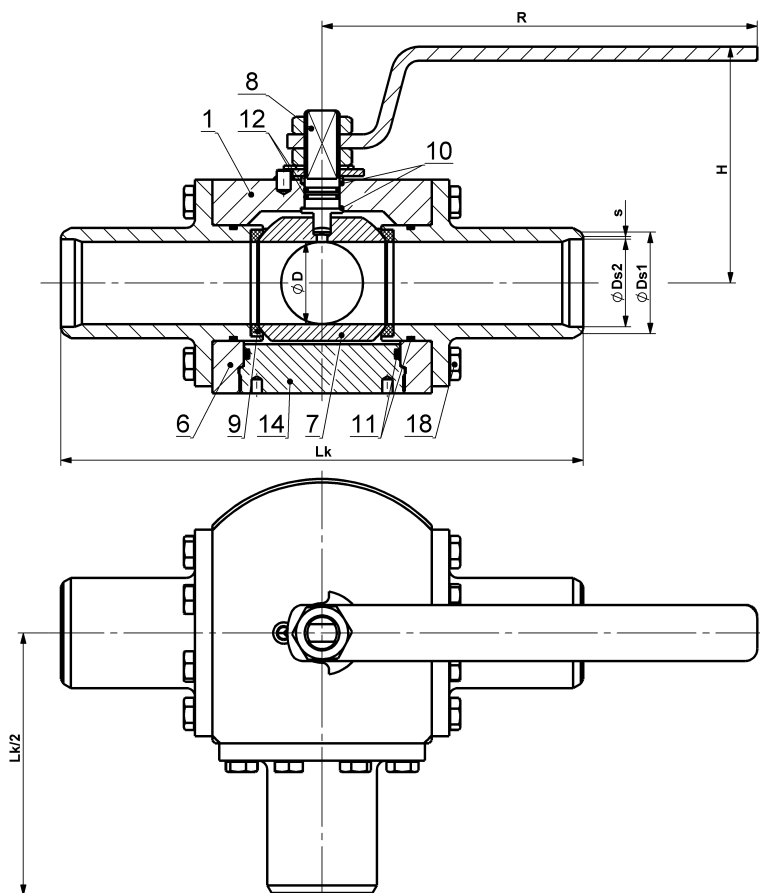


## THREE-WAY BUTT WELD END BALL VALVE

with four seats, with full bore "L" or "T"

KM 9303.X-02

DN 10–150 PN 16, 25, 40, 63, 100, (160, 250)



### Materials

| Type KM 9303.X-02 |           | Material   |   |   |   |
|-------------------|-----------|--|---|---|---|
|                   |           | Carbon steel   |   | Stainless steel                                 |   |
| Position          | Component | X=1<br>For common temperatures<br>from -20°C to +200°C | X=5<br>For low temperatures<br>from -46°C to +200°C | X=3<br>For temperatures<br>from -50°C to +200°C | X=4<br>For temperatures<br>from -50°C to +200°C |
| 1                 | Body      | 1.0577, S355J2   | 1.0565, A350 LF2                                    | 1.4541, A182 F321                               | 1.4571, A182 F316                               |
| 2                 | Socket    |  |   |   |   |
| 7                 | Ball      | 1.4021, ČSN 17 027                                     | 1.4541, A182 F321<br>ČSN 17 027                     | 1.4541, A182 F321                               | 1.4571, A182 F316                               |
| 8                 | Stem      |  |   |   |   |
| 9                 | Seat      | PTFE, PTFE+C, PEEK                                     |   |   |   |
| 10                | Gasket    | PTFE+C, PEEK   |   |   |   |
| 11                | Sealing   | NBR, HNBR, EPDM, FPM, FPM+FEP                          |   |   |   |
| 12                | Sealing   | NBR, HNBR, EPDM, FPM, FPM+FEP                          |   |   |   |
| 14                | Cover     | 1.0577, S355J2   | 1.0565, A350 LF2                                    | 1.4541, A182 F321                               | 1.4571, A182 F316                               |
| 18                | Bolt      | Tr.8, A2-70, A193 B7                                   | A2-70, A320 L7                                      | A2-70, A193 B8                                  | A2-70, A193 B8                                  |

Other materials upon request (P265GH, 1.4306, 1.4462 etc.).

Operating temperature range can be reduced based on selected sealing materials.

### Dimensions and weights

|                   | DN    | øD  | øDs1 | øDs2 | s   | Trubka / Pipe | Lk  | H   | R   | Hm / W |
|-------------------|-------|-----|------|------|-----|---------------|-----|-----|-----|--------|
| PN 16, 25, 40, 63 | 10    | 9,5 | 18   | 13   | -   | 17,1×2        | 270 |     |     |        |
|                   | 15    | 14  | 22   | 16   | -   | 21,3×2,6      | 270 | 72  | 115 | 3,1    |
|                   | 20    | 19  | 27,5 | 21,5 | -   | 26,9×2,6      | 270 | 100 | 150 | 3,9    |
|                   | 25    | 25  | 34   | 28,5 | -   | 33,7×2,6      | 270 |     |     |        |
|                   | 32    | 30  | 43   | 37   | -   | 42,4×2,6      | 270 |     |     |        |
|                   | 40    | 38  | 49   | 42,5 | 1,5 | 48,3×2,9      | 270 |     |     |        |
|                   | 50    | 47  | 61   | 53,2 | 1,5 | 60,3×3,2      | 300 |     |     |        |
| PN 16, 25, 40     | 65    | 62  | 77   | 69,5 | 1,5 | 76,1×3,2      | 360 |     |     |        |
|                   | 80    | 76  | 90   | 81,5 | 1,5 | 88,9×4        | 390 |     |     |        |
|                   | 100   | 95  | 115  | 106  | 1,5 | 114,3×4       | 450 |     |     |        |
|                   | 125   | 119 | ***  |      |     |               | 525 |     |     |        |
|                   | 150   | 150 | ***  |      |     |               | 600 |     |     |        |
| PN 63             | 65    | 62  | 77   | 68,5 | 1,5 | 76,1×3,6      | 360 |     |     |        |
|                   | 80    | 76  | 90   | 80,5 | 1,5 | 88,9×4        | 390 |     |     |        |
|                   | 100   | 95  | 115  | 104  | 1,5 | 114,3×5       | 450 |     |     |        |
|                   | 125*  | 119 | ***  |      |     |               | 525 |     |     |        |
|                   | 150** | 150 | ***  |      |     |               | 600 |     | -   |        |
| PN 100            | 10    | 9,5 | 18   | 13   | -   | 17,1×2        | 270 |     |     |        |
|                   | 15    | 14  | 22   | 16   | -   | 21,3×2,6      | 270 |     |     |        |
|                   | 20    | 19  | 27,5 | 21,5 | -   | 26,9×2,6      | 270 |     |     |        |
|                   | 25    | 25  | 34   | 27,5 | 1,5 | 33,7×2,9      | 270 |     |     |        |
|                   | 32    | 30  | 43   | 36   | 1,5 | 42,4×3,2      | 270 |     |     |        |
|                   | 40    | 38  | 49   | 41   | 1,5 | 48,3×3,6      | 270 |     |     |        |
|                   | 50    | 47  | 61   | 51   | 1,5 | 60,3×4,5      | 300 |     |     |        |
|                   | 65    | 62  | 77   | 66   | 1,5 | 76,1×5        | 360 |     |     |        |
|                   | 80    | 76  | 90   | 77,5 | 1,5 | 88,9×5,6      | 390 |     |     |        |
|                   | 100*  | 95  | 115  | 100  | 1,5 | 114,3×7       | 450 |     |     |        |
|                   | 125** | 119 | ***  |      |     |               | 525 |     | -   |        |
|                   | 150** | 150 | ***  |      |     |               | 600 |     | -   |        |

\* = gearbox recommended, \*\* = with gearbox only, \*\*\* = contact our office. Dimensions in [mm], weights in [kg]. Dimensions of welding ends according to the dimensional table or customer requirement.

### Application

Three-way butt weld end ball valves type KM 9303.X-02 are isolating valves designed either to redirect or to open or close the service fluid flow. They are not designed to be used for throttling or regulating purposes. The scope of application of the ball valves depends directly on their materials and on the properties and temperature of the service fluid. The standard materials are specified in the table of materials. By agreement and based on service conditions, also other materials than those specified in the table may be used.

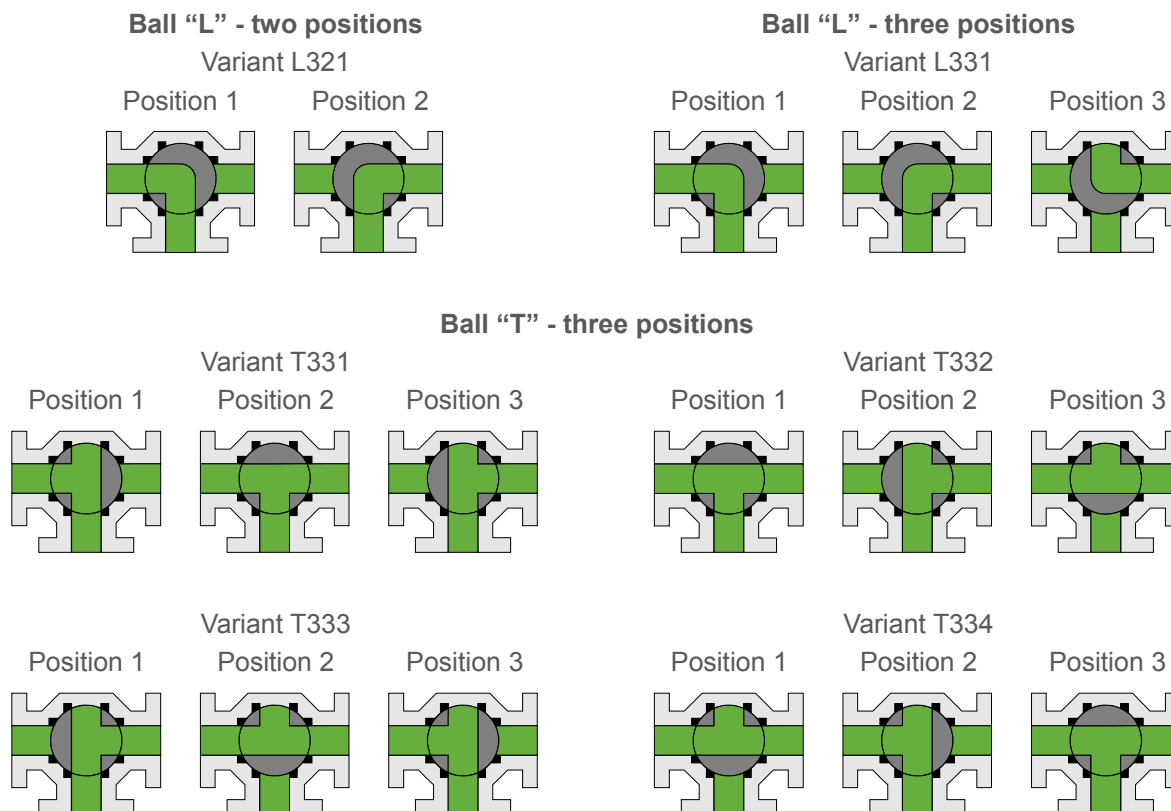
The ball valves are designated for heating gases (e.g. natural gas, lighting gas, propane-butane mixture, biogas, coke-oven gas), water, steam (not exceeding +150°C), oxygen, and generally for both corrosive and non-corrosive liquids and gases without mechanical impurities. Service temperature range can be from -50°C to +200°C depending on combination of body material and sealing rings. Allowable service pressures are in compliance with the pressure-temperature ratings (graphs B1, S1, S2, S4).

### Technical description

Ball valve design meets the requirements of EN 1983. The ball valve is with floating ball. The stem design ensures that the stem can not be ejected from the valve body by pressure of the fluid (anti-blow-out stem), internal components are connected to provide conductivity and resistance to formation of electrostatic discharges (anti-static design).

The ball bore may have the form of either "L" or "T". The position of the ball in the ball valve is shown by the mark on the upper flat of the stem. The flow possibilities are shown on the schemes, other possibilities can be discussed by phone.

### Flow directions



### Operation

By lever, gear box with a hand wheel, pneumatic actuator, electric actuator. Dimensions of flanges for actuator installation are in accordance with ISO 5211. The actuator size depends on the maximum service pressure drop through the ball.

The method of operation is indicated by the third digit of the type designation, which is "0" for lever and "3" for actuator (e.g. KM 9333.X-02).

### Connection to piping

Overall dimensions are shown in the tables of dimensions.

- shapes of welding ends according to EN 17292
- dimension of ball bore according to EN 1983
- end-to-end dimension according to EN 12982

### Testing

According to EN 12 266-1 as a standard, i.e. shell strength test P10, P11, seat tightness test P12 (water pressure  $1,1 \times PN$  and air pressure 0,6 MPa), leakage rate A – zero leakage. If required by the Customer, additional tests may be performed as well.

### Installation, service and maintenance

The ball valves may be installed into the piping in any arbitrary position. They require no special adjustments or maintenance. They are operable at the full pressure drop which equals to PN.

When welding the ball valves type KM 9103.X-01 into the pipeline, the following procedure must be followed:

1. prior to welding, open the ball valve fully
2. do not release and do not remove the sockets from the body!
3. use a welding procedure with which the rubber O-rings between the sockets and the body and their ambient are not exposed to temperatures above 120°C! For instance, protect the O-rings and their ambient by means of wet cloth and continue cooling this area by pouring cold water.

### Optional accessories, adjustments and services

- fire-safe design – fire resistance in accordance with EN ISO 10497 (API 607)
- heating jacket – for keeping the fluid liquid
- lockable handle with a padlock – for locking opened / closed position of the valve
- extended stem – e.g. for the reason of insulation of the valve and pipeline
- limit switches
- documentation according to EN 10204 3.1 or 3.2
- special adjustments according to customer requests
- valves for nominal pressure classes PN 160, 250
- execution according to standard NACE MR 0175 or ISO 15156
- execution according to API standards
- ball bore LL (X)