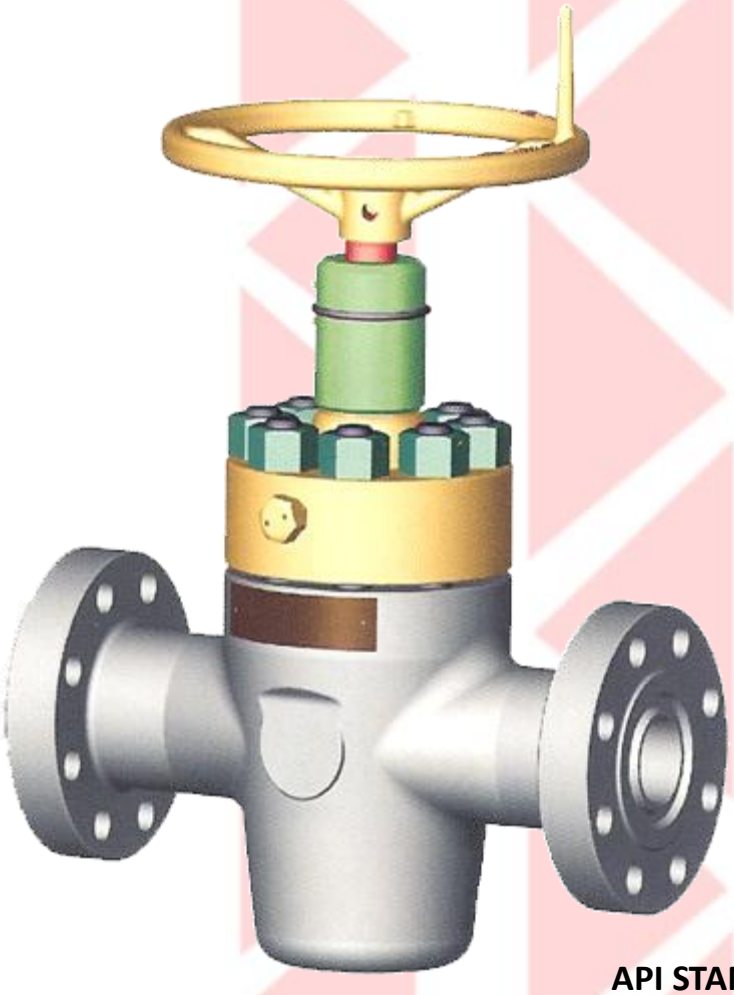
BETTER OIL TOOLS
GATE VALVE



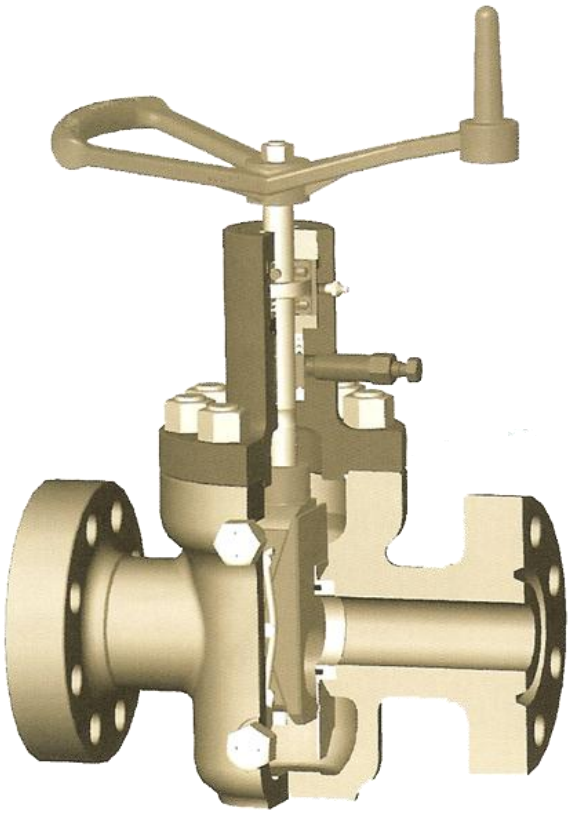
API STANDARD 6A

AB-M GATE VALVES

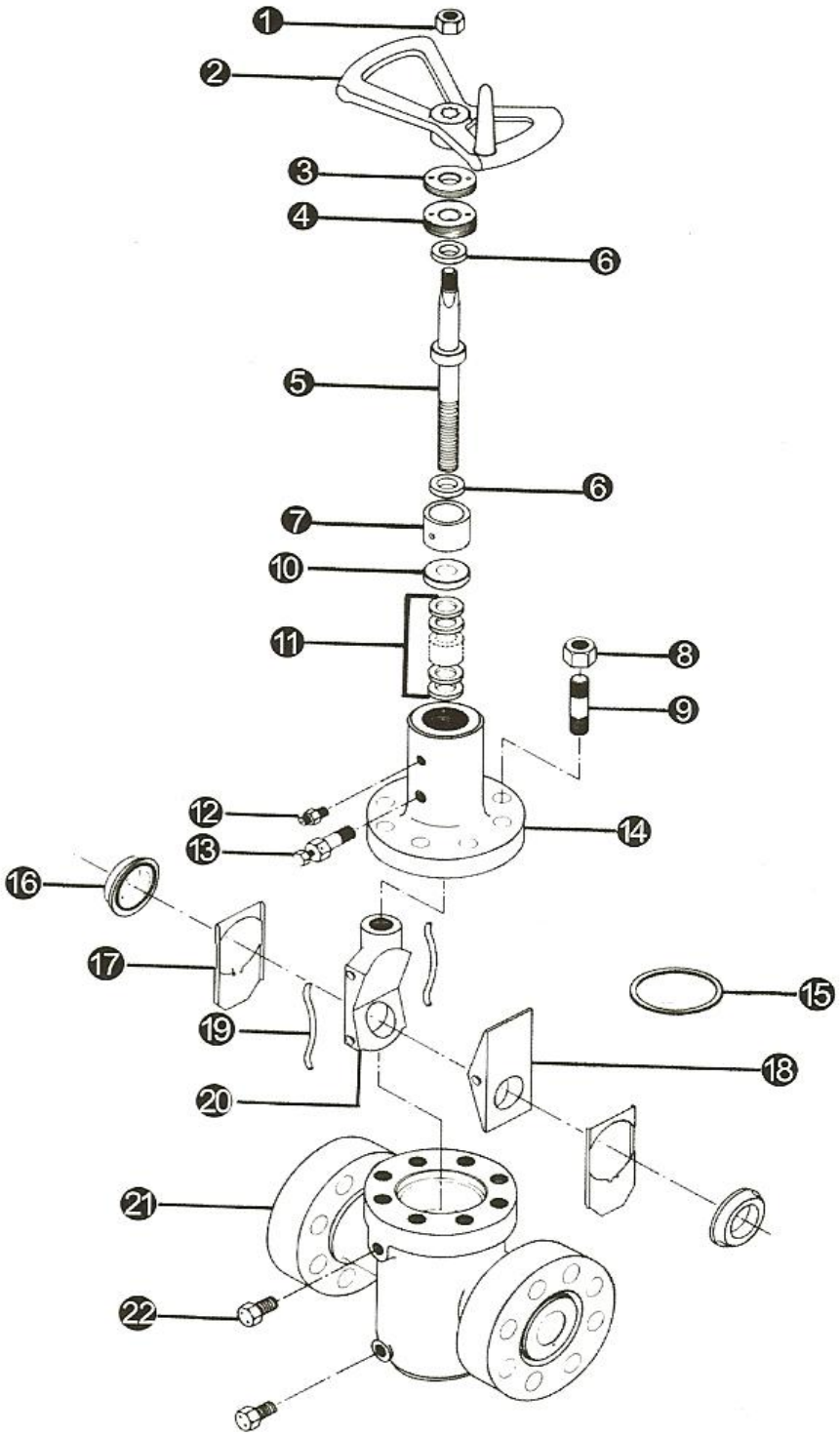
The AB-M gate valve has parallel expanding gates that when in the full open or closed position mechanically expand against both seats. Pressure change, vibrations or other normal operating conditions will not affect the sealing force.

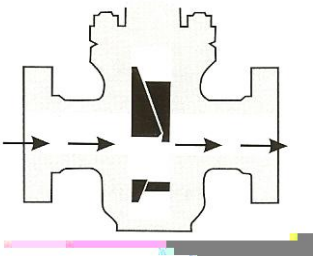
The basic valve is available with flanged, threaded, or clamp hub connections in standard sizes from 2-1/16" to 7-1/16" and working pressures 1,000, 3,000 and 5,000 PSI. Special trims are available for high corrosive and extreme temperature environment like sour service and water flood applications.
AB-M valves, as well as all the valves we make, are licensed by API certificate # 0651 for standard 6A specifications up to PSL-3 and are dimensionally, metallurgical and physical tested during and after manufacturing to ensure the highest standards meet. All the parts for the AB-M valve are interchangeable with other U.S. made expanding gate valves making repair and getting replacement parts easy.

Requests for quotations and orders for AB-M valves can be filled quickly and accurately by providing us with the size, pressure rating, connection, trim (like PSL-1 or T-24) and any special requirements such as actuators, etc.

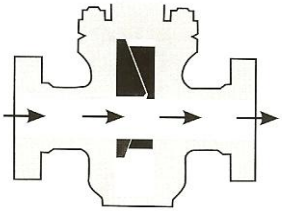


1. Hand-wheel nut
2. Hand-wheel
3. Bearing retainer lock nu
4. Bearing retainer nut
5. Stem
6. Thrust bearing
7. Bearing spacer sleeve
8. Stud nut
9. Bonnet stud
10. Packing retainer bushir
11. Packing set
12. Bonnet grease fitting
13. Packing Fitting
14. Bonnet
15. Bonnet ring seal
16. Seat assembly
17. Guide
18. Segment
19. Gate spring
20. Gate
21. Body
22. Body fittings

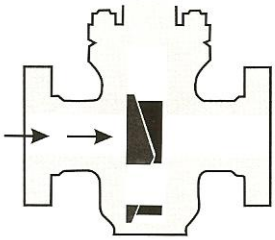




The gate and segment fit flush against each other during the opening and closing operation. The face to face dimension of the gate and segment assembly is narrower than the distance between the upstream and downstream seats, thus letting gate/segment assembly to move freely between the seats.



When the valve is in the full open position, the top of the segment is in contact with the bottom of the bonnet and the two bottom surfaces of the gate and segment make solid contact, and the gate/segment assembly expands, sealing off against the seats. The upward gate movement controls the expansion to provide a tight seal, isolating the flow from the valve body.



When the valve is in the full closed position the bottom of the gate is in contact with the bottom of the valve body, the upper matching surfaces of the gate and segment make solid contact. The gate wedges against the segment expanding the gate/segment assembly outward against the seats simultaneously. The downward gate movement controls the expansion to achieve a high mechanical seal on the seats.

Features of AB-M Gate Valves

AB-M gate valves use the expanding gate operating principle to give you a tight, positive seal under a wide range of pressure and environmental conditions. The 2,000 to 5,000 PSI AB-M valve is offered in threaded and flanged connections, in sizes from 2-1/16" to 7- 1/16".

Full bore flow

The smooth bore design allows fluids to flow through the valve smoothly without causing turbulence. Because the gate expands and seals against both seats bore surface cavities are eliminated thus reducing the accumulation of foreign matter and allows passage of tools through the valve.

Lifetime lubrication for wearing surfaces

Specially formulated coating of molybdenum disulfide is baked on to the gate, expanding segment and stem parts of every AB-M valve. This permanent coating provides a low-friction protective shield which also guards against certain types of corrosion.

Double seal protection

The valve seats in the AB-M valve use Teflon inserts to give you a double sealing action PTFE-to-mental sealing, upstream and down stream.

No lubrication needed

The AB-M valve requires no lubrication for normal operation. Should a sealing member become damaged, however a sealant may be injected into the valve to form a seal pending repairs.

Easy field maintenance

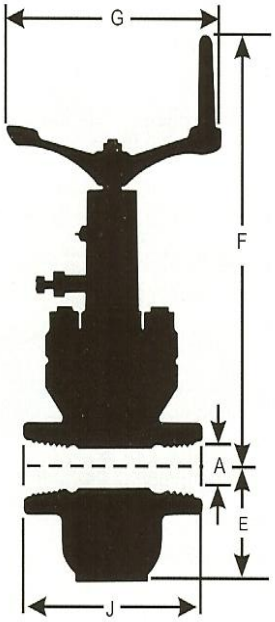
Even with its sophistication the AB-M Valve can be completely over hauled without removal from the line. The valve seats can be removed, serviced and replaced with the valve in-line.

Testing and inspection

When castings and forgings are received at the plant, the quality control department makes sure that all dimensional specifications have been met. To insure the A STM specifications have been met, chemical and physical tests are performed under exact conditions. The application of API-Q1 and 6 A Specifications insure you of receiving a finished qualified product.

Standard Temperature Rating: -20^{0}F to +250^{0}F
Size in inches; weights in pounds; N = number of turns to open.

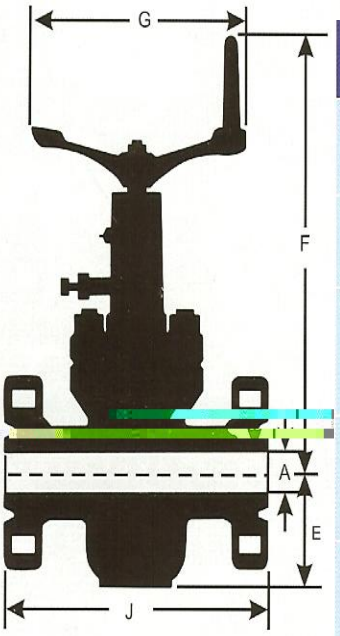
Threaded End Valves



Size	Working Pressure(psi)	A	E	F	G	J	N	Wt.Lbs
2 ,2 3/8	2,000 3,000.5,000	2 1/16	4 13/16 5 1/16	19 1/4 19 7/16	11 13	9 5/8	13	75 105
2 7/ 8,3	2,000 3,000 .5,000	2 9/16	5 5/8 5 15/16	20 3/16 20 7/16	13 16	10 1/4	13 1/2	98 128
3 1/2	2,000 3,000 .5,000	3 1/8	6 15/16 7 5/16	22 1/2 22 3/4	13 16	11 3/4	20	155 200
4	2,000 3,000 .5,000	4 1/16	8 5/8 9 1/16	25 15/16 26 3/8	16 20	13	24 1/2	265 380

Thread connections conform to API Standard 6A. All thread connections are line pipe unless otherwise specified.

Flanged End Valves



Size	Working Pressure(psi)	A	E	F	G	J	N	Wt.Lbs
2 1/16	2,000 3,000 .5,000	2 1/16	4 13/16 5 1/16	19 1/4 19 7/16	11 13	11 5/8 14 5/8	13	105 155
2 9/ 16	2,000 3,000 .5,000	2 9/16	5 5/8 5 15/16	20 3/16 20 7/16	13 16	13 1/8 16 5/8	15 1/2	150 245
3 1/8	2,000 3,000 5,000	3 1/8	6 15/16 7 5/16	22 1/2 22 3/4	13 16 16	14 1/8 17 1/8 18 5/8	20	180 270 310
4 1/16	2,000 3,000 5,000	4 1/16	8 5/8 9 1/16	25 15/16 26 3/8	16 20	17 1/8 20 1/8 21 5/8	24 1/2	345 515 530
7 11/10	5,000	7 1/16	14 1/8	29 7/8	28	32	44	650

Flange connections conform to API Standard 6A

EXPANDING GATE API 6A GATE VALVE FOR HIGH TEMPERATURE SERVICE

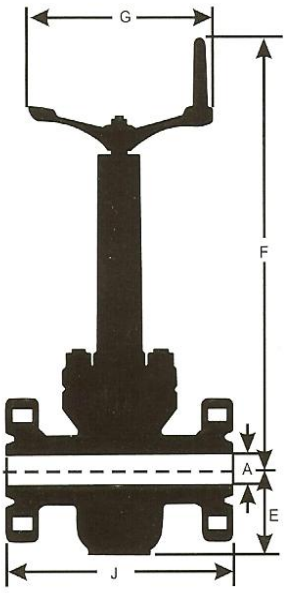
This gate valve is designed to be used in steam injection and other high temperature service to +650^{0}F maximum with pressure derating above +250^{0}F in accordance to API Specification 6A.

The high temperature gate valve uses parallel expanding gates to obtain metal-to metal seal, both upstream and downstream. Heat pressure variations and vibrations will not affect the seal. The valve features an extended length bonnet and stem to place the stem packing outside the extreme heat area and provide improved packing performance at elevated temperature.

The valve is a standard parallel expanding gate design. It has through conduit full bore to allow full flow, minimizing turbulence and permitting passage of servicing tools and other down-hole equipment.

The valve is available in size 2-1/16" to 3-1/8" working pressure 2,000,3,000 and 5,000 PSI at ambient temperature. See Derating table below.

PRESSUE- TEMPERATURE DERATING TABLE
(Recommended derating of metallic parts – from API Spec. 6A)



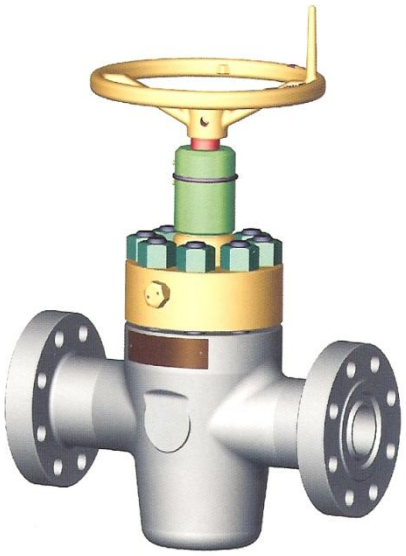
Metal Temperature in Degrees F								
-20°F TO 250°F	300°F	350°F	400°F	450°F	500°F	550°F	600°F	650°F
2000	1955	1905	1860	1810	1735	1635	1540	1430
3000	2930	2860	2785	2715	2605	2455	2310	2145
5000	4880	4765	4645	4525	4340	4090	3850	3575

Size	Working Pressure(psi)	A	E	F	G	J	N	Wt.Lbs
2 1/16	2,000 3,000 .5,000	2 1/16	5 1/16 5 5/16	25 1/4 25 1/2	11 13	11 5/8 14 5/8	13	100 168
2 9/ 16	2,000 3,000 .5,000	2 9/16	5 3/4 5 15/16	26 3/16 26 7/16	13 16	13 1/8 16 5/8	15 1/2	130 220
3 1/8	2,000 3,000 5,000	3 1/8	7 7 3/8 7 3/8	28 1/2 28 3/4 28 3/4	13 16 16	14 1/8 17 1/8 18 5/8	20	188 275 315

DIMENSIOANAL DATA
High Temperature Valve, Flanged Ends
Size in inches; weight in pounds.
N = Number of turns to open

Flange connections conform to API Standard 6A

AB-FC GATE VALVE



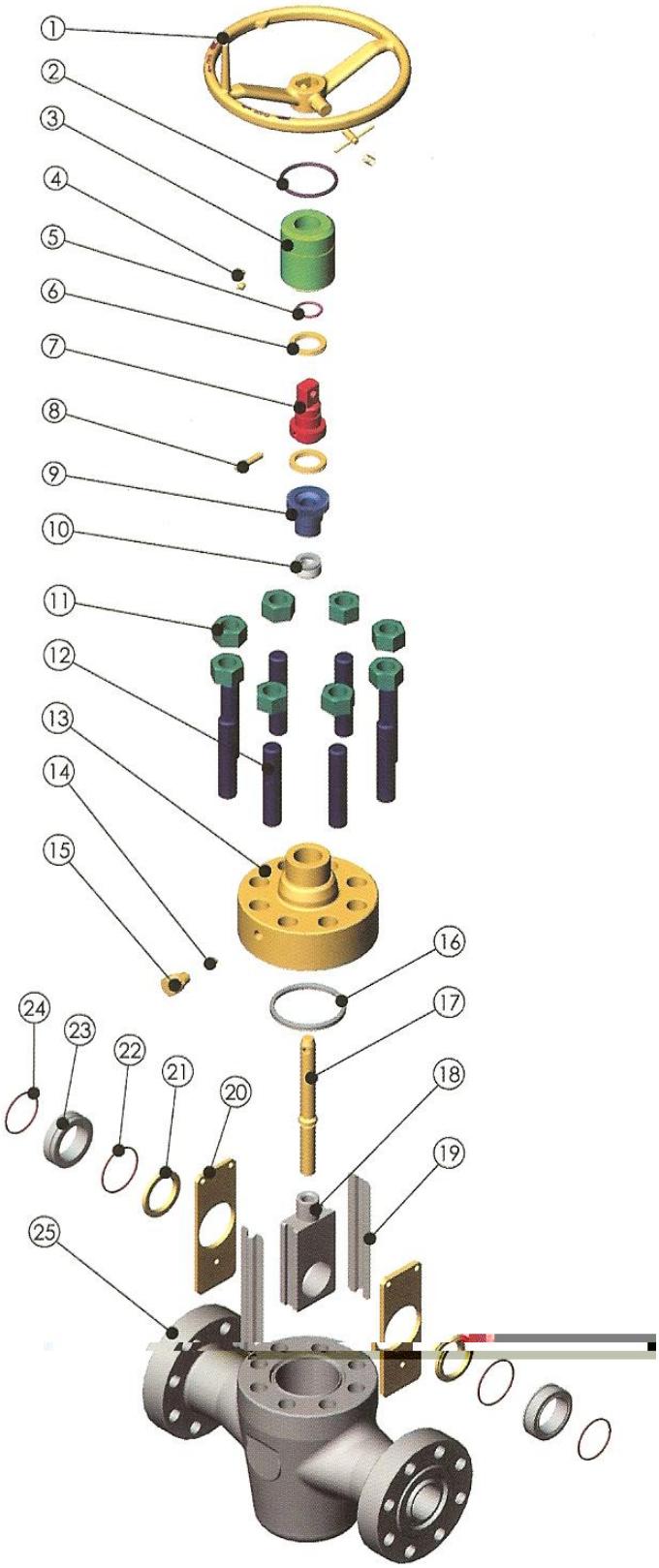
AB-FC Gate Valves
The AB-FC gate valves feature double seats (seats and bushing) which provide metal-to metal sealing against the gate. This feature makes it easy to repair and maintain the valve in line. The AB-FC valves features U.S. made PTFE (Tefon) Seal on both bushing and seat for better sealing and high performance.

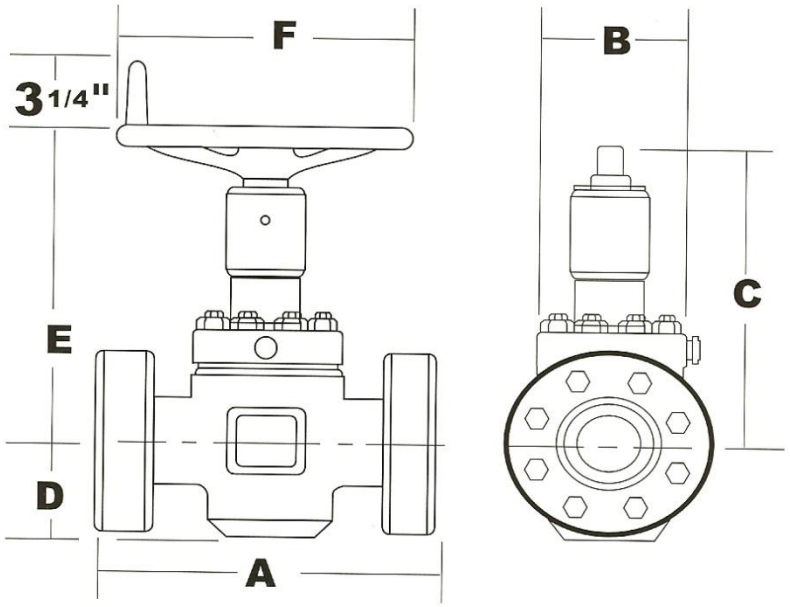
- One-piece gate construction helps to prevent line sediments from entering the body cavity, and also prevents pressure locking in the valve cavity.
- Two thrust bearing with high load capacity absorb the opening or closing loads of the gate, which minimize effort required for turning.
- Threaded packing retainer allows for replacement of the bearings or the stem pin while the valve is under pressure.
- The shoulder on the stem can be back seated against the bonnet to seal off the stuffing box. This allows for replacement of the stem packing while the valve is under pressure.
- The grease injection port permits lubrication of the gate and seat assembly and it used to vent trapped body pressure after stem back seating.
- Excessive force is not necessary to close the valve. The hand wheel should be backed off ¼ turn after the valve is fully closed.
- With minor modifications, gate valve can meet API 14D class 2 Sandy Service Rating.
- Modified Acme stem threads allow the slab gate to float and effect a positive downstream seal.

AB-FC valves are available in popular bore sizes and service rating from 2000 to 15,000 PSI. Parts for the AB-FC valve are interchangeable with other similar valves in the U.S. making the valve easy to repair.

PARTS LIST

1. Handwheel Assembly
2. O-Ring
3. Bearing Cap
4. Grease Fitting
5. O-Ring
6. Bearing Race
7. Stem Adapter
8. Stem Pan
9. Packing Gland
10. Stem Packing (U.S. made)
11. Nut
12. Stud
13. Bonnet
14. Check Valve
15. Grease Fitting
16. Bonnet Gasket
17. Stem
18. Gate
19. Guide
20. Retainer Plate
21. Seat Ring
22. Seal Ring (U.S. made)
23. Body Bushing
24. Seal Ring (U.S. made)
25. Body





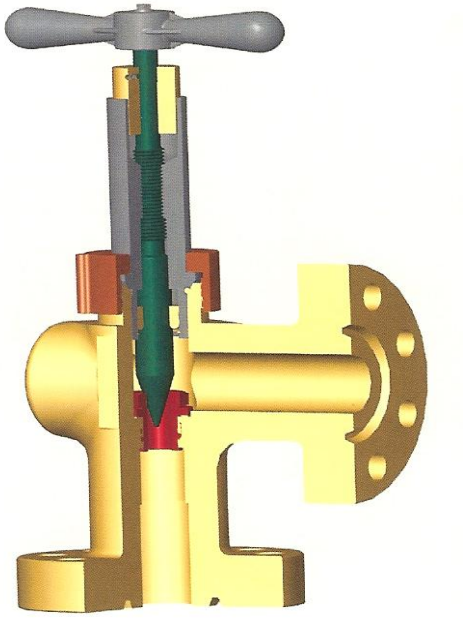
	API 5,000PSI(10,000PSI Test)					API 10,000PSI(15,000PSI Test)						API 15,000PSI(22,000PSI Test)				
	2 1/16"	2 9/16"	3 1/8"	4 1/16"	5 1/8"	1 13/16"	2 1/16"	2 9/16"	3 1/16"	4 1/16"	5 1/8"	1 13/16"	2 1/16"	2 9/16"	3 1/16"	4 1/16"
Flange Size	2 1/16"	2 9/16"	3 1/16"	3 1/16"	3 1/16"	1 13/16"	2 1/16"	2 9/16"	3 1/16"	3 1/16"	3 1/16"	1 13/16"	2 1/16"	2 9/16"	3 1/16"	4 1/16"
A End-to-End,Flanged Ring Joint	14 5/8"	16 5/8"	18 5/8"	21 5/8"	28 5/8"	18 1/4"	20 1/2"	22 1/4"	24 3/8"	26 3/8"	29"	18"	19"	21"	23 9/16"	29"
B Extreme Width of Body	9 1/16"	9 3/8"	9 13/16"	10 1/4"	13"	9 1/16"	9 3/8"	9 13/16"	10 1/4"	13"	13 9/16"	9 7/8"	9 7/8"	11 1/2"	13 9/16"	13 9/16"
C Center of Port to Top of Stem Adapter	15 1/8"	15 1/8"	16 7/8"	20 15/16"	20 15/16"	15 1/8"	15 1/8"	15 3/16"	16 7/8"	19 3/4"	20 15/16"	15 1/8"	15 1/8"	17 3/16"	20 15/16"	20 15/16"
D Center of Port to Bottom of Body	6 1/8"	7 5/16"	9 1/4"	9 1/4"	9 1/4"	5 3/4"	5 7/8"	6 13/16"	8 1/16"	8 3/4"	9 1/4"	5 7/8"	6 1/8"	7 5/16"	9 1/4"	9 1/4"
E Center of Port to Handwheel Rim	17 3/8"	18 1/8"	18 1/8"	22 3/16"	22 3/16"	17 3/8"	17 3/8"	18 1/8"	18 1/8"	25 1/2"	22 3/16"	17 3/8"	17 3/8"	19 9/16"	22 3/16"	22 3/16"
F Handwheel OD	18 1/2"	18 1/2"	24"	24"	24"	14"	18 1/2"	18 1/2"	24"	24"	24"	18 1/2"	18 1/2"	18 1/2"	24"	24"
API Ring Gasket	R24	R27	R35	R39	R44	BX-151	BX-152	BX-153	BX-154	BX-155	BX-169	BX-151	BX-152	BX-153	BX-154	BX-155
No.of Turns-Full Open to Full Close=1/4	12 1/2"	15 3/4"	15 1/4"	15 1/4"	15 1/4"	12 1/2"	12 1/2"	15 1/4"	18 1/4"	23 1/4"	15 1/4"	12 1/2"	12 1/2"	15 3/4"	15 1/4"	23 1/4"
Weight	215Lb	385Lb	580Lb	850Lb	1200Lb	270Lb	275Lb	485Lb	680Lb	950Lb	1500Lb	275Lb	350Lb	800Lb	1065Lb	1800Lb

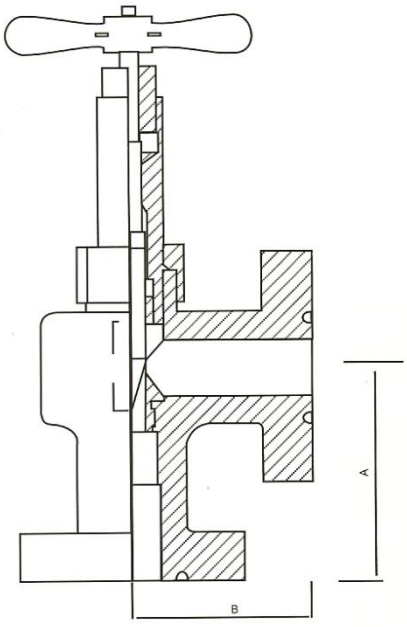
A Better Valve—A reliable Partner

Needle and Seat Chokes

Needle and seat chokes are available in adjustable and positive models and can be converted from one to the other without removal from the line.

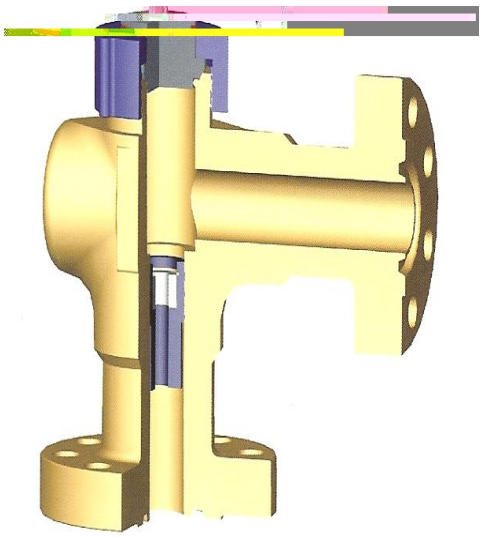
The choke is ideally suited for use on high pressure choke and kill manifolds as the hardened needles and seats withstand the erosive effects of highly abrasive material. The chokes use standard AB-JC choke beans and the parts are completely interchangeable with similar U.S. made chokes.





FLANGED INLET	FLANGED OUTLET	A	B
1 13/16-10000	1 13/16-10000	8.31	7.69
1 13/16-15000	1 13/16-15000	9.62	8.47
2 1/16-5000	2 1/16-5000	8.00	6.88
2 1/16-10000	2 1/16-10000	8.84	7.66
2 1/16-15000	2 1/16-15000	10.31	8.88
2 9/16-10000	2 9/16-10000	11.75	10.38
2 9/16-15000	2 9/16-15000	11.75	10.50
3 1/8-3000	3 1/8-3000	11.38	8.88
3 1/8-5000	3 1/8-5000	11.38	8.88
3 1/16-10000	3 1/16-10000	11.75	10.38
3 1/16-15000	3 1/16-15000	11.62	10.38
4 1/16-10000	4 1/16-10000	11.50	9.94

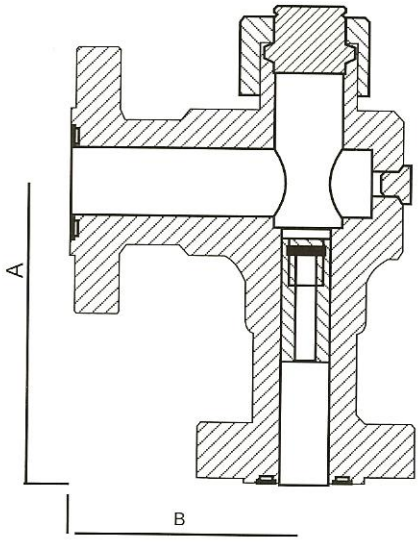
AB-JC CHOKE VALVE



The positive choke high performance needle and seat choke are the result of our studying for many years. Commitment to produce research and development.

Every positive choke is designed and manufactured in accordance with API 6A, and can be manufactured to PSL level III. API PSL level II is standard up to 10,000 PSI, and level III is standard for 15,000 PSI. These new chokes are available in all standard sizes, and with various trims depending upon customer requirement. Typical applications, in addition to the Christmas tree, are production manifolds, line heaters, separators, drilling manifolds, well testing and clean-up, water can CO2 injection and well blow-down. The positive choke design features an intergral body bleeder valve. Reduced operating torque and interchangeable beans and seats are standard features.

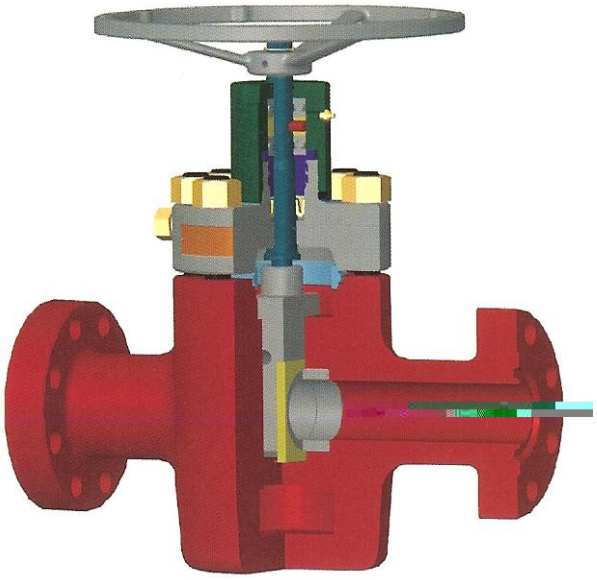
FLANGED INLET	FLANGED OUTLET	A	B
1 13/16-10000 1 13/16-15000	1 13/16-10000 1 13/16-15000	8.31 9.62	7.69 8.47
2 1/16-5000 2 1/16-10000 2 1/16-15000	2 1/16-5000 2 1/16-10000 2 1/16-15000	8.00 8.84 10.31	6.88 7.66 8.88
2 9/16-10000 2 9/16-15000	2 9/16-10000 2 9/16-15000	11.75 11.75	10.38 10.50
3 1/8-3000 3 1/8-5000 3 1/16-10000 3 1/16-15000	3 1/8-3000 3 1/8-5000 3 1/16-10000 3 1/16-15000	11.38 11.38 11.75 11.62	8.88 8.88 10.38 10.38
4 1/16-10000	4 1/16-10000	11.50	9.94



AB-PF GATE VALVE

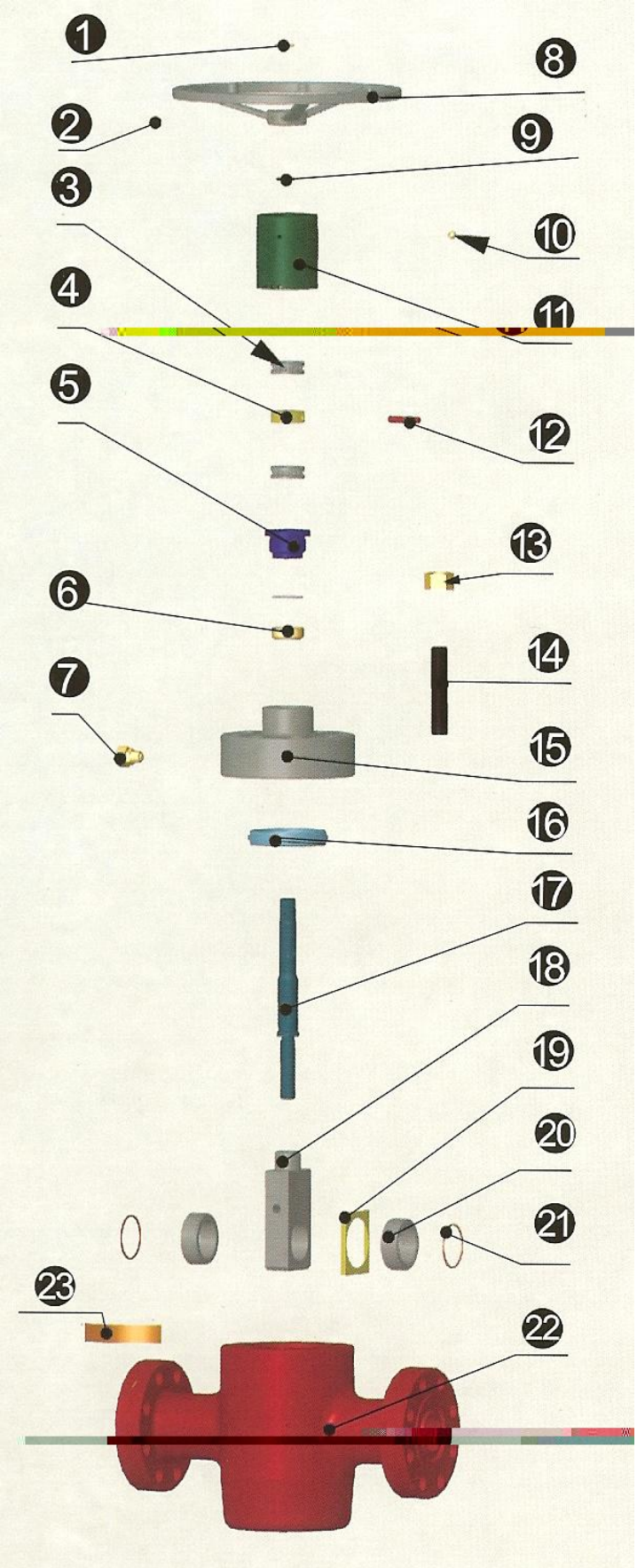
-PF GATE VALVE
All AB-PF gate valves are manufactured to API Specification 6A, latest edition, and have been performance tested and certified to PR2 through the rigorous testing procedures of Appendix F.

All models are bi-directional with non-rising stem, selective metal-to-metal backseat, and metal-to-metal body / bonnet seal.



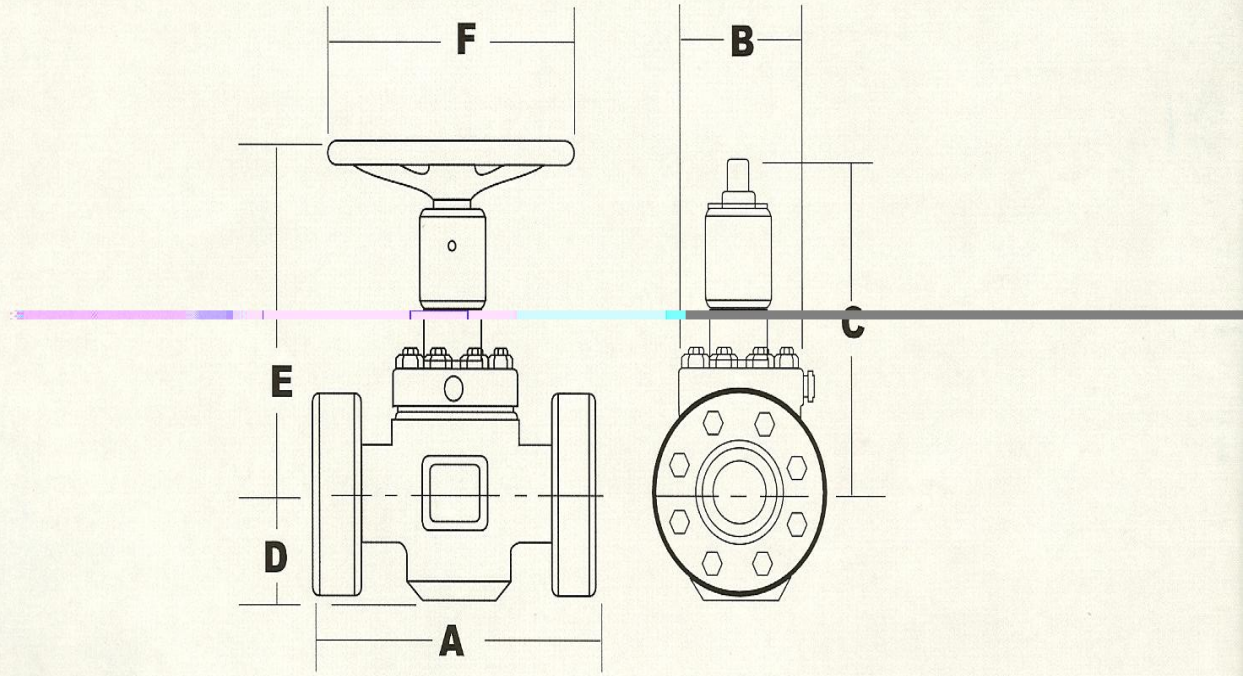
AB-PF

- Simple design, low cost.
- 2,000 and 5,000 PSI body is casted, 10,000 and 15,000 PSI body is forged.
- Material Class: AA BB CC DD EE FF
- Temperature From: -50^{0}F –250^{0}F
- Manufactured to PSL1, PSL2 and PSL3.
- Standard with Nickel-base or Cobalt-base Hard-Faced Gate / seat trims.

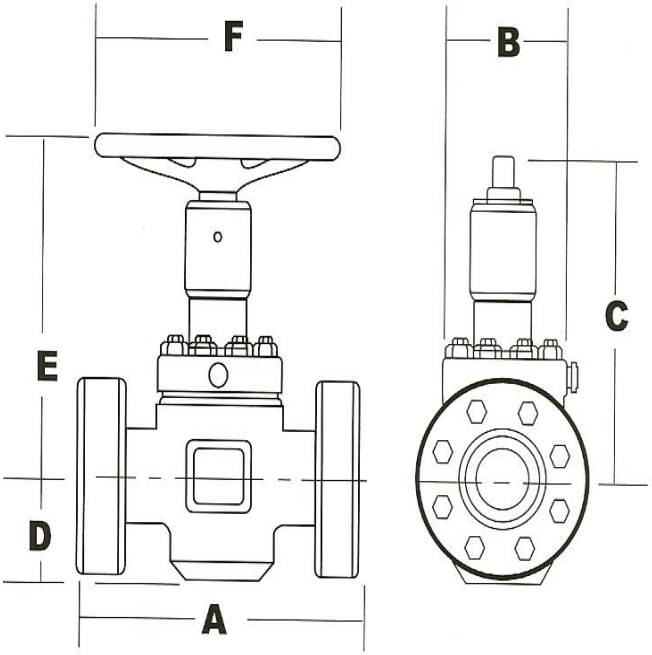


Part List

1. Safety Pin
2. Pin
3. Bearing
4. Stem Adapter
5. Packing Gland
6. Stem Packing
7. Grease Fitting
8. Handwheel
9. O-Ring
10. Grease Fitting
11. Bearing Cap
12. Stem Pin
13. Nut
14. Stud
15. Bonnet
16. Bonnet Gasket
17. Stem
18. Gate
19. Guide
20. Seat Ring
21. .Seal Ring
22. .Body
23. .Name Plate



	API 2,000PSI(4,000PSI Test)					API 3,000PSI(6,000PSI Test)					API 5,000PSI(10,000PSI Test)				
	2 1/16"	2 9/16"	3 1/8"	4 1/16"	5 1/8"	2 1/16"	2 9/16"	3 1/8"	4 1/16"	5 1/8"	2 1/16"	2 9/16"	3 1/8"	4 1/16"	5 1/8"
Flange Size	2 1/16"	2 9/16"	3 1/8"	3 1/16"	3 1/16"	2 1/16"	2 9/16"	3 1/8"	3 1/16"	3 1/16"	2 1/16"	2 9/16"	3 1/8"	4 1/16"	3 1/16"
A End-to-End,Flanged Ring Joint	11 5/8"	13 5/8"	14 1/8"	17 1/8"	22 1/8"	14 5/8"	16 5/8"	17 1/8"	20 1/8"	241/8"	24 5/8"	16 5/8"	18 5/8"	21 5/8"	28 5/8"
B Extreme Width of Body	5 13/16"	7 3/8"	8 13/16"	9 1/4"	10 1/4"	5 13/16"	7 3/8"	8 13/16"	9 1/4"	10 1/4"	5 13/16"	7 3/8"	8 13/16"	9 1/4"	10 1/4"
C Center of Port to Top of Stem Adapter	11 1/8"	14 1/8"	15 7/8"	18 15/16"	20 15/16"	11 1/8"	14 1/8"	15 7/8"	18 15/16"	20 15/16"	11 1/8"	14 1/8"	15 7/8"	18 15/16"	20 15/16"
D Center of Port to Bottom of Body	5 1/8"	6 5/16"	7 13/16"	8 1/4"	9 1/4"	5 1/8"	6 5/16"	7 13/16"	8 1/4"	9 1/4"	5 1/8"	6 5/16"	7 13/16"	8 1/4"	9 1/4"
E Center of Port to Handwheel Rim	11 3/8"	13 1/8"	15 3/8"	21 3/16"	22 3/16"	11 3/8"	13 1/8"	15 3/8"	21 3/16"	22 3/16"	11 3/8"	13 1/8"	15 3/8"	21 3/16"	22 3/16"
F Handwheel OD	13"	13"	18 1/2"	18 1/2"	24"	13"	13"	18 1/2"	18 1/2"	24"	13"	13"	18 1/2"	18 1/2"	24"
API Ring Gasket	R23	R26	R31	R37	R41	R24	R27	R31	R37	R41	R24	R27	R35	R39	R44
No.of Turns-Full Open to Full Close=1/4	12 1/2"	14 3/4"	18 1/4"	23 1/4"	25 1/4"	12 1/2"	15 1/4"	18 1/4"	23 1/4"	25 1/4"	12 1/2"	15 3/4"	15 1/4"	23 1/4"	25 1/4"
Weight	122Lb	144Lb	210Lb	397Lb	508Lb	166Lb	188Lb	287Lb	508Lb	662Lb	166Lb	210Lb	276Lb	552Lb	706Lb



	API 10,000PSI(15,000PSI Test)						API 15,000PSI(22,000PSI Test)				
	1 13/16"	2 1/16"	2 9/16"	3 1/16"	4 1/16"	5 1/8"	1 13/16"	2 1/16"	2 9/16"	3 1/16"	4 1/16"
Flange Size	1 13/16"	2 1/16"	2 9/16"	3 1/16"	3 1/16"	3 1/16"	1 13/16"	2 1/16"	2 9/16"	3 1/16"	4 1/16"
A End-to-End,Flanged Ring Joint	18 1/4"	20 1/2"	22 1/4"	24 3/8"	26 3/8"	29"	18"	19"	21"	23 9/16"	29"
B Extreme Width of Body	9 1/16"	9 3/8"	9 13/16"	10 1/4"	13"	13 9/16"	9 7/8"	9 7/8"	11 1/2"	13 9/16"	13 9/16"
C Center of Port to Top of Stem Adapter	15 1/8"	15 1/8"	15 3/16"	16 7/8"	19 3/4"	20 15/16"	15 1/8"	15 1/8"	17 3/16"	20 15/16"	20 15/16"
D Center of Port to Bottom of Body	5 3/4"	5 7/8"	6 13/16"	8 1/16"	8 3/4"	9 1/4"	5 7/8"	6 1/8"	7 5/16"	9 1/4"	9 1/4"
E Center of Port to Handwheel Rim	17 3/8"	17 3/8"	18 1/8"	18 1/8"	25 1/2"	22 3/16"	17 3/8"	17 3/8"	19 9/16"	22 3/16"	22 3/16"
F Handwheel OD	14"	18 1/2"	18 1/2"	24"	24"	24"	18 1/2"	18 1/2"	18 1/2"	24"	24"
API Ring Gasket	BX-151	BX-152	BX-153	BX-154	BX-155	BX-169	BX-151	BX-152	BX-153	BX-154	BX-155
No.of Turns-Full Open to Full Close=1/4	12 1/2"	12 1/2"	15 1/4"	18 1/4"	23 1/4"	15 1/4"	12 1/2"	12 1/2"	15 3/4"	15 1/4"	23 1/4"
Weight	254Lb	265Lb	364Lb	596Lb	662Lb	993Lb	276Lb	287Lb	408Lb	651Lb	772Lb

Contact Us

Better Oil Tools Co., Ltd.

Tel/Fax: +662158 9272
Mobile: +6687067 7227
Email: sales@betteroiltools.com
www.betteroiltools.com