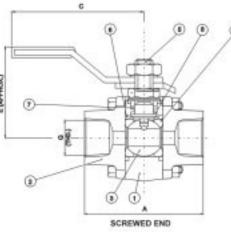
Reduced Bore Ball Valves

Three-piece design

Standard series

This 3-piece Ball Valve is the most easily on-line maintainable in its class. By removing three body connector bolts and loosening the fourth, the body can be swung away using the fourth bolt as the fulcrum, to carry out any installation or maintenance operation on the valve, thus reducing downtime. This valve can be offered in a wide variety of body and seat combinations.

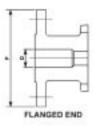


Fire-safe series

This 3-piece fire-safe design Ball Valve features a secondary metal seat which renders the valve fire-safe. When the seat is totally sublimated in a fire, the ball moves and rests against the lip, forming a metal-to-metal seat, thus ensuring leak-tightness.









Dimensional Details

Screwed/Socket-weld end (in mm, unless specified)

Valve Size	A	С	D	E	F	G	Approx. Weight (kg)
8	65	122	14.6 / 14.2	45	9.7	¹ /4"	0.6
10	65	122	18.0 / 17.6	45	9.7	³ /8"	0.6
15	67	122	22.2 / 21.8	45	9.7	¹ /2"	0.6
20	73	122	27.6 / 27.1	48	12.7	³ /4"	0.8
25	95	149	34.3 / 33.8	59	12.7	1"	1.6
32	107	149	43.1 / 42.7	65	12.7	1 ¹ /4"	2.5
40	116	181	49.2 / 48.7	75	12.7	1 ¹ /2"	3.3
50	128	181	61.7 / 61.1	80	15.9	2"	4.1



Dimensional Details - Flanged end (in mm, unless specified)

Valve	С	D	Е	С	lass 15	50	CI	ass 30	0	Cl	ass 60	0	Appro	ox. Weigł	nt (kg)
Size	C	U	E	А	F	G	Α	F	G	Α	F	G	Cl. 150	Cl. 300	Cl. 600
15	152	12.7	90	108	89	11.1	140	96	15	165	96	22	1.8	2.2	4.5
20	152	19.1	98	117	99	12.2	153	118	17	191	118	24	2.3	3.2	6.3
25	177	25.4	102	127	108	11.1	165	124	19	216	124	26	3.1	4.5	9.1
40	202	38.1	121	165	127	14.3	191	156	22	241	156	30	6.4	8.7	15.4
50	202	50.8	126	178	154	15.9	216	165	23	292	165	33	9.0	10.8	21.6



			Material Specification	on				
SI. No.	Part	Carbon Steel	Stainless Steel	Carbon Steel	Stainless Steel			
1 2	Body Body Connector	ASTM A105 or ASTM A216 Gr. WCB	ASTM A351 Gr. CF8M	ASTM A105	ASTM A351 Gr. CF8M			
3	Ball	ASTM A351 Gr	. CF 8M	8M ASTM A35				
4	Seat	PTF	E	Р	TFE			
5	Stem	AISI 3	16	AIS	SI 316			
6	Body Seal	PTF	E	Graphite				
7	Gland Packing	35% Carbon	filled PTFE	Graphite				
8	Stem Seal	35% Carbon	-filled PTFE	35% Carbon-filled PTFE				

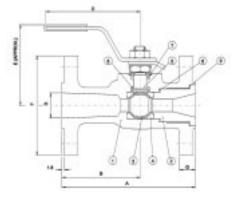
Specifications

Specifications			ure Testing	
Max. cold working pressure	69kg/cm ² for screwed/socket- weld end valves with PTFE seat 103kg/cm ² for screwed/socket- weld end valves with special- filled PTFE seat As per flange rating for flanged	Shell	essures Ends Screwed/Socket weld (air) Flanged 150 (hydrostatic) Flanged 300 (hydrostatic) Flanged 600 (hydrostatic)	kg/cm ² (psi) 5.6 (80) 31.5 (450) 79.0 (1125) 154.0 (2225)
Valve design	valves BS 5159 BS 5351	Seat	All valves (air)	5.6 (80)
Fire Test Testing Face-to-face dimensions	API 607 4th edition API 598 for flanged valves ASME B16.10 for flanged valves and <i>MMKE</i> Standard for screwed/socket-weld end valves	NOTE	Pressure testing as per BS 675 request. Shell hydrostatic test can be do and socket-weld end valves on Shell hydrostatic test can be do 800 rating for both versions on	one for screwed request. one as per Class

Reduced Bore Ball Valves Single-piece and two-piece design

Fire-safe series

These single-piece Ball Valves are high performance valves which come with a one-piece integrally flanged body, in sizes of up to 200mm. complement the single-piece design in 250mm This design offers the unique advantage of eliminating the possibility of external leakage to the atmosphere through bolted body joints. These environment-friendly and high-integrity valves are preferred in critical applications where the media is expensive, volatile or toxic, and where external leakage or wastage is unacceptable.

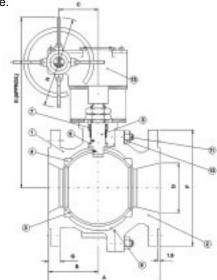


Dimensional Details - Flanged end (in mm, unless specified)

Single-piece (Class 150)

Valve Size	A	В	с	D	E	F	G	Approx. Weight (kg)
15	108	62	152	12.7	89	89	11.5	1.5
20	117	68	152	19.1	91	99	11.5	2.0
25	127	70	177	25.4	103	108	11.5	3.0
40	165	78	202	38.1	118	127	14.5	5.0
50	178	107	202	50.8	131	154	16.0	8.1
80	203	120	546	76.2	169	191	19.5	17.0
100	229	130	546 ⁻	102.01	82	229	24.0	27.8
150	267	138	762 ⁻	150.82	75	280	25.4	47.0
200	292	148	-	203.0	-	343	28.4	115.0

The 2-piece design fire-safe design Ball Valves size.



Single-piece (Class 300)

Approx. Weight (kg) 2.2
2.2
3.2
4.5
8.7
5 10.8
24.1
37.5
67.0
167.0

Two-piece (Class 150)

Valve Size	A	В	С	D	E	F	G	Н	Approx. Weight (kg)
250	330	165	148	254	686	406	30.5	578	210

Two-piece (Class 300)

Valve Size	A	В	С	D	Е	F	G	Н	Approx. Weight (kg)
250	457	229	148	254	686	445	48	578	280





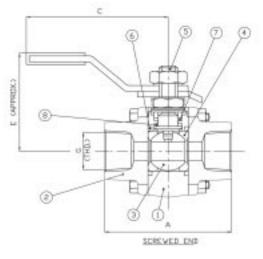
		Material Specification	
SI. No.	Part	Carbon Steel	Stainless Steel
1	Body	ASTM A216 Gr. WCB	ASTM A351 Gr. CF8M
2	Insert	ASTM A105 or ASTM A216 Gr. WCB	AISI 316 or ASTM A351 Gr. CF8M
3	Ball	ASTM A351 Gr. CF 8M	ASTM A351 Gr. CF8M
4	Seat	PTFE	PTFE
5	Stem	AISI 316	AISI 316
6	Body Seal	PTFE	PTFE
7	Gland Packing	Graphite	Graphite
8	Stem Seal	35% Carbon-filled PTFE	35% Carbon-filled PTFE
9	Insert Seal	15mm - 40mm, 200mm : Metal-to-metal 50mm - 150mm : Graphite	15mm - 40mm, 200mm : Metal-to-metal 50mm - 150mm : Graphite

Specifications Valve design Fire test Pressure testing	BS 5351 API 607, 4th edition API 598 (testing as per BS6755 Part I on request)		ure Testing <u>essures</u> Ends Class 150 (hydrostatic) Class 300 (hydrostatic)	kg/cm 31.5 79.0((450)
Face-to-face dimensions End flange dimensions	ASME B16.10 ASME B16.5 Class 150 RF and Class 300 RF	Seat	Class 150 (air) Class 300 (air)	5.6 5.6	(80) (80)

Full Bore Ball Valves Three-piece design

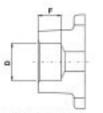
Standard series

This 3-piece Ball Valve is the most easily on-line maintainable in its class. By removing three body connector bolts and loosening the fourth, the body can be swung away using the fourth bolt as the fulcrum, to carry out any installation or maintenance operation on the valve, thus reducing downtime. This valve can be offered in a wide variety of body and seat combinations.



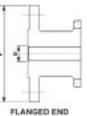
Fire-safe series

This 3-piece fire-safe design Ball Valve features a secondary metal seat which renders the valve fire-safe. When the seat is totally sublimated in a fire, the ball moves and rests against the lip, forming a metal-to-metal seat, thus ensuring leak-tightness.











Dimensional Details Screwed/Socket-weld end (in mm, unless specified)

Valve Size	A	С	D	Е	F	G	Approx. Weight (kg)
15	73	122	22.2 / 21.8	48	9.7	¹ /2"	0.8
20	95	149	27.6 / 27.1	59	12.7	³ /4"	1.6
25	116	181	34.3 / 33.8	75	12.7	1"	3.3
40	128	181	49.2 / 48.7	80	12.7	1 ¹ /2"	4.1

Dimensional Details

Flanged end (in mm, unless specified)

Valve	C D E		Class 150			CI	Class 300			Class 600			Approx. Weight (kg)		
Size	C	U	E	А	F	G	A	F	G	Α	F	G	Cl. 150	CI. 300	Cl. 600
15	152	12.7	98	108	89	11.1	140	96	15	165	96	22	2.3	3.2	6.3
20	177	19.1	102	117	99	12.2	153	118	17	191	118	24	3.1	4.5	9.1
25	202	25.4	121	127	108	11.1	165	124	19	216	124	26	6.4	8.7	15.4
40	202	38.1	126	165	127	14.3	191	156	22	241	156	30	9.0	10.8	21.6



Material Specification

SI. No.	Part	Carbon Steel	Stainless Steel	Carbon Steel	Stainless Steel	
1 2	Body Body Connector	ASTM A105 or ASTM A216 Gr. WCB	ASTM A351 Gr. CF8M	ASTM A105	ASTM A351 Gr. CF8M	
3	Ball	ASTM A351 Gr	CF8M	ASTM A351 Gr. CF8M		
4	Seat	PTFE		PTFE		
5	Stem	AISI 316		AISI 316		
6	Body Seal	PTFE		Graphite		
7	Gland Packing	35% Carbon-filled PTFE		Graphite		
8	Stem Seal	35% Carbon-filled PTFE		35% Carbon-filled PTFE		

Specifications			Pressure Testing			
Max. cold working pressure	69kg/cm ² for screwed/socket-weld	Test pr essur es				
	end valves with PTFE seat		Ends	kg/cm² (psi)		
	103kg/cm ² for screwed/socket-weld	Shell t	Scr./Socket weld (air)	5.6 (80)		
	end valves with special-filled PTFE sea		Flanged 150 (hydrostatic) 31.5 (450			
	As per flange rating for flanged valves		Flanged 300 (hydrostatic)	79.0 (1125)		
Valve design BS 5159			Flanged 600 (hydrostatic)	154.0 (2225)		
	BS 5351	Seat	All valves (air)	5.6 (80)		
Fire Test	st API 607 4th edition		All valves (all)	0.0 (00)		
Testing	API 598 for flanged valves		Pressure testing as per BS 6755 available on			
Face-to-face dimensions	ASME B16.10 for flanged valves and		request.			
	MMKE Standard for screwed/socket-we end valves	eld	Shell hydrostatic test can be done for screwed and socket-weld end valves on request.			
			Shall hydrostatic test can be done as per Class 800			

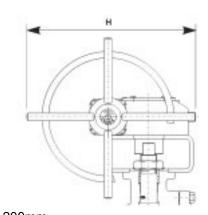
Shell hydrostatic test can be done as per Class 800 rating for both versions on request.

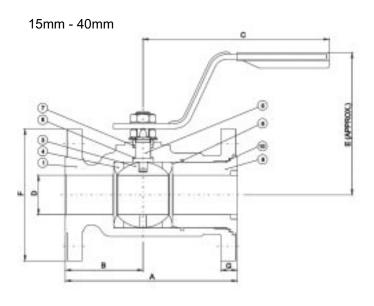
Full Bore Ball Valves

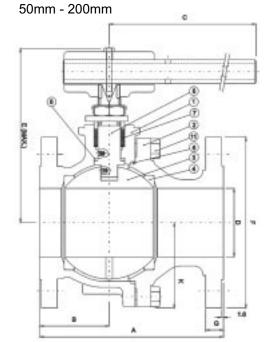
Single-piece / Two-piece design

Fire-safe Series (Class 150 & Class 300)

These high performance full bore ball valves come in single-piece design (in sizes of 15 - 40mm) as well as in two-piece design (in sizes of 50 -200mm). Advanced features such as fire safety, antistatic capability, cavity relief and blow-out proof stem are built into these valves. They are supplied with an integral actuator mounting flange with drilled and tapped holes conforming to ISO 5211.







Dimensional Details	(in mm, unless specified)
Class 150	

Valve Size	А	В	С	D	E	н	Approx. Weight (kg)
15	108	46	163	12.7	97	-	1.8
20	117	50	168	19.1	118	I	2.5
25	127	56	168	25.4	123	-	3.4
40	165	75	193	38.1	139	-	8.5
50	178	84	193	50.8	150	-	12.2
65	191	77	402	64.1	190	-	18.5
80	203	99	256	76.2	155	-	23.0
100	229	108	402 ⁻	101.61	96	-	42.6
150	394	179	1004	150.8	315	-	90.0
200	457	206	-	203.0	690	578	170.0

Class 300							
Valve Size	A	В	С	D	E	Н	Approx. Weight (kg)
15	140	78	163	12.7	97	-	2.5
20	153	85	168	19.1	118	I	3.8
25	165	94	168	25.4	123	-	5.1
40	191	100	193	38.1	139	-	9.5
50	216	84	193	50.8	150	-	15.2
65	241	83	402	64.1	190	-	26.0
80	283	99	402	76.2	205	-	32.6
100	305	122	610 ⁻	101.62	40	-	59.0
150	403	179	-	150.8	645	578	121.0
200	502	231	-	203.0	745	578	210.0



Material Specification

SI. No.	Part	Carbon Steel	Stainless Steel
1	Body	ASTM A216 Gr. WCB	ASTM A351 Gr. CF8M
2	Body Connector	ASTM A216 Gr. WCB	ASTM A351 Gr. CF8M
3	Ball	ASTM A351 Gr. CF 8M	ASTM A351 Gr. CF8M
4	Seat	PTFE	PTFE
5	Stem	AISI 316	AISI 316
6	Body Seal	Graphite	Graphite
7	Gland Packing	Graphite	Graphite
8	Stem Seal	25% Glass-filled PTFE	25% Glass-filled PTFE
9	Insert	ASTM A105 / ASTM A216 Gr. WCB / IS1875 C	2 AISI 316 or ASTM A351 Gr. CF8M
10	Insert gasket	Graphite	Graphite

kg/cm² (psi) 31.5 (450) 79.0 (1125)

> (80) (80)

5.6 5.6

single-piece valves up to 40mm ; two-piece valves from 50mm onwards.

Specifications Valve design Fire test	BS 5351 API 607, 4th edition	Pressu <u>Test pre</u> Shell	Ends
Pressure testing	API 598 (testing as per BS6755 Part I on request)	Shell	Class 150 (hydrostatic) Class 300 (hydrostatic)
Face-to-face dimensions	ASME B16.10 (compliance to BS 2080 can be offered on request)	Seat	Class 150 (air) Class 300 (air)
End flange dimensions	ASME B16.5 Class 150 RF and Class 300 RF		