

POWER TRANSMISSION SIZING SOFTWARE

USER GUIDE



EN

PASSION  PERFORM



TABLE OF CONTENTS

	Page
Table of contents	1
1 PRODUCT DESCRIPTION	2
2 TECHNICAL FEATURES	2
2.1 Desktop version	2
2.2 Mobile version	2
3 WEB ACCESS LINKS	2
4 BELL-HOUSING AND COUPLINGS FOR ELECTRIC MOTORS	4
4.1 Introduction	4
4.2 First selection: Pump (Manufacturer - Type - Code)	4
4.3 Selection of the Electric Motor (No. Poles - Frame - Size)	5
4.4 Spider/sleeve choice	6
4.5 Options and Accessories	6
4.6 Calculation and saving of available solutions	6
4.7 Second selection: Pump shaft / flange data	7
4.8 Electric Motor Input	8
4.9 Spider/sleeve choice - options and accessories	8
4.10 Calculation and saving of available results	8
4.11 Third selection: Pump data entry	9
4.12 Electric Motor Input	9
4.13 Spider/sleeve choice - options and accessories	10
4.14 Calculation and saving of available results	10
5 BELL-HOUSING AND COUPLINGS FOR ENDOTHERMIC ENGINES	11
5.1 Introduction	11
5.2 Selection: European Standard Pump (Type - Code)	11
5.3 Selection of the Engine Power and diameter of the shaft	12
5.4 Calculation and saving of available solution	13
6 SELECTION STARTING FROM EXISTING KIT CODE	13
6.1 Spider/sleeve choice - options and accessories	14
6.2 Calculation and saving of available results	14
7 AKG CODE CREATION	15
7.1 AKG code verification	16
8 AKA CODE CREATION	17
8.1 AKA code verification	18

1 Product Description

The web-based software program will allow you to select the most suitable MP Filtri's Bell Housings & Couplings, in accordance to your process design requirements. The program will automatically check your input design process prior to propose you the acceptable solutions and create an output in PDF report style format. The MP Filtri Selection Tool Software program is easy to use with a flexible fast design method and provides improved layout formats with full descriptions.

2 Technical Features

2.1 Desktop version

Compatible browsers: Internet Explorer or later versions; Microsoft Edge or later versions; Chrome; Firefox (suggested)
Any other browser will be suitable.

No specific additional software is required to enable the MP Filtri sizing software program to operate successfully.

Lists and reports will be generated as Microsoft Excel® files in “.xls” and “.csv” formats, available to be downloaded

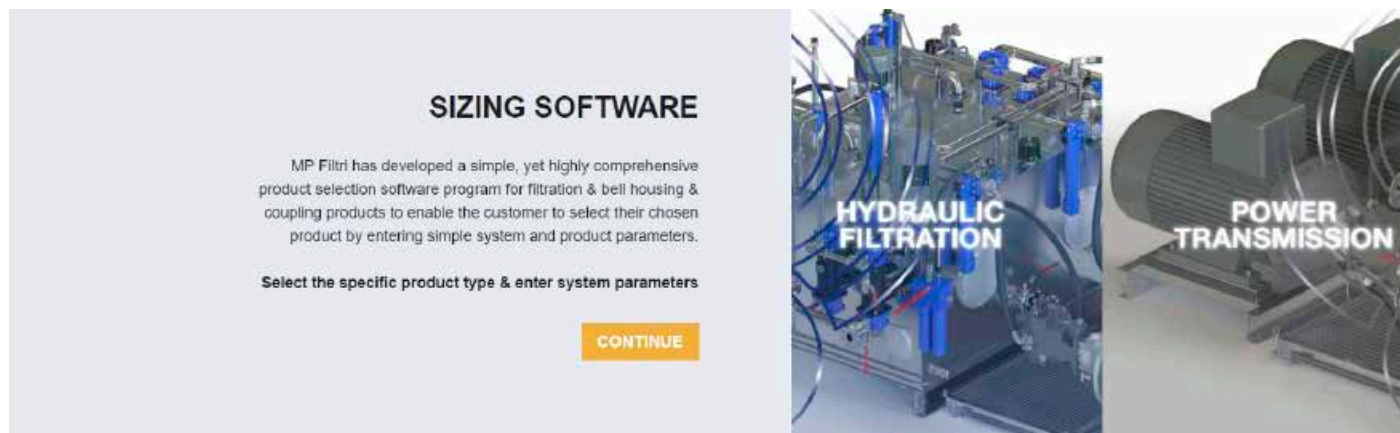
Reports will be generated as “.pdf” files, available to be downloaded.

2.2 Mobile version

Compatible browsers: Any

3 Web access links

The web-based is available at link: <https://www.mpfiltri.com/tools/> by clicking on the button “**CONTINUE**” from the section “**SIZING SOFTWARE**”:



Then, a log-in page will appear, where non-registered users shall input their data to register, while already registered users shall access with their credentials.

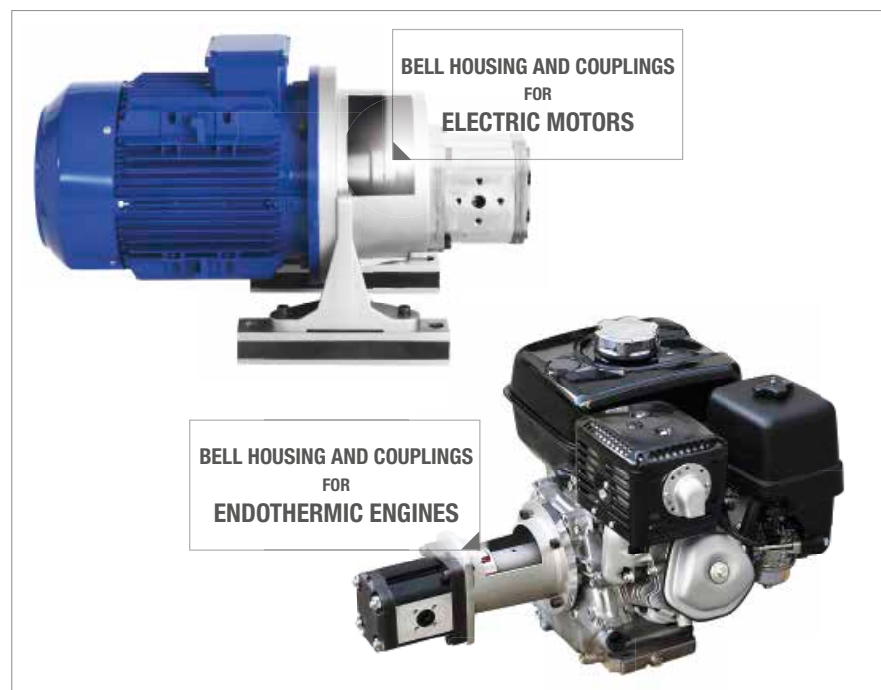
Registration MP Filtri S.p.A.

LOGIN	REGISTER
<p>Welcome back! Please enter the following information:</p> <p>Username *</p> <input type="text" value="name.surname@gmail.com"/> <p>Password *</p> <input type="password"/> <p>Login recover password</p>	<p>Don't have an account? Sign up free to use all our tools!</p> <p>Name *</p> <input type="text" value="Name"/> <p>Surname *</p> <input type="text" value="Surname"/> <p>E-mail *</p> <input type="text" value="name.surname@gmail.com"/>

After registration with your data, or accessing with your credentials (for already registered users) you will be directed to the page where you could still select the desired software tool:

<p>Headquarters MP Filtri S.p.A. Via 1° Maggio, 3 20042 Pessano con Bornago Milan - Italy</p> <p>T : + 39.02.95703.1 F : + 39.02.95741497 / +39.02.95740188 sales@mpfiltri.com VAT IT04221260153 REA MI-997440 Capital Stock: € 6.000.000</p>	<p>WELCOME Name Surname</p> <p>Start now by selecting the tool wanted:</p> <div> FILTER SIZING SOFTWARE POWER TRANSMISSION SOFTWARE SOFTWARE 3D </div> <p>LOGOUT MODIFY PROFILE</p>
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

When Power Transmission sizing software or 3D software are chosen, you will be redirected to the desired software or 3D viewer web page. Anyway, for Power Transmission selection, it is even possible to go to Filter Sizing product selection page (below), and select, within the different products, the “**BELL-HOUSINGS AND COUPLINGS**” box.



4 Bell-housing and Couplings for Electric Motors

4.1 Introduction

The calculation example we are going to report relates to a coupling between an I.E.C. electric motor and a hydraulic pump. The calculation below relates to the selection of a mono-block bell-housing but is also to be considered valid for multi components and lownoise solutions. Nothing changes in the logic of the calculation.

The calculated coupling is to be considered standard and does not need to respect particular conditions beyond the traditional calculation (conditions which we will report at the end of the calculation).

The material of the half-coupling is defined “in advance” based on the electric motor power, and any variation thereof will be the result of a user decision, as will the material of the flexible coupling, which can be selected at the end of the selection process.

Gear pumps with square flanges and tapered shaft are included in the calculation; all couplings are the result of pre-established matches, and so added into the database.

Below is a print screen of the screens and database tables involved in the coupling calculation.

As you will notice, there are 3 different and alternative ways to calculate the selection of bell-housing and coupling:

1. First selection way: Starting from a specific pump and electric motor recommended
2. Second selection way: Starting from pump shaft / flange data
3. Third selection way: Starting from flange and shaft data

4.2 First selection: Pump (Manufacturer - Type - Code)

If this selection mode is chosen, the first data to be input are: Pump Manufacturer; Pump Type; Pump code.

SELECTION FROM PUMP MANUFACTURER	SELECTION FROM SHAFT / FLANGE DATAS	SELECTION WITH PUMP DATA ENTRY
SELECTION FROM INT CODE	ANG CODE CREATION	ANA CODE CREATION

Manufacturer:

Pump type:

Pump code:

Pump interface code:

Pump shaft:

LT:

D:

Ch:

THICKNESS:

Spigot:

Int:

Nr:

F:

L1: Total shaft length
Thickness: Centring thickness
Nr: Number holes pump

D: ØShaft diameter
Spigot: ØCentering pump
F: ØHole dimensions

Ch: Key size
Int: ØPump hole spacing

Then, fields related to pump sizes and technical drawing will appear, with data taken from the database, created from pump manufacturer official data.

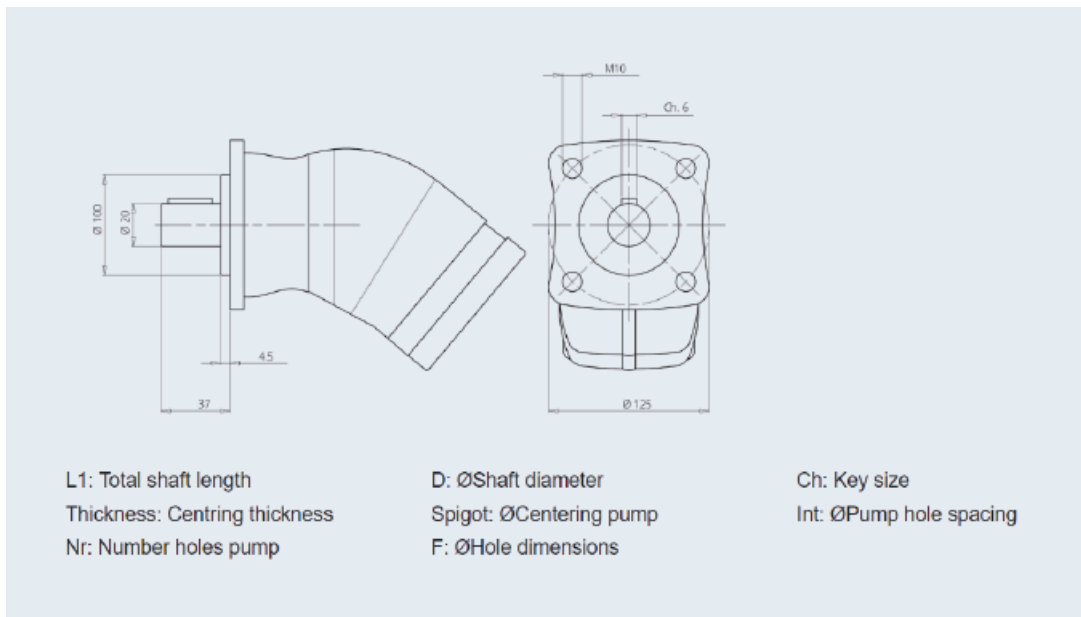
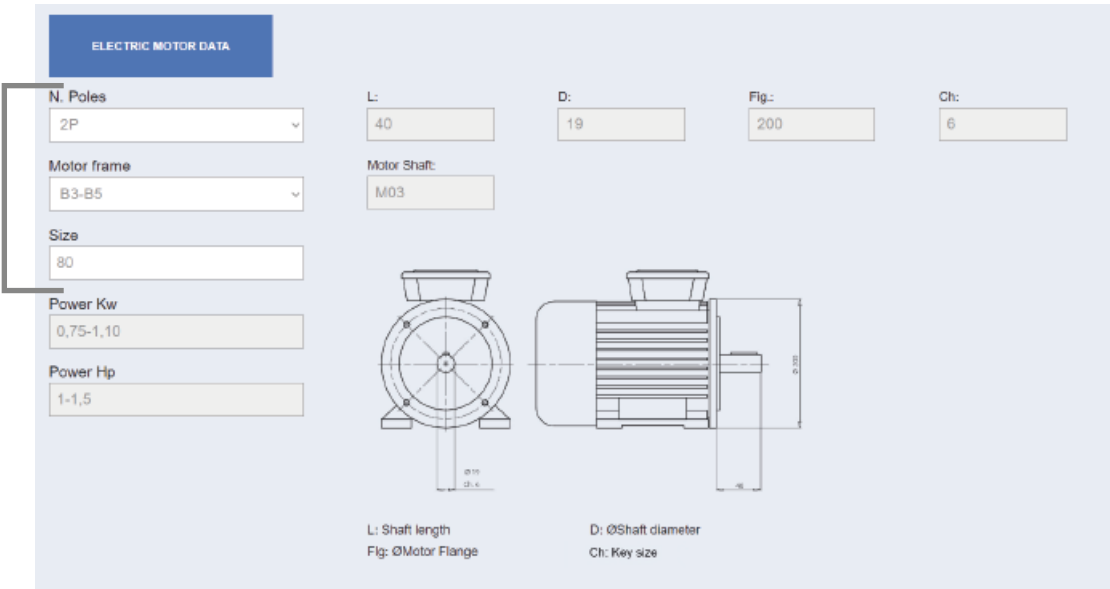


Image for illustrative purpose only

4.3 Selection of the Electric Motor (No. Poles - Frame - Size)

In this section the data to be input are: Pump Motor No. of Poles; Motor frame; Size.



ELECTRIC MOTOR DATA

N. Poles: 2P

Motor frame: B3-B5

Size: 80

Power Kw: 0,75-1,10

Power Hp: 1-1,5

L: 40

D: 19

Fig.: 200

Ch: 6

Motor Shaft: M03

Technical drawing showing motor dimensions: L: Shaft length, Fig: \varnothing Motor Flange, D: \varnothing Shaft diameter, Ch: Key size.

Once above data are input, fields related to motor sizes and technical drawing will appear, with data taken from the database, created from motor manufacturer official data.

4.4 Spider/sleeve choice



At this stage, selection to be done is related to sleeve type, to be chosen from the ones proposed by the software.

4.5 Options and Accessories

The interface includes the following sections:

- BELL-HOUSING OPTIONS:**
 - ☐ Drain and inspection holes
 - ☐ Turned holes
 - ☐ Drilling holes
 - ☐ Drilling holes at motor interface
 - ☐ Anodising
- ACCESSORIES FOR ASSEMBLY:**
 - Foot bracket
 - Damping rods for electric motors
 - Damping rings
 - Damping rods for foot bracket
- CERTIFICATION:**
 - ☐ AKG coupling certified according to ATEX34 / UE & U.K. Regulation S.I. 2016 No. 1107

Logos: CE, Ex, UK CA

* Choose an option

CALCULATE

This selection is related to the choice of eventual Options, Accessories and Certifications from the ones proposed by the software.

4.6 Calculation and saving of available solutions

After clicking on “**CALCULATE**” button, a selection of available solutions will appear.

The interface displays two available solutions:

- MONOBLOC BELL-HOUSING**
- MODULAR BELL-HOUSING**

Buttons: **SAVE SELECTION IN YOUR ARCHIVE**, **SAVE PDF**

Preview of the resulting PDF document:

Parameter	Value	Unit
Flow rate	1000	m³/h
Pressure	10	bar
Temperature	50	°C
Viscosity	100	cP
Power	1.5	kW
Speed	1500	rpm

Technical drawings showing cross-sections and dimensions of the coupling kit.

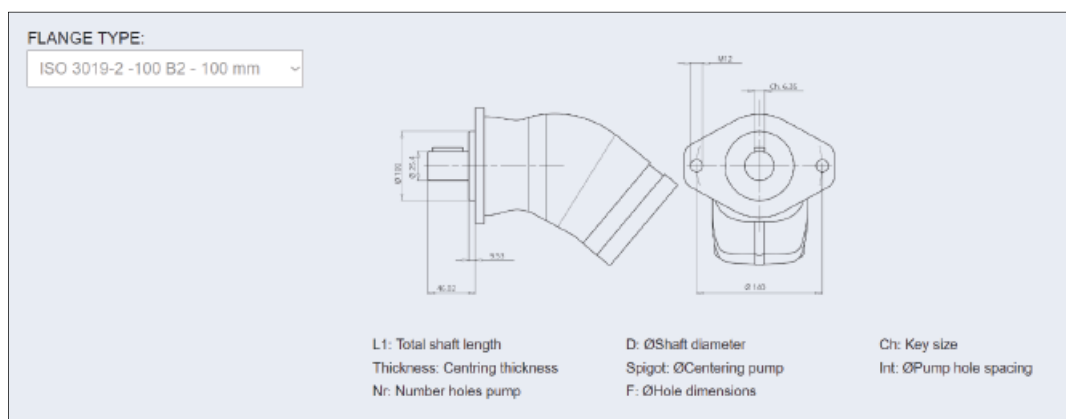
By clicking on one of given possible solutions, the software will allow you to save the selection in your archive, or to create a “.pdf” file with solution result.

4.7 Second selection: Pump shaft / flange data

If this selection mode is chosen, the first data to be input are: Shaft; Shaft Type; Flange; Flange Type.

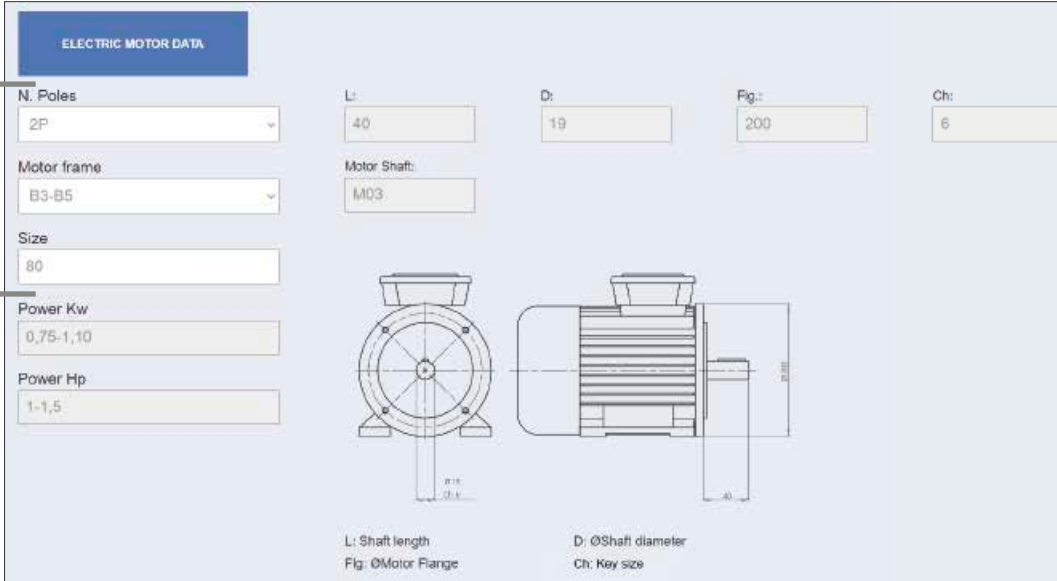


Then, Shaft / flange technical drawing will appear, with data taken from the database.



4.8 Electric Motor Input

In this section the data to be input are: No. of Poles; Motor frame; Size.



ELECTRIC MOTOR DATA

N. Poles: 2P

Motor frame: B3-B5

Size: 80

Power Kw: 0,75-1,10

Power Hp: 1-1,5

L: 40

D: 19

Pg.: 200

Ch: 6

Motor Shaft: M03

L: Shaft length
Pg: Motor Flange

D: Shaft diameter
Ch: Key size

Once above data are input, fields related to motor sizes and technical drawing will appear, with data taken from the database.

4.9 Spider/sleeve choice - options and accessories

These stages will follow the same logic and procedures described at previous paragraphs nos.4.4 and 4.5, that we kindly ask to refer to.

4.10 Calculation and saving of available results

This stage will follow the same logic and procedures described at previous paragraph no.4.6, that we kindly ask to refer to.

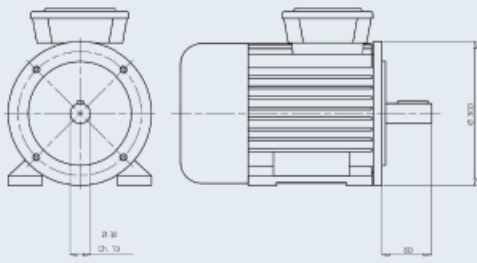
4.11 Third selection: Pump data entry

If this selection mode is chosen, the data to be input are all the dimensional features of shaft and flange:

SELECTION FROM PUMP MANUFACTURER	SELECTION FROM SHAFT / FLANGE DATA		SELECTION WITH PUMP DATA ENTRY	
SELECTION FROM KIT CODE	AKG CODE CREATION		AKA CODE CREATION	
Shaft Type : <input type="text" value="C"/>	L1: <input type="text" value="46"/>	D: <input type="text" value="25.4"/>	Ch: <input type="text" value="6.35"/>	Thickness: <input type="text" value="9.5"/>
Cylindrical shafts table Splined shafts table Drillings chart	Spigot: <input type="text" value="140"/>	Int: <input type="text" value="180"/>	Nr: <input type="text" value="M12"/>	F: <input type="text" value="4"/>
	Pump Interface code: <input type="text" value="S077"/>	Pump Shaft: <input type="text"/>		
L1: Total shaft length Ch: Key size Spigot: ØCentering pump Nr: Number holes pump		D: ØShaft diameter Thickness: Centring thickness Int: ØPump hole spacing F: ØHole dimensions		

4.12 Electric Motor Input

In this section the data to be input are: No. of Poles; Motor frame; Size.

ELECTRIC MOTOR DATA				
N. Poles <input type="text" value="2P"/>	L: <input type="text" value="80"/>	D: <input type="text" value="38"/>	Fig.: <input type="text" value="300"/>	Ch: <input type="text" value="10"/>
Motor frame <input type="text" value="B3-B5"/>	Motor Shaft: <input type="text" value="M06"/>			
Size <input type="text" value="132S"/>				
Power Kw <input type="text" value="5,5"/>				
Power Hp <input type="text" value="7,5"/>				
L: Shaft length Fig: ØMotor Flange		D: ØShaft diameter Ch: Key size		

Once above data are input, fields related to motor sizes and technical drawing will appear, with data taken from the database.

4.13 Spider/sleeve choice - options and accessories

These stages will follow the same logic and procedures described at previous paragraphs no. 4.4 and 4.5, that we kindly ask to refer to.

4.14 Calculation and saving of available results

This stage will follow the same logic and procedures described at previous paragraph no. 4.6, that we kindly ask to refer to.



5 Bell-housing and Couplings for Endothermic Engines

5.1 Introduction

The calculation example we are going to report relates to a coupling between an endothermic engine and group 1/2 hydraulics gear pumps and SAE-A 2-Bolt pumps.

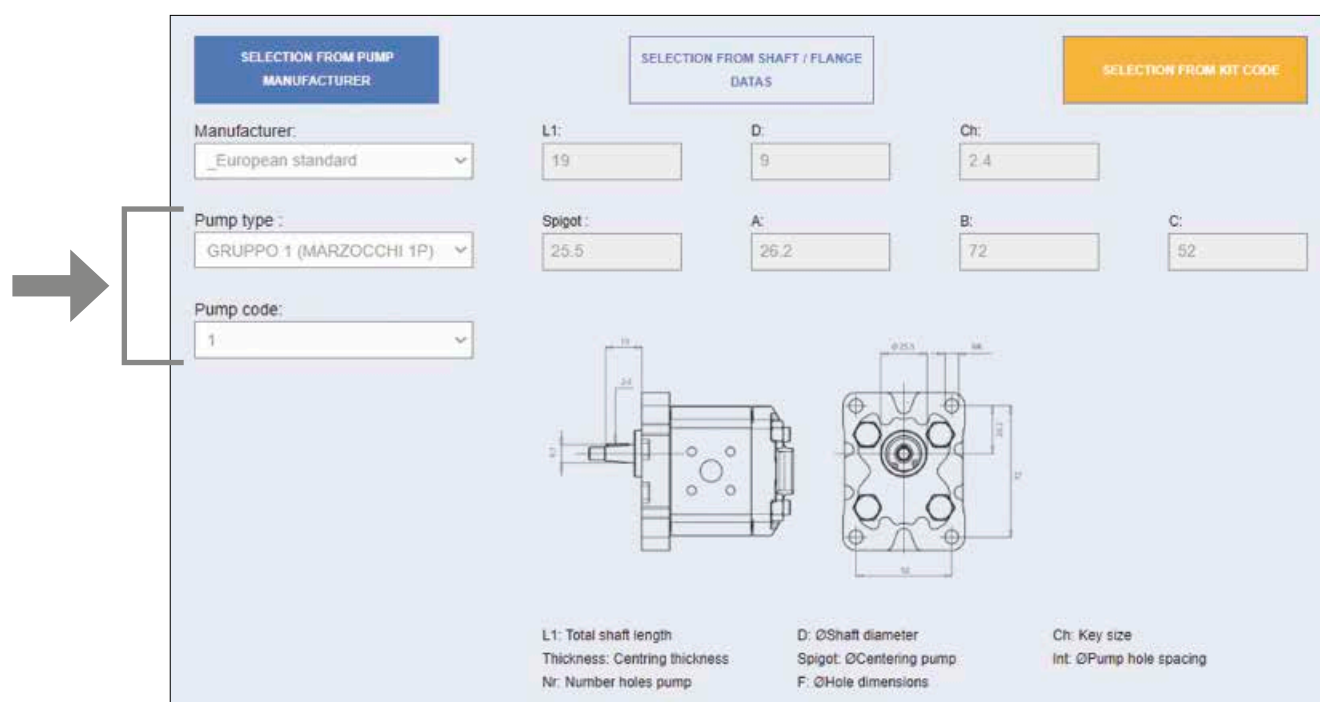
The calculated coupling is to be considered standard and does not need to respect particular conditions beyond the traditional calculation (conditions which we will report at the end of the calculation).

The material of the half-coupling is defined “in advance” based on the engine power, and any variation there of will be the result of a user decision, as will the material of the flexible coupling, which can be selected at the end of the selection process.

Below is a print screen of the screens and database tables involved in the coupling calculation.

5.2 Selection: European Standard Pump (Type - Code)

The first data to be input are: Pump Type; Pump code.



SELECTION FROM PUMP MANUFACTURER

Manufacturer:

Pump type:

Pump code:

SELECTION FROM SHAFT / FLANGE DATAS

L1: D: Ch:

Spigot: A: B: C:

SELECTION FROM KIT CODE

Technical Drawings:

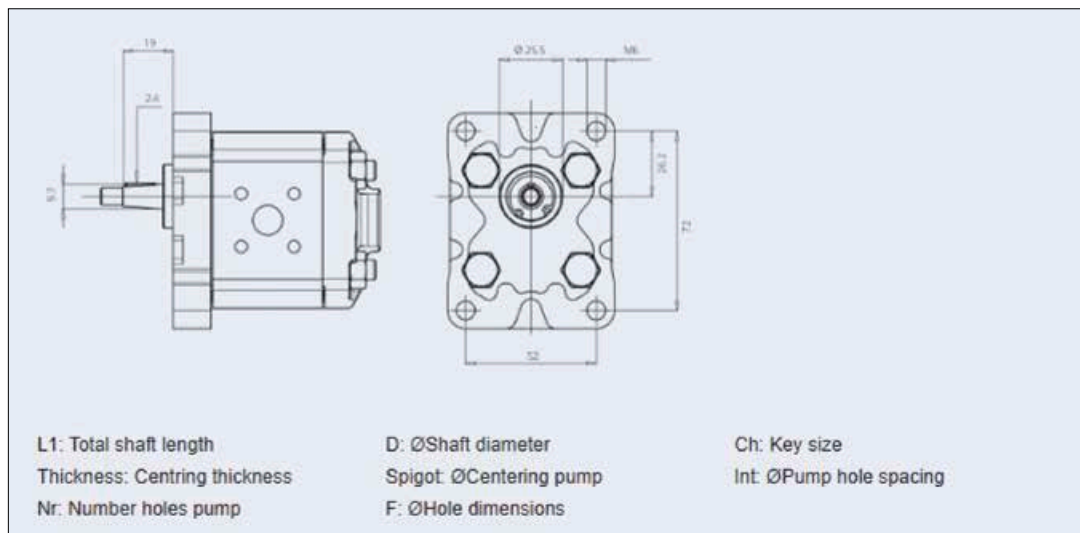
Left drawing: Side view of the pump assembly showing dimensions L1, D, and Ch.

Right drawing: Front view of the pump assembly showing dimensions Spigot, A, B, and C.

Legend:

- L1: Total shaft length
- Thickness: Centring thickness
- Nr: Number holes pump
- D: ØShaft diameter
- Spigot: ØCentering pump
- F: ØHole dimensions
- Ch: Key size
- Int: ØPump hole spacing

© 2015 Pearson Education, Inc. or its affiliate(s). All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage or retrieval system, without prior written permission from Pearson Education, Inc. or its affiliate(s).



5.3 Selection of the Engine Power and diameter of the shaft

In this section the data to be input are: Engine Power

ENDOTHERMIC ENGINE'S DATA

ENGINE POWER

Hp: 3 - 5.5 - kW 2.2 - 4 - a: 19.0 ▾

Size

110

Power Kw

2.2 - 4

Power Hp

3 - 5.5

L

62

D:

19.05

Fig.:

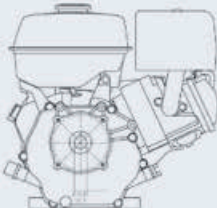
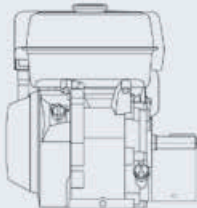
110

Ch:

5

Motor Shaft:

G01

L: Shaft length

Fig: ØMotor Flange

D: ØShaft diameter


Ch: Key size

CALCULATE

Once above data are input, fields related to motor sizes and technical drawing will appear, with data taken from the database, created from motor manufacturer official data.

5.4 Calculation and saving of available solution

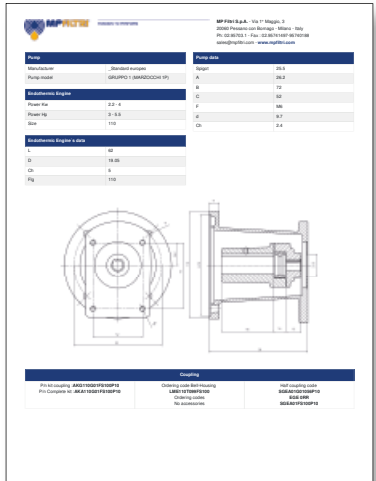
After clicking on “CALCULATE” button, a selection of available solutions will appear.



BELL-HOUSING WITH CENTRING RING

SAVE SELECTION IN YOUR ARCHIVE

SAVE PDF



By clicking on the solution, the software will allow you to save the selection in your archive, or to create a “.pdf” file with solution result.

6 Selection starting from existing kit code

Valid for both Electric motors and Engines.

If a kit code (i.e. AKMM04Z8066) is already available, in this section it is sufficient to input this kit code

SELECTION FROM PUMP MANUFACTURER
SELECTION FROM SHAFT / FLANGE DATAS
SELECTION WITH PUMP DATA ENTRY

SELECTION FROM KIT CODE
AKG CODE CREATION
AKA CODE CREATION

Insert the Kit code:

* Choose an option

CALCULATE

and, after clicking on “**CALCULATE**” button, all pump data will appear

SELECTION FROM PUMP MANUFACTURER
SELECTION FROM SHAFT / FLANGE DATAS
SELECTION WITH PUMP DATA ENTRY

SELECTION FROM KIT CODE
AKG CODE CREATION
AKA CODE CREATION

Manufacturer:

L1:

D:

Ch:

Select:

Pump type :

Select:

Int:

Nr:

F:

and motor data will appear (example en Electric motor)

ELECTRIC MOTOR DATA

N. Poles

2P

Motor frame

B3-B5

Size

132S

Power Kw

5,5

Power Hp

7,5

L:

80

D:

38

Fig.:

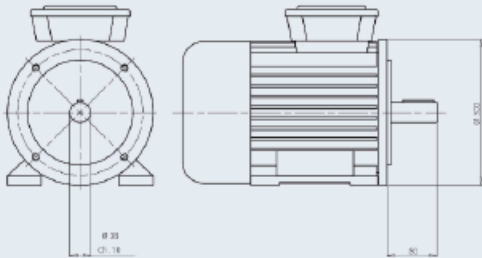
300

Ch:

10

Motor Shaft:

M06



Technical drawing of an electric motor showing front and side views with dimensions. The front view shows a circular motor frame with mounting feet. The side view shows the motor's length and shaft. Dimensions include: L=80, D=38, Fig.=300, Ch=10, Motor Shaft=M06, Size=132S, Power Kw=5,5, Power Hp=7,5. The drawing also shows a shaft diameter of Ø 35 and a shaft length of 16.

6.1 Spider/sleeve choice - options and accessories

These stages will follow the same logic and procedures described at previous paragraphs no. 4.4 and 4.5, that we kindly ask to refer to.

6.2 Calculation and saving of available results

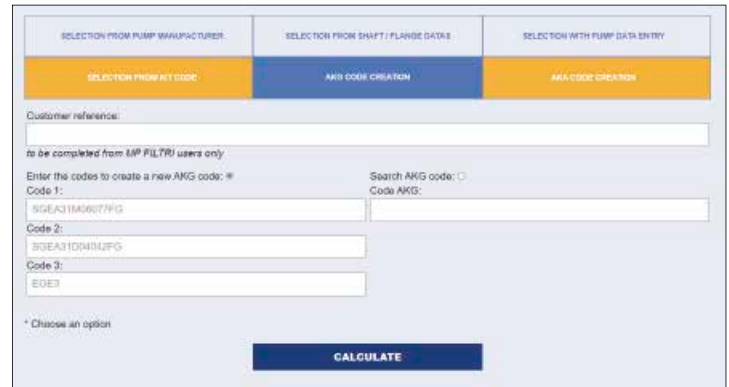
This stage will follow the same logic and procedures described at previous paragraph no. 4.6, that we kindly ask to refer to.

7 AKG code creation

By using this feature, user shall input following fields:

- Customer reference field: *only by MP Filtri users*
- Code 1 - 2 - 3 : in this fields user shall input, in any sequence:
motor half coupling code + pump half coupling code
+ spider/sleeve code

By clicking on the “**CALCULATE**” button, software will provide following possible result.

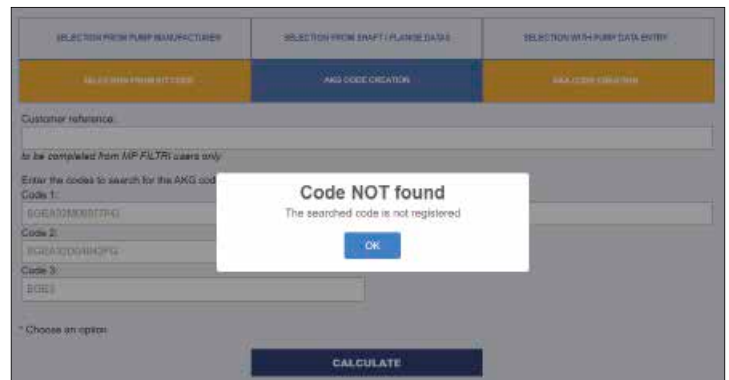


The screenshot shows the 'AKG CODE CREATION' tab selected. It includes a 'Customer reference' field, a section for 'to be completed from MP FILTRI users only' with three code input fields (Code 1, Code 2, Code 3), and a 'CALCULATE' button at the bottom right.

A: CODE NOT FOUND

If the system doesn't find any combinations, the MP Filtri Power Transmission team will receive a message to create the related kit code combining the three mentioned codes:

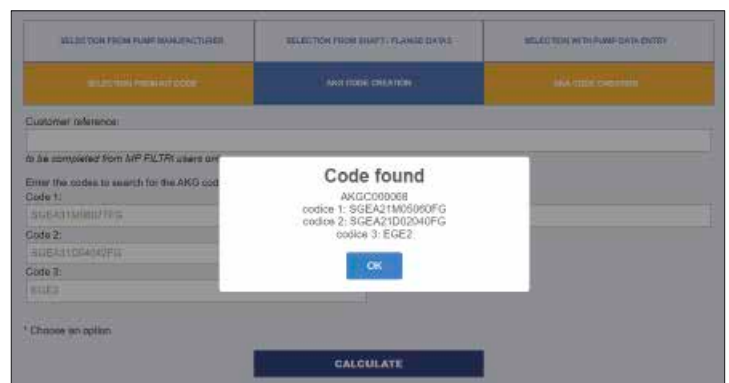
- motor half coupling code
- pump half coupling code
- spider/sleeve code.



The screenshot shows the same interface as before, but with a modal dialog box in the center that says 'Code NOT found' and 'The searched code is not registered'. There is an 'OK' button in the dialog.

B: CODE FOUND

If the system identifies a valid combination of the entered codes, the software will display the corresponding result, showing the related existing kit code in the first row.



The screenshot shows the same interface, but with a modal dialog box in the center that says 'Code found'. It lists the resulting kit code: 'AKGC000008' and the individual codes: 'code 1: SGEA21M05000FG', 'code 2: SGEA21D02000FG', and 'code 3: EGE2'. There is an 'OK' button in the dialog.

7.1 AKG code verification

If user has already an existing AKG kit code to be checked, it is sufficient to input it in the related field on the right-hand side.

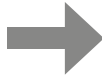
and then, by clicking on the **“CALCULATE”** button, software will show following result, mentioning, in the first row, the related existing kit code and then the connected no. 3 codes for motor half coupling + pump half coupling + spider/sleeve:

- 6-codes input: user shall input, in any sequence: motor base code + pump flange code + mounting kit code (i.e. KVGx) + motor half coupling code + pump half coupling code + spider/sleeve code
- 8-codes input: user shall input, in any sequence: motor base code + bell-housing adaptor code + pump flange code + (2x) mounting kit code (i.e. KVGx) + motor half coupling code + pump half coupling code + spider/sleeve code

8 AKA code creation

By using this feature, user shall input following fields:

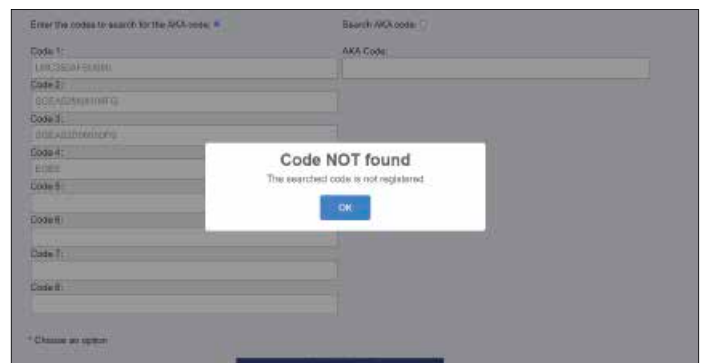
- Customer reference field:
only by MP Filtri users
- 4-codes input: user shall input, in any sequence:
bell housing code + motor half coupling code
+ pump half coupling code + spider/sleeve code




A: CODE NOT FOUND

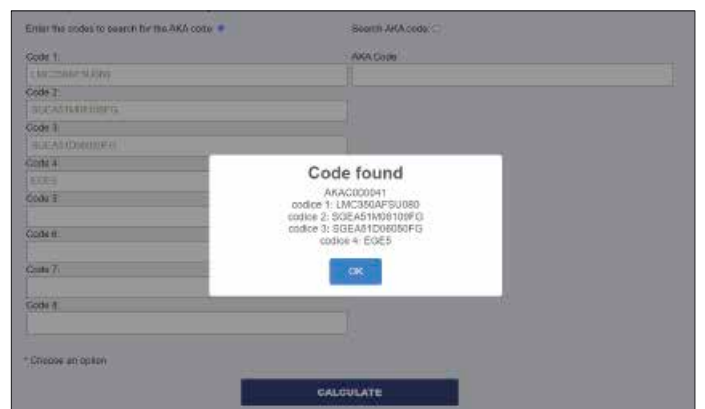
If the system doesn't find any combinations, the MP Filtri Power Transmission team will receive a message to create the related kit code combining the three mentioned codes:

- motor half coupling code
- pump half coupling code
- spider/sleeve code.



B: CODE FOUND

If the user enters existing codes in fields No. 4, or No. 6, or No. 8, the system will identify a valid combination and the software will display the corresponding result, showing the related existing kit code in the first row.



8.1 AKA code verification

If user has already an existing AKA kit code to be checked, it is sufficient to input it in the related field on the right-hand side.

Enter the codes to search for the AKA code: ☐ Search AKA code:

Code 1: LMC350AFSU080

Code 2: SGEA51M08109FG

Code 3: SGEA51D06050FG

Code 4: EGE5

Code 5:

Code 6:

Code 7:

Code 8:

* Choose an option

CALCULATE

and then, by clicking on the “**CALCULATE**” button, software will show following result, mentioning, in the first row, the related existing kit code and then the connected no.3 codes for for motor half coupling + pump half coupling + spider/sleeve:

Code 3: SGEA51D06050FG

Code 4: EGE5

Code 5:

Code 6:

Code 7:

Code 8:

Code found

AKAC000012

codice 1: LMC350AFSU021

codice 2: SGE40M07110

codice 3: ege4

codice 4: SGE40PD02045

OK

All data, details and words contained in this publication are provided for use by technically qualified personnel at their discretion, without warranty of any kind.

MP Filtri reserves the right to make modifications to the models and versions of the described products at any time for both technical and/or commercial reasons.

For updated information please visit our website: www.mpfiltri.com

The colors and the pictures of the products are purely indicative.

Any reproduction, partial or total, of this document is strictly forbidden.

All rights are strictly reserved

WORLDWIDE NETWORK

CANADA ♦ CHINA ♦ FRANCE ♦ GERMANY ♦ INDIA ♦ SINGAPORE
UNITED ARAB EMIRATES ♦ UNITED KINGDOM ♦ USA



PASSION  PERFORM

in   



mpfiltri.com
Scan or click me!