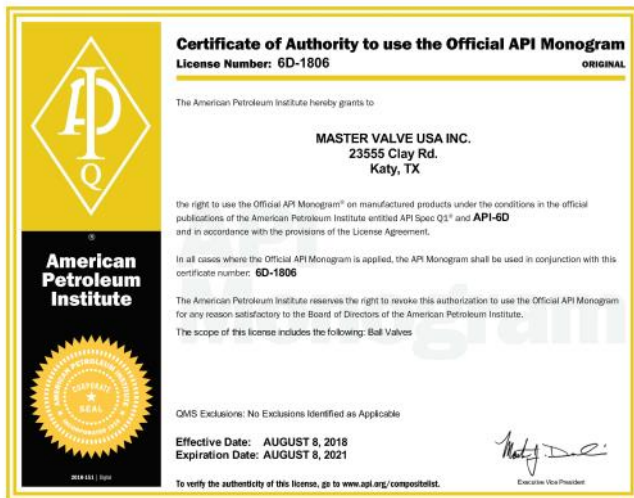


# Master Valve G-Series Trunnion Ball Valve



Coretech Flow America INC

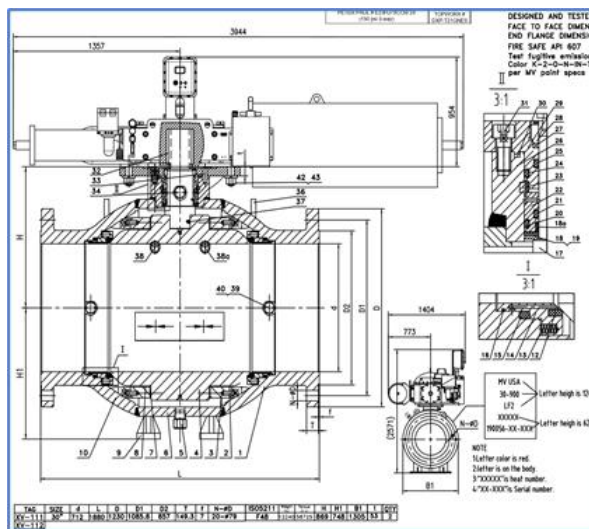
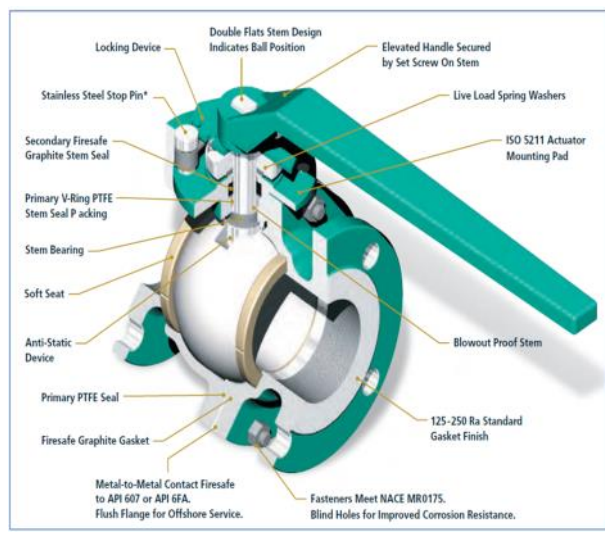
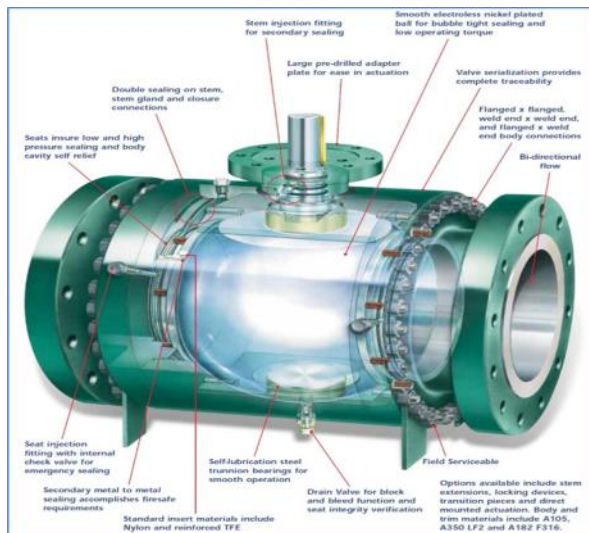
# Zero Leakage Ball Valve -Strategically Located in the Heart of Oil & Gas -Houston, Texas



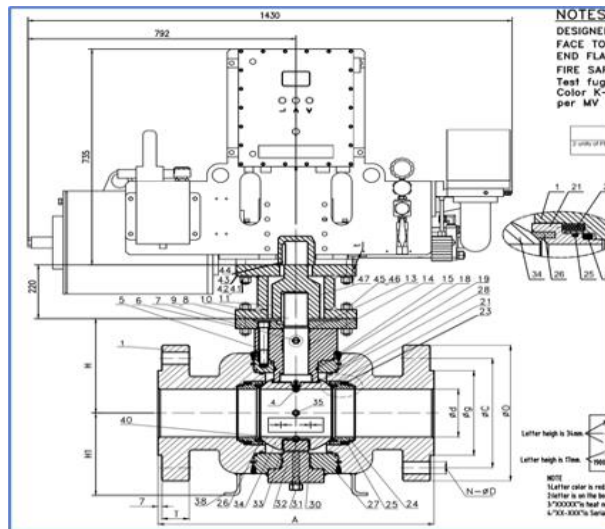
# Innovative Engineering Design

Based on years of valve application experience and material breakthrough, Master Valve’s innovative ball valve designs deliver following features to our customers:

- Low stem torques, typically 20% lower than the norm, which drives your automation costs lower
- Better performance in sealing and leak protection due to new materials used
- High featured sealing design such as double piston effect (DPE) with downstream/upstream redundant seals. A customer buys 1 valve with 2 shutdown production in place



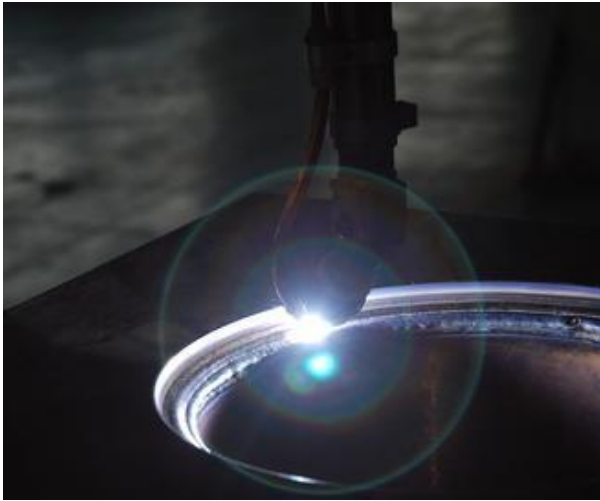
FULLY WELDED BALL VALVE WITH ACTUATOR



FULLY WELDED BALL VALVE WITH ACTUATOR

# Manufacturing Capabilities

Master Valve has access to world class manufacturing and sourcing capabilities and top-notch quality control in the whole supply chain, covering forging, heat treatment, machining, assembly, coating, painting and final testing. We learned to handle high quality materials from API 6A high pressure and high integrity requirements. In addition to the strong manufacturing and sourcing capabilities shared with our partner companies, Master Valve establishes a 20,000 square feet factory in the heart of Houston to house assembly, testing and customer support operations.



# Quality Control

- All manufacturing is conducted under API Q1/ ISO 9001 certified quality management system
- Products are stringently manufactured in accordance with applicable industry standards and to specific Master Valve Design Specifications.
- Designs are compliant with ASME B16.34, API 608, API 600, API 6D, API 6A and MSS-SP110
- Pressure testing is conducted to API 6D, API 6A, API 598, MSS SP-110 as applicable
- Fire test certifications to API 607 and API 6FA as applicable
- All Master Valve products certified to NACE meet the predefined material requirements of NACE MR-0175/ISO 15156 or NACE MR-0103
- Material Test Reports per EN 10204-1991 3.1.B & EN10204 3.1 available for each valve



# Inventory for Short Lead-Time

Inventory is a critical piece of our business model to make customers life easier. Master Valve and associated companies keep inventory from forging material, work-in-progress to finished valves. In today's environment, our customers need our inventory to cut their project delivery short and archive high Return On Investment (ROI).



# Applications of G1 & G2 Series Forged Ball Valve

- Master Valve manufactures some of most dependable forged steel ball valves in the industry. Master Valve offers G Series forged ball valves and is a complete solution for your flow control applications. Master Valve manufactures a complete range of API 6D floating and trunnion mounted ball valves in a size range of 2" to 56" in pressure ratings of up to class 2500. Master Valve manufactures a complete range of API 6A trunnion mounted ball valves in a size range of 2" to 30" in pressure ratings of up to API 10000.
- G1 & G2 Series valves are designed, manufactured, and tested in accordance with respective API, ASME, And ANSI standards, for instance, API 6D, API 6A, API Q1, API-607, ASME B16.34, ASME B16.5, ASME B16.47, ASME B16.10, ASEM B16.25, MR-01-75, TA-Luft/ISO 15848 et al. In the standard versions, G1 & G2 series ball valves are specified for transmission pipeline, pumping stations, compressor stations, gas processing plants, rejection units, offshore platforms, and chemical processing.



- [G1 Series Valve](#)

3-Piece side entry forged trunnion mounted ball valve



- [G2 Series Valve](#)

2-Piece side entry forged trunnion mounted ball valve

# G1 and G2 Series

## Design Standards and Design Features

### Design Standards

#### **American Petroleum Institute**

- API 6D -- Specifications for pipeline valves
- API 607--- Fire test for soft-seated ball valves
- API 6FA ---Fire test for valves
- API Q1 --- Specifications for quality programs
- API 6A ----Specifications for Wellhead and Christmas tree equipment

#### **American National Standard**

- ASME/ANSI B16.10 --- Face-to-face and end-to-end dimensions on ferrous valves
- ASME/ANSI B16.5 --- Steel pipe flanges and flanged fittings
- ASME/ANSI B16.47 --- Large Diameter Steel Flanges
- ASME/ANSI B16.25 --- Buttwelding ends
- ASME/ANSI B16.34 --- Steel valves-flanged and buttweld end
- ASME/ANSI B31.1 --- Chemical plant and petroleum refinery piping

#### **Manufacturers Standardization Society**

- MSS SP-25 --- Standard marking system for valves
- MSS SP-55 --- Quality Standard for Steel Casting

#### **ISO Standards**

- ISO 15848-1 Industrial Valves – Measurement, Test and Qualification procedures for fugitive emissions
- ISO 5211 Industrial valves — Part-turn actuator attachment for actuator mounting pad

#### **National Association of Corrosion Engineers**

- NACE MR-01-75 --- Sulfide stress cracking materials for oilfield equipment

### Standard Features

- Double block and bleed
- Spring loaded floating seat design
- Cavity pressure self-relieving
- Multiple seal for protection against external leakage
- Stem separated from the ball and anti-blowout design
- Triple seal for protection against stem leakage / Meet TA LUFT & ISO 15848
- Stainless steel trim parts for 4" and smaller / ENP plating for trim parts for 6" and up
- Antistatic device;
- Emergency stem and seats sealant injection

### Features upon Request

- Fully Welded Body ball valve
- Double piston effect design (DIB-1 type and DIB-2 type)
- Live-loaded stem packing feature
- Lip seal design
- Cryogenic service design (-196C or -320F)




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*Tough Ball valve for Toughest Flow*



# G1 and G2 Series

## Design Standards and Design Features

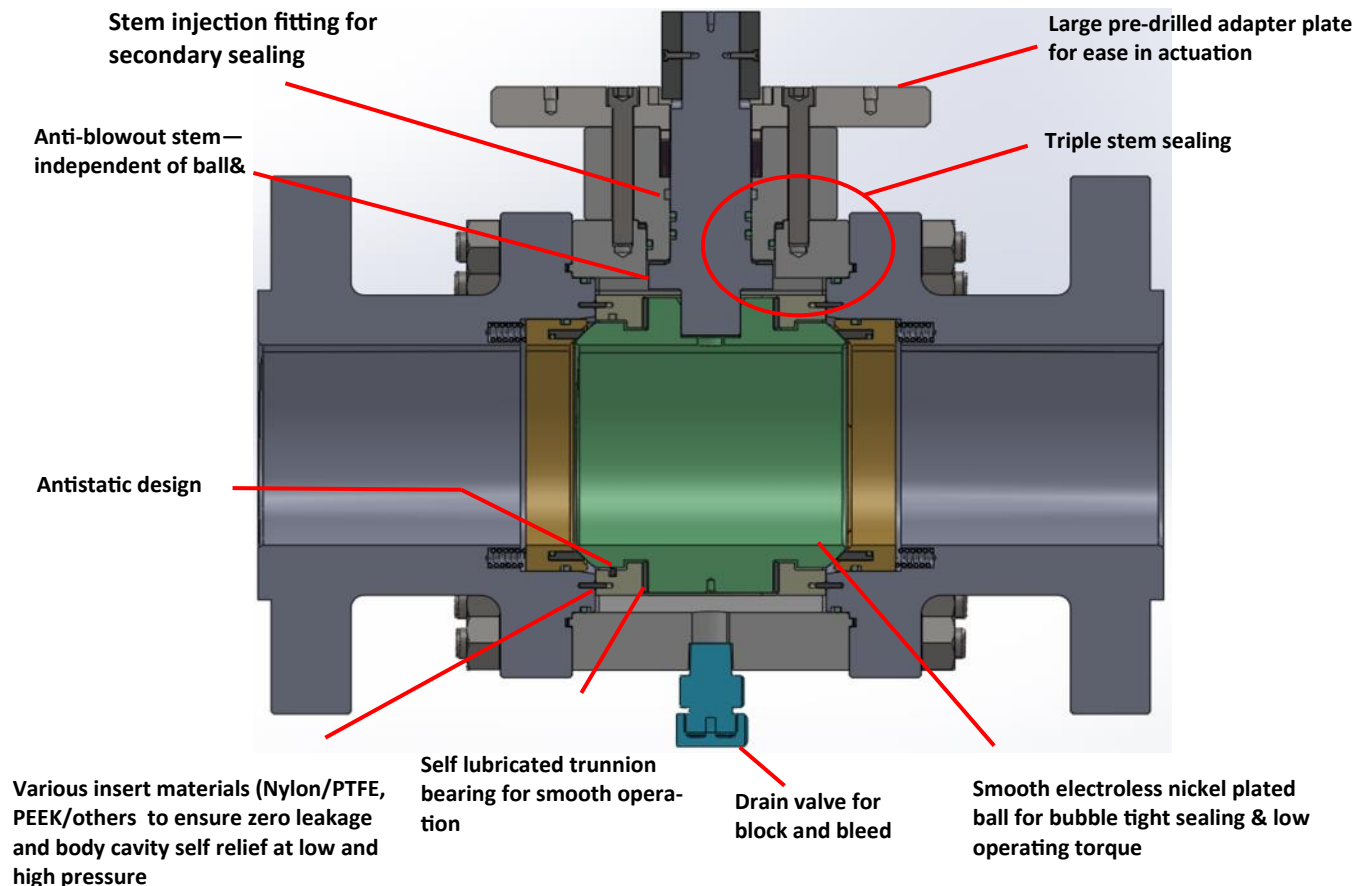
Manufacturing range of API 6D G series is shown in the table below. Other sizes and special classes are also available against specific request.

Size		ASME CLASS					
NPS	DN	150	300	600	900	1500	2500
2	50	G1; G2	G1; G2	G1; G2	G1; G2	G1	G1
3	80	G1; G2	G1; G2	G1; G2	G1; G2	G1	G1
4	100	G1; G2	G1; G2	G1; G2	G1; G2	G1	G1
6	150	G1; G2	G1; G2	G1; G2	G1	G1	G1
8	200	G1; G2	G1; G2	G1; G2	G1	G1	G1
10	250	G1; G2	G1; G2	G1; G2	G1	G1	G1
12	300	G1; G2	G1; G2	G1; G2	G1	G1	G1
14	350	G1	G1	G1	G1	G1	*
16	400	G1	G1	G1	G1	G1	*
18	450	G1	G1	G1	G1	G1	*
20	500	G1	G1	G1	G1	G1	*
24	600	G1	G1	G1	G1	G1	*
26	650	G1	G1	G1	G1	G1	
28	700	G1	G1	G1	G1	G1	
30	750	G1	G1	G1	G1	G1	
32	800	G1	G1	G1	G1	G1	
34	850	G1	G1	G1	G1	G1	
36	900	G1	G1	G1	G1	G1	
40	1000	G1	G1	G1	G1		
42	1050	G1	G1	G1	G1		
46	1150	G1	G1	G1	G1		
48	1200	G1	G1	G1	G1		
56	1400	G1	G1	G1			

\* --- Available upon special request

# Standard Design Features -G Series Forged Ball Valve

- Double block and bleed feature
- Fire safe Design
- Body cavity pressure self relief
- Sealant injection with internal check valve for emergency sealing
- Piggable bore
- Flanged x flanged, weld end x weld end, flanged x weld, RTJ end body connection options
- Valve serialization for complete traceability
- Spare parts stock available for quick delivery



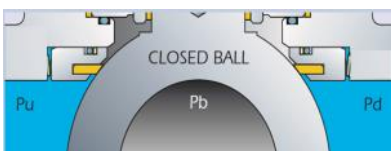
**Figure 1 G1 & G2 Series Standard Design Features**

# G1 and G2 Series Design Standards and Design Features

Manufacturing range of API 6A G series is shown in the table below. Other sizes and special classes are also available against specific request.

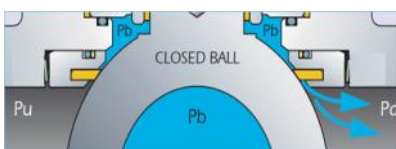
Pressure Rating	Size												
	2 1/16	2 9/16	3 1/8	4 1/16	5 1/8	7 1/16	9	11	13 5/8	16 3/4	21 1/4	26 3/4	30
<b>API 2000</b>	G1; G2	G1; G2	G1; G2	G1; G2	G1; G2	G1; G2	G1; G2	G1	G1	G1	G1	G1	G1
Pressure Rating	Size												
	2 1/16	2 9/16	3 1/8	4 1/16	5 1/8	7 1/16	9	11	13 5/8	16 3/4	20 3/4	26 3/4	30
<b>API 3000</b>	G1	G1	G1	G1	G1	G1	G1	G1	G1	G1	G1	G1	G1
Pressure Rating	Size												
	2 1/16	2 9/16	3 1/8	4 1/16	5 1/8	7 1/16	9	11	13 5/8	16 3/4	18 3/4	21 1/4	
<b>API 5000</b>	G1	G1	G1	G1	G1	G1	G1	G1	G1	G1	G1	G1	
Pressure Rating	Size												
	1 13/16	2 1/16	2 9/16	3 1/16	4 1/16	5 1/8	7 1/16	9	11				
<b>API 10000</b>	G1	G1	G1	G1	G1	G1	G1	G1	G1				

## Double Block and Bleed



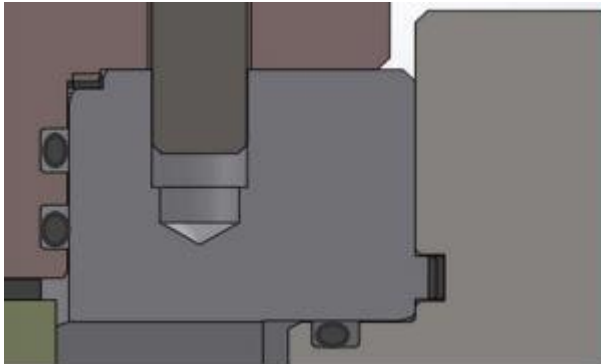
All G1 series and G2 series valves are designed and manufactured to facilitate double block and bleed applications. In addition, all G1 series and G2 series can be completely flushed with valve under pressure and in the closed position. This is achieved by utilizing the drain valve and vent hole in combination. The illustration shows both the upstream pressure (Pu) and downstream pressure (Pd) being held independently from the body pressure (Pb). Both seats can hold bubble tight sealing simultaneously on both sides of the ball.

## Cavity Pressure Self-relieving



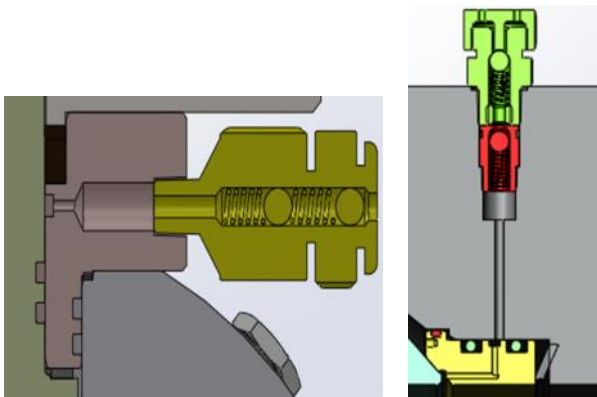
When a trunnion ball valve in the closed position, media will be trapped in the body cavity. Unless this media is drained, it will be subjected to thermal expansion and contraction. All G1 series and G2 series are designed to self-relieve, allowing the media in the body to escape to the pipeline.

# G1 and G2 Series Design Standards and Design Features



## Multiple Seals for Leakage Protection & Blow-out Proof Stem Design

- Multiple seal combination of O-ring and spiral wound gasket ensures perfect joint sealing and fire safe.
- All G1 series and G2 series are designed and manufactured to facilitate double sealing on body/closure connection and body/gland, triple seal on stem/gland connection.
- The blow-out proof stem enables positive stem retention.



## Emergency Sealant/Lubricant Injection

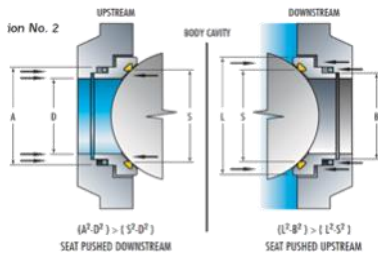
Sealant lubricant fittings are standard on G1 series and G2 series valves. In the event of seat insert or stem seal damage, leakage can occur. Emergency sealant/lubricant injection can save the integrity of the valve by incorporating a seal around the stem or between the seat and the ball until properly serviced. These fittings also act as a lubricant port for regular maintenance.



## Fire Safe Design

- Spring loaded floating seats maintain contact with the ball and provide tight shutoff even at low pressure differential and provide body cavity self relief.
- In the event of fire, soft insert gets burnt and spring loaded seats ensure metal to metal sealing

# G1 and G2 Series Design Standards on Request



## Double Piston Effect Design & Fully Welded Design

- Master Valve often times provides a two-way seat design (DIB). This design allows for downstream seat sealing in the case of an upstream seat failing to seal. This design also provides for the function of testing a valve in-line and in full open position with the drain or bleed valve open to the air.



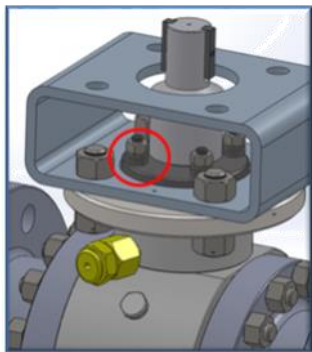
## Extended Stem Design for Buried Service

- Depending on customers' needs, Master Valve could supply Fully Welded valves installed underground or in a remote location. These valves can be operated with an optional extended stem.
- All the drain, vent, and emergency sealant connections can be operated using extended connection pipes firmly attached to the stem protective cover.



## Lip Seal Design/ Cryogenic Services

- For service temperatures below -50F, Master Valve standard design includes lip seals and/or stem extensions using selected materials for your application. The 12" gas column shown at right is a standard feature to isolate the gear operator and stem seals from the cold media.



## Live-loaded Stem Packing

- For frequently cycled valves, high temperature and thermal cycling valves, critical application valves, safety or difficult located valves, and history of packing leak valve, Master Valve® standard valves provide a feature with live loading on the gland follower. Belleville springs are used to maintain load on the gland follower. They are typically arranged in a stack on the stud to increase the elasticity of the system.

# How to Order

<b>040</b>	<b>G1</b>	<b>F</b>	<b>1</b>	<b>6</b>	<b>1</b>	<b>6</b>	<b>7</b>	<b>1</b>	<b>N</b>	<b>H</b>	<b>N</b>	<b>G</b>	
Bore size	Value Type	Port config.	End connection	Pressure class	Body material	Ball/Seat material	Stem material	Bolting material	Seat insert	Seal code	NACE option	Operator	Mod code

Bore Size	
005=0.5"	340=34"
007=0.75"	360=36"
010=1"	400=40"
015=1.5"	420=42"
020=2"	460=46"
030=3"	480=48"
040=4"	560=56"
060=6"	01H=113/16"
080=8"	02A=2 1/16"
100=10"	02E=2 9/16"
120=12"	03B=3 1/18"
140=14"	04A=4 1/16"
160=16"	05B=5 1/8"
180=18"	07A=7 1/16"
200=20"	13F=13 5/8"
240=24"	16G=16 3/4"
260=26"	18G=18 3/4"
280=28"	20G=20 3/4"
300=30"	26G=26 3/4"
320=32"	

Valve Type
<b>G1 = 3-piece side entry trunnion ball valve</b>
<b>G2 = 2-piece side entry trunnion ball valve</b>
<b>H2 = 2-piece high temp trunnion ball valve</b>

End Connection
<b>1 = Flanged RF</b>
<b>2 = Flanged RTJ</b>
<b>3 = Welding End x Welding End</b>
<b>4 = Flanged RF x Welding End</b>
<b>5 = Flanged RTJ x Welding End</b>
<b>B = API 6A Type 6B Flange</b>
<b>C = API 6A Type 6BX Flange</b>
<b>O = Special</b>

Port Configuration
<b>F = Full port</b>
<b>R = Reduced port</b>
<b>S = Special port</b>

Pressure Class
<b>1 = 150#</b>
<b>3 = 300#</b>
<b>4 = 400#</b>
<b>6 = 600#</b>
<b>9 = 900#</b>
<b>A = 1500#</b>
<b>B = 2500#</b>
<b>C = 2000 psi of API 6A</b>
<b>D = 3000 psi of API 6A</b>
<b>E = 5000 psi of API 6A</b>
<b>F = 10000 psi of API 6A</b>
<b>G = 15000 psi of API 6A</b>
<b>O = Special</b>

Body Material
<b>1 = A350 LF2</b>
<b>3 = CF3/SS304L/F304</b>
<b>4 = CF3M/SS316L/F316L</b>
<b>5 = CF8/SS304</b>
<b>6 = CF8M/SS316/F316</b>
<b>7 = 17-4PH</b>
<b>8 = A29 4130</b>
<b>9 = A105</b>
<b>A = CA15/SS410/F6A</b>
<b>I = Inconel</b>
<b>M = Monel</b>
<b>U = Duplex SS</b>
<b>S = Super Duplex</b>
<b>W = WCB</b>

Ball/Seat Material
<b>1 = A350 LF2</b>
<b>3 = CF3/SS304L/F304</b>
<b>4 = CF3M/SS316L/F316L</b>
<b>5 = CF8/SS304</b>
<b>6 = CF8M/SS316/F316</b>
<b>7 = 17-4PH</b>
<b>8 = A29 4130</b>
<b>9 = A105</b>
<b>A = CA15/SS410/F6A</b>
<b>I = Inconel</b>
<b>M = Monel</b>
<b>U = Duplex SS</b>
<b>W = Super Duplex</b>
<b>O = Special</b>

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# How to Order

Example: **040G1F 1 6 1 6 7 1 N H N G**. This product number (P/N) represents a 4" O1 Series (3-Piece, Side Entry, Trunnion Mounted) Ball Valve, Full Port, Raised Face, ANSI Class 600, A105/A350 LF2 Body, 316SS ball and seat, 17-4 stem, B7M/2HM bolting, Nylon seats, Viton A seals, per NACE MR0175 with gear operator

040	G1	F	1	6	1	6	7	1	N	H	N	G	
Bore size	Value Type	Port config.	End connection	Pressure class	Body material	Ball/Seat material	Stem material	Bolting material	Seat insert	Seal code	NACE option	Operator	Mod code

Stem Material	Seat Insert	Seal Code
<p>1 = A350 LF2</p> <p>3 = CF3/SS304L/F304</p> <p>4 = CF3M/SS316L/F316L</p> <p>5 = CF8/SS304</p> <p>6 = CF8M/SS316/F316</p> <p>7 = 17-4 PH</p> <p>8 = A29 4130</p> <p>9 = A105</p> <p>A = CA15/SS410/F6A</p> <p>B = A29 4140</p> <p>I = Inconel</p> <p>M = Monel</p> <p>U = Duplex SS F51/F55</p> <p>W = Super Duplex</p>	<p>B = Buna-N</p> <p>G = Glass Filled PTFE</p> <p>N = Nylon</p> <p>M = Molon</p> <p>D = Devlon®</p> <p>E = EPDM</p> <p>H = HNBR</p> <p>P = Peek</p> <p>R = Low Temp Buna-N</p> <p>V = Viton® A</p> <p>W = Viton® B</p> <p>T = Lip Seal TFE</p> <p>U = Viton GLT</p> <p>Z = Tungsten Carbide</p> <p>O = Special</p>	<p>B = Buna-N</p> <p>G = Glass Filled PTFE</p> <p>N = Nylon</p> <p>D = Devlon®</p> <p>E = EPDM</p> <p>H = HNBR</p> <p>P = Peek</p> <p>R = Low Temp Buna-N</p> <p>V = Viton® A</p> <p>W = Viton® B</p> <p>T = Lip Seal TFE</p> <p>U = Viton GLT</p> <p>Y = Viton GF</p> <p>O = Special</p>
Bolting Material	Mod Code	Operator
<p>1 = B7M/ 2HM</p> <p>2 = B7/ 2H</p> <p>3 = L7M/ 7M</p> <p>4 = L7/7</p> <p>5 = B8M/ 8M</p> <p>6 = A453 GR. 660</p> <p>O = Special</p>	<p>039 --- Fully welded design with DIB-1</p> <p>057 --- Fully welded design with DBB</p> <p>058 --- Fully welded design with DIB-2</p> <p>067— Fully welded design with DBB + Seat SS410</p>	<p>A = Actuator</p> <p>B = Bare stem</p> <p>G = Gear operator</p> <p>L = Lever</p> <p>O = Special</p>
		NACE Option
		<p>N = NACE</p> <p>S = Non NACE</p>

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## How to Order

**Example:** 060G1R-29-1671-PV-NG. This product number represents a 6" G1 Series (3-Piece, Side Entry, Trunnion Mounted) Ball Valve, Reduced Port, Flanged RTJ, ANSI Class 900, A105/A350 LF2 Body, 316SS ball and seat, 17-4PH stem, B7M/2HM bolting, Peek seats, Viton seals, Fire Safe, Per NACE MR0175 Service with gear operator. DBB

**Example:** 060G2F-16-6671-PT-NB 002. This product number represents a 6" G2 Series (2-Piece, Side Entry, Trunnion Mounted) Ball Valve, Full Port, Raised Face, ANSI Class 600, 316SS Body, 316SS ball and seat, 17-4PH stem, B7M/2HM bolting, Peek seats, Lip seals, Fire Safe, Per NACE MR0175 Service with bear stem. DIB-2

**Example:** 360G1F-29-1181-DH-NA 039. This product number represents a 36" G1 Series (3-Piece, Side Entry, Trunnion Mounted) Ball Valve with Fully Welded Design, Full Port, RTJ, ANSI Class 900, A105/A350 LF2 Body, A105/LF2 + ENP ball and seat, 4130 + ENP stem, B7M/2HM bolting, Devlon seats, HNBR seals, Fire Safe, Per NACE MR0175 Service with Actuator Operated, Mod Code 039. DIB-1

**Example:** 200G1F-46-UUI6-ZT-NA SCH STD. This product number represents a 20" G1 Series (3-Piece, Side Entry, Trunnion Mounted) Ball Valve, Full Port, Flange RF x Welding end, Schedule Standard, ANSI Class 600, Duplex SS F51 Body, Metal-seated Duplex SS ball and seat with tungsten carbide coating, Inconel stem, A453 Gr. 660 bolting, Lip seals, Fire Safe, Per NACE MR0175 Service, Actuator Operated. DBB

**Example:** 07AG1F-BC-1671-NV-SA. This feature number represents a 7 1/16" G1 Series (3-Piece, Side Entry, Trunnion Mounted) Ball Valve, Full Port, API 6A Type 6B Flange, 2000 psi, A105/A350 LF2 Body, 316SS ball and seat, 17-4PH stem, B7M/2HM bolting, Nylon seats, Viton A seals, Fire Safe, for Non NACE and Actuator Operated.



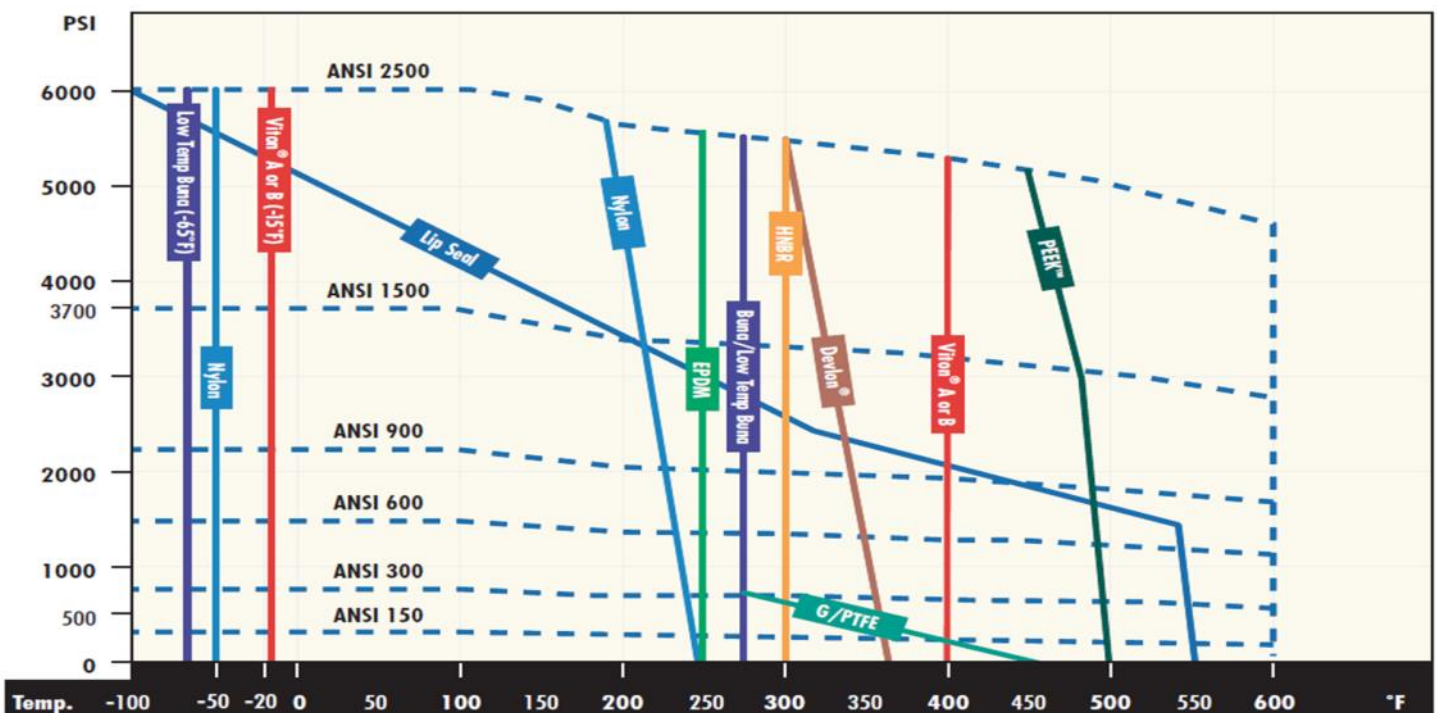
# G Series Material Options

G1 series and G2 series ball valves offer a full range of carbon, alloy and stainless materials. Our standard valves are A105/A350 LF2 steel, B7H/2HM fasteners, Viton seals, and painted with a durable coating. Material test reports in accordance with EN10204.3 are available on each serialized valve. In addition, all G1 series and G2 series trunnion ball valves, with standard trim, have been proven reliable, and fully comply with NACE MR0175. Customers must provide application specific operating conditions for accurate sizing and selection. Inclusive to above, valves with bore diameters 4" and smaller are supplied standard with stainless steel ball, seats and stems. Materials type selected may vary depending on design requirements.

Part	Material Options
Body & Closure	A105/A350 LF2 / F316 / Duplex SS / Inconel
Ball & Seat	A105/A350 LF2 with ENP / SS 410 / A351 CF8M / F316 / 17-4PH / Duplex SS / Inconel / Monel
Stem	ASTM A29 Grade 4130/4140 with ENP / F316 / A564 Type 630 / A479 SS 410 / Duplex SS / Inconel
Seat insert	Nylon / Devlon / Glass filled PTFE / Peek
Gland	ASTM A29 Grade 4130 with ENP / F316 / A564 Type 630 / Duplex SS / Inconel
Trunnion Bearing	Carbon steel or Stainless steel + PTFE coated
Seal	Viton® / Nitril / Buna / HNBR / EPDM / Viton GLT / Kalras / Lip Seal
Studs / Cap Screws	A193 B7M / A320 L7M / A193 B8M
Nut	A 194 2HM / A194 7M / A194 8M

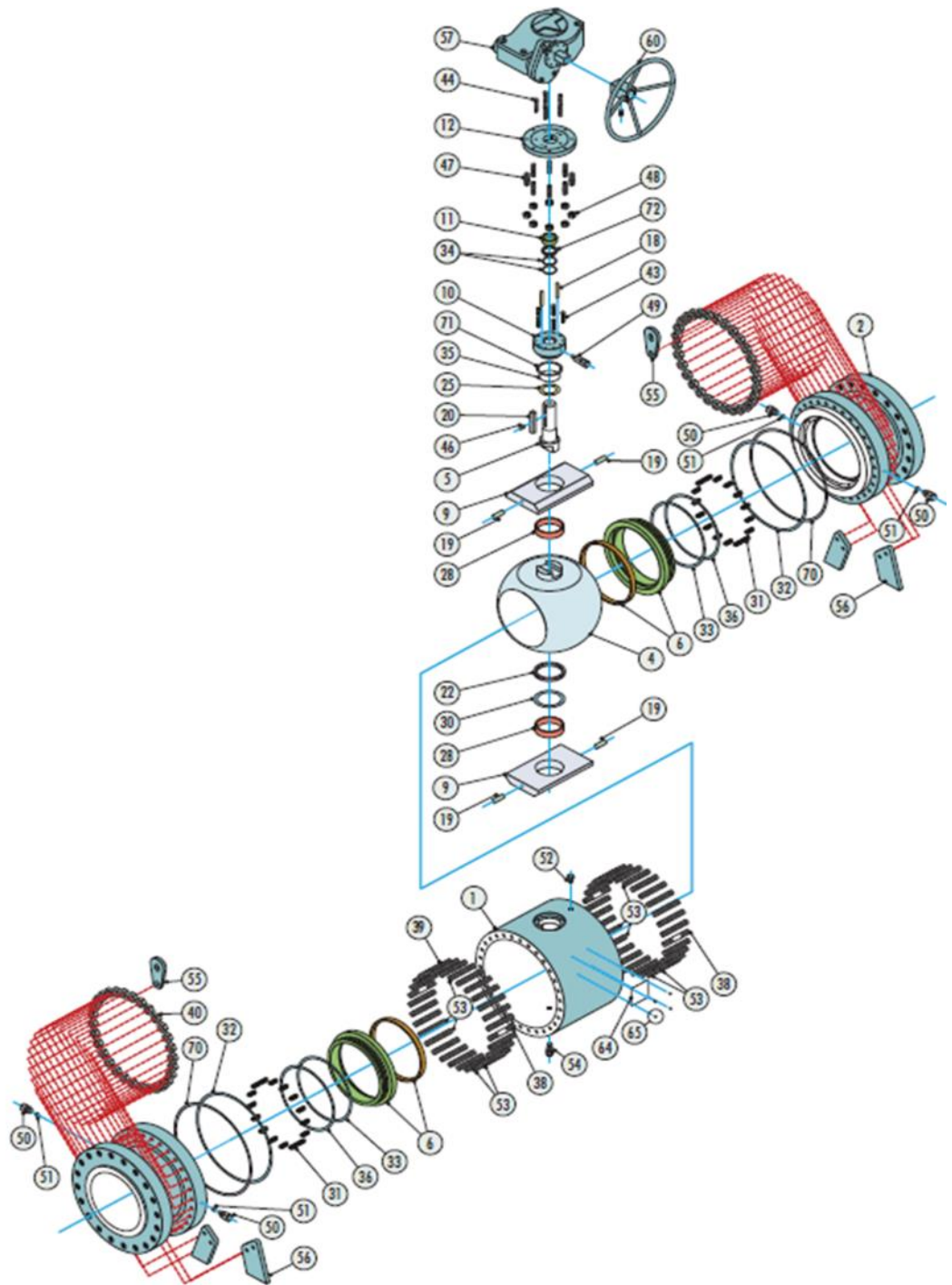
Note: Materials not listed above can be offered on request

**G1 Series and G2 Series Pressure Temperature Ratings**



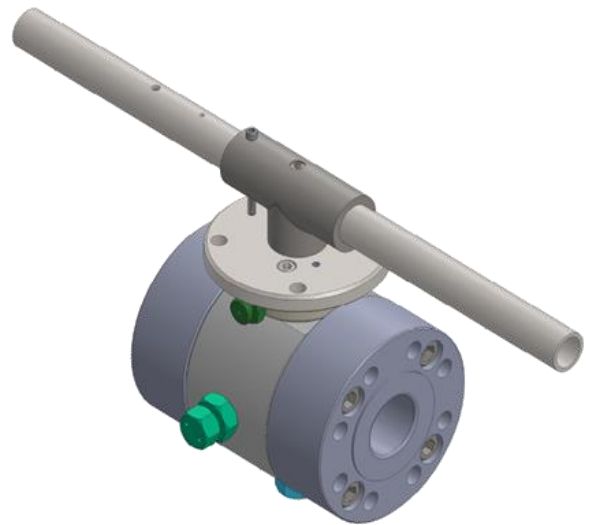
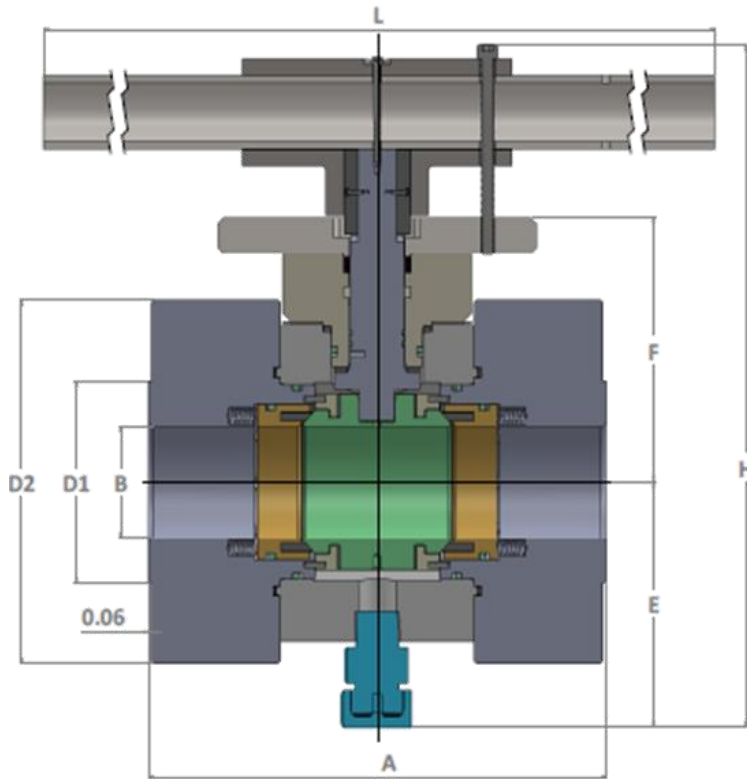
# G1 Series Standard Design General Assembly

No.	Description
1	Body
2	Closure/Flanged End
4	Ball
5	Stem
6	Seat Ring Sub Assembly
9	Bearing Retainer
10	Gland
11	Bushing
12	Adapter Plate
18	Gland Pin
20	Stem Key
22	Ball Thrust Washer
25	Stem Thrust Washer
28	Ball Bearing
31	Seat Spring
32	Body O-ring
33	Seat O-ring
34	Stem O-ring
35	Gland & Trunnion O-ring
36	Emergency Sealant O-ring
38	Location Stud
39	Body Stud
40	Body Nut
43	Gland Cap Screw
44	Adapter Plate Cap Screw
45	Trunnion Cap Screw
46	Stem Key Cap Screw
47	Gear Stud
48	Gear/Adapter Plate Nut
49	Stem Grease Fitting
50	Seat Grease Fitting
51	Check Valve
52	Vent Plug
53	Lifting Lug Stud
54	Drain Valve
55	Lifting Lug
56	Support Leg
57	Worm Gear Operator
60	Handwheel
64	Name Plate
65	Drive Screw
70	Body Gasket
71	Gland & Trunnion Gasket
72	Stem Packing



# G1 & G2 Series Ball Valves' Dimensional Data

The chart and tables below depict G1 & G2 Series ball valves' dimensional data. Please refer to Master Valve General Assembly Drawings for Top Works data.



## Class 150 2" - 4"

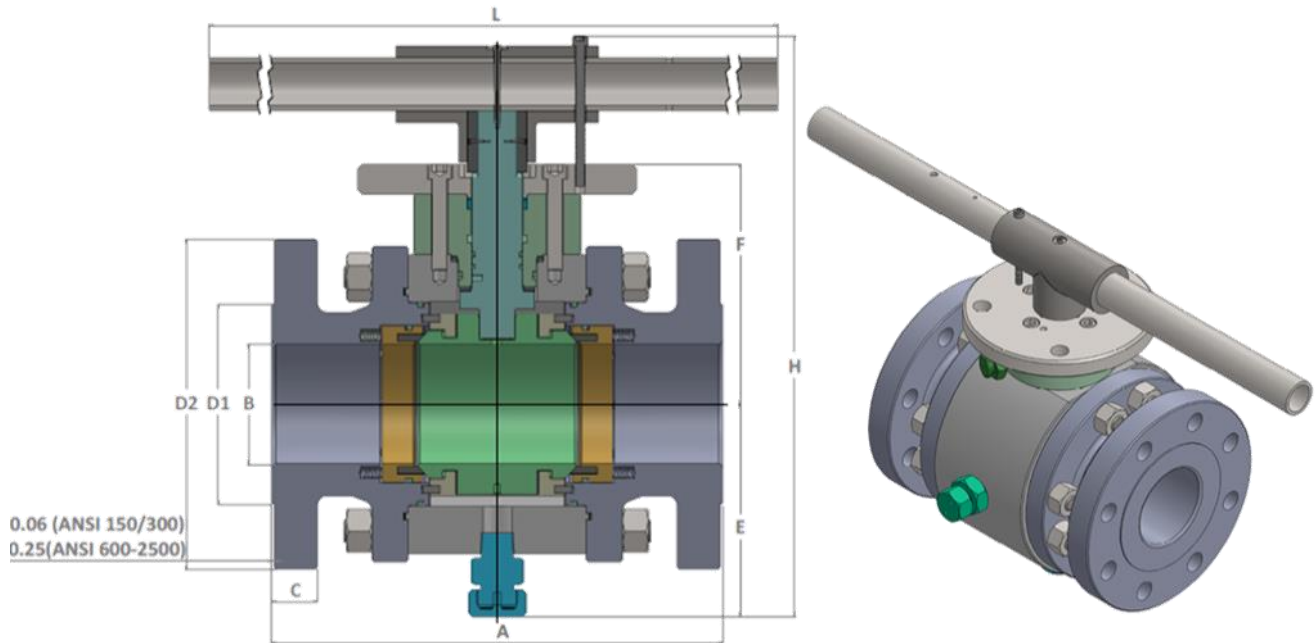
Size (in.)	A (RF)	A (WE)	B	D1	D2	E	F	H	L
2	7.01	8.50	2.00	3.62	6.50	4.4	4.7	12.2	30
3	7.99	11.12	3.00	5.00	7.50	5.3	6.0	14.5	30
4	9.00	12.00	4.00	6.19	9.49	6.0	7.2	16.6	48

## Class 300 2"

Size (in.)	A (RF)	A (WE)	B	D1	D2	E	F	H	L
2	8.50	8.50	2.00	3.62	6.50	4.4	4.7	12.2	30

# G1 & G2 Series Ball Valves' Dimensional Data

3" – 4" Class 300, 2" – 4" Class 600 and 900 FP



## Class 300 3" - 4"

Size (in.)	A (RF)	A (RTJ)	A (WE)	B	C	D1	D2	E	F	H	L
3	11.14	11.75	11.14	3.00	1.12	5.00	8.25	5.3	6.0	14.5	30
4	12.00	12.62	12.00	4.00	1.25	6.19	10.00	6.0	7.2	16.6	48

## Class 600 2" - 4"

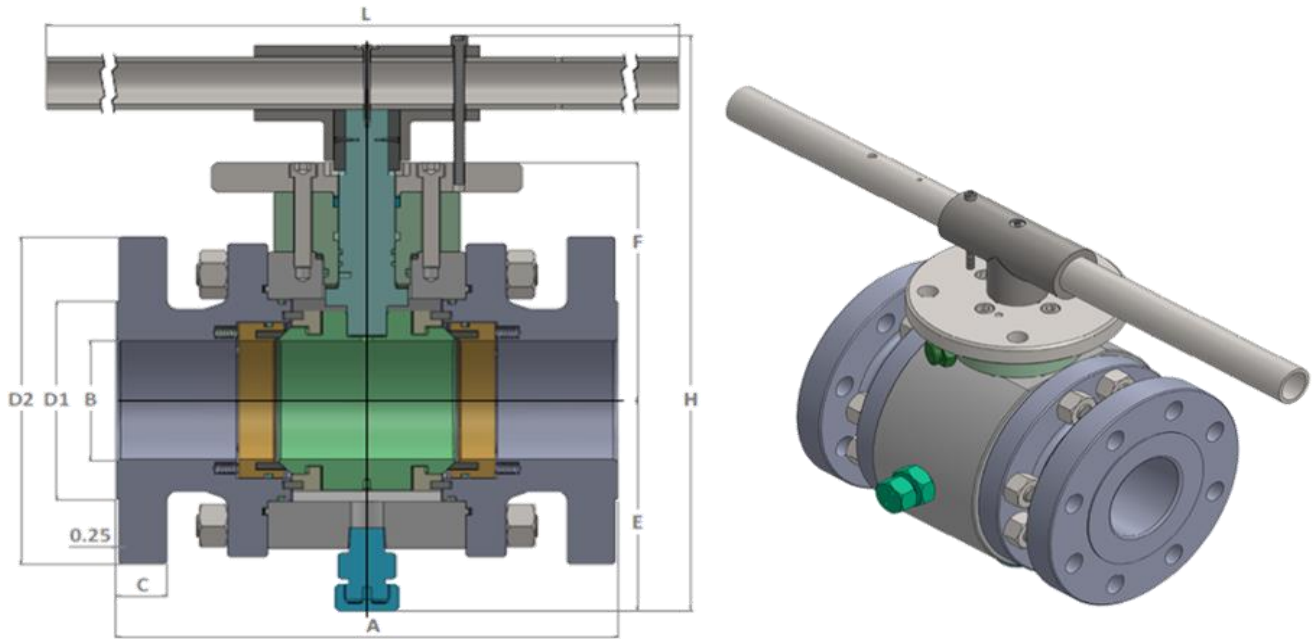
Size (in.)	A (RF)	A (RTJ)	A (WE)	B	C	D1	D2	E	F	H	L
2	11.50	11.61	11.50	2.00	1.27	3.62	6.50	4.4	4.7	12.2	30
3	14.02	14.12	14.02	3.00	1.51	5.00	8.25	5.3	6.0	14.5	30
4	17.01	17.12	17.01	4.00	1.75	6.19	10.75	6.0	7.2	16.6	48

## Class 900 2" - 4"

Size (in.)	A (RF)	A (RTJ)	A (WE)	B	C	D1	D2	E	F	H	L
2	14.49	14.62	14.49	2.00	1.75	3.62	8.50	4.4	4.7	12.2	30
3	15.00	15.12	15.00	3.00	1.75	5.00	9.50	5.3	6.0	14.5	30
4	17.99	18.12	17.99	4.00	2.00	6.19	11.50	6.0	7.2	16.6	48

# G1 & G2 Series Ball Valves' Dimensional Data

2" – 4" Class 1500 and 2500 FP



Class 1500 2" - 4"

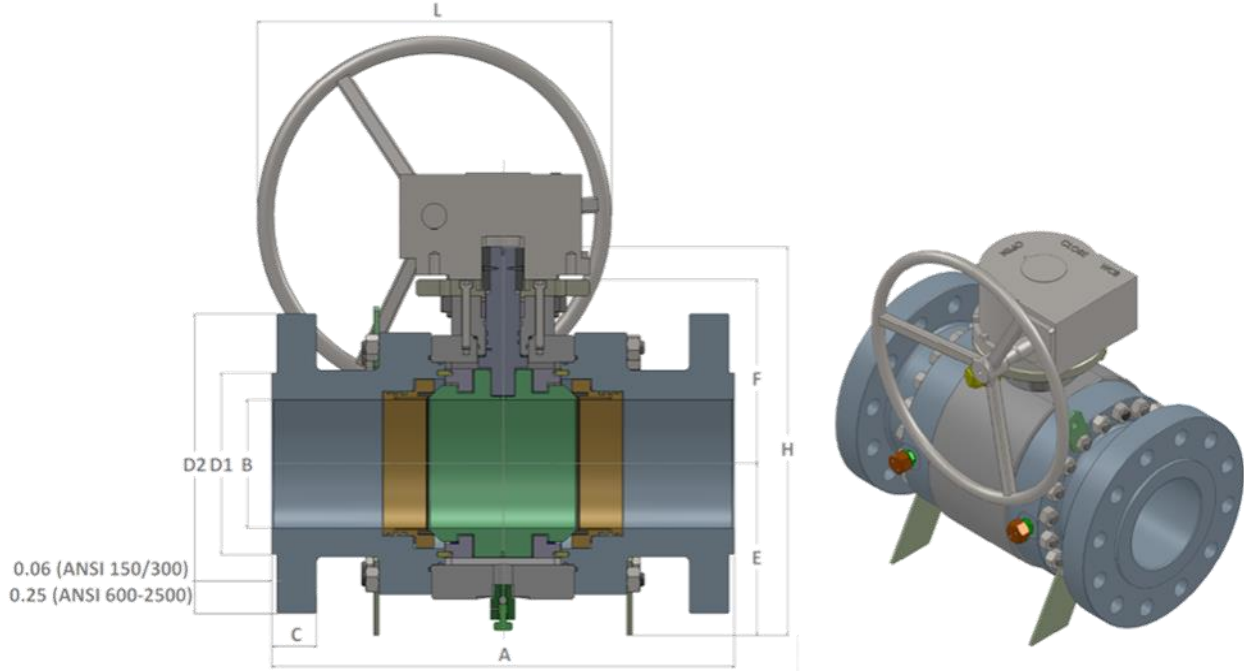
Size (in.)	A (RF)	A (RTJ)	A (WE)	B	C	D1	D2	E	F	H	L
2	14.50	14.62	14.50	2.00	1.75	3.62	8.50	5.3	5.5	12.0	24
3	18.50	18.62	18.50	3.00	2.13	5.00	10.50	6.9	6.4	14.6	24
4	21.50	21.62	21.50	4.00	2.37	6.19	12.25	8.1	7.9	17.5	48

Class 2500 2" - 4"

Size (in.)	A (RF)	A (RTJ)	A (WE)	B	C	D1	D2	E	F	H	L
2	17.75	17.87	17.75	1.75	2.25	3.62	9.25	6.4	7.3	14.9	24
3	22.75	23.00	22.75	2.50	2.87	5.00	12.00	8.2	8.4	18.0	24
4	26.50	26.88	26.50	3.50	3.25	6.19	14.00	9.4	10.6	21.5	48

# G1 & G2 Series Ball Valves' Dimensional Data

6" – 12" Class 150, 300, 600, 900, 1500 and 2500 FP



## Class 150 6" - 12"

Size (in.)	A (RF)	A (RTJ)	A (WE)	B	C	D1	D2	E	F	H	L
6	15.51	16.00	18.00	6.00	1.00	8.50	11.00	8.0	8.6	18.2	24
8	17.99	18.50	20.50	7.91	1.12	10.62	13.50	10.6	10.5	22.9	24
10	21.00	21.50	22.00	10.00	1.19	12.75	16.00	10.6	12.0	24.5	24
12	24.00	24.50	25.00	12.00	1.25	15.00	19.00	12.3	13.8	27.8	24

## Class 300 6" - 12"

Size (in.)	A (RF)	A (RTJ)	A (WE)	B	C	D1	D2	E	F	H	L
6	15.87	16.50	18.00	6.00	1.44	8.50	12.50	8.0	8.6	18.2	24
8	19.76	20.38	20.50	7.91	1.62	10.62	15.00	10.6	10.5	22.9	24
10	22.38	23.00	22.00	10.00	1.88	12.75	17.50	10.6	12.0	24.5	24
12	25.50	26.12	25.00	12.00	2.00	15.00	20.50	12.3	13.8	27.8	24

# G1 & G2 Series Ball Valves' Dimensional Data

6" – 12" Class 150, 300, 600, 900, 1500 and 2500 FP (continued)

Class 600 6" - 12"

Size (in.)	A (RF)	A(RTJ)	A (WE)	B	C	D1	D2	E	F	H	L
6	22.01	22.12	22.01	6.00	2.13	8.50	14.00	9.3	8.6	19.5	24
8	25.98	26.12	25.98	7.91	2.45	10.62	16.40	12.4	10.8	25.0	24
10	31.00	31.12	31.00	10.00	2.75	12.75	20.00	11.7	13.3	26.9	24
12	32.99	33.12	32.99	12.01	2.87	15.00	22.00	14.2	14.8	31.6	30

Class 900 6" - 12"

Size (in.)	A (RF)	A (RTJ)	A (WE)	B	C	D1	D2	E	F	H	L
6	24.00	24.12	24.00	6.00	2.44	8.50	15.00	8.6	10.0	22.2	24
8	29.02	29.12	29.02	7.91	3.01	10.62	18.50	11.4	11.2	24.8	24
10	33.00	33.12	33.00	10.00	3.10	12.75	21.50	11.7	13.3	26.9	30
12	38.00	38.12	38.00	12.00	3.37	15.00	24.00	13.9	14.9	31.4	30

Class 900 6" - 12"

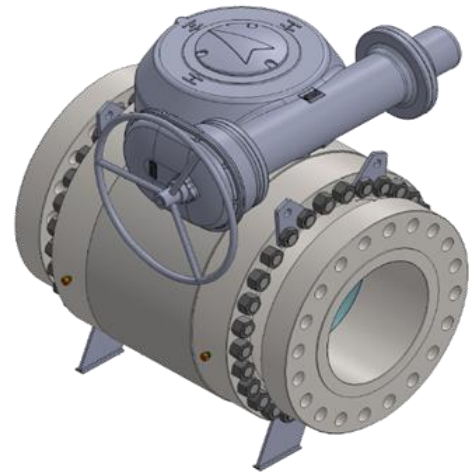
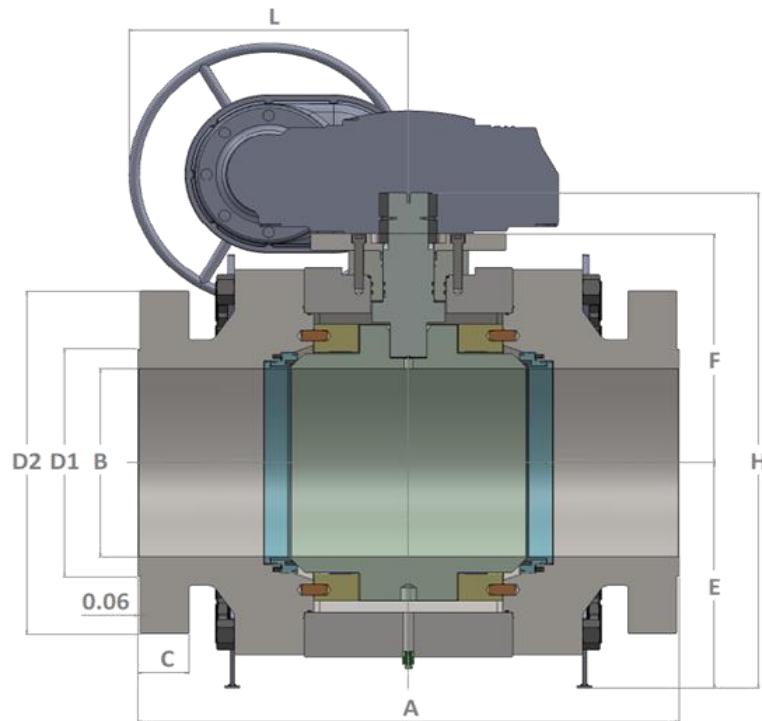
Size (in.)	A (RF)	A (RTJ)	A (WE)	B	C	D1	D2	E	F	H	L
6	27.75	28.00	27.75	5.75	3.50	8.50	15.50	9.7	10.7	26.0	24
8	32.75	33.13	32.75	7.63	3.87	10.62	19.00	12.2	12.9	29.3	30
10	39.00	39.38	39.00	9.50	4.50	12.75	23.00	14.4	15.5	34.8	30
12	44.50	45.12	44.50	11.38	5.13	15.00	26.50	17.0	17.8	40.4	30

Class 900 6" - 12"

Size (in.)	A (RF)	A (RTJ)	A (WE)	B	C	D1	D2	E	F	H	L
6	36.00	36.50	36.00	5.25	4.50	8.50	19.00	12.7	12.7	33.6	30
8	40.25	40.87	40.25	7.14	5.25	10.62	21.75	15.2	16.3	34.0	30
10	50.00	50.88	50.00	8.88	6.75	12.75	26.50	19.7	18.3	42.7	30
12	56.00	56.88	56.00	10.50	7.50	15.00	30.00	22.1	20.8	48.5	30

# G1 & G2 Series Ball Valves' Dimensional Data

14" – 56" Class 150 FP



Class 150 14" – 56"

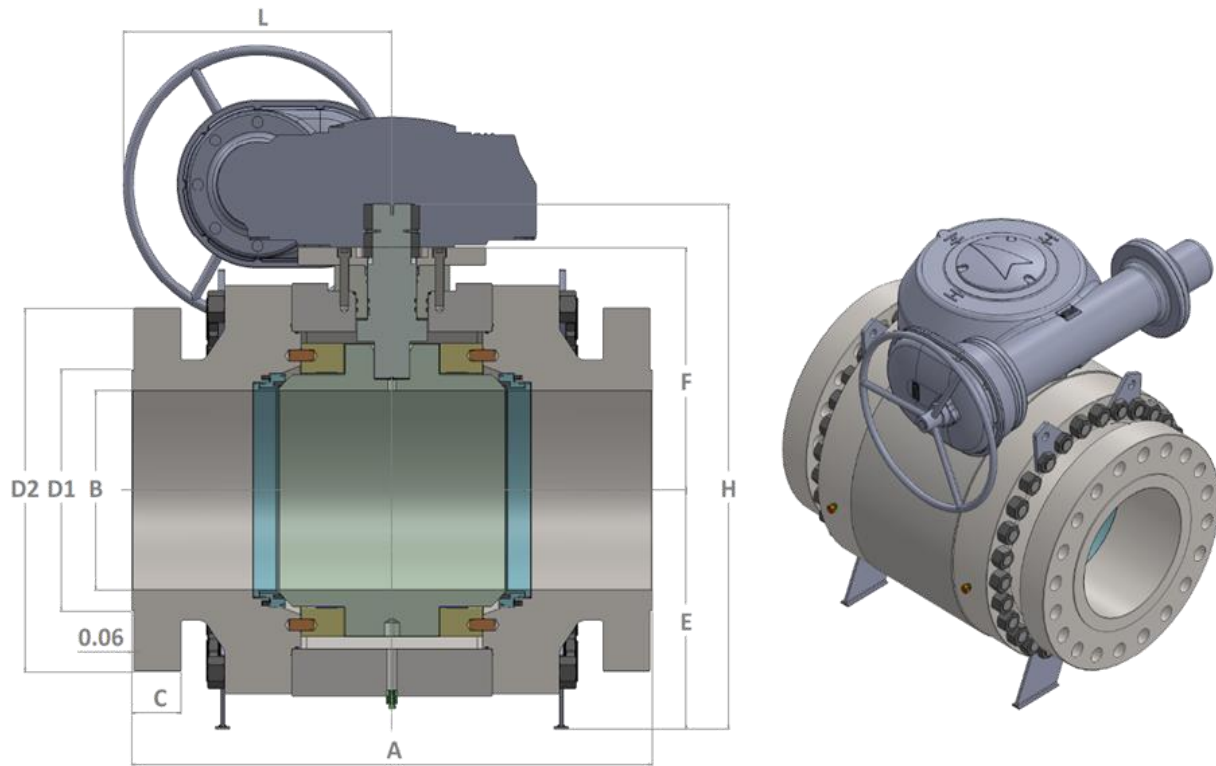
Size (in.)	A (RF)	A (RTJ)	A (WE)	B	C	D1	D2	E	F	H	L
14	27.00	27.50	30.00	13.25	1.44	16.25	21.00	14.9	15.2	35.8	30
16	30.00	30.50	33.00	15.25	1.50	18.50	23.50	16.6	15.9	39.0	30
18	34.00	34.50	36.00	17.25	1.62	21.00	25.00	21.1	19.8	47.4	30
20	36.00	36.50	39.00	19.25	1.75	23.00	27.50	19.7	20.2	46.4	30
24	42.00	42.50	45.00	23.25	1.94	27.25	32.00	22.8	23.3	53.9	30
30	51.00	*	55.00	29.00	2.94	33.75	38.75	31.2	32.1	70.2	30
36	60.00	*	68.00	34.50	3.56	40.25	46.00	34.4	35.8	77.1	30
40	72.83	*	70.08	38.50	3.56	44.25	50.75	36.5	37.1	*	*
44	76.77	*	74.80	42.32	4.00	49.00	55.25	39.8	40.4	*	*
48	85.83	*	82.68	45.98	4.25	53.50	59.50	41.8	43.2	*	*
56	90.55	*	88.58	53.62	4.88	62.00	68.75	48.5	49.9	*	*

\* Provided upon customer's request.



# G1 & G2 Series Ball Valves' Dimensional Data

14" – 56" Class 300 FP



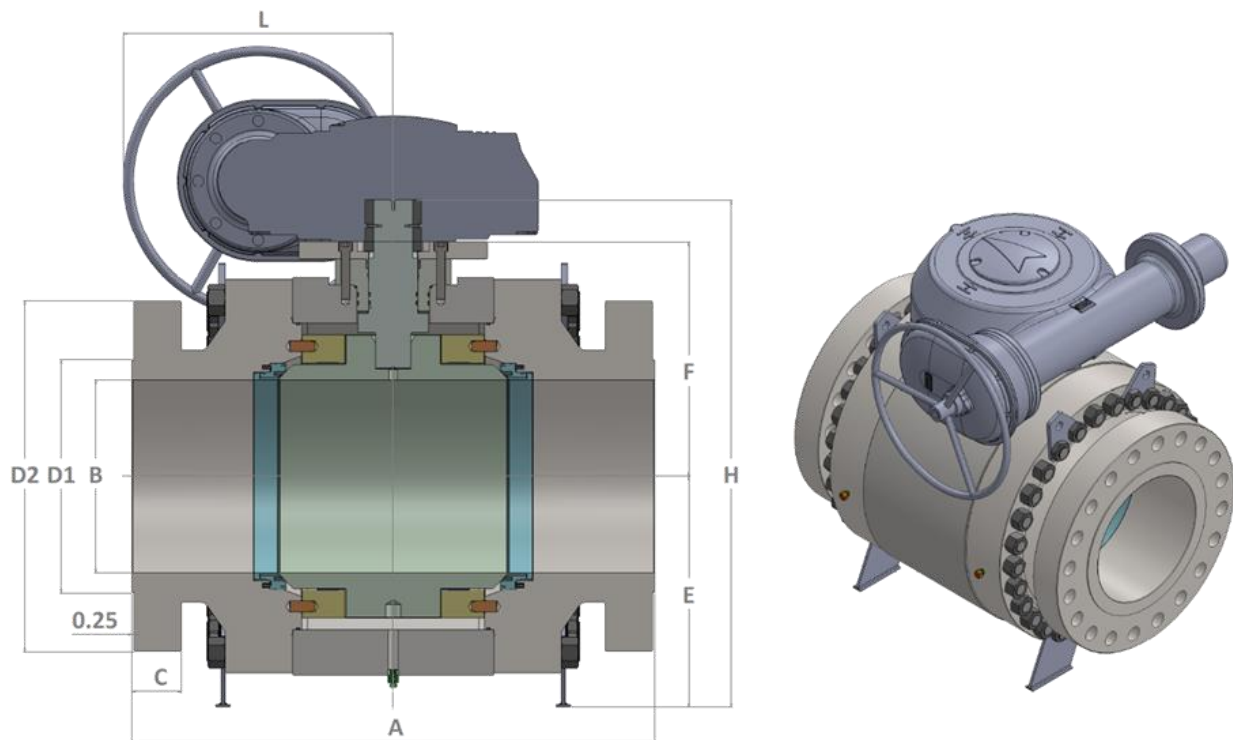
Class 300 14" – 56"

Size (in.)	A (RF)	A (RTJ)	A (WE)	B	C	D1	D2	E	F	H	L
14	30.00	30.62	30.00	13.25	2.12	16.25	23.00	14.9	14.3	35.8	30
16	32.99	33.62	32.99	15.25	2.25	18.50	25.50	18.0	17.1	37.9	30
18	36.00	36.62	36.00	17.25	2.38	21.00	28.00	21.1	19.8	47.4	30
20	39.00	39.75	39.00	19.25	2.50	23.00	30.50	19.7	20.2	46.4	30
24	45.00	45.88	45.00	23.25	2.76	27.25	36.00	24.5	23.4	51.7	30
30	55.00	56.00	55.00	29.00	3.62	33.75	43.00	31.3	32.1	70.1	30
36	68.00	69.12	68.00	34.50	4.12	40.25	50.00	34.4	35.8	77.1	30
40	72.83	*	70.08	38.50	4.44	42.75	48.75	36.5	37.1	*	*
44	76.77	*	74.80	42.32	4.82	47.00	53.25	39.8	40.4	*	*
48	85.83	*	82.68	45.98	5.19	51.25	57.75	41.8	43.2	*	*
56	90.55	*	88.58	53.62	6.00	59.75	67.25	48.5	49.9	*	*

\* Provided upon customer's request.

# G1 & G2 Series Ball Valves' Dimensional Data

14" – 56" Class 600 FP



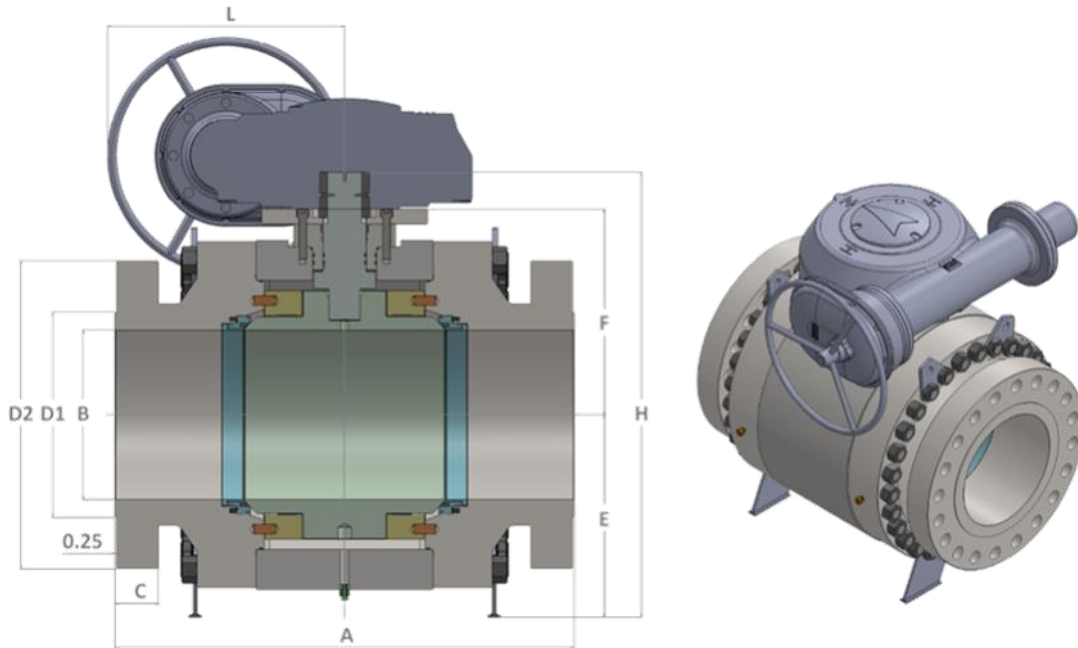
Class 600 14" – 56"

Size (in.)	A (RF)	A (RTJ)	A (WE)	B	C	D1	D2	E	F	H	L
14	35.00	35.12	35.00	13.25	3.00	16.25	23.75	14.9	14.3	35.8	30
16	39.02	39.12	39.02	15.25	3.25	18.50	27.00	18.0	17.1	37.9	30
18	43.00	43.12	43.00	17.25	3.50	21.00	29.25	21.1	1.8	47.4	30
20	47.00	47.25	47.00	19.25	3.75	23.00	32.00	19.7	20.1	46.7	30
24	55.00	55.38	55.00	23.25	4.28	27.25	37.00	24.3	24.2	52.6	30
30	65.00	65.50	65.00	28.95	4.75	33.75	44.50	30.4	31.4	67.9	30
36	82.00	82.64	82.01	34.50	5.13	40.25	51.75	34.4	35.8	77.1	30
40	78.74	*	74.80	38.50	6.50	43.75	52.00	39.3	38.3	84.8	*
44	86.61	*	80.7	42.32	7.06	48.25	57.25	40.6	41.7	*	*
48	94.49	*	85.83	45.98	7.69	52.50	62.75	43.5	44.7	*	*
56	*	*	93.90	53.62	8.81	60.75	73.00	49.4	50.8	*	*

\* Provided upon customer's request.

# G1 & G2 Series Ball Valves' Dimensional Data

14" – 48" Class 900 , 14" – 24" 1500 FP



Class 900 14" – 48"

Size (in.)	A (RF)	A (RTJ)	A (WE)	B	C	D1	D2	E	F	H	L
14	40.50	40.88	40.50	12.75	3.63	16.25	25.25	18.6	16.8	42.0	30
16	44.50	44.88	44.50	14.75	3.75	18.50	27.25	20.6	18.9	46.4	30
18	48.00	48.50	48.00	16.75	4.25	21.00	31.00	23.4	24.9	55.2	30
20	52.00	52.50	52.00	18.63	4.50	23.00	33.75	24.3	26.2	57.4	30
24	61.00	61.75	61.00	22.50	5.75	27.25	41.00	23.8	29.8	54.7	30
30	69.29	70.16	65.35	28.11	6.13	33.75	48.50	30.9	31.4	*	*
36	80.71	81.89	74.80	33.74	7.00	40.25	57.50	36.4	36.1	*	*
40	85.83	*	82.68	37.56	8.00	45.75	59.50	39.9	39.7	*	*
44	93.70	*	88.58	41.26	8.69	50.00	64.88	41.3	45.3	*	*
48	96.46	*	93.70	45.00	9.44	54.50	70.25	47.6	47.7	*	*

Class 1500 14" – 24"

Size (in.)	A (RF)	A (RTJ)	A (WE)	B	C	D1	D2	E	F	H	L
14	49.50	50.25	49.50	12.75	5.50	16.25	29.50	20.6	18.8	46.3	30
16	54.50	55.38	54.50	14.75	6.00	18.50	32.50	22.3	20.5	49.7	30
18	60.50	61.38	60.50	16.75	6.63	21.00	36.00	23.4	24.9	55.2	30
20	65.50	66.38	65.50	18.63	7.25	23.00	38.75	21.7	27.5	50.6	30
24	80.50	81.63	80.50	22.50	8.25	27.25	46.00	23.8	33.7	54.7	30



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