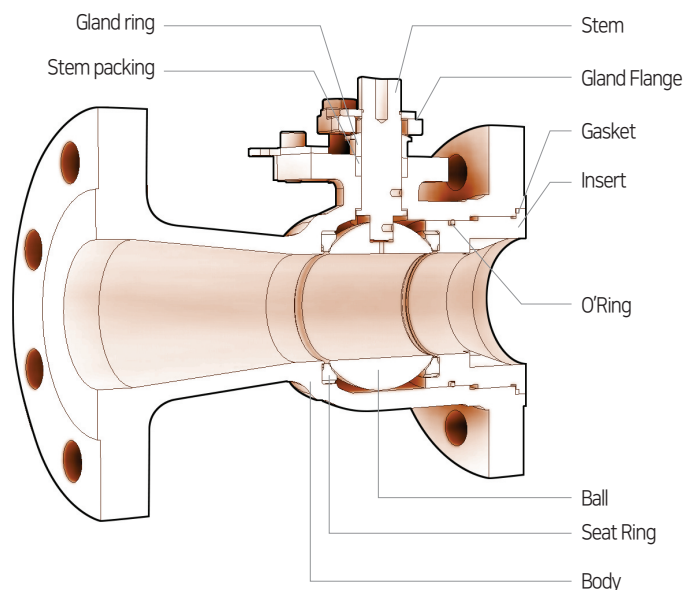


BUS Series

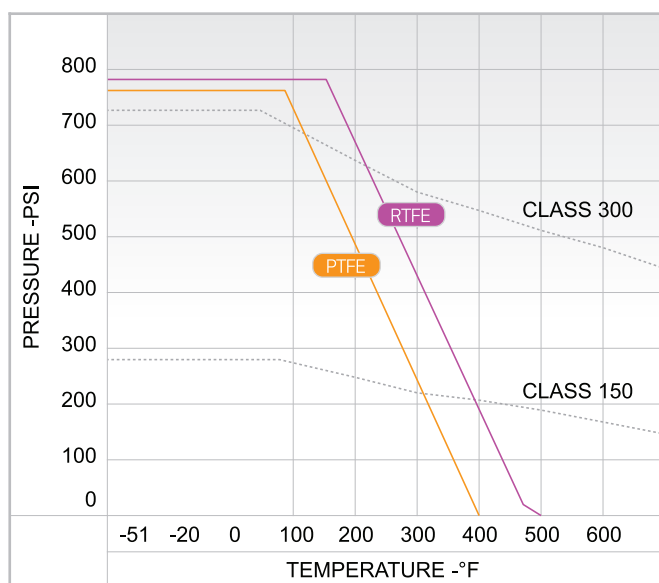
"Uni-Body, Free Floating Ball, Soft Seated & Casting Valves"



FEATURES

- Basic design : API 6D, API 608 and ISO 17292
- One-piece body & side entry design
- Blow out-proof stem construction
- Anti-static design
- Locking device
- Micro-finished ball for long service life
- Ball includes pressure equalization hole to prevent trapped pressure in body cavity
- Reduced port
- Size range : NPS 1(DN 25) to NPS 12(DN 300)
- Pressure rating : ASME Class 150 to Class 300
- Graphite gasket and Stem packing prevent post-fire external leakage.
- Post-fire metal-to-metal seal prevents internal leakage after fire.
- Fire-safe design : API 607/ ISO 10497 or API 6FA

SEAT RATING CHART



STANDARD MATERIALS

No.	Parts	Stainless Steel	Carbon Steel
001	Body	ASTM A351-CF8M	ASTM A216-WCB
003	Insert	ASTM A351-CF8M	ASTM A216-WCB
004	Ball	ASTM A351-CF8M	
005	Stem	ASTM A276-316	
011	Gland Ring	ASTM A276-316	
012	Gland Flange	ASTM A351-CF8	
015	Seat Ring	PTFE or Reinforced PTFE	
S01	Packing	GRAPHITE	
S02	Gasket	GRAPHITE	
S09	O'Ring	VITON or HNBR	
S21	Thrust Washer	Reinforced PTFE	
P01	Top Washer	ASTM A240-304	
P02	Stopper	ASTM A240-304	
P03	Locking Plate	ASTM A240-304	AISI 1020 with Zn Plated
P04	Lever	ASTM A283-D with Vinyl Coated	
B11	Stopper Bolt	ASTM A193-B8	ASTM A307-B
B12	Gland Bolt	ASTM A193-B8	

Extended pressures and temperatures may be achieved by altering design for specific applications. Consult factory with service conditions. The valve rating is the lesser of the body rating and the seat rating.

FORCE manufactures an extensive line of high pressure valves capable of the full seat ratings shown.

Consult factory for details.

DESIGN SPECIFICATIONS AVAILABLE

API 6D 24edition	Piping Valve (design)
API 608	Metal Ball Valves (design)
ASME B16.34	Steel Valves (design)
ISO 17292 / BS 5351	Steel Ball Valve (design)
ASME B16.5	Pipe flanges and flanges Fitting
ASME B16.10	Face-to-face and End-to-end dimensions
MSS SP-72	Ball Valves
API 607 / ISO 10497	Fire test for soft seated valves
NAVE MR 0175	Sour gas service application

STANDARD MATERIALS

- Body : Carbon Steel (WCB, LCC), Stainless Steel (CF8, CF8M)
- Ball : Stainless Steel (CF8, CF8M)
- Stem : SS304, SS316
- Seat : PTFE, RTFE, Modified TFE



SPECIFICATIONS

Construction

Uni-body, Side entry, Reduced port, Free floating ball, "Fire-safe" designed to **API 607 / ISO 10497 or API 6FA** Blow out proof stem, Anti-static device, Cavity relieving seats.

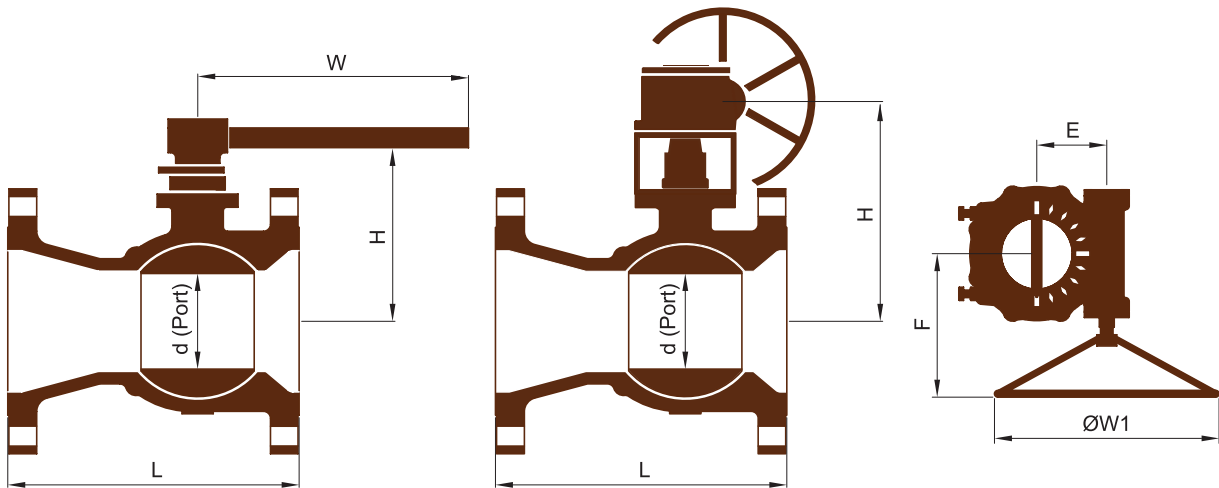
Valves are designed to **API 6D, ASME B16.34, API 608** and **ISO 17292 / BS 5351** specifications.

Manufactured and conforms to **NACE** standard **MR 0175**.

Test pressure (psig / CS material)

ASME Class	Max. Working pressure	Shell (Hydro.)	Seat (Hydro. / Air)
Class 150	285	450	325 / 80
Class 300	740	1125	825 / 80

DIMENSIONS



Valve Size		1-1/2"	2"	2-1/2"	3"	4"	6"	8"	10"	12"
Ød (port)	inch	1	1.5	2	2.32	3	4	5.67	7.32	8.66
	mm	25	39.8	51	59	76	102	144	186	220
L (RF)	150	inch	6.5	7	7.5	8	9	10.5	11.5	13
		mm	165	178	191	203	229	266.7	292	330
	300	inch	7.5	8.5	-	11.14	12	15.87	16.5	18
		mm	191	216	-	283	305	403	419	457
H	inch	4	5	5.6	6.1	6.7	8.1	10.9	12.8	16.5
	mm	102	127	142	154	170	206	278	325	419
W	inch	6.3	9	9	14.7	14.7	17.7	23.6	31.5	39.4
	mm	160	230	230	380	380	450	600	800	1,000
ØW1	inch	-	-	-	-	-	-	19.7	19.7	28
	mm	-	-	-	-	-	-	500	500	710
E	inch	-	-	-	-	-	-	2.74	3.3	3.8
	mm	-	-	-	-	-	-	69.5	82.5	97
F	inch	-	-	-	-	-	-	11.34	11.7	14.8
	mm	-	-	-	-	-	-	288	297	376
Approx. Weight	150	lb	15.4	22.0	30.8	37.4	61.6	103.4	169.4	477.4
		kg	7	10	14	17	28	47	77	217
	300	lb	19.8	26.4	-	50.6	85.8	143.0	290.4	-
		kg	9	12	-	23	39	65	132	-

Gear operators are available for most sizes.

BUS Series

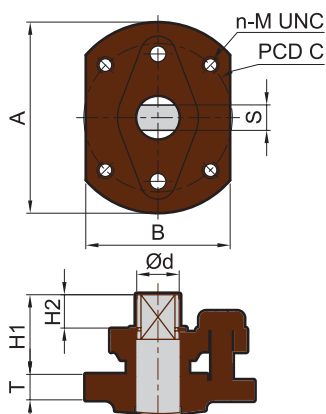
"Uni-Body, Free Floating Ball, Soft Seated & Casting Valves"

FLOW COEFFICIENT (CV)

Valve Size		1-1/2"	2"	2-1/2"	3"	4"	6"	8"	10"	12"
Cv.Value	Class 150	106	153	276	317	449	899	1,180	3,277	4,350
	Class 300	106	156	-	361	533	1,039	1,402	3,277	-

Cv is defined as the volume of water flowing through the valve, in U.S.Gallons per minute at 60°F(15°C), which will result in a pressure drop of 1 psi. The table gives Flow Coefficient(Cv) values for Series 'BU' ball valves in the Full open position.

TOP WORKS DIMENSIONS

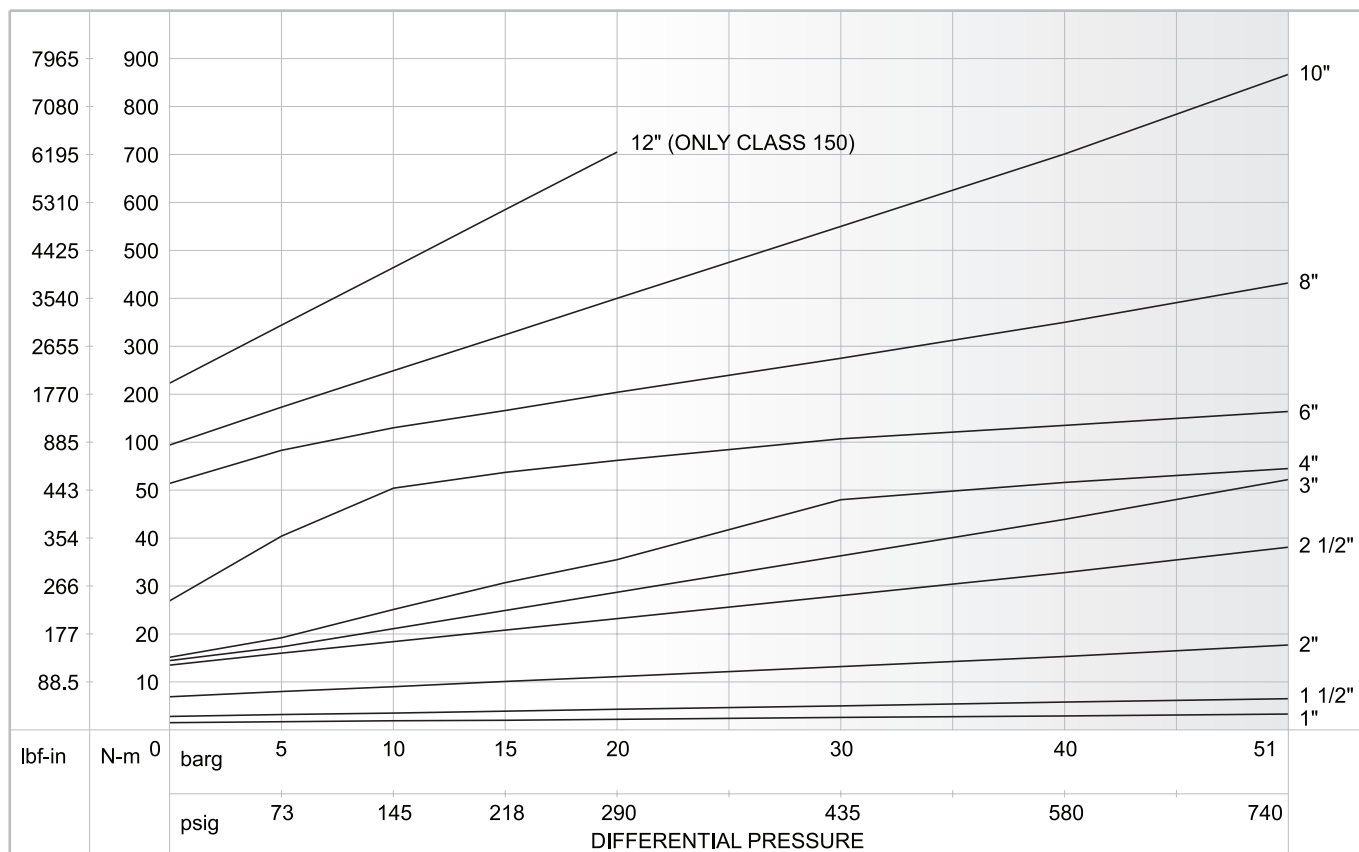


Size	Ød	S	A	B	C	n-M	H1	H2	T	ISO 5211
1-1/2"	14	8	65	50	50	4-1/4"	21.7	-	9	F05
2"	20	12	90	68	70	4-5/16"	31	9.8	150:13 300:11	F07
2-1/2"	20	12	90	68	70	4-5/16"	31	9.8	14	F07
3"	27	17	125	95	102	4-3/8"	43.5	18.3	14	F10
4"	27	17	125	95	102	4-3/8"	43.5	17	15	F10
6"	34	22	125	95	102	4-3/8"	49	24	18	F10
8"	44	26	153	116.4	125	4-1/2"	59	26.5	19	F12
10"	51	32	175	134	140	4-5/8"	73	34.3	20	F14
12"	50	38	200	165	165	4-3/4"	98.5	46.3	24	F16

All construction data sheet for Class 300 same as Class 150

Unit : mm

TORQUE DATA



* Seat material : PTFE & Reinforced PTFE.

* To select the actuator, adding 25% safety factor to the required torque should be considered.

BUS Series

"Uni-Body, Free Floating Ball, Soft Seated & Casting Valves"

Part No.	Part Name
001	Body
003	Insert
004	Ball
005	Stem
011	Gland Ring
012	Gland Flange
015	Seat
S01	Packing
S02	Gasket
S11	O'ring
S21	Thrust Washer(Bearing)
S29	Snap Ring
P01	Top Washer
P02	Stopper
P03	Locking Plate
P04	Lever
B11	Locking Bolt
B21	Gland Bolt
B22	Lever bolt

