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INSTALLATION, OPERATION AND MAINTENANCE MANUAL

Static Balancing Valve
Flanged Ends

Ref. GENEBRE: 2228

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Installation, operation and maintenance instructions

1. Product description.

Genebre, S.A. offers a wide range of valves designed and assembled to handwheel and drive fluids in industrial procedures.
The compatibility of materials used to build the valves (see corresponding Data Sheet) and the application of valves to the different industrial processes is at user's risk. Valves will have an optimal behavior when working conditions do not exceed pressure and temperature limits (pressure curve) for which they have been designed.
Balancing valves with flanged ends are used when it is needed to precisely regulate the flow in large heating and cooling circuits.

2. Transport and Storage conditions

Transport and storage of this kind of products must be done keeping them in their original package!

VISUAL INSPECTION
Check whether during transport, unloading and placement the products have suffered damages.

During storage it is recommended to keep them into the included protective wrapping to avoid damages or dirt accumulation in the inside part of the valve.The wrap must not be removed until valve is to be installed.

Valves must be stored in a dry and clean environment.

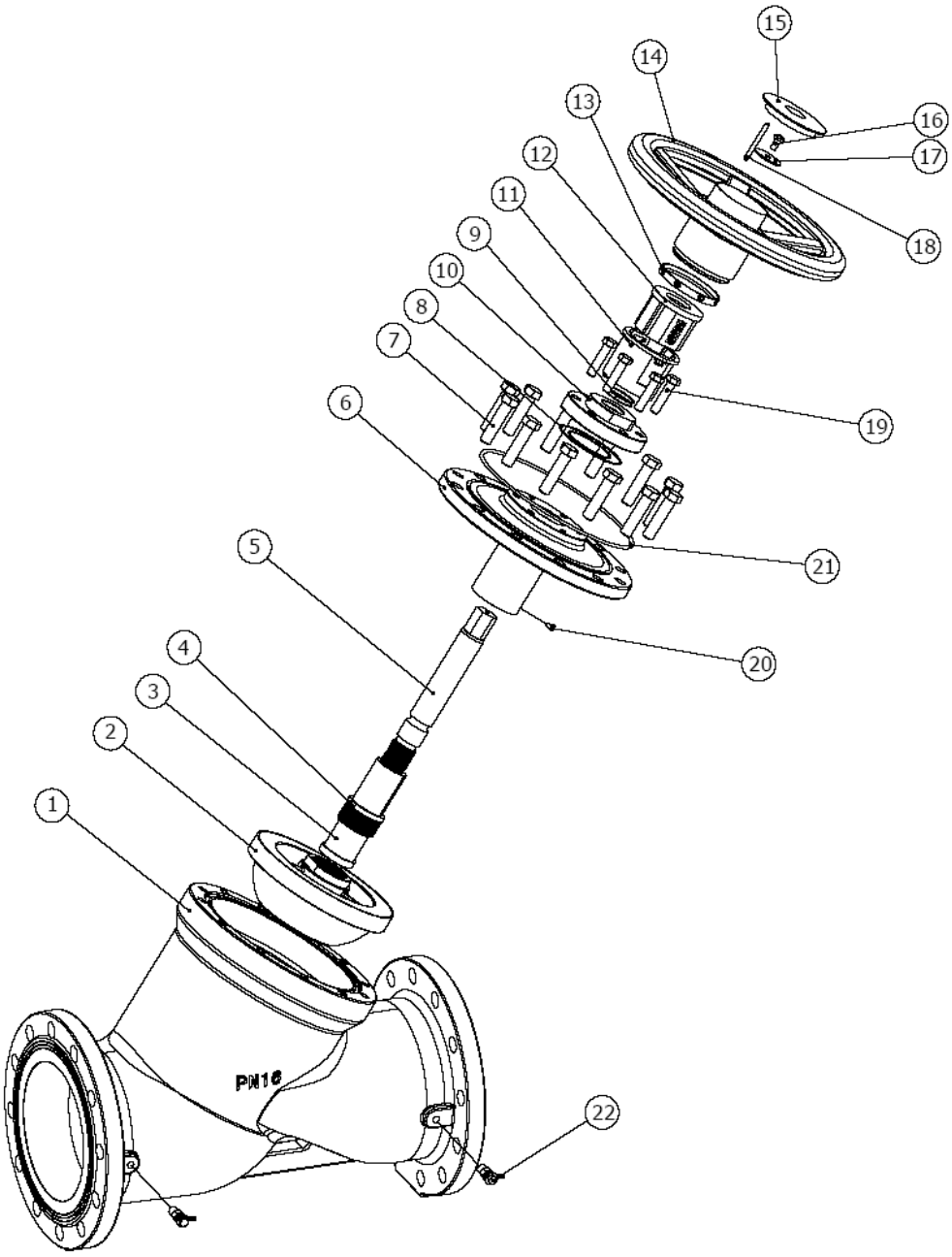
If you notice any kind of anomaly during reception of the goods, contact immediately with GENEBRE in order to determine the possible responsibilities on the issue.

IMPORTANT NOTE:

Before installing and/or manipulating these elements, READ CAREFULLY these instructions for use and OBSERVE all contained information. If you fail to understand any of their content, please contact GENEBRE, S.A.

User is responsible for the safe use of these products, according to present instructions for use and specific technical documentation of the device.

3. Exploded drawing



Nº	Name	Material	Surface Treatment	Spare Part Code
1	Body	EN-GJS-450	Painted	-----
2	Disc	ASTM A126 B + EPDM	------	-----
3	Stem Nut	Cooper Alloy	------	-----
4	Disc Cover	Latón / Brass	------	-----
5	Stem	ASTM A276 420	------	-----
6	Bonnet	EN-GJS-450	Painted	-----
7	Bolt	Carbon Steel	Painted	-----
8	O-ring	EPDM	------	-----
9	O-ring	EPDM	------	-----
10	Gland Flange	ASTM A536 65-45-12	Ni plated	-----
11	Link Cover	ABS	------	-----
12	Direction Cover	ABS	------	-----
13	Scale Ring	Black Plastic	------	-----
14*	Handwheel	≤ 6" Aluminium / ≥ 8" Steel	Painted	V2228 xx
15	Cover	Polietileno / PE	------	-----
16	Screw	ASTM A276 420	------	-----
17	Washer	ASTM A276 420	------	-----
18	Locating Screw	AISI 1035	Zn plated	-----
19	Screw	Carbon Steel	Zn plated	-----
20	Screw	ASTM A276 420	------	-----
21	Gasket	EPDM	------	-----
22*	/ Test Point	Brass	------	T2228 xx

**** Available spare parts***

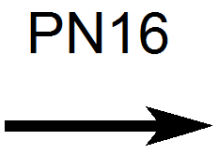
4. Installation instructions

4.1) Preparation

Remove any material remains of the valve wrapping.
Serious problems may arise with the installation of a valve in a dirty pipe.
Make sure the pipe is not dirty and doesn't have welding particles, for example, before installing it. This may cause irreparable damages in the valve when the equipment is started → *prepare a clean working area*.
Plan beforehand enough space for future maintenance operations.
Control the correct performance of the valve by turning the handwheel both sides (close and open) and observing if the disc or needle slides correctly. If this is not the case, check if there are foreign particles inside the valve and repeat the whole operation.

4.2) Installation of valves with flanged ends

Design for this kind of regulation valves allows only one position for assembling it to the pipe, specified by means of an arrow in the valve's body that indicates the direction in which the fluid needs to circulate.



Do not disassemble the valves to install them.

Make sure the pipe's and edges flanges of the valve are clean.
Use the corresponding screws in all of the flanges drill holes.
Place an adequate joint in each end and align it in the centre of the flanges.
Tighten screws evenly and cross-shaped to avoid deformations. To do so, you must not force in any case the pipe to centre the valve; it should take its position smoothly. Last, verify that screws are tightened with the recommended torque for each type of screw.
Make sure the flanges joints are well placed.
After assembling, check the tightness and performance of the valve.

It is recommended to install the valve in horizontal position and the handwheel upwards. A valve installed vertically could distort the results in flow measurement. A valve installed with the handwheel downwards might produce leakage by dirt accumulation on the seat.

ATTENTION:

- install expansion joints in the pipe line.

- valves do not have to support pipe's efforts so it is advisable to anticipate a good alignment and parallelism of such pipe.

- it is also recommended to use filters in the pipe to extend lifecycle of the valve.

- The valve should not be mounted adjacent to one elbow, reducer, valve or pump, to avoid turbulence. The minimum recommended distance between these elements

is 10 times the diameter of the pipe upstream and 3 times the diameter of the pipe downstream, according to CR 13932: 2000. If this recommendation is omitted, the influence of turbulence on the flow rate could reach 20%.

4.3) Calculation of flow and adjustment of the handwheel

Measuring the differential of pressure between the two checkpoints and placing the handwheel in a given position can be determined the circulating flow through the valve. To this we must use the included diagrams and tables in paragraph 8 together with two gauges, or by using a special flow meter.
Once the handwheel is in the desired position, lock it by using the "preset screw" inside the handwheel. It will be necessary to remove the red *Cover* (part. 15) and turn clockwise the *Locating Screw* (part. 18) by using Allen key until it stops.

NOTE: The flow diagrams of Section 8 are based on the calculation with pure water. For use with water + glycol, whose density is higher, the following correction factor should be applied according to the proportion of antifreeze:

0.96 (25% glycol) / 0.92 (50% glycol) / 0.89 (75% glycol) / 0.86 (100% glycol)

5. Operating instructions

5.1) Usage

GENEBRE valves provide good sealing when used adjusted to the pressure and temperature values for which they have been designed.

Valve materials have to be fully compatible with the fluid circulating through the valve. Otherwise, valve could be seriously damaged.

Do not use for slurries or fluids containing solids that can build up in valve cavities.

5.2) Manual operation

In general, once the valve is installed, it should not be operated unless a maintenance operation to be performed.

To close, the operation consists in turning the handwheel clockwise and anticlockwise if you want to open the valve.

6. Maintenance instructions

Frequency, place and process of maintenance will be determined by the user by taking into account usage of the product. However, periodical checks explained below will be useful to extend the service life of the valve and reduce installation problems.

6.1) Valves must not remain in open or closed position for a long period of time. It is recommended, if the process allows for it, to operate it for control purposes every six months.

6.2) Verify possible leaks through the line (due to closure); this defect is probably caused by deposition of impurities between the disc or needle and the seat, transported by the fluid. Disassemble the valve from the pipe, clean it thoroughly and reinstall it. If the problem persists you should change the valve. Probably the elastomer closure has been damaged by the use (see Section 7).

7. Reparation instructions

These types of valves, due to their assembling specifications are not worth repairing, because most of the times are simply not cost-effective, so we recommend to directly replace them.

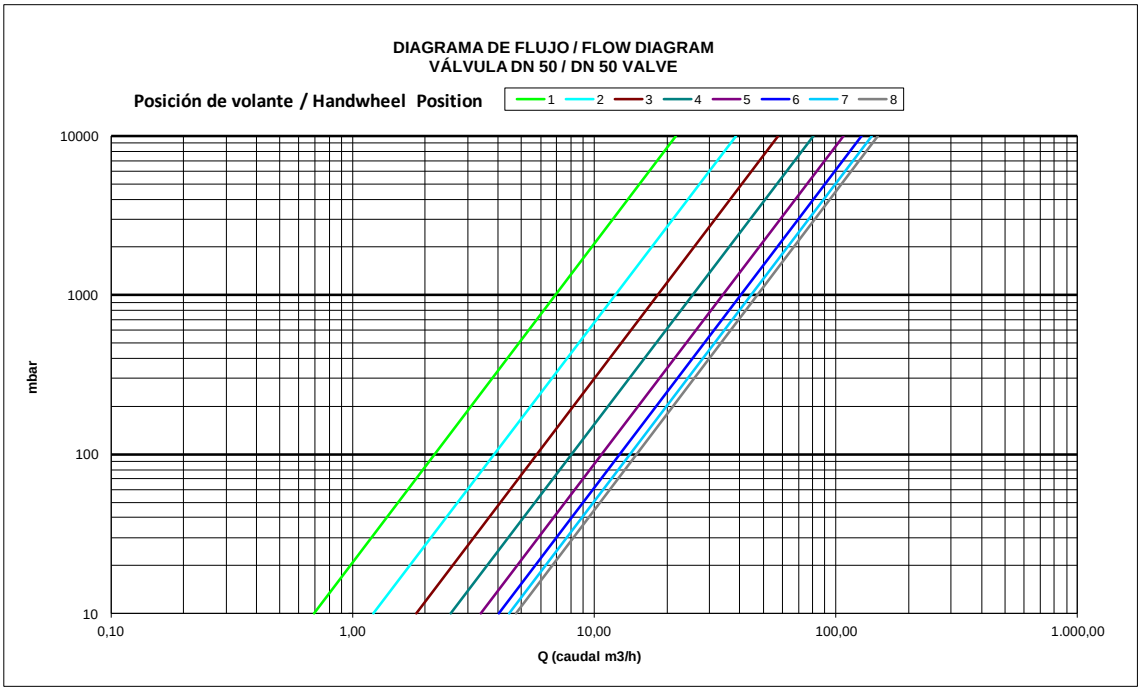
Before disassembling the pipe's valve to clean or replace it, make sure that line has been closed and depressurized because a bad operational procedure could cause a serious accident to staff and installation system

Before installing new valve, check if it meets the requirements of the valve being replaced

8. Flowcharts

Handwheel Position	Kv (m3/h @ 1 bar)								
	50	65	80	100	125	150	200	250	300
1	6.9	14.5	18.5	37.2	64.3	89.6	87.3	113.4	163.4
2	12.2	27.5	32.7	69.4	104.4	146.3	160.6	173.5	295.3
3	18.3	40.5	50.8	102.5	150.5	213.4	240.5	241.8	455.5
4	25.5	53.2	71.8	133.5	196.7	275.6	331.4	318.5	643.5
5	33.9	64.4	89.7	163.4	241.5	338.4	420.3	413.4	852.4
6	40.2	73.4	107.3	189.6	280.4	404.5	498.5	523.5	1037.6
7	44.4	81.6	118.8	213.5	309.5	448.6	573.6	630.6	1197.8
8	47.3	86.6	131.2	230.4	331.3	478.2	641.4	727.8	1384.8
9	----	----	----	----	----	----	704.6	819.6	1568.1
10	----	----	----	----	----	----	764.5	918.1	1739.0
11	----	----	----	----	----	----	811.9	1018.2	1919.4
12	----	----	----	----	----	----	865.6	1116.3	2099.4

** flow rate within the following tolerances: ±18% (at the 25% open position) and ±10% (at the fully open position), according to BS 7350 standard.*



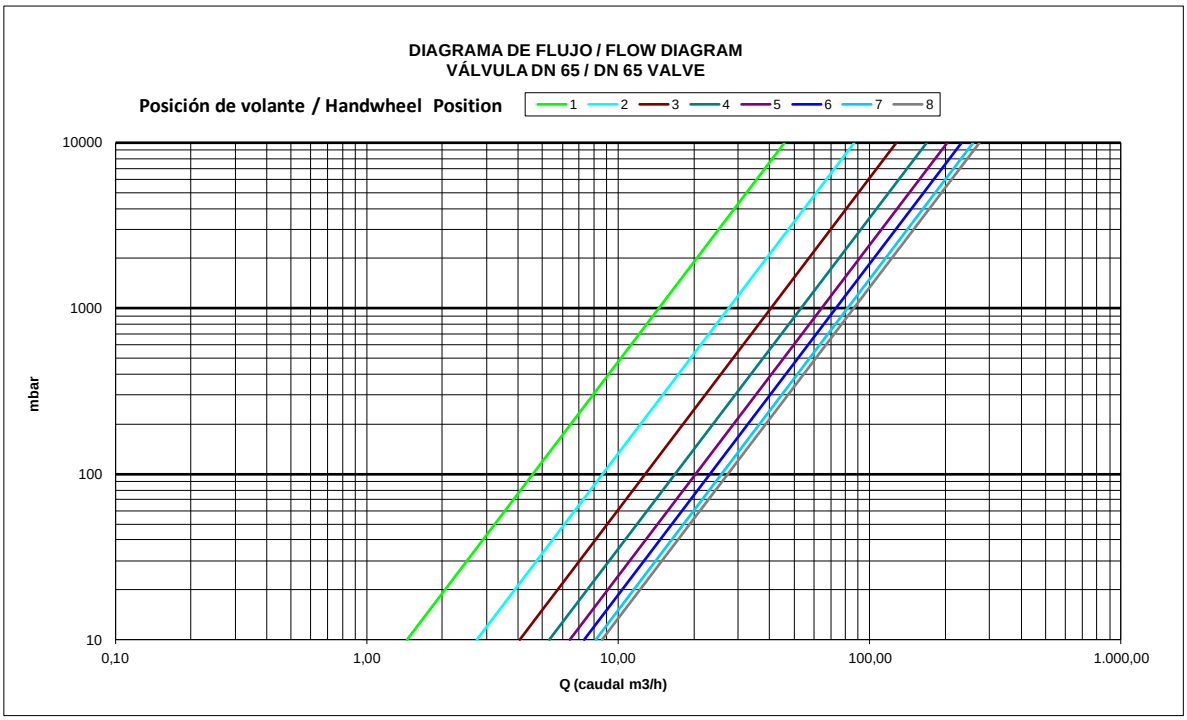


DIAGRAMA DE FLUJO / FLOW DIAGRAM
VÁLVULA DN 65 / DN 65 VALVE
Posición de volante / Handwheel Position
1
2
3
4
5
6
7
8
10000
1000
100
10
mbar
0,10
1,00
10,00
100,00
1.000,00
Q (caudal m3/h)

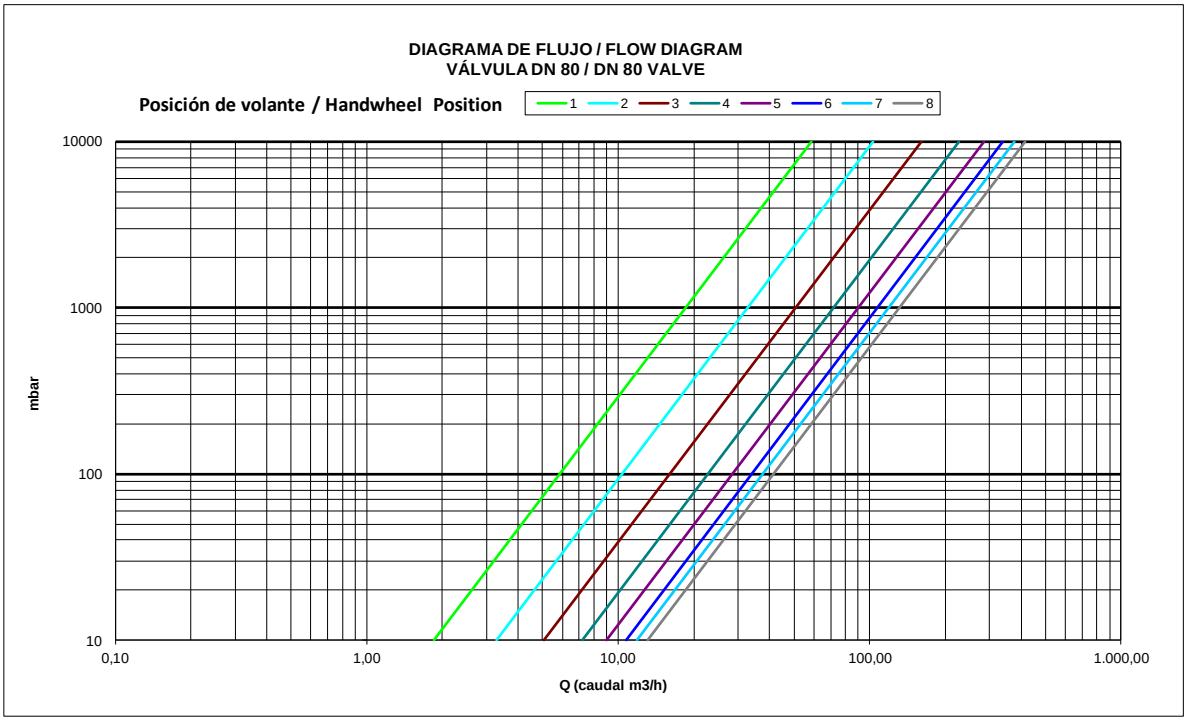


DIAGRAMA DE FLUJO / FLOW DIAGRAM
VÁLVULA DN 80 / DN 80 VALVE
Posición de volante / Handwheel Position
1
2
3
4
5
6
7
8
10000
1000
100
10
mbar
0,10
1,00
10,00
100,00
1.000,00
Q (caudal m3/h)

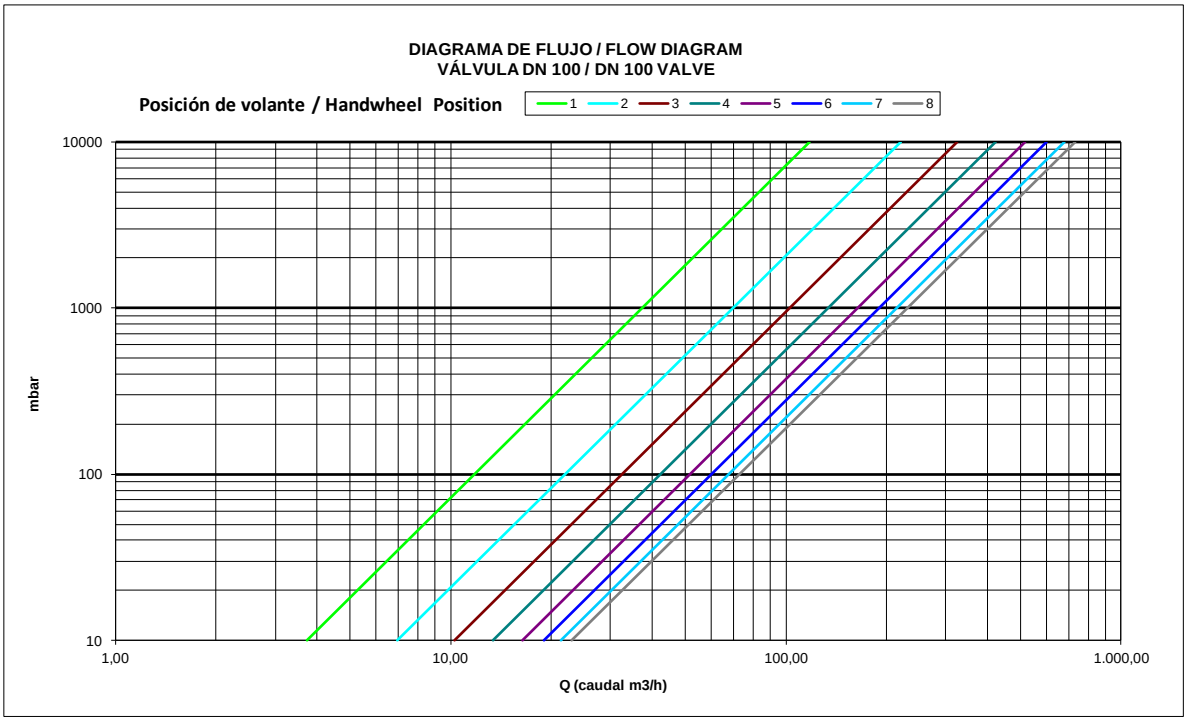


DIAGRAMA DE FLUJO / FLOW DIAGRAM
VÁLVULA DN 100 / DN 100 VALVE
Posición de volante / Handwheel Position
1
2
3
4
5
6
7
8
10000
1000
100
10
mbar
1,00
10,00
100,00
1.000,00
Q (caudal m3/h)

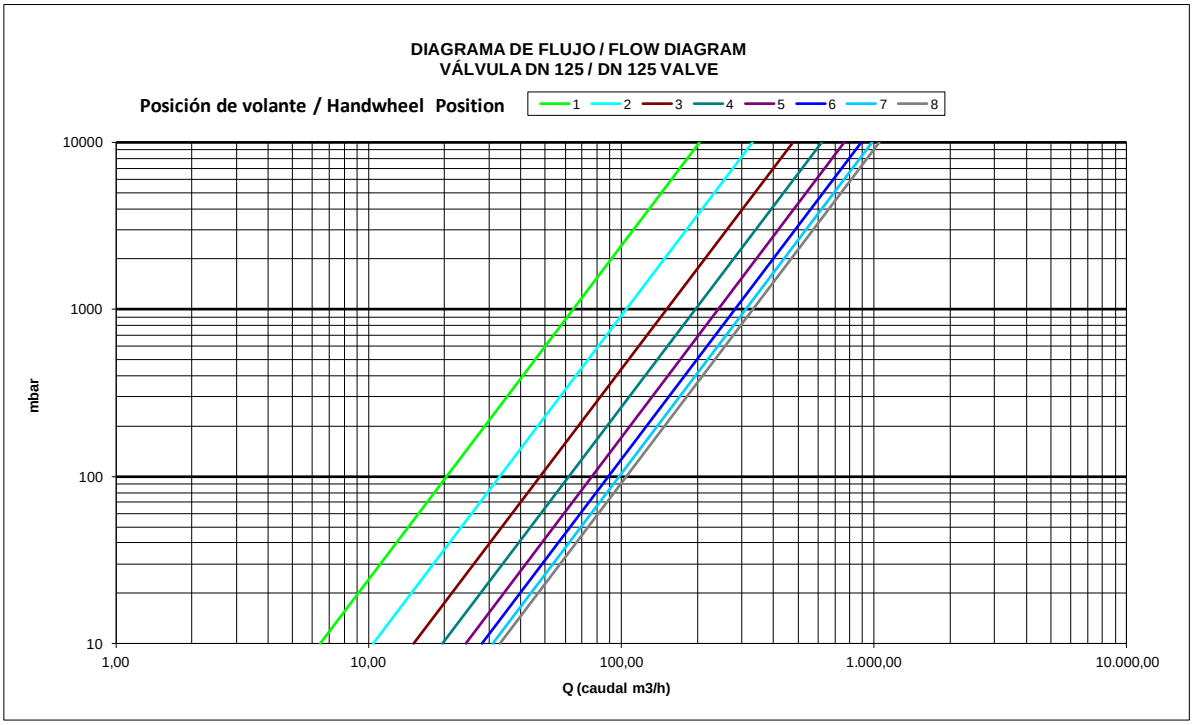


DIAGRAMA DE FLUJO / FLOW DIAGRAM
VÁLVULA DN 125 / DN 125 VALVE
Posición de volante / Handwheel Position
1
2
3
4
5
6
7
8
10000
1000
100
10
mbar
1,00
10,00
100,00
1.000,00
10.000,00
Q (caudal m3/h)

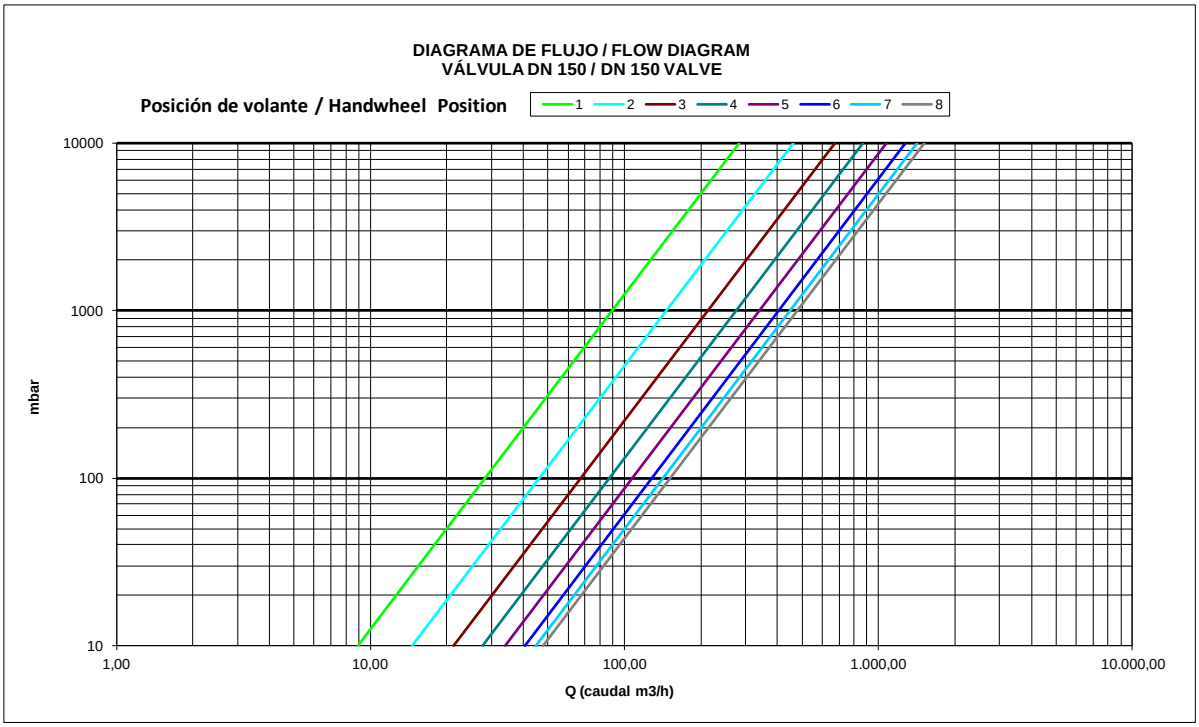


DIAGRAMA DE FLUJO / FLOW DIAGRAM
VÁLVULA DN 150 / DN 150 VALVE
Posición de volante / Handwheel Position
1
2
3
4
5
6
7
8
10000
1000
100
10
mbar
1,00
10,00
100,00
1.000,00
10.000,00
Q (caudal m3/h)

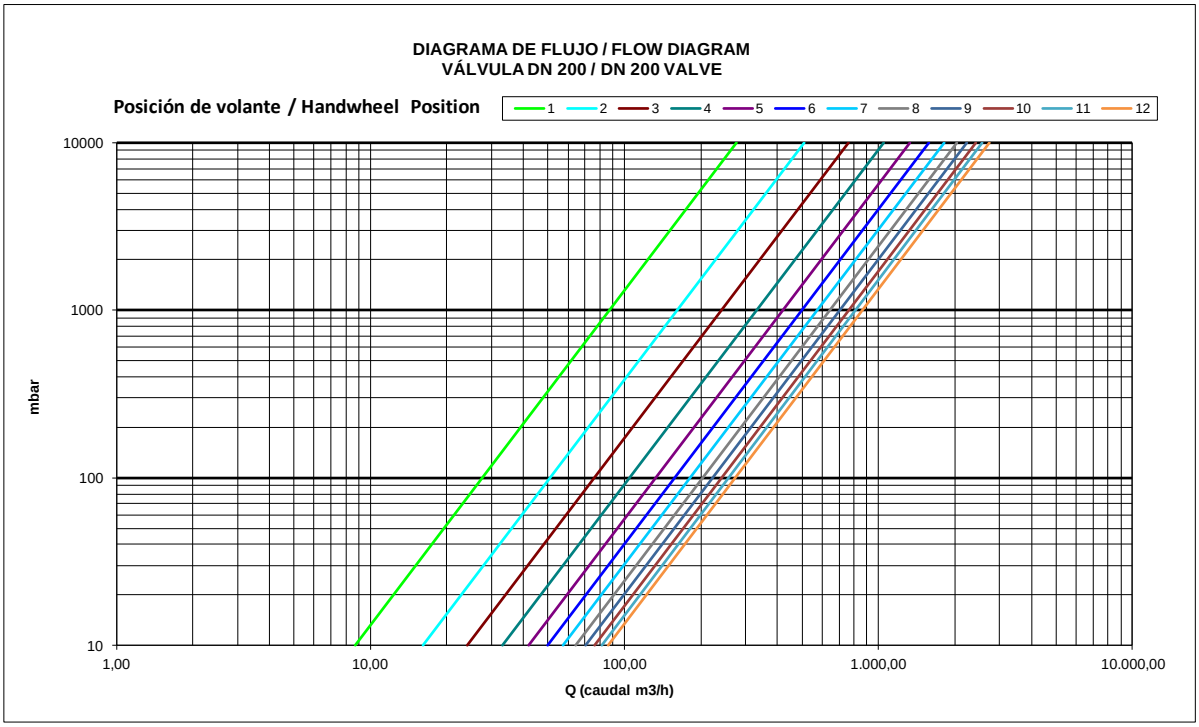


DIAGRAMA DE FLUJO / FLOW DIAGRAM
VÁLVULA DN 200 / DN 200 VALVE
Posición de volante / Handwheel Position
1
2
3
4
5
6
7
8
9
10
11
12
10000
1000
100
10
mbar
1,00
10,00
100,00
1.000,00
10.000,00
Q (caudal m3/h)

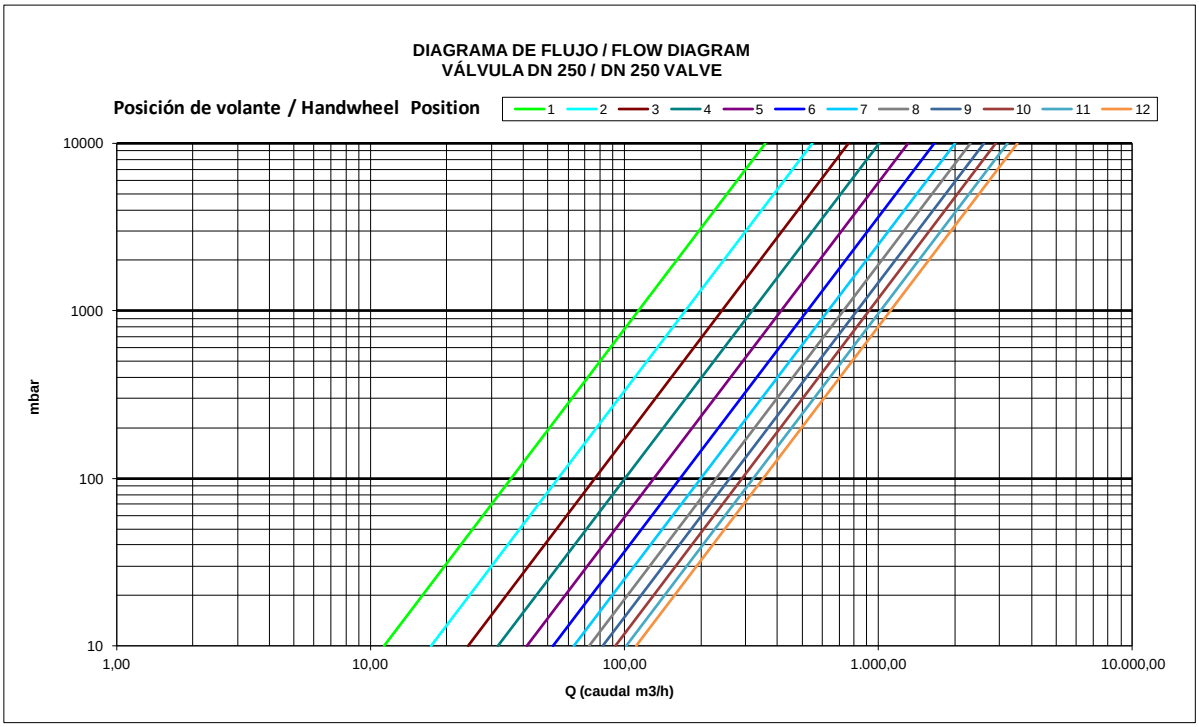


DIAGRAMA DE FLUJO / FLOW DIAGRAM
VÁLVULA DN 250 / DN 250 VALVE
Posición de volante / Handwheel Position
1 2 3 4 5 6 7 8 9 10 11 12
10000
1000
100
10
mbar
1,00
10,00
100,00
1.000,00
10.000,00
Q (caudal m3/h)

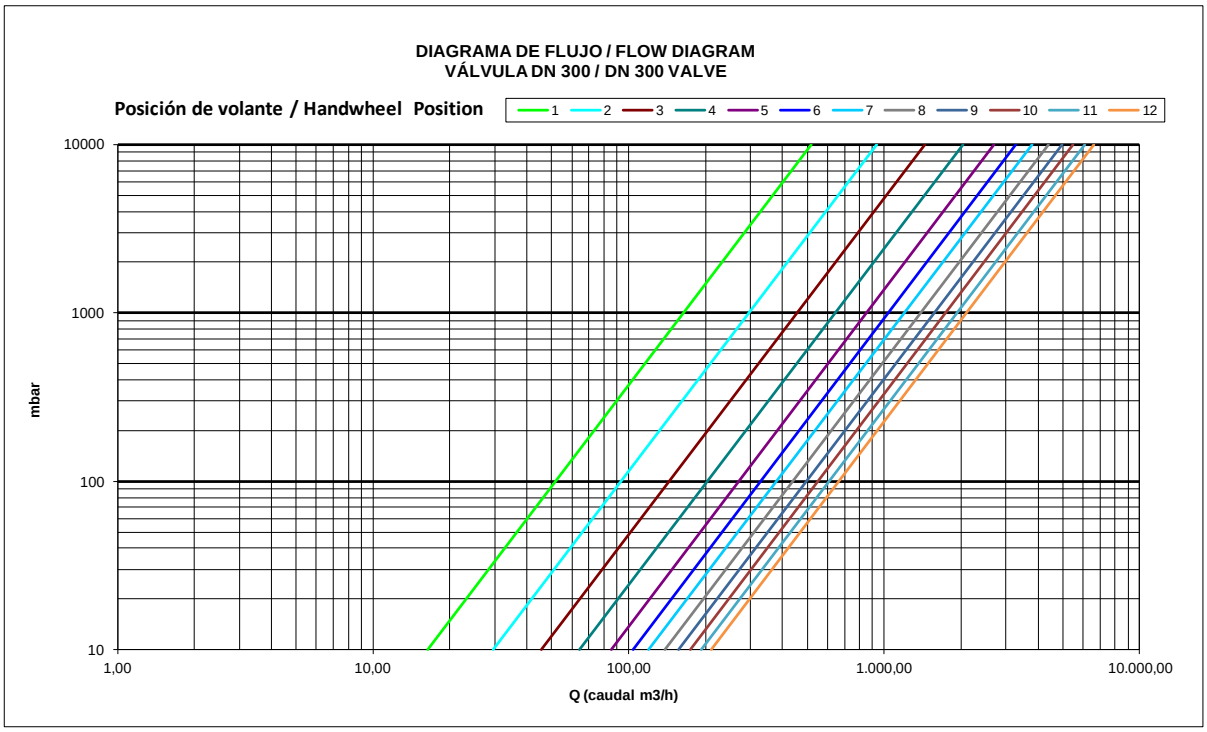


DIAGRAMA DE FLUJO / FLOW DIAGRAM
VÁLVULA DN 300 / DN 300 VALVE
Posición de volante / Handwheel Position
1 2 3 4 5 6 7 8 9 10 11 12
10000
1000
100
10
mbar
1,00
10,00
100,00
1.000,00
10.000,00
Q (caudal m3/h)

9. Hygiene and Safety Instructions

9.1) Fluid passing through a valve or accessory can be corrosive, toxic, flammable or pollutant. When operating valves, you must follow the security instructions and it is recommended to use personal protection gadgets:

1) Protect your eyes.
2) Wear gloves and appropriate working clothes.
3) Wear safety footwear.
4) Wear a helmet.
5) Have running water at hand.
6) To operate flammable fluids, make sure you have an extinguisher at hand.

9.2) Before removing a valve from a pipe, check always if the line is completely drained and depressurized.

9.3) Operate the valve in open position to make sure there is no pressure in the internal cavity.

9.4) Any valve being used by toxic services department needs to obtain a cleanliness certificate before being operated.