

# Ball valves

## Model 58229 3-way flanged ATEX valve with ISO mounting plate - 316 stainless steel

Full L-bore - Lockable handle



### Specifications

**Dimensions:** DN15 to DN100 (1/2" to 4")

**Connections:** flanges in accordance with EN 1092-1

**Pressure:** PN depending on flange dimensions

**Temperature:** from -29°C to +175°C

**Material:** 316 or 1.4408 stainless steel (for the stainless steel parts in contact with the fluid)

ISO 5211 mounting plate for pneumatic or electric motorisation

PTFE + FKM gaskets

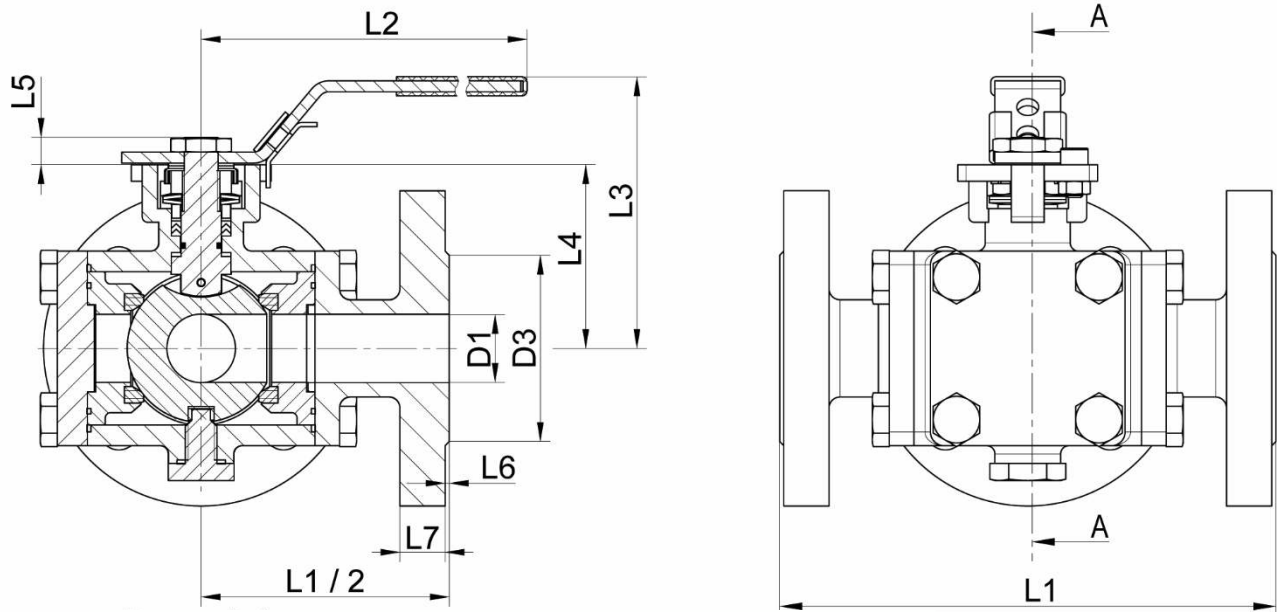
ATEX Ex II 2 GD c T3



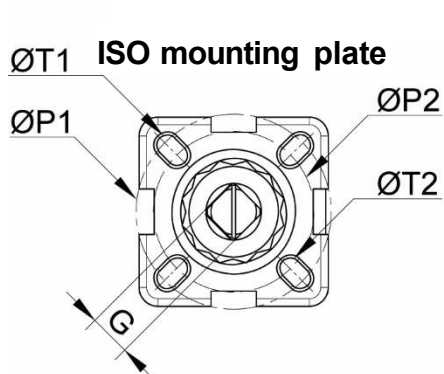
**Béné Inox** – 11 chemin de la Pierre Blanche – 69800 SAINT PRIEST – S.A.S with 240 000 € share capital – SIREN N° 311 810 287

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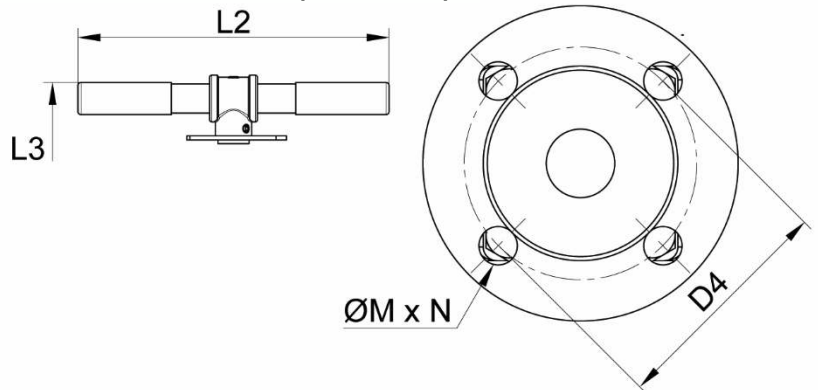
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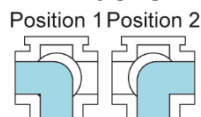
**A-A Cross Section**



**Handle DN65 - 100 (2"1/2 - 4")**

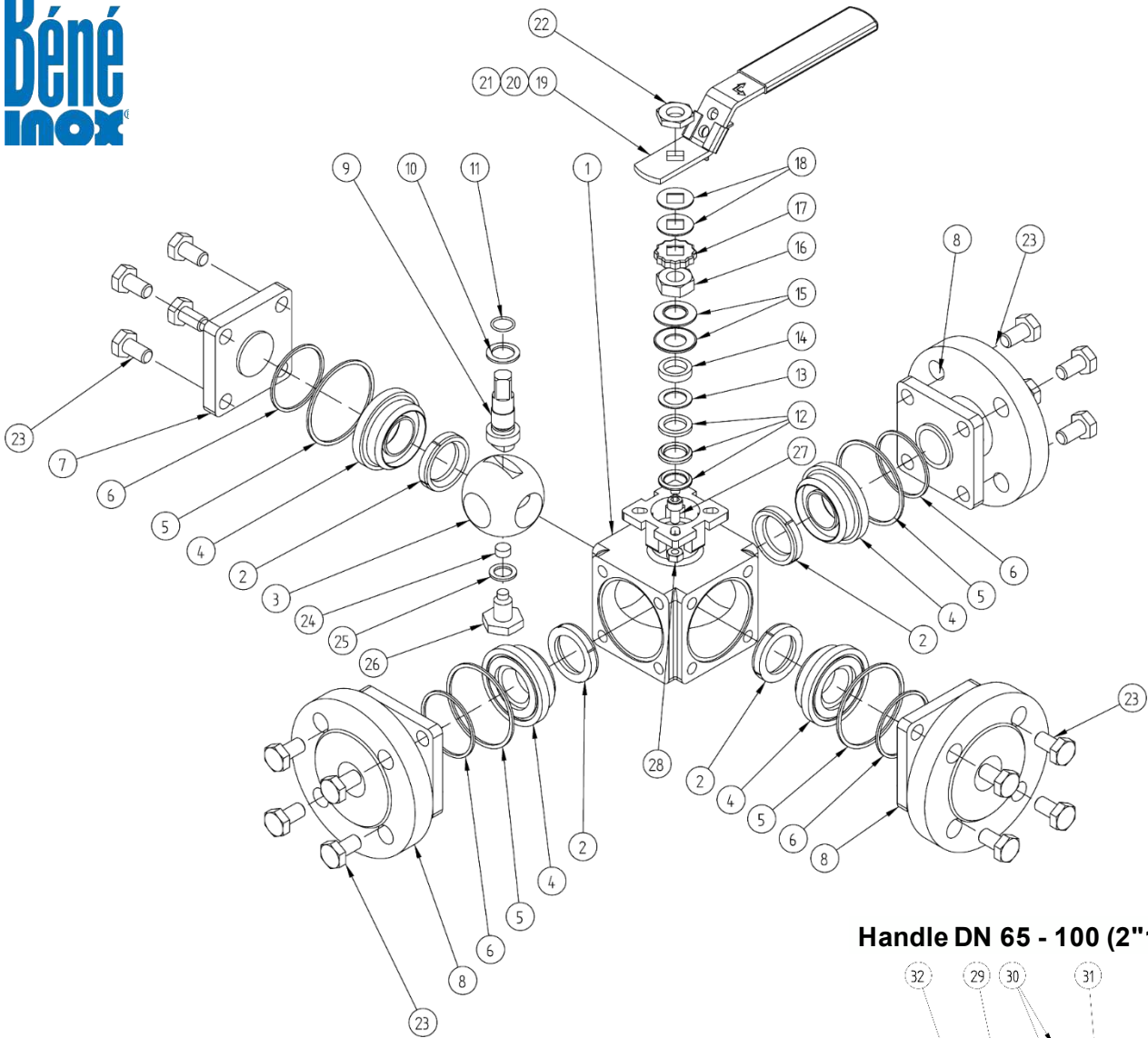


**L-bore**

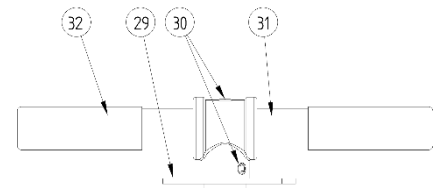


DN (mm)	NB (inches)	PN (bar)	D1 (mm)	D2 (mm)	D3 (mm)	D4 (mm)	L1 (mm)	L2 (mm)	L3 (mm)	L4 (mm)	L5 (mm)	L6 (mm)	L7 (mm)
15	1/2"	40	15	95	45	65	150	146	84	52.5	9	2	16
20	3/4"	40	20	105	58	75	165	146	88	57	9	2	18
25	1"	40	25	115	68	85	181	177	99	68	11	2	18
32	1"1/4	40	32	140	78	100	190	177	103	72	11	2	18
40	1"1/2	40	38	150	88	110	212	200	119	85	14	3	18
50	2"	40	49	165	102	125	230	200	126	92	17	3	20
65	2"1/2	16	63	185	122	145	290	400*	172	107	17	3	18
80	3"	16	75	200	138	160	310	400*	187	119	22	3	20
100	4"	16	99	220	158	180	352	400*	214	150	22	3	20

DN (mm)	NB (inches)	G (mm)	M (mm)	N (mm)	ØP1 (mm)	ØP2 (mm)	ØT1 (mm)	ØT2 (mm)	ISO mounting plate	Weight (kg)	Part numbe r
15	1/2"	9	14	4	36	42	6	6	F03-F04	6.50	458229-15
20	3/4"	9	14	4	36	50	6	7	F03-F05	7.50	458229-20
25	1"	11	14	4	42	50	6	7	F04-F05	9.00	458229-25
32	1"1/4	11	18	4	42	70	6	9	F04-F07	11.00	458229-32
40	1"1/2	14	18	4	50	70	7	9	F05-F07	13.50	458229-40
50	2"	14	18	4	50	70	7	9	F05-F07	22.50	458229-50
65	2"1/2	17	18	4	70	102	9	11	F07-F10	32.00	458229-65
80	3"	17	18	8	70	102	9	11	F07-F10	47.00	458229-80
100	4"	22	18	8	-	102	-	11	F10	73.00	458229-100



**Handle DN 65 - 100 (2"1/2 - 4")**



N°	Part Name	Material
1	BODY	1.4408
2	SEAT RING	PTFE
3	BALL	1.4408
4	SEAT	1.4408
5	BODY GASKET	PTFE
6	FLANGE GASKET	PTFE
7	FLANGE (PLUG)	1.4408
8	FLANGE (CONNECTION)	1.4408
9	ANTI-STATIC + SHAFT	SS316
10	SHAFT RING	PTFE
11	FLAT SHAFT GASKET	FKM (VITON)
12	SHAFT PACKING	PTFE
13	SUPPORT RING	50% stainless steel + 50% PTFE
14	SPACER	SS316
15	BELLEVILLE WASHER	SS301
16	SHAFT NUT (GLAND)	A2-70

N°	Part Name	Material
17	STOP NUT	SS304
18	FLAT WASHER	SS304
19	HANDLE (DN 15-50)	SS304
20	LOCKING DEVICE (DN 15-50)	SS304
21	HANDLE COVERING (DN 15-50)	PLASTIC
22	HANDLE NUT (DN 15-50)	SS304
23	BOLT (FLANGE)	A2-70
24	STOP PIN	PTFE
25	GASKET	PTFE
26	SCREW	SS304
27	BOLT (HANDLE STOP)	A2-70
28	NUT (HANDLE STOP)	A2-70
29	HANDLE MOUNTING BASE (DN 65-100)	1.4308
30	SCREW (HANDLE DN 65-100)	A2-70
31	TUBULAR HANDLE (DN 65-100)	A53-70
32	HANDLE COVERING (DN 65-100)	PLASTIC

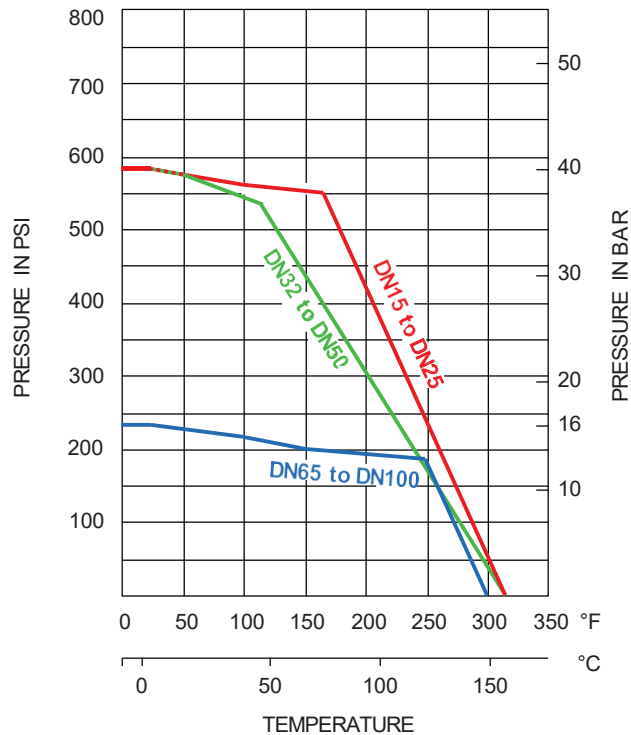
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Do not leave the valve partially open: leaving the ball valve partially open could lead to cavitation which is likely to damage the valve.

To operate the valve, lift the locking device **20** to turn the handle **19** 1/4 turn until it cannot be turned any further.

## Pressure and temperature



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

## Flow coefficient and pressure loss

Dimensions	DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80	DN100
	1/2"	3/4"	1"	1"1/4	1"1/2	2"	2"1/2	3"	4"
Kv (m³/h)	3.78	5.01	7.20	9.73	11.91	16.44	27.15	41.39	55.18

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:

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

## Fluids

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

The valve can be motorised (direct mounting), thanks to its ISO mounting plate (ISO 521 I standard), see the corresponding product data sheets.

- Model **50240**: valve with spring return or double-acting type aluminium pneumatic cylinder
- Model **50242**: valve with spring return or double-acting type stainless steel pneumatic cylinder
- Model **50246**: valve with IP65 electric servo motor
- Model **50252 - 50256**: valve with IP66 electric servo motor
- Model **50258 - 50262**: valve with IP68 electric servo motor
- Model **50264 - 50268**: valve with ATEX IP68 electric servo motor

### Required operating torque for valve motorisation

Dimensions	-	DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80	DN100
Operating torque	Nm	10	15	22	33	46	65	100	160	265
Coupling characteristics	Mounting plate	F03 F04	F03 F05	F04 F05	F04 F07	F05 F07	F05 F07	F07 F10	F07 F10	F10
	Square	9x9	9x9	11x11	11x11	14x14	14x14	17x17	17x17	22x22

*Torque required for water at 40 bar.*

*It is recommended to use a minimum safety factor of +30% for motorisation with a pneumatic cylinder and +50% for motorisation with an electric actuator.*

*Refer to the information given on the product data sheets for the corresponding actuators.*

## Use in ATEX zones

The manual valves (model **58229**) and pneumatic valves (models **50240** and **50242**) can be used in ATEX II 2 GD zones.

If any other element is added (position detection, solenoid valves etc.), it must be confirmed if this addition is compatible with use in an ATEX zone.

The models **50246**, **50252** and **50258**, valves with electric servo motor, **cannot be used in ATEX zones.**

Only the valves with electric servo motor models **50264** and **50268** can be used in an ATEX II 2 GD zone.

## Assembly and maintenance instructions

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### 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 flanges:

Use flanges (e.g. flanges with collar) for welding on the piping and respect the required spacing and the alignment of the mounting holes. During installation, ensure that the valve is correctly lined up with the flanges. For heavy parts, use lifting devices if necessary (do not lift the valve by its handle).

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).

### 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 **9**, tighten the shaft nut **16**. 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. Adhere to the tightening torques (see table **A** on page 8).

If a leak appears between the valve body and the flanges, check that the bolts **23** are correctly tightened, adhering to the tightening torques (see table **B** on page 8).

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.

Remove the valve; unscrew the flanges **8**.

Remove the seat rings **2**, the seats **4** and the gaskets **5** and **6**.

Remove the ball **3**. Inspect the surface condition of the ball.

If it is scratched or damaged, it must be replaced at the same time as the seat rings **2**.

If the shaft needs to be resealed, remove the upper parts of the valve in the following order: handle nut **22**, handle **19** and flat washer(s) **18** in the case of a manual valve (otherwise remove the motorisation), then the stop nut **17**, shaft nut **16**, Belleville washers **15** and stainless steel support ring and spacer (**13** + **14**). Push the shaft **9** towards the inside of the body **1** in order to remove it, and remove the flat shaft gasket **11** and the PTFE shaft ring **10** (take care not to scratch the shaft).

Remove the PTFE shaft packing (v-washers) **12** 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, the PTFE body gaskets and flange gaskets.

To reassemble, follow the disassembly steps in reverse order.

Test the valve (pressure testing + manoeuvring) before putting the installation back into service.



<b>Table A</b>	<b>Dimensions</b>	<b>DN15</b>	<b>DN20</b>	<b>DN25</b>	<b>DN32</b>	<b>DN40</b>	<b>DN50</b>	<b>DN65</b>	<b>DN80</b>	<b>DN100</b>
<b>Tightening torque for shaft nut (16)</b>	Nm	8.0 ~ 9.0	8.0 ~ 9.0	9.0 ~ 11.3	9.0 ~ 11.3	15.8 ~ 18.1	15.8 ~ 18.1	20.4 ~ 22.6	20.4 ~ 22.6	28.3 ~ 30.6

<b>Table B</b>	<b>Dimensions</b>	<b>DN15</b>	<b>DN20</b>	<b>DN25</b>	<b>DN32</b>	<b>DN40</b>	<b>DN50</b>	<b>DN65</b>	<b>DN80</b>	<b>DN100</b>
<b>Tightening torque bolts (23)</b>	Nm	11.3	11.3	11.3	31.7	31.7	31.7	65	65	90.5

## Standards and compliance

- Designed in accordance with ASME B16.34 and EN 12516-1 standards
- Connection: flanges in accordance with NF EN 1092-1
- Leakage testing in accordance with the EN 12266
- Complies with European Pressure Equipment Directive (PED) 2014/68/EU (formerly 97/23/EC) according to the annexe III module H (certificate DGR 0036-QS-1045-14)
- ATEX Ex II 2 GD c T3, in accordance with Directive 94/9/EC (certificate EX9 13 09 82326 002)