An ISO 9001 : 2015 Certified Company

ISO 9001:2008

G M VALVE PVT. LTD.

"COMMITTED TO QUALITY"

Manufacturers of :
Forged Steel Valve | Gate Valve | Globe Valve | Check Valve | Ball Valve | Piston Valve | Bellow Seal Valve

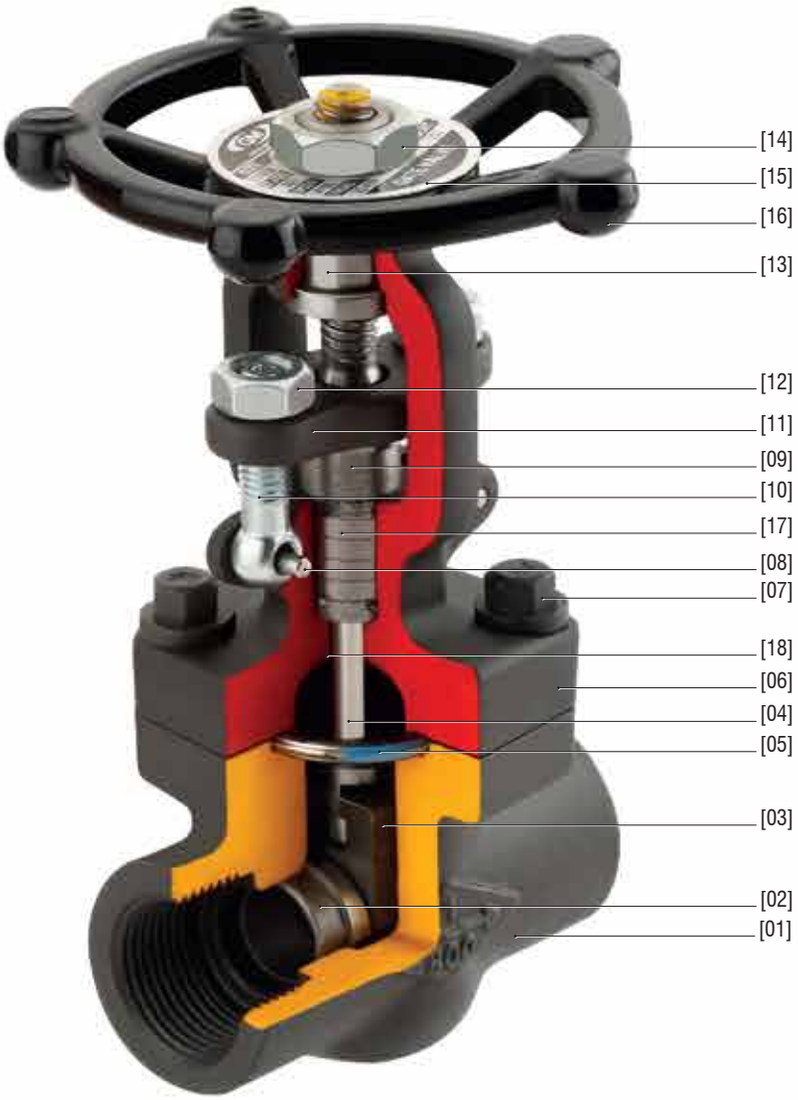
> Leadership is the element that shows the way, that sets the pace. At **G M Valve Pvt. Ltd.,** we are led with courage, knowledge, experience and action.

G M Valve Pvt. Ltd. is part of G M Group and made its presence in 2007 as a Forged Steel Valve Division. G M Valve is globally recognized manufacturer of Forge Steel valves with manufacturing operations in India supported by a worldwide distribution network.

We are professionally managed ISO 9001-2015 & IBR approved firm. Perfection in design, stringent quality checks at every manufacturing stage, unmatchable, performance and prompt after sales service are some of the salient features of our business. G M Valve provides maximum safety, reliability and suitability virtually in all branches of Industrial Applications.

Our Products

Index



Gate Valve

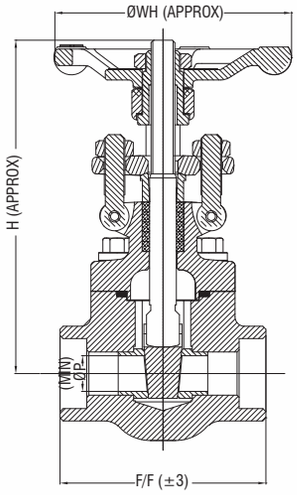
Technical Specification

Design Standard	API 602/ISO 15761/ASME B16.34
Testing Standard	API 598
Face to Face Standard	Manufacturer's Standard
Socket Weld Standard	ASME B16.11
Screwed End Standard	ASME B1.20.1
Butt Weld Standard	ASME B16.25
Flange End Standard	ASME B16.5

Material of Construction

18	BACK SEAT	INTEGRAL	INTEGRAL	INTEGRAL	INTEGRAL	INTEGRAL
17	GLAND PACKING	FLEXIBLE GRAPHITE RINGS	FLEXIBLE GRAPHITE RINGS	FLEXIBLE GRAPHITE RINGS	FLEXIBLE GRAPHITE RINGS	FLEXIBLE GRAPHITE RINGS
16	HAND WHEEL	MI / SGIRON	MI / SGIRON	MI / SGIRON	MI / SGIRON	MI / SGIRON
15	NAME PLATE	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL
14	STEM NUT	ASTM A 194 GR. 2H	ASTM A 194 GR. B8M	ASTM A 194 GR. B8M	ASTM A 194 GR. 2H	ASTM A 194 GR. B8M
13	YOKE SLEEVE	ASTM A 582 GR. SS-416	ASTM A 582 GR. SS-303	ASTM A 582 GR. SS-303	ASTM A 582 GR. SS-416	ASTM A 582 GR. SS-303
12	EYE BOLT NUT	ASTM A 194 GR. 2H	ASTM A 194 GR. B8	ASTM A 194 GR. B8M	ASTM A 194 GR. 2H	ASTM A 194 GR. B8M
11	GLAND FLANGE	ASTM A 105	ASTM A 182 GR. F-304	ASTM A 182 GR. F-316	ASTM A 105	ASTM A 182 GR. F-316
10	EYE BOLT	ASTM A 193 GR. B7	ASTM A 182 GR. F-304	ASTM A 182 GR. F-316	ASTM A 193 GR. B7	ASTM A 182 GR. F-316
09	GLAND BUSH	ASTM A 276 TYPE SS-410	ASTM A 276 TYPE SS-304	ASTM A 276 TYPE SS-316	ASTM A 276 TYPE SS-410	ASTM A 182 GR. F-51
08	EYE BOLT PIN	ASTM A 276 TYPE SS-410	ASTM A 276 TYPE SS-304	ASTM A 276 TYPE SS-316	ASTM A 276 TYPE SS-410	ASTM A 276 TYPE SS-316
07	HEX BOLT (*)	ASTM A 193 GR. B7	ASTM A 193 GR. B8	ASTM A 193 GR. B8M	ASTM A 193 GR. B16	ASTM A 193 GR. B8M
06	BONNET	ASTM A 105	ASTM A 182 GR. F-304	ASTM A 182 GR. F-316	ASTM A 182 GR. F-22	ASTM A 182 GR. F-51
05	GASKET (*)	SS-316 SPW+GRAPHITE	SS-316 SPW + GRAPHITE	SS-316 SPW+GRAPHITE	SS-316 SPW+GRAPHITE	SS-316 SPW+GRAPHITE
04	STEM	ASTM A 182 GR. F6a	ASTM A 182 GR. F-304	ASTM A 182 GR. F-316	ASTM A 182 GR. F6a	ASTM A 182 GR. F-51
03	WEDGE	ASTM A 217 GR. CA-15	ASTM A 351 GR. CF8	ASTM A 351 GR. CF8M	ASTM A 217 GR. CA-15	ASTM A 182 GR. F-51
02	SEAT RING	ASTM A 276 TYPE SS-410	ASTM A 276 TYPE SS-304	ASTM A 276 TYPE SS-316	ASTM A 276 TYPE SS-410	ASTM A 182 GR. F-51
01	BODY	ASTM A 105	ASTM A 182 GR. F-304	ASTM A 182 GR. F-316	ASTM A 182 GR. F-22	ASTM A 182 GR. F-51
	DESCRIPTION	**MATERIAL**	**MATERIAL**	**MATERIAL**	**MATERIAL**	**MATERIAL**
		MOC A 105	MOC F-304	MOC F-316	MOC F-22	MOC F-51

*Marked Parts are not Applicable for Welded 2500#

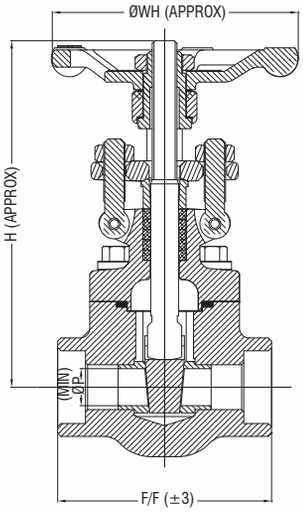


BOLTED DESIGN

Dimensions

800#	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
F/F (mm)	73	80	100	120	120	130
ØP (mm)	9.5	12.7	17.5	23.8	28.6	36.5
H OPEN (mm)	151	157	186	237	237	268
H CLOSE (mm)	135	137	162	201	201	223
ØWh (mm)	86	86	116	150	150	150
Approx. Weight (Kg)	1.5	1.8	3.1	6.3	6.1	8.3

1500#	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
F/F (mm)	80	100	120	120	130	140
ØP (mm)	9.5	12.7	15.9	22.2	27	34.9
H OPEN (mm)	151	178	227	227	256	303
H CLOSE (mm)	138	162	207	207	224	263
ØWh (mm)	86	116	150	150	150	225
Approx. Weight (Kg)	1.7	2.9	6.1	5.9	8.5	13.9



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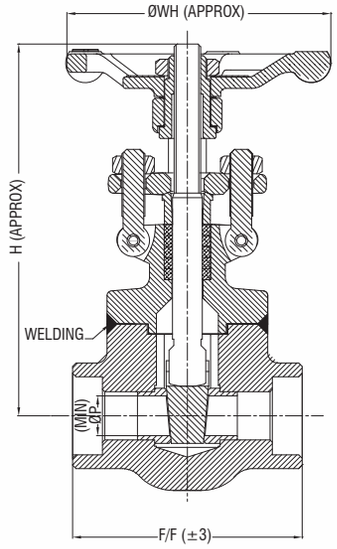
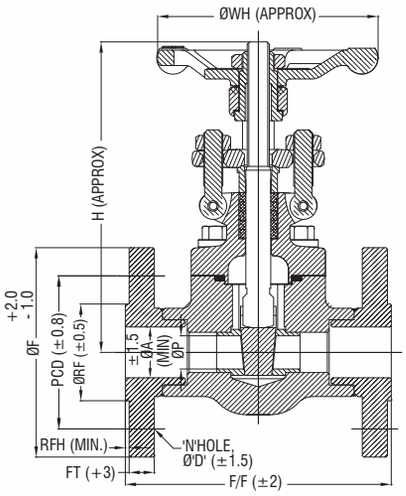


WELDED DESIGN

2500#	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
F/F (mm)	100	120	130	140	140	-
ØP (mm)	7	12.5	15.5	21.5	26.5	-
H OPEN (mm)	187	224	261	318	318	-
H CLOSE (mm)	174	204	239	290	290	-
ØWh (mm)	116	150	150	225	225	-
Approx. Weight (Kg)	2.9	6.1	8.5	14	13.9	-

150#	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
F/F (mm)	108	117	127	140	165	178
ØP (mm)	9.5	12.7	17.5	23.8	28.6	36.5
ØA (mm)	15.7	20.9	26.7	35	40.9	52.5
ØF (mm)	90	100	110	115	125	150
FT (mm)	9.6	11.2	12.7	14.3	15.9	17.5
ØRF (mm)	34.9	42.9	50.8	63.5	73	92.1
RFH (mm)	1.7	1.7	1.7	1.7	1.7	1.7
PCD (mm)	60.3	69.9	79.4	88.9	98.4	120.7
Approx. Weight (Kg)	2.3	2.9	4.6	8.6	8.5	14

*Flange End Valve also Available in 300#, 600# & Above Class on Request.



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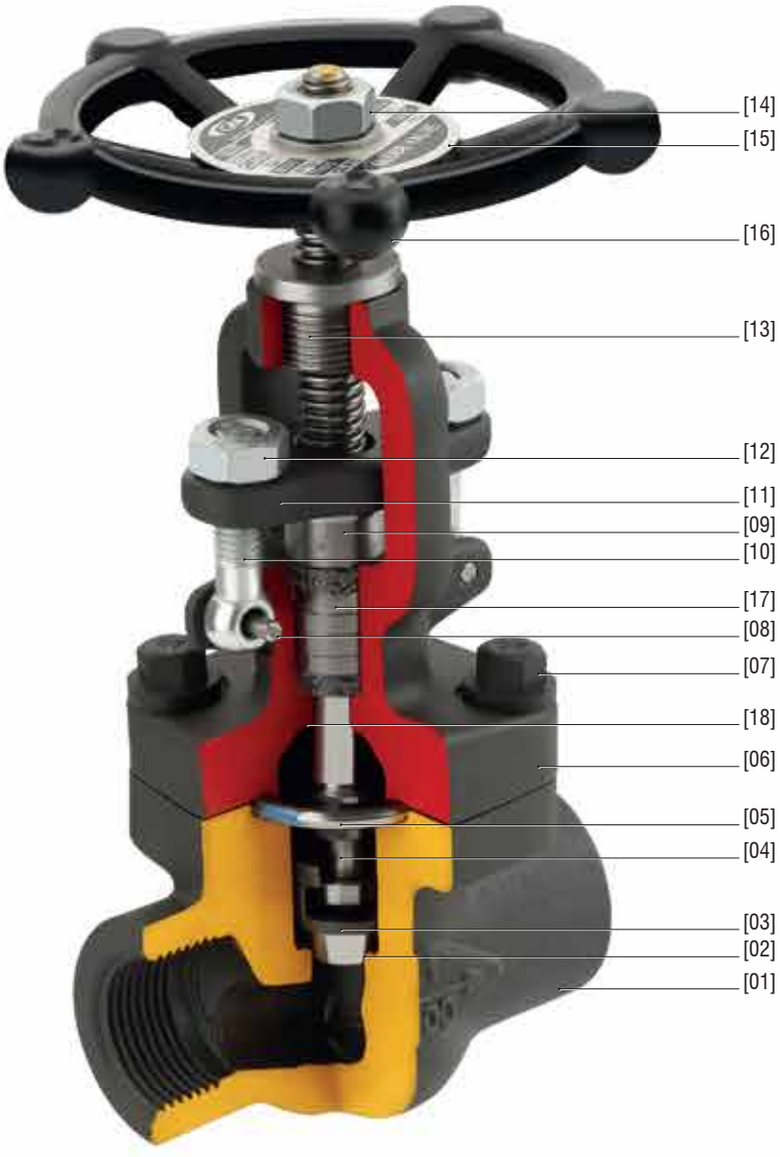


Globe Valve

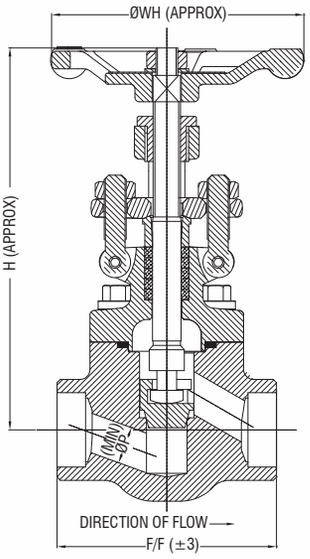
Technical Specification

Design Standard	ISO 15761/API 602/BS 5352/ASME B16.34
Testing Standard	API 598
Face to Face Standard	Manufacturer's Standard
Socket Weld Standard	ASME B16.11
Screwed End Standard	ASME B1.20.1
Butt Weld Standard	ASME B16.25
Flange End Standard	ASME B16.5

Material of Construction

18	BACK SEAT	INTEGRAL	INTEGRAL	INTEGRAL	INTEGRAL	INTEGRAL
17	GLAND PACKING	FLEXIBLE GRAPHITE RINGS	FLEXIBLE GRAPHITE RINGS	FLEXIBLE GRAPHITE RINGS	FLEXIBLE GRAPHITE RINGS	FLEXIBLE GRAPHITE RINGS
16	HAND WHEEL	MI / SGIRON	MI / SGIRON	MI / SGIRON	MI / SGIRON	MI / SGIRON
15	NAME PLATE	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL
14	STEM NUT	ASTM A 194 GR. 2H	ASTM A 194 GR. B8	ASTM A 194 GR. B8M	ASTM A 194 GR. 2H	ASTM A 194 GR. B8M
13	YOKE SLEEVE	ASTM A 582 GR. SS-416	ASTM A 582 GR. SS-303	ASTM A 582 GR. SS-303	ASTM A 582 GR. SS-416	ASTM A 582 GR. SS-303
12	EYE BOLT NUT	ASTM A 194 GR. 2H	ASTM A 194 GR. B8	ASTM A 194 GR. B8M	ASTM A 194 GR. 2H	ASTM A 194 GR. B8M
11	GLAND FLANGE	ASTM A 105	ASTM A 182 GR. F-304	ASTM A 182 GR. F-316	ASTM A 105	ASTM A 182 GR. F-316
10	EYE BOLT	ASTM A 193 GR. B7	ASTM A 182 GR. F-304	ASTM A 182 GR. F-316	ASTM A 193 GR. B7	ASTM A 182 GR. F-316
09	GLAND BUSH	ASTM A 276 TYPE SS-410	ASTM A 276 TYPE SS-304	ASTM A 276 TYPE SS-316	ASTM A 276 TYPE SS-410	ASTM A 182 GR. F-51
08	EYE BOLT PIN	ASTM A 276 TYPE SS-410	ASTM A 276 TYPE SS-304	ASTM A 276 TYPE SS-316	ASTM A 276 TYPE SS-410	ASTM A 276 TYPE SS-316
07	HEX BOLT (*)	ASTM A 193 GR. B7	ASTM A 193 GR. B8	ASTM A 193 GR. B8M	ASTM A 193 GR. B16	ASTM A 193 GR. B8M
06	BONNET	ASTM A 105	ASTM A 182 GR. F-304	ASTM A 182 GR. F-316	ASTM A 182 GR. F-22	ASTM A 182 GR. F-51
05	GASKET (*)	SS-316 SPW+GRAPHITE	SS-316 SPW+GRAPHITE	SS-316 SPW+GRAPHITE	SS-316 SPW+GRAPHITE	SS-316 SPW+GRAPHITE
04	STEM	ASTM A 182 GR. F6a	ASTM A 182 GR. F-304	ASTM A 182 GR. F-316	ASTM A 182 GR. F6a	ASTM A 182 GR. F-51
03	PLUG	ASTM A 217 GR. CA-15	ASTM A 351 GR. CF8	ASTM A 351 GR. CF8M	ASTM A 217 GR. CA-15	ASTM A 182 GR. F-51
02	SEAT RING	13% CR. INTEGRAL	ASTM A 182 GR. F-304 INTEGRAL	ASTM A 182 GR. F-316 INTEGRAL	13% CR. INTEGRAL	ASTM A 182 F-51 INTEGRAL
01	BODY	ASTM A 105	ASTM A 182 GR. F-304	ASTM A 182 GR. F-316	ASTM A 182 GR. F-22	ASTM A 182 GR. F-51
	DESCRIPTION	**MATERIAL**	**MATERIAL**	**MATERIAL**	**MATERIAL**	**MATERIAL**
		MOC A 105	MOC F-304	MOC F-316	MOC F-22	MOC F-51

*Marked Parts are not Applicable for Welded 2500#



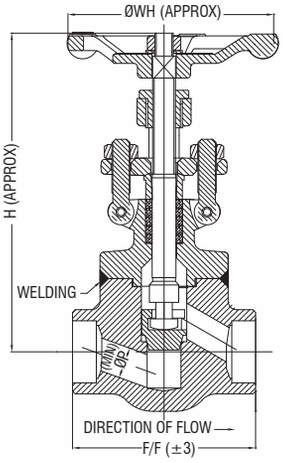
BOLTED DESIGN

Dimensions

800#	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
F/F (mm)	73	80	100	145	145	160
ØP (mm)	9.5	12.7	17.5	23.8	28.6	36.5
H OPEN (mm)	159	162	191	228	228	265
H CLOSE (mm)	143	146	171	199	199	236
ØWh (mm)	86	86	116	150	150	150
Approx. Weight (Kg)	1.6	1.8	3.1	6.6	6.3	9.4

1500#	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
F/F (mm)	80	100	145	145	160	172
ØP (mm)	8.5	9.5	14.5	20.5	25.5	27.5
H OPEN (mm)	160	174	224	224	239	318
H CLOSE (mm)	148	187	204	204	261	290
ØWh (mm)	86	116	150	150	150	225
Approx. Weight (Kg)	1.9	3.1	6.6	6.5	10	15

2500# Straight Type	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
F/F (mm)	100	145	160	172	172	-
ØP (mm)	7	12.5	15.5	21.5	26.5	-
H OPEN (mm)	178	227	256	303	303	-
H CLOSE (mm)	162	207	224	263	263	-
ØWh (mm)	116	150	150	225	225	-
Approx. Weight (Kg)	3.1	6.5	10	15.1	15	-



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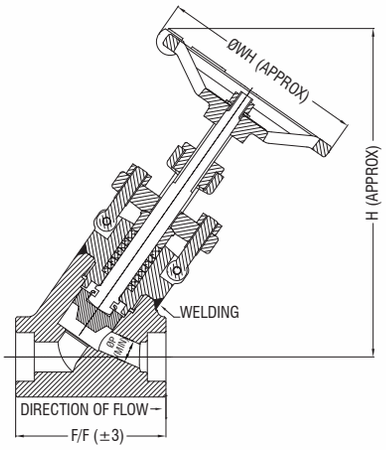
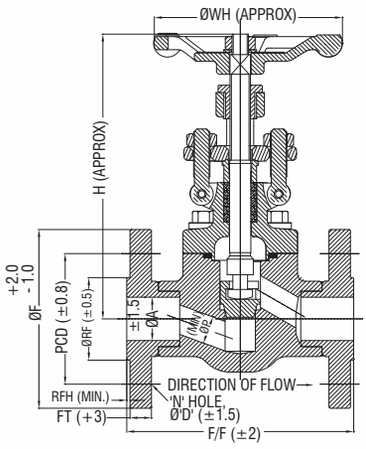


Y TYPE WELDED DESIGN

2500# Y Type	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
F/F (mm)	85	100	105	145	145	145
ØP (mm)	7	12.5	15.5	21.5	26.5	27
H OPEN (mm)	180	222	231	324	324	345
H CLOSE (mm)	175	212	219	309	309	330
ØWh (mm)	116	150	150	225	225	225
Approx. Weight (Kg)	2.5	4	4.6	13.1	13	15

150#	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
F/F (mm)	108	117	127	140	165	203
ØP (mm)	9.5	12.7	17.5	23.8	28.6	36.5
ØA (mm)	15.7	20.9	26.7	35	40.9	52.5
ØF (mm)	90	100	110	115	125	150
FT (mm)	9.6	11.2	12.7	14.3	15.9	17.5
ØRF (mm)	34.9	42.9	50.8	63.5	73	92.1
RFH (mm)	1.7	1.7	1.7	1.7	1.7	1.7
PCD (mm)	60.3	69.9	79.4	88.9	98.4	120.7
Approx. Weight (Kg)	2.2	2.9	4.7	4.9	9	12.5

*Flange End Valve also Available in 300#, 600# & Above Class on Request.



FLANGE END DESIGN

Check Valve

Technical Specification

Design Standard	ISO 15761/API 602/BS 5352/ASME B16.34
Testing Standard	API 598
Face to Face Standard	Manufacturer's Standard
Socket Weld Standard	ASME B16.11
Screwed End Standard	ASME B1.20.1
Butt Weld Standard	ASME B16.25
Flange End Standard	ASME B16.5

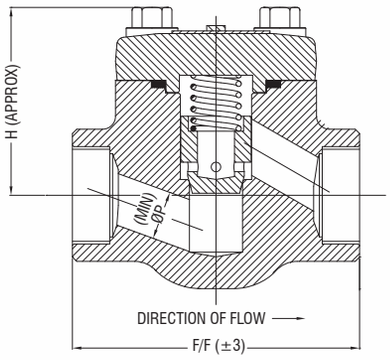
Material of Construction

08	NAME PLATE	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL
07	HEX BOLT (*)	ASTM A 193 GR. B7	ASTM A 193 GR. B8	ASTM A 193 GR. B8M	ASTM A 193 GR. B16	ASTM A 193 GR. B8M
06	CHECK PLATE	ASTM A 105	ASTM A 182 GR. F-304	ASTM A 182 GR. F-316	ASTM A 182 GR. F-22	ASTM A 182 GR. F-51
05	GASKET (*)	SS-316 SPW+GRAPHITE	SS-316 SPW + GRAPHITE	SS-316 SPW+GRAPHITE	SS-316 SPW+GRAPHITE	SS-316 SPW+GRAPHITE
04	SPRING	ASTM A 313 SS-304	ASTM A 313 SS-304	ASTM A 313 SS-316	ASTM A 313 SS-304	ASTM A 313 SS-316
03	PLUG	ASTM A 276 TYPE SS-410	ASTM A 276 TYPE SS-304	ASTM A 276 TYPE SS-316	ASTM A 276 TYPE SS-410	ASTM A 182 GR. F-51
02	SEAT RING	13% CR. INTEGRAL	ASTM A 182 GR. F-304 INTEGRAL	ASTM A 182 GR. F-316 INTEGRAL	13% CR. INTEGRAL	ASTM A 182 F-51 INTEGRAL
01	BODY	ASTM A 105	ASTM A 182 GR. F-304	ASTM A 182 GR. F-316	ASTM A 182 GR. F-22	ASTM A 182 GR. F-51
	DESCRIPTION	**MATERIAL**	**MATERIAL**	**MATERIAL**	**MATERIAL**	**MATERIAL**
		MOC A 105	MOC F-304	MOC F-316	MOC F-22	MOC F-51

*Marked Parts are not Applicable for Welded 2500#

Check Valve Cracking Pressure

Size	Piston Type	Y Pattern Piston Type
	Spring Loaded	Spring Loaded
15 mm	0.7 Bar	0.7 Bar
20 mm	0.7 Bar	0.7 Bar
25 mm	0.7 Bar	0.7 Bar
40 mm	0.7 Bar	0.7 Bar
50 mm	0.8 Bar	0.7 Bar



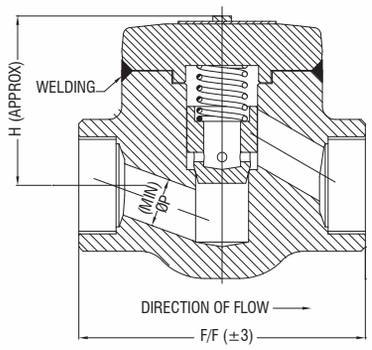
BOLTED DESIGN

Dimensions

800#	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
F/F (mm)	73	80	100	145	145	160
ØP (mm)	9.5	12.7	17.5	23.8	28.6	36.5
H (mm)	53	56	66	86	86	104
Approx. Weight (Kg)	1.0	1.2	2.1	4.8	4.7	7.7

1500#	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
F/F (mm)	80	100	145	145	160	172
ØP (mm)	8.5	9.5	14.5	20.5	25.5	27.5
H (mm)	56	66	86	86	104	127
Approx. Weight (Kg)	1.2	2	4.8	4.6	7.2	10.5

2500# Straight Type	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
F/F (mm)	100	145	160	172	172	-
ØP (mm)	7	12.5	15.5	21.5	26.5	-
H (mm)	66	86	104	127	127	-
Approx. Weight (Kg)	2	4.6	7.2	10.6	10.6	-



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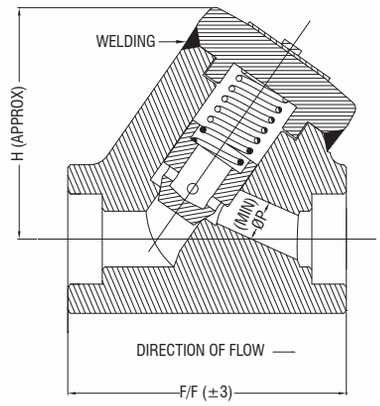
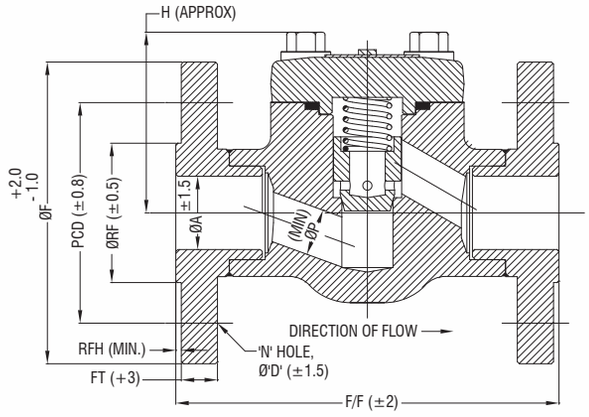


Y TYPE WELDED DESIGN

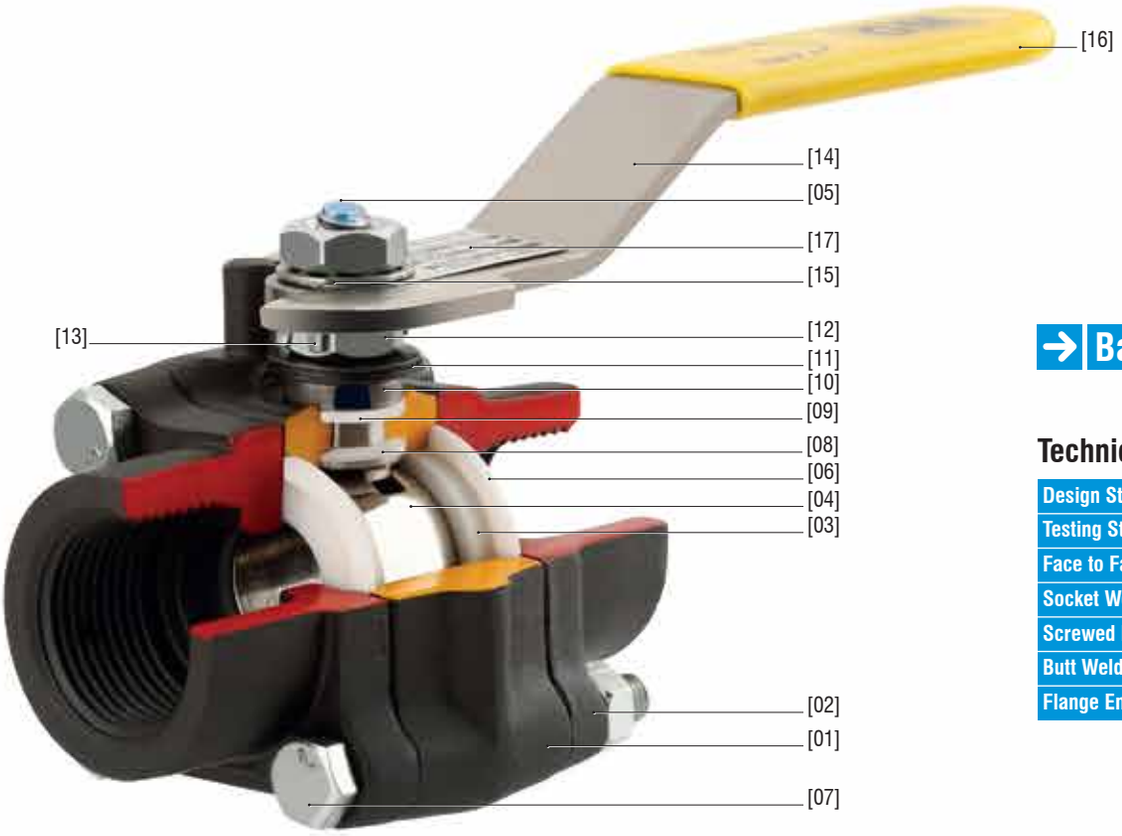
2500# Y Type	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
F/F (mm)	85	100	105	145	145	145
ØP (mm)	7	12.5	15.5	21.5	26.5	27
H (mm)	72	80	86	118	118	124
Approx. Weight (Kg)	1.3	2.1	2.8	7.1	7	9.5

150#	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
F/F (mm)	108	117	127	140	165	203
ØP (mm)	9.5	12.7	17.5	23.8	28.6	36.5
ØA (mm)	15.7	20.9	26.7	35	40.9	52.5
ØF (mm)	90	100	110	115	125	150
FT (mm)	9.6	11.2	12.7	14.3	15.9	17.5
ØRF (mm)	34.9	42.9	50.8	63.5	73	92.1
RFH (mm)	1.7	1.7	1.7	1.7	1.7	1.7
PCD (mm)	60.3	69.9	79.4	88.9	98.4	120.7
Approx. Weight (Kg)	1.7	1.9	3.6	3.8	7.4	11.6

*Flange End Valve also Available in 300#, 600# & Above Class on Request.



FLANGE END DESIGN



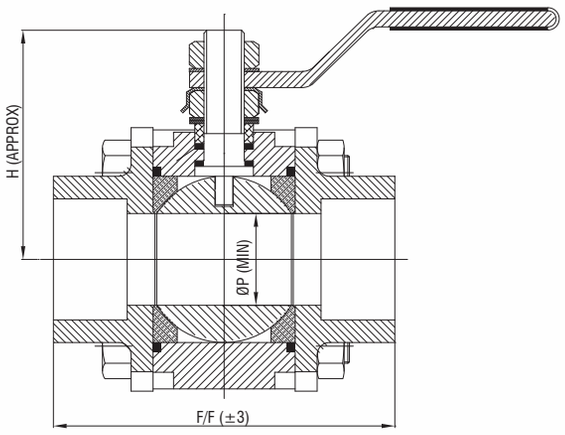
Ball Valve

Technical Specification

Design Standard	ISO 17292 / BS 5351
Testing Standard	EN12266-1/API 598
Face to Face Standard	Manufacturer's Standard
Socket Weld Standard	ASME B16.11
Screwed End Standard	ASME B1.20.1
Butt Weld Standard	ASME B16.25
Flange End Standard	ASME B16.5

Material of Construction

17	NAME PLATE	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL
16	SLEEVE	PVC	PVC	PVC	PVC	PVC
15	STAR WASHER	MS	MS	MS	MS	MS
14	HANDLE	CARBON STEEL	SS-304	SS-304	SS-304	SS-304
13	LOCKING WASHER	MS	MS	MS	MS	MS
12	STEM NUT	ASTM A 194 GR. 2H	ASTM A 194 GR. 2H	ASTM A 194 GR. 2H	ASTM A 194 GR. 2H	ASTM A 194 GR. 2H
11	DISC SPRING	CARBON STEEL	CARBON STEEL	CARBON STEEL	CARBON STEEL	CARBON STEEL
10	GLAND BUSH	ASTM A 276 TYPE SS-304	ASTM A 276 TYPE SS-304	ASTM A 276 TYPE SS-316	ASTM A 276 TYPE SS-304	ASTM A 276 TYPE SS-316
09	STEM PACKING	PTFE/CFT/ *GRAFOIL	PTFE/CFT/ *GRAFOIL	PTFE/CFT/ *GRAFOIL	PTFE/CFT/ *GRAFOIL	PTFE/CFT/ *GRAFOIL
08	THRUST WASHER	GLASS FILLED TEFLON	GLASS FILLED TEFLON	GLASS FILLED TEFLON	GLASS FILLED TEFLON	GLASS FILLED TEFLON
07	HEX. BOLTS & NUTS	ASTM A 193 GR. B7/2H	ASTM A 193 GR. B8/8	ASTM A 193 GR. B8M /8M	ASTM A 193 GR. B8/8	ASTM A 193 GR. B8M/8M
06	GASKET	PTFE/CFT/ *GRAFOIL	PTFE/CFT/ *GRAFOIL	PTFE/CFT/ *GRAFOIL	PTFE/CFT/ *GRAFOIL	PTFE/CFT/ *GRAFOIL
05	STEM	ASTM A 276 TYPE SS-304	ASTM A 276 TYPE SS-304	ASTM A 276 TYPE SS-316	ASTM A 276 TYPE SS-304	ASTM A 276 TYPE SS-316
04	BALL	ASTM A 351 GR. CF8	ASTM A 351 GR. CF8	ASTM A 351 GR. CF8M	ASTM A 351 GR. CF8	ASTM A 351 GR. CF8M
03	SEAT	PTFE/CFT	PTFE/CFT	PTFE/CFT	PTFE/CFT	PTFE/CFT
02	END PIECE	ASTM A 105	ASTM A 182 GR. F-304	ASTM A 182 GR. F-316	ASTM A 351 GR. CF8	ASTM A 351 GR. CF8M
01	BODY	ASTM A 105	ASTM A 182 GR. F-304	ASTM A 182 GR. F-316	ASTM A 351 GR. CF8	ASTM A 351 GR. CF8M
	DESCRIPTION	**MATERIAL**	**MATERIAL**	**MATERIAL**	**MATERIAL**	**MATERIAL**
		MOC A 105	MOC F-304	MOC F-316	MOC CF8	MOC CF8M

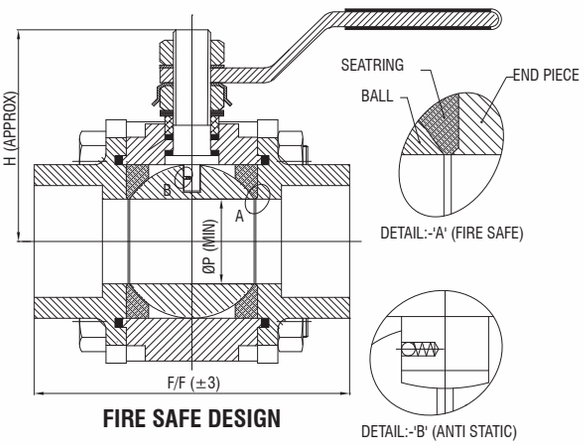


NON FIRE SAFE DESIGN

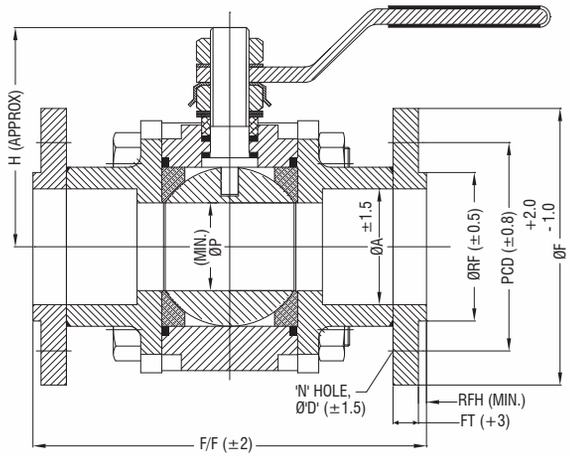
Dimensions

600#/800#	R.B.	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")	
	F.B.	10mm (3/8")	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
Face To Face	F/F (mm)	68	73	96	103	116	128	142
Bore Diameter	ØP (mm)	10	14	20	25	30.5	37.3	50.5
Height	H (mm)	38	40	53	56	75	80	90
Approx. Weight	W(Kg)	0.6	0.9	1.7	2.3	3.1	4.7	6.2

600#/800#	R.B.	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")	
	F.B.	10mm (3/8")	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
Face To Face	F/F (mm)	68	73	96	103	116	128	142
Bore Diameter	ØP (mm)	10	14	20	25	30.5	37.3	50.5
Height	H (mm)	38	40	53	56	75	80	90
Approx. Weight	W(Kg)	0.6	0.9	1.7	2.3	3.1	4.7	6.2



FIRE SAFE DESIGN



FLANGE END DESIGN

150#		15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
Face To Face	F/F (mm)	108	117	127	140	165	178
Bore Diameter	ØP (mm)	10	14	20	25	30.5	37.3
Flange Bore	ØA (mm)	15.7	20.9	26.7	35	40.9	52.5
Flange Dia	ØF (mm)	90	100	110	115	125	150
Flange Thickness	FT (mm)	9.6	11.2	12.7	14.3	15.9	17.5
Raised Face	ØRF (mm)	34.9	42.9	50.8	63.5	73	92.1
Raise Face Height	RFH (mm)	1.7	1.7	1.7	1.7	1.7	1.7
Pitch Center Dia.	PCD (mm)	60.3	69.9	79.4	88.9	98.4	120.7
Approx. Weight	W (kg.)	1.7	1.9	3.6	3.8	7.4	11.6

*Flange End Valve also Available in 300#, 600# & Above Class on Request.

Forged Steel Piston Valve

Technical Specification

Design Standard	ASME B16.34
Testing Standard	API 598
Face to Face Standard	Manufacture's Stanard
Socket Weld Standard	ASME B16.11
Screwed End Standard	ASME B1.20.1
Butt Weld Standard	ASME B16.25
Flange End Standard	ASME B16.5

Maximum Operating Testing Pressure

Pressure Rating for 800#	
Hydro Test Pressure (Body) kg/cm²	209
Pneumatic Test Pressure kg/cm²	7

Design Feature

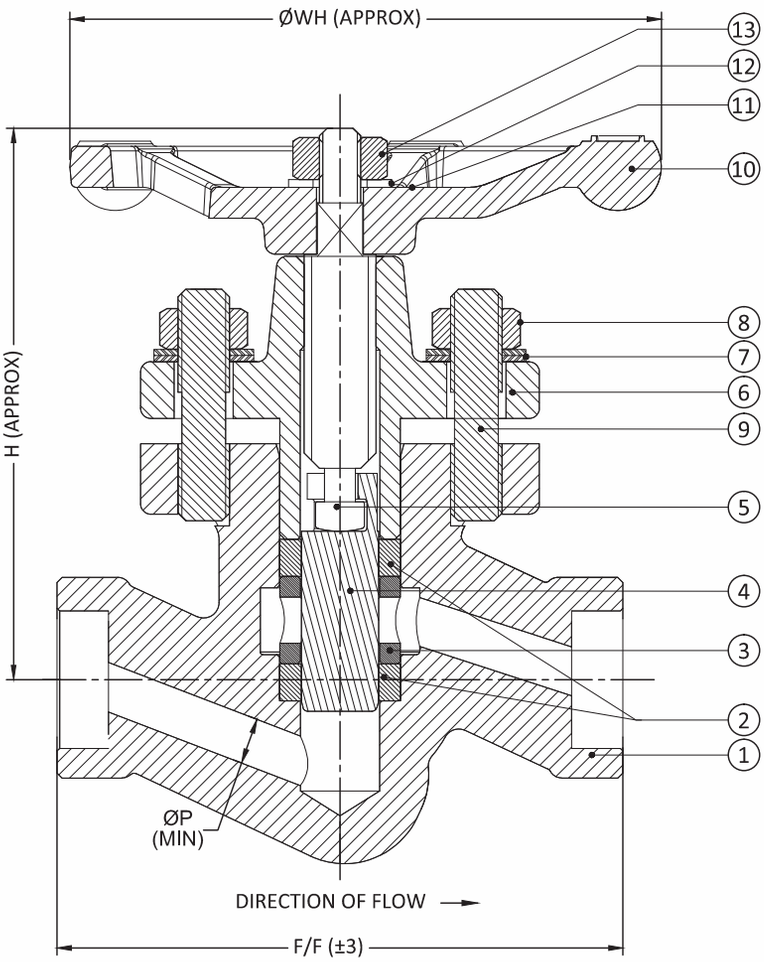
> GM Piston Valve is basically Seatless and Glandless Valve and by virtue of its design can replace both, the conventional type of Gate & Globe valves, with distinct advantages over them.

> Piston Valve works on the principle of Resilient rings in conjunction with a Metallic Stainless Steel Piston, that moves vertically between the rings, giving a Seal that is both effective as well as Durable. This sealing system gives a bubble tight shut off.

Maintenance

> In case any leakage is observed the bonnet nuts should be tightened with the valve in the fully closed position. Tightening the bonnet nuts may be repeated as and when required until the rings are worn out and no further tightening is possible. At this stage the sealing rings need to be replaced.

> Care should be taken while tightening the nuts to avoid tilting of the bonnet. Undue force should not be used to shut the valve as this may damage the spindle or the wheel.



Key Features

Seatless & Glandless Valve
Tight Shut Off
Robust, Maintenance Free for Long Time
Tight Sealing is achieved by the cylindrical, precision ground stainless steel piston
Economy & Easy to Service
Absolutely leak-tight across the ports and to the atmosphere
No Erosion of Sealing Surface

Dimension Table

800#				
DIMENSION	15mm (1/2")	20mm (3/4")	25mm (1")	40mm (1-1/2")
F/F (mm)	110	110	126	180
ØP (mm)	9	12	17	28
H OPEN (mm)	130	130	171	231
H CLOSE (mm)	105	105	137	185
ØWh (mm)	86	86	116	150
Approx. Weight (Kg)	1.9	1.9	4	5.3

Material of Construction

13	HANDEHEEL NUT	ASTM 194 GR. 2H	ASTM A 194 GR. B8	ASTM A 194 GR. B8M
12	HANDWHEEL WASHER	MS	MS	MS
11	NAME PLATE	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL
10	HAND WHEEL	MI / SGIRON	MI / SGIRON	MI / SGIRON
09	STUD	ASTM A 193 GR. B7	ASTM A 193 GR. B8	ASTM A 193 GR. B8M
08	NUT	ASTM 1 194 GR. 2H	ASTM 1 194 GR. B8	ASTM 1 194 GR. B8M
07	BELLEVILLE WASHER	50CR V4	50CR V4	50CR V4
06	BONNET	ASTM A 105	ASTM A 182 GR. F304	ASTM A 182 GR. F316
05	SPINDLE	ASTM A 276 TYPE SS 410	ASTM A 276 TYPE SS 304	ASTM A 276 TYPE SS 316
04	PISTON	ASTM A 276 TYPE SS 410	ASTM A 276 TYPE SS 304	ASTM A 276 TYPE SS 316
03	LANTERN BUSH	ASTM A 276 TYPE SS 410	ASTM A 276 TYPE SS 304	ASTM A 276 TYPE SS 316
02	SEALING RING	GRAPHITE WITH SS304 REINFORCED	GRAPHITE WITH SS304 REINFORCED	GRAPHITE WITH SS304 REINFORCED
01	BODY	ASTM A 105	ASTM A 182 GR. F304	ASTM A 182 GR. F316
		MATERIAL	MATERIAL	MATERIAL
		MOC A105	MOC F-304	MOC F-316

Forged Steel Bellow Seal Globe Valve

Technical Specification

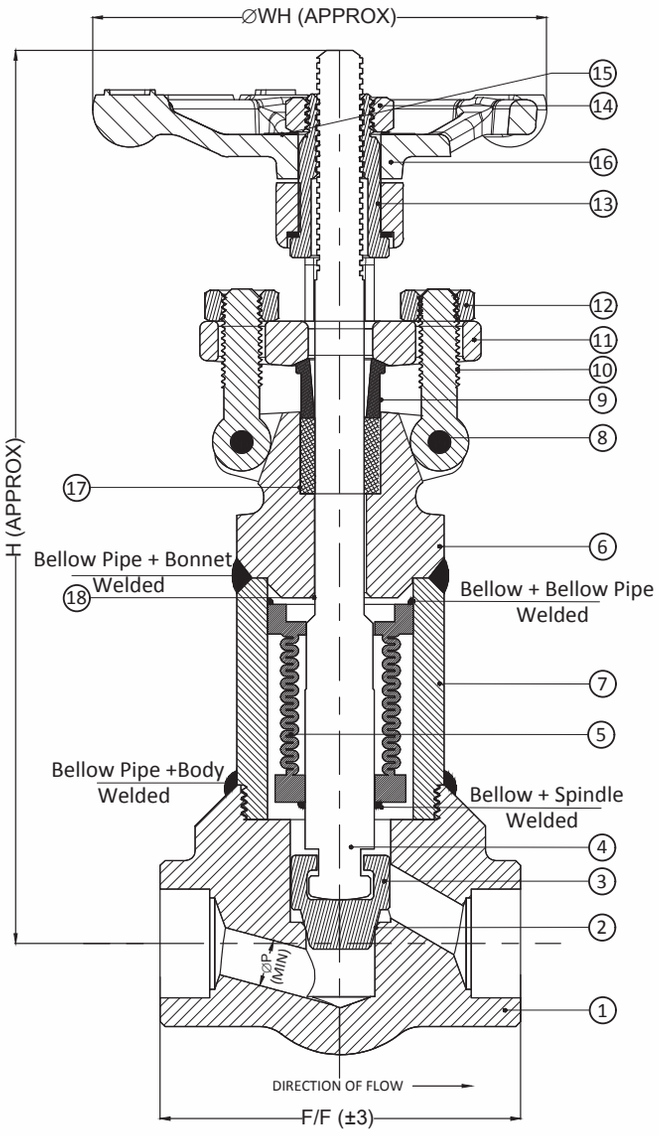
Design Standard	API 602
Testing Standard	API 598
Face to Face Standard	Manufacture's Standard
Socket Weld Standard	ASME B16.11
Screwed End Standard	ASME B1.20.1
Butt Weld Standard	ASME B16.25
Flange End Standard	ASME B16.5

Maximum Operating Testing Pressure

Pressure Rating	150#	300#	800#
Hydro Test Pressure (Body) kg/cm²	32	78	211
Hydro Test Pressure (Seat) kg/cm²	22	56	153
Pneumatic Test Pressure kg/cm²	7	7	7

Comparison Between Bellow Seal, Piston & Traditional Valves

	Bellow Seal Valve	Piston Valve	Conventional Valve
Stem Seal	Metallic Bellow Gland Packing	Sealing Ring	Gland Packing
Steam Leakage	Not Possible Since Metallic Bellow are designed to several thousands cycle	Not Possible till the ring wear out	Very Common Due to friction between stem & gland
Equipment Downtime	Nil	Low for replacing ring	Very High for replacing gland packing
Safety	Can be used safely for almost any media	Cab ne used for limited media steam, hot water	Highly unsafe when the media is poisonous/hazardous
Valve Life	Very High in Years	High compared to Conventinal Valve	Very low due to leakage through gland occur in some month



150#					
DIMENSION	15mm (1/2")	20mm (3/4")	25mm (1")	40mm (1-1/2")	50mm (2")
F/F (mm)	73	80	100	145	160
ØP (mm)	9.5	12.7	17.5	28.6	36.5
ØWh (mm)	86	86	116	150	150

300#					
DIMENSION	15mm (1/2")	20mm (3/4")	25mm (1")	40mm (1-1/2")	50mm (2")
F/F (mm)	73	80	100	145	160
ØP (mm)	9.5	12.7	17.5	28.6	36.5
ØWh (mm)	86	86	116	150	150

800#					
DIMENSION	15mm (1/2")	20mm (3/4")	25mm (1")	40mm (1-1/2")	50mm (2")
F/F (mm)	73	80	100	145	160
ØP (mm)	9.5	12.7	17.5	28.6	36.5
ØWh (mm)	86	86	116	150	150

Material of Construction

	DESCRIPTION	MATERIAL	QTY.
18	BACK SHEET	INTEGRAL	-
17	GLAND PACKING	FLEXIBLE GRAPHITE RINGS	5
16	HAND WHEEL	MI / SGIRON	1
15	NAME PLATE	STAINLESS STEEL	1
14	STEM NUT	ASTM A 194 GR. 2H	1
13	YOKE SLEEVE	ASTM A 582 GR. SS-416	1
12	EYE BOLT NUT	ASTM A 194 GR. 2H	2
11	GLAND FLANGE	ASTM A 105	1
10	EYE BOLT	ASTM A 193 GR. B7	2
09	GLAND BUSH	ASTM A 276 TYPE SS-410	1
08	EYE BOLT PIN	ASTM A 276 TYPE SS-410	2
07	BELLOW PIPE	ASTM A 105	1
06	BONNET	ASTM A 105	1
05	BELLOW	SS316Ti / SS321	1
04	STEM	ASTM A 182 GR. F6a	1
03	PLUG	ASTM A 217 GR. CA-15	1
02	SEAT RING	13% CR. INTEGRAL	-
01	BODY	ASTM A 105	1

Flow Coefficient Cv

The Cv's a valve property and is defined as follows. "The Flow Coefficient Cv states the flow capapcity of a valve in U.S. gallons per minute of water at a standard temperature of 60°F (15.6° C) that will flow through the valve with a pressure loss of one pound per square inch at a specific opening position". For the metric system the analog value is Kv where measure unit are Bar, Kg and meters. The Cv show the quality and accuracy of a valve in terms of pressure loss, the highest values of Cv indicate the highest quality of a valve.

Valve Size	GATE VALVE		GLOBE VALVE			CHECK VALVE		
	Regular Port	Full Port	Regular Port	Full Port	Y-Pattern	Regular Port	Full Port	Y-Pattern
1/4	-	2.5	-	1.1	2.9	-	0.9	2.3
3/8	-	4.3	-	1.4	3.8	-	1.1	3.5
1/2	4.50	11.60	1.00	2.60	3.50	0.50	1.10	3.50
3/4	11.00	25.60	2.80	5.60	9.00	2.80	4.80	6.50
1	26.00	53.60	5.80	9.90	15.00	5.00	6.00	10.00
1-1/4	54.00	78.80	10.00	13.00	22.00	8.50	8.20	17.00
1-1/2	79.00	86.00	13.30	23.30	45.00	10.00	14.40	36.00
2	104.00	108.00	24.00	39.70	75.00	17.00	32.00	66.50

Flow - Rate

$$Q = Cv \sqrt{\frac{\Delta p}{S}}$$

Pressure Drop

$$\Delta p = S \left(\frac{Q}{Cv} \right)^2$$

For liquids other than water

Δp = Pressure drop (p.s.i.)
Q = Liquid flow in gallons per minute (GPM)
S = Specific gravity of liquid relative toater (60°F)
Cv = Valves flow coefficient.

To measure the properly value of Cv there in not a standard method. G M Valve R & D team has used two different methods: 1-Using Cv definition, through the means of a specifically built test rig, it has been obtained 1Bar of pressure loss and the flow has been verified with specific equipment. Calculation is possible to convert the measure to Cv. 2-In the same machine the flow has been changed and different measure of process loss has been obtained: a table has been defined and an average value per each has been calculated.

Conversion Table to Metric STD

Flow Coefficient	Cv	Kv
Cv	1	0.865
Kv	1.156	1

G M Valve Standard Trim Defination

API TRIM NO.	NOMINAL TRIM	STEM	DISC / WEDGE	SEAT	GLAND BUSH
1	F6	410 (13 Cr)	F6 (13Cr)	410 (13Cr)	410 (13 Cr)
2	304	304 (18Cr -8Ni)	304 (18Cr -8Ni)	304 (18Cr -8Ni)	304 (18Cr -8Ni)
5	HARDFACED	410 (13 Cr)	F6 + St GR. 6 (CoCr Alloy)	410 + St GR. 6 (CoCr Alloy)	410 (13 Cr)
8	F6 & HARDFACED	410 (13 Cr)	F6 (13Cr)	410 + St GR. 6 (CoCr Alloy)	410 (13 Cr)
9	MONEL	MONEL(NiCu Alloy)	MONEL(NiCu Alloy)	MONEL(NiCu Alloy)	70Ni - 30Cu
10	316	316 (18Cr - 8Ni- Mo)	316 (18Cr - 8Ni- Mo)	316 (18Cr - 8Ni- Mo)	316 (18Cr - 8Ni- Mo)
11	MONEL & HARDFACED	MONEL(NiCu Alloy)	MONEL(NiCu Alloy)	MONEL+ St GR. 6	70Ni-30Cu/1/2Co-Cr-A
12	316 & HARDFACED	316 (18Cr - 8Ni- Mo)	316 (18Cr - 8Ni- Mo)	316 + St GR. 6	316 (18Cr - 8Ni- Mo)
15	HARDFACED (304)	304 (18Cr - 8Ni)	304 + St GR. 6	304 + St GR. 6	304 (18Cr - 8Ni)
16	316-FULL HARDFACED	316 (18Cr - 8Ni- Mo)	316 (18Cr - 8Ni- Mo)+St GR. 6	316 + St GR. 6	316 (18Cr - 8Ni- Mo)

Maximum Operating Testing Pressure

GGC	150#	300#	600#	800#	1500#	2500#
SHELL / BODY	32 KG /CM^2	78 KG /CM^2	156 KG /CM^2	211 KG /CM^2	390 KG /CM^2	655 KG /CM^2
SEAT	22 KG /CM^2	56 KG /CM^2	115 KG /CM^2	153 KG /CM^2	290 KG /CM^2	485 KG /CM^2
BACK SEAT#	22 KG /CM^2	56 KG /CM^2	115 KG /CM^2	153 KG /CM^2	290 KG /CM^2	485 KG /CM^2
PNEUMATIC SEAT#	7 KG /CM^2	7 KG /CM^2	7 KG /CM^2	7 KG /CM^2	7 KG /CM^2	7 KG /CM^2

BALL VALVE	600#	800#
SHELL / BODY	156 Kg /cm^2	211 Kg /cm^2
SEAT	76 Kg /cm^2	76 Kg /cm^2
PNEUMATIC SEAT	7 KG /CM^2	7 KG /CM^2

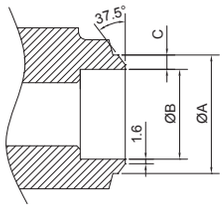
* For Globe & Gate Valve Testing Duration is 15 sec. For Check Valve Testing Duration is 60 sec.
# For Check Vavle Back Seat Pressure & Pneumatic Seat Pressure do not applicable.

Presure Temperature Rating

CLASS 800																	
SERVICE TEMPER	A105 A350-LF2	A182 F11	A182 F22	A182 F5	A182 F9	A182 F304 A351 CF3 A351CF8	A182 F316 A351 CF3M A351 CF8M	A182 F304L A182 F316L	SERVICE TEMPER	A105 A350-LF2	A182 F11	A182 F22	A182 F5	A182 F9	A182 F304 A351 CF3 A351CF8	A182 F316 A351 CF3M A351 CF8M	A182 F304L A182 F316L
°F	PSI	PSI	PSI	PSI	PSI	PSI	PSI	PSI	°C	BAR	BAR	BAR	BAR	BAR	BAR	BAR	BAR
-20 to 100	1975	2000	2000	2000	2000	1920	1920	1600	-29 to 38	136.2	137.9	137.9	137.9	137.9	132.4	132.4	11.03
200	1800	1900	1910	2000	2000	1600	1655	1350	93.5	124.1	131	131.7	137.9	137.9	110.3	114.1	9.31
300	1750	1795	1805	1940	1940	1410	1495	1210	149	120.7	123.8	124.5	133.8	133.8	97.2	103.1	8.34
400	1690	1755	1730	1880	1880	1255	1370	1100	204.5	116.6	121	119.3	129.7	129.7	86.5	94.5	7.58
500	1595	1710	1705	1775	1775	1165	1275	1020	260	110	117.9	117.6	122.4	122.4	80.3	87.9	7.03
600	1460	1615	1615	1615	1615	1105	1205	960	315.5	100.7	113.4	113.4	113.4	113.4	76.2	83.1	6.62
650	1430	1570	1570	1570	1570	1090	1185	935	343.5	98.6	108.3	108.3	108.3	108.3	75.2	81.7	6.45
700	1420	1515	1515	1515	1515	1075	1150	915	371	97.9	104.5	104.5	104.5	104.5	74.1	79.3	6.31
750	1345	1420	1420	1420	1420	1060	1130	895	399	92.7	97.9	97.9	97.9	97.9	73.1	77.9	6.17
800	1100	1355	1355	1325	1355	1050	1105	875	426.5	75.9	93.4	93.4	91.4	93.4	72.4	76.2	6.03
850	715	1300	1300	1170	1300	1035	1080	860	454.5	49.3	89.7	89.7	80.7	89.7	71.4	74.5	5.93
900	460	1200	1200	940	1200	1025	1050		482	31.7	82.8	82.8	64.8	82.8	70.7	72.4	
950	275	1005	1005	695	985	1000	1030		510	19	69.3	69.3	47.9	67.9	69	71	
1000	140	595	715	510	780	860	970		538	9.7	41	49.3	35.2	53.8	59.3	66.9	
1050		365	530	375	505	825	960		565.5		25.2	36.6	25.9	34.8	56.9	66.2	
1100		255	300	275	300	685	860		593.5		17.6	20.7	19	20.7	47.2	59.3	
1150		140	275	185	200	520	735		621		9.7	19	12.8	13.8	35.9	50.7	
1200		95	145	120	140	415	550		649		6.6	10	8.3	9.6	28.6	37.9	
1250						295	485		676.5						20.3	33.4	
1300						218	365		704.5						15	25.2	
1350						165	275		732						11.4	19	
1400						130	200		760						9	13.8	
1450						95	155		788						6.6	10.7	
1500						65	110		815.5						4.5	7.6	

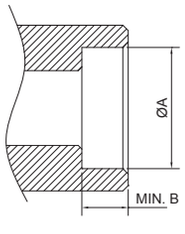
ACCORDING TO API 602/ISO 15761

End Connetion Details

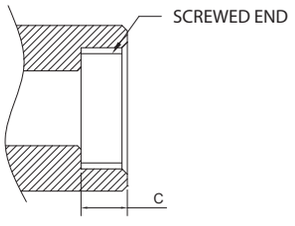


BUTT WELD END
AS PER B16.25.

Size	Sh. 40			Sh. 80			Sh. 160			Sh. XXS		
	A	B	C	A	B	C	A	B	C	A	B	C
1/2"(15mm)	21.30	15.80	2.77	21.30	13.80	3.73	21.30	11.70	4.78	21.30	6.40	7.74
3/4"(20mm)	26.70	25.00	2.87	26.70	18.90	3.91	26.70	15.60	5.56	26.70	11.10	7.82
1"(25mm)	33.40	26.60	3.38	33.40	24.30	4.55	33.40	20.70	6.35	33.40	15.20	9.09
1-1/4"(32mm)	42.20	35.10	3.55	42.20	32.50	4.85	42.20	29.50	6.35	42.20	22.80	9.70
1-1/2"(40mm)	48.30	41.00	3.68	48.30	38.10	5.08	48.30	33.50	7.41	48.30	28.00	10.15
2"(50mm)	60.30	52.50	3.91	60.30	49.20	5.54	60.30	42.90	8.74	60.30	38.20	11.07



SOCKET END
AS PER B16.11



SCREWED END (BSP OR NPT OR BSPT)
AS PER B1.20.1.

SIZE	ØA (SOCKET ID)	B (SOCKET DEPTH)	C (SCREWED DEPTH)
1/2" (15MM)	21.8	9.5	14
3/4" (20MM)	27.2	12.5	16
1" (25MM)	33.9	12.5	20
1-1/4" (32MM)	42.7	12.5	20
1-1/2" (40MM)	48.8	12.5	24
2" (50MM)	61.2	16	26

Body and Bonnet Materials

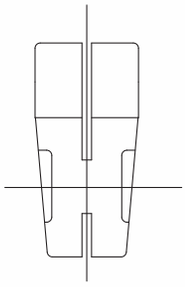
Material Group	Common Name	Nominal Type	UNS	Forging Spec.	Casting Spec. Equivalent	DIN	DIN W. No	Application Notes
Carbon Steel	CS	C-Mn-Fe	K03504	A105N	A216-WCB	C22.8 DIN 17243	1.0460	General non-corrosive service from -20F(-29C) to 800F(427C)
Low Temperature Carbon Steel	LTCS	C-Mn-Fe	K03011	A350-LF2	A352-LCA A352-LCB A352-LCC	TSTE 355 DIN 18103	1.0566	General non-corrosive service from -50F (-46C) to 650F(340C), LF2 to 800F(427C).
Low Temperature Alloy Steel	Nickel Steel	3.1/2Ni	K32025	A350-LF3	A352-LC3	10Ni14	1.5637	-150F(-101C) to 650F(340C)
Low Alloy Steel	Moly Steel	C-1/2Mo	K12822	A182-F1	A217-WC1	15MO3	1.5415	Up to 875F (468C)
	Alloy Steel Chrome Moly	1.1/4Cr-1/2Mo	K11572	A182-F11 cl2	A217-WC6	13CRMO44	1.7335	Up to 1100F (593C)
		2.1/4Cr-1Mo	K21590	A182-F22 cl3	A217-WC9	10CRMO910	1.7380	Up to 1100F(593C), HP steam
		5Cr-1/2Mo	K41545	A182-F5	A217-C5	12CRMO195	1.7362	High temp refinery service
		9Cr-1Mo	K90941	A182-F9	A217-C12	X 12 CrMo 9 1	1.7386	High temp erosive refinery service
		9Cr-1Mo-V		A182-F91	A217-C12A	X 10 CrMoVNb 9 1	1.4903	High pressure steam
Stainless Steel	Austenitic S.Steel 300 series S.Steel	304 : 18Cr-8Ni	S30400	A182-F304	A351-CF8	DIN X5CrNi 18 9	1.4301	0.04% min. carbon for temp.>1000F(538C)
		304L : 18Cr-8Ni	S30403	A182-F304L	A351-CF3	X 2 CrNi 19 11	1.4306	Up to 800F(427C)
		304H :	S30409	A182-F304H	A351-CF10	n/a	n/a	
		316 : 16Cr-12Ni-2Mo	S31600	A182-F316	A351-CF8M	DIN X5CrNiMo 18 10	1.4401	0.04% min. carbon for temp.>1000F(538C)
		316L : 16Cr-12Ni-2Mo	S31603	A182-F316L	A351-CF3M	X 5 CrNiMo 17 12 2	1.4404	Up to 800F(427C)
		316H :	S31609	A182-F316H	A351-CF10M	n/a	n/a	
		316Ti:	S31635	A182-F316Ti		X 6 CrNiMoTi 17 12 2	1.4571	0.04% min. carbon (grade F321H) and heat treat at 2000F(1100C) for service temps.>1000F(538C)
		321: 18Cr-10Ni-Ti	S32100	A182-F321		X 6 CrNiTi 18 10	1.4541	
		321H	S32109	A182-F321H		n/a	n/a	
		347: 18Cr-10Ni-Cb(Nb)	S34700	A182-F347	A351-CF8C	DIN 8556	1.4550	0.04% min. carbon (grade F347H) and heat treat at 2000F(1100C) for service temps.>1000F(538C)
		347H	S34709	A182-F347H	A351-CF8A	n/a	n/a	
		317L	S31703	A182-F317L	A351-CG3M	X2CrNiMo18-16-4	1.4438	
	Alloy 20	28Ni-19Cr-Cu-Mo	N08020	A182-F20	A351-CN7M	DIN 1.4500	2.4660	service to 600F(316C)
	Duplex 2205	22Cr-5Ni-3Mo-N	S31803 S32205	A182-F51	A890-J92205	X2CrNiMON22-5-3 DIN 10088-1 (95)	1.4462	service to 600F(316C) -The original S31803 UNS designation has been supplemented by S32205 which has higher minimum N, Cr, and Mo.
	Super Duplex 2507	25Cr-7Ni-4Mo-N	S32750	A182-F53	A351-CD4MCu A890 5A	X2CrNiMoN25-7-4 DIN 10088-1 (95)	1.4501	service to 600F(316C)
	Super Duplex F55	25Cr-7Ni-3.5Mo-N-Cu-W	S32760	A182 F55	CD3MWCuN			Service to 600F
	Super Austenitic 6Mo	20Cr-18Ni-6Mo	S31254	A182-F44	A351-CK3MCuN	X1CrNiMoCuN20-18-7 DIN 10088-1 (95)	1.4547	service to 600F(316C)
Nickel-Iron Alloy	Incoloy 800	33Ni-42Fe-21Cr	N08800	B564-N08800		X10NiCrAlTi32-20	1.4876	service to 1000F(538C)
	Incoloy 825	42Ni-21.5Cr-3Mo-2.3Cu	N08825	B564-N08825	A494-CU5MCuC	DIN 17744	2.4858	service to 600F(316C) for N02200, 1200F(648C) for N02201
Nickel	Nickel	99/95Ni	N02200	B160-N02200 (bar)	A494-CZ-100	NW2200	1.7740	
Nickel-Copper	Monel 400	67Ni-30Cu	N04400	B564-N04400	A494-M35-1	DIN 17730	2.4360	
	Monel 500		N05500	B564-N05500			2.4375	
Nickel-Alloy	904L		N08904	904L	n/a	Z2 NCDU 25-20	1.4539	
Nickel Superalloys	Inconel 600	72Ni-15Cr-8Fe	N06600	B564-N06600	A494-CY40	DIN 17742	2.4816	
	Inconel 625	60Ni-22Cr-9Mo-3.5Cb	N06625	B564-N06625*	A494-CW-6MC		2.4856	*Difficult to forge in close dye
	Hastelloy C-276	54Ni-15Cr-16Mo	N10276	B564-N10276*	A494-CW-2M	NiMo 16 Cr 15 W	2.4819	*Difficult to forge in close dye
Titanium	Titanium	98Ti	R50400	B381-Gr2	B367-C2	Ti 2	3.7035	

Phosphatizing of CS Valves

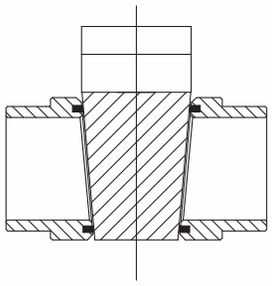
Bath	Type of Operation	Min. Time	Temp.
1	Degreasing in Hot Water	5 MIN	55 Degree Celsius
2	Deoxidation by Concentrated Acid	5 MIN	Atmospheric Temp.
3	Rinse in Clean Water	0.5 MIN	Atmospheric Temp.
4	Rinse in Clean Water	0.5 MIN	Atmospheric Temp.
5	Dip in Zinc Phosphate	15 MIN	70 Degree Celsius
6	Rinse in Clean Water	0.5 MIN	Atmospheric Temp.
7	Rinse in Clean Water	0.5 MIN	Atmospheric Temp.
8	Passivation of Component	3 MIN	Atmospheric Temp.

Phosphatization is carried out on all forged bodies and bonnets in carbon and alloy steel.

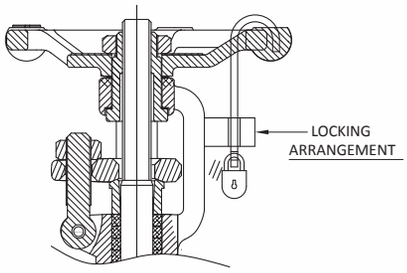
Optional Features



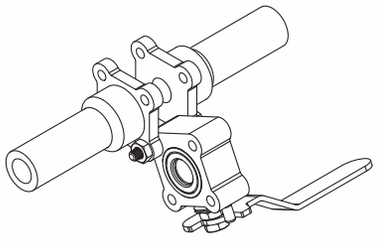
Flexible Wedge



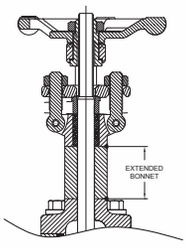
Inserted PTFE



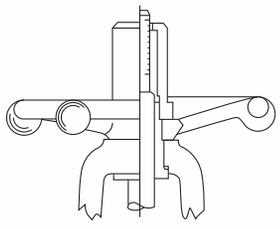
Locking Arrangement



Nipple Extention



Extended Bonnet



Position Indicator

Product Range

Valve Type	Design Stand	End Conn.	ASME Class	Port	B-B Joint	Valve Size						
						10mm (3/8")	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1 1/4")	40mm (1 1/2")	50mm (2")
Straight Pattern Gate Valves	API 602 / ISO 15761	SE / SW / BW	800 / 1500	RB	BB	Y	Y	Y	Y	Y	Y	Y
						Y	Y	Y	Y	Y	Y	Y
		FE	150			-	Y	Y	Y	Y	Y	Y
			300			-	Y	Y	Y	Y	Y	Y
			600			-	Y	Y	Y	Y	Y	Y
	ASME B 16.34	SW / BW	2500		WB	Y	Y	Y	Y	Y	Y	-
Straight Pattern Globe Valves	ISO 15761 / BS 5352	SE / SW / BW	800 / 1500	RB	BB	Y	Y	Y	Y	Y	Y	Y
						Y	Y	Y	Y	Y	Y	Y
		FE	150			-	Y	Y	Y	Y	Y	Y
			300			-	Y	Y	Y	Y	Y	Y
			600			-	Y	Y	Y	Y	Y	Y
	ASME B 16.34	SW / BW	2500		WB	Y	Y	Y	Y	Y	Y	-
Y-Pattern Globe Valves	ASME B 16.34	SW	2500	RB	WB	-	Y	Y	Y	Y	Y	Y
Straight Pattern Check Valves	ISO 15761 / BS 5352	SE / SW / BW	800 / 1500	RB	BB	Y	Y	Y	Y	Y	Y	Y
						Y	Y	Y	Y	Y	Y	Y
		FE	150			-	Y	Y	Y	Y	Y	Y
			300			-	Y	Y	Y	Y	Y	Y
			600			-	Y	Y	Y	Y	Y	Y
	ASME B 16.34	SW / BW	2500		WB	Y	Y	Y	Y	Y	Y	-
Forged 3, Piece Design Ball Valves/ Firesafe / Non Firesafe	ISO 17292 / BS 5351	SE / SW / BW	800	RB	BB	-	Y	Y	Y	Y	Y	Y
				FB		Y	Y	Y	Y	Y	Y	Y
		FE	150	RB		-	Y	Y	Y	Y	Y	Y
			300			-	Y	Y	Y	Y	Y	Y
			600			-	Y	Y	Y	Y	Y	Y
Cast 3, Piece Design Ball Valves Firesafe / Non Firesafe	ISO 17292 / BS 5351	SE / SW / BW	600	RB	BB	-	Y	Y	Y	Y	Y	Y
				FB		Y	Y	Y	Y	Y	Y	Y
Piston Valve	ASME B16.34	SE / SW	800	RB	BB	Y	Y	Y	Y	Y	Y	-
		FE	150									
			300									
Bellow Seal Valve	API 602	SE / SW	150	RB	WB	Y	Y	Y	Y	Y	Y	-
			300									
			800									

RB - Reduce Bore
FB - Full Bore
Y - In Our Product Range
BB - Bolted Bonnet
BW - Butt Weld
SE - Screwed End
SW - Socket Weld
FE - Flanged End
WB - Welded Bonnet

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Plot No. 2732-33, Road No. I-1,
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Metoda Village. Dist. Rajkot - 360 021.
Gujarat, INDIA.

+91 2827 287881
sales@gmvalve.in
www.gmvalve.in

+91 92277 77371
+91 92277 77380
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