

Ball valves



ISO 7-1 (except for NPT)

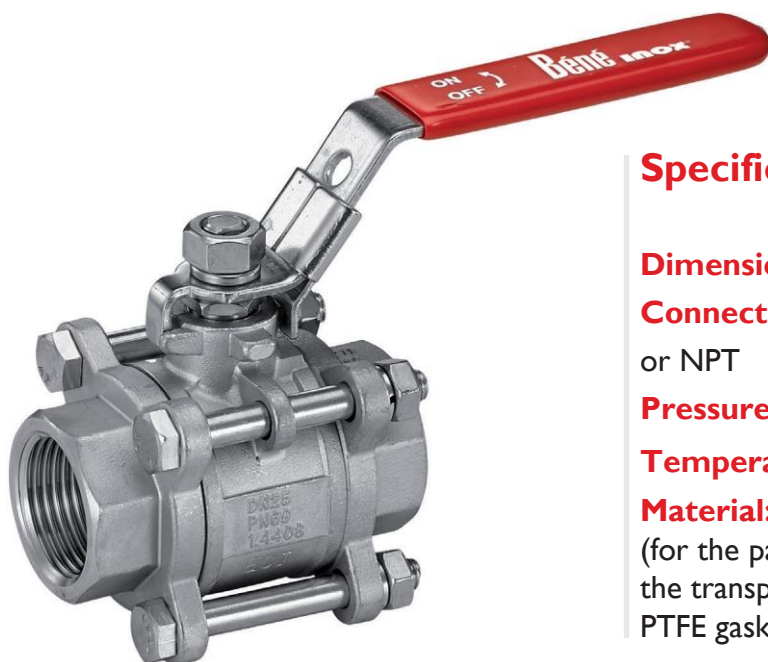
3-part valve female/female BSP or NPT 316 stainless steel Full bore - Lockable handle

Model 58163

BSP female thread

Model 58165

NPT female thread



Specifications

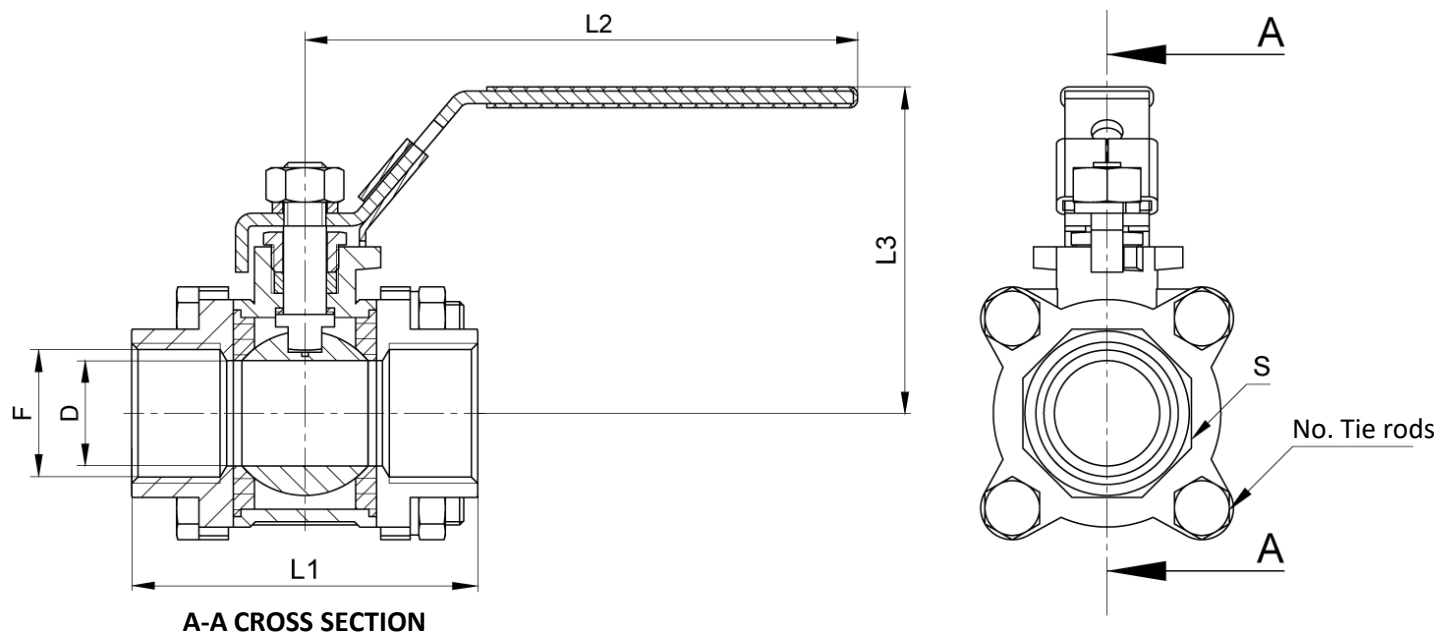
Dimensions: DN8 to DN100 (1/4" to 4")

Connection: BSP male thread ISO 7-1
or NPT

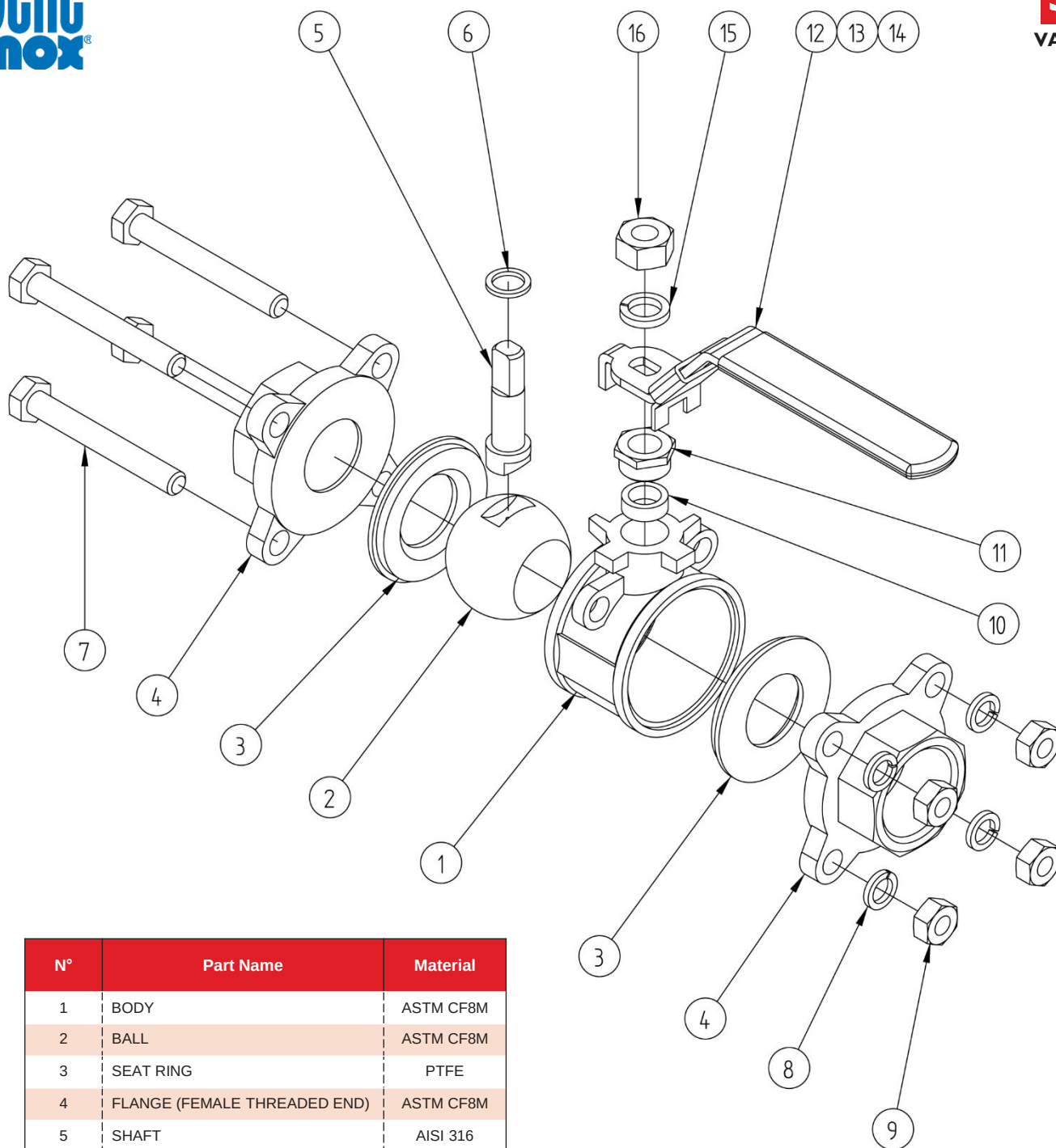
Pressure: according to DN

Temperature: -20°C to +150°C

Material: 316 or CF8M stainless steel
(for the parts that can come into contact with
the transported fluid)
PTFE gaskets



DN (mm)	NB (inches)	D (mm)	L1 (mm)	L2 (mm)	L3 (mm)	S (mm)	Weight (kg)	No. Tie rods	F (inches)	Part number BSP	F (inches)	Part number NPT
8	1/4"	9	60	108	52	19	0.39	4	Rp 1/4"	458163-8	NPT 1/4"	458165-8
10	3/8"	13	60	108	52	22	0.41	4	Rp 3/8"	458163-10	NPT 3/8"	458165-10
15	1/2"	15	63.5	113	63	26	0.53	4	Rp 1/2"	458163-15	NPT 1/2"	458165-15
20	3/4"	20	70	113	68	33	0.79	4	Rp 3/4"	458163-20	NPT 3/4"	458165-20
25	1"	25	82	135	79	40	1.20	4	Rp 1"	458163-25	NPT 1"	458165-25
32	1 1/4"	32	96.5	135	88	48	1.86	4	Rp 1 1/4"	458163-32	NPT 1 1/4"	458165-32
40	1 1/2"	38	107	190	97	56	2.57	4	Rp 1 1/2"	458163-40	NPT 1 1/2"	458165-40
50	2"	50	125	190	108	69	3.89	4	Rp 2"	458163-50	NPT 2"	458165-50
65	2 1/2"	65	165	260	128	85	8.30	4	Rp 2 1/2"	458163-65	-	-
80	3"	80	183	260	140	101	12.25	4	Rp 3"	458163-80	-	-
100	4"	100	218	335	172	129	18.65	6	Rp 4"	458163-100	-	-



N°	Part Name	Material
1	BODY	ASTM CF8M
2	BALL	ASTM CF8M
3	SEAT RING	PTFE
4	FLANGE (FEMALE THREADED END)	ASTM CF8M
5	SHAFT	AISI 316
6	FLAT SHAFT GASKET	PTFE
7	BOLT (TIE ROD)	A2
8	LOCK WASHER (TIE ROD)	A2
9	NUT (TIE ROD)	A2
10	SHAFT PACKING	PTFE
11	SHAFT NUT (GLAND)	A2
12	HANDLE	AISI 304
13	LOCKING DEVICE	AISI 304
14	HANDLE COVERING	PLASTIC
15	LOCK WASHER	A2
16	HANDLE NUT	A2

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Use

This valve is a shut-off valve: it must be either fully open or fully closed.

Do not leave the valve partially open: an opening default, or leaving the ball valve partially open to decrease flow, could lead to cavitation which is likely to damage the valve.

You must lift the locking device **13** to be able to turn the valve's handle **12**. You must always turn the handle by a complete 1/4 turn, until it cannot be turned any further.

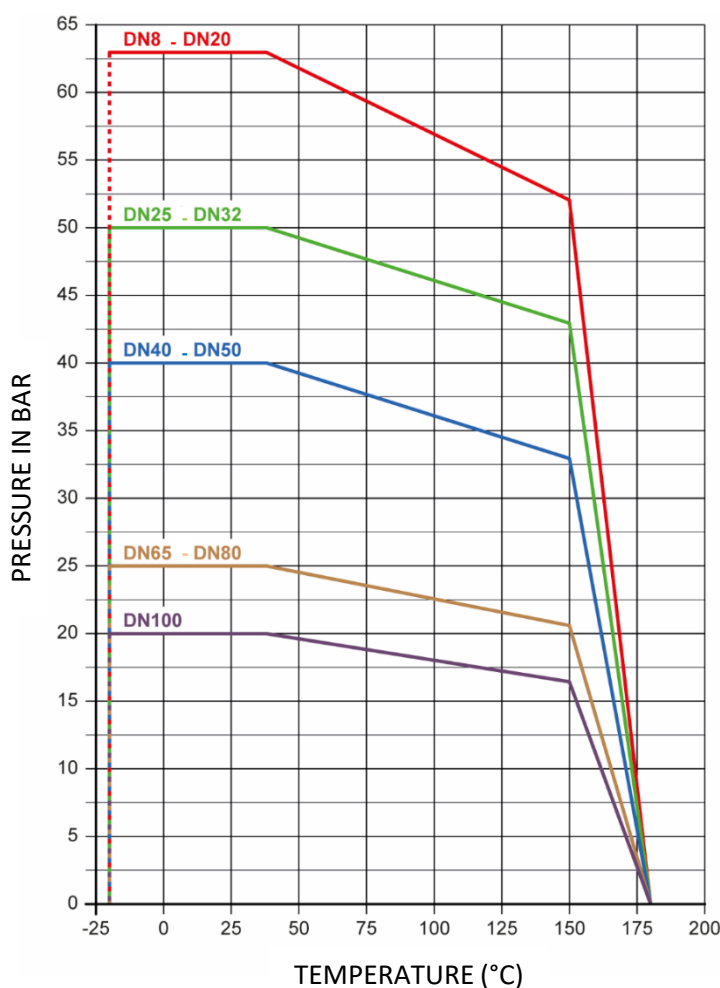
Turn the valve's handle 1/4 turn (90°) clockwise to close the valve or 1/4 turn (90°) anti-clockwise to open it.

The valve is open if the handle is in line with the piping.

You can lock the handle with a padlock, in the open or closed position.

Pressure and temperature

For pressure/temperature ratings, see the graph below.



Warning: If the valve is used with fluids that have a temperature above 60°C then people could burn themselves if they touch it.

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This valve is suitable for non-abrasive and non-coagulable fluids, as long as the fluids are chemically compatible with the valve parts that they can come into contact with.



Warning: Beware of hazardous materials - follow the instructions provided by the suppliers.

Flow coefficient and pressure loss

Dimensions	DN8	DN10	DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80	DN100
	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
Kv (m³/h)	10.7	20.7	28.5	50.7	79.2	129	183	317	535	811	1268

The flow coefficient Kv defines water flow rate through a device (valve, check valve etc.) for a pressure loss (ΔP) of 1 bar. Kv is expressed mathematically as:

$$\Delta P = \frac{Q^2}{K_v^2} \quad \text{so:} \quad K_v = \frac{Q}{\sqrt{\Delta P}} \quad \begin{matrix} Q \text{ in m}^3/\text{h} \\ \Delta P \text{ in bar} \end{matrix} \quad \begin{matrix} K_v \text{ in m}^3/\text{h} \\ C_v \text{ in GPM (Gallons per minute - US)} \end{matrix} \quad C_v = 1.16 \times K_v$$

Assembly and maintenance instructions

Installation

You can install the valve in any position. However, check that there is enough space to move the valve's handle where you are planning to install the valve.

Check that the installation is clean and free from foreign bodies that could damage the valve.

Check that all piping is perfectly aligned and that the piping support structure is dimensioned so that the valve is not subject to any external stresses. The piping support structure must only support the pipes, not the valve.

How to install a valve with threaded ends:

Use a wrench that is suitable for the hexagon-shaped valve ends. You must not use the valve's body or handle when you are tightening the assembly (this could damage the valve). Use a product that is suitable for the working conditions (e.g. pipe sealant model **5291**, PTFE tape, etc.) to make sure the valve's threaded connections are sealed correctly.

You must disassemble and reassemble the valve with the ball in the open position. You must tighten and loosen the tie rods in a criss-cross pattern. You must adhere to the tightening torques in table **A** (see page 7) when you reassemble the valve.

Clean the installation leaving the valve open so that there are no foreign bodies between the ball and the body. Check the valve is operating correctly.

Pressure test the installation according to the relevant standards (e.g. EN 12266-1), but do not exceed the valve's specifications.

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Maintenance

The valve does not require any specific maintenance if it is used in normal operating conditions.

If the valve is never opened or closed during normal operation then you should regularly open and close the valve to check that it is still working correctly.

If any leaks appear around the shaft **5**, during operation or during the valve installation testing phase, tighten the shaft nut (gland) **11**. You can usually stop leaks by tightening the nut by 30 to 60°. But you must not over tighten the nut, as this could reduce the system's service life.

If there is a leak between the valve's body and the flanges, check that the tie rods are correctly tightened (bolt **7** + washer **8** + nut **9**).

You may need to change some of the valve's parts due to unusual wear and tear, or if a fluid has damaged the valve and caused a leak or malfunction.

If this is the case see the 'Assembly / Disassembly' section below.

Assembly / Disassembly

The maintenance and removal/installation of the valve must be carried out by personnel who are qualified and trained for this type of intervention.



Warning: Before you work on the valve, check that the installation has been stopped and that the piping is empty and is not pressurised.

Warning: If the valve is used with fluids that have a temperature above 60°C then people could burn themselves if they touch it.

Warning: Beware of hazardous materials - follow the instructions provided by the suppliers.

Remove the tie rods (bolt **7** + washer **8** + nut **9**). You should work with the valve in the open position.

Remove the central part of the valve; you can keep the flanges **4** attached to the piping.

Remove the two PTFE seat rings **3**.

Close the valve to remove the ball **2**. Check the condition of the ball's surface. You must replace it at the same time as the two seat rings **3** if it is scratched or damaged.

If you need to replace the shaft's sealing, remove the parts from the upper part of the valve in the following order: handle nut **16**, lock washer **15** and manual valve handle **12** (otherwise remove the valve's motorisation), then the shaft nut **11**.

Push the shaft **5** towards the inside of the body **1** in order to remove it, and remove the flat shaft gasket **6** (be careful you do not scratch the shaft).

Remove the PTFE packing (v-washers) **10** from its housing (be careful you do not scratch the surface of this housing).

Clean and inspect all of the parts of the valve. Replace any worn parts. You are strongly advised to replace all the shaft's sealing parts (gaskets and PTFE packing) if it has been disassembled, as well as the ball's PTFE seat rings.

Follow the disassembly steps in reverse to reassemble the valve.

You must tighten the tie rods in a criss-cross pattern, with the valve's ball in the open position, and you must adhere to the tightening torques in table **A** below. Pressure test the valve and check that it can be opened and closed before you put the installation back into service.

Table A	Dimensions	DN8	DN10	DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80	DN100
Tightening torques for the tie rods (7, 8 and 9)	Nm	4	4	8	8	10	13	20	20	35	45	65

Spare parts



Gasket kits

A gasket kit contains:

- 2 seat rings **3**
 - 1 flat shaft gasket **6**
 - 1 shaft packing **10**
- (quantity could vary according to the DN)

DN (mm)	NB (inches)	Gasket kit Part no.
8	1/4"	D5331-8
10	3/8"	D5331-10
15	1/2"	D5331-15
20	3/4"	D5331-20
25	1"	D5331-25
32	1"1/4"	D5331-32

DN (mm)	NB (inches)	Gasket kit Part no.
40	1"1/2"	D5331-40
50	2"	D5331-50
65	2"1/2"	D5331-65
80	3"	D5331-80
100	4"	D5331-100

Handle **12; 13; 14**



DN (mm)	NB (inches)	Handle Part no.
8 to 10	1/4" to 3/8"	D5192-810
15	1/2"	D5192-15
20	3/4"	D5192-20
25 to 32	1" to 1"1/4"	D5192-2532

DN (mm)	NB (inches)	Handle Part no.
40 to 50	1"1/2 to 2"	D5192-4050
65 to 80	2"1/2 to 3"	D5193-6580
100	4"	D5193-100

Handle covering **14**



DN (mm)	NB (inches)	Red covering Part no.
8 to 20	1/4" to 3/4"	D5471R-820
25 to 32	1" to 1"1/4"	D5471R-2532
40 to 50	1"1/2 to 2"	D5471R-4050

Customisation possibilities



Handle covering 14

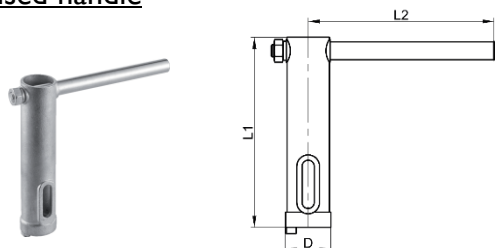


DN (mm)	NB (inches)	Blue covering Part no.
8 to 20	1/4" to 3/4"	D5471B-820
25 to 32	1" to 1 1/4"	D5471B-2532
40 to 50	1 1/2 to 2"	D5471B-4050

DN (mm)	NB (inches)	Yellow covering Part no.
8 to 20	1/4" to 3/4"	D5471J-820
25 to 32	1" to 1 1/4"	D5471J-2532
40 to 50	1 1/2 to 2"	D5471J-4050

DN (mm)	NB (inches)	Green covering Part no.
8 to 20	1/4" to 3/4"	D5471V-820
25 to 32	1" to 1 1/4"	D5471V-2532
40 to 50	1 1/2 to 2"	D5471V-4050

Raised handle



DN (mm)	NB (inches)	D (mm)	L1 (mm)	L2 (mm)	Raised handle Part no.
8 to 10	1/4" to 3/8"	30	125	123	458207-1
15 to 20	1/2" to 3/4"	30	125	123	458207-2
25 to 32	1" to 1 1/4"	34	125	156	458207-3
40 to 50	1 1/2 to 2"	39	127	190	458207-4

Standards and compliance

- Connection: BSP female thread in accordance with EN ISO 7-1 (Rp) or NPT taper thread in accordance with ANSI B1.20.1.
- Leak testing according to EN 12266/API 598.
- This valve complies with European Pressure Equipment Directive (PED) 2014/68/EU (formerly 97/23/EC).