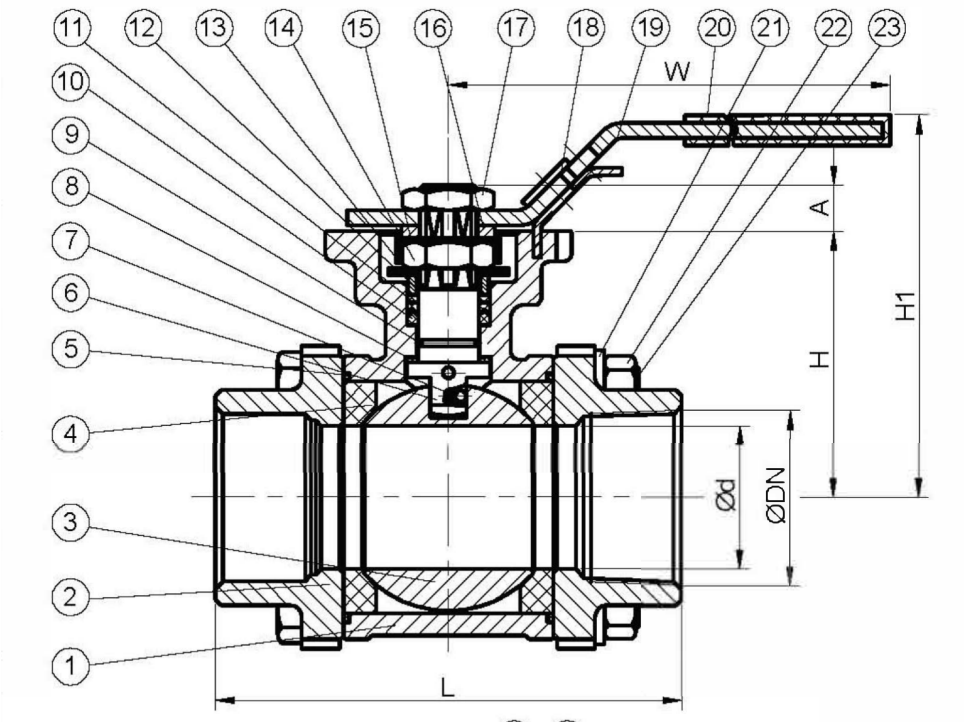
3-Piece Ball Valve

Full Bore · 1000 WOG · Direct Mount Pad · 1/4" – 4"

A heavy-duty three-piece ball valve for general industrial, process and utility service. The bolted body design allows the centre section to be swung out of the line so that seats, seals and the ball can be replaced without breaking pipework or removing welded end connections — making it the natural choice where the valve is welded in, or where maintenance downtime has to be kept short. Available in stainless or carbon steel with screwed, socket weld or butt weld ends, and supplied with an integral direct-mount pad for actuation.



SECTIONAL ASSEMBLY — ITEM NUMBERS REFER TO PAGE 2

Technical Data

Valve type	Three-piece body, floating ball, full bore
Size range	1/4" to 4" (DN8 to DN100)
Pressure rating	1000 WOG — 1000 psi / 69 bar cold working pressure
Body & end caps	CF8M (316), CF8 (304) or WCB carbon steel
Ball	CF8M (316) or CF8 (304), solid, mirror polished
Stem	SUS316 or SUS304, blow-out proof, anti-static device
Seats & body seals	TFM1600 standard; PTFE or RTFE optional
Stem seals	TFM1600 / PTFE / RTFE V-ring packing, FKM (Viton) O-ring
Stem loading	Belleville washer live-loaded gland
End connections	Screwed NPT, BSP, PT or PF; socket weld and butt weld ends available — see dimension tables
Operation	Lockable lever handle with stop bolt and stop-lock cap. 3" and 4" supplied with pipe handle and cast handle adapter
Actuator mounting	Integral direct-mount pad, two bolt circles (4 × ØU1 on ØE1 PCD, 4 × ØU2 on ØE2 PCD)
Temperature range*	–20 °C to +180 °C typical for TFM1600 / PTFE seats
Reference drawing	9130-XXXX-0014641 · BADNXXXXBGFC222-P

* Typical value for the seat material stated. Confirm against the pressure/temperature chart for the selected seat and body combination before specifying.

Key Features

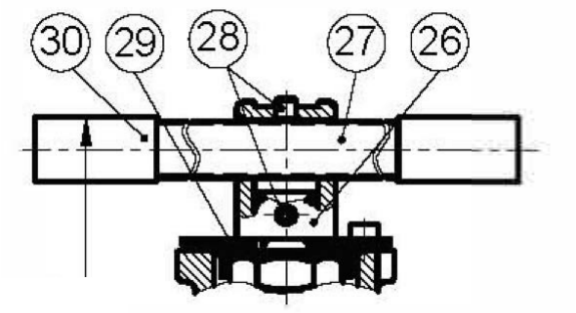
- **Three-piece swing-out body** — the centre section lifts out for seat and seal replacement without cutting the valve out of the line.
- **Full bore** throughout, giving unrestricted flow, low pressure drop and pigging capability.
- **Investment-cast body** in 316 or 304 stainless steel, or WCB carbon steel for general service.
- **TFM1600 seats as standard** — improved creep resistance and wider temperature capability than conventional PTFE.
- **Blow-out proof stem** fitted from inside the body, with an anti-static device maintaining continuity between ball, stem and body.
- **Live-loaded gland** using a Belleville washer to compensate for packing wear and thermal cycling.
- **Lockable handle** with stop bolt and stop-lock cap for lock-open or lock-closed duty.
- **Direct-mount pad** with two bolt circles for straightforward pneumatic or electric actuation — no bracket required on most sizes.

Materials of Construction

NO.	PART	MATERIAL	NO.	PART	MATERIAL
1	Body	CF8M / CF8 / WCB	16	Handle gland	SUS304
2	End cap	CF8M / CF8 / WCB	17	Handle nut	A194-8
3	Ball	CF8M / CF8	18	Lock device	SUS304
4	Ball seat	TFM1600 / PTFE / RTFE	19	Handle	SUS304
5	Body gasket	TFM1600 / PTFE / RTFE	20	Handle sleeve	Vinyl plastic
6	Stem	SUS316 / SUS304	21	Bolt washer	SUS304
7	Anti-static device	SUS316 / SUS304	22	Bolt nut	A194-8
8	Thrust washer	TFM1600 / PTFE / RTFE	23	Body bolting	A193-B8
9	O-ring	FKM (Viton)	24	Stop bolt	A193-B8
10	V-ring stem packing	TFM1600 / PTFE / RTFE	25	Bolt nut	A194-8
11	Bushing	50% SS + 50% PTFE	26	Handle adapter †	A351-CF8
12	Gland	SUS316	27	Pipe handle †	SUS304
13	Belleville washer	SUS301	28	Set screw †	A193-B8
14	Stem nut	A194-8	29	Triangle stopper †	SUS304
15	Stop-lock cap	SUS304	30	Handle sleeve †	Vinyl plastic

† Items 26 to 30 apply to 3" and 4" valves only, which are supplied with a pipe handle and cast handle adapter in place of the pressed lever. Alternative seat, seal and body material combinations are available on request.

3" – 4" Handle Arrangement



The 3" and 4" sizes are fitted with a cast handle adapter (26) and stainless pipe handle (27), secured by set screws (28) and located by a triangle stopper (29) that provides the 90° open and closed stops. The vinyl handle sleeve (30) is retained on the pipe handle.

All other components are common with the smaller sizes.

Dimensions All dimensions in millimetres

Table 1 — Bore, face to face and envelope

SIZE	DN	Ød	L screwed	LB butt weld	LE ext. BW	H	H1	W	A
1/4"	DN8	10.6	75.0	70.0	165.0	42.0	69.0	145.0	9.0
3/8"	DN10	12.7	75.0	70.0	165.0	42.0	69.0	145.0	9.0
1/2"	DN15	15.0	75.0	75.0	165.0	42.0	69.0	145.0	9.0
3/4"	DN20	20.0	80.0	90.0	190.0	48.5	76.0	145.0	9.0
1"	DN25	25.0	90.0	100.0	216.0	58.5	89.0	175.0	11.0
1-1/4"	DN32	32.0	110.0	110.0	229.0	63.0	93.5	175.0	11.0
1-1/2"	DN40	38.0	120.0	125.0	241.0	71.3	103.0	190.0	14.0
2"	DN50	50.0	140.0	150.0	292.0	78.2	109.0	190.0	14.0
2-1/2"	DN65	63.5	185.0	190.0	330.0	100.0	147.0	265.0	17.0
3"	DN80	76.0	205.0	220.0	356.0	108.5	173.0	300.0	17.0
4"	DN100	100.0	240.0	270.0	432.0	140.0	205.0	400.0	22.0

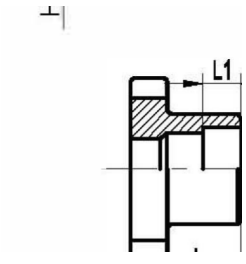
Table 2 — Actuator mounting pad and weld ends

SIZE	ØK stem thread	G	ØE1	4-ØU1	ØE2	4-ØU2	L1 SW depth	ØB1 SW bore	ØB2 BW bore	ØB3 BW O/D
1/4"	7/16-20UNF	9.0	36.0	6.0	42.0	6.0	10.0	14.2	9.3	18.0
3/8"	7/16-20UNF	9.0	36.0	6.0	42.0	6.0	10.0	17.8	12.5	18.0
1/2"	7/16-20UNF	9.0	36.0	6.0	42.0	6.0	10.0	21.8	15.8	22.0
3/4"	7/16-20UNF	9.0	36.0	6.0	50.0	7.0	13.0	27.3	20.9	28.0
1"	9/16-18UNF	11.0	42.0	6.0	50.0	7.0	13.0	34.0	26.7	34.0
1-1/4"	9/16-18UNF	11.0	42.0	6.0	70.0	9.0	16.0	42.8	35.1	43.0
1-1/2"	3/4-16UNF	14.0	50.0	7.0	70.0	9.0	16.0	48.9	40.9	50.0
2"	3/4-16UNF	14.0	50.0	7.0	70.0	9.0	17.0	61.4	52.5	61.0
2-1/2"	7/8-14UNF	17.0	70.0	9.0	102.0	11.0	17.0	74.0	62.7	76.0
3"	7/8-14UNF	17.0	70.0	9.0	102.0	11.0	17.0	90.0	78.0	92.0
4"	1-1/8-12UNF	22.0	—	—	102.0	11.0	20.0	115.1	102.4	115.0

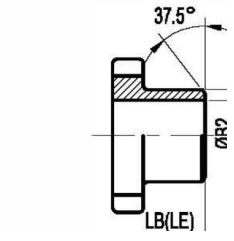
Butt weld ends are prepared to a 37.5° bevel. The 4" size has a single bolt circle (ØE2) only.

Dimension Key & Reference Views

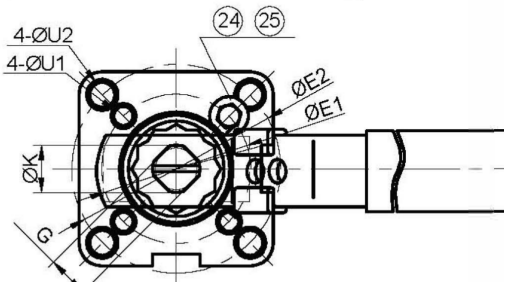
Ød	Full bore diameter
L	Face to face — screwed ends
LB	Face to face — butt weld ends
LE	Face to face — extended butt weld ends
H / H1	Heights — see sectional view
W	Handle length
A / G	Handle and drive dimensions — see views
ØK	Stem thread
ØE1 / ØU1	Bolt circle 1 and 4 off tapped holes
ØE2 / ØU2	Bolt circle 2 and 4 off tapped holes
L1 / ØB1	Socket weld — socket depth and bore
ØB2 / ØB3	Butt weld prep — bore and outside diameter



SOCKET WELD END



BUTT WELD PREP



MOUNTING PAD

Redrawn by Actuation Valve & Control Ltd from manufacturer assembly drawing 9130-XXXX-0014641 (BADNXXXXBGFC222-P). Certified drawings are available on request against a specific order.