POWER TRANSMISSION SIZING SOFTWARE

USER GUIDE

EN

PASSION TO PERFORM

MP FILTRI®

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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

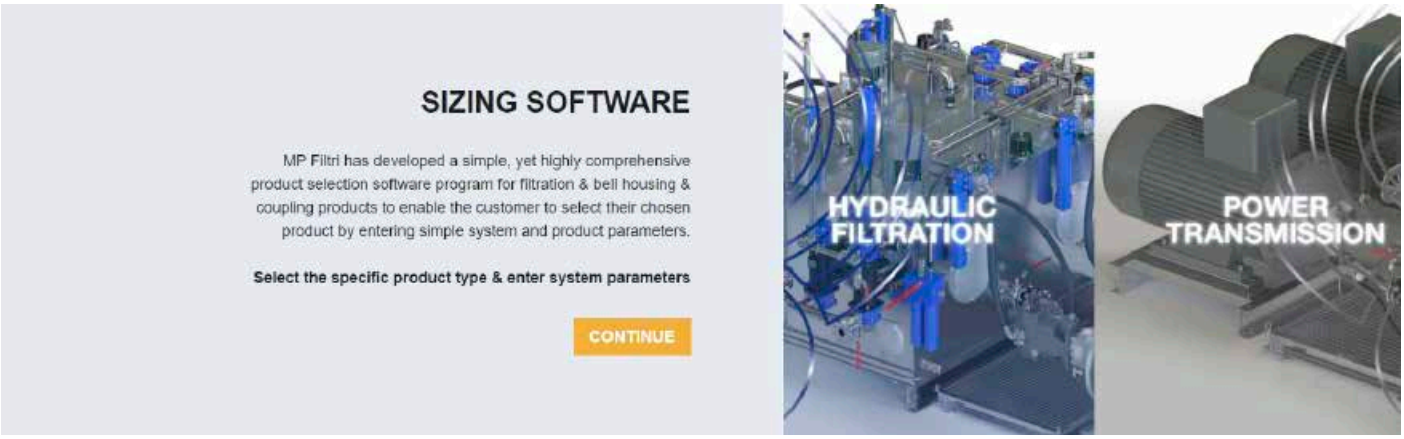
Compatible browsers: Internet Explorer or later versions; Microsoft Edge or later versions; Chrome; Firefox (suggested)
Any other browser will be suitable.
No specific additional software is required to enable the MP Filtri sizing software program to operate successfully.
Lists and reports will be generated 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

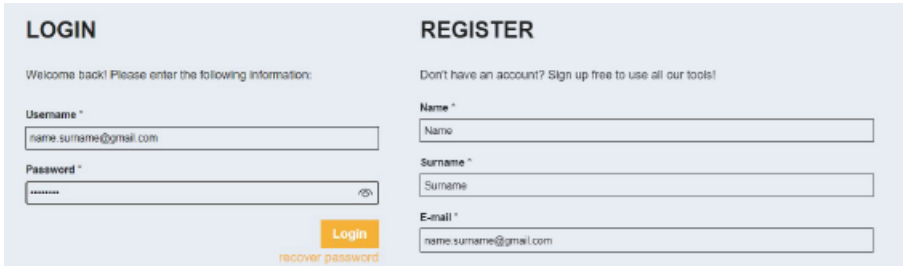
3 Web access links

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

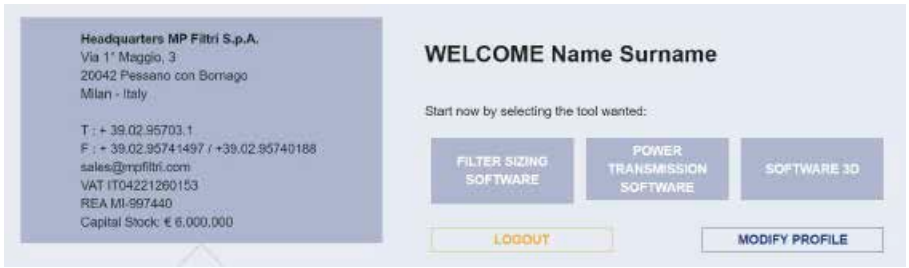


Then, a log-in page will appear, where non-registered users shall input their data to register, while already registered users shall access with their credentials.

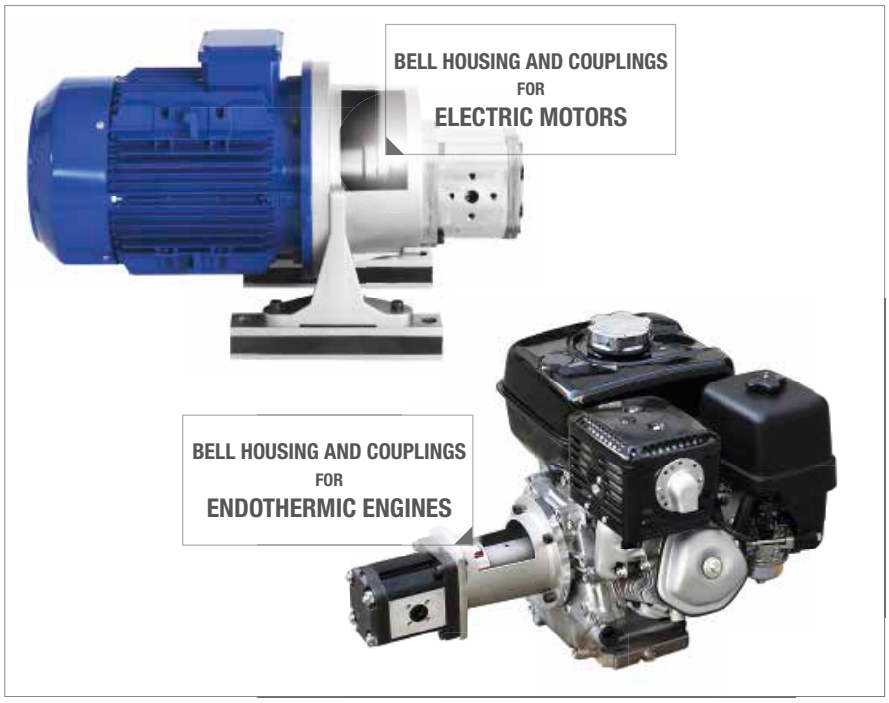
Registration MP Filtri S.p.A.



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:



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

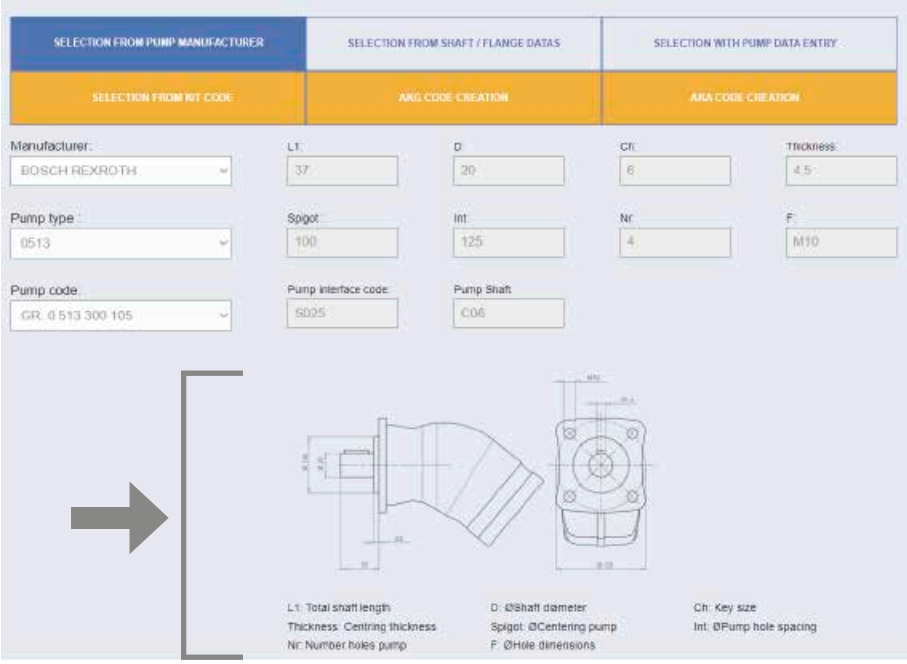
4.1 Introduction

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.



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

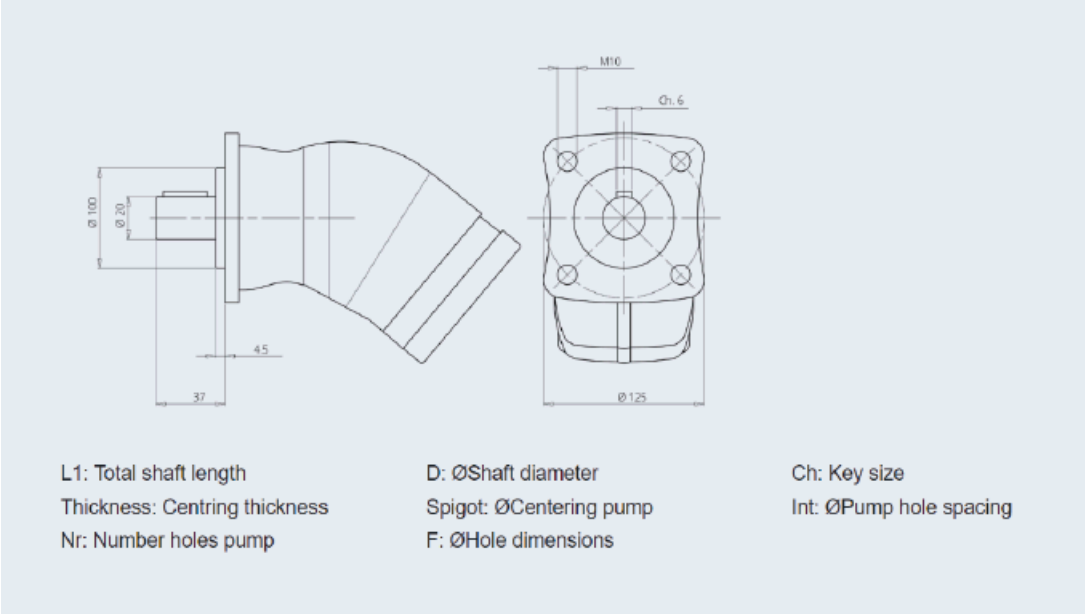
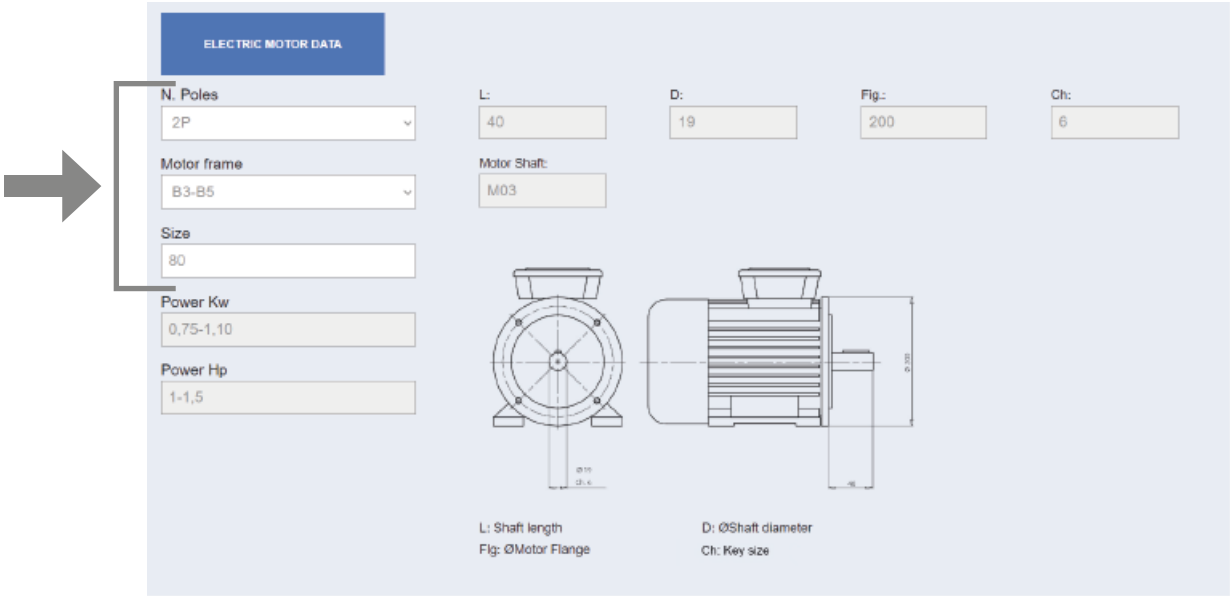


Image for illustrative purpose only

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.



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

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

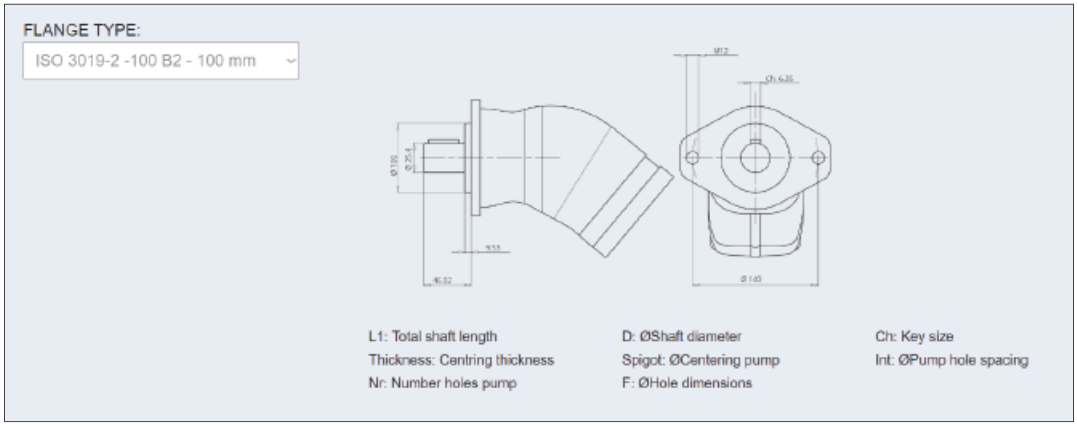
After clicking on "**CALCULATE**" button, a selection of available solutions will appear.

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

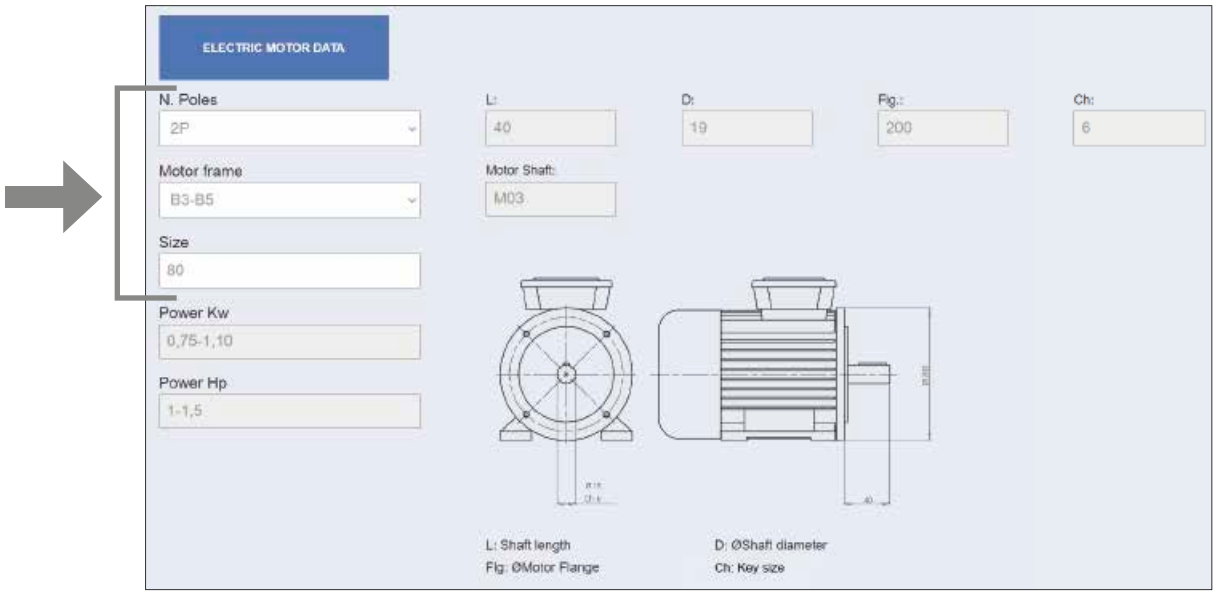
If this selection mode is chosen, the first data to be input are: Shaft; Shaft Type; Flange: Flange Type.

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.



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

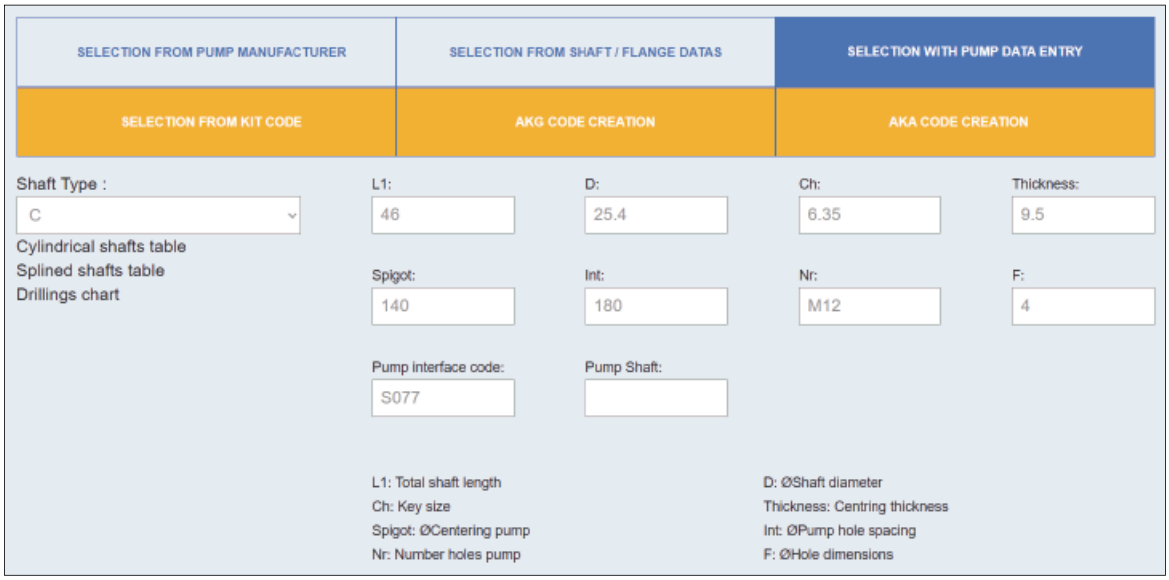
These stages will follow the same logic and procedures described at previous paragraphs nos.4.4 and 4.5, that we kindly ask to refer to.

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.

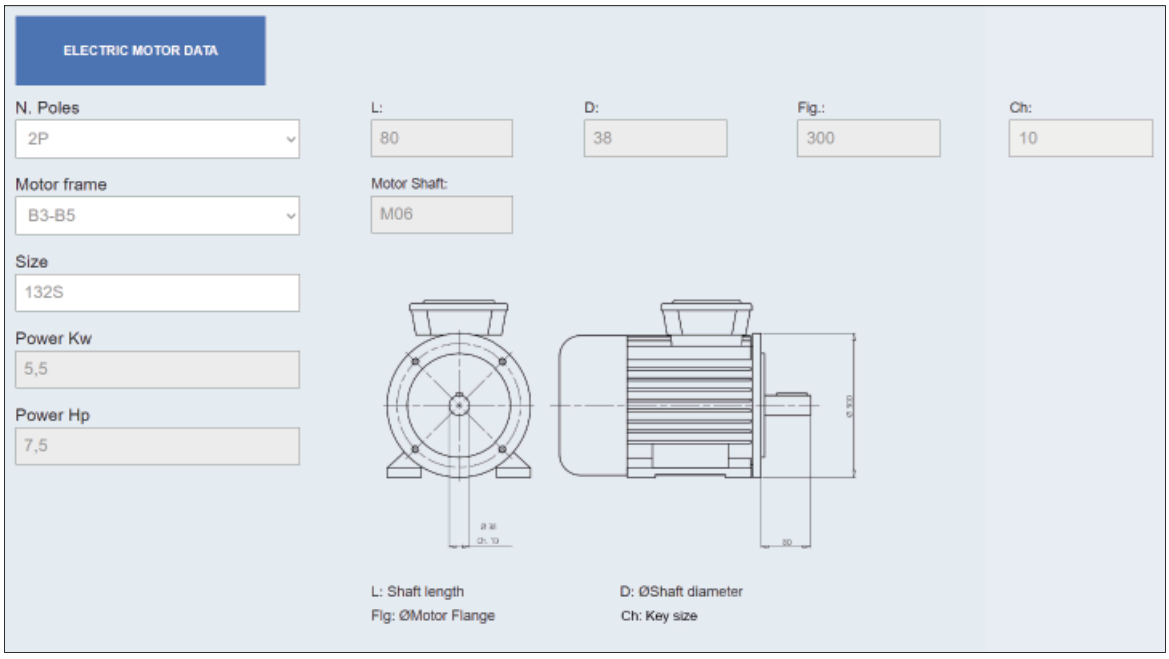
4.11 Third selection: Pump data entry

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



4.12 Electric Motor Input

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

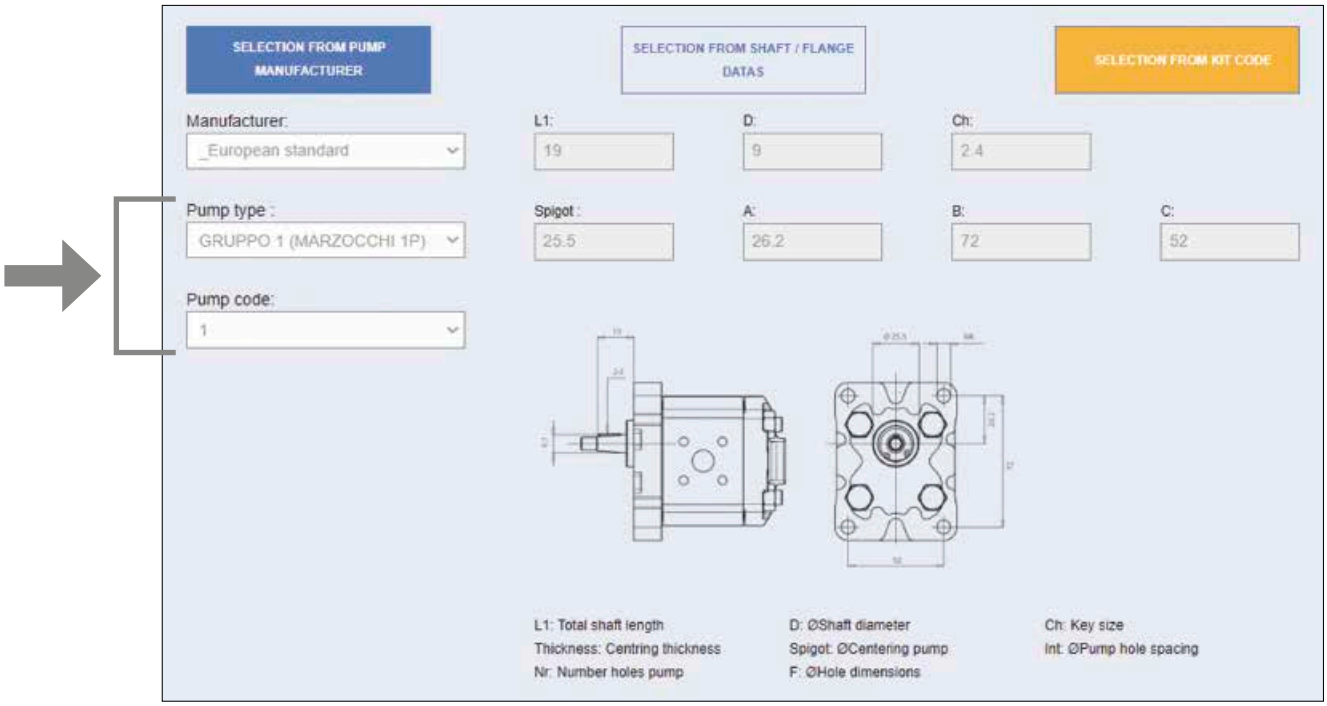
5 Bell-housing and Couplings for Endothermic Engines

5.1 Introduction

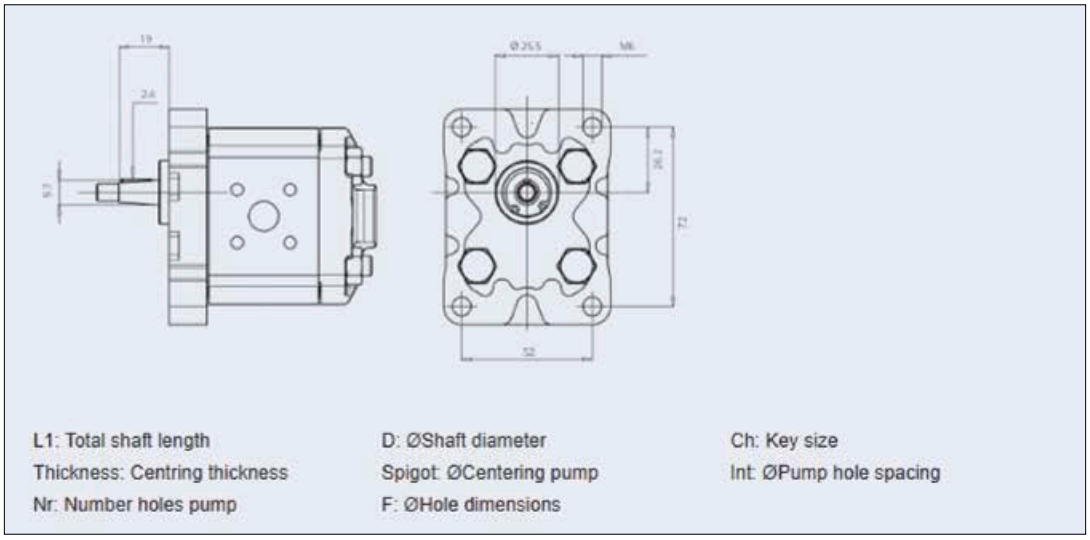
The calculation example we are going to report relates to a coupling between an endothermic engine and group 1/2 hydraulics gear pumps and SAE-A 2-Bolt pumps.
The calculated coupling is to be considered standard and does not need to respect particular conditions beyond the traditional calculation (conditions 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.



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



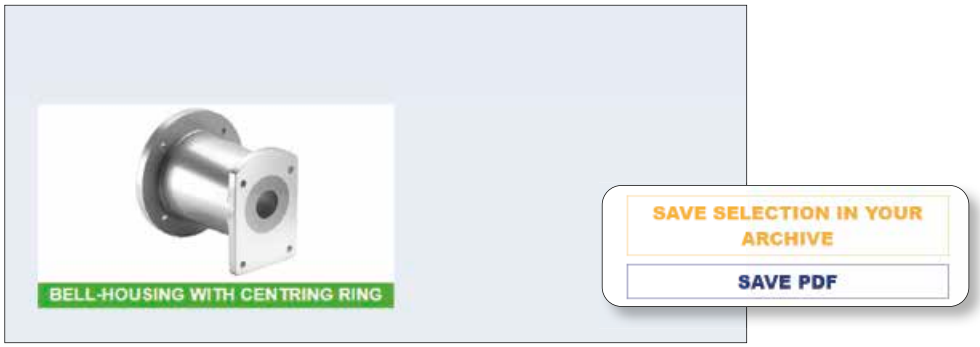
5.3 Selection of the Engine Power and diameter of the shaft

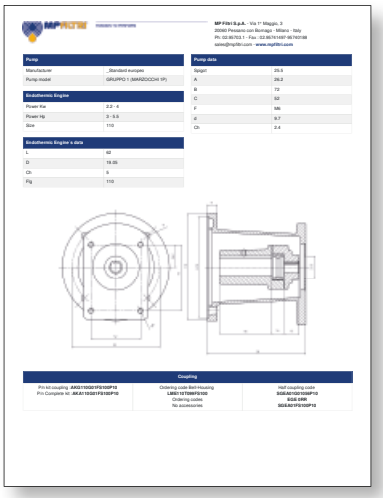
In this section the data to be input are: Engine Power

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.



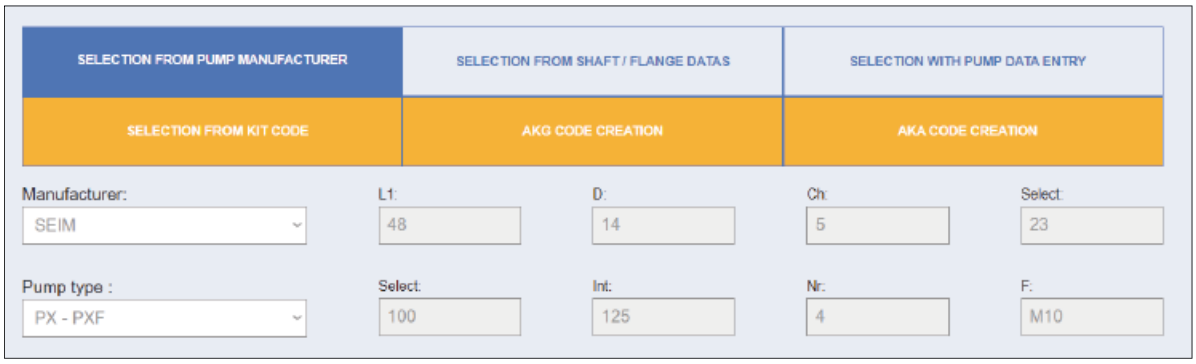


By clicking on the solution, the software will allow you to save the selection in your archive, or to create a “.pdf” file with solution result.

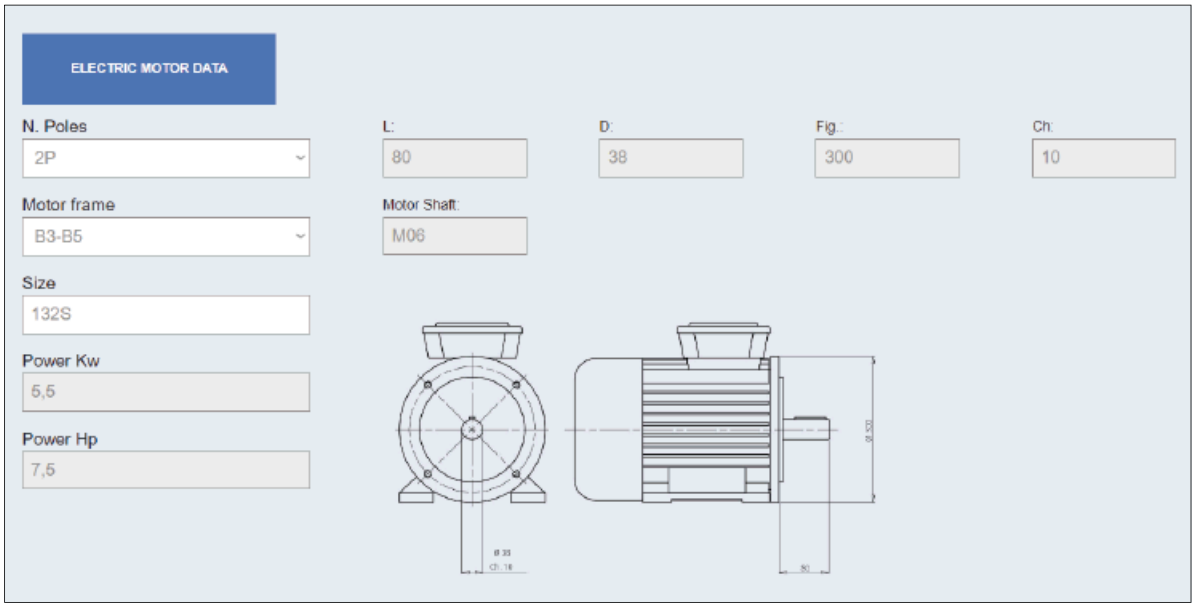
6 Selection starting from existing kit code

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

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



and motor data will appear (example en Electric motor)



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:

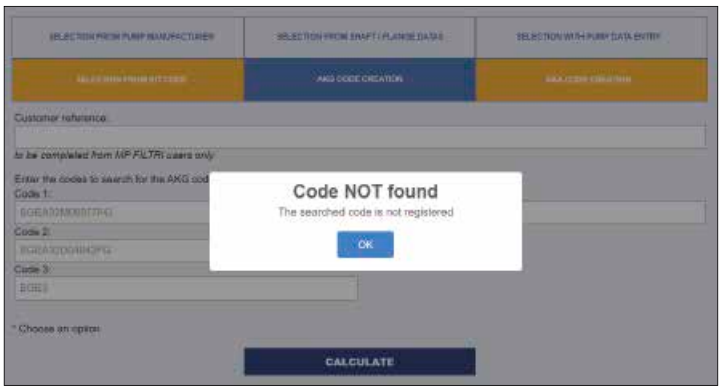
- Customer reference field: *only by MP Filtri users*
- Code 1 - 2 - 3 : in this fields user shall input, in any sequence:
  motor half coupling code + pump half coupling code + spider/sleeve code

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

A: CODE NOT FOUND

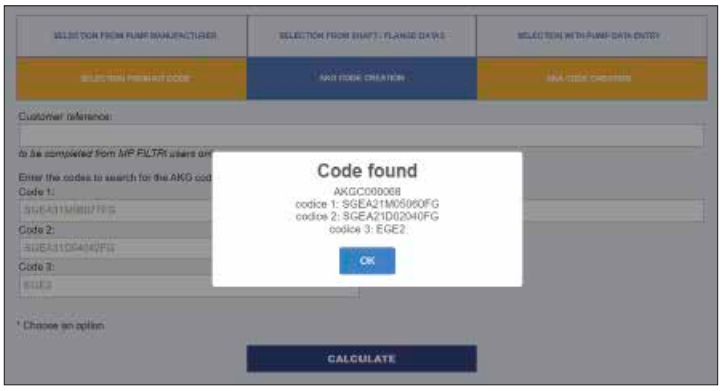
If the system doesn't find any combinations, the MP Filtri Power Transmission team will receive a message to create the related kit code combining the three mentioned codes:

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



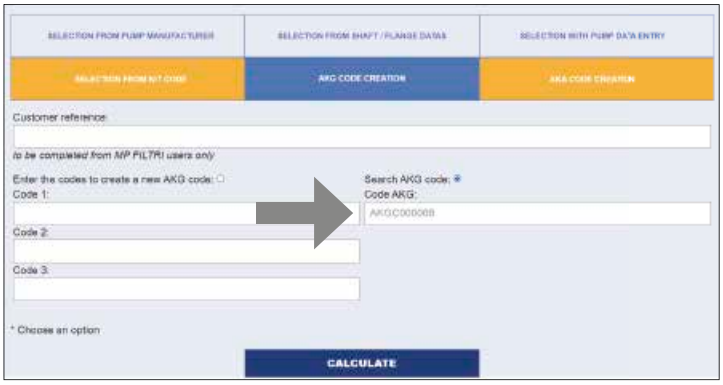
B: CODE FOUND

If the 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.

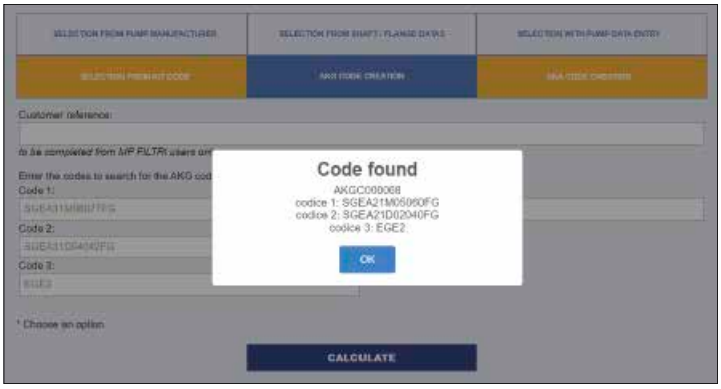


7.1 AKG code verification

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.

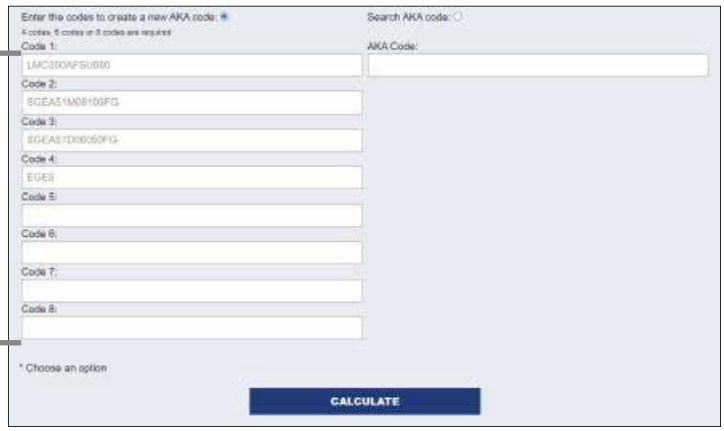


and then, by clicking on the "**CALCULATE**" button, software will show following result, mentioning, in the first row, the related existing kit code and then the connected no. 3 codes for motor half coupling + pump half coupling + spider/sleeve:



- 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

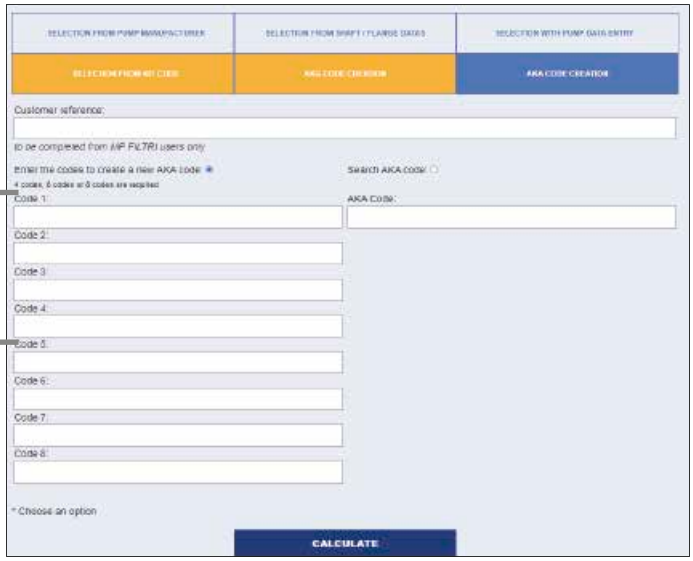
- 8-codes input: user shall input, in any sequence: motor base code + bell-housing adaptor code + pump flange code + (2x) mounting kit code (i.e. KVGx) + motor half coupling code + pump half coupling code + spider/sleeve code



8 AKA code creation

By using this feature, user shall input following fields:

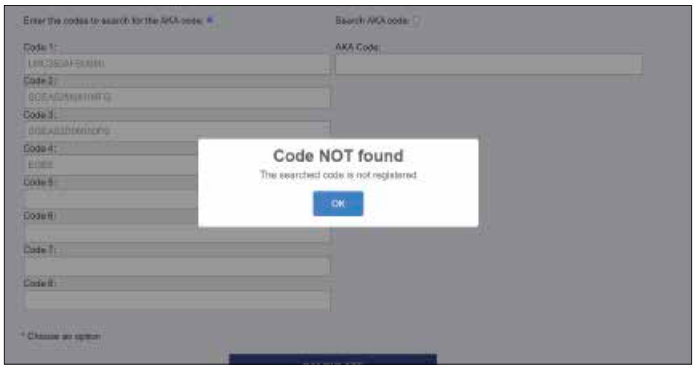
- Customer reference field:
  only by MP Filtri users
- 4-codes input: user shall input, in any sequence:
  bell housing code + motor half coupling code + pump half coupling code + spider/sleeve code



A: CODE NOT FOUND

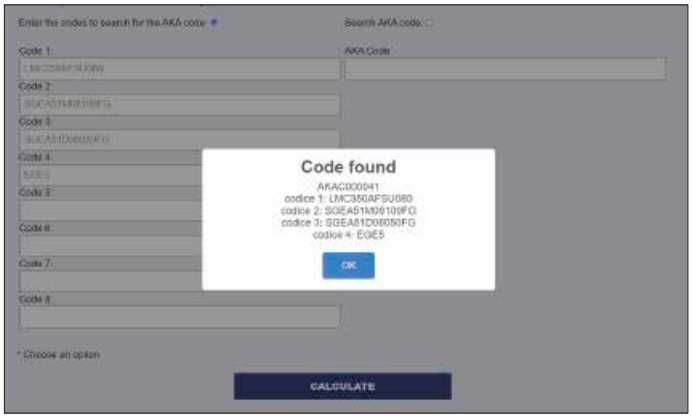
If the system doesn't find any combinations, the MP Filtri Power Transmission team will receive a message to create the related kit code combining the three mentioned codes:

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



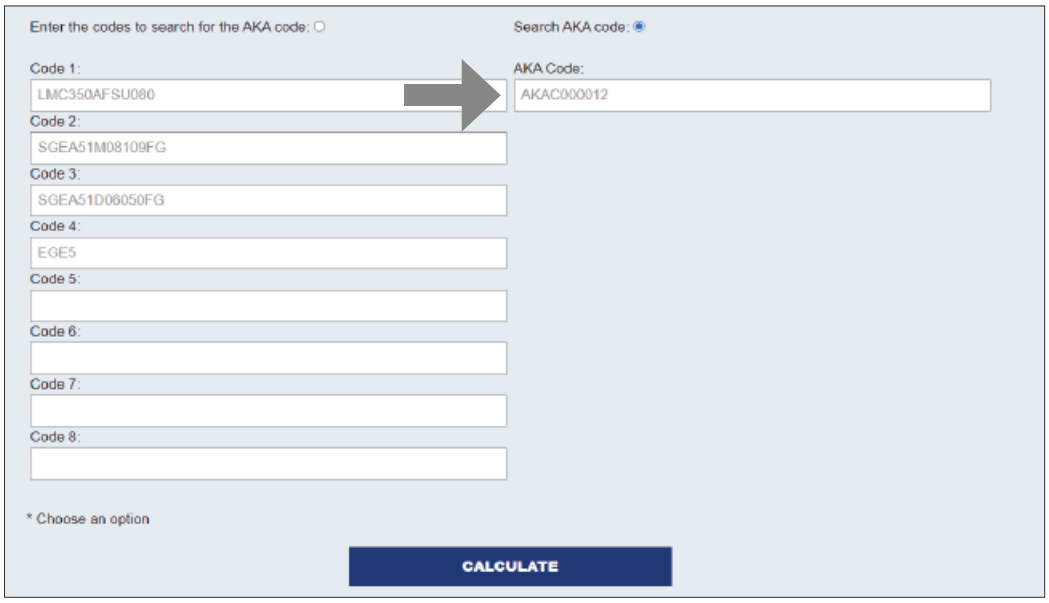
B: CODE FOUND

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.



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:

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