

Neles™ high performance metal seated Neldisc™ triple eccentric disc valve Series L1 & L2

Neles Neldisc series L1 is a wafer type, and series L2 a lug type, metal seated high performance triple eccentric disc valve. With close to equal percentage characteristics and superior tightness, Neldisc triple eccentric disc valves operate both in control and shut-off applications.

As a result of the unique geometry of Neldisc, the contact between disc and seat is mechanically induced and does not rely on assistance from differential pressure. The valve is very tight even in low Δp applications.

Due to a number of special constructions developed from the versatile Neldisc design, these valves offer a powerful tool for standardization and are true high performance valves.

Features

- Metal to metal
- Bidirectional long lasting tightness
- Low friction
- Excellent wear resistance
- Extended life cycle
- Lower operational torque

Applications

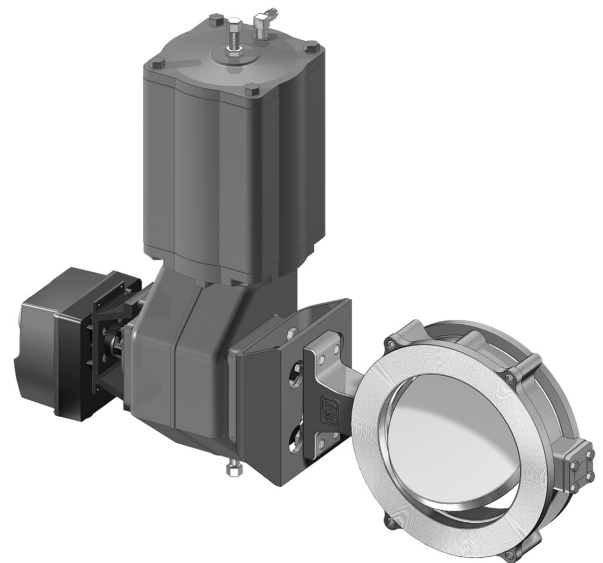
The Neldisc triple eccentric disc valves are widely used in applications such as:

- Liquids
- Gases
- Steam
- Pulpstocks both on control and shutoff services.

FEATURES

Bidirectional tight seat

- Unique all-metal seat design assures superior tightness in difficult applications over long time periods.
- Contact between disc and seat is mechanically induced and does not rely on assistance from differential pressure.



Abrasion resistant

- Solid metal seat design is offered in a variety of materials to suit your application.
- Fully metal seated construction with no resilient parts exposed to the medium.

Wide pressure and temperature range

- Differential pressure/temperature ratings in accordance with ASME B16.34.
- Appropriate constructions perform equally well from -200 °C to +600 °C / -330 °F to +1110 °F.

Low cost of ownership

- Extremely high cycle life minimizes need for maintenance.
- Totally interchangeable seats can be replaced without disassembly of the disc and shaft.

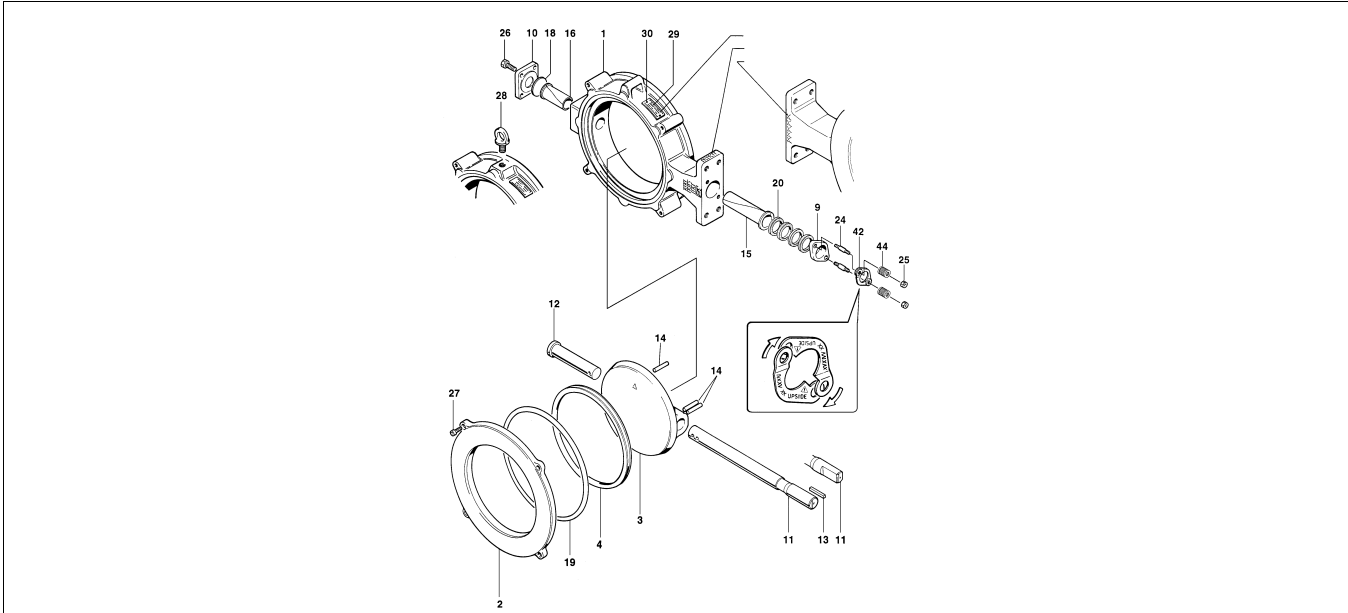
Offset shaft and eccentric disc

- No seat/disc contact in the open or intermediate position.
- Eliminates wear points at top and bottom of disc.

Anti-blow out shaft

- Anti-blow out shaft construction standard in all valves, see page 2 exploded view.

Exploded view

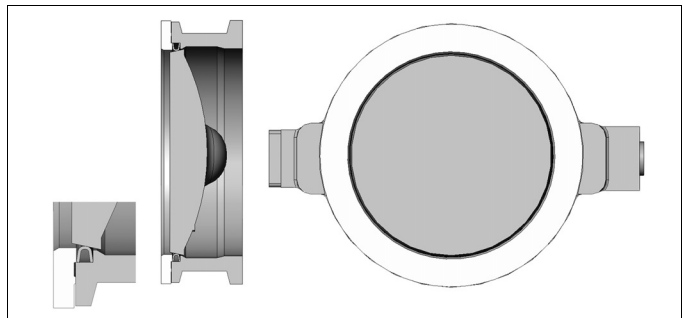


Parts list

| Item | Part description | Material | |
|------|----------------------------|--|--|
| 1 | BODY | Carbon steel, ASTM A 216 gr. WCB | Stainless steel, ASTM A 351 gr. CF8M |
| 2 | CLAMP RING | Carbon steel, 1.0425 (Type ASTM A 515 gr. 55) | Stainless steel, ASTM A 351 gr. CF8M |
| 3 | DISC | Stainless steel, ASTM A 351 gr. CF8M | |
| 4 | SEAT RING | Ni-Fe-base superalloy + Hard chrome, ASTM B 424 (Incoloy 825) or W.no. 1.4418 | |
| 9 | GLAND | Stainless steel, ASTM A 351 gr. CF8M | |
| 10 | BLIND FLANGE | DN 450-500 Stainless steel, ASTM A 351 gr. CF8M DN 600- Carbon steel, ASTM A 216 gr. WCB or equal | Stainless steel ASTM A 351 gr. CF8M |
| 11 | DRIVE SHAFT | L1/L2C AISI 329 (SS 14 2324) L1/L2D Stainless steel, ASTM A 564 gr. 630 (17-4PH) | |
| 12 | SHAFT | L1/L2C AISI 329 (SS 14 2324) L1/L2D Stainless steel, ASTM A 564 gr. 630 (17-4PH) | |
| 13 | KEY | Stainless steel, Type AISI 329 (SS 14 2324) | |
| 14 | PIN | L1/L2C AISI 329 (SS 14 2324) L1/L2D Stainless steel, ASTM A 564 gr. 630 (17-4PH) | |
| 15 | BEARING | PTFE on stainless steel net | |
| 16 | BEARING | PTFE on stainless steel net | |
| 18 | GASKET | Graphite | |
| 19 | BODY SEAL | Graphite | |
| 20 | GLAND PACKING | Polytetrafluoroethylene (PTFE) | |
| 24 | STUD | Stainless steel | |
| 25 | HEXAGON NUT | Stainless steel | |
| 26 | HEXAGON SCREW | DN 450-500 Stainless steel DN 600- Steel, zinc plated | |
| 27 | HEXAGON SOCKET SCREW | Stainless steel, ISO 3506 A4-80 | |
| 28 | LIFTING EYE BOLT (DN 600-) | Steel | |
| 29 | IDENTIFICATION PLATE | Stainless steel, AISI 304 | |
| 42 | RETAINING PLATE | Stainless steel, DIN 17440-1.4435 (AISI 316L) | |
| 44 | Disc spring set | Electroless nickel plated spring steel (EN 10083-1.8159) | |

NELDISC TRIPLE ECCENTRIC SEATING PRINCIPLE

The disc of the valve is machined to close tolerances to create an elliptical shape similar to an oblique slice taken from a solid metal cone. When the valve is closed, the elliptical disc at the major axis displaces the seat ring outward, causing the seat ring to contact the disc at the minor axis. When the valve is opened, the contact is released and the seat ring returns to its original circular shape.



Technical specification

Product type

High performance triple eccentric disc valve
Metal seated fully rated
L1 - Wafer type
L2 - Lug type

Pressure ratings

Body: L1C, L2C ASME 150/PN 25
L1D, L2D ASME 300/PN 40
Trim: L1C, L2CASME 150
L1D, L2DASME 300

Size range

L1C: DN 450 - DN 1200 / 18" - 48"
L1D: DN 400 - DN 900 / 16" - 36"
L2C: DN 450 - DN 750 / 18" - 30"
L2D: DN 400 - DN 750 / 16" - 30"

Temperature range

-200 °C ... +600 °C / -330 °F...+1110 °F
(over +600 °C/+1110 °F please consult with factory).

Design standards

Body: ASME B16.34.
Face to face: ISO 5752, L2D face to face according to manufacturer.

Standard materials

Body: ASTM A216 gr. WCB
ASTM A351 gr. CF8M
ASTM A351 gr. CG8M
Disc: ASTM A351 gr. CF8M
ASTM A351 gr. CG8M
Clamp ring: DIN 17155 - 1.0425
ASTM A351 gr. CF8M
ASTM A351 gr. CG8M
Shaft and pins: AISI 329 (SS 14 2324) in Class ASME 150
ASTM A564 gr. 630 (17-4 PH) in Class

ASME 300

Seat ring: ASTM B424 (Incoloy 825) in DN 450 -
DN 600 / 18"-24"
W.Nr. 1.4418 (Avesta 248SV) in
DN 700 - DN 1200 / 28" - 48"
Seat ring is always hard chrome plated.

Bearing: PTFE + AISI 316 net

Certification

Body and
clamp ring: EN 10 204 - 3.1B
Disc: EN 10 204 - 3.1B on request

Approvals

Emission: TA-Luft, chapter 3.1.8.4, Shell SPE 77/
312, ISO 15848
Fire test: BS6755 and API607, 4th edition.

Valve testing

Each valve undergoes a shell test and a seat test. The shell test pressure is 1.5 x PN. The seat test pressure is 1.1 x PN. The test medium is inhibited water.

Valve tightness: Bidirectionally ISO 5208 Rate D or
ANSI Class V
(Improved tightness available on
request).
10x ISO 5208 rate D with RH hand lever

Options

- Cryogenic.
- High temperature.
- Heating jacket.
- S-disc, flow balancing trim, see bulletin 2S-L1 20.
- NACE.
- High cyclic design.
- Erosion resistant design.

Flow data

C_v tables of L1 and L2 valves in pressure classes ASME 150 and ASME 300.

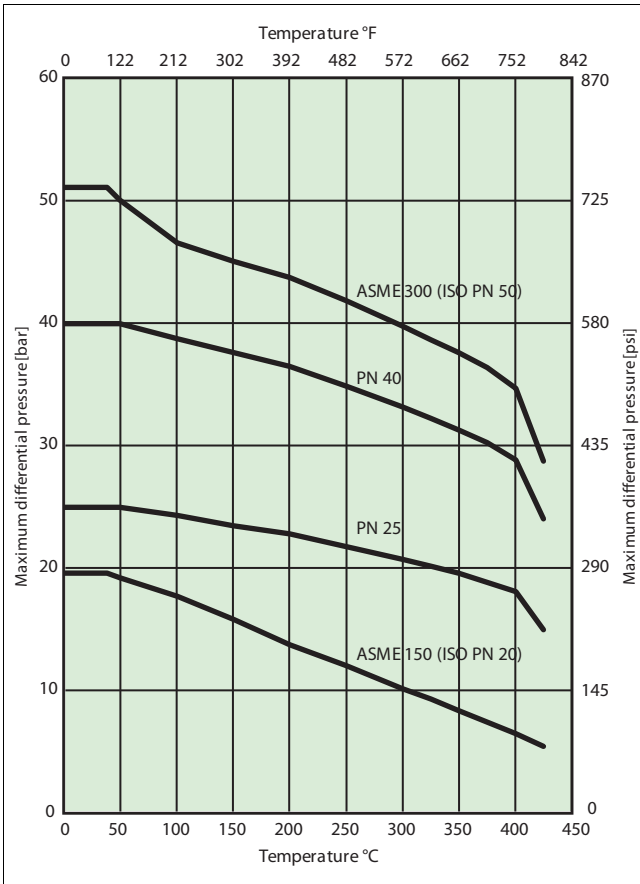
ASME 150

| DN | inch | Relative opening h 100% |
|------|------|-------------------------|
| 450 | 18 | 17600 |
| 500 | 20 | 21900 |
| 600 | 24 | 31000 |
| 700 | 28 | 39300 |
| 750 | 30 | 46900 |
| 800 | 32 | 53600 |
| 900 | 36 | 66400 |
| 1000 | 40 | 82800 |
| 1200 | 48 | 116000 |

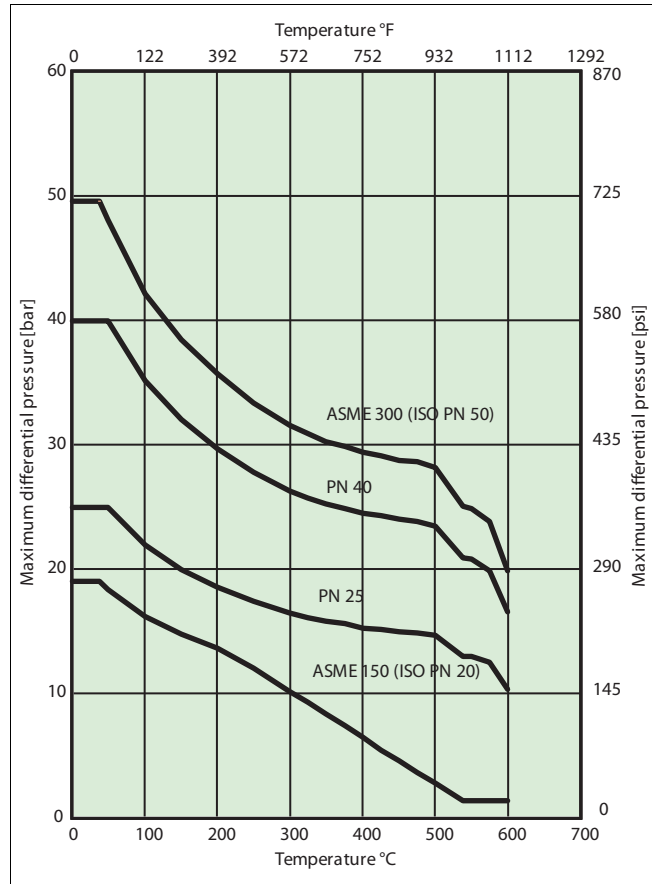
ASME 300

| DN | inch | Relative opening h 100% |
|-----|------|-------------------------|
| 400 | 16 | 9100 |
| 450 | 18 | 12100 |
| 500 | 20 | 14400 |
| 600 | 24 | 22000 |
| 700 | 28 | 28100 |
| 750 | 30 | 28800 |
| 900 | 36 | 40300 |

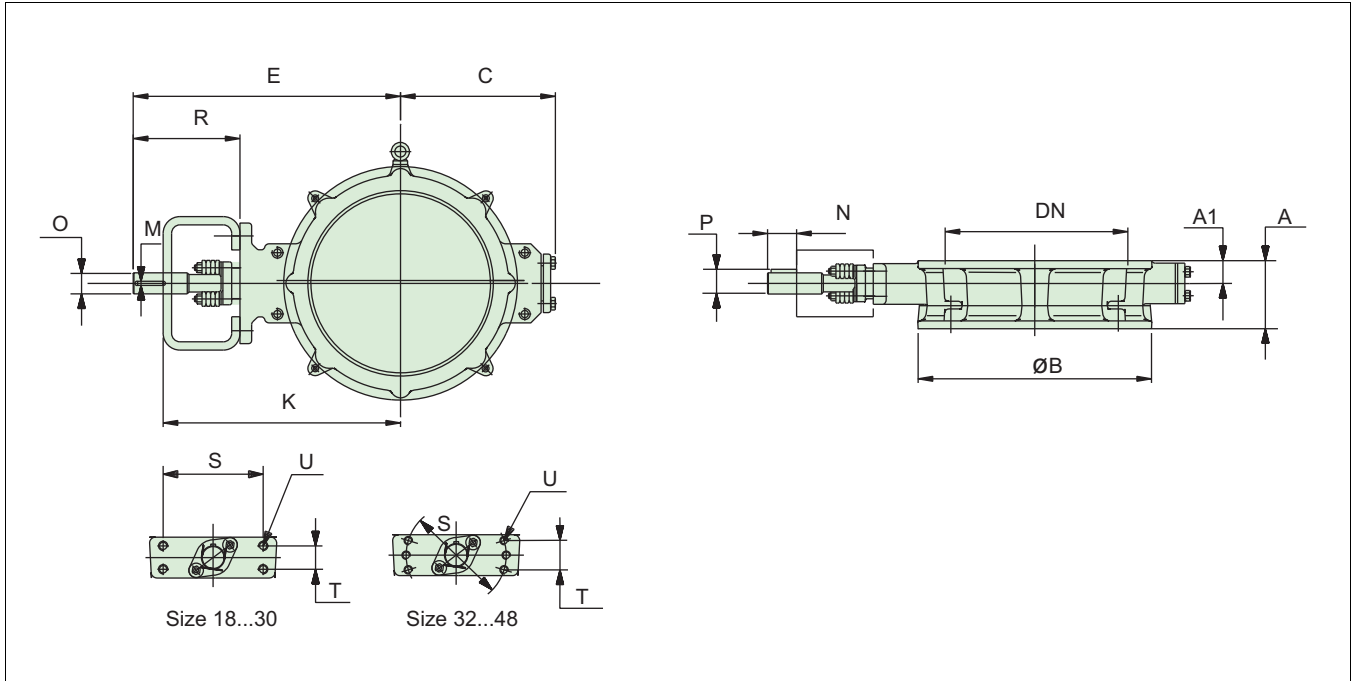
Pressure/temperature ratings for valve body, WCB



Pressure/temperature ratings for valve body, CF8M



Dimensions, weights and c_v -values

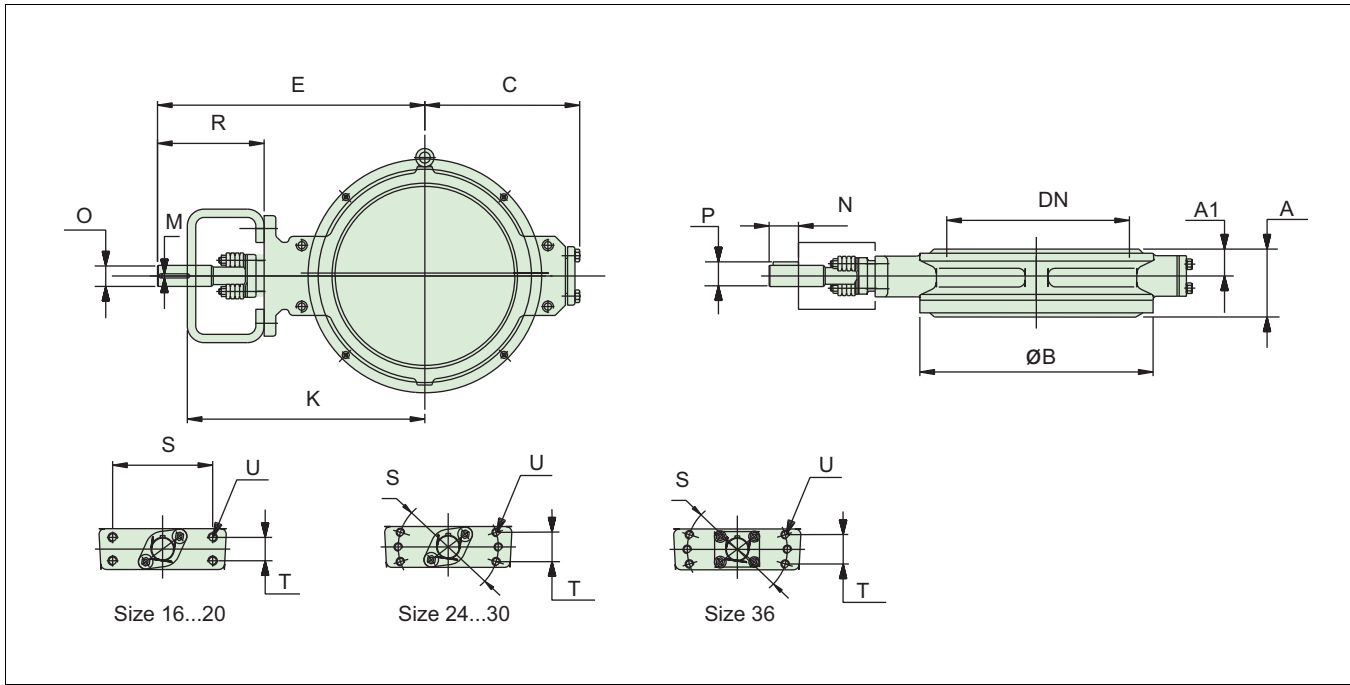


L1/L2C, ASME 150

| Size | Dimensions, mm | | | | | | | | | | | | U UNC | Dimensions, mm | | | | | Δp bar | L1C | | L2C | |
|------|----------------|-----|-----|------|-----|-----|------|-----|------|------|-----|-----|----------|----------------|-----|-------|-------|--------|-------------------|--------|--------|-------|------|
| | L1C | | | L2C | | | C | E | K | S | T | O | | R | M | P | N | Cv 90° | | kg | Cv 90° | kg | |
| | A | A1 | B | A | A1 | B | | | | | | | | | | | | | | | | | |
| 18 | 450 | 114 | 46 | 537 | 152 | 46 | 635 | 370 | 610 | 520 | 160 | 55 | 3/4 | 50 | 230 | 12.7 | 55.5 | 90 | 20 | 17600 | 130 | 14800 | 260 |
| 20 | 500 | 127 | 53 | 590 | 152 | 53 | 700 | 415 | 650 | 560 | 160 | 55 | 3/4 | 55 | 230 | 12.7 | 60.6 | 90 | 20 | 21900 | 160 | 18200 | 300 |
| 24 | 600 | 154 | 65 | 690 | 178 | 65 | 813 | 505 | 794 | 675 | 230 | 90 | 1 | 70 | 299 | 19.05 | 78.2 | 119 | 20 | 31000 | 280 | 27300 | 470 |
| 28 | 700 | 229 | 96 | 805 | 250 | 96 | 927 | 545 | 886 | 740 | 230 | 90 | 1 | 85 | 326 | 22.23 | 94.7 | 146 | 20 | 39300 | 400 | 39000 | 700 |
| 30 | 750 | 229 | 96 | 870 | 250 | 96 | 985 | 585 | 911 | 765 | 230 | 90 | 1 | 85 | 326 | 22.23 | 94.7 | 146 | 20 | 46900 | 470 | 46000 | 820 |
| 32 | 800 | 241 | 101 | 910 | 270 | 101 | 1060 | 600 | 1006 | 850 | 330 | 120 | 1 1/4 | 95 | 376 | 22.23 | 104.8 | 156 | 20 | 53600 | 550 | 52800 | 1000 |
| 36 | 900 | 241 | 105 | 1010 | 241 | 105 | 1170 | 660 | 1065 | 885 | 330 | 120 | 1 1/4 | 105 | 400 | 25.4 | 116.2 | 180 | 20 | 66400 | 710 | 68000 | 1400 |
| 40* | 1000* | 300 | 130 | 1120 | | | | 715 | 1185 | 980 | 330 | 120 | 1 1/4 | 120 | 425 | 31.75 | 133.8 | 205 | 20 | 82800 | 950 | | |
| 48* | 1200* | 350 | 175 | 1355 | | | | 960 | 1440 | 1190 | 400 | 160 | 1 1/2 | 150 | 500 | 38.10 | 167 | 250 | 20 | 116000 | 2100 | | |

| Size | Dimensions, inch | | | | | | | | | | | | U UNC | Dimensions, inch | | | | | Δp psi | L1C | | L2C | |
|------|------------------|-------|------|-------|-------|------|-------|-------|-------|-------|-------|------|----------|------------------|-------|------|------|--------|-------------------|--------|--------|-------|------|
| | L1C | | | L2C | | | C | E | K | S | T | O | | R | M | P | N | Cv 90° | | lbs | Cv 90° | lbs | |
| | A | A1 | B | A | A1 | B | | | | | | | | | | | | | | | | | |
| 18 | 450 | 4.49 | 1.81 | 21.14 | 5.98 | 1.81 | 25.00 | 14.57 | 24.02 | 20.47 | 6.30 | 2.17 | 3/4 | 1.97 | 9.06 | 0.50 | 2.19 | 3.54 | 280 | 17600 | 286 | 14800 | 572 |
| 20 | 500 | 5.00 | 2.09 | 23.23 | 5.98 | 2.09 | 27.56 | 16.34 | 25.59 | 22.05 | 6.30 | 2.17 | 3/4 | 2.17 | 9.06 | 0.50 | 2.39 | 3.54 | 280 | 21900 | 352 | 18200 | 660 |
| 24 | 600 | 6.06 | 2.56 | 27.17 | 7.01 | 2.56 | 32.01 | 19.88 | 31.26 | 26.57 | 9.06 | 3.54 | 1 | 2.76 | 11.77 | 0.75 | 3.08 | 4.69 | 280 | 31000 | 616 | 27300 | 1034 |
| 28 | 700 | 9.02 | 3.78 | 31.69 | 9.84 | 3.78 | 36.50 | 21.46 | 34.88 | 29.13 | 9.06 | 3.54 | 1 | 3.35 | 12.83 | 0.88 | 3.73 | 5.75 | 280 | 39300 | 880 | 39000 | 1540 |
| 30 | 750 | 9.02 | 3.78 | 34.25 | 9.84 | 3.78 | 38.78 | 23.03 | 35.87 | 30.12 | 9.06 | 3.54 | 1 | 3.35 | 12.83 | 0.88 | 3.73 | 5.75 | 280 | 46900 | 1034 | 46000 | 1804 |
| 32 | 800 | 9.49 | 3.98 | 35.83 | 10.63 | 3.98 | 41.73 | 23.62 | 39.61 | 33.46 | 12.99 | 4.72 | 1 1/4 | 3.74 | 14.80 | 0.88 | 4.13 | 6.14 | 280 | 53600 | 1210 | 52800 | 2200 |
| 36 | 900 | 9.49 | 4.13 | 39.76 | 9.49 | 4.13 | 46.06 | 25.98 | 41.93 | 34.84 | 12.99 | 4.72 | 1 1/4 | 4.13 | 15.75 | 1.00 | 4.57 | 7.09 | 280 | 66400 | 1562 | 68000 | 3080 |
| 40* | 1000* | 11.81 | 5.12 | 44.09 | | | | 28.15 | 46.65 | 38.58 | 12.99 | 4.72 | 1 1/4 | 4.72 | 16.73 | 1.25 | 5.27 | 8.07 | 280 | 82800 | 2090 | | |
| 48* | 1200* | 13.78 | 6.89 | 53.35 | | | | 37.80 | 56.69 | 46.85 | 15.75 | 6.30 | 1 1/2 | 5.91 | 19.69 | 1.50 | 6.57 | 9.84 | 280 | 116000 | 4620 | | |

*) Only L1C series



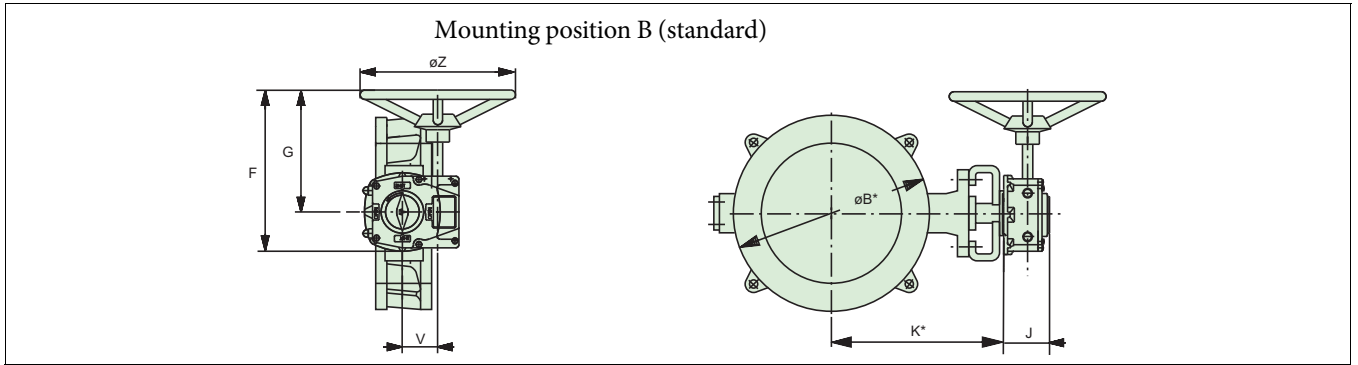
L1/L2D, ANSI 300

| Size | Dimensions, mm | | | | | | | | | | | | | | U UNC | Dimensions, mm | | | | | Δp bar | L1D | | L2D | |
|------|----------------|-----|-----|------|-----|-----|------|-----|------|-----|-----|-----|-------|-----|----------|----------------|-------|--------|----|--------|-----------|-------|------|-----|--|
| | L1D | | | L2D | | | C | E | K | S | T | O | R | M | | P | N | Cv 90° | kg | Cv 90° | | kg | | | |
| | A | A1 | B | A | A1 | B | | | | | | | | | | | | | | | | | | | |
| 16 | 400 | 165 | 83 | 530 | 195 | 83 | 645 | 385 | 679 | 560 | 230 | 90 | 1 | 70 | 299 | 19.05 | 78.2 | 119 | 51 | 9100 | 200 | 9460 | 370 | | |
| 18 | 450 | 180 | 90 | 565 | 210 | 88 | 710 | 410 | 704 | 585 | 230 | 90 | 1 | 70 | 299 | 19.05 | 78.2 | 119 | 51 | 12100 | 245 | 12700 | 500 | | |
| 20 | 500 | 200 | 100 | 625 | 230 | 107 | 775 | 465 | 781 | 635 | 230 | 90 | 1 | 85 | 326 | 22.23 | 94.7 | 146 | 51 | 14400 | 305 | 15200 | 620 | | |
| 24 | 600 | 240 | 120 | 743 | 250 | 105 | 915 | 525 | 906 | 750 | 330 | 120 | 1 1/4 | 95 | 376 | 22.23 | 104.8 | 156 | 51 | 22000 | 540 | 21200 | 950 | | |
| 28* | 700* | 250 | 125 | 848 | | | | 615 | 1028 | 823 | 330 | 120 | 1 1/4 | 120 | 425 | 31.75 | 133.8 | 205 | 51 | 28100 | 830 | | | | |
| 30 | 750 | 300 | 150 | 942 | 300 | 130 | 1090 | 655 | 1115 | 890 | 360 | 135 | 1 1/4 | 135 | 475 | 31.75 | 149 | 225 | 51 | 28800 | 1250 | 28800 | 1200 | | |
| 36* | 900* | 360 | 180 | 1100 | | | | 730 | 1260 | 980 | 360 | 135 | 1 1/4 | 165 | 530 | 38.1 | 181.8 | 280 | 51 | 40300 | 2000 | | | | |

| Size | Dimensions, inch | | | | | | | | | | | | | | U UNC | Dimensions, inch | | | | | Δp psi | L1D | | L2D | |
|------|------------------|-------|------|-------|-----|------|-------|-------|-------|-------|-------|------|-------|------|----------|------------------|------|--------|-----|--------|-----------|-------|------|-----|--|
| | L1D | | | L2D | | | C | E | K | S | T | O | R | M | | P | N | Cv 90° | lbs | Cv 90° | | lbs | | | |
| | A | A1 | B | A | A1 | B | | | | | | | | | | | | | | | | | | | |
| 16 | 400 | 6.50 | 3.27 | 20.87 | 195 | 3.27 | 25.39 | 15.16 | 26.73 | 22.05 | 9.06 | 3.54 | 1 | 2.76 | 11.77 | 0.75 | 3.08 | 4.69 | 735 | 9100 | 440 | 9460 | 814 | | |
| 18 | 450 | 7.09 | 3.54 | 22.24 | 210 | 3.46 | 27.95 | 16.14 | 27.72 | 23.03 | 9.06 | 3.54 | 1 | 2.76 | 11.77 | 0.75 | 3.08 | 4.69 | 735 | 12100 | 539 | 12700 | 1100 | | |
| 20 | 500 | 7.87 | 3.94 | 24.61 | 230 | 4.21 | 30.51 | 18.31 | 30.75 | 25.00 | 9.06 | 3.54 | 1 | 3.35 | 12.83 | 0.88 | 3.73 | 5.75 | 735 | 14400 | 671 | 15200 | 1364 | | |
| 24 | 600 | 9.45 | 4.72 | 29.25 | 250 | 4.13 | 36.02 | 20.67 | 35.67 | 29.53 | 12.99 | 4.72 | 1 1/4 | 3.74 | 14.80 | 0.88 | 4.13 | 6.14 | 735 | 22000 | 1188 | 21200 | 2090 | | |
| 28* | 700* | 9.84 | 4.92 | 33.39 | | | | 24.21 | 40.47 | 32.40 | 12.99 | 4.72 | 1 1/4 | 4.72 | 16.73 | 1.25 | 5.27 | 8.07 | 735 | 28100 | 1826 | | | | |
| 30 | 750 | 11.81 | 5.91 | 37.09 | 300 | 5.12 | 42.91 | 25.79 | 43.90 | 35.04 | 14.17 | 5.31 | 1 1/4 | 5.31 | 18.70 | 1.25 | 5.87 | 8.86 | 735 | 28800 | 2750 | 28800 | 2640 | | |
| 36* | 900* | 14.17 | 7.09 | 43.31 | | | | 28.74 | 49.61 | 38.58 | 14.17 | 5.31 | 1 1/4 | 6.50 | 20.87 | 1.50 | 7.16 | 11.02 | 735 | 40300 | 4400 | | | | |

*) Only L1D series

Valve + manual gear operator series M

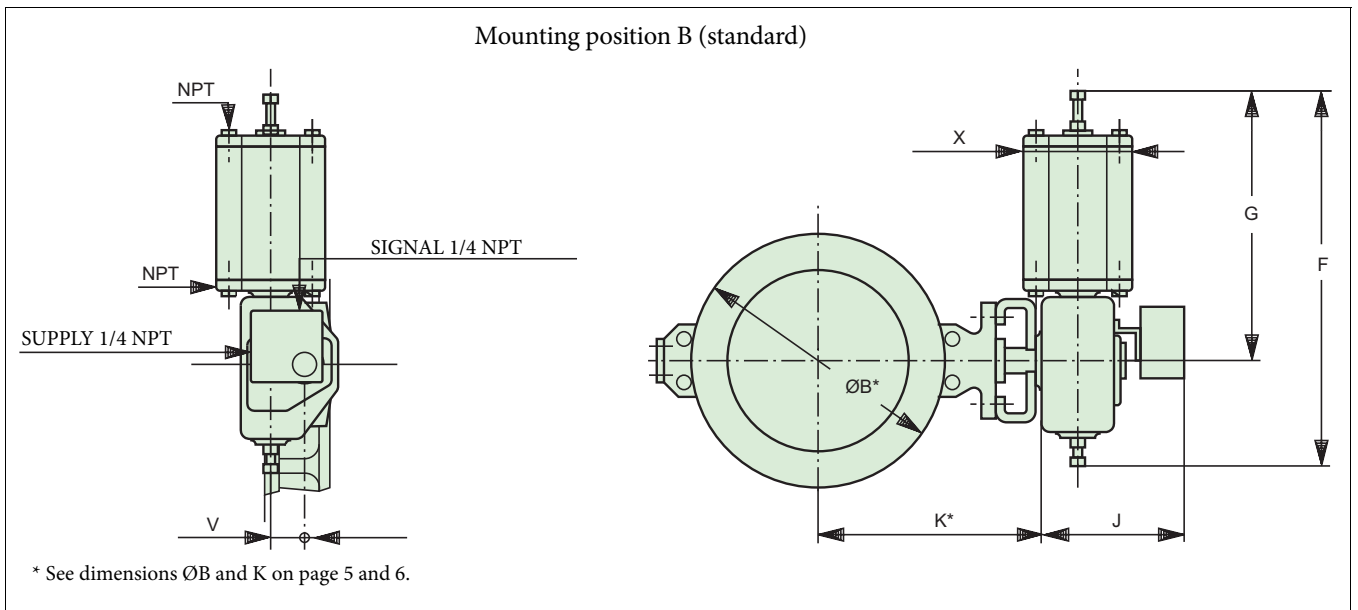


| Type | Dimensions, mm | | | | | kg |
|---------|----------------|-----|-----|-----|-----|----|
| | F | G | J | V | ØZ | |
| M15/F16 | 532 | 406 | 106 | 123 | 500 | 31 |
| M16/F25 | 642 | 466 | 127 | 154 | 600 | 45 |

| Type | Dimensions, inch | | | | | lbs |
|---------|------------------|-------|------|------|-------|-----|
| | F | G | J | V | ØZ | |
| M15/F16 | 20.94 | 15.98 | 4.15 | 4.84 | 19.69 | 68 |
| M16/F25 | 25.28 | 18.35 | 4.98 | 6.06 | 23.62 | 99 |

* See dimensions ØB and K on page 5 and 6.

Valve + pneumatic actuator / B1C / B1J / B1JA



* See dimensions ØB and K on page 5 and 6.

| Type | Dimensions, mm | | | | | NPT | kg |
|-------|----------------|------|------|-----|-----|-----|-----|
| | X | G | F | V | J | | |
| B1C25 | 265 | 710 | 1040 | 121 | 448 | 1/2 | 131 |
| B1C32 | 395 | 910 | 1330 | 153 | 525 | 3/4 | 256 |
| B1C40 | 505 | 1150 | 1660 | 194 | 595 | 3/4 | 446 |
| B1C50 | 610 | 1350 | 1970 | 242 | 690 | 1 | 830 |

| Type | Dimensions, mm | | | | | NPT | kg |
|-------------|----------------|------|------|-----|-----|-----|------|
| | X | G | F | V | J | | |
| B1J, B1JA20 | 395 | 935 | 1200 | 97 | 358 | 3/4 | 175 |
| B1J, B1JA25 | 505 | 1200 | 1530 | 121 | 448 | 3/4 | 350 |
| B1J, B1JA32 | 540 | 1410 | 1830 | 153 | 525 | 1 | 671 |
| B1J/B1JA40 | 724 | 1578 | 2095 | 194 | 580 | 1 | 1100 |

| Type | Dimensions, inch | | | | | NPT | lbs |
|-------|------------------|-------|-------|------|-------|-----|------|
| | X | G | F | V | J | | |
| B1C25 | 10.43 | 27.95 | 40.94 | 4.76 | 17.64 | 1/2 | 289 |
| B1C32 | 15.55 | 35.83 | 52.36 | 6.02 | 20.67 | 3/4 | 564 |
| B1C40 | 19.88 | 45.28 | 65.35 | 7.64 | 23.43 | 3/4 | 983 |
| B1C50 | 24.02 | 53.15 | 77.56 | 9.53 | 27.17 | 1 | 1829 |

| Type | Dimensions, inch | | | | | NPT | lbs |
|-------------|------------------|-------|-------|------|-------|-----|------|
| | X | G | F | V | J | | |
| B1J, B1JA20 | 15.55 | 36.81 | 47.24 | 3.82 | 14.09 | 3/4 | 386 |
| B1J, B1JA25 | 19.88 | 47.24 | 60.24 | 4.76 | 17.64 | 3/4 | 771 |
| B1J, B1JA32 | 21.26 | 55.51 | 72.05 | 6.02 | 20.67 | 1 | 1479 |
| B1J/B1JA40 | 28.50 | 62.13 | 84.48 | 7.64 | 22.83 | 1 | 2424 |

How to order

Typical Neldisc triple eccentric disc valves

L1CMA_AAJAT standard valve ($T_{max} = +250\text{ }^{\circ}\text{C}$)

L1CMH_AANHG high temp. ($T_{max} = +600\text{ }^{\circ}\text{C}$)

L1CMH_AAHHG high temp. ($T_{max} = +600\text{ }^{\circ}\text{C}$)

L1CMC_AACAG cryo temp. ($T_{max} = -200 \dots +250\text{ }^{\circ}\text{C}$)

Example

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|----|----|---|---|---|----|---|---|---|----|----|----|----|
| S- | L1 | C | M | A | 20 | A | A | J | A | T | / | - |

| 1 | S-DISC |
|----|--|
| S- | Flow balancing trim on downstream side |

| 2 | VALVE TYPE |
|----|-------------|
| L1 | Wafer type. |
| L2 | Lug type. |

| 3 | PRESSURE RATING |
|---|-----------------|
| C | ASME Class 150. |
| D | ASME Class 300. |

| 4 | SEAT TYPE |
|---|-------------|
| M | Metal seat. |

| 5 | CONSTRUCTION TYPE |
|---|-------------------|
| A | Standard. |
| C | Cryogenic. |
| H | High-temp. |

| 6 | VALVE SIZE |
|-----|------------------------------------|
| L1C | 18, 20, 24, 28, 30, 32, 36, 40, 48 |
| L2C | 28, 30, 32, 36 |
| L1D | 28, 30, 36 |
| L2D | 28, 30, 36 |

| 7 | BODY MATERIAL |
|---|--------------------|
| A | ASTM A351 gr CF8M. |
| C | ASTM A351 gr CG8M. |
| P | ASTM A216 gr WCB. |
| F | ASTM A352 gr LCC. |

| 8 | DISC MATERIAL |
|---|--------------------|
| A | ASTM A351 gr CF8M. |
| C | ASTM A351 gr CG8M. |
| P | ASTM A216 gr WCB. |

| 9 | SHAFT AND PIN MATERIAL | | |
|---|------------------------|---|---------------------|
| C | 17-4PH. | H | Nimonic 80A |
| J | SIS 2324. | N | XM-19 (Nitronic 50) |

| 10 | SEAT MATERIAL |
|----|--|
| A | Incoloy 825. |
| B | SS Avesta 248 SV. |
| H | Nimonic 80H HCr plated (only upto 24") |
| K | Ultimet (2.4681) (only upto 24") |

| 11 | PACKING CONSTRUCTION |
|----|----------------------|
| T | Live loaded PTFE |
| G | Live loaded graphite |

| 12 | FLANGE FACING |
|----|---|
| - | Ra 3.2 - 6.3 standard, covers; ASME B16.5 (Ra 3.2 - 6.3) DIN 2526 Form E EN 1092-1 type B1 The flange face roughness 10 - 12.5 has to be defined separately in the order. |

| 13 | FLANGE DRILLING |
|----|--|
| - | without sign (drilling according to pressure rating) |
| J* | PN10 |
| K* | PN16 |
| L* | PN25 |
| M* | PN40 |
| X* | ISO PN20 |
| Z* | ISO PN50 |
| R* | JIS 10K |
| S* | JIS 16K |
| T* | JIS 20K |
| U* | JIS 30K |

* Assure suitability from Valmet sales office.

Subject to change without prior notice.

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For more information www.neles.com/trademarks

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