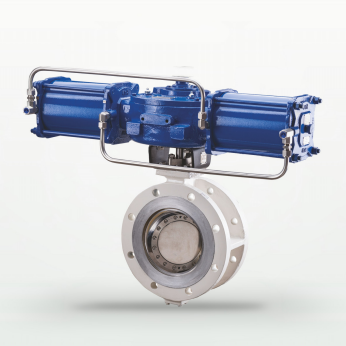
DelVal Series 4 TriO Triple Offset Valve

The Series 4 TriO is DelVal's triple offset, metal seated butterfly valve, offered in Class 150, 300 and 600 with wafer, lug, double flanged and buttweld bodies, and with a fire safe design as standard.



Key data	
Size range	Series 4A, 4B, 4C, 4W – 3" to 48" (DN 80 to 1200); Series 4D, 4E, 4F, 4Y, 4G, 4H, 4J, 4K – 3" to 24" (DN 80 to 600)
Pressure rating	Series 4A, 4B, 4C, 4W – Class 150; Series 4D, 4E, 4F, 4Y – Class 300; Series 4G, 4H, 4J, 4K – Class 600
Body type	Wafer, Lug, Double Flanged, Buttweld
Seat	Stellite Gr.21

Standards and specifications

Design, testing and ratings

Item	Detail
Design	API 609, ASME B16.34, BS EN 593, MSS SP-68
Face to Face	API 609, ISO 5752, BS EN 558, MSS SP-68
Testing	API 598, ISO 5208, EN 12266, MSS SP-68
Pressure Temperature	ASME B16.34
Flange Accommodation	ASME B16.5, ASME B16.47, BS EN 1092-1, AWWA C207
Butt Weld Ends	ASME B16.25
NACE	MR 0175 / ISO 15156
Fire Safe Certified	API 607
Fugitive Emission (Optional)	ISO 15848, API 641
CE Compliance	2014/68/EU (PED)
Body Style	Wafer, Lug, Double Flanged (short / long pattern), and Butt Weld End
Rating	Class 150 to class 900
Temp Range	-29°C to 425°C (Standard); -196°C to 700°C (Optional)
Size Range	DN80 to DN2550

Dimensions and weights

Weights are approximate.

Class 150, butt weld, Series 4W (mm)

Valve size / Inch	Valve size / DN	L	C	E	Top flange / Type	ØG	J	Key size	App. weight (kg)
3	80	180	117	190	F07/F10	16	32	5.00 x 5.00	11
4	100	190	144	225	F07/F10	20	32	6.00 x 6.00	15
5	125	200	145	220	F07/F10	22	32	6.00 x 6.00	23
6	150	210	155	230	F07/F10	22	32	6.00 x 6.00	27
8	200	230	186	285	F10/F12	25	32	8.00 x 7.00	55
10	250	250	225	328	F12	30	51	8.00 x 7.00	82
12	300	270	280	380	F12/F16	35	51	10.00 x 8.00	102
14	350	290	286	405	F14	40	51	12.00 x 8.00	148
16	400	310	335	525	F14/F16	50	64	14.00 x 9.00	242
18	450	330	349	525	F16	55	64	16.00 x 10.00	274
20	500	350	394	580	F25	60	102	18.00 x 11.00	316
24	600	390	450	645	F25	70	102	20.00 x 12.00	477

End to end dimensions "L" conforms to ISO5752 series 14.

Class 300, butt weld, Series 4Y (mm)

Valve size / Inch	Valve size / DN	L	C	E	Top flange / Type	ØG	J	Key size	App. weight (kg)
3	80	180	117	190	F07/F10	16.0	32	5.00 x 5.00	11
4	100	190	144	225	F07/F10	20.0	32	6.00 x 6.00	15
6	150	210	190	275	F12	25.0	32	8.00 x 7.00	36
8	200	230	205	310	F12	35.0	51	10.00 x 8.00	68
10	250	250	260	385	F16	35.0	51	10.00 x 8.00	99
12	300	270	285	425	F16	40.0	51	12.00 x 8.00	136
14	350	290	315	480	F25	55.0	64	16.00 x 10.00	192
16	400	310	378	550	F30	65.0	102	18.00 x 11.00	347
18	450	330	410	585	F30	70.0	102	20.00 x 12.00	451
20	500	350	on request	on request	F30	on request	134	on request	554
24	600	390	516	750	F35	90.0	134	25.00 x 14.00	864

End to end dimensions "L" conforms to ISO5752 series 14.

Class 600, butt weld, Series 4K (mm)

Valve size / Inch	Valve size / DN	L	C	E	Top flange / Type	ØG	J	Key size	App. weight (kg)
3	80	180	147	225	F12	25.0	45	8.00 x 7.00	30
4	100	190	170	275	F14	30.0	51	8.00 x 7.00	59
6	150	210	194	305	F16	35.0	51	10.00 x 8.00	82
8	200	230	250	471	F16	45.0	77	14.00 x 9.00	123
10	250	250	300	520	F25	55.0	80	16.00 x 10.00	218
12	300	270	348	585	F25	65.0	90	18.00 x 11.00	295
14	350	290	380	635	on request	75.0	102	20.00 x 12.00	550
16	400	310	442	665	F30	88.9	on request	22.23 x 15.88	647
18	450	330	467	710	F35	88.9	120	22.23 x 15.88	818
20	500	350	505	795	F35	101.6	151	25.40 x 19.05	1182
24	600	390	585	925	F40	125.0	160	32.00 x 18.00	1773

End to end dimensions "L" conforms to ISO5752 series 14.

Materials of construction

Part list

Item	Description	Standard Material* / Carbon steel	Standard Material* / Stainless steel
1	Body	ASTM A216 WCB/WCC, ASTM A352 LCC/LCB	ASTM A351 CF8M/CF3M
1a	Body Seat	Stellite®Gr. 21	Stellite®Gr. 21
2	Disc	ASTM A216 WCB/WCC, ASTM A352 LCC/LCB	ASTM A351 CF8M/CF3M
3**	Seal Ring	ASTM A 240 S31803 (Duplex)+Graphite ASTM A 240 S20910 (XM-19) +Graphite ASTM A 240 S20910 (XM-19) +hard faced	ASTM A 240 S31803 (Duplex)+Graphite ASTM A 240 S20910 (XM-19)+Graphite ASTM A 240 S20910 (XM-19)+hard faced
4	Retainer Ring	ASTM A516 Gr.70/ASTM A240 SS304	ASTM A240 SS316/SS316L
5**	Seal Gasket	SS316+Graphite	SS316+Graphite
6	Retainer Screw	ISO 3506 A4-70***/ASTM A1082 TYPE 630 H1150M(17-4PH)	ISO 3506 A4-70***/ASTM A1082 TYPE 630 H1150M(17-4PH)
7	Spring Washer	ASTM A580 SS304	ASTM A580 SS316
8	Stem	ASTM A322 4130 ASTM A479 SS410 –cond.3 ASTM A564 Type 630 (17-4PH)	ASTM A564 Type 630 (17-4PH) ASTM A479 XM19
9**	Wedge Key	ASTM A322 4130 ASTM A479 SS410 –cond.3 ASTM A564 Type 630 (17-4PH)	ASTM A564 Type 630 (17-4PH) ASTM A479 XM19
10**	Stem Bearing	ASTM A 479 SS316/SS316L+Nitriding	ASTM A 479 SS316/SS316L+Nitriding
11**	Bearing Protector	Graphite	Graphite

Item	Description	Standard Material* / Carbon steel	Standard Material* / Stainless steel
12	Bearing Protector Support	ASTM A 479 SS316/SS316L	ASTM A 479 SS316/SS316L
13	Bearing Spacer	ASTM A 479 SS316/SS316L	ASTM A 479 SS316/SS316L
14	Packing Spacer	ASTM A 479 SS316/SS316L	ASTM A 479 SS316/SS316L
15**	Gland Packing	Graphite	Graphite
16	Gland	ASTM A 479 SS316/SS316L	ASTM A 479 SS316/SS316L
17**	Stem Retainer	ASTM A313 SS302	ASTM A313 SS302
18	Gland Flange	ASTM A516 Gr.70 / WCB / ASTM A105	ASTM A240 SS316 /SS316L/CF8M/CF3M
19	Stud	ASTM A193 Gr B7M	ASTM A1082 TYPE 630 H1150M (17-4PH)
20**	Belleville Spring	ASTM A666 SS304	ASTM A666 SS316
21	Hex Nut	ASTM A194 Gr 2HM	ASTM A1082 TYPE 630 H1150M (17-4PH)
22**	Thrust Bearing	ASTM A 479 SS316/SS316L+Nitriding	ASTM A 479 SS316/SS316L+Nitriding
23	Bearing Screw	ASTM A193 Gr. B8M	ASTM A193 Gr. B8M
24**	Cover Gasket	Graphite, SS316/ SS316L+Graphite	Graphite, SS316/ SS316L+Graphite
25	Bottom Cover	ASTM A516 Gr.70, ASTM A240 SS304	ASTM A240 SS316/SS316L
26	Spring Washer	ASTM A580 SS304	ASTM A580 SS316
27	Hex Hd Screw	ISO 3506 A4-70***/ ASTM A193 Gr B7M	ISO 3506 A4-70***/ ASTM A1082 TYPE 630 H1150M(17-4PH)
28	Bracket	Carbon steel	Stainless steel
29	Spring Washer	ASTM A580 SS304	ASTM A580 SS316
30	Hex Hd Screw	ISO 3506 A4-70	ISO 3506 A4-70
31	Key	ASTM A322 4130 ASTM A479 SS410 –cond.3 ASTM A564 Type 630 (17-4PH)	ASTM A564 Type 630 (17-4PH) ASTM A479 XM19

*Other materials are available on request.
**Recommended spares.
***Non Nace application

Ordering code

Position 1: series

Series	Code
4A Wafer Class 150	4A
4B Lug Class 150	4B
4C Double Flanged Short Pattern Class 150	4C
4P Double Flanged Long Pattern Class 150	4P
4W Buttweld Class 150	4W
4D Wafer Class 300	4D
4E Lug Class 300	4E
4F Double Flanged Short Pattern Class 300	4F
4Q Double Flanged Long Pattern Class 300	4Q
4Y Buttweld Class 300	4Y
4G Wafer Class 600	4G
4H Lug Class 600	4H
4J Double Flanged Short Pattern Class 600	4J
4R Double Flanged Long Pattern Class 600	4R
4K Buttweld Class 600	4K
4U Double Flanged Class 900	4U
4T Double Flanged Class 1500	4T
4V Buttweld Class 1500	4V

Position 2: size

Size	Code
3"	030
4"	040
5"	050
6"	060
8"	080
10"	100
12"	120
14"	140
↓	↓
84"	840

Position 3: body material

Seal configuration	Body material	Code
Laminated Seal Configurations	ASTM A216 WCC+Stellite 21 body seat overlay	2
Laminated Seal Configurations	ASTM A216 WCB+Stellite 21 body seat overlay	3
Laminated Seal Configurations	ASTM A351 CF8M+Stellite 21 body seat overlay	4
Laminated Seal Configurations	ASTM A995 5A+Stellite 21 body seat overlay	5
Laminated Seal Configurations	ASTM A995 6A+Stellite 21 body seat overlay	6
Laminated Seal Configurations	ASTM A995 4A+Stellite 21 body seat overlay	7
Laminated Seal Configurations	ASTM A352 LCB+Stellite 21 body seat overlay	8
Laminated Seal Configurations	ASTM A352 LCC+Stellite 21 body seat overlay	9
Laminated Seal Configurations	ASTM A351 CF8+Stellite 21 body seat overlay	1
Laminated Seal Configurations	ASTM A351 CN7M+Stellite 21 body seat overlay	A
Laminated Seal Configurations	ASTM A351 CF3+Stellite 21 body seat overlay	B
Laminated Seal Configurations	ASTM A351 CF3M+Stellite 21 body seat overlay	C
Laminated Seal Configurations	ASTM A351 CF8C+Stellite 21 body seat overlay	D
Laminated Seal Configurations	ASTM A351 CK3MCuN+Stellite 21 body seat overlay	E
Laminated Seal Configurations	ASTM A351 CF10M+Stellite 21 body seat overlay	F
Laminated Seal Configurations	ASTM A217 WC6+Stellite 21 body seat overlay	G
Laminated Seal Configurations	ASTM A217 WC9+Stellite 21 body seat overlay	H
Laminated Seal Configurations	ASTM A352 LC1+Stellite 21 body seat overlay	J
Laminated Seal Configurations	ASTM A352 LC2+Stellite 21 body seat overlay	K
Solid Metal Seal Configurations	ASTM A216 WCC+Stellite 6 body seat overlay	L
Solid Metal Seal Configurations	ASTM A216 WCB+Stellite 6 body seat overlay	M
Solid Metal Seal Configurations	ASTM A351 CF8M+Stellite 6 body seat overlay	N
Solid Metal Seal Configurations	ASTM A995 5A+Stellite 6 body seat overlay	O
Solid Metal Seal Configurations	ASTM A995 6A+Stellite 6 body seat overlay	P
Solid Metal Seal Configurations	ASTM A995 4A+Stellite 6 body seat overlay	Q
Solid Metal Seal Configurations	ASTM A352 LCB+Stellite 6 body seat overlay	R
Solid Metal Seal Configurations	ASTM A352 LCC+Stellite 6 body seat overlay	S
Solid Metal Seal Configurations	ASTM A351 CF8+Stellite 6 body seat overlay	T
Solid Metal Seal Configurations	ASTM A351 CN7M+Stellite 6 body seat overlay	U
Solid Metal Seal Configurations	ASTM A351 CF3+Stellite 6 body seat overlay	V
Solid Metal Seal Configurations	ASTM A351 CF3M+Stellite 6 body seat overlay	W
Solid Metal Seal Configurations	ASTM A351 CF8C+Stellite 6 body seat overlay	X
Solid Metal Seal Configurations	ASTM A351 CK3MCuN+Stellite 6 body seat overlay	Y
Solid Metal Seal Configurations	ASTM A351 CF10M+Stellite 6 body seat overlay	Z

Position 4: disc material

Disc material	Code
ASTM A351 CF8	1
ASTM A216 WCC + ENP	2
ASTM A216 WCB + ENP	3
ASTM A351 CF8M	4
ASTM A995 5A	5
ASTM A995 6A	6
ASTM A995 4A	7
ASTM A352 LCB + ENP	8
ASTM A352 LCC + ENP	9
ASTM A351 CN7M	A
ASTM A351 CF3	B
ASTM A351 CF3M	C
ASTM A351 CF8C	D
ASTM A351 CK3MCuN	E
ASTM A351 CF10M	F
ASTM A217 WC6 + ENP	G
ASTM A217 WC9 + ENP	H
ASTM A352 LC1 + ENP	J
ASTM A352 LC2 + ENP	K
ASTM 494 M35-1	M

Position 5: stem material

Stem material	Code
ASTM B637 UNS N00718	4
ASTM A479 Type XM-19	5
ASTM A564 Type 630 17-4PH (H1150D)	6
ASTM A479 UNS S32760	7
ASTM A479 UNS S32750	8
ASTM A479 UNS S31803	9
ASTM B865 N05500	M
ASTM A564 Type 630 17-4PH (H900)	H
ASTM A479 410 Cond.3	3
ASTM A182 Gr.F51	D
ASTM A182 Gr.F53	F
ASTM A182 Gr.F55	S

Position 6: seal ring material

Seal type	Seal ring material	Code
Laminated	S32750+Graphite	C
Laminated	S31803+Graphite	D
Laminated	S32760+Graphite	E
Laminated	XM-19+Graphite	F
Laminated	Inconel 625+Graphite	L
Laminated	Inconel 718+Graphite	M
Solid Metal	S31803+Stellite 21	G
Solid Metal	S32750+Stellite 21	H
Solid Metal	S32760+Stellite 21	J
Solid Metal	XM-19+Stellite 21	K
Solid Metal	SS316+Stellite 21	B

Position 7: pressure rating

Pressure rating	Code
Class 150	5
Class 300	6
Class 600	7
Class 900	8
Class 1500	9

Position 8: operator

Operator	Code
Bare Stem	B
Spring Return Actuator - Fail Close	S
Spring Return Actuator - Fail Open	0
Electric Actuator	E
Gear Operator with Padlock	G
Gear Operator without Padlock	W

Position 9: special requirement

Special requirement	Code
No Special Requirements	0
Special Requirement	S
NSF Name Plate	N
Quad Material Grade Certified	Q
Dual Material Grade Certified	D

Code structure and example

Item	Detail
Code positions	Series (2 boxes), Size (3 boxes), Material: Body (1), Disc (1), Stem (1), Seal (1), Pressure Rating (1), Operator (1), Special Requirement (1)
Example	Part Number for a Series 4B, Lug Style DelVal Triple Offset Valve, 4”, CF8M Body w/ Stellite 21 body seat overlay, CF8M Disc, 17-4 Stem, S31803 + Graphite Seal, Class 150 Rated with a Gear Operator with Padlock and No Special Requirement would be
Example code	4 B 0 4 0 4 4 6 D 5 G 0

Dimensions and weights

Class 150, wafer and lug, Series 4A/4B (mm) (columns 1 of 2)

Valve size / Inch	Valve size / DN	ØA	ØA1	B	C	E	Top flange / Type	ØG	J	Key size	K	End flange drilling / PCD
3	80	127	127	48	117	190	F07/F10	16.0	32	5.00 x 5.00	64	152.4
4	100	157	157	54	144	225	F07/F10	20.0	32	6.00 x 6.00	86	190.5
5	125	186	186	57	145	220	F07/F10	22.0	32	6.00 x 6.00	114	215.9
6	150	216	216	57	155	230	F07/F10	22.0	32	6.00 x 6.00	142	241.3
8	200	270	270	64	186	285	F10/F12	25.0	32	8.00 x 7.00	186	298.5
10	250	324	324	71	225	328	F12	30.0	51	8.00 x 7.00	232	362.0
12	300	381	381	81	280	380	F12/16	35.0	51	10.00 x 8.00	280	431.8
14	350	413	413	92	286	405	F14	40.0	51	12.00 x 8.00	307	476.3
16	400	470	470	102	335	525	F14/16	50.0	64	14.00 x 9.00	352	539.8
18	450	534	534	114	349	525	F16	55.0	64	16.00 x 10.00	417	577.9
20	500	584	584	127	394	580	F25	60.0	102	18.00 x 11.00	449	635.0
24	600	692	692	154	450	645	F25	70.0	102	20.00 x 12.00	554	749.3
28	700	800	762	165	537	770	F30	76.2	102	19.05 x 19.05	620	863.6
30	750	857	807	190	597	830	F30	76.2	102	19.05 x 19.05	687	914.4
32	800	914	864	190	592	870	F30	101.6	134	25.4 x 19.05	747	977.9
36	900	1015	1015	203	650	915	F35	101.6	134	25.4 x 19.05	820	1085.8
38	950	1073	1073	251	720	996	F35	120.0	150	32.00 x 18.00	880	1149.4
40	1000	1124	1124	251	771	1034	F40	120.0	150	32.00 x 18.00	918	1200.2
42	1050	1194	1194	254	823	1110	F40	120.0	150	32.00 x 18.00	971	1257.3
44	1100	1245	1245	276	875	1250	F48	140.0	180	36.00 x 20.00	1040	1314.4
48	1200	1359	1359	276	875	1250	F48	140.0	180	36.00 x 20.00	1116	1422.4
50	1250	1410	1410	318	920	1300	–	–	–	–	–	1479.6
52	1300	1461	1461	318	975	1375	–	–	–	–	–	1536.7
54	1350	1511	1511	390	1025	1450	–	–	–	–	–	1593.8
56	1400	1575	1575	390	1075	1550	–	–	–	–	–	1651.0
58	1450	1626	1626	440	1125	1625	–	–	–	–	–	1708.2
60	1500	1676	1676	440	1175	1604	–	–	–	–	–	1759.0
64	1600	1870	1870	440	1200	1775	–	–	–	–	–	1930.4
66	1650	1870	1870	490	1260	1825	–	–	–	–	–	1930.4

Valve size / Inch	Valve size / DN	ØA	ØA1	B	C	E	Top flange / Type	ØG	J	Key size	K	End flange drilling / PCD
72	1800	2035	2035	490	1300	1950	–	–	–	–	–	2095.5
76	1900	2193	2193	540	1400	2000	–	–	–	–	–	2260.6
78	1950	2193	2193	540	1475	2050	–	–	–	–	–	2260.6
80	2000	2358	2358	540	1540	2100	–	–	–	–	–	2425.7
84	2100	2358	2358	610	1640	2250	–	–	–	–	–	2425.7

Face to face dimensions up to 24": As per API 609 Cat. B to Face to face dimensions from 26" to 84": As per manufacturer standard.
Flange dimensions up to 24": As per ASME B16.5. to Flange dimensions 26"to 60": As per ASME B16.47 series A.
Flange dimensions 64" to 84": As per AWWA C 207 Class E.
Please consult UEC for other dimensions.

Class 150, wafer and lug, Series 4A/4B (mm) (columns 2 of 2)

Valve size / Inch	Valve size / DN	End flange drilling / T°	End flange drilling / Wafer / Nos.	End flange drilling / Wafer / Hole Ø* / Tapping UNC/UN-2B	End flange drilling / Lug / Nos.	End flange drilling / Lug / Tapping UNC/UN-2B	App. weight (kg) / Wafer	App. weight (kg) / Lug
3	80	45.0	2	* 19.1	4	5/8-11	9	11
4	100	22.5	2	* 19.1	8	5/8-11	15	17
5	125	22.5	2	* 22.3	8	3/4-10	16	18
6	150	22.5	2	* 22.3	8	3/4-10	17	20
8	200	22.5	2	* 22.3	8	3/4-10	26	32
10	250	15.0	2	* 25.4	12	7/8-9	45	52
12	300	15.0	4	* 25.4	12	7/8-9	70	80
14	350	15.0	4	* 28.6	12	1-8	90	110
16	400	11.3	4	1-8	16	1-8	164	190
18	450	11.3	4	1-1/8-8	16	1-1/8-8	190	230
20	500	9.0	4	1-1/8-8	20	1-1/8-8	240	270
24	600	9.0	4	1-1/4-8	20	1-1/4-8	450	489
28	700	6.4	4	1-1/4-8	28	1-1/4-8	572	660
30	750	6.4	4	1-1/4-8	28	1-1/4-8	935	1150
32	800	6.4	4	1-1/2-8	28	1-1/2-8	1050	1300
36	900	5.6	4	1-1/2-8	32	1-1/2-8	1200	1500
38	950	5.6	4	1-1/2-8	32	1-1/2-8	1422	1825
40	1000	5.0	4	1-1/2-8	36	1-1/2-8	1580	1950
42	1050	5.0	4	1-1/2-8	36	1-1/2-8	1849	2299
44	1100	4.5	8	1-1/2-8	40	1-1/2-8	2000	2550

Valve size / Inch	Valve size / DN	End flange drilling / T°	End flange drilling / Wafer / Nos.	End flange drilling / Wafer / Hole Ø* / Tapping UNC/UN-2B	End flange drilling / Lug / Nos.	End flange drilling / Lug / Tapping UNC/UN-2B	App. weight (kg) / Wafer	App. weight (kg) / Lug
48	1200	4.1	8	1-1/2-8	44	1-1/2-8	2250	2800
50	1250	4.1	8	1-3/4-8	44	1-3/4-8	–	–
52	1300	4.1	8	1-3/4-8	44	1-3/4-8	–	–
54	1350	4.1	8	1-3/4-8	44	1-3/4-8	–	–
56	1400	3.8	8	1-3/4-8	48	1-3/4-8	–	–
58	1450	3.8	8	1-3/4-8	48	1-3/4-8	–	–
60	1500	3.5	8	1-3/4-8	52	1-3/4-8	–	–
64	1600	3.5	16	1-3/4-8	52	1-3/4-8	–	–
66	1650	3.5	16	1-3/4-8	52	1-3/4-8	–	–
72	1800	3.0	16	1-3/4-8	60	1-3/4-8	–	–
76	1900	2.8	16	2-8	64	2-8	–	–
78	1950	2.8	16	2-8	64	2-8	–	–
80	2000	2.8	16	2-8	64	2-8	–	–
84	2100	2.8	16	2-8	64	2-8	–	–

Face to face dimensions up to 24": As per API 609 Cat. B to Face to face dimensions from 26" to 84": As per manufacturer standard.
Flange dimensions up to 24": As per ASME B16.5. to Flange dimensions 26"to 60": As per ASME B16.47 series A.
Flange dimensions 64" to 84": As per AWWA C 207 Class E.
Please consult UEC for other dimensions.

Class 150, double flanged short and long pattern, Series 4C/4P (mm) (columns 1 of 2)

Valve size / Inch	Valve size / DN	ØA	B / SP	B / LP	C	E	Top flange / Type	ØG	J	Key size	K (short pattern)	End flange drilling / PCD
3	80	190	114	203	117	190	F07/F10	16.0	32	5.00 x 5.00	64	152.4
4	100	230	127	229	144	225	F07/F10	20.0	32	6.00 x 6.00	86	190.5
5	125	254	140	267	145	220	F07/F10	22.0	32	6.00 x 6.00	114	215.9
6	150	280	140	267	155	230	F07/F10	22.0	32	6.00 x 6.00	142	241.3
8	200	345	152	292	186	285	F10/F12	25.0	32	8.00 x 7.00	185	298.5
10	250	405	165	330	225	328	F12	30.0	51	8.00 x 7.00	232	362.0
12	300	485	178	356	280	380	F12/F16	35.0	51	10.00 x 8.00	279	431.8
14	350	535	190	381	286	405	F14	40.0	51	12.00 x 8.00	306	476.3
16	400	595	216	406	335	525	F14/F16	50.0	64	14.00 x 9.00	351	539.8
18	450	635	222	432	349	525	F16	55.0	64	16.00 x 10.00	416	577.9
20	500	700	229	457	394	580	F25	60.0	102	18.00 x 11.00	449	635.0

Valve size / Inch	Valve size / DN	ØA	B / SP	B / LP	C	E	Top flange / Type	ØG	J	Key size	K (short pattern)	End flange drilling / PCD
24	600	815	267	508	450	645	F25	70.0	102	20.00 x 12.00	553	749.3
28	700	927	292	610	537	770	F30	76.2	102	19.05 x 19.05	620	863.6
30	750	984	318	610	597	830	F30	76.2	102	19.05 x 19.05	686	914.4
32	800	1060	318	660	592	870	F30	101.6	134	25.40 x 19.05	747	977.9
36	900	1168	330	711	650	915	F35	101.6	134	25.40 x 19.05	819	1085.8
40	1000	1289	410	–	771	1034	F40	120.0	150	32.00 x 18.00	917	1200.2
42	1050	1346	410	–	823	1110	F40	120.0	150	32.00 x 18.00	970	1257.3
44	1100	1403	470	–	875	1250	F48	140.0	180	36.00 x 20.00	1040	1314.4
48	1200	1511	470	–	875	1250	F48	140.0	180	36.00 x 20.00	1115	1422.4
50	1250	1568	530	–	920	1300	–	–	–	–	–	1479.6
52	1300	1626	530	–	975	1375	–	–	–	–	–	1536.7
54	1350	1683	530	–	1025	1450	–	–	–	–	–	1593.8
56	1400	1746	530	–	1075	1550	–	–	–	–	–	1651.0
58	1450	1803	600	–	1125	1625	–	–	–	–	–	1708.2
60	1500	1854	600	–	1175	1604	–	–	–	–	–	1759.0
64	1600	2032	600	–	1200	1775	–	–	–	–	–	1930.4
66	1650	2032	457	–	1260	1825	–	–	–	–	–	1930.4
72	1800	2197	670	–	1300	1950	–	–	–	–	–	2095.5
76	1900	2362	760	–	1400	2000	–	–	–	–	–	2260.6
78	1950	2362	760	–	1475	2050	–	–	–	–	–	2260.6
80	2000	2534	760	–	1540	2100	–	–	–	–	–	2425.7
84	2100	2534	610	–	1640	2250	–	–	–	–	–	2425.7

Face to face dimensions - Short pattern up to 48" & Long pattern up to 36": As per API 609 Cat. B.
Face to face dimensions - Short pattern above 48" & Long pattern above 36": As per manufacturer standard.
Flange dimensions up to 24": As per ASME B16.5.
Flange dimensions 26"to 60": As per ASME B16.47 series A.
Flange dimensions 64" to 84": As per AWWA C 207 Class E.
Please consult UEC for other dimensions.

Class 150, double flanged short and long pattern, Series 4C/4P (mm) (columns 2 of 2)

Valve size / Inch	Valve size / DN	End flange drilling / Total no. of holes	End flange drilling / T°	End flange drilling / Hole Ø	End flange drilling / Short pattern / No. of taps	End flange drilling / Short pattern / Tapping UNC/UN-2B	App. weight (kg) / DF (SP)	App. weight (kg) / DF (LP)
3	80	4	45.00	19.05	NA	5/8-11	18	19
4	100	8	22.50	19.05	4	5/8-11	28	30
5	125	8	22.50	22.30	NA	3/4-10	28	30
6	150	8	22.50	22.30	NA	3/4-10	38	42
8	200	8	22.50	22.30	NA	3/4-10	55	60
10	250	12	15.00	25.40	4	7/8-9	90	100
12	300	12	15.00	25.40	4	7/8-9	152	167
14	350	12	15.00	28.60	4	1-8	195	213
16	400	16	11.25	28.60	4	1-8	270	295
18	450	16	11.25	31.75	4	1-1/8-8	295	328
20	500	20	9.00	31.75	4	1-1/8-8	425	468
24	600	20	9.00	35.00	4	1-1/4-8	601	662
28	700	28	6.43	35.00	4	1-1/4-8	873	977
30	750	28	6.43	35.00	4	1-1/4-8	1382	1590
32	800	28	6.43	41.30	4	1-1/2-8	1563	1798
36	900	32	5.63	41.30	4	1-1/2-8	1878	2164
40	1000	36	5.00	41.30	4	1-1/2-8	2435	–
42	1050	36	5.00	41.30	4	1-1/2-8	2880	–
44	1100	40	4.50	41.30	8	1-1/2-8	3186	–
48	1200	44	4.09	41.30	8	1-1/2-8	3507	–
50	1250	44	4.09	47.60	8	1-3/4-8	–	–
52	1300	44	4.09	47.60	8	1-3/4-8	–	–
54	1350	44	4.09	47.60	8	1-3/4-8	–	–
56	1400	48	3.75	47.60	8	1-3/4-8	–	–
58	1450	48	3.75	47.60	8	1-3/4-8	–	–
60	1500	52	3.46	47.60	on request	1-3/4-8	–	–
64	1600	52	3.46	47.60	16	1-3/4-8	–	–
66	1650	52	3.46	47.60	16	1-3/4-8	–	–
72	1800	60	3.00	47.60	16	1-3/4-8	–	–
76	1900	64	2.81	54.00	16	2-8	–	–

Valve size / Inch	Valve size / DN	End flange drilling / Total no. of holes	End flange drilling / T°	End flange drilling / Hole Ø	End flange drilling / Short pattern / No. of taps	End flange drilling / Short pattern / Tapping UNC/UN-2B	App. weight (kg) / DF (SP)	App. weight (kg) / DF (LP)
78	1950	64	2.81	54.00	16	2-8	–	–
80	2000	64	2.81	54.00	16	2-8	–	–
84	2100	64	2.81	54.00	16	2-8	–	–

Face to face dimensions - Short pattern up to 48" & Long pattern up to 36": As per API 609 Cat. B.
Face to face dimensions - Short pattern above 48" & Long pattern above 36": As per manufacturer standard.
Flange dimensions up to 24": As per ASME B16.5.
Flange dimensions 26"to 60": As per ASME B16.47 series A.
Flange dimensions 64" to 84": As per AWWA C 207 Class E.
Please consult UEC for other dimensions.

Class 300, wafer and lug, Series 4D/4E (mm) (columns 1 of 2)

Valve size / Inch	Valve size / DN	ØA	ØA1	B	C	E	Top flange / Type	ØG	J	Key size	K	End flange drilling / PCD
3	80	127	127	48	117	190	F07/F10	16.0	32	5.00 x 5.00	66	168.3
4	100	157	157.2	54	144	225	F07/F10	20.0	32	6.00 x 6.00	92	200.2
6	150	216	216	59	190	275	F12	25.0	32	8.00 x 7.00	142	269.7
8	200	270	270	73	205	310	F12	35.0	51	10.00 x 8.00	185	330.2
10	250	324	324	83	260	385	F16	35.0	51	10.00 x 8.00	227	387.4
12	300	381	381	92	285	425	F16	40.0	51	12.00 x 8.00	278	450.8
14	350	413	413	117	315	480	F25	55.0	64	16.00 x 10.00	298	514.4
16	400	470	470	133	378	550	F30	65.0	102	18.00 x 11.00	348	571.5
18	450	534	534	149	410	585	F30	70.0	102	20.00 x 12.00	386	628.6
20	500	584	584	159	on request	on request	F30	on request	134	on request	412	685.8
24	600	692	692	181	516	750	F35	90.0	134	25.00 x 14.00	488	812.8
26	650	749	749	229	525	840	–	–	–	–	–	876.3
28	700	800	800	229	550	885	–	–	–	–	–	939.8
30	750	857	857	230	580	980	–	–	–	–	–	997.0
32	800	914	914	271	610	1050	–	–	–	–	–	1054.1
34	850	965	965	271	635	1100	–	–	–	–	–	1104.9
36	900	1022	1022	271	665	1125	–	–	–	–	–	1168.4
38	950	1029	1029	300	665	1200	–	–	–	–	–	1092.2
40	1000	1086	1086	300	715	1235	–	–	–	–	–	1155.7
42	1050	1137	1137	350	770	1300	–	–	–	–	–	1206.5

Valve size / Inch	Valve size / DN	ØA	ØA1	B	C	E	Top flange / Type	ØG	J	Key size	K	End flange drilling / PCD
44	1100	1194	1194	350	800	1330	–	–	–	–	–	1263.6
46	1150	1245	1245	350	825	1440	–	–	–	–	–	1320.8
48	1200	1302	1302	350	850	1480	–	–	–	–	–	1371.6
50	1250	1359	1359	390	930	1530	–	–	–	–	–	1428.8
52	1300	1410	1410	390	955	1555	–	–	–	–	–	1479.6
54	1350	1467	1467	390	985	1585	–	–	–	–	–	1549.4
56	1400	1518	1518	390	1010	1610	–	–	–	–	–	1600.2
58	1450	1575	1575	440	1040	1640	–	–	–	–	–	1651.0
60	1500	1626	1626	440	1065	1665	–	–	–	–	–	1701.8

Face to face dimensions up to 24": As per API 609 Cat. B to Face to face dimensions from 26" to 60": As per manufacturer standard.
Flange dimensions up to 24": As per ASME B16.5 to Flange dimensions above 26": As per ASME B16.47 series A.
Please consult UEC for other dimensions.

Class 300, wafer and lug, Series 4D/4E (mm) (columns 2 of 2)

Valve size / Inch	Valve size / DN	End flange drilling / T°	End flange drilling / Wafer / Nos.	End flange drilling / Wafer / Hole Ø* / Tapping UNC/UN-2B	End flange drilling / Lug / Nos.	End flange drilling / Lug / Tapping UNC/UN-2B	App. weight (kg) / Wafer	App. weight (kg) / Lug
3	80	22.5	2	* 22.3	8	3/4-10	10	12
4	100	22.5	2	* 22.3	8	3/4-10	20	25
6	150	15.0	2	* 22.3	12	3/4-10	34	45
8	200	15.0	4	* 25.4	12	7/8-9	50	56
10	250	11.3	4	1-8	16	1-8	80	104
12	300	11.3	4	1-1/8-8	16	1-1/8-8	130	160
14	350	9.0	4	1-1/8-8	20	1-1/8-8	165	235
16	400	9.0	4	1-1/4-8	20	1-1/4-8	225	360
18	450	7.5	4	1-1/4-8	24	1-1/4-8	342	494
20	500	7.5	4	1-1/4-8	24	1-1/4-8	390	556
24	600	7.5	4	1-1/2-8	24	1-1/2-8	665	800
26	650	6.4	4	1-5/8-8	28	1-5/8-8	800	1000
28	700	6.4	4	1-5/8-8	28	1-5/8-8	1193	1335
30	750	6.4	4	1-3/4-8	28	1-3/4-8	1463	1658
32	800	6.4	4	1-7/8-8	28	1-7/8-8	1661	1856
34	850	6.4	4	1-7/8-8	28	1-7/8-8	1790	1950
36	900	5.6	4	2-8	32	2-8	1970	2160

Valve size / Inch	Valve size / DN	End flange drilling / T°	End flange drilling / Wafer / Nos.	End flange drilling / Wafer / Hole Ø* / Tapping UNC/UN-2B	End flange drilling / Lug / Nos.	End flange drilling / Lug / Tapping UNC/UN-2B	App. weight (kg) / Wafer	App. weight (kg) / Lug
38	950	5.6	4	1-1/2-8	32	1-1/2-8	2180	2300
40	1000	5.6	8	1-5/8-8	32	1-5/8-8	2380	2470
42	1050	5.6	8	1-5/8-8	32	1-5/8-8	2439	2570
44	1100	5.6	8	1-3/4-8	32	1-3/4-8	2650	2800
46	1150	6.4	8	1-7/8-8	28	1-7/8-8	2870	3230
48	1200	5.6	8	1-7/8-8	32	1-7/8-8	3384	3684
50	1250	5.6	8	2-8	32	2-8	–	–
52	1300	5.6	8	2-8	32	2-8	–	–
54	1350	6.4	8	2-1/4-8	28	2-1/4-8	–	–
56	1400	6.4	8	2-1/4-8	28	2-1/4-8	–	–
58	1450	5.6	8	2-1/4-8	32	2-1/4-8	–	–
60	1500	5.6	8	2-1/4-8	32	2-1/4-8	–	–

Face to face dimensions up to 24": As per API 609 Cat. B to Face to face dimensions from 26" to 60": As per manufacturer standard.
Flange dimensions up to 24": As per ASME B16.5 to Flange dimensions above 26": As per ASME B16.47 series A.
Please consult UEC for other dimensions.

Class 300, double flanged short and long pattern, Series 4F/4Q (mm) (columns 1 of 2)

Valve size / Inch	Valve size / DN	ØA	B / SP	B / LP	C	E	Top flange / Type	ØG	J	Key size	K (short pattern)	End flange drilling / PCD
3	80	210	114	282	117	190	F07/F10	16.0	32	5.00 x 5.00	66	168.1
4	100	255	127	305	144	225	F07/F10	20.0	32	6.00 x 6.00	92	200.2
6	150	320	140	403	190	275	F12	25.0	32	8.00 x 7.00	142	269.7
8	200	380	152	419	205	310	F12	35.0	51	10.00 x 8.00	185	330.2
10	250	445	165	457	260	385	F16	35.0	51	10.00 x 8.00	227	387.4
12	300	520	178	502	285	425	F16	40.0	51	12.00 x 8.00	278	450.8
14	350	585	190	762	315	480	F25	55.0	64	16.00 x 10.00	298	514.4
16	400	650	216	838	378	550	F30	65.0	102	18.00 x 11.00	348	571.5
18	450	710	222	914	410	585	F30	70.0	102	20.00 x 12.00	386	628.6
20	500	775	229	991	on request	on request	F30	on request	134	on request	412	685.8
24	600	914	267	1143	516	750	F35	90.0	134	25.00 x 14.00	488	812.8
26	650	972	292	1245	525	840	–	–	–	–	–	876.3
28	700	1035	292	1346	550	885	–	–	–	–	–	939.8
30	750	1092	318	1397	580	980	–	–	–	–	–	997.0

Valve size / Inch	Valve size / DN	ØA	B / SP	B / LP	C	E	Top flange / Type	ØG	J	Key size	K (short pattern)	End flange drilling / PCD
32	800	1149	318	1524	610	1050	–	–	–	–	–	1054.1
34	850	1206	330	1727	635	1100	–	–	–	–	–	1104.9
36	900	1270	on request	1727	665	1125	–	–	–	–	–	1168.4
38	950	1168	410	–	665	1200	–	–	–	–	–	1092.2
40	1000	1238	410	–	715	1235	–	–	–	–	–	1155.7
42	1050	1289	410	–	770	1300	–	–	–	–	–	1206.5
44	1100	1353	470	–	800	1330	–	–	–	–	–	1263.6
46	1150	1416	470	–	825	1440	–	–	–	–	–	1320.8
48	1200	1467	470	–	850	1480	–	–	–	–	–	1371.6
50	1250	1530	530	–	930	1530	–	–	–	–	–	1428.8
52	1300	1581	530	–	955	1555	–	–	–	–	–	1479.6
54	1350	1657	530	–	985	1585	–	–	–	–	–	1549.4
56	1400	1708	530	–	1010	1610	–	–	–	–	–	1600.2
58	1450	1759	600	–	1040	1640	–	–	–	–	–	1651.0
60	1500	1810	600	–	1065	1665	–	–	–	–	–	1701.8

Face to face dimensions - Short pattern up to 48" & Long pattern up to 36": As per API 609.
Face to face dimensions - Short pattern above 48" & Long pattern above 36": As per manufacturer standard.
Flange dimensions up to 24": As per ASME B16.5.
Flange dimensions above 26": As per ASME B16.47 series A.
Please consult UEC for other dimensions.

Class 300, double flanged short and long pattern, Series 4F/4Q (mm) (columns 2 of 2)

Valve size / Inch	Valve size / DN	End flange drilling / Total no. of holes	End flange drilling / T°	End flange drilling / Hole Ø	End flange drilling / Short pattern / No. of taps	End flange drilling / Short pattern / Tapping UNC/UN-2B	App. weight (kg) / DF (SP)	App. weight (kg) / DF (LP)
3	80	8	22.5	22.3	NA	3/4-10	18	20
4	100	8	22.5	22.3	NA	3/4-10	32	36
6	150	12	15.0	22.3	NA	3/4-10	84	95
8	200	12	15.0	25.4	NA	7/8-9	100	117
10	250	16	11.3	28.6	4	1-8	130	154
12	300	16	11.3	31.8	4	1-1/8-8	225	257
14	350	20	9.0	31.8	4	1-1/8-8	310	373
16	400	20	9.0	34.9	4	1-1/4-8	406	545
18	450	24	7.5	34.9	4	1-1/4-8	526	745
20	500	24	7.5	34.9	4	1-1/4-8	665	959
24	600	24	7.5	41.3	4	1-1/2-8	956	1437
26	650	28	6.4	44.5	4	1-5/8-8	1250	1883
28	700	28	6.4	44.5	4	1-5/8-8	1400	2200
30	750	28	6.4	47.6	4	1-3/4-8	1730	2658
32	800	28	6.4	50.8	4	1-7/8-8	1920	3054
34	850	28	6.4	50.8	4	1-7/8-8	2050	3550
36	900	32	5.6	54.0	4	2-8	2360	3995
38	950	32	5.6	41.3	4	1-1/2-8	2460	–
40	1000	32	5.6	44.5	8	1-5/8-8	2585	–
42	1050	32	5.6	44.5	8	1-5/8-8	2849	–
44	1100	32	5.6	47.6	8	1-3/4-8	3160	–
46	1150	28	6.4	50.8	8	1-7/8-8	3430	–
48	1200	32	5.6	50.8	8	1-7/8-8	4106	–
50	1250	32	5.6	54.0	8	2-8	–	–
52	1300	32	5.6	54.0	8	2-8	–	–
54	1350	28	6.4	60.3	8	2-1/4-8	–	–
56	1400	28	6.4	60.3	8	2-1/4-8	–	–
58	1450	32	5.6	60.3	8	2-1/4-8	–	–
60	1500	32	5.6	60.3	8	2-1/4-8	–	–

Face to face dimensions - Short pattern up to 48" & Long pattern up to 36": As per API 609.
Face to face dimensions - Short pattern above 48" & Long pattern above 36": As per manufacturer standard.
Flange dimensions up to 24": As per ASME B16.5.
Flange dimensions above 26": As per ASME B16.47 series A.
Please consult UEC for other dimensions.

Class 600, wafer and lug, Series 4G/4H (mm) (columns 1 of 2)

Valve size / Inch	Valve size / DN	ØA	ØA1	B	C	E	Top flange / Type	ØG	J	Key size	K	End flange drilling / PCD
3	80	146	146	64	147	225	F12	25.0	45	8.00 x 7.00	70	168.1
4	100	175	175	78	170	275	F14	30.0	51	8.00 x 7.00	80	215.9
6	150	241	241	78	194	305	F16	35.0	51	10.00 x 8.00	145	292.1
8	200	302	302	102	250	471	F16	45.0	77	14.00 x 9.00	162	349.2
10	250	356	356	117	300	520	F25	55.0	80	16.00 x 10.00	195	431.8
12	300	413	413	140	348	585	F25	65.0	90	18.00 x 11.00	228	489.0
14	350	457	457	155	380	635	on request	75.0	102	20.00 x 12.00	273	527.0
16	400	508	508	178	442	665	F30	88.9	on request	22.23 x 15.88	282	603.2
18	450	575	575	200	467	710	F35	88.9	120	22.23 x 15.88	335	654.0
20	500	635	635	216	505	795	F35	101.6	151	25.40 x 19.05	375	723.9
24	600	749	749	232	585	925	F40	125.0	160	32.00 x 18.00	435	838.2
26	650	749	749	292	625	1025	–	–	–	–	–	914.4
28	700	800	800	292	650	1050	–	–	–	–	–	965.2
30	750	857	857	318	680	1080	–	–	–	–	–	1022.4
32	800	914	914	318	710	1110	–	–	–	–	–	1079.5
34	850	965	965	330	735	1135	–	–	–	–	–	1130.3
36	900	1022	1022	330	760	1160	–	–	–	–	–	1193.8
38	950	1054	1054	410	830	1280	–	–	–	–	–	1162.0
40	1000	1111	1111	410	855	1305	–	–	–	–	–	1212.8
42	1050	1168	1168	470	885	1335	–	–	–	–	–	1282.7
44	1100	1226	1226	470	915	1365	–	–	–	–	–	1333.5
46	1150	1276	1276	470	940	1390	–	–	–	–	–	1390.6
48	1200	1334	1334	470	970	1420	–	–	–	–	–	1460.5

Face to face dimensions up to 24": As per API 609 Cat. B except 3" & 4".
Face to face dimensions above 24": As per manufacturer standard.
Flange dimensions up to 24": As per ASME B16.5.
Flange dimensions above 24": As per ASME B16.47 series A.
Please consult UEC for other dimensions.

Class 600, wafer and lug, Series 4G/4H (mm) (columns 2 of 2)

Valve size / Inch	Valve size / DN	End flange drilling / T°	End flange drilling / Wafer / Nos.	End flange drilling / Wafer / Tapping UNC/UN-2B	End flange drilling / Lug / Nos.	End flange drilling / Lug / Tapping UNC/UN-2B	App. weight (kg) / Wafer	App. weight (kg) / Lug
3	80	22.5	4	22.3	8	3/4-10	14	15
4	100	22.5	4	25.4	8	7/8-9	26	30
6	150	15.0	4	1-8	12	1-8	62	70
8	200	15.0	4	1-1/8-8	12	1-1/8-8	90	100
10	250	11.3	4	1-1/4-8	16	1-1/4-8	132	185
12	300	9.0	4	1-1/4-8	20	1-1/4-8	220	254
14	350	9.0	4	1-3/8-8	20	1-3/8-8	282	324
16	400	9.0	4	1-1/2-8	20	1-1/2-8	450	514
18	450	9.0	4	1-5/8-8	20	1-5/8-8	550	630
20	500	7.5	4	1-5/8-8	24	1-5/8-8	690	800
24	600	7.5	4	1-7/8-8	24	1-7/8-8	1086	1240
26	650	6.4	8	1-7/8-8	28	1-7/8-8	–	–
28	700	6.4	8	2-8	28	2-8	–	–
30	750	6.4	8	2-8	28	2-8	–	–
32	800	6.4	8	2-1/4-8	28	2-1/4-8	–	–
34	850	6.4	8	2-1/4-8	28	2-1/4-8	–	–
36	900	6.4	8	2-1/2-8	28	2-1/2-8	–	–
38	950	6.4	8	2-1/4-8	28	2-1/4-8	–	–
40	1000	5.6	8	2-1/4-8	32	2-1/4-8	–	–
42	1050	6.4	8	2-1/2-8	28	2-1/2-8	–	–
44	1100	5.6	8	2-1/2-8	32	2-1/2-8	–	–
46	1150	5.6	8	2-1/2-8	32	2-1/2-8	–	–
48	1200	5.6	8	2-3/4-8	32	2-3/4-8	–	–

Face to face dimensions up to 24": As per API 609 Cat. B except 3" & 4".
Face to face dimensions above 24": As per manufacturer standard.
Flange dimensions up to 24": As per ASME B16.5.
Flange dimensions above 24": As per ASME B16.47 series A.
Please consult UEC for other dimensions.

Class 600, double flanged short and long pattern, Series 4J/4R (mm) (columns 1 of 2)

Valve size / Inch	Valve size / DN	ØA	B / SP	B / LP	C	E	Top flange / Type	ØG	J	Key size	K (short pattern)	End flange drilling / PCD
3	80	210	180	356	147	225	F12	25.0	45	8.00 x 7.00	70	168.1
4	100	273	190	432	170	275	F14	30.0	51	8.00 x 7.00	80	215.9
6	150	356	210	559	194	305	F16	35.0	51	10.00 x 8.00	145	292.1
8	200	419	230	660	250	471	F16	45.0	77	14.00 x 9.00	162	349.2
10	250	508	250	787	300	520	F25	55.0	80	16.00 x 10.00	195	431.8
12	300	559	270	838	348	585	F25	65.0	90	18.00 x 11.00	228	489.0
14	350	603	290	889	380	635	on request	75.0	102	20.00 x 12.00	273	527.0
16	400	686	310	991	442	665	F30	88.9	on request	22.23 x 15.88	282	603.2
18	450	743	330	1092	467	710	F35	88.9	120	22.23 x 15.88	335	654.0
20	500	813	350	1194	505	795	F35	101.6	151	25.40 x 19.05	375	723.9
24	600	940	390	1397	585	925	F40	125.0	160	32.00 x 18.00	435	838.2
26	650	1016	430	1448	625	1025	–	–	–	–	–	914.4
28	700	1073	430	1549	650	1050	–	–	–	–	–	965.2
30	750	1130	470	1651	680	1080	–	–	–	–	–	1022.4
32	800	1194	470	1778	710	1110	–	–	–	–	–	1079.5
34	850	1245	510	2083	735	1135	–	–	–	–	–	1130.3
36	900	1314	510	2083	760	1160	–	–	–	–	–	1193.8
38	950	1270	550	–	830	1280	–	–	–	–	–	1162.0
40	1000	1321	550	–	855	1305	–	–	–	–	–	1212.8
42	1050	1403	630	–	885	1335	–	–	–	–	–	1282.7
44	1100	1454	630	–	915	1365	–	–	–	–	–	1333.5
46	1150	1511	630	–	940	1390	–	–	–	–	–	1390.6
48	1200	1594	630	–	970	1420	–	–	–	–	–	1460.5

Face to face dimensions - Short pattern up to 48" & Long pattern up to 36": As per API 609.
Face to face dimensions - Short pattern above 48" & Long pattern above 36": As per manufacturer standard.
Flange dimensions up to 24": As per ASME B16.5.
Flange dimensions above 26": As per ASME B16.47 series A.
Please consult UEC for other dimensions.

Class 600, double flanged short and long pattern, Series 4J/4R (mm) (columns 2 of 2)

Valve size / Inch	Valve size / DN	End flange drilling / Total no. of holes	End flange drilling / T°	End flange drilling / Hole Ø	End flange drilling / Short pattern / No. of taps	End flange drilling / Short pattern / Tapping UNC/UN-2B	App. weight (kg) / DF (SP)	App. weight (kg) / DF (LP)
3	80	8	22.5	22.3	4	3/4-10	41	46
4	100	8	22.5	25.4	4	7/8-9	65	70
6	150	12	15.0	28.6	4	1-8	132	147
8	200	12	15.0	31.8	4	1-1/8-8	160	188
10	250	16	11.3	34.9	4	1-1/4-8	266	318
12	300	20	9.0	34.9	4	1-1/4-8	365	422
14	350	20	9.0	38.1	4	1-3/8-8	490	555
16	400	20	9.0	41.3	4	1-1/2-8	700	863
18	450	20	9.0	44.5	4	1-5/8-8	736	972
20	500	24	7.5	44.5	4	1-5/8-8	871	1204
24	600	24	7.5	50.8	4	1-7/8-8	1422	1977
26	650	28	6.4	50.8	8	1-7/8-8	1695	2709
28	700	28	6.4	54.0	8	2-8	1890	3136
30	750	28	6.4	54.0	8	2-8	2050	3620
32	800	28	6.4	60.3	8	2-1/4-8	2555	4440
34	850	28	6.4	60.3	8	2-1/4-8	2705	5272
36	900	28	6.4	66.7	8	2-1/2-8	2904	5340
38	950	28	6.4	60.3	8	2-1/4-8	–	–
40	1000	32	5.6	60.3	8	2-1/4-8	–	–
42	1050	28	6.4	66.7	8	2-1/2-8	–	–
44	1100	32	5.6	66.7	8	2-1/2-8	–	–
46	1150	32	5.6	66.7	8	2-1/2-8	–	–
48	1200	32	5.6	73.0	8	2-3/4-8	–	–

Face to face dimensions - Short pattern up to 48" & Long pattern up to 36": As per API 609.
Face to face dimensions - Short pattern above 48" & Long pattern above 36": As per manufacturer standard.
Flange dimensions up to 24": As per ASME B16.5.
Flange dimensions above 26": As per ASME B16.47 series A.
Please consult UEC for other dimensions.

Operating torque

*Flow from stem side is the preferred flow direction. Flow from retainer side is non-preferred flow direction. Arrow on valve body indicates the preferred flow direction.
1. BTO - Break to Open; RTO - Run to Open; ETO - End to Open; BTC - Break to Close; RTC - Run to Close; ETC - End to Close. (Pref.) = Preferred , (N. Pref.) = Non Preferred.
2. RTO, ETO, BTC, RTC= 0.4 x Max (BTO, ETC).
4. The published torque values are common for both laminar seal & metal seal without any factor of safety. For operator sizing, factor of 30% to be considered.
5. For valves with extension (cryogenic service / high temperature service), 1.5 times of preferred side BTO torque to be considered as a base torque without factor of safety and valves shall be offered as uni-directional. For operator sizing, factor of 30% to be considered.
6. The published torque values are without factor of safety.
7. The following factor of safety shall be considered for operator sizing: clean service (liquid, steam, clean gas and non-abrasive) = 1.3, high solids slurry = 1.5, Dry gas= 1.7

Class 150, torque at differential pressure (Nm)

Valve size / Inch	Valve size / DN	Flow direction*	ΔP 3.5 bar / ETC	ΔP 3.5 bar / BTO	ΔP 7 bar / ETC	ΔP 7 bar / BTO	ΔP 10 bar / ETC	ΔP 10 bar / BTO	ΔP 16 bar / ETC	ΔP 16 bar / BTO	ΔP 20 bar / ETC	ΔP 20 bar / BTO
3	80	Shaft Side (Pref.)	23	28	38	47	85	106	90	112	94	118
3	80	Disc Side (N. Pref.)	31	25	52	42	117	93	123	99	130	104
4	100	Shaft Side (Pref.)	29	37	49	61	108	135	115	144	122	153
4	100	Disc Side (N. Pref.)	40	32	67	54	149	119	158	126	168	135
6	150	Shaft Side (Pref.)	51	63	84	106	186	233	201	251	211	264
6	150	Disc Side (N. Pref.)	70	56	116	93	256	205	277	221	290	232
8	200	Shaft Side (Pref.)	77	96	128	160	264	330	304	380	320	400
8	200	Disc Side (N. Pref.)	106	84	176	141	363	290	418	334	440	352
10	250	Shaft Side (Pref.)	176	220	294	367	558	698	685	857	734	918
10	250	Disc Side (N. Pref.)	242	194	404	323	767	614	942	754	1010	808
12	300	Shaft Side (Pref.)	227	284	378	473	662	827	823	1028	946	1182
12	300	Disc Side (N. Pref.)	312	250	520	416	910	728	1131	905	1300	1040
14	350	Shaft Side (Pref.)	301	376	502	627	962	1202	1183	1479	1254	1568
14	350	Disc Side (N. Pref.)	414	331	690	552	1322	1058	1627	1302	1725	1380
16	400	Shaft Side (Pref.)	508	635	847	1058	1499	1874	1940	2426	2117	2646
16	400	Disc Side (N. Pref.)	699	559	1164	931	2062	1649	2668	2134	2911	2328
18	450	Shaft Side (Pref.)	694	867	1156	1445	1870	2338	2423	3029	2890	3613

Valve size / Inch	Valve size / DN	Flow direction*	ΔP 3.5 bar / ETC	ΔP 3.5 bar / BTO	ΔP 7 bar / ETC	ΔP 7 bar / BTO	ΔP 10 bar / ETC	ΔP 10 bar / BTO	ΔP 16 bar / ETC	ΔP 16 bar / BTO	ΔP 20 bar / ETC	ΔP 20 bar / BTO
18	450	Disc Side (N. Pref.)	954	763	1590	1272	2572	2057	3331	2665	3974	3179
20	500	Shaft Side (Pref.)	873	1091	1454	1818	2452	3065	3467	4334	3636	4545
20	500	Disc Side (N. Pref.)	1200	960	2000	1600	3372	2697	4767	3814	5000	4000
24	600	Shaft Side (Pref.)	1344	1680	2240	2800	3977	4971	5113	6391	5600	7000
24	600	Disc Side (N. Pref.)	1848	1478	3080	2464	5468	4374	7030	5624	7700	6160
26	650	Shaft Side (Pref.)	2304	2880	3840	4800	7086	8857	8760	10950	9600	12000
26	650	Disc Side (N. Pref.)	3168	2534	5280	4224	9743	7794	12045	9636	13200	10560
28	700	Shaft Side (Pref.)	2688	3360	4480	5600	8447	10558	11200	14000	11200	14000
28	700	Disc Side (N. Pref.)	3696	2957	6160	4928	11614	9291	15400	12320	15400	12320
30	750	Shaft Side (Pref.)	3600	3780	6000	6300	9000	9450	13125	13782	15000	15750
30	750	Disc Side (N. Pref.)	3960	3360	6600	5600	9900	8400	14438	12250	16500	14000
32	800	Shaft Side (Pref.)	4157	5196	6928	8660	11813	14766	15277	19096	17320	21650
32	800	Disc Side (N. Pref.)	5716	4572	9526	7621	16243	12994	21006	16805	23815	19052
34	850	Shaft Side (Pref.)	5614	7018	9357	11696	14955	18693	21931	27414	23393	29241
34	850	Disc Side (N. Pref.)	7720	6176	12866	10293	20563	16450	30155	24124	32165	25732
36	900	Shaft Side (Pref.)	6288	7860	10480	13100	16749	20937	24563	30703	26200	32750
36	900	Disc Side (N. Pref.)	8646	6917	14410	11528	23030	18424	33773	27019	36025	28820
38	950	Shaft Side (Pref.)	7412	9265	12353	15441	20318	25397	27307	34134	30883	38604
38	950	Disc Side (N. Pref.)	10191	8153	16986	13588	27937	22349	37547	30038	42464	33971
40	1000	Shaft Side (Pref.)	8227	10284	13712	17140	22553	28191	30311	37888	34280	42850
40	1000	Disc Side (N. Pref.)	11312	9050	18854	15083	31010	24808	41677	33342	47135	37708
42	1050	Shaft Side (Pref.)	8421	10526	14035	17544	25191	31489	31174	38968	35088	43860
42	1050	Disc Side (N. Pref.)	11579	9263	19298	15439	34638	27711	42865	34292	48246	38597
44	1100	Shaft Side (Pref.)	9120	11400	15200	19000	26878	33598	35034	43793	38000	47500
44	1100	Disc Side (N. Pref.)	12540	10032	20900	16720	36957	29566	48172	38538	52250	41800
48	1200	Shaft Side (Pref.)	13044	16306	21741	27176	38046	47558	49460	61825	54352	67940
48	1200	Disc Side (N. Pref.)	17936	14349	29894	23915	52314	41851	68008	54406	74734	59787

3. For actuator sizing, the minimum valve differential pressure shall be 3.5 bar. For differential pressures above 3.5 bar the intermediated values to be interpolated. For gear operator sizing, the full rated torque to be considered.

Class 300, torque at differential pressure (Nm) (columns 1 of 2)

Valve size / Inch	Valve size / DN	Flow direction*	ΔP 3.5 bar / ETC	ΔP 3.5 bar / BTO	ΔP 7 bar / ETC	ΔP 7 bar / BTO	ΔP 10 bar / ETC	ΔP 10 bar / BTO	ΔP 20 bar / ETC	ΔP 20 bar / BTO	ΔP 30 bar / ETC	ΔP 30 bar / BTO
3	80	Shaft Side (Pref.)	44	55	82	103	109	137	153	191	166	207
3	80	Disc Side (N. Pref.)	60	48	113	90	150	120	210	168	228	182
4	100	Shaft Side (Pref.)	69	87	130	163	174	217	195	244	212	265
4	100	Disc Side (N. Pref.)	95	76	179	143	239	191	269	215	291	233
6	150	Shaft Side (Pref.)	116	144	217	271	289	361	329	412	361	451
6	150	Disc Side (N. Pref.)	159	127	298	238	397	318	453	362	496	397
8	200	Shaft Side (Pref.)	234	292	439	548	585	731	689	861	802	1002
8	200	Disc Side (N. Pref.)	322	257	603	482	804	643	947	757	1102	882
10	250	Shaft Side (Pref.)	314	392	589	736	785	981	1032	1290	1208	1510
10	250	Disc Side (N. Pref.)	432	345	810	648	1079	863	1419	1135	1661	1329
12	300	Shaft Side (Pref.)	423	529	793	992	1058	1322	1396	1745	1819	2274
12	300	Disc Side (N. Pref.)	582	465	1091	873	1454	1164	1920	1536	2502	2001
14	350	Shaft Side (Pref.)	578	722	1084	1354	1445	1806	1886	2358	2247	2809
14	350	Disc Side (N. Pref.)	795	636	1490	1192	1986	1589	2593	2075	3090	2472
16	400	Shaft Side (Pref.)	973	1217	1825	2281	2433	3042	3216	4019	4041	5052
16	400	Disc Side (N. Pref.)	1338	1071	2509	2008	3346	2677	4421	3537	5557	4445
18	450	Shaft Side (Pref.)	1298	1622	2433	3041	3244	4055	4379	5474	5271	6589
18	450	Disc Side (N. Pref.)	1784	1427	3345	2676	4460	3568	6021	4817	7248	5798
20	500	Shaft Side (Pref.)	1470	1837	2756	3445	3675	4594	4928	6160	6515	8143
20	500	Disc Side (N. Pref.)	2021	1617	3790	3032	5053	4042	6776	5420	8958	7166
24	600	Shaft Side (Pref.)	2186	2733	4099	5124	5466	6832	6979	8724	9249	11562
24	600	Disc Side (N. Pref.)	3006	2405	5636	4509	7515	6012	9596	7677	12718	10174

3. For actuator sizing, the minimum valve differential pressure shall be 3.5 bar. For differential pressures above 3.5 bar the intermediated values to be interpolated. For gear operator sizing, the full rated torque to be considered.

Class 300, torque at differential pressure (Nm) (columns 2 of 2)

Valve size / Inch	Valve size / DN	ΔP 40 bar / ETC	ΔP 40 bar / BTO	ΔP 51.7 bar / ETC	ΔP 51.7 bar / BTO
3	80	179	223	204	255
3	80	245	196	281	224
4	100	239	298	250	312
4	100	328	263	343	275
6	150	397	496	451	564
6	150	546	437	620	496
8	200	896	1120	990	1238
8	200	1232	986	1362	1089
10	250	1323	1654	1411	1764
10	250	1819	1455	1940	1552
12	300	2116	2644	2285	2856
12	300	2909	2327	3142	2513
14	350	2729	3411	2970	3712
14	350	3752	3002	4083	3267
16	400	4867	6084	5475	6845
16	400	6692	5354	7528	6023
18	450	6325	7907	7461	9327
18	450	8698	6958	10259	8207
20	500	7851	9814	9187	11485
20	500	10795	8636	12632	10106
24	600	12108	15135	14294	17869
24	600	16649	13319	19655	15724

3. For actuator sizing, the minimum valve differential pressure shall be 3.5 bar. For differential pressures above 3.5 bar the intermediated values to be interpolated. For gear operator sizing, the full rated torque to be considered.

Class 600, torque at differential pressure (Nm)

Valve size / Inch	Valve size / DN	Flow direction*	ΔP 10 bar / ETC	ΔP 10 bar / BTO	ΔP 30 bar / ETC	ΔP 30 bar / BTO	ΔP 40 bar / ETC	ΔP 40 bar / BTO	ΔP 60 bar / ETC	ΔP 60 bar / BTO	ΔP 80 bar / ETC	ΔP 80 bar / BTO	ΔP 103.4 bar / ETC	ΔP 103.4 bar / BTO
3	80	Shaft Side (Pref.)	131	164	175	219	204	255	248	310	292	365	379	474
3	80	Disc Side (N. Pref.)	181	144	241	193	281	225	341	273	401	321	521	417
4	100	Shaft Side (Pref.)	223	278	297	371	346	433	421	526	495	618	643	804
4	100	Disc Side (N. Pref.)	306	245	408	327	476	381	578	463	680	544	884	708
6	150	Shaft Side (Pref.)	465	582	620	775	724	905	879	1098	1034	1292	1344	1680
6	150	Disc Side (N. Pref.)	640	512	853	682	995	796	1208	967	1422	1137	1848	1478
8	200	Shaft Side (Pref.)	859	1074	1145	1431	1317	1646	1603	2004	1889	2362	2405	3006
8	200	Disc Side (N. Pref.)	1181	945	1575	1260	1811	1449	2204	1764	2598	2078	3307	2645
10	250	Shaft Side (Pref.)	1339	1674	1785	2232	2056	2570	2489	3111	3030	3787	4112	5140
10	250	Disc Side (N. Pref.)	1841	1473	2455	1964	2827	2261	3422	2738	4166	3333	5654	4523
12	300	Shaft Side (Pref.)	1982	2477	2643	3303	3138	3923	3799	4748	4514	5643	5395	6745
12	300	Disc Side (N. Pref.)	2725	2180	3633	2907	4315	3452	5223	4179	6207	4966	7418	5935
14	350	Shaft Side (Pref.)	2621	3276	3495	4368	4420	5525	5499	6874	6475	8094	7709	9637
14	350	Disc Side (N. Pref.)	3604	2883	4805	3844	6077	4862	7561	6049	8904	7123	10600	8480
16	400	Shaft Side (Pref.)	3854	4817	5138	6423	7091	8863	9146	11432	9968	12460	11818	14773
16	400	Disc Side (N. Pref.)	5299	4239	7065	5652	9750	7800	12575	10060	13706	10965	16249	12999
18	450	Shaft Side (Pref.)	5335	6669	7113	8892	9552	11940	12194	15243	14735	18418	17275	21596
18	450	Disc Side (N. Pref.)	7336	5868	9781	7825	13134	10507	16767	13414	20260	16208	23753	19003
20	500	Shaft Side (Pref.)	6482	8102	8642	10803	11920	14901	14901	18626	17881	22351	20861	26078
20	500	Disc Side (N. Pref.)	8912	7130	11883	9507	16391	13113	20488	16391	24586	19669	28684	22947
24	600	Shaft Side (Pref.)	10890	13613	14520	18150	20328	25410	24878	31097	29524	36905	34848	43564
24	600	Disc Side (N. Pref.)	14974	11979	19965	15972	27951	22361	34207	27365	40595	32476	47916	38333

3. For actuator sizing, the minimum valve differential pressure shall be 10 bar. For differential pressures above 10 bar the intermediated values to be interpolated. For gear operator sizing, the full rated torque to be considered.

For a quotation, send the size, pressure rating, materials, operator and quantity to UEC by phone, WhatsApp or email. Data as published by DelVal Flow Controls; DelVal and DelTorq are trademarks of DelVal Flow Controls.