# Globe valve with bellows TYPE AV05 / AV06

## Description:

Globe valves for a controlled opening and closing of a pipeline system. With optional regulation plug to control the flow rate.

## Product features:

- suitable for neutral and non neutral **gaseous & liquid media and steam**
- largely maintenance-free
- with bellows
- installation in any position, spindle preferably in vertical position

**Connection:**
DN15, DN20 DN25, DN32, DN40, DN50, DN65, DN80, DN100, DN125, DN150, DN200, DN250

**Temperature:**
-10°C up to 400°C
– depending on design

**Pressure:**
up to 40.0 bar
– depending on design

### Type AV05 / AV06

| | | |
|---|---|---|
| **Design:** | Globe valve with bellows in straight through design | |
| **Type:** | **AV05 Cast steel** | **AV06 Stainless steel** |
| **Material body:** | Cast steel 1.0619N | Stainless steel 1.4408 / AISI CF-8M |
| **Material stem:** | Stainless steel 1.4021 / AISI 420 | Stainless steel 1.4571 / 316TI \| Stainless steel 1.4401 / 316TI* |
| **Stem:** | external & rising | external & rising |
| **Material yoke:** | Cast steel 1.0619N | Stainless steel 1.4408 / AISI CF-8M |
| **Nominal pressure:** | PN16 / PN40 | PN16 / PN40 |
| **Material disc:** | Cast steel 1.0619N | Stainless steel 1.4571 / AISI 316 TI |
| **Material bellows:** | Stainless steel 1.4401 / AISI 316 | Stainless steel 1.4401 / AISI 316 |
| **Material hand wheel:** | Carbon steel 1.0036 | Carbon steel 1.0036 |
| **Hand wheel:** | Not rising | Not rising |
| **Gasket:** | Graphite | Graphite |
| | | *see material tables for AV06 |

**Notes:**
Cast steel version AV05 with protective coating RAL5015, 40-60 µm, max. 120°C corresponds corrosivity category C1 according to DIN EN ISO 12944 Part 2 (protection duration „low")
Valve according to PED 2014/68/EU
TA-Luft 2021 conform
AD2000 A4
Final testing according to DIN EN 12266
Shell pressure test water PN*1,5; Closure pressure test water PN*1,1
Globe valve according to DIN EN 13709:2010-10

| | |
|---|---|
| **Face-to-face dimension:** | According to DIN EN 558-1 basic series 1 |
| **Flange dimension:** | According to DIN EN 1092-1 |
| **Flange face finish:** | According to DIN EN 1092-1 Type B |

## Pressure-temperature-ratings:

Intermediate values for max. permissible operational pressures can be determind by linear interpolation for the given temperature / pressure chart.

| acc. to DIN EN 1092-1 | | -10°C | 20°C | 120°C | 150°C | 200°C | 250°C | 300°C | 350°C | 400°C |
|---|---|---|---|---|---|---|---|---|---|---|
| Cast steel 1.0619N | 16 bar | 16 | 16 | 16 | 15,3 | 14 | 13 | 11 | 10,2 | 9,5 |
| Cast steel 1.0619N | 40 bar | 40 | 40 | 40 | 38,1 | 35 | 32 | 28 | 25,7 | 23,8 |

| acc. to DIN EN 1092-1 | | -10°C | 20°C | 120°C | 150°C | 200°C | 250°C | 300°C | 350°C | 400°C |
|---|---|---|---|---|---|---|---|---|---|---|
| Stainless steel 1.4408 | 16 bar | 16 | 16 | 16 | 14,5 | 13,4 | 12,7 | 11,8 | 11,4 | 10,9 |
| Stainless steel 1.4408 | 40 bar | 40 | 40 | 40 | 36,3 | 33,7 | 31,8 | 29,7 | 28,5 | 27,4 |

## Difference pressures:

NieRuf-globe valves must be equipped with a pressure relief plug* when the pressure differences, listed bellow, are exceeded in the closed state. The valves must be installed in the pipeline in such a way that the pressure of the medium acts on the taper.

| DN | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 |
|---|---|---|---|---|---|---|---|---|
| Pressure difference (bar) | On request | On request | On request | On request | On request | On request | On request | On request |

*Pressure relief plug already included for nominal diameters from DN125. For AV06 with nominal pressure PN16 the pressure relief plug is included from nominal diameter DN200.

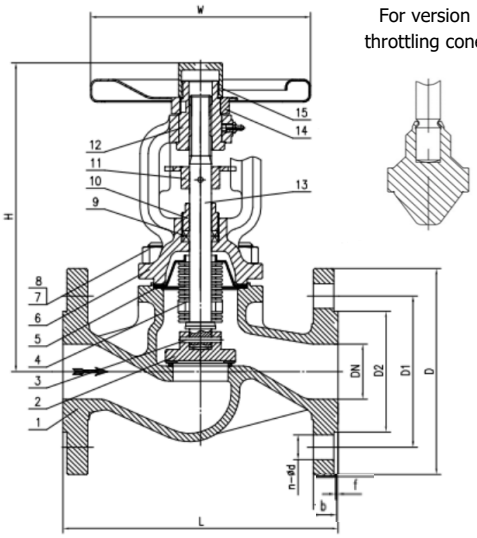
## Leakage rate:

Test with 1,1 times nominal pressure with water according to DIN EN 12266-1, testing of the seat tightness

| Type / Diameter | Leakage rate |
|---|---|
| AV05 & AV06 / up to DN150 | A |
| AV05 & AV06 / from DN 200 | B |

## Materials:

Standard version




For version throttling cone

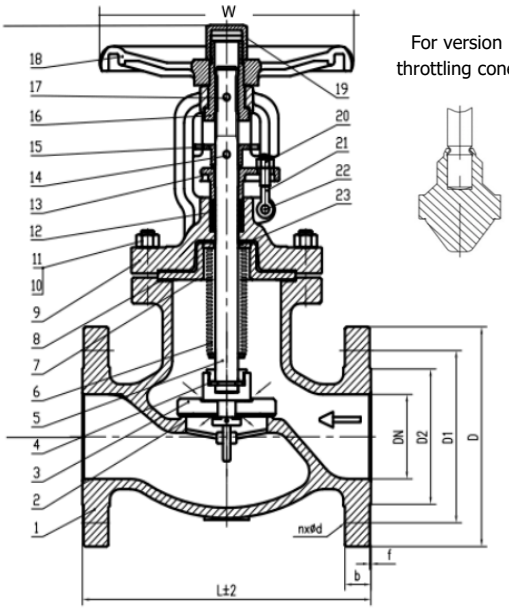


Illustration applies for AV05:
PN16 from DN65 to DN100
PN40 from DN15 to DN100

Illustration applies for AV06:
PN16 from DN65 to DN150
PN40 from DN15 to DN100

| Pos. | Designation | Material AV05 Cast steel 1.0619N | Material AV06 Stainless steel 1.4408 |
|---|---|---|---|
| 1 | Body | GP240GH+N / 1.0619N | GX5CrNoMo1991102 / 1.4408 |
| 1.1 | Body seat | Stellite | Stellite |
| 2 | Disc | GP240GH+N / 1.0619N | X6CrNiMoTi17-12-2 / 1.4571 |
| 2.1 | Disc seat | 13 Cr | X6CrNiMoTi17-12-2 / 1.4571 |
| 3 | Lock bolt | 13 Cr | X5CrNiMo17-12-2 / 1.4401 |
| 4 | Bellows | X5CrNiMo 17-12-2 / 1.4401 | X5CrNiMo17-12-2 / 1.4401 |
| 5 | Gasket | Graphite 1.0036 | Graphite 1.0036 |
| 6 | Yoke | GP240GH+N / 1.0619N | GX5CrNoMo1991102 / 1.4408 |
| 7 | Stud bolt | 25CrMo4 / 1.7218 | A4-70 |
| 8 | Hexagon nut | 25CrMo4 / 1.7218 | A4 |
| 9 | Packing | Graphite 1.0036 | Graphit 1.0036 |
| 10 | Glad nut | Carbon steel / 1.0036 | X5CrNiMo17-12-2 / 1.4401 |
| 11 | Guide piece | 13 Cr | X5CrNiMo17-12-2 / 1.4401 |
| 12 | Threaded bush | GJS-400-15 / 0.7040 | GJS-400-15 / 0.7040 |
| 13 | Stem | X20Cr13 / 1.4021 | X6CrNiMoTi17-12-2 / 1.4571 |
| 14 | Handwheel | Carbon steel / 1.0036 | Carbon steel / 1.0036 |
| 15 | Handwheel nut | Carbon steel / 1.0036 | Carbon steel / 1.0036 |

Standard version




For version throttling cone

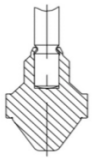


Illustration applies for AV05:
PN16 from DN125 to DN250
PN40 from DN125 to DN250

Illustration applies for AV06:
PN16 from DN200 to DN250
PN40 from DN125 to DN250

| Pos. | Designation | Material AV05 Cast steel 1.0619N | Material AV06 Stainless steel 1.4408 |
|---|---|---|---|
| 1 | Body | GP240GH+N / 1.0619N | GX 5CrNoMo191102 / 1.4408 |
| 2 | Body seat | Stellite | Stellit |
| 3 | Disc | GP240GH+N / 1.0619N | X6CrNiMoTi17-12-2 / 1.4571 |
| 3.1 | Disc seat | 13 Cr | X6CrNiMoTi17-12-2 / 1.4571 |
| 4 | Lock bolt | 13 Cr | X5CrNiMo17-12-2 / 1.4401 |
| 5 | Stem | X20Cr13 / 1.4021 | X5CrNiMo17-12-2 / 1.4401 |
| 6 | Bellows | X5CrNiMo 17-12-2 / 1.4401 | X5CrNiMo 17-12-2 / 1.4401 |
| 7 | Seal adapter | X20Cr13 / 1.4021 | GX5CrNoMo191102 / 1.4408 |
| 8 | Gasket | Graphite | Graphite |
| 9 | Yoke | GP240GH+N / 1.0619N | GX5CrNoMo191102 / 1.4408 |
| 10 | Stud bolt | 25CrMo4 / 1.7218 | A4-70 |
| 11 | Hexagon nut | 25CrMo4 / 1.7218 | A4 |
| 12 | Packing | Graphite | X5CrNiMo 17-12-2 / 1.4401 |
| 13 | Gland flange | GP240GH+N / 1.0619N | GX5CrNoMo191102 / 1.4408 |
| 14 | Guide piece | 13 Cr | PN16:X6CrNiMoTi17-12-2 / 1.4571<br>PN40:X5CrNiMo 17-12-2 / 1.4401 |
| 15 | Indicator | Carbon steel / 1.0036 | PN16: Carbon steel / 1.0036<br>PN40: Stainless steel |
| 16 | Threaded bush | GJS-400-15 / 0.7040 | PN16: Carbon Stahl / 1.0036<br>PN40: GJS-400-15 / 0.7040 |
| 17 | Grease niple | Carbon steel / 1.0036 | Stainless steel |
| 18 | Handwheel | Carbon steel / 1.0036 | Carbon steel / 1.0036 |
| 19 | Cover | Carbon steel / 1.0036 | Carbon steel / 1.0036 |
| 20 | Hinged screw | 25CrMo4 / 1.7218 | Stainless steel |
| 21 | Nut | 25CrMo4 / 1.7218 | Stainless steel |
| 22 | Lock bolt | Stainless steel | Stainless steel |
| 23 | Weld-on piece | X20Cr13 / 1.4021 | X5CrNiMo 17-12-2 / 1.4401 |

## Dimensions:

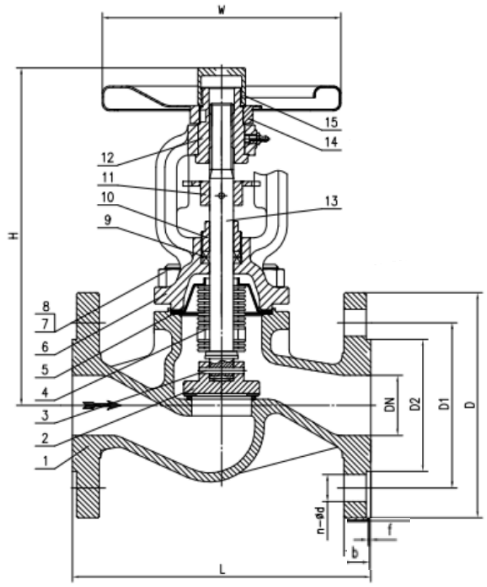



Illustration applies for AV05:
PN16 from DN65 to DN100
PN40 from DN15 to DN100

Illustration applies for AV06:
PN16 from DN65 to DN150
PN40 from DN15 to DN100

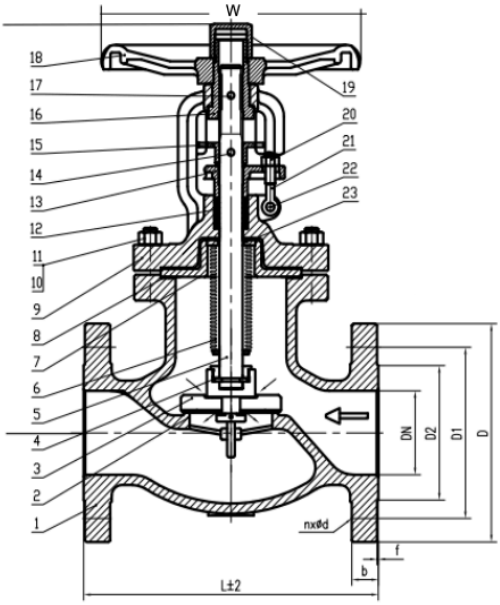



Illustration applies for AV05:
PN16 from DN125 to DN250
PN40 from DN125 to DN250

Illustration applies for AV06:
PN16 from DN200 to DN250
PN40 from DN125 to DN250

| | DN | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PN16 | W | - | - | - | - | - | - | 225 | 250 | 300 | 350 | 400 | 500 | 500 |
| | L | - | - | - | - | - | - | 290 | 310 | 350 | 400 | 480 | 600 | 730 |
| | H | - | - | - | - | - | - | 300 | 335 | 370 | 390 | 400 | 495 | 660 |
| | D | - | - | - | - | - | - | 185 | 200 | 220 | 250 | 285 | 340 | 405 |
| | D1 | - | - | - | - | - | - | 145 | 160 | 180 | 210 | 240 | 295 | 355 |
| | D2 | - | - | - | - | - | - | 122 | 138 | 158 | 188 | 212 | 268 | 320 |
| | b | - | - | - | - | - | - | 18 | 20 | 20 | 22 | 22 | 24 | 26 |
| | f | - | - | - | - | - | - | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| | n x ∅d | - | - | - | - | - | - | 4/8*x18 | 8x18 | 8x18 | 8x18 | 8x22 | 12x22 | 12x26 |
| | Nm | - | - | - | - | - | - | 55 | 70 | 90 | 110 | 135 | 180 | 270 |
| | Stroke | - | - | - | - | - | - | 4,0 | 4,0 | 8,0 | 7,0 | 8,0 | 12,0 | 16,0 |
| | Weight | - | - | - | - | - | - | 19,0 | 28,0 | 42,0 | 55,0 | 82,0 | 125,0 | 265,0 |
| PN40 | W | 140 | 140 | 160 | 160 | 180 | 180 | 225 | 250 | 300 | 350 | 400 | 500 | 500 |
| | L | 130 | 150 | 160 | 180 | 200 | 230 | 290 | 310 | 350 | 400 | 480 | 600 | 730 |
| | H | 185 | 185 | 220 | 220 | 235 | 255 | 300 | 335 | 370 | 390 | 400 | 495 | 660 |
| | D | 95 | 105 | 115 | 140 | 150 | 165 | 185 | 200 | 235 | 270 | 300 | 375 | 450 |
| | D1 | 65 | 75 | 85 | 100 | 110 | 125 | 145 | 160 | 190 | 220 | 250 | 320 | 385 |
| | D2 | 45 | 58 | 68 | 78 | 88 | 102 | 122 | 138 | 162 | 188 | 218 | 285 | 345 |
| | b | 16 | 18 | 18 | 18 | 18 | 20 | 22 | 24 | 24 | 26 | 28 | 34 | 38 |
| | f | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| | n x ∅d | 4x14 | 4x14 | 4x14 | 4x18 | 4x18 | 4x18 | 8x18 | 8x18 | 8x22 | 8x26 | 8x26 | 12x30 | 12x33 |
| | Nm | 10 | 13 | 16 | 22 | 30 | 40 | 55 | 70 | 90 | 110 | 135 | 180 | 270 |
| | Stroke | 6,0 | 6,0 | 8,0 | 8,0 | 13,0 | 13,0 | 16,0 | 20,0 | 25,0 | 32,0 | 40,0 | 50,0 | 70,0 |
| | Weight | 5,0 | 6,0 | 7,0 | 8,0 | 10,0 | 13,0 | 19,0 | 25,0 | 43,0 | 62,0 | 92,0 | 148,0 | 210,0 |

*Optionally available with 8-hole flange bore according to DIN EN 1092-1/-2 instead of 4-hole bore

## Options (on request):

- Chainwheel
- Position indicator
- Lock screw
- Packing and gasket PTFE
- Sealing water connection

## Article number:

| Type | Pressure stage | Version | Connection | Size |
|---|---|---|---|---|
| **AV05 – Cast steel** | **1 – PN40** | **1 – Standard** | **00 – Flange** | 03 – DN15 |
| AV06 – Stainless steel | | 2 – Throttling cone* | | 04 – DN20 |
| | | | | 05 – DN25 |
| | | | | 06 – DN32 |
| | | | | 07 – DN40 |
| | | | | **08 – DN50** |

| Type | Pressure stage | Version | Connection | Size |
|---|---|---|---|---|
| AV05 – Cast steel | 0 – PN16 | 1 – Standard | 00 – Flange | 09 – DN65 |
| AV06 – Stainless steel | 1 – PN40 | 2 – Throttling cone* | | 10 – DN80** |
| | | | | 11 – DN100 |
| | | | | 12 – DN125 |
| | | | | 13 – DN150 |
| | | | | 14 – DN200 |
| | | | | 15 – DN250 |

**Example No. AV05110008:**

| | | | | |
|---|---|---|---|---|
| **AV05** | **1** | **1** | **00** | **08** |

Globe valve made of cast steel
Pressure stage: PN40
Version: Standard
Connection: Flange
Size: DN50

*version with throttling cone only available to diameter DN200

**cast steel version only available in PN40

Image similar, subject change without notice.