



KNIFE-GATE VALVES

AB SERIES

15/01/2011

BIDIRECTIONAL WAFER Knife Gate Valve

- Unidirectional wafer-design knife gate valve.
- One-piece cast body with guides to support gate and seat wedges.
- Provides high flow rates with low pressure drop.
- Various seat and packing materials available.
- Face-to-face dimension in accordance with CMO standard.

General Applications:

- This knife gate valve is suitable for liquids that contain a maximum of 4% suspended solids. Designed for applications such as:
 - Chemical plants
 - Pumping
 - Food Industry
- Sewage treatment
- In all these applications, the valve should be installed once the fluid has been filtered, to eliminate solids or large particles it contains.

Sizes: ND50 to ND2000 (larger sizes on request).

Working Pressure:	-ND50 to ND125: 10kg/cm ²
	-ND150: 8kg/cm ²
	-ND200: 7kg/cm ²
	-ND250 to ND300: 5kg/cm ²
	-ND350 to ND400: 4kg/cm ²
	-ND450 to ND600: 3kg/cm ²
	-ND700 to ND1400: 2kg/cm ²

Standard Flanges: DIN PN10 and ANSI B16.5 (class 150)

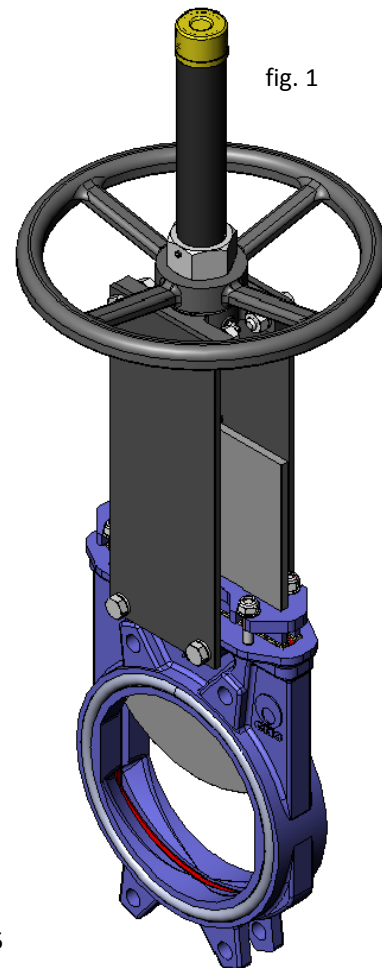
Other Common Flanges: DIN PN 6 DIN PN 16 DIN PN25
BS "D" and "E" ANSI 150 Others on request:

Directives:

- Machinery Directive: **DIR 2006/42/EC (MACHINERY)**
- Pressure Equipment Directive: **DIR 97/23/EC (PED) ART.3, P.3**
- Potential Explosive Atmospheres Directive: **DIR 94/9/EC (ATEX) CAT.3 ZONE 2 and 22 GD** For further information on categories and zones please contact the CMO Technical-Commercial Dept.

Quality Dossier:

- All valves are tested hydrostatically at CMO and material and test certificates can be provided.
- Body test = working pressure x 1.5
- Seat test = working pressure x 1.1



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Advantages of CMO's "Model AB" compared to similar products

This valve's main characteristic is the body design. It is a one-piece machined cast body with wedges on both sides that offers the ability to work with fluids in both directions with the same pressure.

The sealing joint has a stainless steel ring that ensures that the inside of the body is kept clean and prevents the joint from coming loose. This design provides a completely flat seat with no internal cavities and avoids any build up of solids in the seat area.

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 stem on the CMO valve is made of 18/8 stainless steel. This is another added advantage, as some manufacturers produce it with 13% chrome and it gets rusty very quickly.

The handwheel is made of GGG-50 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 is 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 GGG-50 nodular cast iron, making them highly shock resistant. This characteristic is essential in pneumatic actuators.

The pneumatic cylinder's o-ring seals are commercial products and can be purchased worldwide. This means it is not necessary to contact CMO every time a seal is required.

STANDARD COMPONENTS LIST		
COMPONENT:	CAST IRON VERSION:	STAINLESS STEEL VERSION:
1- Body	GG25	CF8M
2- Gate	AISI304	AISI316
3- Guide	RCH1000	RCH1000
4- Packing gland	GGG 50	CF8M
5- Packing	SYNT + PTFE	SYNT + PTFE
6- O-ring seal	EPDM	EPDM
7- Support plates	S275JR	S275JR
8- Ring	AISI316	AISI316
9- Seat	EPDM	EPDM
10- Stem	AISI303	AISI303
11- Yoke	STEEL	STEEL
12- Stem nut	BRONZE	BRONZE
13- Check nut	ST44.2 + ZINC	ST44.2 + ZINC
14- Handwheel	NODULAR CAST IRON	NODULAR CAST IRON
15- Nut	STEEL	STEEL
16- Hood	STEEL	STEEL
17- Top cap	PLASTIC	PLASTIC

table 1

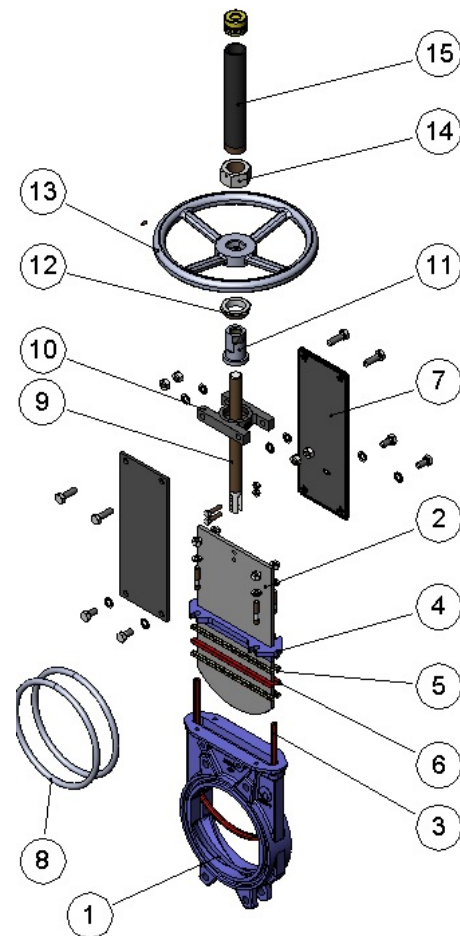


fig. 2



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DESIGN CHARACTERISTICS

1- BODY

Bidirectional wafer-design knife gate valve. One-piece cast iron body.

For diameters greater than ND600 the body is machine-welded with the necessary reinforcements to resist the maximum working pressure. For ND dimensions greater than 600 the body comes in two parts bolted together.

Full port designed to provide high flow rates with low pressure drop.

The body's internal design prevents any build up of solids in the seat area.

The standard manufacturing materials are GG25 cast iron and CF8M stainless steel. Other materials, such as GGG50 nodular cast iron, A216WCB carbon steel and stainless steel alloys (AISI316Ti, Duplex, 254SMO, Uranus B6...) are available on request. As standard, iron or 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 on request.

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.

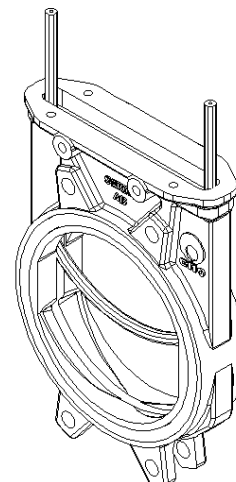
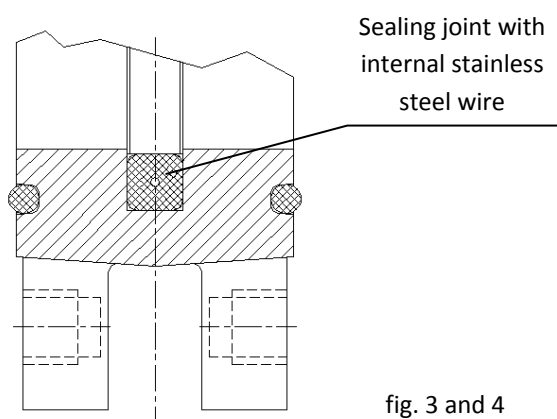
The gate is polished on both sides to provide a smooth contact surface with the resilient seat. At the same time, the gate is rounded to prevent the seat from being cut. Different degrees of polishing, anti-abrasion treatments and modifications are available to adapt the valves to the customer's requirements.

3- SEAT: (watertight)

There is only one seat design available on the AB valve and it must always be soft seated. It can never have a metal or PTFE sealing joint.

Below we show the detail of the seat:

The AB valve seat is a square rubber joint with an internal stainless steel wire.



This rubber joint is inserted inside the body in such a way that it starts on one side, level with the packing, and continues around the body to reach the other end of the packing area.



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This means that the sealing joint is not installed around the whole perimeter of the valve's flow passing hole, but rather, it is installed in a U shape, to cover the gate's perimeter.

The internal stainless steel wire helps to keep the U shape and ensures that the joint does not come out of the body because of the flow as it passes through the valve.

This design provides a completely flat seal with no cavities and avoids any solids being stored in the seal area.

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.

VITON

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.

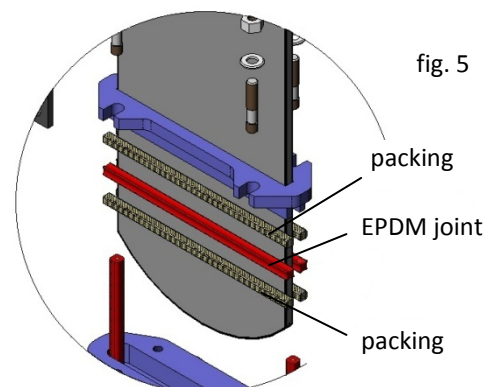
SILICONE

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.

 **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.

4- PACKING

CMO's standard packing is composed of three lines with a specially designed EPDM O-ring in the middle which provides watertight integrity between the body and the gate, 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 application in which the valve is located:



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.

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

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.

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.



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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.

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

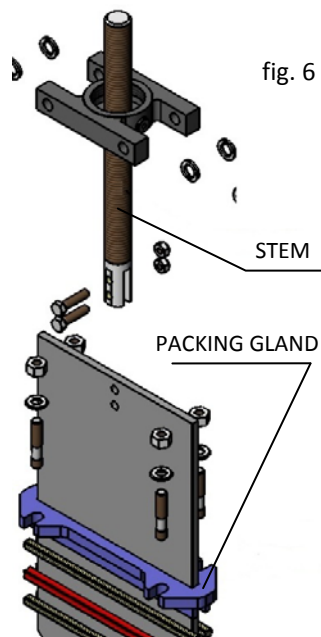
Table 2

SEAT/SEALS			PACKING			
Material	Max. T. (°C)	Applications	Material	P (bar)	Max. T. (°C)	pH
EPDM (E)	90	Mineral acids and oils	Greased cotton	10	100	6-8
Nitrile (N)	90	Hydrocarbons, oils and greases	Dry cotton (AS)	0.5	100	6-8
Viton (V)	200	Hydrocarbons and solvents	Synthetic + PTFE	100	-200+270	0-14
Silicone (S)	200	Food Products	Graphite	40	650	0-14
NOTE: More details and other materials available on request.			Ceramic Fibre	0.3	1400	0-14

5- STEM

The stem on the CMO valve is made of 18/8 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 allows uniform force and pressure to be applied to the packing to ensure watertight integrity.

As standard, valves with cast iron body include GGG50 packing glands, whilst valves with stainless steel body have CF8M packing glands.

7- ACTUATORS

All types of actuators can be supplied, with the advantage that the CMO design is fully interchangeable. It is not possible to change the levers action.

This design allows the customer to change the actuators themselves and normally no extra assembly accessories are required. In the event any accessory is required, CMO will supply it.

Manual:

- Handwheel with rising stem
- Handwheel with non-rising stem
- Chainwheel
- Lever
- Gear Box
- Others (square nut...)

Automatic:

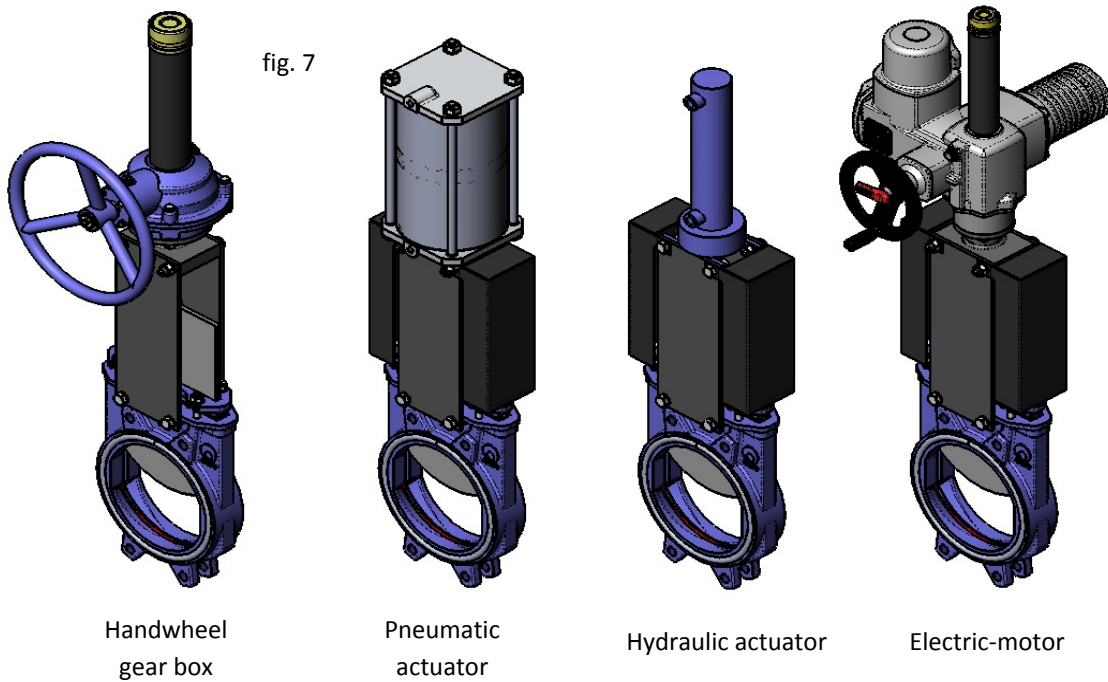
- Electric actuator
- Pneumatic cylinder
- Hydraulic cylinder

The chainwheel and gear box actuators are also available with non-rising stem.

Graphical representation of some actuators on the next page (Fig.7).

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ACCESSORIES AND OPTIONS

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

Mirror Polished Gate

Recommended for the food industry, its function is to prevent solids from sticking to the gate. They slide off the gate and do not stick to it.

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

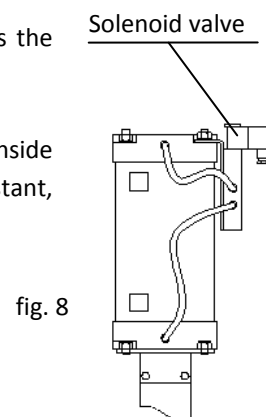
Recommended in applications in which the fluid can harden and solidify inside the valve's body. An external jacket keeps the body temperature constant, preventing the fluid from solidifying.

Mechanical Limit Switches, Inductive Switches and Positioners

Indicates the valve's specific or continuous position.

Solenoid valves (Fig. 8)

For air distribution to pneumatic actuators.





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Connection Boxes, Wiring and Pneumatic Piping

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

Stroke Limiting Mechanical Stops

Mechanical Locking Device

Allows the valve to be mechanically locked in a set position for long periods of time.

Emergency Manual Actuator (Hand Wheel /Gear Box)

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

Triangular (V-Notch) and Pentagonal Diaphragm with Indication Rule (Fig. 9)

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.

Actuator or Yoke Support

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

Epoxy Coating

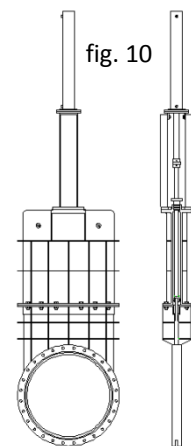
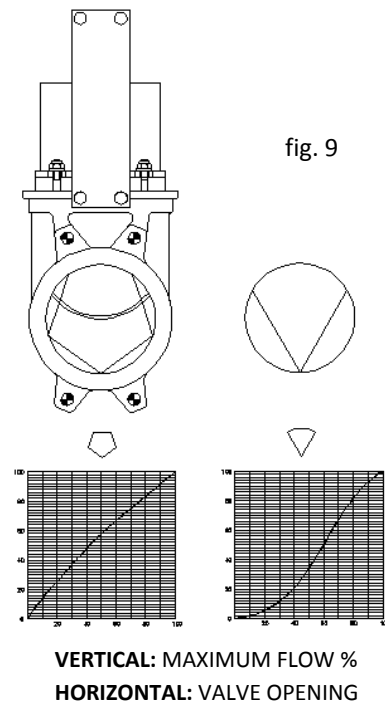
All cast iron and carbon steel bodies and components on CMO valves are EPOXY coated, giving the valves great resistance to corrosion and an excellent finish. CMO's standard colour is blue, RAL-5015.

Gate Safety Protection

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

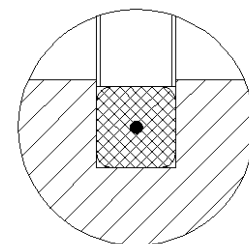
Bonnet (Fig. 10)

The bonnet provides total watertight integrity to the outside, reducing the packing maintenance required.



TYPES OF SEAL

Watertight seal: The joint is fitted into the body, inserted in the seat and in contact with the whole perimeter of the gate which is in contact with the body, this ensures perfect watertight integrity and circulation in both directions, it also prevents build up of solids on the seat making it difficult to seal. The joint contains an internal wire, as can be seen in Figure 11.





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TYPES OF EXTENSION

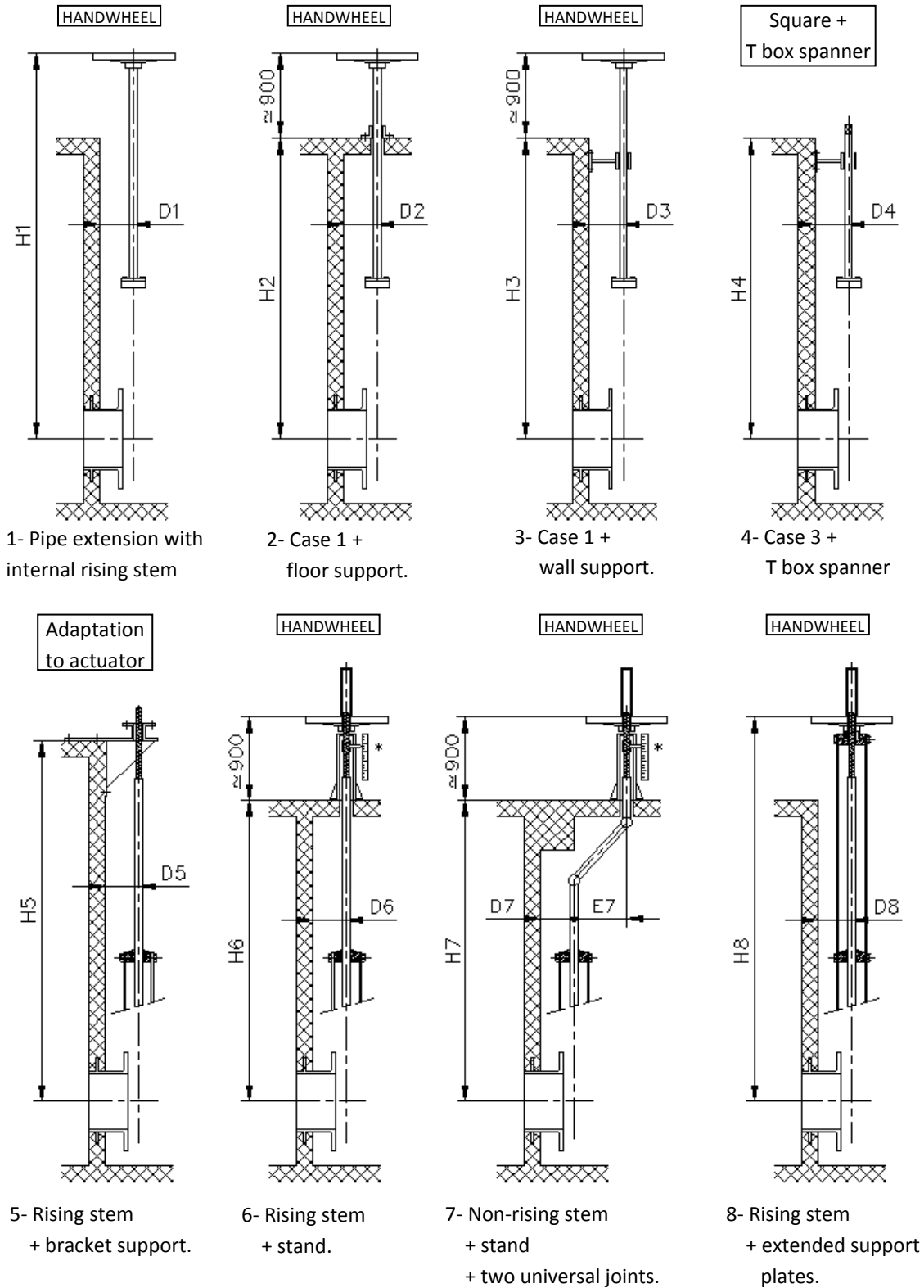


fig. 12

*OPTIONAL: position indicator on the floor stand.



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HANDWHEEL with Rising Stem

- **B = Max. width** of the valve (without actuator)
- **D = Max. height** of the valve (without actuator)
- Options:
 - Locking devices
 - Extensions: stand, pipe, plates...
 - ND higher than those give in the table
- Actuator including:
 - Handwheel
 - Stem
 - Nut
 - Stem protection hood
- Available: ND 50 to ND 1200, other ND on request.

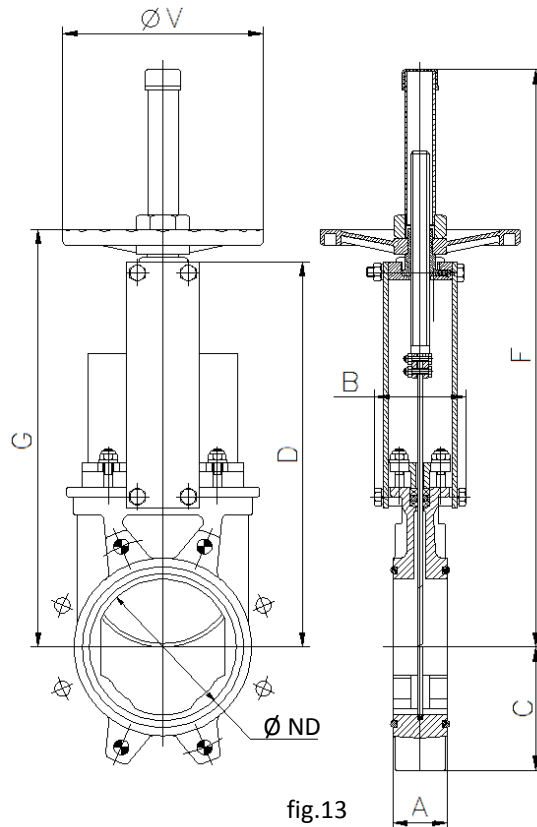


fig.13

ND	P (Kg/cm ²)	DRAW (Nw)	TORQ. (Nm)	A	B	C	D	F	G	Ø STEM	GATE WIDTH	ØV	Weight (kg.)
50	10	1143	2.64	40	91	61	241	410	289	Ø20x4	5	225	7
65	10	1952	4.45	40	91	68	268	437	316	Ø20x4	5	225	8
80	10	2957	6.76	50	91	91	294	463	342	Ø20x4	5	225	9
100	10	4617	10.5	50	91	104	334	503	382	Ø20x4	5	225	11
125	10	7213	16.5	50	101	118	367	586	415	Ø20x4	6	225	13
150	8	7290	16.6	60	101	130	419	638	458	Ø20x4	8	225	17
200	7	12975	37.1	60	118	159	525	816	575	Ø25x5	8	325	28
250	5	14522	41.4	70	118	196	626	1017	676	Ø25x5	8	325	40
300	5	20942	59.8	70	118	230	726	1117	776	Ø25x5	10	325	56
350	4	22810	88.5	96	290	254	797	1337	906	Ø35x6	10	450	94
400	4	29879	115.9	100	290	287	903	1443	1012	Ø35x6	12	450	116
450	3	28461	110.3	106	290	304	989	1629	1098	Ø35x6	12	450	162
500	3	35333	137.1	110	290	340	1101	1741	1210	Ø35x6	15	450	187
600	3	51235	198.6	110	290	398	1307	2047	1416	Ø35x6	15	450	260
700	2	56721	255.7	110	320	453	1506	2246	1656	Ø50x8	15	620	420
800	2	61760	337.7	110	320	503	1720	2560	1870	Ø50x8	20	620	564
900	2	78134	427.3	110	320	583	1953	2893	2103	Ø50x8	20	620	736
1000	2	97383	531.4	110	320	613	2137	3177	2287	Ø50x8	25	800	921
1200	2	140615	963.7	150	340	728	2616	3856	2766	Ø60x9	30	800	N.G.

N.G.: Weight not given



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HANDWHEEL with Non-Rising Stem

- Suitable when no size limitations exist.
- **J = Max. width** of the valve (without actuator)
D = Max. height of the valve (without actuator)
- Options:
 - Square nut
 - Locking devices
 - Extensions: stand, pipe, plates...
 - ND higher than those give in the table
- Actuator including:
 - Handwheel
 - Stem
 - Guide bearings on the yoke.
 - Nut
- Available: ND50 to ND1200, other ND on request.

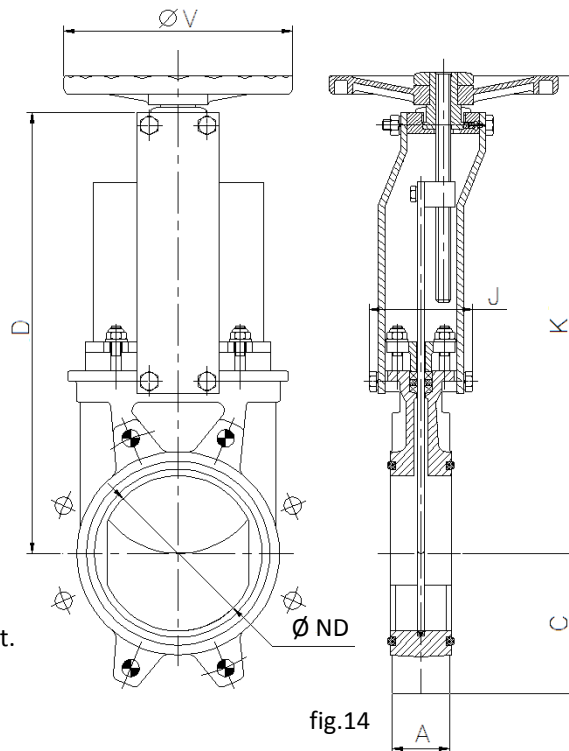


fig.14

ND	P (Kg/cm ²)	DRAW (Nw)	TORQ. (Nm)	A	C	D	J	K	Ø STEM	GATE WIDTH	ØV	Weight (kg.)
50	10	1143	2.64	40	61	241	101	277	Ø20x4	5	225	7
65	10	1952	4.45	40	68	268	101	304	Ø20x4	5	225	8
80	10	2957	6.76	50	91	294	101	330	Ø20x4	5	225	9
100	10	4617	10.5	50	104	334	101	370	Ø20x4	5	225	11
125	10	7213	16.5	50	118	367	111	402	Ø20x4	6	225	13
150	8	7290	16.6	60	130	419	111	454	Ø20x4	8	225	17
200	7	12975	37.1	60	159	525	128	578	Ø25x5	8	325	28
250	5	14522	41.4	70	196	626	128	679	Ø25x5	8	325	40
300	5	20942	59.8	70	230	726	128	779	Ø25x5	10	325	56
350	4	22810	88.5	96	254	797	305	860	Ø35x6	10	450	94
400	4	29879	115.9	100	287	903	305	981	Ø35x6	12	450	116
450	3	28461	110.3	106	304	989	305	1067	Ø35x6	12	450	162
500	3	35333	137.1	110	340	1101	305	1179	Ø35x6	15	450	187
600	3	51235	198.6	110	398	1307	305	1386	Ø35x6	15	450	260
700	2	56721	255.7	110	453	1506	335	1596	Ø50x8	15	620	420
800	2	61760	337.7	110	503	1720	335	1810	Ø50x8	20	620	564
900	2	78134	427.3	110	583	1953	335	2043	Ø50x8	20	620	736
1000	2	97383	531.4	110	613	2137	335	2227	Ø50x8	25	800	921
1200	2	140615	963.7	150	728	2616	355	2706	Ø60x9	30	800	N.G.

N.G.: Weight not given



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CHAINWHEEL

- Widely used in raised installations with difficult access, the handwheel is fitted in vertical position.
- **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
 - ND higher than those give in the table
- Including:
 - Handwheel
 - Stem
 - Nut
 - Hood
 - Chain
- Available: ND 50 to ND 1200, other ND on request.

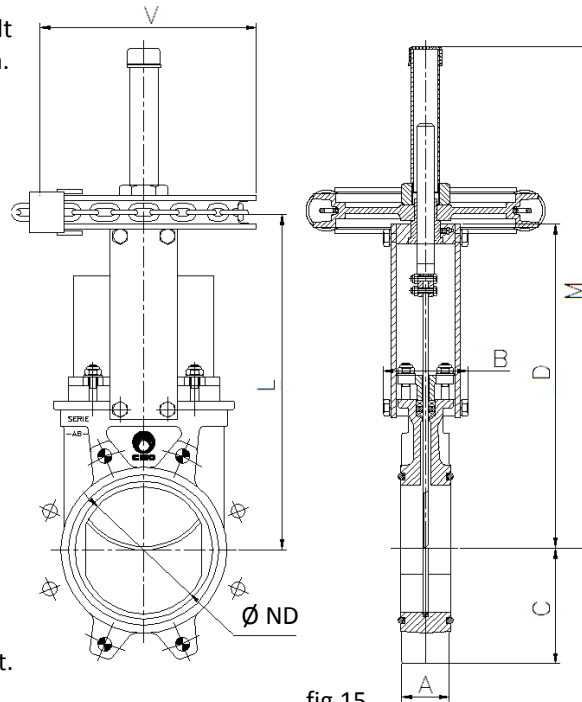


fig.15

ND	P (Kg/cm ²)	DRAW (Nw)	TORQ. (Nm)	A	B	C	D	L	M	Ø STEM	GATE WIDTH	ØV	Weight (kg.)
50	10	1143	2.64	40	91	61	241	264	437	Ø20x4	5	225	7
65	10	1952	4.45	40	91	68	268	291	464	Ø20x4	5	225	8
80	10	2957	6.76	50	91	91	294	317	490	Ø20x4	5	225	9
100	10	4617	10.5	50	91	104	334	357	530	Ø20x4	5	225	11
125	10	7213	16.5	50	101	118	367	390	613	Ø20x4	6	225	13
150	8	7290	16.6	60	101	130	419	442	665	Ø20x4	8	225	17
200	7	12975	37.1	60	118	159	525	551	849	Ø25x5	8	325	28
250	5	14522	41.4	70	118	196	626	652	1050	Ø25x5	8	325	40
300	5	20942	59.8	70	118	230	726	752	1150	Ø25x5	10	325	56
350	4	22810	88.5	96	290	254	797	879	1398	Ø35x6	10	450	94
400	4	29879	115.9	100	290	287	903	985	1504	Ø35x6	12	450	116
450	3	28461	110.3	106	290	304	989	1071	1690	Ø35x6	12	450	162
500	3	35333	137.1	110	290	340	1101	1183	1802	Ø35x6	15	450	187
600	3	51235	198.6	110	290	398	1307	1389	2108	Ø35x6	15	450	260
700	2	56721	255.7	110	320	453	1506	1606	2406	Ø50x8	15	620	420
800	2	61760	337.7	110	320	503	1720	1820	2720	Ø50x8	20	620	564
900	2	78134	427.3	110	320	583	1953	2053	3053	Ø50x8	20	620	736
1000	2	97383	531.4	110	320	613	2137	2257	3337	Ø50x8	25	800	921
1200	2	140615	963.7	150	340	728	2616	2836	4016	Ø60x9	30	800	N.G.

N.G.: Weight not given



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LEVER

- It is a fast actuator
- **B = Max. width** of the valve (without actuator)
D = Max. height of the valve (without actuator)
- The actuator includes:
 - Lever
 - Rod
 - Guide bearing
 - External limiting switches to maintain the position
- Available: ND 50 to ND 300, other ND on request.

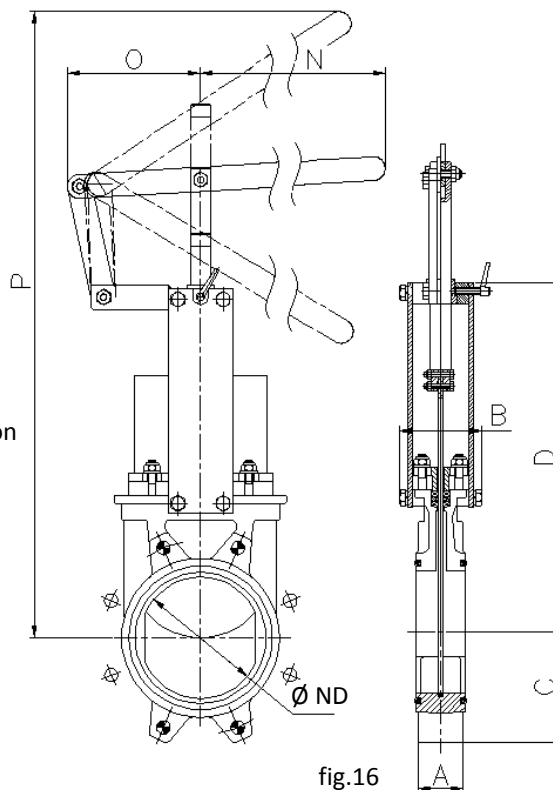


fig.16

ND	P (Kg/cm ²)	DRAW (Nw)	TORQ. (Nm)	A	B	C	D	N	O	P	Ø ROD	GATE WIDTH	Weight (kg.)
50	10	1143	2.64	40	91	61	241	315	165	389	25	5	9
65	10	1952	4.45	40	91	68	268	315	165	436	25	5	10
80	10	2957	6.76	50	91	91	294	315	165	507	25	5	11
100	10	4617	10.5	50	91	104	334	315	165	614	25	5	13
125	10	7213	16.5	50	101	118	367	415	165	725	25	6	16
150	8	7290	16.6	60	101	130	419	415	165	851	25	6	20
200	7	12975	37.1	60	118	159	525	620	290	1098	30	8	32
250	5	14522	41.4	70	118	196	626	620	290	1345	30	8	45
300	5	20942	59.8	70	118	230	726	620	290	1594	30	10	60

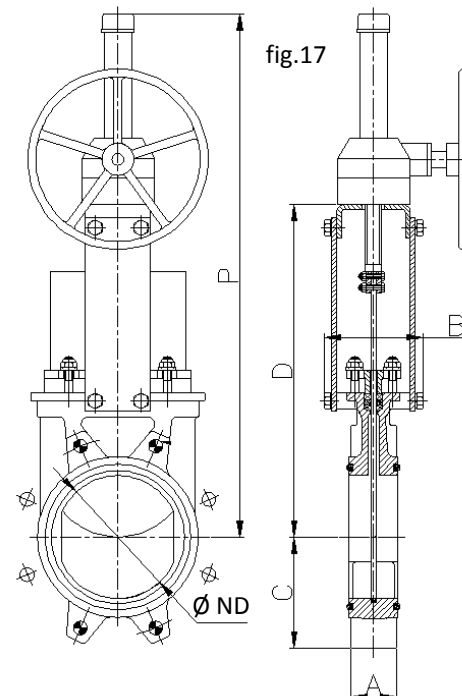


KNIFE-GATE VALVES

AB SERIES

GEAR BOX

- It is recommendable for ND above 350 and working pressures higher than 3.5 Kg/cm².
- **B = Max. width** of the valve (without actuator)
D = Max. height of the valve (without actuator)
- Options:
 - Chainwheel
 - Extensions: stand, pipe, plates...
 - Locking devices
 - **Non-rising stem**
- Actuator including:
 - Stem
 - Yoke
 - Cone-shaped gear box
 - Handwheel
- Standard ratio = 4 to 1 .
- Available: ND 50 to ND 2000, other ND on request.



ND	P (Kg/cm ²)	DRAW (Nw)	TORQ. (Nm)	A	B	C	D	P	Ø STEM	GATE WIDTH	Weight (kg.)
50	10	1143	2.64	40	91	61	241	540	Ø20x4	5	20
65	10	1952	4.45	40	91	68	268	566	Ø20x4	5	21
80	10	2957	6.76	50	91	91	294	592	Ø20x4	5	22
100	10	4617	10.5	50	91	104	334	632	Ø20x4	5	24
125	10	7213	16.5	50	101	118	367	665	Ø20x4	6	26
150	8	7290	16.6	60	101	130	419	717	Ø20x4	6	30
200	7	12975	37.1	60	118	159	525	942	Ø25x5	8	41
250	5	14522	41.4	70	118	196	626	1033	Ø25x5	8	53
300	5	20942	59.8	70	118	230	726	1121	Ø25x5	10	69
350	4	22810	88.5	96	290	254	797	1305	Ø35x6	10	107
400	4	29879	115.9	100	290	287	903	1403	Ø35x6	12	130
450	3	28461	110.3	106	290	304	989	1677	Ø35x6	12	183
500	3	35333	137.1	110	290	340	1101	1789	Ø35x6	12	204
600	3	51235	198.6	110	290	398	1307	1995	Ø35x6	15	288
700	2	56721	255.7	110	320	453	1506	2401	Ø50x8	15	461
800	2	61760	337.7	110	320	503	1720	2715	Ø50x8	20	592
900	2	78134	427.3	110	320	583	1953	3043	Ø50x8	20	768
1000	2	97383	532.4	110	320	613	2137	3351	Ø50x8	25	972
1100	2	118139	809.6	150	340	728	2616	3675	Ø60x9	25	N.G.
1200	2	140615	963.7	150	340	728	2616	4042	Ø60x9	30	N.G.
1300	2	167066	1144.9	150	390	787	2882	4382	Ø70x10	30	N.G.
1400	2	194376	1332.2	150	390	837	3250	4852	Ø70x10	30	N.G.
1500	2	225200	1785.9	170	426	890	3517	5217	Ø80x10	35	N.G.
1600	2	256527	2277.7	170	426	957	3775	5575	Ø80x10	35	N.G.
1700	2	289753	2572.8	190	440	1010	4008	5908	Ø90x12	40	N.G.
1800	2	327615	2753.9	190	440	1057	4242	6242	Ø90x12	40	N.G.
1900	2	367030	3258.9	210	480	1110	4390	6490	Ø100x12	40	N.G.
2000	2	410600	4141.2	210	480	1162	4540	6740	Ø100x12	45	N.G.

N.G.: Weight not given

KNIFE-GATE VALVES

AB SERIES

DOUBLE-ACTING PNEUMATIC CYLINDER (Air pressure: 6 Kg/cm)

- CMO double-acting pneumatic actuators are designed to work at a pressure between 6 and 10 kg/cm².
- 10 Kg/cm² is the maximum admissible air pressure. For air pressures below 6 Kg/cm² please consult manufacturer.
- For ND50 to ND200 valves, the cylinder's jacket and covers are made of aluminium, the rod of AISI304, the piston of rubber-coated steel and the O-ring seals are made of nitrile.
- For valves larger than ND200 the covers are made of nodular cast iron or carbon steel.
- On request, we can also supply the actuator made entirely of stainless steel, especially for installation in corrosive atmospheres.
- **B = Max. width** of the valve (without actuator)
D = Max. height of the valve (without actuator)
- Available: ND50 to ND2000, other ND on request.

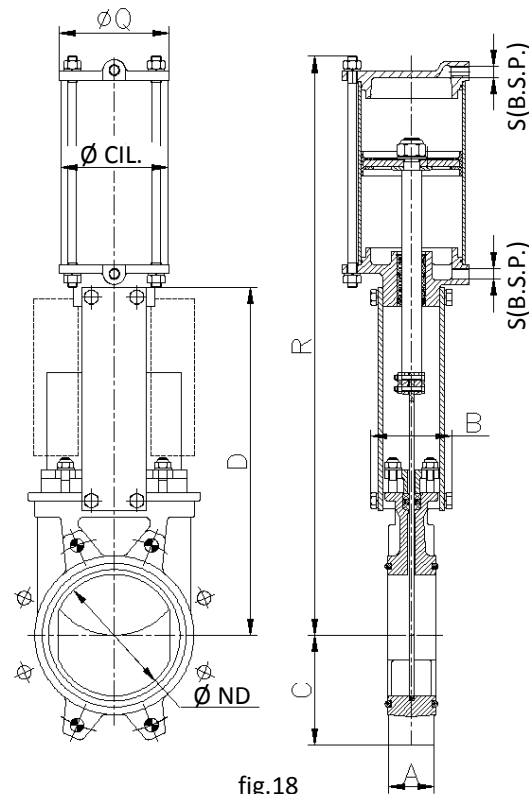


fig.18

ND	P (Kg/cm ²)	DRAW (Nw)	TORQ. (Nm)	A	B	C	D	R	Ø CIL.	Ø ROD	ØQ	S (B.S.P.)	GATE WIDTH	Weight (kg.)
50	10	1143	2.64	40	91	61	241	400	80	20	90	1/4"	5	7
65	10	1952	4.45	40	91	68	268	442	80	20	90	1/4"	5	8
80	10	2957	6.76	50	91	91	294	483	100	20	110	1/4"	5	9
100	10	4617	10.5	50	91	104	334	546	125	25	135	1/4"	5	12
125	10	7213	16.5	50	101	118	367	630	160	30	170	1/4"	6	18
150	8	7290	16.6	60	101	130	419	692	160	30	170	1/4"	6	22
200	7	12975	37.1	60	118	159	525	869	200	30	215	3/8"	8	37
250	5	14522	41.4	70	118	196	626	1032	250	40	270	3/8"	8	58
300	5	20942	59.8	70	118	230	726	1182	250	40	270	3/8"	10	72
350	4	22810	88.5	96	290	254	797	1379	300	45	382	1/2"	10	130
400	4	29879	115.9	100	290	287	903	1535	300	45	382	1/2"	12	148
450	3	28461	110.3	106	290	304	989	1677	300	45	382	1/2"	12	235
500	3	35333	137.1	110	290	340	1101	1839	350	45	444	1/2"	12	260
600	3	51235	198.6	110	290	398	1307	2145	400	50	508	1/2"	15	334
700	2	56721	255.7	110	320	453	1506	2488	400	50	508	1/2"	15	540
800	2	61760	337.7	110	320	503	1720	2798	450	50	552	3/4"	20	693
900	2	78134	427.3	110	320	583	1953	3162	500	50	612	3/4"	20	840
1000	2	97383	532.4	110	320	613	2137	3452	600	60	712	3/4"	25	1053
1100	2	118139	809.6	150	340	670	2375	3792	600	60	712	3/4"	25	N.G.
1200	2	140615	963.7	150	340	728	2616	4133	600	50	712	3/4"	30	N.G.

N.G.: Weight not given

C.M.O.

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TEC-AB.EN00

page 14



KNIFE-GATE VALVES

AB SERIES

SINGLE-ACTING PNEUMATIC CYLINDER (Air pressure: 6 Kg/cm)

- CMO single-acting pneumatic actuators are designed to work at a pressure between 6 and 10 kg/cm².
- 10 Kg/cm² is the maximum admissible air pressure. For air pressures below 6 Kg/cm² please consult manufacturer.
- Available (spring closes or spring opens).
- The jacket is made of aluminium, the covers of nodular cast iron or carbon steel, the rod of AISI304, the piston of rubber-coated steel and the O-ring seals of nitrile.
- The **actuator** design is **spring** activated for valves with diameters **up to ND300**. 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 a fault.
- **B = Max. width** of the valve (without actuator)
D = Max. height of the valve (without actuator)

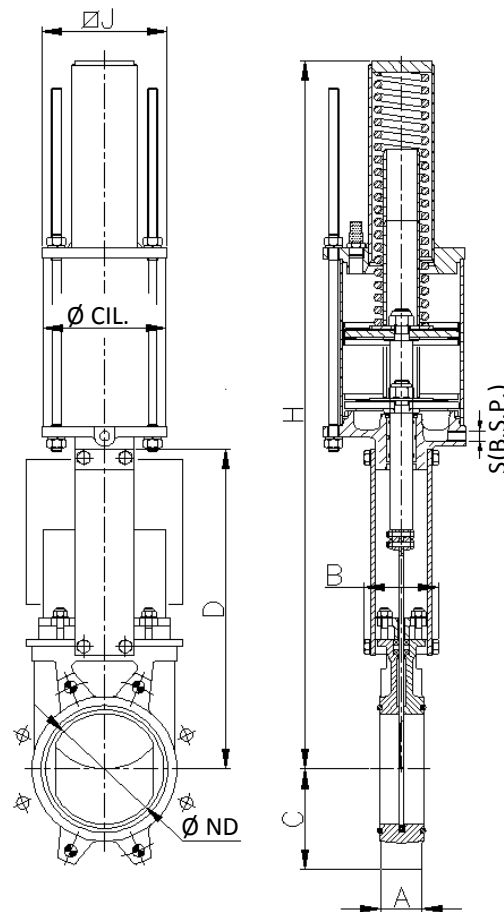


fig.19

Note: Please see the "CMO Pneumatic Actuators" catalogue if you require further information.

ND	P (Kg/cm ²)	DRAW (Nw)	TORQ. (Nm)	A	B	C	D	H	Ø J	Ø CIL.	Ø ROD	S (B.S.P.)	GATE WIDTH	Weight (kg.)
50	10	1143	2.64	40	91	61	241	781	135	125	25	1/4"	5	19
65	10	1952	4.45	40	91	68	268	806	135	125	25	1/4"	5	22
80	10	2957	6.76	50	91	91	294	833	135	125	25	1/4"	5	23
100	10	4617	10.5	50	91	104	334	873	135	160	30	1/4"	5	24
125	10	7213	16.5	50	101	118	367	909	170	200	30	3/8"	6	35
150	8	7290	16.6	60	101	130	419	960	170	200	30	3/8"	6	36
200	7	12975	37.1	60	118	159	525	1355	215	250	40	3/8"	8	66
250	5	14522	41.4	70	118	196	626	1451	270	300	45	1/2"	8	130
300	5	20942	59.8	70	118	230	726	1551	270	300	45	1/2"	10	143



KNIFE-GATE VALVES

AB SERIES

ELECTRIC ACTUATOR

- This actuator is automatic and includes the following parts:
 - Electric motor
 - Stem
 - Yoke
- The electric motor includes:
 - Emergency manual handwheel
 - Limit switches
 - Torque switches
- Options:
 - Different types and brands
 - Non-rising stem
- ISO 5210 / DIN 3338 Flanges
- Available: ND 50 to ND 2000, other ND on request.

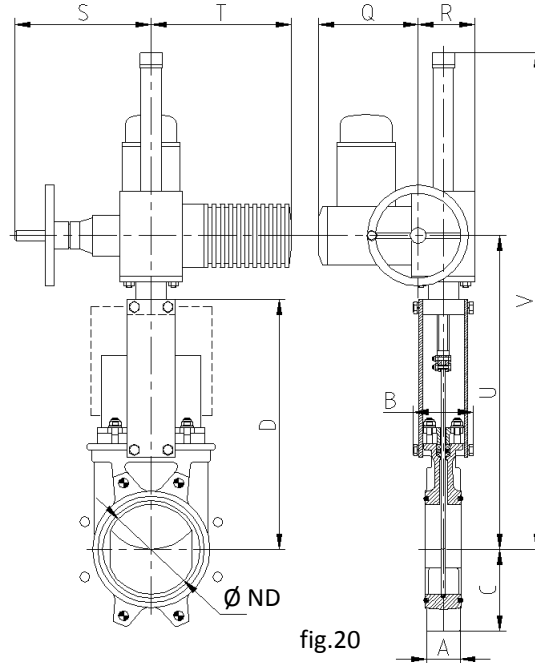


fig.20

ND	P (Kg/cm ²)	DRAW (Nw)	TORQ. (Nm)	A	B	C	D	Q	R	S	T	U	V	Ø ROD.	GATE WIDTH	Peso (kg.)
50	10	1143	2.64	40	91	61	241	197	102	234	265	347	587	Ø20x4	5	24
65	10	1952	4.45	40	91	68	268	197	102	234	265	374	614	Ø20x4	5	25
80	10	2957	6.76	50	91	91	294	197	102	234	265	400	640	Ø20x4	5	26
100	10	4617	10.5	50	91	104	334	197	102	234	265	440	680	Ø20x4	5	27
125	10	7213	16.5	50	101	118	367	197	102	234	265	473	713	Ø20x4	6	30
150	8	7290	16.6	60	101	130	419	197	102	234	265	525	765	Ø20x4	6	32
200	7	12975	37.1	60	118	159	525	197	102	234	265	640	880	Ø25x5	8	42
250	5	14522	41.4	70	118	196	626	197	102	234	265	741	981	Ø25x5	8	55
300	5	20942	59.8	70	118	230	726	197	102	234	265	841	1141	Ø25x5	10	72
350	4	22810	88.5	96	290	254	797	197	115	256	282	944	1347	Ø35x6	10	99
400	4	29879	115.9	100	290	287	903	197	115	256	282	1050	1550	Ø35x6	12	136
450	3	28461	110.3	106	290	304	989	222	153	325	385	1147	1847	Ø35x6	12	166
500	3	35333	137.1	110	290	340	1101	222	153	325	385	1259	1959	Ø35x6	12	245
600	3	51235	198.6	110	290	398	1307	222	153	325	385	1465	2165	Ø35x6	15	362
700	2	56721	255.7	110	320	453	1506	222	153	325	385	1651	2451	Ø50x8	15	472
800	2	61760	337.7	110	320	503	1720	222	153	332	385	1865	2665	Ø50x8	20	630
900	2	78134	427.3	110	320	583	1953	222	153	332	385	2098	2998	Ø50x8	20	764
1000	2	97383	532.4	110	320	613	2137	222	153	332	385	2288	3178	Ø50x8	25	998
1100	2	118139	809.6	150	340	670	2375	227	195	355	510	2575	3675	Ø60x9	25	N.G.
1200	2	140615	963.7	150	340	728	2616	227	195	355	510	2866	4042	Ø60x9	30	N.G.
1300	2	167066	1144.9	150	390	787	2882	227	195	355	510	3082	4382	Ø60x9	30	N.G.
1400	2	194376	1332.2	150	390	837	3250	222	153	332	385	3395	4852	Ø70x10	30	N.G.
1500	2	225200	1785.9	170	426	890	3517	222	153	332	385	3662	5217	Ø70x10	35	N.G.
1600	2	256527	2277.7	170	426	957	3775	227	195	355	510	3975	5575	Ø80x12	35	N.G.
1700	2	289753	2572.8	190	440	1010	4008	227	195	355	510	4210	5908	Ø80x12	40	N.G.
1800	2	327615	2753.9	190	440	1057	4242	227	195	355	510	4457	6242	Ø80x12	40	N.G.
1900	2	367030	3258.9	210	480	1110	4390	227	195	355	510	4690	6490	Ø90x12	40	N.G.
2000	2	410600	4141.2	210	480	1162	4540	227	195	355	510	4940	6740	Ø90x12	45	N.G.

N.G.: Weight not given



KNIFE-GATE VALVES

AB SERIES

HYDRAULIC ACTUATOR (Oil pressure: 135 Kg/cm²)

- **B = Max. width** of the valve (without actuator)
- **D = Max. height** of the valve (without actuator)

- The hydraulic actuator includes:

- Hydraulic cylinder
- Stem
- Yoke

- Available: ND 50 to ND 2000

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

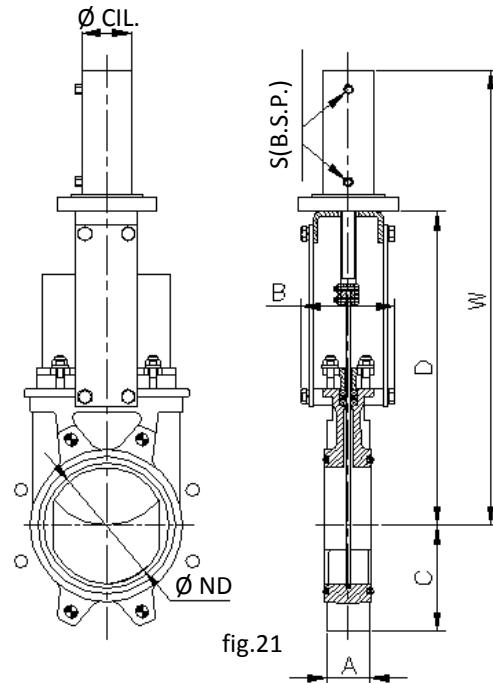


fig.21

ND	P Kg/cm ²	DRAW (Nw)	A	B	C	D	W	Ø CIL.	Ø ROD	S (B.S.P.)	Oil Cap. (dm ³)	Weight (kg.)
50	10	1143	40	91	61	241	457	32	16	3/8"	0.04	7
65	10	1952	40	91	68	268	500	32	16	3/8"	0.05	8
80	10	2957	50	91	91	294	560	32	16	3/8"	0.06	9
100	10	4617	50	91	104	334	620	32	16	3/8"	0.08	12
125	10	7213	50	101	118	367	683	40	22	3/8"	0.16	15
150	8	7290	60	101	130	419	755	40	22	3/8"	0.19	20
200	7	12975	60	118	159	525	926	50	28	3/8"	0.39	31
250	5	14522	70	118	196	626	1077	50	28	3/8"	0.50	44
300	5	20942	70	118	230	726	1246	63	36	3/8"	0.93	62
350	4	22810	96	290	254	797	1376	63	36	3/8"	1.10	100
400	4	29879	100	290	287	903	1532	80	45	3/8"	2.01	138
450	3	28461	106	290	304	989	1707	80	45	3/8"	2.26	161
500	3	35333	110	290	340	1101	1869	80	45	3/8"	2.51	223
600	3	51235	110	290	398	1307	2176	100	56	1/2"	4.71	325
700	2	56721	110	320	453	1506	2525	100	56	1/2"	5.49	481
800	2	61760	110	320	503	1720	2839	125	70	1/2"	9.82	678
900	2	78134	110	320	583	1953	3172	125	70	1/2"	11.0	861
1000	2	97383	110	320	613	2137	3496	160	110	1/2"	20.1	1103
1100	2	118139	150	340	670	2375	3760	160	90	1/2"	22.1	N.G.
1200	2	140615	150	340	728	2616	4174	160	90	1/2"	24.1	N.G.
1300	2	167066	150	390	787	2882	4451	200	140	1/2"	40.8	N.G.
1400	2	194376	150	390	837	3250	4939	200	110	1/2"	44.0	N.G.
1500	2	225200	170	426	890	3517	5286	200	110	1/2"	47.1	N.G.
1600	2	256527	170	426	957	3775	5658	250	180	1/2"	78.5	N.G.
1700	2	289753	190	440	1010	4008	5991	250	140	1/2"	83.5	N.G.
1800	2	327615	190	440	1057	4242	6325	250	140	1/2"	88.4	N.G.
1900	2	367030	210	480	1110	4390	6578	250	140	1/2"	93.3	N.G.
2000	2	410600	210	480	1162	4540	6828	320	180	1/2"	160.9	N.G.

N.G.: Weight not given



KNIFE-GATE VALVES

AB SERIES

INFORMATION ABOUT FLANGE DIMENSIONS

EN 1092-2 PN10

ND	P (Kg/cm ²)	•	o	Metric	T	ØK
50	10	4	-	M 16	10	125
65	10	4	-	M 16	10	145
80	10	4	4	M 16	12	160
100	10	4	4	M 16	12	180
125	10	4	4	M 16	12	210
150	8	4	4	M 20	17	240
200	7	4	4	M 20	16	295
250	5	8	4	M 20	19	350
300	5	8	4	M 20	19	400
350	4	12	4	M 20	28	460
400	4	12	4	M 24	28	515
450	3	16	4	M 24	28	565
500	3	16	4	M 24	34	620
600	3	18	4	M 27	26	725
700	3	20	4	M 27	25	840
800	3	20	4	M 30	22	950
900	3	24	4	M 30	21	1050
1000	3	24	4	M 33	21	1160
1100	3	28	4	M 33	30	1270
1200	3	28	4	M 36	30	1380
1300	2	28	4	M 36	35	1490
1400	2	24	12	M 39	35	1590
1500	2	24	12	M 39	28	1700
1600	2	28	12	M 45	40	1820
1700	2	30	14	M 45	40	1920
1800	2	30	14	M 45	36	2020
1900	2	32	16	M 45	45	2120
2000	2	32	16	M 45	45	2230

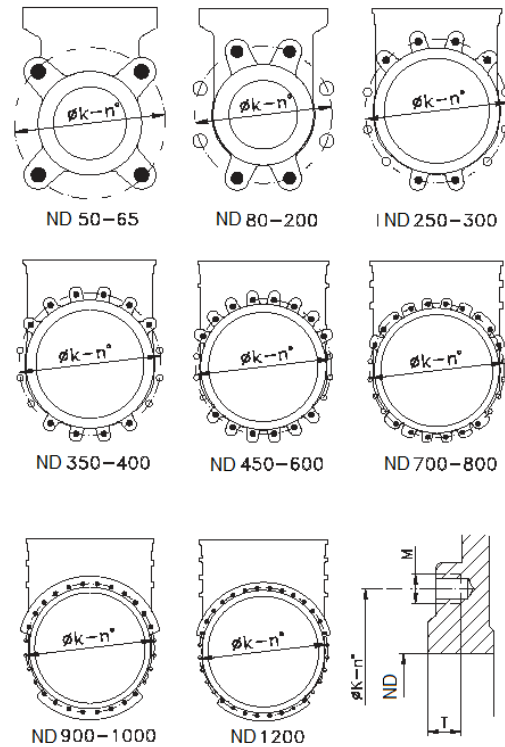


fig.22

◻ BLIND TAPED HOLES
 ◻ THROUGH HOLE

ANSI B16.5, class 150

ND	P (Kg/cm ²)	•	O	R UNC	T	ØK
2"	10	4	-	5/8"	10	120,6
2 1/2"	10	4	-	5/8"	10	139,7
3"	10	4	-	5/8"	12	152,4
4"	10	4	4	5/8"	12	190,5
5"	10	4	4	3/4"	12	215,9
6"	8	4	4	3/4"	17	241,3
8"	7	4	4	3/4"	16	298,4
10"	5	8	4	7/8"	19	361,9
12"	5	8	4	7/8"	19	431,8
14"	4	8	4	1"	28	476,2
16"	4	12	4	1"	28	539,7
18"	3	12	4	1 1/8"	28	577,8
20"	3	16	4	1 1/8"	34	635
24"	3	16	4	1 1/4"	26	749,3
28"	3	20	4	1 1/4"	25	863,6
30"	3	24	4	1 1/2"	22	977,9
32"	3	28	4	1 1/2"	21	1085,9
36"	3	32	4	1 1/2"	21	1200,2
40"	3	40	4	1 1/2"	30	1422,4

