

Ball valves

Model 58249

Wafer ATEX ball valve with ISO mounting plate - 316 stainless steel

Full bore - Lockable handle



Specifications

Dimensions: DN15 to DN150 (1/2" to 6")

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 I600 seats

PTFE + FKM gaskets

ISO 5211 mounting plate for pneumatic or electric actuators

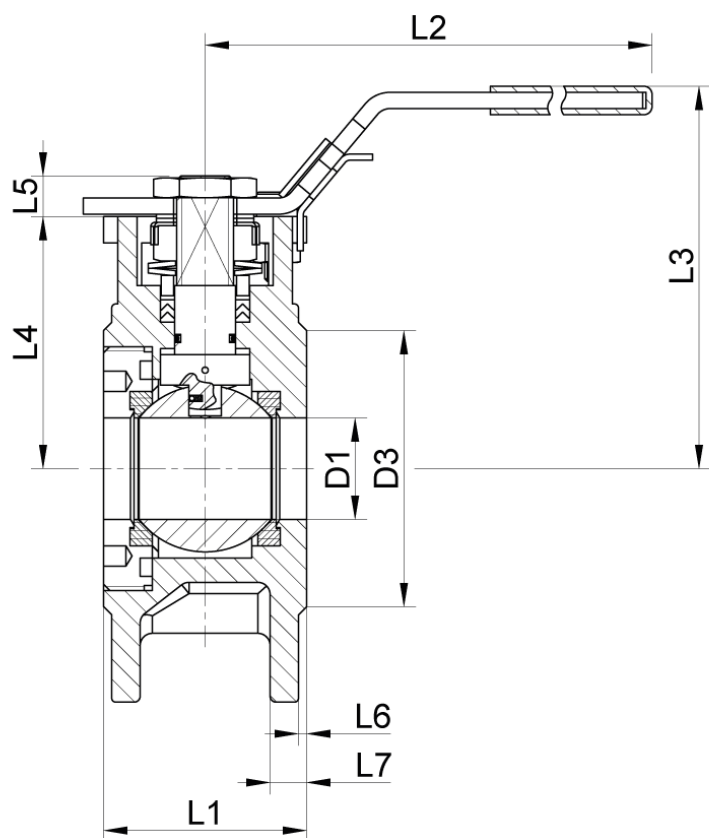
ATEX II 2 GD



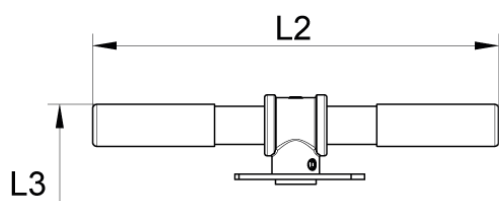
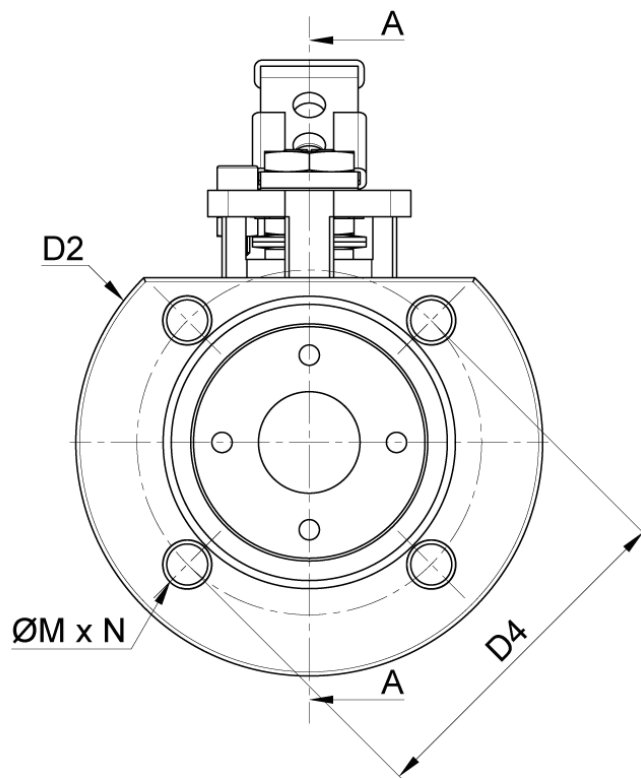
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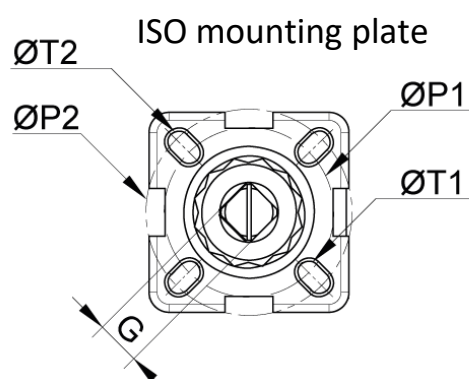
58249-G V0726



A-A CROSS SECTION



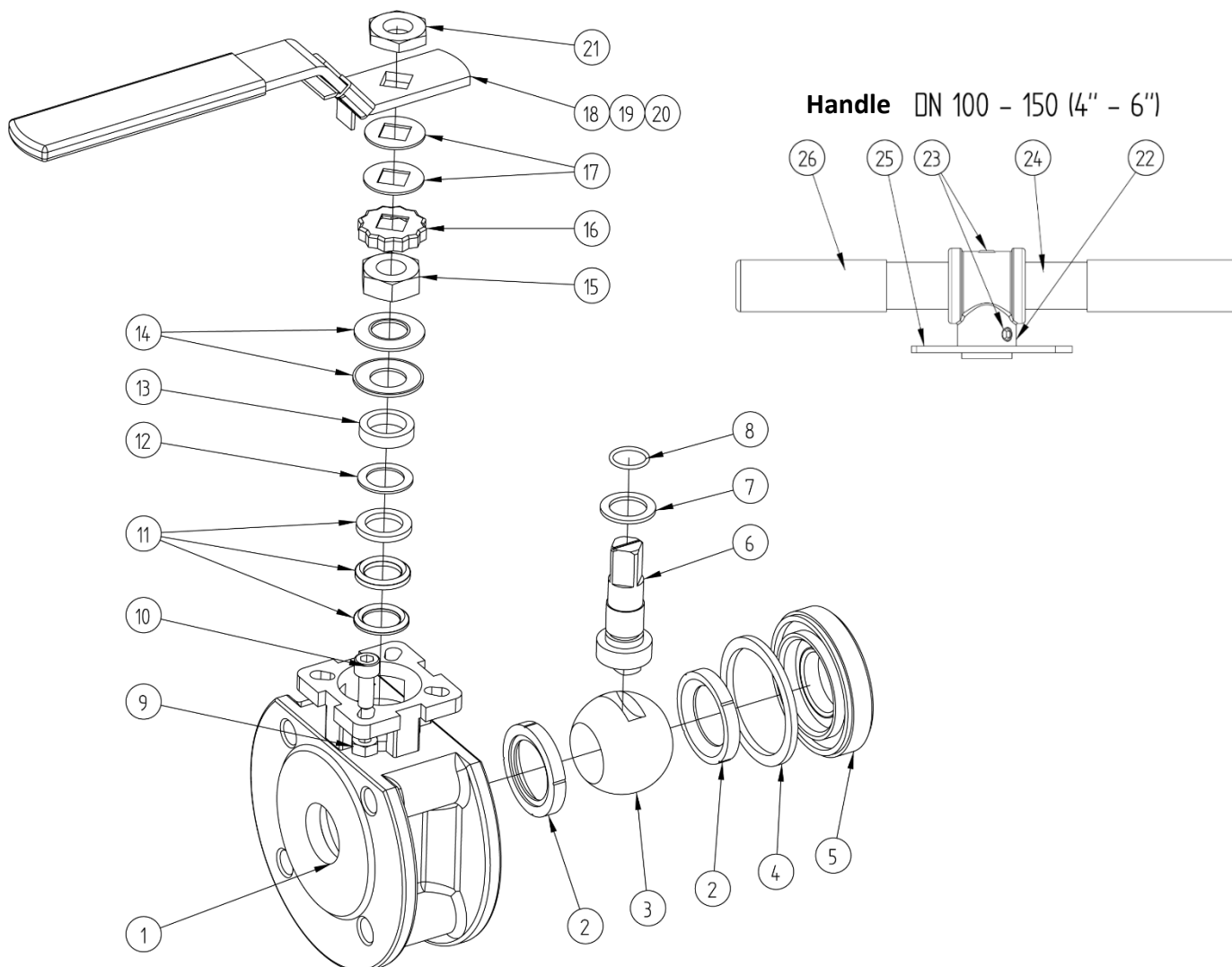
Handle DN100 - 150 (4" - 6")



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	42	150	77	48	9	2	9
20	3/4"	40	20	105	58	75	43	150	83	54	9	2	9
25	1"	40	25	115	68	85	50	177	97	62	11	2	9
32	1"1/4	40	32	140	78	100	60	177	110	72	11	2	12
40	1"1/2	40	38	150	88	110	65	197	115	78	14	3	13
50	2"	40	50	165	102	125	78	197	121	86	14	3	20
65	2"1/2	16	63.5	185	122	145	110	267	161	108	17	3	18
80	3"	16	76	200	138	160	120	267	170	116	17	3	20
100	4"	16	96	220	158	180	150	400*	212	140	22	3	20
125	5"	16	118	250	188	210	180	600*	255	175	27	3	22
150	6"	16	142	285	212	240	225	800*	275	195	27	3	22

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	M12	4	36	42	6	6	F03-F04	1.35	458249-15
20	3/4"	9	M12	4	36	42	6	6	F03-F04	1.76	458249-20
25	1"	11	M12	4	42	50	6	7	F04-F05	2.34	458249-25
32	1"1/4	11	M16	4	42	50	6	7	F04-F05	3.85	458249-32
40	1"1/2	14	M16	4	50	70	7	9	F05-F07	4.83	458249-40
50	2"	14	M16	4	50	70	7	9	F05-F07	6.68	458249-50
65	2"1/2	17	M16	4	70	102	9	11	F07-F010	10.0	458249-65
80	3"	17	M16	8	70	102	9	11	F07-F010	14.6	458249-80
100	4"	22	M16	8	-	102	-	11	F10	22.7	458249-100
125	5"	27	M16	8	-	125	-	14	F12	34.2	458249-125
150	6"	27	M20	8	-	125	-	14	F12	50.6	458249-150

* positionable tubular handle



N°	Part Name	Material
1	BODY	1.4408
2	SEAT RING	TFM1600
3	BALL	AISI 316
4	BODY GASKET	PTFE
5	THREADED CLAMPING RING (DN 15-80)	1.4408
6	ANTI-STATIC SHAFT	AISI 316 (DN 15-125)
7	SHAFT RING	PTFE
8	SHAFT O-RING	FKM
9	NUT (HANDLE STOP)	A2-70
10	BOLT (HANDLE STOP)	A2-70
11	SHAFT PACKING	PTFE
12	SUPPORT RING	STAINLESS STEEL + PTFE
13	SPACER	AISI 316

N°	Part Name	Material
14	BELLEVILLE WASHER	AISI 301
15	SHAFT NUT (GLAND)	A194-8
16	STOP NUT	AISI 304
17	FLAT WASHER	AISI 304
18	HANDLE	AISI 304
19	LOCKING DEVICE	AISI 304
20	HANDLE COVERING (DN 15-80)	PVC
21	HANDLE NUT (DN 15-80)	A194-8
22	HANDLE ADAPTER (DN 100-150)	A351
23	SCREW (DN 80-150)	A2-70
24	TUBULAR HANDLE (DN 100-150)	A53 ZINGUÉ
25	LOCKING DEVICE (DN 100-150)	AISI 304
26	HANDLE COVERING (DN 100-150)	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 of a turn, until it cannot be turned any further due to **10**.

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

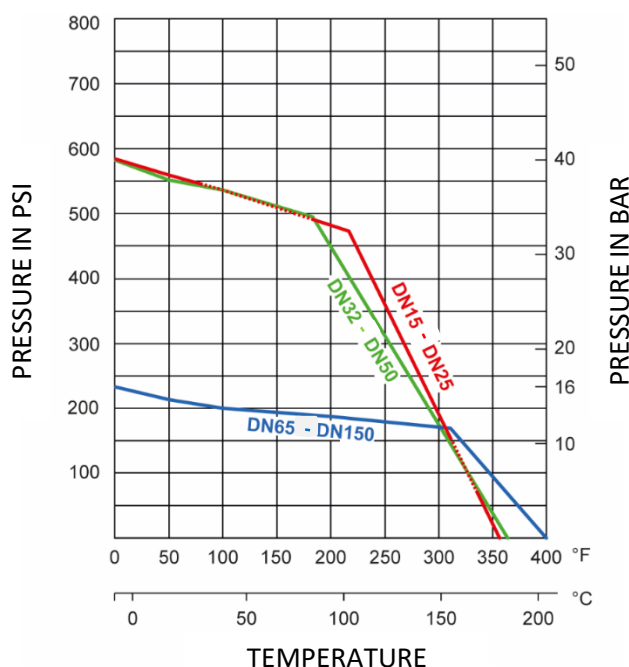
The valve is open if the handle is in line with the piping.

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

Pressure and temperature

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).

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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Flow coefficient and pressure loss

Dimensions	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150
	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"
Kv (m³/h)	26	48	83	147	234	407	675	995	1557	2595	3893

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:

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

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 5211 standard), see the corresponding product data sheets.

- Model **50270**: valve with spring return or double-acting type aluminium pneumatic actuator
- Model **50271**: valve with spring return or double-acting type stainless steel pneumatic actuator
- Model **50273**: valve with IP65 electric servo motor
- Model **50277 - 50278 - 50279**: valve with IP68 electric servo motor
- Model **50281 - 50282 - 50283**: valve with IP68 electric servo motor
- Model **50285 - 50286 - 50287**: valve with ATEX IP68 electric servo motor

Required operating torque for valve motorisation

Dimensions	-	DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80	DN100	DN125	DN150
Operating torque for water at 10 bar	Nm	5	6	10	13	19	29	45	72	110	210	306
Operating torque for water at 20 bar	Nm	5	6	11	15	22	32	49	81	122	245	340
Operating torque for water at 50 bar	Nm	5	6	11	17	24	34	52	88	132	280	510
Coupling characteristics	Mounting plate	F03 F04	F03 F04	F04 F05	F04 F05	F05 F07	F05 F07	F07 F10	F07 F10	F10	F12	F12
	Square	9x9	9x9	11x11	11x11	14x14	14x14	17x17	17x17	22x22	27x27	27x27

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 **58249**) and pneumatic valves (models **50270** and **50271**) 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 **50273**, **50277**, **50278**, **50279**, **50281**, **50282** and **50283** (valves with electric servo motors) **in ATEX zones**.

You can only use models **50285**, **50286** and **50287** 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 **6**, during operation or during the valve installation testing phase, tighten the shaft nut (gland) **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 below).

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 clamping ring **5** from the valve's body **1**. Remove the body gasket **4** and the seat ring **2**.

Close the valve to remove the ball **3** and the second seat ring **2**. Check the condition of the ball's surface. You must replace it at the same time as the seat rings **2** 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 **6** towards the inside of the body **1** in order to remove it, and remove the shaft o-ring **8** and the PTFE ring **7** (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 **1600** seat rings.

Follow the disassembly steps in reverse to reassemble the valve.

Pressure test the valve and check that it can be opened and closed before you put the installation back into service.

Table A	Dimensions	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150
Tightening torque for shaft nut (15)	Nm	9~ 12	9~ 12	12~ 16	12~ 16	17~ 22	17~ 22	25~ 32	25~ 32	42~ 50	65~ 75	65~ 75

Spare parts



Gasket kits

A gasket kit contains:

- 2 seat rings **2**
- 1 body gasket **4**
- 1 shaft ring **7**
- 1 o-ring **8**
- 1 shaft packing **11**
- 1 support ring **12**

(quantity could vary according to the DN)

DN (mm)	NB (inches)	Gasket kit Part no.
15	1/2"	D5371-15
20	3/4"	D5371-20
25	1"	D5371-25
32	1"1/4	D5371-32
40	1"1/2	D5371-40
50	2"	D5371-50

DN (mm)	NB (inches)	Gasket kit Part no.
65	2"1/2	D5371-65
80	3"	D5371-80
100	4"	D5371-100
125	5"	D5371-125
150	6"	D5371-150

Handle **18; 19; 20**

For DN15 to DN80

DN (mm)	NB (inches)	Handle Part no.
15 to 20	1/2" to 3/4"	D5121-820
25 to 32	1" to 1"1/4	D5121-2532
40 to 50	1"1/2 to 2"	D5121-4050
65 to 80	2"1/2 to 3"	D5121-6580

DN (mm)	NB (inches)	Handle Part no.
100	4"	D5121-100
125	5"	D5121-125
150	6"	D5121-150

Tubular handle **22; 23; 24; 25; 26**

For DN100 to DN150

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
125 to 150	5" to 6"	120	458208-6

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 DIN 3375 and EN 12516-I standards.
- Connection: flanges in accordance with NF EN 1092-I.
- 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).