

# Mark 978 Series

## New INLINE Series

### Sanitary Control Valves

The Mark 978 Series is designed to meet the rigid specifications for sterile process control valves. This valve series is suitable for a wide variety of applications in the pharmaceutical, biotechnology, cosmetic, dairy and food and beverage industries.

Conforming to ASME BPE, the MK978 is ideally suited for a wide range of flowing media in both the utility and process areas of sanitary and aseptic systems.

High rangeability, characterized trim, high capacities, superior temperature and pressure ratings along with a selection of sealing methods make the MK978 the sanitary control valve for liquid, gas and steam services.

Whether the need is to control pressure, temperature, flow, pH, or another variable, the MK978 is the right valve for your process.



#### FEATURES

- Specialized design of diaphragm seal and components allows ultra-high cycle life and lifetime diaphragm warranty
- Jorlon diaphragm – highest continuous steam pressure ratings on the market, full CIP/SIP capabilities
- FDA & USP Class VI compliance standard on all process seal and seat materials
- Self draining – Angle Body: when mounted in vertical (all sizes) or horizontal orientations (except 3"); INLINE: 1", 1-1/2" & 2" when mounted in horizontal line
- No guiding surfaces in the fluid – prevents particulate generation
- Mechanically polished internal components – 20Ra (0,5 µm) finish, electropolish – standard
- Wetted parts made of 100% 316L Stainless Steel barstock
- Maintenance-friendly – easy to perform sanitary maintenance with simple disassembly and reassembly
- Epoxy coated multi-spring actuators to meet a wide range of differential pressure requirements while providing excellent corrosion resistance during washdown

#### AVAILABLE FINISHES

##### Body

- *Standard:* 20 Ra mechanical finish on internal wetted surfaces (0,5 µm); machine finish on exterior (63 RMS), and electropolished inside and out
- *Optional:* 20 Ra mechanical finish on external surfaces (0,5 µm); 8 Ra finish on internal or external surfaces (0,2 µm)

##### Stem

- *Standard:* 20 Ra mechanical finish and electropolish (0,5 µm)
- *Optional:* 8 Ra mechanical finish (0,2 µm)

#### APPLICATIONS

A wide variety of applications exist for the MK978 in the pharmaceutical, biotech, health care, and food & beverage and other industries including:

##### Processes

- Fermenter
- Bioreactor
- Lyophilization
- Chromatography
- SIP/CIP Systems

##### Media

- Bio-process
- Caustic
- Acids
- Buffer
- Clean Steam
- WFI

**SPECIFICATIONS – O-RING DIAPHRAGM**

**Sizes:** 1/2" (DN15) through 2" (DN50)

**Body/Bonnet Connection:** bolted flange

**Body/Bonnet Seal:**

- EPDM for EPDM O-Ring
- Viton for Viton O-Ring
- Jorlon for Silicon, Buna-N, Kalrez, Fluoraz

**Body Material:** 316L SST Barstock

**Stem Material:** 316L SST Barstock

**Bonnet Material:** 316L SST Barstock

**Stem Seal:**

- FDA EPDM – to 275°F (+135°C)
- FDA Silicon – to +450°F (+232°C)
- FDA Viton® – to +400°F (+204°C)
- FDA Buna-N – to +225°F (+107°C)
- FDA/USP Class VI Kalrez® – to +450°F (+232°C)
- FDA/USP Class VI Fluoraz® – to +450°F (+232°C)

**Stem Bushing:** FDA USP Class VI PEEK (no process contact)

**Actuators:**

Pneumatic

- 1/2" – 1" (DN15 – DN25)  
35M & 55M: Steel
- 1-1/2" – 2" (DN40 – DN50)  
55M & 85M: Steel

Electric

- 1/2" – 2" (DN15 – DN50)  
MV1010 Cv 0.2 – 5.0 (Kv 0,17 – 4,3)  
MV1020 All other Cv's

**Shutoff:**

- Standard: ANSI Class III with metal seat
- Optional: ANSI Class VI with soft seat

**Ranges:** 3-15, 6-30, 3-9\*, or 9-15\* psi (0,2-1,0; 0,4-2,0; 0,2-0,6; or 0,6-1,0 bar) (\* positioner required)

**Maximum Pressure @ 100°F (38°C):** 450 (31 bar)  
High pressure versions available, contact factory for details

**Flow Characteristics:** Linear, equal percentage, or quick opening

**Pressure/Temperature Rating:**

- O-Ring: 450 psi up to +450°F (31 bar up to +232°C), temperature dependent upon o-ring material

**SPECIFICATIONS – JORLON & ELASTOMER DIAPHRAGM**

**Conforms to ASME BPE 2002**

**Sizes:**

- Angle Body: 1/2" (DN15) through 3" (DN80)
- InLine Series: 1" (DN25) through 2" (DN50)

**Body/Bonnet Connection:** bolted flange

**Body/Bonnet Seal:** valve diaphragm serves as body/bonnet seal

**Body Material:** 316L SST Barstock

**Stem Material:** 316L SST Barstock

**Bonnet Material:** 316L SST Barstock

**Stem Seal:**

Jorlon (1/2" – 3")

- FDA/USP Class VI to +340°F (171°C)

**Stem Bushing:** FDA USP Class VI PEEK (no process contact)

**Actuators:**

Pneumatic

- 1/2" – 1" (DN15 – DN25)  
35M & 55M: Steel
- 1-1/2" – 2" (DN40 – DN50)  
55M & 85M: Steel
- 3" (DN80)  
85M: Steel

Electric

- Contact factory

**Shutoff:**

- Standard: ANSI Class III with metal seat
- Optional: ANSI Class VI with soft seat

**Ranges:** 3-15, 6-30, 3-9\*, or 9-15\* psi (0,2-1,0; 0,4-2,0; 0,2-0,6; or 0,6-1,0 bar) (\* positioner required); 3" is only available in a useable range of 12-30 psi (0,8-2,0 bar)

**Maximum Pressure @ 100°F (38°C):**

- Jorlon (1/2" – 3"): 150 psi (10,3 bar)
- Elastomer: 100 psi (6,9 bar)

**Flow Characteristics:** Linear, equal percentage, or quick opening

**Pressure/Temperature Rating:**

- Jorlon (1/2" – 3"): 100 psi @ +340°F (6,9 bar @ +171°C); 1-1/2" – 3" heavy duty Jorlon diaphragm
- Jorlon (1-1/2" – 2"): 75 psi @ +340°F (5,2 bar @ +171°C)
- Elastomer: material dependent, 100 psi up to 450°F (6,9 bar @ +232°C)

**Cv/Kv RATINGS (O-RING)**

Cv Ratings				Kv Ratings			
Valve Size	Linear	Equal Percentage	Quick Opening	Valve Size	Linear	Equal Percentage	Quick Opening
1/2"	0.2, 0.5, 1.0		1.0	DN15	0,2; 0,4; 0,9		0.9
3/4"	1.0		1.0	DN20	0,9		0,9
	2.0, 3.5, 5.0		5.0		1,7; 3,0; 4,3		4,3
1"	3.5, 5.0		10.0	DN25	3,0; 4,3		8,6
	7.5, 15.0		17.0		6,5; 12,9		14,6
1-1/2"	10.0		17.0	DN40	8,6		14,6
	15.0, 30.0		44.0		12,9; 25,7		37,8
2"	10.0, 15.0		44.0	DN50	8,6; 12,9		37,8
	20.0, 40.0, 60.0	20.0, 40.0	70.0		17,1; 34,3; 51,4	17,1; 34,3	60,2

**MAXIMUM Δ Ratings, PSI (BAR)**

Cv	Valve Size	Actuator Size	ATO 3-15	ATO 6-30 or ATO with positioner	ATC 3-15 @ 20 psi	ATC with positioner or ATC 6-30 @ 40 psi
0.2; 0.5; 1.0; 2.0	1/2" & 3/4"	35M	450 (31)	450 (31)	450 (31)	450 (31)
3.5; 5.0	3/4" & 1"	35M	430 (30)	450 (31)	450 (31)	450 (31)
7.5; 15.0	1"	55M	160 (11)	350 (24)	280 (19)	450 (31)
15.0; 30.0	1-1/2"	55M	80 (5,5)	170 (12)	140 (9,6)	290 (20)
20.0, 40.0, 60.0	2"	85M	70 (4,8)	150 (10)	120 (8,3)	260 (18)

Note: for pressure drop capabilities of electric actuators, please consult factory

**Cv/Kv RATINGS (DIAPHRAGM)**

Cv Ratings				Cv Ratings			
Valve Size	Linear	Equal Percentage	Quick Opening	Valve Size	Linear	Equal Percentage	Quick Opening
1/2"	0.2, 0.5, 1.0		1.0	DN15	0,2; 0,4; 0,9		0.9
3/4"	1.0		1.0	DN20	0,9		0,9
	2.0, 3.5, 5.0		5.0		1,7; 3,0; 4,3		4,3
1"	3.5, 5.0		10.0	DN25	3,0; 4,3		8,6
	7.5, 15.0	7.5	17.0		6,5; 12,9	6,5	14,6
1-1/2"	5.0, 10.0		17.0	DN40	4,3; 8,6		14,6
	15.0, 20.0, 30.0	15.0, 20.0	44.0		12,9; 17,0; 25,7	12,9; 17,1	37,8
2"	10.0, 15.0		44.0	DN50	8,6; 12,9		37,8
	20, 30, 40, 60	20.0	70.0		17; 26; 23; 51	17,1	60,2
3"	75, 100, 125	60, 80, 100	125	DN80	64; 86; 107	51; 69; 86	107,2

\* Jorlon Diaphragm version only

**MAXIMUM Δ Ratings, PSI (BAR)**

Cv	Valve Size	Actuator Size	ATO 3-15	ATO 6-30 or ATO with positioner	ATC 3-15 @ 20 psi	ATC with positioner or ATC 6-30 @ 40 psi
			Jorlon	Jorlon	Jorlon	Jorlon
0.2; 0.5; 1.0; 2.0	1/2" & 3/4"	35M	150 (10)/100 (7)	150 (10)/100 (7)	150 (10)/100 (7)	150 (10)/100 (7)
3.5; 5.0	3/4" & 1"	35M	150 (10)/100 (7)	150 (10)/100 (7)	150 (10)/100 (7)	150 (10)/100 (7)
7.5; 15.0	1"	55M	150 (10)/100 (7)	150 (10)/100 (7)	150 (10)/100 (7)	150 (10)/100 (7)
5.0; 10; 20; 30	1-1/2"	55M	80 (5,5)	150 (10)	140 (9,6)	150 (10)
20, 30, 40, 60	2"	85M	70 (4,8)	150 (10)	120 (8,3)	150 (10)
60, 80, 100	3"	85M	N/A	100/NA*	N/A	100/NA*

Note: for pressure drop capabilities of electric actuators, please consult factory

\* 3" is preset for a pneumatic range of 11-30 psi (0,8 - 2,0 bar)

TRAVEL VS. Cv DATA

Travel vs Cv Data – Flow Characteristics – Linear											
Valve Size	Cv (Kv)	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
1/2" (DN15)	0.2 (0,17)	0.02	0.04	0.06	0.08	0.10	0.12	0.14	0.16	0.18	0.2
	0.5 (0,43)	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.5
	1.0 (0,86)	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.0
3/4" (DN20)	1.0 (0,86)	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.0
	2.0 (1,7)	0.2	0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0
	3.5 (3,0)	0.4	0.7	1.1	1.4	1.8	2.1	2.5	2.8	3.2	3.5
1" (DN25)	5.0 (4,3)	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
	7.5 (6,5)	0.8	1.5	2.3	3.0	3.8	4.5	5.3	6.0	6.8	7.5
	15.0 (12,9)	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0
1-1/2" (DN40)	10.0 (8,6)	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
	15.0 (12,9)	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0
	20 (17)	2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0
2" (DN50)	30 (26)	3.0	6.0	9.0	12.0	15.0	18.0	21.0	24.0	27.0	30.0
	10.0 (8,6)	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
	15 (13)	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0
	20 (17)	2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0
	30 (26)	3.0	6.0	9.0	12.0	15.0	18.0	21.0	24.0	27.0	30.0
3" (DN80)	40 (34)	4.0	8.0	12.0	16.0	20.0	24.0	28.0	32.0	36.0	40.0
	60 (52)	6.0	12.0	18.0	24.0	30.0	36.0	42.0	48.0	54.0	60.0
	75 (65)	7.5	15.0	22.5	30.0	37.5	45.0	52.5	60.0	67.5	75.0
3" (DN80)	100 (86)	10.0	20.0	30.0	40.0	50.0	60.0	70.0	80.0	90.0	100.0
	125 (108)	12.5	25.0	37.5	50.0	62.5	75.0	87.5	100.0	112.5	125.0

Travel vs Cv Data – Flow Characteristics – Equal Percentage											
Valve Size	Cv (Kv)	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
1/2" (DN15)	0.2 (0,17)	0.0027	0.0065	0.0118	0.0193	0.0299	0.0446	0.0654	0.0946	0.13577	0.2
	0.5 (0,43)	0.0068	0.0162	0.0296	0.0483	0.746	0.1116	0.1636	0.2366	0.3392	0.5
	1.0 (0,86)	0.014	0.032	0.059	0.097	0.15	0.223	0.327	0.473	0.678	1.0
3/4" (DN20)	1.0 (0,86)	0.014	0.032	0.059	0.097	0.15	0.223	0.327	0.473	0.678	1.0
	2.0 (1,7)	0.03	0.1	0.1	0.2	0.3	0.4	0.7	0.9	1.4	2.0
	3.5 (3,0)	0.05	0.1	0.2	0.3	0.5	0.8	1.1	1.7	2.4	3.5
1" (DN25)	5.0 (4,3)	0.1	0.2	0.3	0.5	0.7	1.1	1.6	2.4	3.4	5.0
	3.5 (3,0)	0.05	0.1	0.2	0.3	0.5	0.8	1.1	1.7	2.4	3.5
	5.0 (4,3)	0.1	0.2	0.3	0.5	0.7	1.1	1.6	2.4	3.4	5.0
1-1/2" (DN40)	7.5 (6,5)	0.1	0.2	0.4	0.7	1.1	1.7	2.5	3.5	5.1	7.5
	**15.0 (12,9)	0.2	0.5	0.9	1.4	2.2	3.3	4.9	7.1	10.2	15.0
	10.0 (8,6)	0.1	0.3	0.6	1.0	1.5	2.2	3.3	4.7	6.8	10.0
	15.0 (12,9)	0.2	0.5	0.9	1.4	2.2	3.3	4.9	7.1	10.2	15.0
2" (DN50)	20 (17)	0.3	0.6	1.2	1.9	3.0	4.5	6.5	9.5	13.6	20.0
	**30 (26)	0.4	1.0	1.8	2.9	4.5	6.7	9.8	14.2	20.4	30.0
	10.0 (8,6)	0.1	0.3	0.6	1.0	1.5	2.2	3.3	4.7	6.8	10.0
	15 (13)	0.2	0.5	0.9	1.4	2.2	3.3	4.9	7.1	10.2	15.0
3" (DN80)	20 (17)	0.3	0.6	1.2	1.9	3.0	4.5	6.5	9.5	13.6	20.0
	**40 (34)	0.5	1.3	2.4	3.9	6.0	8.9	13.1	18.9	27.1	40.0
	60 (52)	1.6	3.5	5.7	8.4	11.8	16.0	21.7	29.4	41.2	60.0
3" (DN80)	80 (69)	2.1	4.6	7.6	11.2	15.7	24.0	29.0	39.2	55.0	80.0
	100 (86)	2.6	5.8	9.5	14.0	19.6	26.8	36.2	49.0	68.7	100.0

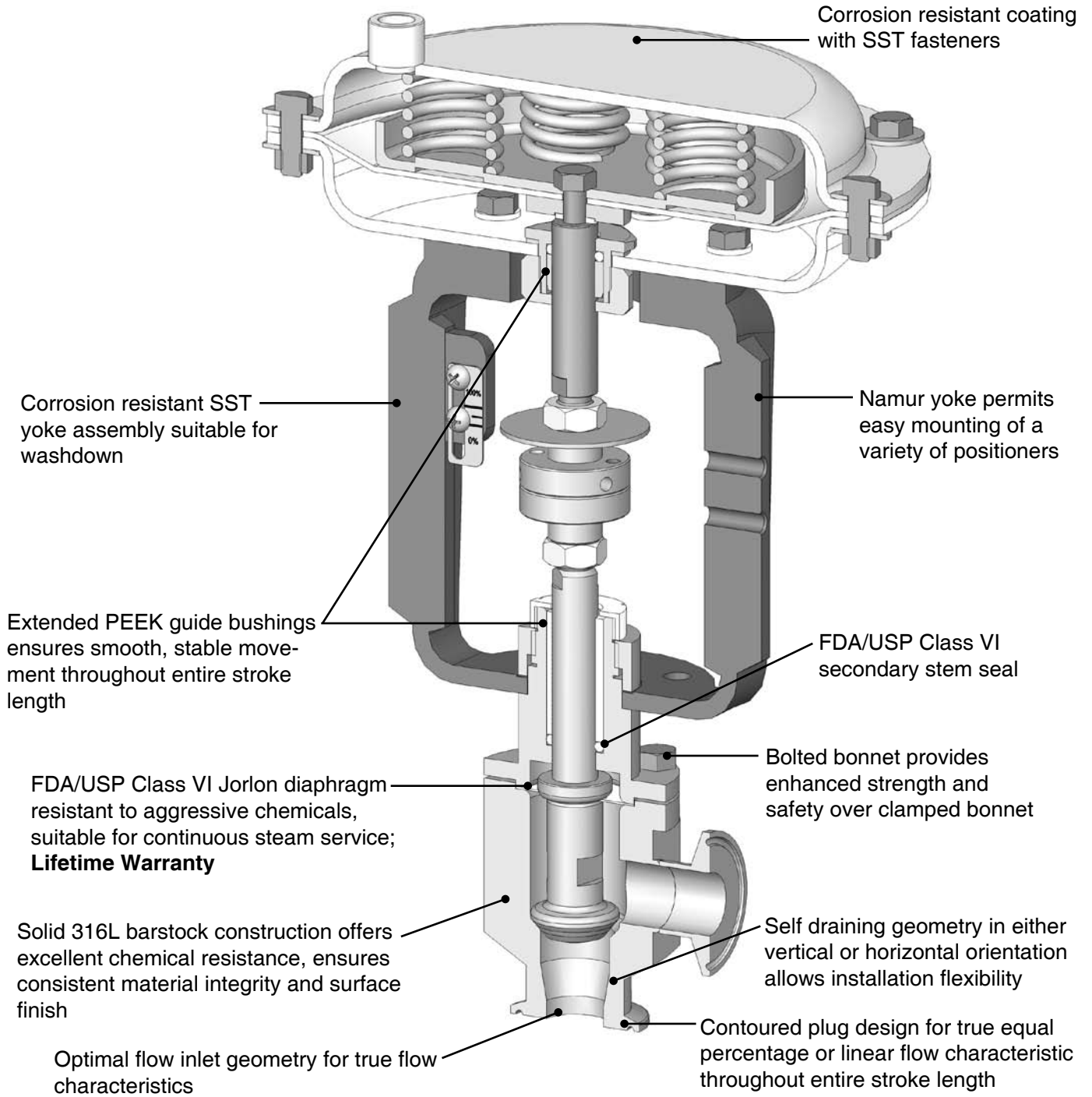
\*\* Except Jorlon diaphragm

Note: Cv=Kv/0.86; Kv=Cv x 0.86

For additional Sizes vs Cv combinations, consult factory

The information presented above is based on calculated and empirical data and is intended to represent performance in a simple, idealized system. Actual in line performance will vary by application according to the specific characteristics of each individual system. If you are interested in learning the flow performance of a particular application not covered by the above data, please consult your Steriflow representative.

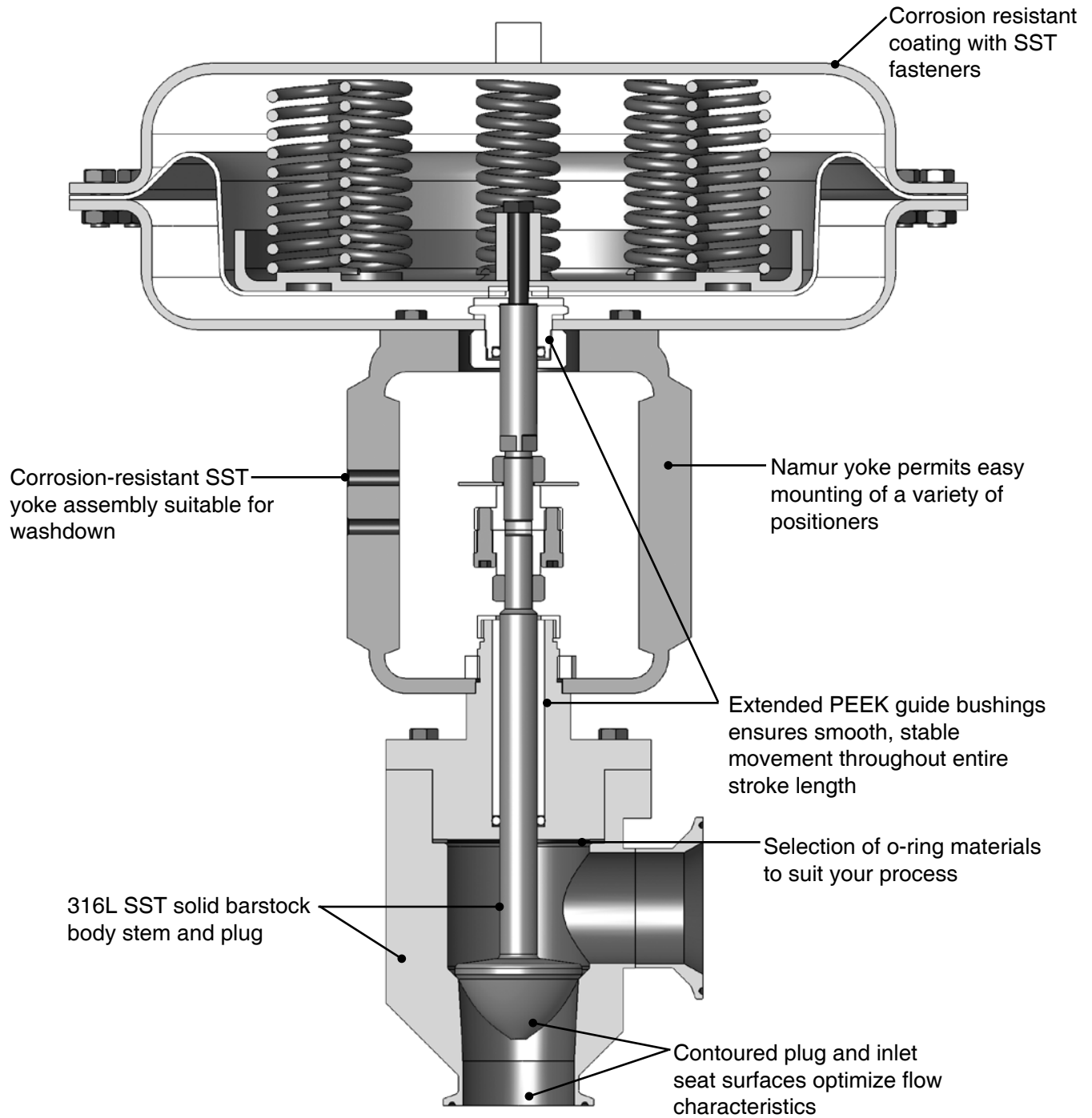
### JORLON DIAPHRAGM SEAL (1/2" – 2")



### SPECIFICATION

Stainless steel sanitary control valve shall be made from ASTM A479 barstock material, which includes body and all wetted metal parts. Control valve with the stem sealed by FDA approved, USP Class VI certified Jorlon diaphragm with lifetime warranty. Guiding of valve stem/plug shall be outside of the wetted process areas of valve above diaphragm. Control valve shall be free of threads within wetted process areas of valve. The control valve shall be free of threads within the wetted process area. Valve shall be self draining in any orientation.

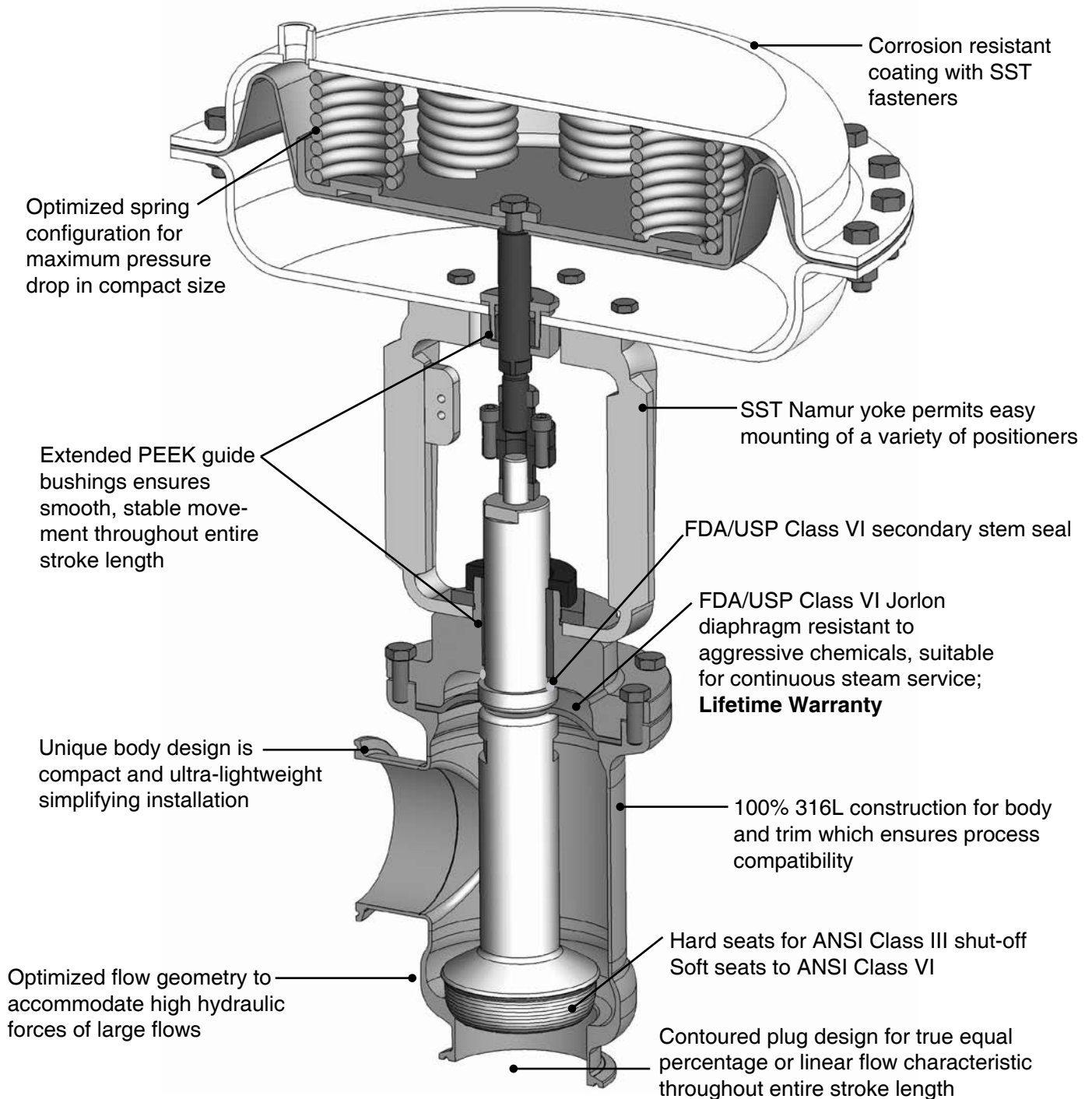
O-RING SEAL (1/2" – 2")



SPECIFICATION

Stainless Steel sanitary control valve shall be made from ASTM A479 barstock material, which includes body and all wetted parts. Valve stem sealed by FDA/USP Class VI approved material o-ring. Guiding of valve stem/plug shall be outside of the wetted process areas of the valve above the o-ring. The control valve shall be free of threads within the wetted process area. Valve shall be self draining in any orientation.

### JORLON DIAPHRAGM SEAL (3")

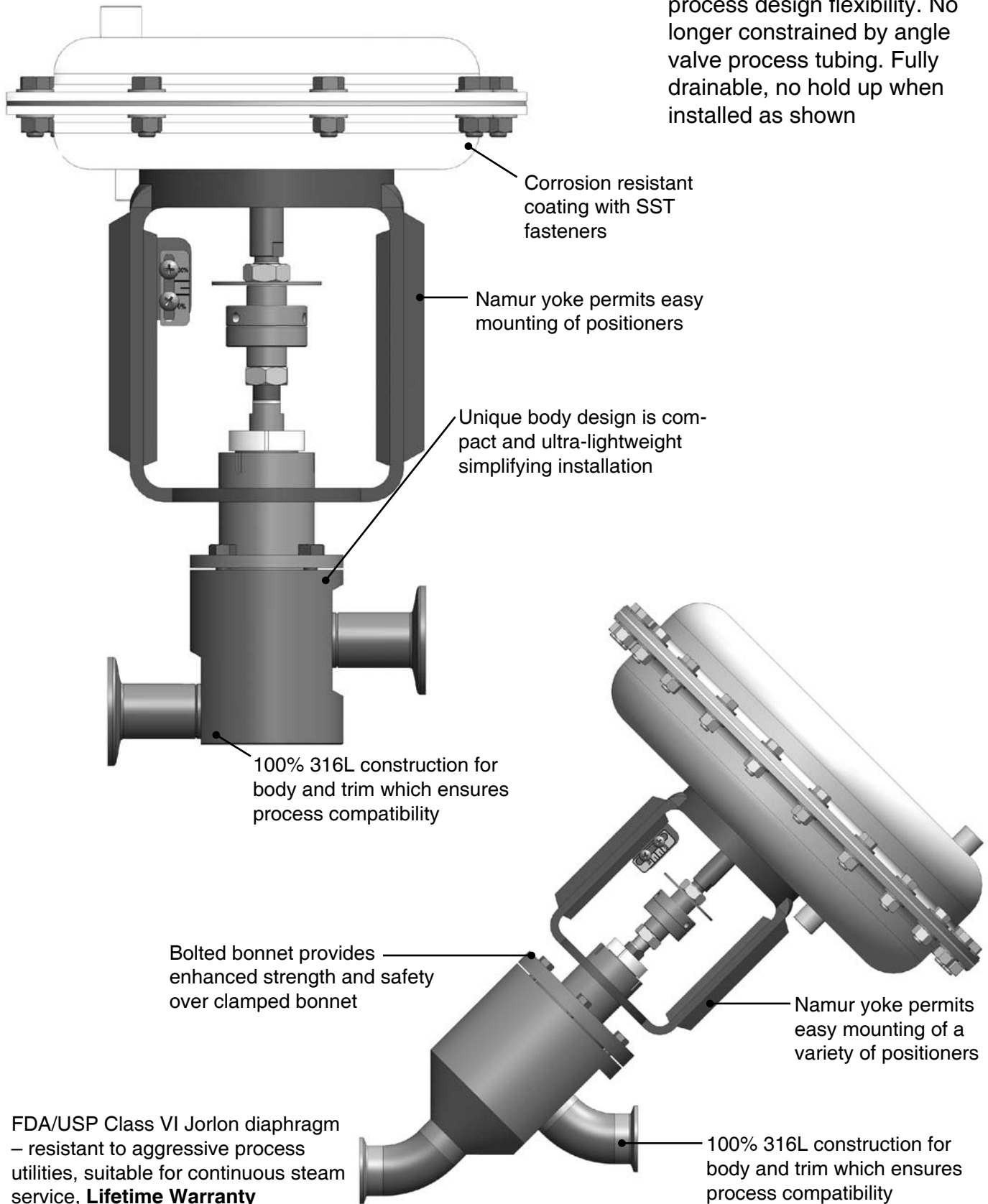


### SPECIFICATION

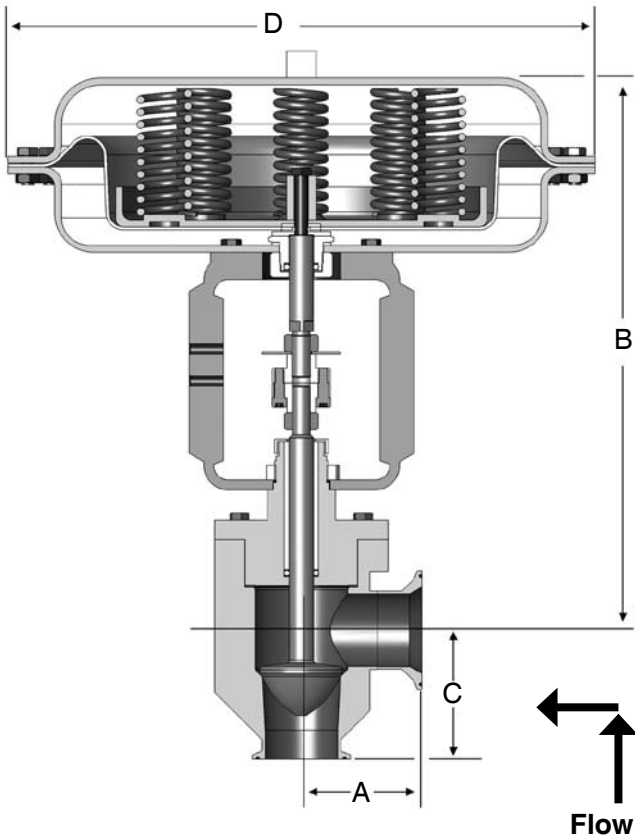
Stainless steel sanitary control valve shall be made from ASTM A479 barstock material, which includes body and all wetted metal parts. Control valve with the stem sealed by FDA approved, USP Class VI certified Jorlon diaphragm with lifetime warranty. Guiding of valve stem/plug shall be outside of the wetted process areas of valve above diaphragm. Control valve shall be free of threads within wetted process areas of valve. Valve shall be self draining when installed with inlet vertical and below valve assembly.

MARK 978 INLINE

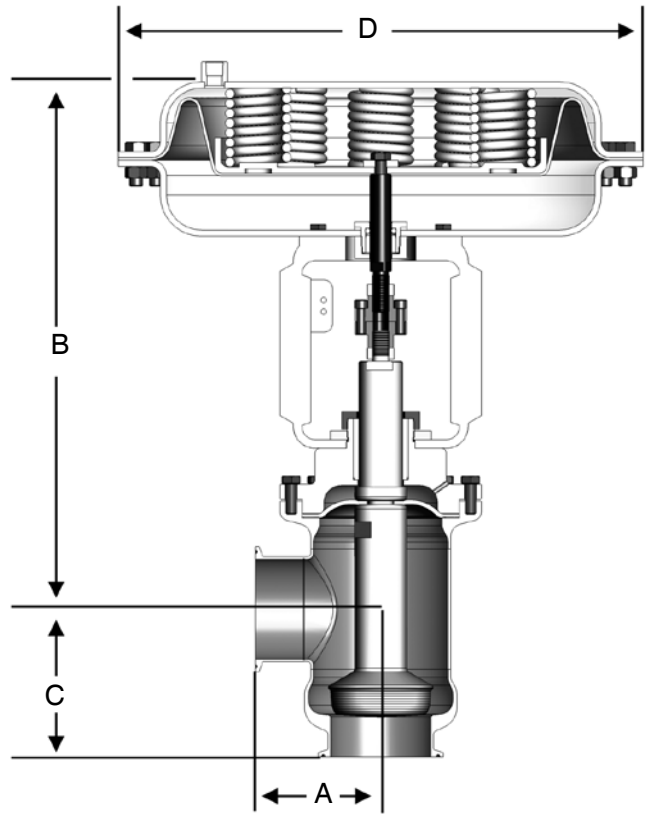
New INLINE design allows process design flexibility. No longer constrained by angle valve process tubing. Fully drainable, no hold up when installed as shown



DIMENSIONS



1/2" – 2" VALVE SIZES  
(O-RING VERSION SHOWN ABOVE)



3" VALVE SIZE  
(AVAILABLE IN JORLON DIAPHRAGM ONLY)

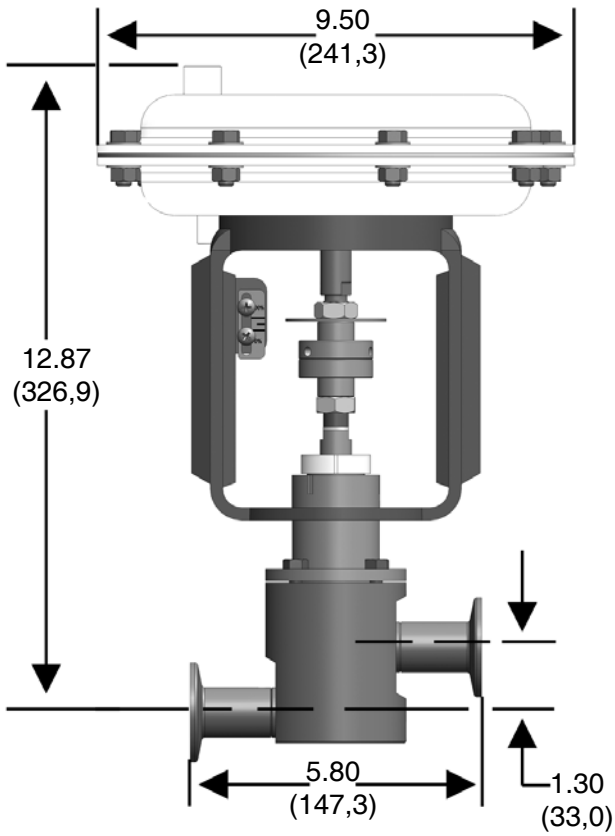
INCHES

Valve Size	Dimensions				Weight Lbs
	A	B	C	D	
1/2"	2.08	11.94	1.91	9.50 (35M)	27 (35M)
				12.50 (55M)	42 (55M)
3/4"	2.08	11.94	1.91	9.50 (35M)	27 (35M)
				12.50 (55M)	42 (55M)
1"	2.08	11.94	1.91	9.50 (35M)	27 (35M)
				12.50 (55M)	42 (55M)
1-1/2"	3.08	15.00	3.30	12.50 (55M)	47 (35M)
				15.00 (85M)	57 (55M)
2"	3.08	15.00	3.30	12.50 (55M)	47 (35M)
				15.00 (85M)	57 (55M)
3"	3.7	15.1	4.2	15.00 (85M)	59 (85M)

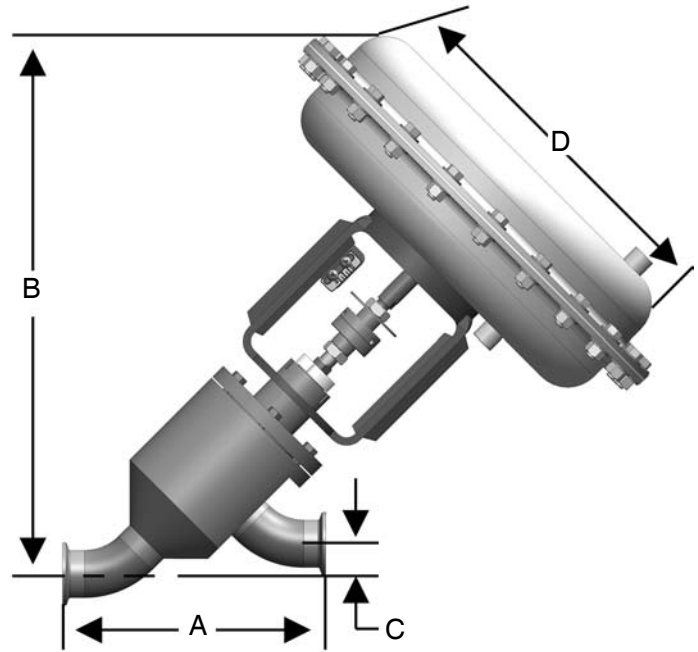
METRIC

Valve Size	Dimensions				Weight Kgs
	A	B	C	D	
DN15	53	303	49	241 (35M)	12 (35M)
				318 (55M)	19 (55M)
DN20	53	303	49	241 (35M)	12 (35M)
				318 (55M)	19 (55M)
DN25	53	303	49	241 (35M)	12 (35M)
				318 (55M)	19 (55M)
DN40	78	381	84	318 (55M)	21 (35M)
				381 (85M)	26 (55M)
DN50	78	381	84	318 (55M)	21 (35M)
				381 (85M)	26 (55M)
DN80	94	384	107	381 (85M)	27 (85M)

**DIMENSIONS**



**1" VALVE SIZE**



**1-1/2" & 2" VALVE SIZE**

Valve Size	Dimensions				Weight Lbs
	A	B	C	D	
1-1/2"	8.31	17.00	0.96	12.50 (55M)	49 (55M)
				15.00 (85M)	59 (85M)
2"	10.23	17.25	0.96	12.50 (55M)	49 (55M)
				15.00 (85M)	59 (85M)

Valve Size	Dimensions				Weight Kgs
	A	B	C	D	
DN40	211	432	24,4	318 (55M)	22 (35M)
				381 (85M)	27 (85M)
DN50	260	438	24,4	318 (55M)	22 (35M)
				381 (85M)	27 (85M)

ORDERING SCHEMATIC (1/2", 3/4", 1")

Model No	Size	Stem Seal	Seat	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

	Model
978	Standard
978MV	Motor Valve
978SP	Side Mounted Positioner
978TP	Top Mounted Positioner
N	In Line Body
NMV	InLine Motor Valve
NSP	InLine with SMP
NPT	InLine with TMP

	Size
050	1/2"
075	3/4"
100	1"

	Stem Seal
JD	Jorlon Diaphragm
OR	O-Ring

	Seat
T	Teflon FDA/USP Class VI

Teflon seat not available on 1/2" size

1,2,3,4,5,6	1/2" Tri-C Body, Cv, Char. Finish
AALN1A	1/2" LIN Cv 0.2 20Ra int./63 RMS ext.
A1LN1A	1/2" LIN Cv 0.2 20Ra int./20Ra ext.
A2LN10	1/2" LIN Cv 0.2 8Ra int./20Ra ext.
A3LN10	1/2" LIN Cv 0.2 8Ra int./8Ra ext.
A4LN10	1/2" LIN Cv 0.2 8Ra int./8Ra ext.
AAEPA1	1/2" EQP Cv 0.2 20Ra int./63 RMS ext.
A1EPA1	1/2" EQP Cv 0.2 20Ra int./20Ra ext.
A2EP11	1/2" EQP Cv 0.2 8Ra int./20Ra ext.
A3EP11	1/2" EQP Cv 0.2 8Ra int./8Ra ext.
A4EP11	1/2" EQP Cv 0.2 8Ra int./63 RMS ext.
AALN2A	1/2" LIN Cv 0.5 20Ra int./83RMS ext.
A1LN2A	1/2" LIN Cv 0.5 20Ra int./20Ra ext.
A2LN21	1/2" LIN Cv 0.5 8Ra int./20Ra ext.
A3LN21	1/2" LIN Cv 0.5 8Ra int./8Ra ext.
A4LN21	1/2" LIN Cv 0.5 8Ra int./63 RMS ext.
AAEPA2	1/2" EQP Cv 0.5 20Ra int./63 RMS ext.
A1EPA2	1/2" EQP Cv 0.5 20Ra int./20Ra ext.
A2EP12	1/2" EQP Cv 0.5 8Ra int./20Ra ext.
A3EP12	1/2" EQP Cv 0.5 8Ra int./8Ra ext.
A4EP12	1/2" EQP Cv 0.5 8Ra int./63 RMS ext.

Continued in next column

1,2,3,4,5,6	1/2" Tri-C Body, Cv, Char. Finish
AALN3A	1/2" LIN Cv 1.0 20Ra int./63 RMS ext.
A1LN3A	1/2" LIN Cv 1.0 20Ra int./20Ra ext.
A2LN31	1/2" LIN Cv 1.0 8Ra int./20Ra ext.
A3LN31	1/2" LIN Cv 1.0 8Ra int./8Ra ext.
A4LN31	1/2" LIN Cv 1.0 8Ra int./63 RMS ext.
AAEPA3	1/2" EQP Cv 1.0 20Ra int./63 RMS ext.
A1EPA3	1/2" EQP Cv 1.0 20Ra int./20Ra ext.
A2EP13	1/2" EQP Cv 1.0 8Ra int./20Ra ext.
A3EP13	1/2" EQP Cv 1.0 8Ra int./8Ra ext.
A4EP13	1/2" EQP Cv 1.0 8Ra int./63 RMS ext.

1,2,3,4,5,6	3/4" Tri-C Body, Cv, Char. Finish
BALN1A	3/4" LIN Cv 1.0 20Ra int./63 RMS ext.
B1LN1A	3/4" LIN Cv 1.0 20Ra int./20Ra ext.
B2LN10	3/4" LIN Cv 1.0 8Ra int./20Ra ext.
B3LN10	3/4" LIN Cv 1.0 8Ra int./8Ra ext.
B4LN10	3/4" LIN Cv 1.0 8Ra int./63 RMS ext.

BAEPA1	3/4" EQP Cv 1.0 20Ra int./63 RMS ext.
B1EPA1	3/4" EQP Cv 1.0 20Ra int./20Ra ext.
B2EP11	3/4" EQP Cv 1.0 8Ra int./20Ra ext.
B3EP11	3/4" EQP Cv 1.0 8Ra int./8Ra ext.
B4EP11	3/4" EQP Cv 1.0 8Ra int./63 RMS ext.

BALN2A	3/4" LIN Cv 2.0 20Ra int./63 RMS ext.
B1LN2A	3/4" LIN Cv 2.0 20Ra int./20Ra ext.
B2LN21	3/4" LIN Cv 2.0 8Ra int./20Ra ext.
B3LN21	3/4" LIN Cv 2.0 8Ra int./8Ra ext.
B4LN21	3/4" LIN Cv 2.0 8Ra int./63 RMS ext.

BAEPA2	3/4" EQP Cv 2.0 20Ra int./63 RMS ext.
B1EPA2	3/4" EQP Cv 2.0 20Ra int./20Ra ext.
B2EP12	3/4" EQP Cv 2.0 8Ra int./20Ra ext.
B3EP12	3/4" EQP Cv 2.0 8Ra int./8Ra ext.
B4EP12	3/4" EQP Cv 2.0 8Ra int./63 RMS ext.

CALN3A	3/4" LIN Cv 3.5 20Ra int./63 RMS ext.
C1LN3A	3/4" LIN Cv 3.5 20Ra int./20Ra ext.
C2LN31	3/4" LIN Cv 3.5 8Ra int./20Ra ext.
C3LN31	3/4" LIN Cv 3.5 8Ra int./8Ra ext.
C4LN31	3/4" LIN Cv 3.5 8Ra int./63 RMS ext.

CAEPA3	3/4" EQP Cv 3.5 20Ra int./63 RMS ext.
C1EPA3	3/4" EQP Cv 3.5 20Ra int./20Ra ext.
C2EP13	3/4" EQP Cv 3.5 8Ra int./20Ra ext.
C3EP13	3/4" EQP Cv 3.5 8Ra int./8Ra ext.
C4EP13	3/4" EQP Cv 3.5 8Ra int./63 RMS ext.

Continued on next page

ORDERING SCHEMATIC CONTINUED (1/2", 3/4", 1")

1,2,3,4,5,6	3/4" Tri-C Body, Cv, Char. Finish
CALN4A	3/4" LIN Cv 5.0 20Ra int./63 RMS ext.
C1LN4A	3/4" LIN Cv 5.0 20Ra int./20Ra ext.
C2LN41	3/4" LIN Cv 5.0 8Ra int./20Ra ext.
C3LN41	3/4" LIN Cv 5.0 8Ra int./8Ra ext.
C4LN41	3/4" LIN Cv 5.0 8Ra int./63 RMS ext.
CAEPA4	3/4" EQP Cv 5.0 20Ra int./63 RMS ext.
C1EPA4	3/4" EQP Cv 5.0 20Ra int./20Ra ext.
C2EP14	3/4" EQP Cv 5.0 8Ra int./20Ra ext.
C3EP14	3/4" EQP Cv 5.0 8Ra int./8Ra ext.
C4EP14	3/4" EQP Cv 5.0 8Ra int./63 RMS ext.

1,2,3,4,5,6	1" Tri-C Body, Cv, Char. Finish
EALN4A	1" LIN Cv 15 20Ra int./63 RMS ext.
E1LN4A	1" LIN Cv 15 20Ra int./20Ra ext.
E2LN41	1" LIN Cv 15 8Ra int./20Ra ext.
E3LN41	1" LIN Cv 15 8Ra int./8Ra ext.
E4LN41	1" LIN Cv 15 8Ra int./63 RMS ext.
EAEPA4	1" EQP Cv 15 20Ra int./63 RMS ext.
E1EPA4	1" EQP Cv 15 20Ra int./20Ra ext.
E2EP14	1" EQP Cv 15 8Ra int./20Ra ext.
E3EP14	14" EQP Cv 15 8Ra int./8Ra ext.
E4EP14	1" EQP Cv 15 8Ra int./63 RMS ext.

1,2,3,4,5,6	1" Tri-C Body, Cv, Char. Finish
DALN1A	1" LIN Cv 3.5 20Ra int./63 RMS ext.
D1LN1A	1" LIN Cv 3.5 20Ra int./20Ra ext.
D2LN10	1" LIN Cv 3.5 8Ra int./20Ra ext.
D3LN10	1" LIN Cv 3.5 8Ra int./8Ra ext.
D4LN10	1" LIN Cv 3.5 8Ra int./63 RMS ext.
DAEPA1	1" EQP Cv 3.5 20Ra int./63 RMS ext.
D1EPA1	1" EQP Cv 3.5 20Ra int./20Ra ext.
D2EP11	1" EQP Cv 3.5 8Ra int./20Ra ext.
D3EP11	1" EQP Cv 3.5 8Ra int./8Ra ext.
D4EP11	1" EQP Cv 3.5 8Ra int./63 RMS ext.
DALN2A	1" LIN Cv 5.0 20Ra int./63 RMS ext.
D1LN2A	1" LIN Cv 5.0 20Ra int./20Ra ext.
D2LN21	1" LIN Cv 5.0 8Ra int./20Ra ext.
D3LN21	1" LIN Cv 5.0 8Ra int./8Ra ext.
D4LN21	1" LIN Cv 5.0 8Ra int./63 RMS ext.
DAEPA2	1" EQP Cv 5.0 20Ra int./63 RMS ext.
D1EPA2	1" EQP Cv 5.0 20Ra int./20Ra ext.
D2EP12	1" EQP Cv 5.0 8Ra int./20Ra ext.
D3EP12	1" EQP Cv 5.0 8Ra int./8Ra ext.
D4EP12	1" EQP Cv 5.0 8Ra int./63 RMS ext.
EALN3A	1" LIN Cv 7.5 20Ra int./63 RMS ext.
E1LN3A	1" LIN Cv 7.5 20Ra int./20Ra ext.
E2LN31	1" LIN Cv 7.5 8Ra int./20Ra ext.
E3LN31	1" LIN Cv 7.5 8Ra int./8Ra ext.
E4LN31	1" LIN Cv 7.5 8Ra int./63 RMS ext.
EAEPA3	1" EQP Cv 7.5 20Ra int./63 RMS ext.
E1EPA3	1" EQP Cv 7.5 20Ra int./20Ra ext.
E2EP13	1" EQP Cv 7.5 8Ra int./20Ra ext.
E3EP13	1" EQP Cv 7.5 8Ra int./8Ra ext.
E4EP13	1" EQP Cv 7.5 8Ra int./63 RMS ext.

7 & 8	Stem Seal
	O-Ring Seal
BN	Buna-N FDA
EP	EPDM / FDA / USP Class VI / 3A
FZ	Fluoraz / FDA / USP Class VI
KZ	Kalrez / FDA / USP Class VI
SI	Silicone / FDA
VI	Viton / FDA / USP Class 6 / 3A
	Jorlon Diaphragm Seal
JL	Jorlon / FDA / USP Class VI
ZZ	Non-Standard

9 & 10	Actuator / Range
	978 / 978TP/978N
3D	35M 3-15 DIR
3R	35M 3-15 REV
4D	35M 6-30 DIR
4R	35M 6-30 REV
5D	55M 3-15 DIR
5R	55M 3-15 REV
6D	55M 6-30 DIR
6R	55M 6-30 REV
	978SP
3D	35M ALL DIR
3R	35M ALL REV
5D	55M ALL DIR
5R	55M ALL REV
	978MV
1D	MV1010 4-20MA DIR 0.2 - 5.0 Cv
1R	MV1010 4-20MA REV 0.2 - 5.0 Cv
2D	MV1020 4-20MA DIR All Cv
2R	MV1020 4-20MA DIR All Cv

Continued in next column

**ORDERING SCHEMATIC CONTINUED (1/2", 3/4", 1")**

11 & 12	Action
DD	Direct
RR	Reverse

13 & 14	Accessories
00	None
1A	I/P Trans. 4-20M / 3-15P
2A	Air Reg. with gage
3A	I/P Trans. 4-20M / 6-30P

15	SMP
0	None
A	SMP DIR / REV 3-15
B	SMP DIR / REV 3-9
C	SMP DIR / REV 9-15
D	SMP / IP DIR / REV 4-20
E	SMP / IP DIR / REV 4-12
F	SMP / IP DIR / REV 4-20
G	MK16IQ DIR / REV
H	MK16IQ - B DIR / REV
J	MK16IQ - FF DIR / REV

**ORDERING SCHEMATIC CONTINUED (1-1/2" & 2")**

Model No	Size	Stem Seal	Seat	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

	Model
978	Standard
978MV	Motor Valve
978SP	Side Mounted Positioner
978TP	Top Mounted Positioner
N	In Line Body
NMV	InLine Motor Valve
NSP	InLine with SMP
NPT	InLine with TMP

	Size
150	1-1/2"
200	2"

	Stem Seal
JD	Jorlon Diaphragm
OR	O-Ring

	Seat
T	Teflon FDA/USP Class VI

1,2,3,4,5,6	1-1/2" Tri-C Body, Cv, Char. Finish
FALN1A	1-1/2" LIN Cv 5 20Ra int./63 RMS. ext.
F1LN1A	1-1/2" LIN Cv 5 20Ra int./20Ra ext.
F2LN10	1-1/2" LIN Cv 5 8Ra int. /20Ra ext.
F3LN10	1-1/2" LIN Cv 5 8Ra int./8Ra ext.
F4LN11	1-1/2" LIN Cv 5 8Ra int./8Ra ext.
FAEPA1	1-1/2" EQP Cv 5 20Ra int./63 RMS ext.
F1EPA1	1-1/2" EQP Cv 5 20Ra int./20Ra ext.
F2EP11	1-1/2" EQP Cv 5 8Ra int./20Ra ext.
F3EP11	1-1/2" EQP Cv 5 8Ra int./8Ra ext.
F4EP11	1-1/2" EQP Cv 5 8Ra int./63 RMS ext.

1,2,3,4,5,6	1-1/2" Tri-C Body, Cv, Char. Finish
FALN2A	1-1/2" LIN Cv 10 20Ra int./63 RMS. ext.
F1LN2A	1-1/2" LIN Cv 10 20Ra int./20Ra ext.
F2LN20	1-1/2" LIN Cv 10 8Ra int. /20Ra ext.
F3LN20	1-1/2" LIN Cv 10 8Ra int./8Ra ext.
F4LN21	1-1/2" LIN Cv 10 8Ra int./8Ra ext.
FAEP12	1-1/2" EQP Cv 10 20Ra int./63 RMS. ext.
F1EPA2	1-1/2" EQP Cv 10 20Ra int./20Ra ext.
F2EP12	1-1/2" EQP Cv 10 8Ra int. /20Ra ext.
F3EP12	1-1/2" EQP Cv 10 8Ra int./8Ra ext.
F4EP12	1-1/2" EQP Cv 10 8Ra int./8Ra ext.
FALN3A	1-1/2" LIN Cv 15 20Ra int./63 RMS. ext.
F1LN3A	1-1/2" LIN Cv 15 20Ra int./20Ra ext.
F2LN30	1-1/2" LIN Cv 15 8Ra int. /20Ra ext.
F3LN30	1-1/2" LIN Cv 15 8Ra int./8Ra ext.
F4LN31	1-1/2" LIN Cv 15 8Ra int./8Ra ext.
FAEPA3	2" EQP Cv 15 20Ra int./63 RMS. ext.
F1EPA3	2" EQP Cv 15 20Ra int./20Ra ext.
F2EP13	2" EQP Cv 15 8Ra int. /20Ra ext.
F3EP13	2" EQP Cv 15 8Ra int./8Ra ext.
F4EP13	2" EQP Cv 15 8Ra int./8Ra ext.
GALN4A	1-1/2" LIN Cv 20 20Ra int./63 RMS. ext.
G1LN4A	1-1/2" LIN Cv 20 20Ra int./20Ra ext.
G2LN41	1-1/2" LIN Cv 20 8Ra int. /20Ra ext.
G3LN41	1-1/2" LIN Cv 20 8Ra int./8Ra ext.
G4LN41	1-1/2" LIN Cv 20 8Ra int./8Ra ext.
GAEPA4	1-1/2" EQP Cv 20 20Ra int./63 RMS ext.
G1EPA4	1-1/2" EQP Cv 20 20Ra int./20Ra ext.
G2EP14	1-1/2" EQP Cv 20 8Ra int./20Ra ext.
G3EP14	1-1/2" EQP Cv 20 8Ra int./8Ra ext.
G4EP14	1-1/2" EQP Cv 20 8Ra int./63 RMS ext.

*Continued on next column*

ORDERING SCHEMATIC CONTINUED (1-1/2" & 2")

1,2,3,4,5,6	1-1/2" Tri-C Body, Cv, Char. Finish
GALN5A	1-1/2" LIN Cv 30 20Ra int./63 RMS. ext.
G1LN5A	1-1/2" LIN Cv 30 20Ra int./20Ra ext.
G2LN51	1-1/2" LIN Cv 30 8Ra int. /20Ra ext.
G3LN51	1-1/2" LIN Cv 30 8Ra int./8Ra ext.
G4LN51	1-1/2" LIN Cv 30 8Ra int./8Ra ext.
GAEPA5	1-1/2" EQP Cv 30 20Ra int./63 RMS. ext.
G1EPA5	1-1/2" EQP Cv 30 20Ra int./20Ra ext.
G2EP15	1-1/2" EQP Cv 30 8Ra int. /20Ra ext.
G3EP15	1-1/2" EQP Cv 30 8Ra int./8Ra ext.
G4EP15	1-1/2" EQP Cv 30 8Ra int./8Ra ext.

1,2,3,4,5,6	2" Tri-C Body, Cv, Char. Finish
HALN1A	2" LIN Cv 10 20Ra int./63 RMS. ext.
H1LN1A	2" LIN Cv 10 20Ra int./20Ra ext.
H2LN10	2" LIN Cv 10 8Ra int. /20Ra ext.
H3LN10	2" LIN Cv 10 8Ra int./8Ra ext.
H4LN10	2" LIN Cv 10 8Ra int./8Ra ext.
HAEPA1	2" EQP Cv 10 20Ra int./63 RMS. ext.
H1EPA1	2" EQP Cv 10 20Ra int./20Ra ext.
H2EP11	2" EQP Cv 10 8Ra int. /20Ra ext.
H3EP11	2" EQP Cv 10 8Ra int./8Ra ext.
H4EP11	2" EQP Cv 10 8Ra int./8Ra ext.
HALN2A	2" LIN Cv 15 20Ra int./63 RMS. ext.
H1LN2A	2" LIN Cv 15 20Ra int./20Ra ext.
H2LN21	2" LIN Cv 15 8Ra int. /20Ra ext.
H3LN21	2" LIN Cv 15 8Ra int./8Ra ext.
H4LN21	2" LIN Cv 15 8Ra int./8Ra ext.
HAEPA2	2" EQP Cv 15 20Ra int./63 RMS. ext.
H1EPA2	2" EQP Cv 15 20Ra int./20Ra ext.
H2EP12	2" EQP Cv 15 8Ra int. /20Ra ext.
H3EP12	2" EQP Cv 15 8Ra int./8Ra ext.
H4EP12	2" EQP Cv 15 8Ra int./8Ra ext.
HALN3A	2" LIN Cv 20 20Ra int./63 RMS. ext.
H1LN3A	2" LIN Cv 20 20Ra int./20Ra ext.
H2LN31	2" LIN Cv 20 8Ra int. /20Ra ext.
H3LN31	2" LIN Cv 20 8Ra int./8Ra ext.
H4LN31	2" LIN Cv 20 8Ra int./8Ra ext.
HAEPA3	2" EQP Cv 20 20Ra int./63 RMS ext.
H1EPA3	2" EQP Cv 20 20Ra int./20Ra ext.
H2EP13	2" EQP Cv 20 8Ra int./20Ra ext.
H3EP13	2" EQP Cv 20 8Ra int./8Ra ext.
H4EP13	2" EQP Cv 20 8Ra int./63 RMS ext.

Continued on next column

1,2,3,4,5,6	2" Tri-C Body, Cv, Char. Finish
HALN4A	2" LIN Cv 30 20Ra int./63 RMS. ext.
H1LN4A	2" LIN Cv 30 20Ra int./20Ra ext.
H2LN41	2" LIN Cv 30 8Ra int. /20Ra ext.
H3LN41	2" LIN Cv 30 8Ra int./8Ra ext.
H4LN41	2" LIN Cv 30 8Ra int./8Ra ext.
HAEPA4	2" EQP Cv 30 20Ra int./63 RMS. ext.
H1EPA4	2" EQP Cv 30 20Ra int./20Ra ext.
H2EP14	2" EQP Cv 30 8Ra int. /20Ra ext.
H3EP14	2" EQP Cv 30 8Ra int./8Ra ext.
H4EP14	2" EQP Cv 30 8Ra int./8Ra ext.
IALN5A	2" LIN Cv 40 20Ra int./63 RMS. ext.
I1LN5A	2" LIN Cv 40 20Ra int./20Ra ext.
I2LN51	2" LIN Cv 40 8Ra int. /20Ra ext.
I3LN51	2" LIN Cv 40 8Ra int./8Ra ext.
I4LN51	2" LIN Cv 40 8Ra int./8Ra ext.
IAEPA5	2" EQP Cv 40 20Ra int./63 RMS. ext.
I1EPA5	2" EQP Cv 40 20Ra int./20Ra ext.
I2EP15	2" EQP Cv 40 8Ra int. /20Ra ext.
I3EP15	2" EQP Cv 40 8Ra int./8Ra ext.
I4EP15	2" EQP Cv 40 8Ra int./8Ra ext.
IALN6A	2" LIN Cv 60 20Ra int./63 RMS. ext.
I1LN6A	2" LIN Cv 60 20Ra int./20Ra ext.
I2LN61	2" LIN Cv 60 8Ra int. /20Ra ext.
I3LN61	2" LIN Cv 60 8Ra int./8Ra ext.
I4LN61	2" LIN Cv 60 8Ra int./8Ra ext.

7 & 8	Stem Seal
	O-Ring Seal
BN	Buna-N FDA
EP	EPDM / FDA / USP Class VI / 3A
FZ	Fluoraz / FDA / USP Class VI
KZ	Kalrez / FDA / USP Class VI
SI	Silicone / FDA
VI	Viton / FDA / USP Class 6 / 3A
	Jorlon Diaphragm Seal
JL	Jorlon / FDA / USP Class VI
	Jorlon Diaphragm with Positioner
JL	Jorlon – FDA / USP Class VI (75 psi)
JH	Jorlon – FDA / USP Class VI (100 psi)

ORDERING SCHEMATIC CONTINUED (1-1/2" & 2")

9 & 10	Actuator / Range
	978 / 978TP/978N
5D	55M 3-15 DIR
5R	55M 3-15 REV
6D	55M 6-30 DIR
6R	55M 6-30 REV
8D	85M 3-15 DIR
8R	85M 3-15 REV
9D	85M 6-30 DIR
9R	85M 6-30 REV
	978SP
5D	55M ALL DIR
5R	55M ALL REV
8D	85M ALL DIR
8R	85M ALL REV
	978MV
2D	MV1020 4-20MA DIR All Cv
2R	MV1020 4-20MA DIR All Cv

13 & 14	Accessories
00	None
1A	I/P Trans. 4-20M / 3-15P
2A	Air Reg. with gage
3A	I/P Trans. 4-20M / 6-30P

15	SMP
0	None
A	SMP DIR / REV 3-15
B	SMP DIR / REV 3-9
C	SMP DIR / REV 9-15
D	SMP / IP DIR / REV 4-20
E	SMP / IP DIR / REV 4-12
F	SMP / IP DIR / REV 4-20
G	MK16IQ DIR / REV
H	MK16IQ - B DIR / REV
J	MK16IQ - FF DIR / REV

11 & 12	Action
DD	Direct
RR	Reverse

**ORDERING SCHEMATIC (3")**

Model No	Size	Stem Seal	Seat	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Model	
978SP	Side Mounted Positioner

7 & 8	Stem Seal
JH	Jorlon - FDA/USP Class VI (100 psi)

Size	
300	3"

9 & 10	Actuator/Range
8D	85M Direct
8R	85M Reverse

Stem Seal	
JD	Jorlon Diaphragm

11 & 12	Action
DD	Direct
RR	Reverse

Seat	
T	Teflon FDA/USP Class VI

13 & 14	Accessories
00	None
2A	Air/Regulator with Gage
3A	I/P Trans. 4-20 / 12-30P

1,2,3,4,5,6	3" Tri-C Body, Cv, Char. Finish
JALN1A	3" LIN Cv 75 20Ra int./63 RMS. ext.
J4LN10	3" LIN Cv 75 8Ra int./63RMS ext.
JAEP1A	3" EQP Cv 60 20Ra int. /63RMS ext.
J4EP11	3" EQP Cv 60 8Ra int./63RMS ext.
JALN2A	3" LIN Cv 100 20Ra 63RMS ext.
J4LN21	3" LIN Cv 100 8Ra int./63RMS ext.
J4EPA2	3" EQP Cv 80 20Ra int./63RMS ext.
J4EP12	3" EQP Cv 80 8Ra int./63RMS ext.
JALN3A	3" LIN Cv 125 20Ra int./63RMS ext.
J4LN31	3" LIN Cv 125 8Ra int./63 RMS ext.
JA3PA3	3" EQP Cv100 20 Ra int./63RMS ext.
J4EP13	3" EQP Cv100 8Ra int/63RMS ext.

15	Accessories
G	SMP - 16IQ DIR/REV
A	SMP DIR/REV 3-15
D	SMP-IP DIR/REV 4-20
H	MK16IQ-B DIR/REV
J	MK16IQ-FF DIR/REV

**DOCUMENTATION**

A Certificate of Compliance to material (with heat number for body and ferule), surface finish and FDA USP Class VI is provided for each line item on all Steriflow orders at no charge. The following additional documentation is available from our factory upon request at time of ordering:

- Traceable Material Certificates
- FDA Certificates on soft seals
- USP Class VI seal materials upon request
- Final Test Reports
- Certificate of Surface Finish
- Certificate of Compliance/Certificate of Origin



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