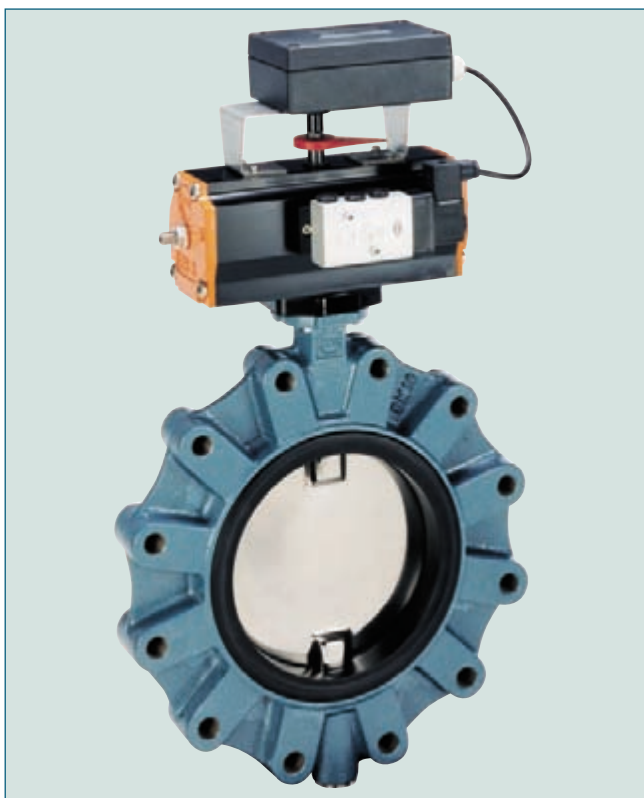


LUG BUTTERFLY VALVE Z 414-A



Resilient seated. centrally mounted lug type butterfly valve with reduced inside diameter for PE/PP piping systems.

TECHNICAL DATA

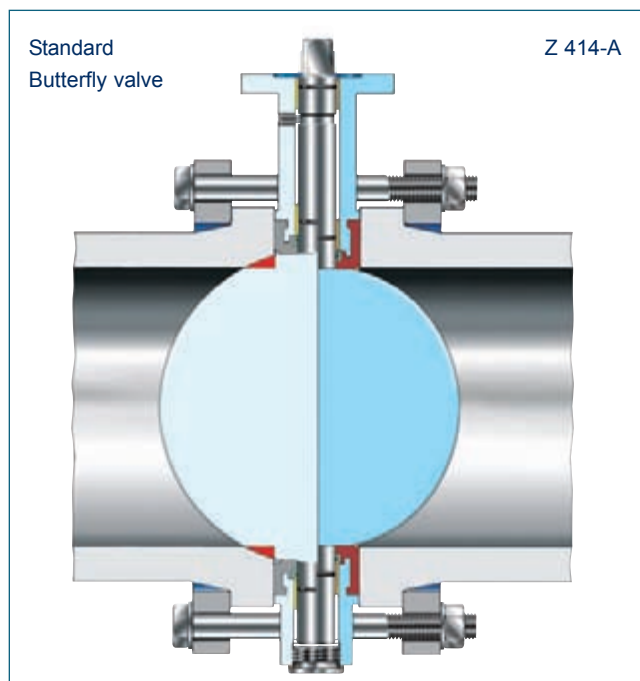
Nominal diameter:	da 50 (1 1/2 in) - da 630 (24 in) (SDR 11) da 50 (1 1/2 in) - da 500 (20 in) (SDR 17/ SDR17.6 / SDR 33)
Face-to-face:	EN 558 Series 20 (DIN 3202 T3 K1) ISO 5752 Series 20 API 609 Table 1 BS 5155 Series 4 NF E 29-305.1
Flange accommodation:	DIN 2501 PN 10
Top flange:	prepared for EN ISO 5211
Marking:	DIN EN 19
Tightness check:	DIN 3230 T3 BO. BN (Leakage Rate 1)
Temperature range:	14 °F to +320 °F (depending on pressure, medium and material)
Operating pressure:	max. 145 psi SDR 11.0 (PE-80) max. 145 psi SDR 17.0 (PE-100) max. 90 psi SDR 17.6 (PE-80) max. 75 psi SDR 33.0 (PE-100)
Vacuum:	3 psi absolute (depending on medium and temperature)

FEATURES

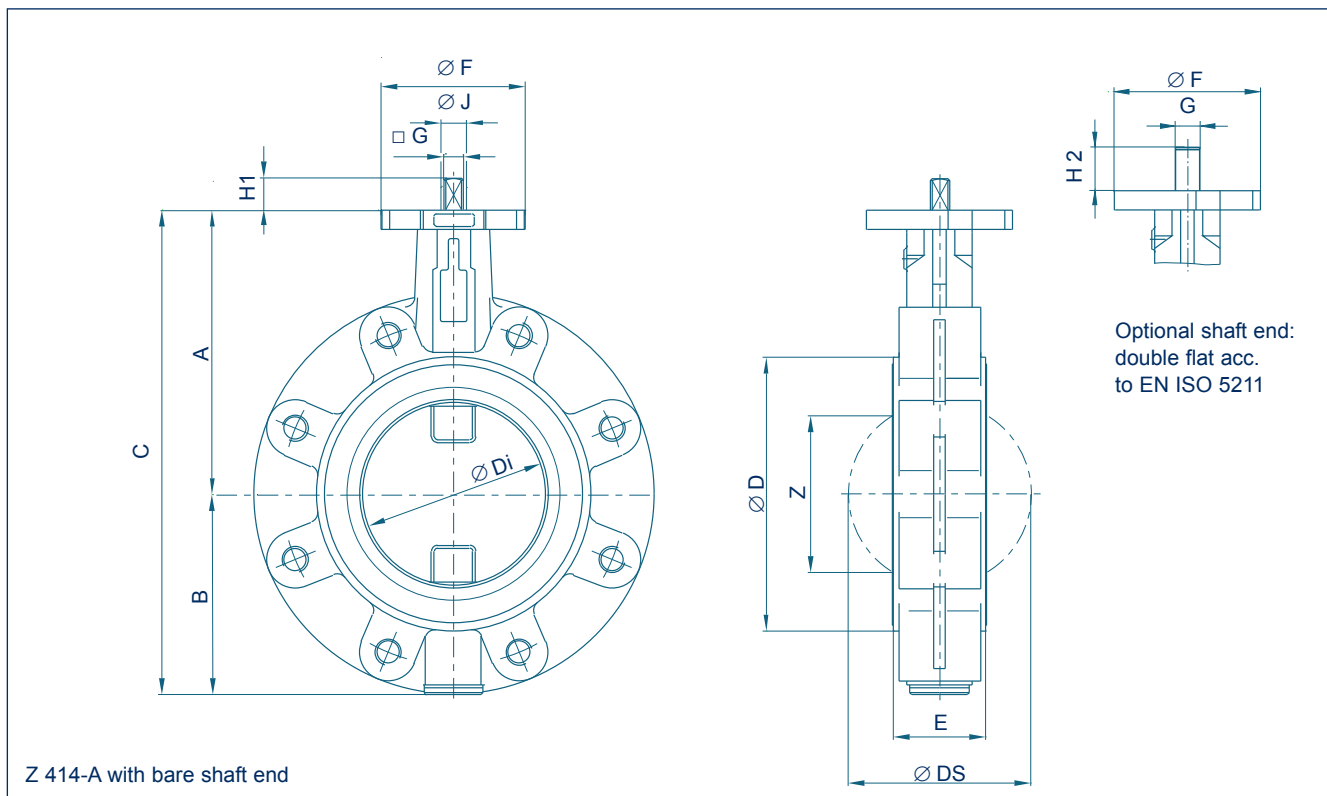
- Butterfly valve for PE/PP piping systems.
- The disc diameter corresponds to the inside diameter of PE HD and PP pressure pipes. (SDR 11/SDR 17/SDR 17.6/SDR 33)
- There is no need to manufacture and install complicated spacers.
- Can be mounted in any desired position.
- Triple shaft bearings prevent shaft deflection and guarantee optimum guidance even after many years of operational service.
- Interchangeable seat
- Maintenance-free
- Can be disassembled. material-specific recycling possible.
- For max. pressure, a through-going shaft (TS) is mounted for sizes ≥ 400 .
- Location lock liner design

GENERAL APPLICATIONS

Where PE/PP pipes are used.



LUG BUTTERFLY VALVE Z 414-A SDR 17 / 17.6

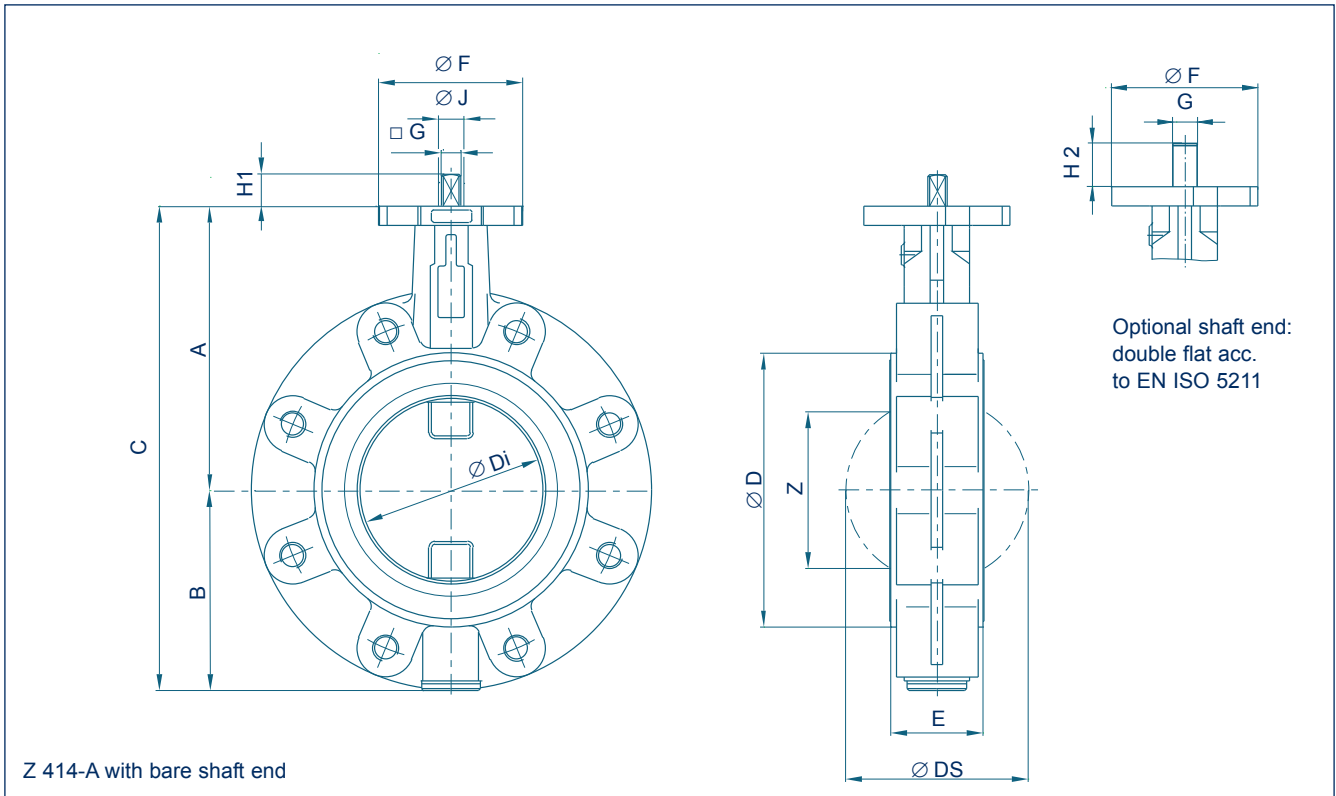


DN [mm]	Ø = da [mm]	Dimensions [in]														Weight [lb] GGG40	
		A	B	C	D	Di	DS	E	F	Flange	G	H1	H2	J	Z	Split Shaft	TS- Shaft
40	50	4.5	2.6	7.1	3.2	1.5	1.5	1.3	2.1	F04	0.4	0.5	0.7	0.6	0.9	8	-
50	63	5.0	3.3	8.3	3.7	1.9	2.0	1.7	2.1	F04	0.4	0.5	0.7	0.6	1.0	10	-
65	75	5.3	3.7	8.9	4.5	2.5	2.5	1.8	2.1	F04	0.4	0.5	0.7	0.6	1.8	12	-
80	90	6.2	4.1	10.3	5.4	3.1	3.1	1.8	2.6	F05	0.6	0.6	1.0	0.7	2.6	19	-
100	110	6.6	4.5	11.1	6.2	3.9	3.9	2.0	2.6	F05	0.6	0.6	1.0	0.7	3.3	21	-
100	125	6.6	4.5	11.1	6.2	3.9	3.9	2.0	2.6	F05	0.6	0.6	1.0	0.7	3.3	24	-
125	140	7.1	5.0	12.1	7.4	4.9	4.9	2.2	2.6	F05	0.6	0.6	1.0	0.7	3.9	29	-
150	160	8.0	5.9	13.9	7.3	4.9	4.9	2.2	3.5	F07	0.7	0.7	1.2	0.9	4.4	33	-
150	180	8.0	5.9	13.9	8.4	5.8	5.9	2.2	3.5	F07	0.7	0.7	1.2	0.9	5.5	34	-
200	200	9.0	6.9	15.9	8.9	6.4	6.4	2.4	3.5	F07	0.7	0.7	1.2	0.9	5.9	44	-
200	225	9.0	6.9	15.9	10.6	7.8	7.8	2.4	3.5	F07	0.7	0.7	1.2	0.9	7.5	52	-
250	250	10.5	8.4	18.8	10.6	7.8	7.8	2.7	3.5	F07	0.7	0.7	1.2	0.9	7.4	68	-
250	280	10.5	8.4	18.8	12.6	9.8	9.8	2.7	4.9	F10	0.9	0.9	1.5	1.2	9.5	77	-
300	315	11.5	9.3	20.8	14.1	10.0	10.1	3.1	4.9	F10	0.9	0.9	1.5	1.2	9.6	94	-
350	355	13.1	10.6	23.7	15.4	12.3	12.3	3.6	4.9	F10	0.9	0.9	1.5	1.2	11.8	101	-
400	400	14.3	12.4	26.7	17.2	13.8	13.8	4.0	5.9	F12	*	*	-	1.6	13.2	-	211
500	450	17.2	16.0	33.2	17.9	14.4	14.5	5.0	5.9	F12	*	*	-	1.6	13.6	-	297
500	500	17.2	16.0	33.2	21.5	17.3	17.4	5.0	5.9	F12	*	*	-	1.6	16.6	-	339
600	560	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
600	630	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* according to the mounted actuator

Subject to change without notice.

LUG BUTTERFLY VALVE Z 414-A SDR 11



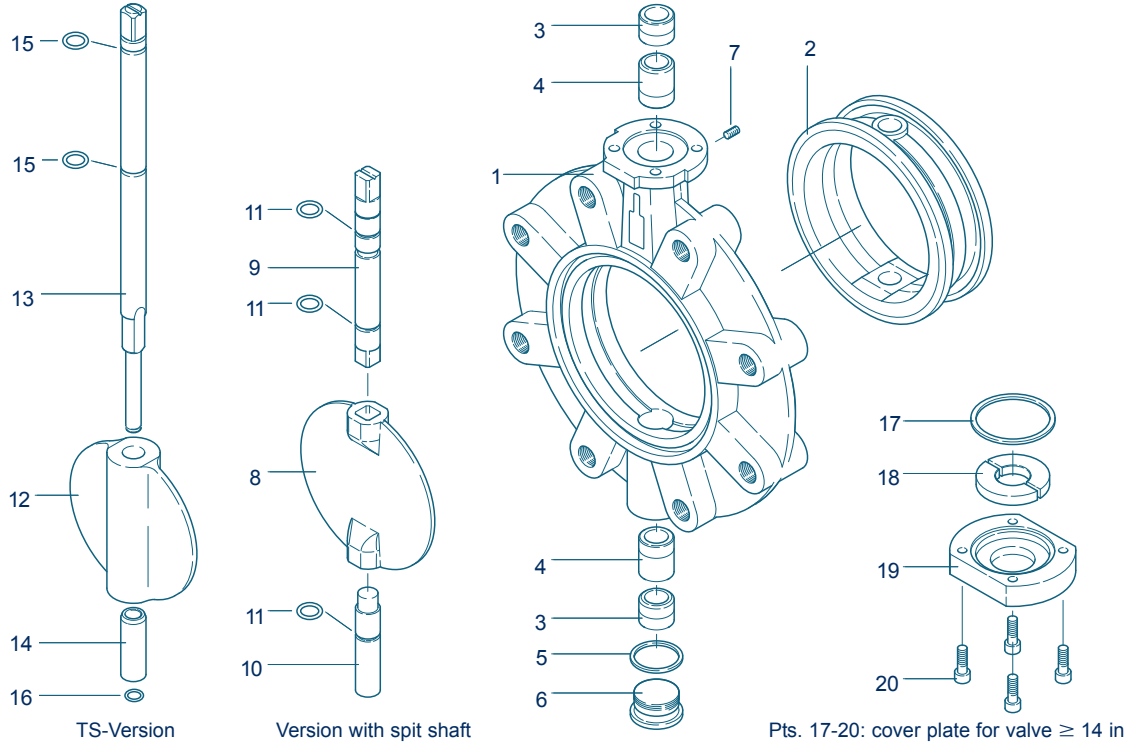
DN [mm]	Ø = da [mm]	Dimensions [in]													Weight [lb] GGG40		
		A	B	C	D	Di	DS	E	F	Flange	G	H1	H2	J	Z	Split Shaft	TS- Shaft
40	50	4.5	2.6	7.1	3.2	1.5	1.5	1.3	2.1	F04	0.4	0.5	0.7	0.6	0.9	8	-
50	63	5.0	3.3	8.3	3.7	1.9	2.0	1.7	2.1	F04	0.4	0.5	0.7	0.6	1.0	10	-
65	75	5.3	3.7	8.9	4.5	2.5	2.5	1.8	2.1	F04	0.4	0.5	0.7	0.6	1.8	12	-
80	90	6.2	4.1	10.3	5.4	3.1	3.1	1.8	2.6	F05	0.6	0.6	1.0	0.7	2.6	19	-
100	110	6.6	4.5	11.1	6.2	3.9	3.9	2.0	2.6	F05	0.6	0.6	1.0	0.7	3.3	21	-
100	125	6.6	4.5	11.1	6.2	3.9	3.9	2.0	2.6	F05	0.6	0.6	1.0	0.7	3.3	24	-
125	140	7.1	5.0	12.1	6.5	4.4	4.4	2.2	2.6	F05	0.6	0.6	1.0	0.7	3.9	26	-
150	160	8.0	5.9	13.9	7.3	4.9	4.9	2.2	3.5	F07	0.7	0.7	1.2	0.9	4.4	33	-
150	180	8.0	5.9	13.9	8.4	5.8	5.9	2.2	3.5	F07	0.7	0.7	1.2	0.9	5.5	34	-
200	200	9.0	6.9	15.9	8.9	6.4	6.4	2.4	3.5	F07	0.7	0.7	1.2	0.9	5.9	44	-
200	225	9.0	6.9	15.9	9.9	7.2	7.2	2.4	3.5	F07	0.7	0.7	1.2	0.9	6.8	47	-
250	250	10.5	8.4	18.8	10.6	7.8	7.8	2.7	3.5	F07	0.7	0.7	1.2	0.9	7.4	68	-
250	280	10.5	8.4	18.8	12.4	8.8	8.9	2.7	4.9	F10	0.9	0.9	1.5	1.2	8.5	72	-
300	315	11.5	9.3	20.8	14.1	10.0	10.1	3.1	4.9	F10	0.9	0.9	1.5	1.2	9.6	94	-
350	355	13.1	10.6	23.7	14.4	11.3	11.3	3.6	4.9	F10	0.9	0.9	1.5	1.2	10.7	121	-
400	400	14.3	12.4	26.7	16.9	12.9	12.9	4.0	5.9	F12	*	*	-	1.6	12.3	-	194
500	450	17.2	16.0	33.2	17.9	14.4	14.5	5.0	5.9	F12	*	*	-	1.6	13.6	-	297
500	500	17.2	16.0	33.2	20.0	16.1	16.2	5.0	5.9	F12	*	*	-	1.6	15.4	-	326
600	560	18.7	16.5	35.2	20.9	16.8	16.8	4.5	8.3	F16	*	*	-	2.0	16.2	-	363
600	630	18.7	16.5	35.2	22.6	19.2	19.3	5.0	8.3	F17	*	*	-	2.0	18.6	-	392

* according to the mounted actuator

Subject to change without notice.

LUG BUTTERFLY VALVE Z 414-A

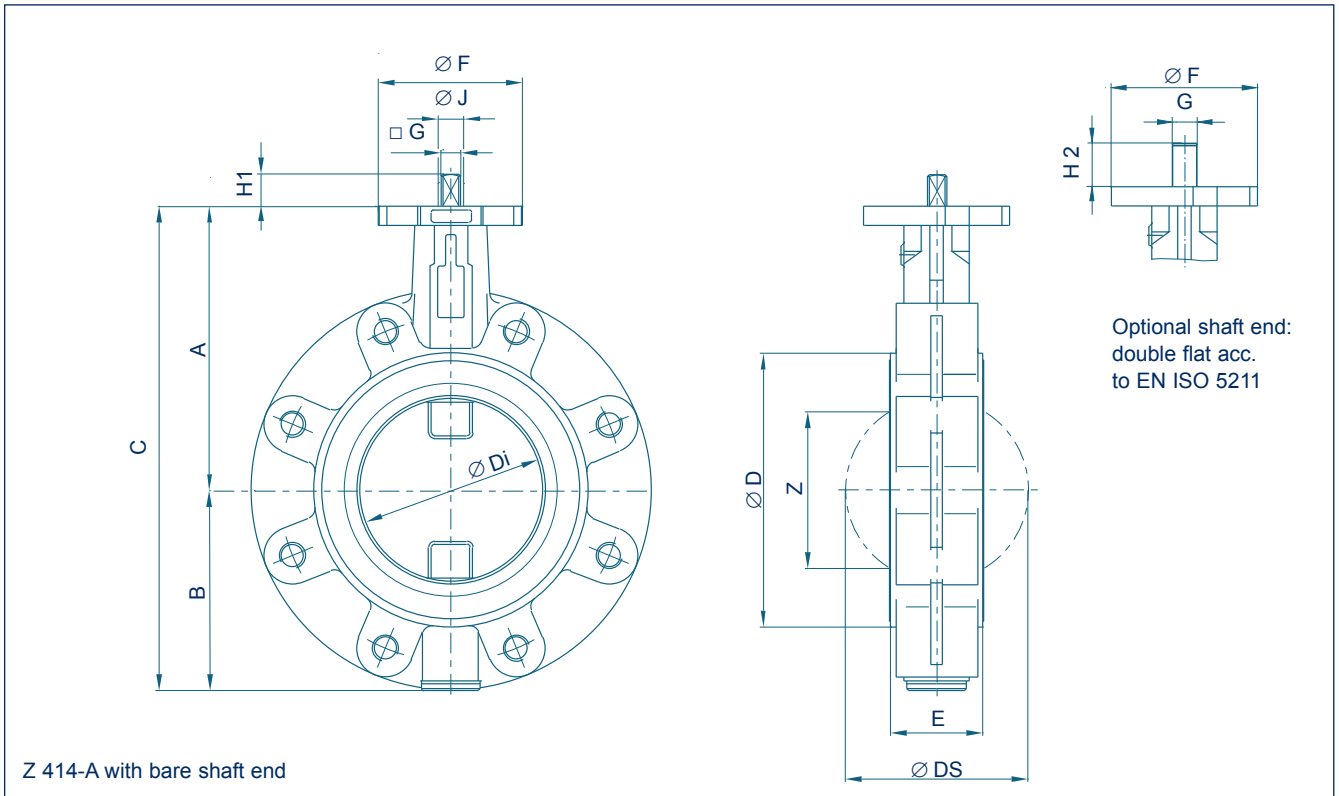
MATERIAL SPECIFICATION AND PARTS LIST



Pt.	Description	Material	Material-No.	ASTM	Pt.	Description	Material	Material-No.	ASTM
1	Body				12	TS-disc da250-da630			
	Nodular Cast Iron	GGG-40	0.7045	60-40-18		Nodular Cast Iron	GGG-40	0.7040	60-40-18
2	Seat					Stainless Steel	X6CrNiMo10-20	1.4408	CF8M
	NBR	Acrylonitrile butadiene rubber				Aluminium Bronze	CuAl10Ni	2.0975	C 95800
	EPDM	Ethylene propylene caoutchouc				Coating	Halar. Rilsan		
	FPM	Fluorocarbon caoutchouc				Surface Quality	electropolished. mirror finished		
3/4	Bearing bush				13	TS-shaft da250-da630			
	Brass	MS 58	2.0401	B 45		Stainless Steel	X14CrMoS17	1.4104	430F
	Polyamid						X39CrMo17-1	1.4122	
5	Seal DIN 7603						X5CrNiMo17-12-2	1.4401	316
	Stainless Steel	X5CrNiMo17-12-2	1.4401	316			X5CrNiMo17-12-2	1.4401	316
	PTFE	Cu			14	Sleeve			
	Copper			Copper		Stainless Steel	X5CrNi18-10	1.4301	304
6	Plug screw DIN 908				15	O-ring			
	Stainless Steel	G-X6CrNiMo 18-10	1.4408	CF8M		NBR	Acrylonitrile butadiene rubber		
7	Set screw DIN 915					FPM	Fluorocarbon caoutchouc		
	Steel	45 H galvanized			16	Retaining ring			
	Stainless Steel	A4-70		B8M		Stainless Steel	X39CrMo17-1	1.4122	
8	Disc				17	O-ring da400-da630			
	Stainless Steel	X5CrNi18-10	1.4301	304		NBR	Acrylonitrile butadiene rubber		
		X5CrNiMo18-10	1.4401	316	18	Shaft retainer da400-da630			
		G-X6CrNiMo18-10	1.4408	CF8M		Brass	MS 58	2.0401	B45
	Coating	Halar. Rilsan			19	Cover plate da400-da630			
	Surface Quality	electropolished. mirror finished				Grey Cast Iron	GG-25	0.6025	40 B
9/10	Shaft				20	Screw da400-da630			
	Stainless Steel	X14CrMoS17	1.4104	430F		Steel	45 H galvanized		
		X5CrNiMo17-12-2	1.4401	316		Stainless Steel	A2-70		B8
							A4-70		B8M
11	O-ring								
	NBR	Acrylonitrile butadiene rubber							
	FPM	Fluorocarbon caoutchou							
							Other materials upon request.		

Subject to change without notice.

LUG BUTTERFLY VALVE Z 414-A SDR 33



DN [mm]	Ø = da [mm]	Dimensions [in]														Weight [lb] GGG40	
		A	B	C	D	Di	DS	E	F	Flange	G	H1	H2	J	Z	Split Shaft	TS- Shaft
40	50	4.5	2.6	7.1	3.2	1.5	1.5	1.3	2.1	F04	0.4	0.5	0.7	0.6	0.9	8	-
50	63	5.0	3.3	8.3	3.7	1.9	2.0	1.7	2.1	F04	0.4	0.5	0.7	0.6	1.0	10	-
65	75	5.3	3.7	8.9	4.5	2.5	2.5	1.8	2.1	F04	0.4	0.5	0.7	0.6	1.8	12	-
80	90	6.2	4.1	10.3	5.4	3.1	3.1	1.8	2.6	F05	0.6	0.6	1.0	0.7	2.6	19	-
100	110	6.6	4.5	11.1	6.2	3.9	3.9	2.0	2.6	F05	0.6	0.6	1.0	0.7	3.3	21	-
100	125	6.6	4.5	11.1	6.2	3.9	3.9	2.0	2.6	F05	0.6	0.6	1.0	0.7	3.3	24	-
125	140	7.1	5.0	12.1	7.4	4.9	4.9	2.2	2.6	F05	0.6	0.6	1.0	0.7	3.9	29	-
150	160	8.0	5.9	13.9	8.4	5.8	5.9	2.2	3.5	F07	0.7	0.7	1.2	0.9	4.4	35	-
150	180	8.0	5.9	13.9	8.4	5.8	5.9	2.2	3.5	F07	0.7	0.7	1.2	0.9	5.5	34	-
200	200	9.0	6.9	15.9	9.9	7.2	7.2	2.4	3.5	F07	0.7	0.7	1.2	0.9	5.9	48	-
200	225	9.0	6.9	15.9	10.6	7.8	7.8	2.4	3.5	F07	0.7	0.7	1.2	0.9	7.5	51	-
250	250	10.5	8.4	18.8	12.1	8.8	8.9	2.7	3.5	F07	0.7	0.7	1.2	0.9	7.4	75	-
250	280	10.5	8.4	18.8	12.6	9.8	9.8	2.7	4.9	F10	0.9	0.9	1.5	1.2	9.5	81	-
300	315	11.5	9.3	20.8	14.1	11.0	11.1	3.1	4.9	F10	0.9	0.9	1.5	1.2	9.6	105	-
350	355	13.1	10.6	23.7	15.4	12.3	12.3	3.6	4.9	F10	0.9	0.9	1.5	1.2	11.8	136	-
400	400	14.3	12.4	26.7	17.2	13.8	13.8	4.0	5.9	F12	*	*	-	1.6	13.2	-	211
500	450	17.2	16.0	33.2	20.0	16.1	16.2	5.0	5.9	F12	*	*	-	1.6	13.6	-	319
500	500	17.2	16.0	33.2	21.5	17.3	17.4	5.0	5.9	F12	*	*	-	1.6	16.6	-	339
600	560	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
600	630	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* according to the mounted actuator

Subject to change without notice.

LUG BUTTERFLY VALVE Z 414-A

TORQUE

– The torque values specified (Md) are based on liquid and lubricant media.

– Powdery (non-lubricant) media Md x 1.3

– Dry gases/high viscous media Md x 1.2

– The values specified are based on the initial breakaway torque.

– Dynamic torque specification available upon request.

Regarding the dimensioning of actuators please contact our engineers.

da [mm]	Size [in]	Operating pressure		
		SDR 11 145 psi	SDR 17 / 17.6 145 psi	SDR 33 90 psi
50	1½	53	53	53
63	2	62	62	62
75	2½	133	133	80
90	3	160	160	87
110	4	248	248	160
125	4	248	248	160
140	5	399	399	195
160	6	975	975	399
180	6	975	975	399
200	8	1240	1240	673
225	8	1240	1240	673
250	10	1772	1772	1595
280	10	1772	1772	1595
315	12	1949	1949	1772
355	14	3190	3190	2747
400	16	5493	5493	4784
450	20	6468	6468	5759
500	20	8506	8506	7885
560	24	13999	–	–
630	24	17720	–	–

All Values in Inch Lbs.

C_v-VALUES

– The C_v-values specified are based on tests carried out by the Delfter Hydraulics Laboratories, the Netherlands.

– Permissible velocity of flow Vmax 15 ft/s for liquids and Vmax 230 ft/s for gases.

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

– Avoid cavitation!

For further values, please contact our engineers.

da [mm]	DN [mm]	Size [in]	SDR	Opening angle α°								
				20°	30°	40°	50°	60°	70°	80°	90°	
50	40	1½	11		3	9	17	24	38	50	58	
			17		3	9	17	24	38	50	58	
			33		3	9	17	24	38	50	58	
63	50	2	11	1	9	15	26	44	58	76	99	
			17	1	9	15	26	44	58	76	99	
			33	1	9	15	26	44	58	76	99	
75	65	2½	11	2	10	26	49	90	138	198	250	
			17	2	10	26	49	90	138	198	250	
			33	2	10	26	49	90	138	198	250	
90	80	3	11	9	28	58	110	174	279	384	488	
			17	9	28	58	110	174	279	384	488	
			33	9	28	58	110	174	279	384	488	
110	100	4	11	15	33	65	151	209	395	640	930	
			17	15	33	65	151	209	395	640	930	
			33	15	33	65	151	209	395	640	930	
125	100	4	11	15	33	65	151	209	395	640	930	
			17	15	33	65	151	209	395	640	930	
			33	15	33	65	151	209	395	640	930	
140	125	5	11	22	53	98	212	316	517	837	1105	
			17	30	76	151	267	407	616	1012	1175	
			33	30	76	151	267	407	616	1012	1175	
160	150	6	11	30	76	151	267	407	616	1012	1175	
			17	30	76	151	267	407	616	1012	1175	
			33	41	105	232	419	744	1047	1570	2442	
180	150	6	11	41	105	232	419	744	1047	1570	2442	
			17	41	105	232	419	744	1047	1570	2442	
			33	41	105	232	419	744	1047	1570	2442	
200	200	8	11	43	120	279	511	861	1279	2175	3082	
			17	43	120	279	511	861	1279	2175	3082	
			33	48	186	360	605	1047	1651	2884	3943	
225	200	8	11	48	186	360	605	1047	1651	2884	3943	
			17	50	209	407	674	1163	1861	3489	4652	
			33	50	209	407	674	1163	1861	3489	4652	
250	250	10	11	50	209	407	674	1163	1861	3489	4652	
			17	50	209	407	674	1163	1861	3489	4652	
			33	99	314	593	977	1640	2791	4826	6048	
280	250	10	11	99	314	593	977	1640	2791	4826	6048	
			17	145	418	767	1279	2093	3605	6164	7443	
			33	145	418	767	1279	2093	3605	6164	7443	
315	300	12	11	155	454	825	1349	2210	3954	6396	7676	
			17	155	454	825	1349	2210	3954	6396	7676	
			33	198	558	1012	1640	2675	5233	7734	8943	
355	350	14	11	215	581	1070	1721	2814	5233	8141	9304	
			17	279	709	1291	2117	3489	6687	9769	10839	
			33	279	709	1291	2117	3489	6687	9769	10839	
400	400	16	11	331	791	1430	2384	2923	7769	10816	11863	
			17	407	907	1628	2791	3954	9304	12560	13374	
			33	407	907	1628	2791	3954	9304	12560	13374	
450	500	20	11	459	1012	1779	3059	4652	10350	12909	14537	
			17	459	1012	1779	3059	4652	10350	12909	14537	
			33	558	1198	2093	3629	6396	12444	14770	18608	
500	500	20	11	558	1198	2093	3629	6396	12444	14770	18608	
			17	581	1244	2326	3838	6862	13142	16282	21864	
			33	581	1244	2326	3838	6862	13142	16282	21864	
560	600	24	11	628	1302	2442	4070	7327	13491	17445	24423	
			17									
			33									
630	600	24	11	709	1512	2791	4768	8374	14537	20469	27912	
			17									
			33									

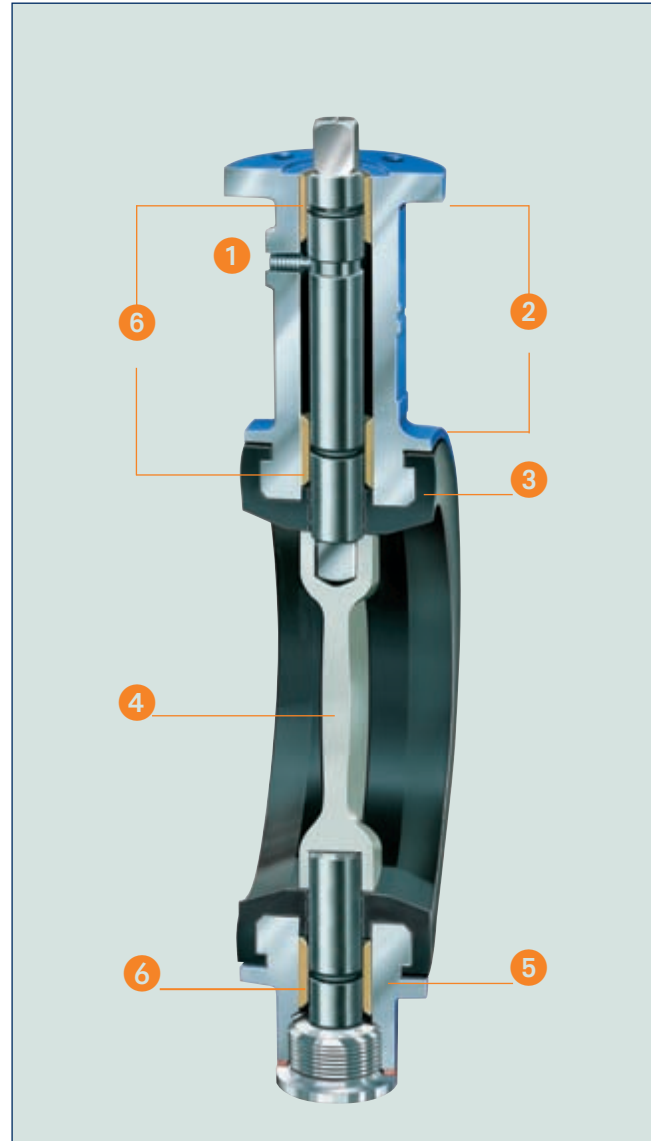
Subject to change without notice.

FEATURES & BENEFITS

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 Extended neck allows for piping insulation.
- 3 EBRO'S unique Location Lock Liner design secures the liner in the valve body to prevent unwanted lateral movement during operation and installation. The liner extends into the upper and lower stem journals to provide added protection against leakage in these areas.
- 4 The sealing surface of the slim profile disc is mirror polished to provide tight shutoff and longer life. Our internal square and octagon disc-to-stem connections eliminate pins & keys found in competitive designs.
- 5 The valve body is precision machined in order secure and accurately position the replaceable liner to ensure minimal operational wear and extend reliable service life. Body is dry powder epoxy coated for external corrosion protection.
- 6 Two radial bearings located immediately above & below the disc prevent disc deflection caused by line pressue, while a third radial bearing is located immediately below the mounting flange to prevent possible side loading from actuators.



- 1 EBRO's Location Lock Liner is molded into entire circumference of the liner to engage with a corresponding recess in the valve body, thus assuring the exact position of the liner. This secure design results in lower torques and longer life.
- 2 Liner is secured to body flange connections by means of lug profile that matches machined recess in body.
- 3 Liner extends into the stem journals to provide a third stem seal. Valves 10" and larger have vulcanized metal support ring.
- 4 The end connection sealing faces of the Location Lock Liner have a convex form. This creates a controlled deformation of the volume of the liner when clamping between flanges, restricting any increase in operating torque and eliminating damage to or destruction of the elastomer.

