

# SGDR series

Steel couplings



# BELL-HOUSING & COUPLING SIZING

## A GUIDE TO SELECT THE CORRECT BELL-HOUSING AND DRIVE COUPLING

### DATA REQUIRED

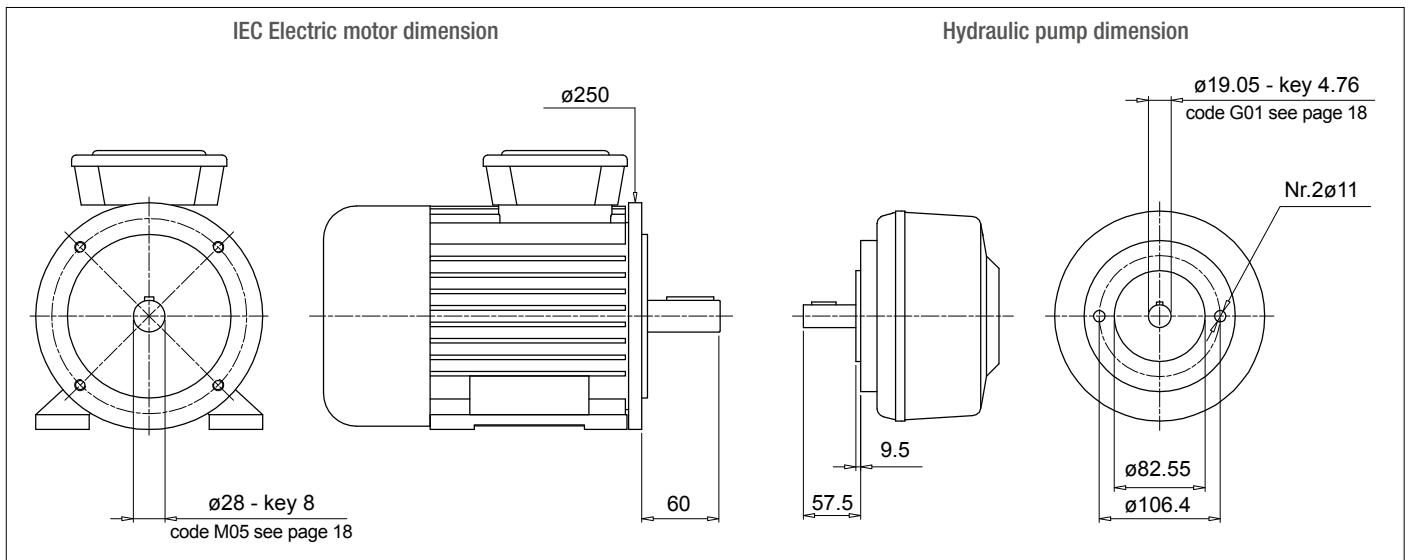
- Electric motor power/motor size
- Manufacturer and pump type

### TO VERIFY:

- 1 - Pump and motor shaft dimensions (see electric motor data sheet)
- 2 - Shaft and flange pump (see pump data sheet)

### Example:

- Electric motor 2.2 kW - size 100-112
- Atos pump code PFE31 - Shaft 1



### Bell-Housing's length calculation

- $H = 60 + 18 + 57.5 = 135.5$  mm (18 = Sp spider - see page 31)
- Choose type of bell-housing (LMC - LMS):  
For monobloc bell-housing LMC/LDC series see pages 63 ÷ 69  
For Low noise bell-housing LMS/LDS series see pages 71 ÷ 77  
For Multi-components 2-3 bell housing series see pages 79 ÷ 99

#### Note:

The length of bell-housing must be  $\geq$  than the length calculated (135.5 mm)

#### Case A

Solution with monobloc bell-housing series **LMC/LDC**

Pages 63 ÷ 69 for IEC Electric motor size 100-112 - LMC250

LMC 250 bell-housing with height  $\geq 135.5$  - LMC250AFSQ

The bell-housing code must be completed with pump drilling code (see pages 48-49).

For the specific case:

Spigot hole 82.55 - PCD 106.4 - Nr.2 holes M10 : Drilling code 060

Definitive bell-housing code **LMC250AFSQ060**

#### Case B

Solution with low noise bell-housing series **LMS/LDS**

Pages 71 ÷ 77 for IEC Electric motor size 100-112 - LMS250

LMS 250 bell-housing with height  $\geq 135.5$  - LMS250AFSA

The bell-housing code must be completed with pump drilling code (see pages 48-49).

For the specific case:

Spigot hole 82.55 - PCD 106.4 - Nr.2 holes M10 : Drilling code 060

Definitive bell-housing code **LMS250AFSA060**

# BELL-HOUSING & COUPLING SIZING

## A GUIDE TO SELECT THE CORRECT BELL-HOUSING AND DRIVE COUPLING

### Coupling selection

#### Motor half-coupling (see page 26)

For IEC Electric motor size 100/112, the half-coupling is **SGEA21M05060FG**

#### Spider (see page 31)

For SGEA21, EGE2 - EGE2RR

(choose spider material on the base of the application, oil, temperature and cycle machine, etc.)

#### Pump half-coupling

Choose the drilling code - see pages 18-19 for shaft 19.05 - key 4.76 - code: **G01**

Pump half-coupling length = BH length - THK Spider - THK Spigot

$$\text{LMC} = 138 \text{ mm} - 60 - 18 - 9.5 = 50.5 \text{ mm}$$

$$\text{LMS} = 148 \text{ mm} - 60 - 18 - 9.5 = 60.5 \text{ mm}$$

LMC - Choose the half-coupling's length at page 26  $\leq$  50.5 mm.

LMS - Choose the half-coupling's length at page 26  $\leq$  60.5 mm.

LMC - Available length for SGEA21 = 50 mm

LMS - Available length for SGEA21 = 60 mm

Half coupling for LMC: **SGEA21G01050FG**

Half coupling for LMS: **SGEA21G01050FG**

### SOFTWARE FOR AUTOMATIC CALCULATION

available on the web site [www.mpfiltri.com](http://www.mpfiltri.com)

Vane / Piston / Screw pumps

AKA  
AKMM03Z0066

Pump  
Manufacturer: ATOS  
Pump type: PFE  
Pump model: PFE31 Shaft 1

HYDRAULIC PUMP - Technical Data  
L1: 57.5  
d1: 19.05  
Ch: 4.76  
s: 9.5  
PD: 82.55  
Int: 106  
Nr: 2  
F: M10

Electric Motor  
N. Poles: 2P  
Type: 83-85  
Size: 100-112  
Kw: 3-4  
Hp: 4-5,44

ELECTRIC MOTOR - Technical Data  
L: 60  
d1: 28  
Flg.: 250  
Ch: 8

Coupling material  
 Aluminium  
 Cast iron  
 Allow alternative material

Result  
Coupling: M03 - Z0066  
Drilling Pump: S060  
Pump Shaft: G01  
Motor Shaft: M05

Monobloc Bellhousing:   
Modular Bellhousing:   
Silenced Bellhousing:

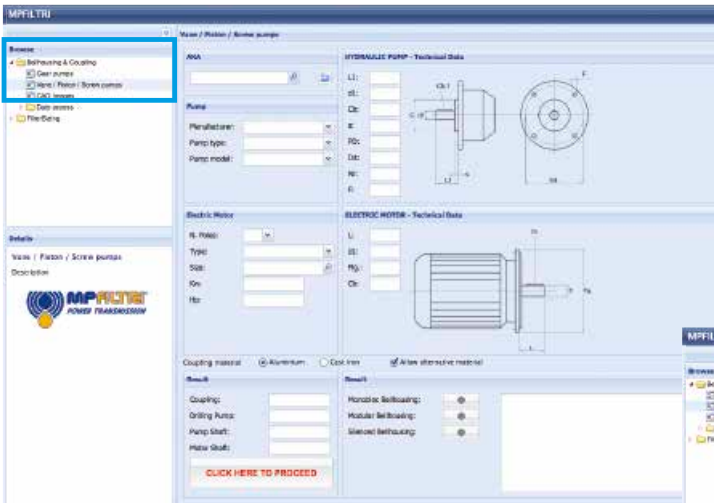
Monobloc Bellhousing:  
Pump half-coupling with grub screw  
For other solution please contact technical department

Modular Bellhousing: OK  
Silenced Bellhousing: OK

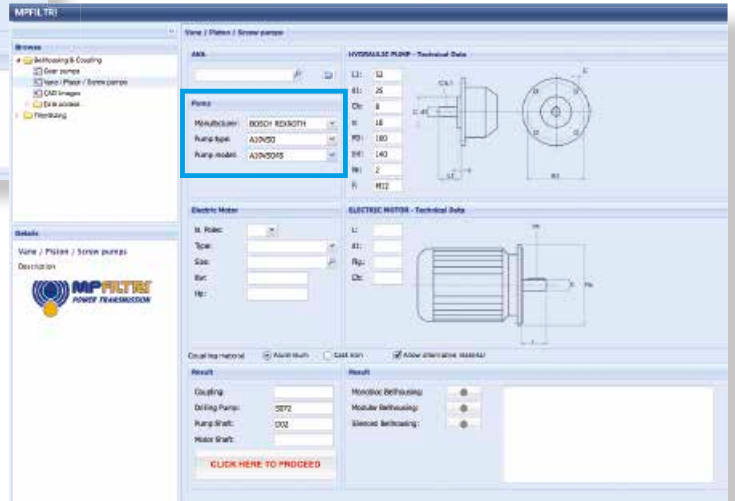
[CLICK HERE TO PROCEED](#)

**Note:** for multi pumps we recommend to use a specific support on the base of the pump's dimensions and weight.

**Step 1** Select "BELL-HOUSING & COUPLING"



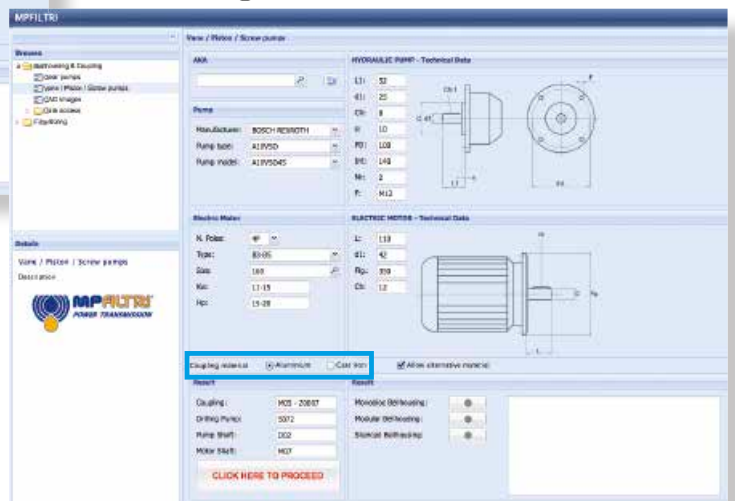
**Step 2** Choose Manufacturer: select "Pump type" and "Pump model"



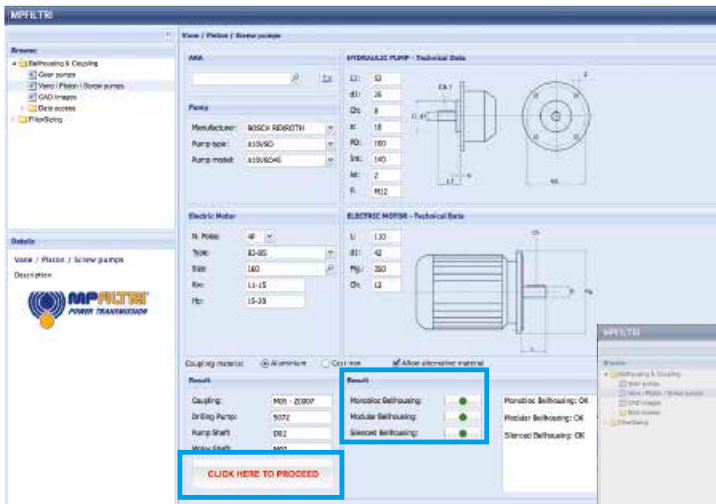
**Step 3** Choose nr° of poles of "Electric motors": select "Electric motors type" and "Electric motors size"



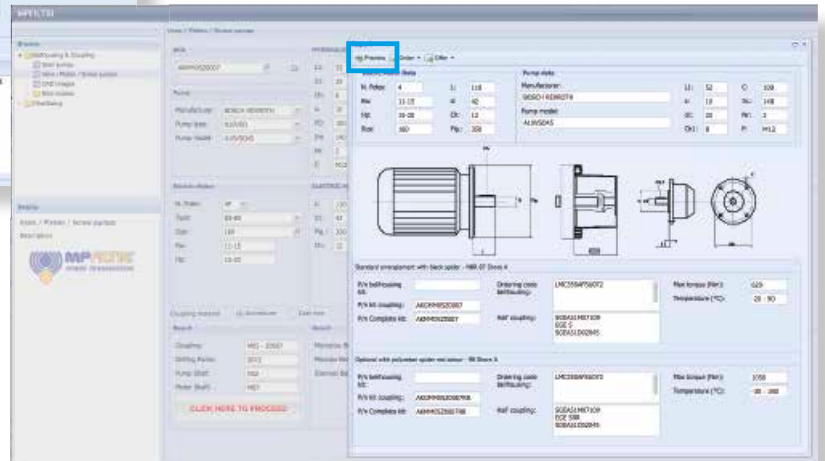
**Step 4** Choose Coupling material



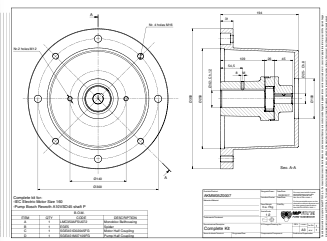
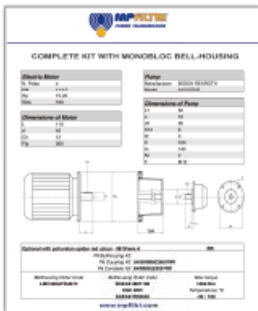
**Step 5** Push **“CLICK HERE TO PROCEED”**, then choose best solution for your application.



**Step 6** Push **“PREVIEW”** to download the reports.



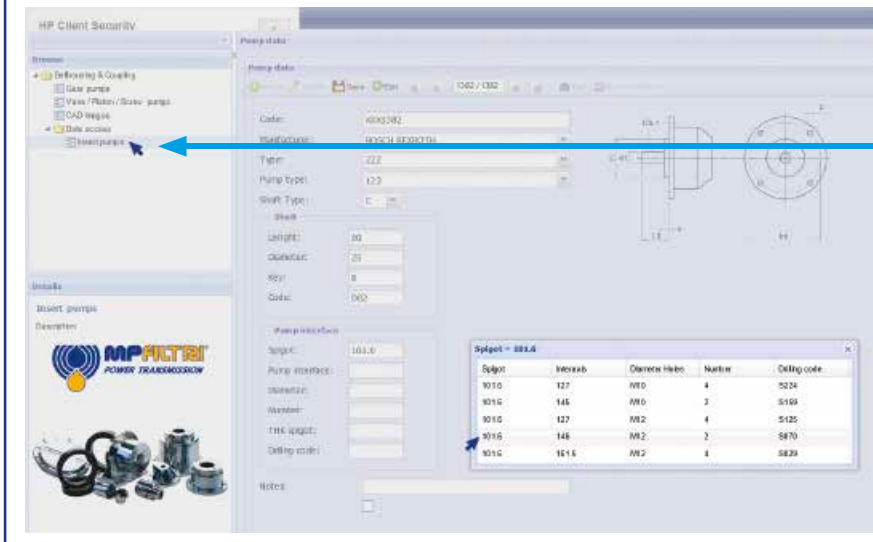
**Step 7**  Download PDF Datasheet and “DXF Drawing” of your selection



You can't find the pump on the system?

**NEW FEATURE!!**

Insert pump's dimension on the section **“INSERT PUMP”** and follow the instructions to achieve the couplings components code



The half-couplings series SGE\*\*\* allow secure transmission between the electric motor and the driven side; they are able to absorb shocks and vibration, in addition to compensating radial misalignment, angular and axial.

The complete range of couplings are extrapolated from the on-line software, with a length equal than the shaft on which must be mounted and they are completed with grub screw for fixing located on the key.

The assembly of the couplings can be horizontal/vertical, withstanding vibration and load reversals.

Available for cylindrical shaft with metric and imperial dimensions as well for splined shafts as per specification DIN, ISO and SAE.

## Admissible misalignment radial, angular and axial

### Max admissible radial misalignment

Half-coupling	R [mm]
SGE * 01	0.5
SGE * 21	1.0
SGE * 31	1.0
SGE * 40	1.0
SGE * 51	1.5
SGE * 60	1.5
SGE * 80	2.0
SGE * 90	2.0

### Max admissible angular misalignment

Half-coupling	$\beta$ [°]
SGE * 01	1.5°
SGE * 21	
SGE * 31	
SGE * 40	
SGE * 51	
SGE * 60	
SGE * 80	
SGE * 90	

### Max admissible angular alignment

Half-coupling	A [mm]
SGE * 01	2.0
SGE * 21	2.5
SGE * 31	3.0
SGE * 40	3.5
SGE * 51	3.5
SGE * 60	3.5
SGE * 80	4.0
SGE * 90	5.0

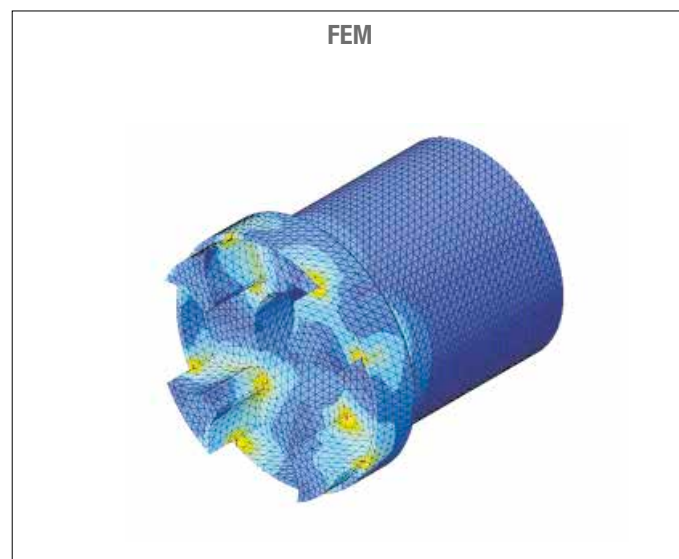
## Standard ATEX 2014/34/EU

Half-couplings are available to use in hazardous area.

The couplings are certified according to Standard ATEX 2014/34/EU - Category certified 2G - Area 1 and 2.

Other information available on our web site "www.mpfiltri.com".

## MP Filtri couplings are developed with:



Drawings 3D available on website [www.mpfiltri.com](http://www.mpfiltri.com) at section TOOLS.



Examples verification of the coupling

Torque transmitted by electric motor:

**Mt:**  $9560 \times \text{kW} / \text{rpm} = \text{Nm}$

**Me >**  $Mt \times S = \text{Nm}$

Where:

**Mt:** Torque transmitted by electric motor

**Me:** Torque transmitted by coupling

**kW:** Power of electric motor

**Rpm:** Revolutions per minute of electric motor

**S:** Service factor

Table 1

<b>Small pumps, uniform load, low operating pressures</b> e.g. rotary action machine tools - 5/8 work cycles per hour	<b>1.3</b>
<b>Small pumps, uniform load, high working pressures</b> e.g. lifting equipment - 120-150 work cycles per hour	<b>1.5</b>
<b>Pumps, non-uniform load</b> e.g. lifting equipment - 280-300 work cycles per hour	<b>1.7</b>

**Example**

Electric motor, 4 pole - 4 kW  
hydraulic pump, uniform load, low operating pressure

**Mt:**  $9560 \times 4 / 1500 = 25.45 \text{ Nm}$

**Me >**  $25.49 \times 1.3 = 33 \text{ Nm}$

**Half-coupling SGEA21 meets the above requirement.**

Select the half-coupling of the calculated size from the motor half-couplings table.

**Note:** When selecting the coupling, remember that for pumps with splined shaft, only cast iron couplings of the SGEG series can be used.

Determine the size of the coupling according to the type of installation and application envisaged, on the basis of the formulas and the following tables:

Table 2

Half-coupling type	External diameter [mm]	Nominal torque Me - Nm	Maximum transmissible torque Me - Nm	
<b>SGEA01</b>	43	15	20	
<b>SGEA21</b>	68	160	190	
<b>SGEA31</b>	75	340	380	
<b>SGEA51</b>	109.5	550	620	<b>ALUMINIUM</b>
<b>SGEG01</b>	40	20	30	
<b>SGEG30</b>	80	400	450	
<b>SGEG40</b>	95	550	620	
<b>SGEG60</b>	120	760	850	
<b>SGEG80</b>	160	2200	2500	
<b>SGEG90</b>	200	5500	6100	<b>CAST IRON</b>
<b>SGES40</b>	95	550	620	
<b>SGES60</b>	120	760	850	
<b>SGES80</b>	180	2200	2500	<b>STEEL</b>

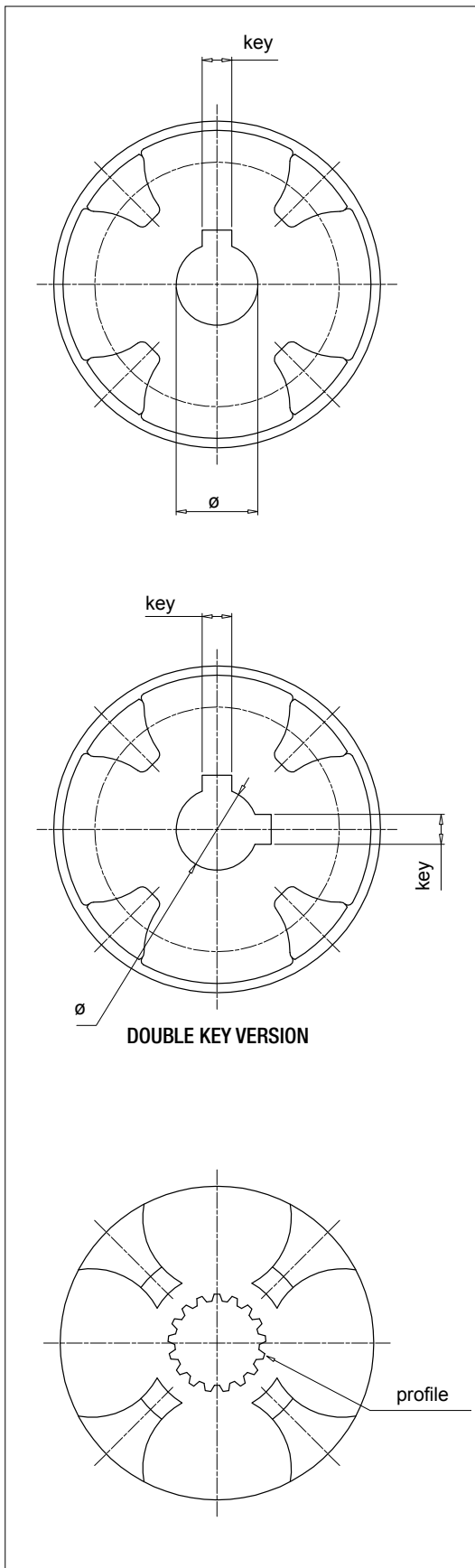
Nominal and maximum torque values are referred to couplings assembled with standard flexible spiders of the **EGE\*\*** series (see page 31). Where higher torques are to be transmitted, use flexible spiders of the **EGE\*\*RR** series (see page 31).

### Parallel shaft - Metric Dimensions

ø [mm]	key [mm]	Code
12	4	<b>C00</b>
15	5	<b>C01</b>
16	4	<b>C02</b>
16	5	<b>C03</b>
17	5	<b>C04</b>
18	6	<b>C05</b>
20	5	<b>C06</b>
19	5	<b>C07</b>
30	10	<b>C08</b>
20	6	<b>C09</b>
16	5	<b>C10</b>
15	4	<b>C11</b>
22	6	<b>D00</b>
24	6	<b>D01</b>
25	8	<b>D02</b>
30	8	<b>D03</b>
32	10	<b>D04</b>
35	10	<b>D05</b>
40	12	<b>D06</b>
45	14	<b>D07</b>
50	14	<b>D08</b>
70	20	<b>D09</b>
22	8	<b>D10</b>
52	16	<b>D20</b>
8	3	<b>E00</b>
10	3	<b>E01</b>
22	5	<b>E02</b>
32	8	<b>E03</b>
35	8	<b>E04</b>
82	22	<b>E05</b>
25	7	<b>E06</b>
63	18	<b>E07</b>
9	3	<b>M00</b>
11	4	<b>M01</b>
14	5	<b>M02</b>
19	6	<b>M03</b>
24	8	<b>M04</b>
28	8	<b>M05</b>
38	10	<b>M06</b>
42	12	<b>M07</b>
48	14	<b>M08</b>
55	16	<b>M09</b>
60	18	<b>M10</b>
65	18	<b>M11</b>
75	20	<b>M12</b>
80	22	<b>M13</b>
90	25	<b>M14</b>
95	25	<b>M15</b>
100	28	<b>M16</b>
110	28	<b>M17</b>
85	22	<b>M18</b>

### Parallel shaft - Imperial Dimensions

ø		key		Code
[inch]	[mm]	[inch]	[mm]	
7/16"	11.11	1/8"	3.18	<b>G00</b>
3/4"	19.05	3/16"	4.76	<b>G01</b>
7/8"	22.22	3/16"	4.76	<b>G02</b>
7/8"	22.22	1/4"	6.35	<b>G03</b>
1"	25.4	3/16"	4.76	<b>G04</b>
1"	25.40	1/4"	6.35	<b>G05</b>
1 1/4"	31.75	1/4"	6.35	<b>G06</b>
1 1/4"	31.75	5/16"	7.94	<b>G07</b>
1 3/8"	34.94	5/16"	7.94	<b>G08</b>
1 1/2"	38.1	3/8"	9.52	<b>G09</b>
1 5/8"	41.27	3/8"	9.52	<b>H00</b>
1 3/4"	44.45	7/16"	11.11	<b>H01</b>
2"	50.8	1/2"	12.7	<b>H02</b>
2 11/32"	53.94	1/2"	12.7	<b>H03</b>
3/4"	19.02	1/8"	3.17	<b>H04</b>
1"	25.4	3/16"	4.76	<b>H05</b>
5/8"	15.87	3/16"	4.76	<b>H06</b>
17/32"	13.45	1/8"	3.18	<b>H07</b>
11/16"	17.46	3/16"	4.76	<b>H08</b>
1/2"	12.7	1/8"	3.18	<b>H09</b>
5/8"	15.87	5/32"	3.97	<b>L00</b>
7/8"	22.22	5/32"	4	<b>L01</b>
11/8"	28.58	1/4"	6.35	<b>L02</b>
3/4"	19.05	1/4"	6.35	<b>L03</b>
1 7/8"	47.63	1/2"	12.7	<b>L04</b>
3 3/8"	85.73	7/8"	22.23	<b>L05</b>
2 3/8"	60.33	5/8"	15.88	<b>L06</b>
2 3/8"	60.33	1/2"	12.7	<b>L07</b>
2 7/8"	73.03	3/4"	19.05	<b>L08</b>
3 5/8"	92.07	7/8"	22.22	<b>L09</b>
1 5/8"	41.6	15/32"	12	<b>L10</b>
1 1/8"	28.58	5/16"	7.94	<b>L15</b>



### Parallel shaft - Double Key

ø [mm]	key [mm]	Code
16.00	4.00	<b>C02***2H</b>
	5.00	
20.00	5.00	<b>C06***2M</b>
	6.00	
19.00	5.00	<b>C07***2L</b>
	6.00	
24.00	6.00	<b>D01***2N</b>
	8.00	
30.00	8.00	<b>D03***2P</b>
	10.00	
22.22	4.76	<b>G02***2E</b>
	6.35	
25.40	6.35	<b>G04***2F</b>
	4.76	
31.75	6.35	<b>G06***2G</b>
	7.94	

\*\*\* = coupling length



SAE Bore - ANS.B.92.1-1970

Profile	Nr. of Th	Code
17 th 8/16	17	<b>PD01</b>
14 th 12/24	14	<b>PD02</b>
16 th 12/24	16	<b>PD03</b>
17 th 12/24	17	<b>PD04</b>
9 th 16/32	9	<b>PD05</b>
11 th 16/32	11	<b>PD06</b>
12 th 16/32	12	<b>PD07</b>
13 th 16/32	13	<b>PD08</b>
15 th 16/32	15	<b>PD09</b>
21 th 16/32	21	<b>PD10</b>
23 th 16/32	23	<b>PD11</b>
27 th 16/32	27	<b>PD12</b>
40 th 16/32	40	<b>PD13</b>
20 th 24/48	20	<b>PD14</b>
21 th 24/48	21	<b>PD15</b>
23 th 24/48	23	<b>PD16</b>
25 th 24/48	25	<b>PD17</b>
26 th 24/48	26	<b>PD18</b>
27 th 12/48	27	<b>PD19</b>
28 th 24/48	28	<b>PD20</b>
29 th 24/48	29	<b>PD21</b>
32 th 24/48	32	<b>PD22</b>
21 th 32/64	21	<b>PD23</b>
30 th 32/64	30	<b>PD24</b>
33 th 32/64	33	<b>PD25</b>
23 th 40/80	23	<b>PD26</b>
36 th 48/96	36	<b>PD27</b>
41 th 48/96	41	<b>PD28</b>
47 th 48/96	47	<b>PD29</b>
13 th 8/16	13	<b>PD30</b>
15 th 8/16	15	<b>PD31</b>
14 th 16/32	14	<b>PD32</b>
40 th 16/32	40	<b>PD33</b>
33 th 16/32	33	<b>PD34</b>
9 th 20/40	9	<b>PD35</b>
10 th 16/32	10	<b>PD36</b>
25 th 20/40	25	<b>PD37</b>

Splined bore as per standard DIN5480

Profile	Nr. of Th	Code
W18 x 1.25 x 13	13	<b>PA01</b>
W20 x 1.25 x 14	14	<b>PA02</b>
W25 x 1.25 x 18	18	<b>PA03</b>
W28 x 1.25 x 21	21	<b>PA04</b>
W32 x 1.25 x 24	24	<b>PA05</b>
W38 x 1.25 x 29	29	<b>PA06</b>
W30 x 2 x 14	14	<b>PA07</b>
W32 x 2 x 14	14	<b>PA08</b>
W35 x 2 x 16	16	<b>PA09</b>
W37 x 2 x 17	17	<b>PA10</b>
W38 x 2 x 18	18	<b>PA11</b>
W40 x 2 x 18	18	<b>PA12</b>
W42 x 2 x 18	18	<b>PA13</b>
W45 x 2 x 21	21	<b>PA14</b>
W50 x 2 x 24	24	<b>PA15</b>
W55 x 2 x 26	26	<b>PA16</b>
W60 x 2 x 28	28	<b>PA17</b>
W70 x 2 x 34	34	<b>PA18</b>
W80 x 2 x 38	38	<b>PA19</b>
W60 x 3 x 18	18	<b>PA20</b>
W70 x 3 x 22	22	<b>PA21</b>
W75 x 3 x 24	24	<b>PA22</b>
W90 x 3 x 28	28	<b>PA23</b>
W105 x 3 x 34	34	<b>PA24</b>
W80 x 3 x 25	25	<b>PA25</b>
W50 x 1.25 x 38	38	<b>PA26</b>
W62 x 1.25 x 48	48	<b>PA27</b>
W40 x 1.5 x 25	25	<b>PA28</b>
W32 x 1.5 x 20	20	<b>PA29</b>
W40 x 1.25 x 30	30	<b>PA30</b>

Splined bore as per standard DIN5481

Profile	Nr. of Th	Code
8 x 10	28	<b>PC01</b>
10 x 12	30	<b>PC02</b>
12 x 14	31	<b>PC03</b>
15 x 17	32	<b>PC04</b>
17 x 20	33	<b>PC05</b>
21 x 24	34	<b>PC06</b>
26 x 30	35	<b>PC07</b>
30 x 34	36	<b>PC08</b>
60 x 65	41	<b>PC09</b>

Splined bore as per standard DIN5482

Profile	Nr. of Th	Code
A15 x 12	8	<b>PB01</b>
A17 x 14	9	<b>PB02</b>
A18 x 15	10	<b>PB03</b>
A20 x 17	12	<b>PB04</b>
A22 x 19	13	<b>PB05</b>
A25 x 22	14	<b>PB06</b>
A28 x 25	15	<b>PB07</b>
A30 x 27	16	<b>PB08</b>
A32 x 28	17	<b>PB09</b>
A35 x 31	18	<b>PB10</b>
A38 x 34	19	<b>PB11</b>
A40 x 36	20	<b>PB12</b>
A42 x 38	21	<b>PB13</b>
A45 x 41	22	<b>PB14</b>
A48 x 44	23	<b>PB15</b>
A50 x 45	24	<b>PB16</b>
A52 x 47	25	<b>PB17</b>
A55 x 50	26	<b>PB18</b>
A58 x 53	27	<b>PB19</b>
A60 x 55	28	<b>PB20</b>
A62 x 57	29	<b>PB21</b>
A65 x 60	30	<b>PB22</b>
A68 x 62	31	<b>PB23</b>
A70 x 64	32	<b>PB24</b>
A72 x 66	33	<b>PB25</b>
A75 x 69	34	<b>PB26</b>
A78 x 72	35	<b>PB27</b>
A80 x 74	36	<b>PB28</b>
A82 x 76	37	<b>PB29</b>
A85 x 79	38	<b>PB30</b>
A88 x 82	39	<b>PB31</b>
A90 x 84	40	<b>PB32</b>
A92 x 86	41	<b>PB33</b>
A95 x 89	42	<b>PB34</b>
A98 x 92	43	<b>PB35</b>
A100 x 94	44	<b>PB36</b>



# SGDR series

Steel couplings



## Technical data

### Gear couplings materials

Couplings: Steel C40  
Sleeve: Nylon PA66 Blue color

### Temperature

Sleeve Nylon PA66: from -20 °C to +90 °C

### Compatibility with fluids

- 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

### Note

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

### Special Applications

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



## IEC Electric motors

IEC Electric Motors size	C40 Carbon Steel				
	Shaft ISO 3019-2	Shaft ANSI B92.1A 1976	Shaft DIN 5480	Shaft DIN 5481	Shaft DIN 5482
IEC 80 ø 200 - ø 19x40	●	●	●	●	●
IEC 90 ø 200 - ø 24x50	●	●	●	●	●
IEC 100 ø 250 - ø 28x60	●	●	●	●	●
IEC 112 ø 250 - ø 28x60	●	●	●	●	●
IEC 132 ø 300 - ø 38x80	●	●	●	●	●
IEC 160 ø 350 - ø 42x110	●	●	●	●	●
IEC 180 ø 350 - ø 48x110	●	●	●	●	●
IEC 200 ø 400 - ø 55x110	●	●	●	●	●

Designation & Ordering code

**BLANK HALF-COUPLING**

<b>Pump half-coupling</b> <b>SGDR</b>	Configuration example: <b>SGDR</b>	<b>28</b>	<b>PB</b>
<b>Size</b> 28 42 55			
<b>Without bore</b> <b>PB</b>			

**HALF-COUPLING FOR PARALLEL SHAFT**

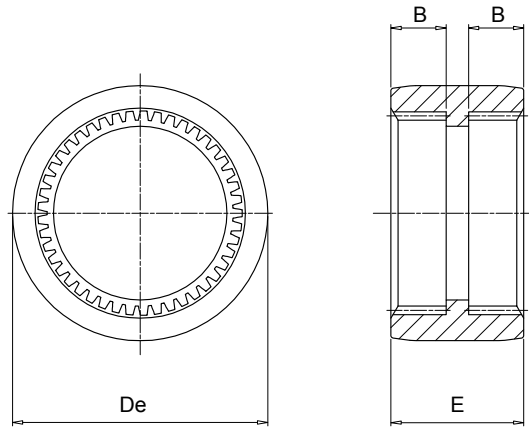
<b>Pump half-coupling</b> <b>SGDR</b>	Configuration example: <b>SGDR</b>	<b>28</b>	<b>G02</b>	<b>040</b>	<b>2E</b>
<b>Size</b> 28 42 55					
<b>Bore size code</b> <b>G02</b> See page 18					
<b>Length</b> <b>040</b> See page 42					
<b>Double key way (available combinations only)</b> <b>2E</b> See page 18 (Parallel shaft - double key only)					

**HALF-COUPLING FOR SPLINED SHAFT**

<b>Pump half-coupling</b> <b>SGDR</b>	Configuration example: <b>SGDR</b>	<b>28</b>	<b>PD02</b>	<b>040</b>
<b>Size</b> 28 42 55				
<b>Bore size code</b> <b>PD02</b> See page 19				
<b>Length</b> <b>040</b> See page 42				







### Sleeve

Code	Half-coupling code	Dimensions [mm]			Weight [kg]
		De	E	B	
<b>EGR066PA</b>	SGDR28	66	38	16	0.050
<b>EGR090PA</b>	SGDR42	90	52	22	0.150
<b>EGR125PA</b>	SGDR55	125	65	27	0.371