

MODEL**CR****SERIES 70**

ROUND BY SQUARE PORT KNIFE GATE VALVE

The **CR(SER.70)** model knife gate is a wafer valve designed for handling difficult applications. This valve is suitable for using in recycling applications, like junk or sand traps of pulpers, high density cleaners (HDC)... or as silo outlet with solid material. The two piece body with round inlet and square outlet (larger than the inlet) ensures non-jamming.

Sizes: DN 4"/100mm to DN 24"/600mm (larger diameters on request).

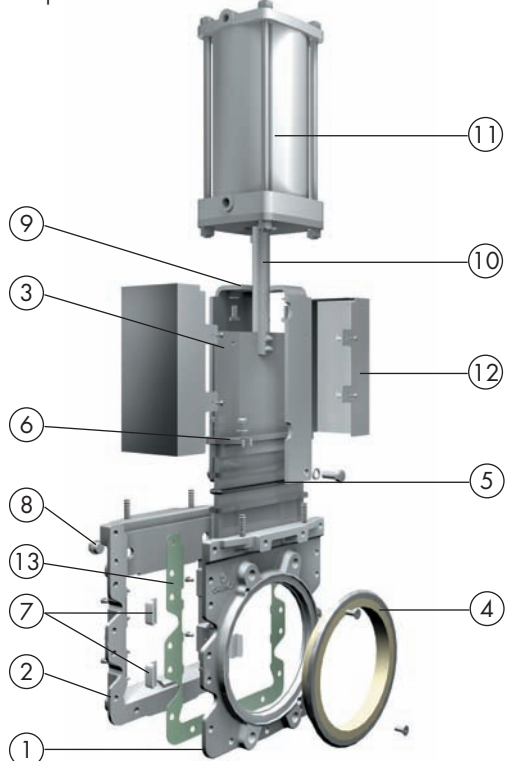
Working pressure: DN 4"/100mm to DN 16"/400mm: 100psi/(7 kg/cm²).
DN 20"/500mm to DN 24"/600: 60psi/(4 kg/cm²).

Standard flange connection: DIN PN 10 and ANSI B16.5 (class 150)
(on valve inlet only). Others: on request

Option: For the square outlet, **ORBINOX** can design a transition piece that passes from square section to round.

Directives: DIR 2006/42/CE (MACHINES)
DIR 97/23/CE (PED) Fluid: Group I(b), II (Cat. I, mod. A)
DIR 94/9/CE (ATEX) Please contact Orbinox for information and availability of categories and zones.

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 (0.6025) | CF8M (1.4408) |
| 2- Body | GJL 250 (0.6025) | CF8M (1.4408) |
| 3- Gate | 2205 (1.4462) | |
| 4- Sleeve | Polyurethane Rubber | |
| 5- Packing | Dynapack (Graphite impregnated PTFE and Aramid yarn combination with an elastomeric core). | |
| 6- Gland Follower | CF8M | |
| 7- Sliders | UHMWPE | |
| 8- Cap | Galv. Steel | AISI 316 (1.4404) |
| 9- Yoke | Carbon Steel - Epoxy Coated | |
| 10- Piston Rod | AISI 304 (1.4301) | |
| 11- Cylinder | Aluminium | |
| 12- Gate guards | AISI 304 (1.4301) | |
| 13- Gasket | Aramid fibres | |



Reserves the right to change specifications without notice.

OBX 02/13 Revision 0
CR(SER.70)-1

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

www.orbinox.com

MODEL

CR

SERIES 70



DESIGN FEATURES

BODY

Two-part bolted body, internally machined, with reinforced ribs in larger diameters for extra body strength.

Internal replaceable gate guides allow for smoother gate travel.

The square outlet (reinforced with sliders), prevents build-up of contaminants such as staples, wires...

For the most severe applications, the body has standard flush ports to flush out solids that may interfere with the gate travel.

GATE

Stainless Steel gate, oversized thickness and polished on both sides, increases its wearing resistance and prevents damage to the seat. This design also allows to perfectly cut through the fluid.

SEAT/POLYURETHANE SLEEVE

The seat is made of a highly resistant, long-lasting sleeve, made of Polyurethane with a stainless steel core.

This design allows for easy sleeve replacement and avoids gasket installation between the flange and the valve.

PACKING

Long-life packing with several graphite impregnated PTFE and Aramid yarn combination with an elastomeric core, with an easy access packing gland ensuring a tight seal. Long-life braided packing is available in a wide range of materials.

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



MODEL

CR

SERIES 70



OTHER OPTIONS

Other materials of construction:

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

Fabricated valves:

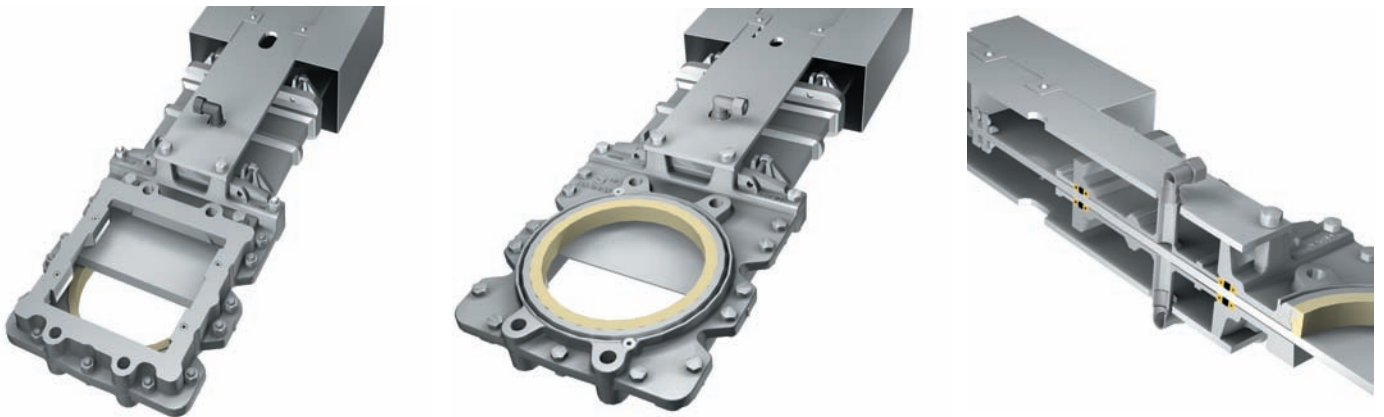
Orbinox is equipped for in house fabrication of special valves.

Depending on the design, diameter, pressures, construction material...

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...).



We recommend consulting with our technical department.

Reserves the right to change specifications without notice.

OBX 02/13 Revision 0
CR(SER.70)-3

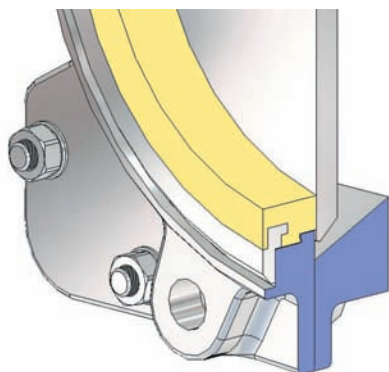
ORBINOX CANADA, ORBINOX USA, ORBINOX BRAZIL, ORBINOX SPAIN, ORBINOX UK, ORBINOX FRANCE, ORBINOX GERMANY, ORBINOX INDIA, ORBINOX CHINA, ORBINOX S.E.A.

www.orbinox.com

MODEL**CR****SERIES 70****TEMPERATURE CHART**

| SEAT / SLEEVES | | | | PACKING | | | | |
|-----------------------|----------------|------|--------------|---------------------------------|-----------------|------|--------|--|
| Material | Max.Temp. (F°) | (°C) | Applications | Material | Max. Temp. (F°) | (°C) | pH | |
| Polyurethane | 194 | 90 | General | Dynapack (DP) | 518 | 270 | 2 - 14 | |
| | | | | PTFE impregn. synth. fibre (ST) | 464 | 240 | 2 - 13 | |
| | | | | Braided PTFE (TH) | 500 | 260 | 0 - 14 | |

All of them are reinforced with a stainless steel core.
More details and other materials on request.

SEAT TYPE**POLYURETHANE**

The sealing of the **CR(SER.70)** valve is achieved through a high resistance elastomer, which improves the watertightness at both the flange and closing area. The sleeve has a stainless steel core with very good resistance to pressure and working conditions.

MODEL**CR****SERIES 70**

DOUBLE ACTING PNEUMATIC CYLINDER

- The standard pneumatic actuator (double acting on-off cylinder) consists of:

- DN 50-250: Aluminum barrels
- DN \geq 300: Composite barrels
- Stainless Steel (AISI 304) piston rod
- Nitrile coated steel piston

- Available in DN 4"/100mm to DN24"/600mm.

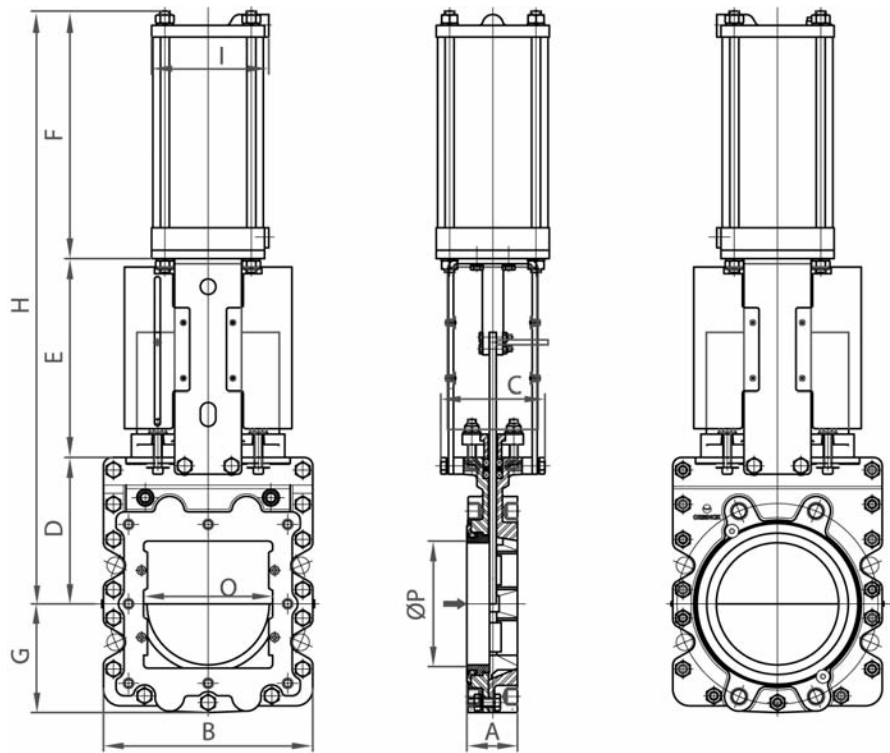
- Supply Pressure:
minimum 50psi/3.5 kg/cm² - maximum 150psi/10 kg/cm².
Actuator designed with 90psi/ 6 kg/cm² air supply.

- Reinforced design of support plates (U-type) is standard starting from DN 10"/250cm.

- Options (on request):
 - Hard anodized jacket and covers
 - Over / Undersized cylinder
 - Stainless Steel jacket and covers
 - Manual override
 - Fail safe system
 - Travel stops

- Instrumentation (on request):

- Positioners
- Solenoid valves
- Flow regulators
- Air preparation units



| DN ("/mm) | A | B | C | D | E | F | G | H | I | O | P | Weight (lbs./kg.) | Std.Cyl. | Connect |
|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-------------------|------------------------|---------|
| 4"/100 | 2.03/52 | 8.11/206 | 4/100 | 5.51/140 | 7.80/198 | 8.86/225 | 4.33/110 | 22.16/563 | 4.52/115 | 3.74/95 | 3.81/97 | 77/35 | C4"-4.52"/(100-115) | 1/4" G |
| 6"/150 | 2.36/60 | 9.92/252 | 4.25/108 | 6.89/175 | 9.33/237 | 11.65/296 | 5.11/130 | 27.87/708 | 5.51/140 | 5.71/145 | 5.75/146 | 172/78 | C5"-6.30"/(125-160) | 1/4" G |
| 8"/200 | 2.36/60 | 12.40/315 | 4.84/123 | 8.07/205 | 12.16/309 | 14.09/358 | 6.61/168 | 34.33/872 | 6.89/175 | 7.63/194 | 7.63/194 | 196/89 | C6.30"-8.66"/(160-220) | 3/8" G |
| 10"/250 | 2.72/69 | 15.28/388 | 7.28/185 | 9.84/250 | 14.80/376 | 16.85/428 | 7.63/194 | 41.49/1054 | 8.66/220 | 9.64/245 | 9.72/247 | 220/100 | C8"-10.62"/(200-270) | 3/8" G |
| 12"/300 | 3.07/78 | 16.85/428 | 7.28/185 | 11.42/290 | 16.77/426 | 18.81/478 | 9.13/232 | 47.00/1194 | 8.66/220 | 11.57/294 | 11.73/298 | 320/145 | C8"-12.60"/(200-320) | 3/8" G |
| 16"/400 | 3.50/89 | 22.04/560 | 10.63/270 | 15.43/392 | 22.60/574 | 23.58/599 | 11.49/292 | 61.61/1565 | 10.90/277 | 15.66/398 | 15.67/398 | 591/268 | C10"-16.73"/(250-425) | 3/8" G |
| 20"/500 | 4.49/114 | 25.47/647 | 10.63/270 | 17.71/450 | 26.57/675 | 27.95/710 | 13.34/339 | 72.24/1835 | 13.18/335 | 19.64/499 | 18.85/479 | 816/370 | C12"-20.67"/(300-525) | 1/2" G |
| 24"/600 | 4.49/114 | 29.41/747 | 10.63/270 | 20.08/510 | 30.51/775 | 31.89/810 | 15.63/397 | 82.48/2095 | 13.18/335 | 24/600 | 22.75/578 | 1118/507 | C12"-24.60"/(300-625) | 1/2" G |

OBX 02/13 Revision 0

CR(SER.70)-5

Reserves the right to change specifications without notice.

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

www.orbinox.com

MODEL

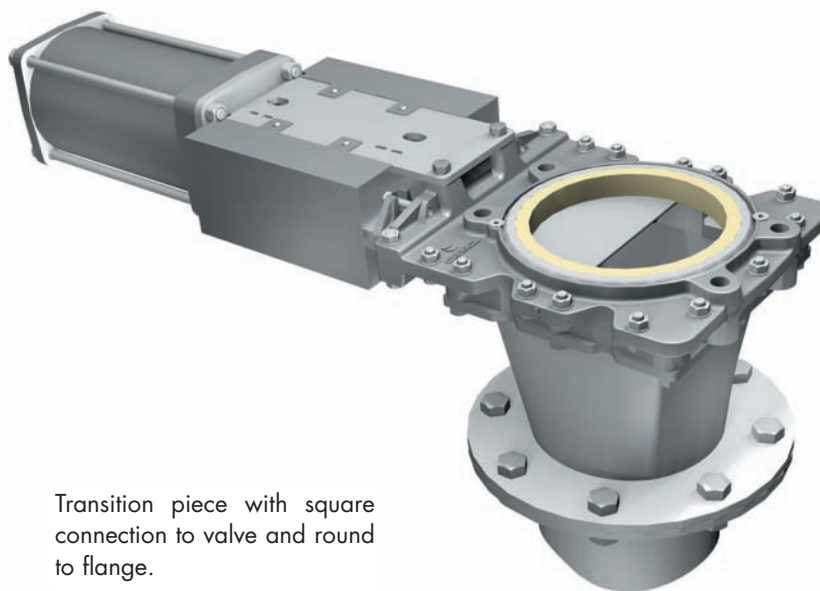
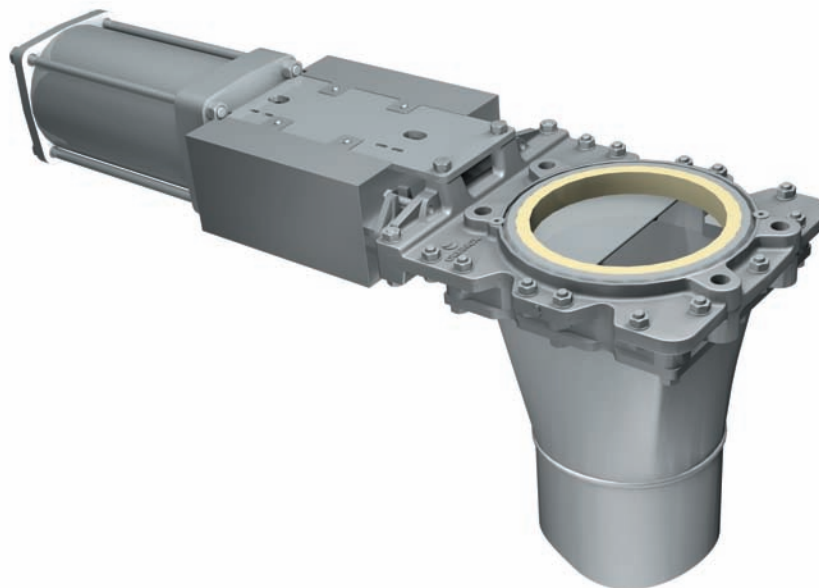
CR

SERIES 70



TRANSITION TYPES

- The CR(SER.70) valve can be supplied with a square to round transition piece, that connects the valve square outlet with the round flange or pipe.



Transition piece with square connection to valve and round to flange.

MODEL

CR

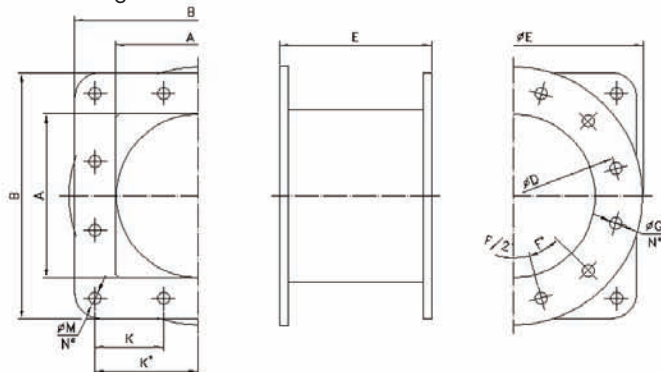
SERIES 70



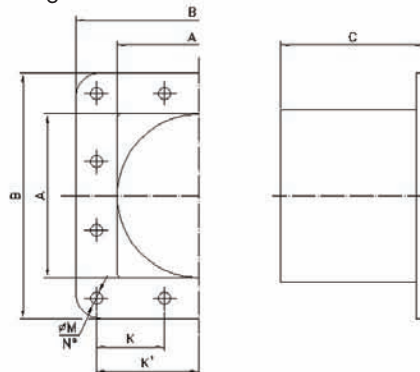
TRANSITION TYPES

Two transition types:

1.- Flange connection



2.- Welding connection



| DN(“/mm) | A | B | K | K' | ØM | Qty | FACE TO FACE | |
|----------|--------|-----------|------------|-------------|----------|-----|--------------|--------------------|
| | | | | | | | C(“/mm) | Transition + valve |
| 4/100 | 4/100 | 8.26/210 | 2.75/70 | 2.75/70 | 0.55 /14 | 8 | 4/100 | 5.98/152 |
| 6/150 | 6/150 | 10.23/260 | 3.74/95 | 3.74/95 | 0.55 /14 | 8 | 6/150 | 8.26/210 |
| 8/200 | 8/200 | 12.60/320 | 4.82/122.5 | 4.82/122.5 | 0.55/14 | 8 | 8/200 | 10.24/260 |
| 10/250 | 10/250 | 16/400 | 6/150 | 6/150 | 0.55 /14 | 8 | 10/250 | 12.55/319 |
| 12/300 | 12/300 | 18.50/470 | 4.88/124 | 7.32/186 | 0.55/14 | 12 | 10/250 | 12.91/328 |
| 16/400 | 16/400 | 22.83/580 | 6.06/154 | 9.09/231 | 0.70 /18 | 12 | 10/250 | 13.34/339 |
| 20/500 | 20/500 | 24/600 | 7.36/187 | 11.04/280.5 | 0.70 /18 | 12 | 12/300 | 16.30/414 |
| 24/600 | 24/600 | 28.35/720 | 6/220 | 12.99/330 | 0.78/20 | 12 | 12/300 | 16.30/414 |

Flange drilling dimensions

ANSI B16.5, class 150

| DN | Ø D | Ø E | F | ØG | Qty |
|-----|-------|-------|------|------|-----|
| 4" | 7.5 | 9 | 1.77 | 0.75 | 8 |
| 6" | 9.5 | 11 | 1.77 | 0.86 | 8 |
| 8" | 11.75 | 13.5 | 1.77 | 0.86 | 8 |
| 10" | 14.25 | 16 | 1.18 | 0.98 | 12 |
| 12" | 17 | 19 | 1.18 | 0.98 | 12 |
| 16" | 21.25 | 23.43 | 0.88 | 1.10 | 16 |
| 20" | 25 | 27.55 | 0.70 | 1.25 | 20 |
| 24" | 29.5 | 32. | 0.70 | 1.37 | 20 |

DIN PN10

| DN | Ø D | Ø E | F | ØG | Qty |
|-----|-----|-----|------|----|-----|
| 100 | 180 | 220 | 45 | 18 | 8 |
| 150 | 240 | 285 | 45 | 22 | 8 |
| 200 | 295 | 340 | 45 | 22 | 8 |
| 250 | 350 | 395 | 30 | 22 | 12 |
| 300 | 400 | 445 | 30 | 22 | 12 |
| 400 | 515 | 565 | 22.5 | 27 | 16 |
| 500 | 620 | 670 | 18 | 27 | 20 |
| 600 | 725 | 780 | 18 | 30 | 20 |

MODEL

CR

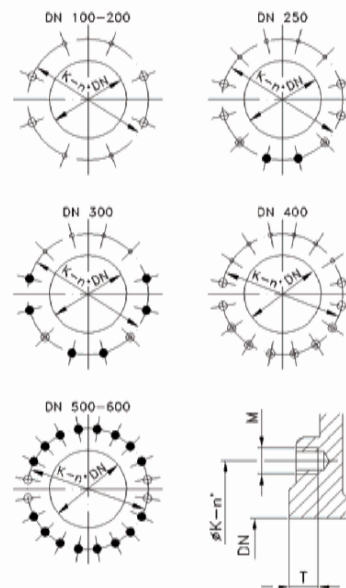
SERIES 70



FLANGE AND BOLTING DETAILS

ANSI B16.5, class 150

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



EN 1092-2 PN10

| DN | K | n° | M | T | | |
|-----|-----|----|------|----|--|--|
| 100 | 180 | 8 | M-16 | 11 | | |
| 150 | 240 | 8 | M-20 | 16 | | |
| 200 | 295 | 8 | M-20 | 16 | | |
| 250 | 350 | 12 | M-20 | 16 | | |
| 300 | 400 | 12 | M-20 | 16 | | |
| 400 | 515 | 16 | M-24 | 22 | | |
| 500 | 620 | 20 | M-24 | 22 | | |
| 600 | 725 | 20 | M-27 | 22 | | |

