优势特点:

当刀闸阀长时间保持打开且车身内壁平行时，需要非常大的扭矩来关闭它。 A系列阀体内部为锥形，提供更大的空间。这样，当阀门关闭时，可以容易地移除存储在其中的固体。
该阀定义为单向阀，这些阀通常存在由于反压而导致浇口弯曲的风险。 CMO阀门不会发生这种情况，因为它包含支撑刀闸的内部导轨，并允许其在最大工作压力的30%的背压下工作，而不会使刀闸弯曲。

A系列的是一体式阀体，同时阀杆保护罩独立于手轮固定螺母，这意味着无需松开手轮就可以拆卸保护罩。该优点允许执行定期维护操作，例如润滑阀杆等。

阀杆由18/8（铬镍比例，耐蚀）不锈钢制成。这是另一个额外的优势，因为一些制造商使用13%的铬生产它并且它很快变得生锈。手轮由GJS-500球墨铸铁制成。一些制造商使用普通铸铁生产它们，这会在非常高的操作扭矩或敲击时导致破损。

轭架设计紧凑，同时执行器螺母采用密封和润滑的盒子保护。这使得即使没有手轮也可以用钥匙移动阀门（在其他制造商的产品中这是不可能的）。

气动执行器的上盖和下盖由GJS-500球墨铸铁制成，使其具有高度抗冲击性。这种特性在气动执行器中至关重要。气缸的O形圈密封件是规格品，可在全球范围内购买。这意味着每次需要密封时都无需联系CMO。

应用:

适用于采矿业、装载流体输送管线，如：含岩石和污泥的水，一般用于化工和废水中的磨料液。可用于采矿、污水处理--石油工业、发电站、化工厂、能源部门、火电站。

A 系列

适用于悬浮固体含量最大5%的液体。重力进料应用中的干燥固体需倒置。

CMO对夹单向刀闸阀，适用于多种低压介质应用，满足任何单向应用的要求。一体式阀体铸造，拥有导轨可支撑闸门和阀板，流速高和阻力低。**结构长度设计依据CMO标准。**多种阀座及填料材质可定制。

优势特点：

当刀闸阀长时间保持打开且车身内壁平行时，需要非常大的扭矩来关闭它。A系列阀体内部为锥形，提供更大的空间。这样，当阀门关闭时，可以容易地移除存储在其中的固体。该阀定义为单向阀，这些阀通常存在由于反压而导致浇口弯曲的风险。CMO阀门不会发生这种情况，因为它包含支撑刀闸的内部导轨，并允许其在最大工作压力的30%的背压下工作，而不会使刀闸弯曲。

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尺寸：

DN50 to DN2000 (可根据要求提供更大尺寸)。

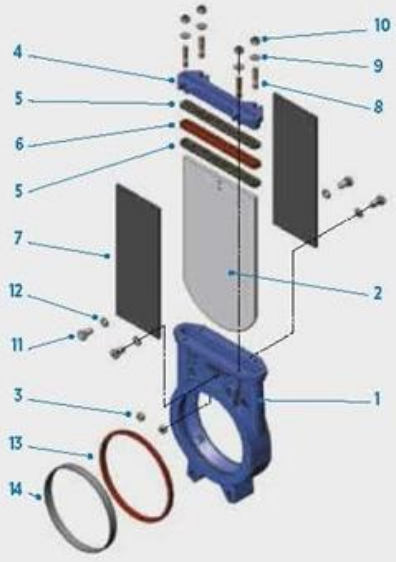
Δ 工作压力：

DN50 →	DN150:	10 kg/cm²
	DN200:	8 kg/cm²
DN250 →	DN300:	6 kg/cm²
DN350 →	DN400:	5 kg/cm²
DN450 →	DN600:	3 kg/cm²
DN700 →	DN1400:	2 kg/cm²

常见应用

- 泵隔离
- 储罐排放
- 供水系统
- 排水系统
- 增稠剂管道
- 过滤器隔离
- 磨料水注入
- 枢纽调配
- 工业废水输送
- 水利控制系统
- 水系统密封
- 石灰浆料管线

标准组件



	描述	GJL-250	CF8M
1	阀体	GJL-250	CF8M
2	闸板	AISI-304	AISI-316
3	导向口	RCH 1000	
4	填料压盖	GJS-500	CF8M
5	填料	SYNT + PTFE	
6	连接件	EPDM	
7	支架	S275JR	
8	销钉	F-111 ZINC	AISI-316
9	垫片	ST ZINC	A-4
10	自锁螺母	5.6 ZINC	A-4
11	螺栓	5.6 ZINC	A-2
12	垫片	ST ZINC	A-2
13	阀座	EPDM	
14	端面	AISI-316	

尺寸:
DN50 to DN2000 (2" - 80")
(可以根据要求定做更大尺寸).

(ΔP) 压力:
DN50 to DN150 (2" - 8") 10 kg/cm².
DN200 (8") 8 kg/cm².
DN250 to DN300 (10" - 12") 6 kg/cm².
DN350 to DN400 (14" - 16") 5 kg/cm².
DN450 to DN600 (18" - 24") 3 kg/cm².
DN700 to DN1400 (28" - 56") 2 kg/cm².

法兰钻孔:
ANSI B16.5 (150 LB) & PN 10, PN16, PN25, Jis 10k, 澳标...

其它材质:
AISI316Ti, 双相钢, 254SMO超级奥氏体不锈钢, Uranus B6, 高镍特铁, 高镍球铁, 等其它。

Rev. 06-06-2018

UNIDIRECTIONAL WAFER KNIFE GATE VALVE

DESCRIPTION

- 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.
- An arrow is marked on the body indicating the flow direction.

GENERAL APPLICATIONS

This knife gate valve is suitable for liquids that contain a maximum of 5% suspended solids. If it is used for dry solids in gravity feed applications it should be installed with the arrow on the body pointing in the opposite direction to the flow.

Designed for applications such as:

- Paper Industry
- Mining
- Silo emptying
- Chemical plants
- Pumping
- Food Industry
- Sewage treatment

SIZES

ND50 a ND2000.

** Others **ND** on request*

WORKING PRESSURE (ΔP)

ND50-250	10 bar
ND300-400	6 bar
ND450	5 bar
ND500-600	4 bar
ND700-1600	2 bar

** Otras presiones, consultar.*

The mentioned working pressures are just valid for the pressures applied on the direction of the arrow market on the body. As the valve is designed with gate support guides, the valves are able to support a 30% of these pressures from the opposite direction without any damage on them. In these cases, the valves are not 100% water tight. To obtain total water tightness in these conditions, it is necessary to incorporate additional supports.

STANDARD FLANGES

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

OTHER COMMON FLANGES

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

** Others on request*

DIRECTIVES

- Pressure Equipment Directive:
  (PED) ART 4.3 /CAT.1.
  Potential Explosive Atmospheres Directive:
  (ATEX) CAT.3 ZONA 2 y 22 GD.

** Para información de categorías y zonas, contactar con el departamento técnico-comercial de **CMO VALVES**.*

QUALITY DOSSIER

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

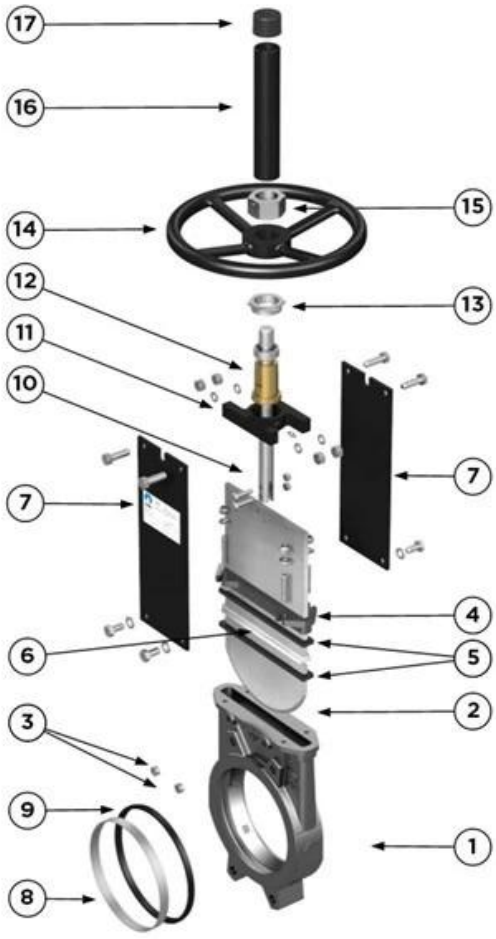
- Body test = working pressure x 1.5
- Seat test = working pressure x 1.1

ADVANTAGES

When a knife 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. Model A's body is cone-shaped inside, providing greater space. This way, when the valve is closed the solids stored inside it can be easily removed.

This valve is defined as unidirectional and these valves are normally at risk of the gate bending due to counter-pressure. This cannot happen with the **CMO valves** because it contains internal guides that support the knife gate and allow it to work under counter-pressure of 30% of the maximum working pressure, without the knife gate bending. 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.

The stem on the **CMO valves** 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 GJS 500 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). This characteristic is essential in pneumatic actuators. The pneumatic cylinder's o-ring seals are commercial products and can be purchased worldwide.

STANDARD COMPONENTS LIST

	COMPONENT	CAST IRON	ST.STEEL
1	BODY	GJL-250	CF8M
2	GATE	AISI304	AISI316
3	GUIDE	RCH1000	
4	PACKING GLAND	GJS-500	CF8M
5	PACKING	SINT + PTFE	
6	O-RING SEAL	EPDM	
7	SUPPORT PLATES	S275JR	
8	RING	AISI316	
9	SEAT	EPDM	
10	STEM	AISI 304	
11	YOKE	GJS500	
12	STEM NUT	BRONZE	
13	CHECK NUT	ST44.2 + ZINC	
14	HANDWHEEL	NODULAR CAST IRON	
15	NUT	STEEL	
16	HOOD	STEEL	
17	TOP CAP	PLASTIC	

Table. 1

DESIGN CHARACTERISTICS

BODY

- Unidirectional wafer-design knife gate valve. One-piece cast body with guides to support gate and seat wedges.
- For diameters greater than DN1200 the body is machine-welded with the necessary reinforcements to resist the maximum working pressure. Full port designed to provide high flow rates with low pressure drop. Full port designed to provide high flow rates with low pressure drop.
- The standard manufacturing materials are GJL-250 cast iron and CF8M stainless steel. Other materials, such as GJS-500 nodular cast iron, A216WCB carbon steel and stainless steel alloys (AISI316Ti, Duplex, 254SMO, Uranus B6...) are available on request. (AISI316Ti, Dúplex, 254SMO, Uranus B6...) están disponibles bajo consulta.
- 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..

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.

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.

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.*

SEAT: (watertight)

Six types of seats are available according to the working: application.

Fig. 3

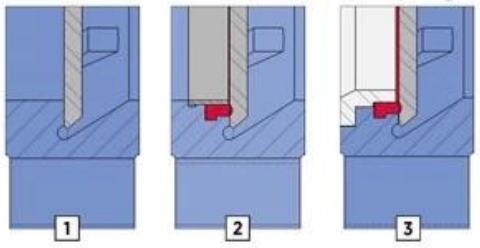
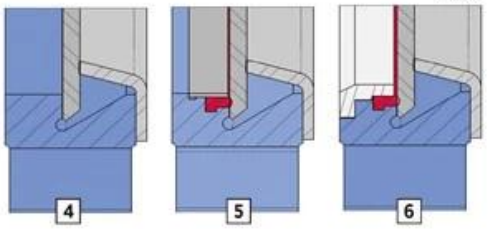


Fig. 4



SEAT 1
Metal / metal seat.
This type of seat does not include any kind of resilient seat and the estimated leakage (considering water as the test fluid) is 1.5% of the pipe flow.

SEAT 2
Standard soft-seated valve
This type of seat includes a resilient seat which is fixed to the inside of the body via an AISI316 stainless steel retaining ring.

SEAT 3
Soft-seated valve with reinforced socket.
This type of seat includes a resilient seat which is fixed to the inside of the body via an AISI316 stainless steel retaining ring with two functions (to protect the valve from abrasion and clean the gate when working with solids that can stick to it)

SEAT 4 / 5 / 6
The same as seats 1, 2 and 3 but including a deflector.
The deflector is a cone-shaped ring located at the valve's entrance with two functions (to protect the valve from abrasion and guide the flow to the centre of the valve).

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:

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. **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

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

SEATS / SEALS			PACKING			
MATERIAL	**Tª MÁX (ºC)**	**APLICATIONS**	**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	0.5	100	6-8
Nitrile (N)	90*	Hydrocarbons, oils and greases	Cotton + PTFE	30	120	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
PTFE (T)	250	Corrosion resistant	Ceramic Fibre	0.3	1400	0-14

Nota: *More details and other materials available on request.* Table. 2

**** > EPDM and nitrile:*** is possible until serving temperature Max.: 120ºC under request

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.

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 GJS-500 packing glands, whilst valves with stainless steel body have CF8M packing glands.

ACTUATORS

All types of actuators can be supplied, with the advantage that thanks to the C.M.O. 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 C.M.O. valves is that all actuators are interchangeable.

MANUAL

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

AUTOMÁTIC

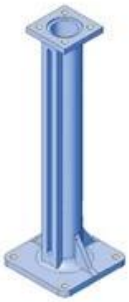
- Electric actuator
- Pneumatic cylinder
- Hydraulic cylinder

WIDE RANGE OF ACCESSORIES AVAILABLE

- Mechanical stops
- Locking devices
- Emergency manual actuators
- Solenoid valves
- Positioners.
- Limit switches
- Proximity switches
- Straight floor stands (fig. 5)
- Leaning floor stand (fig. 6)

STRAIGHT FLOOR stands

Fig. 6



LEANING FLOOR stands

Fig. 5

También se pueden desarrollar alargamientos de eje, permitiendo la actuación desde posiciones alejadas de la ubicación de la válvula para ajustarse a todas las necesidades. Se recomienda consulten previamente a nuestros técnicos.

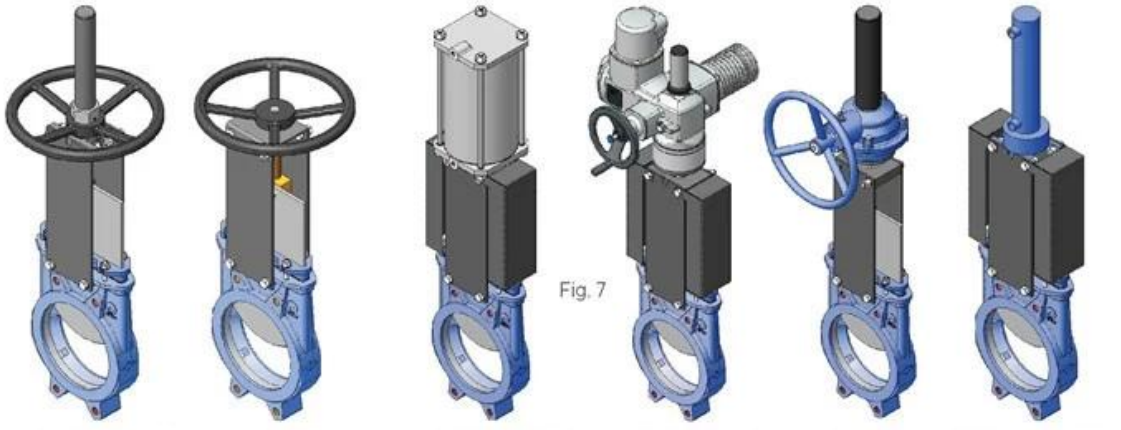


Fig. 7

HANDWHEEL RISING STEM | HANDWHEEL NON-RISING STEM | PNEUMATIC ACTUATOR | ELECTRIC-MOTOR ACTUATOR | HANDWHEEL GEAR BOX | HYDRAULIC ACTUATOR

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 (Fig. 8)
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.

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.

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

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

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

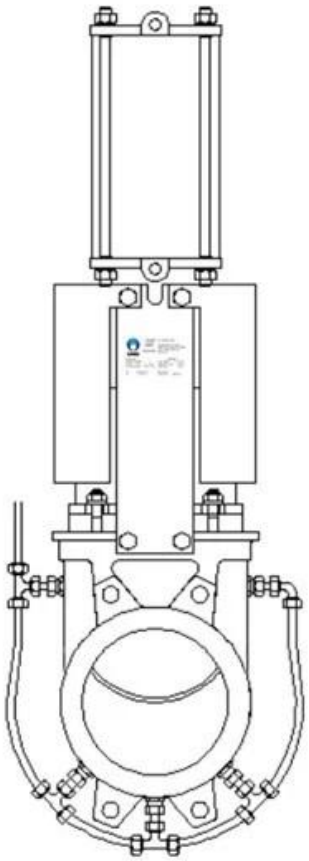


Fig. 8