

Mark 901 Series

Cavity-Filled Three Piece Ball Valves

The Mark 901 Series is a sanitary ball valve designed specifically for Pharmaceutical and food and beverage applications. It has cavity filler seats and Tri-clamp ends to minimize where media can collect. The inner diameter of the end connections is the same as the ID of the ball, ensuring no obstruction of flow from inlet to outlet.



FEATURES

- In sizes from 1/2" (DN15) through 4" (DN100) with a true bore design, to provide unobstructed flow and better drainage
- Pressure ratings up to 1000 psi (69 bar) for 1/2" - 2" and 800 psi (44 bar) for 2-1/2" - 4"
- PTFE cavity filler seats
- Internal finish of ball bore and inlet and outlet waterway is 20 Ra (0,5 Ra µm)
- Lockable handle prevents accidental opening or closing of valve
- ISO 5211 actuator mounting flange
- Designed for simple maintenance with in-line repairable feature
- Anti-blowout stem
- Live-loaded stem seal – no threads in packing chamber
- No sharp internal fillet radius – for smooth finish
- Tri-clamp or tube weld ends
- Available as manual or actuated (pneumatic/ electric) valve

INDUSTRIES AND APPLICATIONS

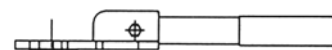
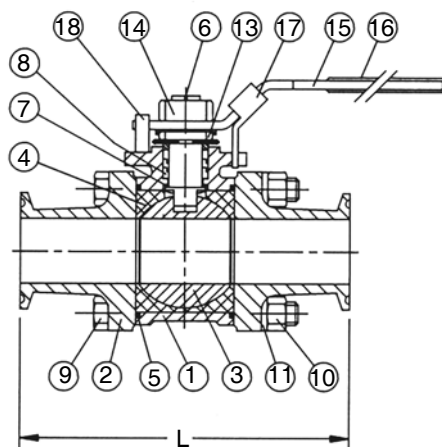
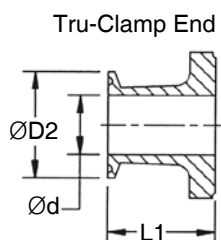
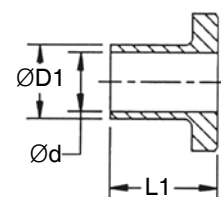
The Mark 901 is designed for applications in the following industries and applications:

- Healthcare/Cosmetics
- Pharmaceutical, Bio-Pharmaceutical
 - Clean Steam
 - Process Gases (N₂, CO₂)
 - Clean Dry Air and Gas
- Food & Beverage
- Specialty Chemical
- Viscous Media

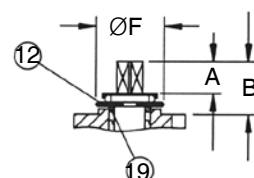
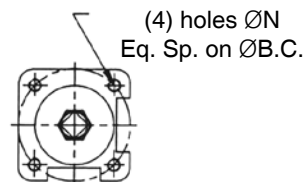
MATERIAL AND FINISH SPECIFICATIONS

- Body/End Connections/Ball: ASTM A351 CF3M 316L SS
- Stem: ASTM A276 316 SS
- External Hardware: AISI 304 SS
- Cavity filled Seat/Packing/Thrust Washer/ Gasket: PFTE TF1641 (FDA and USP Class VI approved resin)
- Internal finish of ball bore and inlet and outlet waterway: 20 Ra µin (0,5 Ra µm) mechanical polish

MATERIAL SPECIFICATIONS



Handle for 4" valve



ART1237

VALVE NAME PLATE RATING

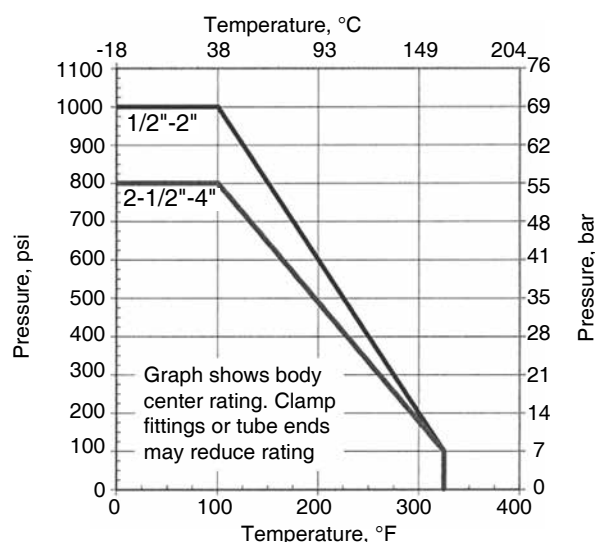
Size, NPS	Body/ Name Plate Pressure Rating, PSI	Operating Pressure Based on Ends, PSI	
		Clamp End ¹	Tube End ¹
1/2"	1000	500	1000
3/4"	1000	500	1000
1"	1000	500	1000
1-1/2"	1000	500	1000
2"	1000	450	750
2-1/2"	800	400	50
3"	800	350	625
4"	800	300	600

¹ Clamp end name plate pressure rating is based on Tri-Clover A13MHM Tri-Clamp (hinged 2-segment clamp with wing nut)

² Tube end name plate pressure rating is the lesser of the body rating or the tube end rating calculated with ANSI B31.3 using $S_y=20\text{ksi}$, $Y=0.4$ and $E=0.8$

No.	Part	Material	Qty
1	Body	ASTM-A351-CF3M	1
2	Cap	ASTM-A351-CF3M	2
3	Ball	ASTM-A351-CF3M	1
4	Seat	PTFE / TF 1641	2
5	Gasket	PTFE / TF 1641	2
6	Stem	ASTM A276 316	1
7	Thrust Washer	PTFE / TF 1641	1
8	Stem Packing	PTFE / TF 1641	1
9	Bolt	AISI 304	4
10	Hex Nut	AISI 304	4
11	Bolt Washer	AISI 304	4
12	Bevel Washer	AISI 304	2
13	Nut	AISI 304	1
14	Nut	AISI 304	1
15	Handle	AISI 304	1
16	Handle Cover	Vinyl	1
17	Lock Device	AISI 304	1
18	Stop Pin	AISI 304	1

PRESSURE – TEMPERATURE CHART

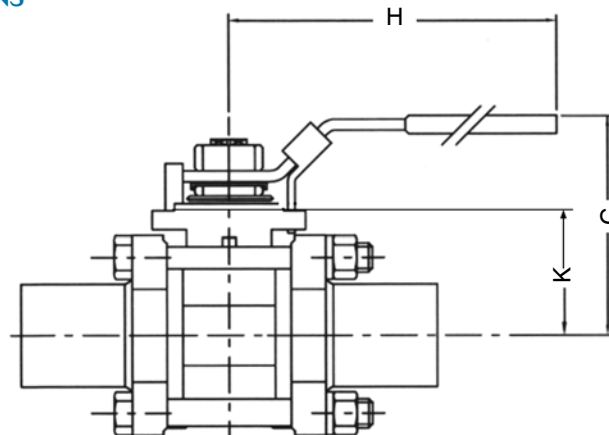
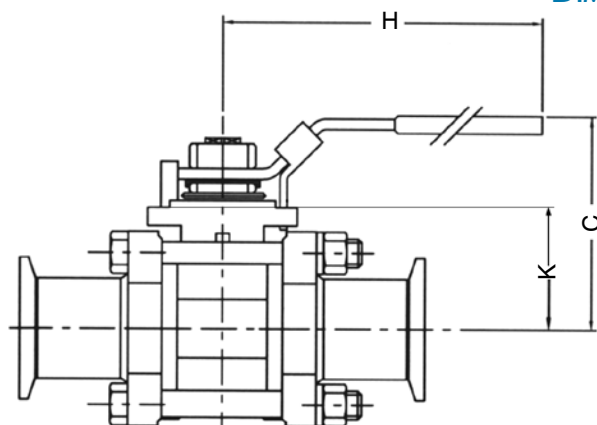


TECHNICAL SPECIFICATIONS

Size	Oper. Torque in-lbs (Nm)	Cv (Kv)	Weight Lb (Kg)	
			Clamp End	Tube Weld Ends
1/2"	80 (9,1)	9 (7,7)	1.6 (0,72)	1.54 (0,70)
3/4"	100 (11,3)	26 (22,4)	2.0 (0,90)	1.90 (0,86)
1"	125 (14,1)	61 (52,5)	2.7 (1,2)	2.6 (1,2)
1-1/2"	290 (33)	193 (166)	5.8 (2,6)	5.6 (2,6)
2"	400 (45)	432 (372)	8 (4)	8 (4)
2-1/2"	600 (68)	728 (626)	18 (8)	17 (8)
3"	900 (102)	1125 (968)	25 (11)	25 (11)
4"	1300 (147)	1986 (1708)	46 (21)	46 (21)

MARK 901 SERIES CAVITY-FILLED BALL VALVES

DIMENSIONS



ART1238

- Tri-Clamp / Tube Weld Ends Dimensions, inches

Size	ISO-5211	H	C	L	K	A	B	ØF	G
1/2"	F03	5.6	2.64	3.50	1.19	0.34	0.69	1.417	0.35
3/4"	F03	5.6	2.81	4.00	1.38	0.49	0.84	1.417	0.35
1"	F04	6.3	3.19	4.50	1.39	0.66	1.15	1.654	0.43
1-1/2"	F05	7.4	4.04	5.51	1.84	0.63	1.24	1.968	0.55
2"	F05	7.4	4.35	6.14	2.14	0.63	1.24	1.968	0.55
2-1/2"	F07	12.2	5.79	7.76	3.00	0.61	1.48	2.756	0.67
3"	F07	12.2	6.16	9.02	3.36	0.61	1.48	2.756	0.67
4"	F10	15.8	6.46	9.57	4.11	0.86	1.55	4.016	0.87

- Tri-Clamp / Tube Weld Ends Dimensions, metric

Size	ISO-5211	H	C	L	K	A	B	ØF	G
DN15	F03	143	67	89	30,2	8,6	17,6	36	9
DN20	F03	143	71,5	101	34,9	12,4	21,4	36	9
DN25	F04	160	81	114	35,4	16,9	29,2	42	11
DN40	F05	187	102,5	140	46,5	16,1	31,5	50	14
DN50	F05	187	110,5	156	54,5	16,1	31,5	50	14
DN65	F07	310	147	197	76,0	15,4	37,5	70	17
DN80	F07	310	156,5	229	85,4	15,4	37,5	70	17
DN100	F10	400	164	243	104,3	21,8	39,3	102	22

- Tube End Dimensions, inches

Size	d	D1	L1
1/2"	0.374	0.500	1.29
3/4"	0.622	0.752	1.44
1"	0.874	1.000	1.58
1-1/2"	1.378	1.504	1.72
2"	1.874	2.000	1.80
2-1/2"	2.374	2.500	2.20
3"	2.874	3.000	2.54
4"	3.835	4.000	2.39

- Tube End Dimensions, metric

Size	d	D1	L1
DN15	9,5	12,7	32,8
DN20	15,8	19,1	36,5
DN25	22,2	25,4	40,0
DN40	35,0	38,2	43,5
DN50	47,6	50,8	45,8
DN65	60,3	63,4	56,0
DN80	73,0	76,2	64,5
DN100	97,4	101,6	60,6

- Clamp End Dimensions, inches

Size	d	D2	L1
1/2"	0.374	1.00	1.29
3/4"	0.622	1.00	1.44
1"	0.874	1.98	1.58
1-1/2"	1.378	1.98	1.72
2"	1.874	2.52	1.80
2-1/2"	2.374	3.05	2.20
3"	2.874	3.58	2.54
4"	3.835	4.68	2.39

- Clamp End Dimensions, metric

Size	d	D2	L1
DN15	9,5	25,40	32,8
DN20	15,8	25,40	36,5
DN25	22,2	50,29	40,0
DN40	35,0	50,29	43,5
DN50	47,6	64,01	45,8
DN65	60,3	77,47	56,0
DN80	73,0	90,93	64,5
DN100	97,4	118,9	60,6

ORDERING SCHEMATIC

Model	Size	Body Mat'l	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

	Model Number
901HN	Lever Operated
901DA	Double Acting Pneumatic Actuator
901SR	Spring Return Pneumatic Actuator
901MO	Electric Motor Act. - Consult Factory

	Size
050	1/2" (DN15)
075	3/4" (DN20)
100	1" (DN25)
150	1-1/2" (DN40)
200	2" (DN50)
250	2-1/2" (DN65)
300	3" (DN80)
400	4" (DN100)

	Body Material
6L	A351 CF3M 316L

1	Cavity Filler
C	PTFE Cavity Filler

2	Ends
A	Tri-Clamp / 20 Ra µin (0,5 Ra µm) Int. Fin. (Std.)
B	Ext. Tube End / 20 Ra µin (0,5 Ra µm) Int. Fin. (Std.) ¹
C	Tri-Clamp x Ext. Tube End / 20 Ra µin (0,5 Ra µm) Int. Fin. ¹
H	Ext. Tube x Tri-Clamp / 20 Ra µin (0,5 Ra µm) Int. Fin. ¹

1: Int. surface finish for ball bore and in/out waterway: 20 Ra µin (0,5 Ra µm) Mechanical Polish

3 & 4	Operation
NN	None
HL	Lever (Standard)
P1	UT-0A-DA STD
P2	UT-0-DA STD
P3	UT-1-DA STD
P4	UT-2-DA STD
P5	UT-2.5-DA STD
P6	UT-3-DA STD
P7	UT-3.5-DA STD
P8	UT-4-DA STD
PF	UT-4.5-DA STD
P9	UT-5-DA STD
S1	UT-0-SR STD
S2	UT-1-SR STD
S3	UT-2-SR STD
S4	UT-2.5-SR STD
S5	UT-3-SR STD
S6	UT-3.5-SR STD
S7	UT-4-SR STD
SF	UT-4.5-SR STD
S8	UT-5-SR STD
ZZ	Non-Standard

5 & 6	Actuator Pressure
40	40 psi
60	60 psi
80	80 psi
NN	N/A (no pneumatic actuator)
ZZ	Non-Standard

7 & 8	Solenoid Feature	Actuator Type
00	None	
3A	3W 8551-120VAC N4 UT-0/5	SR
3C	3W EF8551-120VAC N7 UT-0/5	SR
3J	3W 8317G35-120VAC N4 UT-0/2.5	SR
3M	3W 8321G1-120VAC N4 UT-3/5	SR
3Q	3W EF8317G35-120VAC N7 UT-0/2.5	SR
3R	3W EF8321G1-120VAC N7 UT-3/5	SR
4A	4W 8551-120VAC N4 UT-0A	DA
4B	4W 8551-120VAC N4 UT-0/5	DA
4D	4W EF8551-120VAC N7 UT-0A	DA
4E	4W EF8551-120VAC N7 UT-0/5	DA
ZZ	Non-Standard	

9 & 10	Limit Switch
00	None
AA	LS FMYB-5120-N4 to UT-0/3
AB	LS FMYB-5120-N4 to UT-3.5/7
AC	LS AMYB-5120-N7 to UT-0/3
AD	LS AMYB-5120-N7 to UT-3.5/7
AE	LS AMYB-5120-N4 to Valve
AF	LS-AMYB-5120-N7 to Valve
OZ	Non-Standard

11 & 12	Fail Position
NN	Fail Position N/A (No "SR" Actuator)
01	Fail Closed
02	Fail Open

13 & 14	Positioner
00	None
AA	Siemens 760P (3-15 psi), for UT-0/3
AB	Siemens 760P (3-15 psi), for UT-3.5/7
AC	Siemens 760E (4-20 mA), for UT-0/3
AD	Siemens 760E (4-20 mA), for UT-3.5/7
AE	Siemens 2-IQ (4-20 mA), for UT-0/3 DA
AF	Siemens 2-IQ (4-20 mA), for UT-3.5/7 DA
AQ	Siemens 2-IQ (4-20 mA), for UT-0/3 SR
AR	Siemens 2-IQ (4-20 mA), for UT-3.5/7 SR
ZZ	Non-Standard

15	Miscellaneous Features
0	None
1	2-Bug Screen 1/8" SST
2	2-Speed Control 1/8" (4-Way)
3	SST Tube & Fittings F/Automation
4	AFR 4Z030A to UT0 thru 2.5
Z	Non-standard