ISOLATOR 2.0

Shut-off. Not shutdown.™

MOGAS®

ISOLATOR 2.0 is ideal for the following services:

Autoclave

Drains and secondary isolation applications for:

- Heater vessels
- Steam applications
- Slurry services (feed pumps and tanks)
- Vents
- High pressure air
- Quench and flash vessels

Power Generation

- Steam
- Fuel Gas
- Drain

Refining

- Catalyst handling
- Hydrocarbon isolation
- Catalyst / hydrocarbon slurry
- Gas isolation
- High pressure steam isolation
- Large particulates

Pulp and Paper

- Steam/recovery plant
- Kraft mill
- Bleach plant

Chemical/Petrochemical

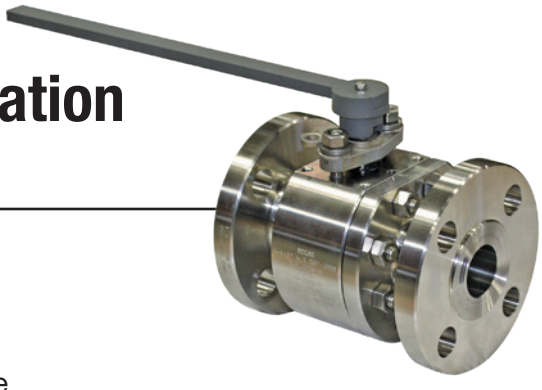
- Steam / superheated steam / condensate
- Hydrogen/nitrogen
- Silicon
- Amines
- Propylene powder
- Catalyst
- Isocyanate

Slurry Transporation

- Secondary lines on tailings and slurry
- By-pass lines
- Underground dewatering

Next Generation of Reliable Isolation

for Low Pressure Severe Services



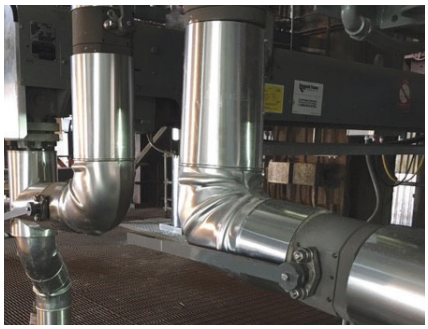
MOGAS' ISOLATOR 2.0 is designed to be the most reliable product for isolation in low pressure (150 to 600 Class) severe service applications. Drawing on MOGAS' 40+ year's experience in extreme severe service applications, advanced manufacturing capabilities and unrivaled after sales service, ISOLATOR 2.0 is designed to solve isolation problems by providing absolute shut-off. Why compromise on quality when you can now have a MOGAS valve for low pressure applications.

Safety

You can feel confident that you're making the right decision when choosing a MOGAS valve. They are synonymous with 'peace of mind'. When a MOGAS valve is installed in an application, rest assured that it will isolate when it supposed to isolate, and will keep your colleagues, equipment and the environment safe from potentially hazardous conditions.

Reliability and Durability

By addressing the root cause of problems, those problems can be eliminated. And, ISOLATOR 2.0 does just that. ISOLATOR 2.0 does not have graphite or PTFE seat gaskets behind the seats that will degrade over time through mechanical loads, thermal change and physical volume loss. ISOLATOR 2.0 metal-to-metal seals are extremely durable. High performance HVOF chrome carbide or nano-coated ball and seats provide superior wear resistance, reduced torque and an extended sealing surface.



Twenty 2-inch, ASME 600 Class ISOLATOR 2.0 valves were installed in a major utility supplier to isolate steam in the daily operation of soot blowers.

Lowest Cost of Ownership

MOGAS valves are more durable and have a long life cycle, so they cost less over time. ISOLATOR 2.0 offers many features that contribute to a longer lasting valve, such as a wider ball/seat sealing surface, compared to competitor seat faces. This means reliable isolation and less downtime from unplanned shutdowns.

Process Efficiency

ISOLATOR 2.0 proven designs, materials of construction and innovative coatings prevent media leakage into the process, which means improved process efficiency and higher return on your investment.

Service

When you select MOGAS products, service is a big part of what comes with them. And with ISOLATOR 2.0 comes the same world-class after-sales service enjoyed by all MOGAS product lines. Our knowledge, experience and the unparalled desire to delight our customers separate MOGAS from everyone else. Our product, our people: together, they ensure that your proccess runs smoothly.

Warranty

MOGAS offers a lifetime warranty on materials and workmanship. We stand behind our products for the life of the product.

Valve Configurations

for 1, 1.5, 2, 3 and 4 inch

Operator configurations

Valve sizes 1, 1.5 and 2 inch feature a Double-D stem, stop plate and lockout for hand levers.

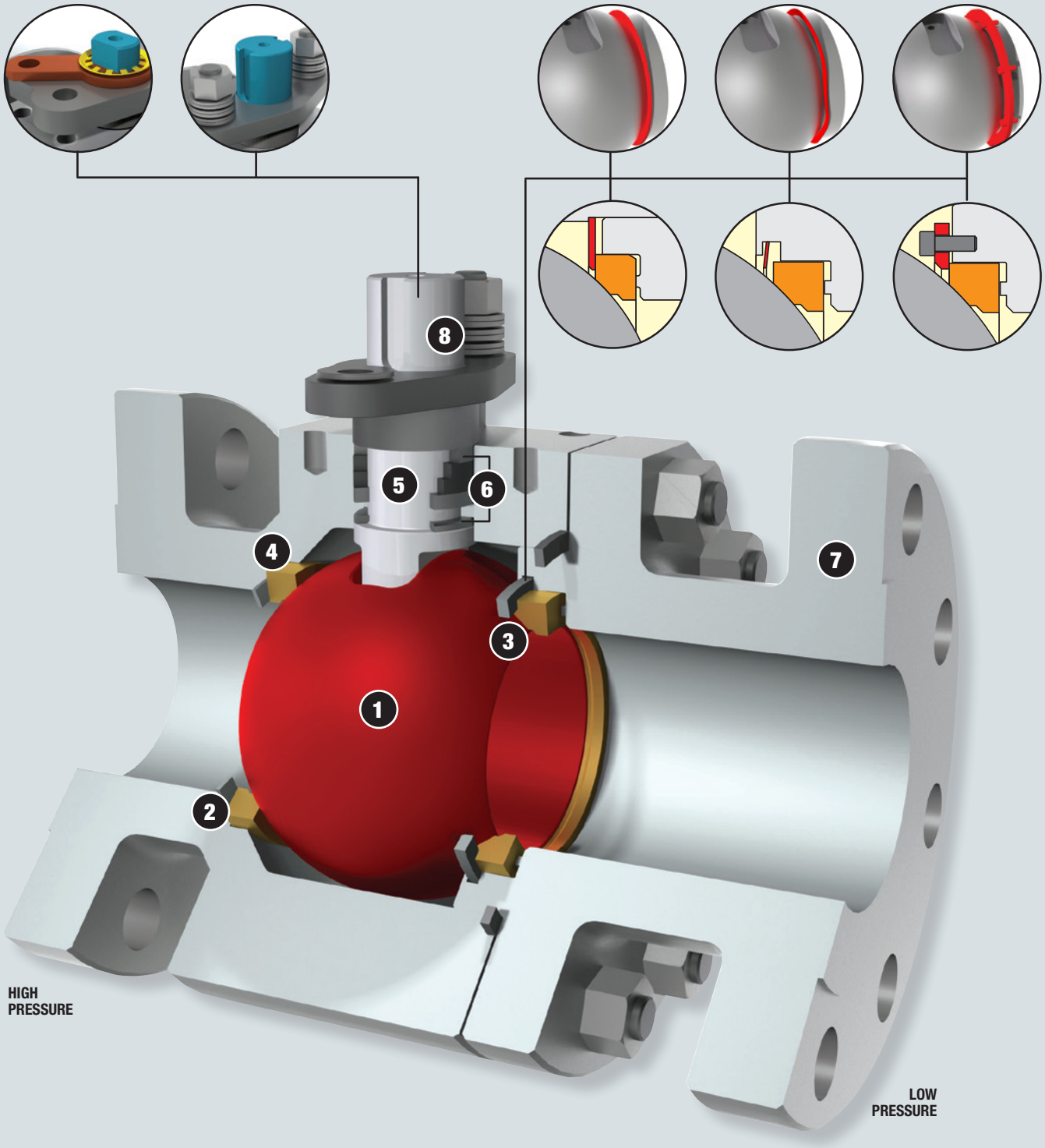
Larger valve sizes (3 and 4 inch) feature keyed stem for operator options.

Seat ring configurations in downstream sealing

Retaining seat ring for sizes 1, 1.5 and 2 inch for all materials.

Wave seat ring in sizes 3 and 4 inch. Not available in Titanium and F53.

Locked-in seat ring in sizes 3 and 4 inch for Titanium and F53.



Features and Benefits

ISOLATOR 2.0 is the next generation metal-seated, bi-directional floating ball valve for absolute isolation in specific mining, refining, chemical/petrochemical, power generation and pulp & paper applications. This ASME 150-600 Class valve withstands temperatures up to 850° F, and its durable materials of construction and proven coatings reflect its lineage of a longer life cycle over time. Available in sizes 1 to 4* inch and in materials of construction that will suit your application.

1 Floating ball design
- Rotating ball does not cause turbulent redirection or displacement of process fluid in the flowstream, resulting in less valve stress
- Straight-through full bore path protects sealing surfaces and packing area from particulate erosion
- Metal seats wipe sealing surface of ball clean during operation preventing solids build-up and clogging

2 Pressure-energized sealing
- Belleville spring in upstream provides constant contact between ball and seat for absolute shut-off and lower operating torque
- Allows resilience during thermal expansion of trim; no graphite seat gaskets

3 Matched ball and seats
- SphereSeal[SM] lapping process on ball and seat set provides 100% sealing contact through the full transition between the open and closed position
- Mate lapping behind seat provides tight sealing
- Optimum seat face diameter allows for lower torque without sealing compromise

4 Independent replaceable seats
- Minimizes maintenance and repair costs

5 Blowout-proof stem design
- One piece design meets industry safety standards
- High strength alloy construction
- Thicker, more robust stem tang eliminates failure inside valve

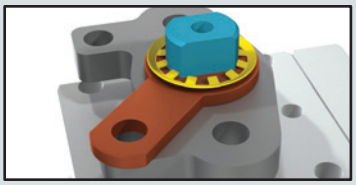
6 Packing box
- Hardened inner steam seal and graphite rings prevent stem packing leaks and risk of fugitive emissions

7 Forged body / end connections
- Greater wall thickness in critical areas provides longer valve life
- Available as raised face flanged, socketweld and buttweld

8 Live-loaded springs
- Belleville washers and gland flange leaf-spring action provide constant pressure on packing

Features Not Shown

- Designed to standards: B16:34, MSS SP-61 and API 598
- Stop plate on hand lever models (1–2 inch) indicates open/close position



Options

- Type I and Type II purging is available, if required, because ISOLATOR 2.0 does not have soft seals behind the seat.
- Mounting bracket and stem adaptor accommodates all types of actuators and accessories, such as electric and pneumatic actuators, and positioners and solenoids.

*** For 1/2-, 6- and 8-inch, consult factory.**

Parts List

Materials of Construction

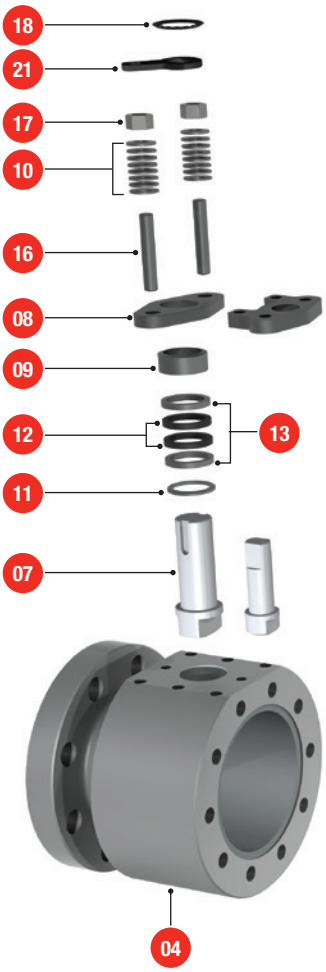
No.	Description	A182-F316 NACE	A182-F316 NACE	Ti Gr 12	A182-F53	A105
01	Ball [1]	316SS	410SS	Ti Gr 12	A182-F53	410SS
02	Seat [1]	316SS	410SS	Ti Gr 12	A182-F53	410SS
03	Spring Disc [1]	Inconel 718	Inconel 718	Ti Gr 5	Inconel 718	Inconel 718
04	Body	A182-F316	A182-F316	Ti Gr 12	A182-F53	A105
05	End Connect	A182-F316	A182-F316	Ti Gr 12	A182-F53	A105
06	Gasket, Spiral Wound [1,2]	316SS	316SS	Ti Gr 2	Inconel 600	316 SS
07	Stem	Gr 660	Gr 660	B348-5	A182-F53	Gr 660
08	Gland Flange	Gr 660	Gr 660	316SS	316SS	316SS
09	Thruster, Gland Flange	316SS	316SS	316SS	316SS	316SS
10	Spring Discs (live loaded)	660SS	660SS	660SS	660SS	660SS
11	Bearing, Stem Seal [1,3]	Stellite 3	Stellite 3	Ti Gr 5 / Nano	A182-F53 Nitrided	Stellite 3
12	Ring, Stem Packing [1,2]	Chesterton 5300	Chesterton 5300	Chesterton 5300	Chesterton 5300	Chesterton 5300
13	Ring, Anti-Extrusion [1,2]	Chesterton 1601	Chesterton 1601	Chesterton 1601	Chesterton 1601	Chesterton 1601
14	Stud, Body	A193 Gr B8M CL 2	Gr 660	A564 Type 630 (17-4 PH)	A193 Gr B8M CL 2	A193 Gr B7
15	Nut, Body	A194 Gr 8M	Gr 660	A564 Type 630 (17-4 PH)	A194 Gr 8M	A194 Gr 2H
16	Stud, Gland	A193 Gr B8M	Gr 660	A193 Gr B8M	A193 Gr B8M	A193 Gr B8M
17	Nut, Gland	A194 Gr 8M	A194 Gr 8M	A194 Gr 8M	A194 Gr 8M	A194 Gr 8M
18	External Self-locking Retainer Ring	17-7PH	17-7PH	17-7PH	17-7PH	17-7PH
19A	Wave Spring Ring [1]	A286	A286	—	—	A286
19B	Locked-in Seat Ring [1]	—	—	Ti Gr 12	A182-F53	—
19C	Retaining Ring [1]	316SS	316SS	Ti Gr 12	A182-F53	316SS
20	Seat Locking Screws	—	—	Ti Gr 12	A182-F53	—
21	Stop Plate	316SS	316SS	316SS	316SS	316SS

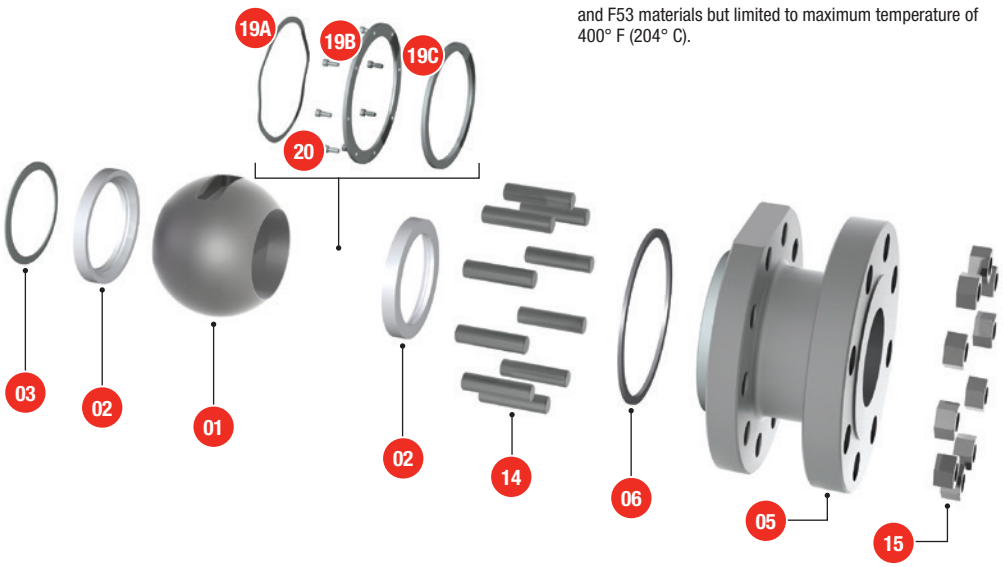
SS = Stainless Steel

[1] Available as spare part in major trim kits. Consult factory.

[2] Available as spare part in soft goods kit. Consult factory.

[3] Glass-filled TFE stem seal version available for Titanium and F53 materials but limited to maximum temperature of 400° F (204° C).





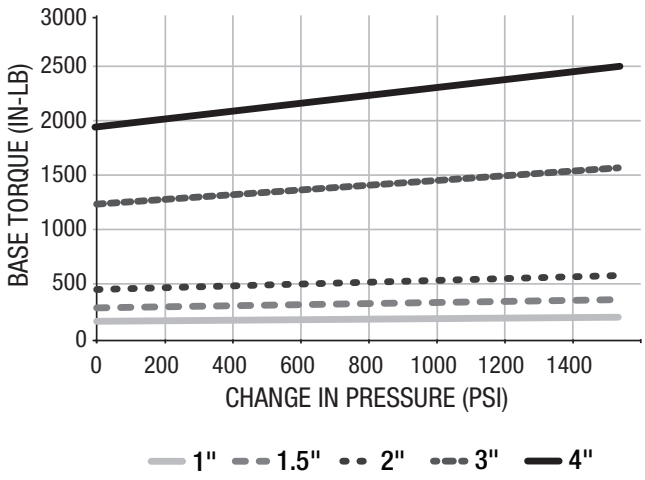
Torque Data

Base Torque Data[1]										
Size (in)	1		1.5		2		3		4	
ASME Class	150–600		150–600		150–600		150–600		150–600	
ΔP (psi)	Base Torque (in-lb)									
	Break	Run	Break	Run	Break	Run	Break	Run	Break	Run
0	188	188	313	313	484	484	1,279	1,279	1,995	1,995
50	199	189	346	315	562	488	1,537	1,290	2,577	2,014
100	211	190	379	317	639	492	1,795	1,301	3,158	2,033
150	223	192	412	320	716	496	2,054	1,312	3,740	2,052
200	234	193	446	322	794	500	2,312	1,323	4,321	2,071
250	246	195	479	324	871	504	2,570	1,334	4,903	2,090
275	252	195	496	326	910	506	2,700	1,339	5,194	2,100
300	257	196	512	327	948	508	2,829	1,345	5,484	2,109
400	281	199	579	332	1,103	515	3,345	1,367	6,647	2,147
500	304	202	646	336	1,258	523	3,862	1,389	7,810	2,185
600	327	204	712	341	1,413	531	4,379	1,411	8,974	2,223
700	350	207	779	346	1,567	538	4,895	1,433	10,137	2,261
720	355	208	792	347	1,598	540	4,999	1,437	10,369	2,269
750	362	209	812	348	1,645	542	5,154	1,444	10,718	2,280
800	374	210	845	351	1,722	546	5,412	1,455	11,300	2,299
900	397	213	912	355	1,877	554	5,929	1,476	12,463	2,337
1,000	420	215	978	360	2,031	562	6,446	1,498	13,626	2,375
1,100	443	218	1,045	365	2,186	569	6,962	1,520	14,789	2,413
1,200	467	221	1,112	370	2,341	577	7,479	1,542	15,952	2,451
1,300	490	224	1,178	374	2,496	585	7,996	1,564	17,115	2,489
1,400	513	227	1,245	379	2,650	592	8,512	1,586	18,278	2,527
1,440	522	228	1,271	381	2,712	596	8,719	1,595	18,744	2,543
1,500	536	229	1,311	384	2,805	600	9,029	1,608	19,441	2,566

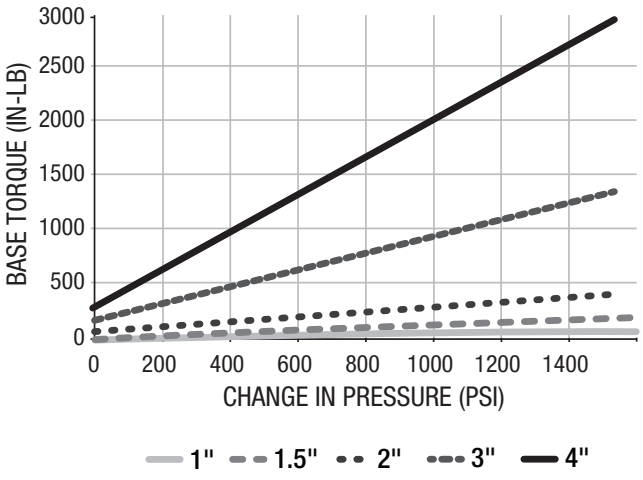
[1] Service and/or actuator safety factor not added.

Gear operator recommended for these torque values.

TORQUE TO RUN



TORQUE TO BREAK



Dimensions

Dimensions (in)

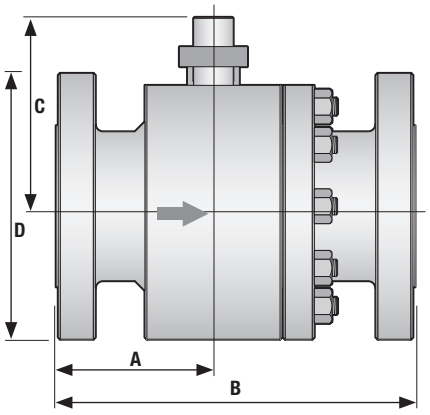
DN	Bore	Class	A	B	C	D	E	F	Weight [2], lb
1	1.00	150	1.99	5.00	2.69	4.25	Note 1	Note 1	11.5
		300	2.86	6.50		4.88			15
		600	3.83	8.50					17
1.5	1.50	150	2.67	6.50	3.57	5.00	Note 1	Note 1	30
		300	3.30	7.50		6.12			34
		600	4.05	9.50					40
2	2.00	150	2.93	7.00	4.36	6.00	Note 1	Note 1	42
		300	3.63	8.50		6.50			51
		600	5.20	11.50					60
3	3.00	150	3.62	8.06	5.87	7.50	Note 1	Note 1	78
		300	4.87	11.12		8.25			105
		600	6.13	14.00					125
4	4.00	150	3.68	9.00	7.35	9.00	Note 1	Note 1	120
		300	5.25	12.00		10.00			167
		600	7.74	17.00		10.75			241

Dimensions (mm)

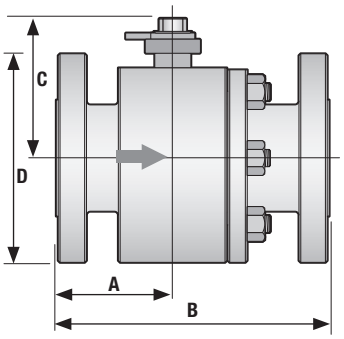
DN	Bore	Class	A	B	C	D	E	F	Weight [2], kg
1	1.00	150	50.5	127.0	68.4	107.9	Note 1	Note 1	5.2
		300	72.6	165.1		123.9			6.8
		600	97.2	215.9					7.7
1.5	1.50	150	67.8	165.1	90.6	127.0	Note 1	Note 1	13.6
		300	83.8	190.5		155.4			15.4
		600	102.8	241.3					18.1
2	2.00	150	74.4	177.8	110.7	152.4	Note 1	Note 1	19.0
		300	92.2	215.9		165.1			23.1
		600	132.1	292.1					27.2
3	3.00	150	91.9	204.7	149.1	190.5	Note 1	Note 1	35.4
		300	123.7	282.4		209.5			47.6
		600	155.7	355.6					56.7
4	4.00	150	93.5	228.6	186.7	228.6	Note 1	Note 1	54.4
		300	133.3	304.8		254.0			75.7
		600	196.6	431.8		273.0			109.3

[1] Varies with actuator model
[2] Does not include adaption

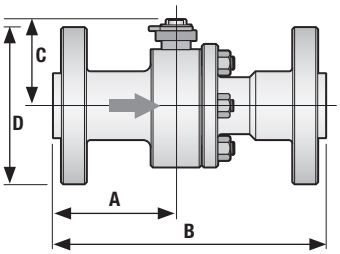
3- and 4-inch, ASME 150–600 Class



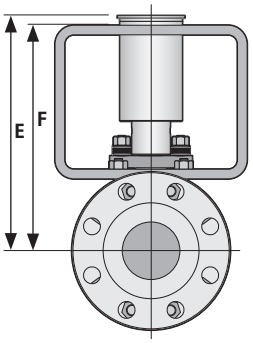
1.5- and 2-inch, ASME 150–600 Class



1-inch, ASME 150–600 Class



Mounting Bracket and Stem Adapter



Temperature / Pressure Ratings

Temperature vs Pressure — Standard Class Ratings

Class	Material	Temperature, °F								
		-20 to 100	200	300	400	500	600	700	800	850
ASME 150 Maximum Pressure (psig)	A182-F316	275	235	215	195	170	140	110	80	65[2]
	A182-F9	290	260	230	200	170	140	110	80	65
	A182-F53	290	260	230	200	170	140	–	–	–
	Ti Gr 12[1]	288	260	230	200	170	140	–	–	–
	A105	285	260	230	200	170	140	110	80	–
ASME 300 Maximum Pressure (psig)	A182-F316	720	620	560	515	480	450	435	420	420[2]
	A182-F9	750	750	730	705	665	605	570	510	485
	A182-F53	750	745	665	615	580	555	–	–	–
	Ti Gr 12[1]	750	701	609	536	490	463	–	–	–
	A105	740	680	655	635	605	570	530	410	–
ASME 600 Maximum Pressure (psig)	A182-F316	1440	1240	1120	1025	955	900	870	845	835[2]
	A182-F9	1500	1500	1455	1410	1330	1210	1135	1015	975
	A182-F53	1500	1490	1335	1230	1160	1115	–	–	–
	Ti Gr 12[1]	1500	1401	1217	1071	979	926	–	–	–
	A105	1480	1360	1310	1265	1205	1135	1060	825	–
Class	**Material**	**Temperature, °C**								
		-29 to 38	100	150	200	250	300	350	400	455[2]
ASME 150 Maximum Pressure (bar)	A182-F316	19.0	16.2	14.8	13.7	12.1	10.2	8.4	6.5	4.4
	A182-F9	20.0	17.7	15.8	13.8	12.1	10.2	8.4	6.5	4.4
	A182-F53	20.0	17.7	15.8	13.8	12.1	10.2	–	–	–
	Ti Gr 12[1]	19.9	17.7	15.8	14.0	12.1	10.2	–	–	–
	A105	19.6	17.7	15.8	13.8	12.1	10.2	8.4	6.5	–
ASME 300 Maximum Pressure (bar)	A182-F316	49.6	42.2	38.5	35.7	33.4	31.6	30.3	29.4	28.8[2]
	A182-F9	51.7	51.7	50.3	42.4	45.8	41.7	40.3	36.5	33.3
	A182-F53	51.7	50.7	45.9	42.7	40.5	38.9	–	–	–
	Ti Gr 12[1]	51.7	47.6	41.9	37.4	34.4	32.5	–	–	–
	A105	51.1	46.6	45.1	43.8	41.9	39.8	37.6	34.7	–
ASME 600 Maximum Pressure (bar)	A182-F316	99.3	84.4	77.0	71.3	66.8	63.2	60.7	58.9	57.6[2]
	A182-F9	103.4	103.0	100.3	97.2	92.7	85.7	80.4	73.3	66.8
	A182-F53	103.4	101.3	91.9	85.3	80.9	77.7	–	–	–
	Ti Gr 12[1]	103.4	95.1	83.7	74.7	68.7	64.9	–	–	–
	A105	102.1	93.2	90.2	87.6	83.9	79.6	75.1	69.4	–

[1] MOGAS recommended temperatures/pressures; Ti Gr 12 is not a B16.34 material.
[2] The 316SS body and 410SS trim are rated to 850° F (455° C).

Industry Codes and Standards

The following partial list of industry codes and standards are referenced in the manufacturing of MOGAS valves: API, ASTM, ATEX, CRN, DIN, FCI, GOST-R, ISA, ISO, NACE, NBBI, PED, SIL, TA-Luft, TUV. For a complete list, download our Design Conformance Standards from our Media Centre at mogas.com.

ASME	Title
B16.5	Steel Pipe Flanges & Flanged Fittings
B16.10	Face to Face & End to End Dimensions of Valves
B16.11	Forged Fittings Socket Welding and Threaded
B16.25	Butt-welding Ends
B16.34	Valve – Flanged, Threaded & Welded End
FCI 70-2	Control Valve Seat Leakage

MSS	Title
SP-25	Standard Marking System for Valves, Flanges & Unions
SP-55	Quality Standard for Steel Castings for Valves, Flanges & Fittings
SP-61	Pressure Testing of Steel Valves

API	Title
598	Valve Inspection & Test
607 / 6FA	Fire Test for Quarter Turn Valves
6D	Specification for Pipeline Valves
641	Type Testing of Quarter-turn Valve for Fugitive Emissions

NACE	Title
MR-0103	Materials Resistant to Sulfide Stress Cracking in Corrosive Petroleum Refining Environments

British Standard	Title
BS 6755	Testing of Valves Part 1 – Specification for Production Pressure Testing Requirements Part 2 – Specification for Fire Type Testing Requirements

PED	Title
2014/68/EU	Pressure Equipment Directive

Service

Global Capabilities

We provide exceptional service for unique locations—everyday, everywhere.

Service Excellence in Action

When you select MOGAS products, service is a big part of what comes with them. The MOGAS commitment to service means more than basic repairs. It also means timely access to our knowledgeable and experienced team of experts—anytime, anywhere in the world. And when our team becomes part of your team, you can trust that we will do everything we can to come through for you.

When you have a problem, our technical advisors get to the root of it. They will look at your entire application to accurately identify and solve the issue. Using a comprehensive approach helps you improve equipment reliability and operational efficiency, as well as reduce costs. Our core services include:

Project Support

- Installation, startup and commissioning
- Shutdown planning and implementation
- Procurement and contract management

Preventive Maintenance

- Complete system inspection
- Routine maintenance, valve repacking
- Valve asset management

Repair, Refurbish & Customization

- 24-hour emergency response
- Troubleshooting
- Valve performance analysis
- 3D finite analysis
- High pressure testing
- Online repair documentation

Severe Service

The MOGAS Definition

- Extreme temperatures
- High pressures
- Abrasive particulates
- Acidic products
- Heavy solids build-up
- Critical plant safety
- Large pressure differentials
- Velocity control
- Noise control

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