



Cipriani Harrison Valves Corp.

Ball Valve

52 Series

Application

Sanitary ball valves are used in stainless steel piping systems for isolation, either manually or automatically operated. The full port design with zero flow restriction makes it an optimum choice for viscous or particulate liquids.

Working Principle

A precision ball with a full port is positioned inside the valve body between two flanges and two PTFE valve seats. The 90° rotation of the valve stem, through the handle or a pneumatic actuator, is transferred to the ball thereby opening or closing the valve.

Standard Design

The valve consists of a valve body, two flanges, PTFE valve seats, EPDM O'Rings, ball, stem and a handle or actuator. All Seats and Seals are made from FDA approved materials.

The valve body, flanges and ball are made of forged 316L and 304L stainless steel which ensures non porous, smooth and dimensionally stable construction.

The valve is designed to maintain a full flow rate, with a minimum pressure drop and it is fully drainable. A Bottom entry, precision machined stem with a live loaded PTFE thrust washer ensures a smooth rotation at various temperatures and pressure conditions.

Purge ports are provided on the valve body for SIP / CIP applications.

Available Sizes

1", 1½", 2", 2½", 3", 4"

Options

Automatic operation by vertical/horizontal pneumatic actuator.

Electrical control unit with proximity switches and solenoid valve for remote operation.

End connections : Sanitary Clamp, Butt - Weld, I-Line or others on request.

Material : AISI 316L or AISI 304L

Handle Options : 90° Open/Close
Universal (360°) Snapping



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TECHNICAL SPECIFICATIONS :

Material :

Product wetted steel parts.....AISI 316L/AISI 304L
Other steel parts.....AISI 304

FDA Seals :

Valve Seat.....TFM PTFE Std.
O'ring.....EPDM Std. (Option : Viton / Silicone)
Cavity filler (optional).....PTFE Std.
TFM PTFE cavity filter available upon request.
*Other seal material available upon request.

Nominal Pressure :

Maximum product pressure.....200 PSI maximum (14 Bars)
Test pressure 235 PSI (16 Bars)
(Leakage test according to BS EN 12266-1)

Supply Pressure for
Air Actuator (Min. - Max. Range).....70-115 PSI (Dry & Filtered Compressed Air)

Temperature Range :.....-60° Degrees Fahrenheit to +300° Degrees Fahrenheit
*Other seal material available for higher temperatures

Surface Finish :

Surface in contact with product.....Ra <= 23 µ in (Grit 180g)
Optional.....Ra <= 16 µ in (Grit 240g)
Ra <= 10 µ in (Grit 320g)
*Electropolishing available upon request

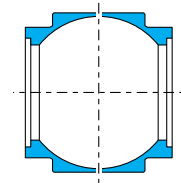
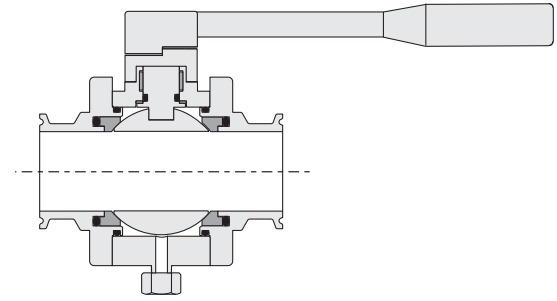
ConnectionsSanitary Clamp (ISO 2852 / BS 4825-3)
Optional.....Butt Weld (ISO 2037 / BS 4825-01)
I-Line
Other connections on request

Purge Port Connections.....1/4" Male BSP
* Please see page12 for purge port adapters

Torque values :

Ball Valve with Std Seat (for rotating the valve stem)			Ball Valve with cavity fillers (for rotating the valve stem)		
Size	lbf.ft	Nm	Size	lbf.ft	Nm
1"	6	8	1"	8	9
1.5"	15	20	1.5"	20	27
2"	20	27	2"	27	37
2.5"	28	38	2.5"	38	52
3"	38	52	3"	51	75
4"	54	84	4"	72	105

	Cv GPM	Kv m ³ /hr
1"	66	56.4
1.5"	192	164
2"	434	370
2.5"	723	618
3"	1124	960
4"	2100	1795



Cavity fillers on request

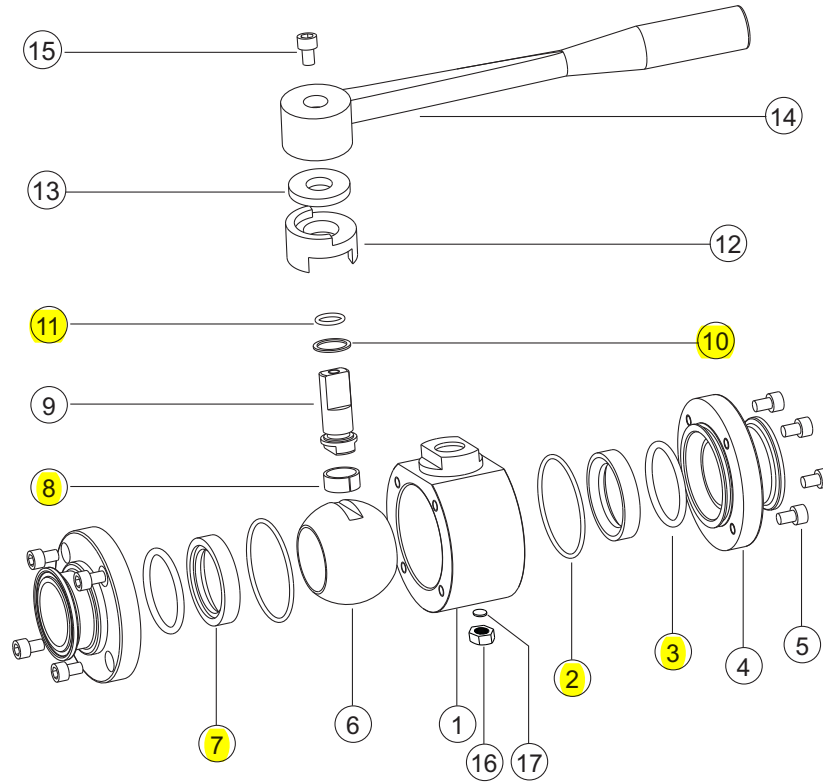


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Exploded view of standard Ball Valve



NO.	PART NO.	DESCRIPTION	MATERIAL
1	5201	BODY	AISI 316L / AISI 304L
2	5202	O'RING	EPDM
3	5203	O'RING	EPDM
4	5204	FLANGE	AISI 316L / AISI 304L
5	5205	CAP SCREW	AISI 304
6	5206	BALL	AISI 316L / AISI 304L
7	5207	SEAT	TFM PTFE
8	5208	BUSHING	PTFE
9	5209	STEM	AISI 316L / AISI 304L
10	5210	THRUST RING	PTFE
11	5211	O'RING	EPDM
12	5212	INDEX BASE	AISI 304
13	5213	THRUST WASHER	PTFE
14	5214	HANDLE	AISI 304
15	5215	CAP SCREW	AISI 304
16	5216	DRAIN CAP	AISI 316L / AISI 304L
17	5217	WASHER	PTFE

*Highlighted items make up a repair kit.



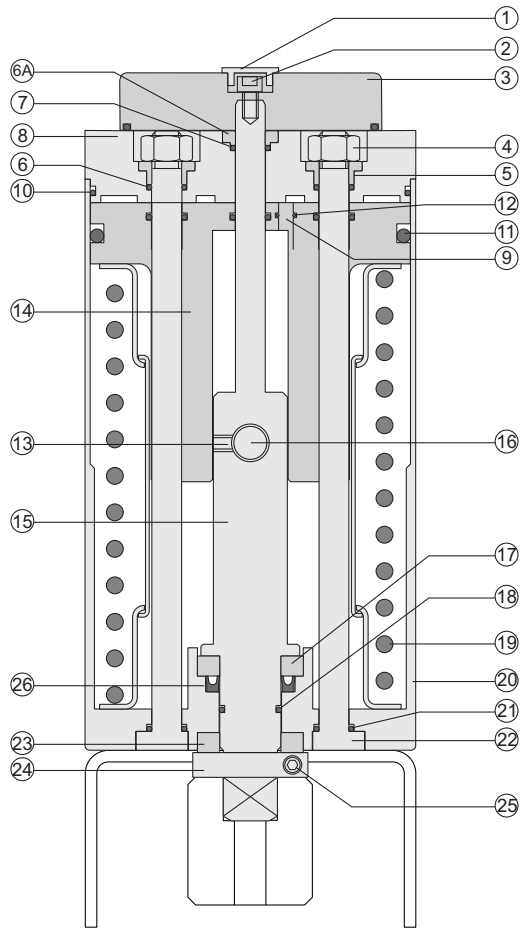
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9 Series Actuator



Cross Section view of Standard Actuator

ITEM	DESCRIPTION	MATERIAL
1.	SCREW CAP	POLYAMIDE 6
2.	CAP SCREW	AISI 304
3.	TOP CAP	POLYAMIDE 6
4.	NYLOCK NUT	AISI 304
5.	BUSHING	POLY ACETAL
6.	O-RING	NITRILE
6A	BUSHING	POLY ACETAL
7.	O-RING	NITRILE
8.	TOP COVER	POLYAMIDE
9.	TUBE	POLYURETHANE
10.	O-RING	NITRILE
11.	O-RING	NITRILE
12.	O-RING	NITRILE
13.	GRUB SCREW	AISI 304
14.	PISTON	POLY ACETAL
15.	PISTON ROD	AISI 304
16.	GUDGEON PIN	AISI 304
17.	UPPER THRUST BUSHING	POLY ACETAL
18.	O-RING	NITRILE
19.	SPRING	SPRING STEEL
20.	CYLINDER	AISI 304
21.	O-RING	NITRILE
22.	TIE RODS	AISI 304
23.	LOWER THRUST BUSHING	POLY ACETAL
24.	LOCK NUT	AISI 303
25.	CAP SCREW	AISI 304



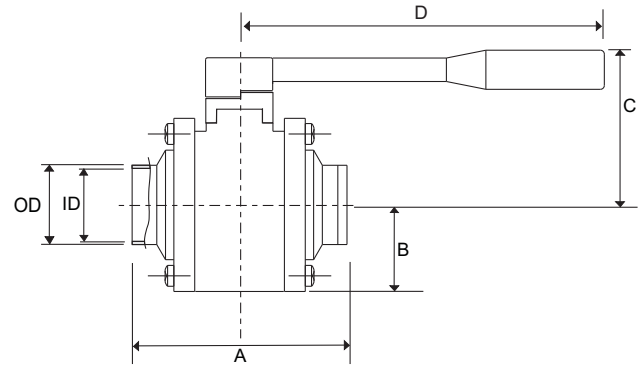
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Ball Valve

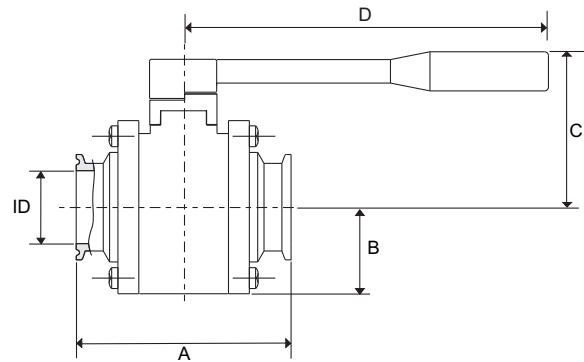
52 Series

Dimensions (Inches)



Butt-weld

Dimensions	1"	1 1/2"	2"	2 1/2"	3"	4"
A	3 45/64	4 7/32	4 39/64	5 11/32	6 7/32	6 45/64
B	1 11/32	1 5/8	1 31/32	2 11/32	2 19/32	3 27/64
C	2 27/32	3 13/64	3 1/2	3 7/8	4 7/32	5
D	7 1/4	7 1/4	7 1/4	7 1/4	10	12
OD	1"	1 1/2"	2"	2 1/2"	3"	4"
ID	7/8	1 3/8	1 7/8	2 3/8	2 55/64	3 27/32



Sanitary Clamp

Dimensions	1"	1 1/2"	2"	2 1/2"	3"	4"
A	3 45/64	4 7/32	4 39/64	5 11/32	6 7/32	6 45/64
B	1 11/32	1 5/8	1 15/16	2 11/32	2 19/32	3 27/64
C	2 27/32	3 13/64	4 1/2	3 7/8	4 7/32	5
D	7 1/4	7 1/4	7 1/4	7 1/4	10	12
ID	7/8	1 3/8	1 7/8	2 3/8	2 55/64	3 27/32

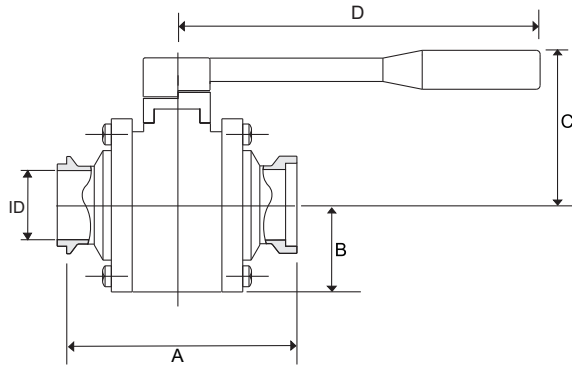


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Dimensions (Inches)



I-Line

Dimensions	1"	1 1/2"	2"	2 1/2"	3"	4"
A	4 1/64	4 21/64	5 17/32	5 19/32	6 23/32	7 61/64
B	1 11/32	1 5/8	1 31/32	2 11/32	2 19/32	3 27/64
C	2 27/32	3 13/64	3 1/2	3 7/8	4 7/32	5
D	7 1/4	7 1/4	7 1/4	7 1/4	10	12
ID	7/8	1 3/8	1 7/8	2 3/8	2 55/64	3 27/32

* Consult the factory for I-line Male x Male or I-line Female x Female "A" Dimensions.



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Vertical Actuator Specifications

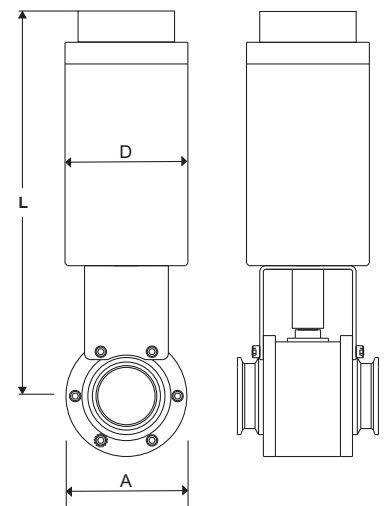
Pressure	: Upto 120 PSI (8 bar)
Temperature	: -4 ⁰ F to 176 ⁰ Fahrenheit (-20 ⁰ to 80 ⁰ C)
Media	: Filtered dry air, preferably lubricated
Construction	: Suitable for indoor or outdoor installation
Material	: AISI 304 Stainless steel
Finish	: Polished
Rotation (Standard)	: Air to open, spring to close and air to open, Air to closes
Movement (Std.)	: 90 ⁰
Lubrication	: Factory lubricated for the normal life of Actuators
Life	: 200,000 operations minimum

Actuator Torque - AT 90 PSI

MODEL			9C35	9C40	9C50
AIR TO AIR TORQUE (lbf.ft)			4.93	5.76	14.39
AIR TO SPRING TORQUE (lbf.ft)	SPRING STROKE	END	2.40	2.74	8.22
		START	1.78	1.92	4.45
	AIR STROKE	END	3.15	5.07	17.13
		START	2.33	2.74	13.70

Vertical Actuator - 9C4 (Air / Spring), 9C5 (Air / Air)

VALVE SIZE	1"	1 1/2"	2"	2 1/2"	3"	4"
ACTUATOR SIZE (D)	3.5		4		5	
L	11 3/4	12 3/32	12 9/16	12 61/64	16 27/64	17 11/64
A	2 11/16	3 1/4	3 15/16	4 11/16	5 15/64	6 55/64



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Horizontal Actuator Specifications

Pressure	: Upto 120 PSI (8 bar)
Temperature	: -4 ⁰ F to 176 ⁰ Fahrenheit (-20 ⁰ to 80 ⁰ C)
Media	: Filtered dry air, preferably lubricated.
Construction	: Suitable for indoor or outdoor installation
Material	: Housing-Aluminium Alloy
Finish	: Two coat polyurethane paint
Rotation (Standard)	: Counter clockwise to open with port 'A' pressurized Spring return Actuators air fail to close clockwise
Movement (Std.)	: 90 ⁰
Lubrication	: Factory lubricated for the normal life of Actuators
Life	: 500,000 operations minimum

Actuator Torque - AT 90 PSI

MODEL		E25	E40	E100	E200	E350	P150	
DA TORQUE (lbf.ft)		27	51	115	251	436	174	
SR TORQUE (lbf.ft)	SPRING STROKE	END	13	25	58	125	206	109
		START	4	8	21	41	63	65
	AIR STROKE	END	21	40	88	196	347	102
		START	13	25	55	123	223	59

Recommended Horizontal Actuator Model (Double Acting / Spring Return)

VALVE SIZE	1"	1 ½"	2"	2 ½"	3"	4"
Double Acting (Air to Air)	ED25	ED40	ED40	ED100	ED200	ED200
Spring Return (Air to Spring)	ES40	ES100	ES100	PS150	ES350	ES350

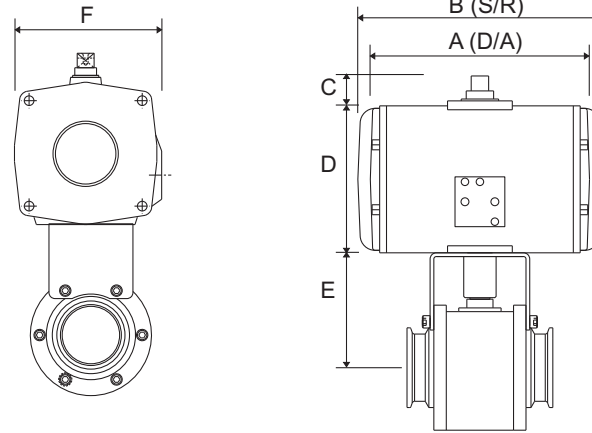


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Dimensions (Inches)



Horizontal Actuators Spring Return (Air to Spring)

VALVE SIZE	1"	1 1/2"	2"	2 1/2"	3"	4"
ACTUATOR SIZE	ES40	ES100	ES100	PS150	ES350	ES350
B (Spring Return)	8	10 1/2	10 1/2	8 9/16	15 1/4	15 1/4
C	25/32	25/32	25/32	25/32	25/32	25/32
D	3 3/4	4 41/64	4 41/64	5 5/16	7 1/8	7 1/8
E	2 61/64	3 21/64	3 5/8	4	4 11/32	5 1/8
F	3 13/16	4 39/64	4 39/64	5 21/32	7 11/64	7 11/64

Horizontal Actuators Double Acting (Air to Air)

VALVE SIZE	1"	1 1/2"	2"	2 1/2"	3"	4"
ACTUATOR SIZE	ED25	ED40	ED40	ED100	ED200	ED200
A (Double Acting)	5 5/16	5 25/32	5 25/32	6 15/16	9 11/32	9 11/32
C	25/32	25/32	25/32	25/32	25/32	25/32
D	3 11/64	3 3/4	3 3/4	4 41/64	5 13/32	5 13/32
E	2 61/64	3 21/64	3 5/8	4	4 11/32	5 1/8
F	3 17/64	3 13/16	3 13/16	4 39/64	5 41/64	5 41/64



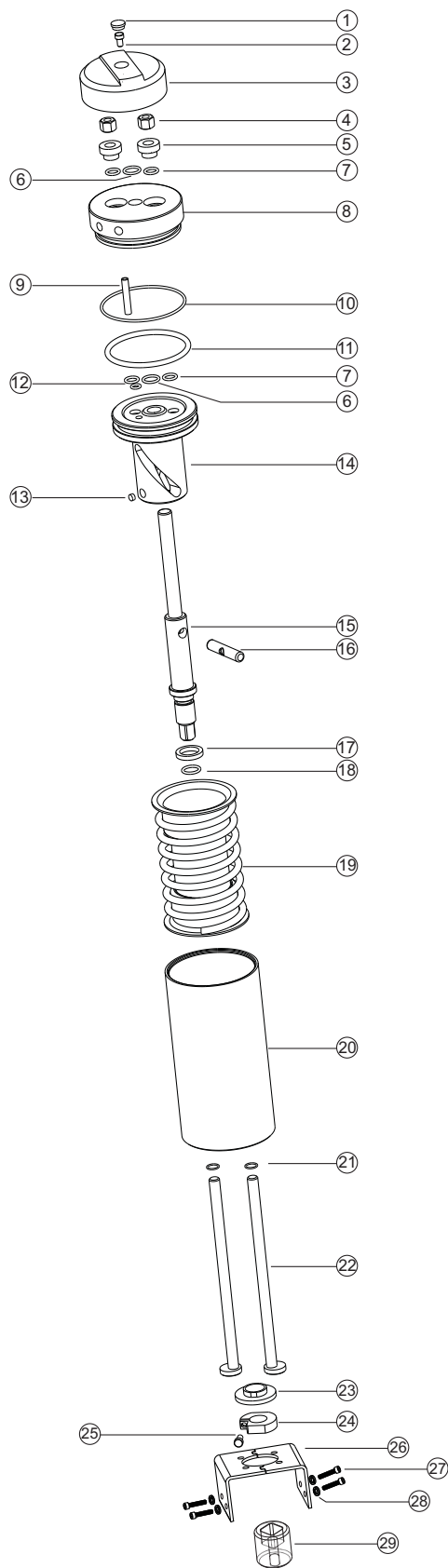
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9 Series Actuator

Exploded view of 9 - Series Actuator



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Part numbers of exploded view of standard Actuator

ITEM	PART NO.	PART NO.	PART NO.	QTY	DESCRIPTION	MATERIAL
	<u>9C-35</u>	<u>9C-40</u>	<u>9C-50</u>			
1.	9C3501	9C4001	9C5001	1	SCREW CAP	POLYAMIDE 6
2.	9C3502	9C4002	9C5002	1	CAP SCREW	AISI 304
3.	9C3503	9C4003	9C5003	1	TOP CAP	POLYAMIDE 6
4.	9C3504	9C4004	9C5004	2	NYLOCK NUT	AISI 304
5.	9C3505	9C4005	9C5005	2	BUSHING	POLY ACETAL
6.	9C3506	9C4006	9C5006	2	O-RING	NITRILE
7.	9C3507	9C4007	9C5007	4	O-RING	NITRILE
8.	9C3508	9C4008	9C5008	1	TOP COVER	POLYAMIDE
9.	9C3509	9C4009	9C5009	1	TUBE	POLYURETHANE
10.	9C3510	9C4010	9C5010	1	O-RING	NITRILE
11.	9C3511	9C4011	9C5011	1	O-RING	NITRILE
12.	9C3512	9C4012	9C5012	1	O-RING	NITRILE
13.	9C3513	9C4013	9C5013	1	GRUB SCREW	AISI 304
14.	9C3514	9C4014	9C5014	1	PISTON	POLY ACETAL
15.	9C3515	9C4015	9C5015	1	PISTON ROD	AISI 304
16.	9C3516	9C4016	9C5016	1	GUDGEON PIN	AISI 304
17.	9C3517	9C4017	9C5017	1	UPPER THRUST BUSHING	POLY ACETAL
18.	9C3518	9C4018	9C5018	1	O-RING	NITRILE
19*.	9C3519	9C4019	9C5019	1	SPRING	SPRING STEEL
20.	9C3520	9C4020	9C5020	1	CYLINDER	AISI 304
21.	9C3521	9C4021	9C5021	2	O-RING	NITRILE
22.	9C3522	9C4022	9C5022	2	TIE RODS	AISI 304
23.	9C3523	9C4023	9C5023	1	LOWER THRUST BUSHING	POLY ACETAL
24.	9C3524	9C4024	9C5024	1	LOCK NUT	AISI 303
25.	9C3525	9C4025	9C5025	1	CAP SCREW	AISI 304
26.	9C3526	9C4026	9C5026	1	BRACKET	AISI 304
27.	9C3527	9C4027	9C5027	4	CAP SCREW	AISI 304
28.	9C3528	9C4028	9C5028	4	SPRING WASHER	AISI 304
29.	9C3529	9C4029	9C5029	1	CONNETOR	AISI 304

* Please note that part no. 19 (Spring) is not a standard part for 9C5 (Air to Air) Actuator



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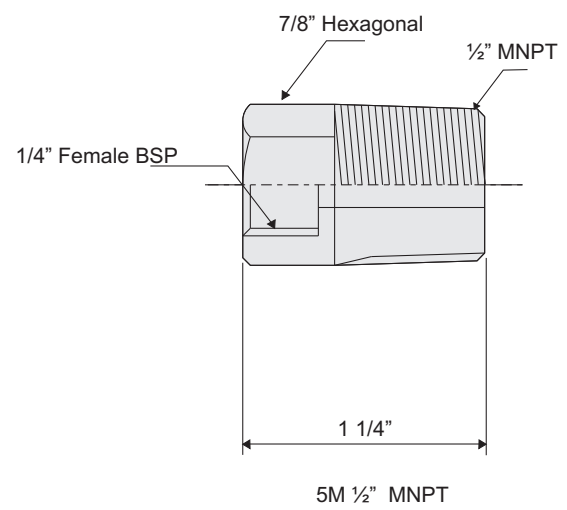
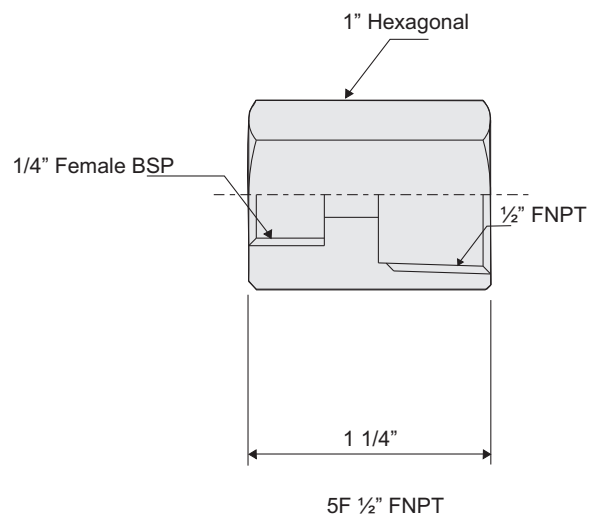
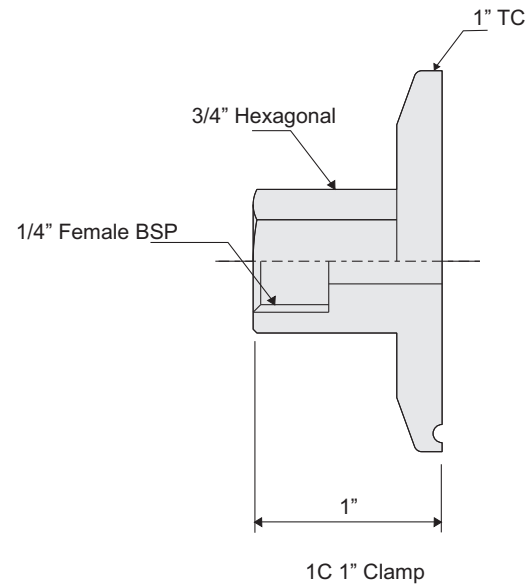
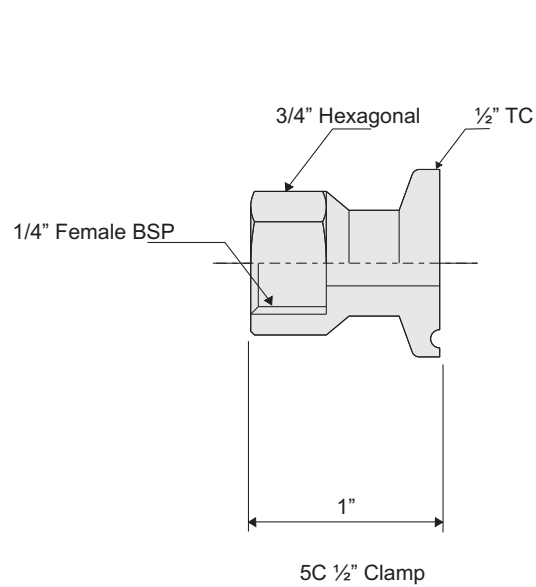
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Purge Port Adapters

Material : AISI 316L

Surface Finish : Ra \leq 25 μ in



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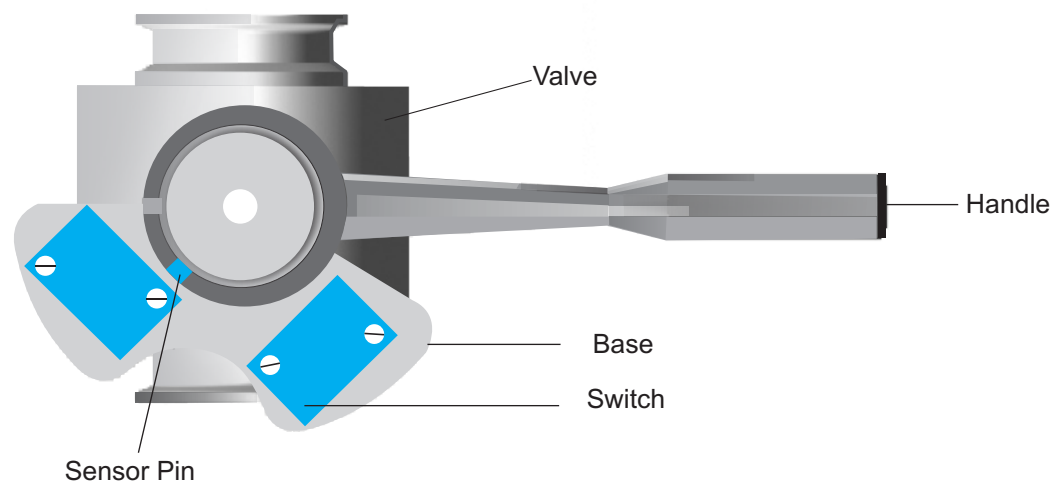
Ball Valve

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Valve with Inductive proximity switch

Specifications :

Handle	: All stainless steel snapping handle (7M3)
Operating Voltage	: 10-30 VDC
Output	: DC PNP/NPN/NO/NC
Output LED	: Yes
Protection	: IP 67
Reverse Polarity Protection	: Yes
Cable	: 2 Wire, 6 Feet Long

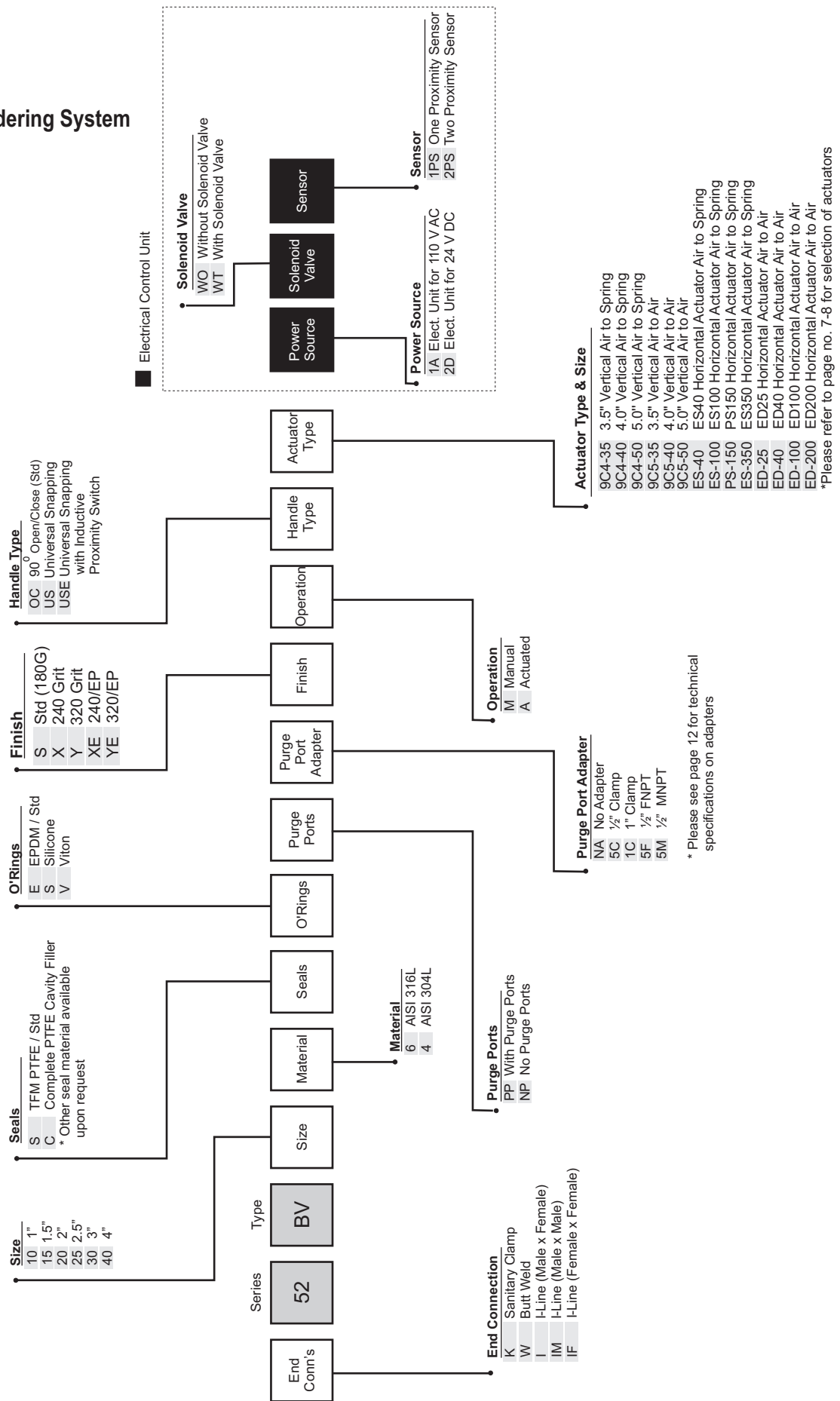


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52 Series Ball Valve Ordering System



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