TECHNICAL DATA
UB SERIES

ARNETT
ENGINEERED SOLUTIONS

ARNETT ENGINEERED SOLUTIONS
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BIDIRECTIONAL WAFER TYPE KNIFE GATE VALVE

DESCRIPTION

- Bidirectional knife gate valve with wafer design.
- Two-piece cast body, joined by screws, with internal guides for smooth movement of through conduit during operation.
- Provides high flow rates with low pressure drop.
- Various seal and gasket materials available.
- Distance between faces up to DN600 in accordance with Standard UNE-EN 558 Basic Series 20.
  The rest in accordance with de **CMO Valves** standard.

GENERAL APPLICATIONS

This knife gate valve is suitable for working with clean liquids or liquids with a concentration of bland solids:

Designed for applications such as:

- Drying plants.
- Paper Industry.
- Sewage treatment.
- Chemical plants
- Food industry.
- Mining.
- Oil extraction.
- Sludge

SIZES

DN50 to DN2000

* *Other dimensions to order.*

WORKING (ΔP)

DN50 - DN250	10 bar
DN300	7 bar
DN350 - DN400	6 bar
DN450	5 bar
DN500 - DN600	4 bar
DN700 - DN1400	3 bar
DN1600 - DN2000	2 bar

* *Other pressures under consultation*

FLANGES

PN10 & ASME B16.5 (class 150)

OTHER COMMON FLANGES

- PN 6
- PN 16
- PN 25
- Australian standard.
- JIS standard.
- British standard.

Fig. 1

APPLICATION OF EUROPEAN DIRECTIVES

Information on the directives applicable to **UB** bidirectionalknife gate valves can be found at the website **www.cmovalves.com** under the product section for **UB Series** knife gate valves.
For information on categories and zones related to applications in potentially explosive atmospheres (ATEX), please contact the technical-commercial department at **CMO Valves.**

QUALITY DOSSIER

All valves are hydrostatically tested at **CMO Valves** according to quality control protocols and procedures, and material and test certificates can be supplied on request.

- Body test = working pressure x 1.5.
- Seal test = working pressure x 1.1.

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

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ADVANTAGES

The main characteristic of this valve is the body design. The valve's body is made up of two internally machined parts that are bolted together, giving the valve the ability to work with fl uid in both directions and at the same pressure.
The seal is located between the two parts of the body, and this seal is secured with the screws used to attach the two parts of the body. In valves DN50 to DN600 the seal has a metal core inserted in order to withstand the fluid pressure and allow the valve to shut off correctly. In valves over DN600 the two parts of the body have an outer rim to ensure the seal remains in position. This seal design provides a completely flat seat with no internal cavities and avoids any build-up of solids in the seat area.

Este diseño de la junta proporciona un asiento completamente plano sin cavidades internas y evita la acumulación de sólidos en la zona del asiento de cierre.

The stem on the **CMO Valves** valve is made of AISI304 stainless steel. This is another added advantage, as some manufacturers produce it with 13% chrome and it gets rusty very quickly.

The stem protection cap is independent from the handwheel's fastening nut, meaning the bonnet can be disassembled without needing to release the handwheel. This allows regular maintenance operations to be carried out, such as lubricating the stem, etc.

The handwheel is made of nodular cast iron. Some manufacturers produce them in normal cast iron which can lead to breakages in the event of very high operating torque or knocks.

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 sealing joints are commercial products and can be purchased worldwide. This means it is not necessary to contact **CMO Valves** every time a sealing joint is required.

STANDARD COMPONENTS LIST

COMPONENT		NODULAR IRON	ST.STEEL
1	BODY	GJS500-7	CF8M
2	GATE	AISI304/DUPLEX	AISI316/DUPLEX
3	SEAL	AISI304	AISI316
4	RIMSTUFFING BOX SEAL	EPDM	EPDM
5	SEAL	EPDM +ACERO	EPDM + STEEL
6	SLIDING GUIDES	--	PE-UHMW
7	SUPPORT	S275JR	
8	STEM	AISI303	
9	YOKE	GJS500-7	
10	STEM NUT	BRONZE	
11	CHECK NUT	STEEL	
12	HANDWHEEL	GJS500-7	
13	NUT	5.6 ZINC	
14	HOOD	STEEL	
15	TOP CAP	PLASTIC	

Table. 1

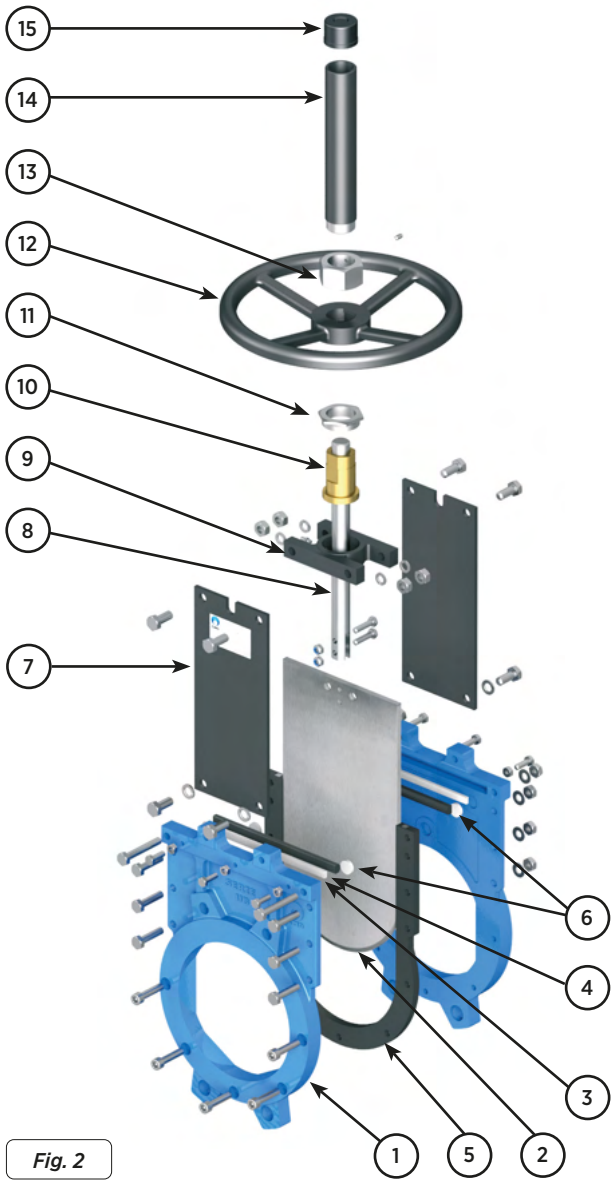

Fig. 2

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DESIGN CHARACTERISTICS

1. BODY

Wafer design reinforced cast body with two bolted parts. The stainless steel version has PE-UHMW interior sliders for smooth movement of the knife gate, while the GJS500-7 versions do not require sliders.

The internal surface of both parts is fully machined and assembled with screws to form a solid block.

Designed with total passage, with the shape of the inside of the body preventing the build-up of solids in the seal area; this means that there is no cavitation in open position and, in consequence, there is no turbulence in the fluid and the loss of load is minimum, thus providing large flows.

The standard manufacturing materials are CF8M stainless steel and nodular cast iron. Other materials such as A216WCB carbon steel and stainless steel alloys (AISI316Ti, Duplex, 254SMO, Uranus B6, etc.) are available to order. As standard, the carbon steel or nodular cast iron valves are painted with EPOXY anti-corrosive protection (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. In both cases, whenever the high pressures to withstand so require, we also make use of DUPLEX material.

Other materials or combinations can be supplied to order.

The through conduit is polished on both sides to provide a smooth contact surface with the resilient seal. At the same time, the through conduit is rounded to prevent the sealing joint from being cut.

Different degrees of polishing, anti-abrasion treatments and modifications are available to adapt the valves to the customer's requirements.

3. SEAL: (soft seated)

This type of valve has an elastic seat which is made up of a rubber seal (5) located between the two parts of the body (1), secured with the screws used to join the two parts of the body.

In valves DN50 to DN600 the seal has a metal core inserted in order to withstand the fluid pressure and allow the valve to shut off correctly (fig. 3).

In valves over DN600 the two parts of the body have an outer rim to ensure the seal remains in position (fig. 4).

This seal design provides a completely flat seat with no internal cavities and avoids any build-up of solids in the seat area.

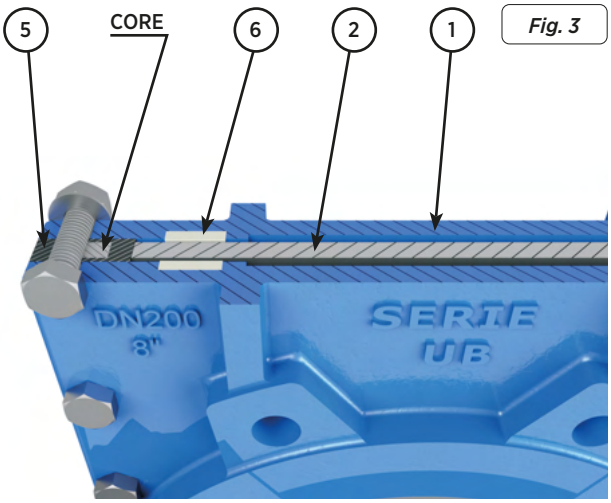

Fig. 3

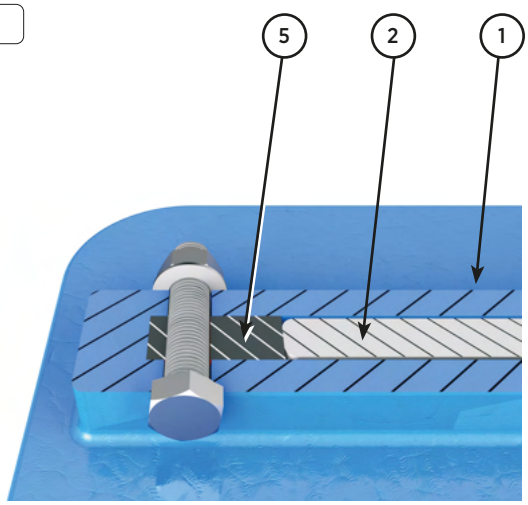

Fig. 4

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WATERTIGHT SEAL MATERIALS

EPDM
This is the standard resilient seal 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 90ºC (*see note). It can also be used with abrasive products and provides the valve with 100% sealtightness.

NITRILE
Used in fluids containing fats or oils at temperatures no higher than 90ºC (*see note). Provides the valve with 100% sealtightness.

FKM
Suitable for corrosive applications and high temperatures up to 190ºC continuously and peaks of 210ºC. Provides the valve with 99% sealtightness.

SILICONE
Mainly used in the food industry and for pharmaceutical products with temperatures no higher than 200ºC. Provides the valve with sealtightness of 100%.

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

***Note**: In some applications other types of elastomer are used, such as: hypalon, butyl, etc. Please contact **CMO Valves** for any such requirements

4. PACKING

Valves DN50 to DN600 not have the traditional gasket system, but rather a rubber strip inserted in the top of each body half. This system avoids the need to regularly replace the gasket and also offers the possibility of regulating the body from the outside by way of screws (fig. 5).

Valves over DN600 do have the traditional system and the standard **CMO Valves** gasket comprises several lines (from 4 to 6 lines) of seal, providing the required sealtightness between the body and the through conduit and preventing any type of leakage. It is located in an easily accessible place and can be replaced without dismantling the valve from the pipeline (fig 6).

Fig. 5

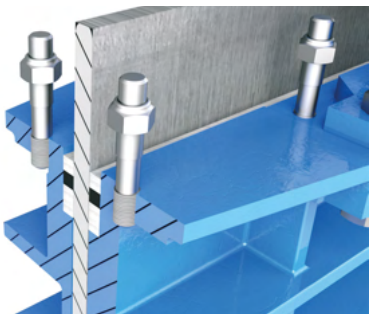

Fig. 6

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A summary of the common materials used for the seals described above and their temperature limitations is set out in the table below.

1. **GREASED COTTON**
   (Recommended for hydraulic services)
   This gasket 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 gasket is composed of cotton fibres. It is for general use in hydraulic applications with solids.

3. **COTTON + PTFE**
   This gasket 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 gasket 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. **GRAPHITE**
   This gasket is composed of high-purity graphite fibres. A diagonal braiding system is used and 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.

6. **CERAMIC FIBRE**
   This gasket is composed of ceramic material fibres. Its main applications are with air or gas at high temperatures and low pressures.

SEAT/SEALS			PACKING			
MATERIAL	**Tª MÁX (ºC)**	**APLICATIONS**	**MATERIAL**	**P(Bar)**	**Tª. MÁX**	**pH**
Steel/Steel	>250º	High temp./Low watertight integ	Greased cotton	10	100º	6-8
EPDM (E)	90º (* see note)	Non-mineral acids and oils	Dry cotton	0.5	100º	6-8
Nitrile (N)	90º (* see note)	Hydrocarbons, oils and greases	Cotton + PTFE	30	120º	6-8
FKM (V)	200º	Hydrocarbons and solvents	Synthetic + PTFE	100	-200º +270º	0-14
Silicone (S)	200º	Food Products	Graphite	40	650º	0-14
PTFE (T)	250º	Corrosion resistant	Ceramic Fibre	0.3	1400º	0-14
Note: More details and other materials on request			*** EPDM and Nitrile:** it is possible up to Tª Max: 120ºC on request			

Table. 2

5. STEM

The stem on the **CMO Valves** valve is made of AISI304 stainless steel. This characteristic provides high resistance and excellent corrosion-resistant properties.

The standard valve design is with rising stem, although non-rising stem is also available. When a rising stem is required for the valve, a stem hood is supplied to protect the stem from contact with dust and dirt, besides keeping it lubricated.

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6- PACKING GLAND

As mentioned above, valves DN50 to DN600 do not have the traditional packing system, but rather a stuffing box seal built into the body. Nevertheless, the common packing system is still used in sizes over DN600; this allows uniform pressure and force to be applied to the gasket, thus ensuring sealtightness.

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.

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 **CMO Valves** 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. 7)
Leaning floor stand (fig. 8)

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

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

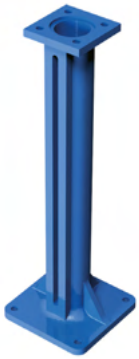


Fig. 7

LEANING FLOOR STANDS.

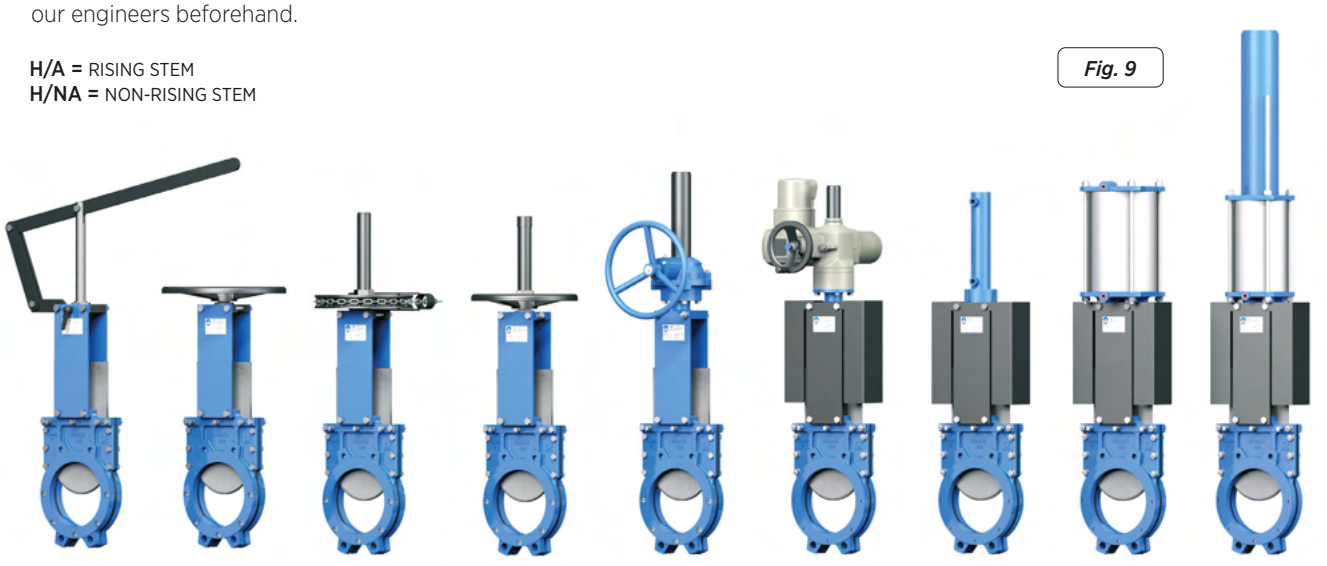
Fig. 8

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. 9



LEVER **H/NA**

HANDWHEEL NON-RISING STEM **H/NA**

CHAIN HANDWHEEL **H/A H/NA**

HANDWHEEL RISING STEM **H/A**

HANDWHEEL GEAR-BOX **H/A H/NA**

ELECTRIC-MOTOR ACTUSTOR **H/A H/NA**

HYDRAULIC ACTUATOR **H/A**

PNEUMATIC ACTUATOR **H/A**

SINGLE-ACTING PNEUMATIC ACTUATOR **H/A**

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ACCESSORIES AND OPTIONS

Limit switches or detectors to indicate valve positions (open/closed and/or intermediate positions), and position transmitters to indicate continuous position.

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.

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.

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.

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 STROKE LIMITING STOP (MECHANICAL STOPPERS)
These allow the stroke to be mechanically adjusted, limiting the valve run.

MECHANICAL LOCKING DEVICE
Allows the valve to be mechanically locked in a fixed position.

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.

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.

RECUBRIMIENTO DE EPOXI
All cast iron and carbon steel bodies and components on **CMO Valves** are EPOXY coated, giving the valves great resistance to corrosion and an excellent finish.
CMO Valves's standard colour is blue, RAL-5015.

GATE SAFETY PROTECTION
In accordance with European Safety Standards ("EC" marking), **CMO Valves** automated valves are equipped with gate guards, to prevent any objects from being accidentally caught in the gate.

EMERGENCY MANUAL ACTUATOR (HAND WHEEL /GEAR BOX)
Allows manual operation of the valve in the event of power or air failure.

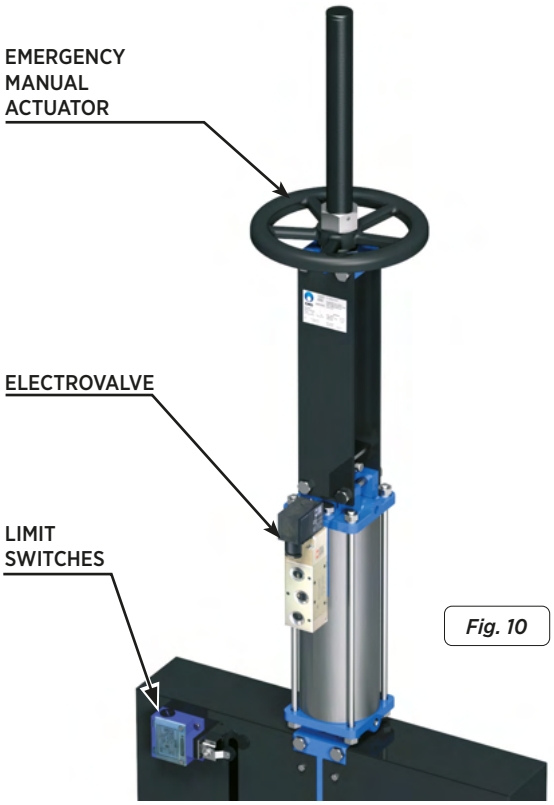

Fig. 10

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TYPES OF EXTENSIONS

For those applications in which the actuation is required to be moved further away from the valve, **CMO Valves** has various solutions (mounting brackets, extension shafts and spindle extensions) that allow the actuation of the guillotine from positions far from the valve location.

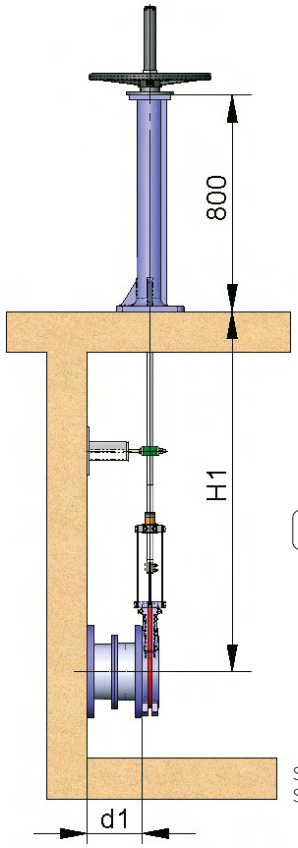

Fig. 11

STANDARD OPERATION STAND.

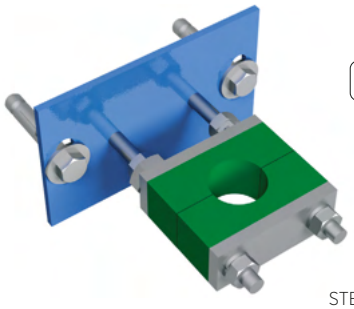

Fig. 12

STEM GUIDE BRACKET

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. 13

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

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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.

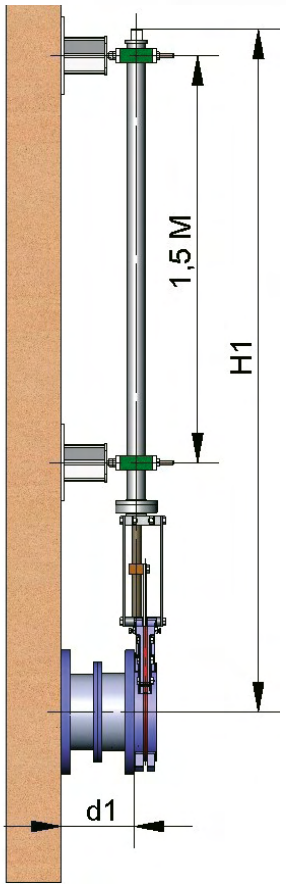

Fig. 14

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.

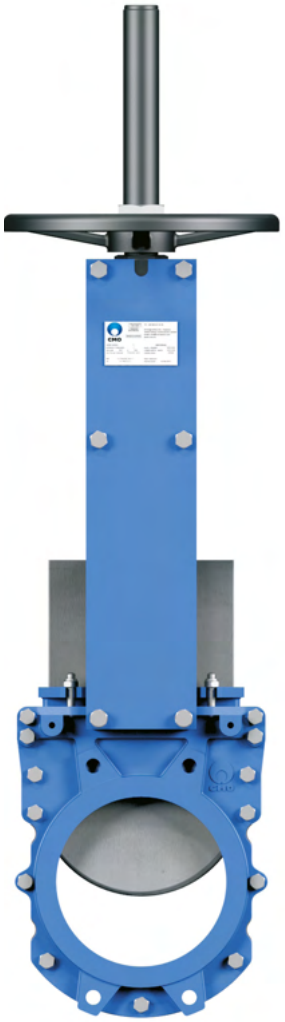

Fig. 15

4.- CARDAN JOINT

If the valve and the drive are not in correct alignment, the problem can be resolved by fitting a universal cardan joint.

Fig. 16

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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:

- Limiting switches.
- Extensions: stand, pipe, plates,...
- Square stem.

ACTUATOR:

- Handwheel.
- Stem.
- Nut.

AVALAIBLE:

- DN50 to DN2000
- From DN 350 the actuator is with geared motor.

** Other ND on request.*

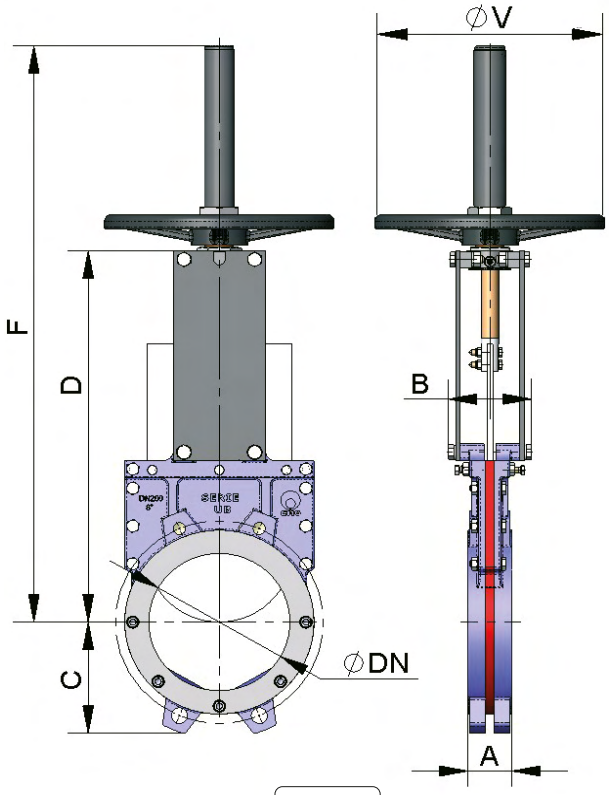

Fig. 17

DN	ΔP (bar)	A	B	C	D	F	øV
50	10	43	90	66	245	418	225
65	10	46	90	73	270	443	225
80	10	46	90	96	295	468	225
100	10	52	90	110	327	500	225
125	10	56	100	123	365	588	225
150	10	56	100	136	415	638	225
200	10	60	118	162	541	840	325
250	10	68	118	199	630	1.029	325
300	7	78	118	225	745	1.149	450

Table. 4

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HANDWHEEL NON-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 above those given in the table

ACTUATOR:

- Handwheel
- Stem
- Guide bearings on the yoke.
- Nut

AVALAIBLE:

- DN50 to DN2000
- From DN 350 the actuator is with geared motor.

** Other ND on request.*

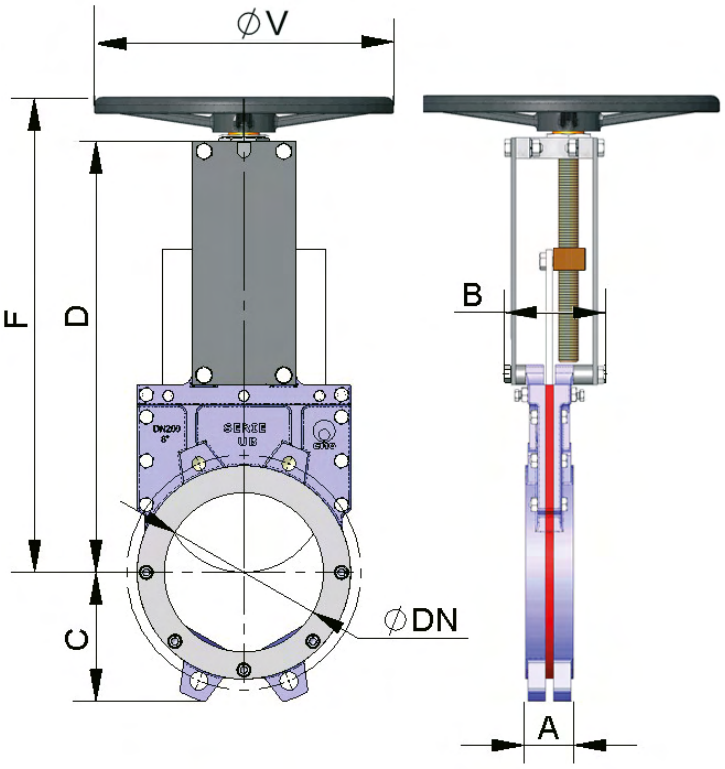

Fig. 18

DN	ΔP (bar)	A	B	C	D	F	øV
50	10	43	101	66	245	281	225
65	10	46	101	73	270	306	225
80	10	46	101	96	295	331	225
100	10	52	101	110	327	363	225
125	10	56	111	123	365	401	225
150	10	56	111	136	415	451	225
200	10	60	130	162	541	578	325
250	10	68	130	199	630	687	325
300	7	78	130	225	745	779	450

Table. 5

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CHAINWHEEL

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

The definition variables are as follows:

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

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

OPTIONS:

- Locking devices
- Extensions: elongated plates...

ACTUATOR:

- Handwheel
- Stem
- Guide bearings on the yoke.
- Nut

AVALAIBLE:

- DN50 to DN600.
- From DN 350 the actuator is with geared motor.

** Other ND on request.*

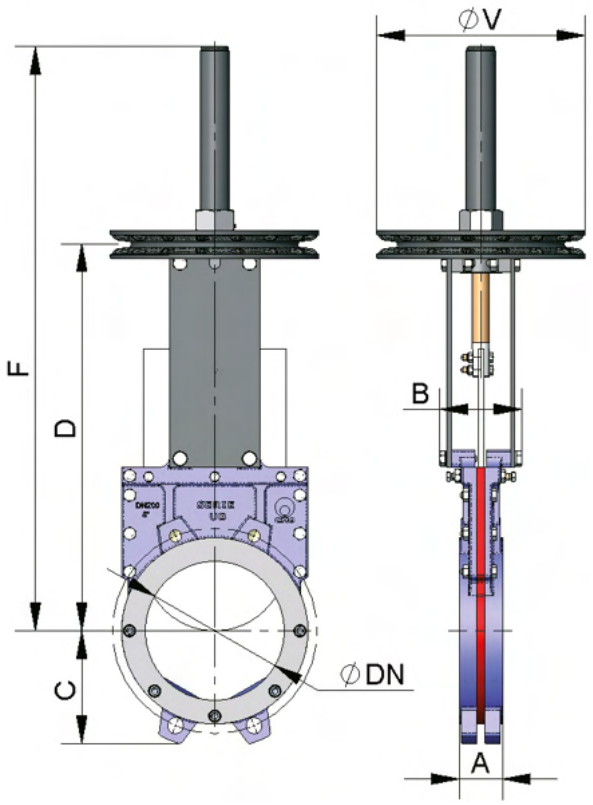

Fig. 19

DN	ΔP (bar)	A	B	C	D	F	ØV
50	10	43	90	66	265	418	225
65	10	46	90	73	290	443	225
80	10	46	90	96	305	468	225
100	10	52	90	110	347	500	225
125	10	56	100	123	385	588	225
150	10	56	100	136	435	638	225
200	10	60	118	162	561	840	300
250	10	68	118	199	650	1.029	300
300	7	78	118	225	765	1.149	402

Table. 6

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LEVER

This is a fast actuator.

The definition variables are as follows:

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

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

ACTUATOR:

- Lever.
- Spindle.
- Guide bushing.
- External limiting switches to maintain position

AVALAIBLE:

- DN50 to DN200
- Actuator designed to run at 2 bar of differential pressure (ΔP).

** Otros DN bajo consulta.*

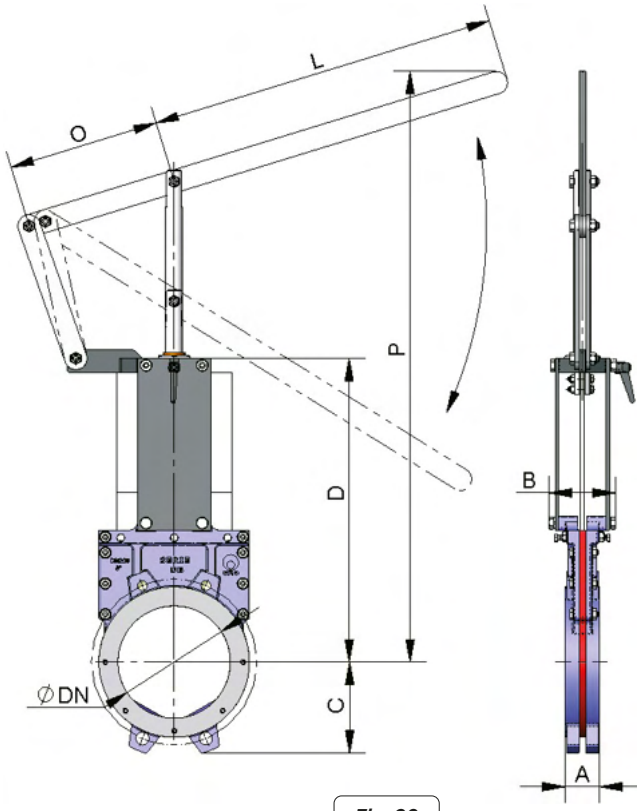

Fig. 20

DN	ΔP (bar)	A	B	C	D	L	O	P
50	10 (* see note)	43	90	66	245	325	140	518
65	10 (* see note)	46	90	73	270	325	140	543
80	10 (* see note)	46	90	96	295	325	140	568
100	10 (* see note)	52	90	110	327	325	140	600
125	10 (* see note)	56	100	123	365	325	140	832
150	10 (* see note)	56	100	136	415	325	140	882
200	10 (* see note)	60	118	162	541	620	270	1.052

Note: Drive designed to operate at 2 bar di erential pressure; the valve is sized to withstand ΔP of 10 bar.

Table. 7

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GEAR BOX

The definition variables are as follows:

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

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

OPTIONS:

- Chainwheel.
- Limiting switches.
- Extensions: stand, pipe, plates,...

ACTUATOR:

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

AVALAIBLE

- DN50 to DN600
- Recommended as of DN 350.

** Other ND on request.*

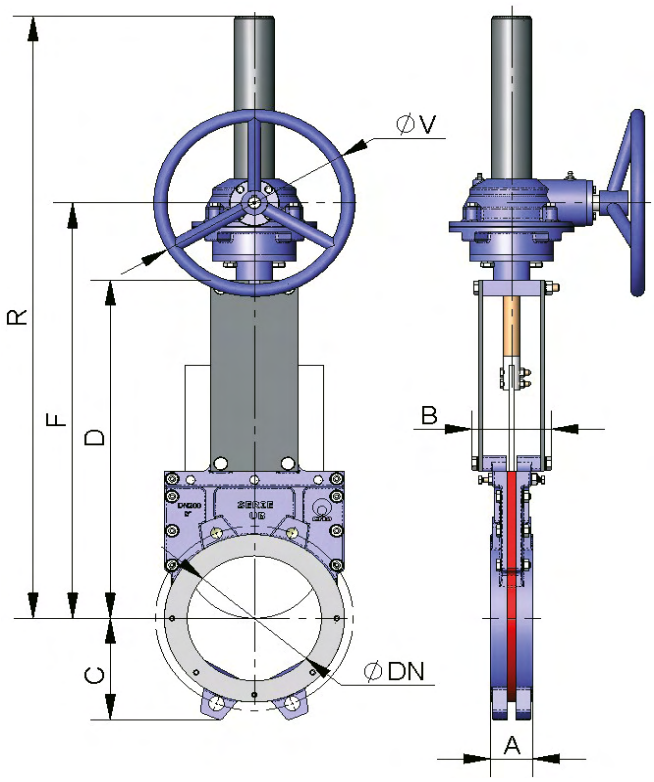

Fig. 21

DN	ΔP (bar)	A	B	C	D	F	R	ØV
50	10	43	90	66	245	369	548	300
65	10	46	90	73	270	394	573	300
80	10	46	90	96	295	419	598	300
100	10	52	90	110	327	451	630	300
125	10	56	100	123	365	489	668	300
150	10	56	100	136	415	539	718	300
200	10	60	118	162	541	665	964	300
250	10	68	118	199	630	754	1.053	300
300	7	78	118	225	745	869	1.168	300
350	6	78	218	257	869	965	1.414	300
400	6	102	243	287	984	1.080	1.529	300
450	5	114	254	318	1.117	1.216	1.815	300
500	4	127	267	355	1.222	1.321	1.920	300
600	4	154	294	418	1.442	1.559	2.140	450

Table. 8

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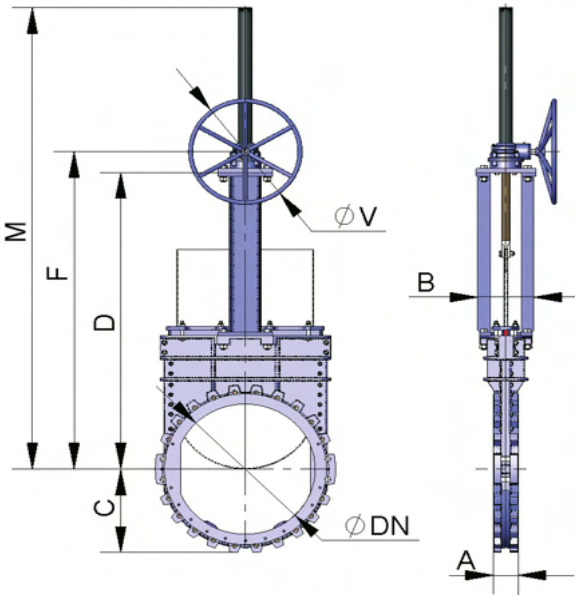

Fig. 22

Table. 9

DN	ΔP (bar)	A	B	C	D	F	M	ØV
700	2	140	320	446	1.548	1.650	2.391	450
	4					1.650	2.403	1.000
	6					1.784	2.441	450
	10					1.784	2.441	850
800	2	140	320	513	1.823	1.929	2.783	650
	4					2.059	2.816	300
	6					2.059	2.816	650
	10					2.097	2.866	1.000
900	2	140	320	585	2.059	2.161	3.114	850
	4					2.295	3.152	450
	6					2.295	3.152	850
	10					2.333	3.202	1.350
1.000	2	145	320	614	2.190	2.426	3.383	300
	4					2.426	3.383	650
	6					2.464	3.433	1.000
	10					2.482	3.448	1.350
1.200	2	150	350	726	2.616	2.852	4.009	450
	4					2.890	4.059	1.350
	6					2.890	4.059	1.350
	10					3.041	4.261	1.350
1.400	2	160	350	837	2.990	3.264	4.633	650
	4					3.264	4.633	850
	6					3.474	4.894	1.350
	10					3.510	4.930	1.350
1.600	2	170	390	960	3.480	3.754	5.323	850
	4					4.772	5.338	1.000
	6					4.168	5.788	1.350
1.800	2	180	440	1.060	3.983	4.257	6.026	850
	4					4.488	6.308	1.350
	6					4.488	6.308	1.350
2.000	2	190	480	1.165	4.390	4.682	6.648	1.350
	4					4.788	6.808	1.350
	6					4.788	6.808	1.350

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DOUBLE-ACTING PNEUMATIC CYLINDER

The definition variables are as follows:

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

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

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 DN150 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 DN150 the covers are made of nodular cast iron or carbon steel.

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

Note: Drive designed to operate at 2 bar differential pressure; the valve is sized to withstand ΔP of 10 bar.

AVALAIBLE

- DN50 to DN600.

** Other DN on request*

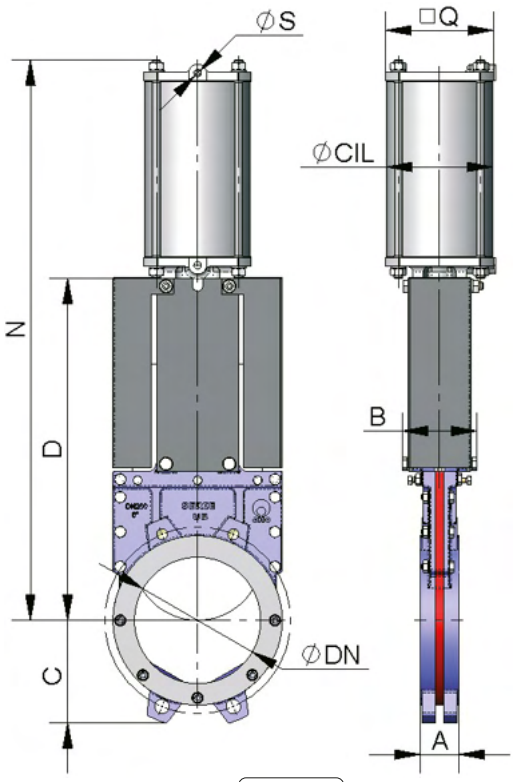

Fig. 23

DN	ΔP (bar)	A	B	C	D	N	Q	ø CIL	ø VAST	S (B.S.P)
50	10	43	90	66	245	420	90	80	20	1/4"
65	10	46	90	73	270	460	90	80	20	1/4"
80	10	46	90	96	295	500	90	80	20	1/4"
100	10	52	90	110	327	553	110	100	20	1/4"
125	10	56	100	123	365	632	135	125	25	1/4"
150	10	56	100	136	415	706	135	125	25	1/4"
200	10	60	118	162	541	886	170	160	30	1/4"
250	10	68	118	199	630	1.037	215	200	30	3/8"
300	7	78	118	225	745	1.202	215	200	30	3/8"
350	6	78	218	257	869	1.454	270	250	40	3/8"
400	6	102	243	287	984	1.619	270	250	40	3/8"
450	5	114	254	318	1.117	1.815	336	300	45	1/2"
500	4	127	267	355	1.222	1.970	336	300	45	1/2"
600	4	154	294	418	1.442	2.290	336	300	45	1/2"

Table. 10

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ELECTRIC ACTUATOR

This actuator is automatic and includes the following parts:

- Electric motor.
- Stem.
- Yoke.

THE ELECTRIC MOTOR INCLUDE:

- Emergency manual handwheel
- Limit switches
- Torque switches

OPTIONS:

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

AVALAIBLE

- DN 50 to DN 600
- From DN350 the motor is assisted with a gear box, see * in table.

** Other DN on request*

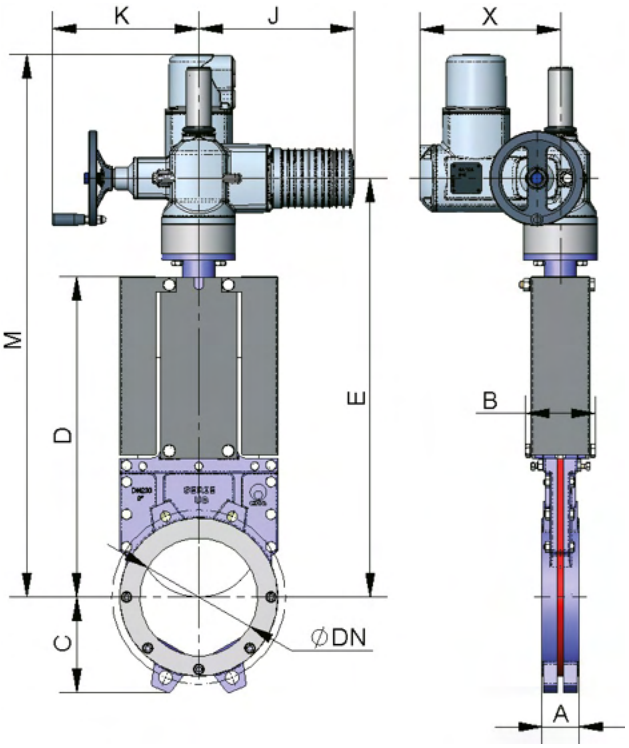

Fig. 24

DN	ΔP (bar)	A	B	C	D	E	J	K	M	X
50	10	43	90	66	245	413	264	249	623	237
65	10	46	90	73	270	438	264	249	648	237
80	10	46	90	96	295	463	264	249	673	237
100	10	52	90	110	327	495	264	249	705	237
125	10	56	100	123	365	533	264	249	743	237
150	10	56	100	136	415	583	264	249	793	237
200	10	60	118	162	541	709	264	249	919	237
250	10	68	118	199	630	798	264	249	1.086	237
300	7	78	118	225	745	915	264	249	1.209	422*
350	6	78	218	257	869	1.005	264	249	1.414	422*
400	6	102	243	287	984	1.120	264	249	1.529	422*
450	5	114	254	318	1.117	1.266	264	249	1.815	422*
500	4	127	267	355	1.222	1.371	283	254	1.920	422*
600	4	154	294	418	1.442	1.590	283	254	2.140	424*

Table. 11

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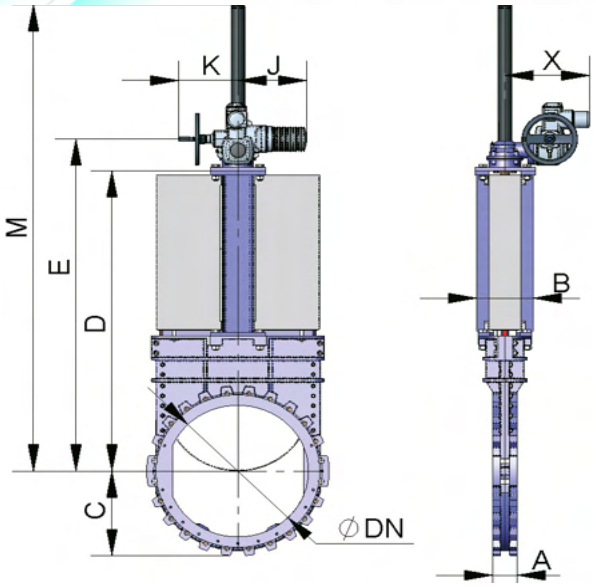

Fig. 25

DN	ΔP (bar)	A	B	C	D	E	J	K	M	X
700	2	140	320	446	1.548	1.700	283	254	2.391	453
	4					1.717	389	336	2.403	479
	6					1.834	283	254	2.441	583
	10					1.851	389	336	2.441	609
800	2	140	320	513	1.823	1.976	283	254	2.783	453
	4					1.992	389	336	2.816	479
	6					2.109	283	254	2.816	583
	10					2.164	389	336	2.866	638
900	2	140	320	585	2.059	2.228	389	336	3.114	479
	4					2.245	283	254	3.152	583
	6					2.362	389	336	3.152	609
	10					2.418	389	336	3.202	706
1.000	2	145	320	614	2.190	2.359	389	336	3.383	479
	4					2.476	283	254	3.383	583
	6					2.531	389	336	3.433	638
	10					2.419	389	336	3.577	638
1.200	2	150	350	726	2.616	2.902	283	254	4.009	583
	4					2.957	389	336	4.059	638
	6					2.860	389	336	4.218	653
	10					2.878	389	339	4.218	721
1.400	2	160	350	837	2.990	3.331	389	336	4.633	638
	4					3.365	389	336	4.923	638
	6					3.347	389	339	4.947	721
	10					3.347	389	339	4.947	721
1.600	2	170	390	960	3.480	3.821	389	336	5.323	638
	4					4.023	389	336	5.781	638
	6					4.005	389	339	5.805	721
1.800	2	180	440	1.060	3.983	4.374	389	336	6.026	706
	4					4.361	389	336	6.319	853
	6					4.361	389	336	6.319	853
2.000	2	190	480	1.165	4.390	4.781	389	336	6.648	706
	4					4.661	389	336	6.861	853
	6					4.661	389	336	6.861	853

Table. 12

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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.

OPTIONS:

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

AVALAIBLE:

- ND50 to DN600.

** Other ND on request.*

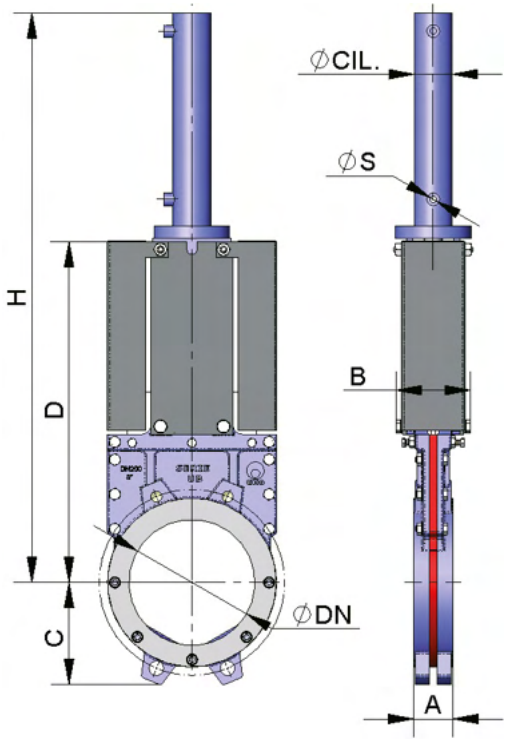

Fig. 26

DN	ΔP (bar)	A	B	C	D	H	ø CIL	ø VAST	S (B.S.P)	OIL CAP. (dm)
50	10	43	90	66	245	424	25	18	3/8"	0,032
65	10	46	90	73	270	479	25	18	3/8"	0,047
80	10	46	90	96	295	504	25	18	3/8"	0,047
100	10	52	90	110	327	556	32	22	3/8"	0,092
125	10	56	100	123	365	624	32	22	3/8"	0,117
150	10	56	100	136	415	719	40	28	3/8"	0,214
200	10	60	118	162	541	904	50	28	3/8"	0,436
250	10	68	118	199	630	1.043	50	28	3/8"	0,534
300	6	78	118	225	745	1.213	50	28	3/8"	0,632
350	6	78	218	257	869	1.400	63	36	3/8"	1,153
400	6	102	243	287	984	1.565	63	36	3/8"	1,309
450	5	114	254	318	1.117	1.770	80	36	3/8"	2,362
500	4	127	267	355	1.222	1.935	80	36	3/8"	2,614
600	4	154	294	418	1.442	2.255	80	36	3/8"	3,116

Table. 13

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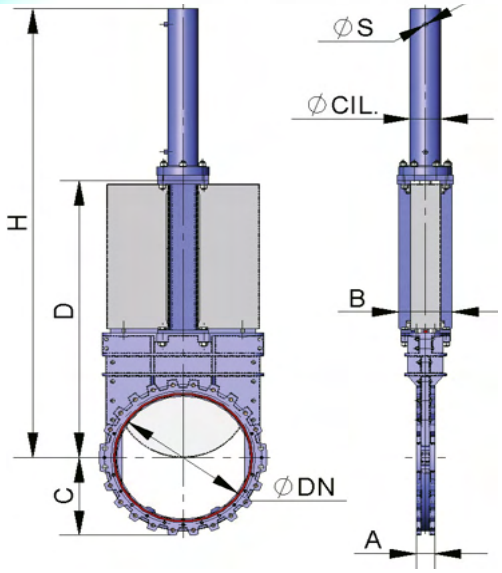

Fig. 27

DN	ΔP (bar)	A	B	C	D	H	Ø CIL.	Ø VAST.	S (B.S.P.)	OIL CAP. (dm³)
700	2	140	320	446	1.548	2.432	100	45	1/2"	5,69
	4					2.447	125	56	1/2"	8,90
	6					2.476	140	56	1/2"	11,16
	10					2.541	200	90	1/2"	22,78
800	2	140	320	513	1.823	2.726	100	45	1/2"	6,48
	4					2.770	140	56	1/2"	12,70
	6					2.793	160	70	1/2"	16,59
	10					2.835	200	90	1/2"	25,92
900	2	140	320	585	2.059	3.078	125	56	1/2"	11,35
	4					3.107	140	56	1/2"	14,24
	6					3.172	200	90	1/2"	29,06
	10					3.190	220	90	1/2"	35,16
1.000	2	145	320	614	2.190	3.459	125	56	1/2"	12,64
	4					3.511	160	70	1/2"	20,71
	6					3.553	200	90	1/2"	32,36
	10					3.594	250	90	1/2"	50,56
1.200	2	150	350	726	2.616	4.188	160	70	1/2"	24,73
	4					4.230	200	90	1/2"	38,64
	6					4.271	250	90	1/2"	60,38
	10					4.305	320	110	1/2"	98,92
1.400	2	160	350	837	2.990	4.855	160	70	1/2"	28,75
	4					4.917	220	90	1/2"	54,36
	6					4.972	320	110	1/2"	115,01
	10					5.010	350	110	1/2"	137,58
1.600	2	170	390	960	3.480	5.765	200	90	1/2"	51,21
	4					5.807	250	90	1/2"	80,01
	6					5.900	320	110	1/2"	131,09
1.800	2	180	440	1.060	3.983	6.470	220	90	1/2"	69,56
	4					6.585	320	110	1/2"	147,18
	6					6.625	350	110	1/2"	182,8
2.000	2	190	480	1.165	4.390	6.992	250	90	1/2"	99,89
	4					7.085	320	110	1/2"	147,18
	6					7.150	350	110	1/2"	202,04

Table. 14

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FLANGE DIMENSIONS

DN	PN10					ASA150				
	●	○	M (Metric)	P	øK	●	○	R UNC	P	øK
50	2	2	M 16	9	125	2	2	5/8"	9	120,6
65	2	2	M 16	9	145	2	2	5/8"	9	139,7
80	2	6	M 16	11	160	2	2	5/8"	11	152,4
100	2	6	M 16	12	180	2	6	5/8"	12	190,5
125	2	6	M 16	12	210	2	6	3/4"	12	215,9
150	2	6	M 20	14	240	2	6	3/4"	14	241,3
200	2	6	M 20	14	295	2	6	3/4"	14	298,4
250	4	8	M 20	14	350	4	8	7/8"	14	361,9
300	4	8	M 20	14	400	4	8	7/8"	14	431,8
350	6	10	M 20	20	460	4	8	1"	20	476,2
400	6	10	M 24	21	515	6	10	1"	21	539,7
450	8	12	M 24	22	565	6	10	1 ⅛"	22	577,8
500	8	12	M 24	22	620	8	12	1 ⅛"	22	635
600	8	12	M 27	22	725	8	12	1 ¼"	22	749,3

Table. 15

● TAPPED HOLES
O THROUGH HOLE

DN50 - DN600

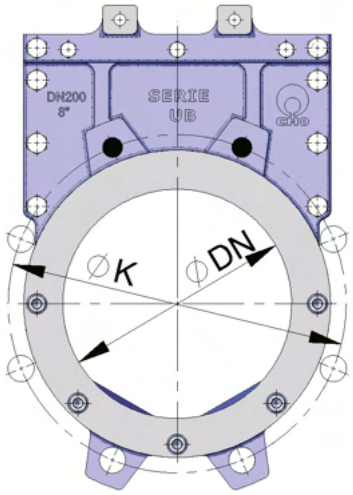

Fig. 28

DN700 - DN2000

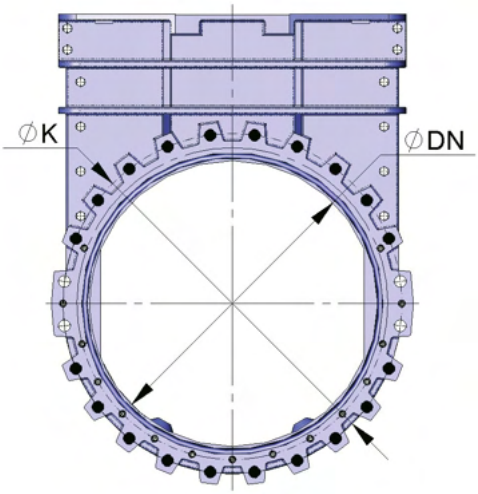

Fig. 29

DN	PN10					ASA150				
	●	○	M (Métrica)	P	øK	●	○	R UNC	P	øK
700	10	14	M 27	23	840	2	2	5/8"	9	120,6
800	10	14	M 30	23	950	2	2	5/8"	9	139,7
900	12	16	M 30	23	1.050	2	2	5/8"	11	152,4
1.000	12	16	M 33	23	1.160	2	6	5/8"	12	190,5
1.200	14	18	M 36	30	1.380	2	6	3/4"	12	215,9
1.400	16	20	M 39	30	1.590	2	6	3/4"	14	241,3

Table. 16

Note: For the number of boreholes defi ned by the standard, the number of through and plain bores can vary depending on size and material. The Table shows the standard implementation. Ask **CMO valves.**

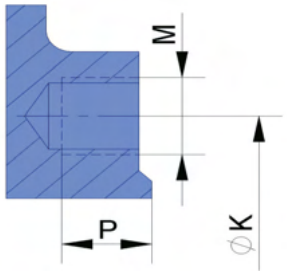

Fig. 30

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