



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.
- Buttweld 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]

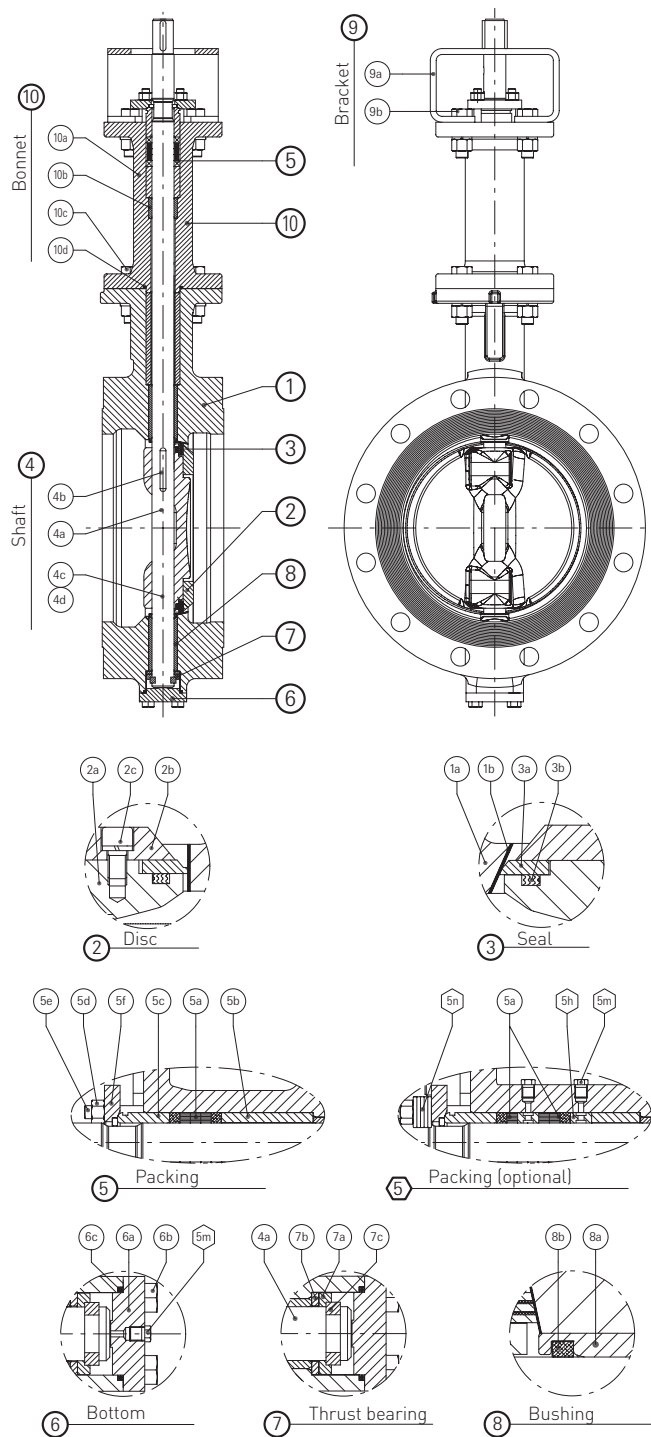
Standards

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
Buttweld ends:
ASME B16.25; EN 12627
Buttweld 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 | ❖ | <i>Lantern ring (bearing and packing flushing option)</i> | UNS S31600 |
| 5m | ❖ | <i>Plug (bearing and packing flushing option)</i> | UNS S31600 |
| 5n | ❖ | <i>Belleville spring (live loaded packing option)</i> | 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 |

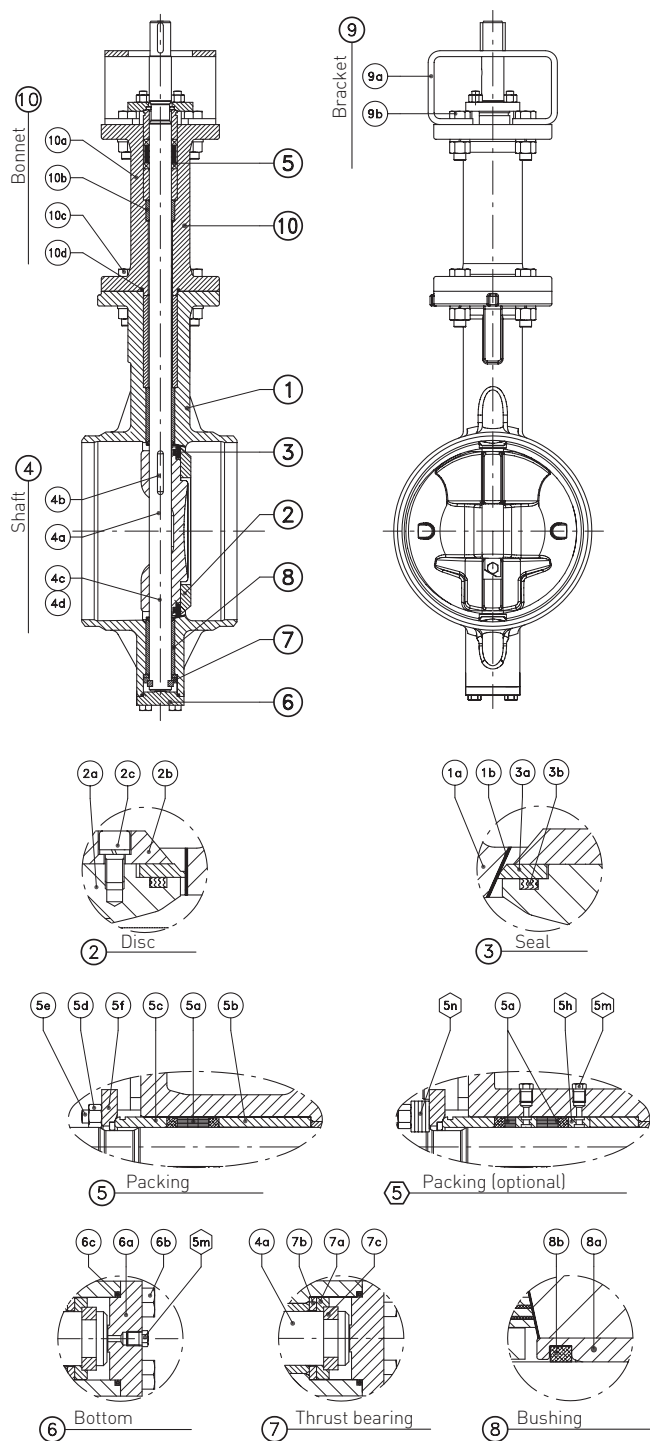
NOTES

- ◆ 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 | ❖ | <i>Lantern ring (bearing and packing flushing option)</i> | UNS S31600 |
| 5m | ❖ | <i>Plug (bearing and packing flushing option)</i> | UNS S31600 |
| 5n | ❖ | <i>Belleville spring (live loaded packing option)</i> | 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 |

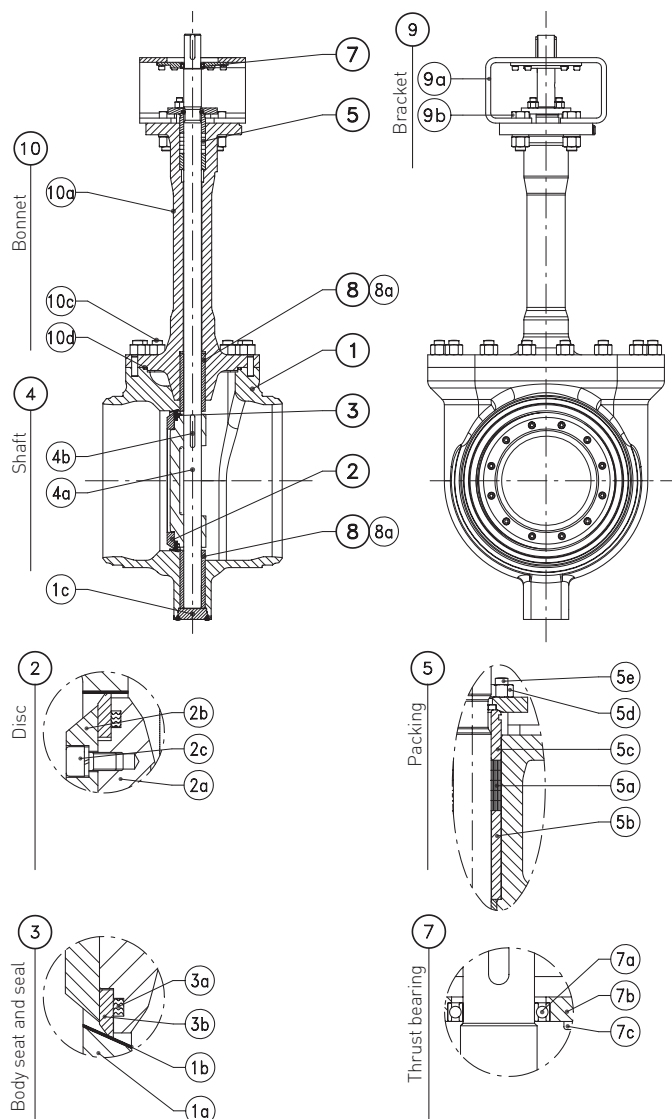
NOTES

- ◆ 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.

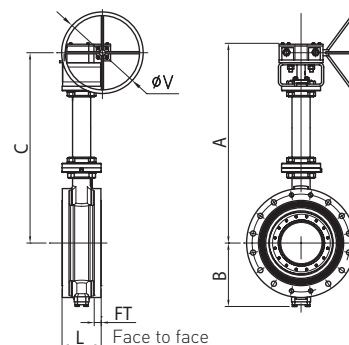
VANESSA SERIES 30,000 TRIPLE OFFSET VALVES

CRYOGENIC VALVE CONFIGURATION - DIMENSIONS AND WEIGHTS, ASME CLASS 150

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

| DN | NPS | A | B | C | L | FT | ØV | Valve | Total |
|-----|-----|------|-----|------|-----|------|-----|-------|-------|
| | | mm | mm | mm | mm | mm | mm | kg | 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



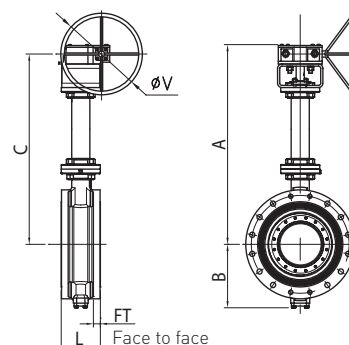
DOUBLE FLANGED - FACE TO FACE ISO 5752 BASIC SERIES 13 (IMPERIAL)

| NPS | DN | A | B | C | L | FT | ØV | Valve | Total |
|-----|-----|-------|-------|-------|-------|------|-------|-------|-------|
| | | inch | inch | inch | inch | inch | inch | lbs | 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 | B | C | L | FT | ØV | Valve | Total |
|------|-----|------|------|------|-----|-------|-----|-------|-------|
| | | mm | mm | mm | mm | mm | mm | kg | 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 | B | C | L | FT | ØV | Valve | Total |
|-----|------|-------|-------|-------|-------|------|-------|-------|-------|
| | | inch | inch | inch | inch | inch | inch | lbs | 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

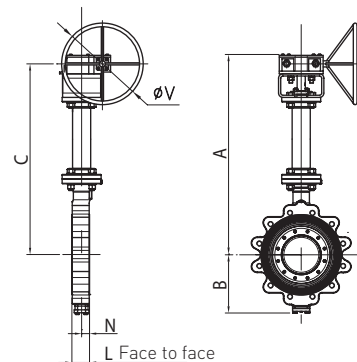
VANESSA SERIES 30,000 TRIPLE OFFSET VALVES

CRYOGENIC VALVE CONFIGURATION - DIMENSIONS AND WEIGHTS, ASME CLASS 150

LUG - FACE TO FACE API 609 (METRIC)

| DN | NPS | A | B | C | L | N | ØV | Valve | Total |
|-----|-----|------|-----|------|-----|----|-----|-------|-------|
| | | mm | mm | mm | mm | mm | mm | kg | 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



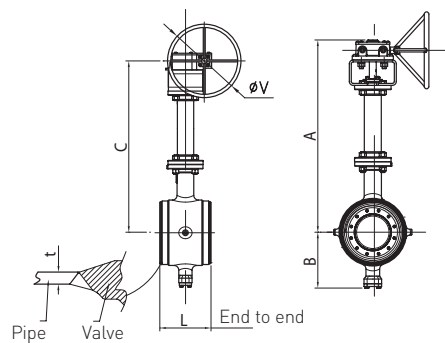
LUG - FACE TO FACE API 609 (IMPERIAL)

| NPS | DN | A | B | C | L | N | ØV | Valve | Total |
|-----|-----|-------|-------|-------|------|------|-------|-------|-------|
| | | inch | inch | inch | inch | inch | inch | lbs | 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 | B | C | L | t* | ØV | Valve | Total |
|-----|-----|------|-----|------|-----|-----|-----|-------|-------|
| | | mm | mm | mm | mm | | mm | kg | 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 | B | C | L | t* | ØV | Valve | Total |
|-----|-----|-------|-------|-------|-------|-----|-------|-------|-------|
| | | inch | inch | inch | inch | | inch | lbs | 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

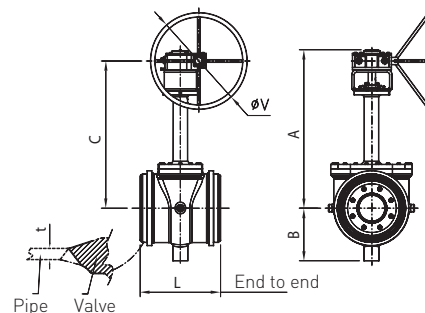
VANESSA SERIES 30,000 TRIPLE OFFSET VALVES

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

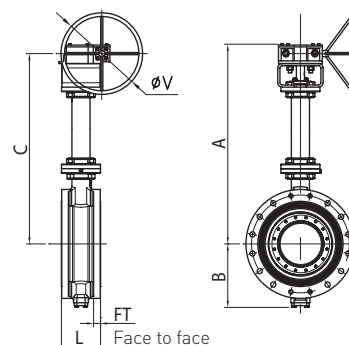
VANESSA SERIES 30,000 TRIPLE OFFSET VALVES

CRYOGENIC VALVE CONFIGURATION - DIMENSIONS AND WEIGHTS, ASME CLASS 300

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

| DN | NPS | A | B | C | L | FT | ØV | Valve | Total |
|-----|-----|------|-----|------|-----|------|-----|-------|-------|
| | | mm | mm | mm | mm | mm | mm | kg | 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



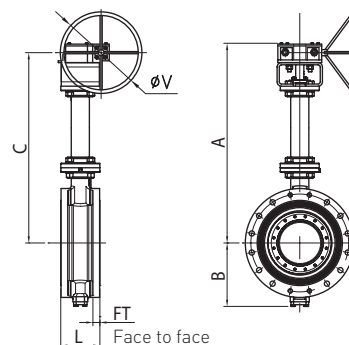
DOUBLE FLANGED - FACE TO FACE ISO 5752 BASIC SERIES 13 (IMPERIAL)

| NPS | DN | A | B | C | L | FT | ØV | Valve | Total |
|-----|-----|-------|-------|-------|-------|------|-------|-------|-------|
| | | inch | inch | inch | inch | inch | inch | lbs | 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 | B | C | L | FT | ØV | Valve | Total |
|------|-----|------|------|------|-----|-------|------|-------|-------|
| | | mm | mm | mm | mm | mm | mm | kg | 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 | B | C | L | FT | ØV | Valve | Total |
|-----|------|--------|-------|-------|-------|------|-------|-------|-------|
| | | inch | inch | inch | inch | inch | inch | lbs | 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

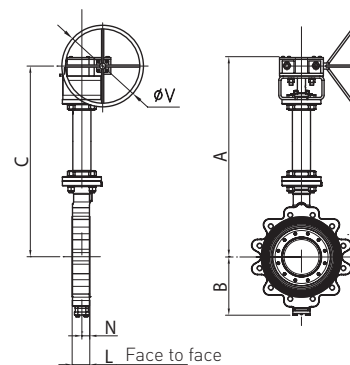
VANESSA SERIES 30,000 TRIPLE OFFSET VALVES

CRYOGENIC VALVE CONFIGURATION - DIMENSIONS AND WEIGHTS, ASME CLASS 300

LUG - FACE TO FACE API 609 (METRIC)

| DN | NPS | A | B | C | L | N | ØV | Valve | Total |
|-----|-----|------|-----|------|-----|----|-----|-------|-------|
| | | mm | mm | mm | mm | mm | mm | kg | 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



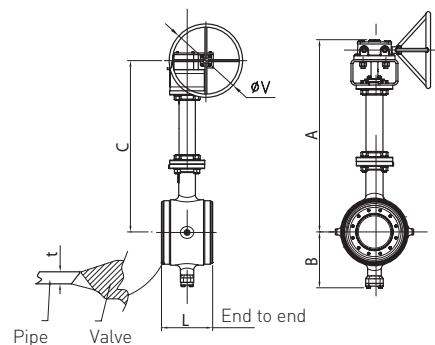
LUG - FACE TO FACE API 609 (IMPERIAL)

| NPS | DN | A | B | C | L | N | ØV | Valve | Total |
|-----|-----|-------|-------|-------|------|------|-------|-------|-------|
| | | inch | inch | inch | inch | inch | inch | lbs | 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 | B | C | L | t* | ØV | Valve | Total |
|-----|-----|------|-----|------|-----|-----|-----|-------|-------|
| | | mm | mm | mm | mm | | mm | kg | 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 | B | C | L | t* | ØV | Valve | Total |
|-----|-----|-------|-------|-------|-------|-----|-------|-------|-------|
| | | inch | inch | inch | inch | | inch | lbs | 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

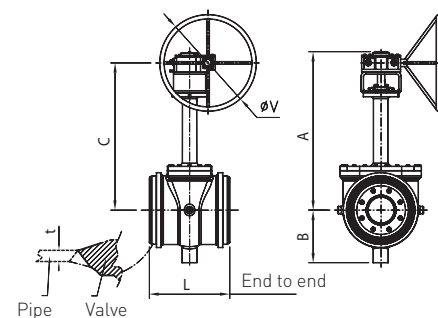
VANESSA SERIES 30,000 TRIPLE OFFSET VALVES

CRYOGENIC VALVE CONFIGURATION - DIMENSIONS AND WEIGHTS, ASME CLASS 300

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

| DN | NPS | A | B | C | L | t * | ØV | Valve | Total |
|------|-----|------|-----|------|------|-----|-----|-------|-------|
| | | mm | mm | mm | mm | | mm | kg | 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 | B | C | L | t * | ØV | Valve | Total |
|-----|------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | inch | inch | inch | inch | | inch | lbs | 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

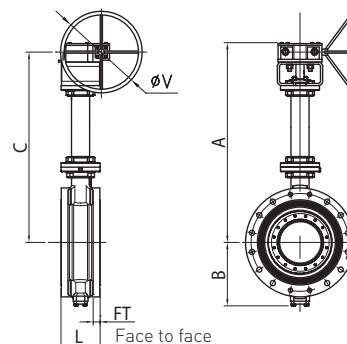
VANESSA SERIES 30,000 TRIPLE OFFSET VALVES

CRYOGENIC VALVE CONFIGURATION - DIMENSIONS AND WEIGHTS, ASME CLASS 600

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

| DN | NPS | A | B | C | L | FT | ØV | Valve | Total |
|-----|-----|------|-----|------|-----|-------|-----|-------|-------|
| | | mm | mm | mm | mm | mm | mm | kg | 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



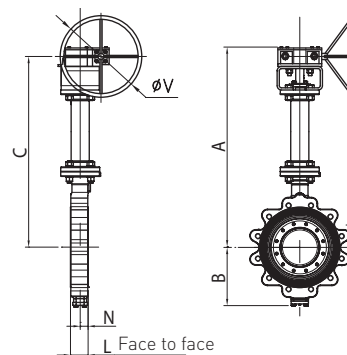
DOUBLE FLANGED - FACE TO FACE ISO 5752 BASIC SERIES 14 (IMPERIAL)

| NPS | DN | A | B | C | L | FT | ØV | Valve | Total |
|-----|-----|-------|-------|-------|-------|------|-------|-------|-------|
| | | inch | inch | inch | inch | inch | inch | lbs | 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 | B | C | L | N | ØV | Valve | Total |
|-----|-----|------|-----|------|-----|-------|-----|-------|-------|
| | | mm | mm | mm | mm | mm | mm | kg | 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 | B | C | L | N | ØV | Valve | Total |
|-----|-----|-------|-------|-------|------|------|-------|-------|-------|
| | | inch | inch | inch | inch | inch | inch | lbs | 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 | 1010 |
| 14 | 350 | 49.88 | 15.38 | 45.63 | 6.12 | 2.75 | 32.38 | 948 | 1312 |
| 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

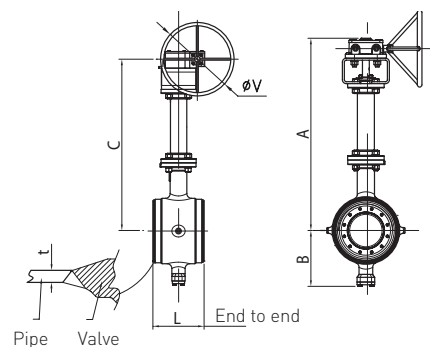
BUTTWELD - END TO END ISO 5752 BASIC SERIES 14 (METRIC)

| DN | NPS | A | B | C | L | t * | ØV | Valve | Total |
|-----|-----|------|-----|------|-----|------|-----|-------|-------|
| | | mm | mm | mm | mm | | mm | kg | 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 |

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

| NPS | DN | A | B | C | L | t * | ØV | Valve | Total |
|-----|-----|-------|-------|-------|-------|------|-------|-------|-------|
| | | inch | inch | inch | inch | | inch | lbs | 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 |

ASME B16.34 CLASS 600 - TRIM D



* Maximum allowable pipe schedule
Please see notes on page 14

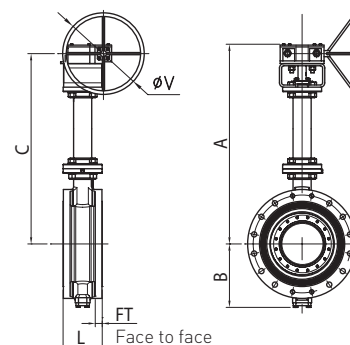
VANESSA SERIES 30,000 TRIPLE OFFSET VALVES

CRYOGENIC VALVE CONFIGURATION - DIMENSIONS AND WEIGHTS, ASME CLASS 900

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

| DN | NPS | A | B | C | L | FT | ØV | Valve | Total |
|-----|-----|------|-----|------|-----|-------|-----|-------|-------|
| | | mm | mm | mm | mm | mm | mm | kg | 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



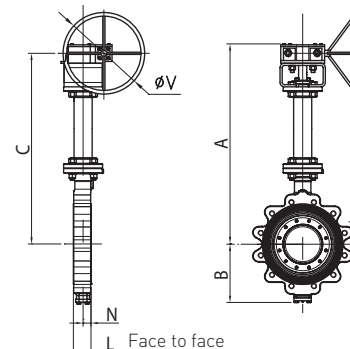
DOUBLE FLANGED - FACE TO FACE ISO 5752 BASIC SERIES 8 (IMPERIAL)

| NPS | DN | A | B | C | L | FT | ØV | Valve | Total |
|-----|-----|-------|-------|-------|-------|------|-------|-------|-------|
| | | inch | inch | inch | inch | inch | inch | lbs | 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 | B | C | L | N | ØV | Valve | Total |
|-----|-----|------|-----|------|-----|-------|-----|-------|-------|
| | | mm | mm | mm | mm | mm | mm | kg | 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 | B | C | L | N | ØV | Valve | Total |
|-----|-----|-------|-------|-------|-------|------|-------|-------|-------|
| | | inch | inch | inch | inch | inch | inch | lbs | 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 |
| | Performance | SIL 3 capable |
| Applicable product standards | 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 |

