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

Czech Industrial Valve Manufacturer

Bidirectional bubble-tight concentric butterfly valves of Series 500 with PTFE sealing are offered for very clean manufacturig 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 PFFE coated
  9 - duplex stainless steel 1.4469 PTFE coated
  7 - duplex stainless steel 1.4469 with polished edges
- **Series designation**
  Series 500

Standards

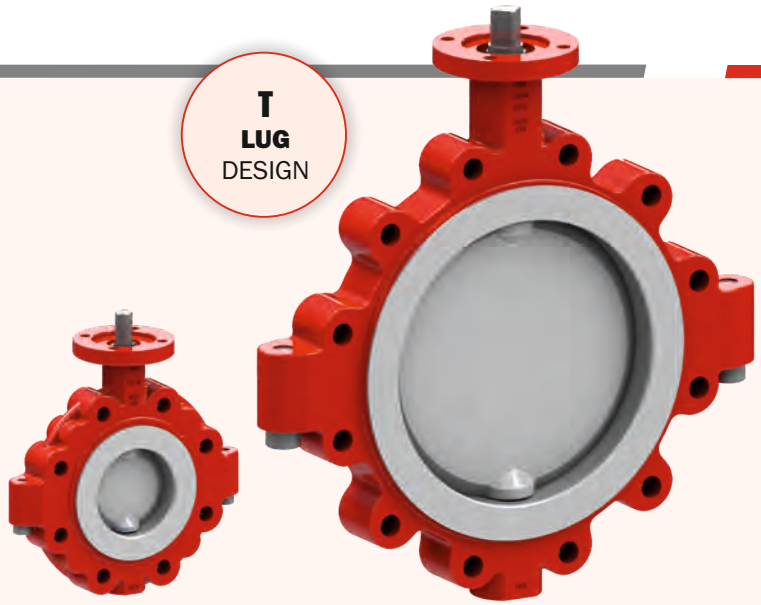
Hydraulic test	EN 12266-1, Class A ISO 5208, Class A
Face-to-face length	EN 558, Series 20 ISO 5752, Series 20
Flange connection	EN 1092-1 ASME B16.5
Top flange	EN ISO 5211
Working standard	EN 593
Marking	EN 19
Atex design	EN ISO 80079-36 EN IEC 60079-0

VALVE MODELS

ABO valve

B
WAFER
DESIGN

T
LUG
DESIGN



ATEX performance

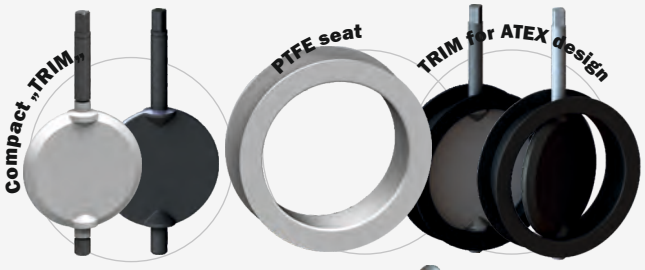
578B

588B

578T

588T

Valve actuation



DN80B/T
Handlever

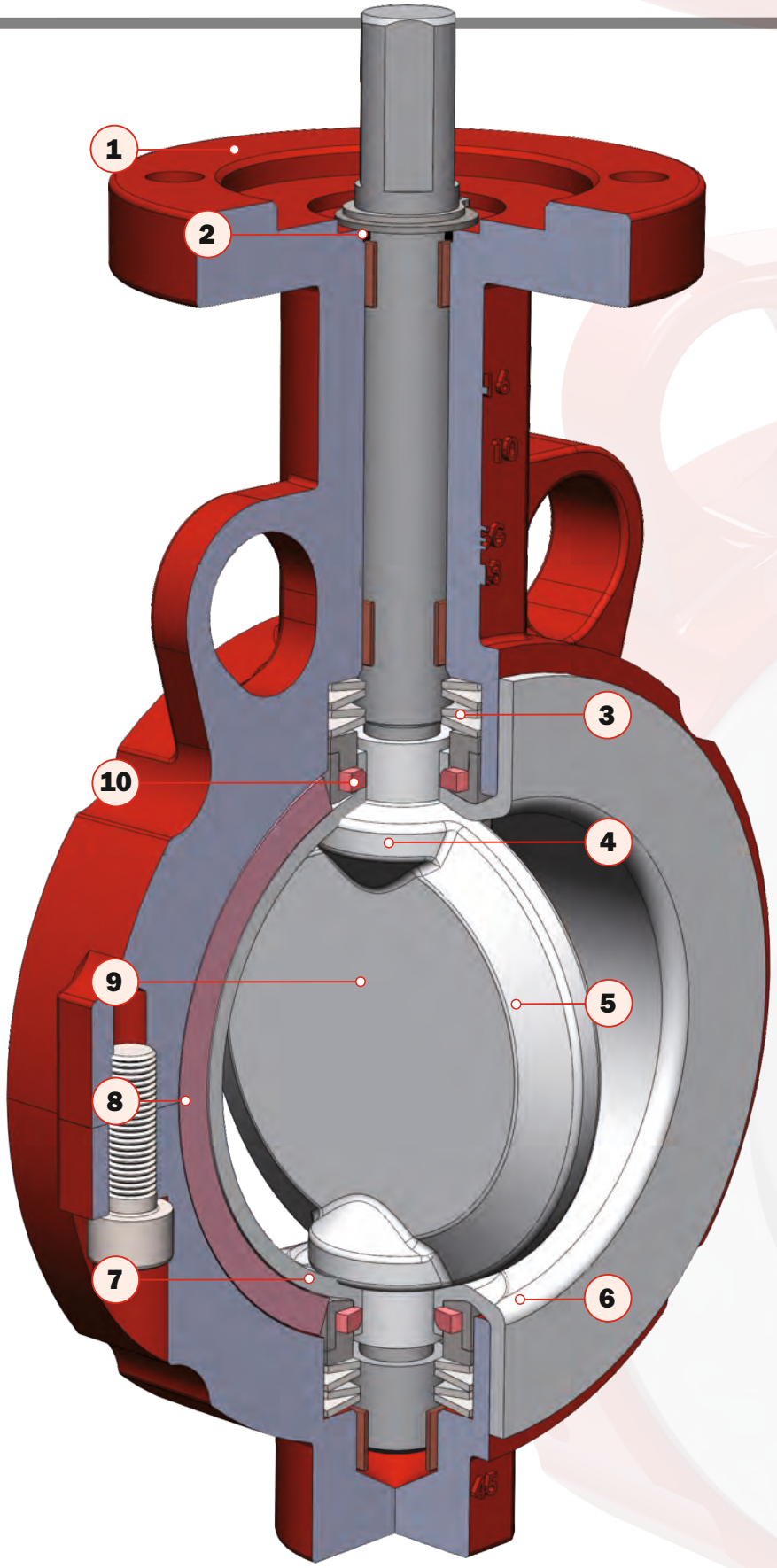
DN150B/DN80T
Gearbox
with handwheel

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 presure to disc. Double seals on both stem/pivot are standard equipment.

4. Ball sealing priciple
- sealing surface of the teflone 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.

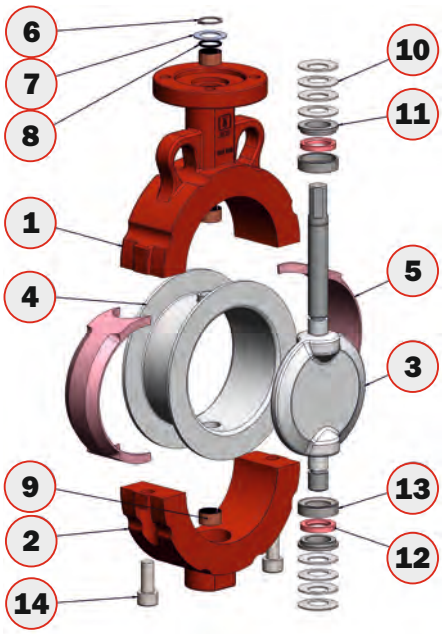
10. Safety elements
- bushings with the silicone rings are compressed by the belleville springs washers during assembly. The silicone ring presses the edge of the seat, against the edge of the disc and around the stem. This ensures tightness and protects the inner seal of the valve against the media.

MATERIAL PERFORMANCE

ABO valve

Standard desing

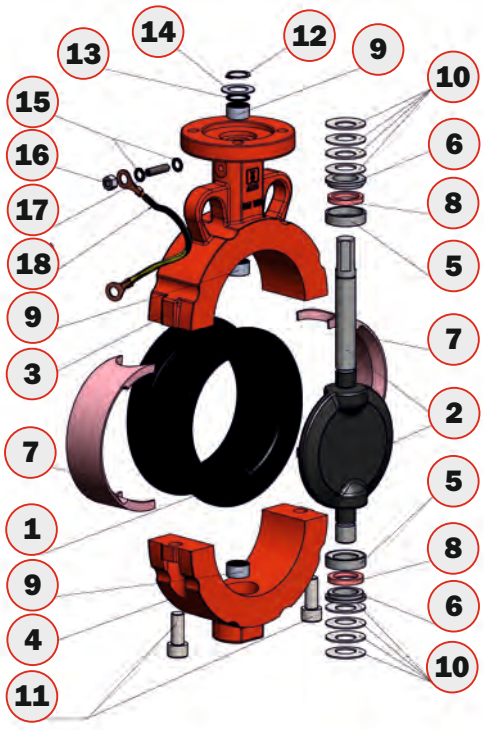
1 / 2 - Body (top / bottom part)
Ductile iron 0.7043 (GGG40.3)
3 - Disc & Stem & Pivot
Duplex stainless steel
1.4469 + PTFE
4 - Seat
PTFE
5 - Spring element
Silicone rubber / Viton
6 - Retaining ring
Stainless steel A2
7 - Washer
Stainless steel A2
8 - O-ring
Silicone rubber
9 - Sliding cover
Steel + 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

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)
- WAFER / 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 asembly

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
WAFER - with through holes
LUG - with threaded holes
Nominal size
578: DN50 - DN300
588: DN50 - DN400
Working pressure
6 bar / 10 bar
Flange connection
PN6/PN/10/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 - WAFER 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

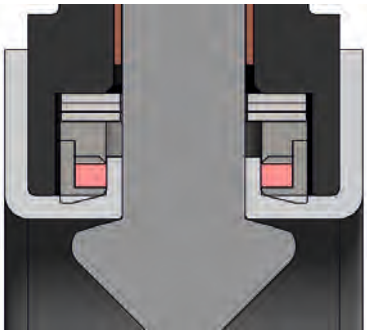
	Maximum medium flow rate [m/s]	
PS [bar]	**Liquid**	**Gas**
do 6	2,5	25
6 < PS ≤ 10	3	30

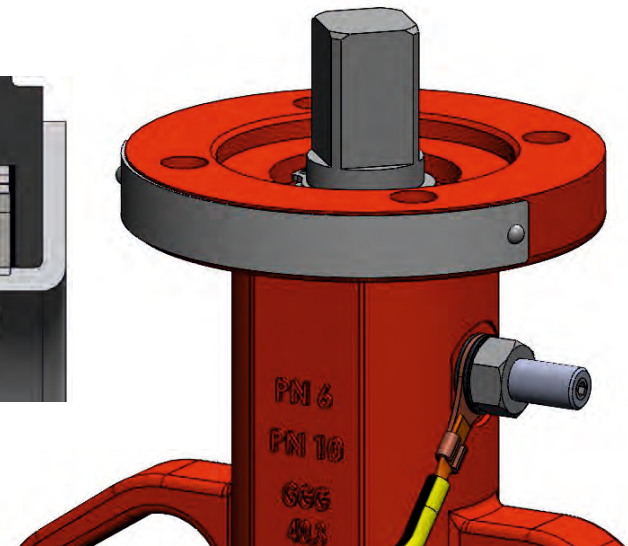
Seat

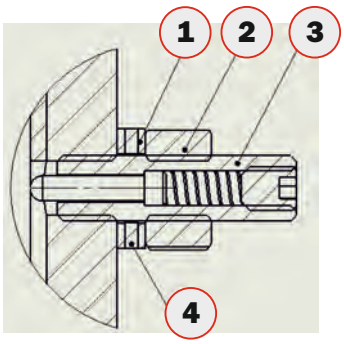
- The seat is made of **conductive** Teflon **(PTFE)** and is pressed by a set of prestressed disc springs
- **Safety seals** on both shaft ends - ring made of silicone rubber which is pressed by set of springs

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







VALVE ACTUATION

ABO valve

Operating torgues (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

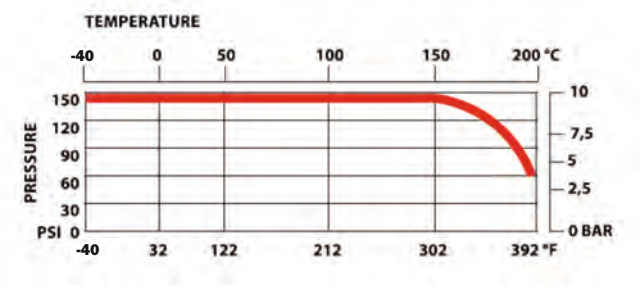
standard

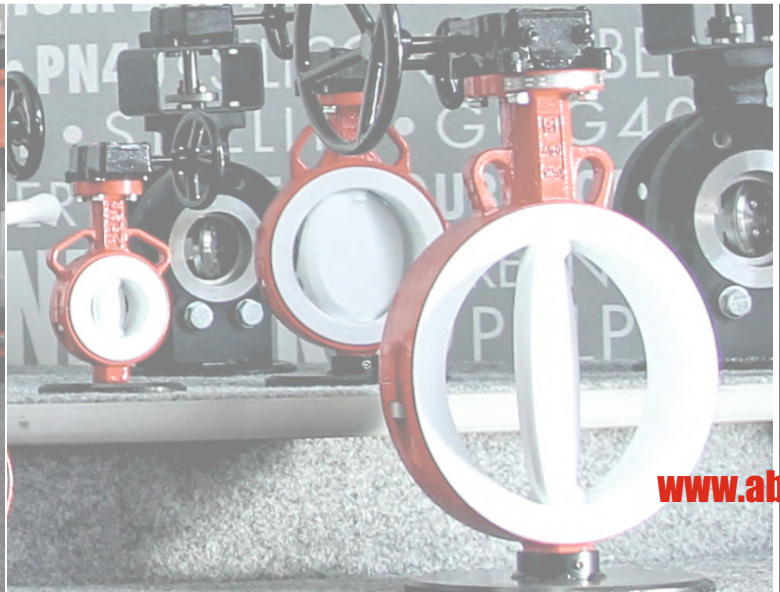
DN	50	65	80	100	125	150	200	250	300	350	400
PN6											
PN10											
PN16											
Class 150											
JIS 10 K											
JIS 16 K											

Working conditions

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

**) depending on medium*



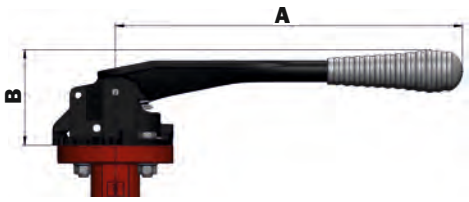


VALVE ACTUATION

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

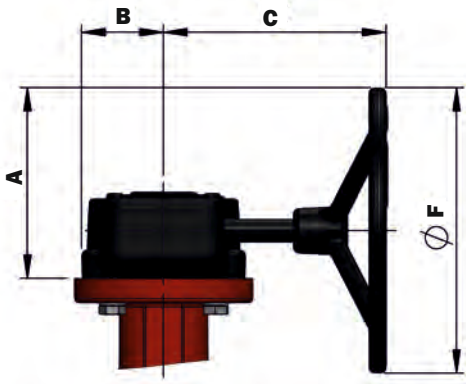
Dimensions are mentioned in mm.

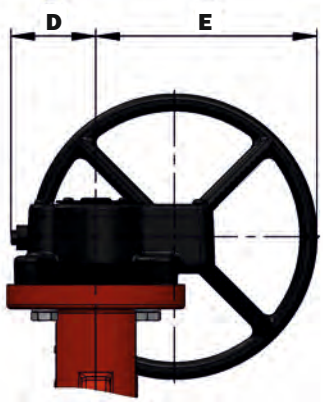
Manual gearbox with handwheel

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

ABO valve

Actuators

Pneumatic actuators

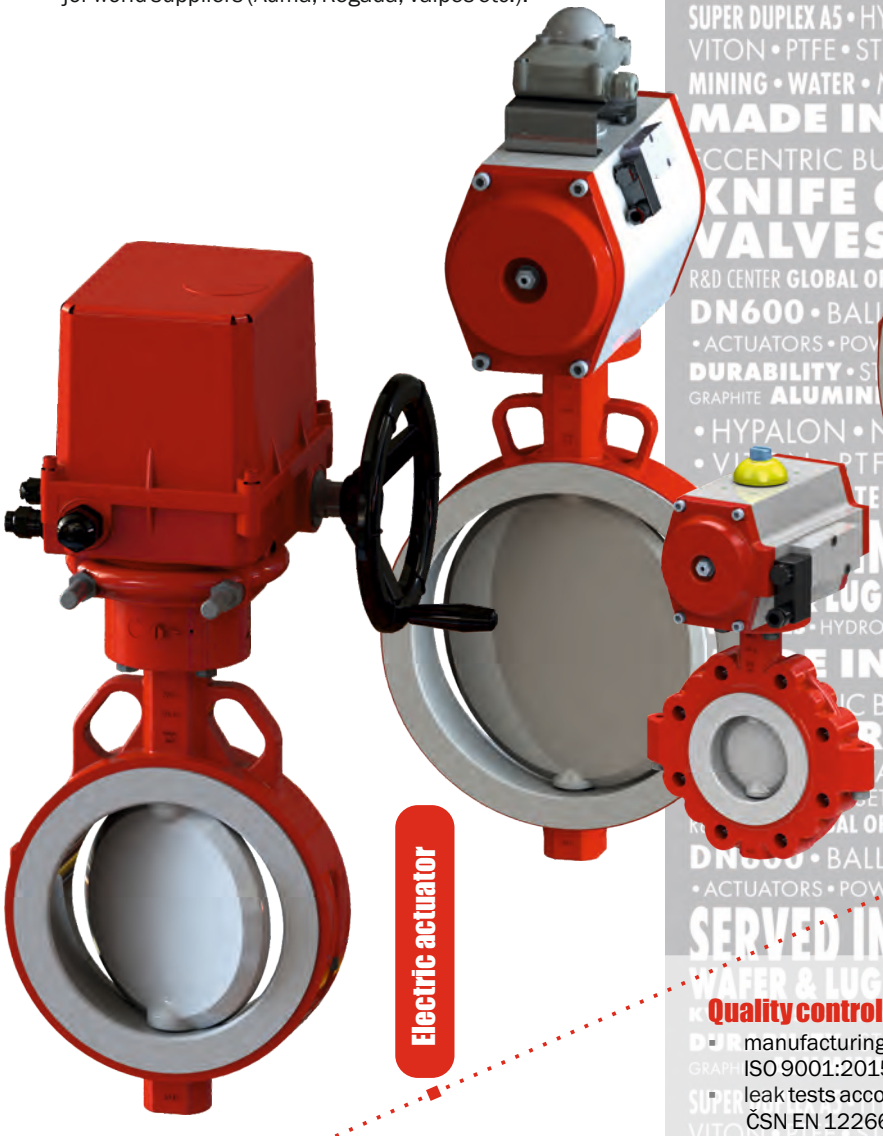
ABO valves can be equipped with pneumatic actuators of two optional designs: single-action or double-action.

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

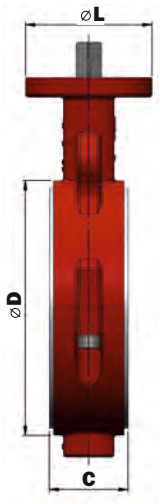
Valves are equipped with special actuator types from major world suppliers (Auma, Regada, Valpes etc.).

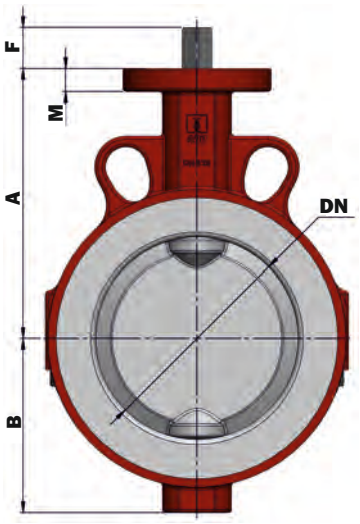


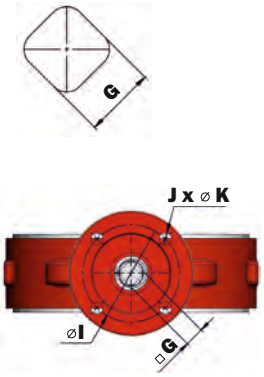
Quality control

- 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 Pre-ssure 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**

BASIC DIMENSIONS
WAFER (B) DESIGN





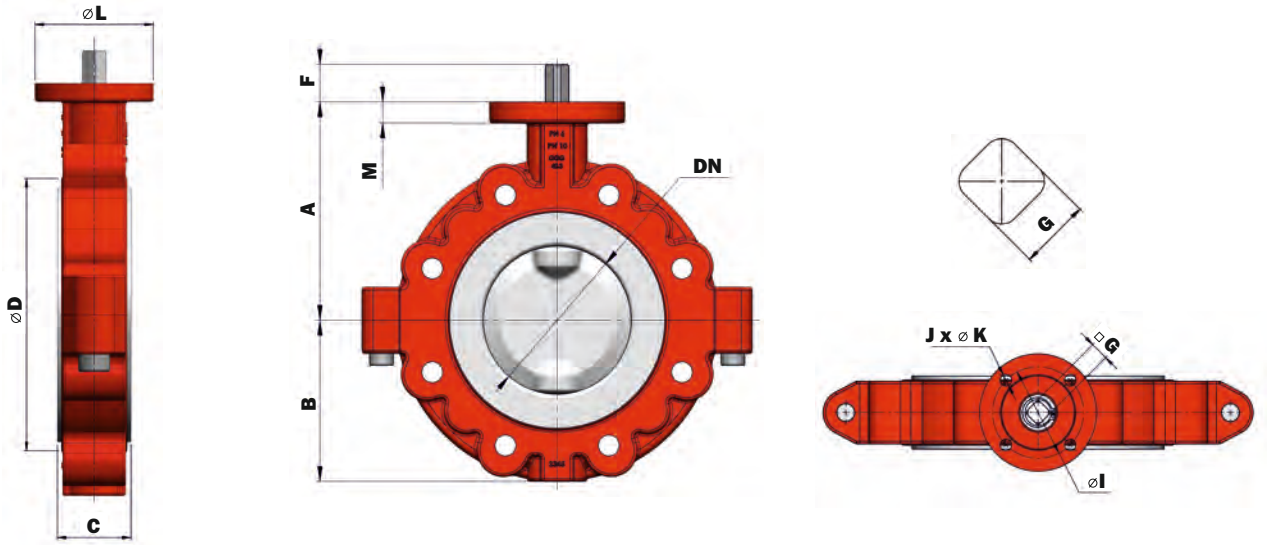


WAFER (B)-DESIGN	DN	50	65	80	100	125	150	200	250	300	350	400
Valve dimension	A	120	128	135	145	164	176,5	234	274	299	331	361
	B	61	74	78	90	106	126	152	186	214	245	280
	C	43	46	46	52	56	56	60	70	76	78	102
	D	96	115	131	152	181	207	257	314	364	408	468
Endshaft dimensions	F	25	25	25	25	25	25	25	31	31	42	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.

BASIC DIMENSIONS
LUG (T) DESIGN

ABO valve

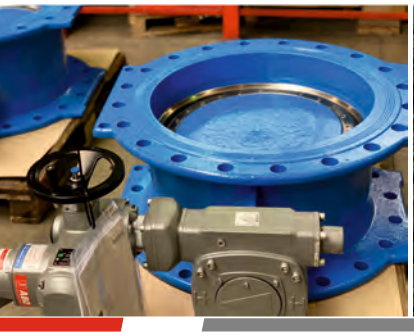


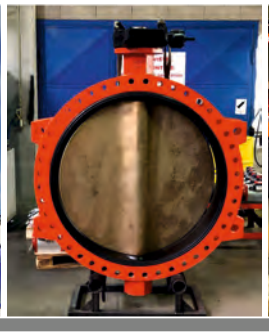
LUG (T)-DESIGN	DN	50	65	80	100	125	150	200	250	300
Valve dimension	A	120,5	128	135,5	145	164	176,5	234	274	299
	B	76	85	95	107	127	138	172	197	214
	C	43	46	46	52	56	56	60	70	76
	D	96	115	131	152	181	207	257	314	364
Endshaft dimensions	F	25	25	25	25	25	25	25	31	31
	G	11	11	14	14	14	14	17	22	22
Top flange 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.

CONTACT US

Czech Industrial Valve Manufacturer





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