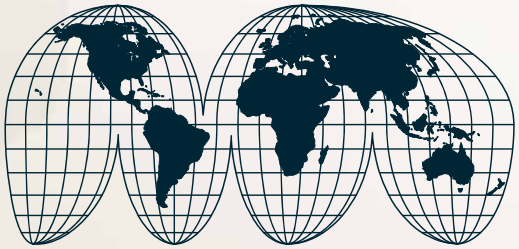
Smart Solutions. Powerful Products.

FORUM™
ENERGY TECHNOLOGIES

PBV® Threaded & Socketweld Ball Valves

Manufacturer of Quality Valve Products Around the Globe



At Forum™ Energy Technologies we are committed to improving our clients' operational and financial performance by supplying the most comprehensive range of valve products in the industry through our family of trusted valve brands.

Their Options Are Our Standards

Forum™ Energy Technologies, Inc. has become a world industry leader by providing both the highest quality valve products available, and the most complete product offering of PBV® Ball and Check Valves for every application.

Many end users and distributors have come to rely on PBV® for all of their ball valve requirements, no matter what the service conditions are. The engineers at PBV®'s "state-of-the-art" manufacturing facility in Stafford, Texas welcome your challenge.

The PBV® Threaded and Socketweld Ball Valves are an important part of the overall PBV® product offering.

This versatile line of small diameter valves was designed for many applications. The PBV® Threaded & Socketweld Ball Valves featured in this brochure are designed with a wide range of product innovations including in-line repairability, high pressure, metal seated as well as specialty materials and accessories.
The unparalleled commitment to computerized inventory control coupled with the wide application range of the PBV® product line makes Forum™ Energy Technologies the right choice for your Threaded & Socketweld Floating Ball Valve requirements.

At PBV®, we live by the motto "Their Options are Our Standards."

Engineering Expertise

Forum™ Energy Technologies, Inc. has become a world industry Forum™ utilizes the latest state of the art engineering software to provide custom design services for any application. Finite element analysis is just one of many Design Verification Tools FET uses for designing valves to specific customer requirements.

CAD & NC Capabilities

With FET's fast and efficient workflow, CAD drawings can be released to the network for manufacturing and purchasing. All computer generated machine programs can be quickly changed for weld overlays or other processes. The result is faster deliveries.

Accurate Inventories

Daily cycle counting & order picking using wireless barcode guns and automated part delivery systems results in more accurate inventories and faster product delivery.

Customer Service

Forum™'s Customer Service Department is fully staffed with trained customer service representatives ready to help you with your ordering information, technical specifications and logistics.

Quality Control

All FET Companies manufacture quality products designed and tested to meet the standards of Qualifying Authorities around the world.
Advanced engineering and our Quality Management System assure that our valve products continue to exceed your expectations for performance.

Manufactured in Strict Conformance With the Following Industry Standards

ASME B16.34 • Valve Shell Pressure, Temperature & Shell Wall Thickness
Manufacturers Standard • Face-to-Face Dims.
API 598 • Pressure Test
API 607, API 6FA & BS 6755 • Firesafe Test
API 608 • Design Standard
ISO 5211 • Attachment of Actuator
ISO 9001 • Management System
PED 97/23/EC • Pressure Equipment Directive
ATEX 94/9/EC • Explosive Atmosphere Directive
VDI 2440 • Fugiative Emission Contro l Standard

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Contents

PBV® Threaded & Socketweld Ball Valves

Product Range, Size/Model Overview

Size (in.)		Forged Firesafe 3-Piece Models			Forged Multi-Port Models		
Reduced Port	Full Port	Master Star	Super Star	Mega Star	3-Way	4-Way T or L Port	4-Way X Port
—	1/4	No. 33 5333/6333	No. 31 5331/6331 Socketweld Available with Extended Ends Only	No. 36 6336 Full Port Only	No. 38 5338/6338	No. 39 5339/6339	No. 39 5339/6339
1/2	3/8						
3/4	1/2						
1	3/4						
1 1/4	1						
1 1/2	1 1/4						
2	1 1/2						
2 1/2	2						
3	2 1/2						
4	3						

Maximum Pressure (WOG/CWP) Standard P Seat Materials

Size (in.)		No. 33	No. 31		No. 36	No. 38	No. 39	
Reduced Port	Full Port	M Seat	M Seat	D Seat	D Seat	M Seat	T or L Port	X Port
—	1/4	2000	2200	3000	6000	1500	1500	1200
1/2	3/8	2000	2200	3000	6000	1500	1500	1200
3/4	1/2	2000	2200	3000	6000	1500	1500	1200
1	3/4	2000	2200	3000	6000	1000	1000	1000
1 1/4	1	2000	2200	3000	6000	1000	1000	1000
1 1/2	1 1/4	2000	2000	3000	4000	800	800	750
2	1 1/2	2000	2000	3000	4000	800	800	750
2 1/2	2	—	1500	1800	4000	600	600	440
3	2 1/2	—	1500	1800	—	400	400	—
4	3	—	1000	1200	—	—	—	—

ASME Class Rating with Standard Seat

Size (in.)		No. 33	No. 31		No. 36	No. 38	No. 39	
Reduced Port	Full Port	M Seat	M Seat	D Seat	D Seat	M Seat	T or L Port	X Port
—	1/4	900	900	900	2500	600	600	300
1/2	3/8	900	900	900	2500	600	600	300
3/4	1/2	900	900	900	2500	600	600	300
1	3/4	900	900	900	2500	300	300	300
1 1/4	1	900	900	900	2500	300	300	300
1 1/2	1 1/4	900	800	900	1500	300	300	300
2	1 1/2	900	800	900	1500	300	300	300
2 1/2	2	—	600	600	1500	150	150	150
3	2 1/2	—	400	400	—	150	150	—
4	3	—	400	400	—	—	—	—

How To Order, Seat Features & Applications

Specifying PBV® Threaded & Socketweld Valve Figure Numbers

Example: 6" S-6331-38-3600-ML-NE-I-LD This number represents an all Stainless Steel, 316 SS Body and Trim, Full Port, Threaded Socketweld Valve, Super Star Series, Fire Tested, Threaded End Connections, 20% C with 5% Graphite filled PTFE Seats, Graphite Seals, for use in NACE Applications, Lever Operated Tee Handle and ISO Mounting Pad with Locking Device.

S – 6 3 31 – 3 8 – 36 00 – M L – N E – I – LD

Mat. Code	Port Config.	Valve Type	Press. Class	Fire Tested	End Conn.	Body Mat.	Trim Mat.	Seat Material	Seal Mat.	NACE Option	Options
C Carbon Steel **S** SS **N** Nickel Alloys	**5** Reduced **6** Full	**3** Thread and SW Type	**31** Super Star **33** Master Star **36** Mega Star **38** 3-Way Multi Port **39** 4-Way Multi Port	**0** Non-Fire Tested w/No Emerg. Grease Seals **3** Fire Tested w/No Emerg. Grease Seals	**5** BWE **7** Thrd. x SW* **8** Thrd.'d **9** SW* **6** NPL Welded or Integ.	**25** LF2 **34** 304SS **36** 316SS **F51** Duplex **70** Monel®	**00** Same as Body **36** 316SS **70** Monel® **FS1** Duplex	**B** Bronze Filled TFE **D** Devlon® **E** Vespel Polymide **G** Glass Filled TFE **K** Kel-F® TFE **M** 20% C 5% Graph. Filled TFE **P** PEEK™ **R** Delrin® **T** Virgin TFE **U** UHMWPE **Z** Special	**L** Graphite	**N** NACE **S** Non NACE	**A** Actuated **B** Bare Stem **E** Tee Handle For Insulation **I** ISO Mounting Pad **L** Lever **LD** Locking Device **V** Oval Handle

Note: *Valve must be dismantled to weld end connections into piping. See IOM.

Seat Features & Applications

Code	Seat Material Description	Temp. Range ˚C	Temp. Range ˚F	Specif.'s	Notes & Applications	Valve Model
B	RPTFE	-100/+270	-148/ +518	Med. Pressure	Perfect for Steam Applications	M, S, 3 & 4-Way
D	Nylon Devlon® V Polymide-Nylon	-65/+150	-50/+302	High Pressure Med/Low Temp	Hydrocarbons & NACE Applications, Not RECOMMENDED FOR GLYCOL, METHANOL, WATER	Super Star Mega Star
E	Vespel Polymide	-200/+260	-328/+500	High Pressure High Temp	Good Chemical Resistance NOT RECOMMENDED FOR STEAM	Super Star Mega Star
G	RPTFE	-60/+220	-51/+428	Low Pressure High Cycle Life	Higher Pressure Than Virgin PTFE	Master, Super 3 & 4-Way
K	Kel-F® PCTFE	-196/+150	-319/+302	High Pressure Low Temp	Similar to PTFE But with Improved Resistance to Nitric Acid, Hydrofluoric Acid and Liquid Oxygen	Super Star Mega Star
M	PTFE + 25% Carbographite	-190/+250	-310/+482	Med. Pressure Low/High Temp	Higher Pressure and Temperature Than Virgin PTFE	Master, Super 3 & 4-Way
P	PEEK™ Polyetherketone	-80/+220	-42/+428	High Pressure High Temp	Hydrocarbons-NACE, Particularly Indicated for Tobacco and Nuclear Environment	Super Star Mega Star
R	Delrin® Acetal Resin	-70/+95	-94/+203	High Pressure No Temp	Hydrocarbons-NACE-CO2 Applications NOT RECOMMENDED FOR OXYGEN	Super Star Mega Star
T	Virgin PTFE	-196/+200	-319/+392	Low Torque	Subject to Temperature Restrictions	M, S, 3 & 4-Way
U	UHMWPE Polyethylene	-10/+80	-14/+176	Low Pressure Low Torque	Food & Tobacco Industries Nuclear Environment	Master, Super 3 & 4-Way

Note: M = Master Star S = Super Star

Topworks Data & Torque Charts

PBV® Master Star & Super Star Threaded & Socketweld Ball Valves

Figure A (1/4" FP – 1" RP)

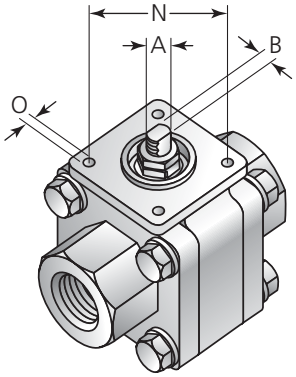
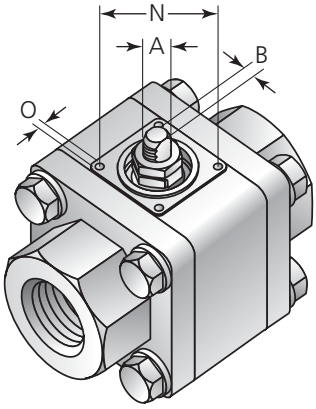
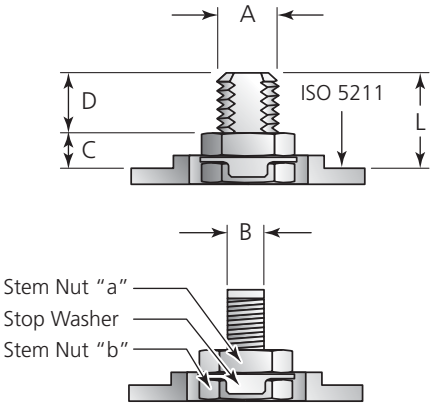


Figure B (1" FP – 4" RP)



ISO 5211 Stem Detail



Topworks Dimensional Data (in.), Full & Reduced Port • 1/4"-4"

Valve Size (in.).		Dimensions (in.)							ISO 5211
Full Port	Reduced Port	A	B	C	D	L	N	O	
		Figure A							
1/4	—	M10 x 1	0.21	0.00	0.19	0.19	1.41	M5 x 8	F03
3/8	1/2	M10 x 1	0.21	0.00	0.19	0.19	1.41	M5 x 8	F03
1/2	3/4	M10 x 1	0.21	0.00	0.19	0.19	1.41	M5 x 8	F03
3/4	1	M12 x 1.25	0.29	0.20	0.35	0.55	1.65	M5 x 8	F04
Figure B									
1	1 1/4	M12 x 1.25	0.29	0.39	0.39	0.78	1.65	M5 x 8	F04
1 1/4	1 1/2	M15 x 1.5	0.35	0.55	0.51	1.06	1.96	M6 x 10	F05
1 1/2	2	M15 x 1.5	0.35	0.55	0.55	1.10	1.96	M6 x 10	F05
2	2 1/2	M15 x 1.5	0.35	0.40	0.49	0.89	1.96	M6 x 10	F05
2 1/2	3	M22 x 1.5	0.62	0.71	0.66	1.37	2.75	M8 x 12	F07
3	4	M24 x 1.5	0.70	0.88	0.59	1.47	2.75	M8 x 12	F07

Torque Data for Actuated Threaded & Socketweld Ball Valves
Break Torques (in./lbs.)

Reduced Port

Valve Size (in.)	5333 (A)	5331 (A)		5338 (A)	5339 (A)
	M Seat	M Seat	D Seat	M Seat	M Seat
1/2	104	104	135	160	160
3/4	138	138	179	254	254
1	207	207	269	372	372
1 1/4	287	287	373	425	425
1 1/2	346	346	450	532	532
2	403	403	524	637	637
2 1/2	—	576	749	956	956
3	—	863	1122	1169	1169
4	—	1036	1347	—	—

Full Port

Valve Size (in.)	6333 (A)	6331 (A)		6336 (C)	6338 (A)	6339 (A)
	M Seat	M Seat	D Seat	D Seat	M Seat	M Seat
1/4	104	104	135	159	160	160
3/8	104	104	135	159	160	160
1/2	138	138	179	159	254	254
3/4	207	207	269	266	372	372
1	287	287	373	398	425	425
1 1/4	346	346	450	886	532	532
1 1/2	406	403	524	886	637	637
2	—	576	749	1150	956	956
2 1/2	—	863	1122	—	1169	1169
3	—	1036	1347	—	—	—

Notes:

1. Torques listed are max. 50 bar (725 psig) differential pressure in Clean Service.
   Application Factors: Deduct 25% for high lubricity service. • Add 15% for dry gas or demineralized water. • Add 20% for slurry or abrasive service.
2. Torques listed are for Clean Service (liquid or wet gas) up to 64 bar (928 psig) differential pressure, operated at least once a week.
   Temperatures of -200°C to +280°C (-40°F to +820°F) • For severe service, increase torques by 50% for M Seats and 15% for D Seats.
3. Torques listed are at 200 bar (2900 psig).

PBV® Master Star Series 5333/6333 Threaded & Socketweld Ball Valves

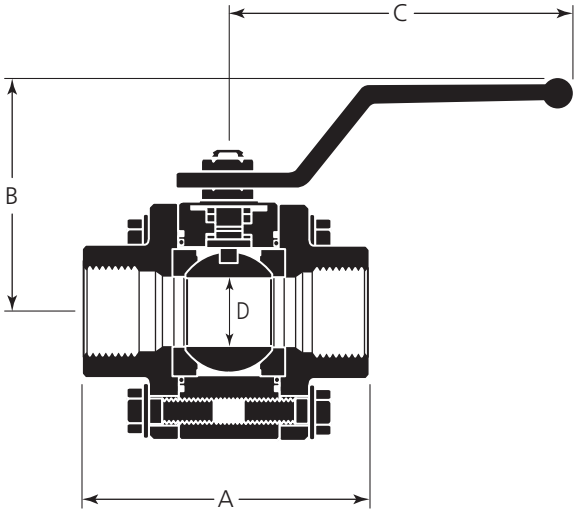
Master Star Series

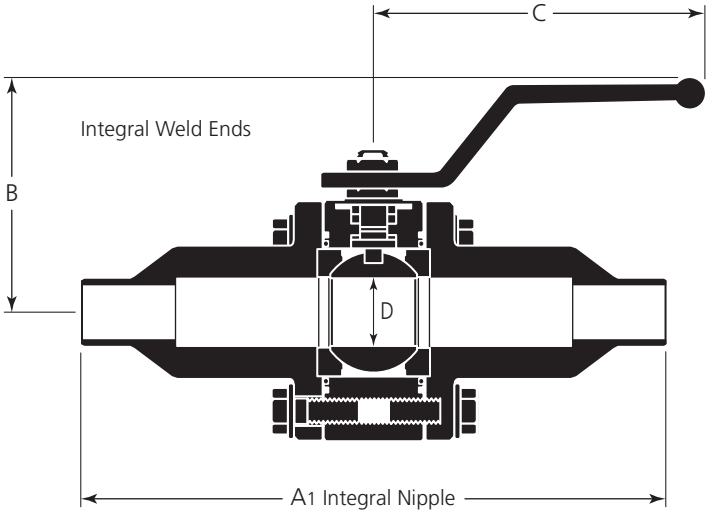
The Master Star Series offers the best possible design for socketweld ends. The swing-out body feature and seat arrangements make welding the ends into line virtually problem free, when the welder follows recommended welding practices. Available with integral nipples.

Standard Features
Series 5333: 1/2"-2", 2000 psi
Series 6333: 1/4"-1 1/2", 2000 psi

- Three-Piece Bolted Construction
- Carbon Filled PTFE Seats; Grafoil® Packing
- Double Body Seals (Grafoil® & PTFE)
- Available in Forged A350 LF2 & F316 Body Materials, 316 Stainless Steel Ball & Stem
- Integral Nipples Available as a Factory Option
- ISO 5211 Mounting Pad

Dimensional Data (in.)





Series 5333, Reduced Port, NPT or SW • 1/2"-2"

Size (in.)	Dimensions (in.)					Wt. (lbs.)
	A	A1	B	C	D	
1/2	2.9	9.3	2.6	6.0	0.44	2.2
3/4	3.2	9.4	2.7	6.0	0.56	2.6
1	3.9	9.8	3.2	7.5	0.83	4.8
1 1/4	4.3	10.3	3.6	7.5	1.00	6.8
1 1/2	4.7	10.7	4.2	9.0	1.25	9.2
2	5.5	11.0	4.4	9.0	1.50	12.1

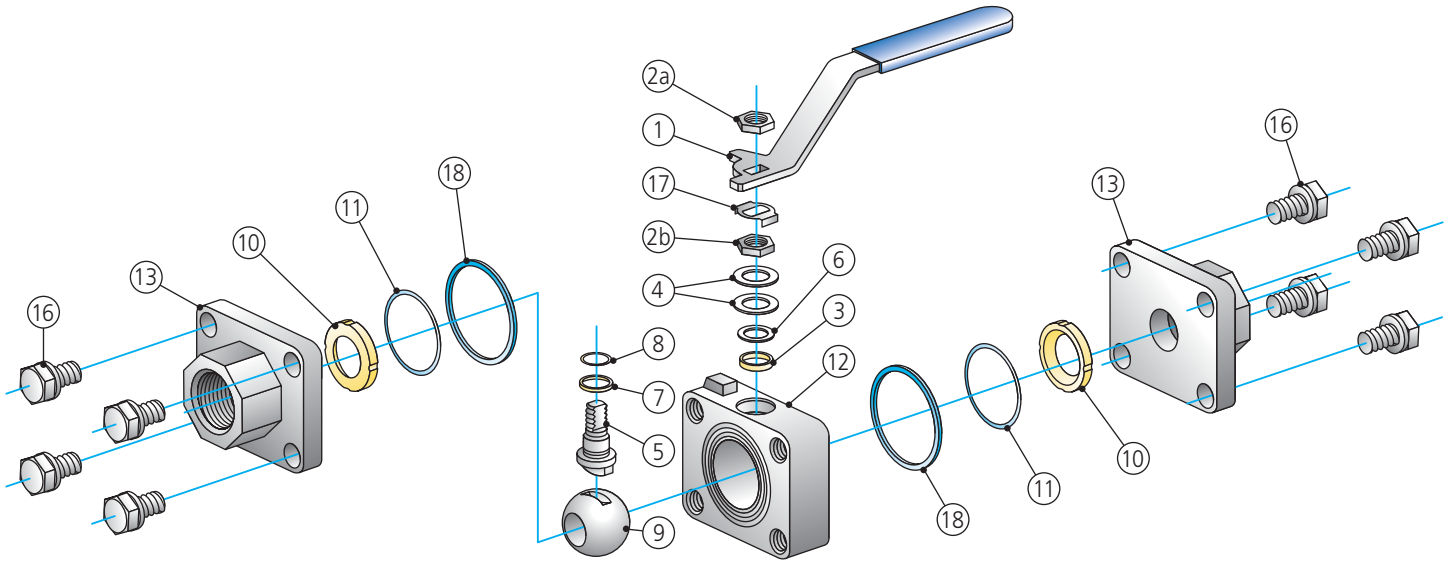
Note: Socketweld ends without nipple extensions will result in seat damage during welding for sizes smaller than 2 1/2".

Series 6333, Full Port, NPT or SW • 1/4"-1 1/2"

Size (in.)	Dimensions (in.)					Wt. (lbs.)
	A	A1	B	C	D	
1/4	2.9	9.3	2.6	6.0	0.44	2.4
3/8	2.9	9.3	2.6	6.0	0.44	2.2
1/2	3.2	9.4	2.7	6.0	0.56	2.8
3/4	3.9	9.8	3.2	7.5	0.83	5.0
1	4.3	10.3	3.6	7.5	1.00	7.0
1 1/4	4.7	10.7	4.2	9.0	1.25	9.5
1 1/2	5.5	11.0	4.4	9.0	1.50	12.8

PBV® Master Star Series 5333/6333 Threaded & Socketweld Ball Valves

Parts & Engineering Data



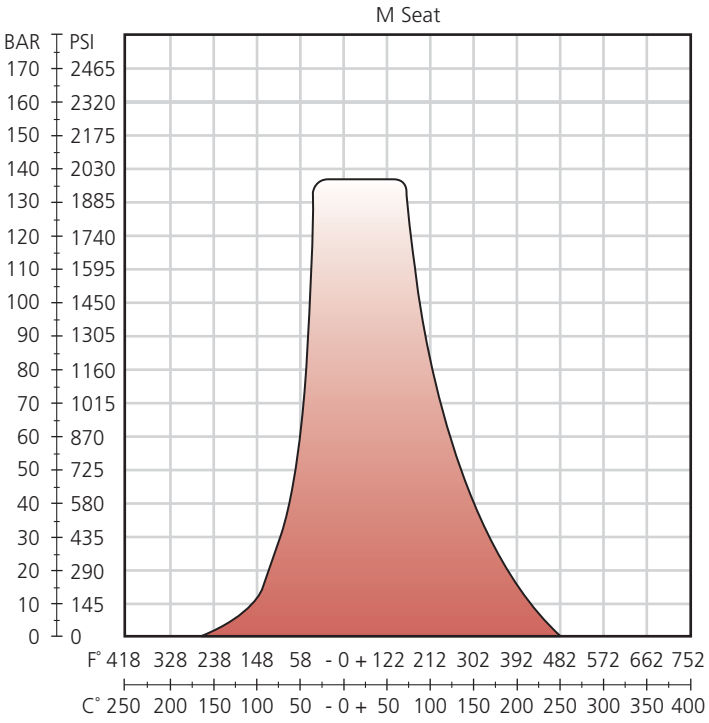
Parts & Materials

No.	Qty.	Description	Std. Materials, Ser. 5333/6333	
			A350 LF2	F316
1	1	Handle	CS Galvanized Plastic Cover	
2a/2b	2	Nut	CS Zinc Plated	316 SS
3	1	Packing Ring	Graphite	
4	2	Spring Washer	302 SS	
5	1	Antistatic Stem	316 SS	
6	1	Gland Follower	316 SS	
7	1	Thrust Washer	RPTFE	
8	1	Stem O-Ring	Viton®	
9	1	Ball	316 SS	
10	2	Seats	20% C 5% Graph. Filled TFE	
11	2	Body Seal	TFMC	
12	1	Body	ASTM A350 LF2	ASTM A182 F316
13	2	End Connections	ASTM A350 LF2	ASTM A182 F316L
14	1	Stop Pin	Integral or CS	Integral or SS
16	8	Bolt	ASTM A193 L7M	ASTM A193 B8M
17	1	Stop Washer	316 SS	
18	2	Body Seal	Graphite	

Soft Parts Repair Kit

No.	Qty.	Part Name	Materials
3	1	Packing Ring	Graphite
7	1	Thrust Washer	RPTFE
8	1	Stem O-Ring	Viton®
10	2	Seats	20% C 5% Graph. Filled PTFE
11	2	Body Seals	TFMC
18	2	Body Seals	Graphite

Pressure Temperature



Flow Coefficient (C_V)

Reduced Port, Size (in.)									
—	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
—	8	13	32	48	82	120	275	460	700

Full Port, Size (in.)									
1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
8	8	12	30	45	78	115	265	445	680

Flow Data: Flow rates were determined for ball valves in fully open position and a water temperature of 60°F (15°C). C_V value is the full capacity flow rate through the ball valve in gallons/min. of water at 60°F with a pressure of one psi.

PBV® Super Star Series 5331/6331 Threaded Ball Valves

Super Star Series

Standard Features

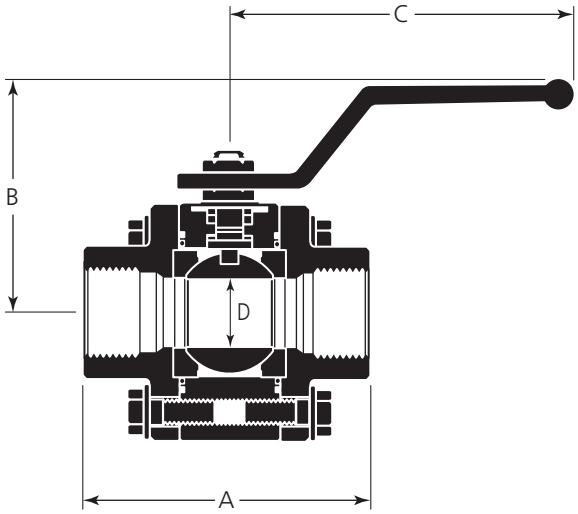
Series 5331: 1/2"-4", 2000 & 3000 psi

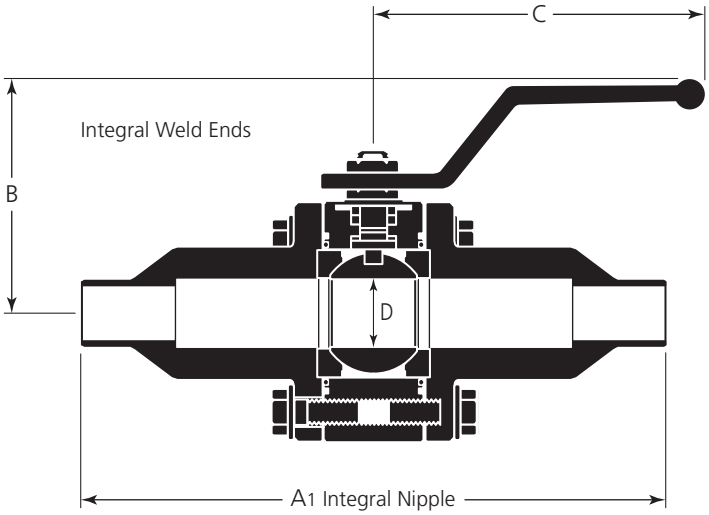
Series 6331: 1/4"-3", 2000 & 3000 psi

- Encapsulated Seats
- Three-Piece Bolted Construction
- Carbon Filled PTFE Seats; Grafoil® Packing
- Double Body Seals (Grafoil® & PTFE)
- Available in Forged A350 LF2 & F316 Body Materials, 316 Stainless Steel Ball & Stem
- ISO 5211 Mounting Pad
- Integral Nipples Available for Weld Applications

Integral Locking Device
Padlock shown for illustration only.
Customer to supply own lock.

Dimensional Data (in.)





NOTE: The seat configuration and body construction for weld ends require disassembling the valve or utilizing welding pup extensions or integral hubs.

Series 5331, Reduced Port, NPT or SW • 1/2"-4"

Size (in.)	Dimensions (in.)					Wt. (lbs.)
	A	A1	B	C	D	
1/2	2.95	9.3	2.6	6.0	0.44	2.2
3/4	3.15	9.4	2.7	6.0	0.56	2.6
1	3.95	9.8	3.2	7.5	0.83	4.8
1 1/4	4.25	10.3	3.6	7.5	1.00	6.8
1 1/2	4.75	10.7	4.2	9.0	1.25	9.2
2	5.50	11.0	4.4	9.0	1.50	12.1
2 1/2	5.55	7.5	4.6	9.0	1.93	19.8
3	6.70	8.3	5.4	17.7	2.50	26.4
4	9.00	12.0	5.9	17.7	3.00	35.2

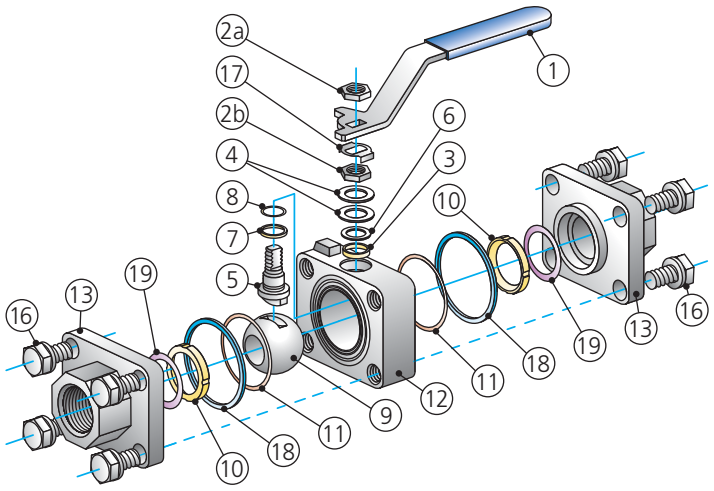
Note: Dimensions are available upon request. Socketweld ends without nipple extensions will result in seat damage.

Series 6331, Full Port, NPT or SW • 1/4"-3"

Size (in.)	Dimensions (in.)					Wt. (lbs.)
	A	A1	B	C	D	
1/4	2.95	9.3	2.6	6.0	0.44	2.4
3/8	2.95	9.3	2.6	6.0	0.44	2.2
1/2	3.15	9.4	2.7	6.0	0.56	2.8
3/4	3.95	9.8	3.2	7.5	0.83	5.0
1	4.35	10.3	3.6	7.5	1.00	7.0
1 1/4	4.75	10.7	4.2	9.0	1.25	9.5
1 1/2	5.50	11.0	4.4	9.0	1.50	12.8
2	5.55	7.5	4.6	9.0	1.93	22.0
2 1/2	6.70	8.3	5.4	17.7	2.50	29.7
3	12.00	12.0	5.9	17.7	3.00	38.5

PBV® Super Star Series 5331/6331 Threaded Ball Valves

Parts & Engineering Data



Parts & Materials

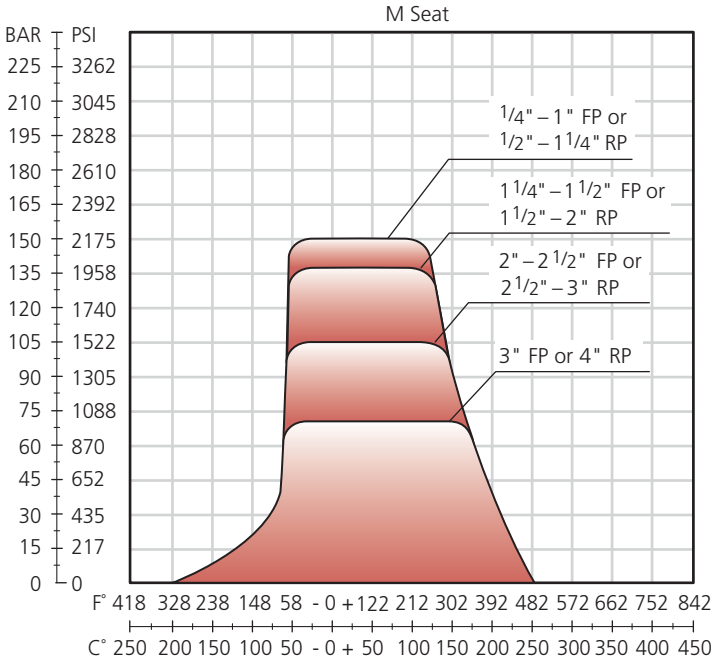
No.	Qty.	Description	Std. Materials, Ser. 5331/6331	
			A350 LF2	F316
1	1	Handle	CS Galvanized Plastic Cover	
2a/2b	2	Nut	CS Zinc Plated	316 SS
3	1	Packing Ring	Graphite	
4	2	Spring Washer	302 SS	
5	1	Antistatic Stem	316 SS	
6	1	Gland Follower	316 SS	
7	1	Thrust Washer	20% C 5% Graph. Filled PTFE	
8	1	Stem O-Ring	Viton®	
9	1	Ball	316 SS	
10	2	Seats	RPTFE	
11	2	Body Seal	TFMC	
12	1	Body	ASTM A350 LF2	ASTM A182 F316
13	2	End Connections	ASTM A350 LF2	ASTM A182 F316L
14	1	Stop Pin	Integral or CS	Integral or SS
16	8	Bolt	ASTM A193 L7M	ASTM A193 B8M
17	1	Stop Washer	316 SS	
18	2	Body Seal	Graphite	
19	2	Seat Ring	PTFE	

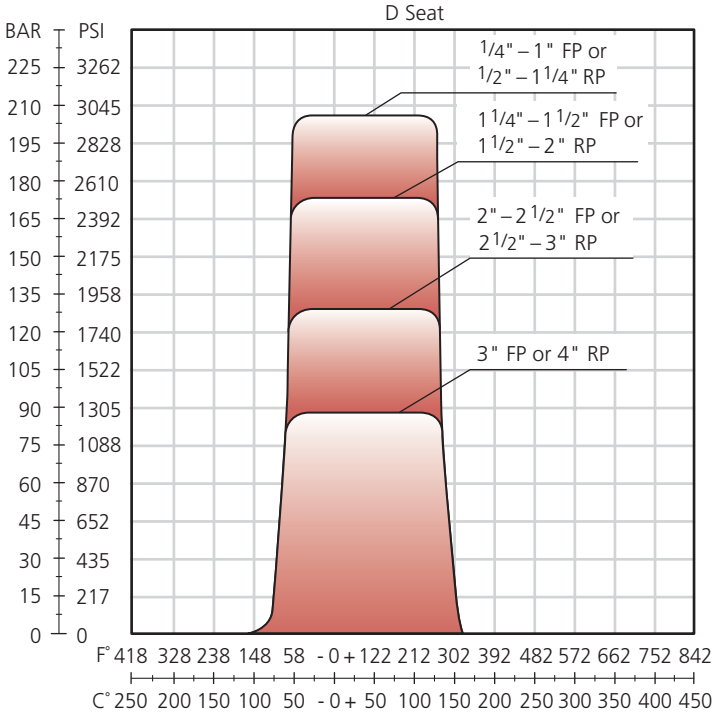
Soft Parts Repair Kits* • M & D Seat

No.	Qty.	Seat Design	Part Name	Material
3	1	M, D	Packing Ring	Graphite
7	1	M, D	Thrust Washer	RPTFE
8	1	M, D	Stem O-Ring	Viton®
10	2	M	Seats	20% C 5% Graph. Filled PTFE
10	2	D	Seats	Devlon®
18	2	M, D	Body Seals	Carbon Filled PTFE
11	2	M, D	Body Seals	RTFE
18	2	M, D	Body Seals	Graphite

Note: *M = Contents of "M" Seat Kit. • D = Contents of "D" Seat Kit.

Pressure Temperature





Flow Coefficient (C_V)

Reduced Port, Size (in.)									
—	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
—	8	13	32	48	82	120	275	460	700

Full Port, Size (in.)								
1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
8	8	12	30	45	78	115	265	445	680

Flow Data: Flow rates were determined for ball valves in fully open position and a water temperature of 60°F (15°C). C_V value is the full capacity flow rate through the ball valve in gallons/min. of water at 60°F with a pressure of one psi.

PBV® Mega Star Series 6336 Threaded Ball Valve

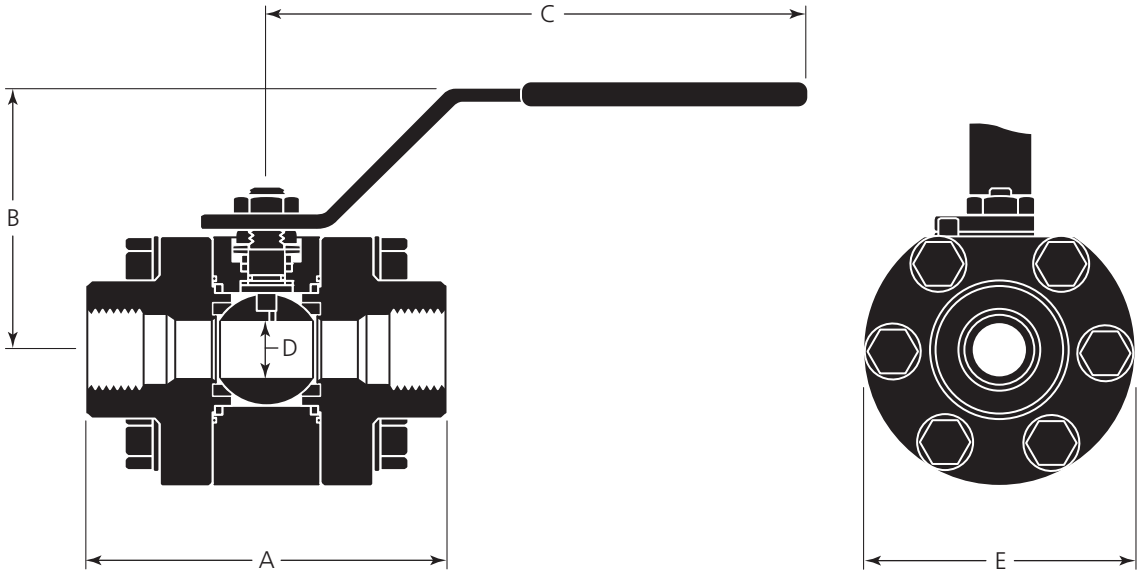
Mega Star Series

Standard Features

Series 6336: Full Port 1/4"-1", 6000 psi, 1 1/4"-2", 4000 psi

- Encapsulated Devlon® Seats
- Three-Piece Bolted Construction
- Grafoil® Packing
- Double Body Seals
- Firesafe to API 607
- NACE MR0175
- Available in Forged A350 LF2 and F316 Body Materials, 316 Stainless Steel Ball & Stem
- Standard ISO 5211 Mounting Pad for Valves 3/4" & Larger

Dimensional Data (in.)

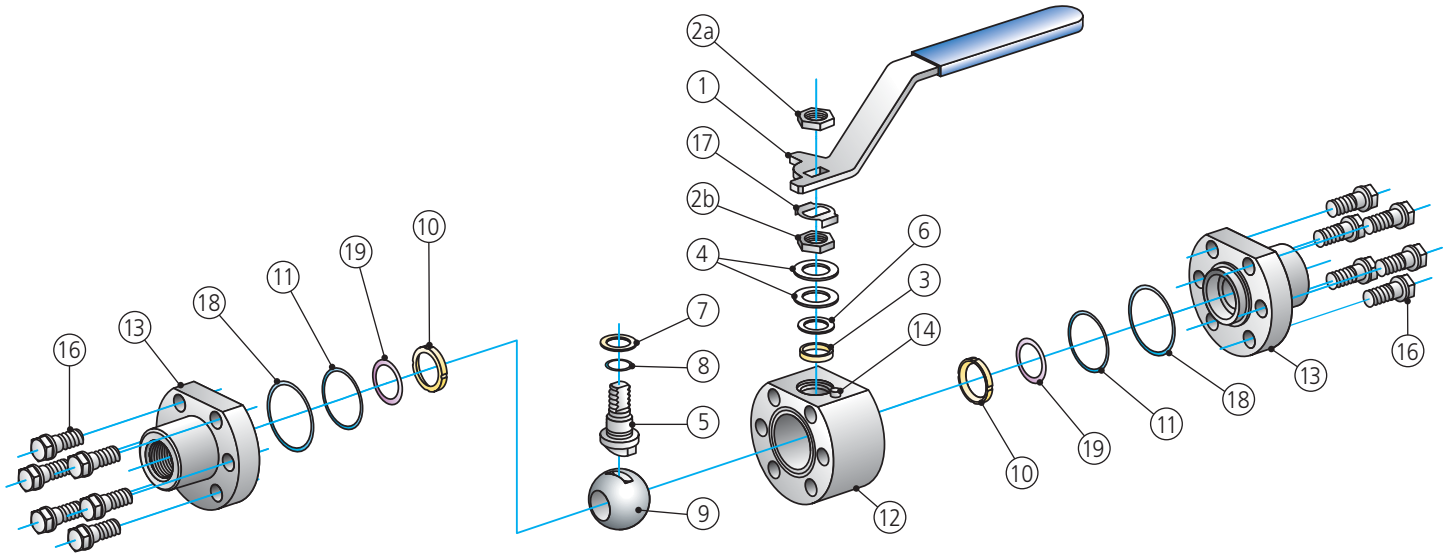


Series 6333, Full Port • 1/4"-2"

Size (in.)	Dimensions (in.)						Weight (lbs.)	
	A (Thrd)	A (SW)	B	C	D	E	Thrd	SW
1/4	4.00	8.50	3.35	7.60	0.44	3.15	6.6	8.9
3/8	4.00	8.50	3.35	7.60	0.44	3.15	6.6	8.9
1/2	4.00	8.50	3.35	7.60	0.44	3.15	6.6	8.9
3/4	5.00	9.00	3.75	7.60	0.61	3.85	2.25	14.4
1	5.50	10.00	4.33	8.85	0.83	4.33	14.4	17.8
1 1/4	6.70	11.00	5.50	13.75	1.34	5.32	30.0	36.5
1 1/2	6.70	12.00	5.50	13.75	1.34	5.32	30.0	37.8
2	7.85	14.50	5.90	13.75	1.70	5.90	41.0	52.2

PBV® Series 6336 Threaded Ball Valve

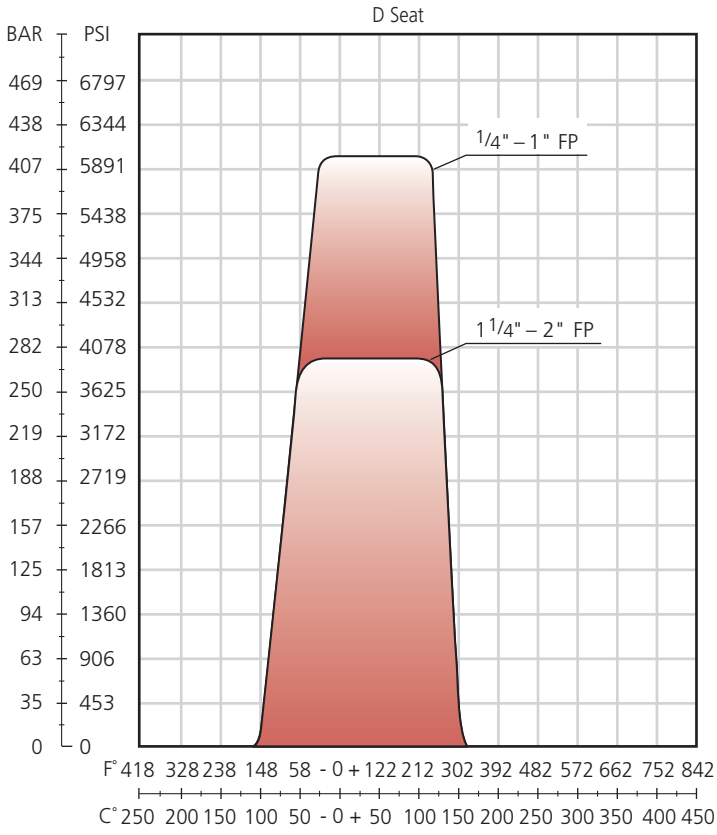
Parts & Engineering Data



Parts & Materials

No.	Qty.	Description	Materials, Series 6336	
			A350 LF2	F316
1	1	Handle	CS Galvanized Plastic Cover	
2a/2b	2	Nut	CS Cadmium Plated	316 SS
3	1	Packing Ring	Graphite	
4	2	Spring Washer	Stainless Steel	
5	1	Antistatic Stem	316 SS	
6	1	Gland Follower	316 SS	
7	1	Thrust Washer	RPTFE	
8	1	Stem O-Ring	Viton®	
9	1	Ball	316 SS	
10	2	Seats	Devlon® V	
11	2	Body Seal	Graphite	
12	1	Body	ASTM A350 LF2	ASTM A182 F316
13	2	End Connections	ASTM A350 LF2	ASTM A182 F316L
14	1	Stop Pin	Carbon Steel	304 SS
16	6/8/10	Bolt	ASTM A193 L7M	ASTM A193 B8M
17	1	Stop Washer	Stainless Steel	
18	2	Body Seal	Viton®	
19	2	Seat Ring	PTFE	

Pressure Temperature



Soft Parts Repair Kit

No.	Qty.	Part Name	Materials
3	1	Packing Ring	Graphite
7	1	Thrust Washer	RPTFE
8	1	Stem O-Ring	Viton®
10	2	Seats	Devlon® V
11	2	Body Seals	Graphite
18	2	Body Seals	Viton®

Flow Coefficient (C_V)

Full Port, Size (in.)							
1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
8	8	8	25	34	100	100	100

Flow Data: Flow rates were determined for ball valves in fully open position and a water temperature of 60˚F (15˚C). C_V value is the full capacity flow rate through the ball valve in gallons/min. of water at 60˚F with a pressure of one psi.

PBV® Multi-Port Series 5338/6338 Threaded & Socketweld Ball Valves

3-Way Multi-Port Series

Standard Features

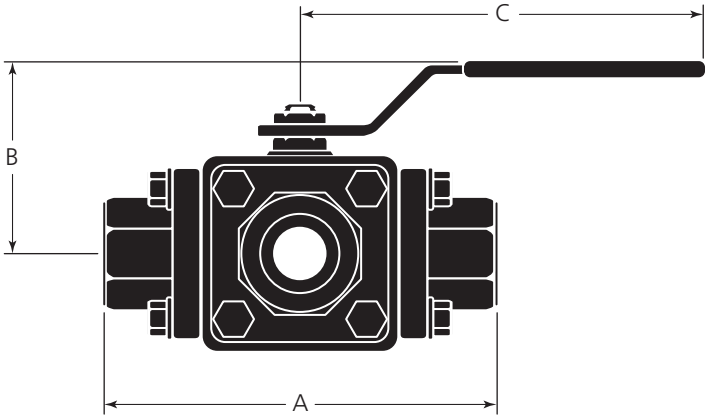
Series 5338: Reduced Port 1/2"-3", 1500 psi

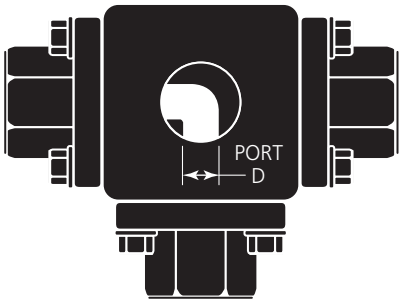
Series 6338: Full Port 1/4"-2 1/2", 1500 psi

- Three-Piece Bolted Construction
- Available in Forged A350 LF2 & F316 Body Materials, 316 Stainless Steel Ball & Stem
- Carbon Filled PTFE Seats
- Double Body Seals
- Grafoil® Packing
- Standard ISO 5211 Mounting Pad
- Available in T & L Port Configurations

Note: Firesafe not Available Due to Design Configuration

Dimensional Data (in.)





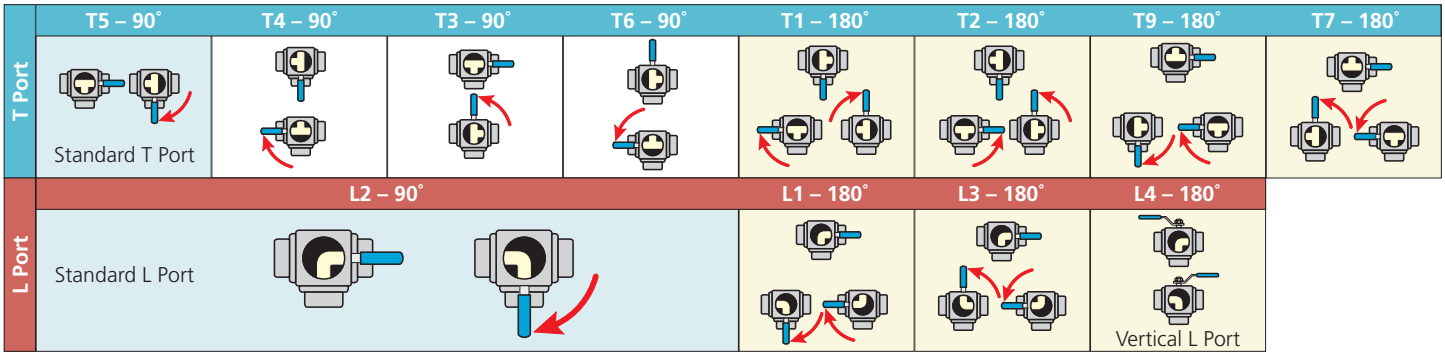
Series 5338, Reduced Port • 1/2"-3"

Size (in.)	Dimensions (in.)					Weight (lbs.)
	A (Thrd)	A (SW)	B	C	D	
1/2	4.45	4.45	2.75	6.00	0.44	5.0
3/4	4.70	4.70	3.00	6.00	0.56	6.6
1	5.90	5.90	3.40	7.60	0.83	11.0
1 1/4	6.25	6.25	3.85	8.85	1.00	15.4
1 1/2	7.15	7.15	4.45	8.85	1.25	22.0
2	7.90	7.90	4.65	8.85	1.50	30.0
2 1/2	10.30	11.90	5.30	16.54	1.93	121.0
3	16.65	16.65	6.50	16.54	2.50	143.0

Series 6338, Full Port • 1/4"-2 1/2"

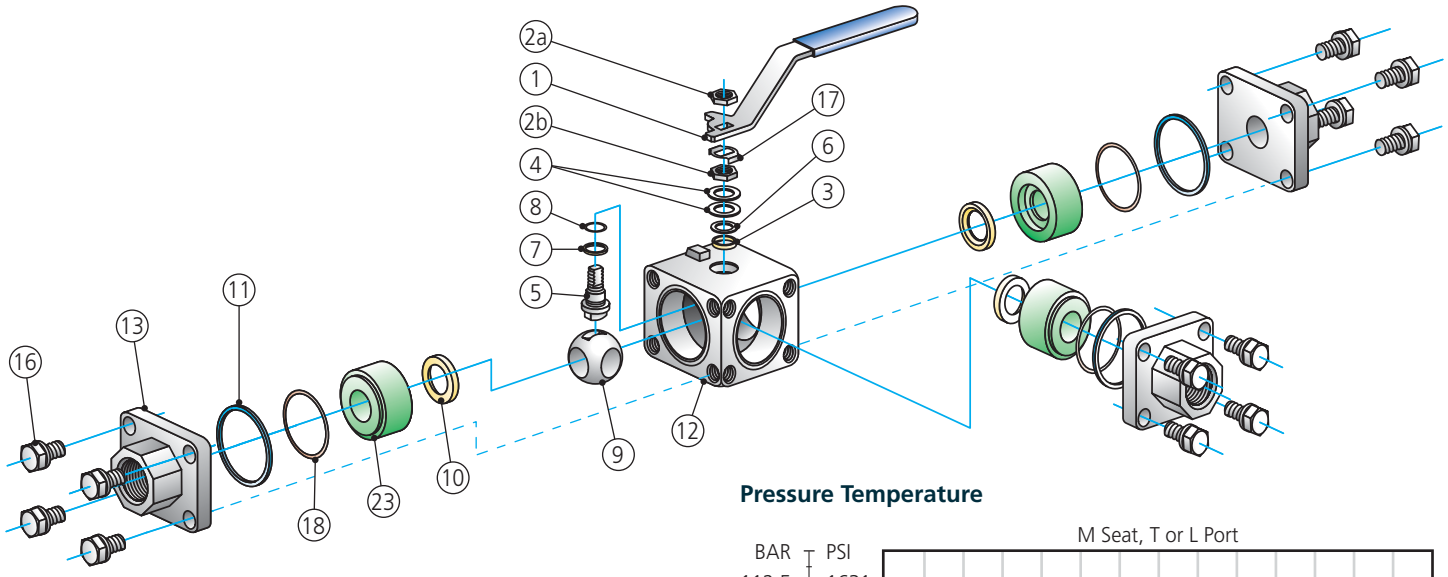
Size (in.)	Dimensions (in.)					Weight (lbs.)
	A (Thrd)	A (SW)	B	C	D	
1/4	4.45	4.45	2.75	6.00	0.44	5.0
3/8	4.45	4.45	2.75	6.00	0.44	5.0
1/2	4.70	4.70	3.00	7.60	0.56	6.6
3/4	6.00	6.00	3.40	7.60	0.83	11.0
1	6.25	6.25	3.85	8.85	1.00	15.4
1 1/4	7.20	7.20	4.45	8.85	1.25	22.0
1 1/2	7.90	7.90	4.65	8.85	1.50	30.0
2	10.30	11.90	5.30	16.54	1.93	121.0
2 1/2	16.65	16.65	6.50	16.54	2.50	143.0

Available Port Configurations



PBV® Multi-Port Series 5338/6338 Threaded & Socketweld Ball Valves

Parts & Engineering Data



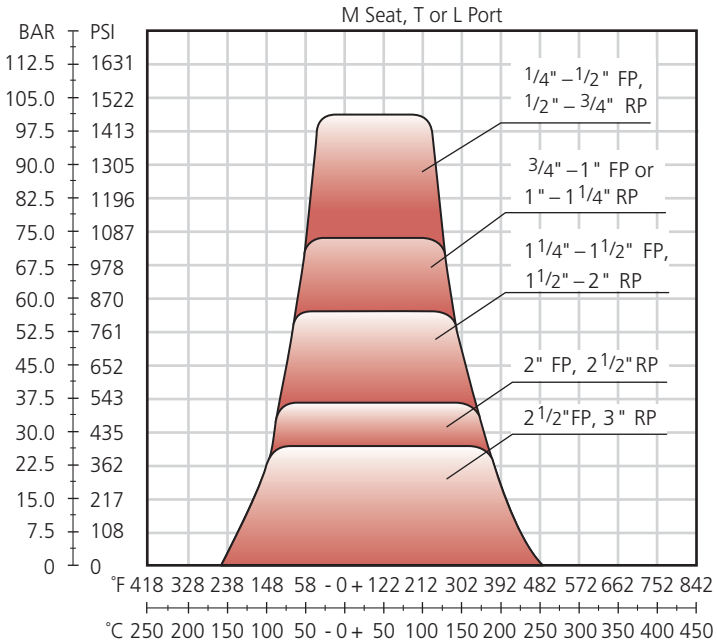
Parts & Materials

No.	Qty.	Description	Std. Materials, Ser. 5338/6338	
			A350 LF2/316	F316/F316
1	1	Handle	CS Galvanized Plastic Cover	
2a/2b	2	Nut	CS Cadmium Plated	A194 Gr.8
3	1	Packing Ring	Graphite	
4	2	Spring Washer	302 SS	
5	1	Antistatic Stem	316 SS	
6	1	Gland Follower	ASTM A182 F316L	
7	1	Thrust Washer	RPTFE	
8	1	Stem O-Ring	Viton®	
9	1	Ball	ASTM A182 F316	
10	4	Seats	RPTFE	
11	3	Body Seal	Graphite	
12	1	Body	ASTM A350 LF2	ASTM A182 F316
13	4	End Connections	ASTM A350 LF2	ASTM A182 F316L
14	1	Stop Pin	Carbon Steel	Stainless Steel
16	12	Bolt	ASTM A193 L7M	ASTM A193 B8M
17	1	Stop Washer	SS ASTM A182 F316	
18	3	Body Seal	TFMC	
23	3	Seat Retainer	ASTM A350 LF2	A182 F316

Soft Parts Repair Kit

No.	Qty.	Part Name	Materials
3	1	Packing Ring	Graphite
7	1	Thrust Washer	RPTFE
8	1	Stem O-Ring	Viton®
10	3	Seats	RPTFE
11	3	Body Seals	RTFE
18	3	Body Seals	Graphite

Pressure Temperature

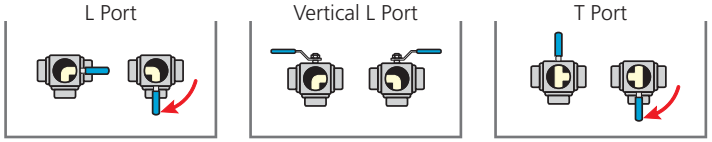


Flow Coefficient (C_V)

Reduced Port, Size (in.)								
—	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
—	5.6	10.5	24	40	60	87.5	175	223

Full Port, Size (in.)							
—	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
—	—	10.5	24	40	60	87.5	175

C_V Values Apply to the Port Configurations Shown Below:



Flow Data: Flow rates were determined for ball valves in fully open position and a water temperature of 60°F (15°C). C_V value is the full capacity flow rate through the ball valve in gallons/min. of water at 60°F with a pressure of one psi. **Note:** When T Port works like the 2-way valves, use C_V values for PBV 5331/6331 and deduct 50%.

PBV® Multi-Port Series 5339/6339 Threaded & Socketweld Ball Valves

4-Way Multi-Port Series

Standard Features

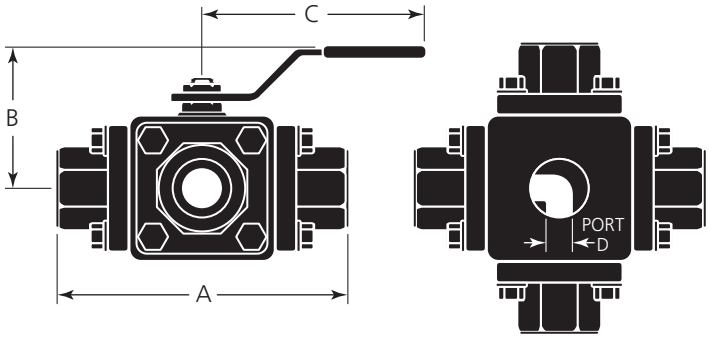
Series 5339 Reduced Port 1/2"-3", 1500 psi

Series 6339 Full Port 1/4"-2 1/2", 1500 psi

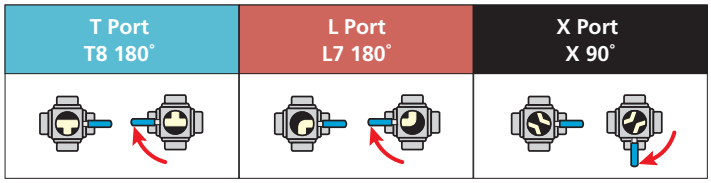
- Four-Way Bolted Construction
- Available in Forged A350 LF2 & F316 Body Materials, 316 Stainless Steel Ball & Stem
- Carbon Filled PTFE Seats
- Double Body Seals
- Grafoil® Packing
- Standard ISO 5211 Mounting Pad
- NACE MR0175
- Available in T, L or X Port Configurations

Note: Firesafe not Available Due to Design Configuration

Dimensional Data (in.)



Available Port Configurations



T & L Port Configurations

Series 5339, Reduced Port • 1/2"-3"

Size (in.)	Dimensions (in.)					Weight (lbs.)
	A (Thrd)	A (SW)	B	C	D	
1/2	4.45	4.45	2.75	6.00	0.44	5.0
3/4	4.70	4.70	2.95	7.60	0.56	6.6
1	5.90	5.90	3.40	7.60	0.83	11.0
1 1/4	6.25	6.25	3.85	8.85	1.00	15.4
1 1/2	7.15	7.15	4.45	8.85	1.25	22.0
2	7.90	7.90	4.65	8.85	1.55	30.0
2 1/2	10.30	11.90	5.30	16.54	1.93	121.3
3	16.65	16.65	6.50	16.54	2.51	143.3

Series 6339, Full Port • 1/4"-2 1/2"

Size (in.)	Dimensions (in.)					Weight (lbs.)
	A (Thrd)	A (SW)	B	C	D	
1/4	4.45	4.45	2.75	6.00	0.44	5.0
3/8	4.45	4.45	2.75	6.00	0.44	5.0
1/2	4.70	4.70	2.95	7.60	0.56	6.6
3/4	5.90	5.90	3.40	7.60	0.83	11.0
1	6.25	6.25	3.85	8.85	1.00	15.4
1 1/4	7.15	7.15	4.45	8.85	1.25	22.0
1 1/2	7.90	7.90	4.65	8.85	1.50	30.0
2	10.30	11.90	5.30	16.54	1.93	121.3
2 1/2	16.65	16.65	6.50	16.54	2.50	143.3

X Port Configurations

Series 5339, Reduced Port • 1/2"-3"

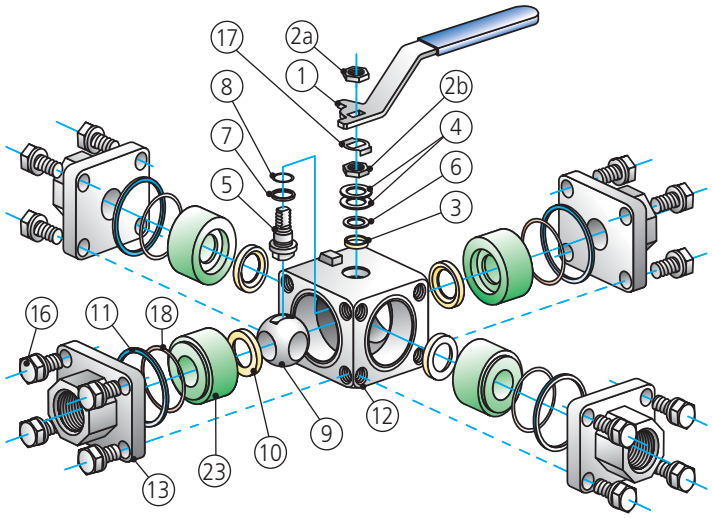
Size (in.)	Dimensions (in.)					Weight (lbs.)
	A (Thrd)	A (SW)	B	C	D	
1/2	4.70	4.70	2.95	7.60	0.25	7.5
3/4	5.90	5.90	3.40	7.60	0.47	12.0
1	6.25	6.25	3.85	8.85	0.71	17.0
1 1/4	7.20	7.20	4.45	8.85	1.10	23.5
1 1/2	7.90	7.90	4.65	8.85	1.28	32.0
2	10.30	11.90	5.30	16.54	1.34	125.0
2 1/2	16.65	16.65	6.50	16.54	1.65	150.5

Series 6339, Full Port • 1/4"-2 1/2"

Size (in.)	Dimensions (in.)					Weight (lbs.)
	A (Thrd)	A (SW)	B	C	D	
1/4	4.70	4.70	2.95	7.60	0.25	7.5
3/8	4.70	4.70	2.95	7.60	0.25	7.5
1/2	5.90	5.90	3.40	7.60	0.47	12.0
3/4	6.25	6.25	3.85	8.85	0.71	17.0
1	7.20	7.20	4.45	8.85	0.83	23.5
1 1/4	7.90	7.90	4.65	8.85	1.10	32.0
1 1/2	10.30	11.90	5.30	16.54	1.34	125.0
2	16.65	16.65	6.50	16.54	1.65	150.5

PBV® Multi-Port Series 5339/6339 Threaded & Socketweld Ball Valves

Parts & Engineering Data



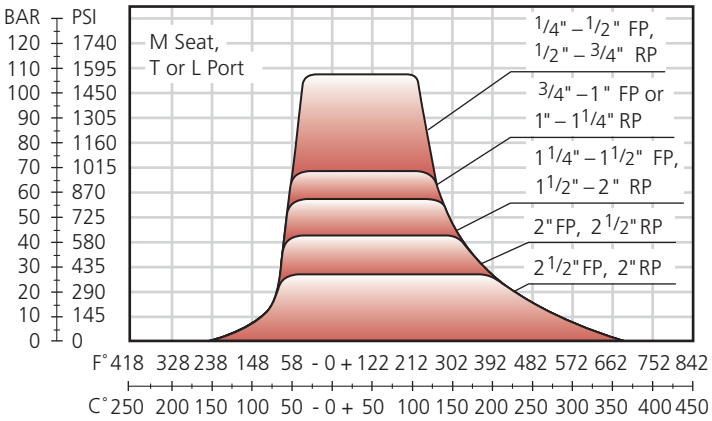
Parts & Materials

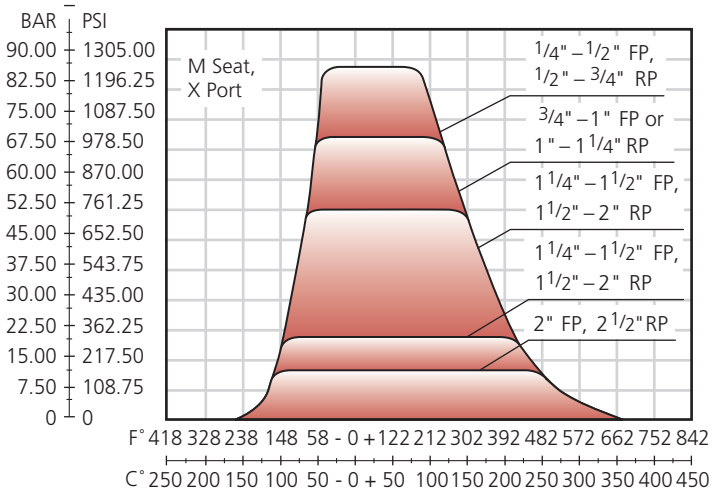
No.	Qty.	Description	Std. Materials, 5339/6339	
			A350 LF2/316	F316/F316
1	1	Handle	CS Galvanized Plastic Cover	
2a/2b	2	Nut	CS Cadmium Plated	A194 Gr.8
3	1	Packing Ring	Graphite	
4	2	Spring Washer	302 SS	
5	1	Antistatic Stem	316 SS	
6	1	Gland Follower	ASTM A182 F316L	
7	1	Thrust Washer	PTFE + 25% Carbographite	
8	1	Stem O-Ring	Viton®	
9	1	Ball	ASTM A182 F316	
10	4	Seats	RPTFE	
11	4	Body Seal	Graphite	
12	1	Body	ASTM A350 LF2	ASTM A182 F316
13	4	End Connections	ASTM A350 LF2	ASTM A182 F316L
14	1	Stop Pin	Carbon Steel	Stainless Steel
16	16	Bolt	ASTM A193 L7M	ASTM A193 B8M
17	1	Stop Washer	SS ASTM A182 F316	
18	4	Body Seal	TFMC	
23	4	Seat Retainer	ASTM A350 LF2	A182 F316

Soft Parts Repair Kit

No.	Qty.	Part Name	Materials	
			T or L Port	X Port
3	1	Packing Ring	Graphite	Graphite
7	1	Thrust Washer	RPTFE	RPTFE
8	1	Stem O-Ring	Viton®	Viton®
10	4	Seats	Devlon® V	20% C 5% Gr. Filled PTFE
11	4	Body Seals	RTFE	Graphite
18	4	Body Seals	Graphite	Viton®

Pressure Temperature





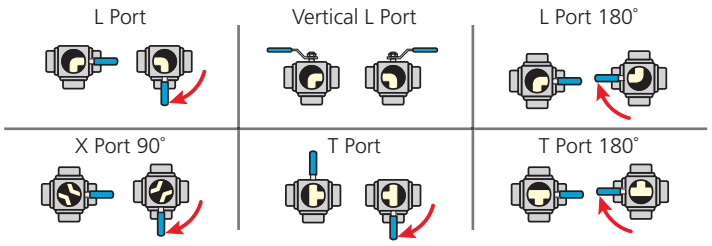
Flow Coefficient (C_V)

Reduced Port, Size (in.)								
—	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
—	5.6	10.5	24	40	60	87.5	175	223

Full Port, Size (in.)							
—	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
—	—	10.5	24	40	60	87.5	175

X Port, Size (in.)								
1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
2.8	2.8	2.8	9.5	22	36	60	90	164

C_V Values Apply to the Port Configurations Shown Below:



Flow Data: Flow rates were determined for ball valves in fully open position and a water temp. of 60°F (15°C). C_V value is the full capacity flow rate through the ball valve in gal./min. of water at 60°F with a pressure of 1 psi. **Note:** When T Port works like the 2-way valves, use C_V values for PBV 5331/6331 and deduct 50%.

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OUR CORE VALUES

Integrity: In everything we do, in every interaction, both internally and externally, we strive to operate with the upmost integrity and mutual respect.

Long-term view: We are building our company for the long-term, a company that we can be proud of.

Open communication: We believe partnerships with our customers and co-workers must be based on trust, professionalism and transparency.

Customer focused: Our products enhance our customer's performance and we listen to their needs and work with them to solve their challenges.

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No one gets hurt: The safety of our employees and customers is our first priority coupled with a healthy respect for the environment.

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