Frese Butterfly Valve

Application

Frese Butterfly Valve serie is used in heating and cooling applications, for HVAC, Marine and Industry applications.

Frese Butterfly valve serie is used as manual isolation valve in connection with Frese OPTIMA Compact Pressure Independent Control Valves and Frese ALPHA or Frese SIGMA Dynamic Balancing Valves.

By applying On/Off electric or pneumatic actuators the fully opening and closing of the hydraulic system can be controlled.

The high quality materials and surface treatment outside the valve ensures long lifetime in harsh environments.

Benefits

- Easy to install with no need of special flanges for installation.
- The valve body and actuator can be completely assembled before delivery
- Low torque required for closing of the valves
- Suitable for numerous kind of applications due to the high quality materials
- Can be supplied with a wide range of actuators for various applications
- Seat located in valve body, which prevents seat from moving and keeps a tight valve when mounted as lugged type servivce valve.

Features

- Valve sizes from DN50 to DN600
- The butterfly valves can be delivered both as Wafer type and as Lug type
- Coated valve body
- High close-off pressure up to 16 Bar
- Two-way sealing ensures zero leakage when the valve is closed.
- CE marked

Frese Butterfly Valve

Technical Data

Material

Valve body:	Ductile Iron EN GJS-450/10
Stem:	Stainless steel AISI 420
Disc:	Stainless steel AISI 316
Seat:	EPDM

Medium temperature

DN50-DN200:	-20°C to +120°C
DN250-DN600:	-20°C to +110°C

Pressure class:	PN16
Close off pressure:	Max 16 Bar
Leakage class:	ISO 5208 Rate A (zero leakage)
Connection flange:	ISO 7005.2
Top flange:	ISO 5211
Surface treatment:	Epoxy powder coated

Standard Operation

Size DN50-DN150	Manual handle
Size DN200-DN600	Gear operated

Optional

Size DN50-DN600	Can be fitted with electrical or pneumatic actuators

Flow calculations

$Q = kV \cdot \sqrt{\Delta p}$	$Q = m^3/h$ $\Delta p = Bar$
$Q = kV \cdot 100 \cdot \sqrt{\Delta p}$	$Q = l/h$ $\Delta p = kPa$
$Q = \frac{kV \cdot \sqrt{\Delta p}}{36}$	$Q = l/s$ $\Delta p = kPa$

The flow through the butterfly valves at different opening angles can be calculated by using the formulas above and the KV-values below

Pressure loss calculations

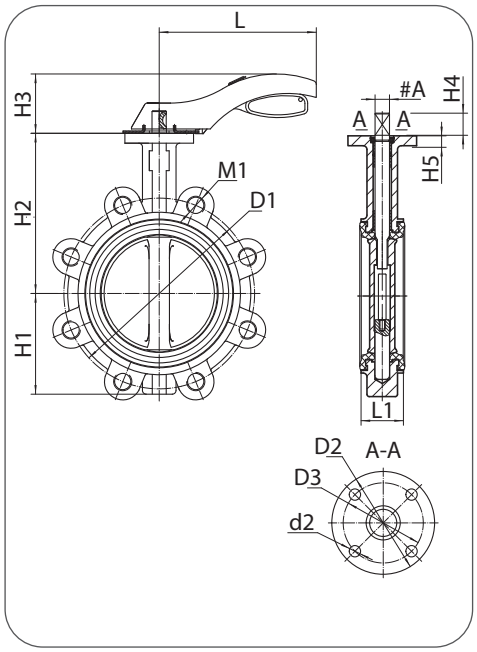
$\Delta p = \left(\frac{Q}{KV}\right)^2$	$Q = m^3/h$ $\Delta p = Bar$
$\Delta p = \left(\frac{Q}{KV \cdot 100}\right)^2$	$Q = l/h$ $\Delta p = kPa$
$\Delta p = \left(\frac{Q \cdot 36}{KV}\right)^2$	$Q = l/s$ $\Delta p = kPa$

The pressure loss across the butterfly valves at different opening angles can be calculated by using the formulas above and the KV-values below.

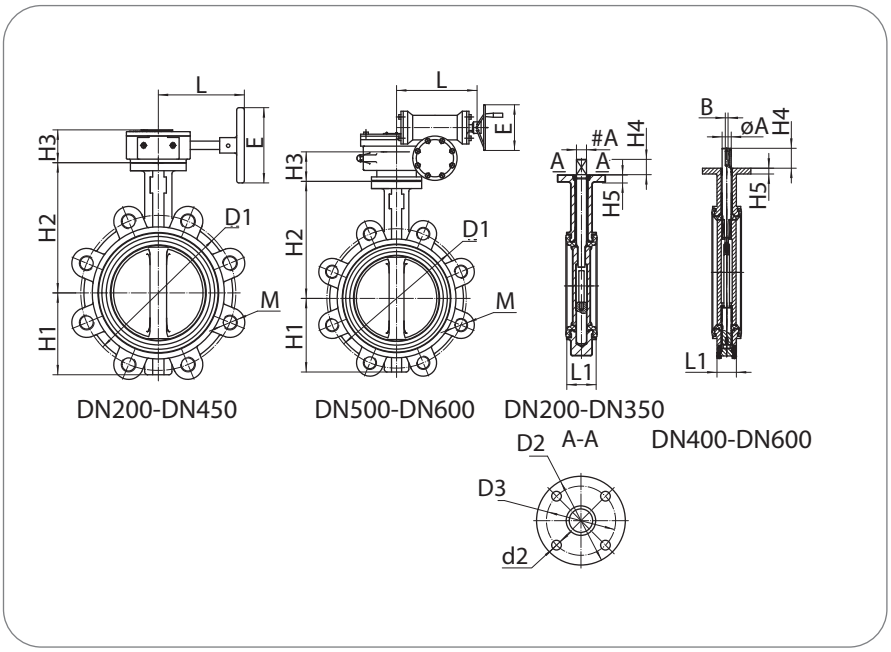
Dim.	KV-values at different opening angles								
	10°	20°	30°	40°	50°	60°	70°	80°	90°
DN50	1.11	6.99	16.5	21.7	27.8	39.8	57.6	75.5	82.7
DN65	1.25	7.55	19.3	33.7	60.6	87.4	138	182	208
DN80	7.79	20.9	34.5	52.0	87.9	140	208	281	290
DN100	6.37	26.4	46.1	67.7	106	175	273	409	566
DN125	15.8	33.3	60.5	115	188	310	508	753	882
DN150	26.2	48.0	95.1	173	298	478	728	1,199	1,361
DN200	52.6	88.7	214	366	625	967	1,500	2,388	2,718
DN250	85.5	196	338	595	922	1,520	2,393	3,996	5,602
DN300	90	226	405	715	1,244	2,108	3,650	6,221	7,628
DN350	106	292	618	1,340	2,388	3,951	6,254	9,380	10,308
DN400	132	401	850	1,842	3,284	5,434	8,600	12,900	14,176
DN450	148	532	1,126	2,441	4,349	7,197	11,390	17,085	18,775
DN500	172	684	1,448	3,138	5,592	9,254	14,645	21,968	24,140
DN600	208	1,057	2,238	4,848	8,640	12,931	19,695	30,187	37,295

Frese Butterfly Valve

Product Programme & Dimensions Lug type valves - With manual handle/gear



DN50-DN150

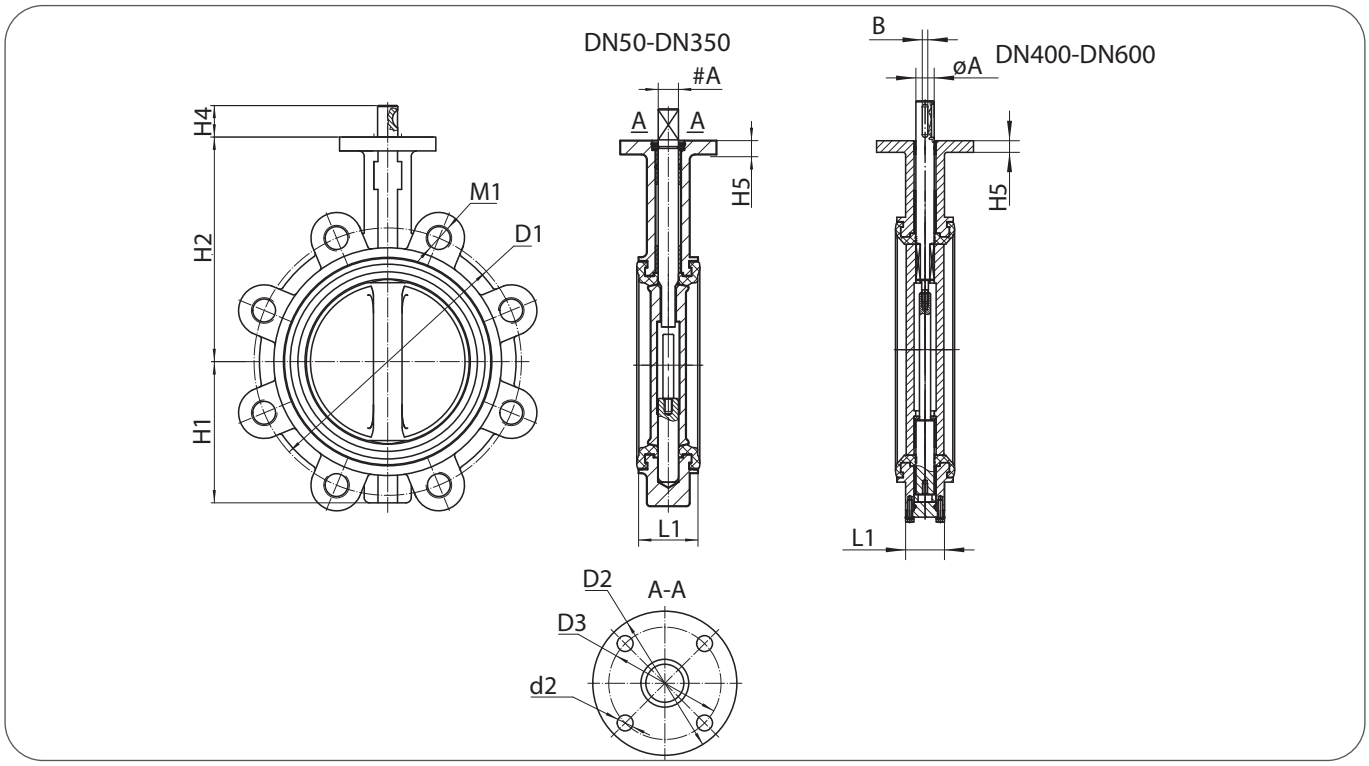


DN200-DN600

Frese no.	Dim.	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	H5 [mm]	L [mm]	L1 [mm]	A #/ø [mm]	D1 [mm]	D2 [mm]	D3 [mm]	(n) - M	(n) - d2 [mm]	E [mm]	B [mm]	Weight [kg]
38-3000	DN50	70	130	64	16	9	170	42,6	#9	125	65	50	(4) - M16	(4) - 7	-	-	2.9
38-3001	DN65	76	143	64	16	9	170	45,6	#9	145	65	50	(4) - M16	(4) - 7	-	-	3.7
38-3002	DN80	92	155	64	16	9	170	45,6	#9	160	65	50	(8) - M16	(4) - 7	-	-	4.7
38-3003	DN100	104	170	70	19	11	200	51,6	#11	180	90	70	(8) - M16	(4) - 10	-	-	7
38-3004	DN125	120	190	75	25	13	260	56,6	#14	210	90	70	(8) - M16	(4) - 10	-	-	11
38-3005	DN150	132	210	75	25	13	260	56,6	#14	240	90	70	(8) - M20	(4) - 10	-	-	12
38-3006	DN200	167	243	70	39	15	180	59,6	#17	295	125	102	(12) - M20	(4) - 12	260	-	16.2
38-3007	DN250	202	282	70	39	17	180	67,6	#22	355	125	102	(12) - M24	(4) - 12	260	-	25.2
38-3008	DN300	230	310	75	39	17	218	77,6	#22	410	150	125	(12) - M24	(4) - 14	260	-	34.3
38-3009	DN350	265	345	75	39	20	218	77,6	ø31.7	470	150	125	(16) - M24	(4) - 14	260	8	56
38-3010	DN400	302	377	90	72	21	301	102	ø33.2	525	175	140	(16) - M27	(4) - 18	370	10	96
38-3011	DN450	340	412	90	72	21	301	114	ø38	585	175	140	(20) - M27	(4) - 18	370	10	122
38-3012	DN500	372	440	155	72	22	254	127	ø41.2	650	210	165	(20) - M30	(4) - 22	400	10	202
38-3013	DN600	465	562	174	72	28	301	154	ø50.7	770	210	165	(20) - M33	(4) - 22	400	16	270

Frese Butterfly Valve

Product Programme & Dimensions Lug type valves - Bare shaft

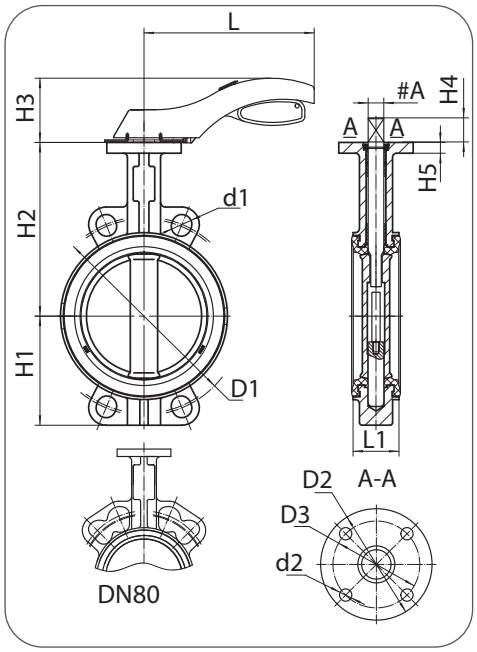


Frese no.	Dim.	H1 [mm]	H2 [mm]	H4 [mm]	H5 [mm]	L1 [mm]	A #/ø [mm]	D1 [mm]	D2 [mm]	D3 [mm]	(n) - M	(n) - d2 [mm]	B [mm]	Weight [kg]
38-3040	DN50	70	130	16	9	42,6	#9	125	65	50	(4) - M16	(4) - 7	-	2.9
38-3041	DN65	76	143	16	9	45,6	#9	145	65	50	(4) - M16	(4) - 7	-	3.7
38-3042	DN80	92	155	16	9	45,6	#9	160	65	50	(8) - M16	(4) - 7	-	4.7
38-3043	DN100	104	170	19	11	51,6	#11	180	90	70	(8) - M16	(4) - 10	-	7
38-3044	DN125	120	190	25	13	56,6	#14	210	90	70	(8) - M16	(4) - 10	-	11
38-3045	DN150	132	210	25	13	56,6	#14	240	90	70	(8) - M20	(4) - 10	-	12
38-3046	DN200	167	243	39	15	59,6	#17	295	125	102	(12) - M20	(4) - 12	-	16.2
38-3047	DN250	202	282	39	17	67,6	#22	355	125	102	(12) - M24	(4) - 12	-	25.2
38-3048	DN300	230	310	39	17	77,6	#22	410	150	125	(12) - M24	(4) - 14	-	34.3
38-3049	DN350	265	345	39	20	77,6	ø31.7	470	150	125	(16) - M24	(4) - 14	8	56
38-3050	DN400	302	377	72	21	102	ø33.2	525	175	140	(16) - M27	(4) - 18	10	96
38-3051	DN450	340	412	72	21	114	ø38	585	175	140	(20) - M27	(4) - 18	10	122
38-3052	DN500	372	440	72	22	127	ø41.2	650	210	165	(20) - M30	(4) - 22	10	202
38-3053	DN600	465	562	72	28	154	ø50.7	770	210	165	(20) - M33	(4) - 22	16	270

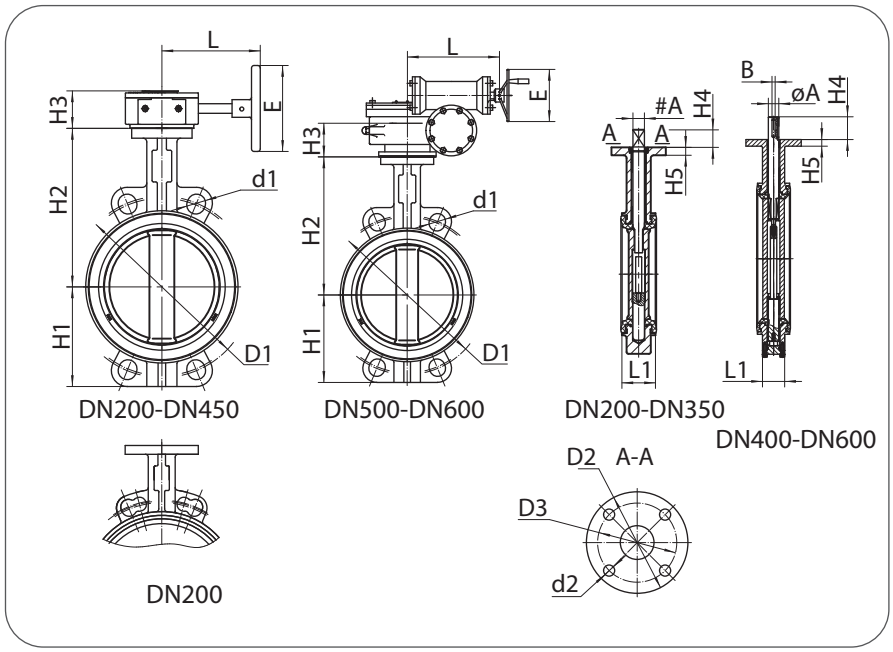
For suitable actuators see Frese ROL Technote

Frese Butterfly Valve

Product Programme & Dimensions Wafer type valves - With manual handle/gear



DN50-DN150



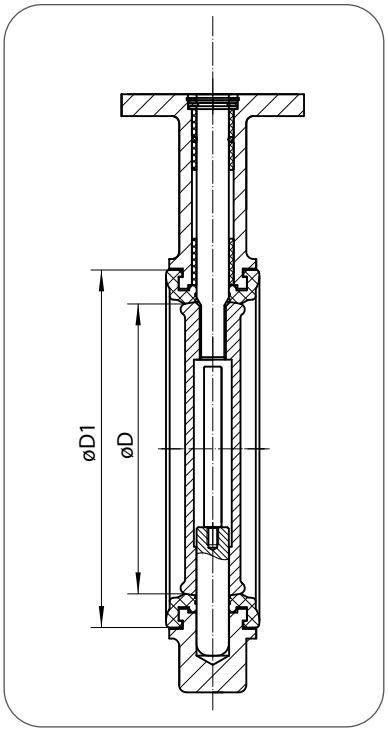
DN200-DN600

Frese no.	Dim.	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	H5 [mm]	L [mm]	L1 [mm]	A #/ø [mm]	D1 [mm]	D2 [mm]	D3 [mm]	(n) - d1 [mm]	(n) - d2 [mm]	E [mm]	B [mm]	Weight [kg]
38-3020	DN50	70	131	64	16	9	170	42.6	#9	125	65	50	(4) - 19	(4) - 7	-	-	2.1
38-3021	DN65	76	143	64	16	9	170	45.6	#9	145	65	50	(4) - 19	(4) - 7	-	-	2.4
38-3022	DN80	92	155	64	16	9	170	45.6	#9	160	65	50	(4) - 19	(4) - 7	-	-	2.6
38-3023	DN100	104	170	70	19	11	200	51.6	#11	180	90	70	(4) - 19	(4) - 10	-	-	4.5
38-3024	DN125	120	190	75	25	13	260	56.6	#14	210	90	70	(4) - 19	(4) - 10	-	-	6.8
38-3025	DN150	132	210	75	25	13	260	56.6	#14	240	90	70	(4) - 23	(4) - 10	-	-	8.3
38-3026	DN200	167	243	70	39	15	180	59.6	#17	295	125	102	(4) - 23	(4) - 12	260	-	18.3
38-3027	DN250	202	282	70	39	17	180	67.6	#22	355	125	102	(4) - 28	(4) - 12	260	-	18.8
38-3028	DN300	231	310	75	39	17	218	77.6	#22	410	150	125	(4) - 28	(4) - 14	260	-	29
38-3029	DN350	265	345	75	39	20	218	77.6	ø31.7	470	150	125	(4) - 28	(4) - 14	260	8	41
38-3030	DN400	312	377	90	72	21	311	102	ø33.2	525	175	140	(4) - 31	(4) - 18	370	10	61
38-3031	DN450	340	412	90	72	21	311	114	ø38	585	175	140	(4) - 31	(4) - 18	370	10	79
38-3032	DN500	372	440	155	72	22	254	127	ø41.2	650	210	165	(4) - 34	(4) - 22	400	10	128
38-3033	DN600	465	562	174	72	28	311	154	ø50.7	770	210	165	(4) - 37	(4) - 22	400	16	188

Frese Butterfly Valve

Dimensions EPDM liner

Dim.	øD [mm]	øD1 [mm]
DN50	53	83
DN65	65	97
DN80	79	112
DN100	103	141
DN125	126	166
DN150	151	193
DN200	201	245
DN250	252	299
DN300	302	357
DN350	331	398
DN400	387	460
DN450	438	516
DN500	489	571
DN600	590	673



Text for technical specifications

Isolation valves of size DN50 and above should be butterfly valve type

Butterfly valve housing to be of ductile iron, stem of AISI316 stainless steel and liner of EPDM

Butterfly valves in sizes DN50 to DN150 should be operated by manual handle.

Butterfly valves in sizes DN200 to DN600 should be operated by manual gear.

Surface treatment of butterfly valves should be epoxy powder coated.

Butterfly valves should be able to operate between -20°C 120°C for for DN50-200 and -20°C to 110°C for DN250-600

Butterfly valves should be pressure class PN16.

The valve shall have a close-off pressure up to 16 Bar

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