Butterfly Valve

# ISORIA 20/25

DN 32-1000
PS 20 bar: ISORIA 20
PS 25 bar: ISORIA 25

## Type Series Booklet

## Legal information/Copyright

Type Series Booklet ISORIA 20/25

All rights reserved. The contents provided herein must neither be distributed, copied, reproduced, edited or processed for any other purpose, nor otherwise transmitted, published or made available to a third party without the manufacturer's express written consent.

Subject to technical modification without prior notice.

© KSB S.A.S, Gennevilliers (Paris), France 21/12/2016

# Butterfly Valves

## Centred-disc Butterfly Valves

# ISORIA 20/25

### Main applications

- Cooling circuits
- Seawater desalination/reverse osmosis
- Flue gas desulphurisation
- Pulp and paper industry
- Washing plants
- General irrigation systems
- Shipbuilding
- Pipelines and tank farms
- Process engineering
- Sugar industry
- Pressure boosting
- Water treatment/conditioning

### Fluids handled

- Wash water
- Seawater
- Service water
- Cooling water
- Fire-fighting water
- Drinking water
- Brackish water
- River water, lake and groundwater
- Abrasive fluids
- Fluids containing mineral oils
- Solids-laden fluids
- Organic fluids
- Radioactive fluids
- Solvents

### Operating data

Operating properties

| Characteristic | Value | |
|---|---|---|
| | ISORIA 20 | ISORIA 25 |
| Nominal pressure | PN 20 | PN 25 |
| Nominal size | DN 32-600 | DN 32-1000 |
| Max. permissible pressure | 20 bar | 25 bar |
| Max. permissible temperature | +80 °C | +60 °C |
| Min. permissible temperature | -10 °C | |
| Actuation at ΔP<br>at ambient temperature | 20 bar max. | 25 bar max. |
| Vacuum operation down to | 0.3 bar absolute | |
| Max. permissible flow velocity at operating pressure | 1.5 to 3 m/s (max.) for water | |

Pressure limits of liner based on pressure/materials table of liners

### Design details

### Design

- Semi-lug body - T2: DN 32 - 600
- Full-lug body with flat faces - T3: DN 32 - 600 (ISORIA 20 only)
- Full-lug body with raised faces - T4: DN 32 - 600 (ISORIA 20 only)
- Flanged body with flat faces - T5: DN 200 - 600 (ISORIA 20/25) and DN 650 - 1000 (ISORIA 25 only)
- Downstream dismantling possible with body types T2, T3, T4 and T5
- Dead-end service with counterflange possible with all body types
- Design to EN 593 and ISO 10631
- Top flange to ISO 5211
- Marked in accordance with EN 19
- Absolutely tight shut-off (no leakage visible to the naked eye) in either direction of flow in accordance with EN 12266-1, leakage rate A, and ISO 5208, category A.
- Face-to-face length to ISO 5752-20 and EN 558-1-20 for valves of DN 32 to 600
- EN, ASME, JIS, AWWA connections possible.
- Body with polyurethane coating, thickness 80 µm, colour: RAL 5002, blue.
- Valve disc made of nodular cast iron, epoxy-coated, thickness 80 µm, colour: RAL 8012, brown
- The valves satisfy the safety requirements of Annex I of the European Pressure Equipment Directive 2014/68/EU (PED) for fluids in Groups 1 and 2.
- Valves with actuators can meet the requirements of the 2006/42/EC Machinery Directive for partly completed machinery.
- The valves meet the requirements of the REACH 1907/2006 regulation. None of the substances listed in the candidate list and in Annex XIV of the regulation is present in a concentration above 0.1 % (w/w) (Article 33/REACH).

### Variants

- Valve cleaned and packaged, free from substances which impair the adhesive strength of paint

- S / SR / SP / CR / CM quarter-turn levers
- MN / MR manual gearboxes
- ACTELEC electric actuators
- ACTAIR / DYNACTAIR pneumatic actuators
- HQ hydraulic actuators
- AMTROBOX limit switch box
- AMTRONIC valve controller with compressed air supply via directional control valve
- SMARTRONIC intelligent positioner
- ATEX-compliant version in accordance with the 2014/34/EU Directive
- UL version of ISORIA 20 for fire protection applications
- Version to RCC-M and ASME for use in the nuclear sector

## Body materials

Overview of available materials

| Material | Material number | Type | DN | KSB Code |
|---|---|---|---|---|
| ISORIA 20 und ISORIA 25 | | | | |
| EN-GJS-400-15 | 5.3106 | T2 | DN 32-600 | 3g |
| EN-GJS-400-15 | 5.3106 | T5 | DN 350-600 | 3g |
| ISORIA 20 | | | | |
| EN-GJS-400-15 | 5.3106 | T3 | DN 32-600 | 3g |
| EN-GJS-400-15 | 5.3106 | T4 | DN 32-600 | 3g |
| Cast steel | 1.0619 | T4 | DN 32-600 | 1 |
| Cast steel | 1.0619 | T5 | DN 200-600 | 1 |
| ISORIA 25 | | | | |
| EN-GJS-400-15 | 5.3106 | T5 | DN 700-1000 | 3g |
| ASTM A536 Gr. 60.40.18 | | T5 | DN 350-1000 | 3g |
| Cast steel<br>ASTM A216 Gr. WCC | | T5 | DN 200-1000 | 1 |

## Product benefits

- Spherically machined valve disc with rounded sealing contour
  - ensures durable and permanently tight shut-off
- Splined or keyed connection between stem and valve disc
  - Dry stem, no contact with fluid handled
- Sealing to atmosphere and tight shut-off are ensured,
  - even when the actuator has been removed
- Marking indicates position of valve disc
- Valve equipped with stainless steel bearings with reinforced PTFE coating
- The elastomer liner provides tight sealing at the flanged line connections, eliminating the need for a flange gasket.
- Valve certified to
  - ACS / DVGW / WRAS / BELGAQUA for drinking water applications, with EPDM elastomer liner
  - UL for fire protection applications (ISORIA 20)
- Valve actuation options:
  - Manual
  - Electric
  - Pneumatic
  - Hydraulic

## Related documents

Other applicable documents

| Document | Reference No. |
|---|---|
| Actuator selection | 8446.11 |
| Operating manual | 8449.8 |

## Purchase order specifications

1. Type series
2. Nominal pressure
3. Nominal size
4. Fluid handled
5. Flow rate/velocity
6. Temperature
7. Materials (body, valve disc, seat)
8. Line connection, flange facing and flange surface quality
9. Actuator/automation
10. Reference number of type series booklet

## Technical data

### Max. permissible pressures for ISORIA 20/25 liners

| DN | NPS | Max. permissible pressure PS [bar] |
|---|---|---|
| | | XA - XC - XV - K |
| 32-600 | 1¼-24 | 20 |
| 32-1000 | 1¼-40 | 25 |

### Vacuum resistance of ISORIA 20/25

| DN | NPS | Liner mounting method | Min. pressure | Max. temperature | |
|---|---|---|---|---|---|
| | | | [bar absolute] | XV | Other liners |
| 32-150 | 1¼-6 | Non-glued (standard) | 1,33 . $10^{-5}$ ($10^{-2}$torr) | 80 °C | 60 °C |
| 200-600 | 8-24 | Non-glued (standard) | 0,3 | 80 °C | 60 °C |
| 200-1000 | 8-24 | Glued (optional) | 1,33 . $10^{-5}$ ($10^{-2}$torr) | 80 °C | 60 °C |

### Hydraulic data of ISORIA 20 (DN32-600) and ISORIA 25 (DN32-1000)

| DN | NPS | Flow coefficient with disc fully open | | Zeta |
|---|---|---|---|---|
| | | Kvo | Cvo | |
| 32 | 1¼ | 30 | 35 | 1,44 |
| 40 | 1½ | 53 | 62 | 1,46 |
| 50 | 2 | 133 | 154 | 0,56 |
| 65 | 2½ | 240 | 280 | 0,49 |
| 80 | 3 | 410 | 475 | 0,39 |
| 100 | 4 | 655 | 760 | 0,37 |
| 125 | 5 | 900 | 1044 | 0,48 |
| 150 | 6 | 1800 | 2090 | 0,25 |
| 200 | 8 | 3550 | 4120 | 0,20 |
| 250 | 10 | 3890 | 4500 | 0,41 |
| 300 | 12 | 5580 | 6470 | 0,42 |
| 350 | 14 | 8060 | 9350 | 0,37 |
| 400 | 16 | 10500 | 12180 | 0,37 |
| 450 | 18 | 13300 | 15400 | 0,37 |
| 500 | 20 | 17400 | 20200 | 0,33 |
| 550 | 22 | 21000 | 24400 | 0,33 |
| 600 | 24 | 25000 | 29000 | 0,33 |
| 700 | 28 | 34200 | 39600 | 0,33 |
| 800 | 32 | 43000 | 49900 | 0,35 |
| 900 | 36 | 54600 | 63300 | 0,35 |
| 1000 | 40 | 69600 | 80700 | 0,33 |

## Actuating torques (in Nm)

A safety coefficient has already been included in the actuating torques for actuator selection.

### ISORIA 20

| DN | NPS | With lubricating fluids | With non-lubricating fluids |
|---|---|---|---|
| 32 | 1¼ | 20 | 20 |
| 40 | 1½ | 20 | 20 |
| 50 | 2 | 30 | 30 |
| 65 | 2½ | 40 | 50 |
| 80 | 3 | 50 | 60 |
| 100 | 4 | 70 | 100 |
| 125 | 5 | 100 | 150 |
| 150 | 6 | 140 | 200 |
| 200 | 8 | 240 | 350 |
| 250 | 10 | 410 | 610 |
| 300 | 12 | 630 | 950 |
| 350 | 14 | 860 | 1300 |
| 400 | 16 | 1300 | 1900 |
| 450 | 18 | 1700 | 2500 |
| 500 | 20 | 2100 | 3100 |
| 550 | 22 | 2500 | 3700 |
| 600 | 24 | 2900 | 4300 |

### ISORIA 25

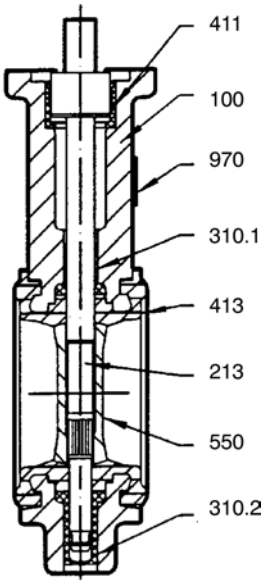
| DN | NPS | With lubricating fluids only |
|---|---|---|
| 32 | 1¼ | 20 |
| 40 | 1½ | 20 |
| 50 | 2 | 30 |
| 65 | 2½ | 50 |
| 80 | 3 | 60 |
| 100 | 4 | 100 |
| 125 | 5 | 150 |
| 150 | 6 | 200 |
| 200 | 8 | 270 |
| 250 | 10 | 500 |
| 300 | 12 | 800 |
| 350 | 14 | 1000 |
| 400 | 16 | 1600 |
| 450 | 18 | 2100 |
| 500 | 20 | 2500 |
| 550 | 22 | 3000 |
| 600 | 24 | 3500 |
| 700 | 28 | 9000 |
| 800 | 32 | 10500 |
| 900 | 36 | 12000 |
| 1000 | 40 | 14000 |

## Materials

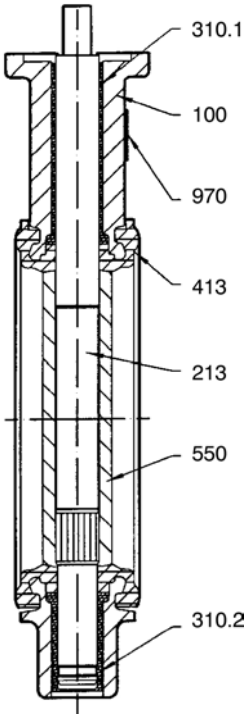
### DN 32-350

**Sectional drawing**

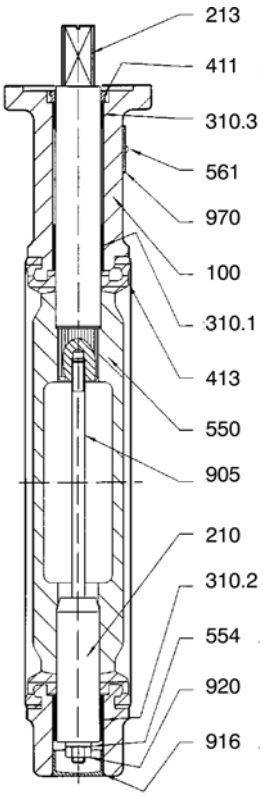
DN 32 - 100




DN 125 - 150



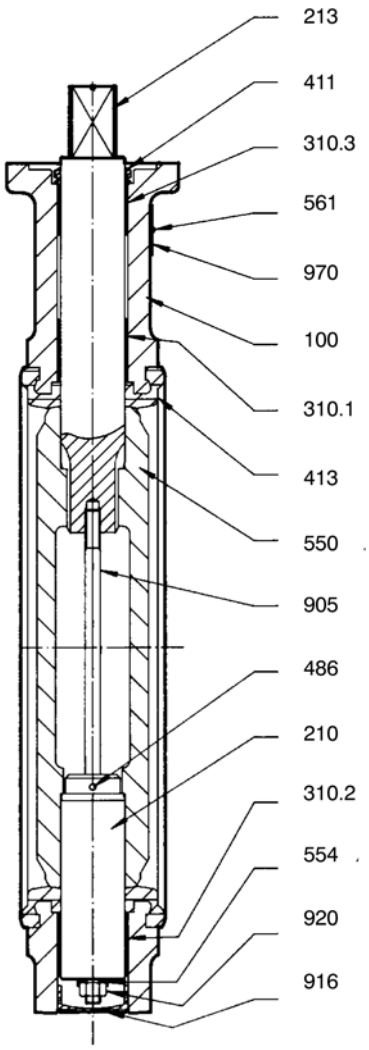

DN 200 - 350



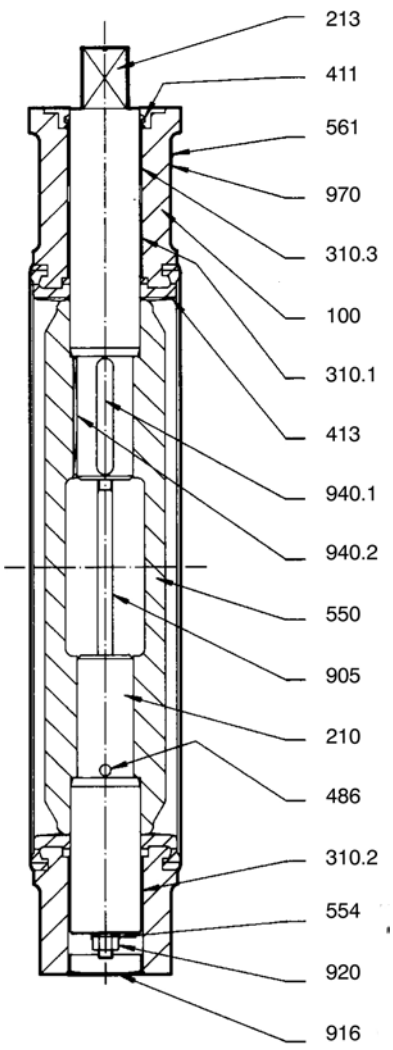
## DN 400-600

### Sectional drawing

DN 400 - 500



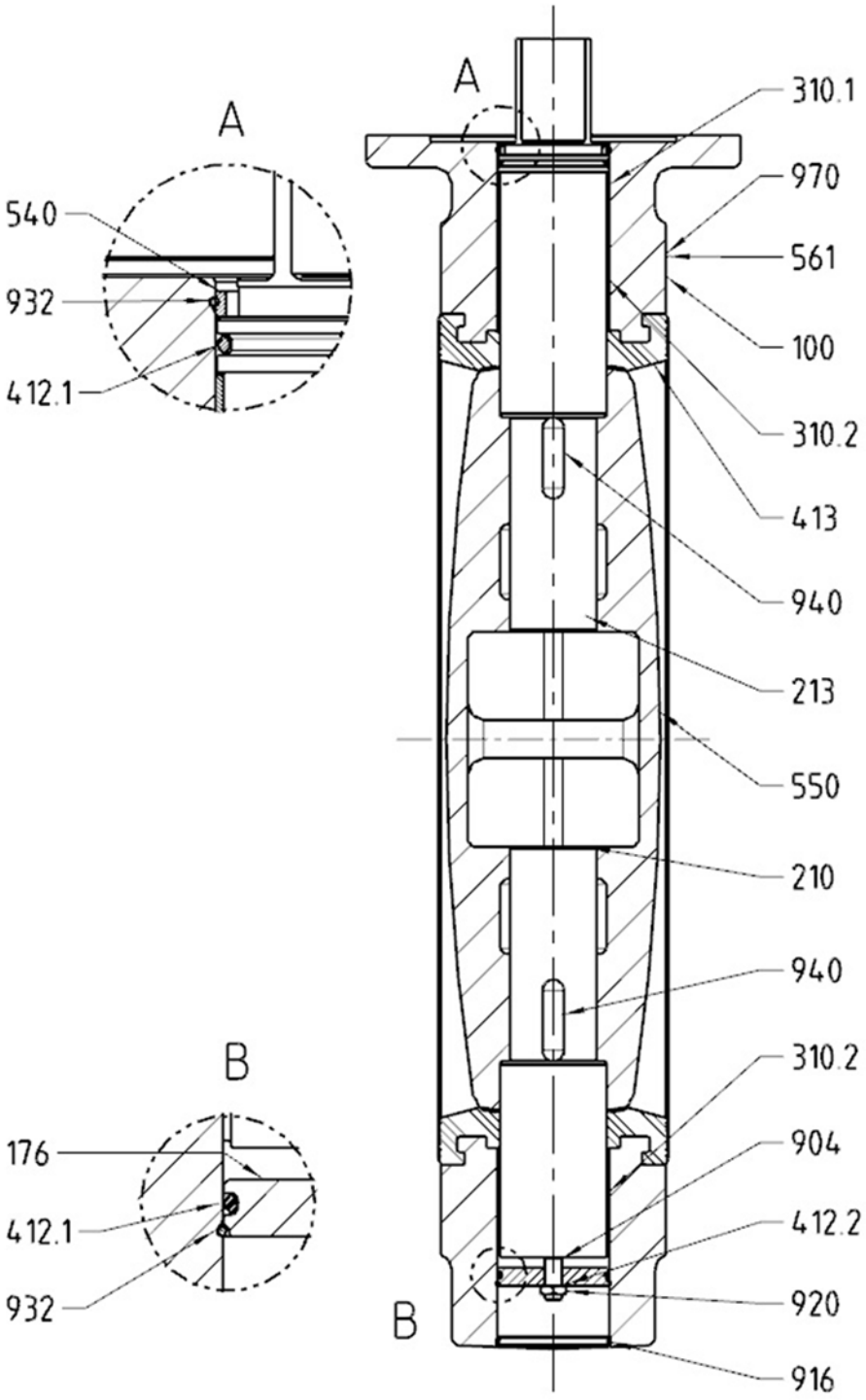

DN 550 - 600



**DN 700-1000 (ISORIA 25 only)**

**Sectional drawing**

DN 700 - 1000



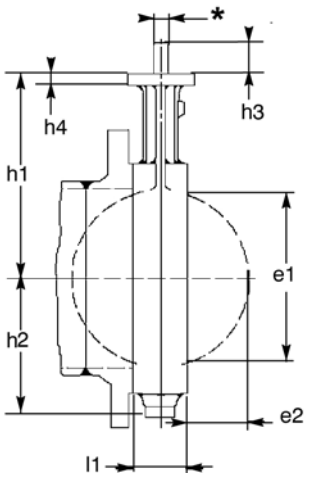
## List of components

| Part No. | Description | DN | Materials | KSB code |
|---|---|---|---|---|
| 100 | Body T2 | 32 - 600 | Nodular cast iron 5.3106 | 3g |
| 100 | Body T3 | 32 - 600 | Nodular cast iron 5.3106 | 3g |
| 100 | Body T4 | 32 - 600 | Nodular cast iron 5.3106 | 3g |
| 100 | Body T4 | 32 - 600 | Cast steel | 1 |
| 100 | Body T5 | 350 - 1000 | Nodular cast iron 5.3106 | 3g |
| 100 | Body T5 | 700 - 1000 | ASTM A536 Gr. 60.40.18 | 3g |
| 100 | Body T5 | 200 - 1000 | Cast steel | 1 |
| 100 | Body T5 | 700 - 1000 | ASTM A216 Gr. WCC | 1 |
| 210[1)] | Stem | 200 - 600 | Stainless steel 1.4057 (17 % Cr) | 6e |
| 210[1)] | Stem | 200 - 600 | Nickel alloy MONEL K 500, tempered | |
| 210[1)] | Stem | 700 - 1000 | Stainless steel 1.4028 (13% Cr) | 6k |
| 213[1)] | Actuating stem | 32 - 600 | Stainless steel 1.4057 (17 % Cr) | 6e |
| 213[1)] | Actuating stem | 32 - 600 | Nickel alloy MONEL K 500, tempered | |
| 213[1)] | Actuating stem | 700 - 1000 | Stainless steel 1.4028 (13% Cr) | 6k |
| 310.1[1)2)] | Plain bearing | 32 - 150 | Acetal | |
| 310.1[1)2)3)] | Plain bearing | 200 - 1000 | Steel with reinforced PTFE coating | |
| 310.2[1)2)3)] | Plain bearing | 32 - 150 | Acetal | |
| 310.2[1)2)3)] | Plain bearing | 200 - 1000 | Steel with reinforced PTFE coating | |
| 310.3[1)] | Plain bearing | 200 - 1000 | Steel with reinforced PTFE coating | |
| 411[1)2)3)] | Joint ring | 32 - 100 | Acetal | |
| 411[1)2)3)] | Joint ring | 200 - 600 | Nitrile | |
| 413[3)] | Liner | 32 - 600 | EPDM | XA |
| 413[3)] | Liner | 32 -1000 | EPDM suitable for drinking water | XC |
| 413[3)] | Liner | 32 - 600 | EPDM, heat-resistant | XV |
| 413[3)] | Liner | 32 - 600 | High-grade Nitrile | K |
| 486 | Ball | 400 - 1000 | Stainless steel | |
| 550[2)] | Valve disc | 32 - 1000 | Nodular cast iron 5.3106 | 3g |
| 550[2)] | Valve disc | 32 - 600 | Stainless steel 1.4408 (18-12) ASTM A351 Gr. CF8M | 6 |
| 550[2)] | Valve disc | 32 - 600 | Stainless steel 1.4408 (18-12), polished, ASTM A351 Gr. CF8M | 6i[4)] |
| 550[2)] | Valve disc | 700 - 1000 | ASTM A536 Gr. 60.40.18 | 3g |
| 550[2)] | Valve disc | 32 - 1000 | Aluminium bronze CC333G | 2 |
| 554 | Washer | 200 - 600 | Nylon | |
| 559 | Seal retainer | 700 - 1000 | Steel | |
| 561 | Half round head grooved pin | 200 - 1000 | Stainless steel | |
| 901.1 | Hexagon head bolt | 700 - 1000 | Steel | |
| 901.2 | Hexagon head bolt | 700 - 1000 | Steel | |
| 904 | Grub screw | 700 - 1000 | Steel | |
| 905 | Tie bolt | 200 - 600 | Steel | |
| 916[1)2)3)] | Plug | 200 - 500 | Polyethylene | |
| 916[1)2)3)] | Plug | 550 - 600 | Polyamide | |
| 920[1)] | Nut | 200 - 600 | Steel | |
| 920.1[1)] | Nylstop nut | 700 - 1000 | Steel and plastics | |
| 920.2[1)] | Nut | 700 - 1000 | Steel | |
| 940[1)] | Key | 700 - 1000 | Steel | |
| 940.1[1)] | Key | 550 - 600 | Steel | |
| 940.2[1)] | Key | 550 - 600 | Steel | |
| 970 | Name plate | 32 - 1000 | Stainless steel | |

1) Stem spare parts kit
2) Valve disc spare parts kit
3) Liner spare parts kit
4) ISORIA 20 only

## Dimensions

### Drawings




* Flat end s in Ø z or ⍁ s

### Dimensions

**[mm]**

| DN | NPS | l1 | h1 | h2 | Top flange to ISO 5211 | | Stem end Flat end | | | Stem end Square end | | Valve disc | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | No. | h4 | ⍁ s | Ø z | h3 | ⍁s | h3 | e1 | e2 |
| 32 | 1¼ | 33 | 109 | 54 | F05 | 10 | 11 | 14 | 24 | / | / | - | - |
| 40 | 1½ | 33 | 105 | 58 | F05 | 10 | 11 | 14 | 24 | / | / | 33 | 4 |
| 50 | 2 | 43 | 115 | 65 | F05 | 10 | 11 | 14 | 24 | / | / | 38 | 4 |
| 65 | 2½ | 46 | 130 | 75 | F05 | 10 | 11 | 14 | 24 | / | / | 55 | 10 |
| 80 | 3 | 46 | 135 | 95 | F05 | 10 | 11 | 14 | 24 | / | / | 74 | 18 |
| 100 | 4 | 52 | 150 | 105 | F05 | 10 | 14 | 18 | 24 | / | / | 92 | 25 |
| 125 | 5 | 56 | 165 | 124 | F07 | 12 | 14 | 18 | 30 | / | / | 117 | 35 |
| 150 | 6 | 56 | 185 | 141 | F07 | 12 | 14 | 18 | 30 | / | / | 143 | 48 |
| 200 | 8 | 60 | 218 | 172 | F10 | 15 | 19 | 25 | 35 | / | / | 191 | 68 |
| 250 | 10 | 68 | 265 | 206 | F10 | 15 | 19 | 25 | 35 | / | / | 241 | 89 |
| 300 | 12 | 78 | 306 | 236 | F12 | 18 | 22 | 28 | 40 | / | / | 290 | 110 |
| 350 | 14 | 78 | 335 | 269 | F14 | 22 | / | / | / | 30 | 55 | 326 | 127 |
| 400 | 16 | 102 | 380 | 302 | F14 | 22 | / | / | / | 36 | 55 | 370 | 140 |
| 450 | 18 | 114 | 410 | 328 | F14 | 22 | / | / | / | 36 | 55 | 422 | 160 |
| 500 | 20 | 127 | 440 | 358 | F16 | 26 | / | / | / | 40 | 65 | 470 | 178 |
| 550 | 22 | 154 | 475 | 406 | F16 | 26 | / | / | / | 50 | 65 | 522 | 195 |
| 600 | 22 | 154 | 495 | 438 | F16 | 26 | / | / | / | 50 | 65 | 566 | 215 |
| 700[5)] | 28 | 210 | 581 | 542 | F30 | 43 | / | / | / | 70 | 73 | 670 | 246 |
| 800[5)] | 32 | 230 | 631 | 602 | F30 | 43 | / | / | / | 70 | 73 | 768 | 286 |
| 900[5)] | 36 | 260 | 681 | 657 | F30 | 43 | / | / | / | 80 | 73 | 864 | 321 |
| 1000[5)] | 40 | 280 | 756 | 713 | F30 | 43 | / | / | / | 90 | 73 | 962 | 361 |

5) For ISORIA 25 only

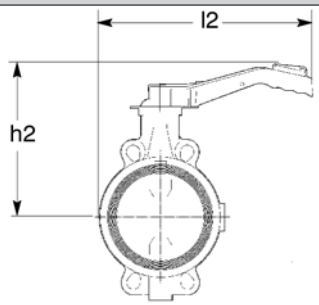
## Manual actuation

The selection of actuators given below typically applies to butterfly valves handling liquid fluids at the maximum flow velocities shown.

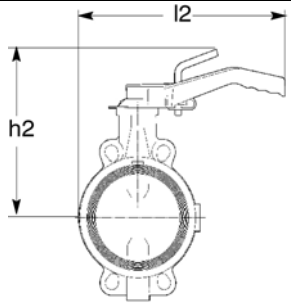
For valves handling non-lubricating fluids (gas), a max. flow velocity of 50 m/s applies.

Higher flow velocities and further actuator/valve combinations are possible, depending on the operating conditions and hydraulic characteristics. Please contact us.

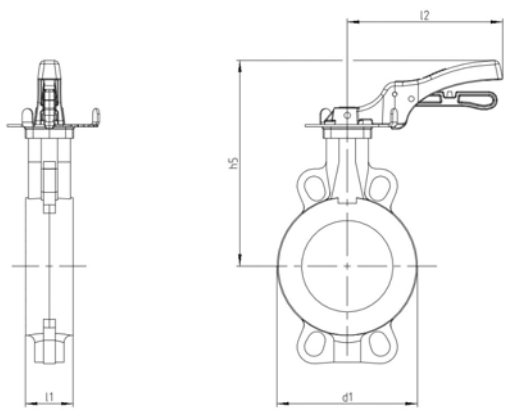
### Levers S - SR

| Lever S<br>▪ Can be locked in end positions<br>Lever SR<br>▪ Can be locked in 9 positions | DN | NPS | Max. velocity | Levers S + SR with all fluids | | |
|---|---|---|---|---|---|---|
| | | | | l2 | h2 | Weight[6] |
| | | | [m/s] | [mm] | [mm] | [kg] |
|  | 32 | 1¼ | 4,0 | 180 | 164 | 0,5 |
| | 40 | 1½ | 4,0 | 180 | 160 | 0,5 |
| | 50 | 2 | 4,0 | 180 | 170 | 0,5 |
| | 32 | 1¼ | 4,0 | 260 | 184 | 0,6 |
| | 40 | 1½ | 4,0 | 260 | 180 | 0,6 |
| | 50 | 2 | 4,0 | 260 | 190 | 0,6 |
| | 65 | 2½ | 4,0 | 260 | 205 | 0,6 |
| | 80 | 3 | 4,0 | 260 | 210 | 0,6 |
| | 100 | 4 | 4,0 | 330 | 235 | 0,7 |
| | 125 | 5 | 4,0 | 330 | 250 | 0,7 |
| | 150 | 6 | 4,0 | 330 | 270 | 0,7 |

### Lever SP

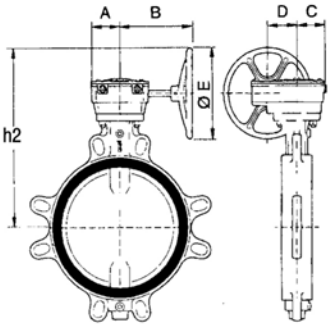
| Lever SP<br>▪ Can be locked in all positions | DN | NPS | Max. velocity | Lever SP with all fluids | | |
|---|---|---|---|---|---|---|
| | | | | l2 | h2 | Weight |
| | | | [m/s] | [mm] | [mm] | [kg] |
|  | 32 | 1¼ | 4,0 | 260 | 209 | 0,7 |
| | 40 | 1½ | 4,0 | 260 | 205 | 0,7 |
| | 50 | 2 | 4,0 | 260 | 210 | 0,7 |
| | 65 | 2½ | 4,0 | 260 | 236 | 0,7 |
| | 80 | 3 | 4,0 | 260 | 242 | 0,7 |
| | 100 | 4 | 4,0 | 330 | 263 | 1,4 |
| | 125 | 5 | 4,0 | 330 | 277 | 1,4 |
| | 150 | 6 | 4,0 | 330 | 294 | 1,4 |

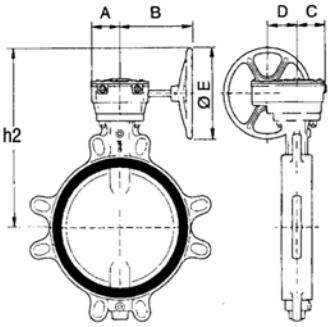
### Levers CR - CM

| | DN | NPS | Max. velocity | Levers CR - CM | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | l1 | d1 | l2 | h5 | Weight |
| | | | [m/s] | [mm] | [mm] | [mm] | [mm] | [kg] |
|  | 32 | 1¼ | 4,0 | 33 | 103 | CR165 | 182 | 0,8 |
| | 40 | 1½ | 4,0 | 33 | 110 | CR165 | 178 | 0,8 |
| | 50 | 2 | 4,0 | 43 | 122 | CR165 | 188 | 0,8 |
| | 65 | 2½ | 4,0 | 46 | 139 | CR165 | 203 | 0,8 |
| | 80 | 3 | 4,0 | 46 | 145 | CR165 | 208 | 0,8 |
| | 100 | 4 | 4,0 | 52 | 152 | CR230 | 236 | 1,2 |
| | 125 | 5 | 4,0 | 56 | 185 | CR300 | 264 | 1,7 |
| | 150 | 6 | 4,0 | 56 | 210 | CR300 | 284 | 1,7 |
| | 200 | 8 | 4,0 | 60 | 346 | CR510[7] | 331 | 3,1 |

6) The weights given refer to the actuating element.
7) High actuating torque, manual gearbox recommended

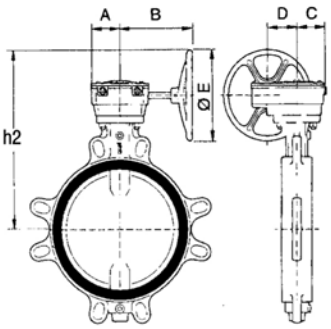
## Manual gearbox MR for ISORIA 20

| With lubricating fluids | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | DN | NPS | Max. velocity | Actuator | A | B | C | D | E | h2 | Weight |
| | | | [m/s] | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [kg] |
|  | 32 | 1¼ | 4,0 | MR25 | 54 | 184 | 45 | 56 | 225 | 260 | 6 |
| | 40 | 1½ | 4,0 | MR25 | 54 | 184 | 45 | 56 | 225 | 256 | 6 |
| | 50 | 2 | 4,0 | MR25 | 54 | 184 | 45 | 56 | 225 | 266 | 6 |
| | 65 | 2½ | 4,0 | MR25 | 54 | 184 | 45 | 56 | 225 | 281 | 6 |
| | 80 | 3 | 4,0 | MR25 | 54 | 184 | 45 | 56 | 225 | 286 | 6 |
| | 100 | 4 | 4,0 | MR25 | 54 | 184 | 45 | 56 | 225 | 301 | 6 |
| | 125 | 5 | 4,0 | MR25 | 54 | 184 | 45 | 56 | 225 | 316 | 6 |
| | 150 | 6 | 4,0 | MR25 | 54 | 184 | 45 | 56 | 225 | 336 | 6 |
| | 200 | 8 | 4,0 | MR25 | 54 | 184 | 45 | 56 | 225 | 369 | 6 |
| | 250 | 10 | 4,0 | MR50 | 64 | 184 | 55 | 66 | 225 | 428 | 7,5 |
| | 300 | 12 | 4,0 | MR100 | 80 | 245 | 67 | 78 | 350 | 543 | 14 |
| | 350 | 14 | 4,0 | MR100 | 80 | 245 | 67 | 78 | 350 | 572 | 14 |
| | 400 | 16 | 3,0 | MR200 | 116 | 275 | 75 | 109 | 350 | 628 | 21,5 |
| | 450 | 18 | 3,0 | MR200 | 116 | 275 | 75 | 109 | 350 | 658 | 21,5 |
| | 500 | 20 | 3,0 | MR200 | 116 | 275 | 75 | 109 | 350 | 688 | 21,5 |
| | 550 | 22 | 3,0 | MR400 | 229 | 332 | 115 | 125 | 350 | 775 | 58 |
| | 600 | 24 | 3,0 | MR400 | 229 | 332 | 115 | 125 | 350 | 795 | 58 |

| With non-lubricating fluids | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | DN | NPS | Max. velocity | Actuator | A | B | C | D | E | h2 | Weight |
| | | | [m/s] | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [kg] |
|  | 32 | 1¼ | * | MR25 | 54 | 184 | 45 | 56 | 225 | 260 | 6 |
| | 40 | 1½ | * | MR25 | 54 | 184 | 45 | 56 | 225 | 256 | 6 |
| | 50 | 2 | * | MR25 | 54 | 184 | 45 | 56 | 225 | 266 | 6 |
| | 65 | 2½ | * | MR25 | 54 | 184 | 45 | 56 | 225 | 282 | 6 |
| | 80 | 3 | * | MR25 | 54 | 184 | 45 | 56 | 225 | 286 | 6 |
| | 100 | 4 | * | MR25 | 54 | 184 | 45 | 56 | 225 | 301 | 6 |
| | 125 | 5 | * | MR25 | 54 | 184 | 45 | 56 | 225 | 316 | 6 |
| | 150 | 6 | * | MR25 | 54 | 184 | 45 | 56 | 225 | 336 | 6 |
| | 200 | 8 | * | MR50 | 64 | 184 | 55 | 66 | 225 | 381 | 7,5 |
| | 250 | 10 | * | MR50 | 64 | 184 | 55 | 66 | 225 | 428 | 7,5 |
| | 300 | 12 | * | MR100 | 80 | 245 | 67 | 78 | 350 | 543 | 14 |
| | 350 | 14 | * | MR200 | 116 | 275 | 75 | 109 | 350 | 583 | 21,5 |
| | 400 | 16 | * | MR200 | 116 | 275 | 75 | 109 | 350 | 628 | 21,5 |
| | 450 | 18 | * | MR400 | 229 | 332 | 115 | 125 | 350 | 710 | 58 |
| | 500 | 20 | * | MR400 | 229 | 332 | 115 | 125 | 350 | 740 | 58 |
| | 550 | 22 | * | MR400 | 229 | 332 | 115 | 125 | 350 | 775 | 58 |
| | 600 | 24 | * | MR400 | 229 | 332 | 115 | 125 | 350 | 795 | 58 |

*: Max. velocity with non-lubricating fluid (gases): 50 [m/s]

## Manual gearbox MR for ISORIA 25

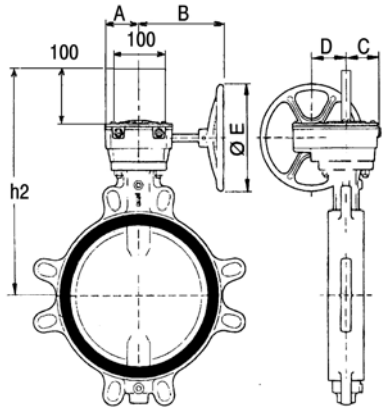



| DN | NPS | Max. velocity | Actuator | A | B | C | D | E | h2 | Weight |
|---|---|---|---|---|---|---|---|---|---|---|
| | | [m/s] | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [kg] |
| 32 | 1¼ | 4,0 | MR25 | 54 | 184 | 45 | 56 | 225 | 260 | 6 |
| 40 | 1½ | 4,0 | MR25 | 54 | 184 | 45 | 56 | 225 | 256 | 6 |
| 50 | 2 | 4,0 | MR25 | 54 | 184 | 45 | 56 | 225 | 266 | 6 |
| 65 | 2½ | 4,0 | MR25 | 54 | 184 | 45 | 56 | 225 | 281 | 6 |
| 80 | 3 | 4,0 | MR25 | 54 | 184 | 45 | 56 | 225 | 286 | 6 |
| 100 | 4 | 4,0 | MR25 | 54 | 184 | 45 | 56 | 225 | 301 | 6 |
| 125 | 5 | 4,0 | MR25 | 54 | 184 | 45 | 56 | 225 | 316 | 6 |
| 150 | 6 | 4,0 | MR25 | 54 | 184 | 45 | 56 | 225 | 336 | 6 |
| 200 | 8 | 4,0 | MR50 | 64 | 184 | 55 | 66 | 225 | 381 | 7,5 |
| 250 | 10 | 4,0 | MR50 | 64 | 184 | 55 | 66 | 225 | 428 | 7,5 |
| 300 | 12 | 4,0 | MR100 | 80 | 245 | 67 | 78 | 350 | 543 | 14 |
| 350 | 14 | 4,0 | MR100 | 80 | 245 | 67 | 78 | 350 | 572 | 14 |
| 400 | 16 | 3,0 | MR200 | 116 | 275 | 75 | 109 | 350 | 628 | 21,5 |
| 450 | 18 | 3,0 | MR200 | 116 | 275 | 75 | 109 | 350 | 658 | 21,5 |
| 500 | 20 | 3,0 | MR400 | 229 | 332 | 115 | 125 | 350 | 710 | 58 |
| 550 | 22 | 3,0 | MR400 | 229 | 332 | 115 | 125 | 350 | 745 | 58 |
| 600 | 24 | 3,0 | MR400 | 229 | 332 | 115 | 125 | 350 | 765 | 58 |
| 700 | 28 | 2,0 | MR1200 | 337 | 680 | 180 | 180 | 800 | 1072 | 175 |
| 800 | 32 | 2,0 | MR1200 | 337 | 680 | 180 | 180 | 800 | 1122 | 175 |
| 900 | 36 | 2,0 | MR1600 | 337 | 446 | 180 | 180 | 350 | 969 | 183 |
| 1000 | 40 | 2,0 | MR1600 | 337 | 446 | 180 | 180 | 350 | 1044 | 183 |

### ISORIA UL - Fire protection

UL approval is valid for the unit consisting of the valve and the manual gearbox:

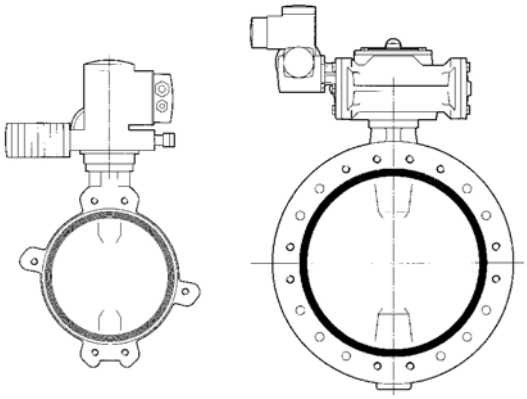
- ISORIA 20
- MR manual gearbox with:
  - Red gear housing
  - Yellow position indicator flag
- Options:
  - Handwheel locking arrangement with chain and padlock
  - Limit switches
  - Neck extension (1 to 6 metres)



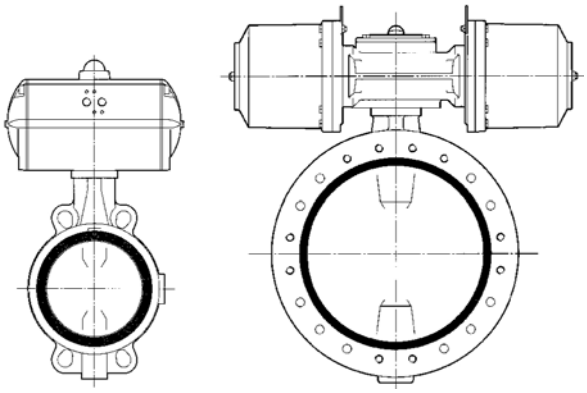

| DN | NPS | Max. velocity | Actuator | A | B | C | D | E | h2 | Weight |
|---|---|---|---|---|---|---|---|---|---|---|
| | | [m/s] | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [kg] |
| 32 | 1¼ | 4,0 | MR25 | 54 | 184 | 45 | 56 | 291 | 225 | 6 |
| 40 | 1½ | 4,0 | MR25 | 54 | 184 | 45 | 56 | 287 | 225 | 6 |
| 50 | 2 | 4,0 | MR25 | 54 | 184 | 45 | 56 | 297 | 225 | 6 |
| 65 | 2½ | 4,0 | MR25 | 54 | 184 | 45 | 56 | 312 | 225 | 6 |
| 80 | 3 | 4,0 | MR25 | 54 | 184 | 45 | 56 | 317 | 225 | 6 |
| 100 | 4 | 4,0 | MR25 | 54 | 184 | 45 | 56 | 332 | 225 | 6 |
| 125 | 5 | 4,0 | MR25 | 54 | 184 | 45 | 56 | 347 | 225 | 6 |
| 150 | 6 | 4,0 | MR25 | 54 | 184 | 45 | 56 | 367 | 225 | 6 |
| 200 | 8 | 4,0 | MR25 | 54 | 184 | 45 | 56 | 400 | 225 | 6 |
| 250 | 10 | 4,0 | MR25 | 54 | 184 | 45 | 56 | 447 | 225 | 6 |
| 300 | 12 | 4,0 | MR50 | 64 | 184 | 55 | 66 | 488 | 225 | 7,5 |

## Variants

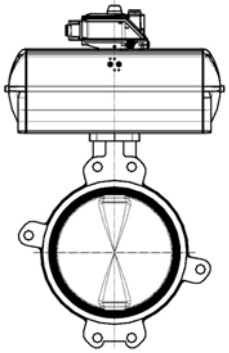
ACTELEC



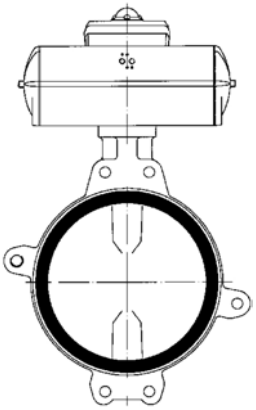
ACTAIR / DYNACTAIR



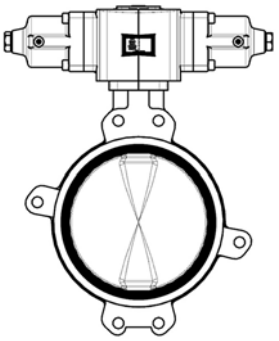
ACTAIR +
AMTRONIC / SMARTRONIC



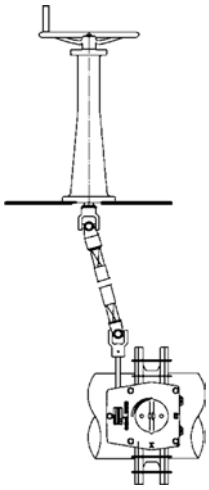
ACTAIR +
AMTROBOX



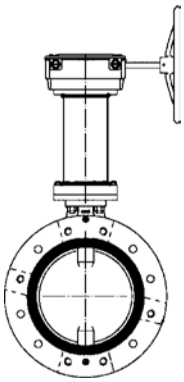
HQ



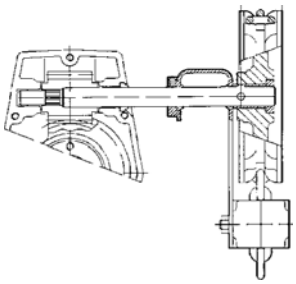
Deck stand



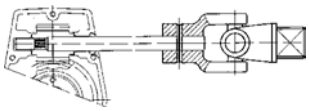
Extension



Chain wheel



Cardan connection



### Notes on installation

### Connections of ISORIA 20

The valves can be installed between the following line connections (other line connections on request):

- EN 1092 PN 16, 20 and 25
- ASME B16.1 Cl.125 and B16.5 Cl.150
- ASME B16.47 Cl.150 Series A
- MSS SP 44 Cl.150
- AWWA C207 Cl. E
- AS 2129 Table E
- BS 10 Table E
- JIS B2220, B2238 and B2239 16K and 20K

### Semi-lug body - T2

| DN | NPS | EN 1092 | | | ASME | | MSS SP44 Cl. 150 | JIS B2220, B2238, B2239 | | AWWA | BS10 | AS2129 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PN 16 | PN 20 | PN 25 | B16.1 Cl. 125 | B16.1 Cl. 150 | | 16K | 20K | C207 Cl. E | Table E | Table E |
| 32 | 1¼ | ✓ | ✓ | ✓ | ✓ | ✓ | ● | ✓ | ✓ | ● | ✓ | ✓ |
| 40 | 1½ | ✓ | ✓ | ✓ | ✓ | ✓ | ● | ✓ | ✓ | ● | ✓ | ✓ |
| 50 | 2 | ✓ | ✓ | ✓ | ✓ | ✓ | ● | ✓■ | ✓■ | ● | ✓ | ✓ |
| 65 | 2½ | ✓ | ✓ | ✓■ | ✓ | ✓ | ● | ✓■ | ✓■ | ● | ✓ | ✓ |
| 80 | 3 | ✓ | ✓ | ✓ | ✓ | ✓ | ● | ✓ | ✓ | ● | ✓■ | ✓■ |
| 100 | 4 | ✓ | ✓ | ✓ | ✓ | ✓ | ● | ✓ | ✓ | ✓ | ✓■ | ✓■ |
| 125 | 5 | ✓ | ✓ | ✓ | ✓ | ✓ | ● | ✓ | ✓ | ✓ | ✓ | ✓ |
| 150 | 6 | ✓ | ✓ | ✓ | ✓ | ✓ | ● | ✓■ | ✓■ | ✓ | ✓ | ✓ |
| 200 | 8 | ✓ | ✓ | ✓▲ | ✓ | ✓ | ● | ✓▲ | ✓▲ | ✓ | ✓ | ✓ |
| 250 | 10 | ✓ | ✓ | ✓ | ✓ | ✓ | ● | ✓ | ✓ | ✓ | ✓ | ✓ |
| 300 | 12 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 350 | 14 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 400 | 16 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 450 | 18 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 500 | 20 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 550 | 22 | ● | ✓ | ● | ● | ● | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 600 | 24 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

### Full-lug body with flat faces -T3

| DN | NPS | EN 1092 | | | ASME | MSS SP44 Cl.150 | MSS SP44 Cl.150 | JIS B2220, B2238, B2239 | | AWWA | BS10 | AS2129 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PN 16 | PN 20 | PN 25 | B16.5 Cl. 150 | | | 16K | 20K | C207 Cl. E UNC (94) | Table E UNC | Table E UNC |
| 32 | 1¼ | ✓ | ✓ | ✓ | ✓ | ● | ● | ✓ | ✓ | ● | ✓ | ✓ |
| 40 | 1½ | ✓ | ✓ | ✓ | ✓ | ● | ● | ✓ | ✓ | ● | ✓ | ✓ |
| 50 | 2 | ✓ | ✓ | ✓ | ✓ | ● | ● | ◆ | ◆ | ● | ✓ | ✓ |
| 65 | 2½ | ✓ | ✓ | ✓ | ✓ | ● | ● | ✓ | ✓ | ● | ✓ | ✓ |
| 80 | 3 | ✓ | ✓ | ✓ | ✓ | ● | ● | ✓ | ✓ | ● | ✓ | ✓ |
| 100 | 4 | ✓ | ✓ | ✓ | ✓ | ● | ● | ✓ | ✓ | ✓ | ✓ | ✓ |
| 125 | 5 | ✓ | ✓ | ✓ | ✓ | ● | ● | ✓ | ✓ | ✓ | ✓ | ✓ |
| 150 | 6 | ✓ | ✓ | ✓ | ✓ | ● | ● | ◆ | ◆ | ✓ | ✓ | ✓ |
| 200 | 8 | ✓ | ✓ | ✓ | ✓ | ● | ● | ✓ | ✓ | ✓ | ✓ | ✓ |
| 250 | 10 | ✓ | ✓ | ✓ | ✓ | ● | ● | ✓ | ✓ | ✓ | ✓ | ✓ |
| 300 | 12 | ✓ | ✓ | ✓ | ✓ | ✓ | ● | ✓ | ✓ | ✓ | ✓ | ✓ |
| 350 | 14 | ✓ | ✓ | ✓ | ✓ | ✓ | ● | ✓ | ✓ | ✓ | ✓ | ✓ |
| 400 | 16 | ✓ | ✓ | ✓ | ✓ | ✓ | ● | ✓ | ✓ | ✓ | ◆ | ◆ |
| 450 | 18 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 500 | 20 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ◆ | ◆ |
| 600 | 24 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ◆ | ◆ |

### Full-lug body with raised faces -T4

| DN | NPS | EN 1092 | | | ASME | | MSS SP44 cl.150 | JIS B2220, B2238, B2239 | | AWWA | BS10 | AS2129 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PN 16 | PN 20 | PN 25 | B16.1 Cl. 125 | B16.5 Cl. 150 | | 16K | 20K | C207 Cl. E | Table E | Table E |
| 32 | 1¼ | ✓ | ✓ | ✓ | ✓ | ✓ | ● | ✓ | ✓ | ● | ✓ | ✓ |
| 40 | 1½ | ✓ | ✓ | ✓ | ✓ | ✓ | ● | ✓ | ✓ | ● | ✓ | ✓ |
| 50 | 2 | ✓ | ✓ | ✓ | ✓ | ✓ | ● | ◆ | ◆ | ● | ✓ | ✓ |
| 65 | 2½ | ✓ | ✓ | ◆ | ✓ | ✓ | ● | ◆ | ◆ | ● | ✓ | ✓ |
| 80 | 3 | ✓ | ✓ | ✓ | ✓ | ✓ | ● | ✓ | ✓ | ● | ✓ | ✓ |
| 100 | 4 | ✓ | ✓ | ✓ | ✓ | ✓ | ● | ✓ | ✓ | ✓ | ✓ | ✓ |
| 125 | 5 | ✓ | ✓ | ◆ | ✓ | ✓ | ● | ◆ | ◆ | ✓ | ✓ | ✓ |
| 150 | 6 | ✓ | ✓ | ◆ | ✓ | ✓ | ● | ◆ | ◆ | ✓ | ✓ | ✓ |
| 200 | 8 | ✓ | ✓ | ◆ | ✓ | ✓ | ● | ◆ | ◆ | ✓ | ✓ | ✓ |
| 250 | 10 | ✓ | ✓ | ◆ | ✓ | ✓ | ● | ◆ | ◆ | ✓ | ✓ | ✓ |
| 300 | 12 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 350 | 14 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 400 | 16 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ◆ | ◆ |
| 450 | 18 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 500 | 20 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ◆ | ◆ |
| 550 | 22 | ● | ✓ | ● | ● | ● | ✓ | ✓ | ✓ | ✓ | ◆ | ◆ |
| 600 | 24 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ◆ | ◆ |

### Flanged body with flat faces -T5

| DN | NPS | EN 1092 | | | ASME | | MSS SP44 Cl. 150 | JIS B2220, B2238, B2239 | | AWWA | BS10 | AS2129 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PN 16 | PN 20 | PN 25 | B16.1 Cl. 125 | B16.1 Cl. 150 | | 16K | 20K | C207 Cl. E | Table E | Table E |
| 200 | 8 | ✓ | ✓ | ✓■ | ✓ | ✓ | ● | ✓ | ✓ | ✓ | ✓ | ✓ |
| 250 | 10 | ✓ | ✓ | ✓■ | ✓ | ✓ | ● | ✓ | ✓ | ✓ | ✓ | ✓ |
| 300 | 12 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 350 | 14 | ✓ | ✓ | ✓■ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 400 | 16 | ✓ | ✓ | ✓■ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 450 | 18 | ✓ | ✓ | ◆ | ✓ | ✓ | ✓ | ◆ | ◆ | ✓ | ✓ | ✓ |
| 500 | 20 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 550 | 22 | ● | ✓ | ● | ● | ● | ✓ | ◆ | ◆ | ✓ | ✓ | ✓ |
| 600 | 24 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

Key to the symbols

| Symbol | Description | Symbol | Description |
|---|---|---|---|
| ✓ | Installation possible | ● | Non-standardised connection |
| ■ | Downstream dismantling not possible | ◆ | Installation not possible |

## Connections of ISORIA 25

### Semi-lug body - T2

| DN | NPS | EN 1092 | | ASME | MSS SP44 Cl. 150 |
|---|---|---|---|---|---|
| | | PN 20 | PN 25 | B16.1 Cl. 150 | |
| 32 | 1¼ | ✓ | ✓ | ✓ | • |
| 40 | 1½ | ✓ | ✓ | ✓ | • |
| 50 | 2 | ✓ | ✓ | ✓ | • |
| 65 | 2½ | ✓ | ✓ | ✓ | • |
| 80 | 3 | ✓ | ✓ | ✓ | • |
| 100 | 4 | ✓ | ✓ | ✓ | • |
| 125 | 5 | ✓ | ✓ | ✓ | • |
| 150 | 6 | ✓ | ✓ | ✓ | • |
| 200 | 8 | ✓ | ✓▲ | ✓ | • |
| 250 | 10 | ✓ | ✓ | ✓ | • |
| 300 | 12 | ✓ | ✓ | ✓ | ✓ |
| 350 | 14 | ✓ | ✓ | ✓ | ✓ |
| 400 | 16 | ✓ | ✓ | ✓ | ✓ |
| 450 | 18 | ✓ | ✓ | ✓ | ✓ |
| 500 | 20 | ✓ | ✓ | ✓ | ✓ |
| 550 | 22 | ✓ | • | • | ✓ |
| 600 | 24 | ✓ | ✓ | ✓ | ✓ |

### Flanged body with flat faces -T5

| DN | NPS | EN 1092 | | ASME | MSS SP44 Cl. 150 |
|---|---|---|---|---|---|
| | | PN 20 | PN 25 | B16.5 Cl. 150 | |
| 200 | 8 | ✓ | ✓■ | ✓ | • |
| 250 | 10 | ✓ | ✓■ | ✓ | • |
| 300 | 12 | ✓ | ✓ | ✓ | ✓ |
| 350 | 14 | ✓ | ✓■ | ✓ | ✓ |
| 400 | 16 | ✓ | ✓■ | ✓ | ✓ |
| 450 | 18 | ✓ | ◆ | ✓ | ✓ |
| 500 | 20 | ✓ | ✓ | ✓ | ✓ |
| 550 | 22 | ✓ | • | • | ✓ |
| 600 | 24 | ✓ | ✓ | ✓ | ✓ |
| 700 | 28 | ✓ | ◆ | ✓ | ✓ |
| 800 | 32 | ✓ | ✓ | ✓ | ✓ |
| 900 | 36 | ✓ | • | • | ✓ |
| 1000 | 40 | ✓ | ✓ | ✓ | ✓ |

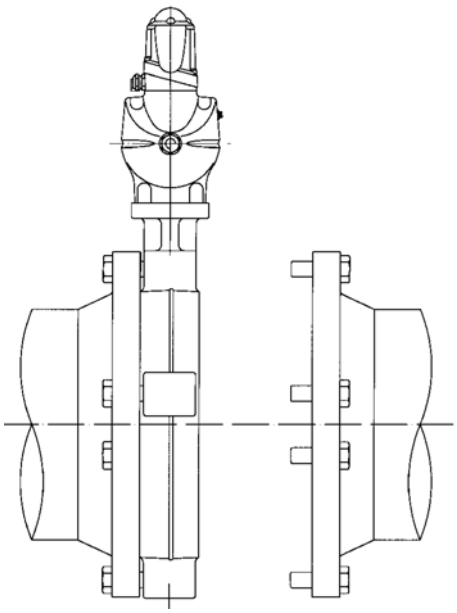
Key to the symbols

| Symbol | Description | Symbol | Description |
|---|---|---|---|
| ✓ | Installation possible | • | Non-standardised connection |
| ■ | Downstream dismantling not possible | ◆ | Installation not possible |

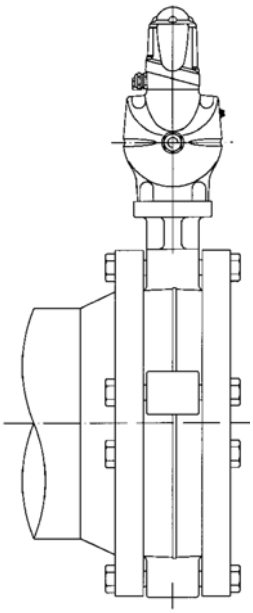
## Dead-end service and downstream dismantling

**Downstream dismantling**

For downstream dismantling,
successively loosen diagonally opposed tie rods.

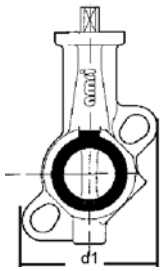


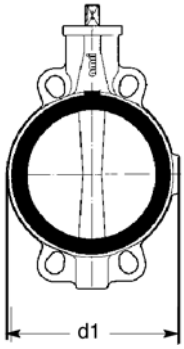
**Dead-end service**

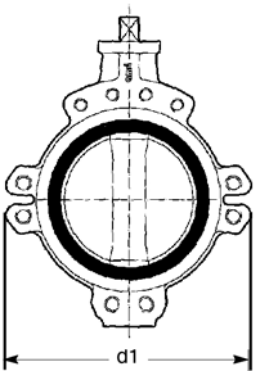


## Bolting and weights

### Semi-lug body - T2

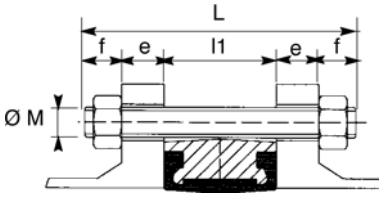



The drawings do not indicate the exact product design (number of tapped lugs/tapped holes/clearance holes

**N.B.: Bolting is not included in our standard scope of supply.**



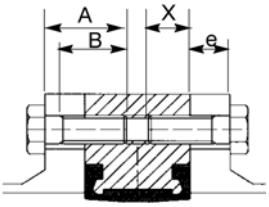

**Length of tie rod L = l1 + 2e + 2f**

L: minimum length of tie rods

l1: face-to-face length of butterfly valve

e: flange thickness (customer-specific)

f: thickness of nut + standardised overhang of tie rod




**Bolt length at stem passage**

**A = e + X**

A: max. bolt length

X: max. thread engagement depth

e: flange thickness (customer-specific)

B: min. thread length > A-e

### Semi-lug body - T2 for ISORIA 20

| DN | NPS | l1 | d1 | EN 1092-1 PN 16 | | | | | EN 1092-1 PN 25 | | | | | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ø M | Tie rod* | | Bolt | | Ø M | Tie rod* | | Bolt | | |
| | | | | | f | Qty | X | Qty** | | f | Qty | X | Qty** | [kg] |
| 32 | 1¼ | 33 | 103 | M16 | 20 | 4 | - | - | M16 | 20 | 4 | - | - | 1,2 |
| 40 | 1½ | 33 | 110 | M16 | 20 | 4 | - | - | M16 | 20 | 4 | - | - | 1,3 |
| 50 | 2 | 43 | 122 | M16 | 20 | 4 | - | - | M16 | 20 | 4 | - | - | 1,8 |
| 65 | 2½ | 46 | 139 | M16 | 20 | 4/8 | - | - | M16 | 20 | 4/8 | - | - | 2,3 |
| 80 | 3 | 46 | 145 | M16 | 20 | 8 | - | - | M16 | 20 | 8 | - | - | 3,2 |
| 100 | 4 | 52 | 152 | M16 | 20 | 8 | - | - | M20 | 24 | 8 | - | - | 4,5 |
| 125 | 5 | 56 | 185 | M16 | 20 | 8 | - | - | M24 | 29 | 8 | - | - | 6,7 |
| 150 | 6 | 56 | 210 | M20 | 24 | 8 | - | - | M24 | 29 | 8 | - | - | 7,5 |
| 200 | 8 | 60 | 346 | M20 | 24 | 12 | - | - | M24 | 29 | 12 | - | - | 14,0 |
| 250 | 10 | 68 | 413 | M24 | 29 | 12 | - | - | M27 | 32 | 12 | - | - | 20,0 |
| 300 | 12 | 78 | 520 | M24 | 29 | 6 | 24 | 6 | M27 | 32 | 10 | 27 | 6 | 48,0 |
| 350 | 14 | 78 | 539 | M24 | 29 | 10 | 24 | 6 | M30 | 35 | 10 | 30 | 6 | 60,0 |
| 400 | 16 | 102 | 604 | M27 | 32 | 10 | 27 | 6 | M33 | 38 | 10 | 33 | 6 | 80,0 |
| 450 | 18 | 114 | 657 | M27 | 32 | 14 | 27 | 6 | M33 | 28 | 14 | 33 | 6 | 110,0 |
| 500 | 20 | 127 | 716 | M30 | 35 | 12 | 30 | 8 | M33 | 24 | 12 | 33 | 8 | 145,0 |
| 550 | 22 | 154 | 782 | • | • | • | • | • | • | • | • | • | • | • |
| 600 | 24 | 154 | 836 | M33 | 38 | 10 | 33 | 10 | M36 | 42 | 10 | 36 | 10 | 220,0 |

| DN | NPS | l1 | d1 | ASME B16.5 Class 150 ***<br>ASME B16.1 Class 125 ***<br>MSS SP 44 Class 150 ***<br>ASME B16.47 Class 150 Series A ***<br>8) | | | | | JIS B2220, B2238, B2239<br>16K | | | | | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | UNC | Tie rod* | | Bolt | | Ø M | Tie rod* | | Bolt | | |
| | | | | | f | Qty | X | Qty** | | f | Qty | X | Qty** | [kg] |
| 32 | 1¼ | 33 | 108 | 1/2" | 17 | 4 | - | - | M16 | 20 | 4 | - | - | 1,2 |
| 40 | 1½ | 33 | 108 | 1/2" | 17 | 4 | - | - | M16 | 20 | 4 | - | - | 1,3 |
| 50 | 2 | 43 | 118 | 5/8" | 20 | 4 | - | - | M16 | 20 | 8 | - | - | 1,8 |
| 65 | 2½ | 46 | 132 | 5/8" | 20 | 4 | - | - | M16 | 20 | 8 | - | - | 2,3 |
| 80 | 3 | 46 | 138 | 5/8" | 20 | 4 | - | - | M20 | 24 | 8 | - | - | 3,2 |
| 100 | 4 | 52 | 150 | 5/8" | 20 | 8 | - | - | M20 | 24 | 8 | - | - | 4,5 |
| 125 | 5 | 56 | 234 | 3/4" | 24 | 8 | - | - | M22 | 26 | 8 | - | - | 6,7 |
| 150 | 6 | 56 | 260 | 3/4" | 24 | 8 | - | - | M22 | 26 | 12 | - | - | 7,5 |
| 200 | 8 | 60 | 322 | 3/4" | 24 | 8 | - | - | M22 | 26 | 12 | - | - | 14,0 |
| 250 | 10 | 68 | 394 | 7/8" | 29 | 12 | - | - | M24 | 29 | 12 | - | - | 20,0 |
| 300 | 12 | 78 | 462 | 7/8" | 29 | 12 | 24 | 6 | M24 | 29 | 10 | 24 | 6 | 48,0 |
| 350 | 14 | 78 | 538 | 1" | 32 | 6 | 27 | 6 | M30x3 | 35 | 10 | 30 | 6 | 60,0 |
| 400 | 16 | 102 | 604 | 1" | 32 | 10 | 27 | 6 | M30x3 | 35 | 16 | 30 | 6 | 80,0 |
| 450 | 18 | 114 | 656 | 1"1/8 | 35 | 10 | 30 | 6 | M30x3 | 35 | 14 | 30 | 6 | 110,0 |
| 500 | 20 | 127 | 716 | 1"1/8 | 35 | 12 | 30 | 8 | M30x3 | 35 | 12 | 30 | 8 | 145,0 |
| 550 | 22 | 154 | 804 | 1"1/4 | 38 | 12 | 32 | 8 | M36x3 | 42 | 12 | 36 | 8 | 180,0 |
| 600 | 24 | 154 | 836 | 1"1/4 | 38 | 10 | 32 | 10 | M36x3 | 42 | 14 | 36 | 10 | 220,0 |

8) DNs concerned, see connection standards

### Semi-lug body - T2 for ISORIA 25

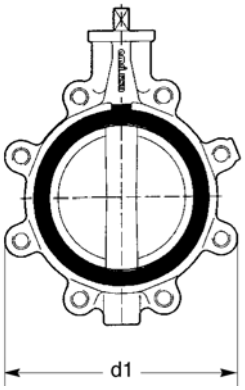
| DN | NPS | l1 | d1 | EN 1092-1 PN 25 | | | | | ASME B16.5 Class 150 | | | | | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ø M | Tie rod* | | Bolt | | UNC | Tie rod* | | Bolt | | |
| | | | | | f | Qty | X | Qty** | | f | Qty | X | Qty* | [kg] |
| 32 | 1¼ | 33 | 103 | M16 | 20 | 4 | - | - | 1/2" | 17 | 4 | - | - | 1,2 |
| 40 | 1½ | 33 | 110 | M16 | 20 | 4 | - | - | 1/2" | 17 | 4 | - | - | 1,3 |
| 50 | 2 | 43 | 122 | M16 | 20 | 4 | - | - | 5/8" | 20 | 4 | - | - | 1,8 |
| 65 | 2½ | 46 | 139 | M16 | 20 | 4/8 | - | - | 5/8" | 20 | 4 | - | - | 2,3 |
| 80 | 3 | 46 | 145 | M16 | 20 | 8 | - | - | 5/8" | 20 | 4 | - | - | 3,2 |
| 100 | 4 | 52 | 152 | M20 | 24 | 8 | - | - | 5/8" | 20 | 8 | - | - | 4,5 |
| 125 | 5 | 56 | 185 | M24 | 29 | 8 | - | - | 3/4" | 24 | 8 | - | - | 6,7 |
| 150 | 6 | 56 | 210 | M24 | 29 | 8 | - | - | 3/4" | 24 | 8 | - | - | 7,5 |
| 200 | 8 | 60 | 346 | M24 | 29 | 12 | - | - | 3/4" | 24 | 8 | - | - | 14,0 |
| 250 | 10 | 68 | 413 | M27 | 32 | 12 | - | - | 7/8" | 29 | 12 | - | - | 20,0 |
| 300 | 12 | 78 | 520 | M27 | 32 | 10 | 27 | 6 | 7/8" | 29 | 12 | 24 | 6 | 48,0 |
| 350 | 14 | 78 | 539 | M30 | 35 | 10 | 30 | 6 | 1" | 32 | 6 | 27 | 6 | 60,0 |
| 400 | 16 | 102 | 604 | M33 | 38 | 10 | 33 | 6 | 1" | 32 | 10 | 27 | 6 | 80,0 |
| 450 | 18 | 114 | 657 | M33 | 28 | 14 | 33 | 6 | 1"1/8 | 35 | 10 | 30 | 6 | 110,0 |
| 500 | 20 | 127 | 716 | M33 | 24 | 12 | 33 | 8 | 1"1/8 | 35 | 12 | 30 | 8 | 145,0 |
| 550 | 22 | 154 | 782 | • | • | • | • | • | 1"1/4 | 38 | 12 | 32 | 8 | • |
| 600 | 24 | 154 | 836 | M36 | 42 | 10 | 36 | 10 | 1"1/4 | 38 | 10 | 32 | 10 | 220,0 |

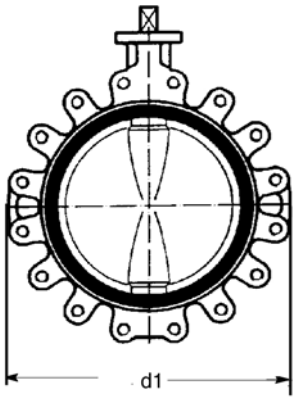
| DN | NPS | l1 | d1 | MSS SP 44 Class150<br>ASME B16.47 Class 150 Series A | | | | | Weight |
|---|---|---|---|---|---|---|---|---|---|
| | | | | UNC | Tie rod* | | Bolt | | |
| | | | | | f | Qty | X | Qty** | [kg] |
| 32 | 1¼ | 33 | 108 | 1/2" | 17 | 4 | - | - | 1,2 |
| 40 | 1½ | 33 | 108 | 1/2" | 17 | 4 | - | - | 1,3 |
| 50 | 2 | 43 | 118 | 5/8" | 20 | 4 | - | - | 1,8 |
| 65 | 2½ | 46 | 132 | 5/8" | 20 | 4 | - | - | 2,3 |
| 80 | 3 | 46 | 138 | 5/8" | 20 | 4 | - | - | 3,2 |
| 100 | 4 | 52 | 150 | 5/8" | 20 | 8 | - | - | 4,5 |
| 125 | 5 | 56 | 234 | 3/4" | 24 | 8 | - | - | 6,7 |
| 150 | 6 | 56 | 260 | 3/4" | 24 | 8 | - | - | 7,5 |
| 200 | 8 | 60 | 322 | 3/4" | 24 | 8 | - | - | 14,0 |
| 250 | 10 | 68 | 394 | 7/8" | 29 | 12 | - | - | 20,0 |
| 300 | 12 | 78 | 462 | 7/8" | 29 | 12 | 24 | 6 | 48,0 |
| 350 | 14 | 78 | 538 | 1" | 32 | 6 | 27 | 6 | 60,0 |
| 400 | 16 | 102 | 604 | 1" | 32 | 10 | 27 | 6 | 80,0 |
| 450 | 18 | 114 | 656 | 1"1/8 | 35 | 10 | 30 | 6 | 110,0 |
| 500 | 20 | 127 | 716 | 1"1/8 | 35 | 12 | 30 | 8 | 145,0 |
| 550 | 22 | 154 | 804 | 1"¼ | 38 | 12 | 32 | 8 | 180,0 |
| 600 | 24 | 154 | 836 | 1"¼ | 38 | 10 | 32 | 10 | 220,0 |

*: Quantity of nuts = Quantity of tie rods x 2

**: Quantity of bolts x 2

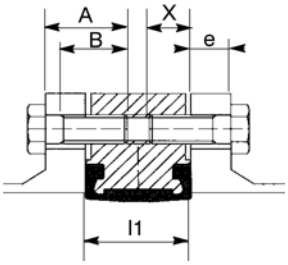
**Full-lug body with raised / flat faces - T3 / T4 (ISORIA 20 only)**




The drawings do not indicate the exact product design (number of tapped lugs).

**N.B.: Bolting is not included in our standard scope of supply.**




**A = e + X**

A: max. bolt length
X: max. thread engagement depth
e: flange thickness (customer-specific)
B: min. thread length > A-e

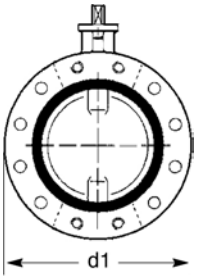
## Full-lug body with raised / flat faces - T3 / T4 (ISORIA 20 only)

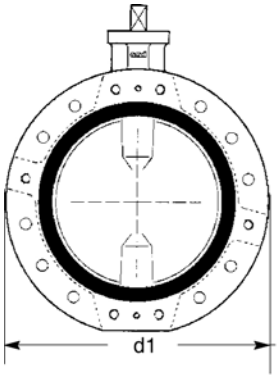
| DN | NPS | l1 | d1 | EN 1092-1 PN 16 | | | EN 1092-1 PN 25 | | | ASME B16.5 Class 150<br>ASME B16.1 Class 125<br>MSS SP 44 Class 150<br>ASME B16.47 Class 150<br>Series A<br>9) | | | JIS B2220, B2238, B2239<br>16K | | | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ø M | Bolt | | Ø M | Bolt | | UNC | Bolt | | Ø M | Bolt | | |
| | | | | | X | Qty[10)] | | X | Qty[10)] | | X | Qty[10)] | | X | Qty[10)] | [kg] |
| 32 | 1¼ | 33 | 101 | M16 | 14 | 4 | M16 | 14 | 4 | 1/2" | 14 | 4 | M16 | 14 | 4 | 2,0 |
| 40 | 1½ | 33 | 106 | M16 | 14 | 4 | M16 | 14 | 4 | 1/2" | 14 | 4 | M16 | 14 | 4 | 2,0 |
| 50 | 2 | 43 | 117 | M16 | 18 | 4 | M16 | 18 | 4 | 5/8" | 18 | 4 | • | • | • | 2,5 |
| 65 | 2½ | 46 | 132 | M16 | 20 | 4/8 | • | • | • | 5/8" | 20 | 4 | • | • | • | 3,0 |
| 80 | 3 | 46 | 139 | M16 | 20 | 8 | M16 | 20 | 8 | 5/8" | 20 | 4 | M20 | 20 | 8 | 4,0 |
| 100 | 4 | 52 | 160 | M16 | 22 | 8 | M20 | 24 | 8 | 5/8" | 22 | 8 | M20 | 24 | 8 | 5,5 |
| 125 | 5 | 56 | 234 | M16 | 22 | 8 | • | • | • | 3/4" | 23 | 8 | • | • | • | 9,0 |
| 150 | 6 | 56 | 257 | M20 | 26 | 8 | • | • | • | 3/4" | 26 | 8 | • | • | • | 11,0 |
| 200 | 8 | 60 | 310 | M20 | 26 | 12 | • | • | • | 3/4" | 26 | 8 | • | • | • | 24,0 |
| 250 | 10 | 68 | 394 | M24 | 29 | 12 | • | • | • | 7/8" | 28 | 12 | • | • | • | 39,0 |
| 300 | 12 | 78 | 462 | M24 | 30 | 12 | M27 | 34 | 16 | 7/8" | 28 | 12 | M24 | 30 | 16 | 46,0 |
| 350 | 14 | 78 | 527 | M24 | 30 | 16 | M30 | 24 | 16 | 1" | 30 | 12 | M30x3 | 34 | 16 | 62,0 |
| 400 | 16 | 102 | 605 | M27 | 34 | 16 | M33 | 40 | 16 | 1" | 34 | 16 | M30x3 | 37 | 16 | 101,0 |
| 450 | 18 | 114 | 636 | M27 | 34 | 20 | M33 | 40 | 20 | 1"1/8 | 37 | 16 | M30x3 | 37 | 20 | 122,0 |
| 500 | 20 | 127 | 718 | M30 | 37 | 20 | M33 | 40 | 20 | 1"1/8 | 37 | 20 | M30x3 | 37 | 20 | 179,0 |
| 550 | 22 | 154 | 790 | • | • | • | • | • | • | 1"1/4 | 39 | 20 | M36x3 | 42 | 20 | 233,0 |
| 600 | 24 | 154 | 835 | M33 | 42 | 20 | M36 | 45 | 20 | 1"1/4 | 42 | 20 | M36x3 | 34 | 24 | 256,0 |

• Non-standardised connection

9) DNs concerned, see connection standards
10) Quantity of bolts x 2

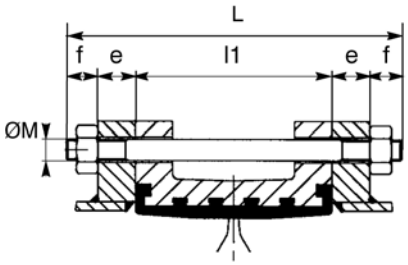
## Flanged body with flat faces -T5




The drawings do not indicate the exact product design
(number of tapped holes/clearance holes)

**N.B.: Bolting is not included in our standard scope of supply.**



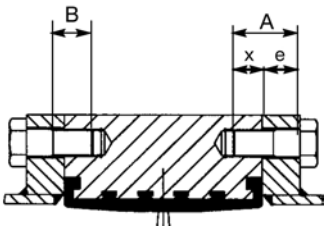

**Length of tie rod L = l1 + 2e + 2f**

L: minimum length of tie rods

l1: face-to-face length of butterfly valve

e: flange thickness (customer-specific)

f: thickness of nut + standardised overhang of tie rod




**Bolt length at stem passage**

**A = e + X**

A: max. bolt length

X: max. thread engagement depth

e: flange thickness (customer-specific)

B: min. thread length > A-e

### Flanged body with flat faces - T5 for ISORIA 20

| DN | NPS | l1 | d1 | EN 1092-1 PN 16 | | | | | EN 1092-1 PN 25 | | | | | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ø M | Tie rod[11] | | Bolt | | Ø M | Tie rod[11] | | Bolt | | |
| | | | | | f | Qty | X | Qty[12] | | f | Qty | X | Qty[12] | [kg] |
| 200 | 8 | 60 | 343 | M20 | 24 | 8 | 16 | 4 | M24 | 29 | 12 | - | - | 23 |
| 250 | 10 | 68 | 406 | M24 | 29 | 8 | 24 | 4 | M27 | 32 | 12 | - | - | 40 |
| 300 | 12 | 78 | 483 | M24 | 29 | 6 | 24 | 6 | M27 | 32 | 10 | 27 | 6 | 60 |
| 350 | 14 | 78 | 533 | M24 | 29 | 10 | 24 | 6 | M30 | 35 | 16 | - | - | 80 |
| 400 | 16 | 102 | 597 | M27 | 32 | 10 | 27 | 6 | M33 | 38 | 16 | - | - | 105 |
| 450 | 18 | 114 | 640 | M27 | 32 | 14 | 27 | 6 | M33 | 38 | 14 | 33 | 6 | 130 |
| 500 | 20 | 127 | 715 | M30 | 35 | 12 | 30 | 8 | M33 | 38 | 12 | 33 | 8 | 180 |
| 550 | 22 | 154 | 749 | • | • | • | • | • | • | • | • | • | • | • |
| 600 | 24 | 154 | 840 | M33 | 38 | 10 | 33 | 10 | M36 | 42 | 10 | 36 | 10 | 260 |

| DN | NPS | l1 | d1 | ASME B16.5 Class 150<br>ASME B16.1 Class 125<br>MSS SP 44 Class 150<br>ASME B16.47 Class 150 Series A<br>[13] | | | | | JIS B2220, B2238, B2239<br>16K | | | | | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | UNC | Tie rod[11] | | Bolt | | Ø M | Tie rod[11] | | Bolt | | |
| | | | | | f | Qty | X | Qty[12] | | f | Qty | X | Qty[12] | [kg] |
| 200 | 8 | 60 | 343 | 3/4" | 24 | 4 | 20 | 4 | M22 | 26 | 8 | 22 | 4 | 23 |
| 250 | 10 | 68 | 406 | 7/8" | 29 | 8 | 24 | 4 | M24 | 29 | 8 | 24 | 4 | 40 |
| 300 | 12 | 78 | 483 | 7/8" | 29 | 6 | 24 | 6 | M24 | 29 | 10 | 24 | 6 | 60 |
| 350 | 14 | 78 | 533 | 1" | 32 | 6 | 27 | 6 | M30x3 | 35 | 10 | 30 | 6 | 80 |
| 400 | 16 | 102 | 597 | 1" | 32 | 10 | 27 | 6 | M30x3 | 35 | 10 | 30 | 6 | 105 |
| 450 | 18 | 114 | 640 | 1"1/8 | 32 | 10 | 30 | 6 | • | • | • | • | • | 130 |
| 500 | 20 | 127 | 715 | 1"1/8 | 35 | 12 | 30 | 8 | M30x3 | 35 | 12 | 30 | 8 | 180 |
| 550 | 22 | 154 | 749 | 1"1/4 | 35 | 12 | 32 | 8 | • | • | • | • | • | 230 |
| 600 | 24 | 154 | 840 | 1"1/4 | 38 | 10 | 32 | 10 | M30x3 | 42 | 14 | 36 | 10 | 260 |

11) Quantity of nuts = Quantity of tie rods x 2
12) Quantity of bolts x 2
13) DNs concerned, see connection standards

### Flanged body with flat faces - T5 for ISORIA 25

| DN | NPS | l1 | Ød1 | | EN 1092-1 PN 25 | | | | | ASME B16.5 Class 150 | | | | | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | ØM | Tie rod* | | Bolt | | UNC | Tie rod* | | Bolt | | |
| | | | Steel | JS 1030 | | f | Qty | X | Qty** | | f | Qty | X | Qty** | [kg] |
| 200 | 8 | 60 | 343 | - | M24 | 29 | 12 | - | - | 3/4" | 24 | 4 | 20 | 4 | 23 |
| 250 | 10 | 68 | 430 | - | M27 | 32 | 12 | - | - | 7/8" | 29 | 8 | 24 | 4 | 40 |
| 300 | 12 | 78 | 483 | - | M27 | 32 | 10 | 27 | 6 | 7/8" | 29 | 6 | 24 | 6 | 60 |
| 350 | 14 | 78 | 533 | 533 | M30 | 35 | 16 | - | - | 1" | 32 | 6 | 27 | 6 | 80 |
| 400 | 16 | 102 | 597 | 597 | M33 | 38 | 16 | - | - | 1" | 32 | 10 | 27 | 6 | 105 |
| 450 | 18 | 114 | 668 | 640 | M33 | 38 | 14 | 33 | 6 | 1"1/8 | 32 | 10 | 30 | 6 | 130 |
| 500 | 20 | 127 | 715 | 715 | M33 | 38 | 12 | 33 | 8 | - | - | - | - | - | 180 |
| 550 | 22 | 154 | 790 | 749 | • | • | • | • | • | - | - | - | - | - | 230 |
| 600 | 24 | 154 | 840 | 840 | M36 | 42 | 10 | 36 | 10 | - | - | - | - | - | 260 |
| 700 | 28 | 210 | 960 | 960 | M39 | 45 | 20 | 36 | 4 | 1"1/8 | 32 | 10 | 30 | 6 | 375 |
| 800 | 32 | 230 | 1085 | 1085 | M45 | 52 | 20 | 32 | 4 | - | - | - | - | - | 500 |
| 900 | 36 | 260 | 1185 | 1185 | M45 | 52 | 24 | 40 | 4 | - | - | - | - | - | 745 |
| 1000 | 40 | 280 | 1320 | 1320 | M52 | 60 | 24 | 35 | 4 | - | - | - | - | - | 950 |

| DN | NPS | l1 | Ød1 | | MSS SP 44 Class 150<br>ASME B16.47 Class 150 Series A | | | | | Weight |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | UNC | Tie rod* | | Bolt | | |
| | | | Steel | JS 1030 | | f | Qty | X | Qty** | [kg] |
| 200 | 8 | 60 | 343 | - | 3/4" | - | - | - | - | 23 |
| 250 | 10 | 68 | 430 | - | 7/8" | - | - | - | - | 40 |
| 300 | 12 | 78 | 483 | - | 7/8" | 29 | 6 | 24 | 6 | 60 |
| 350 | 14 | 78 | 533 | 533 | 1" | 32 | 6 | 27 | 6 | 80 |
| 400 | 16 | 102 | 597 | 597 | 1" | 32 | 10 | 27 | 6 | 105 |
| 450 | 18 | 114 | 668 | 640 | 1"1/8 | 35 | 10 | 30 | 6 | 130 |
| 500 | 20 | 127 | 715 | 715 | 1"1/8 | 35 | 12 | 30 | 8 | 180 |
| 550 | 22 | 154 | 790 | 749 | 1"¼ | 38 | 12 | 32 | 8 | 230 |
| 600 | 24 | 154 | 840 | 840 | 1"¼ | 38 | 10 | 32 | 10 | 260 |
| 700 | 28 | 210 | 960 | 960 | 1"¼ | 38 | 10 | 32 | 10 | 375 |
| 800 | 32 | 230 | 1085 | 1085 | 1"½ | 45 | 24 | 35 | 4 | 500 |
| 900 | 36 | 260 | 1185 | 1185 | 1"½ | 45 | 28 | 35 | 4 | 745 |
| 1000 | 40 | 280 | 1320 | 1320 | 1"½ | 45 | 32 | 35 | 8 | 950 |

*: Quantity of nuts = Quantity of tie rods x 2

**: Quantity of bolts x 2

### Flange dimensions

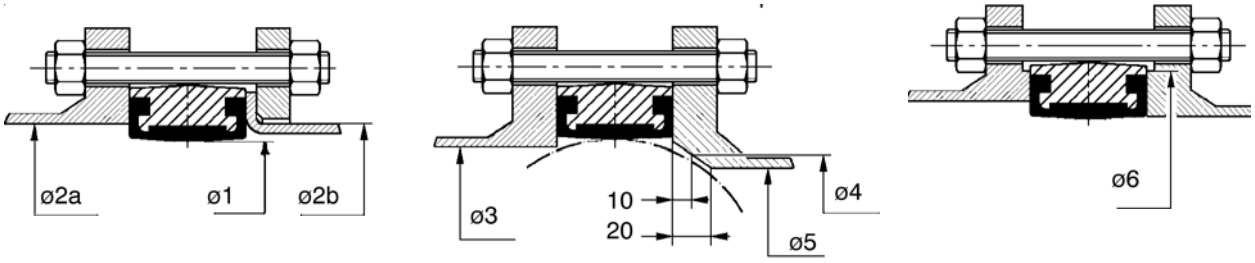
The valves can be installed between all commercial mating flanges and line connections without requiring any flange gaskets.

The elastomer liner alone provides a tight seal at the flange connections.

Please verify that the connection meets the requirements given below.

The flange dimensions indicated in the table apply to all body types.

### ISORIA 20




Ø2a and Ø3: flange face diameter

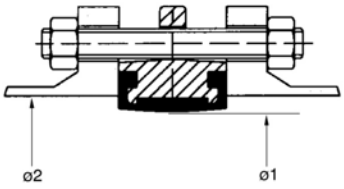
Ø2b: pipe OD with loose plate flange to DIN 2642 and NF E 29-251

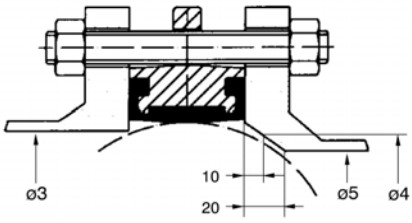
### Dimensions table of ISORIA 20

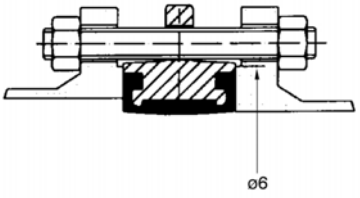
| DN | NPS | Optimum Ø | Max. permissible Ø | | Min. permissible Ø of flange face | Min. diameter at a distance of 10 mm from the flange face | Min. diameter at a distance of 20 mm from the flange face | Min. permissible raised face Ø of flanges with raised faces |
|---|---|---|---|---|---|---|---|---|
| | | Ø1 | Ø2a | Ø2b | Ø3 | Ø4 | Ø5 | Ø6 |
| 40 | 1¼ | 32 | 44 | 43 | - | - | - | 64 |
| 40 | 1½ | 40 | 50 | 49 | 33 | - | - | 73 |
| 50 | 2 | 50 | 63 | 61 | 38 | - | - | 89 |
| 65 | 2½ | 65 | 78 | 77 | 55 | - | - | 104 |
| 80 | 3 | 80 | 92 | 89 | 74 | 53 | - | 124 |
| 100 | 4 | 100 | 117 | 115 | 92 | 77 | 48 | 147 |
| 125 | 5 | 125 | 145 | 140 | 117 | 107 | 88 | 177 |
| 150 | 6 | 150 | 172 | 169 | 143 | 137 | 123 | 202 |
| 200 | 8 | 195 | 223 | 220 | 191 | 183 | 173 | 251 |
| 250 | 10 | 245 | 278 | 273 | 241 | 234 | 226 | 305 |
| 300 | 12 | 295 | 329 | 324 | 290 | 284 | 276 | 358 |
| 350 | 14 | 330 | 361 | 356 | 326 | 321 | 314 | 399 |
| 400 | 16 | 380 | 412 | 407 | 370 | 366 | 358 | 452 |
| 450 | 18 | 430 | 463 | 457 | 422 | 416 | 409 | 505 |
| 500 | 20 | 480 | 515 | 508 | 470 | 464 | 457 | 558 |
| 550 | 22 | 540 | 568 | 561 | 522 | 516 | 509 | 625 |
| 600 | 24 | 580 | 617 | 610 | 566 | 560 | 554 | 664 |

### ISORIA 25

Installation between loose plate flanges on lap joint stub ends is not permitted.



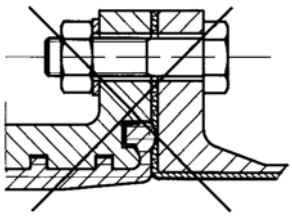



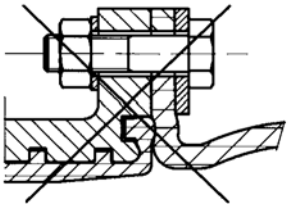

### Dimensions table of ISORIA 25

| DN | NPS | Optimum Ø | Max. permissible Ø | Min. permissible Ø of flange face | Min. diameter at a distance of 10 mm from the flange face | Min. diameter at a distance of 20 mm from the flange face | Min. permissible raised face Ø of flanges with raised faces |
|---|---|---|---|---|---|---|---|
| | | Ø1 | Ø2 | Ø3 | Ø4 | Ø5 | Ø6 |
| 32 | 1¼ | 32 | 33 | - | - | - | 64 |
| 40 | 1½ | 40 | 41 | 33 | - | - | 73 |
| 50 | 2 | 50 | 51 | 38 | - | - | 89 |
| 65 | 2½ | 65 | 66 | 55 | - | - | 104 |
| 80 | 3 | 80 | 81 | 74 | 53 | - | 124 |
| 100 | 4 | 100 | 101 | 92 | 77 | 48 | 147 |
| 125 | 5 | 125 | 126 | 117 | 107 | 88 | 177 |
| 150 | 6 | 150 | 151 | 143 | 137 | 123 | 202 |
| 200 | 8 | 195 | 201 | 191 | 183 | 173 | 251 |
| 250 | 10 | 245 | 251 | 241 | 234 | 226 | 305 |
| 300 | 12 | 295 | 302 | 290 | 284 | 276 | 358 |
| 350 | 14 | 330 | 337 | 326 | 321 | 314 | 399 |
| 400 | 16 | 380 | 387 | 370 | 366 | 358 | 452 |
| 450 | 18 | 430 | 438 | 422 | 416 | 409 | 505 |
| 500 | 20 | 480 | 488 | 470 | 464 | 457 | 558 |
| 550 | 22 | 540 | 549 | 522 | 516 | 509 | 625 |
| 600 | 24 | 580 | 589 | 566 | 560 | 554 | 664 |
| 700 | 28 | 700 | 700 | 683 | 668 | 661 | Flanges with flat faces only |
| 800 | 32 | 800 | 799 | 782 | 766 | 760 | |
| 900 | 36 | 900 | 900 | 880 | 860 | 854 | |
| 1000 | 40 | 1000 | 1000 | 976 | 958 | 952 | |

**Coated flange**



Flange with rubber coating



Expansion bellows

N.B.: Direct installation between rubber-coated flanges or with expansion bellows is not permitted. Contact KSB.

**Installation between flanges made of polyethylene**

- Installation between flanges with flat faces is permitted.
- Installation between flanges with grooved faces is not permitted.

21/12/2016

8447.5/1-EN

**KSB S.A.S.**
4, allée des Barbanniers • 92635 Gennevilliers Cedex (France)
Tél. +33 1 41 47 75 00 • Fax +33 1 41 47 75 10
www.ksb.com