

**MODEL****BT****SERIES 22**

## HEAVY DUTY KNIFE GATE VALVE

The BT(SER.22) model knife gate is a bi-directional lug type valve designed according to MSS-SP-81 and TAPPI TIS 405-8 for industrial service applications. The completely new design of the body and seat (patented) assures non-clogging shut off on suspended solids in industries such as:

- Pulp and Paper
- Wastewater
- Food and Beverage
- Power plants
- Mining
- Chemical plants
- Etc.

### Sizes:

DN 2"/50mm to DN 36"/900mm (larger diameters on request)

### Working pressure:

DN 2"/50mm to DN 24"/600mm: 150psi / 10bar  
 DN 30"/750mm: 100psi / 7bar  
 DN 36"/900mm: 100psi / 7bar

### Standard flange connection:

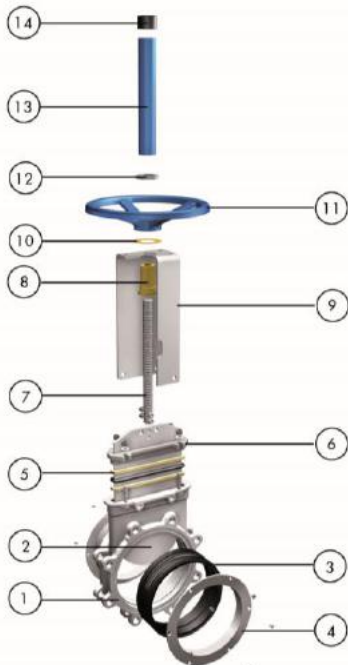
ANSI B16.5 (class 150)  
 Others on request

### Directives:

2006/42/CE (MACHINES)  
 2014/68/EU (PED) Fluid: Group 1(b), 2 (Cat. I, mod. A)  
 2014/34/EU (ATEX)



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



### STANDARD PARTS LIST

Part:	Stainless Steel:
1- Body	CF8M / CF8
2- Gate	AISI 316 / AISI 304
3- Sleeve	EPDM
4- Seat Ring	CF8M / CF8
5- Packing	PTFE Impreg. Synth. Fibre + EPDM O-Ring
6-Gland Follower	CF8M / CF8
7- Stem	Stainless Steel
8- Stem nut	Brass
9- Yoke	AISI 304 / Carbon Steel - Epoxy Coated
10- Thrust Washer	Brass
11- Handwheel	Ductile iron
12- Nut	Zinc Plated Carbon Steel
13- Stem protector	Carbon Steel - Epoxy Coated
14- Cap	Plastic



Reserves the right to change specifications without notice

OBX 04/20

Rev.12

ORBINOX CANADA, ORBINOX USA, ORBINOX BRAZIL, ORBINOX CHILE, ORBINOX PERU, ORBINOX SPAIN, ORBINOX UK, ORBINOX FRANCE, ORBINOX GERMANY, ORBINOX INDIA, ORBINOX CHINA, ORBINOX S.E.A. BT (SER.22)\_1

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**MODEL****BT****SERIES 22**

## DESIGN FEATURES

**BODY:**

One piece integrally cast stainless steel body with reinforced ribs in larger diameters for extra body strength.

Port design according to MSS-SP-81 and Tappi TIS 405-8.

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

**GATE:**

Standard AISI 316 or AISI 304 stainless steel gate.

Gates polished and lapped for a greater seal between the gate and both the packing and seat.

**SEAT: (resilient)**

Patented. Totally new design.

The resilient seat is an elastomer sleeve, available in different materials.

This sleeve which supports, protects and also guides the gate is slotted in the top half to allow gate travel, and guarantees full tightness with low friction. The sleeve is held by means of two seat rings which support it and also guide the gate.

**PACKING:**

Standard braided PTFE impregnated synthetic fibre with EPDM o-ring for better shut off, with an easy access packing gland ensuring a tight seal. The 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 actuators only, a stem protector is provided for additional protection against dust and damage while the valve 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 stainless steel (EPOXY coated carbon 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 components is electrostatically applied making them 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 MATERIALS:**

On request, the body and the gate can be supplied in other materials.



## ACTUATOR TYPES

### MANUAL:

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

### AUTOMATION:

Electric  
 Double Acting Pneumatic  
 Single Acting Pneumatic  
 Hydraulic

All actuators supplied by ORBINOX are interchangeable.

## FAIL SAFE SYSTEMS

Used on pneumatic actuated valves

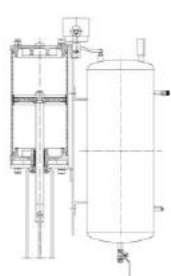
### SINGLE ACTING (SPRING RETURN)

- Available from  
DN 2"/50mm to DN 12"/300mm
- Supply pressure:
  - min. 75 psi / (5 bar )
  - max. 150 psi / (10 bar)
- Options:
  - Pneumatic or electric fail open
  - Pneumatic or electric fail close
  - Other options on request



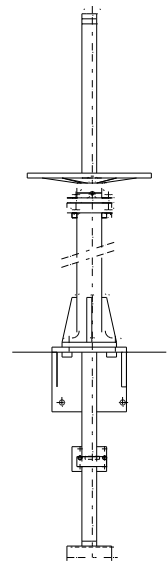
### DOUBLE ACTING WITH AIR TANK

- Available for all valve sizes
- Supply pressure:
  - min. 50 psi / (3.5 bar)
  - max. 150 psi / (10 bar)
- Options:
  - Pneumatic or electric fail open
  - Pneumatic or electric fail close
  - Other options on request



## ACCESSORIES

Bonnet  
 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 consultation with our technical department.

**TEMPERATURE CHART**

**SEAT / SLEEVE**

Material	Max.Temp.(°F)	(°C)	Applications
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.

More details and other materials upon request.  
All are reinforced with a metal core.

**PACKING**

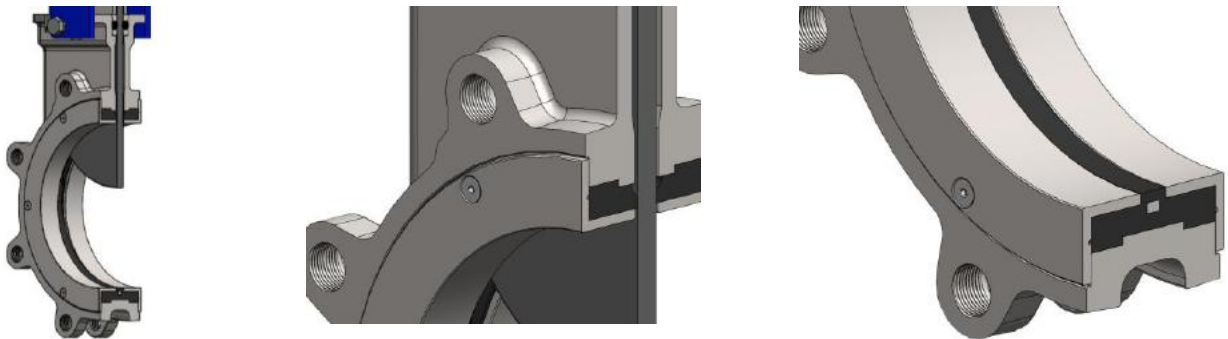
Material	Max.Temp.(°F)	(°C)	pH
Dry cotton (AS)	122	50	6-8
PTFE impregn. synth. fibre (ST)	464	240	2-13
Braided PTFE (TH)	560	260	0-14
Graphited (GR)	1112	600	0-14
Ceramic fibre (FC)	2192	1200	---

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

**SEAT**

**RESILIENT SEAT:**

The new seat (patented) is a slotted sleeve on its top half and includes a metal core in the bottom half which provides a great resistance to demanding working conditions and pressures. The seat is held by means of two stainless steel rings. This design provides watertightness in both directions while avoiding any buildup of solids that could prevent the valve from closing. The seat can be supplied in different resilient material qualities.



**ATEX**

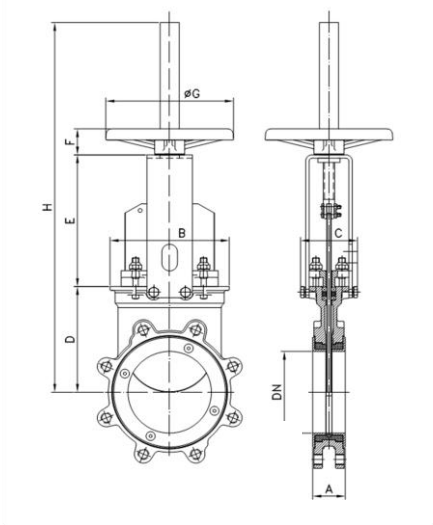


Please contact our ORBINOX representative for info and availability. Some considerations:

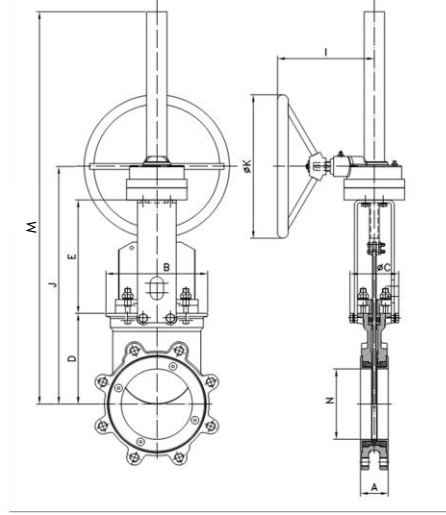
- Hand operated BT (SER.22) valves have been subjected to an ignition risk assessment according to DIN EN 13463: 1-5 and they are out of the scope of application of ATEX Directive. Therefore hand operated valves are suitable for ALL ATEX zones.
- Electrically, pneumatically and hydraulically operated valves must be subjected to a conformity assessment of their own and also of the whole of unit valve-actuator to get EC Type Approval to Directive 2014/34.

**HAND OPERATED (Rising stem)**

**HANDWHEEL**



**GEAR**



- Standard handwheel actuator. Available from DN 2"/50mm to DN 24"/600mm

- Consists of:
  - Handwheel: Ductile iron
  - Stem
  - Stem nut
  - Yoke

- Options (on request):
  - Chainwheel
  - Locking Device
  - Extensions

- Gear is optional above DN 6"/150mm and recommended above 12"/300mm

- Consists of:
  - Stem
  - Yoke
  - Bevel Gear Actuator with Handwheel (Standard Ratio 4:1)

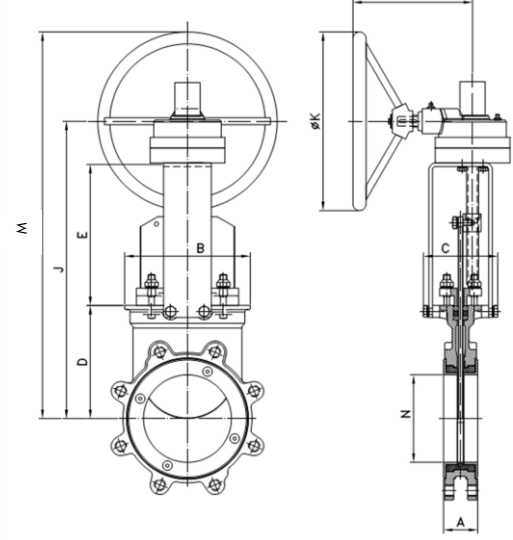
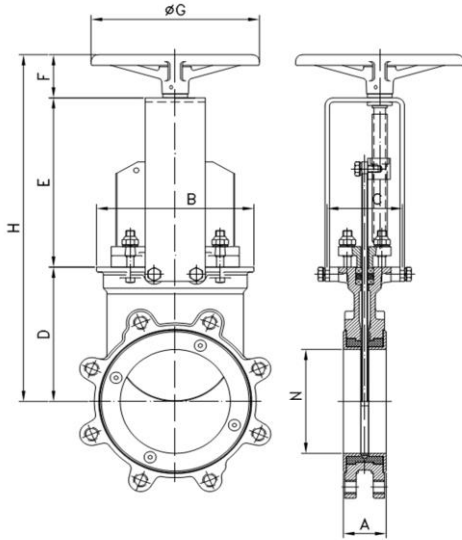
- Options (on request):
  - Chainwheel
  - Locking Device
  - Extensions

DN ("/mm)	N	A	B	C	D	E	F	J	ØG	ØK	H	I	M
2"/50	2/50	1,88/47,8	4,92/125	4,13/105	4,13/105	5,07/129	1,85/47	-	8,86/225	-	16,92/430	-	-
3"/80	2,9/75	2/50,8	6,06/154	4,13/105	4,68/119	6,37/162	1,85/47	-	8,86/225	-	18,70/475	-	-
4"/100	3,8/97	2/50,8	6,88/175	4,13/105	5,59/142	7,36/187	1,85/47	-	8,86/225	-	20,66/525	-	-
5"/125	4,76/121	2,25/57,2	7,08/180	4,13/105	6,49/165	8,30/211	1,85/47	-	8,86/225	-	24,40/620	-	-
6"/150	5,78/147	2,25/57,2	8,46/215	4,13/105	7,48/190	9,33/237	1,85/47	-	8,86/225	-	26,37/670	-	-
8"/200	7,63/194	2,74/69,8	10,23/260	4,80/122	9,44/240	12,16/309	2,63/67	24,37/619	12,20/310	12/300	40,51/1029	7,87/200	40,51/1029
10"/250	9,4/239	2,74/69,8	13,33/338	4,80/122	11,41/290	13,54/344	2,63/67	27,67/703	12,20/310	12/300	43,81/1113	7,87/200	43,82/1113
12"/300	11,18/284	3/76,2	14,40/366	4,80/122	14,17/360	15,43/392	2,60/66	32,36/822	16,14/410	12/300	48,62/1235	7,87/200	48,62/1235
14"/350	12,67/322	3/76,2	16/400	7,75/197	12,60/320	17,52/445	2,60/66	32,09/815	16,14/410	17,72/450	50,78/1290	10,62/270	63,38/1610
16"/400	14,40/366	3,50/89	18,03/458	7,75/197	14,49/368	19,80/503	2,60/66	35,75/908	16,14/410	17,72/450	54,92/1395	10,62/270	67,72/1720
18"/450	15,74/400	3,50/89	19,25/489	7,75/197	16,34/415	21,14/537	2,63/67	38,82/986	21,65/550	17,72/450	62,20/1580	10,62/270	70,87/1800
20"/500	18,11/460	4,50/114,2	21,73/552	7,75/197	18,11/460	23,82/605	2,63/67	42,87/1089	21,65/550	17,72/450	66,53/1690	10,62/270	74,61/1895
24"/600	20,86/530	4,50/114,2	25,07/637	7,75/197	20,12/511	26,10/663	2,63/67	48,03/1220	21,65/550	17,72/450	75,39/1915	10,62/270	80,31/2040
30"/750	26,37/670	4,6/117	33,14/842	12,59/320	26,37/670	37,2/945	-	64,17/1630	-	17,72/450	-	12,2/310	105,11/2670
36"/900	31,88/810	4,6/117	38,18/970	12,59/320	31,49/800	44,01/1418	-	77,44/1967	-	25,5/650	-	14,56/370	126,29/3208

**HAND OPERATED (Non-rising stem)**

**HANDWHEEL**

**GEAR**



• Standard handwheel actuator. Available from DN 2"/50mm to DN 24"/600mm

- Consists of:
  - Handwheel: Ductile iron
  - Stem
  - Yoke

- Options (on request):
  - Chainwheel
  - Locking Device
  - Extensions

• Gear is optional above DN 6"/150mm and recommended above 12"/300mm

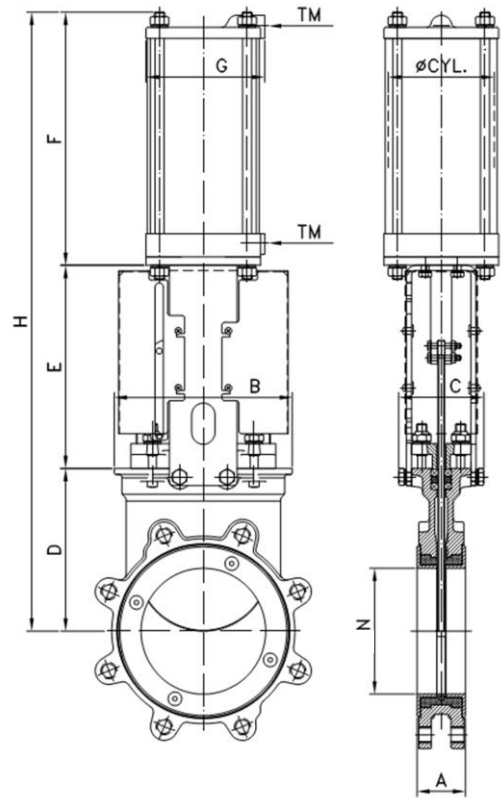
- Consists of:
  - Yoke
  - Stem
  - Bevel Gear Actuator with Handwheel (Standard Ratio 4:1)

- Options (on request):
  - Chainwheel
  - Locking Device
  - Extensions

DN ("/mm)	N	A	B	C	D	E	F	J	ØG	ØK	H	M	I
2"/50	2/50	1,88/47,8	4,92/125	4,88/124	4,13/105	5,14/132	2,38/61	-	8,86/225	-	11,62/298	-	-
3"/80	2,9/75	2/50,8	6,06/154	4,88/124	4,68/119	6,43/165	2,38/61	-	8,86/225	-	13,45/345	-	-
4"/100	3,8/97	2/50,8	6,88/175	4,88/124	5,59/142	7,41/190	2,38/61	-	8,86/225	-	15,47/393	-	-
5"/125	4,76/121	2,25/57,2	7,08/180	4,88/124	6,49/165	8,35/214	2,38/61	-	8,86/225	-	17,32/440	-	-
6"/150	5,78/147	2,25/57,2	8,46/215	4,88/124	7,48/190	9,36/240	2,38/61	-	8,86/225	-	19,33/491	-	-
8"/200	7,63/194	2,74/69,8	10,23/260	5,59/142	9,44/240	12,28/312	2,38/61	24,48/622	12,20/310	12/300	24,13/613	30,51/775	7,87/200
10"/250	9,4/239	2,74/69,8	13,33/338	5,59/142	11,41/290	13,66/347	2,38/61	28,38/721	12,20/310	12/300	27,48/698	34,29/871	7,87/200
12"/300	11,18/284	3/76,2	14,40/366	5,59/142	14,17/360	15,55/395	2,77/71	33,07/840	16,14/410	12/300	32,52/826	38,97/990	7,87/200
14"/350	12,67/322	3/76,2	16/400	7,75/197	12,60/320	18,9/482	4,33/110	34,88/886	16,14/410	12/300	35,9/912	40,78/1036	8,54/217
16"/400	14,40/366	3,50/89	18,03/458	7,75/197	14,49/368	20,74/527	4,33/110	38,5/978	16,14/410	17,72/450	39,56/1005	47,36/1203	8,54/217
18"/450	15,74/400	3,50/89	19,25/489	7,91/201	16,34/415	22,16/563	4,37/111	41,81/1062	21,65/550	17,72/450	42,87/1089	50,66/1287	8,54/217
20"/500	18,11/460	4,50/114,2	21,73/552	7,91/201	18,11/460	25,39/645	4,37/111	47,5/1207	21,65/550	17,72/450	47,87/1216	56,37/1432	11,33/288
24"/600	20,86/530	4,50/114,2	25,07/637	7,91/201	20,12/511	27,49/711	4,37/111	52,12/1324	21,65/550	17,72/450	52,48/1333	64,92/1649	11,33/288
30"/750	26,37/670	4,6/117	33,14/842	12,59/320	26,37/670	34,44/875	-	65,23/1657	-	17,72/450	-	76,06/1932	12,2/310
36"/900	31,88/810	4,6/117	38,18/970	12,59/320	31,49/800	40,55/1030	-	76,06/1932	-	25,59/650	-	88,85/2257	14,56/370

PNEUMATIC CYLINDER

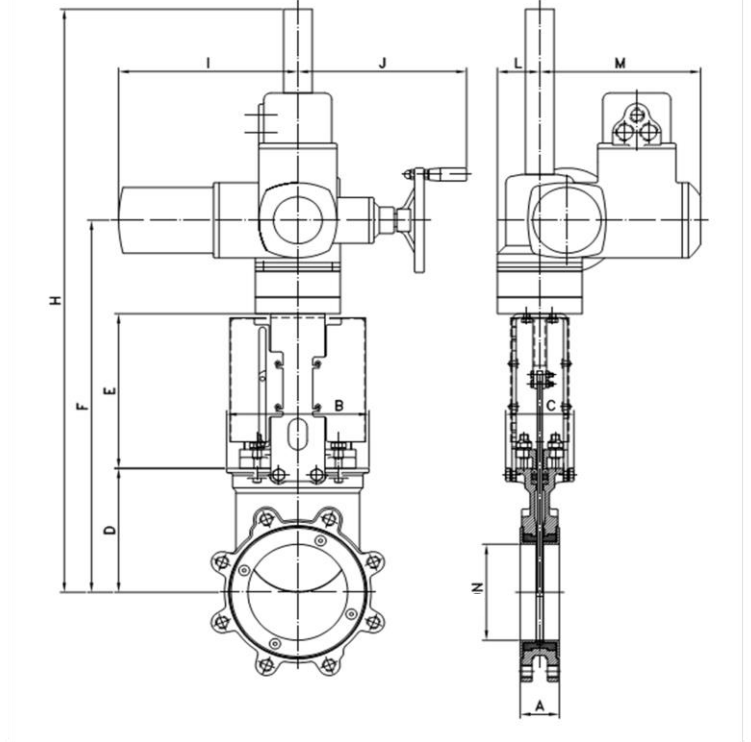
- The standard pneumatic actuator (double acting on-off cylinder) consists of:
  - $\varnothing \leq 12''/300\text{mm}$ : Aluminum barrels
  - $\varnothing \geq 14''/350\text{mm}$ : Composite barrels
  - Aluminum end covers
  - Stainless Steel (AISI 304) piston rod
  - Nitrile coated steel piston
- Available from DN 2''/50mm to DN 36''/900mm
- Air supply pressure: Actuator is sized considering 90 psi / 6 bar
- For valves installed in a horizontal position, we recommend U-type support plates and/or actuator support
- Options (on request):
  - Hard anodized barrel and covers
  - Stainless Steel barrel and covers
  - Over / Undersized cylinder
  - Manual override
  - Fail safe systems
  - Limit switches
- Instrumentation (on request):
  - Positioners
  - Solenoid valves
  - Flow regulators
  - Air preparation units



DN ("/mm)	N	A	B	C	D	E	F	G	H	Standard Cyl	TM
2"/50	2/50	1,88/47,8	4,92/125	4,13/105	4,13/105	5,07/129	7,00/178	4,52/115	16,22/412	C4"-2,44"/(100-62)	1/4" G
3"/80	2,9/75	2/50,8	6,06/154	4,13/105	4,68/119	6,37/162	8,31/211	4,52/115	19,37/492	C4"-3,74"/(100-95)	1/4" G
4"/100	3,8/97	2/50,8	6,88/175	4,13/105	5,59/142	7,36/187	9,09/231	4,52/115	22,04/560	C4"-4,52"/(100-115)	1/4" G
5"/125	4,76/121	2,25/57,2	7,08/180	4,13/105	6,49/165	8,30/211	10,67/271	5,51/140	25,47/647	C5"-5,63"/(125-143)	1/4" G
6"/150	5,78/147	2,25/57,2	8,46/215	4,13/105	7,48/190	9,33/237	11,65/296	5,51/140	28,46/723	C5"-6,61"/(125-168)	1/4" G
8"/200	7,63/194	2,74/69,8	10,23/260	4,80/122	9,44/240	12,16/309	14,09/358	6,88/175	35,70/907	C6.30"-8,66"/(160-220)	1/4" G
10"/250	9,4/239	2,74/69,8	13,33/338	4,80/122	11,41/290	13,58/345	16,93/430	8,66/220	41,92/1065	C8"-10,63"/(200-270)	3/8" G
12"/300	11,18/284	3/76,2	14,40/366	4,80/122	14,17/360	15,47/393	18,89/480	8,66/220	48,54/1233	C8"-12,60"/(200-320)	3/8" G
14"/350	12,67/322	3/76,2	16/400	7,75/197	12,60/320	18,07/459	21,61/549	10,90/277	52,28/1328	C10"-14,76"/(250-375)	3/8" G
16"/400	14,40/366	3,50/89	18,03/458	7,75/197	14,49/368	20,31/516	21,61/549	10,90/277	56,42/1433	C10"-16,73"/(250-425)	3/8" G
18"/450	15,74/400	3,50/89	19,25/489	10,62/270	16,34/415	21,61/549	26,77/680	15,04/382	64,72/1644	C12"-18,70"/(300-475)	1/2" G
20"/500	18,11/460	4,50/114,2	21,73/552	10,62/270	18,11/460	24,21/615	26,77/680	15,04/382	69,09/1755	C12"-20,67"/(300-525)	1/2" G
24"/600	20,86/530	4,50/114,2	25,07/637	10,62/270	20,12/511	27,04/687	32,67/830	15,04/382	79,84/2028	C12"-24,60"/(300-625)	1/2" G
30"/750	26,37/670	4,6/117	33,14/842	12,59/320	26,37/670	37/940	38,77/985	17,48/444	102,16/2595	C14"-30,71"/(350-780)	1/4" G
36"/900	31,88/810	4,6/117	38,18/970	12,59/320	31,49/800	43,3/1100	47,32/1202	20,27/515	122,12/3102	C16"-36,61"/(400-930)	1/4" G

**ELECTRIC ACTUATOR (Rising stem)**

- Consists of:
  - Electric motor
  - Rising stem
  - Motor support yoke  
(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 36"/900mm
- Wide range of types and makes available to meet customer's needs.

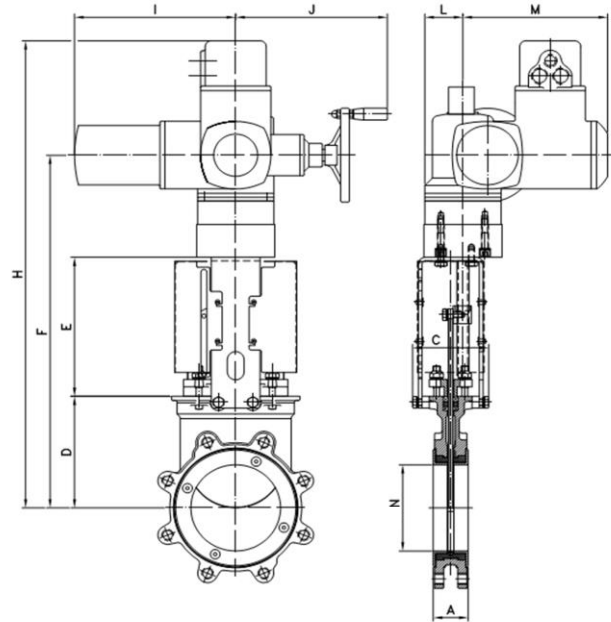


DN ("/mm)	N	A	B	C	D	E	F	ØG	H	I	J	L	M	Stem Ø x nut h	Torque (ft.lbs/Nm)
2"/50	2"/50	1,88/47,8	4,92/125	4,13/105	4,13/105	5,07/129	14,84/377	6,30/160	17,87/454	10,43/265	9,80/249	2,44/62	9,33/237	0,79 x 0,16/20 x 4	7,4/10
3"/80	2,9"/75	2/50,8	6,06/154	4,13/105	4,68/119	6,37/162	16,70/424	6,30/160	19,72/501	10,43/265	9,80/249	2,44/62	9,33/237	0,79 x 0,16/20 x 4	7,4/10
4"/100	3,8"/97	2/50,8	6,88/175	4,13/105	5,59/142	7,36/187	18,58/472	6,30/160	21,61/549	10,43/265	9,80/249	2,44/62	9,33/237	0,79 x 0,16/20 x 4	7,4/10
5"/125	4,76"/121	2,25/57,2	7,08/180	4,13/105	6,49/165	8,30/211	20,43/519	6,30/160	23,46/596	10,43/265	9,80/249	2,44/62	9,33/237	0,79 x 0,16/20 x 4	11,1/15
6"/150	5,78"/147	2,25/57,2	8,46/215	4,13/105	7,48/190	9,33/237	22,44/570	6,30/160	45,15/1147	10,43/265	9,80/249	2,44/62	9,33/237	0,79 x 0,16/20 x 4	14,8/20
8"/200	7,63"/194	2,74/69,8	10,23/260	4,80/122	9,44/240	12,16/309	27,71/704	6,30/160	50,86/1292	10,43/265	9,80/249	2,44/62	9,33/237	0,98 x 0,2/25 x 5	22,2/30
10"/250	9,4"/239	2,74/69,8	13,33/338	4,80/122	11,41/290	13,58/345	31,10/790	6,30/160	54,25/1378	10,43/265	9,80/249	2,44/62	9,33/237	0,98 x 0,2/25 x 5	33,3/45
12"/300	11,18"/284	3/76,2	14,40/366	4,80/122	14,17/360	15,47/393	34,76/883	7,87/200	57,91/1471	11,10/282	10,08/256	2,55/65	9,72/247	0,98 x 0,2/25 x 5	51,8/70
14"/350	12,67"/322	3/76,2	16/400	7,75/197	12,60/320	18,07/459	35,79/909	7,87/200	58,94/1497	11,14/283	10/254	2,55/65	9,76/248	1,38 x 0,24/35 x 6	81,4/110
16"/400	14,40"/366	3,50/89	18,03/458	7,75/197	14,49/368	20,31/516	42,32/1075	12,40/315	70,98/1803	15,31/389	13,22/336	3,58/91	11,25/286	1,38 x 0,24/35 x 6	118,4/160
18"/450	15,74"/400	3,50/89	19,25/489	10,62/270	16,34/415	21,61/549	44,84/1139	12,40/315	73,50/1867	15,31/389	13,22/336	3,58/91	11,25/286	1,38 x 0,24/35 x 6	140,6/190
20"/500	18,11"/460	4,50/114,2	21,73/552	10,62/270	18,11/460	24,21/615	52/1321	15,74/400	80,67/2049	15,31/389	13,34/339	3,58/91	11,25/286	1,38 x 0,24/35 x 6	199,8/270
24"/600	20,86"/530	4,50/114,2	25,07/637	10,62/270	20,12/511	27,04/687	56,85/1444	15,74/400	85,51/2172	15,31/389	13,34/339	3,58/91	11,25/286	1,57 x 0,27/40 x 7	333/450
30"/750	26,37/670	4,6/117	33,14/842	12,59/320	26,37/670	37/940	71,65/1820	19,68/500	115,55/2935	16,92/430	14,37/365	4,6/117	11,92/303	1,96 x 0,31/50 x 8	407/550
36"/900	31,88/810	4,6/117	38,18/970	12,59/320	31,49/800	43,3/1100	74,8/1900	19,68/500	126,96/3225	16,92/430	14,37/365	4,6/117	11,92/303	2,36 x 0,35/60 x 9	629/850



**ELECTRIC ACTUATOR (Non-rising stem)**



- Consists of:
  - Electric motor
  - Non-rising stem
  - Motor support yoke  
(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 36"/900mm
- Wide range of types and makes available to meet customer's needs

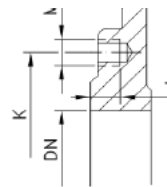
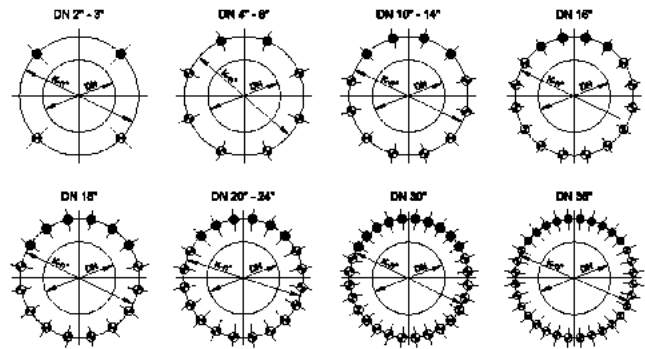



DN ("/mm)	N	A	B	C	D	E	F	ØG	H	I	J	L	M	StemØ x pitch	Torque (ft.LBS/Nm)
2"/50	2/50	1,88/47,8	4,92/125	4,13/105	4,13/105	5,07/129	14,84/377	6,30/160	21,33/547	10,43/265	9,80/249	2,44/62	9,33/237	0.79 x 0.16/20 x 4	7.4/10
3"/80	2,9/75	2/50,8	6,06/154	4,13/105	4,68/119	6,37/162	16,70/424	6,30/160	23,17/594	10,43/265	9,80/249	2,44/62	9,33/237	0.79 x 0.16/20 x 4	7.4/10
4"/100	3,8/97	2/50,8	6,88/175	4,13/105	5,59/142	7,36/187	18,58/472	6,30/160	25,27/642	10,43/265	9,80/249	2,44/62	9,33/237	0.79 x 0.16/20 x 4	7.4/10
5"/125	4,7"/121	2,25/57,2	7,08/180	4,13/105	6,49/165	8,30/211	20,43/519	6,30/160	27,16/690	10,43/265	9,80/249	2,44/62	9,33/237	0.79 x 0.16/20 x 4	11.1/15
6"/150	5,78/147	2,25/57,2	8,46/215	4,13/105	7,48/190	9,33/237	22,44/570	6,30/160	29,13/740	10,43/265	9,80/249	2,44/62	9,33/237	0.79 x 0.16/20 x 4	14.8/20
8"/200	7,63/194	2,74/69,8	10,23/260	4,80/122	9,44/240	12,16/309	27,71/704	6,30/160	34,44/875	10,43/265	9,80/249	2,44/62	9,33/237	0.98 x 0.2/25 x 5	22.2/30
10"/250	9,4/239	2,74/69,8	13,33/338	4,80/122	11,41/290	13,58/345	31,10/790	6,30/160	37,79/960	10,43/265	9,80/249	2,44/62	9,33/237	0.98 x 0.2/25 x 5	33.3/45
12"/300	11,18/284	3/76,2	14,40/366	4,80/122	14,17/360	15,47/393	34,76/883	7,87/200	41,45/1053	11,10/282	10,08/256	2,55/65	9,72/247	0.98 x 0.2/25 x 5	51.8/70
14"/350	12,67/322	3/76,2	16/400	7,75/197	12,60/320	18,07/459	35,79/909	7,87/200	42,48/1079	11,14/283	10/254	2,55/65	9,76/248	1.38 x 0.24/35 x 6	81.4/110
16"/400	14,40/366	3,50/89	18,03/458	7,75/197	14,49/368	20,31/516	42,32/1075	12,40/315	49,01/1245	15,31/389	13,22/336	3,58/91	11,25/286	1.38 x 0.24/35 x 6	118.4/160
18"/450	15,74/400	3,50/89	19,25/489	10,62/270	16,34/415	21,61/549	44,84/1139	12,40/315	51,53/1309	15,31/389	13,22/336	3,58/91	11,25/286	1.38 x 0.24/35 x 6	140.6/190
20"/500	18,11/460	4,50/114,2	21,73/552	10,62/270	18,11/460	24,21/615	52/1321	15,74/400	58,70/1491	15,31/389	13,34/339	3,58/91	11,25/286	1.38 x 0.24/35 x 6	199.8/270
24"/600	20,86/530	4,50/114,2	25,07/637	10,62/270	20,12/511	27,04/687	56,85/1444	15,74/400	63,54/1614	15,31/389	13,34/339	3,58/91	11,25/286	1.57 x 0.27/40 x 7	333/450
30"/750	26,37/670	4,6/117	33,14/842	12,59/320	26,37/670	37/940	71,65/1820	19,68/500	78,43/2005	16,92/430	14,37/365	4,6/117	11,92/303	1,96 x 0.31/50 x 8	407/550
36"/900	31,88/810	4,6/117	38,18/970	12,59/320	31,49/800	43,3/1100	74,80/1900	19,68/500	40,35/2295	16,92/430	14,37/365	4,6/117	11,92/303	2,36 x 0.35/60 x 9	629/850




**MODEL****BT****SERIES 22****FLANGE AND BOLTING DETAILS****ANSI B16.5 / B16.47, class 150**



DN	K	N°	M	T	 
2"	4 3/4"	4	5/8" - 11 UNC	7/16"	2 - 2
3"	6"	4	5/8" - 11 UNC	11/32"	2 - 2
4"	7 1/2"	8	5/8" - 11 UNC	11/32"	2 - 6
5"	8 1/2"	8	3/4" - 10 UNC	3/8"	2 - 6
6"	9 1/2"	8	3/4" - 10 UNC	3/8"	2 - 6
8"	11 3/4"	8	3/4" - 10 UNC	7/16"	2 - 6
10"	14 1/4"	12	7/8" - 9 UNC	18/32"	4 - 8
12"	17"	12	7/8" - 9 UNC	18/32"	4 - 8
14"	18 3/4"	12	1" - 8 UNC	1/2"	4 - 8
16"	21 1/4"	16	1" - 8 UNC	1/2"	4 - 12
18"	22 3/4"	16	1 1/8" - 7 UNC	18/32"	6 - 10
20"	25"	20	1 1/8" - 7 UNC	1"	6 - 14
24"	29 1/2"	20	1 1/4" - 7 UNC	7/8"	6 - 14
30"	36"	28	1 1/4" - 7 UNC	1 1/8"	10 - 18
36"	42 3/4"	32	1 1/2" - 6 UNC	1 1/4"	10 - 22



 BLIND TAPPED HOLES

 TAPPED THROUGH

**EN 1092-2 PN10**

DN	K	N°	M	T	 
50	125	4	M-16	11	2 - 2
80	160	8	M-16	9	2 - 6
100	180	8	M-16	9	2 - 6
125	210	8	M-16	10	2 - 6
150	240	8	M-20	10	2 - 6
200	295	8	M-20	12	2 - 6
250	350	12	M-20	14	4 - 8
300	400	12	M-20	14	4 - 8
350	460	16	M-20	14	6 - 10
400	515	16	M-24	14	4 - 12
450	565	20	M-24	17	6 - 14
500	620	20	M-24	24	6 - 14
600	725	20	M-27	22	6 - 14
900	1050	28	M-30	32	10 - 18

