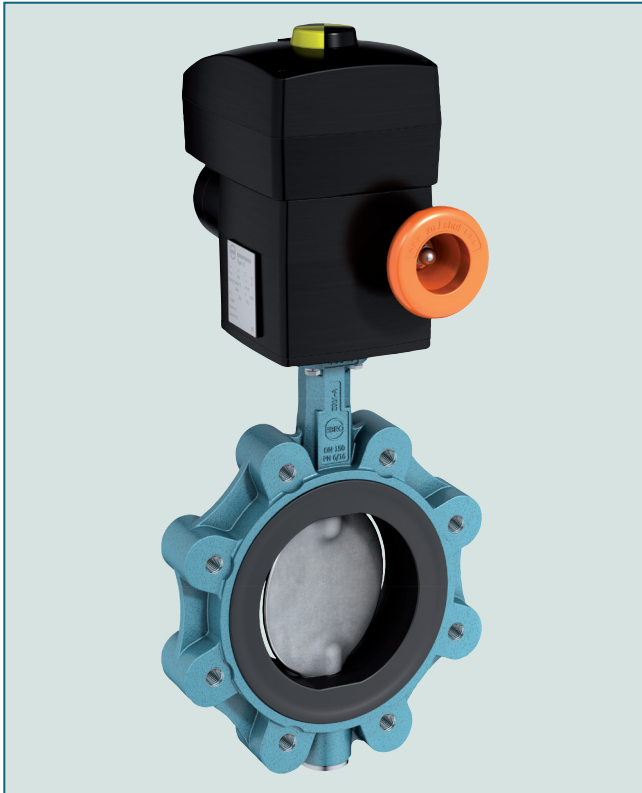


# LUG TYPE BUTTERFLY VALVE Z 014-A



Lug type butterfly valve with threaded holes. This type enables the one-sided lugging of pipes.

## TECHNICAL DATA

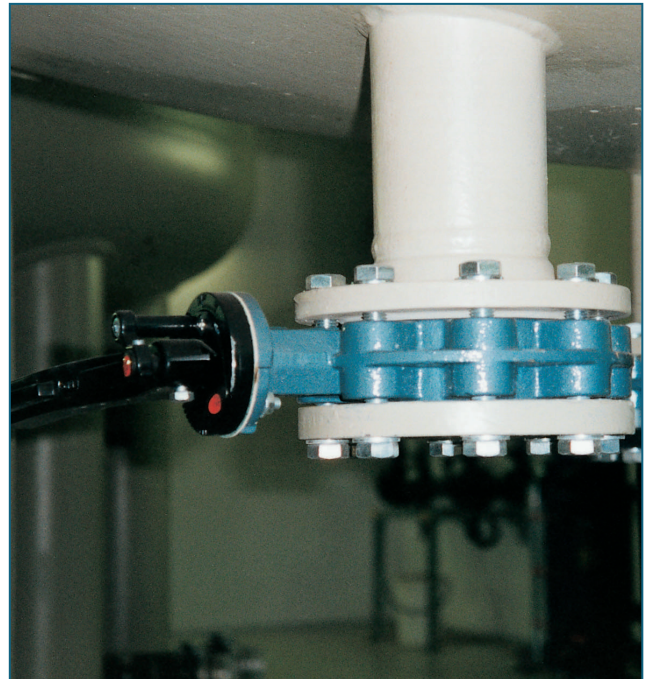
Nominal diameter:	DN 20 - DN 600 (DN 20 only PN10/16)
Face-to-face:	EN 558 Series 20 ISO 5752 Series 20 API 609 Table 1
Flange accommodation:	EN 1092 PN 6/10/16 ASME Class 150 AS 4087 PN 16
Flange Surface Design:	EN 1092 Form A/B ASME RF, FF
Top flange:	EN ISO 5211
Marking:	EN 19
Tightness check:	EN 12266 (Leakage rate A) ISO 5208, Category 3
Temperature range:	-40°C to +200°C (depending on pressure, medium and material)
Operating pressure:	max. 16 bar

## FEATURES

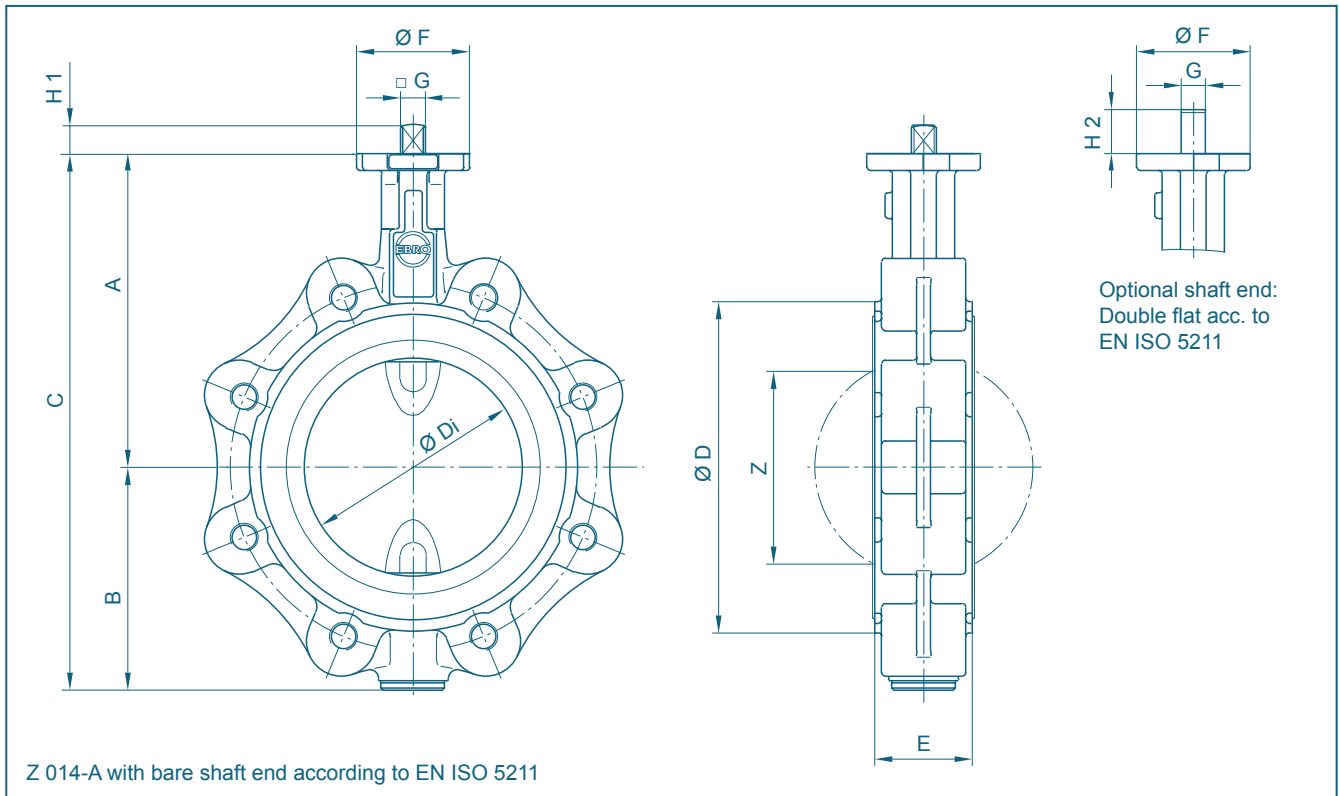
- Absolutely tight sealing with flow in either direction
- The valve body and disc are accurately machined which results in low operating torque and long service life and reliability
- Triple shaft bearings prevent shaft deflection and guarantee optimum guidance even after many years of operating service
- Can be disassembled, material-specific recycling possible
- Single flange mounting is possible
- Can be installed in any desired position
- Maintenance-free
- For paint and laquers, a silicone-free version is available

## GENERAL APPLICATIONS

- Chemical and petrochemical industries
- Water and waste water technology
- Pneumatic materials handling technology
- Shipbuilding
- Power generation industry
- Food industry
- Civil engineering



# LUG TYPE BUTTERFLY VALVE Z 014-A



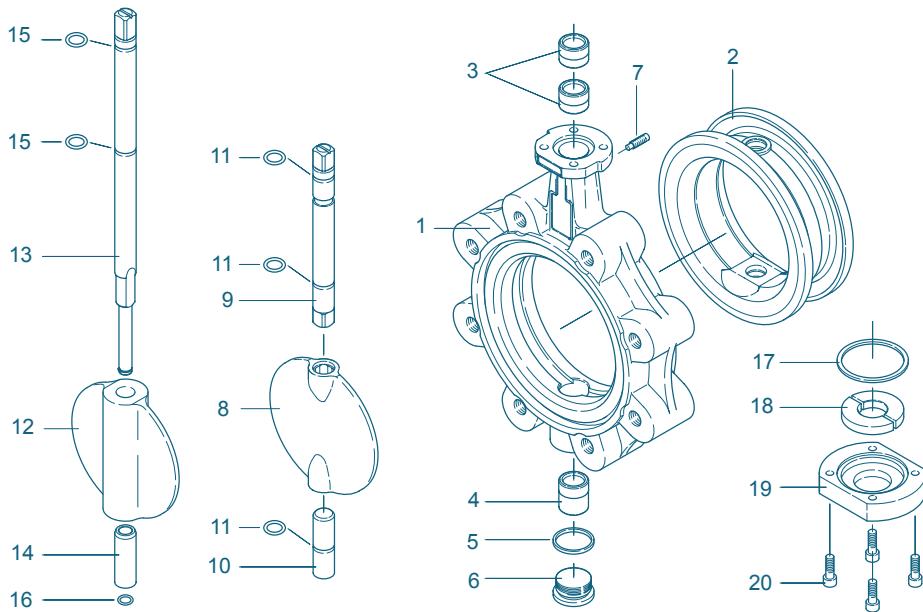
DN [mm]	Size [in]	Dimensions [mm]												Weight[kg] (GG-25)	
		A	B	C	D	Di	E	F	Flange	G	H1	H2	Z	Splitted shaft	TS- shaft
20	¾	104	45	149	63	31,5	33	54	F04	11	12	19	-	2,1	-
25	1	104	45	149	63	31,5	33	54	F04	11	12	19	-	2,1	-
32	1¼	104	50	154	68	31,5	33	54	F04	11	12	19	-	2,1	-
40	1½	113	66	179	80	38	33	54	F04	11	12	19	22	4,0	-
50	2	126	84	210	95	48,5	43	54	F04	11	12	19	25	4,8	-
65	2½	134	93	227	115	63,5	46	54	F04	11	12	19	45	5,5	-
80	3	157	104	261	138	78,5	46	65	F05	14	16	25	65	8,6	9,1
100	4	167	115	282	158	98,5	52	65	F05	14	16	25	85	9,8	10,4
125	5	180	127	307	188	123,5	56	65	F05	14	16	25	111	10,1	10,7
150	6	203	150	353	210	148	56	90	F07	17	19	30	139	13,1	14,6
200	8	228	176	404	268	199	60	90	F07	17	19	30	190	18,8	20,6
250	10	266	212	478	320	248	68	125	F10	22	24	39	240	29,5	32,5
300	12	291	237	528	370	296	78	125	F10	22	24	39	287	37,0	40,5
350	14	332	269	601	408	338	78	150	F12	*	*	-	330	54,8	60,4
400	16	363	314	677	470	388	102	150	F12	*	*	-	378	81,5	87,3
450	18	397	335	732	530	430,5	114	210	F16	*	*	-	417	101,4	105,9
500	20	437	371	808	574	494,5	127	210	F14/F16	*	*	-	474	136,3	142,8
600	24	498	469	967	675	590	154	300	F16/F25	*	*	-	563	240,5	267,5

\* According to mounted actuator

Subject to change without notice

# LUG TYPE BUTTERFLY VALVE Z 014-A

## MATERIAL SPECIFICATION AND PARTS LIST



TS-Version

Version with splitted shaft

Pts. 17-20:  
Cover plate for  
valve ≥ DN 350

Pt.	Description	Material	Material-No.	ASTM	Pt.	Description	Material	Material-No.	ASTM
<b>1</b>	<b>Body</b>				<b>9/10</b>	<b>Shafts</b>			
	Nodular Cast Iron	GGG-40	0.7040	60-40-18		Stainless Steel	X14CrMoS17	1.4104	430 F
		GGG-40.3	0.7043				X5/(X2)CrNiMo17-12-2	1.4401/1.4404	316
<b>2</b>	<b>Seat</b>						Hastelloy	2.4883	Hastelloy
	NBR	Nitrile butadiene rubber			<b>11</b>	<b>O-ring</b>			
	EPDM	Ethylene propylene diene monomer rubber				NBR	Nitrile butadiene rubber		
	CSM	Chlorosulfonated polyethylene rubber				FPM	Fluorocarbon rubber		
	FPM	Fluorocarbon rubber			<b>12</b>	<b>TS-disc</b>			
	VSI	Silicon rubber				Nodular Cast Iron	GGG-40	0.7040	60-40-18
	SBR-green	Styrene butadiene rubber				Stainless Steel	G-X5CrNiMo19-11-2	1.4408	CF8M
<b>3/4</b>	<b>Bearing bush</b>					Aluminium Bronze	G-CuAl10Ni	2.0975	C 95800
	Brass	MS 58	2.0401	B 45		Coating	Halar, Rilsan		
	Polyamide	PA 66				Surface quality	electropolished, mirror finished		
	PTFE	Polytetrafluorethylene			<b>13</b>	<b>TS-shaft</b>			
<b>5</b>	<b>Seal DIN 7603</b>					Stainless Steel	X14CrMoS17	1.4104	430 F
	Copper	Cu		Copper			X39CrMo17-1	1.4122	
<b>6</b>	<b>Plug screw DIN 908</b>						X5CrNiMo17-12-2	1.4401	316
	Stainless Steel	G-X5CrNiMo19-11-2	1.4408	CF8M	<b>14</b>	<b>Sleeve</b>			
<b>7</b>	<b>Set screw DIN 915</b>					Stainless Steel	X5CrNi18-10	1.4301	304
	Steel	45 H galvanized			<b>15</b>	<b>O-ring</b>			
	Stainless Steel	A4-70		B8M		NBR	Nitrile butadiene rubber		
<b>8</b>	<b>Disc</b>					FPM	Fluorocarbon rubber		
	Steel	ST 52.3	1.0570	572-50	<b>16</b>	<b>Retaining ring</b>			
	Stainless Steel	X5CrNi18-10	1.4301	304		Stainless Steel	X39CrMo17-1	1.4122	
		G-X5CrNiMo19-11-2	1.4408	CF8M	<b>17</b>	<b>O-ring</b>			
		X2CrNiMo17-12-2	1.4404	316 L		NBR	Acrylonitrile butadiene rubber		
		X6CrNiMoTi17-12-2	1.4571	316 Ti	<b>18</b>	<b>Shaft retainer</b>			
		G-X2CrNiMoN26-7-4	1.4469	F 51		Brass	MS 58	2.0401	B 45
		Hastelloy	2.4883	Hastelloy	<b>19</b>	<b>Cover plate</b>			
	Aluminium Bronze	G-CuAl10Ni	2.0975	C 95800		Grey Cast Iron	GG-25	0.6025	40 B
	Coating	Halar, Rilsan, NBR, EPDM			<b>20</b>	<b>Screw</b>			
	Surface quality	electropolished, mirror finished				Steel	45 H galvanized		
						Stainless Steel	A2-70		B 8
							A4-70		B8M
	Other materials upon request								

Subject to change without notice

# LUG TYPE BUTTERFLY VALVE Z 014-A

## TORQUE

- The values listed in the table are initial breakaway torques, taken with liquids and lubricant media.

- Please regard these as approximate values, as the objective value depends on different factors like pressure, medium, rubber, quality, temperature ... etc.

- Our engineers look forward to help you with exact values for your application.

- Powdery (non-lubricant) media  
Md x 1,3

- Dry gases/high viscous media  
Md x 1,2

DN [mm]	Size [in]	Adapted Disc Size Pressure Rating			
		3 bar disc	6 bar disc	10 bar disc	16 bar disc
20	¾	5	5	5	-
25	1	5	5	5	-
32	1¼	5	5	5	-
40	1½	8	8	8	8
50	2	9	9	9	9
65	2½	18	18	18	18
80	3	8	10	18	24
100	4	9	18	28	37
125	5	15	22	45	59
150	6	36	45	78	125
200	8	59	76	140	200
250	10	150	180	200	240
300	12	200	240	280	360
350	14	350	540	610	700
400	16	420	620	750	850
450	18	720	746	860	1500
500	20	900	1100	2255	3690
600	24	1050	2100	3000	5830

All values in Nm

## K<sub>V</sub>-VALUES

- The K<sub>V</sub>-values [m<sup>3</sup> per hour] is the flow of water at a temperature of 5°C to 30°C (41°F to 86°F) at Δp of 1 bar

- The K<sub>V</sub>-values specified are based on tests carried out by the Delfter Hydraulics Laboratories, the Netherlands

- Permissible velocity of flow  
V<sub>max</sub> 4,5 m/s for liquids,  
V<sub>max</sub> 70 m/s for gases

- The throttle function is linear at an angle 30° to 70°

- Avoid cavitation

For further values, please contact our engineers.

DN [mm]	Size [in]	Opening angle α°							
		20°	30°	40°	50°	60°	70°	80°	90°
20	¾	-	3,46	5,95	7,97	9,7	11,2	12,8	14,5
25	1	-	3,53	7,33	11,5	15,8	20,0	24,0	27,3
32	1¼	-	2,56	7,97	15,5	24,2	33,0	40,8	46,6
40	1½	0,94	4,96	11,9	20,7	30,4	40,2	49,0	55,8
50	2	3,84	10,1	20,7	34,4	49,7	65,2	79,5	91,2
65	2½	9,5	16,6	39,1	72,6	113	157	199	235
80	3	15,6	20,6	51,4	102	165	234	304	368
100	4	24,9	39,8	96,5	183	288	398	503	589
125	5	51,8	67,2	135	256	428	652	926	1250
150	6	76,5	97,3	197	375	629	957	1360	1830
200	8	137	187	373	697	1160	1760	2510	3400
250	10	227	271	563	1090	1850	2830	4010	5390
300	12	287	409	820	1550	2610	4050	5880	8120
350	14	399	488	1070	2110	3590	5480	7760	10400
400	16	557	703	1360	2600	4470	7060	10400	14600
450	18	716	907	1810	3440	5830	8980	13000	17800
500	20	875	1110	2250	4280	7180	10900	15500	20900
600	24	1230	1550	3150	6010	10090	15400	21800	29400

Subject to change without notice

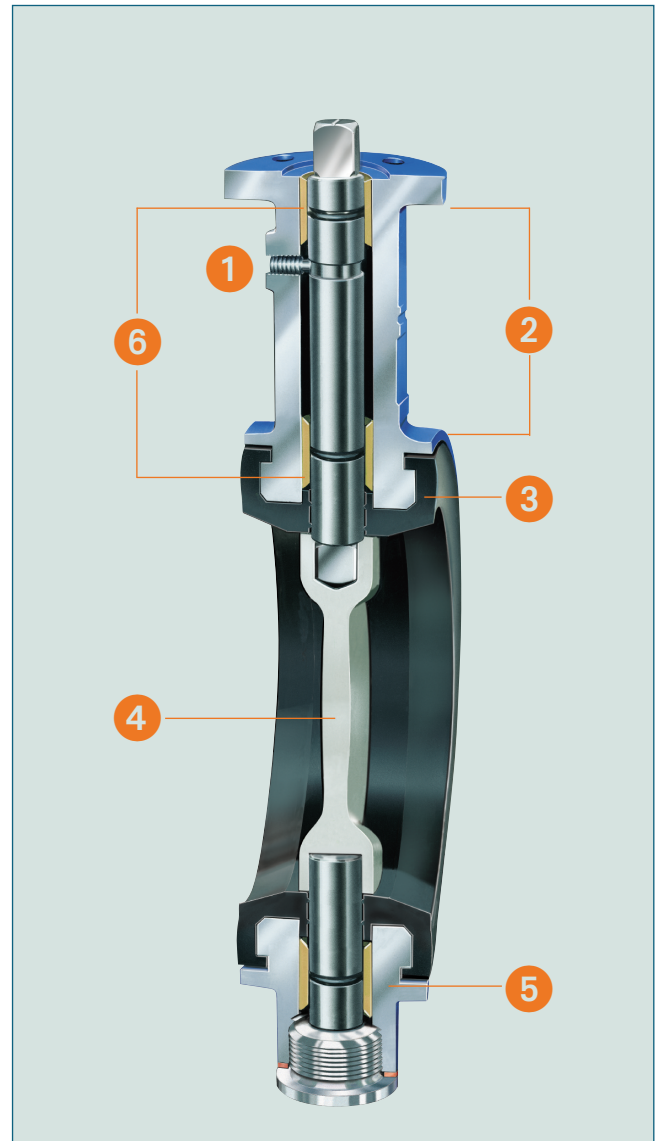
# QUALITY FEATURES

## RESILIENT SEATED VALVES

### SUMMARY OF THE PRODUCT ADVANTAGES

- 1 The shaft safety device prevents inadvertant shaft removal when fitting actuators or undertaking maintenance procedures.
- 2 EBRO Butterfly valves comply with the requirements of the Heating System regulations dated 1st June 1994.
- 3 The special construction of the liner\* (incorporating location beads for positioning within the body to prevent „working“ in operation) efficiently seals against the medium, the shaft locations and the connecting pipeworks flanges. Supplementary gasket seals for the adjacent flanges are not required.
- 4 The sealing surface of the disc being mirror finished guarentees the benefit of low operating torque and tight valve sealing up to the maximum working pressure 16 bars. This design gives high flow characteristics.
- 5 The valve body is completely precision machined in order that the valve liner with shaft locations can be accurately positioned to ensure minimal operational wear and an extended reliable service life.
- 6 The shaft is carried in multiple bearings with shaft deflection due to high pressure being prevented, thus ensuring optimal guidance, positive location and long service life.

\* See picture 2



picture 1

- 1 Around the centre of the whole circumference of the liner is a raised locating ring to engage with an corresponding recess in the valve body, thus assuring the exact position of the liner.
- 2 Positive location and retention of the liner within the body is by means of circumferential lug profiles on the liner with matching recesses in the body.
- 3 The collars at the shaft locations ensure accurate positioning of the liner within the valve body (sizes DN 250 and larger have an integral vulcanized in steel ring).
- 4 The end connection sealing faces of the liner have a convex form. During assembly of the valve into the pipeline controlled deformation of the volume of the liner achieved when clamping between flanges (see picture 1). This controlled deformation restricts any increase in operating torque and eliminates damage to or destruction of the elastomers.



picture 2