



High Purity Cast Ball Valve, Tube Bore, 1000/720psi

Fig No:MD-928EB ISO DIMENSIONS
1/2"- 4" DN15 ~ DN100



Materials of construction

- CF3Mwith Ferrite content less than 3%; Sulfur content 0.005~0.017%
- Capable of withstanding the temperature, pressure and chemical corrosiveness assuring the purity and integrity of the product

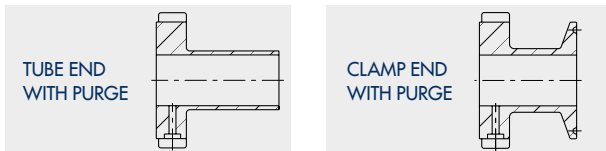
Seats

- Non-slotted design to meet ASME/BPE 2002 SD-3.6.1, SG-4.1.1.1.6, SG-4.1.1.8
- Material complies with the requirement of FDA USP 23 CLASS V1
- Cavity filler upon request

End connections

- Butt weld have tangent lengths for automatic welding

Purge ports on end caps upon the users' request



Purge ports type and size are provided as per following

- Valve size 1-1/2" and less 1/4" VCR female compression fitting
- Valve size 2" and uppor 1/2" VCR female compression fitting

MATERIALS LIST

NO.	PART NAME	MATERIAL
1	BODY	ASTM A351 Gr.CF3M
4	BALL	ASTM A351 Gr.CF3M
5	STEM	SS316L
9	END CAP	ASTM A351 Gr.CF3M
11	BODY SEAL	TFM1600
12	SEAT	TFM1600
13	THRUST WASHER	TFM1600
14	STEM PACKING	TFM1600
15	GLAND BUSH	SS304
18	YOKE SLEEVE	SS304
19	HANDLE	SS304
20	SET SCREW	SS304
21	HANDLE COVER	PLASTIC
22	STEM NUT	SS304
23	HANDLE WASHER	SS304
29	BELLEVILLE WASHER	SS301
30	TAB WASHER	SS304
32	PACKING FOLLOWER	TFM1600
33	LEVER STOP	SS304
35	BODY BOLT	SS304
36	BOLT WASHER	SS304
37	BOLT NUT	SS304
49	GROUNDIND SPRING	SS304

- Tube bore:The ID for the valve flow path (ball,seats,ends) are the same ID as the tubing as per ASME/BPE 2002 DT-1
- Size range: 1/2"~4"
- 3pc design and removable swing-out center section
- With Integral ISO5211 Actuator Mounting Pad

Body rating

- 1/2"~2" 1000psi
- 2-1/2"~4" 720psi
- Steam Pressure of 150 psig at 350°F

Temperature Rating

- 70°F to 475°F

Interior finish

- Electro-Polishing to SFV4 Ra 10 u-in (0.25 um)
- Mechanical Polishing to SFV1 Ra 15u-in (0.375um)

Markings

- Valves will be marked and tagged for the traceability to conform with ASME/BPE 2002 DT-3

Testing

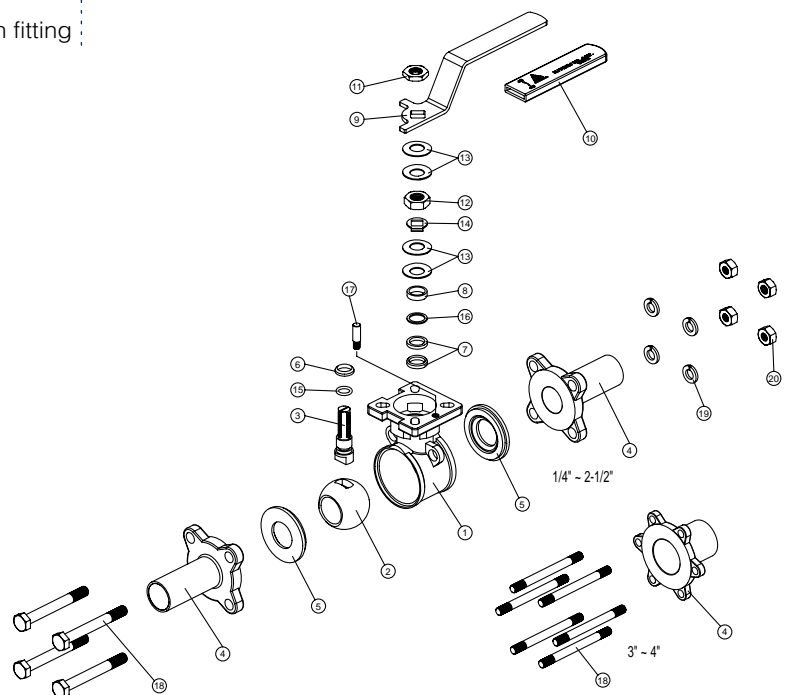
- All valves are cleaned, dried, assembled, 100% leak tested in the clean room.

Packing

- All valves are finally packed in a hermetically sealed bag filled with dry nitrogen in the clean room.
- Conforming to ASME BPE 2002 DT-13

MTR

- Each valve is individually tagged for traceability and material certification will be provided on request.





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•) Table Sf-5 Acceptance Criteria For Interior Surface Finishes Of Valve Bodies

Anomaly or Indication	Acceptance Criteria
Cluster of pits	None accepted
Demarcation	If < 5% of the total area when visually inspected and Ra is met
Grit lines	If Ra is met
Nicks	If depth < 0.010 in.
Oxides	None accepted
Pits	If diameter < 0.020 in. and bottom is shiny
Porosity	If diameter < 0.010 in. and bottom is shiny
Scratches	If length < 0.25 in., depth < 0.003 in., and Ra is met
Surface cracks	None accepted
Surface inclusions	If Ra is met and there is no liquid penetrant indication
Surface residuals	None accepted, visual inspection without magnification
Surface roughness (Ra)	See Table SF-6
Weld slag	None accepted

•) Table Sf-6 Readings for Valves

Mechanically Polished						
Surface Designation ASME BPE			Ra, Average [Note (1)]		Ra, Max.	
			GRIT	μ-in.	μm	μ-in.
SFV 1		320	15	0.375	20	0.5
SFV 2		240	20	0.5	25	0.625
SFV 3		180	25	0.625	30	0.75

Mechanically Polished and Electropolished						
Surface Designation ASME BPE			Ra, Average [Note (1)]		Ra, Max.	
			GRIT	μ-in.	μm	μ-in.
SFV 4		320	10	0.25	15	0.375
SFV 5		240	15	0.375	20	0.5
SFV 6		180	20	0.5	25	0.625

※ Table SF-5, SF-6 from ASME/BPE 2002

•) Surface Roughness for Grit Finishes (Ra.)

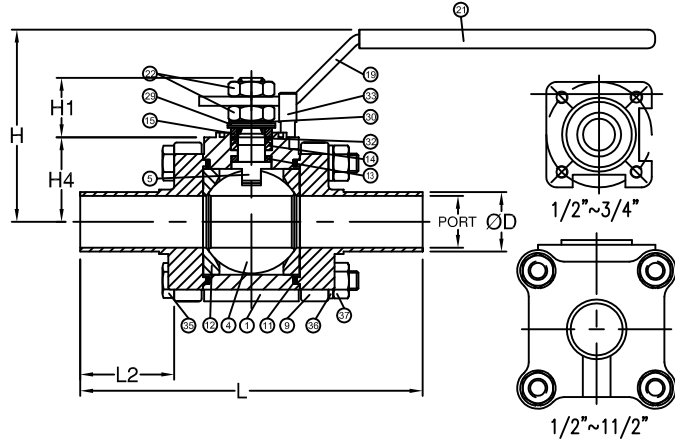
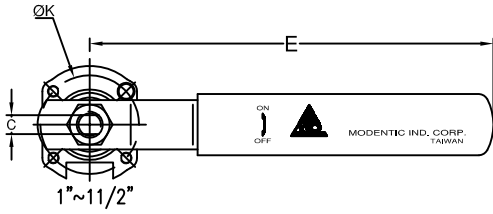
Abrasive grit No.	Ra, Max.	
	μ-in.	μm
500	4 to 10	0.10 to 0.25
320	6 to 15	0.15 to 0.38
240	8 to 20	0.20 to 0.51
180	25 max	0.64 max
120	45 max	1.14 max
60	140 max	3.56 max

Grit: Measures the number of scratches per liner inch of abrasive pad. Higher numbers indicate a smoother finish.

RMS: Defined as Root Mean Square roughness, this method measure a sample for peaks and valleys. Lower numbers indicate a smoother finish.

Ra: Know as the Arithmetic Mean, this measurement represents the average value of all peaks and valleys. Lower numbers indicate a smooth finish.

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DIMENSIONS

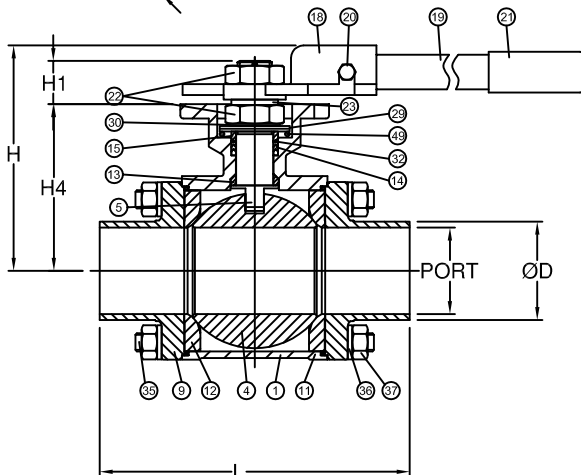
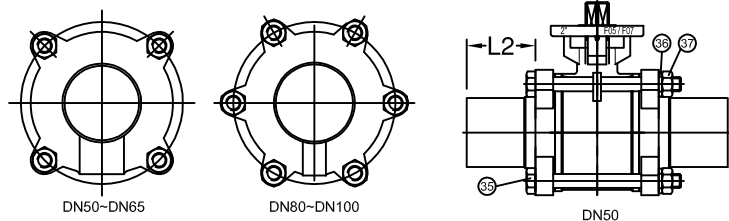
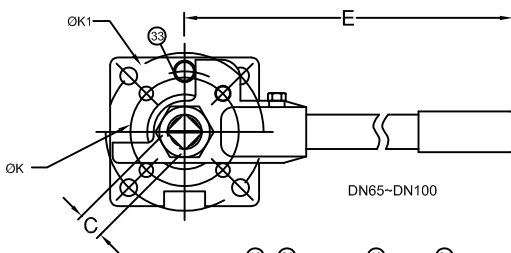
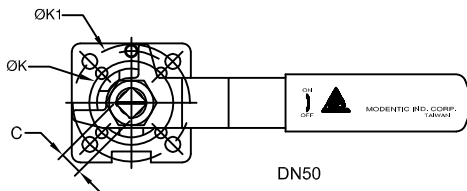
unit:mm

SIZE	PORT	L	L2	E	H	H1	H4	C	ØD	ØK	
DN15	1/2"	18.10	126.00	40.00	132.80	69.75	16.30	30.75	6.50	21.30	36.00
DN20	3/4"	23.70	137.40	40.00	132.80	76.45	17.40	35.25	6.50	26.90	36.00
DN25	1"	29.70	149.70	40.00	171.80	84.85	25.30	39.00	8.00	33.70	42.00
DN32	1-1/4"	38.40	162.60	40.00	171.80	89.85	26.00	43.50	8.00	42.40	42.00
DN40	1-1/2"	44.30	169.20	40.00	204.20	101.45	31.70	51.30	9.70	48.30	50.00

DIMENSIONS

unit:inch

SIZE	PORT	L	L2	E	H	H1	H4	C	ØD	ØK	
DN15	1/2"	0.71	4.96	1.57	5.23	2.75	0.64	1.21	0.26	0.84	1.42
DN20	3/4"	0.93	5.41	1.57	5.23	3.01	0.69	1.39	0.26	1.06	1.42
DN25	1"	1.17	5.89	1.57	6.76	3.34	1.00	1.54	0.31	1.33	1.65
DN32	1-1/4"	1.51	6.40	1.57	6.76	3.54	1.02	1.71	0.31	1.67	1.65
DN40	1-1/2"	1.74	6.66	1.57	8.04	3.99	1.25	2.02	0.38	1.90	1.97



DIMENSIONS

unit:mm

SIZE	PORT	L	L2	E	H	H1	H4	C	ØD	ØK	ØK1	
DN50	2"	56.30	180.60	40.00	202.00	126.70	17.00	85.30	14.00	60.30	50.00	70.00
DN65	2-1/2"	72.10	229.20	50.00	365.50	149.95	24.60	112.55	17.00	76.10	70.00	102.00
DN80	3"	84.30	237.20	50.00	365.50	158.45	24.60	121.05	17.00	88.90	70.00	102.00
DN100	4"	109.70	265.90	50.00	401.00	200.50	29.20	159.70	22.00	114.30	102.00	125.00

DIMENSIONS

unit:inch

SIZE	PORT	L	L2	E	H	H1	H4	C	ØD	ØK	ØK1	
DN50	2"	2.22	7.11	1.57	7.95	4.99	0.67	3.36	0.55	2.37	1.97	2.76
DN65	2-1/2"	2.84	9.02	1.97	14.39	5.90	0.97	4.43	0.67	3.00	2.76	4.02
DN80	3"	3.32	9.34	1.97	14.39	6.24	0.97	4.77	0.67	3.50	2.76	4.02
DN100	4"	4.32	10.47	1.97	15.79	7.89	1.15	6.29	0.87	4.50	4.02	4.92