

A3009-... Lug Type Center Line Butterfly Valve Series



A3009H-Handle



A3009G-Gear



A3009E-Electric

Lug Type Center Line Butterfly Valve
Flanged Connection
PN10/16

Performance & Features:

- ◆ Nominal diameter: DN40 to DN500 (For other sizes, please contact the person in charge at ZIGTOO).
- ◆ Light weight, quick opening and closing, low torque.
- ◆ Simple structure, compact connection, easy disassembly and convenient maintenance.
- ◆ Through shaft, spline, pinless connection, tongue-and-groove structure (backing-free), zero leakage.
- ◆ Top flange conforming to ISO 5211.
- ◆ Extended neck design meeting pipeline insulation requirements.
- ◆ Wide range of material options, suitable for various fields and media.
- ◆ Worm gear drive with stainless steel worm and fasteners, with IP rating up to IP67(Optional).

Applications:

Butterfly valves are widely used in central air conditioning, heating networks, data centers, municipal water supply, wineries, pharmaceuticals, agricultural irrigation, sewage treatment plants, drinking and purified water, food and beverages, tobacco, petroleum, chemicals, electric power, steel, shipbuilding, papermaking, textiles, metallurgy, cement, mining and other industries. In short, butterfly valves can be used wherever liquid or gaseous media flow in pipelines and require on/off control or regulation.

Model Designation:

For example: A3009H-QE-100-16Q

1. "A30" Butterfly Valve Series;
2. Structure Type: "0" Center Line Type;
3. Connection: "6" Wafer Type; "3" Flange Type; "9" Lug Type;
4. Operation Type: "H" Handle (optional by default); "G" Gear; "C" Signal; "E" Electric; "P" Pneumatic;
5. Disc Material: "Q" Ductile Iron (Default); "N" Nylon; "S4" SUS304; "S6" SUS316;
6. Seat Material: "E" EPDM (Default); "P" PTFE; "F" FKM;
7. Caliber: "100" Nominal Diameter DN100;
8. Pressure: "16/10" Nominal Pressure: PN16/10;
9. Body Material: "Q" Ductile Iron; "C" Cast Steel; "P" Stainless Steel

Technical Description: (Standard)

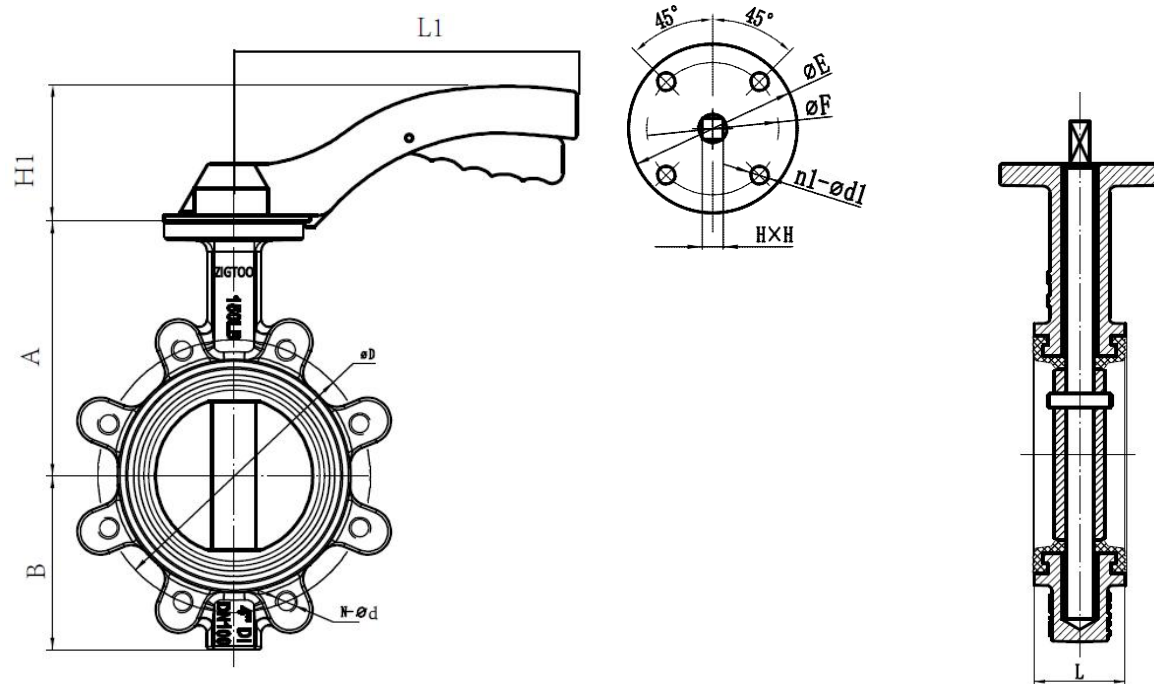
PN (Nominal Pressure)	PN10, PN16
Connection Standard	GB17241.6
Working Temperature	-15°C~130°C
Body	Ductile Iron QT450-10/QT500-7 /Cast Steel (WCB) / Stainless Steel
Stem	Stainless Steel2 CR13
Disc	Ductile Iron (Epoxy Spraying)/ Ductile Iron (Nylon Spraying)/ Stainless Steel, and so on
Seat	EPDM/PTFE/FKM
O-ring	EPDM/FKM
Handle	Malleable iron
Gear	Ductile Iron

Kvs Value Table

Pipe Diameter (in.)	DN (mm)	Kvs (m³/h)
2"	50	124
2.5"	65	243
3"	80	397
4"	100	723
5"	125	1083
6"	150	1600
8"	200	2850
10"	250	4640
12"	300	6880
14"	350	10400
16"	400	13600
18"	450	17200
20"	500	21200

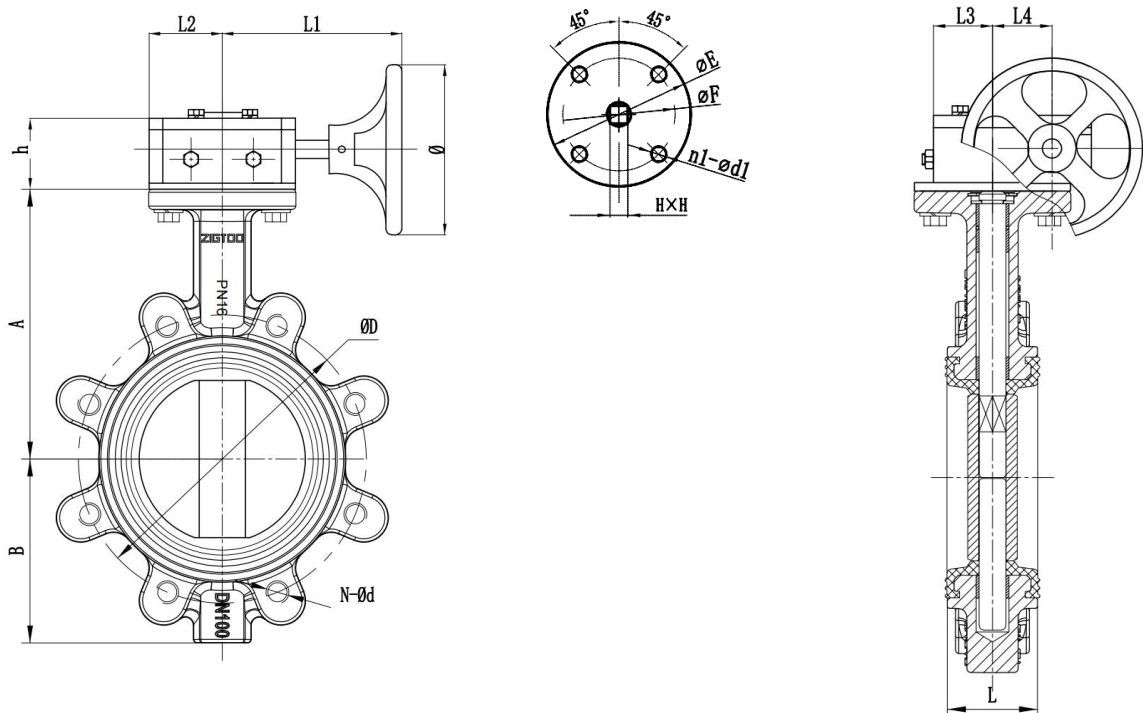
Dimension Chart:

A3009H Handle Type



Nominal Diameter		L	A	B	H1	L1	ISO5211				PN16	
							Top flange	Ø E	Ø F	n1- Ø d1	Ø D	n- Ø d
50	2"	43	131.7	77.2	65	173	F05	65	50	4--8	125	4--16
65	2.5"	46	138.5	88.2	65	173	F05	65	50	4--8	145	4--16
80	3"	46	154.5	96.5	65	173	F05	65	50	4--8	160	8--16
100	4"	52	169	114	80	220	F07	90	70	4--10	180	8--16
125	5"	56	182.5	125	80	220	F07	90	70	4--10	210	8--16
150	6"	56	197.5	138.5	80	220	F07	90	70	4--10	240	8--20

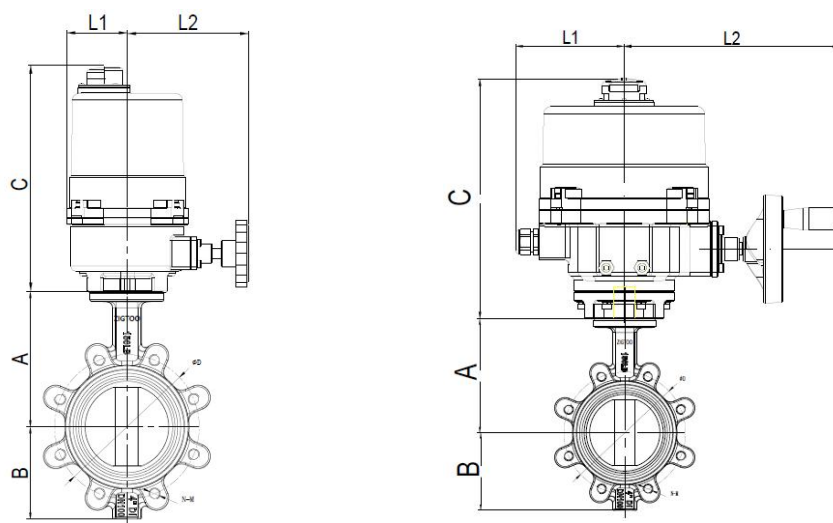
A3009G Gear Type



Body Nominal Diameter		L	A	B	H×H	ISO5211				PN16	
						Top flange	Ø E	Ø F	n1- Ø d1	Ø D	n- Ø d
50	2"	43	131.7	77.2	9	F05	65	50	4--8	125	4--16
65	2.5"	46	138.5	88.2	9	F05	65	50	4--8	145	4--16
80	3"	46	154.5	96.5	9	F05	65	50	4--8	160	8--16
100	4"	52	169	114	11	F07	90	70	4--10	180	8--16
125	5"	56	182.5	125	14	F07	90	70	4--10	210	8--16
150	6"	56	197.5	138.5	14	F07	90	70	4--10	240	8--20
200	8"	60	235	172	17	F10	125	102	4--12	295	12--20
250	10"	68	267	200	22	F10	125	102	4--12	355	12--24
300	12"	78	305	238	22	F10	125	102	4--12	410	12--24
350	14"	78	327	265	22	F10	125	102	4--12	470	16--24
400	16"	86	400	320	27	F14	175	140	4--18	525	16--27
450	18"	102	411	352	27	F14	175	140	4--18	585	20--27
500	20"	127	460	383	32	F14	175	140	4--18	650	20--30

Gear Nominal Diameter	h	L1	L2	L3	L4	Gear levels	Ø
DN50-DN150	60.5	159	33	37	44	Single-stage	142
DN200-DN250	72	230	63	52.5	63	Single-stage	258
DN300-DN350	79	225	63	62	77.5	Single-stage	258
DN400-DN500	102	260	98	48	104	Double-stage	278

A3009E Electric Type



Model Designation:

For example: A3009E-.../ZT...-K

1. "A3009E-..." Electric Center Line Butterfly Valve;
2. Actuator Model: "/EOT" ;
3. On-Off Type: "K" ; Modulation Type "T" ;

Electric Actuator Selection & Dimensions Table

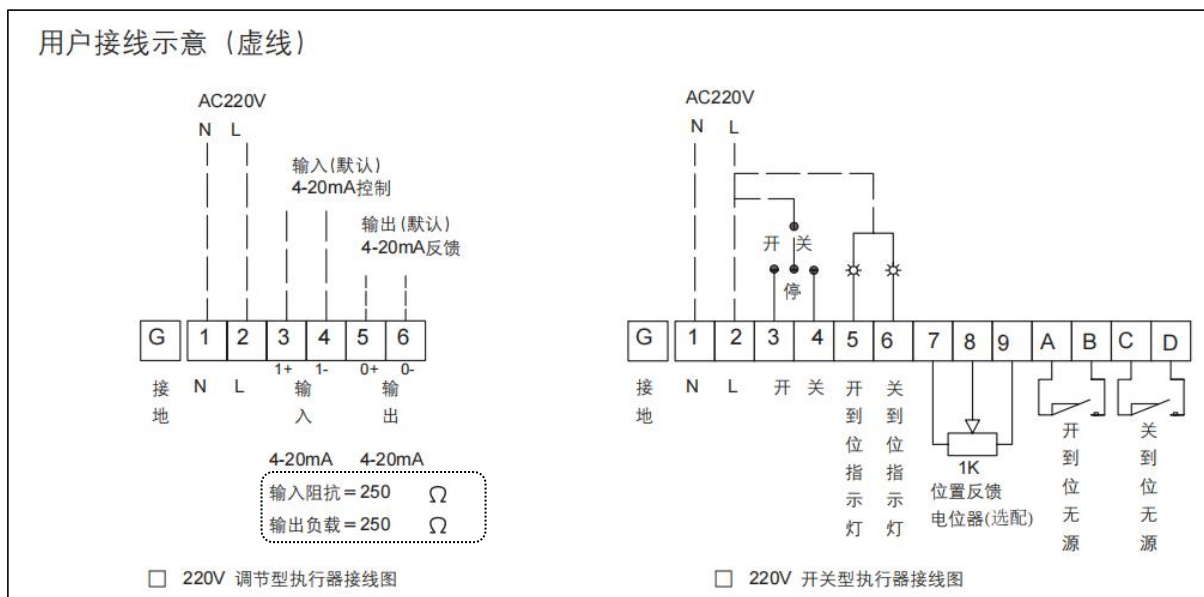
DN	Torque (NM)	On-Off Type	Modulation Type	Power (W)	On-Off time (Sec)	A	B	C	L1	L2	Weight (kg)
50	20	ZTB-2-K	ZTB-2-T	10	12	132	72	110	71	16	4
65	20	ZTB-2-K	ZTB-2-T	10	12	138.5	82.5	110	71	16	5
80	30	ZTB-3-K	ZTB-3-T	10	11	154	96	110	71	16	6
100	50	ZTA-H-K	ZTA-H-T	10	15	169	109	212	135	35	8
125	80	ZTB-H-K	ZTB-H-T	10	22	182.5	125	212	135	35	11
150	100	ZT2-K	ZT2-T	10	19	197.5	138.5	268	121	240	19
200	200	ZT3-K	ZT3-T	40	39	235	172	268	121	240	25
250	400	ZT4-K	ZT4-T	90	29	267	207	327	150	297	42
300	600	ZT5-K	ZT5-T	90	39	305	238	327	150	297	55
350	800	ZT6-K	ZT6-T	90	47	336	265	327	150	297	64
400	1000	ZT7-K	ZT7-T	120	47	405	320	327	150	297	85
450	1300	ZT7A-K	ZT7A-T	120	47	415	355	327	150	297	101
500	2000	ZT8-K	ZT8-T	200	34	460	390	380	161	333	150
600	2300	ZT9-K	ZT9-T	200	47	535	435	380	161	333	213

Electric Actuator Selection Table

DN	Torque (NM)	On-Off Actuator	Modulating Actuator	Power (W)	On-Off time (Sec)	Weight (kg)
50	20	ZTB-2-K	ZTB-2-T	10	12	1
65	20	ZTB-2-K	ZTB-2-T	10	12	1
80	30	ZTB-3-K	ZTB-3-T	10	11	1
100	50	ZTA-H-K	ZTA-H-T	10	15	3
125	80	ZTB-H-K	ZTB-H-T	10	22	3.6
150	100	ZT2-K	ZT2-T	10	19	11
200	200	ZT3-K	ZT3-T	40	39	11
250	400	ZT4-K	ZT4-T	90	29	22
300	600	ZT5-K	ZT5-T	90	39	22
350	800	ZT6-K	ZT6-T	90	47	22
400	1000	ZT7-K	ZT7-T	120	47	22
450	1300	ZT7A-K	ZT7A-T	120	47	22
500	2000	ZT8-K	ZT8-T	200	34	36

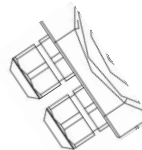
Electric Actuator Wiring

The electric butterfly valve is calibrated as a complete unit (including the valve and electric actuator) before delivery. The wiring diagram is located inside the valve cover (as shown in the figure below).



Note: To ensure the waterproof performance of the electric actuator, please pay attention to the following when selecting the connecting cable:

- For ZTA/B-H series, use cables with a diameter of 6–12 mm.
- For ZT2–ZT15 series, use cables with a diameter of 10–14 mm.



Troubleshooting for Electric Actuator (Please contact ZIGTOO representative if the problem persists.)

Fault Phenomenon	Cause	Solution
Electric actuator work failure	1.1. No voltage in power supply (Power off)	1.1. Check the power supply voltage
	1.2. No input signal or incorrect input value	1.2. Check input signal
	1.3. Wire breakage or disconnection from terminal block	1.3. Reconnect wires and replace terminal block
	1.4. Motor overheat protector activated	1.4. Allow motor to cool down
	1.5. Limit switch activated at the mid-opening position	1.5. Adjust the limit switch cam
	1.6. Motor running capacitor damaged	1.6. Replace the capacitor
	1.7. Motor winding damaged	1.7. Replace motor
	1.8. High voltage incorrectly connected to signal input terminals (Modulation type)	1.8. Replace the circuit board
Continuous operation of electric actuator	2.1. Signal from signal source unstable	2.1. Check input signal
	2.2. Potentiometer interference or failure (Modulation type)	2.2. Replace the potentiometer
	2.3. Potentiometer gear or sector gear loose (Modulation type)	2.3. Check the hexagon socket bolts for gear fastening
Input signal inconsistent with feedback signal (Modulation type)	3.1. Incorrect input signal	3.1. Check the input signal
	3.2. Improper zero and span adjustment (to be performed by professionals)	3.2. Reset according to the setting procedure
	3.3. Position change of the potentiometer gear	3.3. Readjust the potentiometer gear
No feedback signal	Position signal wire open circuit or poor contact	Check whether the wiring is in accordance with the wiring diagram

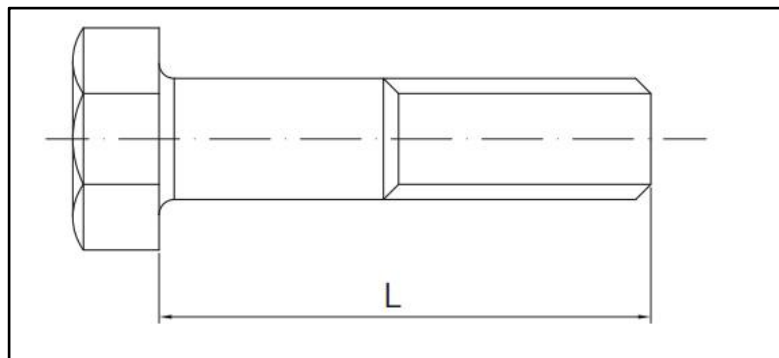
Handling and Storage of Valves

1. Valves shall be stored in a clean, dry, fire-resistant and well-ventilated area free of corrosive gases in the surrounding environment.
2. For unloading and handling packaged valve bodies, rolling or dropping them directly from the vehicle is strictly prohibited. They must be handled gently with the aid of a forklift or other tools.
3. Butterfly valves shall be kept open at 5° during storage; closing is strictly prohibited.
4. Lubricant may be applied to the butterfly disc and seat of the valve; cleaning with chemical solvents such as alcohol or gasoline is strictly prohibited.

Installation Instructions (See Installation Manual for details)

1. Select flanges meeting national standard or industrial standard. Select matching stud bolts and nuts according to relevant standards and the face-to-face dimension of the butterfly valve. No additional sealing gaskets are required (see the attached table for stud bolt selection);
2. When installing the valve, tighten the connecting bolts diagonally and gradually in a crisscross pattern to ensure even stress distribution.
The bolt tightening torque shall be appropriately controlled to achieve a good seal. Torque wrenches are not required, so as to avoid damaging the sealing ring.
3. The butterfly valve features bidirectional sealing and has no flow direction requirements for installation.
4. During on-site installation, please note that welding on the corresponding flanges is not allowed after the butterfly valve is installed, so as to avoid damaging the rubber seat of the valve.
5. After welding, the inner welds of the flanges must be ground to remove slag and spatter, and shall not protrude above the flange sealing surface to prevent damage to the rubber seat.
6. When welding at the upper end of the same vertical pipe of the valve, operate the valve to the fully open position to prevent welding slag and spatter from accumulating on the disc and damaging the rubber seat.
7. To reduce dynamic torque during operation, if the valve is installed at a bend, it is recommended to install it at the water outlet.
8. After full installation, please flush the pipeline repeatedly with the valve in the fully open position until the inside of the pipeline is clean before operating the valve.

Lug Type Center Line Butterfly Valve Bolt Selection & Dimensions GB/T5782



Thread Standard: GB/T196-2003; Standard of Matching Washer: GB/T 97.1-2002.

DN	PN16		
Nominal Diameter	Nut size	Length	Quantity
50	M16*2	45	8
65	M16*2	45	8
80	M16*2	45	16
100	M16*2	45	16
125	M16*2	48	16
150	M20*2.5	50	16
200	M20*2.5	55	24
250	M24*2.5	60	24
300	M24*2.5	70	24
350	M24*2.5	75	32
400	M27*3	80	32
450	M27*3	90	40
500	M30*3.5	100	40

Lug Type Center Line Butterfly Valve Flange Selection & Dimensions

Nominal Diameter	ΦD	$\Phi D1$	N- Φd	$\Phi D2$	$\Phi D3$	$\Phi D4$	b	T	f
DN50	165	125	4-18	59	50	102	20	5	3
DN65	185	145	4-18	75	65	122	20	6	3
DN80	200	160	8-18	91	80	138	20	6	3
DN100	220	180	8-18	110	100	158	22	6	3
DN125	250	210	8-18	135	125	188	22	6	3
DN150	285	240	8-23	161	150	212	24	6	3
DN200	340	295	12-23	221	208	268	26	8	3
DN250	405	355	12-26	275	255	320	29	10	3
DN300	460	410	12-26	327	308	378	32	10	4
DN350	520	470	16-26	379	340	438	35	11	4
DN400	580	525	16-30	429	405	490	38	11	4
DN450	640	585	20-30	481	455	550	42	11	4
DN500	715	650	20-33	532	505	610	46	11	4
DN600	840	770	20-36	633	605	725	55	11	5

Flange Standard: GB/T 9124.1

