

LOW PARTICLE GATE VALVE, SERIES 15.0 / 15.1 / 15.2

15.0 vacuum / 15.1 HV / 15.2 UHV isolation valve for extremely particle and shock sensitive vacuum systems.



Very low shock

Low particle count

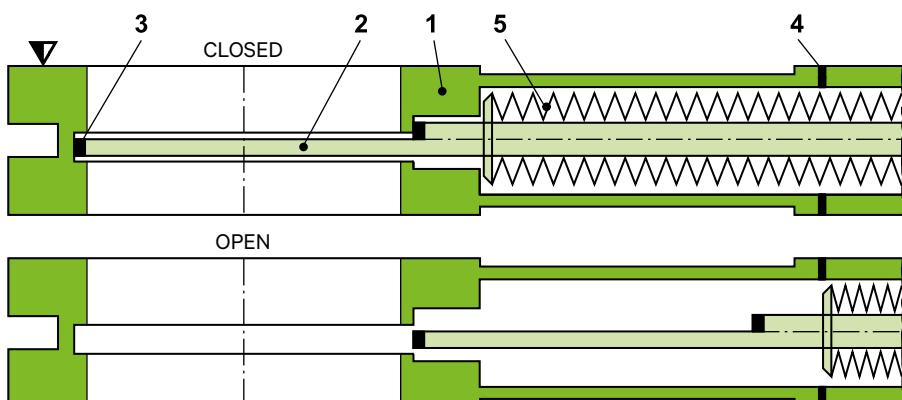
No mechanism in vacuum

Vulcanized gate seal (see glossary)

MAIN FEATURES

Sizes	DN 63 – 250 mm (2½" – 10")
Actuators	pneumatic: double acting
Body material	15.0 / 15.1: aluminum 15.2: stainless steel
Feedthrough	15.0: shaft feedthrough 15.1/15.2: bellows
Standard flanges	15.0 / 15.1: ISO-F, ASA-LP, JIS 15.2: ISO-F, CF-F, ASA-LP, JIS
Sealing technology	MONOVAT (see glossary)

FUNCTIONAL PRINCIPLE



- 1 Valve body
- 2 Gate
- 3 Gate seal
- 4 Bonnet seal
- 5 Bellows
- ▼ Valve seat side

TECHNICAL DATA

Leak rate	Valve body	15.0 / 15.1	$< 1 \cdot 10^{-9}$ mbar ls ⁻¹
		15.2	$< 5 \cdot 10^{-10}$ mbar ls ⁻¹
Pressure range	Valve seat		$< 1 \cdot 10^{-9}$ mbar ls ⁻¹
		15.0	$1 \cdot 10^{-7}$ mbar to 1 bar (abs)
		15.1	$1 \cdot 10^{-8}$ mbar to 1 bar (abs)
		15.2	$1 \cdot 10^{-10}$ mbar to 1 bar (abs)
Differential pressure on the gate			≤ 1.2 bar
Differential pressure at opening			≤ 30 mbar
Cycles until first service ¹⁾			500 000
Temperature ²⁾	Valve body	15.0 / 15.1	≤ 120 °C ³⁾
		15.2: DN 63 – 200	≤ 250 °C open / ≤ 200 °C closed
		15.2: DN 250	≤ 120 °C ³⁾
	Actuator	15.0 / 15.1	≤ 100 °C
		15.2: DN 63 – 160	≤ 200 °C
		15.2: DN 200 – 250	≤ 100 °C ³⁾
	Solenoid valve		≤ 50 °C
	Position indicator		≤ 80 °C
Heating and cooling rate		15.0 / 15.1	≤ 30 °C h ⁻¹
		15.2	≤ 50 °C h ⁻¹
Material	Valve body	15.0 / 15.1	EN AW-6082 (3.2315)
		15.2	AISI 304 (1.4301)
	Gate	15.0 / 15.1	EN AW-6082 (3.2315)
		15.2: DN 63 – 200	AISI 304 (1.4301)
		15.2: DN 250	EN AW-6082 (3.2315)
	Bellows		AISI 633 (AM350)
Seal	Bonnet	15.0 / 15.1	FKM (Viton®)
		15.2	metal
	Gate		FKM (Viton®)
Feedthrough	Bonnet	15.0	shaft feedthrough
		15.1/15.2	bellows
Mounting position			any
Solenoid valve			24 V DC, 5.4 W (others on request)
Position indicator: contact rating	Voltage		≤ 250 V AC ≤ 50 V DC
	Current		≤ 2 A ≤ 1.2 A
Valve position indication			visual (mechanical)

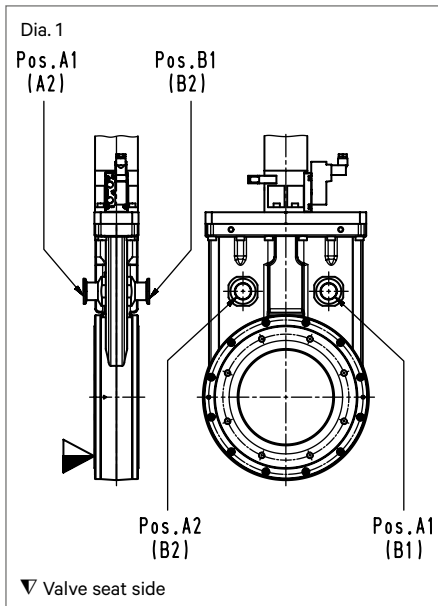
DN (nominal I.D.)	Conductance (molecular flow) (depending on A-dimension and flange type)	Compressed air min. – max. overpressure		Volume of pneumatic actuator		Closing or opening time		Weight							
		15.0/15.1	15.2	l	ft ³	15.0/15.1	15.2	15.0	15.1	15.2	kg	lbs	kg	lbs	
mm	inch	ls ⁻¹	ls ⁻¹	bar	psi	l	ft ³	s	s	kg	lbs	kg	lbs	kg	lbs
63	2 ½	480	480	4 – 7	58 – 102	0.22	0.008	1.50	1.50	7	15.50	8	17.70	11.50	25.40
100	4	1700	1700	4 – 7	58 – 102	0.32	0.011	2.80	2.80	9	19.90	10	22.10	15.50	34.20
160	6	6000	6000	4 – 7	58 – 102	0.46	0.016	3.10	3.10	12	26.50	13.50	29.80	22	48.50
200	8	–	12000	4 – 7	58 – 102	1.08	0.038	–	6	–	–	–	–	36	79.40
250	10	–	19400	5 – 7	73 – 102	2.10	0.074	–	7	–	–	–	–	55	121.30

¹⁾ Higher number of cycles on request.

²⁾ Maximum values: depending on operating conditions and sealing materials.

³⁾ Higher temperatures 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)
- Double position indicator (2 switches each for the positions «open» and «closed»)
- Bakeable position indicator: pneumatic actuator bakeable to max. 140 °C

VALVE

- Customer specified flanges
- Other sealing materials
- Ports for roughing (by-pass), venting or for gauges (Dia. 1): possible positions A1, A2, B1 and B2. Details on request.
- Special gate for the installation of various windows and foils

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

ORDERING INFORMATION FOR STANDARD VALVES

15.0
Vacuum valve with pneumatic actuator
 double acting
 with solenoid valve
 with position indicator

DN		Ordering numbers (specify control voltage)		
mm	inch	ISO-F	ASA-LP	JIS
63	2½	15036-PA44	15036-TA44	15036-JA44
100	4	15040-PA44	15040-TA44	15040-JA44
160	6	15044-PA44	15044-TA44	15044-JA44

without solenoid valve, without position indicator: 150 . . . **A14**
 without solenoid valve, with position indicator: 150 . . . **A24**
 with solenoid valve, without position indicator: 150 . . . **A34** (specify control voltage)

15.1
HV valve with pneumatic actuator
 double acting
 with solenoid valve
 with position indicator

DN		Ordering numbers (specify control voltage)		
mm	inch	ISO-F	ASA-LP	JIS
63	2½	15136-PA44	15136-TA44	15136-JA44
100	4	15140-PA44	15140-TA44	15140-JA44
160	6	15144-PA44	15144-TA44	15144-JA44

without solenoid valve, without position indicator: 151 . . . **A14**
 without solenoid valve, with position indicator: 151 . . . **A24**
 with solenoid valve, without position indicator: 151 . . . **A34** (specify control voltage)

15.2
UHV valve with pneumatic actuator
 double acting
 with solenoid valve
 with position indicator

DN		Ordering numbers (specify control voltage)				
mm	inch	ISO-F	CF-F		ASA-LP	JIS
			metric threads	UNF threads		
63	2½	15236-PE44	15236-CE44	15236-UE44	15236-TE44	15236-JE44
100	4	15240-PE44	15240-CE44	15240-UE44	15240-TE44	15240-JE44
160	6	15244-PE44	15244-CE44	15244-UE44	15244-TE44	15244-JE44
200	8	15246-PE44	15246-CE44	15246-UE44	15246-TE44	15246-JE44
250	10	15248-PE44	15248-CE44	15248-UE44	15248-TE44	15248-JE44

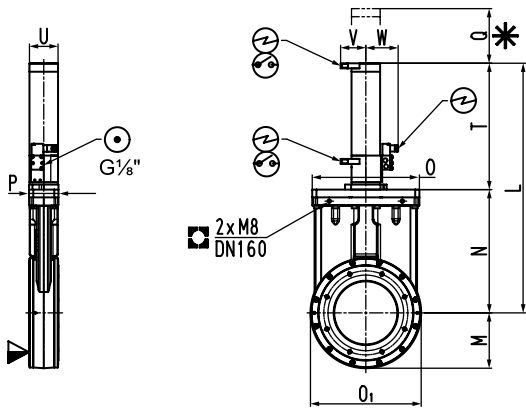
without solenoid valve, without position indicator: 152 . . . **E14**
 without solenoid valve, with position indicator: 152 . . . **E24**
 with solenoid valve, without position indicator: 152 . . . **E34** (specify control voltage)

ORDERING INFORMATION FOR VALVES WITH OPTIONS

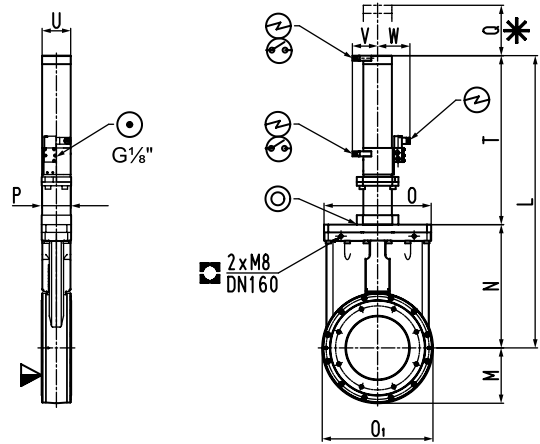
Basic ordering number plus «-X»: -X to be specified
 Example: 15246-CE44-X, X = port CF-F 40 in position A1

MAIN DIMENSIONS

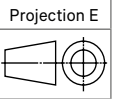
15.0
 Vacuum valve with pneumatic actuator
 DN 63 – 160 (2½" – 6")



15.1
 HV valve with pneumatic actuator
 DN 63 – 160 (2½" – 6")



- ▼ Valve seat side
- * Required for dismantling
- ⊕ Compressed air connection
- ⊖ Electrical connection
- ⊙ Position indicator
- ⊙ Leak detection hole
- For attachment



DN	mm	63	100	160
	inch	2½	4	6
L	mm	384.50	472	594.50
	inch	15.14	18.58	23.41
M	mm	87	107	132
	inch	3.43	4.21	5.20
N	mm	168.50	221	293.50
	inch	6.63	8.70	11.56
O	mm	155	195	255
	inch	6.10	7.68	10.04
O1	mm	174	214	264
	inch	6.85	8.43	10.39
P	mm	70	70	70
	inch	2.76	2.76	2.76
Q	mm	110	145	195
	inch	4.33	5.71	7.68
T	mm	216	251	301
	inch	8.50	9.88	11.85
U	mm	68	68	68
	inch	2.68	2.68	2.68
V	mm	60	60	60
	inch	2.36	2.36	2.36
W	mm	77	77	77
	inch	3.03	3.03	3.03

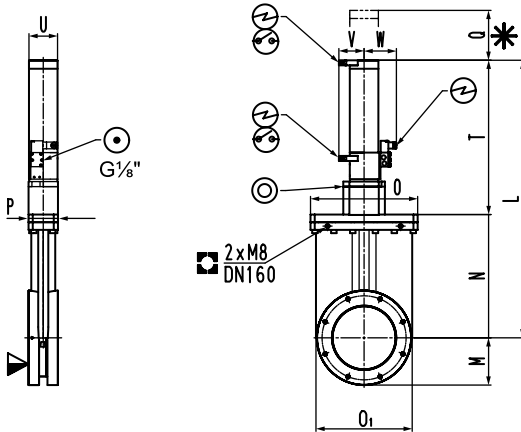
DN	mm	63	100	160
	inch	2½	4	6
L	mm	443	552.50	696
	inch	17.44	21.75	27.40
M	mm	87	107	132
	inch	3.43	4.21	5.20
N	mm	168.50	221	293.50
	inch	6.63	8.70	11.56
O	mm	155	195	255
	inch	6.10	7.68	10.04
O1	mm	174	214	264
	inch	6.85	8.43	10.39
P	mm	70	70	70
	inch	2.76	2.76	2.76
Q	mm	110	145	195
	inch	4.33	5.71	7.68
T	mm	274	331.50	402.50
	inch	10.79	13.05	15.85
U	mm	68	68	68
	inch	2.68	2.68	2.68
V	mm	60	60	60
	inch	2.36	2.36	2.36
W	mm	77	77	77
	inch	3.03	3.03	3.03

Flange dimensions: see pages 80 – 81

MAIN DIMENSIONS

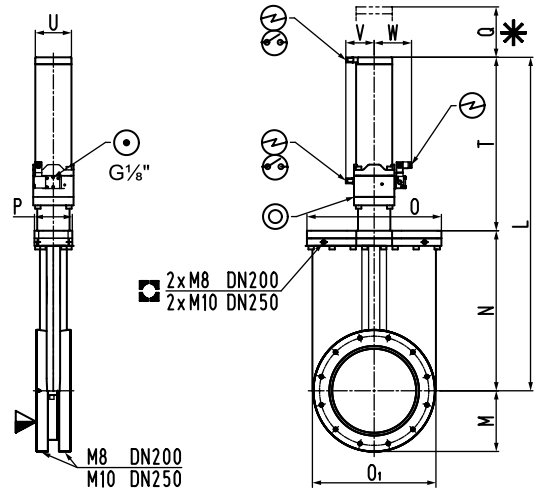
15.2

UHV valve with pneumatic actuator
DN 63 – 160 (2½" – 6")



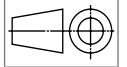
15.2

UHV valve with pneumatic actuator
DN 200 – 250 (8" – 10")



- ▼ Valve seat side
- * Required for dismantling
- ⊙ Compressed air connection
- ⊕ Electrical connection
- ⊖ Position indicator
- ⊗ Leak detection hole
- ▣ For attachment

Projection E

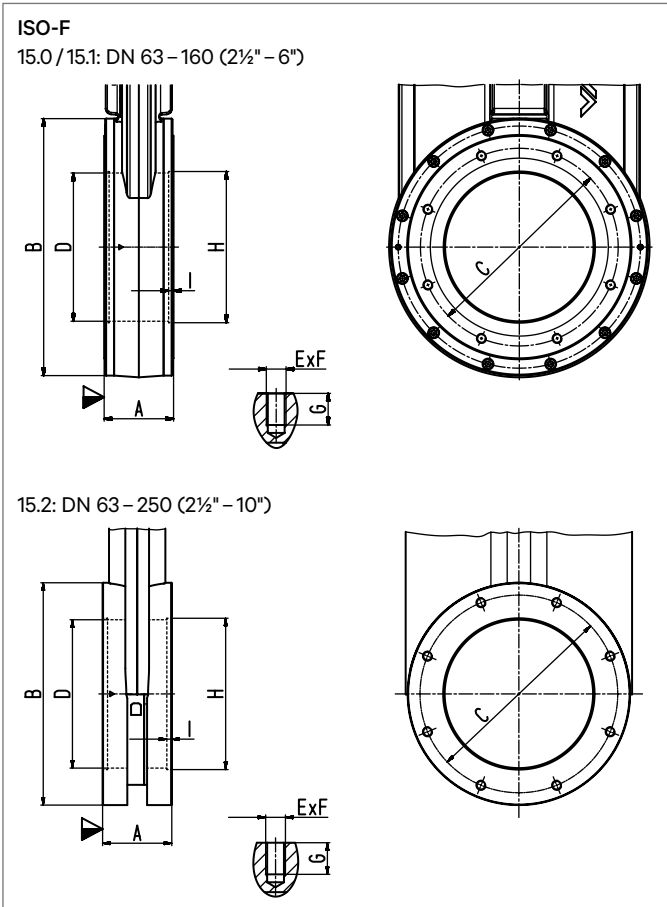


DN	mm	63	100	160
	inch	2½	4	6
L	mm	415	517.50	661
	inch	16.34	20.37	26.02
M	mm	67.50	87.50	112.50
	inch	2.66	3.44	4.43
N	mm	168.50	221	293.50
	inch	6.63	8.70	11.56
O	mm	155	195	255
	inch	6.10	7.68	10.04
O1	mm	139	179	229
	inch	5.47	7.05	9.02
P	mm	70	70	70
	inch	2.76	2.76	2.76
Q	mm	110	145	195
	inch	4.33	5.71	7.68
T	mm	246.50	296.50	367.50
	inch	9.70	11.67	14.47
U	mm	68	68	68
	inch	2.68	2.68	2.68
V	mm	60	60	60
	inch	2.36	2.36	2.36
W	mm	77	77	77
	inch	3.03	3.03	3.03

DN	mm	200	250	
	inch	8	10	
L	mm	794.50	942.80	
	inch	31.28	37.12	
M	mm	144.50	176.50	
	inch	5.69	6.95	
N	mm	381.50	481.30	
	inch	15.02	18.95	
O	mm	320	391	
	inch	12.60	15.39	
O1	mm	294	360	
	inch	11.57	14.17	
P	mm	96	99	
	inch	3.78	3.90	
Q	mm	225	275	
	inch	8.86	10.83	
T	mm	413	470.50	
	inch	16.26	18.52	
U	mm	86	106	
	inch	3.39	4.17	
V	mm	67	75	
	inch	2.64	2.95	
W	mm	89	126.40	
	inch	3.50	4.98	

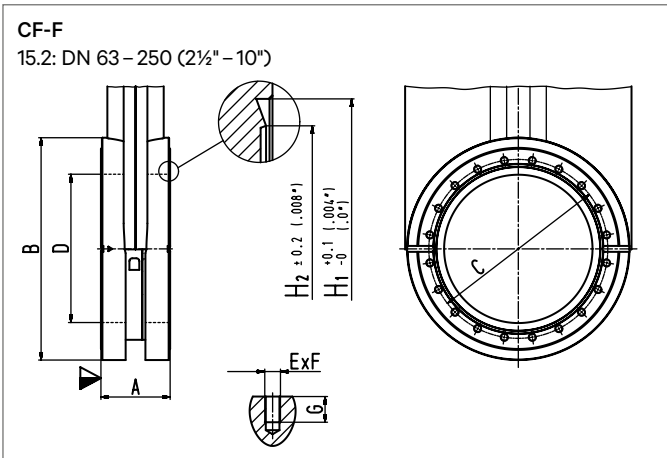
Flange dimensions: see pages 80 – 81

FLANGE DIMENSIONS



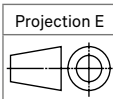
DN	mm inch	63 2½	100 4	160 6	200 8	250 10
A	mm inch	70.20 2.76	70.20 2.76	70.20 2.76	80 3.15	100 3.94
B ¹⁾	mm inch	170 6.69	210 8.27	260 10.24	-	-
B ²⁾	mm inch	135 5.31	175 6.89	225 8.86	290 11.42	354 13.94
C	mm inch	110 4.33	145 5.71	200 7.87	260 10.24	310 12.20
D	mm inch	65.10 2.56	100.10 3.94	150.10 5.91	200.10 7.87	250.10 9.84
E × F		4 × M8	8 × M8	8 × M10	12 × M10	12 × M10
G	mm inch	12 0.47	12 0.47	15 0.59	15 0.59	16 0.63
H	mm inch	70.10 2.76	102.10 4.02	153.10 6.02	213.10 8.39	261 10.28
I	mm inch	5 0.20	5 0.20	5 0.20	5 0.20	5 0.20

¹⁾ Series 15.0 / 15.1

²⁾ Series 15.2


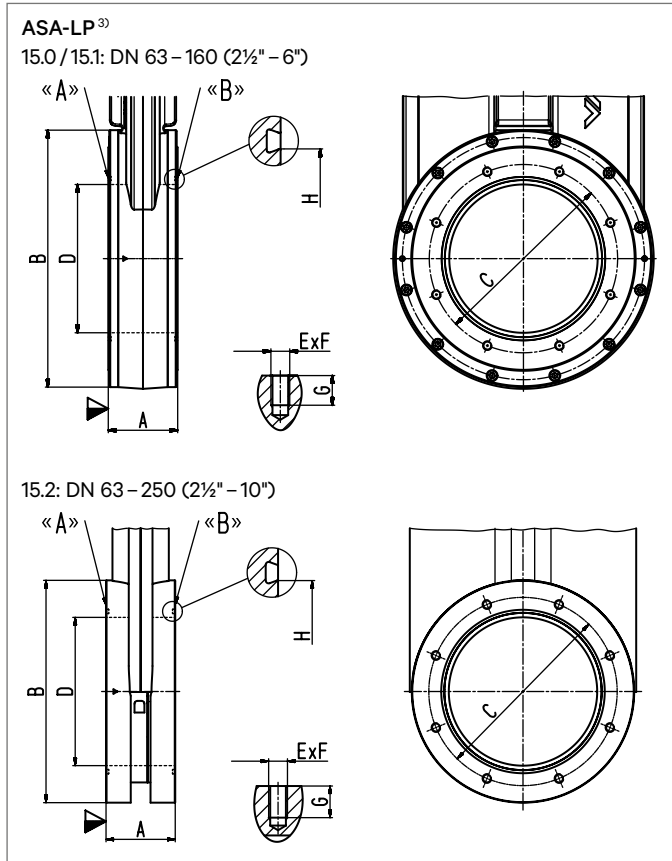
DN	mm inch	63 2½	100 4	160 6	200 8	250 10
O.D.	inch	4½	6	8	10	12
A	mm inch	70 2.76	70 2.76	70 2.76	80 3.15	100 3.94
B	mm inch	135 5.31	175 6.89	225 8.86	289.50 11.40	354 13.94
C	mm inch	92.10 3.63	130.30 5.13	181 7.13	231.80 9.13	284 11.18
D	mm inch	65.10 2.56	100.10 3.94	150.10 5.91	200.10 7.87	250 9.84
E × F ¹⁾		8 × M8	16 × M8	20 × M8	24 × M8	32 × M8
E × F ²⁾		8 × 5/16" 24 UNF	16 × 5/16" 24 UNF	20 × 5/16" 24 UNF	24 × 5/16" 24 UNF	32 × 5/16" 24 UNF
G	mm inch	12 0.47	12 0.47	12 0.47	12 0.47	12 0.47
H1	mm inch	82.50 3.25	120.65 4.75	171.45 6.75	222.30 8.75	273.15 10.75
H2	mm inch	77.40 3.05	115.50 4.55	166 6.54	217 8.54	267 10.51

¹⁾ Metric threads

²⁾ UNF threads


▽ Valve seat side

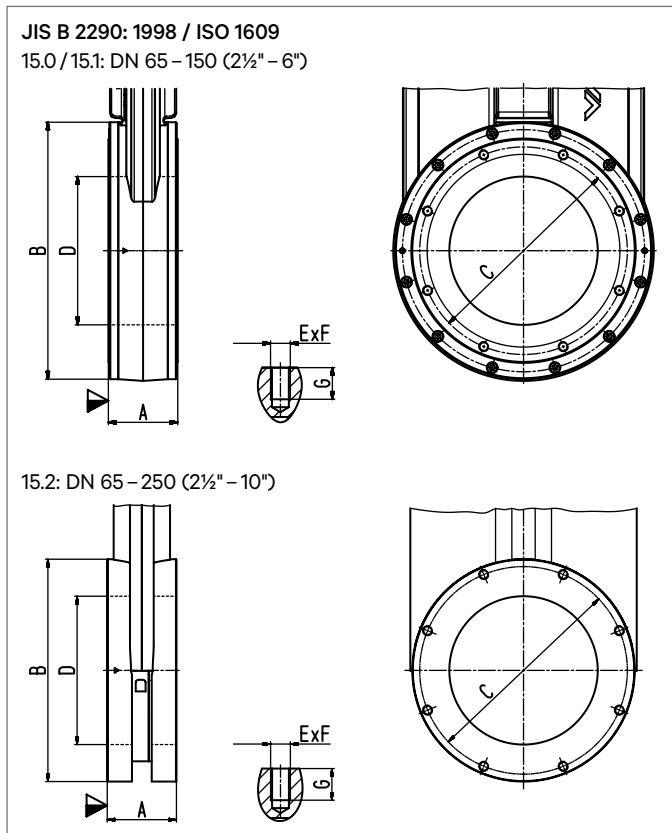
FLANGE DIMENSIONS



³⁾ ASA-LP
 with or without O-ring groove
 For orders with O-ring groove specify:
 «A», «B» or «A + B»

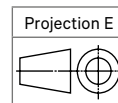
DN	mm inch	63 2½	100 4	160 6	200 8	250 10
ASA-LP		2	3	4	6	8
A	mm inch	70 2.76	70 2.76	70 2.76	80 3.15	100 3.94
B ¹⁾	mm inch	170 6.69	210 8.27	260 10.24	-	-
B ²⁾	mm inch	135 5.31	175 6.89	225 8.86	290 11.41	354 13.94
C	mm inch	120.70 4.75	152.40 6.00	190.50 7.50	241.30 9.50	298.50 11.75
D	mm inch	65 2.56	100 3.94	150 5.91	200 7.87	250 9.84
E × F		4 × ¾" 16 UNC	4 × ¾" 16 UNC	8 × ¾" 16 UNC	8 × ¾" 10 UNC	8 × ¾" 10 UNC
G	mm inch	15 0.59	15 0.59	15 0.59	19 0.75	19 0.75
H	mm inch	88.90 3.50	120.65 4.75	158.75 6.25	206.40 8.13	266.70 10.50
O-ring I.D. × D	mm inch	88.49 × 3.53 3.48 × 0.139	120.24 × 3.53 4.73 × 0.139	158.34 × 3.53 6.23 × 0.139	202.79 × 3.53 7.98 × .139	266.29 × 3.53 10.48 × .139

¹⁾ 15.0/15.1
²⁾ 15.2



DN	mm inch	65 2½	100 4	150 6	200 8	250 10
A	mm inch	70 2.76	70 2.76	70 2.76	80 3.15	100 3.94
B ¹⁾	mm inch	170 6.69	210 8.27	260 10.24	-	-
B ²⁾	mm inch	135 5.31	175 6.89	225 8.86	290 11.42	354 13.94
C	mm inch	120 4.72	160 6.30	210 8.27	270 10.63	320 12.60
D	mm inch	65 2.56	100 3.94	150 5.91	200 7.87	250 9.84
E × F		4 × M10	8 × M10	8 × M10	8 × M12	12 × M12
G ¹⁾	mm inch	12 0.47	12 0.47	15 0.59	-	-
G ²⁾	mm inch	15 0.59	15 0.59	15 0.59	16 0.63	16 0.63

¹⁾ 15.0/15.1
²⁾ 15.2



▼ Valve seat side