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Data sheet ERHARD butterfly valves



ERHARD butterfly valves – the overview

This table contains the most important specifications for the standard products in the ERHARD butterfly valve range (DIN EN 593). Numerous other options are available on request.

ERHARD butterfly valves by nominal sizes and pressure ratings

DN	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	>=1000
PN 10					ERHARD ROCO Premium											
PN 16	ERHARD ROCO Premium															
PN 25	ERHARD EAK butterfly valves															
PN 40					ERHARD EAK butterfly valves											

	ROCO	ROCO Premium		EAK				
Nominal size DN	80-125	150-600		80-1800		700-2600		700-3600
Pressure rating PN	16	10	16	25	40	10	16	10
Face-to-face dimensions DIN EN 558 Basic line 14	•	•	•	•	•	•	•	•
Flange DIN EN 1092-1 Type 21 DG	•	• ¹	•	•	•	•	•	•
Flange DIN EN 1092-2 Type 21 DG	•	• ¹	•	•	•	•	•	•
Body and valve disc material								
Spheroidal graphite cast iron EN-JS 1030	•	•	•			•	•	
Spheroidal graphite cast iron EN-JS 1025					•			
Spheroidal graphite cast iron EN-JS 1050				•		•	•	
Body corrosion protection								
All-round EKB / Cr steel seat	•	•	•	•	•	•	•	•
Inside vitreous enamel, outside EKB / vitreous enamel seat	◦ ⁷	◦	◦	◦	◦	◦	◦	◦
Valve disc corrosion protection								
ERHARD EKB fusion bonded epoxy		•	•	•	•	•	•	•
Enamel up to DN 1400 PN 16		◦	◦	◦		◦	◦	
ERHARD Pro-Enamel		◦	◦					
Main seal								
Valve disc butter lined all round	•			• ⁸				
Profiles sealing ring butter lined all round		•	•					
Profile ring and clamping ring				•	•	•	•	•
Sealing materials								
EPDM KTW W270	•	•	•	◦		•	•	•
Perbunan (NBR)	•	•	•	•	•	•	•	•
Viton (FPM)	◦	◦ ²	◦ ²			◦	◦	◦
PU (PUR)				◦	◦	◦	◦	◦
Shaft material: ferritic Cr steel	•	•	•	•	•	•	•	•
Connection between shaft and valve disc								
Polygon shaft hub connection	◦	•	•					
Key with key securing device				•	•	•	•	•
Bronze bearing bushes	◦	•	•	◦	◦	◦	◦	◦
Lag P1 (PTFE) bearing bushes erbuchsen P1 (PTFE)	•			•	•	•	•	•
Screws								
External and internal A2				•	•	•	•	•
External A2 and internal A4		•	•	◦	◦	◦	◦	◦
Gearbox								
Travelling-nut type gearbox (SP)				•		•	•	•
Slider crank mechanism (SK/SKG)	•	•	•	• ⁵	• ⁶	• ³	• ⁴	• ³

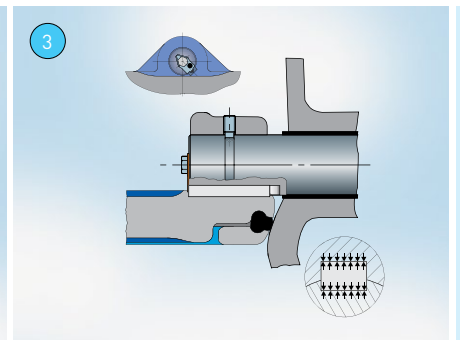
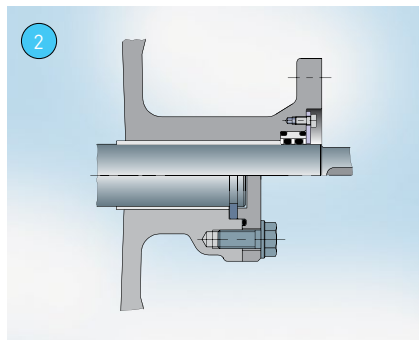
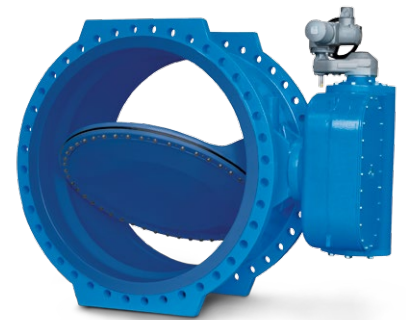
• Standard – ◦ available on request – 1) PN 10 available for DN 200 and larger – 2) Profile ring and separate clamping ring Cr steel – 3) for DN 1000 and larger – 4) for DN 800 and larger – 5) for DN 700 and larger – 6) for DN 600 and larger – 7) additional seat Cr steel – 8) PN 25 DN 80-125

ERHARD EAK butterflyvalves

The tried and tested butterfly valve for large nominal sizes and pressure ratings

The used for many years ERHARD butterfly valves cover with nominal sizes between DN 700 and 3600 [1] and pressure ratings from PN 10 to PN 40 a wide range of applications. Proven details ensure reliable quality and a high degree of cost-effectiveness:

- Drive shaft and bearing pin are supported in maintenance-free, self-lubricating plain bearings and hence are highly resilient [2]
- Connection between drive shaft and valve disc with proved and robust key connection for force transmission without play even under the highest stresses [3]
- Main seal through profile ring that is clamped onto the valve disc and fixed with a clamping ring
- Double-eccentrically supported valve disc with optimised flow performance
- Sliding crank mechanism with optimal movement kinematics which is almost exactly corresponding to the valve's characteristic curve (from DN 800 spindle gear up)



ERHARD EAK butterfly valve – the overview

Brief specifications

Butterfly valve according to DIN EN 593 materials and finishes

- **Body:** spheroidal graphite cast iron EN-JS 1030
- **Body seat:** austenitic Cr-Ni steel
- **Valve disc:** soft-sealed, with double eccentricity support, made of spheroidal graphite cast iron EN-JS 1030
- **Valve shaft:** ferritic Cr steel
- **Shaft bearing:** P1 (PTFE) according to DIN 1494-4, maintenance-free
- **Shaft seal:** elastomer
- **Profiled sealing real:** elastomer, confined with clamping ring, EPDM or NBR, optionally Viton
- **Screws:** internal and external A2
- **SKG/SK slider crank mechanism:** degree of protection IP68 / IP67
- **Gearbox body:** grey cast iron EN-JL 1040 / EKB
- **Gearbox crank:** steel / black-finished
- **Stem nut:** special brass
- **Stem:** ferritic Cr steel
- **Handwheel:** steel / EKB
- **Gearbox configuration:** standard according to Figure 1
- **Corrosion protection of the body parts:** heavy-duty corrosion assurance in accordance with quality assurance DIN 30 677-2 (at least 250 µm), ERHARD EKB fusion bonded epoxy coating, optionally with ERHARD vitreous enamelling on the inside, each “blue” coloured. Other coating options are available, please contact us for advice.

Areas of use				
PN	10	16	25	40
DN	700-3600	700-2600	80-1800	150-1800
Water up to max. 60 °C				
Test pressure in bar according to DIN EN 12266-1				
Body	17,0	25,0	37,5	60,0
Closure	11,0	17,6	27,5	44,0
Largest allowable working pressure in bar	10,0	16,0	25,0	40,0

Operating instructions

BA50E000_EAK_Hand_

BA50E001_EAK_EA_

ERHARD EAK butterfly valve – the dimensions table

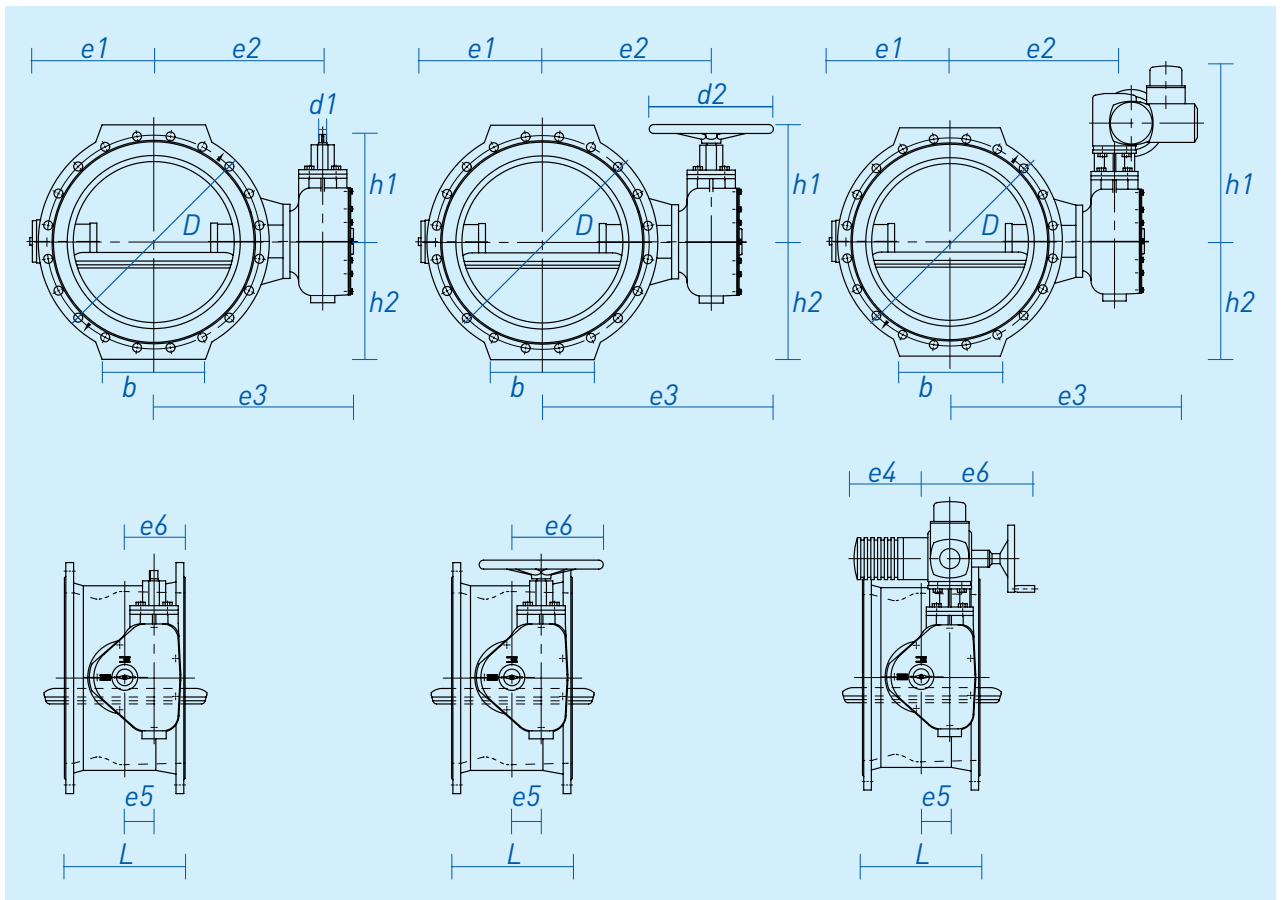
DN	PN	L	D	h1	h1	h1	h2	b	e1	e2	e3	e3	e3	e4	e5	e6	e6	e6	d1	d2	G	G	G	u
				RZ	HR	EA					RZ	HR	EA	EA		RZ	HR	EA	RZ	HR	HR	RZ	EA	H
80	25	180	200	199	222	438	117	/	100	167	229	267	404	85	180	148	185	334	18	200	22	22	44	18
100	25	190	235	199	222	438	117	/	118	182	244	282	419	85	180	148	185	334	18	200	26	26	48	18
125	25	200	270	199	222	438	117	/	135	195	257	295	432	85	180	148	185	334	18	200	30	30	52	18
150	25	210	300	239	262	478	155	150	192	215	260	315	452	195	70	135	170	319	18	200	51	50	71	28
200	25	230	360	290	318	525	185	160	225	274	349	399	511	185	80	154	205	329	22	250	97	95	116	27
250	25	250	425	290	318	525	215	180	255	304	379	479	541	185	80	154	255	329	22	350	122	120	141	27
300	25	270	485	310	346	547	245	200	322	400	489	575	647	197	85	163	260	339	22	350	183	180	205	29
350	25	290	555	440	468	675	280	225	352	430	519	605	667	249	16	223	191	265	22	350	237	235	256	29
400	25	310	620	474	502	709	315	250	383	460	549	635	697	224	41	247	216	290	22	350	327	325	346	37
450	25	330	670	474	502	711	340	300	378	455	544	580	702	241	41	247	166	295	22	250	432	430	455	148
500	25	350	730	549	577	786	370	300	443	510	610	635	757	201	81	289	206	335	22	250	607	605	630	200
600	25	390	845	549	577	786	425	330	493	560	660	685	807	201	81	289	206	335	22	250	622	620	645	200
700	10	430	895	396	428	633	455	400	489	570	670	745	807	110	155	255	330	404	25	350	563	563	584	37
700	16	430	910	549	577	786	460	400	490	651	751	776	898	201	81	289	206	335	22	250	802	800	825	200
700	25	430	960	595	636	868	485	400	576	685	827	860	922	84	181	387	356	430	22	350	1198	1195	1216	228
800	10	470	1015	396	428	633	515	450	554	635	735	810	872	110	155	255	330	404	25	350	663	663	684	37
800	16	470	1025	549	577	786	520	450	596	685	785	810	932	201	81	289	206	335	22	250	997	995	1020	200
800	25	470	1085	595	636	870	550	450	636	745	887	920	992	101	181	387	356	435	22	350	1373	1370	1395	228
900	10	510	1115	549	577	786	562	550	626	715	815	840	962	201	81	289	206	335	22	250	1026	1024	1049	200
900	16	510	1125	633	674	868	570	550	676	785	927	910	1022	84	181	387	306	430	22	250	1312	1310	1331	228
900	25	510	1185	633	674	870	600	550	711	820	962	945	1067	101	181	387	306	435	22	250	1672	1670	1695	228
1000	10	550	1230	549	585	786	630	600	701	785	885	960	1032	201	81	289	256	335	22	350	1162	1159	1184	200
1000	16	550	1255	633	674	870	635	600	736	845	987	970	1092	101	181	387	306	435	22	250	1702	1700	1725	228
1000	25	550	1320	708	749	945	665	600	789	905	1092	1080	1152	41	241	448	416	495	22	350	2333	2330	2355	284
1200	10	630	1455	491	531	705	730	600	816	905	1042	1155	1152	82	200	313	450	454	30	500	1944	1939	1964	51
1200	16	630	1485	708	749	945	750	700	861	980	1167	1155	1227	41	241	448	416	495	22	350	2673	2670	2695	284
1200	25	630	1530	708	749	945	780	700	889	1000	1187	1175	1247	41	241	448	416	495	22	350	3423	3420	3445	284
1400	10	710	1675	595	636	870	845	800	936	1045	1187	1220	1292	101	181	387	356	435	22	350	2732	2729	2754	228
1400	16	710	1985	708	749	945	850	800	976	1095	1282	1270	1342	41	241	448	416	495	22	350	3763	3760	3785	284
1400	25	710	1975	826	866	1081	885	800	984	1135	1325	1385	1420	324	60	725	310	389	30	500	4705	4700	4751	409
1600	10	790	1915	708	749	945	970	900	1061	1180	1367	1355	1427	41	241	448	416	495	22	350	4152	4149	4174	284
1600	16	790	1930	708	749	945	970	900	1104	1215	1402	1390	1462	41	241	448	416	495	22	350	5123	5120	5145	284
1600	25	790	1975	916	956	1171	995	900	1108	1290	1530	1540	1575	254	130	660	380	459	30	500	6855	6850	6901	437
1800	10	870	2115	708	749	945	1065	1000	1179	1295	1482	1470	1542	41	241	448	416	495	22	350	5403	5400	5425	284
1800	16	870	2130	826	866	1081	1065	1000	1184	1335	1525	1585	1620	324	60	725	310	389	30	500	6405	6400	6451	409
2000	10	950	2325	826	866	1081	1165	1100	1304	1455	1645	1705	1740	324	60	725	310	389	30	500	7105	7100	7151	409

Basic line R15

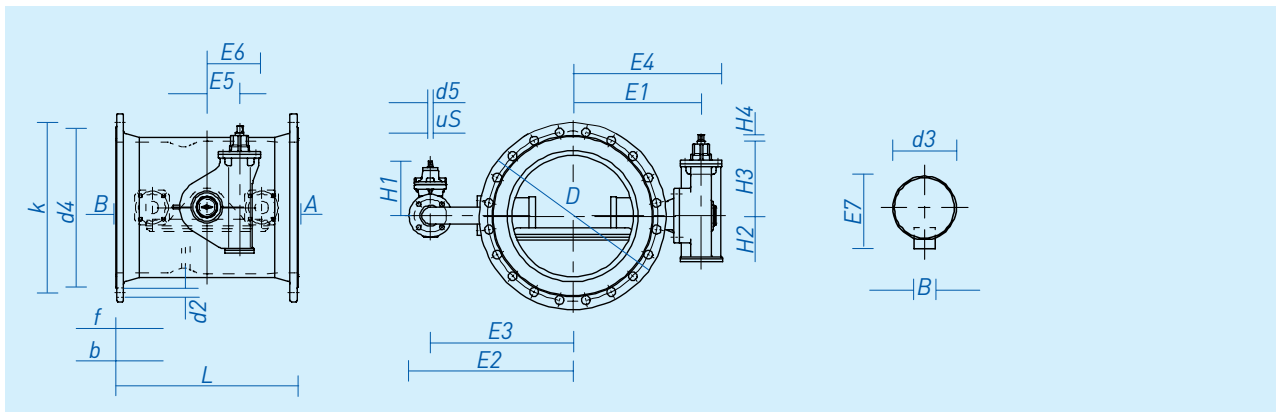
DN	PN	Flange															Weights									
		D	k	b	d2	Anz	d4	f	B	e1	e2	e3	e4	e5	e6	e7	u5	H1	H2	H3	H4	L	d3	d5	G	G1
		ø	ø		ø		ø																ø	ø	R2	R2
700	10	895	840	32,5	31	24	794	5	8	595	794,5	702	695	155	255	33	17,3	233	209	450	19	900	22	25	1410	1448
700	16	910	840	39,5	37	24	794	5	8	615	794,5	702	795	150	260	33	17,3	233	261	525	27	900	22	25	1410	1448
800	10	1015	950	35	34	24	901	5	8	665	715	615	765	155	255	33	17,3	268	225	360	40	1000	25	25	1476	1509
800	16	1025	950	43	41	24	901	5	8	685	715	615	795	150	260	33	17,3	268	261	525	27	1000	22	25	1476	1509
1000	10	1255	1160	50	37	28	1112	5	8	825	840	730	950	150	260	33	19,3	310	377	572	26	1200	22	25	2054	2093
1000	16	1255	1170	50	44	28	1112	5	8	845	840	730	987	250	340	33	19,3	310	434	607	26	1200	22	25	2054	2093

Other nominal sizes, pressure ratings and actuator options on request.

ERHARD EAK butterfly valve – the dimensions table



Basic line R15



Dimensions used

L [mm] face-to-face dimension

D [mm] flange

G [kg] weight

$G1$ [kg] weight with bypass

u handwheel revolutions (Open/Closed)

RZ with round trunnion

HR with handwheel

EA with electric rotary actuator

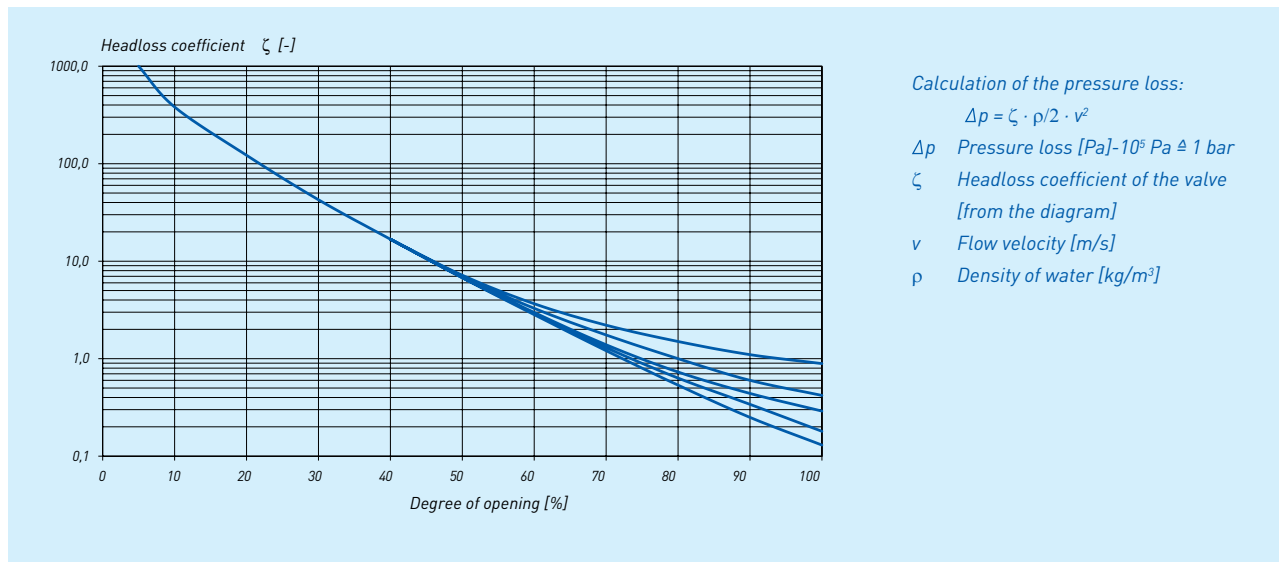
(dimensions can vary depending on the actuator manufacturer)

ERHARD butterfly valves – perfect engineering to the last detail

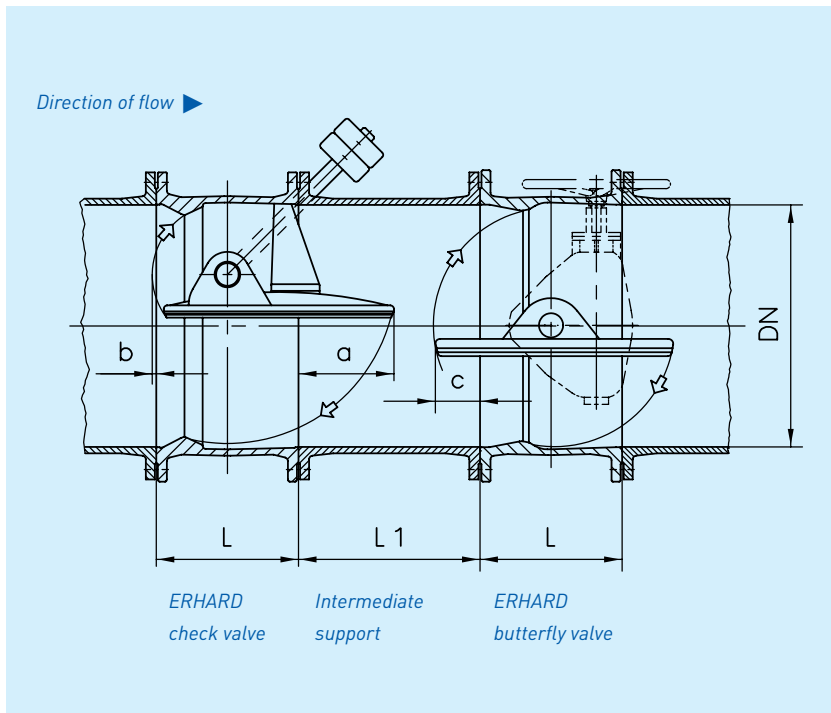
Headloss coefficients

DN	PN 10	PN 16	DN	PN 10	PN 16	DN	PN 10	PN 16
80	-	1,39	500	0,23	0,29	1500	0,12	0,16
100	-	0,89	600	0,20	0,26	1600	0,12	0,15
125	-	0,57	700	0,18	0,23	1800	0,12	0,15
150	-	0,78	800	0,16	0,21	2000	0,11	0,15
200	-	0,71	900	0,15	0,19	2200	0,11	0,15
250	-	0,42	1000	0,13	0,18	2400	0,11	0,15
300	0,34	0,40	1100	0,13	0,17	2500	0,11	0,14
350	0,30	0,37	1200	0,12	0,16	2600	0,11	0,14
400	0,27	0,34	1300	0,12	0,16	2900	0,11	0,14
450	0,25	0,31	1400	0,12	0,16	3000	0,10	0,13

Headloss coefficients ζ with fully opened butterfly valve. The results were obtained in ERHARD's test centre following extensive test series and correspond to the actual performance of the fitting.



ERHARD butterfly valves – installation suggestion for ERHARD check valve



DN	L	L1	a	b	c
150	210				
200	230	150	20		
250	250	150	45		
300	270	150	70		9
400	310	225	118		41
500	350	300	165		63
600	390	400	215		95
700	430	500	260	10	120
800	470	600	315	15	150
900	510	650	360	30	180
1000	550	750	410	40	210
1100	590	800	455	55	225
1200	630	900	515	50	270
1300	670	1000	560	60	295
1400	710	1100	615	70	320
1500	750	1200	660	80	360
1600	790	1300	705	90	385
1800	870	1400	815	110	445
2000	950	1600	915	130	505