Butterfly valves for high temperature series GD(H) - LDK

Butterfly valves of series GD(H) and LDK are suitable for industrial plants to regulate hot air and exhaust combustion gas, not containing cast iron corrosive substances.

Typical application for these valves are foundries, industrial furnaces, drying plants, gas turbines, heat treatment and other thermal treatment.

GD is available with free shaft or motorized with electric or pneumatic actuator, GDH valves are available with ratchet handle lockable in 16 positions.

LDK-1 and LDK-4 is a compact and light weight version of butterfly valve for high temperature, particularly suitable for ventilating systems according to DIN 24154 T2R2.

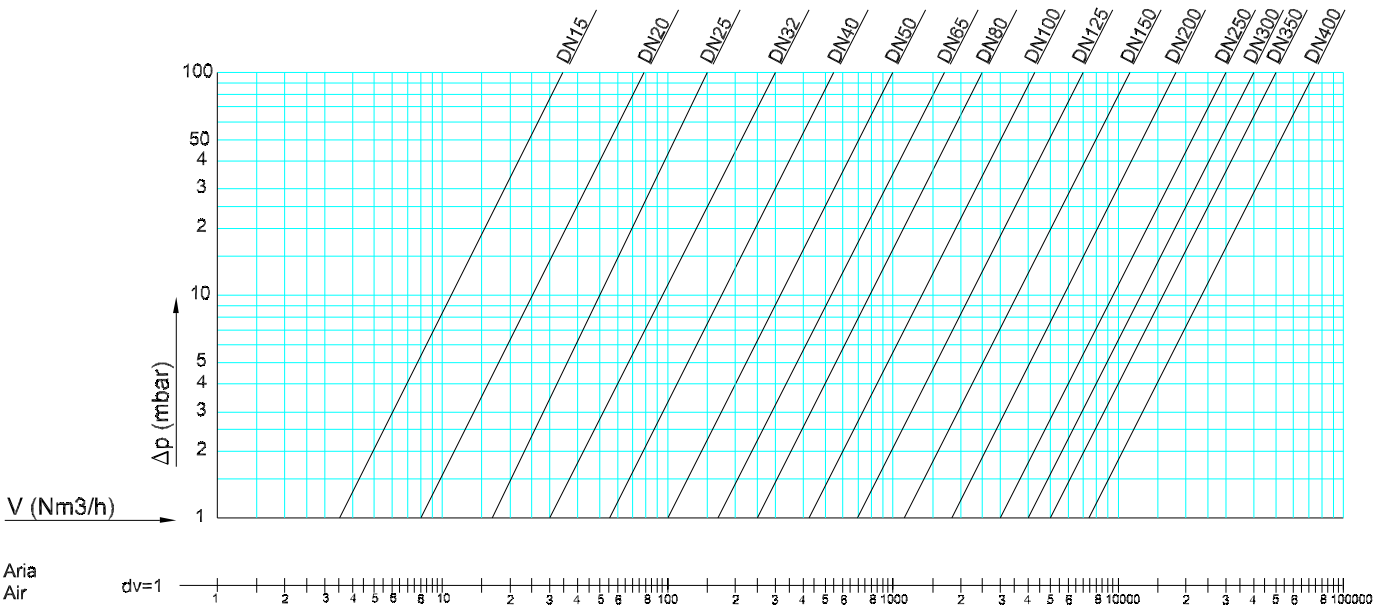
TECHNICAL FEATURES

Valve body	Grey cast-iron GG25, stainless steel AISI 304
Valve disc	Steel St.37, grey cast-iron GG25, stainless steel AISI 304
Spindle	Steel St.37, AISI 420S37, AISI 303, AISI 321
Gland packing	Graphite rings, alu-silicate
Diameters model GD	DN15 ÷ DN5000
Diameters model LDK	DN63 ÷ DN5000
Flanges GD	Wafer type PN6, PN10 and PN16
Flanges LDK	Wafer type (LDK-1) or body flanged (LDK-4) according to DIN 24154 T2R2
Max pressure	1 bar (standard)
Standard temperature	GD(H)3 up to 350 °C, GD(H)4 up to 450 °C, GD(H)6 up to 650 °C, LDK up to 450 °C
Max temperature	- 40 ÷ 1000 °C, depending on material combination
Leakage rate	1% of Kv a 90°, 0,1÷0,2% of Kv with ledge seat inside the valve body and 0,01÷0,02% of Kv with ledge seat inside the valve body and flexible sealing

FEATURES

- Robust and consistent butterfly valve suitable for heavy industry application
- Free shaft butterfly valve or equipped with hand wheel
- Motorized butterfly valves with electrical actuator (floating or analogical control) or with pneumatic actuator, simple or double effect
- Various leakage class up to class III tight

FLOW DIAGRAM VALVE GD

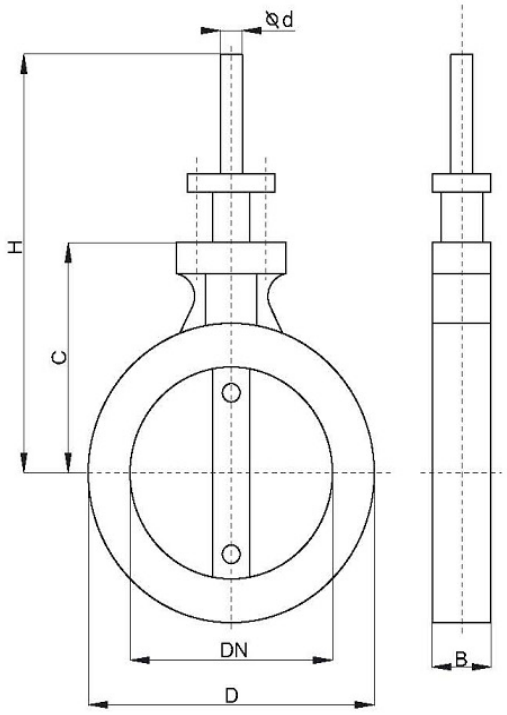


FLOW RATE Kv									
DN	**10°**	**20°**	**30°**	**40°**	**50°**	**60°**	**70°**	**80°**	**90°**
25	0,2	0,8	1,8	3	7	9	9,9	11	18
32	0,35	1,2	3	6	14	18	19,5	21	32
40	0,9	2,9	6	15	29	33	36	38,5	60
50	1,9	5,2	13	27	44	63	68	71	115
65	4,5	12	19	42	74	95	108	125	190
80	5,5	16	30	55	95	130	165	188	280
100	8	22	58	100	160	230	288	350	480
125	9	35	80	170	250	370	490	610	800
150	15	56	120	225	320	530	715	910	1200
200	22	102	210	370	650	1010	1550	1990	2180
250	34	165	340	620	990	1600	2070	2790	3280
300	73	230	510	880	1530	2300	3040	4200	4740
350	93	320	560	1300	2030	3010	4080	5800	6410
400	124	460	975	1400	2400	3900	5540	7500	8400

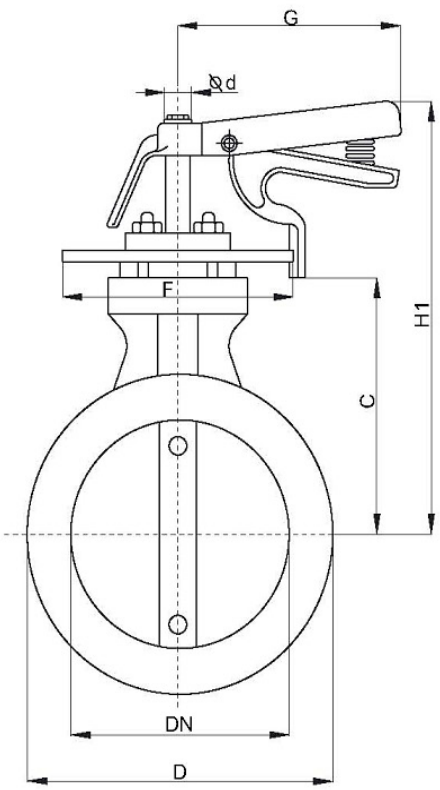
DRIVE TORQUE FOR GD... VALVES WITH INLET PRESSURE 100 mbar										
Diameter DN	100	125	150	200	250	300	350	400	450	500
Torque Nm	15	20	25	37	40	42	45	57	65	75

GD(H)3 350 °C AND GD(H)4 450 °C

GD



GDH



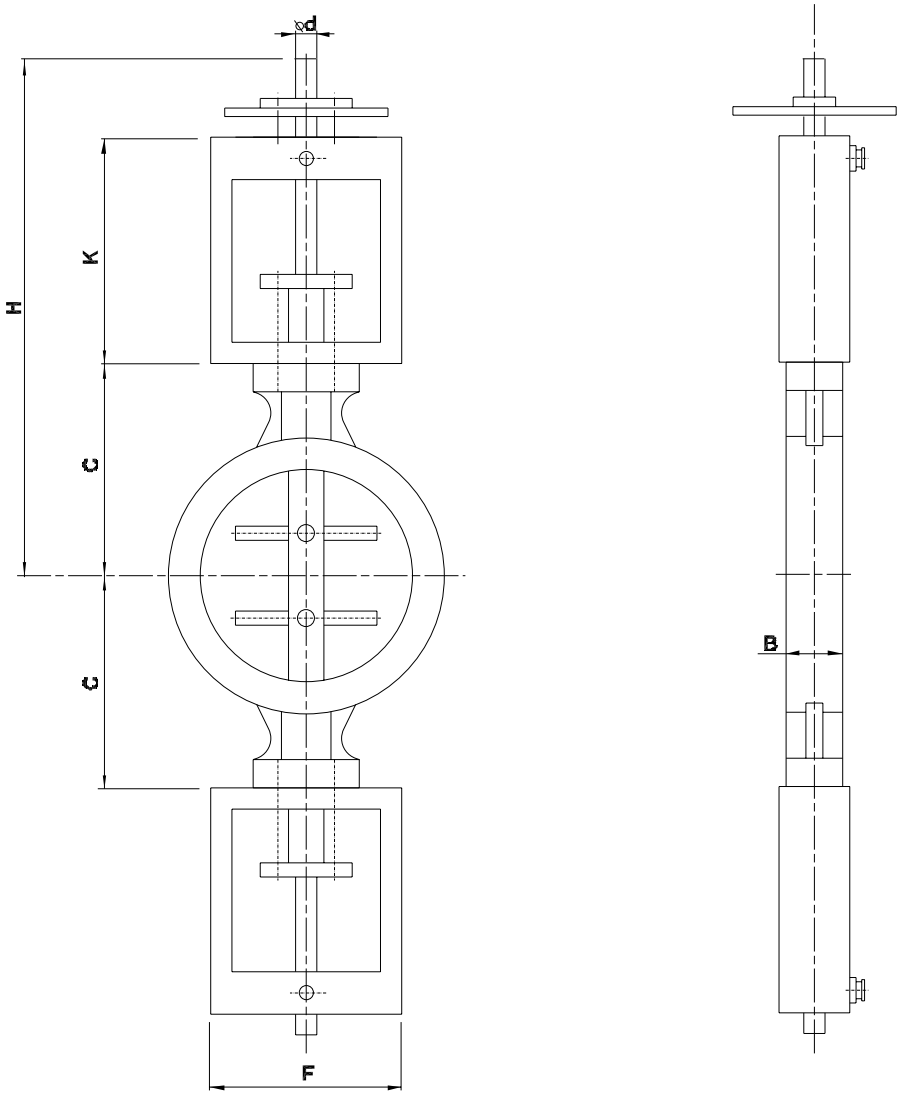
Dimensions in mm

Model		DN	B	C	ØD	Ød	ØF	G	H	H1	Wei-ght Kg
Exposed spindle	With handle										
GD*- 15	GDH*- 15	15	25	60	44	8	100	100	140	130	1,1
GD*- 20	GDH*- 20	20	25	60	44	8	100	100	140	130	1,1
GD*- 25	GDH*- 25	25	25	75	60	10	100	100	155	145	1,6
GD*- 32	GDH*- 32	32	25	80	67	10	100	100	160	150	1,6
GD*- 40	GDH*- 40	40	25	83	75	10	100	100	163	153	1,6
GD*- 50	GDH*- 50	50	25	85	85	10	100	105	165	150	1,6
GD*- 65	GDH*- 65	65	25	95	105	12	100	120	175	160	2,2
GD*- 80	GDH*- 80	80	30	105	120	12	100	120	185	170	2,5
GD*- 100	GDH*- 100	100	30	115	140	12	100	120	195	180	2,8
GD*- 125	GDH*- 125	125	35	135	170	12	115	150	225	205	4,8
GD*- 150	GDH*- 150	150	40	150	195	15	115	150	240	220	5,7
GD*- 200	GDH*- 200	200	40	175	255	15	115	150	265	245	8,8
GD*- 250	GDH*- 250	250	40	220	310	15	115	150	320	305	14
GD*- 300	GDH*- 300	300	45	240	360	20	160	220	340	325	23
GD*- 350	GDH*- 350	350	45	290	41	25	160	220	420	410	27
GD*- 400	GDH*- 400	400	50	336	466	30	160	220	466	466	39

*3 = for temperature up to 350° C
*4 = for temperature up to 450° C

On request available up to DN5000

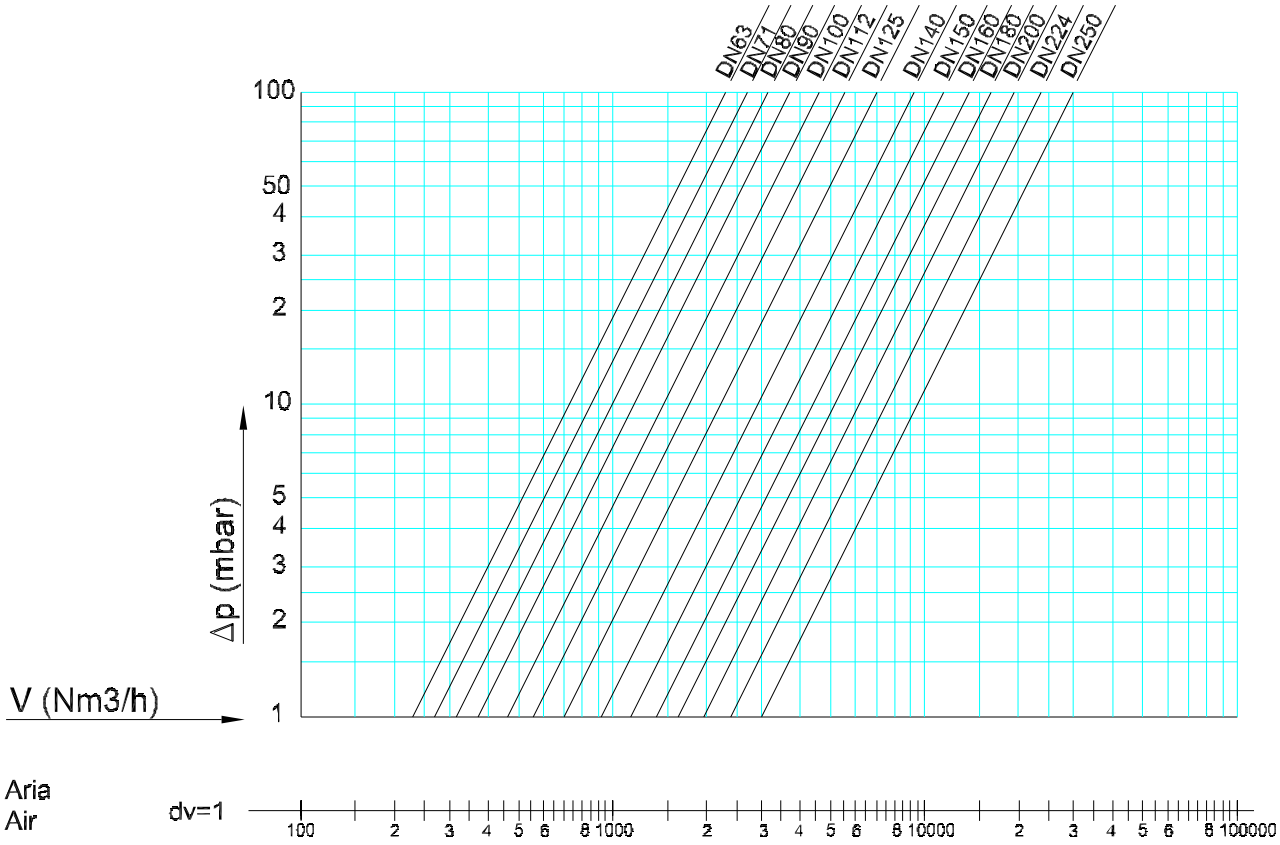
GD(H)6 650 °C WITH EXETERNAL BEARINGS



Dimensions in mm

Model		DN	B	C	ØD	Ød	K	H	Weight Kg
Exposed spindle	With handle								
GD6- 25	GDH6- 25	25	25	75	60	10	160	315	2,0
GD6- 32	GDH6- 32	32	25	80	67	10	160	320	2,6
GD6- 40	GDH6- 40	40	25	83	75	10	160	323	3,2
GD6- 50	GDH6- 50	50	25	85	85	10	160	325	4,0
GD6- 65	GDH6- 65	65	25	95	105	12	160	335	5,0
GD6- 80	GDH6- 80	80	30	105	120	12	160	345	5,8
GD6- 100	GDH6- 100	100	30	115	140	12	160	355	9,0
GD6- 125	GDH6- 125	125	35	135	170	12	160	385	14,5
GD6- 150	GDH6- 150	150	40	150	195	15	160	400	25,0
GD6- 200	GDH6- 200	200	40	175	255	15	160	415	28
GD6- 250	GDH6- 250	250	40	220	310	15	160	425	40
GD6- 300	GDH6- 300	300	45	240	360	20	160	435	50
GD6- 350	GDH6- 350	350	45	290	41	25	160	480	58
GD6- 400	GDH6- 400	400	50	336	466	30	160	500	73

FLOW CHART VALVE LDK

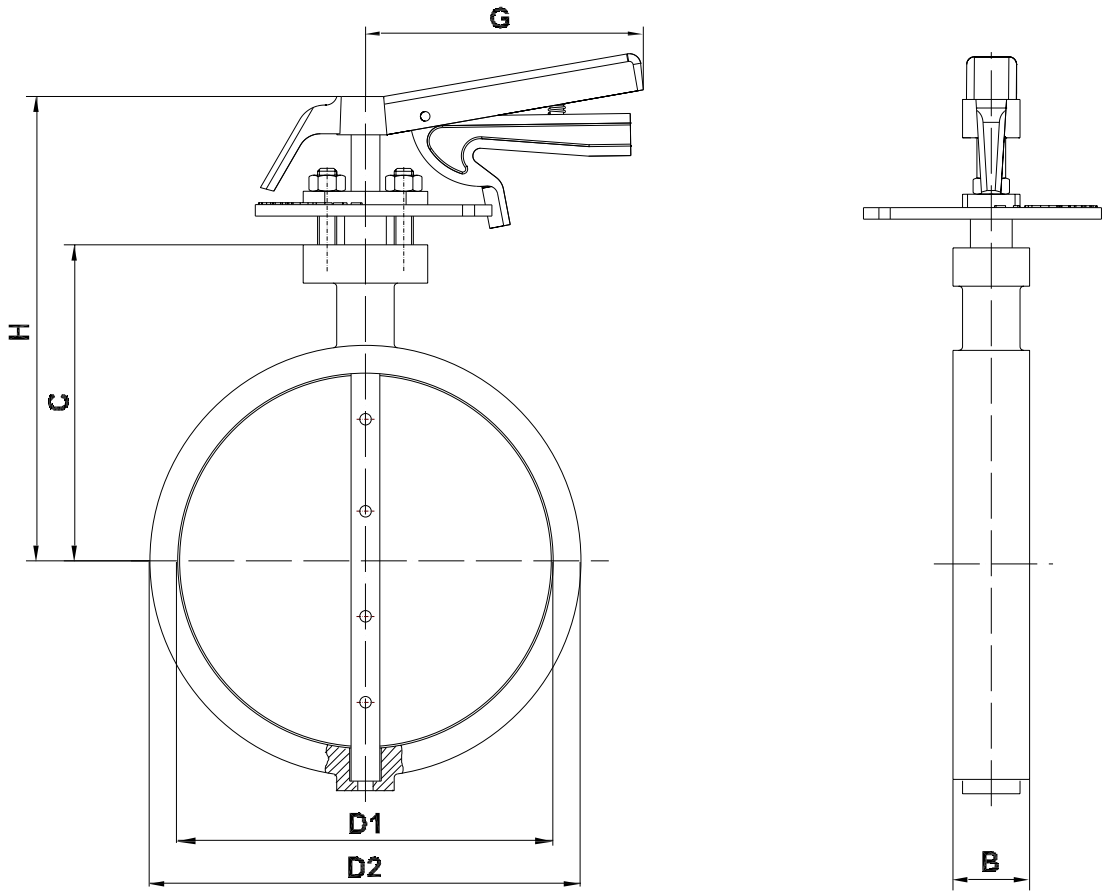


FLOW RATE Kv									
DN	**10°**	**20°**	**30°**	**40°**	**50°**	**60°**	**70°**	**80°**	**90°**
63	4	12	19	44	77	99	113	131	199
71	5	14	25	51	88	117	141	162	244
80	6	17	32	58	100	137	173	197	294
90	7	20	46	81	132	189	238	283	398
100	8	23	61	105	168	242	302	368	504
112	9	30	71	141	212	311	405	501	669
125	10	37	84	179	263	389	515	641	840
140	12	57	125	241	387	591	845	1070	1235
160	15	71	152	283	469	720	1062	1360	1541
180	19	86	178	325	552	855	1283	1650	1848
200	23	107	221	389	683	1061	1628	2090	2289
224	28	126	247	545	754	1310	1907	2460	2824
250	36	173	357	651	1040	1680	2173	2929	3444

DRIVE TORQUE FOR LDK... VALVES WITH INLET PRESSURE 100 mbar										
Diameter DN	63÷80	90÷112	125	140	150	160	180	200	224	250
Torque Nm	6	14	15	24	26	26	29	37	39	41

DIMENSIONS

LDK - 1

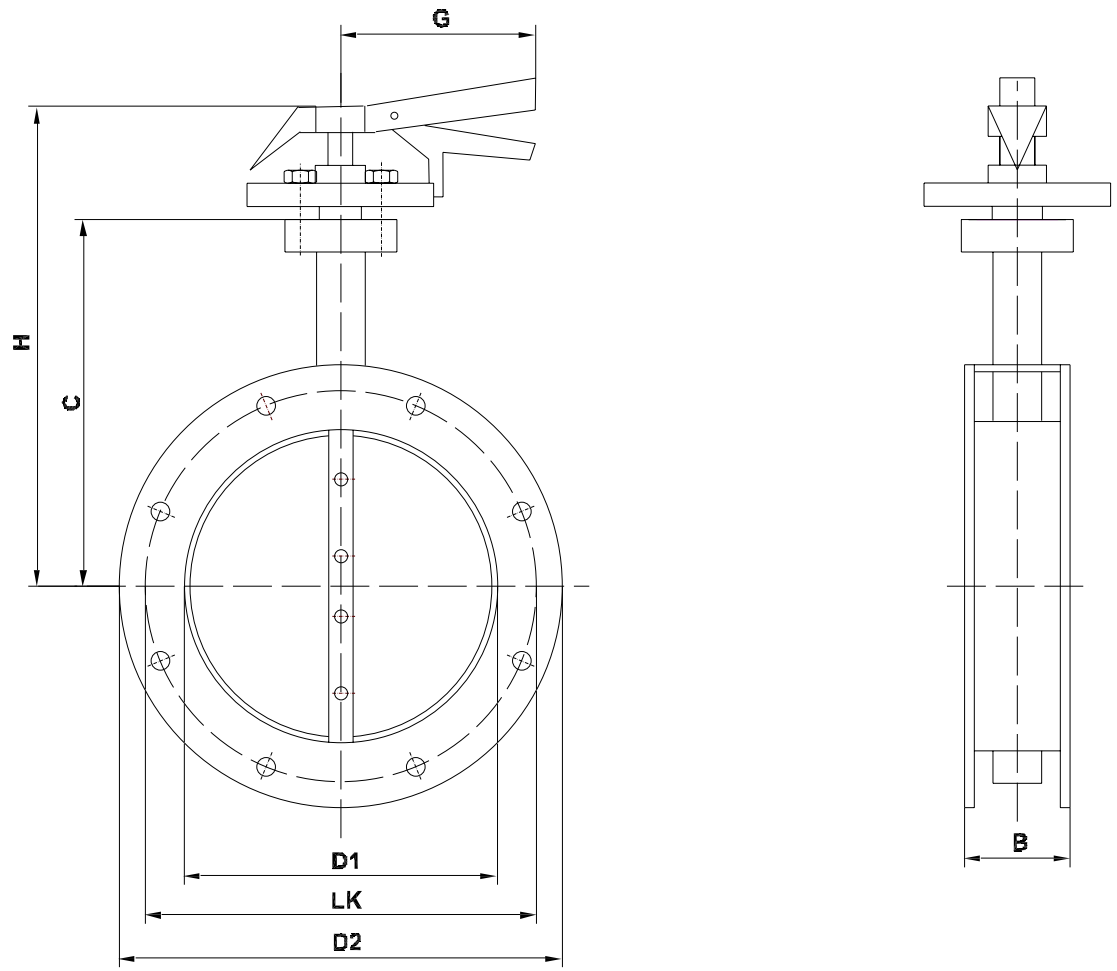


Dimensions in mm

Model		DN	B	C	D1	D2	D	H	G
Exposed spindle	With handle								
LDK1-63	LDKH1-63	63	25	90	57	85	10	160	100
LDK1-71	LDKH1-71	71	25	95	67	105	10	165	100
LDK1-80	LDKH1-80	80	25	100	76	105	10	170	100
LDK1-90	LDKH1-90	90	25	110	89	120	12	180	120
LDK1-100	LDKH1-100	100	25	115	100	129	12	185	120
LDK1-112	LDKH1-112	112	30	121	111	140	12	191	120
LDK1-125	LDKH1-125	125	35	125	123	145	12	195	145
LDK1-140	LDKH1-140	140	35	140	138	168	15	215	145
LDK1-150	LDKH1-150	150	40	145	146	179	15	220	145
LDK1-160	LDKH1-160	160	40	145	155	185	15	220	145
LDK1-180	LDKH1-180	180	40	155	174	206	15	230	145
LDK1-200	LDKH1-200	200	40	165	196	225	15	240	145
LDK1-224	LDKH1-224	224	40	175	220	280	15	250	145
LDK1-250	LDKH1-250	250	40	200	247	275	15	275	145

On request available up to DN5000

LDK - 4



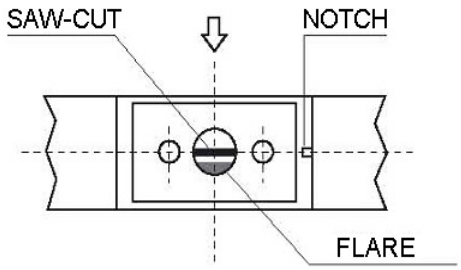
Dimensions in mm

Model		DN	B	C	D1	D2	d	G	H	N° of holes and LK
Exposed spindle	With handle									
LDK4-63	LDKH4-63	63	100	108	58	128	15	145	160	4x102
LDK4-71	LDKH4-71	71	100	111	64	133	15	145	165	4x110
LDK4-80	LDKH4-80	80	100	115	72	142	15	145	170	4x118
LDK4-90	LDKH4-90	90	100	120	82	152	15	145	180	4x128
LDK4-100	LDKH4-100	100	100	125	92	162	15	145	185	4x139
LDK4-112	LDKH4-112	112	100	131	104	174	15	145	191	4x151
LDK4-125	LDKH4-125	125	100	138	118	187	15	145	195	4x165
LDK4-140	LDKH4-140	140	100	145	132	212	15	145	215	8x182
LDK4-150	LDKH4-150	150	100	151	143	222	15	145	220	8x191
LDK4-160	LDKH4-160	160	100	155	152	232	15	145	220	8x200
LDK4-180	LDKH4-180	180	100	165	172	252	15	145	230	8x219
LDK4-200	LDKH4-200	200	100	176	194	273	15	145	240	8x241
LDK4-224	LDKH4-224	224	100	188	218	297	15	145	250	8x265
LDK4-250	LDKH4-250	250	100	201	244	323	15	145	275	8x292

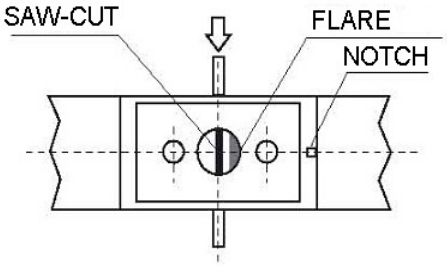
1. BEFORE INSTALLATION

Piping connection flanges should be parallel to each other.
Thoroughly clean the flanges surface of both pipe and valve.
Insert gaskets concentrically and introduce the screws connecting flanges evenly, avoiding faulty clamping of the butterfly valve body.
Any axial forces - such as thermal expansion - must be balanced by expansion joints. Make sure that the butterfly valve would not be affected by axial load of the pipeline or would be used as a fixed point to support the pipe. Put the valve onto "Closed position" and check its function. Avoid any forced action.
In "Closed position", the saw-cut at the upper spindle-end, equipped for controlling the position of the valve, and the notch on the spindle and on the frame must have the same orientation.

VALVE ON CLOSED POSITION



VALVE ON OPEN POSITION



Set both the valve as well as the actuator in OPEN position by hand and after electrical actuator construction, back in approx. 45° position.
Connect the electrical gear motor in accordance with the wiring diagram, supplied apart and check right operation and the correct rotation way of actuator.

WARNING
In closing direction, please drive the actuator with torque switch.

Use the limit switch in closing direction only as control-switch [signal]. With hydraulic motors, check opening and closing of springs.
Generally, set both the actuator and the valve on open position during the installation of the gear motor.
From DN 200 onwards, the valve must be installed horizontally.
By butterfly valve with ledge seat, the bottom part of the valve disc should open contrary to the flow direction. Any deviation should be reported at purchase time.
Make sure that the bottom side of the valve disc would act upstream, by opening the valve. Open and close the valve several times, to check the correct operation.

2. MAINTENANCE

A special stuffing box packing and a mobile sealing ring ensure the tight leak of the spindle. Adjustments are possible during operation.

WARNING
Keep the butterfly valve fully open, during start-up at high pressure and high-speed flow, to avoid pressure falls.
Do not insulate the pipe near the sealing.

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