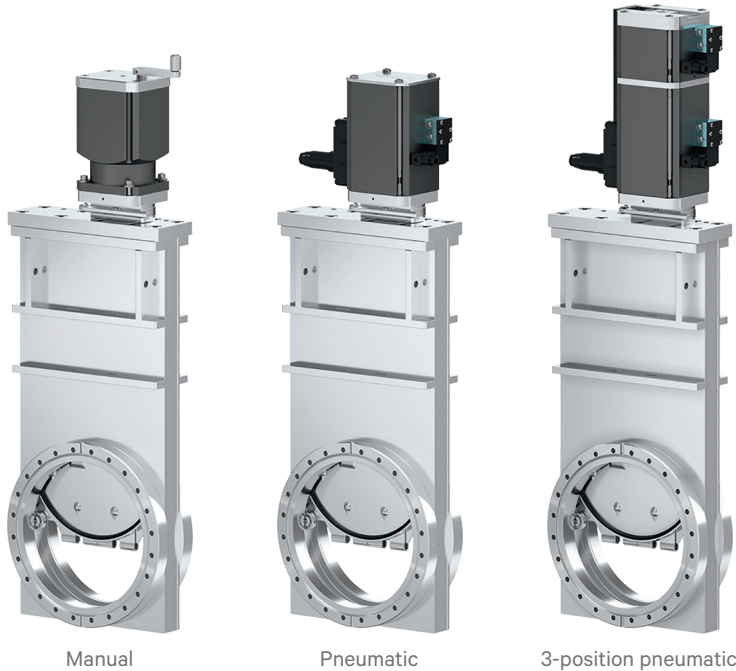


## UHV GATE VALVE, SERIES 10.8

The standard valve for UHV isolation applications in research and industry.



Free of lubricants

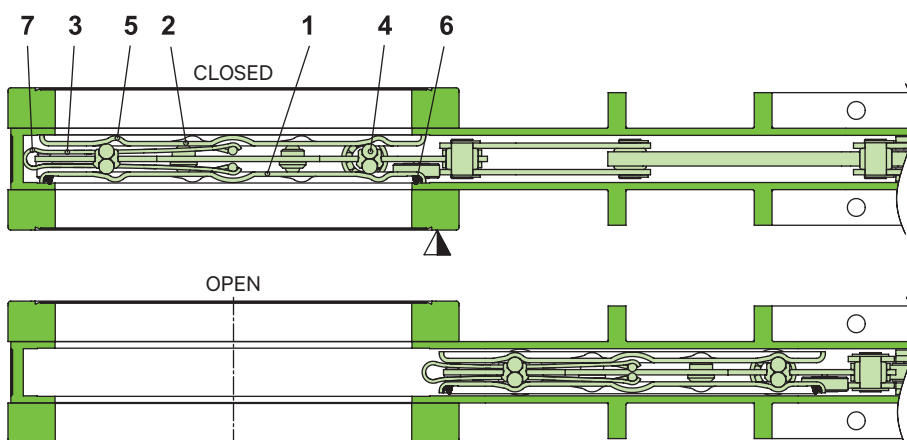
DN 63 – 200 with vulcanized gate seal  
(see glossary)

Easy maintenance

### MAIN FEATURES

Sizes	DN 63 – 320 mm (2½" – 12")
Actuators	manual with crank handle pneumatic: double acting 3-position pneumatic: double acting
Body material	stainless steel
Feedthrough	bellows
Standard flanges	ISO-F, CF-F, ASA-LP, JIS
Sealing technology	VATLOCK (see glossary)

### FUNCTIONAL PRINCIPLE



- 1 Gate
- 2 Counter-plate
- 3 Leaf springs
- 4 Ball pairs
- 5 Ball detents
- 6 Gate seal
- 7 Spring stop
- ▼ Valve seat side

## TECHNICAL DATA

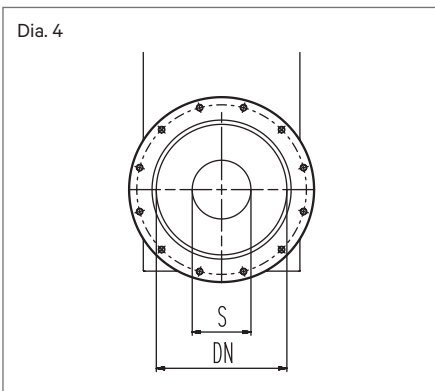
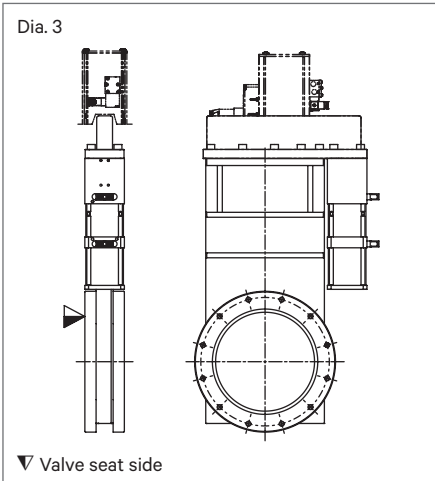
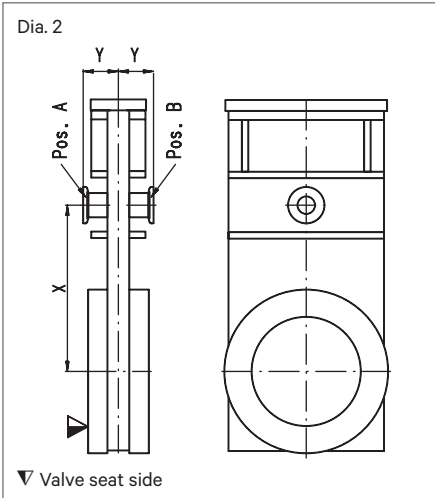
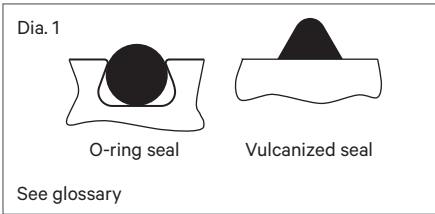
Leak rate	Valve body	$< 5 \cdot 10^{-10}$ mbar ls <sup>-1</sup>
	Valve seat	$< 1 \cdot 10^{-9}$ mbar ls <sup>-1</sup>
Pressure range	DN 63–200	1·10 <sup>-10</sup> mbar to 1.6 bar (abs)
	DN 250–320	1·10 <sup>-10</sup> mbar to 1.2 bar (abs)
Differential pressure on the gate	DN 63–200	≤ 1.6 bar
	DN 250–320	≤ 1.2 bar
Differential pressure at opening		≤ 30 mbar
Cycles until first service		50 000
Temperature <sup>1)</sup>	Valve body	≤ 250 °C open / ≤ 200 °C closed
	Manual actuator	≤ 250 °C
	Pneumatic actuator	≤ 200 °C
	Solenoid valve	≤ 50 °C
	Position indicator	≤ 80 °C
Heating and cooling rate		≤ 50 °C h <sup>-1</sup>
Material	Valve body	AISI 304 (1.4301)
	Mechanism DN 63–200	AISI 316L (1.4404)
	DN 250–320	AISI 304 (1.4301)
	Bellows	AISI 316L (1.4404, 1.4435)
Seal	Bonnet	metal
	Gate	FKM (Viton®)
Feedthrough		bellows
Mounting position		any
Solenoid valve		24 V DC, 5.4 W (others on request)
Position indicator: contact rating	Voltage	≤ 50 V AC/DC
	Current	≤ 1.2 A
Valve position indication		visual (mechanical)

			Valve with manual actuator			Valve with pneumatic actuator <sup>2)</sup>						
DN (nominal I.D.)		Conductance (molecular flow) (depending on A-dimension and flange type)	Turns per stroke	Weight		Compressed air min. – max. overpressure		Volume of pneumatic actuator		Closing or opening time	Weight	
mm	inch			kg	lbs	bar	psi	l	ft <sup>3</sup>		kg	lbs
63	2½	600	10	9	20	4–7	58–102	0.08	0.0028	1	9	20
80	3	765	10	9	20	4–7	58–102	0.08	0.0028	1	9	20
100	4	1740	13	11	24	4–7	58–102	0.11	0.0038	1.20	12	26
160	6	5880	17	16	35	4–7	58–102	0.14	0.0049	1.50	17	37
200	8	12200	17	29	64	4–7	58–102	0.25	0.0087	2	29	64
250	10	21690	40	51	112	5–7	73–102	0.35	0.0122	4	52	115
320	12	29130	45	89	196	5–7	73–102	0.48	0.0167	5	91	200

<sup>1)</sup> Maximum values: depending on operating conditions and sealing materials.

<sup>2)</sup> Technical data for valve with 3-position pneumatic actuator on request.

## OPTIONS, CUSTOMIZED SOLUTIONS



### ACTUATOR

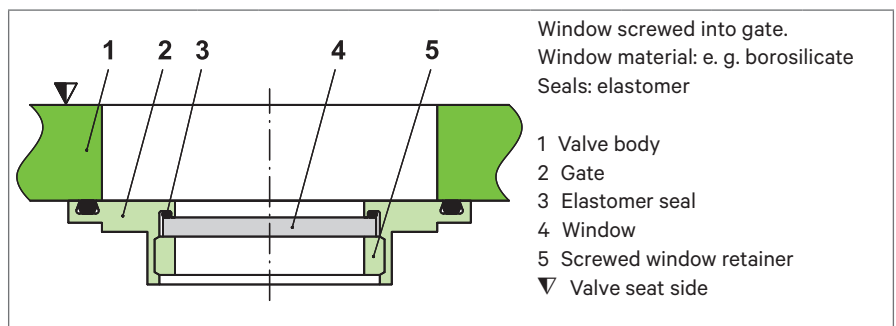
- Solenoid valve for impulse actuation:  
last valve position is maintained at power failure
- Solenoid valve separate, for external mounting
- Other solenoid valve voltage (standard 24VDC)
- Manual emergency operation on solenoid valve lockable
- Double position indicator (2 switches each for the positions «open» and «closed»)
- Bakeable position indicator:  
manual actuator bakeable to max. 250 °C, pneumatic actuator to max. 200 °C
- Position indicator with change-over contact

### VALVE

- Customer specified flanges with/without watercooling
- Other sealing materials
- O-ring seal in gate (Dia. 1) with DN 63, 100, 160, 200 instead of the vulcanized seal
- Ports for roughing (by-pass), venting or for gauges (Dia. 2): possible positions A and B

DN valve	mm inch	63 2½	80 3	100 4	160 6	200 8	250 10	320 12
Recommended port CF-F		40	40	40	40	40	40	40
X	mm inch	110 4.33	110 4.33	120 4.72	205 8.07	260 10.24	335 13.19	415 16.34
Y	mm inch	44 1.73	64 2.52	64 2.52	64 2.52	68 2.68	62 2.44	72 2.83
Other ports on request								

- Space saving compact version: DN 200 + 250 only (Dia. 3)
- Special gate for the installation of various foils
- Window in gate (Dia. 4) with DN 63, 100, 160, 200



DN valve	mm inch	63 2½	100 4	160 6	200 8			
Optically free diameter «S»	mm inch	40 1.57	43 1.69	68 2.67	90 3.54			
Thickness of glass	mm inch	4 0.15	4 0.15	6 0.23	6 0.23			

## SPARE PARTS

We can offer a wide variety of spare parts. Please contact us for details and an offer.

Thank you for specifying the fabrication number of the valve indicated on the identification tag when asking for spare parts.

## ACCESSORIES

- Flange connections for installation of the valve: see series 32 and 33
- Heater

## ORDERING INFORMATION FOR STANDARD VALVES

### Valve with manual actuator crank handle

DN		Ordering numbers				
mm	inch	ISO-F	CF-F metric threads	CF-F UNF threads	ASA-LP	JIS
63	2 ½	10836-PE01	10836-CE01	10836-UE01	10836-TE01	10836-JE01
80	3	10838-PE01	10838-CE01	10838-UE01	10838-TE01	10838-JE01
100	4	10840-PE01	10840-CE01	10840-UE01	10840-TE01	10840-JE01
160	6	10844-PE01	10844-CE01	10844-UE01	10844-TE01	10844-JE01
200	8	10846-PE01	10846-CE01	10846-UE01	10846-TE01	10846-JE01
250	10	10848-PE01	10848-CE01	10848-UE01	10848-TE01	10848-JE01
320	12	10850-PE01	on request	on request	10850-TE01	10850-JE01

with position indicator: 108 . . . E08

### Valve with pneumatic actuator double acting with solenoid valve with position indicator

DN		Ordering numbers (specify control voltage)				
mm	inch	ISO-F	CF-F metric threads	CF-F UNF threads	ASA-LP	JIS
63	2 ½	10836-PE44	10836-CE44	10836-UE44	10836-TE44	10836-JE44
80	3	10838-PE44	10838-CE44	10838-UE44	10838-TE44	10838-JE44
100	4	10840-PE44	10840-CE44	10840-UE44	10840-TE44	10840-JE44
160	6	10844-PE44	10844-CE44	10844-UE44	10844-TE44	10844-JE44
200	8	10846-PE44	10846-CE44	10846-UE44	10846-TE44	10846-JE44
250	10	10848-PE44	10848-CE44	10848-UE44	10848-TE44	10848-JE44
320	12	10850-PE44	on request	on request	10850-TE44	10850-JE44

without solenoid valve, without position indicator: 108 . . . E14

without solenoid valve, with position indicator: 108 . . . E24

with solenoid valve, without position indicator: 108 . . . E34 (specify control voltage)

### Valve with 3-position pneumatic actuator double acting with solenoid valve with position indicator

DN		Ordering numbers (specify control voltage)				
mm	inch	ISO-F	CF-F metric threads	CF-F UNF threads	ASA-LP	JIS
63	2 ½	10836-PE48	10836-CE48	10836-UE48	10836-TE48	10836-JE48
80	3	10838-PE48	10838-CE48	10838-UE48	10838-TE48	10838-JE48
100	4	10840-PE48	10840-CE48	10840-UE48	10840-TE48	10840-JE48
160	6	10844-PE48	10844-CE48	10844-UE48	10844-TE48	10844-JE48
200	8	10846-PE48	10846-CE48	10846-UE48	10846-TE48	10846-JE48
250	10	10848-PE48	10848-CE48	10848-UE48	10848-TE48	10848-JE48
320	12	10850-PE48	on request	on request	10850-TE48	10850-JE48

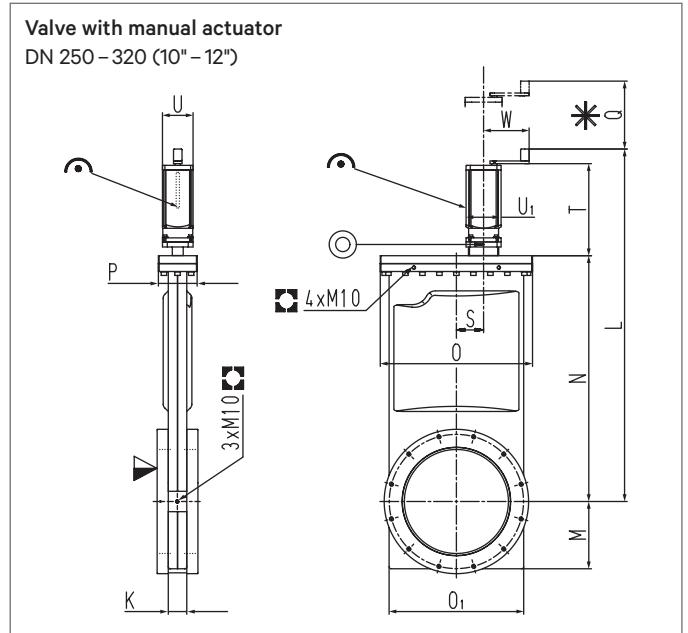
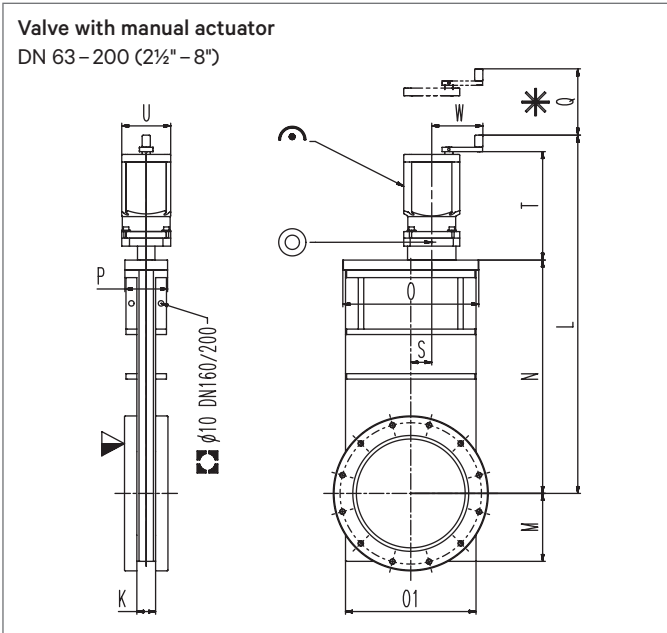
without solenoid valve, with position indicator: 108 . . . E28

## ORDERING INFORMATION FOR VALVES WITH OPTIONS

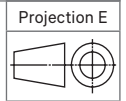
Basic ordering number plus «-X»: -X to be specified

Example: 10846-CE44-X, X = port CF-F 40 in position A

## MAIN DIMENSIONS



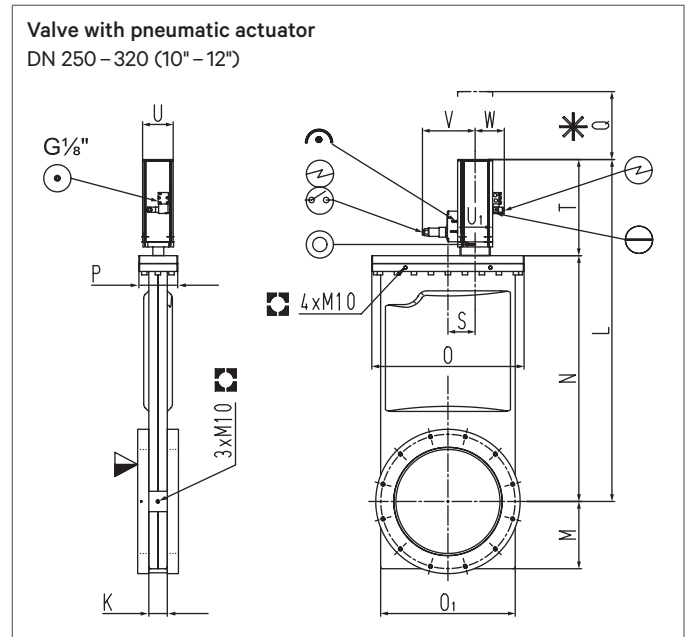
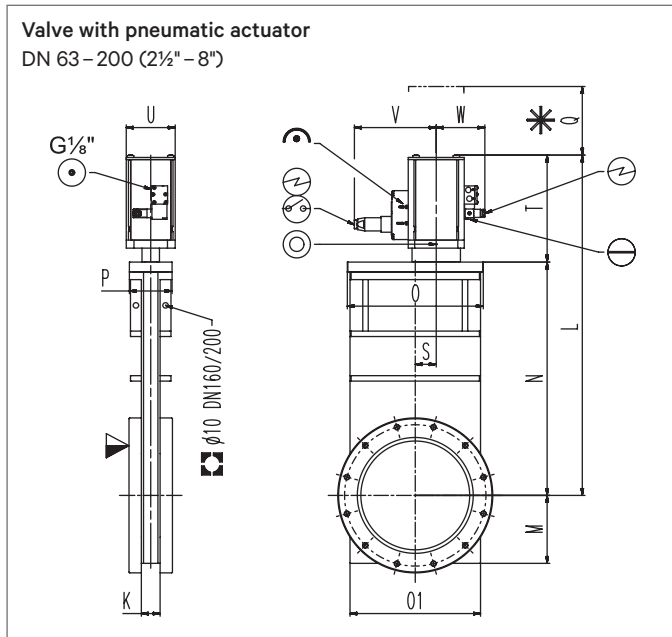
- ▼ Valve seat side
- \* Required for dismantling
- ⤴ Mechanical position indication
- ⊙ Leak detection hole
- ◻ For attachment



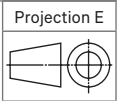
Flange dimensions: see pages 50 – 51

DN	mm	63	80	100	160	200	250	320
	inch	2½	3	4	6	8	10	12
K	mm	27	27	27	27	34.50	41	54
	inch	1.06	1.06	1.06	1.06	1.36	1.61	2.13
L	mm	406	421	461	551	660	841	1038
	inch	15.98	16.57	18.15	21.69	25.98	33.11	40.87
M	mm	57	57	73	99	125	160	198
	inch	2.24	2.24	2.87	3.90	4.92	6.30	7.80
N	mm	191	205	246	336	430	559	724
	inch	7.52	8.07	9.68	13.23	16.93	22.01	28.50
O	mm	115	115	145	200	250	344	448
	inch	4.53	4.53	5.71	7.87	9.84	13.54	17.64
O1	mm	112	112	143	192	240	321	396
	inch	4.41	4.41	5.63	7.56	9.45	12.64	15.59
P	mm	70	70	70	70	80	80	114
	inch	2.76	2.76	2.76	2.76	3.15	3.15	4.49
Q	mm	180	180	220	290	350	450	560
	inch	7.09	7.09	8.66	11.42	13.78	17.72	22.05
S	mm	11	11	9	25	38.50	65	80
	inch	0.43	0.43	0.35	0.98	1.52	2.56	3.15
T	mm	185	185	185	185	195	239	271
	inch	7.28	7.28	7.28	7.28	7.68	9.41	10.67
U	mm	70	70	70	70	90	90	90
	inch	2.76	2.76	2.76	2.76	3.54	3.54	3.54
U1	mm	83	83	83	83	103	103	103
	inch	3.27	3.27	3.27	3.27	4.06	4.06	4.06
W	mm	76	76	76	76	94	134	134
	inch	2.99	2.99	2.99	2.99	3.70	5.28	5.28

## MAIN DIMENSIONS



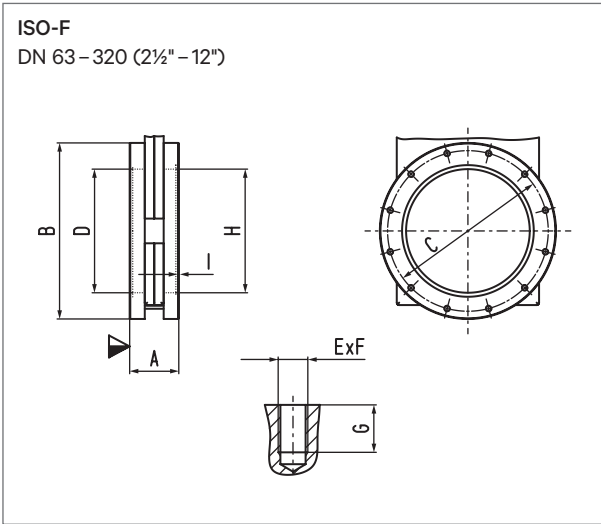
- ▼ Valve seat side
- \* Required for dismantling
- ⊕ Compressed air connection
- ⊖ Electrical connection
- ↻ Mechanical position indication
- ⊗ Position indicator
- ⊙ Leak detection hole
- ⊖ Emergency operation
- ⊠ For attachment



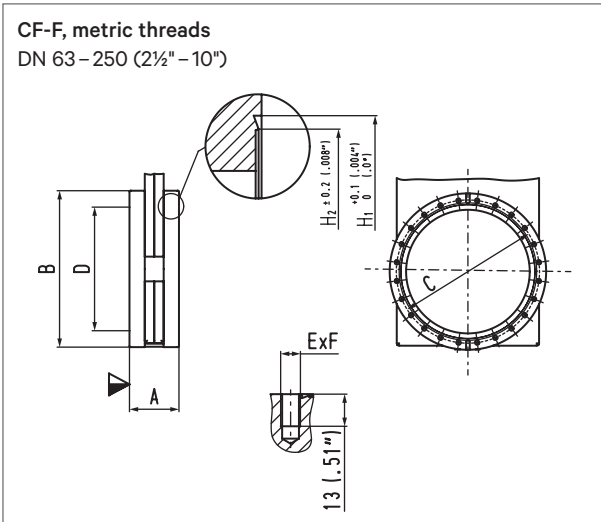
Flange dimensions: see pages 50 – 51

DN	mm	63	80	100	160	200	250	320
	inch	2½	3	4	6	8	10	12
K	mm	27	27	27	27	34.50	41	54
	inch	1.06	1.06	1.06	1.06	1.36	1.61	2.13
L	mm	342	358	414	521	626	796	1010
	inch	13.46	14.07	16.30	20.51	24.65	31.34	39.76
M	mm	57	57	73	99	120	161	198
	inch	2.24	2.24	2.87	3.90	4.73	6.34	7.80
N	mm	191	205	246	336	429	558	723
	inch	7.52	8.07	9.68	13.23	16.89	21.97	28.46
O	mm	115	115	145	200	250	344	448
	inch	4.53	4.53	5.71	7.87	9.84	13.54	17.64
O1	mm	112	112	143	192	230	321	396
	inch	4.41	4.41	5.63	7.56	9.06	12.64	15.59
P	mm	70	70	70	70	80	80	114
	inch	2.76	2.76	2.76	2.76	3.15	3.15	4.49
Q	mm	180	180	220	290	350	450	560
	inch	7.09	7.09	8.66	11.42	13.78	17.72	22.05
S	mm	11	11	9	25	38.50	65	80
	inch	0.43	0.43	0.35	0.98	1.52	2.44	3.15
T	mm	151	151	168	185	197	238	287
	inch	5.94	5.94	6.61	7.28	7.76	9.37	11.30
U	mm	70	70	70	70	90	90	90
	inch	2.76	2.76	2.76	2.76	3.54	3.54	3.54
U1	mm	83	83	83	83	103	103	103
	inch	3.27	3.27	3.27	3.27	4.06	4.06	4.06
V	mm	145	145	145	145	150	150	150
	inch	5.71	5.71	5.71	5.71	5.91	5.91	5.91
W	mm	80	80	80	80	89	89	89
	inch	3.15	3.15	3.15	3.15	3.50	3.50	3.50

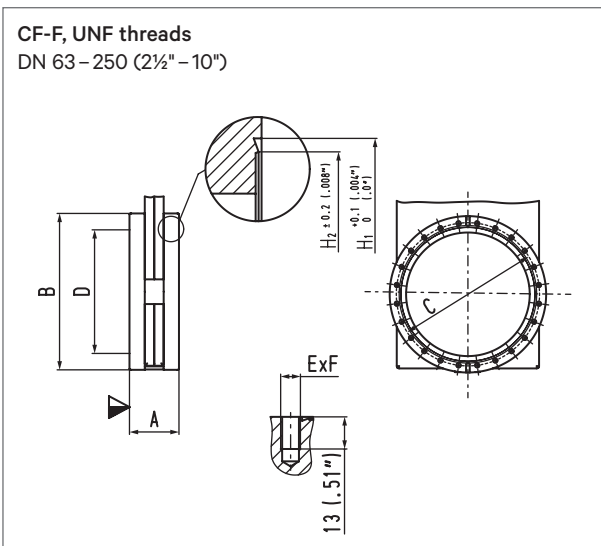
## FLANGE DIMENSIONS



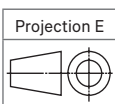
DN	mm	63	80	100	160	200	250	320
	inch	2½	3	4	6	8	10	12
A	mm	70	70	70	70	80	100	120
	inch	2.76	2.76	2.76	2.76	3.15	3.94	4.72
B	mm	130	145	165	225	285	350	425
	inch	5.12	5.71	6.50	8.86	11.22	13.78	16.73
C	mm	110	125	145	200	260	310	395
	inch	4.33	4.92	5.71	7.87	10.24	12.20	15.55
D	mm	70	76	100	150	200	261	306
	inch	2.76	2.99	3.94	5.91	7.87	10.28	12.05
E × F		4 × M8	8 × M8	8 × M8	8 × M10	12 × M10	12 × M10	12 × M12
G	mm	13	13	13	13	15	15	18
	inch	0.51	0.51	0.51	0.51	0.59	0.59	0.71
H	mm	-	83	102	153	213	-	318
	inch	-	3.27	4.02	6.02	8.39	-	12.52
I	mm	-	3	3	5	5	-	5
	inch	-	0.12	0.12	0.20	0.20	-	0.20



DN	mm	63	80	100	160	200	250	
	inch	2½	3	4	6	8	10	
O.D.	inch	4½	4¾	6	8	10	12	
A	mm	70	70	70	70	80	100	
	inch	2.76	2.76	2.76	2.76	3.15	3.94	
B	mm	113.50	117.50	151.60	202.40	253.20	350	
	inch	4.47	4.63	5.97	7.97	9.97	13.78	
C	mm	92.10	102.40	130.20	181	231.80	284	
	inch	3.63	4.03	5.13	7.13	9.13	11.18	
D	mm	70	76	100	150	200	254	
	inch	2.76	2.99	3.94	5.91	7.87	10.00	
E × F		8 × M8	10 × M8	16 × M8	20 × M8	24 × M8	32 × M8	
H1	mm	82.50	91.65	120.70	171.45	222.40	273.15	
	inch	3.25	3.61	4.75	6.75	8.76	10.75	
H2	mm	77.40	86.30	115.50	166	217	267	
	inch	3.05	3.40	4.55	6.54	8.54	10.51	



DN	mm	63	80	100	160	200	250 <sup>1)</sup>	250 <sup>2)</sup>
	inch	2½	3	4	6	8	10	10
O.D.	mm							
	inch	4½	4¾	6	8	10	12 <sup>1)</sup>	13¼ <sup>2)</sup>
A	mm	70	70	70	70	80	100	100
	inch	2.76	2.76	2.76	2.76	3.15	3.94	3.94
B	mm	113.50	117.50	151.60	202.40	253.20	350	350
	inch	4.47	4.63	5.97	7.97	9.97	13.78	13.78
C	mm	92.10	102.40	130.20	181	231.80	284	306.30
	inch	3.63	4.03	5.13	7.13	9.13	11.18	12.06
D	mm	70	76	100	150	200	254	254
	inch	2.76	2.99	3.94	5.91	7.87	10.00	10.00
E × F		8 × 5/16"	10 × 5/16"	16 × 5/16"	20 × 5/16"	24 × 5/16"	32 × 5/16"	30 × 3/8"
		24 UNF	24 UNF	24 UNF	24 UNF	24 UNF	24 UNF	24 UNF
H1	mm	82.50	91.65	120.70	171.45	222.40	273.15	294.64
	inch	3.25	3.61	4.75	6.75	8.76	10.75	11.60
H2	mm	77.40	86.30	115.50	166	217	267	288.30
	inch	3.05	3.40	4.55	6.54	8.54	10.51	11.35



▼ Valve seat side

<sup>1)</sup> VAT standard O.D. 12"

<sup>2)</sup> Option O.D. 13¼": Ordering No. 10848-UE44-X, X = O.D. 13¼"

## FLANGE DIMENSIONS

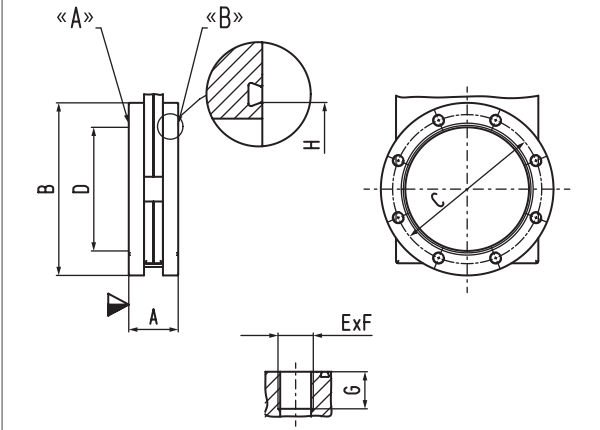
### ASA-LP

DN 63 – 320 (2½" – 12")

with or without O-ring groove

For orders with O-ring groove specify:

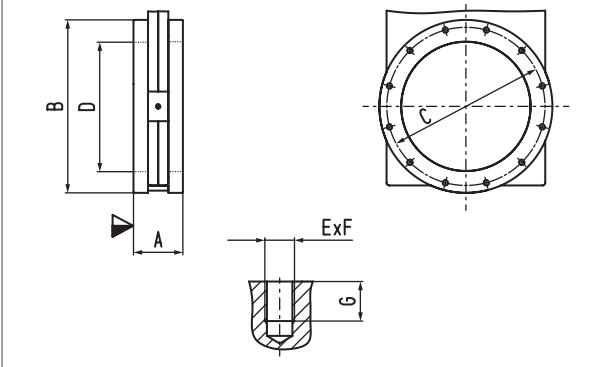
«A», «B» or «A + B»



DN	mm inch	63 2½	80 3	100 4	160 6	200 8	250 10	320 12
ASA-LP		2	–	3	4	6	8	10
A	mm inch	70 2.76	70 2.76	70 2.76	70 2.76	80 3.15	100 3.94	120 4.72
B	mm inch	152.40 6.00	177.80 7.00	190.50 7.50	225 8.86	279.40 11.00	350 13.78	425 16.73
C	mm inch	120.70 4.75	139.70 5.50	152.40 6.00	190.50 7.50	241.30 9.50	298.50 11.75	362 14.25
D	mm inch	70 2.76	76 2.99	100 3.94	150 5.91	200 7.87	254 10.00	300 11.81
E × F		4 × ⅜" 16 UNC	4 × ⅜" 16 UNC	8 × ⅜" 16 UNC	8 × ⅜" 16 UNC	8 × ¾" 10 UNC	8 × ¾" 10 UNC	12 × ¾" 10 UNC
G	mm inch	15 0.59	15 0.59	15 0.59	15 0.59	19 0.75	19 0.75	19 0.75
H	mm inch	88.90 3.50	88.90 3.50	120.65 4.75	158.75 6.25	206.40 8.13	266.70 10.50	317.50 12.50
O-ring I.D. × D	mm inch	88.49 × 3.53 3.48 × .139	88.49 × 3.53 3.48 × .139	120.24 × 3.53 4.73 × .139	158.34 × 3.53 6.23 × .139	202.79 × 3.53 7.98 × .139	266.29 × 3.53 10.48 × .139	316.87 × 7.00 12.47 × .275

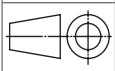
### JIS B 2290: 1998 / ISO 1609

DN 65 – 300 (2½" – 12")



DN	mm inch	63 2½	80 3	100 4	150 6	200 8	250 10	300 12
A	mm inch	70 2.76	70 2.76	70 2.76	70 2.76	80 3.15	100 3.94	120 4.72
B	mm inch	136 5.35	165 6.50	185 7.28	235 9.25	300 11.81	350 13.78	425 16.73
C	mm inch	120 4.72	135 5.31	160 6.30	210 8.27	270 10.63	320 12.60	370 14.57
D	mm inch	70 2.76	76 2.99	100 3.94	150 5.91	200 7.87	261 10.28	306 12.05
E × F		4 × M10	8 × M10	8 × M10	8 × M10	8 × M12	12 × M12	12 × M12
G	mm inch	13 0.51	13 0.51	13 0.51	13 0.51	15 0.59	15 0.59	16 0.63

Projection E



▽ Valve seat side