

**HOPPER SHAPE KNIFE GATE VALVE**

The XC (SER.14) model knife gate is a uni-directional wafer valve designed for industrial bulk handling service applications (powdered and granular products). The special design of the body allows for easy passage of the fluid and makes it ideal for use as silo outlet valve. Widely used in industries such as:

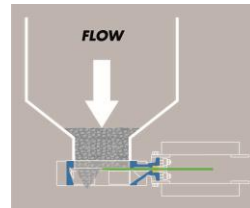
- Power plants
- Chemical plants
- Mining
- Food and Beverage
- Etc.

Valve is usually installed under silos or hoppers in vertical pipes with the seat in the upstream side of the valve in order to protect it from the solids flow. This set up helps to protect the seat from premature wear and gate jamming due to solid build-up.

**Sizes:** DN 2"/50mm to DN 24"/600mm (larger diameters on request)

**Working pressure:**

DN 2"/ 50mm to DN 10"/250mm	150 psi/(10 kg/cm <sup>2</sup> )
DN 12"/300mm to DN 16"/400mm	90 psi/( 6 kg/cm <sup>2</sup> )
DN 18"/450mm	75 psi/( 5 kg/cm <sup>2</sup> )
DN 20"/500mm to DN 24"/600mm	60 psi/( 4 kg/cm <sup>2</sup> )



For specific off seating tightness requirements contact ORBINOX technical department

**Standard flange connection:**

EN 1092 PN 10 and ASME B16.5 (class 150)

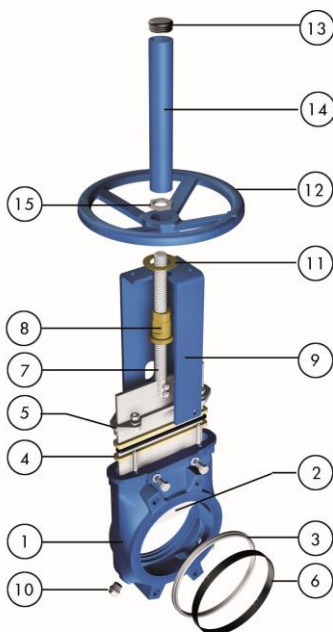
Note: other flange connections are available on request.

**Directives:**

For EU Directives and other Certificates, please see the document: Directives and Certificates Compliance - Knife Gate Valves - Catalogues and Datasheets

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	GJL 250 (GG25)	CF8M
2- Gate	AISI 304	AISI 316
3- Seat	Metal or EPDM	
4- Packing	PTFE Impreg. Synth. Fibre (with an EPDM o-ring)	
5- Gland Follower	Aluminum (DN 2"/50mm-12"/300mm) Ductile Iron (DN 14"/350mm-24"/600mm)	CF8M
6- Seat retainer ring	AISI 304	AISI 316
7- Stem	Stainless Steel	
8- Stem nut	Brass	
9- Yoke	Epoxy-coated Carbon Steel	
10- Cleaning	Carbon Steel	Stainless Steel
11- Friction washer	Brass	
12- Handwheel	GJS400 (GGG40)	
13- Cap	Plastic	
14- Stem Protector	Epoxy-coated Carbon Steel	
15- Nut	Zinc plated Carbon Steel	



**MODEL****XC****SERIES 14**

## DESIGN FEATURES

### **BODY:**

Wafer style cast monoblock design for installation between raised face flanges and reinforced ribs in larger diameters for extra body strength. Internal cast gate wedges and guides allow for tighter shut-off. Special cast gate supports ensure permanent contact between the gate and the seat when the valve is installed in the reverse position of the flow direction. The wide face to face distance as well as the internal design with the integrated flushing corners avoid any build up of solids that would prevent the valve from closing. Full port design for greater flow capacity and minimal pressure drop. The standard flush ports allow the cleaning of solids trapped within the body cavities that can obstruct the flow or the sealing in the closed position. Depending on the media, the purge ports can be injected with air, steam, liquids, etc.

### **GATE:**

Stainless steel rectangular shape gate. 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. The thickness and/or material of the gate can be changed on request for higher pressure requirements.

### **SEAT: (resilient)**

Unique design that mechanically locks the seal 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 for installation purposes 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. Reinforced design is standard starting from DN 10"/250mm.

### **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



## OTHER OPTIONS

### Bonnet (Fig.1):

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

### Other materials of construction:

Special alloys such as AISI 317 (1.4449), 254SMO (1.4547), Hastelloys, etc.

### Fabricated valves:

ORBINOX designs, produces and delivers special fabricated valves for special process conditions (big sizes, high pressures, materials of construction, etc.)

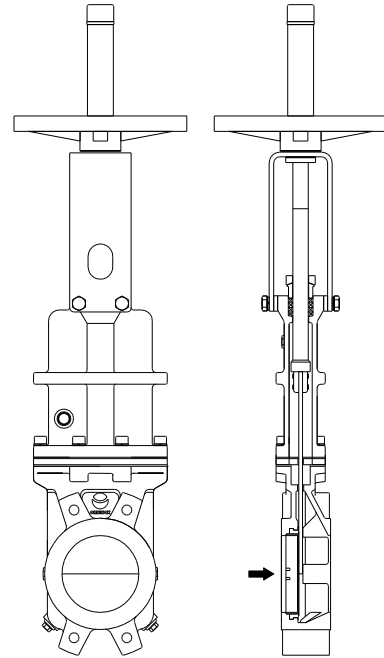


Fig.1

## 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...)

## ACTUATOR TYPES

### MANUAL:

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

### AUTOMATIC:

Electric (rising & non-rising stem)  
 Pneumatic (single & double-acting)  
 Hydraulic

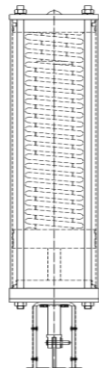
All actuators supplied by ORBINOX are interchangeable

## FAIL SAFE SYSTEMS

Used on pneumatic actuated valves

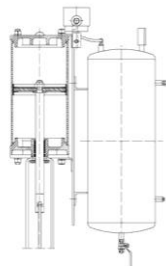
### SINGLE ACTING (SPRING RETURN)

- Available from  
DN 2"/50mm to DN 12"/300mm
- Supply pressure:
  - min. 75psi/(5 kg/cm<sup>2</sup>)
  - max. 150psi/(10 kg/cm<sup>2</sup>)
- Options:
  - Fail open
  - Fail close



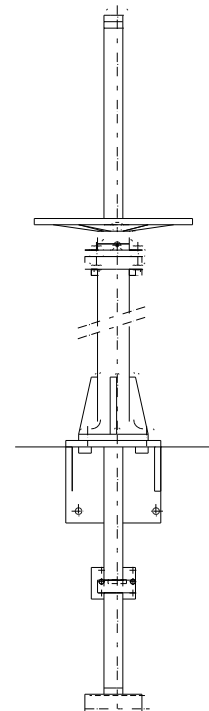
### DOUBLE ACTING WITH AIR TANK

- Available for all valve sizes
- Supply pressure:
  - min. 50 psi / (3.5 kg/cm<sup>2</sup>)
  - max. 150 psi / (10 kg/cm<sup>2</sup>)
- Options:
  - Pneumatic Failsafe
  - Pneumatic or Electric Failsafe



## ACCESSORIES

Mechanical stops  
 Locking device  
 Manual override  
 Solenoid valves  
 Positioners  
 Limit switches  
 Proximity switches  
 Floor stands  
 Stem extensions



Wide range of valve extensions available

*For further information about fail safe systems and valve extensions, please see EX(SER.10) catalog*

*We recommend to contact our technical department*

**TEMPERATURE CHART**

**SEAT / SEALS**

Material	Max.T. (°F)	(°C)	Applications
Metal/Metal	>482	>250	High temp./Low tightness
EPDM (E)	248	120	Acids and non mineral oils
NBR (N)	248	120	Resistance to petroleum products
FKM-FPM (V)	392	200	Chemical service/High temp.
VMQ (S)	482	250	Food service/High temp.
PTFE (T)	482	250	Corrosion resistance

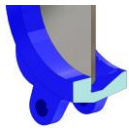
**PACKING**

Material	Max.T. (°F)	(°C)	pH
PTFE impregn. synth. fibre (ST)	482	250	2-13
Braided PTFE (TH)	500	260	0-14
Graphited (GR)	1112	600	0-14
Ceramic fibre (FC)	2192	1200	--

NOTE: all types include an elastomere O-ring (same material as seal), excluding TH, GR and FC

More details and other materials under request.

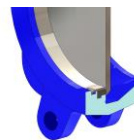
**SEAT TYPES**



**METAL/METAL**

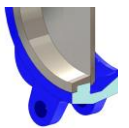
For applications with:

- High temperature
- High density media application
- Full tightness not required



**RESILIENT TYPE "A"**

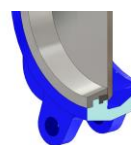
- Standard resilient seat
- Temperature limitations according to the selected seat material. Review the above chart or contact our Technical Department for more information
- Seat with replaceable retainer ring



**TYPE "B" SEAT (metal/metal)**

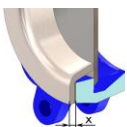
For applications with:

- High temperature
- High density media application
- Full tightness is not required
- Replaceable design without disassembling the valve



**TYPE "B" SEAT (resilient)**

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

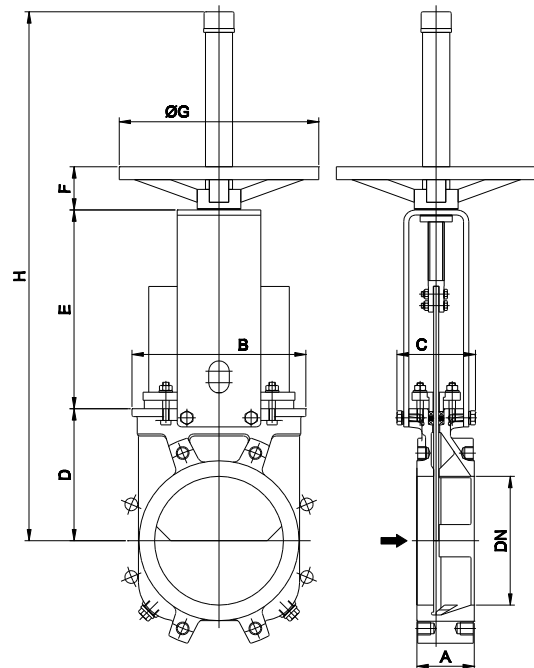


**DEFLECTION CONE "C"**

- Deflects the media away from any valve internal exposed parts (gate guides, seat,...)
- Material: AISI 316, CA15, Ni-Hard, etc.
- Face-to-face dimension increases:
  - DN 2"/50mm to DN 10"/250mm X = 0.35"/9mm
  - DN 12"/300mm to DN 24"/600mm X = 0.47"/12mm
  - Larger diameters on request

**HANDWHEEL (rising stem)**

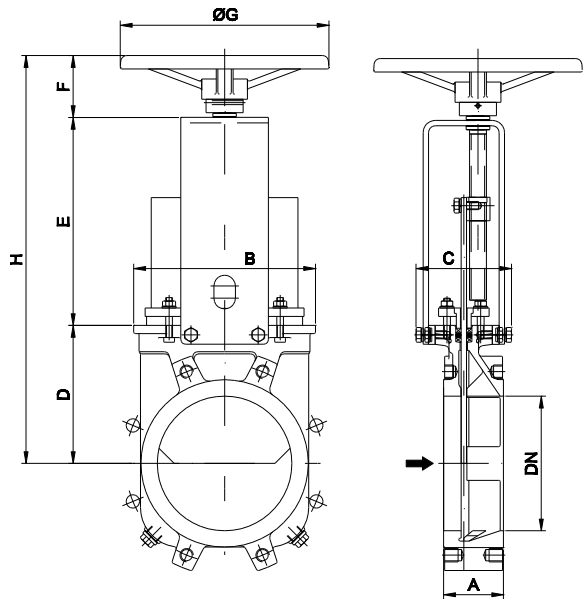
- Standard manual actuator
- Consists of:
  - Handwheel: Epoxy coated Cast Iron
  - Stem
  - Stem nut
  - Stem protector
- Available from DN 2"/50mm to DN 24/600mm
- Options (on request):
  - Locking Device
  - Extensions and floor stands



DN(“/mm)	A	B	C	D	E	F	ØG	H	Weight (lbs./kg.)
2"/50	1,81/46	4,88/124	4/100	4,13/105	5,07/129	1,85/47	8,86/225	16,53/420	15/7
2,5"/65	1,81/46	5,47/139	4/100	4,53/115	5,79/146	1,85/47	8,86/225	17,71/450	18/8
3"/80	2,52/64	6,06/154	4/100	4,88/124	6,37/162	1,85/47	8,86/225	18,70/475	20/9
4"/100	2,52/64	6,85/174	4/100	5,52/140	7,36/187	1,85/47	8,86/225	20,47/520	24/11
5"/125	2,75/70	7,55/192	4/100	6/150	8,30/211	1,85/47	8,86/225	23,62/600	33/15
6"/150	2,99/76	8,54/217	4/100	6,89/175	9,33/237	1,85/47	8,86/225	25,67/647	40/18
8"/200	3,50/89	10,62/270	4,80/122	8,07/205	12,16/309	2,64/67	12,20/310	32,36/822	66/30
10"/250	4,48/114	12,83/326	6,70/170	9,44/240	14,33/364	2,64/67	12,20/310	39,84/1012	97/44
12"/300	4,48/114	14,96/380	6,70/170	11,02/280	16,30/414	2,64/67	12,20/310	43,38/1102	128/58
14"/350	5/127	17,24/438	6,70/170	12,59/320	19,13/486	2,60/66	16,14/410	51,37/1305	217/96
16"/400	5,51/140	19,40/493	6,70/170	13,78/350	21,10/536	2,60/66	16,14/410	54,53/1385	274/124
18"/450	5,98/152	21,49/546	6,70/170	16,53/420	23,15/588	2,60/66	21,65/550	62,28/1582	370/168
20"/500	5,98/152	24,40/620	6,70/170	17,71/450	25,51/648	2,60/66	21,65/550	65,82/1672	424/192
24"/600	7,00/178	28,11/714	6,70/170	20,86/530	29,44/748	2,60/66	21,65/550	77,24/1962	540/245

**HANDWHEEL (non-rising stem)**

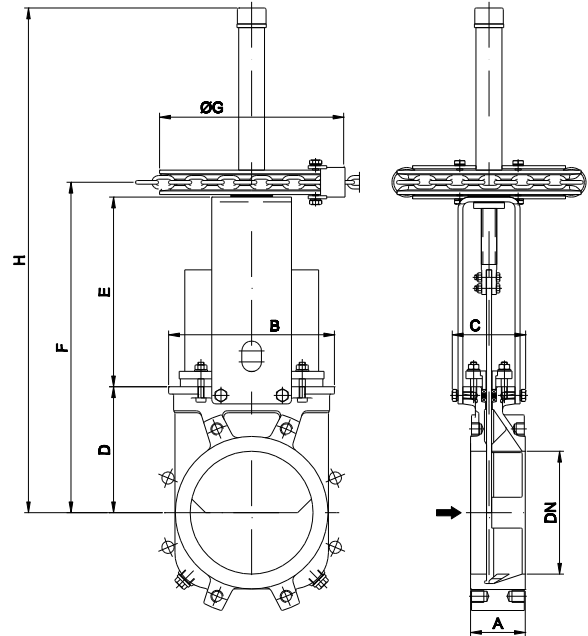
- Recommended for installation where space is limited
- Consists of:
  - Handwheel
  - DN 2"/50mm - DN 12"/300mm: aluminium
  - DN ≥14"/350mm: GJS400 (GGG40)
  - Stem
  - Yoke bushing
  - Stem nut fixed to the gate
- Available from DN 2"/50mm to DN 24"/600mm
- Options:
  - Locking Device
  - Extensions and floor stands
  - Square Nut Drive



DN(" / mm)	A	B	C	D	E	F	ØG	H
2"/50	1,81/46	4,88/124	5/125	4,13/105	5,67/144	2,48/63	8,86/225	12,28/312
2,5"/65	1,81/46	5,47/139	5/125	4,53/115	6,34/161	2,48/63	8,86/225	13,34/339
3"/80	2,52/64	6,06/154	5/125	4,88/124	6,97/177	2,48/63	8,86/225	14,33/364
4"/100	2,52/64	6,85/174	5/125	5,52/140	7,95/202	2,48/63	8,86/225	15,94/405
5"/125	2,75/70	7,55/192	5/125	6/150	8,90/226	2,48/63	8,86/225	17,28/439
6"/150	2,99/76	8,54/217	5/125	6,70/170	9,92/252	2,48/63	8,86/225	19,09/485
8"/200	3,50/89	10,62/270	4,80/122	8,07/205	12,48/317	2,87/73	12,20/310	23,42/595
10"/250	4,48/114	12,83/326	4,80/122	9,44/240	14,64/372	2,87/73	12,20/310	26,97/685
12"/300	4,48/114	14,96/380	6,70/170	11,02/280	16,61/422	2,87/73	12,20/310	30,51/775
14"/350	5/127	17,24/438	6,70/170	12,59/320	20,03/509	3,86/98	16,14/410	36,50/927
16"/400	5,51/140	19,40/493	6,70/170	13,78/350	22,00/559	3,86/98	16,14/410	39,65/1007
18"/450	5,98/152	21,49/546	6,70/170	16,53/420	24,05/611	3,86/98	21,65/550	44,44/1129
20"/500	5,98/152	24,40/620	6,70/170	17,71/450	26,42/671	3,86/98	21,65/550	47,99/1219
24"/600	7,00/178	28,11/714	6,70/170	20,86/530	30,35/771	3,86/98	21,65/550	55,08/1399

**CHAINWHEEL (rising stem)**

- 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:
  - Locking Device
  - Extension and floor stands
  - Non-rising Stem

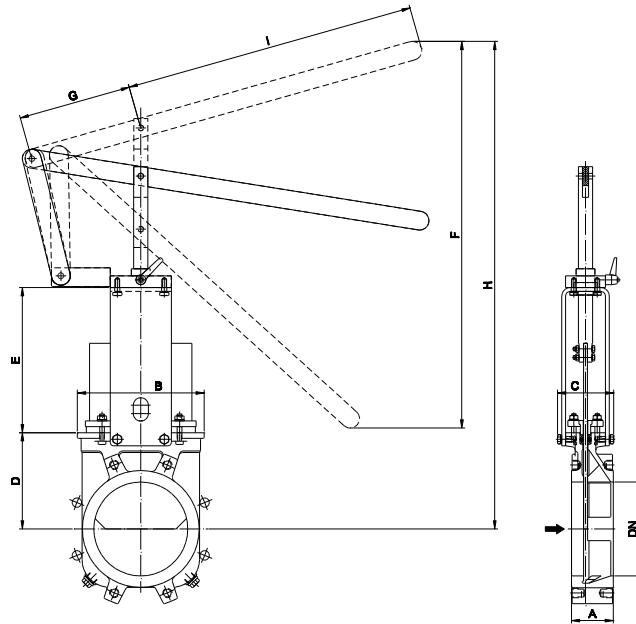


DN(" / mm)	A	B	C	D	E	F	ØG	H
2"/50	1,81/46	4,88/124	4/100	4,13/105	5,07/129	9,96/253	8,86/225	16,69/424
2,5"/65	1,81/46	5,47/139	4/100	4,53/115	5,79/146	11,02/280	8,86/225	17,75/451
3"/80	2,52/64	6,06/154	4/100	4,88/124	6,37/162	12,00/305	8,86/225	18,74/476
4"/100	2,52/64	6,85/174	4/100	5,52/140	7,36/187	13,66/347	8,86/225	20,39/518
5"/125	2,75/70	7,55/192	4/100	6/150	8,30/211	14,96/380	8,86/225	23,66/601
6"/150	2,99/76	8,54/217	4/100	6,70/170	9,33/237	16,77/426	8,86/225	25,47/647
8"/200	3,50/89	10,62/270	4,80/122	8,07/205	12,16/309	21,18/538	11,81/300	32,36/822
10"/250	4,48/114	12,83/326	6,70/170	9,44/240	14,33/364	24,72/628	11,81/300	39,84/1012
12"/300	4,48/114	14,96/380	6,70/170	11,02/280	16,30/414	28,26/718	11,81/300	43,38/1102
14"/350	5/127	17,24/438	6,70/170	12,59/320	19,13/486	32,99/838	17,87/454	51,37/1305
16"/400	5,51/140	19,40/493	6,70/170	13,78/350	21,10/536	36,14/918	17,87/454	54,52/1385
18"/450	5,98/152	21,49/546	6,70/170	16,53/420	23,15/588	40,94/1040	17,87/454	62,08/1577
20"/500	5,98/152	24,40/620	6,70/170	17,71/450	25,51/648	44,48/1130	17,87/454	65,43/1662
24"/600	7,00/178	28,11/714	6,70/170	20,86/530	29,44/748	51,57/1310	17,87/454	77,24/1962



**LEVER**

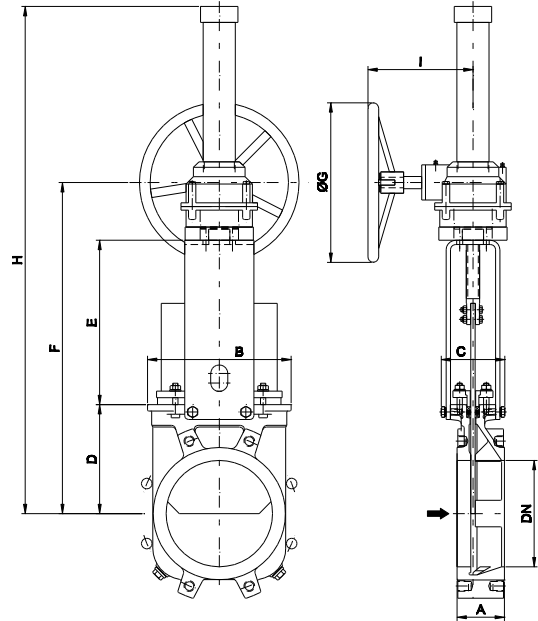
- Recommended for quick opening and closing
- Consists of:
  - Lever
  - Stem
  - Yoke Sleeve
  - Lever Lock
- Available from DN 2"/50mm to DN 8"/200mm



DN(" / mm)	A	B	C	D	E	F	G	H	I
2"/50	1,81/46	4,88/124	4/100	4,13/105	5,07/129	10,08/256	5,90/150	16,06/408	12,40/315
2,5"/65	1,81/46	5,47/139	4/100	4,53/115	5,79/146	10,20/259	5,90/150	17,12/435	12,40/315
3"/80	2,52/64	6,06/154	4/100	4,88/124	6,37/162	12,08/307	5,90/150	20,03/509	12,40/315
4"/100	2,52/64	6,85/174	4/100	5,52/140	7,36/187	14,88/378	5,90/150	25,08/637	16,33/415
5"/125	2,75/70	7,55/192	4/100	6/150	8,30/211	17,28/439	5,90/150	29,72/755	16,33/415
6"/150	2,99/76	8,54/217	4/100	6,70/170	9,33/237	20,83/529	5,90/150	35,03/890	16,33/415
8"/200	3,50/89	10,62/270	4,80/122	8,07/205	12,16/309	24,40/620	9,25/235	40,86/1038	24,40/620

**GEAR (rising stem)**

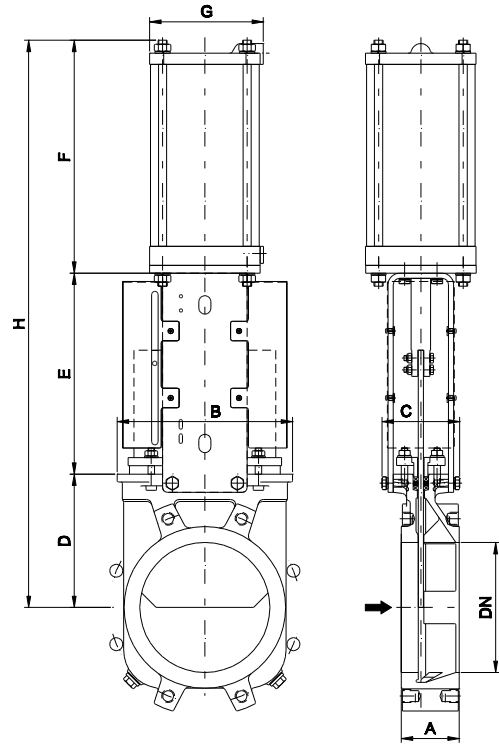
- Recommended for valves larger than DN 14"/350mm and working pressures greater than 50psi/(3.5 kg/cm<sup>2</sup>)
- Consists of:
  - Stem
  - Stem protector
  - Bevel Gear Actuator with Handwheel (Standard Ratio 4:1)
- Available from DN 8"/200mm to DN 24"/600mm
- Options (on request):
  - Locking device
  - Extension
  - Chainwheel
  - Non-rising stem



DN("/mm)	A	B	C	D	E	F	G	H	I
8"/200	3,50/89	10,62/270	4,80/122	8,07/205	12,16/309	24,52/623	12/300	37,95/964	7,79/198
10"/250	4,48/114	12,83/326	4,80/122	9,44/240	14,33/364	28,07/713	12/300	41,50/1054	7,79/198
12"/300	4,48/114	14,96/380	6,70/170	11,02/280	16,30/414	31,61/803	12/300	45,03/1144	7,79/198
14"/350	5/127	17,24/438	6,70/170	12,59/320	20/500	35,59/904	18/450	60,82/1545	8,58/218
16"/400	5,51/140	19,40/493	6,70/170	13,78/350	21,65/550	38,74/984	18/450	64,02/1626	8,58/218
18"/450	5,98/152	21,49/546	6,70/170	16,53/420	23,54/598	43,38/1102	18/450	68,58/1742	8,58/218
20"/500	5,98/152	24,40/620	6,70/170	17,71/450	25,90/658	46,93/1192	18/450	72,16/1833	8,58/218
24"/600	7,00/178	28,11/714	6,70/170	20,86/530	29,84/758	54,02/1372	18/450	79,29/2014	8,58/218

**PNEUMATIC CYLINDER**

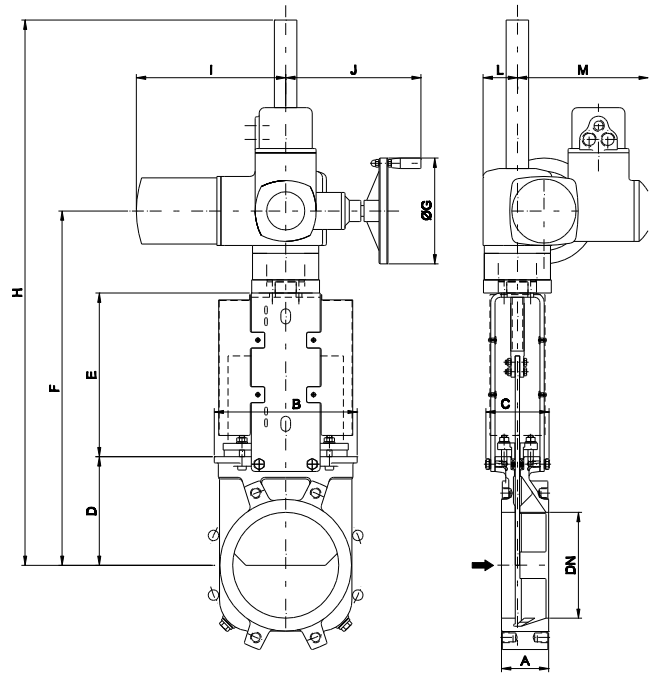
- The standard pneumatic actuator (double acting on-off cylinder) consists of:
  - $\varnothing \leq 12''/300\text{mm}$ : Aluminum barrels
  - $\varnothing \geq 14''/350\text{mm}$ : Composite barrels
  - Aluminum end covers
  - Stainless Steel (AISI 304) piston rod
  - Nitrile coated steel piston
- Available from DN 2''/50mm to DN 24''/600mm
- Actuator sized for 85psi/(6 kg/cm<sup>2</sup>) air supply
- Reinforced yoke is standard starting from DN 10''/250mm
- Options (on request):
  - Hard anodized barrel and covers
  - Stainless Steel barrel and covers
  - Over/Undersized cylinder
  - Manual override
  - Fail safe system
  - Limit switches
- Instrumentation (on request):
  - Positioners
  - Solenoid valves
  - Flow regulators
  - Air preparation units



DN(″/mm)	A	B	C	D	E	F	G	H	Weight (lbs./kg.)	Standard Cyl.	TM
2″/50	1,81/46	4,88/124	4/100	4,13/105	5,07/129	7,00/178	4,53/115	16,22/412	20/9	C4″-2.44″/(100-62)	¼″ G
2,5″/65	1,81/46	5,47/139	4/100	4,53/115	5,79/146	7,60/193	4,53/115	17,87/454	22/10	C4″-3.03″/(100-77)	¼″ G
3″/80	2,52/64	6,06/154	4/100	4,88/124	6,37/162	8,31/211	4,53/115	19,56/497	24/11	C4″-3.74″/(100-95)	¼″ G
4″/100	2,52/64	6,85/174	4/100	5,52/140	7,36/187	9,09/231	4,53/115	21,96/558	30/14	C4″-4.52″/(100-115)	¼″ G
5″/125	2,75/70	7,55/192	4/100	6/150	8,30/211	10,67/271	5,51/140	24,88/632	44/20	C5″-5.52″/(125-143)	¼″ G
6″/150	2,99/76	8,54/217	4/100	6,70/170	9,33/237	11,65/296	5,51/140	27,68/703	55/25	C5″-6.61″/(125-168)	¼″ G
8″/200	3,50/89	10,62/270	4,80/122	8,07/205	12,16/309	14,09/358	6,89/175	34,33/872	97/44	C6.30″-8.66″/(160-220)	¼″ G
10″/250	4,48/114	12,83/326	6,70/170	9,44/240	14,33/364	16,85/428	8,66/220	40,62/1032	148/67	C8″-10.62″/(200-270)	3/8″ G
12″/300	4,48/114	14,96/380	6,70/170	11,02/280	16,29/414	18,82/478	8,66/220	46,14/1172	181/82	C8″-12.60″/(200-320)	3/8″ G
14″/350	5/127	17,24/438	6,70/170	12,59/320	19,68/500	21,61/549	10,90/277	53,89/1369	298/135	C10″-14.76″/(250-375)	3/8″ G
16″/400	5,51/140	19,40/493	6,70/170	13,78/350	21,65/550	23,58/599	10,90/277	59,01/1499	364/165	C10″-16.73″/(250-425)	3/8″ G
18″/450	5,98/152	21,49/546	6,70/170	16,53/420	23,94/598	26,77/680	15,03/382	66,85/1698	485/220	C12″-18.70″/(300-475)	½″ G
20″/500	5,98/152	24,40/620	6,70/170	17,71/450	25,90/658	28,74/730	15,03/382	72,36/1838	617/280	C12″-20.67″/(300-525)	½″ G
24″/600	7,00/178	28,11/714	6,70/170	20,86/530	29,84/758	32,68/830	15,03/382	83,38/2118	727/330	C12″-24.60″/(300-625)	½″ G

**ELECTRIC ACTUATOR (rising stem)**

- Consists of:
  - Electric motor
  - 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 24"/600mm
- Reinforced yoke is standard starting from DN 10"/250mm
- Wide range of types and marks available to meet customer's needs.
- Option:
  - Non rising stem

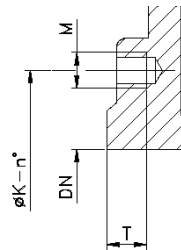
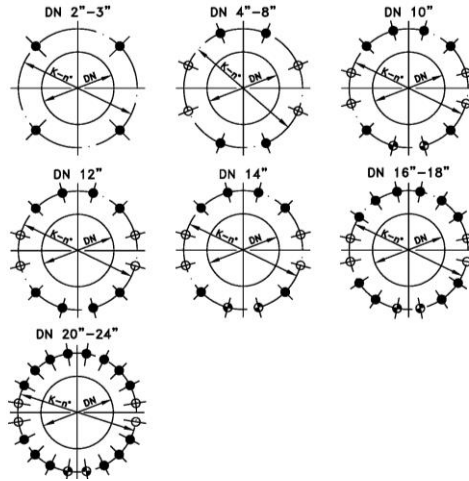


DN <sup>("/mm)</sup>	A	B	C	D	E	F	ØG	H	I	J	L	M	stemØ x pitch	Torque (ft.LBS/Nm)
2"/50	1,81/46	4,88/124	4/100	4,13/105	5,07/129	14,84/377	6,30/160	21,53/547	10,43/265	9,80/249	2,44/62	9,37/238	0.79 x 0.16/20 x 4	7.4/10
2.5"/65	1,81/46	5,47/139	4/100	4,53/115	5,79/146	15,90/404	6,30/160	22,60/574	10,43/265	9,80/249	2,44/62	9,37/238	0.79 x 0.16/20 x 4	7.4/10
3"/80	2,52/64	6,06/154	4/100	4,88/124	6,37/162	16,88/429	6,30/160	23,58/599	10,43/265	9,80/249	2,44/62	9,37/238	0.79 x 0.16/20 x 4	7.4/10
4"/100	2,52/64	6,85/174	4/100	5,52/140	7,36/187	18,50/470	6,30/160	25,19/640	10,43/265	9,80/249	2,44/62	9,37/238	0.79 x 0.16/20 x 4	7.4/10
5"/125	2,75/70	7,55/192	4/100	6/150	8,30/211	19,84/504	6,30/160	26,53/674	10,43/265	9,80/249	2,44/62	9,37/238	0.79 x 0.16/20 x 4	11.1/15
6"/150	2,99/76	8,54/217	4/100	6,70/170	9,33/237	21,65/550	6,30/160	44,09/1120	10,43/265	9,80/249	2,44/62	9,37/238	0.79 x 0.16/20 x 4	14.8/20
8"/200	3,50/89	10,62/270	4,80/122	8,07/205	12,16/309	26,33/669	6,30/160	50,74/1289	10,43/265	9,80/249	2,44/62	9,37/238	0.98 x 0.2/25 x 5	22.2/30
10"/250	4,48/114	12,83/326	6,70/170	9,44/240	14,33/364	29,88/759	6,30/160	52,71/1339	10,43/265	9,80/249	2,44/62	9,37/238	0.98 x 0.2/25 x 5	33.3/45
12"/300	4,48/114	14,96/380	6,70/170	11,02/280	16,30/414	33,42/849	6,30/160	56,45/1434	10,43/265	9,80/249	2,44/62	9,37/238	0.98 x 0.2/25 x 5	29.50/40
14"/350	5/127	17,24/438	6,70/170	12,59/320	20/500	37,40/950	7,87/200	60,43/1535	11,14/283	10/254	2,55/65	9,76/248	1.38 x 0.24/35 x 6	51.8/70
16"/400	5,51/140	19,40/493	6,70/170	13,78/350	21,65/550	40,55/1030	7,87/200	63,58/1615	11,14/283	10/254	2,55/65	9,76/248	1.38 x 0.24/35 x 6	66.38/90
18"/450	5,98/152	21,49/546	6,70/170	16,53/420	23,54/598	46,96/1193	7,87/200	70,59/1793	11,14/283	10/254	2,55/65	9,76/248	1.38 x 0.24/35 x 6	81.4/110
20"/500	5,98/152	24,40/620	6,70/170	17,71/450	25,90/658	50,51/1283	7,87/200	74,13/1883	11,14/283	10/254	2,55/65	9,76/248	1.38 x 0.24/35 x 6	70.06/95
24"/600	7,00/178	28,11/714	6,70/170	20,86/530	29,84/758	57,59/1463	12,40/315	85,15/2163	15,31/389	13,22/336	3,58/91	11,25/286	1.38 x 0.24/35 x 6	103.26/140

**FLANGE AND BOLTING DETAILS**

**ASME B16.5, class 150**

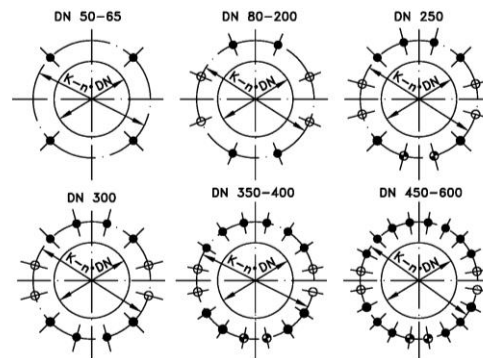
DN	K	n°	M	T			
2"	4 3/4"	4	5/8" - 11 UNC	5/16"	4 - 0 - 0		
2 1/2"	5 1/2"	4	5/8" - 11 UNC	5/16"	4 - 0 - 0		
3"	6"	4	5/8" - 11 UNC	3/8"	4 - 0 - 0		
4"	7 1/2"	8	5/8" - 11 UNC	7/16"	4 - 0 - 4		
5"	8 1/2"	8	3/4" - 10 UNC	7/16"	4 - 0 - 4		
6"	9 1/2"	8	3/4" - 10 UNC	9/16"	4 - 0 - 4		
8"	11 3/4"	8	3/4" - 10 UNC	9/16"	4 - 0 - 4		
10"	14 1/4"	12	7/8" - 9 UNC	11/16"	6 - 2 - 4		
12"	17"	12	7/8" - 9 UNC	11/16"	8 - 0 - 4		
14"	18 3/4"	12	1" - 8 UNC	7/8"	6 - 2 - 4		
16"	21 1/4"	16	1" - 8 UNC	13/16"	10 - 2 - 4		
18"	22 3/4"	16	1 1/8" - 7 UNC	7/8"	10 - 2 - 4		
20"	25"	20	1 1/8" - 7 UNC	7/8"	14 - 2 - 4		
24"	29 1/2"	20	1 1/4" - 7 UNC	15/16"	14 - 2 - 4		



- BLIND TAPPED HOLES
- TAPPED THROUGH
- THROUGH HOLES

**EN 1092 PN 10**

DN	K	n°	M	T			
50	125	4	M-16	8	4 - 0 - 0		
65*	145	4	M-16	8	4 - 0 - 0		
80	160	8	M-16	9	4 - 0 - 4		
100	180	8	M-16	11	4 - 0 - 4		
125	210	8	M-16	11	4 - 0 - 4		
150	240	8	M-20	14	4 - 0 - 4		
200	295	8	M-20	14	4 - 0 - 4		
250	350	12	M-20	18	6 - 2 - 4		
300	400	12	M-20	18	8 - 0 - 4		
350	460	16	M-20	22	10 - 2 - 4		
400	515	16	M-24	21	10 - 2 - 4		
450	565	20	M-24	22	14 - 2 - 4		
500	620	20	M-24	22	14 - 2 - 4		
600	725	20	M-27	24	14 - 2 - 4		



\* Flange drilling of DN-65 PN10/16 according to EN1092 allow 4 or 8 drills. ORBINOX designs of DN-65 PN10/16 have 4 drills