is R₂ 32 minimum
- pressure rating: 1/2" 2" 1000 PSI WOG, 21/2" - 4" 800 PSI WOG
- see seat material ratings on page 53 for applicable temperature ranges
- materials: CF8M (316) stainless steel
- sizes ½" thru 4"

Ordering Information

When ordering please list part number along with description. Example:

BV2GG-200CC-A non-encapsulated ball valve, 2" clamp ends, standard handle

3 4 5 6 7 8 9 2 G G - 2 0 0

Valve (1-4)	Seat Material (5)	(6)	Size (7-9)		Ends (10-11)	(12)	A	ctuation (13)
BV2G	G RTFE	-	050 ½"	С	Clamp	-	Α	standard
	C 25% carbon reinforced PTFE		075 ¾"	В	Weld			
			100 1"	F	Female I-Line			
			150 1½"	M	Male I-Line			
			200 2"	T	Threaded Bevel			
			250 21/2"	Р	Plain Bevel			
			300 3"	Q	Q-Line			
			400 4"	J	John Perry Plain			
				Н	John Perry Threaded			
				E	Extended Weld			
				1	Female NPT			
				2	Male NPT			
				3	Socket Weld			

Specifications

Size	Part	Weight (in. lbs.)	Break Torque (in. lbs.)
1/2"	BV2G*-050CC-A	1.4	55
3/4"	BV2G*-075CC-A	1.8	71
1"	BV2G*-100CC-A	2.6	101
1½"	BV2G*-150CC-A	4.6	221
2"	BV2G*-200CC-A	8.5	345
21/2"	BV2G*-250CC-A	17.8	883
3"	BV2G*-300CC-A	28.2	830
4"	BV2G*-400CC-A	41.4	1323

^{*} G - RTFE; C - 25% carbon/PTFE



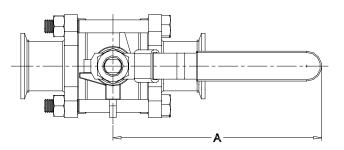
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Non-Encapsulated 2-Way 3 Piece Stainless Steel Ball Valves

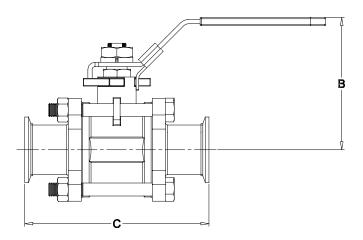
Flow Data

Size	Non-Encapsulated C _v
1/2"	8
3/4"	29
1"	66
1½"	192
2"	434
2½"	723
3"	1124
4"	2100

Dimensions



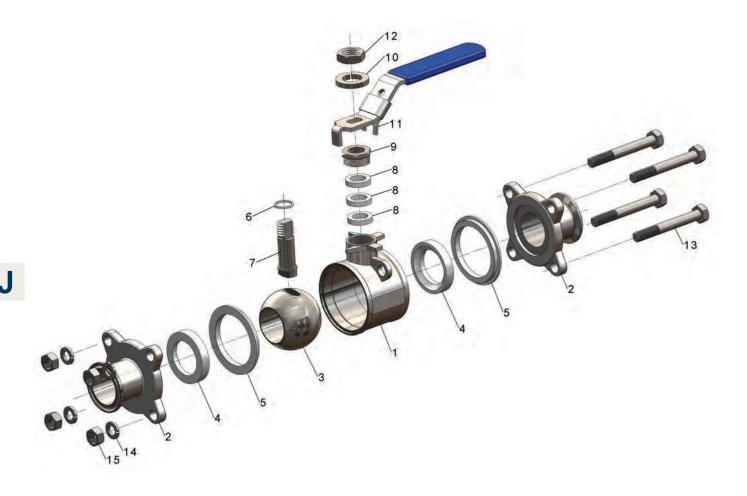
Size	А	В	С
1/2"	4.1	2.3	4.6
3/4"	4.1	2.5	4.7
1"	5.0	2.8	4.9
1½"	6.1	3.5	5.6
2"	7.6	3.9	6.4
2½"	7.6	4.4	7.8
3"	10.9	4.9	9.0
4"	13.2	6.6	9.6



All dimensions are in inches, unless noted. Dimensions are approximate. Engineering dimensions are available upon request. Specifications are subject to change without notice.

Non-Encapsulated 2-Way 3 Piece Stainless Steel Ball Valves

Material List



Item	Description	Description Material		Quantity		
пеш	Description	Iviateriai	½" to 3"	4"		
1	body	CF8M	1	1		
2	end (4-bolt)	CF8M	2	2		
3	ball	CF8M	1	1		
4	seat	G or C *	2	2		
5	gasket	G or C *	2	2		
6	thrust washer	G or C *	1	1		
7	stem	316	1	1		
8	stem packing	G or C *	3	3		
9	gland	304	1	1		
10	bevel washer	301	1	1		
11	handle	304	1	1		
12	nut	304	1	1		
13	bolt	304	4	6		
14	bolt washer	304	4	6		
15	bolt nut	304	4	6		

Repair Kit contains:

#4 (2) seats

#5 (2) gaskets #6 (1) thrust washer #8 (3) stem packing

Valve Size	Repair Kit Part #
1/2"	BV-2G-*K050
3/4"	BV-2G-*K075
1"	BV-2G-*K100
1½"	BV-2G-*K150
2"	BV-2G-*K200
21/2"	BV-2G-*K250
3"	BV-2G-*K300
4"	BV-2G-*K400

^{*} G - RTFE; C - 25% carbon/ PTFE



Characterized V Seat 2-Way Sanitary Stainless Steel Control Valves



L = 60° V seat



M = 30° V seat



Features and Benefits

- compact design for areas with tight space restrictions
- full port design offer high flow capacity
- balanced encapsulated construction minimizes cold-flow of seats
- · precise control
- · bubble tight shut off
- interchangeable V port characterized seats
- precision stainless steel balls reduce torque and friction losses while extending seat life
- · other characterized seats available
- blow-out proof stem
- · live-loaded stem packing
- · ISO 5211 mounting pad
- · lock out, tag out
- ID polish is R₂ 32 minimum
- maximum pressure rating: ½" 2" 1000 PSI WOG,
 2½" 4" 800 PSI WOG
- sizes ½" thru 4"

Ordering Information

When ordering please list part number along with description. Example:

BV2CL-200CC-A characterized V seat ball valve, virgin PTFE, 2" clamp ends, standard handle

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 B V 2 L V - 2 0 0 C C - A

Valve (1-4)	Seat Material (5)	(6)	Size (7-9)	End (10-11)	(12)	Actuation (13-15)
BV2L 60°	V virgin PTFE	-	050 ½"	C Clamp	-	manual (13)
BV2M 30°	G RTFE		075 3/4"	B Weld		A standard
	C 25% carbon PTFE		100 1"	F Female I-Line		All others (13-15)
	S 50% stainless PTFE		150 1½"	M Male I-Line		Contact Dixon Sanitary
	U UHMW		200 2"	T Threaded Bevel		
			250 21/2"	P Plain Bevel		
			300 3"	Q Q-Line		
			400 4"	J John Perry Plain		
				H John Perry Threaded		
				E Extended Weld		
				1 Female NPT		
				2 Male NPT		
				3 Socket Weld		

The BV2 series control valve has all the features and benefits of the BV2C sanitary encapsulated ball valve including complete interchangeability of all components. The BV2 "V" port control valve utilizes all the components of the BV2C including the full port ball. has introduced a special encapsulated characterized "V" port seat that replaces one end of the standard full port encapsulated seat. All five seat material options are available.

The throttling part of the valve is based on an encapsulated 60° "V" port. Characterized seat technology provides accurate modulating control. The characterized seat control valve gives you extremely precise control through the complete valve rotation. This design gives efficient laminar flow with bubble tight closure. Combine this with our wide variety of pneumatic or electric actuators, positioners and accessories and will provide a modulating control valve package that can match a multitude of performance requirements. 60° "V" port is standard. 30° "V" port is available on request. A simple change of the seat style and/ or seat material allows a modification of valve C_v, characteristic and fluid compatibility to match your process requirements.



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Characterized V Seat 2-Way Sanitary Stainless Steel Control Valves

Specifications

Size	Part #	Weight (lbs.)	Assembly Torque (in. lbs.)	Break Torque (in. lbs.)	ISO 5211
1/2"	BV2"L or M"*-050CC-A	1.5	160	150	F03/F04
3/4"	BV2"L or M"*-075CC-A	1.9	160	116	F03/F04
1"	BV2"L or M"*-100CC-A	2.7	160	336	F04/F05
1½"	BV2"L or M"*-150CC-A	4.8	200	420	F05/F07
2"	BV2"L or M"*-200CC-A	8.9	212	473	F05/F07
21/2"	BV2"L or M"*-250CC-A	18.7	221	788	F07/F10
3"	BV2"L or M"*-300CC-A	29.7	239	1155	F10/F12
4"	BV2"L or M"*-400CC-A	43.6	266	1680	F10/F12

^{*} see chart material options chart below

Seat Material Codes

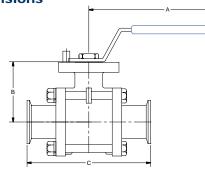
Code	Description	Food Grade Material	
V	virgin PTFE	yes	
G	RTFE	yes	
С	25% carbon PTFE	no	
S	stainless reinforced PTFE	yes	
U	UHMW	yes	

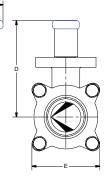
Flow Coefficient (C,)

	Percent and Angle of Ball Rotation											
Valve Size	V Port Angle	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
1/2"	30°	0	.04	.23	.47	.77	1.19	1.83	2.47	3.43	4.65	5.55
/2	60°	0	.04	.28	.73	1.11	1.83	2.92	4.29	7.00	9.43	12.78
3/11	30°	0	.07	.30	.61	.99	1.57	2.42	3.25	4.52	6.12	7.30
3/4"	60°	0	.07	.35	.93	1.46	2.42	3.85	5.64	9.21	12.41	16.25
1"	30°	0	.08	.45	1.25	2.06	3.54	5.30	7.70	10.49	12.84	15.48
1	60°	0	.09	.68	1.74	2.78	5.13	8.00	11.88	18.71	23.22	32.81
41/"	30°	0	.07	.65	1.88	3.39	5.66	8.36	12.12	16.17	20.44	23.88
1½"	60°	0	.09	.92	2.81	4.69	8.89	14.85	21.16	30.73	45.88	59.74
2"	30°	0	.09	1.18	3.79	7.53	12.26	17.83	26.44	36.45	48.09	55.85
2	60°	0	.11	1.51	5.80	10.39	20.60	33.98	48.75	69.04	104.23	135.75
2½"	30°	0	.09	1.15	4.42	7.91	13.39	20.05	30.43	41.92	56.30	76.95
Z /2	60°	0	.13	1.46	5.91	11.90	23.24	37.92	59.31	83.29	113.65	162.50
3"	30°	0	.12	1.20	4.15	9.49	15.96	26.78	38.91	53.31	69.77	85.91
3	60°	0	.15	2.89	6.70	15.82	29.36	46.32	73.60	106.74	149.88	193.20
4"	30°	0	.16	1.75	7.84	18.59	35.21	58.60	87.89	124.21	158.53	196.35
4	60°	0	.26	2.20	12.44	33.67	62.98	106.26	160.49	233.96	329.50	437.29

Dimensions

Size	А	В	С	D	E
1/2"	4.9	1.5	4.3	3.0	1.9
3/4"	4.9	1.8	4.7	3.3	2.2
1"	5.6	2.1	4.9	3.6	2.4
1½"	9.5	2.7	5.6	4.4	3.1
2"	9.5	3.1	6.4	4.8	3.7
21/2"	18.0	3.8	7.8	5.2	4.8
3"	18.0	4.2	9.0	5.7	5.4
4"	18.0	5.3	9.5	6.8	8.8

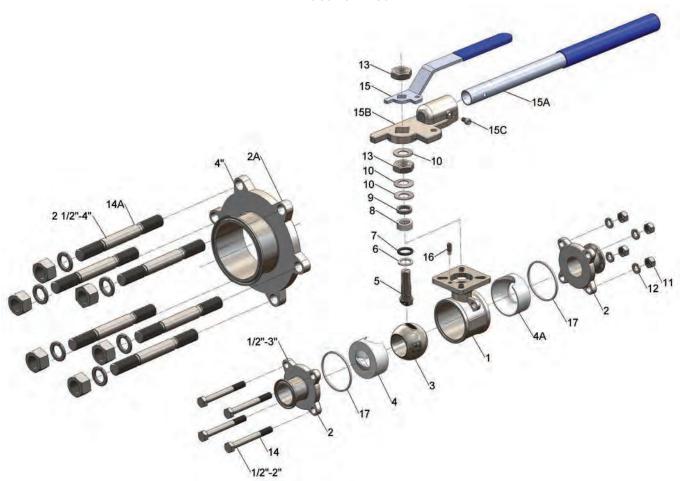




All dimensions are in inches, unless noted. Dimensions are approximate.



Characterized V Seat 2-Way Sanitary Stainless Steel Control Valves Material List



Repair Kit contains: #4 (1) V seat #4A (1) seat #6 (1) thrust washer #7 (1) O-Ring

#8 (3) stem packing

#17 (2) gasket

Valve	Repair Kit Part #
Size	Tepaii Nit i ait #
1/2"	BV-2"L or M"-*K050
3/4"	BV-2"L or M"-*K075
1"	BV-2"L or M"-*K100
1½"	BV-2"L or M"-*K150
2"	BV-2"L or M"-*K200
21/2"	BV-2"L or M"-*K250
3"	BV-2"L or M"-*K300
4"	BV-2"L or M"-*K400

Code *	Description		
V	virgin PTFE		
G	RTFE		
С	25% carbon PTFE		
S	stain. rein. PTFE		

Item	Description	Material	Quantity				
пеш	Description	iviateriai	½" to 2"	2½"	3"	4"	
1	body	CF8M	1	1	1	1	
2	end (4-bolt)	CF8M	2	2	2	n/a	
2A	end (6-bolt)	CF8M	n/a	n/a	n/a	2	
3	ball	CF8M	1	1	1	1	
4	V seat (encapsulated)	V, G, C, S, U	1	1	1	1	
4A	seat (encapsulated)	V, G, C, S, U	1	1	1	1	
5	stem	316	1	1	1	1	
6	thrust washer	V, G, C, S, U	1	1	1	1	
7	O-ring	RTF	1	1	1	1	
8	stem packing	V, G, C, S, U	*	3	3	3	
9	gland ring	316	1	1	1	1	
10	bevel washer	301	3	3	3	3	
11	hex nut	304	4	4	8	12	
12	bolt washer	304	4	4	8	12	
13	nut	304	2	2	2	2	
14	bolt	304	4	4	n/a	n/a	
14A	bolt (double thread)	304	n/a	n/a	4	6	
15	handle	304/Vinyl	1	n/a	n/a	n/a	
15A	handle (rod)	304/Vinyl	n/a	1	1	1	
15B	handle head	304	n/a	1	1	1	
15C	handle nut	304	n/a	1	1	1	
16	stop pin	316	1	1	1	1	

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BV2H ball valve is manufactured of CF8M (316) stainless steel. It is a two-piece industrial valve with FNPT ends and ISO 5211 mounting pad.



SSBV ball valve is manufactured from 316 stainless steel. It is a two-piece industrial valve with FNPT ends.



BV2I ball valve is manufactured of CF8M (316) stainless steel. It is a three-piece industrial valve with FNPT or socket weld ends and ISO 5211 mounting pad.



BV3I ball valve is manufactured of CF8M (316) stainless steel. It is a 3-way valve with FNPT ends and ISO 5211 mounting pad.



BV2B ball valve is manufactured of brass. It is a two-piece industrial valve with FNPT ends and ISO 5211 mounting pad



BV3B ball valve is manufactured of brass. It is a 3-way reduced port valve with FNPT end and ISO 5211 mounting pad

Private label valve handle covers are available. See page 215



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2 Piece Industrial Stainless Steel Ball Valves

Features and Benefits

- ISO5211 low profile mounting pad
- · blow-out proof stem
- low torque design
- RTFE® seats and TFE seals
- pressure rating: ½" 2" 1000 PSI WOG,
 2½" 3" 800 PSI WOG
- temperature range: -40°F to 450°F
- materials: CF8M (316) stainless steel body
- full port stainless steel ball valves ¼" thru 3"



Ordering Information

When ordering please list part number along with description. Example:

BV2HG-20011-A ball valve, RTFE seals, 2" FNPT, standard handle

			11 0 2	. 0 0 1 1	, ,	
Valve (1-4)	Seat Material (5)	(6)	Size (7-9)	Ends (10-11)	(12)	Actuation (13-15)
BV2H	G RTFE	-	025 1/4" *	1 female NPT	-	manual (13)
	C 25% carbon/PTFE		038 3/8" *			A standard handle (1½"-3" only)
			050 1/2" *			All others (13-15)
			075 3/4" *			Contact Dixon Sanitary
			100 1"*			
			125 1 1/4			
			150 1 1/2"			
			200 2"			
			250 2 1/2"			
			300 3"			

^{*} for manual valve - see SSBV on page 73

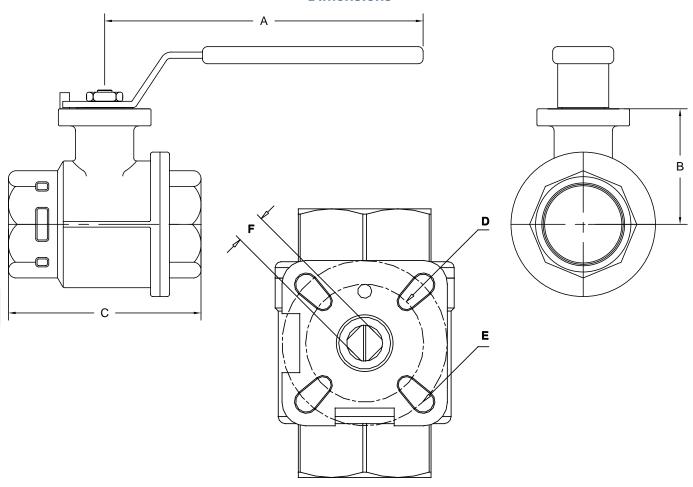
Specifications

Size	Part #	Weight (lbs.)	Break Torque (in. lbs.)
1/4"	BV2HG-02511-A	0.53	65
3/8"	BV2HG-03811-A	0.53	86
1/2"	BV2HG-05011-A	0.66	86
3/4"	BV2HG-07511-A	1.12	97
1"	BV2HG-10011-A	1.87	160
1 1/4"	BV2HG-12511-A	2.76	239
1 1/2"	BV2HG-15011-A	4.45	398
2"	BV2HG-20011-A	6.30	600
2 1/2"	BV2HG-25011-A	11.62	980
3"	BV2HG-30011-A	24.69	1000



2 Piece Industrial Stainless Steel Ball Valves

Dimensions



Size	А	В	С	D	E	F (mm)	Stainless Steel Part Number
1/4"	n/a	1.06	2.17	F03	F04	9	BV2H*-02511-A**
3/8"	n/a	1.06	2.17	F03	F04	9	BV2H*-03811-A**
1/2"	n/a	1.18	2.41	F03	F04	9	BV2H*-05011-A**
3/4"	n/a	1.29	2.99	F03	F04	9	BV2H*-07511-A**
1"	n/a	1.72	3.43	F04	F05	9	BV2H*-10011-A**
1 1/4"	5.35	1.86	3.93	F04	F05	9	BV2H*-12511-A
1 1/2"	9.17	2.34	4.48	F05	F07	11	BV2H*-15011-A
2"	9.17	2.74	5.21	F05	F07	11	BV2H*-20011-A
2 1/2"	17.32	3.29	6.33	F07	F10	14	BV2H*-25011-A
3"	17.32	4.67	7.34	F07	F10	17	BV2H*-30011-A

Note: Temperatures and pressures shown are guidelines only. They do not indicate maximum and minimum continuous working conditions.



All dimensions are in inches, unless noted. Dimensions are approximate. Engineering dimensions are available upon request. Specifications are subject to change without notice.



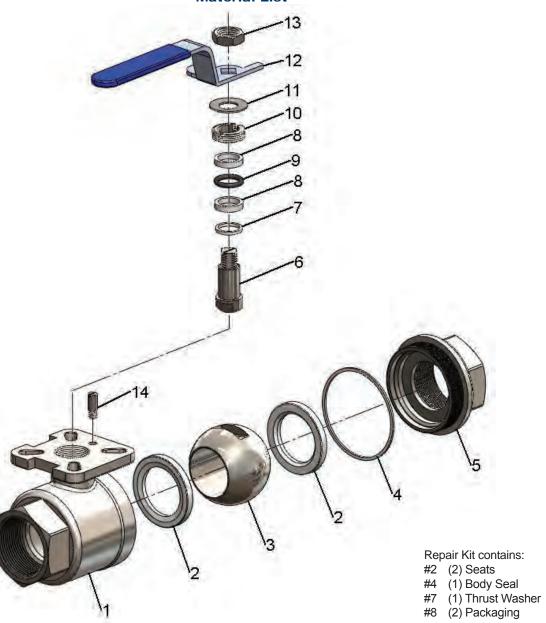
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^{*} C or G

^{**} For 1/4" to 1" valves with handles, use SSBV valves see page 180

Material List



Item	Description	Material	Quantity
1	body	CF8M	1
2	seat	RTFE or 25% Carbon PTFE	2
3	ball	316 SS	1
4	body seal	RTFE	1
5	end cap	CF8M	1
6	stem	316 SS	1
7	thrust washer	RTFE	1
8	packing	RTFE	2
9	o-ring	SILICONE	1
10	glandnut	304 SS	1
11	spring washer	304 SS	1
12	handle	304 SS/PLASTIC	1
13	handle nut	304 SS	1
14	stop pin	304 SS	1

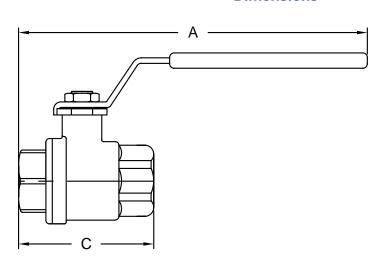
Value size	Donair kit nort #
Valve size	Repair kit part #
1/4"	BV-2H-*K025
3/8"	BV-2H-*K038
1/2"	BV-2H-*K050
3/4"	BV-2H-*K075
1"	BV-2H-*K100
1 1/4"	BV-2H-*K125
1 1/2"	BV-2H-*K150
2"	BV-2H-*K200
2 1/2"	BV-2H-*K250
3"	BV-2H-*K300
* C or G	

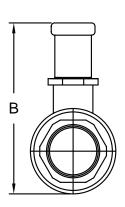
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- for use in water, oil and gas
- 1/4" 2" rated to 1000 PSI WOG (CWP); 21/2" 3" rated to 800 PSI WOG (CWP); 100 PSI saturated steam
- 316 stainless steel body, ball and stem
- PTFE seat, joint gasket and thrust washer
- plastic cover on handle
- blow-out proof stem design
- full port
- temperature range -60°F to 450°F

Dimensions





Part Number	Valve Size(In)	A	В	С
SSBV25	1/4"	5.25	2.75	1.25
SSBV38	3/8"	5.25	3.00	2.25
SSBV50	1/2"	6.50	3.25	2.75
SSBV75	3/4"	6.75	3.50	3.00
SSBV100	1"	8.25	4.00	3.50
SSBV125	1 1/4"	8.75	4.50	4.00
SSBV150	1 1/2"	9.75	5.00	4.50
SSBV200	2"	10.00	5.75	5.00
SSBV250	2 1/2"	13.50	7.75	6.50
SSBV300	3"	14.00	8.50	7.00

Features and Benefits

- 316 stainless steel stem and ball
- CF8M stainless steel body
- ISO 5211 mounting pad
- · swing out design for easy maintenance
- pressure ratings:

½" thru 2" 1000 PSI WOG 2½" thru 3" 800 PSI WOG 4" 600 PSI WOG

- temperature range: -40°F to 400°F
- full port stainless steel ball valves with FNPT or socket weld ends



Ordering Information

When ordering please list part number along with description. Example:

BV2IG-20011-A ball valve, RTFE, 2" female NPT, standard handle

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 B V 2 I G - 2 0 0 1 1 - A

Valve (1-4)	Seat Material (5)	(6)	Size	(7-9)	E	End (10-11)	(12)	Actuation (13-15)
BV2I	G RTFE	-	025	1/4"	1	female NPT	-	manual (13)
	C 25% carbon/PTFE		038	3/8"	3	socket weld		A standard
			050	1/2"				All others (13-15)
			075	3/4"				Contact Dixon Sanitary
			100	1"				
			125	1 1/4"				
			150	1 1/2"				
			200	2"				
			250	2 1/2"				
			300	3"				
			400	4"				

Specifications

Size	FNPT Part #	Socket Weld Part #	Weight (lbs.)	Break Torque (in. lbs.)	ISO 5211
1/4"	BV2I*-02511-A	n/a	1.00	40	F03/F04
3/8"	BV2I*-03811-A	BV2I*-03833-A	1.10	40	F03/F04
1/2"	BV2I*-05011-A	BV2I*-05033-A	1.26	47	F03/F04
3/4"	BV2I*-07511-A	BV2I*-07533-A	1.57	67	F03/F04
1"	BV2I*-10011-A	BV2I*-10033-A	2.27	165	F04/F05
1-1/4"	BV2I*-12511-A	BV2I*-12533-A	3.44	265	F04/F05
1-1/2"	BV2I*-15011-A	BV2I*-15033-A	5.51	481	F05/F07
2"	BV2I*-20011-A	BV2I*-20033-A	7.58	728	F05/F07
2-1/2"	BV2I*-25011-A	BV2I*-25033-A	14.11	900	F07/F10
3"	BV2I*-30011-A	BV2I*-30033-A	24.69	1000	F07/F10
4"	BV2I*-40011-A	BV2I*-40033-A	48.50	1482	F07/F10

^{*} Use G or C



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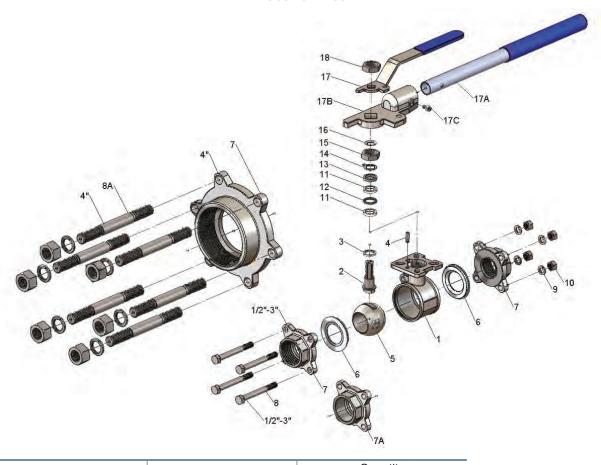
Dimensions FNPT SOCKET WELD D

Size	А	В	С	D	Е	F (mm)	FNPT	Socket Weld	FNPT Part #	Socket Weld Part #
1/4"	4.72	1.52	2.51	F03	F04	9	0.25	NA	BV2I*-02511-A	n/a
3/8"	4.72	1.52	2.51	F03	F04	9	0.38	0.71	BV2I*-03811-A	BV2I*-03833-A
1/2"	4.72	1.67	2.84	F03	F04	9	0.50	0.88	BV2I*-05011-A	BV2I*-05033-A
3/4"	4.72	1.91	3.11	F03	F04	9	0.75	1.09	BV2I*-07511-A	BV2I*-07533-A
1"	5.35	2.17	3.29	F04	F05	11	1.00	1.35	BV2I*-10011-A	BV2I*-10033-A
1 1/4"	5.35	2.35	4.14	F04	F05	11	1.25	1.70	BV2I*-12511-A	BV2I*-12533-A
1 1/2"	9.17	2.77	4.41	F05	F07	14	1.50	1.94	BV2I*-15011-A	BV2I*-15033-A
2"	9.17	3.38	5.13	F05	F07	14	2.00	2.44	BV2I*-20011-A	BV2I*-20033-A
2 1/2"	17.32	4.29	6.64	F07	F10	17	2.50	3.01	BV2I*-25011-A	BV2I*-25033-A
3"	17.32	4.67	7.34	F07	F10	17	3.00	3.52	BV2I*-30011-A	BV2I*-30033-A
4"	17.32	4.54	8.88	F07	F10	22	4.00	4.52	BV2I*-40011-A	BV2I*-40033-A

^{*} Use G or C



Material List



Item	Description	Material	Quantity			
пеш	Description	Iviateriai	1/4" to 2"	2½" to 3"	4"	
1	body	CF8M	1			
2	stem	316		1		
3	thrust washer	G or C		1		
4	stopper	304		1		
5	ball	316		1		
6	seat	G or C		2		
7	end (FNPT)	CF8M		2		
7A	end (socket weld)	CF8M	2			
8	body bolt	304		n/a		
8A	body bolt	304	n/a 6		6	
9	bolt washer	304		4 12		
10	bolt nut	304		4	12	
11	stem packing	G or C		2		
12	o-ring	silicone		1		
13	gland bushing	304		1		
14	tab washer	304		1		
15	gland nut	304		1		
16	spring washer	304	1			
17	handle	304/Plastic	1 n/a			
17A	handle rod	304/Plastic	n/a 1			
17B	handle hub	304	n/a	n/a 1		
17C	hub bolt	304	n/a	n/a 1		
18	handle nut	304	1			

Repair Kit contains:

#3 (1) thrust washer

#6 (2) seats

#11 (2) stem packing

#12 (1) silicone O-ring

Valve Size	Repair Kit Part #
1/4"	BV-2I-*K025
3/8"	BV-2I-*K038
1/2"	BV-2I-*K050
3/4"	BV-2I-*K075
1"	BV-2I-*K100
11/4"	BV-2I-*K125
1½"	BV-2I-*K150
2"	BV-2I-*K200
21/2"	BV-2I-*K250
3"	BV-2I-*K300
4"	BV-2I-*K400

^{*} Use G or C



Multi-port Stainless Steel Ball Valves

Features and Benefits



- full port stainless steel ball
- female NPT ends
- ISO 5211 mounting pad
- blow-out proof stem
- pressure ratings: 1/4" thru 2" 1000 PSI WOG
- temperature range: -40°F to 400°F
- 100% air tested under water at 80 PSI
- sizes 1/4" thru 2"

Ordering Information

When ordering please list part number along with description. Example:

BV3IGLF-2001-A 3-way multi-port ball valve, RTFE, 2" female NPT, standard handle

Valve (1-4)	Seat M	laterial (5)	Ball Co	onfiguration (6)	Port S	Size (7)	(8)	Size	(9-11)		End (12)	Actuation (13-15)
BV3I	G	RTFE	L	L-port	F	full	-	025	1/4"	1	female NPT	manual (14)
			Т	T-port				038	3/8"			- A standard
								050	1/2"			All others (13-15)
								075	3/4"			Contact Dixon Sanitary
								100	1"			
								125	1 1/4"			
								150	1-1/2"			
								200	2"			

Specifications

Size	L-port Part #	T-port Part #	Weight (lbs.)	Break Torque (in. lbs.)	ISO 5211
1/4"	BV3IGLF-0251-A	BV3IGTF-0251-A	.70	105	F03/F04
3/8"	BV3IGLF-0381-A	BV3IGTF-0381-A	.72	105	F03/F04
1/2"	BV3IGLF-0501-A	BV3IGTF-0501-A	.72	138	F03/F04
3/4"	BV3IGLF-0751-A	BV3IGTF-0751-A	1.11	184	F04/F05
1"	BV3IGLF-1001-A	BV3IGTF-1001-A	1.71	323	F04/F05
1-1/4"	BV3IGLF-1251-A	BV3IGTF-1251-A	2.77	461	F05/F07
1-1/2"	BV3IGLF-1501-A	BV3IGTF-1501-A	3.82	633	F05/F07
2"	BV3IGLF-2001-A	BV3IGTF-2001-A	6.73	1037	F07/F10

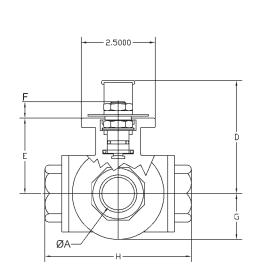


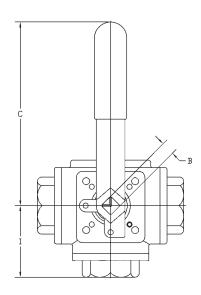
Multi-port Stainless Steel Ball Valves

Flow Paths

Flow paths must be advised at time of order. Please see pages 166-167 for options.

Dimensions



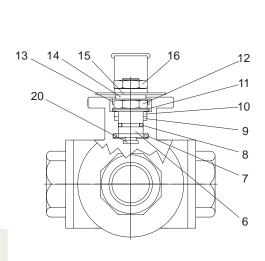


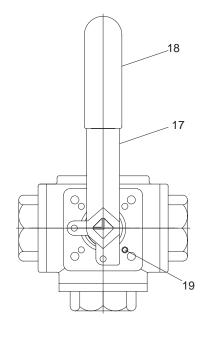
Size	А	B (mm)	С	D	E	F	G	Н	I
1/4"	.43	9	5.12	2.44	1.45	.40	.78	2.83	1.41
3/8"	.47	9	5.12	2.44	1.45	.40	.78	2.83	1.41
1/2"	.59	5	5.12	2.51	1.65	.45	.91	3.26	1.63
3/4"	.78	11	6.49	3.22	1.65	.59	1.10	3.89	1.94
1"	.98	11	6.49	3.50	2.18	.55	1.33	4.40	2.20
1 1/4"	1.25	14	8.07	3.85	2.48	.64	1.53	4.92	2.46
1 1/2"	1.50	14	8.07	4.25	2.88	.62	1.88	5.86	2.93
2"	2.0	17	12.79	5.51	3.63	.88	2.36	6.85	3.42

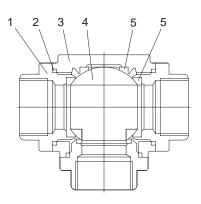
All dimensions are in inches, unless noted. Dimensions are approximate. Engineering dimensions are available upon request. Specifications are subject to change without notice.

Multi-port Stainless Steel Ball Valves

Material List







Item	Description	Material	Quantity
1	end cap	CF8M	1
2	gasket	PTFE	3
3	body	CF8M	1
4	ball	CF8M	1
5	seat	PTFE	4
6	stem	RTFE	1
7	stem seal	FKM	1
8	O-ring	PTFE	1
9	stem packing	PTFE	1
10	gland	301	1
11	Belleville washer	304	2
12	stem nut	304	1
13	nut stop	304	1
14	space washer	304	1
15	lock saddle	304	1
16	handle nut	304	1
17	handle	304	1
18	handle sleeve	vinyl	1
19	stop pin	304	1
20	insert pin	316	1

Repair Kit contains:

#2 (3) PTFE gaskets

#5 (4) PTFE seats

#6 (1) RTFE stem

#7 (1) FKM stem seal

#9 (1) PTFE stem packing

Valve Size	Repair Kit Part #
1/4"	BV-3I-GK0251
3/8"	BV-3I-GK0381
1/2"	BV-3I-GK0501
3/4"	BV-3I-GK0751
1"	BV-3I-GK1001
1-1/4"	BV-3I-GK1251
1 1/2"	BV-3I-GK1501
2"	BV-3I-GK2001

2 Piece Industrial Brass Ball Valves

Features and Benefits

- ISO5211 mounting pad
- blow-out proof stem
- PTFE seats
- pressure rating: 600 PSI WOG and 150 PSI WSP
- maximum temperature: 320°F
- full port brass ball valves ¼" thru 2"
- full port bronze ball valves 2-1/2" 4"



1/4" - 2"

2-1/2" - 4"

Ordering Information

When ordering please list part number along with description. Example:

BV2BV-20011-A ball valve, Viton®, 2" female NPT, standard handle

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 B V 2 B V - 2 0 0 1 1 - A

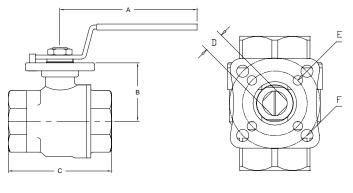
Valve (1-4)	Seat Material (5)	(6)	Size (7-9)	Ends (10-11)	(12)	Actuation (13-15)
BV2B	V PTFE	-	025 1/4"	1 female NPT	(12)	manual (13)
DVZD	V FIFE			i lemale NF i		· · · ·
			038 3/8"			A standard
			050 1/2"			All others (13-15)
			075 3/4"			Contact Dixon Sanitary
			100 1"			
			125 1 1/4"			
			150 1 1/2"			
			200 2"			
			250 2 1/2"			
			300 3"			
			400 4"			

Specifications

Size	Part #	Weight (lbs.)	Break Torque (in. lbs.)				
1/4"	BV2BV-02511 *	0.82	53				
3/8"	BV2BV-03811 *	0.79	53				
1/2"	BV2BV-05011-A	0.86	86				
3/4"	BV2BV-07511-A	0.91	149				
1"	BV2BV-10011-A	1.55	193				
1 1/4"	BV2BV-12511-A	2.14	290				
1 1/2"	BV2BV-15011-A	3.71	470				
2"	BV2BV-20011-A	5.52	634				
2 1/2"	BV2BV-25011-A	8.83	725				
3"	BV2BV-30011-A	13.29	800				
4"	BV2BV-40011-A	18.32	1062				

^{*} Actuated only

Dimensions



Size	А	В	С	D	Е	F (mm)
1/4"	n/a	1.28	2.64	F03	n/a	9
3/8"	n/a	1.28	2.64	F03	n/a	9
1/2"	4.40	1.51	2.16	F04	n/a	9
3/4"	4.40	1.63	2.80	F04	F05	11
1"	5.40	1.76	3.23	F04	F05	11
1 1/4"	7.30	2.13	3.58	F05	F07	11
1 1/2"	7.80	2.32	4.06	F05	F07	11
2"	7.80	2.65	4.76	F05	F07	14
2 1/2"	7.10	3.93	6.10	n/a	F07	17
3"	7.10	4.32	6.90	n/a	F07	17
4"	7.10	4.93	8.10	n/a	F07	17

Note: Temperatures and pressures shown are guidelines only. They do not indicate maximum and minimum continuous working conditions.

All dimensions are in inches, unless noted. Dimensions are approximate.



Call Toll Free: 1-866-711-4673
WebSales@GoodyearRubberProducts.com

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J



Itom	Description	Materia	I	Qua	ntity			
Item	1/4" - 4"	1/4" - 2"	2 1/2" - 4"	1/4" - 2"	2 1/2" - 4"			
1	body	brass	bronze	1	1			
2	seat	PTFE	PTFE	2	2			
3	ball	chrome plated brass	304 SS	1	1			
4	body seal	PTFE	n/a	1	1			
5	end cap	brass	bronze	1	1			
6	stem	304 SS	304 SS	1	1			
7	thrust washer	PTFE	PTFE	1	1			
8	O-ring	FKM	EPDM	1	2			
9	packing	PTFE	PTFE	1	1			
10	gland ring	brass	brass	1	1			
11	spring washer	301 SS	304 SS	2	1			
12	gland nut	304 SS	n/a	1	n/a			
13	washer	304 SS	n/a	1	n/a			
14	handle washer	304 SS	n/a	1	n/a			
15	handle washer	304 SS/plastic	steel/PVC	1	1			
16	handle nut	304 SS	steel	1	1			
17	stop pin	brass	brass	1	1			
18	pin washer	304 SS	steel	1	1			
40	min must	204.00	-41	4	4			

Repair Kit contains:

#2 (2) PTFE seats

#4 (1) PTFE body seal

#7 (1) PTFE thrust washer

#8 (1) FKM O-ring

#9 (1) PTFE packing

Valve Size	Repair Kit Part #
1/4"	BV-2B-VK025
3/8"	BV-2B-VK038
1/2"	BV-2B-VK050
3/4"	BV-2B-VK075
1"	BV-2B-VK100
1 1/4"	BV-2B-VK125
1 1/2"	BV-2B-VK150
2"	BV-2B-VK200
2 ½"	BV-2B-VK250
3"	BV-2B-VK300



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DV 2D V/K400 We Ship **World Wide**

Multi-port Industrial Brass Ball Valves

Features and Benefits

- · reduced port brass ball
- female NPT ends
- ISO 5211 mounting pad
- blow-out proof stem
- · chrome plated brass ball
- PTFE seats with O-ring backing for low operation torque
- · FKM elastomers
- · double O-ring stem packing
- pressure rating: 400 PSI WOG; 100 PSI WSP
- · maximum temperature: 344° F
- 100% tested
- sizes 1/4" thru 3"



Ordering Information

When ordering please list part number along with description. Example:

BV3BVLR-2001-A ball valve, L port, reduced port, 2" female NPT, standard handle

Valve (1-4)	Seat Material (5)	Ball Conf	figuration (6)	Poi	rt Size (7)	(8)	Size (9-11)		End (12)	Actu	ation (13-15)
BV3B	V virgin PTFE	L	L port	R	reduced	-	025 1/4"	1	female NPT	mar	nual (13-14)
		Т	T port				038 3/8"			- A	standard
							050 1/2"			All ot	hers (13-15)
							075 3/4"			Contact	Dixon Sanitary
							100 1"				
							125 1-1/4"				
							150 1-1/2"				
							200 2"				
							250 2-1/2"				
							300 3"				

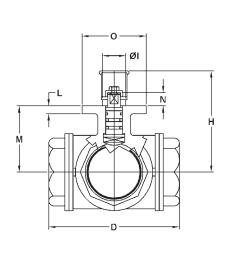
Specifications

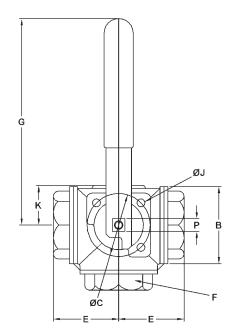
Size	L port Part #	T port Part #	Weight (lbs.)	Break Torque (in. lbs.)	ISO 5211
1/4"	BV3BVLR-0251-A	BV3BVTR-0251-A	1.22	53.1	F03
3/8"	BV3BVLR-0381-A	BV3BVTR-0381-A	1.16	53.1	F03
1/2"	BV3BVLR-0501-A	BV3BVTR-0501-A	1.21	53.1	F03
3/4"	BV3BVLR-0751-A	BV3BVTR-0751-A	1.44	53.1	F03
1"	BV3BVLR-1001-A	BV3BVTR-1001-A	2.64	150.46	F05
1-1/4"	BV3BVLR-1251-A	BV3BVTR-1251-A	4.15	150.46	F05
1-1/2"	BV3BVLR-1501-A	BV3BVTR-1501-A	6.02	150.46	F05
2"	BV3BVLR-2001-A	BV3BVTR-2001-A	9.08	274.37	F07
2-1/2"	BV3BVLR-2501-A	BV3BVTR-2501-A	16.33	380.58	F07
3"	BV3BVLR-3001-A	BV3BVTR-3001-A	19.55	380.58	F07

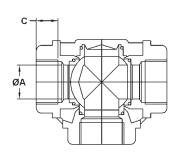
Multi-port Industrial Brass Ball Valves Flow Paths

Flow paths must be advised at time of order. Please see pages 166-167 for options.

Dimensions







Size	Α	В	С	D	E	F	G	Н	I	J	K	L	M	N	0	P (mm)
1/4"	.39	1.34	.39	2.64	1.32	.86	4.72	2.44	.87	.23	.77	.20	1.20	.35	1.49	9
3/8"	.43	1.34	.40	2.64	1.32	.86	4.72	2.44	.87	.23	.77	.20	1.20	.35	1.49	9
1/2"	.43	1.34	.53	2.87	1.44	1.06	4.72	2.44	.87	.23	.77	.20	1.20	.35	1.49	9
3/4"	.59	1.53	.55	3.19	1.60	1.25	4.72	2.52	.87	.23	.87	.20	1.29	.35	1.49	9
1"	.79	1.89	.66	3.74	1.87	1.61	6.69	2.95	.94	.27	1.00	.28	1.63	.43	1.97	11
1-1/4"	.98	2.36	.68	4.39	2.20	1.96	6.69	3.17	.94	.27	1.22	.28	1.85	.43	1.97	11
1-1/2"	1.26	2.83	.68	4.86	2.43	2.16	6.69	3.66	1.26	.27	1.79	.28	2.34	.43	1.97	11
2"	1.57	3.38	.70	5.73	2.87	2.75	9.05	4.43	1.46	.35	1.75	.32	2.90	.59	2.75	14
2-1/2"	1.95	4.37	.93	6.93	3.47	3.34	9.05	4.86	1.46	.35	2.20	.32	3.35	.59	2.75	14
3"	1.95	4.45	1.01	7.08	3.54	4.13	9.05	4.86	1.46	.35	2.20	.32	3.35	.59	2.75	14

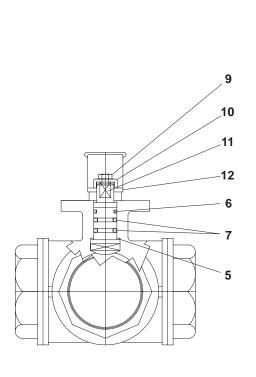
All dimensions are in inches, unless noted. Dimensions are approximate. Engineering dimensions are available upon request. Specifications are subject to change without notice.

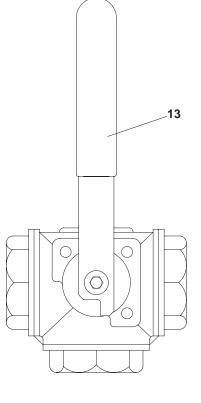


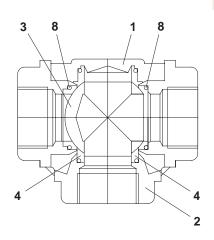


Multi-port Industrial Brass Ball Valves

Material List







Item	Description	Material	Quantity
1	body	brass	1
2	end connection	brass	3
3	ball	chrome plated brass	1
4	ball seat	PTFE	4
5	thrust washer	PTFE	1
6	stem seal	PTFE	1
7	O-ring stem	FKM	1
8	O-ring body	FKM	4
9	screw	steel	1
10	bushing	brass	1
11	stem	brass	1
12	washer	nylon	1
13	handle	steel and vinyl	1

Repair Kit contains:

#4 (4) PTFE ball seats

#5 (1) PTFE thrust washer

#6 (1) PTFE steam seal

#7 (1) FKM O-ring stem

#8 (4) FKM O-ring body

#U (1) 1	Trivi O-IIIIg body
Valve Size	Repair Kit Part #
1/4"	BV-3B-VK0251
3/8"	BV-3B-VK0381
1/2"	BV-3B-VK0501
3/4"	BV-3B-VK0751
1"	BV-3B-VK1001
11/4"	BV-3B-VK1251
1-1/2"	BV-3B-VK1501
2"	BV-3B-VK2001
2-1/2"	BV-3B-VK2501
3"	BV-3B-VK3001



Call Toll Free: 1-866-7

Delrin™ Assembly Gauge Fixture for 3-Piece Ball Valve Assembly

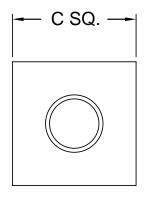


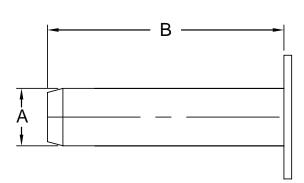
Gauge fixtures insure perfect alignment of 3-piece ball valves when assembling after changing seats or valve ends.

Features and Benefits

- ½" 4" sizes available
- Sanitary Tube OD or Industrial FNPT / Socket weld available
- Delrin® material will not damage surface finish
- · Aluminum base can be mounted in vise

Dimensions





Sanitary Tube OD

Size	Part #	A	В	С
1/2"	BV2C-G050	0.36	5.18	4.00
3/4"	BV2C-G075	0.61	5.23	4.00
1"	BV2C-G100	0.86	5.75	4.00
1½"	BV2C-G150	1.36	7.30	4.00
2"	BV2C-G200	1.86	7.65	4.00
21/2"	BV2C-G250	2.36	9.31	6.00
3"	BV2C-G300	2.86	10.56	6.00
4"	BV2C-G400	3.83	10.93	6.00

Industrial FNPT / Socket Weld

Size	Part #	А	В	С
1/2"	BV2I-G050	0.59	5.18	4.00
3/4"	BV2I-G075	0.78	5.23	4.00
1"	BV2I-G100	0.98	5.75	4.00
1½"	BV2I-G150	1.49	7.30	4.00
2"	BV2I-G200	1.97	7.65	4.00
21/2"	BV2I-G250	2.55	9.31	6.00
3"	BV2I-G300	3.00	10.56	6.00



		-

Contact Name				Ball V	Valve	Check		st						
Contact Nam	ne:	Phor				Company Na	ame: _							
Date: Customer ID	.4.	PIIOI	ie			Email:								
Customer iD					_									
					Process	Background								
Process Tem	np:					Plant Air S	Supply	(PSI):						
Product:														
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110VAC	Closed	Centers								•		• /		
				Ele	ectric Act	uator Option	ns							
	Enclosure			Manu	al Over-R	lide				Swi	tches			
NEN	MA 4/4X			Ye				tandar			Potenti	iomete	r	
	NEMA 7/9 No 2 Extra Current Position													
Intrins	ically Safe	_		Handv				ıe Swi	tches					
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12 VDC 24VDC		C 1PH C 3PH		1-5 V 4-20 mA		2-10 √	′		Deci		ble Gear (al Control		iue	
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110 VAC														
						cial Request	·s		Oil	.01 10	-quodia			
					and ope	J.a. Roquest								

Sanitary Butterfly Valves



B5101 series butterfly valves offer three handle options. Clamp ends standard.



B5102 series butterfly valves is extremely diversified. Consider it a clamp that acts like a butterfly valve.



B5104 series butterfly valves offer a short face to face dimension and can be installed in any direction. Clamp ends are standard.



B5115 series butterfly valves are 304 stainless steel with a trigger handle. Offered with both clamp and weld ends.



Any B5101, B5102 and B5014 butterfly valve can be actuated with many options. See page ?? for more details.





B5101 Butterfly Valves

- low resistance to flow
- bi-directional flow
- gentle to media
- suitable for low and medium viscosity fluids
- field serviceable (no special tools required)
- self-draining
- · various manual or automatic operators available
- · special handle available for accurate, manual flow balancing capabilities
- polyacetal bushings for the valve disc reduce friction and increase cycle life.
- optional wing nut kit is available for effortless valve assembly and disassembly.
- 100% tested / 100% inspected
- all wetted surfaces are sanitary finished to ≤ 32R
 seat materials available ½" 4" (EPDM, silicone, FKM)
- · material: forged 316L body & disc
- sizes from ½" thru 8"



Ordering Information

When ordering please list part number along with description. Example:

B5101E200CC-C - butterfly valve, EPDM seat, 2" clamp ends with trigger handle

<u>10 11 12 13 14 15</u> С С

Valve (1-5)	Seat Material (6) *	Size (7-9	9)		Ends (10-11)	(12)		Actuation (13-15)
B5101	E EPDM	050 ½'	'	С	Clamp	-		Manual (13)
	S Silicone	075 ¾'	'	В	Weld		Α	Pull
	V FKM	100 1"		F	Female I-Line		В	Infinite
		150 1½	/ II 2	M	Male I-Line		С	Trigger
		200 2"		Т	Threaded Bevel			Pneumatic (13)
		250 21/	2"	Р	Plain Bevel		F	Canister STO
		300 3"		Q	Q-Line		G	Canister STC
		400 4"		J	John Perry Plain		Н	Canister DA
		600 6"		Н	John Perry Threaded			All Others (13-15)
		800 8"		Е	Extended Weld			Contact Dixon Sanitary
				1	Female NPT			
				2	Male NPT			

^{* 6&}quot; EPDM and silicone only, 8" EPDM only

Specifications

Information supplied based on water media at 68°F

Ci70	Break Torque	Break Torque	Break Torque	Pressure Rating	Flow Coefficient	Weight w/standard
Size	(in. lbs.) silicone	(in. lbs.) EPDM	(in. lbs.) FKM	(PSI)	(C _V)	handle (lbs.)
1/2"	20	75	70	140	7	2.2
3/4"	20	75	70	140	11	2.2
1"	20	75	70	140	23	2.2
1½"	40	130	125	140	80	2.9
2"	55	165	175	140	230	3.5
21/2"	70	210	220	110	264	3.7
3"	165	350	310	110	372	4.4
4"	350	540	450	85	800	9
6"	700	1550	n/a	60	1200	18.5
8"	n/a	1650	n/a	60	2800	13.6

For All Diameters of Manual B5101 Butterfly Valves

Minimum Line Pressure

Minimum Temperature Rating

Maximum Temperature Rating



B5101 Butterfly Valves with Pull Handle

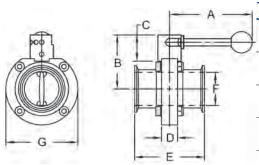
Dimensions

B5101 Series Butterfly Valve with Pull Handle and Clamp Ends



			<u>-</u>				
Valve	Clamp x Clamp Configuration Part #						
Size	EPDM seats	Silicone seats	FKM seats				
1/2"	B5101E050CC-A	B5101S050CC-A	B5101V050CC-A				
3/4"	B5101E075CC-A	B5101S075CC-A	B5101V075CC-A				
1"	B5101E100CC-A	B5101S100CC-A	B5101V100CC-A				
1½"	B5101E150CC-A	B5101S150CC-A	B5101V150CC-A				
2"	B5101E200CC-A	B5101S200CC-A	B5101V200CC-A				
21/2"	B5101E250CC-A	B5101S250CC-A	B5101V250CC-A				
3"	B5101E300CC-A	B5101S300CC-A	B5101V300CC-A				
4"	B5101E400CC-A	B5101S400CC-A	B5101V400CC-A				
6"	B5101E600CC-A	B5101S600CC-A					
8"	B5101E800CC-A						

Clamp End x Clamp End



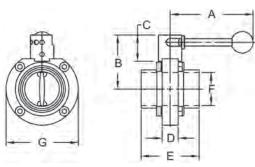
1	Size	А	В	С	D	Е	F	G
	1/2"	4.4	2.8	1.4	0.9	3.5	.37	3.1
7	3/4"	4.4	2.8	1.4	0.9	3.5	.62	3.1
	1"	4.4	2.8	1.4	0.9	3.5	0.9	3.1
	1½"	4.4	2.8	1.4	0.9	3.5	1.4	3.1
	2"	4.4	3.1	1.4	0.9	3.8	1.9	3.9
	21/2"	4.4	3.5	1.4	0.9	3.8	2.4	4.6
	3"	6.2	3.8	1.3	1.2	4.1	2.9	5.2
	4"	6.2	4.5	1.3	1.2	4.8	3.8	6.7
	6"	11.5	5.5	1.3	1.2	5.5	5.8	8.5
	8"	18.0	6.9	1.6	1.2	4.9	7.8	11.2

B5101 Series Butterfly Valve with Pull Handle and Weld Ends



Valve	Weld	x Weld Configuration F	art #						
Size	EPDM seats	Silicone seats	FKM seats						
1/2"	B5101E050BB-A	B5101S050BB-A	B5101V050BB-A						
3/4"	B5101E075BB-A	B5101S075BB-A	B5101V075BB-A						
1"	B5101E100BB-A	B5101S100BB-A	B5101V100BB-A						
1½"	B5101E150BB-A	B5101S150BB-A	B5101V150BB-A						
2"	B5101E200BB-A	B5101S200BB-A	B5101V200BB-A						
21/2"	B5101E250BB-A	B5101S250BB-A	B5101V250BB-A						
3"	B5101E300BB-A	B5101S300BB-A	B5101V300BB-A						
4"	B5101E400BB-A	B5101S400BB-A	B5101V400BB-A						
6"	B5101E600BB-A	B5101S600BB-A							
8"	B5101E800BB-A								

Weld End x Weld End



-	Size	A	В	С	D	E	F	G
1	1/2"	4.3	2.6	1.3	0.9	2.0	.37	3.1
1	3/4"	4.3	2.6	1.3	0.9	2.0	.62	3.1
	1"	4.4	2.8	1.4	0.9	2.0	0.9	3.1
	1½"	4.4	2.8	1.4	0.9	2.0	1.4	3.1
	2"	4.4	3.1	1.4	0.9	2.0	1.9	3.9
	21/2"	4.4	3.5	1.4	0.9	2.1	2.4	4.6
	3"	6.2	3.8	1.3	1.2	2.5	2.9	5.2
	4"	6.2	4.5	1.3	1.2	3.1	3.8	6.7
	6"	11.5	5.5	1.3	1.2	5.5	5.8	8.5
	8"	18.0	6.9	1.6	1.2	4.9	7.8	11.2

All dimensions are in inches, unless noted. Dimensions are approximate.



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B5101 Butterfly Valve with Infinite Handle

Dimensions

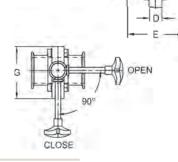
B5101 Series Butterfly Valve with Infinite Handle and Clamp Ends

Valve	Clamp	Clamp x Clamp Configuration Part #							
Size	EPDM seats	Silicone seats	FKM seats						
1/2"	B5101E050CC-B	B5101S050CC-B	B5101V050CC-B						
3/4"	B5101E075CC-B	B5101S075CC-B	B5101V075CC-B						
1"	B5101E100CC-B	B5101S100CC-B	B5101V100CC-B						
1½"	B5101E150CC-B	B5101S150CC-B	B5101V150CC-B						
2"	B5101E200CC-B	B5101S200CC-B	B5101V200CC-B						
21/2"	B5101E250CC-B	B5101S250CC-B	B5101V250CC-B						
3"	B5101E300CC-B	B5101S300CC-B	B5101V300CC-B						
4"	B5101E400CC-B	B5101S400CC-B	B5101V400CC-B						



Clamp End x Clamp End

Size	А	В	С	D	Е	F	G
1/2"	4.3	2.6	1.3	0.9	3.5	.37	3.1
3/4"	4.3	2.6	1.3	0.9	3.5	.62	3.1
1"	4.3	2.6	1.3	0.9	3.5	0.90	3.1
1½"	4.3	2.6	1.3	0.9	3.5	1.40	3.1
2"	4.3	2.9	1.3	0.9	3.8	1.90	3.1
21/2"	4.3	3.3	1.3	0.9	3.8	2.40	4.6
3"	6.4	3.6	1.3	1.2	4.1	2.90	5.2
4"	6.4	4.4	1.3	1.2	4.8	3.80	6.7



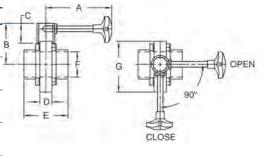
B5101 Series Butterfly Valve with Infinite Handle and Weld Ends

Valve	Weld	x Weld Configuration P	art#
Size	EPDM seats	Silicone seats	FKM seats
1/2"	B5101E050BB-B	B5101S050BB-B	B5101V050BB-B
3/4"	B5101E075BB-B	B5101S075BB-B	B5101V075BB-B
1"	B5101E100BB-B	B5101S100BB-B	B5101V100BB-B
1½"	B5101E150BB-B	B5101S150BB-B	B5101V150BB-B
2"	B5101E200BB-B	B5101S200BB-B	B5101V200BB-B
21/2"	B5101E250BB-B	B5101S250BB-B	B5101V250BB-B
3"	B5101E300BB-B	B5101S300BB-B	B5101V300BB-B
4"	B5101E400BB-B	B5101S400BB-B	B5101V400BB-B



Weld End x Weld End

Size	А	В	С	D	Е	F	G
1/2"	4.3	2.6	1.3	0.9	1.9	.37	3.1
3/4"	4.3	2.6	1.3	0.9	1.9	.62	3.1
1"	4.3	2.6	1.3	0.9	1.9	0.9	3.1
11/2"	4.3	2.6	1.3	0.9	1.9	1.4	3.1
2"	4.3	2.9	1.3	0.9	2.0	1.9	3.1
21/2"	4.3	3.3	1.3	0.9	2.1	2.4	4.6
3"	6.4	3.6	1.3	1.2	2.5	2.9	5.2
4"	6.4	4.4	1.3	1.2	3.1	3.8	6.7



All dimensions are in inches, unless noted. Dimensions are approximate.

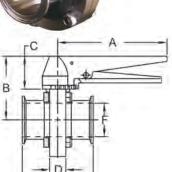


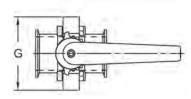
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Dimensions

B5101 Series Butterfly Valve with Trigger Handle and Clamp Ends





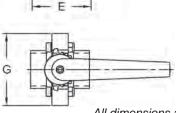


Valve	Clamp	x Clamp Configuration	Part #					
Size	EPDM seats	Silicone seats	FKM seats					
1/2"	B5101E050CC-C	B5101S050CC-C	B5101V050CC-C					
3/4"	B5101E075CC-C	B5101S075CC-C	B5101V075CC-C					
1"	B5101E100CC-C	B5101S100CC-C	B5101V100CC-C					
1½"	B5101E150CC-C	B5101S150CC-C	B5101V150CC-C					
2"	B5101E200CC-C	B5101S200CC-C	B5101V200CC-C					
21/2"	B5101E250CC-C	B5101S250CC-C	B5101V250CC-C					
3"	B5101E300CC-C	B5101S300CC-C	B5101V300CC-C					
4"	B5101E400CC-C	B5101S400CC-C	B5101V400CC-C					

Clamp End x Clamp End

Size	А	В	С	D	Е	F	G
1/2"	6.6	3.0	1.7	0.9	3.5	.37	3.1
3/4"	6.6	3.0	1.7	0.9	3.5	.62	3.1
1"	6.6	3.0	1.7	0.9	3.5	0.9	3.1
1½"	6.6	3.0	1.7	0.9	3.5	1.4	3.1
2"	6.6	3.5	1.7	0.9	3.8	1.9	3.1
21/2"	6.6	3.7	1.7	0.9	3.8	2.4	4.6
3"	6.6	3.9	1.7	1.2	4.1	2.9	5.2
4"	6.6	4.8	1.7	1.2	4.8	3.8	6.7





B5101 Series Butterfly Valve with Trigger Handle and Weld Ends

Valve	Weld x Weld Configuration Part #						
Size	EPDM seats	Silicone seats	FKM seats				
1/2"	B5101E050BB-C	B5101S050BB-C	B5101V050BB-C				
3/4"	B5101E075BB-C	B5101S075BB-C	B5101V075BB-C				
1"	B5101E100BB-C	B5101S100BB-C	B5101V100BB-C				
11/2"	B5101E150BB-C	B5101S150BB-C	B5101V150BB-C				
2"	B5101E200BB-C	B5101S200BB-C	B5101V200BB-C				
21/2"	B5101E250BB-C	B5101S250BB-C	B5101V250BB-C				
3"	B5101E300BB-C	B5101S300BB-C	B5101V300BB-C				
4"	B5101E400BB-C	B5101S400BB-C	B5101V400BB-C				

Weld End x Weld End

Size	А	В	С	D	Е	F	G
1/2"	6.6	3.0	1.7	0.9	1.9	.37	3.1
3/4"	6.6	3.0	1.7	0.9	1.9	.62	3.1
1"	6.6	3.0	1.7	0.9	1.9	0.9	3.1
1½"	6.6	3.0	1.7	0.9	1.9	1.4	3.1
2"	6.6	3.5	1.7	0.9	2.0	1.9	3.9
21/2"	6.6	3.7	1.7	0.9	2.1	2.4	4.6
3"	6.6	3.9	1.7	1.2	2.5	2.9	5.2
4"	6.6	4.8	1.7	1.2	3.1	2.9	6.7

All dimensions are in inches, unless noted. Dimensions are approximate.



We Ship **World Wide**

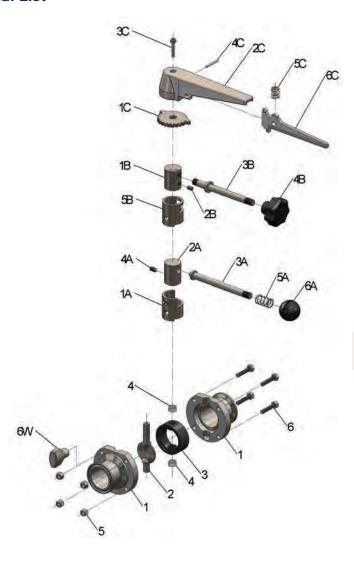
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B5101 Butterfly Valves

Material List

	D t. ft	NA - C - C - I	0					
Item	Description	Material	Quantity					
Trigger Handle								
1C	sprocket	CF8	1					
2C	handle	CF8	1					
3C	hex socket bolt	304	1					
4C	pin	304	1					
5C	spring	304	1					
6C	trigger	CF8	1					
	Infinite	Handle						
1B	hub	CF8	1					
2B	hex socket screw	304	1					
3B	handle shaft	304	1					
4B	knob	polymer	1					
5B	hub housing	CF8	1					
	Pull Handle							
1A	hub housing	CF8	1					
2A	hub	CF8	1					
3A	handle shaft	304	1					
4A	hex socket screw	304	1					
5A	spring	304	1					
6A	knob	polymer	1					
	Va	lve						
1	body half	316	2					
2	disc	316	1					
3	seat	silicone	1					
		EPDM						
		FKM						
4	bushing	polyacetal	2					
5	hex nut	304	4 *					
6	bolt	304	4 *					
6W	optional wing nut	304	4 *					



* 4" and 8" valves have 6 bolts and nuts 6" valve has 8 bolts and nuts

Repair Kit contains:

#3 (1) seat

#4 (2) bushings

. ,			
Valve		Part #	
Size	Black EPDM	Red Silicone	Brown FKM
1/2" - 1"	B5101-RKE100	B5101-RKS100	B5101-RKV100
1½"	B5101-RKE150	B5101-RKS150	B5101-RKV150
2"	B5101-RKE200	B5101-RKS200	B5101-RKV200
21/2"	B5101-RKE250	B5101-RKS250	B5101-RKV250
3"	B5101-RKE300	B5101-RKS300	B5101-RKV300
4"	B5101-RKE400	B5101-RKS400	B5101-RKV400
6"	B5101-RKE600	B5101-RKS600	
8"	B5101-RKE800		



B5101 Butterfly Valves

Technical Data

Capacity / Pressure Drop Chart AP (PSI)

(USPM)	Capacity	apacity Valve Size (in)									
SPM 72	(US	4.4	2.4		44,				_		
10	ĠPM)	1/2	3/4	1	1½	2	2½	3	4	6	8
50		7									
90			2.5		0.0						
130											
170 210 6.9 0.8 0.6 0.3 0.6 0.3 250 9.8 1.2 0.9 0.5 290 1.6 1.6 1.2 0.6 0.2 330 370 2.1 1.6 0.8 0.2 2.6 2.0 1.0 0.2 4410 3.2 2.4 1.2 0.3 450 450 4.0 2.0 4.0 2.0 4.0 2.0 6.0 3.8 2.1 4.0 2.0 6.1 3.1 4.7 0.4 0.2 2.3 2.7 0.6 0.3 650 6.1 3.1 0.7 0.3 660 6.8 3.4 0.7 0.3 680 6.8 3.4 0.7 0.3 680 6.8 3.4 0.7 0.3 680 6.8 3.4 0.7 0.3 680 6.8 3.4 0.7 0.3 680 6.8 3.4 0.7 0.3 680 6.8 3.4 0.7 0.3 680 6.8 3.4 0.7 0.3 680 6.8 3.4 0.7 0.3 680 6.8 3.4 0.7 0.3 0.8 680 6.8 3.4 0.7 0.3 0.8 680 0.8 6.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0	90			15.3	1.3	0.2					
210 250 9.8 1.2 0.9 0.5 280 330 2.1 1.6 0.8 0.2 3370 2.6 2.0 1.0 0.2 410 3.2 2.4 1.2 0.3 450 3.8 2.9 1.5 0.3 0.2 450 4.7 2.3 0.5 0.2 570 4.7 2.3 0.5 650 6.8 3.4 0.7 3.9 0.8 6.8 3.4 0.7 0.3 650 6.8 3.9 0.8 0.8 0.2 0.3 650 6.8 3.4 0.7 0.3 650 6.8 3.4 0.7 0.3 650 6.8 3.9 0.8 0.8 0.8 0.8 0.2 0.3 0.2 0.4 0.2 0.4 0.2 0.4 0.2 0.4 0.2 0.4 0.2 0.3 0.3 0.2 0.3 0.3 0.2 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3											
250 290 1.6 1.6 1.2 0.6 0.2 370 2.6 2.0 1.0 0.8 0.2 370 410 3.2 2.4 1.2 0.3 38 0.2 490 3.8 2.9 1.5 3.4 1.7 0.4 0.2 4.0 2.0 4.0 2.0 0.4 0.2 530 4.0 2.0 6.1 3.1 0.7 0.3 6.8 3.4 0.7 0.3 6.8 3.9 0.8 6.1 3.1 0.7 0.3 6.8 3.9 0.8 0.4 4.7 1.0 0.5 850 890 80 80 80 80 80 80 80 80 80 80 80 80 80					4.5	0.5	0.4	0.2			
1.6	210				6.9	0.8	0.6	0.3			
330 370 2.6 2.0 1.0 0.2 3.2 2.4 4.1 2.0 3.3 450 3.8 2.9 1.5 0.3 0.2 450 4.0 2.0 4.7 2.3 0.5 0.2 570 610 6.1 3.1 0.7 0.3 690 6.8 3.4 0.7 0.3 6.9 6.8 3.9 0.8 0.4 4.7 1.0 0.5 6.8 6.8 3.4 0.7 0.3 6.8 6.9 6.8 3.9 0.8 0.4 4.7 1.0 0.5 850 890 80 80 80 80 80 80 80 80 80 80 80 80 80	250				9.8	1.2	0.9	0.5			
370	290					1.6	1.2	0.6	0.2		
410 450 3.8 2.9 1.5 0.3 0.2 490 4.5 3.4 4.7 2.3 0.5 0.2 610 610 6.1 3.1 0.7 0.3 690 6.8 3.4 0.7 70 810 880 890 80 80 80 80 80 80 80 80 80 80 80 80 80	330					2.1	1.6	0.8	0.2		
3.8 2.9 1.5 0.3 0.2	370					2.6	2.0	1.0	0.2		
490	410					3.2	2.4	1.2	0.3		
4.0 2.0 0.4 0.2 0.5 0.5 0.2 0.6 0.3 0.5 0.2 0.5 0.2 0.5 0.2 0.5 0.2 0.5 0.2 0.5 0.2 0.5 0.2 0.5 0.2 0.5 0.2 0.5 0.2 0.5 0.2 0.5 0.2 0.5 0.2 0.5 0.2 0.5 0.2 0.5 0.2 0.5 0.3 0.5 0.3 0.5 0.3 0.5 0.3 0.5 0.3 0.5 0.3 0.5	450					3.8	2.9	1.5	0.3	0.2	
4.0 2.0 0.4 0.2 0.5 0.5 0.2 0.5 0.5 0.2 0.5 0.5 0.2 0.5 0.5 0.2 0.5 0.5 0.2 0.5 0.5 0.2 0.5 0.5 0.2 0.5 0.5 0.2 0.5 0.5 0.2 0.5 0.5 0.2 0.5	490						3.4		0.4	0.2	
570 610 650 650 650 650 660 650 661 3.1 0.7 0.3 690 730 730 730 730 770 810 810 850 890 850 890 86.8 3.4 4.7 1.0 0.5 850 890 86.8 3.9 0.8 0.4 4.7 1.0 0.5 890 86.8 3.9 0.8 0.4 4.7 1.0 0.5 890 870 1.5 0.7 1.2 0.6 8970 1.15 0.7 1010 1.6 0.7 1170 1.9 0.8 0.2 1170 1210 1210 1220 1230 1330 1330 1370 1410 1410 1450 1490 1550 1570 1660 1690 1770 1730 1650 1690 1730 1730 1730 1730 1730 1730 1730 173	530						4.0	2.0	0.4	0.2	
610 650 660 660 660 660 660 660 660 660 66	570									0.2	
650 690 730 730 730 730 770 810 810 820 83.9 83.9 83.9 83.9 83.9 84.1 84.3 85.0 85.2 85.2 85.2 85.2 85.3 85.3 85.3 85.3 85.3 85.3 85.3 85.3											
690 730 730 730 730 730 730 730 730 730 73											
730 770 810 810 850 890 930 930 970 1010 1050 1050 1170 1080 1190 1190 1190 1190 1190 1190 119	690									0.3	
770 810 4.3 0.9 0.4 810 850 850 890 930 930 930 970 1.12 0.6 850 850 870 1.2 0.6 850 890 970 1.5 0.7 1.2 0.6 850 1.5 0.7 1.2 0.6 970 1.5 0.7 1.6 0.7 1.6 0.7 1.6 0.7 1.7 0.8 0.2 1.9 0.8 0.2 1.9 0.8 0.2 1.9 0.8 0.2 1.10 0											
810 850 890											
850 890 5.2 1.1 0.5 890 970 1.2 0.6 930 970 1.5 0.7 1.2 0.6 1.5 0.7 1.10 0.5 1.5 0.7 1.5 0.2 0.2 0.2 0.9 0.2 0.2 0.9 0.2 0.2 0.9 0.2 0.2 0.2 0.9 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2											
890 930 970 1010 1.5 1.5 0.7 1010 1.6 0.7 1050 1.9 1.9 0.8 0.2 119 0.8 0.2 119 0.8 0.2 119 0.8 0.2 1.9 0.9 0.2 1170 1210 1210 1220 1250 1210 1220 1330 1330 1330 13570 1410 1410 1450 1450 147 02 147 03 1650 1650 1650 1690 1770 1890 1990 1990 11,4 0,6 0,7 11,5 0,8 0,2 0,9 0,2 0,9 0,2 0,9 0,2 0,9 0,2 0,9 0,2 0,9 0,2 0,9 0,2 0,9 0,2 0,9 0,2 0,9 0,2 0,9 0,2 0,9 0,2 0,9 0,2 0,9 0,2 0,9 0,2 0,9 0,3 0,9 0,2 0,9 0,3 0,9 0,9 0,2 0,9 0,9 0,2 0,9 0,9 0,2 0,9 0,3 0,9 0,9 0,2 0,9 0,9 0,2 0,9 0,9 0,9 0,9 0,9 0,9 0,9 0,9 0,9 0,9											
930 970 1010 1.5 0.7 1050 1.6 0.7 1.7 0.8 0.2 1.9 0.8 0.2 1.9 0.9 0.2 1.170 2.1 1.0 0.2 1210 2.3 1.0 0.2 1250 2.4 1.1 0.2 1290 1330 1330 13450 1410 1450 1490 1530 1530 1570 1610 1650 1650 1690 1770 18 0.3 18 0.2 18 0.2 19 0.8 0.2 2.0 0.9 0.2 2.1 1.0 0.2 2.1 1.0 0.2 2.3 1.0 0.2 2.4 1.1 0.2 2.9 1.3 0.2 2.8 1.2 0.2 2.9 1.3 0.2 3.1 1.4 0.3 3.5 1.5 0.3 3.5 1.5 0.3 3.7 1.6 0.3 3.9 1.7 0.3 4.1 1.8 0.3 4.3 1.9 0.3 4.5 2.0 0.4 4.7 2.1 0.4 4.7 2.1 0.4 4.9 2.2 0.4											
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1730 1770 4.7 2.1 0.4 4.9 2.2 0.4											
1770 4.9 2.2 0.4											
	1810								5.1	2.2	0.4

Note: medium = water at 68°F Data is not certified. ΔP values are intended as a guideline ONLY.





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B5102 Butterfly Valves

Features and Benefits

- · low resistance to flow
- · finely profiled disc
- · bi-directional flow
- · gentle to media
- · suitable for low and medium viscosity fluids
- · quick and easy installation
- all sizes use only 3/4" of line space
- · use existing ferrules
- · no need for clamps, gaskets or welding
- all wetted surfaces are 20R₃ or better
- PTFE valve disc bushings reduce friction and increase cycle life
- 3-position reversible handle with lockout / tagout capability
- · various automatic operators available
- 100% tested / 100% inspected
- field serviceable (no special tools required)
- · self-draining
- · seat materials available (silicone, EPDM, FKM)
- sizes from 1" thru 4"



Ordering Information

When ordering please list part number along with description. Example:

B5102E200-A - B5102 clamp butterfly valve, EPDM, 2"

Valve (1-5)	Seat Material (6)	Size (7-9)	(10)	Actuation (11-13)
B5102	E EPDM	100 1"	-	manual (11)
	S silicone	150 1½"		A standard handle
	V FKM	200 2"		pneumatic (11)
		250 2½"		F canister STO
		300 3"		G canister STC
		400 4"		H canister DA
				All others (11-13)
				contact Dixon Sanitary

Specifications

Information supplied based on water media at 68°F

Size	Break Torque (in. lbs.)	Assembly Torque (in. lbs.)	Pressure Rating (PSI)	Flow Coefficient (C_{V})	Weight (lbs.)
1"	125	36	140	23	1.5
1½"	185	36	140	80	2.0
2"	200	22	120	230	2.5
21/2"	260	22	120	264	3.0
3"	350	29	100	372	4.0
4"	495	43	70	800	6.0

For All Diameters of Manual B5102 Butterfly Valves

Elastomer	Minimum Line Pressure	Minimum Temperature Rating	Maximum Temperature Rating
all	.4 inches Hg vacuum at 68°F	15°F	200°F

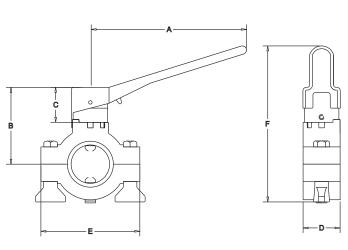


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B5102 Butterfly Valves

Dimensions

B5102 Series Butterfly Valves

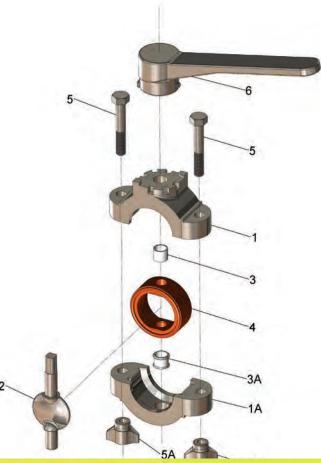


Valve		Part #	
Size	EPDM seats	Silicone seats	FKM seats
1"	B5102E100-A	B5102S100-A	B5102V100-A
1½"	B5102E150-A	B5102S150-A	B5102V150-A
2"	B5102E200-A	B5102S200-A	B5102V200-A
21/2"	B5102E250-A	B5102S250-A	B5102V250-A
3"	B5102E300-A	B5102S300-A	B5102V300-A
4"	B5102E400-A	B5102S400-A	B5102V400-A

Size	А	В	С	D	Е	F
1"	5.6	2.8	1.3	1.3	3.6	5.6
1½"	5.6	2.8	1.3	1.3	3.6	5.6
2"	5.6	3.0	1.3	1.3	4.1	6.1
21/2"	5.6	3.3	1.3	1.3	4.6	6.6
3"	5.6	3.6	1.3	1.3	5.3	7.1
4"	5.6	4.1	1.3	1.3	6.4	8.2

All dimensions are in inches, unless noted. Dimensions are approximate. Engineering dimensions are available upon request. Specifications are subject to change without notice.

Material List



Ī	Item	Description	Material	Quantity
	1	upper body half	CF8, Stainless	1
	1A	lower body half	CF8, Stainless	1
	2	disc	316L stainless	1
	3	upper bushing	PTFE	1
	3A	lower bushing	PTFE	1
	4	seat	silicone, EPDM, FKM	1
	5	bolts	304 stainless	2
	5A	wing nuts	304 stainless	2
	6	handle	CF8, Stainless	1

Repair Kit contains:

#4 (1) seat

#3 (1) upper bushings

#3A (1) lower bushings

B5102 Series Butterfly Valve Repair Kits

Valve		Part #	
Size	Black EPDM	Red Silicone	Black FKM
1"	B5102-RKE100	B5102-RKS100	B5102-RKV100
1½"	B5102-RKE150	B5102-RKS150	B5102-RKV150
2"	B5102-RKE200	B5102-RKS200	B5102-RKV200
21/2"	B5102-RKE250	B5102-RKS250	B5102-RKV250
3"	B5102-RKE300	B5102-RKS300	B5102-RKV300
4"	B5102-RKE400	B5102-RKS400	B5102-RKV400

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V

B5104 Butterfly Valves

Features and Benefits

- · low resistance to flow
- · bi-directional flow
- · gentle to media
- suitable for low and medium viscosity fluids
- space-saving, light weight favored by wineries
- field serviceable (no special tools required)
- self-draining
- various automatic operations available 100% Tested / 100% Inspected
- materials: CF8M
- all wetted surfaces are sanitary finished to ≤ 32R_a
- seat materials available (silicone, EPDM, FKM)
- sizes from 1" thru 4"



Ordering Information

When ordering please list part number along with description. Example:

B5104E200CC-D butterfly valve, EPDM, 2" clamp ends, CCW push handle

Valve (1-5)	Seat Material (6)	Size (7-9)	Ends (10-11)	(12)	Actuation (13-15)
B5104	E EPDM	100 1"	C Clamp	-	manual (13)
	S silicone	150 1½"	B Weld		D push
	V FKM	200 2"	F Female I-Line		pneumatic (13)
		250 2½"	M Male I-Line		F canister STO
		300 3"	T Threaded Bevel		G canister STC
		400 4"	P Plain Bevel		H canister DA
			Q Q-Line		All others (13-15)
			J John Perry Plain		Contact Dixon Sanitary
			H John Perry Threaded		
			E Extended Weld		
			1 Female NPT		
			2 Male NPT		

Specifications

Information supplied based on water media at 68°F

Size	Break Torque	Break Torque	Break Torque	Pressure Rating	Flow Coefficient	Weight w/standard
Size	(in. lbs.) EPDM	(in. lbs.) Silicone	(in. lbs.) FKM	(PSI)	(C _v)	handle (lbs.)
1"	105	50	45	140	23	1.8
1½"	135	60	55	140	80	1.2
2"	180	175	125	140	230	1.6
2½"	260	250	200	110	264	2.0
3"	305	300	250	110	372	2.4
4"	360	350	300	85	800	4.8

For All Diameters of Manual B5104 Butterfly Valves

Elastomer	Minimum Line Pressure	Minimum Temperature Rating	Maximum Temperature Rating
all	.4 inches Hg vacuum at 68°F	15°F	200°F



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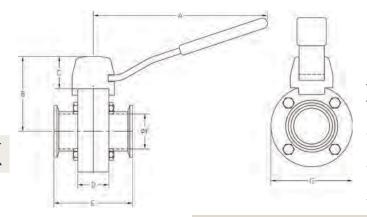
B5104 Butterfly Valves

Dimensions



Clamp End Valves

_								
	Valve	Clamp x Clamp Configuration Part #						
	Size	EPDM seats	Silicone seats	FKM seats				
	1"	B5104E100CC-D	B5104S100CC-D	B5104V100CC-D				
	1½"	B5104E150CC-D	B5104S150CC-D	B5104V150CC-D				
	2"	B5104E200CC-D	B5104S200CC-D	B5104V200CC-D				
	21/2"	B5104E250CC-D	B5104S250CC-D	B5104V250CC-D				
	3"	B5104E300CC-D	B5104S300CC-D	B5104V300CC-D				
	4"	B5104E400CC-D	B5104S400CC-D	B5104V400CC-D				



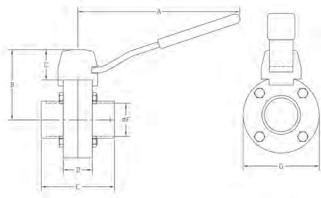
Clamp End x Clamp End

Size	Α	В	С	D	Е	F	G
1"	6.6	2.9	1.2	1.9	3.0	0.9	3.1
1½"	6.6	2.9	1.2	1.9	3.0	1.4	3.1
2"	6.6	3.2	1.2	1.9	3.0	1.9	3.7
21/2"	6.6	3.4	1.2	1.9	3.0	2.4	4.2
3"	6.6	3.7	1.2	1.9	3.0	2.9	4.8
4"	6.6	4.7	1.7	1.5	3.5	3.8	5.9



Weld End Valves

Valve	Weld x	Weld Configuration	n Part#
Size	EPDM seats	Silicone seats	FKM seats
1"	B5104E100BB-D	B5104S100BB-D	B5104V100BB-D
1½"	B5104E150BB-D	B5104S150BB-D	B5104V150BB-D
2"	B5104E200BB-D	B5104S200BB-D	B5104V200BB-D
21/2"	B5104E250BB-D	B5104S250BB-D	B5104V250BB-D
3"	B5104E300BB-D	B5104S300BB-D	B5104V300BB-D
4"	B5104E400BB-D	B5104S400BB-D	B5104V400BB-D



Weld End x Weld End

Size	Α	В	С	D	E	F	G
1"	6.6	2.9	1.2	1.9	3.0	0.9	3.1
1½"	6.6	2.9	1.2	1.9	3.0	1.4	3.1
2"	6.6	3.2	1.2	1.9	3.0	1.9	3.7
21/2"	6.6	3.4	1.2	1.9	3.0	2.4	4.2
3"	6.6	3.7	1.2	1.9	3.0	2.9	4.8
4"	6.6	4.7	1.7	1.5	3.5	3.8	5.9

All dimensions are in inches, unless noted. Dimensions are approximate. Engineering dimensions are available upon request. Specifications are subject to change without notice.

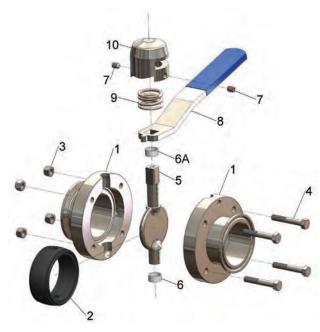


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K

B5104 Butterfly Valves

Material List



Item	Description	Material	Quantity
1	body half	CF8M	2
2	seat	silicone	1
		EPDM	
		FKM	
3	hex nut	304	4*
4	bolt	304	4*
5	disc	316L	1
6	bushing	PTFE	1
6A	split bushing	PTFE	1
7	hex socket screw	304	2
8	handle	304	1
9	spring	304	1
10	hub	CF8 (304)	1

^{* 4&}quot; have 6 bolts and nuts

Repair Kit contains:

#2 (1) seat

#6 (1) bushing

#6A (1) split bushing

B5104 Series Butterfly Valve Repair Kits

Valve Size	Part #						
valve Size	Black EPDM	Red Silicone	Black FKM				
1"	B5104-RKE100	B5104-RKS100	B5104-RKV100				
1½"	B5104-RKE150	B5104-RKS150	B5104-RKV150				
2"	B5104-RKE200	B5104-RKS200	B5104-RKV200				
2½"	B5104-RKE250	B5104-RKS250	B5104-RKV250				
3"	B5104-RKE300	B5104-RKS300	B5104-RKV300				
4"	B5104-RKE400	B5104-RKS400	B5104-RKV400				



B5115 Series - 304 Stainless Steel Butterfly Valves Clamp End with Trigger Handle

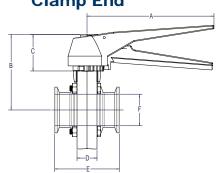
Features:

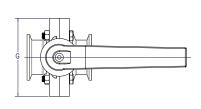
- 100% tested / 100% inspected
- all wetted surface are sanitary finish to <32R₃
- field serviceable (no special tools required)
- silicone seats

- · blue trigger handle
- · repair kits available
- operating temperature range: 15° 200°F
- maximum operating pressure: 110 PSI

Clamp End



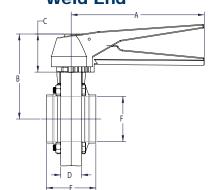


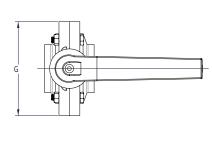


Size	Dimensions					304 Stainless Steel		
Size	Α	В	С	D	E	F	G	Part #
1½"	5.70	3.40	1.60	0.87	2.80	1.40	3.40	B5115S150CC-C
2"	5.70	3.60	1.60	0.87	3.00	1.90	3.90	B5115S200CC-C
3"	5.70	4.20	1.60	0.87	3.30	2.90	5.00	B5115S300CC-C
4"	6.89	5.51	1.60	0.87	3.62	3.83	6.89	B5115S400CC-C

Weld End







Size			D	imension	ıs			304 Stainless Steel
Size	A	В	С	D	E	F	G	Part #
1½"	5.70	3.40	1.60	0.87	1.97	1.40	3.40	B5115S150BB-C
2"	5.70	3.60	1.60	0.87	2.05	1.90	3.90	B5115S200BB-C
3"	5.70	4.20	1.60	0.87	2.12	2.90	5.00	B5115S300BB-C
4"	6.89	5.51	1.60	0.87	2.52	3.83	6.89	B5115S400BB-C

Replacement Seats

Size	Part #
1½"	B5115-RKS150
2"	B5115-RKS200
3"	B5115-RKS300
4"	B5115-RKS400



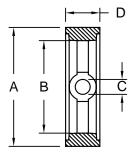


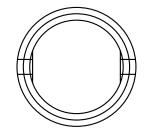


Butterfly Valve SeatDimensions

B5101 Seat Dimensions

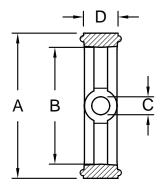
Size	А	В	С	D
1/2" - 1"	1.42	0.83	0.37	0.77
1 1/2"	1.93	1.34	0.37	0.77
2"	2.56	1.73	0.37	0.78
2 1/2"	3.03	2.35	0.46	0.91
3"	3.66	2.80	0.55	1.10
4"	4.96	3.86	0.62	1.43
6"	6.83	5.79	0.62	1.70
8"	9.32	7.89	0.67	1.59

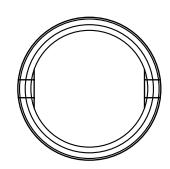




B5102 Seat Dimensions

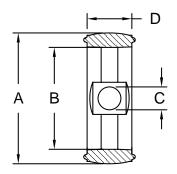
Size	Α	В	С	D
1"	1.87	0.86	0.37	0.66
1 1/2"	1.87	1.32	0.37	0.66
2"	2.42	1.89	0.37	0.66
2 1/2"	2.94	2.30	0.37	0.66
3"	3.44	2.83	0.43	0.66
4"	4.52	3.81	0.43	0.66

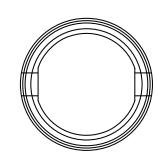




B5104 Seat Dimensions

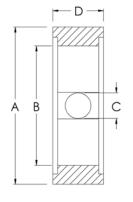
Size	А	В	С	D
1"	1.41	0.83	0.43	0.83
1 1/2"	2.21	1.36	0.43	0.85
2"	2.48	1.93	0.43	0.85
2 1/2"	3.04	2.34	0.43	0.85
3"	3.50	2.84	0.43	0.85
4"	4.61	3.84	0.43	0.85

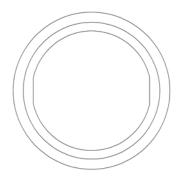




B5115 Seat Dimensions

Size	А	В	С	D
1"	1.476	0.866	0.374	0.846
1 1/2"	2.047	1.417	0.354	0.736
2"	2.637	2.007	0.433	0.854
2 1/2"	3.070	2.382	0.433	0.933
3"	3.543	2.834	0.433	0.906
4"	4.763	3.976	0.496	1.102





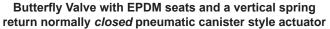


Call Toll Free: 1-866-711-4673

Butterfly Valve Automation

Butterfly Valve with Stainless Steel Vertical Spring Return Actuation

- Silicone and FKM elastomers also available
- · other end configurations are available
- Each pneumatically actuated butterfly valve is shipped fully assembled, including pneumatic actuator and mounting bracket assembly.



Valve	Valve Style						
Size	B5101	B5102	B5104				
1/2"	B5101E050CC-G	n/a	n/a				
3/4"	B5101E075CC-G	n/a	n/a				
1"	B5101E100CC-G	B5102E100-G	B5104E100CC-G				
1½"	B5101E150CC-G	B5102E150-G	B5104E150CC-G				
2"	B5101E200CC-G	B5102E200-G	B5104E200CC-G				
21/2"	B5101E250CC-G	B5102E250-G	B5104E250CC-G				
3"	B5101E300CC-G	B5102E300-G	B5104E300CC-G				
4"	B5101E400CC-G	B5102E400-G	B5104E400CC-G				

Butterfly Valve with EPDM seats and a vertical spring return normally open pneumatic canister style actuator

Valve	Valve Style							
Size	B5101	B5102	B5104					
1/2"	B5101E050CC-F	n/a	n/a					
3/4"	B5101E075CC-F	n/a	n/a					
1"	B5101E100CC-F	B5102E100-F	B5104E100CC-F					
1½"	B5101E150CC-F	B5102E150-F	B5104E150CC-F					
2"	B5101E200CC-F	B5102E200-F	B5104E200CC-F					
21/2"	B5101E250CC-F	B5102E250-F	B5104E250CC-F					
3"	B5101E300CC-F	B5102E300-F	B5104E300CC-F					
4"	B5101E400CC-F	B5102E400-F	B5104E400CC-F					

Butterfly Valve with EPDM seats and a vertical double acting pneumatic canister style actuator

Valve	Valve Style							
Size B5101		B5102	B5104					
1/2"	B5101E050CC-H	n/a	n/a					
3/4"	B5101E075CC-H	n/a	n/a					
1"	B5101E100CC-H	B5102E100-H	B5104E100CC-H					
1½"	B5101E150CC-H	B5102E150-H	B5104E150CC-H					
2"	B5101E200CC-H	B5102E200-H	B5104E200CC-H					
21/2"	B5101E250CC-H	B5102E250-H	B5104E250CC-H					
3"	B5101E300CC-H	B5102E300-H	B5104E300CC-H					
4"	B5101E400CC-H	B5102E400-H	B5104E400CC-H					



Dimensions

Dimension 'A'

Valve	Valve Style							
Size	B5101 B5102 B5104							
1/2" - 1"	2.7	2.5	3.1					
1½"	2.7	2.5	3.1					
2"	3.1	2.9	3.3					
21/2"	3.5	3.2	3.6					
3"	3.7	3.4	3.9					
4"	4.5	4.0	4.8					

All dimensions are in inches, unless noted. Dimensions are approximate.



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We Ship

Butterfly Valve Automation

Features and Benefits

Dixon Sanitary offers remote indication on manual valves.

- Signal back equipment can be provided for information on open / close positions, intermediate and proportional feedback.
- · Position detection can be determined using mechanical switches, proximity switches, or 4-20 mA signal transmission in NEMA 4 or NEMA 7 enclosures.



B5101 series butterfly valve pictured. Remote indication is also available on ball valves (contact Dixon Sanitary for details).

Specifications

- seats EPDM, Silicone, FKM
- · handles full, infinite, trigger, push

- end configurations Clamp, Butt-weld, Bevel seat, John Perry, I-Line, Q-line
- butterfly valve: ½" 8"







B5101 series butterfly valve with vertical canister air to open, spring to close actuator. Normally closed, 110VAC control top

B5101 series butterfly valve with vertical canister air to open, spring to close actuator. Normally closed, 10-30VDC, 3-wire PNP proximity sensors

Dixon Sanitary offers various configurations of Automated Butterfly Valves. Call for price and delivery of different options



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Butterfly Valve Automation



B5102 Series Butterfly Valve with horizontal stainless steel air to open, air to close, 3-15 PSI pneumatic positioner and full gauge set.



B5101 Series Butterfly Valve with horizontal stainless steel rack and pinion air-to-open, air to close, 3-15 PSI pneumatic positioner and full gauge set.



B5101 Series Butterfly Valve with spring return rack & pinion actuator, single coil solenoid, pre-wired to a limit switch.

Dixon Sanitary offers various configurations of Automated Butterfly Valves.



Call Toll Free: 1-866-711-4673
WebSales@GoodyearRubberProducts.com



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B51 Series Industrial Butterfly Valves

Features and Benefits

- · wafer or lug type
- installs between standard ANSI Class 150# flanges
- · ISO 5211 drive shaft for easy automation
- conforms to MSS-SP-67,MSS-SP-25,API-609
- · seat backing ring ensures blowout proof service
- no taper pins
- · field repairable / seats are replaceable
- · undercut available
- sizes 1½" to 12"

More options are available for sizes and materials. Contact Dixon Sanitary for details.







Wafer Butterfly Valve

Ordering Information

When ordering please list part number along with description. Example:

B5120B200WW-C: 2" industrial butterfly valve with cast iron body, stainless steel disc, wafer style, buna seat and multi-position handle

<u>4</u> <u>5</u> <u>6</u> <u>7</u> <u>8</u> <u>9</u> <u>10</u> <u>11</u> <u>12</u> <u>13</u> <u>14</u> <u>15</u>

		D 0 1 4	2 0 6 2 0 0		VV	vv - C		
Valve (1-3)	Body (4)	Disc (5)	Seat (6)	Size (7-10)	Ends (11-12)	(13)	Actuation (14-15)
B51	2 cast iron	0 stainless steel	B Buna	150	1½"	W wafer	-	C multi-position handle
	3 stainless steel	1 NI plated DI	Ssilicone	200	2"	L lug		Q dead man
	4 aluminum	2 nylon coated DI *	VFKM	250	21/2"			G gear operator
	5 ductile iron	3 AL bronze	EEPDM	300	3"			Call for actuation
		4 304 SS mirror polish	PPTFE backed EPDM	400	4"			CL standard w/ lock plate
			Afood grade EPDM	500	5"			
				600	6"			
				800	8"			
				1000	10"			
				1200	12"			

Note: 10" and higher IBV'S are avaliable with no handle. End part number with 11 &12 th digits. Valves up to 8" include multiposition handle automatically. Multi-position handles should not be used on 10" valves and larger.

* only available with stainless steel body

Part Numbers for Handles Only

Valve (1-4)	(5)	Size (6-9)	(10)	Handle (11)
IBFV	-	150 1½"	-	C trigger lever
		200 2"		G gear operator
		250 2½"		Q dead man
		300 3"		
		400 4"		
		500 5"		
		600 6"		
		800 8"		
		1000 10"		
		1200 12"		

Specifications

Valve Seating Torque (in. lbs.)

			• '	
Ciro		Standard Disc at Pres	100 105 110 116 1172 186 230 240 340 380 520 580 782 873 0 1280 1410	
Size	50 ΔP	100 ΔΡ	150 ΔP	200 ΔΡ
1" - 1½"	80	95	100	105
2"	99	105	110	116
21/2"	146	160	172	186
3"	198	206	230	240
4"	250	300	340	380
5"	420	470	520	580
6"	600	690	782	873
8"	960	1100	1280	1410
10"	1590	1790	2000	2180



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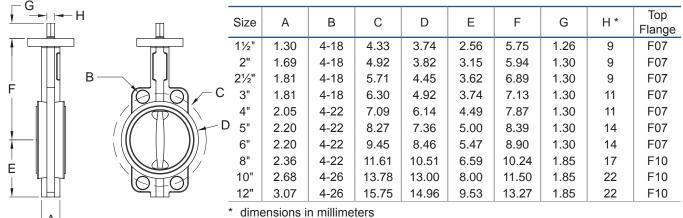
B51 Series Industrial Butterfly Valves

Dimensions

Wafer Butterfly Valves

B5120 Industrial Butterfly Valve, Cast Iron Body, Stainless Steel Disc, Wafer, Manual Handle

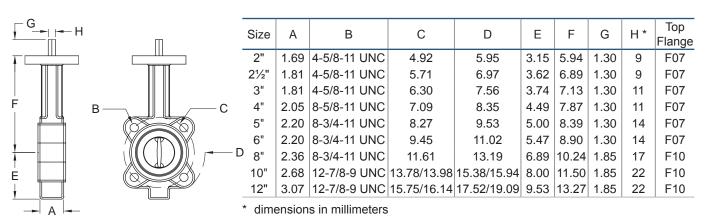
Valve Size	Buna Seats	EPDM Seats	FKM Seats
1½"	B5120B150WW-C	B5120E150WW-C	B5120V150WW-C
2"	B5120B200WW-C	B5120E200WW-C	B5120V200WW-C
21/2"	B5120B250WW-C	B5120E250WW-C	B5120V250WW-C
3"	B5120B300WW-C	B5120E300WW-C	B5120V300WW-C
4"	B5120B400WW-C	B5120E400WW-C	B5120V400WW-C
5"	B5120B500WW-C	B5120E500WW-C	B5120V500WW-C
6"	B5120B600WW-C	B5120E600WW-C	B5120V600WW-C
8"	B5120B800WW-C	B5120E800WW-C	B5120V800WW-C
10"	B5120B1000WW-G	B5120E1000WW-G	B5120V1000WW-G
12"	B5120B1200WW-G	B5120E1200WW-G	B5120V1200WW-G



Lug Butterfly Valves

B5120 Industrial Butterfly Valve, Cast Iron Body, Stainless Steel Disc, Lug, Manual Handle

		-	_
Valve Size	Buna Seats	EPDM Seats	FKM Seats
2"	B5120B200LL-C	B5120E200LL-C	B5120V200LL-C
2½"	B5120B250LL-C	B5120E250LL-C	B5120V250LL-C
3"	B5120B300LL-C	B5120E300LL-C	B5120V300LL-C
4"	B5120B400LL-C	B5120E400LL-C	B5120V400LL-C
5"	B5120B500LL-C	B5120E500LL-C	B5120V500LL-C
6"	B5120B600LL-C	B5120E600LL-C	B5120V600LL-C
8"	B5120B800LL-C	B5120E800LL-C	B5120V800LL-C
10"	B5120B1000LL-G	B5120E1000LL-G	B5120V1000LL-G
12"	B5120B1200LL-G	B5120E1200LL-G	B5120V1200LL-G



unless noted. Dimensions are approximate



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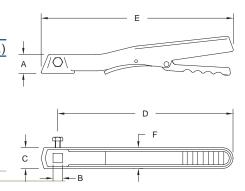
B51 Series Industrial Butterfly Valves

Dimensions

Handles

• 1½" to 8" valves ship with a 10 position trigger style handle

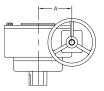
		•	•	00 ,			
Size	Α	В	С	D	E	F	Weight (lbs.)
1½"	.88	.35	1.25	8.00	9.00	1.00	1.00
2"	.88	.35	1.25	8.00	9.00	1.00	1.00
21/2"	.88	.35	1.25	8.00	9.00	1.00	1.00
3"	.88	.35	1.25	8.00	9.00	1.00	1.00
4"	1.00	.43	1.38	10.60	12.00	1.13	2.00
6"	1.00	.55	1.38	10.60	12.00	1.13	2.00
8"	1.25	.67	1.75	12.60	14.00	1.38	3.00

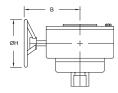


Gear Operators

- 1½" to 8" valves the gear operator is optional
- 10" and 12" valves come standard with a gear operator

Size	DN	А	В	ØH	Weight (lbs.)	Torque (in. lbs.)
1½"-3"	DN40-80	1.97	6.30	5.91	13.00	1330
4"	DN100	1.97	6.30	5.91	13.00	1330
5"-6"	DN125-150	1.97	6.30	5.91	13.00	1330
8"	DN200	2.60	8.86	9.84	26.00	2660
10"	DN250	2.60	8.86	9.84	26.00	2660
12"	DN300-350	2.60	8.86	11.80	31.00	6900





All dimensions are in inches, unless noted. Dimensions are approximate.

Engineering dimensions are available upon request. Specifications are subject to change without notice.

B51 Series Industrial Butterfly Valves

Technical Specifications

- nominal size (inches): 1½" to 12"
- nominal pressure: 200 PSI
- · body test pressure: 220 PSI
- sealing test pressure: 1.1 x rated pressure
- · body material: various

- · disc material: various
- shaft material: 416 stainless to ASTM A276
- Buna-N temperature rating: 0°F to 180°F
- EPDM temperature rating: -20°F to 250°F
- FKM temperature rating: 0°F to 350°F

$C_{_{V}}$ Values Valve Sizing Coefficients (US-GPM / ΔP

Size	Disc Position (degrees)								
	90°	80°	70°	60°	50°	40°	30°	20°	10°
1½"	130	105	75	50	35	25	12	5	2
2"	140	115	88	60	48	30	15	8	2
21/2"	280	225	158	104	68	46	25	12	2
3"	460	365	250	152	98	63	35	16	2
4"	840	700	500	277	178	108	60	26	3
5"	1380	1140	770	431	258	170	100	40	4
6"	1840	1520	1030	555	356	220	130	52	7
8"	3300	2810	1880	1094	688	410	225	98	14
10"	5400	4500	2980	1744	1078	653	380	156	20
12"	8100	6740	4400	2544	1498	999	550	220	26



B51 Series Industrial Butterfly Valves (11/2" - 8")

Material List





Item #	Description	Materials	Qty
1	Lug Body	Cast Iron, CF8M, Ductile Iron	1
1A	Wafer Body	Cast Iron, CF8M, Ductile Iron	1
2	Operator (Bare Stem, Handle, Or Gear)	Cast Iron, 304Ss	1
3	Seat	EPDM, Buna, FKM, (Others)	1
4	Backing Ring	Phenolic Thermoset Resin	1
5	Stem, Upper	416SS or 316SS	1
6	Disc	Nickle Plated Ductile Iron, CF8M, Aluminum Bronze, Nylon Coated Ductile Iron	1
7	Stem Lower	416SS Or 316SS	1
8	Stem Retainer Plate	Zinc Dichromate Plated Carbon Steel	1
9	Retainer Plate Screws	Zinc Dichromate Plated Carbon Steel	2
10	Bushings, Upper	Tefon With Graphite	2
11	Stem O-Ring	EPDM, Buna, FKM, (Others)	1
12	Bushings, Lower	PTFE With Graphite	2
13	Throttle Plate	Zinc Dichromate Plated Carbon Steel	1
14	Infinite Lock Plate	Zinc Dichromate Plated Carbon Steel	1
15	Washer	Zinc Dichromate Plated Carbon Steel	2
16	Lock Washer	Zinc Dichromate Plated Carbon Steel	2
17	Nut	Zinc Dichromate Plated Carbon Steel	2
18	Bolt	Zinc Dichromate Plated Carbon Steel	2
19	Set Screw	Zinc Dichromate Plated Carbon Steel	1

Replacement parts are avaliable. Contact Dixon sanitary.



Private Label Valve Handle Covers

Ordering Information



Size	
S	small
<i>M</i>	medium
L	large

Cover Color R......red Y.....yellow B.....blue G.....green BK.....black

Screen	print Color
<i>W</i>	white
BK	black
N	none



- 100 pieces per minimun order
- customer to supply artwork for screenprinting

Size	Length	Width	Thickness
small	3.503	0.866	0.067
medium	4.409	1.102	0.071
large	9.251	1.535	0.084



M

	Sanita	ary But	terfly	, Valve	Che	ck Lis	st			
Contact Name:				Company Na						
Date:	Phone:			Email:						
Customer ID#:										
	Process Background									
Drococo Tomo:				Plant Air S		(CI):				
-				Plant All 3	Supply (P	SI)				
Product:										
4/011	Size									
1/2" 3/4"	1" 1-1	/2" 2"		2-1/2" Material	3"	4"		6" 8"		
EPDM		1	FKM	nateriai	1		Si	licone		
	lve Type		1 IXIVI			Coni	nectio			
B510						Clamp				
B510						Weld				
B510				Other:						
B5101 Handle Optio	ns	Act	uation			Pne	umat	ic Actuators		
Pull		Manua				SS Ver	tical (Canister		
Trigger		Pneuma	tic		1	Rac	k & P	inion		
Infinite		Electri	С			Horizonta	ıl Dou	ble Acting		
For Manual Valves O	nly	Dead Man H	landle							
			Ope	ration						
Spring return r					_	Double A	_			
Spring return n					5	Standard E		-		
	cal Canister F			-	 \			ual Valve Option		
CT Series Ten see ng 20	24	Proximity Sensor (pg. 26			67)	Maabaa		Limit Switch		
CT Series Top see pg. 20	01	Vertical Detection (TI-Series) Rotational (MI-Series)				Mechan Prox		Switch # Poles #		
CT Part #:		Number of Sensors			Other:					
Prism Top CM Series see po	J. 262			2113013						
CT Part #:		Other				Commu	nicati	on:		
E a la company				Actuator C	•			11		
Enclosure Mater			Cessory EMA 4/4	/ Enclosure)	Mochan		Limit Switch Switch #		
SS Techno-p			NEMA 7		Mechanical Switch # Prox Poles #					
oo leenno-p	olymer	_	nsically		Other:					
Solenoid		11101		ositioner		Otric	,ı	Other Options		
12VDC 220VA	AC	Pneumatic		Electro-pne	umatic	De	ecluch	nable Gear Over-Ride		
24VDC Single	Coil	Feedback:	Yes	·	No		Pre V	Vired Sol to Switch		
24VAC Dual C	Coil	Other:				F	Recep	tical (Specify):		
110VAC Closed C	enters					_				
		Elect	tric Actu	uator Option	ns					
Enclosure		Manual	Over-R	ide			Sw	vitches		
NEMA 4/4X		Yes			-	ndard		Potentiometer		
NEMA 7/9		No			_	Extra		Current Position		
Intrinsically Safe		Handwh		(D :::: -		Switches				
Power Supply 12 VDC 220VAC		1-5 V	nodulat	ing (Positio 2-10 \		Do	olush	Other Options hable Gear Over-Ride		
24VDC 220 VAC		4-20 mA		Z-1U \	v	DE		cal Control Unit		
24VAC		Feedback:	Yes		No 🗆			attery Back-Up		
110 VAC	J. 11	Other:			. 10			Requests:		
				ial Request	·e	_	'	·		
		Oth	er opec	iai Nequest	3					

Contact Name:		Indu	ustri	ial But			/alve bany Na		eck l	List				
Date:	Phone:					Emai	l:							
Customer ID#:	ustomer ID#:													
				Pr	ocess E	3ack ₍	ground							
Process Temp:						Pla	ant Air S	Supply ((PSI):					
Product:														
	Product: Pressure Differential △P:													
1-1/2" 2" 2-1/2" 3" 4" 5" 6" 8" 10" 12" Other:														
					Seat I	Mater	ial							
Buna	Silicone		FKM	1	EPDM	Т	PTF	E Bacl	ked EPDI	И	Food	grade E	PDM	
	Body	Mater	ial						Dis	sc Mate				
	Cast Iron	(CI)					Stainles	ss Stee	el		AL Br	onzed	\top	
	Ductile Iron	ı (DI)					NI Pla	ted DI			304 S	S Miror		
	Stainless S	Steel					1	Nylon C	Coated DI	(SS bo	dy only)			
S	tyle				Actuation	on				M	anual O	ptions		
Lug			Pr	neumatic		M	anual		Standa			ar Opera	ator	
Waffer			Dead	Man Handl	е	EI	ectric		Lock Pla	ite	Sp	ring Ret	urn	
Other:														
					Ope	ratio	n							
Spri	ng return no	rmally	open						Double	Acting				
Sprir	ng return nor	mally c	losed						Standard	d Electr	ic			
				R & P Pn	eumatio	c Acti	uator O	ptions						
Enclos	sure Materia	al		Ac	cessor	y End	losure				Limit S	witch		
Aluminum	Ni Plated				IEMA 4/				Mech	anical		Switch	#	
SS	Techno-po	lymer			NEMA 7					rox		Poles	#	
					nsically				0	ther: _				
	Solenoid				Modula							Option		
12VDC	220VAC	-		Pneumatic		Elec	tro-pneu	-			hable G			
24VDC	Single Co			Feedback:				No			Wired So		.ch	
24VAC	Dual Co			Other:						Rece	ptical (Sp	респу): _		
110VAC	Closed Cer	iters		Floo	4ula A a4		Ontion	_						
Fuel					tric Act		Option	15		Limi	t Switch	00		
NEMA 4/	osure			Manual Yes	Over-R	iae		C+-	andard			es entiomet	or	
NEMA 7			-	No		-			Extra			ent Posi		
Intrinsically	-		-	Handwh	eel				e Switche	· s	Cuii	CHE I OSI	.1011	
	ver Supply				/lodulat	ina (I	Position		5 OWITOITE		Other	Option	e	
12 VDC	220VAC 1	PH		1-5 V	ouu.u.	9 (.	2-10 V	-		Decluc	hable Ge			
24VDC	220 VAC 3			4-20 mA				L			ocal Con			
24VAC	440VAC 3	PH		Feedback:	Yes			No			Battery B			
110 VAC				Other:							Reques			
					er Spec	ial R	equest	s						
					эрэс		- 4							



Check Valves



Spring check valves are designed to prevent reverse flow. The concentric design makes them ideal for vertical applications.



Y-ball check valves are used where full flow and low pressure drop of product during processing is required. When the flow of product stops, the PTFE ball rolls back and seats, thus preventing backflow. The two-piece body design is available in 11/2" - 3" sizes.



Air-blow check valves are used to clear lines of product or CIP solutions. Air connections available are 1/4" air quick coupler, 1" hose barb and 1/2" FNPT. The air-blow check valve is stocked in 1" - 4" sizes.



Air relief valves are used for bleeding of air on the suction side of a pump.



Tank Vent Valves are used for relieving pressure as the fluid level rises while filling a tank and relieving vacuum as the fluid level drops while emptying a tank.

Spring Check Valves

3\ 2

Features and Benefits

- · lower resistance to flow
- full size flow plate
- long stem bushing for increased cycle life
- · suitable for low and medium viscosity fluids
- space-saving, light weight
- field serviceable (no special tools required)
- · special design prevents low pressure leak through
- all wetted surfaces are sanitary finished to ≤ 20R_a
- · operating temperature range: 15°F to 200°F
- maximum operating pressure: 145 PSI
- sizes from ½" thru 4"



Ordering Information

When ordering please list part number along with description. Example:

B46MP-R100 - Spring check valve, 1" x 1", 316L stainless

1 2 6 4 5 6 7 8 9 10 11 12 B 4 6 M P - R 1 0 0

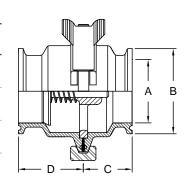
Valve (1-5)	Ends (6-8)	Material (7)	Size (8-10)
B45MP (½" & ¾")	(blank)- Clamp	R 316L stainless	050 ½"
B46MP (1" to 4")	BB- Weld		075 ¾"
	FF- Female I-Line		100 1"
	MM- Male I-Line		150 1½"
	TT- Threaded Bevel		200 2"
	PP- Plain Bevel		250 2½"
	QQ- Q-Line		300 3"
	JJ- John Perry Plain		400 4"
	HH- John Perry Threaded		
	EE- Extended Weld		
	11- Female NPT		
	22- Male NPT		

Specifications

		_		
Size	Part #	Pressure Rating (PSI)	Cracking Pressure (PSI)	Flow Coefficient (CV)
1/2"	B45MP-R50	145	10.0	5
3/4"	B45MP-R75	145	4.0	8
1"	B46MP-R100	145	2.0	12
1½"	B46MP-R150	145	1.6	20
2"	B46MP-R200	145	1.4	40
2½"	B46MP-R250	145	0.9	60
3"	B46MP-R300	145	0.5	100
4"	B46MP-R400	145	0.5	210

Dimensions

Size	А	В	С	D	316L SS Part #	Gasket EPDM Part #	Gasket FKM Part #	Clamp Part #
1/2"	0.37	0.99	1.1	1.6	B45MP-R50	Coo Donoir Kit	Coo Donoir Kit	B45MP3-50
3/4"	0.62	0.99	1.1	1.6	B45MP-R75	See Repair Kit	See Repair Kit	D431VIF3-30
1"	0.87	1.99	1.7	2.3	B46MP-R100	40MP-E200	40MP-SFY100	13MHHM200SN
1½"	1.37	1.99	1.7	2.3	B46MP-R150	40MP-E250	40MP-SFY150	13MHHM250SN
2"	1.87	2.52	1.7	2.3	B46MP-R200	40MP-E300	40MP-SFY300	13MHHM300SN
2½"	2.37	3.05	1.7	2.3	B46MP-R250	B46MP8-B250	B46MP8-V250	13MHHM350SN
3"	2.87	3.58	1.7	2.3	B46MP-R300	40MP-E400	40MP-SFY400	13MHHM400SN
4"	3.83	4.68	2.2	2.7	B46MP-R400	B46MP8-E400	B46MP8-V400	B45MP3-400



All dimensions are in inches, unless noted. Dimensions are approximate.



L

Spring Check Valves



Valve	Repair Kit	Valve	Repair Kit
Size	Part #	Size	Part #
1/2"	B45MP-RK050	1/2"	B45MP-RKV050
3/4"	B45MP-RK075	3/4"	B45MP-RKV075
1"	B46MP-RK100	1"	B46MP-RKV100
1½"	B46MP-RK150	1½"	B46MP-RKV150
2"	B46MP-RK200	2"	B46MP-RKV200
2½"	B46MP-RK250	21/2"	B46MP-RKV250
3"	B46MP-RK300	3"	B46MP-RKV300
4"	B46MP-RK400	4"	B46MP-RKV400

#7 (1) FKM stem seat

#8 (1) FKM clamp gasket

lá a ua	Description	Matarial	Quantity			
Item	Description	Material	½" thru ¾"	1" thru 4"		
1	upper body housing	316L	1	1		
2	lower body housing	316L	1	1		
3	single pin clamp	CF8	1	1		
4	flow plate	CF3M	n/a	1		
4A	flow plate	CF3M	1	n/a		
5	plunger	316L	1	1		
6	spring	316L	1	1		
7	stem seat	FKM	1	1		
8	body O-ring	EPDM	1	n/a		
8A	clamp gasket	EPDM	n/a	1		



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#7 (1) FKM stem seat,

#8 (1) EPDM clamp gasket

Spring Check Valves

Technical Data

Capacity / Pressure Drop Chart ΔP (PSI)

Capacity				Valv	e Size			
(US GPM)	1/2"	3/4"	1"	1½"	2"	2½"	3"	4"
10	4.0	1.6	.7	.3				
30	36.0	14.1	6.3	2.3	.6			
40		25.0	11.1	4.0	1.0	.4		
50		39.1	17.4	6.3	1.6	.7		
60			25.0	9.0	2.3	1.0		
70			34.0	12.3	3.1	1.4	.4	
80			44.4	16.0	4.0	1.8	.6	
90				20.3	5.1	2.3	.7	
100				25.0	6.3	2.8	.9	
110				30.3	7.6	3.4	1.1	.3
120				36.0	9.0	4.0	1.3	.3
130				42.3	10.6	4.7	1.5	.4
140				49.0	12.3	5.4	1.8	.4
150					14.1	6.3	2.0	.5
160					16.0	7.1	2.3	.6
170					18.1	8.0	2.6	.7
180					20.3	9.0	2.9	.7
190					22.6	10.0	3.3	.8
200					25.0	11.1	3.6	.9
210					27.6	12.3	4.0	1.0
220					30.3	13.4	4.4	1.1
230					33.1	14.7	4.8	1.2
240					36.0	16.0	5.2	1.3
250					39.1	17.4	5.7	1.4
260						18.8	6.1	1.5
270						20.3	6.6	1.7
280						21.8	7.1	1.8
290						23.4	7.6	1.9
300						25.0	8.2	2.0
310						26.7	8.7	2.2
320						28.4	9.3	2.3
330						30.3	9.9	2.5
340			F	7.0		32.1	10.5	2.6
350			GPM			34.0	11.1	2.8
360		ΔΡ	= C _v	G		36.0	11.8	2.9
370			r - A	4		38.0	12.4	3.1
380						40.1	13.1	3.3
390						42.3	13.8	3.4
400						44.4	14.5	3.6
410							15.2	3.8
420							16.0	4.0
430							16.8	4.2
440							17.6	4.4
450							18.4	4.6
460							19.2	4.8
470							20.0	5.0

Note: medium = 68°F

Data is not certified. ΔP values are intended as a guideline ONLY.



Y-Ball Check Valves

Features and Benefits





- two piece construction for easier alignment
 - seat is replaceable instead of entire valve
 - PTFE ball provides better heat and abrasion resistance and lasts longer between maintenance cycles.
 - · easy cleaning, no tools required
 - polished ID and OD to 3A standards
 - all metal product contact surfaces are CF8M (316) stainless steel construction
 - air blow check valve can be added (see air blow check valve for sizing page 225)
 - operating temperature range: 15°F to 200°F
 - FKM max temperature: 240°F
 - maximum operating pressure: 150 PSI
 - sizes 11/2" thru 3"

Ordering Information

When ordering please list part number along with description. Example:

B45BY-R150 - Y ball check valve, 11/2", 316L stainless, clamp ends

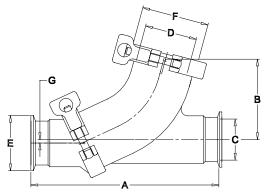
<u>1 2 3 4 5 6 7 8 9 10 11 12</u> B 4 5 B Y - R 1 5 0

Valve (1-5)	Ends (6-8)	Material (7)	Size (8-10)	Elastomer (11)
B45BY	(blank)- Clamp	R 316L stainless	150 1½"	(blank) EPDM
	BB- Weld		200 2"	V FKM
	FF- Female I-Line		250 2½"	
	MM- Male I-Line		300 3"	
	TT- Threaded Bevel			
	PP- Plain Bevel			
	QQ- Q-Line			
	JJ- John Perry Plain			
	HH- John Perry Threaded			
	EE- Extended Weld			
	11- Female NPT			
	22- Male NPT			

Specifications

Valve Size	Part #	Weight (lbs)	Cap Size	Clamp Size	Cap	Ball Diameter	inches	Pressure s (H ₂ O)	•	Pressure SI)	Flow Coefficient (CV)
Size		(ibs)	Size	Size	Gasket	Diameter	Vertical	Horizontal	Vertical	Horizontal	(00)
1½"	B45BY-R150	4.9	2.0	2.0	2.0	1.6	2.0	0.5	3.6	3.9	60
2"	B45BY-R200	6.6	2.5	2.5	2.5	2.1	2.5	0.5	2.6	3.7	80
2½"	B45BY-R250	10.5	3.0	3.0	3.0	2.7	3.0	0.5	1.6	2.4	100
3"	B45BY-R300	17.5	4.0	4.0	4.0	3.6	3.8	0.5	1.9	2.6	140

Dimensions



Size	Α	В	С	D	Е	F	G
1½"	7.5	3.3	1.4	1.9	2.0	2.5	0.16
2"	8.5	3.9	1.9	2.3	2.5	3.0	0.16
2½"	10.0	4.5	2.4	2.9	3.0	3.6	0.16
3"	11.5	5.3	2.9	3.8	3.8	4.7	0.16

All dimensions are in inches, unless noted. Dimensions are approximate.



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Y-Ball Check Valves

Material List



EPDM/PTFE Repair Kit contains:

#5 (1) EPDM end cap gasket

#6 (1) PTFE ball

#7 (1) EPDM/CF3M seat

EPDM Seal Kit contains:

#5 (1) EPDM end cap gasket

#7 (1) EPDM/CF3M seat

FKM Seal Kit contains:

#5 (1) FKM end cap gasket

#7 (1) FKM seat/CF3M

Replacement Ball Kit contains: #6 (1) Ball

Valve	Repair Kit	Valve	Seal Kit	Valve	
Size	Part #	Size	Part #	Size	
1½"	B45BY-RK150	1½"	B45BY-SK150	1½"	
2"	B45BY-RK200	2"	B45BY-SK200	2"	
2½"	B45BY-RK250	21/2"	B45BY-SK250	2½"	
3"	B45BY-RK300	3"	B45BY-SK300	3"	

Seal Kit	Cina	Ball Part #			
Part #	Size	PTFE	Buna		
B45BY-SKV150	1½"	B45BY-TB150	B45BY-BB150		
B45BY-SKV200	2"	B45BY-TB200	B45BY-BB200		
B45BY-SKV250	2½"	B45BY-TB250	B45BY-BB250		
B45BY-SKV300	3"	B45BY-TB300	B45BY-BB300		

Item	Description	Material	Quantity
1	angle body	CF8M	1
2	inlet body	CF8M	1
3	clamp	CF8	2
4	end cap	316L	1
5	cap gasket	EPDM	1
6	ball	PTFE/Buna	1



Call Toll Free: 1-866-711-4673

Y-Ball Check Valves

Technical Data

Capacity / Pressure Drop Chart ΔP (PSI)

Capacity		Valve	e Size	
(US GPM)	1½"	2"	2½"	3"
10	0.0	0.0	0.0	0.0
20	0.1	0.1	0.0	0.0
30	0.3	0.1	0.1	0.0
40	0.4	0.3	0.2	0.1
50	0.7	0.4	0.3	0.1
60	1.0	0.6	0.4	0.2
70	1.4	0.8	0.5	0.3
80	1.8	1.0	0.6	0.3
90	2.3	1.3	0.8	0.4
100	2.8	1.6	1.0	0.5
110	3.4	1.9	1.2	0.6
120	4	2.3	1.4	0.7
130	4.7	2.6	1.7	0.9
140	5.4	3.1	2	1.0
150	6.3	3.5	2.3	1.1
160	7.1	4.0	2.6	1.3
170	8.0	4.5	2.9	1.5
180	9.0	5.1	3.2	1.7
190	10.0	5.6	3.6	1.8
200	11.1	6.3	4.0	2.0
210		6.9	4.4	2.3
220		7.6	4.8	2.5
230		8.3	5.3	2.7
240		9.0	5.8	2.9
250		9.8	6.3	3.2
260		10.6	6.8	3.4
270		11.4	7.3	3.7
280		12.3	7.8	4.0
290		13.1	8.4	4.3
300		14.1	9.0	4.6
310			9.6	4.9
320			10.2	5.2
330			10.9	5.6
340			11.6	5.9
350			12.3	6.3
360				6.6
370				7.0
380				7.4
390		$\Delta P = \begin{bmatrix} GPM \\ C_V \end{bmatrix}^2 G$		7.8
400		[o^] o		8.2
410				8.6
420				9.0
430				9.4
440				9.9
460				10.3
470				10.8

Note: medium = 68°F

Data is not certified. ΔP values are intended as a guideline ONLY.



Air Blow Check Valves

Features and Benefits

- 316L stainless steel offered with EPDM stem seat and gasket
- · maximum operating temperature: 212°F
- maximum operating pressure: 145 PSI
- Conforms to 3A standards for filtration of air entering tanks or pipelines with optional filter disc
- filter discs sold separately in packs of 50
- sizes from 1" thru 4"



Ordering Information

When ordering please list part number along with description. Example:

B45AB-R200AB - air blow check valve, 2" clamp, 316L stainless, quick connect

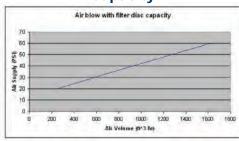
<u>1 2 3 4 5 6 7 8 9 10 11 12 13</u> B 4 5 A B - R 2 0 0

Valve (1-3)	End (4-5)	(6)	Material (7)	Size (8-13)
B45	AB quick connect plug	-	R 316L stainless	100150 1" - 1½"
	BC FNPT			200 2"
	CC hose barb			250 2½"
	AR air relief cap			300 3"
	NC no coupler			400 4"

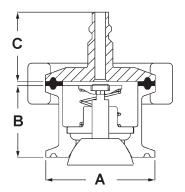
Sizing When Used on Ball Check Valves

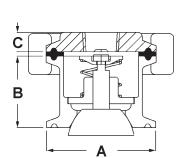
Ball Check Valve	Air Blow Check Valve
Size	Size
1½"	2"
2"	2½"
21/2"	3"
3"	4"

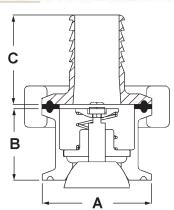
Capacity



Dimensions







B45AB	B45BC	B45CC

Size	Α	В	C Plug	C FNPT	C Hose Barb	Quick-Connect Plug Part Number	Female NPT Part Number	Hose Barb Part Number
1"-11/2"	1.984	1.30	1.26	.6	1.7	B45AB-R100150	B45BC-R100150	B45CC-R100150
2"	2.516	1.30	1.26	.6	1.7	B45AB-R200	B45BC-R200	B45CC-R200
2½"	3.047	1.30	1.26	.6	1.7	B45AB-R250	B45BC-R250	B45CC-R250
3"	3.579	1.30	1.26	.6	1.7	B45AB-R300	B45BC-R300	B45CC-R300
4"	4.682	1.30	1.26	.6	1.7	B45AB-R400	B45BC-R400	B45CC-R400

All dimensions are in inches, unless noted. Dimensions are approximate.

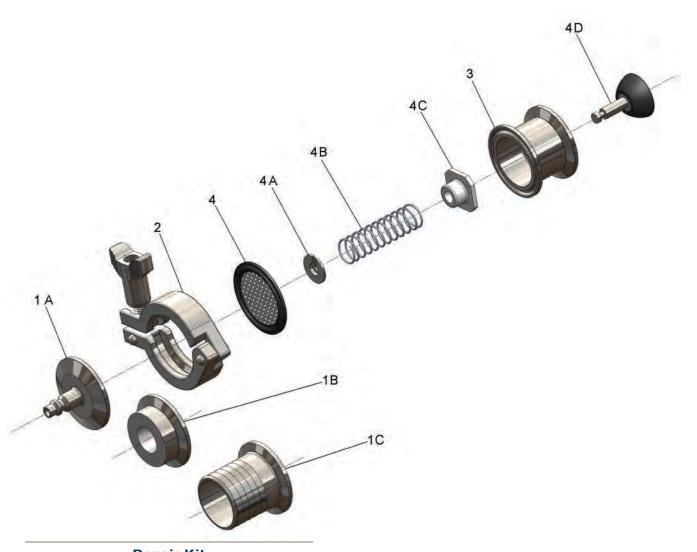
Engineering dimensions are available upon request. Specifications are subject to change without notice



Call Toll Free: 1-866-711-4673

Air Blow Check Valves

Material List



Repair Kit

repair kit, B45AB-RK, contains contains:

#4 (1) EPDM / 316L stainless perforated disc

#4A (1) 304 stainless spring retainer

#4B (1) 304 stainless spring

#4C (1) nylon stem guide

#4D (1) EPDM / 316L stem and plug

Description	Material	Quantity
1/4" air line quick connect	316L	1
½" NPT cap	316L	1
1" hose barb	316L	1
single pin clamp	CF8	1
valve body	316L	1
perforated disc	EPDM/316L	1
spring retainer	304	1
spring	304	1
stem guide	nylon	1
stem and plug	EPDM/316L	1
ilter Discs (optional) Must be use	d when installed in 3A application	ns
filter disc pack	1 micron filter	50
	1/4" air line quick connect 1/2" NPT cap 1" hose barb single pin clamp valve body perforated disc spring retainer spring stem guide stem and plug	1/4" air line quick connect 1/2" NPT cap 316L 1" hose barb 316L single pin clamp valve body 316L perforated disc spring retainer spring stem guide stem and plug EPDM/316L SITURD STATE STATE STATE STATE STATE STATE STATE 316L EPDM/316L EPDM/316L SPDM/316L STATE STATE STATE ST

• filter discs (optional) must be used when installed for Accepted Practice 3A 604-05, supplying air under pressure in contact



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Air Relief Check Valves

Features and Benefits

- no tools for assembly or disassembly
- ball and gaskets are replaceable
- valve seals for both pressure and vacuum
- air and water can be directed away by using a plastic tube and the valves 1/8" FNPT connection port
- all product contact surfaces have a radius of ¼" or better
- valve ball is constructed of FDA, 3A approved polypropylene
- maximum temperature: 212°F
- Polypropylene ball density = 0.033lb/in³
- PTFE ball available (density = 0.078lb/in³)
- · other gasket materials available

Standard materials:

- · metal parts 304 stainless steel
- ball Polypropylene
- gasket EPDM



Ordering Information

When ordering please list part number along with description. Example:

BARV-G150 - air relief valve, 11/2", 304 stainless

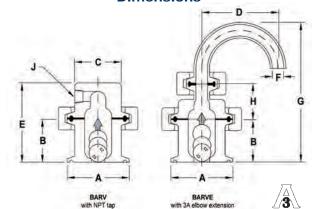
<u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u> <u>6</u> <u>7</u> <u>8</u> <u>9</u> <u>10</u> B A R V - G 1 5 0

Valve (1-5)	(6)	Material (7)	Size (8-10)
BARV NPT tap	-	G 304 stainless	150 1½"
BARVE 3A			200 2"
BARBA no elbow			

Specifications

Size	Part #	Pressure Rating (PSI)	Description
1½"	BARV-G150	145	1½" air relief valve with NPT tap
1½"	BARVE-G150	145	1½" air relief valve with elbow extension (3A)
2"	BARV-G200	145	2" air relief valve with NPT tap
2"	BARVE-G200	145	2" air relief valve with elbow extension (3A)

Dimensions



Size	А	В	С	D	E	F	G	Н	J
1½" air relief valve with tapped blind end	1.98	1.4	1.5		2.4				1/8" NPT
2" air relief valve with tapped blind end	2.51	1.4	1.5		2.4				1/8" NPT
1½" air relief valve with 180° elbow	1.98	1.4		1.5		0.37	4.5	1.1	
2" air relief valve with 180° elbow	2.51	1.4		1.5		0.37	4.5	1.1	



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Air Relief Check Valves

Material List



Replacement Ball Kit

Part #	Description	Material	Qty Required
BARVE3P-G150	ball	polypropylene	1
BARVE3T-G150	ball	PTFE	1

ltom	Description	Motorial	Quantity Required			
Item	Description	Material	elbow 🔊	tapped		
1	body	304 stainless	1	1		
2	ball	PP or PTFE	1 1	1		
3	1" gasket	EPDM	1 1	1		
4	3A cover	304 stainless	1 1	n/a		
4A	tapped cover	304 stainless	n/a	1		
5	1½" clamp	CF8 stainless	1 1	1		
6	180° tube ferrule	304 stainless	1 1	n/a		
7	½" gasket	EPDM	1 1	n/a		
8	½" clamp	CF8 stainless	1 1	n/a		

11-4673 We Ship World Wide

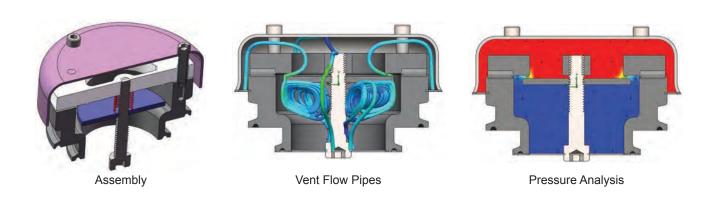
Air & Vacuum Relief Tank Vent Valve

Features:

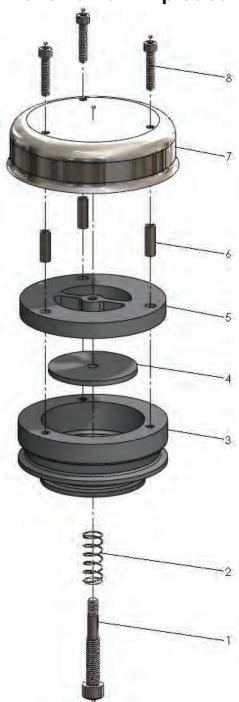
- · The valve relieves pressure as the fluid level rises while filling a tank.
- The valve relieves vacuum as the fluid level drops while emptying a tank.
- 2" and 3" clamp connections on the same valve
- dome helps in preventing external contamination
- light weight, robust PVC and 304 stainless steel construction
- · can use any clamp gasket
- · 304 stainless steel dome
- PVC
- · maximum flow rate: 500GPM
- vacuum break: .1 PSI
- pressure relief: .1 PSI



Dimensions Ø3.98 1.85 2.86 Ø 2.52 Ø3.58



Tank Vent Valve - Exploded View



Item	Description	Material	Quantity
1	spring bolt	304 stainless steel	1
2	spring	304 stainless steel	1
3	body	PVC	1
4	check plate	PVC	1
5	flow plate	PVC	1
6	spacer	304 stainless steel	3
7	cap	304 stainless steel	1
8	cap bolt	304 stainless steel	3



The most versatile of the actuator offering. Available in aluminum, stainless steel and Technopolymer materials; and spring return double acting and 90° and 180° rotation. Used on ALL Dixon Butterfly and valves. All standard with ISO 5211 and Namur mounting interface.

RP-BA series is manufactured of extruded hard anodized aluminum alloy. Available in spring return or double acting for all quarter turn valves.



RP-BS series is manufactured of stainless steel for corrosive environments. Available in spring return or double acting for all quarter turn valves.



M

RP-MA series is manufactured of extruded hard anodized aluminum alloy. For use in 3 position or 180° rotation applications. Available in spring return or double acting.



RP-TP series is manufactured of light weight technopolymer for corrosive environments. Available in spring return or double acting for all quarter turn valves.

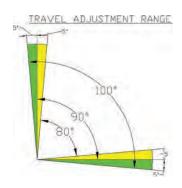


Rack and Pinion Actuators

Bi-Directional Travel Stop

Rack and Pinion actuators feature bi-directional pinion travel stops. Two stops located on the side of the actuator allow a full \pm 5° of valve travel adjustment, giving a guaranteed range of adjustment between 80° and 100° of actuator travel. These travel stops are designed to absorb the maximum rated torque of the actuator and the maximum impact loading associated with recommended stroke speed.

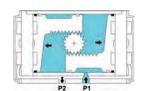
Adjustment of the counterclockwise and clockwise rotation limits are accomplished by turning the respective left and right stops adjustment screws to increase or reduce the output rotation angle.



Pneumatic Actuator Operation

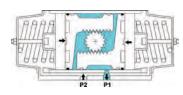
Double-Acting

For a clockwise output, apply pressure to P2. This forces the pistons to move to the center resulting in the linear piston travel converted to clockwise rotation of the pinion. The air volume between the pistons is exhausted at P1.

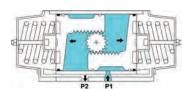


For a counter-clockwise output, apply pressure to P1. This forces the pistons to move to away from the center resulting in the linear piston travel converted to counter- clockwise rotation of the pinion. The air volume between the pistons is exhausted at P2.

Spring Return



For a clockwise output, the spring energy forces the pistons to move to the center resulting in the linear piston travel converted to clockwise rotation of the pinion. The air volume between the pistons is exhausted at P1, while the volume outside the pistons is vented at P2.



For a counter-clockwise output, apply pressure to P1. This forces the pistons to move away from the center, compressing the spring sets and resulting in the linear piston travel converted to counter-clockwise rotation of the pinion. The air volume outside each piston is exhausted at P2.

Note: When reverse Rotation is required, the pistons can be inverted in the housing. This will result in a clockwise rotation when air pressure is applied to P1 and a counter-clockwise rotation when P1 is vented.

RP-BS Series Horizontal Rack and Pinion Stainless Steel Actuators

Features and Benefits

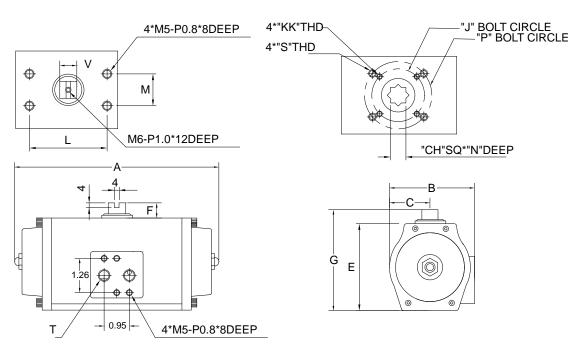
- Replaceable top and bottom PTFE pinion bearings ensure low friction.
- 304SS construction for excellent chemical and corrosion resistance
- travel stops provide ±4° travel adjustment
- Precision cast stainless steel pistons are guided through full face engagement with the pinion and piston guide.
- NAMUR slotted shaft is standard to provide a self-centering positive drive for positioners or a variety of switches.
- drive pinion is one-piece stainless steel alloy shaft with precision machined gear teeth for precise control
- ISO 5211 mounting
- Temperature range: -4° F to 200° F with Buna elastomers (standard)
- Temperature range: -4° F to 400° F with FKM elastomers (optional)



Available in:

- air to open / air to close (ATO/ATC)
- air to open / spring to close (ATO/STC)
- spring to open / air to close (STO/ATC)

Dimensions



Part #	A * (DA)	A* (SR)	В	С	Е	F (mm)	G	CH (mm)	J	L (mm)	M (mm)	N	Р	S	Т	V (mm)	KK
RP-BS-045 *	166.11	192.02	65.02	29.21	65.02	20	85.09	11	36.06	80	30	14.73	1.97	10-24	1/4" NPT	16	1/4 x 20
RP-BS-065 *	177.80	186.43	74.16	35.30	80.77	20	100.83	14	50.03	80	30	14.98	N/A	1/4 x 20	1/4" NPT	16	N/A
RP-BS-080 *	198.37	212.59	100.83	48.51	107.69	20	127.76	19	50.03	80	30	16.76	2.76	1/4 x 20	1/4" NPT	16	5/16 x 18
RP-BS-105 *	251.71	267.46	120.65	58.16	132.84	20	152.90	19	70.10	80	30	19.55	N/A	5/16 x 18	1/4" NPT	16	N/A
RP-BS-125 *	296.16	309.88	136.90	68.32	154.68	30	184.65	22	70.10	130	30	24.63	4.02	3/8 x 16	1/4" NPT	22	3/8 x 16
RP-BS-140 *	359.91	489.96	159.00	78.99	175.00	30	204.97	27	102.10	130	30	29.97	4.92	3/8 x 16	1/4" NPT	22	1/2 x 13

All dimensions are in inches, unless noted. Dimensions are approximate.



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Horizontal Rack and Pinion Stainless Steel Actuators



Item	Description	Material	Quantity
1	body	304SS	1
2	piston	304SS	2
3	end cap	304SS	2
4	Pinion	304SS	1
5	guide bearing	Nylon	2
6	spring cartridge	Nylon/Steel	*
7	O-ring	Buna/FKM**	2
8	piston bearing	TFE	2
9	O-ring	Buna / FKM **	2
10	bearing	Nylon	1
11	washer	304SS	1
12	snap ring	304SS	1
13	indicator	Nylon	1
14	O-ring	Buna / FKM**	1
15	upper pinion bearing 1	TFE	1
16	upper pinion bearing 2	TFE	1
17	lower pinion bearing	TFE	1
18	O-ring	Buna / FKM**	1
19	O-ring	Buna / FKM **	2
20	nut	304SS	2
21	travel stop	304SS	2
22	bolt (end cap)	304SS	8

Buna Repair Kit Part #
Standard
RP-045SS-RK
RP-065SS-RK
RP-080SS-RK
RP-105SS-RK
RP-125SS-RK
RP-140SS-RK

Repair Kits

Item #	Description	Material	Quantity
5	guide bearing	nylon	2
7	O-ring	Buna / FKM	2
8	piston bearing	TFE	2
9	O-ring	Buna / FKM	2
10	bearing	nylon	1
12	snap ring	304SS	1
14	o-ring	Buna / FKM	1
15	upper pinion bearing 1	TFE	1
16	upper pinion bearing 2	TFE	1
17	lower pinion bearing	TFE	1
18	O-ring	Buna / FKM	1
10	O-ring	Runa / FKM	2

FKM Repair Kit Part #
Optional
RP-045SS-RKV
RP-065SS-RKV
RP-080SS-RKV
RP-105SS-RKV
RP-125SS-RKV
RP-140SS-RKV

^{depends upon torque} ratings, n/a for double acting see chart on page 235
Buna standard / FKM

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Horizontal Rack and Pinion Stainless Steel Actuators

Technical Data

Torque Ratings for Double Acting Actuator (in. lbs.)

Part #	40 PSI	60 PSI	80 PSI	100 PSI	120 PSI
RP-BS-045-DA	71	107	143	178	214
RP-BS-065-DA	171	256	342	427	512
RP-BS-080-DA	370	555	740	925	1110
RP-BS-105-DA	624	936	1249	1561	1873
RP-BS-125-DA	1214	1822	2429	3036	3643
RP-BS-140-DA	2034	3051	4068	5085	6102

Torque Ratings for Spring Return Actuator (in. lbs.)

Part #	Springs	Spring	Torque	40 PSI End Break		60	PSI	80	PSI	100	PSI
Pall #	per side	End	Break	End	Break	End	Break	End	Break	End	Break
	3	35	57	14	36	50	72	86	108	121	143
RP-BS-045-SR	4	47	77			30	60	66	96	101	131
KF-D3-040-3K	5	60	96					47	83	82	118
	6	71	115							63	107
	3	67	136	35	104	120	189	206	275	291	360
RP-BS-065-SR	4	90	182			74	166	160	252	245	337
KF-D3-000-3K	5	112	227					115	230	200	315
	6	135	273							154	292
	3	167	273	97	203	282	388	467	573	652	758
RP-BS-080-SR	4	223	364			191	332	376	517	561	702
KF-D3-000-3K	5	279	456					284	461	469	646
	6	335	547							378	590
	3	346	574	50	278	362	590	675	903	987	1215
RP-BS-105-SR	4	461	766			170	475	483	788	795	1110
KF-D3-100-3K	5	576	956					293	673	605	985
	6	692	1141							420	869
	3	651	1141	73	563	681	1171	1288	1778	1895	2385
RP-BS-125-SR	4	869	1522			300	953	907	1560	1514	2167
KF-BS-125-SK	5	1080	1902					527	1349	1134	1956
	6	1301	2283							753	1735
	3	808	1859	175	1226	1192	2243	2209	3260	3226	4277
RP-BS-140-SR	4	1071	2487			564	1980	1581	2997	2598	4014
KC-D3-14U-SK	5	1345	3107					961	2723	1978	3740
	6	1610	3726							1359	3475

Note: 5 springs per side is standard





Features and Benefits

- body: extruded hard anodized aluminum alloy provides wear and corrosion resistance and reduced friction
- heavy duty springs: high tensile steel springs with retainer and guide for safe and easy assembly
- pistons: die-cast aluminum alloy fitted with nylon bushing guides and Buna-N seals
- end caps: epoxy-coated die-cast aluminum alloy for maximum resistance to corrosive environments
- pinion: Electroless nickel plated carbon steel for maximum corrosion and wear resistance
- rotation adjustment: A full ±5° of travel adjustment in the open and closed positions, standard on all sizes
- solenoid interface: International NAMUR solenoid mounting interface is standard on all units
- indicator: A high visibility polyethylene indicator. Open/Close indication is standard on all models
- tested to 1 million cycles

Available in:

- air to open / air to close (ATO/ATC)
- air to open / spring to close (ATO/STC)
- spring to open / air to close (STO/ATC)

Specifications

- operating pressure: 40 to 120 PSI
- maximum pressure rating: 150 PSI
- temperature range: -4°F to 200°F
- FKM seal max temperature 350°F
- size range: 40 in. lb. 16,500 in. lb.

- ISO 5211 bolt patterns piston and pinion lubrication: Shell Darina R2
- range of rotation adjustment: 80° to 100°

female double square output shaft

twin rack & pinion design

operating media: dry or lubricated non-corrosive gas

Double-Acting

	\Mainlet		Volu	ume		
Part #	Weight (lbs.)	Outb	ooard	Inbe	oard	ISO5211
	(103.)	cm³	in ³	cm ³	in³	
RP-BA-012-DA	2.24	77	4.70	80	4.88	F04
RP-BA-025-DA	2.36	139	8.48	170	10.37	F04
RP-BA-025-DA5	2.36	139	8.48	170	10.37	F05
RP-BA-045-DA	5.00	252	15.38	324	19.77	F05 / F07
RP-BA-101-DA	8.70	495	30.21	708	43.20	F05 / F07
RP-BA-225-DA	17.25	1163	70.97	1573	95.99	F07 / F10
RP-BA-365-DA	14.80	2415	147.37	2673	163.12	F10 / F12
RP-BA-500-DA	45.00	2863	174.71	3018	184.17	F10 / F12

Spring Return

Part #	Weight	Vo	lume	ISO 5211
Fail#	(lbs.)	cm ³	in ³	190 9211
RP-BA-025-SR	4.21	170	10.37	F04
RP-BA-025-SR5	4.21	170	10.37	F05
RP-BA-045-SR	5.20	324	19.77	F05 / F07
RP-BA-101-SR	11.45	708	43.20	F05 / F07
RP-BA-225-SR	22.50	1573	95.99	F07 / F10
RP-BA-365-SR	40.55	2673	163.12	F10 / F12
RP-BA-500-SR	57.80	3018	184.17	F10 / F12

Cycle Times

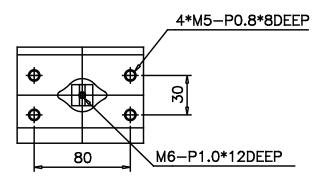
Overall cycle time performance will vary greatly for each unit. Cycle times are dependant on air supply, valve torque, line ressure, temperature and media. Please contact Divon Sanitary for process specific cycle times



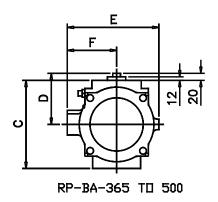
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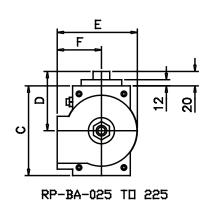
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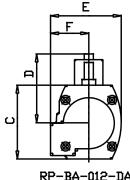
Dimensions RP-BA-012 through 500-DA/SR



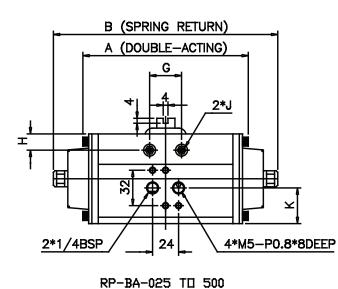
RP-BA-025 TO 500

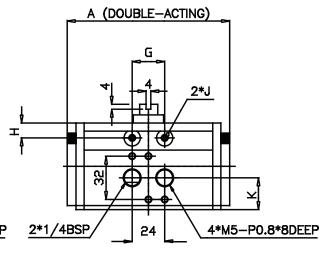






RP-BA-012-DA





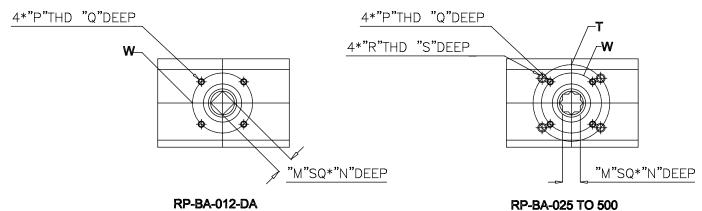
RP-BA-012-DA

All dimensions are in mm, unless noted. Dimensions are approximate.



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Dimensions RP-BA-012 through 500-DA/SR



Part #	Α	В	С	D	Е	F	G	Н	J	K	М	N	Р	Q	R	S	Т	W
RP-BA-012	120.0	N/A	66.0	22.0	74.5	46.0	23.8	11.0	M5xP0.8	23.5	9.0	10.5	M5xP0.8	8.0	N/A	N/A	N/A	42.0
RP-BA-025 *	144.3	194.6	79	57.7	81.4	47.8	32.5	12.6	M5xP0.8	29.7	11	17	M5xP0.8	8	M6xP1.0	10	50	42
RP-BA-045 *	149.2	205.6	98.0	67.4	95.0	51.5	32.5	13.8	M6xP1.0	30.2	14.0	21.0	M6xP1.0	10.0	M8xP1.25	12.0	70.0	50.0
RP-BA-101 *	183.0	250.0	121.0	79.2	119.0	64.5	46.2	16.6	M8xP1.25	33.5	17.0	25.5	M6xP1.0	10.0	M8xP1.25	12.0	70.0	50.0
RP-BA-225 *	259.6	355.0	141.0	89.5	140.5	75.5	54.0	18.6	M10xP1.5	39.0	22.0	31.0	M8xP1.25	12.0	M10xP1.5	15.0	102.0	70.0
RP-BA-365 *	304.3	422.0	176.0	99.1	185.2	105.5	79.7	27.3	M12xP1.75	97.4	27.0	35.0	M10xP1.5	15.0	M12xP1.75	19.0	125.0	102.0
RP-BA-500 *	364.4	487.0	196.0	116.5	204.8	107.8	79.4	28.3	M12xP1.75	99.0	27.0	35.0	M10xP1.5	15.0	M12xP1.75	19.0	125.0	102.0



- -SR (spring return)
- -DA (double acting)

Aluminum Rack and Pinion Actuators



Item	Description	Material	Qua	ntity	Item	Description	Material	Qua	ntity
110111	Booomption	Material	DA SR		110111	Booonplion	Material	DA	SR
6	piston bearing	nylon	2 or 4*	2 or 4*	22	bearing	nylon	1	1
6A	piston bearing	nylon	0 or 2**	0 or 2**	23	O-Ring	Buna or FKM	1	1
7	O-ring	Buna or FKM	2	2	24	bearing	nylon	1	1
8	O-ring	Buna or FKM	2	2	27	bearing	Buna or FKM	1	1
9	O-ring	Buna or FKM	2	2	28	O-Ring	Buna or FKM	1	1
10	O-ring	Buna or FKM		2	29	O-Ring	Buna or FKM	2	2

Item	Description	Material		intity	Item	Description	Material		intity
			DA	SR		·		DA	_
1	body	anodized aluminum alloy	1	1	17	spring (inner)	high tensile steel	n/a	2
2	piston	die-cast aluminum alloy	2	2	18	spring (outer)	high tensile steel	n/a	2
3	end cap (left)	die-cast aluminum alloy	n/a	1	19	position indicator	polyethylene	1	1
3A	end cap (left)	die-cast aluminum alloy	1	n/a	20	snap ring	304SS	1	1
4	end cap (right)	die-cast aluminum alloy	n/a	1	21	washer	304SS	1	1
4A	end cap (right)	die-cast aluminum alloy	1	n/a	22	bearing	nylon	1	1
5	pinion	carbon steel	1	1	23	o-ring	Buna or FKM	1	1
6	piston bearing	nylon	2 or 4*	2 or 4*	24	bearing	nylon	1	1
6A	piston bearing	nylon	0 or 2**	0 or 2**	25	stop cam	carbon steel	1	1
7	O-ring	Buna or FKM	2	2	26	retaining ring	304SS	1	1
8	O-ring	Buna or FKM	2	2	27	bearing	Buna or FKM	1	1
9	O-ring	Buna or FKM	2	2	28	O-ring	Buna or FKM	1	1
10	O-ring	Buna or FKM	n/a	2	29	O-ring	Buna or FKM	2	2
11	washer	304SS	n/a	2	30	washer	304SS	2	2
12	nut	304SS	n/a	2	31	stop screw	304SS	2	2
13	screw	304SS	n/a	2	32	nut	304SS	2	2
14	washer	304SS	n/a	2	33	spring washer	304SS	8	8
15	spring guide	304SS	n/a	2	34	cap screw	304SS	8	8
16	retainer	304SS	n/a	2	* Quan	tity 4 for sizes 012 to	101, Quantity 2 for sizes 225	to 500	



Technical Data Torque Ratings for Double Acting Actuator (in. lb.)

		•	•		
Part #	40 PSI	60 PSI	80 PSI	100 PSI	120 PSI
RP-BA-012-DA	63	94	125	156	188
RP-BA-025-DA	125	187	250	312	375
RP-BA-045-DA	225	337	450	562	675
RP-BA-101-DA	500	750	1000	1250	1500
RP-BA-225-DA	1125	1687	2250	2812	3375
RP-BA-365-DA	1825	2738	3650	4563	5475
RP-BA-500-DA	2500	3750	5000	6250	7500

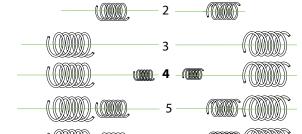
Torque Ratings for Spring Return Actuator (in. lb.)

Air Torque

Spring Torque

	Spring	Opring	Torque					All I	rquc				
Part #	Set	Start	End	40	PSI	60	PSI	80	PSI	100	PSI	120	PSI
	361	Start	Ena	Start	End	Start	End	Start	End	Start	End	Start	End
	2	69	45	76	47	138	109	201	172	263	234	326	312
	3	104	67			113	70	176	133	229	195	301	258
RP-BA-025-SR	4	140	90			88	31	151	93	213	156	276	218
	5	175	112					126	54	189	116	251	179
	6	209	135							164	77	227	139
	2	126	81	135	83	248	196	361	309	473	421	586	533
	3	190	121			203	125	316	238	428	350	541	463
RP-BA-045-SR	4	254	162			158	54	271	167	383	279	496	392
	5	317	202					226	96	339	209	451	321
	6	381	243							293	137	406	251
	2	279	179	300	184	549	433	798	682	1048	931	1297	1181
	3	418	270			449	278	698	526	947	775	1196	1025
RP-BA-101-SR	4	559	360			350	120	599	371	848	618	1097	867
	5	698	450					500	212	749	464	998	710
	6	839	540							650	304	899	557
	2	659	394	690	395	1253	958	1816	1521	2379	2084	2939	2647
	3	990	590			1034	591	1596	1154	2159	1717	2722	2280
RP-BA-225-SR	4	1320	787			816	226	1379	788	2029	1351	2505	1914
	5	1650	984					1161	424	1724	984	2287	1549
	6	1980	1181							1506	621	2069	1181
	2	1053	607	1152	659	2063	1570	2975	2482	3886	3393	4797	4305
	3	1573	912			1726	996	2637	1907	3549	2819	4460	3730
RP-BA-365-SR	4	2091	1217			1388	423	2300	1335	3211	2246	4123	3157
	5	2625	1519					1967	744	2878	1655	3789	2566
	6	3144	1824							2540	1082	3452	1994
	2	1560	785	1590	803	2780	1990	3970	3180	5160	4380	6350	5570
	3	2340	1180			2380	1200	3570	2400	4760	3590	5960	4780
RP-BA-500-SR	4	3130	1570			1980	414	3180	1600	4370	2800	5560	3990
	5	3910	1960					2780	815	3970	2010	5160	3200
	6	4690	2360							3570	1220	4760	2410

Note: Spring set 4 is standard on all sizes







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Available in:

- air to open / air to close (ATO/ATC)
- air to open / spring to close (ATO/STC)
- spring to open / air to close (STO/ATC)



Features and Benefits

- NAMUR VDI/VDE 3845 and ISO 5211 dimensions on all sizes, no special blocks are required to mount solenoid valves, limit switches or positioners.
- The standard angle of rotation is 180°, additional travel rotations of 120°, 135°, 150° are available.
- MA016 and larger sizes feature a travel stop with ±10° adjustment in both open and close directions (International Patent).
- The patent pending bottom plate design, unique to Dixon Sanitary secures a captive pinion (anti-blowout system) and permits flexibility in mounting by retaining AISI 304 nuts (standard) or AISI 304 bolts (optional). Available in either dual ISO patterns or to customer dimensions.
- All pinions are supplied with anti-blowout retention in both directions.
- The female pinion drive is standard with a double square output drive and optional with a double-D drive, keyed drive and designs to meet your specific requirements.
- Shaft bearings isolate the pinion gear from the housing and support the shaft for high cycle applications.
- The pinion teeth are engaged for the full length and stroke of the piston. The pinion height allows manual override without disturbing the position indication.

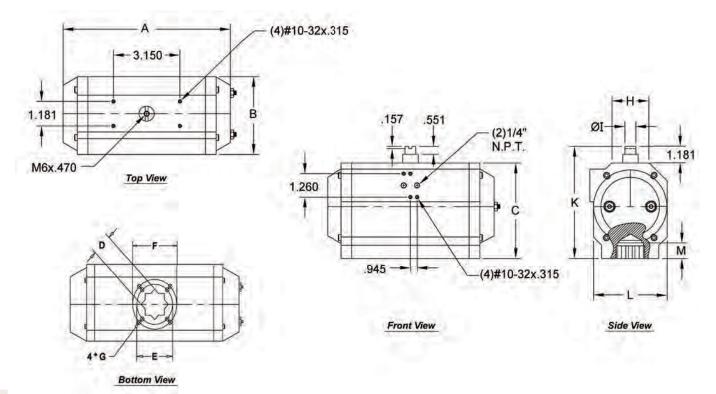
- Extruded aluminum body is internally machined and lapped to exact specifications. All internal and external surfaces are anodized for corrosion resistance.
- For additional corrosion resistance actuator can be epoxy coated.
- An external open/closed indicator is standard and available for all rotations.
- Pistons incorporate double wear pads to separate the rack from the actuator wall and serve as both guide and wear bearings.
- Epoxy coated special steel springs are pre-loaded with non-metallic materials. The stainless steel end cap fasteners are extra long to allow for spring relaxation, all parts are corrosion resistant.
- Air pressure operation from 40 to 150 PSI. Water, nitrogen and compatible hydraulic fluids may be used to power the actuator.
- All external fasteners are corrosion resistant stainless steel.
- All units are permanently lubricated at the factory with non-silicone grease.
- All units are externally stamped with a progressive traceable serial number.
- 100% of all units are factory pressure and leak tested.

Specifications

- twin rack and pinion design
- · female double square output shaft
- ISO 5211 bolt patterns
- · piston and pinion lubrication: non-silicone grease
- range of rotation adjustment: 170° to 190°
- · operating media: dry or lubricated non-corrosive gas
- operating pressure: 40 to 120 PSI
- · maximum pressure rating: 150 PSI
- temperature range: -40°F to 176°F

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Dimensions Double Acting



Part #	Α	В	С	D (mm)	Е	F	G	Н	I	K	L	M
RP-MA-012-DA	4.7	2.6	2.8	11	N/A	F04	10 - 32	1.9	0.5	4.0	2.1	0.5
RP-MA-016-DA	9.2	3.3	3.5	14	N/A	F05	1/4"-20	1.7	0.5	4.8	2.8	0.7
RP-MA-017-DA	10.8	3.3	3.5	14	N/A	F05	1/4"-20	1.7	0.5	4.8	2.8	0.8
RP-MA-021-DA	9.9	3.8	4.5	17	N/A	F07	5/16"-18	1.8	0.6	5.6	3.4	0.9
RP-MA-026-DA	13.0	3.8	4.4	17	N/A	F07	5/16"-18	1.8	0.8	5.6	3.4	0.9
RP-MA-031-DA	13.0	4.5	5.2	17	N/A	F07	5/16"-18	2.3	8.0	6.4	4.1	0.9
RP-MA-036-DA	13.7	5.4	6.5	22	F07	F10	5/16"-18	2.6	0.8	7.7	5.2	1.2
RP-MA-041-DA	15.8	5.4	6.5	22	F07	F10	5/16"-18	2.6	1.1	7.7	5.2	1.2
RP-MA-046-DA	20.0	5.9	7.0	22	F07	F10	5/16"-18	3.0	1.1	8.2	5.7	1.2
RP-MA-051-DA	19.6	7.3	8.5	27	N/A	F12	1/2"-13	4.0	1.1	9.8	7.2	1.5
RP-MA-056-DA	23.9	7.3	8.5	27	N/A	F12	1/2"-13	4.0	1.1	9.8	7.2	1.5

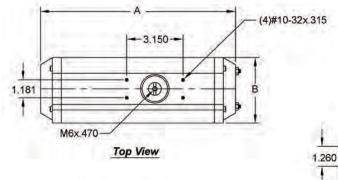
All dimensions are in inches, unless noted. Dimensions are approximate. Engineering dimensions are available upon request. Specifications are subject to change without notice.

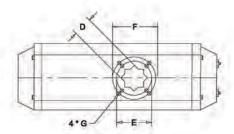


Side View

RP-MA Series 180° Aluminum Rack and Pinion Actuators

Dimensions Spring Return





1.260 (4)#10-32x.315

Front View

Bottom View

Part #	Α	В	С	D (mm)	Е	F	G	Н	I	K	L	М
RP-MA-015-SR	10.9	3.4	3.5	14	N/A	F05	1/4"-20	1.7	0.5	4.0	2.1	0.5
RP-MA-017-SR	12.8	3.4	3.5	14	N/A	F05	1/4"-20	1.7	0.5	4.8	2.8	0.7
RP-MA-020-SR	11.7	3.8	4.4	17	N/A	F07	5/16"-18	1.8	0.5	4.8	2.8	0.8
RP-MA-025-SR	15.5	3.8	4.4	17	N/A	F07	5/16"-18	1.8	0.6	5.6	3.4	0.9
RP-MA-030-SR	15.2	4.5	5.2	17	N/A	F07	5/16"-18	2.3	0.8	5.6	3.4	0.9
RP-MA-035-SR	16.0	5.4	6.5	22	F07	F10	5/16"-18	2.6	0.8	6.4	4.1	0.9
RP-MA-040-SR	18.8	5.4	6.5	22	F07	F10	5/16"-18	2.6	0.8	7.7	5.2	1.2
RP-MA-045-SR	23.2	6.0	7.0	22	F07	F10	5/16"-18	3.0	1.1	7.7	5.2	1.2
RP-MA-050-SR	23.4	7.3	7.0	27	N/A	F12	1/2"-13	4.0	1.1	8.2	5.7	1.2
RP-MA-055-SR	27.7	7.3	8.5	27	N/A	F12	1/2"-13	4.0	1.1	9.8	7.2	1.5

All dimensions are in inches, unless noted. Dimensions are approximate. Engineering dimensions are available upon request. Specifications are subject to change without notice.

Technical Data Torque Ratings for Double Acting Actuator (in. lb.)

Part #	40 PSI	60 PSI	80 PSI	100 PSI	120 PSI
RP-MA-012-DA	62	94	125	156	187
RP-MA-016-DA	137	206	275	344	412
RP-MA-017-DA	180	270	360	450	540
RP-MA-021-DA	250	375	500	625	750
RP-MA-026-DA	375	562	750	937	1125
RP-MA-031-DA	500	750	1000	1250	1500
RP-MA-036-DA	800	1200	1600	2000	2400
RP-MA-041-DA	1000	1500	2000	2500	300
RP-MA-046-DA	1562	2344	3125	3906	4687
RP-MA-051-DA	2250	3375	4500	5625	6750
RP-MA-056-DA	3000	4500	6000	7500	9000
					III - OLI



Call Toll Free: 1-866-711-4673

Technical Data

Torque Ratings for Spring Return Actuator (in. lb.)

					(
_	Springs	Spring	Torque					Air To	-				
Part #	set	Start	End	40	1		PSI	80	i		PSI		PSI
				Start	End	Start	End	Start	End	Start	End	Start	End
	2+2	75	53	84	62	153	131	222	200	291	269	359	337
	3+3	112	81	56	25	125	94	194	163	263	232	331	300
RP-MA-015-SR	4+4	150	107			99	56	168	125	237	194	305	262
	5+5	187	134			72	19	141	88	210	157	278	225
	7+5	224	160					115	51	184	120	252	188
	2+2	93	64	116	87	206	177	296	267	386	357	476	447
	3+3	139	96	84	41	174	131	264	221	354	311	444	401
RP-MA-017-SR	4+4	185	128			142	85	232	175	322	265	412	355
	5+5	232	160			110	38	200	128	290	218	380	308
	7+5	278	192					168	82	258	172	348	262
	2+2	122	92	158	128	283	253	408	378	533	503	658	628
	3+3	184	138	112	66	237	191	362	316	487	441	612	566
RP-MA-020-SR	4+4	245	184	66	5	191	130	316	255	441	380	566	505
	5+5	307	230			145	68	270	193	395	318	520	443
	7+5	369	278			97	6	222	131	347	256	472	381
	2+2	196	124	251	179	438	366	626	554	813	741	1001	929
	3+3	294	185	190	81	377	268	565	456	752	643	940	831
RP-MA-025-SR	4+4	392	247			315	170	503	358	690	545	878	733
	5+5	490	309			253	72	441	260	628	447	816	635
	7+5	588	372					378	162	565	349	753	537
	2+2	251	187	313	249	563	499	813	749	1063	999	1313	1249
	3+3	376	280	220	123	470	374	720	624	970	874	1220	1124
RP-MA-030-SR	4+4	502	374			376	248	626	498	876	748	1126	998
	5+5	627	467			283	123	533	373	783	623	1033	873
	7+5	753	560					440	247	690	497	940	747
	2+2	412	306	494	388	894	788	1294	1188	1694	1588	2094	1988
	3+3	617	461	339	183	739	583	1139	983	1539	1383	1939	1783
RP-MA-035-SR	4+4	824	614			586	376	986	776	1386	1176	1786	1576
	5+5	1029	767			433	171	833	571	1233	971	1633	1371
	7+5	1236	921					679	364	1079	764	1479	1164
	2+2	505	371	629	495	1129	995	1629	1495	2129	1995	2629	2495
	3+3	757	556	444	243	944	743	1444	1243	1944	1743	2444	2243
RP-MA-040-SR	4+4	1011	741			759	489	1259	989	1759	1489	2259	1989
	5+5	1263	929			572	237	1072	737	1572	1237	2072	1737
	7+5	1516	1113					887	484	1387	984	1887	1484
	2+2	890	560	1002	672	1784	1454	2565	2235	3346	3016	4127	3797
	3+3	1334	840	722	228	1504	1010	2285	1791	3066	2572	3847	3353
RP-MA-045-SR	4+4	1779	1120			1224	565	2005	1346	2786	2127	3567	2908
	5+5	2224	1399			945	120	1726	901	2507	1682	3288	2463
	7+5	2669	1679					1446	456	2227	1237	3008	2018
	2+2	1101	869	1381	1149	2506	2274	3631	3399	4756	4524	5881	5649
	3+3	1652	1304	946	598	2071	1723	3196	2848	4321	3973	5446	5098
RP-MA-050-SR	4+4	2203	1738	512	47	1637	1172	2762	2297	3887	3422	5012	4547
	5+5	2754	2173			1202	621	2327	1746	3452	2871	4577	3996
	7+5	3303	2607			768	72	1893	1197	308	2322	4143	3447
	2+2	1487	1055	1945	1513	3445	3013	4945	4513	6445	6013	7945	7513
	3+3	2231	1583	1417	769	2917	2269	4417	3769	5917	5269	7417	6769
RP-MA-055-SR	4+4	2974	2111	889	26	2389	1526	3889	3026	5389	4526	6889	6026
	5+5	3718	2638			1862	782	3362	2282	4862	3782	6362	5282
	l		1			l	l	l	l	l	l	l	l





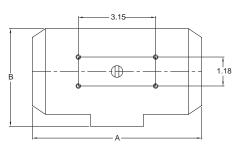
RP-TP Series Technopolymer Actuators

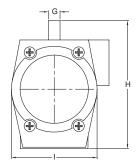
Features and Benefits

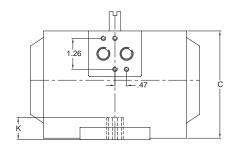
- Designed to withstand most environments with 3 different sizes for your corrosive environmental applications.
- Double Acting or Spring Return housings are available in a polyamide base material utilizing high cycle life spring cartridges made with non-metallic materials.
- Pinions are blow out proof ensuring safe and effective operation.
- All pinions and fasteners are made from high quality stainless steel.
- · All actuators come with an ISO 5211 female output drive.
- Have the ability to add a NAMUR mountable solenoid and a limit switch box.
- air, hydraulic oil or water, minimum of 40 PSI and maximum of 120 PSI
- standard working temperature range of -4°F to 176°F
- all actuators are 100% tested before shipping

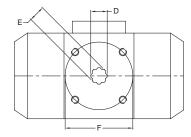


Dimensions









Part #	Α	В	С	D (mm)	E (mm)	F	G	Н	I	K
RP-TP-011-*	4.69	2.64	2.76	11	11	F04	.47	3.58	2.09	.49
RP-TP-014-*	6.30	3.39	3.54	14	14	F05	.47	4.37	2.76	.75
RP-TP-019-*	6.89	3.98	4.39	17	17	F07	.47	5.22	2.76	.91

* SR (spring return); DA (double acting)

All dimensions are in inches, unless noted. Dimensions are approximate.



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We Ship World Wide

M

RP-TP Series Technopolymer Actuators

Torque Ratings for Double Acting Actuators

Part #	40 PSI	60 PSI	80 PSI	100 PSI	120 PSI
RP-TP-011-DA	62	94	125	156	187
RP-TP-014-DA	137	206	275	344	412
RP-TP-019-DA	250	375	500	625	750

Torque Ratings for Spring Return

D		Position #1 Spring Torqu	e	Position #2 Air Torque								
Part #	# Springs	Start	End	60	PSI	80	PSI	100 PSI				
	# Springs	Start	Elia	Start	End	Start	End	Start	End			
	1+1	33	22	72	61	103	92	134	123			
RP-TP-011-SR	2+2	66	44	50	28	81	59	112	90			
	3+3	99	66	n/a	n/a	58	27	90	66			
	2+2	75	53	153	131	222	200	291	269			
	3+3	112	81	125	94	194	163	263	232			
RP-TP-014-SR	4+4	150	107	99	56	168	125	237	194			
	5+5	187	134	72	19	141	88	210	157			
	7+5	224	160	n/a	n/a	115	51	184	120			
	2+2	122	92	283	253	408	378	533	503			
	3+3	184	138	237	191	362	316	487	441			
RP-TP-019-SR	4+4	245	184	191	130	316	255	441	380			
	5+5	307	230	145	68	270	193	395	318			
	7+5	369	278	97	6	222	131	347	256			

Coupler Kit for Rack and Pinion Actuators

Feature:

 for mounting a rack and pinion actuator to the B5101 and B5104 series butterfly valves.



Rack and Pinion BFV Actuation Kits

Size	Series	Part #								
1/2" - 1½"	B5101	B5101-ISO100150								
2" - 21/2"	B5101	B5101-ISO200250								
3" - 4"	B5101	B5101-ISO300400								
6"	B5101	B5101-ISO600								
8"	B5101	B5101-ISO800								
1", 1½", 2½"	B5104	B5104-ISO100250								
2", 3"	B5104	B5104-ISO200300								
4"	B5104	B5104-ISO400								
, -										

For 1/2" - 6" Valves

Item	Description	Material	Qty
1	brackets	304 SS	2
2	coupler	304 SS	1
3	bracket bolts	304 SS	2
4	roll pin	304 SS	1

For 8" Valves

Item	Description	Material	Qty
1	brackets	304 SS	1
3	Bracket bolts	304 SS	2



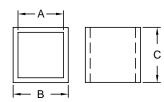
Actuator Sleeve Inserts

Features and Benefits

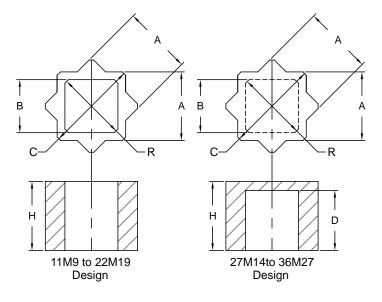
- · Fits all pneumatic actuators
- Reduces actuator ISO 5211 output drive for direct assembly with smaller square valve stems and couplers
- Double square sleeve high strength iron-based powdered metal
- Square sleeves 304SS
- · Multiple size reductions possible with one sleeve



Square Design



	XB51-SVA 11/14	XB51-SVB 14/17	XB51-SVC 17/22	XB51-SVD 9/11	XB51-SVE 22/27
Α	11	14	17	9	22
В	14	17	22	11	27
С	16	17	22	11	27



Insert Part Number	Α	В	С	D	Н	R
XB51-STVD	11	9	15.0	N/A	17.0	12.5
XB51-SVH	14	9	19.1	N/A	20.0	12.5
XB51-STVA	14	11	19.1	N/A	20.0	14.5
XB51-SVQ	17	9	23.1	N/A	24.0	12.5
XB51-SVI	17	11	23.1	N/A	24.0	14.5
XB51-STVB	17	14	23.1	N/A	24.0	19.2
XB51-SVJ	22	11	29.6	N/A	30.0	14.5
XB51-SVK	22	14	29.6	N/A	30.0	19.2
XB51-STVC	22	17	29.6	N/A	30.0	23.3
XB51-SVR	22	19	29.6	N/A	30.0	25.8
XB51-SVL	27	14	36.0	27.0	29.0	19.2
XB51-SVM	27	17	36.0	27.0	29.0	23.3
XB51-STVE	27	22	36.0	27.0	29.0	30.0
XB51-STS	36	19	48.0	33.0	35.0	25.8
VDE1 CVD	36	27	18 N	33 U	35 N	37 N





Star Design



BEO series are the most versatile of the electric actuators offered. Used on ALL quarter turn valves. All standard with ISO 5211 mounting interface.



BEP series are heavy duty electric spring return actuators. Used on ALL quarter turn valves. All standard with ISO 5211 mounting interface.



BEX series are high speed spring return electric actuators. For use on most quarter valves. Three classifications available.



M

BEO Series Electric Actuation

Features and Benefits



High Alloy Steel Gear Train

- provides self-locking function to avoid valve back drive
- factory installed high temperature lubricant, reduces maintenance

Additional Features

- · tested to one million cycles
- · one year manufacturer's warranty
- OM-1 and larger include heater to reduce condensation
- · larger actuators available upon request

- · conforms to CSA-C for outdoor use
- built by an ISO9001 certified manufacturer **Enclosure**
- · lightweight powder coated aluminum alloy with plastic cover
- NEMA 4 and 4X waterproof and dust proof
- ROHS compliant
- aluminum cover on larger models

Motor

- · extended duty cycle induction motor
- · H-insulation class OM-1 and OM-A Class F on OM-2 to OM-4
- · built in thermal protection prevents motor burn out
- · includes position indicators on top of unit

Manual Override

- non-clutch design allows manual operation in a power
- fail-safe does not allow manual operation when electric motor is operating
- · some units feature a hand wheel for manual operation
- · optional battery back-up available

Ordering Information

Part # example; BEOM-2E-31 = Electric actuator model OM-2, 24VDC, with 4-20 mA input/output Modulating controller and no other options.

Actuator (1-2) Model		odel (3-6)	Voltage (7)	(8) Options (9)			Options (10)		
BE	Electric	BM-T*	(132 in-lb)	B 115VAC	-	1	No options	1	No options
		OM-1	(309 in-lb)	C 12VDC		2	Torque switches	2	Torque switches
		OM-A	(442 in-lb)	D 24VAC		3	4-20 mA input/output Modulating controller	3	4-20 mA input/output Modulating controller
		OM-M	(OM-A w/ over-ride)	E 24VDC		4	4 Current position transmitter		Current position transmitter
		OM-2	(796.5 in-lb)	F 220VAC		5	Potentiometer	5	Potentiometer
		BM-2*	(1062 in-lb)			6	Local control unit	6	Local control unit
		OM-3	(1327 in-lb)			7	Two extra travel cams and switches	7	Two extra travel cams and switches
		OM-4	(3450 in-lb)			8	Three position cam set	8	Three position cam set
		OM-5	(4425 in-lb)			9	local control unit with lock	9	local control unit with lock
		OM-6	(5752 in-lb)			Α	1-5V input/ 2-10V output Modulating controller	Α	1-5V input/ 2-10V output Modulating controller
		OM-7	(8850 in-lb)			В	2-10V input/output Modulating controller	В	2-10V input/output Modulating controller
		OM-8	(13,243 in-lb)			С	75% duty cycle	С	75% duty cycle
		OM-9	(17,600 in-lb)			D Relay		D	Relay
		OM-10	(22,000 in-lb)			Е	Four positions cam set	Е	Four positions cam set

^{*} limited options available

Specifications

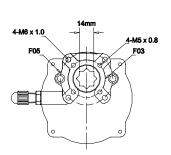
Model #	ISO 5211 Mounting	Manual Override	Heater Standard	Position Indicator	Weight Lbs	Top Cover Material Standard	Options Avaliable
BEBM-T	F03/F05	lever	no	no	3.3	plastic	n/a
BEOM-1	F03/F05	hex	yes	dome	4.4	plastic	all
BEOM-A	F05/F07	optional	yes	dome	6.6	plastic	all
BEBM-2	F07	na	yes	flat	13.2	plastic	limited
BEOM-2	F07	handwheel	yes	dome	24.3	aluminum	all
BEOM-3	F07	handwheel	yes	dome	24.3	aluminum	all

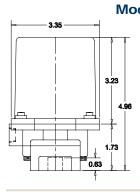


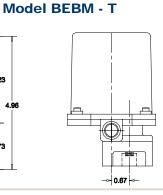
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BEO Series Electric Actuators

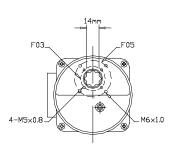
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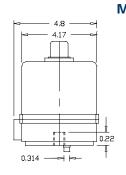




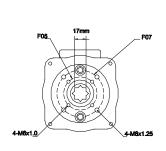


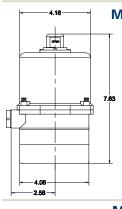


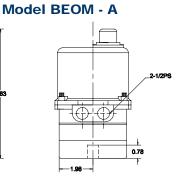




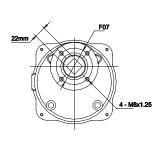


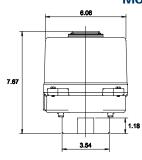


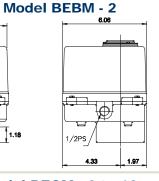




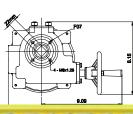


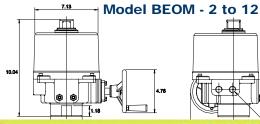


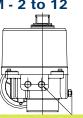
















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BEO Series Electric Actuators Specifications

Single Phase

Model	Max	Spee	d (90)	Motor	Motor	Speed	11	0 V Curre	ent	220V	/-240V Cu	irrent
No.	Torque inlbs.	60 Hz	50 Hz	Power	60 Hz	50 Hz	Run	Start	Lock	Run	Start	Lock
BEBM-T	132	19 s	22 s	5W	3600/min	3600/min	0.3A	0.4A	0.3A	0.3A	0.3A	0.3A
BEBM-2	1062	8 s	10 s	40 W	1720/min	1450/min	1.3A	3.0A	1.8A	0.5A	1.5A	0.9A
BEOM-A	442.5	20 s	24 s	10 W	3600/min	3600/min	0.5A	1.5A	0.6A	0.7A	0.8A	1.4A
BEOM-1	309.75	15 s	13 s	10 W	3600/min	3600/min	0.5A	1.5A	0.6A	0.6A	0.8A	1.4A
BEOM-2	796.5	15 s	17 s	70 W	1720/min	1450/min	1.0A	3.0A	1.8A	3.0A	5.0A	13.0A
BEOM-3	1327.5	22 s	26 s	70 W	1720/min	1450/min	1.0A	3.0A	1.8A	3.0A	5.0A	13.0A
BEOM-4	3540	16 s	18 s	180 W	1720/min	1450/min	1.3A	3.1A	3.6A	6.0A	8.0A	30.0A
BEOM-5	4425	22 s	25 s	180 W	1720/min	1450/min	1.5A	3.0A	3.6A	6.5A	8.0A	30.0A
BEOM-6	5752.5	28 s	31 s	180 W	1720/min	1450/min	1.8A	3.0A	3.6A	7.5A	8.0A	30.0A
BEOM-7	8850	46 s	55 s	220 W	1720/min	1450/min	3.2A	12.0A	10.0A	7.0A	8.0A	30.0A
BEOM-8	13275	46 s	55 s	220 W	1720/min	1450/min	4.0A	14.0A	10.0A	7.5A	8.0A	30.0A
BEOM-9	17700	58 s	70 s	220 W	1720/min	1450/min	3.2A	12.0A	6.0A	7.0A	8.0A	30.0A
BEOM-10	22125	58 s	70 s	220 W	1720/min	1450/min	4.0A	12.0A	6.0A	7.5A	8.0A	30.0A
BEOM-11	26550	58 s	70 s	250 W	1720/min	1450/min	3.0A	10.0A	5.0A	10.0A	10.0A	26.0A
BEOM-12	30975	58 s	70 s	300 W	1720/min	1450/min	4.0A	14.0A	5.0A	15.0A	15.0A	26.0A

N

Three Phase

Model	Max	Speed	d (90)	Motor	Motor	Speed	220	V Cur	rent	380	V Curi	rent	440	V Cur	rent
No.	Torque inlbs.	60 Hz	50 Hz	Power	60 Hz	50 H	Run	Start	Lock	Run	Start	Lock	Run	Start	Lock
BEBM-2	1062	8 s	10 s	40 W	1720/min	1450/min	0.6A	1.8A	1.1A	0.3A	1.0A	0.7A	0.4A	1.3A	0.7A
BEOM-2	796.5	15 s	17 s	70 W	1720/min	1450/min	0.6A	1.8A	1.1A	0.3A	1.0A	0.7A	0.4A	1.3A	0.7A
BEOM-3	1327.5	22 s	26 s	70 W	1720/min	1450/min	0.6A	1.8A	1.1A	0.3A	1.0A	0.7A	0.4A	1.3A	0.7A
BEOM-4	3540	16 s	18 s	180 W	1720/min	1450/min	1.0A	3.0A	3.5A	0.7A	2.2A	2.0A	0.8A	2.5A	2.0A
BEOM-5	4425	22 s	25 s	180 W	1720/min	1450/min	1.0A	3.0A	3.5A	0.7A	2.2A	2.0A	0.8A	2.5A	2.0A
BEOM-6	5752.5	28 s	31 s	180 W	1720/min	1450/min	1.0A	3.0A	3.5A	0.7A	2.2A	2.0A	0.8A	2.5A	2.0A
BEOM-7	8850	46 s	55 s	220 W	1720/min	1450/min	0.6A	0.8A	1.8A	0.4A	0.6A	1.0A	0.4A	0.6A	1.0A
BEOM-8	13275	46 s	55 s	220 W	1720/min	1450/min	0.8A	1.0A	2.8A	0.6A	0.8A	1.6A	0.6A	0.8A	1.2A
BEOM-9	17700	58 s	70 s	220 W	1720/min	1450/min	0.4A	0.6A	2.0A	0.4A	0.6A	1.0A	0.4A	0.6A	1.0A
BEOM-10	22125	58 s	70 s	220 W	1720/min	1450/min	0.8A	1.0A	1.5A	0.4A	0.6A	1.0A	0.4A	0.6A	1.0A
BEOM-11	26550	58 s	70 s	250 W	1720/min	1450/min	1.2A	1.2A	3.0A	0.6A	0.8A	1.5A	0.6A	0.8A	1.5A
BEOM-12	30975	58 s	70 s	300 W	1720/min	1450/min	1.2A	1.4A	2.5A	0.6A	0.8A	1.5A	0.6A	0.8A	1.5A



N

BEO Series Electric Actuators

Specifications

12V / 24V

Model	Max	Speed	Motor	Motor	Speed	1	2 V DC/A	C	2	24 V DC/A	<u> </u>
No.	Torque inlbs.	(90)	Power	12 V	24 V	Run	Start	Lock	Run	Start	Lock
BEBM-T	132	19 s	5 W	3600/min	3600/min	n/a	n/a	n/a	1.5A	1.5A	1.5A
BEOM-A	442.5	20 s	10 W	3600/min	3600/min	0.5A	3.0A	3.0A	0.7A	0.8A	1.4A
BEOM-1	309.75	15 s	10 W	3600/min	3600/min	0.5A	3.0A	3.0A	0.6A	0.8A	1.4A
BEOM-2	796.5	15 s	70 W	1800/min	1800/min	3.4A	5.0A	8.5A	3.0A	5.0A	13.0A
BEOM-3	1327.5	22 s	70 W	1800/min	1800/min	3.4A	5.0A	8.5A	3.0A	5.0A	13.0A
BEOM-4	3540	16 s	180 W	1800/min	1800/min	12.0A	8.5A	30.0A	6.0A	8.0A	30.0A
BEOM-5	4425	22 s	180 W	1800/min	1800/min	13.0A	8.5A	30.0A	6.5A	8.0A	30.0A
BEOM-6	5752.5	28 s	180 W	1800/min	1800/min	14.0A	8.5A	30.0A	7.5A	8.0A	30.0A
BEOM-7	8850	46 s	220 W		1800/min				7.0A	8.0A	30.0A
BEOM-8	13275	46 s	220 W		1800/min				7.5A	8.0A	30.0A
BEOM-9	17700	58 s	220 W		1800/min				7.0A	8.0A	30.0A
BEOM-10	22125	58 s	220 W		1800/min				7.5A	8.0A	30.0A
BEOM-11	26550	58 s	250 W		1800/min				10.0A	10.0A	26.0A
BEOM-12	30975	58 s	300 W		1800/min				15.0A	15.0A	26.0A

BES Series Heavy Duty Spring Return Electric Actuators



These actuators are designed to provide fail-safe positioning of valves upon loss of power. A mechanical spring set is used to position the valve in either the OPEN or CLOSED position without any external power source. A mechanical buffer is utilized at the end of the spring stroke to reduce dynamic effects. The actuator is available with or without a manual over-ride.

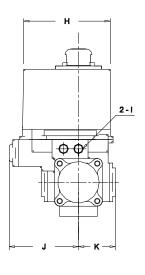
Features and Benefits

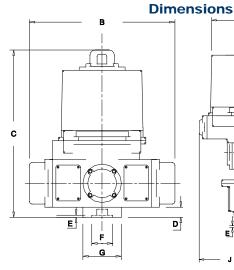
- Spring return electric actuators are designed for load requirements up to 2100 in. lb.
- The actuator comes standard with two switches, an to minimize condensation and NEMA 4x enclosure in 120/230VAC or 24VDC supply voltage.
- Spring return electric actuators come standard with ISO5211 mounting systems for easy mounting on complying valves.
- · Actuator is available in three different control modes:
 - on/off (2 position control)
 - floating control (Jog)
 - Proportional (modulating control) and depending on the application it is offered in either clockwise or counterclockwise rotation.

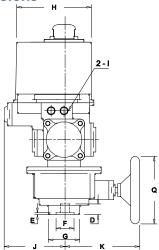
Part Number Key

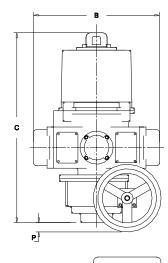
	Actuator (1-3)	Model (4)	Voltage (5)	(6)	Enclosure (6)	Spr	ing Rotation (7-8)	(ver Ride (10)		Options (10)		Options (11)	С	able Entry (12)
•	BES Electric Spring Return	1 (442 in-lb)	B 110VAC / B 1 PH	-	Nema 4 4/4X	CW	Clockwise (standard)	N	None	1	No options	1	No options	1	1/2" NPT (standard)
		2 (1150 in-lb)	D 24VAC		7 Nema 7	СС	Counter Clockwise	M	Manual Over-ride	2	Heater	2	Heater	2	3/4" NPT
		3 (1770 in-lb)	E 24VDC							3	4-20 mA input/ output Modulating controller	3	4-20 mA input/ output Modulating controller	3	M20
		4 (2301 in-lb)	F 220VAC / 1PH							4	Current position transmitter	4	Current position transmitter		
			G 380 VAC / 3PH							5	Potentiometer	5	Potentiometer		
			H 440 VAC / 3PH							6	Floating control	6	Floating control		
										Α	1-5V input/ 2-10V output Modulating controller	Α	1-5V input/ 2-10V output Modulating controller		
										В	2-10V input/ output Modulating controller	В	2-10V input/ output Modulating controller		

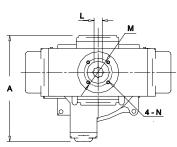
BES Series Heavy Duty Spring Return Electric Actuators



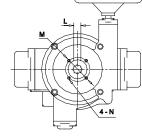








Spring Return Standard



Spring Return with Manual Override

Spring Return Standard

Model	А	В	С	D	E	F	G	Н	I	J	K	L (mm)	M	N	Flange Type
BES1	10.16	14.17	16.73	1.22	0.20	2.17	3.94	7.010	1/2" NPT	6.73	3.43	17	2.76	M8X1.25	F07
BES2	14.37	18.19	19.80	1.61	0.20	2.76	5.51	10.43	1/2" NPT	9.72	4.33	22	4.02	M10X1.5	F10
BES3	17.24	23.62	22.72	1.81	0.24	3.35	6.69	12.01	1/2" NPT	12.01	5.24	27	4.92	M12X1.75	F12
BES4	17.24	23.62	22.72	1.81	0.24	3.35	6.69	12.01	1/2" NPT	12.01	5.24	27	4.92	M12X1.75	F12

Note: All units given in (in) unless noted

Spring Return with Manual Override

Model	А	В	С	D	E	F	G	Н		J	К	L (mm)	M	N	Р	Q	Flange Type
BES1	15.24	14.17	21.06	1.18	0.16	2.17	3.54	7.01	1/2" NPT	6.73	8.50	17	2.76	M8X1.25	1.38	7.64	F07
BES2	19.06	18.19	25.12	1.61	0.20	2.76	4.92	10.43	1/2" NPT	9.72	9.33	22	4.02	M10X1.5	2.68	11.61	F10
BES3	23.19	23.62	28.82	1.77	0.20	3.35	5.91	12.01	1/2" NPT	12.01	11.81	27	4.92	M12X1.75	4.30	15.67	F12
BES4	23.19	23.62	28.82	1.77	0.20	3.35	5.91	12.01	1/2" NPT	12.01	11.81	27	4.92	M12X1.75	4.30	15.67	F12

Note: All units given in (in) unless noted



BES Series Heavy Duty Spring Return Electric Actuators

Specifications

110/120 VAC 1 Phase

Model	Max. Torque	Motor Dowor	Mojaht	Flange Size	Operati (Sec.	ng Time /90°)		Ratings /1 Phase		Ratings /1 Phase
iviouei	(IN-LB)	Motor Power	Weight	(ISO 5211)	Motor	Spring	Run	Lock	Run	Lock
					(60 Hz/50 Hz)	Spring	(60 Hz/50 Hz)	(60 Hz/50 Hz)	(60 Hz/50 Hz)	(60 Hz/50 Hz)
BES1	442	50W	59.4 lbs	F07	7/9	3	1.0/1.3	2.0/2.2	1.0/1.3	2.0/2.2
BES2	1150	130W	125.4 lbs	F10	7/9	8	2.6/4.5	10/10.5	3.8/6.9	11/11.5
BES3	1770	130W	209 lbs	F12	11/13	12	2.6/4.5	10/10.5	3.8/6.9	11/11.5
BES4	2301	130W	209 lbs	F12	11/13	12	2.6/4.5	10/10.5	3.8/6.9	11/11.5

220/240 VAC 1 Phase

Model	Max. Torque	Motor Dower	Woight	Flange Size	Operatir (Sec.	0		Ratings /1 Phase		Ratings /1 Phase
(II	(IN-LB)	Motor Power	Weight	(ISO 5211)	Motor (60 Hz/50 Hz)	Spring	Run (60 Hz/50 Hz)	Lock	Run (60 Hz/50 Hz)	Lock (60 Hz/50 Hz)
					(00 112/30 112)		(00 112/30 112)	(00 112/30 112)	(00 112/30 112)	(00 112/30 112)
BES1	442	50W	59.4 lbs	F07	7/9	3	0.6/0.7	1.0/1.2	1.7/0.8	1.3/1.5
BES2	1150	130W	125.4 lbs	F10	7/9	8	1.5/2.2	5.0/5.1	2.1/3.8	5.6/5.7
BES3	1770	130W	209 lbs	F12	11/13	12	1.5/2.2	5.0/5.1	2.1/3.8	5.6/5.7
BES4	2301	130W	209 lbs	F12	11/13	12	1.5/2.2	5.0/5.1	2.1/3.8	5.6/5.7

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380/440 VAC 3 Phase

Model	Max. Torque	Motor Dowor	Woight	Flange Size	Operati (Sec.	ng Time ./90°)		Ratings /1 Phase		Ratings /1 Phase
	(IN-LB)	Motor Power	Weight	(ISO 5211)	Motor (60 Hz/50 Hz)	Spring	Run (60 Hz/50 Hz)	Lock (60 Hz/50 Hz)	Run (60 Hz/50 Hz)	Lock (60 Hz/50 Hz)
BES1	442	50W	59.4 lbs	F07	7/8.5	3	0.4/0.4	0.5/0.6	0.3/0.4	0.5/0.6
BES2	1150	130W	125.4 lbs	F10	7/8.5	8	1.0/1.5	2.8/3.0	0.7/1.0	2.1/2.2
BES3	1770	130W	209 lbs	F12	11/13	12	1.0/1.5	2.8/3.0	0.7/1.0	2.1/2.2
BES4	2301	130W	209 lbs	F12	14/17	12	1.0/1.5	2.8/3.0	0.7/1.0	2.1/2.2

24 V AC/DC 1 Phase

Model	Max. Torque	Motor Power	Weight	Flange Size	Operati (Sec.	ng Time /90°)		Ratings C 1 Phase
	(IN-LB)		_	(ISO 5211)	Motor	Spring	Run	Lock
BES1	442	50W	59.4 lbs	F07	7	3	3.0	4.0
BES2	1150	130W	125.4 lbs	F10	8	3	9.0	19.0
BES3	1770	130W	209 lbs	F12	11	3	9.0	19.0
BES4	2301	130W	209 lbs	F12	17	3	9.0	19.0



Call Toll Free: 1-866-711-4673

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BEX Series High Speed Spring Return Electric Actuators



Features and Benefits

- 24 240 VAC/DC self adaptable power supply
- 95 degree angle of rotation (5° for preload)
- 100% overload protected
- Aluminum housing NEMA4X / IP66, cable 39.4"
- Temp rating -40° +104° F/+122° F
- Integrated heater for low temperatures
- · Emergency manual over-ride
- High speed spring return
- · Three classifications available

Rotational speed

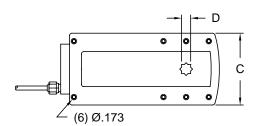
- · Spring return running time for 90°.
 - 135 in-lb ≤ 1 second
 - 270 & 450 in-lb ≤ 3 seconds
- Running time (power) for 90°.
 - 135 in-lb = 3+ seconds
 - 270 & 450 in-lb = 40+ seconds

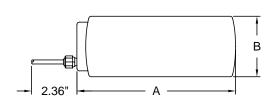
Note: Many other options are available. Please call Dixon Sanitary for details.

Ordering Information

Actuator (1-4)		Installation Classification (5)	Torque in-lb (6-8)	(9)	Limit Switches (10)	Options (11-15)
BEX	Е	Explosion Proof XP,DIP / Class I,II,III / Div.1 / Group BCDEFG Class I Zone 1 Aex d [ia] IIC T6 Class II,III, Zone 21 Aex tD [iaD] T80° C	135 270 450	-	A 2 limit switches	
	Н	Hazarous Location NI,DIP / Class I,II,III / Div.2 / Group ABCDEFG Class I Zone 2 Aex nC IIC T6 Class II,III, Zone 22 Aex tD [iaD] T80° C			B no switches	
	G	General purpose (non explosion proof) for use in ordinary locations to standard NEMA 4X / IP66				

Dimensions







BEX-135

Actuator Size	Α	В	С	D
BEX-135	8.27	3.15	3.74	0.47
BEX - 270 & 450	11.31	4.57	5.87	0.63







Coupler Kit for Electric Actuators



Features:

 for mounting a rack and pinion actuator to the B5101 and B5104 series butterfly valves.

Rack and Pinion BFV Actuation Kits

Size	Series	Part #
1/2" - 1½"	B5101	B5101-ISO100150
2" - 21/2"	B5101	B5101-ISO200250
3" - 4"	B5101	B5101-ISO300400
6"	B5101	B5101-ISO600
8"	B5101	B5101-ISO800
1", 1½", 2½"	B5104	B5104-ISO100250
2", 3"	B5104	B5104-ISO200300
4"	B5104	B5104-ISO400

For 1/2" - 6" Valves

Item	Description	Material	Qty
1	brackets	304 SS	2
2	coupler	304 SS	1
3	bracket bolts	304 SS	2
4	roll pin	304 SS	1

For 8" Valves

Item	Description	Material	Qty
1	brackets	304 SS	1
3	Bracket bolts	304 SS	2

Pneumatic Stainless Steel Canister Style Actuators

Developed exclusively for the sanitary butterfly valve. Available in stainless steel construction with vertical and horizontal configurations.

VC series vertical stainless steel actuator. Available in double acting and spring return.



VC series vertical stainless steel actuator with control top options. Available in double acting and spring return.

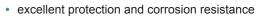


RP series horizontal double acting stainless steel actuator. Available in two sizes and double acting.



VC Series Pneumatic Vertical Stainless Steel Canister Actuator

Features and Benefits

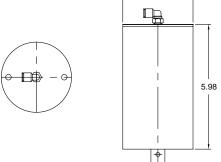


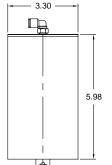
- · tested to 1 million cycles
- available in ATO/ATC, ATO/STC, STO/ATC
- 100% Fully tested
- backed by 1 year warranty
- can be mounted on all butterfly valves up to 4"

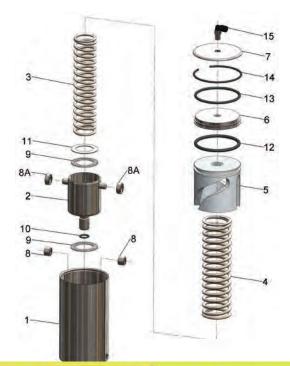
Specifications

Part #	Description	Weight (lbs.)	Air Consum down stroke CW	up stroke	Temp. Rating Max. (°F)	rtaing	Torque	Max. Pres. Rating (PSI)	Supply Pres. Required (PSI)	Dia. (in)	Height (in)	Air Fitting Ports
VC-NR-100-DA	double acting	5.1	8.5	20	+250	-4	550	120	80-100	3.35	5.83	1/8" NPT
VC-NR-100-SR	spring return	6	8.5	18.5	+250	-4	550	120	80-100	3.35	5.83	1/8" NPT

Dimensions / Bill of Materials







Complete Repair Kit for Spring Return = VC-100-RK-SR contains:

#13 (1) O-ring #8A (2) needle bearing (drive)

#12 (1) O-ring #10 (1) O-ring

#11 (1) thrust drive #8 (2) needle bearing (body)

#9 (2) thrust bearing

Complete Repair Kit for Double Acting = VC-100-RK-DA contains:

#13 (1) O-ring #10 (1) O-ring

#12 (1) O-ring #8 (2) needle bearing (body)

#9 (2) thrust bearing

#8A (2) needle bearing (drive)

Elastomer Only Repair Kit = VC-100-RK contains:

#13 (1) O-ring

#12 (1) O-ring

#10 (1) O-ring

	" To (T) o thing							
			Qua	intity				
Item	Description	Material	Spring	Double				
			Return	Acting				
1	body	304 SS	1	1				
2	drive	304 SS	1	1				
3	inner spring	302 SS	1	0				
4	outer spring	302 SS	1	0				
5	piston	aluminum	1	1				
6	end cap	304 SS	1	1				
7	top cap	304 SS	1	1				
8	needle bearing (body)	304 SS	2	2				
8A	needle bearing (drive)	304 SS	2	2				
9	thrust bearing	304 SS	2	1				
10	O-ring (drive)	EPDM	1	1				
11	thrust washer	304 SS	1	0				
12	O-ring (piston)	EPDM	1	1				
13	O-ring (end cap)	EPDM	1	1				
14	retaining ring	304 SS	1	1				
15	air fitting	nickel plated brass	1	2				



WebSales@GoodyearRubberProducts.com

VC Series Pneumatic Vertical Stainless Steel Canister Actuator with Contol Top

Made specifically for butterfly valves 1" through 4"

Available in:

- · 24 volt DC solenoid
- 110 volt AC solenoid



Features and Benefits

- · excellent protection and corrosion resistance
- · tested to 1 million cycles
- available in ATO/ATC, ATO/STC, STO/ATC
- 100% Fully tested
- backed by 1 year warranty

- · can be mounted on all butterfly valves up to 4"
- Each pneumatically actuated butterfly valve is shipped fully assembled, including pneumatic actuator and mounting bracket assembly.

Specifications

Part #	Description	Weight (lbs.)	Air Consun down stroke CW	up stroke	Temp. Rating Min. (°F)	Temp. Rating Max. (°F)	Output Torque (in-lb)	Max. Pres.	Supply Pres. Required (PSI)	Dia. (in)	Height (in)	Air Fitting Ports
VC-NR-100-DA	double acting	5.1	8.5	20.0	-4	+250	550	120	80-100	3.35	5.83	1/8" NPT
SSBTDA24/110	control top	2.0	n/a	n/a	-40	+175	n/a	n/a	n/a	3.50	4.80	1/8" NPT
VC-NR-100-SR	spring return	6.0	8.5	18.5	-4	+250	550	120	80-100	3.35	5.83	1/8" NPT
SSBTSR24/110	control top	2.1	n/a	n/a	-40	+175	n/a	n/a	n/a	3.50	4.50	1/8" NPT

Solenoid Valve

Voltage options Flow Coefficient

Temperature range

Power

Seat Material

24VDC or 110VAC

Cv = 0.03

-40 to 140 degrees F

6 W **NBR** **Micro Switches**

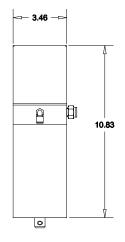
Max Voltage 250AC, 48DC

Max Current (Amps)

Life Cycles Mech. 5,000,000 Temperature range -40 to 175 degrees F

Seat Material **NBR**

Dimensions



All dimensions are in inches, unless noted. Dimensions are approximate.



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CM-Series Control Module

The CM-Series Control Communication Module, designed for corrosive process environments, attaches directly to the Sanitary Divert Valves. This platform offers a full array of communication and switching options as well as discrete integral pneumatic control for spring return actuator operation.

Features and Benefits:

- The CM-Series may be washed down and temporarily submersed with no adverse affects. It is rated NEMA 4, 4x, and 6. It may be used in Div. 2/Zone 2 areas (Nonincendive) or Div.1/Zones 0 & 1 (Intrinsically Safe) hazardous applications
- · Enclosure features high strength polycarbonate with excellent corrosion resistance and exceptional temperature stability.
- · Visual electronic and mechanical position indication confirm valve and switch status for added safety.
- · Solid state proximity sensors monitor Open/Closed discrete valve position with precision and reliability.
- Integral pneumatic valve is isolated from environmental contamination, offers high tolerance to dirty air and enables rapid valve operation.
- Solenoid options available for 120VAC and 24VDC. Select Piezo option for bus powered Foundation Fieldbus Applications.
- · Self Adjusting triggering system provides consistent Open and Closed indication. No resetting is required.
- Manual override enables valve operation without electrically energizing.
- Dual module system seals all position sensing, communication and control electronics in a compact vibration proof package.
- NPT port connections are stainless steel reinforced for long life sealing under high torque stress conditions.
- Water proof quick connectors, compression fittings or conduit connections are available for convenient, reliable attachment to plant electrical systems.



Part Number Key

Series		Function	Pneumatic Valve	Conduit / Connectors	Visual Indicator	Stroke	Mounting Kit
СМ	(Sensor Modules	11 no pneumatic valve	S02 (2) ½" NPT	R red closed/ green open	-L long	N none
	33	(2) SST N.O. switching sensors	1A 3-way Piezo (use with function option 93)	S05 (2) M20	G green closed/ red open	-S short	L long
	44	(2) NAMUR sensors (I.S.; EN 60947-5-6)		S09(2) cable glands			S short
		ve Communication Ferminals (VCT)	1C 3-way 120 VAC 7.2 W (use with function option 33)	S11 (1) 5-pin mini connector			
	92	DeviceNet VCT	1D 3-way 24 VDC 0.5 W (use with function option 97)	S13(1) 4-pin micro connector			
	93	Foundation Fieldbus VCT (bus powered: I.S.)	1E 3-way (I.S. 12 VDC (use with function opton 44)	S14(2) 4-pin micro connector			
	94	Foundation Fieldbus VCT (externally powered)		S15(1) 5-pin micro connector			
	95	Modbus VCT					
	96	AS-Interface VCT					
	97	AS-Interface VCT (with extended					



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Part Number Key

SST Switching Sensors (33)

Configuration (2) SST Switching Sensors (2) Wire Terminations (Solenoid)

Output Select either NO or NC Models

Maximum Current

Inrush 2.0 Amps
Continuous 0.3 Amps
Minimum On Current 2.0 mA
Maximum Leakage Current 0.5 mA

Voltage Range
 8 to 125VDC / 24 to 125VAC

Maximum Voltage Drop 7.0 Volts @ 100 mA

Namur Sensors (44)

Configuration (2) NAMUR Sensors (2) Wire Terminations (Solenoid)

Output Conforms to EN 60947-5-6

Current Ratings
 Target On I<1.0 mA Target Off I>3.0 mA

Voltage Range
 5 to 25 VDC

AS-Interface VCT (96)

Configuration
 Maximum Current
 Maximum Current
 Modern Companies (2) Auxiliary Inputs (2) Power Outputs (Solenoids)
 Maximum Current Limited to 200mA)

Outputs, Maximum Power
 4 Watts, Both Outputs Combined

Outputs, Voltage
 25 to 30 VDC

AS-Interface VCT (97) with Extended Addressing

Configuration
 (2) Sensor Inputs (2) Auxiliary Discrete Inputs (1) Power Output (Solenoid)

Maximum Current
Outputs, Maximum Power
Outputs, Voltage
2.4 Watts
25 to 30 VDC

DeviceNet VCT (92)

Configuration
 (2) Discrete Inputs (Open & Closed) (2) Power Outputs (Solenoids) (1) 4-20 mA Auxiliary

Input

Outputs, Maximum Power
 4 Watts, Both Outputs Combined

Outputs, Voltage
 24 VDC

Bus Powered Foundation Fieldbus VCT (93)

Configuration
 (2) Discrete Inputs, DI (Open & Closed) (2) Discrete Outputs, DO (Piezo Valves)

Outputs
 2mA @ 6.5 VDC each; Current Limited to 2mA (Bus Powered)

• Temperature Range -40° to 80°C (40°F to 176°F)

Externally Powered Foundation Fieldbus VCT (94)

Configuration
 (2) Discrete Inputs, DI (Open & Closed) (2) Power Outputs, DO (Solenoids)

Outputs
 4 Watts @ 24VDC Both Outputs Combined; Current Limited to 200mA (Externally Powered)

Temperature Range -40° to 80°C (40°F to 176°F)

Modbus VCT (95)

• Configuration (2) Discrete Inputs (Open & Closed) (2) Power Outputs (Solenoids) (1) 4-20 mA Auxiliary

Input

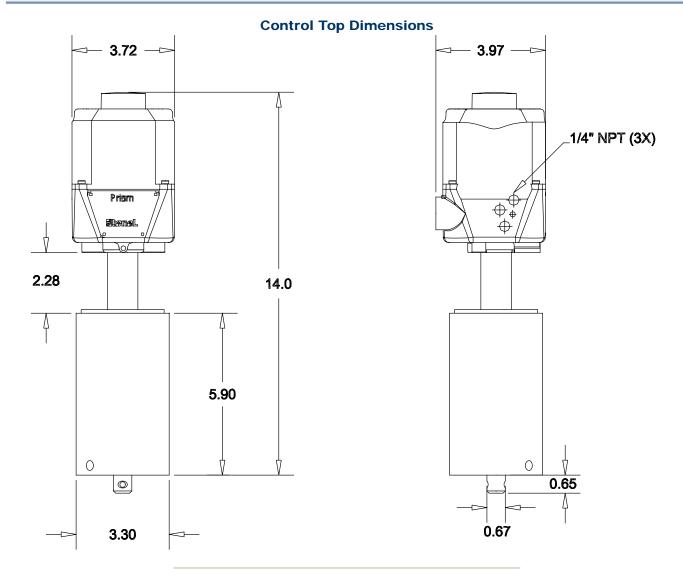
Outputs
 4 Watts @ 24VDC Both Outputs Combined (Current Limited 200mA)

• Temperature Range -40° to 80° C (40°F to 176°F)









Technical Specifications

Materials of Construction

- · Housing and Cover: Polycarbonate
- · Fasteners: Stainless Steel
- Triggering Cams: Stainless Steel Banded Polycarbonate
- Shaft: Stainless Steel
- Valve Manifold: Polysulfone with Stainless Steel Reinforced NPT

Temperature Range: -40° C to 80° C (-40° F to 176° F)

• with solenoid: Maximum Ambient 50° C (120° F)

Operating Life: 1 Million Cycles

Nonincendive Ratings

NEC/CEC: Classes I and II, All Groups, Div. 2

Intrinsically Safe Ratings

• NEC/CEC: Classes I and II, All Groups, Div. 1 & 2

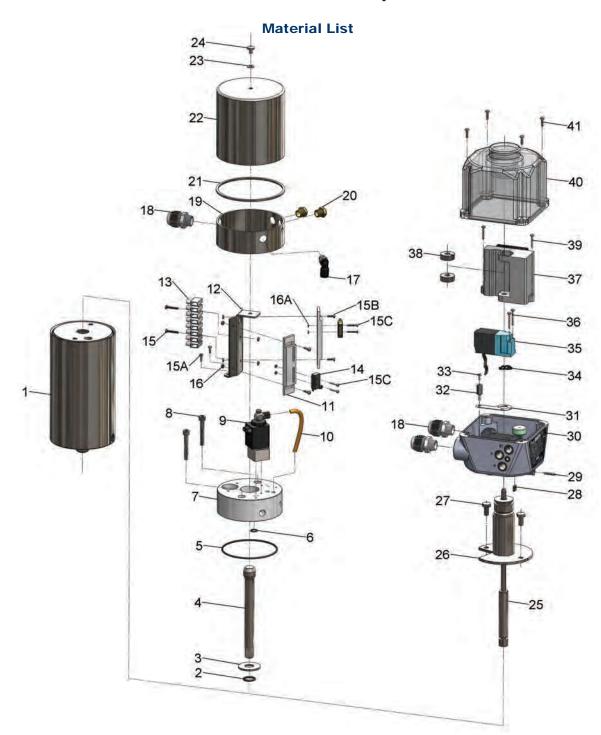
Enclosure Protection

• NEMA: 4, 4X water proof / dust proof, class IP 67 Enclosure





VC Series Pneumatic Vertical Stainless Steel Canister Actuator with CT / CM Top



Complete Repair Kit for Spring Return = VC-100-RK-SR contains:

#8 (2) needle bearings (body)

#8A (2) needle bearings (drive)

#9 (2) thrust bearings

#10 (1) O-ring (drive)

#11 (1) thrust washer

#12 (1) O-ring (piston)

#13 (1) O-ring (end cap)

Complete Repair Kit for Double Acting = VC-100-RK-DA contains:

#8 (2) needle bearings (body)

#8A (2) needle bearings (drive)

#9 (1) thrust bearing

#10 (1) O-ring (drive)

#12 (1) O-ring (piston)

#13 (1) O-ring (end cap)

Elastomer Only Repair Kit = VC-100-RK contains:

#10 (1) O-ring (drive)

#12 (1) O-ring (piston)



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VC Series Pneumatic Vertical Stainless Steel Canister Actuator with CT / CM Top

Bill of Materials

Item	Description	Material		intity
пеш	<u> </u>		Spring Return	Double Acting
1	VC-NR-100 Actuator	304 SS	1	1
2	O-ring (Detection Shaft)	EPDM	1	1
3	Washer	304	1	1
4	CT Detection Shaft	304	1	1
5	O-ring (Manifold Large)	EPDM	1	1
6	O-ring (Manifold Small)	EPDM	1	1
7	Manifold	THERMOPLASTIC	1	1
8	Bolt (Manifold)	304 SS	2	2
9	Solenoid Valve	ALUMINUM	1	2
10	Pneumatic Tube	POLYETHEYLENE	1	2
11	Switch Plate	THERMOPLASTIC	2	2
12	Switch Rack	304 SS	1	1
13	Terminal Strip	PLASTIC	1	1
14	Mechanical Micro-Switch	SILVER CONTACT	2	2
15	Bolt (Terminal Strip)	304 SS	2	2
15A	Bolt (Switch Rack)	304 SS	2	2
15B	Bolt (Switch Plate)	304 SS	4	4
15C	Bolt (Micro-Switch)	304 SS	4	4
16	Nut (Switch Plate & Strip)	304 SS	6	6
16A	Nut (Micro-Switch)	304 SS	4	4
17	Air Fitting	THERMOPLASTIC	1	3
18	Conduit Entry	PLASTIC	1	1
19	Manifold Sleeve	304 SS	1	1
20	Plug (Exhaust)	BRASS	2	2
21	Cover Seal	THERMOPLASTIC	1	1
22	Cover	304 SS	1	1
23	Bolt Seal	THERMOPLASTIC	1	1
24	Bolt (Cover)	304 SS	1	1
25	CM Detection Shaft	304SS	1	1
26	Adapter Stem	304SS	1	1
27	Adapter Bolt	304SS	2	2
28	Set Screw Nut	304SS	1	1
29	Set Screw Nut	304SS	1	1
30	Component Housing	POLYCARBONATE	1	1
31	Grounding Plate	304SS	1	1
32	Grounding Nut	304SS	1	1
33	Grounding Screw	304SS	1	1
34	Manifold Gasket	BUNA	1	1
35	Solenoid Valve	POLYSULFONE WITH 304SS NPT PORTS	1	1
36	Solenoid Bolts	304SS	2	2
37	SST Switching Sensor	POLYCARBONATE	1	1
38	Trigger Cams	STAINLES BANDED POLYCARBONATE	2	2
39	Sensor Bolt	304SS	2	2
40	Cover	POLYCARBONATE	1	1
41	Cover Bolts	304SS	4	4



VC-NR-100 Series Actuator With PS-AE Series Inductive Proximity Sensors

(For detailed specification on sensors, see pages 151-152)

Signal back equipment for Dixon Sanitary butterfly valves and VC series actuators

Dixon Sanitary offers two mounting options for differing process space requirements.

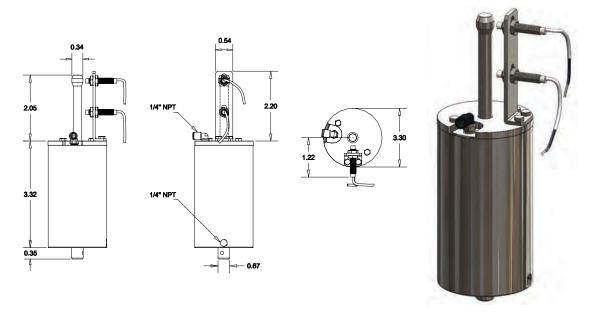
MI-Series bracket mounted sensors

- M8 PS-AE series Proximity sensors (1 or 2) are mounted to the bracket between the actuator and butterfly valve.
- Valve positions are monitored by targets attached to a sensor ring on the actuator coupler. The targets rotate 90 degrees with the coupler to pass in front of the sensor face.
- For use with butterfly valves ½" to 4" mounted to VC-NR -100-SR and VC-NR-100-DA actuators



TI-Series Top mounted sensors

- M8 PS-AE series Proximity sensors (1 or 2) are mounted to a bracket on top of the actuator.
- Valve positions are monitored by a detection shaft attached to the actuator piston. Linear movement of the shaft will pass the target in front of the sensor face.
- \bullet For use with butterfly valves $1\!\!/\!_2$ to 4" mounted to VC-NR -100-SR-T and VC-NR-100-DA-T actuators.
- Sensor plate and bracket kit part # = VC-TI-BKT-M8





Butterfly Bracket and Coupling Kit for Vertical Stainless Steel Actuators



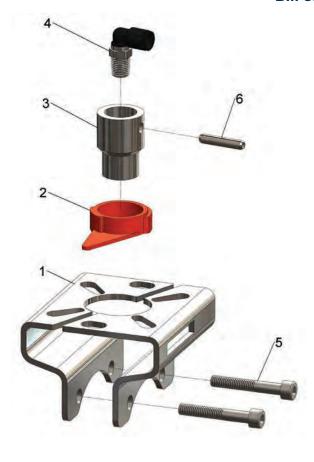
Features and Benefits

The complete bracket and coupler kit includes everything required to assemble your butterfly valves (sizes 1/2"-4") to the VC series actuator. Convenient kit for stocking various sizes of BFV's for future actuation, or converting a manual valve.

Three kits cover valve sizes from 1/2" to 4".

Size	Series	Part #
1/2" - 11/2"	B5101	B5101-VC100-150
2" - 21/2"	B5101	B5101-VC200-250
3" - 4"	B5101	B5101-VC300-400
1", 1½", 2½"	B5104	B5104-VC100-250
2" - 3"	B5104	B5104-VC200-300
4"	B5104	B5104-VC400

Bill of Materials



Kits include:

#1 (2) 5101 SS brackets

#2 (1) 1 polyethylene position indicator

#3 (1) SS coupler

#4 (1) 90° 1/4" tube x 1/8" NPT air fitting

#5 (2) Upper valve body to bracket bolts (for use with existing nylock nuts)

#6 (1) roll pin for coupler to drive assembly

Item	Description	Material	Otv
	•		2
1	brackets	304SS	2
2	position indicator	polyethylene	1
3	coupler	304SS	1
4	90° 1/4" tube x 1/8" NPT air fitting	nickle plated brass	1
5	bracket bolts	304SS	2
6	roll pin	304SS	1

Bracket kits are also available for ISO 5211 mounting on butterfly valves 6" to 8"



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RP Series Pneumatic Double Acting Stainless Steel Actuator



Features and Benefits

- designed for the B5102 series butterfly valves sizes 1" 4"
- can be mounted on most B5101 and B5104 butterfly valves 1" - 4"
- · excellent protection and corrosion resistance
- · tested to 1 million cycles
- 100% fully tested prior to shipment
- backed by one year manufacturer's warranty

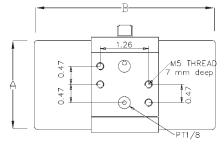
- air fittings port: 1/8" NPT
- air to open / air to close (ATO/ATC)
- supply pressure: 80 to 100 PSI
- · maximum pressure rating: 120 PSI
- temperature range: -4°F to 250°F

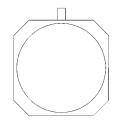
Specifications

Size	Description	Part #	Weight (lbs.)	Output Torque (in. lbs.)	Air Consur down stroke clockwise	mption (in³) up stroke counter-clockwise
1" thru 2"	double acting	RP-BS-050-DA	4	250	3.5	5.5
21/2" thru 4"	double acting	RP-BS-075-DA	8	500	8.5	13.5

Dimensions

Size	А	В
1" thru 2"	2.4	3.2
2½" thru 4"	4.6	6.1



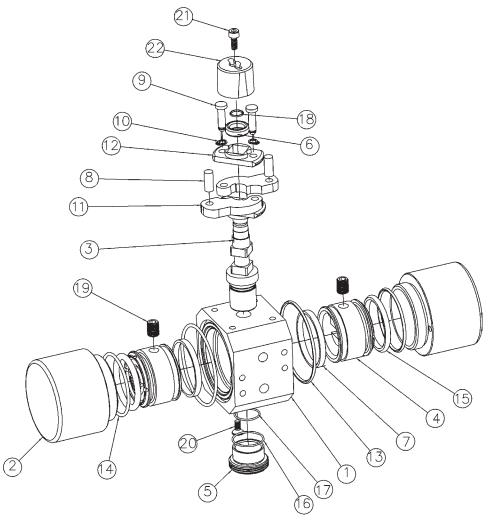


All dimensions are in inches, unless noted. Dimensions are approximate. Engineering dimensions are available upon request. Specifications are subject to change without notice.



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Horizontal Double Acting Stainless Steel Actuator Material List



Item	Description	Material	Quantity
1	body	304	1
2	cylinder	304	2
3	pinion	304	1
4	piston	aluminum	2
5	lower bushing	17-4PH	1
6	upper bushing	17-4PH	1
7	piston ring	PTFE	2
8	pinion	high carbon steel	2
9	bolt	high carbon steel	2
10	bolt ring	high carbon steel	2
11	arm	high carbon steel	2
12	connector	304	2
13	body seal	NBR	2
14	cap seal	NBR	2
15	piston seal	NBR	2
16	bushing seal	NBR	1
17	pinion seal	NBR	1
18	upper bushing seal	NBR	1
19	set screw	high carbon steel	2
20	flat head screw	304	1
21	socket head screw	304	1
	l		

Repair Kit contains:

(2) piston rings

#13 (2) body seals

#14 (2) cap seals

#15 (2) piston seals

#16 (1) bushing seal

#17 (1) pinion seal

#18 (1) upper bushing seal

_		
	Repair Kit Part #	
	RP-BS-050RK	
	RP-BS-075RK	



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Manual Operators





Manual Fail Safe Spring Return Handle

Features and Benefits

- fail safe handles for ball valves and butterfly valves
- manual unit cannot be left in the wrong position
- reliable low stress clock style springs
- · weatherproof sealed spring housing

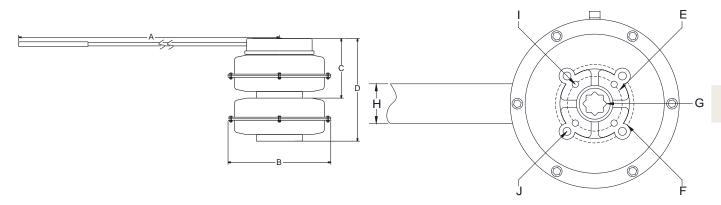
- · clockwise or counter-clockwise rotation available
- · tough corrosion resistant epoxy paint
- ISO mount allows for direct mounting

Handle Specifications

- · spring case: die cast zinc alloy with epoxy finish
- · shaft: stainless steel

- · cover shield: nylon
- · lever: stainless steel

Dimensions



Part #	А	В	C (single spring)	D (double spring)	Е	F	G	Н	I	J
DEAD-97	9.35	4.25	2.63	5.26	F03	F05	11mm	1.0	M5	M6
DEAD-180	9.35	4.64	2.63	5.26	F03	F05	14mm	1.0	M5	M6
DEAD-342	9.35	5.98	4.10	8.20	F05	F07	17mm	1.0	M6	M8

All dimensions are in inches, unless noted. Dimensions are approximate. Engineering dimensions are available upon request. Specifications are subject to change without notice.

Technical Torque Values

Part #	Spring Start Torque (in. lbs)	Spring End Torque (in. lbs.)
DEAD-97	123	97
DEAD-180	210	179

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Manual Operators



DG series declutchable override

The DG series operators are designed to provide a means of manually overriding pneumatic valve actuators

DG gear operators are installed between the valve and actuator. They are provided with an integral ISO 5211 flange for the actuator and a bottom ISO flange for the valve.

Features and Benefits

- All DG's can be supplied complete with valve and actuator mounting kits.
- We can also assemble customer's valves and actuators with gear operators and control accessories.
- Disengageable design for use with double acting and spring return pneumatic actuators. The disengaging handle is securely held in place with a locking pin.
- DG gear operators are provided with two independent stroke adjustments 90°± 5°.
- The DG series has options for extended strokes: 120°, 180° and 360° (without lock).
- DG gear operators housing is 100% environmentally sealed and submersible to 30 psi.

Ordering Information

Declutchable Gear (1-3)	(4)	Actuator 5211 ISO (5-7)	Actuator Drive SQ mm (8-9)	Valve 5211 ISO (10-12)	Valve Drive SQ mm (13-14)
DGA	-	F07	11	F07	11
DGB	DGB		14	F10	14
		F12	17	F12	17
			22		22
			27		27

Materials

Housing: Epoxy coated cast iron

· Input shaft : stainless steel

Gear segment : ductile ironLever : stainless steel

ACTUATOR -ISO 5211

Specifications

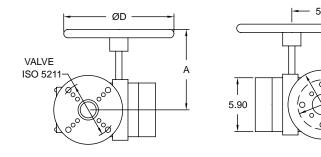
Torque range: 4,425 (500 Nm) to 31,000 (3.500 Nm)

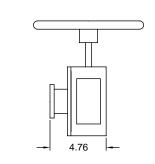
Stroke: 90°±5° (120°, 180° or 360° on request)

• Temperature range : -4°F (-20°C) to 176°F (80°C)

· High temperature option available on request

Dimensions





Model	Α	D	Max Torque (in-lb)	Ratio	ISO 5211 Actuator specify	ISO 5211 Valve specify
DGA	7.48"	7.87"	2650	40:1	F07 F10 F12	F07, F10, F12
DGB	7.78"	11.81"	4425	40.1	F07, F10, F12	F07, F10, F12



Limit Switchers

A wide variety of feedback options are offered. Available in NEMA 4/4X and NEMA 7 enclosures, mechanical, solid state and proximity switches, networking options, and various visual indicators. Can be used on ALL rack and pinion actuators. All standard with NAMUR mounting interface.

XLS-B4 series are general purpose limit switches in Nema 4/4x enclosures. Can be used on all rack and pinion actuators.



XLS-C7 series are hazardous location limit switches in Nema 7 & 9 enclosures. Can be used on all rack and pinion actuators.



XLS-C4 series are general purpose limit switches in Nema 4/4X enclosures with additional switching options, including ASI interface. Can be used on all rack and pinion actuators.



S series combines switching with integral solenoids for 3 position control of 3-way ball valves and 180° actuators.



PS-AE & PS-V series are inductive proximity sensors that are available in varying voltages and sizes. Can be bracket mounted to any valve actuation package.



XLS-B4 Series Limit Switch

Features and Benefits



- · compact, cost-efficient, low profile limit switches for both local and remote indication of valve and/or actuator position
- visual position indicator
- quick-set cam
- multipoint terminal strip
- dual wire potting
- captive cover bolts
- UL and CENEFLEC approved
- NEMA 4/4X
- standard NAMUR mounting

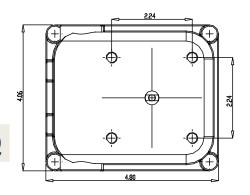
Specifications

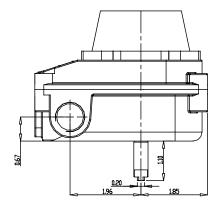
- enclosure: weatherproof, 1P67
- temperature range: -4°F (20°C) to 185°F (85°C) cable entry: 2 x $\frac{1}{2}$ " NPT
- terminal strip: 8 points

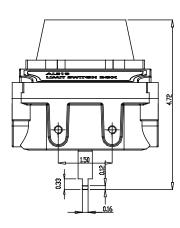
- position indicator: 0 90: open yellow, close red L and T flow indication
- switch type: 2 SPDT mechanical switches
- · painting: black polyester powder coating
- bracket: stainless steel (optional)

Dimensions

XLS-B4A0120P (NEMA 4/4x enclosure)







XLS-C7 Series Limit Switch for Hazardous Environments

The XLS-C7 series hazardous location explosion proof limit switch provides an effective solution for both visual and remote electrical indication of valve/actuator position. The heavy-duty design and wide variety of options make the XLS-C7 series the ideal limit switch for use in NEMA 7 & 9 applications.



Features and Benefits

· compact, cost-efficient, low profile limit switches for both local and remote indication of valve and/or actuator position

position indicator: 0 - 90: open - vellow, close - red

AS-i digital communication interface card option Indicator dome: UV resistant and 94-V0 polycarbonate

Option for NAMUR proximity switches for intrinsically safe

wide variety of switch options are available

painting: black polyester powder coating

- visual position indicator
- quick-set cam

applications.

multipoint terminal strip

cable entry: 2 x 1/2" NPT

0-180° L and T flow indication

bracket: stainless steel (optional)

terminal strip: 8 points

Shaft: stainless steel

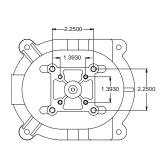
Fasteners: stainless steel

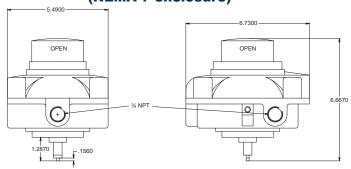
- · dual wire potting
 - captive cover bolts
- UL and CENEFLEC approved
- NEMA 4, 4X, 7 and 9
- standard NAMUR mounting

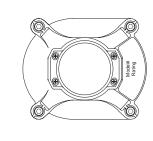
Specifications

- Operating temperature range DIV1 -13°F (-25°C) to 176°F (80°C)
- Temp. range may vary due to switch range and switch approvals
- Electrical: according to switch option
- Operating temperature range DIV2 -40°F (-40°C) to 176°F (80°C)
- Switch approvals
- -Class I Division 1 Groups C, D
- -Class I Division 2 Groups A, B, C, D (Proximity Sensors Only)
- -Class li Division 1 Groups E, F, G
- -Class li Division 2 Groups F, G

XLS-C7 Series (NEMA 7 enclosure)







Ordering Information

				3					
Limit Switch	1.1.1.1	Indicator			Switch Quantity		Те		Cable Entry (12)
(1-5)	(6)	(7)		(8-9)		(10)		(11)	
XLS-C	7 NEMA 4/4X, 7 & 9	A Open/Close	01	mechanical SPDT silver plated contacts	0	Use For Tr	0	Standard *	P Two 1/2" NPT
		L 3-Way L Port	03	mechanical DPDT silver plated contacts	1	Use For As	1	10-Pole	G Two 1/2" NPT & One 3/4"
		T 3-Way T Port	10	proximity SPDT	2	2 switches	2	AS-I Terminal	
			20	proximity SPST	4	4 switches			
			30	proximity DPDT					
			AS	AS interface					
			TR	4-20 mA transmitter					
			TF	4-20 mA transmitter (plus 2 mech. Switches)					
			3N	proximity NAMUR					
			71	proximity NO					

* Terminal strip will depend upon switch type



XLS-C4 Series Limit Switch

The XLS-C4 series limit switch box provides a compact design and cost effective solution for both visual and remote electrical indication of rotary valve/actuator position. The large 3D rotor provides highly visible confirmation of valve/actuator position. The XLS-C4 series is the ideal switch for applications requiring proximity switches or ASI interface. Hermetically sealed and solid state switch options also make the XLS-C4 series suitable for use in intrinsically safe applications and Class I &II Division 2 Groups A, B, C, D, F & G hazardous applications.

Features and Benefits



- The polyester powder coating inside and outside and stainless steel shaft, make this unit ideal for use in hostile environments.
- Compact body design is ideal for use on all size actuators including very small units.
- Multiple switch options include mechanical, proximity and inductive switches.
- Visual position indication: the 3D rotor provides high visibility confirmation of valve/actuator position.
- "Easy-Set" cams are splined, spring loaded and independently adjustable. This design offers tool-free calibration and positive vibration resistant engagement.
- Multiple cable entries are standard with two ½" NPT cable entries and an option for a third entry.

Specifications

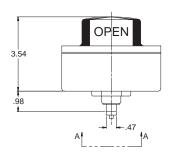
- · housing: aluminum, polyester coated or stainless steel
- · cover: polycarbonate, aluminum or stainless steel
- shaft: stainless steel
- cam / splines: UV resistant polycarbonate
- 3D Rotor: UV resistant polycarbonate

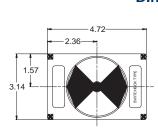
- terminal block: stainless steel screws and PVC housing
- temperature range: 32°F to +176°F
- weight: 1¼ bs.
- approvals: UL and CUL, NEMA 4,4X also CENELEC IP65 Class I & II Division 2 Groups A, B, C, D, F & G

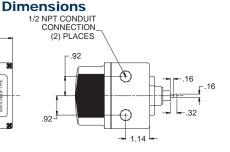
Ordering Information

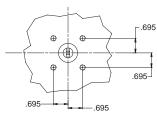
Limit Switch (1-5)	Er	nclosure (6)	Indicator (7)	Switch Type (8-9) Switch Quantity Terminal Str (10) (11)		•	Cable Entry (12)				
XLS-C	XLS-C 4 NEMA 4/4X A Open/Close		01	mechanical SPDT silver plated contacts	0	Use For TR	0	Standard *	Р	Two 1/2" NPT	
	5	Stainless Steel	L 3-Way L Port	03	mechanical DPDT silver plated contacts	1	Use For AS	1	10-Pole		
			T 3-Way T Port	10	proximity SPDT	2	2 switches	2	AS-I Terminal		
				20	proximity SPST	3	3 switches				
				30	proximity DPDT						
				AS	AS interface						
				TR	4-20 mA transmitter						
				TF	4-20 mA transmitter (plus 2 mech. Switches)						
				3N	proximity NAMUR						
				73	prox. NO PNP (Pepper & Fuchs)						
				11	prox. SPST (one red & one green LED)						

* Terminal strip will depend upon switch type









VIEW AA - ISO F05 MOUNTING PATTERN

All dimensions are in inches unless noted. Dimensions are annovimate



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S-Series Limit Switch with Integral Solenoids

The S- Series combines a compact enclosure with limit switches, visual indication and integral solenoids for position indication plus valve actuator control and 3-position control for 3-way ball valves and 180 degree actuators. NAMUR proximity switch options and EEx ia solenoid valve also make the S-series suitable for use in intrinsically safe applications.

The S- Series integral single or double 5-port, 4-way solenoid valves dramatically reduce automation assembly time and envelop dimension of package. Factory pre-wiring ensures reliable startups and longterm reliability.

The S- Series is available with a variety of switches and feedback choices including: electromechanical, inductive proximity, NAMUR, NPN, PNP and hermetically-sealed proximity dry contact switches; AS-i digital communication or a 4-20 mA position transmitter.



Ordering	Information
Oracing	mormation

					0.40.		9	• • • •								
Limit Switch (1-5)	Enclosure (6)	In	idicator (7)		Switch Type (8-9)	Sw	itch Quantity (10)	Те	erminal Strip (11)	Cab	le Entry (12)	(13) -		Solenoid Type (14)		olenoid age (15)
XLS-C	4 NEMA 4/4X	А	Beacon OPEN/ CLOSE	10	Proximity Spdt	0	Use For TR	0	Standard PCB **	Р	Two 1/2" NPT		S	Dual coil, 3-position, 4 way (SR actuators)	А	24VAC
	5 Stainless Steel	L	3-WAY L PORT	20	Proximity Spst	1	Use For AS			G	Two 1/2" NPT & One 3/4" NPT		Т	Dual coil, 3-position, 4 way (DA actuators)	В	24VDC
		Т	3-WAY T PORT	30	Proximity Dpdt	2	2 Switches			М	Two 1/2" NPT & 4-pin micro con.		V	Single Coil, 2-Position, 4-Way	С	12VDC
		F	Flat - open close	AS	As Interface	4	2 Switches						Z	Dual Coil, 2-Position, 4-Way	D	120VAC
				TR	4-20 mA transmitter	5	5 switches (use w/ 3A & 3B)								F	240VAC
				TF	4-20 mA transmitter (plus 2 mechanical switches)											
				3A	Mech, 2-DPDT + 3 SPDT (for DA actuators)											
				3B	Mech, 2-DPDT + 3 SPDT (for SR actuators)											
				DN	Device Net											

^{**} According to switches used

Specifications

- integral single and double 5-way solenoid valves
- pneumatic connections are 1/4" NPT
- Large two-color 3D indicator can be clearly viewed from overhead and from all sides.
- Easy-set cams are splined, spring loaded and independently adjustable. This design offers tool free calibration and positive vibration resistant engagement.
- · weatherproof IP67 and NEMA 4/4X

Ratings

- · ambient temperature range
- general purpose execution: -5°C to +50°C
- intrinsically safe execution: -20°C to +60°C
- · air supply: filtered, lubricated or non lubricated compressed air (also dried to a dew point of -20°C)
- operating pressure: mininum 37 PSI, maximum 120 PSI
- electrical: according to switch option
- temperature range may vary due to switch type

Materials

- · body and cover: epoxy coated aluminium
- indicator dome: UV resistant and V0 polycarbonate
- pneumatic connection plate: anodized aluminium
- seals: NBR
- · shaft: stainless steel
- · fasteners: stainless steel

Dimensions PNEUMATIC CONNECTIONS TO ACTUATOR O' 0 0

All dimensions are in inches, unless noted. Dimensions are approximate.



PS-AE Series Inductive Proximity Sensors



Features and Benefits

M8 (8 mm) metal - DC

- 20 standard length models available
- · Compact metal housing
- Axial cable or M8 quick-disconnect models
- Complete overload protection
- IP67 rated
- LED status indicators are visible 360 degrees around the cylinder

Specifications

Specifications	Stand	ard Distance Models	Extended Distance Models						
Туре	Shielded	Unshielded Shielded	Shielded	Unshielded Shielded					
Operating Distance	1.5mm (0.059in)	2.5mm (0.098in) 2mm (0.079in)	2mm (0.079in)	4mm (0.157in)					
Differential Travel		2 to 10%		1 to 20%					
Repeat Accuracy		2 to 10%	2	2 to 10%					
Operating Voltage		10-30VD	C						
Ripple		≤10%	10%						
No-load Supply Current		≤20mA		≤10mA					
Load Current		≤200m	A						
Leakage Current		≤10µA		≤120µA					
Voltage Drop		≤1.2V							
Output Type	NPN or PNP/N.O. only/3-wire								
Switching Frequency		3kHz							
(tv) Time Delay Before Availability		100ms (5ms for AE6 sh	ort body models)						
Input Voltage Transient Protection		Up to 30 V	'DC						
Input Power Polarity Reversal Protection		yes							
Output Power Short-Circuit Protection		Yes (switch auto-resets after overload is removed)							
Temperature Range		-25° to +70° C (-13	3° to 158° F)						
Temperature Drift		≤10% S	ir						
Protection Degree (DIN 40050)		IEC IP6	7						
Agency Approvals		NA							
LED Indicators		Yellow (output e	nergized)						
Housing Material		Nickel-plated	brass						
Sensing Face Material		PBT							
Tightening Torque		4Nm (35lb	o-in)						
Weight (cable/M8 connector/M12 connector)		43g (1.52oz)/16g (0.56	oz)/20g (0.71oz)						





PS-AE Series Inductive Proximity Sensors

Ordering Information

Part Number	Sensing Range	Housing	Output State	Logic	Connection	Wiring	Dimensions
			Standard D	istance			
PS-AE1-AN-1A				NPN	2m (6.5') axial cable	Diagram 1	Figure 1
PS-AE1-AP-1A		Chialdad		PNP	2m (6.5') axial cable	Diagram 1	Figure 1
PS-AE1-AN-1H	0 to 1 Fmm (0 0 050in)		N.O.	NPN	M12 (12mm) connector	Diagram 1	Figure 2
PS-AE1-AP-1H	0 to 1.5mm (0-0.059in)	Shielded	N.O.	PNP	M12 (12mm) connector	Diagram 1	Figure 2
PS-AE1-AN-1F				NPN	M8 (8mm) connector	Diagram 1	Figure 3
PS-AE1-AP-1F				PNP	M8 (8mm) connector	Diagram 1	Figure 3
PS-AE1-AN-2A				NPN	2m (6.5') axial cable	Diagram 1	Figure 1
PS-AE1-AP-2A	0.1-0.5(0.0.000:-)	Unshielded		PNP	2m (6.5') axial cable	Diagram 1	Figure 1
PS-AE1-AN-2H			0.000in) Unahialdad	N.O.	NPN	M12 (12mm) connector	Diagram 1
PS-AE1-AP-2H	0 to 2.5mm (0-0.098in)		N.O.	PNP	M12 (12mm) connector	Diagram 1	Figure 2
PS-AE1-AN-2F				NPN	M8 (8mm) connector	Diagram 1	Figure 3
PS-AE1-AP-2F				PNP	M8 (8mm) connector	Diagram 1	Figure 3
			Extended D	istance			
PS-AE1-AN-3A				NPN	2m (6.5') axial cable	Diagram 1	Figure 1
PS-AE1-AP-3A	0 to 2mm (0 0 070in)	Chioldod	N.O.	PNP	2m (6.5') axial cable	Diagram 1	Figure 1
PS-AE1-AN-3F	0 to 2mm (0-0.079in)	Shielded	N.O.	NPN	M8 (8mm) connector	Diagram 1	Figure 3
PS-AE1-AP-3F				PNP	M8 (8mm) connector	Diagram 1	Figure 3
PS-AE1-AN-4A				NPN	2m (6.5') axial cable	Diagram 1	Figure 1
PS-AE1-AP-4A	0 to 4mm (0 0 157:n)	l la chialde d	NO.	PNP	2m (6.5') axial cable	Diagram 1	Figure 1
PS-AE1-AN-4F	0 to 4mm (0-0.157in)	Unshielded	N.O.	NPN	M8 (8mm) connector	Diagram 1	Figure 3
PS-AE1-AP-4F				PNP	M8 (8mm) connector	Diagram 1	Figure 3



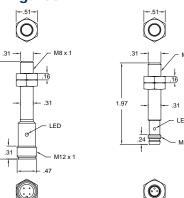
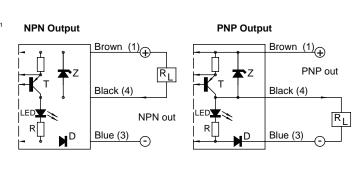


Diagram 1



M12 connector

FIGURE 1

FIGURE 3 **Connectors**

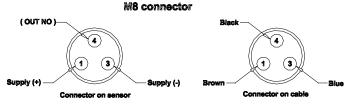
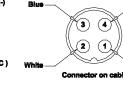


FIGURE 2

(OUT NO)





PS-V Series Inductive AC Proximity Sensors

Features:

- Multi-voltage: 20 to 253 VAC
- 2-Wire
- Metal Housing
- Axial cable with tang or quick-disconnect models; purchase cable separately
- IP67 rated
- · LED status indicator

Specifications

	•						
Specifications	M12 N	Models	M18 N	Models	M30 I	Models	
Mounting Type	Shielded	Unshielded	Shielded	Unshielded	Shielded	Unshielded	
Nominal Sensing Distance	2	4	5	8	10	15	
Operating Distance	N/A						
Output Type	Triac/N.O./2-wire						
Operating Voltage	20 to 253 VAC, 50/60 Hz						
No-Load Supply Current	N/A						
Operating (load) Current	5 to 300 mA (RMS)						
Off-state Leakage Current	1.0 mA max. (RMS)						
Switching Frequency	25 Hz						
Differential Travel (% of Nominal Distance)	2 to 10%						
Repeat Accuracy	5%						
Ripple	N/A						
Time Delay Before Availibility (tv)	200 ms						
Reverse Polarity Protection	N/A						
Short Circuit Protection	No						
Operating Temperature	-25° to +70°C (-13° to + 158°F)						
Protection Degree (DIN 40 050)	IEC IP67						
LED Indicators	Yellow (output energized)						
Housing Material	Nickel-plated brass						
Sensing Face Material	Polybutylene Terephthalate (PBT)						
Tightening Torque	10 Nm	(11 lb-ft)	25 Nm (1	8.44 lb-ft)	50 Nm (36.88 lb-ft)		
Weight	70 g (2	2.47 oz)	120 g (4.23 oz)	300 g (10.6 oz)		
Connection	2 m (6.5') axial cable of M12 (12mm) connector						
Agency Approvals	CE, UL Recognized file E130644						

PS-V Series Inductive AC Proximity Sensors

Ordering Information

Part Number	Sensing Range	Housing	Output State	Connection	Wiring	Dimensions
PS-VM1-A0-1B	2 mm (0.079in)	Shielded		2 m (6.5') axial cable	Diagram 1	Figure 1
PS-VM1-A0-2B	4 mm (0.157in)	Unshielded	N.O.	2 m (6.5') axial cable	Diagram 1	Figure 1
PS-VM1-A0-1H	2 mm (0.079in)	Shielded	IN.O.	M12 (12mm)	Diagram 1	Figure 2
PS-VM1-A0-2H	4 mm (0.157in)	Unshielded		M12 (12mm)	Diagram 1	Figure 2
PS-VK1-A0-1B	5 mm (0.197in)	Shielded		2 m (6.5') axial cable	Diagram 1	Figure 3
PS-VK1-A0-2B	8 mm (0.315in)	Unshielded	N.O.	2 m (6.5') axial cable	Diagram 1	Figure 3
PS-VK1-A0-1H	5 mm (0.197in)	Shielded	IN.O.	M12 (12mm)	Diagram 1	Figure 4
PS-VK1-A0-2H	8 mm (0.315in)	Unshielded		M12 (12mm)	Diagram 1	Figure 4
PS-VT1-A0-1B	10 mm (0.394in)	Shielded	N.O.	2 m (6.5') axial cable	Diagram 1	Figure 5
PS-VT1-A0-2B	15 mm (0.591in)	Unshielded	IN.O.	2 m (6.5') axial cable	Diagram 1	Figure 5

Figures and Diagrams mm (inches)

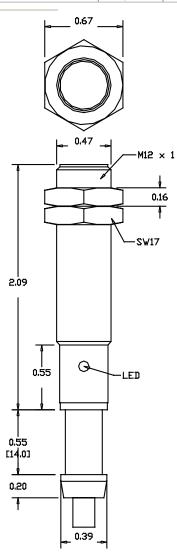
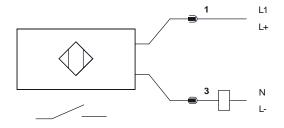


Diagram 1



Connector

M12 connector

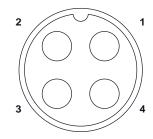




Diagram 1

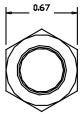
Figure 1

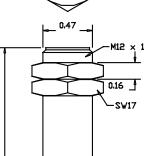


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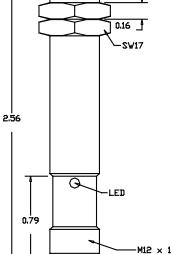
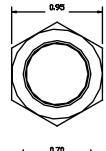
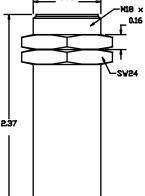
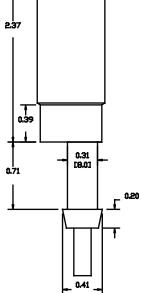




Figure 2







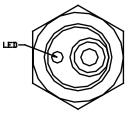
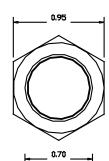
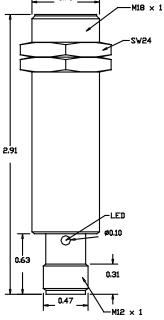
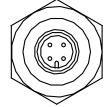
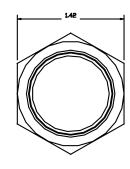


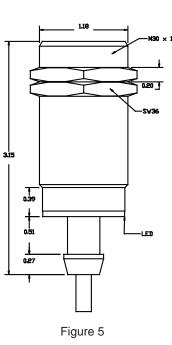
Figure 3













Available in a variety of voltages, materials, spools and enclosures. All solenoid valves are standard with NAMUR mounting interface for direct mounting to all rack and pinion actuators.

SV series single coil NEMA 4/4X solenoid valve.



SV series dual coil NEMA 4/4X solenoid valve.



SV series single coil NEMA 7 solenoid valve.



SV series single coil intrinsically safe solenoid valve.



SV series dual coil NEMA 4/4X solenoid valve with open or closed centers.





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Ordering Information

Solenoid Valve (1-4)		Type (5-6)	E	Enclosure (7)	Voltage (8) (9) Options (10)		Options (11)			
XSO-	4S	4-way single coil	4	NEMA 4/4X	Α	12VDC	-	0 None	Α	None
	4D	4-way dual coil	7	NEMA 4/4X, 7 & 9	В	24VDC	-	1 Lighted Din Connector	B Pr	e-Wired Coil
					С	24VAC	-	2 Coil Only		
					D	110VAC	-	3 3-Position Da		
	E		E	220VAC	-	4 Intrinsically Safe				
			F	48VAC	-	5 Low Watt Coil (1.1W)				
							-	6 3-Position For Center Return 180° Actuators		
							-	7 3-Position SR		

NAMUR mount single coil solenoid valves



Features and Benefits

- Compact IP65 rated NAMUR mount solenoid valve
- Lightweight and easy to use.
- comes standard as 4-Way
- NEMA 4/4X Coil
- · Epoxy coated aluminum housing
- · Electroless nickel plated spool
- Manual override (Locking Type)
- 1/4" NPT inlet and exhaust ports
- · Field interchangeable for DA or SR actuators
- Available in 220VAC, 120VAC, 24VAC, 24VDC, 12VDC, others upon request
- · Lighted Din connectors avaliable

Materials

- Body: powder epoxy coated extruded aluminum
- Spool: anodized aluminum
- Spring: stainless steel

- O-ring: Buna-N (FKM optional)
- DIN Connector: Technopolymer

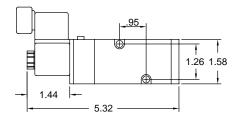
Specifications

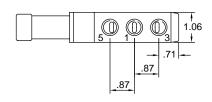


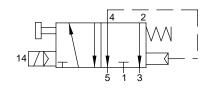
AC coil voltage (60Hz): 24v, 120v, 220v

- standard protection class: IP65, NEMA 4 (DIN connector, as shown)
- electrical connection: 1/2" NPT DIN connector
- · coil insulation: Class F
- supply air and environment temperature limits: -4°F to 158°F
- Viton seal temperature range: 0°F to 250°F
- Air supply connection = ¼"NPT
- Operating pressure = 30 120 PSI
- Weight = 0.80 lb
- Flow factor = Kv 10.5
- Duty cycle = 100%
- Power input = 50/60 Hz inrush 7.5VA rated 5VA, DC 3W

Dimensions









NAMUR Mount Dual Coil Solenoid Valves

Features and Benefits

- · Compact IP65 rated NAMUR mount solenoid valve
- · Lightweight and easy to use.
- comes standard as 4-Way
- NEMA 4/4X Coil
- Epoxy coated aluminum housing
- Electroless nickel plated spool
- Manual override (Locking Type)
- 1/4" NPT inlet and exhaust ports
- · Field interchangeable for DA or SR actuators
- Available in 220VAC, 120VAC, 24VAC, 24VDC, 12VDC, others upon request
- · Lighted Din connectors avaliable
- · Available in explosion proof and intrinsically safe



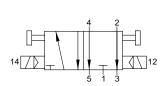
Materials

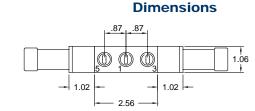
- · Body: powder epoxy coated extruded aluminum
- Spool: anodized aluminum
- · Spring: stainless steel

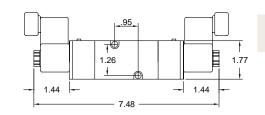
- O-ring: Buna-N (FKM optional)
- DIN Connector: Technopolymer

Specifications

- DC coil voltage: 12v, 24v
- AC coil voltage (60Hz): 24v, 120v, 220v
- standard protection class: IP65, NEMA 4 (DIN connector, as shown)
- electrical connection: ½" NPT DIN connector
- coil insulation: Class F
- supply air and environment temperature limits: -4°F to 158°F
- FKM seal temperature range: 0°F to 250°F
- Air supply connection = ½"NPT
- Operating pressure = 30 120 PSI
- Weight = 1 lb
- Flow factor = Kv 10.5
- Duty cycle = 100%
- Power input = 50/60 Hz inrush 7.5VA rated 5VA, DC 3W







R

NAMUR Mount Explosion Proof Single Coil Solenoid Valves



Features and Benefits

- Compact IP65 rated NAMUR mount solenoid valve
- · Lightweight and easy to use.
- comes standard as 4-Way
- NEMA 7 Coil
- Epoxy coated aluminum housing
- · Electroless nickel plated spool
- Manual override (Locking Type)
- 1/4" NPT inlet and exhaust ports
- · Field interchangeable for DA or SR actuators
- Available in 220VAC, 120VAC, 24VAC, 24VDC, 12VDC, others upon request
- · Lighted Din connectors available

Materials

- Body: powder epoxy coated extruded aluminum
- Spool: anodized aluminum
- · Spring: stainless steel

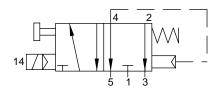
- O-ring: Buna-N (FKM optional)
- · DIN Connector: Technopolymer

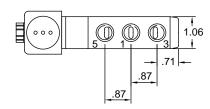
Specifications

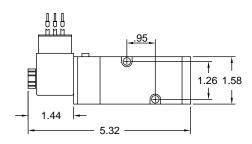
- DC coil voltage: 12v, 24v
- AC coil voltage (60Hz): 24v, 120v, 220v
- standard protection class: IP65, NEMA 7 (DIN connector, as shown)
- electrical connection: ½" NPT DIN connector
- · coil insulation: Class H
- supply air and environment temperature limits: -4°F to 140°F
- FKM seal temperature range: 0°F to 250°F
- Air supply connection = ½"NPT
- Operating pressure = 30 120 PSI
- Weight = 0.95 lb
- Flow factor = Kv 10.5
- Duty cycle = 100%
- Power input = 50/60 Hz inrush 7.5VA rated 5VA, DC 6W

Dimensions

R







NAMUR Mount Intrinsically Safe Single Coil Solenoid Valves

Features and Benefits

- · Compact IP65 rated NAMUR mount solenoid valve
- · Lightweight and easy to use.
- comes standard as 4-Way
- Intrinsically safe coil
- Epoxy coated aluminum housing
- Electroless nickel plated spool
- Manual override (Locking Type)
- 1/4" NPT inlet and exhaust ports
- · Field interchangeable for DA or SR actuators



Materials

- Body: powder epoxy coated extruded aluminum
- · Spool: anodized aluminum
- · Spring: stainless steel

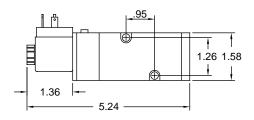
- O-ring: Buna-N (FKM optional)
- DIN Connector: Technopolymer

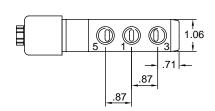
Specifications

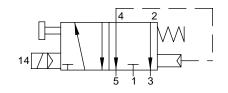
- · Standard voltage: 24VDC
- · standard protection class: IP65, Intrinsically safe coil
- electrical connection: ½" NPT DIN connector
- · coil insulation: Class F
- supply air and environment temperature limits: -4°F to 122°F
- FKM seal temperature range: 0°F to 250°F
- Air supply connection = 1/4"NPT
- Operating pressure = 30 120 PSI

- Weight = 0.80 lb
- Flow factor = Kv 10.5
- Duty cycle = 100%
- Power input = 50/60 Hz inrush 7.5VA rated 5VA, DC 3W
- · Hazardous location class:
 - -Class I Groups A, B, C & D
 - -Class II Groups E, F & G
 - -Class III Division I

Dimensions







SV Series NAMUR Mount Solenoid Valves

NAMUR Mount Dual Coil Solenoid Valves with Open or Closed Centers



Features and Benefits

- Compact IP65 rated NAMUR mount solenoid valve
- Lightweight and easy to use.
- comes standard as 4-Way
- NEMA 4/4X Coil
- · Epoxy coated aluminum housing
- · Electroless nickel plated spool
- Manual override (Locking Type)
- ¼" NPT inlet and exhaust ports
- Field interchangeable for DA or SR actuators
- Available in 220VAC, 120VAC, 24VAC, 24VDC, 12VDC, others upon request
- · Lighted Din connectors avaliable
- Available in explosion proof and intrinsically safe

Materials

- Body: powder epoxy coated extruded aluminum
- Spool: anodized aluminum
- · Spring: stainless steel

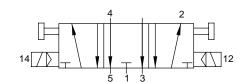
- O-ring: Buna-N (FKM optional)
- DIN Connector: Technopolymer

Specifications

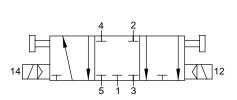
- DC coil voltage: 12v, 24v
- AC coil voltage (60Hz): 24v, 120v, 220v
- standard protection class: IP65, NEMA 4 (DIN connector, as shown)
- electrical connection: ½" NPT DIN connector
- coil insulation: Class F
- supply air and environment temperature limits: -4°F to 158°F
- FKM seal temperature range: 0°F to 250°F

- Air supply connection = ½"NPT
- Operating pressure = 30 120 PSI
- Weight = 1.2 lb
- Flow factor = Kv 10.5
- Duty cycle = 100%
- Power input = 50/60 Hz inrush 7.5VA rated 5VA, DC 3W

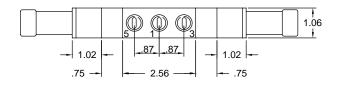
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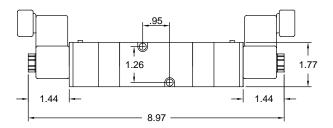


OPEN CENTERS (S36A)



Dimensions





CLOSED CENTERS (S36C)



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Positioners and Controls

Dixon Sanitary offers a wide variety of positioner options for varying control requirements. Positioners are available in both pneumatic and electro-pneumatic signal options inside either NEMA 4/4X or NEMA 7 enclosures. Feedback is also available on Dixon positioners in mechanical, reed, and transmitter feedback options. Other options include but are not limited to networking and a wide variety of visual indicators, including digital display. Positioners can be used on ALL Dixon rack and pinion actuators using the standard NAMUR mounting interface.

XPO series pneumatic and electro-pneumatic positioners for use with all rack and pinion actuators.



XPB series digital electropneumatic positioners and control heads are designed for use on Dixon/Rieger hygienic process control valves.



XPO series digital positioner available in NEMA 4/4X or explosion proof enclosure for use with all rack and pinion actuators.





XPO Series Pneumatic & Electro-Pneumatic Positioners



Pneumatic & Electro-Pneumatic positioners are available in pneumatic and electro-pneumatic with many variations.

Ordering Information

Positioner Feedback (1-4)		Type (5)	Е	nclosure (6)		Indicator (7)		Material (8)
XPO-	Р	pneumatic	4	NEMA 4/4X	F	flat		cast aluminum / polyester coating
	Е	electro-pneumatic 4-20mA	7	NEMA 7	R	raised	Т	tufram impregnated
	V	electro-pneumatic 0-10v	I	intrinsically safe			Ν	nickle plated
			F	fail freeze				

The Pneummatic Positioner is completely modular. To convert the XPO-P4F to electro-pneumatic, intrinsically safe, or fail freeze, add one of the converters below.

Positioner Conversion Kits

Converter (1-4)		Insert Type (5)				
XPC-	EP	electro-pneumatic 4-20mA				
	IS	intrinsically safe				
	FF	fail freeze				

XPO-P4F (pneumatic positioner) Features and Benefits

- · cam characterized and force balanced
- cast aluminum NEMA 4X housing with electrostatically applied polyester coating
- operates on a standard 3-15 PSI signal (12 PSI span, optional 24 PSI)
- · pressure gauge blocks built into the unit
- large indicator has scaling to operate in both direct and reverse directions

Specifications

S

input range: 3-15 PSIsupply pressure: <145 PSI

linearity error: <0.7 f.s.
hysteresis: <0.4 f.s.

repeatability: <0.3 f.s.pressure gain: 750:1 P

air delivery: SCFM @ 29 PSI 9.5 @ 87 PSI 28.3 @ 145 PSI 47.1 air consumption: SCFM
 @ 29 PSI (200 kPa)
 @ 87 PSI (600 KPa)
 @ 145 PSI
 0.88

• temperature range: -40°F (-40°C) to 185°F (85°C)

air connections: 1/4" NPTgauge port: 1/8" NPT

· ingress and corrosion protection: NEMA 4X and IP 66

coating: Powder polyester (nickel - optional)

· weight: 3.5 lbs.





Positioners

XPO-E4F

(electro pneumatic positioner)

Features and Benefits

- · cam characterized and force balanced
- cast aluminum NEMA 4X housing with electrostatically applied polyester coating
- operates on a 4-20 mA signal

- · pressure gauge blocks built into the unit
- large indicator has scaling to operate in both direct and reverse directions

Specifications

- input range: 4-20 (R1<170 ohms)
 supply pressure: 22-145 PSI
 linearity error: <1.0 f.s.
- hysteresis: <0.5 f.s.
- repeatability: <0.3 f.s.
- pressure gain: 750:1 P out /P in

air delivery:	<u>SCFM</u>
@ 29 PSI (200 kPa)	9.5
@ 87 PSI (600 KPa)	28.3
@ 145 PSI	47.1

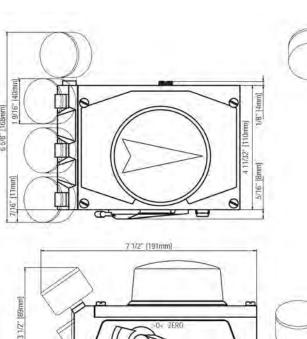
- air consumption: SCFM
 @ 29 PSI
 @ 87 PSI
 @ 145 PSI
 0.88
- temperature range: **-40°F** (-40°C) to **185°F** (85°C)
- air connections: 1/4" NPT
- gauge port: 1/8" NPT
- ingress and corrosion protection: NEMA 4X and IP 66
- coating: powder polyester (nickel optional)

0

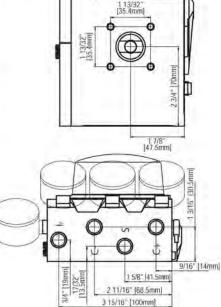
· weight: 3.8 lbs.

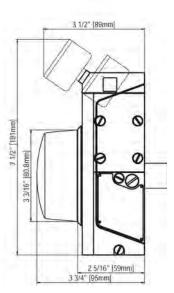
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Dimensions



6 11/32" [161mm 6 7/16" [163mm]





S

XPF Series Positioner Feedback



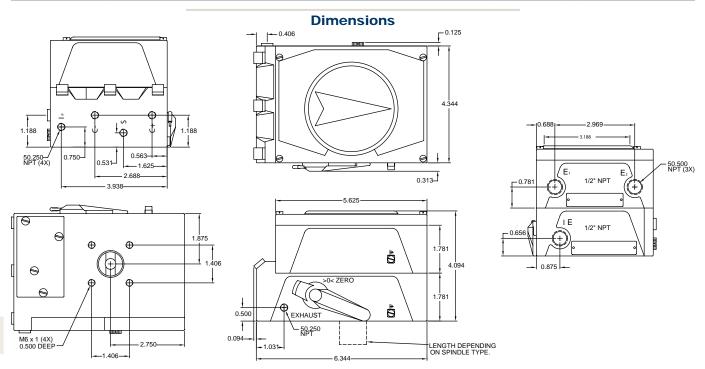
This module can be simply added to either of the XPO positioners, without special mounting and calibrated without special tools. Coupled with the XPO, the package still maintains its NEMA 4 X rating, due to sealing designs.

Feedback options are as follows:

- · mechanical switches
- · reed switches
- · 4-20 mA transmitter
- a combination of these items

Ordering Information

Positioner Feedback (1-4)		Type (5)	In	ndicator (6)		Feedback (7-8)		Switch Qty (9)		Material (10)
XPF	W	for use w/positioner	F	flat	01	mechanical spdt	0	use with TR		cast aluminum / polyester coating
	S	stand alone unit	R	raised	02	proximity spdt	1		Т	tufram impregnated
			N	none-use with W	TR	4-20ma transmitter	2		N	nickle plated
					TF	4-20ma transmitter w/ feedback (2 mech. spdt)	3			



Module can be factory mounted to the positioner or mounted in the field. If used in the field, the XPF is shipped without a cover and the positioner cover is used to seal the compete package

Specifications

- temperature: -40°F to 185°F
- two 1/2" conduit connections
- 4/20 transmitter- 2 wire-10-30 VDC-Max impedance 700W @ 24 VDC
- mechanical switches-SPDT-Co Form C, (V3)-max 10A (3) 12/250 VAC
- reed switches-SPDT-Co form C-contact rating 5W or 5VA @ 30 VDC/VAC .16 APC Board Settings: Jumpers for CCW or CW-(45) 30-60 degree rotation-(90) 60-120 degree rotation-zero and span adjustments-test pins for loop calibration.



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We Ship World Wide

XPO Series Digital Positioner

Part Numbers



Example: XPO-D1H126

This part number would be a standard enclosure digital positioner with Hart communication, including a gauge block with gauges, micro switches and fail freeze.

Ordering Information

Positioner Feedback		Type (5)	Action (6)	Options (8)			Options (8)	Options (9)		Options (10)	
(1-4)			single				gauge block w/		gauge block w/		gauge block w/
XPO-	D	digital	(sr)	N	none	1	gauges	1	gauges	1	gauges
	Х	digital explosion proof	2 double (da)	Н	hart	2	micro switches*	2	micro switches*	2	micro switches*
	I	digital intrinsically safe		F	foundation fieldbus	3	4/20 transmitter*	3	4/20 transmitter*	3	4/20 transmitter*
				Р	profibus	4	filter regulator coalesscing	4	filter regulator coalesscing	4	filter regulator coalesscing
						5	filter coalesscing	5	filter coalesscing	5	filter coalesscing
						6	fail freeze	6	fail freeze	6	fail freeze
						7	atex	7	atex	7	atex
						8	prox / no	8	prox / no	8	prox / no
						9	prox / nc	9	prox / nc	9	prox / nc

* 4/20 transmitter and switches are not avaliable for profibus or fieldbus units



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XPO Series Digital Positioner

Features and Benefits

- · microprocessor based valve positioner
- user friendly, menu-driven programming with LCD display, multi-lingual
- local push button configuration no hand held device of PC necessary
- · low air consumption and dependable mechanical design
- · modular design available with position feedback, micro switches and fail free options
- aluminum housing NEMA 4X IP 65 enclosure standard
- ATEX, FM, CSA, IEC and EX approvals available

Enclosure Options

- NEMA 4X IP 65 standard
- explosion proof
- · intrinsically safe / non-incendive
- Communications

- Hart
- no communications
- foundation fieldbus
- profibus

Options

- gauge block with gauges
- micro switches
- 4-20ma transmitter

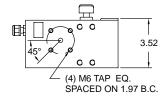
- · filter regulator coalescing
- fail freeze

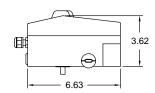
Specifications

- rotation: 25-120 degrees
- maximum air supply: 90 PSI
- air delivery: 6.0 SCFM @ 90 PSI
- ambient temperature: -40°F to 185°F
- stroke: .4 to 4" (longer stokes POA)
- connections: 1/4" NPT air, 1/2" NPT cable
- air consumption: .015 SCFM
- characteristic curves: linear, equal %, 1:25, 1:50, 25:1, 50:1 or user configurable with 20 reference points
- characteristic deviation: ≤ 0.5%
- deadband 0.1%, adjustable to 10%
- resolution (A/D conversion): 4000 steps, Hart: 16,000 steps, FF and PA
- vibration influence: ≤ 1% up to 10 G and 80 Hz
- sample rate: 20 msec
- air supply: must be free of oil, water and dust to DIN / ISO 8573-1 pollution and oil contents according to Class 3 dew point 20 K below operating temperature

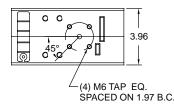
Dimensions

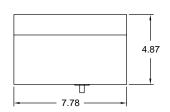
XPO-D series





XPO-X series







We Ship World Wide

S

XPB Digital Electropneumatic Positioner With Display For The Integrated Mounting On Process Controls Valves

Features:

- · Compact stainless steel design
- Graphic display with backlight
- Easy start-up by automatic X-Tune function
- · Comprehensive range of additional software functions
- Internal control air routing
- Profibus DPV1 or DeviceNet communication (option)



Techinical Information

		hinical Data						
	Body	PPS, stainless steel						
Material	Cover	PC						
	Sealing	EPDM						
Power Supply		24 VDC +/- 10%						
Residual Ripple		max. 10%						
Setpoint Setting		0/4 to 20mA and 0 to 5/10 V						
Output resistance		0/4 to 20mA: 180 Ω						
Output resistance		0 to 5/10V: 19 k Ω						
		neutral gases, air DIN ISO 8573-1						
Control Medium	Dust concentration	Class 5 (<40µm particle size)						
	Particle density	Class 5 (<10mg/m³)						
	Pressure condensation point	Cass 3 (<-20°C)						
	Oil concentration	Class 5 (<25mg/m³)						
Ambient Temperat	ure	0 to +55°C						
Pilot air ports		Threaded ports G1/8 stainless steel or Push-in connectors (Ø6mm and 1/4" tube)						
0 1		Low air flow rate 0 to 7 bar 1						
Supply pressure		High air flow rate 3 to 7 bar						
Air input filter		Exchangeable (mesh aperture~0.1mm)						
	A studtor porios ELEMENT 22VV	Low air flow rate : Ø Actuator 70 / 90 mm						
Actuator Cuatara	Actuator series ELEMENT 23XX	High air flow rate: Ø Actuator 130 mm						
Actuator System	Actuator porice OLACOLO CZVV	Low air flow rate : Ø Actuator 80 / 100 mm						
	Actuator series CLASSIC 27XX	High air flow rate: Ø Actuator 125 / 175 / 225 mm						
Position detection	module	Contact-free, wear-free						
Stroke range valve	spindle	3 to 45 mm						
Installation		as required, preferably with actuator in upright position						
Protection class		IP65 and IP67 acc. to EN 60529						
Power consumption	n	< 5 W						
Floorise Loop (1)	Multipole connection	M12, 8-pins or 4-pins						
Electrical connecti	on Cable gland	2xM16x1.5 (cable-Ø10mm) on terminal screws (1.5 mm ²)						
Bus communication		Profi bus DPV1, DeviceNet						
Protection class		3 according to VDE 0580						
Conformity		CE acc. to EMV2004/108/EG						



We Ship World Wide

XPB Electropneumatic Positioner For The Integrated Mounting On Process Controls Valves



Features:

- · contact-free position sensor
- · compact stainless steel design
- AS-Interface communication (option)
- · internal control air routing

Techinical Information

Technical months.									
	1 5 :		nical Data						
	Body		PPS, stainless steel						
Material	Cove	•	PC						
	Seali	ng	EPDM						
Power Supply			24 VDC +/- 10%						
Residual Ripple			max. 10%						
Setpoint Setting			4 to 20mA (0 to 20mA adjustable via communication interface)						
Output resistance			180 Ω						
			neutral gases, air DIN ISO 8573-1						
	[Dust concentration	Class 5 (<40µm particle size)						
Control Medium	F	Particle density	Class 5 (<10mg/m³)						
	F	Pressure condensation point	Cass 3 (<-20°C)						
		Oil concentration	Class 5 (<25mg/m³)						
Ambient Temperat	ture		0 to +60°C						
Pilot air ports			Threaded ports G1/8 stainless steel or Push-in connectors (Ø6mm and 1/4" tube)						
Cumply processes			Low air flow rate 0 to 7 bar 1						
Supply pressure			High air flow rate 3 to 7 bar						
Air input filter			Exchangeable (mesh aperture~0.1mm)						
		Actuator series ELEMENT 23XX	Low air flow rate: Ø Actuator 70 / 90 mm						
Actuator System		Actuator series ELEMENT 25AA	High air flow rate: Ø Actuator 130 mm						
Actuator System		Actuator series CLASSIC 27XX	Low air flow rate : Ø Actuator 80 / 100 mm						
		Actuator series CLASSIC 27XX	High air flow rate: Ø Actuator 125 / 175 / 225 mm						
Position detection	module	•	Contact-free, wear-free						
Stroke range valve	e spindl	е	3 to 45 mm						
Installation			as required, preferably with actuator in upright position						
Protection class			IP65 and IP67 acc. to EN 60529						
Protection class			3 according to VDE 0580						
Conformity			CE acc. to EMV2004/108/EG						
Options			Analogue position feedback, 4-20mA						
Communication			AS-Interface (option, in preparation)						

¹ The supply pressure has to be 0.5 - 1 bar above the minimum required pilot pressure for the valve actuator.

Ordering Information

Positioner (1-4)	Type (5)	Pilot Air Ports (6)		ectrical ection (7)	Со	mmunication (8)	С	isplay (9)	F	eedback (10)	Opti	ons (11)
XPB-	E Electropneumatic 0/4 to 20mA	T Threaded Ports	4	4 Pole	N	None	1	Dip Switches	N	None	N	None
	V Electropneumatic 0 to 5/10V	P Push in Connectors	8	8 Pole	Α	Profibus DPV1	2	Digital	Α	Analogue 4-20mA		r Options act Dixon
			G	Cable Gland	В	DeviceNet						
					С	AS-Interface						



Cordsets and Receptacles

Dixon Sanitary offers a wide variety of cordsets and receptacles.

Cordsets are available in a wide variety of single or double ended cordsets in different lengths, gauges, number of poles and shielded or unshielded.



Receptacles available in a wide variety of male and female, single and dual key way and multiple connections.



We can pre-wire all valve packages that include solenoids and electro-pneumatic positioners along with any of our limit switch options.





Cordsets



Available in a wide variety of single or double ended cordsets in different lengths, gauges, number of poles and shielded or unshielded.

Receptacles



Receptacles available in a wide variety of male and female, single and dual key way and multiple connections.

Ordering Information

Receptacle (1-4)		Material (5)	Р	oles (6)		Key (7)	Pin (Connection (8)	Matii	ng Thread (9)	Mou	ınting Thread (10)
XEC receptacle	Α	grey anodized aluminum	2	2-pole	s	single	F	female	Α	½ - 20 UNF	А	½ - 14 MNPT
	В	black anodized aluminum	3	3-pole	D	dual	M	male	В	M12	В	½ - 18 MNPT
	Ν	nickel plated	4	4-pole								
			5	5-pole								
			6	6-pole								
			8	8-pole								

* All combinations may not be avaliable



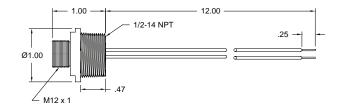
Receptacles

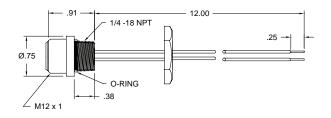
M12 Single Key Way Receptacles

3P	4P	5P	8P
3 1	3-1	3 1 5	3 4 5 6 7

Male Face View		3P		4P		5P		8P		
	1	brown	1	brown	1	brown	1	white		
	3	blue	2	white	2	white	2	brown		
	4	black	3	blue	3	blue	3	orange		
			4	black	4	black	4	violet		
Color Code					5	grey	5	pink		
							6	grey		
							7	black		
							8	blue		

Technical Data





- · Shell: anodized aluminum
- Insert: nylon 6/6
- Conductors: #22 AWG w/ PVC insulation over 26 x #36 copper stranding, 300V, UL style 1061, CSA AWM SR
- · O-ring: nitrile rubber

- Voltage rating: 250V AC/DC
- · Amperage: 4A
- Protection: IP 68 NEMA 6P
- Temperature rating: -4° to 176°F
- · Certifications: UL- 3P & 4P UL Listed, 5P UL recognized

CSA Certified



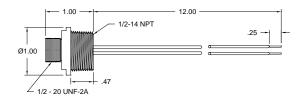
Receptacles

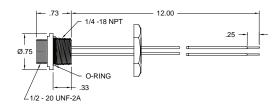
1/2 - 20 UNF Dual Key Way Receptacles

2P	3P	4P	5P	6P
	3 2	2 1	1 5 4	1 5 4 2 3 6

Male Face View		2P		3P		4P		5P		6P
	1	brown	1	green-gnd	1	red-black trace	1	red-white trace	1	red-white trace
	2	blue	2	red-black trace	2	red-white trace	2	red	2	red
Color			3	red-white trace	3	red	3	green-gnd	3	green-gnd
Code					4	green-gnd	4	red-yellow trace	4	red-yellow trace
							5	red-black trace	5	red-black trace
									6	red-blue trace

Technical Data





- Shell: anodized aluminumInsert: nylon 6/6
 - Conductors: #22 AWG w/ PVC insulation over 26 x #36 copper stranding, 300V, UL style 1061, CSA AWM SR
 - · O-ring: nitrile rubber

- Voltage rating: 250V AC/DC
- Amperage: 4A
- Protection: IP 68 NEMA 6P
- Temperature rating: -4° to 176°F
- Certifications: UL-3P & 4P UL Listed, 5P UL recognized CSA Certified

Pre-Wired Valve Packages

Features and Benefits

Save time and money with Dixon Santary's Pre-wired solenoid/limit switch combination.

- Meets Nema 4/4x requirements
- · Can be prewired to all solenoids and switches.
- · Used on all rack and pinion actuators
- · No special tools required for removal

Part Numbers

XSOL-LS-M12CRD

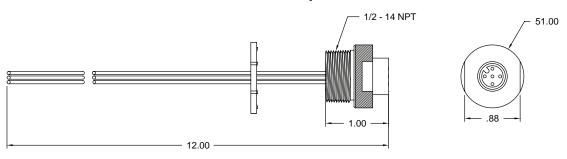
 Cordset, solenoid to switch with Din connector x 5P M12 Male connector

XEC - 5

 M12 female Nickel plated brass Receptacle (mount to cordset), single key, ½" NPT (mount to limit switch), special 5 P – 3 wire



Pre-Wire Receptacle



We can pre-wire all valve packages that include solenoids and electro-pneumatic



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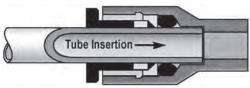
Legris Automation Accessories Nylon / Nickel - Plated Brass Push-In Fittings

- materials: nickel-plated brass construction, black body is glass-filled nylon, Buna-N O-Ring seal, polypropylene release button, silicone free
- positive seal: sealing and holding is accomplished instantaneously
- reusable: connect and disconnect numerous times
- · full flow: fitting seals on outside diameter of tubing
- working pressure: fittings rated to 290 PSI at ambient temperature
- working temperature: -4°F to 175°F
- Maximum circuit pressure depends equally on the SAFETY type and diameter of the tube used.

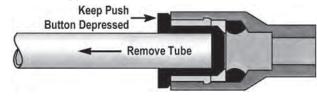


- pre-applied thread sealant on all male pipe threads
- compatible tubing: semi-rigid nylon, polyurethane and polyethylene tube
- vacuum capability: vacuum of 28 inches Hg (99% vacuum)

Gripping Ring Technology







To disconnect: press the release ring towards the fitting and pull tubing out. No tools required.



To connect: simply push tubing in.

Male Swivel Run Tees (tube to male NPT)

Tube OD	Male NPT	Part #
1/4"	1/8"	31035611



Male Connectors (tube to male NPT)

Tube OD	Male NPT	Part #
1/4"	1/8"	31755611
1/4"	1/4"	31755614



Male Swivel Elbows (tube to male NPT)

Tube OD	Male NPT	Part #
1/4"	1/8"	31095611
1/4"	1/4"	31095614



Male Connectors (tube to male BSPT)

Tube OD	Male BSPT	Part #
1/4"	1/8"	31755610
1/4"	1/4"	31755613



45° Male Elbows (tube to male NPT)

Tube OD	Male NPT	Part #
1/4"	1/8"	31135611
1/4"	1/4"	31135614



Nylon/Nickel-Plated Brass Legris Push-In Fittings Features:

- · materials:
 - nickel-plated brass threads; black body is glass-filled nylon; Buna-N D seal; polypropylene release button; silicone free
- positive seal: sealing and holding is accomplished instantaneously
- reusable: connect and disconnect numerous times
- · full flow: fitting seals on outside diameter of tubing
- · working pressure: fittings rated to 290 PSI at ambient

temperature. Maximum circuit pressure depends equally on the type and diameter of the tube used.

- working temperature: -4°F to 175°F
- pre-applied thread sealant on all tapered male pipe threads
- compatible tubing: semi-rigid nylon, polyurethane and polyethylene tube
- vacuum capability: vacuum of 28" Hg (99% vacuum)

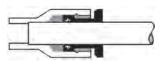
Male Connectors



tube to male NPT

		tube to male NF I
Tube	Male	Nickel-plated Brass
OD	NPT	Part #
1/8"	1/16"	31755308
1/8"	1/8"	31755311
1/8"	1/4"	31755314
5/32"	1/8"	31750411
5/32"	1/4"	31750414
1/4"	1/8"	31755611
1/4"	1/4"	31755614
1/4"	3/8"	31755618
5/16"	1/8"	31750811
5/16"	1/4"	31750814
5/16"	3/8"	31750818
3/8"	1/8"	31756011
3/8"	1/4"	31756014
3/8"	3/8"	31756018
3/8"	1/2"	31756022
1/2"	1/4"	31756214
1/2"	3/8"	31756218
1/2"	1/2"	31756222

Gripping Ring Technology



Quick Connect and Disconnect:

- · To connect, simply push tubing in.
- To disconnect, press the release ring towards the fitting and pull tubing out.
- · No tools required.

Female Connectors



tube to female NPT

Tube	Female	Nickel-plated Brass
OD	NPT	Part #
1/8"	1/8"	30145311
1/8"	1/4"	30145314
5/32"	1/8"	30140411
5/32"	1/4"	30140414
1/4"	1/8"	30145611
1/4"	1/4"	30145614
5/16"	1/8"	30140811
5/16"	1/4"	30140814
3/8"	1/8"	30146011
3/8"	1/4"	30146014
3/8"	3/8"	30146018

"Hybrid" Male Connectors



fractional inch tube to male BSPT

	Tractional men tube to male Bot 1			
Tube	Male	Nickel-plated Brass		
OD	BSPT	Part #		
1/4"	1/8"	31755610		
1/4"	1/4"	31755613		
3/8"	1/4"	31756013		







Nylon/Nickel-Plated Brass Legris Push-In Fittings **Bulkhead Unions Unions Union Elbows**







tube to tube

tube to tube

tube to tube

Tube OD	Nylon	Nylon	Nylon
Tube OD	Part #	Part #	Part #
1/8"	31065300	31165300	31025300
5/32"	31060400	31160400	31020400
1/4"	31065600	31165600	31025600
5/16"	31060800	31160800	31020800
3/8"	31066000	31166000	31026000
1/2"	31066200	31166200	31026200

Male Swivel Elbows



tube to male NPT

Tube	Male	Nylon/Nickel-plated Brass
OD	NPT	Part #
1/8"	10-32 *	31095320
1/8"	1/16"	31095308
1/8"	1/8"	31095311
1/8"	1/4"	31095314
5/32"	10-32 *	31090420
5/32"	1/8"	31090411
5/32"	1/4"	31090414
1/4"	10-32 *	31095620
1/4"	1/8"	31095611
1/4"	1/4"	31095614
1/4"	3/8"	31095618
5/16"	1/8"	31090811
5/16"	1/4"	31090814
5/16"	3/8"	31090818
3/8"	1/8"	31096011
3/8"	1/4"	31096014
3/8"	3/8"	31096018
3/8"	1/2"	31096022
1/2"	1/4"	31096214
1/2"	3/8"	31096218
1/2"	1/2"	31096222

UNF - Straight thread, supplied with gasket

Female Swivel Elbows



tube to female NPT

Tube OD	Female NPT	Nylon/Nickel-plated Brass Part #
1/8"	1/8"	30095311
5/32"	1/4"	30090414
1/4"	1/8"	30095611
1/4"	1/4"	30095614
5/16"	1/8"	30090811
5/16"	1/4"	30090814
3/8"	1/4"	30096014
1/2"	3/8"	30096218

Nylon/Nickel-Plated Brass Legris Push-In Fittings 45° Male Elbows **Extended Male Swivel Elbows**





fractional inch tube to male NPT

fractional inch tube to male NPT

Tube OD	Male NPT	Nylon/Nickel-plated Brass Part #	Nylon/Nickel-plated Brass Part #
1/4"	1/8"	31135611	31295611
1/4"	1/4"	31135614	31295614
3/8"	1/4"	31136014	31296014
3/8"	3/8"	31136018	31296018

Male Swivel Branch Tees



tube to male NPT

tube to male Ni i			
Tube	Male	Nylon/Nickel-plated Brass	
OD	NPT	Part #	
1/8"	10-32 *	31085320	
1/8"	1/8"	31085311	
5/32"	10-32 *	31080420	
5/32"	1/8"	31080411	
5/32"	1/4"	31080414	
1/4"	1/8"	31085611	
1/4"	1/4"	31085614	
1/4"	3/8"	31085618	
5/16"	1/8"	31080811	
5/16"	1/4"	31080814	
5/16"	3/8"	31080818	
3/8"	1/8"	31086011	
3/8"	1/4"	31086014	
3/8"	3/8"	31086018	
3/8"	1/2"	31086022	
1/2"	1/4"	31086214	
1/2"	3/8"	31086218	
1/2"	1/2"	31086222	

Male Swivel Run Tees



tube to male NPT

Tube	Male	Nylon/Nickel-plated Brass
OD	NPT	Part #
1/8"	10-32 *	31035320
1/8"	1/16"	31035308
1/8"	1/8"	31035311
5/32"	10-32 *	31030420
5/32"	1/8"	31030411
5/32"	1/4"	31030414
1/4"	1/8"	31035611
1/4"	1/4"	31035614
1/4"	3/8"	31035618
5/16"	1/8"	31030811
5/16"	1/4"	31030814
3/8"	1/8"	31036011
3/8"	1/4"	31036014
3/8"	3/8"	31036018
1/2"	1/4"	31036214
1/2"	3/8"	31036218
1/2"	1/2"	31036222
* !!	01 1 - 1 - 1 - 1	and recognitional could be associated

^{*} UNF - Straight thread, supplied with gasket

* UNF - Straight thread, supplied with gasket **Y Male Swivel Connectors**



tube to male NPT

Tube	Male	Nylon/Nickel-plated Brass
OD	NPT	Part #
5/32"	1/8"	31480411
5/32"	1/4"	31480414
1/4"	1/8"	31485611
1/4"	1/4"	31485614

Y Connectors



tube to tube

tabe to tabe		
Tube	Nylon	
OD	Part #	
1/8"	31405300	
5/32"	31400400	
1/4"	31405600	
5/16"	31400800	
3/8"	31406000	

Union Tees



tube to tube

	Tube	Nylon
_	OD	Part #
	1/8"	31045300
	5/32"	31040400
	1/4"	31045600
	5/16"	31040800
	3/8"	31046000
-	1/2"	31046200

Plugs









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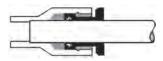
We Ship **World Wide**

Metric Push-In Fittings

Features:

- materials:
 - nickel-plated brass threads; black body is glass-filled nylon; Buna-N D seal; polypropylene release button; silicone free
- positive seal: sealing and holding is accomplished instantaneously
- reusable: connect and disconnect numerous times
- · full flow: fitting seals on outside diameter of tubing
- working pressure: fittings rated to 290 PSI at ambient temperature
- working temperature: -4°F to 175°F
- pre-applied thread sealant on all tapered male pipe threads
- compatible tubing: semi-rigid nylon, polyurethane and polyethylene tube
- vacuum capability: vacuum of 28" Hg (99% vacuum)

Gripping Ring Technology



Quick Connect and Disconnect:

- · To connect, simply push tubing in.
- To disconnect, press the release ring towards the fitting and pull tubing out.
- No tools required.

Male Connectors



tube to male BSPT

		10	1
13	1	100	



tube to female BSPP

Male BSPT	Part #
1/8"	31750410
1/4"	31750413
1/8"	31750610
1/4"	31750613
1/8"	31750810
1/4"	31750813
3/8"	31750817
1/4"	31751013
3/8"	31751017
	1/8" 1/4" 1/8" 1/4" 1/8" 1/4" 3/8" 1/4"

Tube OD	Female BSPT	Part #
4 mm	1/8"	31140410
4 mm	1/4"	31140413
6 mm	1/8"	31140610
6 mm	1/4"	31140613
8 mm	1/8"	31140810
8 mm	1/4"	31140813

Male Swivel Elbows



tube to male BSPT

Tube OD	Male BSPT	Part #
4 mm	1/8"	31090410
4 mm	1/4"	31090413
6 mm	1/8"	31090610
6 mm	1/4"	31090613
8 mm	1/8"	31090810
8 mm	1/4"	31090813
8 mm	3/8"	31090817
10 mm	1/4"	31091013
10 mm	3/8"	31091017

Male Swivel Branch Tees



tube to male BSPT

Tube OD	Male BSPT	Part #
4 mm	1/8"	31080410
4 mm	1/4"	31080413
6 mm	1/8"	31080610
6 mm	1/4"	31080613
8 mm	1/8"	31080810
8 mm	1/4"	31080813

Metric Push-In Fittings

Unions



Union Tees



tube to tube

Tube OD	Tube OD	Part #
4 mm	6 mm	31060406
6 mm	6 mm	31060600
10 mm	10 mm	31061000

tube to tube

Tube OD	Part #
6 mm	31040600
10 mm	31041000

Union Elbows



Bulkhead Unions



tube to tube

Tube OD	Tube OD	Part #
6 mm	6 mm	31020600
10 mm	10 mm	31021000

 Tube OD
 Part #

 6 mm
 6 mm

 31160600

Y Connectors



Plugs



Tube OD	Tube OD	Part #
6 mm	6 mm	31400600

Tube OD	Tube OD	Part #
6 mm	6 mm	31260600
10 mm	10 mm	31261000

Male Connectors



Male Swivel Elbows



tube to thread

Tube OD	Thread	Part #
4 mm	M5	31010419
4 mm	1/8 BSPP	31010410
6 mm	M5	31010619
6 mm	1/8 BSPP	31010610
6 mm	1/4 BSPP	31010613
8 mm	1/8 BSPP	31010810
8 mm	1/4 BSPP	31010813

tube to thread

Tube OD	Thread	Part #
4 mm	M5	31990419
4 mm	1/8 BSPP	31990410
6 mm	M5	31990619
6 mm	1/8 BSPP	31990610
6 mm	1/4 BSPP	31990613
8 mm	1/8 BSPP	31990810
8 mm	1/4 BSPP	31990813



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Legris Tubing Nylon 12 Tubing

Applications: Nylon tubing is ideal for many industrial applications. It has optimum mechanical properties and good chemical, humidity and abrasive resistance.

Features:

- · semi rigid tubing
- working temperature: -4°F to 175°F (working pressure given at 75°F)

Size OD ID	Wall Thickness	Working Pressure at 75°F	Length	Clear Part #	Black Part #	Blue Part #
1/4" x .18"	.035	265	50' roll	1091P5600	1091P5601	1091P5604
Size	Wall Thickness	Working Pressure at 75°F	Length	Clear Part #	Black Part #	Blue Part #
OD ID	VVali Triioki1000	Working Freedome at 70 T	Longar	Olour r ure n	Black Falt #	Bido i dit ii
1/4" x .18"	.035	265	100' roll	1094P5600	1094P5601	1094P5604



Polyurethane - 95 Durometer Tubing

Applications: Polyurethane tubing has high flexibility and a small bend radius and thus is very good for applications where space is tight. For applications where the tubing will be exposed black tubing is recommended.

Features:

working temperature: -40°F to 165°F (working pressure given at 75°F)

Size	Wall Thickness	Working Pressure at 75°F	Length	Clear Part #	Black Part #	Blue Part #
OD ID	Wall Triloidicss	Working Fressure at 70 T	Longui	Olcai i ait#	Black Falt #	
1/4" x .160"	.045	148	50' roll	1091U56R00	1091U56R01	1091U56R04
Size	Wall Thickness	Working Pressure at 75°F	Length	Clear Part #	Black Part #	Blue Part #
OD ID	vvali TTIICKTIESS	Working Fressure at 75 F	Lengui	Clear Fait #	DIACK FAIL#	Diue Fait #
1/4" x .160"	.045	148	100' roll	1094U56R00	1094U56R01	1094U56R04



Fluoropolymer FEP 140 Tubing

Applications: Fluoropolymer tubing is of food quality and provides excellent resistance to aggressive and corrosive agents as well as high temperatures.

Features:

- FDA compliant materials
- maximum working temperature: 300°F (working pressure given at 75°F)

Siz	ze	Wall Thickness	Working Pressure at 75°F	Length	Clear Part #
OD	ID	vvali i i ii cki i e s s	Working Flessure at 75 F	Lengui	Clear Fait #
1/4" x	.17"	.040	246	25' roll	1092T5600



Nylon Metric Tubing Rolls

Features:

- translucent color
- resistant to fungus, abrasion, moisture and UV radiation
- temperature range -60°F to 200°F (working pressure given at 75°F)

	Si D	ze ID	Wall Thickness	Working Pressure @ 75°F	Length	Part #
4 mm x 2.7 mm 6 mm x 4 mm			.65 mm 1 mm	275 280	25 m 25 m	1025P0400 1025P0600
0 11111 X 4 111111			4	240	25 111	10201 0000 400ED0000



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Jax Lubes

Food Grade Penetrating Oil

Features:

- · NSF H1 Registered for incidental food contact
- · Colorless, odorless & tasteless
- · Quickly frees corroded parts
- · Protects metal from corrosion
- · Lubricates moving parts

Part #	Description
LUPO-16	16 fl.oz. trigger spray bottle



PurGel Klear

Features:

- Meets FDA 21 CFR Part 172: Food Additive Permitted for direct addition to food for human consumption and Part 178: Indirect Food Additives
- Pure White, FDA approved kosher petrolatum for use as a release agent
- Use for any assembly, barrier or release applications holding O-rings or gaskets or coating cutting blades or augers

Part #	Description	
LUPG-08	8 oz. squeeze tube	



Food Grade Anti-Seize

Features:

- NSF H1 Registered for incidental food contact
- Non-toxic & Non-drying
- · Lubricates threads
- · Forms leak-proof seals
- · Prevents corrosion
- · Resists water and steam

Part #	Description	
LUAS-08	8 oz. bottle with brush-top cap	



Stainless Steel Cleaner & Polish

Features:

- A7 Registered for use in federally-inspected facilities
- Repels water beads up like wax
- · Provides high-gloss protective shield
- Dissolves tarnish
- · Rubs in completely, with no dust or residue

Part #	Description	
LUCP-14	14 oz. aerosol can	



U





Breather Vents

- Applications:
- · Breather vents have many applications, including vacuum relief or pressure equalization on gear boxes, oil tanks or reservoirs.
- Common uses can be found on single acting cylinders or valves to prevent dirt and foreign particles from entering ports open to the atmosphere.

Features:

- standard pipe thread fittings for quick assembly and removal for cleaning
- · nickel plated steel insert with a bronze filter

- The filter element is rated for 40 micron filtration.
- maximum operating pressure: 150 PSI
- operating temperatures: 35°F to 300°F



	NPT Thread Size	Overall Length	Nickel Plated Steel Part #
Ī	1/8" 7/16"		ASP-1BV
	1/4"	5/8"	ASP-2BV
	3/8"	3/4"	ASP-3BV
	1/2"	7/8"	ASP-4BV
	3/4"	1"	ASP-6BV
	1"	1-5/16"	ASP-8BV

Application:

Conical Mufflers

Conical mufflers are easy to install, threading the exhaust ports of air tool, valves, cylinders and other pneumatic equipment. They offer an economical method of reducing the noise levels below 90 dBA, conforming with OSHA standards.

Features:

- The bronze filter element is rated for 40 micron filtration.
- The element is bonded directly to the fitting. *These elements are not replaceable.*
- · maximum operating pressure: 300 PSI
- operating temperature: 35°F to 300°F



NPT Thread Size	Overall Length	Nickel Plated Steel Part #	
1/8"	1-1/8"	CMF18	
1/4"	1-3/8"	CMF28	
3/8"	1-1/2"	CMF38	
1/2"	1-7/8"	CMF48	
3/4"	2-1/8"	CMF68	
1"	2-7/8"	CMF88	

Application:

Speed Control Mufflers

Speed control mufflers provide an infinite variation of metering air flow at an acceptable sound level on exhaust ports of air valves with complete safety. The speed of an operating cylinder or air tool may be increased or decreased with the adjusting screw. The final position is then locked in place by the lock nut. Objectionable exhaust air noise is eliminated by the surrounding sleeve of sintered bronze.

aluminum



brass

maximum operating pressure: 300 PSI

• operating temperature: 35°F to 300°F

NPT	Approximate Maximum	2011T3 Aluminum	Brass	
Thread Size	Full Operating Height	Adjusted SCFM	Part #	Part #
1/8"	1-5/16"	20	ASCM18	SCM18
1/4"	1-9/16"	30	ASCM28	SCM28
3/8"	1-5/8"	40	ASCM38	SCM38
1/2"	2"	60	ASCM48	SCM48
3/4"	2-3/8"	70	ASCM68	SCM68
1"	2-1/2"	100	ASCM88	SCM88

Wilkerson Miniature Filters

Features:

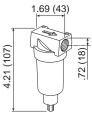
- · excellent water removal efficiency
- 5 micron element
- .5 oz. bowl
- · maximum operating conditions:

transparent bowl: 150 PSIG (10 bar) and 32°F to 125°F

(0°C to 52°C)

metal bowl: 250 PSIG (17 bar) and 32°F to 175°F

(0°C to 80°C)



1.60 (41) Bowl Removal Clearance



transparent bowl

		With Transp	parent Bowl	With Me	etal Bowl
Size	SCFM	Automatic Drain	Manual Drain	Automatic Drain	Manual Drain
		Part #	Part #	Part #	Part #
1/8"	22	F03-01A	F03-01M	F03-01AMB	F03-01MMB
1/4"	24	F03-02A	F03-02M	F03-02AMB	F03-02MMB

Features:

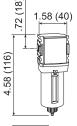
- 5 micron element
- .4 oz. bowl
- · maximum operating conditions:

transparent bowl: 150 PSIG (10 bar) and 32°F to 125°F

(0°C to 52°C)

metal bowl: 250 PSIG (17 bar) and 32°F to 150°F

(0°C to 65.5°C)



Bowl Removal Clearance



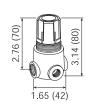
		With Transparent	Bowl and Guard	With Me	etal Bowl
Size	SCFM	Automatic Drain	Manual Drain	Automatic Drain	Manual Drain
		Part #	Part #	Part #	Part #
1/8"	25	F08-01A	F08-01M	F08-01AMB	F08-01MMB
1/4"	50	F08-02A	F08-02M	F08-02AMB	F08-02MMB

Wilkerson Miniature Regulators

Features:

- · 2-125 PSI adjusting range
- · balanced valve design
- · self-relieving standard
- non-rising push/pull locking adjustment knob
- two 1/8" NPT gauge ports standard on models without gauge, one 1/8" NPT gauge port standard on models with gauge can be used for additional outlet ports.
- · models supplied without gauge use a GC620 gauge.
- · panel mount nuts sold separately
- · maximum operating conditions:

300 PSIG (20.17 bar) and **32°F** to **125°F** (0°C to 52°C)





Size	SCFM	With Gauge Part #	Without Gauge Part #
1/8"	13	R03-01RG	R03-01R
1/4"	15	R03-02RG	R03-02R

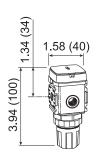


FRL's are designed for air service only, unless otherwise indicated.



Wilkerson Miniature Regulators





Features:

- 0-125 PSI adjusting range
- balanced valve design
- self-relieving standard
- non-rising push/pull locking adjustment knob
- two 1/8" NPT gauge ports standard on models without gauge, one 1/8" NPT gauge port standard on models with gauge can be used for additional outlet ports.
- models with gauge are supplied with a 0-160 flush mount style gauge
- models supplied without gauge use a GC620 gauge.
- · panel mount nuts sold separately
- · maximum operating conditions:

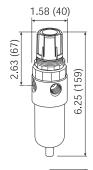
300 PSIG (20.7 bar) and **32°F** to **150°F** (0°C to 65.5°C)

Size SC	Ze SCFM With Gauge Part #		Without Gauge Part #
	9.2	R08-01RG	R08-01R
	44	R08-02RG	R08-02R

Wilkerson Miniature Filter / Regulators







1.58 (40) Bowl Removal

Features:

- · 2-125 PSI adjusting range
- 5 micron element
- .5 oz. bowl
- · self-relieving
- supplied with a GC620 gauge
- maximum operating conditions: transparent bowl: 125 PSIG (8.6 bar) and 40°F to 125°F (4.4°C to 52°C)

metal bowl: **300 PSIG** (20.7 bar) and **40°F** to **125°F**

(4.4°C to 52°C)

		With Transparent	Bowl and Guard	With Me	etal Bowl
Size	SCFM	Automatic Drain	Manual Drain	Automatic Drain	Manual Drain
		Part #	Part #	Part #	Part #
1/8"	13	BB3-01AG	BB3-01MG	BB3-01AGMB	BB3-01MGMB
1/4"	16	BB3-02AG	BB3-02MG	BB3-02AGMB	BB3-02MGMB



FRL's are designed for air service only, unless otherwise indicated.

SCFM ratings at 150 PSIG inlet pressure.

Wilkerson Miniature Filter / Regulators

Features:

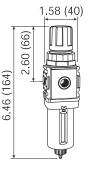
- · 0-125 PSI adjusting range
- 5 micron element
- .4 oz. bowl
- · self-relieving
- supplied with a 0-160 PSI flush mount style gauge
- · maximum operating conditions:

transparent bowl: 150 PSIG (10.3 bar) and 32°F to 125°F

(0°C to 52°C)

metal bowl: 250 PSIG (17.2 bar) and 32°F to 150°F

(0°C to 65.5°C)







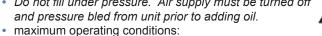
metal bowl

		With Transparent Bowl and Guard		With Metal Bowl	
Size	SCFM	Automatic Drain	Manual Drain	Automatic Drain	Manual Drain
		Part #	Part #	Part #	Part #
1/8"	28.6	B08-01AG	B08-01MG	B08-01AGMB	B08-01MGMB
1/4"	42.1	B08-02AG	B08-02MG	B08-02AGMB	B08-02MGMB

Wilkerson Miniature Lubricators

Features:

- 1 oz. bowl
- · adjustable oil feed
- · full view sight dome
- · Do not fill under pressure. Air supply must be turned off and pressure bled from unit prior to adding oil.



transparent bowl: 150 PSIG (10.3 bar) and 32°F to 125°F

(0°C to 52°C)

metal bowl: 250 PSIG (17.2 bar) and 32°F to 175°F (0°C to 80°C)



1.60 (41) Bowl Removal

5.80 (147)



transparent bowl

Size	SCFM	With Transparent Bowl Part #	With Metal Bowl Part #
1/8"	20	L03-01A	L03-01AMB
1/4"	20	L03-02A	L03-02AMB

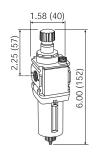
Features:

- .6 oz. bowl
- adjustable oil feed
- · full view sight dome
- · fill under pressure design

 maximum operating conditions: transparent bowl: 150 PSIG (10.3 bar) and 32°F to 125°F (0°C to 52°C)

metal bowl: 250 PSIG (17.2 bar) and 32°F to 150°F

(0°C to 65.5°C)





metal bowl

Size	00514	With Transparent Bowl	With Metal Bowl		
	Size	SCFM	Part #	Part #	
	1/8"	23.5	L08-01A	L08-01AMB	
	1/4"	57.5	L08-02A	L08-02AMB	



FRL's are designed for air service only, unless otherwise indicated.



Wilkerson Miniature Combination Units

(Filter, Regulator, Lubricator)







1.60 (41) Bowl Removal Clearance

Features:

 maximum operating conditions: transparent bowl: 150 PSIG (10.3 bar) and 32°F to 125°F (0°C to 52°C) metal bowl: 250 PSIG (17.2 bar) and 32°F to 175°F (0°C to 80°C)

Filter series F03:

- 5 micron element
- .5 oz. bowl

Regulator series R03:

- 2-125 PSI adjusting range
- balanced valve design
- self-relieving
- supplied with a GC620 gauge
- Regulator can be mounted with knob in up or down position.

Lubricator series L03:

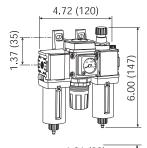
- 1 oz. bowl
- adjustable oil feed
- full view sight dome

Included components:

· (2) adapters

	SCFM	With Transparent Bowl and Guard		With Metal Bowl	
Size		Automatic Drain	Manual Drain	Automatic Drain	Manual Drain
		Part #	Part #	Part #	Part #
1/8"	20	C03-01A	C03-01M	C03-01AMB	C03-01MMB
1/4"	20	C03-02A	C03-02M	C03-02AMB	C03-02MMB

DIXON WARNED WAN



1.31 (33) Bowl Removal -Clearance

Features:

 maximum operating conditions: transparent bowl: 150 PSIG (10.3 bar) and 32°F to 125°F (0°C to 52°C) metal bowl: 250 PSIG (17.2 bar) and 32°F to 150°F (0°C to 65.5°C)

Filter series F08:

- 5 micron element
- .4 oz. bowl

Regulator series R08:

- 0-125 PSI adjusting range
- balanced valve design
- self-relieving
- supplied with a 0-160 PSI flush mount style gauge

Lubricator series L08:

- .6 oz. bowl
- adjustable oil feed
- full view sight dome Included components:
- (2) mounting brackets with joiner set

	SCFM	With Transparent Bowl and Guard		With Metal Bowl	
Size		Automatic Drain	Manual Drain	Automatic Drain	Manual Drain
		Part #	Part #	Part #	Part #
1/8"	29	C08-01A	C08-01M	C08-01AMB	C08-01MMB
1/4"	44	C08-02A	C08-02M	C08-02AMB	C08-02MMB



FRL's are designed for air service only, unless otherwise indicated.







Mechanical Specifications

Standard Construction

- · volute: 316L stainless steel
- · impeller: CF3M (316L) stainless steel
- · backplate: 316L stainless steel
- stub shaft: 316L stainless steel
- · adapter: 304 stainless steel
- · optional leg kit: 304 stainless steel
- seal types: externally balanced 'D' and 'DG' with clamped in seat, F flush seal
- · rotary seal material: carbon, silicon carbide rotating element available as option
- · 'DG' seal seat material: silicon carbide, ceramic and tungsten carbide
- · elastomers: Buna, EPDM, silicone and FKM
- finish: sanitary polish 32R_a

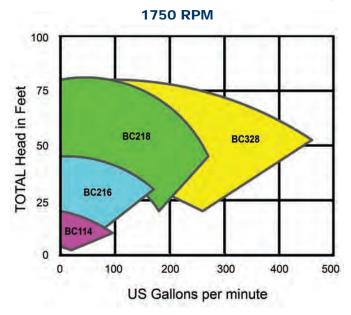
Performance Characteristics

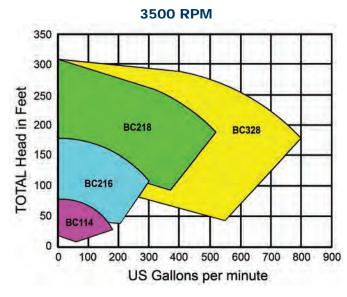
- nominal capacity: up to 780 GPM
- temperature: 32°F to 212°F, consult factory for other temperatures
- nominal speed: up to 3500 RPM 60 Hz

Motors and Mounting

- · motor: standard C-face, 1750 and 3450 RPM, TEFC and washdown, foot mounted
- additional motor types available upon request
- · mounting: pump head mounted to a C-Face motor

Family of Curves







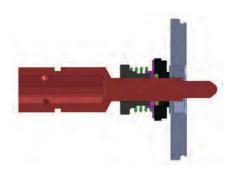




Seal Options

D Seal

External Balanced

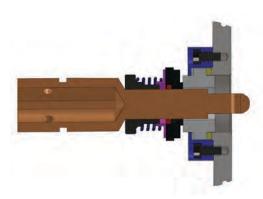


Features:

- optional silcon carbide
- carbon rotating element on stationary stainless steel
- suitable for sanitary and industrial applications where fluid is non-abrasive and lubricating

DG Seal

Clamped-In Seat

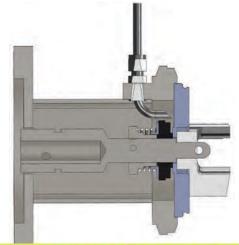


Features:

- · choose from ceramic, silicon carbide and tungsten carbide as the stationary seal
- suitable for the majority of sanitary applications, including those using non-lubricating and abrasive fluids
- carbon rotating element on encapsulated seat; optional silicon rotating element is available

F Seal

External Balanced



Feature:

· Externally balanced D or DG Seal with water cascade for use when normal D seal applications include product temperatures that reach 212°F or when the fluid is sticky or tacky.

Sanitary Pump Carts

Dixon now offers pump carts as an added option to all of our pumps. There are two standard model sizes and others available upon request. Carts can be ordered with countless options and customized to your specifications. Please contact Dixon Engineering with your request at (800)-789-1718.



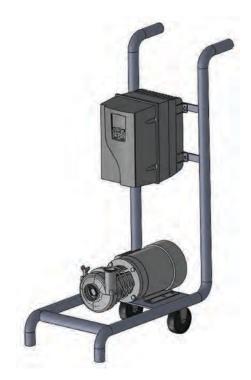


Big Cart without Pump

Big Cart with Pump



Small Cart without Pump



Small Cart with Pump

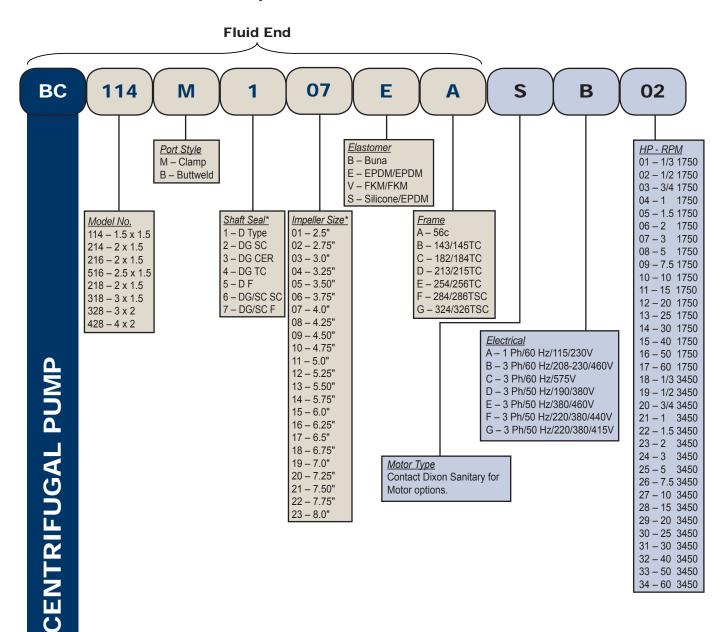




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Key Numbers Pump Model Number Breakdown



Fluid end includes all parts required to assemble to your motor.

Specify adjustable leg kits at time of order. Leg kits will be shipped to match the frame size of motor as specified by model number. Leg kits will not be assembled.

Please note, if there are options that are not listed above, please contact Dixon Sanitary (800.789.1718) for availability and pricing.

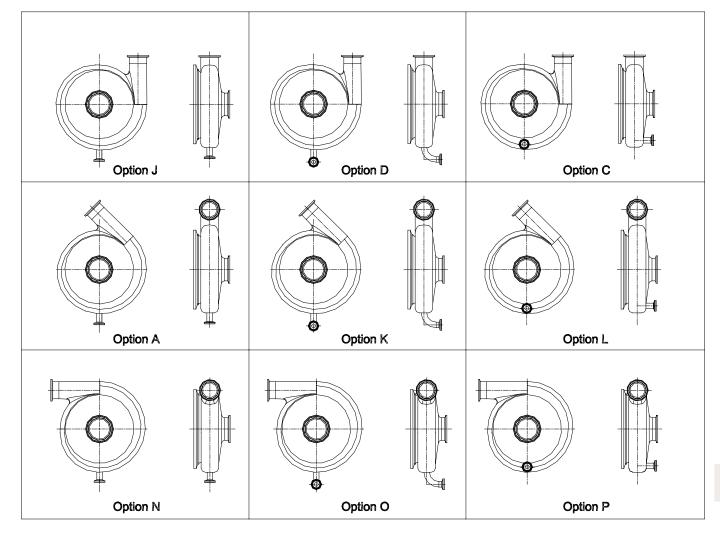
V



^{*} other options available

BC-Series Sanitary Centrifugal Pump Casing Drain Options





Contact Dixon Sanitary Engineering Department for other configurations.



How to Read a Curve

- A: This section references the size of the pump, speed, frequency and the model number.
- B: y axis, shows head in feet
- C: x axis, shows flow in GPM
- **D:** These solid line curves are for specific impeller diameters.
- **E:** The dotted line curves are for motor horsepower requirements.
- F: Duty point, where the flow and head requirements intersect.
- G: NPSH required for the duty point.

Example:

72 GPM @ 40' Head of water

Find 72 GPM on the curve and then go upwards until you hit the line that is 40' of head on the impeller trim curves. This determines what impeller diameter is needed for your application. This is your duty point as labeled F. To determine the horsepower required, from the duty point go towards the right to the closest dotted horsepower curve and that will be the size of motor you will need.

To determine the NPSH required, from the duty point, draw a line straight downward and where that intersects is the NPSH required in feet. That figure is on the y axis in feet.

In this example the pump you would select would be:

Model No. BC114, 3.5" impeller diameter, driven by a 11/2 HP, 3500 RPM motor, NPSHr would be 8'.

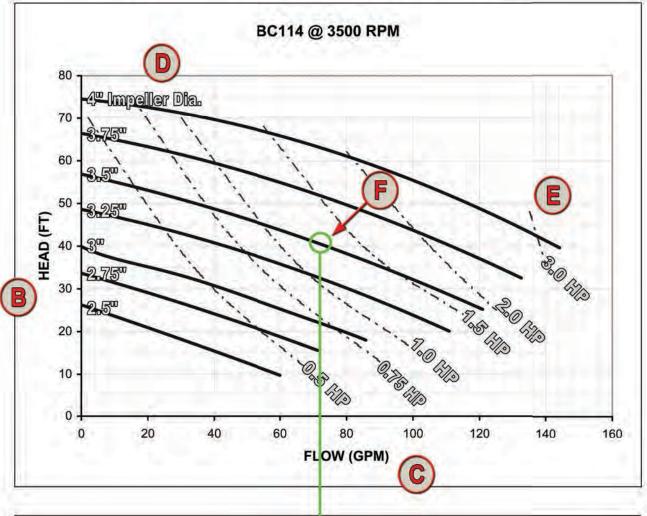


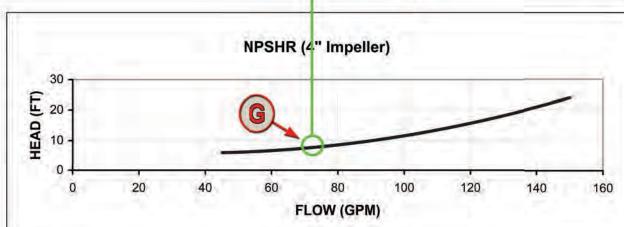
Size: 1.5 x 1.5 x 4 RPM: 3500 Frequency: 60 Hz Model #: BC114

BC Series Centrifugal Pump

PERFORMANCE CURVES

(Based on H₂0 @ 70° F)









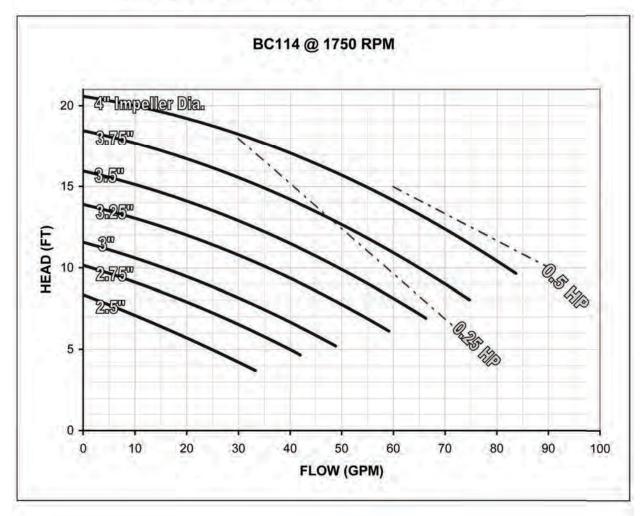


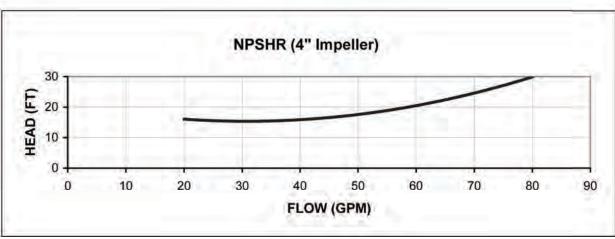
Size: 1.5 x 1.5 x 4 RPM: 1750 Frequency: 60 Hz Model #: BC114

BC Series Centrifugal Pump

PERFORMANCE CURVES

(Based on H₂0 @ 70° F)





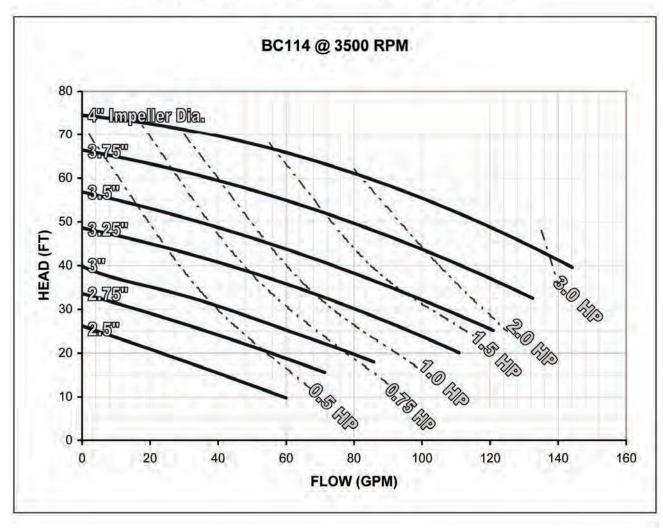


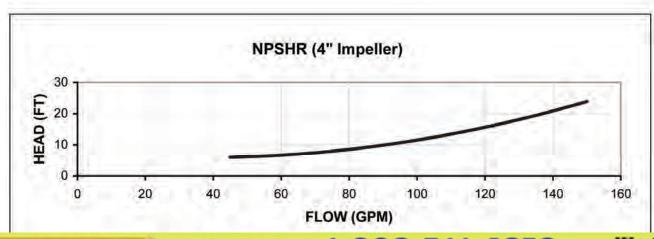


Size: 1.5 x 1.5 x 4 RPM: 3500 Frequency: 60 Hz Model #: BC114

BC Series Centrifugal Pump

PERFORMANCE CURVES









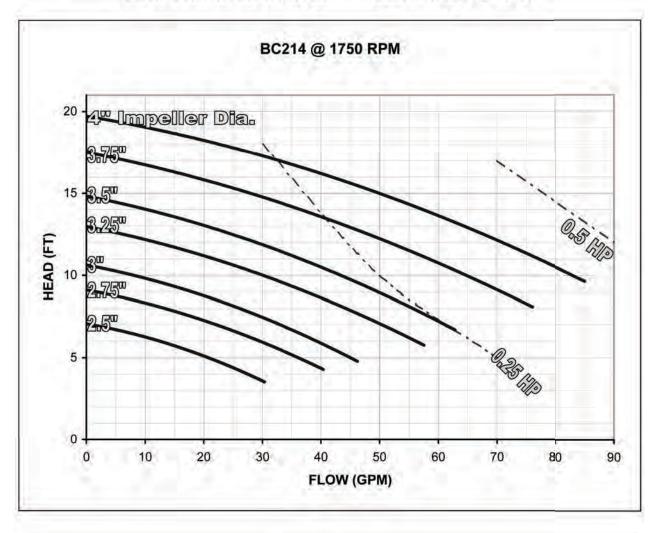


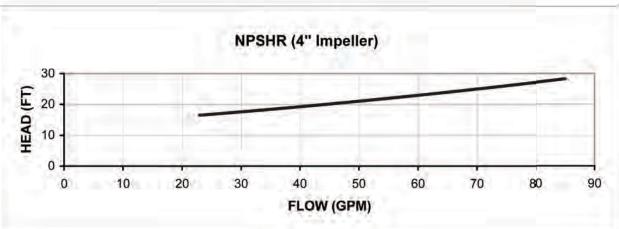
The Right Connection"

BC Series Centrifugal Pump

PERFORMANCE CURVES

Size: 2 x 1.5 x 4 RPM: 1750 Frequency: 60 Hz Model #: BC214





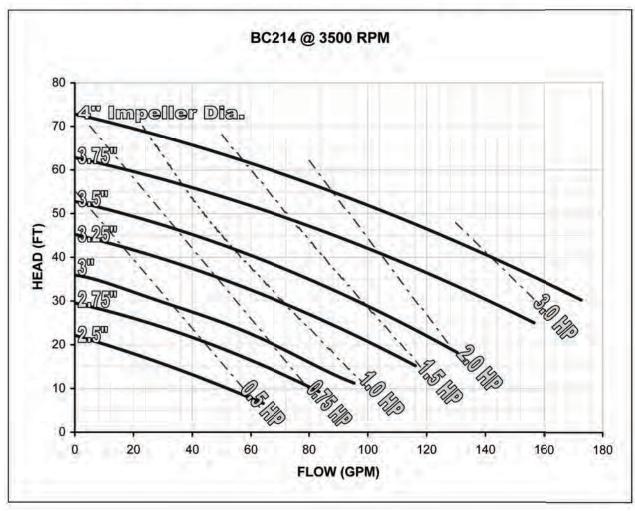


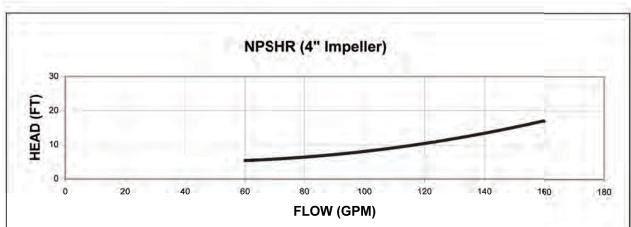


Size: 2 x 1.5 x 4 RPM: 3500 Frequency: 60 Hz Model #: BC214

BC Series Centrifugal Pump

PERFORMANCE CURVES











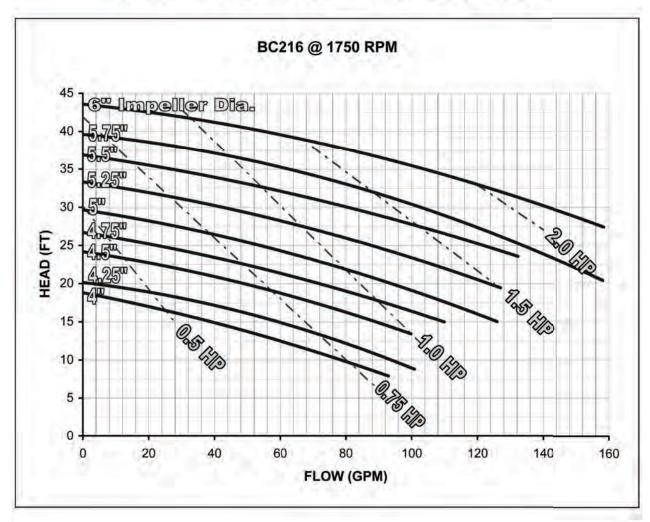


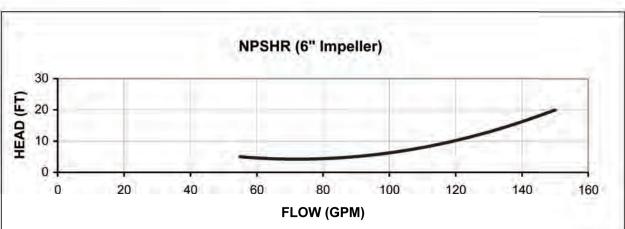
t Connection™

Size: 2 x 1.5 x 6 RPM: 1750 Frequency: 60 Hz Model #: BC216

BC Series Centrifugal Pump

PERFORMANCE CURVES





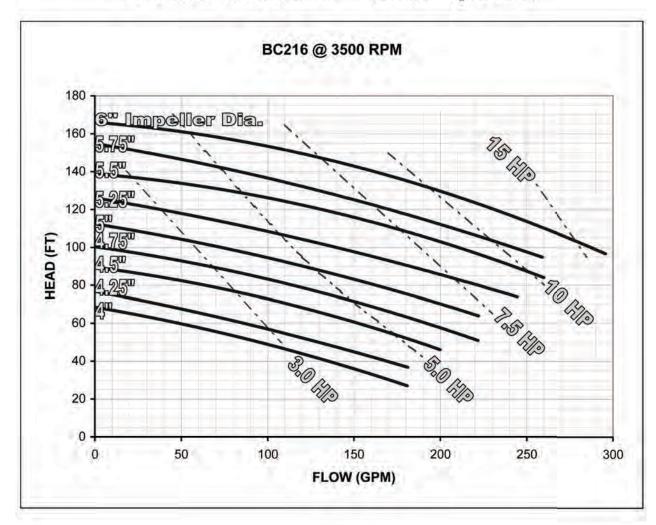


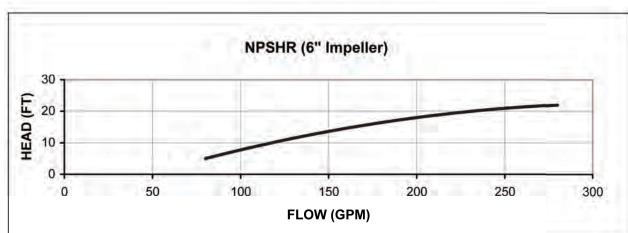


Size: 2 x 1.5 x 6 RPM: 3500 Frequency: 60 Hz Model #: BC216

BC Series Centrifugal Pump

PERFORMANCE CURVES









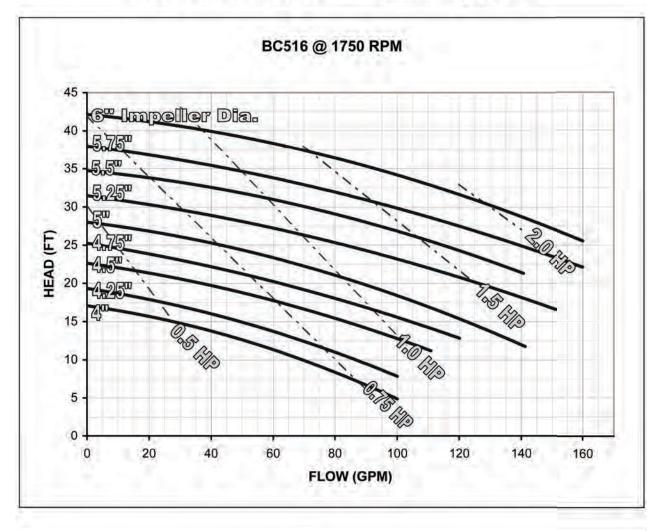


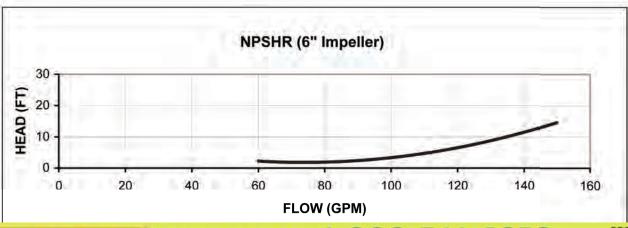
The Right Connection

BC Series Centrifugal Pump

PERFORMANCE CURVES

Size: 2.5 x 1.5 x 6 RPM: 1750 Frequency: 60 Hz Model #: BC516





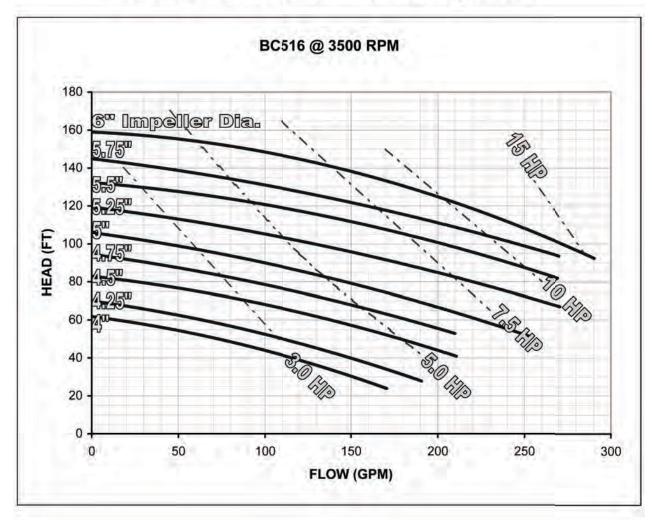


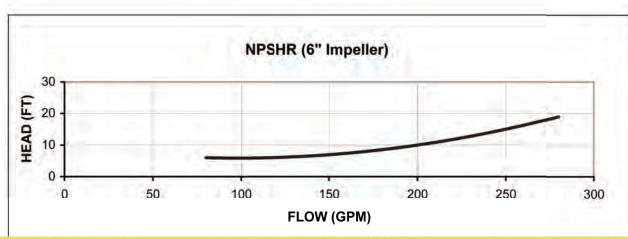


Size: 2.5 x 1.5 x 6 RPM: 3500 Frequency: 60 Hz Model #: BC516

BC Series Centrifugal Pump

PERFORMANCE CURVES





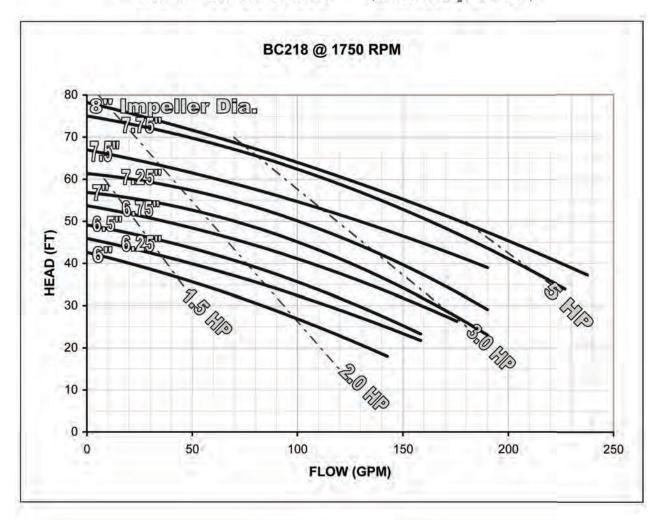


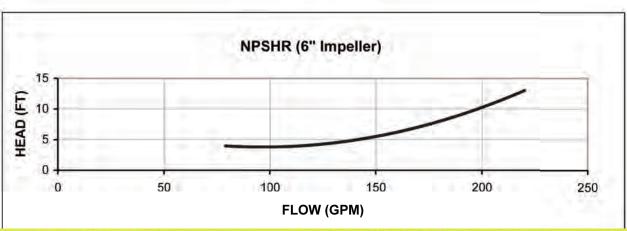




Size: 2 x 1.5 x 8 RPM: 1750 Frequency: 60 Hz Model #: BC218

PERFORMANCE CURVES









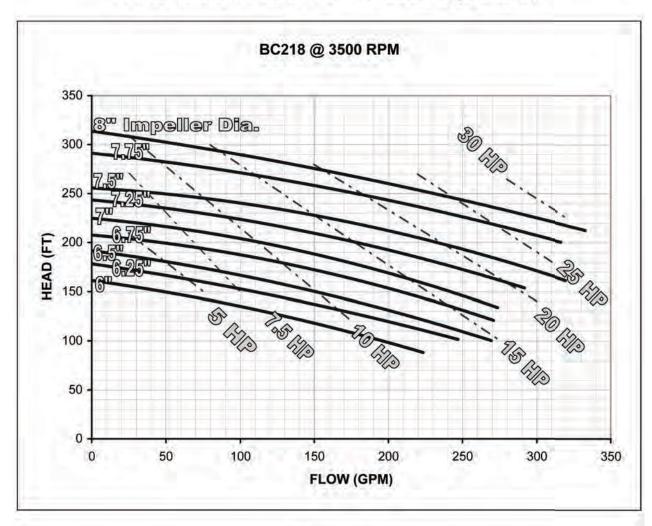
The Right Connection™

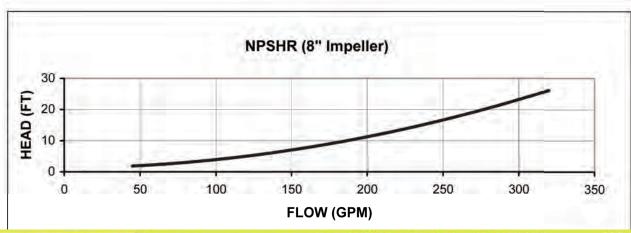
Size: 2 x 1.5 x 8 RPM: 3500 Frequency: 60 Hz Model #: BC218

BC Series Centrifugal Pump

PERFORMANCE CURVES

(Based on H₂0 @ 70° F)









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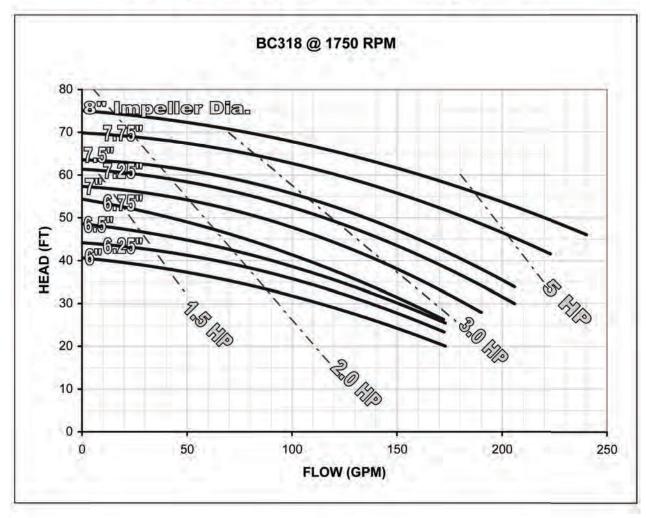
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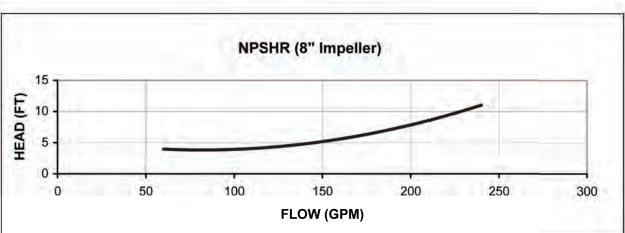


Size: 3 x 1.5 x 8 RPM: 1750 Frequency: 60 Hz Model #: BC318

BC Series Centrifugal Pump

PERFORMANCE CURVES







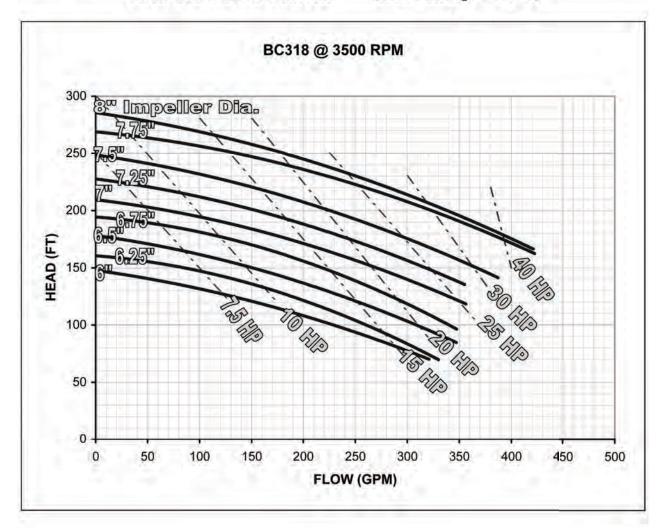


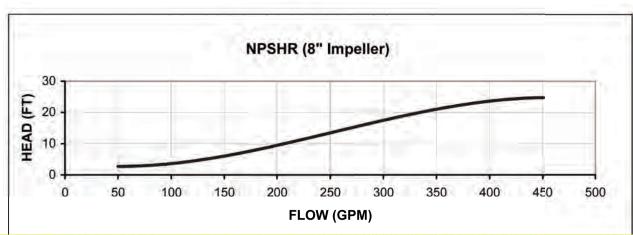


Size: 3 x 1.5 x 8 RPM: 3500 Frequency: 60 Hz Model #: BC318

BC Series Centrifugal Pump

PERFORMANCE CURVES







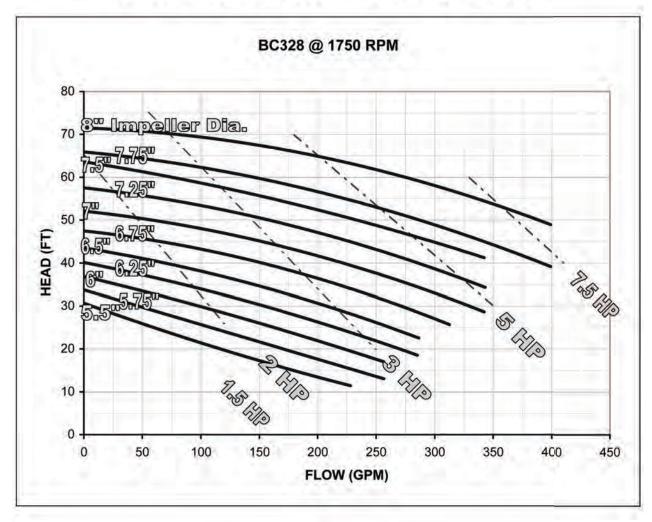


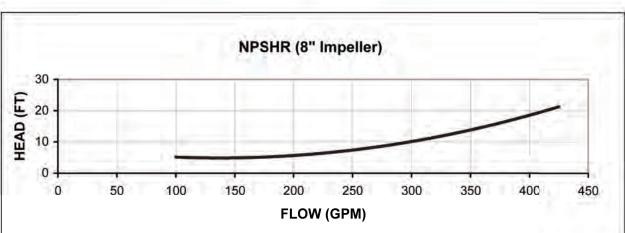


Size: 3 x 2 x 8 RPM: 1750 Frequency: 60 Hz Model #: BC328

BC Series Centrifugal Pump

PERFORMANCE CURVES







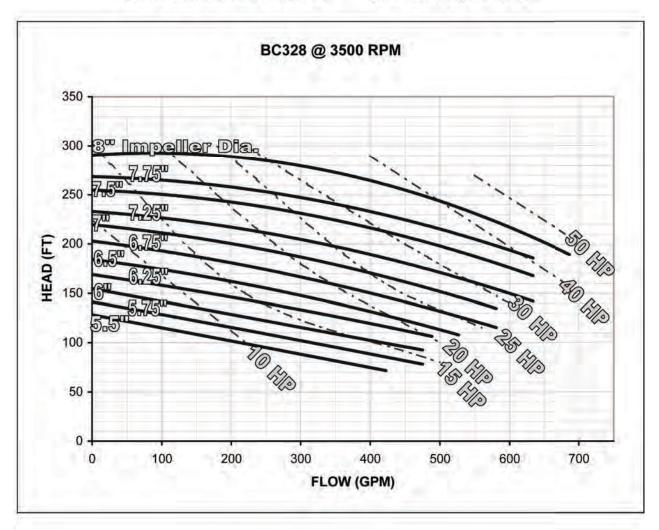


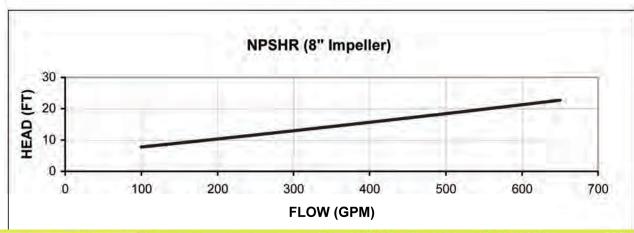


Size: 3 x 2 x 8 RPM: 3500 Frequency: 60 Hz Model #: BC328

PERFORMANCE CURVES

(Based on H₂0 @ 70° F)









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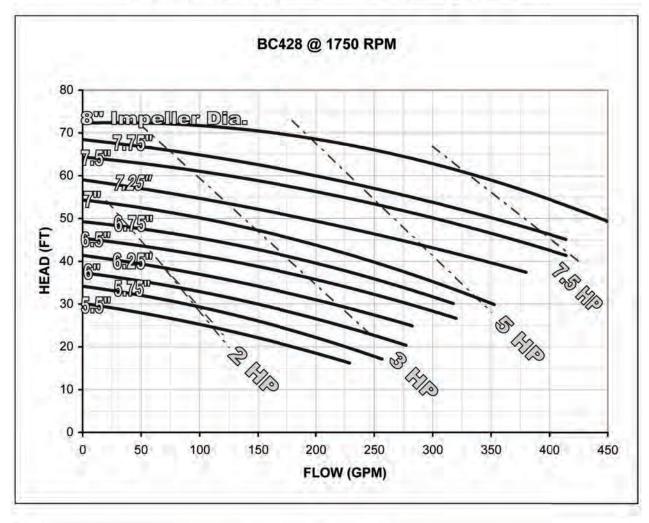


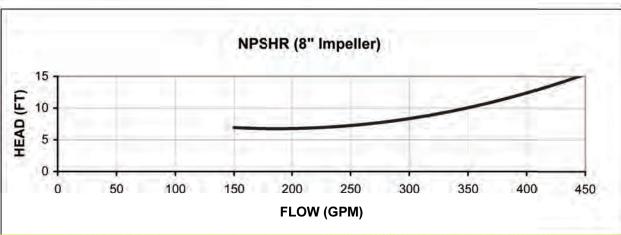
Size: 4 x 2 x 8 RPM: 1750 Frequency: 60 H

Frequency: 60 Hz Model #: BC428

BC Series Centrifugal Pump

PERFORMANCE CURVES





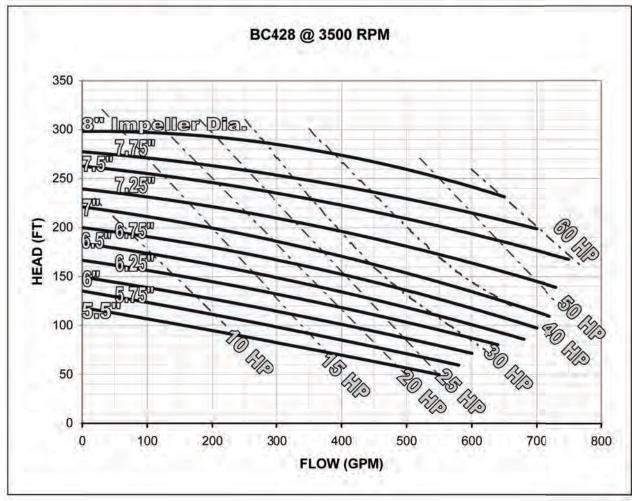


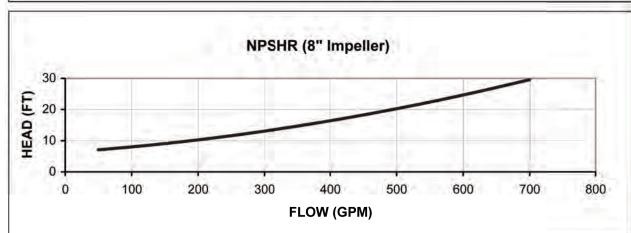




Size: 4 x 2 x 8 RPM: 3500 Frequency: 60 Hz Model #: BC428

PERFORMANCE CURVES











Size: 1.5 x 1.5 x 4 2 x 1.5 x 4

RPM: 1450

Frequency: 50 Hz

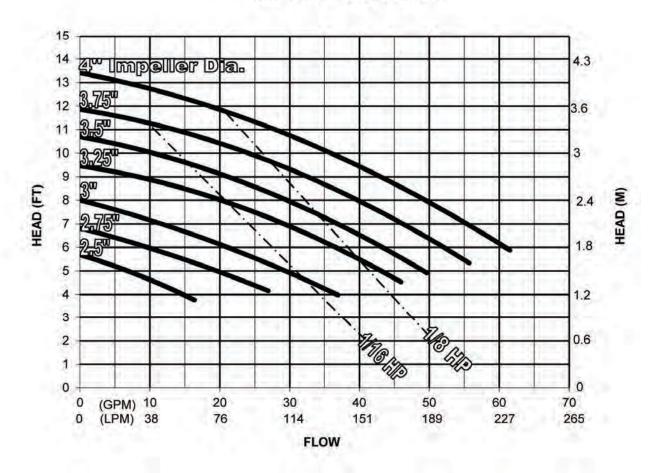
Model #: BC114 & BC 214

BC Series Centrifugal Pump

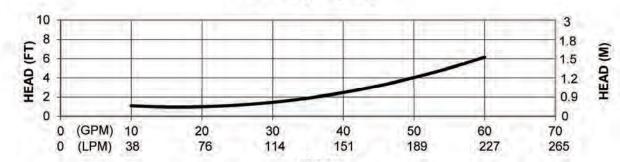
PERFORMANCE CURVES

(Based on H₂0 @ 70° F)

BC114 & BC214 @ 1450 RPM



NPSHR (4" Impeller)









The Right Connection™

Size: 1.5 x 1.5 x 4 2 x 1.5 x 4

RPM: 2900

Frequency: 50 Hz

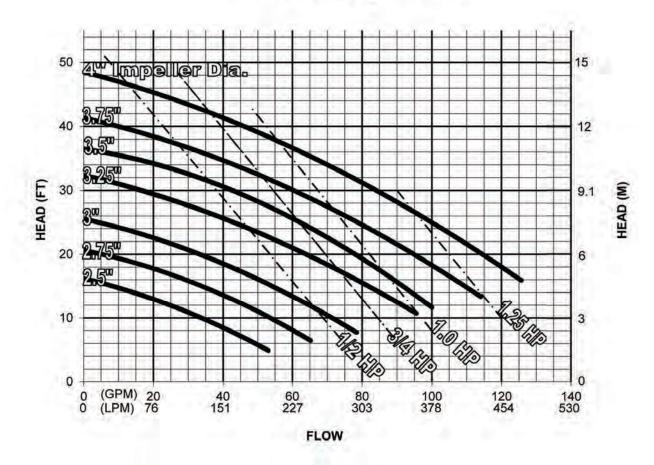
Model #: BC114 & BC 214

BC Series Centrifugal Pump

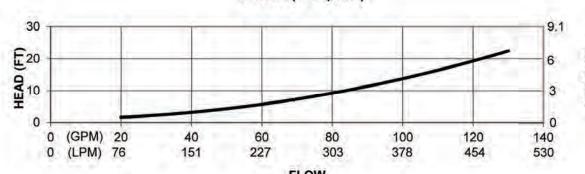
PERFORMANCE CURVES

(Based on H₂0 @ 70° F)

BC114 & BC214 @ 2900 RPM



NPSHR (4" Impeller)









The Right Connection™

BC Series Centrifugal Pump PERFORMANCE CURVES

Size: 2 x 1.5 x 6

2.5 x 1.5 x 6

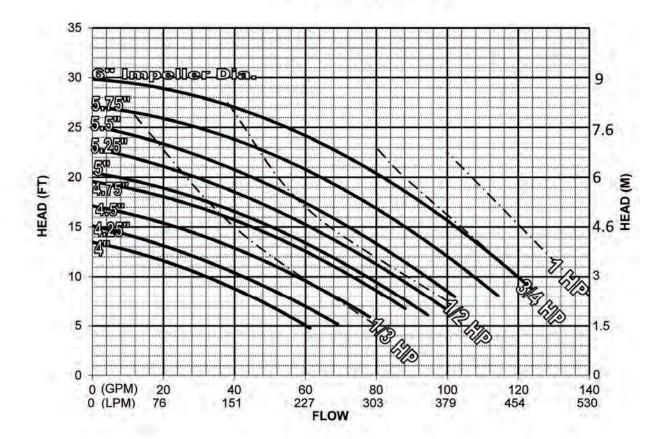
RPM: 1450

Frequency: 50 Hz

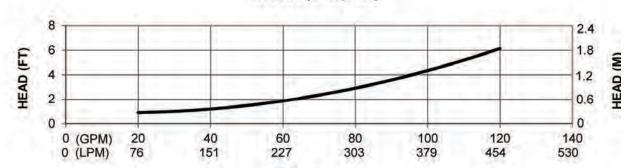
Model #: BC216 & BC516

(Based on H₂0 @ 70° F)

BC216 & BC516 @ 1450 RPM



NPSHR (6" Impeller)





BC Series Centrifugal Pump PERFORMANCE CURVES

Size: 2 x 1.5 x 6

2.5 x 1.5 x 6

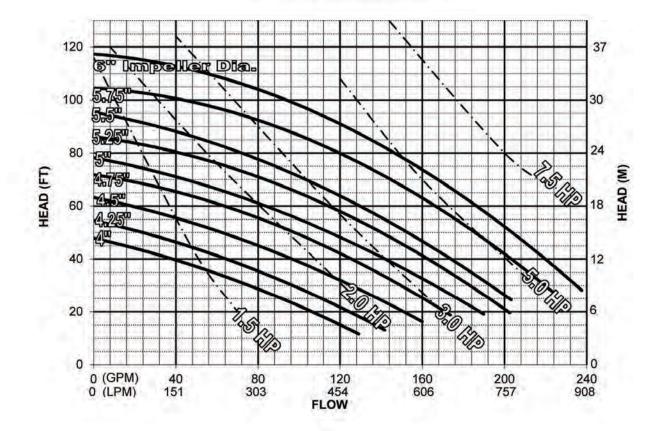
RPM: 2900

Frequency: 50 Hz

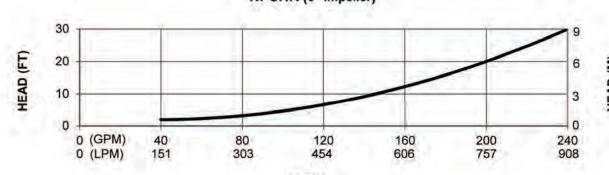
Model #: BC216 & BC516

(Based on H₂0 @ 70° F)

BC216 & BC516 @ 2900 RPM



NPSHR (6" Impeller)











Size: 2 x 1.5 x 8

3 x 1.5 x 8

Frequency: 50 Hz

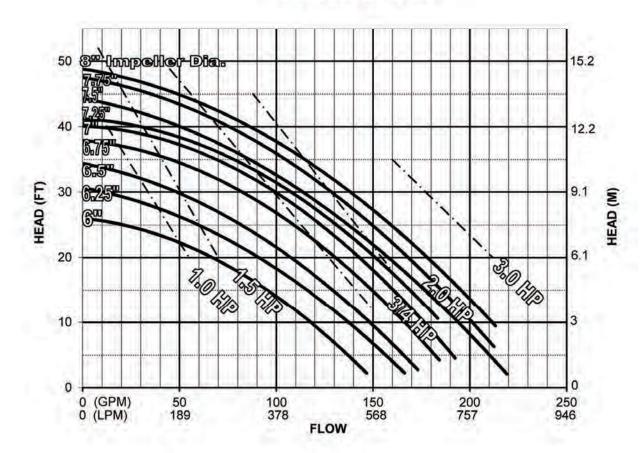
RPM: 1450

Model #: BC218 & BC318

BC Series Centrifugal Pump PERFORMANCE CURVES

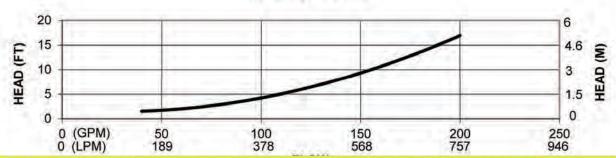
(Based on H₂0 @ 70° F)

BC218 & BC 318 @ 1450 RPM



NPSHR (8" Impeller)











The Right Connection™

Size: 2 x 1.5 x 8 3 x 1.5 x 8 RPM: 2900

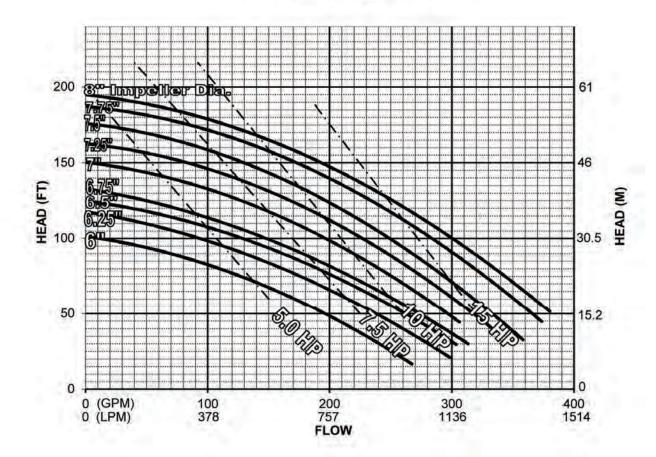
Frequency: 50 Hz

Model #: BC218 & BC318

BC Series Centrifugal Pump PERFORMANCE CURVES

(Based on H₂0 @ 70° F)

BC218 & BC318 @ 2900 RPM



NPSHR (8" Impeller)







We Ship **World Wide**



Size: 4 x 2 x 8 3 x 2 x 8

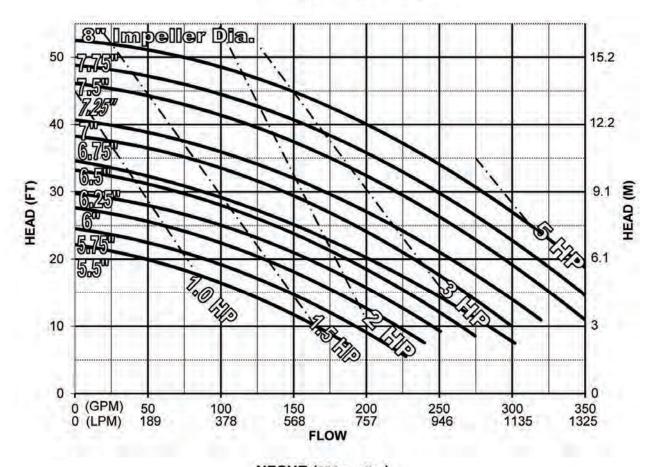
RPM: 1450

Frequency: 50 Hz

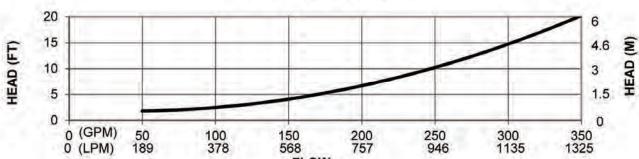
BC Series Centrifugal Pump PERFORMANCE CURVES

(Based on H₂0 @ 70° F)

BC428 & BC328 @ 1450 RPM



NPSHR (8" Impeller)





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Size: 4 x 2 x 8 3 x 2 x 8

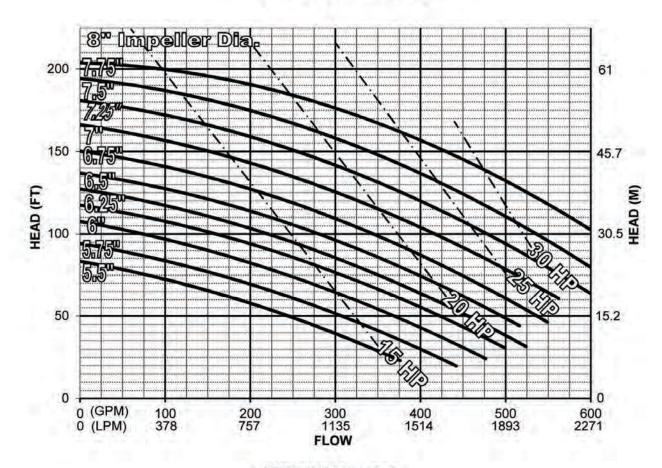
RPM: 2900

Frequency: 50 Hz

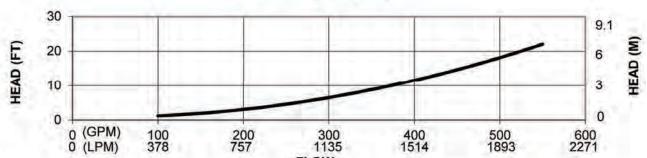
BC Series Centrifugal Pump PERFORMANCE CURVES

(Based on H₂0 @ 70° F)

BC428 & BC328 @ 2900 RPM



NPSHR (8" Impeller)



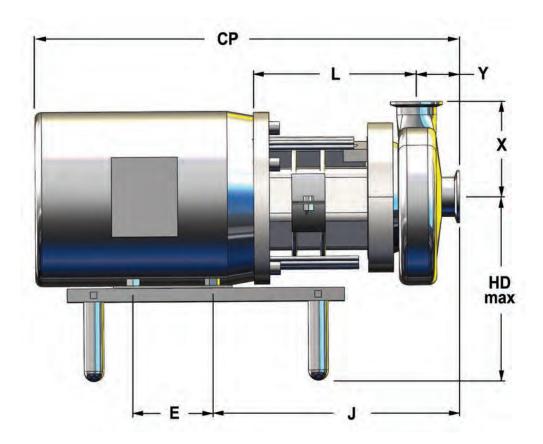


World Wide

We Ship

Dimensions

All dimensions are given in inches



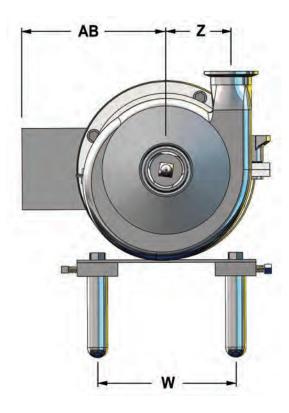
Pump Model	Frame Size	Х	Y	СР	Е	HDmax	J	L
	56C	3.63	1.63	18.00	3.00	7.00	10.60	6.22
BC114	140TC	3.63	1.63	18.20	4.00	7.00	10.80	6.22
	180TC	3.63	1.63	18.80	4.50	8.00	11.00	6.78
	56C	4.50	1.94	16.26	3.00	7.00	8.81	6.06
	140TC	4.50	1.94	18.70	4.00	7.00	11.25	6.06
BC216	180TC	4.50	1.94	22.00	4.50	8.00	12.00	6.69
	210TC	4.50	1.94	25.70	5.50	8.75	13.90	7.81
	250TC	4.50	1.94	31.40	10.00	9.75	15.70	8.50
	140TC	5.50	1.94 2.25 *	18.50	4.00	7.00	11.10	6.31
	180TC	5.50	1.94 2.25 *	22.50	4.50	8.00	12.00	6.94
BC218 &	210TC	5.50	1.94 2.25 *	26.30	5.50	8.75	14.50	7.31
о ВС328	250TC	5.50	1.94 2.25 *	31.20	10.00	9.75	15.50	8.19
	280TC	5.50	1.94 2.25 *	33.80	11.00	10.50	15.60	8.81
	320TC	5.50	1.94 2.25 *	36.70	12.00	11.50	17.90	9.69

^{*} only applies to the BC328



BC-Series Sanitary Centrifugal Pump Dimensions

All dimensions are given in inches



Pump Model	Inlet	Outlet	Z	
BC114	1.5	1.5	2.63	
BC214	2	1.5	2.03	
BC216	2	1.5	3.69	
BC516	2.5	1.5		
BC218	2	1.5	4.75	
BC318	3	1.5	4.75	
BC328	3	2	4.75	
BC428	4	2	4.75	

Frame Size	AB	Conduit Entry diameter	W
56C	5.53	0.87	4.85
140TC	5.53	0.87	5.50
180TC	7.00	0.87	7.50
210TC	7.62	0.87	8.50
250TC	10.80	2.05	10.00
280TSC	13.40	2.36	11.00
320TSC	14.37	2.36	12.50

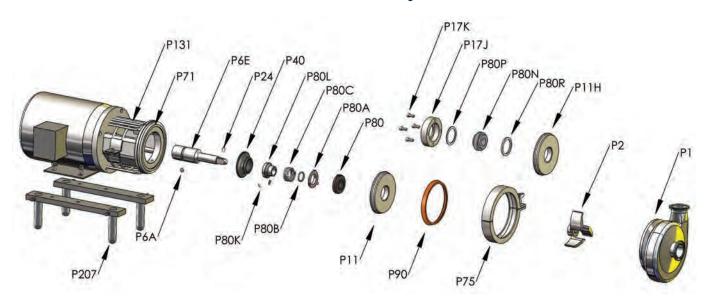






Model Numbers and Part Numbers

Part Number Key



Common Parts

I/av		BC114	BC216	BC218	BC328
Key	Description				
No.	·	Part Number	Part Number	Part Number	Part Number
21	casing	P1-114M	P1-216M	P1-218M	P1-328M
P1	casing enlarged	P1-214M	P1-516M	P1-318M	P1-428M
P2	impeller	P2-114-400	P2-216-600	P2-218-800	P2-328-800
P6A	stub shaft set screw	P6A-114SS	P6A-216BSS	P6A-216BSS	P6A-216BSS
≥11	back plate (D seal)	P11-114DP	P11-216DP	P11-218BDP	P11-218BDP
P11F	back plate pin	P11F-114BPP	P11F-114BPP	P11F-114BPP	P11F-114BPP
P11H	back plate (DG seal)	P11H-114DGP	P11H-216DGP	P11H-218BDGP	P11H-218BDG
P17J	gland ring (DG seal)	P17J-114GR	P17J-216GR	P17J-218BGR	P17J-218BGR
P17K	gland bolt (DG seal)	P17K-114BG	P17K-216BGB	P17K-216BGB	P17K-216BGB
P17M	washers (DG seal)	P17M-114GW	P17M-216BGW	P17M-216BGW	P17M-216BGW
24	impeller retainer	P24-114R	P24-216R	P24-218BR	P24-218BR
P71A	adapter pins	P71A-114BAP	P71A-114BAP	P71A-114BAP	P71A-114BAP
P75	clamp	P75-114CA	P75-216CA	P75-218BCA	P75-218BCA
P80	carbon seal	P80-114CS	P80-216CS	P80-218BCS	P80-218BCS
P80	silicone carbide seal	P80-114-SC	P80-216-SC	P80-218B-SC	P80-218B-SC
P80A	seal cup	P80A-114CP	P80A-216CP	P80A-218BCP	P80A-218BCP
P80B	EPDM seal O-ring	P80B-114SOE	P80B-216SOE	P80B-218BSOE	P80B-218BSO
P80B	FKM seal O-ring	P80B-114SOV	P80B-216SOV	P80B-218BSOV	P80B-218BSO
P80B	Buna seal O-ring	P80B-114SOB	P80B-216SOB	P80B-218BSOB	P80B-218BSO
≥80B	silicone seal O-ring	P80B-114SOS	P80B-216SOS	P80B-218BSOS	P80B-218BSO
P80C	spring	P80C-114SG	P80C-216SG	P80C-218BSG	P80C-218BSG
P80K	seat screw	P80K-114DCS	P80K-216BDCS	P80K-216BDCS	P80K-216BDC
P80L	drive collar	P80L-114DC	P80L-216DC	P80L-218BDC	P80L-218BDC
P80N	silicon carbide seat (DG seal)	P80N-114SC	P80N-216SC	P80N-218BSC	P80N-218BSC
P80N	ceramic seat (DG seal)	P80N-114CER	P80N-216CER	P80N-218BCER	P80N-218BCE
P80N	Tungsten carbide seat (DG seal)	P80N-114TC	P80N-216TC	P80N-218BTC	P80N-218BTC
P80P	outboard gasket (DG seal)	P80P-114OG	P80P-216OG	P80P-218BOG	P80P-218BOG
280R	inboard gasket (DG seal)	P80R-114IG	P80R-216IG	P80R-218BIG	P80R-218BIG
90	BUNA casing gasket	P90-114CGB	P90-216CGB	P90-218BCGB	P90-218BCGB
90	EPDM casing gasket	P90-114CGE	P90-216CGE	P90-218BCGE	P90-218BCGE
90	Silicone casing gasket	P90-114CGS	P90-216CGS	P90-218BCGS	P90-218BCGS
90	FKM casing gasket	P90-114CGV	P90-216CGV	P90-218BCGV	P90-218BCGV



Model Numbers and Part Numbers

Variable Parts

	BC114	56C	140TC	180TC
Item No.	Description	Part Number	Part Number	Part Number
P6E	stub shaft	P6E-114-56SH	P6E-114-14SH	P6E-114-18SH
P40	deflector	P40-114-56D	P40-114-56D	P40-114-18D
P71	adapter	P71-114-56A	P71-114-56A	P71-114-18A
P71B	adapter bolts	P71B-114B-56AB	P71B-114B-56AB	P71B-114B-18AB
P131	guard assembly	P131-114-56GA	P131-114-56GA	P131-114-18GA
P207	adjustable leg kit	P207-56LK	P207-14LK	P207-18LK

	BC216	56C	140TC	180TC	210TC	250TC
Item No.	Description	Part Number				
P6E	stub shaft	P6E-216-56SH	P6E-216-14SH	P6E-216-18SH	P6E-216-21SH	P6E-216-25SH
P40	deflector	P40-216-56D	P40-216-56D	P40-216-56D	P40-216-21D	P40-216B-25D
P71	adapter	P71-216-56GA	P71-216-56GA	P71-216-18GA	P71-216-21GA	P71-216-25GA
P71B	adapter bolts	P71B-114B-56AB	P71B-114B-56AB	P71B-114B-18AB	P71B-114B-18AB	P71B-114B-18AB
P131	guard assembly	P131-216-56A	P131-216-56A	P131-216-18A	P131-216-21A	P131-216-25A
P207	adjustable leg kit	P207-56LK	P207-14LK	P207-18LK	P207-21LK	P207-25LK

В	C218/328	140TC	180TC	210TC	250TC	280TSC	320TSC
Item No.	Description	Part Number	Part Number				
P6E	stub shaft	P6E-218-14SH	P6E-218B-18SH	P6E-218B-21SH	P6E-218B-25SH	P6E-218B-28SH	P6E-328-32SH
P40	deflector	P40-218B-14D	P40-218B-14D	P40-218B-14D	P40-218B-14D	P40-218B-28D	P40-328-32D
P71	adapter	P71-218-14A	P71-218B-18A	P71-218B-21A	P71-218B-25A	P71-218B-28A	P71-328-32A
P71B	adapter bolts	P71B-114B-56AB	P71B-114B-18AB	P71B-114B-18AB	P71B-114-18AB	P71B-114B-18AB	P71B-328-32AB
P131	guard assbly.	P131-218-14GA	P131-218B-18GA	P131-218B-21GA	P131-218B-25GA	P131-218B-28GA	P131-328-32GA
P207	adj. leg kit	P207-14LK	P207-18LK	P207-21LK	P207-25LK	P207-28LK	P207-32LK







BC-Series Sanitary Centrifugal Pump Repair Kits

Repair Kit # 1



- 1 casing gasket (P90)
- 1 seal O-ring (P80B)
- 1 carbon seal (P80)
- 1 impeller retainer (P24)

Model Number	Buna	EPDM	Silicone	FKM
BC114	PRK1-114B	PRK1-114E	PRK1-114S	PRK1-114V
BC216	PRK1-216B	PRK1-216E	PRK1-216S	PRK1-216V
BC218/BC328	PRK1-218BB	PRK1-218BE	PRK1-218BS	PRK1-218BV

Repair Kit # 3

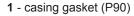


- 1 carbon seal (P80)
- 1 seal O-ring (P80B)
- 1 spring (P80C)
- 1 cup (P80A)

Model Number	Buna	EPDM	Silicone	FKM
BC114	PRK3-114B	PRK3-114E	PRK3-114S	PRK3-114V
BC216	PRK3-216B	PRK3-216E	PRK3-216S	PRK3-216V
BC218/BC328	PRK3-218BB	PRK3-218BE	PRK3-218BS	PRK3-218BV

Repair Kit # 4

recommended spare parts



- 1 seal O-ring (P80B)
- 1 carbon seal (P80)
- 1 impeller retainer (P24)
- 1 seal cup (P80A)
- 1 spring (P80C)

Model Number	Buna	EPDM	Silicone	FKM
BC114	PRK4-114B	PRK4-114E	PRK4-114S	PRK4-114V
BC216	PRK4-216B	PRK4-216E	PRK4-216S	PRK4-216V
BC218/BC328	PRK4-218BB	PRK4-218BE	PRK4-218BS	PRK4-218BV



Repair Kits

DG Repair Kit

recommended spare parts

- 1 seal seat (P80N)
- 1 carbon seal (P80)
- 1 seal cup (P80A)
- 1 seal O-ring (P80B)
- 1 spring (P80C)
- 1 casing gasket (P90)
- 1 impeller pin (P24)
- 1 inboard gasket (P80R)
- 1 outboard gasket (P80P)

Model Number	Elastomer	Ceramic	SC	TC
	Buna	PRKDG-114BCER	PRKDG-114BSC	PRKDG-114BTC
BC114	EPDM	PRKDG-114ECER	PRKDG-114ESC	PRKDG-114ETC
BC114	Silicone	PRKDG-114SCER	PRKDG-114SSC	PRKDG-114STC
	FKM	PRKDG-114VCER	PRKDG-114VSC	PRKDG-114VTC
	Buna	PRKDG-216BCER	PRKDG-216BSC	PRKDG-216BTC
BC216	EPDM	PRKDG-216ECER	PRKDG-216ESC	PRKDG-216ETC
BC210	Silicone	PRKDG-216SCER	PRKDG-216SSC	PRKDG-216STC
	FKM	PRKDG-216VCER	PRKDG-216VSC	PRKDG-216VTC
	Buna	PRKDG-218BBCER	PRKDG-218BBSC	PRKDG-218BBTC
BC218/BC328	EPDM	PRKDG-218BECER	PRKDG-218BESC	PRKDG-218BETC
BC210/BC320	Silicone	PRKDG-218BSCER	PRKDG-218BSSC	PRKDG-218BSTC
	FKM	PRKDG-218BVCER	PRKDG-218BVSC	PRKDG-218BVTC



DG Conversion

- 1 DG backplate (P11H)
- 1 gland ring (P17J)
- 4 gland bolts (P17K)
- 4 lock washers (P17M)
- 1 seal seat (P80N)
- 1 outboard gasket (P80P)
- 1 inboard gasket (P80R)

Model Number	Ceramic	SC	TC
BC114	PCK-114DGCER	PCK-114DGSC	PCK-114DGTC
BC216	PCK-216DGCER	PCK-216DGSC	PCK-216DGTC
BC218/BC328	PCK-218BDGCER	PCK-218BDGSC	PCK-218BDGTC









Troubleshooting

Dixon Sanitary BC-Series pumps are manufactured and inspected to meet sanitary standards. Occasional problems may arise. The following guide will help determine the possible cause and offer suggestions on corrections to maximize the performance of your pump. In case of any electric motors issues, contact the motor manufacturer directly. If you have any questions or concerns in regards to your BC-Series pump, we encourage you to contact Dixon Sanitary.

Problem	Possible Cause	Suggested Action			
Not enough or no discharge	No fluid reaching pump.	Need to prime pump. Installation of a priming system is recommended.			
	Suction or discharge closed or blocked.	Open suction. If plugged, shutdown pump and remove blockage. If closed, check all valves for proper positions.			
	Motor rotation incorrect.	Adjust motor electrical wiring to correct rotation.			
	Speed too slow (low voltage, wrong frequency, wrong motor).	Adjust voltage and frequency. Change motor if necessary.			
	Impeller damaged.	Replace impeller.			
	Seal area or supply area has an air leak.	Replace seal if needed. Check all other areas for air leaks and repair.			
	Excessive air in material.	Make any adjustments in system to insure excess air is removed before material reaches the pump.			
	Discharge head too high.	Adjust system to lower discharge head.			
	Suction lift too high.	Adjust system to lower suction lift.			
	Insufficient NPSH (Net Positive Suction Head) available.	Adjust system to provide correct NPSHa.			
	Impeller diameter not correct for application.	Contact: Dixon Sanitary 800-789-1718			
Not Enough Pressure	Seal area or supply area has an air leak.	Replace seal if needed. Check all other areas for air leaks and repair.			
	Motor rotation incorrect.	Adjust motor electrical wiring to correct rotation.			
	Speed too slow (low voltage, wrong frequency, wrong motor).	Adjust voltage and frequency. Change motor if necessary.			
	Excessive air in material.	Make any adjustments in system to insure excess air is removed before material reaches the pump.			
	Impeller diameter not correct for application.	Contact: Dixon Sanitary 800-789-1718			
Motor Overload/Excessive Power	Discharge is too high.	Restrict discharge to lower flow rate.			
Consumption	Impeller is binding.	Inspect pump and check for any damage, misalignment or interference. Replace any damaged or worn parts.			
	Seal binding.	Inspect pump and replace any damaged or worn parts.			
	Discharge is too low.	Increase discharge head.			
	Liquid is heavier or more viscous than rating.	Contact: Dixon Sanitary 800-789-1718			
	Electrical supply, voltage or frequency incorrect.	Make any adjustments needed up to replacing the motor.			
	Faulty electrical connections.	Check wiring and repair/replace as necessary.			
	Overload heaters too small.	Inspect and replace as necessary.			
	Defective motor.	Contact motor manufacturer for possible warranty or repair. Replace if needed.			

Troubleshooting

Problem	Possible Cause	Suggested Action				
Excessive Vibration/Pump is Noisy	Pump not level.	Inspect installation of pump and correct level.				
	Non-supported piping.	Verify piping support follows recommendations in installation portion of this manual.				
	Not enough or no material reaching pump.	Inspect pump to verify there is no blockage. Inspect suction line and shorten or enlarge.				
	Insufficient NPSH (Net Positive Suction Head) available.	Adjust system to provide correct NPSHa.				
	Impeller and/or shaft worn.	Replace worn parts.				
	Shaft loose or bent.	Readjust shaft settings, tighten shaft screws if loose. If bent, replace shaft and inspect impeller hub for uneven wear, replace impeller if worn.				
	Impeller out of balance.	Inspect shaft if loose or bent. If impeller damaged, replace.				
	Foreign material in pump.	Remove any foreign material and replace any worn or damaged parts.				
	Excessive air in material.	Make any adjustments in system to insure excess air is removed before material reaches the pump.				
	Motor bearings worn.	Replace any worn ports or replace motor if needed.				
Rapid Seal Wear	Improper installation of mechanical seal.	Adjust mechanical seal installation. Replace any worn or damaged parts.				
	Dry running.	Material must be in contact with seal at all times. Catastrophic failure will occur.				
	Abrasive product.	Contact: Dixon Sanitary 800-789-1718				
	Shaft loose or bent.	Readjust shaft settings, tighten shaft screws if loose. If bent, replace shaft and inspect impeller hub for uneven wear, replace impeller if worn.				
	Water hammer.	Correct system to prevent any quick starts and stops.				
	Improper seal for application.	Contact: Dixon Sanitary 800-789-1718				
Pump Leaks	Inlet/Outlet	Inspect for missing union gaskets, loose connections or damaged ports. Replace worn gaskets and tighten loose connections. Damaged ports repair or replace.				
	Casing clamp loose.	Tighten clamp.				
	Casing gasket damaged or worn.	Replace gaskets.				
	Seal not installed correctly.	Reassemble seal properly. Replace any worn or damaged parts.				
	Carbon seal worn or damaged.	Replace any worn or damaged parts.				
	'D' seal back plate worn.	Resurface or replace. "DG" option should be considered.				
Any Other Issue		Contact: Dixon Sanitary 800-789-1718				







			check List					
Contact Name:		i dilip c	Cananani, Nana					
Date:	Phone:		Email:					
Customer ID#:								
		Applic	ation Data					
Fluid:			Flow (GPM):					
Fluid Temp:				ead:	or PSI:			
Viscosity (CPS):								
NPSH Available:								
	Dr	eferred Connect	ion Size (Inlet x Out	tlot)				
BC114 (1-1/2" x 1-1/2"		' x 1-1/2")	BC216 (2" x 1-1		C516 (2-1/2" x 1-1/2"	')		
BC218 (2" x 1-1/2")	BC318 (3	BC328 (3" x 2		BC428 (4" x 2")				
		Con	nections					
	Clamp		Combination:	Inlet:	Outlet:			
	Weld		Other:					
		·	oing Information					
Size / Qty of Elbows			ngth) /	List check valve		/		
Size / Qty of Tees	/ Horizo		ength) /		•	/		
BFVs Size / Qty	I	(FC	or best sizing please i	include a piping o	alagram)			
			al Type		6 1 (5 1)			
D-seal	2)	DG-seal			flush (F-seal)			
DG-seal (So	J)	DG-sea	I (IC)	Other:				
Dung	EPI		Silicone		FKM			
Buna	CFL				FKIVI			
	Enclosure	Mot	tor Data	Voltag	P			
Stainles	s Steel Washdown		115/230V		380/460V			
	olosion Proof		208-230/46		220/380/440V			
	ainted Washdown		575V		220/380/415V			
Totally En	closed None Vented		190/380V	,				
	Phase			Motor Opt				
Single Phase 50Hz Three Phase 50Hz	Single Phase Three Phase		Variable Fre	equency Drive: (c	ontrol/other info)			
Tillee Filase 50HZ	Tillee Filas							
Volute with drain (pleas	se specify location of dr		o Options) Small Cart		Large Cart			
volute with drain (plea	se specify location of di	ain and onemation	,		Large Cart			
			Cart Options					
			ecial Requests					
(For all r	eplacement pump ord	ers please include	e all known information	on about pump b	eing replaced.)			

V

Friction Loss Chart

Friction Loss in Sanitary Tube and Fittings

This table indicates loss of head due to friction in feet loss per foot of tubing or in feet loss per fitting.

	OD Tube Size																	
Capacity		1"			11/2"			2"			21/2"			3"		4"		
in US GPM	I.D	. = 0.87	70"	I.D	. = 1.37	70"	I.D	. = 1.8 ⁻	70"	I.D. = 2.370"		I.D. = 2.870"		70"	I.D	. = 3.83	34"	
OI W	Tubing	Elbow	Tee	Tubing	Elbow	Tee	Tubing	Elbow	Tee	Tubing	Elbow	Tee	Tubing	Elbow	Tee	Tubing	Elbow	Tee
5	.035	.025	.25															
10	.12	.06	.40	.02	.01	.15	.005	.015	.10									
15	.25	.10	.80	.04	.02	.25	.013	.02	.15									
20	.43	.22	1.5	.06	.03	.30	.02	.025	.20	.005	.02	.10	.003	.02	.06			
25	.66	.40	2.3	.08	.04	.40	.025	.03	.25	.006	.03	.15	.004	.03	.08			
30	.93	.70	3.3	.105	.06	.55	.035	.05	.30	.008	.05	.20	.005	04	.10			
35	1.22	1.25	5.2	.135	.09	.80	.04	.06	.40	.011	.06	.25	.006	.05	.13			
40				.17	.11	1.0	.05	.08	.50	.015	.07	.30	.007	.06	.15			
45				.21	.16	1.3	.063	.10	.60	.02	.09	.35	.008	.065	.18			
50				.25	.20	1.6	.073	.12	.70	.022	.10	.40	.01	.07	.20			
60				.34	.35	2.2	.10	.18	.90	.03	.12	.45	.015	.08	.25			
80				.57	.76	3.7	.16	.30	1.5	.05	.15	.55	.02	.10	.40			
100				.85	1.35	5.8	.23	.44	2.3	.075	.18	.60	.03	.11	.50	.008	.04	.10
120				1.18	2.05	9.1	.32	.64	3.3	.105	.21	1.0	.04	.13	.60	.01	.05	.15
140							.42	.85	4.5	.14	.23	1.25	.05	.16	.80	.013	.06	.2
160							.54	1.13	5.8	.17	.28	1.6	.07	.20	1.1	.015	.07	.25
180							.67	1.45	7.4	.205	.31	2.0	.08	.21	1.3	.02	.08	.30
200							.81	1.82	9.0	.245	.35	2.5	.10	.26	1.6	.025	.09	.40
220							.95	2.22	11.0	.29	.41	3.0	.12	.30	1.9	.028	.10	.50
240							1.10	2.63	13.5	.34	.48	3.7	.14	.33	2.2	.035	.11	.55
260										.39	.53	4.5	.165	.39	2.5	.04	.115	.60
280										.45	.61	5.3	.19	.42	2.8	.045	.12	.65
300										.515	.70	6.2	.22	.50	3.1	.05	.13	.70
350										.68	1.05	8.5	.28	.67	4.1	.07	.15	.90
400										.86	1.55	11.0	.38	.88	5.2	.085	.18	1.2
450										1.05	2.25	13.5	.44	1.1	6.6	.105	.20	1.5
500													.54	1.4	8.0	.13	.23	1.75
550													.64	1.7	9.5	.15	.27	2.1
600													.75	2.05	10.2	.175	.30	2.5
650													.87	2.41	13.0	.20	.34	2.8
700													1.0	2.8	15.0	.23	.40	3.4
750																.26	.43	3.8
800																.30	.50	4.4







CIP Flow Rates

CIP Flow Rate Requirements

5 Feet Per Second Sanitary Tubing

Size	Flow
1"	10 GPM
1 1/2"	24 GPM
2"	43 GPM
2 1/2"	69 GPM
3"	101 GPM
4"	180 GPM

Water Vapor Pressure Chart

Temperature - Vapor Pressure for Water
At sea level the saturation pressure of vapor pressure (PSIG) = vapor pressure (PSIA - 14.7).

Temperature °F	Vapor Pressure PSIA	Temperature °F	Vapor Pressure PSIA	Temperature °F	Vapor Pressure PSIA	Temperature °F	Vapor Pressure PSIA
32	.088	190	9.339	320	89.66	460	466.9
35	.100	195	10.385	324	94.84	465	490.3
40	.122	200	11.526	328	100.3	470	514.7
45	.148	204	12.512	332	105.9	475	539.9
50	.178	208	13.568	336	111.8	480	566.1
55	.214	212	14.70	340	118.0	485	593.3
60	.256	216	15.90	344	124.4	490	621.4
65	.306	220	17.19	348	131.2	495	650.6
70	.363	224	18.56	352	138.2	500	680.8
75	.430	228	20.03	356	145.4	505	712.0
80	.507	232	21.58	360	153.0	510	744.3
85	.596	236	23.22	364	160.9	515	777.8
90	.698	240	24.97	368	169.2	520	812.4
95	.815	244	26.83	372	177.7	525	848.1
100	.949	248	28.80	376	186.6	530	885.0
105	1.102	252	30.88	380	195.8	535	923.2
110	1.275	256	33.09	384	205.3	540	962.5
115	1.471	260	35.43	388	215.3	545	1003
120	1.692	264	37.90	392	225.6	550	1045
125	1.942	268	40.50	396	236.2	555	1088
130	2.222	272	43.25	400	247.3	560	1133
135	2.537	276	46.15	405	261.7	565	1179
140	2.889	280	49.20	410	276.8	570	1226
145	3.281	284	52.42	415	292.4	575	1275
150	3.718	288	55.80	420	308.8	580	1326
155	4.203	292	59.36	425	325.9	585	1378
160	4.741	296	63.09	430	343.7	590	1431
165	5.335	300	67.01	435	362.3	595	1486
170	5.992	304	71.13	440	381.6	600	1543
175	6.715	308	75.44	445	401.7		
180	7.510	312	79.96	450	422.6		



8.383

316

84.70

185

455

444.3

Centrifugal Pump Characteristics

The Dixon BC-Series centrifugal pump is characterized as a radial flow centrifugal pump. Radial flow pumps operate according to a specific set of laws known as the Affinity Laws. These laws demonstrate the mathematical relationship between impeller diameter, flow, pressure, brake horsepower, and motor speed. Each of these characteristics and the equations that govern them will be given in detail below. It is important to understand that when dealing with variant centrifugal pumps such as axial or mixed flow, other variables must be taken into consideration. The following equations are only intended for radial flow centrifugal pump applications.

Variance in impeller diameter while maintaining constant motor speed

$$\frac{D_{1}}{D_{2}} = \frac{Q_{1}}{Q_{2}} = \frac{\sqrt{H_{1}}}{\sqrt{H_{2}}}$$

$$\frac{BHP_1}{BHP_2} = \frac{D_1^3}{D_2^3}$$

Where: D= Impeller dameter (in)

Q= Flow rate (gpm)

H= Head pressure (ft)

BHP= Brake horsepower (hp)

Variance in motor speed with constant impeller diameter

$$\frac{S_1}{S_2} = \frac{Q_1}{Q_2} = \frac{\sqrt{H_1}}{\sqrt{H_2}}$$

$$\frac{BHP_{1}}{BHP_{2}} = \frac{S_{1}^{3}}{S_{2}^{3}}$$

Where: S= Motor speed (rpm)

Q= Flow rate (gpm)

H= Head pressure (ft)

BHP= Brake horsepower (hp)







Viscosity Chart

- N Newtonian
- T Thixotropic
- D Dilatent

	Fluid	Specific Gravity	Viscosity CPS	Viscous Type
Reference	Water	1.0	1.0	N
	"Box" Adhesives	1+-	3,000	T
Adhesives	PVA	1.3	100	Т
	Rubber & Solvents	1.0	15,000	N
	Batter	1.0	2,000	Т
	Butter (Melted)	0.98	18 @ 140°F	N
	Egg (Whole)	0.5	60 @ 50°F	N
Dakami	Emulsifier		20	Т
Bakery	Frosting	1.0	10,000	Т
	Lectithin		3,250 @ 125°F	Т
	77% Sweetened Condensed Milk	1.3	10,000 @ 77°F	N
	Yeast Slurry 15%	1.0	180	Т
	Beer	1.0	1.1 @ 40°F	N
Deer/Mine	Brewers Concentrated Yeast (80% solids)		16,000 @ 40°F	Т
Beer/Wine	Wort			
	Wine	1		
	Caramel	1.2	400 @ 140°F	
Confortionem	Chocolate	1.1	17,000 @ 120°F	Т
Confectionery	Fudge (Hot)	1.1	36,000	Т
	Toffee	1.2	87,000	Т
	Face Cream		10,000	Т
	Hair Gel	1.4	5,000	Т
Cosmetics/Soaps	Shampoo		5,000	Т
	Toothpaste		20,000	Т
	Hand Cleaner		2,000	Т
	Cottage Cheese	1.08	225	Т
	Cream	1.02	20 @ 40°F	N
Dairy	Milk	1.03	1.2 @ 60°F	N
•	Process Cheese		30,000 @ 160°F	Т
	Yogurt		1,100	Т
Detergents	Detergent Concentrate		10	N
	Printers Ink	1 to 1.38	10,000	Т
Dyes & Inks	Dye	1.1	10	N
•	Gum		5,000	Т
	Corn Oil	0.92	30	N
	Lard	0.96	60 @ 100°F	N
	Linseed Oil	0.93	30 @ 100°F	N
Fats & Oils	Peanut Oil	0.92	42 @ 100°F	N
	Soybean Oil	0.95	36 @ 100°F	N
	Vegetable Oil	0.92	3 @ 300°F	N
	Black Bean Paste		10,000	T
	Cream Style Corn		130 @ 190°F	T
	Catsup (Ketsup)	1.11	560 @ 145°F	T
	Pablum		4,500	T
	Pear Pulp		4,000 @ 160°F	Ť
	Mashed Potato	1	20,000	T
Misc. Foods	Potato Skins & Caustic		20,000 @ 100°F	Ť
	Prune Juice	1	60 @ 120°F	T
	Orange Juice Concentrate	1.1	5,000 @ 38°F	
	Tapioca Pudding	0.7	1,000 @ 235°F	T
	Mayonnaise	1	5,000 @ 75°F	T
	33% Tomato Paste	1.14	7,000	T
	Honey	1.14	1.500 @ 100°F	<u>'</u>





Viscosity Chart

N - Newtonian

T - Thixotropic

D - Dilatent

	Fluid	Specific Gravity	Viscosity CPS	Viscous Type
	Melted Animal Fats	0.9	43 @ 100°F	N
	Ground Beef Fats	0.9	11,000 @ 60°F	Т
Meat Products	Meat Emulsion	1	22,000 @ 40°F	T
	Pet Food	1	11,000 @ 40°F	Т
	Pork Fat Slurry	1	650 @ 40°F	T
Misc. Chemicals	Glycols	1.1	35 @ Range	
	Metallic Auto Paints		220	T
	Solvents	0.8 to 0.9	0.5 to 10	N
Paint	Titanium Dioxide Slurry		10,000	Т
	Varnish	1.06	140 @ 100°F	
	Turpentine	0.86	2 @ 60°F	
	Black Liquor Tar		2,000 @ 300°F	
	Paper Coating 35%		400	
Paper & Textile	Sulfide 6%		1,600	
·	Black Liquor	1.3	1,100 @ 122°F	
	Black Liquor Soap		7,000 @ 122°F	
	Asphalt (Unblended)	1.3	500 to 2,500	
	Gasoline	0.7	0.8 @ 60°F	N
	Kerosene	0.8	3 @ 68°F	N
Petroleum & Petroleum	Fuel Oil #6	0.9	660 @ 122°F	N
Products	Auto Lube Oil SAE 40	0.9	200 @ 100°F	N
	Auto Lube Oil SAE 90	0.9	320 @ 100°F	N
	Propane	0.46	0.2 @ 100°F	N
	Tars	1.2	Wide Range	
	Castor Oil	0.96	350	N
	Cough Syrup	1	190	N
Pharmaceuticals	"Stomach" Remedy Slurries		1,500	Т
	Pill Pastes		5,000 +-	Т
	Butadiene	0.94	0.17 @ 40°F	
	Polyester Resin (Typ)	1.4	3,000	Т
Plastic Resins	PVA Resin (Typ)	1.3	65,000	
	(Wide variety of plastics can be pumped,	1		
	viscosity varies greatly)			
	Corn Starch Sol 22°B	1.18	32	Т
Starches & Gums	Corn Starch Sol 25°B	1.21	300	Т
	Corn Syrup 41 Be	1.39	15,000 @ 60°F	N
	Corn Syrup 45 Be	1.45	12,000 @ 130°F	N
	Glucose	1.42	10,000 @ 100°F	
	Molasses A	1.42	280 to 5,000 @ 100°F	
	В	1.43 to 1.48	1,400 to 13,000 @ 100°F	
Sugar, Syrups, Molasses	C	1.46 to 1.49	2,600 to 5,000 @ 100°F	
	Sugar Syrups	112.000	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
	60 Brix	1.29	75 @ 60°F	N
	68 Brix	1.34	360 @ 60°F	N
	76 Brix	1.39	4,000 @ 60°F	N
Water & Waste Treatment	Clarified Sewage Sludge	1.1	2,000 Range	











Product Specifications

Size range:

• 1" - 3" clamp

Type:

- Inline
 - short
- long
- Side Entry

- long

Material:

316L stainless steel

Finish:

· 3A sanitary, ID and OD

What Are Filters / Strainers Used For?

Filter Definition

A filter uses a disposable media to remove finer particulate from the stream. Dixon Sanitary holds Authorization Number 1446 for the 3-A Sanitary Standard for Filters using Single Service Filter Media, Number: 10-4. Vertical mounting is necessary to meet 3A 10-04 requirements for minimal product clingage.

Strainer Definition

A strainer is a device used to separate solids from fluids. Here it is used for larger particulate matter from liquid or gas. It uses cleanable media.



Full Flow Filters Can be equipped with a variety of
filtering media, down to 40 microns,
media includes polyester, cotton
cheesecloth and nylon mesh.
See chart on page 365.

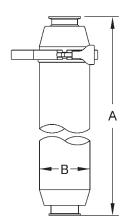


Full Flow Coarse Strainers - 1/4" or 1/8" perforations. (1/8" not 3A)



Full Flow Fine/Medium Strainers - Can be equipped with a variety of mesh screens for removing finer particles (20 to 100 mesh). See chart on page 365. (not 3A)









- In-line units ship standard with the following: spring, distributor cap, clamp gasket, 1/4" perforated back-up tube, inlet and outlet bodies and squeeze clamp
- 1/8" perforated back-up tube available, must specify when ordering (not 3A authorized)
- must be vertical mount for 3A usage

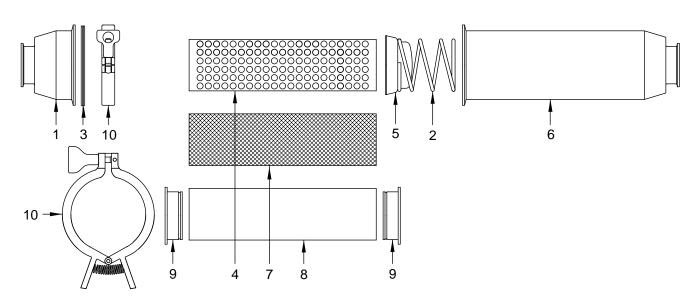
Feature

• Bevel seat, I-line and weld ends available, call Dixon Sanitary for information

Size	A short	A long	В	Short 316L Stainless Steel Part Number	Long 316L Stainless Steel Part Number
1"	15.75		4.00	BSCCQ1-R100	
1½"	15.75	35.375	4.00	BSCCQ1-R150	BSCCQ2-R150
2"	15.75	35.375	4.00	BSCCQ1-R200	BSCCQ2-R200
2½"	15.75		4.50	BSCCS1-R250	
3"	15.75	35.375	4.50	BSCCS1-R300	BSCCS2-R300



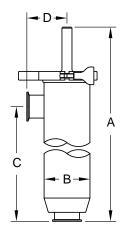
Bill of Materials



Item #	Description	Short Part #	Long Part #	Material	Qty
	1" strainer outlet	BS-01-R100			
	1½" strainer outlet	BS-01-R	150		
1	2" strainer outlet	BS-01-R	200	316L stainless steel	1
	2½" strainer outlet	BS-01-R250			
	3" strainer outlet	BS-01-R	300		
2	1" - 2" strainer spring	BS-02-R10	00-200	316L stainless steel	1
2	2½" - 3" strainer spring	BS-02-R25	50-300	3 TOL Stairliess steel	'
3	1" - 2" (4") clamp gasket	40MP-U	400	Buna	1
3	2½" - 3" (4") schedule 5 clamp gasket	40MPV-L	J400	Dulla	1
	1" - 2" back-up tube with 1/8" perforations	BS-1418-R100200	BS-2418-R100200		
4	2½" - 3" back-up tube with 1/8" perforations	BS-1418-R250300	BS-2418-R250300	316L stainless steel	1
4	1" - 2" back-up tube with 1/4" perforations	BS-1425-R100200	BS-2425-R100200	3 TOL Stairliess steel	'
	2½" - 3" back-up tube with 1/4" perforations	BS-1425-R250300	BS-2425-R250300		
_	1" - 2" strainer cap	BS-05-R10	00-200	216L stainless staal	1
5	2½" - 3" strainer cap	BS-05-R25	50-300	316L stainless steel	
	1" strainer inlet	BS-16-R100	BS-16-R100		
	1½" strainer inlet	BS-16-R150	BS-16-R150 BS-26-R150		
6	2" strainer inlet	BS-16-R200	BS-26-R200	316L stainless steel	1
	2½" strainer inlet	BS-16-R250			
	3" strainer inlet	BS-16-R300	BS-26-R300		
7	1" - 3" various mesh over screens (short/long)	part number	on page 365	316 stainless steel	1
8	1" - 3" various filter bag (short/long)	1" - 3" various filter bag (short/long) part number on page 365		various	1
9	1" - 2" retaining ring used with filter bags	BS-09-U10	00-200	Buna	
9	2½" - 3" retaining ring used with filter bags BS-09-U250-300		Buna	2	
10	1" - 2" (4") squeeze clamp	13MHHM-	Q400	050	1
10	2½" - 3" (4") schedule 5 squeeze clamp	13MHHV-Q400		CF8	1



Side-Entry Filter / Strainer - BSCCQ





- Side entry units ship standard with the following: spring, end cap with handle, distributor cap, clamp gasket, 1/4" perforated back-up tube, body and squeeze clamp
- 1/8" perforated back-up tube available, must specify when ordering (not 3A authorized)
- must be vertical mount for 3A usage

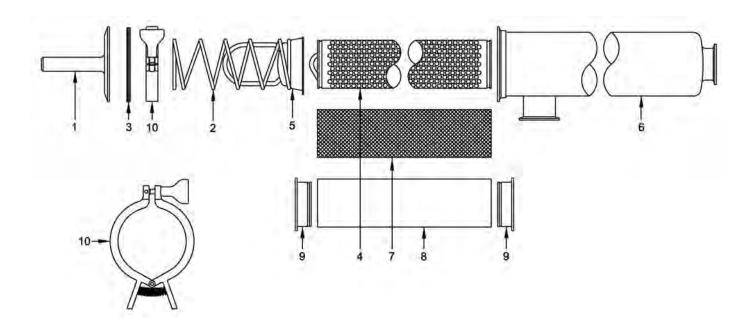
Features:

- Bevel seat, I-line and weld ends available, call Dixon Sanitary for information
- · Serviceable without removing from the line

Size	А	В	С	D	316L Stainless Steel Part #
1½"	41.90	4.00	35.00	3.50	BSCCQ3-R150
2"	41.90	4.00	35.00	3.50	BSCCQ3-R200
3"	41.90	4.50	35.00	3.75	BSCCQ3-R300



Bill of Materials



Item #	Description	1½" and 2" Part #	3" Part #	Material	Qty
1	end cap with handle	BS-31-R100-200	BS-31-R250-300	316L stainless steel	1
2	strainer spring	BS-32-R100-200	BS-32-R250-300	316L stainless steel	1
3	clamp gasket	40MP-U400	40MPV-U400	Buna	1
4	back-up tube with 1/8" perforations	BS-1418-R100200	BS-2418-R250300	316L stainless steel	
4	back-up tube with 1/4" perforations	BS-1425-R100200	3S-1425-R100200 BS-2425-R250300		1
5	distributor cap BS-35-R100-200		BS-35-R250-300	316L stainless steel	1
	1½" strainer body	BS-36-R150			
6	2" strainer body	BS-36-R200		316L stainless steel	1
	3" strainer body	3" strainer body BS-36-R30			
7	various mesh over screens part number on page 365		on page 365	316 stainless steel	1
8	various filter bag	part number	on page 365	various	1
9	retaining ring used with filter bags	BS-09-U100-200	BS-09-U250-300	Buna	2
10	squeeze clamp for assembly	13MHHM-Q400	13MHHV-Q400	CF8	1



Filters

- Filter medium are special order and minimum quantities apply. Not included with base unit.
- Filters require retaining ring. See pages xx and xx for part numbers.

Size	Micron Rating	Description	<i>Short</i> Part Number	Long/Side Entry Part Number
1" - 2"	38	nonwoven rayon (glued seam)	BF30A-100-200	
21/2" - 3"	38	nonwoven rayon (glued seam)	BF30A-250-300	
1" - 2"	513	woven knapped cotton flannel	BF30B-100-200	
21/2" - 3"	513	woven knapped cotton flannel	BF30B-250-300	
1" - 2"	300	cheese cloth, single thickness cotton	BF30C-100-200	
2½" - 3"	300	cheese cloth, single thickness cotton	BF30C-250-300	
1" - 2"	765	nylon, 26/29 mesh, rectangular opening, (.025 x .030)	BF30D-100-200	
2½" - 3"	765	nylon, 26/29 mesh, rectangular opening, (.025 x .030)	BF30D-250-300	
1" - 2"	40-42	nonwoven rayon	BF30E-100-200	BF302E-100-200
21/2" - 3"	40-42	nonwoven rayon	BF30E-250-300	BF302E-250-300
1" - 2"	40	nonwoven rayon	BF30F-100-200	
1" - 2"	420	woven nylon, 40 mesh	BF30G-100-200	
2½" - 3"	420	woven nylon, 40 mesh	BF30G-250-300	BF302G-250-300

316 Stainless Wire Cloth Mesh Over Screens

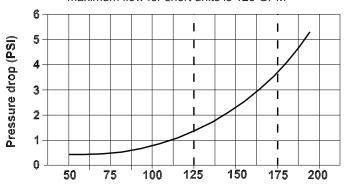
- Not all sizes are stocked additional sizes may be available (5 piece minimum), call Dixon Sanitary. Not included with base unit.
- · not 3A compatible

Size	Micron Rating	Square Mesh	Space Between Wires	Percent of Open Area	<i>Short</i> Part Number	Long/Side Entry Part Number
1" - 2"	864	20	0.034	46.2	BS20-100-200	BS202-100-200
2½" - 3"	864	20	0.034	46.2	BS20-250-300	BS202-250-300
1" - 2"	381	40	0.015	36.0	BS40-100-200	BS402-100-200
21/2" - 3"	381	40	0.015	36.0	BS40-250-300	BS402-250-300
1" - 2"	229	60	0.009	30.3	BS60-100-200	BS602-100-200
21/2" - 3"	229	60	0.009	30.3	BS60-250-300	BS602-250-300
1" - 2"	178	80	0.007	31.4	BS80-100-200	BS802-100-200
21/2" - 3"	178	80	0.007	31.4	BS80-250-300	BS802-250-300
1" - 2"	140	100	0.006	30.3	BS100-100-200	BS1002-100-200
21/2" - 3"	140	100	0.006	30.3	BS100-250-300	BS1002-250-300

Pressure Drop Curves for Filter and Strainer

Water at ambient temperature

· maximum flow for short units is 125 GPM







Dual Filters / Strainers

Application:

Use when system needs to be cleaned regularly but product flow needs to be maintained. Short, long and side entry dual units are available with manual or actuated valves, contact Dixon Sanitary for information.

Design Using 3-way Ball Valves



Description	Part #	Qty
3-way L port ball valves, sizes 1" - 3"	BV3SVLF	2
squeeze clamps, sizes 1" - 3"	13MHHM-Q	4
single pin clamps, sizes 1" - 3"	13MHHM	4
clamp 90° elbow, sizes 1" - 3"	B2CMP-R	4
clamp gaskets in various materials, sizes 1" - 3"	40MP	8

Design Using Butterfly Valves



Description	Part #	Qty
butterfly valve, various handles, actuation and seat materials, sizes 1" - 3"	B5101	4
clamp tee, 1" - 3"	B7MP	2
clamp 90° elbow, sizes 1" - 3"	B2CMP	4
squeeze clamps, sizes 1" - 3"	13MHHM-Q	4
single pin clamps, sizes 1" - 3"	13MHHM	8
clamp gaskets in various materials, sizes 1" - 3"	40MP	12



Austenitic Stainless Steel Chemistry

Element	С	Mn	Р	S	Si	Cr	Ni	Мо
304 ¹	.08	2.00	0.045	0.030	1.00	18.0-20.0	8.0-10.0	
316L ¹	.03	2.00	0.045	0.030	1.00	16.0-18.0	10.0-14.0	2.0-3.0
316L BPE ²	.03	2.00	0.045	0.05 - 0.17	1.00	16.0-18.0	10.0-14.0	2.0-3.0
CF-8 ³	.08	1.50	0.04	0.04	2.00	18.0-21.0	8.0-11.0	
CF-8M ³	.08	1.50	0.04	0.04	2.00	18.0-21.0	9.0-12.0	2.0-3.0

¹ AISI specifications for wrought material

Finish Information

Polished Finish Specification

Process	R _a microinch	R _a micron	ISO	BPE	3A	
150 grit	30 - 35	0.75 - 0.875	N6			
150 grit + Electropolish	12 - 20	0.3 - 0.5				
180 grit	20 - 25	0.5 - 0.625			XX	
180 grit + Electropolish	10 - 16	0.25 - 0.4				
240 grit	15 - 20	0.375 - 0.5	N5	SF1		PL
240 grit + Electropolish	8 - 12	0.2 - 0.3				
320 grit	8 - 12	0.2 - 0.3	N4			
320 grit + Electropolish	6 - 12	0.15 - 0.3		SF4		PM

Specifications are "best fit" to the process. Other methods may be used to achive the desired results.

Finish Designations for Tubing and Fittings

Finish Number	Finish Conditions
1	Mill Finish (bright annealed, pickled, sand blast or tumbled)
3	Polished 180 grit inside diameter (ID) only
5	Polished 150 grit outside diameter (OD) only
7	Polished 180 grit outside/inside diameter (OD/ID)
3A	Polished 150 grit outside (OD), 180 grit inside diameter (ID)

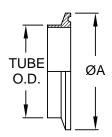
^{• 180} grit = 25R_a microinch = 0.5R_a micron (minimum)

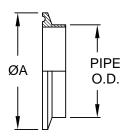
² ASME BPE 2009

³ ASTM A743

[·] Percentages are maximums unless a range is specified

Clamp Ferrules





Note: flanges are symmetrical

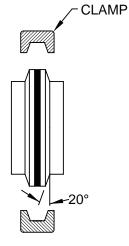
Tube

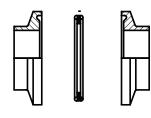
Pipe

Tube OD (inches)	ØA
1/2	.992
3/4	.992
1	1.984
1½	1.984
2	2.516
2½	3.047
3	3.579
4	4.682
5	5.687
6	6.570
8	8.602
10	10.570
12	12.570

Pipe Size	Pipe OD	ØA
(inches)	(inches)	WA .
1	1.315	1.984
11/4	1.660	2.516
1½	1.900	2.516
2	2.375	3.047
2½	2.875	3.579
3	3.500	4.125
4	4.500	5.125
6	6.625	7.195
8	8.625	9.200

Clamp Connection





sizes 1" - 12"

sizes 1/2" and 3/4"





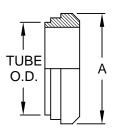


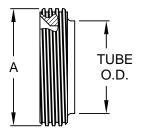
Type 1 Standard 1/2" and 3/4"

Type 1 Standard 1" - 12"

Type 2 Flanged 1" - 12"

Bevel Seat Ferrules





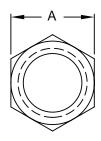
Plain

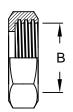
Tube OD (inches)	ØA
1	1.312
1½	1.848
2	2.380
2½	2.912
3	3.444
4	4.508

Threaded

Tube OD (inches)	ØA
1	1.462
1½	1.994
2	2.526
2½	3.058
3	3.590
4	4.695

13H Hex Nuts





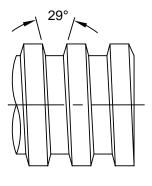
Tube OD	А	В	Threads per
(inches)	Across Flats	Thread ID	inch
1	1.812	1.362	8
1½	2406	1.894	8
2	3.000	2.426	8
21/2	3.594	2.958	8
3	4.188	3.490	8

4.554

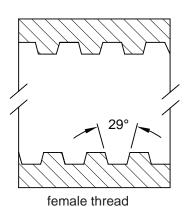
5.438

Nut

Acme Thread Form



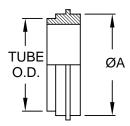
male thread

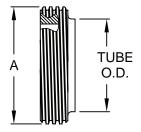


Gasket



John Perry Ferrules





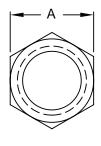
וח	oin
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	uni

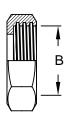
Tube OD (inches)	ØA
1	1.125
1½	1.656
2	2.187
2½	2.656
3	3.187
4	4.187

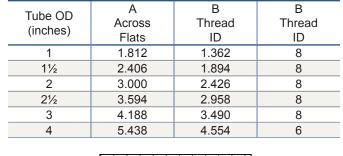
Threaded

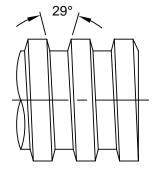
Tube OD (inches)	ØA
1	1.462
1½	1.994
2	2.526
2½	3.058
3	3.590
4	4.695

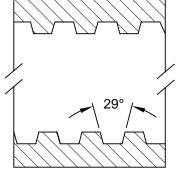
13H Hex Nuts











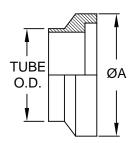
male thread

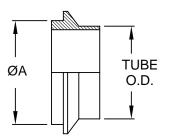
female thread





I-line Ferrules





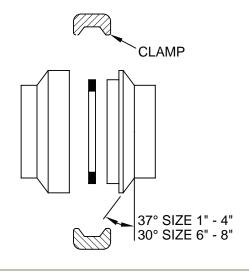
Female		

Tube OD (inches)	ØA
1	1.985
1½	1.985
2	2.640
2½	3.307
3	3.870
4	4.870
6	7.495
8	9.945
4 6	4.870 7.495

Tube OD (inches)	ØA
1	1.250
1½	1.740
2	2.240
2½	2.740
3	3.300
4	4.297
6	6.830
8	8.830

Male

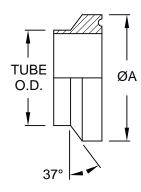
Clamp Connection



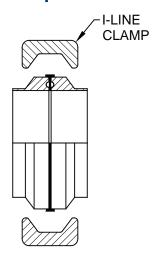
Q-line Ferrules

both halves of a jointed connection are symmetrical

Tube OD (inches)	ØA
1	1.985
1½	1.985
2	2.640
2½	3.307
3	3.870
4	4.870



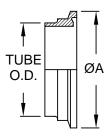
Clamp Connection





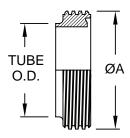
APC Clamped Ferrules

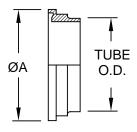
both halves of a jointed connection are symmetrical



clamp ferrule		
Tube OD (inches)	ØA	
1	1.98	
1½	1.98	
2	2.52	
2½	3.05	
3	3.58	
4	4.68	

APC Threaded Ferrules





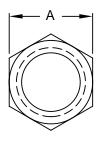
threaded ferrule

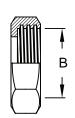
Tube OD (inches)	ØA
1	1.462
1½	1.994
2	2.526
21/2	3.058
3	3.590
4	4.695

plain ferrule

Tube OD (inches)	ØA
1	1.312
1½	1.848
2	2.380
2½	2.912
3	3.444
4	4.508

13H Hex Nuts

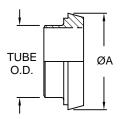


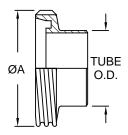


Nut			
Tube OD	А	В	Threads per
(inches)	Across Flats	Thread ID	inch
1	1.812	1.362	8
1½	2406	1.894	8
2	3.000	2.426	8
21/2	3.594	2.958	8
3	4.188	3.490	8
4	5.438	4.554	6



DIN Ferrules





Liners		
	ØA	
	1.73	
	2.20	
	2.68	

3.39

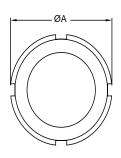
3.94

4.76

Tube OD (inches)	ØA
1	2.04
1½	2.56
2	3.07
2½	3.74
3	4.31
4	5.10

Males

DIN Round Nuts



Tube OD (inches)

1

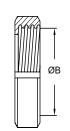
1½

2

2½

3

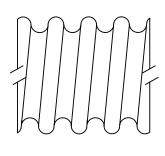
4



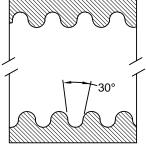
		Nut		
Tube OD	DN	ØΑ	В	Threads
(inches)	DIN	<u></u> ΣΑ	Thread ID	per inch
1	25	2.48	1.88	6
1½	40	3.07	2.39	6
2	50	3.62	2.90	6
2½	65	4.41	3.49	6
3	80	5.00	4.14	4
4	100	5.83	4.94	4

Note: nuts 3" and larger will have 6 slots

DIN Thread Form



male thread

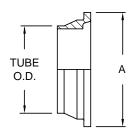


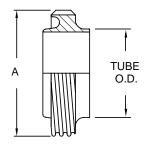
female thread





RJT Ferrules





Liners

Tube OD (inches)	ØA
1	1.63
1½	2.13
2	2.63
2½	3.13
3	3.63
4	4.63

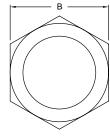
Males

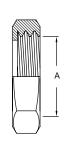
Tube OD (inches)	ØA
1	1.80
1½	2.30
2	2.86
2½	3.36
3	3.86
4	4.86

RJT Hex Nuts

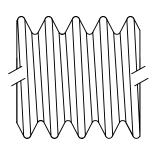
Nut

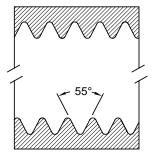
Tube OD	ØA	В	Threads
(inches)	Thread ID	Across flats	per inch
1	1.68	2.00	8
1½	2.18	2.56	8
2	2.69	3.12	6
2½	3.19	3.62	6
3	3.69	4.12	6
4	4.69	5.12	6





RJT Thread Form (British Standard Witworth)





male thread

female thread

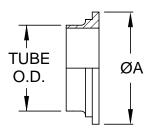
Gasket

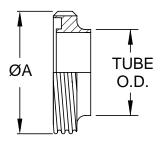


Also known as BSM (British Standard Milk) in Australia modified into Australian CIP Union



SMS Couplings



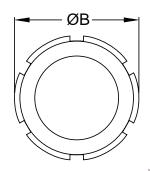


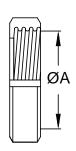
Tube OD (inches)	ØA
1	1.40
1½	2.17
2	2.56
2½	3.15
3	3.66
4	4.65

Males

Tube OD (inches)	ØA
1	1.55
1½	2.34
2	2.74
2½	3.33
3	3.84
4	4.90

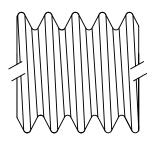
SMS Round Nuts



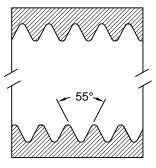


	Nut				
Tube OD	ØΑ	ØB	Threads		
(inches)	Thread ID	ND ND	per inch		
1	1.44	2.01	6		
1½	2.22	2.91	6		
2	2.62	3.31	6		
2½	3.21	3.94	6		
3	3.72	4.49	6		
4	4.72	5.43	4		

SMS Thread Form





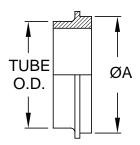


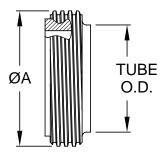
female thread





IDF Couplings





Liners

Tube OD (inches)	ØA
1	1.33
1½	1.85
2	2.38
2½	2.91
3	3.44
4	4.75

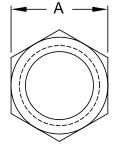
Tube OD (inches)	ØA
1	1.46
1½	1.99
2	2.53
21/2	3.06

Males

IDF Hex Nuts

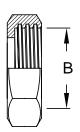
Nut

	Truck				
Tube OD	ØA	В	Threads		
(inches)	Thread ID	Across flats	per inch		
1	1.81	1.35	8		
1½	2.36	1.88	8		
2	2.95	2.42	8		
2½	3.54	2.95	8		
3	4.13	3.48	8		
4	5.24	4.81	6		



3

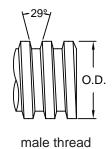
4

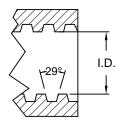


3.59

4.96

IDF Thread Form (same as Acme thread form)





female thread





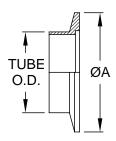


Vacuum Flanges

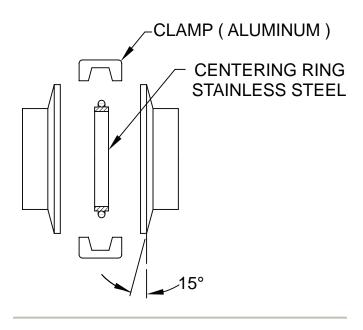
both halves of a jointed connection are symmetrical

clamp ferrule

Tube OD (inches)	ØA
1/2	1.18
3/4	1.18
1	1.57
1½	2.16
2	2.95



Clamp Connection



Gasket



Sanitary Gaskets

Elastomers available:

Nitrile (Buna N)
Silicone (peroxide cured/platinum cured)
EPDM
FKM
PTFE
Screens and orifice gaskets
(see page 160 for mesh sizes)
PTFE orifice gaskets are solid PTFE

Certified as required to:

US Pharmacopoeia Class VI Cytotoxicity Criteria Title 21CFR177.2600 & .1550 USDA and 3A Sanitary Standards



All elastomeric gaskets require periodic replacement. Gasket life is influenced by the gasket material, product application, temperature, cleaning procedures, etc. After monitoring gasket conditions in a process system, a schedule should be developed for replacement of gaskets.

Color Coding - Identification of Gasket Materials

Elastomer	Part Number Identifier	Typical Color	Color Code	Useful Temperature
Buna-N	U	black	1 red dot	-25°F to 225°F
Buna-N	UW	white	1 red dot	-25°F to 225°F
EPDM sulfur cured	Е	black	1 green dot	-40°F to 275°F
EPDM peroxide cured	E	black	3 green dots	-40°F to 275°F
FKM	SFY	black brown	1 white dot 1 yellow dot	-15°F to 375°F
Silicone peroxide cured	XW	white	1 pink dot	-50°F to 400°F
Silicone platinum cured	XC	clear	none	-50°F to 400°F
PTFE	G	white	none	-10°F to 300°F
PTFE w/50% 316 particles	GTS	silver	none	-20°F to 450°F

Packaging and Storing Information

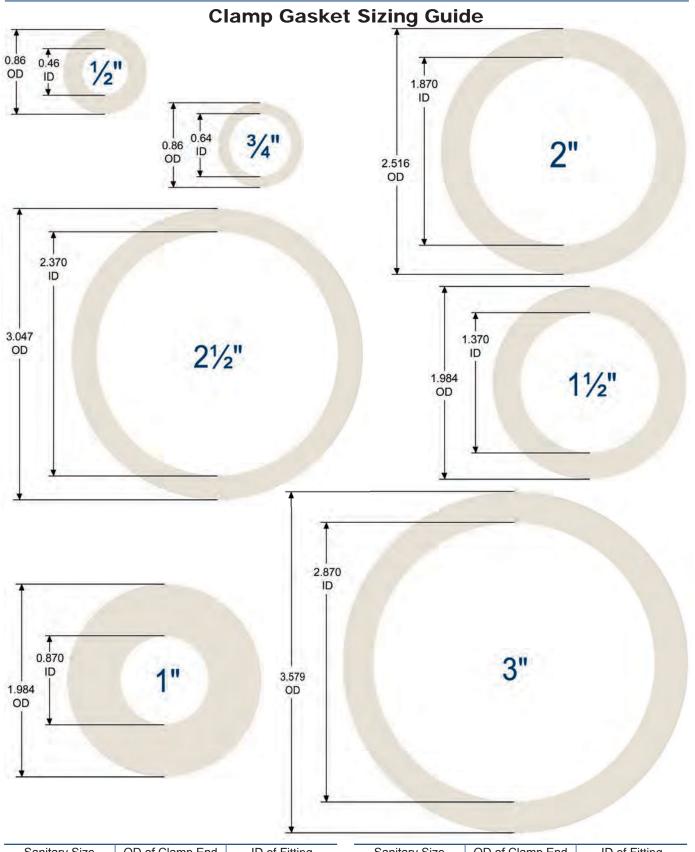
The shelf life of rubber gaskets is the maximum period from cure date to the date the product is installed. During the shelf life time, the rubber product is expected to retain its characteristics under the following conditions:

- · stored in original packaging in a clean, dry warehouse
- · not exposed to direct sunlight
- · stored no closer than 6' from electric motors
- temperature between 65°F to 85°F

A guideline for shelf life of rubber gaskets manufactured from the following components should have the following shelf life not to exceed:

Buna
EPDM
FKM
Silicone
PTFE
10 years
years
years
years





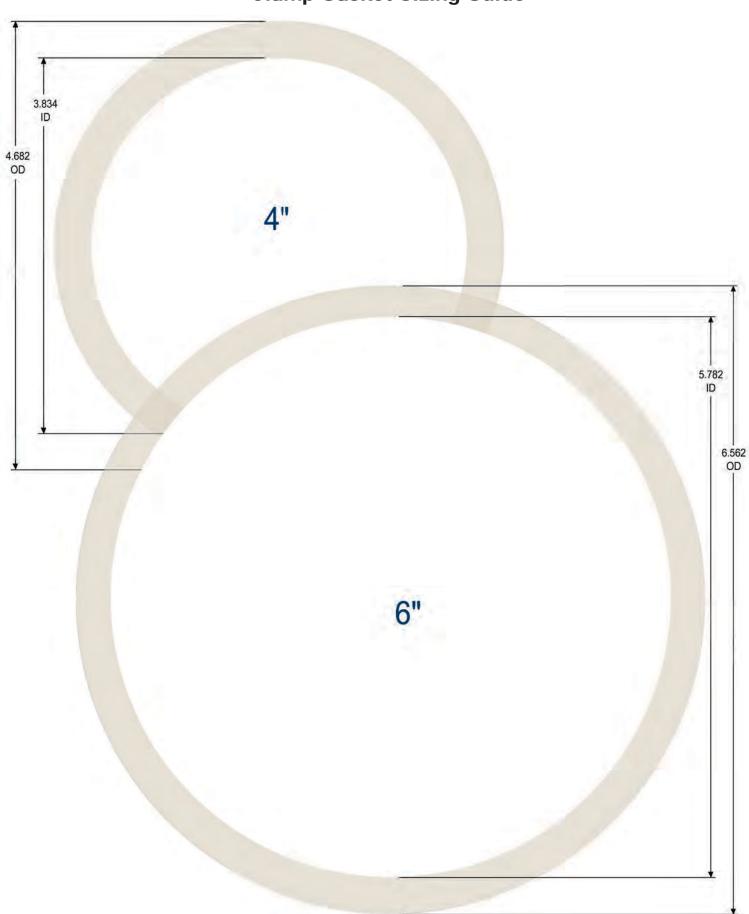
Sanitary Size	OD of Clamp End	ID of Fitting	Sanitary Size	OD of Clamp End	ID of Fitting
1/2"	0.992	0.370	3"	3.579	2.870
3/4"	0.992	0.620	4"	4.682	3.834
1"	1.984	0.870	6"	6.562	5.782
1½"	1.984	1.370	8"	8.602	7.782
2"	2.516	1.870	10"	10.570	9.782



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We Ship World Wide

Clamp Gasket Sizing Guide



Thread Dimensions

ODM -- Outside Diameter of the Male

IDF -- Inside Diameter of the Female

TPI -- Threads Per Inch

GHT (3/4") -- 1.0625 ODM, 11-1/2 TPI

NPT = National Pipe Taper

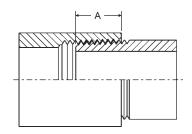
BS = British Standard

		Tapered Threads		Straight Threads		s
Size	Pipe OD	NPT BSPTr			Acme 3A	
		TPI	TPI	TPI	ODM (max)	IDF (min)
1/8"	.405	27	28			
1/4"	.504	18	19			
3/8"	.675	18	19			
1/2"	.840	14	14			
3/4"	1.050	14	14			
1"	1.315	11.5	11	8	1.462	1.352
1-1/4"	1.660	11.5	11			
1-1/2"	1.900	11.5	11	8	1.994	1.884
2"	2.375	11.5	11	8	2.526	2.416
2-1/2"	2.875	8	11	8	3.058	2.948
3"	3.500	8	11	8	3.590	3.480
4"	4.500	8	11	6	4.695	4.544
5"	5.563	8	11			
6"	6.625	8	11			
8"	8.625	8				
10"	10.750	8				
12"	12.750	8				

Normal Engagement Length of NPT Thread in Inches (A) *

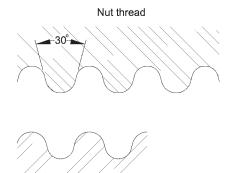
Sanitary Size	ID of Fitting
1/8"	1/4"
1/4"	3/8"
3/8"	3/8"
1/2"	1/2"
3/4"	9/16"
1"	11/16"
1-1/4"	11/16"
1-1/2"	11/16"
2"	3/4"

ID of Fitting
15/16"
1"
1-1/8"
1-1/4"
1-5/16"
1-7/16"
1-5/8"
1-3/4"



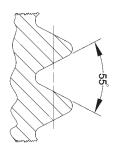
* Dimensions given do not allow for variations in tapping or threading.

Identifying Threads



DIN knuckle threads for sanitary applications have a unique round shape making them easy to identify. There is a 30° included angle between the threads. There are 6 to 8 threads per inch for sanitary fittings. Measuring the ID of the round nut or the OD of the threads on the weld liner will help with identification. As Dixon Sanitary will be offering inch sizes, the best size identification is the OD of the tube.

Bolt thread



The threads for RJT fittings are British Standard Whitworth. These look similar to straight threads but have a 55° angle and small radii on the tips rather than the flat tips and 60° angle found on U.S. standard straight threads. There are 6 to 8 threads per inch for the sanitary fittings.



Identifying Threads

It is important to identify the threads required before ordering couplings.

Identifying threads can sometimes be the most difficult and frustrating part of coupling selection. However, without the right combination of threads, you may not provide a functional or safe connection.

The diameters, threads per inch (TPI) and thread pitch, etc. are necessary to completely identify a thread. Ring, Plug and GO/ NOGO gauges are required to accurately gauge or identify threads. In the field, in the absence of these gauges, thread leaf gauges can be used to identify the Threads Per Inch (TPI) and the thread pitch. On threads you have determined to be straight threads, a caliper can be used to measure the Outside Diameter of the Male (ODM) or the Inside Diameter of the Female (IDF). A caliper can also be used to take measurements of tapered thread diameters. However, these are more difficult to define because of the taper. Fortunately, there are few tapered threads to deal with and these can usually be identified from the nominal ODM and the TPI.

However, identifying the thread may not fully identify what is needed in a mating fitting. The application is the primary *limiting* factor on the thread type used. Dixon offers products with a wide variety of threads used with hose, pipe and hydraulics.

When attempting to choose a fitting, it is always advisable to first identify the thread to which it must connect. This may entail checking with a fitting or equipment manufacturer.

When it is not possible to identify the thread:

- Determine the number of threads per inch by measuring the distance from peak of thread to peak of thread across the largest number of whole threads. Then divide the number of threads by the measurement (This will provide the TPI).
- Check to see if the thread is straight or tapered or flat thread.

a) Straight Threads

Measure the Outside Diameter of the Male (ODM) or the Inside Diameter of the Female (IDF), from peak of thread to peak of thread.

b) Tapered Threads

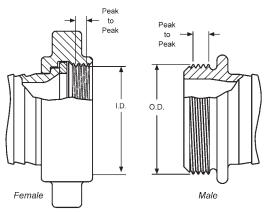
Measure the Outside Diameter of the Male (ODM) at the large end and the small end, or the Inside Diameter of the Female (IDF) at the large end and the small end, from peak of thread to peak of thread. Then measure the Outside Diameter (OD) of the unthreaded pipe.

c) Flat (ACME) Threads

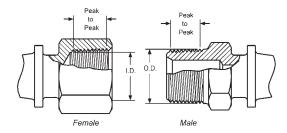
Acme threads are used for bevel seat and John Perry fittings in sanitary installations. Sizes 1" to 3" (tube size) have 8 threads per (TPI) and the 4" has 6 TPI. There is not a sharp point on this thread and it is a straight thread. The tops of the threads are flat and there is typically a 29° included angle between the threads. Measure the outside diameter of the male (OD) or inside diameter of the female (ID)

Once the application and these two pieces of information have been determined, the thread can generally be determined. When in doubt, contact the factory.

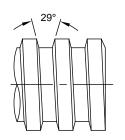
Straight Thread

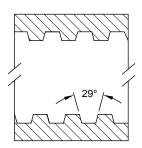


Tapered Thread



ACME Thread





Temperature Conversions

Look up reading in middle column (shaded). If in degrees Centigrade, read Fahrenheit equivalent in right-hand column; if in degrees Fahrenheit, read Centigrade equivalent in left-hand column.

°C	°F °C	°F
-73 -68 -62 -57 -51 -40 -34 -29 -23 -17.8 -16.7 -16.1 -15.0 -14.4 -13.9 -13.3 -12.8 -11.7 -11.1 -10.0 -9.4 -8.9 -7.2 -6.7 -6.1 -5.0 -4.4 -3.9 -3.3 -7.2 -6.7 -6.1 -5.0 -4.4 -7.2 -7.2 -7.3 -7.2 -7.3 -7.2 -7.3 -7.3 -7.3 -7.3 -7.3 -7.3 -7.3 -7.3	-100 -80 -70 -60 -50 -40 -30 -10 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 31 32 33 34 35 36 36 37 37 38 37 37 37 37 37 37 37 37 37 37 37 37 37	-148 -130 -112 -94 -76 -58 -40 -22 -4 14 32 33.8 35.6 37.4 39.2 41.0 42.8 44.6 46.4 48.2 50.0 51.8 53.6 55.4 57.2 59.0 60.8 61.6 71.6 75.2 77.0 78.8 80.6 87.8 87.8 87.8 87.8 87.8 87.8 87.8 87

°C	°F °C	°F
5.0 5.6 6.1 6.7 7.8 8.3 9.4 10.0 11.1 12.2 12.8 13.3 14.4 15.0 16.1 17.2 17.8 18.3 19.4 20.0 21.1 22.2 23.3 24.4 25.0 26.1 27.2 27.8 28.3 29.4 20.0 21.1 21.7 22.8 23.9 24.0 25.0 26.1 27.2 27.8 28.3 29.4 20.0 20.1 20.0 2	41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 67 57 68 68 69 70 71 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 91 91 91 91 91 91 91 91 91 91 91 91	105.8 107.6 109.4 111.2 113.0 114.8 116.6 118.4 120.2 123.8 125.6 127.4 129.2 131.0 132.8 134.6 136.4 138.2 140.0 141.8 145.4 147.2 149.0 150.8 152.6 154.4 156.2 158.0 159.8 161.6 172.4 174.2 176.0 177.8 179.6 177.8 179.6 179.6 179.6 179.6 179.6 179.8 179.6 179.8 179.6 179.8 179.6 179.8

°C	°F °C	°F
33.3 33.9 34.4 35.0 35.6 36.1 36.7 37.2 37.8	92 93 94 95 96 97 98 99	197.6 199.4 201.2 203.0 204.8 206.6 208.4 210.2 212.0
43 49 54 60 66 71 77 82 88 93 99 100 104 110 116 121 127 132 138 143 149 154 160 166 170 171 177 182 186 188 193 198 204 216 221 227 232	110 120 130 140 150 160 170 180 190 200 210 212 220 230 240 250 260 270 280 290 300 310 320 338 340 350 366 370 380 388 390 400 406 410 420 430 440 450	230 248 266 284 302 320 338 356 374 392 410 413.6 428 446 464 482 500 518 536 554 572 590 608 626 640 644 662 680 691 698 716 730 734 752 763 770 788 806 824 842

Water Data and Formulas

	(no losses included)							
1 gallon water = 231 cubic inches = 8.333 pounds	Water Level		Given					
1 pound of water = 27.7 cubic inches	(inches)	5	10	12				
1 cubic foot water = 7.5 gallons = 62.5 pounds (salt water	5	163						
weighs approximately 64.3 pounds per cubic foot)	6	195	285					
	7	228	334	580				
Pounds per square inch at bottom of a column of water =	8	260	380	665	1060			
height of column in feet x .434	9	293	430	750	1190	1660		
	10	326	476	830	1330	1850		
Horsepower to Raise Water	11	360	525	915	1460	2020		
If pumping liquid other than water, multiply the gallons per	12	390	570	1000	1600	2220		
minute below by the liquids specific gravity	13	425	620	1080	1730	2400		
gallone per minute y total head in fact	14	456	670	1160	1860	2590		
Horsepower = <u>gallons per minute x total head in feet</u> 3960	15	490	710	1250	2000	2780		
3900	16	520	760	1330	2120	2960		
	17	550	810	1410	2260	3140		
Gallons Per Minute through a Pipe	18	590	860	1500	2390	3330		
GPM = .0408 x pipe diameter inches ² x feet/minute water	19	620	910	1580	2520	3500		
velocity	20	650	950	1660	2660	3700		
	21	685	1000	1750	2800	3890		
Weight of Water in a Pipe	22	720	1050	1830	2920	4060		
Pounds water = pipe length feet x pipe diameter inches 2 x .34	23	750	1100	1910	3060	4250		
	24		1140	2000	3200	4440		

Measurement Information

Measures of Pressure

- 1 Pound Per Square Inch = 144 Pounds Per Square Foot = 0.068 Atmosphere = 2.042 Inches of Mercury at $62^{\circ}F$ = 27.7 Inches of Water at $62^{\circ}F$ = 2.31 Feet of Water at $62^{\circ}F$.
- 1 Atmosphere = 30 Inches of Mercury at 62°F = 14.7 Pounds Per Square Inch = 2116.3 Pounds Per Square Foot = 33.95 Feet of Water at 62°F.
- 1 Foot of Water at 62°F = 62.355 Pounds Per Square Foot = 0.433 Pounds Per Square Inch.
- 1 Inch of Mercury at 62°F = 1.132 Feet of Water = 13.58 Inches of Water = 0.491 Pounds Per Square Inch.

Column of Water 12 Inches High, 1 Inch in Diameter = .341 Pounds

Length Conversion Constants

Millimeters x .039370 = Inches Meters x 39.370 = Inches Meters x 3.2808 = Feet Meters x 1.09361 = Yards Kilometers x 3,280.8 = Feet Kilometers x .62137 = Statute Mile Kilometers x .53959 = Nautical Miles Inches x 25.4001 = Millimeters
Inches x .0254 = Meters
Feet x .30480 = Meters
Yards x .91440 = Meters
Feet x .0003048 = Kilometers
Statute Miles x 1.60935 = Kilometers
Nautical Miles x 1.85325 = Kilometers

Weight Conversion Constants

Grams x .03527 = Ounces (Avd.) Grams x .033818 = Fluid Ounces (Water) Kilograms x 35.27 = Ounces (Avd.) Kilograms x 2.20462 = Pounds (Avd.) Ounces (Avd.) x 28.35 = Grams Fluid Ounces (Water) x 29.57 = Grams Ounces (Avd.) x .02835 = Kilograms Pounds (Avd.) x .45359 = Kilograms





		Fraction	- Decimal	Conver	sion Cha	art	
	1	<u>Inches</u>	<u>Millimeters</u>	ı	33	<u>Inches</u>	<u>Millimeters</u>
1	64	015625	.3969	17	33 64	515625	13.0969
$\begin{pmatrix} \frac{1}{32} \end{pmatrix}$	2	−.03125	.7938	$\left(\frac{17}{32}\right)$	25	53125	13.4938
	<u>3</u> 64	046875	1.1906		35 64	546875	13.8907
$\left(\frac{1}{16}\right)$		− .0625	1.5875	$\left \begin{pmatrix} \frac{9}{16} \end{pmatrix} \right $	0.7	5625	14.2876
	<u>5</u> 64	078125	1.9844		37 64	578125	14.6844
$\begin{pmatrix} \frac{3}{32} \end{pmatrix}$		09375	2.3813	$\left(\frac{19}{32}\right)$ —		59375	15.0813
	<u>7</u>	109375	2.7781		39 64	609375	15.4782
$\left(\frac{1}{8}\right)$		−.125	3.1750	$\left(\begin{array}{c} \frac{5}{8} \end{array}\right)$		625	15.8751
	<u>9</u> 64	140625	3.5719		<u>41</u> 64	640625	16.2719
<u>5</u> 32		−.15625	3.9688	<u>21</u> 32		65625	16.6688
	<u>11</u> 64	171875	4.3656		43 64	671875	17.0657
(<u>3</u> 16)—		−.1875	4.7625	$\left(\begin{array}{c} \frac{11}{16} \end{array}\right)$.6875	17.4626
	13 64	203125	5.1594		45 64	703125	17.8594
$\begin{pmatrix} \frac{7}{32} \end{pmatrix}$		21875	5.5563	<u>23</u> 32		71875	18.2563
	15 64	234375	5.9531		47 64	.734375	18.6532
$\left(\begin{array}{c} \frac{1}{4} \end{array}\right)$		- .250	6.3500	$\left(\begin{array}{c} \frac{3}{4} \end{array}\right)$		750	19.0501
	17 64	.265625	6.7469		49 64	.765625	19.4470
$\left(\frac{9}{32}\right)$		28125	7.1438	<u>25</u> 32		.78125	19.8438
	19 64	296875	7.5406		<u>51</u> 64	.796875	20.2407
<u>5</u> 16		−.3125	7.9375	13 16		.8125	20.6376
	<u>21</u> 64	328125	8.3344		53 64	.828125	21.0345
$\left(\frac{11}{32}\right)$		−.34375	8.7313	$\left(\frac{27}{32}\right)$.84375	21.4313
	23 64	359375	9.1282	JZ)	<u>55</u> 64	.859375	21.8282
$\left(\frac{3}{8}\right)$		− .375	9.5250	$\left(\begin{array}{c} \frac{7}{8} \end{array} \right)$		875	22.2251
	25 64	390625	9.9219		57 64	.890625	22.6220
$\left(\frac{13}{32}\right)$.40625	10.3188	<u>29</u> 32		.90625	23.0188
	27 64	.421875	10.7157		59 64	.921875	23.4157
(<u>7</u>)—		4375	11.1125	$\left(\begin{array}{c} 15\\16 \end{array}\right)$.9375	23.8126
10	<u>29</u> 64	.453125	11.5094		61 64	953125	24.2095
(<u>15</u> 32)—		.46875	11.9063	$\left(\begin{array}{c} 31\\32 \end{array}\right)$.96875	24.6063
32	31 64	.484375	12.3032	32	63 64	.984375	25.0032
1	04	500	12 7001	(1)—		1 000	25 4001
000	VEA	Coll	Toll Free-	1_96	6-711.	4672	We SI

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A Guideline for Compound Selection for Use with Various Fluids and Chemicals

Note: The information contained in these tables was derived from several sources and is to be used as a general guide only. Compounds suitable for any specific application rests solely by the end user. Dixon Sanitary assumes no responsibility. All effect ratings assume static conditions at ambient temperatures.

A - satisfactory

B - fair

C - severe effect; except for some static applications

D - unsatisfactory

E - insufficient information

	material					
fluid	Buna	EPDM	FKM	PTFE	Silicone	
Acetaldehyde	D	Α	D	Α	В	
Acetamide	Α	Α	В	Α	В	
Acetic Acid, 30%	В	Α	В	Α	Α	
Acetone	D	Α	D	Α	С	
Acetophenone	D	Α	D	Α	D	
Acetyl Chloride	D	D	Α	Α	С	
Acetylene	Α	Α	Α	Α	В	
Acrylonitrile	D	D	С	Α	D	
Adipic Acid	Α	Α	Е	Е	Е	
Ammonia Gas (cold)	Α	Α	D	Α	Α	
Ammonium Choride (aq)	Α	Α	Α	Α	Е	
Ammonium Hydroxide (conc.)	D	Α	В	Α	Α	
Ammonium Nitrate (aq)	Α	Α	Е	Α	Е	
Ammonium Nitrite (aq)	Α	Α	Е	Е	В	
Ammonium Phospate (aq)	Α	Α	Е	Α	Α	
Ammonium Sulfate (aq)	Α	Α	D	Α	Е	
Amyl Acetate (Banana Oil)	D	Α	D	Α	D	
Amyl Alcohol	В	Α	В	Α	D	
Amyl Borate	Α	D	Α	Α	Е	
Arsenic Acid	Α	Α	Α	Е	Α	
Arsenic Trichloride (aq)	Α	С	Е	Е	Е	
Barium Chloride (aq)	Α	Α	Α	Α	Α	
Barium Hydroxide (aq)	Α	Α	Α	Α	Α	
Barium Sulfate (aq)	Α	Α	Α	Α	Α	
Barium Sulfide (aq)	Α	Α	Α	Α	Α	
Benzaldehyde	D	Α	D	Α	В	
Benzene	D	D	Α	Α	D	
Benzoic Acid	С	С	Α	Α	С	
Benzoyl Chloride	D	D	Α	Α	Е	
Benzyl Alcohol	D	Α	Α	Α	В	
Benzyl Chloride	D	D	Α	Α	D	
Boric Acid	Α	Α	Α	Α	Α	
Brine	Α	Α	Α	Α	Α	
Bromine, Anhydrous	D	D	Α	Е	D	
Bromine Water	D	В	Α	Е	D	
Butadiene	D	С	Α	Α	D	
Butane	Α	D	Α	Α	D	
Butyl Acetate	D	С	D	Е	D	

	material				
fluid	Buna	EPDM	FKM	PTFE	Silicone
Butyl Acetyl Ricinoleate	С	Α	Α	Е	Е
Butyl Alcohol	Α	В	Α	Α	В
Butyl Amine	С	В	D	Е	D
Butyl Benzoate	D	В	Α	Е	Е
Butyl Carbitol	D	Α	Α	Α	D
Butyl Cellosoive	D	Α	D	Α	Е
Butyl Oleate	D	В	Α	Е	Е
Butyl Stearate	В	С	Α	Е	Е
Butylene	В	D	Α	Е	D
Butyraldehyde	D	В	D	Е	D
Carbolic Acid (Phenol)	D	В	Α	Α	D
Carbon Bisulfide	С	D	Α	Е	D
Carbon Dioxide	Α	В	Α	Е	В
Carbonic Acid	В	Α	Α	Е	Α
Carbon Monoxide	Α	Α	Α	Α	Α
Carbon Tetrachloride	С	D	Α	Α	D
Castor Oil	Α	В	Α	Α	Α
Cellosoive Acetate	D	В	D	Α	D
China Wood Oil (Tung Oil)	Α	С	Α	Α	D
Chlorine (wet)	D	С	Α	Α	D
Chlorine Dioxide	D	С	Α	Α	Е
Chloroacetic Acid	D	Α	D	Α	Е
Chloroacetone	D	Α	D	Е	D
Chlorobenzene	D	D	Α	Е	D
Chlorobromomethane	D	В	Α	Е	D
Chloroform	D	D	Α	Α	D
Chlorotoluene	D	D	Α	Е	D
Chrome Plating Solutions	D	С	Α	Α	С
Chromic Acid	D	В	Α	Α	В
Cod Liver Oil	Α	Α	Α	Α	В
Copper Acetate (aq)	В	Α	D	Е	D
Copper Chloride (aq)	Α	Α	Α	Α	Α
Copper Cyanide (aq)	Α	Α	Α	Α	Α
Copper Sulfate (aq)	Α	Α	Α	Α	Α
Creosote (coal tar)	Α	D	Α	Α	D
Cresylic Acid	D	D	Α	Е	D
Cyclohexane	Α	D	Α	Α	D
Cyclohexanol	С	С	Α	Е	D



	material					
	~	7		lu)e	
fluid	Buna	EPDM	FKM	PTFE	Silicone	
Cyclohexanone	D	В	D	Е	D	
Denatured Alcohol	Α	Α	Α	Α	Α	
Detergent Solutions	Α	Α	Α	Α	Α	
Diacetone Alcohol	D	Α	D	Α	В	
Dibenzyl Ether	D	В	D	Α	Е	
Dibenzyl Sebecate	D	В	В	Е	С	
Dibromoethyl Benzene (Alkazene)	D	D	В	Е	D	
Dibutyl Amine	D	С	D	Е	С	
Dibutyl Ether	D	С	С	Е	D	
Dibutyl Phthalate	D	В	С	Α	В	
Dibutyl Sebecate	D	В	В	Е	В	
O-Dichlorobenzene	D	D	Α	Е	D	
Dichloro-Isopropyl Ether	D	С	С	Е	D	
Diethylamine	В	В	D	Α	В	
Diethyl Benzene	D	D	Α	Е	D	
Diethyl Ether	D	D	D	Е	D	
Diethylene Glycol	Α	Α	Α	Е	В	
Diethyl Sebecate	В	В	В	Е	В	
Diisobutylene	В	D	Α	Е	D	
Diisopropyl Benzene	D	D	Α	Е	Е	
Diisopropyl Ketone	D	Α	D	Е	D	
Diisopropylidence Acetone	D	С	D	Е	D	
Dimethyl Aniline (Xylidine)	С	В	D	Е	D	
Dimethyl Ether (Methyl Ether)	Α	D	Α	Е	Α	
Dimethyl Formamide	В	В	D	Е	В	
Dimethyl Phthalate	D	В	В	Е	Е	
Dinitrotoluene	D	D	D	Е	D	
Dioctyl Phthalate	С	В	В	Е	С	
Dioctyl Sebecate	D	В	В	Е	С	
Dioxane	D	В	D	Е	D	
Dioxolane	D	В	D	Е	D	
Dipentene	Α	D	Α	Е	D	
Diphenyl (Phenylbenzene)	D	D	Α	Е	D	
Diphenyl Oxides	D	D	Α	Е	С	
Dowtherm Oil	D	D	Α	Α	С	
Ethane	Α	D	Α	Α	D	
Ethanolamine	В	В	D	Е	В	
Ethyl Acetate	D	В	D	Е	В	
Ethyl Acetoacetate	D	В	D	Е	В	
Ethyl Acrylate	D	В	D	Е	В	
Ethyl Alcohol	Α	Α	С	Α	Α	
Ethyl Benzene	D	D	Α	Α	D	
Ethyl Benzoate	D	A	Α	Α	D	
Ethyl Cellosoive	D	В	D	E	D	
Ethyl Cellulose	В	В	D	A	С	
Ethyl Chloride	Α	С	Α	Α	D	
,						

	material				
		-			ā
fluid	Buna	EPDM	FKM	PTFE	Silicone
	B	Щ	Щ	ď	Sili
Ethyl Chlorocarbonate	D	В	Α	Α	D
Ethyl Chloroformate	D	В	D	Е	D
Ethyl Ether	С	С	D	A	D
Ethyl Pentachlorobenzene	D	D	Α	Α	D
Ethylene	Α	В	Α	Α	E
Ethylene Chloride	D	С	В	Е	D
Ethylene Diamine	Α	A	D	E	A
Ethylene Dichloride	D	С	Α	Α	D
Ethylene Glycol	A	A	Α	Α	A
Fluoroboric Acid	Α	Α	E	E	E
Freon 11	В	D	A	A	D
Freon 12	A	В	В	Α	D
Freon 22	D	A	D	A	D
Fumaric Acid	A	В	A	E	В
Gallic Acid	В	В	A	A	E
Gasoline	В	D	A	A	D
Glucose	A	A	A	A	A
Glycerin	A	A	A	A	A
Hexane	Α	D	A	A	D
Hexyl Alcohol	A	С	A	A	В
Hydrazine	В	A	D	A	С
Hydrobromic Acid	D	A	A	E	D
Hydrocyanic Acid	В	A	A	A	С
Hydrofluoric Acid (conc.) cold	D	C	A	A	D
Hydrofluosilicic Acid	В	В	A	E	D
Hydrogen Gas	A	A	A	A	С
Hydrogen Peroxide (90%)	D	В	В	E	В
Hydrogen Sulfide (wet) cold	D	A	D	E	С
Hydroquinone	С	В	В	A	E
lodoform	E	D	E	E	E
Isobutyl Alcohol	В	A	A	A	A
Isooctane	A	D	A	E	D
Isopropyl Acetate	D	В	D	A	D
Isopropyl Alcohol	В	A	A	A	A
Isopropyl Chloride	D	D	A	A	D
Isopropyl Ether	В	D	D	A	D
Kerosene	A	D	A	A	D
Lacquers	D	D	D	A	D
Lactic Acid (cold)	A	A	A	A	A
Lead Acetate (aq)	В	A	D	E	D
Lead Nitrite (aq)	A	A	E	E	В
Lime Bleach	A	A	A	E	В
Linoleic Acid	В	D	В	A	В
Maleic Acid	D	В	Α	A E	Е
Malic Acid	A	В	A		В
Methyl Acetate	A	D	В	Α	D
Methyl Acetate	D	Α	D	Α	D

	material					
fluid	ā				ne	
	Buna	EPDM	FKM	PTFE	Silicone	
Methyl Acrylate	D	В	D	Α	D	
Methylacrylic Acid	D	В	D	Е	D	
Methyl Alcohol	Α	Α	D	Α	Α	
Methyl Bromide	В	D	Α	Α	Е	
Methyl Butyl Ketone	D	Α	D	Α	С	
Methyl Cellosoive	С	В	D	Α	D	
Methyl Chloride	D	С	В	Α	D	
Methyl Cyclopentane	D	D	В	Е	D	
Methylene Chloride	D	С	В	Е	D	
Methyl Ether	Α	D	Α	Α	Α	
Methyl Ethyl Ketone	D	Α	D	Α	D	
Methyl Isobutyl Ketone	D	В	D	Α	D	
Methyl Methacrylate	D	С	D	Α	D	
Milk	Α	Α	Α	Α	Α	
Mineral Oil	Α	С	Α	С	В	
Monoethanol Amine	D	Α	D	Е	В	
Monomethyl Ether	Α	D	Α	Е	Α	
Monovinyl Acetylene	Α	Α	Α	Α	В	
Mustard Gas	Е	Α	Е	Е	Α	
Naphthalenic Acid	В	D	Α	Α	D	
Natural Gas	Α	D	Α	Α	Α	
Nickel Acetate (aq)	В	Α	D	Е	D	
Nickel Chloride (aq)	Α	Α	Α	Α	Α	
Nickel Sulfate (aq)	Α	Α	Α	Α	Α	
Nitric Acid (dilute)	D	В	Α	Α	В	
Nitrobenzene (Ligroin)	Α	D	Α	Α	D	
Nitroethane	D	В	D	Α	D	
Nitrogen Tetroxide	D	С	D	Α	D	
Octachlorotoluene	D	D	Α	Е	D	
Octadecane	Α	D	Α	Е	D	
N-Octane	В	D	Α	Α	D	
Octyl Alcohol	В	С	Α	Α	В	
Oleic Acid	С	D	В	Α	D	
Oxalic Acid	В	Α	Α	Е	В	
Oxonia	D	Α	Α	Е	Α	
Oxygen - Cold	В	Α	Α	Α	Α	
Ozone	D	Α	Α	Е	Α	
Palmitic Acid	Α	В	Α	Е	D	
Perchloric Acid	D	В	Α	Е	D	
Phenyl Ethyl Ether	D	D	D	Е	D	
Phosphoric Acid - 20%	В	Α	Α	E	В	
Phosphorus Trichloride	D	Α	Α	Α	Е	
Piperidine	D	Α	D	E	D	
Polyvinyl Acetate Emulsion	E	Α	E	E	E	
Potassium Acetate (aq)	В	Α	D	E	D	
Potassium Chloride (aq)	A	Α	A	A	A	
Potassium Cyanide (aq)	A	Α	Α	A	A	
. Staddiam Cyaniac (aq)	/٦	71	73	7.	73	

Propyl Acetate		material				
Propyl Acetate	fluid	Buna	EPDM	FKM	PTFE	Silicone
Propyl Nitrate D B D E D Propylene D D A A D Pyridine D B D E D Salicylic Acid B A A E E Silicone Oils A	Potassium Nitrate (aq)	А	Α	Α	Α	Α
Propylene D D A A D Pyridine D B D E D Salicylic Acid B A A E E Silicone Oils A	i-Propyl Acetate	D	В	D	Е	D
Pyridine D B D E D Salicylic Acid B A A E E Silicone Oils A	Propyl Nitrate	D	В	D	Е	D
Salicylic Acid B A A E E Silicone Oils A B B A A </td <td>Propylene</td> <td>D</td> <td>D</td> <td>Α</td> <td>Α</td> <td>D</td>	Propylene	D	D	Α	Α	D
Silicone Oils A <	Pyridine	D	В	D	Е	D
Soap Solutions A B B A	Salicylic Acid	В	Α	Α	Е	Е
Sodium Acetate (aq) B A D E D Sodium Bicarbonate (aq) A B B A A B B A A B B A A D A A D A A D	Silicone Oils	А	Α	Α	Α	С
Sodium Bicarbonate (aq) Sodium Borate (aq) Sodium Borate (aq) Sodium Borate (aq) Sodium Chloride (aq) Sodium Hydroxide (aq) Sodium Hydroxide (aq) Sodium Nitrate (aq) Sodium Peroxide (aq) So	Soap Solutions	Α	Α	Α	Α	Α
Sodium Borate (aq) Sodium Chloride (aq) Sodium Hydroxide (aq) Sodium Hydroxide (aq) Sodium Nitrate (aq) Sodium Peroxide (aq) Sodium Hydroxide (aq) Sodium Peroxide (aq)	Sodium Acetate (aq)	В	Α	D	Е	D
Sodium Chloride (aq) Sodium Hydroxide (aq) Sodium Hydroxide (aq) Sodium Nitrate (aq) Sodium Peroxide (aq) Sodium Peroxide (aq) Sodium Peroxide (aq) Soybean Oil Steam, under 300°F DADAC Stearic Acid BBBEABBEABB Stoddard Solvent ADAABC Sulfur Chloride (aq) CDABBABC Sulfuric Acid (dilute) CBBABC Sulfuric Acid (dilute) CBBABC Sulfurous Acid BBBAAAB Tartaric Acid AAAAB Tetrachloroethylene DDAAAD Toluene DDDAAAD Triethanol Amine BADABEC Tung Oil (China Wood Oil) ACAAB Vinegar BAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	Sodium Bicarbonate (aq)	Α	Α	Α	Α	Α
Sodium Hydroxide (aq) Sodium Nitrate (aq) Sodium Peroxide (aq) Sodium Peroxide (aq) Sodium Peroxide (aq) Soybean Oil A C A A A Steam, under 300°F D A D A C Stearic Acid B B E A B Stoddard Solvent A D A B C Sulfur Chloride (aq) C D A B C Sulfuric Acid (dilute) C B A E D Sulfurous Acid B B A A D Tannic Acid A A A A B Tetrachloroethylene D D A A D Toluene Triethanol Amine B A D A E Trioctyl Phosphate D A B E C Tung Oil (China Wood Oil) Turpentine Vegetable Oils Vinegar B A A A A Whiskey, Wines A A A A A Whiskey, Wines B D A E D	Sodium Borate (aq)	А	Α	Α	Α	Α
Sodium Nitrate (aq) B A E E D Sodium Peroxide (aq) B A A E D Soybean Oil A C A A A Steam, under 300°F D A D A C Stearic Acid B B E A B Stearic Acid B B E A B Stoddard Solvent A D A A D Sulfur Chloride (aq) C D A B C Sulfur Chloride (aq) C D A B C Sulfuric Acid (dilute) C B A E D Sulfurous Acid B B A A A B Tannic Acid A A A A A A A Tetrachloroethylene D D A A D A A D	Sodium Chloride (aq)	А	Α	Α	Α	Α
Sodium Peroxide (aq) B A A E D Soybean Oil A C A A A Steam, under 300°F D A D A C Stearic Acid B B E A B B E A B Stoddard Solvent A D A A D A A D Sulfur Chloride (aq) C D A B C C B A E D Sulfur Chloride (aq) C D A B C C B A E D Sulfuric Acid (dilute) C B A E D D A A B A A A B B A A A B B A A A A A A A A A A A A A A	Sodium Hydroxide (aq)	В	Α	В	Α	В
Soybean Oil A C A A Steam, under 300°F D A D A Stearic Acid B B E A B Stearic Acid B B E A B Stearic Acid A D A A D Sulfur Chloride (aq) C D A B C Sulfur Chloride (aq) C D A B C Sulfuric Acid (dilute) C B A E D Sulfurous Acid B B A A D Tannic Acid A A A A B Tartaric Acid A B A A A Tetrachloroethylene D D A A D Triethanol Amine B A D A E Trioctyl Phosphate D A B E C	Sodium Nitrate (aq)	В	Α	Е	Е	D
Steam, under 300°F D A D A C Stearic Acid B B E A B Stoddard Solvent A D A A D Sulfur Chloride (aq) C D A B C Sulfur Chloride (aq) C D A B C Sulfuric Acid (dilute) C B A E D Sulfurous Acid B B A A D Tannic Acid A A A A B Tartaric Acid A B A A A Tetrachloroethylene D D A A D Toluene D D A A D Triethanol Amine B A D A E Trioctyl Phosphate D A B E C Tung Oil (China Wood Oil) A C A A	Sodium Peroxide (aq)	В	Α	Α	Е	D
Stearic Acid B B E A B Stoddard Solvent A D A A D Sulfur Chloride (aq) C D A B C Sulfuric Acid (dilute) C B A E D Sulfurous Acid B B A A D Tannic Acid A A A A B Tartaric Acid A B A A A Tetrachloroethylene D D A A D Toluene D D A A D Triethanol Amine B A D A E Trioctyl Phosphate D A B E C Tung Oil (China Wood Oil) A C A A D Turpentine A D A A A A Vinegar B A A A </td <td>Soybean Oil</td> <td>Α</td> <td>С</td> <td>Α</td> <td>Α</td> <td>Α</td>	Soybean Oil	Α	С	Α	Α	Α
Stoddard Solvent A D A A D Sulfur Chloride (aq) C D A B C Sulfuric Acid (dilute) C B A E D Sulfurous Acid B B A A D Tannic Acid A A A A B Tartaric Acid A B A A A Tetrachloroethylene D D A A D Toluene D D A A D Triethanol Amine B A D A E Trioctyl Phosphate D A B E C Tung Oil (China Wood Oil) A C A A D Turpentine A D A A A A Vinegar B A A A A A White Pine Oil B D A	Steam, under 300°F	D	Α	D	Α	С
Sulfur Chloride (aq) C D A B C Sulfuric Acid (dilute) C B A E D Sulfurous Acid B B A A D Tannic Acid A A A A B Tartaric Acid A B A A A Tetrachloroethylene D D A A D Toluene D D A A D Triethanol Amine B A D A E Trioctyl Phosphate D A B E C Tung Oil (China Wood Oil) A C A A D Turpentine A D A A A A Vegetable Oils A C A A A A Whiskey, Wines A A A A A A White Pine Oil B	Stearic Acid	В	В	Е	Α	В
Sulfuric Acid (dilute) C B A E D Sulfurous Acid B B B A A D Tannic Acid A A A A B A A B Tartaric Acid A B A A A A A A A A A A A A A A A A A A D A A D A A D A A D A A D A A D A A D A A D A A D A A D A A D A A D A A D A A D A A A A A A A A A A A A A A A A A A	Stoddard Solvent	А	D	Α	Α	D
Sulfurous Acid B B A A D Tannic Acid A A A A B Tartaric Acid A B A A A Tetrachloroethylene D D A A D Toluene D D A A D Triethanol Amine B A D A E Trioctyl Phosphate D A B E C Tung Oil (China Wood Oil) A C A A D Turpentine A D A A D Vegetable Oils A C A A B Vinegar B A A A A Whiskey, Wines A A A A A White Pine Oil B D A E D	Sulfur Chloride (aq)	С	D	Α	В	С
Tannic Acid A A A A B Tartaric Acid A B A A A Tetrachloroethylene D D D A A D Toluene D D A A D Triethanol Amine B A D A E Trioctyl Phosphate D A B E C Tung Oil (China Wood Oil) A C A A D Turpentine A D A A D Vegetable Oils A C A A B Vinegar B A A A A A Whiskey, Wines A A A A A A	Sulfuric Acid (dilute)	С	В	Α	Е	D
Tartaric Acid A B A A Tetrachloroethylene D D A A D Toluene D D A A D Triethanol Amine B A D A E Trioctyl Phosphate D A B E C Tung Oil (China Wood Oil) A C A A D Turpentine A D A A D Vegetable Oils A C A A B Vinegar B A A A A Whiskey, Wines A A A A A White Pine Oil B D A E D	Sulfurous Acid	В	В	Α	Α	D
Tetrachloroethylene D D A A D Toluene D D A A D Triethanol Amine B A D A E Trioctyl Phosphate D A B E C Tung Oil (China Wood Oil) A C A A D Turpentine A D A A D Vegetable Oils A C A A B Vinegar B A A A A Whiskey, Wines A A A A A White Pine Oil B D A E D	Tannic Acid	А	Α	Α	Α	В
Toluene D D A A D Triethanol Amine B A D A E Trioctyl Phosphate D A B E C Tung Oil (China Wood Oil) A C A A D Turpentine A D A A D Vegetable Oils A C A A B Vinegar B A A A A Whiskey, Wines A A A A A White Pine Oil B D A E D	Tartaric Acid	А	В	Α	Α	Α
Triethanol Amine B A D A E Trioctyl Phosphate D A B E C Tung Oil (China Wood Oil) A C A A D Turpentine A D A A D Vegetable Oils A C A A B Vinegar B A A A A Whiskey, Wines A A A A A White Pine Oil B D A E D	Tetrachloroethylene	D	D	Α	Α	D
Trioctyl Phosphate D A B E C Tung Oil (China Wood Oil) A C A A D Turpentine A D A A D Vegetable Oils A C A A B Vinegar B A A A A Whiskey, Wines A A A A A White Pine Oil B D A E D	Toluene	D	D	Α	Α	D
Tung Oil (China Wood Oil) A C A A D Turpentine A D A A D Vegetable Oils A C A A B Vinegar B A A A A Whiskey, Wines A A A A A White Pine Oil B D A E D	Triethanol Amine	В	Α	D	Α	Е
Turpentine A D A A D Vegetable Oils A C A A B Vinegar B A A A A Whiskey, Wines A A A A A White Pine Oil B D A E D	Trioctyl Phosphate	D	Α	В	Е	С
Vegetable Oils A C A A B Vinegar B A A A A Whiskey, Wines A A A A A White Pine Oil B D A E D	Tung Oil (China Wood Oil)	А	С	Α	Α	D
Vinegar B A A A A Whiskey, Wines A A A A A White Pine Oil B D A E D	Turpentine	Α	D	Α	Α	D
Whiskey, Wines A A A A A White Pine Oil B D A E D	Vegetable Oils	Α	С	Α	Α	В
White Pine Oil B D A E D	Vinegar	В	Α	Α	Α	Α
	Whiskey, Wines	Α	А	А	А	Α
Zinc Chloride (aq) A A A A A	White Pine Oil	В	D	Α	Е	D
	Zinc Chloride (aq)	А	Α	Α	Α	Α

3A Symbol for 3A Sanitary Standards Symbol Administrative Council. The 3A Sanitary Standard were created by the dairy industry as a voluntary benchmark for product performance and sanitary safety. The standard, collaboratively developed by a group of processors, suppliers, regulatory officials and sanitation specialists, is accepted by federal, state and local regulatory authorities. Our products have earned the 3A symbol through third party verification. This assessment makes certain each product conforms in all respects to the published standards. Dixon Sanitary is proud to be a participant in the 3A program.

3A Finish Product surface finish equivalent to 150 grit or better OD, and 180 grit or better ID. A maximum of Ra 32 microinch (0.8 micron) is indicated.

ABS (Acrylicnitrile-butadiene-styrene) a thermoplastic resin with an excellent resistance to acids, bases, salts and some solvents. It is heat resistant to 230°F.

AC Alternating current. The form in which electricity is delivered to businesses and residences.

AFD See VFD

ANSI American National Standards Institute, Inc.

ASME American Society of Mechanical Engineers

ASTM American Society for Testing and Materials

Absolute Pressure Atmospheric pressure added to gauge pressure.

Acme Thread A flat grooved helical ridge on a nut or bolt. This typically has a 29° included angle. Used on bevel seat and John Perry fittings

Adapter Connects the pump fluid end to the motor

Affinity Laws Used to predict how capacity, head and horsepower are affected by changes in the centrifugal pump impeller diameter or impeller speed.

Ambient Temperature The temperature at a point or area expressed as an average of the surrounding areas or materials. Ambient surface temperature is generally given to be 70°F to 80°F – an average of daily and seasonal variations.

Anneal Stress relief of stainless steel, a heat treatment to remove the stresses generated in forming and welding operations. This heat treatment is best done under controlled atmosphere or vacuum to maintain the mill finish. The fittings are not quenched, as in solution annealing; this would reintroduce residual stresses. Done correctly, parts are processed to provide minimum residual stresses and full corrosion resistance.

Atmospheric Pressure Force per unit area exerted against a surface by the weight of the air above that surface. At sea level, atmospheric pressure is 14.7 PSI.

Automatic Welding welding with equipment that performs the welding operation without adjustment of the controls by a welding operator. The equipment may or may not perform the loading and unloading of the work (see also machine welding).

BEP Best Efficiency Point. The point where the power coming out of the pump (water horsepower) is the closest to the power coming into the pump (brake horsepower) from the motor. This is also the point where there is no radial deflection of the shaft



BHP Brake Horsepower. The actual amount of horsepower being consumed by the pump as measured on a pony brake or dynamometer. This is not the horsepower used by the motor or driver.

Bioprocessing the creation of a product utilizing a living organism

Bioprocessing Equipment equipment, systems or facilities used in the creation of products utilizing living organisms

Bevel Seat Ferrules A set of plain (male) and externally threaded (female) bushings with matching bevel angles that produce a leak-proof seal when connected with a hex union nut. The threads used are Acme form.

Bright Anneal Annealing in a protective medium to prevent scaling and discoloration of the surface.

Bright Annealed Finish A silvery satin surface, approximating the mill finish of stainless steel.

Buna Synthetic rubber, a copolymer of acrylonitrile and butadiene.

Burst Pressure The pressure at which rupture occurs.

CCW Counter clockwise

C-Face/Frame The NEMA standard for motor mounting dimensions.

C_v The flow rate (in US gal/min) of pure water at 60°F passing through a valve when the valve is fully opened and the pressure differential between the two ends of the valve is 1 PSI.

- V = max. flow (in US gal/min)
- G = specific gravity (1 for water)
- P1 = inlet side pressure (psi)
- P2 = outlet side pressure (psi)

CW Clockwise

Capacity Flow rate normally measured in gallons per minute (GPM).

Carbon/Graphite A common mechanical seal face material chemically inert to most fluids with the exception of oxidizers, bleaches, halogens and a few other fluids.

Cavitation When the NPSH required by the pump is greater than the NPSH available in the system, cavitation occurs. Vapor is formed and moves along with the stream. These vapor bubbles or "cavities" collapse when they reach regions of higher pressure on their way through the pump cavities are forming in the liquid being pumped. When these cavities form at the suction of the pump several things happen all at once:

- Loss in capacity.
- · Loss of head (pressure).
- The efficiency drops.
- The cavities or bubbles will collapse when they pass into the higher regions of pressure causing noise, vibration and damage to many of the components.

Centipoise Metric unit of viscosity



Centistoke The kinematic unit of viscosity. Viscosity in centipoise divided by the liquid density at the same temperature gives kinematic viscosity in centistokes.

Centrifugal Pump Moves liquid with centrifugal force.

Ceramic A hard, chemically inert seal face material that has very high compressive resistance.

Clamp A device used to join mechanical parts, fittings, ensuring a quick leak-proof connection and enabling easy tear down.

Clean-In-Place (CIP) internally cleaning a piece of equipment without relocation or disassembly. The equipment is cleaned but not necessarily sterilized. The cleaning is normally done by acid, caustic or a combination of both with water-for-injection (WFI) rinse.

Close Coupled The pump impeller is mounted directly to the motor shaft or stub shaft that is mounted directly on the motor shaft. There is no separate bearing case.

Cold Flow Continued deformation or movement of rubber or PTFE under stress.

Compression Set The deformation that remains in rubber or PTFE after it has been subjected to and released from stress such as a clamp. The longer the stress is maintained the more definitive the deformation.

Controlled Sulfur in weld ends of 316L materials used in BPE installations, the sulfur content must be between .005% and .017% to assure better orbital welding.

Corrosion a chemical or electrochemical interaction between a metal and its environment, which results in changes in the property of the metal. This may lead to impairment of the function of the metal, the environment and/or the technical system involved.

Cycle See Hertz

DC Direct current. The movement of electrical charge is only in one direction.

DPDT Double pole-double throw, a type of limit switch.

Dead Head The condition of a centrifugal pump running with a closed discharge line.

Dilatent Fluid Viscosity increases with shear.

Discharge Head The outlet pressure of a pump.

Double-Acting (DA) Pneumatic Actuator Any pneumatic actuator which uses air to drive the actuator output shaft in both the open and close direction. The air supply is piped to one side of a piston-drive or a diaphragm while the air contained on the opposing side is exhausted.

Dry Running Occurs when a pump is running with insufficient or no fluid in the pump.

Durometer An instrument for measuring the hardness of rubber by resistance to penetration.



Durometer Hardness A numerical value which indicates the resistance to indentation of the blunt indentor of the durometer.

Dynamic Head (System Head) A moving fluid exerts a pressure higher than the static pressure due to the kinetic energy of the fluid.

EPDM Ethylene propylene diene monome, a synthetic rubber.

Efficiency Power out of the pump divided by power into the pump.

Efficiency Formula: TDH X GPM

HP X 3960

Elastomer Any of various elastic substances resembling rubber.

Elastomeric Material a material that can be stretched or compressed repeatedly and, upon immediate release of stress, will return to its approximate original size.

Electropolishing a controlled electrochemical process utilizing acid electrolyte, DC current, anode and cathode to smooth the surface by removal of metal.

Electric Actuator An electro-mechanical device used to open and close or modulate a valve. The actuator (which is mounted and coupled to the valve in similar fashion as the pneumatic actuator), operates the valve using an electric motor driving a gear train. While the basic function of the electric actuator is similar to the pneumatic, there are distinct differences in the application and flexibility of the two types, and these differences should be considered to select the proper type.

Electric Fail-safe Actuator Electrically driven actuator that contains an internal spring to close the valve on loss of electricity.

Encapsulation The enclosing of material by an encapsulant for protective purposes. In a ball valve the ball is encased in PTFE, for example, preventing the material flowing through the valve from getting behind the ball causing contamination problems.

Eye of the Impeller The center of the impeller where the fluid enters.

Fail-Closed Spring return pneumatic actuator is applied to the valve such that the spring will drive the valve to the closed position upon loss of air (may be termed air-to open).

Fail-Open Spring return pneumatic actuator is applied to the valve such that the spring will drive the valve to the open position upon loss of air (may be termed air-to close).

Ferrule A bushing used to secure a tube joint. A special bushing designed for welding to the end of tubing. Two ferrules and a gasket make a leak-proof connection when used with the complimentary clamps.

Fitting A small part of an apparatus (may be detachable).

Flooded Suction When the liquid source is higher than the pump and the liquid flows to the pump by gravity. Preferable for centrifugal pump installations.



Flow See capacity

Flow Coefficient (C_v) The flow in U.S. gallons of water (at 60°F) that will pass through the valve in one minute with a differential pressure across the valve of 1 PSI.

Fluid End The portion of the pump that comes in contact with the fluid being pumped.

Fluorocarbon Elastomer known as FKM a registered trademark of DuPont. (FKM is generic equivalent)

Fluoropolymer polymer material having a carbon chain either partially or completely bonded to fluorine atoms. FKM (FKM) and PTFE are examples of this material type.

Foot Valve A type of check valve. Used at the point of the liquid intake to retain liquid in the system, preventing the loss of prime when the liquid source is lower than the pump.

Frame See C-Face

Friction Head The pressure needed to overcome the resistance to the flow in the pipe and fittings.

Friction Loss The part of the total loss that occurs as the fluid flows through straight pipe.

Gas Tungsten-Arc Welding (GTAW) an arc welding process that produces coalescence of metals by heating them with an arc between a tungsten (non-consumable) electrode and the work. Shielding is obtained from a gas or gas mixture. (This process is sometimes called TIG welding, a non-preferred term.) GTAW may be performed by adding filler material to the weld or by a fusion process in which no filler is added.

Gasket static seal made from deformable material compressed between two mating surfaces.

GPM Gallons per minute

Hard Face A seal face either rotating or stationary. The most common materials are silicon carbide, ceramic and tungsten carbide.

Head The equivalent height of the liquid. 20°C water is used as the standard where 33.9ft of water equals one atmosphere (14.7psi). The pressure in a column of liquid. Pressure will increase as the height of the column increases. Head refers to the height in feet: pressure refers to the PSI. Centrifugal pump discharge is measured in head.

Heat Number an alphanumeric identification of a stated tonnage of metal obtained from a continuous melting in a furnace.

Heat-Affected Zone that portion of the base metal that has not been melted, but whose microstructure or mechanical properties have been altered by the heat of welding or cutting.

Hertz Frequency (cycles per seconds)

Hex Union Nut An internally acme-threaded six-sided connector used to assemble some fittings.

Horsepower Unit for measurement of power or rate of work. One horsepower = 33,000 foot pounds per minute.



Hygienic Clamp Joint a tube outside diameter union consisting of two neutered ferrules having flat faces with a concentric groove and mating gasket that is secured with a clamp, providing a non-protruding, recessless product contact surface.

ISO 5211 International standard for actuator and valve interface

Impeller A rotor or rotor blade attached to the end of the stub shaft imparting energy from the motor to the fluid being pumped

Internal Expansion (IX) A method using a stem and a ferrule to assemble ends on a hose. Upon assembly of the parts, a plug, sometimes known as a bullet, or a set of blades (fingers) is used to expand the stem diameter to a new larger size where the serrations on the stem are forced into the hose and this, in turn, forces the hose cover into the serrations of the ferrule. This provides a permanent assembly.

Kinetic Energy Created by a centrifugal pump when the velocity of the fluid is accelerated to the outer rim of the impeller. The amount of kinetic energy given to the fluid corresponds to the velocity at the impeller vane tip. The faster the impeller revolves or the bigger the impeller, the greater the energy given to the fluid. This kinetic energy is then harnessed and slowed by the resistance created by the pump volute.

Laminar Flow Sometimes known as streamline flow, occurs when a fluid flows in parallel layers, with no disruption between the layers. In fluid dynamics, laminar flow is a flow regime characterized by high momentum diffusion and low momentum convection. It is the opposite of turbulent flow. In nonscientific terms laminar flow is "smooth", while turbulent flow is "rough." Laminar flow is common in viscous fluids, especially those moving at low velocities.

Lubricant Any fluid that will maintain a film thickness of one micron or more at its operating temperature and load.

Machine Welding welding with equipment that performs the welding operation under the constant observation and control of a welding operator. The equipment may or may not perform the loading and unloading of the works. (see also automatic welding).

Manual Override Any mechanical device by which an automated valve may be manually operated. On smaller actuators, this may simply be wrench flats on the output shaft of the actuator. Larger actuators may require a more sophisticated system, such as de-clutchable hand wheels, manual gears, jack screws or hydraulic hand pump over-ride.

Manual Welding welding in which the entire welding operation is performed and controlled by hand.

Maximum-Shut-Off Pressure (Delta-P) The pressure of the media flowing into the valve against which the valve will have to close.

Meandering of or pertaining to a weld bead that deviates from side to side across the weld joint rather than tracking the joint precisely. Note the controlled sulfur content in BPE weld material.

Mechanical Seal A positive sealing device used to seal all fluids. Consists of two basic parts, a rotating element attached to the pump shaft and a stationary element attached to the pump casing. Each of these elements has a highly polished sealing surface. The polished faces of the rotating and stationary elements come into contact with each other to form a seal that prevents leakage along the shaft.

Media The material flowing through the valve.



Modulating Service Proportional positioning of a valve between the open and closed position. Used for flow control processes.

MTR Material Test Report

NAMUR International Standard of Interface for actuator accessories connections.

NEMA National Electrical Manufacturers Association

NEMA Rating National electrical code ratings for electrical component enclosures.

NEMA 4 Weather-proof enclosure suitable for indoor/outdoor applications to protect from windblown dust, rain or hose-directed water.

NEMA 4x Offers the same protection as NEMA 4 with the addition of corrosion resistance.

NEMA 6 Enclosure that may be submerged up to six feet for 30 minutes.

NEMA 7 Enclosure for hazardous locations must be capable of withstanding an internal explosion of gases so as not to ignite an external gas-air mixture.

NPSH(a) Net positive suction head available is the amount of fluid pressure you have at the suction side of the pump due to atmospheric pressure, pressurized tank or other means.

NPSH(r) Net positive suction head required is the amount of fluid pressure required at the suction to prevent cavitation. This requirement is found on pump curves produced by each pump manufacturer.

Net Positive Suction Head Amount of energy in the liquid at the pump datum. It must be defined to have a meaning, as either available or required NPSH.

Neoprene Synthetic rubber, chemically and structurally similar to natural rubber.

Nick a surface void anomaly caused by material removal or compression from the surface, whose bottom surface is usually irregular.

Nominal Size A dimensional value assigned for the purpose of convenient designation.

ODP Open Drip Proof motor enclosure

On-Off Service When the valve is being used to start or stop flow by being cycled to the full open or full closed position

Operating Pressure The pressure at which system functions. Also known as working pressure.

Orbital Welding automatic or machine welding of tubes or pipe in-place with the electrode rotating (or orbiting) around the work. Orbital welding can be done with the addition of filler material or as a fusion process without the addition of filler.

PSI Pounds per square inch



PSIG Pounds per square inch gauge

PTFE Tetrafluoroethylene, is a high performance thermo plastic polymer that has excellent dielectric strength, chemical and temperature resistance.

Passivation removal of exogenous iron or iron from the surface of stainless steels and higher alloys by means of a chemical dissolution, most typically by a treatment with an acid solution that will remove the surface contamination and enhance the formation of the passive layer.

Pipe pipe size is determined by diameter and either schedule, series or SDR. For bioprocessing equipment, pipe does not include tube.

Pipe Friction Loss The positive head (fluid pressure) loss due to friction resistance between the pipe walls and the moving liquid.

Pit a small surface void resulting from a localized loss of base material.

Pneumatic Actuator An air operated mechanical device used to open and close or modulate a valve. The actuator, which is mounted to the valve by a bracket and coupled to the stem, is designed to convert air pressure into mechanical force sufficient to operate the valve.

Polish To make smooth and shiny by rubbing. Fittings may be machine polished to 180 grit finish.

Polypropylene A lightweight synthetic plastic.

Positive Displacement Pump A pump that causes a fluid to move by trapping a fixed amount of it then forcing (displacing) that trapped volume into the discharge pipe.

Pressure The force per unit area applied on a surface in a direction perpendicular to that surface.

Pressure Head Must be considered when a pumping system either begins or terminates in a tank which is under some pressure other than atmospheric. The pressure in such a tank must first be converted to feet of liquid. A vacuum in the suction tank or a positive pressure in the discharge tank must be added to the system head, whereas a positive pressure in the suction tank or vacuum in the discharge tank would be subtracted. The following is a handy formula for converting inches of mercury vacuum into feet of liquid.

Vacuum, in. of Hg X 1.13 Vacuum, ft of liquid = Sp. Gr.

The above forms of head, namely static, friction, velocity, and pressure, are combined to make up the total system head at any particular flow rate.

Pressure Rating pressure at which a system is designed to operate, allowing for applicable safety factors.

Prime. A charge of liquid required beginning the pumping action of centrifugal pumps when the liquid source is lower than the pump.

Profilometer an instrument for the measurement of the degree of surface roughness.



R_a log of the arithmetic mean of the surface profile.

RPM Revolutions per minute

SPDT Single pole double throw, a type of limit switch.

SPST Single pole single throw, a type of limit switch.

STP Standard conditions for temperature and pressure. In physical sciences, STP, are standard sets of conditions for experimental measurements, to allow comparisons to be made between different sets of data. National Institute of Standard and Technology's (NIST) version is a temperature of 20°C (293.15 K, 68°F) and an absolute pressure of 101.325 kPa (14.696 PSI, 1 atm).

Sanitary (hygienic) Weld generally considered to be a groove weld in a square butt joint made by the GTAW (or plasma) process as a fusion weld without the addition of filler material. A sanitary weld must be completely penetrated on the weld ID, with little or no discoloration due to oxidation and be otherwise without defects that would interfere with maintenance in a clean and sterile condition.

Santoprene A thermoplastic elastomer, a rubber-like material that complies to FDA requirements.

Schedule dimensional standard for pipe as defined by ASTM.

Seal Face surface point on which a seal is achieved.

Service Temperature The maximum and minimum temperature of the media.

Shut-Off Head The maximum head that a pump can generate.

Silicon Carbide Synthetic mineral of silicon and carbide. It is used in abrasives, refractories, ceramics and numerous high performance applications.

Silicone Dimethyl silicone, a synthetic rubber.

Sintering Heat process in which powdered metal particles are heated to near melting point, fusing the metal granules together.

Specific Gravity A measure of the weight of a liquid in relation to that of water. If the liquid in question will float on water then the specific gravity will be less than one and if the liquid will sink when mixed with water the specific gravity will be greater than one.

Spring-Return (SR) Pneumatic Actuator Any pneumatic actuator which contains a single coil spring or group of coil springs to oppose the movement of a piston or diaphragm. As air moves the piston or diaphragm the spring is compressed. When the air supply is discontinued and exhausted, the spring extends and drives the piston or diaphragm in the opposite direction. This type of actuator is normally used for applications where it is necessary for the valve to move to the open or close position upon loss of air supply, whether by design or by system failure.

Static Discharge Head The vertical distance in feet between the pump center line and the point of free discharge or the surface of the liquid in the discharge tank.



Static Head The pressure at any point in a liquid can be thought of as being caused by a vertical column of the liquid which, due to its weight, exerts a pressure equal to the pressure at the point in question. The height of this column is called the "static head" and is expressed in terms of feet of liquid.

Stem Torque The force required at the valve stem to open or close the valve against system pressure and service conditions.

Suction Head Exists when the source of supply is above the center line of the pump. Thus the static suction head is the vertical distance in feet from the center line of the pump to the free level of the liquid to be pumped.

Suction Lift Exists when the source of supply is below the center line of the pump. Thus the static suction lift is the vertical distance in feet from the center line of the pump to the free level of the liquid to be pumped.

Supply Pressure The plant air supply pressure available to operate a pneumatic actuator. (plant air)

Surface Finish all surfaced as defined by Part SF of the current ASME BPE Standard and/or the owner/user or manufacturer and referred in R_a µin. or µm.

Surge Also known as water hammer. A rapid rise or decrease of internal pressure. Surge conditions occur for various reasons, typically, but not limited to: start and stop sequences.

System Curve A description of what the pump is required to perform. The pump will pump where the system curve intersects the pump curve.

System Head The head caused by friction in the piping valves and fittings.

TDH Total dynamic head. A combination of the suction head and the head being produced by the pump. Discharge reservoir pressure head + static discharge head + velocity head at pump discharge + total friction head in discharge line.

TEFC Totally Enclosed Fan Cooled motor enclosure.

TENV Totally Enclosed Non Ventilated motor enclosure.

Thixotropic Fluid Viscosity thins with shear.

Torque A twisting or turning force. Usually measured in inch pounds (in-lbs) or foot pounds (ft-lbs). (Force through a distance.)

Total Dynamic Discharge Head (hd) The static discharge head plus the velocity head at the pump discharge flange plus the total friction head in the discharge line. The total dynamic discharge head, as determined on pump test, is the reading of a gauge at the discharge flange, converted to feet of liquid and corrected to the pump center line, plus the velocity head at the point of gauge attachment.

Total Dynamic Suction Head (hs) The static suction head plus the velocity head at the pump suction flange minus the total friction head in the suction line. The total dynamic suction head, as determined on pump test, is the reading of the gauge on the suction flange, converted to feet of liquid and corrected to the pump centerline, plus the velocity head at the point of gauge attachment.



Total Dynamic Suction Lift (hs) The static suction lift minus the velocity head at the pump suction flange plus the total friction head in the suction line. The total dynamic suction lift, as determined on pump tests, is the reading of a gauge on the suction flange, converted to feet of liquid and corrected to the pump centerline, minus the velocity head at the point of gauge attachment.

Total Head (H) or **Total Dynamic Head** The total dynamic discharge head minus the total dynamic suction head or plus the total dynamic suction lift.

```
TDH = hd + hs (with suction lift)
TDH = hd - hs (with a suction head)
```

Total Static Head The vertical distance in feet between the free level of the source of supply and the point of free discharge or the free surface of the discharge liquid.

Tube A hollow cylinder especially one that conveys a fluid. For sanitary applications a thin wall is implied.

Tube Fitting A length of tubing formed into a usable shape either welded to an apparatus or welded to ferrules for use in an apparatus.

Tubing A piece or length of tube.

Tumble Polish Surface A uniform finish applied by vibratory equipment to stainless steel, varying from matte grey to bright, depending on media used. This process may cause work hardening on the surfaces.

Tungsten Carbide A common hard face seal material available in several grades depending upon hardness and corrosion resistance. Cobalt and nickel are the two most common binders.

Turbulent Flow Irregular flow that is characterized by tiny whirlpool regions. The velocity of this fluid is definitely not constant at every point.

VFD Variable Frequency Drive. Used to vary the frequency going into a motor, thus varying the speed at which the motor runs.

Vapor Pressure Below this pressure the liquid being pumped will vaporize.

Vaporize The fluid passes from a liquid to a gaseous state.

Velocity A measurement of the speed of the liquid in the system; Velocity = distance/time.

Velocity Head (hv) The energy of a liquid as a result of its motion at some velocity V. It is the equivalent head in feet through which the water would have to fall to acquire the same velocity, or in other words, the head necessary to accelerate the water. Velocity head can be calculated from the following formula:

```
\begin{array}{ll} H=& \underline{V}^2\\ & 2g\\ \\ \text{where} & g=32.2 \text{ ft/second}^{-2}\\ & V=\text{liquid velocity in feet per second} \end{array}
```

The velocity head is usually insignificant and can be ignored in most high head systems. However, it can be a large factor and must be considered in low head systems



Viscosity Resistance to flow. Internal friction of a liquid tending to reduce flow.

FKM A DuPont manufactured elastomer widely used in the sealing industry. FKM is the generic equivalent.

Volute (casing) Casing surrounding the pump impeller. The volute converts velocity energy to pressure energy.

WOG Water, Oil, Gas. Pressure rating for valves handling these products. This does not include steam.

WHP Water Horse Power. The calculated horse power coming out of the pump.

WHP = head x gpm
3960

Washdown Duty Motor enclosure that is suitable for a liquid washdown atmosphere.

Water Hammer See surge

Waviness undulations or rippling of the surfaces.

Welding Join two (or more) pieces of material by applying heat to produce a localized union through fusion across the interface. For sanitary fittings, a ferrule is attached to the ends of a tube fitting by TIG welding without the addition of filler metal. Tube fittings can then be joined with clamps and gaskets to form parts of a system.

Work (Strain) Hardening. An increase in hardness and strength caused by plastic deformation at temperatures below the annealing ranges.

Index

A		Actuators (continued)	
Accessories	304-314	technopolymer (RP-TP)	245-246
Breather Vents	310	dimensions	245
Jax Lubes	309	torque ratings	246
Legris Push-In Fittings	302-305	Vertical with Control Top (VC)	261-266
Metric Push-In Fittings	306-307	butterfly valve bracket & coupli	ing kit 268
Tubing	308	dimensions	261, 264
Wilkerson Mini FRLs	311-314	material list	265-266
Actuators	231-270	Vertical without Control Top (VC)	260
Canister - stainless steel	259-270	butterfly valve bracket & coupli	ing kit 268
bracket & coupling kit	268	dimensions	260
double acting (RP)	269-270	material list	260
dimensions	269	Aseptic Valves	30-39
material list	270	Single Body Valves	30-35
Electric	249-258	dimensions	32, 34
BEO series	250-253	material list	33, 35
dimensions	251	Y-Body Angle Valves	36-39
specifications	252-253	dimensions	36, 38
BES heavy duty series	254-256	material list	37, 39
dimensions	255	_	
specifications	256	В	
BEX high speed series	257	Ball Valves	159-193
coupler kit	258	Industrial	176-193
Inductive Proximity Sensors	267	2 piece- brass	187-188
Rack & Pinion	231-248	dimensions	187
180° aluminum (RP-MA)	241-244	material list	188
dimensions	242-243	2 piece- stainless steel	177-180
torque ratings	244	dimensions	178, 180
actuator sleeve inserts	248	material list	179
aluminum (RP-BA)	236-240	3 piece- stainless steel	181-183
dimensions	237-238	dimensions	182
material list	239	material list	183
torque ratings	240	assembly gauge	192
coupler kit	247	industrial ball valve check list	193
stainless steel (RP-BA)	233-235	multiport- brass	189-191
dimensions	233	dimensions	190
material list	234	material list	191
torque ratings	235	multiport- stainless steel	184-186



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Index

Ball Valves (continued)	Butterfly Valves (continued)	
dimensions185	with pull handle	196
material list186	with trigger handle	198
Sanitary159-175	B5102 butterfly valves	. 201-202
2-way161-163	material list	202
dimensions 162	B5104 butterfly valves	. 203-205
encapsulated161	dimensions	204
material list 163	material list	205
non-encapsulated161	B5115 butterfly valves	206
assembly gauge192	sanitary butterfly ball valve che	ck list 216
automation169	valve seat dimensions	207
characterized V-seat 173-175		
dimensions 174	C	
material list 175	Check Valves	218-230
manual only non-encapsulated . 170-172	Air Blow Check Valves	225-226
dimensions171	dimensions	225
material list 172	material list	226
multiport164-168	Air Relief Check Valves	227-228
3 way 164-165	dimensions	227
4 way164-165	material list	228
dimensions 165	Air & Vacuum Relief Tank Vent Val	ve 229-230
flow paths166-167	dimensions	229
material list168	material list	230
pressure temperature charts 160	Spring Check Valves	219-221
sanitary ball valve check list 193	dimensions	219
seat materials160	material list	220
Butterfly Valves194-217	technical data	221
Industrial 211-214	Y-Ball Check Valves	. 222-224
B51 series 211-213	dimensions	222
industrial butterfly valve check list 217	material list	223
material list214	technical data	224
Private Label Valve Handle Covers 215	Control Valves	123-141
Sanitary194-210	Aseptic	131-138
automation208-210	C _v factors	128-130
B5101 butterfly valves195-200	dimensions	. 132, 134
material list 199	material list	. 133, 135
technical data200	Characterized V-Seat	140-141
with infinite handle197	dimensions	141



Index				
Control Valves (continued)	Limit Switches (continued)			
material list 175	XLS-B4 series	274		
Hygienic 123-130	XLS-C4 series	276		
C _v factors 128-130	XLS-C7 series	275		
dimensions 124, 126	Long Stroke Valves	20-29		
material list 125, 127	Change Over Valves	26-29		
Positioners 139	C _v factors	28-29		
Cordsets and Receptacles297-301	dimensions	26		
Cordsets	material list	27		
Pre-wired Valve Packages 301	pressure loss	28-29		
Receptacles 298-300	Long Stroke Valves	20-25		
	C _v factors	24		
D	dimensions	22		
Diaphragm Valves52-84	material list	23		
Accessories82-83	pressure loss	25		
Clamp Dimensions57				
C _v factors 57	M			
Diaphragms56	Mix Proof Valves	40-47		
Diaphragm Valve Check List 84	Mix Proof	40-44		
Manual Valves58-64	body configurations	41		
Multiport Valves78	dimensions	41		
Pneumatically Operated Valves 65-76	material list	44		
Tank Bottom Valves79-81	operation	43		
Welded Valves77	Mix Proof Piggable	45-47		
_	dimensions	46		
F	material list	47		
Filters / Strainers 360-366	operation	46		
Dual Filter / Strainer 366	Manual Operators	271-272		
In-Line Filter / Strainer 361-362	Declutchable Override	272		
Replacement Filters 365	Fail Safe Spring Return Handle.	271		
Side-Entry Filter / Strainer 363-364	B			
Wire Cloth Mesh Over Screens 365	P			
	PMO Valves	48-51		
L	Body Configurations	49		
Limit Switches 273-282	Dimensions	49		
PS-AE series	Material List	50		
PS-V series 280-282	Operation	50		
S series 277	Positioners & Controls	289-296		



Positioners & Controls (continued) Sample Valves (continued) XPB Series – Electro-pneumatic.......... 296 sampling bottles115-117 configurations......115-116 material list117 XPO Series- Electro-pneumatic 290-291 configurations 94-95 Pump - Sanitary Centrifugal 315-354 dimensions 96-105 material list 106-107 Casing Drain Options......319 Angle Valves 86-88 Performance Curves – 60 Cycle ... 322-337 Safety & Overflow Valves...... 142-158 Performance Curves – 50 Cycle ... 338-345 Manual Overflow Valves 148-152 dimensions 149, 151 Repair Kits 350-351 Replacement Parts 348-349 material list 150, 152 Pneumatic Overflow Valves 153-157 Seal Options 316 material list 155, 157 Troubleshooting 352-353 Pump Technical 355-359 Safety Valves 142-147 Centrifugal Pump Characteristics 357 dimensions 144, 146 material list 145, 147 Sanitary Breakaway Coupling...... 158 Viscosity Chart 358-359 Seat Valves...... 2–19 Body Configurations...... 3 Water Vapor Pressure Chart 356 Control Tops 14-17 Dimensions 7-11 S Holding Pressure 4 Sample Valves...... 85-122 BioCheck Valves 93-122 Pressure Drop Flow Paths 5–6 accessories 118-121 combi-sampling valves108-111 Valve Troubleshooting...... 18 Solenoid - NAMUR Mount...... 283-288 configurations......110 dimensions 108-109 Dual Coil 285, 288 material list111 inclined seat valve112-114 dimensions112 material list113-114 K_v factors......122



Index

T

echnical	367-401
Austenitic Stainless Steel Chemist	ry 367
Chemical Compatibility Guide	387-389
Finish Information	367
Fraction - Decimal Conversion Cha	art 386
Glossary of Terms	390-401
Measurement Information	385
length conversion constants	385
measures of pressure	385
weight conversion constants	385
Sanitary Fittings Identification	368-378
APC	373
bevel seat	369
clamp	368
DIN	374
IDF	377
I-Line	371
John Perry	370
Q-Line	372
RJT	375
SMS	376
vacuum flanges	378
Sanitary Gaskets	379-381
clamp gasket sizing guide	
Temperature Conversions	384
Thread Information	382-383
identifying threads	382-383
normal engagement length	
thread dimensions	
Water Data and Formulas	385

NOTES	



NOTES





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