

Application Tip

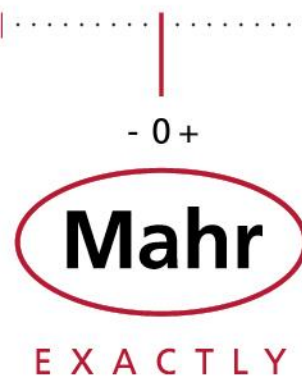


APPLICATION TIP MARWIN

THE SCANNED GRAPHIC CODE AUTOMATICALLY STARTS THE CORRESPONDING MEASUREMENT PROGRAM. PROTOCOL ENTRIES ARE AUTOMATICALLY SET.

Convenient, reliable and fast data entry with laser scanner or RFID to start the correct measuring program as well as for logging and data export.

This is what we mean by **EXACTLY**.



Fast and convenient program start with a scanner

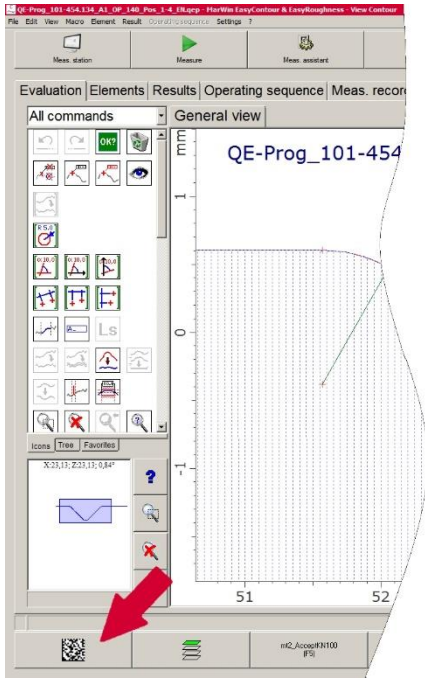


Image 1: Start the scan of the DMC code

Start measuring programs easily, quickly and conveniently with a laser scanner

With MarWin measuring stations from the areas MarSurf, MarForm and MarShaft, measuring programs can be started easily and conveniently by scanning the DMC code. In addition, the information contained in the code can be used for logging or exporting data. Component information is imported, virtually eliminating errors in the log and export data. The operator only has to scan in the data of the component to be tested and the associated measuring program is simultaneously started. It couldn't be easier or more convenient.

Reading the workpiece-specific data with an RFID scanner

The data of the workpiece to be tested can also be read with an RFID scanner. In this case, the RFID scanner receives the signals that are sent by the RFID transponder.

Scanning other graphic codes

Other graphic code formats such as bar code, QR code, etc. can of course also be scanned.



Image 2: Printout of name, personnel number and DMC code

Graphic code of operator names with personnel numbers

The strings of these DMC codes in this example are printed on a sheet of paper along with their contents in ASCII. They include the first name, tab, last name, tab and the personnel number. In the graphics, however, the tabs are invisible. The DMC codes can be generated in the Internet or with separate programs.

Reading the workpiece-specific data makes testing easier, faster and more reliable

By reading the data, the operator is relieved because he no longer has to check where and what information must be entered, and which measuring program is the right one for this component, and which features must be checked at all. Which program is needed for this processing state and the associated tolerances? The operator is relieved of these questions and decisions by scanning the data. Testing processes are thus faster, more reliable and more economical.

After a brief instruction, the operating personnel is able to scan in the graphic codes and thus start the correct measuring program. (Images 1 and 2)

It couldn't be easier!

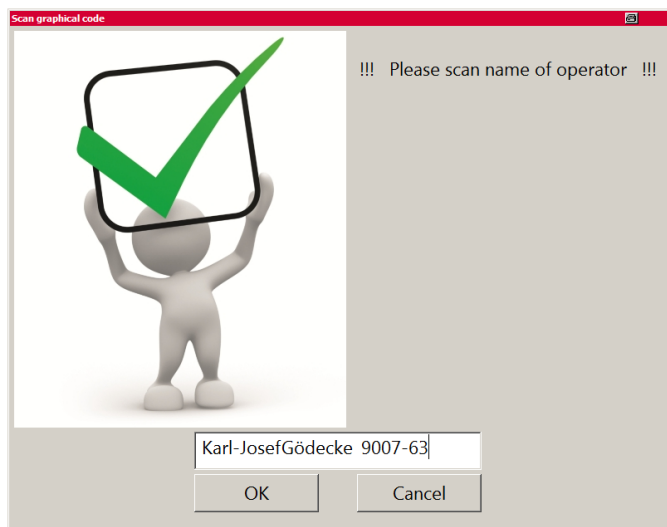


Image 3: Prompt to scan operator's name

Fast and convenient program start with a scanner

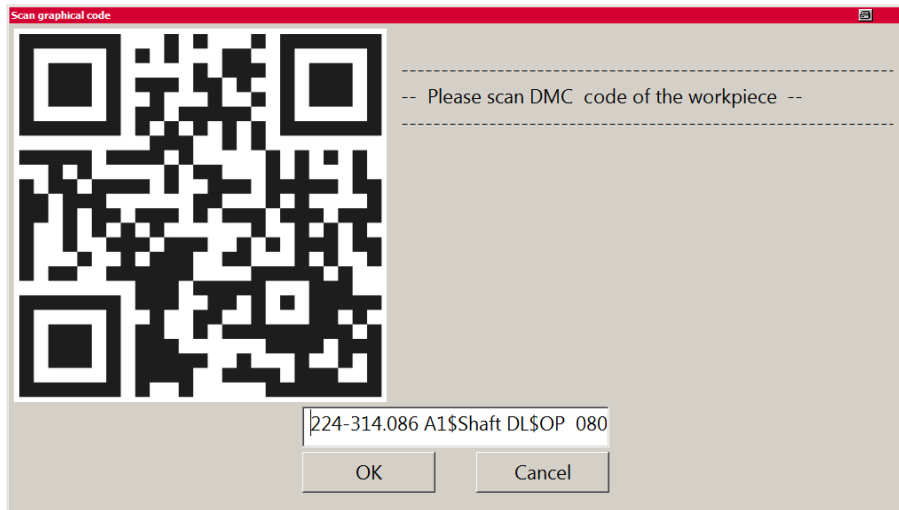


Image 4: Prompt to scan the workpiece DMC code

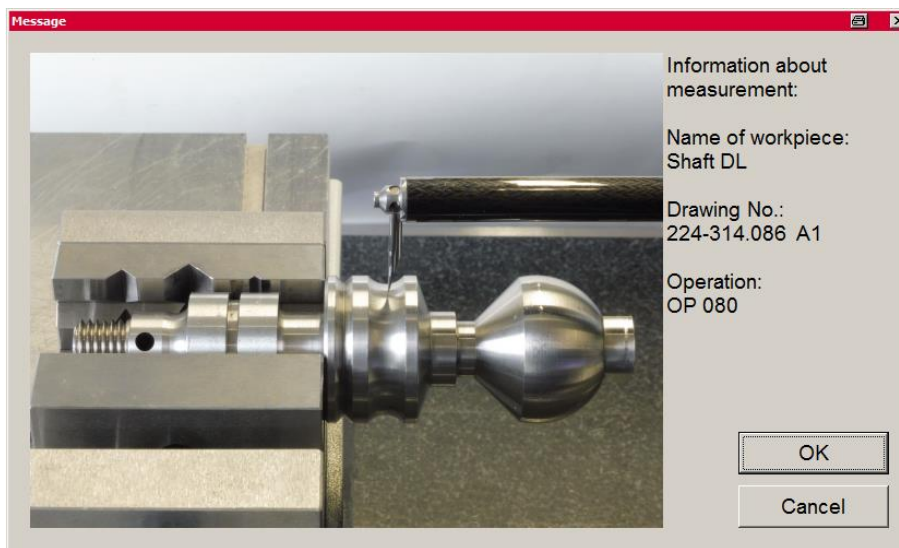


Image 5: The Quick&Easy measuring program starts with operating prompts

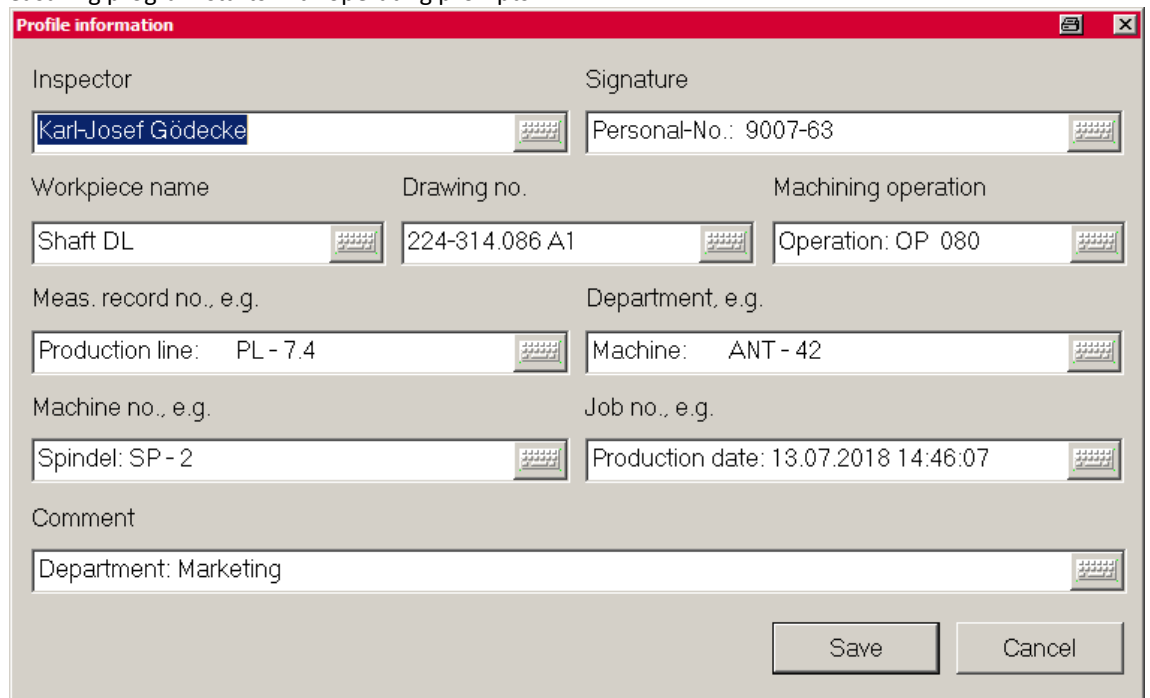


Image 6: Information read from the DMC code

Reading the workpiece-specific data and starting the Quick&Easy program

After reading in the DMC code of the operator name, the DMC code of the workpiece is scanned and compared with the string of the associated measurement program. Then the assigned measuring program is started automatically (Images 4 and 5).

In the event that no measuring program exists or has been assigned to the read string, the default settings are loaded.

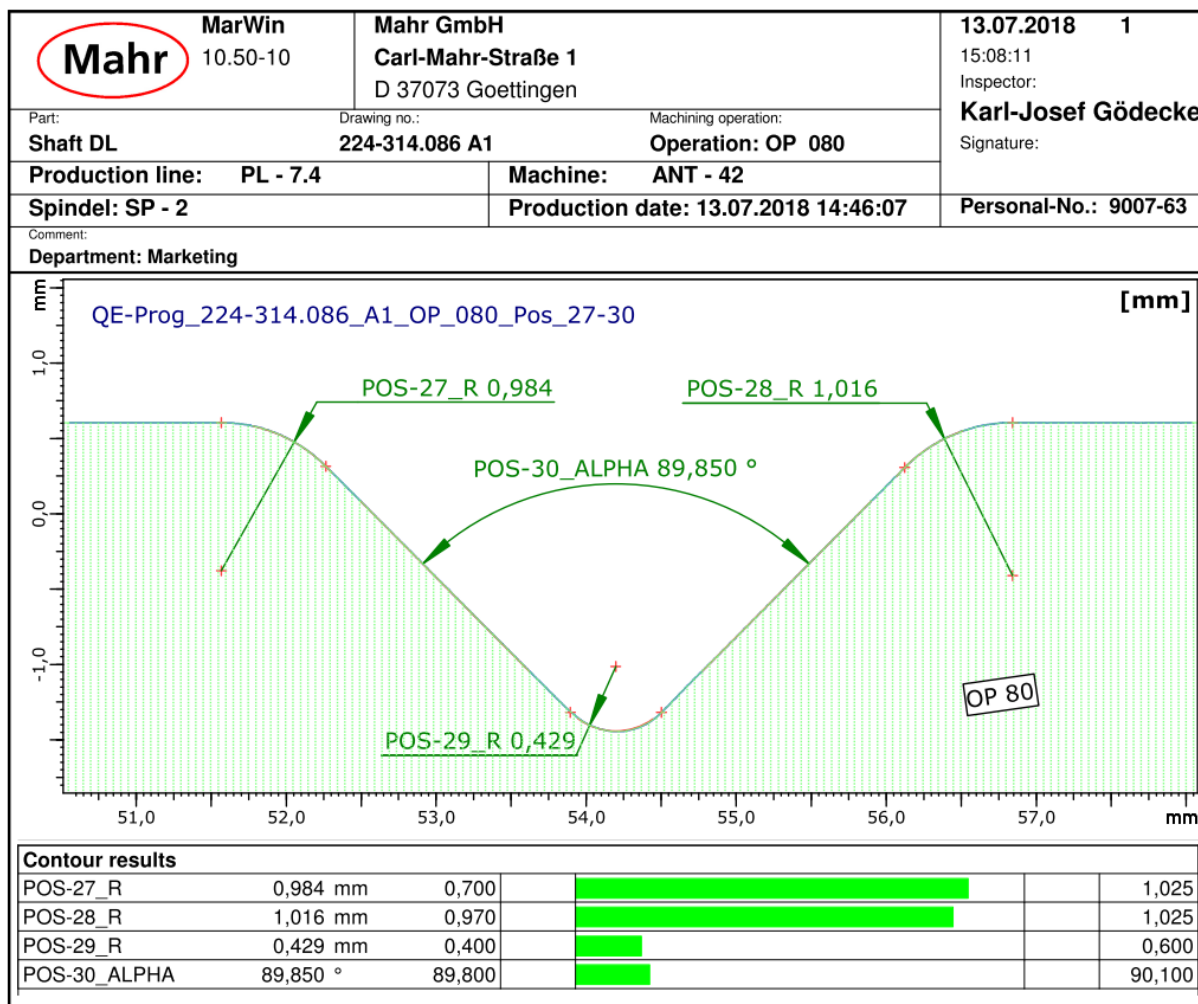
Display of read data

The read data is displayed before the measurement in order to be able to enter additional information, Image 6.

Comprehensive documentation and automatically correctly entered protocol information

The data from the imported DMC codes are automatically transferred to the log header.

Automatically correctly entered protocol information



C:/Mahr/Users/Gödecke/QE/QE-Prog_224-314.086_A1_OP_080_Pos_27-30_EN.qer

Image 7: Evaluation and documentation of the contour measurement with the assigned Quick&Easy measuring program

Comprehensive documentation and automatically correctly entered protocol information

Data from the scanned DMC codes is automatically transferred to the log header. Incorrect or incomplete logging is thus excluded. The unambiguous traceability to the tested parts is reliably guaranteed.

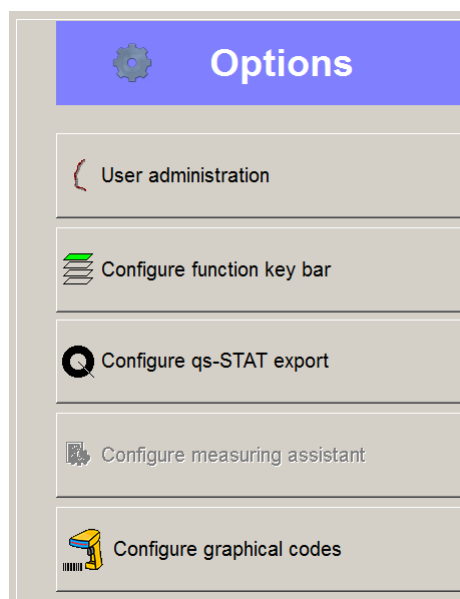


Image 8: The configuration of the graphic code is started in the "Options" menu

Configuration of a graphic code with MarWin

For the information contained in the DMC code to be included in the log and in the data export, the following three steps must be carried out:

- Reading the DMC code,
Separation of the character string into its individual information and definition of the names of the individual text fields
- Preparation of comparative texts and comparison samples and
Assignment to the measuring programs to be started
- Assignment of the individual information fields to the protocol fields and
export areas

The configuration of the graphic code is started in the "Options" menu (Image 8).

A new graphic code is created and the name of the dialog text to be displayed and the image to be displayed are entered.

Then the graphic code is scanned (Image 9).

Reading the DMC code

The description of the graphic code is made after scanning the DMC code of the operator's name (Image 2). The entire scanned character chain with the separators is shown, example code Figure 9.

Configuration of a graphic code with MarWin

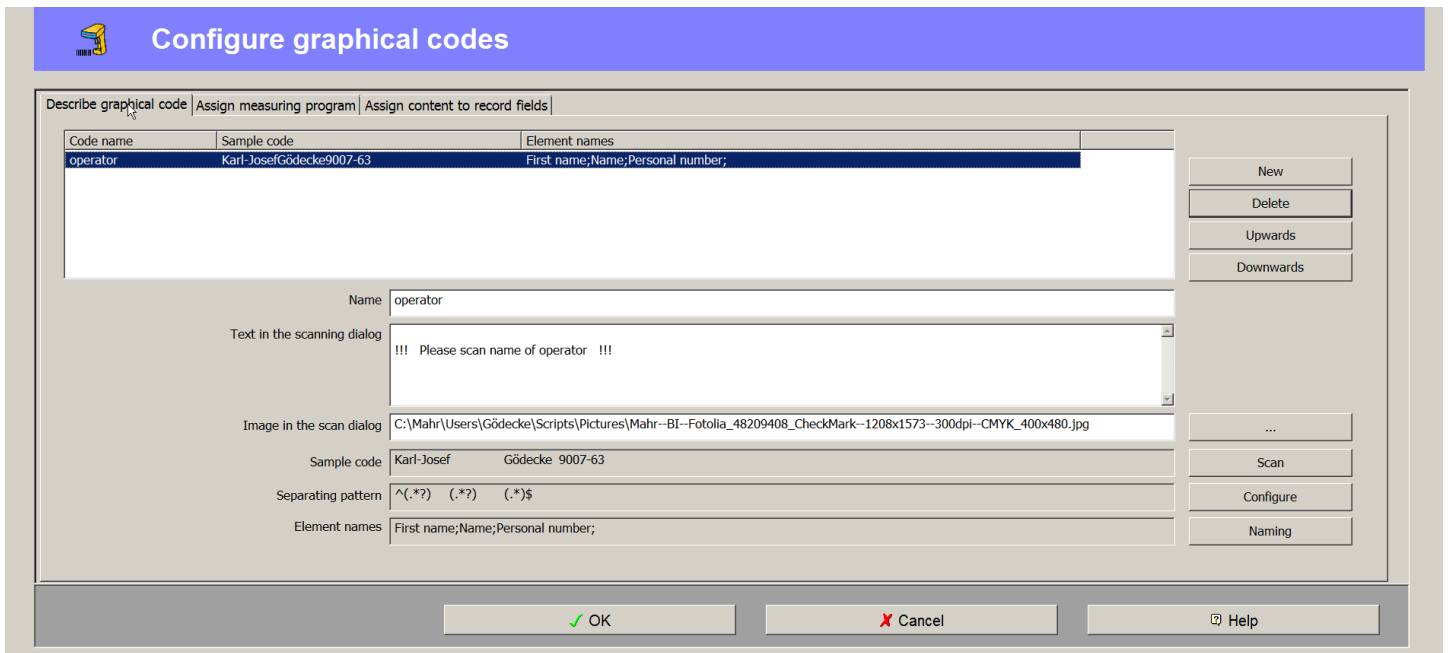


Image 9: Description of the graphic code after scanning the DMC code of the operator name and the configuration

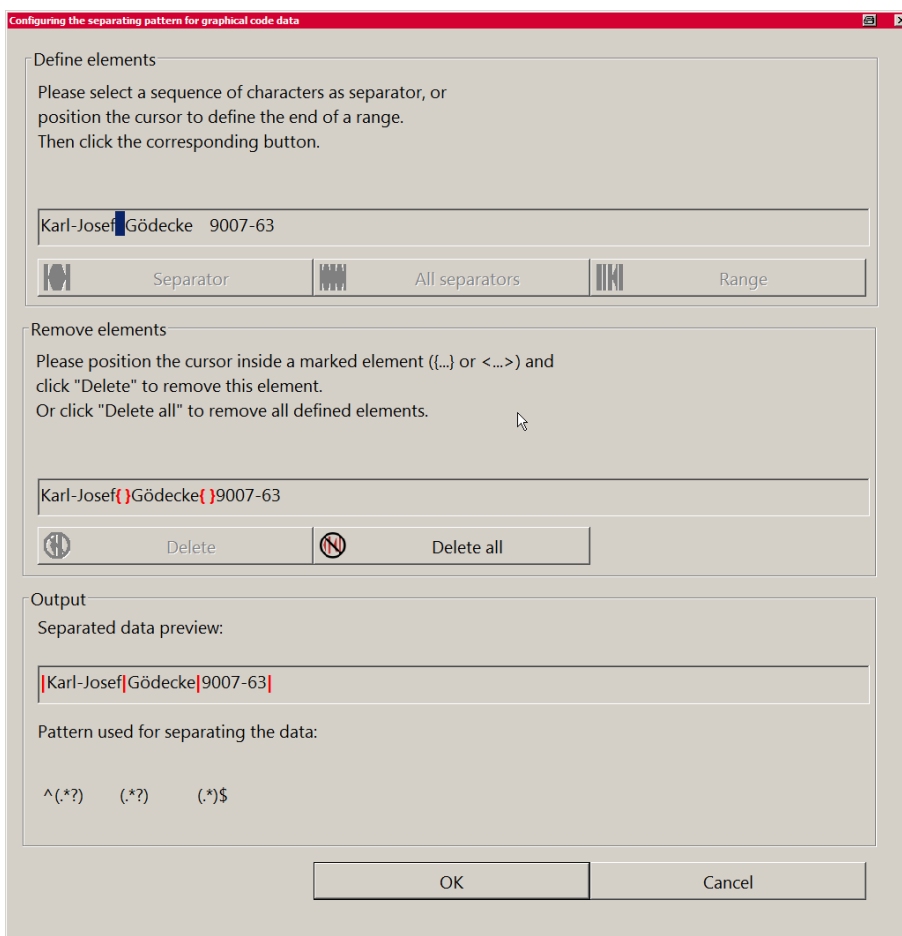


Image 10: Configuration of the separating pattrer for the data of the graphic code with tabulator, TAB

Configuration of separating pattern

You can use single separators, all separators, or individual ranges for separating the data into its individual components. In addition, separators can also be deleted.

When the delimiters or areas are marked, a preview of the separated data is displayed immediately, so that you can be sure that the data blocks are extracted correctly (Image 10).

In this example of the DMC code in Image 2, tabs were used as separators.

Configuration of a graphic code with MarWin

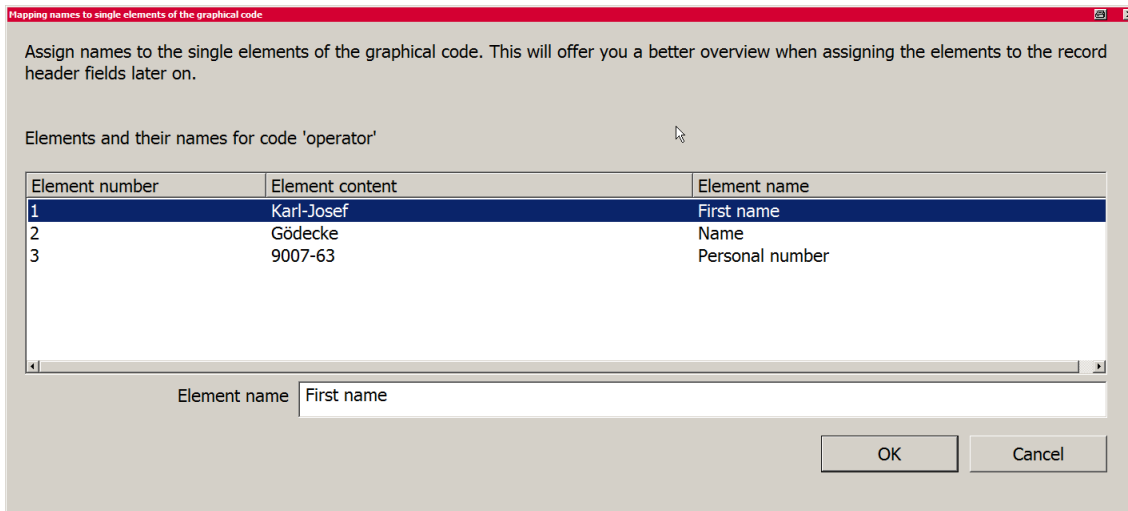


Image 11: Name assignment for the elements of the code "operator"

Finally, the element names of the first graphic code are entered.

Configuration of a code for the part-specific information

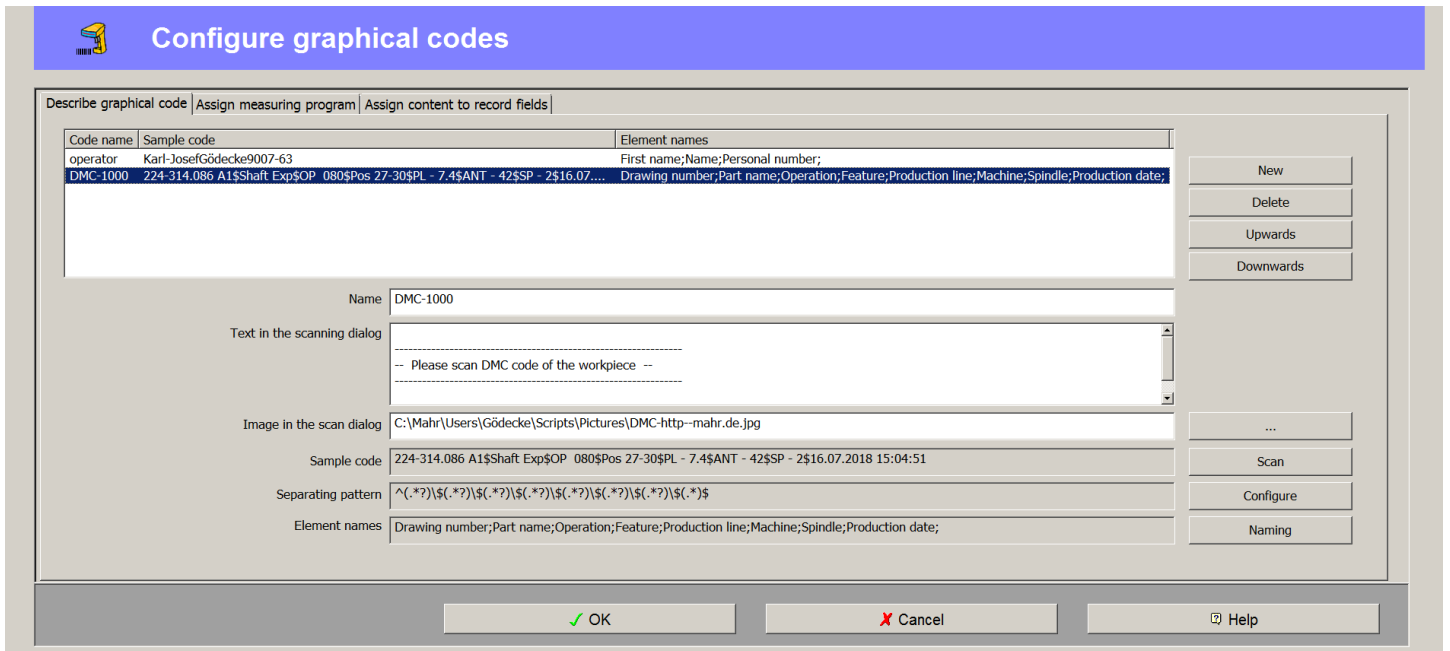


Image 12: Configuration of the code of the workpieces (DMC-1000) with „\$“ as separator

Structure of the graphic code of a workpiece

As a rule, the graphic code of a workpiece contains information such as drawing number, serial or batch number, workpiece name, production line, processing machine, spindle, sequence of operations, etc., to name but a few. This information is available as an alphanumeric string, which may be separated by separators. In some cases, fixed ranges, i.e. characters 1-12 for drawing number and characters 13-25 for the part name, are also available for the individual information.

In this example, the individual elements were separated with the separator „\$“ (Images 12 and 13).

Configuring the separator pattern

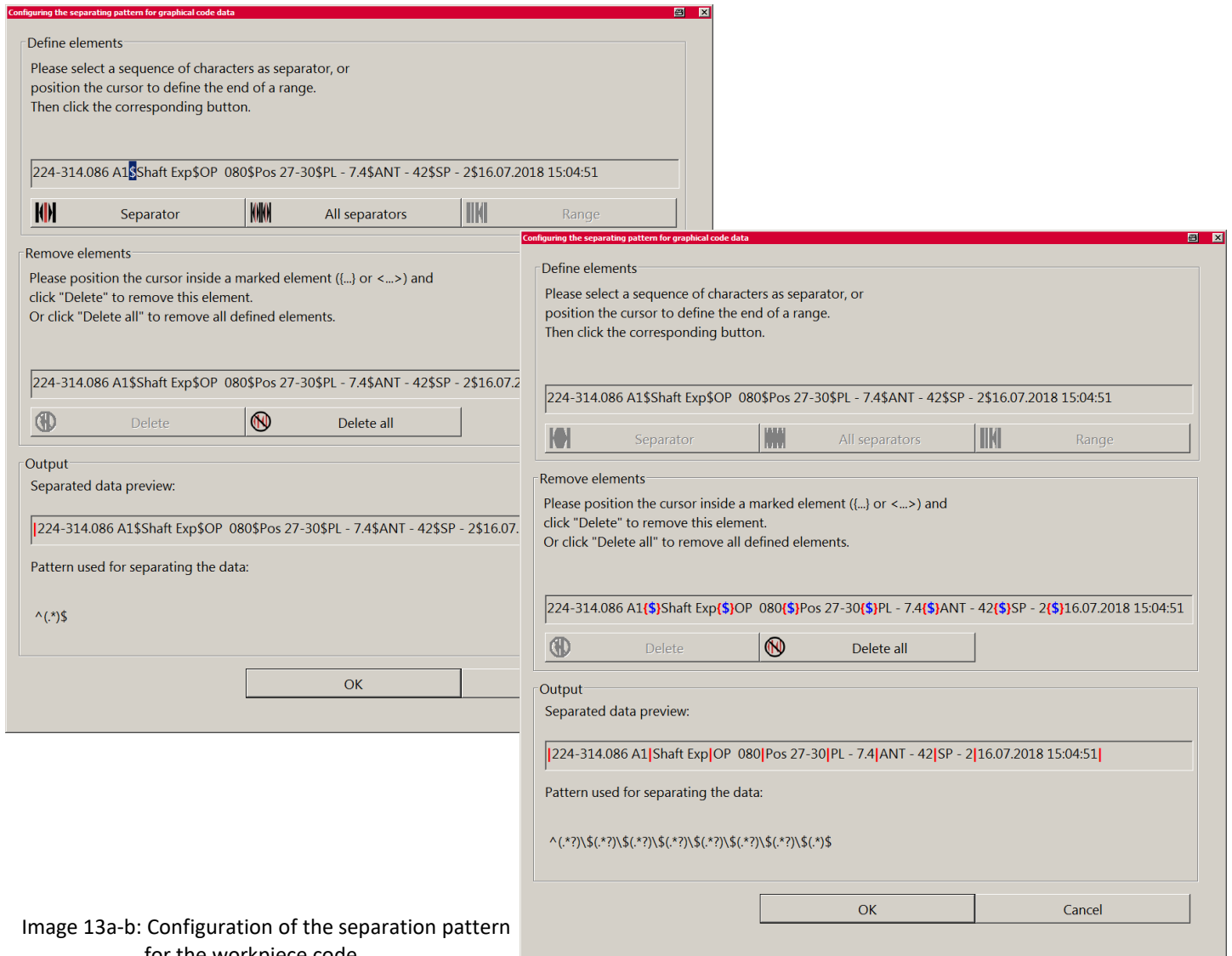


Image 13a-b: Configuration of the separation pattern for the workpiece code

Assigning the element names

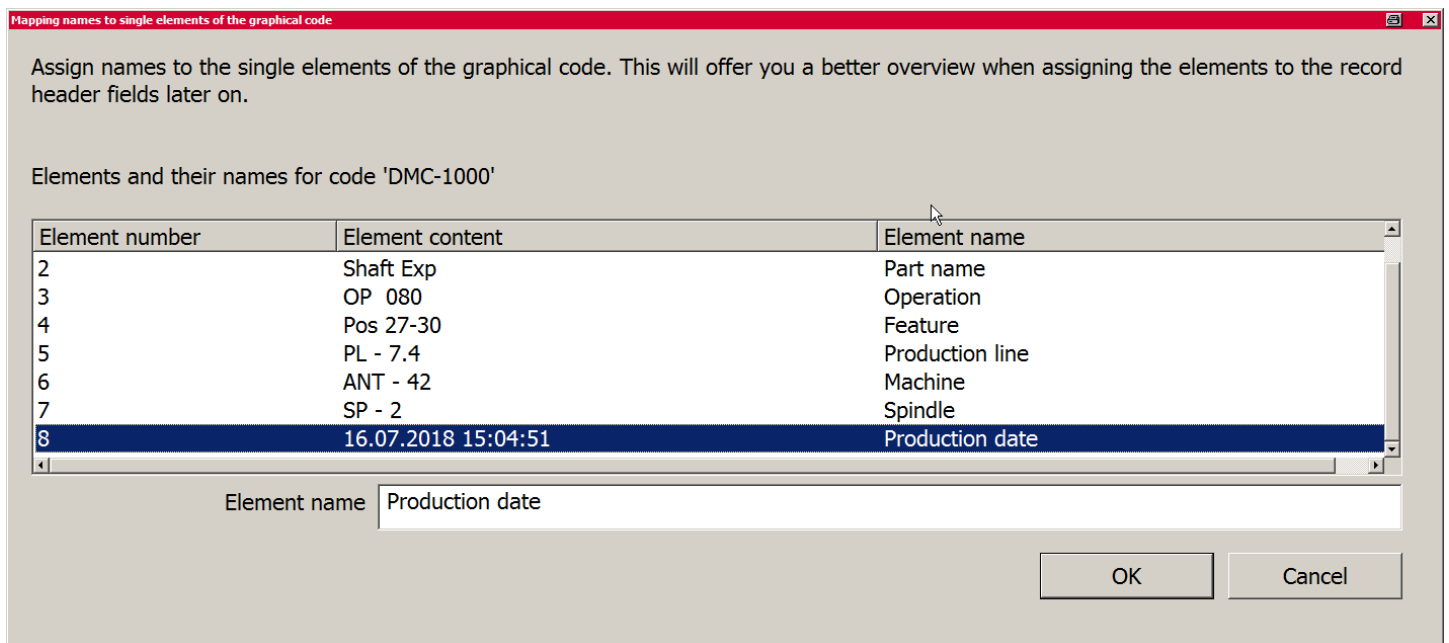


Image 14: Assignment of element names and the display of the scanned element contents

Assigning comparison texts to the measuring programs

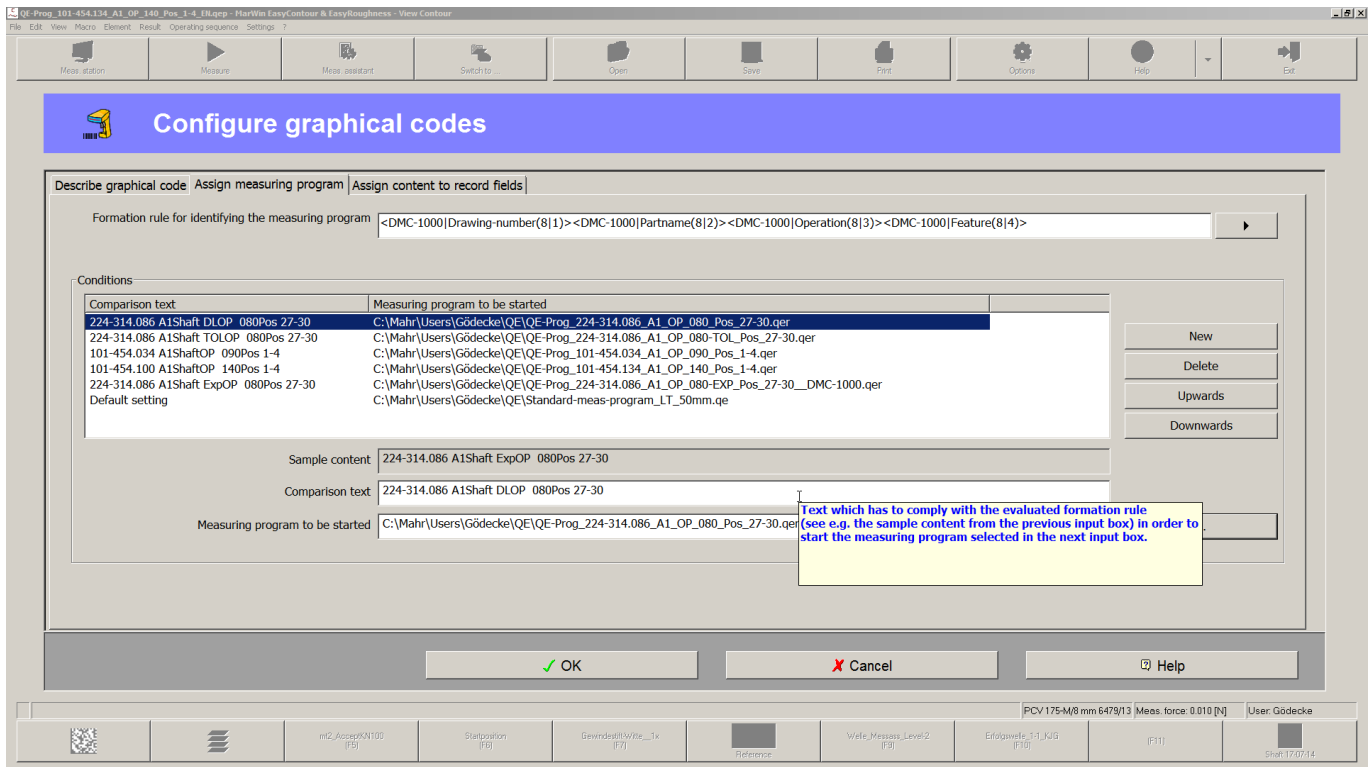


Image 15: Assignment of the comparison texts to the measuring programs to be started

Rule for forming the identification of the measuring program

In this example, the rule for forming the identification of the measuring program is comprised of

Drawing number – Workpiece name – Machining operation – Features

This information is read out of the DMC code and compared with the comparison text of the workpiece. If the four pieces of information are identical, then the corresponding measuring program is started. If no comparison text matches the scanned information, then the default settings are loaded and, for example, a manual measurement performed or only a note displayed, according to the programmed standard program.

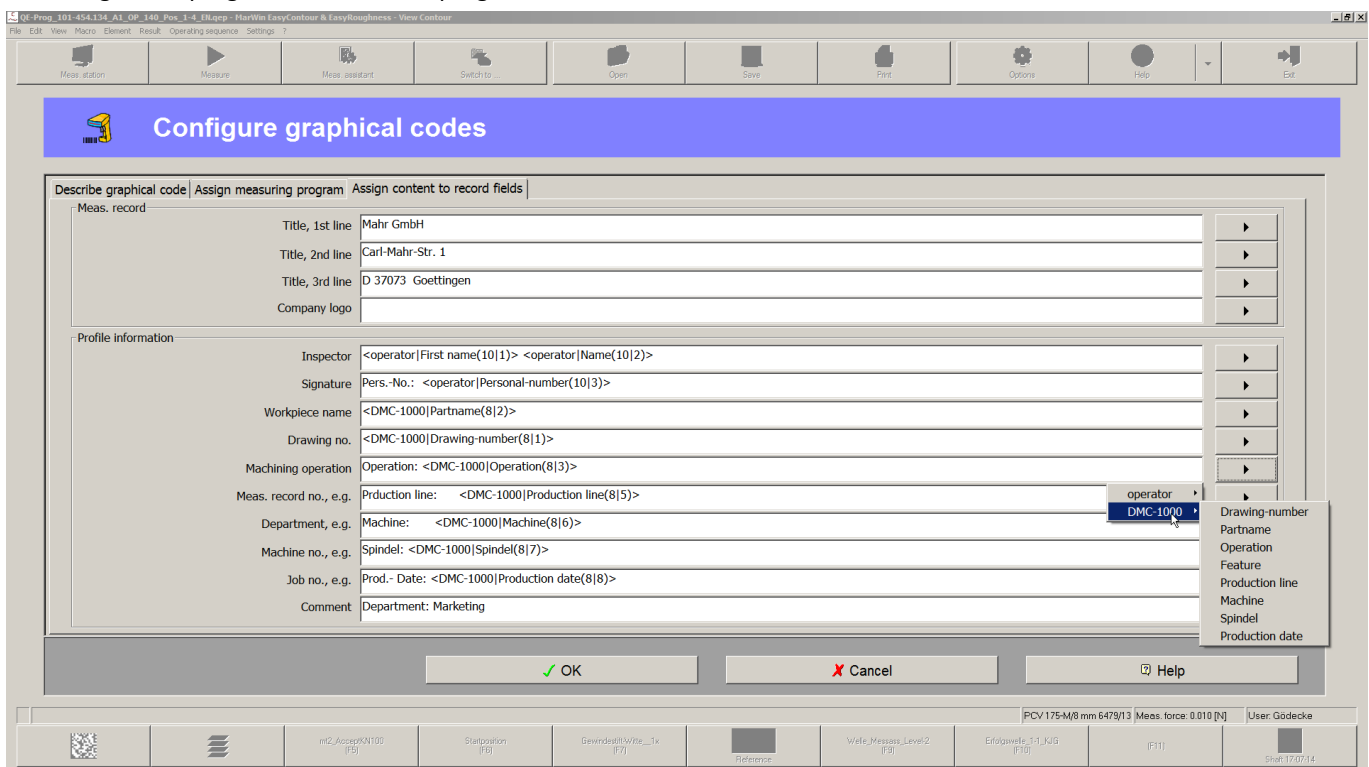


Image 16: Assignment of the element names to the protocol fields

Assignment of the individual elements to the protocol fields

The contents of the individual protocol fields are defined under the *Assign protocol fields* tab. The element names previously defined in the two example codes "Inspector" and "DMC-1000" can now be selected and assigned to the protocol fields (Image 16).

Several elements such as, for example, in the field Inspector "<operator | First Name (10 | 1)> <operator | Name (10 | 2)>" as well as constant texts and element names like in the protocol field, e.g. Machine no. "Spindle: <DMC-1000 | Spindle (8 | 7)>" can be contained in one protocol field.

Export of the measurement results with Option ContourPlus

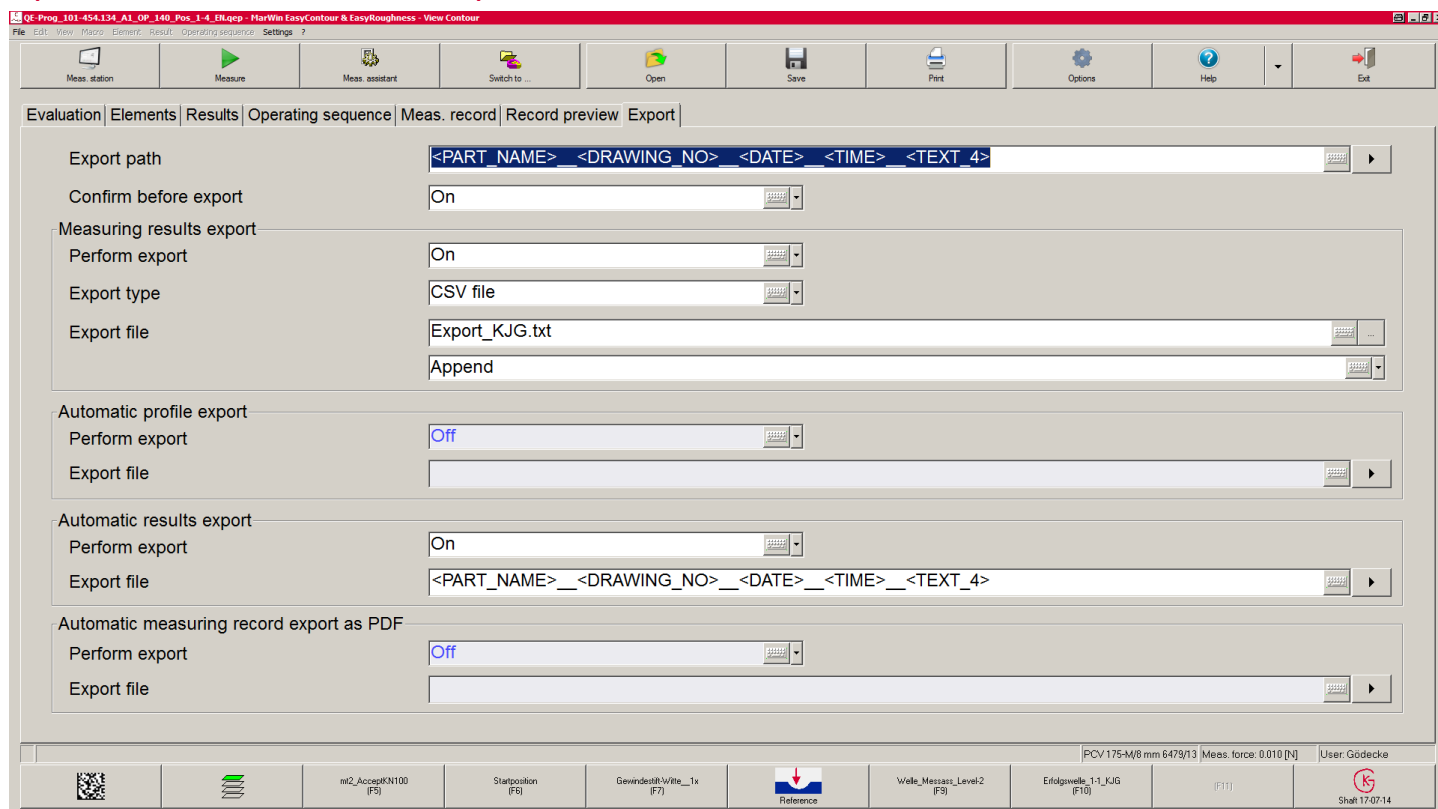


Image 17: Data export with automatically generated data name and paths

As already described for the protocol fields, the export path and the export file can be generated dynamically from the contents of the protocol fields and constant texts by the program, so that a one-to-one allocation of the measurement results is guaranteed. MarWin EasyContour requires the option ContourPlus.

Depending on the existing option, the export of the measurement results takes place as a text file, CSV file or QS-STAT file. In any case, before the export, a request may be displayed as to whether the results should be exported or not. This is a great advantage for incorrect measurements or insufficiently cleaned components. Furthermore, it can be specified whether the measurement results should be attached to the next measurement or a new file should be created.

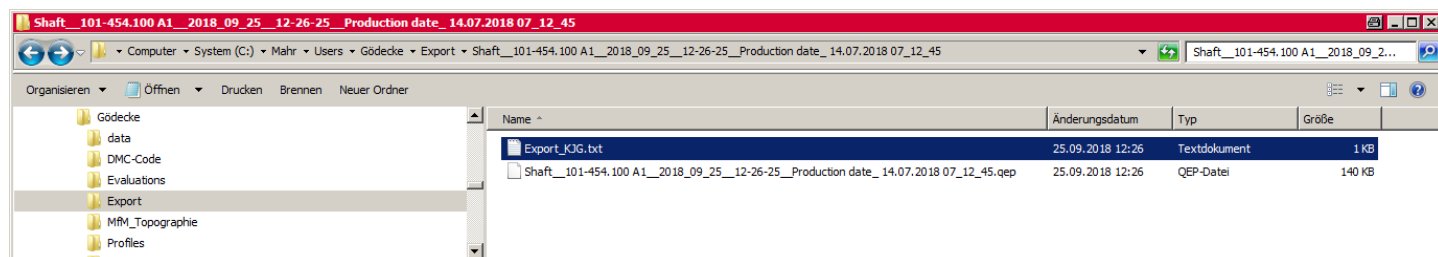


Image 18: Example of data export

Tip: Quick Info and tooltips are displayed in the profile information or protocol header fields when the mouse cursor hovers over a field (Images 6 and 15).

Comprehensive and detailed help

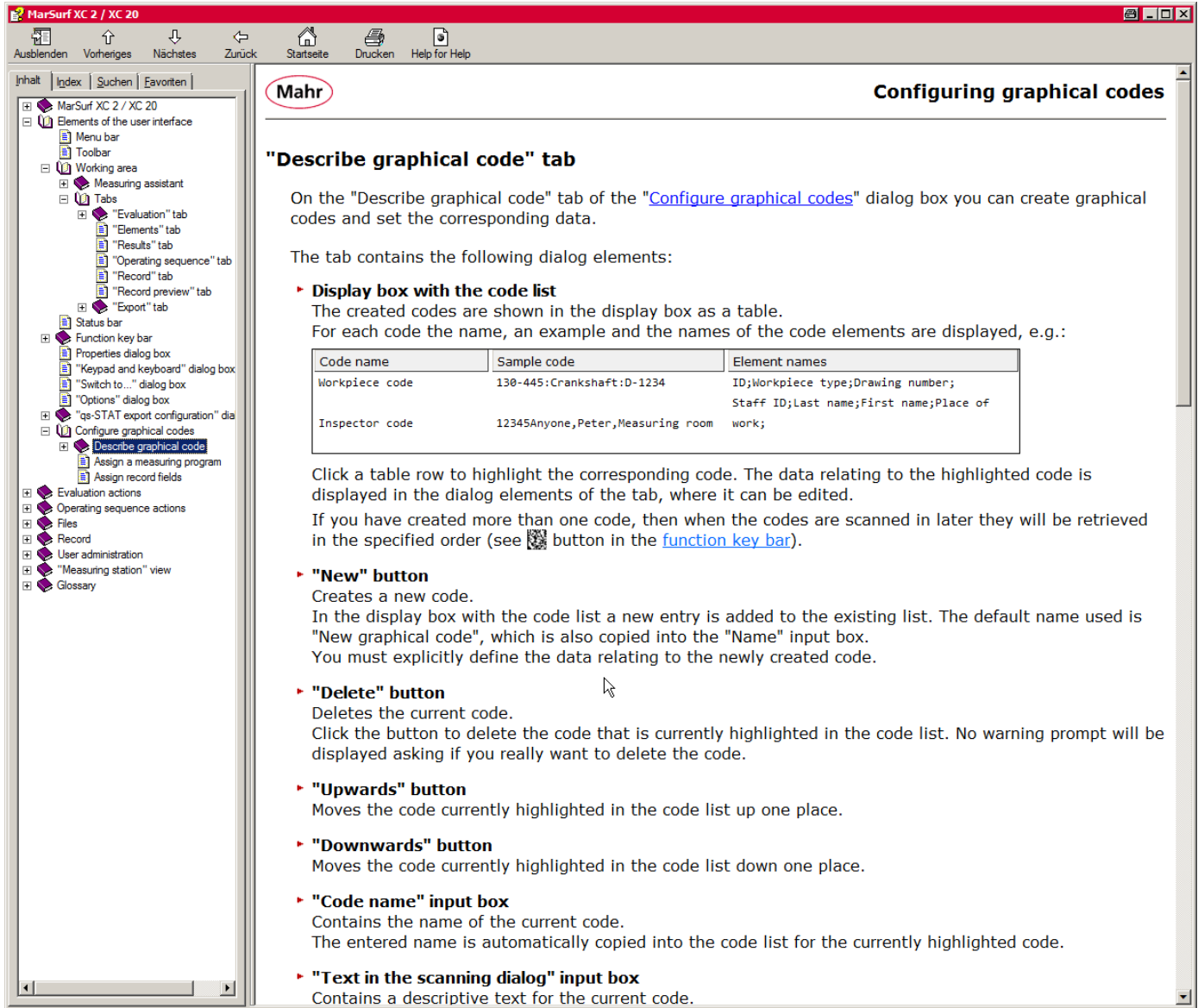


Image 19: Comprehensive and detailed help

Comprehensive help functions and directly displayed tooltips

Both the useful tooltips, which appear while holding the mouse pointer in a window area, as well as the comprehensive offline help contribute to the easy handling of the configuration of the graphical code. Without any programming knowledge, the company-specific data structure is displayed and after a short time you can conveniently read in your DMC codes or other graphics codes or RFID.

Reading the graphic codes with MarShaft and MarForm

Of course, due to the common software platform MarWin, graphic codes can also be scanned by all MarShaft and MarForm measuring stations. The **MarWin graphics code interpreter** decomposes the code into its individual components and then assigns them to the protocol fields and export areas. Thus, the procedure described here is almost identical and can be easily implemented with all MarWin measuring stations.

Configuration of a graphic code with MarWin

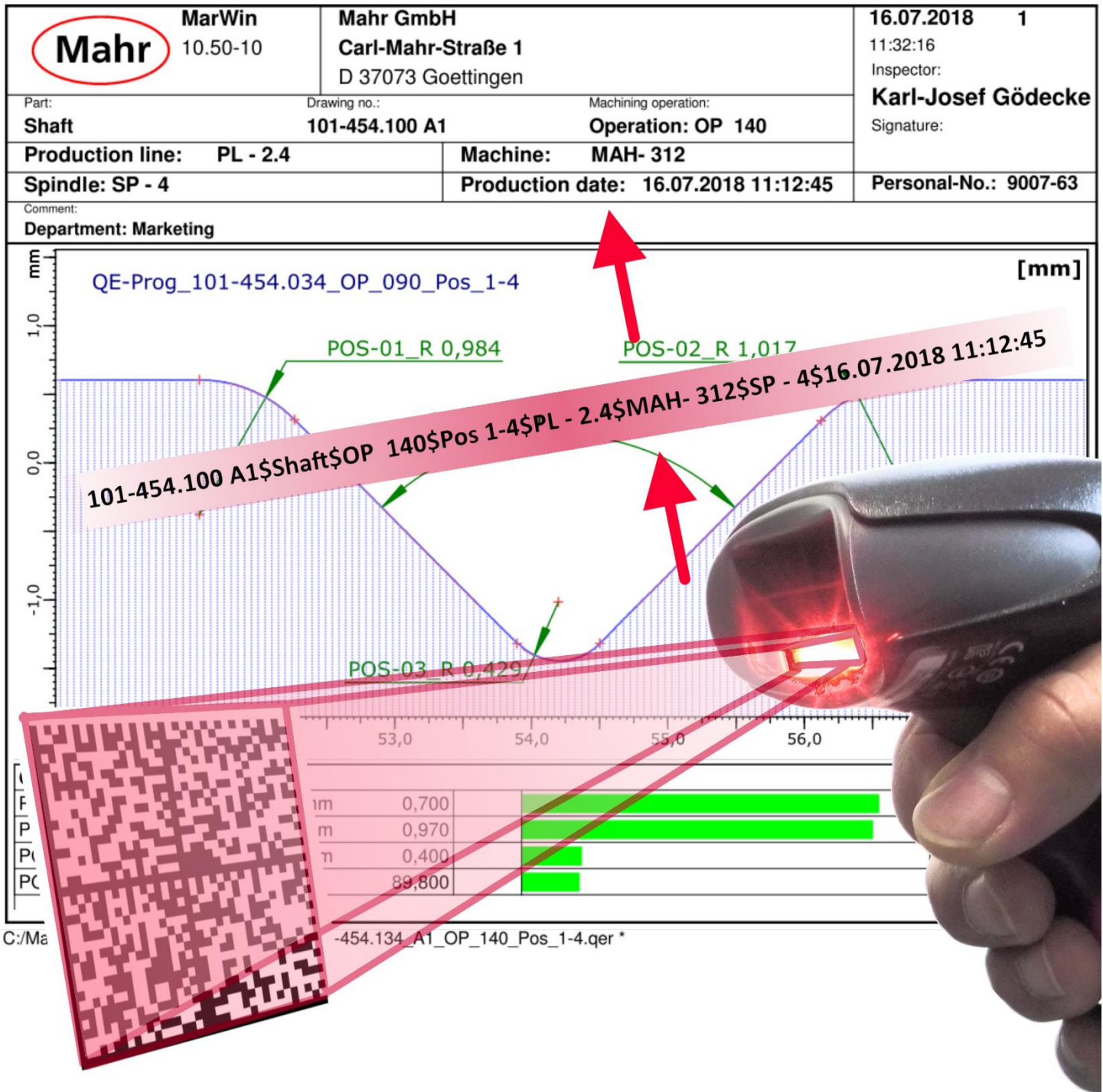


Image 20: Scanning the DMC workpiece code and reading and transferring the information to the log

Tip: The application tip about creating custom logs can be found here:

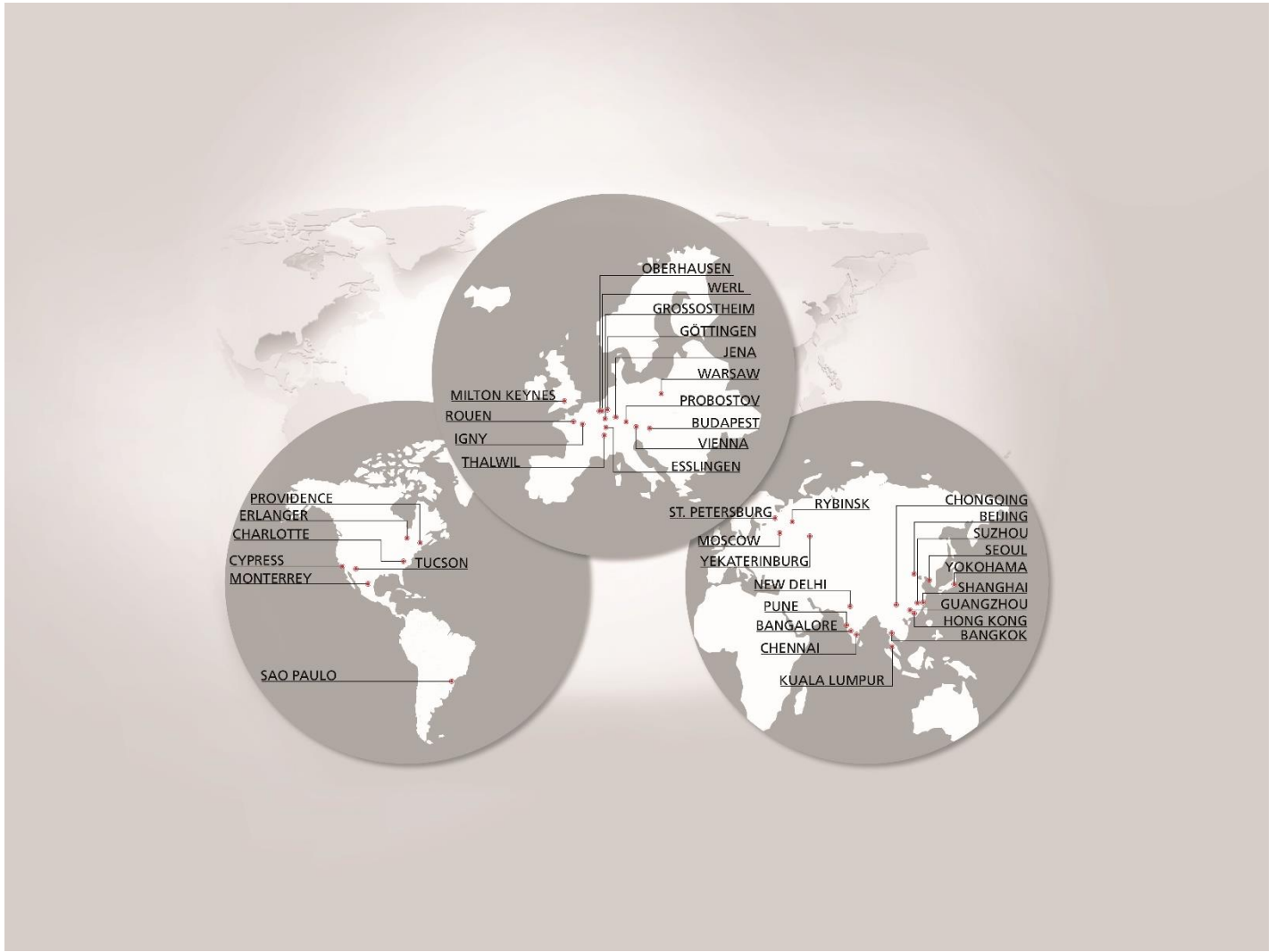
<https://www.mahr.com/en/Services/Production-metrology/Know-how/Application-Tips/General-Application-Tips/?ContentID=254434&Overview=0>

Detailed information on the diverse measuring and evaluation strategies from industrial practice with our contour and surface measuring stations can be obtained from our Level 2 application training courses.

Contact our Head of Application Engineering Mr. Nils Gößner Tel.: +49 (551) 7073-499 Nils.Goessner@mahr.de

This and other application tips and videos can be found at:

<https://www.mahr.com/en/Services/Production-metrology/Know-how/Application-Tips/General-Application-Tips/?ContentID=254434&Overview=0>



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DMC code automatically starts the corresponding measuring program
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