



WAFER & LUG BUTTERFLY VALVE



Product
and installation
instructions

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WAFER & LUG BUTTERFLY VALVES

Description

Altech WAFER & LUG butterfly valves for installation between flanges. Epoxy-coated class C4 with stainless steel valve disc. Available with WRAS-approved EPDM liner or NBR liner. ISO-top according to ISO5211 for direct installation of actuator. Can be installed in vertical or horizontal pipes. All valves can be equipped with a manual lever or gear, but are delivered in accordance with the specification. The manual lever has fixed operating functions.

- Soft-closing
- Triple bearings

Application

Valves for shutoff or throttling media and drinking water (only EPDM liner), heating, cooling, compressed air and in industrial applications.

Installation between flanges (connection)

WAFER

DN	PN 6	PN 10	PN 16	ANSI 150
50		●	●	●
65		●	●	●
80	●	●	●	●
100		●	●	●
125		●	●	●
150		●	●	●
200	●	●	●	●
250		●	●	●
300		●	●	●

Authorisations

- CE/PED 2014/68/EU
- WRAS-approved EPDM liner (drinking water)

Material

	Material	Material quality
Valve body	Cast iron	Cast iron GJS-400-15 (GGG40)
Disc	Stainless steel	Stainless steel 316 (1.4401)
Stem	Stainless steel	Stainless steel 316 (1.4401)

Kv-value

Conn.	Water flow m ³ /h at 1 bar pressure drop across valve								Open 90°
	10°	20°	30°	40°	50°	60°	70°	80°	
DN50	0,1	5	12	24	45	64	90	125	135
DN65	0,2	8	20	37	65	98	144	204	220
DN80	0,3	12	22	39	70	116	183	275	302
DN100	0,5	17	36	78	139	230	364	546	600
DN125	0,8	29	61	133	237	392	620	930	1022
DN150	2	45	95	205	366	605	958	1437	1579
DN200	3	89	188	408	727	1202	1903	2854	3136
DN250	4	151	320	694	1237	2047	3240	4859	5340
DN300	5	234	495	1072	1911	3162	5005	7507	8250

WAFER BUTTERFLY VALVES

Product range

Temperature

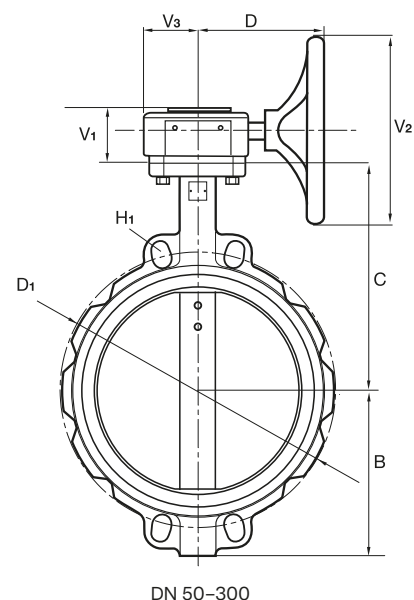
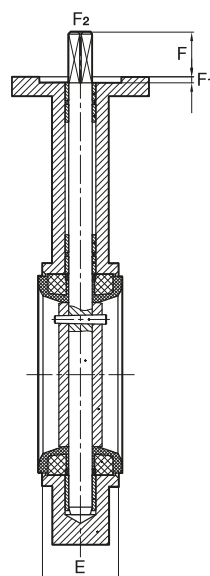
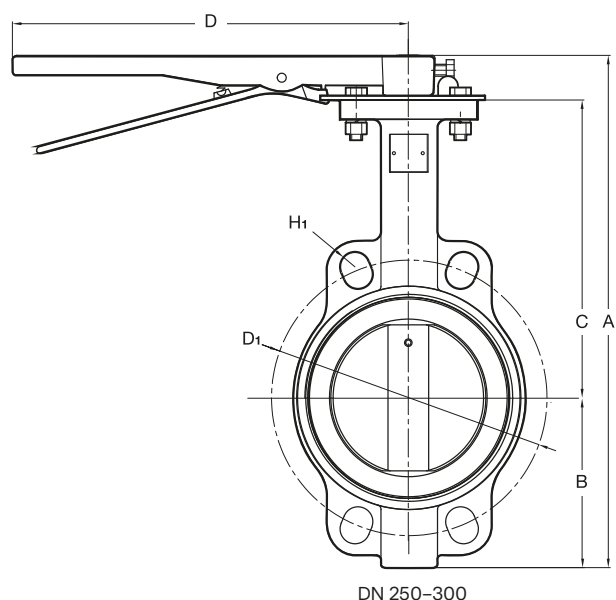
EPDM-liner: -15–120 °C

NBR-liner: -10–80 °C

WAFER PRODUCT FAMILY

EPDM Item No.	NBR Item No.	DN	Pressure class	Operation (preinstalled)
4565135	4565207	50	PN16	Lever
4565136	4565208	65	PN16	Lever
4565137	4565209	80	PN16	Lever
4565138	4565210	100	PN16	Lever
4565139	4565211	125	PN16	Lever
4565140	4565212	150	PN16	Lever
4565141	4565213	200	PN16	Lever
4565142	4565214	250	PN16	Gear
4565143	4565215	300	PN16	Gear





Technical specification

DN	A	B	C	D	E	F	F1	F2
50	271	80	161	266	42	30	4	11
65	294	89	175	266	44,5	30	4	11
80	306	95	181	266	44,5	30	4	11
100	344	114	200	266	51	30	4	14
125	370	127	213	266	54,5	30	4	14
150	395	139	226	266	54,5	30	4	17
200	469	175	260	357	59,6	34	4	17
250	575	203	292	191	67	34	4	22
300	659	242	337	186	75,5	34	4	22

* Construction dimensions according to EN 558-1 Series 20

DN	V1	V2	V3	H1	D1	TOP (ISO 5211)	Weight (kg)	Kv
50				24	125	F05	3,3	117
65				23	145	F05	4,0	191
80				19	160	F05	4,4	263
100				25	180	F07	5,7	522
125				26	210	F07	7,8	889
150				26	240	F07	8,9	1374
200				22	295	F10	15,2	2784
250 vax	80	280	75	32	355	F10	27,5	4576
300 vax	80	280	80	32	410	F10	50,5	7070

Operation with media (wet)

DN	Torque (Nm)
50	15
65	17
80	23
100	39
125	62
150	102
200	192
250	292
300	323

- EPDM and NBR have the same torque (Nm)
- Operating pressure 16 bar
- Not including safety factor; we recommend a safety factor of 30% when using other actuator types

LUG BUTTERFLY VALVES

Product range

Temperature

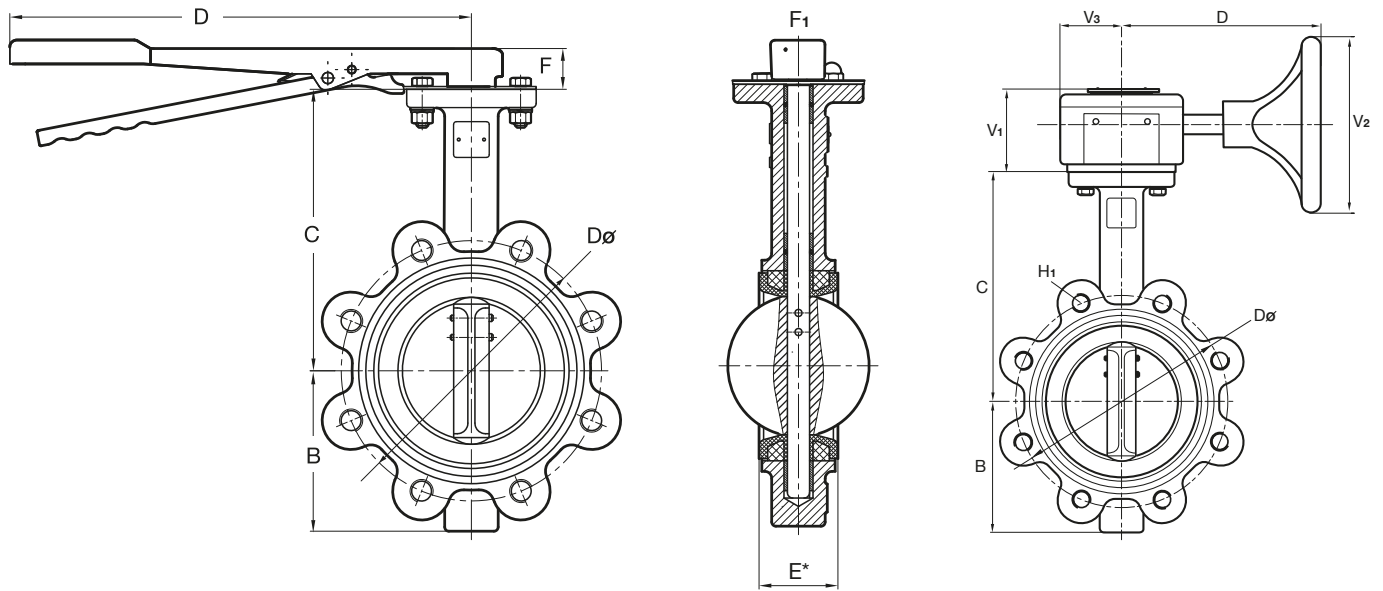
EPDM-liner: -15-120 °C

NBR-liner: -10-80 °C

LUG PRODUCT SERIES

EPDM Item No.	NBR Item No.	DN	Pressure class	Operation (preinstalled)
4565128	4565200	50	PN16	Lever
4565129	4565201	65	PN16	Lever
4565130	4565202	80	PN16	Lever
4565131	4565203	100	PN16	Lever
4565132	4565204	125	PN16	Lever
4565133	4565205	150	PN16	Lever
4565134	4565206	200	PN10	Lever
4565593	4565595	250	PN10	Gear
4565594	4565596	300	PN10	Gear





Technical specification

DN	B	C	D	E*	F
50	80	161	266	43	29
65	89	175	266	46	29
80	95	181	266	46	29
100	114	200	266	52	29
125	127	213	266	56	29
150	139	226	328	56	29
200	175	260	386	60	32
250	203	292	208	68	34
300	242	337	212	78	34

* Construction dimensions according to EN 558-1 Series 20

DN	F1 (Stem)	DØ	V1	V2	V3	Top (ISO 5211)	Weight (kg)	Kv	N-M
50	11	125	-	-	-	F05	4,3	117	4-M16
65	11	145	-	-	-	F05	4,7	191	4-M16
80	11	160	-	-	-	F05	4,8	263	8-M16
100	14	180	-	-	-	F07	9,1	522	8-M16
125	14	210	-	-	-	F07	12,1	889	8-M16
150	17	240	-	-	-	F07	13,2	1374	8-M20
200	17	295	-	-	-	F10	19,5	2784	8-M20
250	4	350	76	278	72	F10	36,6	4540	12-M20
300	4	400	83	278	78	F10	53,1	7015	12-M20

Operation with media (wet)

DN	Torque (Nm)
50	15
65	17
80	23
100	39
125	62
150	102
200	192
250	285
300	285

- EPDM and NBR have the same torque (Nm)
- Operating pressure 10 or 16 bar
- Not including safety factor; we recommend a safety factor of 30% when using other actuator types

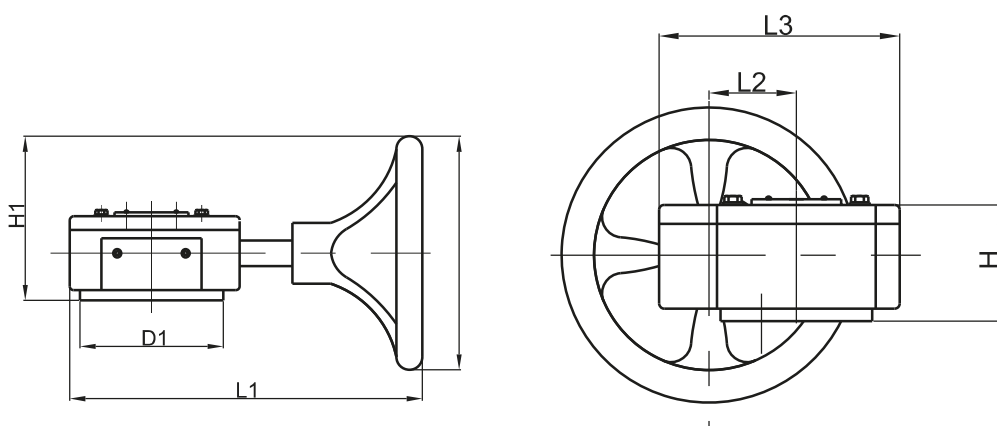
WAFER & LUG ACCESSORIES

Gear

Altech worm gear can be installed on all of our butterfly valves. Material in nodular cast iron GGG40 with epoxy coating. Installed directly on the valve.

Gear dimensions

Model	Valve DN	D1	L1	L2	L3	H	H1
4658991	40–80	108	212	45	129	65	113
4658992	100–125	108	212	45	129	65	113
4658993	150	108	212	45	129	65	113
4658994	200	146	305	62	171	70	182
4659457	250	146	305	62	171	70	182
4659458	300	165	300	85	198	77	182



Lever

Lever for Altech butterfly valves

- Adjustable in different fixed positions
- Material: Nodular cast iron GGG40, painted in same colour as valve

Item No.	DN
4658995	40–80
4658996	100–125
4658997	150
4658998	200

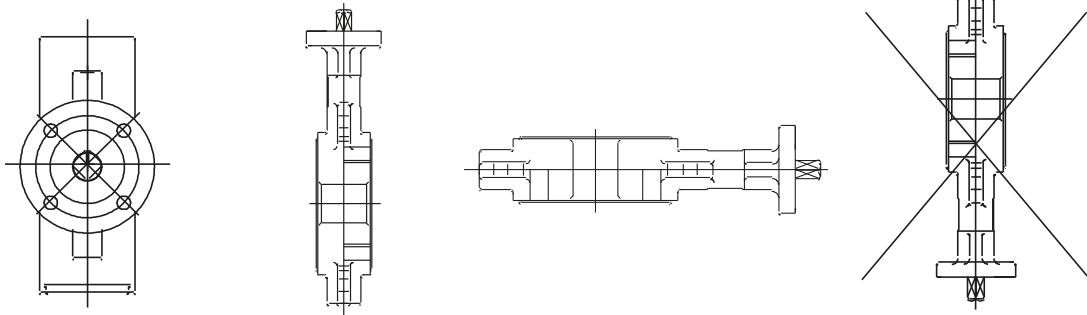
ΔP Conn.	$\Delta P=3,5$ Wet / dry	$\Delta P=5,2$ Wet / dry	$\Delta P=7,0$ Wet / dry	$\Delta P=10$ Wet / dry	$\Delta P=14$ Wet / dry
DN50	13/20	13/21	13/21	14/23	16/25
DN65	13/25	14/26	14/27	16/30	18/33
DN80	20/38	21/39	21/40	22/42	24/44
DN100	32/58	34/61	35/64	38/68	40/73
DN125	49/86	52/90	54/94	58/101	62/108
DN150	76/134	81/141	85/149	94/165	102/174
DN200	137/236	145/250	154/64	173/297	192/330
DN250	215/365	232/394	249/423	286/486	323/549
DN300	314/512	343/559	371/605	429/699	490/799

Torque

- ΔP =Bar Torque /
- Torque=Nm
- Seat material=EPDM

WAFER & LUG INSTALLATION INSTRUCTIONS

Preparation for installation



Recommended orientation

Possible orientation

Possible orientation

Incorrect orientation

- Before starting installation, check to ensure that the valve is appropriate for use with the media in the pipe system.
- There is no requirement for how the butterfly valve is installed with regard to the direction of flow; it is leak-tight on both sides. It is recommended that the valve be installed with the stem horizontal and with the lower part of the disc in the pressure direction. This is especially the case for slurries or similar media.
- Most valves are made from cast materials and should not be used to press the flanges apart on installation.
- Perform installation without separate gaskets; the rubber lining of the valve acts as a flange gasket.

Installation in new piping system



Caution

Never weld the flanges with the valve installed between them. The seat gasket can be destroyed.

1. The valve must be nearly closed when installing flanges on the valve.
2. Place the valve with the flanges up against the pipe.
3. Spot weld the flanges to the pipe.
4. Remove the valve before fully welding the flanges.
5. Fully weld the flanges.
6. Allow the flanges to cool.
7. Install the valve as described under "Installation in existing piping system".

Installation in existing piping system

1. Ensure that the valve fits between the flanges without forcing it in place.
2. Close the valve so that the disc is 5–10 mm within the valve body.
3. Place the valve between the flanges.
4. Centre the valve.
5. Install the bolts.
6. Open the valve disc to the fully open position.
7. Hand-tighten the bolts.
8. Close the valve disc to ensure that it can be operated with no problems.
9. Reopen the valve disc.
10. Use a suitable tool to remove the bolts (tighten bolts in a crosswise pattern)

Note! Never tighten the bolts with the valve in the closed position.

WAFER bolts and tightening torque

Bolt lengths

For tightening, use long bolts with one nut. Length is calculated with a flange on each side of the valve.

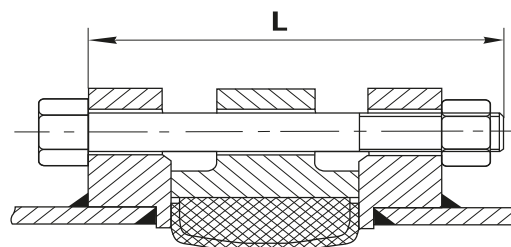
Welding flange with collar

DIN2632 PN10

DIN2633 PN16

Bolts and torque

Conn.	Number of bolts	Bolt length	Tightening torque Nm
Flange PN10 – DIN2633			
DN200	8	20 x 140	216–258
DN250	12	20 x 155	216–258
DN300	12	20 x 165	216–258
Flange PN16 – DIN2633			
DN50	4	16 x 105	111–132
DN65	4	16 x 105	111–132
DN80	8	16 x 110	111–132
DN100	8	16 x 120	111–132
DN125	8	16 x 125	111–132
DN150	8	20 x 130	216–258
DN200	12	20 x 140	216–258
DN250	12	24 x 155	373–446
DN300	12	24 x 170	373–446



LUG bolts and tightening torque

Bolt lengths

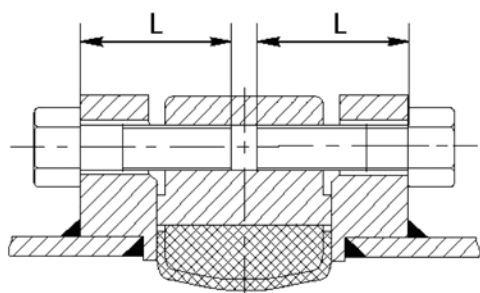
Short bolts without nuts. Length is calculated with a flange on one side of the valve.

Welding flange with collar

DIN2632 PN10

DIN2633 PN16

Bolts and torque



Connection	Number of bolts	Bolt length	Tightening torque Nm
Flange PN10 – DIN2632			
DN200	8	20 x 50	216–258
Flange PN16 – DIN2633			
DN50	4	16 x 35	111–132
DN65	4	16 x 35	111–132
DN80	8	16 x 35	111–132
DN100	8	16 x 40	111–132
DN125	8	16 x 45	111–132
DN150	8	20 x 45	216–258

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