



Cert. No. LRQ 0963008

ISO 9001

spirax sarco

TI-P133-48
ST Issue 2

M45 ISO Ball Valve DN25 to DN150

Description

The M45 ISO is a flanged reduced bore single piece ball valve with metal seats. This makes it suitable for working with fluids that contain solids in suspension, high temperature fluids and flow control applications.

The valve has an ISO mounting making it easy and safe to automate.

Available types

M452V ISO Zinc plated carbon steel body, Viton 'O' ring.

M452K ISO Zinc plated carbon steel body, Kalrez 'O' ring.

M453V ISO Stainless steel body, Viton 'O' ring.

M453K ISO Stainless steel body, Kalrez 'O' ring.

Options

- Self-venting ball.
- Extended stem to 50 mm (2") and 100 mm (4") to allow full insulation.
- Lockable handle
- Oval handle for confined spaces.

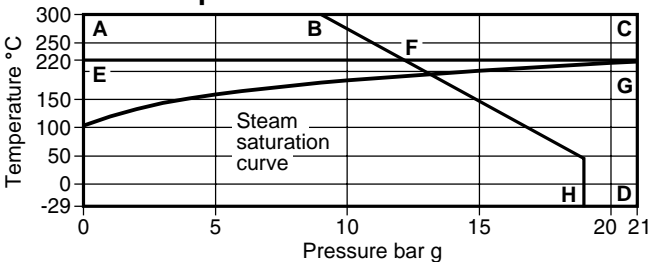
Sizes and pipe connections

DN25, DN40, DN50, DN65, DN80, DN100 and DN150.
Standard flange ANSI 150 and ANSI 300.

Technical data

| | |
|-----------------------|--|
| Flow characteristic | Equal percentage |
| Port | Reduced bore |
| Leakage | Test procedure to ANSI B 16.104 Class IV |
| Antistatic (optional) | Complies with ISO 7121 and BS 5351 |

Pressure/temperature limits



E-F-H ANSI 150 Viton **A-B-H** ANSI 150 Kalrez

E-G-D ANSI 300 Viton **A-C-D** ANSI 300 Kalrez

Body design conditions BS 5351

| PMA | Maximum allowable (operating) pressure (MOP) | M45V | ANSI 150 | 19 bar g @ 38°C |
|-----|--|------|----------|------------------|
| | | | ANSI 300 | 21 bar g @ 220°C |
| TMA | Maximum allowable temperature | M45V | ANSI 150 | 220°C |
| | | | ANSI 300 | 220°C |
| | | M45K | ANSI 150 | 300°C |
| | | | ANSI 300 | 300°C |

Minimum allowable temperature -29°C

| PMO | Maximum operating pressure for saturated steam service | ANSI 150 | 13 bar g @ 200°C |
|-----|--|----------|------------------|
| | | ANSI 300 | 21 bar g @ 220°C |

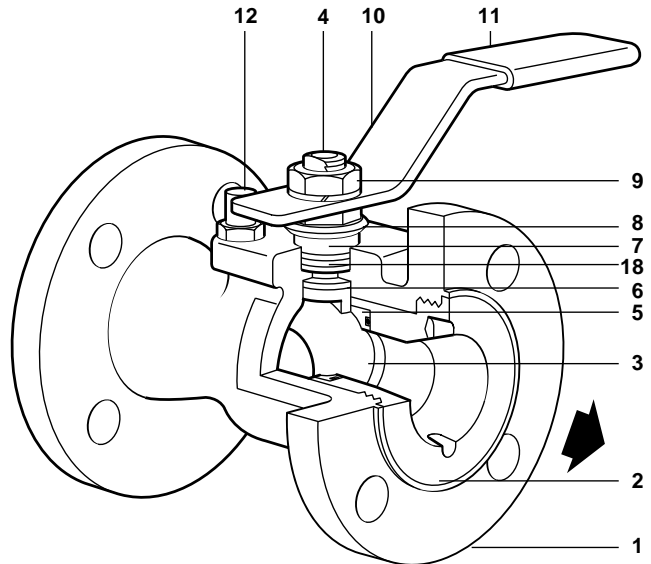
TMO Maximum operating temperature is the same as the TMA

Minimum operating temperature -29°C

Note: For lower operating temperatures consult Spirax Sarco.

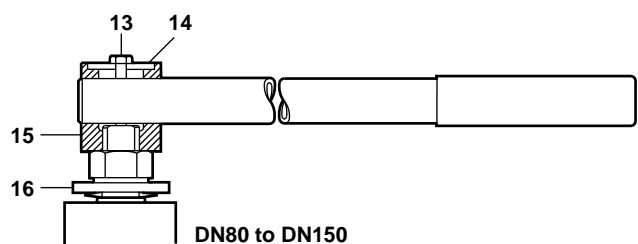
Δ PMX Maximum differential pressure is limited to the PMO

Designed for a maximum cold hydraulic test pressure of 1.5 x MOP



Material

| No. Part | Material |
|---------------------|--|
| 1 Body | Zinc plated carbon steel ASTM A 216 WCB |
| | Stainless steel ASTM A 351 CF8M |
| 2 Insert | Zinc plated carbon steel SAE 1040 |
| | Stainless steel AISI 316 |
| 3 Ball | Stainless steel (hardened) AISI 316 + CrN |
| 4 Stem | Stainless steel AISI 316 |
| 5 Seat | Stainless steel (hardened) AISI 316 + CrN |
| 6 Stem seal | PEEK |
| 7 Separator | Zinc plated carbon steel SAE 1010 / 1045 |
| 8 Belleville washer | AISI 301 |
| 9 Stem nut | Zinc plated carbon steel SAE 12L14 |
| 10 Lever | Zinc plated carbon steel SAE 1010 |
| 11 Grip | Vinyl |
| 12 Stop screw | Zinc plated carbon steel |
| 13 Fixing screw | Zinc plated carbon steel |
| 14 Support washer | Zinc plated carbon steel SAE 1045 |
| 15 Stem adaptor | Zinc plated SG iron |
| 16 Stop plate | Zinc plated carbon steel SAE 1010 |
| 17 'O' ring | M45V Viton |
| | M45K Kalrez |
| 18 Stem seal | PTFE Reinforced with graphite |

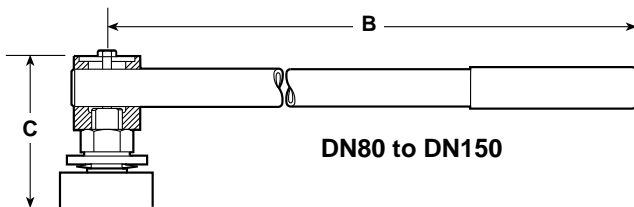


DN80 to DN150

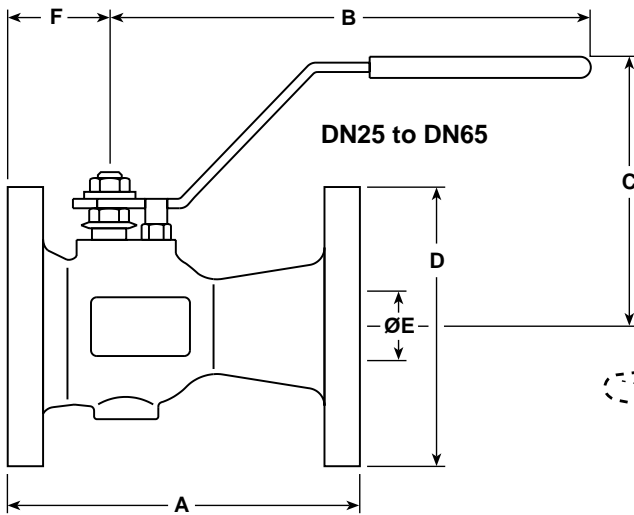
Dimensions / weights (approximate) in mm and kg

ANSI 150

| Size | A | B | C | D | E | F | Weight |
|-------|-----|-----|-----|-----|-----|-----|--------|
| DN25 | 127 | 180 | 100 | 108 | 20 | 49 | 2.3 |
| DN40 | 165 | 180 | 115 | 127 | 31 | 54 | 4.5 |
| DN50 | 178 | 220 | 129 | 152 | 36 | 61 | 7.1 |
| DN65 | 190 | 220 | 142 | 178 | 50 | 63 | 9.7 |
| DN80 | 203 | 275 | 144 | 190 | 57 | 73 | 14.0 |
| DN100 | 229 | 415 | 172 | 229 | 75 | 82 | 21.0 |
| DN150 | 267 | 700 | 220 | 279 | 100 | 118 | 38.0 |



DN80 to DN150



DN25 to DN65

ANSI 300

| Size | A | B | C | D | E | F | Weight |
|-------|-----|-----|-----|-----|-----|-----|--------|
| DN25 | 165 | 180 | 100 | 124 | 20 | 59 | 4.10 |
| DN40 | 190 | 180 | 115 | 156 | 31 | 64 | 7.65 |
| DN50 | 216 | 220 | 129 | 165 | 36 | 69 | 9.60 |
| DN65 | 241 | 220 | 142 | 191 | 50 | 75 | 13.50 |
| DN80 | 283 | 275 | 153 | 210 | 57 | 87 | 20.40 |
| DN100 | 305 | 415 | 178 | 254 | 75 | 97 | 32.40 |
| DN150 | 403 | 700 | 220 | 318 | 100 | 118 | 62.00 |

K_v values

| DN | 25 | 40 | 50 | 65 | 80 | 100 | 150 |
|----------------|------|----|----|-----|-----|-----|-----|
| K _v | 26.5 | 81 | 94 | 197 | 248 | 479 | 641 |

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 | 25 | 40 | 50 | 65 | 80 | 100 | 150 |
|-----|----|----|----|----|----|-----|-----|
| N m | 12 | 20 | 25 | 60 | 80 | 200 | 400 |

The indicated torque values are for valves frequently operated, and submitted to a maximum differential pressure.

How to order

| Specify: | Size | Model | Body material | |
|----------|------|-------|---------------------|------------|
| Seats | | | 2 = Carbon steel | |
| Material | | | 3 = Stainless steel | |
| | | | V = Viton | |
| | | | 'O' ring | K = Kalrez |

Example: 1 off Spirax Sarco DN50 flanged ANSI 150 M452V ISO ball valve.

Spare parts

The spare parts available are shown in heavy outline. Parts drawn in broken line are not supplied as spares.

Available spares

| | |
|--|---------------------|
| Ball | 3 |
| Seat, stem seal set and 'O' ring | 5, 6, 17, 18 |
| Special tool (not shown) for the removal of insert (2) | |

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 - Seat, stem seal set and 'O' ring for a Spirax Sarco DN50 M452V ISO ball valve.

