ABO valve

GET IN CONTROL
INTELLIGENT • INNOVATIVE • INTERNATIONAL
STAY IN CONTROL

RESILIENT SEATED BUTTERFLY VALVES

Body design
WAFER type
LUG type

Nominal size
DN32 - DN1600

Working pressure
6/10/16 bar

Flange connection
PN6/PN10/PN16/Class 150

Working temperature
-40°C /+200°C

Tightness
Class A



SERIES S900

industrial line

www.abovalve.com

Description

ABO valve resilient seated butterfly valves provide reliable, smooth-sealing performance for water systems, HVAC, chemical media and general industrial use. With customizable body, disc and seat materials and optional protective coatings, they adapt easily to a wide range of operating conditions and media. A robust split-shaft design, blow-out-proof stem and ISO 5211 interface ensure long-term durability and simple automation. The valves can be equipped with manual, pneumatic or electric actuators, making the Series 900 a versatile solution for both standard and demanding applications.



Working medium

Potable water
Waste water
Hot industrial water
Heating water
Sea water
Chemicals
Gas / Oil and gas
Oil derivates
Loose materials
Air
Beverages / Food
Malt
Sugar juice

Standards

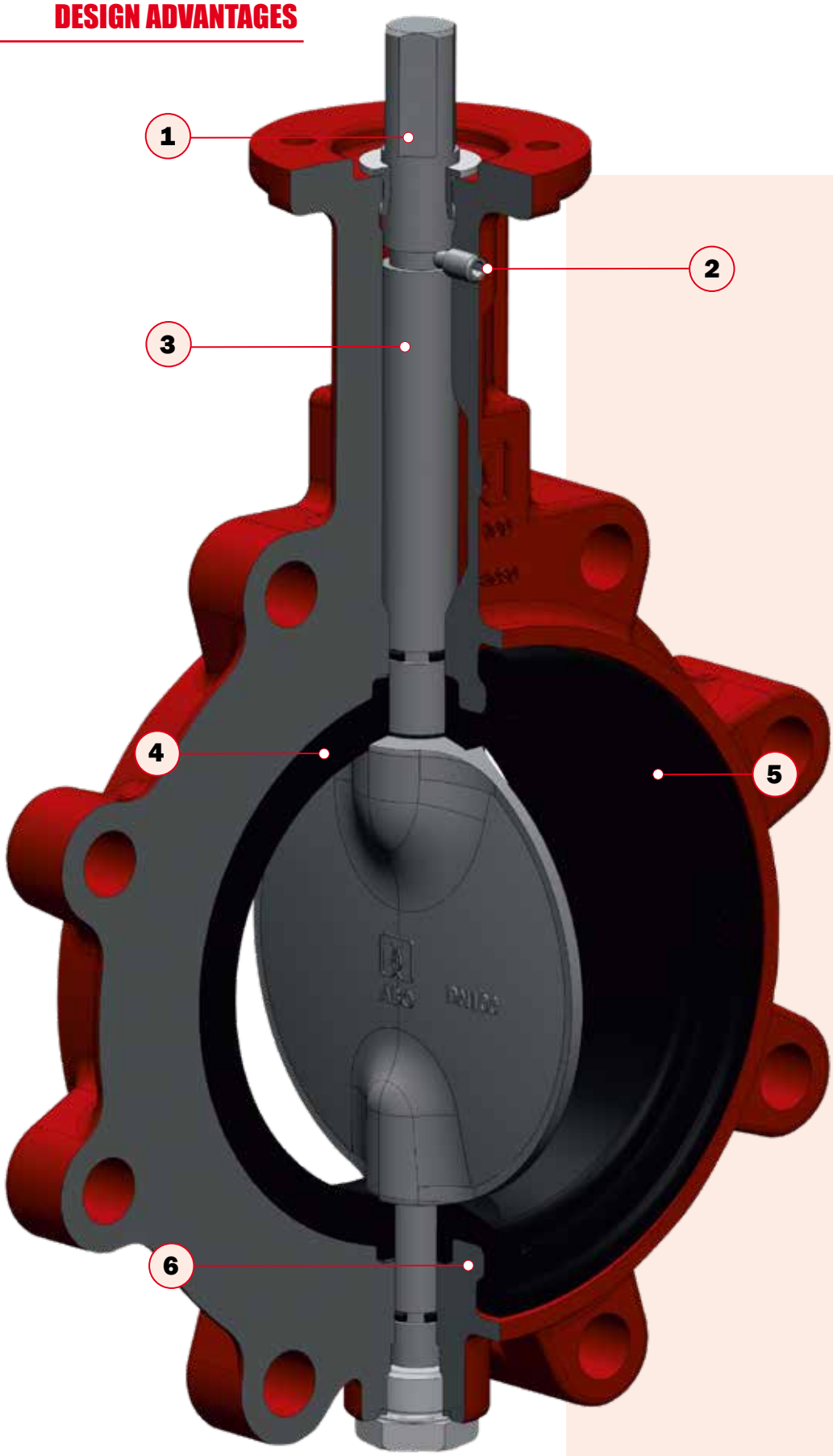
Design standard	EN 593 API 609 - option
Leak test	Bi-directional tightness EN 12266-1, Class A ISO 5208, Class A API 598, (soft-seated valves) ANSI/FCI 70-2, class VI
Face-to-face dimension	**Wafer „B“ / Lug „T“** EN 558-2, series 20 ISO 5752, series 20 API609, category A, Class 150 *for double flange type see other catalogue*
ATEX performance	As option
Top flange	EN ISO 5211
Flange conncection	Type B, EN 1092-1/ EN 1092-2 Raised face, ASME B16.5 ASME B16.47
Marking	EN 19 EN 593 PED 2014/68/EU ASME B16.34

Type designation

9 2 4 B 100 03 A

- **Atex Option**
- **Controls**
  0 - bare shaft
  1 - lever
  3 - manual gearbox with handwheel
  4 - pneuactuator
  5 - electroactuator
- **Nominal size (DN)**
- **Design of the body**
  B - Wafer
  T - Lug
- **Disc material**
  0 - Brass
  1 - Bronze
  2 - Stainless steel 1.4308
  3 - Ductile iron
  4 - Stainless steel 1.4408
  5 - Hastelloy
  6 - Uranus
  7 - Titan
  9 - Duplex
- **Seat material**
  1 - NBR
  2 - EPDM, FLUCAST
  3 - NBR Carboxyle (XNBR)
  4 - VITON (FPM)
  5 - Silicone (MVQ)
  6 - Silicone (VMQ)
  7 - Epichlorhydrin (ECO)
  8 - Hypalon (CSM)
  9 - NBR (for gas/ DVGW), NBR CONDUCT
- **Series designation**
  Series 900

DESIGN ADVANTAGES



1. International standard compatibility

according to the standard ISO 5211 top flange enables to directly mount any manual operators and actuators. Valve long neck enables to use insulation and protects control elements on the ISO flange. The design meets on heating system control valves.

2. Anti blow-out proof shaft system

a retaining bolt disables a stem movement upwards˝.

3. Split shaft design

with the divided stem the valve reaches better Kv/Cv values and thus a low pressure loss.

4. Seat design

seat profile in the body (groove and tongue system) prevents the seat to slip out from the body when the disc moves.

5. Double side profile

enables to correctly fit the seat in the body.

6. Demountable design

enables to simply change the seat.

BODY SURFACE TREATMENT / SEAT ANCHORING

Body surface treatment

Epoxy coating

Standard ABO high quality epoxy coating system, complying with the C2 corrosion aggressiveness degree according to the standard ČSN EN ISO 12944-1, minimum coating thickness 80 µm.

Marine environment coating

Resistant coating suitable for marine environment or high corrosion risk environment. Available are variants resistant to corrosion aggresiveness grades C3, C4 and C5.

Rilsan

Highly resistant coating for very demanding applications of high flexibility, elasticity and excellent corrosion resistance.
This coating option is recommended for applications such as seawater, cement, process water, food or media contamina- ted with chemicals.

Halar

Thermoplastic Fluoroplast coating to be installed in pipelines with aggressive media. The coatings of high chemical resistance are suitable also for joining material, sealing washers and similar.

GSK coating (Aqua line)

High-performance GSK-approved epoxy coating providing excellent corrosion protection, outstanding adhesion, high impact resistance, and long-lasting durability. Suitable for potable water and demanding water distribution applications.

Seat anchoring options

Groove/tongue

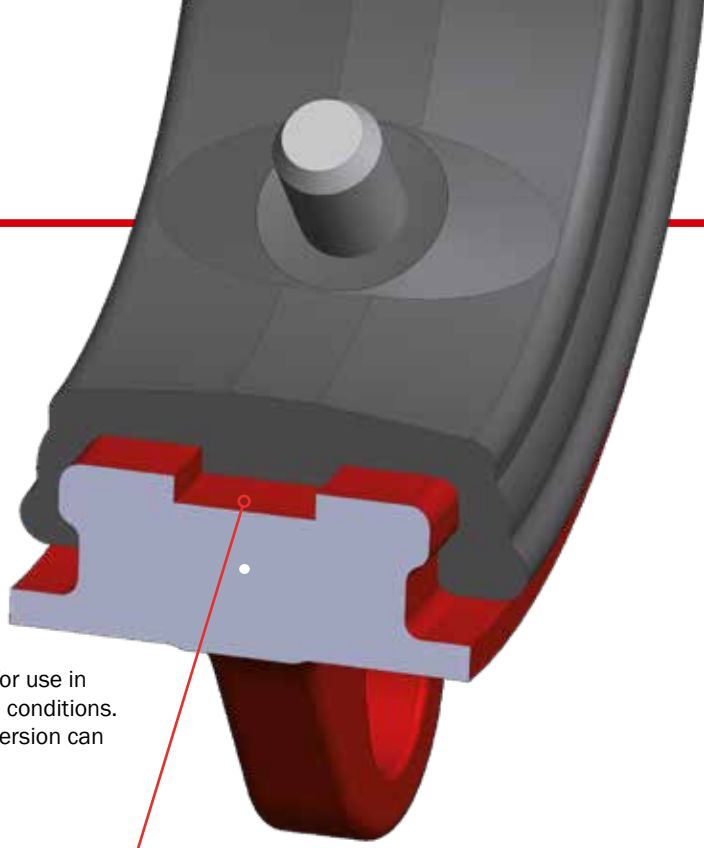
STANDARD

- reliability
- simple replacing seat

Vulcanized(bonded) seat

UPON REQUEST

- vulcanized seat is intended for use in vacuum and difficult operation conditions. For lower vacuum glued seat version can be used.



Groove/ tongue system prevents seat movement







3-stage sealing system guarantees 100% tightness, long term product lifespan and safe operation in the most demanding applications.

1. Primary sealing

- sealing surface of the seat in the contact area with disc, stem and pivot has a precisely defined geometry

2. Secondary sealing

- secondary sealing is created by the stem and pivot disc overlap depending on the seat diameter

3. Tertiary sealing

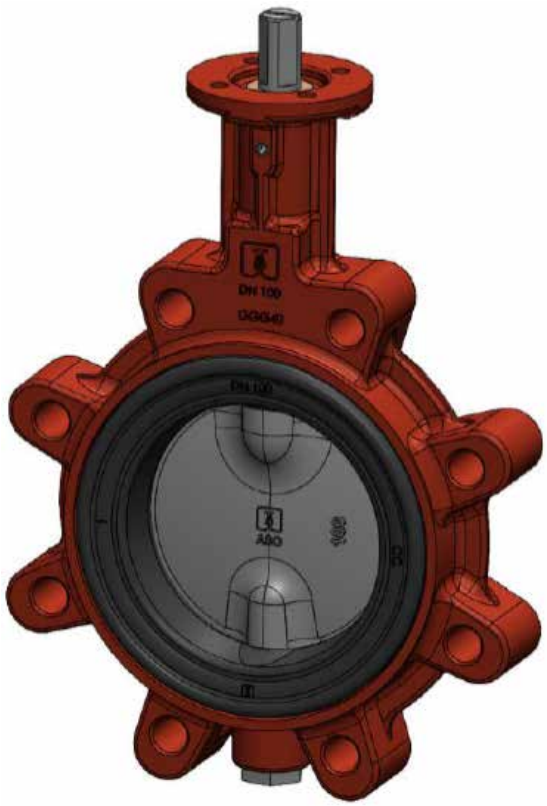
- stems and pivots are equipped with safety O-rings that further enhance operational performance and reliability
- O-rings protect stem bearings against penetration of abrasive particles from environment

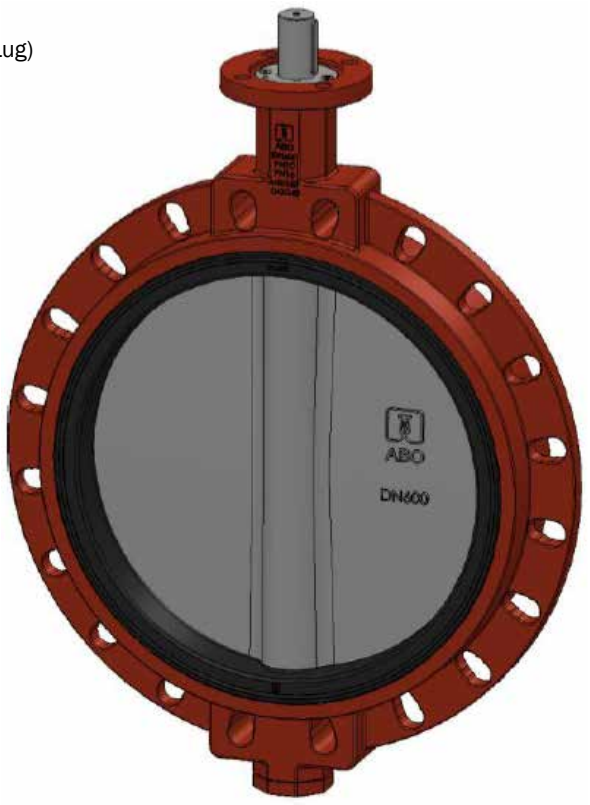
SERIES 900 BUTTERFLY VALVES DESIGN MODELS B / T

Type B (Wafer)



Type T (Lug)





TORQUES

Opening torques [Nm]

OPENING TORQUES [Nm]															
DN	**32/40**	**50**	**65**	**80**	**100**	**125**	**150**	**200**	**250**	**300**	**350**	**400**	**450**	**500**	**600**
NPS	**1 1/2"**	**2"**	**2 1/2"**	**3"**	**4"**	**5"**	**6"**	**8"**	**10"**	**12"**	**14"**	**16"**	**18"**	**20"**	**24"**
PS 6 bar	6	8	15	20	38	55	70	100	150	235	650	750	1000	1400	2100
PS 10 bar	8	10	17	25	46	70	80	145	220	290	700	900	1200	1650	2500
PS 16 bar	10	12	20	30	55	85	100	165	290	380	750	1050	1400	1900	3100

Mentioned torques are valid only for valves with EPDM seats and stainless discs for liquid media. For valve actuation the declared values must be multiplied by 1,2. For NBR and VITON (FPM) seats multiply by 1,4. For gas media or media with abrasive particles use secondary coefficient 1,35. For specific work conditions contact manufacturer to get advised the actuation type choice.

KV VALUES

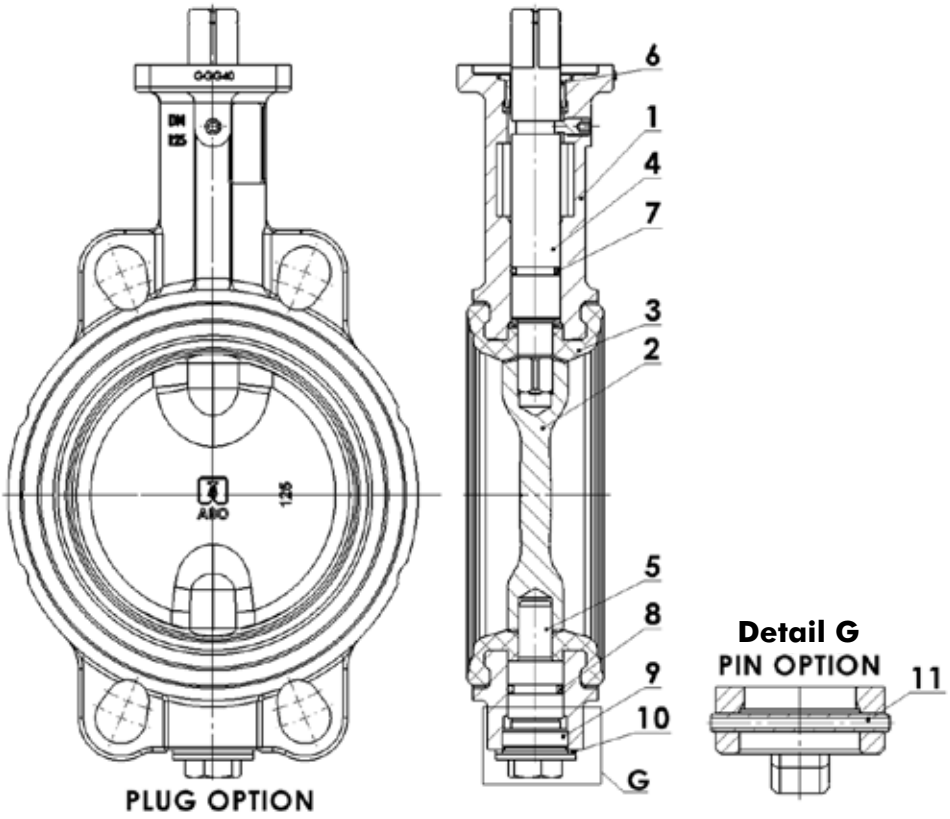
Size	Valve open angle with Kv								
	10°	**20°**	**30°**	**40°**	**50°**	**60°**	**70°**	**80°**	**90°**
DN32/40	-	-	3	9	19	32	46	54	58
DN50	-	2	8	18	34	57	85	104	109
DN65	2	6	17	36	64	104	163	222	238
DN80	4	9	29	57	97	158	254	376	418
DN100	8	17	50	100	171	275	430	579	618
DN125	14	28	82	157	262	416	651	909	992
DN150	27	54	138	249	403	633	985	1 403	1 551
DN200	50	103	231	411	674	1 082	1 743	2 684	3 119
DN250	90	183	386	667	1 079	1 709	2 670	3 711	4 060
DN300	125	259	532	932	1 450	2 452	3 876	5 441	5 975
DN350	135	273	569	1 028	1 721	2 826	4 531	6 427	7 019
DN400	170	350	800	1 461	2 404	3 861	6 016	8 095	8 768
DN450	200	400	861	1 622	2 826	4 747	7 964	12 479	14 762
DN500	240	485	1 085	2 029	3 503	5 817	9 706	14 400	18 164
DN600	310	626	1 618	3 004	5 115	8 410	13 602	20 847	24 690
DN700	31	1 554	3 118	5 686	8 569	12 810	19 511	29 904	42 416
DN800	39	2 045	4 105	4 786	11 815	17 633	29 902	41 231	52 776
DN900	53	2 614	5 767	10 917	17 326	27 849	44 987	68 209	74 979
DN1000	72	3 584	7 194	13 117	20 702	30 991	47 201	72 344	102 614
DN1200	390	4 597	10 146	19 195	26 221	43 873	79 092	119 966	131 962

K_v = Water flow in m^3/h, passing through the valve at a pressure drop of 1 bar

C_v = Water flow in US gal/min passing through the valve at a pressure drop of 1 psi

$K_v = 0{,}875 \times C_v$

MATERIAL CONFIGURATION FOR DN32-200

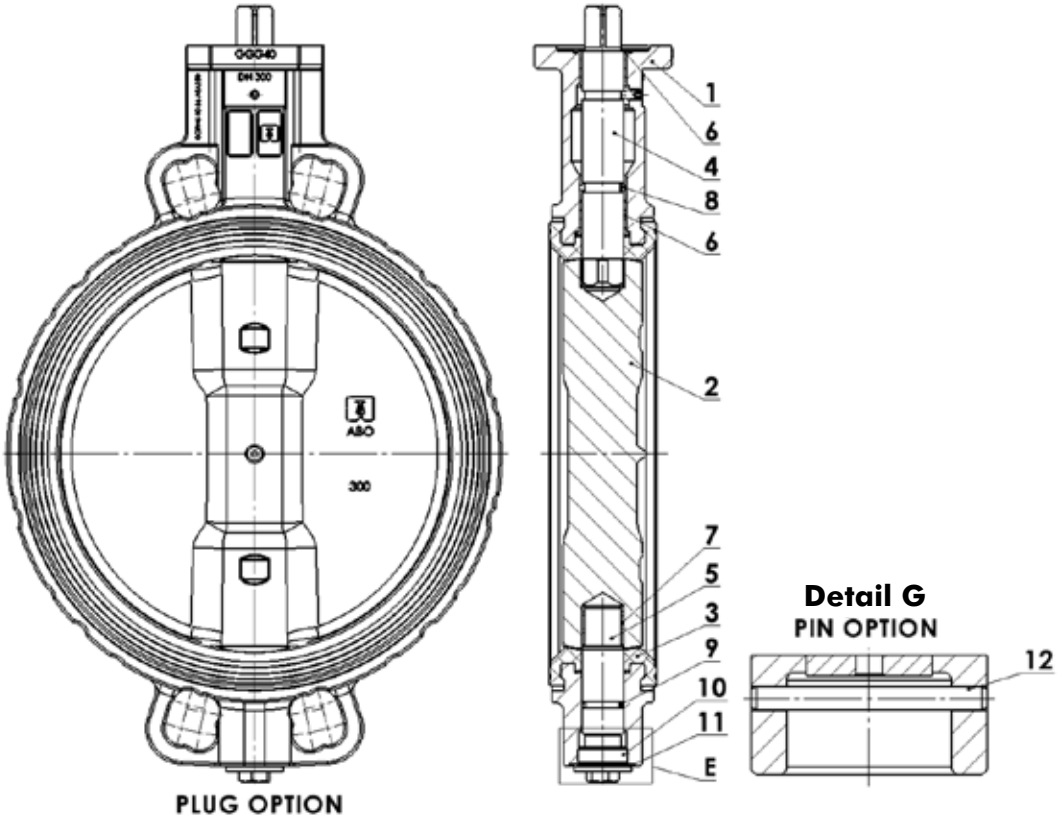


For standard option with cast body. Valid for B / T types and DN32-200:

Part NO	Item		Material
1	Body		GGG40 / WCB / CF8M / LCC / AC-43000***
2	Disc		Brass / C95800 / CF8 / GGG40 / CF8M / Hastelloy / Uranus / Titan / 1.4469
3	Seat		NBR, EPDM, FLUCAST, NBR Carboxyle, VITON, Silicone (MVQ), Silicone (VMQ), Epichlorhydrin (ECO), Hypalon (CSM), NBR (for gas/ DVGW), NBR CONDUCT
4	Shaft		1.4021 / 1.4404 / 1.4462 / 1.4410 / Monel K500 / 1.4501 / 1.4057 / 1.4542
5	Pivot		1.4021 / 1.4404 / 1.4462 / 1.4410 / Monel K500 / 1.4501 / 1.4057 / 1.4542
6	Sleeve bearing		Delrin
7*	O-Ring		NBR / EPDM / VITON / SILICONE
8*	O-Ring		NBR / EPDM / VITON / SILICONE
9	Plug		A4
10	Plug seal	DN32-100	Klingersil
		DN125-200	Cu
11**	Pin		A2

**O-Ring material chosen based on seat material.*
***Only for option with pin (Pin version).*
**** For AC 43000 body see our aluminium body version datasheet*
Fastener material is A4 and A2 for all material configuration.
Other materials upon request.

MATERIAL CONFIGURATION FOR DN250-300

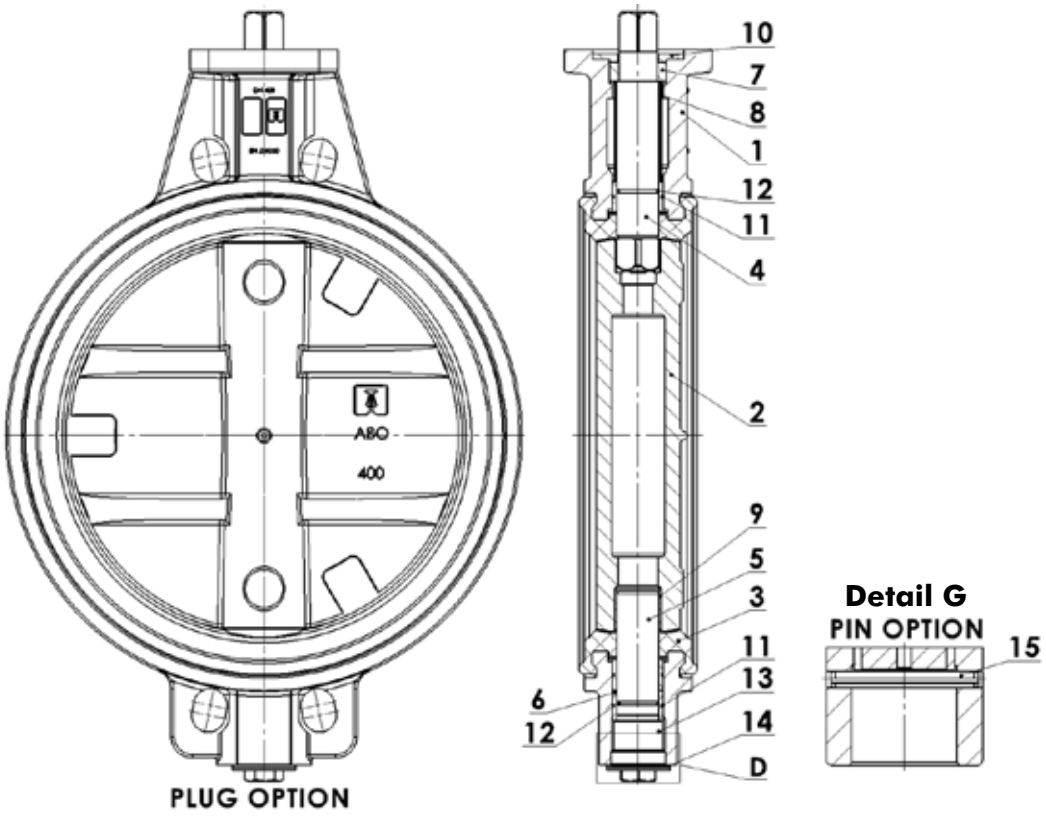


For standard option with cast body. Valid for B / T types and DN250-300:

Part NO	Item	Material
1	Body	GGG40 / WCB / CF8M / LCC / AC-43000
2	Disc	Brass / C95800 / CF8 / GGG40 / CF8M / Hastelloy / Uranus / Titan / 1.4469
3	Seat	NBR, EPDM, FLUCAST, NBR Carboxyle, VITON, Silicone (MVQ), Silicone (VMQ), Epichlorhydrin (ECO), Hypalon (CSM), NBR (for gas/ DVGW), NBR CONDUCT
4	Shaft	1.4021 / 1.4404 / 1.4462 / 1.4410 / Monel K500 / 1.4501 / 1.4057 / 1.4542
5	Pivot	1.4021 / 1.4404 / 1.4462 / 1.4410 / Monel K500 / 1.4501 / 1.4057 / 1.4542
6	Sleeve bearing	Iglidur G
7	Sleeve bearing	Iglidur G
8*	O-Ring	NBR / EPDM / VITON / SILICONE
9*	O-Ring	NBR / EPDM / VITON / SILICONE
10	Plug	A4
11	Plug seal	Cu
12**	Pin	A2

**O-Ring material chosen based on seat material.*
***Only for option with pin (Pin version).*
Fastener material is A4 and A2 for all material configuration.
Other materials upon request.

MATERIAL CONFIGURATION FOR DN350-400

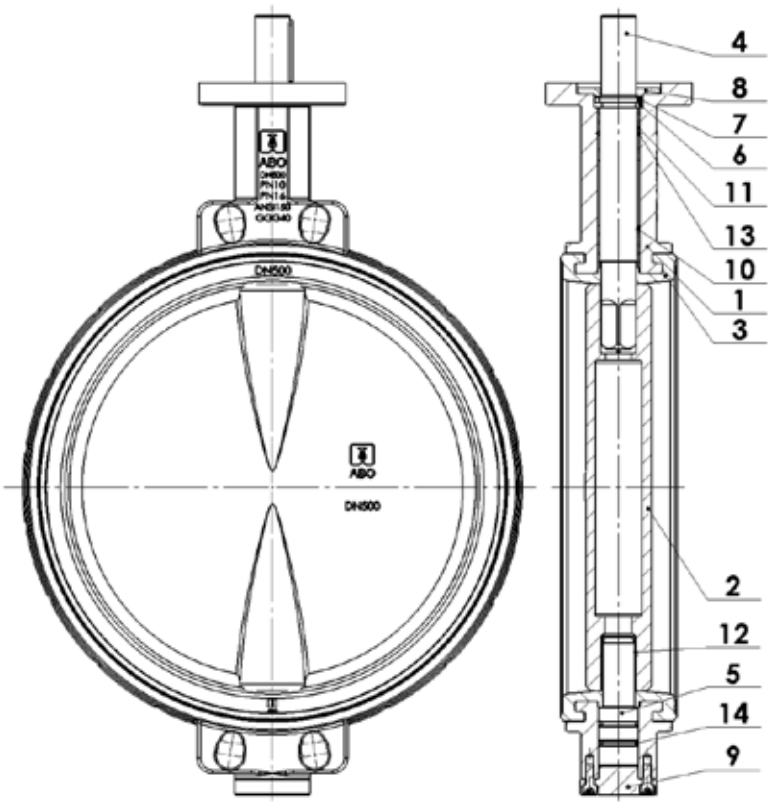


For standard option with cast body. Valid for B / T types and DN350-400:

Part NO	Item	Material
1	Body	GGG40 / WCB / CF8M / LCC / AC-43000
2	Disc	Brass / C95800 / CF8 / GGG40 / CF8M / Hastelloy / Uranus / Titan / 1.4469
3	Seat	NBR, EPDM, FLUCAST, NBR Carboxyle, VITON, Silicone (MVQ), Silicone (VMQ), Epichlorhydrin (ECO), Hypalon (CSM), NBR (for gas/ DVGW), NBR CONDUCT
4	Shaft	1.4021 / 1.4404 / 1.4462 / 1.4410 / Monel K500 / 1.4501 / 1.4057 / 1.4542
5	Pivot	1.4021 / 1.4404 / 1.4462 / 1.4410 / Monel K500 / 1.4501 / 1.4057 / 1.4542
6	Sleeve bearing	2.0402
7	Sleeve bearing	2.0402
8	Bushing	1.4301
9	Sleeve bearing	Iglidur G
10	Shaft flange	1.4301
11*	O-ring	NBR / EPDM / VITON / SILICONE
12*	O-ring	NBR / EPDM / VITON / SILICONE
13	Plug	A4
14	Plug seal	Cu
15	Pin	A2

**O-Ring material chosen based on seat material.*
Fastener material is A4 and A2 for all material configuration.
Other materials upon request.

MATERIAL CONFIGURATION FOR DN450-600

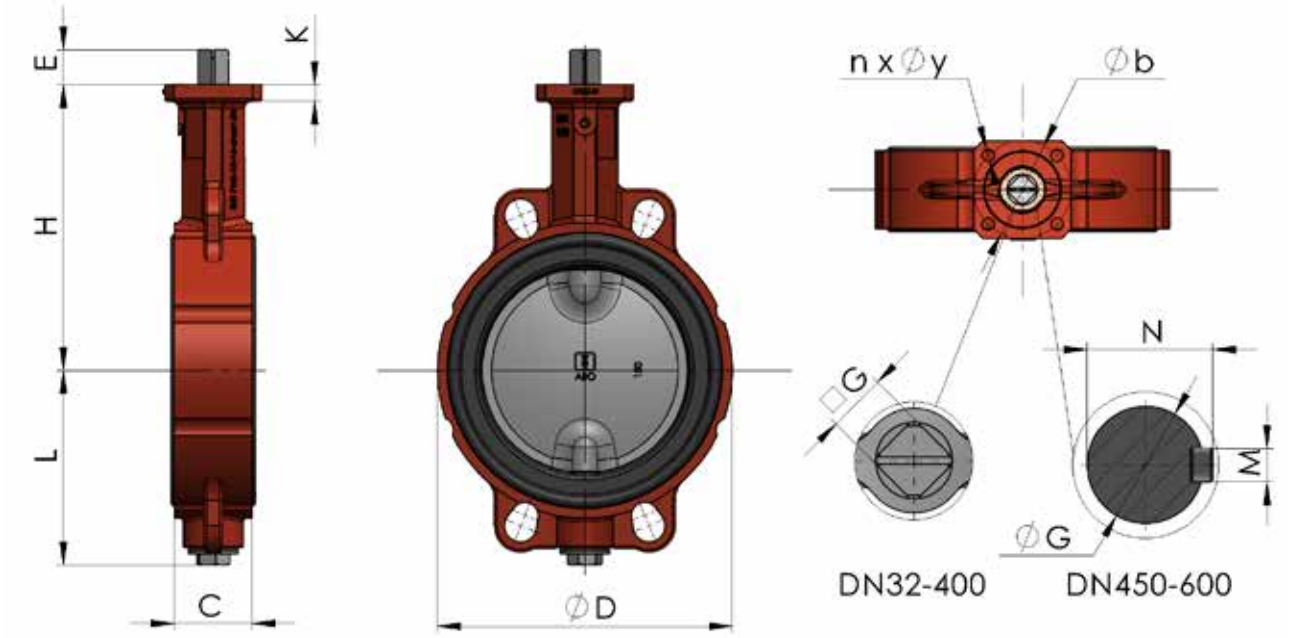


For standard option with cast body. Valid for B / T types and DN450-600:

Part NO	Item	Material
1	Body	GGG40 / WCB / CF8M / LCC / AC-43000
2	Disc	Brass / C95800 / CF8 / GGG40 / CF8M / Hastelloy / Uranus / Titan / 1.4469
3	Seat	NBR, EPDM, FLUCAST, NBR Carboxyle, VITON, Silicone (MVQ), Silicone (VMQ), Epichlorhydrin (ECO), Hypalon (CSM), NBR (for gas/ DVGW), NBR CONDUCT
4	Shaft	1.4021 / 1.4404 / 1.4462 / 1.4410 / Monel K500 / 1.4501 / 1.4057 / 1.4542
5	Pivot	1.4021 / 1.4404 / 1.4462 / 1.4410 / Monel K500 / 1.4501 / 1.4057 / 1.4542
6	Retainer ring	1.4021
7	Shaft ring	1.4301
8	Shaft flange	1.0553
9	Pivot flange	1.0425
10	Sleeve bearing	Iglidur G
11	Sleeve bearing	Iglidur G
12	Sleeve bearing	Iglidur G
13*	O-Ring	NBR / EPDM / VITON / SILICONE
14*	O-Ring	NBR / EPDM / VITON / SILICONE

**O-Ring material chosen based on seat material.*
Fastener material is A4 and A2 for all material configuration.
Other materials upon request.

DIMENSIONS



For standard option with cast body type B / T:

DN	H	L		C		F	D		K	E	G/M/N	ISO 5211 FLANGE	n x øy	øb	DESIGN B [kg]	DESIGN T [kg]
		„B“	„T“	„B“	„T“		„B“	„T“								
32/40	136	58,5		36		-	109	108	8	25	□14	F07/F05	3x9/4x7	70/50	1,7	2,2
50	146	69		43		16	118	114	8	25	□14	F05	4x7	50	2,5	2,95
65	153,5	77		46		16	133	129	8	25	□14	F05	4x7	50	3	3,7
80	163	89		46		16	128	174	8	25	□14	F05	4x7	50	3,5	4,7
100	172,5	105		52		16	150	202	8	25	□14	F05	4x7	50	4,3	5,6
125	192,5	127		56		19	184	234	12	25	□17	F07	4x9	70	6,9	8,9
150	208	140		56		19	212	255	12	25	□17	F07	4x9	70	8,5	11,2
200	237	166		60		17	268	306,5	14	25	□17	F07	4x9	70	12,5	14,7
250	270	214		68		18	320	397	17	30	□22	F10	4x10,5	102	22,5	30,5
300	310	249		78		20,5	378	464	17	30	□22	F10	4x10,5	102	33,2	42,5
350	325	285		78		23,5	435	509	17	36	□27	F12	4x14	125	47,2	59,3
400	365	327		102		-	488	590	21	36	□27	F14	4x18	140	73,9	96,5
450	427	333,5		114		-	546	627	22	80	ø42/12/45,1	F14	4x18	140	109,3	132,7
500	485	368		127		-	585	702	27	80	ø42/12/45,1	F14	4x18	140	126,7	195,5
600	565	464		154		-	824	825	27	80	ø50/14/53,5	F16	4x23	165	214	290

The weights are approximate, depending on material configuration and connection.
Others option FTF dimensions upon request.

FLANGE CONNECTION

B type (wafer)

DN	32/40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
NPS	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
PN6															
PN10															
PN16															
ANSI150															
JIS 10K															
JIS 16K															

for cast bodies, all connections are possible at the same time
possible only in case of additional machining
impossible

T type (Lug)

DN	32/40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
NPS	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
PN6															
PN10															
PN16															
ANSI150															
JIS 10K															
JIS 16K															

possible options, connection should be specified in an order
impossible

SEATS / POSSIBLE APPLICATIONS

Marking	Seat material	Code	Applications	Working temperature range
EPDM	EPDM	EPDM-008 / 1	Weak mineral acids and basis air, water ketones, esters	-20/+90 °C
	FOOD WHITE EPDM	EPDM-014 (FDA)	FDA approval, Regulation (EC) 1935/2004	-10/+90 °C
	DRINKING WATER EPDM	EPDM-018	Normatives WRAS, ACS, W270, UBA, EN-681-1	-20/+90 °C
	NEW DRINKING WATER EPDM-HT	EPDM-024	Normatives WRAS, ACS, W270, UBA, EN-681-1	-20/+130 °C
	EPDM-HT	EPDM - 022	High temperature resistance	-20/+130 °C
	EPDM SUPER HT	EPDM-015	Super high temperature and steam resistance	-10/+150 °C
	EPDM-HT (FDA)	FLUCAST AB/T	High temperature abrasion resistance, FDA and Regulation (EC)1935/2004	-5/+130 °C
NBR	NITRILE	NBR-004 / 1	Oils, Greases, Fuel, Gas oil CO2, CO, H2	-10/+90 °C
	FOOD WHITE NITRILE	NBR-001 (FDA)	FDA approval, Regulation (EC) 1935/2004	
	DVGW-GAS NITRILE	NBR - 011	DVGW Gas Regulation UNE EN-682	
NBR-X	CARBOXYLIC NITRILE	NBR - 005	Oily abrasion resistance FDA approval	0/ +90 °C
HNBR	HYDROGENATED NBR	NBR-008	Higher resistance SH2	-10/+90 °C
NBR-D	CONDUCTIVE NITRILE	NBR-009	Conductive properties	-10/+90 °C
ECO	EPICHLORHYDRIN	ECO - 002	Resistance to brine, gases and moderate to oil, fuel	-40/+90 °C
CSM	HYPALON	CSM - 001	Moderate resistance to oils, greases and weak acids	-10/+100 °C
FPM	VITON	FPM - 002	Best chemical resistance	-5/+200 °C
	VITON GF	FPM - 003	Oxygenated Gasoline	
	VITON BIO FDA	FPM-006	„Acids, Steam, Biodiesel, the best chemical resistance FDA and Regulation (EC)1935/2004“	
	VITON LOW TEMPER.	FPM-008	Low temperature resistance	-30/+200 °C
	VITON BASES	FPM-009	Bases resistance	-5/+200 °C
MVQ	RED SILICONE	Q - 001	Highest and lowest temperature resistance (Red color)	-55/+200 °C
	FOOD TRANSPARENT SILICONE	Q-002 /1 (FDA)	FDA approval, Regulation (EC) 1935/2004	
	STEAM SILICONE	Q - 004	Steam water	-55/+160 °C
FLUCAST	FLUCAST AB / W	FLUCAST AB / W	White rubber abrasion resistance, FDA and Regulation (EC)1935/2004	-10/+90 °C
	FLUCAST AB / P	FLUCAST AB / P	Dry abrasion resistance	-10/+70 °C
	FLUCAST AB / N	FLUCAST AB / N	Oily abrasion resistance	0/ +90 °C

VALVE ACTUATION

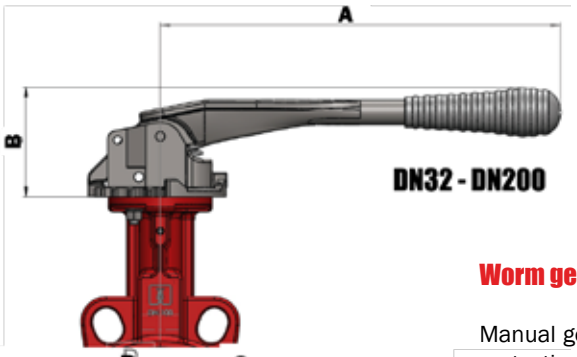
All the ABO valves can be equipped with hand levers, worm gears, pneumatic and electric actuators. The top flange design according to the standard ISO 5211 enables to directly assemble actuators on valves. Thus compatibility between valves and actuators is guaranteed.

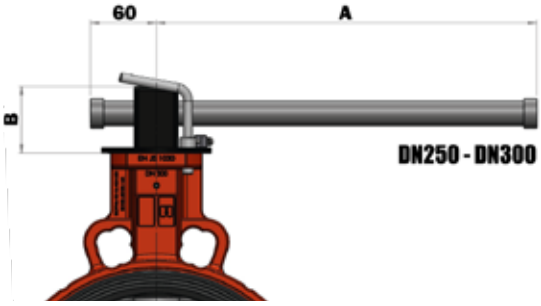
Handlever

For manual actuation ABO offers carbon steel lever suitably painted to improve resistance to corrosion, abrasion and shock. Stainless lever on request. Top flange conection according to ISO standards. Controlled lever upon request. The levers can be equipped with a lock to ensure an optimized position.The levers can be supplemented with limit switches.

Dimensions are mentioned in mm, weight in kg.

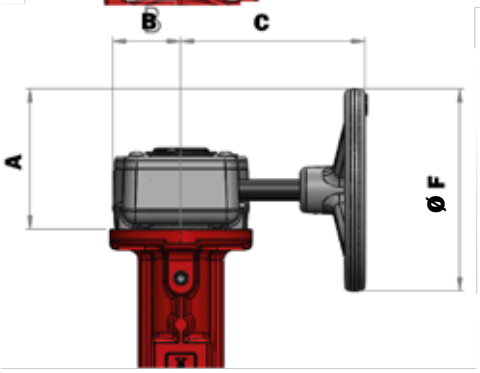
DN	32-100	125	150 - 200	250	300
A	270	270	362	450	750
B	75	75	75	135	135
Weight	1,24	1,26	1,40	2,20	3,10
Shaft	14x14	17x17	17x17	22x22	22x22

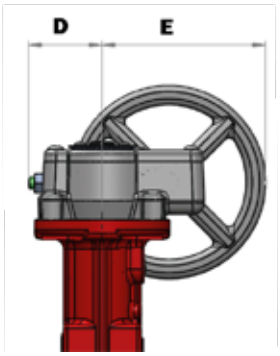




Worm gear with handwheel

Manual gearbox housing 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	PN	ISO FLANGE	SHAFT	A	B	C	D	E	F	Kg
32/40	16	F05	14X14	70	35	91	38	84	100	1,2
50	16	F05	14X14	70	35	91	38	84	100	1,2
65	16	F05	14X14	70	35	91	38	84	100	1,2
80	16	F05	14X14	70	35	91	38	84	100	1,2
100	16	F05	14X14	70	35	91	38	84	100	1,2
125	16	F07	17X17	127,5	46	139	59	141	200	2,2
150	16	F07	17X17	127,5	46	139	59	141	200	2,2
200	16	F07	17X17	127,5	46	139	59	141	200	2,2
250	16	F10	22X22	134	57	156	60	155	200	4,2
300	16	F10	22X22	134	57	156	60	155	200	4,2
350	10	F12	27X27	183	57	210	95	205	300	4,5
350	16	F12	27X27	238	67	255	131	267	400	6,5
400	10	F14	27X27	292	78	350	169	331	500	11,0
400	16	F14	27X27	341	78	350	219	381	600	12,00
450	10	F14	Ø38	348	110	346	196	405	600	26,00
450	16	F14	Ø38	348	110	346	196	405	600	26,00
500	10	F14	Ø42	348	110	346	196	405	600	26,00
500	16	F14	Ø42	405	143	387	220	480	700	35,00
600	10	F16	Ø50	405	143	387	220	480	700	35,00
600	16	F16	Ø50	405	143	387	270	530	800	37,00

Dimensions are mentioned in mm.

VALVE ACTUATION

Actuators

Pneumatic actuators
Pneumatic actuators ABO Series 95 can be assembled to valves in two options: single--acting or double-acting.



Electric actuators
Electric drives ABO Series 97 are designed quarter-turn. Electric actuators can be installed on ABO valves for voltages of 24 V, 230 V or 400 V.



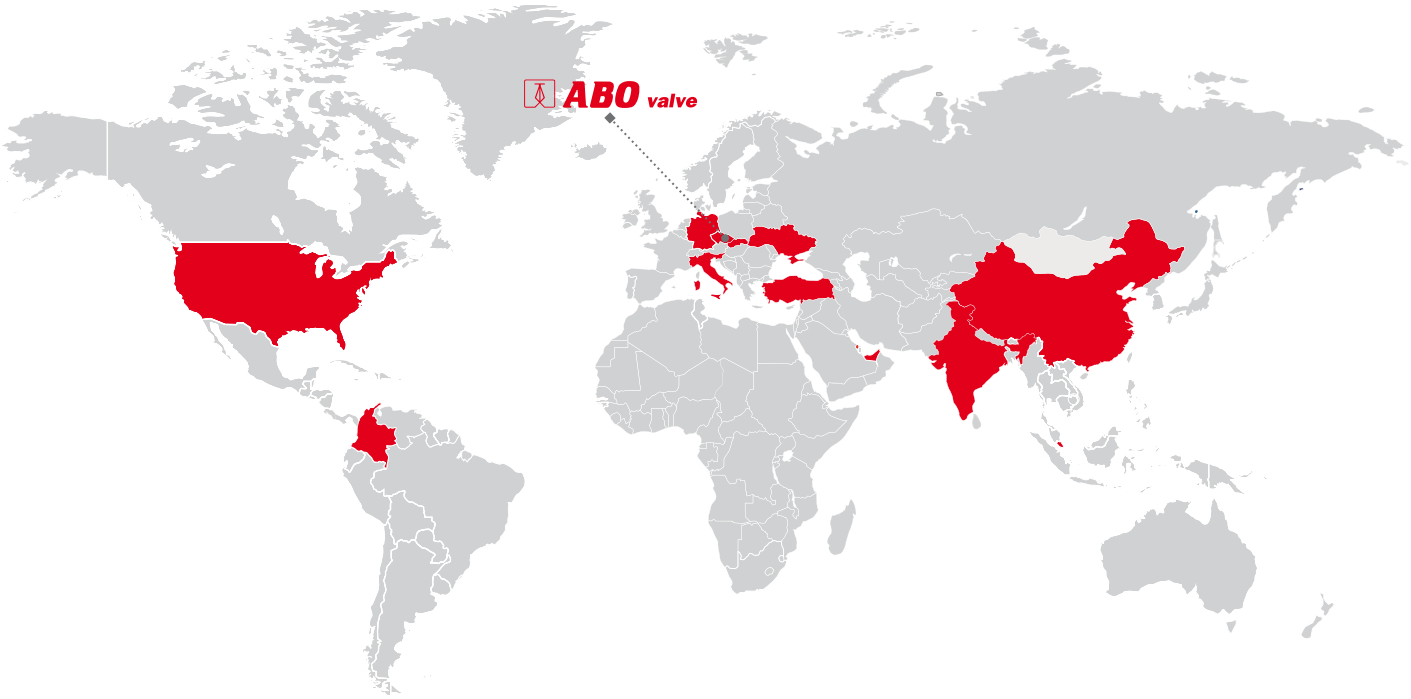


Special actuators types
Valves are equipped with special actuator types from major world suppliers.

ABO valve can provide complete valve and actuator testing services, including actuator functional testing.

ABO valve

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