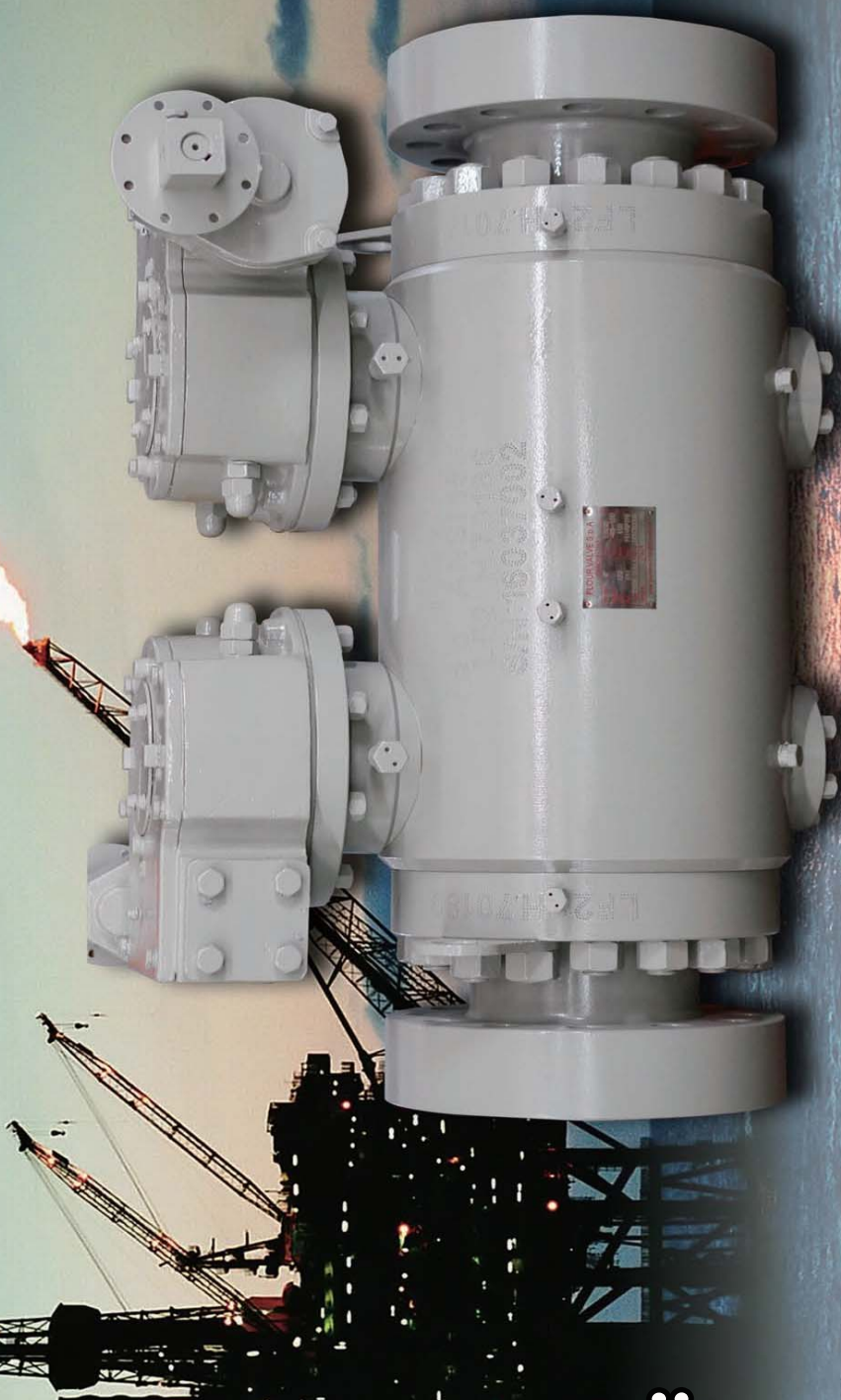


API 6D Trunnion—Mounted Ball

- Bolted Body
- Side—Entry
- Welded Body



**Sizes: 1–64”
(25–1600mm)**
**API 6D Pressure Range:
ASME150–2500**



Contents

Ball Valve, CS, FL (Floating) 01

Cast Steel Ball Valve 02-04

Ball Valve, CS, TM (Trunnion Mounted) 05

Cast Steel Ball Valve 06-11

Ball Valve, FS, FL (Floating) 12

Forged Steel Ball Valve 13-15

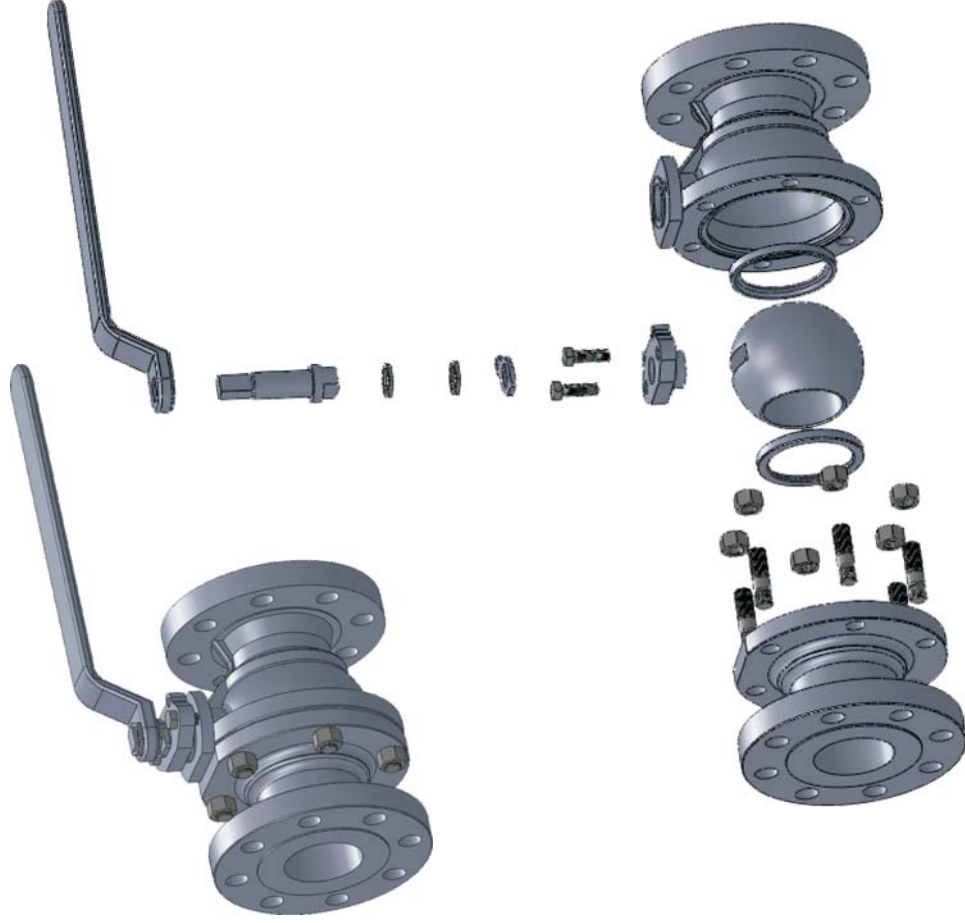
Ball Valve, FS, TM (Trunnion Mounted) 16

Forged Steel Ball Valve 17-22



www.flourvalve.it

Ball Valve, CS, FL (Floating)



Design

Flour Valve steel ball valves are designed and manufactured to provide maximum service life and dependability. All ball valves are full ported and meet the design requirements of American Petroleum Institute standard API 608 & API 6D, British Standard BS 5351 and generally conform to American Society of Mechanical Engineers standard ASME B16.34. Valves are available in a complete range of body/bonnet materials and trims.

Range Of Materials

Standard body/bonnet materials include nine grades of carbon, low alloy and stainless steels, for special applications they can be supplied in other grades of alloy and stainless steel. There's a full range of trim materials to match any service. Optional packing and gasket materials are available for a full range of service conditions.

Ball Valve, CS, FL (Floating)

Available Modifications For Flour Valve Cast Steel Valve

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 & packaging

Operating

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

Packing

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

Body & Bonnet

Split or 3-piece, split body & bonnet for 12" and smaller. Dis-assembles easily for repair or replacement of internal components

BPS

Blow-out proof stem. A pressure-safe stem shoulder design that protects against failure under excess pressure.

Bore

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

AS

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

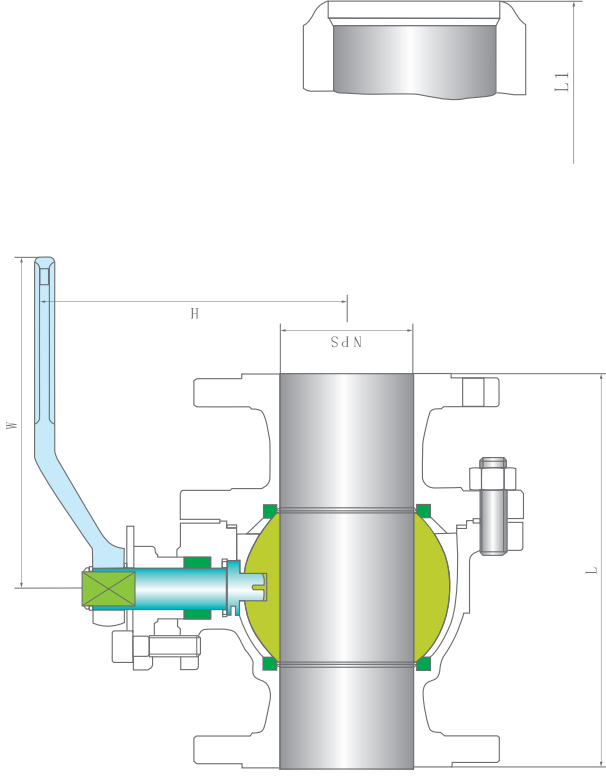
End Connections

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

FR

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.





List of Materials

NO	Part name	ASTM Material	
		Carbon steel	18Cr-9Ni-2Mo
1	Body	A216-WCB	A351-CF8M
2	Bonnet	A216-WCB	A351-CF8M
3	Ball	A182-F304 ¹⁾	A182-F304 ¹⁾
4	Stem	A276-304	A276-316
5	Seat ring		R-PTFE
6	Bonnet gasket	Graphite+304 ¹⁾	PTFE
7	Bonnet stud	A193-B7	A193-B8
8	Bonnet stud nut	A194-2H	A194-8
9	Packing		PTFE
10	Gland flange	A216-WCB	A351-CF8M
11	Gland bolt	A193-B7	A193-B8
12	Stop plate	Carbon steel	Carbon steel+Zn
13	Handle		Carbon steel

Note: 1), A 105+ENP optional ; 2), Spiral wound construction.

Dimensional Data

Size	L (RF)		L1 (BW)		H		W		WT (Kg)		
	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

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

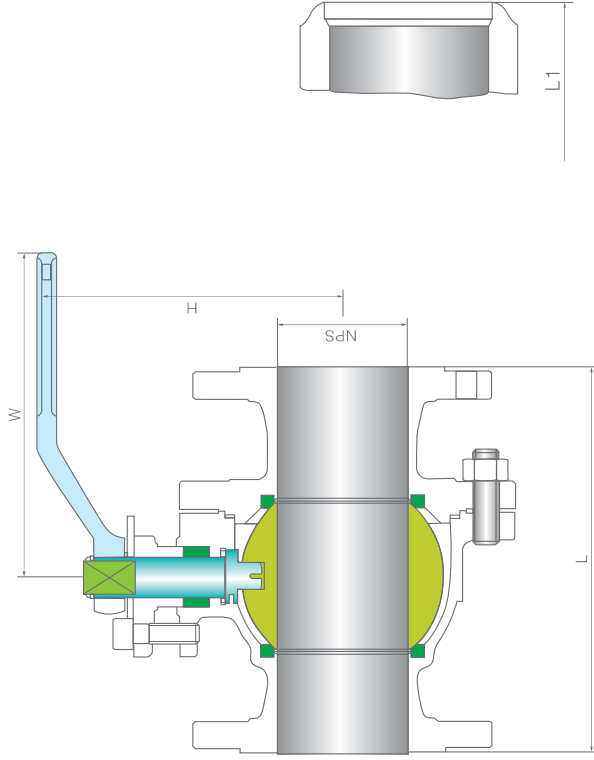
Design Description

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





List of Materials

NO	Part name	ASTM Material	
		Carbon steel	18Cr-9Ni-2Mo
1	Body	A216-WCB	A351-CF8M
2	Bonnet	A216-WCB	A351-CF8M
3	Ball	A182-F304*	A182-F316
4	Stem	A276-304	A276-316
5	Seat ring		R.PTFE
6	Bonnet gasket	Graphite+304*	PTFE
7	Bonnet stud	A193-B7	A193-B8
8	Bonnet stud nut	A194-2H	A194-8
9	Packing		PTFE
10	Gland flange	A216-WCB	A351-CF8M
11	Gland bolt	A193-B7	A193-B8
12	Stop plate	Carbon steel	Carbon steel+Zn
13	Handle		Carbon steel

Note: 1), A 105+ENP optional ; 2), Spiral wound construction.

Dimensional Data

Size	L (RF)		L1 (BW)		H		W		WT (Kg)		
	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

Applicable Standards

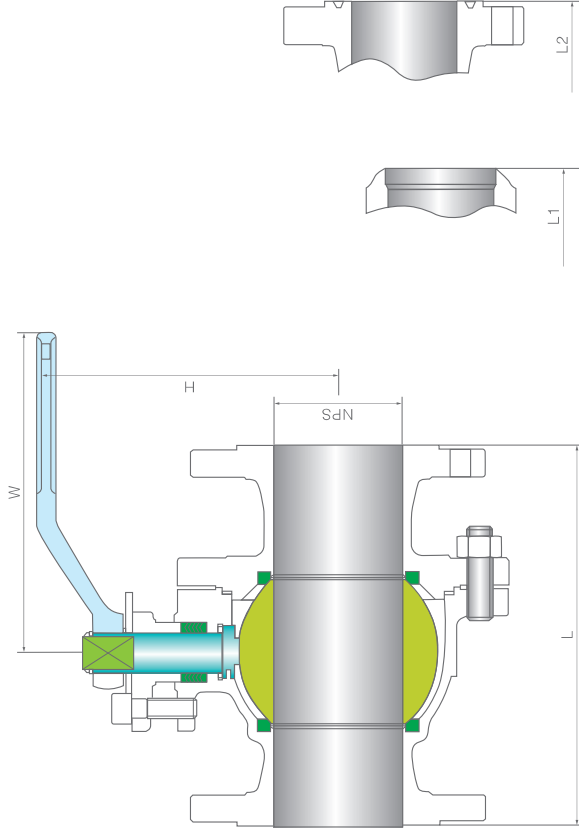
Steel ball valves: API 608/API 6D
 Steel ball valves: ISO 14313
 Fire resistant: API 607
 Anti static: API 608
 Steel valves: ASME B16.34
 Face to face: ASME B16.10
 End flanges: ASME B16.25
 Inspection and test: API 598/API 6D

Fig. No.

B3F56A B3F59L B3F56B
 B3B56A B3B59L B3B56B
 B3R56A B3R59L B3R56B

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



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

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

List of Materials

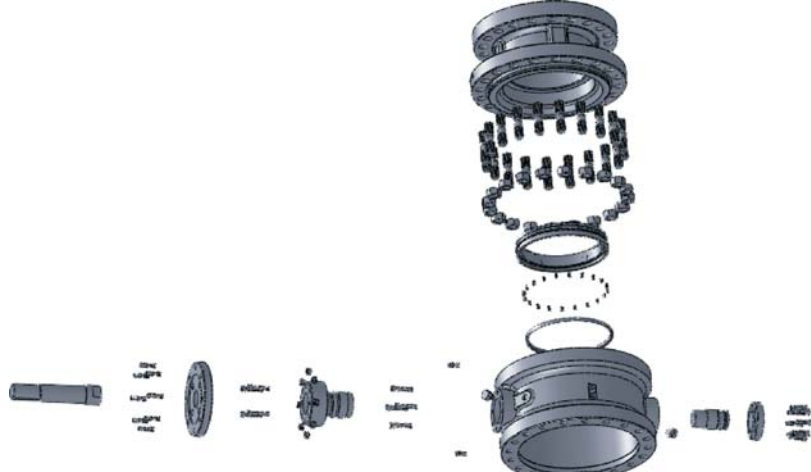
NO	Part name	ASTM Material	
		Carbon steel	18Cr-9Ni-2Mo
1	Body	A216-WCB	A351-CF8M
2	Bonnet	A216-WCB	A351-CF8M
3	Ball	A182-F304 (1)	A182-F304 ^h
4	Stem	A276-304	A276-304
5	Seat ring		R-PTFE
6	Bonnet gasket	Graphitel+304 (2)	PTFE
7	Bonnet stud	A193-B7	A193-B8
8	Bonnet stud nut	A194-2H	A194-8
9	Packing		PTFE
10	Gland flange	A216-WCB	A351-CF8M
11	Gland bolt	A193-B7	A193-B8
12	Stop plate	Carbon steel	Carbon steel+Zn
13	Handle		Carbon steel

Note: 1), A 105+ENP optional ; 2), Spiral wound construction.

Dimensional Data

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

Ball Valve, CS, TM (Trunnion Mounted)



Design

Flour Valve steel ball valves are designed and manufactured to provide maximum service life and dependability. All ball valves are full ported and meet the design requirements of American Petroleum Institute standard API 608 & API 6D, British Standard BS 5351 and generally conform to American Society of Mechanical Engineers standard ASME B16.34. Valves are available in a complete range of body/bonnet materials and trims.

Range Of Materials

Standard body/bonnet materials include nine grades of carbon, low alloy and stainless steels. For special applications they can be supplied in other grades of alloy and stainless steel. There's a full range of trim materials to match any service. Optional packing and gasket materials are available for a full range of service conditions.

Ball Valve, CS, TM (Trunnion Mounted)

Available Modifications For Flour Valve Cast Steel Valve

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

Operating

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

Packing

STD Packing multiple V-TEFLON packing, combined with live loading, maintains packing compression under high-cycle and severe service applications. Graphite packing is used for high temperature applications.

Body & Bonnet

Split or 3-piece, split body & bonnet for 12" and smaller. Disassembles easily for repair or replacement of internal components

AS

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

Bore

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

DDB

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 be bled easily to avoid over pressure.

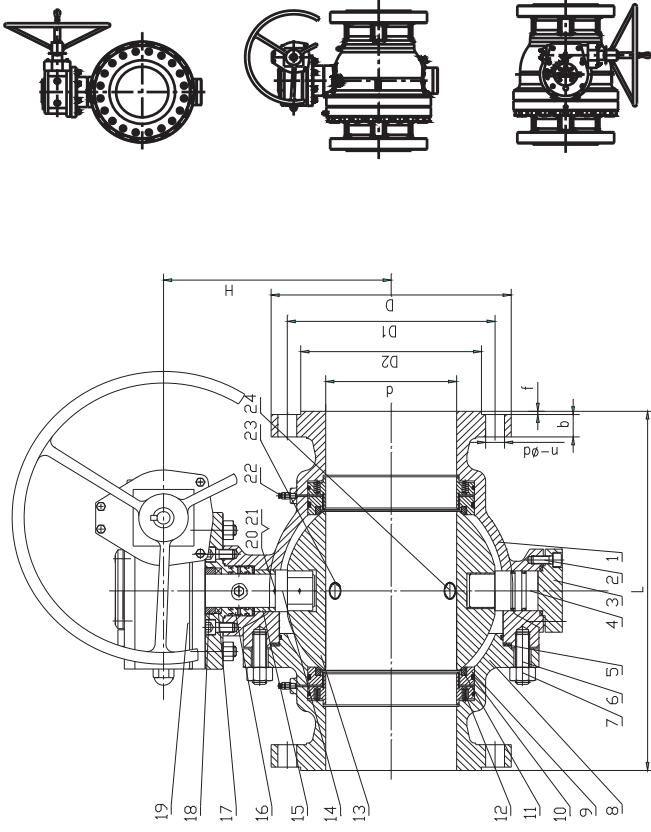
End Connections

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

FR

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.





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 B 16.34
 Face to face: ASME B 16.10
 End flanges: ASME B16.5
 Butt weld ends: ASME B16.25
 Inspection and test: API 598/API 6D

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



List of Materials

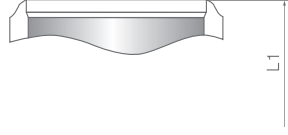
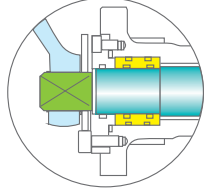
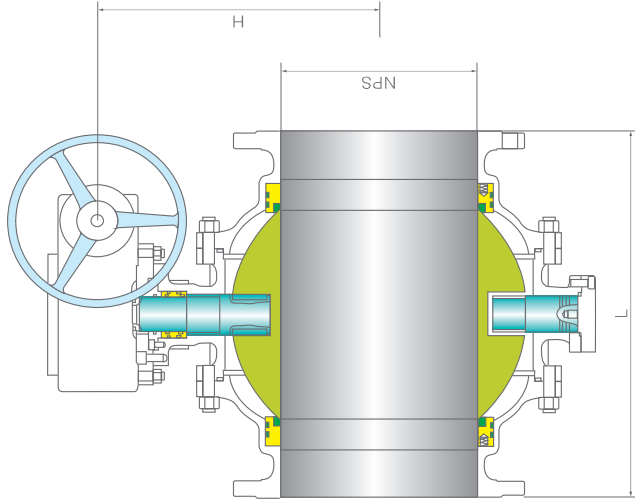
NO	Part name	ASTM Material	
		Carbon steel	18Cr-9Ni-2Mo
1	Body	A216-WCB	A351-CF8M
2	Bonnet	A216-WCB	A351-CF8M
3	ball	A182-F304 1)	A182-F316
4	Stem	A276-304	A276-316
5	Seat	A105+ENP	A182-F316
6	Stem insert		Glass filled PTFE
7	Seat spring	A313-304	Inconel X-750
8	Seat O-ring	NBR	Viton
9	Stem O-ring	NBR	Viton
10	Bonnet gasket	Graphite+304 2)	Graphite+304 2)
11	Bonnet O-ring	NBR	Viton

NO	Part name	ASTM Material		W	H	L (RF)	L1 (BW)	in	mm	in	mm	in	mm	RF	BW	WT (kg)
		Carbon steel	1 1/4C- 1/2Mo													
12	Antistatic spring	A313-304	A313-316													
13	Grounding plunger	A216-WCB	A182-F316													
14	Bonnet stud	A193-B7	A193-B8													
15	Bonnet stud nut	A194-2H	A194-8													
16	Trunnion	A276-304	A276-316													
17	Trunnion bearing	304+PTFE	316+PTFE													
18	Gland flange	A216-WCB	A351-CF8M													
19	Gland bolt	A193-B7	A193-B8													
20	Stop plate	Carbon steel	Carbon steel+Zn													
21	Handle	Carbon steel	Carbon steel													

Note: 1), A 105+ENP optional ; 2), Spiral wound construction.

Dimensional Data

Size	L (RF)		L1 (BW)		H		W		RF	BW	WT (kg)
	in	mm	in	mm	in	mm	in	mm			
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	22.00	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	5.25	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	1640	1640
30	750	51.00	1295	55.00	1397	64.12	1630	32	800	1860	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



List of Materials

NO	Part name	ASTM Material	
		Carbon steel	18Cr-9Ni-2Mo
1	Body	A216-WCB	A351-CF8M
2	Bonnet	A216-WCB	A351-CF8M
3	ball	A182-F304 1)	A182-F304 1)
4	Stem	A276-304	A276-304
5	Seat	A105+ENP	A182-F316
6	Stem insert		Glass filled PTFE
7	Seat spring	A313-304	Inconel X-750
8	Seat O-ring	NBR	Viton
9	Stem O-ring	NBR	Viton
10	Bonnet gasket	Graphite+304 2)	Graphite+316 2)
11	Bonnet O-ring	NBR	Viton

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

Note: 1), A 105+ENP optional ; 2), Spiral wound construction.

Dimensional Data

Size	L (RF)		L1 (BW)		H		W		WT (Kg)	
	in	mm	in	mm	in	mm	in	mm	RF	BW
2	50	8.50	216	216	7.00	177	14	350	19	14
2 1/2	65	9.50	241	241	7.50	190	16	400	24	16
3	80	11.12	283	283	8.25	210	20	500	34	25
4	100	12.00	305	305	9.25	235	20	500	48	34
6	150	15.88	403	403	20.88	530	24	600	101	82
8	200	19.75	502	502	24.62	625	24	600	175	145
10	250	22.38	568	568	25.62	650	24	600	200	155
12	300	25.50	648	648	25.00	635	30.75	780	24	200
14	350	30.00	762	762	31.00	790	32	800	325	238
16	400	33.00	838	838	33.00	838	36.25	920	32	255
18	450	36.00	914	914	36.00	914	38.25	970	32	285
20	500	39.00	991	991	39.00	991	43.38	1100	32	315
24	600	45.00	1143	1143	45.00	1143	45.25	1150	32	375
26	650	49.00	1245	1245	49.00	1245	50.75	1290	32	405
28	700	53.00	1346	1346	53.00	1346	55.12	1400	32	435
30	750	55.00	1397	1397	55.00	1397	64.12	1630	32	465
32	800	60.00	1524	1524	60.00	1524	70.88	1800	32	500
36	900	-	-	-	-	-	-	-	-	-

Applicable Standards

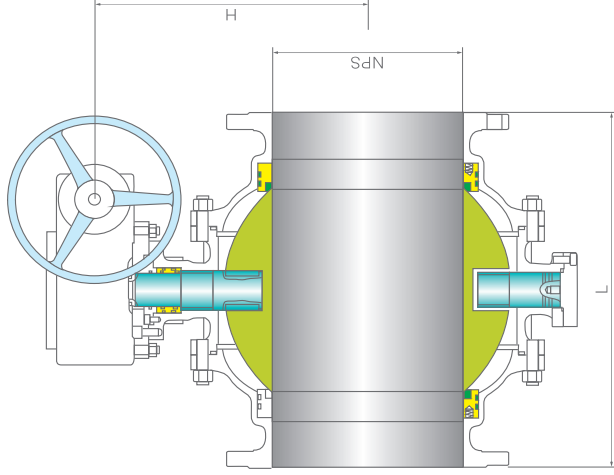
Steel ball valves: API 608/API 6D
 Steel ball valves: ISO 14313
 Fire resistant: API 607
 Anti static: API 608
 Steel valves: ASME B 16.34
 Face to face: ASME B 16.10
 End flanges: ASME B16.5
 Butt weld ends: ASME B16.25
 Inspection and test: API 598/API 6D

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



List of Materials

NO	Part name	ASTM Material	
		Carbon steel	18Cr-9Ni-2Mo
1	Body	A216-WCB	A351-CF8M
2	Bonnet	A216-WCB	A351-CF8M
3	ball	A182-F304 1)	A182-F304 1)
4	Stem	A276-304	A182-F316
5	Seat	A105+ENP	A182-F316
6	Stem insert	Glass filled PTFE	A350-LF2+ENP
7	Seat spring	A313-304	Inconel X-750
8	Seat O-ring	NBR	Viton
9	Stem O-ring	NBR	Viton
10	Bonnet gasket	Graphite+304 2)	Graphite+304 2)
11	Bonnet O-ring	NBR	Viton

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

Note: 1), A 105+ENP optional ; 2), Spiral wound construction.

Dimensional Data

Size	L/L1 (RF/BW)		H		W		L2, WT (RT/JKg)				
	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	1082	43.12	1085	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

Applicable Standards

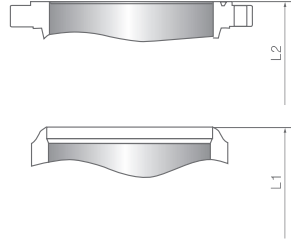
Steel ball valves: API 608/API 6D
 Steel ball valves: ISO 14313
 Fire resistant: API 607
 Anti static: API 608
 Steel valves: ASME B 16.34
 Face to face: ASME B 16.10
 End flanges: ASME B16.5
 Butt weld ends: ASME B16.25
 Inspection and test: API 598/API 6D

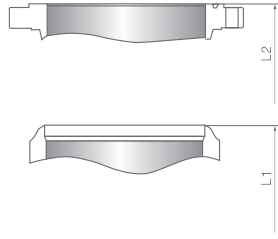
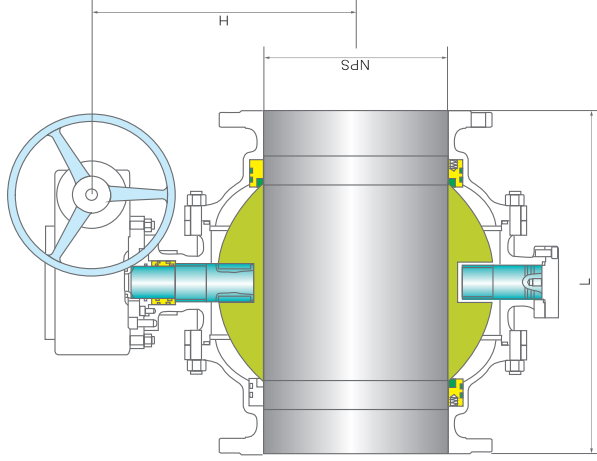
Design Description

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





■ List of Materials

NO	Part name	ASTM Material	
		Carbon steel	18Cr-9Ni-2Mo
1	Body	A216-WCB	Carbon steel
2	Bonnet	A216-WCB	A352-LCB
3	ball	A182-F304 1)	A352-LCB
4	Stem	A276-316	A182-F304 1)
5	Seat	A105+ENP	A276-304
6	Stem insert	A182-F316	A350-LF2+ENP
7	Seat spring	Glass filled PTFE	A313-304
8	Seat O-ring	Inconel X-750	Viton
9	Stem O-ring	NBR	Viton
10	Bonnet gasket	Graphite+304 2)	Graphite+304 2)
11	Bonnet O-ring	NBR	Viton

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

Note: 1), A 105+ENP optional ; 2), Spiral wound construction.

■ Dimensional Data

Size	L/L1 (RF/BW)		L2 (RTJ)		H		W		W/T (kg)		
	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

Fig. No:

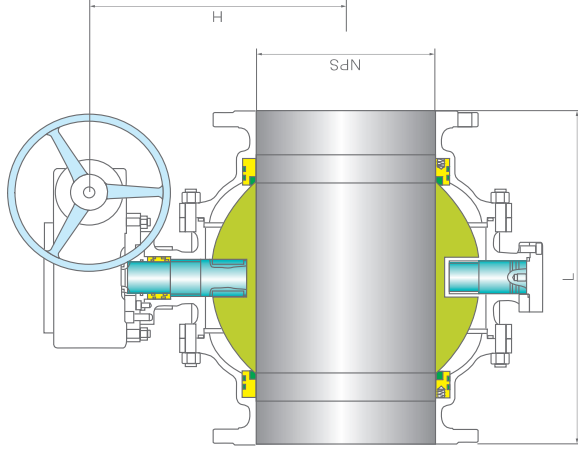
BM9F56A	BM9F59L	BM9F56B
BM9B56A	BM9B59L	BM9B56B
BM9R56A	BM9R59L	BM9R56B

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 B 16.34
 Face to face: ASME B 16.10
 End flanges: ASME B16.5
 Butt weld ends: ASME B16.25
 Inspection and test: API 598/API 6D

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



■ **List of Materials**

NO	Part name	ASTM Material	
		Carbon steel	18Cr-9Ni-2Mo
1	Body	A216-WCB	A351-CF8M
2	Bonnet	A216-WCB	A351-CF8M
3	ball	A182-F304 1)	A182-F304 1)
4	Stem	A276-304	A182-F316
5	Seat	A105+ENP	A182-F316
6	Stem insert		Glass filled PTFE
7	Seat spring	A313-304	Inconel X-750
8	Seat O-ring	NBR	Viton
9	Stem O-ring	NBR	Viton
10	Bonnet gasket	Graphite+304 2)	Graphite+304 2)
11	Bonnet O-ring	NBR	Viton

NO	Part name	ASTM Material		WT (kg)	
		Carbon steel	1 1/4C- 1/2Mo	H	W
12	Antistatic spring	A313-304	A313-316	in	mm
13	Grounding plunger	A216-WCB	A182-F316	in	mm
14	Bonnet stud	A193-B7	A193-B8	in	mm
15	Bonnet stud nut	A194-2H	A194-8	in	mm
16	Trunnion	A276-304	A276-316	in	mm
17	Trunnion bearing	304+PTFE	316+PTFE	in	mm
18	Gland flange	A216-WCB	A351-CF8M	in	mm
19	Gland bolt	A193-B7	A193-B8	in	mm
20	Stop plate	Carbon steel	Carbon steel+Zn	in	mm
21	Handle	Carbon steel	Carbon steel	in	mm

Note: 1), A 105+ENP optional ; 2), Spiral wound construction.

■ **Dimensional Data**

Size	L1 (RF/BW)		L2 (RTJ)		H	W		RF/RTJ	BW	WT (kg)	
	in	mm	in	mm		in	mm				
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	44.50	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

Fig. No:

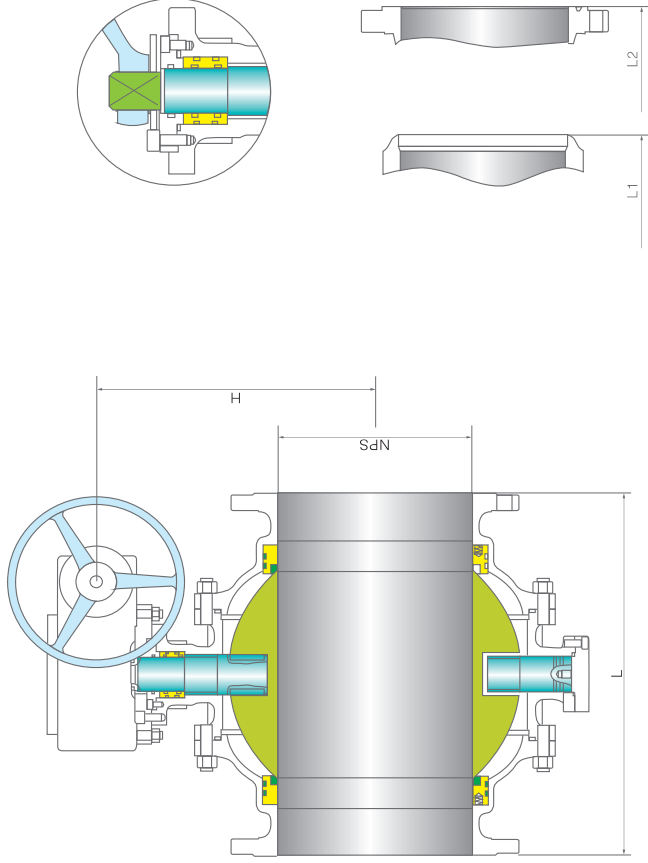
BM15F56A BM15F59L BM15F56B
 BM15B56A BM15B59L BM15B56B
 BM15R56A BM15R59L BM15R56B

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 B 16.34
 Face to face: ASME B 16.10
 End flanges: ASME B16.5
 Butt weld ends: ASME B16.25
 Inspection and test: API 598/API 6D

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



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 B 16.34
 Face to face: ASME B 16.10
 End flanges: ASME B16.5
 Butt weld ends: ASME B16.25
 Inspection and test: API 598/API 6D

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

List of Materials

NO	Part name	ASTM Material	
		Carbon steel	18Cr-9Ni-2Mo
1	Body	A216-WCB	A351-CF8M
2	Bonnet	A216-WCB	A351-CF8M
3	ball	A182-F304 1)	A182-F316
4	Stem	A276-304	A276-316
5	Seat	A105+ENP	A182-F316
6	Stem insert		Glass filled PTFE
7	Seat spring	A313-304	Inconel X-750
8	Seat O-ring	NBR	Viton
9	Stem O-ring	NBR	Viton
10	Bonnet gasket	Graphite+304 2)	Graphite+304 2)
11	Bonnet O-ring	NBR	Viton

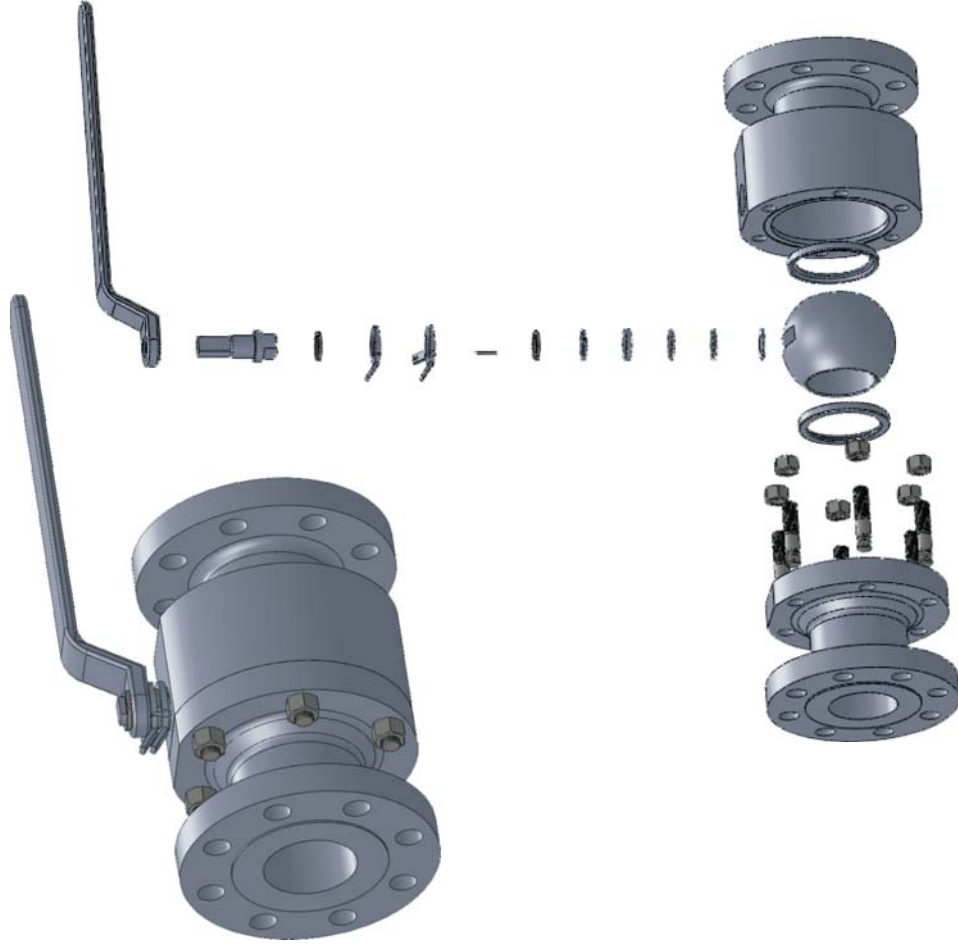
NO	Part name	ASTM Material	
		Carbon steel	1 1/4Cr- 1/2Mo
12	Antistatic spring	A313-304	A313-316
13	Grounding plunger	A216-WCB	A182-F316
14	Bonnet stud	A193-B7	A193-B8
15	Bonnet stud nut	A194-2H	A194-8
16	Trunnion	A276-304	A276-316
17	Trunnion bearing	304+PTFE	316+PTFE
18	Gland flange	A216-WCB	A351-CF8M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

Note: 1), A 105+ENP optional ; 2), Spiral wound construction.

Dimensional Data

Size	L1 (REF/BW)		L2 (RTJ)		H		W		WT (kg)		
	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, CS, FL (Floating)



Design

Flour Valve steel ball valves are designed and manufactured to provide maximum service life and dependability. All ball valves are full ported and meet the design requirements of American Petroleum Institute standard API 608 & API 6D, British Standard BS 5351 and generally conform to American Society of Mechanical Engineers standard ASME B16.34. Valves are available in a complete range of body/bonnet materials and trims.

Range of Materials

Standard body/bonnet materials include nine grades of carbon, low alloy and stainless steels. For special applications they can be supplied in other grades of alloy and stainless steel. There's a full range of trim materials to match any service. Optional packing and gasket materials are available for a full range of service conditions.

Ball Valve, FS, FL (Floating)

Available Modifications For Flour Valve Cast Steel Valve

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

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 flange, RTJ flanged or butt welding end for piping flexibility.

SLB

Self-Lubrication bearing. Non-maintenance, easy operation, low torque and longer life.

FR

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.

BPS

Ball-out proof stem. A Pressure-safe stem shoulder design that protects against failure under excess pressure.

Grease-Jet Joint

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

BORE

Full can also be used with pigs. Full-bore design provides exceptional flow control.

Packing

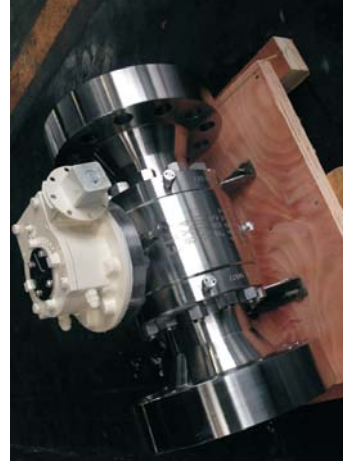
STD Packing adopt high-performance rubber seal ring, STD Packing and TEFLON use situation for smooth pressure. With spring apply high-pressure situation. Graphite packing is used for high temperature applications.

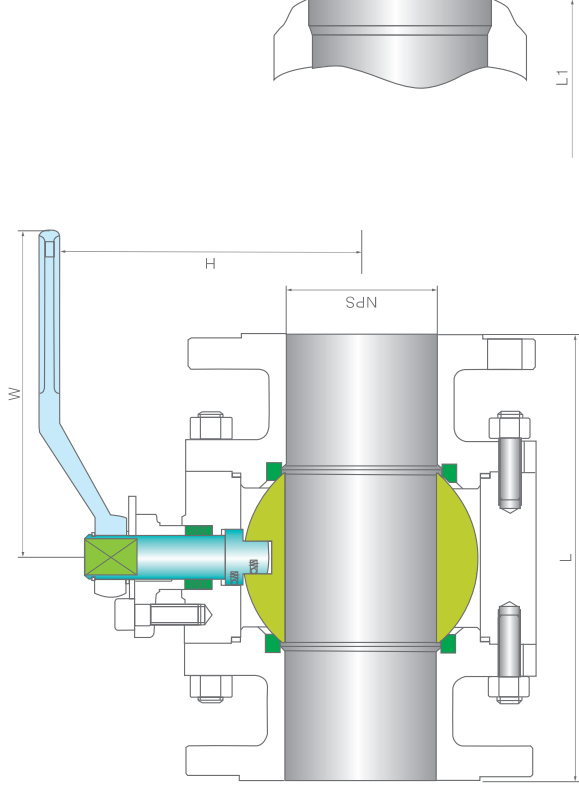
AS

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





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 B 16.34
Face to face: ASME B 16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

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

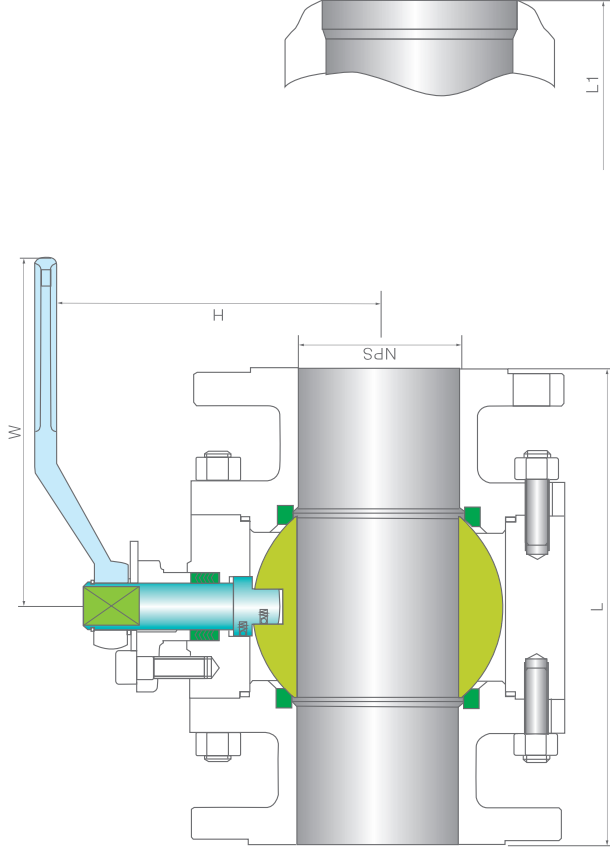
List of Materials

NO	Part name	ASTM Material	
		Carbon steel	18Cr-9Ni-2Mo
1	Body	A105	A182-F316
2	Bonnet	A105	A182-F316
3	Ball	A182-F304 ¹⁾	A182-F304 ¹⁾
4	Stem	AZ76-304	AZ76-316
5	Seat ring		R-PTFE
6	Bonnet gasket	Graphite+304 ²⁾	PTFE
7	Bonnet stud	A193-B7	A193-B8
8	Bonnet stud nut	A194-2H	A194-8
9	Packing		PTFE
10	Gland	A105	A182-F316
11	Gland bolt	A193-B7	A193-B8
12	Stop plate	Carbon steel	Carbon steel+Zn
13	Handle		Carbon steel

Note: 1), A 105+ENP optional ; 2), Spiral wound construction.

Dimensional Data

Size	L (RF)		L1 (BW)		H		W		WT (Kg)		
	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



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 B 16.34
 Face to face: ASME B 16.10
 End flanges: ASME B16.5
 Butt weld ends: ASME B16.25
 Inspection and test: API 598/API 6D

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:

B3F56FA B3F59FL B3F56FB
 B3B56FA B3B59FL B3B56FB
 B3R56FA B3R59FL B3R56FB

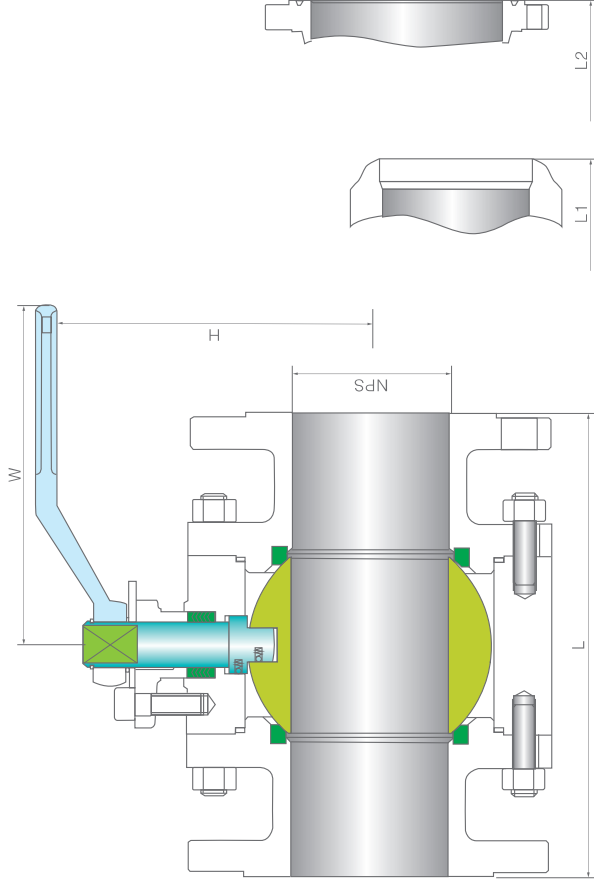
List of Materials

ND	Part name	ASTM Material	
		Carbon steel	18Cr-9Ni-2Mo
1	Body	A105	A182-F316
2	Bonnet	A105	A182-F316
3	Ball	A182-F304 ¹⁾	A182-F316
4	Stem	A276-304	A276-316
5	Seat ring		R-PTFE
6	Bonnet gasket	Graphite+304 ²⁾	PTFE
7	Bonnet stud	A193-B7	A193-B8
8	Bonnet stud nut	A194-2H	A194-8
9	Packing		PTFE
10	Gland	A105	A182-F316
11	Gland bolt	A193-B7	A193-B8
12	Stop plate	Carbon steel	Carbon steel+Zn
13	Handle		Carbon steel

Note: 1), A 105+ENP optional ; 2), Spiral wound construction.

Dimensional Data

Size	L (RF)		L1 (BW)		H		W		WT (Kg)		
	in	mm	in	mm	in	mm	in	mm	RF	BW	
1/2	15	140	5.50	140	2.12	55	8	200	3.5	2.8	
3/4	20	152	6.00	152	2.12	55	8	200	4.6	3.1	
1	25	165	6.50	165	2.50	65	12	300	6.7	4.4	
1 1/2	40	190	7.50	190	3.38	85	12	300	10.5	5.5	
2	50	216	8.50	216	16.00	400	10	250	14.5	8.7	
2 1/2	65	241	9.50	241	16.00	400	12	300	22	13.5	
3	80	283	11.12	283	24.00	600	14	350	29	17	
4	100	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



■ **List of Materials**

ND	Part name	ASTM Material	
		Carbon steel	18Cr-9Ni-2Mo
1	Body	A105	A182-F316
2	Bonnet	A105	A182-F316
3	Ball	A182-F304 ¹⁾	A182-F316
4	Stem	A276-304	A276-316
5	Seat ring		R-PTFE
6	Bonnet gasket	Graphite+304 ²⁾	PTFE
7	Bonnet stud	A193-B7	A193-B8
8	Bonnet stud nut	A194-2H	A194-8
9	Packing		PTFE
10	Gland	A105	A182-F316
11	Gland bolt	A193-B7	A193-B8
12	Stop plate	Carbon steel	Carbon steel+Zn
13	Handle		Carbon steel

Note: 1), A 105+ENP optional ; 2), Spiral wound construction.

■ **Dimensional Data**

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

■ **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 B 16.34
 Face to face: ASME B 16.10
 End flanges: ASME B16.5
 Butt weld ends: ASME B16.25
 Inspection and test: API 598/API 6D

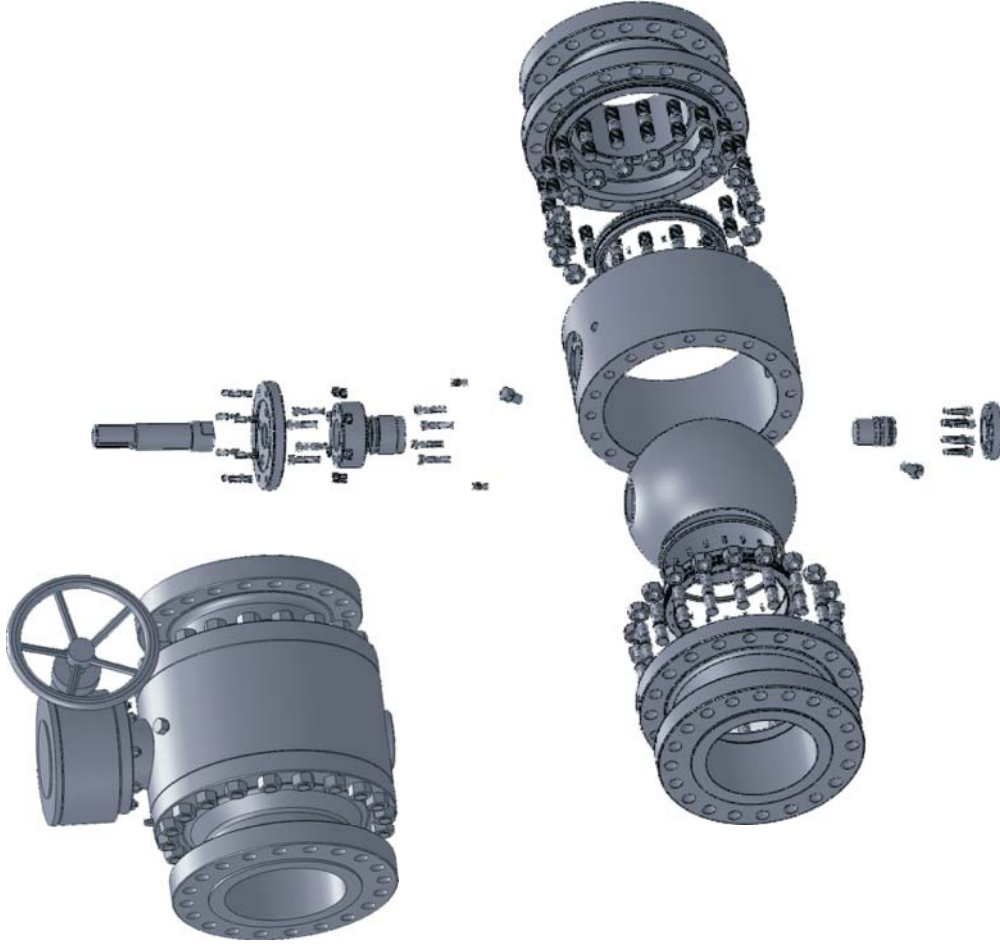
■ **Design Description**

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 B6F59FL B6F56FB
 B6B56FA B6B59FL B6B56FB
 B6R56FA B6R59FL B6R56FB

Ball Valve, FS, TM (Trunnion Mounted)



Design

Flour Valve steel ball valves are designed and manufactured to provide maximum service life and dependability. All ball valves are full ported and meet the design requirements of American Petroleum Institute standard API 608 & API 6D, British Standard BS 5351 and generally conform to American Society of Mechanical Engineers standard ASME B16.34. Valves are available in a complete range of body/bonnet materials and trims.

Range Of Materials

Standard body/bonnet materials include nine grades of carbon, low alloy and stainless steels. For special applications they can be supplied in other grades of alloy and stainless steel. There's a full range of trim materials to match any service. Optional packing and gasket materials are available for a full range of service conditions.

Ball Valve, FS, TM (Trunnion Mounted)

Available Modifications For Flour Valve Forged Steel Valve

Trim changes
End connection modifications
Packing and gasket changes
Operator mounting
Handwheel extensions
Pressure equalizing
Anti static or fire resistant
Customer specified coatings
Weld end bore changes
Oxygen & chlorine cleaning & packaging

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

AS

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.

FR

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.

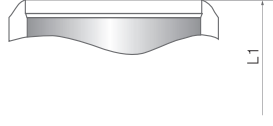
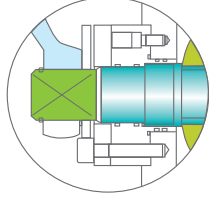
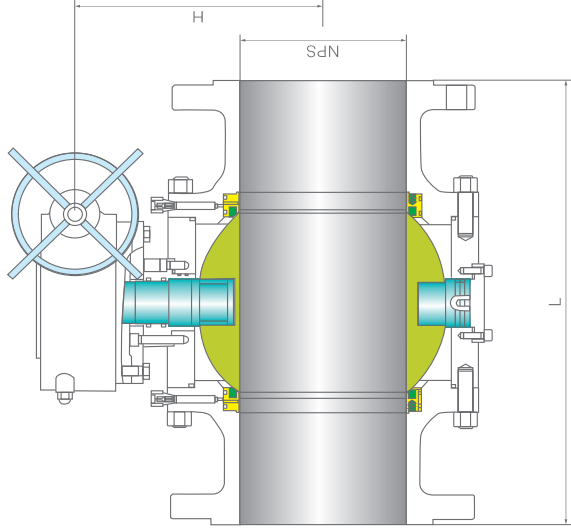
DDB

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

Uses high performance rubber seal ring and spiral wound graphite.





List of Materials

NO	Part name	ASTM Material	
		Carbon steel	18Cr-9Ni-2Mo
1	Body	A105	A350-LF2
2	Bonnet	A105	A350-LF2
3	ball	A182-F304 1)	A182-F304 1)
4	Stem	A276-304	A276-304
5	Seat	A105+ENP	A350-LF2+ENP
6	Stem insert	Glass filled PTFE	
7	Seat spring	A313-304	A313-304
8	Seat O-ring	NBR	Viton
9	Stem O-ring	NBR	Viton
10	Bonnet gasket	Graphite+304 2)	Graphite+304 2)
11	Bonnet O-ring	NBR	Viton

NO	Part name	ASTM Material	
		Carbon steel	1 1/4Cr-1/2Mo
12	Anti static spring	A313-304	Carbon steel
13	Grounding plunger	A182-F304	A313-304
14	Bonnet stud	A193-B7	A182-F304
15	Bonnet stud nut	A194-8	A320-L7
16	Trunnion	A276-304	A194-4
17	Trunnion bearing	304+PTFE	A276-304
18	Gland	A105	304+PTFE
19	Gland bolt	A193-B7	A182-F316
20	Stop plate	Carbon steel	A193-B7
21	Handle	Carbon steel	Carbon steel+Zn

Note: 1), A105+ENP optional ; 2), Spiral wound construction.

Dimensional Data

Size	L (RF)		L1 (BW)		H		W		WT (kg)	
	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW
2	50	1270	8.50	216	4.00	102	16	400	28	25
2 1/2	65	1650	9.50	241	6.00	150	16	400	35	28
3	80	2030	11.12	283	7.00	180	24	600	55	49
4	100	2540	12.00	305	9.25	235	24	600	80	71
6	150	3810	18.00	457	9.88	250	24	600	180	182
8	200	5080	20.50	521	11.00	280	24	600	290	277
10	250	6350	22.00	559	12.62	320	32	800	445	423
12	300	7620	25.00	635	15.38	390	32	800	570	553
14	350	8890	30.00	762	16.50	420	32	800	780	747
16	400	10160	33.00	838	21.88	555	32	800	1520	1481
18	450	11430	36.00	914	23.62	600	32	800	2300	2266
20	500	12700	39.00	991	25.00	635	32	800	2500	2460
24	600	15240	45.00	1143	28.00	710	32	800	3950	3904
26	650	16510	49.00	1245	29.50	750	40	1000	4890	4939
28	700	17800	53.00	1346	31.50	800	40	1000	6360	6362
30	750	19090	55.00	1397	34.00	865	40	1000	7100	8149
32	800	20380	60.00	1524	36.00	915	40	1000	8950	9000
36	900	22860	68.00	1727	38.50	980	40	1000	13500	13570

Fig. No:

BM1F56FA BM1F59FL BM1F56FB
BM1B56FA BM1B59FL BM1B56FB

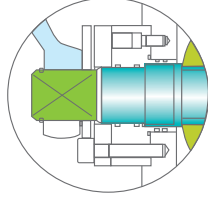
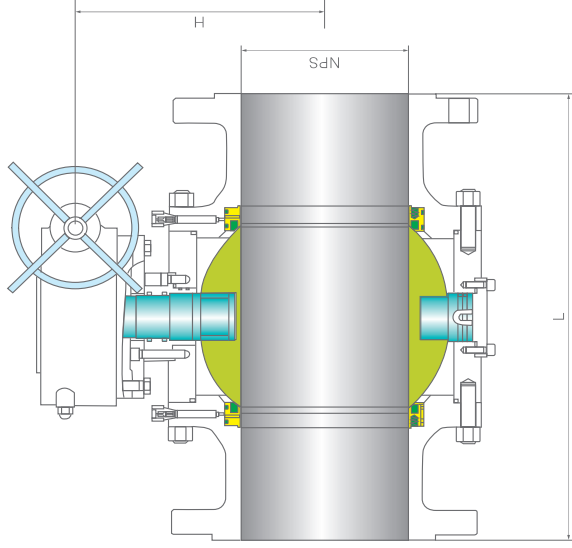


Applicable Standards

Steel ball valves: API 608/API 6D
Steel ball valves: ISO 14313
Fire resistant: API 607
Anti static: API 608
Steel valves: ASME B 16.34
Face to face: ASME B 16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

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



L1

■ **List of Materials**

NO	Part name	ASTM Material	
		Carbon steel	18Cr-9Ni-2Mo
1	Body	A105	A182-F316
2	Bonnet	A105	A182-F316
3	ball	A182-F304 ¹⁾	A182-F316
4	Stem	A276-304	A182-F316
5	Seat	A105+ENP	A182-F316
6	Stem insert		Class filled PTFE
7	Seat spring		Inconel X-750
8	Seat O-ring	NBR	Viton
9	Stem O-ring	NBR	Viton
10	Bonnet gasket	Graphite+304 ²⁾	Graphite+304 ²⁾
11	Bonnet O-ring	NBR	Viton

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

Note: 1), A105+ENP optional; 2), Spiral wound construction.

■ **Dimensional Data**

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

Applicable Standards

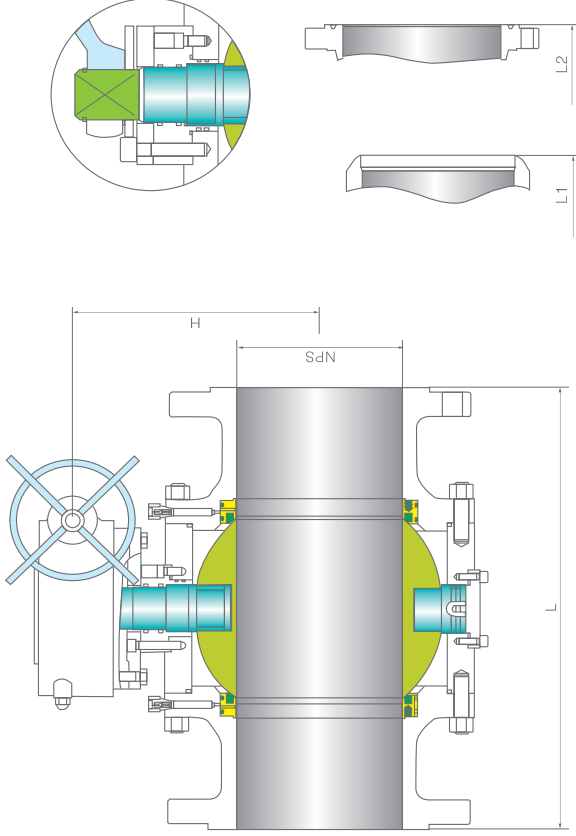
Steel ball valves: API 608/API 6D
 Steel ball valves: ISO 14313
 Fire resistant: API 607
 Anti static: API 608
 Steel valves: ASME B 16.34
 Face to face: ASME B 16.10
 End flanges: ASME B16.5
 Butt weld ends: ASME B16.25
 Inspection and test: API 598/API 6D

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



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 B 16.34
 Face to face: ASME B 16.10
 End flanges: ASME B16.5
 Butt weld ends: ASME B16.25
 Inspection and test: API 598/API 6D

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 BM6R59FL BM6R56FB

List of Materials

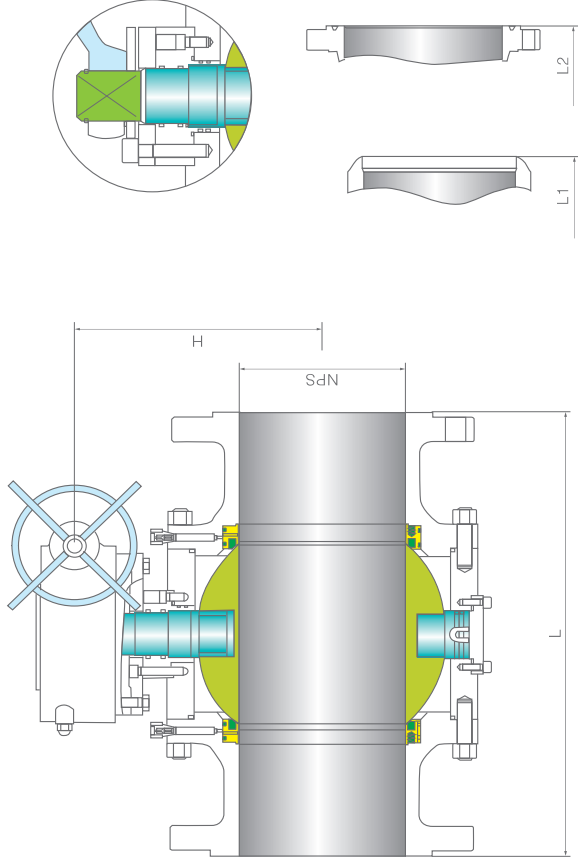
NO	Part name	ASTM Material	
		Carbon steel	18Cr-9Ni-2Mo
1	Body	A105	A182-F316
2	Bonnet	A105	A182-F316
3	ball	A182-F304 ¹⁾	A350-LF2
4	Stem	A276-304	A182-F304 ¹⁾
5	Seat	A105+ENP	A276-316
6	Stem insert		A182-F316
7	Seat spring		Class filled PTFE
8	Seat O-ring	NBR	Inconel X-750
9	Stem O-ring	NBR	Viton
10	Bonnet gasket	Graphite+316 ²⁾	Viton
11	Bonnet O-ring	NBR	Graphite+304 ²⁾
			Viton

NO	Part name	ASTM Material	
		Carbon steel	1 1/4Cr-1/2Mo
12	Anti static spring	A313-304	A313-304
13	Grounding plunger	A182-F304	A182-F316
14	Bonnet stud	A193-B7	A182-F304
15	Bonnet stud nut	A194-8	A193-B8
16	Trunnion	A276-316	A194-4
17	Trunnion bearing	304+PTFE	A276-304
18	Gland	A105	316+PTFE
19	Gland bolt	A193-B7	A182-F316
20	Stop plate	Carbon steel	A193-B8
21	Handle	Carbon steel	Carbon steel+Zn

Note: 1), A 105+ENP optional ; 2), Spiral wound construction.

Dimensional Data

Size	L/L1 (RP/BW)		L2 (RTJ)		H		W		WT (kg)		
	in	mm	in	mm	in	mm	in	mm	RF/RTJ	BW	
2	50	1150	292	1162	295	650	165	16	400	34	27
2 1/2	65	1300	330	1312	333	700	180	24	600	53	43
3	80	1400	356	1412	359	788	200	24	600	65	49
4	100	1700	432	1712	435	1100	280	24	600	125	95
6	150	2200	559	2212	562	1225	310	32	800	245	188
8	200	2600	680	2612	684	1400	355	32	800	505	418
10	250	3100	787	3112	791	1612	410	32	800	640	485
12	300	3300	838	3312	841	1800	455	32	800	910	740
14	350	3500	869	3512	892	1925	490	32	800	1380	1185
16	400	3900	991	3912	994	2100	535	32	800	2250	1980
18	450	4300	1082	4312	1095	2488	630	40	1000	3400	3050
20	500	4700	1194	4725	1200	2562	650	40	1000	3850	3406
24	600	5500	1397	5538	1407	3012	765	40	1000	4900	4275
26	650	5700	1448	5750	1461	3188	810	40	1000	6700	6025
28	700	6100	1549	6150	1562	3462	880	40	1000	8300	7590



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 B 16.34
 Face to face: ASME B 16.10
 End flanges: ASME B16.5
 Butt weld ends: ASME B16.25
 Inspection and test: API 598/API 6D

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

List of Materials

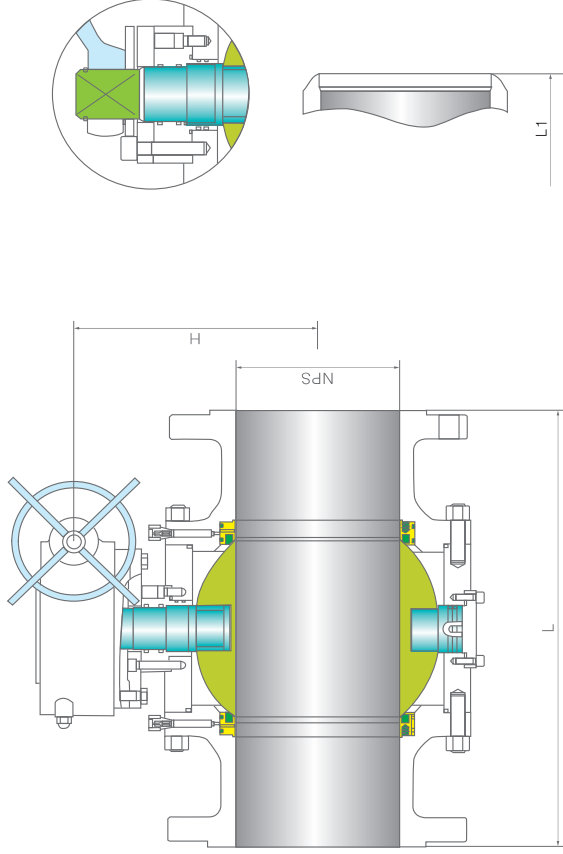
NO	Part name	ASTM Material	
		Carbon steel	18Cr-9Ni-2Mo
1	Body	A105	A350-LF2
2	Bonnet	A105	A350-LF2
3	ball	A182-F304 ¹⁾	A182-F304 ¹⁾
4	Stem	A276-316	A276-304
5	Seat	A105+ENP	A350-LF2+ENP
6	Stem insert	Class filled PTFE	
7	Seat spring	A313-304	A313-304
8	Seat O-ring	NBR	Viton
9	Stem O-ring	NBR	Viton
10	Bonnet gasket	Graphite+316 ²⁾	Graphite+304 ²⁾
11	Bonnet O-ring	NBR	Viton

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

Note: 1), A105+ENP optional ; 2), Spiral wound construction.

Dimensional Data

Size	L/L1 (R/F/BW)		L2 (R/T/J)		H		W		W/T (kg)		
	in	mm	in	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



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 B 16.34
Face to face: ASME B 16.10
End flanges: ASME B16.5
Butt weld ends: ASME B16.25
Inspection and test: API 598/API 6D

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

List of Materials

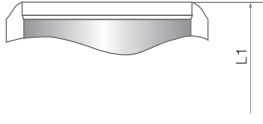
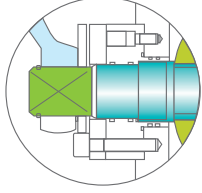
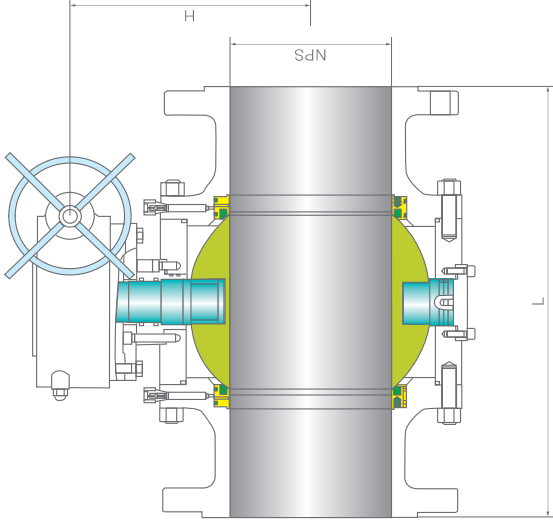
NO	Part name	ASTM Material	
		Carbon steel	18Cr-9Ni-2Mo
1	Body	A105	A350-LF2
2	Bonnet	A105	A350-LF2
3	ball	A182-F304 ¹⁾	A182-F304 ¹⁾
4	Stem	A276-316	A276-304
5	Seat	A105+ENP	A350-LF2+ENP
6	Stem insert	Class filled PTFE	
7	Seat spring	A313-304	A313-304
8	Seat O-ring	NBR	Viton
9	Stem O-ring	NBR	Viton
10	Bonnet gasket	Graphite+304 ²⁾	Graphite+304 ²⁾
11	Bonnet O-ring	NBR	Viton

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

Note: 1), A105+ENP optional ; 2), Spiral wound construction.

Dimensional Data

Size	L1/L1		L2		H		W		WT		
	in	mm	in	mm	in	mm	in	mm	REF RTJ	(kg)	
2	50	14.50	388	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	55.38	1407	27.12	690	40	1000	4650	3930



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 B 16.34
 Face to face: ASME B 16.10
 End flanges: ASME B16.5
 Butt weld ends: ASME B16.25
 Inspection and test: API 598/API 6D

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:

BM25F56FA BM25F59FL BM25F56FB
 BM25B56FA BM25B59FL BM25B56FB
 BM25R56FA BM25R59FL BM25R56FB

List of Materials

NO	Part name	ASTM Material	
		Carbon steel	18Cr-9Ni-2Mo
1	Body	A105	A350-LF2
2	Bonnet	A105	A350-LF2
3	ball	A182-F304 ¹⁾	A182-F304 ¹⁾
4	Stem	A276-316	A276-304
5	Seat	A105+ENP	A350-LF2+ENP
6	Stem insert	Class filled PTFE	
7	Seat spring	A313-304	A313-304
8	Seat O-ring	NBR	Viton
9	Stem O-ring	NBR	Viton
10	Bonnet gasket	Graphite+316 ²⁾	Graphite+304 ²⁾
11	Bonnet O-ring	NBR	Viton

NO	Part name	ASTM Material		W		H		L ₂		L _{1/L1}		WT			
		Carbon steel	1 1/4Cr-1/2Mo	in	mm	in	mm	in	mm	in	mm	RF	RJ	kg	BW
12	Antistatic spring	A313-304	A313-316												
13	Grounding plunger	A182-F304	A182-F316												
14	Bonnet stud	A193-B7	A193-B8												
15	Bonnet stud nut	A194-2H	A194-8												
16	Trunnion	A276-316	A276-316												
17	Trunnion bearing	304+PTFE	316+PTFE												
18	Gland	A105	A182-F316												
19	Gland bolt	A193-B7	A193-B8												
20	Stop plate	Carbon steel	Carbon steel+Zn												
21	Handle	Carbon steel	Carbon steel												

Note: 1), A105+ENP optional ; 2), Spiral wound construction.

Dimensional Data

Size	L _{1/L1}		L ₂		H		W		WT		
	in	mm	in	mm	in	mm	in	mm	RF	RJ	
2	50	17.75	451	17.88	454	190	7.50	24	600	68	54
2 1/2	65	20.00	508	21.25	540	230	9.00	32	800	95	74
3	80	22.75	578	23.00	584	280	11.00	32	800	120	91
4	100	26.50	673	26.88	683	360	14.12	32	800	185	122
6	150	36.00	914	36.50	927	400	15.75	32	800	675	555
8	200	40.25	1022	40.88	1038	480	18.88	40	1000	1100	918
10	250	50.00	1270	50.88	1292	520	20.50	40	1000	1650	1355
12	300	56.00	1422	56.88	1445	670	26.38	40	1000	2300	2950
14	350	-	-	-	-	-	-	-	-	-	-
16	400	-	-	-	-	-	-	-	-	-	-



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