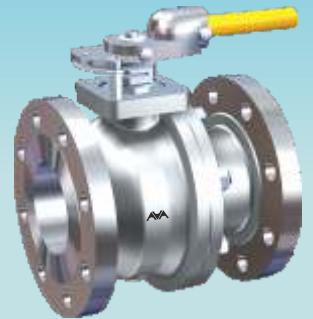




# Floating Ball Valves



6D 0301



0045



SIL 3 IEC 61508



ATEX 94/9/EC



## MICROFINISH



Pumps • Valves • Automation



## THE MICROFINISH WAY

Microfinish Valves Pvt. Ltd. is a privately owned and managed company specializing in industrial valves for energy, process, and natural resource industries.

The guiding principles of Microfinish are :

- ◆ Personal commitment to our customers
- ◆ Top quality in everything we do
- ◆ Best available technology for all our products and services

## INTRODUCTION

Microfinish Valves Pvt.Ltd. was established in 1971 to manufacture ball valves, bellows sealed globe valves, chlorine globe valves, and knife edge gate valves. We have designed, developed, and supplied our products to:

- ◆ Oil and gas facilities, hydrocarbon processing refineries, and petrochemical plants
- ◆ Fossil fuel, Nuclear, and combined cycle power plants
- ◆ Fertilizer, chemical, and pharmaceutical industries
- ◆ Food and beverage plants
- ◆ Mining, minerals processing, and steel sectors
- ◆ Pulp and paper mills



We are recognized as a quality manufacturer of reliable valves for industry. Our wealth of experience has enabled Microfinish to become a prominent supplier of ball valves throughout the world. Industrial technology is progressing at a remarkable rate, so we have established a research and development department equipped with modern test facilities.

Our new state of art manufacturing facilities is located in Itigatti village 10 kms from Hubballi City

## QUALITY

Microfinish is committed to total quality. Stringent and efficient quality assurance and control systems have been implemented in accordance with ISO 9001.

In 1994 our organization was the first in India to receive the prestigious ISO 9001 certificate (1994 edition) from RWTUV in Germany. Microfinish ball valves have also had API-6D certification since February 1999 and CE certification since 2002.

## IN-HOUSE FACILITIES FOR QUALIFICATION TESTS

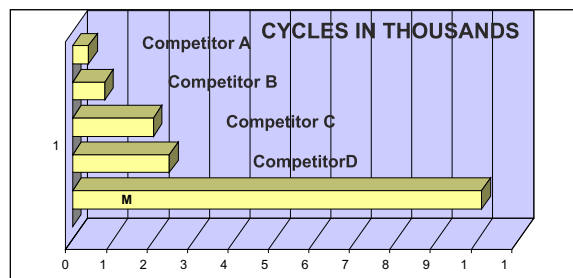
- ◆ Fire safe testing
- ◆ High temperature testing by superheated steam
- ◆ Low temperature testing for cryogenic valves
- ◆ Cycle testing
- ◆ Fugitive-emission

## FLOATING BALL VALVES

MICROFINISH Floating Ball valves with unmatched features:

- ◆ Designed to handle most severe service applications
- ◆ Internally mounted Blow-out proof stem
- ◆ Standard live loaded stem design meets stringent Fugitive norms
- ◆ Fire safe & Antistatic design to meet API-607 standard
- ◆ High cycle life
- ◆ Actuator mounting pad as per ISO-5211
- ◆ Improved seat design for long life & bubble tight shut off having low Torque
- ◆ Choice of Seat material

## Stem Leakage Test Results



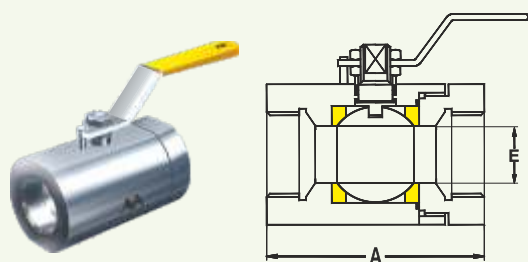
- ◆ MICROFINISH Valve has stem seal integrity without packing adjustment even after 100,000 cycle
- ◆ This is four times more cycles than the best competitive valve could achieve
- ◆ Valve tested with Water at Room temperature at 20 bar pressure. Each valve is fully pressurized while in the closed position & depressurized

# SINGLE TWO PIECE & THREE PIECE BALL VALVES



## SERIES 80BK Class 300

Ends : Screwed

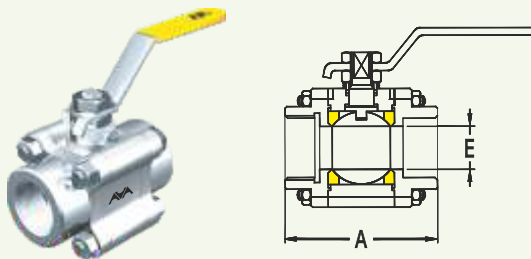


### REDUCED BORE

	SIZE	A	E	WEIGHT
SINGLE PIECE	15	70	9.5	0.5
	20	80	13.0	0.8
	25	90	15.0	1.3
	32	110	19.0	3.0
	40	115	25.0	3.2
	50	125	32.0	3.8

## SERIES 81R3 / 81F3 Class 600 and Class 800 90R3 / 90F3 Class 1500 91R3 / 91F3 Class 2500

Ends : Screwed, Socket & Butt Weld



RB = REDUCED BORE      Class 600 and 800      FB = FULL BORE

	SIZE	A		E		WEIGHT	
		RB	FB	RB	FB	RB	FB
THREE PIECE	15	64	64	9.5	13.0	0.7	0.8
	20	70	75	13.0	19.0	0.8	1.3
	25	88	88	19.0	25.0	1.5	1.9
	32	105	105	25.0	32.0	1.8	3.3
	40	114	114	32.0	38.0	3.1	4.1
	50	130	130	38.0	50	4.3	6.5

RB = REDUCED BORE      Class 1500      FB = FULL BORE

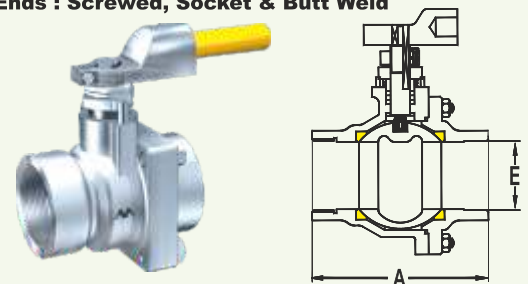
	SIZE	A - VALVE LENGTH		E - FLOW BORE DIA		WEIGHT	
		RB	FB	RB	FB	RB	FB
THREE PIECE	15	83	85	13	13	3.8	4.0
	20	95	97	13	19	5.3	5.5
	25	104	108	19	25	7.8	8.0
	32	112	116	25	32	8.8	9.0
	40	122	125	32	38	9.8	10.0
	50	138	142	38	49	11.8	12.0

RB = REDUCED BORE      Class 2500      FB = FULL BORE

	SIZE	A - VALVE LENGTH		E - FLOW BORE DIA		WEIGHT	
		RB	FB	RB	FB	RB	FB
THREE PIECE	15	98	100	13	13	7	8
	20	122	125	13	19	9	10
	25	130	133	19	25	11	12
	32	148	154	25	32	13	15
	40	164	170	32	38	16	17
	50	188	194	38	49	19	20

## SERIES 81R2 / 81F2 Class 300

Ends : Screwed, Socket & Butt Weld



RB = REDUCED BORE      FB = FULL BORE

	SIZE	A		E		WEIGHT	
		RB	FB	RB	FB	RB	FB
TWO PIECE	50	-	130	-	50	-	6
	65	150	170	50	65	10	12
	80	170	200	58	76	14	16
	100	200	229	76	102	30	35
	150	275	315	98	152	52	60

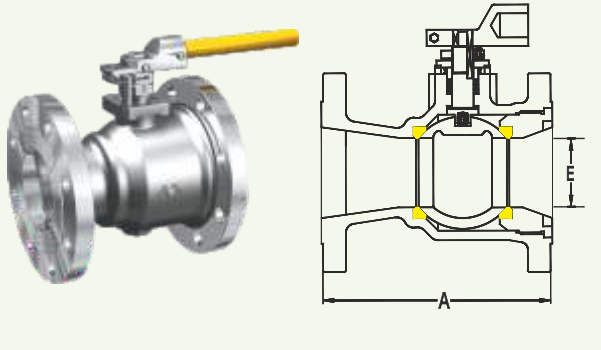
Note: Dimensions are in mm and Weight (approx) in kg

# SINGLE AND TWO PIECE BALL VALVES



**SERIES 84R1 Class 150**  
**85R1 Class 300**

**Ends : Flanged**



**RB = REDUCED BORE**

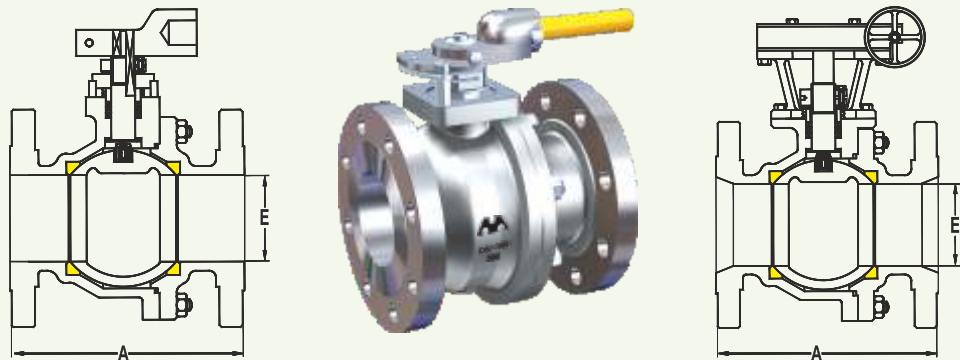
SIZE	A		E	WEIGHT	
	150	300		150	300
15	108	140	9.5	1.6	2.8
20	117	152	13.0	2.0	3.9
25	127	165	19.0	2.9	5.0
32	140	178	25.0	3.5	8.0
40	165	190	32.0	5.0	10.0
50	178	216	38.0	8.5	12.0
65	190	241	50.0	11.0	18.0
80	203	283	58.0	17.0	27.0
100	229	305	76.0	25.0	42.0
150	267	403	102.0	42.0	76.0
200	292	419	151.0	75.0	153.0
250	330	457	187.0	126.0	192.0
300	356	502	228.0	145.0	-

## TWO PIECE BALL VALVES

**SERIES**

84R2 / 84F2 Pr Class 150  
85R2 / 85F2 Pr Class 300  
87R2 / 87F2 Pr Class 600  
89R2 / 89F2 Pr Class 900  
90R2 / 90F2 Pr Class 1500  
91R2 / 91F2 Pr Class 2500

**Ends : Flanged & Butt Weld**



**RB = REDUCED BORE**

**FB = FULL BORE**

SIZE	A				E		WEIGHT									
	Class				RB	FB	Class 150		Class 300		Class 600		Class 900		Class 1500	
	150	300	600	900&1500			RB	FB	RB	FB	RB	FB	RB	FB	RB	FB
15	108	140	165	216	9.5	13	1.5	1.5	2.5	2.8	3.2	3.3	4.6	4.9	5.0	6.0
20	117	152	190	229	13	19	1.7	2.5	3.5	4.0	4.8	5.0	6.5	7.1	7.5	9.5
25	127	165	216	254	19	25	2.6	2.8	4.5	5.0	6.5	6.7	8.8	13	10	14
32	140	178	229	280	25	32	3.8	5.4	5.3	7.0	8.4	9.0	12.5	21	13	23
40	165	190	241	305	32	38	5.5	6.5	9.5	10	13	13	20	28	23	29
50	178	216	292	368	38	50	8.3	9.5	12	15	16	21	27	31	31	-
65	190	241	330	419	50	65	11	16	14	22	25	30	40	50	-	-
80	203	283	356		58	76	17	19	25	31	33	38				
100	229	305	432		76	102	25	33	41	52	65	90				
150	267	403	559		102	152	42	60	70	141	85	-				
200	292	419	-		152	203	76	98	157	221	-	-				
250	330	457	-		187	250	129	160	200	280	-	-				
300	356	502	-		228	-	150	-	275	-	-	-				

**Note: Dimensions are in mm and Weight (approx) in kg**

# TWO PIECE & JACKETED BALL VALVES



**RB = REDUCED BORE**

**Class 1500 and 2500**

**FB = FULL BORE**

SIZE	A		E		WEIGHT		
	RB	FB	RB	FB	RB	FB	
TWO PIECE	15	264	264	13	13	14	15
	20	273	273	13	19	15	16
	25	308	308	19	25	16	17
	32	349	349	22	30	17.5	18
	40	384	384	32	38	19	20
	50	451	451	37	49	36	38

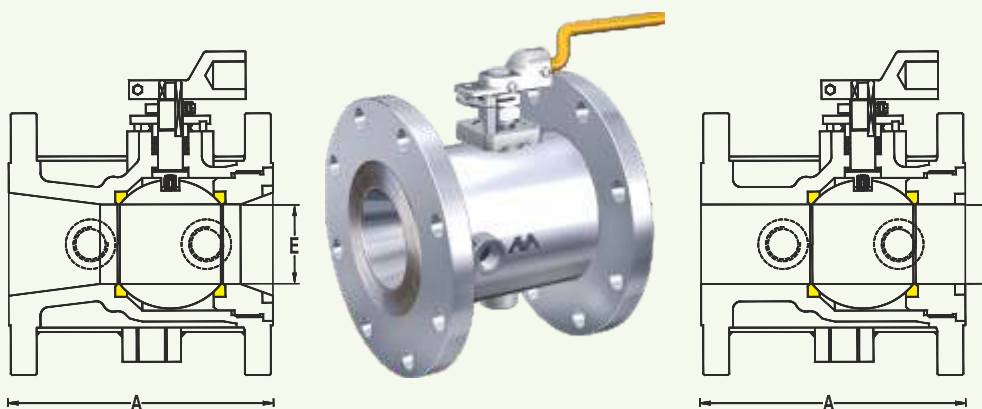
## JACKETED BALL VALVES

### SERIES

84R1-J / 84F1-J Pr Class 150

85R1-J / 85F1-J Pr Class 300

Ends : Flanged



**RB = REDUCED BORE**

**FB = FULL BORE**

SIZE	A		E		WEIGHT			
	Class		RB	FB	Class 150		Class 300	
	150	300			RB	FB	RB	FB
15 x 25	108	140	9.5	13	2.5	3.0	3.5	4.0
20 x 32	117	152	13	19	3.0	4.5	4.5	5.0
25 x 40	127	165	19	25	6.0	7.0	7.0	7.5
32 x 50	140	178	25	32	9.0	10.0	10.0	11.0
40 x 65	165	190	32	38	10.0	11.0	11.5	12.0
50 x 80	178	216	38	50	12.0	16.5	18.0	20.0
65 x 100	190	241	50	65	18.0	19.5	26.0	28.0
80 x 100	203	283	58	76	35.0	40.0	42.0	44.0
100 x 150	229	305	76	102	-	60.0	-	80.0
150 x 250	267	403	98	152	-	120.0	-	150.0
200 x 300	292	419	144	203	-	160.0	-	320.0
250 x 350	330	-	187	250	-	376.0	-	-

**Note: Dimensions are in mm and Weight (approx) in kg**

# THREE WAY BALL VALVES



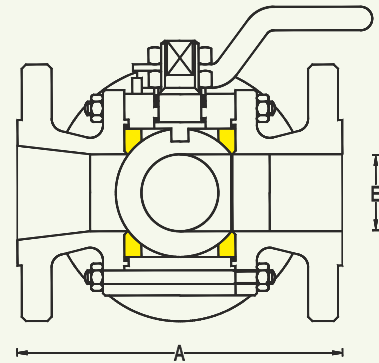
## THREE PIECE DESIGN

Series 71R3 / 71F3 Pr Class 150

74R3 / 74F3 Pr Class 300

72R3 / 72F3 Pr Class 800

Ends : Screwed, Socket, Butt Weld & Flanged



**RB = REDUCED BORE**

**FB = FULL BORE**

SIZE	A		E		WEIGHT			
	Class		RB	FB	Class 150		Class 300	
	150	300			RB	FB	RB	FB
15	108	140	9.5	13	1.8	2.0	3.0	3.5
20	117	152	13	19	2.2	3.0	4.0	4.6
25	127	165	19	25	3.2	3.5	5.0	5.8
32	140	178	25	32	4.6	4.8	6.0	7.6
40	165	190	32	38	6.5	7.5	10.0	12.0
50	178	216	38	-	9.6	-	12.0	-

Note: Dimensions of Class 900, 1500 & 2500 on request.

**RB = REDUCED BORE**

**Class 800**

**FB = FULL BORE**

THREE PIECE	SIZE	A - Valve Length		E - Flow Bore Dia		WEIGHT	
		RB	FB	RB	FB	RB	FB
	15	64	64	13	13	1.0	1
	20	70	75	13	19	1.1	1.2
	25	90	88	19	25	2.4	2.5
	32	105	120	25	32	2.8	3
	40	120	114	32	38	4.3	4.5
	50	130	130	38	50	5.7	6

Note: Dimensions are in mm and Weight (approx) in kg

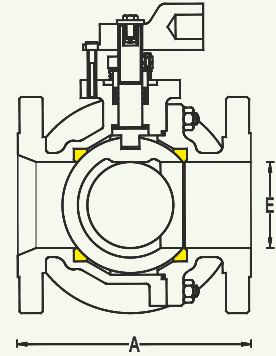
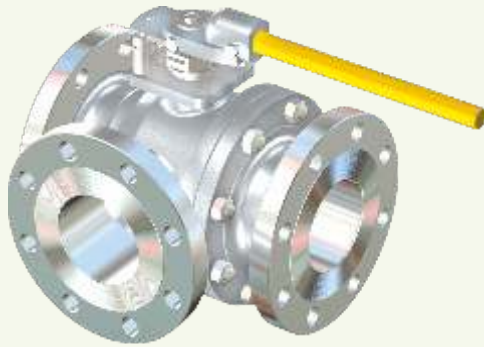
# THREE WAY BALL VALVES



## TWO PIECE DESIGN

Series 71R2 / 71F2 Pr Class 150  
74R2 / 74F2 Pr Class 300

Ends : Flanged & Butt Weld



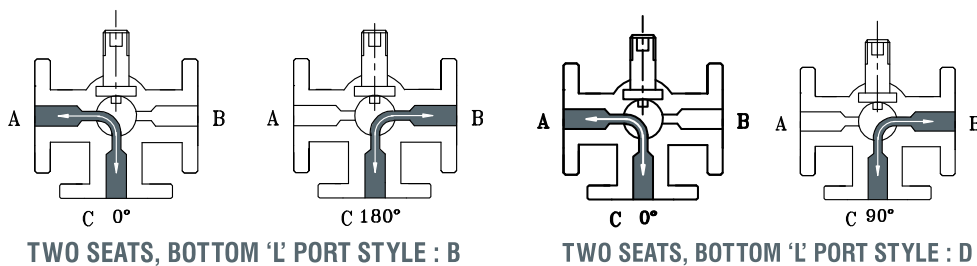
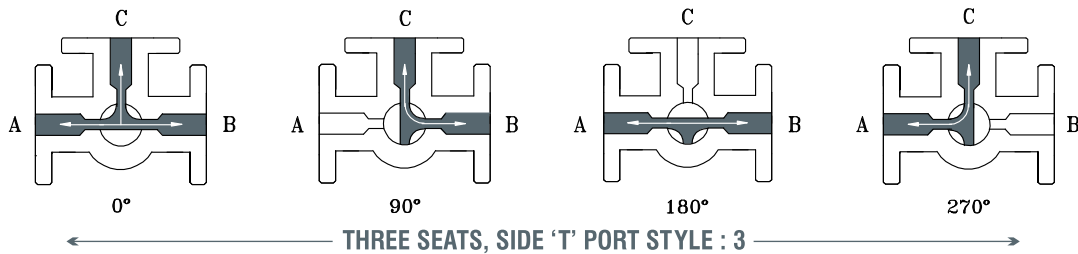
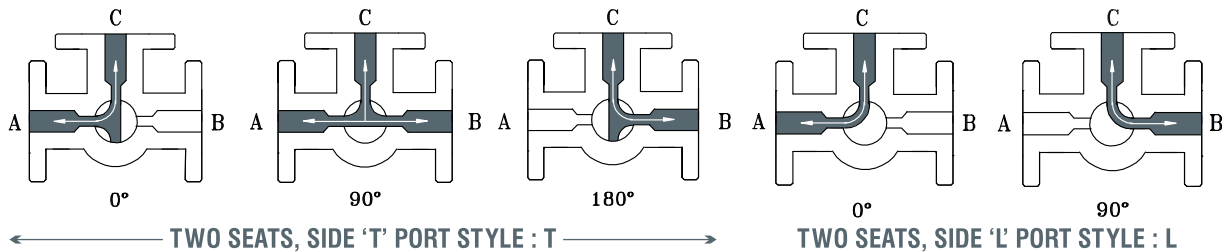
RB = REDUCED BORE

FB = FULL BORE

SIZE	A			E		WEIGHT			
	Class 150		Class 300	RB	FB	Class 150		Class 300	
	TWO SEATS	THREE SEATS	TWO&THREE SEATS			RB	FB	RB	FB
50	178	203	216	-	50	-	14	-	19
65	190	222	241	50	65	17	24	18	29
80	203	241	283	58	76	26	29	33	40
100	229	305	305	76	98	38	50	53	68
150	267	394	403	102	148	48	90	91	136
200	457	457	502	148	198	100	147	180	190
250	533	533	568	187	248	168	240	270	380
300	610	610	648	228	298	195	300	350	425

Note: Dimensions are in mm and Weight (approx) in kg

## FLOW PATTERNS



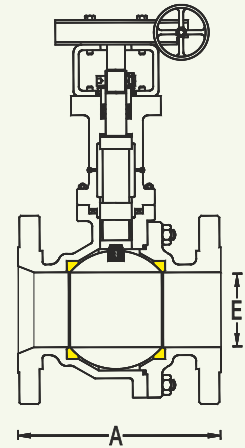
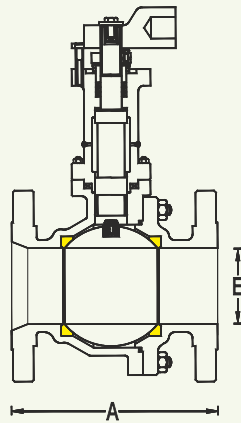
# CRYOGENIC BALL VALVES



## SERIES

84R2 / 84F2 Pr Class 150 Ext'n.  
 85R2 / 85F2 Pr Class 300 Ext'n.  
 87R2 / 87F2 Pr Class 600 Ext'n.  
 89R2 / 89F2 Pr Class 900 Ext'n.  
 90R2 / 90F2 Pr Class 1500 Ext'n.  
 91R2 / 91F2 Pr Class 2500 Ext'n.

Ends : Screwed, Socket, Butt Weld  
& Flanged



**RB = REDUCED BORE**

**FB = FULL BORE**

Dimensions are in mm & Weight (approx) in kg

SIZE	A		E		WEIGHT			
	Class		RB	FB	Class 150		Class 300	
	150	300			RB	FB	RB	FB
15	108	140	9.5	13	1.8	2.2	3.0	3.5
20	117	152	13	19	2.0	3.3	4.3	4.8
25	127	165	19	25	3.2	3.5	5.6	6.4
32	140	178	25	32	4.7	5.4	6.6	8.5
40	165	190	32	38	6.8	8.5	12.5	14
50	178	216	38	50	10.6	15	15	16
65	190	241	50	65	14	22	17	23
80	203	283	58	76	17	26	32	38
100	229	305	76	98	31	41	52	95
150	267	403	98	152	52	81	118	176
200	292	419	144	203	96	140	196	276
250	330	457	187	250	162	200	250	350
300	356	502	228	-	187	-	340	-

Note: Dimensions of Class 900, 1500 & 2500 on request.

## Applicable Standards

Design Std	ISO-17292, ASME B - 16.34
Testing Std	ISO 5208, API-598
Face to Face Dimension	ASME B 16.5
Socket Weld Ends	ASME B16.11
Buttweld Ends	ASME B 16.25
Flanged Ends	ASME B16.5
Sour Service	NACE MR01 75
Fire Safe Testing	API-607 & API-6FA

## Pressure Testing

Pressure Class	Test Pressure - Bar		
	Hydrostatic Shell*	Hydrostatic Seat*	Air-seat
150	29	22	7
300	77	57	7
600	154	113	7
800	205	150	7
900	230	169	7
1500	383	281	7
2500	638	469	7

\*Applicable for WCB Material

# TECHNICAL INFORMATION



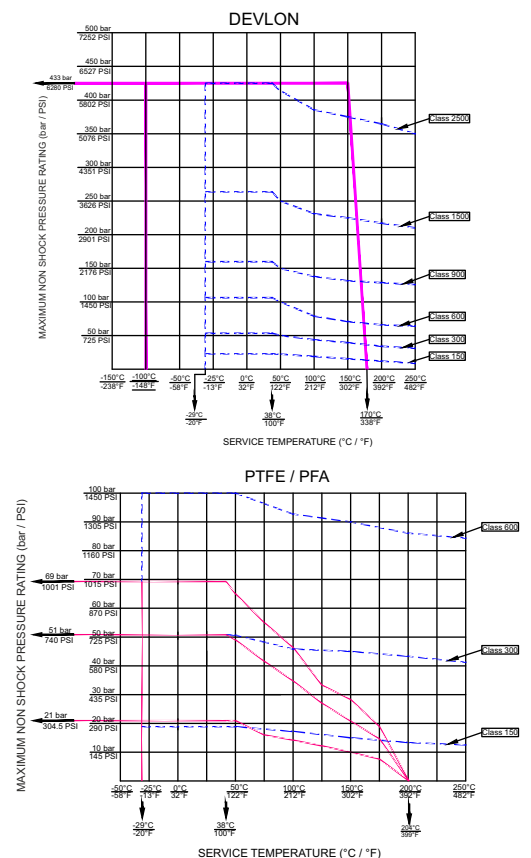
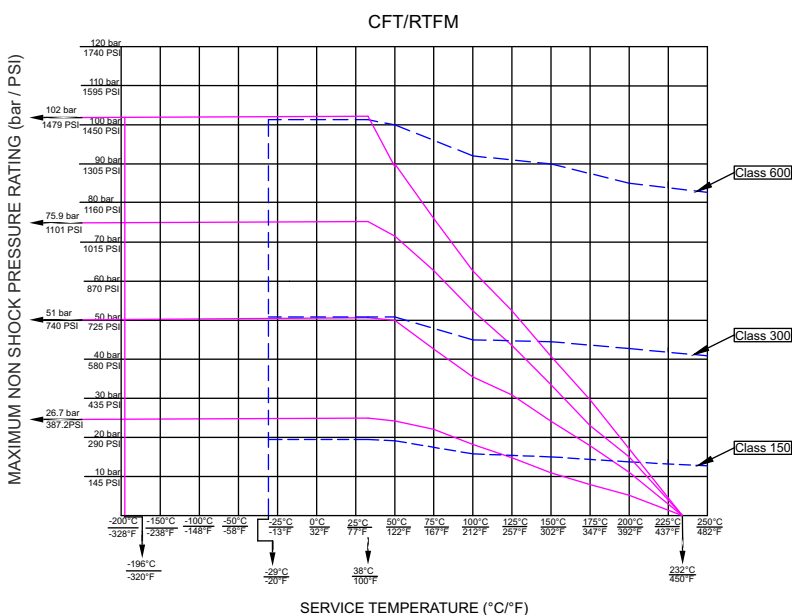
## BREAK AWAY TORQUE VALUES - Nm

CLASS	150				300				600				800			
	Reduced Bore		Full Bore		Reduced Bore		Full Bore		Reduced Bore		Full Bore		Reduced Bore		Full Bore	
	Differential Pressure - bar								Differential Pressure - bar							
SIZE mm (inch)	15	20	15	20	39	51	39	51	78	102	78	102	108	137	108	137
15 (½)	4	4	4	4	4	4	4	4	12	15	12	15	14	16	14	16
20 (¾)	4	4	7	7	4	4	8	8	12	15	16	16	14	16	25	30
25 (1)	7	7	8	8	8	8	10	15	16	16	20	25	25	30	36	38
32 (1¼)	8	8	14	15	10	15	20	21	20	25	32	35	36	38	65	77
40 (1½)	14	15	21	21	20	21	24	25	32	35	48	50	65	77	80	88
50 (2)	21	21	31	35	24	25	43	50	48	50	125	150	80	88	150	165
65 (2½)	31	35	58	67	52	62	85	96	125	150	150	180	-	-	-	-
80 (3)	48	50	80	90	79	88	106	120	150	180	175	250	-	-	-	-
100 (4)	80	90	132	155	106	120	174	185	175	250	265	370	-	-	-	-
125 (5)	130	165	230	259	147	165	330	411	-	-	-	-	-	-	-	-
150 (6)	132	155	280	310	188	210	485	545	-	-	-	-	-	-	-	-
200 (8)	237	250	530	590	468	650	820	1100	-	-	-	-	-	-	-	-
250 (10)	530	590	875	1050	820	1100	2030	2115	-	-	-	-	-	-	-	-

1. Break torque values for Class 150 & Class 300 is with PTFE seat Material. Class 600 to Class 1500 is with Devlon seat Material, and Class 800 is with CFT seat material.

## Materials of Construction

Body and tail piece	Casting : WCB, WCC, LCB, LCC, CF8, CF8M, CF3, CF3M, CD4MCU, CN7M, CD3MN, CN3MN, CW-6M, N-7M Duplex and other exotic alloys. Other materials on request Forging : A105, LF2, F304 and F316
Ball	WCB, LCB with ENP, CA15, CF8, CF8M, CF3, CF3M, CD4MCU, CN7M, CD3MN, CN3MN, CW-6M, N-7M Duplex and other exotic alloys
Stem and gland	410, 304, 316, A20, 31803, Inconel and Nickel alloys
Seat	PTFE, RPTFE, NYLON, DELRIN, PEEK, DEVLON and METAL
Stem washer	RPTFE
Stem seal	Graphite and PTFE
Body seal	Graphite and Spiral Wound gasket with filler
Body stud	B7, L7, B8, B8M
Body nut	2H, 2HM, 8, 8M



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