

MODEL**EX****SERIES 10**

WAFER STYLE KNIFE GATE VALVE

The **EX (SER. 10)** model knife gate is an uni-directional wafer valve designed for general industrial service applications. The design of the body and seat assures non-clogging shut off on suspended solids in industries such as:

- Pulp and Paper
- Wastewater treatment plants
- Food and Beverage
- Mining
- Power plants
- Chemical plants
- Bulk handling
- etc.

Sizes: DN 2"/50mm to DN 48"/1200mm (larger diameters on request)

Working pressure: DN 2"/50mm to DN 10"/250mm: 150 psi / (10 kg/cm²)
 DN 12"/300mm to DN 16"/400mm: 90 psi / (6 kg/cm²)
 DN 18"/450mm: 75 psi / (5 kg/cm²)
 DN 20"/500mm to DN 24"/600mm: 60 psi / (4 kg/cm²)
 DN 28"/700mm to DN 52"/1200mm: 30 psi / (2 kg/cm²)

Standard flange connection: DIN PN 10 and ANSI B16.5 (class 150)

Note: other flange connections are available on request such as:

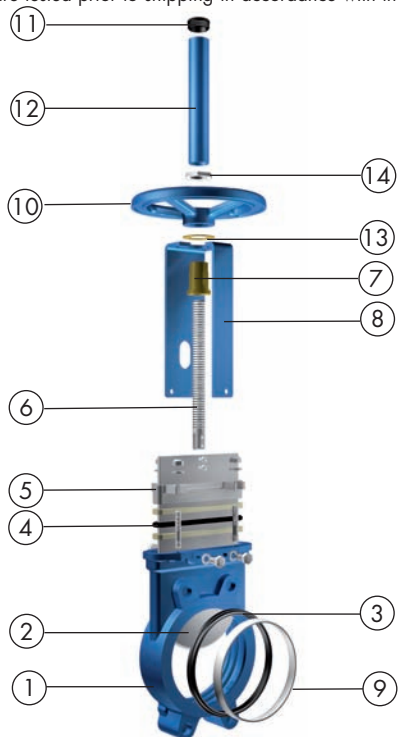
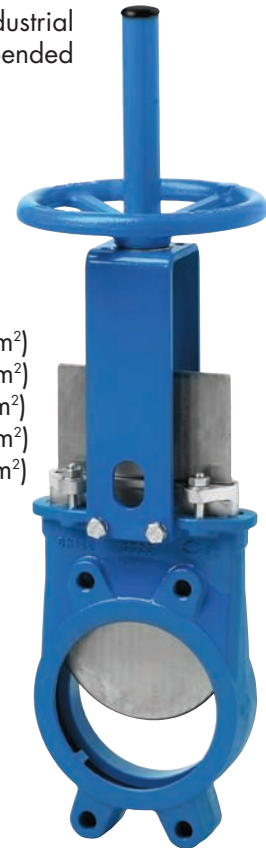
DIN PN 6 DIN PN 16 DIN PN 25
 BS "D" and "E"p ANSI 125

Directives: DIR 2006/42/CE (MACHINES)

DIR 97/23/CE (PED) Fluid: Group 1(b), 2 (Cat. I, mod. A)

DIR 94/9/CE (ATEX^{Ex})

All valves are tested prior to shipping in accordance with the standard developed by the Quality Control Department at ORBINOX.



STANDARD PARTS LIST

| Part: | Cast Iron: | Stainless Steel: |
|---------------------|------------------------------------------------------------------------------------------------|------------------|
| 1- Body | GJL250 (GG25) | CF8M |
| 2- Gate | AISI 304 | AISI 316 |
| 3- Seat | Metal/Metal or EPDM | |
| 4- Packing | PTFE Impreg. Synth. Fibre (With a EPDM o-ring) | CF8M |
| 5- Gland Follower | Aluminium (DN 2"/50mm to DN 12"/300mm) or Ductile Iron (DN 14"/350mm to DN 40"/1000mm) | CF8M |
| 6- Stem | AISI 430 | |
| 7- Stem nut | Brass | |
| 8- Yoke | Epoxy-coated Carbon Steel | |
| 9- "A" ring | AISI 304 | AISI 316 |
| 10- Handwheel | $\phi \leq 12,20"/310\text{mm}$: Ductile Iron / $\phi \geq 14"/410\text{mm}$: GJL 250 (GG25) | |
| 11- Cap | Plastic | |
| 12- Stem Protector | Epoxy-coated Carbon Steel | |
| 13- Friction washer | Brass | |
| 14- Nut | Zinc Plated Carbon Steel | |



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OBX 02/13 Revision 0

EX(SER.10)-1

MODEL

EX

SERIES 10



DESIGN FEATURES

BODY:

Wafer style cast **monoblock** with raised face and with reinforced ribs in larger diameters for extra body strength.

Internal cast-in gate wedges and guides allows for tighter shut-off.

Full port design for greater flow capacity and minimal pressure drop.

Internal design avoids any build up of solids that would prevent valve from closing.

GATE:

Stainless steel gate as standard.

Gate is polished on both sides to avoid jamming and seat damage.

Bottom of the gate edge is machined to a bevel to cut through solids for a tighter seal in the closed position. On request: thickness and/or material of the gate can be changed for higher pressure requirement.

SEAT: (resilient)

Unique design that mechanically locks the seat in the internal of the valve body with a stainless steel retainer ring.

Standard EPDM also available in different materials such as Viton, PTFE, etc.

PACKING:

Long-life packing with several layers of braided fibre plus an EPDM o-ring, with an easy access packing gland ensuring a tight seal.

Long-life braided packing is available in a wide range of materials.

STEM:

The standard stainless steel stem offers a long corrosion resistant life.

For rising stem handwheel actuators only, a stem protector is provided for additional protection against dust while the valve is in the open position.

ACTUATORS:

All actuators supplied by **ORBINOX** are interchangeable, and supplied with a standard mounting kit to allow for installation on site.

YOKE or ACTUATOR SUPPORT:

Made of EPOXY coated steel (stainless steel available on request).

Compact design makes it extremely robust even under the most severe conditions.

EPOXY COATING:

The epoxy coating on all **ORBINOX** cast iron and carbon steel valve bodies and components is electrostatically applied making the valves to be corrosion resistant with a high quality finished surface.

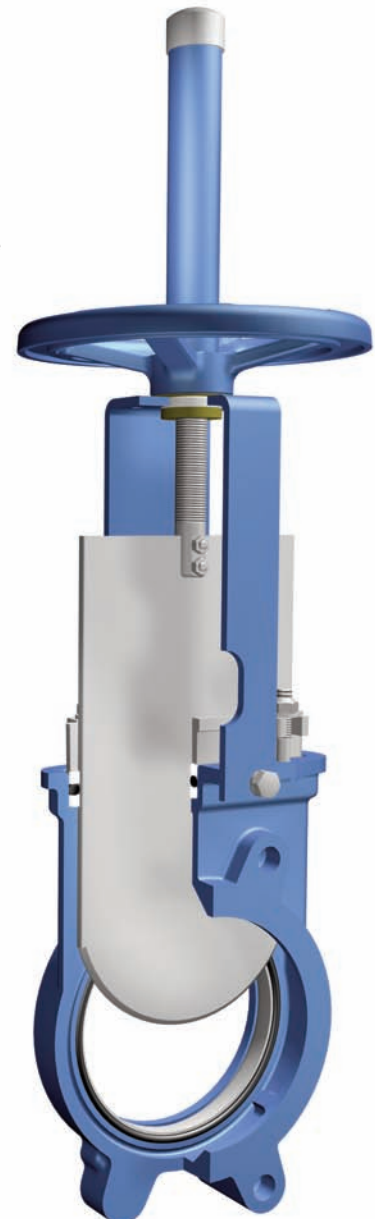
The **ORBINOX** standard colour is RAL-5015 **blue**.

GATE SAFETY PROTECTION:

***ORBINOX** automated valves are provided with gate guards in accordance with EU Safety Standards.

The design feature prevents any objects from being caught accidentally while the gate is moving.

* IN EUROPE ONLY



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OTHER OPTIONS

Bonnet (Fig.1):

Assures tight seal to atmosphere for using with hazardous gas or fluids.
Reduces packing maintenance.

V-port:

60 degree and pentagonal port design.
Selection depends on type of fluid control desired.

Flush ports (Fig.2):

Allow for cleaning of solids trapped within the body cavities that can obstruct the flow or prevent the valve from closing.
Purging can be made with air, steam, liquids, etc. depending on the process.

Other materials of construction:

Special alloys such as AISI 317, 254SMO, Hastelloys, Titanium, etc.

Fabricated valves:

ORBINOX is equipped for in house fabrication of special valves.
Depending on the design, diameter, pressures, construction material, etc.

EXT (full lug design):

Modified version of the EX model with full lug design for end of line applications.

Standard flange connection from DIN PN 10, ANSI 150, to AS "D".
Sizes available up to DN 24"/600mm.

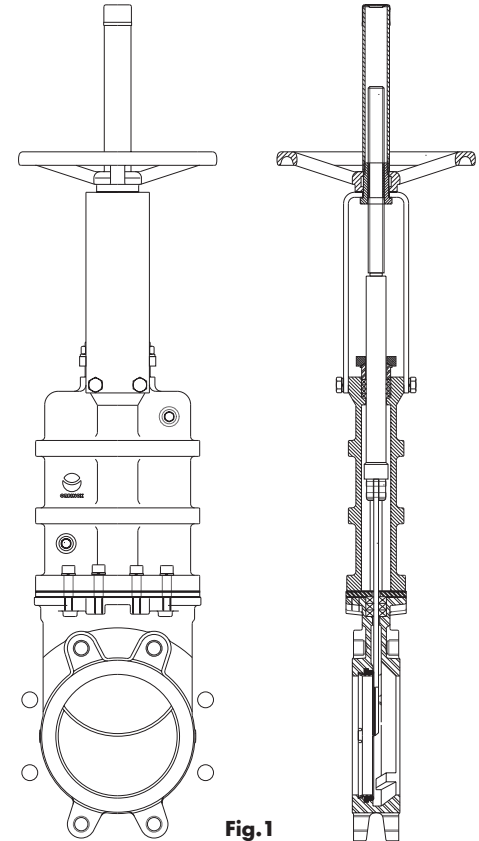


Fig.1

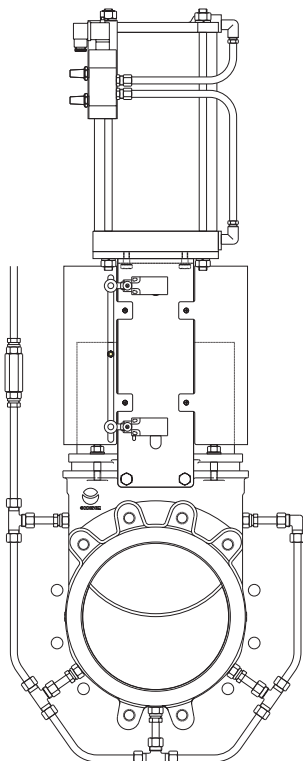


Fig.2

SURFACE TREATMENTS

Valve components can be protected or coated for a longer life expectancy, depending on the application and the service conditions.

At **ORBINOX** we can offer treatments and coatings for the valve components to improve the properties against **abrasion** (Stellite, Polyurethane...), **corrosion** (Halar, Rilsan, Galvanised...) and **adherence** (Polishing, PTFE...).

ATEX



Please contact our Orbinox representative for info and availability. Some considerations:

- Hand operated **EX(SER.10)** valves have been subjected to an ignition risk assessment according to DIN EN 13463: 1-5 and they are out the scope of application of ATEX Directive. Therefore hand operated valves are suitable for ALL ATEX zones.
- Electrical, pneumatical and hydraulically operated valves must be subjected to a conformity assesment of their own and also of the whole unit valve-actuator to get EC Type Approval to Directive 94/9.

We recommend consultation with our technical department.

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ACTUATOR TYPES

Manual:

- Handwheel (rising & non-rising stem)
- Chainwheel
- Lever
- Bevel Gear
- Other (square nut...)

Automatic:

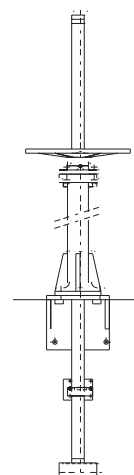
- Electric
- Pneumatic
- Hydraulic

All actuators supplied by ORBINOX are interchangeable.

Accessories:

- Mechanical Stops
- Actuator manual override
- Positioners
- Proximity Switches
- Stem extensions

- Locking device
- Solenoid valves
- Limit Switches
- Floor stands



Wide range of valve extensions available.

Please consult our technical department.



**Standard Handwheel
(Rising Stem)**

**Handwheel
(Non Rising Stem)**

**Pneumatic
Cylinder**

Electric

Lever

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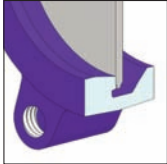
MODEL**EX****SERIES 10**

TEMPERATURE CHART

| SEAT / SEALS | | | | PACKING | | | | |
|--------------|---------------|------|------------------------------------------------|------------------------------------------------------------------------------------------------|------------|------|------|--------|
| Material | Max.Temp.(F°) | (°C) | Applications | Material | Max. Temp. | (F°) | (°C) | pH |
| Metal/Metal | >482 | >250 | High temp. Low tightness. | Dry cotton (AS) | | 122 | 50 | 6 - 8 |
| EPDM (E) | 248 | 120 | Acids and non mineral oils. | PTFE impregn. synth. fibre (ST) | | 464 | 240 | 2 - 13 |
| Nitrile (N) | 248 | 120 | Resistance to petroleum products. | Braided PTFE (TH) | | 500 | 260 | 0 - 14 |
| Viton (V) | 392 | 200 | General chemical service. High temperature. | Graphited (GR) | | 1112 | 600 | 0 - 14 |
| Silicone (S) | 482 | 250 | Food service. / High temperature. | Ceramic fibre (FC) | | 2192 | 1200 | — |
| PTFE (T) | 482 | 250 | Corrosion resistance. | NOTE: all types include an elastomere O-ring (same material as seal), excluding TH, GR and FC. | | | | |

More details and other materials under request.

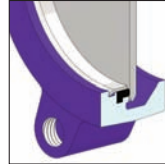
SEAT TYPES



METAL / METAL

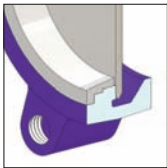
For applications with:

- High temperature
- High density media application
- When full tightness is not required



RESILIENT, TYPE "A"

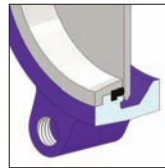
- Standard resilient seat.
- Temperature limitations according to seat material selected. Consult the above chart or our technical department for more information.
- Replaceable seat retainer ring.



TYPE "B" SEAT (metal/metal)

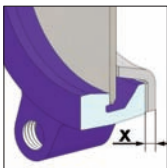
For applications with:

- High temperature
- High density media application
- When full tightness is not required
- Replaceable design without dismantling the valve



TYPE "B" SEAT (resilient)

- Temperature limitations according to seat material selected. Consult the above chart or our technical department for more information.
- Replaceable and reinforced seat ring available in different materials such as: stainless steel, CA15, Ni-Hard,...



DEFLECTION CONE "C"

- Deflects the media away from any internal exposed parts of the valve such as gate guides, seat, etc.
- Different types of material available such as AISI 316 stainless, CA15, Ni-Hard, etc.

Face to face dimension increase:

DN 2"/50mm to DN10"/250mm X =0.35"/9mm

DN 12"/300mm to DN24"/600mm X=0.47"/12mm

Larger diameters on request.

VALVE EXTENSIONS

The extension on a valve allows the operator to open or close the valve from a distance. Different types of extensions can be used depending on the application and the distance from the gate to the actuator.

1.- Floor stand.

Mainly used to facilitate the operation in opening and closing the valve at normal operating level.

Required dimensions:

H1: distance from centre line of the pipe to the base of the floor.

d1: (wall bracket) distance from the wall to the face of the connecting flange.

Notes:

a- Any type of actuator can be mounted on the floor stand such as Handwheel, Gear, Electric, etc.

b- A wall bracket (detail A) is recommended at every 59"/1.5m. This prevents any deviation or buckling of the extension rod.

c- Standard construction of the floor stand is cast iron or carbon steel. Other materials are available on request. (Fig. 1)

d- A position indicator (optional) can be installed for easy visibility of the percentage of opening of the valve.

e- Possibility of construction of floor stand supports. (Fig. 2)

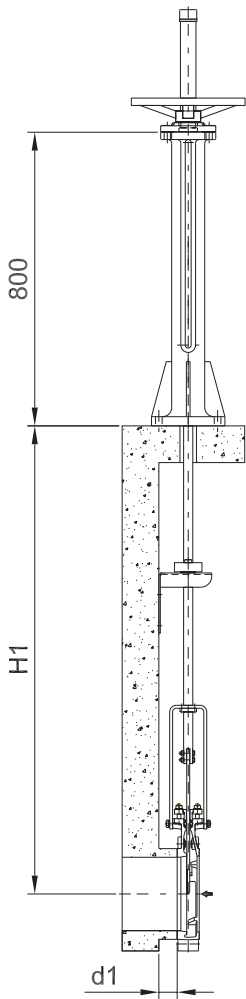
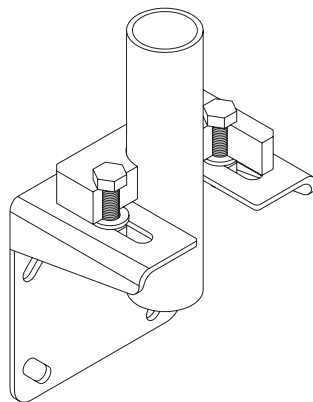


Fig. 1



Detail A.

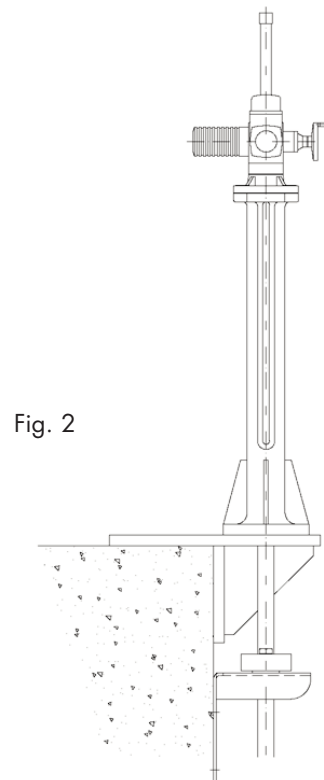
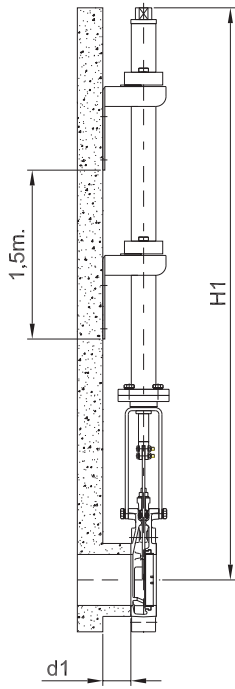


Fig. 2

STANDARD PARTS LIST

| Part: | Material: |
|----------------|-----------------------------|
| Spindle | AISI 303 |
| Stem | AISI 304 |
| Wall bracket | Carbon Steel - Epoxy coated |
| Slider/bushing | Nylon |
| Floor stand | Cast Iron - Epoxy coated |

2.- Tube



- Stem and yoke assembly remains in its original position.
- Handwheel is replaced by a tube, which rotates when operating the valve.
- Stem rises and lowers within the tube.
- Ideal for surface box operation, valve can be operated with a T-bar and a square nut.
- Required dimensions:

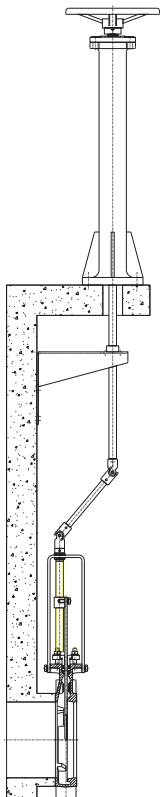
H1: distance from centre line of the pipe to the base of the floor.

d1: (wall bracket) distance from the wall to the face of the connecting flange.

Notes:

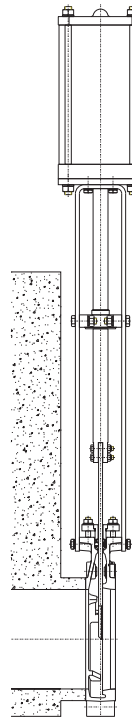
1. Handwheel or square nut operated only.
2. A wall bracket (detail A) is recommended at every 59"/1.5m. This prevents any deviation or buckling of the extension rod.
3. Standard construction of the extension is carbon steel epoxy coated. Other materials are available on request.

3 - Universal joint



- Universal joints are installed between the rod extensions where a straight alignment is not available. Please contact our technical department for more information.

4 - Extended support plates

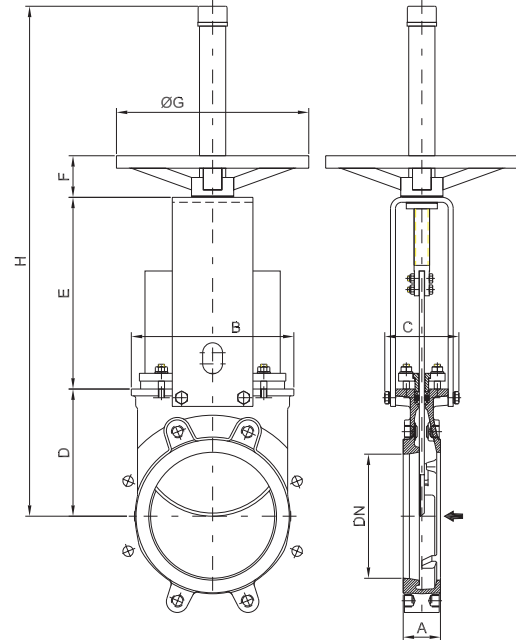


- Ideal where long extensions are not required.
- Guide bearing is installed at the mid point to prevent any deflection of the rod.

Please consult our technical department.

MODEL**EX****SERIES 10****HANDWHEEL (rising stem)**

- Standard handwheel actuator.
- Consists of:
 - Handwheel: Epoxy coated Cast Iron
 - Stem
 - Stem nut
 - Stem protector
- Available from DN 2"/50mm to DN 40"/1000mm
- Options:
 - Locking Device
 - Extensions



| DN(“/mm) | A | B | C | D | E | F | ØG | H | Weight (lbs./kg.) |
|----------|----------|------------|-----------|-----------|------------|---------|-----------|-------------|-------------------|
| 2"/50 | 1,57/40 | 4,68/119 | 4/100 | 4,13/105 | 5,07/129 | 1,85/47 | 8,86/225 | 16,53/420 | 15/7 |
| 2,5"/65 | 1,57/40 | 5,27/134 | 4/100 | 4,53/115 | 5,79/146 | 1,85/47 | 8,86/225 | 17,71/450 | 18/8 |
| 3"/80 | 2/50 | 5,87/149 | 4/100 | 4,88/124 | 6,37/162 | 1,85/47 | 8,86/225 | 18,70/475 | 20/9 |
| 4"/100 | 2/50 | 6,65/169 | 4/100 | 5,52/140 | 7,36/187 | 1,85/47 | 8,86/225 | 20,47/520 | 24/11 |
| 5"/125 | 2/50 | 7,08/180 | 4/100 | 6/150 | 8,30/211 | 1,85/47 | 8,86/225 | 23,62/600 | 33/15 |
| 6"/150 | 2,36/60 | 8,26/210 | 4/100 | 6,89/175 | 9,33/237 | 1,85/47 | 8,86/225 | 25,67/652 | 40/18 |
| 8"/200 | 2,36/60 | 10,31/262 | 4,68/119 | 8,07/205 | 12,16/309 | 2,64/67 | 12,20/310 | 32,36/822 | 66/30 |
| 10"/250 | 2,75/70 | 12,52/318 | 4,80/122 | 10/250 | 14,33/364 | 2,64/67 | 12,20/310 | 40,23/1022 | 97/44 |
| 12"/300 | 2,75/70 | 14,64/372 | 4,80/122 | 12/300 | 16,30/414 | 2,64/67 | 12,20/310 | 44,17/1122 | 128/58 |
| 14"/350 | 3,78/96 | 16,97/431 | 7,75/197 | 13,30/338 | 19,13/486 | 2,60/66 | 16,14/410 | 52,08/1323 | 217/96 |
| 16"/400 | 3,93/100 | 19,13/486 | 7,75/197 | 15,43/392 | 21,10/536 | 2,60/66 | 16,14/410 | 56,18/1427 | 274/124 |
| 18"/450 | 4,17/106 | 21,26/540 | 7,91/201 | 17,00/432 | 23,15/588 | 2,60/66 | 21,65/550 | 62,75/1594 | 370/168 |
| 20"/500 | 4,33/110 | 23,70/602 | 7,91/201 | 19,09/485 | 25,51/648 | 2,60/66 | 21,65/550 | 67,20/1707 | 424/192 |
| 24"/600 | 4,33/110 | 27,87/708 | 7,91/201 | 23,23/590 | 29,44/748 | 2,60/66 | 21,65/550 | 79,60/2022 | 540/245 |
| 28"/700 | 4,33/110 | 32,83/834 | 14,96/380 | 27,00/686 | 35,04/890 | 2,92/74 | 31,50/800 | 109,37/2778 | 893/405 |
| 30"/750 | 4,33/110 | 34,80/884 | 14,96/380 | 29,90/760 | 37,20/945 | 2,92/74 | 31,50/800 | 114,17/2900 | 1003/455 |
| 32"/800 | 4,33/110 | 39,96/1015 | 12,60/320 | 31,14/791 | 38,94/989 | 2,92/74 | 31,50/800 | 117,32/2980 | 1129/512 |
| 36"/900 | 4,33/110 | 40,94/1040 | 12,60/320 | 35,23/895 | 45,01/1118 | 2,92/74 | 31,50/800 | 126,57/3215 | 1499/680 |
| 40"/1000 | 4,33/110 | 45,12/1146 | 12,60/320 | 38,28/975 | 48,03/1220 | 2,92/74 | 31,50/800 | 133,86/3400 | 1907/865 |

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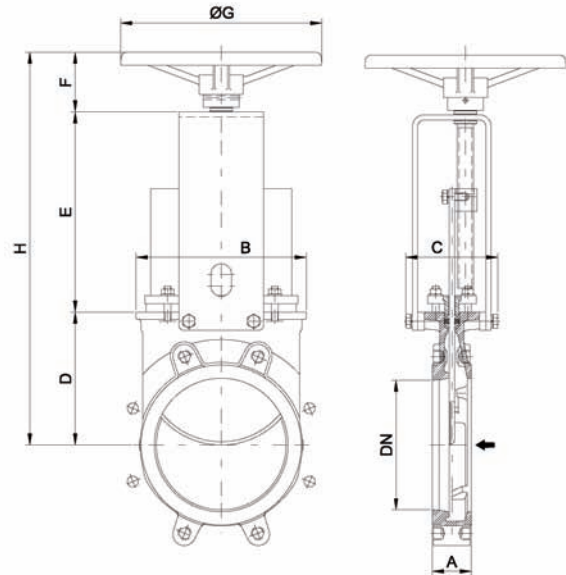
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MODEL**EX****SERIES 10**

HANDWHEEL (non-rising stem)

- Recommended for installation where space is limited.
- Consists of:
 - Handwheel: Epoxy coated Cast Iron
 - Stem
 - Yoke bushing
 - Stem nut fixed to the gate
- Available from DN 2"/50mm to DN 40"/1000mm
- Options:
 - Locking Device
 - Extension
 - Square Nut Drive



| DN(" /mm) | A | B | C | D | E | F | ØG | H |
|-----------|----------|------------|-----------|-----------|------------|----------|-----------|------------|
| 2"/50 | 1,57/40 | 4,68/119 | 4,92/125 | 4,13/105 | 5,20/132 | 3,07/78 | 8,86/225 | 12,40/315 |
| 2,5"/65 | 1,57/40 | 5,27/134 | 4,92/125 | 4,13/115 | 5,87/149 | 3,07/78 | 8,86/225 | 13,46/342 |
| 3"/80 | 1,96/50 | 5,87/149 | 4,92/125 | 4,88/124 | 6,50/165 | 3,07/78 | 8,86/225 | 14,44/367 |
| 4"/100 | 1,96/50 | 6,65/169 | 4,92/125 | 5,52/140 | 7,48/190 | 3,07/78 | 8,86/225 | 16,06/408 |
| 5"/125 | 1,96/50 | 7,08/180 | 4,92/125 | 5,90/150 | 8,42/214 | 3,07/78 | 8,86/225 | 17,40/442 |
| 6"/150 | 2,36/60 | 8,26/210 | 4,92/125 | 6,89/175 | 9,45/240 | 3,07/78 | 8,86/225 | 19,40/493 |
| 8"/200 | 2,36/60 | 10,31/262 | 5,60/142 | 8,07/205 | 12,00/305 | 3,62/92 | 12,20/310 | 23,70/602 |
| 10"/250 | 2,75/70 | 12,52/318 | 5,60/142 | 9,84/250 | 14,17/360 | 3,62/92 | 12,20/310 | 27,64/702 |
| 12"/300 | 2,75/70 | 14,64/372 | 5,60/142 | 11,81/300 | 16,17/410 | 3,62/92 | 12,20/310 | 31,57/802 |
| 14"/350 | 3,78/96 | 16,97/431 | 7,75/197 | 13,30/338 | 19,17/487 | 4,33/110 | 16,14/410 | 36,81/935 |
| 16"/400 | 3,93/100 | 19,13/486 | 7,75/197 | 15,43/392 | 21,14/537 | 4,33/110 | 16,14/410 | 40,90/1039 |
| 18"/450 | 4,17/106 | 21,26/540 | 7,91/201 | 17,00/432 | 23,19/589 | 4,37/111 | 21,65/550 | 44,56/1132 |
| 20"/500 | 4,33/110 | 23,70/602 | 7,91/201 | 19,09/485 | 25,55/649 | 4,37/111 | 21,65/550 | 49,01/1245 |
| 24"/600 | 4,33/110 | 27,87/708 | 7,91/201 | 23,23/590 | 29,45/748 | 4,37/111 | 21,65/550 | 57,04/1449 |
| 28"/700 | 4,33/110 | 32,83/834 | 14,96/380 | 27,00/686 | 35,43/900 | 5,94/151 | 31,50/800 | 68,38/1737 |
| 30"/750 | 4,33/110 | 34,80/884 | 14,96/380 | 29,90/760 | 37,20/945 | 5,94/151 | 31,50/800 | 73,07/1856 |
| 32"/800 | 4,33/110 | 39,96/1015 | 12,60/320 | 13,14/791 | 39,25/997 | 5,94/151 | 31,50/800 | 76,34/1939 |
| 36"/900 | 4,33/110 | 40,94/1040 | 12,60/320 | 35,23/895 | 44,40/1128 | 5,94/151 | 31,50/800 | 85,59/2174 |
| 40"/1000 | 4,33/110 | 45,12/1150 | 12,60/320 | 38,38/975 | 49,40/1255 | 5,94/151 | 31,50/800 | 93,74/2381 |

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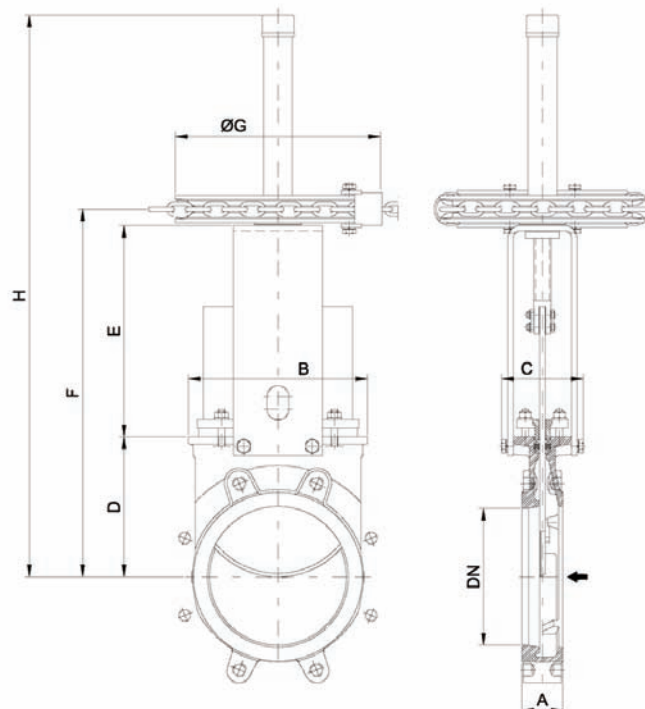
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MODEL**EX****SERIES 10****CHAINWHEEL**

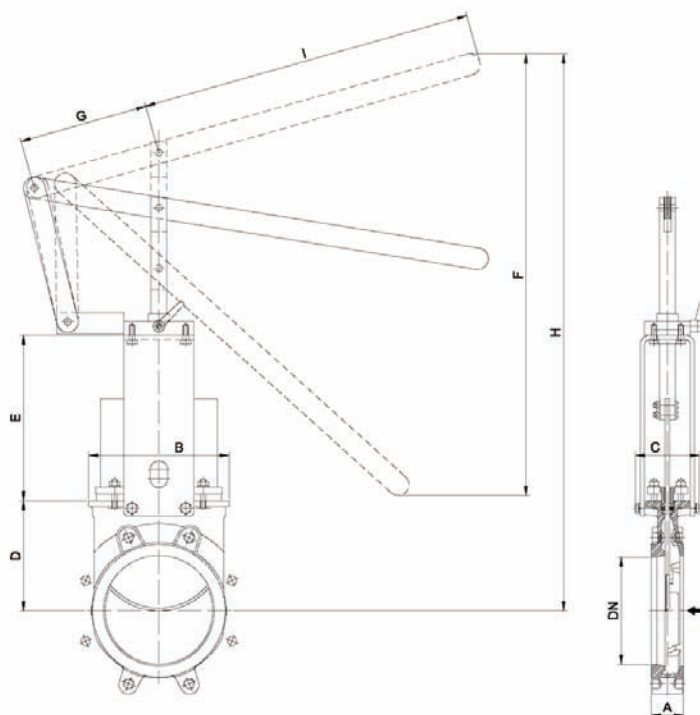
- Recommended for elevated installations.
- Consists of:
 - Chainwheel: Epoxy coated Cast Iron
 - Stem
 - Stem nut
 - Stem protector
- Available from DN 2"/50mm to DN 24"/600mm
- Options (on request):
 - Locking Device
 - Extension
 - Non-rising Stem



| DN | A | B | C | D | E | F | ØG | H |
|---------|----------|-----------|----------|-----------|-----------|------------|-----------|------------|
| 2"/50 | 1,57/40 | 4,68/119 | 3,94/100 | 4,13/105 | 5,07/129 | 9,96/253 | 8,86/225 | 16,53/420 |
| 2,5"/65 | 1,57/40 | 5,27/134 | 3,94/100 | 4,13/115 | 5,79/146 | 11,02/280 | 8,86/225 | 17,71/450 |
| 3"/80 | 1,96/50 | 5,87/149 | 3,94/100 | 4,88/124 | 6,37/162 | 12,00/305 | 8,86/225 | 18,70/475 |
| 4"/100 | 1,96/50 | 6,65/169 | 3,94/100 | 5,52/140 | 7,36/187 | 13,66/347 | 8,86/225 | 20,47/520 |
| 5"/125 | 1,96/50 | 7,08/180 | 3,94/100 | 5,90/150 | 8,30/211 | 14,96/380 | 8,86/225 | 23,62/600 |
| 6"/150 | 2,36/60 | 8,26/210 | 3,94/100 | 6,89/175 | 9,33/237 | 16,97/431 | 8,86/225 | 25,67/652 |
| 8"/200 | 2,36/60 | 10,31/262 | 4,68/119 | 8,07/205 | 12,16/309 | 21,18/538 | 11,81/300 | 32,36/822 |
| 10"/250 | 2,75/70 | 12,52/318 | 4,8/122 | 9,84/250 | 14,33/364 | 25,11/638 | 11,81/300 | 40,23/1022 |
| 12"/300 | 2,75/70 | 14,64/372 | 4,8/122 | 11,81/300 | 16,30/414 | 29,05/738 | 11,81/300 | 44,17/1122 |
| 14"/350 | 3,78/96 | 16,97/431 | 7,75/197 | 13,30/338 | 19,13/486 | 33,70/856 | 17,87/454 | 52,08/1323 |
| 16"/400 | 3,93/100 | 19,13/486 | 7,75/197 | 15,43/392 | 21,10/536 | 37,79/960 | 17,87/454 | 56,18/1427 |
| 18"/450 | 4,17/106 | 21,26/540 | 7,91/201 | 17,00/432 | 23,15/588 | 41,41/1052 | 17,87/454 | 62,75/1594 |
| 20"/500 | 4,33/110 | 23,70/602 | 7,91/201 | 19,09/485 | 25,51/648 | 45,87/1165 | 17,87/454 | 67,20/1707 |
| 24"/600 | 4,33/110 | 27,87/708 | 7,91/201 | 23,23/590 | 29,44/748 | 53,93/1370 | 17,87/454 | 79,60/2022 |

MODEL**EX****SERIES 10****LEVER**

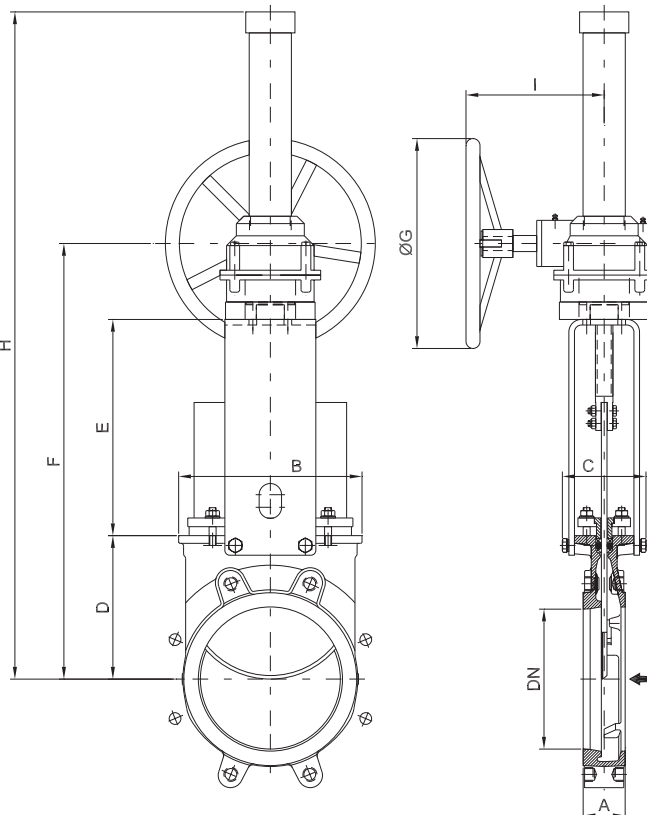
- Recommended for quick opening and closing.
- Consists of:
 - Lever
 - Stem
 - Yoke sleeve
 - Lever lock
- Available from DN 2"/50mm to DN 12"/300mm



| DN | A | B | C | D | E | F | G | H | I |
|---------|---------|-----------|----------|-----------|-----------|------------|----------|------------|-----------|
| 2"/50 | 1,57/40 | 4,68/119 | 3,94/100 | 4,13/105 | 5,07/129 | 10,08/256 | 5,90/150 | 16,06/408 | 12,40/315 |
| 2,5"/65 | 1,57/40 | 5,27/134 | 3,94/100 | 4,53/115 | 5,79/146 | 10,20/259 | 5,90/150 | 17,12/435 | 12,40/315 |
| 3"/80 | 1,96/50 | 5,87/149 | 3,94/100 | 4,88/124 | 6,37/162 | 12,08/307 | 5,90/150 | 20,03/509 | 12,40/315 |
| 4"/100 | 1,96/50 | 6,65/169 | 3,94/100 | 5,52/140 | 7,36/187 | 17,28/439 | 5,90/150 | 25,08/637 | 16,33/415 |
| 5"/125 | 1,96/50 | 7,08/180 | 3,94/100 | 5,90/150 | 8,30/211 | 20,83/529 | 5,90/150 | 29,72/755 | 16,33/415 |
| 6"/150 | 2,36/60 | 8,26/210 | 3,94/100 | 6,89/175 | 9,33/237 | 24,40/620 | 5,90/150 | 35,23/895 | 16,33/415 |
| 8"/200 | 2,36/60 | 10,31/262 | 4,68/119 | 8,07/205 | 12,16/309 | 32,36/822 | 9,25/235 | 40,86/1038 | 24,40/620 |
| 10"/250 | 2,75/70 | 12,52/318 | 4,80/122 | 9,84/250 | 14,33/364 | 39,17/995 | 9,25/235 | 51,45/1307 | 24,40/620 |
| 12"/300 | 2,75/70 | 14,64/372 | 4,80/122 | 11,81/300 | 16,30/414 | 45,90/1166 | 9,25/235 | 62,12/1578 | 24,40/620 |

MODEL**EX****SERIES 10****GEAR**

- Recommended for valves larger than DN 14"/350mm and working pressures greater than 50 psi/3.5 kg/cm²
- Consists of:
 - Stem
 - Yoke
 - Bevel Gear Actuator with Handwheel (Standard Ratio 4:1)
- Available from DN 8"/200mm to DN50"/1200mm
- Options:
 - Locking device
 - Extension
 - Chainwheel
 - Non-rising stem



| DN | A | B | C | D | E | F | ØG | H | I |
|----------|----------|------------|-----------|------------|------------|-------------|--------|-------------|-----------|
| 8"/200 | 2,36/60 | 10,31/262 | 4,68/119 | 8,07/205 | 12,16/309 | 23,00/584 | 12/300 | 39,13/994 | 7,87/200 |
| 10"/250 | 2,75/70 | 12,52/318 | 4,80/122 | 10/250 | 14,33/364 | 26,93/684 | 12/300 | 43,07/1094 | 7,87/200 |
| 12"/300 | 2,75/70 | 14,65/372 | 4,80/122 | 12/300 | 16,30/414 | 30,86/784 | 12/300 | 47/1194 | 7,87/200 |
| 14"/350 | 3,78/96 | 16,96/431 | 7,75/197 | 13,30/338 | 18,53/472 | 33,74/857 | 18/450 | 65,24/1657 | 10,31/262 |
| 16"/400 | 3,93/100 | 19,13/486 | 7,75/197 | 15,43/392 | 20,55/522 | 37,83/961 | 18/450 | 69,33/1761 | 10,31/262 |
| 18"/450 | 4,17/106 | 21,26/540 | 7,91/201 | 17/432 | 22,60/574 | 41,46/1053 | 18/450 | 72,95/1853 | 10,31/262 |
| 20"/500 | 4,33/110 | 23,70/602 | 7,91/201 | 19,09/485 | 24,96/634 | 45,90/1166 | 18/450 | 77,40/1966 | 10,31/262 |
| 24"/600 | 4,33/110 | 27,87/708 | 7,91/201 | 23,22/590 | 28,90/734 | 53,97/1371 | 18/450 | 85,47/2171 | 10,31/262 |
| 28"/700 | 4,33/110 | 32,83/834 | 14,96/380 | 27/686 | 35,03/890 | 63,90/1623 | 18/450 | 95,39/2423 | 10,31/262 |
| 30"/750 | 4,33/110 | 34,80/884 | 14,96/380 | 29,92/760 | 37,20/945 | 69,09/1755 | 18/450 | 100,59/2555 | 10,31/262 |
| 32"/800 | 4,33/110 | 39,96/1015 | 12,60/320 | 31,14/791 | 39,10/993 | 74,25/1886 | 18/450 | 115,19/2926 | 10,24/260 |
| 36"/900 | 4,33/110 | 40,94/1040 | 12,60/320 | 35,24/895 | 44,21/1123 | 83,46/2120 | 26/650 | 124,41/3160 | 11,34/288 |
| 40"/1000 | 4,33/110 | 45,11/1146 | 12,60/320 | 38,38/975 | 48,03/1220 | 90,62/2302 | 26/650 | 131,57/3342 | 11,34/288 |
| 48"/1200 | 6/150 | 54,72/1390 | 17,71/450 | 40,82/1037 | 59,92/1522 | 106,10/2695 | 33/850 | 154,92/3935 | 14,37/365 |

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EX(SER.10)-12

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MODEL

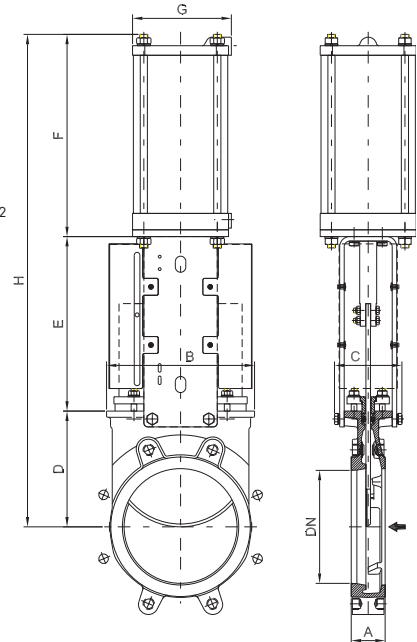
EX

SERIES 10



PNEUMATIC CYLINDER

- The standard pneumatic actuator (double acting on-off cylinder) consists of:
 - DN 50-250: Aluminum barrels
 - DN ≥ 300: Composite barrels
 - Stainless steel (AISI 304) piston rod
 - Nitrile coated steel piston
- Available from DN 2"/50mm to DN 40"/1000mm
- Supply Pressure: minimum 50 psi/3.5 kg/cm² - maximum 150psi /10 kg/cm²
Actuator designed with 90psi /6kg/cm² air supply
- For valves installed in a horizontal position, we recommend U-type support plates and/or actuator support.
- Options:
 - Hard anodized jacket and covers
 - Over / Undersized cylinder
 - Stainless steel jacket and covers
 - Manual override
 - Fail safe system (Page EX-14)
 - Travel stops
- Instrumentation (on request):
 - Positioners
 - Flow regulators
 - Solenoid valves
 - Air preparation units



| DN | A | B | C | D | E | F | G | H | Weight (lbs./kg.) | Standard Cyl | TM |
|----------|----------|------------|-----------|-----------|------------|------------|-----------|-------------|-------------------|------------------------|--------|
| 2"/50 | 1,57/40 | 4,68/119 | 3,94/100 | 4,13/105 | 5,07/129 | 7,00/178 | 4,53/115 | 16,22/412 | 20/ 9 | C4"-2.44"/(100-62) | 1/4" G |
| 2,5"/65 | 1,57/40 | 5,27/134 | 3,94/100 | 4,53/115 | 5,74/146 | 7,60/193 | 4,53/115 | 17,87/454 | 22/10 | C4"- 3.03"/(100-77) | 1/4" G |
| 3"/80 | 1,96/50 | 5,87/149 | 3,94/100 | 4,88/124 | 6,37/162 | 8,31/211 | 4,53/115 | 19,56/497 | 24/11 | C4"-3.74"/(100-95) | 1/4" G |
| 4"/100 | 1,96/50 | 6,65/169 | 3,94/100 | 5,52/140 | 7,36/187 | 9,09/231 | 4,53/115 | 21,96/558 | 30/14 | C4"-4.52"/(100-115) | 1/4" G |
| 5"/125 | 1,96/50 | 7,08/180 | 3,94/100 | 5,90/150 | 8,30/211 | 10,67/271 | 5,51/140 | 24,88/632 | 44/20 | C5"-5.62"/(125-143) | 1/4" G |
| 6"/150 | 2,36/60 | 8,26/210 | 3,94/100 | 6,89/175 | 9,33/237 | 11,65/296 | 5,51/140 | 27,87/708 | 55/25 | C5"-6.61"/(125-168) | 1/4" G |
| 8"/200 | 2,36/60 | 10,31/262 | 4,68/119 | 8,07/205 | 12,16/309 | 14,09/358 | 6,89/175 | 34,33/872 | 97/44 | C6.30"-8.66"/(160-220) | 1/4" G |
| 10"/250 | 2,75/70 | 12,52/318 | 4,80/122 | 9,84/250 | 14,33/364 | 16,85/428 | 8,66/220 | 41,02/1042 | 148/67 | C8"-10.62"/(200-270) | 3/8" G |
| 12"/300 | 2,75/70 | 14,64/372 | 4,80/122 | 11,81/300 | 16,29/414 | 18,82/478 | 8,66/220 | 46,93/1192 | 181/82 | C8"-12.60"/(200-320) | 3/8" G |
| 14"/350 | 3,78/96 | 16,97/431 | 7,75/197 | 13,30/338 | 19,68/500 | 21,61/549 | 10,90/277 | 54,60/1387 | 298/135 | C10"-14.76"/(250-375) | 3/8" G |
| 16"/400 | 3,93/100 | 19,13/486 | 7,75/197 | 15,43/392 | 21,65/550 | 23,58/599 | 10,90/277 | 60,67/1541 | 364/165 | C10"-16.73"/(250-425) | 3/8" G |
| 18"/450 | 4,17/106 | 21,26/540 | 10,63/270 | 17,00/432 | 23,94/598 | 26,77/680 | 15,03/382 | 67,32/1710 | 485/220 | C12"-18.70"/(300-475) | 1/2" G |
| 20"/500 | 4,33/110 | 23,70/602 | 10,63/270 | 19,09/485 | 25,90/658 | 28,74/730 | 15,03/382 | 73,74/1873 | 617/280 | C12"-20.67"/(300-525) | 1/2" G |
| 24"/600 | 4,33/110 | 27,87/708 | 10,63/270 | 23,23/590 | 29,84/758 | 32,68/830 | 15,03/382 | 85,71/2178 | 727/330 | C12"-24.60"/(300-625) | 1/2" G |
| 28"/700 | 4,33/110 | 32,83/834 | 14,96/380 | 27/686 | 34,45/875 | 38,77/985 | 17,48/444 | 100,24/2546 | 1146/520 | C14"-28.74"/(350-730) | 3/4" G |
| 30"/750 | 4,33/110 | 34,80/884 | 14,96/380 | 29,9/760 | 36,61/930 | 40,75/1035 | 17,48/444 | 107,28/2725 | 1290/585 | C14"-30.70"/(350-780) | 3/4" G |
| 32"/800 | 4,33/110 | 39,96/1015 | 12,60/320 | 31,14/791 | 38,34/974 | 42,77/1085 | 17,48/444 | 112,20/2850 | 1433/650 | C14"-32.68/(350-830) | 3/4" G |
| 36"/900 | 4,33/110 | 40,94/1040 | 12,60/320 | 35,23/895 | 43,50/1105 | 47,32/1202 | 20,27/515 | 126,06/3202 | 1874/850 | C16"-36.61/(400-930) | 3/4" G |
| 40"/1000 | 4,33/110 | 45,12/1146 | 12,60/320 | 38,38/975 | 47,91/1217 | 47,91/1296 | 20,27/515 | 137,32/3488 | 2334/1060 | C16"-40.55"/(400-1030) | 3/4" G |

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EX(SER.10)-13

ORBINOX CANADA, ORBINOX USA, ORBINOX BRAZIL, ORBINOX SPAIN, ORBINOX UK, ORBINOX FRANCE, ORBINOX GERMANY, ORBINOX INDIA, ORBINOX CHINA, ORBINOX S.E.A.

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MODEL

EX

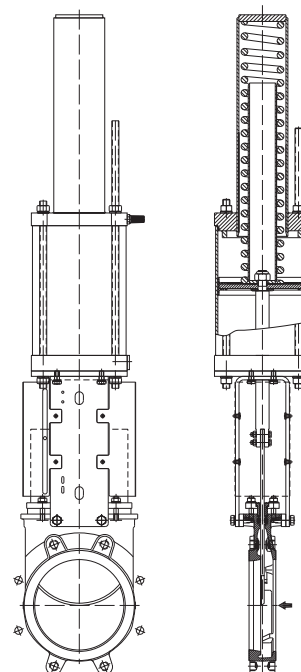
SERIES 10



FAIL SAFE SYSTEM

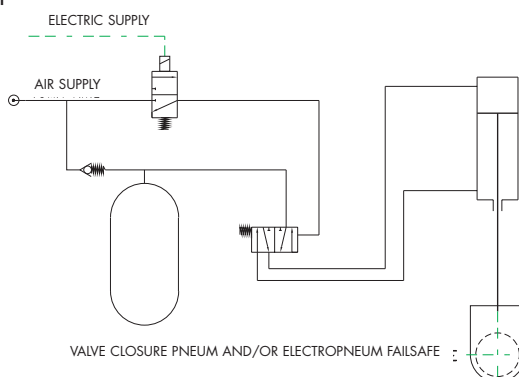
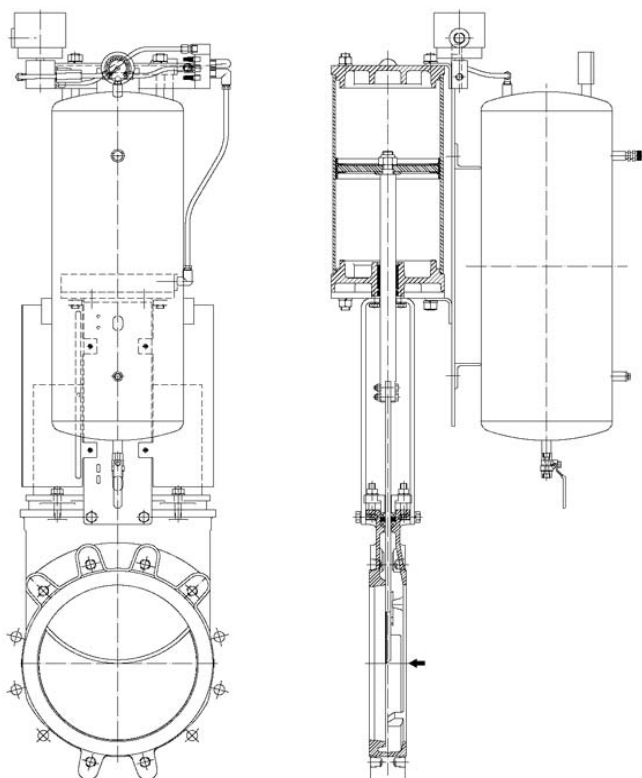
SINGLE ACTING / SPRING RETURN

- This actuator (single acting cylinder) consists of:
 - Aluminium jacket and covers
 - Ductile Iron or carbon steel spring cap
 - Steel spring
 - Stainless Steel (AISI 304) piston rod
 - Nitrile coated steel piston
- Available from DN 2"/50mm to DN 8"/200mm
- Supply pressure: minimum 71 psi/5 kg/cm² - maximum 150psi/10 kg/cm²
- Options:
 - Fail open
 - Fail close



SINGLE ACTING / VOLUME TANK

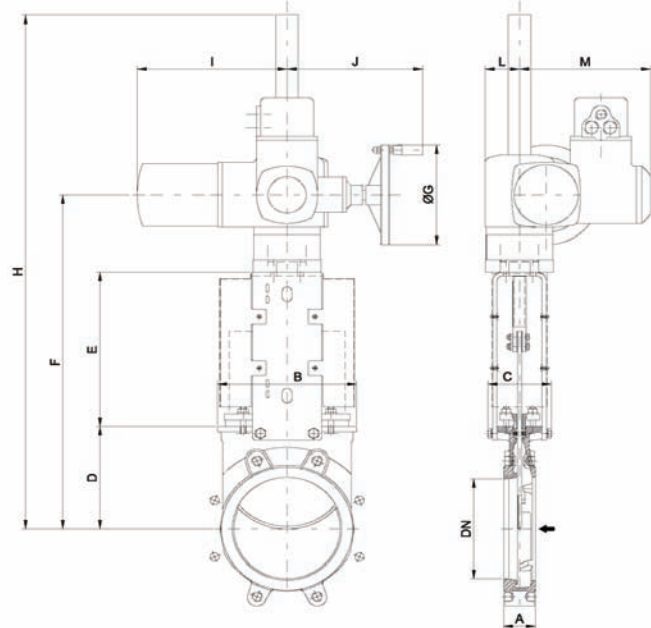
- For size DN 10"/250mm and bigger safety system consists on: double acting pneumatic cylinder, volume tank and all the necessary elements according to the available options (solenoid valve, spool valve,...)
- Available for all diameters
- Supply Pressure: Minimum 50 psi/3.5kg/cm²
Maximum 150 psi/10 kg/cm²
- Options:
 - 1- Pneumatic Failsafe
 - 2- Pneumatic or Electric Failsafe
- Option 2:



VALVE CLOSURE PNEUM AND/OR ELECTROPNEUM FAILSAFE

MODEL**EX****SERIES 10****ELECTRIC ACTUATOR**

- Consists of:
 - Electric actuator
 - Rising stem
 - Motor support yoke flange (Acc. to ISO 5210 / DIN 3338)
- The standard electric motor is equipped with:
 - Manual emergency operation
 - Limit switches (open/closed)
 - Torque switches
- Available from DN 2"/50mm to DN 48"/1200mm
- Wide range of types and makes available to meet customer's needs.
- Option:
 - Non rising stem



| DN(″/mm) | A | B | C | D | E | F | ØG | H | I | J | L | M | stem Ø x pitch | Torque(ft.LBS/NM) |
|----------|----------|------------|-----------|------------|------------|-------------|-----------|-------------|-----------|-----------|----------|-----------|------------------|-------------------|
| 2″/50 | 1,57/40 | 4,68/119 | 3,94/100 | 4,13/105 | 5,07/129 | 14,84/377 | 6,30/160 | 21,53/547 | 10,43/265 | 9,80/249 | 2,44/62 | 9,33/237 | 0.79x0.16/20 x 4 | 7.4/10 |
| 2,5″/65 | 1,57/40 | 5,27/134 | 3,94/100 | 4,53/115 | 5,79/146 | 15,90/404 | 6,30/160 | 22,60/574 | 10,43/265 | 9,80/249 | 2,44/62 | 9,33/237 | 0.79x0.16/20 x 4 | 7.4/10 |
| 3″/80 | 1,96/50 | 5,87/149 | 3,94/100 | 4,88/124 | 6,37/162 | 16,88/429 | 6,30/160 | 23,58/599 | 10,43/265 | 9,80/249 | 2,44/62 | 9,33/237 | 0.79x0.16/20 x 4 | 7.4/10 |
| 4″/100 | 1,96/50 | 6,65/169 | 3,94/100 | 5,52/140 | 7,36/187 | 18,50/470 | 6,30/160 | 25,19/640 | 10,43/265 | 9,80/249 | 2,44/62 | 9,33/237 | 0.79x0.16/20 x 4 | 7.4/10 |
| 5″/125 | 1,96/50 | 7,08/180 | 3,94/100 | 5,90/150 | 8,30/211 | 19,84/504 | 6,30/160 | 26,53/674 | 10,43/265 | 9,80/249 | 2,44/62 | 9,33/237 | 0.79x0.16/20 x 4 | 11.1/15 |
| 6″/150 | 2,36/60 | 8,26/210 | 3,94/100 | 6,89/175 | 9,33/237 | 21,85/555 | 6,30/160 | 41,55/1055 | 10,43/265 | 9,80/249 | 2,44/62 | 9,33/237 | 0.79x0.16/20 x 4 | 14.8/20 |
| 8″/200 | 2,36/60 | 10,31/262 | 4,80/122 | 8,07/205 | 12,16/309 | 26,33/669 | 7,87/200 | 46,02/1169 | 10,43/265 | 9,80/249 | 2,44/62 | 9,33/237 | 0.94x0.2/24 x 5 | 22.2/30 |
| 10″/250 | 2,75/70 | 12,52/318 | 4,80/122 | 9,89/250 | 14,33/364 | 30,27/769 | 7,87/200 | 49,96/1269 | 10,43/265 | 9,80/249 | 2,44/62 | 9,33/237 | 0.94x0.2/24 x 5 | 33.3/45 |
| 12″/300 | 2,75/70 | 14,64/372 | 4,80/122 | 11,81/300 | 16,30/414 | 34,21/869 | 7,87/200 | 53,89/1369 | 10,43/265 | 9,80/249 | 2,44/62 | 9,33/237 | 0.94x0.2/24 x 5 | 29.50/40 |
| 14″/350 | 3,78/96 | 16,97/431 | 7,75/197 | 13,30/338 | 19,13/472 | 37,00/940 | 7,87/200 | 56,69/1440 | 11,10/282 | 10,07/256 | 2,55/65 | 9,72/247 | 1.42x0.24/36 x 6 | 51.8/70 |
| 16″/400 | 3,93/100 | 19,13/486 | 7,75/197 | 15,43/392 | 21,73/552 | 41,10/1044 | 7,87/200 | 60,78/1544 | 11,10/282 | 10,07/256 | 2,55/65 | 9,72/247 | 1.42x0.24/36 x 6 | 66.38/90 |
| 18″/450 | 4,17/106 | 21,26/540 | 10,62/270 | 17,00/432 | 24,01/610 | 46,14/1172 | 7,87/200 | 65,82/1672 | 10,10/282 | 10,07/256 | 2,55/65 | 9,72/247 | 1.42x0.24/36 x 6 | 81.4/110 |
| 20″/500 | 4,33/110 | 23,70/602 | 10,62/270 | 19,09/485 | 26,37/670 | 50,39/1280 | 7,87/200 | 70,07/1780 | 10,10/282 | 10,07/256 | 3,54/90 | 9,72/247 | 1.42x0.24/36 x 6 | 70.06/95 |
| 24″/600 | 4,33/110 | 27,87/708 | 10,62/270 | 23,23/590 | 31,49/800 | 61,61/1565 | 12,40/315 | 81,29/2065 | 15,15/385 | 12,95/329 | 3,54/90 | 11,22/285 | 1.42x0.24/36 x 6 | 103.26/140 |
| 28″/700 | 4,33/110 | 32,83/834 | 14,96/380 | 27,00/686 | 35,43/900 | 69,40/1763 | 12,40/315 | 112,04/2846 | 15,15/385 | 12,95/329 | 3,54/90 | 11,22/285 | 1.57x0.27/40 x 7 | 88.50/120 |
| 30″/750 | 4,33/110 | 34,80/884 | 14,96/380 | 29,90/760 | 37,20/945 | 74,09/1882 | 12,40/315 | 116,73/2965 | 15,15/385 | 12,95/329 | 3,54/90 | 11,22/285 | 1.57x0.27/40 x 7 | 103.26/140 |
| 32″/800 | 4,33/110 | 39,96/1015 | 12,60/320 | 31,14/791 | 38,58/980 | 76,69/1948 | 12,40/315 | 110,33/3031 | 15,15/385 | 12,95/329 | 3,54/90 | 11,22/285 | 1.97x0.31/50 x 8 | 132.76/180 |
| 36″/900 | 4,33/110 | 40,94/1040 | 12,60/320 | 35,23/895 | 42,79/1087 | 84,92/2157 | 15,74/400 | 127,55/3240 | 15,15/385 | 13,07/332 | 3,54/90 | 11,22/285 | 1.97x0.31/50 x 8 | 163.74/220 |
| 40″/1000 | 4,33/110 | 45,12/1146 | 12,60/320 | 38,38/975 | 47,24/1200 | 92,51/2350 | 15,74/400 | 135,07/3431 | 15,15/385 | 13,07/332 | 3,54/90 | 11,22/285 | 1.97x0.31/50 x 8 | 221.27/300 |
| 48″/1200 | 5,90/150 | 45,11/1390 | 17,71/450 | 40,82/1037 | 58,46/1485 | 107,55/2732 | 19,68/500 | 162,87/4137 | 20,07/510 | 13,97/355 | 4,52/115 | 12,20/310 | 2.36x0.35/60 x 9 | 354.03/480 |

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EX(SER.10)-15

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MODEL

EX

SERIES 10



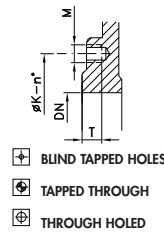
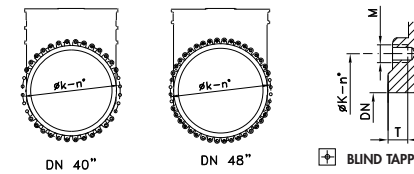
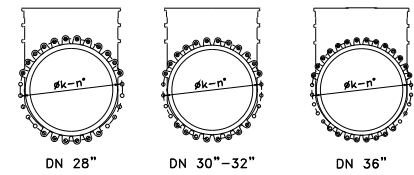
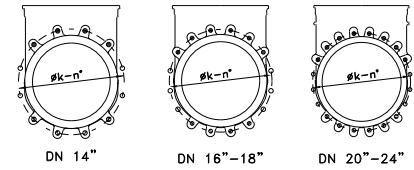
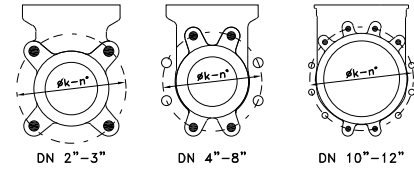
FLANGE AND BOLTING DETAILS

ANSI B16.5, class 150(*)

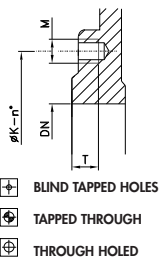
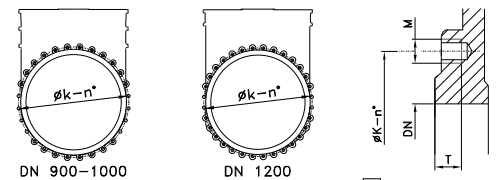
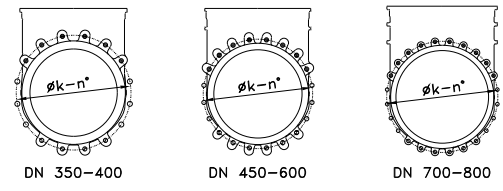
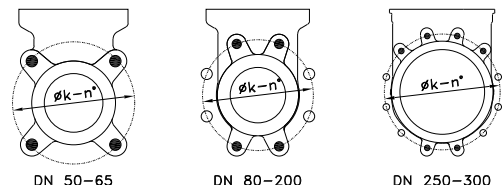
| DN | K | n° | M | T | | | |
|--------|---------|----|------------|---------|----|-----|-----|
| 2" | 4 3/4" | 4 | 5/8" UNC | 3/8" | 4 | --- | --- |
| 2 1/2" | 5 1/2" | 4 | 5/8" UNC | 3/8" | 4 | --- | --- |
| 3" | 6" | 4 | 5/8" UNC | 3/8" | 4 | --- | --- |
| 4" | 7 1/2" | 8 | 5/8" UNC | 3/8" | 4 | --- | 4 |
| 5" | 8 1/2" | 8 | 3/4" UNC | 3/8" | 4 | --- | 4 |
| 6" | 9 1/2" | 8 | 3/4" UNC | 1/2" | 4 | --- | 4 |
| 8" | 11 3/4" | 8 | 3/4" UNC | 1/2" | 4 | --- | 4 |
| 10" | 14 1/4" | 12 | 7/8" UNC | 3/4" | 6 | --- | 6 |
| 12" | 17" | 12 | 7/8" UNC | 3/4" | 6 | --- | 6 |
| 14" | 18 3/4" | 12 | 1" UNC | 7/8" | 4 | 4 | 4 |
| 16" | 21 1/4" | 16 | 1" UNC | 1" | 6 | 4 | 6 |
| 18" | 22 3/4" | 16 | 1 1/8" UNC | 1" | 6 | 4 | 6 |
| 20" | 25" | 20 | 1 1/8" UNC | 1" | 8 | 6 | 6 |
| 24" | 29 1/2" | 20 | 1 1/4" UNC | 1" | 8 | 6 | 6 |
| 28" | 34" | 28 | 1 1/4" UNC | 3/4" | 12 | 6 | 10 |
| 30" | 36" | 28 | 1 1/4" UNC | 3/4" | 12 | 8 | 8 |
| 32" | 38 1/2" | 28 | 1 1/2" UNC | 3/4" | 12 | 8 | 8 |
| 36" | 42 3/4" | 32 | 1 1/2" UNC | 3/4" | 14 | 8 | 10 |
| 40" | 47 1/4" | 36 | 1 1/2" UNC | 3/4" | 14 | 12 | 10 |
| 48" | 56" | 44 | 1 1/2" UNC | 1 3/16" | 26 | 10 | 8 |

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| DN | K | n° | M | T | | | |
|------|------|----|------|----|----|-----|-----|
| 50 | 125 | 4 | M-16 | 11 | 4 | --- | --- |
| 65 | 145 | 4 | M-16 | 11 | 4 | --- | --- |
| 80 | 160 | 8 | M-16 | 11 | 4 | --- | 4 |
| 100 | 180 | 8 | M-16 | 11 | 4 | --- | 4 |
| 125 | 210 | 8 | M-16 | 11 | 4 | --- | 4 |
| 150 | 240 | 8 | M-20 | 14 | 4 | --- | 4 |
| 200 | 295 | 8 | M-20 | 14 | 4 | --- | 4 |
| 250 | 350 | 12 | M-20 | 18 | 6 | --- | 6 |
| 300 | 400 | 12 | M-20 | 18 | 6 | --- | 6 |
| 350 | 460 | 16 | M-20 | 22 | 6 | 4 | 6 |
| 400 | 515 | 16 | M-24 | 24 | 6 | 4 | 6 |
| 450 | 565 | 20 | M-24 | 24 | 8 | 6 | 6 |
| 500 | 620 | 20 | M-24 | 24 | 8 | 6 | 6 |
| 600 | 725 | 20 | M-27 | 24 | 8 | 6 | 6 |
| 700 | 840 | 24 | M-27 | 20 | 10 | 6 | 8 |
| 800 | 950 | 24 | M-30 | 20 | 10 | 6 | 8 |
| 900 | 1050 | 28 | M-30 | 20 | 12 | 8 | 8 |
| 1000 | 1160 | 28 | M-33 | 20 | 12 | 8 | 8 |
| 1200 | 1380 | 32 | M-36 | 30 | 22 | 6 | 4 |



(*) From DN 24", acc. to MSS SP 44 (class 150)



- BLIND TAPPED HOLES
- TAPPED THROUGH
- THROUGH HOLED

- BLIND TAPPED HOLES
- TAPPED THROUGH
- THROUGH HOLED

Reserves the right to change specifications without notice

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EX(SER.10)-16

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