

FK DN 40÷400

Butterfly valve



N.P.V. EQUIPMENT LTD., PART.





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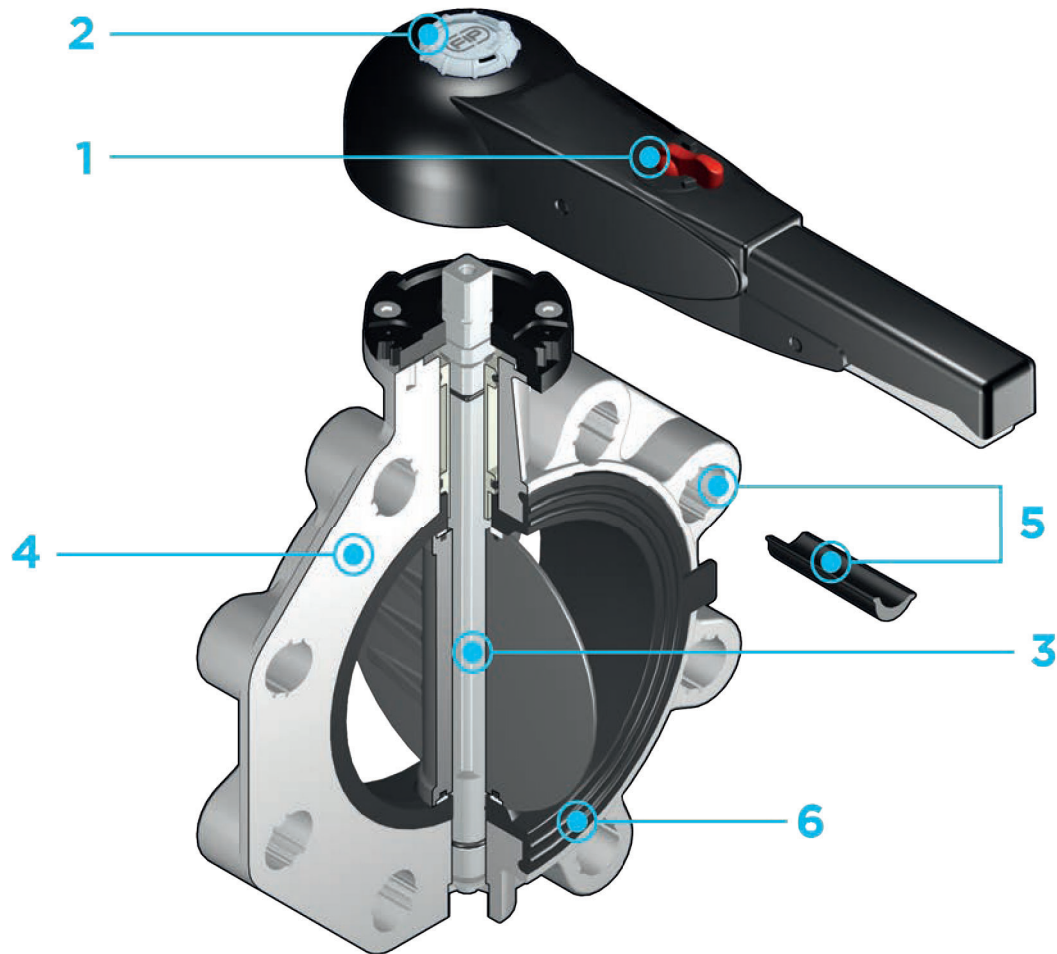
FK DN 40÷400

The FK is a butterfly valve for shutting off or regulating flow, with structural characteristics that make it ideal for industrial applications requiring high performance and longterm reliability. This valve is also equipped with the customisable Labelling System.

BUTTERFLY VALVE

- Interchangeable disk in PVC-U with through shaft, available in different thermo-plastic materials: PP-H, PVC-C, ABS, PVDF
- Overall dimensions of the valve in accordance with standard ISO 5752 and EN 558 (DN 40÷65 and DN 250÷350 Long Series 16, DN 80÷200 Medium Series 25, DN 400 according to internal specifications)
- Can also be installed as an end line valve, bottom discharge valve or tank dump valve
- **Special Lug version** PN 10 fully drilled to EN 1092-1 or ANSI B16.5 cl.150 with **molded-in AISI 316 STAINLESS steel threaded inserts**
- **Valve material compatibility** (PVC-U + EPDM) with water conveyance, drinking water and other food substances according to **current regulations**
- Possibility of installing a manual reducer or pneumatic and/or electric actuators by applying an ISO standard drilling PP-GR flanges. DN 40 ÷ 200 valve fitted with plate with rack in PP-GR. For actuated versions with flange drilled according to ISO 5211 F05, 07, F10. DN 250÷400 valve, fitted with one-piece top flange in high mechanical strength PP-GR with mounting flange for internal components drilled according to standard ISO 5211 F10 (excluding DN 350÷400), F12, F14.
- Possibility to have handle with integrated LSQT limit micro switch, even as a retrofit in existing installations

Technical specifications	
Construction	Bi-directional centric butterfly valve
Size range	DN 40 ÷ 400
Nominal pressure	Wafer version DN 40 ÷ 50: PN16 with water at 20 °C DN 65÷250: PN 10 with water at 20 °C DN 300: PN 8 with water at 20 °C DN 350: PN 7 with water at 20 °C DN 400: PN 6 with water at 20 °C Lug version DN 65÷200: PN 10 with water at 20 °C DN 250÷300: PN 6 with water at 20 °C
Temperature range	0 °C ÷ 60 °C
Coupling standards	Flanging system: EN ISO 1452, EN ISO 15493, ISO 7005-1, EN 1092-1, ANSI B16.5 Cl.150, JIS B2220
Reference standards	Construction criteria: EN ISO 16136, EN ISO 1452, EN ISO 15493 Test methods and requirements: ISO 9393 Actuator couplings: ISO 5211
Valve material	Body: PP-GR Disk: PVC-U Stem: Acciaio INOX AISI 316
Seal material	Liner: EPDM, FKM.
Control options	Hand lever operated (DN 40÷200); Gearbox, pneumatic actuator, electric actuator



1 Ergonomic handle in HIPVC equipped with **locking and unlocking device, release, quick operation and graduated adjustment** in 10 intermediate positions (DN 40÷200). The operating range, starting from the first few degrees of valve opening, also guarantees extremely low pressure drops.

2 Customisable Labelling System: integrated module in the handle, made of a transparent protection plug and a customisable tag holder using the LSE set (available as an accessory). The **customisation** lets you **identify the**

valve on the system according to specific needs.

3 STAINLESS steel square section stem completely isolated from the fluid complying with standard ISO 5211:
DN 40÷65: 11 mm
DN 80÷100: 14 mm
DN 125÷150: 17 mm
DN 200: 22 mm
DN 250÷400: 27 mm

4 Body in polypropylene based **compound reinforced with fibreglass (PP-GR)** **resistant to UV rays** and characterised by **high mechanical strength**.

5 Drilling pattern using oval slots that allow coupling to flanges according to numerous international standards. The special **self-centring inserts in ABS** supplied for DN 40÷200 guarantee the **correct axial alignment** of the valve during installation. For DN 250÷400 valves, the drilling pattern for the selfcentring system is of the traditional type according to DIN and ANSI standards.

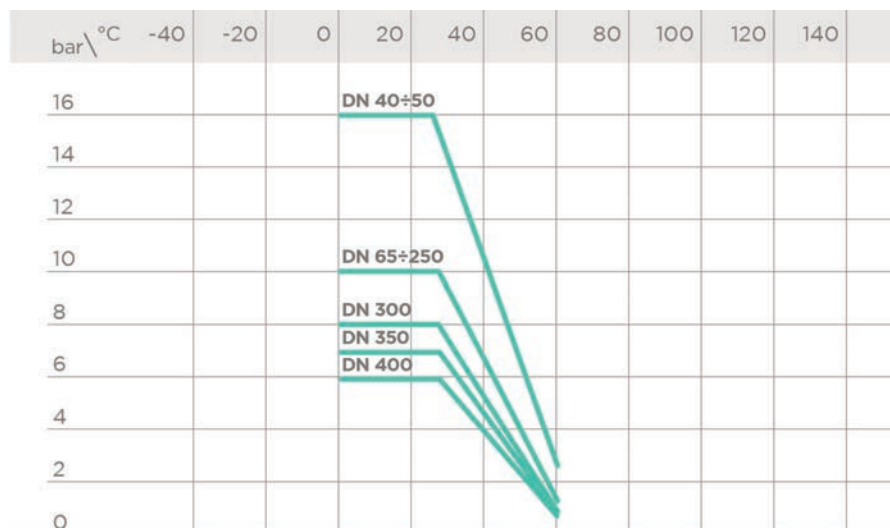
6 Interchangeable liner with the dual function of forming a hydraulic seal and isolating the body from the fluid.

TECHNICAL DATA

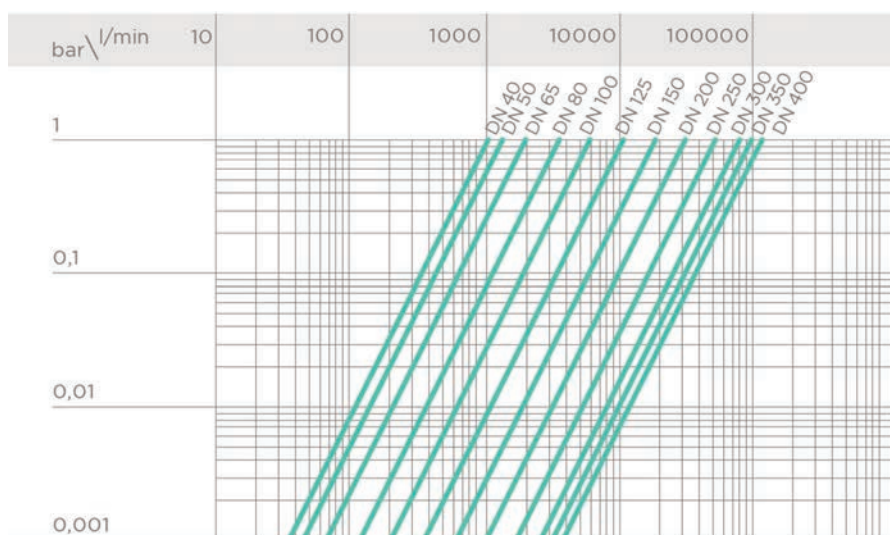


PRESSURE VARIATION ACCORDING TO TEMPERATURE

For water and harmless fluids to which the material is classified as CHEMICALLY RESISTANT. In other cases, a reduction of the nominal PN pressure is required (25 years with safety factor).



PRESSURE DROP GRAPH



K_v100 FLOW COEFFICIENT DN 40÷200

The K_v100 flow coefficient is the Q flow rate of litres per minute of water at a temperature of 20°C that will generate $\Delta p = 1$ bar pressure drop at a certain valve position. The Kv100 values shown in the table are calculated with the valve completely open.

DN	40	50	65	80	100	125	150	200
Kv100 l/min	1000	1285	1700	3550	5900	9850	18700	30500



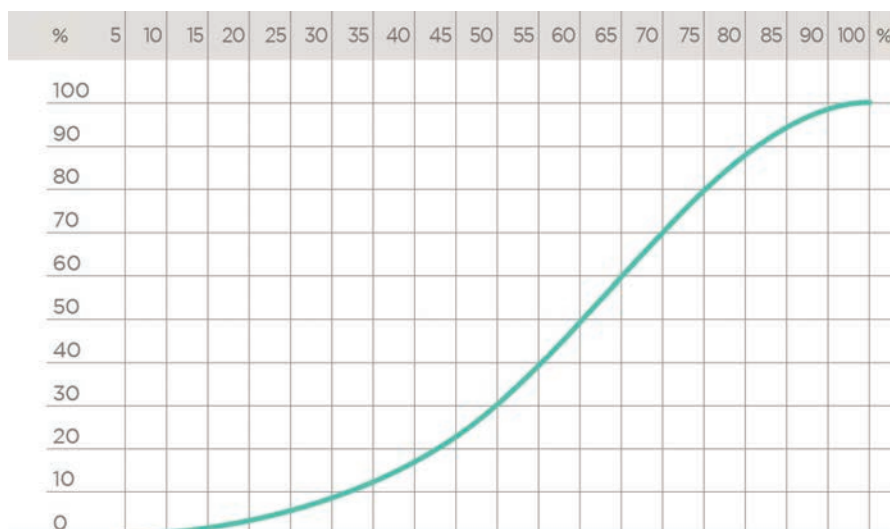
K_v100 FLOW COEFFICIENT DN 250÷400

The K_v100 flow coefficient is the Q flow rate of litres per minute of water at a temperature of 20°C that will generate $\Delta p = 1$ bar pressure drop at a certain valve position. The Kv100 values shown in the table are calculated with the valve completely open.

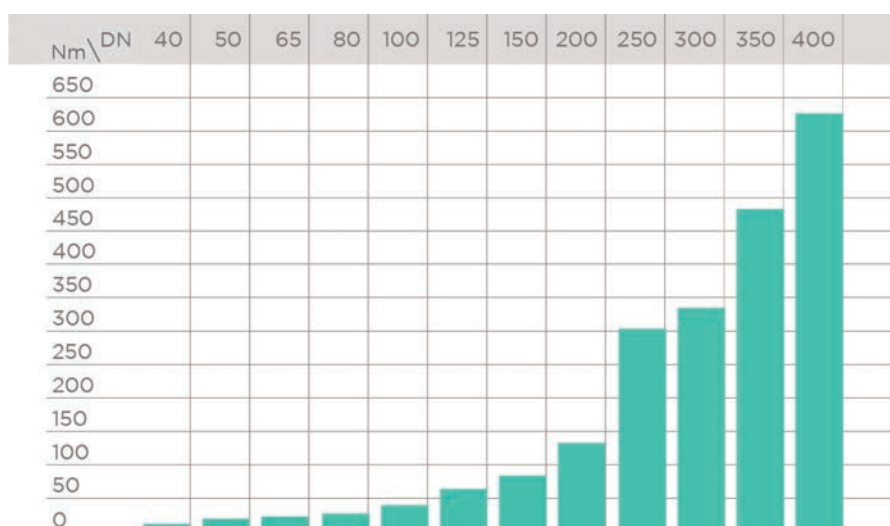
DN	250	300	350	400
Kv100 l/min	53200	81600	94100	124900

RELATIVE FLOW COEFFICIENT GRAPH

The relative flow coefficient is the flow rate through the valve as a function of the degree of valve opening.
Horizontal axis: Percentage opening of the disk
Vertical axis: Relative flow coefficient

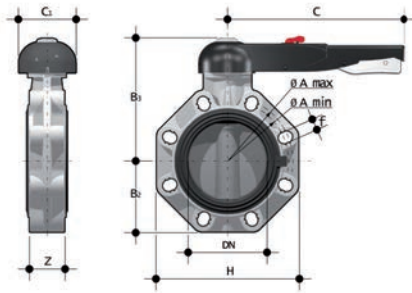


OPERATING TORQUE AT MAXIMUM WORKING PRESSURE



The information in this leaflet is provided in good faith. No liability will be accepted concerning technical data that is not directly covered by recognised international standards. FIP reserves the right to carry out any modification. Products must be installed and maintained by qualified personnel.

DIMENSIONS



FKOV/LM

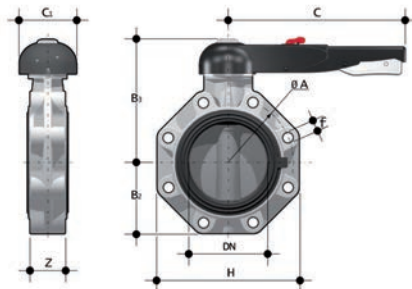
Hand operated Butterfly valve

d	DN	PN	A min	A max	B ₂	B ₃	C	C ₁	H	U	Z	g	EPDM code	FKM code
50 - 1 1/2"	40	16	99	109	60	137	175	100	132	4	33	1000	FKOVL050E	FKOVL050F
63 - 2"	50	16	115	125,5	70	143	175	100	147	4	43	1180	FKOVL063E	FKOVL063F
75 - 2 1/2"	65	10	128	144	80	164	175	110	165	4	46	1570	FKOVL075E	FKOVL075F
90 - 3"	80	10	145	160	93	178	272	110	185	12	49	2020	FKOVL090E	FKOVL090F
110 - 4"	100	10	165	190	107	192	272	110	211	8	56	2370	FKOVL110E	FKOVL110F
*125 - 5"	125	10	204	215	120	212	330	110	240	8	56	3300	FKOVL140E	FKOVL140F
140 - 5"	125	10	204	215	120	212	330	110	240	8	64	3300	FKOVL140E	FKOVL140F
160 - 6"	150	10	230	242	134	225	330	110	268	8	70	4100	FKOVL160E	FKOVL160F
**200 - 8"	200	10	280	298	161	272	420	122	323	8	71	7050	FKOVL225E	FKOVL225F
225 - 8"	200	10	280	298	161	272	420	122	323	8	71	7050	FKOVL225E	FKOVL225F

Note: for d75÷d225 NBR primary liner available

* d125, FKOV d140 with special QPV FE-FK d125 for butterfly valve (QPV125FKE)

** d200, FKOV d225 with special QPV FE-FK d200 for butterfly valve (QPV200FKE)



FKOV/LM LUG ISO-DIN

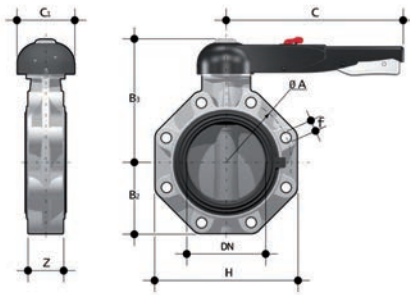
Hand operated Butterfly valve, version Lug ISO-DIN

d	DN	PN	øA	B ₂	B ₃	C	C ₁	f	H	U	Z	g	EPDM code	FKM code
75	65	10	145	80	164	175	110	M16	165	4	46	1870	FKOLVLM075E	FKOLVLM075F
90	80	10	160	93	178	272	110	M16	185	12	49	2670	FKOLVLM090E	FKOLVLM090F
110	100	10	180	107	192	272	110	M16	211	8	56	3020	FKOLVLM110E	FKOLVLM110F
*125	125	10	210	120	212	330	110	M16	240	8	64	4700	FKOLVLM140E	FKOLVLM140F
140	125	10	210	120	212	330	110	M16	240	8	64	4700	FKOLVLM140E	FKOLVLM140F
160	150	10	240	134	225	330	110	M20	268	8	70	5450	FKOLVLM160E	FKOLVLM160F
**200	200	10	295	161	272	420	122	M20	323	8	71	8350	FKOLVLM225E	FKOLVLM225F
225	200	10	295	161	272	420	122	M20	323	8	71	8350	FKOLVLM225E	FKOLVLM225F

Note:

* d125, FKOV d140 with special QPV FE-FK d125 for butterfly valve (QPV125FKE)

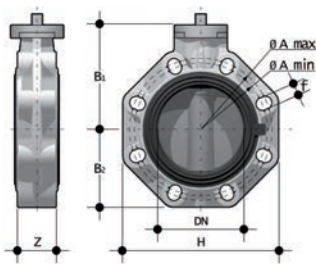
** d200, FKOV d225 with special QPV FE-FK d200 for butterfly valve (QPV200FKE)



FKOV/LM LUG ANSI

Hand operated Butterfly valve, version Lug ANSI

d	DN	PN	øA	B ₂	B ₁	C	C ₁	f	H	U	Z	g	EPDM code	FKM code
2" 1/2	65	10	139,7	119	80	175	110	5/8"	165	4	46	1970	FKOALVLM212E	FKOALVLM212F
3"	80	10	152,4	133	93	272	110	5/8"	185	12	49	2820	FKOALVLM300E	FKOALVLM300F
4"	100	10	190,5	147	107	272	110	5/8"	211	8	56	3170	FKOALVLM400E	FKOALVLM400F
5"	125	10	215,9	167	120	330	110	3/4"	240	8	64	4900	FKOALVLM500E	FKOALVLM500F
6"	150	10	241,3	180	134	330	110	3/4"	268	8	70	5700	FKOALVLM600E	FKOALVLM600F
8"	200	10	298,4	227	161	420	122	3/4"	323	8	71	8650	FKOALVLM800E	FKOALVLM800F



FKOV/FM

Butterfly valve with bare shaft

d	DN	PN	A min	A max	øA	B ₁	B ₂	f	H	U	Z	g	EPDM code	FKM code
50 - 1"1/2	40	16	99	109	-	106	60	19	132	4	33	574	FKOVFM050E	FKOVFM050F
63 - 2"	50	16	115	125,5	-	112	70	19	147	4	43	754	FKOVFM063E	FKOVFM063F
75 - 2"1/2	65	10	128	144	-	119	80	19	165	4	46	1000	FKOVFM075E	FKOVFM075F
90 - 3"	80	10	145	160	-	133	93	19	185	12	49	1400	FKOVFM090E	FKOVFM090F
110 - 4"	100	10	165	190	-	147	107	19	211	8	56	1750	FKOVFM110E	FKOVFM110F
*125 - 5"	125	10	204	215	-	167	120	23	240	8	64	2550	FKOVFM140E	FKOVFM140F
140 - 5"	125	10	204	215	-	167	120	23	240	8	64	2550	FKOVFM140E	FKOVFM140F
160 - 6"	150	10	230	242	-	180	134	23	268	8	70	3300	FKOVFM160E	FKOVFM160F
**200 - 8"	200	10	280	298	-	227	161	23	323	8	71	6000	FKOVFM225E	FKOVFM225F
225 - 8"	200	10	280	298	-	227	161	23	323	8	71	6000	FKOVFM225E	FKOVFM225F
***250	250	10	-	-	350	248	210	22	405	12	114	12000	FKOVFM280E	FKOVFM280F
***280	250	10	-	-	350	248	210	22	405	12	114	12000	FKOVFM280E	FKOVFM280F
315	300	8	-	-	400	305	245	22	475	12	114	19000	FKOVFM315E	FKOVFM315F
355	350	7	-	-	460	330	280	22	530	16	129	26000	FKOVFM355E	FKOVFM355F
400	400	6	-	-	515	350	306	26	594	16	169	34000	FKOVFM400E	FKOVFM400F
****10"	250	10	-	-	362	248	210	25,4	405	12	114	12000	FKOAVFM810E	FKOAVFM810F
****12"	300	8	-	-	432	305	245	25,4	475	12	114	19000	FKOAVFM812E	FKOAVFM812F
14"	350	7	-	-	476	330	280	28,5	530	12	129	26000	FKOAVFM814E	FKOAVFM814F
16"	400	6	-	-	540	350	306	28,5	594	16	169	34000	FKOAVFM816E	FKOAVFM816F

Note:

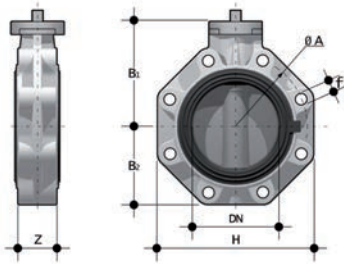
FK suitable for flanged JIS K10 wafer installation is also available on request in the size 10" (DN250), 14" (DN350) and 16" (DN400).

* d125, FKOV d140 with special QPV FE-FK d125 for butterfly valve (QPV125FKE)

** d200, FKOV d225 with special QPV FE-FK d200 for butterfly valve (QPV200FKE)

***ISO-DIN

****ANSI B.16.5 cl.150



FKOV/FM LUG ISO-DIN

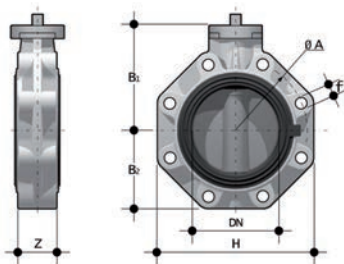
Butterfly valve with bare shaft, version Lug ISO-DIN

d	DN	PN	øA	B ₁	B ₂	f	H	U	Z	g	EPDM code	FKM code
75	65	10	145	119	80	M16	165	4	46	1400	FKOLVFM075E	FKOLVFM075F
90	80	10	160	133	93	M16	185	12	49	2200	FKOLVFM090E	FKOLVFM090F
110	100	10	180	147	107	M16	211	8	56	2550	FKOLVFM110E	FKOLVFM110F
*125	125	10	210	167	120	M16	240	8	64	4150	FKOLVFM140E	FKOLVFM140F
140	125	10	210	167	120	M16	240	8	64	4150	FKOLVFM140E	FKOLVFM140F
160	150	10	240	180	134	M20	268	8	70	4900	FKOLVFM160E	FKOLVFM160F
**200	200	10	295	227	161	M20	323	8	71	7600	FKOLVFM225E	FKOLVFM225F
315	300	6	400	305	245	M20	475	12	114	23800	FKOLVFM315E	FKOLVFM225F

Note:

* d125, FKOV d140 with special QPV FE-FK d125 for butterfly valve (QPV125FKE)

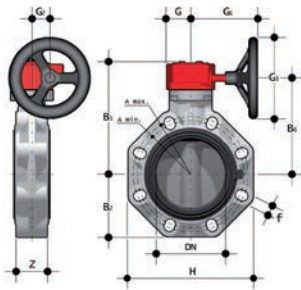
** d200, FKOV d225 with special QPV FE-FK d200 for butterfly valve (QPV200FKE)



FKOV/FM LUG ANSI

Butterfly valve with bare shaft, version Lug ANSI

d	DN	PN	øA	B ₁	B ₂	f	H	U	Z	g	EPDM code	FKM code
2" 1/2	65	10	139,7	119	80	5/8"	165	4	46	1400	FKOALVFM212E	FKOALVFM212F
3"	80	10	152,4	133	93	5/8"	185	12	49	2200	FKOALVFM300E	FKOALVFM300F
4"	100	10	190,5	147	107	5/8"	211	8	56	2550	FKOALVFM400E	FKOALVFM400F
5"	125	10	215,9	167	120	3/4"	240	8	64	4150	FKOALVFM500E	FKOALVFM500F
6"	150	10	241,3	180	134	3/4"	268	8	70	4900	FKOALVFM600E	FKOALVFM600F
8"	200	10	298,4	227	161	3/4"	323	8	71	7600	FKOALVFM800E	FKOALVFM800F
10"	250	6	362	248	210	7/8"	405	12	114	16800	FKOALVFM810E	FKOALVFM810F
12"	300	6	431,8	305	245	7/8"	475	12	114	23800	FKOALVFM812E	FKOALVFM812F



FKOV/RM

Gearbox operated Butterfly valve

d	DN	PN	A min	A max	øA	B ₂	B ₅	B ₆	G	G ₁	G ₂	G ₃	H	U	Z	g	EPDM code	FKM code
50	40	16	99	109	-	60	161	133	48	135	39	125	132	4	33	1974	FKOVRM050E	FKOVRM050F
63	50	16	115	125,2	-	70	167	139	48	135	39	125	147	4	43	2154	FKOVRM063E	FKOVRM063F
75 - 2 1/2"	65	10	128	144	-	80	174	146	48	135	39	125	165	4	46	2400	FKOVRM075E	FKOVRM075F
90 - 3"	80	10	145	160	-	93	188	160	48	135	39	125	185	12	49	2800	FKOVRM090E	FKOVRM090F
110 - 4"	100	10	165	190	-	107	202	174	48	135	39	125	211	8	56	3150	FKOVRM110E	FKOVRM110F
*125 - 5"	125	10	204	215	-	120	222	194	48	144	39	200	240	8	64	4450	FKOVRM140E	FKOVRM140F
140 - 5"	125	10	204	215	-	120	222	194	48	144	39	200	240	8	64	4450	FKOVRM140E	FKOVRM140F
160 - 6"	150	10	230	242	-	134	235	207	48	144	39	200	268	8	70	5200	FKOVRM160E	FKOVRM160F
**200 - 8"	200	10	280	298	-	161	287	256	65	204	60	200	323	8	71	9300	FKOVRM225E	FKOVRM225F
225 - 8"	200	10	280	298	-	161	287	256	65	204	60	200	323	8	71	9300	FKOVRM225E	FKOVRM225F
***250	250	10	-	-	350	210	317	281	88	236	76	250	405	12	114	18600	FKOVRM280E	FKOVRM280F
***280	250	10	-	-	350	210	317	281	88	236	76	250	405	12	114	18600	FKOVRM280E	FKOVRM280F
***315	300	8	-	-	400	245	374	338	88	236	76	250	475	12	114	25600	FKOVRM315E	FKOVRM315F
355	350	7	-	-	460	280	438	390	88	361	80	300	530	16	129	34450	FKOVRM355E	FKOVRM355F
400	400	6	-	-	515	306	438	390	88	361	80	300	594	16	169	42450	FKOVRM400E	FKOVRM400F
****10"	250	10	-	-	362	210	317	281	88	236	76	250	405	12	114	18600	FKOAVRM810E	FKOAVRM810F
****12"	300	8	-	-	432	245	374	338	88	236	76	250	475	12	114	25600	FKOAVRM812E	FKOAVRM812F
14"	350	7	-	-	476	280	438	390	88	361	80	300	530	12	129	34450	FKOAVRM814E	FKOAVRM814F
16"	400	6	-	-	540	306	438	390	88	361	80	300	594	16	169	42450	FKOAVRM816E	FKOAVRM816F

Note:

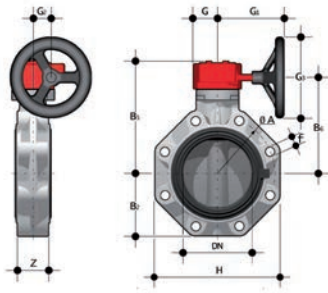
FK suitable for flanged JIS K10 wafer installation is also available on request in the size 10" (DN250), 14" (DN350) and 16" (DN400).

* d125, FKOV d140 with special QPV FE-FK d125 for butterfly valve (QPV125FKE)

** d200, FKOV d225 with special QPV FE-FK d200 for butterfly valve (QPV200FKE)

***ISO-DIN

****ANSI B.16.5 cl.150



FKOV/RM LUG ISO-DIN

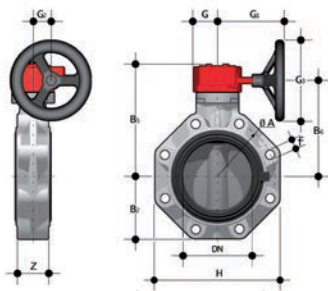
Gearbox operated Butterfly valve, version Lug ISO-DIN

315	300	6	400	245	374	338	M20	88	236	76	250	475	12	114	30400	FKOLVRM315E	FKM code
75	65	10	145	80	174	146	M16	48	135	39	125	165	4	46	2800	FKOLVRM075E	FKOLVRM075F
90	80	10	160	93	188	160	M16	48	135	39	125	185	12	49	3600	FKOLVRM090E	FKOLVRM090F
110	100	10	180	107	202	174	M16	48	135	39	125	211	8	56	3950	FKOLVRM110E	FKOLVRM110F
*125	125	10	210	120	222	194	M16	48	144	39	200	240	8	64	6050	FKOLVRM140E	FKOLVRM140F
140	125	10	210	120	222	194	M16	48	144	39	200	240	8	64	6050	FKOLVRM140E	FKOLVRM140F
160	150	10	240	134	235	207	M20	48	144	39	200	268	8	70	6800	FKOLVRM160E	FKOLVRM160F
**200	200	10	295	161	287	256	M20	65	204	60	200	323	8	71	10900	FKOLVRM225E	FKOLVRM225F
225	200	10	295	161	287	256	M20	65	204	60	200	323	8	71	10900	FKOLVRM225E	FKOLVRM225F
315	300	6	400	245	374	338	M20	88	236	76	250	475	12	114	30400	FKOLVRM315E	FKOLVRM315F

Note:

* d125, FKOV d140 with special QPV FE-FK d125 for butterfly valve (QPV125FKE)

** d200, FKOV d225 with special QPV FE-FK d200 for butterfly valve (QPV200FKE)



FKOV/RM LUG ANSI

Gearbox operated Butterfly valve, version Lug ANSI

d	DN	PN	øA	B ₂	B ₃	B ₅	f	G	G ₁	G ₂	G ₃	H	U	Z	g	EPDM code	FKM code
2" 1/2	65	10	139,7	80	174	146	5/8"	48	135	39	125	165	4	46	2800	FKOALVRM212E	FKOALVRM212F
3"	80	10	152,4	93	188	160	5/8"	48	135	39	125	185	12	49	3600	FKOALVRM300E	FKOALVRM300F
4"	100	10	190,5	107	202	174	5/8"	48	135	39	125	211	8	56	3950	FKOALVRM400E	FKOALVRM400F
5"	125	10	215,9	120	222	194	3/4"	48	144	39	200	240	8	64	6050	FKOALVRM500E	FKOALVRM500F
6"	150	10	241,3	134	235	207	3/4"	48	144	39	200	268	8	70	6800	FKOALVRM600E	FKOALVRM600F
8"	200	10	298,4	161	287	256	3/4"	65	204	60	200	323	8	71	10900	FKOALVRM800E	FKOALVRM800F
10"	250	6	362	210	317	281	7/8"	88	236	76	250	405	12	114	23400	FKOALVRM810E	FKOALVRM810F
12"	300	6	431,8	245	374	338	7/8"	88	236	76	250	475	12	114	30400	FKOALVRM812E	FKOALVRM812F