

Knife gate valves

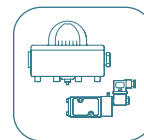
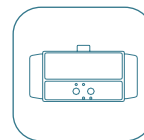
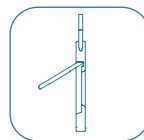
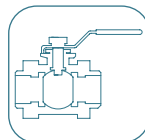
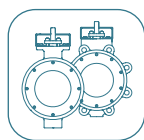
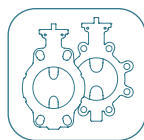


Fig.411

English



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General specifications, actuator types and accessories

General specifications

Nominal diameter:	DN50-DN2000
Standard differential pressure:	10 bar for DN50-DN250 6 bar for DN300-DN400 5 bar for DN450 4 bar for DN500-DN600 2 bar for DN700-DN1200 1 bar for DN1400-DN2000
Max. differential pressure:	10 bar for DN50-DN400 6 bar for DN450-DN600 4 bar for DN700-DN900 2 bar for DN1000-DN2000
Flange accommodation:	EN1092 PN10, PN16. ASME B16.5 Class150



Actuator types

Manual

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

Automatic

Electric
Pneumatic
Hydraulic

Accessories

Mechanical Stops
Actuator manual override
Positioners
Proximity Switches
Stem extensions
Locking device
Solenoid valves
Limit Switches
Floor stands

Design features

Design features

BODY:

Cast monoblock with raised face. Reinforced ribs in larger diameters for extra body strength.

Internal gate wedges and guides ensure tighter shut-off.

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

Internal design avoids 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.

SUPPORT PLATES :

Reinforced design and including visual position indication.

SEAT: (resilient)

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

EPDM as standard, but available in many different materials.

PACKING:

Long-life packing with PTFE+Silicon, with an easy access packing gland ensuring a tight seal.

Packing is available in a wide range of materials.

STEM:

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

For rising stem a protector tube is provided to ensure there is always enough space for the gate to open and protect the stem thread.

ACTUATORS:

All actuators supplied by Coreline are interchangeable, and supplied with an 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 Coreline cast iron and carbon steel valve bodies and components, make the valves corrosion resistant with a high quality finished surface.

GATE SAFETY PROTECTION:

Coreline automated valves are provided with gate protection guards in accordance with EU Safety Standards.

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



Other options and surface treatments

Other options

Bonnet (Fig.1)

Assures tight sealing 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

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

EXT (full lug design)

Modified version of the Fig 411 with full lug design for end of line applications.
Standard flange connection from DIN PN10, ANSI150, to AS "D". Sizes available up to DN1200.

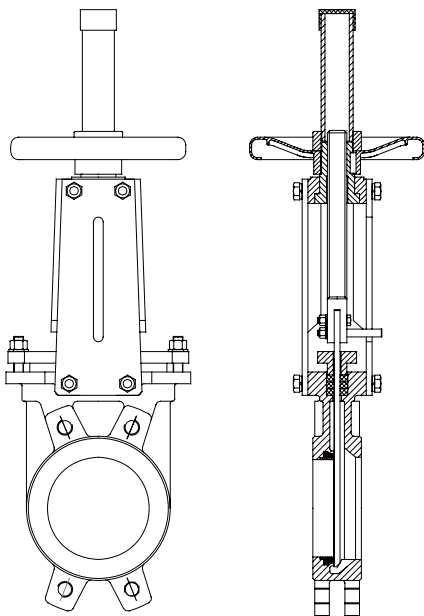


Fig.1

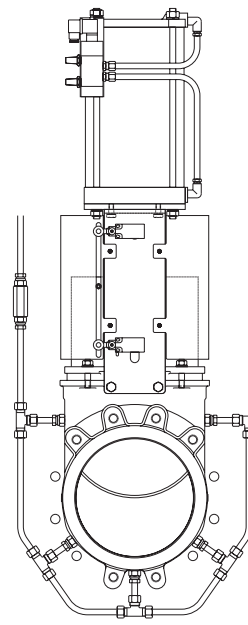


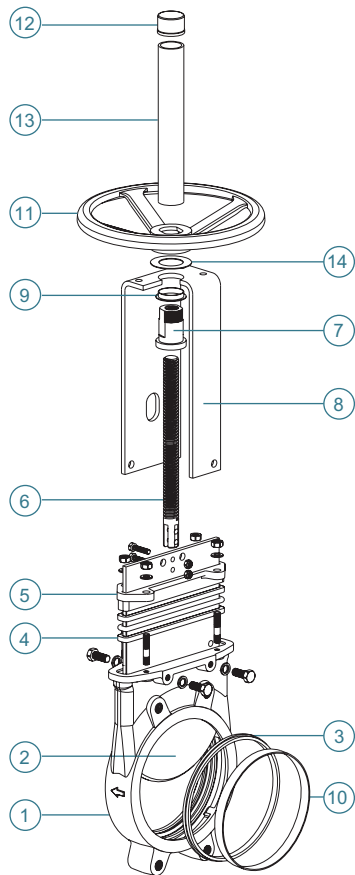
Fig.2

Surface treatments

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

At Coreline 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...).

Part list and material specification



No.	Part name	Material
1	Body	WCB, CF8, CF8M, 904L, CK20
2	Gate	SS304, SS316, 904L, SS310
3	Seat	NBR, EPDM, VITON, Silicon, PTFE, Metal to metal
4	Packing	PTFE impregn, Synth, Fiber (Braided PTFE, Graphite, Replaceable metal)
5	Gland	WCB, SS304, SS316
6	Stem	SS410, SS304, SS316, SS316L
7	Stem nut	Brass
8	Yoke	WCB, CF8, CF8M
9	Collar	Brass
10	Seat retainer ring	SS304, SS316
11	Hand wheel	Ductile iron
12	Cap	Plastic (Optional)
13	Stem protector	Carbon steel (Optional)
14	Thrust washer	Brass

Temperature chart and seat types

Temperature chart

Seat

Material	Max. temp. (°C)	Applications
Metal/Metal	>250	High temp, low tightness
EPDM	120	Acids, non mineral oils
Nitrile	85	Resistance to petroleum products
Viton	200	General chemical service High temperature
Silicone	250	Food service. / High temperature
PTFE	250	Corrosion resistance

* Other materials are available on request.

Packing

Material	Max. temp. (°C)	pH
Dry cotton (AS)	50	6 - 8
PTFE impregn. synth. fibre (ST)	240	2 - 13
Braided PTFE (TH)	260	0 - 14
Graphited (GR)	600	0 - 14
Ceramic fibre (FC)	1200	—

* All types include a standard O-ring (Same as seat material) except TH, GR and FC.

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.

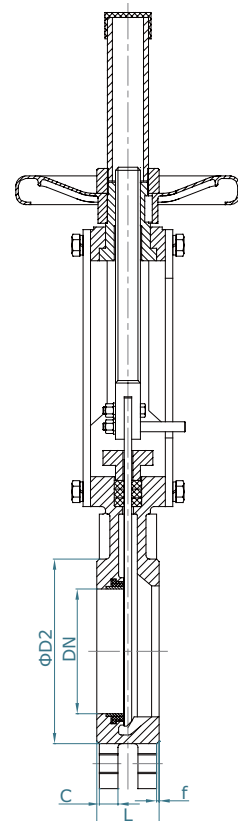
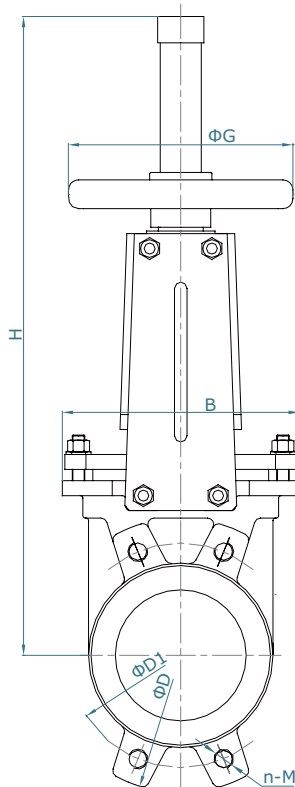
Face to face dimension increase:

DN 50 to DN 250 X = 9mm

DN 300 to DN 600 X = 12mm

Larger diameters on request.

Wafer knife gate valve - Handwheel and rising stem



DN	L	D	D1	D2	B	C	f	n-M	H	G	[kg]
50	40	165	125	95	136	16	2	4-M16	375	180	7
65	40	185	145	110	151	16	2	4-M16	420	180	8
80	50	200	160	127	170	17	2	8-M16	450	200	11
100	50	220	180	148	190	17	2	8-M16	512	200	12
125	50	250	210	174	212	17	2	8-M16	570	220	15
150	60	285	240	199	230	21	2	8-M20	665	250	21
200	60	340	295	250	286	21	2	8-M20	825	300	29
250	70	395	350	308	338	24	2	12-M20	1000	350	46
300	70	445	400	360	388	24	2	12-M20	1155	350	66
350	96	505	460	416	460	33	2	16-M20	1310	400	92
400	100	565	515	466	520	35	2	16-M24	1475	500	125

* Different pressure may cause different dimension of "D1".

Wafer knife gate valve - Pneumatic actuator

□ Air supply pressure: 3.5bar ~ 10bar

Below dimension is with 6bar air supply. If other air supply pressure, we can send dimensions on request.

□ Options:

Hard anodized jacket and covers

Stainless steel jacket and covers

Manual override

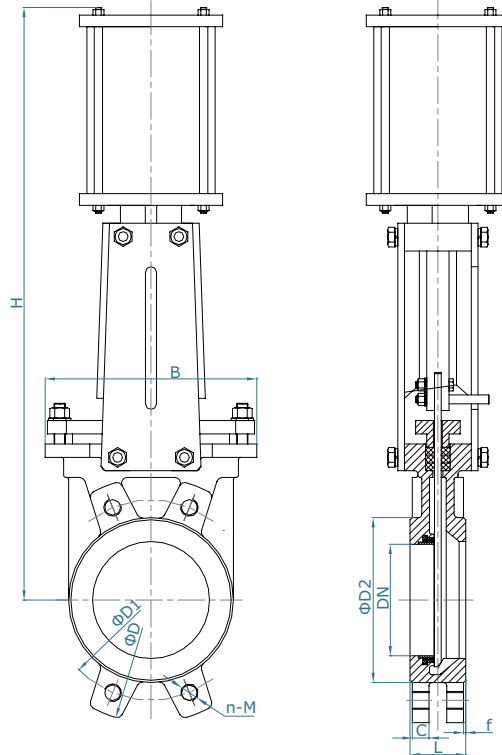
□ Accessories:

Positioners

Solenoid valves

Flow regulators

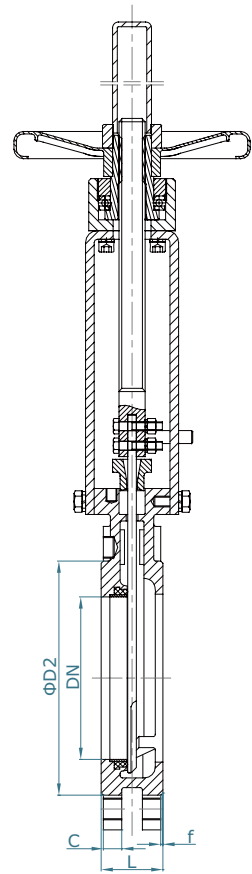
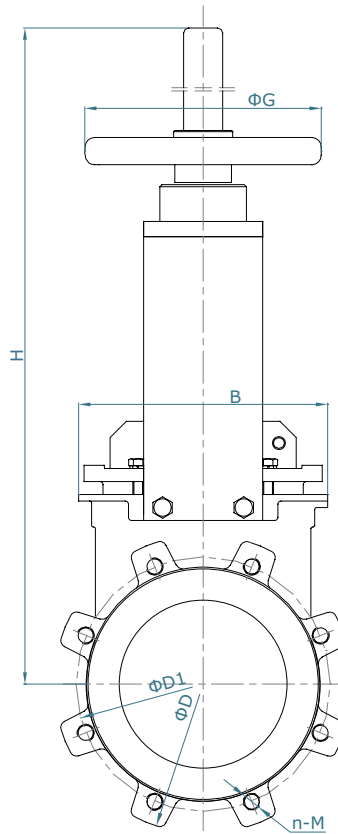
Air preparation units



DN	L	D	D1	D2	B	C	f	n-M	H	[kg]
50	40	165	125	95	136	16	2	4-M16	430	7
65	40	185	145	110	151	16	2	4-M16	460	9
80	50	200	160	127	170	17	2	8-M16	510	12
100	50	220	180	148	190	17	2	8-M16	570	14
125	50	250	210	174	212	17	2	8-M16	660	22
150	60	285	240	199	230	21	2	8-M20	720	25
200	60	340	295	250	286	21	2	8-M20	890	38
250	70	395	350	308	338	24	2	12-M20	1120	65
300	70	445	400	360	388	24	2	12-M20	1230	77
350	96	505	460	416	460	33	2	16-M20	1370	195
400	100	565	515	466	520	35	2	16-M24	1570	240
450	106	615	565	525	585	36	2	20-M24	1720	306
500	110	670	620	584	635	37	2	20-M24	1850	365
600	110	780	725	664	720	37	2	20-M27	2150	420

* Different pressure may cause different dimension of "D1".

Lug knife gate valve - Handwheel and rising stem



DN	L	D	D1 *	D2	B	C	f	n-M	H	G
50	48	152	120.5	91.9	136	16	1.6	4-M5/8"-11	375	180
65	48	178	139.5	104.8	151	16	1.6	4-M5/8"-11	420	180
80	51	190	152.5	127	170	17	1.6	4-M5/8"-11	450	200
100	51	229	190.5	157.2	190	17	1.6	8-M5/8"-11	512	200
125	57	254	216	185.4	212	17	1.6	8-M3/4"-10	570	220
150	57	280	241.5	215.9	230	21	1.6	8-M3/4"-10	665	250
200	70	343	298.5	269.7	286	21	1.6	8-M3/4"-10	825	300
250	70	406	362	323.8	338	24	1.6	12-M7/8"-9	1000	350
300	76	483	432	381	388	24	1.6	12-M7/8"-9	1155	350
350	76	533	476	412.7	460	33	1.6	12-M1"-8	1310	400
400	89	597	540	469.9	520	35	1.6	16-M1"-8	1475	500

* Different pressure may cause different dimension of "D1".

Lug knife gate valve - Pneumatic actuator

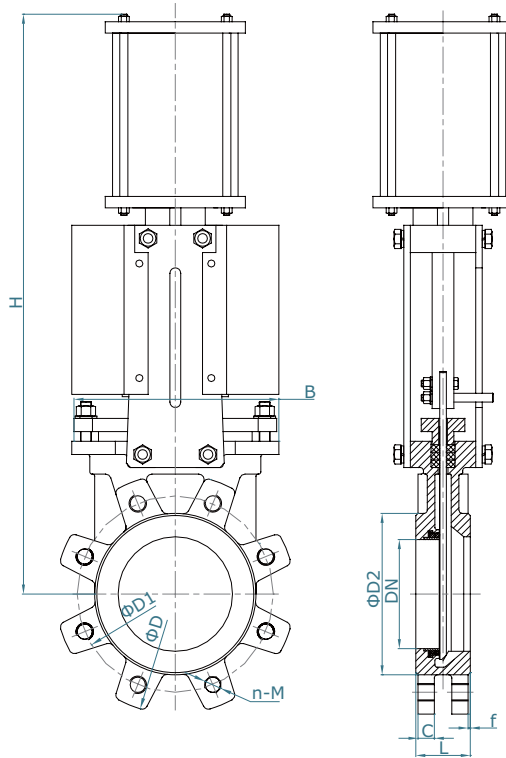
□ Air supply pressure: 3.5bar ~ 10bar
 Below dimension is with 6bar air supply. If other air supply pressure, we can send dimensions on request.

□ Options:

- Hard anodized jacket and covers
- Stainless steel jacket and covers
- Manual override

□ Accessories:

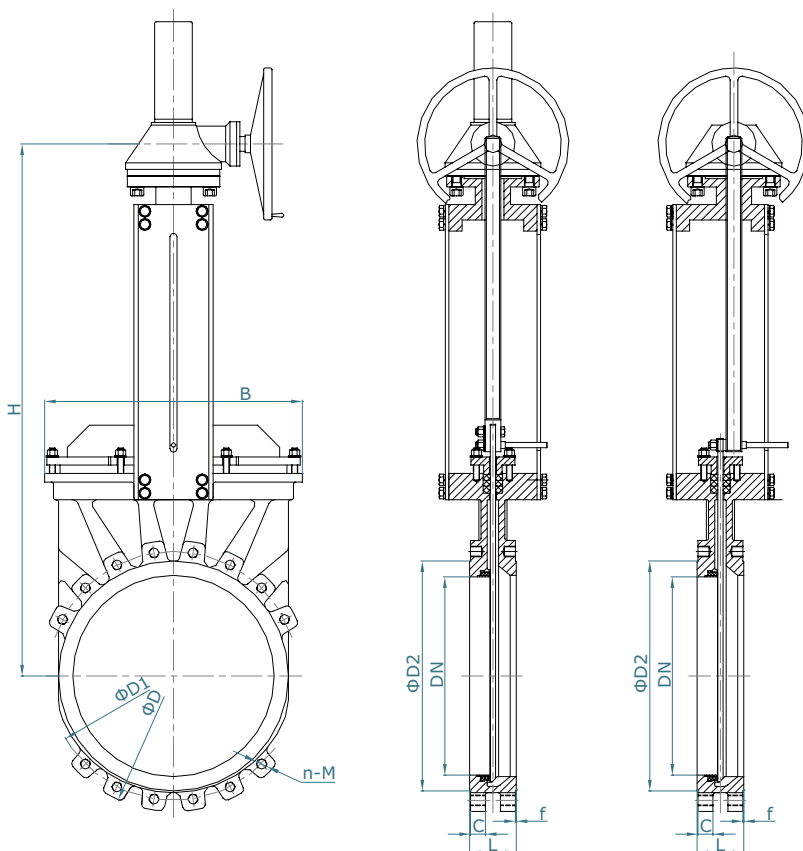
- Positioners
- Solenoid valves
- Flow regulators
- Air preparation units



DN	L	D	D1	D2	B	C	f	n-M	H
50	48	152	120.5	91.9	136	16	1.6	4-M5/8"-11	430
65	48	178	139.5	104.8	151	16	1.6	4-M5/8"-11	460
80	51	190	152.5	127	170	17	1.6	4-M5/8"-11	510
100	51	229	190.5	157.2	190	17	1.6	8-M5/8"-11	570
125	57	254	216	185.4	212	17	1.6	8-M3/4"-10	660
150	57	280	241.5	215.9	230	21	1.6	8-M3/4"-10	720
200	70	343	298.5	269.7	286	21	1.6	8-M3/4"-10	890
250	70	406	362	323.8	338	24	1.6	12-M7/8"-9	1120
300	76	483	432	381	388	24	1.6	12-M7/8"-9	1230
350	76	533	476	412.7	460	33	1.6	12-M1"-8	1370
400	89	597	540	469.9	520	35	1.6	16-M1"-8	1570
450	89	635	578	533.4	585	36	1.6	16-M1 1/8"-7	1720
500	114	700	635	584.2	635	37	1.6	20-M1 1/8"-7	1850
600	114	813	749.5	692.1	720	37	1.6	20-M1 1/4"-7	2150

* Different pressure may cause different dimension of "D1".

Wafer knife gate valve - Bevel gear



DN	L	D	D1	D2	B	C	f	n-M	H
450	106	615	565	525	585	36	2	20-M24	1170
500	110	670	620	574	635	37	2	20-M24	1280
600	110	780	725	664	720	37	2	20-M27	1485
700	110	895	840	1070	807	38	2	24-M27	1670
800	110	1015	950	955	922	38	2	24-M30	1880
900	110	1115	1050	955	1030	38	2	28-M30	2120
1000	110	1230	1160	1080	1140	38	2	28-M33	2270

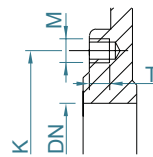
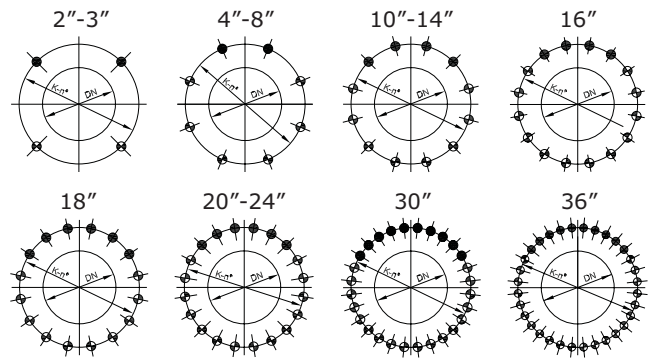
* Different pressure may cause different dimension of "D1".

** Larger dimensions above DN1000 are available on request.

Flange and bolting details

ANSI B16.5 Class150

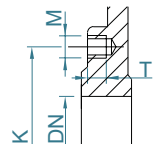
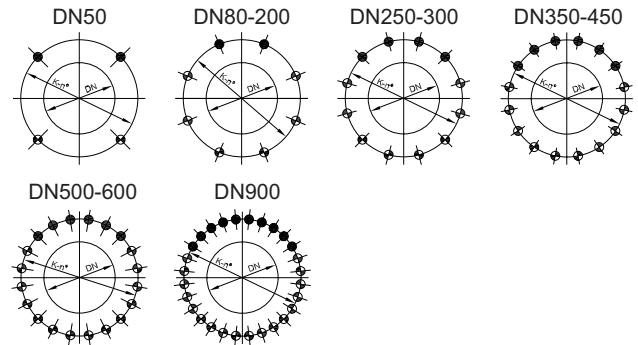
Inch	K	n°	M	T	◆ ◆
2"	4 3/4"	4	5/8" UNC	7/16"	2 - 2
3"	6"	4	5/8" UNC	11/32"	2 - 2
4"	7 1/2"	8	5/8" UNC	11/32"	2 - 6
5"	8 1/2"	8	3/4" UNC	3/8"	2 - 6
6"	9 1/2"	8	3/4" UNC	3/8"	2 - 6
8"	11 3/4"	8	3/4" UNC	15/32"	2 - 6
10"	14 1/4"	12	7/8" UNC	15/32"	4 - 8
12"	17"	12	7/8" UNC	15/32"	4 - 8
14"	18 3/4"	12	1" UNC	19/32"	4 - 8
16"	21 1/4"	16	1" UNC	19/32"	4 - 12
18"	22 3/4"	16	1 1/8" UNC	19/32"	6 - 10
20"	25"	20	1 1/8" UNC	7/8"	6 - 14
24"	29 1/2"	20	1 1/4" UNC	7/8"	6 - 14
30"	36"	28	1 1/4" UNC	1 1/8"	10 - 18
36"	42 3/4"	32	1 1/2" UNC	1 1/4"	10 - 22



- ◆ Blind tapped holes
- ◆ Tapped through

EN1092 PN10

DN	K	n°	M	T	◆ ◆
50	125	4	M16	11	2 - 2
80	160	8	M16	9	2 - 6
100	180	8	M16	9	2 - 6
125	210	8	M16	10	2 - 6
150	240	8	M20	10	2 - 6
200	295	8	M20	12	2 - 6
250	350	12	M20	12	4 - 8
300	400	12	M20	12	4 - 8
350	460	16	M20	15	6 - 10
400	515	16	M24	15	6 - 10
450	565	20	M24	15	6 - 10
500	620	20	M24	22	6 - 14
600	725	20	M27	22	6 - 14
900	1050	28	M30	32	10 - 18



- ◆ Blind tapped holes
- ◆ Tapped through

Coreline

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