PROFI

VALVE.

Ball Valve . Gate valve . Globe Valve . Check Valve . Butterfly Valve . Plug Valve

About US

Profi Oilfield International Sdn Bhd is a company specialising in the supply and manufacturing of valves. It is located in Ulu Tiram, Johor, near Petronas Pengerang Intergrated Complex (PIC) / Petronas RAPID Project. Profi Oilfield International Sdn Bhd is a member of TURCOMP Group.

We are known as a leading manufacturer and service provider of oilfield equipment used in drilling and production of oil and gas. We have designed and produced a complete line of high quality API 6D products, as well as products for engineering which consists of gate valves and check valves.

With one acre manufacturing area, expert team and shared know-how, we are able to manufacture and produce high quality valves including Ball, Globe, Check, and Gate Valves. In order to meet customers' needs and to produce better, higher quality products, all of the soft parts are made locally in Malaysia.

Profi Oilfield International Sdn Bhd aspires to manufacture the best valve designs that enhance and optimise our clients' performance. To achieve these goals, we have a clear focus on:

- **P**rofessionalism in design, outstanding manufacturing process and first class product quality.
- **R**eliable products to fulfil clients' requirement and ensure profits.
- **O**peration in World Class standard factory.
- **F**oundation built on mutual benefits sharing system between shareholders and employee.
- **I**ntegration of human resource in contributing to well-being society or integrity in project execution which helps us retain the long-term trust.

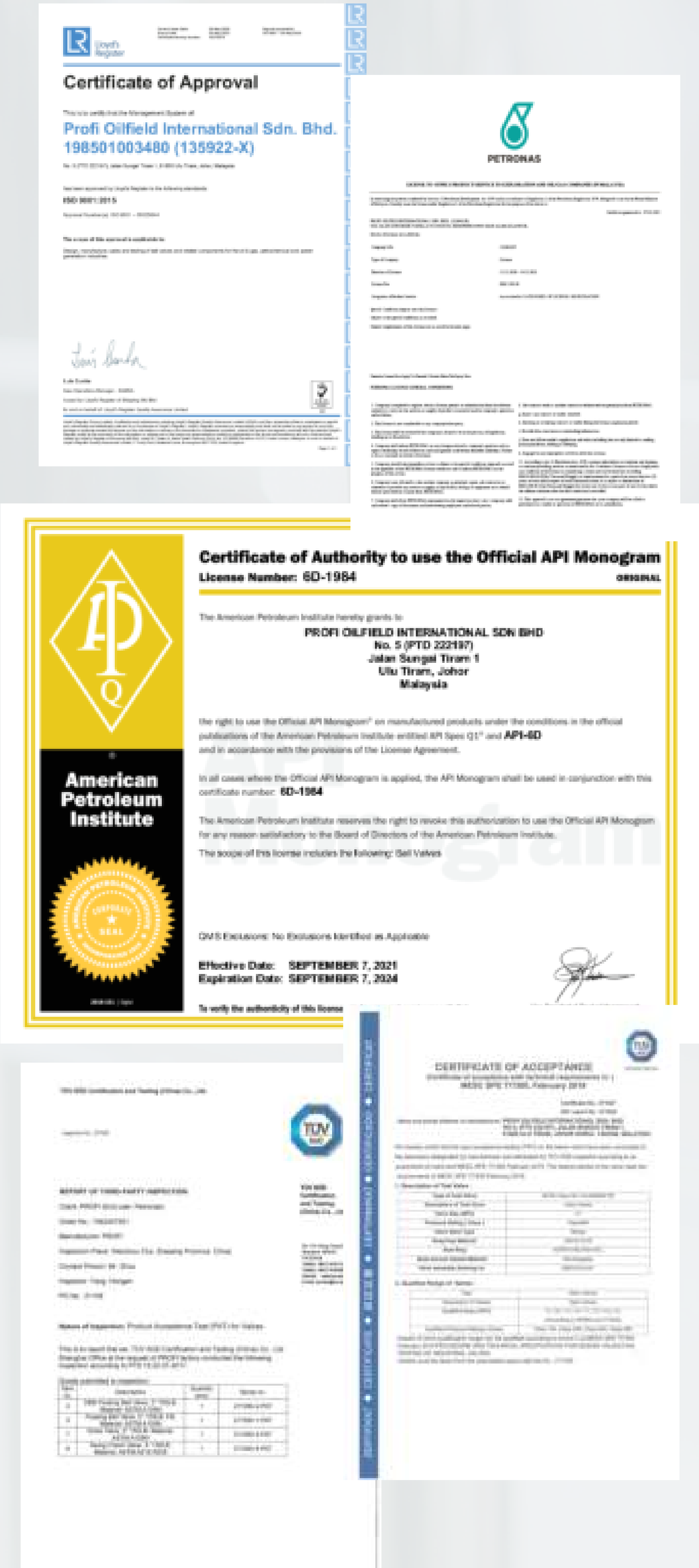
Our valves are designed for severe service to a high standard for applications such as : corrosive and erosive (slurry) fluids, high temperature, underground, cryogenic and any other specific requirements from our customers.

The valves meet a full range of industry standards and testing requirements per the customers' specification to include fugitive emissions, performance and functionality, high pressure gas, high temperature, low temperature, fire safe. NDE inspections can be conducted as required.

Our offer for the general sizes range is from 1/8" to 40". If client required larger than these sizes, it can be ordered per special requirements. The valves' general pressure ratings range between 150LB and 4500LB.

Profi Oilfield International Sdn Bhd has several certifications including API and ISO.

OUR Certificates



Product SERIES



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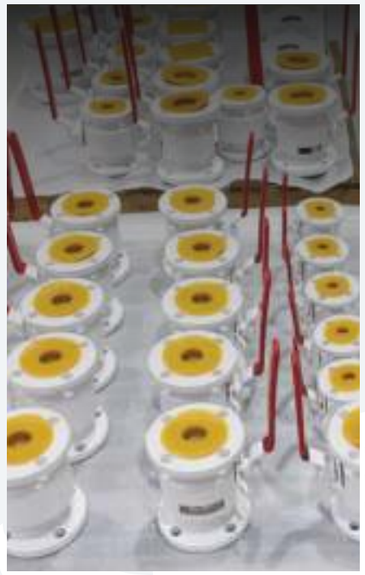


Ball Valve, CS, FL (Floating)

Valve Design

PROFI ball valves are designed and manufactured for longer service life and high dependability. Our ball valves are made to American Petroleum Institute standard API 608 & API 6D design requirements, British Standard BS 5351 and comply with American Society of Mechanical Engineers standard ASME B16.34. These valves are available in a complete range of body/bonnet materials and trims.

Range of Materials

These standard body/bonnet materials are made of nine grades of carbon, low alloy, and stainless steels. It can be supplied in other grades of alloy and stainless steel for a special usage and requirement. There are full range of trim materials to match for any service. For a full range service conditions, there are optional packing and gasket materials are availble.

PROFI Ball Valve that are available for modification

- Trim changes
- End connection modifications
- Packing and gasket changes
- Operator mounting
- Handwheel extensions
- Pressure equalising
- Anti Static or Fire Durable
- Customer specified coatings
- Weld end bore changes
- Oxygen & chlorine cleaning & packing

Operating

For an easy operation, lever extended are offered. For a difficult services, these are available with gearing, motor actuators, pneumatic or hydraulic actuators.

Body & Bonnet

The valve came with split or 3-piece, split body & bonnet for 12” and smaller. It is easy to dissambles of internal components for repairing or replacement if needed.

End Connections

Has choice for flanged, RTJ flanged, or butt weld ends for piping flexibility.

Blow-out Proof Stem

For protection against failure under excess pressure, a pressure-safe stem shoulder has been designed.

Bore

The full-bore has been designed to provides an exceptional flow control.

Packing

STD Packing multiple V-TEFLON, these are combined with live Graphite packing that is used for a high temperature applications.

Anti Static

A metallic contact is always granted between ball and stem/ body to discharge eventual static build up during operation service.

Fire Resistant

Designed in accordance with API 607 or BS 6755 to ensure that its functioning is safe in the event of a fire. If the primary seal is destroyed by fire, the secondary metal-to-metal seal serves as a backup. Graphite packing and gaskets will be included with all API 607-compliant valves.

150Lb Cast Steel Ball Valve (Floating)

Applicable Standards

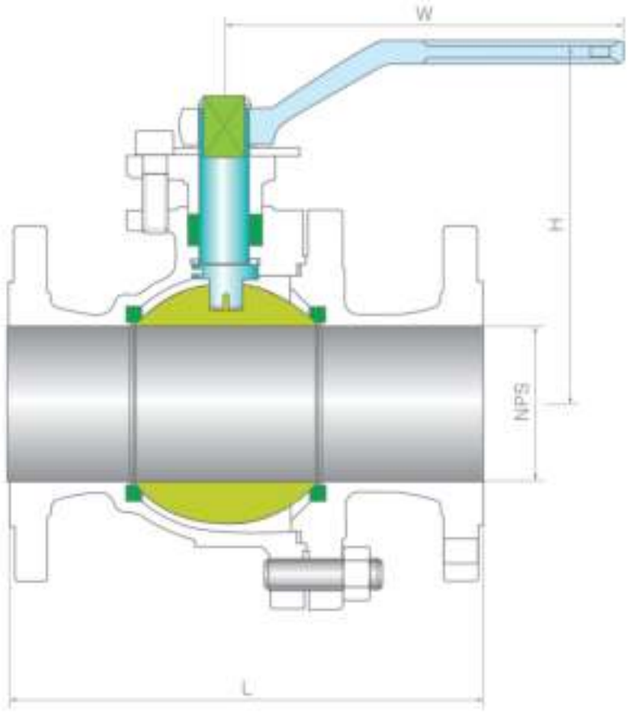
Steel ball valves: API 608/API 6D
Steel ball valves: ISO 14313
Fire resistant: API 607
Anti static: API 608
Steel Valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Inspection and test: API 598/API 6D

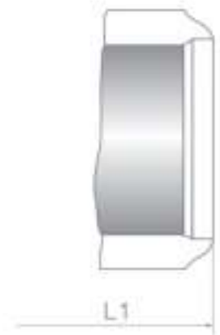
Valve Design Description

Full port design
Bolted bonnet (BB) split body
Floating ball type
Blow-out proof stem
Fire resistant construction
Anti static device
Stopper device
ISO 5211 Mounting pad
Flanged or butt weld ends
Available with manual worm gear

Fig. No.

B1F56A B1F59L B1F56B
B1B56A B1B59L B1B56B





Materials List

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304[1]	A182-F316	A182-F304[1]
4	Stem	A276-304	A276-316	A276-304
5	Seat Ring		R.PTFE	
6	Bonnet Gasket	Graphite+304[1]	PTFE	Graphite+304[1]
7	Bonnet Stud	A193-B7	A193-B8	A320-L7
8	Bonnet Stud Nut	A194-2H	A194-8	A194-4
9	Packing		PTFE	
10	Gland Flange	A216-WCB	A351-CF8M	A352-LCB
11	Gland Bolt	A193-B7	A193-B8	A193-B7
12	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
13	Handle		Carbon Steel	

Note:
A105+ENP optional ; Spiral wound construction

Dimensional Data

Size		L (RF)		L1 (BW)		H		W		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF	BW
1/2	15	4.25	108	5.50	140	2.12	55	5	130	2.3	1.8
3/4	20	4.62	117	6.00	152	2.12	55	5	130	3	2.8
1	25	5.00	127	6.50	165	2.75	70	6	160	4.5	3.7
1 1/2	40	6.50	165	7.50	190	3.50	90	8	200	7	6.2
2	50	7.00	178	8.50	216	4.12	105	14	350	9.5	8.5
2 1/2	65	7.50	190	9.50	241	6.12	155	16	400	15	14
3	80	8.00	203	11.12	283	7.25	185	20	500	19	21
4	100	9.00	229	12.00	305	8.00	205	20	500	33	35
6	150	15.50	394	18.00	457	10.00	255	24	600	93	98
8	200	18.00	457	20.50	521	11.00	280	32	800	160	170
10	250	21.00	533	22.00	559	13.50	345	32	800	200	225
12	300	24.00	610	25.00	635	16.50	420	32	800	280	295

300Lb Cast Steel Ball Valve (Floating)

Applicable Standards

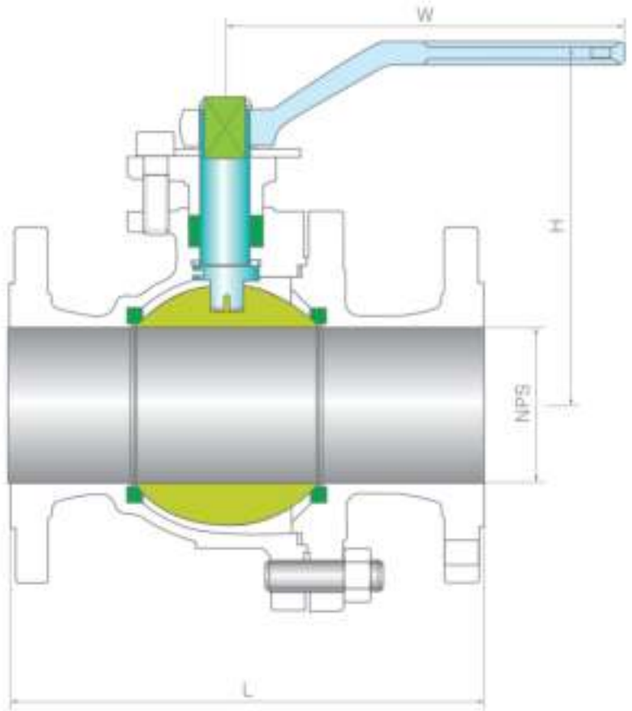
Steel ball valves: API 608/API 6D
Steel ball valves: ISO 14313
Fire resistant: API 607
Anti static: API 608
Steel Valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.25
Inspection and test: API 598/API 6D

Valve Design Description

Full port design
Bolted bonnet (BB) split body
Floating ball type
Blow-out proof stem
Fire resistant construction
Anti static device
Stopper device
ISO 5211 Mounting pad
Flanged or butt weld ends
Available with manual worm gear operator

Fig. No.

B3F56A B3F59L B3F56B
B3B56A B3B59L B3B56B
B3R56A B3R59L B3R56B



Materials List

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304[1]	A182-F316	A182-F304[1]
4	Stem	A276-304	A276-316	A276-304
5	Seat Ring		R.PTFE	
6	Bonnet Gasket	Graphite+304[2]	PTFE	Graphite+304[1]
7	Bonnet Stud	A193-B7	A193-B8	A320-L7
8	Bonnet Stud Nut	A194-2H	A194-8	A194-4
9	Packing		PTFE	
10	Gland Flange	A216-WCB	A351-CF8M	A352-LCB
11	Gland Bolt	A193-B7	A193-B8	A193-B7
12	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
13	Handle		Carbon Steel	

Note:
A105+ENP optional ; Spiral wound construction

Dimensional Data

Size		L (RF)		L1 (BW)		H		W		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF	BW
1/2	15	5.50	140	5.50	140	2.12	55	5	130	2.5	1.8
3/4	20	6.00	152	6.00	152	2.12	55	5	130	3.5	2
1	25	6.50	165	6.50	165	2.75	70	6	160	5.5	3.2
1 1/2	40	7.50	190	7.50	190	3.50	90	8	200	10.5	5.5
2	50	8.50	216	8.50	216	4.12	105	14	350	14.5	8.7
2 1/2	65	9.50	241	9.50	241	6.12	153	16	400	23.5	15
3	80	11.12	283	11.12	283	7.25	187	20	500	30	18
4	100	12.00	305	12.00	305	8.00	206	20	500	55	36
6	150	15.88	403	18.00	457	10.00	255	24	600	118	85
8	200	19.75	502	20.50	521	11.00	280	32	800	200	152
10	250	22.38	568	22.00	559	13.50	345	32	800	250	182
12	300	25.50	648	25.00	635	16.50	420	32	800	330	232

600Lb Cast Steel Ball Valve (Floating)

Applicable Standards

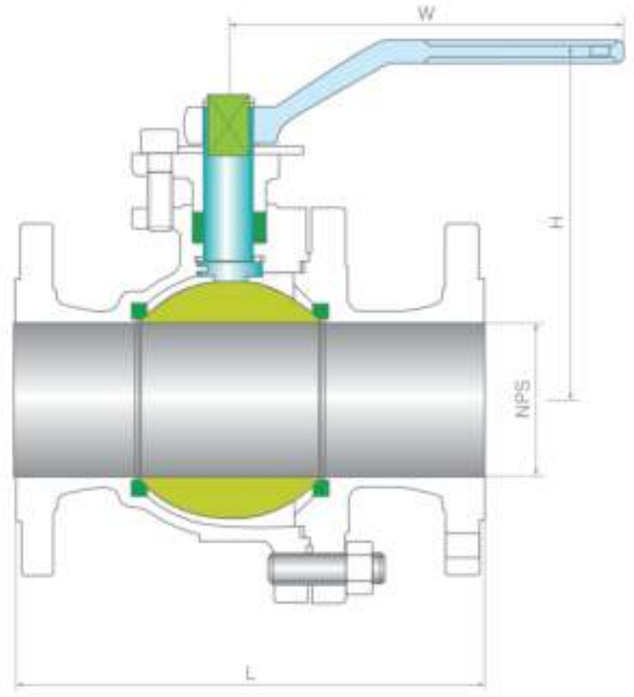
Steel ball valves: API 608/API 6D
Steel ball valves: ISO 14313
Fire resistant: API 607
Anti static: API 608
Steel Valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Inspection and test: API 598/API 6D

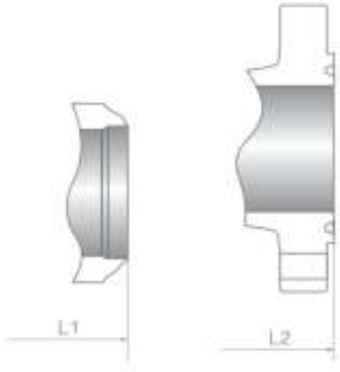
Valve Design Description

Full port design
Bolted bonnet (BB) split body
Floating ball type
Blow-out proof stem
Fire resistant construction
Anti static device
Stopper device
ISO 5211 Mounting pad
Flanged or butt weld ends
Available with manual worm gear operator

Fig. No.

B6F56A B6F59L B6F56B
B6B56A B6B59L B3656B
B6R56A B6R59L B6R56B





Materials LIst

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304[1]	A182-F316	A182-F304[1]
4	Stem	A276-304	A276-316	A276-304
5	Seat Ring		R.PTFE	
6	Bonnet Gasket	Graphite+304[2]	PTFE	Graphite+304[1]
7	Bonnet Stud	A193-B7	A193-B8	A320-L7
8	Bonnet Stud Nut	A194-2H	A194-8	A194-4
9	Packing		PTFE	
10	Gland Flange	A216-WCB	A351-CF8M	A352-LCB
11	Gland Bolt	A193-B7	A193-B8	A193-B7
12	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
13	Handle		Carbon Steel	

Note:
A105+ENP optional ; Spiral wound construction

Dimensional Data

Size		L/L1 (RF/BW)		L2 (RTJ)		H		W		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
1/2	15	6.50	165	-	-	2.38	61.5	5	130	3.3	2.6
3/4	20	7.50	190	-	-	2.38	61.5	6	160	4.5	3.1
1	25	8.50	216	-	-	3.00	78	8	200	7.2	4.8
1 1/2	40	9.50	241	-	-	4.00	101	14	350	13.5	8
2	50	11.50	292	11.62	295	4.75	120	16	400	19	13
2 1/2	65	13.00	330	13.12	333	6.88	174	20	500	31	22
3	80	14.00	356	14.12	359	8.38	212	24	600	39	27
4	100	17.00	432	17.12	435	9.25	234	24	600	71	53
6	150	22.00	559	22.12	562	11.38	289	32	800	153	120
8	200	-	-	-	-	-	-	-	-	-	-
10	250	-	-	-	-	-	-	-	-	-	-
12	300	-	-	-	-	-	-	-	-	-	-

Ball Valve, CS, TM (Trunnion Mounted)

Valve Design

PROFI ball valves are designed and manufactured for longer service life and high dependability. Our ball valves are made to American Petroleum Institute standard API 608 & API 6D design requirements, British Standard BS 5351 and comply with American Society of Mechanical Engineers standard ASME B16.34. These valves are available in a complete range of body/bonnet materials and trims.

Range of Materials

These standard body/bonnet materials are made of nine grades of carbon, low alloy, and stainless steels. It can be supplied in other grades of alloy and stainless steel for a special usage and requirement. There are full range of trim materials to match for any service. For a full range service conditions, there are optional packing and gasket materials are availble.

PROFI Ball Valve that are available for modification

- Trim changes
- End connection modifications
- Packing and gasket changes
- Operator mounting
- Handwheel extensions
- Pressure equalising
- Anti Static or Fire Durable
- Customer specified coatings
- Weld end bore changes
- Oxygen & chlorine cleaning & packing

Operating

For an easy operation, lever extended are offered. For difficult services, these are available with gearing, motor actuators, pneumatic or hydraulic actuators.

Body & Bonnet

The valve came with split or 3-piece, split body & bonnet for 12” and smaller. It is easy to dissambles of internal components for repairing or replacement if needed.

End Connections

Has choice for flanged, RTJ flanged, or butt weld ends for piping flexibility.

Double Block & Bleed/DOB

Double block & bleed. When the ball is totally closed or fully opened, the bodily cavity will completely isolated. To avoid over pressure, the medium enclosed in it can be quickly bled.

Bore

Two types of bore, full bore or reduced bore. These has been designed to provide the best flow control.

Packing

STD Packing compression is maintained in high-cycle and severe service applications by combining numerous V-TEFLON with live loading. For high-temperature applications, graphite packing is used.

Anti Static

A metallic contact is always made between the ball and the stem/body to discharge any static build-up that may occur during operation.

Fire Resistant

Designed to API 607 or BS 6755 to grant their operation suitability in case of fire. Secondary metal-to-metal seal acts as backup if primary seal is destroyed by fire. Valves ordered for compliance with API 607 will be provided with graphite packing and gaskets.

150Lb Cast Steel Ball Valve (Trunnion)

Applicable Standards

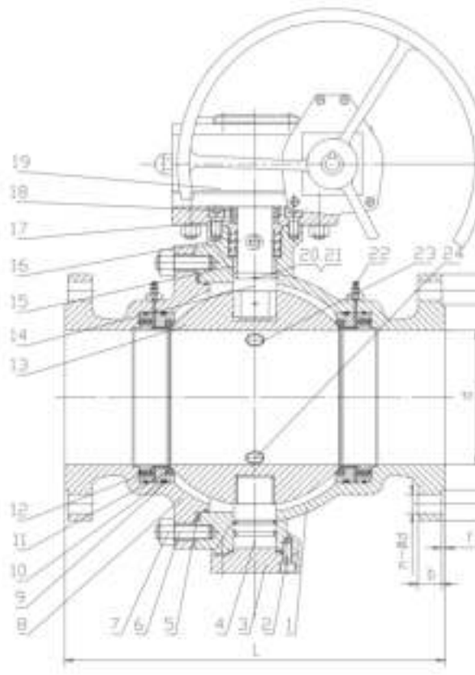
Steel ball valves: API 608/API 6D
Steel ball valves: ISO 14313
Fire resistant: API 607
Anti static: API 608
Steel Valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

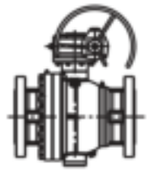
Valve Design Description

Full port design
Bolted bonnet (BB) split body
Three piece body for 12" & above
Trunnion mounted ball type
Blow-out proof stem
Fire resistant construction
Anti static device
Stopper device
ISO 5211 Mounting pad
Flanged or butt weld ends
Available with manual worm gear operator

Fig. No.

BM1F56A BM1F59L BM1F56B
BM1B56A BM1B59L BM1B56B





Materials List

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304[1]	A182-F316	A182-F304[1]
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105-ENP	A182-F316	A305-LF2+ENP
6	Stem insert		Glass filled PTFE	
7	Seat spring	A313-304	Inconel X-750	A313-304
8	Seat O-ring	NBR	Viton	Viton
9	Stem O-ring	NBR	Viton	Viton
10	Bonnet gasket	Graphite+304[2]	Graphite+316[2]	Graphite+304[2]
11	Bonnet O-ring	NBR	Viton	Viton

No	Part Name	ASTM Material		
		Carbon Steel	1 1/4Cr-1/2Mo	Carbon Steel
12	Antistatic spring	A313-304	A313-316	A313-304
13	Grounding plunger	A216-WCB	A182-F316	A182-F304
14	Bonnet stud	A193-B7	A193-B8	A320-L7
15	Bonnet stud nut	A194-2H	A194-8	A194-4
16	Trunnion	A276-304	A276-316	A276-304
17	Trunnion bearing	304+PTFE	316+PTFE	304+PTFE
18	Gland flange	A216-WCB	A351-CF8M	A352-LCB
19	Gland bolt	A193-B7	A193-B8	A193-B7
20	Stop plate	Carbon Steel	Carbon steel+Zn	Carbon Steel
21	Handle		Carbon steel	

Note:
A105+ENP optional ; Spiral wound construction

Dimensional Data

Size		L (RF)		L1 (BW)		H		W		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF	BW
2	50	7.00	178	8.50	216	7.00	177	14	350	15	13.5
2 1/2	65	7.50	190	9.50	241	7.50	190	16	400	19	15.5
3	80	8.00	203	11.12	283	8.25	210	20	500	27	24.5
4	100	9.00	229	12.00	305	9.25	235	20	500	38	32.5
6	150	15.50	394	18.00	457	20.88	530	24	600	81	76
8	200	18.00	457	20.50	521	24.62	625	24	600	140	132
10	250	21.00	533	22.00	559	25.62	650	24	600	160	147
12	300	24.00	610	25.00	635	30.75	780	24	600	205	182
14	350	27.00	686	30.00	762	31.00	790	32	800	260	241
16	400	30.00	762	33.00	838	36.25	920	32	800	390	370
18	450	34.00	864	36.00	914	38.25	970	32	800	510	495
20	500	36.00	914	39.00	991	43.38	1100	32	800	750	726
24	600	42.00	1067	45.00	1143	45.25	1150	32	800	1200	1125
26	650	45.00	1143	49.00	1245	50.75	1290	32	800	1400	1250
28	700	49.00	1245	53.00	1346	55.12	1400	32	800	1860	1640
30	750	51.00	1295	55.00	1397	64.12	1630	32	800	2100	1930
32	800	54.00	1372	60.00	1524	70.88	1840	32	800	2530	2390
36	900	60.00	1524	68.00	1727	80.75	2050	32	800	2970	2760

300Lb Cast Steel Ball Valve (Trunnion)

Applicable Standards

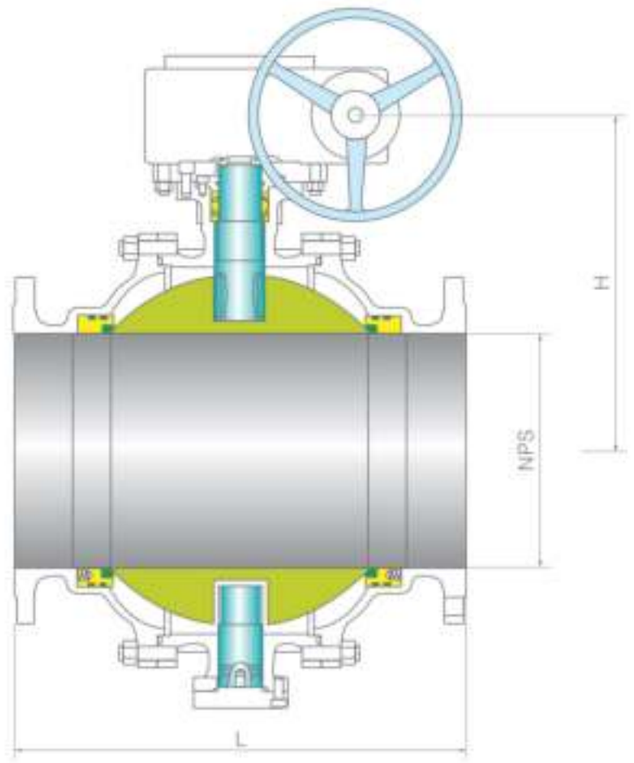
Steel ball valves: API 608/API 6D
Steel ball valves: ISO 14313
Fire resistant: API 607
Anti static: API 608
Steel Valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

Valve Design Description

Full port design
Bolted bonnet (BB) split body
Three piece body for 12" & above
Trunnion mounted ball type
Blow-out proof stem
Fire resistant construction
Anti static device
Stopper device
ISO 5211 Mounting pad
Flanged or butt weld ends
Available with manual worm gear operator

Fig. No.

BM3F56A BM3F59L BM3F56B
BM3B56A BM3B59L BM3B56B
BM3R56A BM3R59L BM3R56B



Materials List

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304[1]	A182-F316	A182-F304[1]
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105-ENP	A182-F316	A305-LF2+ENP
6	Stem insert		Glass filled PTFE	
7	Seat spring	A313-304	Inconel X-750	A313-304
8	Seat O-ring	NBR	Viton	Viton
9	Stem O-ring	NBR	Viton	Viton
10	Bonnet gasket	Graphite+304[2]	Graphite+316[2]	Graphite+304[2]
11	Bonnet O-ring	NBR	Viton	Viton
No	**Part Name**	**ASTM Material**		
		Carbon Steel	**1 1/4Cr-1/2Mo**	**Carbon Steel**
12	Antistatic spring	A313-304	A313-316	A313-304
13	Grounding plunger	A216-WCB	A182-F316	A182-F304
14	Bonnet stud	A193-B7	A193-B8	A320-L7
15	Bonnet stud nut	A194-2H	A194-8	A194-4
16	Trunnion	A276-304	A276-316	A276-304
17	Trunnion bearing	304+PTFE	316+PTFE	304+PTFE
18	Gland flange	A216-WCB	A351-CF8M	A352-LCB
19	Gland bolt	A193-B7	A193-B8	A193-B7
20	Stop plate	Carbon Steel	Carbon steel+Zn	Carbon Steel
21	Handle		Carbon steel	

Note:
A105+ENP optional ; Spiral wound construction

Dimensional Data

Size		L (RF)		L1 (BW)		H		W		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF	BW
2	50	8.50	216	8.50	216	7.00	177	14	350	19	14
2 1/2	65	9.50	241	9.50	241	7.50	190	16	400	24	16
3	80	11.12	283	11.12	283	8.25	210	20	500	34	25
4	100	12.00	305	12.00	305	9.25	235	20	500	48	34
6	150	15.88	403	18.00	403	20.88	530	24	600	101	82
8	200	19.75	502	20.50	521	24.62	625	24	600	175	145
10	250	22.38	568	22.00	559	25.62	650	24	600	200	155
12	300	25.50	648	25.00	635	30.75	780	24	600	255	185
14	350	30.00	762	30.00	762	31.00	790	32	800	325	238
16	400	33.00	838	33.00	838	36.25	920	32	800	485	375
18	450	36.00	914	36.00	914	38.25	970	32	800	635	516
20	500	39.00	991	39.00	991	43.38	1100	32	800	935	782
24	600	45.00	1143	45.00	1143	45.25	1150	32	800	1500	1280
26	650	49.00	1245	49.00	1245	50.75	1290	32	800	1750	1375
28	700	53.00	1346	53.00	1346	55.12	1400	32	800	2225	1825
30	750	55.00	1397	55.00	1397	64.12	1630	32	800	2450	2180
32	800	60.00	1524	60.00	1524	70.88	1800	32	800	2870	2260
36	900	-	-	-	-	-	-	-	-	-	-

600Lb Cast Steel Ball Valve (Trunnion)

Applicable Standards

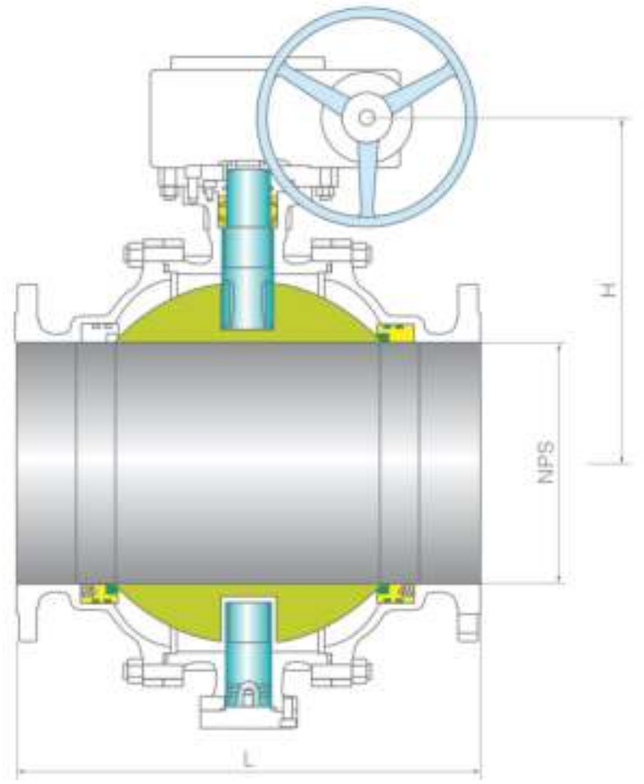
Steel ball valves: API 608/API 6D
Steel ball valves: ISO 14313
Fire resistant: API 607
Anti static: API 608
Steel Valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

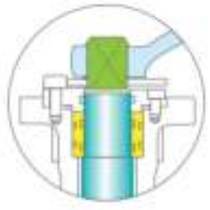
Valve Design Description

Full port design
Bolted bonnet (BB) split body
Three piece body for 12" & above
Trunnion mounted ball type
Blow-out proof stem
Fire resistant construction
Anti static device
Stopper device
ISO 5211 Mounting pad
Flanged or butt weld ends
Available with manual worm gear operator

Fig. No.

BM6F56A BM6F59L BM6F56B
BM6B56A BM6B59L BM6B56B
BM6R56A BM6R59L BM6R56B





Materials List

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304[1]	A182-F316	A182-F304[1]
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105-ENP	A182-F316	A305-LF2+ENP
6	Stem insert		Glass filled PTFE	
7	Seat spring	A313-304	Inconel X-750	A313-304
8	Seat O-ring	NBR	Viton	Viton
9	Stem O-ring	NBR	Viton	Viton
10	Bonnet gasket	Graphite+304[2]	Graphite+316[2]	Graphite+304[2]
11	Bonnet O-ring	NBR	Viton	Viton
No	**Part Name**	**ASTM Material**		
		Carbon Steel	1 1/4Cr-1/2Mo	Carbon Steel
12	Antistatic spring	A313-304	A313-316	A313-304
13	Grounding plunger	A216-WCB	A182-F316	A182-F304
14	Bonnet stud	A193-B7	A193-B8	A320-L7
15	Bonnet stud nut	A194-2H	A194-8	A194-4
16	Trunnion	A276-304	A276-316	A276-304
17	Trunnion bearing	304+PTFE	316+PTFE	304+PTFE
18	Gland flange	A216-WCB	A351-CF8M	A352-LCB
19	Gland bolt	A193-B7	A193-B8	A193-B7
20	Stop plate	Carbon Steel	Carbon steel+Zn	Carbon Steel
21	Handle		Carbon steel	

Note:
A105+ENP optional ; Spiral wound construction

Dimensional Data

Size		L /L1 (RF/BW)		L2 (RTJ)		H		W		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
2	50	11.50	292	11.62	295	7.12	180	14	350	26	19
2 1/2	65	13.00	330	13.12	333	7.62	193	16	400	35	25
3	80	14.00	356	14.12	359	8.50	215	20	500	58	42
4	100	17.00	432	17.12	435	9.50	241	20	500	81	51
6	150	22.00	559	22.12	562	21.52	540	24	600	142	82
8	200	26.00	660	26.12	664	25.00	635	24	600	287	200
10	250	31.00	787	31.12	791	26.12	665	24	600	540	395
12	300	33.00	838	33.12	841	31.12	790	24	600	780	610
14	350	35.00	889	35.12	892	31.88	810	32	800	1000	805
16	400	39.00	991	39.12	994	36.38	925	32	800	1300	1010
18	450	43.00	1092	43.12	1095	38.75	985	32	800	1700	1350
20	500	47.00	1194	47.25	1200	44.50	1130	32	800	2100	1656
24	600	55.00	1397	55.38	1407	46.62	1185	32	800	3400	2775
26	650	57.00	1448	57.50	1461	52.50	1335	32	800	3800	3125
28	700	61.00	1549	61.50	1562	57.00	1450	32	800	4500	3790

900Lb Cast Steel Ball Valve (Trunnion)

Applicable Standards

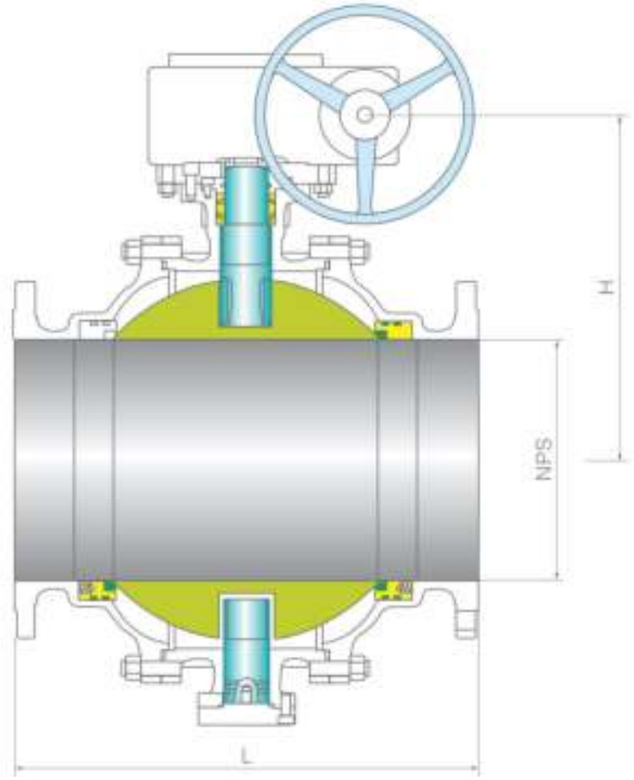
Steel ball valves: API 608/API 6D
Steel ball valves: ISO 14313
Fire resistant: API 607
Anti static: API 608
Steel Valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

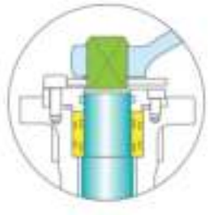
Valve Design Description

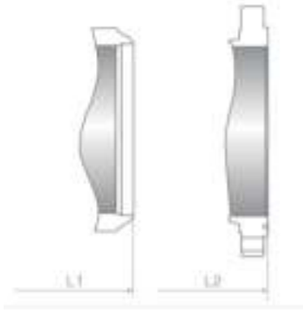
Full port design
Bolted bonnet (BB) split body
Three piece body for 12" & above
Trunnion mounted ball type
Blow-out proof stem
Fire resistant construction
Anti static device
Stopper device
ISO 5211 Mounting pad
Flanged or butt weld ends
Available with manual worm gear operator

Fig. No.

BM9F56A BM9F59L BM9F56B
BM9B56A BM9B59L BM9B56B
BM9R56A BM9R59L BM9R56B







Materials List

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304[1]	A182-F316	A182-F304[1]
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105-ENP	A182-F316	A305-LF2+ENP
6	Stem insert		Glass filled PTFE	
7	Seat spring	A313-304	Inconel X-750	A313-304
8	Seat O-ring	NBR	Viton	Viton
9	Stem O-ring	NBR	Viton	Viton
10	Bonnet gasket	Graphite+304[2]	Graphite+316[2]	Graphite+304[2]
11	Bonnet O-ring	NBR	Viton	Viton
No	**Part Name**	**ASTM Material**		
		Carbon Steel	**1 1/4Cr-1/2Mo**	**Carbon Steel**
12	Antistatic spring	A313-304	A313-316	A313-304
13	Grounding plunger	A216-WCB	A182-F316	A182-F304
14	Bonnet stud	A193-B7	A193-B8	A320-L7
15	Bonnet stud nut	A194-2H	A194-8	A194-4
16	Trunnion	A276-304	A276-316	A276-304
17	Trunnion bearing	304+PTFE	316+PTFE	304+PTFE
18	Gland flange	A216-WCB	A351-CF8M	A352-LCB
19	Gland bolt	A193-B7	A193-B8	A193-B7
20	Stop plate	Carbon Steel	Carbon steel+Zn	Carbon Steel
21	Handle		Carbon steel	

Note:
A105+ENP optional ; Spiral wound construction

Dimensional Data

Size		L /L1 (RF/BW)		L2 (RTJ)		H		W		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
2	50	14.50	368	14.62	371	8.62	219	20	500	31	23
2 1/2	65	16.50	419	16.62	422	9.25	235	20	500	43	31
3	80	15.00	381	15.12	384	10.25	260	20	500	68	51
4	100	18.00	457	18.12	460	15.38	390	24	600	98	61
6	150	24.00	610	24.12	613	25.75	655	24	600	171	102
8	200	29.00	737	29.12	740	30.25	770	24	600	345	240
10	250	33.00	838	33.12	841	31.75	805	24	600	650	480
12	300	38.00	965	38.12	968	38.00	965	32	800	940	735
14	350	40.50	1029	40.88	1038	38.50	980	32	800	1205	965
16	400	44.50	1130	44.88	1140	45.00	1145	32	800	1565	1215
18	450	48.00	1219	48.50	1232	47.00	1195	32	800	2050	1625
20	500	52.00	1321	52.50	1334	53.50	1360	32	800	2535	1995
24	600	61.00	1549	61.75	1568	56.00	1425	32	800	3950	3335

1500Lb Cast Steel Ball Valve (Trunnion)

Applicable Standards

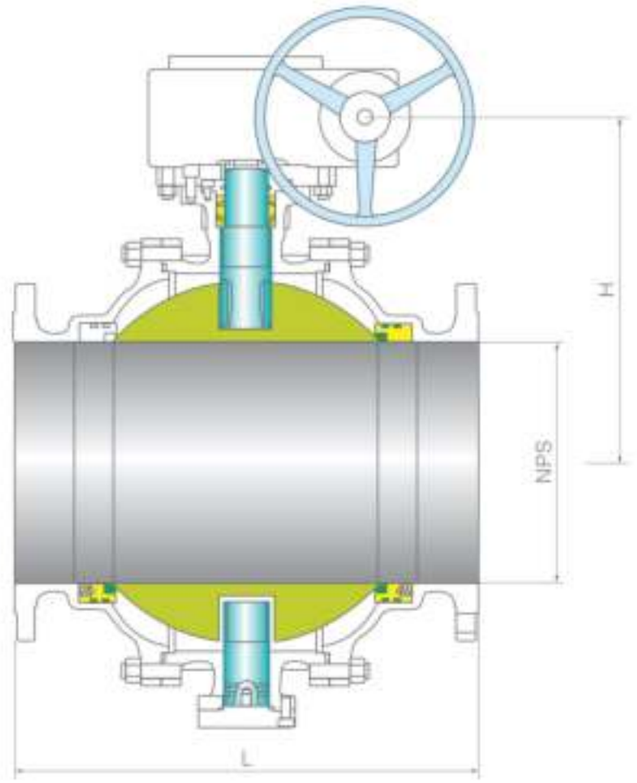
Steel ball valves: API 608/API 6D
Steel ball valves: ISO 14313
Fire resistant: API 607
Anti static: API 608
Steel Valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

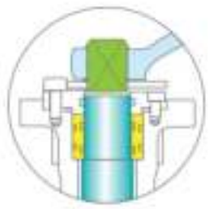
Valve Design Description

Full port design
Bolted bonnet (BB) split body
Three piece body for 12" & above
Trunnion mounted ball type
Blow-out proof stem
Fire resistant construction
Anti static device
Stopper device
ISO 5211 Mounting pad
Flanged or butt weld ends
Available with manual worm gear operator

Fig. No.

BM15F56A BM15F59L BM15F56B
BM15B56A BM15B59L BM15B56B
BM15R56A BM15R59L BM15R56B





Material List

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304[1]	A182-F316	A182-F304[1]
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105-ENP	A182-F316	A305-LF2+ENP
6	Stem insert		Glass filled PTFE	
7	Seat spring	A313-304	Inconel X-750	A313-304
8	Seat O-ring	NBR	Viton	Viton
9	Stem O-ring	NBR	Viton	Viton
10	Bonnet gasket	Graphite+304[2]	Graphite+316[2]	Graphite+304[2]
11	Bonnet O-ring	NBR	Viton	Viton

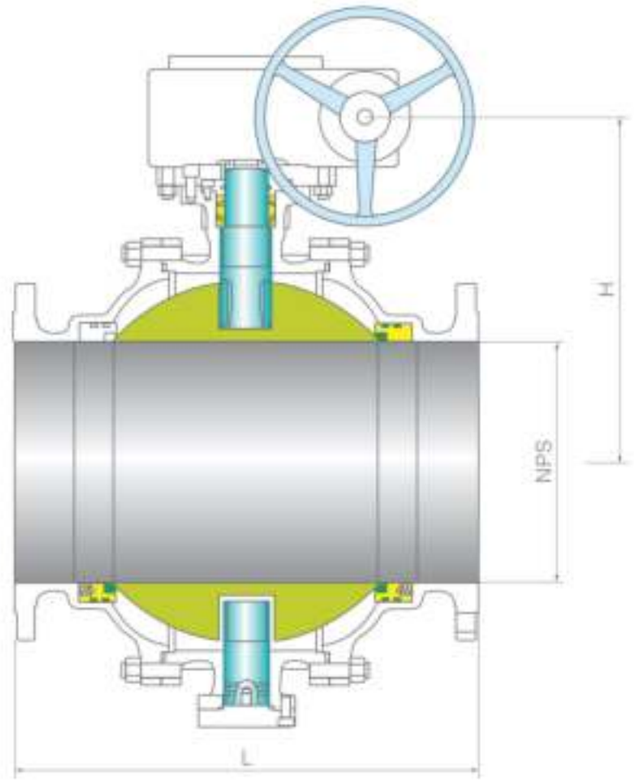
No	Part Name	ASTM Material		
		Carbon Steel	1 1/4Cr-1/2Mo	Carbon Steel
12	Antistatic spring	A313-304	A313-316	A313-304
13	Grounding plunger	A216-WCB	A182-F316	A182-F304
14	Bonnet stud	A193-B7	A193-B8	A320-L7
15	Bonnet stud nut	A194-2H	A194-8	A194-4
16	Trunnion	A276-304	A276-316	A276-304
17	Trunnion bearing	304+PTFE	316+PTFE	304+PTFE
18	Gland flange	A216-WCB	A351-CF8M	A352-LCB
19	Gland bolt	A193-B7	A193-B8	A193-B7
20	Stop plate	Carbon Steel	Carbon steel+Zn	Carbon Steel
21	Handle		Carbon steel	

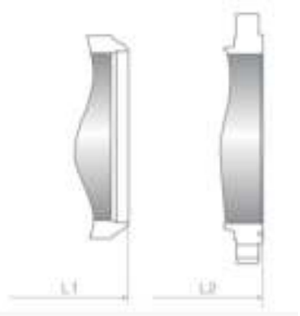
Note:
A105+ENP optional ; Spiral wound construction

Dimensional Data

Size		L /L1 (RF/BW)		L2 (RTJ)		H		W		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
2	50	14.50	368	14.62	371	11.25	285	20	500	49	33
2 1/2	65	16.50	419	16.62	422	12.00	306	20	500	67	44
3	80	18.50	470	18.62	473	13.25	338	24	600	106	73
4	100	21.50	546	21.62	549	20.00	506	24	600	153	87
6	150	27.75	705	28.00	711	33.50	852	24	600	268	145
8	200	32.75	832	33.12	841	39.38	1000	32	800	540	345
10	250	39.00	991	39.38	1000	41.12	1045	32	800	1020	685
12	300	44.45	1130	45.12	1146	49.38	1255	32	800	1475	1050
14	350	49.50	1257	50.25	1276	50.00	1270	32	800	1885	1385
16	400	54.50	1384	55.38	1407	58.50	1485	32	800	2455	1735

2500Lb Cast Steel Ball Valve (Trunnion)





Applicable Standards

Steel ball valves: API 608/API 6D
Steel ball valves: ISO 14313
Fire resistant: API 607
Anti static: API 608
Steel Valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

Valve Design Description

Full port design
Bolted bonnet (BB) split body
Three piece body for 12" & above
Trunnion mounted ball type
Blow-out proof stem
Fire resistant construction
Anti static device
Stopper device
ISO 5211 Mounting pad
Flanged or butt weld ends
Available with manual worm gear operator

Fig. No.

BM25F56A BM25F59L BM25F56B
BM25B56A BM25B59L BM25B56B
BM25R56A BM25R59L BM25R56B

Material List

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304[1]	A182-F316	A182-F304[1]
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105-ENP	A182-F316	A305-LF2+ENP
6	Stem insert		Glass filled PTFE	
7	Seat spring	A313-304	Inconel X-750	A313-304
8	Seat O-ring	NBR	Viton	Viton
9	Stem O-ring	NBR	Viton	Viton
10	Bonnet gasket	Graphite+304[2]	Graphite+316 2)	Graphite+304[2]
11	Bonnet O-ring	NBR	Viton	Viton
No	**Part Name**	**ASTM Material**		
		Carbon Steel	1 1/4Cr-1/2Mo	Carbon Steel
12	Antistatic spring	A313-304	A313-316	A313-304
13	Grounding plunger	A216-WCB	A182-F316	A182-F304
14	Bonnet stud	A193-B7	A193-B8	A320-L7
15	Bonnet stud nut	A194-2H	A194-8	A194-4
16	Trunnion	A276-304	A276-316	A276-304
17	Trunnion bearing	304+PTFE	316+PTFE	304+PTFE
18	Gland flange	A216-WCB	A351-CF8M	A352-LCB
19	Gland bolt	A193-B7	A193-B8	A193-B7
20	Stop plate	Carbon Steel	Carbon steel+Zn	Carbon Steel
21	Handle		Carbon steel	

Note:
A105+ENP optional ; Spiral wound construction

Dimensional Data

Size		L /L1 (RF/BW)		L2 (RTJ)		H		W		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
2	50	17.75	451	17.88	454	12.00	304	20	500	55	41
2 1/2	65	20.00	508	21.25	540	12.88	327	24	600	76	55
3	80	22.75	578	23.00	584	14.25	362	24	600	120	91
4	100	26.50	673	26.88	683	21.25	540	24	600	173	110
6	150	36.00	914	36.50	927	35.88	911	32	800	302	182
8	200	40.25	1022	40.88	1038	42.12	1070	32	800	612	430
10	250	50.00	1270	50.88	1292	44.00	1120	32	800	1150	855
12	300	56.00	1422	56.88	1445	53.00	1345	32	800	1665	1315
14	350	-	-	-	-	-	-	-	-	-	-
16	400	-	-	-	-	-	-	-	-	-	-

Ball Valve, FS, FL (Floating)

Valve Design

PROFI Forged Steel Ball Valves are designed and manufactured for longer service life and high dependability. Our ball valves are made to American Petroleum Institute standard API 608 & API 6D design requirements, British Standard BS 5351 and comply with American Society of Mechanical Engineers standard ASME B16.34. These valves are available in a complete range of body/bonnet materials and trims.

Range of Materials

These standard body/bonnet materials are made of nine grades of carbon, low alloy, and stainless steels. It can be supplied in other grades of alloy and stainless steel for a special usage and requirement. There are full range of trim materials to match for any service. For a full range service conditions, there are optional packing and gasket materials are availble.

PROFI Forged Steel Ball Valve that are available for modification

- Trim changes
- End connection modifications
- Packing and gasket changes
- Operator mounting
- Handwheel extensions
- Pressure equalising
- Anti Static or Fire Durable
- Customer specified coatings
- Weld end bore changes
- Oxygen & chlorine cleaning & packing

Operating

For an easy operation, lever extended are offered. For difficult services, these are available with gearing, motor actuators, pneumatic or hydraulic actuators.

Body & Bonnet

The valve came with split or 3-piece, split body & bonnet for 12” and smaller. Easy to dissambles of internal components for repairing or replacement.

End Connections

Has choice for flanged, RTJ flanged, or butt weld ends for piping flexibility.

Self-Lubricantion Bearing

No maintenance required, easy to operate, low torque, and has a longer life spend

Blow-out Proof Stem

For protection against failure under excess pressure, a pressure-safe stem shoulder has been designed.

Grease-Jet Joint

Grease Injection Port can be installed on the valve for an easy maintenance

Bore

Full bore or reduced bore. The full-bore design is to provides an exceptional flow control.

Packing

STD Packing multiple V-TEFLON, these are combined with live Graphite packing that is used for a high temperature applications.

Anti Static

A metallic contact is always granted between ball and stem/ body to discharge eventual static build up during operation service

Gasket

Standard gasket or double gasket. Standard gasket utilizes a high performance rubber seal ring. Double gasket utilizes a high performance rubber seal ring and spiral wound gasket.

Fire Resistant

Designed in accordance with API 607 or BS 6755 to ensure that its functioning is safe in the event of a fire. If the primary seal is destroyed by fire, the secondary metal-to-metal seal serves as a backup. Graphite packing and gaskets will be included with all API 607-compliant valves.

150Lb Forged Steel Ball Valve (Floating)

Applicable Standards

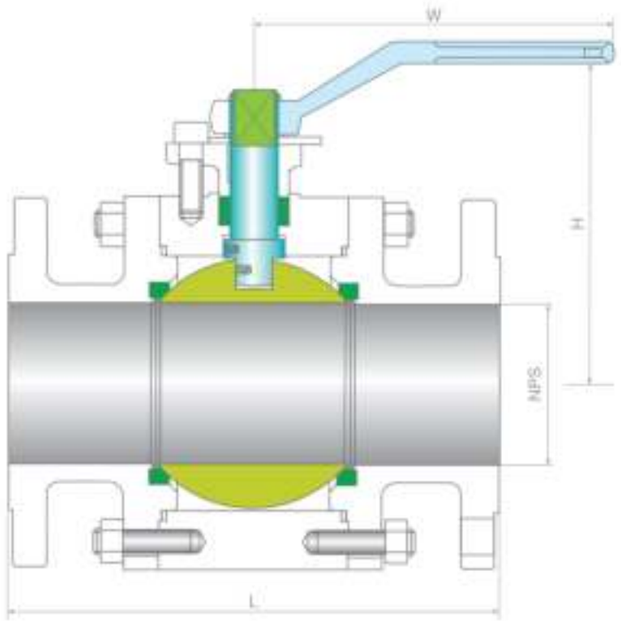
Steel ball valves: API 608/API 6D
Steel ball valves: ISO 14313
Fire resistant: API 607
Anti static: API 608
Steel Valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

Valve Design Description

Full port design
Bolted bonnet (BB) split body
Floating ball type
Blow-out proof stem
Fire resistant construction
Anti static device
Stopper device
ISO 5211 Mounting pad
Flanged or butt weld ends
Available with manual worm gear operator

Fig. No.

B1F56FA B1F59FL B1F56FB
B1B56FA B1B59FL B1B56FB



Materials List

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A105	A182-F316	A350-LF2
2	Bonnet	A105	A182-F316	A350-LF2
3	Ball	A182-F304[1]	A182-F316	A182-F304[1]
4	Stem	A276-304	A276-316	A276-304
5	Seat Ring		R.PTFE	
6	Bonnet Gasket	Graphite+304[2]	PTFE	Graphite+304[2]
7	Bonnet Stud	A193-B7	A193-B8	A320-L7
8	Bonnet Stud Nut	A194-2H	A194-8	A194-4
9	Packing		PTFE	
10	Gland	A105	A182-F316	A350-LF2
11	Gland Bolt	A193-B7	A193-B8	A193-B7
12	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
13	Handle		Carbon Steel	

Note:
A105+ENP optional ; Spiral wound construction

Dimensional Data

Size		L (RF)		L1 (BW)		H		W		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF	BW
1/2	15	4.25	108	5.50	140	2.12	55	8	200	3.1	2.6
3/4	20	4.62	117	6.00	152	2.12	55	8	200	4.1	3.9
1	25	5.00	127	6.50	165	2.50	65	12	300	6	5.2
1 1/2	40	6.50	165	7.50	190	3.38	85	12	300	9.5	8.7
2	50	7.00	178	8.50	216	4.00	100	16	400	12.8	1.8
2 1/2	65	7.50	190	9.50	241	6.00	150	16	400	20	19
3	80	8.00	203	11.12	283	7.00	180	24	600	26	28
4	100	9.00	229	12.00	305	9.25	235	24	600	45	47
6	150	15.50	394	18.00	457	9.88	250	24	600	126	131
8	200	18.00	457	20.50	521	11.00	280	24	600	216	226
10	250	21.00	533	22.00	559	12.62	320	32	800	270	295
12	300	24.00	610	25.00	635	15.38	390	32	800	378	393

300Lb Forged Steel Ball Valve (Floating)

Applicable Standards

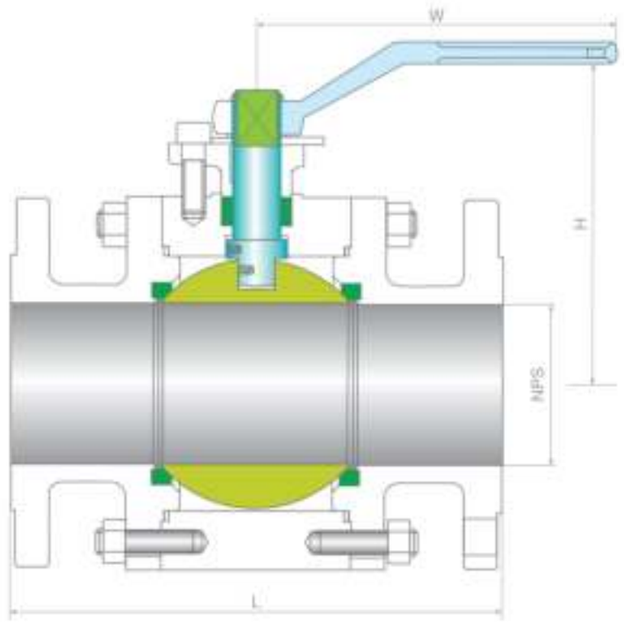
Steel ball valves: API 608/API 6D
Steel ball valves: ISO 14313
Fire resistant: API 607
Anti static: API 608
Steel Valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

Valve Design Description

Full port design
Bolted bonnet (BB) split body
Floating ball type
Blow-out proof stem
Fire resistant construction
Anti static device
Stopper device
ISO 5211 Mounting pad
Flanged or butt weld ends
Available with manual worm gear operator

Fig. No.

B3F56FB	B3F56FA	B3F59FL
B3B56FB	B3B56FA	B3B59FL
B3R56FB	B3R56FA	B3R59FL



Material List

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A105	A182-F316	A350-LF2
2	Bonnet	A105	A182-F316	A350-LF2
3	Ball	A182-F304[1]	A182-F316	A182-F304[1]
4	Stem	A276-304	A276-316	A276-304
5	Seat Ring		R.PTFE	
6	Bonnet Gasket	Graphite+304[2]	PTFE	Graphite+304[2]
7	Bonnet Stud	A193-B7	A193-B8	A320-L7
8	Bonnet Stud Nut	A194-2H	A194-8	A194-4
9	Packing		PTFE	
10	Gland	A105	A182-F316	A350-LF2
11	Gland Bolt	A193-B7	A193-B8	A193-B7
12	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
13	Handle		Carbon Steel	

Note:
A105+ENP optional ; Spiral wound construction

Dimensional Data

Size		L (RF)		L1 (BW)		H		W		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF	BW
1/2	15	5.50	140	5.50	140	2.12	55	8	200	3.5	2.8
3/4	20	6.00	152	6.00	152	2.12	55	8	200	4.6	3.1
1	25	6.50	165	6.50	165	2.50	65	12	300	6.7	4.4
1 1/2	40	7.50	190	7.50	190	3.38	85	12	300	10.5	5.5
2	50	8.50	216	8.50	216	16.00	400	10	250	14.5	8.7
2 1/2	65	9.50	241	9.50	241	16.00	400	12	300	22	13.5
3	80	11.12	283	11.12	283	24.00	600	14	350	29	17
4	100	12.00	305	12.00	305	24.00	600	19	480	50	31
6	150	15.88	103	18.00	457	9.88	250	24	600	141	108
8	200	19.75	502	20.50	521	11.00	280	24	600	242	194
10	250	22.38	568	22.00	559	12.62	320	32	800	302	234
12	300	25.50	648	25.00	635	15.38	390	32	800	423	325

600Lb Forged Steel Ball Valve (Floating)

Applicable Standards

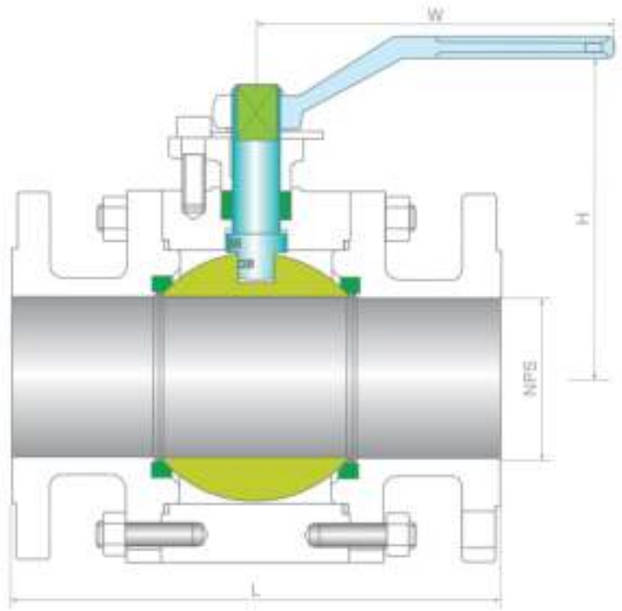
Steel ball valves: API 608/API 6D
Steel ball valves: ISO 14313
Fire resistant: API 607
Anti static: API 608
Steel Valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

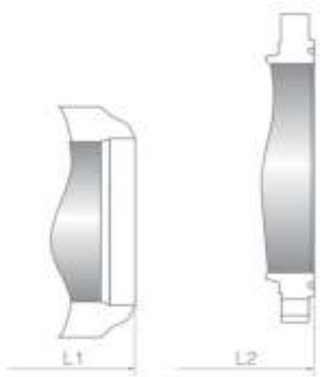
Valve Design Description

Full port design
Bolted bonnet (BB) split body
Floating ball type
Blow-out proof stem
Fire resistant construction
Anti static device
Stopper device
ISO 5211 Mounting pad
Flanged or butt weld ends
Available with manual worm gear operator

Fig. No.

B6F56FA B6F56FB B6F59FL
B6B56FA B6B56FB B6B59FL
B6R56FA B6R56FB B6R59FL





Material List

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A105	A182-F316	A350-LF2
2	Bonnet	A105	A182-F316	A350-LF2
3	Ball	A182-F304[1]	A182-F316	A182-F304[1]
4	Stem	A276-304	A276-316	A276-304
5	Seat Ring		R.PTFE	
6	Bonnet Gasket	Graphite+304[2]	PTFE	Graphite+304[2]
7	Bonnet Stud	A193-B7	A193-B8	A320-L7
8	Bonnet Stud Nut	A194-2H	A194-8	A194-4
9	Packing		PTFE	
10	Gland	A105	A182-F316	A350-LF2
11	Gland Bolt	A193-B7	A193-B8	A193-B7
12	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
13	Handle		Carbon Steel	

Note:
A105+ENP optional ; Spiral wound construction

Dimensional Data

Size		L/L1 (RF/BW)		L2 (RTJ)		H		W		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF	BW
1/2	15	6.50	165	-	-	2.25	58	8	200	4.5	3.8
3/4	20	7.50	190	-	-	2.25	58	12	300	5.5	4.1
1	25	8.50	216	-	-	2.62	68	12	300	8	5.6
1 1/2	40	9.50	241	-	-	3.50	89	16	400	12.5	7
2	50	11.50	292	11.62	295	4.12	105	16	400	18	12
2 1/2	65	13.00	330	13.12	333	6.25	158	24	600	27	18
3	80	14.00	356	14.12	359	7.50	190	24	600	35	23
4	100	17.00	432	17.12	435	9.75	247	24	600	61	43
6	150	22.00	559	22.12	562	10.38	262	32	800	172	139
8	200	-	-	-	-	-	-	-	-	-	-
10	250	-	-	-	-	-	-	-	-	-	-
12	300	-	-	-	-	-	-	-	-	-	-

Ball Valve, FS, TM
(Trunnion Mounted)

Valve Design

PROFI Forged Steel Ball Valves (Trunnion) are designed and manufactured for longer service life and high dependability. These ball valves are made to American Petroleum Institute standard API 608 & API 6D design requirements, British Standard BS 5351 and comply with American Society of Mechanical Engineers standard ASME B16.34. These valves are available in a complete range of body/bonnet materials and trims.

Range of Materials

These standard body/bonnet materials are made of nine grades of carbon, low alloy, and stainless steels. It can be supplied in other grades of alloy and stainless steel for a special usage and requirement. There are full range of trim materials to match for any service. For a full range service conditions, there are optional packing and gasket materials are availble.

PROFI Forged Steel Valve (Trunnion) that are available for modification

- Trim changes
- End connection modifications
- Packing and gasket changes
- Operator mounting
- Handwheel extensions
- Pressure equalising
- Anti Static or Fire resistant
- Customer specified coatings
- Weld end bore changes
- Oxygen & chlorine cleaning & packing

Operating
Extended lever for easy operation. Also available with gearing, motor actuators, pneumatic or hydraulic actuators for more difficult services.

Body & Bonnet
Split or 3-piece, split body & bonnet for 8” and smaller. Disassembles easily for repair or replacement of internal components.

End Connections
A choice of flanges, RTJ flanged or butt weld ends for piping flexibility.

Anti Static
A metallic contact is always granted between ball and stem/ body to discharge eventual static build up during operation service

Grease-Jet Joint
Grease Injection Port Greasing ports can be installed on the valve to allow easy maintenance.

Fire Resistant
Designed to API 607 or BS 6755 to grant their operation suitability in case of fire. Secondary metal-to-metal seal acts as backup if primary seal is destroyed by fire. Valves ordered for compliance with API 607 will be provided with graphite packing and gaskets.

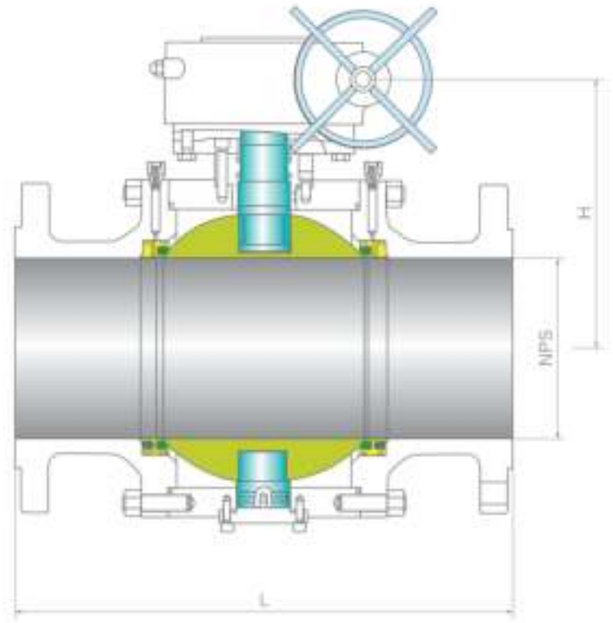
BORE
Full bore or reduced bore. Full-bore design provides exceptional flow control.

Packing
STD Packing adopt high-performance rubber seal ring, STD Packing and TEFLON use situation for smooth pressure. With spring apply high-pressure situation. Graphite packing is used for high temperature applications.

Double Block & Bleed
The body cavity is isolated when the ball is in either fully closed or fully opened position, the medium entrapped in it can easily be bled to avoid over pressure.

Gasket
A high performance rubber seal ring and spiral wound graphite.

150Lb
Forged Steel Ball Valve (Trunnion)



Applicable Standards

Steel ball valves: API 608/API 6D
Steel ball valves: ISO 14313
Fire resistant: API 607
Anti static: API 608
Steel Valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

Valve Design Description

Full port design
Bolted bonnet (BB) split body
Three piece body for 12" & above
Trunnion mounted ball type
Blow-out proof stem
Fire resistant construction
Anti static device
Stopper device
ISO 5211 Mounting pad
Flanged or butt weld ends
Available with manual worm gear operator

Fig. No.

BM1F56FA BM1F59FL BM1F56FB
BM1B56FA BM1B59FL BM1B56FB

Material List

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A105	A182-F316	A350-LF2
2	Bonnet	A105	A182-F316	A350-LF2
3	Ball	A182-F304[1]	A182-F316	A182-F304[1]
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105-ENP	A182-F316	A305-LF2+ENP
6	Stem insert		Glass filled PTFE	
7	Seat spring	A313-304	Inconel X-750	A313-304
8	Seat O-ring	NBR	Viton	Viton
9	Stem O-ring	NBR	Viton	Viton
10	Bonnet gasket	Graphite+304[2]	Graphite+316 2)	Graphite+304[2]
11	Bonnet O-ring	NBR	Viton	Viton

No	Part Name	ASTM Material		
		Carbon Steel	1 1/4Cr-1/2Mo	Carbon Steel
12	Antistatic spring	A313-304	A313-316	A313-304
13	Grounding plunger	A182-F304	A182-F316	A182-F304
14	Bonnet stud	A193-B7	A193-B8	A320-L7
15	Bonnet stud nut	A194-2H	A194-8	A194-4
16	Trunnion	A276-304	A276-316	A276-304
17	Trunnion bearing	304+PTFE	316+PTFE	304+PTFE
18	Gland	A105	A182-F316	A352-LF2
19	Gland bolt	A193-B7	A193-B8	A193-B7
20	Stop plate	Carbon Steel	Carbon steel+Zn	Carbon Steel
21	Handle		Carbon steel	

Note:
A105+ENP optional ; Spiral wound construction

Dimensional Data

Size		L (RF)		L1 (BW)		H		W		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
2	50	7.00	178	8.50	216	4.00	120	16	400	28	25
2 1/2	65	7.50	190	9.50	241	6.00	150	16	400	35	28
3	80	8.00	203	11.12	283	7.00	180	24	600	55	49
4	100	9.00	229	12.00	305	9.25	235	24	600	80	71
6	150	15.50	394	18.00	457	9.88	250	24	600	190	182
8	200	18.00	457	20.50	521	11.00	280	24	600	290	277
10	250	21.00	533	22.00	559	12.62	320	32	800	445	423
12	300	24.00	610	25.00	635	15.38	390	32	800	570	553
14	350	27.00	686	30.00	762	16.50	420	32	800	780	747
16	400	30.00	762	33.00	838	21.88	555	32	800	1520	1421
18	450	34.00	864	36.00	914	23.62	600	32	800	2300	2266
20	500	36.00	914	39.00	991	25.00	635	32	800	2500	2460
24	600	42.00	1067	45.00	1143	28.00	710	32	800	3950	3904
26	650	45.00	1143	49.00	1245	29.50	750	40	1000	4890	4939
28	700	49.00	1245	53.00	1346	31.50	800	40	1000	6300	6362
30	750	51.00	1295	55.00	1397	34.00	865	40	1000	7100	8149
32	800	54.00	1372	60.00	1524	36.00	915	40	1000	8950	9000
36	900	60.00	1524	68.00	1727	38.50	980	40	1000	13500	13570

300Lb
Forged Steel Ball Valve (Trunnion)

Applicable Standards

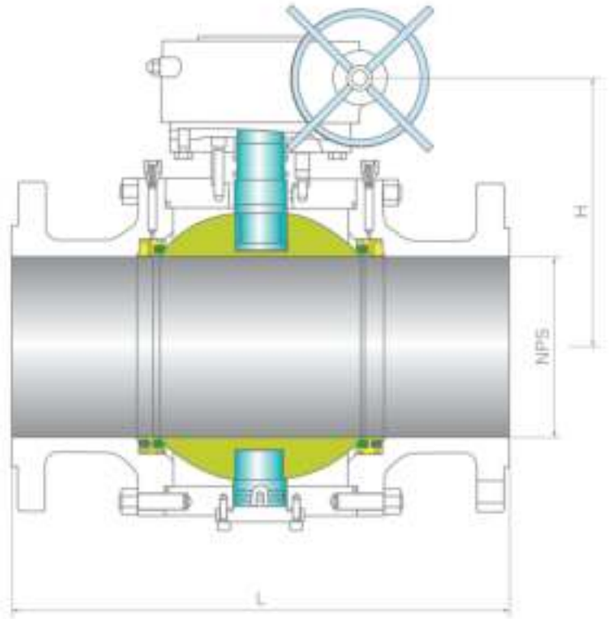
Steel ball valves: API 608/API 6D
Steel ball valves: ISO 14313
Fire resistant: API 607
Anti static: API 608
Steel Valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

Valve Design Description

Full port design
Bolted bonnet (BB) split body
Three piece body for 12" & above
Trunnion mounted ball type
Blow-out proof stem
Fire resistant construction
Anti static device
Stopper device
ISO 5211 Mounting pad
Flanged or butt weld ends
Available with manual worm gear operator

Fig. No.

BM3F56FA	BM3F59FL	BM3F56FB
BM3B56FA	BM3B59FL	BM3B56FB
BM3R56FA	BM3R59FL	BM3R56FB



Material List

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A105	A182-F316	A350-LF2
2	Bonnet	A105	A182-F316	A350-LF2
3	Ball	A182-F304[1]	A182-F316	A182-F304[1]
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105-ENP	A182-F316	A305-LF2+ENP
6	Stem insert		Glass filled PTFE	
7	Seat spring	A313-304	Inconel X-750	A313-304
8	Seat O-ring	NBR	Viton	Viton
9	Stem O-ring	NBR	Viton	Viton
10	Bonnet gasket	Graphite+304[2]	Graphite+316 2)	Graphite+304[2]
11	Bonnet O-ring	NBR	Viton	Viton

No	Part Name	ASTM Material		
		Carbon Steel	1 1/4Cr-1/2Mo	Carbon Steel
12	Antistatic spring	A313-304	A313-316	A313-304
13	Grounding plunger	A182-F304	A182-F316	A182-F304
14	Bonnet stud	A193-B7	A193-B8	A320-L7
15	Bonnet stud nut	A194-2H	A194-8	A194-4
16	Trunnion	A276-304	A276-316	A276-304
17	Trunnion bearing	304+PTFE	316+PTFE	304+PTFE
18	Gland	A105	A182-F316	A350-LF2
19	Gland bolt	A193-B7	A193-B8	A193-B7
20	Stop plate	Carbon Steel	Carbon steel+Zn	Carbon Steel
21	Handle		Carbon steel	

Note:
A105+ENP optional ; Spiral wound construction

Dimensional Data

Size		L (RF)		L1 (BW)		H		W		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
2	50	8.50	216	8.50	216	4.00	120	16	400	30	24
2 1/2	65	9.50	241	9.50	241	6.00	150	16	400	40	31
3	80	11.12	283	11.12	283	7.00	180	24	600	60	49
4	100	12.00	305	12.00	305	9.25	235	24	600	90	72
6	150	15.88	403	18.00	403	9.88	250	24	600	200	169
8	200	19.75	502	20.50	521	11.00	280	24	600	325	280
10	250	22.38	568	22.00	559	12.62	320	32	800	490	424
12	300	25.50	648	25.00	635	15.38	390	32	800	690	598
14	350	30.00	762	30.00	762	16.50	420	32	800	990	872
16	400	33.00	838	33.00	838	21.88	555	32	800	1810	1665
18	450	36.00	914	36.00	914	23.62	600	32	800	2620	2440
20	500	39.00	991	39.00	991	25.00	635	32	800	2860	2635
24	600	45.00	1143	45.00	1143	28.00	710	32	800	4430	4075
26	650	49.00	1245	49.00	1245	29.50	750	40	1000	5430	4880
28	700	53.00	1346	53.00	1346	31.50	800	40	1000	6810	6225
30	750	55.00	1397	55.00	1397	34.00	865	40	1000	7655	7115
32	800	60.00	1524	60.00	1524	36.00	915	40	1000	9590	9230
36	900	-	-	-	-	-	-	-	-	-	-

600Lb
Forged Steel Ball Valve (Trunnion)

Applicable Standards

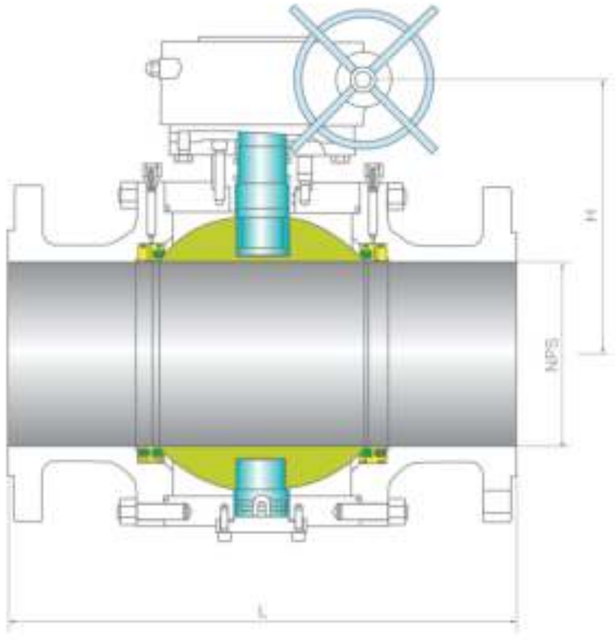
Steel ball valves: API 608/API 6D
Steel ball valves: ISO 14313
Fire resistant: API 607
Anti static: API 608
Steel Valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

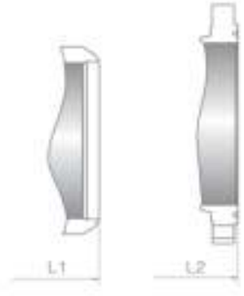
Valve Design Description

Full port design
Bolted bonnet (BB) split body
Three piece body for 12" & above
Trunnion mounted ball type
Blow-out proof stem
Fire resistant construction
Anti static device
Stopper device
ISO 5211 Mounting pad
Flanged or butt weld ends
Available with manual worm gear operator

Fig. No.

BM6F56FA BM6F59FL BM6F56FB
BM6B56FA BM6B59FL BM6B56FB
BM6R56FA BM6R56FL BM6R56FB





Materials List

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A105	A182-F316	A350-LF2
2	Bonnet	A105	A182-F316	A350-LF2
3	Ball	A182-F304[1]	A182-F316	A182-F304[1]
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105-ENP	A182-F316	A305-LF2+ENP
6	Stem insert		Glass filled PTFE	
7	Seat spring	A313-304	Inconel X-750	A313-304
8	Seat O-ring	NBR	Viton	Viton
9	Stem O-ring	NBR	Viton	Viton
10	Bonnet gasket	Graphite+304[2]	Graphite+316 2)	Graphite+304[2]
11	Bonnet O-ring	NBR	Viton	Viton

No	Part Name	ASTM Material		
		Carbon Steel	1 1/4Cr-1/2Mo	Carbon Steel
12	Antistatic spring	A313-304	A313-316	A313-304
13	Grounding plunger	A182-F304	A182-F316	A182-F304
14	Bonnet stud	A193-B7	A193-B8	A320-L7
15	Bonnet stud nut	A194-2H	A194-8	A194-4
16	Trunnion	A276-304	A276-316	A276-304
17	Trunnion bearing	304+PTFE	316+PTFE	304+PTFE
18	Gland	A105	A182-F316	A350-LF2
19	Gland bolt	A193-B7	A193-B8	A193-B7
20	Stop plate	Carbon Steel	Carbon steel+Zn	Carbon Steel
21	Handle		Carbon steel	

Note:
A105+ENP optional ; Spiral wound construction

Dimensional Data

Size		L /L1 (RF/BW)		L2 (RTJ)		H		W		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
2	50	11.50	292	11.62	295	6.50	165	16	400	34	27
2 1/2	65	13.00	330	13.12	333	7.00	180	24	600	53	43
3	80	14.00	356	14.12	359	7.88	200	24	600	65	49
4	100	17.00	432	17.12	435	11.00	280	24	600	125	95
6	150	22.00	559	22.12	562	12.25	310	32	800	245	188
8	200	26.00	660	26.12	664	14.00	355	32	800	505	418
10	250	31.00	787	31.12	791	16.12	410	32	800	640	495
12	300	33.00	838	33.12	841	18.00	455	32	800	910	740
14	350	35.00	889	35.12	892	19.25	490	32	800	1380	1185
16	400	39.00	991	39.12	994	21.00	535	32	800	2250	1690
18	450	43.00	1092	43.12	1095	24.88	630	40	1000	3400	3050
20	500	47.00	1194	47.25	1200	25.62	650	40	1000	3850	3406
24	600	55.00	1397	55.38	1407	30.12	765	40	1000	4900	4275
26	650	57.00	1448	57.50	1461	31.88	810	40	1000	6700	6025
28	700	61.00	1549	61.50	1562	34.62	880	40	1000	8300	7590

900Lb
Forged Steel Ball Valve (Trunnion)

Applicable Standards

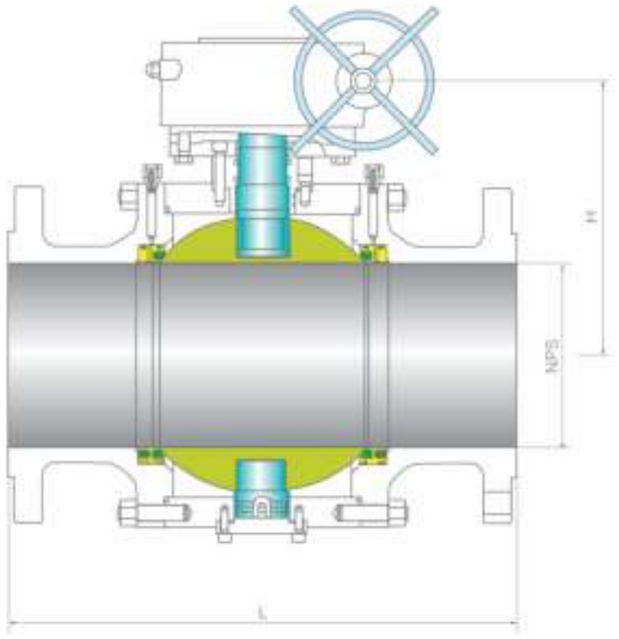
Steel ball valves: API 608/API 6D
Steel ball valves: ISO 14313
Fire resistant: API 607
Anti static: API 608
Steel Valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

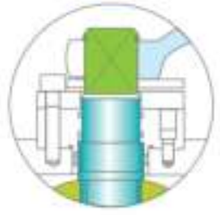
Valve Design Description

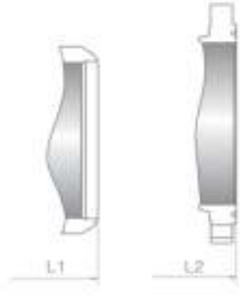
Full port design
Bolted bonnet (BB) split body
Three piece body for 12" & above
Trunnion mounted ball type
Blow-out proof stem
Fire resistant construction
Anti static device
Stopper device
ISO 5211 Mounting pad
Flanged or butt weld ends
Available with manual worm gear operator

Fig. No.

BM9F56FA BM9F59FL BM9F56FB
BM9B56FA BM9B59FL BM9B56FB
BM9R56FA BM9R59FL BM9R56FB







Materials List

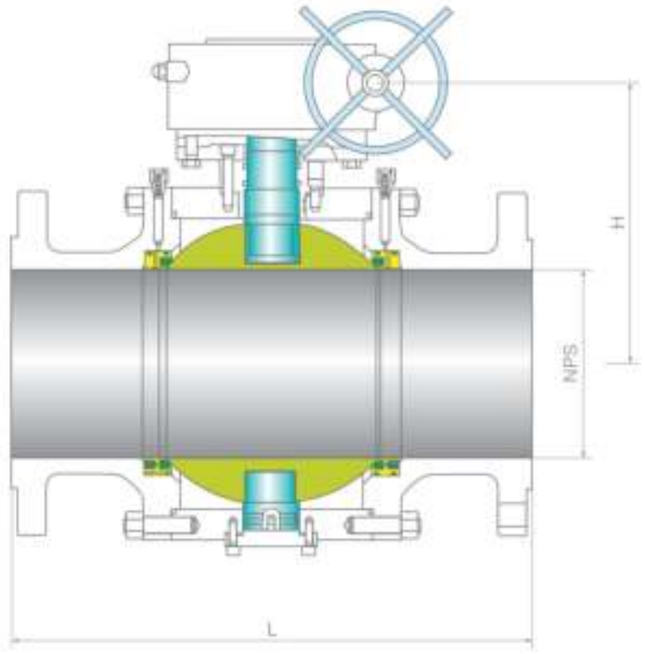
No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A105	A182-F316	A350-LF2
2	Bonnet	A105	A182-F316	A350-LF2
3	Ball	A182-F304[1]	A182-F316	A182-F304[1]
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105-ENP	A182-F316	A305-LF2+ENP
6	Stem insert		Glass filled PTFE	
7	Seat spring	A313-304	Inconel X-750	A313-304
8	Seat O-ring	NBR	Viton	Viton
9	Stem O-ring	NBR	Viton	Viton
10	Bonnet gasket	Graphite+304[2]	Graphite+316[2])	Graphite+304[2]
11	Bonnet O-ring	NBR	Viton	Viton
No	**Part Name**	**ASTM Material**		
		Carbon Steel	1 1/4Cr-1/2Mo	Carbon Steel
12	Antistatic spring	A313-304	A313-316	A313-304
13	Grounding plunger	A182-F304	A182-F316	A182-F304
14	Bonnet stud	A193-B7	A193-B8	A320-L7
15	Bonnet stud nut	A194-2H	A194-8	A194-4
16	Trunnion	A276-304	A276-316	A276-304
17	Trunnion bearing	304+PTFE	316+PTFE	304+PTFE
18	Gland	A105	A182-F316	A350-LF2
19	Gland bolt	A193-B7	A193-B8	A193-B7
20	Stop plate	Carbon Steel	Carbon steel+Zn	Carbon Steel
21	Handle		Carbon steel	

Note:
A105+ENP optional ; Spiral wound construction

Dimensional Data

Size		L /L1 (RF/BW)		L2 (RTJ)		H		W		WT (Kg)	
in	mm	in	mm		mm	in	mm	in	mm	RF/RTJ	BW
2	50	14.50	368	14.62	371	6.72	170	24	600	45	37
2 1/2	65	16.50	419	16.62	422	7.50	190	24	600	65	53
3	80	15.00	381	15.12	384	8.25	210	24	600	73	56
4	100	18.00	457	18.12	460	11.38	290	32	800	135	98
6	150	24.00	610	24.12	613	12.62	320	32	800	360	291
8	200	29.00	737	29.12	740	15.38	390	32	800	650	545
10	250	33.00	838	33.12	841	17.00	430	32	800	930	760
12	300	38.00	965	38.12	968	18.50	470	32	800	1350	1145
14	350	40.50	1029	40.88	1038	20.88	530	32	800	1890	1650
16	400	44.50	1130	44.88	1140	24.00	610	40	1000	3100	2750
18	450	48.00	1219	48.50	1232	26.00	660	40	1000	4300	3875
20	500	52.00	1321	52.50	1334	27.50	700	40	1000	4950	4410
24	600	61.00	1549	61.75	1568	30.75	780	40	1000	7100	6485

1500Lb
Forged Steel Ball Valve (Trunnion)



Applicable Standards

Steel ball valves: API 608/API 6D
Steel ball valves: ISO 14313
Fire resistant: API 607
Anti static: API 608
Steel Valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

Valve Design Description

Full port design
Bolted bonnet (BB) split body
Three piece body for 12" & above
Trunnion mounted ball type
Blow-out proof stem
Fire resistant construction
Anti static device
Stopper device
ISO 5211 Mounting pad
Flanged or butt weld ends
Available with manual worm gear operator

Fig. No.

BM15F56FA BM15F59FL BM15F56FB
BM15B56FA BM15B59FL BM15B56FB
BM15R56FA BM15R59FL BM15R56FB

Materials List

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A105	A182-F316	A350-LF2
2	Bonnet	A105	A182-F316	A350-LF2
3	Ball	A182-F304[1]	A182-F316	A182-F304[1]
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105-ENP	A182-F316	A305-LF2+ENP
6	Stem insert		Glass filled PTFE	
7	Seat spring	A313-304	Inconel X-750	A313-304
8	Seat O-ring	NBR	Viton	Viton
9	Stem O-ring	NBR	Viton	Viton
10	Bonnet gasket	Graphite+304[2]	Graphite+316 2)	Graphite+304[2]
11	Bonnet O-ring	NBR	Viton	Viton

No	Part Name	ASTM Material		
		Carbon Steel	1 1/4Cr-1/2Mo	Carbon Steel
12	Antistatic spring	A313-304	A313-316	A313-304
13	Grounding plunger	A182-F304	A182-F316	A182-F304
14	Bonnet stud	A193-B7	A193-B8	A320-L7
15	Bonnet stud nut	A194-2H	A194-8	A194-4
16	Trunnion	A276-304	A276-316	A276-304
17	Trunnion bearing	304+PTFE	316+PTFE	304+PTFE
18	Gland	A105	A182-F316	A350-LF2
19	Gland bolt	A193-B7	A193-B8	A193-B7
20	Stop plate	Carbon Steel	Carbon steel+Zn	Carbon Steel
21	Handle		Carbon steel	

Note:
A105+ENP optional ; Spiral wound construction

Dimensional Data

Size		L/L1 (RF/BW)		L2 (RTJ)		H		W		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
2	50	14.50	368	14.62	371	6.75	170	24	600	55	40
2 1/2	65	16.50	419	16.62	422	7.50	190	24	600	75	55
3	80	18.50	470	18.62	473	8.25	210	32	800	95	65
4	100	21.50	546	21.62	549	11.38	290	32	800	150	115
6	150	27.75	705	28.00	711	13.00	330	32	800	540	420
8	200	32.75	832	33.12	841	15.75	400	32	800	880	865
10	250	39.00	991	39.38	1000	17.38	440	32	800	1360	1025
12	300	44.50	1130	45.12	1146	22.00	560	40	1000	1980	1555
14	350	49.50	1257	50.25	1276	25.25	640	40	1000	3100	2600
16	400	54.50	1384	55.39	1407	27.12	690	40	1000	4650	3930

2500Lb
Forged Steel Ball Valve (Trunnion)

Applicable Standards

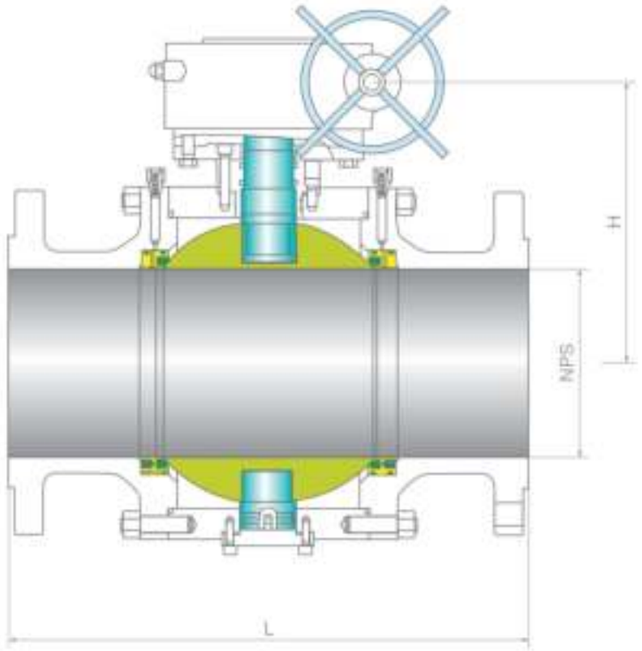
Steel ball valves: API 608/API 6D
Steel ball valves: ISO 14313
Fire resistant: API 607
Anti static: API 608
Steel Valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

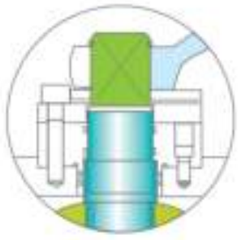
Valve Design Description

Full port design
Bolted bonnet (BB) split body
Three piece body for 12" & above
Trunnion mounted ball type
Blow-out proof stem
Fire resistant construction
Anti static device
Stopper device
ISO 5211 Mounting pad
Flanged or butt weld ends
Available with manual worm gear operator

Fig. No.

BM1F56FA BM1F59FL BM1F56FB
BM1B56FA BM1B59FL BM1B56FB





Materials List

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A105	A182-F316	A350-LF2
2	Bonnet	A105	A182-F316	A350-LF2
3	Ball	A182-F304[1]	A182-F316	A182-F304[1]
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105-ENP	A182-F316	A305-LF2+ENP
6	Stem insert		Glass filled PTFE	
7	Seat spring	A313-304	Inconel X-750	A313-304
8	Seat O-ring	NBR	Viton	Viton
9	Stem O-ring	NBR	Viton	Viton
10	Bonnet gasket	Graphite+304[2]	Graphite+316 2)	Graphite+304[2]
11	Bonnet O-ring	NBR	Viton	Viton

No	Part Name	ASTM Material		
		Carbon Steel	1 1/4Cr-1/2Mo	Carbon Steel
12	Antistatic spring	A313-304	A313-316	A313-304
13	Grounding plunger	A182-F304	A182-F316	A182-F304
14	Bonnet stud	A193-B7	A193-B8	A320-L7
15	Bonnet stud nut	A194-2H	A194-8	A194-4
16	Trunnion	A276-304	A276-316	A276-304
17	Trunnion bearing	304+PTFE	316+PTFE	304+PTFE
18	Gland	A105	A182-F316	A352-LCB
19	Gland bolt	A193-B7	A193-B8	A193-B7
20	Stop plate	Carbon Steel	Carbon steel+Zn	Carbon Steel
21	Handle		Carbon steel	

Note:
A105+ENP optional ; Spiral wound construction

Dimensional Data

Size		L /L1 (RF/BW)		L2 (RTJ)		H		W		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
2	50	17.75	451	17.88	454	7.50	190	24	600	68	54
2 1/2	65	20.00	508	21.25	540	9.00	230	32	800	95	74
3	80	22.75	578	23.00	584	11.00	280	32	800	120	91
4	100	26.50	673	26.88	683	14.12	360	32	800	185	122
6	150	36.00	914	36.50	927	15.75	400	32	800	672	555
8	200	40.25	1022	40.88	1038	18.88	480	40	1000	1100	918
10	250	50.00	1270	50.88	1292	20.50	520	40	1000	1650	1355
12	300	56.00	1422	56.88	1445	26.38	670	40	1000	2300	2950
14	350	-	-	-	-	-	-	-	-	-	-
16	400	-	-	-	-	-	-	-	-	-	-

GATE VALVE

- 150Lb Cast Steel Gate Valve
- 300Lb Cast Steel Gate Valve
- 600Lb Cast Steel Gate Valve
- 900Lb Cast Steel Gate Valve
- 1500Lb Cast Steel Gate Valve
- 2500Lb Cast Steel Gate Valve

Gate Valve, BB CS

Valve Design

PROFI Gate Valves are designed and manufactured for longer service life and high dependability. These gate valves are made to American Petroleum Institute standard API 600 & API 6D design requirements, British Standard BS 1414 * BS EN 1984 and comply with American Society of Mechanical Engineers standard ASME B16.34. These valves are available in a complete range of body/bonnet materials and trims.

Range of Materials

These standard body/bonnet materials are made of nine grades of carbon, low alloy, and stainless steels. It can be supplied in other grades of alloy and stainless steel for a special usage and requirement. There are full range of trim materials to match for any service. For a full range service conditions, there are optional packing and gasket materials are available.

PROFI Gate Valves that are available for modification

- Trim changes
- End connection modifications
- Packing and gasket changes
- Operator mounting
- Handwheel extensions
- Pressure equalising
- Anti Static or Fire resistant
- Customer specified coatings
- Weld end bore changes
- Oxygen & chlorine cleaning & packing

Operating

Large handwheels making it easy to operate. For difficult applications, Motor-driven, pneumatic or hydraulic actuators are also available

Body-To-Bonnet Joint

For 150Lb valves, a flat face gasket joint is used. 300Lb to 600Lb valves using a male and female joint. For a body to bonnet connection in 900Lb & high rated valves will be using Ring joint.

Outside Screw & Yoke

Cast steel gate valve yoke integral with bonnet for 150Lb-8”, 300Lb-8”, 600Lb-6”, 900Lb-4”, & small.

Stem

The upset forged thread stems are standard on all wedge gate valves. The stem at the stem-wedge connection is strengthened by forging the Thread. This design also allows the wedge to self-align, eliminating the possibility of the wedge becoming jammed due to a bent stem.

Lantern Ring And Double Packing Set

Lantern ring with leak-off fitting connection and double packing stack is optionally available for critical services.

End Connections

For piping flexibility there are a choice of flanged, RTJ flanged or a butt weld ends.

Bolted Bonnet

For services with frequent cycling or high pressure/ temperature changes, welded bonnets and pressure seal bonnets are provided.

Yoke sleeve

Extra-long thread engagement between yoke sleeve and stem provides long thread life. Valves of sizes large than 150Lb-12”, 600Lb-10”, 600Lb-6”, 900Lb/1500Lb/2500Lb-4” are regularly provide with roll bearing yokes.

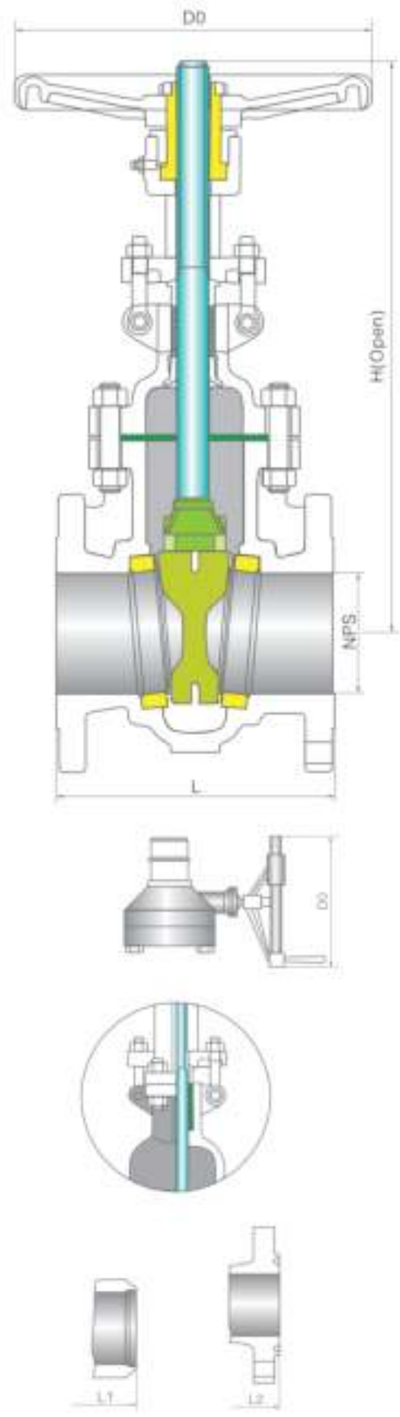
Live Load Packing

Live loading extends the service life between maintenance intervals by needing fewer packing gland modifications in systems that require frequent cycling or high pressure temperature swings. To maintain continuous packing gland stress, Belleville springs are used.

Wedge

Wedge self-centering is ensured by integral guiding rib faces. The flexible wedge gate valve has a one-piece, twin-disc wedge that flexes independently on either half. it is available in solid, flex split and HIS design.

150Lb
Cast Steel Gate Valve



Applicable Standards

Steel gate valves: API 600/API 6D
Steel gate valves: ISO 10434/ISO 14313
Steel valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

Design Description

Full port design
OS & Y, Outside screw and yoke
Bolted bonnet (BB) split body
Flexible wedge, fully guided
Choice of solid or split wedge
Renewable seat rings
Forged T-head stem
Rising stem and non-rising handwheel
Flanged or butt weld ends
Available with manual bevel gear operator

Fig No:

G1F01A	G1F05D	G1F01B
G1B01A	G1B05D	G1B01B

Materials List

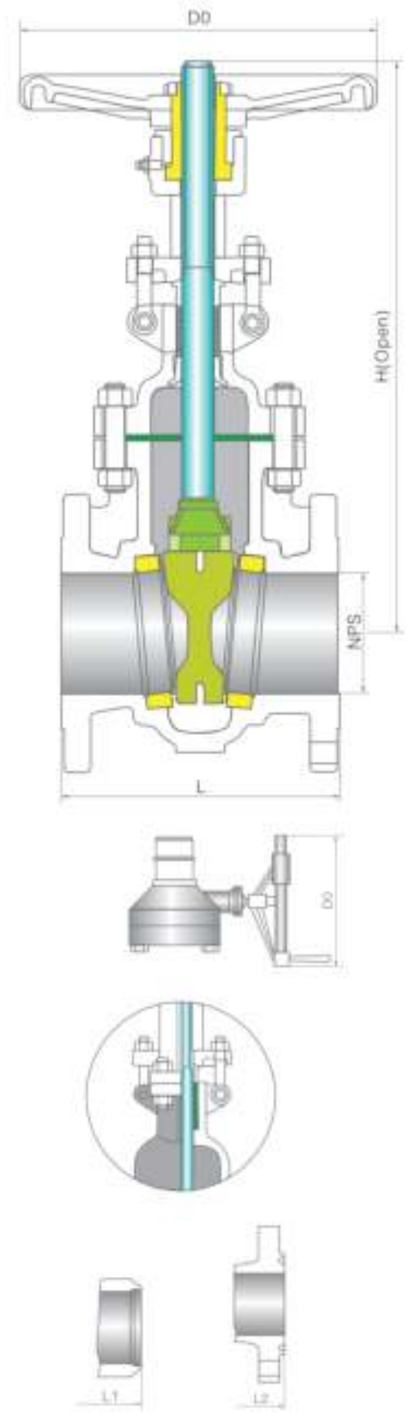
NO	Part Name	ASTM Material		
		Carbon steel	1 1/4Cr - 1/2 Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet	A216-WCB	A217-WC6	A352-LCB
3	Wedge	A216-WCB+CR13	A217-WC6+HF	A352-LCB+CR13
4	Stem	A182-F6a	CR-MO-V	A182-F6a
5	Seat Ring	A105+CR13	A182-F11+HF	A350-LF2+CR13
6	Stem backseat	A276-420	A276-304	A276-420
7	Bonnet gasket		Spiral wound (Graphite+304)	
8	Bonnet stud	A193-B7	A193-B16	A320-L7
9	Bonnet stud nut	A194-2H	A194-7	A194-4
10	Packing		Graphite	
11	Gland	A276-420	A276-304	A276-420
12	Gland flange	A216-WCB	A217-WC6	A352-LCB
13	Eyebolt pin	Carbon steel	A276-420	Carbon steel
14	Eyebolt	Carbon steel	A193-B7	Carbon steel
15	Eyebolt nut	Carbon steel	A194-2H	Carbon steel
16	Grease fitting		Brass+steel	
17	Yoke Sleeve		Aluminium-Bronze	
18	Yoke sleeve jam nut		Carbon steel	
19	Handwheel		Malleable iron	
20	Handwheel nut		Carbon steel	

Note:
Ductile Ni-Resist optional
The wedge and seat ring may either be hard faced or use a base material equal or better than the body/bonnet material with facing as shown.

Dimensional Data

Size		L (RF)		L1 (BW)		L2 (RTJ)		H (Open)		D0		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	RF	BW
1 1/2	40	6.50	165	6.50	165	7.00	178	15.70	392	7.86	200	18.5	15.5
2	50	7.00	178	8.50	216	7.50	191	15.25	368	8	200	18	15
2 1/2	65	7.50	191	9.50	241	8.00	203	17.00	434	8	200	25	18
3	80	8.00	203	11.12	283	8.50	216	18.88	480	10	250	32	26
4	100	9.00	229	12.00	305	9.50	242	23.00	584	12	300	50	41
6	150	10.50	267	15.88	403	11.00	279	30.50	765	12	300	77	69
8	200	11.50	292	16.50	419	12.00	305	37.62	956	14	350	121	108
10	250	13.00	330	18.00	457	13.50	343	45.50	1149	16	400	178	156
12	300	14.00	356	19.75	502	14.50	368	53.12	1350	18	450	265	248
14	350	15.00	381	22.50	572	15.50	394	59.38	1508	20	500	363	330
16	400	16.00	406	24.00	610	16.50	419	67.00	1703	22	550	463	424
18	450	17.00	432	26.00	660	17.50	445	74.50	1892	24	600	621	587
20	500	18.00	457	28.00	711	18.50	470	83.50	2119	26	640	792	752
24	600	20.00	508	32.00	813	20.50	521	98.25	2500	29	720	1190	1144
26	650	22.00	559	34.00	864	-	-	110.25	2806	29	720	1521	1570
28	700	24.00	610	36.00	914	24.50	622	116.50	2960	32	800	1838	1900
30	750	24.00	610	36.00	914	24.50	622	124.00	3150	32	800	2261	2310
32	800	28.00	711	38.00	965	26.50	673	129.00	3280	38	950	2490	2540
36	900	28.00	711	40.00	1016	28.50	724	146.00	3720	40	1000	3310	3380
40	1000	30.00	762	42.00	1067	-	-	183.86	4670	30	760	4815	4840
42	1050	31.00	787	43.00	1092	-	-	193.75	4920	30	760	5300	5275
48	1200	34.00	864	46.00	1168	-	-	217.50	5525	30	760	7110	7050

300Lb
Cast Steel Gate Valve



Applicable Standards

Steel gate valves: API 600/API 6D
Steel gate valves: ISO 10434/ISO 14313
Steel valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

Design Description

Full port design
OS & Y, Outside screw and yoke
Bolted bonnet (BB) split body
Flexible wedge, fully guided
Choice of solid or split wedge
Renewable seat rings
Forged T-head stem
Rising stem and non-rising handwheel
Flanged or butt weld ends
Available with manual bevel gear operator

Fig No:

G3F01A G3F05D G3F01B
G3B01A G3B05D G3B01B
G3R01A G3R05D G3R01B

Materials List

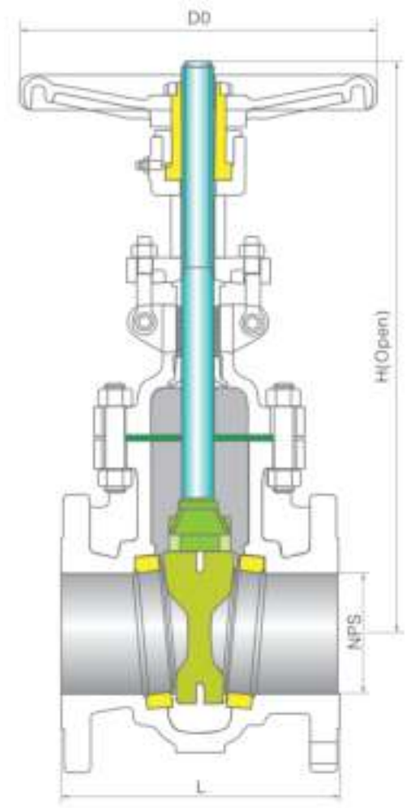
NO	Part Name	ASTM Material		
		Carbon steel	1 1/4Cr - 1/2 Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet	A216-WCB	A217-WC6	A352-LCB
3	Wedge	A216-WCB+CR13	A217-WC6+HF	A352-LCB+CR13
4	Stem	A182-F6a	CR-MO-V	A182-F6a
5	Seat Ring	A105+CR13	A182-F11+HF	A350-LF2+CR13
6	Stem backseat	A276-420	A276-304	A276-420
7	Bonnet gasket		Spiral wound (Graphite+304)	
8	Bonnet stud	A193-B7	A193-B16	A320-L7
9	Bonnet stud nut	A194-2H	A194-7	A194-4
10	Packing		Graphite	
11	Gland	A276-420	A276-304	A276-420
12	Gland flange	A216-WCB	A217-WC6	A352-LCB
13	Eyebolt pin	Carbon steel	A276-420	Carbon steel
14	Eyebolt	Carbon steel	A193-B7	Carbon steel
15	Eyebolt nut	Carbon steel	A194-2H	Carbon steel
16	Grease fitting		Brass+steel	
17	Yoke Sleeve		Aluminium-Bronze	
18	Yoke sleeve jam nut		Carbon steel	
19	Handwheel		Malleable iron	
20	Handwheel nut		Carbon steel	

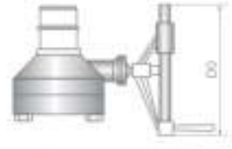
Note:
Ductile Ni-Resist optional
The wedge and seat ring may either be hard faced or use a base material equal or better than the body/bonnet material with facing as shown.

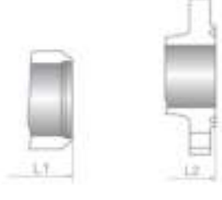
Dimensional Data

Size		L/L1 (RF/BW)		L2 (RTJ)		H (Open)		D0		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
1 1/2	40	7.50	190	8.00	203	14.70	374	7.88	200	26	22
2	50	8.50	216	9.12	232	16.12	410	8	200	23	17
2 1/2	65	9.50	241	10.12	257	17.88	453	8	200	35	26
3	80	11.12	283	11.75	298	20.00	509	10	250	50	39
4	100	12.00	305	12.62	321	24.00	612	12	300	71	53
6	150	15.88	403	16.50	419	31.75	805	14	350	144	113
8	200	16.50	419	17.12	435	39.38	1000	16	400	209	164
10	250	18.00	457	18.62	473	47.62	1210	18	450	322	256
12	300	19.75	502	20.38	518	55.75	1415	20	500	482	390
14	350	30.00	762	30.62	778	62.25	1580	22	550	683	565
16	400	33.00	838	33.62	854	67.88	1725	22	550	950	805
18	450	36.00	914	36.62	930	77.12	1960	24	600	1145	965
20	500	39.00	991	39.75	1010	86.38	2195	26	640	1635	1410
24	600	45.00	1143	45.88	1165	102.00	2590	29	720	2660	2305
26	650	49.00	1245	50.00	1270	117.00	2975	29	720	3090	2540
28	700	53.00	1346	54.00	1372	122.00	3100	32	800	3310	2725
30	750	55.00	1397	56.00	1422	126.00	3200	32	800	3595	3055
32	800	60.00	1524	61.12	1553	130.00	3300	38	950	3720	3360
36	900	68.00	1727	69.12	1756	152.00	3860	40	1000	3985	3630
40	1000	76.00	1930	-	-	188.63	4791	24	610	8460	6160
42	1050	78.00	1981	-	-	198.13	5032	24	610	9500	6800
48	1200	88.00	2235	-	-	217.38	5522	24	610	12400	9000

600Lb
Cast Steel Gate Valve







Applicable Standards

Steel gate valves: API 600/API 6D
Steel gate valves: ISO 10434/ISO 14313
Steel valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

Design Description

Full port design
OS & Y, Outside screw and yoke
Bolted bonnet (BB) split body
Flexible wedge, fully guided
Choice of solid or split wedge
Renewable seat rings
Forged T-head stem
Rising stem and non-rising handwheel
Flanged or butt weld ends
Available with manual bevel gear operator

Fig No:

G6F01A G6F05D G6F01B
G6B01A G6B05D G6B01B
G6R01A G6R05D G6R01B

Materials List

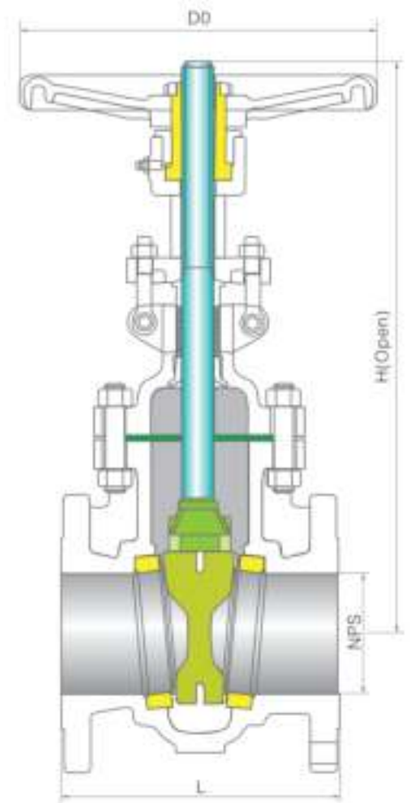
NO	Part Name	ASTM Material		
		Carbon steel	1 1/4Cr - 1/2 Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet	A216-WCB	A217-WC6	A352-LCB
3	Wedge	A216-WCB+CR13	A217-WC6+HF	A352-LCB+CR13
4	Stem	A182-F6a	CR-MO-V	A182-F6a
5	Seat Ring	A105+CR13	A182-F11+HF	A350-LF2+CR13
6	Stem backseat	A276-420	A276-304	A276-420
7	Bonnet gasket	Steel ring	304SS Ring	Steel ring
8	Bonnet stud	A193-B7	A193-B16	A320-L7
9	Bonnet stud nut	A194-2H	A194-7	A194-4
10	Packing		Graphite	
11	Gland	A276-420	A276-304	A276-420
12	Gland flange	A216-WCB	A217-WC6	A352-LCB
13	Eyebolt pin	Carbon steel	A276-420	Carbon steel
14	Eyebolt	Carbon steel	A193-B7	Carbon steel
15	Eyebolt nut	Carbon steel	A194-2H	Carbon steel
16	Grease fitting		Brass+steel	
17	Yoke Sleeve		Aluminium-Bronze	
18	Yoke sleeve jam nut		Carbon steel	
19	Handwheel		Malleable iron	
20	Handwheel nut		Carbon steel	

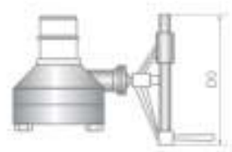
Note:
Ductile Ni-Resist optional
The wedge and seat ring may either be hard faced or use a base material equal or better than the body/bonnet material with facing as shown.

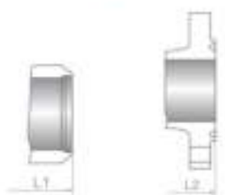
Dimensional Data

Size		L/L1 (RF/BW)		L2 (RTJ)		H (Open)		D0		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
2	50	11.50	292	11.62	295	16.50	418	8	200	36	29
2 1/2	65	13.00	330	13.12	333	18.75	476	10	250	52	42
3	80	14.00	356	14.12	359	20.38	518	10	250	67	53
4	100	17.00	432	17.12	435	25.50	646	12	300	112	83
6	150	22.00	559	22.12	562	33.00	840	18	450	170	125
8	200	26.00	660	26.12	664	40.38	1025	20	500	393	310
10	250	31.00	787	31.12	791	48.38	1230	24	600	610	472
12	300	33.00	838	33.12	841	57.00	1450	24	600	890	730
14	350	35.00	889	35.12	892	62.00	1575	24	600	1245	1055
16	400	39.00	991	39.12	994	70.62	1795	24	600	1530	1240
18	450	43.00	1092	43.12	1095	76.00	1930	26	640	1965	1625
20	500	47.00	1194	47.25	1200	87.00	2210	26	640	2450	2030
24	600	55.00	1397	55.38	1407	101.50	2580	29	720	2995	2590
26	650	57.00	1448	57.50	1461	105.00	1665	29	720	3475	2855
28	700	61.00	1549	61.50	1562	109.50	2780	32	800	3725	3065
30	750	65.00	1651	65.50	1664	114.00	2895	32	800	4045	3440
32	800	70.00	1778	70.62	1794	124.00	3150	38	950	4185	3780
36	900	82.00	2083	82.62	2099	140.00	3560	40	1000	4480	4085

900Lb
Cast Steel Gate Valve







Applicable Standards

Steel gate valves: API 600/API 6D
Steel gate valves: ISO 10434/ISO 14313
Steel valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

Design Description

Full port design
OS & Y, Outside screw and yoke
Bolted bonnet (BB) split body
Flexible wedge, fully guided
Choice of solid or split wedge
Renewable seat rings
Forged T-head stem
Rising stem and non-rising handwheel
Flanged or butt weld ends
Available with manual bevel gear operator

Fig No:

G9F05A G9F05D G9F05B
G9B05A G9B05D G9B05B
G9R05A G9R05D G9R05B

Materials List

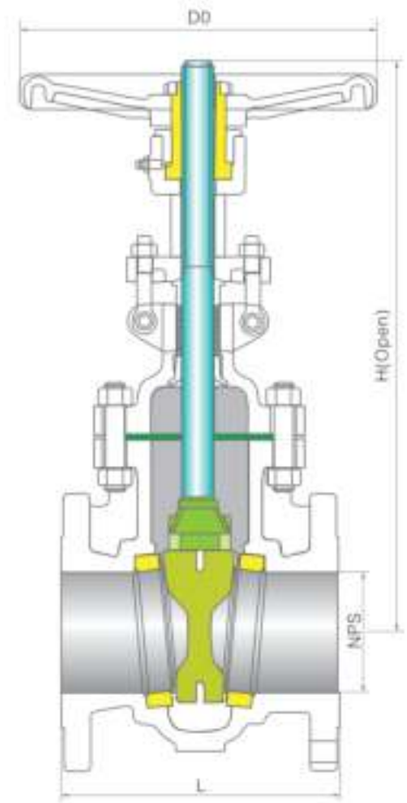
NO	Part Name	ASTM Material		
		Carbon steel	1 1/4Cr - 1/2 Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet	A216-WCB	A217-WC6	A352-LCB
3	Wedge	A216-WCB+CR13	A217-WC6+HF	A352-LCB+CR13
4	Stem	A182-F6a	CR-MO-V	A182-F6a
5	Seat Ring	A105+HF	A182-F11+HF	A350-LF2+HF
6	Stem backseat	A276-420	A276-304	A276-420
7	Bonnet gasket	Steel ring	304SS Ring	Steel ring
8	Bonnet stud	A193-B7	A193-B16	A320-L7
9	Bonnet stud nut	A194-2H	A194-7	A194-4
10	Packing		Graphite	
11	Gland	A276-420	A276-304	A276-420
12	Gland flange	A216-WCB	A217-WC6	A352-LCB
13	Eyebolt pin	Carbon steel	A276-420	Carbon steel
14	Eyebolt	Carbon steel	A193-B7	Carbon steel
15	Eyebolt nut	Carbon steel	A194-2H	Carbon steel
16	Grease fitting		Brass+steel	
17	Yoke Sleeve		Aluminium-Bronze	
18	Yoke sleeve jam nut		Carbon steel	
19	Handwheel		Malleable iron	
20	Handwheel nut		Carbon steel	

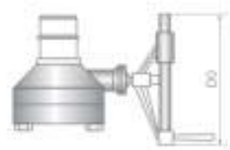
Note:
Ductile Ni-Resist optional
The wedge and seat ring may either be hard faced or use a base material equal or better than the body/bonnet material with facing as shown.

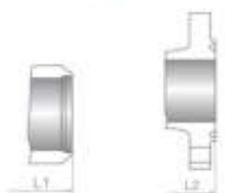
Dimensional Data

Size		L/L1 (RF/BW)		L2 (RTJ)		H (Open)		D0		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
2	50	14.50	368	14.62	371	19.62	498	10	250	74	54
2 1/2	65	16.50	419	16.62	422	21.50	547	10	250	131	105
3	80	15.00	381	15.12	384	22.50	573	12	300	101	78
4	100	18.00	457	18.12	460	26.62	678	18	450	172	135
6	150	24.00	610	24.12	613	35.50	900	20	500	335	260
8	200	29.00	737	29.12	740	43.50	1103	24	600	640	515
10	250	33.00	838	33.12	841	53.00	1345	26	640	1100	920
12	300	38.00	965	38.12	968	60.00	1525	29	720	1600	1380
14	350	40.50	1029	40.88	1038	74.88	1900	32	800	2250	2010
16	400	44.50	1130	44.88	1140	81.00	2055	32	800	2850	2565
18	450	48.00	1219	48.50	1232	87.00	2215	38	950	3060	2485
20	500	52.00	1321	52.50	1334	101.00	2565	38	950	3835	3250
24	600	61.00	1549	61.75	1568	104.00	2640	40	1000	4900	4065

1500Lb
Cast Steel Gate Valve







Applicable Standards

Steel gate valves: API 600/API 6D
Steel gate valves: ISO 10434/ISO 14313
Steel valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

Design Description

Full port design
OS & Y, Outside screw and yoke
Bolted bonnet (BB) split body
Flexible wedge, fully guided
Choice of solid or split wedge
Renewable seat rings
Forged T-head stem
Rising stem and non-rising handwheel
Flanged or butt weld ends
Available with manual bevel gear operator

Fig No:

G15F05A G15F05D G15F05B
G15B05A G15B05D G15B05B
G15R05A G15R05D G15R05B

Materials List

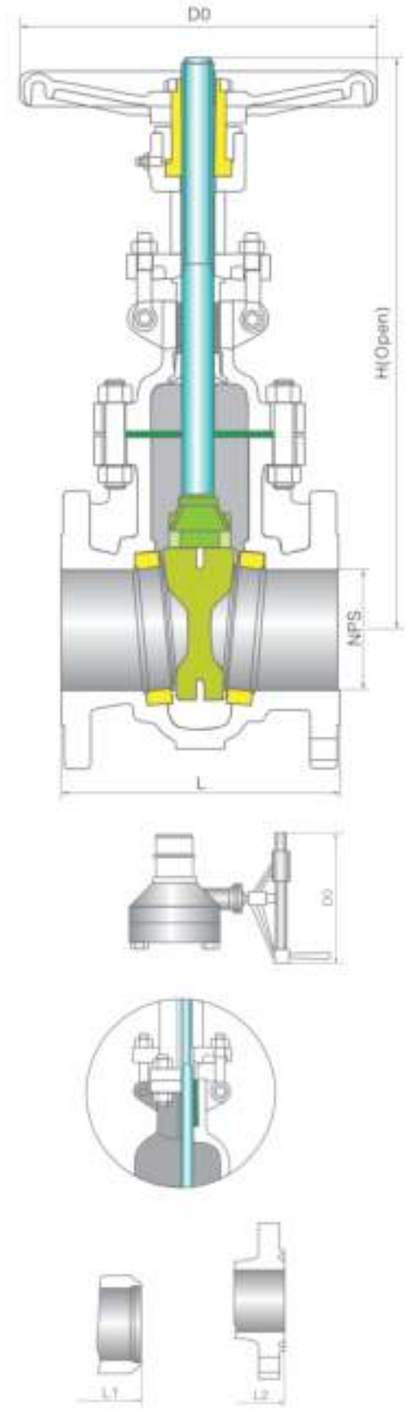
NO	Part Name	ASTM Material		
		Carbon steel	1 1/4Cr - 1/2 Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet	A216-WCB	A217-WC6	A352-LCB
3	Wedge	A216-WCB+CR13	A217-WC6+HF	A352-LCB+CR13
4	Stem	A182-F6a	CR-MO-V	A182-F6a
5	Seat Ring	A105+HF	A182-F11+HF	A350-LF2+HF
6	Stem backseat	A276-420	A276-304	A276-420
7	Bonnet gasket	Steel ring	304SS Ring	Steel ring
8	Bonnet stud	A193-B7	A193-B16	A320-L7
9	Bonnet stud nut	A194-2H	A194-7	A194-4
10	Packing		Graphite	
11	Gland	A276-420	A276-304	A276-420
12	Gland flange	A216-WCB	A217-WC6	A352-LCB
13	Eyebolt pin	Carbon steel	A276-420	Carbon steel
14	Eyebolt	Carbon steel	A193-B7	Carbon steel
15	Eyebolt nut	Carbon steel	A194-2H	Carbon steel
16	Grease fitting		Brass+steel	
17	Yoke Sleeve		Aluminium-Bronze	
18	Yoke sleeve jam nut		Carbon steel	
19	Handwheel		Malleable iron	
20	Handwheel nut		Carbon steel	

Note:
Ductile Ni-Resist optional
The wedge and seat ring may either be hard faced or use a base material equal or better than the body/bonnet material with facing as shown.

Dimensional Data

Size		L/L1 (RF/BW)		L2 (RTJ)		H (Open)		D0		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
2	50	14.50	368	15.50	371	24.25	615	10	250	116	105
2 1/2	65	16.50	419	16.62	422	26.00	658	12	300	166	150
3	80	18.50	470	18.62	473	30.00	760	18	450	209	188
4	100	21.50	546	21.62	549	34.12	868	20	500	296	265
6	150	27.75	705	28.00	711	39.50	1005	24	600	510	412
8	200	32.75	832	33.12	841	45.00	1145	18	460	920	760
10	250	39.00	991	39.38	1000	54.00	1370	18	460	1910	1640
12	300	44.50	1130	45.12	1146	61.00	1550	24	600	3145	2755
14	350	49.50	1257	50.25	1276	74.88	1900	24	600	4100	3200
16	400	54.50	1384	55.38	1407	80.50	2050	24	600	6200	5300
18	450	60.50	1537	61.38	1559	93.75	2380	24	600	8965	8070
20	500	56.50	1664	66.38	1686	101.50	2580	24	600	13100	11790
24	600	76.50	1943	77.62	1972	114.75	2915	24	600	15860	14275

2500Lb Cast Steel Gate Valve



Applicable Standards

Steel gate valves: API 600/API 6D
Steel gate valves: ISO 10434/ISO 14313
Steel valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

Design Description

Full port design
OS & Y, Outside screw and yoke
Bolted bonnet (BB) split body
Flexible wedge, fully guided
Choice of solid or split wedge
Renewable seat rings
Forged T-head stem
Rising stem and non-rising handwheel
Flanged or butt weld ends
Available with manual bevel gear operator

Fig No:

G25F05A G25F05D G25F05B
G25B05A G25B05D G25B05B
G25R05A G25R05D G25R05B

Materials List

NO	Part Name	ASTM Material		
		Carbon steel	1 1/4Cr - 1/2 Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet	A216-WCB	A217-WC6	A352-LCB
3	Wedge	A216-WCB+CR13	A217-WC6+HF	A352-LCB+CR13
4	Stem	A182-F6a	CR-MO-V	A182-F6a
5	Seat Ring	A105+HF	A182-F11+HF	A350-LF2+HF
6	Stem backseat	A276-420	A276-304	A276-420
7	Bonnet gasket	Steel ring	304SS Ring	Steel ring
8	Bonnet stud	A193-B7	A193-B16	A320-L7
9	Bonnet stud nut	A194-2H	A194-7	A194-4
10	Packing		Graphite	
11	Gland	A276-420	A276-304	A276-420
12	Gland flange	A216-WCB	A217-WC6	A352-LCB
13	Eyebolt pin	Carbon steel	A276-420	Carbon steel
14	Eyebolt	Carbon steel	A193-B7	Carbon steel
15	Eyebolt nut	Carbon steel	A194-2H	Carbon steel
16	Grease fitting		Brass+steel	
17	Yoke Sleeve		Aluminium-Bronze	
18	Yoke sleeve jam nut		Carbon steel	
19	Handwheel		Malleable iron	
20	Handwheel nut		Carbon steel	

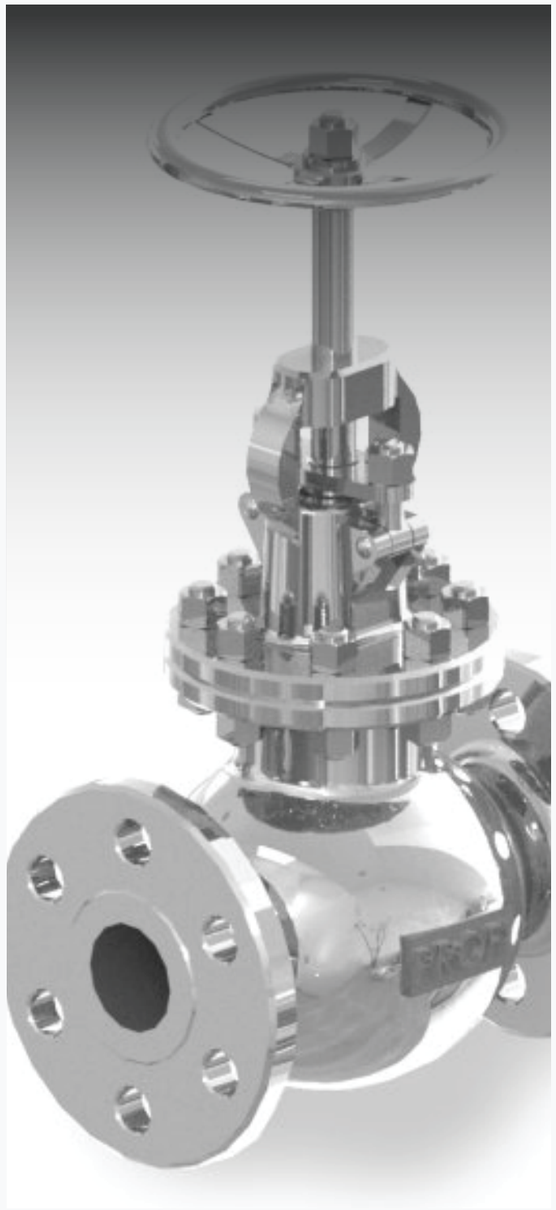
Note:
Ductile Ni-Resist optional
The wedge and seat ring may either be hard faced or use a base material equal or better than the body/bonnet material with facing as shown.

Dimensional Data

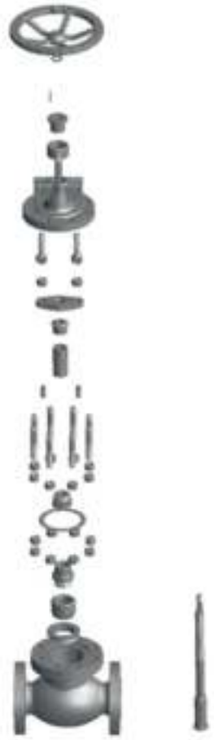
Size		L/L1 (RF/BW)		L2 (RTJ)		H (Open)		D0		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
2	50	17.75	451	17.88	454	21.88	631	12	300	155	124
2 1/2	65	20.00	508	20.50	514	29.00	736	18	450	210	160
3	80	22.75	578	23.00	584	35.00	890	20	500	310	245
4	100	26.50	673	26.88	683	41.50	1055	20	500	580	460
6	150	36.00	914	36.50	927	57.00	1450	24	600	1600	1310
8	200	40.25	1022	10.88	1038	63.38	1610	24	600	2450	2010
10	250	50.00	1270	50.88	1292	81.75	2075	24	600	4570	3800
12	300	56.00	1422	56.88	1445	89.75	2280	24	600	7150	6000
14	350	-	-	-	-	-	-	-	-	-	-
16	400	-	-	-	-	-	-	-	-	-	-
18	450	-	-	-	-	-	-	-	-	-	-
20	500	-	-	-	-	-	-	-	-	-	-
24	600	-	-	-	-	-	-	-	-	-	-

GLOBE VALVE

- 150Lb Cast Steel Globe Valve
- 300Lb Cast Steel Globe Valve
- 600/900Lb Cast Steel Globe Valve
- 1500/2500Lb Cast Steel Globe Valve



Globe Valve BB, CS



Valve Design

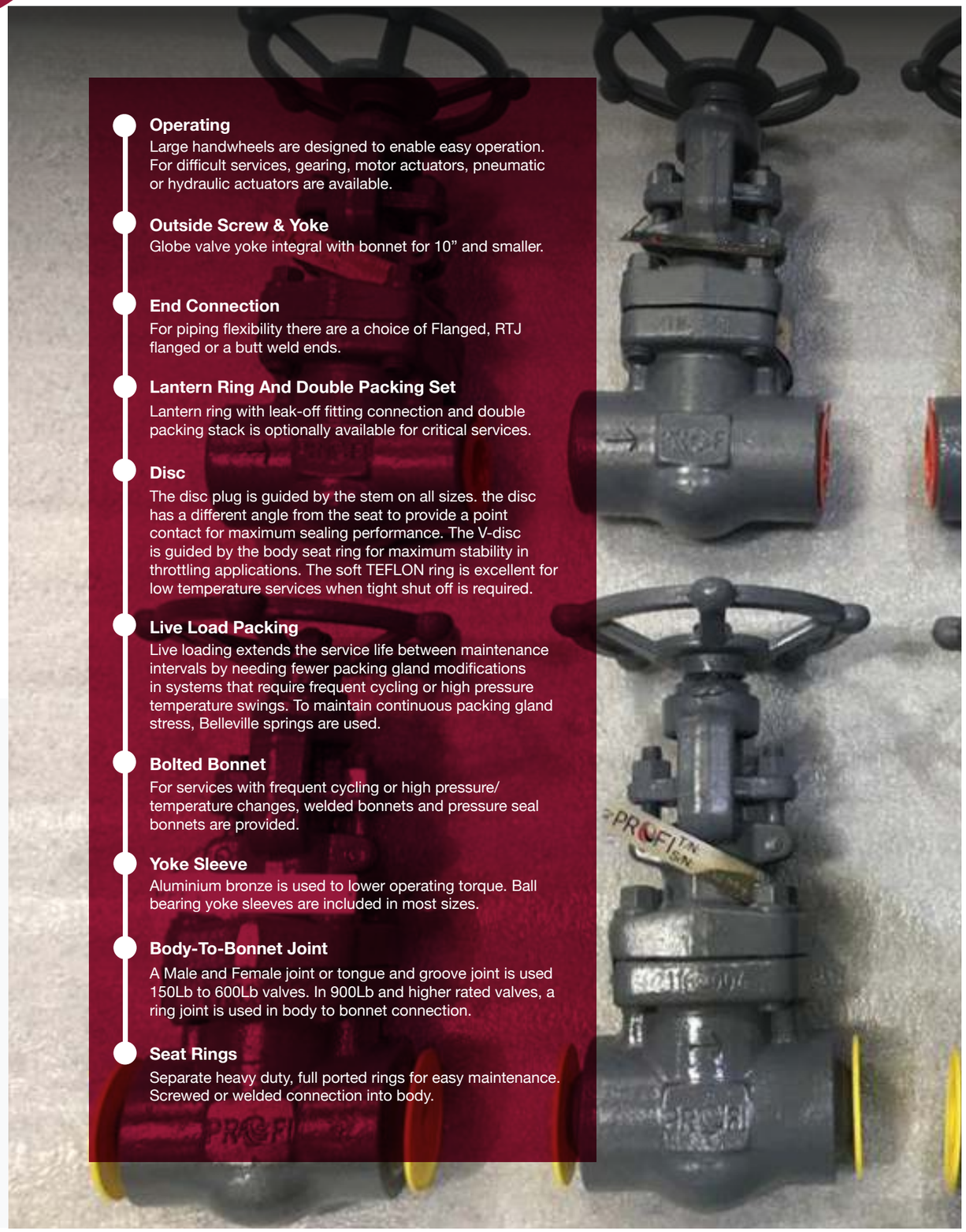
PROFI Globe Valves are designed and manufactured for longer service life and high dependability. These gate valves are made to American Petroleum Institute standard API 600 & API 6D design requirements, British Standard BS EN 13709 and and comply with American Society of Mechanical Engineers standard ASME B16.34.

Range of Materials

These standard body/bonnet materials are made of nine grades of carbon, low alloy, and stainless steels. It can be supplied in other grades of alloy and stainless steel for a special usage and requirement. There are full range of trim materials to match for any service. For a full range service conditions, there are optional packing and gasket materials are available.

PROFI Globe Valves that are available for modification

- Trim changes
- End connection modifications
- Packing and gasket changes
- Operator mounting
- Handwheel extensions
- Is pressure equalising applicable to globe valves
- By-pass
- Customer specified coatings
- Weld end bore changes
- Oxygen & chlorine cleaning & packaging



Operating

Large handwheels are designed to enable easy operation. For difficult services, gearing, motor actuators, pneumatic or hydraulic actuators are available.

Outside Screw & Yoke

Globe valve yoke integral with bonnet for 10” and smaller.

End Connection

For piping flexibility there are a choice of Flanged, RTJ flanged or a butt weld ends.

Lantern Ring And Double Packing Set

Lantern ring with leak-off fitting connection and double packing stack is optionally available for critical services.

Disc

The disc plug is guided by the stem on all sizes. the disc has a different angle from the seat to provide a point contact for maximum sealing performance. The V-disc is guided by the body seat ring for maximum stability in throttling applications. The soft TEFLON ring is excellent for low temperature services when tight shut off is required.

Live Load Packing

Live loading extends the service life between maintenance intervals by needing fewer packing gland modifications in systems that require frequent cycling or high pressure temperature swings. To maintain continuous packing gland stress, Belleville springs are used.

Bolted Bonnet

For services with frequent cycling or high pressure/ temperature changes, welded bonnets and pressure seal bonnets are provided.

Yoke Sleeve

Aluminium bronze is used to lower operating torque. Ball bearing yoke sleeves are included in most sizes.

Body-To-Bonnet Joint

A Male and Female joint or tongue and groove joint is used 150Lb to 600Lb valves. In 900Lb and higher rated valves, a ring joint is used in body to bonnet connection.

Seat Rings

Separate heavy duty, full ported rings for easy maintenance. Screwed or welded connection into body.

150Lb
Cast Steel Globe Valve

Applicable Standards

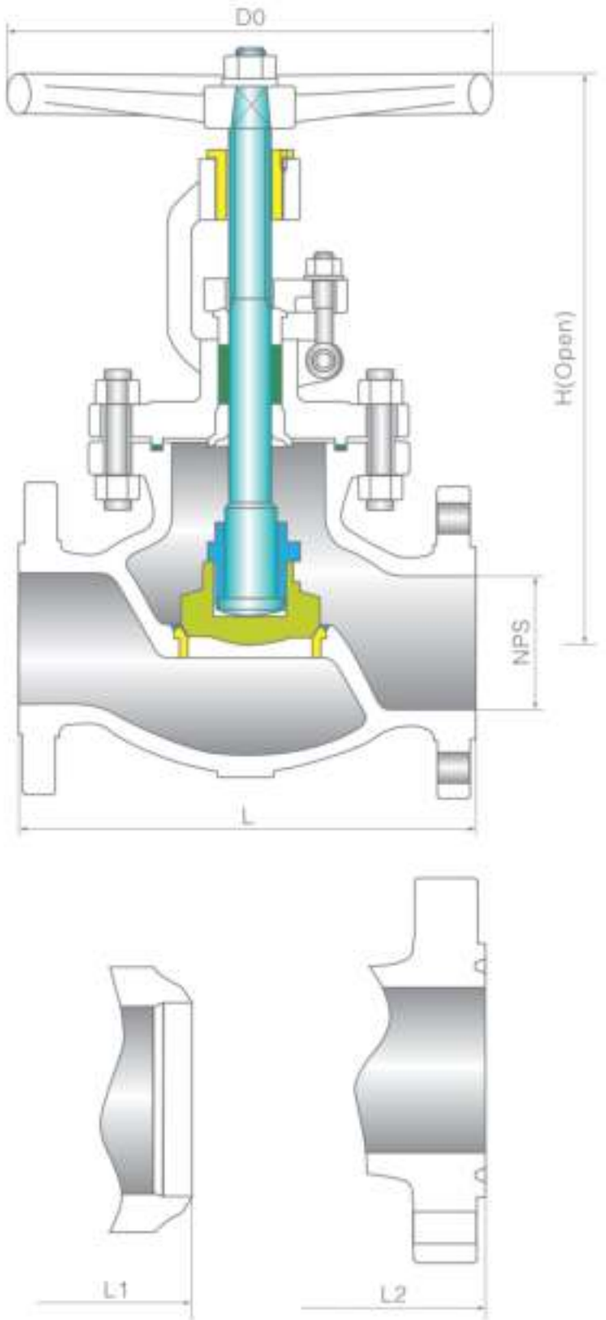
Steel globe vlaves: BS EN 13709/API 600; Bs1873
Steel valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598

Design Description

Straight pattern body design
OS & Y, Outside screw and yoke
Bolted bonnet (BB) split body
Yoke integral with bonnet
Rising stem and handwheel
Loose disc, choice of plug or ball
Renewable seat ring
Impact handwheel for 10" & above
Horizontal service
Flanged or butt weld ends
Available with manual bevel gear operator

Fig. No.

GL1F01A GL1F05D GL1F01B
GL1B01A GL1B05D GL1B01B



Materials List

NO	Part Name	ASTM Material		
		Carbon steel	1 1/4Cr - 1/2 Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet	A216-WCB	A217-WC6	A352-LCB
3	Disc	A105+CR13	A182-11+HF	A352-LCB+CR13
4	Stem	A182-F6a	CR-MO-V	A182-F6a
5	Seat Ring	A105+CR13	A182-F11+HF	A350-LF2+CR13
6	Stem backseat	A276-420	A276-304	A276-420
7	Bonnet gasket		Spiral wound (Graphite+304)	
8	Bonnet stud	A193-B16	A193-B16	A320-L7
9	Bonnet stud nut	A194-7	A194-7	A194-4
10	Packing		Graphite	
11	Gland	A276-420	A276-304	A276-420
12	Gland flange	A216-WCB	A217-WC6	A352-LCB
13	Eyebolt pin	Carbon steel	A276-420	Carbon steel
14	Eyebolt	Carbon steel	A193-B7	Carbon steel
15	Eyebolt nut	Carbon steel	A194-2H	Carbon steel
16	Yoke Sleeve		Aluminium-Bronze	
17	Handwheel		Malleable iron	

Note:
A Ductile Ni-Resist optional
The disc and seat ring may either be hard faced or use a base material equal or better than the body/bonnet material with facing as shown.

Dimensional Data

Size		L/L1 (RF/BW)		L2 (RTJ)		H (Open)		D0		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
2	50	8.00	203	8.00	203	15.00	380	7	180	18	14
2	65	8.50	216	8.50	216	21.00	535	10	240	30	22
3	80	9.50	241	9.50	241	17.50	445	11	280	41	33
4	100	11.50	292	11.50	292	20.25	515	11	280	64	43
6	150	16.00	406	16.00	406	22.00	560	13	320	86	72
8	200	19.50	495	19.50	495	24.25	615	13	320	110	88
10	250	24.50	622	24.50	622	32.00	815	16	400	280	245
12	300	27.50	698	27.50	698	35.88	910	18	450	380	345
14	350	31.00	787	31.00	787	48.38	1230	20	500	510	450
16	400	36.00	914	36.00	914	57.00	1450	24	600	740	665

300Lb
Cast Steel Globe Valve

Applicable Standards

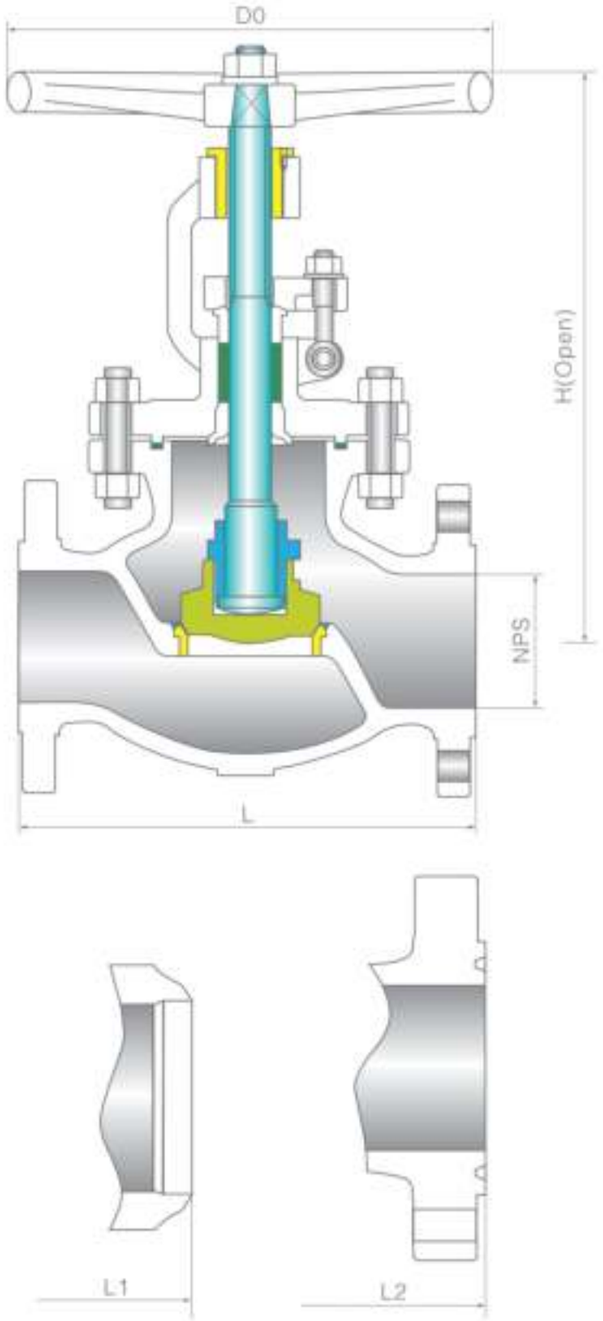
Steel globe vlaves: BS EN 13709/API 600
Steel valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598

Design Description

Straight pattern body design
OS & Y, Outside screw and yoke
Bolted bonnet (BB) split body
Yoke integral with bonnet
Rising stem and handwheel
Loose disc, choice of plug or ball
Renewable seat ring
Impact handwheel for 10" & above
Horizontal service
Flanged or butt weld ends
Available with manual bevel gear operator

Fig. No.

GL3F01A GL3F05D GL3F01B
GL3B01A GL3B05D GL3B01B
GL3R01A GL3R05D GL3R01B



Materials List

NO	Part Name	ASTM Material		
		Carbon steel	1 1/4Cr - 1/2 Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet	A216-WCB	A217-WC6	A352-LCB
3	Disc	A105+CR13	A182-11+HF	A352-LCB+CR13
4	Stem	A182-F6a	CR-MO-V	A182-F6a
5	Seat Ring	A105+CR13	A182-F11+HF	A350-LF2+CR13
6	Stem backseat	A276-420	A276-304	A276-420
7	Bonnet gasket		Spiral wound (Graphite+304)	
8	Bonnet stud	A193-B16	A193-B16	A320-L7
9	Bonnet stud nut	A194-7	A194-7	A194-4
10	Packing		Graphite	
11	Gland	A276-420	A276-304	A276-420
12	Gland flange	A216-WCB	A217-WC6	A352-LCB
13	Eyebolt pin	Carbon steel	A276-420	Carbon steel
14	Eyebolt	Carbon steel	A193-B7	Carbon steel
15	Eyebolt nut	Carbon steel	A194-2H	Carbon steel
16	Yoke Sleeve		Aluminium-Bronze[1]	
17	Handwheel		Malleable iron	

Note:
A Ductile Ni-Resist optional
The disc and seat ring may either be hard faced or use a base material equal or better than the body/bonnet material with facing as shown.

Dimensional Data

Size		L/L1 (RF/BW)		L2 (RTJ)		H (Open)		D0		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
2	50	10.50	267	11.12	282	16.75	425	8	200	25	20
2	65	11.50	292	12.12	308	19.00	485	10	240	32	22
3	80	12.50	318	13.12	333	19.88	505	11	280	38	27
4	100	14.00	356	14.62	371	22.50	570	13	320	56	41
6	150	17.50	444	18.12	460	25.25	640	16	400	96	75
8	200	22.00	559	22.62	575	33.25	845	18	450	150	117
10	250	24.50	622	25.12	638	35.50	900	20	500	360	310
12	300	28.00	711	28.62	727	38.62	980	24	600	550	492
14	350	-	-	-	-	-	-	-	-	-	-
16	400	-	-	-	-	-	-	-	-	-	-

600/900Lb
Cast Steel Globe Valve

Applicable Standards

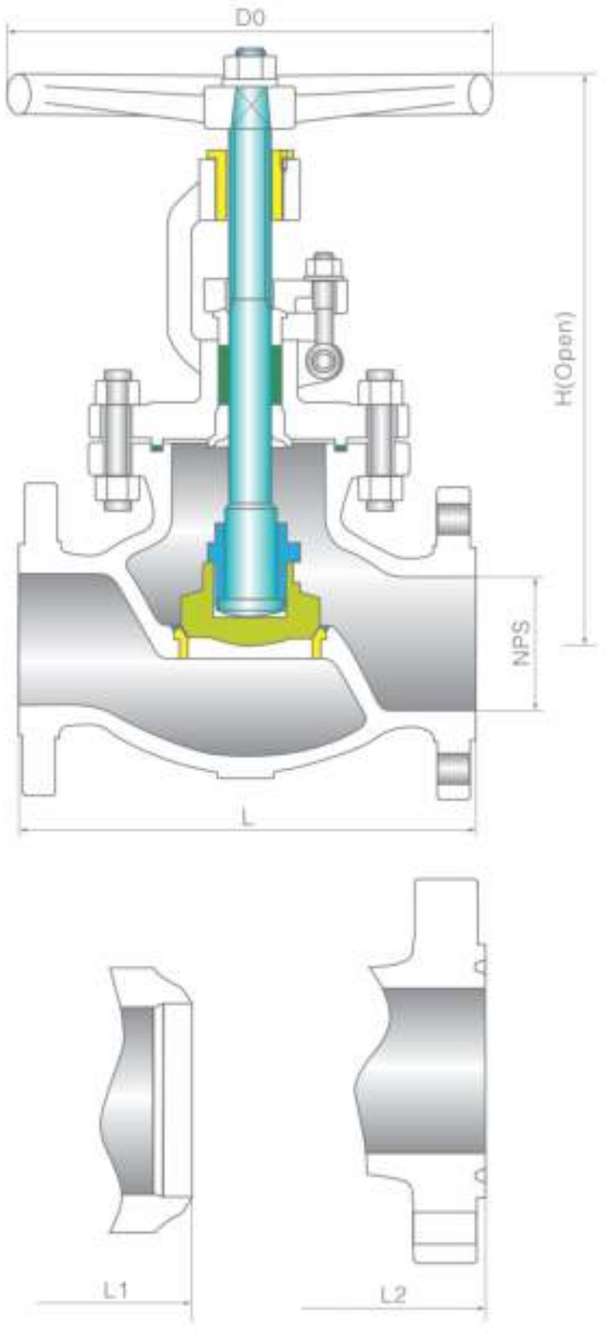
Steel globe vlaves: BS EN 13709/
API 600
Steel valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598

Design Description

Straight pattern body design
OS & Y, Outside screw and yoke
Bolted bonnet (BB) split body
Yoke integral with bonnet
Rising stem and handwheel
Loose disc, choice of plug or ball
Renewable seat ring
Impact handwheel for 10" & above
Horizontal service
Flanged or butt weld ends
Available with manual bevel gear operator

Fig. No.

GL6F01A	GL6F05D	GL6F01B
GL6B01A	GL6B05D	GL6B01B
GL6R01A	GL6R05D	GL6R01B
GL9F05A	GL9F05D	GL9F05B
GL9B05A	GL9B05D	GL9B05B
GL9R05A	GL9R05D	GL9R05B



Materials List

NO	Part Name	ASTM Material		
		Carbon steel	1 1/4Cr - 1/2 Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet	A216-WCB	A217-WC6	A352-LCB
3	Disc	A105+CR13	A182-11+HF	A352-LCB+CR13
4	Stem	A182-F6a	CR-MO-V	A182-F6a
5	Seat Ring	A105+HF	A182-F11+HF	A350-LF2+HF
6	Stem backseat	A276-420	A276-304	A276-420
7	Bonnet gasket		Spiral wound (Graphite+304)	
8	Bonnet stud	A193-B7	A193-B16	A320-L7
9	Bonnet stud nut	A194-2H	A194-7	A194-4
10	Packing		Graphite	
11	Gland	A276-420	A276-304	A276-420
12	Gland flange	A216-WCB	A217-WC6	A352-LCB
13	Eyebolt pin	Carbon steel	A276-420	Carbon steel
14	Eyebolt	Carbon steel	A193-B7	Carbon steel
15	Eyebolt nut	Carbon steel	A194-2H	Carbon steel
16	Yoke Sleeve		Aluminium-Bronze[1]	
17	Handwheel		Malleable iron	

Note:
A Ductile Ni-Resist optional
The disc and seat ring may either be hard faced or use a base material equal or better than the body/bonnet material with facing as shown.

Dimensional Data

ANSI Class 600Lb

Size		L/L1 (RF/BW)		L2 (RTJ)		H (Open)		D0		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
2	50	11.50	292	11.62	295	17.50	445	10	240	35	27
2	65	13.00	330	13.12	332	19.75	502	11	280	50	34
3	80	14.00	356	14.12	359	21.00	533	13	320	60	42
4	100	17.00	432	17.12	435	24.50	622	16	400	110	84
6	150	22.00	559	22.12	562	29.50	750	18	450	23	192
8	200	26.00	660	26.12	663	36.50	927	20	500	410	350
10	250	31.00	787	31.12	790	44.88	1140	24	600	770	680
12	300	33.00	838	33.12	841	53.12	1350	24	600	1140	1030

ANSI Class 900Lb

Size		L/L1 (RF/BW)		L2 (RTJ)		H (Open)		D0		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
2	50	14.50	368	14.62	371	22.00	560	11	280	57	41
2	65	16.50	419	16.62	422	23.25	590	13	320	82	53
3	80	15.00	381	15.12	384	25.25	640	16	400	92	58
4	100	18.00	457	18.12	460	31.88	810	18	450	168	117
6	150	24.00	610	24.12	613	41.38	1050	20	500	365	238
8	200	29.00	737	29.12	740	53.50	1360	24	600	665	538
10	250	33.00	838	33.12	841	61.88	1570	24	600	1250	1060
12	300	-	-	-	-	-	-	-	-	-	-

1500/2500Lb
Cast Steel Globe Valve

Applicable Standards

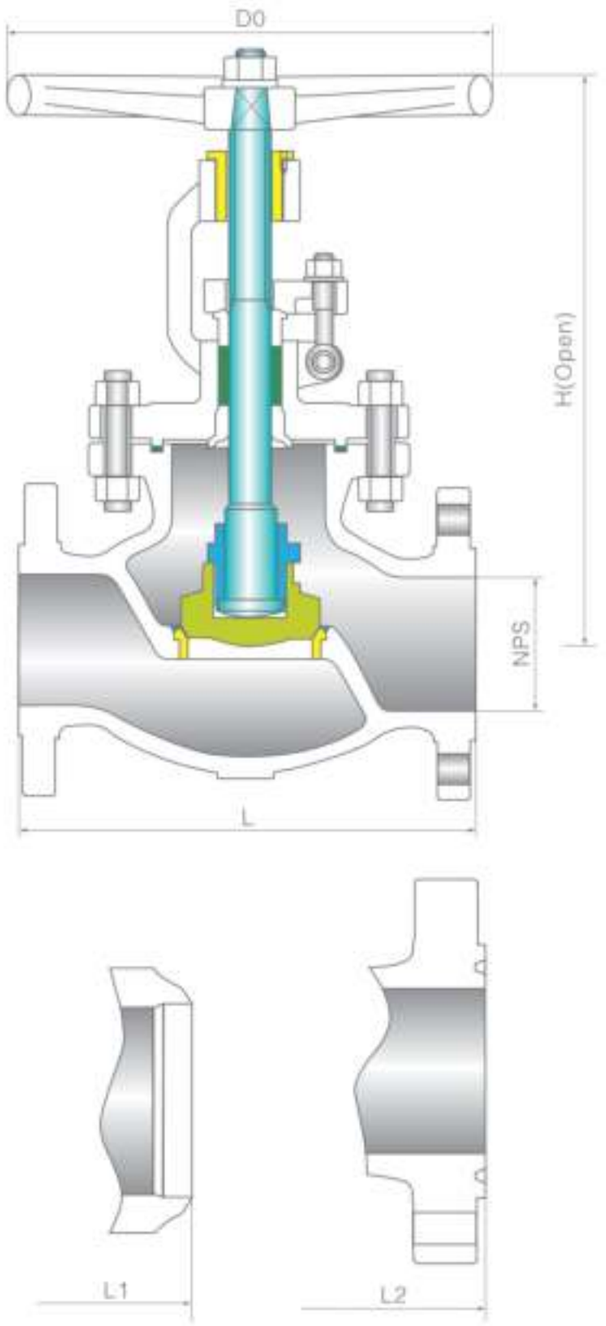
Steel globe vlaves: BS EN 13709/ API 600
Steel valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598

Design Description

Straight pattern body design
OS & Y, Outside screw and yoke
Bolted bonnet (BB) split body
Yoke integral with bonnet
Rising stem and handwheel
Loose disc, choice of plug or ball
Renewable seat ring
Impact handwheel for 10" & above
Horizontal service
Flanged or butt weld ends
Available with manual bevel gear operator

Fig. No.

GL15F05A GL15F05D GL15F05B
GL15B05A GL15B05D GL15B05B
GL15R05A GL15R05D GL15R05B
GL25F05A GL25F05D GL25F05B
GL25B05A GL25B05D GL25B05B
GL25R05A GL25R05D GL25R05B



Materials List

NO	Part Name	ASTM Material		
		Carbon steel	1 1/4Cr - 1/2 Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet	A216-WCB	A217-WC6	A352-LCB
3	Disc	A105+CR13	A182-11+HF	A352-LCB+CR13
4	Stem	A182-F6a	CR-MO-V	A182-F6a
5	Seat Ring	A105+HF	A182-F11+HF	A350-LF2+HF
6	Stem backseat	A276-420	A276-304	A276-420
7	Bonnet gasket	Steel ring	304SS Ring	304SS Ring
8	Bonnet stud	A193-B7	A193-B16	A320-L7
9	Bonnet stud nut	A194-2H	A194-7	A194-4
10	Packing		Graphite	
11	Gland	A276-420	A276-304	A276-420
12	Gland flange	A216-WCB	A217-WC6	A352-LCB
13	Eyebolt pin	Carbon steel	A276-420	Carbon steel
14	Eyebolt	Carbon steel	A193-B7	Carbon steel
15	Eyebolt nut	Carbon steel	A194-2H	Carbon steel
16	Yoke Sleeve		Aluminium-Bronze[1]	
17	Handwheel		Malleable iron	

Note:
A Ductile Ni-Resist optional
The disc and seat ring may either be hard faced or use a base material equal or better than the body/bonnet material with facing as shown.

Dimensional Data

ANSI Class 600Lb

Size		L/L1 (RF/BW)		L2 (RTJ)		H (Open)		D0		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
2	50	14.50	368	14.62	371	22.00	560	13	320	68	57
2	65	16.50	419	16.62	16.62	23.25	590	16	400	97	81
3	80	18.50	470	18.62	18.62	29.50	750	18	450	116	95
4	100	21.50	546	21.62	21.62	36.00	915	20	500	215	184
6	150	27.75	705	28.00	28	48.62	1235	24	600	445	347
8	200	32.75	832	33.12	33.12	65.00	1650	28	700	795	635

ANSI Class 900Lb

Size		L/L1 (RF/BW)		L2 (RTJ)		H (Open)		D0		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
2	50	17.75	451	17.88	454	25.50	650	16	400	97	72
2	65	20.00	508	20.50	514	28.12	715	18	450	138	95
3	80	22.75	578	23.00	584	32.50	825	20	500	167	108
4	100	26.50	673	26.88	683	47.00	1195	24	600	305	196
6	150	36.00	914	36.50	927	70.50	1790	28	700	633	351
8	200	-	-	-	-	-	-	-	-	-	-

SWING CHECK VALVE

- 150Lb Cast Steel Check Valve
- 300Lb Cast Steel Check Valve
- 600Lb Cast Steel Check Valve
- 900Lb Cast Steel Check Valve
- 1500Lb Cast Steel Check Valve
- 2500Lb Cast Steel Check Valve
- 150/300Lb Cast Steel Check Valve
- 600/900Lb Cast Steel Check Valve

Swing Check Valve, BB, CS

Valve Design

PROFI Swing Check Valve are designed and manufactured for longer service life and high dependability. These gate valves are made to American Petroleum Institute standard API 600 & API 6D design requirements, British Standard BS EN 13709 and comply with American Society of Mechanical Engineers standard ASME B16.34.

Range of Materials

These standard body/bonnet materials are made of nine grades of carbon, low alloy, and stainless steels. It can be supplied in other grades of alloy and stainless steel for a special usage and requirement. There are full range of trim materials to match for any service. For a full range service conditions, there are optional packing and gasket materials are available.

PROFI Swing Check Valves that are available for modifications

- Trim changes
- End connection modifications
- Gasket changes
- Outside lever and weight
- Slam retarders
- Pressure equalising is for ball valves
- Outside lever and weight
- Customer specified coatings
- Weld end bore changes
- Oxygen & chlorine cleaning & packaging

Eyebolt
For 150Lb-8”, 300Lb-08”, 600Lb-6”, 900Lb/1500Lb/2500Lb-4” and above

End Connections
For piping flexibility, flanged, RTJ flanged, or butt weld ends are available.

Outside Lever and Weight
An exterior lever and weight are available for all external hinge pin swing check valves 12” and smaller. All swing check valves have an internal hinge.

Bolted Bonnet
For services with frequent cycling or high pressure/ temperature changes, welded bonnets and pressure seal bonnets are provided.

Body-To-Bonnet Joint
For 150Lb to 600Lb, a male and female joint or tongue and groove will be used. 900Lb and higher rated valves, a ring joint is used in the body to bonnet connection.

Seat Rings
For easy maintenance, there’s a separate heavy-duty, full-ported ring. The connection is screwed or welded into the body.

HCU Weighted Mechanical Accumulator
Depending on the orientation, this design can be used to dampen or facilitate shutting of the check valve disc. By using the hydraulic control unit to buffer action the disc, the valve will be open at lower flow rates.

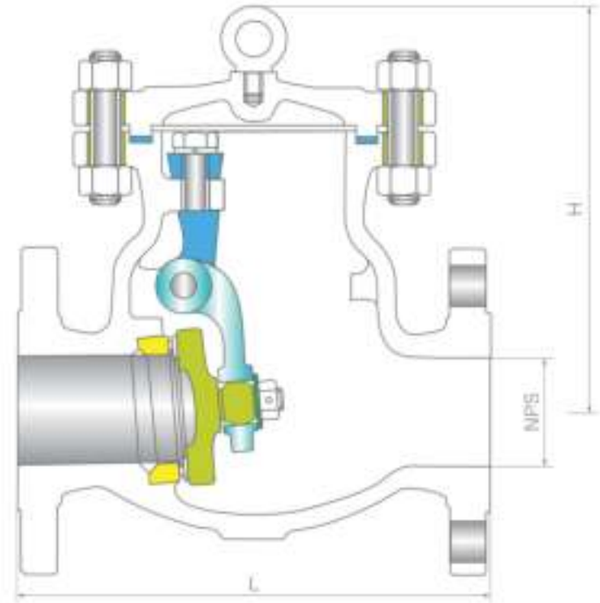
150Lb
Cast Steel Check Valve

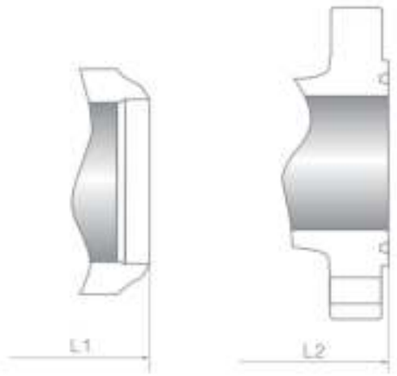
Applicable Standards
Steel check valves: API 6D; Bs 1868
Steel check valves: ISO 14313
Steel valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6

Design Description
Bolted bonnet (BB) split body, cap
Swing type, Anti-rotation disc
Renewable seat rings
Internal disc shaft
Horizontal or vertical service
Flanged or butt weld ends

Fig. No.

C1F01A	C1F05D	C1F01B
C1B01A	C1B05D	C1B01B





Materials List

NO	Part Name	ASTM Material		
		Carbon steel	1 1/4Cr - 1/2 Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet	A216-WCB	A217-WC6	A352-LCB
3	Disc[1']	A105+CR13	A182-F11+HF	A350-LF+CR13
4	Hinge	A216-WCB	A217-WC6	A352-LCB
5	Support	A216-WCB	A217-WC6	A352-LCB
6	Seat ring	A105+CR13	A182-F11+HF	A350-LF2+CR13
7	Hinge pin	A276-420	A276-304	A276-420
8	Disc washer	Carbon steel	A276-304	Carbon Steel
9	Disc nut	Carbon steel	A194-7	Carbon Steel
10	Disc nut pin	Carbon steel	A276-420	Carbon Steel
11	Bonnet gasket		Spiral wound (Graphite+304)	
12	Bonnet stud	A193-B7	A193-B16	A320-L7
13	Bonnet stud nut	A194-2H	A194-7	A194-4
14	Eyebolt[2']		Carbon steel	

Note:
Cast steel disc for NPS 4" and above ; 2). NPS 6" & Larger;
Disc and seat ring may either be hard faced or supplied with a base material equal to or better than the body/binnet material, with facing as shown.

Dimensional Data

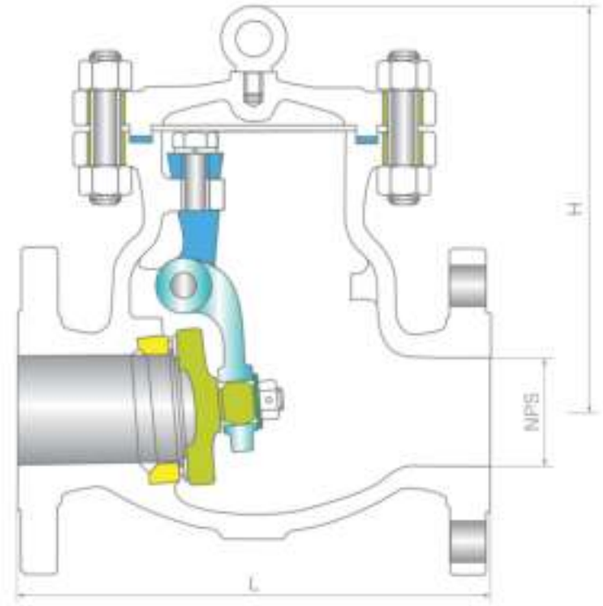
Size		L/L1 (RF/BW)		L2 (RTJ)		H		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
2	50	8.00	203	8.50	216	6.00	152	14	10
2 ½	65	8.50	216	9.00	229	6.50	165	20	12
3	80	9.50	241	10.00	254	6.88	175	25	17
4	100	11.50	292	12.00	305	8.00	204	40	29
6	150	14.00	356	14.50	368	11.50	293	71	57
8	200	19.50	495	20.00	508	13.88	353	118	96
10	250	24.50	622	25.00	635	15.38	390	177	143
12	300	27.50	699	28.00	711	17.00	432	263	227
14	350	31.00	787	31.50	800	18.75	475	353	295
16	400	34.00	864	34.50	876	20.62	525	542	468
18	450	38.50	978	39.00	991	22.88	582	632	552
20	500	38.50	978	39.00	991	24.62	627	855	755
24	600	51.00	1295	51.00	1308	34.75	883	970	831
26	650	51.00	1295	-	-	35.88	910	1275	1120
28	700	57.00	1448	-	-	37.00	940	1600	1420
30	750	60.00	1524	-	-	38.62	980	1990	1760
36	900	77.00	1956	-	-	48.00	1220	2760	2230

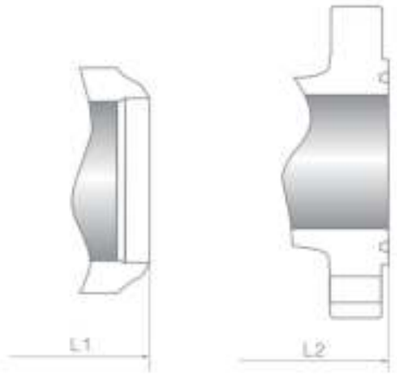
300Lb
Cast Steel Check Valve

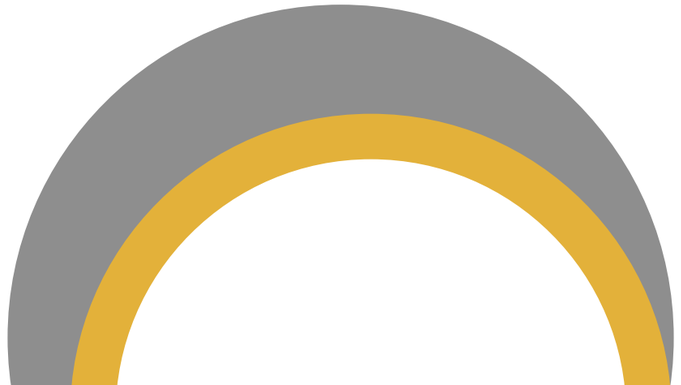
Applicable Standards
Steel check valves: API 6D
Steel check valves: ISO 14313
Steel valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

Design Description
Bolted bonnet (BB) split body, cap
Swing type, Anti-rotation disc
Renewable seat rings
Non-penetrate disc shaft
Horizontal or vertical service
Flanged or butt weld ends

Fig. No.
C3F01A C3F01B C3F05D
C3B01A C3B01B C3B05D
C3R01A C3R01B C3R05D







Materials List

NO	Part Name	ASTM Material		
		Carbon steel	1 1/4Cr - 1/2 Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet	A216-WCB	A217-WC6	A352-LCB
3	Disc[1']	A105+CR13	A182-F11+HF	A350-LF+CR13
4	Hinge	A216-WCB	A217-WC6	A352-LCB
5	Support	A216-WCB	A217-WC6	A352-LCB
6	Seat ring	A105+CR13	A182-F11+HF	A350-LF2+CR13
7	Hinge pin	A276-420	A276-304	A276-420
8	Disc washer	Carbon steel	A276-304	Carbon Steel
9	Disc nut	Carbon steel	A194-7	Carbon Steel
10	Disc nut pin	Carbon steel	A276-420	Carbon Steel
11	Bonnet gasket		Spiral wound (Graphite+304)	
12	Bonnet stud	A193-B7	A193-B16	A320-L7
13	Bonnet stud nut	A194-2H	A194-7	A194-4
14	Eyebolt[2']		Carbon steel	

Note:
Cast steel disc for NPS 4" and above ; 2). NPS 6" & Larger;
Disc and seat ring may either be hard faced or supplied with a base material equal to or better than the body/binnet material, with facing as shown.

Dimensional Data

Size		L/L1 (RF/BW)		L2 (RTJ)		H		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
2	50	10.50	267	11.12	283	6.00	152	16	11
2 ½	65	11.50	292	12.12	308	6.50	165	23	12
3	80	12.50	318	13.12	333	6.88	175	29	18
4	100	14.00	356	14.62	371	8.00	204	46	31
6	150	17.50	445	18.12	460	11.50	292	82	61
8	200	21.00	533	21.62	549	13.88	353	136	103
10	250	24.50	622	25.12	638	15.38	390	204	155
12	300	28.00	711	28.62	727	17.00	432	302	245
14	350	33.00	838	33.62	854	18.75	475	405	315
16	400	34.00	864	34.62	879	20.62	525	625	503
18	450	38.50	978	39.12	994	22.88	582	730	593
20	500	40.00	1016	40.75	1035	24.62	627	985	512
24	600	53.00	1346	53.88	1368	34.75	883	1115	895
26	650	53.00	1346	54.00	1372	35.88	910	1465	1205
28	700	59.00	1490	60.00	1524	37.00	940	1840	1525
30	750	62.75	1594	63.75	1619	38.62	980	2290	1895
36	900	82.00	2038	-	-	48.00	1220	3180	2395

600Lb
Cast Steel Check Valve

Applicable Standards

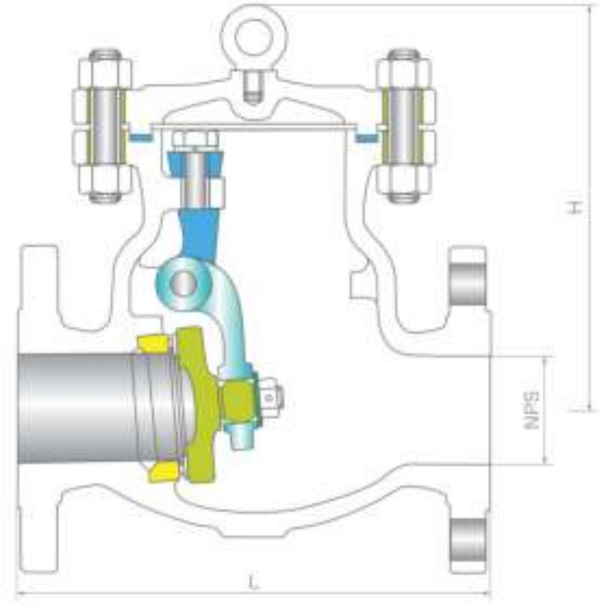
Steel check valves: API 6D
Steel check valves: ISO 14313
Steel valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

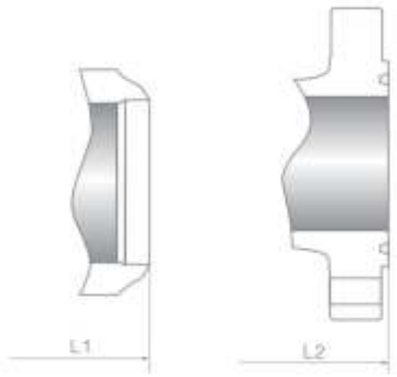
Design Description

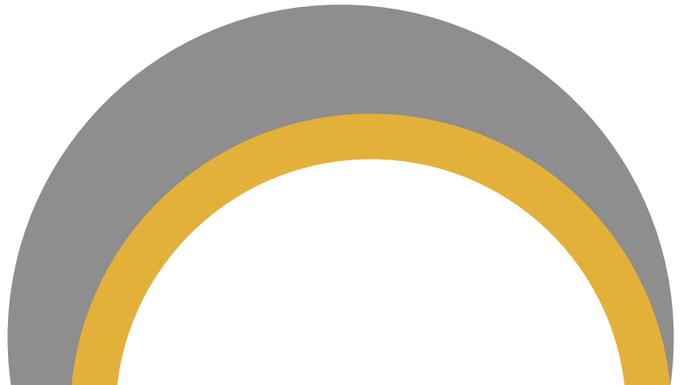
Bolted bonnet (BB) split body, cap
Swing type, Anti-rotation disc
Renewable seat rings
Non-penetrate disc shaft
Horizontal or vertical service
Flanged or butt weld ends

Fig. No.

C6F01A C6F05D C6F01B
C6B01A C6B05D C6B01B
C6R01A C6R05D C6R01B







Materials List

NO	Part Name	ASTM Material		
		Carbon steel	1 1/4Cr - 1/2 Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet	A216-WCB	A217-WC6	A352-LCB
3	Disc[2']	A216-WCB+CR13	A217-WC6+HF	A352-LCB+CR13
4	Hinge	A216-WCB	A217-WC6	A352-LCB
5	Support	A216-WCB	A217-WC6	A352-LCB
6	Seat ring[2']	A105+CR13	A182-F11+HF	A350-LF2+CR13
7	Hinge pin	A276-420	A276-304	A276-420
8	Disc washer	Carbon steel	A276-304	Carbon Steel
9	Disc nut	Carbon steel	A194-7	Carbon Steel
10	Disc nut pin	Carbon steel	A276-420	Carbon Steel
11	Bonnet gasket		Spiral wound (Graphite+304)	
12	Bonnet stud	A193-B7	A193-B16	A320-L7
13	Bonnet stud nut	A194-2H	A194-7	A194-4
14	Eyebolt[1']		Carbon steel	

Note:
NPS 6" & Larger;
Disc and seat ring may either be hard faced or supplied with a base material equal to or better than the body/binnet material, with facing as shown.

Dimensional Data

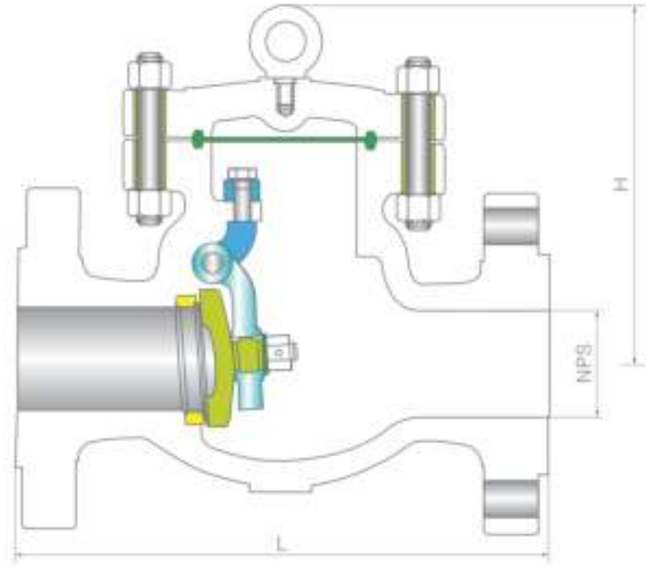
Size		L/L1 (RF/BW)		L2 (RTJ)		H		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
2	50	8.00	203	8.50	216	6.00	152	14	10
2 ½	65	8.50	216	9.00	229	6.50	165	20	12
3	80	9.50	241	10.00	254	6.88	175	25	17
4	100	11.50	292	12.00	305	8.00	204	40	29
6	150	14.00	356	14.50	368	11.50	293	71	57
8	200	19.50	495	20.00	508	13.88	353	118	96
10	250	24.50	622	25.00	635	15.38	390	177	143
12	300	27.50	699	28.00	711	17.00	432	263	227
14	350	31.00	787	31.50	800	18.75	475	353	295
16	400	34.00	864	34.50	876	20.62	525	542	468
18	450	38.50	978	39.00	991	22.88	582	632	552
20	500	38.50	978	39.00	991	24.62	627	855	755
24	600	51.00	1295	51.50	1308	32.75	883	970	831

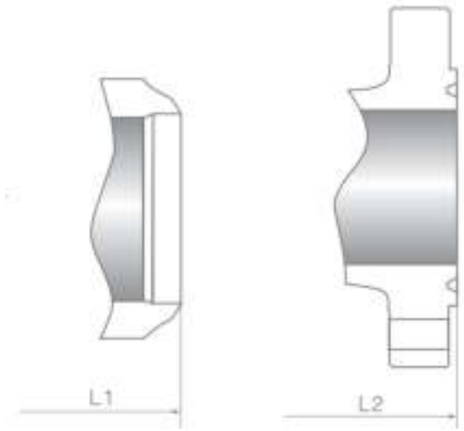
900Lb
Cast Steel Check Valve

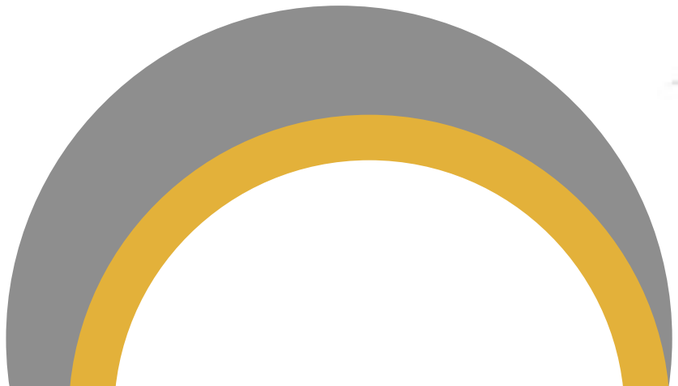
Applicable Standards
Steel check valves: API 6D
Steel check valves: ISO 14313
Steel valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

Design Description
Bolted bonnet (BB) split body, cap
Swing type, Anti-rotation disc
Renewable seat rings
Non-penetrate disc shaft
Horizontal or vertical service
Flanged or butt weld ends

Fig. No.
C9F01A C9F05D C9F01B
C9B01A C9B05D C9B01B
C9R01A C9R05D C9R01B







Materials List

NO	Part Name	ASTM Material		
		Carbon steel	1 1/4Cr - 1/2 Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet	A216-WCB	A217-WC6	A352-LCB
3	Disc[2']	A216-WCB+CR13	A217-WC6+HF	A352-LCB+CR13
4	Hinge	A216-WCB	A217-WC6	A352-LCB
5	Support	A216-WCB	A217-WC6	A352-LCB
6	Seat ring[2']	A105+HF	A182-F11+HF	A350-LF2+CR13
7	Hinge pin	A276-420	A276-304	A276-420
8	Disc washer	Carbon steel	A276-304	Carbon Steel
9	Disc nut	Carbon steel	A194-7	Carbon Steel
10	Disc nut pin	Carbon steel	A276-420	Carbon Steel
11	Bonnet gasket	Steel ring	304SS Ring	Steel ring
12	Bonnet stud	A193-B7	A193-B16	A320-L7
13	Bonnet stud nut	A194-2H	A194-7	A194-4
14	Eyebolt[1']		Carbon steel	

Note:
NPS 6" & Larger;
Disc and seat ring may either be hard faced or supplied with a base material equal to or better than the body/binnet material, with facing as shown.

Dimensional Data

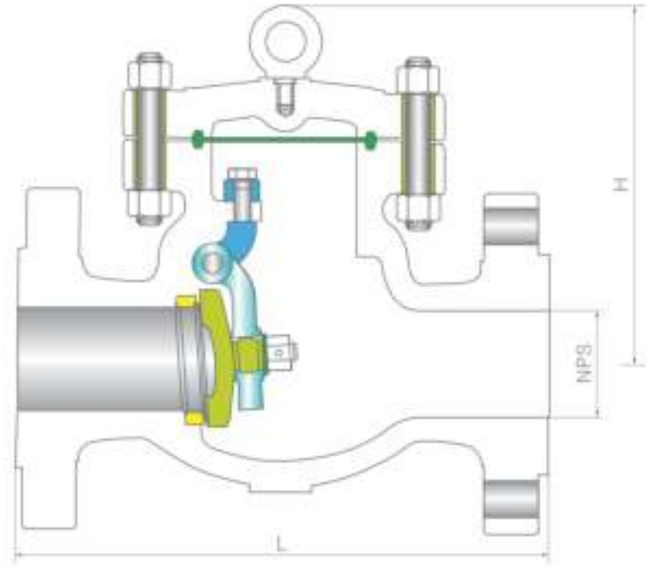
Size		L/L1 (RF/BW)		L2 (RTJ)		H		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
2	50	4.50	368	14.62	371	9.50	240	37	21
2 ½	65	16.50	419	16.62	422	10.00	256	54	25
3	80	15.00	381	15.12	384	11.00	278	68	34
4	100	18.00	457	18.12	460	12.50	320	109	58
6	150	24.00	610	24.12	613	18.12	460	195	115
8	200	29.00	737	29.12	740	22.00	560	321	194
10	250	33.00	838	33.12	841	24.00	610	481	290
12	300	38.00	965	38.12	968	26.50	675	711	461
14	350	40.50	1029	40.88	1038	29.38	745	956	597
16	400	44.50	1130	44.88	1140	32.00	815	1468	950
18	450	48.00	1219	48.50	1232	33.50	850	1870	1210
20	500	52.00	1321	52.50	1334	38.75	985	2316	1533
24	600	-	-	-	-	-	-	-	-

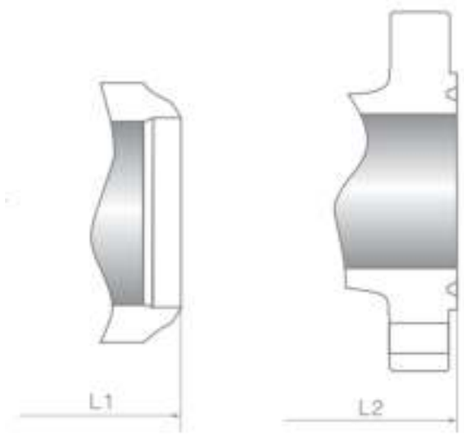
1500Lb
Cast Steel Check Valve

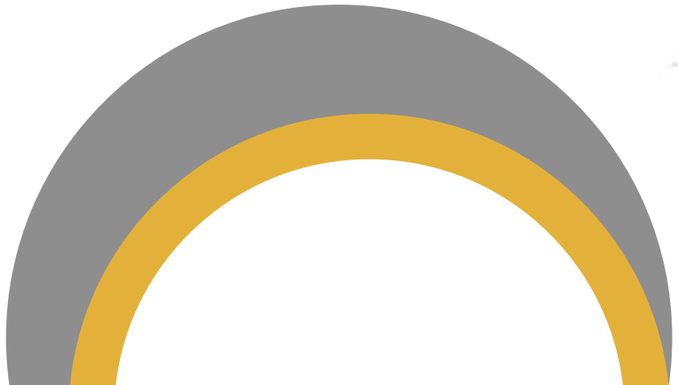
Applicable Standards
Steel check valves: API 6D
Steel check valves: ISO 14313
Steel valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

Design Description
Bolted bonnet (BB) split body, cap
Swing type, Anti-rotation disc
Renewable seat rings
Non-penetrate disc shaft
Horizontal or vertical service
Flanged or butt weld ends

Fig. No.
C15F01A C15F05D C15F01B
C15B01A C15B05D C15B01B
C15R01A C15R05D C15R01B







Materials List

NO	Part Name	ASTM Material		
		Carbon steel	1 1/4Cr - 1/2 Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet	A216-WCB	A217-WC6	A352-LCB
3	Disc[2']	A216-WCB+CR13	A217-WC6+HF	A352-LCB+CR13
4	Hinge	A216-WCB	A217-WC6	A352-LCB
5	Support	A216-WCB	A217-WC6	A352-LCB
6	Seat ring[2']	A105+HF	A182-F11+HF	A350-LF2+HF
7	Hinge pin	A276-420	A276-304	A276-420
8	Disc washer	Carbon steel	A276-304	Carbon Steel
9	Disc nut	Carbon steel	A194-7	Carbon Steel
10	Disc nut pin	Carbon steel	A276-420	Carbon Steel
11	Bonnet gasket	Steel ring	304SS Ring	Steel ring
12	Bonnet stud	A193-B7	A193-B16	A320-L7
13	Bonnet stud nut	A194-2H	A194-7	A194-4
14	Eyebolt[1']		Carbon steel	

Note:
NPS 6" & Larger;
Disc and seat ring may either be hard faced or supplied with a base material equal to or better than the body/binnet material, with facing as shown.

Dimensional Data

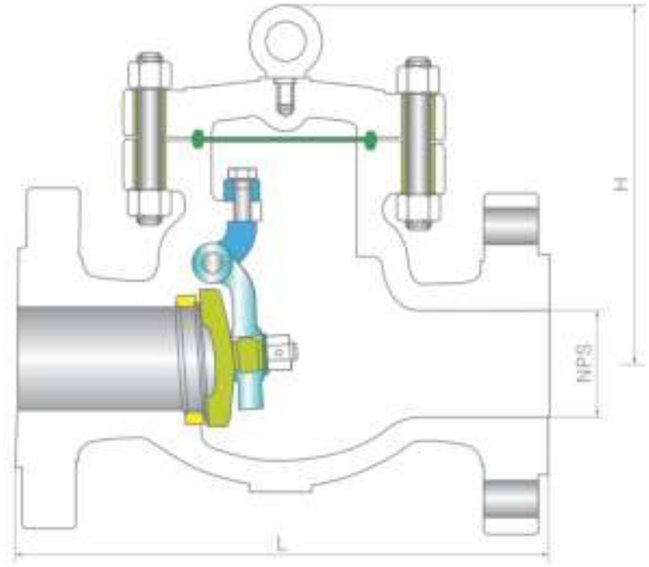
Size		L/L1		L2		H		WT	
		(RF/BW)		(RTJ)				(Kg)	
in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
2	50	14.50	368	14.62	371	9.50	240	40.00	29
2 ½	65	16.50	419	16.62	422	10.00	256	63.00	47
3	80	18.50	470	18.62	473	13.00	330	70.00	49
4	100	21.50	546	21.62	549	14.75	375	115.00	84
6	150	27.75	705	28.00	711	18.88	480	250.00	152
8	200	32.75	832	33.12	841	23.50	595	470.00	310
10	250	39.00	991	39.38	1000	26.00	660	740.00	470
12	300	44.50	1130	45.12	1146	29.12	740	1100.00	710
14	350	49.50	1257	50.25	1276	30.88	785	1410.00	910
16	400	54.50	1384	55.38	1407	32.88	835	1600.00	1100

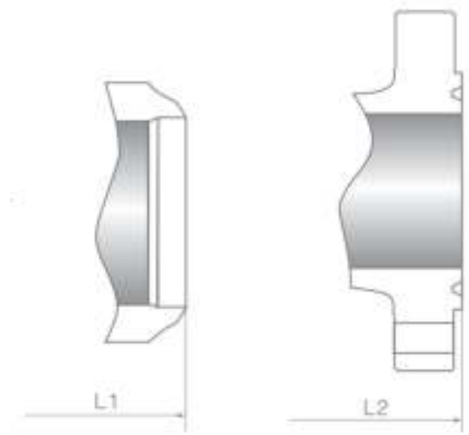
2500Lb
Cast Steel Check Valve

Applicable Standards
Steel check valves: API 6D
Steel check valves: ISO 14313
Steel valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

Design Description
Bolted bonnet (BB) split body, cap
Swing type, Anti-rotation disc
Renewable seat rings
Non-penetrate disc shaft
Horizontal or vertical service
Flanged or butt weld ends

Fig. No.
C25F01A C25F05D C25F01B
C25B01A C25B05D C25B01B
C25R01A C25R05D C25R01B





Materials List

NO	Part Name	ASTM Material		
		Carbon steel	1 1/4Cr - 1/2 Mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet	A216-WCB	A217-WC6	A352-LCB
3	Disc[2']	A216-WCB+CR13	A217-WC6+HF	A352-LCB+CR13
4	Hinge	A216-WCB	A217-WC6	A352-LCB
5	Support	A216-WCB	A217-WC6	A352-LCB
6	Seat ring[2']	A105+HF	A182-F11+HF	A350-LF2+HF
7	Hinge pin	A276-420	A276-304	A276-420
8	Disc washer	Carbon steel	A276-304	Carbon Steel
9	Disc nut	Carbon steel	A194-7	Carbon Steel
10	Disc nut pin	Carbon steel	A276-420	Carbon Steel
11	Bonnet gasket	Steel ring	304SS Ring	Steel ring
12	Bonnet stud	A193-B7	A193-B16	A320-L7
13	Bonnet stud nut	A194-2H	A194-7	A194-4
14	Eyebolt[1']		Carbon steel	

Note:
NPS 6" & Larger;
Disc and seat ring may either be hard faced or supplied with a base material equal to or better than the body/binnet material, with facing as shown.

Dimensional Data

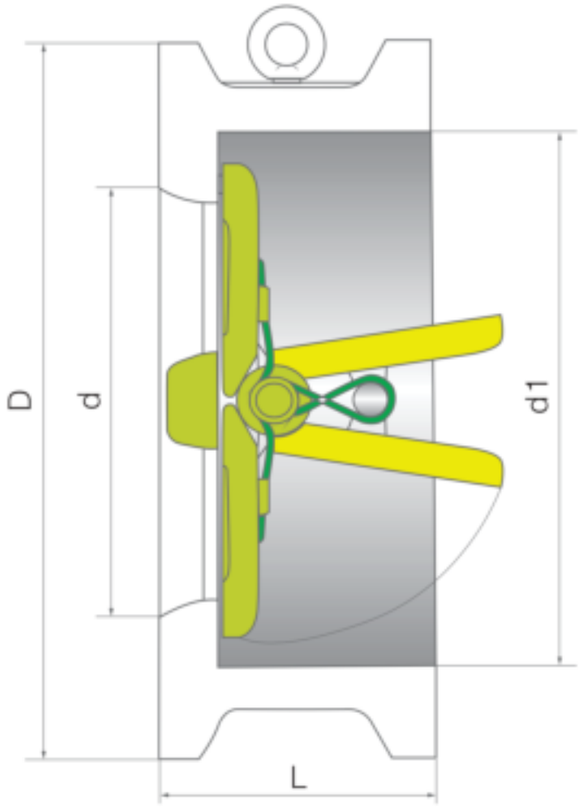
Size		L/L1 (RF/BW)		L2 (RTJ)		H		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
2	50	17.75	451	17.88	454	10.75	275	50	35
2 ½	65	20	508	20.25	514	13.25	335	76	55
3	80	22.75	578	23	584	13.75	350	85	68
4	100	26.5	673	26.88	683	15.12	385	165	115
6	150	36	914	36.5	927	19.5	495	460	225
8	200	40.25	1022	40.88	1038	24.62	625	900	580
10	250	50	1270	50.88	1282	28	712	1300	860
12	300	56	1422	56.88	1445	35.62	905	1800	1150
14	350	-	-	-	-	-	-	-	-
16	400	-	-	-	-	-	-	-	-

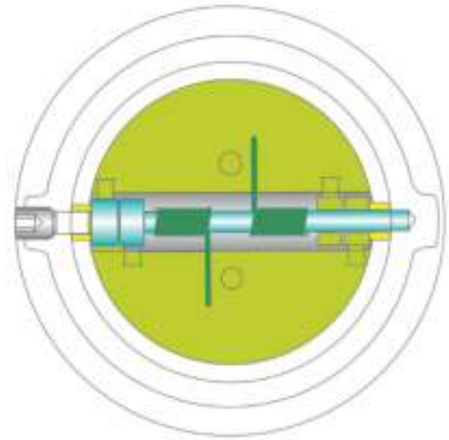
150/300Lb
Cast Steel Check Valve

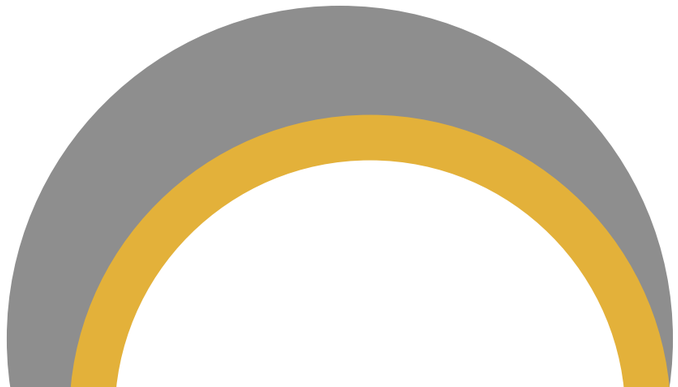
Applicable Standards
Steel check valves: API 594/API 6D
Steel check valves: ISO 14313
Steel valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Inspection and test: API 598/API 6D

Design Description
One piece body
Butterfly swing type
Dual-plate disc, long-pattern
Renewable split disc
Horizontal or vertical service
Wafer ends
Available with flanged ends

Fig. No.
CD1W01A CD1W05D CD1W01B
CD1F01A CD1F05D CD1F01B
CD3W01A CD3W05D CD3W01B
CD3F01A CD3F05D CD3F01B







Materials List

NO	Part Name	ASTM Material		
		Carbon steel	1 1/4Cr - 1/2 Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Plate	A216-WCB+CR13	A351-CF8M+HF	A352-LCB+CR13
3	Stop pin	A276-420	A276-304	A276-420
4	Back spring	A313-304	A313-316	A313-304
5	Hinge pin	A276-420	A276-304	A276-420
6	Eyebolt†'	Carbon steel		

Note:
NPS 8" & Larger;

Dimensional Data

ANSI Class 150Lb

Size		L		D		d		d1		WT (Kg)
in	mm	in	mm	in	mm	in	mm	in	mm	
2	50	2.38	60	4.00	103	2.00	51	2.25	56	2
2 ½	65	2.62	67	4.88	122	2.50	65	2.88	73	3
3	80	2.88	73	5.38	135	3.25	80	3.50	88	4
4	100	2.88	73	6.75	173	4.00	102	4.25	108	6
6	150	3.88	98	8.62	220	6.00	152	6.25	160	13
8	200	5.00	127	10.88	277	8.00	203	8.26	210	25
10	250	5.75	146	13.25	337	10.00	254	10.50	266	39
12	300	7.12	181	16.00	407	12.00	305	12.12	310	54
14	350	7.25	184	19.62	448	13.75	350	14.00	356	80
16	400	7.50	191	20.12	512	15.75	400	16.00	405	117
18	450	8.00	203	21.50	547	17.75	450	18.00	455	138
20	500	8.62	219	23.75	604	19.75	500	19.88	505	163
24	600	8.75	222	28.12	715	23.62	600	23.75	605	331

ANSI Class 300Lb

L		D		d		d1		WT (Kg)
in	mm	in	mm	in	mm	in	mm	
2.38	60	4.25	110	2.00	51	2.25	58	3
2.62	67	5.00	128	2.50	65	2.88	73	4
2.88	73	5.75	147	3.00	80	3.50	88	6
2.88	73	7.00	179	4.00	102	4.25	108	8
3.88	98	9.88	249	6.00	152	6.38	160	18
5.00	127	12.00	305	8.00	203	8.25	210	31
5.75	146	14.12	359	10.00	254	10.50	266	51
7.12	181	16.50	420	12.00	305	12.25	310	77
8.75	222	19.00	483	14.00	350	14.00	355	117
9.12	232	21.12	537	16.00	400	16.00	405	190
10.38	264	23.38	594	18.00	450	18.00	455	200
11.50	292	25.62	652	20.00	500	20.00	505	265
12.50	318	30.38	772	24.00	600	24.00	608	410

600/900Lb Cast Steel Check Valve

Applicable Standards

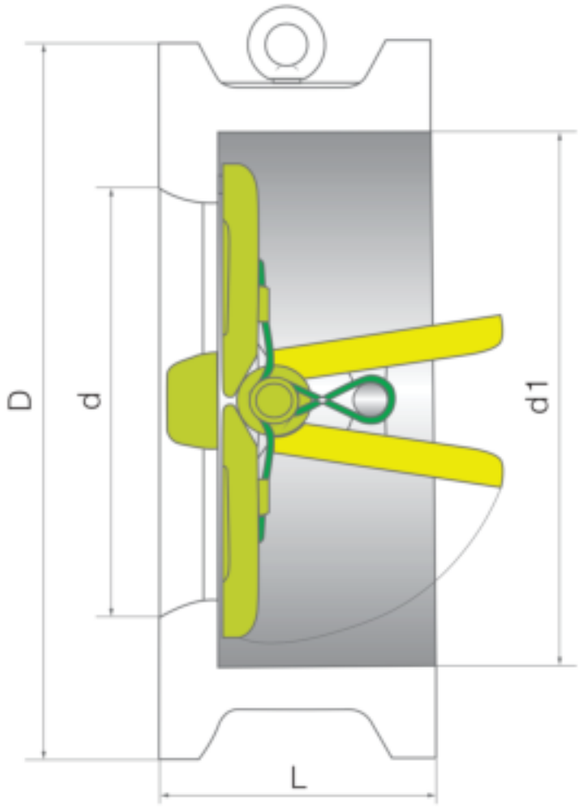
Steel check valves: API 594/API 6D
Steel check valves: ISO 14313
Steel valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Inspection and test: API 598/API 6D

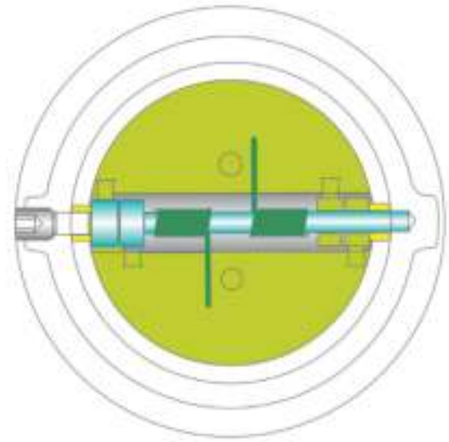
Design Description

One piece body
Butterfly swing type
Dual-plate disc, long-pattern
Renewable split disc
Horizontal or vertical service
Wafer ends
Available with flanged ends

Fig. No.

CD1W01A CD1W05D CD1W01B
CD1F01A CD1F05D CD1F01B
CD3W01A CD3W05D CD3W01B
CD3F01A CD3F05D CD3F01B





Materials List

NO	Part Name	ASTM Material		
		Carbon steel	1 1/4Cr - 1/2 Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Plate	A216-WCB+CR13	A351-CF8M+HF	A352-LCB+CR13
3	Stop pin	A276-420	A276-304	A276-420
4	Back spring	A313-304	A313-316	A313-304
5	Hinge pin	A276-420	A276-304	A276-420
6	Eyebolt[1]		Carbon steel	

Note:
NPS 8" & Larger;

Dimensional Data

ANSI Class 600Lb

Size		L		D		d		d1		WT (Kg)
in	mm	in	mm	in	mm	in	mm	in	mm	
2	50	2.38	60	4.38	111	2.00	51	2.25	58	4
2 ½	65	2.62	67	5.00	128	2.50	65	2.88	73	5
3	80	2.88	73	5.75	147	3.00	80	3.50	88	8
4	100	3.12	79	7.50	191	4.00	102	4.25	108	11
6	150	5.38	137	10.38	264	6.00	152	6.38	162	26
8	200	6.50	165	12.50	318	7.88	200	8.38	212	55
10	250	8.38	213	15.62	398	9.88	250	10.50	266	95
12	300	9.00	229	17.88	455	12.00	305	12.25	312	140
14	350	10.75	273	19.25	490	13.25	337	14.00	355	223
16	400	12.00	305	22.12	562	15.25	387	15.75	400	360

ANSI Class 600Lb

L		D		d		d1		WT (Kg)
in	mm	in	mm	in	mm	in	mm	
2.75	70	5.50	140	2.00	51	2.25	58	8
3.25	83	6.38	162	2.50	65	2.88	73	11
3.25	83	6.50	165	3.00	80	3.50	88	14
4.00	102	8.00	204	4.00	102	4.25	108	20
6.25	159	11.25	286	6.00	152	6.38	162	42
8.12	206	14.00	356	7.88	200	8.38	212	84
9.50	241	17.00	432	9.88	250	10.50	266	145
11.50	292	19.50	495	12.00	305	12.25	312	220
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-

BUTTERFLY VALVE

- Triple Offset, Metal Seated Butterfly Valves
- Tripe Offset Butterfly Valve With Manual Worm Gear Operator
- Tripe Offset Butterfly Valve With Pneumatic Or Electric Operator
- Triple Offset Butterfly Valve

Triple Offset, Metal Seated Butterfly Valves

Product Description

A multilayer hard face seat and three offsets of advanced Butterfly Valves. Form of many metallic layers and graphite will make an effective seal when torque is applied. An advanced geometry provides low running torque and energy savings.

Valve Characteristics

The valve's three offsets, or triple eccentric design, ensure that the sealing faces are not rubbed during the disc movement.

- Sealing is made by applying torque and more torque provide a tighter seal and contact only made at the end of the travel
- The operation that is on going does not harm the seat or sealing surfaces, resulting in a long and reliable service life with no leakage.
- Its small size and light weight design make it perfect for usage in small and confined place, and can be utilised for on-off or control applications.
- Butterfly valve offers good high temperature and high pressure resistance.

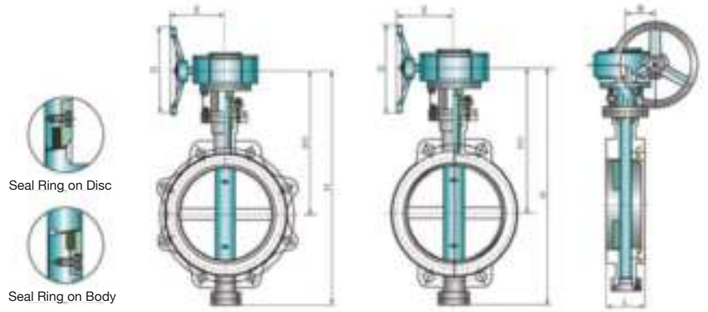
Standards

Design and manufacture standard		API609	Inspection and test standard	API 598
Material pressure-temperature standard		ASME B16.34	Flange ends dimension standard	Size ≤ 24" to ANSI B16.5
Face to face dimension standard	Flange short pattern to	ISO5752 basic series 13		Size > 24" to ANSI B16.47 Series B
	Flange long pattern to	ASME B16.10	Fire safe standard	API 607

Products Performance Specification

Pressure		Testing pressure at constant temperature (Mpa)			Applicable Temperature	Applicable Medium
		The shell testing	High Pressure	Low Pressure		
Class	150	2.93	2.07	0.6	-50 to '+400, Degree Celcius as standard depending on materials	Water, oil, gas and other causticity medium
	300	7.58	5.52	0.6		
	600	15.0	11.03	0.6		

TRIPLE OFFSET BUTTERFLY VALVE WITH MANUAL WORM GEAR OPERATOR



STANDARDS

Design and manufacture standard	API 609	Flange ends dimension standard
Material pressure-temperature standard	ASME B16.34	Size ≤ 24" to ANSI B16.5
Face to face dimension standard	API 609 Series B	Size > 24" to ANSI B16.47 Series B

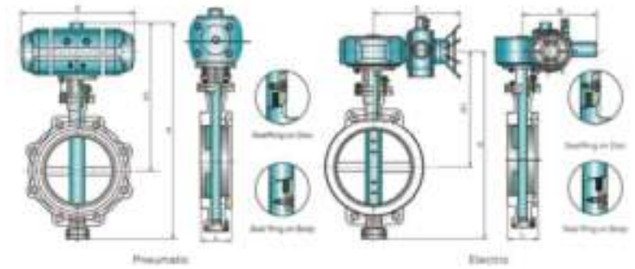
Products Performance Specification

Pressure		Testing pressure at constant temperature (Mpa)			Applicable temperature	Applicable medium
		Shell Test	High Pressure seal	Low Pressure seal		
Class	150	2.93	2.07	0.6	-50 to +400 Degrees Celcius as standard depending on materials	Water, oil, gas and other causticity medium
	300	7.58	5.52	0.6		
	600	15	11.03	0.6		

Main Outline Dimensions and Weight

150 LB														
NPS		3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	36"
L		48	54	57	64	71	81	92	102	114	127	154	167	184
H		320	342	415	510	567	665	739	825	910	990	1210	1453	1775
H1		185	195	243	263	295	342	385	430	469	500	618	875	939
E		140	140	140	150	150	200	200	240	240	300	320	512	512
B		63	63	63	84	84	108	108	152	152	168	192	279	279
D		160	160	300	400	400	600	600	600	800	800	800	400	400
Weight (kg)	WF	9	11	17	25	40	61	82	123	150	204	300	454	762
	WL	9	14	20	31	49	79	107	150	183	253	398	490	771
300LB														
L		48	54	59	73	83	92	117	133	149	159	181	254	305
H		320	342	415	510	567	665	739	825	910	990	1210	1937	2198
H1		185	195	243	263	295	342	385	430	469	500	618	1180	1298
E		140	140	140	150	150	200	200	240	240	300	320	512	570
B		63	63	63	84	84	108	108	152	152	168	192	279	368
D		160	160	300	400	400	600	600	600	800	800	800	600	600
Weight (kg)	WF	13.5	18	28	49	68	109	186	264	297	363	530	816	1429
	WL	15.5	21	34	60	88	117	207	308	408	468	635	1338	2154

Triple Offset Butterfly Valve With Pneumatic Or Electric Operator



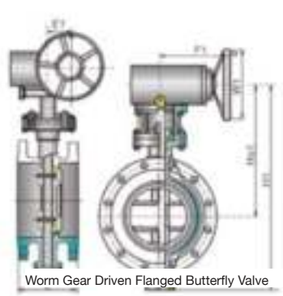
Triple Offset Butterfly Valve With Pneumatic Operator

		150 LB												
NPS		3”	4”	6”	8”	10”	12”	14”	16”	18”	20”	24”	30”	36”
L		48	54	57	64	71	81	92	102	114	127	154	167	184
H		-	-	-	690	750	95	1032	1182	1265	1335	1642	1823	2145
H1		-	-	-	323	355	475	513	598	635	667	830	1245	1329
E		-	-	-	275	275	378	378	530	530	530	680	680	680
Weight (kg)	WF	9	11	17	25	40	61	82	123	150	204	300	454	762
	WL	9	14	20	31	49	79	107	150	182	253	398	490	771
		300LB												
L		48	54	59	73	83	92	117	133	149	159	181	254	305
H		-	-	-	750	909	1075	1158	1230	1462	1328	-	-	-
H1		-	-	-	368	442	535	572	610	736	765	-	-	-
E		-	-	-	275	378	530	530	530	680	680	-	-	-
Weight (kg)	WF	13.5	18	28	49	68	109	186	264	297	363	454	816	1429
	WL	15.5	21	34	60	88	117	207	308	408	468	748	1338	2154

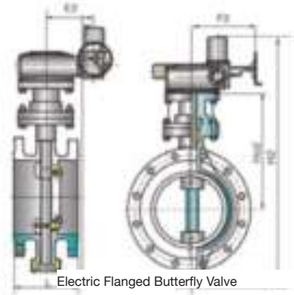
Triple Offset Butterfly Valve With Electric Operator

		150 LB												
NPS		3”	4”	6”	8”	10”	12”	14”	16”	18”	20”	24”	30”	36”
L		48	54	57	64	71	81	92	102	114	127	154	167	184
H		513	535	602	745	805	883	965	1033	1120	1186	1380	1583	1905
H1		263	282	322	296	325	365	408	443	485	518	625	1005	1089
B		178	178	178	235	235	235	235	235	235	235	235	245	245
E		180	180	180	370	370	370	370	370	370	370	370	515	515
Weight (kg)	WF	9	11	17	25	40	61	82	123	150	204	300	454	762
	WL	9	14	20	31	49	79	107	150	182	253	398	490	771
		300 LB												
L		48	54	59	73	83	92	117	133	149	159	181	254	305
H		513	535	602	745	805	883	965	1033	1120	1186	1380	1516	1669
H1		263	282	322	296	325	365	408	443	485	518	625	716	794
B		178	178	178	235	235	235	235	235	235	235	235	360	360
E		180	180	180	370	370	370	370	370	370	370	370	540	540
Weight (kg)	WF	13.5	18	28	49	68	109	186	264	297	363	454	816	1429
	WL	15.5	21	34	60	88	117	207	308	408	468	748	1338	2154

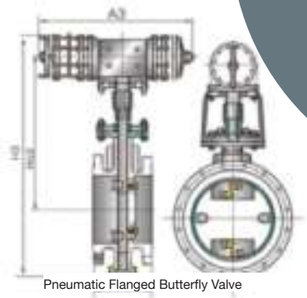
Triple Offset Butterfly Valve



Worm Gear Driven Flanged Butterfly Valve



Electric Flanged Butterfly Valve



Pneumatic Flanged Butterfly Valve

Main Outline Dimensions And Weight

NPS	L	Worm gear and worm drive					Electric				Pneumatic			Kg
		H1	Ho1	E1	F1	W1	H2	Ho2	E2	F2	H3	Ho3	A3	Worm gear
3”	114	472	350	50	203	203	513	283	180	178	-	-	-	15.4
4”	127	520	386	60	191	203	535	282	180	178	-	-	-	23
5”	140	580	395	60	215	250	563	293	180	178	-	-	-	29
6”	140	653	475	67	289	305	602	322	180	178	-	-	-	33
8”	152	773	565	67	308	460	745	296	370	235	690	323	275	50
10”	165	880	640	86	346	460	805	325	370	235	750	355	275	73
12”	178	989	711	111	403	610	883	265	370	235	955	475	378	108
14”	190	1044	760	60	601	350	985	408	370	235	1032	513	378	143
16”	216	1142	826	60	605	457	1033	443	370	235	1182	598	530	186
18”	222	1228	887	60	652	610	1120	485	370	235	1265	635	530	234
20”	229	1337	959	60	805	762	1186	518	370	235	1335	667	530	277
24”	267	1554	1109	103	763	762	1380	625	370	235	1642	830	680	408
28”	292	1456	956	245	400	315	1587	745	515	245	1711	859	680	653
30”	318	1541	991	310	460	400	1650	777	515	245	1782	910	680	816
32”	318	1611	1036	310	460	400	1717	810	515	245	1856	942	680	914
36”	330	1743	1103	410	480	400	1870	875	540	360	1920	975	680	1157
40”	410	1868	1173	410	480	400	2030	965	540	360	-	-	-	1610
44”	450	1968	1223	410	480	400	2078	1022	540	360	-	-	-	2160
48”	470	2145	1320	520	640	400	2188	1100	540	360	-	-	-	2359
52”	490	2300	1405	520	640	400	2214	1150	565	385	-	-	-	2720
56”	530	2440	1475	520	640	400	2328	1325	565	385	-	-	-	3353
60”	570	2594	1559	450	785	630	2530	1515	565	385	-	-	-	3629

Structural length of valves in the table : DN<2000, to ISO5852 13series ; DN ≥ 2000, to ISO5752 14 series.

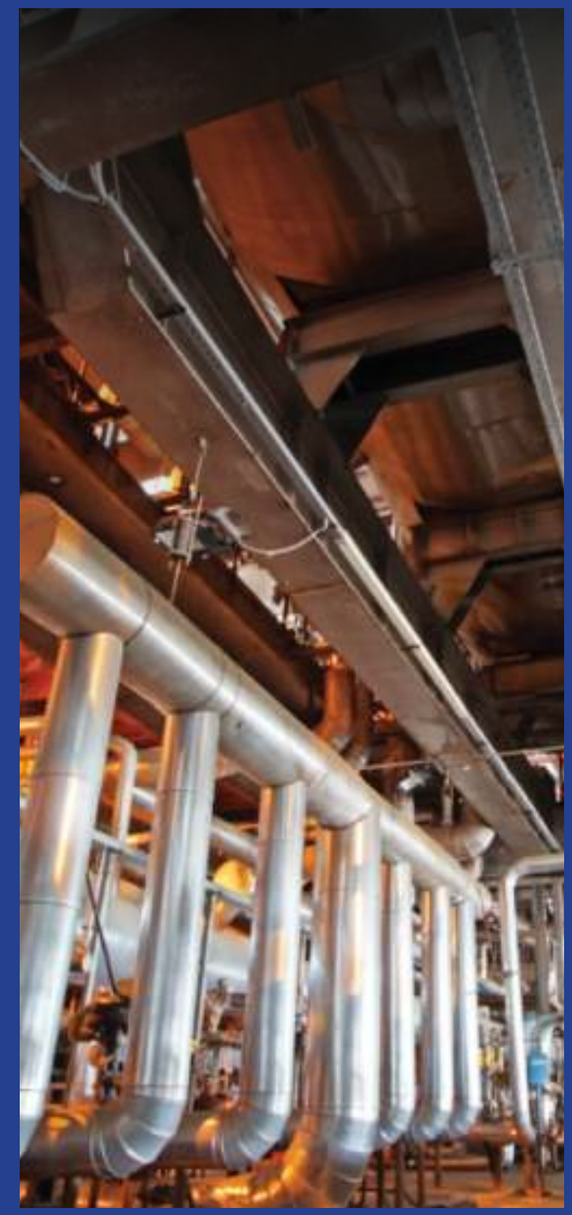
Triple Offset Butterfly Valve

Main Outline Dimensions And Weight

NPS	L	Worm gear and worm drive					Electric				Pneumatic			Kg		
		H1	Ho1	E1	F1	W1	H2	Ho2	E2	F2	H3	Ho3	A3	Worm gear	Electric	Pneumatic
300 LB																
2”	108	365	237	35	169	152	407	237	180	178	-	-	-	19	27	-
3”	114	378	253	73	229	152	530	253	180	178	-	-	-	29	43	-
4”	127	421	274	73	229	305	552	274	180	178	-	-	-	39	51	-
5”	140	482	312	73	229	305	580	312	180	178	-	-	-	48	58	-
6”	140	543	351	108	254	305	610	351	180	178	-	-	-	54	67	-
8”	152	628	392	108	254	305	755	392	370	235	750	368	275	84	107	-
10”	165	855	480	133	305	610	816	480	370	235	909	442	378	118	150	-
12”	178	812	515	133	305	610	912	515	370	235	1075	535	530	170	225	-
14”	191	885	555	194	356	610	980	555	370	235	1158	572	530	231	266	-
16”	216	915	590	194	356	356	1057	590	370	235	1230	610	530	299	369	-
18”	225	1106	636	194	356	356	1140	636	370	235	1462	736	680	390	429	-
20”	229	1308	685	194	356	356	1243	684	515	245	1328	765	680	499	590	-
24”	267	1445	934	165	686	686	1420	934	817	351	-	-	-	726	766	-
28”	292	1495	1039	165	686	686	1812	1039	817	351	-	-	-	1360	-	-
30”	292	1535	1060	165	686	686	1906	1060	817	351	-	-	-	1429	-	-
32”	318	1575	1120	165	686	686	2021	1120	817	351	-	-	-	1757	-	-
36”	330	1605	1190	165	686	686	2327	1190	973	440	-	-	-	2223	-	-
40”	410	1755	1234	165	686	686	2451	1234	973	440	-	-	-	2531	-	-
42”	430	2100	1385	429	805	903	2515	1384	973	440	-	-	-	2781	-	-
44”	450	2175	1436	429	805	903	2565	1436	973	440	-	-	-	2970	-	-
48”	470	2303	1570	399	965	903	2697	1570	973	440	-	-	-	3603	-	-
600 LB																
3”	180	541	414	63	140	250	606	295	180	178	-	-	-	182	79	-
4”	190	607	447	63	140	250	650	358	180	178	-	-	-	125	96	-
5”	200	680	395	108	200	250	695	371	180	178	-	-	-	165	154	-
6”	210	686	490	152	240	315	743	387	180	178	-	-	-	191	172	-
8”	230	757	536	168	300	315	1055	417	370	235	-	-	-	247	248	-
10”	250	897	641	192	320	315	1172	465	370	235	-	-	-	413	308	-
12”	270	1034	727	237	368	400	1392	546	515	245	-	-	-	576	467	-
14”	290	1087	757	237	368	400	1475	579	515	245	-	-	-	664	585	-
16”	310	1216	825	237	368	400	1557	643	540	360	-	-	-	971	807	-
18”	330	1240	840	269	559	400	1625	673	540	360	-	-	-	1117	1003	-
20”	350	1330	978	350	645	400	1679	701	540	360	-	-	-	1639	1139	-
24”	350	1583	1070	350	645	400	1834	775	540	360	-	-	-	2083	1767	-

Structural leghth of valves in the table : DN<2000, to ISO5852 13series; DN≥2000, to ISO5752 14 series.

OTHER VALVE



150/300Lb
Cast Steel Plug Valve

Applicable Standards

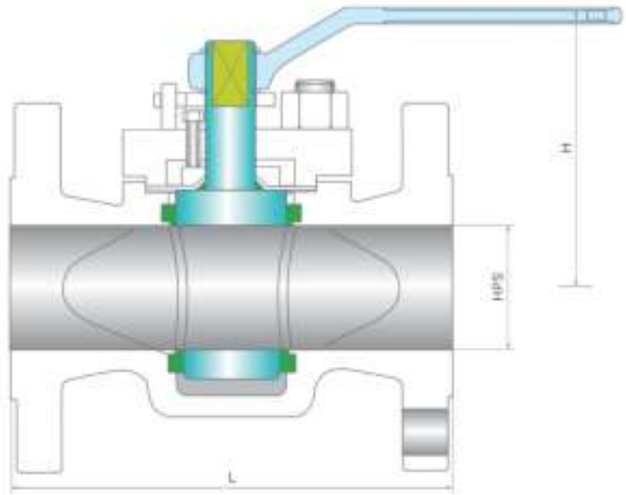
Steel plug valves: API 599/API 6D
Steel plug valves: ISO 14313
Fire resistant: API 607
Anti static: API 599
Steel Valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

Design Description

Rugged, heavy-duty body
Bolted bonnet cap
PTFE Sleeved, tapered plug
Larged port openings
Non-lubricated
Stem integral with-plug
In-line adjustment
Fire resistant construction
Anti static device
Stopper device
Renewable seat ring
Flanged or butt weld ends
Available with manual worm gear operator

Fig. No.

P1F57A P1F59L P1F57B
P1B57A P1B59L P1B57B



Materials List

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet cap	A216-WCB	A351-CF8M	A352-LCB
3	Plug	A182-F304 1)	A182-F316	A182-F304 1)
4	Sleeve		Glass filled PTFE	
5	Bonnet gasket	Graphite+304 2)	Graphite+316 2)	Graphite+304 2)
6	Adjusting gasket	A182-F6a	A182-F316	A182-F6a
7	Adjusting bolt	A193-B7	A193-B8	A320-L7
8	Bonnet stud	A193-B7	A193-B8	A320-L7
9	Bonnet bolt	A194-2H	A194-8	A194-4
10	Handle		Carbon steel	
11	Diaphragm	A167-304+PTFE	A167-304+PTFE	A167-304+PTFE
12	Packing		Graphite	
13	Gland flange	A216-WCB	A217-WC6	A352-LCB

Note: A105+ENP optional ; Jacketed construction

Dimensional Data

ANSI Class150Lb

Size		L (RF)		L1 (BW)		H		W		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF	BW
2	50	7.00	178	10.50	267	6.00	150	13	320	17	13
2 1/2	65	7.50	191	12.00	305	6.50	165	14	350	20	14
3	80	8.00	203	13.00	330	7.12	180	16	410	25	17.5
4	100	9.00	229	14.00	356	15.00	380	13	320	40	29
6	150	10.50	267	18.00	457	20.50	520	13	320	70	55
8	200	11.50	292	20.50	521	22.88	580	13	320	135	110
10	250	13.00	330	22.00	559	24.50	620	14	350	220	185
12	300	14.00	356	25.00	635	26.75	680	15	380	300	247

ANSI Class 300Lb

Size		L (RF)		L1 (BW)		H		W		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF	BW
2	50	8.5	216	10.50	267	6.00	150	13	320	17	13
2 1/2	65	9.5	241	12.00	305	6.50	165	14	350	20	14
3	80	11.0	283	13.00	330	7.12	180	16	410	25	17.5
4	100	12.0	305	14.00	356	15.00	380	13	320	40	29
6	150	16.0	403	18.00	457	20.50	520	13	320	70	55
8	200	16.5	419	20.50	521	22.88	580	13	320	135	110
10	250	18.0	457	22.00	559	24.50	620	14	350	220	185
12	300	20.0	502	25.00	635	26.75	680	15	380	300	247

600/900Lb
Cast Steel Plug Valve

Applicable Standards

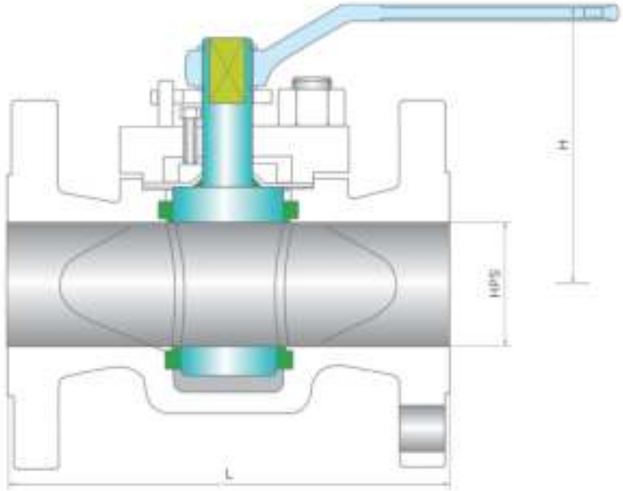
Steel plug valves: API 599/API 6D
Steel plug valves: ISO 14313
Fire resistant: API 607
Anti static: API 599
Steel Valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

Design Description

Rugged, heavy-duty body
Bolted bonnet cap
PTFE Sleeved, tapered plug
Larged port openings
Non-lubricated
Stem integral with-plug
In-line adjustment
Fire resistant construction
Anti static device
Stopper device
Renewable seat ring
Flanged or butt weld ends
Available with manual worm gear operator

Fig. No.

P6F57A	P6F59L	P6F57B
P6B57A	P6B59L	P6B57B
P6R57A	P6R59L	P6R57B
P9F57A	P9F59L	P9F57B
P9B57A	P9B59L	P9B57B
P9R57A	P9R59L	P9R57B



Materials List

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet cap	A216-WCB	A351-CF8M	A352-LCB
3	Plug	A182-F304 1)	A182-F316	A182-F304 1)
4	Sleeve		Glass filled PTFE	
5	Bonnet gasket	Graphite+304 2)	Graphite+316 2)	Graphite+304 2)
6	Adjusting gasket	A182-F6a	A182-F316	A182-F6a
7	Adjusting bolt	A193-B7	A193-B8	A320-L7
8	Bonnet stud	A193-B7	A193-B8	A320-L7
9	Bonnet bolt	A194-2H	A194-8	A194-4
10	Handle		Carbon steel	
11	Diaphragm	A216-WCB	A217-WC6	A352-LCB
12	Packing		Graphite	
13	Gland flange	A216-WCB	A217-WC6	A352-LCB

Note: A105+ENP optional ; Jacketed construction

Dimensional Data

ANSI Class 600Lb

Size		L/L1 (RFBW)		L2 (RTJ)		H		W		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
2	50	11.50	292	11.62	295	6.12	155	14	350	28	21
2 1/2	65	13.00	330	13.12	333	6.75	170	16	410	33	23.5
3	80	14.00	356	14.12	359	7.25	185	13	320	37	23
4	100	16.00	432	16.12	435	15.38	390	13	320	75	46
6	150	19.50	559	19.62	562	20.88	530	13	320	142	97
8	200	23.50	660	23.62	664	23.25	590	14	350	250	167
10	250	26.50	787	26.62	791	24.88	630	15	380	365	227
12	300	30.00	838	30.12	841	27.12	690	15	380	515	354

ANSI Class 900Lb

Size		L/L1 (RFBW)		L2 (RTJ)		H		W		WT (Kg)	
in	mm	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
2	50	14.50	368	14.62	371	6.12	155	14	350	52	32
2 1/2	65	16.50	419	16.62	422	6.75	170	16	410	60	34
3	80	15.00	381	15.12	384	7.25	185	13	320	70	47
4	100	18.00	457	18.12	460	15.38	390	13	320	92	55
6	150	24.00	610	24.12	613	20.88	530	13	320	195	120
8	200	29.00	737	29.12	740	23.25	590	14	350	320	197
10	250	33.00	838	33.12	841	24.88	630	15	380	455	277
12	300	38.00	965	38.12	968	27.12	690	15	380	625	405

150/300Lb
Cast Steel Y-Strainer

Applicable Standards

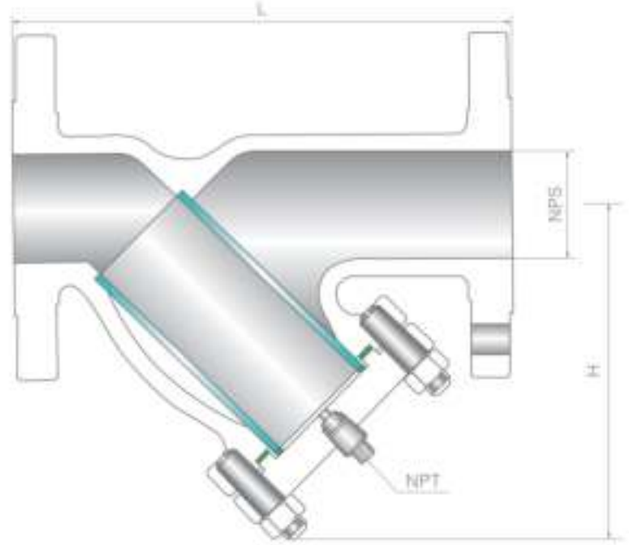
Steel valves: ASME B16.34
Face to face: ASME B16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598

Design Description

Y-Pattern type
Bolted bonnet cap with drain plug
Perforated stainless steel screen
Strainer density 100 mesh design
Full range of strainer density
Renewable strainer density
Flanged or Butt weld ends

Fig. No.

SY1F57A	SY1F59L	SY1F57B
SY1B57A	SY1B59L	SY1B57B
SY3F57A	SY3F59L	SY3F57B
SY3B57A	SY3B59L	SY3B57B



Materials List

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet cap	A216-WCB	A351-CF8M	A352-LCB
3	Screen	A240-304	A420-316	A240-304
4	Bonnet gasket	Graphite+304 1)	PTFE	Graphite+304 1)
5	Bonnet stud	A193-B7	A193-B8	A320-L7
6	Bonnet stud nut	A194-2H	A194-8	A194-7
7	Plug	A276-410	A276-316	A276-410

Note: Spiral wound construction

Percentage Open Area

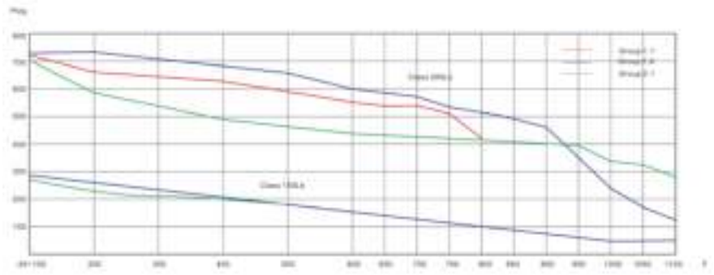
Mesh	5	10	20	30	40	50	60	80	100	120	150	180	200	250	300
A(SWG)	20	22	28	32	36	37	38	40	42	43	451/2	461/2	47	48	48
B(m/m)	0.914	0.711	0.356	0.274	0.193	0.172	0.152	0.122	0.102	0.092	0.066	0.053	0.051	0.040	0.039
C(m/m)	4.166	1.829	0.914	0.572	0.442	0.336	0.271	0.195	0.152	0.119	0.103	0.088	0.076	0.062	0.044
D(%)	67.3	51.8	51.8	45.7	48.4	43.6	41.0	37.8	35.8	31.8	37.1	38.9	35.8	37.7	27.6

Open are can change due depending on several factors:
A: Number of wires; B: Diameter of the wire; C: Width of the oepening; D: Percentage of open area based on factors from A,B and C.

Dimensional Data

150Lb									300Lb						
Size		L /L1 (RF/BW)		H		Plug (NPT)	WT (Kg)		L /L1 (RF/BW)		H		Plug (NPT)	WT (Kg)	
in	mm	in	mm	in	mm	in	RF/RFJ	BW	in	mm	in	mm	in	RF/RFJ	BW
1/2	15	5.50	140	3.38	87	1/8	2.1	0.8	5.50	140	3.38	87	1/8	2.5	1.2
3/4	20	6.00	152	4.12	105	1/2	2.3	1.2	6.00	152	4.12	105	1/2	3.4	1./
1	25	6.50	165	4.50	114	1/2	3.1	1.4	6.50	165	4.50	114	1/2	4.2	2.3
1 1/2	40	8.00	203	6.12	156	1/2	6.2	3.7	8.00	203	6.12	156	1/2	8.6	4.8
2	50	9.00	229	7.12	181	1/2	9.7	6.7	9.00	229	7.12	181	1/2	11.2	8.2
2 1/2	65	11.00	279	10.25	259	3/4	23.5	16.5	11.00	279	10.25	259	3/4	29	20
3	80	12.50	318	11.50	293	3/4	28	22	12.50	318	11.50	293	3/4	38	27
4	100	14.50	368	12.75	324	3/4	37	28	14.50	368	12.75	324	3/4	57	39
6	150	18.5	470	17.62	448	3/4	67	59	18.50	470	17.62	448	3/4	105	74
8	200	23.5	597	21.00	535	3/4	91	78	23.50	597	21.00	535	3/4	176	131
10	250	26.5	673	27.12	690	1	135	113	26.50	673	27.12	690	1	230	164
12	300	30.5	775	30.75	780	1	168	151	30.50	775	30.75	780	1	360	268

150/300Lb Pressure-Temperature Ratings



Asme B16.34 Maximum Allowable Non-Shock Pressure

Temperature		ASTM Material															
		ANSI Class 150Lb								ANSI Class 300Lb							
°F	°C	Group 1.1	Group 1.2	Group 1.3	Group 1.9	Group 1.10	Group 1.13	Group 2.1	Group 2.2	Group 1.1	Group 1.2	Group 1.3	Group 1.9	Group 1.10	Group 1.13	Group 2.1	Group 2.2
20~100	20~38	285	290	265	290	290	290	275	275	740	150	695	750	750	750	720	720
200	93	260	260	250	260	260	260	230	235	670	750	655	750	750	745	600	620
300	149	230	230	230	230	230	230	205	215	655	730	640	720	730	715	540	560
400	204	200	200	200	200	200	200	190	195	635	305	620	695	705	705	495	515
500	260	170	170	170	170	170	170	170	170	600	665	585	665	665	665	465	480
600	316	140	140	140	140	140	140	140	140	550	605	535	605	605	605	435	450
650	343	125	125	125	125	125	125	125	125	535	590	525	590	590	590	430	445
700	371	110	110		110	110	110	110	110	535	570		570	570	570	425	430
750	399	95	95		95	95	95	95	95	505	505		530	530	530	415	425
800	427	80	80		80	80	80	80	80	410	410		510	510	510	405	420
850	454				65	65	65	65	65				485	485	485	395	420
900	482				50	50	50	50	50				450	450	370	390	415
950	510				35	35	35	35	35				320	375	275	380	385
1000	538				20	20	20	20	20				215	260	200	320	350
1050	566				20[6]	20[6]	20[6]	20[6]	20[6]				145	175	145	310	345
1100	593				20[6]	20[6]	20[6]	20[6]	20[6]				95	110	100	255	305

Test Pressure Per API 598

Hydrostatic sheet test	450	450	400	450	450	450	425	425	1125	1125	1050	1125	1125	1125	1100	1100
Hydrostatic seal test	315	320	295	320	320	320	305	320	815	825	765	765	825	825	795	795
Air seal test	80 ± 20								80 ± 20							

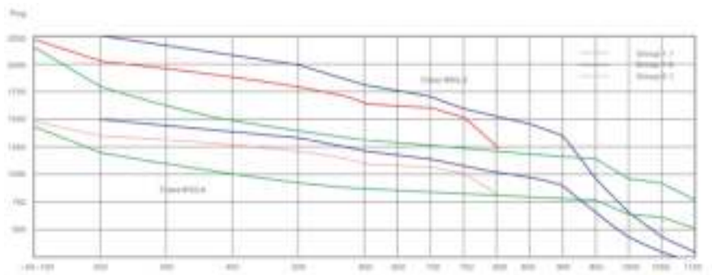
Metric conversions by API STD 2564 Pressure : 1Pound per square inch (Psig) = 0.06894757 bar = 0.006894757 MPa Temperature : °C = (5/9) (°F-32)

ASME B16.34 Material Group

Group 1.1	A105[a]	A216-WCB[e]	
Group 1.2	A216-WCC[e]	A352-LCC[a]	
Group 1.3	A352-LCB[a]		
Group 1.9	A217-WC6[d]		
Group 1.10	A217-WC9[d]		
Group 1.13	A217-C5		
Group 2.1	A182-F304	A351-CF8	A351-CF3[b]
Group 2.2	A182-F316	A352-CF8M	A351-CF3M[c]

- Not to be utilised at temperatures above 650°F (343°C).
- Not to be utilised at temperatures above 800°F (427°C).
- Not to be utilised at temperatures above 1000°F (538°C).
- Not to be utilised at temperatures above 1100°F (593°C).
- It is permissible, but not suggested, to use above 800°F (427°C) for an extended period of time.
- Only for use welding end valve. Flanged end rating terminates at 1000°F (538°C).

600/900Lb Pressure-Temperature Ratings



Asme B16.34 Maximum Allowable Non-Shock Pressure

Temperature		ASTM Material															
		ANSI Class 150Lb								ANSI Class 300Lb							
°F	°C	Group 1.1	Group 1.2	Group 1.3	Group 1.9	Group 1.10	Group 1.13	Group 2.1	Group 2.2	Group 1.1	Group 1.2	Group 1.3	Group 1.9	Group 1.10	Group 1.13	Group 2.1	Group 2.2
20~100	20~38	1480	1500	1390	1500	1500	1500	1440	1440	2220	2250	2085	2250	2250	2250	2160	2160
200	93	1350	1500	1315	500	1500	1490	1200	1240	2025	2250	1970	2250	2235	2235	1800	1860
300	149	1315	1455	1275	1445	1455	1430	1080	1120	1970	2185	1915	2165	2185	2150	1620	1680
400	204	1270	1410	1235	1385	1410	1410	995	1025	1900	2115	1850	2080	2115	2115	1490	1540
500	260	1200	1330	1165	1330	1330	1330	930	965	1795	1995	1745	1995	1995	1995	135	1435
600	316	1095	1210	1065	1210	1210	1210	875	900	1640	1815	160	1815	1815	1815	1310	1355
650	343	1075	1175	1045	1175	1175	1175	860	890	1610	1765	1570	1765	1765	1765	1290	1330
700	371	1065	1135		1135	1135	1135	850	870	1600	1705		1705	1705	1705	1275	1305
750	399	1010	1010		1065	1065	1055	830	855	1510	1510		1595	1595	1585	1245	1280
800	427	825	825		1015	1015	1015	805	845	1235	1235		1525	1525	1525	1210	1265
850	454				975	975	965	790	835				1460	1460	1450	1190	1255
900	482				900	900	740	780	830				1350	1350	1110	1165	1245
950	510				640	755	550	765	775				955	1130	825	1145	1160
1000	538				430	520	400	640	700				650	790	595	965	1050
1050	566				290	350	290	615	685				430	525	430	925	1030
1100	593				190	220	200	515	610				290	330	300	770	915

Test Pressure Per API 598

Hydrostatic sheet test	2225	2250	2100	2250	2250	2250	2175	2175	3350	3375	3150	3375	3375	3375	3250	3250
Hydrostatic seal test	1630	1650	1530	1650	1650	1650	1585	1585	2445	2475	2295	2475	2475	2475	2380	2380
Air seal test	80 ± 20								80 ± 20							

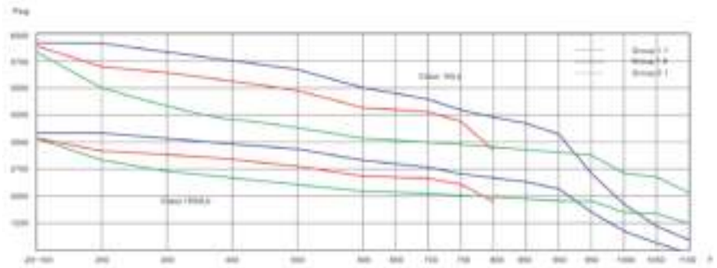
Metric conversions by API STD 2564 Pressure : 1Pound per square inch (Psig) = 0.06894757 bar = 0.006894757 MPa Temperature : °C = (5/9) (°F-32)

ASME B16.34 Material Group

Group 1.1	A105[e]	A216-WCB[e]	
Group 1.2	A216-WCC[e]	A352-LCC[a]	
Group 1.3	A352-LCB[a]		
Group 1.9	A217-WC6[d]		
Group 1.10	A217-WC9[d]		
Group 1.13	A217-C5		
Group 2.1	A182-F304	A351-CF8	A351-CF3[b]
Group 2.2	A182-F316	A352-CF8M	A351-CF3M[c]

- Not to be utilised at temperatures above 650°F (343°C).
- Not to be utilised at temperatures above 800°F (427°C).
- Not to be utilised at temperatures above 1000°F (538°C).
- Not to be utilised at temperatures above 1100°F (593°C).
- It is permissible, but not suggested, to use above 800°F (427°C) for an extended period of time.

1500/2500Lb Pressure-Temperature Ratings



Asme B16.34 Maximum Allowable Non-Shock Pressure

Temperature		ASTM Material															
		ANSI Class 150Lb								ANSI Class 300Lb							
°F	°C	Group 1.1	Group 1.2	Group 1.3	Group 1.9	Group 1.10	Group 1.13	Group 2.1	Group 2.2	Group 1.1	Group 1.2	Group 1.3	Group 1.9	Group 1.10	Group 1.13	Group 2.1	Group 2.2
20~100	20~38	3705	3750	3470	3750	3750	3750	3600	3600	6170	6250	5785	6250	6250	6250	6000	600
200	93	3375	3750	3280	3750	3750	3725	3000	3095	5625	6250	5470	6250	6250	6205	5000	5160
300	149	3280	3640	3190	3610	3640	3580	2700	2795	5470	6070	5315	6015	6070	6070	4500	4660
400	204	3170	3530	3085	3465	3530	3530	2485	2570	5280	5880	5145	5775	5880	5880	4140	4280
500	260	2995	3325	2910	3325	3325	3325	2330	2390	4990	5540	4850	5540	5540	5540	3880	3980
600	316	2735	3025	2665	3025	3025	3025	2185	2255	4560	5040	4440	5040	5040	5040	3640	3760
650	343	2685	2940	2615	2940	2940	2940	2150	2220	4475	4905	4355	4905	4905	4905	3580	3700
700	371	2665	2840		2840	2840	2840	2125	2170	4440	4730		4730	4730	4730	3540	3620
750	399	2520	2520		2660	2660	2640	2075	2135	4200	4200		4430	4430	4400	3460	3560
800	427	2060	2060		2540	2540	2540	2015	2110	3430	3430		4230	4230	4230	3360	3520
850	454				2435	2435	2415	1980	2090				4060	4060	4030	3300	3480
900	482				2245	2245	1850	1945	2075				3745	3745	3085	3240	3460
950	510				1595	1885	1370	1910	1930				2655	3145	2285	3180	3220
1000	538				1080	1305	995	1605	1750				1800	2170	1655	2675	2915
1050	566				720	875	720	1545	1720				1200	1455	1200	2570	2865
1100	593				480	550	495	1285	1525				800	915	830	2145	2545

Test Pressure Per API 598

Hydrostatic shell test	5575	5625	5225	5625	5625	5625	5400	5400	9275	9375	8700	9375	9375	9375	9000	9000
Hydrostatic seal test	4080	4125	3820	4125	4125	4125	3960	3960	6790	6875	6365	6875	6875	6875	6600	6600
Air seal test	80 ± 20								80 ± 20							

Metric conversions by API STD 2564 Pressure : 1Pound per square inch (Psig) = 0.06894757 bar = 0.006894757 MPa Temperature : °C = (5/9) (°F-32)

ASME B16.34 Material Group

Group 1.1	A105[e)]	A216-WCB[e)]	
Group 1.2	A216-WCC[e)]	A352-LCC[a)]	
Group 1.3	A352-LCB[a)]		
Group 1.9	A217-WC6[d)]		
Group 1.10	A217-WC9[d)]		
Group 1.13	A217-C5		
Group 2.1	A182-F304	A351-CF8	A351-CF3[b)]
Group 2.2	A182-F316	A352-CF8M	A351-CF3M[c)]

- Not to be utilised at temperatures above 650°F (343°C).
- Not to be utilised at temperatures above800°F (427°C).
- Not to be utilised at temperatures above 1000°F (538°C).
- Not to be utilised at temperatures above 1100°F (593°C).
- It is permissible, but not suggested, to use above 800°F (427°C) for an extended period of time.

Materials Characteristic

Material Properties

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
ASTM Specification		Chemical requirement										Tensile requirement				
		C	Mn	Si	P	S	Cr	Ni	Mo	Cu	V	Tensile	Yield	Elongation	Reduction of area %	Hardness
		Carbon	Manganese	Silicon	Phosphorus	Sulfur	Chromium	Nickel	Molybdenum	Copper	Vanadium	Mpa	Mpa	%		HB
		Nominal or maximum %										Min.				Max.
Cast Steel																
Carbon steel	A216-WCA	0.25	0.70	0.60	0.040	0.045	0.50	0.50	0.20	0.30	0.03	415-585	205	24	35	
	A216-WCB	0.30	1.00	0.60	0.040	0.045	0.50	0.50	0.20	0.30	0.03	485-655	250	22	35	
	A216-WCC	0.25	1.20	0.60	0.040	0.045	0.50	0.50	0.20	0.30	0.03	485-655	275	22	35	
Cast Steel																
Chrome-moybdenum steel	A217-WC1	0.25	0.50-0.80	0.60	0.040	0.045	0.35	0.045-0.65	0.45-0.65	0.50	-	450-620	240	24	35	
	A217-WC6	0.05-0.20	0.50-0.80	0.60	0.040	0.045	1.00-1.50	0.50	0.45-0.65	0.50	-	450-620	295	20	35	
	A217-WC9	0.05-0.18	0.40-0.70	0.60	0.040	0.045	2.00-2.75	0.50	0.90-1.20	0.50	-	485-655	295	20	35	
	A217-C5	0.20	0.40-0.70	0.75	0.040	0.045	4.00-6.50	0.50	0.45-0.65	0.50	-	620-795	415	18	35	
	A217-C12	0.20	0.35-0.65	1.00	0.040	0.045	8.00-10.0	0.50	0.90-1.20	0.50	-	620-795	415	18	35	
Cast Steel																
Ni-Alloy steel	A494 M-35-1	0.35	1.50	1.25	0.030	0.030	-	Allowance	-	26.0-33.0	Fe≤ 3.50	450	170	25	-	
	A494 CW-6M	0.07	1.00	1.00	0.040	0.030	17.0-20.0	Allowance	17.0-20.0	-	Fe≤ 3.00	495	275	25	-	
	A494 CY-40	0.40	1.50	3.00	0.030	0.030	14.0-17.0	Allowance	-	-	Fe≤ 11.00	185	195	30	-	
Cast Steel																
Stainless steel	351-CF8	0.08	1.50	2.00	0.040	0.040	18.0-21.0	8.0-11.0	0.05	-	-	485	205	35	35	
	A351-CF8M	0.08	1.50	1.50	0.040	0.040	18.0-21.0	9.0-12.0	2.0-3.0	-	-	485	205	30	30	
	A351-CF3	0.03	1.50	2.00	0.040	0.040	17.0-21.0	8.0-12.0	0.50	-	-	485	205	35	35	
	A351-CFM3M	0.03	1.50	1.50	0.040	0.040	17.0-21.0	9.0-13.0	2.0-3.0	-	-	485	205	30	30	
	A351-CN7M	0.07	1.50	1.50	0.040	0.040	19.0-22.0	27.5-30.5	2.0-3.0	3.0-4.0	-	450	170	35	35	
Cast Steel																
Carbon steel	A352-LCB	0.30	1.00	0.60	0.040	0.045	0.50	0.50	0.20	0.30	0.03	450-650	240	24	35	
	A352-LCC	0.25	1.20	0.60	0.040	0.045	0.50	0.50	0.20	0.30	0.03	485-655	275	24	35	
	A352-LC1	0.25	0.50-0.80	0.60	0.040	0.045	-	-	0.45-0.65	-	-	450-620	240	24	35	
	A352-LC2	0.25	0.50-0.81	0.60	0.040	0.045	-	2.00-3.00	-	-	-	485-655	275	24	35	
	A352-LC3	0.15	0.50-0.82	0.60	0.040	0.045	-	3.00-4.00	-	-	-	485-655	275	24	35	
Forged Steel																
Carbon steel	A105(N)	0.35	0.60-1.05	0.35	0.040	0.050	0.30	0.40	0.12	0.40	0.03	485	250	30	30	187
	A350-LF1	0.30	1.35	0.15-0.30	0.035	0.040	0.30	0.40	0.12	0.40	0.03	415-585	205	25	38	
	A350-LF2	0.30	1.35	0.15-0.30	0.035	0.040	0.30	0.40	0.12	0.40	0.03	485-655	250	22	3	
	A350-LF3	0.20	0.90	0.20-0.356	0.035	0.040	0.30	3.25-3.7	0.12	0.40	0.03	485-655	260	22	35	
	A350-LF9	0.20	0.40-1.06	-	0.035	0.040	0.30	1.60-2.24	0.12	0.75-1.25	0.03	435-605	315	25	38	
Forged Steel																
Stainless steel	A182-F304	0.08	2.00	1.00	0.040	0.030	18.0-20.0	8.0-11.0	-	-	-	515	205	30	50	
	A182-F316	0.08	2.00	1.00	0.040	0.030	16.0-18.0	10.0-14.0	2.0-3.0	-	-	515	205	30	50	
	A182-F304L	0.03	2.00	1.00	0.045	0.030	18.0-20.0	8.0-13.0	-	-	-	485	170	30	50	
	A182-F316L	0.03	2.00	1.00	0.045	0.030	16.0-18.0	10.0-15.0	2.0-3.0	-	-	485	170	30	50	
Component part																
Trim	A276-304	0.08	2.00	1.00	0.045	0.030	18.0-20.0	8.0-10.5	-	-	-	515	205	40	50	
	A276-316	0.08	2.00	1.00	0.045	0.030	16.0-18.0	10.0-14.0	2.0-3.0	-	-	485	170	40	50	
	A276-410	0.15	1.00	1.00	0.040	0.030	12.5-13.5	-	-	-	-	480	275	20	45	
	A276-420	0.15	1.00	1.00	0.040	0.030	12.0-14.0	-	-	-	-	-	-	-	-	241
	A182-F6a	0.15	1.00	1.00	0.040	0.030	11.5-13.5	0.50	-	-	-	585	380	18	35	167-229
Fastening piece																
Stud	A193-B7	0.37-0.49	0.65-1.10	0.15-0.35	0.035	0.040	0.75-1.20	-	0.15-0.25	-	-	860	720	16	50	
	A193-B7M	0.37-0.49	0.65-1.10	0.15-0.35	0.035	0.040	0.75-1.20	-	0.15-0.25	-	-	690	550	18	50	235
	A193-B8	0.08	2.00	1.00	0.045	0.030	18.0-20.0	8.0-10.50	-	-	-	515	205	30	50	223
	A193-B8A	0.08	2.00	1.00	0.045	0.030	18.0-20.0	8.0-10.50	-	-	-	515	205	30	50	192
	A193-B8M	0.08	2.00	1.00	0.045	0.030	16.0-18.0	10.0-14.0	2.0-3.0	-	-	515	205	30	50	192
	A320-L7	0.38-0.48	0.75-1.00	0.15-0.35	0.035	0.040	0.80-1.10	-	0.15-0.25	-	-	860	725	16	50	
Nut	A194-2H	≥ 0.40	1.00	0.40	0.040	0.050	-	-	-	-	-	-	-	-	-	248-352
	A194-2HM	≥ 0.40	1.00	0.40	0.040	0.050	-	-	-	-	-	-	-	-	-	129-237
	A194-7	0.37-0.49	0.65-1.10	0.15-0.35	0.040	0.040	0.75-1.20	-	0.15-0.25	-	-	-	-	-	-	248-352
	A194-8	0.08	2.00	1.00	0.045	0.030	18.0-20.0	8.0-10.5	-	-	-	-	-	-	-	126-300
	A194-8M	0.08	2.00	1.00	0.045	0.030	16.0-18.0	10.0-14.0	2.0-3.0	-	-	-	-	-	-	126-300

NACE Resist SSC Valves (NACE MR 0175)

Nace Valves

PROFI Valve offers NACE valves for servicing sour gases or other hydrogen sulphide carrying hydrocarbon fluids, which are made of component materials that have been heat-treated and hardness-controlled in accordance with the NACE MR 0175 standard. For cast steel valves, a typical NACE material configuration is presented below. Note that the face that NACE complying valves are offered per customer request contradicts with the one of valve seating surface provided by API 600, Table 13. PROFI steel valves are only available at the customer's request.

Materials Used for SSC (Sulfur Stress Cracking) Service, Including H2S Carbon Hydride Compound Medium

NO	Part Name	ASTM Material	NACE Hardness	API 600 Hardness
1	Body	A216-WCB	≤ HRC 22 (273 HB)	-
2	Bonnet/Yoke	A216-WCB		-
3	Seat ring	A105 With 13CR overlay		≥ 250 HB*
4	Wedge/Disc	A216-WCB/A 105 With 13CR overlay		≥ 250 HB*
5	Stem	ANSI TYPE 410A182-F6a	≤ HRC 22 (273 HB)	≥ 250 HB*
6	Backseat bushing			≥ 250 HB*
7	Lantern ring			-
8	Gland			-
9	Bonnet gasket	316SS + Graphite	-	-
		316SS (RTJ)	≤ HRC 22	-
10	Bonnet bolt	193-B7	-	-
		A193-B7M	≤ HRC 22	-
11	Bonnet nut	A194-2H	-	-
		A194-2HM	≤ HRC 22	-

All Cast Steel Valves in this Catalogue can be made to NACE MR 0175 Sour Service Specification.

- Except for those modified to meet the NACE specification's HRC 22 maximum hardness criteria, all NACE valves meet the API standards.
- The maximum carbon equivalent of ASTM A216-WCB standard body and bonnet is 0.43 percent.
- Seat rings are screwed in to prevent the possibility of weld hardness issues and HAZ (Heat Affected Zones).
- Bonnet gasket in flexible graphite with stainless steel 316 sheet reinforcement for ANSI Class 150Lb gate valve only; bonnet gasket in stainless steel 316 spiral wrapped with graphite filler for ANSI Class 300Lb gate valve and ANSI Class 150Lb and 300Lb globe and check valve.
- Standard trim is hardness controlled 13%Cr steel with Hard faced seats (API trim No.8)
- A Class II nut and bolt is used for standard bonnet bolting.
- For traceability and confirmation of conformance, all NACE valves are labelled with the words "NACE MR 0175" on the nameplate.

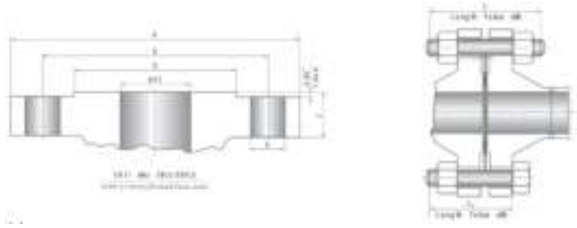
Typical NACE material specifications shown in above table and other material application are available at customer's option.

International Materials Standards

International Materials Standards

Materials		America	Germany			United Kingdom		China
		ASTM/ANSI/ASME	Din No.	Din Type	Material Number	BS Number	BS Grade	GB
Cast steel								
Carbon steel	A216-WCA	ASTM A316-WCA	1881	GS-38	1.042	1504-161	430	WCA
	A216-WCB	ASTM A216-WCB	17245	GS-C25	1.062	1504-161	480	WCB
	A216-WCC							WCC
Cast steel								
Chrome-moybdenum steel	A217-WC1	ASTM A217-WC1	17245	GS-22Mo4	1.5419			ZG20Mo
	A217-WC6	ASTM A217-WC6	17245	GS-17CrMo55	1.7357			15CrMo
	A217-WC9	ASTM A217-WC9	17245	GS-18CrMo810	1.7379			12Cr1Mo1V
	A217-C5	ASTM A217-C5	VDeh SPW 595	GS-12CrMo195	17363	1504	625E	1Cr5Mo
	A217-C12	ASTM A217-C12	VDeh SPW 595	GS-X12CrMo101	17389	1504	625E	9Cr1Mo
Cast steel								
Ni alloy steel	A494M-35-1							
	A494 CW-6M							
	A494 CY-40							
Cast steel								
Stainless steel	A351-CF8	ASTM A351-CF8	17445	G-X6CrNi189	1.431	1504-304	C15	0Cr18Ni9
	A351-CF8M	ASTM A351-CF8M	17445	G-X6CrNiMo1810	1.441	1504-316	C16	1Cr18Ni12Mo2Ti
	A351-CF3	ASTM A351-CF3	17440	G-X2CrNi189	1.431	970/1	304S11	00Cr18Ni10
	A351-CF3M	ASTM A351-CF3M	17440	G-X2CrNiMoN1810	1.440	2056	316S12	00Cr17Ni14Mo2
	A351-CN7M	ASTM A351-CN7M				1504	332C11E	
Cast steel								
Carbon steel	A352-LCB	ASTM A352-LCB	SFW 685	GS-21Mo5	1.114			LCB
	A352-LCC	ASTM A352-LCC	17173	GS-26CrMo4	1.722			LCC
	A352-LC1	ASTM A352-LC1				1504	245LT50	
	A352-LC2	ASTM A352-LC2						ZG0CrMnVA1
	A352-LC3	ASTM A352-LC3	SEW 685	GS10Ni14	1.564	1504-503	LT60	
Forged steel								
Carbon steel	A105 (N)	ASTM A105	17100	St50-2	1.005	1503	221-490	25
	A350-LF1	ASTM A350-LF1	SEW 680	TTSt41	1.044			
	A350-LF2	ASTM A350-LF2	17155	19Mn5	1.048			
	A350-LF3	ASTM A350-LF3	17173	10Ni14	1.564	1503	503Gr.490	
	A350-LF9	ASTM A350-LF9						
Forged steel								
Stainless steel	A182-F304	ASTM A182-F304	17440	X5CrNi189	1.430	1503	304S31	0Cr18Ni9
	A182-F316	ASTM A182-F316	17440	X5CrNiMo1810	1.440	1503	316S31	0C17Ni12Mo2
	A182-F304L	ASTM A182-F304L	17440	X2CrNi810	1.431			00Cr18Ni10
	A182-F316L	ASTM A182-F316L	17440	X2CrNiMo1810	1.440	1503	316S11	00Cr17Ni14Mo2
Component part								
Trim	A276-304	ATM A276-304						0Cr18Ni9
	A276-316	ASTM A276-316						0Cr17Ni12Mo2
	A276-410	ASTM A276-410						1Cr13
	A276-420	ASTM A276-420						2Cr13
	A182-F6a	ASTM A276-F6a						2Cr13
Fastening piece								
Stud	A193-B7	ASTM A193 GRAD B7	17240	40CrMoV47	17,711	1506-630	790	35CrMoA
	A193-B7M	ASTM A193 GRAD B7M						
	A193-B8	ASTM A193 GRAD B8	17240	X5CrNi189	1.430			0Cr18Ni9
	A193-B8A							
	A193-B8M	ASTM A193 GRAD B8M	17245	X6CrNiMoTi17 12 2	1.457	1506-316	S31	0Cr17Ni12Mo2
	A320-L7	ASTM A320 GRL7	17200	42CrMo4	1.723	4882		42CrMo
Nut	A194-2H	ASTM A194 GRAD 2H	17440	CK 35	1.118	1506-162		45
	A194-2HM	ASTM A194 GRAD 2HM						
	A194-7	ASTM A194 GRAD 7	17200	24CrMo5	1.726	1506-163		20CrMo
	A194-8	ASTM A194 GRAD 8	17245	X6CrNiMo 17 12 2	1.457	1506-316	S31	0Cr18Ni9
	A194-8M	ASTM A194 GR8M	17440	X5CrNiMo 1810	1.440			0Cr17Ni12Mo

150/300Lb Flange Ends



Class 150Lb

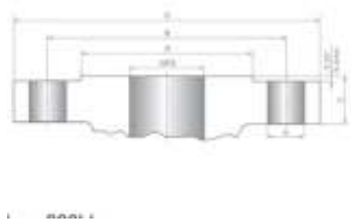
NPS		O		C		R		B		D		Bolt		L		Lm	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	QTY	Diam	in	mm	in	mm
2	50	6.00	152.4	0.75	19.1	3.62	91.9	4.75	120.7	0.75	19.1	4	5/8	3.25	82.6	2.75	69.9
2 1/2	65	7.00	177.8	0.88	22.4	4.12	104.6	5.50	139.7	0.75	19.1	4	5/8	3.50	88.9	3.00	76.2
3	80	7.50	190.5	0.94	23.9	5.00	127.0	6.00	152.4	0.75	19.1	4	5/8	3.50	88.9	3.00	76.2
4	100	9.00	228.6	0.94	23.9	6.19	157.2	7.50	190.5	0.75	19.1	8	5/8	3.50	88.9	3.00	76.2
5	125	10.00	254.0	0.94	23.9	7.31	185.7	8.50	215.9	0.88	22.4	8	3/4	3.75	95.3	3.25	82.6
6	150	11.00	279.4	1.00	25.4	8.50	215.9	9.50	241.3	0.88	22.4	8	3/4	4.00	101.6	3.25	82.6
8	200	13.50	342.9	1.12	28.4	10.62	269.7	11.75	298.5	0.88	22.4	8	3/4	4.25	108.0	3.50	88.9
10	250	16.00	406.4	1.19	30.2	12.75	323.9	14.25	362.0	1	25.4	12	7/8	4.50	114.3	4.00	101.6
12	3000	19.00	482.6	1.25	31.8	15.00	381.0	17.00	431.8	1	25.4	12	7/8	4.75	120.7	4.00	101.6
14	350	21.00	533.4	1.38	35.1	16.25	412.8	18.75	476.3	1.12	28.4	12	1	5.25	133.4	4.50	114.3
16	400	23.50	596.9	1.44	36.6	18.50	469.9	21.25	539.8	1.12	28.4	16	1	5.25	133.4	4.50	114.3
18	450	25.00	635.0	1.56	39.6	21.00	533.4	22.75	577.9	1.25	31.8	16	1 1/8	5.75	146.1	5.00	127.0
20	500	27.50	698.5	1.69	42.9	23.00	584.2	25.00	635.0	1.25	31.8	20	1 1/8	6.25	158.8	5.50	139.7
24	600	32.00	812.8	1.88	47.8	27.25	692.2	29.50	749.3	1.38	35.1	20	1 1/4	6.75	171.5	6.00	152.4
26	650	34.25	870.0	2.69	68.3	29.50	749.3	31.75	806.5	1.38	35.1	24	1 1/4	8.25	209.6	7.50	190.5
28	700	36.50	927.1	2.81	71.4	31.50	800.1	34.00	863.6	1.38	35.1	28	1 1/4	8.50	215.9	7.75	196.9
30	750	38.75	984.3	2.94	74.7	33.75	857.3	36.00	914.4	1.38	35.1	28	1 1/4	9.00	228.6	8.00	203.2
32	800	41.75	1060.5	3.18	80.8	36.00	914.4	38.50	977.9	1.62	41.1	28	1 1/2	9.75	247.7	8.75	222.3
44	850	43.75	111.3	3.25	82.6	38.00	965.2	40.50	1028.7	1.62	41.1	32	1 1/2	10.00	254.0	9.00	228.6
36	900	46.00	1168.4	3.56	90.4	40.25	1022.4	42.75	1085.9	1.62	41.1	32	1 1/2	10.50	266.7	9.50	241.3

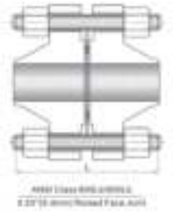
Class 300Lb

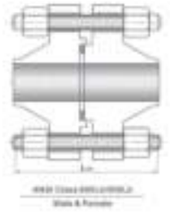
NPS		O		C		R		B		D		Bolt		L		LRTJ		Lm	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	QTY	Diam	in	mm	in	mm	in	mm
2	50	6.50	165.1	0.88	22.4	3.62	91.9	5.00	127.0	0.75	19.1	8	5/8	3.50	88.9	4.00	101.6	3.00	76.2
2 1/2	65	7.50	190.5	1.00	25.4	4.13	104.6	5.88	149.4	0.88	22.4	8	3/4	4.00	101.6	4.50	114.3	3.25	82.6
3	80	8.25	209.6	1.12	28.4	5.00	127.0	6.62	168.1	0.88	22.4	8	3/4	4.25	108.0	4.75	120.7	3.50	88.9
4	100	10.00	254.0	1.25	31.8	6.19	157.2	7.88	200.2	0.88	22.4	8	3/4	4.50	114.3	5.00	127.0	3.75	95.3
5	125	11.00	279.4	1.38	35.1	9.31	185.7	9.25	235.0	0.88	22.4	8	3/4	4.75	120.7	5.25	133.4	4.25	108.0
6	150	12.50	317.5	1.44	36.6	8.50	215.9	10.62	267.9	0.88	22.4	12	3/4	4.75	120.7	5.50	139.7	4.25	108.0
8	200	15.00	381.0	1.62	41.1	10.62	269.7	13.00	330.2	1.00	25.4	12	7/8	5.50	139.7	6.00	152.4	4.75	120.7
10	250	17.50	444.5	1.88	47.8	12.75	323.9	15.25	387.4	1.12	28.4	16	1	6.25	158.8	6.75	171.5	5.50	139.7
12	300	20.50	520.7	2.00	50.8	15.00	381.0	17.75	450.9	1.25	31.8	16	1 1/8	6.75	171.5	7.25	184.2	6.00	146.1
4	350	23.00	584.2	2.12	53.8	16.25	412.8	20.25	514.4	1.25	31.8	20	1 1/8	7.00	177.8	7.50	190.5	6.25	158.8
16	400	25.50	647.7	2.25	57.2	18.50	469.9	22.50	571.5	1.38	35.1	20	1 1/4	7.50	190.5	8.00	203.2	6.50	165.1
18	450	28.00	711.2	2.38	60.5	21.00	533.4	24.75	628.7	1.38	35.1	24	1 1/4	7.75	196.9	8.25	209.6	6.75	171.5
20	500	30.50	774.4	2.50	63.5	23.00	584.2	27.00	685.8	1.38	35.1	24	1 1/4	8.00	203.2	8.75	222.3	7.25	184.2
24	600	36.00	914.4	2.75	69.9	27.25	692.2	32.00	812.8	1.62	41.1	24	1 1/2	9.00	228.6	10.00	254.0	8.00	203.2
26	650	38.25	971.6	3.12	79.2	29.50	749.3	34.50	876.3	1.75	44.5	28	1 5/8	10.25	260.4	11.25	285.8	9.25	235.0
28	700	40.75	1035.1	3.38	85.9	31.50	800.1	37.00	939.8	1.75	44.5	28	1 5/8	10.75	273.1	11.75	298.5	9.75	247.7
30	750	43.00	1092.2	3.62	91.9	33.75	857.3	39.25	997.0	1.88	47.8	28	1 3/4	11.50	292.1	12.50	317.5	10.50	266.7
32	800	45.25	1149.4	3.88	98.6	36.00	914.4	41.50	1054.1	2.00	50.8	28	1 7/8	12.25	311.2	13.50	342.9	11.25	285.8
34	850	47.50	1206.5	4.00	101.6	38.00	965.2	43.50	1104.9	2.00	50.8	28	1 7/8	12.75	323.9	13.75	349.3	11.75	298.5
36	900	50.00	1270.0	4.12	104.6	40.25	1022.4	46.00	1168.4	2.12	53.8	32	2	13.25	336.6	14.25	362.0	12.25	311.2

- NPS 24" and smaller flanged ends conform to ANSI B16.5, NPS 26" and larger conform to MSS SP-44.
- Flanged of 150Lb and 300Lb with the raised face of 0.06" (1.6mm) is included in the smallest flange of thickness C.
- The length L of the double end bolt does not include the termonal length.
- Flange gasket of the matching flange ASME B16.20.

600/900Lb Flange Ends







Class 600Lb

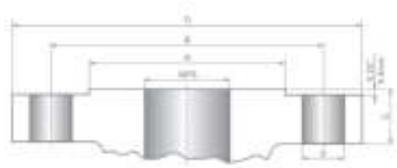
NPS		O		C		R		B		D		Bolt		L		LRTJ		Lm	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	QTY	Diam	in	mm	in	mm	in	mm
2	50	6.50	165.1	1.00	25.4	3.62	91.9	5.00	127.0	0.75	19.1	8	5/8	4.25	108.0	4.25	108.0	4.00	101.6
2 1/2	66	7.50	190.5	1.12	28.4	4.12	104.6	5.88	149.4	0.88	22.4	8	3/4	4.75	120.7	4.75	120.7	4.50	114.3
3	80	8.25	209.6	1.25	31.8	5.00	127	6.62	168.1	0.88	22.4	8	3/4	5.00	127.0	5.00	127.0	4.75	120.7
4	100	10.75	273.1	1.50	38.1	6.19	157.2	8.50	215.9	1.00	25.4	8	7/8	5.75	146.1	5.75	146.1	5.50	139.7
5	125	13.00	330.2	1.75	44.5	7.31	185.7	10.50	266.7	1.12	28.4	8	1	6.50	165.1	6.50	165.1	6.25	158.8
6	150	14.00	3555.6	1.88	47.8	8.50	215.9	11.50	292.7	1.12	28.4	12	1	6.75	171.5	6.75	171.5	6.50	165.1
8	200	16.50	419.1	2.19	55.6	10.62	269.7	13.75	349.3	1.25	31.8	12	1 1/8	7.50	190.5	7.50	190.5	7.25	184.2
10	250	20.00	508.0	2.50	63.5	12.75	323.9	17.00	431.8	1.38	35.1	16	1 1/4	8.50	215.9	8.50	215.9	8.25	209.6
12	300	22.00	558.8	2.62	66.5	15.00	381	19.25	489.0	1.38	35.1	20	1 1/4	8.75	222.3	8.75	222.3	8.50	215.9
14	350	23.75	603.3	2.75	69.9	16.25	412.8	20.75	527.1	1.50	38.1	20	1 3/8	9.25	235.0	9.25	235.0	9.00	228.6
16	400	27.00	685.8	3.00	76.2	18.50	469.9	23.75	603.3	1.62	41.1	20	1 1/2	10.00	254.0	10.00	254.0	9.75	247.7
18	450	29.25	743.0	3.25	82.6	21.00	533.4	25.75	654.1	1.75	44.5	20	1 5/8	10.75	273.1	10.75	273.1	10.50	266.7
20	500	32.00	812.8	3.50	88.9	23.00	584.2	28.50	723.9	1.75	44.5	24	1 5/8	11.25	285.8	11.50	292.1	11.00	279.4
24	600	37.00	939.8	4.00	101.6	27.25	692.2	33.00	838.2	2.00	50.8	24	1 7/8	13.00	330.2	13.25	336.6	1175.00	323.9
26	650	40.00	1016.0	4.25	108.0	29.50	749.3	36.00	914.4	2.00	50.8	28	1 7/8	14.00	355.6	14.00	355.6	13.75	349.3
28	700	42.25	1073.2	4.38	111.3	31.50	800.1	38.00	965.2	2.12	53.8	28	2	14.50	368.3	14.50	368.3	14.25	362
30	750	44.50	1130.3	4.50	114.3	33.75	857.3	40.25	1022.4	2.12	53.8	28	2	15.00	381.0	14.75	374.7	14.75	374.7
32	800	47.00	1193.8	4.62	117.3	36.00	914.4	42.50	1079.5	2.38	60.5	28	2 1/4	15.50	393.7	15.75	400.1	15.25	387.4
34	850	49.00	1244.6	4.75	120.7	38.00	965.2	44.50	1130.3	2.38	60.5	28	2 1/4	16.25	412.8	16.25	412.8	16.00	406.4
36	900	51.75	1314.5	4.88	124.0	40.25	1022.4	47.00	1193.8	2.62	66.5	28	2 1/2	15.75	400.1	16.75	425.5	15.50	393.7

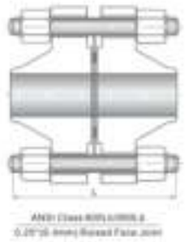
Class 900Lb

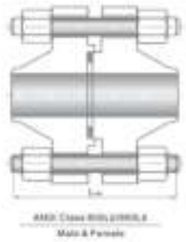
NPS		O		C		R		B		D		Bolt		L		LRTJ		Lm	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	QTY	Diam	in	mm	in	mm	in	mm
2	50	8.50	215.9	1.50	38.1	3.62	91.9	6.50	165.1	1.00	25.4	8	7/8	5.75	146.1	5.75	146.1	5.50	139.7
2 1/2	65	9.62	244.3	1.62	41.1	4.12	104.6	7.50	190.5	1.12	28.4	8	1	6.25	158.8	6.25	158.8	6.00	152.4
3	80	9.50	241.3	1.50	38.1	5	127	7.50	190.5	1.00	25.4	8	7/8	5.75	146.1	5.75	146.1	5.50	139.7
4	100	11.50	292.1	1.75	44.5	6.19	157.2	9.25	235.0	1.25	31.8	8	11/8	6.75	171.5	6.75	171.5	6.50	165.1
5	125	13.75	349.3	2.00	50.8	7.31	185.7	11.00	279.4	1.38	35.1	8	11/4	7.50	190.5	7.50	190.5	7.25	184.2
6	150	15.00	381	2.19	55.6	8.5	215.9	12.50	317.5	1.25	31.8	12	11/8	7.50	190.5	7.75	196.9	7.25	184.2
8	200	18.50	469.9	2.50	63.5	10.62	269.7	15.50	393.7	1.50	38.1	12	13/8	8.75	222.3	8.75	222.3	8.50	215.9
10	250	21.50	546.1	2.75	69.9	12.75	323.9	18.50	469.9	1.50	38.1	16	13/8	9.25	235	9.25	235.0	9.00	228.6
12	300	24.00	609.6	3.12	79.2	15	381	21.00	533.4	1.50	38.1	20	13/8	10.00	254	10.00	254.0	9.75	247.7
14	350	25.25	641.4	3.38	85.9	16.25	412.8	22.00	558.8	1.62	41.1	20	11/2	10.75	273.1	11.00	279.4	10.50	266.7
16	400	27.75	704.9	3.50	88.9	18.5	469.9	24.25	616.0	1.75	44.5	20	15/8	11.25	285.8	11.50	292.1	11.00	279.4
18	450	31.00	787.4	4.00	101.6	21	533.4	27.00	685.8	2.00	50.8	20	17/8	12.75	323.9	13.25	336.6	12.50	317.5
20	500	33.75	857.3	4.25	108	23	584.2	29.50	749.3	2.12	53.8	20	2	13.75	349.3	14.25	362.0	13.50	342.9
24	600	41.00	1041.4	5.50	139.7	27.25	692.2	35.50	901.7	2.62	66.5	20	2 1/2	17.25	438.2	18.00	457.2	17.00	431.8

- NPS 24" ans smaller flanged ends conform to ANSI B16.5, NP 26" and larger conform to MSS SP-44.
- Flanged of 150Lb and 300Lb with the raised face of 0.06" (1.6mm) is included in the smallest flange of thickness C.
- The length L of the double end bolt does not include the terminal length.
- Flange gasket of the matching flange ASME B16.20.

1500/2500Lb Flange Ends







Class 1500Lb

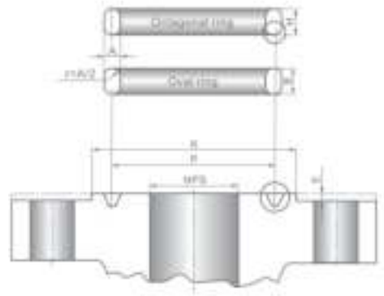
NPS		O		C		R		B		D		Bolt		L		LRTJ		Lm	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	QTY	Diam	in	mm	in	mm	in	mm
2	50	8.50	215.9	1.50	38.1	3.62	91.9	6.50	165.1	1.00	25.4	8	7/8	5.75	146.1	5.75	146.1	5.50	139.7
2 1/2	65	9.62	244.3	1.62	41.1	4.12	Apr-00	7.50	190.5	1.12	28.4	8	1	6.25	158.8	6.25	158.8	6.00	152.4
3	80	10.50	266.7	1.88	47.8	5	127	8.00	203.2	1.25	31.8	8	1 1/8	7.00	177.8	7.00	177.8	6.75	171.5
4	100	12.25	311.2	2.12	53.8	6.19	157.2	9.50	241.3	1.38	35.1	8	1 1/4	7.75	196.9	7.75	196.9	7.50	190.5
5	125	14.75	374.7	2.88	73.2	7.31	185.7	11.50	292.1	1.62	41.1	8	1 1/2	9.75	247.7	9.75	247.7	9.50	241.3
6	150	15.50	393.7	3.25	82.6	8.5	215.9	12.50	317.5	1.50	38.1	12	1 3/8	10.25	260.4	10.50	266.7	10.00	254.0
8	200	19.00	482.6	3.62	91.9	10.62	269.7	15.50	393.7	1.75	44.5	12	1 5/8	11.50	292.1	12.75	323.9	11.25	285.8
10	250	23.00	584.2	4.25	108	12.75	323.9	19.00	482.6	2.00	50.8	12	1 7/8	13.25	336.6	13.50	342.9	13.00	330.2
12	300	26.50	673.1	4.88	124	15.00	381	22.50	571.5	2.12	53.8	16	2	14.75	374.7	15.25	387.4	14.50	368.3
14	350	29.50	749.3	5.25	133.4	16.25	412.8	25.00	635.0	2.38	60.5	16	2 1/4	16.00	406.4	16.75	425.5	15.75	400.1
16	400	32.50	825.5	5.75	146.1	18.5	469.9	27.75	704.9	2.62	66.5	16	2 1/2	17.50	444.5	18.50	469.9	17.25	438.2
18	450	36.00	914.4	6.38	162.1	21	533.4	30.50	774.7	2.88	73.2	16	2 3/4	19.50	495.3	20.75	527.1	19.25	489.0
20	500	38.75	984.3	7.00	177.8	23	584.2	32.75	831.9	3.12	79.2	16	3	21.25	539.8	22.25	565.2	21.00	533.4
24	600	46.00	1168.4	8.00	203.2	27.25	692.2	39.00	990.6	3.62	91.9	16	3 1/2	24.25	616..0	25.50	647.7	24.00	609.6

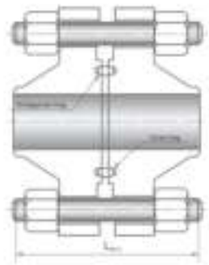
Class 2500Lb

NPS		O		C		R		B		D		Bolt		L		LRTJ		Lm	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	QTY	Diam	in	mm	in	mm	in	mm
2	50	9.25	235.0	2.00	50.8	3.62	91.9	6.75	171.5	1.12	28.4	8	1	7.00	177.8	7.00	177.8	6.75	171.5
2 1/2	65	10.50	266.7	2.25 57.2	57.2	4.12	104.6	7.75	196.9	1.25	31.8	8	1 1/8	7.75	196.9	8.00	203.2	7.50	190.5
3	80	12.00	304.8	2.62 66,5	66.5	5.00	127.0	9.00	228.6	1.38	35.1	8	1 1/4	8.75	222.3	9.00	228.6	8.50	215.9
4	100	14.00	355.6	3.00 76.2	76.2	6.19	157.2	10.75	273.1	1.62	41.1	8	1 1/2	10.00	254.0	10.25	260.4	9.75	247.7
5	125	16.50	419.1	3.62 91.9	91.9	7.31	185.7	12.75	323.9	1.88	47.8	8	1 3/4	11.75	298.5	12.25	311.2	11.50	292.1
6	150	19.00	482.6	4.25 108,0	108	8.50	215.9	14.50	368.3	2.12	53.8	8	2	13.50	342.9	14.00	355.6	13.25	336.6
8	200	21.75	552.5	5,00 127,0	127	10.62	269.7	17.25	438.2	2.12	53.8	12	2	15.00	381.0	15.50	393.7	14.75	374.7
10	250	26.50	673.1	6.50 165.1	165.1	12.75	323.9	21.25	539.8	2.62	66.8	12	2 1/2	19.25	489.0	20.00	508.0	19.00	482.6
12	300	30.00	762.0	7.25	184.2	15.00	381.0	24.38	619.3	2.88	73.2	12	2 3/4	21.25	539.8	22.00	558.8	21.00	533.4

- NPS 24" ans smaller flanged ends conform to ANSI B16.5.
- Flanged of 1500Lb and 2500Lb with the raised face of 0.25" (6.4mm) is added while excluded by the smallest flanged of thickness C.
- The length L LM FM of the double end bolt does not include the terminal length.
- Flange gasket of the matching flange ASME B16.20.

Ring-Joint flange Ends



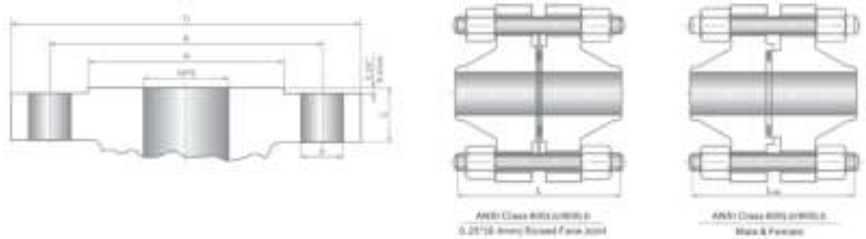


Ring-Joint flange Ends

1	2	4	5	6	7	8	9	10	11	12	13	14	15	16	17
ANSI Class-Lb						Annular groove					150Lb	300/600Lb	900Lb	1500Lb	2500Lb
150	300	600	900	1500	2500	No	P	E	F	R	K				
NPS							in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
2						R22	3.250	82.55	0.250	6.35	0.344	8.74	0.03	0.76	4.00	101.6																
	2	2				R23	3.250	85.55	0.312	7.92	0.469	11.91	0.03	0.76			4.25	107.95							4.50	114.30				
				2		R24	3.750	95.25	0.312	7.92	0.469	11.91	0.03	0.76							4.88	123.95								
					2	R26	4.000	101.60	0.312	7.92	0.469	11.91	0.03	0.76			5.00	127.00							5.25	133.35				
2 1/2						R25	4.000	101.60	0.25	6.35	0.344	8.74	0.03	0.76	4.75	120.65														
	2 1/2	2 1/2				R26	4.000	101.60	0.312	7.92	0.469	11.91	0.03	0.76			5.00	127.00							5.25	133.35				
				2 1/2		R27	4.250	107.95	0.312	7.92	0.469	11.91	0.03	0.76							5.38	136.65								
					2 1/2	R28	4.375	111.13	0.375	9.53	0.531	13.49	0.03	0.76											5.88	149.35				
3						R29	4.500	114.30	0.25	6.35	0.344	8.47	0.03	0.76	5.25	133.35														
	3	3	3			R31	4.875	123.83	0.312	7.92	0.469	11.91	0.03	0.76			5.75	146.05	6.12	155.45										
					3	R32	5.000	127.00	0.375	9.53	0.531	13.49	0.06	1.52											6.62	168.15				
4						R36	5.875	149.23	0.25	6.35	0.344	8.74	0.03	0.76	6.75	171.45														
	4	4	4			R37	5.875	149.23	0.312	7.92	0.469	11.91	0.03	0.76			6.88	174.75	7.12	180.85										
					4	R38	6.188	157.18	0.438	11.13	0.656	16.66	0.06	1.52											8.00	203.20				
				4		R39	6.375	161.93	0.312	7.92	0.469	11.91	0.03	0.76							7.62	193.55								
5						R40	6.750	171.45	0.500	6.35	0.344	8.74	0.03	0.76	7.62	193.55														
	5	5	5			R41	7.125	180.98	0.312	7.92	0.469	11.91	0.03	0.76			8.25	209.55	8.50	215.90										
					5	R42	7.500	190.50	0.375	12.70	0.781	19.84	0.060	1.52											9.50	241.30				
				5		R44	7.625	193.68	0.500	7.92	0.469	11.91	0.03	0.76							9.00	228.65								
6						R43	7.625	193.68	0.250	6.35	0.344	8.74	0.03	0.76	8.62	218.95														
	6	6	6			R45	8.312	211.12	0.312	7.92	0.469	11.91	0.03	0.76			9.50	241.30	9.50	241.30										
				6		R46	8.312	211.12	0.375	9.53	0.531	13.49	0.06	1.52							9.75	247.65								
					6	R47	9.000	228.60	0.500	12.70	0.781	19.84	0.06	1.52											11.00	279.40				
8						R48	9.750	247.65	0.250	6.35	0.344	8.74	0.03	0.76	10.75	273.05														
	8	8	8			R49	10.625	269.88	0.312	7.92	0.469	11.91	0.03	0.76			11.88	301.75	12.12	307.85										
				8		R50	10.625	269.88	0.438	11.13	0.656	16.66	0.06	1.52							12.5									
					8	R51	11.000	279.40	0.562	14.27	0.906	23.01	0.06	1.52											13.38	339.85				

- See 'Flange Ends' for dimensions not specified above.
- Flange ring gasket to ASME B16.20.
- Class 900, NPS 2~2 1/2" have the same dimensions as class 1500.
- The length L RTJ of the double end bolt does not include the terminal length.

Ring-Joint Flange Ends

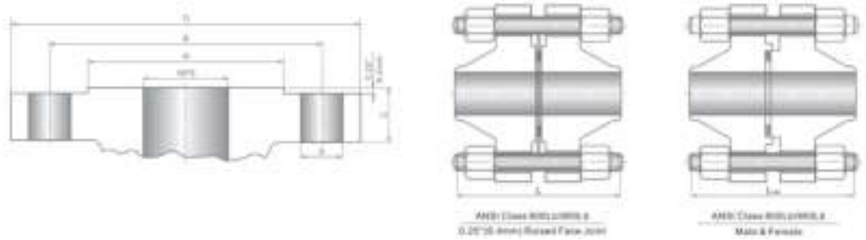


Ring-Joint flange Ends

1	2	4	5	6	7	8	9		10		11		12		13		14		15		16		17	
ANSI Class-Lb							Annular groove								150Lb		300/600Lb		900Lb		1500Lb		2500Lb	
150	300	600	900	1500	2500	No	P		E		F		R		K									
NPS							in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	Vmm	in	mm
10						R52	12.000	304.80	0.250	6.35	0.344	8.74	0.03	0.76	13.00	330.2								
	10	10	10			R53	12.750	323.85	0.312	7.92	0.469	11.91	0.03	0.76			14.00	355.60	14.25	361.95				
				10		R54	12.750	323.85	0.438	11.13	0.656	16.66	0.06	1.52							4.62	371.35		
					10	R55	13.500	342.90	0.688	17.48	1.188	30.18	0.09	2.29									16.75	425.45
12						R56	15.000	381.00	0.250	6.35	0.344	8.74	0.03	0.76	16.00	406.4								
	12	12	12			R57	15.000	381.00	0.312	7.92	0.469	11.91	0.03	0.76			16.25	412.75	16.50	419.10				
				12		R58	15.000	381.00	0.562	14,27	0.906	23.01	0.06	1.52							17.25	438.15		
					12	R60	16.000	406.40	0.688	17.48	1.312	33.32	0.09	2.29									19.50	495.30
14						R59	15.625	396.88	0.250	6.35	0.344	8.74	0.03	0.76	16.75	425.45								
	14	14				R61	16.500	419.10	0.312	7.92	0.469	11.91	0.03	0.76			18.00	457.20	18.38	466.85				
			14	14		R62	16.500	419.10	0.438	11.13	0.656	16.66	0.06	1.52							19.25	488.95		
						R63	16.500	419.10	0.625	17.48	1.062	26.97	0.09	2.29										
16						R64	17.875	454.03	0.25	6.35	0.344	8.74	0.03	0.76	19.00	482.60								
	16	16				R65	18.500	469.90	0.312	7.92	0.469	11.91	0.03	0.76			20.00	508.00						
			16			R66	18.500	469.90	0.438	11.13	0.656	16.66	0.06	1.52					20.62	523.75				
				16		R67	18.500	469.90	0.688	17.48	1.188	30.18	0.09	2.29							21.50	546.10		
18						R68	20.375	517.53	0.250	6.35	0.344	8.74	0.03	0.76	21.50	546.10								
	18	18				R69	21.000	533.40	0.312	7.92	0.469	11.91	0.03	0.76			22.62	574.55						
			18			R70	21.000	533.40	0.500	12.70	0.781	19.84	0.06	1.52					23.38	593.85				
				18		R71	21.000	533.40	0.688	17.48	1.188	30.18	0.09	2.29							24.12	612.65		
20						R72	22.000	558.80	0.250	6.35	0.344	8.74	0.03	0.76	23.50	596.90								
	20	20				R73	23.000	584.20	0.375	9.53	0.531	13.49	0.06	1.52			25.00	635.00						
			20			R74	23.000	584.20	0.500	12.70	0.781	19.84	0.06	1.52					25.50	647.70				
				20		R75	23.000	584.20	0.688	17.48	1.312	33.32	0.09	2.29							26.50	673.10		
24						R76	26.500	673.10	0.250	6.35	0.344	8.74	0.03	0.76	28	711.2								
	24	24				R77	27.250	692.15	0.438	11.13	0.656	16.66	0.06	1.52			29.5	749.3						
			24			R78	27.250	269.88	0.625	15.88	1.062	26.97	0.09	2.29					30.38	771.65				
				24		R79	27.250	279.40	0.812	20.62	1.438	46.53	0.09	2.29							31.25	793.75		

- See 'Flange Ends' for dimensions not specified above.
- Flange ring gasket to ASME B16.20.
- Class 900, NPS 2~2 1/2" have the same dimensions as class 1500.
- The length L RTJ of the double end bolt does not include the terminal length.

Ring-Joint flange Ends

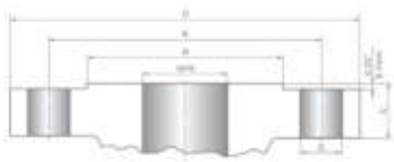


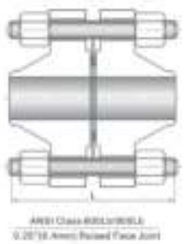
Ring-Joint flange Ends

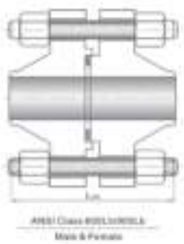
1	2	4	5	6	7	8	25		26		27		28		29		30		31		32		33		34	
ANSI Class-Lb							Metal joint ring								150Lb		300Lb		600Lb		900Lb		1500Lb		2500Lb	
150	300	600	900	1500	2500	No	A		B		H		C		K											
NPS							in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
2						R22	0.312	7.95	0.56	14.22	0.50	12.70	0.206	5.23	3.75	95.25										
	2	2				R23	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75			4.00	101.60	4.25	107.95						
				2		R24	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75									5.75	146.05		
					2	R26	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75											7.00	177.80
2 1/2						R25	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	4.00	101.6										
	2 1/2	2 1/2				R26	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75			4.50	114.30	4.75	120.65					7.00	177.80
				2 1/2		R27	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75									6.25	158.75		
					2 1/2	R28	0.500	12.70	0.69	14.22	0.69	17.53	0.341	8.66											8.00	203.20
3						R29	0.313	7.95	0.69	17.53	0.50	12.70	0.206	5.23	4.00	101.60										
	3	3	3			R31	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75			4.75	120.65	5.00	127.00	5.75	146.05				
				3		R32	0.500	12.70	0.75	19.05	0.69	17.53	0.341	8.66											9.00	228.60
					3	R35	0.438	11.13	0.69	17.53	0.63	16.0	0.305	7.75									7.00	177.80		
4						R36	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	4.00	101.60										
	4	4	4			R37	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75			5.00	127.00	5.75	146.05	6.75	171.45				
				4		R38	0.625	15.88	0.88	22.35	0.81	20.57	0.413	10.49											10.25	260.35
					4	R39	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75									7.75	196.85		
5						R40	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	4.25	107.95										
	5	5	5			R41	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75			5.25	133.35	6.50	165.10	7.50	190.50				
				5		R42	0.750	19.05	1.00	25.40	0.94	23.88	0.485	12.32											12.25	311.15
					5	R44	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75									9.75	247.65		
6						R43	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	4.50	114.30										
	6	6	6			R45	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75			5.50	1.99	6.75	171.45	7.75	196.85				
				6		R46	0.500	12.70	0.75	19.05	0.69	17.53	0.341	8.66									10.50	266.70		
					6	R47	0.750	19.05	1.00	25.40	0.94	23.88	0.485	12.32											14.00	355.60
8						R48	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	4.75	120.65										
	8	8	8			R49	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75			6.00	152.4	7.75	196.85	8.75	222.25				
				8		R50	0.625	15.88	0.88	22.35	0.81	20.57	0.413	10.49									12.75	323.85		
					8	R51	0.875	22.23	1.13	28.70	1.06	26.92	0.583	14.81											15.50	393.70

- See 'Flange Ends' for dimensions not specified above.
- Flange ring gasket to ASME B16.20.
- Class 900, NPS 2~2 1/2" have the same dimensions as class 1500.
- The length L RTJ of the double end bolt does not include the terminal length.

Ring-Joint Flange Ends





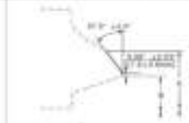
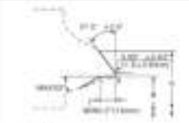
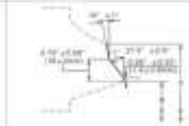


Ring-Joint flange Ends

1	2	4	5	6	7	8	25		26		27		28		29		30		31		32		33		34	
ANSI Class-Lb						Metal joint ring									150Lb		300Lb		600Lb		900Lb		1500Lb		2500Lb	
150	300	600	900	1500	2500	No	A		B		H		C		K											
NPS							in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
10						R52	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	5.00	127.00										
	10	10	10			R53	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75			6.75	171.45	8.50	215.90	9.25	234.95				
				10		R54	0.625	15.88	0.88	22.35	0.81	20.57	0.413	10.49									13.50			
					10	R55	1.125	28.58	1.44	36.58	1.38	35.05	0.780	19.81											20.00	508.00
12						R56	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	5.25	133.35										
	12	12	12			R57	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75			7.25	184.15	8.75	222.25	10.0	254.00				
				12		R58	0.875	22.23	1.13	28.7	1.06	26.92	0.583	14.81									15.25	387.35		
					12	R60	1.250	31.75	1.56	39.62	1.5	38.10	0.879	22.23											22.00	558.80
14						R59	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	5.75	146.05										
	14	14				R61	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75			7.50	190.50	9.25	234.95						
			14			R62	0.625	15.88	0.88	22.35	0.81	20.57	0.413	10.49									11.00	279.40		
				14		R63	1.000	25.40	1.31	33.27	1.25	31.75	0.681	17.30											16.75	425.45
16						R64	0.313	7.95	0.56	14.22	0.50	12.70	O.205	5.21	5.75	146.06										
	16	16				R65	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75			8.00	203.20	10.00	254.00						
			16			R66	0.625	15.88	0.88	22.35	0.81	20.57	0.413	10.49									11.50	292.10		
				16		R67	1.125	28.58	1.44	36.58	1.38	35.05	0.78	19.81											18.50	469.90
18						R58	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	6.25	158.75										
	18	18				R69	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75			8.25	209.55	10.75	273.05						
			18			R70	0.750	19.05	1.00	25.40	0.94	23.88	0.485	12.32									13.25	336.55		
				18		R71	1.125	28.58	1.44	36.58	1.38	35.05	0.78	19.81											20.75	527.05
20						R72	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	6.75	171.45										
	20	20				R73	0.500	12.70	0.75	19.05	0.69	17.53	0.341	8.66			8.75	222.25	11.50	192.10						
			20			R74	0.750	19.05	1.00	25.40	0.94	23.88	0.485	12.32									14.25	361.95		
				20		R75	1.250	21.75	1.56	39.62	1.50	38.10	0.879	22.33											22.25	565.15
24						R76	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	7.25	184.15										
	24	24				R77	0.625	15.88	0.88	22.35	0.81	20.57	0.413	10.49			10.00	254.00	13.25	336.55						
			24			R78	1.000	24.50	1.31	33.27	1.25	31.75	0.681	17.3									18.00	457.20		
				24		R79	1.375	34.93	1.75	44.45	1.63	41.4	0.977	24.82											25.50	647.70

- See 'Flange Ends' for dimensions not specified above.
- Flange ring gasket to ASME B16.20.
- Class 900, NPS 2~2 1/2" have the same dimensions as class 1500.
- The length L RTJ of the double end bolt does not include the terminal length.

Butt Weld Ends

Nominal wall thickness	Use without backing ring	Us with continuous rectangular backing ring
≤0.886" (22.5mm)		
>0.66" (22.5mm)		

- Standard butt weld ends are included with Class 150 and 300 valves that are 12 inches or smaller (0.375 Inches).
- Other thicknesses can be custom-machined.
- End connection dimensions for Class 150 and 300 vaves, 14 inch and bigger, must be provided at the time of order.
- Backing rings can also be supplied.
- The connection measurements must be supplied at the time of order for pressure ratings over class 300 (all sizes).
- Any additional end connection dimensions can be customised to meet your needs.

Butt Weld Ends

1		2	3		4		5		6		7	
Nominal pipe diameter		Wall thickness of pipe number	Outside diameter of welding end				Nominal inside diameter of pipe		Machined inside diameter of pipe		Nominal wall thickness	
			Steel valve		Forged[3]							
NPS	DN		A		A1		B		C		t	
in	mm		in	mm	in	mm	in	mm	in	mm	in	mm
2 1/2	65	40	2.96	75	2.88	73.0	2.469	62.5	2.479	62.93	0.203	5.16
		80	2.96	75	2.88	73.0	2.323	59	2.351	59.69	0.276	7.01
		160	2.96	75	2.88	73.0	2.215	54	2.178	55.28	0.375	9.53
		XXS	2.96	75	2.88	73.0	1.771	45	1.868	47.43	0.552	14.02
3	80	40	3.59	91	3.50	88.9	3.068	78	3.081	78.25	0.216	5.49
		80	3.59	91	3.50	88.9	2.900	73.5	2.934	74.53	0.300	7.62
		160	3.59	91	3.50	88.9	2.624	66.5	2.692	68.38	0.438	11.13
		XXS	3.59	91	3.50	88.9	2.300	58.5	2.409	61.19	0.600	15.24
3 1/2	90	40	4.12	105	4.00	101.60	3.548	90	3.564	90.52	0.226	5.74
		80	4.12	105	4.00	101.60	3.364	85.5	3.402	86.42	0.318	8.08
4	100	40	4.62	117	4.50	114.3	4.026	102	4.044	102.73	0.237	6.02
		80	4.62	117	4.50	114.3	3.826	97	3.869	98.28	0.337	8.56
		120	4.62	117	4.50	114.3	3.624	92	3.692	93.78	0.438	11.13
		160	4.62	117	4.50	114.3	3.438	87.5	3.530	89.65	0.531	13.49
		XXS	4.62	117	4.50	114.3	3.152	80	3.279	83.30	0.674	17.12
5	125	40	5.69	144	5.56	141.3	5.047	128	5.070	128.80	0.258	6.55
		80	5.69	144	5.56	141.3	4.813	122	4.866	123.58	0.375	9.53
		120	5.69	144	5.56	141.3	4.563	116	4.647	118.04	0.500	12.70
		160	5.69	144	5.56	141.3	4.313	109.5	4.428	112.47	0.625	15.88
		XXS	5.69	144	5.56	141.3	4.063	103	4.209	106.92	0.750	19.05
6	150	40	6.78	172	6.62	168.3	6.065	154	6.094	154.82	0.280	7.11
		80	6.78	172	6.62	168.3	5.761	146.5	5.828	148.06	0.432	10.97
		120	6.78	172	6.62	168.3	5.501	140	5.600	142.29	0.562	14.27
		160	6.78	172	6.62	168.3	5.187	132	5.326	135.31	0.719	18.26
		XXS	6.78	172	6.62	168.3	4.897	124.5	5.072	128.85	0.864	21.95
8	200	40	8.78	223	8.62	219.10	7.981	203	8.020	203.75	0.322	8.18
		60	8.78	223	8.62	219.10	7.813	198.5	7.873	200.02	0.406	10.31
		80	8.78	223	8.62	219.10	7.625	193.5	7.709	195.84	0.500	12.70
		100	8.78	223	8.62	219.10	7.437	189	7.544	191.65	0.594	15.09
		120	8.78	223	8.62	219.10	7.187	182.5	7.326	186.11	0.719	18.26
		140	8.78	223	8.62	219.10	7.001	178	7.163	181.98	0.812	20.62
		XXS	8.78	223	8.62	219.10	6.875	174.5	7.053	179.16	0.875	22.23
		160	8.78	223	8.62	219.10	6.813	173	6.998	177.79	0.906	23.01
10	250	40	10.94	278	10.75	273.0	10.020	254.5	10.700	255.74	0.365	9.27
		60	10.94	278	10.75	273.0	9.750	247.5	9.834	249.74	0.500	12.70
		80	10.94	278	10.75	273.0	9.562	243	9.670	245.55	0.594	15.09
		100	10.94	278	10.75	273.0	9.312	236.5	9.451	240.01	0.719	18.26
		120	10.94	278	10.75	273.0	9.062	230	9.232	234.44	0.844	21.44
		140	10.94	278	10.75	273.0	8.750	222	8.959	227.51	1.000	25.40
		160	10.94	278	10.75	273.0	8.500	216	8.740	221.95	1.125	28.58

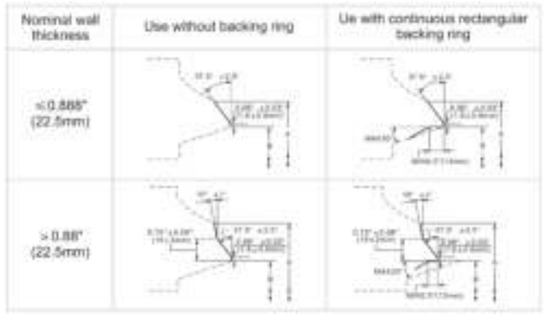
Butt Weld Ends

ASME B16.25-Butt-Welding Ends

1		2	3		4		5		6		7	
Nominal pipe diameter		Wall thickness of pipe number	Outside diameter of welding end				Nominal inside diameter of pipe		Machined inside diameter of pipe		Nominal wall thickness	
			Steel valve		Forged[a]							
NPS	DN		A		A1		B		C		t	
in	mm		in	mm	in	mm	in	mm	in	mm	in	mm
		STD	12.97	329	12.75	323.80	12.000	305	12.053	306.08	0.375	9.53
		40	12.97	329	12.75	323.80	11.938	303	11.999	304.72	0.406	10.31
		XS	12.97	329	12.75	323.80	11.750	298.5	11.834	300.54	0.500	12.70
		60	12.97	329	12.75	323.80	11.626	295	11.725	297.79	0.562	14.27
12	300	80	12.97	329	12.75	323.80	11.374	289	11.505	292.17	0.688	17.48
		100	12.97	329	12.75	323.80	11.062	281	11.232	285.24	0.844	21.44
		120	12.97	329	12.75	323.80	10.750	273	10.959	278.31	1.000	25.40
		140	12.97	329	12.75	323.80	10.500	266.5	10.740	272.75	1.125	28.58
		160	12.97	329	12.75	323.80	10.126	257	10.413	264.45	1.312	33.32
		STD	14.25	362	14.00	355.60	13.250	336.5	13.303	337.88	0.375	9.53
		40	14.25	362	14.00	355.60	13.124	333.5	13.192	335.08	0.438	11.13
		XS	14.25	362	14.00	355.60	13.000	330	13.084	332.34	0.500	12.70
		60	14.25	362	14.00	355.60	12.812	325.5	12.920	328.15	0.594	15.09
14	350	80	14.25	362	14.00	355.60	12.500	317.5	12.646	321.22	0.750	19.05
		100	14.25	362	14.00	355.60	12.124	308	12.318	312.86	0.938	23.83
		120	14.25	362	14.00	355.60	11.812	300	12.044	305.93	1.094	27.79
		140	14.25	362	14.00	355.60	11.500	292	11.771	299.00	1.250	31.75
		160	14.25	362	14.00	355.60	11.188	284	11.498	292.07	1.406	35.71
		STD	16.25	413	16.00	406.40	15.250	387.5	15.303	388.68	0.375	9.53
		40	16.25	413	16.00	406.40	15.000	381	15.084	383.14	0.500	12.70
		60	16.25	413	16.00	406.40	14.688	373	14.811	376.21	0.656	16.66
16	400	80	16.25	413	16.00	406.40	14.312	363.5	14.482	367.84	0.844	21.44
		100	16.25	413	16.00	406.40	19.938	354	14.155	359.53	1.031	26.19
		120	16.25	413	16.00	406.40	13.562	344.5	13.826	351.18	1.219	30.96
		140	16.25	413	16.00	406.40	13.442	333.5	13.442	341.43	1.438	36.53
		160	16.25	413	16.00	406.40	12.812	325.5	13.170	334.50	1.594	40.49
		STD	18.28	464	18.00	457.20	17.250	438	17.303	439.48	0.375	9.53
		XS	18.28	464	18.00	457.20	17.000	432	17.084	433.94	0.500	12.70
		40	18.28	464	18.00	457.20	16.876	428.5	16.975	431.19	0.562	14.27
		60	18.28	464	18.00	457.20	16.500	419	15.646	422.82	0.750	19.05
18	450	80	18.28	464	18.00	457.20	16.124	409.5	16.318	414.46	0.938	23.83
		100	18.28	464	18.00	457.20	15.688	398.5	15.936	404.78	1.156	29.36
		120	18.28	464	18.00	457.20	15.250	387.5	15.553	395.03	1.375	34.93
		140	18.28	464	18.00	457.20	14.876	378	15.225	386.77	1.562	39.67
		160	18.28	464	18.00	457.20	14.438	366.5	14.842	376.99	1.781	45.24
		STD	10.94	516	20.00	508.00	19.250	489	19.303	490.28	0.375	9.53
		XS	20.31	516	20.00	508.00	19.000	482.5	19.084	484.74	0.500	12.70
		40	20.31	516	20.00	508.00	18.812	478	18.920	480.55	0.594	15.09
		60	20.31	516	20.00	508.00	18.376	467	18.538	470.88	0.812	20.62
20	500	80	20.31	516	20.00	508.00	17.938	455.5	18.155	461.13	1.031	26.19
		100	20.31	516	20.00	508.00	17.438	443	17.717	450.02	1.281	32.54
		120	20.31	516	20.00	508.00	17.000	432	17.334	440.29	1.500	38.10
		140	20.31	516	20.00	508.00	16.500	419	16.896	429.17	1.750	44.45
		160	20.31	516	20.00	508.00	16.062	408	16.513	419.44	1.969	50.01
		STD	22.34	567	22.00	558.80	21.250	520	21.303	541.08	0.375	9.53
		XS	22.34	567	22.00	558.80	21.000	533	21.084	535.54	0.500	12.70
		60	22.34	567	22.00	558.80	20.250	514	20.428	518.86	0.875	22.23
22	550	80	22.34	567	22.00	558.80	19.750	502	19.990	507.75	1.125	28.58
		100	22.34	567	22.00	558.80	19.250	488.5	19.553	496.63	1.375	34.93
		120	22.34	567	22.00	558.80	18.750	476	19.115	485.52	1.625	41.28
		140	22.34	567	22.00	558.80	18.250	464	18.678	474.41	1.875	47.63
		160	22.34	567	22.00	558.80	17.750	450.5	18.240	463.30	2.215	53.98

Note :
Forged machined component part
- Standard wall thickness
- XS : Excess Wall Thickness
- XXS : Double Excess Wall Thickness

Butt Weld Ends



- Standard butt weld ends are included with Class 150 and 300 valves that are 12 inches or smaller (0.375 Inches).
- Other thicknesses can be custom-machined.
- End connection dimensions for Class 150 and 300 vaves, 14 inch and bigger, must be provided at the time of order.
- Backing rings can also be supplied.
- The connection measurements must be supplied at the time of order for pressure ratings over class 300 (all sizes).
- Any additional end connection dimensions can be customised to meet your needs.

ASME B16.25 Butt Weld Ends

1		2	3		4		5		6		7	
Nominal pipe diameter		Wall thickness of pipe number	Outside diameter of welding end				Nominal inside diameter of pipe		Machined inside diameter of pipe		Nominal wall thickness	
			Steel valve		Forged[a]							
NPS	DN		A		A1		B		C		t	
in	mm		in	mm	in	mm	in	mm	in	mm	in	mm
		STD	24.38	619	24.00	609.6	23.250	590.5	23.303	591.88	0.750	9.53
		XS	24.38	619	24.00	609.6	23.000	584	23.084	586.34	0.500	12.70
		30	24.38	619	24.00	609.6	22.876	581	22.975	583.59	0.562	14.27
		40	24.38	619	24.00	609.6	22.624	574.5	22.755	577.97	0.688	17.48
		60	24.38	619	24.00	609.6	22.062	560.5	22.263	565.49	0.969	24.61
600	600	80	24.38	619	24.00	609.6	21.562	547.5	21.826	554.38	1.219	30.93
		100	24.38	619	24.00	609.6	20.938	532	21.280	540.49	1.531	38.89
		120	24.38	619	24.00	609.6	20.376	517.5	20.788	528.03	1.812	46.02
		140	24.38	619	24.00	609.6	19.876	505	20.350	516.91	2.062	52.37
		160	24.38	619	24.00	609.6	10.312	490.5	19.857	504.37	2.344	59.54
650	650	10	26.38	670	26.00	660.4	25.376	645.5	25.413	645.50	0.312	7.92
		20	26.38	670	26.00	660.4	25.000	635	25.084	637.14	0.500	12.70
700	700	10	28.38	721	28.00	711.2	27.376	695.5	27.413	696.30	0.312	7.92
		20	28.38	721	28.00	711.2	27.000	686	27.084	687.94	0.500	12.70
		30	28.38	721	28.00	711.2	26.750	679.5	26.865	862.37	0.625	15.88
750	750	10	30.38	772	30.0	762.0	29.376	746	29.413	747.10	0.312	7.92
		20	30.38	772	30.0	762.0	29.000	736.5	29.084	738.74	0.500	12.70
		30	30.38	772	30.0	762.0	28.750	730	28.865	733.17	0.625	15.88
800	800	10	32.50	825	32.0	812.8	31.376	797	31.413	797.90	0.312	7.92
		20	32.50	825	32.0	812.8	31.000	787.5	31.084	789.54	0.500	12.70
		30	32.50	825	32.0	812.8	30.750	781	30.865	783.97	0.625	15.88
		40	32.50	825	32.0	812.8	30.624	778	30.755	781.17	0.688	17.48
850	850	10	34.50	876	34.0	863.6	33.376	848	33.413	848.70	0.312	7.92
		20	34.50	876	34.0	863.6	33.000	838	33.084	840.34	0.500	12.70
		30	34.50	876	34.0	863.6	32.750	832	32.865	834.77	0.625	15.88
		40	34.50	876	34.0	863.6	32.624	828.5	32.755	831.97	0.688	17.48
900	900	10	36.50	927	36.0	914.40	35.376	898.5	35.413	899.50	0.312	7.92
		20	36.50	927	36.0	914.40	35.000	889	35.084	891.14	0.500	12.70
		30	36.50	927	36.0	914.40	34.750	882.5	34.865	885.57	0.625	15.88
		40	36.50	927	36.0	914.40	34.500	876.5	34.646	880.02	0.750	19.05

Note :
Forged machined component part
- Standard wall thickness
- XS : Excess Wall Thickness
- XXS : Double Excess Wall Thickness

How To Select The Valve Code for PROFI Valve

PROFI valves have a detailed coding system that thoroughly describes the valve's design. You can specify the valve code, as well as a description when ordering to verify that your valve is accurately configured and designed.

1	SIZE
Code	Description
3/8"	DN10
1/2"	DN15
3/4"	DN20
1"	DN25
1-1/2"	DN40
2"	DN50
3"	DN80
4"	DN100
6"	DN150
8"	DN200
10"	DN250
12"	DN300
14"	DN350
16"	DN400
18"	DN450
20"	DN500
24"	DN600
26"	DN650
28"	DN700
30"	DN750
32"	DN800
36"	DN900

2	TYPE
Code	Description
BV	Ball Valve
GA	Gate Valve
GL	Globe Valve
CH	Check Valve
BU	Butterfly Valve
DB	DBB Valve
PL	Plug Valve
ST	Strainer

3	PRESSURE CLASS
Code	Description
A1	ANSI Class 150LB
A3	ANSI Class 300LB
A6	ANSI Class 600LB
A8	ANSI Class 800LB
A9	ANSI Class 900LB
A15	ANSI Class 1500LB
A25	ANSI Class 2500LB

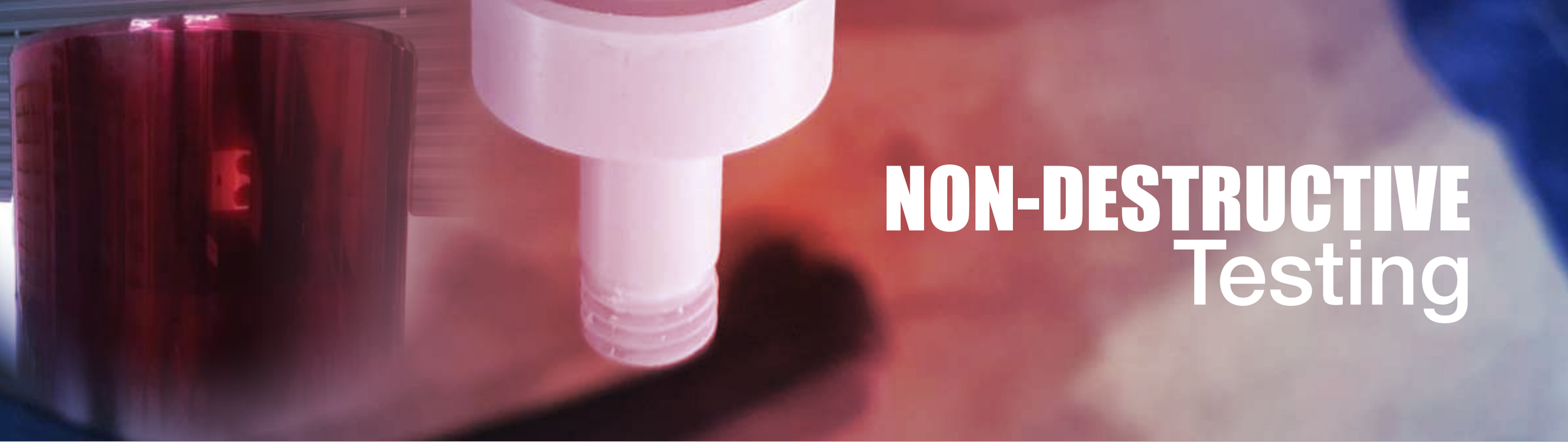
4	BODY MATERIAL		
Code	Description	Code	Description
	FORGING		CASTING
B11	ASTM A105N	B12	ASTM A216 WCB
B21	ASTM A350 LF2	B22	ASTM A352-LCC
B31	ASTM A350 LF3	B37	ASTM A352 LC3
B32	ASTM A182 F5a	B38	ASTM A217 C5
B33	ASTM A182 F9	B39	ASTM A217 C12
B34	ASTM A182 F11	B40	ASTM A217 WC6
B35	ASTM A182 F22	B41	ASTM A217 WC9
B36	ASTM A182 F91	B42	ASTM A217 C12A
B41	ASTM A182 F304	B49	ASTM A351 CF8
B42	ASTM A182 F304L	B50	ASTM A351 CF3
B43	ASTM A182 F316	B51	ASTM A351 CF8M
B44	ASTM A182 F316L	B52	ASTM A351 CF3M
B45	ASTM A182 F321		-
B46	ASTM A182 F347	B53	ASTM A351 CF8C
B47	ASTM 182 F44	B54	ASTM CK3MCuN
B48	ASTM A182 F20	B55	ASTM A351 CN7M
B61	ASTM A182 F51 (DUPLEX)	B64	A995 Gr 4A
B62	ASTM A182 F53 (SUPER DUPLEX)	B65	A995 Gr 5A
B63	ASTM A182 F55 (SUPER DUPLEX)	B66	A995 Gr 6A
	-	B71	ASTM C95800
	-	B72	ASTM C95400

5	END CONNECTION
Code	Description
R	Raised Face (RF)
F	Flat Face (FF)
T	Ring Type Joint (RTJ)
B	Butt Weld (BW)
S	Socket Weld (SW)
N	NPT
W	Wafer Type (WF)

6	TRIM MATERIAL		
Code	Description		
	Ball/Wedge/Disc	Seat	Stem
S1	F316	PTFE	F316
S2	F316	RPTFE	F316
S3	F316	PCTFE	F316
S4	F316	PEEK	F316
S5	F316	DEVLON	F316
S6	F316L	RPTFE	F316L
S7	F304	PTFE	F304
S8	F304	PEEK	F304
S9	C95800	PTFE	MONEL
S10	C95400	EPDM	MONEL
S11	F2	RPTFE	F2
S12	DI	EPDM	F6a
M1	F316	F316	F316
M2	F316 + STL	F316 + STL	F316
M3	F6a + STL	F6a + STL	F6a
M4	F6a	F6a + STL	F6a
M5	F304	F304	F304
M6	WCB + 13Cr	A105 + STL	F6a
M7	A105N + STL	A105 + STL	F6a
M8	WC6 + STL	F11 + STL	F6a
M9	WC6 + STL	A105 + STL	F6a
M10	WC6 +13Cr	A105 + STL	F6a
M11	CF8M	F316+STL	F316
M12	CF8M	F316	F316
M13	CF8	CF8	CF8
M14	F22 + STL	F22 + STL	F6a
M15	F51	F51	F51
M16	C95800	C95800	MONEL
M17	DI	DI + BRASS	F6a
M18	4A	F51	4A

7	OPERATION
Code	Description
G	Gear Operated
L	Lever Operated
H	Handwheel
B	Bare Stem
A	Actuator

8	SPECIAL CONSTRUCTION
Code	Description
	-
E	Extended Bonnet
W	3-way flow
B	Cryogenic



NON-DESTRUCTIVE Testing

What is NDT?

Non-Destructive testing (NDT), are also known as Non-Destructive Examination (NDE), Non-Destructive Inspection (NDI) and Non-Destructive Evaluation (NDE). It is a common term that to be used to describe a techniques in the science and technology industry. These are to observe and measure welding defects or characteristic differences in a structure, component, or material without damaging the original structure.

Our Capabilities NDT Service:

- Liquid Penetrant Testing (PT).
- Magnetic Particle Testing (MT)-Coming soon.
- Ultrasonic Testing (UT)-Coming soon.
- Positive material identification (PMI)-By TBMB.

Why choose us as your NDT service provider?

- Customer Satisfaction is our utmost priority.
- Prompt response towards customer inquiries.
- Fast action towards customer needs and fast turnaround time.
- Highly qualified and certified NDT Manpower.

Why Non-Destructive Testing?

Non-Destructive Testing methods are normally applied in industries where a failure in component would cause significant hazard or economic loss, acting as in transportation, pressure vessels, building structures, piping, and hoisting equipment.

A major advantage of using the NDT method technique of testing is, it does not permanently alter the specimen/weld during inspection. Furthermore, it is a cost effective and time saving method for product evaluation, troubleshooting and research.

Liquid Penetrant Testing

Liquid Penetrant Testing, it is known as Dye Penetrant Testing (DPT) or Dye Penetrant Inspection (DPI). It is one of the most used technique in Non-Destructive Testing (NDT) services. LPT testing procedure, use coloured penetration liquid to identify and locate any defects on the surface through capillary action. It is commercially used across the industries in ensuring the quality and integrity of a machine parts, weldments, manufactured products, castings, forgings, and other items that will be placed into services.

PROFI is capable for performing Liquid Penetrant Testing on all non-porous metal products, including ferrous and non-ferrous, of welding structure, casted and forged items, new components, and raw materials. The most common anomalies detected by Liquid Penetrant Testing are, porosity, cracks, fracture, laps, seams, etc. We can assure, that our expert deliver fast and reliable result.

We conduct Liquid Penetrant Testing to ensure that our products and materials meet strict standards and are of high quality that caters to various needs of our clients.

Advantages

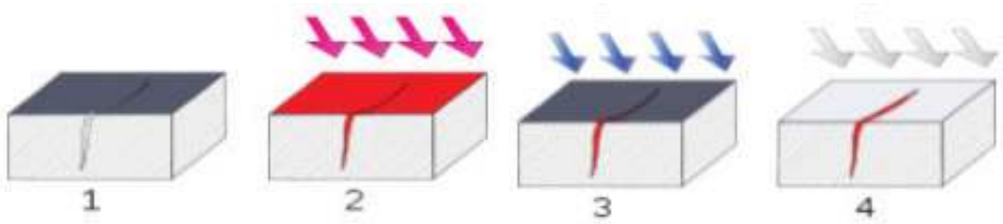
- Fast turnaround time.
- High sensitivity.
- Immediate indication of location of flaws on material surface.
- Appropriate for large and complex object shapes.

Application and Methods

Dye Penetrant Inspection is a capillary action procedure in which a low-surface-tension fluid penetrates clean and dry surface breaking discontinuities. The penetrant will be dipped, sprayed or brushed onto the test component. Adequate penetration time needed, the excess penetrant will be removed, and a developer will be applied. The developer helps to draw penetrant out of the flaw so that an invisible indication becomes visible for the inspection. Non-Flurorescent (visible) penetrant is used during the inspection, which will be done under white light.

Steps for Liquid Penetrant Testing:

- Section of material with a surface-breaking crack that is non-visible to the naked eye.
- Penetrant will be applied on the surface.
- Excess penetrant will be removed.
- Developer is applied, rendering the crack visible.



VALVE PLUG


PUMP SLEEVE



HYDRAULIC COUPLING (HC) USED SCOPE TUBES



MACHINED VALVE'S GROOVE SEAT AND PLUG AREA



Magnetic Particle Testing (MT)

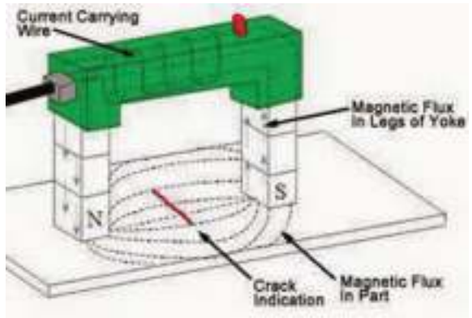
Magnetic Particle Inspection (MPI), it is used of magnetic fields and small magnetic particles to detect surface and sub-surface flaws in a component. It is used to determine a parts' serviceability or conformity to match the requirement and standards. This technique is used to inspect a wide range of product forms including castings, forgings, and weldments.

PROFI is capable for carrying out magnetic particle inspection on welded items, new components, raw material, and others which made of from ferromagnetic material such as iron, nickel, cobalt, or some of their alloys. The testing includes, inspection on welded pipeline, pressure vessels, completed machining items etc.

Advantages

- Simple, fast, and reliable operation.
- Immediate visual indication of surface anomalies.
- High sensitivity to small defects and flaws.
- Applicable to most materials.
- Inspect large parts or areas at low cost.
- No size limitations for parts to be tested.

Application and Methods



Continuous Magnetization Technique shall be applied. The magnetic particles will be sprayed on the surface and will be examined before the application of the magnetic field current, terminating the application simultaneously with the initiation of the magnetizing. The duration of the magnetization current, shall not be less than ½ second. At least two separate examination should be carried out on each specific area. For the second examination, the lines of magnetic flux should be approximately perpendicular to the first examination area.



Ultrasonic Testing (UT)

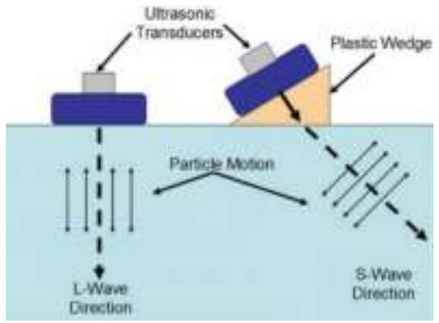
Ultrasonic testing is a non-destructive testing method that is use of high frequency sound waves to conduct examinations and measurements on the test area. The testing system usually consists of an ultrasonic transducer, pulser/receiver, and a display unit. Ultrasonic Testing use a probe and it can detect the surface flaws such as cracks, for the internal flaws it will detect such voids or inclusion of foreign materials. These testing method has been used in ensuring a high quality and integrity of a new components, weld joints, including service items, and has become vital across the industrial sector.

PROFI also provides Ultrasonic Flaw Detection (UTFD), used of A-scan ultrasonic detectors and an extensive range of tools and techniques to match every inspection challenge. The most common anomalies are include cracks, voids, and porosity in metals.

Advantages

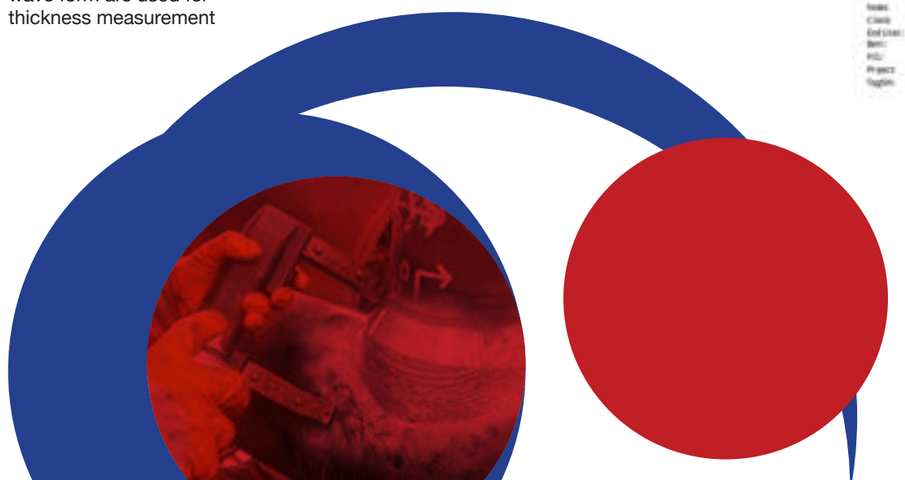
- Access is required from one side for the pulse-echo mode
- The depth of penetration is superior to other methods
- Show the exact defects sizing area and shape
- Reliable results
- Minimal part preparation is required.
- Defected area can be detected whether it is underneath or on the surface.
- Easy to perform without cutting the material
- No health risks while testing.

Application and Methods



Flaw inside the weldment can be detected and examined using the Ultrasonic Testing Flaw detector, through the form of shear wave or longitudinal wave, depending on the application and type of transducer used. To produce high voltage electrical pulses for the transducer, the electronic pulse/ receiver device is used. Driven by the pulse, the transducer generates a high frequency ultrasonic sound energy into the material in the form of sound waves. Flaws such as inclusions, porosity, cracks, etc. will be reflected as discontinuities in the sound path. The reflection of a sound wave signal will be received by the transducer, then transformed back into an electrical signal and its intensity will be shown on the display unit. The distance travelled by the signal can be directly compared to the time it takes for sound waves to travel. Reflector location, size, orientation, and other features can be determined from the signal.

Shear wave are used for flaw detection and longitudinal wave form are used for thickness measurement



Positive material identification (PMI)

Positive material identification (PMI) is a type of non-destructive testing (NDT) that focuses on identifying and analysing materials. PMI can be used to determine both materials and alloys, and it can be done on-site or in a lab. PROFI testing services ensure that the chemical makeup and percentage of important constituents are accurately identified.

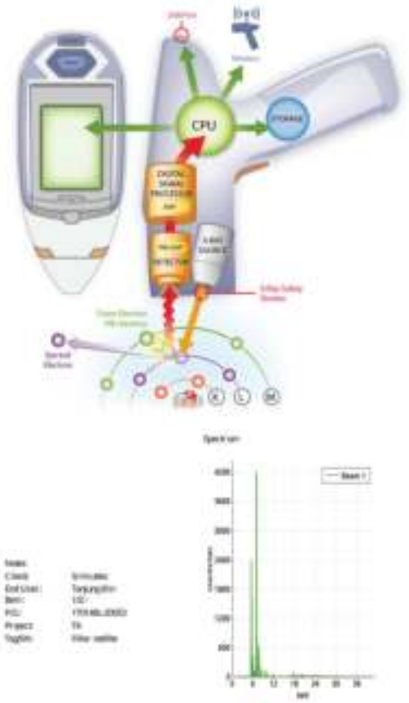
X-ray Fluorescence (XRF) analyzers evaluate the chemistry of a sample by measuring the fluorescence (or secondary) X-ray generated by the sample when it is excited by a primary X-ray source. Each element in a sample creates a distinct set of fluorescent X-rays (“a fingerprint”) that is unique to that element. To confirm that the correct alloy was used to build the products/components.

Advantages

- Find potentially mixed-up alloys
- Identify if the wrong material has been used
- Ensure material conforms to the correct standard and specification (both customer and industry)
- Specific and accurate results
- Quick results for product sorting and verification
- Assurance of product quality

Application and Methods

Sample preparation: No surface coating, clean from grease or contamination
Size of sample: All range size of solid sample
Chemical elements detect: All elements except Carbon content and light elements (P, S, Si)



- XRF Analyzer uses an X-ray source to generate a beam of low energy radiation to excite the material under analysis. The electrons of the element in the alloy are exposed to the X-ray beam and are temporarily raising them to an excited state. This can be done with different varity of X-ray resources, either by single isotope source or multiple (up to three sources), or a tube X-ray
- An X-ray source produces a primary X-ray beam that is focused on the alloy sample. The X-ray may be absorbed by atoms from different elements in the sample, resulting in atomic excitation of inner shell orbiting electrons. The excitation state of atoms is meta-stable, which means that numerous activities, such as the emission of fluorescence X-rays, can cause a near-instant transition from excitation to de-excitation.
- The energy of each atomic transition happening in the sample are characteristic of these fluorescent X-rays.
- These fluorescent emissions of electromagnetic energy (X-ray) being unique for each atom, are like electromagnetic fingerprints that identify each individual element.
- Therefore, the material under analysis emits a characteristic radiation spectrum which can be analyzed both qualitatively (X-ray spectrum) and quantitatively (% of element) to determine which elements are present and in what quantity.

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