

VANESSA SERIES 30,000 TRIPLE OFFSET VALVES*

CRYOGENIC CONFIGURATION

A virtually maintenance-free valve with tightness, operability and torque demand unaffected by cryogenic conditions and severe temperature fluctuations



FEATURES

- Non-rubbing 90-degree rotation and metal-to-metal torque seating provide bi-directional zero leakage tightness to ISO 5208, EN 12266-1 and API 598.
- Bolted extended bonnet protects packing from cryogenic service temperatures.
- Forged one-piece Nitronic® 50 metal seal ring ensures high corrosion resistance and keeps important mechanical features at low temperatures.
- Butt-weld top entry design allows access without removing the valve body from the line.
- Stellite® grade 21 overlay seats are maintenance-free.
- Robust and fire-resistant all-metal construction.
- Spot-faced flanges ensure maximum joint-to-pipe integrity.
- Robust one-piece shaft designed to transfer/maintain torque efficiently.
- Two-piece packing gland and graphite packing minimize external emission risk.
- Key secured shaft-to-disc connection for maximum shaft integrity.
- Heavy duty bearings withstand high pressure loads and wear.
- Braided graphite bearing protectors prevent dirt intrusion, ensuring constant running torque and valve operability.
- Internal and external shaft extrusion risk handling complies with international standards.

GENERAL APPLICATIONS

Available across the full range of body styles and suitable for isolation, flow and pressure control, ON-OFF, emergency/safety operations, HIPPS and major equipment protective functions in LNG liquefaction, storage and transport, air separation, hydrocarbon cryogenic distillation and aerospace applications.

Fluids

Series 30,000 cryogenic valves are suitable for processes containing:
Liquid propane, ethane, methane, oxygen, liquid nitrogen, liquid hydrogen, glycol, ethylene glycol, ethylene.

TECHNICAL DATA

Sizes: DN 80 - 1800 (NPS 3 - 72)
Pressure ratings: ASME class 150 - 900;
EN PN 10 - 160
Temperature range: -254°C to +250°C
(-425°F to +482°F)

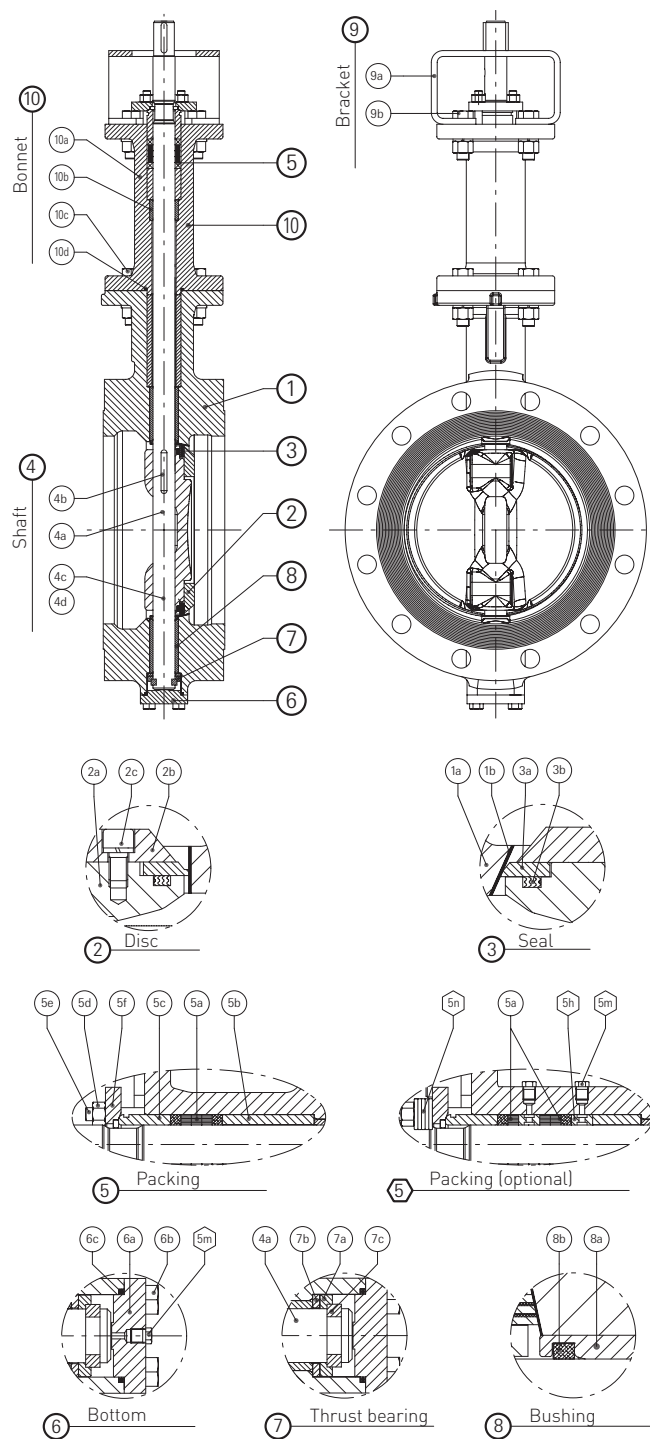
Standards

Design standards:
API 609, EN 593; ASME B16.34, EN 12516
Flange standards:
ASME B16.5/ASME B16.47; EN 1092-1
Face to face:
ISO 5752; EN 558; ASME B16.10; API 609
Butt-weld ends:
ASME B16.25; EN 12627
Butt-weld top entry ends:
Vanessa standard

* The product leakage rate meets and exceeds international standard requirements (BS 6364, ISO 28921-1 and major oil & gas end users) when tested in cryogenic conditions with high pressure gas (helium or nitrogen).

VANESSA SERIES 30,000 TRIPLE OFFSET VALVES

CRYOGENIC FLANGED CONFIGURATION - SECTIONAL DRAWING AND MATERIAL SELECTION



MATERIALS SELECTION

Item	Note	Description	Material
1a		Body	ASTM A351 CF8M / EN 10213 1.4408
1b		Weld surfacing on seat	Stellite® gr.21
2a	◆	Cast disc or forge disc	ASTM A351 CF8M / EN 10213 1.4408 or ASTM A182 Type F316 / EN 10222-5 1.4401
2b		Retainer flange	UNS S31600
2c		Retainer flange screw	ISO 3506 A4 (AISI 316)
3a	•	Solid seal ring	UNS S20910 (Nitronic 50®) hard faced
3b	•	Disc gasket	UNS S31600 + Graphite
4a		Shaft	ASTM A479 Type XM19 (Nitronic 50®)
4b		Disc key	UNS S20910
4c		Locating nut	UNS S31600
4d		Locating bolt	ISO 3506 A4 (AISI 316) or UNS N10276
5a	•	Packing	Graphite
5b		Spacer	UNS S31600
5c		Packing gland	UNS S31600
5d		Stud nut	ISO 3506 A4 (AISI 316)
5e		Stud bolts	ISO 3506 A4 (AISI 316)
5f		Packing flange	ASTM A240 Type 316
5h	❖	Lantern ring (bearing and packing flushing option)	UNS S31600
5m	❖	Plug (bearing and packing flushing option)	UNS S31600
5n	❖	Belleville spring (live loaded packing option)	Stainless steel or spring steel nickel plated
6a		Bottom flange	ASTM A240 Type 316
6b		Screw	ISO 3506 A4 (AISI 316)
6c	•	Bottom spiral wound gasket	UNS S31600 + Graphite
7a		Thrust bearing	UNS S31600 hard faced
7b		Thrust bearing washer	UNS S31600 hard faced
7c		Key or ring	UNS S31600
8a		Bearing	UNS S31600 hard faced
8b		Bearing protector	Reinforced graphite
9a		Bracket	Carbon steel
9b		Screw	Alloy steel PTFE coated
10a	◆	Bonnet	ASTM A351 CF8M / EN 10213 1.4408
10b		Bonnet bearing	UNS S31600 hard faced
10c		Screw	ISO 3506 A4 (AISI 316)
10d		Bonnet spiral wound gasket	UNS S31600 + Graphite

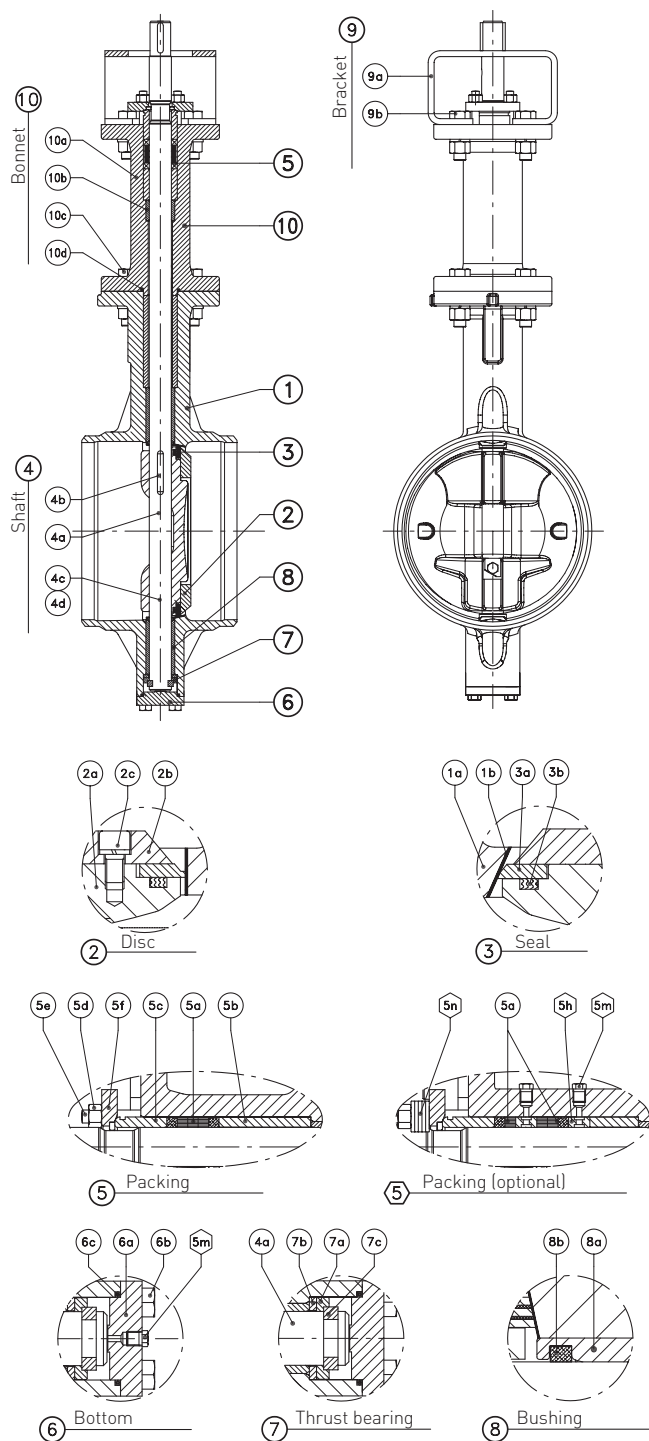
NOTES

- ◆ Material selection depends on valve size
Valve bonnets may be manufactured in weld-fabricated stainless steel to meet customized length requirements
- Suggested spare parts
- ❖ Options available upon request

Vanessa Series 30,000 triple offset valves in cryogenic configuration are also manufactured in the following valve body materials: austenitic stainless steel e.g. CF8M, 1.4408, CF8, CF3M, CF3.

VANESSA SERIES 30,000 TRIPLE OFFSET VALVES

CRYOGENIC BUTTWELD CONFIGURATION - SECTIONAL DRAWING AND MATERIAL SELECTION



MATERIALS SELECTION

Item	Note	Description	Material
1a		Body	ASTM A351 CF3M / EN 10213 1.4409
1b		Weld surfacing on seat	Stellite® gr.21
2a	◆	Cast disc or forge disc	ASTM A351 CF8M / EN 10213 1.4408 or ASTM A182 Type F316 / EN 10222-5 1.4401
2b		Retainer flange	UNS S31600
2c		Retainer flange screw	ISO 3506 A4 (AISI 316)
3a	•	Solid seal ring	UNS S20910 (Nitronic 50®) hard faced
3b	•	Disc gasket	UNS S31600 + Graphite
4a		Shaft	ASTM A479 Type XM19 (Nitronic 50®)
4b		Disc key	UNS S20910
4c		Locating nut	UNS S31600
4d		Locating bolt	ISO 3506 A4 (AISI 316) or UNS N10276
5a	•	Packing	Graphite
5b		Spacer	UNS S31600
5c		Packing gland	UNS S31600
5d		Stud nut	ISO 3506 A4 (AISI 316)
5e		Stud bolts	ISO 3506 A4 (AISI 316)
5f		Packing flange	ASTM A240 Type 316
5h	❖	Lantern ring (bearing and packing flushing option)	UNS S31600
5m	❖	Plug (bearing and packing flushing option)	UNS S31600
5n	❖	Belleville spring (live loaded packing option)	Stainless steel or spring steel nickel plated
6a		Bottom flange	ASTM A240 Type 316
6b		Screw	ISO 3506 A4 (AISI 316)
6c	•	Bottom spiral wound gasket	UNS S31600 + Graphite
7a		Thrust bearing	UNS S31600 hard faced
7b		Thrust bearing washer	UNS S31600 hard faced
7c		Key or ring	UNS S31600
8a		Bearing	UNS S31600 hard faced
8b		Bearing protector	Reinforced graphite
9a		Bracket	Carbon steel
9b		Screw	Alloy steel PTFE coated
10a	◆	Bonnet	ASTM A351 CF8M / EN 10213 1.4408
10b		Bonnet bearing	UNS S31600 hard faced
10c		Screw	ISO 3506 A4 (AISI 316)
10d		Bonnet spiral wound gasket	UNS S31600 + Graphite

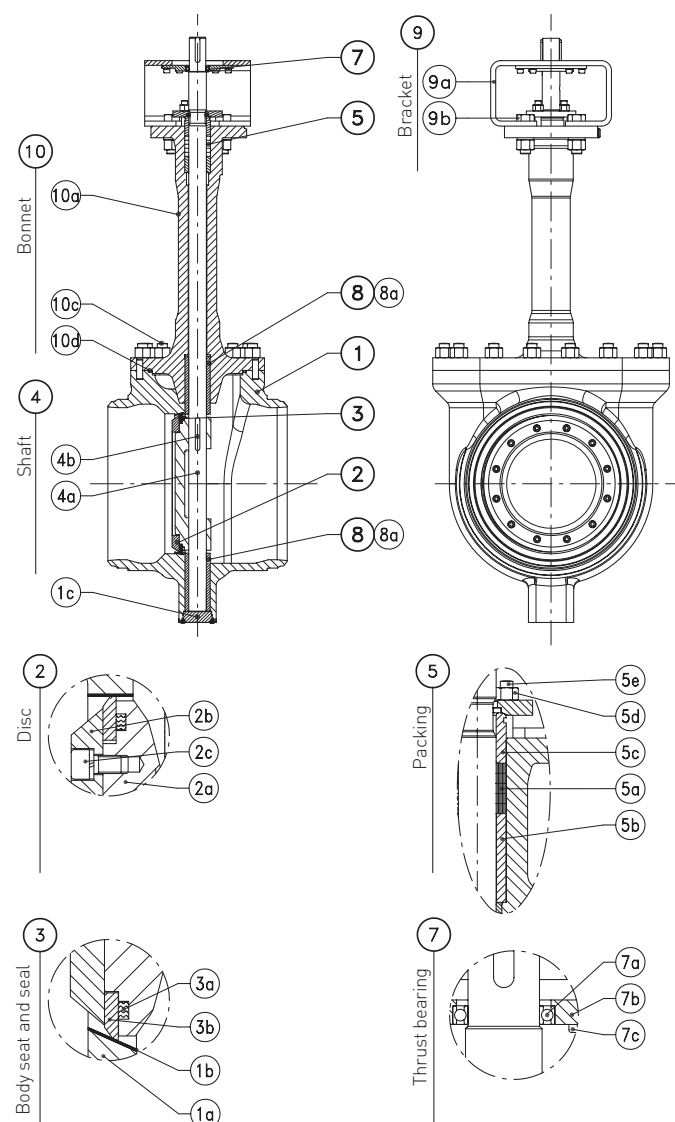
NOTES

- ◆ Material selection depends on valve size
Valve bonnets may be manufactured in weld-fabricated stainless steel to meet customized length requirements
- Suggested spare parts
- ❖ Options available upon request

Vanessa Series 30,000 triple offset valves in cryogenic configuration are also manufactured in the following valve body materials: austenitic stainless steel e.g. CF8M, 1.4408, CF8, CF3M, CF3.

VANESSA SERIES 30,000 TRIPLE OFFSET VALVES

CRYOGENIC BUTTWELD TOP ENTRY CONFIGURATION - SECTIONAL DRAWING AND MATERIAL SELECTION



MATERIALS SELECTION

Item	Note	Description	Material
1a		Body	ASTM A351 CF3M / EN 10213 1.4409
1b		Weld surfacing on seat	Stellite® gr.21
1c		Welded bottom flange	ASTM A182 Type F316L
2a	◆	Cast disc or forge disc	ASTM A351 CF8M / EN 10213 1.4408 or ASTM A182 Type F316 / EN 10222-5 1.4401
2b		Retainer flange	UNS S31600
2c		Retainer flange screw	ISO 3506 A4 (AISI 316)
3a	•	Solid seal ring	UNS S20910 (Nitronic 50®) hard faced
3b	•	Disc gasket	UNS S31600 + Graphite
4a		Shaft	ASTM A479 Type XM19 (Nitronic 50®)
4b		Disc key	UNS S20910
5a	•	Packing	Graphite
5b		Spacer	UNS S31600
5c		Packing gland	UNS S31600
5d		Stud nut	ISO 3506 A4 (AISI 316)
5e		Stud bolts	ISO 3506 A4 (AISI 316)
5f		Packing flange	ASTM A240 Type 316
7a		Thrust bearing	Alloy steel
7b		Thrust bearing flange	UNS S31600
7c		Thrust bearing screw	ISO 3506 A4 (AISI 316)
8a		Bearing	UNS S31600 hard faced
9a		Bracket	Carbon steel
9b		Screw	Alloy steel PTFE coated
10a	◆	Bonnet	ASTM A351 CF8M / EN 10213 1.4408
10b		Bonnet bearing	UNS S31600 hard faced
10c		Screw	ISO 3506 A4 (AISI 316)
10d		Bonnet spiral wound gasket	UNS S31600 + Graphite

NOTES

- ◆ Material selection depends on valve size
For class 150, valve bonnets are manufactured in weld-fabricated stainless steel
- Suggested spare parts

Vanessa Series 30,000 triple offset valves in top entry configuration are also manufactured in the following valve body materials: austenitic stainless steel e.g. CF8M, 1.4408, CF8, CF3M, CF3.

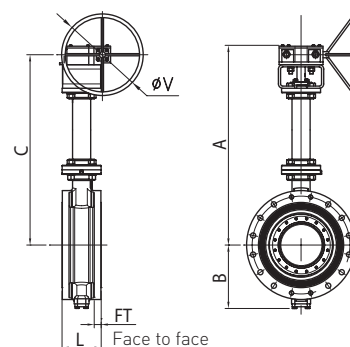
VANESSA SERIES 30,000 TRIPLE OFFSET VALVES

CRYOGENIC VALVE CONFIGURATION - DIMENSIONS AND WEIGHTS, ASME CLASS 150

DOUBLE FLANGED - FACE TO FACE ISO 5752 BASIC SERIES 13 (METRIC)

DN	NPS	A mm	B mm	C mm	L mm	FT mm	ØV mm	Valve kg	Total kg
80	3	590	125	548	114	22.3	125	36	43
100	4	620	141	578	127	22.3	125	52	59
150	6	710	165	668	140	23.9	125	65	72
200	8	775	214	724	152	27.0	300	103	114
250	10	865	243	814	165	28.6	300	143	154
300	12	942	286	889	178	30.2	500	193	206
350	14	1077	312	1024	190	33.4	500	230	243
400	16	1120	350	1050	216	35.0	600	298	328
450	18	1155	383	1085	222	38.1	600	365	395
500	20	1215	407	1145	229	41.3	700	451	481
600	24	1295	484	1200	267	46.1	300	644	690

ASME B16.5 CLASS 150 - TRIM B



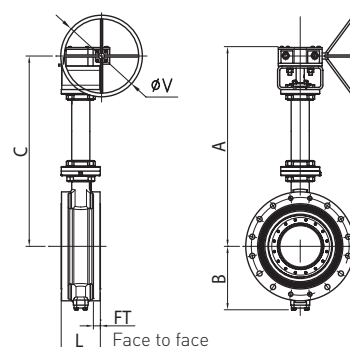
DOUBLE FLANGED - FACE TO FACE ISO 5752 BASIC SERIES 13 (IMPERIAL)

NPS	DN	A inch	B inch	C inch	L inch	FT inch	ØV inch	Valve lbs	Total lbs
3	80	23.25	5.00	21.63	4.50	0.88	5.00	79	95
4	100	24.50	5.63	22.88	5.00	0.88	5.00	115	130
6	150	28.00	6.50	26.38	5.50	0.94	5.00	143	159
8	200	30.63	8.50	28.63	6.00	1.06	11.88	227	251
10	250	34.13	9.63	32.13	6.50	1.13	11.88	315	340
12	300	37.13	11.38	35.00	7.00	1.19	19.75	425	454
14	350	42.50	12.38	40.38	7.50	1.31	19.75	507	536
16	400	44.13	13.88	41.38	8.50	1.38	23.63	657	723
18	450	45.50	15.13	42.75	8.75	1.50	23.63	805	871
20	500	47.88	16.13	45.13	9.00	1.63	27.63	994	1060
24	600	51.00	19.13	47.25	10.50	1.81	11.88	1420	1521

DOUBLE FLANGED - FACE TO FACE ISO 5752 BASIC SERIES 13 (METRIC)

DN	NPS	A mm	B mm	C mm	L mm	FT mm	ØV mm	Valve kg	Total kg
700	28	1450	556	1343	292	69.9	820	822	987
750	30	1570	611	1463	318	73.1	820	1155	1320
800	32	1570	611	1463	318	79.4	820	1180	1345
900	36	1705	736	1612	330	88.9	680	1801	1973
1000	40	1835	801	1736	410	88.9	680	2245	2535
1050	42	1835	801	1736	410	95.3	680	2635	2925
1200	48	2057	941	1930	470	106.4	680	3510	3945
1350	54	2127	1060	2000	530	119.1	680	4485	4920
1400	56	2245	1060	2053	530	122.3	820	4885	5530
1500	60	2520	1078	2328	600	130.2	820	6102	6747

ASME B16.47 SERIES A CLASS 150 - TRIM B



DOUBLE FLANGED - FACE TO FACE ISO 5752 BASIC SERIES 13 (IMPERIAL)

NPS	DN	A inch	B inch	C inch	L inch	FT inch	ØV inch	Valve lbs	Total lbs
28	700	57.13	22.00	52.88	11.50	2.75	32.38	1812	2176
30	750	61.88	24.13	57.63	12.52	2.88	32.38	2546	2910
32	800	61.88	24.13	57.63	12.52	3.13	32.38	2601	2965
36	900	67.25	29.00	63.50	12.99	3.50	26.88	3971	4350
40	1000	72.25	31.63	68.38	16.14	3.50	26.88	4949	5589
42	1050	72.25	31.63	68.38	16.14	3.75	26.88	5809	6449
48	1200	81.00	37.13	76.00	18.50	4.19	26.88	7738	8697
54	1350	83.75	41.75	78.75	20.87	4.69	26.88	9888	10847
56	1400	88.50	41.75	80.88	20.87	4.81	32.38	10770	12192
60	1500	99.25	42.50	91.75	23.62	5.13	32.38	13453	14875

Please see notes on page 14

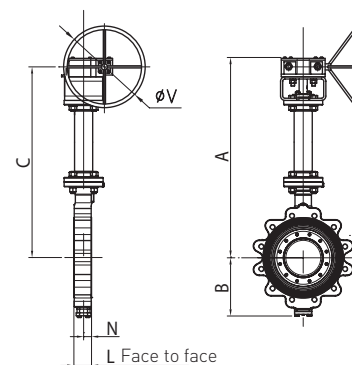
VANESSA SERIES 30,000 TRIPLE OFFSET VALVES

CRYOGENIC VALVE CONFIGURATION - DIMENSIONS AND WEIGHTS, ASME CLASS 150

LUG - FACE TO FACE API 609 (METRIC)

DN	NPS	A mm	B mm	C mm	L mm	N mm	ØV mm	Valve kg	Total kg
80	3	590	125	548	48	20	125	19	26
100	4	620	141	578	54	24	125	24	31
150	6	710	165	668	57	26	125	33	40
200	8	775	214	724	64	28	300	49	60
250	10	865	243	814	71	32	300	67	78
300	12	942	286	889	81	38	500	111	124
350	14	1077	312	1024	92	44	500	147	160
400	16	1120	350	1050	102	49	600	198	228
450	18	1155	383	1085	114	55	600	244	274
500	20	1215	407	1145	127	63	700	326	356
600	24	1295	484	1200	154	78	300	461	507

ASME B16.5 CLASS 150 - TRIM B



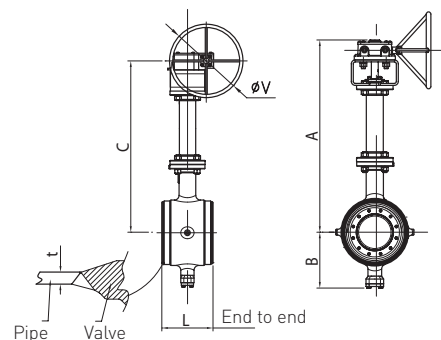
LUG - FACE TO FACE API 609 (IMPERIAL)

NPS	DN	A inch	B inch	C inch	L inch	N inch	ØV inch	Valve lbs	Total lbs
3	80	23.25	5.00	21.63	1.88	0.88	5.00	42	57
4	100	24.50	5.63	22.88	2.12	1.00	5.00	53	68
6	150	28.00	6.50	26.38	2.25	1.13	5.00	73	88
8	200	30.63	8.50	28.63	2.50	1.13	11.88	108	132
10	250	34.13	9.63	32.13	2.81	1.38	11.88	148	172
12	300	37.13	11.38	35.00	3.19	1.50	19.75	245	273
14	350	42.50	12.38	40.38	3.62	1.75	19.75	324	353
16	400	44.13	13.88	41.38	4.00	2.00	23.63	437	503
18	450	45.50	15.13	42.75	4.50	2.25	23.63	538	604
20	500	47.88	16.13	45.13	5.00	2.50	27.63	719	785
24	600	51.00	19.13	47.25	6.06	3.13	11.88	1016	1118

BUTTWELD - END TO END ISO 5752 BASIC SERIES 14 (METRIC)

DN	NPS	A mm	B mm	C mm	L mm	t* mm	ØV mm	Valve kg	Total kg
80	3	590	125	548	180	≤80	125	25	32
100	4	620	141	578	190	≤80	125	34	41
150	6	710	165	668	210	≤80	125	42	49
200	8	775	214	724	230	≤60	300	55	66
250	10	865	243	814	250	≤40	300	74	85
300	12	942	286	889	270	≤40	500	110	123
350	14	1077	312	1024	290	≤40	500	138	151
400	16	1120	350	1050	310	≤40	600	165	195
450	18	1155	383	1085	330	≤40	600	194	224
500	20	1215	407	1145	350	≤40	700	252	282
600	24	1295	484	1200	390	≤40	300	357	403

ASME B16.34 CLASS 150 - TRIM B



BUTTWELD - END TO END ISO 5752 BASIC SERIES 14 (IMPERIAL)

NPS	DN	A inch	B inch	C inch	L inch	t* inch	ØV inch	Valve lbs	Total lbs
3	80	23.25	5.00	21.63	7.09	≤80	5.00	55	71
4	100	24.50	5.63	22.88	7.48	≤80	5.00	75	90
6	150	28.00	6.50	26.38	8.27	≤80	5.00	93	108
8	200	30.63	8.50	28.63	9.06	≤60	11.88	121	146
10	250	34.13	9.63	32.13	9.84	≤40	11.88	163	187
12	300	37.13	11.38	35.00	10.63	≤40	19.75	243	271
14	350	42.50	12.38	40.38	11.42	≤40	19.75	304	333
16	400	44.13	13.88	41.38	12.20	≤40	23.63	364	430
18	450	45.50	15.13	42.75	12.99	≤40	23.63	428	494
20	500	47.88	16.13	45.13	13.78	≤40	27.63	556	622
24	600	51.00	19.13	47.25	15.35	≤40	11.88	787	888

* Maximum allowable pipe schedule
Please see notes on page 14

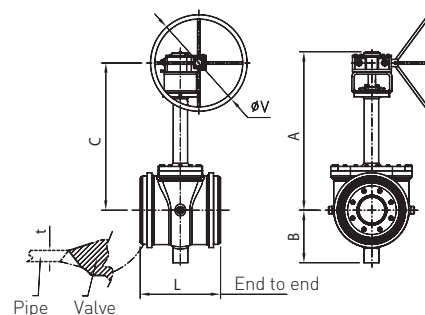
VANESSA SERIES 30,000 TRIPLE OFFSET VALVES

CRYOGENIC VALVE CONFIGURATION - DIMENSIONS AND WEIGHTS, ASME CLASS 150

BUTTWELD TOP ENTRY - END TO END VANESSA STANDARD (METRIC)

DN	NPS	A mm	B mm	C mm	L mm	t * mm	ØV mm	Valve kg	Total kg
200	8	775	192	724	350	≤60	300	130	141
250	10	865	225	814	400	≤40	300	170	181
300	12	942	265	889	450	≤40	500	250	263
350	14	1077	290	1024	500	≤40	500	320	333
400	16	1120	330	1050	500	≤40	600	375	405
450	18	1150	370	1085	500	≤40	600	415	445
500	20	1215	390	1145	600	≤40	700	550	580
600	24	1284	460	1216	650	≤40	300	750	825
700	28	1389	545	1321	750	≤18.5	500	1065	1140
750	30	1562	615	1467	750	≤18.5	820	1250	1415
800	32	1562	615	1467	750	≤18.5	820	1300	1465
900	36	1717	720	1666	900	≤22	680	1850	2140
1000	40	1892	775	1836	1000	≤23	680	2850	3140
1050	42	1892	775	1836	1000	≤23	680	2900	3190

ASME B16.34 CLASS 150 - TRIM B



- * Maximum allowable pipe schedule up to DN 600
- * Maximum allowable pipe thickness (in mm) from DN 700

BUTTWELD TOP ENTRY - END TO END VANESSA STANDARD (IMPERIAL)

NPS	DN	A inch	B inch	C inch	L inch	t * inch	ØV inch	Valve lbs	Total lbs
8	200	30.63	7.63	28.63	13.78	≤60	11.88	286	310
10	250	34.13	8.88	32.13	15.75	≤40	11.88	374	399
12	300	37.13	10.50	35.00	17.72	≤40	19.75	551	579
14	350	42.50	11.50	40.38	19.69	≤40	19.75	705	734
16	400	44.13	13.00	41.38	19.69	≤40	23.63	826	892
18	450	45.38	14.63	42.75	19.69	≤40	23.63	914	981
20	500	47.88	15.38	45.13	23.62	≤40	27.63	1212	1278
24	600	50.63	18.13	47.88	25.59	≤40	11.88	1653	1818
28	700	54.75	21.50	52.13	29.53	≤0.75	19.75	2347	2513
30	750	61.50	24.25	57.88	29.53	≤0.75	32.38	2755	3119
32	800	61.50	24.25	57.88	29.53	≤0.75	32.38	2866	3229
36	900	67.63	28.38	65.63	35.43	≤0.88	26.88	4078	4717
40	1000	74.50	30.63	72.38	39.37	≤0.88	26.88	6283	6922
42	1050	74.50	30.63	72.38	39.37	≤0.88	26.88	6393	7032

- * Maximum allowable pipe schedule up to NPS 24
- * Maximum allowable pipe thickness (in inch) from NPS 28

Please see notes on page 14

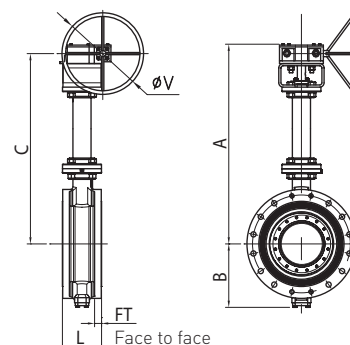
VANESSA SERIES 30,000 TRIPLE OFFSET VALVES

CRYOGENIC VALVE CONFIGURATION - DIMENSIONS AND WEIGHTS, ASME CLASS 300

DOUBLE FLANGED - FACE TO FACE ISO 5752 BASIC SERIES 13 (METRIC)

DN	NPS	A mm	B mm	C mm	L mm	FT mm	ØV mm	Valve kg	Total kg
80	3	590	125	548	114	27.0	125	41	48
100	4	620	141	578	127	30.2	125	52	59
150	6	740	189	689	140	35.0	300	92	103
200	8	817	236	764	152	39.7	500	140	153
250	10	907	272	854	165	46.1	500	199	212
300	12	965	310	895	178	49.3	600	265	295
350	14	1120	335	1050	190	52.4	700	357	387
400	16	1180	389	1085	216	55.6	300	478	524
450	18	1265	422	1170	222	58.8	500	563	610
500	20	1305	461	1210	229	62.0	500	694	741
600	24	1440	531	1333	267	68.3	820	1036	1201

ASME B16.5 CLASS 300 - TRIM C



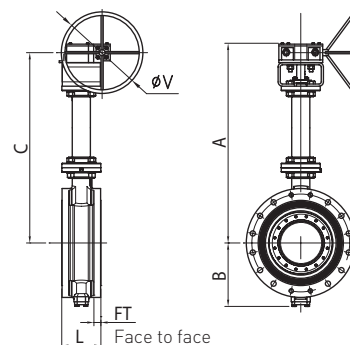
DOUBLE FLANGED - FACE TO FACE ISO 5752 BASIC SERIES 13 (IMPERIAL)

NPS	DN	A inch	B inch	C inch	L inch	FT inch	ØV inch	Valve lbs	Total lbs
3	80	23.25	5.00	21.63	4.50	1.06	5.00	90	106
4	100	24.50	5.63	22.88	5.00	1.19	5.00	115	130
6	150	29.25	7.50	27.25	5.50	1.38	11.88	203	227
8	200	32.25	9.38	30.13	6.00	1.56	19.75	309	337
10	250	35.75	10.75	33.63	6.50	1.81	19.75	439	467
12	300	38.00	12.25	35.25	7.00	1.94	23.63	584	650
14	350	44.13	13.25	41.38	7.50	2.06	27.63	787	853
16	400	46.50	15.38	42.75	8.50	2.19	11.88	1054	1155
18	450	49.88	16.63	46.13	8.75	2.31	19.75	1241	1345
20	500	51.50	18.25	47.75	9.00	2.44	19.75	1530	1634
24	600	56.75	21.00	52.50	10.50	2.69	32.38	2284	2648

DOUBLE FLANGED - FACE TO FACE ISO 5752 BASIC SERIES 13 (METRIC)

DN	NPS	A mm	B mm	C mm	L mm	FT mm	ØV mm	Valve kg	Total kg
700	28	1535	617	1442	292	84.2	680	1557	1729
750	30	1705	671	1606	318	90.5	680	1941	2231
800	32	1705	671	1606	318	96.9	680	2011	2301
900	36	1917	801	1790	330	103.0	680	2730	3165
1000	40	1917	801	1790	410	113.0	680	2540	2975
1050	42	1982	900	1855	410	117.0	680	3265	3700
1200	48	2192	991	1993	470	132.0	820	4260	5055
1350	54	2619	1190	2387	530	151.0	1400	6150	7095
1400	56	2619	1190	2387	530	152.0	1400	6450	7395

ASME B16.47 SERIES A CLASS 300 - TRIM C



DOUBLE FLANGED - FACE TO FACE ISO 5752 BASIC SERIES 13 (IMPERIAL)

NPS	DN	A inch	B inch	C inch	L inch	FT inch	ØV inch	Valve lbs	Total lbs
28	700	60.50	24.38	56.88	11.50	3.31	26.88	3433	3812
30	750	67.25	26.50	63.25	12.52	3.56	26.88	4279	4919
32	800	67.25	26.50	63.25	12.52	3.81	26.88	4433	5073
36	900	75.50	31.63	70.50	12.99	4.06	26.88	6019	6978
40	1000	75.50	31.63	70.50	16.14	4.44	26.88	5600	6559
42	1050	78.13	35.50	73.13	16.14	4.63	26.88	7198	8157
48	1200	86.38	39.13	78.50	18.50	5.19	32.38	9392	11144
54	1350	103.13	46.88	94.00	20.87	5.94	55.13	13558	15642
56	1400	103.13	46.88	94.00	20.87	6.00	55.13	14220	16303

Please see notes on page 14

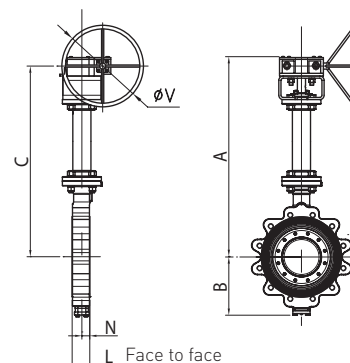
VANESSA SERIES 30,000 TRIPLE OFFSET VALVES

CRYOGENIC VALVE CONFIGURATION - DIMENSIONS AND WEIGHTS, ASME CLASS 300

LUG - FACE TO FACE API 609 (METRIC)

DN	NPS	A mm	B mm	C mm	L mm	N mm	ØV mm	Valve kg	Total kg
80	3	590	125	548	48	20	125	24	31
100	4	620	141	578	54	24	125	29	36
150	6	740	189	689	59	26	300	53	64
200	8	817	236	764	73	32	500	76	89
250	10	907	272	854	83	37	500	101	114
300	12	965	310	895	92	39	600	149	179
350	14	1120	335	1050	117	60	700	291	321
400	16	1180	389	1085	133	65	300	358	404
450	18	1265	422	1170	149	73	500	523	570
500	20	1305	461	1210	159	72	500	588	635
600	24	1440	531	1333	181	82	820	919	1084

ASME B16.5 CLASS 300 - TRIM C



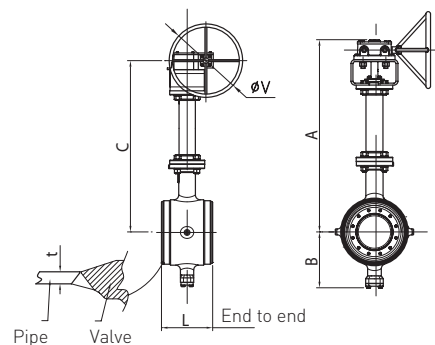
LUG - FACE TO FACE API 609 (IMPERIAL)

NPS	DN	A inch	B inch	C inch	L inch	N inch	ØV inch	Valve lbs	Total lbs
3	80	23.25	5.00	21.63	1.88	0.88	5.00	53	68
4	100	24.50	5.63	22.88	2.12	1.00	5.00	64	79
6	150	29.25	7.50	27.25	2.31	1.13	11.88	117	141
8	200	32.25	9.38	30.13	2.88	1.38	19.75	168	196
10	250	35.75	10.75	33.63	3.25	1.50	19.75	223	251
12	300	38.00	12.25	35.25	3.62	1.63	23.63	328	395
14	350	44.13	13.25	41.38	4.62	2.38	27.63	642	708
16	400	46.50	15.38	42.75	5.25	2.63	11.88	789	891
18	450	49.88	16.63	46.13	5.88	2.88	19.75	1153	1257
20	500	51.50	18.25	47.75	6.25	2.88	19.75	1296	1400
24	600	56.75	21.00	52.50	7.12	3.25	32.38	2026	2390

BUTTWELD - END TO END ISO 5752 BASIC SERIES 14 (METRIC)

DN	NPS	A mm	B mm	C mm	L mm	t* mm	ØV mm	Valve kg	Total kg
80	3	590	125	548	180	≤80	125	27	34
100	4	620	141	578	190	≤80	125	37	44
150	6	740	189	689	210	≤80	300	46	57
200	8	817	236	764	230	≤80	500	76	89
250	10	907	272	854	250	≤80	500	98	111
300	12	965	310	895	270	≤80	600	139	169
350	14	1120	335	1050	290	≤60	700	205	235
400	16	1180	389	1085	310	≤40	300	254	300
450	18	1265	422	1170	330	≤40	500	381	428
500	20	1305	461	1210	350	≤40	500	444	491
600	24	1440	531	1333	390	≤40	820	634	799

ASME B16.34 CLASS 300 - TRIM C



BUTTWELD - END TO END ISO 5752 BASIC SERIES 14 (IMPERIAL)

NPS	DN	A inch	B inch	C inch	L inch	t* inch	ØV inch	Valve lbs	Total lbs
3	80	23.25	5.00	21.63	7.09	≤80	5.00	60	75
4	100	24.50	5.63	22.88	7.48	≤80	5.00	82	97
6	150	29.25	7.50	27.25	8.27	≤80	11.88	101	126
8	200	32.25	9.38	30.13	9.06	≤80	19.75	168	196
10	250	35.75	10.75	33.63	9.84	≤80	19.75	216	245
12	300	38.00	12.25	35.25	10.63	≤80	23.63	306	373
14	350	44.13	13.25	41.38	11.42	≤60	27.63	452	518
16	400	46.50	15.38	42.75	12.20	≤40	11.88	560	661
18	450	49.88	16.63	46.13	12.99	≤40	19.75	840	944
20	500	51.50	18.25	47.75	13.78	≤40	19.75	979	1082
24	600	56.75	21.00	52.50	15.35	≤40	32.38	1398	1761

* Maximum allowable pipe schedule
Please see notes on page 14

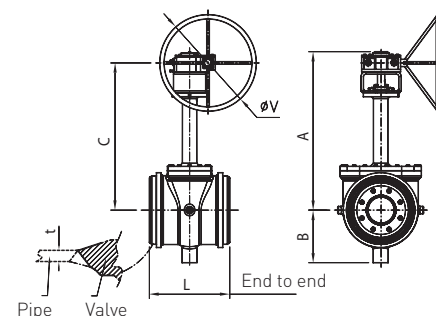
VANESSA SERIES 30,000 TRIPLE OFFSET VALVES

CRYOGENIC VALVE CONFIGURATION - DIMENSIONS AND WEIGHTS, ASME CLASS 300

BUTTWELD TOP ENTRY - END TO END VANESSA STANDARD (METRIC)

DN	NPS	A mm	B mm	C mm	L mm	t * mm	ØV mm	Valve kg	Total kg
200	8	817	236	764	457	≤80	500	240	253
250	10	907	250	854	500	≤80	500	300	313
300	12	965	290	895	600	≤80	600	372	402
350	14	1120	320	1050	762	≤80	700	505	535
400	16	1169	370	1101	838	≤80	300	544	619
450	18	1254	410	1186	914	≤80	500	757	832
500	20	1294	450	1226	991	≤80	500	857	932
600	24	1432	535	1337	1000	≤80	820	1147	1312
700	28	1537	615	1496	1100	≤31	680	1685	1857
750	30	1722	645	1666	1200	≤32	680	2686	2976
800	32	1722	645	1666	1200	≤32	680	2786	3076
900	36	1917	780	1790	1300	≤32	680	3207	3642
1000	40	1917	780	1790	1300	≤32	680	3350	3785
1050	42	1982	895	1890	1500	≤32	680	4667	5102

ASME B16.34 CLASS 300 - TRIM C



- * Maximum allowable pipe schedule up to DN 600
- * Maximum allowable pipe thickness (in mm) from DN 700

BUTTWELD TOP ENTRY - END TO END VANESSA STANDARD (IMPERIAL)

NPS	DN	A inch	B inch	C inch	L inch	t * inch	ØV inch	Valve lbs	Total lbs
8	200	32.25	9.38	30.13	17.99	≤80	19.69	529	558
10	250	35.75	9.88	33.63	19.69	≤80	19.69	661	690
12	300	38.00	11.50	35.25	23.62	≤80	23.62	820	886
14	350	44.13	12.63	41.38	30.00	≤80	27.56	1113	1179
16	400	46.13	14.63	43.38	32.99	≤80	11.81	1199	1365
18	450	49.38	16.25	46.75	35.98	≤80	19.69	1669	1834
20	500	51.00	17.75	48.38	39.02	≤80	19.69	1889	2055
24	600	56.50	21.13	52.75	39.37	≤80	32.28	2529	2892
28	700	60.63	24.25	59.00	43.31	≤1.25	26.77	3715	4094
30	750	67.88	25.50	65.63	47.24	≤1.38	26.77	5922	6561
32	800	67.88	25.50	65.63	47.24	≤1.38	26.77	6142	6781
36	900	75.50	30.75	70.50	51.18	≤1.38	26.77	7070	8029
40	1000	75.50	30.75	70.50	51.18	≤1.38	26.77	7385	8344
42	1050	78.13	35.25	74.50	59.06	≤1.38	26.77	10289	11248

- * Maximum allowable pipe schedule up to NPS 24
- * Maximum allowable pipe thickness (in inch) from NPS 28

Please see notes on page 14

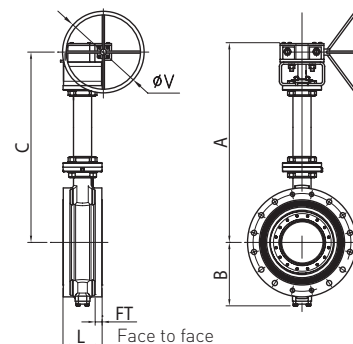
VANESSA SERIES 30,000 TRIPLE OFFSET VALVES

CRYOGENIC VALVE CONFIGURATION - DIMENSIONS AND WEIGHTS, ASME CLASS 600

DOUBLE FLANGED - FACE TO FACE ISO 5752 BASIC SERIES 14 (METRIC)

DN	NPS	A mm	B mm	C mm	L mm	FT mm	ØV mm	Valve kg	Total kg
100	4	638	185	587	190	38.1	300	83	94
150	6	822	216	769	210	47.7	500	146	159
200	8	870	265	800	230	55.6	600	233	263
250	10	1010	315	915	250	63.5	300	359	405
300	12	1105	362	1010	270	66.7	500	504	551
350	14	1265	390	1158	290	69.9	820	577	742
400	16	1335	440	1228	310	76.2	820	800	965
450	18	1338	460	1245	330	82.5	680	958	1130
500	20	1500	526	1401	350	88.9	680	1271	1561
600	24	1590	623	1491	390	101.6	680	1817	2107

ASME B16.5 CLASS 600 - TRIM D



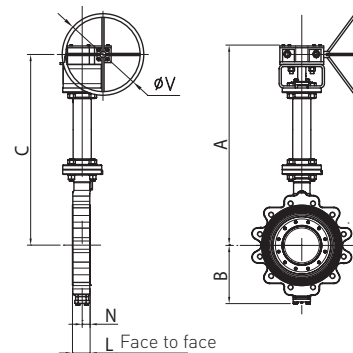
DOUBLE FLANGED - FACE TO FACE ISO 5752 BASIC SERIES 14 (IMPERIAL)

NPS	DN	A inch	B inch	C inch	L inch	FT inch	ØV inch	Valve lbs	Total lbs
4	100	25.13	7.38	23.13	7.48	1.50	11.88	183	207
6	150	32.38	8.63	30.38	8.27	1.88	19.75	322	351
8	200	34.38	10.50	31.50	9.06	2.19	23.63	514	580
10	250	39.88	12.50	36.13	9.84	2.50	11.88	791	893
12	300	43.63	14.38	39.88	10.63	2.63	19.75	1111	1215
14	350	49.88	15.38	45.63	11.42	2.75	32.38	1272	1636
16	400	52.63	17.38	48.38	12.20	3.00	32.38	1764	2127
18	450	52.75	18.13	49.13	12.99	3.25	26.88	2112	2491
20	500	59.13	20.75	55.25	13.78	3.50	26.88	2802	3441
24	600	62.63	24.63	58.75	15.35	4.00	26.88	4006	4645

LUG - FACE TO FACE API 609 (METRIC)

DN	NPS	A mm	B mm	C mm	L mm	N mm	ØV mm	Valve kg	Total kg
100	4	638	185	587	64	29.0	300	39	50
150	6	822	216	769	78	38.0	500	96	109
200	8	870	265	800	102	52.5	600	163	193
250	10	1010	315	915	117	60.0	300	237	283
300	12	1105	362	1010	140	71.5	500	411	458
350	14	1265	390	1158	155	68.0	820	430	595
400	16	1335	440	1228	178	84.0	820	544	709
450	18	1338	460	1245	200	92.0	680	822	994
500	20	1500	526	1401	216	101.0	680	995	1285
600	24	1590	623	1491	232	102.0	680	1611	1901

ASME B16.5 CLASS 600 - TRIM D



LUG - FACE TO FACE API 609 (IMPERIAL)

NPS	DN	A inch	B inch	C inch	L inch	N inch	ØV inch	Valve lbs	Total lbs
4	100	25.13	7.38	23.13	2.50	1.25	11.88	86	110
6	150	32.38	8.63	30.38	3.06	1.50	19.75	212	240
8	200	34.38	10.50	31.50	4.00	2.13	23.63	359	425
10	250	39.88	12.50	36.13	4.62	2.38	11.88	522	624
12	300	43.63	14.38	39.88	5.50	2.88	19.75	906	1.010
14	350	49.88	15.38	45.63	6.12	2.75	32.38	948	1.312
16	400	52.63	17.38	48.38	7.00	3.38	32.38	1199	1563
18	450	52.75	18.13	49.13	7.88	3.63	26.88	1812	2191
20	500	59.13	20.75	55.25	8.50	4.00	26.88	2194	2833
24	600	62.63	24.63	58.75	9.13	4.13	26.88	3552	4191

Please see notes on page 14

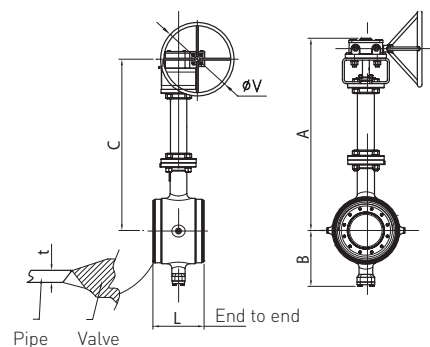
VANESSA SERIES 30,000 TRIPLE OFFSET VALVES

CRYOGENIC VALVE CONFIGURATION - DIMENSIONS AND WEIGHTS, ASME CLASS 600

BUTTWELD - END TO END ISO 5752 BASIC SERIES 14 (METRIC)

DN	NPS	A mm	B mm	C mm	L mm	t * mm	ØV mm	Valve kg	Total kg
150	6	822	216	769	210	≤80	500	87	100
200	8	870	265	800	230	≤100	600	138	168
250	10	1010	315	915	250	≤100	300	201	247
300	12	1105	362	1010	270	≤100	500	279	326
350	14	1265	390	1158	290	≤100	820	330	495
400	16	1335	440	1228	310	≤80	820	535	700
450	18	1338	460	1245	330	≤80	680	650	822
500	20	1500	526	1401	350	≤80	680	771	1061
600	24	1590	623	1491	390	≤80	680	1045	1335

ASME B16.34 CLASS 600 - TRIM D



BUTTWELD - END TO END ISO 5752 BASIC SERIES 14 (IMPERIAL)

NPS	DN	A inch	B inch	C inch	L inch	t * inch	ØV inch	Valve lbs	Total lbs
6	150	32.38	8.63	30.38	8.25	≤80	19.75	192	220
8	200	34.38	10.50	31.50	9.00	≤100	23.63	304	370
10	250	39.88	12.50	36.13	9.88	≤100	11.88	443	545
12	300	43.63	14.38	39.88	10.63	≤100	19.75	615	719
14	350	49.88	15.38	45.63	11.38	≤100	32.38	728	1091
16	400	52.63	17.38	48.38	12.25	≤80	32.38	1179	1543
18	450	52.75	18.13	49.13	13.00	≤80	26.88	1433	1812
20	500	59.13	20.75	55.25	13.75	≤80	26.88	1700	2339
24	600	62.63	24.63	58.75	15.38	≤80	26.88	2304	2943

* Maximum allowable pipe schedule
Please see notes on page 14

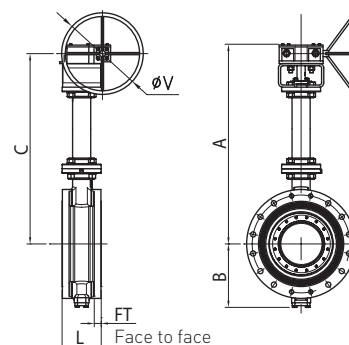
VANESSA SERIES 30,000 TRIPLE OFFSET VALVES

CRYOGENIC VALVE CONFIGURATION - DIMENSIONS AND WEIGHTS, ASME CLASS 900

DOUBLE FLANGED - FACE TO FACE ISO 5752 BASIC SERIES 8 (METRIC)

DN	NPS	A mm	B mm	C mm	L mm	FT mm	ØV mm	Valve kg	Total kg
150	6	807	226	754	225	55.6	500	199	212
200	8	910	277	840	275	63.5	700	331	361
250	10	1080	337	985	325	69.9	500	512	559
300	12	1210	401	1103	375	79.4	820	709	874
350	14	1328	456	1235	425	85.8	680	922	1094
400	16	1385	492	1292	475	88.9	680	1170	1342
450	18	1425	510	1326	500	101.6	680	1480	1770
500	20	1587	590	1460	575	108.0	680	2020	2455
600	24	1747	673	1620	675	139.7	680	3245	3680

ASME B16.5 CLASS 900 - TRIM E



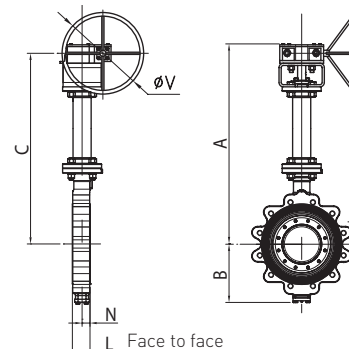
DOUBLE FLANGED - FACE TO FACE ISO 5752 BASIC SERIES 8 (IMPERIAL)

NPS	DN	A inch	B inch	C inch	L inch	FT inch	ØV inch	Valve lbs	Total lbs
6	150	31.88	9.00	29.75	8.88	2.19	19.75	439	467
8	200	35.88	11.00	33.13	10.88	2.50	27.63	730	796
10	250	42.63	13.38	38.88	12.75	2.75	19.75	1129	1232
12	300	47.75	15.88	43.50	14.75	3.13	32.38	1563	1927
14	350	52.38	18.00	48.63	16.75	3.38	26.88	2033	2412
16	400	54.63	19.38	50.88	18.75	3.50	26.88	2579	2959
18	450	56.13	20.13	52.25	19.63	4.00	26.88	3263	3902
20	500	62.50	23.25	57.50	22.63	4.25	26.88	4453	5412
24	600	68.88	26.50	63.88	26.63	5.50	26.88	7154	8113

LUG - FACE TO FACE VANESSA STANDARD (METRIC)

DN	NPS	A mm	B mm	C mm	L mm	N mm	ØV mm	Valve kg	Total kg
150	6	807	226	754	105	52.5	500	134	147
200	8	910	277	840	140	70.0	700	296	326
250	10	1080	337	985	155	77.5	500	379	426
300	12	1210	401	1103	178	89.0	820	569	734
400	16	1385	492	1292	241	117.0	680	1033	1205
450	18	1425	510	1326	244	122.0	680	1243	1533
500	20	1587	590	1460	300	150.0	680	1666	2101
600	24	1747	673	1620	350	175.0	680	2488	2923

ASME B16.5 CLASS 900 - TRIM E



LUG - FACE TO FACE VANESSA STANDARD (IMPERIAL)

NPS	DN	A inch	B inch	C inch	L inch	N inch	ØV inch	Valve lbs	Total lbs
6	150	31.88	9.00	29.75	4.13	2.13	19.75	295	324
8	200	35.88	11.00	33.13	5.50	2.88	27.63	653	719
10	250	42.63	13.38	38.88	6.13	3.13	19.75	836	939
12	300	47.75	15.88	43.50	7.00	3.63	32.38	1254	1618
16	400	54.63	19.38	50.88	9.50	4.63	26.88	2277	2657
18	450	56.13	20.13	52.25	9.63	4.88	26.88	2740	3380
20	500	62.50	23.25	57.50	11.75	6.00	26.88	3673	4632
24	600	68.88	26.50	63.88	13.75	7.00	26.88	5485	6444

Please see notes on page 14

VANESSA SERIES 30,000 TRIPLE OFFSET VALVES

CRYOGENIC VALVE CONFIGURATION - DIMENSIONS AND WEIGHTS, NOTES

NOTES RELEVANT TO CRYOGENIC CONFIGURATION

- Total kg indicates the sum of valve and manual gear weights.
- Trim A: Δp max. 10 bar (145 psi)
Trim B: Δp max. 25 bar (363 psi)
Trim C: Δp max. 52 bar (754 psi)
Trim D: Δp max. 110 bar (1595 psi)
Trim E: Δp max. 160 bar (2320 psi) at ambient temperature
- With reference to the face to face of double flanged short valves, note that ISO 5752 BASIC SERIES 13/14 corresponds to API 609 DOUBLE FLANGED SHORT where applicable.
- Drawings and dimensional tables illustrated on this datasheet represent just a selection from Vanessa's much wider product range.
- Sectional drawings and dimensional tables on this datasheet refer to valves with gears. However note that Vanessa valves are suitable for operation with all kinds of quarter turn actuators (pneumatic, hydraulic, electric, etc.)
- For liquid cryogenic applications, vertical (or inclined from vertical up to 45°) shaft installation is suggested to allow the vapor space formation into the bonnet.
- In case of cryogenic butt weld TOP ENTRY valves, suggested installation is with the valve shaft vertical.
- Whenever horizontal installation is necessary, please contact your nearest Emerson Sales Office.

VANESSA SERIES 30,000 TRIPLE OFFSET VALVES

CRYOGENIC VALVE CONFIGURATION - CERTIFICATION

CERTIFICATION TABLE

Quality management system	ISO 9001:2008 ISO 3834-2	
Regional product certification	PED 97/23/EC, category III, module H AD 2000 Merkblatt HP0 - AD 2000 Merkblatt A4 CRN TSGD 7002:2006 CU TR	
Environmental management system	ISO 14001:2004	
Health and safety management system	OHSAS 18001:2007	
Product	Welding	EN ISO 3834-2
	Fire safety	API 607
	Fugitive emission	ISO 15848-1
		EPA METHOD 21
		TUV TA LUFT / VDI 2440
Applicable product standards	Performance	SIL 3 capable
	Design	
	Design standards:	API 609 and EN 593; ASME B16.34 and EN 12516, ISO 28921-1
	Flange standards:	ASME B16.5; ASME B16.47; EN 1092-1; ISO 7005
	Buttweld ends:	ASME B16.25; EN 12627
	Face to face:	ISO 5752; EN 558; ASME B16.10; API 609
	Testing	API 609 and EN 593; ASME B16.34 and EN 12516
		API 598
		EN 12266-1
		BS 6364, ISO 28921-1 and major O&G end users

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