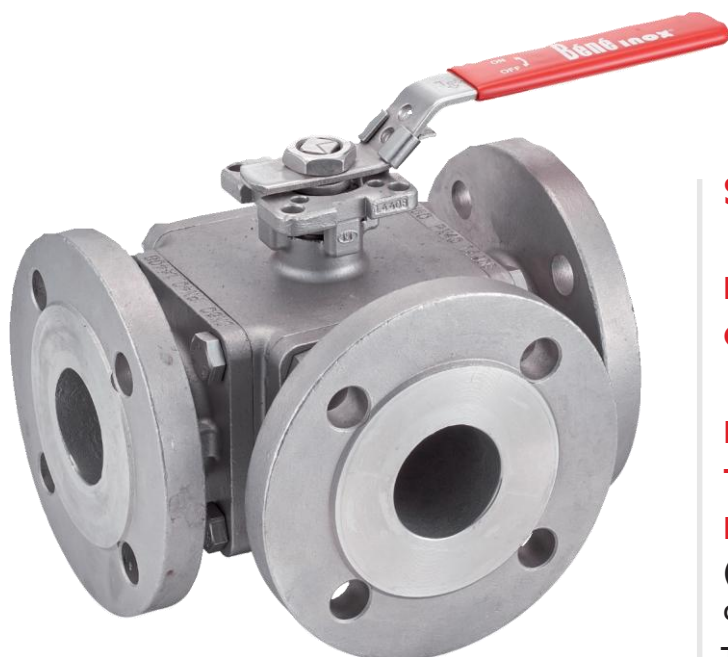


Ball valves

Model 58229

3-way ATEX valve with flanges and ISO mounting plate - 316 stainless steel

Full L-bore - Lockable handle



Specifications

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

Connection: flanges in accordance with EN 1092-1

Pressure: PN depending on flange dimensions

Temperature: -29°C to +175°C

Material: 316 or 1.4408 stainless steel
(for the stainless steel parts that can come into contact with the transported fluid)

TFM 1600 seats

PTFE + FKM gaskets

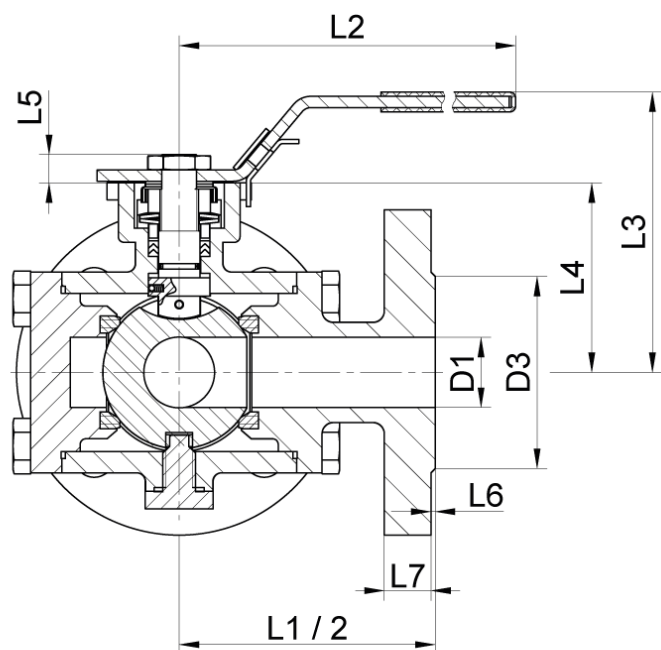
ISO 5211 mounting plate for
pneumatic or electric actuators
ATEX II 2 GD



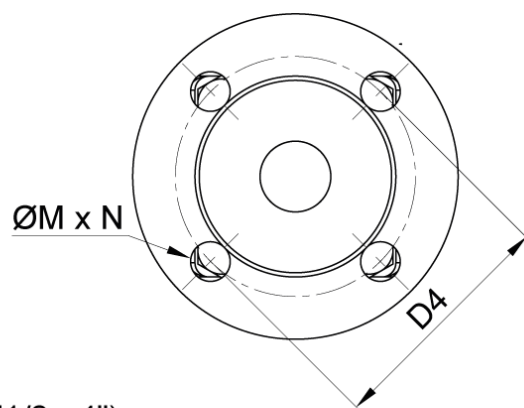
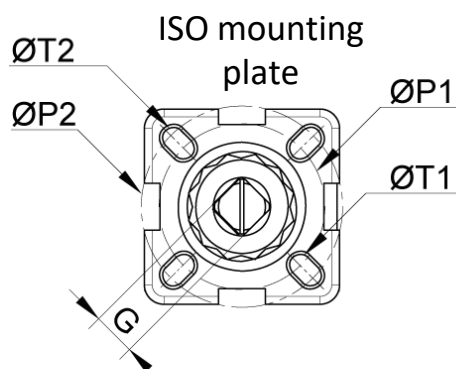
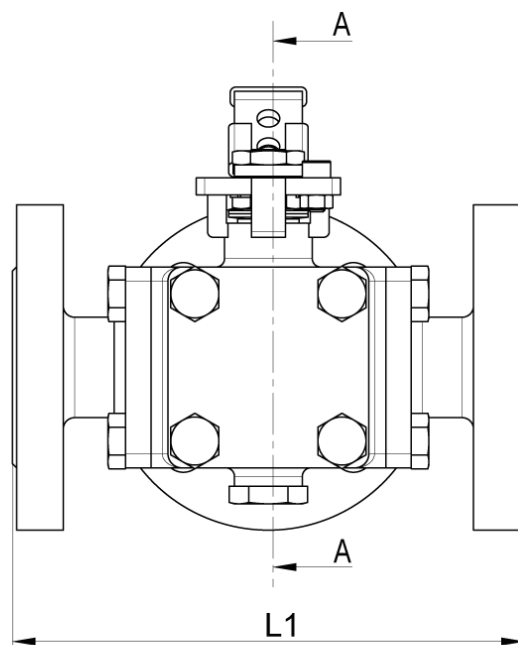
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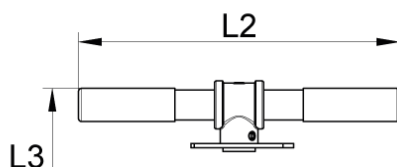
58229-I V0726



A-A CROSS SECTION

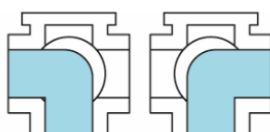


Handle DN65 - 100 (2"1/2 - 4")



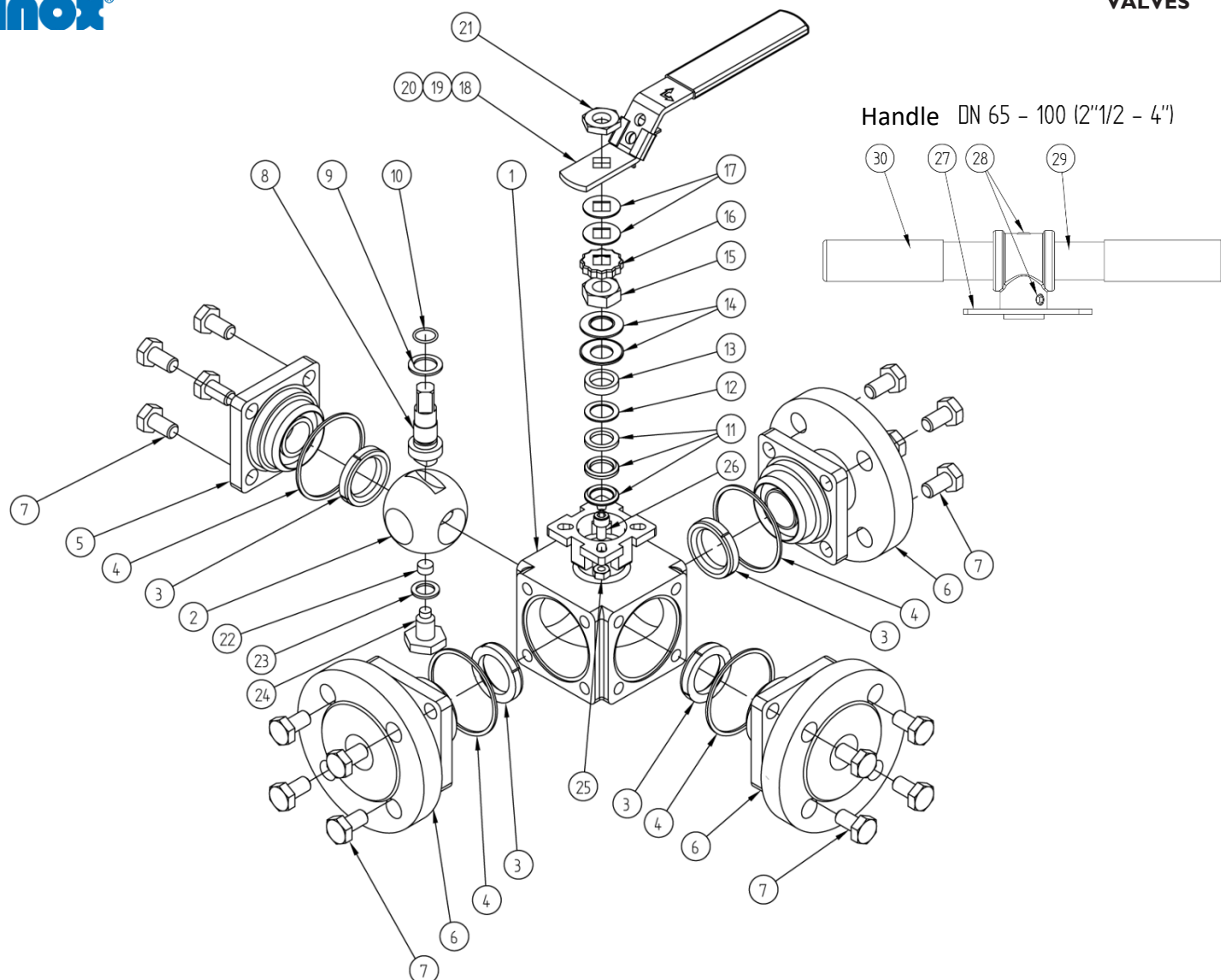
L-shaped bore

Position 1 Position 2



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	53	9	2	16
20	3/4"	40	20	105	58	75	165	146	84	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	60	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 number
15	1/2"	9	14	4	36	42	6	6	F03-F04	4.41	458229-15
20	3/4"	9	14	4	36	50	6	7	F03-F05	5.85	458229-20
25	1"	11	14	4	42	50	6	7	F04-F05	8.40	458229-25
32	1"1/4	11	18	4	42	70	6	9	F04-F07	11.4	458229-32
40	1"1/2	14	18	4	50	70	7	9	F05-F07	13.9	458229-40
50	2"	14	18	4	50	70	7	9	F05-F07	19.2	458229-50
65	2"1/2	17	18	8	70	102	9	11	F07-F10	31.7	458229-65
80	3"	17	18	8	70	102	9	11	F07-F10	48.3	458229-80
100	4"	22	18	8	-	102	-	11	F10	64.4	458229-100



N°	Part Name	Material
1	BODY	EN 1.4408
2	BALL	EN 1.4408
3	SEAT RING	TFM 1600
4	BODY GASKET	PTFE
5	FLANGE (PLUG)	EN 1.4408
6	FLANGE (CONNECTION)	EN 1.4408
7	SCREW (FLANGE)	A2-70
8	ANTI-STATIC SHAFT	AISI 316
9	SHAFT RING	PTFE
10	SHAFT O-RING	FKM
11	SHAFT PACKING	PTFE
12	SUPPORT RING	STAINLESS STEEL + PTFE
13	SPACER	AISI 316
14	BELLEVILLE WASHER	AISI 301
15	SHAFT NUT (GLAND)	A194-8

N°	Part Name	Material
16	STOP NUT	AISI 304
17	FLAT WASHER	AISI 304
18	HANDLE (DN 15-50)	AISI 304
19	LOCKING DEVICE (DN 15-50)	AISI 304
20	HANDLE COVERING (DN 15-50)	PVC
21	HANDLE NUT (DN 15-50)	A194-8
22	STOP PIN	STAINLESS STEEL + PTFE
23	GASKET	PTFE
24	SCREW	1.4408
25	NUT (HANDLE STOP)	A2-70
26	BOLT (HANDLE STOP)	A2-70
27	HANDLE MOUNTING BASE (DN 65-100)	EN 1.4408
28	SCREW (HANDLE DN 65-100)	A2-70
29	TUBULAR HANDLE (DN 65-100)	Zinc-coated A53
30	HANDLE COVERING (DN 65-100)	PVC

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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 **19** to be able to turn the valve's handle **18**. You must always turn the handle by a complete 1/4 turn until it cannot be turned any further.

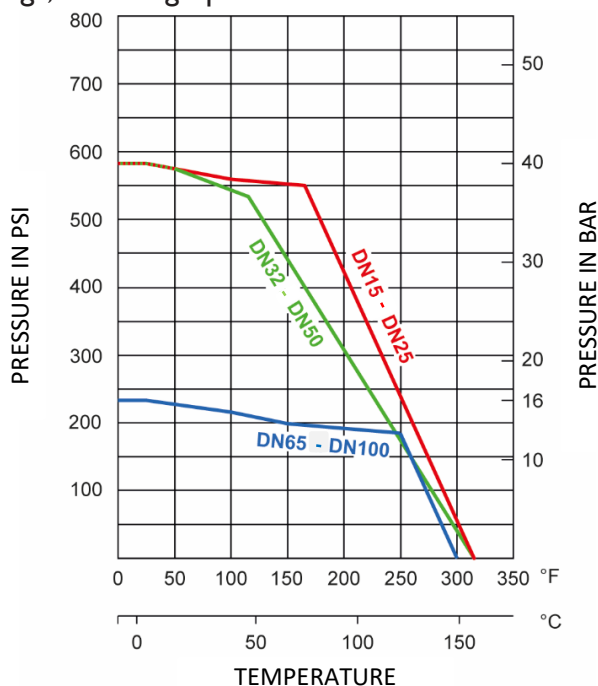
Turn the valve's handle 1/4 turn (90°) clockwise to close the valve or 1/4 turn (90°) anti-clockwise to open it.

The position of the ball is shown on the top of the shaft. You can lock the handle with a padlock, in the open or closed position.

Pressure and temperature

The data plate indicates the valve's maximum operating pressure and the minimum and maximum operating temperatures (but this information does not cover any associated actuator or servo motor, so if you use one of these with the valve please also check their respective data plates to find this information). The operating temperature is between -29°C and +175°C for TFM I600 seats.

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.

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)	15	31	39	50	96	192	264	351	653

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

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

Fluids

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.

Motorisation

You can motorise the valve through direct mounting using 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 actuator
- Model **50242**: valve with spring return or double-acting type stainless steel pneumatic actuator
- Model **50246**: valve with IP65 electric servo motor
- Model **50252 - 50256**: valve with IP68 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 for water at 10 bar	Nm	9	14	18	26	38	50	79	122	209
Operating torque for water at 20 bar	Nm	10	15	19	27	42	56	86	138	232
Operating torque for water at 40 bar	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

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

You can find this information on the product data sheet for each actuator.

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Use in ATEX zones

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

The valve's anti-static shaft ensures electrical continuity between the valve's ball, shaft and body.

If you add any other element (e.g. position detection, solenoid valves etc.), you must check that this addition can be used in ATEX zones.

You **cannot use** models **50246**, **50252** and **50258** etc. (valves with electric servo motors) **in ATEX zones**.

You can only use models **50264** and **50268** with electric servo motors in ATEX II 2 GD zones.

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 flanges:

Weld flanges (e.g. flanges with a collar) onto the piping and respect the required spacing and alignment of the mounting holes. You must check that the valve is correctly lined up with the flanges during installation. 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 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.

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 **8**, during operation or during the valve installation testing phase, tighten the shaft nut **15**. 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. You must adhere to the tightening torques in table **A** (see page 9).

If there is a leak between the valve body and the flanges, check that the flange screws **7** are correctly tightened, adhering to the tightening torques in table **B** (see page 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' and 'Spare Parts' sections 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 valve; unscrew the flanges **6**.

Remove the 3 seat rings **3** and the body gaskets **4**.

Remove the ball **2**. Check the condition of the ball's surface.

You must replace it at the same time as the 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 **21**, handle **18** and flat washer(s) **17** in the case of a manual valve (otherwise remove the valve's motorisation), then the stop nut **16**, shaft nut **15**, Belleville washers **14** and stainless steel rings (**12** + **13**).

Push the shaft **8** towards the inside of the body **1** in order to remove it, and remove the o-ring **10** and the PTFE ring **9** (be careful you do not scratch the shaft).

Remove the PTFE shaft packing (v-washers) **11** 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 TFM I 600 seat rings.

Follow the disassembly steps in reverse to reassemble the valve.

You must adhere to the tightening torques in table **A** below when you tighten the shaft packing (shaft + PTFE packing + washers, etc.) with the shaft nut **I 5**.

You must tighten the screws in a criss-cross pattern, with the valve's ball in the open position, and you must adhere to the tightening torques in table **B** 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	DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80	DN100
Tightening torque for shaft nut (15)	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

Table B	Dimensions	DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80	DN100
Tightening torque for flange screws (7)	Nm	11.3	11.3	11.3	31.7	31.7	31.7	65	65	90.5

Spare parts



Gasket kits

A gasket kit contains:

- 4 seat rings **3**
- 4 body gaskets **4**
- 1 shaft ring **9**
- 1 o-ring **10**
- 1 shaft packing **11**
- 1 support ring **12**
- 1 stop pin **22** + 1 gasket **23**

(quantity could vary according to the DN)

DN (mm)	NB (inches)	Gasket kit Part no.
15	1/2"	D5361-15
20	3/4"	D5361-20
25	1"	D5361-25
32	1"1/4	D5361-32
40	1"1/2	D5361-40

DN (mm)	NB (inches)	Gasket kit Part no.
50	2"	D5361-50
65	2"1/2	D5361-65
80	3"	D5361-80
100	4"	D5361-100

Handle for L-bore valve **I 8; I 9; 20**

For DN15 to DN50

DN (mm)	NB (inches)	Handle Part no.
15 to 20	1/2" to 3/4"	D5531-1520L
25 to 32	1" to 1"1/4	D5531-2532L
40 to 50	1/2" to 2"	D5531-4050L

DN (mm)	NB (inches)	Handle Part no.
65 to 80	2"1/2 to 3"	D5531-6580L
100	4"	D5531-100L

Tubular handle for L-bore valve

27; 28; 29; 30

For DN65 to DN100

Customisation possibilities



Position raiser with ISO mounting plate



DN (mm)	NB (inches)	Length (mm)	Position raiser with ISO plate Part no.
8 to 20	1/4" to 3/4"	100	458208-1
25 to 32	1" to 1 1/4"	100	458208-2
40 to 50	1 1/2 to 2"	100	458208-3
65 to 80	2 1/2 to 3"	100	458208-4
100	4"	100	458208-5

Oval operating wheel



DN (mm)	NB (inches)	Operating wheel Part no.
15 to 20	1/2" to 3/4"	458136-1
25 to 32	1" to 1 1/4"	458136-2
40 to 50	1 1/2 to 2"	458136-3

Spring return (deadman) handle



DN (mm)	NB (inches)	Deadman handle Part no.
15 to 20	1/2" to 3/4"	458136-1
25 to 32	1" to 1 1/4"	458136-2
40 to 50	1 1/2 to 2"	458136-3

Standards and compliance

- This valve is designed in accordance with ASME B16.34 and EN 12516-1 standards.
- Connection: flanges in accordance with NF EN 1092-1.
- Leak testing according to EN 12266/API 598.
- This valve complies with European Pressure Equipment Directive (PED) 2014/68/EU
 - from DN8 according to Annex I Paragraph 4.3.
 - from DN32 according to Annex III Module H: Certificate No. DGR 0036-QS-I045-23.
- ATEX Group II Category 2 G D in accordance with Directive 2014/34/EU: Certificate No. EX9A 082326 0003
 - II 2G Ex h IIC T6...T1 Gb (gas and vapour).
 - II 2D Ex h IIIC T85°C...T450°C Db (combustible dust).