General purpose stainless steel valve

Compact and variable actuator

Body material

stainless steel

Manual actuator

DN 63 - 350: lever
DN 400: handwheel

DN		Ordering numbers				
mm	inch	ISO-F	CF-F metric threads	CF-F UNF threads	ASA-LP (T) ASA (A)	JIS
63	2½	14036-PE06	14036-CE06	14036-UE06	14036-TE06	14036-JE06
80	3	14038-PE06	14038-CE06	14038-UE06	on request	on request
100	4	14040-PE06	14040-CE06	14040-UE06	14040-TE06	14040-JE06
160	6	14044-PE06	14044-CE06	14044-UE06	14044-TE06	14044-JE06
200	8	14046-PE06	14046-CE06	14046-UE06	14046-TE06	14046-JE06
250	10	14048-PE06	14048-CE06	14048-UE06	14048-TE06	14048-JE06
320	12	14050-PE06	on request	on request	14050-TE06	14050-JE06
350	14	on request	on request	on request	on request	on request
400	16	14052-PE01	on request	on request	14052-AE01	14052-JE01

with handwheel: 140 . . - . E0**1** (DN 63 - 350)
with handwheel, with position indicator: 140 . . - . E0**8**

Pneumatic actuator

double acting
with position indicator
with solenoid

DN		Ordering numbers (specify control voltage)				
mm	inch	ISO-F	CF-F metric threads	CF-F UNF threads	ASA-LP (T) ASA (A)	JIS
63	2½	14036-PE44	14036-CE44	14036-UE44	14036-TE44	14036-JE44
80	3	14038-PE44	14038-CE44	14038-UE44	on request	on request
100	4	14040-PE44	14040-CE44	14040-UE44	14040-TE44	14040-JE44
160	6	14044-PE44	14044-CE44	14044-UE44	14044-TE44	14044-JE44
200	8	14046-PE44	14046-CE44	14046-UE44	14046-TE44	14046-JE44
250	10	14048-PE44	14048-CE44	14048-UE44	14048-TE44	14048-JE44
320	12	14050-PE44	on request	on request	14050-TE44	14050-JE44
350	14	on request	on request	on request	on request	on request
400	16	14052-PE44	on request	on request	14052-AE44	14052-JE44

without position indicator, without solenoid: 140 . . - . E**1**4
with position indicator, without solenoid: 140 . . - . E**2**4
without position indicator, with solenoid: 140 . . - . E**3**4 (specify control voltage)

3-position pneumatic actuator

See series 64: 3-position pneumatic actuator with intermediate throttling position

Stepper motor

See series 64: for conductance and pressure control

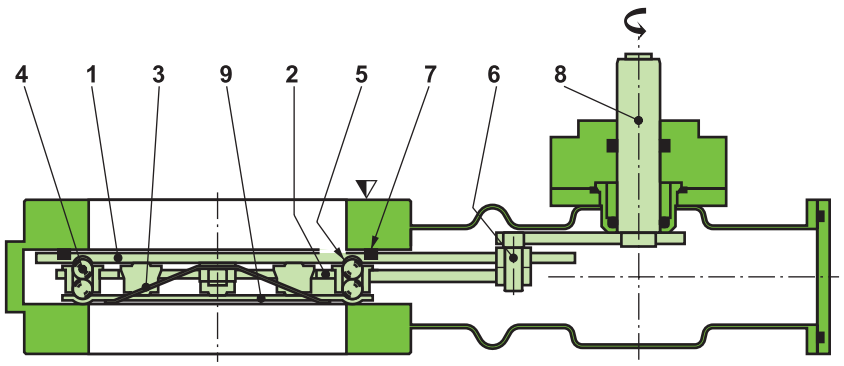
Sealing materials

Gate: FKM (VITON)

Bonnet: FKM (VITON)

Feedthrough

FKM (VITON) / rotary feedthrough



1	valve gate	4	ball pairs	7	gate seal	▽	valve seat side
2	ball guidance	5	detents	8	actuator shaft		
3	leaf spring	6	crank bolt	9	counter plate		

Features

Six actuator possibilities (three positions on either side)

Rotary feedthrough for high cycle life, low particle count

Optimized VATLOCK configuration (see glossary)

Technical data

Continued next page

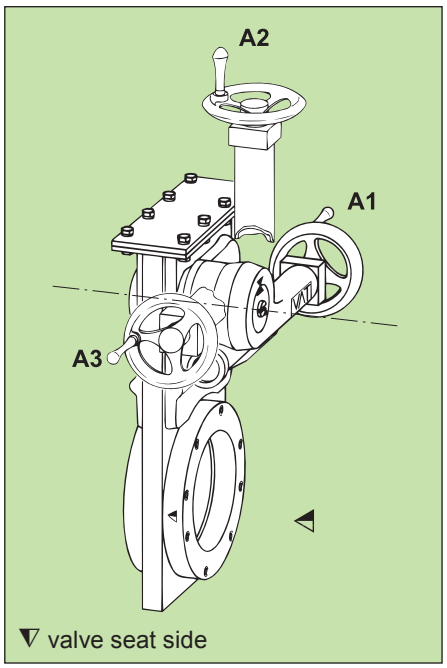
Leak rate: body, valve seat	$< 1 \cdot 10^{-9}$ mbar ls^{-1}
Pressure range	
- DN 63 - 200	$1 \cdot 10^{-8}$ mbar to 2 bar (abs)
- DN 250 - 400	$1 \cdot 10^{-8}$ mbar to 1.2 bar (abs)
Differential pressure on the gate	
- DN 63 - 200 / 250 - 400	≤ 2 / ≤ 1.2 bar in either direction
Differential pressure at opening	
- in closing and opening direction	≤ 30 mbar
Cycles until first service	
- DN 63 - 400	200 000
- DN 400 vertical mounting pos.: (standing/suspended)	reduced cycle life
Temperature [1]	
- Valve body	≤ 150°C
- Manual actuator, position indicator	≤ 80°C
- Pneumatic actuator, motor, solenoid	≤ 50°C
Material	
- Valve body, valve gate	AISI 304 (1.4301)
- Mechanism	AISI 301 (1.4310), AISI 304 (1.4301), AISI 420 (1.4034) AISI 420D (1.4037), AISI 430 (1.4016)
Seal: bonnet, gate	FKM (VITON)
Mounting position: DN 63 - 350 / DN 400	any / horizontal
Solenoid	24 V DC, 2.5 W (others see «options»)
Position indicator: contact rating	
- Voltage	≤ 250 V AC ≤ 50 V DC
- Current	≤ 5 A ≤ 3 A
Valve position	visual (mechanical)

[1] Maximum values: depending on operating conditions and sealing materials

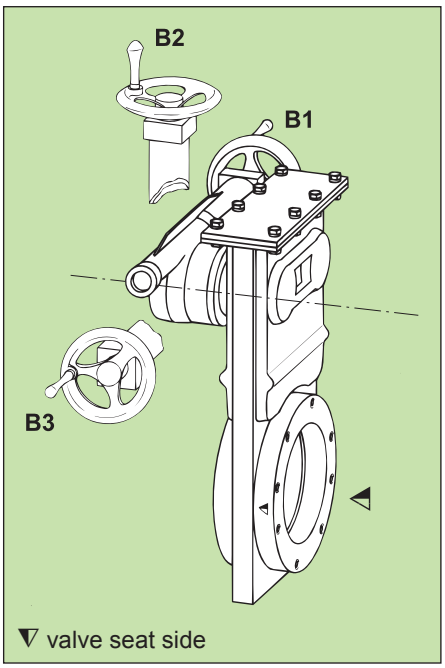
Actuator positions

For optimum system design the actuator can be mounted:

- on the A-side (valve seat side): standard
- on the B-side: option (please indicate in your order)
- in position 1 (standard for A- and B-side)
- in position 2 (can be mounted by customer: for DN 63 restricted)
- in position 3 (can be mounted by customer: for DN 63 restricted)



standard: A1
options: A2, A3



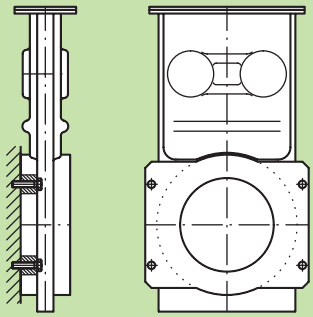
options: B1, B2, B3

Technical data

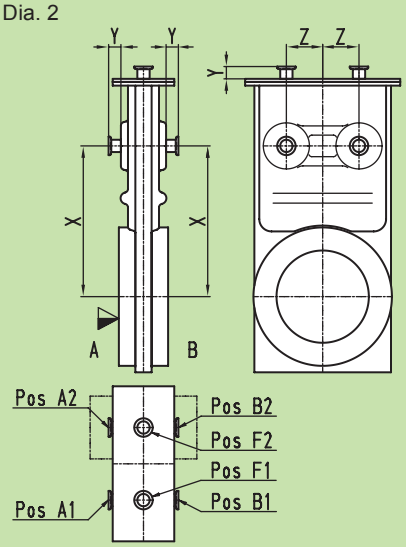
							manual						pneumatic						
							lever			handwheel									
DN (nominal I.D.)		standard flanges				molecular flow conductance	angle of rotation per stroke	weight		turns per stroke	weight		compressed air pressure min. - max. overpressure		volume of air cylinder		closing or opening time	weight	
		CF-F	ISO-F	ASA-LP	JIS														
mm	inch	OD				ls^{-1}	o	kg	lbs	n	kg	lbs	bar	psi	l	ft^3	s	kg	lbs
63	2½	4½	63	2	65	440	130	8	17	41	10	22	4 - 7	55 - 100	0.13	.005	1.5	10	22
80	3	4⅝	80	–	–	800	130	9	20	41	10	22	4 - 7	55 - 100	0.13	.005	1.5	10	22
100	4	6	100	3	100	1700	130	13	28	41	15	33	4 - 7	55 - 100	0.13	.005	1.5	15	34
160	6	8	160	4	150	5000	130	24	52	37	26	57	4 - 7	55 - 100	0.28	.01	2.5	27	58
200	8	10	200	6	200	12000	130	30	66	37	32	70	4 - 7	55 - 100	0.28	.01	2.5	33	72
250	10	12	250	8	250	22000	130	58	127	48	60	132	4 - 7	55 - 100	0.75	.025	4.5	62	137
320	12		320	10	300	30000	130	108	237	48	110	242	4 - 7	55 - 100	0.75	.025	4.5	112	246
350	14	on request				43000	130	108	237	48	110	242	4 - 7	55 - 100	0.75	.025	4.5	112	246
400	16		400	14	400	50000	–	–	–	48	153	336	4 - 7	55 - 100	0.75	.025	5.5	155	340

Options

Dia. 1



Dia. 2



▽ valve seat side

Actuator:

- Solenoid for impulse actuation:
  last valve position is maintained at power failure
- Solenoid separate, for external mounting
- Solenoid for 12, 48 V DC
  24, 48, 100, 115, 200, 230 V 50/60 Hz
- Double position indicator
  (2 switches each for the positions «open» and «closed»)
- Actuator in position 2 or 3 (position 1 is standard)
- Actuator on B-side (A-side is standard)

Valve:

- Customer specified flanges
- For direct mounting to flat chamber (diagram 1):
  Special flange for mounting to chamber wall, standard flange on opposite side
- Other sealing materials
- Watercooled or waterheated flanges
- Rotary feedthrough with intermediate pump port
- Ports (diagram 2)
  for roughing (by-pass), venting, purging or for gauges
- Special ports on request resp. according to customer's specification

DN valve	mm / inch	63 / 2½	80 / 3	100 / 4	160 / 6	200 / 8	250 / 10	320 / 12	350 / 14	400 / 16
*)	mm	16	16	40	40	40	40	40	40	40
	inch	⅝	⅝	1½	1½	1½	1½	1½	1½	1½
X	mm	146	146	185	245	304.4	387.3	482	482	415
	inch	5.75	5.75	7.28	9.65	11.98	15.25	18.98	18.98	16.34
Y	mm	20	20	20	20	20	20	20	20	20
	inch	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Z	mm	30	30	47.5	59	85	100	135	135	140
	inch	1.18	1.18	1.87	2.32	3.35	3.94	5.31	5.31	5.51
*) recommended port: CF-F or ISO-KF										

Ordering information for options:
Ordering No. of valve-X (e. g. 14046-CE01-X,
X = actuator A2, port ISO-KF40 in position F2)

Heater

Temperature control with thermostat: individually adjustable
Supply voltage: 100 - 120 V / 200 - 240 V AC

Accessories

Fittings for installation of the valve: series 32 and 33

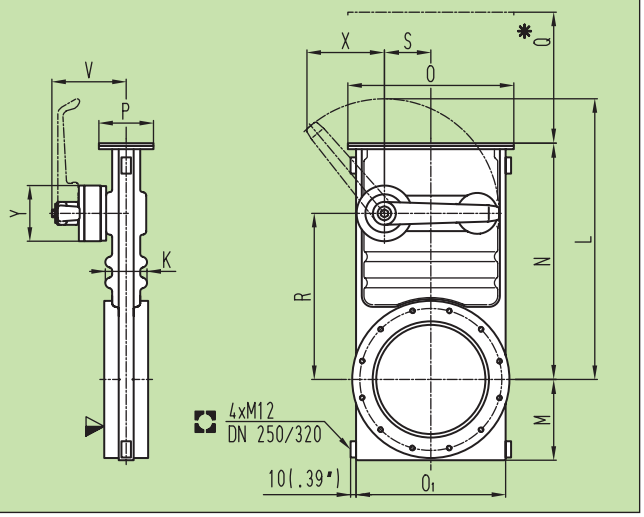
Seal kit

Consisting of seals for gate, bonnet and rotary feedthrough
Ordering No.: see operating manual or price list

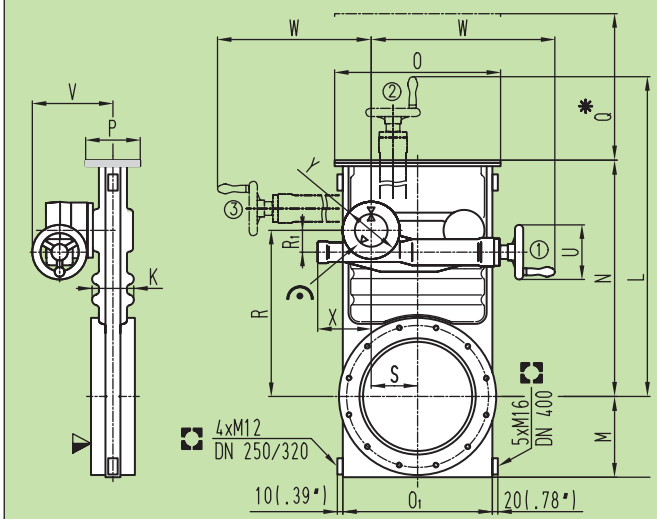
Standard: FKM (VITON). Special sealing materials on request.
Specify fabrication number of valve: e. g. 14044-PE24-AGV1/0014

Main dimensions

Valve with manual actuator: lever
DN 63 - 350 (2½" - 14")

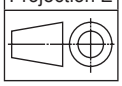


Valve with manual actuator: handwheel
DN 63 - 400 (2½" - 16")



▼ valve seat side
✳ required for dismantling
mechanical position indication
for attachment
① standard actuator position (A1)
②③ optional actuator positions

Projection E



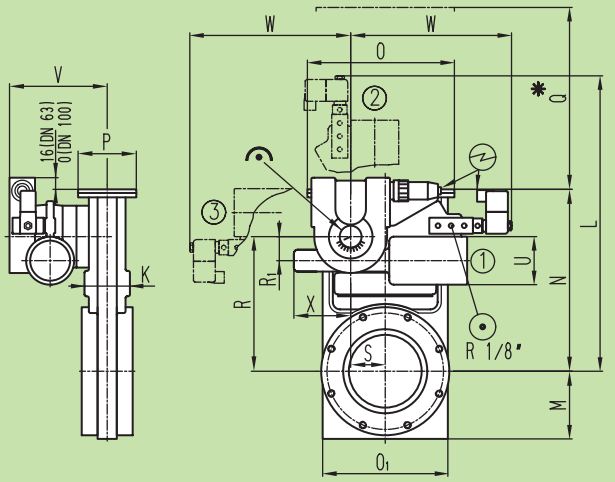
Flange dimensions see pages 50 and 51

DN	mm / inch	63 / 80 2½ / 3	100 4	160 6	200 8	250 10	320/350 12/14	
K	mm	51	63	75	77	117	120	
	inch	2.01	2.48	2.95	3.03	4.6	4.72	
L	mm	276	315	455	515	817	1012	
	inch	10.87	12.4	17.91	20.27	32.17	39.84	
M	mm	73	93	123	148	177	214	
	inch	2.87	3.66	4.84	5.83	6.97	8.43	
N	mm	211	270	362	441	570	691	
	inch	8.31	10.63	14.25	17.36	22.44	27.2	
O	mm	152	190	252	304	400	475	
	inch	5.98	7.48	9.92	11.97	15.75	18.7	
O1	mm	134	172	222	274	356	421	
	inch	5.28	6.77	8.74	10.79	14.02	16.57	
P	mm	80	80	100	100	138	138	
	inch	3.15	3.15	3.94	3.94	5.43	5.43	
Q	mm	180	220	300	350	450	550	
	inch	7.09	8.66	11.81	13.78	17.72	21.65	
R	mm	146	185	245	305	387	482	
	inch	5.75	7.28	9.65	12.01	15.24	18.98	
S	mm	30	47.5	59	85	100	135	
	inch	1.18	1.87	2.32	3.35	3.94	5.31	
V	mm	120	120	138	138	189	189	
	inch	4.72	4.72	5.43	5.43	7.44	7.44	
X	mm	96	96	143	143	288	353	
	inch	3.78	3.78	5.63	5.63	11.34	13.9	
Y	mm	85	85	102	102	130	130	
	inch	3.35	3.35	4.02	4.02	5.12	5.12	

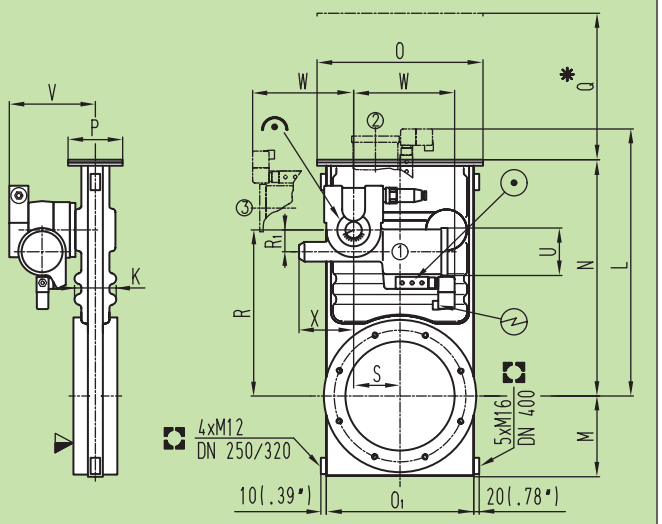
DN	mm / inch	63 / 80 2½ / 3	100 4	160 6	200 8	250 10	320/350 12/14	400 16
K	mm	51	63	75	77	117	120	133
	inch	2.01	2.48	2.95	3.03	4.6	4.72	5.23
L	mm	458	497	595	655	771	849	935
	inch	18.03	19.57	23.43	25.79	30.35	33.42	36.81
M	mm	73	93	123	148	177	214	232
	inch	2.87	3.66	4.84	5.83	6.97	8.43	9.13
N	mm	211	270	362	441	570	689	789
	inch	8.31	10.63	14.25	17.36	22.44	27.13	31.06
O	mm	152	190	252	304	400	475	520
	inch	5.98	7.48	9.92	11.97	15.75	18.7	20.47
O1	mm	134	172	222	274	356	421	474
	inch	5.28	6.77	8.74	10.79	14.02	16.57	18.66
P	mm	80	80	100	100	138	138	138
	inch	3.15	3.15	3.94	3.94	5.43	5.43	5.43
Q	mm	180	220	300	350	450	550	600
	inch	7.09	8.66	11.81	13.78	17.72	21.65	23.62
R	mm	146	185	245	305	387	482	568
	inch	5.75	7.28	9.65	12.01	15.24	18.98	22.36
R1	mm	33	33	40	40	50	50	50
	inch	1.3	1.3	1.57	1.57	1.97	1.97	1.97
S	mm	30	47.5	59	85	100	135	140
	inch	1.18	1.87	2.32	3.35	3.94	5.31	5.51
U	mm	100	100	125	125	125	125	125
	inch	3.94	3.94	4.92	4.92	4.92	4.92	4.92
V	mm	129	129	160.5	160.5	196.5	198	202
	inch	5.08	5.08	6.32	6.32	7.74	7.8	7.95
W	mm	312	312	350	350	384	367	367
	inch	12.28	12.28	13.78	13.78	15.12	14.45	14.45
X	mm	78	78	98	98	130	130	130
	inch	3.07	3.07	3.86	3.86	5.12	5.12	5.12
Y	mm	85	85	104	104	130	130	130
	inch	3.35	3.35	4.09	4.09	5.12	5.12	5.12

Main dimensions

Valve with pneumatic actuator: double acting
DN 63 - 100 (2½" - 4")



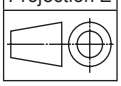
Valve with pneumatic actuator: double acting
DN 160 - 400 (6" - 16")



▽ valve seat side
✳ required for dismantling
⊙ compressed air connection
mechanical position indication
for attachment
⊖ electrical connection

① standard actuator position (A1)
②③ optional actuator positions

Projection E



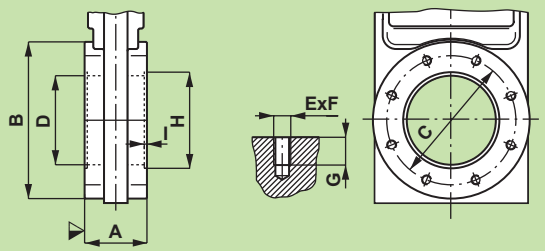
Flange dimensions see pages 50 and 51

DN	mm / inch	63 / 80 2½ / 3	100 4				
K	mm	51	63				
	inch	2.01	2.48				
L	mm	367	406				
	inch	14.45	15.98				
M	mm	73	93				
	inch	2.87	3.66				
N	mm	211	270				
	inch	8.31	10.63				
O	mm	152	190				
	inch	5.98	7.48				
O1	mm	134	172				
	inch	5.28	6.77				
P	mm	80	80				
	inch	3.15	3.15				
Q	mm	180	220				
	inch	7.09	8.66				
R	mm	146	185				
	inch	5.75	7.28				
R1	mm	33	33				
	inch	1.3	1.3				
S	mm	30	47.5				
	inch	1.18	1.87				
U	mm	66	66				
	inch	2.6	2.6				
V	mm	135	135				
	inch	5.32	5.32				
W	mm	221	221				
	inch	8.7	8.7				
X	mm	78	78				
	inch	3.07	3.07				

DN	mm / inch	160 6	200 8	250 10	320 12	350 14	400 16
K	mm	75	77	117	120	120	130
	inch	2.95	3.03	4.6	4.72	4.72	5.12
L	mm	435	495	654	750	750	836
	inch	17.13	19.49	25.75	29.59	29.59	32.91
M	mm	123	148	177	214	214	232
	inch	4.84	5.83	6.97	8.43	8.43	9.13
N	mm	362	441	570	689	689	789
	inch	14.25	17.36	22.44	27.13	27.13	31.06
O	mm	252	304	400	475	475	520
	inch	9.92	11.97	15.75	18.7	18.7	20.47
O1	mm	222	274	356	421	421	474
	inch	8.74	10.79	14.02	16.57	16.57	18.66
P	mm	100	100	138	138	138	138
	inch	3.94	3.94	5.43	5.43	5.43	5.43
Q	mm	300	350	450	550	550	600
	inch	11.81	13.78	17.72	21.65	21.65	23.62
R	mm	245	305	387	482	482	568
	inch	9.65	12.01	15.24	18.98	18.98	22.36
R1	mm	40	40	50	50	50	50
	inch	1.57	1.57	1.97	1.97	1.97	1.97
S	mm	59	85	100	135	135	140
	inch	2.32	3.35	3.94	5.31	5.31	5.51
U	mm	87	87	122.5	122.5	122.5	122.5
	inch	3.43	3.43	4.82	4.82	4.82	4.82
V	mm	158	158	202	202	202	206
	inch	6.22	6.22	7.95	7.95	7.95	8.11
W	mm	190	190	268	268	268	268
	inch	7.48	7.48	10.55	10.55	10.55	10.55
X	mm	100	100	131	131	131	131
	inch	3.94	3.94	5.16	5.16	5.16	5.16

Flange dimensions

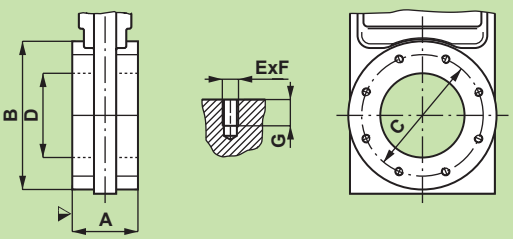
ISO-F DN 63 - 400 (2½" - 16")



DN		63	80	100	160	200
	inch	2½	3	4	6	8
A	mm	70	70	70	80	80
	inch	2.76	2.76	2.76	3.15	3.15
B	mm	136	136	176	225	288
	inch	5.35	5.35	6.93	8.86	11.34
C	mm	110	125	145	200	260
	inch	4.33	4.92	5.71	7.87	10.24
D	mm	63	80	100	150	200
	inch	2.48	3.15	3.94	5.91	7.87
E x F		4 x M8	8 x M8	8 x M8	8 x M10	12 x M10
G	mm	13	13	13	14	16
	inch	0.51	0.51	0.51	0.55	0.63
H	mm	70	83	102	153	213
	inch	2.76	3.27	4.02	6.02	8.39
I	mm	3	3	3	5	5
	inch	0.12	0.12	0.12	0.2	0.2

DN		250	320	350	400	
	inch	10	12	14	16	
A	mm	100	120	on request	150	
	inch	3.94	4.72		5.9	
B	mm	350	425		510	
	inch	13.78	16.73		20.08	
C	mm	310	395		480	
	inch	12.2	15.55		18.9	
D	mm	261	318		400	
	inch	10.28	12.52		15.75	
E x F		12 x M10	12 x M12		16 x M12	
G	mm	16	16		20	
	inch	0.63	0.63		0.79	
H	mm	–	–		–	
	inch	–	–		–	
I	mm	–	–		–	
	inch	–	–		–	

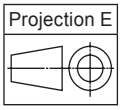
JIS B 2290: 1998 / ISO 1609
DN 65 - 400 (2½" - 16")



DN		65	100	150	200	250	300	400
	inch	2½	4	6	8	10	12	16
A	mm	70	70	80	80	100	120	150
	inch	2.76	2.76	3.15	3.15	3.94	4.72	5.9
B	mm	136	176	225	288	350	425	510
	inch	5.35	6.93	8.86	11.34	13.78	16.73	20.08
C	mm	120	160	210	270	320	370	480
	inch	4.72	6.3	8.27	10.63	12.6	14.57	18.9
D	mm	63	100	150	200	261	318	400
	inch	2.48	3.94	5.91	7.87	10.28	12.52	15.75
E x F		4 x M10	8 x M10	8 x M10	8xM12	12xM12	12xM12	12xM16
G	mm	12	12	14	16	16	16	25
	inch	0.47	0.47	0.55	0.63	0.63	0.63	0.98

DN 80 (3") and DN 350 (14") on request

Projection E

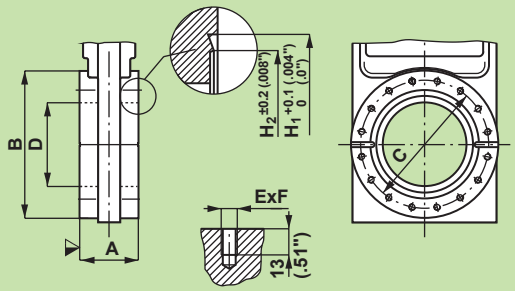


▼ valve seat side

Flange dimensions

CF-F DN 63 - 250 (2½" - 10")
metric threads

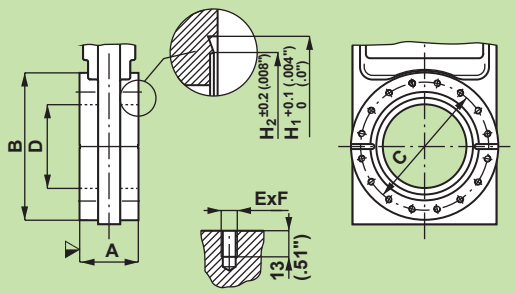
DN 350 (14"): on request



DN		63	80	100	160	200	250	
	mm	63	80	100	160	200	250	
	inch	2½	3	4	6	8	10	
O.D.	inch	4½	4⅝	6	8	10	12	
A	mm	70	70	70	80	80	100	
	inch	2.76	2.76	2.76	3.15	3.15	3.94	
B	mm	136	136	176	225	288	350	
	inch	5.35	5.35	6.93	8.86	11.34	13.78	
C	mm	92.1	102.4	130.3	181	231.8	284	
	inch	3.63	4.03	5.13	7.13	9.13	11.18	
D	mm	63	80	100	150	200	254	
	inch	2.48	3.15	3.94	5.91	7.87	10	
E x F		8 x M8	10 x M8	16 x M8	20 x M8	24 x M8	32 x M8	
H1	mm	82.5	91.55	120.65	171.45	222.3	273.15	
	inch	3.25	3.6	4.75	6.75	8.75	10.75	
H2	mm	77.4	86.3	115.5	166	217	267	
	inch	3.05	3.4	4.55	6.54	8.54	10.51	

CF-F DN 63 - 250 (2½" - 10")
UNF threads

DN 350 (14"): on request



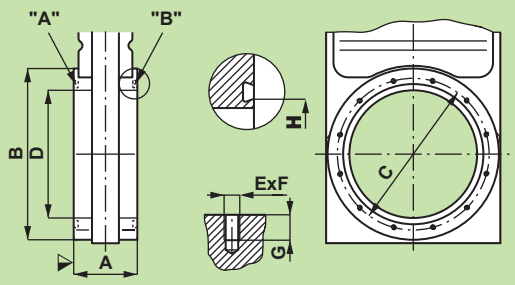
DN		63	80	100	160	200	250 *)	250 *)
	mm	63	80	100	160	200	250	250
	inch	2½	3	4	6	8	10	10
O.D.	inch	4½	4⅝	6	8	10	12	13¼
A	mm	70	70	70	80	80	100	100
	inch	2.76	2.76	2.76	3.15	3.15	3.94	3.94
B	mm	136	136	176	225	288	350	350
	inch	5.35	5.35	6.93	8.86	11.34	13.78	13.78
C	mm	92.1	102.4	130.3	181	231.8	284	306.3
	inch	3.63	4.03	5.13	7.13	9.13	11.18	12.06
D	mm	63	80	100	150	200	254	254
	inch	2.48	3.15	3.94	5.91	7.87	10	10
E x F		8 x 5/16" 24 UNF	10 x 5/16" 24 UNF	16 x 5/16" 24 UNF	20 x 5/16" 24 UNF	24 x 5/16" 24 UNF	32 x 5/16" 24 UNF	30 x 3/8" 24 UNF
H1	mm	82.5	91.55	120.65	171.45	222.3	273.15	294.64
	inch	3.25	3.6	4.75	6.75	8.75	10.75	11.6
H2	mm	77.4	86.3	115.5	166	217	267	288.3
	inch	3.05	3.4	4.55	6.54	8.54	10.51	11.35

*) O.D. 12" VAT standard, O.D. 13¼" option

Ordering information for option: O.D. 13¼"
Ordering No. of valve-X
(e. g. 14048-UE44-X, X = O.D. 13¼")

ASA-LP DN 63 - 400 (2½" - 16")
with or without O-ring groove

For orders **with** O-ring groove specify:
«A», «B» or «A + B»



DN		63	100	160	200	250	320	400
	mm	63	100	160	200	250	320	400
	inch	2½	4	6	8	10	12	16
ASA-LP		2	3	4	6	8	10	16 *)
A	mm	70	70	80	80	100	120	150
	inch	2.76	2.76	3.15	3.15	3.94	4.72	5.9
B	mm	136	176	225	288	350	425	596.9
	inch	5.35	6.93	8.86	11.34	13.78	16.73	23.5
C	mm	120.7	152.4	190.5	241.3	298.5	362	539.8
	inch	4.75	6	7.5	9.5	11.75	14.25	21.25
D	mm	63	100	150	200	254	300	400
	inch	2.48	3.94	5.91	7.87	10	11.81	15.75
E x F		4 x 3/8" 16 UNC	4 x 3/8" 16 UNC	8 x 3/8" 16 UNC	8 x 3/4" 10 UNC	8 x 3/4" 10 UNC	12 x 3/4" 10 UNC	16 x 1" 8 UNC
G	mm	15	15	15	20	20	28	25.4
	inch	0.59	0.59	0.59	0.79	0.79	1.1	1
H	mm	88.9	120.65	158.75	206.4	266.7	317.5	419.1
	inch	3.5	4.75	6.25	8.13	10.5	12.5	16.5
O-Ring I.D. x d		88.49 x 3.53 3.48 x .139	120.24 x 3.53 4.73 x .139	158.34 x 3.53 6.23 x .139	202.79 x 3.53 7.98 x .139	266.29 x 3.53 10.48 x .139	316.87 x 7.00 12.47 x .275	417.96 x 7.00 16.46 x .275

Projection E

▼ valve seat side

DN 80 (3") and DN 350 (14") on request

*) ASA