

# Ball valves

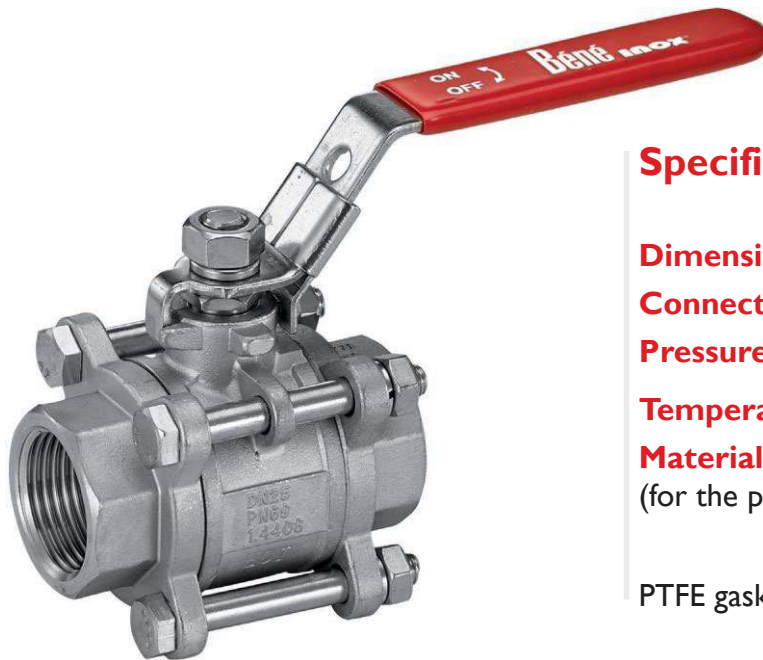
## 3-part valve female/female BSP or NPT

**316 stainless steel**

Full bore - Lockable handle

**Model 58163** BSP female threaded

**Model 58165** NPT female threaded



### Specifications

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

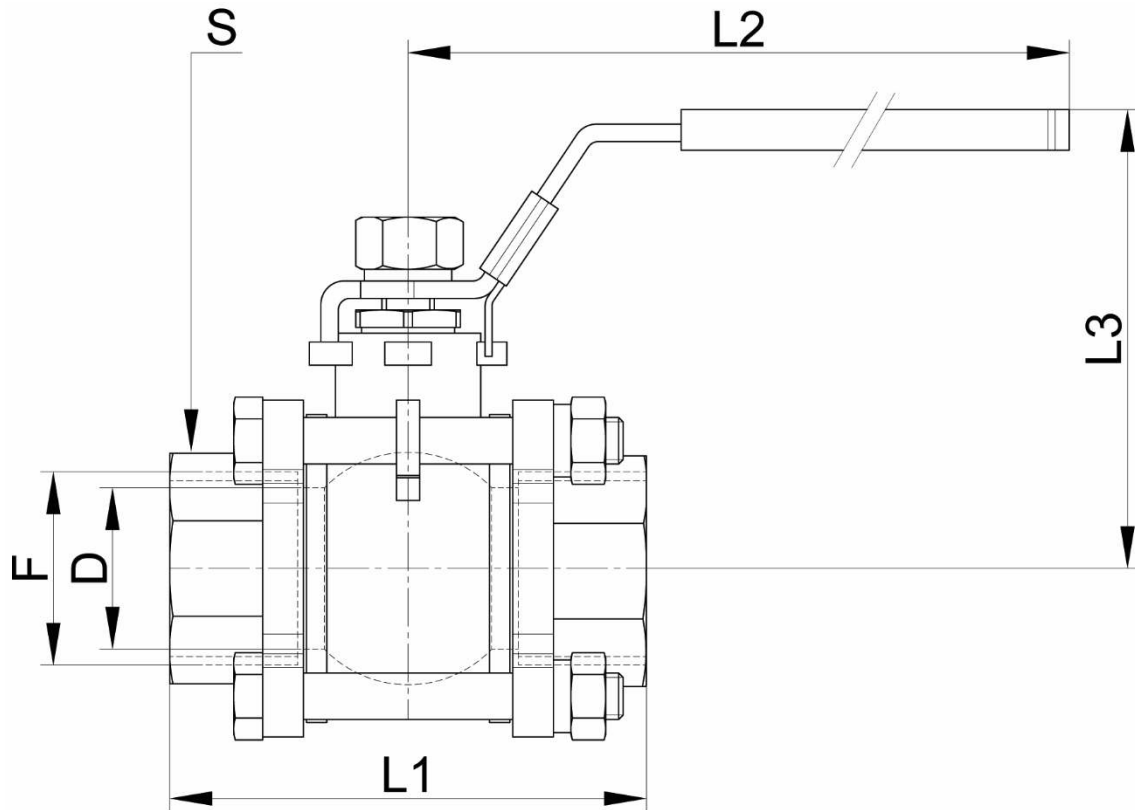
**Connection:** BSP or NPT female threaded

**Pressure:** according to DN

**Temperature:** from - 20°C to +150°C

**Material:** 316 or CF8M stainless steel  
(for the parts in contact with the fluid)

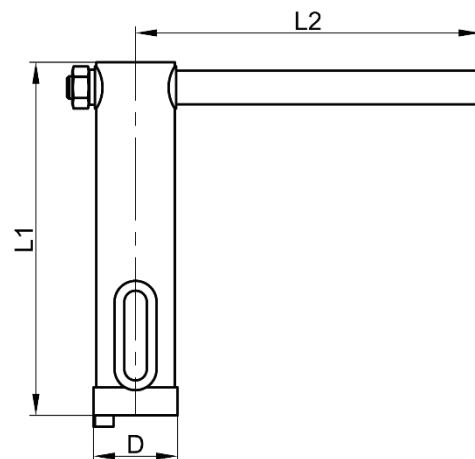
PTFE gaskets



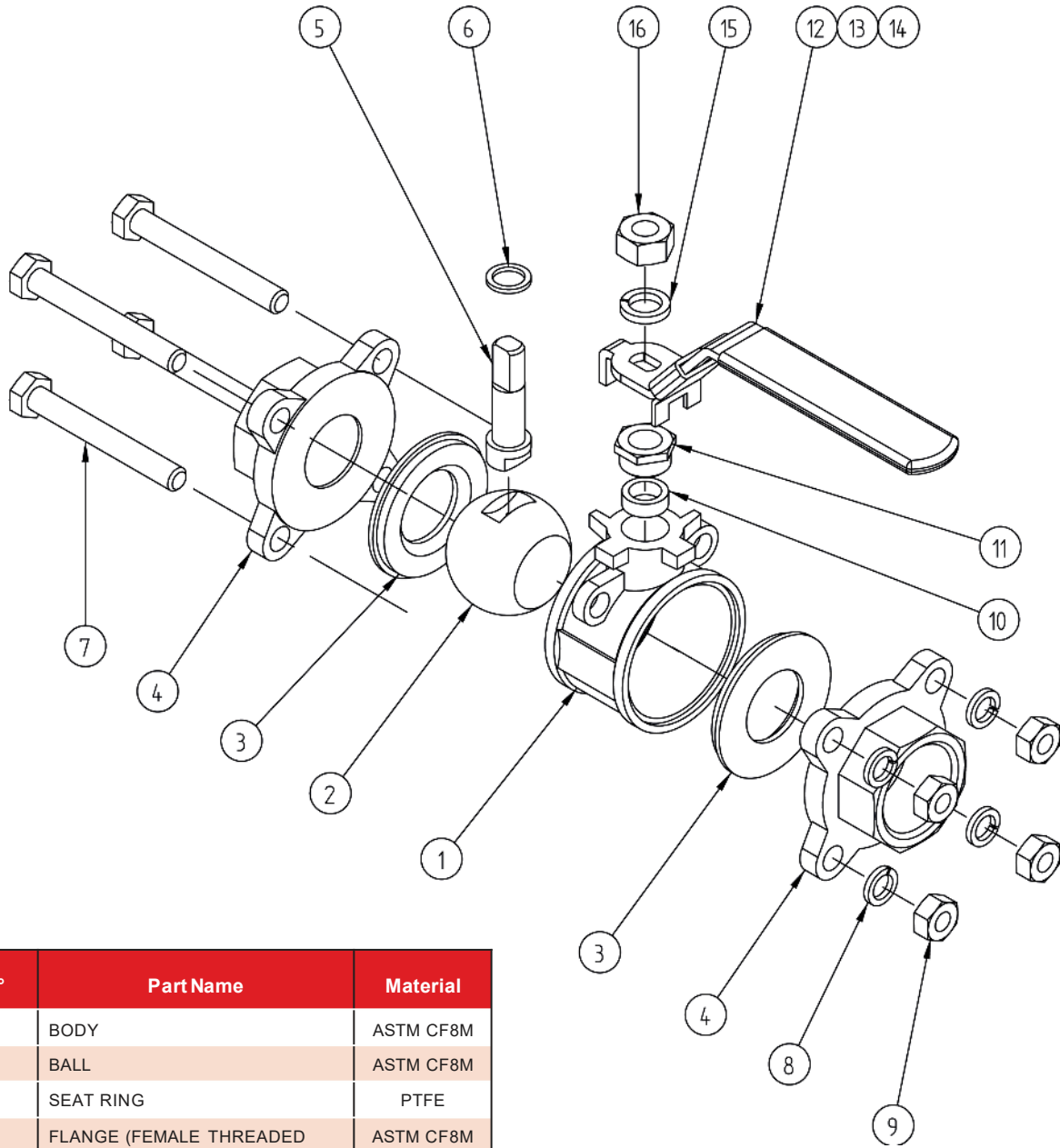
DN	NB	D	F	L1	L2	L3	S	Weight	Part number	Part number
(mm)	(inches)	(mm)	(inches)	(mm)	(mm)	(mm)	(mm)	(kg)	BSP	NPT
8	1/4"	9	1/4"	60	108	52	19	0.39	458163-8	458165-8
10	3/8"	13	3/8"	60	108	52	22	0.41	458163-10	458165-10
15	1/2"	15	1/2"	63.5	113	63	26	0.53	458163-15	458165-15
20	3/4"	20	3/4"	70	113	68	33	0.79	458163-20	458165-20
25	1"	25	1"	82	135	79	40	1.20	458163-25	458165-25
32	1"1/4	32	1"1/4	96.5	135	88	48	1.86	458163-32	458165-32
40	1"1/2	38	1"1/2	107	190	97	56	2.57	458163-40	458165-40
50	2"	50	2"	125	190	108	69	3.89	458163-50	458165-50
65	2"1/2	65	2"1/2	165	260	128	85	8.30	458163-65	
80	3"	80	3"	183	260	140	101	12.25	458163-80	
100	4"	100	4"	218	335	172	129	18.65	458163-100	

## Options

- Raised handle, to replace the existing handle:



Valve DN	D (mm)	L1 (mm)	L2 (mm)	Part number
DN8 / DN10	30	125	123	458207-1
DN15 / DN20	30	125	123	458207-2
DN25 / DN32	34	125	156	458207-3
DN40 / DN50	39	127	190	458207-4



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)	AISI 304
8	LOCK WASHER (TIE ROD)	AISI 304
9	NUT (TIE ROD)	AISI 304
10	SHAFT PACKING	PTFE
11	SHAFT NUT (GLAND)	AISI 304
12	HANDLE	AISI 304
13	LOCKING DEVICE	AISI 304
14	HANDLE COVERING	PLASTIC
15	LOCK WASHER	AISI 304
16	HANDLE NUT	AISI 304

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

An opening default, or leaving the ball valve partially open to decrease flow, could lead to cavitation which is likely to damage the valve.

To operate the valve, lift the locking device **13** to turn the handle **12** 1/4 turn, until it cannot be turned any further.

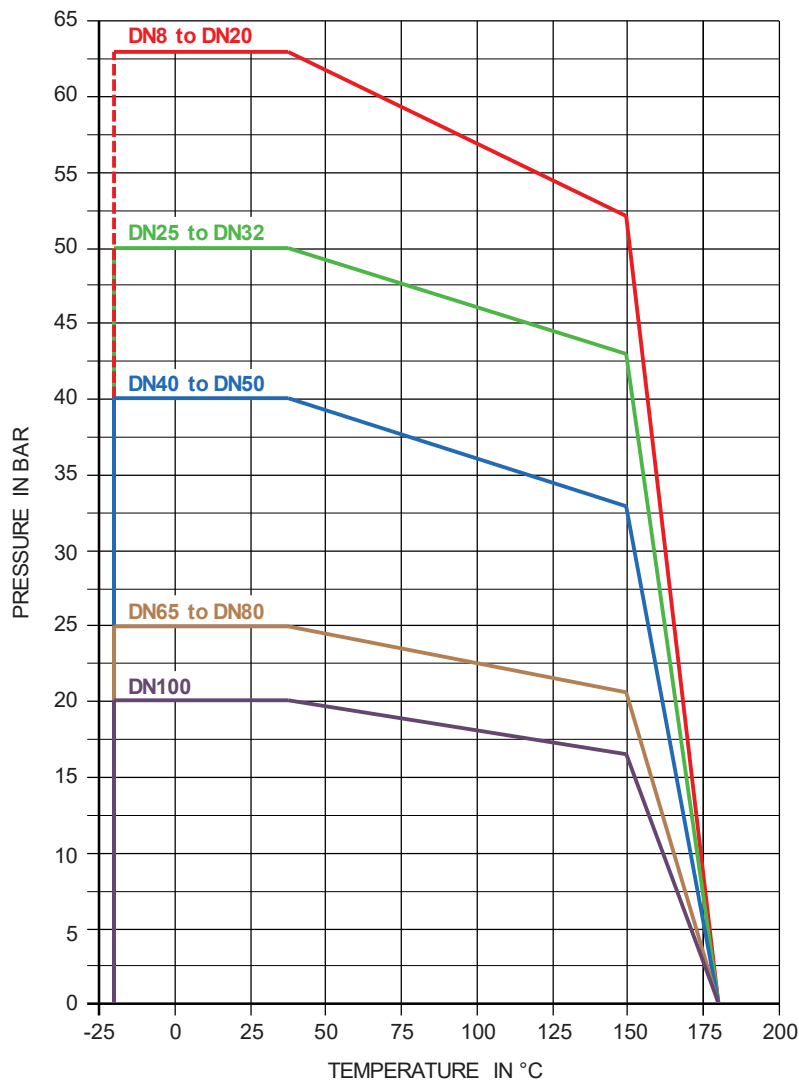
Turn the handle 1/4 turn (90°) clockwise to close it or 1/4 turn (90°) anti-clockwise to open it.

If the handle is in line with the piping, the valve is open.

The handle is lockable, with a padlock, in the open or closed position.

## Pressure and temperature

For pressure/temperature ratings, see the graph below.



Warning: For usage temperatures above 60°C there is a risk of burns.

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## Fluids

This valve is suitable for non-abrasive and non-coagulable fluids, subject to the chemical compatibility of the parts in contact.



Warning: Be careful of hazardous materials - follow supplier usage instructions.

## 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 (m <sup>3</sup> /h)	10.7	20.7	28.5	50.7	79.2	129	183	317	535	811	1268

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

$$\Delta P = \frac{Q^2}{Kv^2} \quad \text{so:} \quad Kv = \frac{Q}{\sqrt{\Delta P}} \quad \begin{array}{l} Q \text{ in m}^3/\text{h} \\ \Delta P \text{ in bar} \end{array}$$

## Assembly and maintenance instructions

### Installation

The valve can be used in any position. Ensure that the intended location is sufficiently clear from obstructions for handle operation.

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

Make sure that the piping is perfectly aligned and its support structures are sufficiently dimensioned so that the valve is not subject to any external stresses. The support structure must support the pipes, not the valve.

#### Installation of a valve with female threaded ends:

Use a wrench that is suitable for the hexagon-shaped valve end. Do not use the valve body or the handle when you are tightening the assembly (this could damage the valve). To ensure the sealing of the threaded connections, use a product suitable for the working conditions (e.g. anaerobic adhesive model **5291**, PTFE tape etc.).

The valve must be disassembled and reassembled with the ball in the open position. The tie rods must be tightened and loosened in a criss-cross pattern. When reassembling, adhere to the tightening torques (see table **A** on page 8).

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

Carry out installation pressure testing without exceeding the valve's specifications, and according to the applicable standards (e.g. EN 12266-1).

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## Maintenance

Under normal operating conditions, the valve does not require any specific maintenance.

In the case of a valve that is never operated during normal operation, it is advisable to regularly open and close the valve to ensure it continues to operate correctly.

During operation (or during the valve installation testing phase), if any leaks appear around the shaft **5**, tighten the shaft nut **11**. Usually leaks can be stopped by tightening the nut by 30 to 60°. But do not over tighten the nut, as this could reduce the system's service life.

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

Following abnormal wear, or the passage of a product which has damaged the valve and caused a leak or malfunction, it may be necessary to change some of its parts. In this case, see the "Assembly / Disassembly" section below.

## Assembly / Disassembly

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



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

Warning: For usage temperatures above 60°C there is a risk of burns.

Warning: Be careful of hazardous materials - follow supplier usage instructions.

Disassemble the tie rods (bolt **7** + washer **8** + nut **9**). It is best to work with the valve in the open position. Remove the central part of the valve; the flanges **4** can remain attached to the piping.

Remove the two PTFE rings **3**.

Move the valve to the closed position to remove the ball **2**. Inspect the surface condition of the ball. If it is scratched or damaged it must be replaced at the same time as the two seat rings **3**.

If the shaft's sealing needs to be replaced, remove these parts from the upper part of the valve in the following order: handle nut **16**, lock washer **15** and handle **12** for a manual valve (otherwise remove the valve 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** (take care not to scratch the shaft).

Remove the PTFE packing (v-washers) **10** from its housing (take care not to scratch the surface of this housing).

Clean and inspect all the parts. Change any worn parts. It is strongly recommended to change all the shaft's sealing parts (gaskets and PTFE packing) if it has been disassembled, as well as the ball's PTFE seat rings.

To reassemble, follow the disassembly steps in reverse order:

To retighten the tie rods, work with the valve's ball in the open position, and tighten the tie rods in a criss-cross pattern, adhering to the tightening torques given in table **A** below. Test the valve (pressure testing + manoeuvring) before putting the installation back into service.

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

## Gasket kits

A gasket kit contains:

- 2 seat rings **3**
- 1 flat shaft gasket **6**
- 1 shaft packing **10**

DN (mm)	NB (inches)	Partnumber
8	1/4"	958161-8
10	3/8"	958161-10
15	1/2"	958161-15
20	3/4"	958161-20
25	1"	958161-25
32	1 1/4"	958161-32

DN (mm)	NB (inches)	Partnumber
40	1 1/2"	958161-40
50	2"	958161-50
65	2 1/2"	958161-65
80	3"	958161-80
100	4"	958161-100

## Standards and compliance

- Connection: BSP female threaded in accordance with EN ISO 7/1 or NPT taper threaded in accordance with ANSI B1.20.1
- Leakage testing in accordance with EN 12266 / API 598
- Complies with European Pressure Equipment Directive (PED) 2014/68/EU (formerly 97/23/EC)