# GEMÜ 536

## Pneumatically operated globe valve

## Features

- Available as shut-off or control valve
- Precise controllability thanks to guided regulating cage and actuator membrane
- Flow rate values of up to 380 m³/h
- Suitable for vacuum up to 20 mbar (a)
- Versions for higher temperatures are available on request

## Description

The GEMÜ 536 2/2-way globe valve has a robust low maintenance membrane actuator and is pneumatically operated. The valve is particularly suitable for use as a control valve. The valve plug is fixed to the spindle in such a way as to allow flexing during closure in order to ensure tight shut off. The valve spindle is sealed by a self-adjusting gland packing providing low maintenance and reliable valve spindle sealing even after a long service life. A wiper ring fitted in front of the gland packing protects the seal against contamination and damage. A wiper ring fitted in front of the gland packing protects the seal against contamination and damage.

## Technical specifications

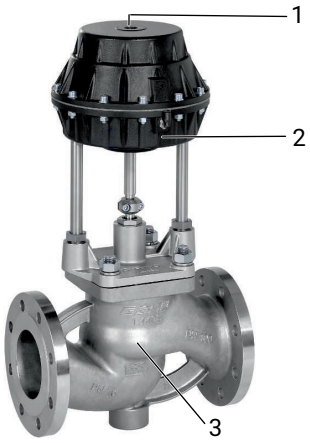
- **Media temperature :** -10 to 210 °C
- **Ambient temperature:** -10 to 60 °C
- **Operating pressure :** 0 to 40 bar
- **Nominal sizes:** DN 32 to 150
- **Body configurations:** 2/2-way body
- **Connection types:** Flange
- **Connection standards:** ANSI I EN I ISO
- **Body materials:** 1.4408, investment casting material I EN-GJS-400-18-LT, SG iron material
- **Seat seal materials:** PTFE I PTFE, reinforced
- **Conformities:** ATEX I CRN I EAC

Technical data depends on the respective configuration

further information
webcode: GW-536

# Product description

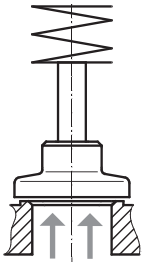
## Construction




| Item | Name | Materials |
|---|---|---|
| 1 | Optical position indicator | |
| 2 | Membrane actuator | Metal |
| 3 | Valve body | 1.4408, investment casting<br>EN-GJS-400-18-LT (GGG 40.3), SG iron |

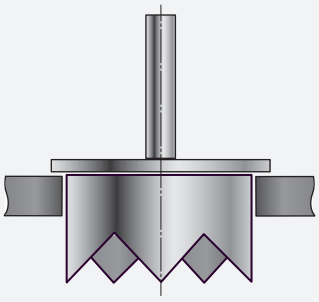
## Flow direction

The flow direction is indicated by an arrow on the valve body.



Flow under the seat

## Regulating cage

| Regulating cage |
|---|
|  |

## *GEMÜ CONEXO*

The interaction of valve components that are equipped with RFID chips and an associated IT infrastructure actively increase process reliability.

Thanks to serialization, every valve and every relevant valve component such as the body, actuator or diaphragm, and even automation components, can be clearly traced and read using the CONEXO pen RFID reader. The CONEXO app, which can be installed on mobile devices, not only facilitates and improves the "installation qualification" process, but also makes the maintenance process much more transparent and easier to document. The app actively guides the maintenance technician through the maintenance schedule and directly provides him with all the information assigned to the valve, such as test reports, testing documentation and maintenance histories. The CONEXO portal acts as a central element, helping to collect, manage and process all data.

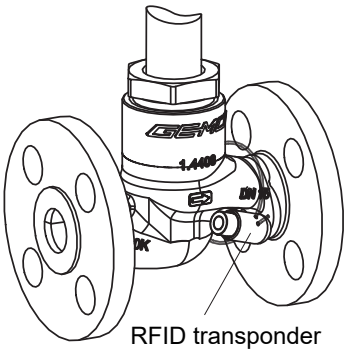
**For further information on GEMÜ CONEXO please visit:**
www.gemu-group.com/conexo

### Ordering

GEMÜ Conexo must be ordered separately with the ordering option "CONEXO".

In the corresponding design with CONEXO, this product has an RFID chip for electronic identification purposes. The position of the RFID chip can be seen below.

**Installing the RFID chip**



# Availability

## Actuator assignment

| DN | Control function | | | | | | |
|---|---|---|---|---|---|---|---|
| | Normally closed (NC) | | | | | Normally open (NO), double acting (DA) | |
| | Actuator size | | | | | | |
| | 3A1 | 3A2 | 3A3 | 4A2 | 4A3 | 3AN | 4AN |
| **32** | X | X | - | - | - | - | - |
| **40** | X | X | X | - | - | - | - |
| **50** | X | X | X | X | | X | - |
| **65** | X | X | X | X | | X | - |
| **80** | X | X | X | X | X | X | - |
| **100** | - | X | X | X | X | X | - |
| **125** | - | - | X | X | X | X | X |
| **150** | - | - | - | X | X | X | X |

## Flange

| DN | Connection type code [1] | | | | |
|---|---|---|---|---|---|
| | 8 | | 11 | 39 | |
| | Material code [2] | | | | |
| | 37 | 90 | 37 | 37 | 90 |
| **32** | - | - | X | - | - |
| **40** | - | - | X | - | - |
| **50** | - | - | X | - | - |
| **65** | X | X | X | X | X |
| **80** | X | X | X | X | X |
| **100** | X | X | X | X | X |
| **125** | X | X | - | X | X |
| **150** | X | X | - | X | X |

1) **Connection type**
Code 8: Flange EN 1092, PN 16, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1
Code 11: Flange EN 1092, PN 40, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1
Code 39: Flange ANSI Class 125/150 RF, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1

2) **Valve body material**
Code 37: 1.4408, investment casting
Code 90: EN-GJS-400-18-LT (GGG 40.3)

## Type of design

| Type of design | |
|---|---|
| Media temperature -10 to 210 °C (code 2023) | Seat seal (code 5G) |

# Order data

The order data provide an overview of standard configurations.

Please check the availability before ordering. Other configurations available on request.

## Order codes

| 1 Type | Code |
|---|---|
| Globe valve, pneumatically operated,<br>metal membrane actuator | 536 |

| 2 DN | Code |
|---|---|
| DN 32 | 32 |
| DN 40 | 40 |
| DN 50 | 50 |
| DN 65 | 65 |
| DN 80 | 80 |
| DN 100 | 100 |
| DN 125 | 125 |
| DN 150 | 150 |

| 3 Housing configuration | Code |
|---|---|
| 2/2-way body | D |

| 4 Connection type | Code |
|---|---|
| Flange EN 1092, PN 16, form B,<br>face-to-face dimension FTF EN 558 series 1, ISO 5752,<br>basic series 1 | 8 |
| Flange EN 1092, PN 40, form B,<br>face-to-face dimension FTF EN 558 series 1, ISO 5752,<br>basic series 1 | 11 |
| Flange ANSI Class 125/150 RF,<br>face-to-face dimension FTF EN 558 series 1, ISO 5752,<br>basic series 1 | 39 |

| 5 Valve body material | Code |
|---|---|
| 1.4408, investment casting | 37 |
| EN-GJS-400-18-LT (GGG 40.3) | 90 |

| 6 Seat seal | Code |
|---|---|
| PTFE | 5 |
| PTFE, glass fibre reinforced | 5G |
| **Note:** Code 5, DN 65–100 only | |

| 7 Control function | Code |
|---|---|
| Normally closed (NC) | 1 |
| Normally open (NO) | 2 |
| Double acting (DA) | 3 |
| **Note:** Control function 2 and 3 not for DN 32–40 | |

| 8 Actuator version | Code |
|---|---|
| Actuator size 3A1 | 3A1 |
| Actuator size 3A2 | 3A2 |
| Actuator size 3A3 | 3A3 |
| Actuator size 3AN | 3AN |
| Actuator size 4A2 | 4A2 |
| Actuator size 4A3 | 4A3 |
| Actuator size 4AN | 4AN |

| 9 Regulating cone | Code |
|---|---|
| Without | |
| Please find the number of the optional regulating cone (R-No.) for the linear or equal-percentage modified regulating cone in the Kv value table. | R.... |

| 10 Type of design | Code |
|---|---|
| Standard | |
| For higher operating temperatures | 2023 |

| 11 Special version | Code |
|---|---|
| Standard | |
| Special version for oxygen,<br>(max. temperature 60 °C; max. operating pressure 10 bar),<br>media wetted seal materials and auxiliary materials with BAM testing | S |

| 12 CONEXO | Code |
|---|---|
| Without | |
| Integrated RFID chip for electronic identification and traceability | C |

## Order example

| Ordering option | Code | Description |
|---|---|---|
| 1 Type | 536 | Globe valve, pneumatically operated,<br>metal membrane actuator |
| 2 DN | 80 | DN 80 |
| 3 Housing configuration | D | 2/2-way body |
| 4 Connection type | 8 | Flange EN 1092, PN 16, form B,<br>face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1 |
| 5 Valve body material | 37 | 1.4408, investment casting |
| 6 Seat seal | 5 | PTFE |
| 7 Control function | 1 | Normally closed (NC) |

Order data

| Ordering option | Code | Description |
|---|---|---|
| 8 Actuator version | 3A3 | Actuator size 3A3 |
| 9 Regulating cone | | Without |
| 10 Type of design | | Standard |
| 11 Special version | | Standard |
| 12 CONEXO | | Without |

# Technical data

## Medium

**Working medium:** Corrosive, inert, gaseous and liquid media which have no negative impact on the physical and chemical properties of the body and seal material.

**Control medium:** Inert gases

**Max. permissible viscosity:** 600 mm²/s (cSt)
Other versions for lower/higher temperatures and higher viscosities on request.

## Temperature

**Media temperature:** -10 — 180 °C
-10 — 210 °C only with design ordering option (code 2023)

**Ambient temperature:** -10 — 60 °C

**Control medium temperature:** 0 — 60 °C

**Storage temperature:** 0 — 40 °C

## Pressure

**Operating pressure:**

| DN | Control function | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Normally closed (NC) | | | | | Normally open (NO) | | Double acting (DA) | |
| | Actuator size | | | | | | | | |
| | 3A1 | 3A2 | 3A3 | 4A2 | 4A3 | 3AN | 4AN | 3AN | 4AN |
| **32*** | 36.0 | 40.0 | - | - | - | - | - | - | - |
| **40*** | 31.0 | 36.0 | 40.0 | - | - | - | - | | - |
| **50*** | 12.0 | 25.0 | 35.0 | 40.0 | - | 40.0 | - | 40.0 | - |
| **65** | 8.0 | 14.0 | 18.0 | 18.0 | - | 16.0 | - | 16.0 | - |
| **80** | 5.0 | 8.5 | 11.0 | 19.0 | 19.0 | 16.0 | - | 16.0 | - |
| **100** | - | 5.5 | 7.0 | 12.0 | 18.0 | 14.0 | - | 16.0 | - |
| **125** | - | - | 4.5 | 6.0 | 10.0 | 9.0 | 16.0 | 10.0 | 16.0 |
| **150** | - | - | - | 4.0 | 7.0 | 6.0 | 16.0 | 6.0 | 16.0 |

*DN 32, 40, 50 only with seat seal code 5G
All pressures are gauge pressures.
The max. operating pressure is dependent on the pressure rating
For max. operating pressures the pressure / temperature correlation must be observed.

**Control pressure:**

| DN | Control function | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Normally closed (NC) | | | | | Normally open (NO) | | Double acting (DA) | |
| | Actuator size | | | | | | | | |
| | 3A1 | 3A2 | 3A3 | 4A2 | 4A3 | 3AN | 4AN | 3AN | 4AN |
| **32*** | 3.0 - 7.0 | 5.0 - 7.0 | - | - | - | - | - | - | - |
| **40*** | 3.0 - 5.0 | 5.0 - 7.0 | 6.5 - 7.0 | - | - | - | - | - | - |
| **50*** | 3.0 - 7.0 | 5.0 - 7.0 | 6.5 - 7.0 | 4.0 - 7.0 | - | max. 5.5 | - | max. 5.0 | - |
| **65** | 3.0 - 7.0 | 5.0 - 7.0 | 6.5 - 7.0 | 4.0 - 7.0 | - | max. 7.0 | - | max. 7.0 | - |
| **80** | 3.0 - 7.0 | 5.0 - 7.0 | 6.5 - 7.0 | 4.0 - 7.0 | 5.5 - 7.0 | max. 7.0 | - | max. 7.0 | - |
| **100** | - | 5.0 - 7.0 | 6.5 - 7.0 | 4.0 - 7.0 | 5.5 - 7.0 | max. 7.0 | - | max. 7.0 | - |
| **125** | - | - | 6.5 - 7.0 | 4.0 - 7.0 | 5.5 - 7.0 | max. 7.0 | max. 7.0 | max. 7.0 | max. 7.0 |
| **150** | - | - | - | 4.0 - 7.0 | 5.5 - 7.0 | max. 7.0 | max. 7.0 | max. 7.0 | max. 7.0 |

*DN 32, 40, 50 only with seat seal code 5G
All pressures are gauge pressures.

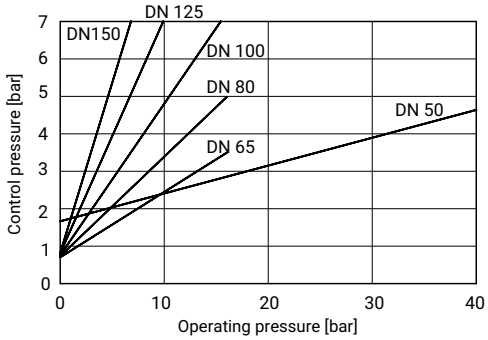
Observe control pressure / operating pressure diagram

**Control pressure/operating pressure diagram:**

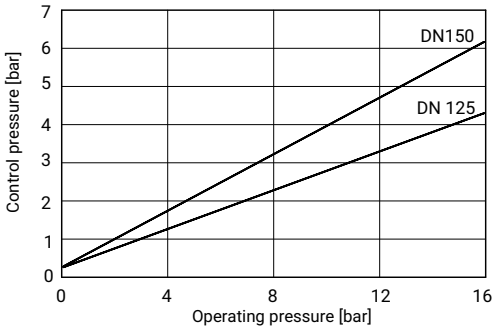
**Control function**

**Normally open (NO) (code 2), double acting (DA) (code 3)**

Actuator size 3AN




Actuator size 4AN




**Note:** In the diagrams above, the minimum required control pressure dependent on the operating pressure is indicated for "normally open" actuators (control function 2). For "double acting" (control function 3) actuators, the required control pressure may be 1 bar lower than on the diagram.

**Pressure/temperature correlation:**

| Connection type code | Material code | Permissible operating pressures in bar at temperature in °C | | | | | |
|---|---|---|---|---|---|---|---|
| | | RT | 100 | 150 | 200 | 250 | 300 |
| **8** | **37** | 16.0 | 16.0 | 14.5 | 13.4 | 12.7 | 11.8 |
| **11** | **37** | 40.0 | 40.0 | 36.3 | 33.7 | 31.8 | 29.7 |
| **39** | **37** | 19.0 | 16.0 | 14.8 | 13.6 | 12.0 | 10.2 |
| **8** | **90** | 16.0 | 16.0 | 15.5 | 14.7 | 13.9 | 11.2 |
| **39** | **90** | 17.0 | 16.0 | 14.8 | 13.9 | 12.1 | 10.2 |

All pressures are gauge pressures.
The valves are suitable for temperatures as low as -10 °C
RT = room temperature

**Pressure rating:**

PN 16

PN 40

**Kv values:**

| DN | Kv values |
|---|---|
| **32** | 20.0 |
| **40** | 30.0 |
| **50** | 50.0 |
| **65** | 95.0 |
| **80** | 140.0 |
| **100** | 200.0 |
| **125** | 290.0 |
| **150** | 380.0 |

Kv values in m³/h
Kv values determined in accordance with DIN EN 60534. The Kv value specifications refer to the largest actuator for the respective nominal size. The Kv values for other product configurations (e.g. other connections or body materials) may differ.

**Kv value assignment, regulating cage number**

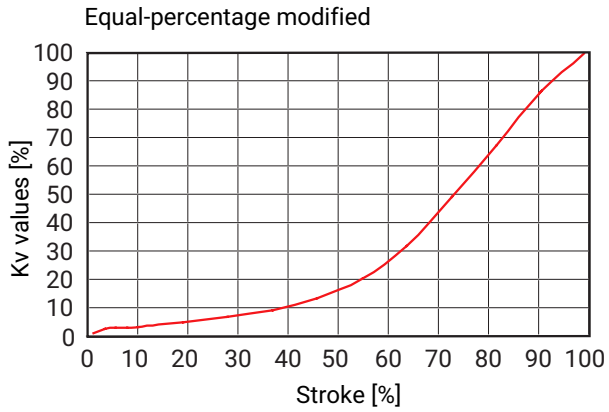
**Valve body material 1.4408 (code 37), EN-GJS-400-18-LT (code 90)**

| DN | Actuator size | Equal-percentage (mod.) | Kv value |
|---|---|---|---|
| **32** | 3 | RS319 | 16.0 |
| **40** | 3 | RS320 | 25.0 |
| **50** | 3 | RS316 | 40.0 |
| | 4 | RS315 | 40.0 |
| **65** | 3 | RS300 | 70.0 |
| **80** | 3 | RS301 | 100.0 |
| | 4 | RS302 | 100.0 |
| **100** | 3 | RS303 | 100.0 |
| | 4 | RS304 | 100.0 |
| | 3 | RS305 | 160.0 |
| | 4 | RS306 | 160.0 |
| **125** | 3 | RS307 | 160.0 |
| | 4 | RS308 | 160.0 |
| | 3 | RS309 | 225.0 |
| | 4 | RS310 | 225.0 |
| **150** | 3* | RS317 | 200.0 |
| | 4 | RS312 | 200.0 |
| | 3* | RS318 | 290.0 |
| | 4 | RS314 | 290.0 |

*only control function 2 and 3
Kv values in m³/h

**Kv values:**

**Example Kv value diagram**




The diagram shows the approximative curve of the Kv value characteristic.

**Leakage rate:**

**Open/Close valve**

| Seat seal | Standard | Test procedure | Leakage rate | Test medium |
|---|---|---|---|---|
| PTFE | DIN EN 12266-1 | P12 | A | Air |

**Control valve**

| Seat seal | Standard | Test procedure | Leakage rate | Test medium |
|---|---|---|---|---|
| PTFE | DIN EN 60534-4 | 1 | VI | Air |

**Filling volume:**

Actuator size 3: 2.5 dm³
Actuator size 4: 6.8 dm³

## Product conformity

**Pressure Equipment Directive:** 2014/68/EU

**Machinery Directive:** 2006/42/EC

**Explosion protection:** ATEX (2014/34/EU) on request

## Mechanical data

**Weight:**

Total weight

| DN | Actuator size | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 3A1 | 3A2 | 3A3 | 4A2 | 4A3 | 3AN | 4AN | 3AN | 4AN |
| | Control function | | | | | | | | |
| | 1 | | | | | 2 | | 3 | |
| **32** | 32.0 | 34.0 | - | - | - | - | - | - | - |
| **40** | 31.0 | 33.0 | 34.0 | - | - | - | - | - | - |
| **50** | 35.0 | 37.0 | 38.0 | 68.0 | - | 41.0 | - | 40.0 | - |
| **65** | 37.0 | 39.0 | 40.0 | 70.5 | - | 43.0 | - | 42.0 | - |
| **80** | 40.0 | 42.0 | 43.0 | 73.0 | 76.0 | 46.0 | - | 45.0 | - |
| **100** | - | 53.0 | 54.0 | 80.0 | 87.0 | 57.0 | - | 56.0 | - |
| **125** | - | - | 66.0 | 95.3 | 99.0 | 69.0 | 89.0 | 66.0 | 88.0 |
| **150** | - | - | - | 117.0 | 118.0 | 88.0 | 108.0 | 87.0 | 107.0 |

Weights in kg

**Valve body**

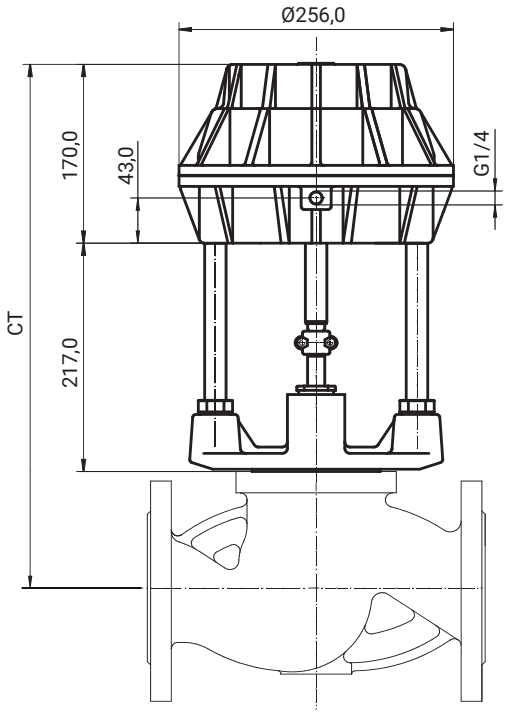
| DN | Weight |
|---|---|
| **32** | 5.3 |
| **40** | 6.3 |
| **50** | 11.5 |
| **65** | 12.7 |
| **80** | 15.4 |
| **100** | 23.0 |
| **125** | 33.5 |
| **150** | 42.5 |

Weights in kg

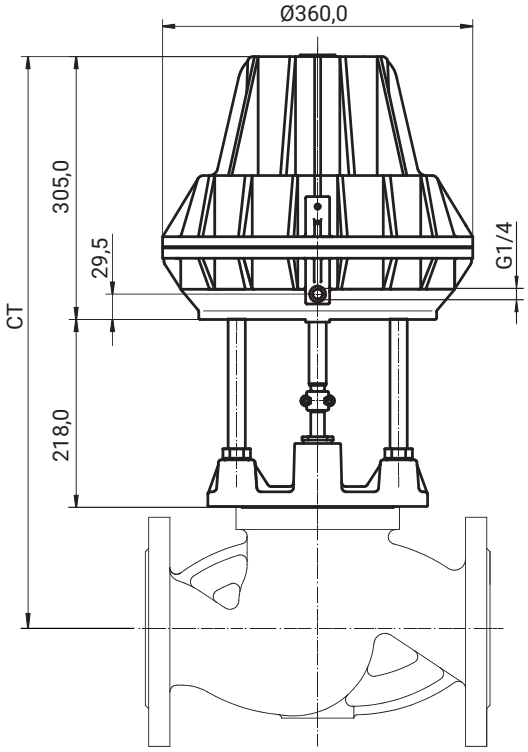
# Dimensions

## Installation dimensions

**Control function 1 – normally closed (NC)**




Actuator size 3A1, 3A2, 3A3

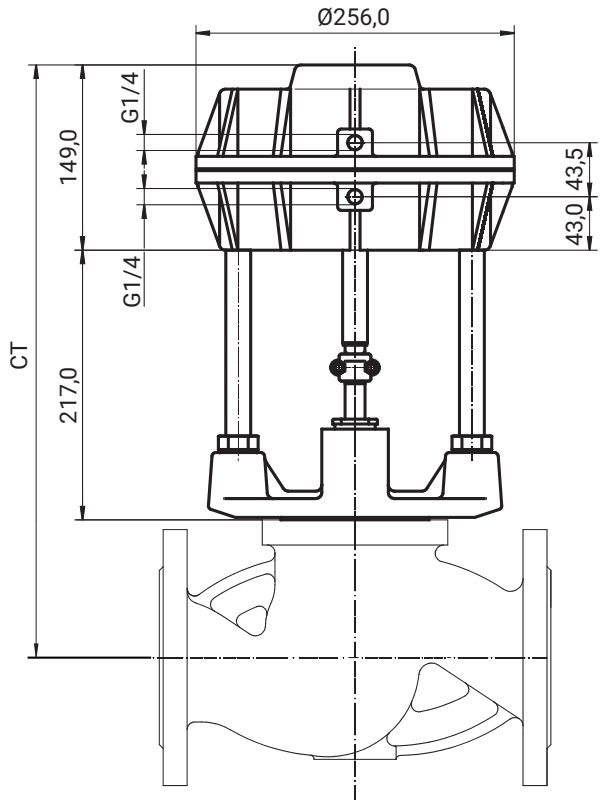



Actuator size 4A2, 4A3

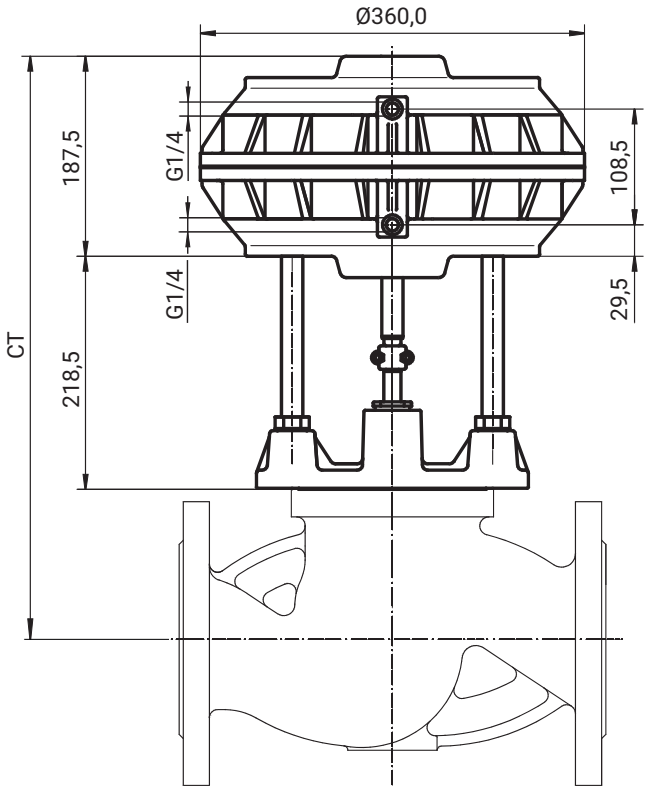
| DN | Actuator size (code) | |
|---|---|---|
| | 3A1, 3A2, 3A3 | 4A2, 4A3 |
| | CT | |
| **32** | 393.3 | - |
| **40** | 393.3 | - |
| **50** | 467.0 | 603.0 |
| **65** | 484.0 | 620.0 |
| **80** | 496.0 | 632.0 |
| **100** | 517.0 | 653.0 |
| **125** | 539.0 | 675.0 |
| **150** | 559.0 | 695.0 |

Dimensions in mm

**Control function 2 – normally open (NO)**
**Control function 3 – double acting (DA)**




Actuator size 3AN



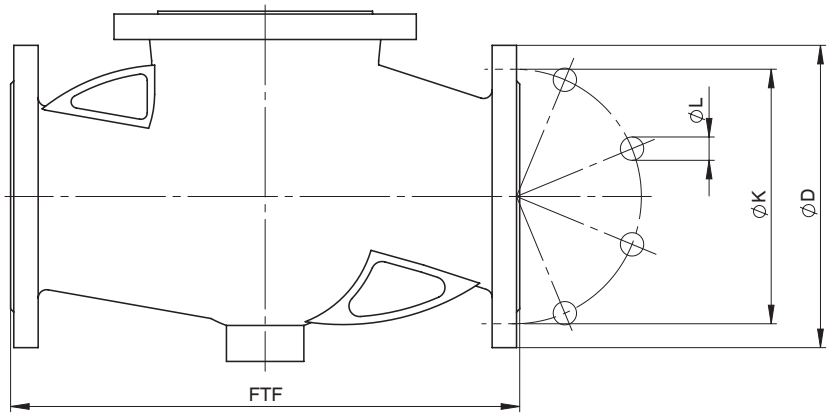

Actuator size 4AN

| DN | Actuator size (code) | |
|---|---|---|
| | 3AN | 4AN |
| | CT | |
| **50** | 446.0 | 486.0 |
| **65** | 463.0 | 503.0 |
| **80** | 475.0 | 515.0 |
| **100** | 496.0 | 536.0 |
| **125** | 518.0 | 558.0 |
| **150** | 538.0 | 578.0 |

Dimensions in mm

# Body dimensions

## Flange EN (code 8)




**Connection type flange, length EN 558 (code 8)** [1], **investment casting material (code 37), EN-GJS-400-18-LT (code 90)** [2]

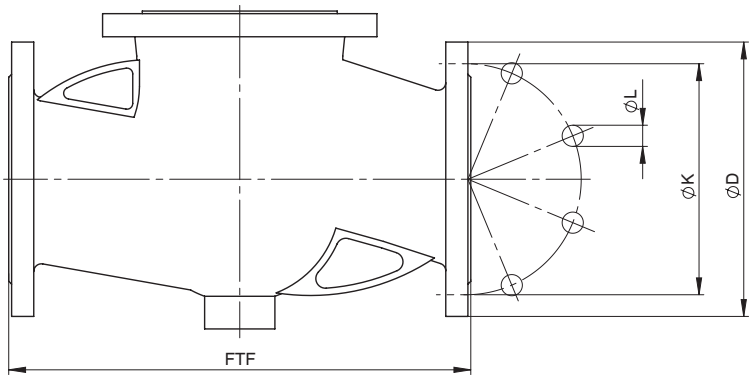
| DN | NPS | ø D | FTF | ø K | ø L | n |
|---|---|---|---|---|---|---|
| **65** | **2½"** | 185 | 290 | 145 | 18 | 4 |
| **80** | **3"** | 200 | 310 | 160 | 18 | 8 |
| **100** | **4"** | 220 | 350 | 180 | 18 | 8 |
| **125** | **5"** | 250 | 400 | 210 | 18 | 8 |
| **150** | **6"** | 285 | 480 | 240 | 22 | 8 |

Dimensions in mm
n = number of bolts

1) **Connection type**
Code 8: Flange EN 1092, PN 16, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1

2) **Valve body material**
Code 37: 1.4408, investment casting
Code 90: EN-GJS-400-18-LT (GGG 40.3)

## *Flange EN (code 11)*




**Connection type flange, length EN 558 (code 11),** [1] **investment casting material (code 37)** [2]

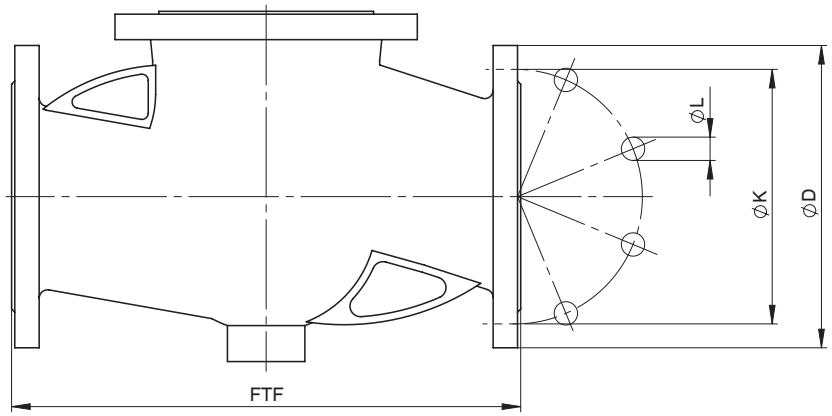
| DN | NPS | ø D | FTF | ø k | ø L | n |
|---|---|---|---|---|---|---|
| **32** | **1¼"** | 140.0 | 180.0 | 100.0 | 18.0 | 4 |
| **40** | **1½"** | 150.0 | 200.0 | 110.0 | 18.0 | 4 |
| **50** | **2"** | 165.0 | 230.0 | 125.0 | 18.0 | 4 |
| **65** | **2½"** | 185.0 | 290.0 | 145.0 | 18.0 | 8 |
| **80** | **3"** | 200.0 | 310.0 | 160.0 | 18.0 | 8 |
| **100** | **4"** | 235.0 | 350.0 | 190.0 | 22.0 | 8 |

Dimensions in mm
n = number of bolts

1) **Connection type**
Code 11: Flange EN 1092, PN 40, form B, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1

2) **Valve body material**
Code 37: 1.4408, investment casting

## *Flange ANSI Class (code 39)*




**Connection type flange, length EN 558 (code 39) [1], investment casting material (code 37), SG iron material (code 90) [2]**

| DN | NPS | ø D | FTF | ø k | ø L | n |
|---|---|---|---|---|---|---|
| **65** | **2½"** | 180.0 | 290.0 | 139.7 | 19.0 | 4 |
| **80** | **3"** | 190.0 | 310.0 | 152.4 | 19.0 | 4 |
| **100** | **4"** | 230.0 | 350.0 | 190.5 | 19.0 | 8 |
| **125** | **5"** | 255.0 | 400,0 | 215,9 | 22.2 | 8 |
| **150** | **6"** | 280.0 | 480,0 | 241,3 | 22.2 | 8 |

Dimensions in mm
n = number of bolts

1) **Connection type**
Code 39: Flange ANSI Class 125/150 RF, face-to-face dimension FTF EN 558 series 1, ISO 5752, basic series 1

2) **Valve body material**
Code 37: 1.4408, investment casting
Code 90: EN-GJS-400-18-LT (GGG 40.3)

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Subject to alteration | 03.2025 | 88426776