ABO valve

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TRIPLE OFFSET BUTTERFLY VALVES

Body design
WAFER type with through holes
LUG type with threaded holes
DOUBLE FLANGED type

Nominal size
DN50 - DN600

Working pressure
16/25/40/50 bar

Flange connection
PN6/PN10/PN16/PN25/
PN40/Class 150/
Class 300

Working temperature
-50°C/+325°C

Tightness
Class A/B

SERIES 3E

power line

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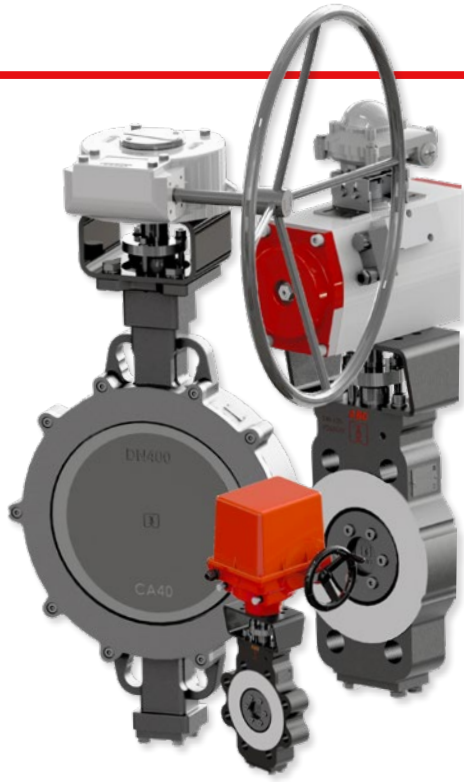


Desription

The 3E-series triple offset butterfly valves are industrial-grade shut-off and control units designed for high-demand process applications in sectors including power generation, oil & gas, petrochemical, and heavy industry. The triple eccentric geometry enables precise metal-to-metal sealing with negligible friction during operation, ensuring extended service life and consistent sealing integrity. Engineered from high-strength alloys with advanced surface treatments, these valves maintain performance across diverse media and process conditions. The design is compliant with international engineering standards and supports direct integration with a full range of manual, pneumatic, and electric actuation systems.

Working medium

Crude Oil
Petroleum products
Fuel
Oil&Oil derivates
Pulp
Potable/Waste/Hot/Industral/
Supply water
Paper stock
Natural/Coke/Oven Stack Gas
Steam
Condensate
Air
Bitumen

Standards

Design standard	EN 593 / ASME B16.34 API 609 - option
Leak test	Uni-directional tightness EN 12266-1, Class A/B (A: liquids, B: gas) ISO 5208, Class A/B (A: liquids, B: gas) API 598, (metal-seated valves) ANSI/FCI 70-2, Class VI
Face-to-face dimension	Wafer „B“ / Lug „T“ EN 558-2, seies 20 (series 25 - for DN350) ISO 5752, series 20 (series 25 - for DN350) API 609, category B, Class 150 Double flange „DF“ EN 558-2, seies 13 ISO 5752, seies 13 API 609, category B (short pattern), Class150
Fire safe design	EN ISO 10497 API 607
ATEX performance	As option
Anti blow-out design	As option
Top flange	EN ISO 5211
Flange conncection	Type B, EN 1092-1 (Type D, EN 1092-1 as option) Raised face, ASME B16.5 (Small groove face, ASME B16.5 as option)
Gasket options	EN 1514-1 / EN 1514-2 ASME B16.21 / ASME B16.20
Marking	EN 19 EN 593 PED 2014/68/EU API 609 ASME B16.34

Type designation

3 5 L 4 B 150 03

Control
0 - bare shaft
3 - manual gearbox with handwheel
4 - pneumatic actuator
5 - electric actuator

Nominal size (DN)

Design of the body
B - Wafer
T - Lug
F - Double flanged

Disc material
4 - stainless steel nitridated
4s - stainless steel + stellite

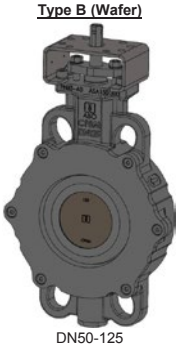
Seat material
L - lamellar stainless steel + graphite

Body material
4 - stainless steel
5 - carbon steel
6 - low-temperature carbon steel

Series designation
Series 3E

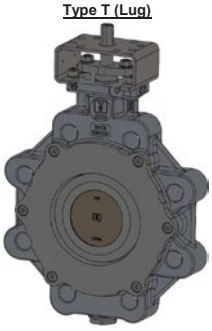
DESIGN MODELS B / T / DF DN50-125

Type B (Wafer)



DN50-125

Type T (Lug)



DN50-125

Type DF (Double flange)

DN50-125

Type B (Wafer)

DN150-400

DN450-600

Type T (Lug)

DN150-400

DN150-600

Type DF (Double flange)

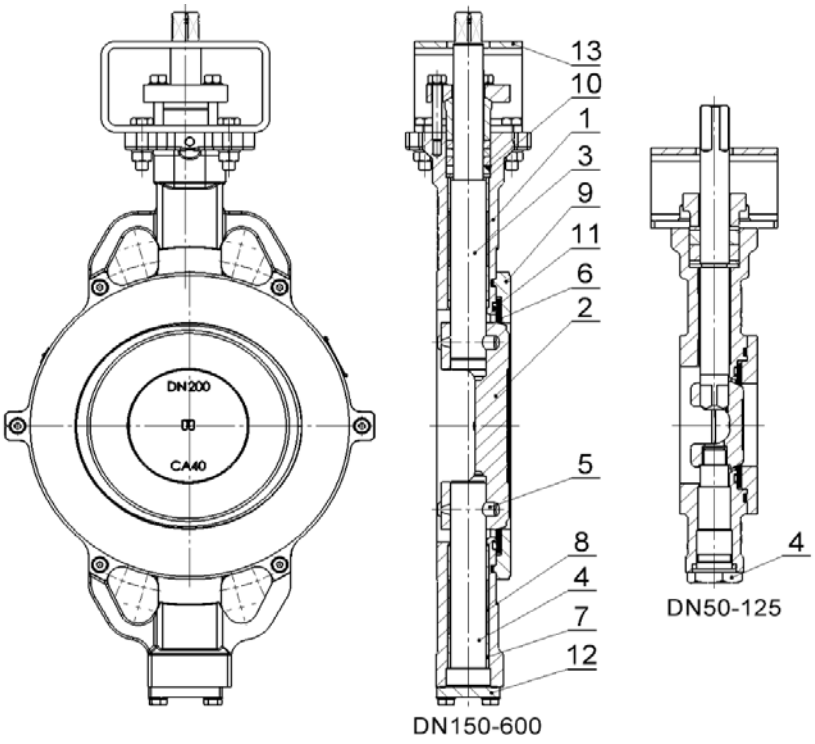
DN150-600

TORQUES

OPENING TORQUES [Nm] VS. WORKING PRESSURE [bar]													
DN	**50**	**65**	**80**	**100**	**125**	**150**	**200**	**250**	**300**	**350**	**400**	**500**	**600**
NPS	**2"**	**2 1/2"**	**3"**	**4"**	**5"**	**6"**	**8"**	**10"**	**12"**	**14"**	**16"**	**20"**	**24"**
Pmax 10 bar	33	42	55	65	85	110	280	283	600	1100	1600	2490	3900
Pmax 16 bar	42	53	70	70	95	140	330	418	900	1500	2270	4100	5150
Pmax 20 bar	48	61	80	70	110	190	370	460	1030	1900	2430	5200	6100
Pmax 25 bar	54	68	90	85	130	210	490	656	1150	2500	3100	6500	8500
Pmax 30 bar	60	76	100	100	150	261	530						
Pmax 40 bar	66	84	110	125	170	350	630						
Pmax 50 bar	75	95	125	150	200								

CLOSING TORQUES [Nm]													
DN	**50**	**65**	**80**	**100**	**125**	**150**	**200**	**250**	**300**	**350**	**400**	**500**	**600**
NPS	**2"**	**2 1/2"**	**3"**	**4"**	**5"**	**6"**	**8"**	**10"**	**12"**	**14"**	**16"**	**20"**	**24"**
Closing torque (water)	75	85	105	140	175	220	450	420	400	450	500	1750	2500
Closing torque (air)	75	85	105	140	175	220	450	565	550	1000	1300	3590	5050

MATERIAL CONFIGURATION

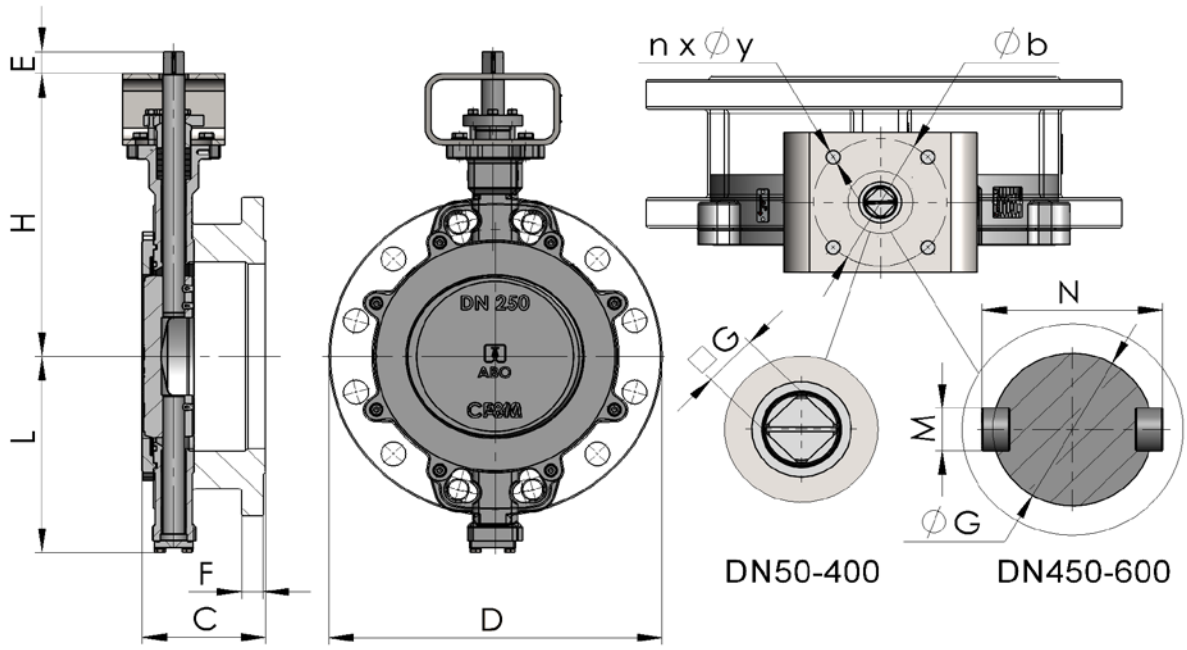


For standard option with cast body. Valid for B / T / DF types

Part NO	Item	35L4	34L4	36L4
1	**Body**	WCB	CF8M	LCC
2	**Disc (3xL4), (DN50-125)**	CF8M + nitrided	CF8M + nitrided	CF8M + nitrided
	Disc (3xL4),(DN150-600)	CA40 + nitrided		
	Disc (3xL4s), (DN50-125)	CF8M + stellit	CF8M + stellit	CF8M + stellit
	Disc (3xL4s),(DN150-600)	CA40 + stellit		
3	**Shaft (DN50-125)**	1.4542	1.4542	1.4542
	Shaft (DN150-600, 150-600)	1.4021	1.4462	1.4462
4	**Pivot (DN50-125)**	1.4404	1.4404	1.4404
	Pivot (DN150-600)	1.4021	1.4462	1.4462
5 *	**Pin (DN150-600)**	1.4021	1.4462	1.4462
6	**Seat**	1.4401 + graphite	1.4401 + graphite	1.4401 + graphite
7	**Bearing**	1.4404+Ni	1.4404+Ni	1.4404+Ni
8	**Bushing**	1.4404	1.4404	1.4404
9	**Ring flange**	1.0425 + Zn	1.4404	1.4404
10	**Packing**	Graphite	Graphite	Graphite
11	**Spiral seal**	1.4541 + graphite	1.4541 + graphite	1.4541 + graphite
12 *	**Cover (DN150-600)**	1.0425	1.4404	1.4404
13	**Bracket**	Carbon steel	Carbon steel	Carbon steel

Fastener material is A4 for all material configuration.
** Only DN150-600 valves have a cover (position 12) and pins (position 5);*
DN50-125 valves have a pivot with thread (position 4), picture DN50-125.
Other material performance upon request.

DIMESIONS



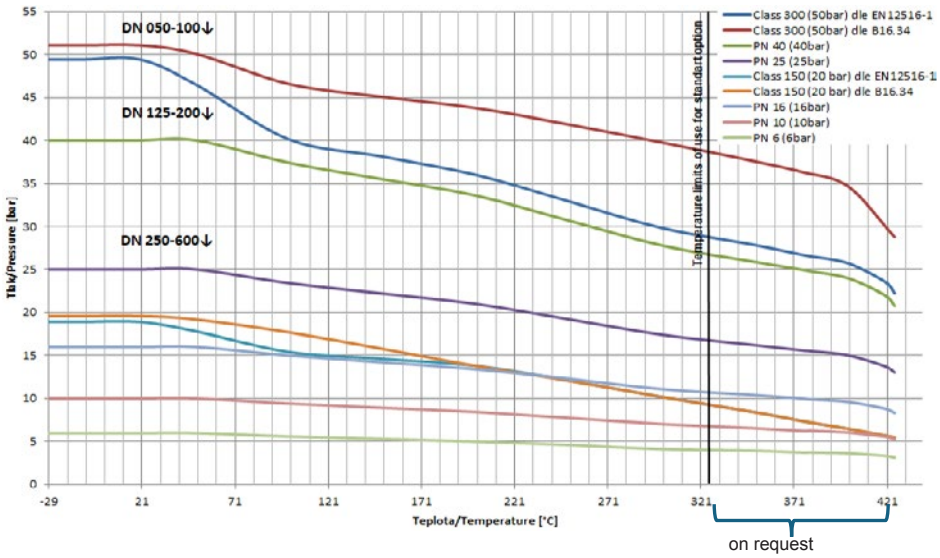
For standard option with cast body:

DN	H	L	C			F	D			E	G/M/N	ISO 5211 FLANGE	n x øy	øb	DESIGN B [kg]	DESIGN T [kg]	DESIGN DF [kg]
			„B“	„T“	„DF		„B“	„T“	„DF“								
50	162,5	92,5	43	-	-	-	114	151	-	25	□14	F07	4x9	70	4	5	-
65	169,5	100	46	-	-	-	138	137	-	25	□14	F07	4x9	70	5	8	-
80	173,5	106	48,5	114	21	150	195	210	25	□14	F07	4x9	70	6	10	14	
100	205,5	122,5	53	127	21	192	225	240	25	□14	F07	4x9	70	9	13	18	
125	215	137	56	140	23	217	259	280	25	□14	F07	4x9	70	12	16	27	
150	307	214	57	140	25	253	318	298	25	□17	F07/F10	4x9/4x11	70/102	21	32	37	
200	338,5	245,5	61	152	27	307	381	373	31	□22*	F10*	4x11	102	29	46	58	
250	395	274	69	165	29	352	450	445	31	□22	F12	4x13	125	46	70	88	
300	459,5	312	79	178	30	394	521	508	31	□27	F14	4x17	140	67	104	122	
350	508	354	92**	190	34	448	577	577	45	□27	F16	4x22	165	100	149	174	
400	556	401	103	216	36	542	657	657	58	□36	F16	4x22	165	130	206	230	
450	567	395	114	-	-	566	622	-	80	ø55/16/62,6	F16	4x22	165	160	174	-	
500	625	428	127,5	229	43	623	707	730	100	ø64/18/72,4	F25	8x18	254	240	280	342	
600	698	491,5	154	267	53	729	821	845	110	ø75/20/84,2	F25	8x18	254	365	407	535	

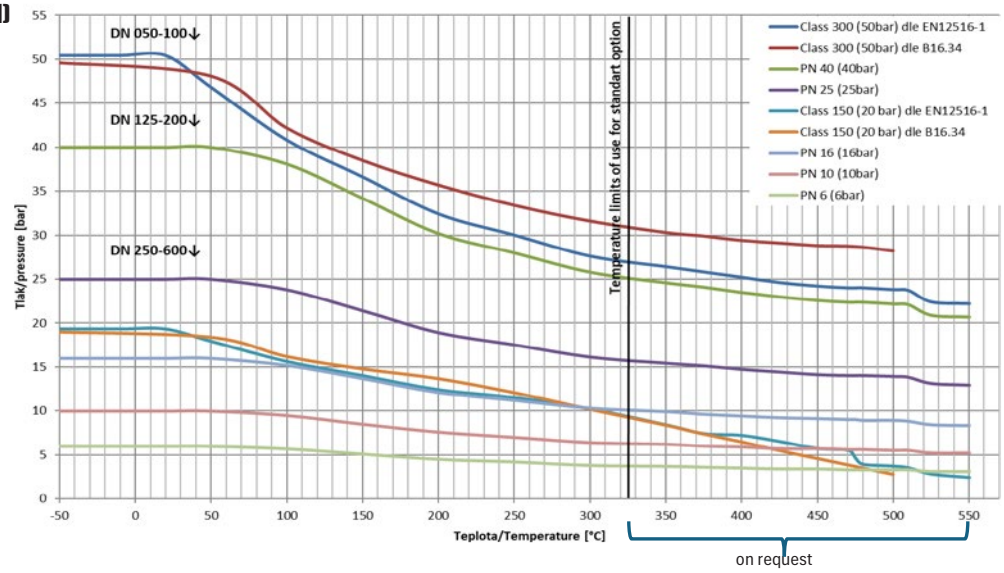
**New design since 01/06/2024. Old design was 17x17, F10*
The weights are approximate, depending on material configuration and connection
***For standard option valve DN350 B and T type is FTF dimension (dimension C) according to series 25, others DN are according to series 20*
Others option FTF dimensions upon request

Pressure-temperature diagram

Body: carbon steel 1.0625 (WCB)



Body: stainless steel 1.4408 (CF8M)



KV Values

Size	Valve open angle with Kv								
	10°	20°	30°	40°	50°	60°	70°	80°	90°
DN50	6	14	25	37	47	55	61	64	62
DN65	10	22	39	59	79	100	120	132	129
DN80	16	34	57	80	105	138	186	223	230
DN100	25	54	84	115	166	231	300	355	356
DN125	36	80	133	189	280	399	518	601	613
DN150	45	92	165	252	361	484	610	715	755
DN200	80	162	279	442	659	939	1 292	1 580	1 658
DN250	150	307	514	784	1 143	1 617	2 169	2 551	2 677
DN300	200	431	708	1 068	1 553	2 175	2 954	3 600	3 710
DN350	220	514	838	1 289	1 925	2 787	3 927	4 825	4 982
DN400	250	590	1 017	1 589	2 444	3 657	5 291	7 068	7 704
DN450	300	660	1 121	1 860	2 963	4 539	6 729	9 483	10 541
DN500	360	740	1 403	2 398	3 791	5 747	8 378	11 347	12 679
DN600	600	1 247	2 214	3 620	5 605	8 380	12 336	16 650	17 971

FLANGE CONNECTION

B type (Wafer)

DN	50	65	80	100	125	150	200	250	300	350	400	450	500	600
NPS	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
PN6														
PN10														
PN16														
PN25														
PN40														
ANSI150														
ANSI300														
JIS 10K														
JIS 16K														

for cast bodies, all connections are possible at the same time
connections available, should be specified in an order
additional machining required
only in case of face-to-face in accordance with CLASS300 or Series 25
not available

T type (Lug type)

DN	50	65	80	100	125	150	200	250	300	350	400	450	500	600
NPS	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
PN6														
PN10														
PN16														
PN25														
PN40														
ANSI150														
ANSI300														
JIS 10K														
JIS 16K														

connections available, should be specified in an order
additional machining required
only in case of face-to-face in accordance with CLASS300 or Series 25
not available

DF type (Double flange)

DN	80	100	125	150	200	250	300	350	400	450	500	600
NPS	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
PN6												
PN10												
PN16												
PN25												
PN40												
ANSI150												
ANSI300												
JIS 10K												
JIS 16K												

connections available, should be specified in an order
additional machining required
not available

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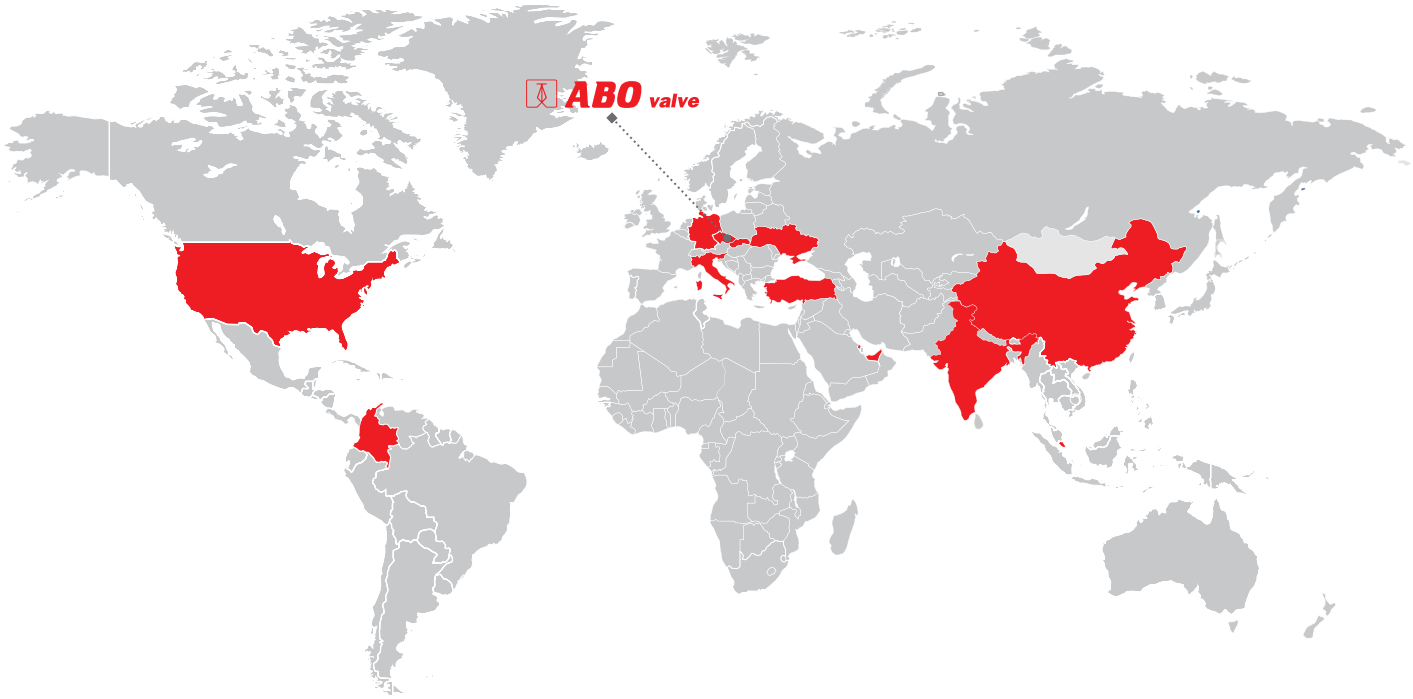

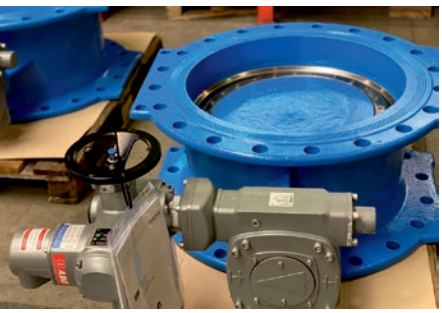

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