

McSYS[®]



MFK DN 40÷300
PVC-C

Butterfly valve

CODES

HOW TO READ MAC VALVES COMMERCIAL CODES

Ex: **MFKOCRM315F** MFK butterfly valve, PVC-C disc, gear box, d 315, FPM gasket

MFK VALVE MODEL		O CONNECTION STD.		C MATERIALS	
MVKD	ball 2-way DUAL BLOCK®	I	ISO socket (metric)	A	ABS
MTKD	ball 3-way DUAL BLOCK® T	D	ISO spigot (metric)	C	PVC-C
MLKD	portball 3-way DUAL BLOCK® L	B	ISO butt welding (metric)	F	PVDF
MVKR	regulating ball 2-way DUAL BLOCK®	BE	PE100 ISO butt welding (metric)	M	PP-H
MVXE	ball 2-way Easyfit	G	JIS socket threaded (inch)	V	PVC-U
MVEE	ball 2-way Easyfit	P	Hose adaptor (metric)	T	PVC-U Transparent
MSXE	ball spring check valve Easyfit	F	BSP female threaded (inch)		
MFK	butterfly multi-purpose	R	BSP male threaded (inch)		
MFE	butterfly water	L	BS female (inch)		
MVM	diaphragm	M	BS male (inch)		
MVMU	unionised diaphragm	A	ASTM socket (inch)		
MCM	compact diaphragm	Y	ASTM spigot (inch)		
MCMU	unionised compact diaphragm	N	NPT socket threaded (inch)		
MDM	direct acting diaphragm (only pneumatically actuated)	J	JIS socket (inch)		
MDMU	unionised direct acting diaphragm (only pneumatically actuated)	O	ISO-DIN flanged (metric)		
MMK	piston act. diaphragm (onlypneumatically actuated)	OA	ANSI 150 flanged (inch)		
MMKU	unionised piston actuator diaphragm (only pneumatically actuated)	OL	LUG ISO-DIN (mm) flanged		
MRM	diaphragm cock	OAL	LUG ANSI 150 (inch) flanged		
MRP	piston cock				
MRV	strainer				
MRVU	unionised strainer				
MVR	piston check valve				
MVRU	unionised piston check valve				
MVV	angle seat valve				
MVVU	unionised angle seat valve				
MSR	ball check valve				
MVZ	foot valve				
MVA	air release valve				
MSV	pressure relief valve				
MCR	wafer check valve				

RM COMMAND SYSTEM		315 SIZE		F SEAL MATERIAL
		METRIC SERIES d (mm)	INCH SERIES d/R (inches)	
SHX	handle block (for VKD ball valves)	006 6		E EPDM
LM	lever (for butterfly)	008 8		F FPM
RM	gear box (for butterfly)	010 10		N NBR
FM	bare shaft (for butterfly)	012 12	014 1/4"	P PTFE
NC	Pneumatic Normally Closed	016 16	038 3/8"	
NO	Pneumatic Normally Open	020 20	012 1/2"	
DA	Pneumatic Double Acting	025 25	034 3/4"	
SA	Pneumatic Single Acting	032 32	100 1"	
EA	Electric 230V AC	040 40	114 1" 1/4	
EB	Electric 115V AC	050 50	112 1" 1/2	
EE	Electric 24V AC	063 63	200 2"	
EF	Electric 24V DC		214 2" 1/4	
EI	Electric 400V trifase	075 75	212 2" 1/2	
EM	Electric 90-240V AC		234 2" 3/4	
EL	Electric 24V AC/DC	090 90	300 3"	
		110 110	400 4"	
		125 125		
		140 140	500 5"	
		160 160	600 6"	
		180 180		
		200 200		
		225 225	800 8"	
		250 250		
		280 280	810 10"	
		315 315	812 12"	
		355 355	813 14"	
		400 400	814 16"	

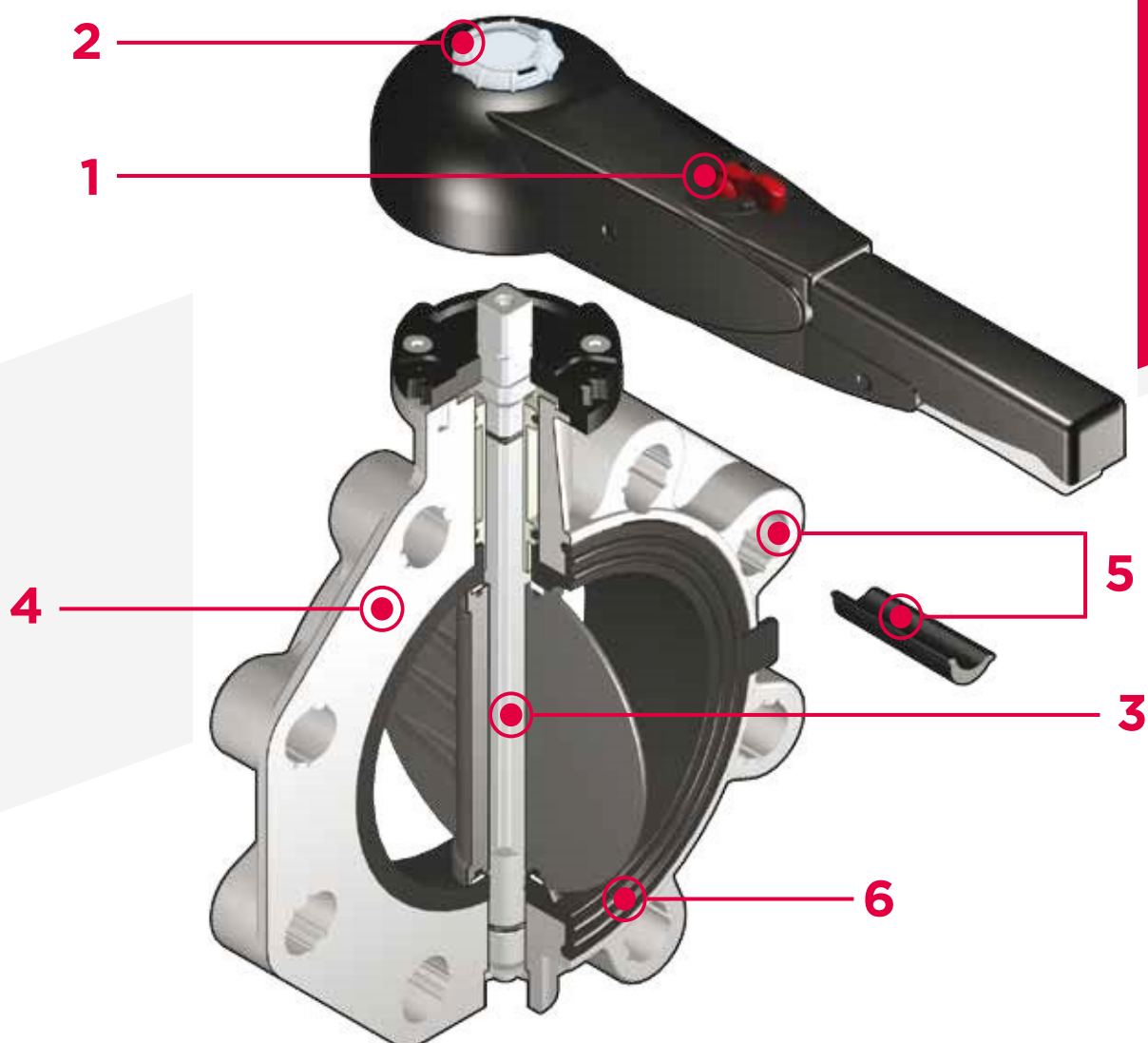
MFK DN 40÷300

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

BUTTERFLY VALVE

- Interchangeable Disk in PVC-C with through shaft, available in different thermoplastic materials: PVC-U, PP-H, ABS, PVDF
- Overall dimensions of the valve in accordance with standard ISO 5752 (DN 40÷200 Medium Series 25, DN 250÷ 300 Long Series 16) and DIN 3202 K2 and ISO 5752 (DN 65÷200 K2, DN 250÷300 K3)
- Can also be installed as an end line valve, bottom discharge valve or tank dump valve
- **Special Lug version** PN 10 fully drilled to DIN 2501 or ANSI B16.5 cl.150 with **molded-in AISI 316 stainless steel threaded inserts**
- Possibility of installing a manual reducer or pneumatic and/or electric actuators by applying ISO standard drilling pattern 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, F07, F10
- DN 250÷300 valve, fitted with one-piece top flange in high mechanical strength PP-GR with mounting flange for internal components with drilling according to standard ISO 5211 F10, F12, F14

Technical specifications	
Construction	Bi-directional centric butterfly valve
Size range	DN 40÷300
Nominal pressure	Wafer version DN 40÷50: PN 16 with water at 20° C DN 65÷250: PN 10 with water at 20° C DN 300: PN 8 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 ÷ 100 °C
Coupling standards	Flanging system: EN ISO 15493, DIN 2501, ISO 7005-1, EN 1092-1, ASTM B16.5 Cl.150
Reference standards	Construction criteria: EN ISO 16136, EN ISO 15493 Test methods and requirements: ISO 9393 Actuator couplings: ISO 5211
Valve material	Body: PP-GR Disk: PVC-C Stem: STAINLESS steel AISI 420. On request STAINLESS steel AISI 316
Seal material	Liner: EPDM, FPM. On request NBR
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 customisable tag holder using the LSE set (available as 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÷300: 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 with 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÷300 valves, the drilling pattern for the self-centring system is of the traditional type according to DIN and ANSI standards

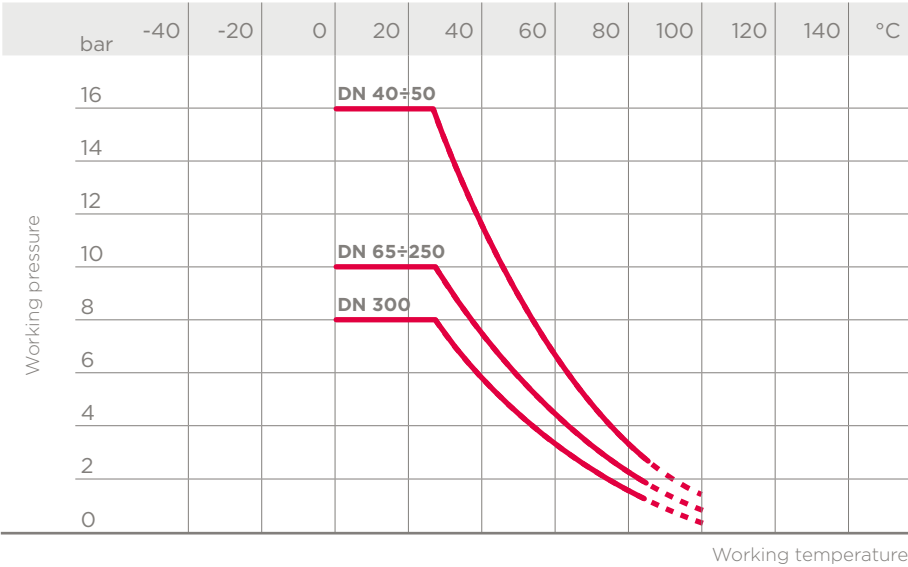
6 Interchangeable liner with the dual function of forming a hydraulic seal and isolating the body from the fluid

TECHNICAL DATA

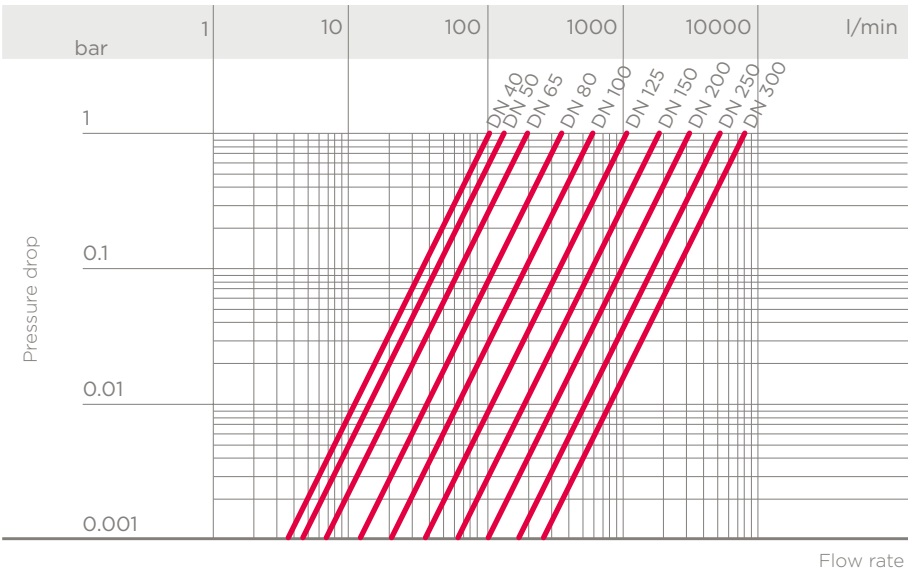
PRESSURE VARIATION ACCORDING TO TEMPERATURE

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

Note: When using PVC-C at working temperatures higher than 90°, it is advisable to first contact the service centre.



PRESSURE DROP GRAPH



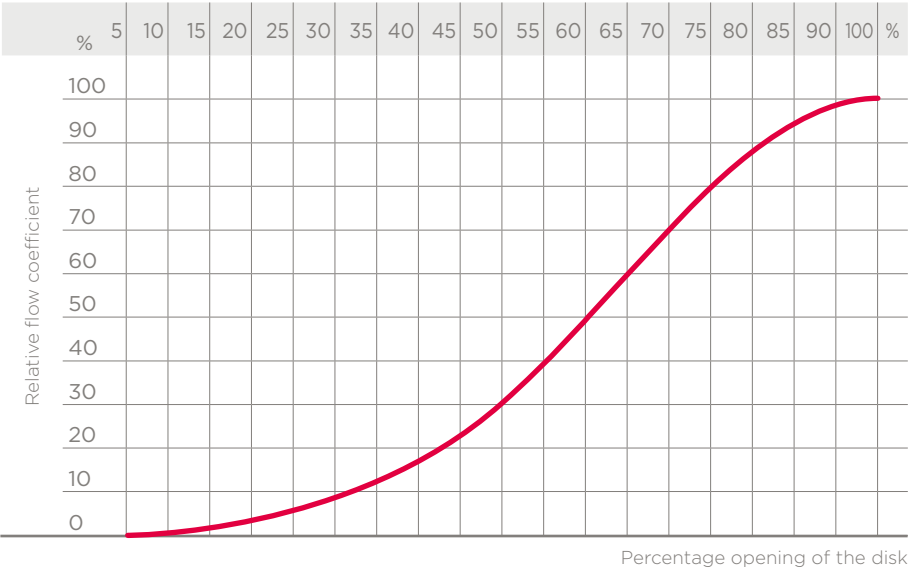
K_v100 FLOW COEFFICIENT

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 Δp= 1 bar pressure drop at a certain valve position.

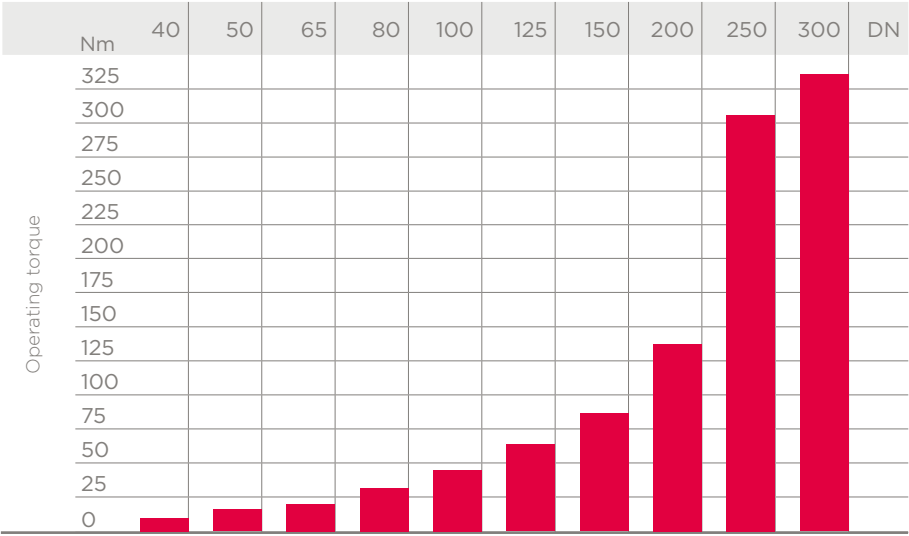
The K_v100 values shown in the table are calculated with the valve completely open.

DN	40	50	65	80	100	125	150	200	250	300
K _v 100 l/min	1000	1285	1700	3550	5900	9850	18700	30500	53200	81600

RELATIVE FLOW COEFFICIENT GRAPH

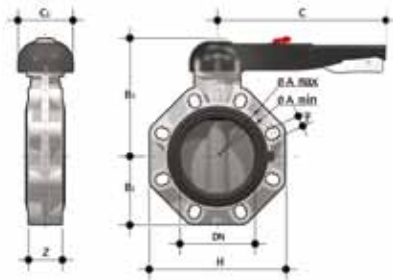


OPERATING TORQUE AT MAXIMUM WORKING PRESSURE



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.

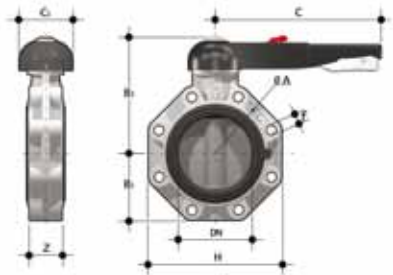
DIMENSIONS



MFKOC/LM

Hand operated Butterfly valve

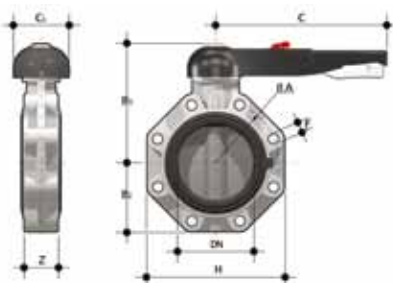
d - Size	DN	PN	A min	A max	B ₂	B ₃	C	C ₁	H	U	Z	g	EPDM Code	FPM Code
50 - 1" 1/2	40	16	99	109	60	137	175	100	132	4	33	900	MFKOCLM050E	MFKOCLM050F
63 - 2"	50	16	115	125.5	70	143	175	100	147	4	43	1080	MFKOCLM063E	MFKOCLM063F
75 - 2" 1/2	65	10	128	144	80	164	175	110	165	4	46	1470	MFKOCLM075E	MFKOCLM075F
90 - 3"	80	10	145	160	93	178	272	110	185	8	49	1870	MFKOCLM090E	MFKOCLM090F
110 - 4"	100	10	165	190	107	192	272	110	211	8	56	2220	MFKOCLM110E	MFKOCLM110F
140 - 5"	125	10	204	215	120	212	330	110	240	8	64	3100	MFKOCLM140E	MFKOCLM140F
160 - 6"	150	10	230	242	134	225	330	110	268	8	70	3850	MFKOCLM160E	MFKOCLM160F
225 - 8"	200	10	280	298	161	272	420	122	323	8	71	6750	MFKOCLM225E	MFKOCLM225F



MFKOC/LM LUG ISO-DIN

Hand operated Butterfly valve, version Lug ISO-DIN

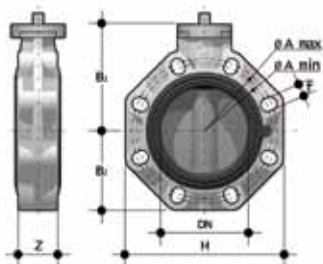
d	DN	PN	øA	B ₂	B ₃	C	C ₁	f	H	U	Z	g	EPDM Code	FPM Code
75	65	10	145	80	164	175	110	M16	165	4	46	1870	MFKOLCLM075E	MFKOLCLM075F
90	80	10	160	93	178	272	100	M16	185	8	49	2670	MFKOLCLM090E	MFKOLCLM090F
110	100	10	180	107	192	272	110	M16	211	8	56	3020	MFKOLCLM110E	MFKOLCLM110F
140	125	10	210	120	212	330	110	M16	240	8	64	4700	MFKOLCLM140E	MFKOLCLM140F
160	150	10	240	134	225	330	110	M20	268	8	70	5450	MFKOLCLM160E	MFKOLCLM160F
225	200	10	295	161	272	420	122	M20	323	8	71	8350	MFKOLCLM225E	MFKOLCLM225F



MFKOC/LM LUG ANSI

Hand operated Butterfly valve, version Lug ANSI

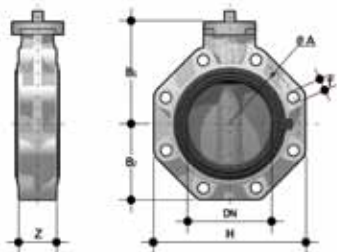
d	DN	PN	øA	B ₁	B ₂	C	C ₁	f	H	U	Z	g	EPDM Code	FPM Code
2"1/2	65	10	139.7	119	80	175	110	5/8"	165	4	46	1870	MFKOALCLM212E	MFKOALCLM212F
3"	80	10	152.4	133	93	272	100	5/8"	185	8	49	2670	MFKOALCLM300E	MFKOALCLM300F
4"	100	10	190.5	147	107	272	110	5/8"	211	8	56	3020	MFKOALCLM400E	MFKOALCLM400F
5"	125	10	215.9	167	120	330	110	3/4"	240	8	64	4700	MFKOALCLM500E	MFKOALCLM500F
6"	150	10	241.3	180	134	330	110	3/4"	268	8	70	5450	MFKOALCLM600E	MFKOALCLM600F
8"	200	10	298.4	227	161	420	122	3/4"	323	8	71	8350	MFKOALCLM800E	MFKOALCLM800F



MFKOC/FM

Butterfly valve with bare shaft

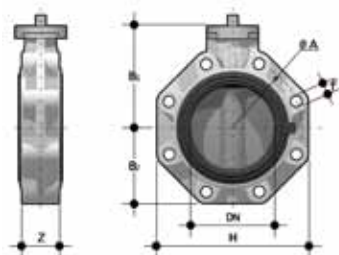
d - Size	DN	PN	A min	A max	øA	B ₁	B ₂	f	H	U	Z	g	EPDM Code	FPM Code
50 - 1" 1/2	40	16	99	109	-	106	60	19	132	4	33	574	MFKOCFM050E	MFKOCFM050F
63 - 2"	50	16	115	125.5	-	112	70	19	147	4	43	754	MFKOCFM063E	MFKOCFM063F
75 - 2" 1/2	65	10	128	144	-	119	80	19	165	4	46	1000	MFKOCFM075E	MFKOCFM075F
90 - 3"	80	10	145	160	-	133	93	19	185	8	49	1400	MFKOCFM090E	MFKOCFM090F
110 - 4"	100	10	165	190	-	147	107	19	211	8	56	1750	MFKOCFM110E	MFKOCFM110F
140 - 5"	125	10	204	215	-	167	120	23	240	8	64	2550	MFKOCFM140E	MFKOCFM140F
160 - 6"	150	10	230	242	-	180	134	23	268	8	70	3300	MFKOCFM160E	MFKOCFM160F
225 - 8"	200	10	280	298	-	227	161	23	323	8	71	6000	MFKOCFM225E	MFKOCFM225F
280	250	10	-	-	350	248	210	22	405	12	114	12000	MFKOCFM280E	MFKOCFM280F
315	300	8	-	-	400	305	245	29	475	12	114	19000	MFKOCFM315E	MFKOCFM315F
10"	250	10	-	-	350	248	210	25.4	405	12	114	12000	MFKOACFM810E	MFKOACFM810F
12"	300	8	-	-	400	305	245	25.4	475	12	114	19000	MFKOACFM812E	MFKOACFM812F



MFKOC/FM LUG ISO-DIN

Butterfly valve with bare shaft, version Lug ISO-DIN

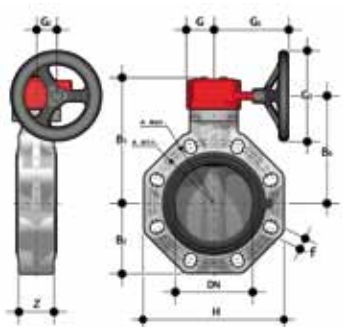
d	DN	PN	øA	B ₁	B ₂	f	H	U	Z	g	EPDM Code	FPM Code
75	65	10	145	119	80	M16	165	4	46	1400	MFKOLCFM075E	MFKOLCFM075F
90	80	10	160	133	93	M16	185	8	49	2200	MFKOLCFM090E	MFKOLCFM090F
110	100	10	180	147	107	M16	211	8	56	2550	MFKOLCFM110E	MFKOLCFM110F
140	125	10	210	167	120	M16	240	8	64	4150	MFKOLCFM140E	MFKOLCFM140F
160	150	10	240	180	134	M20	268	8	70	4900	MFKOLCFM160E	MFKOLCFM160F
225	200	10	295	227	161	M20	323	8	71	7600	MFKOLCFM225E	MFKOLCFM225F



MFKOC/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	FPM Code
2"1/2	65	10	145	119	80	5/8"	165	4	46	1400	MFKOALCFM212E	MFKOALCFM212F
3"	80	10	160	133	93	5/8"	185	8	49	2200	MFKOALCFM300E	MFKOALCFM300F
4"	100	10	180	147	107	5/8"	211	8	56	2550	MFKOALCFM400E	MFKOALCFM400F
5"	125	10	210	167	120	3/4"	240	8	64	4150	MFKOALCFM500E	MFKOALCFM500F
6"	150	10	240	180	134	3/4"	268	8	70	4900	MFKOALCFM600E	MFKOALCFM600F
8"	200	10	295	227	161	3/4"	323	8	71	7600	MFKOALCFM800E	MFKOALCFM800F
10"	250	6	362	248	210	7/8"	405	12	114	16800	MFKOALCFM810E	MFKOALCFM810F
12"	300	6	431.8	305	245	7/8"	475	12	114	23800	MFKOALCFM812E	MFKOALCFM812F



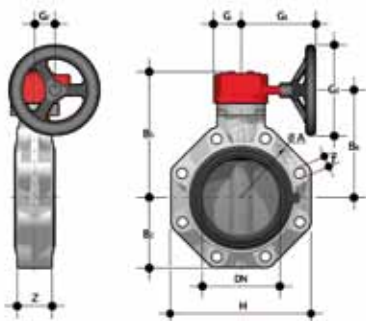
MFKOC/RM

Gearbox operated Butterfly valve

d - Size	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	FPM Code
75 - 2" 1/2	65	10	128	144	-	80	174	146	48	135	39	125	165	4	46	2400	MFKOCRM075E	FKOCRM075F
90 - 3"	80	10	145	160	-	93	188	160	48	135	39	125	185	8	49	2800	MFKOCRM090E	FKOCRM090F
110 - 4"	100	10	165	190	-	107	202	174	48	135	39	125	211	8	56	3150	MFKOCRM110E	FKOCRM110F
140 - 5"	125	10	204	215	-	120	222	194	48	144	39	200	240	8	64	4450	MFKOCRM140E	FKOCRM140F
160 - 6"	150	10	230	242	-	134	235	207	48	144	39	200	268	8	70	5200	MFKOCRM160E	FKOCRM160F
225 - 8"	200	10	280	298	-	161	287	256	65	204	60	200	323	8	71	9300	MFKOCRM225E	FKOCRM225F
*280	250	10	335	362	350	210	317	281	88	236	76	250	405	8	114	18600	MFKOCRM280E	FKOCRM280F
*315	300	8	390	432	400	245	374	338	88	236	76	250	475	12	114	25600	MFKOCRM315E	FKOCRM315F
**10"	250	10	-	362	350	210	317	281	88	236	-	250	405	12	114	18600	MFKOACRM810E	FKOACRM810F
**12"	300	8	-	431.8	400	245	374	338	88	236	-	250	475	12	114	25600	MFKOACRM812E	FKOACRM812F

* ISO-DIN

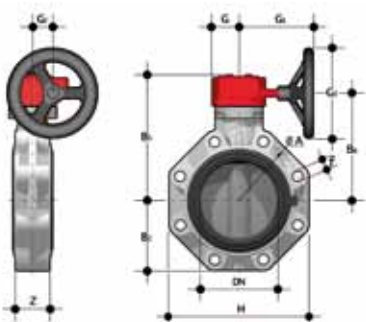
** ANSI B16.5 cl.150



MFKOC/RM LUG ISO-DIN

Gearbox operated Butterfly valve, version Lug ISO-DIN

d	DN	PN	øA	B ₂	B ₅	B ₆	f	G	G ₁	G ₂	G ₃	H	U	Z	g	EPDM Code	FPM Code
75	65	10	145	80	174	146	M16	48	135	39	125	165	4	46	2800	MFKOLCRM075E	MFKOLCRM075F
90	80	10	160	93	188	160	M16	48	135	39	125	185	8	49	3600	MFKOLCRM090E	MFKOLCRM090F
110	100	10	180	107	202	174	M16	48	135	39	125	211	8	56	3950	MFKOLCRM110E	MFKOLCRM110F
140	125	10	210	120	222	194	M16	48	144	39	200	240	8	64	6050	MFKOLCRM140E	MFKOLCRM140F
160	150	10	240	134	235	207	M20	48	144	39	200	268	8	70	6800	MFKOLCRM160E	MFKOLCRM160F
225	200	10	295	161	287	256	M20	65	204	60	200	323	8	71	10900	MFKOLCRM225E	MFKOLCRM225F



MFKOC/RM LUG ANSI

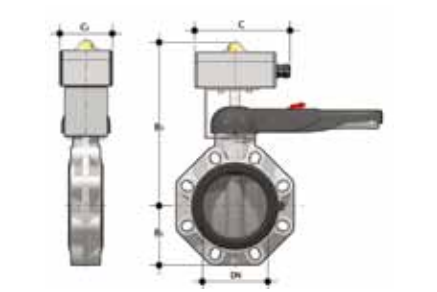
Gearbox operated Butterfly valve, version Lug ANSI

d	DN	PN	B ₂	B ₅	B ₆	H	Z	øA	f	G	G ₁	G ₂	G ₃	U	g	EPDM Code	FPM Code
2"1/2	65	10	80	174	146	165	46	139.7	5/8"	48	135	39	125	4	2800	MFKOALCRM212E	MFKOALCRM212F
3"	80	10	93	188	160	185	49	152.4	5/8"	48	135	39	125	8	3600	MFKOALCRM300E	MFKOALCRM300F
4"	100	10	107	202	174	211	56	190.5	5/8"	48	135	39	125	8	3950	MFKOALCRM400E	MFKOALCRM400F
5"	125	10	120	222	194	240	64	215.9	3/4"	48	144	39	200	8	6050	MFKOALCRM500E	MFKOALCRM500F
6"	150	10	134	235	207	268	70	241.3	3/4"	48	144	39	200	8	6800	MFKOALCRM600E	MFKOALCRM600F
8"	200	10	161	287	256	323	71	298.4	3/4"	65	204	60	200	8	10900	MFKOALCRM800E	MFKOALCRM800F
10"	250	6	210	317	281	405	114	362	7/8"	88	236	76	250	12	23400	MFKOALCRM810E	MFKOALCRM810F
12"	300	6	245	374	338	475	114	431.8	7/8"	88	236	76	250	12	30400	MFKOALCRM812E	MFKOALCRM812F

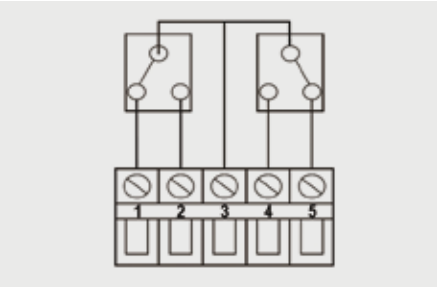
ACCESSORIES

MS

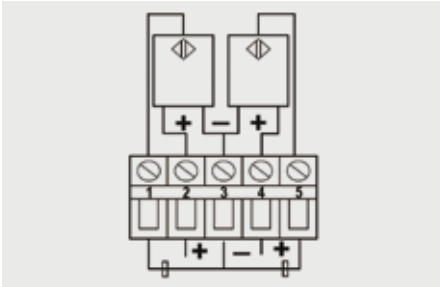
The MS kit lets you install a limit switch box with electromechanical or inductive micro switches on a manual MFK/LM valve to remotely signal the valve position (open-closed). The kit can be assembled on the valve even if already installed on the system.



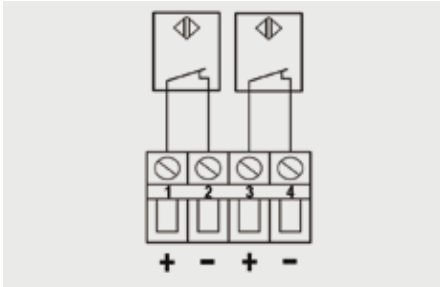
DN	B ₂	B ₃	C ₁	Protection rate	Code electromechanical	Code inductive	Code Namur
40	60	248	80	IP67	MFKMS0M	MFKMS0I	MFKMS0N
50	70	254	80	IP67	MFKMS0M	MFKMS0I	MFKMS0N
65	80	261	80	IP67	MFKMS0M	MFKMS0I	MFKMS0N
80	93	275	80	IP67	MFKMS1M	MFKMS1I	MFKMS1N
100	107	289	80	IP67	MFKMS1M	MFKMS1I	MFKMS1N
125	120	309	80	IP67	MFKMS1M	MFKMS1I	MFKMS1N
150	134	322	80	IP67	MFKMS1M	MFKMS1I	MFKMS1N
200	161	369	80	IP67	MFKMS2M	MFKMS2I	MFKMS2N



Electromechanical



Inductive



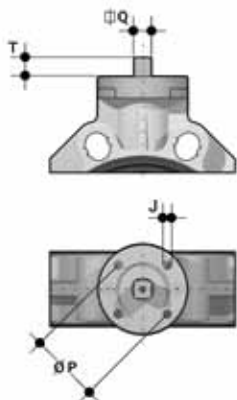
Namur

LSE

Customisation and label printing set for Easyfit handle made up of precut adhesive sheets and software for guided label creation.



DN	Code
40	LSE040
50	LSE040
65	LSE040
80	LSE040
100	LSE040
125	LSE040
150	LSE040
200	LSE040



ACTUATOR MOUNTING FLANGE

The valve can be equipped with standard pneumatic or electric actuators and gearbox for heavy-duty operations, using a flange in PP-GR reproducing the drilling pattern provided for by standard ISO 5211.

DN	J	P	Ø	T	Q
40	7	50	F 05	12	11
50	7	50	F 05	12	11
65	7/9	50/70	F 05/F 07	12	11
80	9	70	F 07	16	14
100	9	70	F 07	16	14
125	9	70	F 07	19	17
150	9	70	F 07	19	17
200	11	102	F 10	24	22
200	11	102	F 10	24	22
250	11/13/17	102/125/140	F 10/F 12/F 14	29	27
300	11/13/17	102/125/140	F 10/F 12/F 14	29	27

CUSTOMISATION

The MFK valve is equipped with the customisable Labelling System.

This system lets you create special labels to insert in the handle. This makes it extremely easy to apply company logos, identification serial numbers or service indications such as, for example, the valve function in the system, the transported fluid, but also specific information for customer service, such as the customer name or installation date or location on the valves.

The specific LCE module is a standard supply and is made up of a rigid transparent water-resistant PVC plug (A-C) and white tag holder (B) made of the same material, one side of which bears the FIP logo (fig. 1).

The tag holder, inserted in the plug, can be removed and, once overturned, used for customisation by applying labels printed with the software supplied with the LSE set.

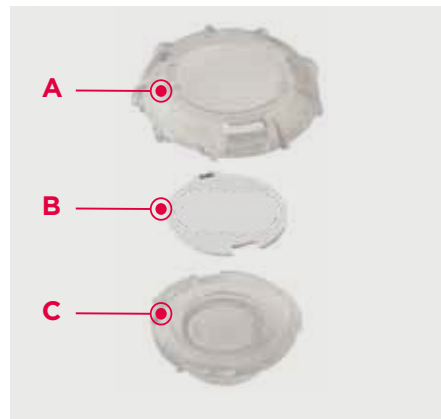
Proceed as follows to apply the label on the valve:

- 1) Remove the upper part of the transparent plug (A) rotating it counter-clockwise as indicated by the word "Open" on the plug and remove it.
- 2) Extract the tag holder from its housing on the lower part of the plug (C)
- 3) Apply the adhesive label on the holder (B) to align the profiles matching the tab position.
- 4) Reinsert the tag holder in its housing at the bottom of the plug
- 5) Reposition the top of the plug in the housing rotating it clockwise; this way the label is protected against the elements.

Fig. 1

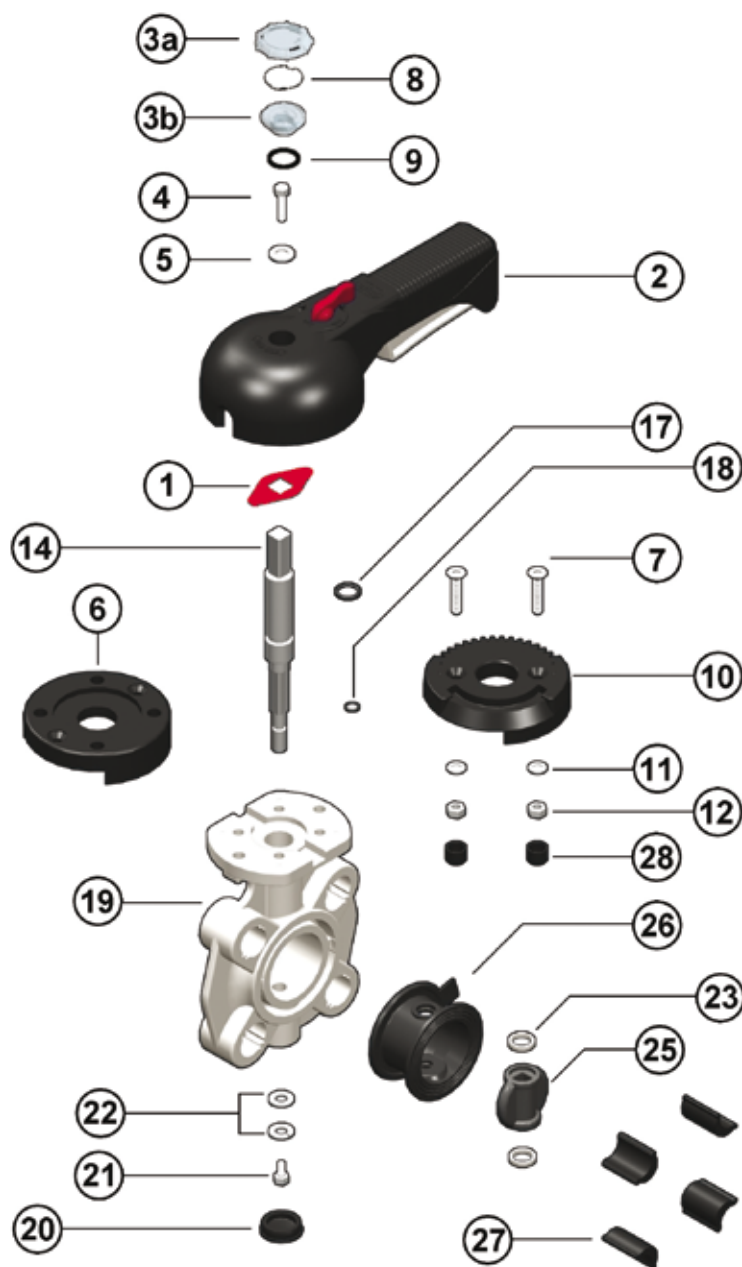


Fig. 2



COMPONENTS

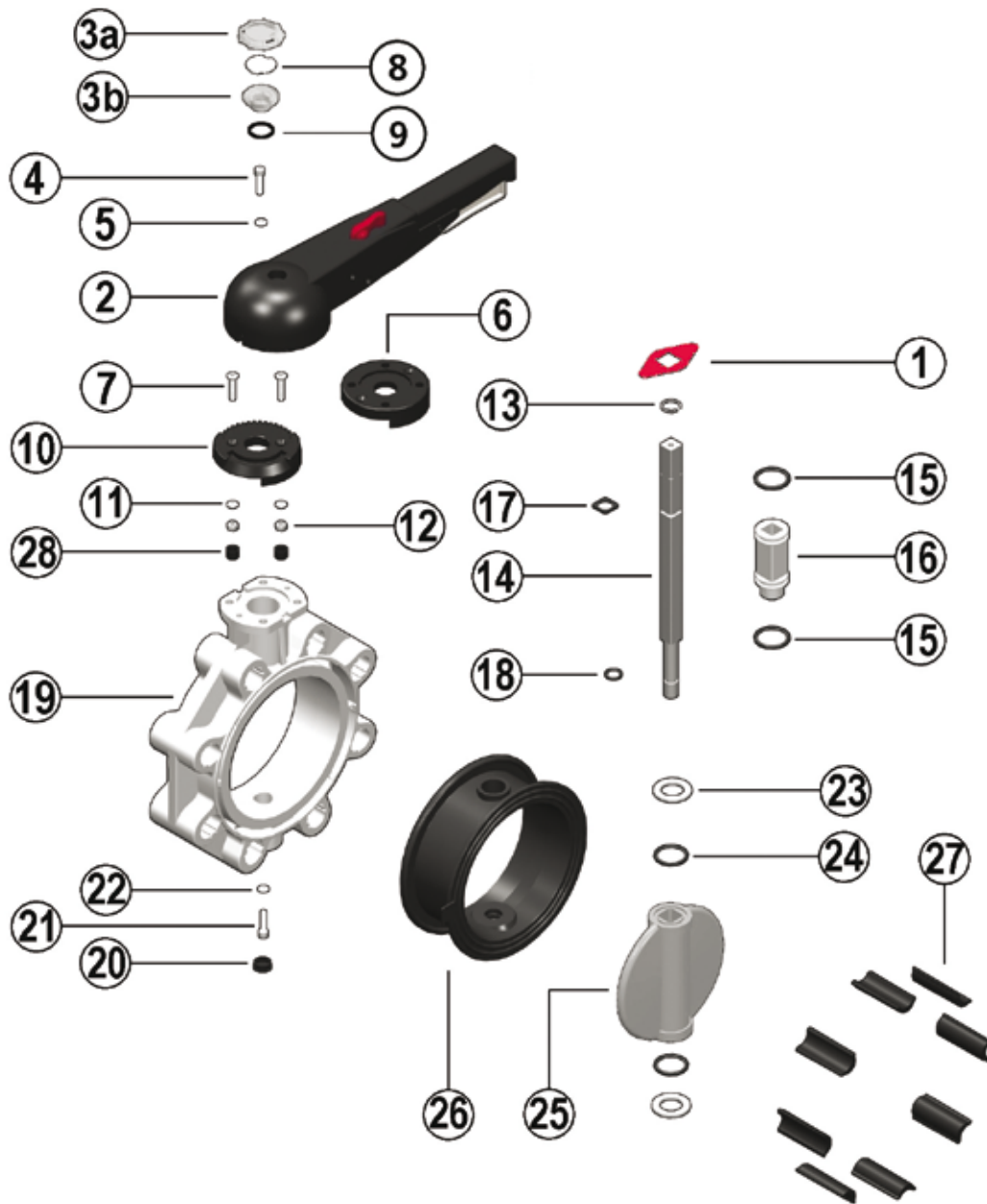
EXPLODED VIEW DN 40÷50



- | | | |
|---|---|---|
| 1 • Position indicator (PA - 1) | 9 • O-Ring (NBR - 1) | 20 • Protection plug (PE - 1) |
| 2 • Handle (HIPVC - 1) | 10 • Plate (PP-GR - 1) | 21 • Screw (STAINLESS steel - 1) |
| 3a/b • Transparent protection plug (PVC - 1) | 11 • Washer (STAINLESS steel - 2) | 22 • Washer (STAINLESS steel - 1) |
| 4 • Fastening screw (STAINLESS steel - 1) | 12 • Nut (STAINLESS steel - 2) | 23 • Anti-friction ring (PTFE - 2) |
| 5 • Washer (STAINLESS steel - 1) | 13 • Seeger ring (STAINLESS steel - 1) | 24 • Disk O-Ring (EPDM or FPM - 2) |
| 6 • Flange (PP-GR - 1) | 14 • Stem (STAINLESS steel - 1) | 25 • Disk (PVC-C - 1) |
| 7 • Screw (STAINLESS steel - 2) | 15 • Bush O-Ring (EPDM or FPM - 2) | 26 • Liner (EPDM or FPM - 1) |
| 8 • Tag holder (PVC-U - 1) | 16 • Bush (Nylon - 1) | 27 • Inserts (ABS - 4-8) |
| | 17 • Stem O-Ring (EPDM or FPM - 1) | 28 • Plug (PE - 2) |
| | 18 • Stem O-Ring (EPDM or FPM - 1) | |
| | 19 • Body (PP-GR - 1) | |

The material of the component and the quantity supplied are indicated between brackets

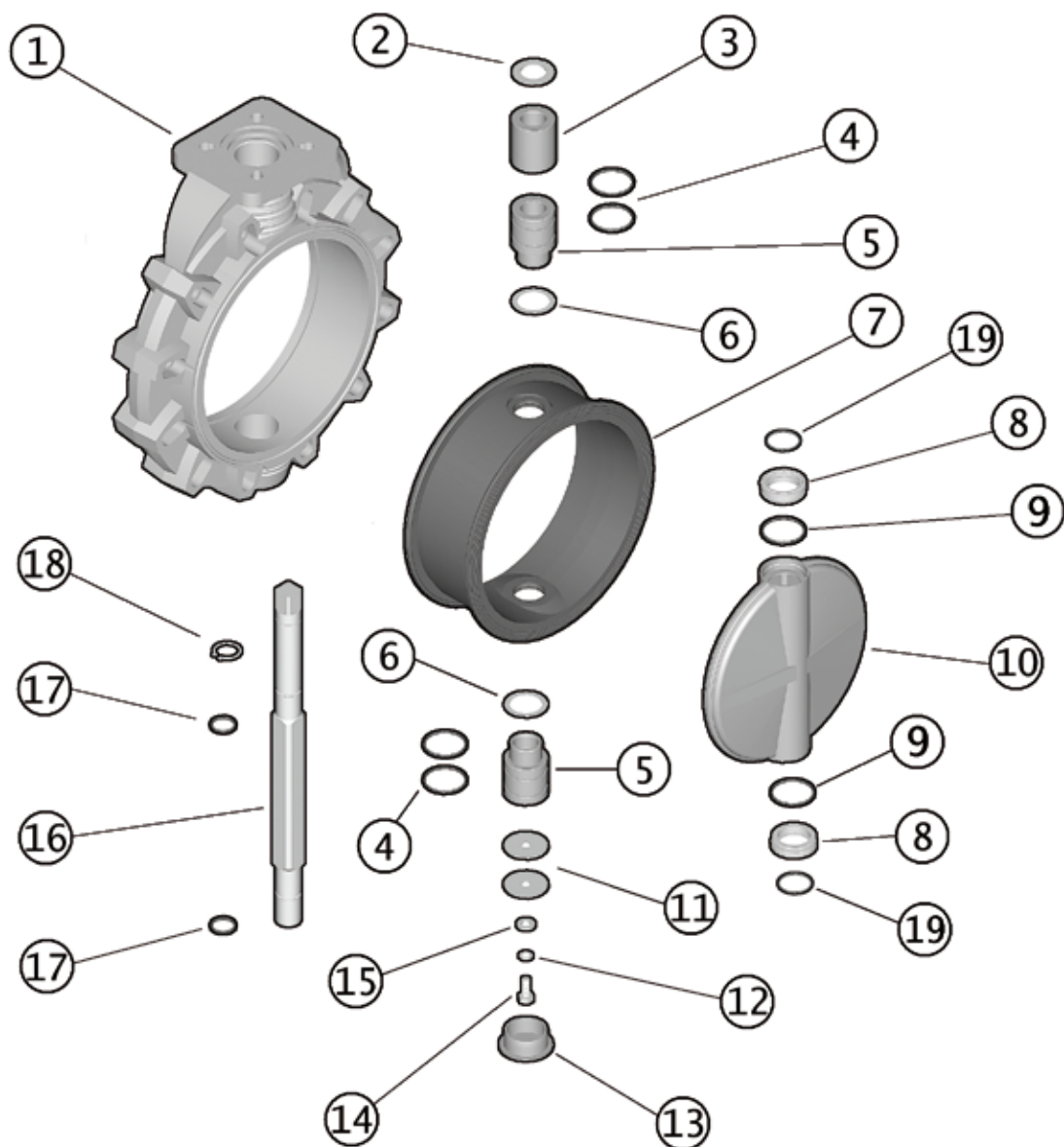
EXPLODED VIEW DN 65÷200



- | | | |
|---|---|---|
| 1 • Position indicator (PA - 1) | 9 • O-Ring (NBR - 1) | 20 • Protection plug (PE - 1) |
| 2 • Handle (HIPVC - 1) | 10 • Plate (PP-GR - 1) | 21 • Screw (STAINLESS steel - 1) |
| 3a/b • Transparent protection plug (PVC - 1) | 11 • Washer (STAINLESS steel - 2) | 22 • Washer (STAINLESS steel - 1) |
| 4 • Fastening screw (STAINLESS steel - 1) | 12 • Nut (STAINLESS steel - 2) | 23 • Anti-friction ring (PTFE - 2) |
| 5 • Washer (STAINLESS steel - 1) | 13 • Seeger ring (STAINLESS steel - 1) | 24 • Disk O-Ring (EPDM or FPM - 2) |
| 6 • Flange (PP-GR - 1) | 14 • Stem (STAINLESS steel - 1) | 25 • Disk (PVC-C - 1) |
| 7 • Screw (STAINLESS steel - 2) | 15 • Bush O-Ring (EPDM or FPM - 2) | 26 • Liner (EPDM or FPM - 1) |
| 8 • Tag holder (PVC-U - 1) | 16 • Bush (Nylon - 1) | 27 • Inserts (ABS - 4-8) |
| | 17 • Stem O-Ring (EPDM or FPM - 1) | 28 • Plug (PE - 2) |
| | 18 • Stem O-Ring (EPDM or FPM - 1) | |
| | 19 • Body (PP-GR - 1) | |

The material of the component and the quantity supplied are indicated between brackets

EXPLODED VIEW DN 250÷300



- | | | |
|--|--|---|
| 1 • Body (PP-GR - 1) | 9 • Disk O-Ring (EPDM or FPM - 2) | 16 • Stem (STAINLESS steel - 1) |
| 2 • Washer (STAINLESS steel - 1) | 10 • Disk (PVC-C - 1) | 17 • Stem O-Ring (EPDM or FPM - 2) |
| 3 • Bush (PP - 1) | 11 • Washer (STAINLESS steel - 2) | 18 • Seeger ring (STAINLESS steel - 1) |
| 4 • Bush O-Ring (EPDM or FP - 4) | 12 • Washer (STAINLESS steel - 1) | 19 • O-Ring (EPDM or FPM - 2) |
| 5 • Bush (PP - 2) | 13 • Protection plug (PE - 1) | |
| 6 • Washer (PTFE - 2) | 14 • Screw (STAINLESS steel - 1) | |
| 7 • Liner (EPDM or FPM - 1) | 15 • Washer (STAINLESS steel - 1) | |
| 8 • Anti-friction ring (PTFE - 2) | | |

The material of the component and the quantity supplied are indicated between brackets

DISASSEMBLY

DN 40÷200

- 1) Remove the LCE module consisting of the rigid transparent PVC plug (3a-3b) and white tag holder (8) and remove screw (2) and washer (3) (fig.3).
- 2) Remove the handle (2).
- 3) Remove the screws (7) and plate (10) from the body (19).
- 4) Remove the protection plug (20) and screw (21) with the washer (22).
- 5) Extract the stem (14) and disk (25).
- 6) Remove the anti-friction rings (23) and (DN 65÷200 only) O-Rings (24).
- 7) Remove the liner (26) from the body (19).
- 8) Remove the Seeger ring (13) and (DN 65÷200 only) guide bush (16).
- 9) Remove (DN 65÷200 only) the O-Rings (15) and (17, 18).

DN 250÷300

- 1) Remove the protection plug (13) and screw (14) with the washers (11-15).
- 2) Extract the stem (16) and disk (10).
- 3) Remove the seal (7) from the body (1).
- 4) Remove the Seeger ring (18) and guide bushes (5-3) with washer (2).
- 5) Extract the lower bush (5).
- 6) Remove O-Rings (4) and (17).

ASSEMBLY

DN 40÷200

- 1) Place the liner (26) on the body (19).
- 2) Insert the O-Rings (17) and (18) on the stem (14).
- 3) Insert the O-Rings (15) on the guide bush (16) and the bush on the stem. Lock the bush using the Seeger ring (13).
- 4) Position the O-Rings (24) and then the anti-friction rings (23) on the disk (25) and the disk inside the body, after having lubricated the liner (26).
- 5) Insert the through stem (14) in the body (19) and disk (25).
- 6) Tighten screw (21) with washer (22) and insert the protection plug (20).
- 7) Position the plate (10) on the body (19) and tighten screws (7).
- 8) Position the handle (2) on the stem (14).
- 9) Tighten screw (4) with washer (5) and replace the LCE module consisting of the rigid transparent PVC plug (3a-3b) and white tag holder (8).

DN 250÷300

- 1) Place the liner (7) on the body (1).
- 2) Insert the O-Rings (4) and washer (6) on bushes (5).
- 3) Insert the O-Rings (17) on the stem (16); insert the upper bush (5), bush (3), washer (2) on the stem and fix them with Seeger ring (18).
- 4) Insert the seals (19-9) on the anti-friction rings (8).
- 5) Position the washers (8) in the seatings on the disk (10), and the disk inside the body (1) after having lubricated the liner (7).
- 6) Insert the through stem (16) in the body and disk.
- 7) Position the lower bush (5) from below.
- 8) Tighten screws (14) with washers (11-15) and insert the protection plug (13).

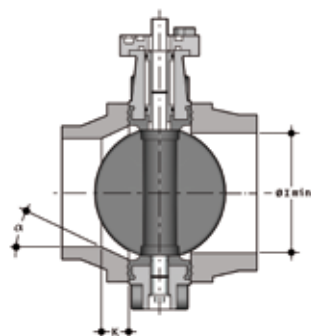
Fig. 3



Note: during assembly, it is advisable to lubricate the rubber seals. It should be remembered that mineral oils are not recommended for this task as they react aggressively with EPDM rubber.

INSTALLATION

JOINTS



Before proceeding with the installation of the stubs, check that the bore of the fittings has sufficient clearance to allow the valve disk to open correctly.

Also check the maximum coupling distance for the liner. Before proceeding with the installation of the MFK valve, check that the bore of the stub allows the correct opening of the disk.

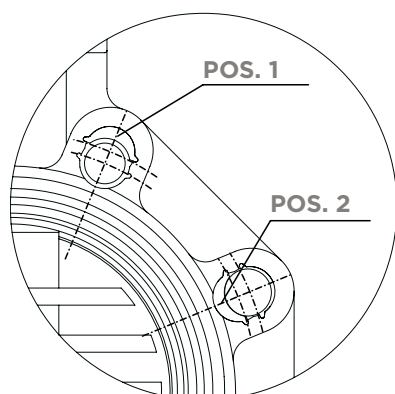
DN	l min.
40	25
50	28
65	47
80	64
100	84
125	108
150	134
200	187
250	225
300	280

For the installation of PP-PE stubs, for butt welding a short spigot or electrofusion/butt welding a long spigot, check the valve-stub-flange couplings and the K - a chamfer dimensions where necessary according to the different SDR's in the following table.

d	DN	50 40	63 50	75 65	90 80	110 100	125 100	140 125	160 150	180 150	200 200	225 200	250 250	280 250	315 300
MFK valve	50														
	63														
	75														
	90														
	110														
	140														
	160														
	225														
	280														
	315														
SDR	17/17.6										k=26.5 a=20°		k=15.7 a=25°		k=13.3 a=25°
	11								k=35 a=20°		k=35 a=25°	k=40 a=15°	k=32.5 a=25°	k=35 a=25°	k=34.5 a=25°
	7.4				k=10 a=35°	k=15 a=35°		k=20 a=30°	k=35 a=20°	k=15 a=35°	k=40 a=20°	k=35 a=30°	k=55 a=30°	k=35 a=30°	k=65 a=30°

Short/long spigot stubs according to EN ISO 15494 and DIN 16962/16963 and flange

POSITIONING THE INSERTS



Place the inserts in the holes according to the positions indicated in the table, from the side corresponding to the letters D and DN in order to facilitate the insertion of the stud-bolts and the coupling with the flanges (DN 40 ÷ 200). The self-centring inserts must be inserted in the guides in the slots in the valve body on the side with the writing, with the writing facing upwards, and positioned according to the type of flange drilling, as indicated in the following table:

DN	DIN 2501 PN6, EN 1092-1, BS 4504 PN6, DIN 8063 PN6	DIN 2501 PN10/16, EN 1092-1, BS 4504 PN 10/16, DIN 8063 PN 10/16, EN ISO 15493	BS 10 table A-D-E Spec D-E	BS 1560 cl.150, ANSI B16.5 cl.150 *	JIS B 2220 K5
DN 40	Pos. 1	Pos. 2	Pos. 1	Pos. 1	Pos. 1
DN 50	Pos. 1	Pos. 2	Pos. 1	-	N/A
DN 65	Pos. 1	Pos. 2	Pos. 1	Pos. 2	Pos. 1
DN 80	Pos. 1	Pos. 2	Pos. 1	Pos. 2	Pos. 1
DN 100	Pos. 1	Pos. 2	Pos. 1	Pos. 2	Pos. 1
DN 125	Pos. 1	Pos. 2	Pos. 1	Pos. 2	Pos. 1
DN 150	Pos. 1	Pos. 2	Pos. 1	Pos. 2	Pos. 1
DN 200	Pos. 1	PN 10 Pos. 2	Pos. 2	Pos. 2	Pos. 1

* DN 50 without inserts

** DN 40, 50, 125 without inserts

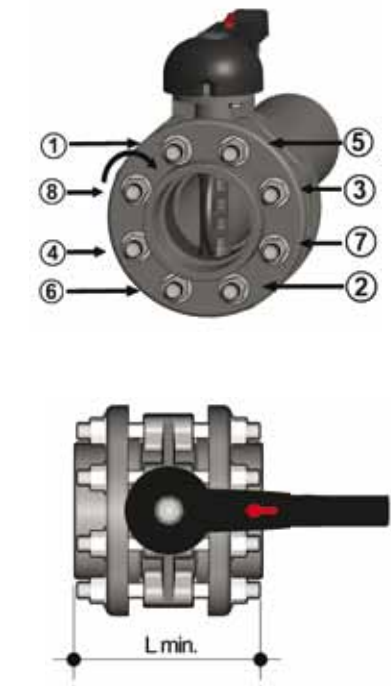
POSITIONING THE VALVE

Position the valve between two flanged stubs, taking care to respect the installation tolerances Z. It is advisable to always install the valve with the disk partially closed (it must not exit the body) and avoid any misalignment of the flanges, as this would cause leaks.

Where possible comply with the following requirements:

- Conveying dirty fluids: position the valve with the stem inclined at an angle of 45° to the pipe support plane.
- Conveying fluids with sediment: position the valve with the stem parallel to the pipe support plane.
- Conveying clean fluids: position the valve with the stem perpendicular to the pipe support plane.

TIGHTENING THE STUD-BOLTS



Before tightening the stud-bolts, it is advisable to open the disk in order to prevent damage to the seal. Tighten the stud-bolts in a uniform manner, in the order indicated in the figure, to the nominal operating torque value indicated in the table. The stud-bolts do not need to be excessively tightened in order to produce a perfect hydraulic seal. Overtightening could adversely affect the operating torque of the valve.

DN	L min.	*Nm
40	M16x150	9
50	M16x150	12
65	M16x170	15
80	M16x180	18
100	M16x180	20
125	M16x210	35
150	M20x240	40
200	M20x260	55
250	M20x310	70
300	M20x340	70

* Tightening torques for nuts and bolts on couplings with backing rings.
Values required to obtain the hydraulic test seal (1.5xPN at 20°C) (new or lubricated nuts and bolts)

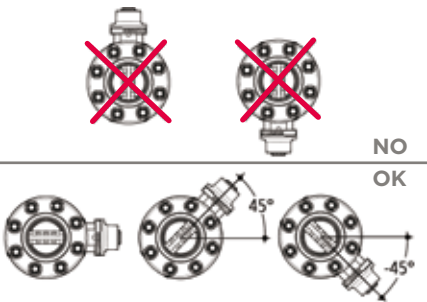
HANDLE BLOCK



Thanks to the multifunctional handle and the red manoeuvre button on the lever, you can perform a 0°-90° operation and a graduated operation by means of the 10 intermediate positions and a stop lock: the handle can be locked in each of the 10 positions by simply pressing the Free-lock button. A lock can also be installed on the handle to protect the system against tampering.

The valve is two-way and can be installed in any position. It can also be installed at end line or tank.

⚠ WARNINGS



Make sure that the valves installed on the system are suitably supported for their weight.

Always avoid sudden closing manoeuvres and protect the valve from accidental operations. To this end, it is advisable to install a reduction gear, available on request.

In the case of dirty fluids or those with sediments, install the valve inclined as shown in the figure.



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