

TECHNICAL DATA

D SERIES



ARNETT
ENGINEERED SOLUTIONS

ARNETT ENGINEERED SOLUTIONS
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UNIDIRECTIONAL GATE VALVE

DESCRIPTION

- Unidirectional flanged gate valve (bidirectional option to order), designed for high pressure applications, with self-cleaning seal.
- Single piece die-cast body with screwed-down bonnet and wedges to guarantee the seal.
- Provides high flow rates with low pressure drop.
- Various seal and packing materials available.
- Face-to-face distance in accordance with **CMO Valves** standard.
- It has an arrow on the body indicating the flow direction.

GENERAL APPLICATIONS

The gate valve is suitable for working with clean liquids or liquids with a concentration of solids.

Designed for a wide range of applications such as:

- Drying plants
- Paper industry
- Water Treatment
- Chemical Plants
- Food sector
- Mining
- Sludge
- Oil extraction

SIZES

ND50 to ND1200.

** Others **ND** on request.*

WORKING PRESSURE (ΔP)

- PN 2,5 to PN 100.
- Each valve is designed according to work conditions.

STANDARD FLANGES

- EN1092 PN10.
- ASME B16.5 (class 150).

OTHER COMMON FLANGES

- PN6.
- PN16.
- PN25.
- BS "D" & "E".
- JIS10K.

** Others on request*



Fig. 1

APPLICATION OF EUROPEAN DIRECTIVES

See document of European Directives applicable to **CMO Valves**.

** For category and zone information, contact technical-commercial department at **CMO Valves**.*

QUALITY DOSSIER

All valves are tested hydrostatically at **CMO Valves** and material and test certificates can be provided.

- Body test = working pressure x 1.5
- Seat test = working pressure x 1.1

D SERIES

As part of a process of on-going product and service development, **CMO Valves** reserves the right to amend and change the data and content of this document at its discretion at any time without notice. The publication of the latest revision renders all previous documents invalid.

Installation and Maintenance Manual available at www.cmovalves.com.

ADVANTAGES

When a gate valve remains open for long periods of time and the body's internal walls are parallel a very large torque is required to close it. The inside of the **D** model body has a conical shape which provides more space; moreover, the width across flats in this type of valves is greater than standard, thus achieving more space. This way, when the valve is shut-o the solids stored inside it can be easily released.

This knife gate valve is defined as unidirectional and in this type of valves of other suppliers there is the risk of the gate bending due to the existence of counterpressure. This cannot happen with the **CMO Valves** valve because it contains internal slides that support the gate and allow it to work under counter-pressure of 30% of the maximum working pressure, without the gate becoming deformed. There is also option of making bidirectional **D valves** to order.

The stem protection hood is independent from the handwheel securing nut, this means the hood can be disassembled without the need to release the handwheel. This advantage allows regular maintenance operations to be performed, such as lubricating the stem, etc.

The valve spindle is made of stainless steel AISI304. This is another added advantage, as some manufacturers supply it with 13% chromium, resulting in quick oxidation. The operating wheel is manufactured in nodular cast. Some manufacturers supply it in common cast-iron, which can lead to breakage in the event of very high operation torque or a bang. The yoke has a compact design with the bronze actuator nut protected in a sealed and lubricated box. This makes it possible to move the valve with a key, even without the handwheel (in other manufacturers' products this is not possible).

The pneumatic actuator's upper and lower covers are made of nodular cast iron, making them highly shock resistant. This characteristic is essential in pneumatic actuators. The pneumatic cylinder's seals are commercial products and can be purchased worldwide. This means it is not necessary to contact **CMO Valves** every time a seal is required.

STANDARD COMPONENTS LIST

COMPONENT	NODULAR IRON	ST. STEEL
1 BODY	A216WCB	CF8M
2 GATE	AISI304	AISI316
3 BONNET	A216WCB	CF8M
4 GLAND FLANGE	S275JR	AISI316
5 GLAND BUSHING	AISI304	AISI316
6 PACKING	SYNT + PTFE	
7 STEM	AISI303	
8 SUPPORT PLATE	S275JR	
9 SEAL	EPDM	
10 RING	AISI304	AISI316
11 YOKE	GJS500-7	
12 STEM NUT	BRONZE	
13 STOPPER NUT	STEEL	
14 HANDWHEEL	GJS500	
15 HOOD NUT	5.6 ZINC	
16 HOOD	STEEL	
17 PROTECTION CAP	PLASTIC	
18 SEAT SEALING JOINT	EPDM	

Table. 1

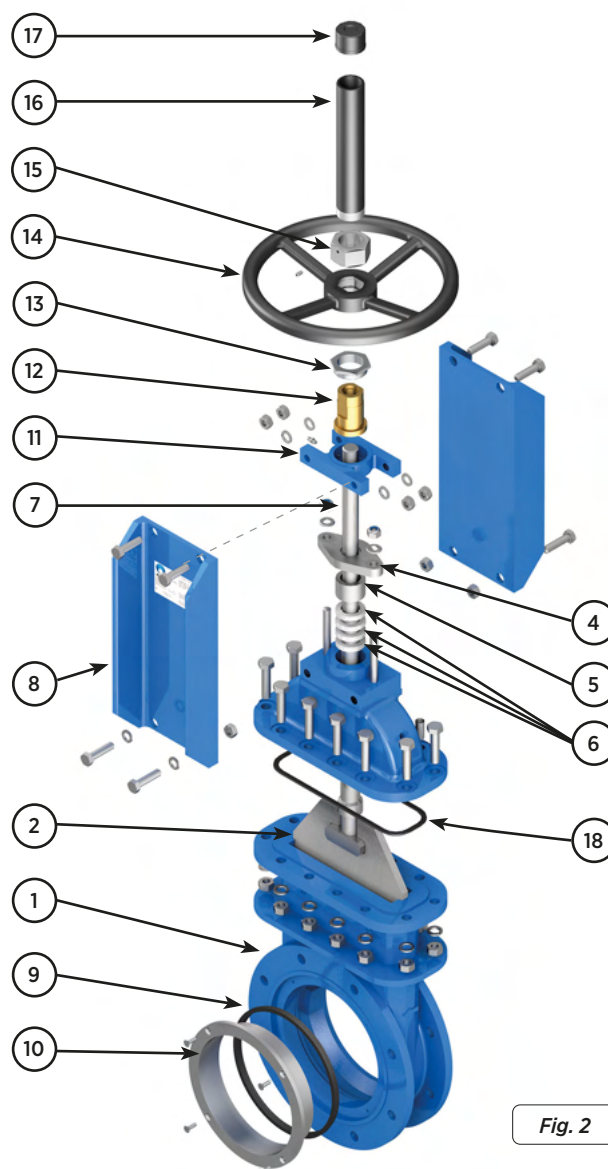


Fig. 2

DESIGN CHARACTERISTICS

1. BODY

Single piece (monobloc) die-cast body with screwed-down bonnet. The body has interior guides for optimum sliding of the gate and wedges for improved seal-tightness. For diameters over DN1200, the body and the bonnet are mechanically welded with the reinforcements necessary to withstand the maximum working pressure. Designed with full passage to provide large flows with small losses of load.

The internal design of the body prevents solids from being stored in the seal area, whilst the distance between flanges in this type of valves allows the solids to move freely inside the body. The standard manufacturing materials are A216WCB carbon steel and CF8M stainless steel. Other materials such as GJS500-7 and stainless steel alloys (AISI316Ti, Duplex, 254SMO, Uranus B6, etc) are available on request. As standard, carbon steel valves are painted with an anti-corrosive protection of 80 microns of EPOXY (colour RAL 5015). Other types of anti-corrosive protections are available to order.

2. GATE

The standard manufacturing materials are AISI304 stainless steel in valves with iron body and AISI316 stainless steel in valves with CF8M body. Other materials or combinations can be supplied on request. The gate is polished on both sides to provide a smooth contact surface with the resilient seat. At the same time, the gate is rounded to prevent the seat from being cut. Different degrees of polishing, antiabrasion treatments and modifications are available to adapt the valves to the customer's requirements.

RESILIENT SEAT MATERIALS

EPDM

This is the standard resilient seat fitted on **CMO valves**. It can be used in many applications, however, it is generally used for water and products diluted in water at temperatures no higher than 90°C*. It can also be used with abrasive products and it provides the valve with 100% watertight integrity.

NITRILE

It is used in fluids containing fats or oils at temperatures no higher than 90°C*. It provides the valve with 100% watertight integrity.

FKM

Suitable for corrosive applications and continuous high temperatures of up to 190°C and peaks of 210°C. It provides the valve with 100% watertight integrity.

SILICONE

Mainly used in the food industry and for pharmaceutical products with temperatures no higher than 200°C. It provides the valve with 100% watertight integrity.

PTFE

Suitable for corrosive applications and pH between 2 and 12. Does not provide the valve with 100% watertight integrity. Estimated leakage: 0.5% of the tube flow.

Note: In some applications other types of resilient materials are used, such as hypalon, butile or natural rubber. Please contact us if you require one of these materials.

3. SEAT

Four types of seats are available according to the working application:

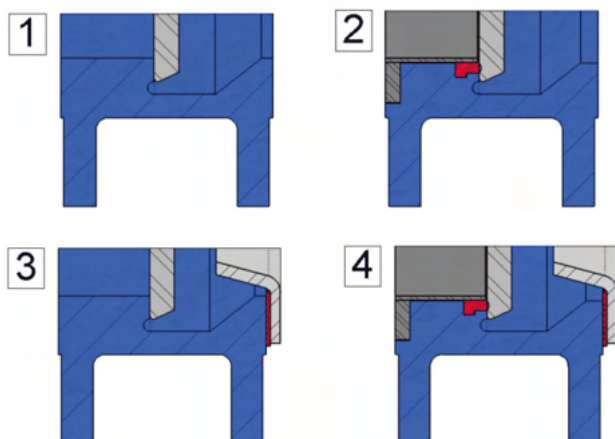


Fig. 3

SEAT 1

Metal / metal seat.

This type of seat does not include any kind of resilient seal and the estimated leakage (considering water as the test fluid) is 1.5% of the pipe flow.

SEAT 2

Metal / rubber seat with ring.

This type of seat includes a resilient seal which is fixed to the inside of the body by way of a stainless steel ring, which is screwed to the body in order to prevent it moving due to the high pressure.

SEAT 3 & 4:

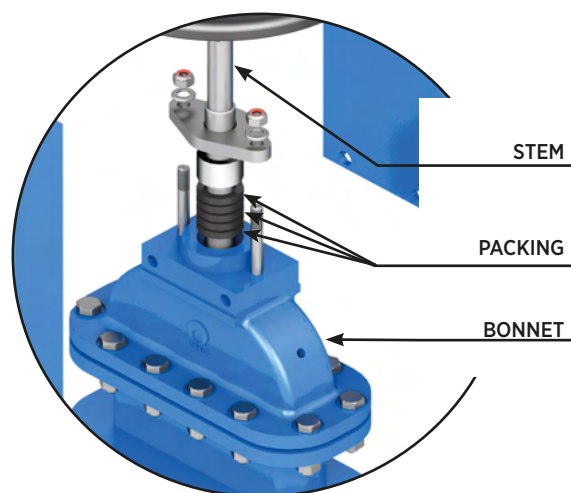
As seats 1 and 2 but including a deflector.

The deflector is an O-ring located at the valve input with two functions: firstly to protect the valve from abrasion and secondly to guide the flow to the centre of the valve.

***Note:** Three materials are available for the deflector: Steel CA-15, CF8M and Ni-hard.

4. PACKING

CMO Valves standard packing comprises several lines (from 4 to 6) of seal which provide seal-tightness between the bonnet and the spindle, preventing any type of leakage to the atmosphere. It is located in an easily accessible place and can be replaced without dismantling the valve from the pipeline. Below we indicate various types of packing available according to the use to be given to the valve:



1. GREASED COTTON (Recommended for hydraulic services)

This packing is composed of braided cotton fibres soaked in grease both inside and out. It is for general use in hydraulic applications in both pumps and valves.

2. DRY COTTON

This packing is composed of cotton fibres. It is for general use in hydraulic applications with solids.

3. COTTON + PTFE

This packing is composed of braided cotton fibres soaked in PTFE both inside and out. It is for general use in hydraulic applications in both pumps and valves.

4. SYNTHETIC + PTFE

This packing is composed of braided synthetic fibres soaked in PTFE both inside and out. It is for general use in hydraulic applications in both pumps and valves and in all types of fluids, especially corrosive ones, including concentrated and oxidising oils. It is also used in liquids with solid particles in suspension.

5. LUBRICATED PTFE

This is made with PTFE filaments and designed to work at great speed. It is braided with a diagonal system. Suitable for valves and pumps which work with almost all types of fluids, particularly with the most corrosive, such as oxidant and concentrated oils. It is also used in liquids with solid content.

6. GRAPHITE

This packing is composed of high-purity graphite fibres. A diagonal braiding system is used and it is impregnated with graphite and lubricant which helps to reduce porosity and improve operation. It has a wide range of applications as graphite is resistant to steam, water, oils, solvents, alkali and most acids.

SEATS / SEALS			PACKING			
MATERIAL	Tª MÁX (°C)	APLICACIONES	MATERIAL	P(Bar)	Tª. MÁX	pH
Steel/Steel	>250	High temp./Low watertight integ	Greased cotton	10	100	6-8
EPDM (E)	90*	Non-mineral acids and oils	Dry cotton (AS)	0.5	100	6-8
Nitrile (N)	90*	Hydrocarbons, oils and greases	Cotton + PTFE	30	120	6-8
FKM (V)	200	Hydrocarbons and solvents	Synthetic + PTFE	100	-200+270	0-14
Silicone (S)	200	Food Products	Graphite	40	650	0-14
PTFE (T)	250	Corrosion resistant	Ceramic Fibre	0.3	1400	0-14

Note: More details and other materials on request

*** EPDM and Nitrile:** it is possible up to Tª Max: 120°C on request

Table. 2

5. SPINDLE

The **CMO Valves** spindle is made of AISI 304 stainless steel. This characteristic provides high resistance and excellent corrosion-resistant properties. The valve design can be rising stem or non-rising stem. When rising stem is required a stem hood is supplied to protect the stem from contact with dust and dirt, as well as keeping it lubricated.

6. PACKING GLAND

The packing gland flange, through the bushing, allows uniform pressure and force to be applied on the packing in order to guarantee seal tightness. As standard, valves with steel body include a steel packing gland flange, while for valves with stainless steel body this is made of stainless steel. In both cases the packing bushing is common material, usually stainless steel.

7. ACTUATORS

All types of actuators can be supplied, with the advantage that, thanks to the **CMO Valves** design, they are fully interchangeable. This design allows the customer to change the actuators themselves and no extra assembly accessories are required. A design characteristic of is that all actuators are interchangeable.

Manual Drives

Handwheel (*)
Chain handwheel (*)
Lever
Geared motor (*)
Others (square stem)

Availability of Accessories

Mechanical stoppers
Locking devices
Emergency manual drives
Electrovalves
Positioners
Limit switches
Proximity detectors
Straight floor stand (Fig. 4)
Leaning floor stand (Fig. 5)

Automatic Drives

Electric actuator (*)
D/E & S/E pneumatic cylinder
Hydraulic cylinder

(*) Available in rising and non-rising stem versions.

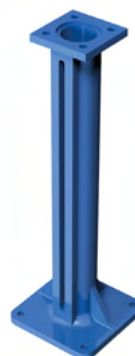


Fig. 4

LEANING FLOOR STANDS.



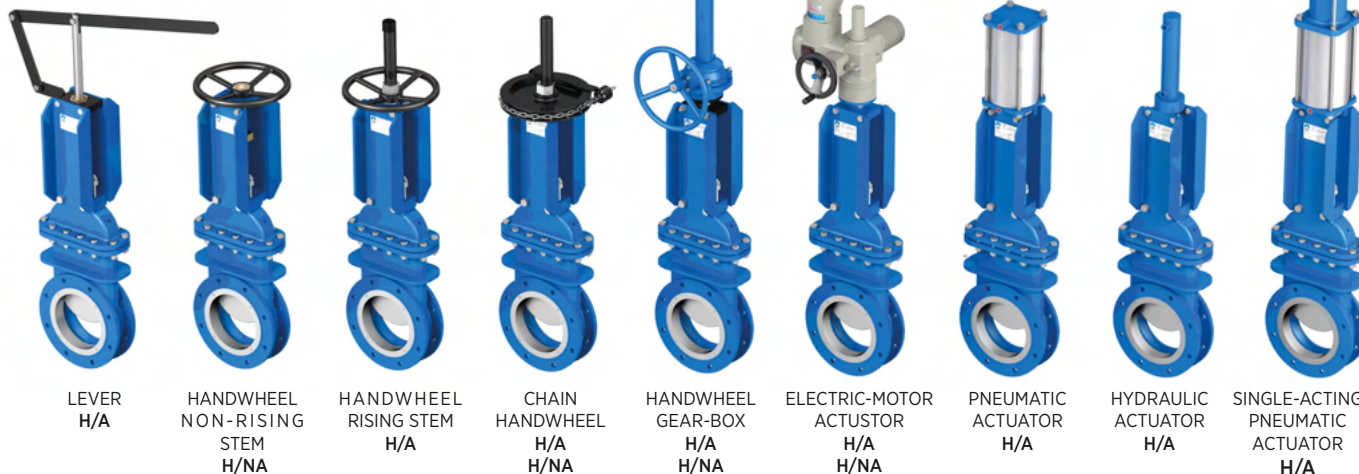
Fig. 5

STRAIGHT FLOOR STANDS.

Stem extensions have also been developed, allowing the drive to be located far away from the valve, to suit all needs. Please ask our engineers beforehand.

H/A = RISING STEM
H/NA = NON-RISING STEM

Fig. 6



ACCESSORIES AND OPTIONS

Different types of accessories are available to adapt the valve to specific working conditions such as:

MIRROR POLISHED GATE

The mirror polished gate is especially recommended in the food industry and, as standard, in applications in which solids can stick to the gate. It is an alternative to ensure the solids slide off and do not stick to the gate.

PTFE LINED GATE

As with the mirror polished gate, it improves the valve's resistance to products that can stick to the gate.

STELLITED GATE

Stellite is added to the gate's lower edge to protect it from abrasion.

SCRAPER IN THE PACKING

Its function is to clean the gate during the opening movement and prevent possible damage to the packing.

AIR INJECTION IN THE PACKING GLAND

By injecting air in the packing, an air chamber is created which improves the watertight integrity.

HEATING JACKET

Recommended in applications in which the fluid can harden and solidify inside the valve's body. An external jacket keeps the body temperature constant, preventing the fluid from solidifying.

FLUSHING HOLES IN BODY

Several holes can be drilled in the body to flush air, steam or other fluids out in order to clean the valve seat before sealing.

SOLENOID VALVES

For air distribution to pneumatic actuators.

CONNECTION BOXES, WIRING AND PNEUMATIC PIPING

Fully assembled units can be supplied with all the necessary accessories.

MECHANICAL LIMIT SWITCHES, INDUCTIVE SWITCHES AND POSITIONERS

Limit switches or inductive switches are installed to indicate precise valve position, as well as positioners to indicate continuous position.

STROKE LIMITING MECHANICAL STOPS

They allow the stroke to be mechanically adjusted, limiting the valve's desired run.

MECHANICAL STROKE LIMITING STOP (MECHANICAL STOPPERS):

These allow the stroke to be mechanically adjusted, limiting the valve run.

TRIANGULAR (V-NOTCH) AND PENTAGONAL DIAPHRAGM WITH INDICATION RULE

Recommended for applications in which flow regulation is required. Allows flow control according to the valve's opening percentage.

INTERCHANGEABLE ACTUATORS

All actuators are easily interchangeable, except the lever.

DRIVE OR YOKE SUPPORT

Made of EPOXY-coated steel (or stainless steel to order), its robust design gives it great rigidity in order to withstand the most adverse operation conditions.

EPOXY COATING:

All cast-iron and carbon steel valve bodies and components are EPOXY coated, making the valves hugely resistant to corrosion while giving them an excellent finish.

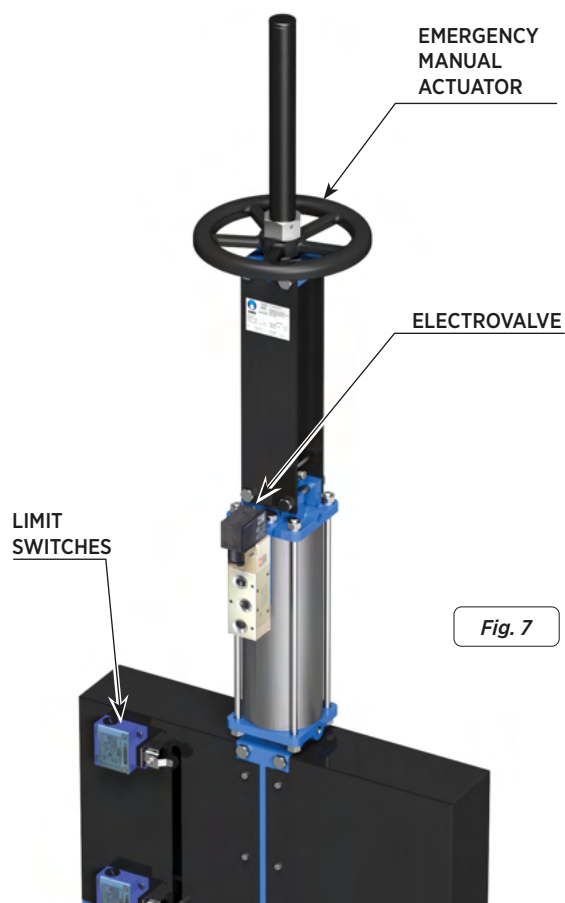
The standard colour in **CMO Valves** is blue, RAL-5015.

BONNET

Provides total seal-tightness to the outside, reducing the packing maintenance required.

EMERGENCY MANUAL ACTUATOR (HAND WHEEL /GEAR BOX)

Allows manual operation of the valve in the event of power or air failure.



TYPES OF EXTENSIONS

When the valve needs to be operated from a distance, the following different types of actuators can be fitted :

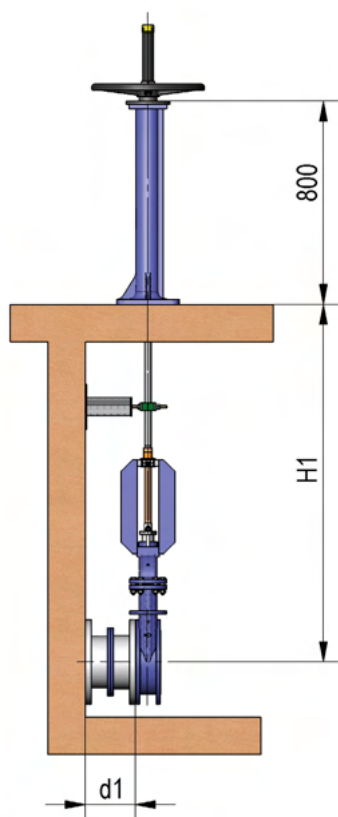


Fig. 8

STANDARD OPERATION
STAND.

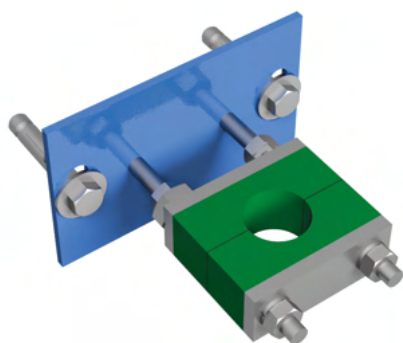


Fig. 9

STEM GUIDE
BRACKET

COMPONENT LIST

COMPONENT	STANDARD VERSION
Stem	AISI 304
Rod	AISI 304
Support-Guide	Carbon steel with EPOXY coating
Guide	PA6
Stand	GJS500-7 with EPOXY coating

Table. 3

1- FLOOR STAND

This extension is done by coupling a spindle to the stem. The desired extension is achieved by defining the length of the spindle. A floor stand is normally installed to support the drive.

The definition variables are as follows:

H1 = Distance from valve centre to base of the stand

d1 = Separation from the wall to the end of the connecting flange

CHARACTERISTICS:

- It can be coupled to any type of drive.
- We recommend a stem guide bracket every 1.5 m
- The standard floor stand is 800 mm high.
- Option to use a position indicator to determine the valve's percentage of opening.
- Leaning stand available to order
- Other floor stand measurements available on request.



LEANING STAND.

Fig. 10

2.- PIPE

This consists of raising the drive. The pipe will rotate in the same direction as the wheel when the valve is operated. The valve always remains at the same height.

The definition variables are as follows:

H1 = Distance from valve centre to base of the stand

d1 = Separation from the wall to the end of the connecting flange

CHARACTERISTICS:

- Standard drives: handwheel and top square.
- A pipe guide bracket is recommended every 1.5 m.
- The standard materials are: EPOXY-coated carbon steel and stainless steel.

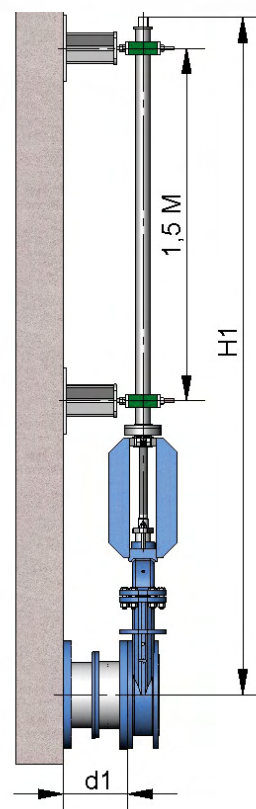


Fig. 11

3.- ELONGATED SUPPORT PLATES

When a short extension is required, it can be achieved by extending the support plates. An intermediate yoke can be fitted to reinforce the support plates structure.

Fig. 12



4.- UNIVERSAL CARDAN JOINT

If the valve and the drive are not in correct alignment, the problem can be resolved by fitting a universal cardan joint. This option is only valid for non-rising stem drives.

Fig. 13



HANDWHEEL WITH RISING STEM

The definition variables are as follows:

B = Max. width of the valve (without drive).

D = Max. height of the valve (without drive).

OPTIONS:

- Locking devices.
- Extensions: stand, pipe, plates,...
- DN higher than those shown in the table
-

ACTUATOR:

- Handwheel
- Stem
- Nut
- Stem protection bonnet

AVAILABLE:

- DN50 to DN350.
- From DN350 the actuator is with geared motor.

* Other ND on request.

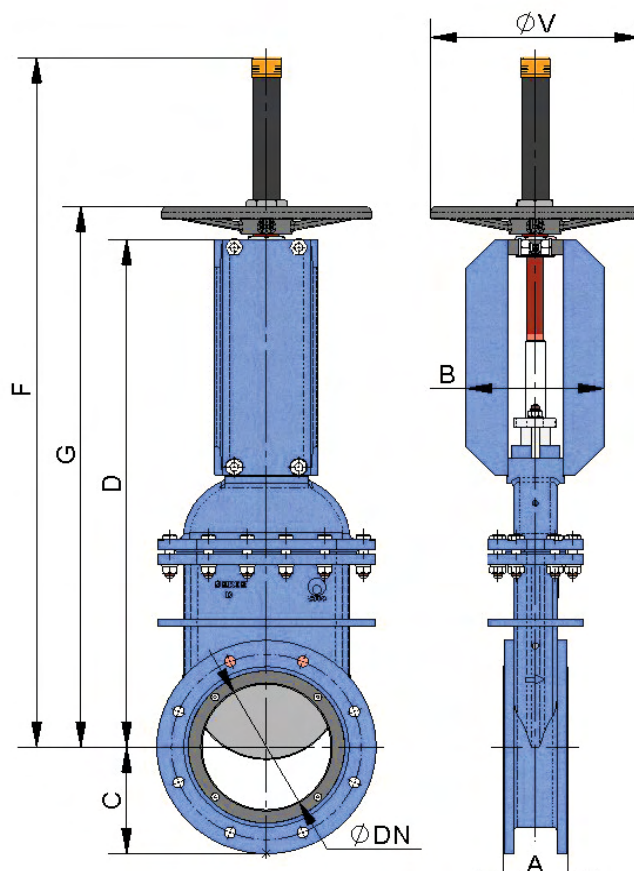


Fig. 14

DN	ΔP (bar)	A	B	C	D	G	F	ØV
50	10	70	106	83	330	369	498	225
65	10	70	106	93	365	404	534	225
80	10	70	106	100	401	440	570	225
100	10	70	160	110	468	507	637	225
125	10	90	180	127	553	592	772	225
150	10	90	180	143	619	658	838	225
200	10	100	215	170	809	862	1100	325
250	10	114	215	198	907	960	1300	325
300	10	114	215	223	1033	1090	1425	380
350	10	127	290	260	1166	1265	1695	450

Table. 4

CHAINWHEEL

Widely used in raised installations with direct access, the handwheel is fitted in vertical position.

The definition variables are as follows:

B = Max. width of the valve (without actuator)

D = Max. height of the valve (without actuator)

OPTIONS:

- Locking devices.
- Extensions: stand, pipe, plates,...
- Non-rising stem.
- DN higher than those shown in the table

ACTUATOR:

- Handwheel
- Stem
- Nut
- Hood

AVAILABLE:

- DN50 to DN1200
- From DN350 the actuator is with geared motor.

* Other ND on request.

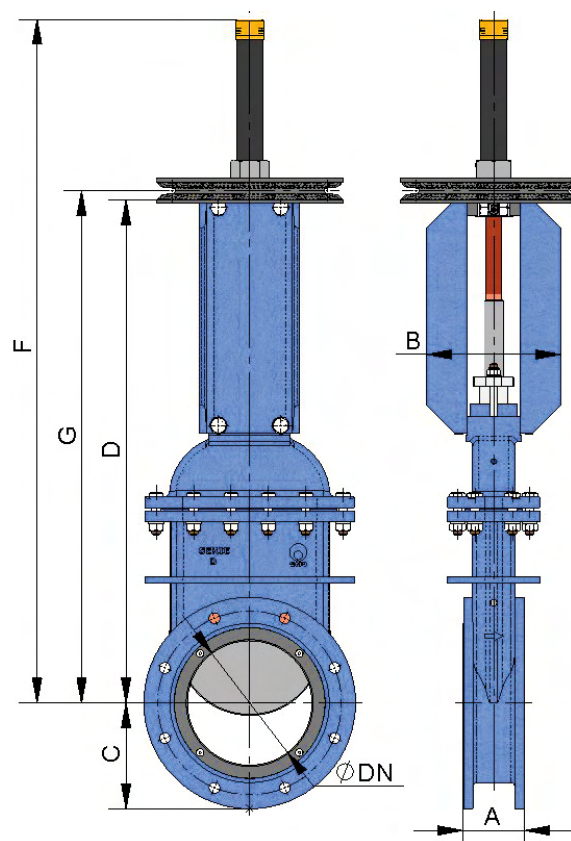


Fig. 15

DN	ΔP (bar)	A	B	C	D	G	F	øV
50	10	70	106	83	330	369	498	225
65	10	70	106	93	365	404	534	225
80	10	70	106	100	401	440	570	225
100	10	70	160	110	468	507	637	225
125	10	90	180	127	553	592	772	225
150	10	90	180	143	619	658	838	225
200	10	100	215	170	809	862	1100	300
250	10	114	215	198	907	960	1300	300
300	10	114	215	223	1033	1090	1425	300
350	10	127	290	260	1166	1265	1695	402*
400	10	140	290	290	1372	1482	1905	402*
450	10	152	290	308	1472	1566	2160	402*
500	10	152	290	335	1575	1669	2263	402*
600	10	178	290	390	1825	1919	2613	402*
700	10	229	380	448	2089	2221	2930	402*
800	6	241	340	508	2380	2512	3410	402*
900	6	241	340	558	2690	2898	3895	402*
1000	6	300	350	615	2920	3015	4052	402*
1200	6	350	520	728	3630	3835	5120	402*

Table. 5

LEVER

This is a fast actuator.

The definition variables are as follows:

B = Max. width of the valve (without actuator)

D = Max. height of the valve (without actuator)

ACTUATOR INCLUDING :

- Lever.
- Stem.
- Guide bushing.
- External blockers to maintain position

AVAILABLE:

- DN50 to DN200

* Other ND on request.

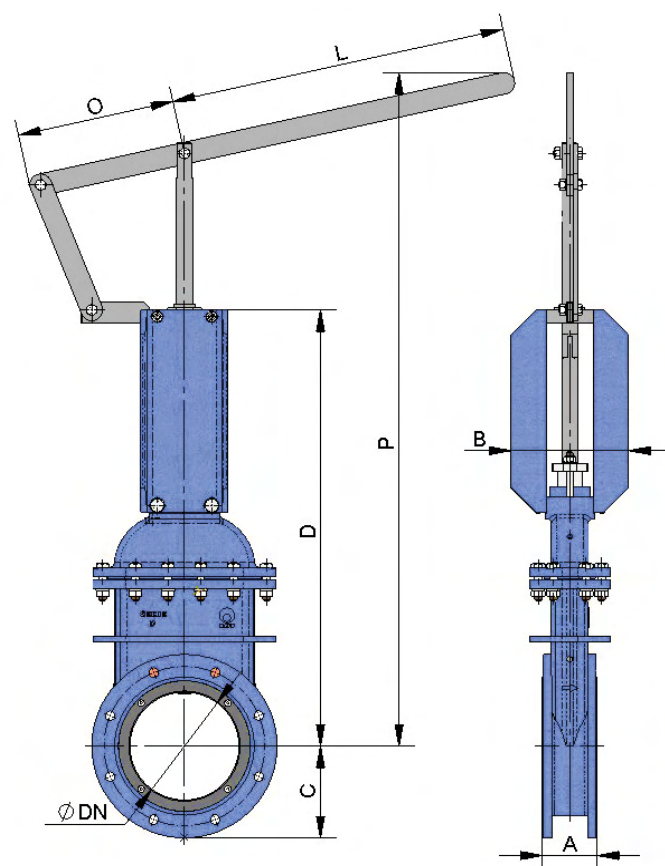


Fig. 16

DN	ΔP (bar)	A	B	C	D	L	O	P
50	10	70	106	83	330	325	155	598
65	10	70	106	93	365	325	155	633
80	10	70	106	100	401	325	155	669
100	10	70	160	110	468	325	155	736
125	10	90	180	127	553	425	155	1082
150	10	90	180	143	619	425	155	1148
200	10	100	215	170	809	620	290	1324

Table. 6

GEAR BOX

It is recommendable for ND greater than 350.

The definition variables are as follows:

B = Max. width of the valve (without drive).

D = Max. height of the valve (without drive).

OPTIONS:

- Chain handwheel.
- Locking devices.
- Extensions: stand, pipe, plates, etc.
- Non-rising stem.

ACTUATOR:

- Stem
- Yoke
- Cone-shaped gear box
- Handwheel
- Standard ratio = 4 to 1.

AVAILABLE:

- DN50 to DN1200.

* Other ND on request.

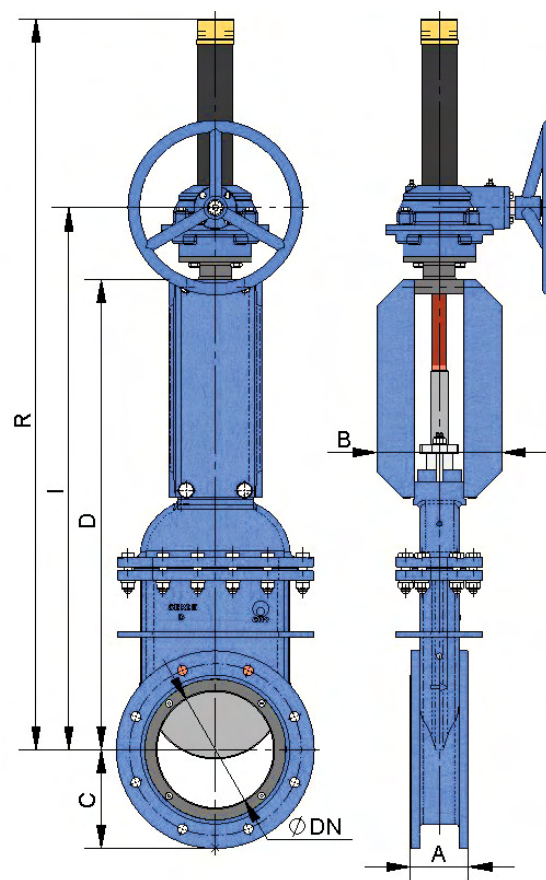


Fig. 17

DN	ΔP (bar)	A	B	C	D	I	R
50	10	70	106	83	330	451	601
65	10	70	106	93	365	487	661
80	10	70	106	100	401	523	697
100	10	70	160	110	456	578	752
125	10	90	180	127	528	650	824
150	10	90	180	143	619	743	917
200	10	100	215	170	809	933	1227
250	10	114	215	198	907	1030	1324
300	10	114	215	223	1033	1156	1450
350	10	127	290	260	1156	1250	1694
400	10	140	290	290	1372	1482	1905
450	10	152	290	308	1472	1566	2160
500	10	152	290	335	1575	1669	2263
600	10	178	290	390	1825	1919	2613
700	10	229	380	448	2089	2221	2930
800	6	241	340	508	2380	2512	3410
900	6	241	340	558	2690	2898	3895
1000	6	300	350	615	2920	3015	4052
1200	6	350	520	728	3630	3835	5120

Table. 7

DOUBLE-ACTING PNEUMATIC CYLINDER

The air supply pressure to the pneumatic cylinder is a minimum of 6 bar and a maximum of 10 bar, the air must be dry and lubricated.

10 bar is the maximum admissible air pressure. For air pressures below 6 bar, please check with **CMO Valves**.

For DN50 to DN200 valves, the cylinder's jacket and covers are made of aluminium, the spindle of AISI304, the piston of rubber-coated steel and the O-ring seals are made of nitrile.

For valves larger than DN200 the covers are made of nodular cast iron or carbon steel.

To order, we can also supply the actuator made entirely of stainlesssteel, especially for installation in corrosive atmospheres.

The definition variables are as follows:

B = Max. width of the valve (without drive).

D = Max. height of the valve (without drive).

AVAILABLE:

- DN50 to DN900.

* Other ND on request.

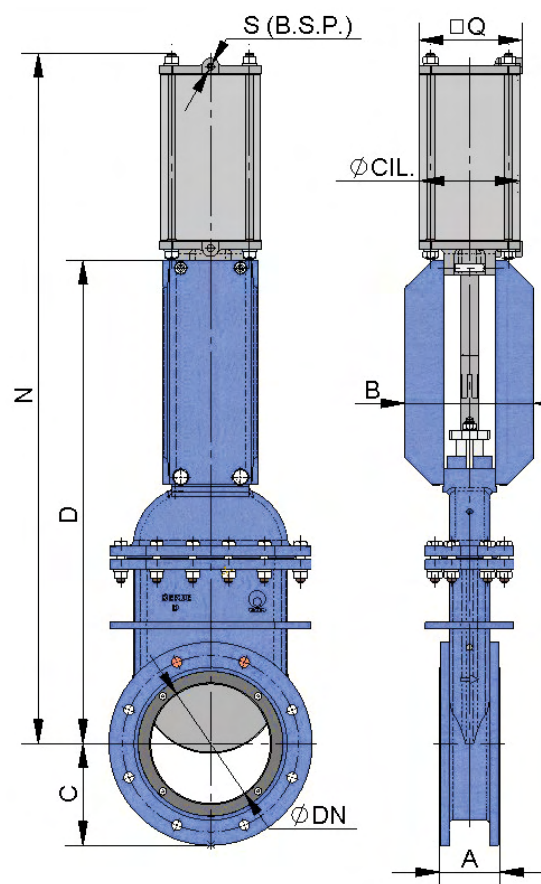


Fig. 18

DN	ΔP (bar)	A	B	C	D	N	Q	ø CIL	ø VAST	S (B.S.P.)
50	10	70	106	83	347	535	96	80	20	1/4"
65	10	70	106	93	381	582	96	80	20	1/4"
80	10	70	106	100	426	650	96	80	20	1/4"
100	10	70	160	110	468	720	115	100	20	1/4"
125	10	90	180	127	553	824	138	125	25	1/4"
150	10	90	180	143	649	949	175	160	30	1/4"
200	10	100	215	170	809	1167	218	200	30	3/8"
250	10	114	215	198	913	1418	270	250	40	3/8"
300	10	114	215	223	1033	1603	382	300	45	1/2"
350	10	127	290	260	1156	1774	444	350	45	1/2"
400	10	140	290	290	1372	2083	508	400	50	1/2"
450	*	152	290	308	1442	2184	508	400	50	1/2"
500	*	152	290	335	1575	2410	508	400	50	1/2"
600	*	178	290	390	1825	2759	508	400	50	1/2"
700	*	229	380	448	2089	3144	508	400	50	1/2"
800	*	241	340	508	2438	3574	508	400	50	1/2"
900	*	241	340	558	2692	3944	508	400	50	1/2"

(*) Consult

Table. 8

SINGLE-ACTING PNEUMATIC CYLINDER

The air supply pressure to the pneumatic cylinder is a minimum of 6 bar and a maximum of 10 bar, the air must be dry and lubricated.

10 bar is the maximum admissible air pressure. For air pressures below 6 bar, please check with the manufacturer.

Available for opening or closing in the event of air supply failure (spring opens or closes)..

The casing is made of aluminium, the covers of nodular cast iron or carbon steel, the spindle of AISI304, the piston of rubber-coated steel, the O-ring seals of nitrile and the spring is made of steel.

The actuator design is spring activated for valves with diameters up to DN200. For larger diameters the actuator contains a double-acting cylinder and an air tank which stores the volume of air necessary to perform the last movement in the event of an air supply failure.

The definition variables are as follows:

B = Max. width of the valve (without drive).

D = Max. height of the valve (without drive).

AVAILABLE:

- DN50 to DN200.

* Other ND on request.

Please see the “**CMO Valves** Pneumatic Actuators” catalogue if you require further information.

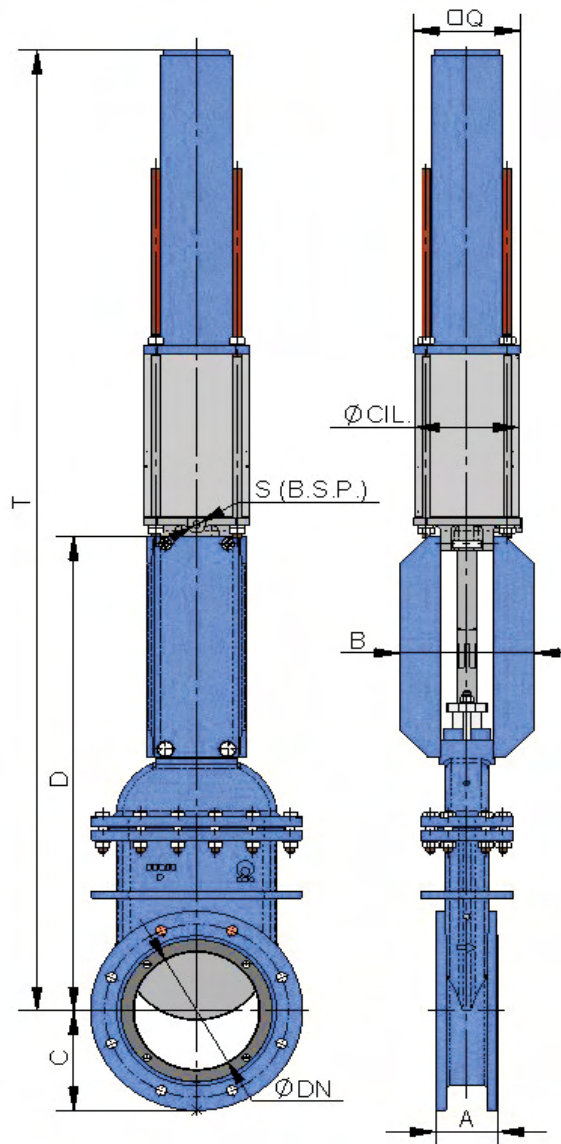


Fig. 19

DN	ΔP (bar)	A	B	C	D	Q	T	Ø CIL	Ø VAST	S (B.S.P.)
50	10	70	106	83	347	138	887	125	25	1/4"
65	10	70	106	93	381	138	919	125	25	1/4"
80	10	70	106	100	426	138	965	125	25	1/4"
100	10	70	160	110	468	138	1007	125	25	1/4"
125	10	90	180	127	553	175	1096	160	30	1/4"
150	10	90	180	143	649	218	1495	200	30	3/8"
200	10	100	215	170	809	270	2084	250	40	3/8"

Table. 9

ELECTRIC ACTUATOR

This actuator is automatic and includes the following parts:

- Electric motor
- Stem
- Yoke

OPTIONS:

- Different types and brands
- Non-rising stem
- ISO 5210 / DIN 3338 flanges

AVAILABLE:

- ND 50 to DN 1200.
- From DN500 the motor is assisted with a gear box.

* Other ND on request.

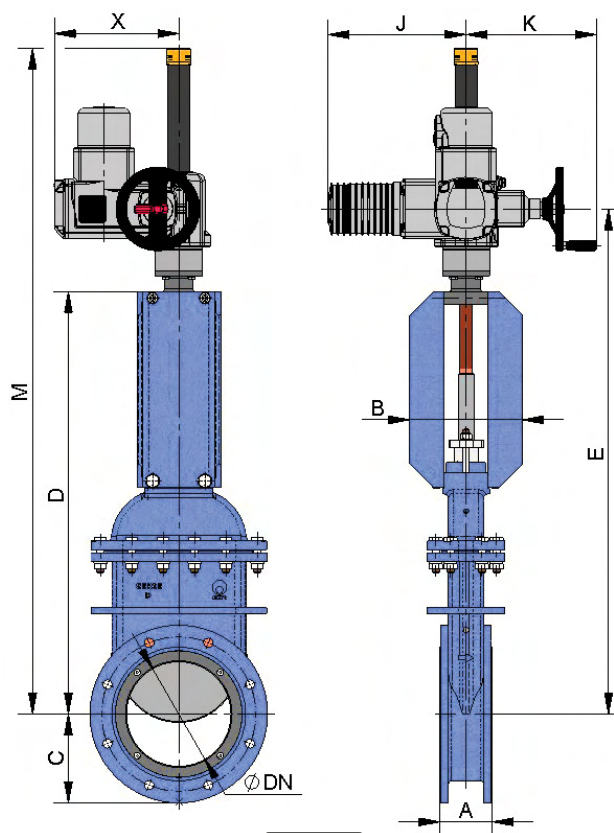


Fig. 20

DN	ΔP (bar)	A	B	C	D	E	J	K	M	X
50	10	70	106	83	330	489	265	250	642	238
65	10	70	106	93	365	523	265	250	702	238
80	10	70	106	100	401	559	265	250	737	238
100	10	70	160	110	456	614	265	250	792	238
125	10	90	180	127	528	686	265	250	864	238
150	10	90	180	143	619	777	265	250	957	238
200	10	100	215	170	809	967	265	250	1273	238
250	10	114	215	198	907	1055	265	250	1370	238
300	10	114	215	223	1033	1181	283	255	1446	248
350	10	127	290	260	1156	1318	265	250	1726	439
400	10	140	290	290	1372	1506	265	250	1920	439
450	10	152	290	308	1472	1585	283	255	2160	439
500	10	152	290	335	1575	1719	283	325	2263	453
600	10	178	290	390	1825	1988	283	325	2613	453
700	10	229	380	448	2089	2327	283	325	3094	453
800	6	241	340	508	2380	2615	283	325	3410	453
900	6	241	340	558	2690	2902	283	325	3895	453
1000	6	300	350	615	2920	3160	389	335	4052	605
1200	6	350	520	728	3630	3896	389	335	5120	605

Table. 10

HYDRAULIC ACTUATOR

The definition variables are as follows:

B = Max. width of the valve (without drive).

D = Max. height of the valve (without drive).

THE HYDRAULIC ACTUATOR INCLUDES:

- Hydraulic cylinder
- Yoke

SUPPLY PRESSURE STANDARD:

- 150 bar.

AVAILABLE:

- DN50 to DN1200.

* Otros DN bajo consulta.

AVAILABLE:

Different types and brands available according to customer's requirements.

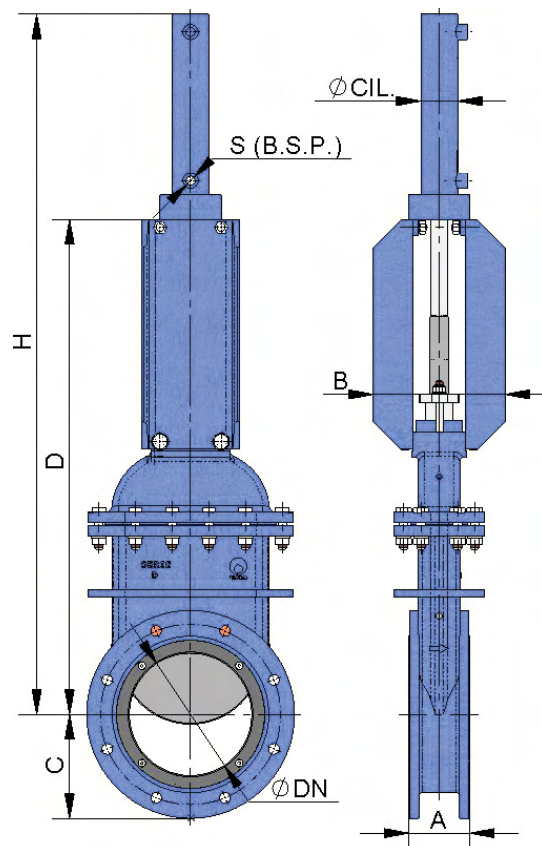


Fig. 21

DN	ΔP (bar)	A	B	C	D	H	Ø CIL.	Ø VAST	S (B.S.P.)	OIL CAP. (dm³)
50	10	70	106	83	330	546	32	22	3/8"	0.05
65	10	70	106	93	365	597	32	22	3/8"	0.06
80	10	70	106	100	401	667	32	22	3/8"	0.08
100	10	70	160	110	456	742	32	22	3/8"	0.09
125	10	90	180	127	528	844	40	22	3/8"	0.15
150	10	90	180	143	619	955	40	22	3/8"	0.22
200	10	100	215	170	809	1210	50	28	3/8"	0.42
250	10	114	215	198	907	1358	63	36	3/8"	0.81
300	10	114	215	223	1033	1553	80	36	3/8"	1.6
350	10	127	290	260	1156	1735	80	36	3/8"	1.9
400	10	140	290	290	1372	2000	100	56	1/2"	3.26
450	10	152	290	308	1472	2190	125	56	1/2"	5.8
500	10	152	290	335	1575	2343	125	56	1/2"	6.4
600	10	178	290	390	1825	2720	140	56	1/2"	9.5
700	10	229	380	448	2089	3108	160	70	1/2"	14.38
800	6	241	340	508	2380	3478	160	70	1/2"	16.39
900	6	241	340	558	2690	3930	160	70	1/2"	18.75
1000	6	300	350	615	2920	4220	200	90	1/2"	32.36
1200	6	350	520	728	3630	5175	200	90	1/2"	38.17

Table. 11

FLANGE DIMENSIONS

EN 1092-2 PN10

DN	●	M (Métrica)	P	ØK
50	4	M 16	12	125
65	4	M 16	12	145
80	8	M 16	12	160
100	8	M 16	12	180
125	8	M 16	16	210
150	8	M 20	16	240
200	8	M 20	16	295
250	12	M 20	20	350
300	12	M 20	18	400
350	16	M 20	19	460
400	16	M 24	22	515
450	20	M 24	24	565
500	20	M 24	24	620
600	20	M 27	30	725
700	24	M 27	35	840
800	24	M 30	35	950
900	28	M 30	35	1050
1000	28	M 33	40	1160
1200	32	M 36	40	1380

Table. 12

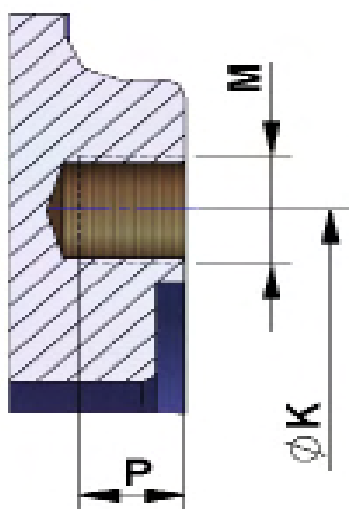


Fig. 23

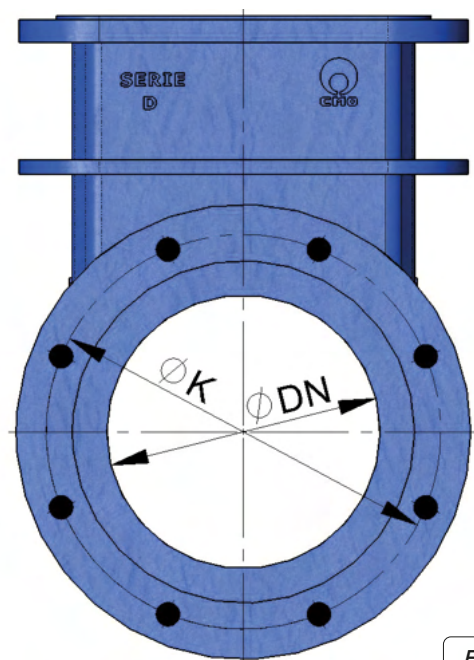


Fig. 22

● BLIND TAPPED HOLES

ANSI B16, Clase 150

DN	●	M (UNC)	P	ØK
2"	4	5/8"	12	120,6
2 ½"	4	5/8"	12	139,7
3"	4	5/8"	12	152,4
4"	8	5/8"	12	190,5
5"	8	3/4"	16	215,9
6"	8	3/4"	16	241,3
8"	8	3/4"	16	298,4
10"	12	7/8"	20	361,9
12"	12	7/8"	18	431,8
14"	12	1"	19	476,2
16"	16	1"	22	539,7
18"	16	1 ⅛"	24	577,8
20"	20	1 ⅛"	24	635
24"	20	1 ¼"	30	749,3
28"	28	1 ¼"	35	863,6
32"	28	1 ½"	35	977,9
36"	32	1 ½"	35	1085,9
40"	36	1 ½"	40	1200,2
48"	44	1 ½"	40	1422,4

Table. 13

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