

Sprzęgła i korpusy pośrednie



2017

Drive couplings

SGEA-SGEG-SGES series

Drive couplings provide the means by which power is transmitted from the electric motor to the hydraulic pump.

By virtue of their flexible structure, they are able to compensate angular and radial misalignments between motor and pump, and appreciably attenuate the noise generated through the drive line.

The couplings illustrated are available in aluminium and cast iron versions, with a variety of spider options, and will cover a range of applications using electric motors from **size 63**, rated **0.15 kW**, up to **size 400** rated **400 kW**.

Grub screw on all half couplings.

Cast iron half coupling SGEG available with screw mounted.

Technical specifications

SGEA - SGEG - SGES

Materials

- **Motor half-coupling**
Pressure diecast aluminium/cast iron/steel.
- **Pump half-coupling**
Pressure diecast aluminium/cast iron/steel.
- **Spiders**
Oil-resistant rubber, black, Sh.A hardness 87
Polyurethane resin, red, Sh.A hardness 95

Temperature

- **Oil-resistant rubber:**
-20°C + +90°C
- **Polyurethane resin:**
-30°C + +120°C

For temperatures outside this range, contact the MP Filtri Technical and Sales Department.



Compatibility with fluids

- **Modular bell-housing components compatible for use with:**

Mineral oils

Types HH-LL-HM-HR-HV-HC, to ISO 6743/4 standard

Water based emulsions

Types HFAE - HFAS, to ISO 6743/4 standard

Water glycol

Type HFC, to ISO 6743/4 standard

Ask for anodized version

Special Applications

- Any applications not covered by the normal indications contained in this catalogue must be evaluated and approved by the MP Filtri Technical and Sales Department.

EGE** series

Made of black oil-resistant rubber, these components serve to interconnect the two halves (motor - pump) of a flexible coupling. They are suitable for all industrial applications and will withstand temperatures from -20°C to +90°C. Shore A hardness 87

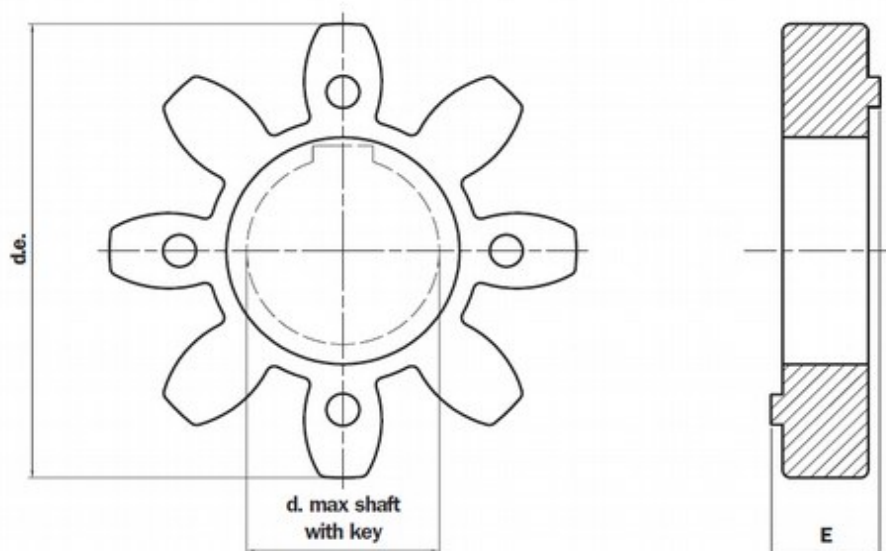


TABLE 36

Half-coupling type	Code	E	d.e.	d.max	Nominal torque Nm	Max torque Nm	Weight (kg)
SGEA01/SGEG01	EGE0	15	40	16	10	20	0,006
SGEA21	EGE2	18	65	25	95	190	0,02
SGEA31/SGEG31	EGE3	22	80	35	190	380	0,04
SGEA51	EGE5	26	105	45	310	620	0,06
SGEG40/SGES40	EGE4	24	95	40	310	620	0,09
SGEG60/SGES60	EGE6	28	120	55	430	860	0,13
SGEG80/SGES80	EGE8	38	160	75	1250	2500	0,36

EGE**RR series

Made in polyurethane Laripur - LPR202-95A, red colour, are suitable for applications where high levels of torque are transmitted. They will withstand temperatures from -30°C to +120°C. Shore A hardness 95

TABLE 37

Half-coupling type	Code	E	d.e.	d.max	Nominal torque Nm	Max torque Nm	Weight (kg)
SGEA01/SGEG01	EGE0RR	15	40	16	15	30	0,006
SGEA21	EGE2RR	18	65	25	115	230	0,02
SGEA31/SGEG31	EGE3RR	22	80	35	250	500	0,04
SGEA51	EGE5RR	26	105	45	400	800	0,06
SGEG40/SGES40	EGE4RR	24	95	40	380	760	0,09
SGEG60/SGES60	EGE6RR	28	120	55	550	1100	0,13
SGEG80/SGES80	EGE8RR	38	160	75	1400	2900	0,36
SGEG90	EGE9RP	42	200	95	8900	9900	0,59

Version for extreme temperatures available on request.

For further information, contact the MP Filtri Technical and Sales Department.

SGEA motor half-coupling aluminum

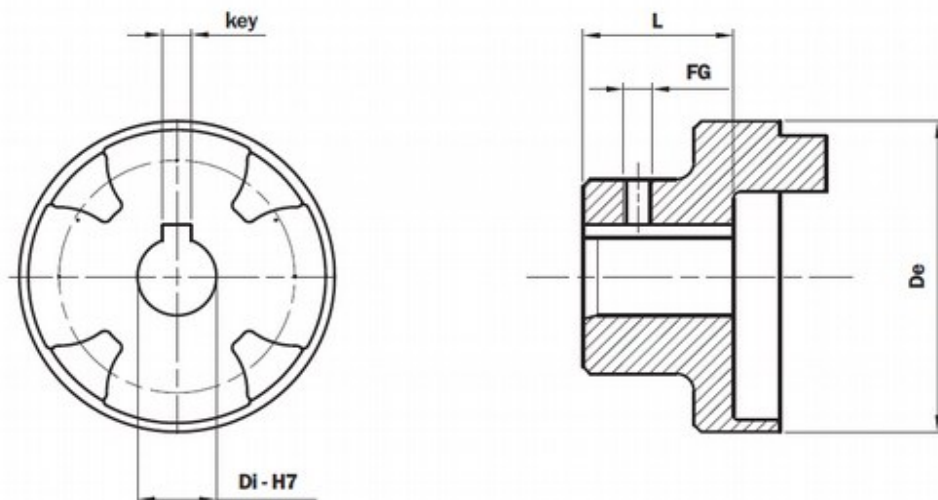


TABLE 38 - Motor half-coupling

Motor 4-pole 1500 rpm				Dimensions of motor half-coupling								
Frame size	kW	Hp	Shaft	Half-coupling code	De	L	d	Tol	key	Tol	FG	Weight (kg)
63	0.12 - 0.16	0.18 - 0.24	11x23	SGEA01M01021	43	21	11		4		M5	0,07
71	0.25 - 0.34	0.37 - 0.50	14x30	SGEA01M02028	43	28	14		5		M5	0,08
80	0.53 - 0.75	0.75 - 1	19x40	SGEA01M03040	43	40	19		6		M5	0,12
				SGEA21M03040	68	40	19		6		M6	0,30
90	1.1 - 1.5	1.5-2	24x50	SGEA01M04048	43	48	24		8		M5	0,13
				SGEA21M04048	68	48	24		8		M6	0,28
100 - 112	2.2-4	3-5.5	28x60	SGEA21M05060	68	60	28		8		M6	0,33
				SGEA31M05060	85	60	28	H7	8	D10	M8	0,48
132	5.5-7.5	7.5-12.5	38x80	SGEA31M06077	85	77	38		10		M8	0,78
				SGEA51M06077	109,5	77	38		10		M8	1,60
160	11-15	15-20	42x110	SGEA51M07109	109,5	109	42		12		M8	1,60
180	18-22	25-30	48x110	SGEA51M08109	109,5	109	48		14		M8	1,60
200	30	40	55x110	SGEA51M09109	109,5	109	55		16		M8	1,90
225	37-45	50-61	60x140	SGEA51M10109	109,5	109	60		18		M8	1,90

TABLE 39 - Pump drive half-couplings

Half-coupling code	d min	d max	D	Tol	L min	L max	Standard lengths										FG
SGEA01 *** **	11	19	43	H7	17	50	17	23	30	40	44	48	-	-	-	-	M5
SGEA21 *** **	15	24	70	H7	23	50	35	40	42	44	48	50	-	-	-	-	M6
SGEA21 *** **	25	28	70	H7	40	60	40	42	44	48	50	55	58	60	-	-	M6
SGEA31 *** **	18	32	85	H7	40	60	42	45	48	50	52	55	58	60	-	-	M8
SGEA31 *** **	38	42	85	H7	60	80	60	65	70	77	80	-	-	-	-	-	M8
SGEA51 *** **	18	40	109,5	H7	40	70	42	45	48	50	52	55	58	60	65	70	M8
SGEA51 *** **	38	55	109,5	H7	70	109	70	75	80	85	90	95	100	105	109	-	M8

Complete the half-coupling designation with the pump interface code and the length.

Ex. **SGEA51D02040** **D02** See **Table 44** **040** Half-coupling length (see **Table 39**).

Note: Screw not included

SGEG half-coupling cast iron

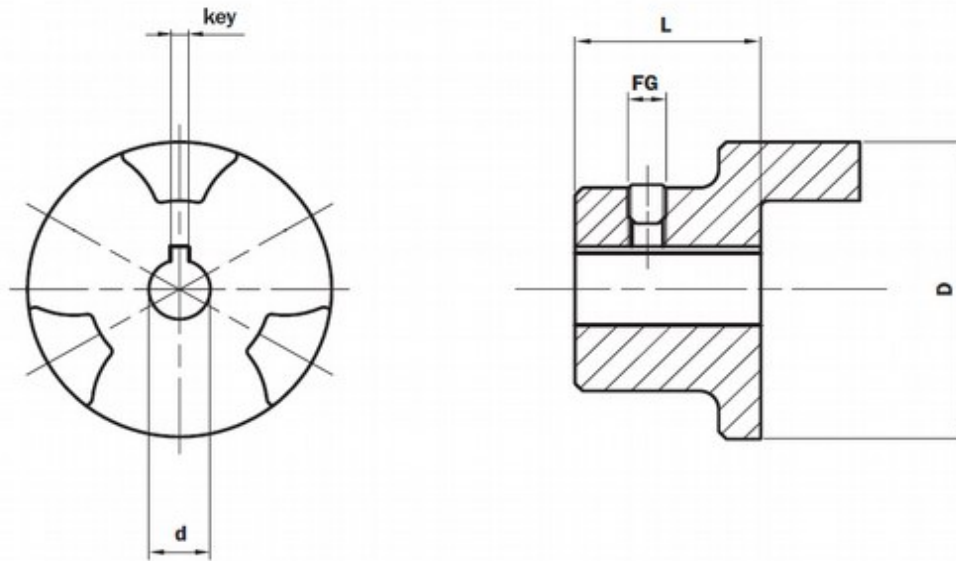


TABLE 40 - Motor half-coupling

Motor 4-pole 1500 rpm				Dimensioni semigiunti lato motore									
Frame size	kW	Hp	Shaft	Half-coupling code	D	L	d	Tol	key	Tol	FG	Weight (kg)	
63	0.12 - 0.16	0.18 - 0.24	11x23	SGEG01M01021	43	21	11	H7	4		M6	0,32	
71	0.25 - 0.34	0.37 - 0.50	14x30	SGEG01M02028	43	28	14		5		M6	0,42	
80	0.53 - 0.75	0.75 - 1	19x40	SGEG01M03040	43	40	19		6		M6	0,61	
90	1.1 - 1.5	1.5-2	24x50	SGEG01M04050	43	50	24		8		M6	0,77	
100 - 112	2.2-4	3-5.5	28x60	SGEG31M05060	80	60	28	H7	8		M6	2,35	
				SGEG40M05060	95	60	28		8		M8	2,65	
132	5.5-7.5	7.5-12.5	38x80	SGEG31M06080	80	80	38		10		JS9	M6	3,15
				SGEG40M06080	95	80	38		10			M8	3,55
160	11-15	15-20	42x110	SGEG40M07110	95	110	42	12	M8	4,70			
180	18-22	25-30	48x110	SGEG40M08110	95	110	48	14	M8	4,55			
200	30	40	55x110	SGEG40M09110	95	110	55	F6	16		M8	4,35	
				SGEG60M09110	120	110	55		16		M8	9,00	
225	37-45	50-60	60x140	SGEG60M10140	120	140	60		18		M8	12,30	
250	55	75	65x140	SGEG60M11140	120	140	65		18		M8	12,00	
				SGEG80M11140	160	140	65	18	M8	18,30			
280	75-90	102-122	75x140	SGEG80M12140	160	140	75	20		M10	17,70		
				SGEG90M12100	200	100	75	20		M10	21,00		
315	110-200	150-272	80x170	SGEG80M13170	160	170	80	22		M10	20,60		
				SGEG90M13100	200	100	80	22		M10	20,00		
355	250-315	340-428	95x140	SGEG90M15100	200	100	95	25		M10	19,00		
400	355-400	482-544	100x210	SGEG90M16100	200	100	100	80		M10	18,00		

TABLE 41 - Pump drive half-couplings

Half-coupling code	d min	d max	Tol	D	L min	L max	Standard lengths
SGEG01 *** **	/	24	H7	40	20	50	every 5 mm
SGEG30 *** **	/	42	H7	80	30	80	
SGEG40 *** **	/	55	H7	95	30	110	
SGEG60 *** **	/	75	H7	120	40	140	
SGEG80 *** **	/	85	H7	160	50	170	
SGEG90 *** **	/	100	H7	200	40	100	

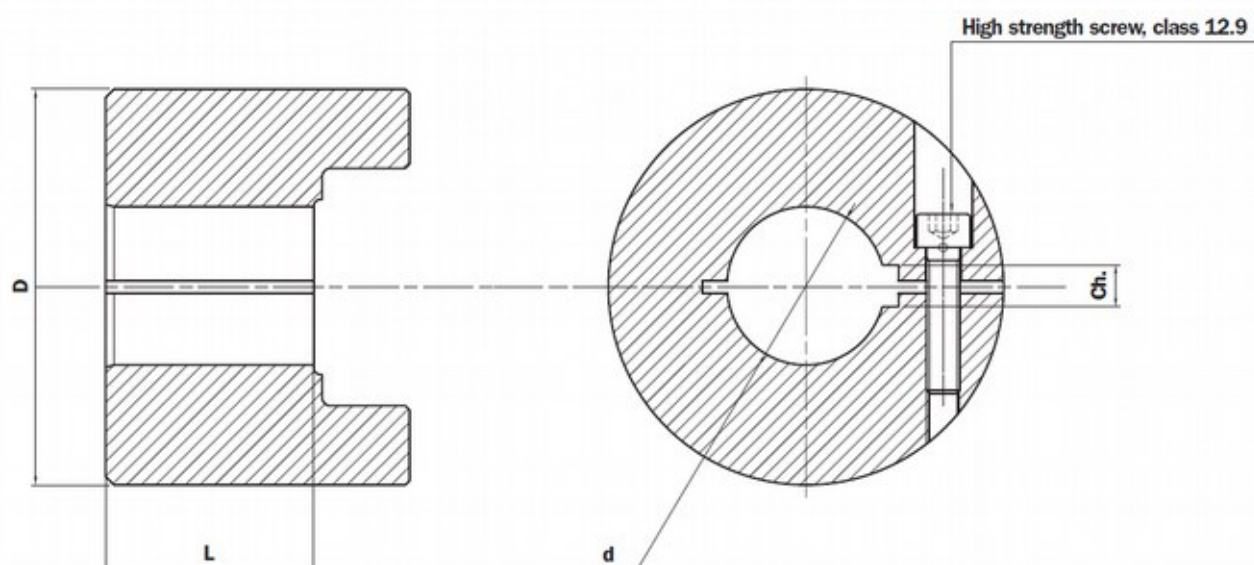
All SGEG series cast iron half-couplings are supplied with a grub screw hole as standard, and with a grub screw UNI 5929 DIN 916 fitted to the hub.

Note: For lengths other than those indicated in table 41, contact the MP Filtri Technical and Sales Department.

SGES*GO series pump drive half-couplings

SGES series half-couplings, made of hardened and tempered C40 steel, are designed to eliminate any clearance between the hub and the shaft on which they are mounted.

All SGES couplings are balanced and supplied complete with property class 12.9 fixing screws.



SGES series motor half-couplings - steel

TABLE 42

Motor 4-pole 1500 rpm				Dimensions of motor half-coupling								
Frame size	kW	HP	Shaft	Half-coupling code	D	L	d	Tol	key	Tol	Screw	Weight (kg)
132	5.5-7.5	7.5-12.5	38x80	SGES40M06050G0	95	50	38		10		M8	4,00
160	11-15	15-20	42x110	SGES40M07065G0	95	65	42		12		M8	5,00
180	18-22	25-30	48x110	SGES40M08065G0	95	65	48		14		M8	5,00
200	30	40	55x110	SGES60M09085G0	120	85	55	H7	16	JS9	M10	8,00
225	37-45	50-61	60x140	SGES60M10085G0	120	85	60		18		M10	8,00
250	55	75	65x140	SGES60M11085G0	120	85	65		18		M10	8,00
280	75-90	102-122	75x140	SGES60M12085G0	120	85	75		20		M10	8,00
315	110-200	150-272	80x170	SGES80M13085G0	160	85	80		22		M10	13,00

SGES series pump half-couplings - steel

TABLE 43

Half-coupling code	d min	d max	Tol	D	L
SGES40 *** **	/	55	H7	95	35
SGES60 *** **	/	65	H7	120	65
SGES80 *** **	/	75	H7	160	85

Complete the half-coupling designation with the pump interface code and the length.

Ex. SGES40PD02050 PD02 See Table 44 - 45

Half-coupling bore size codes

TABLE 44

Bore size code - cylindrical shafts (SGEA - SGEG - SGES series)											
Diameter	key	Code	Diameter	key	Code	Diameter	key	Code	Diameter	key	Code
12	4	C00	35	10	D05	14	5	M02	19,05	4,76	G01
15	5	C01	40	12	D06	19	6	M03	22,22	4,76	G02
16	4	C02	45	14	D07	24	8	M04	22,22	6,35	G03
16	5	C03	50	14	D08	28	8	M05	25,4	4,76	G04
17	5	C04	70	20	D09	38	10	M06	25,4	6,35	G05
18	6	C05	22	8	D10	42	12	M07	31,75	6,35	G06
20	5	C06	8	3	E00	48	14	M08	31,75	7,94	G07
19	5	C07	10	3	E01	55	16	M09	34,94	7,94	G08
30	10	C08	22	5	E02	60	18	M10	38,1	9,52	G09
20	6	C09	32	8	E03	65	18	M11	41,27	9,52	H00
16	5	C10	35	8	E04	75	20	M12	44,45	11,11	H01
22	6	D00	82	22	E05	80	22	M13	50,8	12,7	H02
24	6	D01	25	7	E06	90	25	M14	53,94	12,7	H03
25	8	D02	63	18	E07	95	25	M15	19,02	3,17	H04
30	8	D03	9	3	M00	100	28	M16	25,4	4,76	H05
32	10	D04	11	4	M01	11,11	3,18	G00	15,87	4,76	H06

Combinations with double key:

G02+G03 **2E** G06+G07 **2G** C07+M03 **2L** D01+M04 **2N**
 G04+G05 **2F** C02+C03 **2H** C06+C09 **2M** D03+C08 **2P**

Ex. Code SGEA21G020502E

TABLE 45

Bore size code - splined shafts (SGEG - SGES half-couplings only)											
Profile	Standard	Code	Profile	Standard	Code	Profile	Standard	Code	Profile	Standard	Code
17th 8/16	Diametral Pitch	PD01	30th 32/64	Diametral Pitch	PD24	W55x2x26	DIN 5480	PA16	A55x50	DIN 5482	PB18
14th 12/24	Diametral Pitch	PD02	33th 32/64	Diametral Pitch	PD25	W60x2x28	DIN 5480	PA17	A58x53	DIN 5482	PB19
16th 12/24	Diametral Pitch	PD03	23th 40/80	Diametral Pitch	PD26	W70x2x34	DIN 5480	PA18	A60x55	DIN 5482	PB20
17th 12/24	Diametral Pitch	PD04	36th 48/96	Diametral Pitch	PD27	W80x2x38	DIN 5480	PA19	A62x57	DIN 5482	PB21
9th 16/32	Diametral Pitch	PD05	41th 48/96	Diametral Pitch	PD28	W60x3x18	DIN 5480	PA20	A65x60	DIN 5482	PB22
11th 16/32	Diametral Pitch	PD06	47th 48/96	Diametral Pitch	PD29	W70x3x22	DIN 5480	PA21	A68x62	DIN 5482	PB23
12th 16/32	Diametral Pitch	PD07	13th 8/16	Diametral Pitch	PD30	A15x12	DIN 5482	PB01	A70x64	DIN 5482	PB24
13th 16/32	Diametral Pitch	PD08	15th 8/16	Diametral Pitch	PD31	A17x14	DIN 5482	PB02	A72x66	DIN 5482	PB25
15th 16/32	Diametral Pitch	PD09	W18x1,25x13	DIN 5480	PA01	A18x15	DIN 5482	PB03	A75x69	DIN 5482	PB26
21th 16/32	Diametral Pitch	PD10	W20x1,25x14	DIN 5480	PA02	A20x17	DIN 5482	PB04	A78x72	DIN 5482	PB27
23th 16/32	Diametral Pitch	PD11	W25x1,25x18	DIN 5480	PA03	A22x19	DIN 5482	PB05	A80x74	DIN 5482	PB28
27th 16/32	Diametral Pitch	PD12	W28x1,25x21	DIN 5480	PA04	A25x22	DIN 5482	PB06	A82x76	DIN 5482	PB29
40th 16/32	Diametral Pitch	PD13	W32x1,25x24	DIN 5480	PA05	A28x25	DIN 5482	PB07	A85x79	DIN 5482	PB30
20th 24/48	Diametral Pitch	PD14	W38x1,25x29	DIN 5480	PA06	A30x27	DIN 5482	PB08	A88x82	DIN 5482	PB31
21th 24/48	Diametral Pitch	PD15	W30x2x14	DIN 5480	PA07	A32x28	DIN 5482	PB09	8x10	DIN 5481	PC01
23th 24/48	Diametral Pitch	PD16	W32x2x14	DIN 5480	PA08	A35x31	DIN 5482	PB10	10x12	DIN 5481	PC02
25th 24/48	Diametral Pitch	PD17	W35x2x16	DIN 5480	PA09	A38x34	DIN 5482	PB11	12x14	DIN 5481	PC03
26th 24/48	Diametral Pitch	PD18	W37x2x17	DIN 5480	PA10	A40x36	DIN 5482	PB12	15x17	DIN 5481	PC04
27th 12/48	Diametral Pitch	PD19	W38x2x18	DIN 5480	PA11	A42x38	DIN 5482	PB13	17x20	DIN 5481	PC05
28th 24/48	Diametral Pitch	PD20	W40x2x18	DIN 5480	PA12	A45x41	DIN 5482	PB14	21x24	DIN 5481	PC06
29th 24/48	Diametral Pitch	PD21	W42x2x18	DIN 5480	PA13	A48x44	DIN 5482	PB15	26x30	DIN 5481	PC07
32th 24/48	Diametral Pitch	PD22	W45x2x21	DIN 5480	PA14	A50x45	DIN 5482	PB16	30x34	DIN 5481	PC08
21th 32/64	Diametral Pitch	PD23	W50x2x24	DIN 5480	PA15	A52x47	DIN 5482	PB17	60x65	DIN 5481	PC09

For splined profiles other than those indicated in the table, contact the MP Filtri S.p.A. Technical and Sales Department.

Monobloc bell-housing

LMC series

LMC series monobloc bell-housings for gear pumps are used to interconnect **UNEL-MEC frame electric motors with B3 - B5 - B14** flange, and internal gear pumps with standard rectangular flange.

Accordingly, these components can be classified as standard units in terms both of the pump flange fixing holes, and of the shaft design. Available with or without a removable centre ring, they will cover the majority of applications within a range including in electric motors from size **63** rated **0.12 kW**, up to size **280** rated **75 kW**.

Technical specifications

LMC

Materials

- **Monobloc bell-housing**
Pressure diecast aluminium alloy.
- **Pump flange**
Pressure diecast aluminium alloy.
- **Foot bracket**
Pressure diecast aluminium alloy.
- **Damping ring**
Vulcanized aluminium
- **Gaskets**
Special paper (Guarnital).

Temperature

- $-30^{\circ}\text{C} \div +80^{\circ}\text{C}$
For temperatures outside this range,
contact the MP Filtri Technical and Sales Department.

Compatibility with fluids

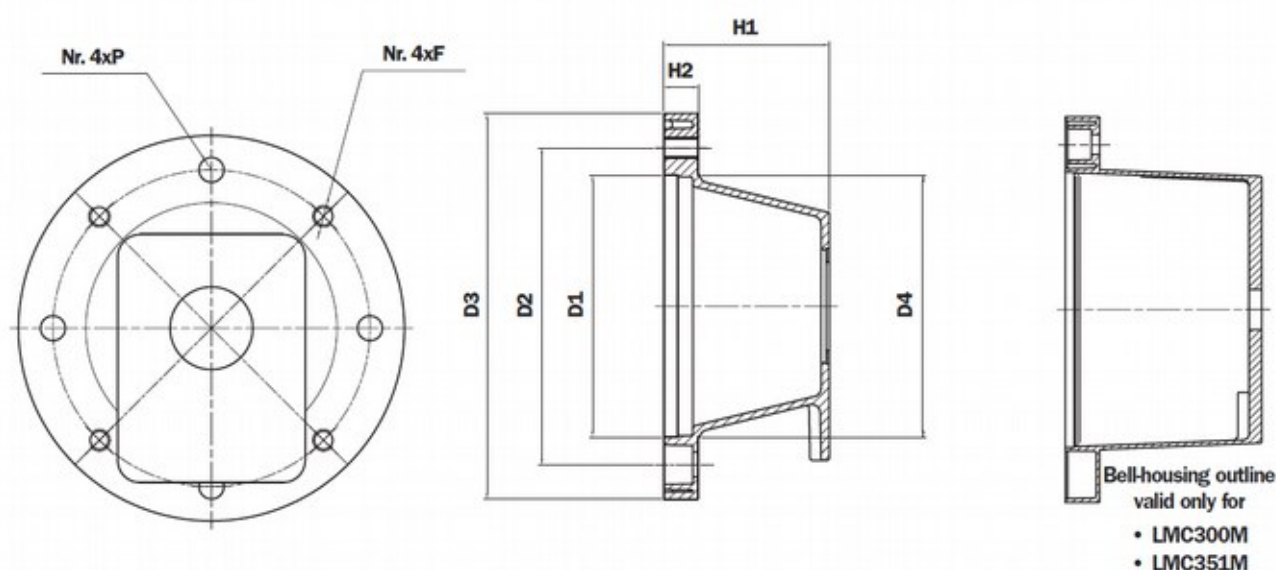
- **Monobloc bell-housing compatible for use with:**
 - Mineral oils**
Types HH-LL-HM-HR-HV-HC, to ISO 6743/4 standard
 - Water based emulsions**
Types HFAE - HFAS, to ISO 6743/4 standard
 - Water glycol**
Type HFC, to ISO 6743/4 standard
- Ask for anodized version**

Special Applications

- **Any applications not covered by the normal indications contained in this catalogue must be evaluated and approved by the MP Filtri Technical and Sales Department.**



Monobloc bell-housing for gear pumps



The auxiliary flange, if specified, is supplied already fitted to the bell-housing (MODUL-2).

Note: The hole made in the tank cover should be 2 mm larger than dimension D4

Machining tolerances

D1	F8
Spigot hole	H7
H1	± 0,15 mm

Concentricity of D1/Spigot hole

LMC 090 - LMC 160	0,15 mm
LMC 200 - LMC 350	0,20 mm
LMC 300 - LMC 450	0,25 mm

TABLE 12

Electric motor, 4-pole, 1500 rpm - B3/B5				Dimensions of LMC monobloc bell-housing											Weight (kg)
Frame size	kW	Hp	Shaft	Bell-housing code	Foot bracket code	Damping ring code	D1	D2	D3	D4	H1	H2	F	P	
63	0.12-0.18	0.16-0.24	11x23	LMC 140	/	/	95	115	140	100		13	M8	9	0,35
63	0.12-0.18	0.16-0.24	11x23	LMC 141	/	/	95	115	140	100		13	M8	9	0,35
71	0.25-0.37	0.34-0.50	14x30	LMC 160	PDM A 160	/	110	130	160	110		15	M8	9	0,44
71	0.25-0.37	0.34-0.50	14x30	LMC 161	PDM A 160	/	110	130	160	110		15	M8	9	0,44
80	0.53-0.75	0.75-1	19x40	LMC 200	PDM A 200	ANM A 200	130	165	200	135		18	M10	11	0,68
90	1.1-1.5	1.5-2	24x50	LMC 201	PDM A 200	ANM A 200	130	165	200	135		18	M10	11	0,80
100-112	2.2-4	3-5.5	28x60	LMC 250	PDM A 250	ANM A 250	180	215	250	185		19	M12	14	1,16
132	5.5-7.5	7.5-12.5	38x80	LMC 300	PDM A 300	ANM A 300	230	265	300	235		23	M12	14	2,55
160	11-15	15-20	42x110	LMC 351	PDM A 350	ANM A 350	250	300	350	255		31	M16	18	4,90
180	18-22	25-30	48x110	LMC 351	PDM A 350	ANM A 350	250	300	350	255		31	M16	18	4,90
				Per dimensioni vedi pag. 55		Per dimensioni vedi pag. 56					Vedi Tab. 15-16 17				

TABLE 13

Electric motor, 4-pole, 1500 rpm - B14				Dimensions of LMC monobloc bell-housing											Weight (kg)
Frame size	kW	Hp	Shaft	Bell-housing code	Foot bracket code	Damping ring code	D1	D2	D3	D4	H1	H2	F	P	
63	0.12-0.18	0.16-0.24	11x23	LMC 090	/	/	60	75	90	63		7	7	7	0,30
71	0.25-0.37	0.34-0.50	14x30	LMC 105	/	/	70	85	105	74		8	6	6	0,35
80	0.53-0.75	0.75-1	19x40	LMC 120	/	/	80	100	120	84		9	7	7	0,35
90	1.1-1.5	1.5-2	24x50	LMC 141	/	/	95	115	140	100		13	M8	9	0,51
100-112	2.2-4	3-5.5	28x60	LMC 161	PDM A 160	/	110	130	160	110		15	M8	9	0,60
				For dimension see page 55		For dimension see page 56					See Tab. 18				

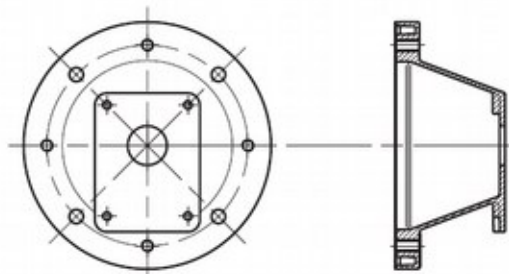
To determine dimension H1 of the bell-housing see pages 22 - 23 - 24 - 25

Note: For larger dimensions, contact the MP Filtri Technical and Sales Department.

Versions

In order to ensure greater adaptability across a wide range of applications, **LMC** monobloc bell-housings for gear pumps can be supplied in 4 different versions:

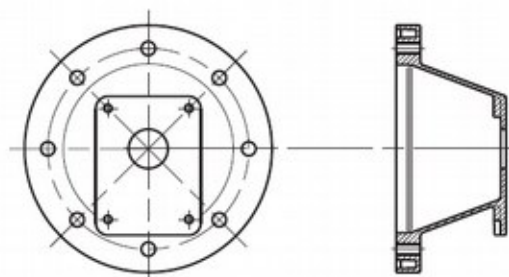
LMC *** 4S



Without centre ring allowing removal of half-coupling (which as a rule is keyed permanently to the pump shaft); motor mounting flange drilled with 4 clearance holes + 4 threaded holes.

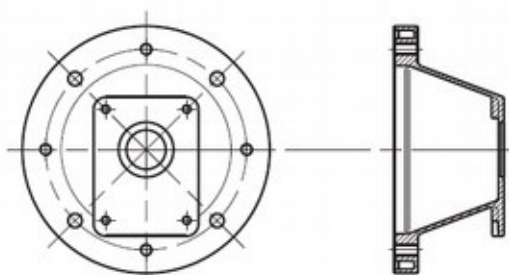
Used normally for vertically mounted motor and pump units with pump submerged in the oil tank.

LMC *** 8S



Without centre ring allowing removal of half-coupling (which as a rule is keyed permanently to the pump shaft); motor mounting flange drilled with 8 clearance holes. Used normally for vertically mounted motor and pump units with pump submerged in the oil tank; allows greater flexibility for directional positioning of the hydraulic pump inside the tank, according to constructional requirements.

LMC *** 4E

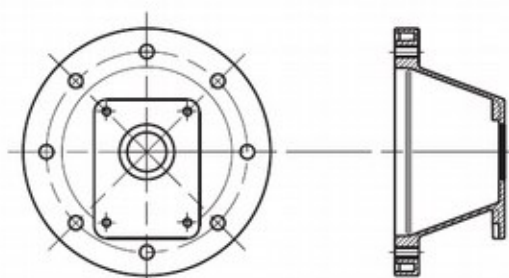


With centre ring allowing removal of half-coupling (which as a rule is keyed permanently to the pump shaft); motor mounting flange drilled with 4 clearance holes + 4 threaded holes.

Normally used for motor and pump units mounted horizontally on the tank lid or on the machine, for maximum ease of maintenance. With this type of mounting, in effect, the hydraulic pump can be removed without removing the motor.

The half-coupling mounted to the shaft passes through the spigot hole.

LMC *** 8E



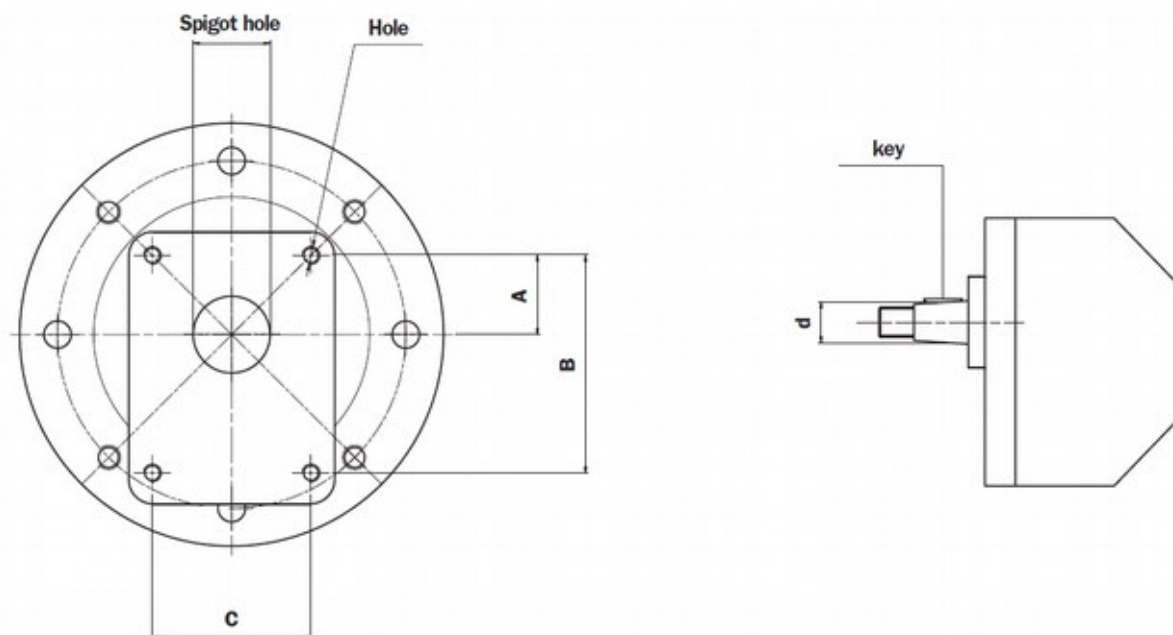
With centre ring allowing removal of half-coupling (which as a rule is keyed permanently to the pump shaft); motor mounting flange drilled with 8 clearance holes.

Normally used for motor and pump units mounted horizontally on the tank lid or on the machine; offers maximum ease of maintenance, and enables directional positioning of the pump.

With this type of mounting, in effect, the hydraulic pump can be removed without removing the motor.

The half-coupling mounted to the shaft passes through the spigot hole.

Designation of pump flange and shaft



The auxillary flange, if specified, is supplied already fitted to the bell-housing (MODUL-2).

- For technical information see "DRIVE COUPLINGS".

TABLE 14

Pump group	Spigot hole	A	B	C	Hole	Pump flange code	Shaft type	d	key	Pump half-coupling code
05	22	25.5	66	/	M6	FS05M	cilindrico	6	2	FS05M
	22	25.5	66	/	M6	FS05C	cilindrico	7	2	FS05C
1	25.4	26.2	72	52	M6	FS100	con. 1:8	9.7	2.4	FS100
	30	24.5	73	56	M6	FS1M0	cilindrico	12	3	FS1C0
	30	24.5	73	56	M6	FS1M0	con. 1:8	13.9	3	FS1M0
2	36.5	32.5	96	71.5	M8	FS200	con. 1:8	17.2	3.2/4	FS200
3	50.8	43	128	98.5	M8	FS25T	con. 1:8	22.2	4	FS300
	50.8	42	128	98.5	M10	FS300	con. 1:8	22.2	4	FS300
	50.8	43	128	98.5	M10	FS3M0	con. 1:8	22.2	4	FS300
	50.8	45	137	98.5	M10	FS3T0	con. 1:8	22.2	4	FS300
3.5	60	48.5	148	127	M12	FS35M	con. 1:8	25.6	4.76/5	FS350
	60.3	49.5	149.5	114.3	M10	FS350	con. 1:8	25.6	4.76/5	FS350
4	63.5	65	196	142.8	M12	FS4M0	con. 1:8	33.3	6.35/7	FS400
	63.5	64.3	188	143	M12	FS400	con. 1:8	33.3	6.35/7	FS400
Bosch	32	10.3	40	40	M8	FSZBR	con. 1:5	9.8	2	FSZBR
	80	34.5	100	72	M8	FSZFR	con. 1:5	16.9	3	FSZFR
	105	48	145	102	M10	FSZGR	con. 1:5	25.2	5	FSZGR

Note: For any dimensions not indicated in Table 14, see tables 15 - 16 - 17 - 18 showing motor-pump combinations.

Table of combinations

Electric motors with B3 - B5 flange gear pumps

TABLE 15

Electric motor, 4-pole, 1500 rpm				Components of combination						
Motor size	kW	Hp	Motor shaft	Pump code	Bell-housing code	H1	Motor half-coupling code	Spider code	Pump half-coupling code	Centre ring code
63	0.12 0.18	0.16 0.24	11x23	FS05M	LMC140MFS05M4S	60	SGEA01M01021	EGE 0	SGEA01FS05M	/
				FS05C	LMC140MFS05M4S				SGEA01FS05C	/
				FS100	LMC140MFS100**				SGEA01FS100	ANC01FS100
				FS1C0	LMC140MFS1M0**				SGEA01FS1C0	ANC01FS1M0
				FS1M0	LMC140MFS1M0**				SGEA01FS1M0	ANC01FS1M0
				FSZBR	LMC140MFSZBR4S				SGEA01FSZBR	/
71	0.25 0.37	0.34 0.50	14x30	FS05M	LMC160MFS05M4S	70	SGEA01M02028	EGE 0	SGEA01FS05M	/
				FS05C	LMC160MFS05M4S				SGEA01FS05C	/
				FS100	LMC160MFS100**				SGEA01FS100	ANC01FS100
				FS1C0	LMC160MFS1M0**				SGEA01FS1C0	ANC01FS1M0
				FS1M0	LMC160MFS1M0**				SGEA01FS1M0	ANC01FS1M0
				FSZBR	LMC160MFSZBR4S				SGEA01FSZBR	/
80	0.53 0.75	0.75 1	19x40	FS05M	LMC200MFS05M4S	87	SGEA01M03048	EGE 0	SGEA01FS05M	/
				FS05C	LMC200MFS05M4S				SGEA01FS05C	/
				FS100	LMC200MFS100**				SGEA01FS100	ANC01FS100
				FS1C0	LMC200MFS1M0**				SGEA01FS1C0	ANC01FS1M0
				FS1M0	LMC200MFS1M0**				SGEA01FS1M0	ANC01FS1M0
				FSZBR	LMC200MFSZBR4S				SGEA01FSZBR	/
				FS200	LMC201MFS200**	95	SGEA21M03048	EGE 2	SGEA21FS200	ANC02FS200
				FSZFR	LMC201MFSZFR4S				SGEA21FSZFR	/
90	1.1 1.5	1.5 2	24x50	FS05M	LMC200MFS05M4S	87	SGEA01M04048	EGE 0	SGEA01FS05M	/
				FS05C	LMC200MFS05M4S				SGEA01FS05C	/
				FS100	LMC200MFS100**				SGEA01FS100	ANC01FS100
				FS1C0	LMC200MFS1M0**				SGEA01FS1C0	ANC01FS1M0
				FS1M0	LMC200MFS1M0**				SGEA01FS1M0	ANC01FS1M0
				FSZBR	LMC200MFSZBR4S				SGEA01FSZBR	/
				FS200	LMC201MFS200**	95	SGEA21M04048	EGE 2	SGEA21FS200	ANC02FS200
				FSZFR	LMC201MFSZFR4S				SGEA21FSZFR	/
100 112	2.2 4	3 5.5	28x60	FS100	LMC250MFS1004S	105	SGEA21M05055	EGE 2	SGEA21FS100	/
				FS1C0	LMC250MFS1M04S				SGEA21FS1C0	/
				FS1M0	LMC250MFS1M04S				SGEA21FS1M0	/
				FSZBR	LMC250MFSZBR4S				SGEA21FSZBR	/
				FS200	LMC250MFS200**				SGEA21FS200	ANC02FS200
				FSZFR	LMC250MFSZFR4S				SGEA21FSZFR	/
				● FS25T	LMC250MFS25T4E	126			SGEA21FS300	ANC0005
				● FS300	LMC250MFS3004E				SGEA21FS300	ANC0005
				● FS3M0	LMC250MFS3M04E				SGEA21FS300	ANC0005
				● FS3T0	LMC250MFS3T04E				SGEA21FS300	ANC0005

● Bell-housing with auxiliary flange + centre ring

Table of combinations

Electric motors with B3 - B5 flange gear pumps

TABLE 16

Electric motor, 4-pole, 1500 rpm				Components of combination						
Motor size	kW	Hp	Motor shaft	Pump code	Bell-housing code	H1	Motor half-coupling code	Spider code	Pump half-coupling code	Centre ring code
132	5.5 7.5	7.5 10	38x80	FS100	LMC300MFS1004S	145	SGEA31M06077	EGE 3	SGEA31FS100	/
				FS1C0	LMC300MFS1M04S				SGEA31FS1C0	/
				FS1M0	LMC300MFS1M04S				SGEA31FS1M0	/
				FSZGR	LMC300MFSZGR4S				SGEA31FSZGR	/
				FS200	LMC300MFS200**				SGEA31FS200	ANC03FS200
				FSZFR	LMC300MFSZFR4S				SGEA31FSZFR	/
				FS25T	LMC300MFS25T**				SGEA31FS300	ANC03FS300
				FS300	LMC300MFS300**				SGEA31FS300	ANC03FS300
				FS3M0	LMC300MFS3M0**				SGEA31FS300	ANC03FS300
				FS3T0	LMC300MFS3T0**				SGEA31FS300	ANC03FS300
				FS35M	LMC300MFS35M**				SGEA31FS350	ANC03FS350
				FS350	LMC300MFS350**				SGEA31FS350	ANC03FS300
160	11 15	15 20	42x110	FSZGR	LMC351MFSZGR4S	179	SGEA51M07109	EGE 5	SGEA51FSZGR	/
				FS200	LMC351MFS2004S				SGEA51FS200	/
				FSZFR	LMC351MFSZFR4S				SGEA51FSZFR	/
				FS25T	LMC351MFS25T**				SGEA51FS300	ANC04FS300
				FS300	LMC351MFS300**				SGEA51FS300	ANC04FS300
				FS3M0	LMC351MFS3M0**				SGEA51FS300	ANC04FS300
				FS3T0	LMC351MFS3T0**				SGEA51FS300	ANC04FS300
				FS35M	LMC351MFS35M**				SGEA51FS350	ANC04FS350
180	18.5 22	25 30	48x110	FS350	LMC351MFS350**				SGEA51FS350	ANC04FS350
				FSZGR	LMC351MFSZGR4S	179	SGEA51M08109	EGE 5	SGEA51FSZGR	/
				FS200	LMC351MFS2004S				SGEA51FS200	/
				FSZFR	LMC351MFSZFR4S				SGEA51FSZFR	/
				FS25T	LMC351MFS25T**				SGEA51FS300	ANC04FS300
				FS300	LMC351MFS300**				SGEA51FS300	ANC04FS300
				FS3M0	LMC351MFS3M0**				SGEA51FS300	ANC04FS300
				FS3T0	LMC351MFS3T0**				SGEA51FS300	ANC04FS300
				FS35M	LMC351MFS35M**				SGEA51FS350	ANC04FS350
				FS350	LMC351MFS350**				SGEA51FS350	ANC04FS350

For dimensions of motor half-coupling
For dimensions of spiders
For dimensions of pump half-coupling

see page 25
see page 49
see page 25

Table of combinations

Electric motors with B14 flange gear pumps

TABLE 18

Electric motor, 4-pole, 1500 rpm				Components of combination						
Motor size	kW	Hp	Motor shaft	Codice pompa	Bell-housing code	H1	Motor half-coupling code	Spider code	Pump half-coupling code	Centre ring code
63	0.12 0.18	0.16 0.25	11x23	FS05M	LMC090MFS05M4E	60	SGEA01M01021	EGE 0	SGEA00FS05M	ANCA001
				FS05C	LMC090MFS05M4E				SGEA01FS05C	ANCA001
				FS100	LMC090MFS1004E				SGEA01FS100	ANC01FS100
				FS1C0	LMC090MFS1M04E				SGEA01FS1C0	ANC01FS1M0
				FS1M0	LMC090MFS1M04E				SGEA01FS1M0	ANC01FS1M0
				FSZBR	LMC090MFSZBR4E				SGEA01FSZBR	/
71	0.25 0.37	0.35 0.55	14x30	FS05M	LMC105MFS05M4E	67	SGEA01M02028	EGE 0	SGEA01FS05M	ANCA001
				FS05C	LMC105MFS05M4E				SGEA01FS05C	ANCA001
				FS100	LMC105MFS1004E				SGEA01FS100	ANC01FS100
				FS1C0	LMC105MFS1C04E				SGEA01FS1C0	ANC01FS1M0
				FS1M0	LMC105MFS1M04E				SGEA01FS1M0	ANC01FS1M0
				FSZBR	LMC105MFSZBR4E				SGEA01FSZBR	/
80	0.55 0.75	0.75 1	19x40	FS05M	LMC120MFS05M4E	87	SGEA01M03048	EGE 0	SGEA01FS05M	ANCA001
				FS05C	LMC120MFS05M4E				SGEA01FS05C	ANCA001
				FS100	LMC120MFS1004E				SGEA01FS100	ANC01FS100
				FS1C0	LMC120MFS1M04E				SGEA01FS1C0	ANC01FS1M0
				FS1M0	LMC120MFS1M04E				SGEA01FS1M0	ANC01FS1M0
				FSZBR	LMC120MFSZFR4S				SGEA01FSZBR	/
				FS200	LMC121MFS2004E	95	SGEA21M03048	EGE 2	SGEA21FS200	ANC02FS200
				FSZFR	LMC121MFSZFR4S				SGEA21FSZFR	/
90	1.1 1.5	1.5 2	24x50	FS05M	LMC141MFS05M4S	95	SGEA01M04048	EGE 0	SGEA01FS05M	ANCA001
				FS05C	LMC141MFS05M4S				SGEA01FS05C	ANCA001
				FS100	LMC141MFS100**				SGEA01FS100	ANC01FS100
				FS1C0	LMC141MFS1M0**				SGEA01FS1C0	ANC01FS1M0
				FS1M0	LMC141MFS1M0**				SGEA01FS1M0	ANC01FS1M0
				FSZBR	LMC141MFSZBR4S				SGEA01FSZBR	/
				FS200	LMC141MFS200**	95	SGEA21M04048	EGE 2	SGEA21FS200	ANC02FS200
				FSZFR	LMC141MFSZFR4S				SGEA21FSZFR	/
100 112	2.2 4	3 5.5	28x60	FS05M	LMC161MFS05M4S	105	SGEA21M05055	EGE 2	SGEA21FS05M	/
				FS05C	LMC161MFS05M4S				SGEA21FS05C	/
				FS100	LMC161MFS1004S				SGEA21FS100	/
				FS1C0	LMC161MFS1M04S				SGEA21FS1C0	/
				FS1M0	LMC161MFS1M04S				SGEA21FS1M0	/
				FSZBR	LMC161MFSZBR4S				SGEA21FSZBR	/
				FS200	LMC161MFS200**				SGEA21FS200	ANC02FS200
				FSZFR	LMC161MFSZFR4S				SGEA21FSZFR	/

Dimensions of SGEA series motor half-coupling aluminium

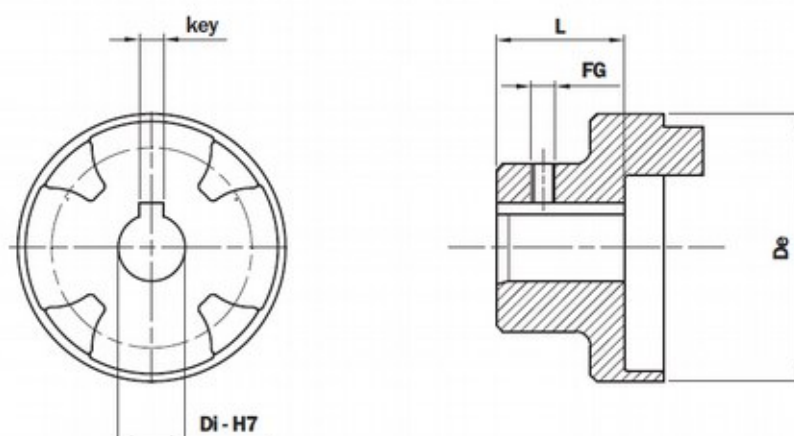


TABLE 19

Half-coupling code	De	L	Di	key	FG
SGEA01M01021	44	21	11	4	M5
SGEA01M02028	44	28	14	5	M5
SGEA01M03048	44	48	19	6	M5
SGEA01M04048	44	48	24	8	M5

Half-coupling code	De	L	Di	key	FG
SGEA21M05055	65	55	28	8	M6
SGEA31M06077	85	77	32	10	M8
SGEA51M07109	105	109	42	12	M8
SGEA51M08109	105	109	48	14	M8

Note: Screw not included

Dimensions of SGEA series pump half-coupling aluminium

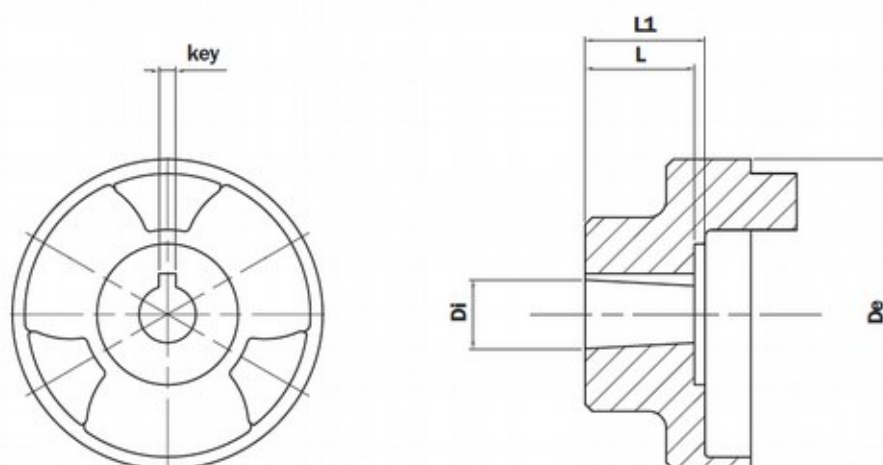


TABLE 20

Half-coupling code	De	L	L1	Di	key
SGEA01FS05M	44	10	16	06	2
SGEA01FS05C	44	10	16	07	2
SGEA01FS100	44	14,5	16	9,7	2,4
SGEA01FS1M0	44	16	16	13,9	3
SGEA01FS1C0	44	16	16	12	3
SGEA01FSZBR	44	16	16	9,8	2
SGEA21FS100	65	14,5	21,5	9,7	2,4
SGEA21FS1C0	65	16	21,5	12	3
SGEA21FS1M0	65	16	21,5	13,9	3
SGEA21FS200	65	21,5	21,5	17,2	3,2-4
SGEA21FSZFR	65	20	21,5	16,9	3
SGEA21FS300	65	27	41	21,6	4

Half-coupling code	De	L	L1	Di	key
SGEA31FS100	85	14,5	37	9,7	2
SGEA31FS1C0	85	16	37	12	2
SGEA31FS1M0	85	16	37	13,9	2,4
SGEA31FS200	85	23	37	17,2	3,2-4
SGEA31FS300	85	27	37	21,6	4
SGEA31FS350	85	35	37	25,6	4,76-5
SGEA31FSZFR	85	20	37	16,9	3
SGEA31FSZGR	85	27	34	25,2	5
SGEA51FS200	105	21,5	32	17,2	3,2-4
SGEA51FS300	105	27	32	21,6	4
SGEA51FS350	105	35	32	25,6	5
SGEA51FSZFR	105	20	32	16,9	3
SGEA51FSZGR	105	27	32	25,2	5

Comparative table - Bell-housing

MP Filtri		OMT	Hydrapp	Raja	KTR
New code	Old code	Code	Code	Code	Code
LMC140MFS05M**	LMB140A060A001	LS140	/	/	/
LMC140MFS05C**	LMB140A060A001	LS140	/	/	/
LMC140MFS100**	LMB140A060A002	LS141	/	L45	/
LMC140MFS1C0**	LMB140A060A003	LS142	/	/	/
LMC140MFS1M0**	LMB140A060A003	LS142	/	B45	/
LMC140MFSZBR**	LMB140A060S013	LBS18	/	Bo45	/
LMC160MFS05M**	LMB160A067A001	LS160	HL1	H9	PL160/1/...
LMC160MFS05C**	LMB160A067A001	LS160	HL2	H9	PL160/1/...
LMC160MFS100**	LMB160A067A002	LS161	HL2	L9	PL160/1/...
LMC160MFS1C0**	LMB160A067A003*	LS162	HL3	L9	PL160/1/...
LMC160MFS1M0**	LMB160A067A003	LS162	HL4	B9	PL160/1/...
LMC160MFSZBR**	LMB160A067S013	LBS19	HLB1	Bo9	PL160/1/...
LMC200MFS05M**	LMB200A087A001	LS210	HL4L	H2	PL200/1/...
LMC200MFS05C**	LMB200A087A001*	LS210	HL4L	H2	PL200/1/...
LMC200MFS100**	LMB200A087A002	LS211	HL5L	L2	PL200/1/...
LMC200MFS1C0**	LMB200A087A003	LS212	HL6L	B2	PL200/1/...
LMC200MFS1M0**	LMB200A087A003	LS212	HL6L	B2	PL200/1/...
LMC200MFSZBR**	LMB200A087S013	LBS28	HLB3L	Bo2	PL200/1/...
LMC201MFS200**	LMB200A095C004	LS203	HL7SL	L7/4	PL200/2/...
LMC201MFSZBR**	LMB200A098S014	LS203	HLB12SL	Bo7	PL200/2/...
LMC250MFS100**	LMB250A109C002	LS250	HL8/1L	L6/3	PL250/1/...
LMC250MFS1C0**	LMB250A109C003	LS251	HL8L	B5	PL250/1/...
LMC250MFS1M0**	LMB250A109C003	LS251	HL8L	B5	PL250/1/...
LMC250MFSZBR**	LMB250A109S013	LBS22	HLB13L	Bo5	PL250/1/...
LMC250MFS200**	LMB250A109C004	LS252	HL9L	L6/3	PL250/1/...
LMC250MFSZFR**	LMB250A109S014	LBS23	HLB17L	Bo6	PL250/1/...
LMC250MFS25T**	LMB250A126D005	LS254	HL11	L4/3	PL250/7/...
LMC250MFS300**	LMB250A126D006	LBS25	HL11	L4/3	PL250/7/...
LMC250MFS3M0**	LMB250A126D007	LS256	HL11	L4/3	PL250/7/...
LMC250MFS3T0**	LMB250A126D006	LS257	HL11T	L34	PL250/7/...
LMC300MFS100**	/	LS210	/	/	PL300/2/...
LMC300MFS1C0**	/	LS211	/	/	PL300/2/...
LMC300MFS1M0**	/	LS311	/	/	PL300/2/...
LMC300MFSZBR**	/	/	/	/	PL300/2/...
LMC300MFS200**	LMB300A130D004	LS300	HL12	L13	PL300/2/...
LMC300MFSZSR**	LMB300A130S014	LBS26	HLB22	Bo13	PL300/2/...
LMC300MFS25T**	LMB300A147D005	LS301	HL13	L12	PL300/2/...
LMC300MFS300**	LMB300A147D005	LS302	HL13	L12	PL300/2/...
LMC300MFS3M0**	LMB300A147D005	LS303	HL13	L12	PL300/2/...
LMC300MFS3T0**	LMB300A147D006	LS304	HL13T	L14	PL300/2/...
LMC300MFS35M**	/	LS305	/	L16	PL300/2/...
LMC300MFS350**	/	LS306	HLB28	L15	PL300/2/...
LMC351MFSZGR**	/	LBS27	HL15	Bo14	PL350/2/...
LMC351MFS200**	LMB350A160D004	LS350	HLB27	L17	PL350/2/...
LMC351MFSZSR**	LMB350A160S014	LBS31	/	Bo18	PL350/2/...
LMC351MFS25T**	LMB350A179F005	LS351	/	L18	PL350/2/...
LMC351MFS300**	LMB350A179F005	LS352	/	L18	PL350/2/...
LMC351MFS3M0**	LMB350A179F005	LS353	/	L18	PL350/2/...
LMC351MFS3T0**	LMB350A179F006	LS354	/	L19	PL350/2/...
LMC351MFS35M**	/	LSE355	/	L21	PL350/2/...
LMC351MFS350**	/	LSE356	/	L20	PL350/2/...
LMC351MFSZGR**	/	LBS32	/	Bo19	PL350/2/...
LMC351MFS200**	LMB350A160D004	LS350	HL15	L17	PL350/2/...
LMC351MFSZSR**	LMB350A160S014	LBS31	HLB27	Bo18	PL350/2/...
LMC351MFS25T**	LMB350A179F005	LS351	/	L18	PL350/2/...
LMC351MFS300**	LMB350A179F005	LS352	/	L18	PL350/2/...
LMC351MFS3M0**	LMB350A179F005	LS353	/	L18	PL350/2/...
LMC351MFS3T0**	LMB350A179F006	LS354	/	L19	PL350/2/...
LMC351MFS35M**	/	LSE355	/	L21	PL350/2/...

Comparative table - Half-coupling

MP Filtri		OMT
New code	Old code	Code
SGEA01FS05M	SGEA00B01018	ND48P05M
SGEA01FS05C	SGEA00B02018	ND48P05GT
SGEA01FS100	SGEA00B07018	ND48PU1P
SGEA01FS1C0	SGEA00B03014	ND48P1C
SGEA01FS1M0	SGEA00B06016	ND48P1M
SGEA01FSZBR	SGEA00B08014	ND48PZB
SGEA21FS100	SGEA20B07018	ND65PU1P
SGEA21FS1C0	SGEA20B03024	ND65P1C
SGEA21FS1M0	SGEA20B06024	ND65P1M
SGEA21FSZBR	SGEA20B08024	ND65PZB
SGEA21FS200	SGEA20B100242A	ND65P2
SGEA21FSZFR	SGEA20B13024	ND65PZF
SGEA21FS25T	SGEA20B16041	ND65Q3U
SGEA31FS100	SGEA30B07022	ND86PU1P
SGEA31FS1C0	/	ND86P1C
SGEA31FS1M0	SGEA30B06021	ND86P1M
SGEA31FSZBR	/	/
SGEA31FS200	SGEA30B100222A	ND86P2
SGEA31FSZFR	SGEA30B13020	ND86PZF
SGEA31FS300	SGEA30B16038	ND86P3U
SGEA31FS350	SGEA30B180382B	/
SGEA51FSZGR	SGEA50B17034	/
SGEA51FS200	/	/
SGEA51FSZFR	SGEA50B13032	ND108PZF
SGEA51FS300	SGEA50B16032	ND108P3U
SGEA51FS350	SGEA50B180342B	ND108Q35
SGEA51FS400	SGEA50B210462C	/

Note: The above table is guideline only.

Not all half-couplings are fully interchangeable.

For further information, contact the MP Filtri Technical and Sales Department.

Ordering information AKA

Complete coupling kit AKA

Example: AKA

1	2	3	4
02	FS100	Z	4E

1 - Sizes

02	Gr. 63 B3-B5	43	Gr. 63 B14
03	Gr. 71 B3-B5	44	Gr. 71 B14
04	Gr. 80 B3-B5	45	Gr. 80 B14
05	Gr. 90 B3-B5	46	Gr. 90 B14
07	Gr. 100/112 B3-B5	48	Gr. 100/112 B14
11	Gr. 132 B3-B5		
12	Gr. 160 B3-B5		
13	Gr. 180 B3-B5		

2 - Pump Identification code

FS200 See table 14 page 21

3 - Product revision code

Z

4 - Versions

4S **8S** **4E** **8E**] See page 20

Ordering information AKG

Coupling kit AKG

Example: AKG

1	2	3
02	FS100	Z

1 - Sizes

02	Gr. 63 B3-B5	43	Gr. 63 B14
03	Gr. 71 B3-B5	44	Gr. 71 B14
04	Gr. 80 B3-B5	45	Gr. 80 B14
05	Gr. 90 B3-B5	46	Gr. 90 B14
07	Gr. 100/112 B3-B5	48	Gr. 100/112 B14
11	Gr. 132 B3-B5		
12	Gr. 160 B3-B5		
13	Gr. 180 B3-B5		

2 - Pump Identification code

FS200 See table 14 page 21

3 - Product revision code

Z

Ordering information LMC

Monobloc bell-housing LMC

Example: LMC

1	2	3	4	5
140	M	FS200	4E	DI

1 - Sizes

140	300
141	350
160	400
161	450
200	550
201	660
250	

2 - Product revision code

M

3 - Pump flange Identification code

FS200 See table 14 page 21

4 - Option

4S	4 through holes + 4 threaded holes, motor interface without coupling removal ring
4E	4 through holes + 4 threaded holes, motor interface with coupling removal ring
8S	8 through holes, motor interface without coupling removal ring
8E	8 through holes, motor interface with coupling removal ring

5 - Option

DI	Drain hole + inspection hole
AN	Black anodized finish
SA	Motor interface with clearance holes
Pxx	Customer specification

N.B. Bell-housings with DI options are supplied complete with threaded closure plug

Seals made of special paper provide the sealing action between the lid of the oil tank and the bell-housing (motor interface) and between the bell-housing and the pump flange.

They are available for motors from size **63** rated **0.12 kW**, up to size **180** rated **22 kW**, and for all gear pumps listed in this catalogue.

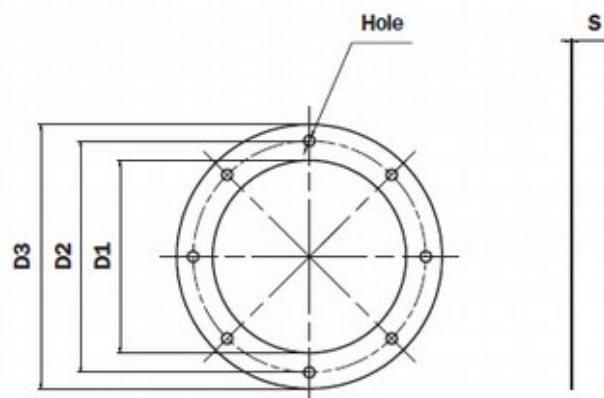


TABLE 51

Bell-housing code	Seals code	D1	D2	D3	S	Hole
LMC 120	GUM P 120	84	100	120	1	7
LMC 140	GUM P 140	96	115	140		9
LMC 160	GUM P 160	110	130	160		9
LMC 200	GUM P 200	145	165	200		11
LMC 250	GUM P 250	190	215	250		14
LMC 300	GUM P 300	234	265	300		14
LMC 350	GUM P 350	260	300	350		18

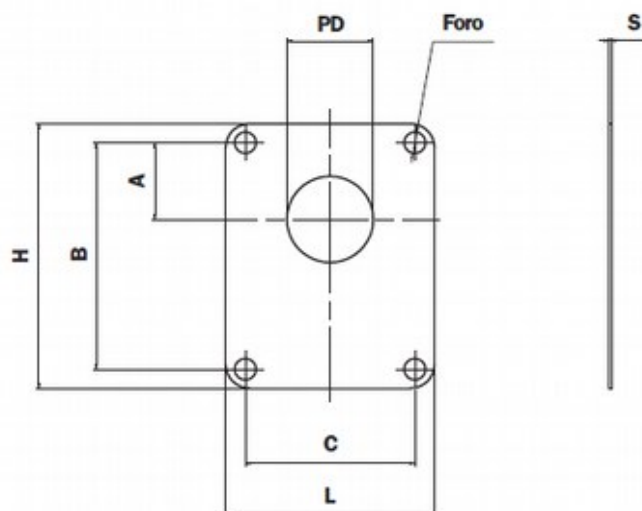


TABELLA 52

Pump code	Seals code	PD	A	B	C	H	L	S	Hole
FS05M	GUP P001	22	25.6	66	-	80	48	1	6.5
FS100	GUP P002	25.4	26.6	72	52.4	87	67		6.5
FS1M0	GUP P003	30	24.5	73	56	85	68		6.5
FS200	GUP P004	36.5	32.5	96	71.5	112	88		8.5
FS300	GUP P005	50.8	43	128	98.5	148	118		10.5
FSZBR	GUP P013	32	10.35	40	40	75	62		8.5
FSZFR	GUP P014	80	34.5	100	72	118	90		9

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