

ABO valve

we make processes work

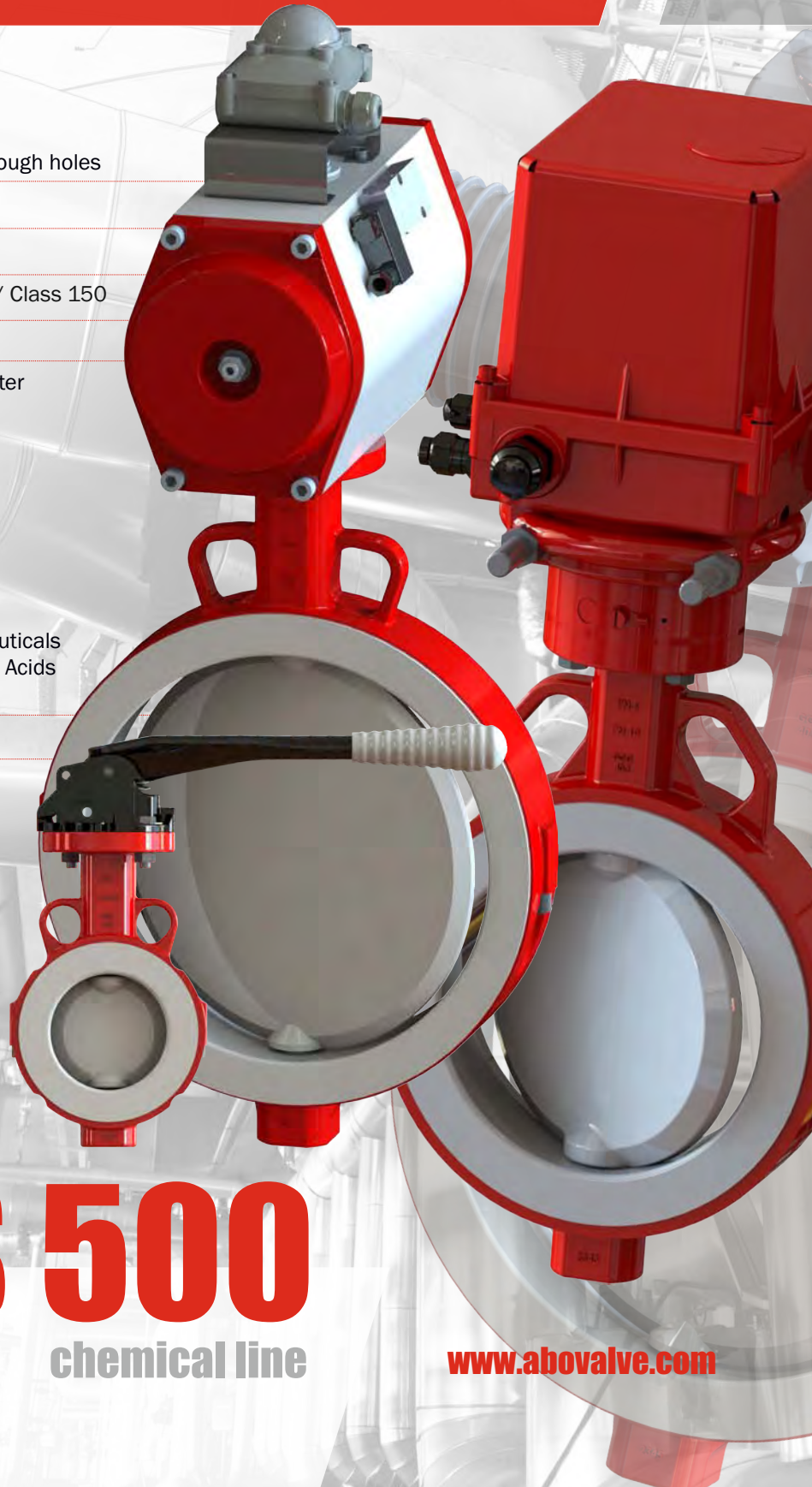
PTFE LINED BUTTERFLY VALVES

Body type	Interflanged	WAFER type with through 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**
High-performance valve for high-demanding industries
- Bidirectional tightness**
PTFE seat for high-temperature working settings
- Split body**
FDA certification



SERIES 500

chemical line

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GENERAL DESCRIPTION / DESIGN MODELS

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
- compact PTFE „TRIM” assembly (stem, disc, pivot)
- 3 mm PTFE coated disc
- 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

- other body coating grade
- WRAS certification for potable water
- inspection certificate 3.1, 3.2



Type designation

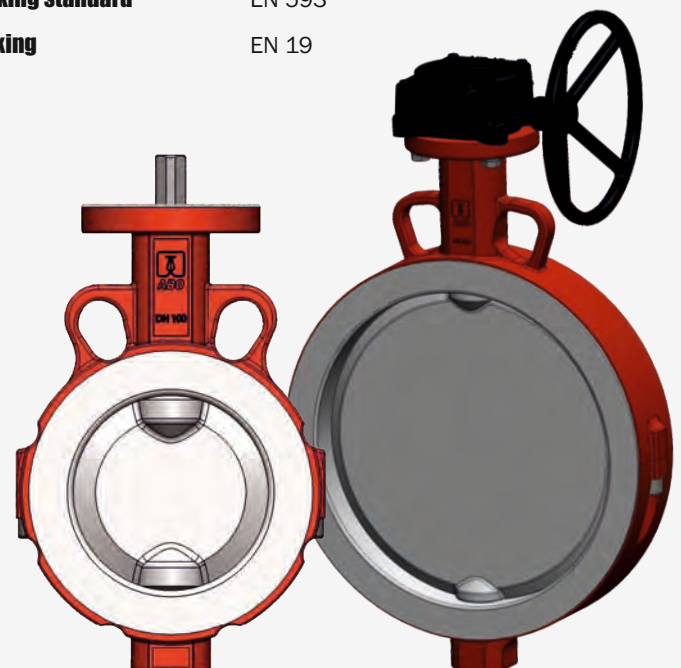
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- **Nominal size**
DN50 - DN400
- **Body design**
B - wafer with threaded holes (two-piece body)
- **Seat material**
9 - teflon (PTFE)
- **Disc material**
9 - duplex stainless steel 1.4469 PTFE coated
7 - duplex stainless steel 1.4469 with polished 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

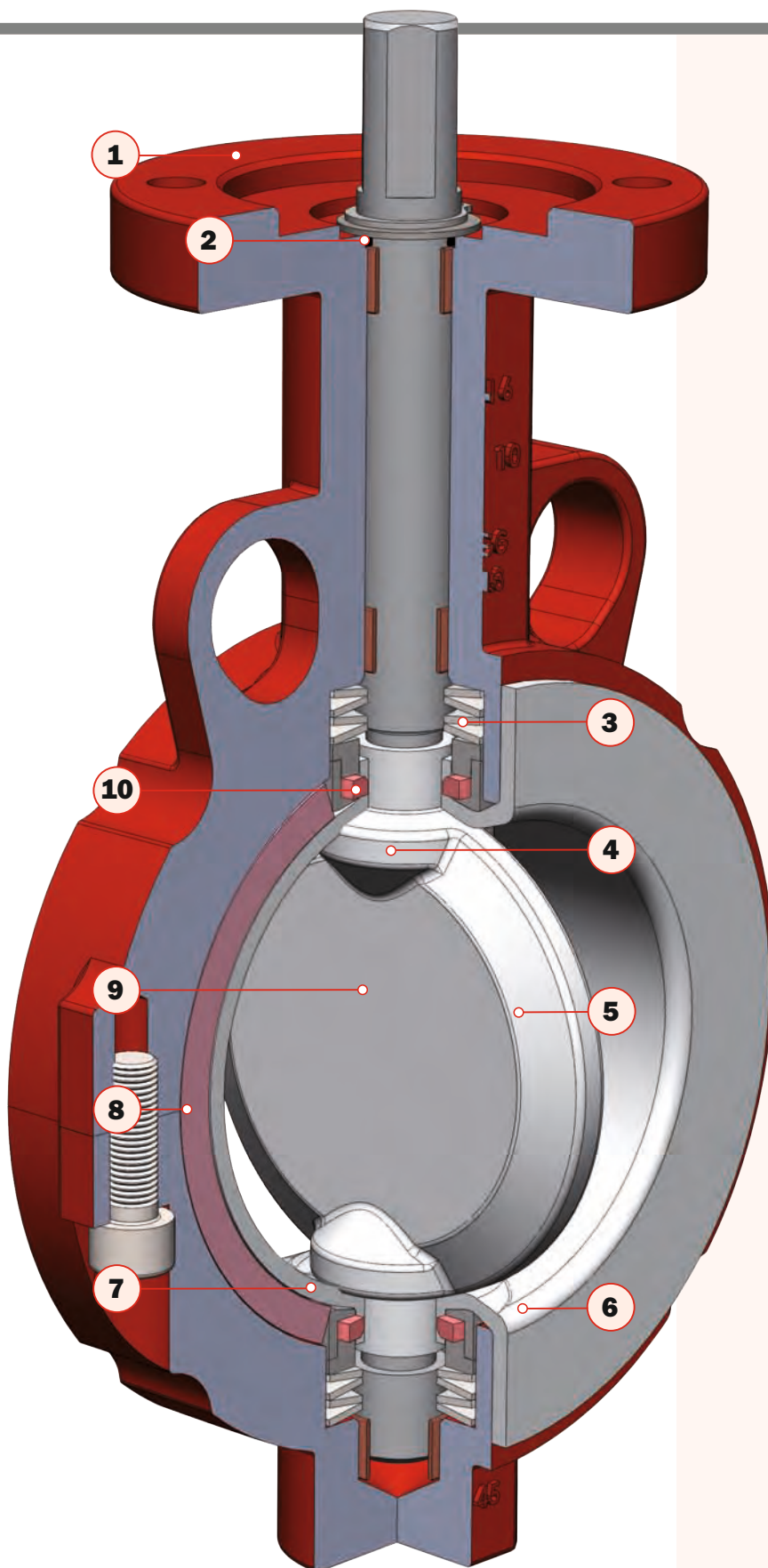
Design
„B”
WAFER



valves are delivered
in a wide range of control elements

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.

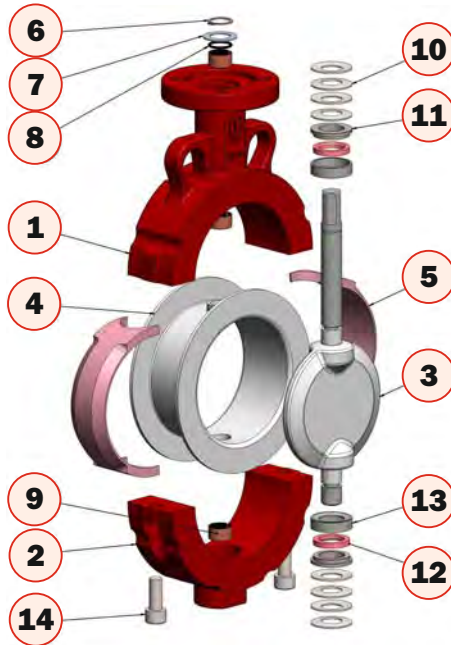
10. Safety elements

- bushings with the silicone rings are compressed by the belleville springs 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.

MATERIALS

Czech Industrial Valve Manufacturer

Design
„B”
WAFER



Pos.	Item	Material
1	Body - upper part	Ductile iron 0.7043 (GGG40.3) *)
2	Body - lower part	Ductile iron 0.7043 (GGG40.3) *)
3	Disc/Stem/Pivot	Duplex stainless steel 1.4469 + PTFE
4	Seat	PTFE
5	Pressure element	Silicone rubber / VITON
6	Support ring	Stainless steel A2
7	Washer	Stainless steel A2
8	O-ring	Silicone rubber
9	Sliding cover	Steel + PTFE
10	Belleville spring	Steel
11	Ring seat	Stainless steel 1.4021
12	Gasket ring	Silicone rubber
13	Thrust washer	Stainless steel 1.4021
14	Screw	Stainless steel A4

*) stainless steel body upon request

Pure PTFE properties

- the parts coming to contact with work media (seat, disc) are lined with pure PTFE. Thus their long lifespan and valve quality stability are provided. Pure 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

Quality control

- manufacturing at ABO valve is certified according to quality control standard ISO 9001:2015 (14001, 18001)
- tightness 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)
- all the ABO valves are tested under the pressure of 110% max. work pressure to ensure leak tightness according to standards - 3.1/3.2 pressure 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

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 systems (thickness) f.e. C3, C4 etc.



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

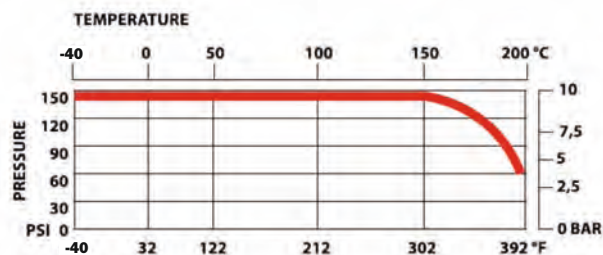
DN	50	65	80	100	125	150	200	250	300	350	400
PN6											
PN10											
PN16											
Class 150											
JIS 10 K											
JIS 16 K											

standard

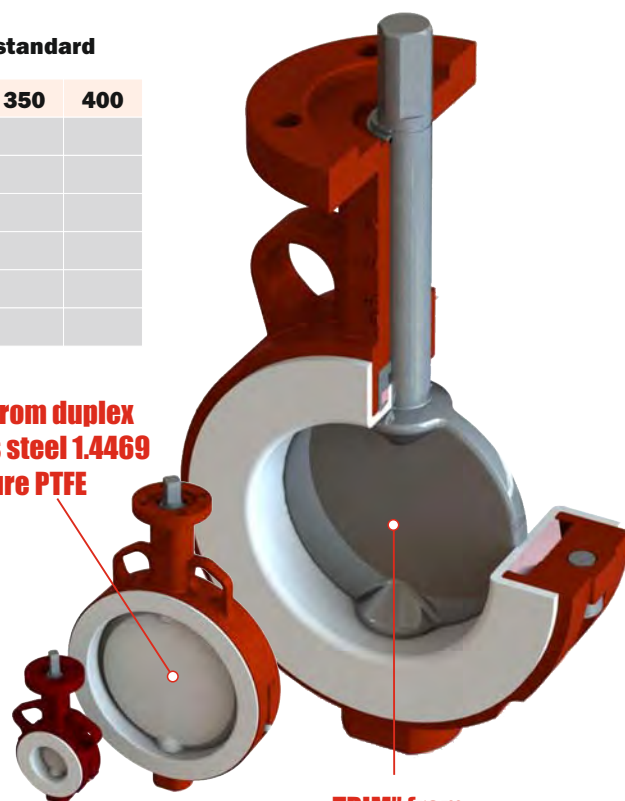
Working conditions

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

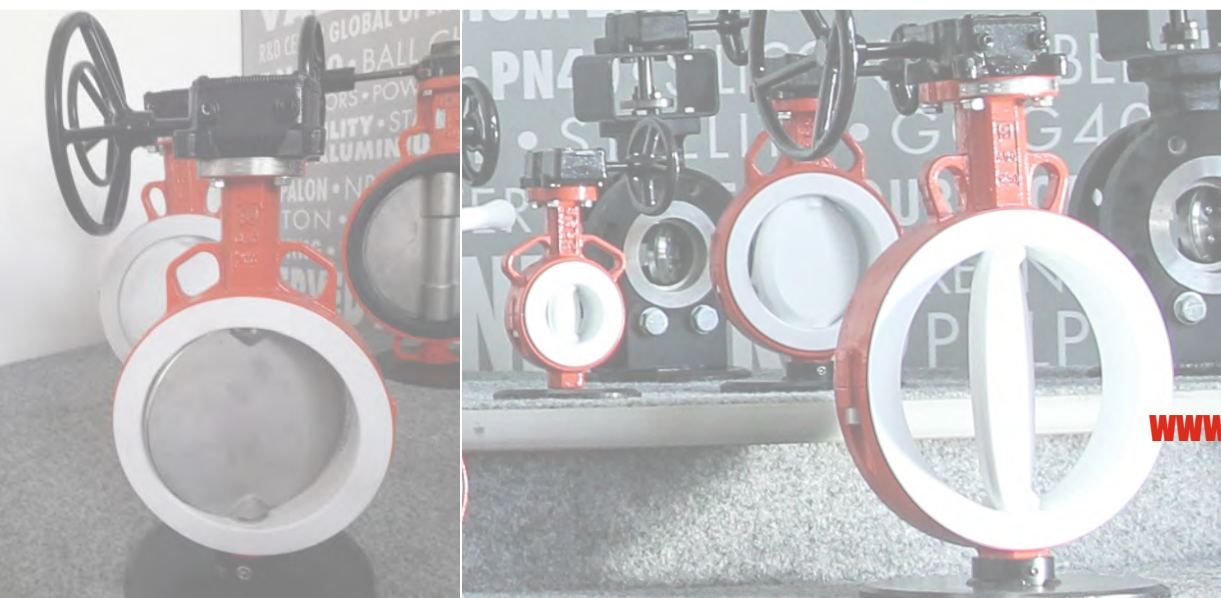
*) depending on medium



„TRIM” from duplex stainless steel 1.4469 + pure PTFE



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



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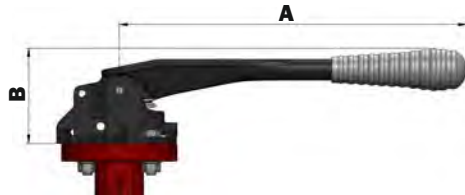
VALVE ACTUATION

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

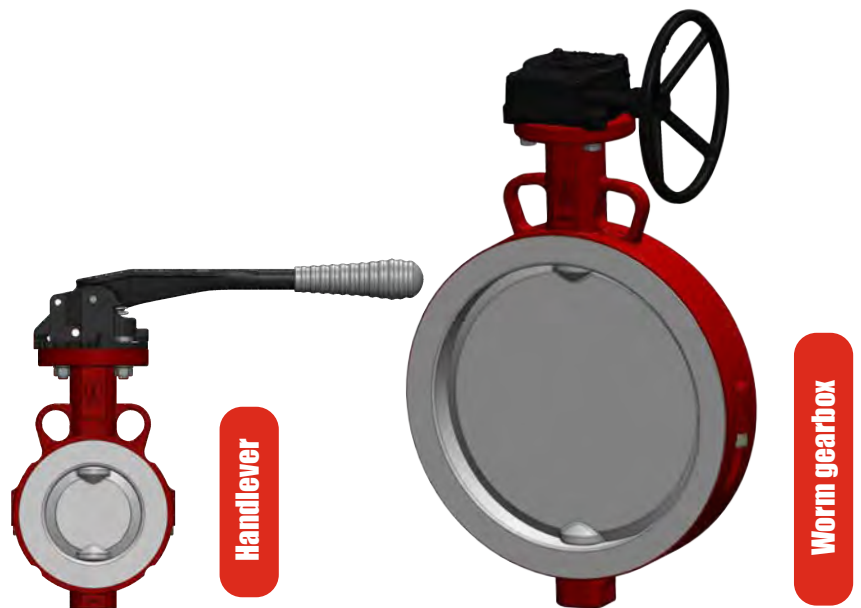
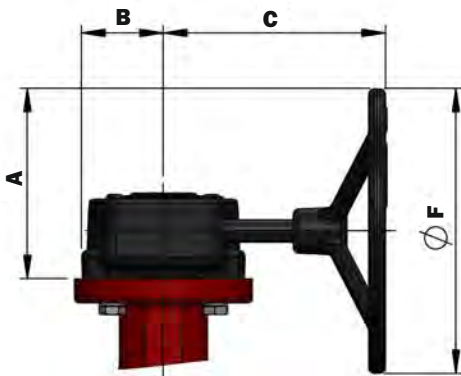
Dimensions are mentioned in mm.

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

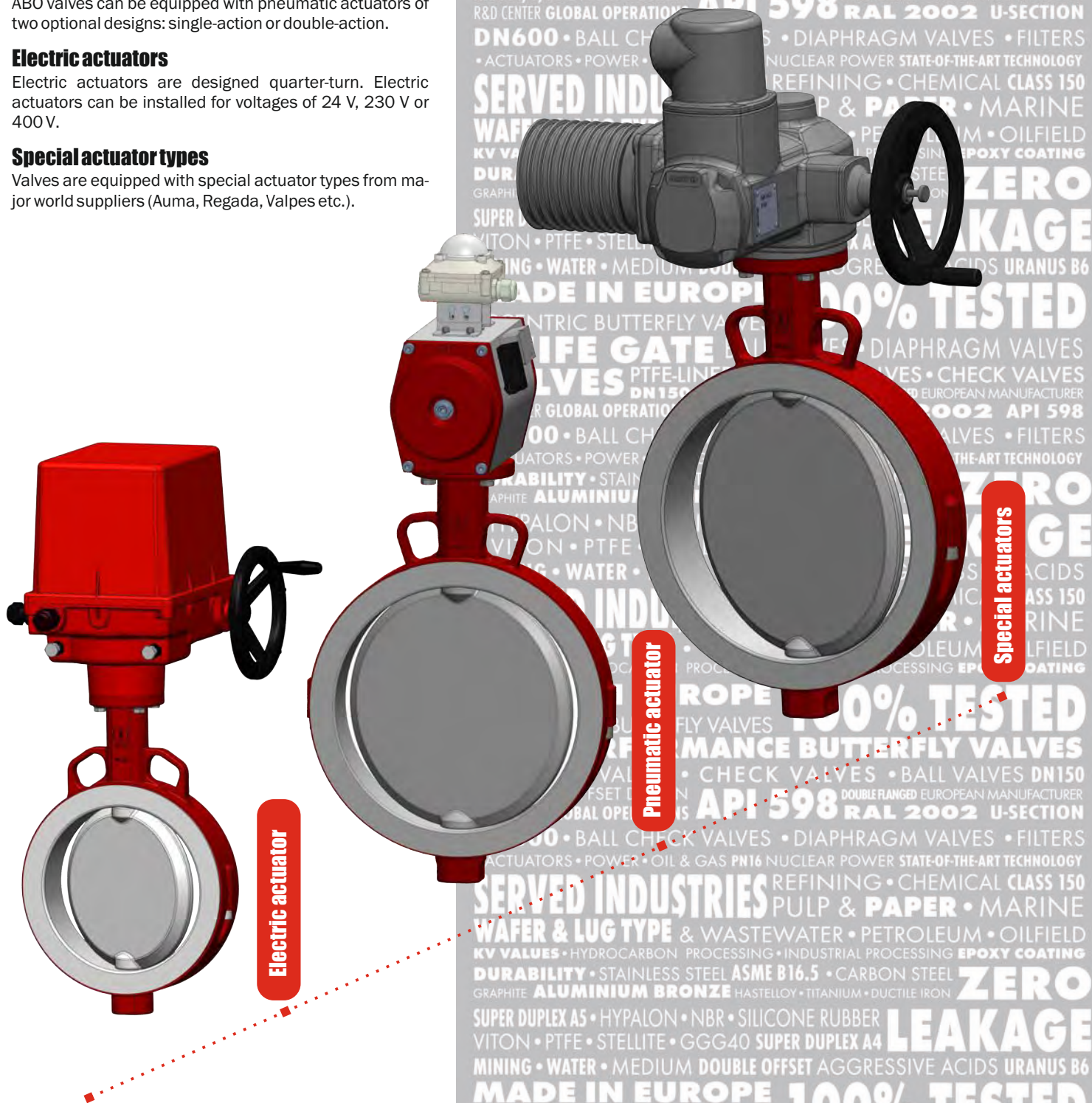
ABO valves can be equipped with pneumatic actuators of two optional designs: single-action or double-action.

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

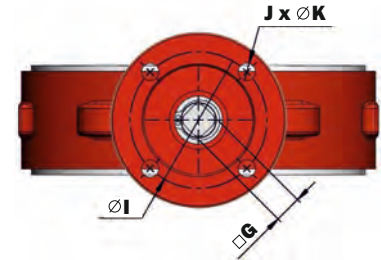
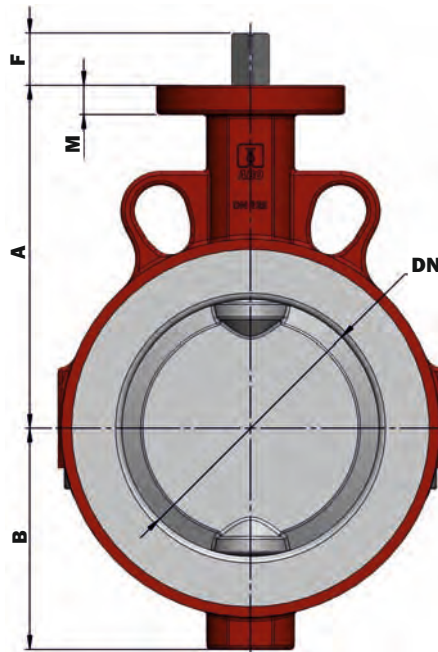
Pneumatic actuator

Special actuators

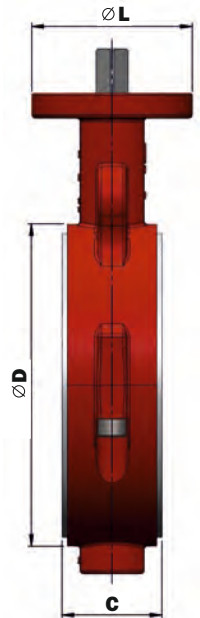
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BASIC DIMENSIONS

Czech Industrial Valve Manufacturer



	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.

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