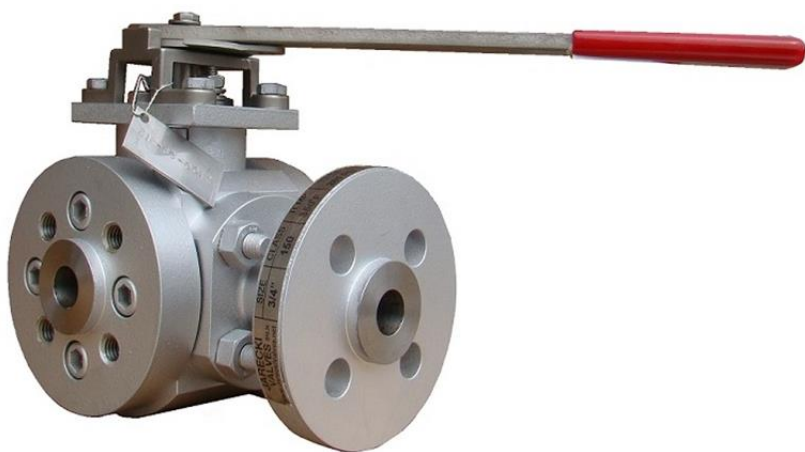


# MDV SERIES 3 WAY BALL VALVES

Diverting ball valves for industrial and process applications.



The Jarecki MDV Series ball valves are available in a variety of materials, end connections, and seat materials. This series is an economical alternative to piping systems using multiple valves to divert flow. Jarecki valves are built for applications in the Pulp and Paper, Petrochemical, Petroleum, Chemical, and Power industries.

#### Standard Applications:

Natural Gas  
Hot Oil  
Saturated Steam  
Feedwater  
Sour Water  
Gas  
HAP - Hazardous Air Pollutants  
VOC – Volatile Organic Compounds

#### Seat Leakage Class:

RTFE Seats Bubble Tight  
RTFE Seats API 598  
Metal Seats Class V - Standard  
Metal Seats Class VI  
Metal Seats Zero Leakage  
Metal Seats API 598  
Metal Seats ISO 5208

## Design

#### Pressure Rating

- 150# to 1500# Available in Sizes ½" to 12"
- 2500# Available in Sizes ½" to 4"

#### Valve Size

- 1/2" to 12" Full Port
- 6" to 12" Reduced Port

#### End Connections

- Flanged
- Butt weld Available On Request

#### Valve Construction

- Bar Body Size ½" to 2"
- Forged Body Size 3" to 12"
- Floating Ball or Trunnion
- Spiral Wound Body Gasket with Secondary Metal to Metal Seal
- Actuator Mounting Pad
- Live Loaded Stem Packing
- Designed to B16.34
- Blow Out Proof Stem
- Heavy Duty Stem For High Torque

#### Seat Designs

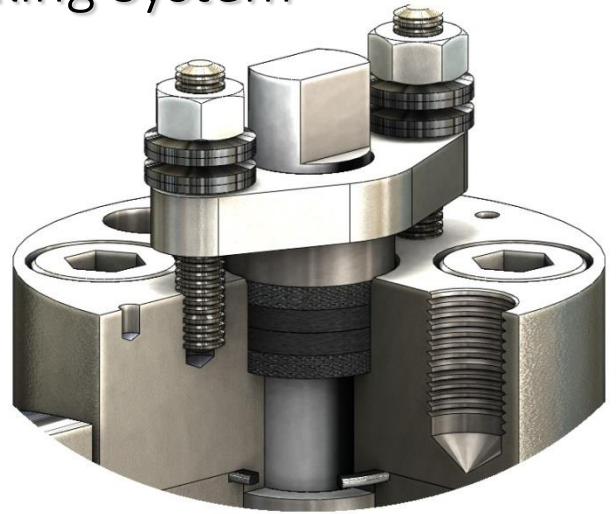
- Bi-Direction RTFE Seats
- Bi-Direction Metal Seats
- Uni-Directional Metal Seats – Standard

#### Service Conditions

- Temperatures Up to 1500 deg F
- Pressures as low as Vacuum Service
- Pressures as High as 740 psi
- For Clean and Abrasive Services

# Live Loaded Packing System

- Blow-Out proof stem design to ensure workman safety.
- Tight tolerance between the stem and the stem thrust washer allow for precise stem to ball contact.
- Live-Loaded stem packing to compensate for temperature fluctuations and normal wear.
- Care is taken not to over torque the stem packing at the testing facility. This provides the customer with the longest packing life possible. At the same time, it keeps the valve torque at a minimum.
- Stem system certified to ISO 15848 available on request.



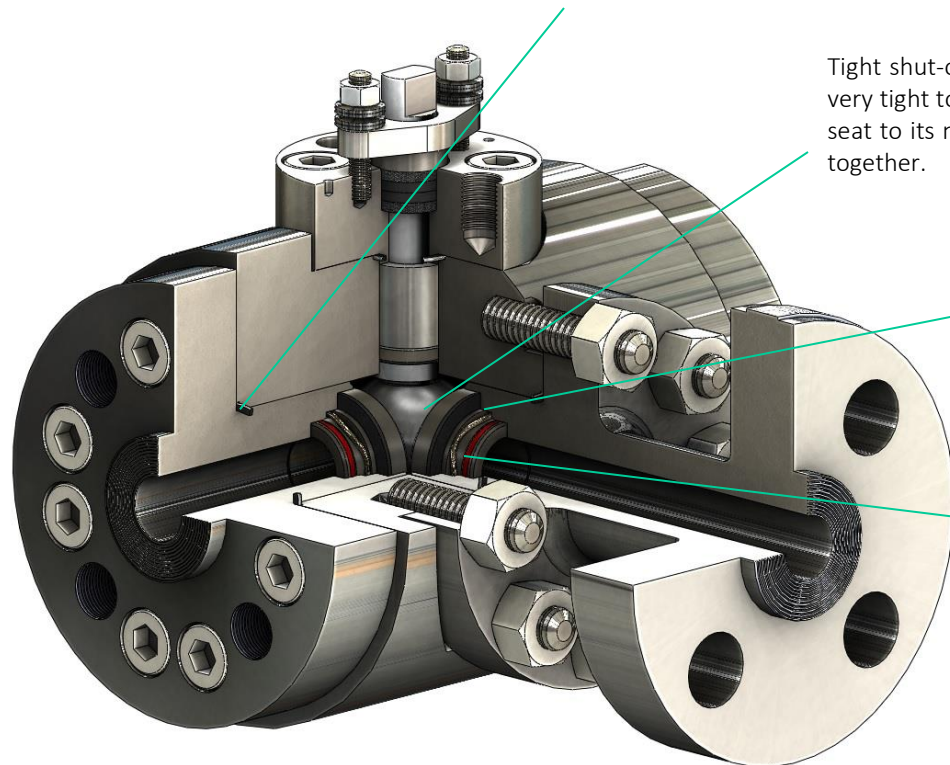
## FEATURES

The body and end connections are bolted with a metal to metal contact to ensure that proper compression on the body gasket is achieved. This metal to metal contact also guarantees that the dimensions inside the valve are correct. The torque is constant, and both the body and seat seal gaskets will always have the proper compression.

Tight shut-off is accomplished by grinding every ball to very tight tolerances, carefully radiusing each individual seat to its mating ball, and then carefully lapping them together.

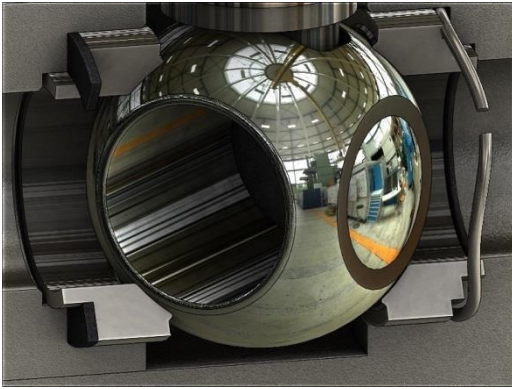
Seat designs are picked based on the flow pattern to ensure shut-off

Wave spring utilized on metal seated seat designs for more accurate spring rate provides for a consistent load and low torque performance.



## SEAT STYLES

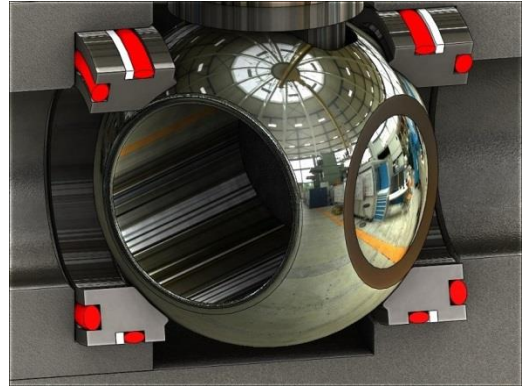
P Seat - Spring Loaded (Standard)



For unidirectional applications. The sealing seat is available as a separate seat ring for reparability, or integral with the tailpiece for high temperature applications. The spring seat OD seal prevents media from building up between the spring and the back of the seat.

Temperature Range: -40 to 1300 deg F  
 Application: Steam, Hot Air, Gases, Low Pressure Differentials, High Temperatures  
 Shut-Off: Class V, Class VI, Bubble Tight

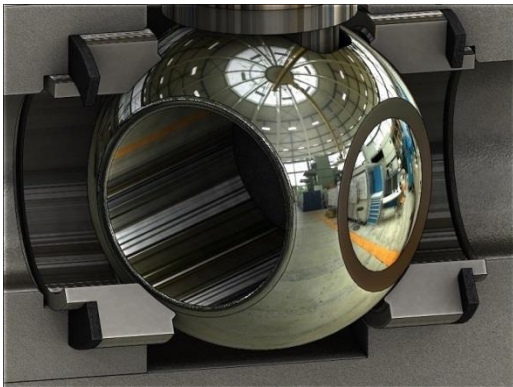
O Seal - Graphite Sealed Seat



A double seal design providing both spring loading and excellent sealing capabilities. There is no area for media to build up behind the seat, which prevents the valve from locking up.

Temperature Range: --40 to 650 deg F  
 Application: Steam, Abrasion, Low Pressure Differentials, Fine Solids, Emulsions  
 Shut-Off: Class V, Class VI, Bubble Tight

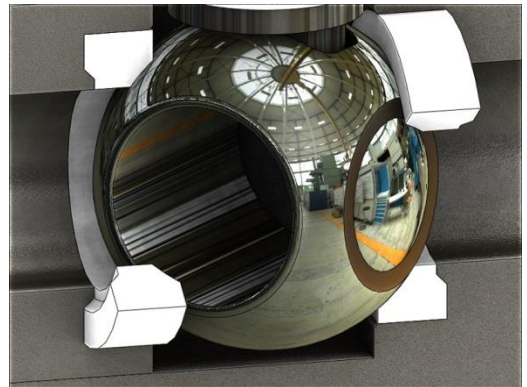
G Seal - Graphite Sealed Seat



A series of Graphite seal rings behind the metal seat prevents media from building up behind the seat. The rings also allow for expansion of the internal valve components in high temperature applications. This design is great for applications involving fine solids as the graphite prevents the media from building up behind the seats.

Temperature Range: -20 to 1500 deg F  
 Application: Steam, Abrasion, High Temperatures, Fine Solids, Slurry  
 Shut-Off: Class V, Class VI, Bubble Tight

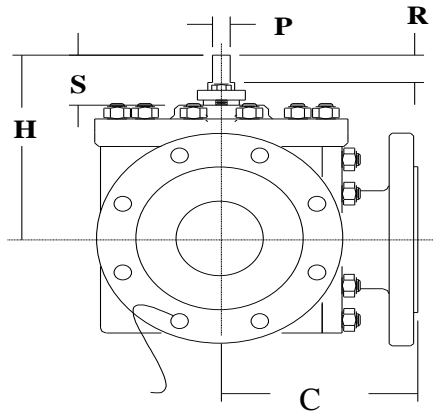
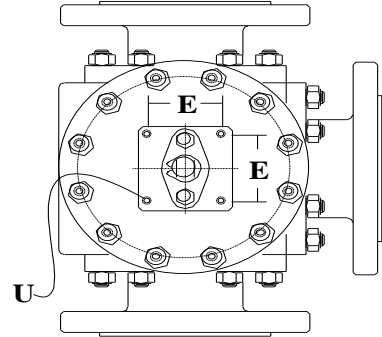
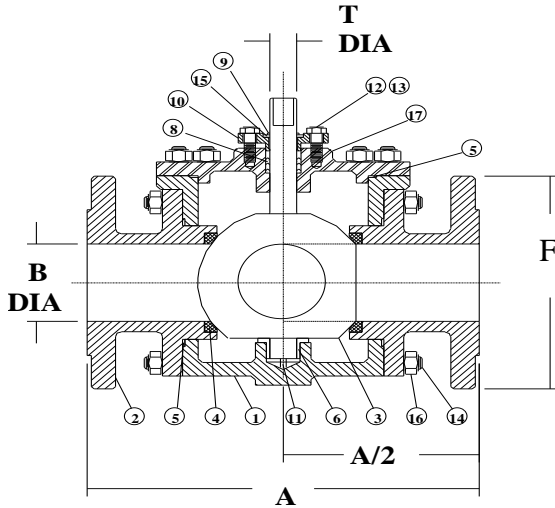
T Seat - Reinforced TFE Seat



The T Seat Style designates a soft seat material. There are many seat materials available with TFM being the standard option. A metal lip on the body and tailpiece provides fire safety and meets API 607 requirements.

Temperature Range: -20 to 450 deg F  
 Application: Steam, Low Pressure Differentials, Emulsions, Nonabrasive Media  
 Shut-Off: Class VI, Bubble Tight

# CLASS 150# AND 300# DIMENSIONS



ANSI CLASS 150#					
SIZE	A - R.F.	B (Dia)	C - R.F.	F (Dia)	H
3/4	6.64	0.75	3.32	3.88	3.2
1	7.20	1.00	3.60	4.25	3.3
1 1/2	7.20	1.50	3.60	5.00	4.2
2	8.65	2.00	4.33	6.00	4.93
3	11.25	3.00	5.63	7.50	6.67
4	13.65	4.00	6.83	9.00	8.01
6	16.77	6.00	8.39	11.00	10.1
8	20.93	7.95	10.47	13.50	11.55
10	27.55	9.90	13.78	16.00	13.01
12	30.00	11.80	15.00	19.00	12

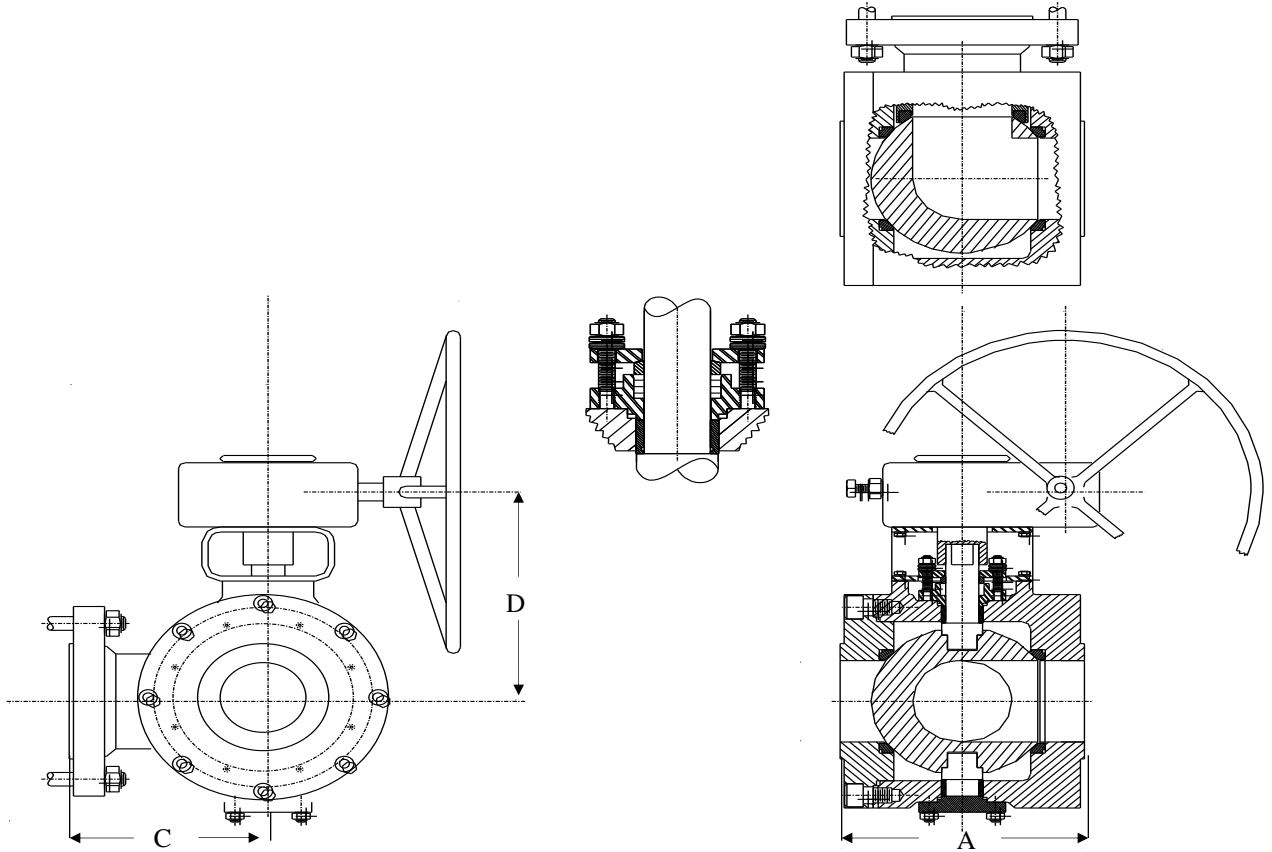
ANSI CLASS 300#					
SIZE	A - R.F.	B (Dia)	C - R.F.	F (Dia)	H
3/4	6.64	0.75	3.32	3.88	3.2
1	7.20	1.00	3.60	4.25	3.3
1 1/2	7.20	1.50	3.60	5.00	4.2
2	8.65	2.00	4.33	6.00	4.93
3	11.25	3.00	5.63	7.50	6.67
4	13.65	4.00	6.83	9.00	8.01
6	16.77	6.00	8.39	11.00	10.1
8	20.93	7.95	10.47	13.50	11.55
10	27.55	9.90	13.78	16.00	13.01
12	30.00	11.80	15.00	19.00	12

MOUNTING DIMENSIONS								
SIZE	P	T Dia	E	R	S	H	M	U
3/4	0.354	0.46	1.95	0.47	0.50	3.20	0.38	1/4-20 NC
1	0.433	0.55	1.95	0.47	0.54	3.30	0.38	1/4-20 NC
1 1/2	0.551	0.61	1.95	0.63	0.72	4.12	0.67	5/16-18 NC
2	0.669	0.87	2.83	1.57	1.90	4.90	0.88	5/16-18 NC
3	0.669	1.16	3.50	1.97	3.10	6.75	1.13	1/2-13 NC
4	0.906	1.34	3.50	2.44	3.10	8.10	1.13	1/2-13 NC
6	1.378	1.77	3.50	2.36	3.58	10.05	1.88	5/8-11 NC

The MDV Series are made to order valves. The manufacturer can make changes to the bore diameter, end to end, or any other changes which may be beneficial to the customer. Common flange is always (except for carbon steel valves) 316 sst unless otherwise specified. Manufacturer reserves the right to make design alterations. Cv is for T Port Valves



## CLASS 600# TO 2500# DIMENSIONS



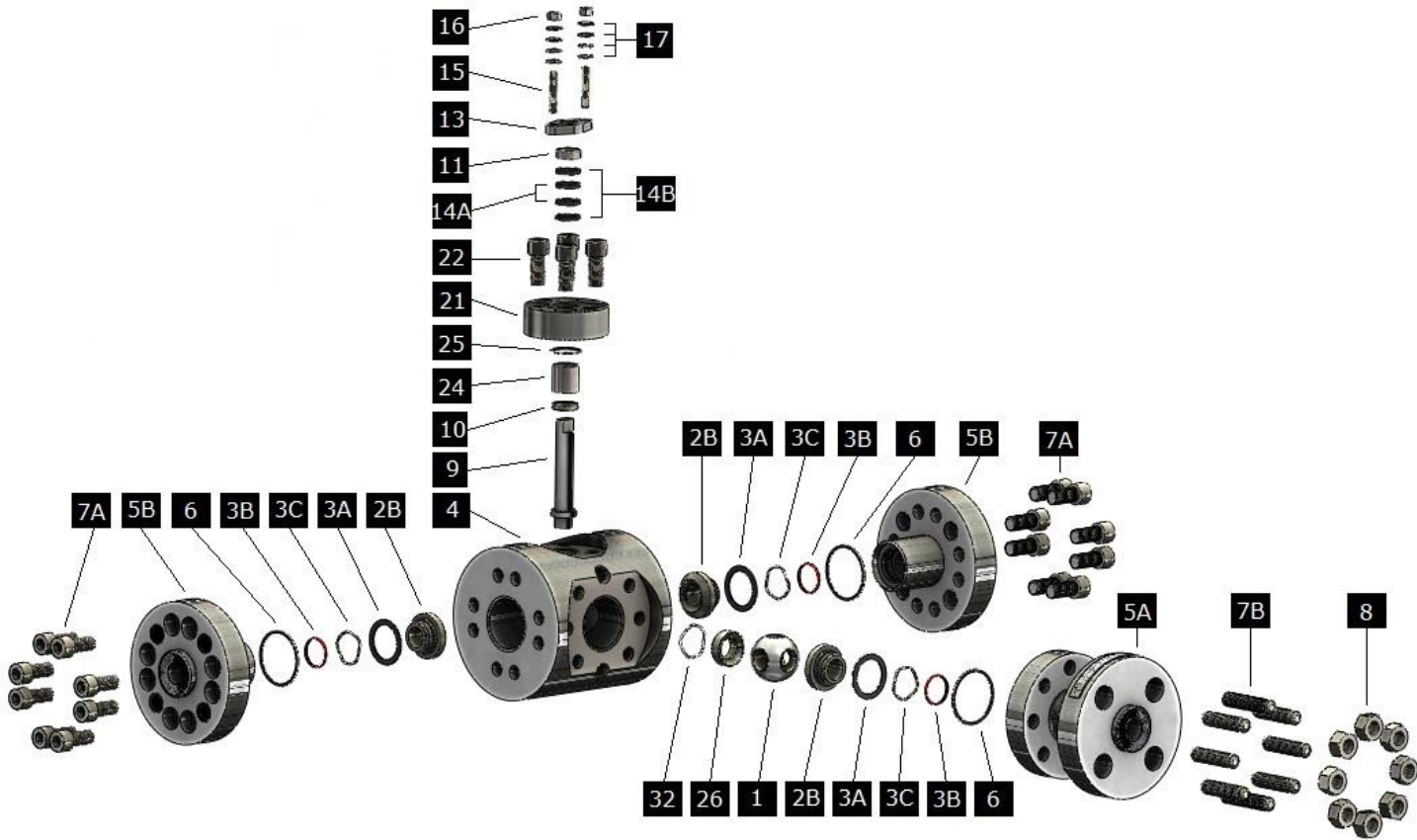
ANSI CLASS 600#						
SIZE	A-RF	A-RTJ	A-SW	C	D	B (Dia)
1/2	5.25	5.25	7.25	5.25	5.20	0.50
3/4	5.25	5.25	7.25	5.25	5.20	0.75
1	6.25	6.25	8.25	6.25	6.00	0.96
1 1/2	7.50	7.50	9.50	9.50	6.50	1.50
2	10.00	10.00	12.00	7.00	7.00	1.94
3	11.50	11.50	13.50	8.00	9.60	2.90
4	11.50	11.50	13.50	12.00	12.38	3.83
6	22.00	22.00	22.00	22.00	14.00	5.76
8	26.00	26.00	26.00	26.00	15.50	7.63
10	31.00	31.00	31.00	31.00	18.00	9.75
12	33.00	33.00	33.00	33.00	18.95	11.75

ANSI CLASS 900#						
SIZE	A-R.F.	A-RTJ RTJ	A-SW	C	D	B (Dia)
1/2	7.25	7.25	10.00	7.25	6.00	0.50
3/4	7.25	7.25	10.00	7.25	6.00	0.75
1	8.25	8.25	10.00	8.25	7.00	0.96
1 1/2	9.50	9.50	12.00	8.50	7.50	1.50
2	11.00	11.00	13.00	9.50	8.00	1.94
3	12.00	12.00	14.00	9.50	10.60	2.90
4	12.25	12.25	14.25	10.00	13.44	3.83
6	24.00	24.00	24.00	24.00	16.50	5.76
8	29.00	29.00	29.00	29.00	17.50	7.63
10	31.00	33.00	33.00	33.00	20.13	9.75
12	33.00	38.00	38.00	38.00	22.00	11.75

ANSI CLASS 1500#						
SIZE	A-R.F.	A-RTJ RTJ	A-SW	C	D	B (Dia)
1/2	7.25	7.25	10.00	7.25	6.00	0.50
3/4	7.25	7.25	10.00	7.25	6.00	0.75
1	8.25	8.25	10.00	8.25	7.00	0.96
1 1/2	9.50	9.50	12.00	8.50	7.50	1.50
2	11.00	11.00	13.00	9.50	8.00	1.94
3	12.00	12.00	14.00	9.50	10.60	2.90
4	12.25	12.25	14.25	10.00	13.44	3.83
6	24.00	24.00	24.00	24.00	16.50	5.76
8	29.00	29.00	29.00	29.00	17.50	7.63
10	31.00	33.00	33.00	33.00	20.13	9.75
12	33.00	38.00	38.00	38.00	22.00	11.75

ANSI CLASS 2500#						
SIZE	A-R.F.	A-RTJ RTJ	A-SW	C	D	B (Dia)
1/2	8.25	8.25	12.00	8.25	6.50	0.38
3/4	8.25	8.25	12.00	8.25	6.50	0.50
1	9.25	9.25	12.00	9.25	8.00	0.63
1 1/2	10.50	10.50	14.00	9.50	8.50	1.00
2	13.00	13.00	15.00	10.50	9.00	1.20
3	14.00	14.00	17.00	12.50	11.60	2.50
4	14.25	14.25	18.25	14.00	16.25	3.00
6	C/F	C/F	C/F	C/F	C/F	C/F
8	C/F	C/F	C/F	C/F	C/F	C/F
10	C/F	C/F	C/F	C/F	C/F	C/F
12	C/F	C/F	C/F	C/F	C/F	C/F

# BILL OF MATERIAL



STANDARD OPTIONS

ITEM NO.	NAME	STAINLESS STEEL	A105	ALLOY 20	DUPLEX	F-22	Titanium	Inconel
1	BALL	316 W/ HARD CHROME*	316 W/ HARD CHROME*	ALLOY 20 W/ COLMONOY*	2205 W/ Tantalum Chrome Oxide *	718 W/ CHROME CARBIDE	Titanium Gr. 2	Inconel 600
2A	GUIDE SEAT (IF APPLICABLE)	316 W/ STELLITE HF*	316 W/ STELLITE HF*	ALLOY 20 W/ COLMONOY*	2205 W/ Tantalum Chrome Oxide *	316 W/ CHROME CARBIDE	RTFE	Colmonoy
2B	SEALING SEAT	316 W/ STELLITE HF*	316 W/ STELLITE HF*	ALLOY 20 W/ COLMONOY*	2205 W/ Tantalum Chrome Oxide *	316 W/ CHROME CARBIDE	RTFE	Colmonoy
3A	SEAT SEAL	TFE/Viton/Graphite	TFE/Viton/Graphite	TFE/Viton/Graphite	TFE/Viton/Graphite	GRAPHITE	TFE/Viton/Graphite	TFE/Viton/Graphite
3C	SEAT SPRING (IF APPLICABLE)	17-7 SST/ A286	17-7 SST/ A286	ALLOY 20	2205 DUPLEX SST	A-286	NA	A286
4	BODY	316 SST	A105	A182 CN7M	A351 CD3MN	F-22	Titanium Gr. 2	Inconel 600
5	TAILPIECE	316 SST	A105	A182 CN7M	A351 CD3MN	F-22	Titanium Gr. 2	Inconel 600
6	BODY GASKET	316sst w/ Graphite Filler*	316sst w/ Graphite Filler*	ALLOY 20 w/ Graphite Filler*	2205sst w/ Graphite Filler*	316sst w/ Graphite Filler*	TFE	Inconel w/Graphite Filler
7	BODY STUD	ASTM A193 B8	ASTM A193 B8	ASTM A193 B8	ASTM A193 B8	ASTM A193 B8	ASTM A193 B8	ASTM A193 B8
8	BODY NUT	ATM A194 Gr. 8	ATM A194 Gr. 8	ATM A194 Gr. 8	ATM A194 Gr. 8	ATM A194 Gr. 8	ATM A194 Gr. 8	ATM A194 Gr. 8
9	STEM	17-4SST/XM-19*	17-4SST/XM-19*	2205 DUPLEX SST*	2205 DUPLEX SST*	718 INCONEL	Titanium Gr. 2	Inconel 600
10	THRUST WASHER	Nitronic 60/TFE	Nitronic 60/TFE	STELLITE	STELLITE	STELLITE	RTFE	Stellite
11	COMPRESSION RING	316 SST	316 SST	ALLOY 20*	2205 DUPLEX SST*	316 SST	Titanium Gr. 2	Inconel 600
13	COMPRESSION PLATE	304 SST	304 SST	304 SST	304 SST	304 SST	304 SST	304 SST
14a	STEM PACKING	TFE/GRAPHITE	TFE/GRAPHITE	TFE/GRAPHITE	TFE/GRAPHITE	TFE/GRAPHITE	TFE/GRAPHITE	TFE/GRAPHITE
15	GLAND STUD	ASTM A193 B8	ASTM A193 B8	ASTM A193 B8	ASTM A193 B8	ASTM A193 B8	ASTM A193 B8	ASTM A193 B8
16	BELLEVILLE WASHER	301 SST	301 SST	301 SST	301 SST	718 Inconel	301 SST	301 SST
17	GLAND NUT	ATM A194 Gr. 8	ATM A194 Gr. 8	ATM A194 Gr. 8	ATM A194 Gr. 8	ATM A194 Gr. 8	ATM A194 Gr. 8	ATM A194 Gr. 8
21	BONNET	TFE/GRAPHITE	TFE/GRAPHITE	TFE/GRAPHITE	TFE/GRAPHITE	TFE/GRAPHITE	TFE/GRAPHITE	TFE/GRAPHITE
22	BONNET BOLTS	ASTM A193 B8	ASTM A193 B8	ASTM A193 B8	ASTM A193 B8	ASTM A193 B8	ASTM A193 B8	ASTM A193 B8
24	STEM BEARING	Nitronic 60/TFE	Nitronic 60/TFE	STELLITE	STELLITE	STELLITE	RTFE	Stellite
25	BONNET SEAL	316sst w/ Graphite Filler*	316sst w/ Graphite Filler*	ALLOY 20 w/ Graphite Filler*	2205sst w/ Graphite Filler*	316sst w/ Graphite Filler*	TFE	Inconel w/Graphite Filler
26	TRUNNION	316 W/ STELLITE HF*	316 W/ STELLITE HF*	ALLOY 20 W/ COLMONOY*	2205 W/ Tantalum Chrome Oxide *	316 W/ CHROME CARBIDE	RTFE	Colmonoy
32	TRUNNION SPRING	17-7 SST/ A286	17-7 SST/ A286	ALLOY 20	2205 DUPLEX SST	A-286	NA	A286

Other materials available upon request

# Specifications

- Flanged end connections meet ANSI B16.5
- Minimum wall thickness and design meets ANSI B16.34
- Valves are tested per API 6D\*
- API 598 / Class V/ Class VI Shut-Off Available

- API 598 / Class V/ Class VI Shut-Off Available
- Fire Safe To API 607
- ISO 15848 Fugitive Emissions\*
- NACE MR-01-75\*

\* Available On Request

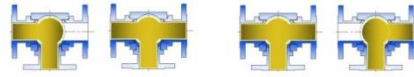
## AVAILABLE FLOW CONFIGURATIONS

### L-Port 90 Deg.

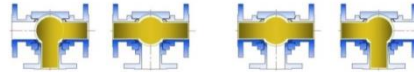


Position 1 Position 2  
FLOW PLAN 1

### T-Port 90 Deg. Turn



Position 1 Position 2 Position 1 Position 2  
FLOW PLAN 2 FLOW PLAN 3



Position 1 Position 2 Position 1 Position 2  
FLOW PLAN 4 FLOW PLAN 5

### T-Port 180 Deg. Turn



Position 1 Position 2 Position 3  
FLOW PLAN 6



Position 1 Position 2 Position 3  
FLOW PLAN 7



Position 1 Position 2 Position 3  
FLOW PLAN 8



Position 1 Position 2 Position 3  
FLOW PLAN 9

## MODEL NUMBER

SIZE	-	SERIES	PORT SIZE	SEAT	MATERIAL	BALL	BALL COATING	BODY	-	CLASS	END CONNECTION	END CONNECTION
1/2"	2	MDV	F FULL	0 NONMETAL	B Boronizing	A 316SST	B Boronizing	A 316SST	01	150#	A NPT	F1 Flow Plan 1
TO			R REDUCED	1 O SEAT	C COLMONOY	B A105	C CHROME	B A105	03	300#	B FLANGED	F2 Flow Plan 2
12"				2 G SEAL	G Graphite	C F-22	E ENP	C F-22	06	600#	C RTJ Flanged	F3 Flow Plan 3
				4 P SEAT	M Tantalum	D Inconel	M Tantalum	D Inconel	09	900#	D Butt weld	F4 Flow Plan 4
				5 P SEAT	Chrome Oxide	E 304SST	Chrome Oxide	E 304SST	15	1500#	E Socket Weld	F5 Flow Plan 5
				750 F TO 1000 F	P PEEK	F Hastelloy	L Colmonoy	F Hastelloy	25	2500#		F6 Flow Plan 6
				6 G SEAL	R CHROME CARBIDE	G Incoloy	R CHROME CARBIDE	G Incoloy				F7 Flow Plan 7
				<1300 deg F	S STELLITE	H Alloy 20	S STELLITE	H Alloy 20				F8 Flow Plan 8
				Uni-Directional	T TFE	I Monel	T TFE	I Monel				F9 Flow Plan 9
				7 G SEAL	U UHMWPE	J 316H	w TUNGSTEN CARBIDE	J 316H				
				Uni-Directional	W TUNGSTEN CARBIDE	L 316L	O no coating	L 316L				
				8 G SEAL		N Ni-Al-Bronze		N Ni-Al-Bronze				
				<1500 deg F		R F-91		R F-91				
				Uni-Directional		T Titanium		T Titanium				
				9 P Seat		X Duplex		X Duplex				
				OD O-Ring				2 LF2				

Example: 2" MDV Series, Full Port, RTFE Seats, 316sst Ball with No Plating, A105 Body, 600# RF Flanged, Flow Plan 1 Diverting L Port

2 - MDV F O T A O B - 06 B F1