Butterfly Valve type 038/039

			
Type 038 With hand lever Wafer or lug style valve	**Type 038** Manual reduction gear Wafer or lug style valve	**Type 039** With hand lever Wafer style valve	**Type 039** Manual reduction gear Wafer style valve

Product description

Metal butterfly valves are ideal for shutting off and controlling the flow of liquid media in pipelines. They offer high temperature and pressure resistance as well as outstanding resistance to corrosion.

Function

Metal butterfly and control Valve types 038 and 039 can be universally used and are intended exclusively for shutting off, conveying and dosing media in the allowable pressure and temperature range or for controlling flow in piping systems into which they have been installed. The easy installation of the valves between pipe flanges guarantees reliable operation and sealing.

The Rilsan-coating of the valve body and the ductile iron valve disk provide a high resistance against corrosion. The butterfly valves are also available in a standard version with a stainless steel valve disk.

Applications

- Water treatment
- Chemical process industry
- Cooling water facilities
- Power plant
- Shipbuilding

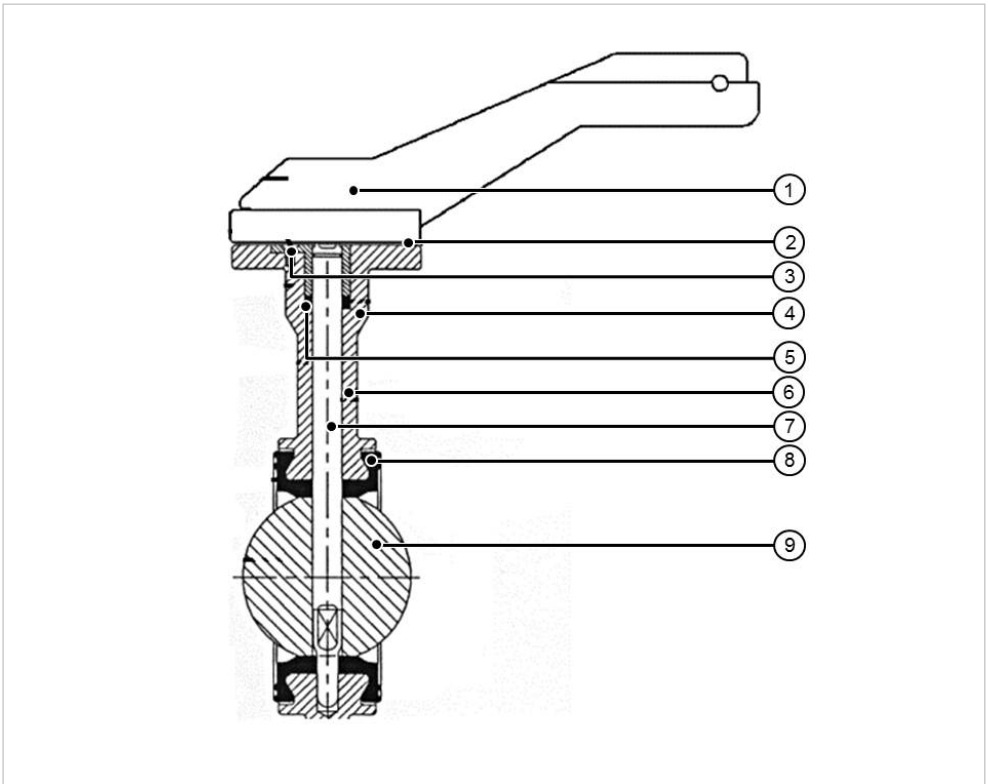
Benefits/features

- Good flow characteristics
- Rilsan/epoxy-coating: good chemical resistance
- Easy installation
- Space-saving installation
- Large dimensions to DN1200
- Compact design
- Varied applications
- Low maintenance and high cost efficiency
- KTW / DVGW / WRAS certification

Flow media

Not recommended for media containing solids.

Technical data



1 Hand lever
2 Ten-position plate
3 Screw for bushing
4 Bushing
5 Shaft sealing
6 Valve housing
7 Shaft
8 Collar
9 Valve disc

Specification			
Dimensions	Type 038 wafer or lug style	DN50 – DN600, 2" – 24"	
	Type 039 wafer style	DN50 – DN1200, 2" – 48"	
Materials	Disc	Ductile cast iron Rilsan/epoxy-coated	
		Stainless steel	
		Aluminum bronze	
	Outside housing	Ductile cast iron	
Gasket materials	EPDM, FKM, others upon request		
Pressure ratings	Type 038, 039	PN10/16	
Actuation variants	Manually operated		
	Pneumatically actuated FC, FO, DA		
	Electrically actuated AC: 100 – 230 V, AC/DC: 24 V		
Connections	Flange connections	EN1092-1	PN10/PN16
		DIN2501	PN10/PN16
		ANSI B16.5	Class 150
	Valve flange	ISO/DIN, BS, ASTM	
Standards	Type 038	ISO/DIN, ASTM	
	Type 039	All standards	
Product standard	EN ISO 16136		
Test standard	ISO 5208 (leackage rate A)		
Approvals	PZH, DVGW		

Kv 100 values

Nominal diameter DN		Opening angle (l/min)							
(mm)	(inch)	20°	30°	40°	50°	60°	70°	80°	90°
50	2"	117	267	433	717	1'150	1'833	2'833	3'167
65	2 ½"	150	367	633	1'000	1'583	2'583	4'167	4'667
80	3"	233	550	950	1'583	2'500	4'000	6'167	7'167
100	4"	400	900	1'583	2'583	4'000	6'667	10'334	11'834
125	5"	633	1'433	2'583	4'000	6'500	10'667	15'834	18'334
150	6"	867	2'000	3'667	5'750	9'167	15'834	23'334	26'667
200	8"	1'583	3'667	5'750	10'000	15'834	26'667	40'001	46'668
250	10"	2'583	5'750	10'167	15'834	26'667	43'334	66'668	78'335
300	12"	3'667	8'500	14'334	25'001	38'334	63'335	98'335	115'002
350	14"	4'833	11'000	20'000	31'667	48'334	80'002	130'003	143'336
400	16"	6'333	14'334	26'667	40'001	65'001	106'669	158'337	186'670
450	18"	8'167	18'334	33'334	51'668	83'335	138'336	215'004	258'339
500	20"	10'167	23'334	41'668	66'668	103'335	171'670	258'339	316'673
600	24"	14'334	33'334	56'668	91'669	143'336	245'005	373'341	431'675
700	28"	18'334	43'334	76'668	111'669	203'337	310'006	488'343	618'346
800	32"	30'001	60'001	110'002	161'670	276'672	471'676	720'014	871'684
900	36"	36'667	75'002	130'003	215'004	330'007	546'678	861'684	1'005'020
1'000	40"	51'668	88'335	145'003	266'672	401'675	703'347	1'035'021	1'306'693
1'200	48"	75'002	130'003	211'671	388'341	586'678	1'025'021	1'511'697	1'906'705

Operating torque

Nominal diameter DN (mm)	Inch (inch)	Operating pressure 10 bar (Nm)	Operating pressure 16 bar (Nm)
50	2"	15	15
65	2 ½"	20	20
80	3"	25	25
100	4"	40	40
125	5"	50	50
150	6"	60	60
200	8"	160	160
250	10"	250	250
300	12"	300	300
350	14"	900	
400	16"	1'200	
450	18"	1'650	
500	20"	2'300	
600	24"	4'100	

Reference values for tightening torque of screws

Use of PVC-U flange adapters

DIN PN16 / PN10 Standard								Required screws for type 039 wafer butterfly valve With PVC-U flange adapters					Required screws for type 038 lug style butterfly valve With PVC-U flange adapters			
		Butterfly valve	Flange (DIN-2632)					Studs		Nuts			Screws			
PN (bar)	DN (mm)	inch (inch)	Housing width A	Flange thickness B	Hole distanceøC	Number of holes N°	Outer ø øD (mm)	Length L (mm)	Thread metric	Number N°	Thread metric	Number N°	Length L (mm)	Thread metric	Thread UNC	Number N°
16	50	2"	43	18	125	4	165	150	M16	4	M16	8	50	M16	⅝" UNC	
16	65	2 ½"	46	18	145	4	185	155	M16	4	M16	8	55	M16	⅝" UNC	4
16	80	3"	46	20	160	8	200	155	M16	8	M16	16	55	M16	⅝" UNC	8
16	100	4"	52	20	180	8	220	165	M16	8	M16	16	60	M16	⅝" UNC	8
16	125	5"	56	22	210	8	250	180	M16	8	M16	16	65	M16	¾" UNC	8
16	150	6"	56	22	240	8	285	190	M20	8	M20	16	70	M20	¾" UNC	8
16	200	8"	60	24	295	12	340	220	M20	8	M20	16	80	M20	¾" UNC	8
16	250	10"	68	26	355	12	405	230	M20	8	M20	16	90	M20	⅞" UNC	8
16	300	12"	78	28	410	12	460	255	M20	12	M20	16	100	M20	⅞" UNC	12
10	350	14"	78	30	470	16	520	275	M20	16	M20	32				
10	400	16"	102	32	525	16	580	310	M24	16	M24	32				

Use flange adapter PP and PE100

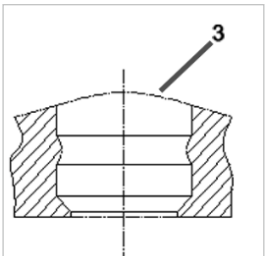
DIN PN16 / PN10 Standard								Required screws for type 039 Wafer butterfly flange With flange adapter PP- and PE100					Required screws type 038 with flange adapter PP and PE 100			
		Butterfly valve	Flange (DIN-2632)					Studs		Nuts			Screws			
PN (bar)	DN (mm)	Inch (inch)	Housing width A	Flange thickness B	Hole distance øC	Number of holes N°	Outer ø øD (mm)	Length L (mm)	Thread metric	Number N°	Thread metric	Number N°	Length L (mm)	Thread metric	Thread UNC	Number N°
16	50	2"	43	18	125	4	165	160	M16	4	M16	8	55	M16	⅝" UNC	4
16	65	2 ½"	46	18	145	4	185	165	M16	4	M16	8	60	M16	⅝" UNC	4
16	80	3"	46	20	160	8	200	170	M16	8	M16	16	60	M16	⅝" UNC	8
16	100	4"	52	20	180	8	220	175	M16	8	M16	16	65	M16	⅝" UNC	8
16	125	5"	56	22	210	8	250	200	M16	8	M16	16	80	M16	¾" UNC	8
16	150	6"	56	22	240	8	285	210	M20	8	M20	16	80	M20	¾" UNC	8
16	200	8"	60	24	295	12	340	230	M20	8	M20	16	90	M20	¾" UNC	8
16	250	10"	68	26	355	12	405	250	M20	8	M20	16	100	M20	⅞" UNC	8
16	300	12"	78	28	410	12	460	270	M20	12	M20	16	110	M20	⅞" UNC	12
10	350	14"	78	30	470	16	520	340	M20	16	M20	32				
10	400	16"	102	32	525	16	580	380	M24	16	M24	32				
10	500	20"	126	34	650	20	715	470	M24	20	M24	40				
10	600	24"	146	36	770	20	840	420	M27	20	M27	40				

Technical basics

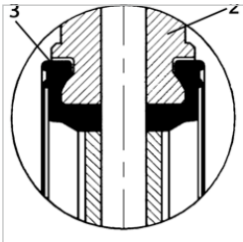
Shaft sealing

Shaft sealing is guaranteed by:

1. Special profile of the collar in the area of the shaft seal.
2. Fixation of the collar with the valve housing



Longitudinal section of the collar



Cross-section of the valve housing with collar

The outer grooves of the collar seal the flange connection. No additional flange seals are required.

Valve handling

Differentiation between and use of respective types

- Use butterfly Valve type 039 only as a wafer style valve
- Use butterfly Valve type 038 as either a wafer style or a lug style valve

Installation notes

- Make sure that the butterfly valves to be installed correspond specifically to the pressure rating, type of connection, dimension and materials of the particular application.
- Perform a function test. To do this, close and re-open the butterfly valve.
- Only install butterfly valves that function without trouble.

Maintenance notes

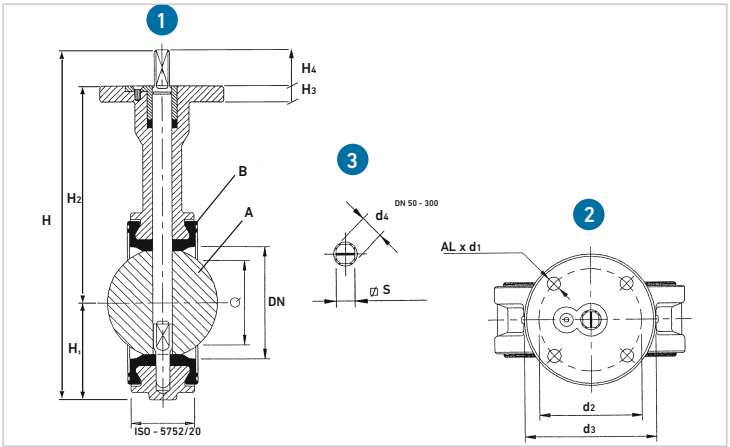
In normal operation, butterfly valves do not require maintenance. It is nonetheless recommended to perform maintenance on butterfly valves after 5,000 actuation cycles at most. The following steps must be taken when doing so:

- Regularly check that no medium escapes to the outside. If medium exits from the flange connections, tighten them.
- We recommend operating butterfly valves that are kept permanently in the same position 1 – 2 times per year to check their functionality.
- Depending on the operating conditions, the collars should be lubricated periodically with grease (silicone-based grease).

⚠ Installation and maintenance must be performed according to the corresponding installation instructions. The installation manual is included with the product, see also the online product catalog at www.gfps.com

Dimensions

Butterfly Valve types 038 and 039 with open shaft end DN50 – DN1200



Type 038			Butterfly valve[1]							Actuation flange[2]					Shaft end[3]		
d (mm)	DN (mm)	inch (inch)	(kg)	(Nm)	Q (mm)	L (mm)	H (mm)	H1 (mm)	H2 (mm)	Type	d1 (mm)	d2 (mm)	d3 (mm)	H3 (mm)	H4 (mm)	d4 (mm)	ΦS (mm)
63	50	2"	3.2	24	32	43	215	63	140	F-07	9	70	90	12	26	14	11
75	65	2 ½"	4.3	30	51	46	241	73	152	F-07	9	70	90	12	26	14	11
90	80	3"	6.0	39	69	46	256	81	159	F-07	9	70	90	12	26	14	11
110	100	4"	8.0	59	89	52	295	97	178	F-07	9	70	90	14	30	18	14
140	125	5"	9.8	78	115	56	323	112	191	F-07	9	70	90	14	30	18	14
160	150	6"	12.0	98	143	56	358	122	203	F-07	9	70	90	15	33	22	17
225	200	8"	18.0	157	194	60	423	149	245	F-07	9	70	90	15	33	22	17
280	250	10"	32.0	209	243	68	521	203	275	F-10	12	102	125	17	47	28	22
315	300	12"	48.0	301	293	78	559	241	315	F-10	12	102	125	17	47	28	22

Type 039			Butterfly valve[1]							Actuation flange[2]					Shaft end[3]		
d (mm)	DN (mm)	inch (inch)	(kg)	(Nm)	Q (mm)	L (mm)	H (mm)	H1 (mm)	H2 (mm)	Type	d1 (mm)	d2 (mm)	d3 (mm)	H3 (mm)	H4 (mm)	d4 (mm)	ΦS (mm)
63	50	2"	3.3	24	32	43	219	53	140	F-07	9	70	90	13	26	14	11
75	65	2 ½"	4.0	30	51	46	241	63	152	F-07	9	70	90	13	26	14	11
90	80	3"	4.3	39	69	46	256	71	159	F-07	9	70	90	13	26	14	11
110	100	4"	5.7	59	89	52	295	87	178	F-07	9	70	90	16	30	18	14
140	125	5"	7.4	78	115	56	323	102	191	F-07	9	70	90	16	30	18	14
160	150	6"	8.9	98	143	56	358	122	203	F-07	9	70	90	17	33	22	17
225	200	8"	13.5	157	194	60	423	149	241	F-07	9	70	90	17	33	22	17
280	250	10"	22.8	209	243	68	521	201	273	F-10	12	102	125	17	47	28	22
315	300	12"	31.7	301	293	78	559	231	311	F-10	12	102	125	17	47	28	22
355	350	14"	43.2	900	332	78	653	291	307	F-12	13	125	150	22	55	36	
400	400	16"	65.2	1'200	382	102	732	325	342	F-14	17	140	175	24	65	42	
450	450	18"	84.5	1'650	432	113	809	357	387	F-14	17	140	175	27	65	48	
500	500	20"	119.0	2'300	478	126	871	381	425	F-14	17	140	175	27	65	48	
630	600	24"	281.0	4'100	585	146	1'130	488	532	F-25	18	254	300	40	110	72	
700	700	28"	414.0	5'500	683	175	1'189	506	573	F-25	18	254	300	40	110	72	
800	800	32"	572.0	8'100	755	215	1'338	578	650	F-25	18	254	300	40	110	72	
900	900	36"	639.0	10'000	852	246	1'460	643	707	F-25	18	254	300	40	110	98	
1'000	1'000	40"	918.0	13'500	958	280	1'594	729	755	F-25	18	254	300	40	110	98	
1'200	1'200	48"	1'760.0	16'500	1'098	360	1'885	855	900	F-30	22	298	350	50	130	120	

[1] Butterfly valve: kg = net weight
Nm = closing torque
Q = disc outlet diameter
L = mounting length

[2] Actuation flange:
AL = number of holes (4)

[3] Shaft end: DN50 – DN300: square end
DN350 – DN1200: key way
Butterfly Valve type 039
with manual override

Tightening torque for installing the butterfly valve

DN (mm)	Inch (inch)	Max. closing torque	
		(Nm)	(lb-ft)
50	2"	30	22
65	2 ½"	35	26
80	3"	40	30
100	4"	45	33
125	5"	50	37
150	6"	60	44
200	8"	75	55
250	10"	75	55
300	12"	80	59

Accessories

- Lever with fine adjustment
- Mechanical limit switch box

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