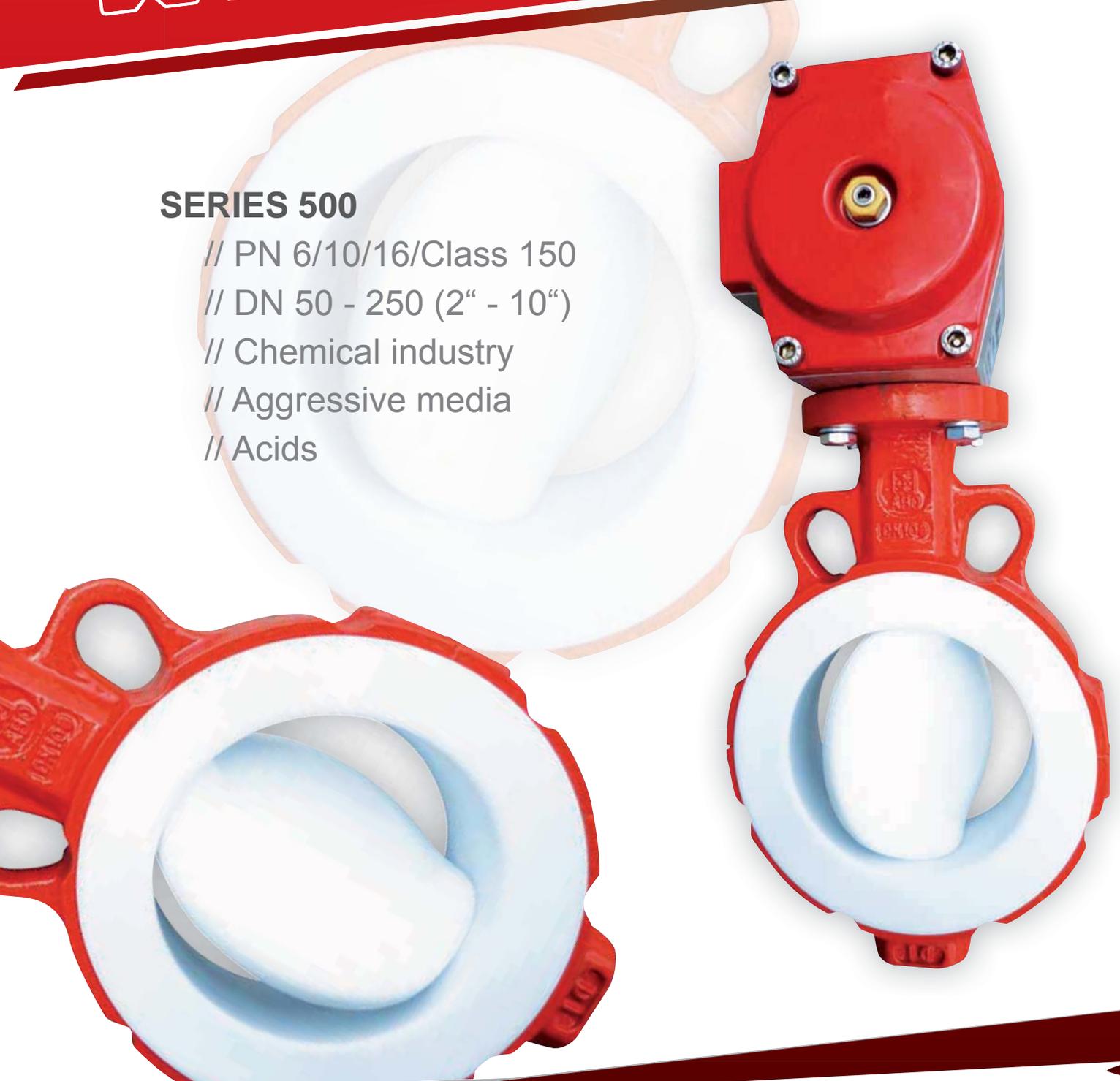


ABO

GRIP THAT HOLDS

SERIES 500

- // PN 6/10/16/Class 150
- // DN 50 - 250 (2" - 10")
- // Chemical industry
- // Aggressive media
- // Acids



PTFE LINED HIGH PERFORMANCE
BUTTERFLY VALVES

GENERAL INFORMATION - SERIES 500

GENERAL CHARACTERISTICS

- DN 50 – DN 250 (2" - 10")
- Maximum working pressure: **10 bar**
- Concentric design with epoxy coated body
- Shut-off and regulating device
- No limits in position in piping (horizontal/vertical)
- Excellent shut off protection (bubble tight shut off) and high KV values
- Disc has 3 mm thickness of pure virgin PTFE
- Upper stem seal system prevents any environmental contaminants from entering the stem bore
- Extended neck design allows for piping insulation and enables easy access for actuator mounting
- PTFE impregnated steel bearing ensures precision alignment of the upper and lower stem
- Top flange acc. to ISO 5211 allows connection with various kinds of actuators (electric, pneumatic, hydraulic etc.)

APPLICATIONS

High performance butterfly valves Series 500 are designed to work with aggressive media in industries such as:

- Chemical industry
- High purity water
- Food industry
- Pharmaceutical industry
- Sanitary industries
- Corrosive & toxic media
- Adhesive & acids
- Paper industry
- Chlorine production
- Mining industry
- Paint manufacture

STANDARDS

LEAK TEST:

- EN 12266-1, Rate A
- ISO 5208, Rate A
- API 598, TAB. 5

FACE TO FACE ACC.:

- EN 558, SERIES 20
- ISO 5752, SERIES 20
- API 609, TAB. 2

TOP FLANGE:

- EN ISO 5211

CONNECTION BETWEEN FLANGES:

- EN 1092-1
- DIN 2631-32
- ASME B16.5

WORKING STANDARD:

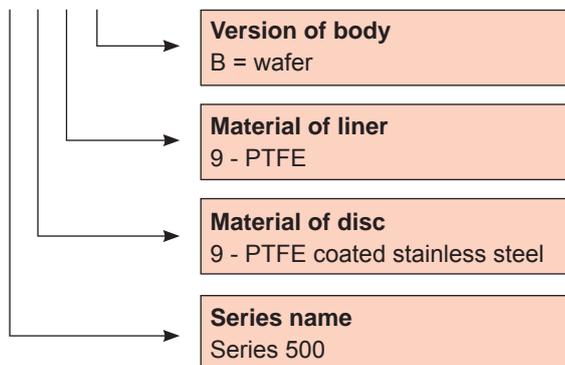
- EN 593 + A1

MARKING:

- EN 19

TYPE DESIGNATION

5 9 9 B



Models
Wafer type B

PRODUCT QUALITY AND CONTROL

ABO production facilities are certified in accordance with ISO 9001 quality system, which ensures product quality and precision in manufacturing as well as strict product testing. Quality control guidelines and procedures include number of steps in 3 main areas: incoming materials control, in-production control and after-production control.

- Test procedures are established according to: EN 12266-1, ISO 5208, API 598, ANSI/FCI 70-2
- Manufacture according to the requirements of the European Directive 97/23/CE – Equipment under pressure (Category III, modul B)
- All ABO valves pass pressure tests to 110% of rated pressure to ensure bubble tight shutoff
- All actuators are calibrated and cycle tested before shipment
- Material Traceability Rule – Certification is provided for all supplied valves as per customer's request
- Positive Material Identification – All materials are subjected to PMI testing in order to verify Material Traceability Certificate

Certificates - Complete list of certificates can be found on www.abovalve.com.

DESIGN BENEFITS

10) SAFETY FEATURES

A key element of the ABO butterfly valve Series 500 is the sealing capsule, which forms the secondary seal. This capsule fully isolates the valve body and stem from the working media. The capsule is consisting of a safety stainless steel ring which is supplemented by a silicone energizer ring.

9) DISC

The one-piece shaft/disc as well as the safety seat are coated with PTFE. The thickness of the PTFE on the disc is at least 3 mm. All sealing surfaces are machined.

8) ENERGIZER

An elastic energizer secures constant pressure around the perimeter of the liner.

7) FUNCTIONAL AREAS

The sealing element around the shaft (functional areas) is secured via precise machining and alignment of the sealing components.

1) INTERNATIONAL STANDARDS COMPATIBILITY

Top flange according to Standard ISO 5211 enables direct mounting of manual operators and power actuators. Longer necks of ABO butterfly valves result in insulation of ISO top flange (protection of mounted actuator).

2) PROTECTION AGAINST ABRASIVE PARTICLES INTRUSION

A duster in an „O“ ring shape protects shaft bearings against intrusion of abrasive particles.

3) SPRING LOADING STUFFING BOX

Loaded springs situated in the valve neck prevent axial movement of the shaft. A standard feature is a double seal on both shaft passages. The stuffing box is supplemented with a silicone energizer.

4) BALL SEALING PRINCIPLE

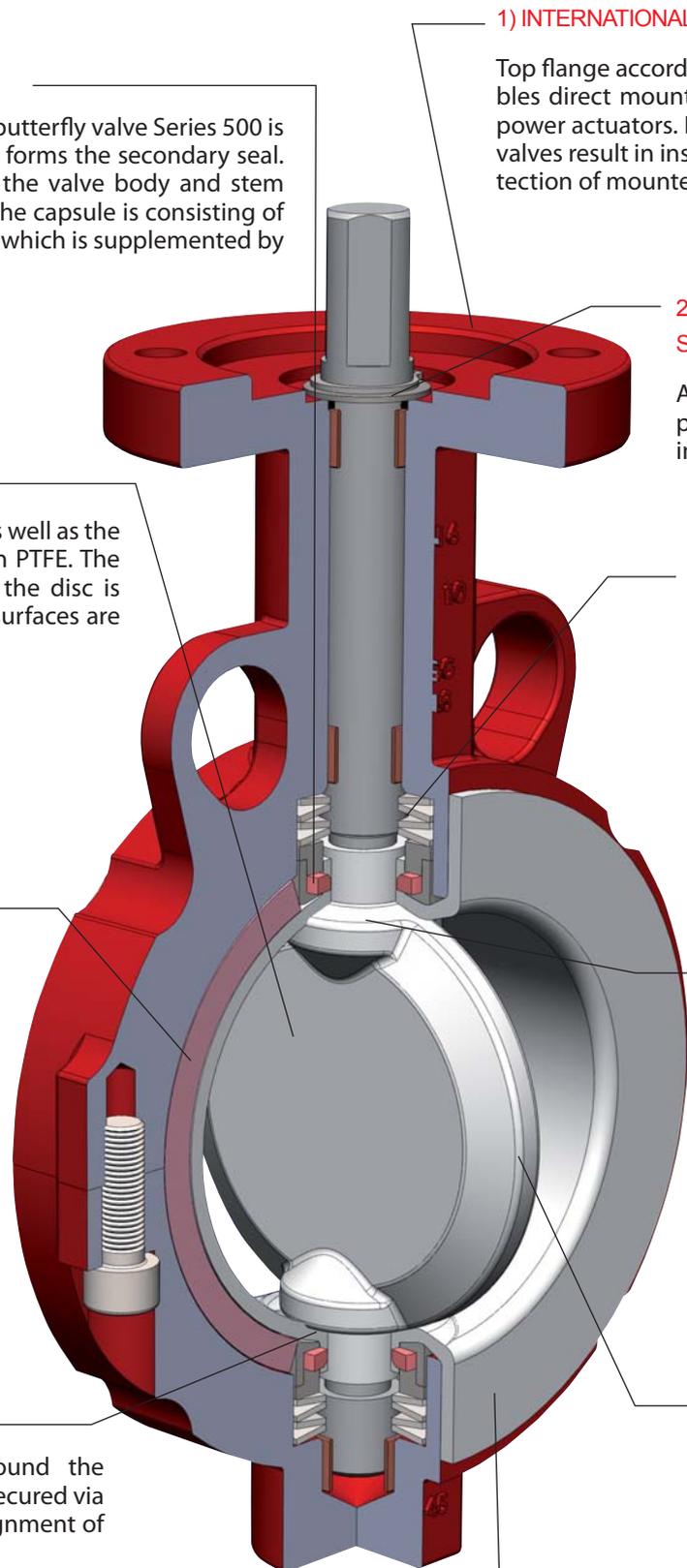
Sealing surface of the Teflon liner in the shaft area has a defined ball geometry which accurately reproduces the disc geometry, does not include critical transitions, and thus ensures long-term operations.

5) PROFILED DISC

A profiled disc assures lower pressure drops and higher Kv/Cv values.

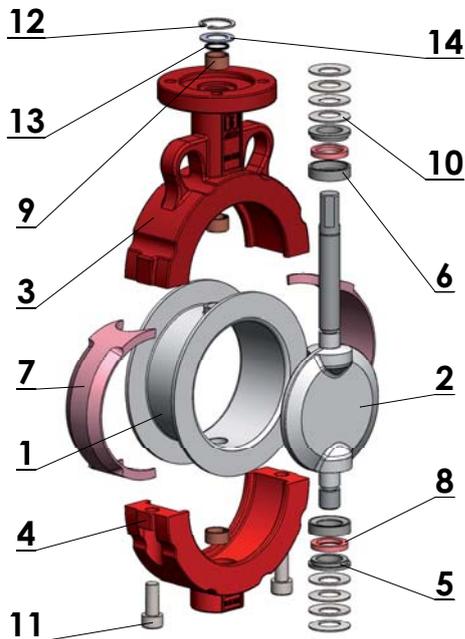
6) TEFLON LINER

The Teflon liner is 3 mm thick and is manufactured via isostatic pressing. The sealing strips function as double-sided flange seal.



MATERIALS & TECHNICAL INFORMATION

DRAWING & MATERIALS



Item	Name	Material
1	Liner	PTFE
2	Disc with shaft	Stainless steel 1.4469, PTFE coated
3	Upper body part	Ductile iron 0.7043 (GGG40.3)
4	Lower body part	Ductile iron 0.7043 (GGG40.3)
5	Pressure element	Stainless steel 1.4021 (AISI 420)
6	Seal capsule	Stainless steel 1.4021 (AISI 420)
7	Energizer	Silicone rubber / VITON
8	Ring	Silicone rubber
9	Sliding gland ring	Steel PTFE
10	Disc spring	Carbon steel 1.8159
11	Screw	Stainless steel A4
12	Retaining ring	Stainless steel A2
13	O-ring	NBR
14	Lock Washer	Stainless steel A2

Execution in other material types can be provided upon request. Max. temperatures for each material of seat are accepted only for a specific medium and short time exposure. Please always consult material selection with the manufacturer.

ABO VIRGIN PTFE PROPERTIES

In order to assure long-life span and superior quality, all PTFE parts (seats as well as encapsulated discs) for ABO Series 500 valves are moulded from pure, virgin PTFE material. Virgin PTFE provides for an excellent chemical resistance and can be used with aggressive media. Typical characteristics of fluoropolymer resins include chemical inertness, exceptional dielectric properties, toughness and flexibility, low coefficient of friction, negligible water absorption and non-stick characteristics. All these properties provide increased protection against permeation of the line media. Further, low coefficient of friction reduces valve operation torque.

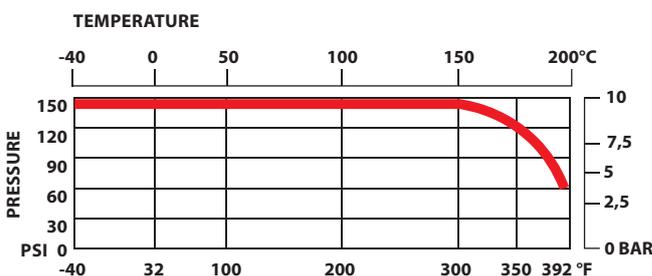
INSTALLATION BETWEEN FLANGES (DN 50 - 200)

Vers.	PN / DN	50	65	80	100	125	150	200	250
B	PN 6								
	PN 10								
	PN 16								
	Class 150								
	JIS 10 K								
	JIS 16 K								

 standard

WORKING CONDITIONS

- Maximum working pressure: 10 bar
- Temperature range - max: -40°C + 200°C (-40°F + 392°F), depending on medium



COATING OPTIONS

ABO's standard product offers valve bodies with an epoxy coating, providing excellent wear as well as corrosion resistance to the valve's surface. ABO epoxy coating is executed in orange finish RAL 2002 – 80 µm. Based on customer requirement, other customer specific coatings or colors are available. ABO epoxy coating has the following features:

- Excellent corrosion and wear resistance
- Resistance of chemicals including dilute acids and alkalis, petroleum solvents, alcohols, greases and oils
- Resistance to humidity & water
- Resistance to ultra - violet radiation
- Excellent resistance to abrasion
- Impact resistance without chipping or cracking



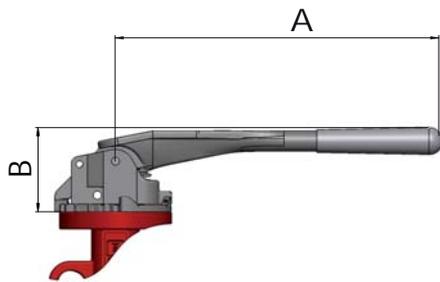
ACTUATION & TORQUES

ACTUATION POSSIBILITIES

All ABO handles, manual gear operators, pneumatic and electric actuators can be mounted directly to ABO butterfly valves. This feature eliminates the need for brackets or couplings, allows for simple installation in the field, minimizes possible misalignment, and decreases overall height.

HANDLEVER

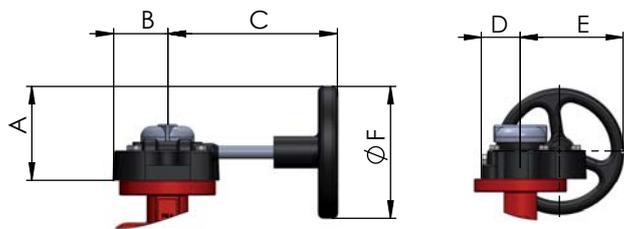
For manual actuation, ABO offers levers in carbon steel material with protective coating for excellent corrosion, abrasion and impact resistance. A lever in stainless steel material is an option. ISO top flange connection is F05 for sizes DN 50 and 65, and F07 for sizes DN 80-200, respectively.



DN	mm	50-65	80-125	150-200	250
	inch	2"-2 1/2"	3"-5"	6"-8"	10"
A		270	270	362	750
B		75	80	90	105
Weight (kg)		1,24	1,24	1,40	2,20

MANUAL GEARBOX WITH HANDWHEEL

ABO gearbox series of manual actuators combines state of art production technology, with cast iron and pressed steel construction, to provide a smooth and trouble-free operation for heavy duty on-off and throttling service of ABO valves. The rugged, cast iron body seal is weatherproof to IP65. A self-locking gearing holds the valve in the desired position. Further features include a readily accessible handwheel, adjustable stopscrew for closed position, removable splined drive bush with indexing facility and a facility to lock handwheel with padlock and chain. Gearboxes, as well as handlevers, can be supplemented with contacts for signalization of endpoints.



DN	mm	50 - 125	150 - 200	250
	inch	2" - 5"	6" - 8"	10"
A		70	78	133
B		35	46	57
C		91	110	156
D		38	46	60
E		84	91	155
F		100	100	200
Weight (kg)		1,6	3,7	6,6

ACTUATORS

- PNEUMATIC ACTUATORS - ABO pneumatic actuators Series 95 are rack and pinion, opposed-piston actuators available in two versions: single acting & double acting
- ELECTRIC ACTUATORS - ABO series 97 electric actuators are designated for quarter turn operating application. Electric actuators of 24V, 230V and 400V can be installed on ABO butterfly valves.

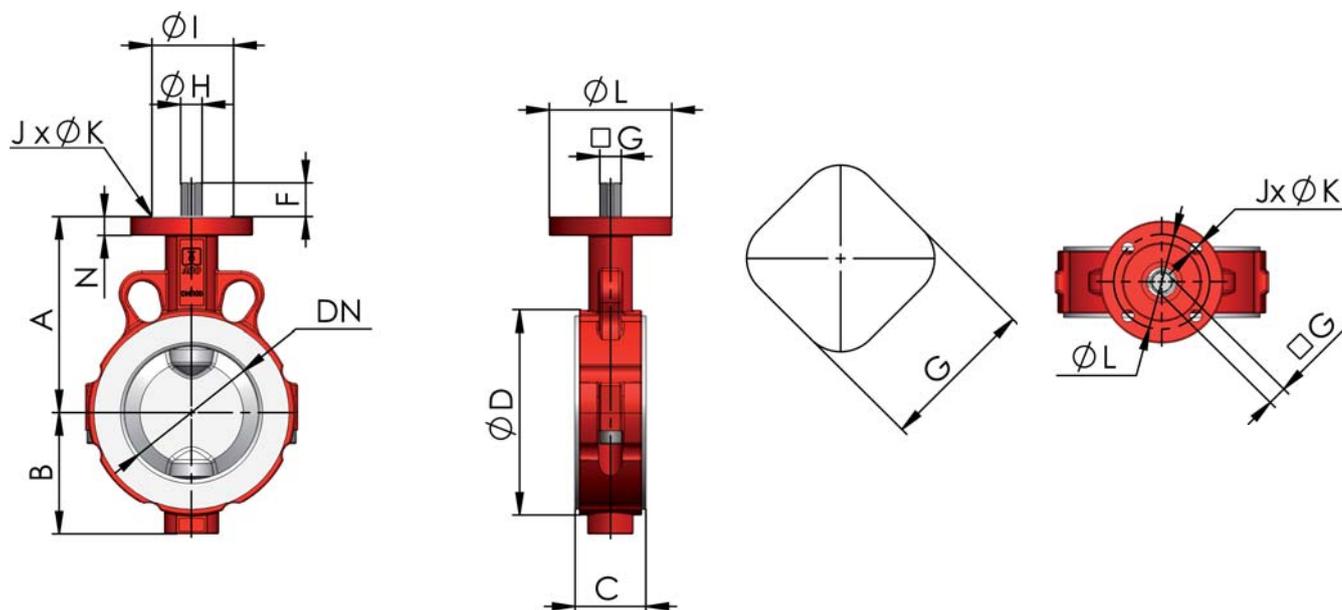
OPERATING TORQUES UPON WORKING PRESSURE (NM)

DN	mm	50	65	80	100	125	150	200	250
	inch	2"	2" 1/2"	3"	4"	5"	6"	8"	10"
PMA 10bar		34	41	66	85	113	153	282	354

For pressure 10 bar - water at 20°C only.

Operating torques are mentioned without safety reserve.

DIMENSIONS DN 50 - 250 (2" - 10"), PN 6/10/16



DN	mm	50	65	80	100	125	150	200	250
	inch	2"	2 1/2"	3"	4"	5"	6"	8"	10"
Version B	A	120	128	135	145	164	176,5	234	274
Valve dimensions	B	61	74	78	90	106	126	152	186
	C	43	46	46	52	56	56	60	70
	D	96	115	131	152	181	207	257	314
	E	100	115	131	152	181	207	257	314
Endshaft dimensions	F	25	25	25	25	25	25	25	31
	G	11	11	14	14	14	14	17	22
	H	-	-	-	-	-	-	-	-
Top Flange	I	50	50	70	70	70	70	70	102
	J	4	4	4	4	4	4	4	4
	K	7	7	9	9	9	9	9	12
Flange dimensions	L	70	70	90	90	90	90	90	125
	M	-	-	-	-	-	-	-	-
	N	14	14	14	14	14	14	14	18
Weight (kg)		2,3	3,0	3,5	5,0	6,5	7,8	13,2	23,6
ISO Flange		F05	F05	F07	F07	F07	F07	F07	F10



EUROPEAN UNION
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Data subject to change.

