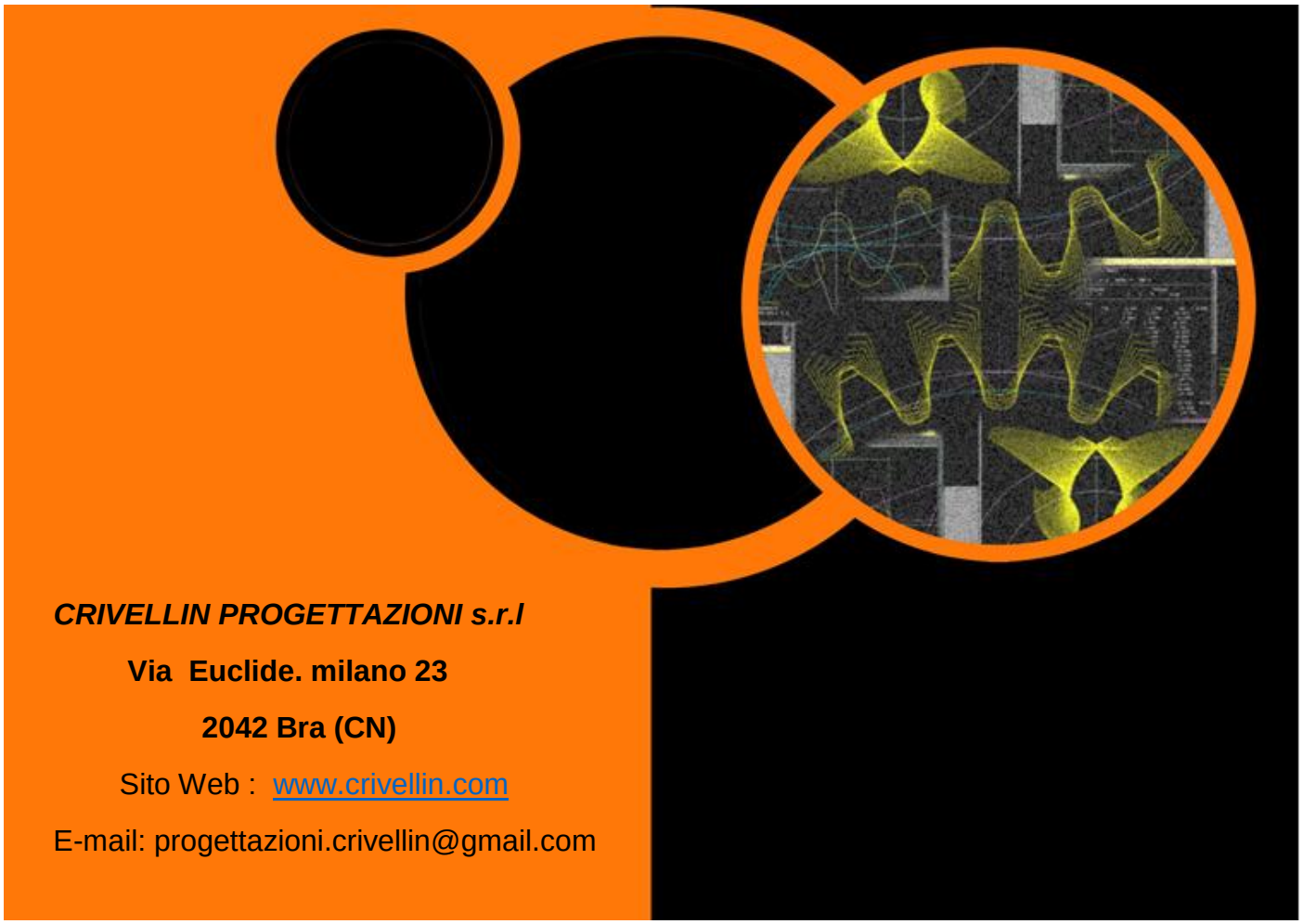


CRIVELLIN PROGETTAZIONI s.r.l

Via Euclide. milano 23

2042 Bra (CN)

Sito Web : www.crivellin.com

E-mail: progettazioni.crivellin@gmail.com

"DIFFERENTIAL"

Gearing calculation for gear train the differential.

User manual

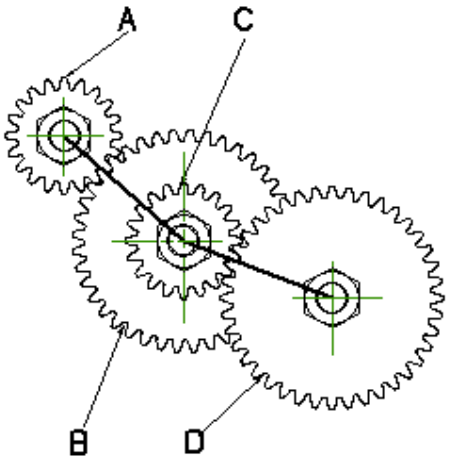
Index

Presentation

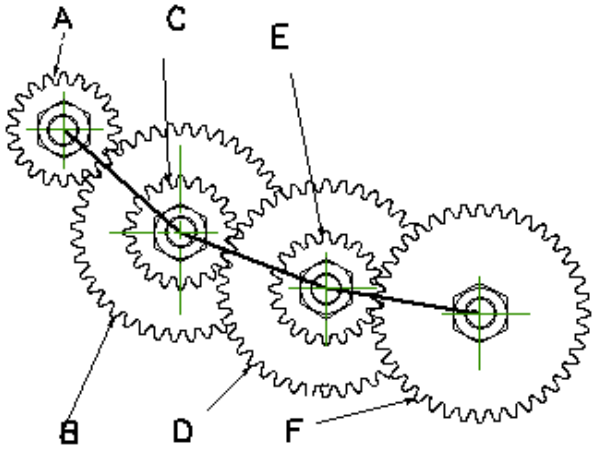
The program calculates gear train ratio of the differential by:
hobbing machines, grinding machines, threading machines, bevel cutting, Basic rack machine and milling racks.

Normally calculated 4 wheels but if the ratio is very low, the program calculates with 6 wheels.
The calculation can be performed with precision to the 10th decimal place. By default, the program proposes the calculation with 6 digits.
If a result is not found, the program recalculates down by one digit up to the minimum (3 digits).

Results with 4 wheels, ratio $\frac{A*C}{B*D}$ (A-C = Conductive, B-D = Driven)



Results with 6 wheels, ratio.= $\frac{A*C*E}{B*D*F}$ (A-C-E = Conductive, B-D-F = Driven)



Start the program window

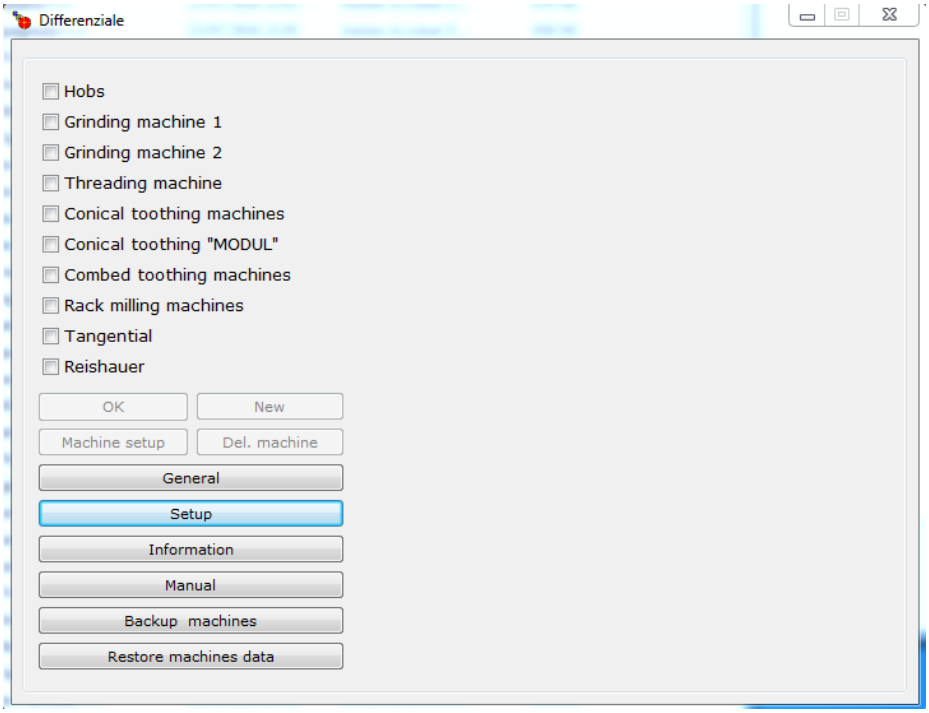


Fig. 1

General

Selecting "General" from Figure 1 window, you can make the calculation 4 gears, given a report and a set of wheels without bond with no machine.

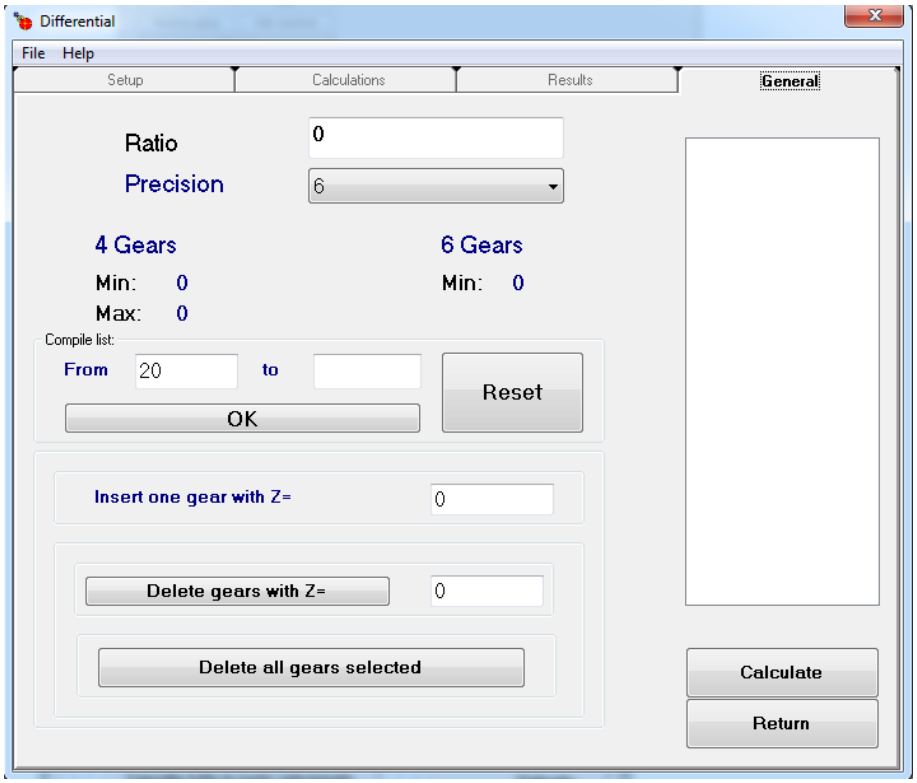


FIG. 2

Settings

By selecting "Settings" you can set the unit of measurement
the angle in decimal degrees or degrees, minutes,seconds, and the language for using the program.
The button "Save" makes this valid setting every time you launch the program.

FIG.3

Backup data of the machines

Save data file machines.

Charging machine data

Upload the data previously saved .

Choosing a machine

Appears in the window below. Select a machine.
At this point you can choose the options on the buttons:

"OK" continues with the calculation
"NEW" offers a window we'll see where you can enter values to store a new car of the same family.
For the family it is meant that the formula for calculating the ratio is the same, you can only enter the constant.

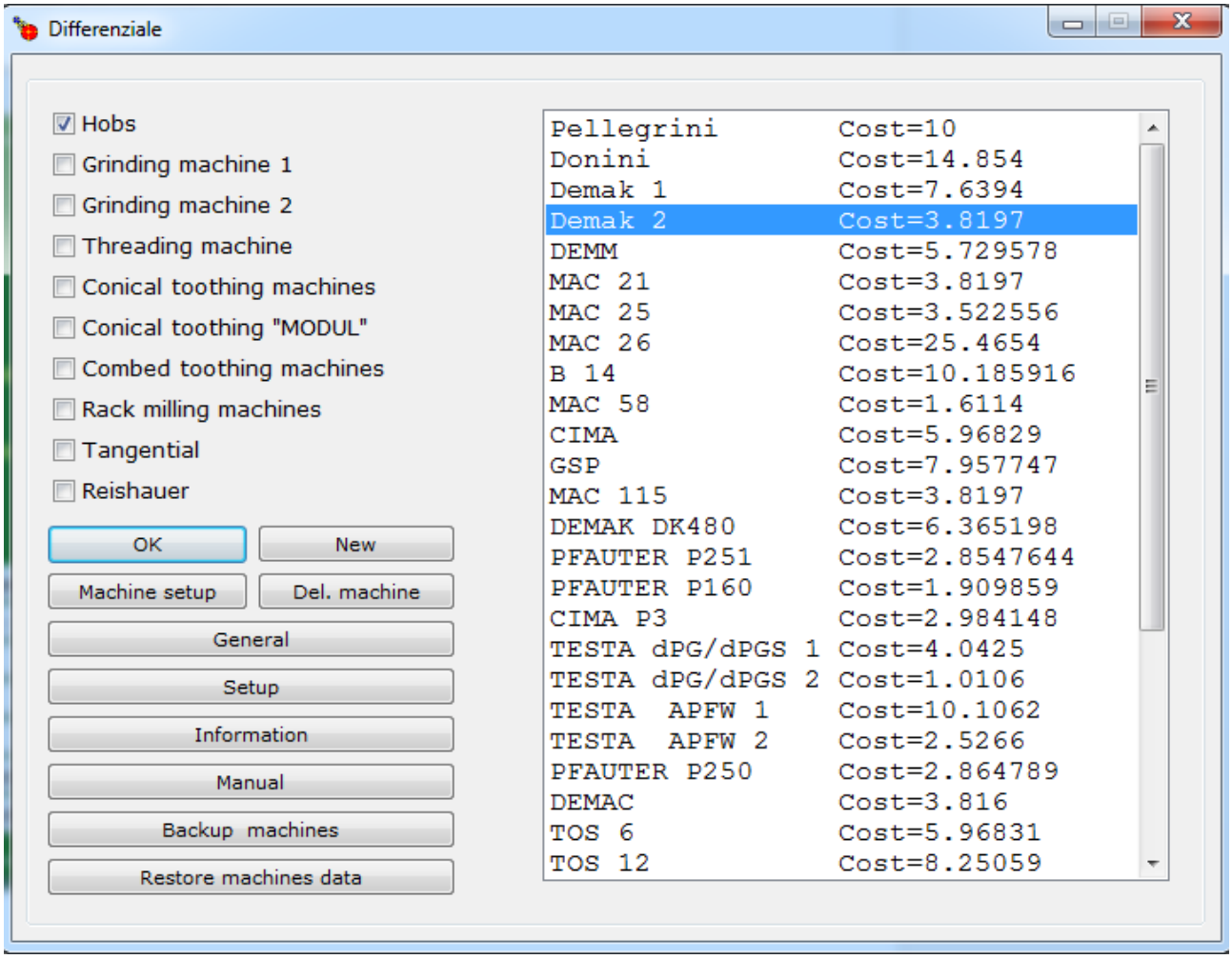


FIG.4

Button "Setup" or "New"

"Machine name":
Enter the name of the machine.

"Constant":
Enter the numeric value of the constant.

"Compile a list":
Fill in the 1st **"BY"** field with the smaller wheel number of teeth. fill in the 2 ° field **"TO"** with the number of teeth on the large wheel.
Press the **"OK"** button in the right window you will be compiled a list of the wheels.

"Reset":
Remove all the wheels that appear on the list.

"Insert a time wheel":
Write the number of teeth in the field and press the **"Return"** key on the keyboard.

"Remove all the wheels with Z =":
Select the wheels on the list to be deleted by selecting the BUTTON

"Save":
Stores the setting just made.

"Return":
Go back to the previous window.

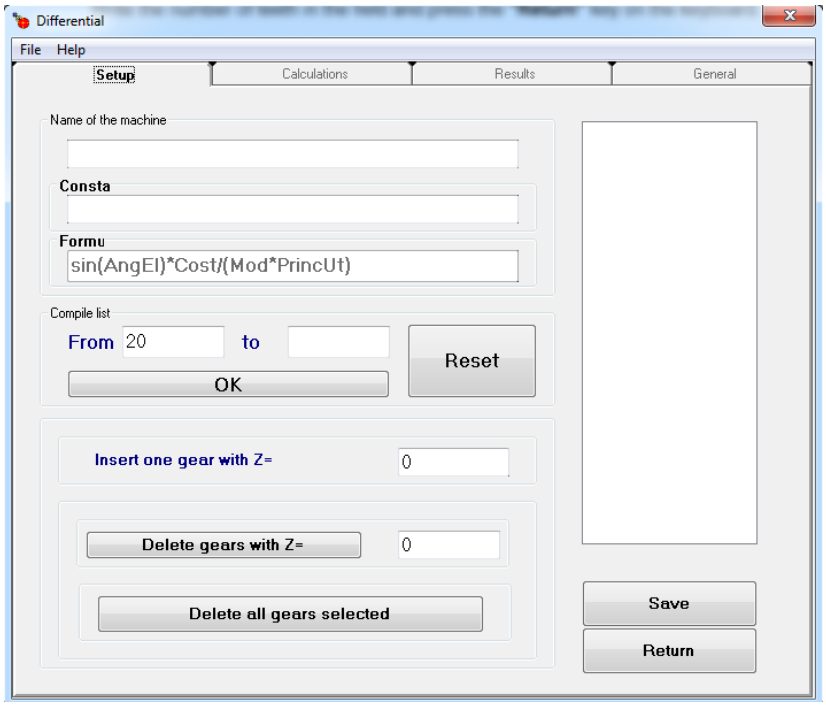


FIG. 5

Data input window

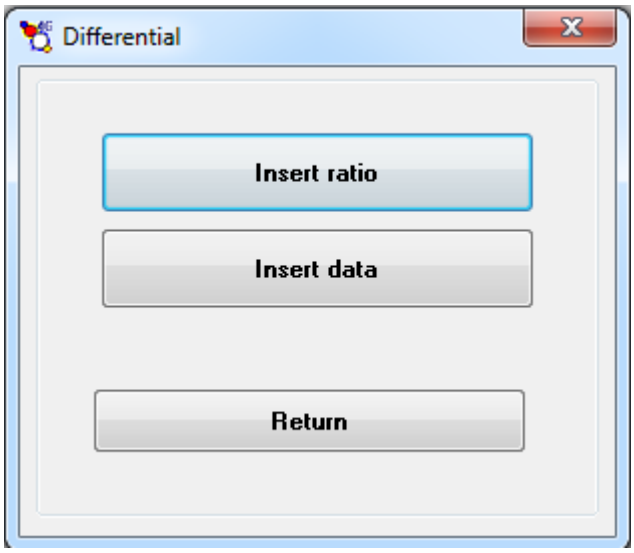


FIG.6

"Input value":

You may choose to enter only the previously calculated ratio by other means (see figure 7).

"Input data"

Inputting data and the ratio is calculated by the pro-gramme (see Figure 8).

"Back":

Back of a window..

"Introduction ratio"

Enter the value of the report in the "Report" (ratio between the drive wheels divided the driven wheels).

In the window you can see in advance the minimum and maximum possible with the available wheels.

If you want to have a calculation accuracy higher than that set by default, select the value in the field below: "Decimal".

----------Limitations----------

"Fxed wheel A":

Select the picture, you will see the list of wheels, select the desired wheel. You can set a fixed driving gear.

"Fixed wheel B":

Select the picture, you will see the list of wheels, select the desired wheel. You can set a fixed driven wheel.

"Sum minimum teeth A + B":

If the horse's head does not allow you to mount small wheels: select the picture, you will see a field where you enter the value.

"Calculate" starts the calculation.

"Return": go back one box.

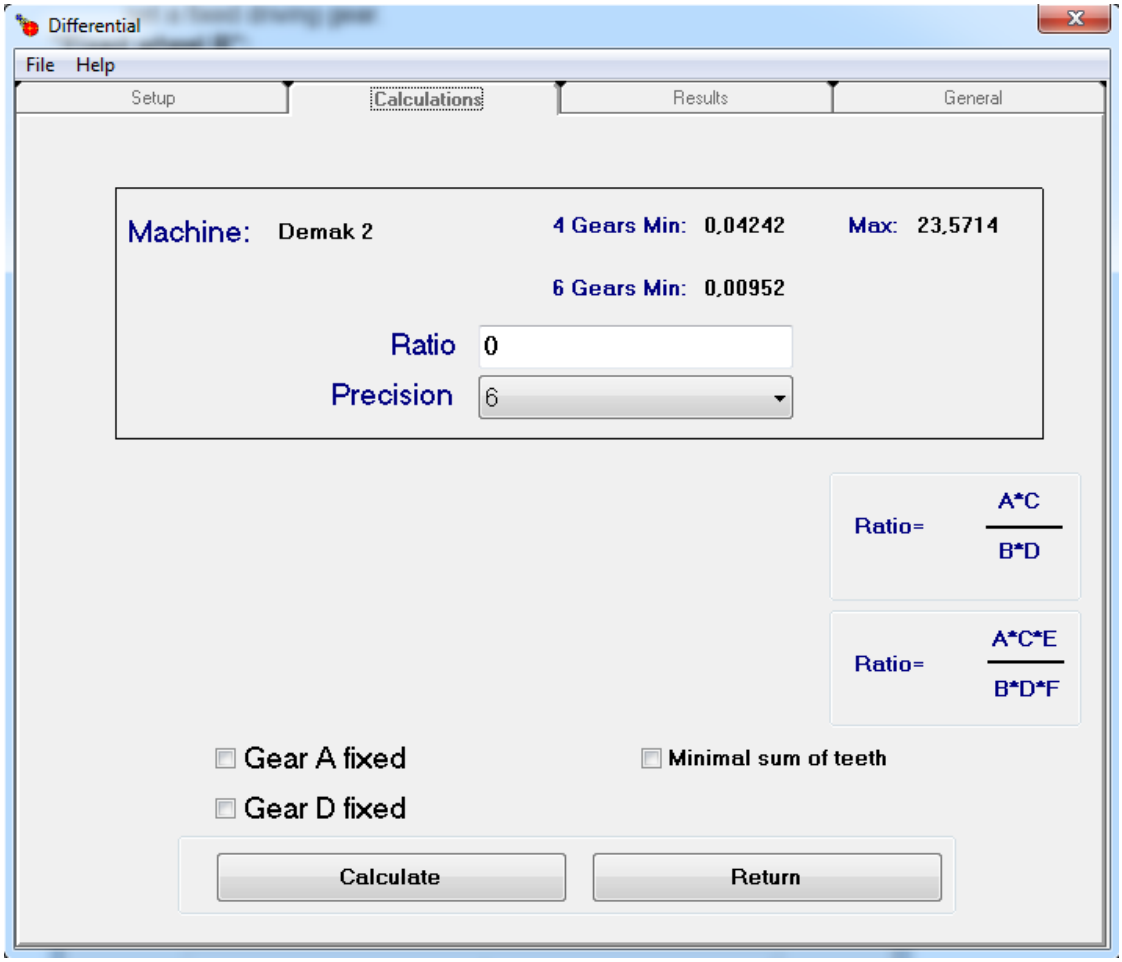


FIG. 7

"Enter data"

The input box allows you to enter the essential data to calculate the ratio and the wheels.

The "Report" field is disabled. Will be automatically filled in just inserted the module,

the N ° threads of the hob and the helix angle.

Enter values in the fields below as required.

The "G" and "GPS" buttons allow you to enter data in sessadecimali degrees or in degrees, minutes, seconds. Limitations: are the same as on page 7.

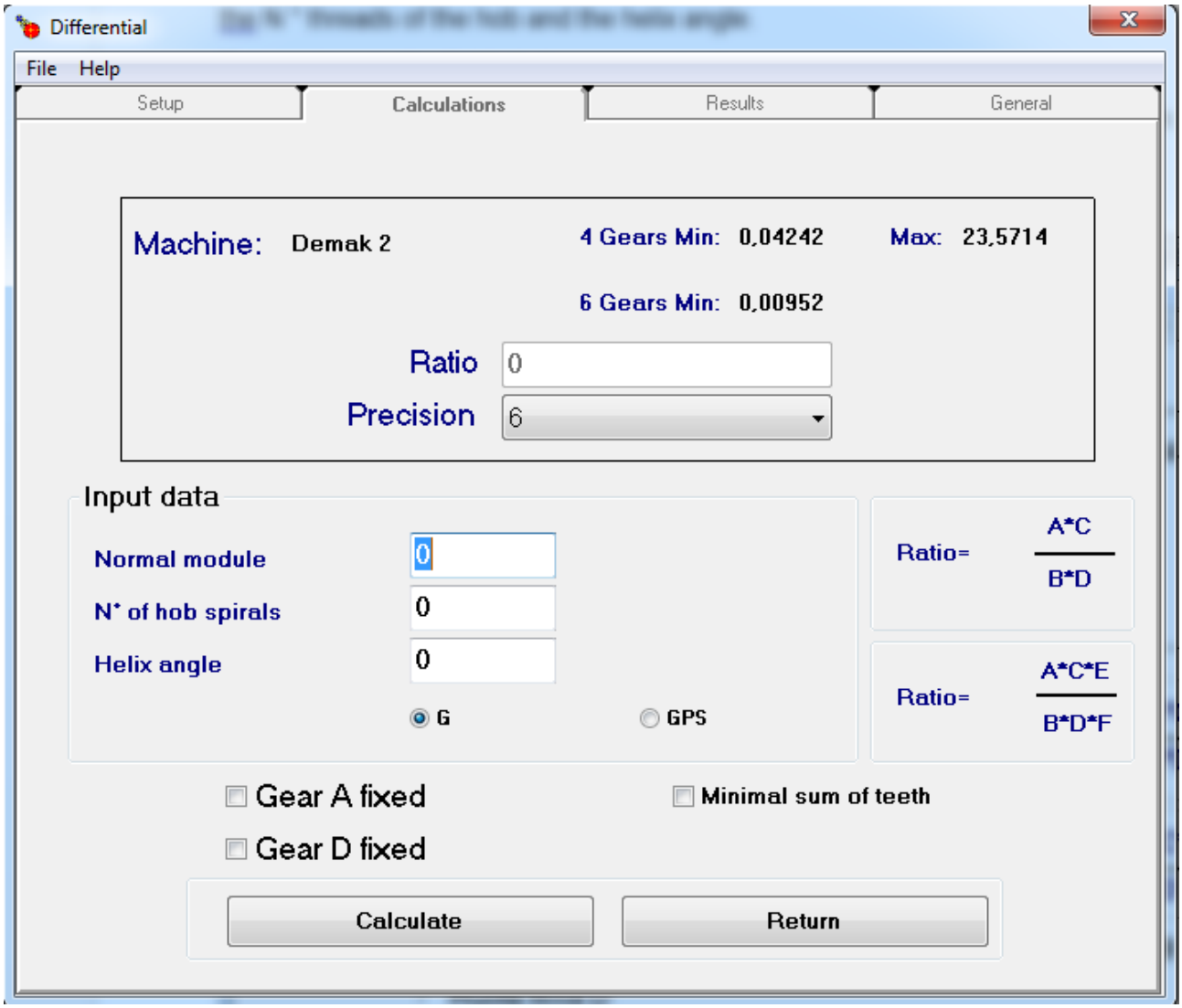


FIG. 8

Results window

The results appear from the window below; you can print or save to disk. If you choose the **"Print Selection"** option prints only the wheels that interest you.
The program calculates the difference (delta) between the searched ratio and that found ratio.
It also calculates the helix angle actually achievable with the wheels choices.

In the case of threading calculates the actual axial pitch and so on also to other machines.

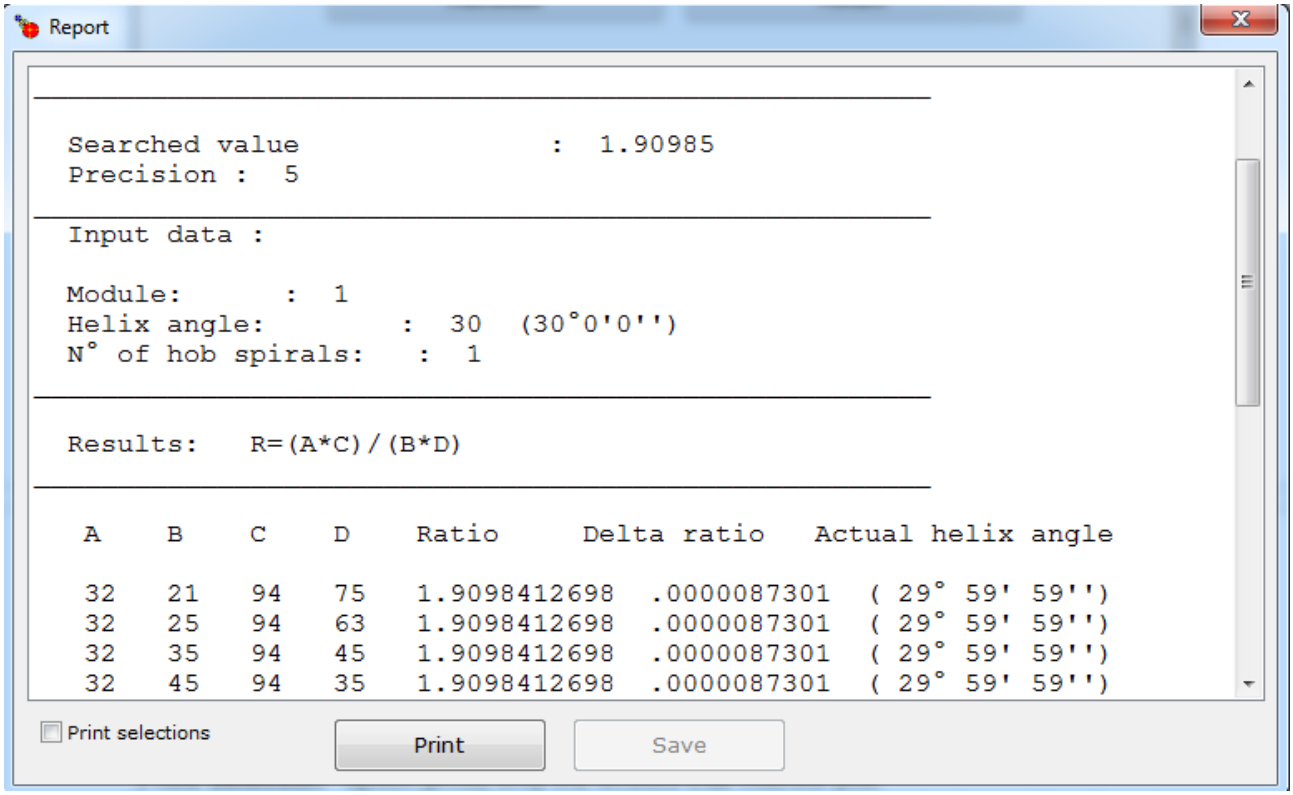


FIG. 9