



M33T ISO

Full Bore Ball Valve for the Tobacco Industry DN50 to DN200 Flanged ASME 150 and 300

Description

The M33T ISO is a full bore, two-piece body, ball valve with floating ball and has ISO mounting in accordance with ISO 5211, as standard. As a main feature the valve has UHMWPE seats.

The M33T ISO has been designed for use as an isolating valve, not a control valve, and can be used in Teflon free process applications at moderate temperatures. The M33T ISO is not suitable for steam applications.


It is not recommended for gases applications.

Available types

M33T2 ISO Zinc plated carbon steel body, UHMWPE seats.

M33T3 ISO Stainless steel body, UHMWPE seats.

Standards

This product fully complies with the requirements of the Pressure Equipment Directive (PED) and carries the  mark when so required.

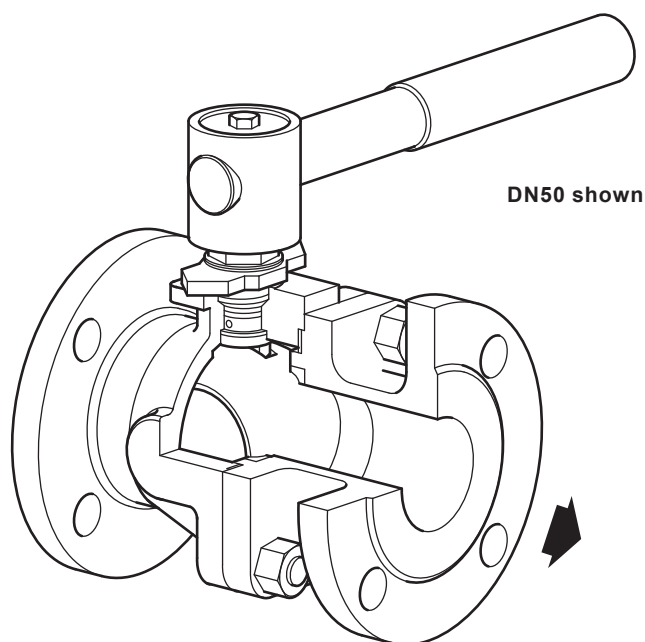
Certification

This product is available with certification to EN 10204 3.1.

Note: All certification/inspection requirements must be stated at the time of order placement.

Options

- Hollow ball for DN150 and DN200 sizes.
- Self-venting ball.
- Ring joint flanges.
- Extended stems to allow full insulation.
- Operation by pneumatic actuator BVA300 series for all sizes.
- Operation by pneumatic actuator BVA300 series and declutchable gearbox.
- Operation by gearbox.
- Lockable handle.
- Materials according to NACE MR0175
- Relief valve.
- Drain plug.



Sizes and pipe connections

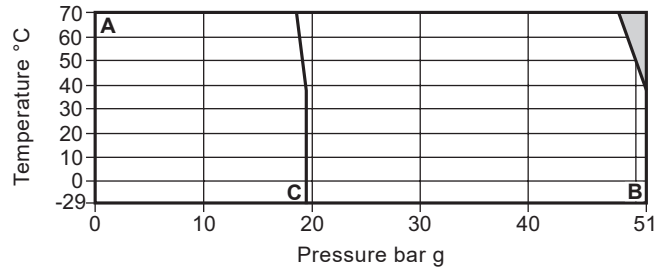
DN50, DN65, DN80, DN100, DN150 and DN200.

Standard flange ASME 150 and ASME 300 with face-to-face dimensions according to ASME B 16.10.

Technical data

| | |
|---|------------------------------------|
| Flow characteristic | Modified linear |
| Port | Full bore |
| Leakage test procedure to ISO 5208 (Rate A)/EN 12266-1 (Rate A) and BS 5351 | |
| Antistatic device | Complies with ISO 7121 and BS 5351 |

Pressure/temperature limits



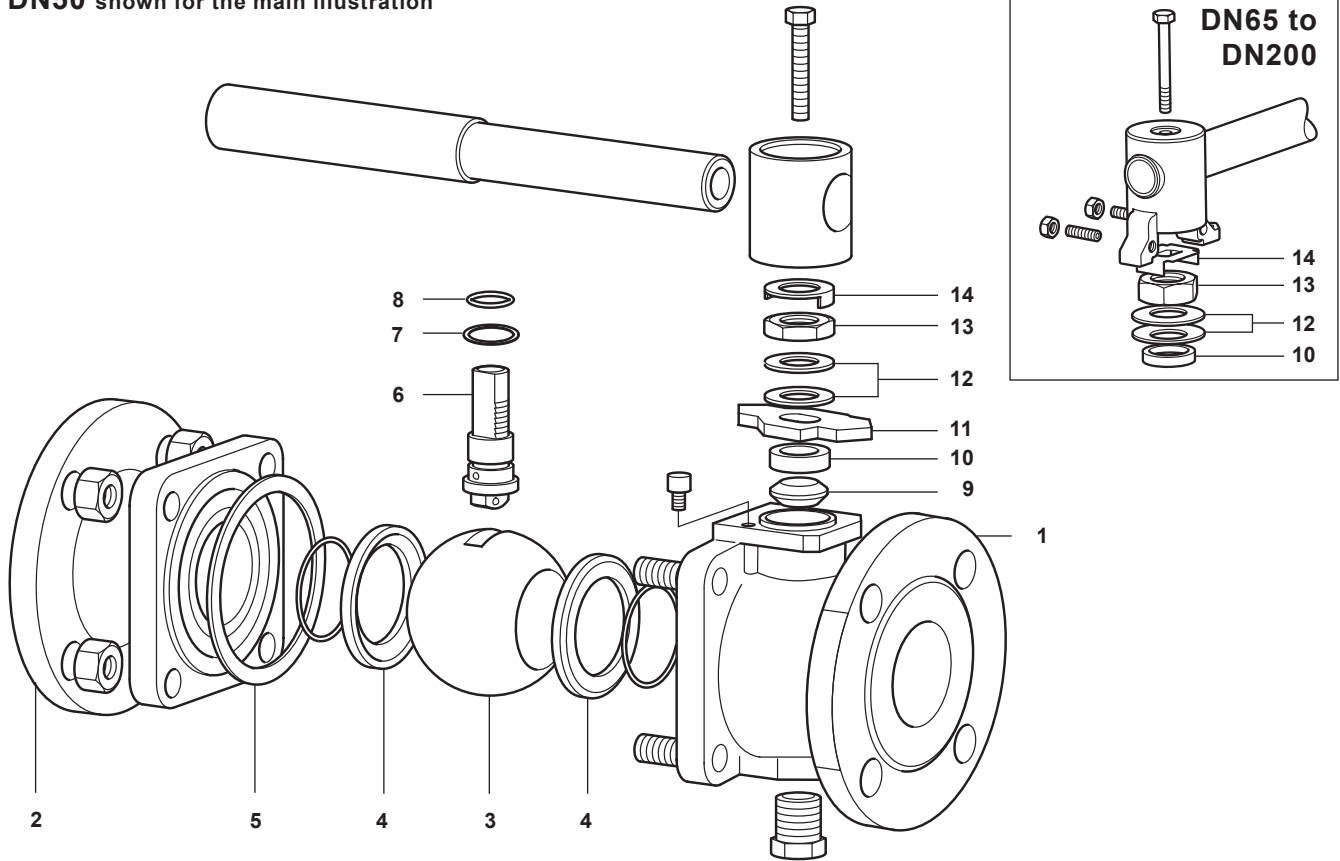
The product **must not** be used in this region.

A - B Flanged ASME 300

A - C Flanged ASME 150

| Body design conditions | | ASME 150 and ASME 300 | |
|--|---|-----------------------|------------------|
| PMA | Maximum allowable pressure | ASME 150 | 19 bar g @ 38 °C |
| | | ASME 300 | 51 bar g @ 38 °C |
| TMA | Maximum allowable temperature | ASME 150 | 70 °C @ 18 bar g |
| | | ASME 300 | 70 °C @ 48 bar g |
| Minimum allowable temperature | | | -29 °C |
| PMO | Maximum operating pressure | ASME 150 | 19 bar g @ 38 °C |
| | | ASME 300 | 51 bar g @ 38 °C |
| TMO | Maximum operating temperature | ASME 150 | 70 °C @ 18 bar g |
| | | ASME 300 | 70 °C @ 48 bar g |
| Minimum operating temperature | | | -29 °C |
| Note: For lower operating temperatures consult Spirax Sarco | | | |
| Δ PMX | Maximum differential pressure is limited to the PMO | | |
| Designed for a maximum cold hydraulic test pressure of: | ASME 150 | 28.5 bar g | |
| | ASME 300 | 76.5 bar g | |

DN50 shown for the main illustration

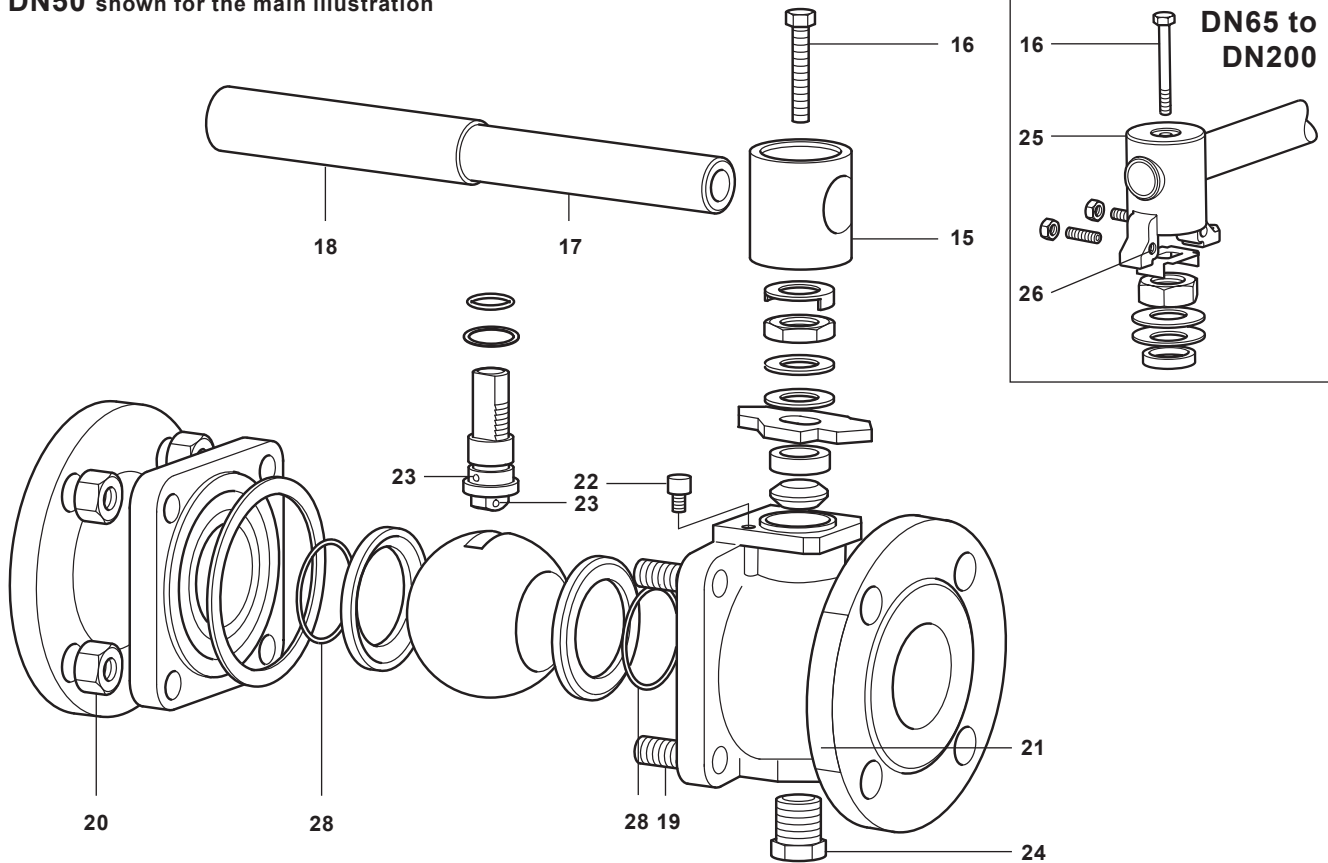


Materials

| No. | Part | Material | |
|-----|------------------------------------|------------------------------|--|
| 1 | Body | M33T2 ISO | Zinc plated carbon steel ASTM A 216 WCB |
| | | M33T3 ISO | Stainless steel ASTM A 351 CF8M |
| 2 | Insert | M33T2 ISO | Zinc plated carbon steel ASTM A 216 WCB |
| | | M33T3 ISO | Stainless steel ASTM A 351 CF8M |
| 3 | Solid ball | Stainless steel | AISI 316 |
| 4 | Seats | UHMWPE | |
| 5 | Body gasket | Graphite with metal insert | |
| 6 | Stem | Stainless steel | AISI 316/AISI 420 |
| 7 | Lower stem seal | UHMWPE | |
| 8 | Stem 'O' ring | EPDM | Geothermal |
| 9 | Upper stem packing | UHMWPE | |
| 10 | Separator | Zinc plated carbon steel | SAE 1010 |
| 11 | Stop plate with indicator for DN50 | Zinc plated carbon steel | SAE 1010 |
| 12 | Belleville stem washer | Carbon steel/stainless steel | |
| 13 | Gland nut | Zinc plated carbon steel | SAE 1010/SAE 12L14 |
| 14 | Locking plate | Stainless steel | AISI 304 |

For parts 15 to 28, go to page 4

DN50 shown for the main illustration



Materials

| No. | Part | Material | |
|-----|--|--------------------------|-----------------|
| 15 | Adaptor DN50 | Zinc plated SG iron | |
| 16 | Adaptor screw | Zinc plated carbon steel | Grade 5 |
| 17 | Handle | Zinc plated carbon steel | SAE 1010 |
| 18 | Grip | Vinyl | Light blue |
| 19 | Stud | Zinc plated alloy steel | A193-B7 |
| 20 | Nut | Zinc plated carbon steel | A194-2H |
| 21 | Nameplate | Stainless steel | AISI 430 |
| 22 | Stop screw | Zinc plated carbon steel | SAE 12L14 |
| 23 | Antistatic device ball | Stainless steel | AISI 302 |
| 24 | Drain plug (optional) | M33T2 ISO | Carbon steel |
| | | M33T3 ISO | Stainless steel |
| 25 | Adaptor with indicator for DN65 to DN200 | Zinc plated SG iron | |
| 26 | Stop screw for DN65 to DN200 | Zinc plated carbon steel | SAE 12L14 |
| 27 | Lifting eye (DN200 only) - not shown | Zinc plated carbon steel | SAE 1010 |
| 28 | Seat 'O' ring | EPDM | Geothermal |

For parts 1 to 14, go to page 3

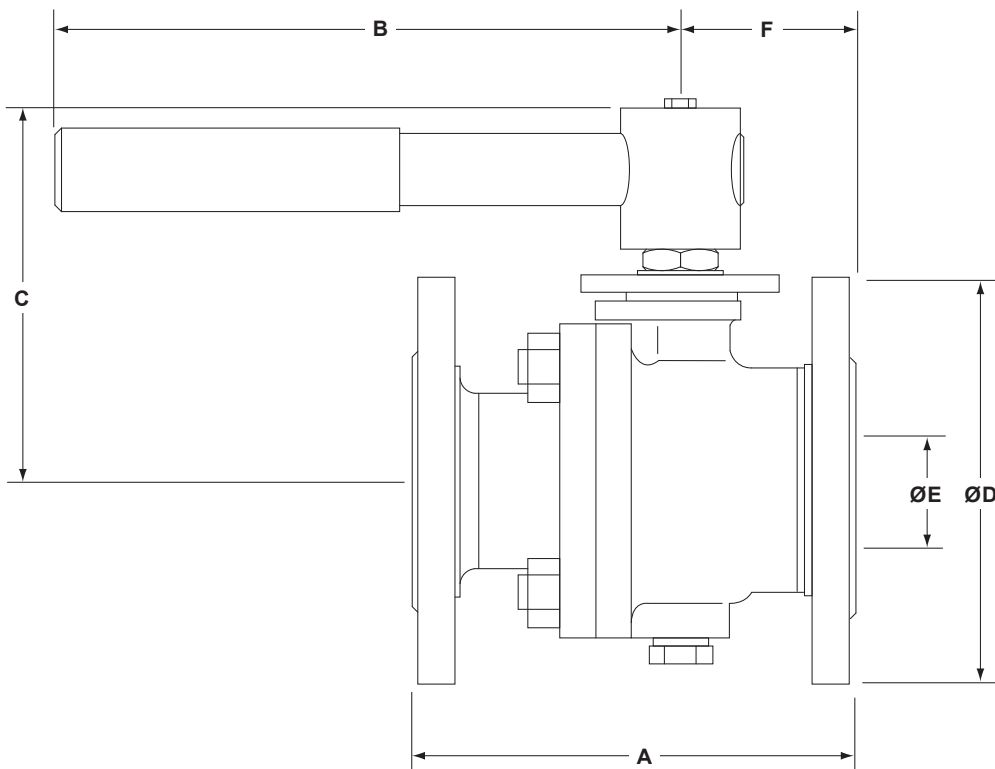
Dimensions/weights (approximate) in mm and kg

Flanged ASME 150

| Size | A | B | C | D | E | F | Weight |
|-------|-----|-----|-----|-----|-----|------|--------|
| DN50 | 178 | 275 | 140 | 152 | 50 | 70 | 10.8 |
| DN65 | 190 | 415 | 160 | 178 | 63 | 82.5 | 16.2 |
| DN80 | 203 | 515 | 168 | 191 | 74 | 87 | 20.0 |
| DN100 | 229 | 700 | 202 | 229 | 100 | 106 | 35.3 |
| DN150 | 394 | 850 | 283 | 279 | 150 | 197 | 80.2 |
| DN200 | 457 | 950 | 317 | 343 | 201 | 228 | 140.0 |

Flanged ASME 300

| Size | A | B | C | D | E | F | Weight |
|-------|-----|-----|-----|-----|-----|------|--------|
| DN50 | 216 | 275 | 140 | 165 | 50 | 85.5 | 14.8 |
| DN65 | 241 | 415 | 160 | 191 | 63 | 90.5 | 22.8 |
| DN80 | 283 | 515 | 168 | 210 | 74 | 99 | 30.0 |
| DN100 | 305 | 700 | 202 | 254 | 100 | 122 | 50.0 |
| DN150 | 403 | 850 | 283 | 318 | 150 | 179 | 111.2 |
| DN200 | 502 | 950 | 317 | 381 | 201 | 213 | 185.3 |



K_v values

| DN | 50 | 65 | 80 | 100 | 150 | 200 |
|----------------|-----|-----|-----|------|------|------|
| K _v | 300 | 430 | 750 | 1030 | 2410 | 4800 |

For conversion:

$$C_v \text{ (UK)} = K_v \times 0.963$$

$$C_v \text{ (US)} = K_v \times 1.156$$

Operating torque (N m)

| DN | 50 | 65 | 80 | 100 | 150 | 200 |
|-----|----|-----|-----|-----|-----|------|
| N m | 75 | 120 | 190 | 250 | 720 | 1150 |

The torque figures shown are for a valve at maximum operating pressure that is operated frequently. Valves that are subject to long static periods, may require greater break-out torque.

Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions supplied with the product.

Welding

Only the models that have connections designed for welding (SW, BW, Imperial Tube connections) should be welded. Valves with flanged connections must not be welded to avoid damages to the valve and/or injury to personnel.

How to order

| | | |
|----------|----------------------|---------------------------------------|
| Specify: | Size | DN50, DN65, DN80, DN100, DN150, DN200 |
| | Model | M33T_ISO |
| | Body material | 2 = Carbon steel |
| | | 3 = Stainless steel |
| Flanges | ASME 150 or ASME 300 | |

Example: 1 off Spirax Sarco DN50 flanged ASME 150 M33T2 ISO ball valve.

Spare parts

The spare parts available are shown in solid outline. Parts drawn in a grey line are not supplied as spares.

Available spares

Seats, body gasket, lower stem seal, upper stem packing, stem 'O' ring and seat 'O' ring set

4, 5, 7, 8, 9, 28

How to order spares

Always order spares by using the description given in the column headed 'Available spares' and state the size and type of ball valve.

Example: 1 - Seats, body gasket, lower stem seal, upper stem packing, stem 'O' ring and seat 'O' ring set for a Spirax Sarco DN80 flanged ASME 150 M33T2 ISO ball valve.

