

ABO valve

we make processes work

PTFE LINED BUTTERFLY VALVES

Body type
Interflanged

WAFER type with through holes
LUG type with threaded holes

Nominal size

DN50 - DN400

Working pressure

6 bar / 10 bar

Flange connection

PN6 / PN10 / PN16 / Class 150

Working temperature

-40°C / +200°C

Working media

Purified industrial water
Potable water
Industrial cleaners
Chemicals
Beverages
Food
Aggressive liquids
Toxic media
Caustic media
Paper mill stock
Drugs and pharmaceuticals
Chlorine / Alkalines / Acids
Dyes

Tightness

Class A

Features

Concentric design
ATEX design

High-performance valve for high-demanding industries

Bidirectional tightness

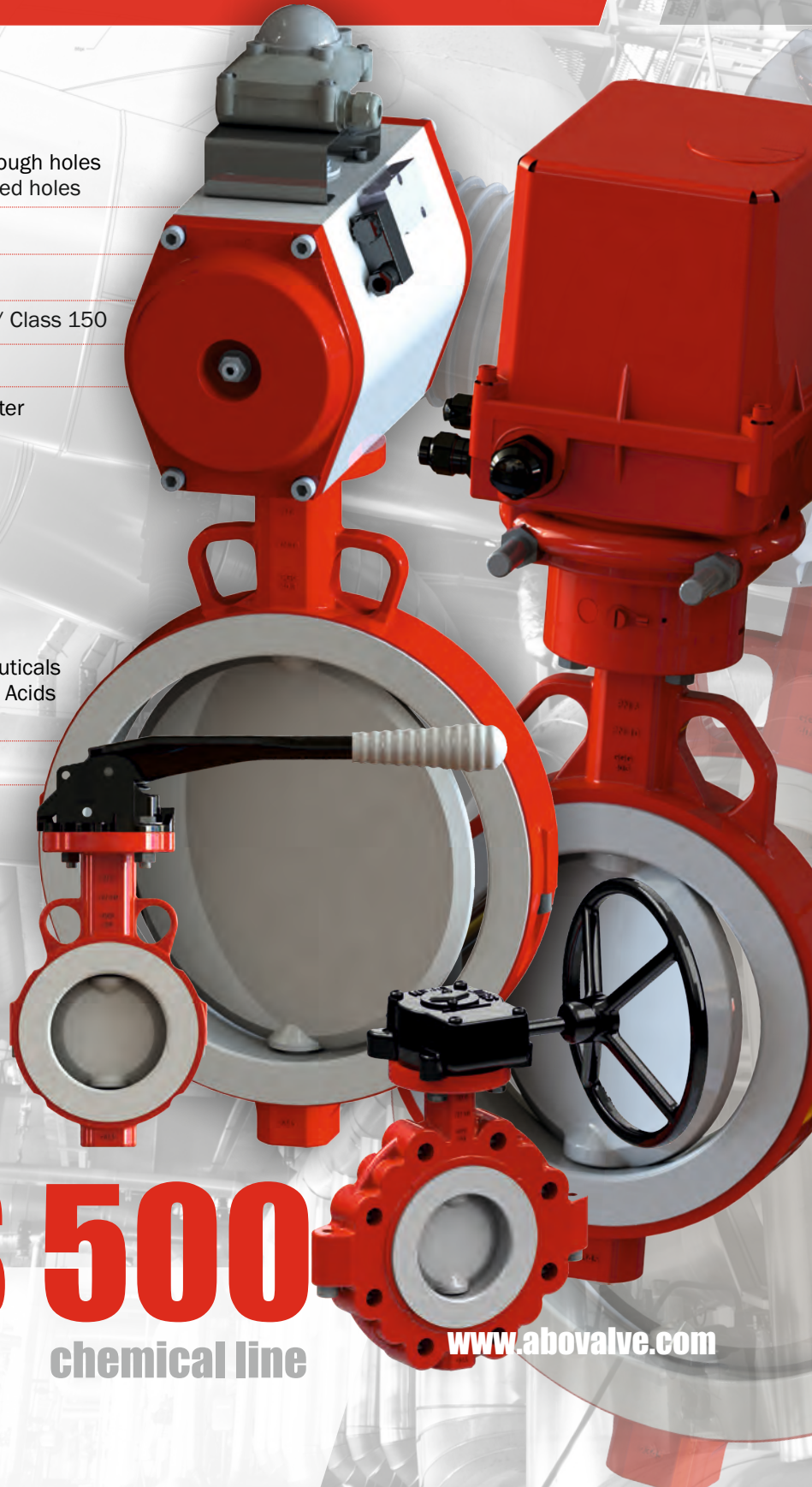
PTFE seat for high-temperature working settings

Split body

SERIES 500

chemical line

www.abovalve.com



GENERAL DESCRIPTION

SERIES 500
CHEMICAL LINE

Czech Industrial
Valve Manufacturer

Bidirectional bubble-tight concentric butterfly valves of Series 500 with PTFE sealing

are offered for very clean manufacturing environments and are used in various industries like:

- pure industrial water treatment
- chemical industry (acids, alkalines)
- pharmaceutical/sanitary industry
- food and beverage industry
- paper industry
- pulp processing
- corrosive, toxic and caustic media
- production of chlorine
- dyes manufacturing and processing

Basic properties

- **concentric design**
- **bi-directional valve**
- compact PTFE „TRIM” (stem, disc, pivot)
- 3 mm PTFE coated disc
- **ATEX design, version 588:** disc provided with 3mm layer of conductive PTFE (contains graphite to improve conductivity)
- possible both vertical and horizontal pipe mounting
- fully tight in shut position
- suitable as shut-off and control valve
- easy installation
- actuating stem sealing prevents media leaking to environs
- extended neck design allows for piping insulation and enables easy access for actuator mounting
- steel PTFE impregnated bearings provide exact support of stem and pivot
- top flange according to standard EN ISO 5211 enables variable control by means of various actuator types
- red epoxy coating acc. RAL 2002 - 80 µm (as a standard)

Based on customers' particular requirements we offer

- WRAS certification for potable water
- **ATEX design**
- inspection certificate 3.1, 3.2

Valve coating

- ABO offers epoxy coated valve bodies providing excellent abrasion and atmosphere corrosion resistance
- coating colour is red acc. RAL 2002, 80 µm thick
- upon request valve bodies can be provided with special coating f.e. C3, C4 etc.



Type designation

5 9 9 B 100

- **Nominal size**
DN50 - Dn400
- **Body design**
B - WAFER with through holes
T - LUG with threaded holes
- **Seat material**
8 - conductive PTFE
9 - PTFE
- **Disc material**
8 - duplex stainless steel 1.4469
conductive PTFE coated
9 - duplex stainless steel 1.4469
PTFE coated
7 - duplex stainless steel 1.4469
with polished edges
- **Series designation**
Series 500

Standards

| | |
|----------------------------|--|
| Hydraulic test | EN 12266-1, Class A ISO 5208, Class A |
| Face-to-face length | EN 558, Series 20 ISO 5752, Series 20 |
| Flange connection | EN 1092-1 ASME B16.5 |
| Top flange | EN ISO 5211 |
| Working standard | EN 593 |
| Marking | EN 19 |
| Atex design | EN ISO 80079-36 EN IEC 60079-0 |



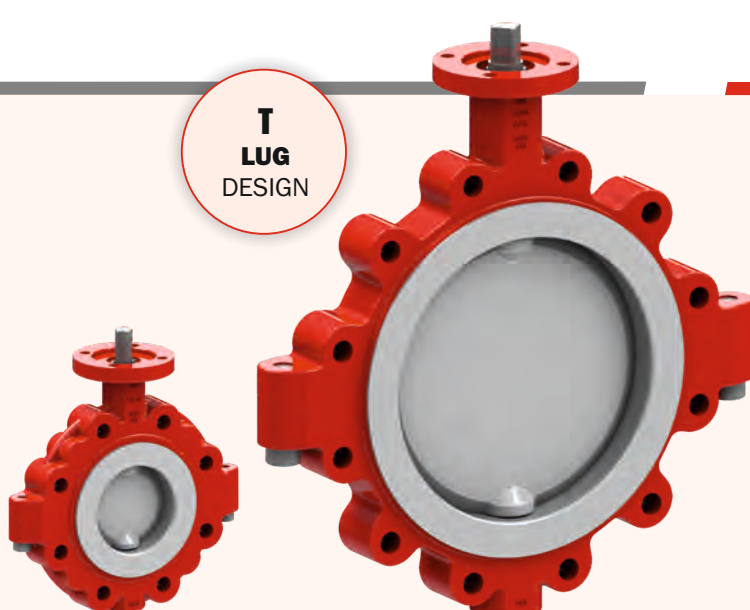
VALVE MODELS



B
WAFER
DESIGN



T
LUG
DESIGN



ATEX performance



578B



588B



578T



588T

Valve actuation



Handlever



Gearbox with handwheel



Actuator - pneumatic



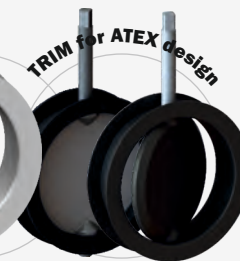
Actuator - electric



Compact "TRIM"



PTFE seat



TRIM for ATEX design



DN80B/T
Handlever



DN150B/DN80T
Gearbox
with handwheel



DN150B/DN80T
Electric actuator

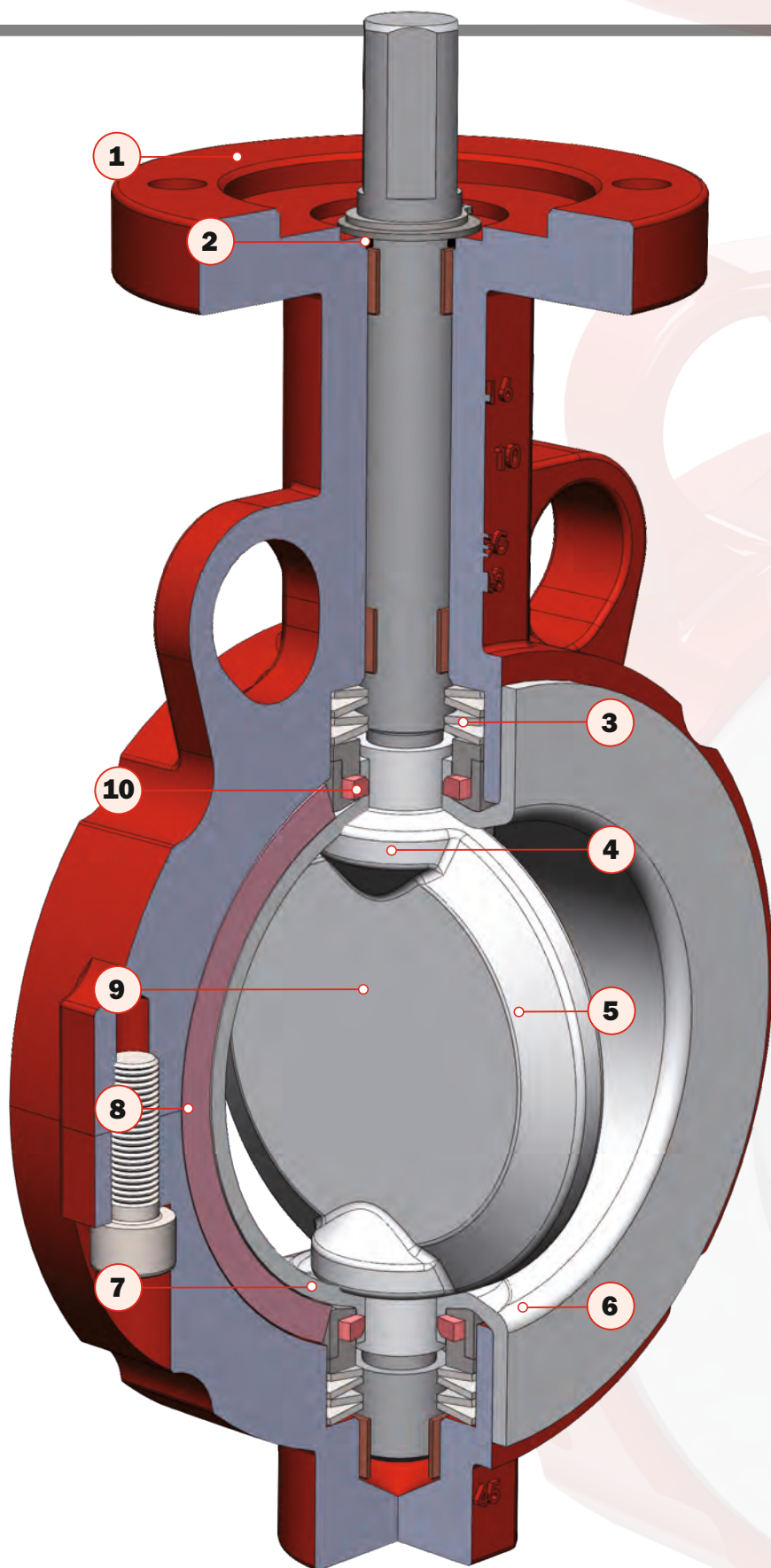


DN150B/DN80T
Pneumatic actuator

DESIGN ADVANTAGES



ABO valve



1. Top flange

- according to standard ISO 5211 enables to directly assemble any type of actuator. Flange high neck enables to insulate the actuator on the ISO flange.

2. Protection from penetrating abrasive articles

- dust protection O-ring protects stem and pivot bearings against entering abrasive articles.

3. Preloaded seal

- belleville washers in the valve neck ensure the seal pressure to disc. Double seals on both stem/pivot are standard equipment.

4. Ball sealing principle

- sealing surface of the teflon liner in the stem area has a defined ball geometry exactly reproducing the disc geometry. There are no critical transitions. Thus fluent and reliable operation is ensured.

5. Profiled disc

- lower pressure drops and higher Kv values.

6. Teflon seat

- with minimal thickness of 3 mm PTFE is manufactured by isostatic hot pressing.

7. Functional areas

- precise machining and exact alignment of the sealing components provides sealing around the stem in the functional areas.

8. Seat energizer

- silicone energizer extends completely around the seat, including the disc hub providing uniform force for bubble-tight shutoff.

9. Disc / stem / pivot

- single-piece TRIM lined with PTFE coating thick at least 3 mm. All the sealing surfaces are machined.

10. Safety elements

- bushings with the silicone rings are compressed by the belleville springs during assembly. The silicone ring presses the edge of the seat, against the edge of the disc and around the stem. This ensures tightness and protects the inner seal of the valve against the media.

MATERIAL PERFORMANCE



Standard desing

1 / 2 - Body (top / bottom part)

Ductile iron 0.7043 (GGG40.3)

3 - Disc & Stem & Pivot

Duplex stainless steel

1.4469 + PTFE

4 - Seat

PTFE

5 - Spring element

Silicone rubber / Viton

6 - Retaining ring

Stainless steel A2

7 - Washer

Stainless steel A2

8 - O-ring

Silicone rubber

9 - Sliding cover

Steel + CuSn10 + PTFE

10 - Disc spring

Stainless steel 1.4310

11 - Ring seat

Stainless steel 1.4021

12 - Ring

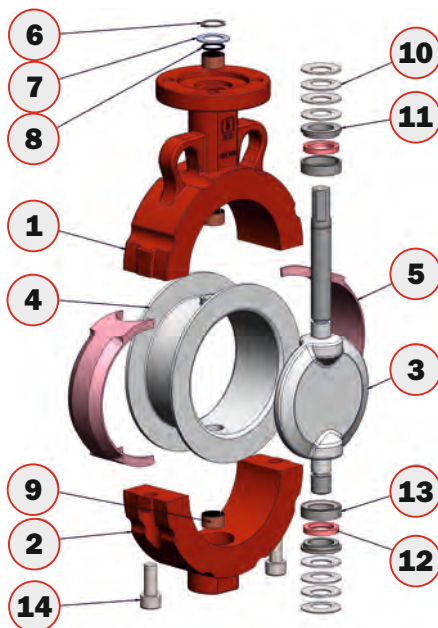
Silicone rubber

13 - Thrust washer

Stainless steel 1.4021

14 - Screw

Stainless steel A4



Disc from stainless steel
with polished edges
Disc with **PTFE coating**

ATEX design

1 - Seat

Conductive PTFE

2 - Disc & Shaft & Pivot

Stainless steel 1.4469 + conductive
PTFE coating / Stainless steel 1.4469
with polished edges

3/4 - Body (top and bottom part)

Ductile iron 0.7043 (GGG40.3)

5 - Ring seat

Stainless steel 1.4021

6 - Pressure washer

Stainless steel 1.4021

7 - Spring element

Silicone rubber

8 - Ring

Silicone rubber

9 - Sliding bush

Steel + CuSn10 + PTFE

10 - Disc spring

Stainless steel 1.4310

11 - Bolt

Stainless steel A4

12 - Retaining ring

Stainless steel A2

13 - O-Ring

Silicone rubber

14 - Washer

Stainless steel A2

15 - Fan washer

Steel - galvanized

16 - Nut

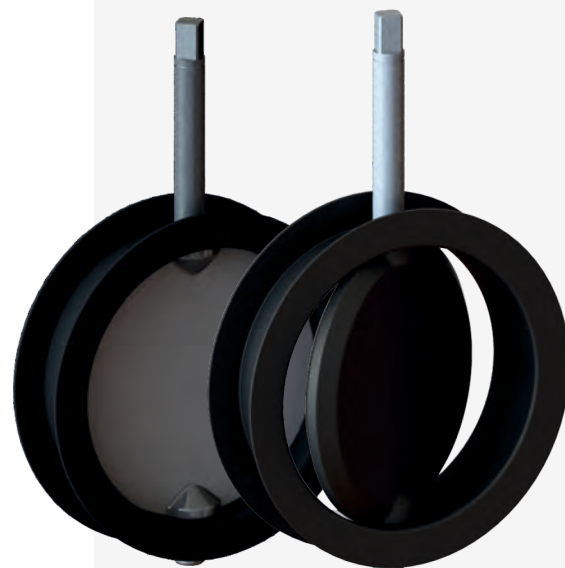
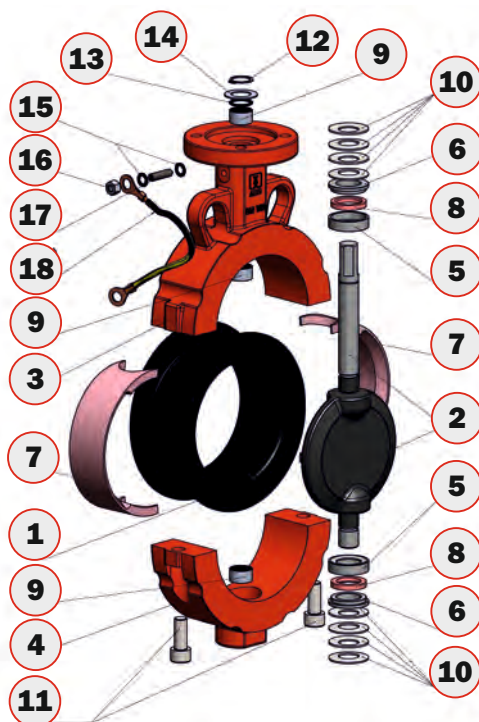
Stainless steel A4

17 - Screw for ATEX valves

Stainless steel 1.4021

18 - Wire clamp

Stainless steel A2 / Copper



Disc from stainless steel
with polished edges
Disc with **conductive
PTFE coating**

ATEX DESIGN

Czech Industrial Valve Manufacturer

PTFE properties

- the parts coming to contact with work media (seat, disc) are lined with PTFE. Thus their long lifespan and valve quality stability are provided. PTFE characteristics are high chemical resistance, toughness and flexibility, low friction coefficient, low water absorption and non-adhesiveness. All the mentioned properties provide increased protection against leakage of media. Low friction coefficient value reduces valve opening torque.
- excellent abrasion and corrosion resistance
- resistance to chemicals incl. strong acids and alkalines
- resistance to solvents, alcohols, greases and oils
- resistance to humidity and water

General features

- Concentric design**
- Compact **PTFE „TRIM”**
- 588:** disc provided with 3 mm layer of conductive PTFE (to improve conductivity contains graphite)
- WAFFER / LUG type (split body)
- Bi-directional valve**
- Possible both vertical and horizontal pipe mounting
- Suitable as a closure and control valve
- Top flange according to standard ISO 5211
- PTFE coated steel bearings ensure accurate guidance of the top and bottom shaft**
- Actuating stem sealing prevents media leaking to environs
- Easy assembly
- Working media**
- Purified industrial water
- Potable water
- Industrial cleaners / Dyes
- Chemicals / Chlorine / Alkalines / Acids
- Beverages / Food
- Caustic / Toxic media / Paper mill stock
- Drugs and pharmaceuticals

Basic information

Body design
WAFFER - with through holes
LUG - with threaded holes

Nominal size
578: DN50 - DN300
588: DN50 - DN400

Working pressure
6 bar / 10 bar

Flange connection
PN6/PN10/PN16/Class 150

Body material
Ductile iron 0.7043 (GGG40.3)

Disc
Duplex stainless steel
1.4469 conductive PTFE coated
Duplex stainless steel
1.4469 with polished edges

Seat type
Conductive PTFE

Temperature rating
- 40 °C / +200 °C

Hydraulic test
Class A

Standards

Leak test
EN 12266-1, Class A
ISO 5208, Class A

Face to face length
EN 558, Series 20
ISO 5752, Series 20
API 609 Tab. 1

Flange connection
EN 1092-1
ASME B16.5

TOP flange
EN ISO 5211

Working standard
EN 593

Marking
EN 19

ATEX desing
EN ISO 80079-36
EN IEC 60079-0

Type designation

- 5 8 8 B**
- Body design**
B - WAFFER body with through holes
T - LUG body with threaded holes
 - Seat material**
8 - Conductive PTFE
 - Disc material**
8 - Duplex stainless steel 1.4469 conductive PTFE coated
7 - Duplex stainless steel 1.4469 with polished edges
 - Series designation**
Series 500

Maximum medium flow rate

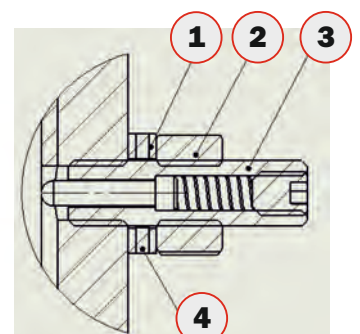
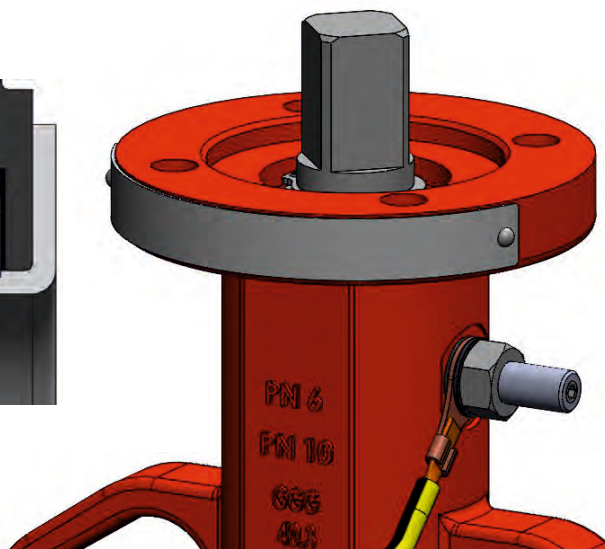
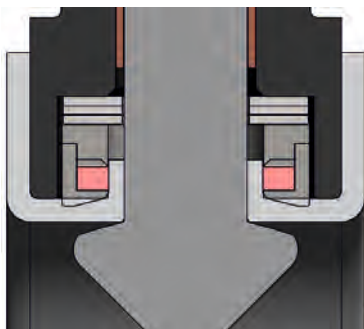
| PS [bar] | Maximum medium flow rate [m/s] | |
|-------------|--------------------------------|-----|
| | Liquid | Gas |
| do 6 | 2,5 | 25 |
| 6 < PS ≤ 10 | 3 | 30 |

Seat

- The seat is made of **conductive Teflon (PTFE)** and is pressed by a set of prestressed disc springs
- Safety seals** on both shaft ends - ring made of silicone rubber which is pressed by set of springs

ATEX design

- ATEX clamp** - (pos. No. 4) to which it is connected the lead wire is connected to the ATEX screw (No. 3) using hexagon nuts (No. 2) and two washers (No. 1)
- The ATEX screw** is connected to the shut-off flap through the threaded hole into which it is screwed
- The tip of the ATEX screw** is pressed in by means of a spring to the steel shaft and thanks to this spring the contact is constant and does not break



6 / ABO valve Czech

VALVE ACTUATION



Operating torques (Nm) vs. working pressure (bar)

| | DN | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 400 |
|-------------|------------------------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|------|
| 599 | p_{max} 10bar | 35 | 40 | 60 | 95 | 140 | 190 | 250 | 435 | 660 | 850 | 1050 |
| 579* | p_{max} 10bar | 35 | 40 | 60 | 95 | 140 | 190 | 250 | 435 | 660 | - | - |

p_{max} - maximum working pressure. For pressure of 10 bar (water at 20 °C). Torques are declared without safety factor. Recommended safety coefficient for the actuator installation is 1,3.

*) series 579B are available only up to DN300

Installation between flanges DN50 - DN400

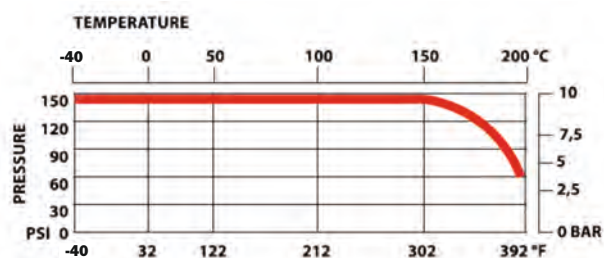
| DN | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 400 |
|------------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|
| PN6 | | | | | | | | | | | |
| PN10 | | | | | | | | | | | |
| PN16 | | | | | | | | | | | |
| Class 150 | | | | | | | | | | | |
| JIS 10 K | | | | | | | | | | | |
| JIS 16 K | | | | | | | | | | | |

standard

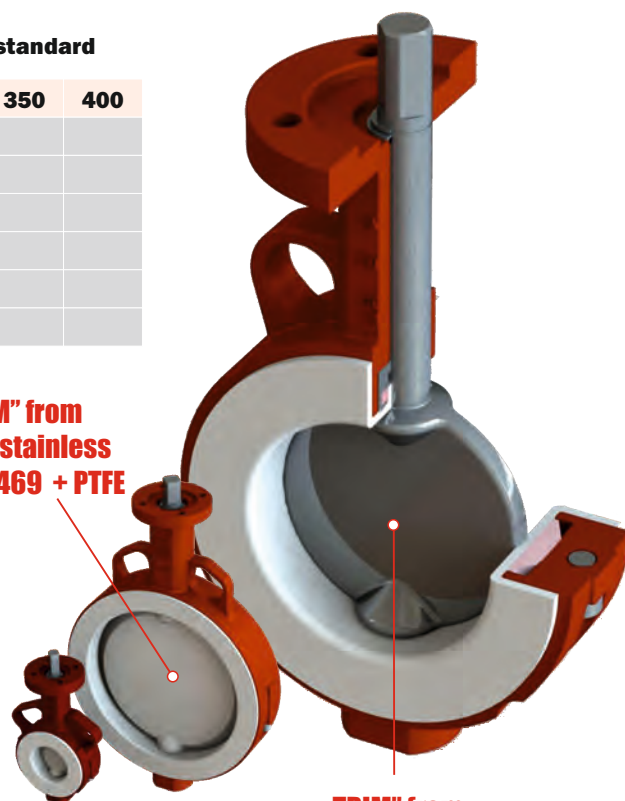
Working conditions

| Max. working pressure | Temperature rating |
|-----------------------|-----------------------|
| DN50-DN400: 10 bar | - 40 °C do +200 °C *) |

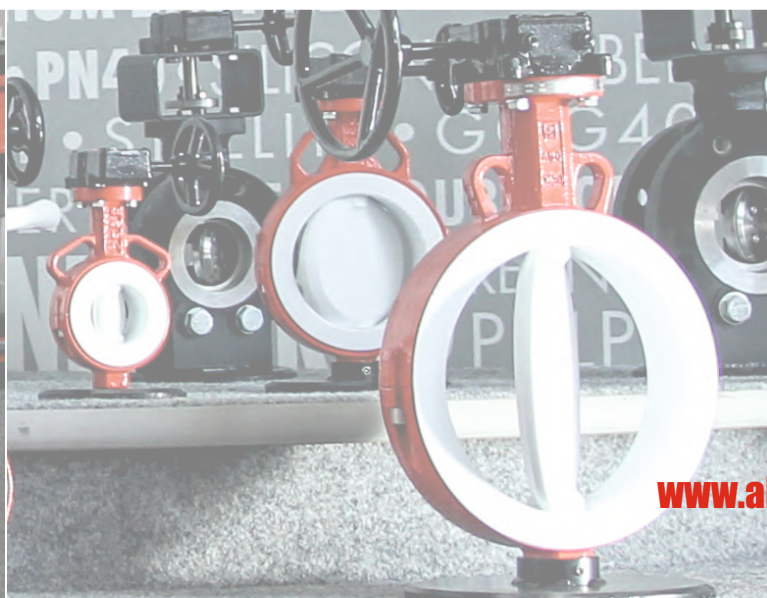
*) depending on medium



„TRIM” from duplex stainless steel 1.4469 + PTFE



„TRIM” from one piece only (stem + disc + pivot)



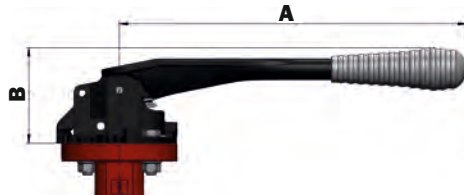
VALVE ACTUATION

Czech Industrial Valve Manufacturer

All ABO handlevers, manual worm-gear units, pneumatic or electric actuators can be mounted directly to ABO butterfly valves, which ensures compatibility between the actuator and the valve.

Handlever

For manual actuation, company ABO valve offers handlevers in carbon steel material with protective coating for excellent corrosion, abrasion and impact resistance. A lever in stainless steel material is an option.



| DN | 50-65 | 80-125 | 150 |
|----|-------|--------|-----|
| A | 225 | 270 | 360 |
| B | 75 | 75 | 75 |
| Kg | 1,2 | 1,35 | 1,5 |

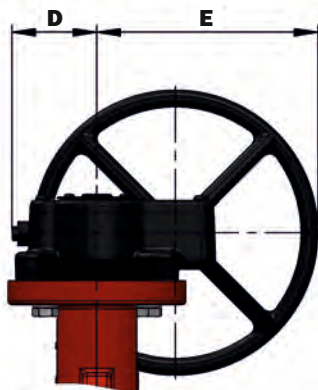
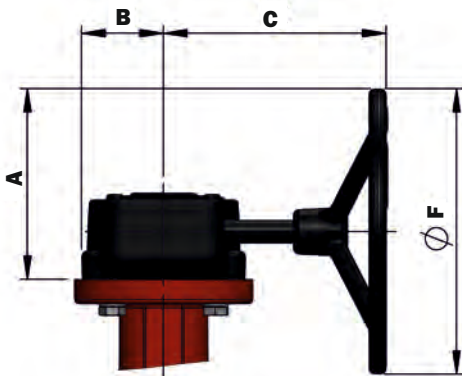
Dimensions are mentioned in mm.

Manual gearbox with handwheel

Manual gearbox casing is made from cast iron with suitable surface treatment and protection degree class IP 67. Self-locking design of the worm gear enables both to set basic positions open/shut and to control (throttle) media flow. The worm gearbox is simply controlled hand-wheel of a suitable diameter. End positions of the worm gearbox are adjusted by screws. The gearbox can be equipped with a lockable system secured by a padlock. The worm gearbox as well as the hand lever can be completed with limit switch boxes.

| DN | 50-65 | 80-150 | 200-300 | 350-400 |
|----|-------|--------|---------|---------|
| A | 69,5 | 127,5 | 133,5 | 287,5 |
| B | 35 | 46 | 57 | 67 |
| C | 91 | 139 | 156 | 275 |
| D | 38 | 59 | 59,5 | 181 |
| E | 84 | 141 | 155 | 319 |
| F | 100 | 200 | 200 | 500 |
| Kg | 1,24 | 2,85 | 4,56 | 10,2 |

Dimensions are mentioned in mm.



VALVE ACTUATION



Actuators

Pneumatic actuators

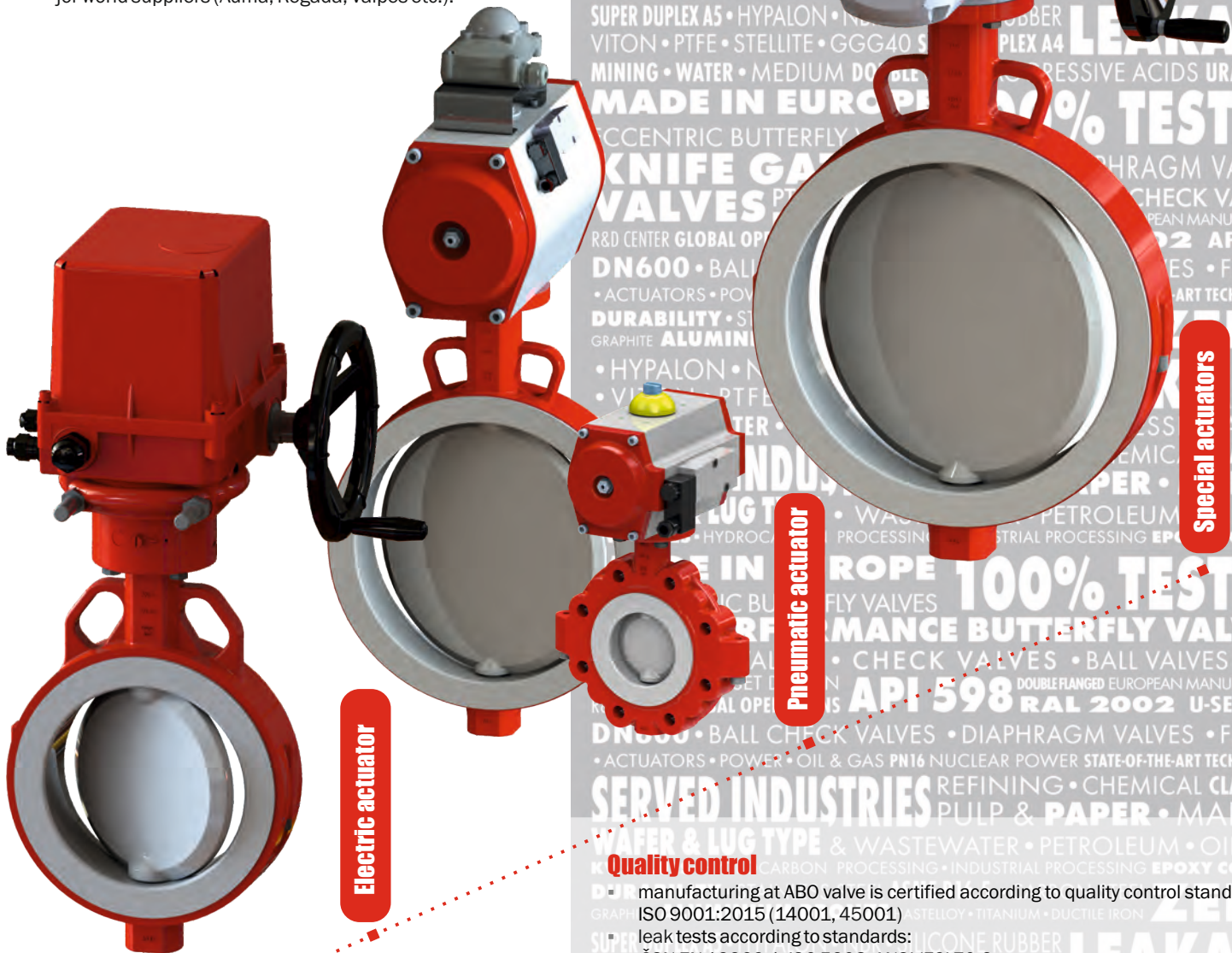
ABO valves can be equipped with pneumatic actuators of two optional designs: single-action or double-action.

Electric actuators

Electric actuators are designed quarter-turn. Electric actuators can be installed for voltages of 24 V, 230 V or 400 V.

Special actuator types

Valves are equipped with special actuator types from major world suppliers (Auma, Regada, Valpes etc.).



Electric actuator

Pneumatic actuator

Special actuators

MADE IN EUROPE 100% TESTED

CONCENTRIC BUTTERFLY VALVES HIGH PERFORMANCE BUTTERFLY VALVES

KNIFE GATE VALVES • BALL VALVES • BALL VALVES DN150

ATEX 94/9/EC OFFSET DESIGN DOUBLE FLANGED EUROPEAN MANUFACTURER

R&D CENTER GLOBAL OPERATIONS IS API 598 RAL 2002 U-SECTION

DN600 • BALL CHECK VALVES • DIAPHRAGM VALVES • FILTERS

• ACTUATORS • POWER • OIL & GAS PN16 NUCLEAR POWER STATE-OF-THE-ART TECHNOLOGY

SEWERAGE • CHEMICAL CLASS 150

WATER & WASTEWATER • PETROLEUM • OILFIELD

KV VALVES • MARINE

DURABILITY • STAINLESS STEEL • EPOXY COATING

GRAPHITE ALUMINIUM • DUCTILE IRON

• HYALON • NBR • RUBBER LEAKAGE

VITON • PTFE • STELLITE • GGG40 S • PLEX A4

MINING • WATER • MEDIUM DUTY • COMPRESSIVE ACIDS URANUS B6

MADE IN EUROPE 100% TESTED

CONCENTRIC BUTTERFLY VALVES

KNIFE GATE VALVES • DIAPHRAGM VALVES

VALVES • CHECK VALVES

R&D CENTER GLOBAL OPERATIONS EUROPEAN MANUFACTURER

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CONCENTRIC BUTTERFLY VALVES

KNIFE GATE VALVES • DIAPHRAGM VALVES

VALVES • CHECK VALVES • BALL VALVES DN150

R&D CENTER GLOBAL OPERATIONS IS API 598 RAL 2002 U-SECTION

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SEWERAGE • CHEMICAL CLASS 150

WATER & WASTEWATER • PETROLEUM • OILFIELD

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DURABILITY • STAINLESS STEEL • EPOXY COATING

GRAPHITE ALUMINIUM • DUCTILE IRON

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MINING • WATER • MEDIUM DUTY • COMPRESSIVE ACIDS URANUS B6

MADE IN EUROPE 100% TESTED

Quality control

manufacturing at ABO valve is certified according to quality control standard ISO 9001:2015 (14001, 45001)

leak tests according to standards:

ČSN EN 12266-1, ISO 5208, ANSI/FCI 70-2

production in accordance with the Pressure Equipment Directive 2014/68/EU - Equipment operating under pressure (Category III, module H)

3.1/3.2 inspection test certificates can be issued

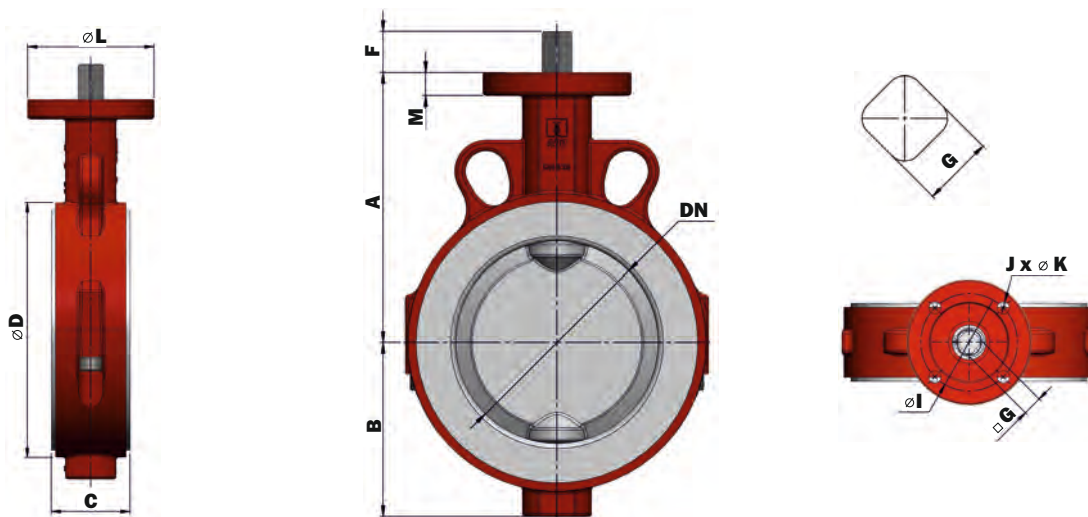
valve actuators, if delivered, are adjusted and tested while assembled

all the certificates can be downloaded from www.abovalve.com

www.abovalve.com / 9

BASIC DIMENSIONS WAFER (B) DESIGN

Czech Industrial Valve Manufacturer



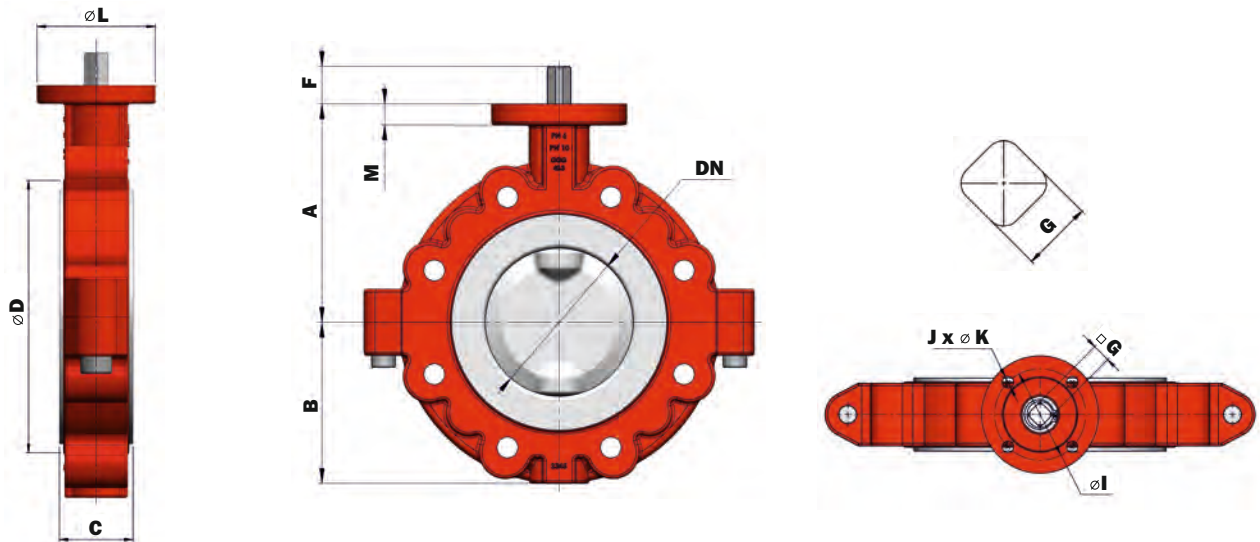
| WAFER (B)-DESIGN | DN | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 400 |
|-----------------------|----|-----|-----|-----|-----|-----|-------|------|------|------|------|------|
| Valve dimension | A | 120 | 128 | 135 | 145 | 164 | 176,5 | 234 | 274 | 299 | 331 | 361 |
| | B | 61 | 74 | 78 | 90 | 106 | 126 | 152 | 186 | 214 | 245 | 280 |
| | C | 43 | 46 | 46 | 52 | 56 | 56 | 60 | 70 | 76 | 78 | 102 |
| | D | 96 | 115 | 131 | 152 | 181 | 207 | 257 | 314 | 364 | 408 | 468 |
| Endshaft dimensions | F | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 31 | 31 | 42 | 42 |
| | G | 11 | 11 | 14 | 14 | 14 | 14 | 17 | 22 | 22 | 27 | 27 |
| Top flange dimensions | I | 50 | 50 | 70 | 70 | 70 | 70 | 70 | 102 | 102 | 125 | 125 |
| | J | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| | K | 7 | 7 | 9 | 9 | 9 | 9 | 9 | 12 | 12 | 14 | 14 |
| | L | 70 | 70 | 90 | 90 | 90 | 90 | 90 | 125 | 125 | 155 | 155 |
| | M | 14 | 14 | 14 | 14 | 14 | 14 | 14 | 18 | 20 | 20 | 20 |
| ISO Flange 5211 | | F05 | F05 | F07 | F07 | F07 | F07 | F07 | F10 | F10 | F12 | F12 |
| Weight (kg) | | 2,3 | 3,0 | 3,5 | 5,0 | 6,5 | 7,8 | 13,2 | 23,6 | 30,9 | 40,1 | 59,7 |

Dimensions are mentioned in mm.

10 / ABO valve Czech



BASIC DIMENSIONS LUG (T) DESIGN



| LUG (T)-DESIGN | DN | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 |
|-----------------------|----|-------|-----|-------|-----|------|-------|------|------|------|
| Valve dimension | A | 120,5 | 128 | 135,5 | 145 | 164 | 176,5 | 234 | 274 | 299 |
| | B | 76 | 85 | 95 | 107 | 127 | 138 | 172 | 197 | 214 |
| | C | 43 | 46 | 46 | 52 | 56 | 56 | 60 | 70 | 76 |
| | D | 96 | 115 | 131 | 152 | 181 | 207 | 257 | 314 | 364 |
| Endshaft dimensions | F | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 31 | 31 |
| | G | 11 | 11 | 14 | 14 | 14 | 14 | 17 | 22 | 22 |
| Top flange dimensions | I | 50 | 50 | 70 | 70 | 70 | 70 | 70 | 102 | 102 |
| | J | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| | K | 7 | 7 | 9 | 9 | 9 | 9 | 9 | 12 | 12 |
| | L | 70 | 70 | 90 | 90 | 90 | 90 | 90 | 125 | 125 |
| | M | 14 | 14 | 14 | 14 | 14 | 14 | 14 | 18 | 20 |
| ISO Flange 5211 | | F05 | F05 | F07 | F07 | F07 | F07 | F07 | F10 | F10 |
| Weight (kg) | | 3,65 | 5,8 | 7,1 | 9,4 | 12,4 | 14,7 | 26,7 | 35,9 | 46,6 |

Dimensions are mentioned in mm.



