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III. Gauge management system QM-MANAG (Lite version)

Today, almost every company is faced with the task of adjusting to the requirements of the DIN-ISO 9000 standard, particularly in the fields of quality assurance and gauge inspection. This is usually accomplished using various gauge data base card index systems which are generally organised to meet the needs and technical capacity of each individual company. The QM-MANAG gauge inspection system has been designed to replace the need to create customised systems and contains many qualities that cannot be found in similar programs currently available on the market.

When applying ISO 9000 to 9004 standards, the installation of a gauge data management system is indispensable. When working with these standards a complete inspection of all measurement and test gauges is required periodically.

QM-MANAG characteristics include:

- free definitions of data structures;
- an unlimited number of user defined gauge types;
- configurable order processing, administration and documentation;
- a practically unlimited number of possibilities (nearly 2 billion !) for each kind of gauge;
- a practically unlimited capacity of gauge histories;
- free definition of database calling up operations
- the possibility of parallel administration of different stocks of gauge data (client capability);
- inclusion of nominal value generation (calculation of tolerances) for practically all common gauges for length inspection; it is possible to add other types of gauges without having to change the system;
- inclusion of on-line measurement through integration of separate measurement modules of any type of gauge;
- standardised user interface using XML files between the database system and the measurement programs;
- network and multi-user capability for almost all common network platforms;

These and other features are what make the QM-MANAG system a viable alternative to the other gauge inspection systems currently available on the market.

The QM-MANAG manual is divided into two principal sections:

- Section III.1. does describe the settings you should do before starting to work with the system;
- Section III.2. gives an general explanation of how to use the system;
- In Section III.3. you will find a more detailed explanation of the possibilities of program settings and internal data base activities; this section is mainly for the system manager of the QM-MANAG program;

ATTENTION: Before starting to work with the database and entering your gauge data enter your company specific data for "location(s)", "cost departments" and other specific catalogues. See the section "III.3. Program settings" for this. This settings can only be done by the "system manager"

When using the software, make sure that the license copy lock is properly connected and you have entered the correct license code. If not, the system will run on demonstration mode which contains only a limited number of the features of the complete QM-MANAG system.



III.1. Before starting; the Database Configuration Tool

Please read this section attentively. It will describe the basic settings the "Administrator" should do before starting to use the QM-MANAG program.

Some of the basic settings for the program are already done during the installation process.

The next important step is to create your "Start" database and to configure the database connection. It will be start automatically in case that the configuration tool can not find a valid database connection.

This steps are described in the manual section I.3.1.

See also section III.3. describing the internal configuration of the database.

The settings we will describe here are important for:

- defining the program users, their passwords and access rights to the database system;
- the program QM-MANAG is able to handle an unlimited number clients with their own Gauge stocks; define here the client names and the database information for the clients.

All this settings can be changed by using the configuration tool "Configurator32". To start this tool the access privilege "QMSOFT32" is required. When the system is just installed this privilege is assigned to the "Administrator" user group.

Start now the QMSOFT GaugeMan program at your desktop and enter the access data for the "Administrator": User name : **"system"** and Password: **"system"**.

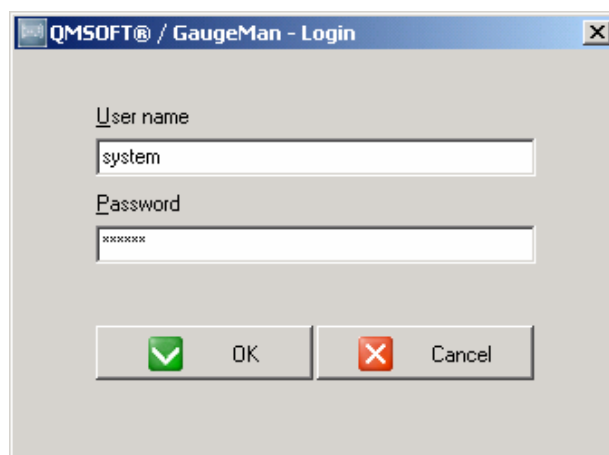


Figure: Start the program with Administrator rights

III.2. Basic settings - the database configuration tool



Now start for the QMSOFT GaugeMan the configuration tool

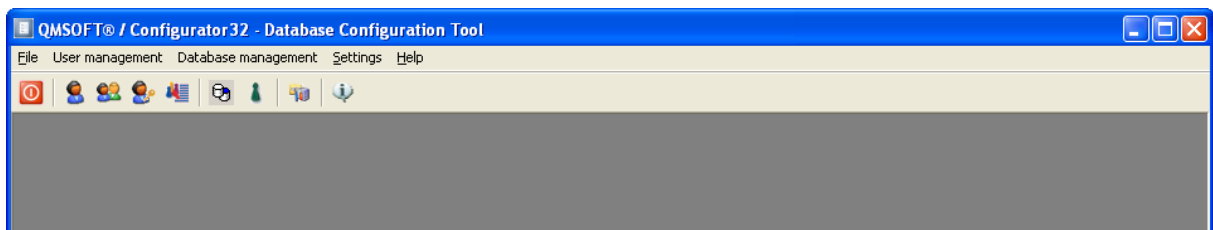


Figure: the Database Configuration Tool

III.2.1. Manage Users, User groups and their privileges

In the function "User management" you will find the following items:

- User: does define the "User name", the "Password" and some general information about a user;
- User groups: define user groups and the privileges of a group;
- Privileges: show a list of all available privileges;
- User history: show the list of user log-ins and log-outs.

III.2.1.1. Create a new "User" or change existing user data

If the system is new installed there is only the user "system" with the password "system" available. This user has all Administrator rights.

☛ **To avoid unauthorised access to internal database settings you should change the Administrator Password and you should create new users with less privileges!**

Use the related buttons to create a new user or to change an existing one.

☛ ***Please note, that here you can not define the privileges that this user have.
Any user has to be assigned to a User Group!
The privileges of an user are only defined by its User Group!***

III.2.1.2. User groups and Privileges

Here you can define new user groups or changing the privileges for existing groups.

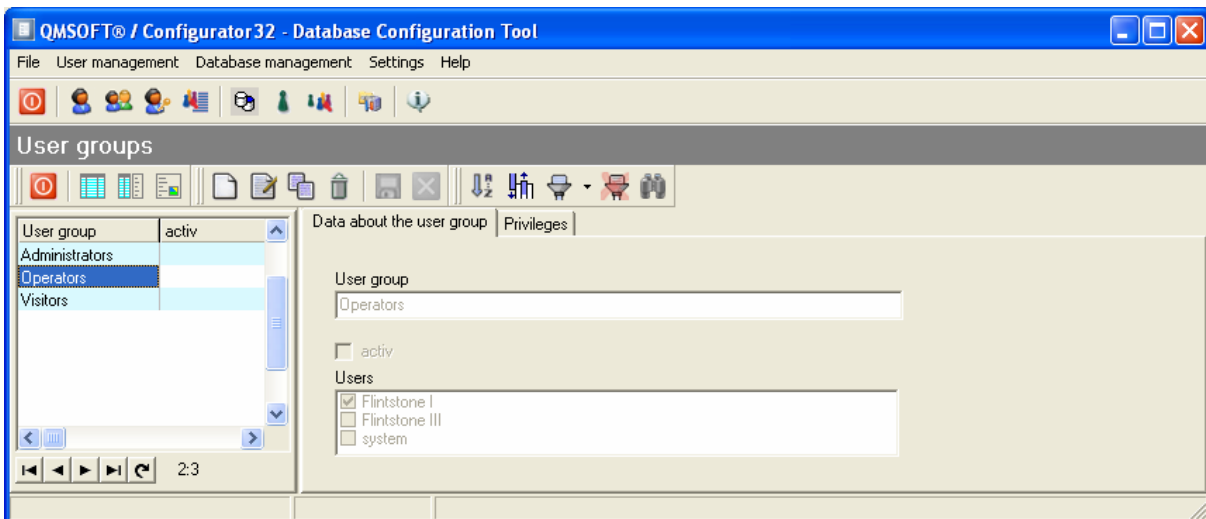


Figure: Working with User Groups

The assignment of the privileges is the most important thing you can do here.

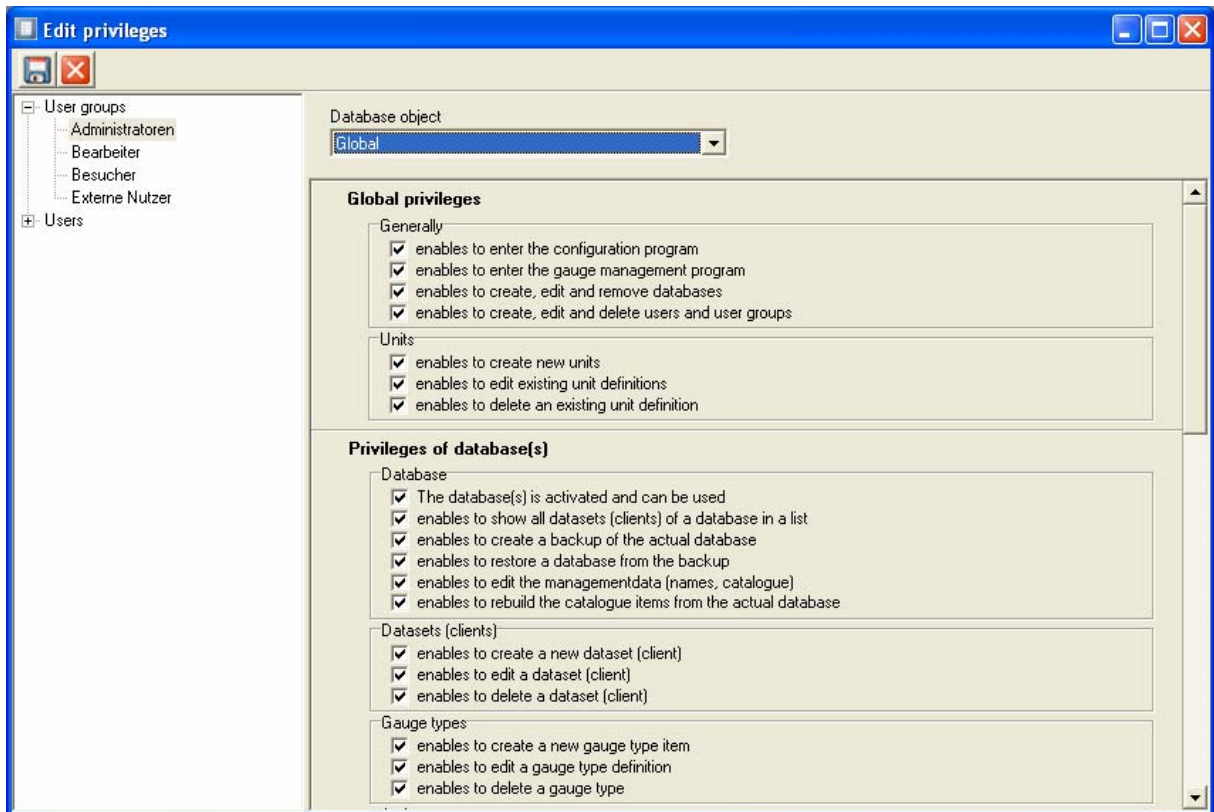


Figure: Assignment of Privileges to a User group

III.2.2. Database management

The program QM-MANAG does support the parallel administration of different stocks of gauge data (client capability). Here you can manage your existing client informations and can add new clients or delete existing.

III.2.2.1. Databases (create, backup, update)

This function will allow you to create new databases to organise the database backup and to make database updates.

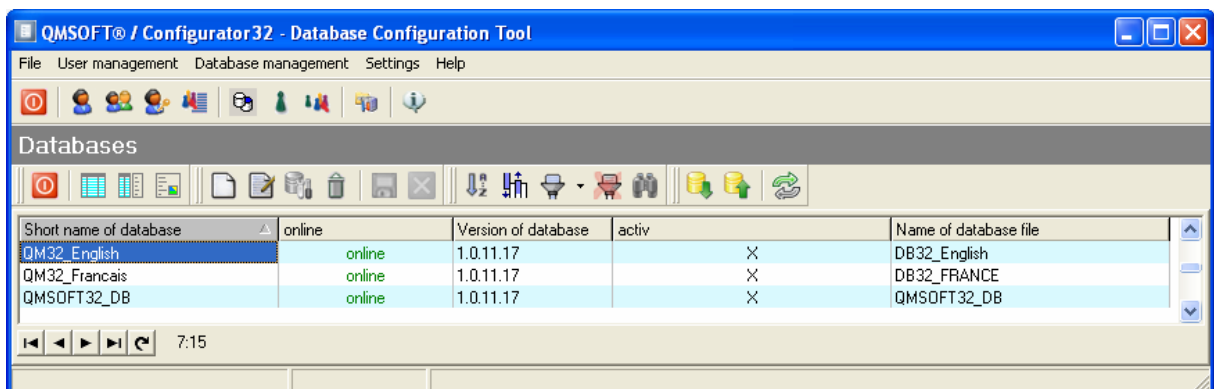


Figure: List with the existing database files

NOTE: In case that you can create different clients in one database usually it should not be necessary to create different databases. The only reason for it is, if you need databases with different languages or with different database structures. Please note that all the information about "Gauge status", "Gauge actions" and "Gauge types" will be identical in one database.

Creating a database you have two options for it:

- you can create this new database using the **"Default database structure"**:
this means you will get the information about the used "Gauge types", "Gauge status" and "Gauge operations" from the "Default structure" you will get when the program will be installed;
- "Import the database structure"** to create the new database
in this case you will use a special file to import all information about "Gauge types", "Gauge status" and "Gauge operations";

III.2.2.2. Creating a new client



If you want to create a new data set for a new client use the menu "Database management | Clients". You will now get a screen showing your existing client data sets.

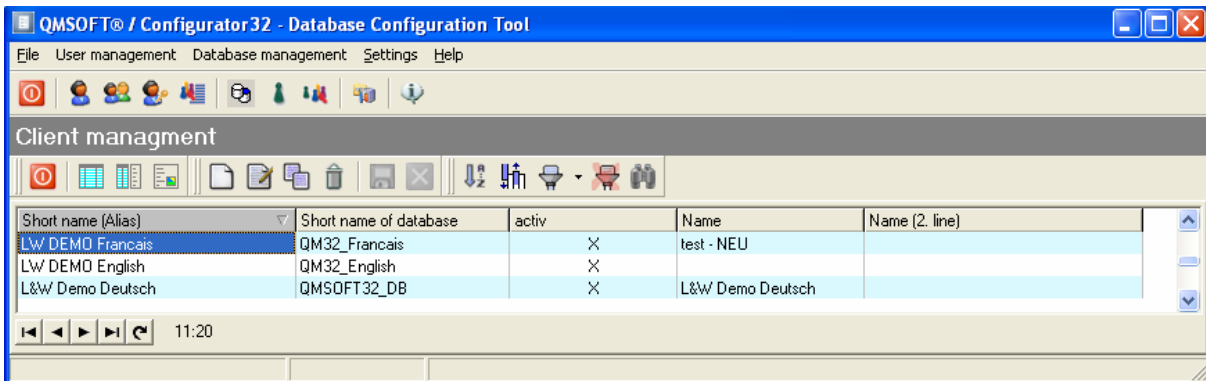


Figure: Overview about existing clients

Use the button "New client" to create a new client in your database and enter the related client data as shown in the next figure.

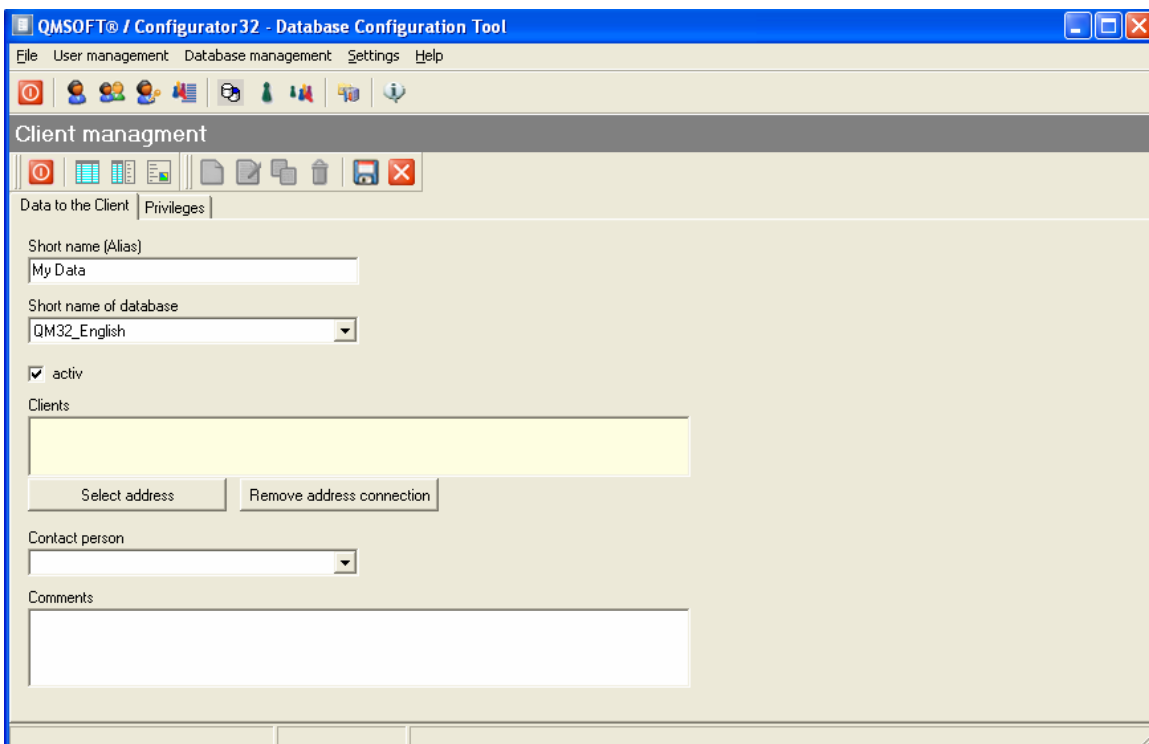


Figure: Creating a new "Client"

When creating a new client you have at first to enter the "Client name". After that you can enter more client information: Client address.. and others.

Important is the selection of the database where you want to create the new client.



III.3. How to Use the Program QM-MANAG (User Manual)

This section of your manual describes the "user dialog" of the QM-MANAG gauge management program. This section has been written to correspond with the dialog structure of the program so that even a non-specialist can use the system.

III.3.1. Start and cancel the program

The QM-MANAG program can be opened by click on the QM-MANAG symbol in the QMSOFT "GaugeMan" program shell.

After your login name and password have been entered, the QM-MANAG program will be opened. If an incorrect or invalid login name or password has been entered, access to the program will be barred. Make sure that what you have entered corresponds exactly including spelling, spaces, capital and small letters. If you do not have a login name and password, make sure to ask the system administrator in your company responsible for your computer system to give you one.

III.3.2. Open a database

To work with a gauge stock you have to open a database. Use the option "**File|Open**" and select one of the available databases. If you have the system newly installed you have two databases available, "DB" and "DEMO".

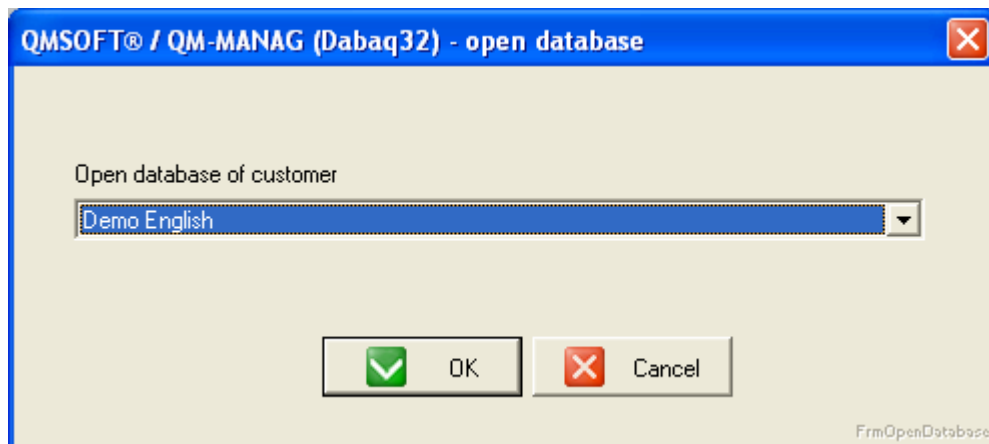


Figure: open an existing "Client" database

If you start, the "DB" database is empty. Use this database to enter your individual gauge data. The "DEMO" database includes different gauge data. Use this to demonstrate the database functions and to make your experiences in using of the system.

☞ **Please see section III.1.2. if you need to create a new "Customer (Client)"**

III.3.3. Working with a Gauge database, Gauge Management

After opening a database, a window will appear on your screen with a list of gauges already stored in the data base (see Figure III-1). If the window is empty, this simply means that no gauge has been stored here. In this case it is only possible to enter a new gauge using the "Ins" key or the "Insert a new Gauge" button.

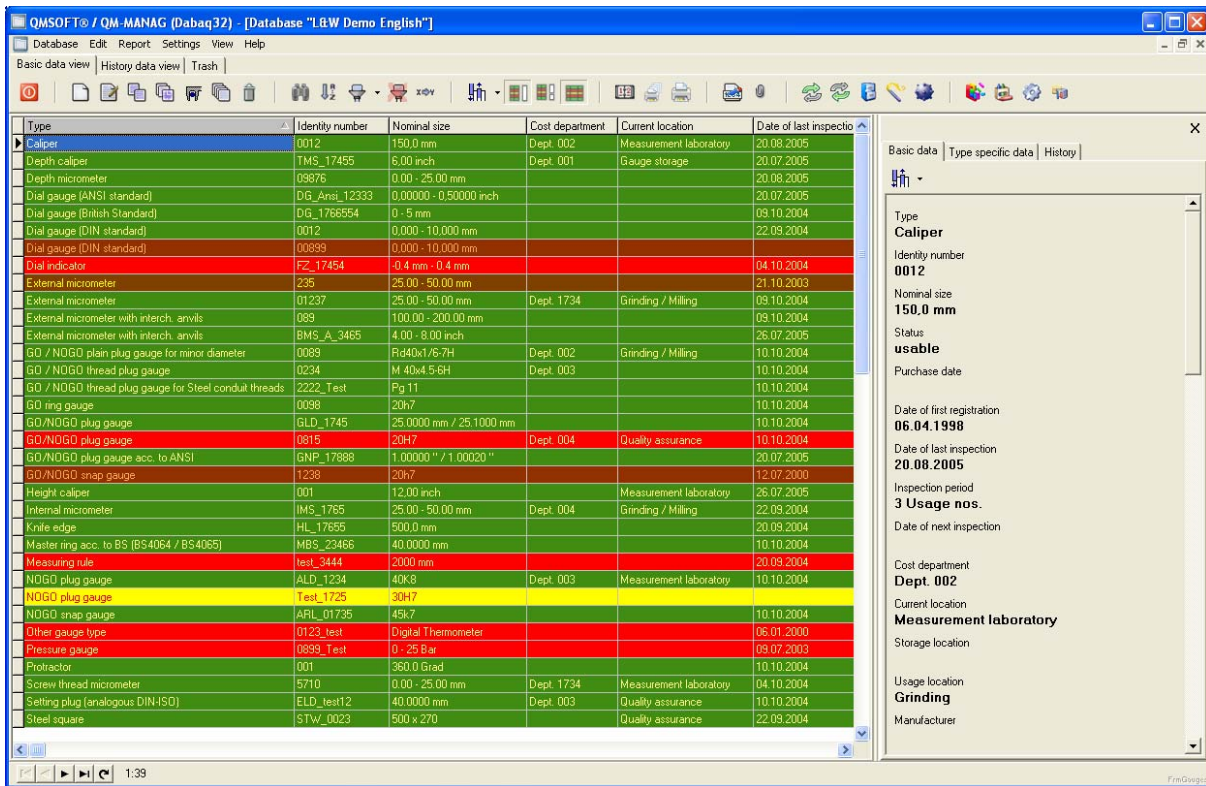


Figure III-1: Start screen of the database – Gauge "Basic data" screen

To operate the database you can use the Buttons or the menu "Edit". If you open the menu "Edit" you can also see "Hot keys" for special functions.

On the top of the shown window you can find a toolbar including the Icons for the available functions. Pay attention, that you can select the functions shown in the toolbar by switching the „tabbed notebook“.

III.3.3.1. Define the viewed details

Using the menu "View" you can configure different views at your "Gauge basic data":

- "Show / Hide columns" – define the fields (columns) which are shown at your start screen;
- "Show help texts" – switch on/off the viewing of help texts for menu items and buttons; this help texts will be shown when you move the mouse pointer on a Button;
- "Show grids colored" – switch on/off the colors in the shown grid;
- "Show the detail panel" – the "Detail panel" will show you specific Gauge information (see page 7) about the Gauge currently selected (e.g. Nominal sizes and Tolerances);
- "Show gauge picture.." – in case that you have stored an image of a special Gauge type you can show this on the "Detail panel" (NOTE: If you have performance problems with your computer please switch this option OFF !).

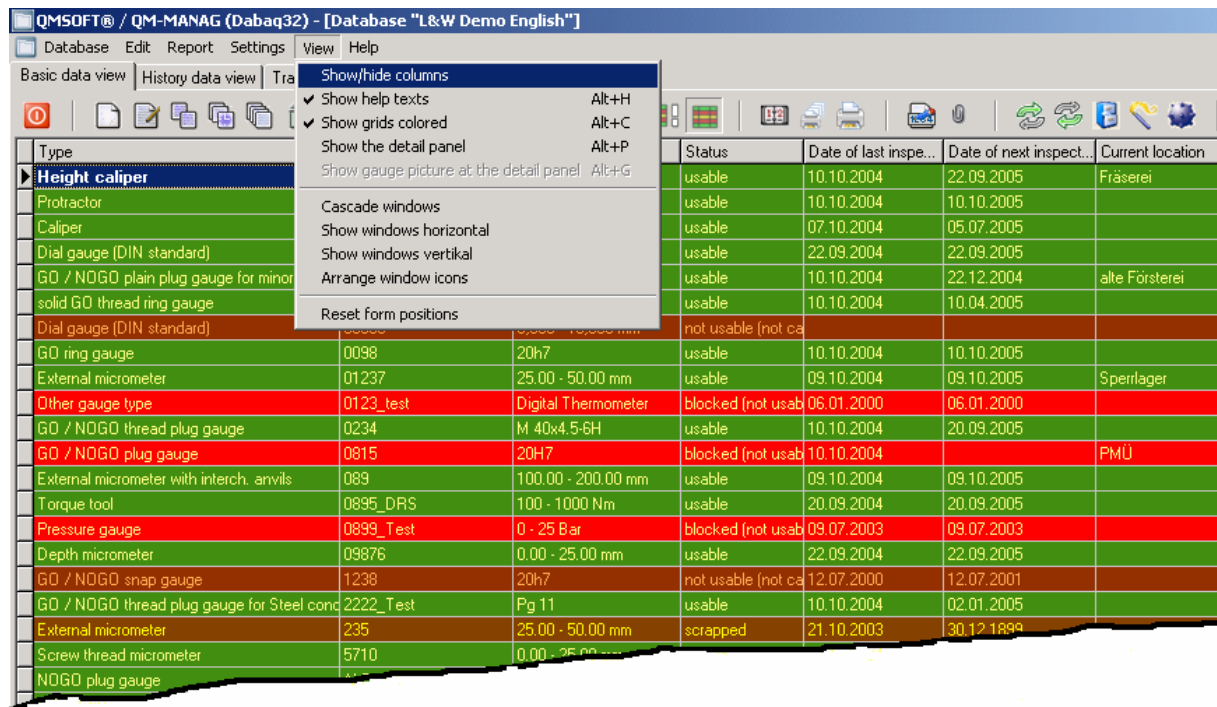


Figure: the menu "View"



III.3.3.2. Entering a "New Gauge" ("Ins" - Key)

By pressing the "Ins" key or button a new gauge, and a corresponding set of gauge basic data can be added to the data base. At first, a selection window will appear on your screen with a list of different types of gauges known to the system. Highlight the appropriate type of gauge and press "ENTER".

To make this selection more convenient you can enter the first characters of your Gauge type name to decrease the number of shown types: For example: if you enter "GO" on your keyboard you will get a list with all gauge types beginning with "GO" (see figure).

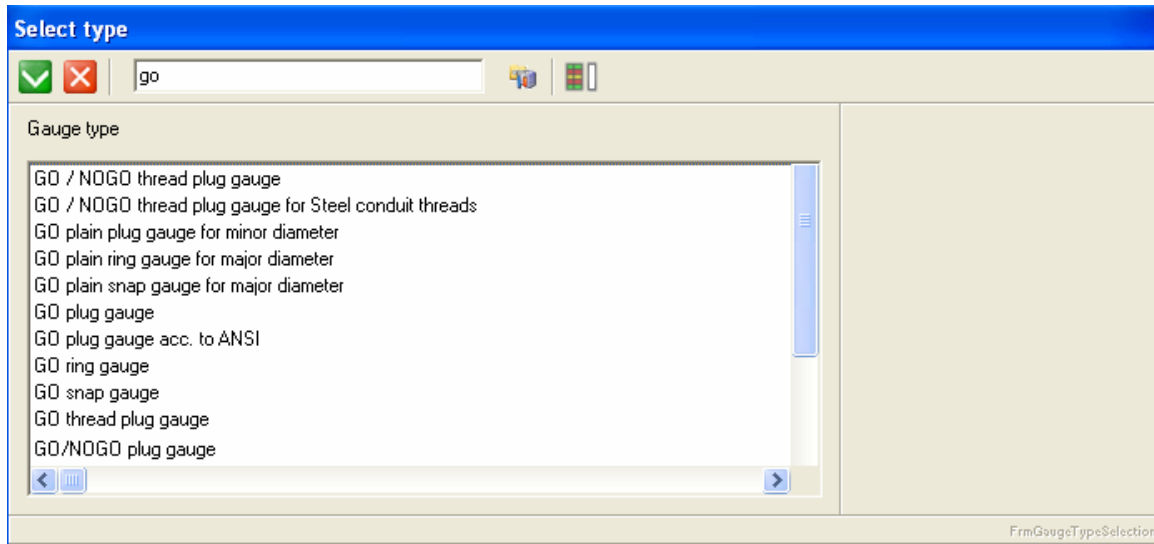


Figure: Selecting a gauge type

Note: You can only enter a gauge of a "known" type. If you can not find the type of gauge you want to enter in the shown list you have to create at first the "gauge type definition".

Please see **section III.3.5.** how to do this.

After selecting the gauge type a window will appear on your screen usable to enter the set of gauge basic data. This window is divided into two parts. The left side the **"General basic data"** include all data fields which are available for all the different types of gauges.

The right side, the **"Type specific basic data"** includes all the fields which are defined only for this special type of gauge. Depended on the selected gauge type the fields in the right side will be different. In the next figure this will be illustrated with a "GO / NO GO plug gauge".

Figure: Enter a new Gauge in to the database

At first you have always to enter the gauge "*Identity number*". Pay attention that it is (usually) not possible to change the identity number after saving this gauge.

- ☞ In the menu "Settings | Basic settings" you will find an option "**Only unique identity numbers**". Use this option to make sure that each identity number can be used only unique: If you do not activate this you can enter different Gauge types with the same number (e.g.: a Dial gauge with no. 001 and a Caliper with the same number) but you can not use the same number twice for the same Gauge type.

Pay attention to the following fact: all fields in the "Global basic data" may be used as parameters for database inquiries. In fact you want to search to a specific "Gauge location" the correct spelling is important. To avoid errors while entering this texts you can use different system "Catalogues" (also named as "Lookup tables").

To use a catalogue for a special field make a double click with the mouse key or use the **F8** function key on the related field.

Attention: Before using "**Catalogues**" your system manager should be customised all entries in the catalogue list. See the section "*Settings/Catalogues*" for more information how to do this.

- ☞ **Using the "Field checking" option (see Section III.3.1 – how to activate this) you can force the checking of your entered texts to allow the entering of existing catalogue items only!**

If necessary set the "Inspection period" for the gauge to be insert.

The entry "(no individual period)" will keep the default settings made in the gauge type definition. Please refer section "III.3.7. Settings | Gauge types" for it.

Figure: Keep the Gauge type settings for the "Inspection period"

Naturally you can also define a individual "Inspection period" for any gauge in the stock. To do it click on the related field with the period units and select the unit you need. Then enter the number of units.

Figure: Setting an individual inspection period

- ☞ Please see also section III.3.3. "Settings | Inspection periods" to get more information about this topic.

Now continue, so far as you need, to enter the other information into the left screen.

On the right screen side the titles of the fields will very depending on the type of gauge being entered in order to correspond with the information needed for the given gauge.

Entering the gauge "Nominal size" or "Designation" for a lot of gauge types the gauge's nominal values can be generated from those entered in the data dialog box. Use the **F7** key (or the related Button) to do this. The results will than be automatically entered into the corresponding fields of the data dialog box (for example: gauge limits for a GO plain ring gauge "20 H7" or a GO screw plug gauge "M10").

Changing the "Unit"

For different gauge types there may be the possibility to change the gauges "unit". For example a "GO / NOGO gauge plug" can be handled with "mm" or "inch" units. If you want to change the gauges default unit then click at the shown unit list. You will get a message if you want to change the unit for the next field(s) also (see figure).

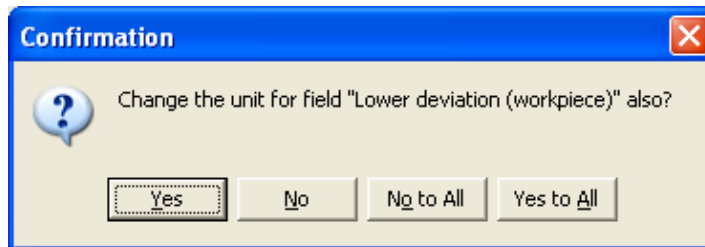


Figure: Changing a field unit

If you press the button "Yes to All" for all fields with the same unit definition the unit changing will also be made. If there was already a value typed in, you will get a message asking for converting this value to the new unit. For more information about the handling with "Units" please refer the sections III.3.5. "Settings | Units" and III.3.6. "Settings | Types".

III.3.3.3. Inserting a new "Set of Gauges" (Gauge block sets, Set of cylindrical pins...)

Sometimes an inspection equipment does contain a number of homogeneous part. A simple example for this is a "Set of cylindrical pins". (Note: the same working procedure can be used for Gauge block sets, Feeler gauges..). This set is mostly packed in a wooden case and you have one Identity number to manag this set in your database. But inside the case you have a serious of cylindrical pins with different diameters and their tolerances.

First: you need to insert the set in the database with it's Identity number, the location, the inspection period and all the other management informations. This you can do in the same way as described in the previous section of this manual (press the "Ins" key, select the Gauge type, enter the related information..).

Second: now you need to insert the releated information for the single items which are contained in the set. In case that the gauge type you have inserted does consist of other items the left side of the screen shows a new field where the single items of a set can be indicated.

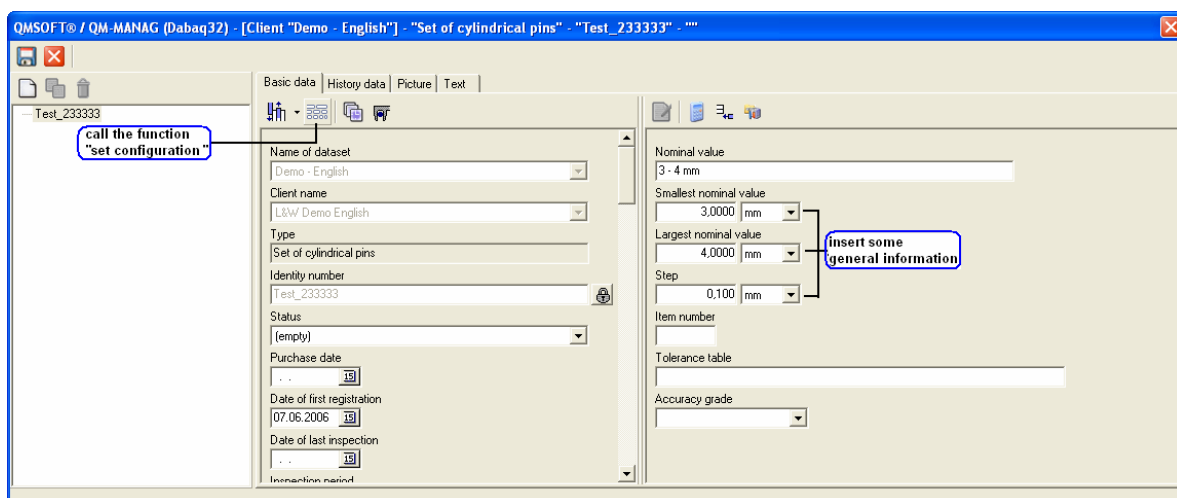


Figure: Inserting a gauge set in the database

The definition if a special Gauge type does contain other single items will be made in the gauge types definition. Please see the section III.4.6. "Settings | Types" for it.

After entering some general information about your set (see the previous figure for it) you can now insert the values of the single items in your set. To do this please click the button "Set configuration". You will get the following screen:

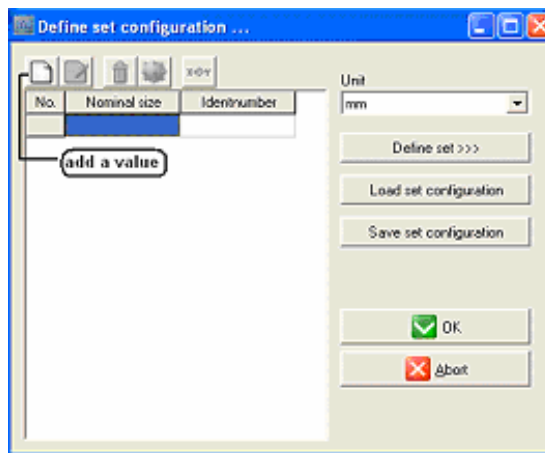


Figure: the function "Set configuration"

First you can use the button "Add value" to insert the nominal values of your single items. In the most cases you can simplify this procedure by using the "Define set" function. You will find a more detailed description about this function and their special options inside the manual for the "QM-PIN" program in the section XI.5.1.1.

After you have all items in your list, terminate the function by using the "OK" button. The list of your items will now be shown in the left part of the screen.

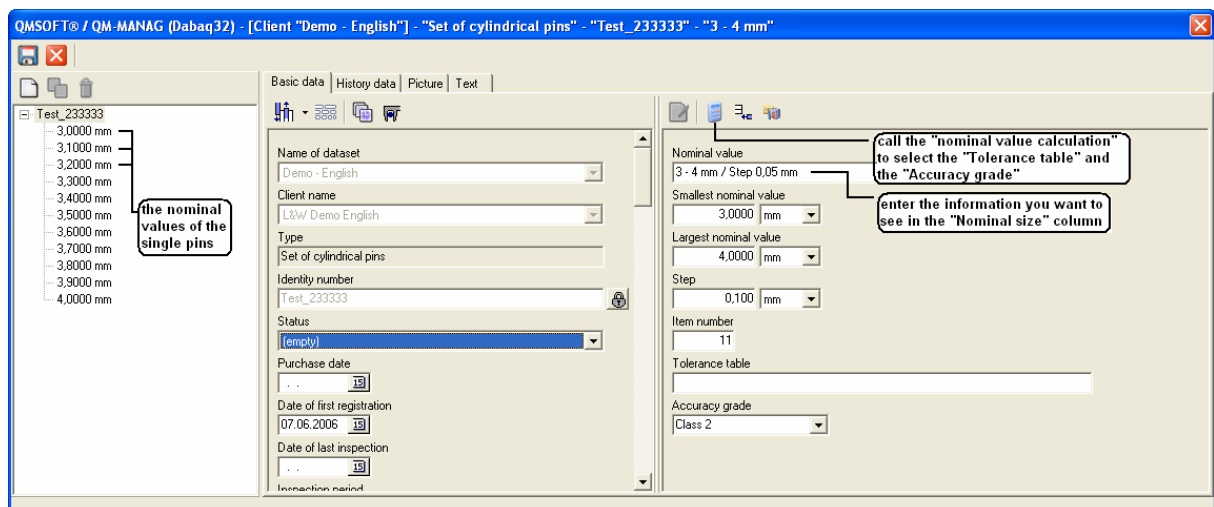


Figure: the nominal values of a set of cylindrical pins

As shown in the figure you can enter more detailed information if necessary. You can use the "Nominal value calculation" to select the tolerance table and the tolerance class from a pre-defined list. The user manual for the QM-PIN program will you give more information about the defining of tolerances.

If you now click on a single item on the left side you can see the properties it.

Terminate the input by clicking the "Save" icon.

If you want to insert a "Gauge block set" the procedure is nearly the same. The only difference is that gauge block sets usually have a fixed configuration depended on the manufacturer. In this case when using the function "Set configuration" click the button "Load set configuration". You can now select a pre-defined configuration from the list.

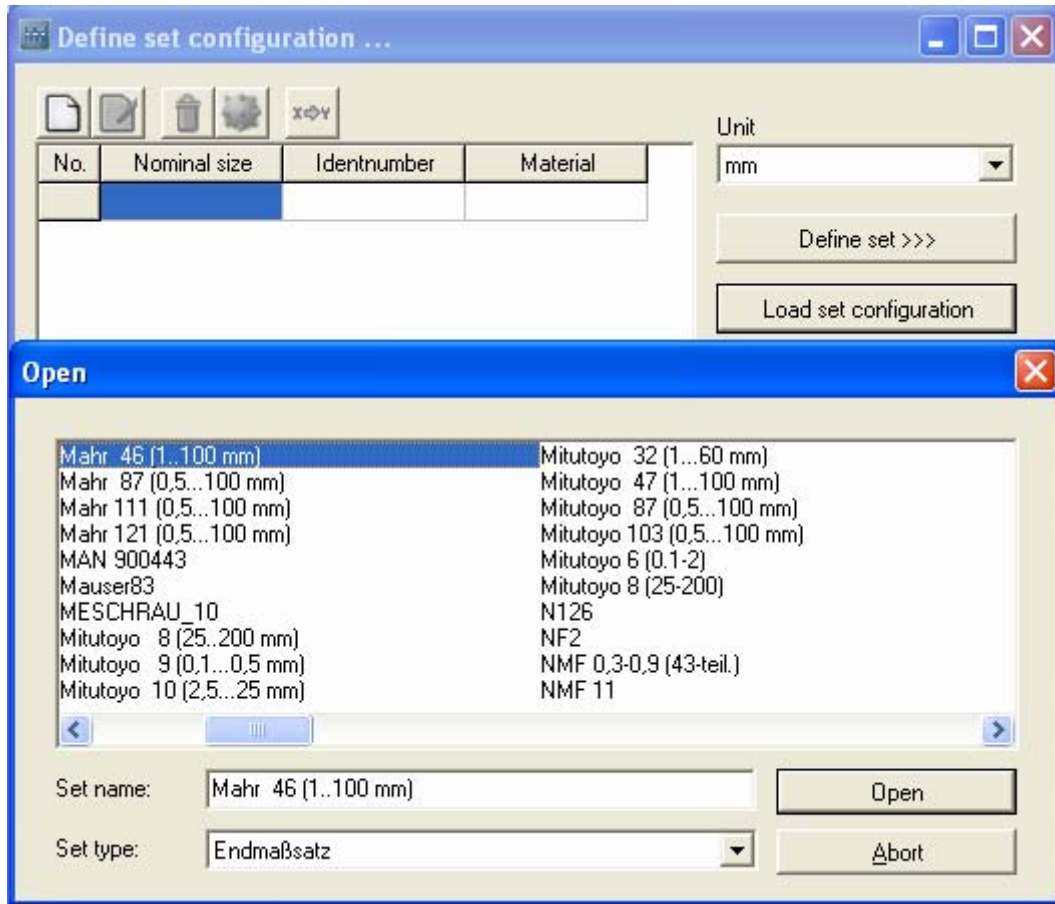


Figure: Loading a pre-defined gauge block set

To create new set configurations or to change existing configuration use the related function in the QM-BLOCK program.

III.3.3.4. Copy the Gauge Basic Data

If you have to enter more gauges with partly identical data, e.g. you have to enter five "Dial gauges" with identical ranges, graduations... use the "Clone a gauge" function to make your work more efficient. Pay attention to enter a new "Identity number" for the new gauge. If necessary you can change also the information in all other fields.

III.3.3.5. Edit the Gauge Basic data (Enter – key)

In order to work on a set of gauge basic data, first choose which set of data you would like to work on by highlighting your choice and confirming it by pressing the ENTER key or click onto the "Edit" button. Making changes to a set of data works in basically the same way as entering a new one excepts that the identity number cannot be altered.

III.3.3.6. Deleting a Gauge ("Del" – Gauge)

To delete a set of gauge basic data and all corresponding inspection data for a gauge, highlight the data you wish to be deleted and press the "Del"-key or the shown Button. Before a data, is deleted a warning box will appear on your screen. The data will then be deleted only when you have authorised it.

Attention: Once a gauge has been deleted it you can still find it in the "paper basket"!



III.3.3.7.

Sorting and Searching of gauges, Filters

This functions should be used when you wish to locate a certain gauge from the data stock to sort the gauges according to a defined pattern or to restrict the view according to specified parameters.

a) Sorting the gauge stock



- Note: If you need only a simple sorting according to one parameter (e.g. "Identity number" or "Location") you need only to click in the header line of the related column. You will see an activated "sort order" by the "Gray colored" header.

Using the menu "Sort" or the related button you will get the windown shown in the next. Select here the fields you will use. Continue with "OK" if you have set the wished parameters.

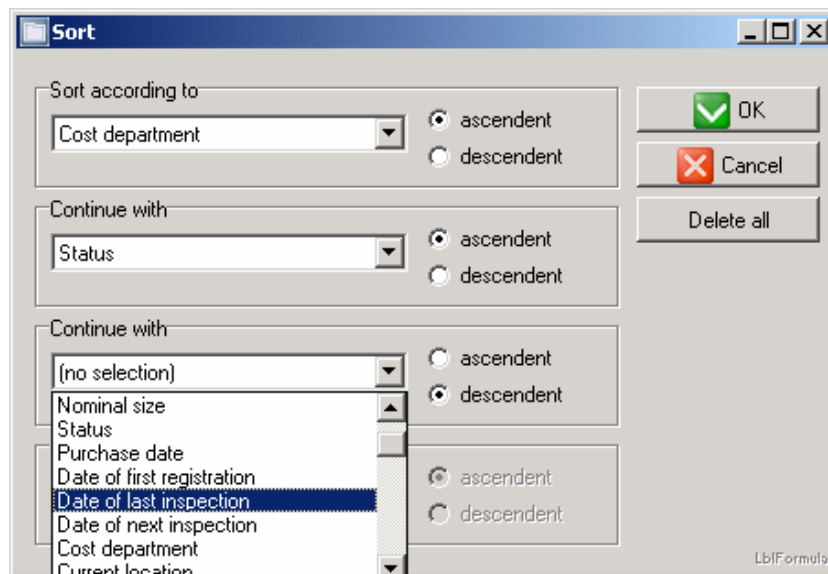


Figure: Set a sort order

You can also sort according to different columns by pressing the "Shift"-key when clicking at the column header.

b) Search function (F3 key)



After pressing the **F3** key or clicking at the "Search" symbol, a dialog box will appear where you can enter the gauge parameter you want to search.

In this dialogue the program does offer only "Simple search" after a single parameter. The default setting for the parameter "Field" does depend on the current sort order. If your gauge stock is sorted after the "Status" the "Status" field will be shown as the first parameter you can search for.

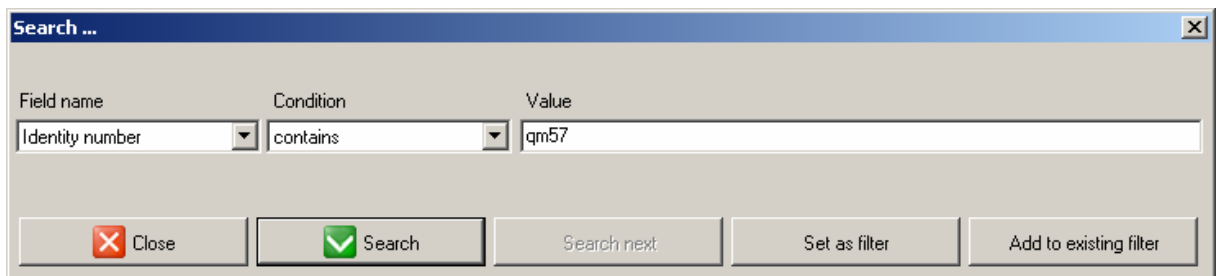


Figure: Making a "simple" search operation

If the search will result more then one gauge which will fullfill the search criterias the search dialogue will not be closed. Using the function key "Search next" you will get the next result(s).

With the "Set as filter" button you can set the defined searching condition as a filter. All existing filters will be removed by this operation. Use the "Add to existing filter" to add the defined condition to the existing filter conditions (see also the next section: description of filter operations).

☞ For a more complex searching operation use the "Filter" operation which will give you all searching results in one view (see the next section for it).



c) Filter operations (restrict the database view)

If you want to show only a special part of your gauge stock use the "Filter" function. So for example you want to see only "Dial gauges" on your screen – set a filter for it.

Filter are also used to make a selection of that gauges with those you want to perform an other operation: Gauge reports; Gauge data export..

☞ ***The "Filter" operation is often required to prepare your data for the next operation ! To make the report of a Gauge list, to export Gauge data or to execute an "Replace" operation always you have at first to set a filter to select all gauges with those you want to do this operation – except you have to do it with the complete Gauge stock!***

If a Filter is activated you will see a yellow status message on your screen. To remove a filter you have to press only the related button. After removing a filter you will see your complete Gauge stock again.

The setting of filters is shown in the next figure:

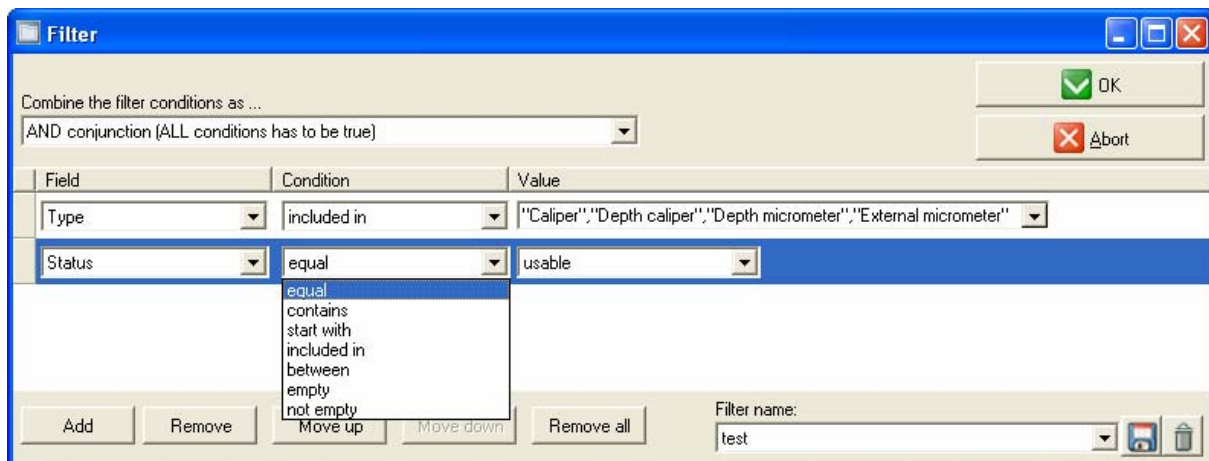


Figure: Setting a "Filter"

The example does show how to apply a filter in that way that only "Caliper", "Depth caliper", "Depth micrometer" and "External micrometer" whose "Status" is currently "usable" are shown at the screen.

To do it call the filter function. Now at first select the field "Type". Click now at the field shown under "Condition" to select one of operators from the list (is "equal", "start with"..). Use the "**included in**" operator if you need a list for the selection. After this you have to enter or select the property where you want to look for (in our example you select "Status" / "equal" / "usable").

Use the Buttons "Add" to define more parameters for the filter or "Remove" to remove it from the list.

Saving a "Filter" is very simple by clicking at the "Disc" – Symbol and entering a name to save it. To load a saved filter you have only to select it from the list when you click at the "Filter name" menu.

☞ **ATTENTION:** *The "Combine the filter conditions as.." setting will define the logical operator to combine the filter parameters you have set.*

As default it is set to "AND" which does mean that all filter conditions has to be "true". The "OR conjunction" will give a "True" result if one of all conditions will result as "True".

"User defined" will give you the possibility to combine the logical operators "AND" and "OR". Please note that the operator "AND" will always be analysed before the "OR" operator.

III.3.3.8. The gauge “Container”

Sometimes, for example if you want to “Expense” or “Release” a number of gauges, it is difficult to find a suitable definition to filter exactly these gauges you need. So you can use the “Container” function to arrange these gauges. The “container” you can see if you switch on the “Detail view” (see also the figure in section III.3.1.1.). You will find it in the right register page.

With “drag and drop” you can now move selected gauges to the container. For gauges you have placed in the container you can carry out the same functions like for gauges you have been filtered.

Possible functions are:

- printing a Gauge list;
- making an export of the gauges from the container;
- executing a “Joined action” like “Expense” all gauges placed in the container

NOTE: To place a gauge in the “container” will not really move it. It is only a special view! After executing the wished function you can remove the gauges here.

III.3.3.9. "Replace" gauge information (menu "Special functions")

Sometimes it is necessary to change special gauge information or to replace it by an other. For example the name of a department which you use in the database for the field "Current location" was changed. So you has to replace for all gauges which are currently set at this location the name of it.

To do this at first you have to set a filter to show only that gauges which are "infected" with the department name you have to change. After setting the filter call the replace function, select the field "Current location" and enter the information which should be entered in this field. For catalogue fields you will usually select it from the related "Catalogue".

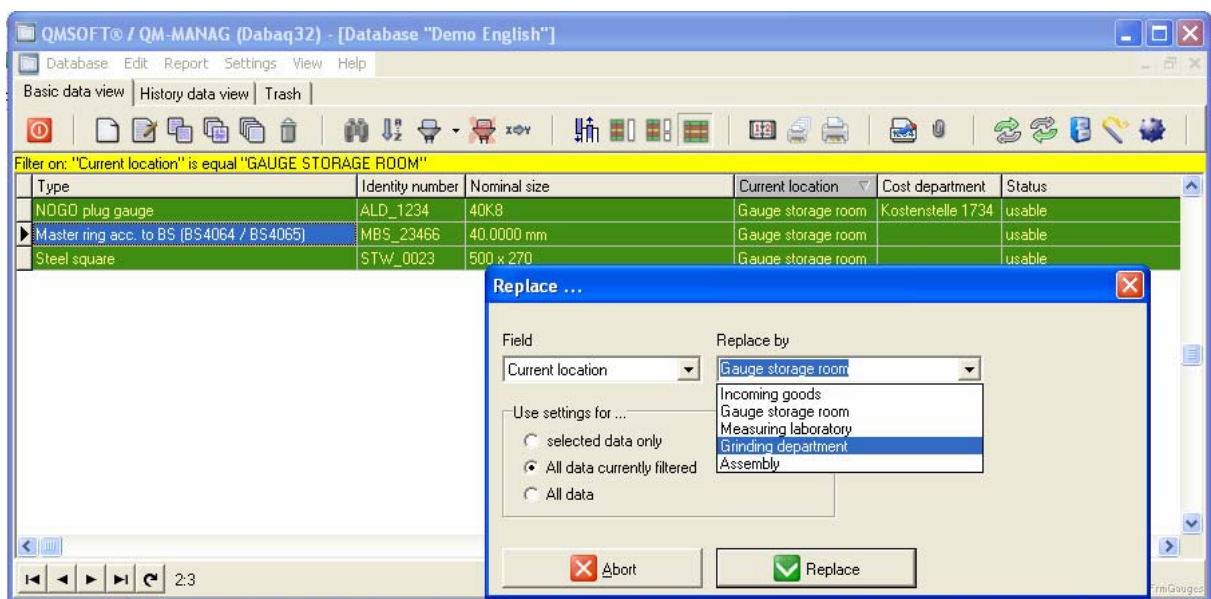


Figure: Replacing the field "Current location" (change the name)

In the example – shown in the figure above – at first a filter was set:
[“Current location” is equal “Gauge storage room”].

Then the function “Replace” was called. The “Replace by” field will show you all values available in the Catalogue “Current location”.

Before starting the replacement operation select the gauges for those the operation has to be done.

- “Selected data only”: will do it for the active gauge only;
- “Data in container box” will do it for all gauges placed in the container
- “All data currently filtered”: will replace it for all gauges selected by the current filter;

“All data”: make the replacement for all gauges in the currently selected
client database

III.3.4. Data Base Reports

The previous section described the functions needed for entering data in the gauge data base. The QM-MANAG menu option "Report" allows you gauge information to show, print out or save in a file.

III.3.4.1. Report | Gauge data card

Once you have selected a gauge, the menu option "Gauge data card" allows you to access the contents of the gauge's set of data as well as all the inspection data of the gauge. This is set up in order so that you can examine all information that has been recorded about the gauge.

Selecting the gauge is done by using the normal procedure. Either highlight the desired gauge or use the search function, using the F3 key, to locate the gauge.

III.3.4.2. Report | Gauge list

The menu option " Report | Gauge list " is used when you want to get a list of gauges regarding special defined parameters (e.g. to create a gauge recall list).

☛ ***Making a "Gauge list" is usually joined with setting a filter !***

Otherwise you will get the complete stock at your list. Use a filter (see section III.2.1.6.) to select the gauges you want to have at your list BEFORE starting this function.

If you open the menu " Report | Gauge list " you get a list with the report layouts available. Select the layout file you want to use (default is "GaugeList_English.lst") and continue with "Open".

Now the report tool "List&Label" will be started with the "Print options" dialogue (see figure):

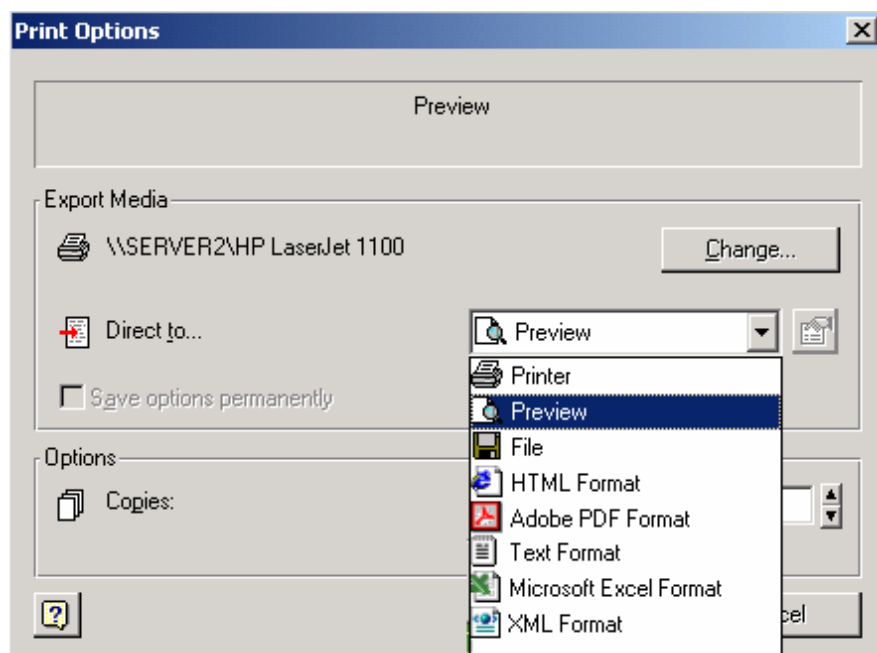


Figure: Print options "List&Label" reporting tool

As default this dialogue is set at "Preview". This will start the List&Label to show you the Gauge list at the screen. Here you can start the "Printing out" or other operation (send it as mail...).

If you do not need the "Preview" with the option "Direct to.." you can start the printing out just now or you can also save the list as a "Excel"-File, in XML or other format.

III.3.5. Gauge history and Gauge actions

One of the most important functions of the "Gauge management system" is the performing of any kind of operations with a gauge.

A "gauge operation" is any operation was done with a gauge during a gauges life. Each gauge action will be saved in the "gauge history". A gauge action may be a gauge inspection, a gauge distribution or the repair of a gauge. Which gauge operations you can execute is defined in the option "Settings|Gauge operations" (see also section III.3.5. in this manual).

III.3.5.1. Performing a Gauge operation

To make a gauge operation use the right mouse key to get the menu as shown in the figure OR use the button "Add action to Gauge history" (Note: the function key F7 will do the same).

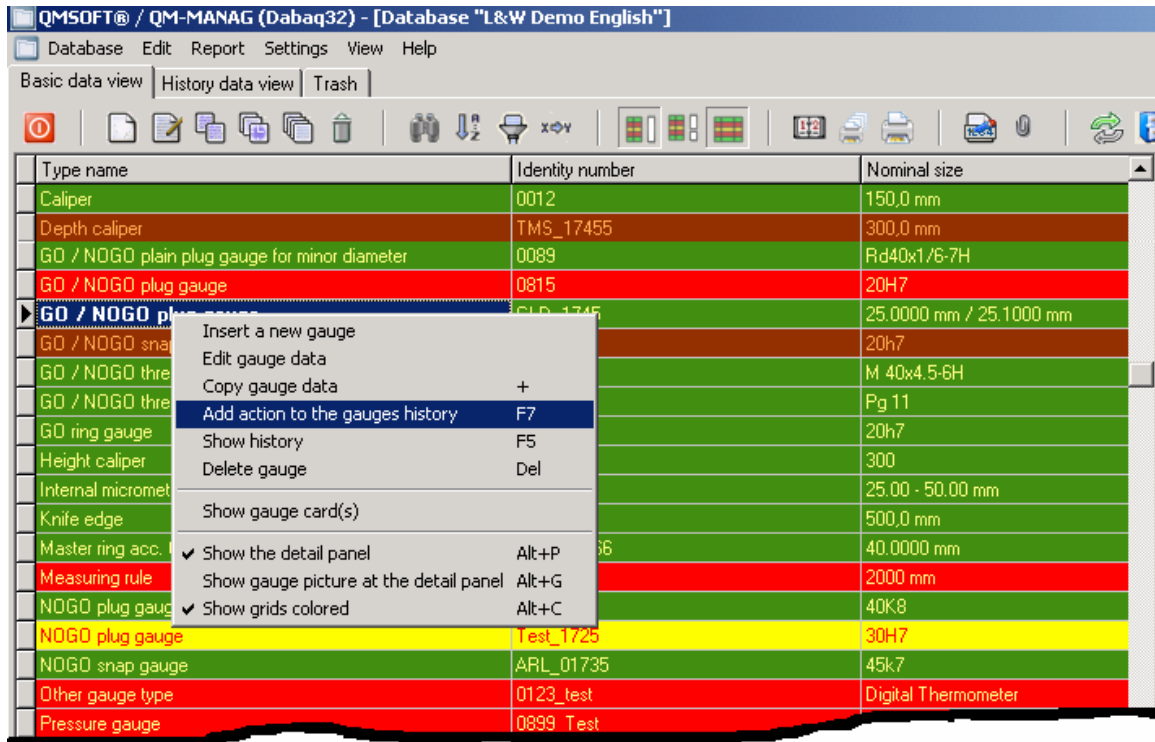


Figure: Context menu to perform a Gauge action

Select the menu item "Add action to gauges history". Now you will get the screen with all Gauge actions available:

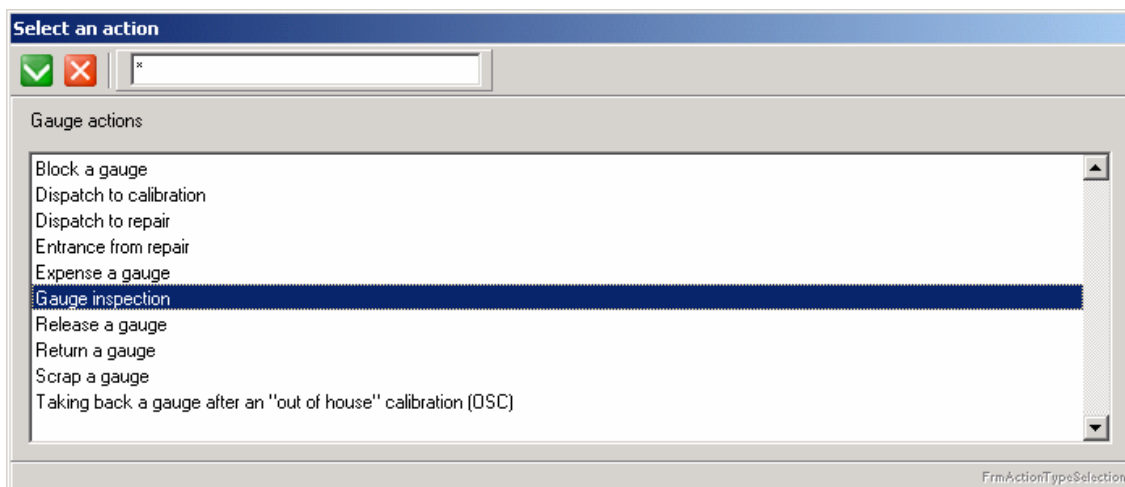


Figure: Select the Gauge action you want to execute

Now you will get the "History view" of the gauge selected. A new item for the "Action" you want to do was just add to the history list. Date, Time and your Login name are already set.

Date/Time	Login name	Action
05.07.2004 11:55:50	system	Gauge inspection
16.09.2004 14:22:05	Joyce	Expense a gauge
22.09.2004 14:23:26	James	Return a gauge
22.09.2004 14:39:57	system	Gauge inspection
15.10.2004 17:12:42	system	Gauge inspection

Date/Time: 15.10.2004 17:12:42
 Login name: system
 Certificate number: 041015-0001
 GO side, Meas.plane 1, Value 1:
 GO side, Meas.plane 1, Value 2:
 NOGO side, Meas.plane 1, Value 1:
 NOGO side, Meas.plane 1, Value 2:
 NOGO side, Meas.plane 2, Value 1:
 NOGO side, Meas.plane 2, Value 2:
 NOGO side, Meas.plane 3, Value 1:
 NOGO side, Meas.plane 3, Value 2:
 NOGO side, Meas.plane 3, Value 3:
 Status: usable
 Date of last inspection: 15.10.2004
 Check period: (no individual period)
 Date of next inspection: 15.12.2004

Figure: History view with a new Action

At the right side of the screen you will see all fields which are related with the current action. This fields will be defined in the related "Gauge type definition" (see section III.3.5.).

An action can be connected with an "External program" to execute different operations related with it. Doing a "Gauge inspection" (as shown in the figure) the user has the option of entering the set of inspection data manually on the keyboard in the corresponding fields in the dialog box. However, this can be done automatically by opening the measurement program which corresponds to the gauge being inspected (for example the QM-PLAIN program designed to support the inspection of all types of plain gauges). By doing so, the inspection itself is supported by the measurement program and the results of measurement – including the inspection certificate - will be automatically entered into the QM-MANAG program system.

Once it has been installed, the measurement program can be opened by pressing the **F4** key (or the QMSOFT-Button). For further information on how the various measurement programs work please refer to the documentation of the measurement program being employed.

- ☞ Performing a "Gauge action" the "Gauge status" and the dates of the "Last inspection" and "Next inspection" may be changed. Whether and how this fields will be changed does depend on the definitions made in the "Gauge action" and in the "Gauge type" related (**please see also section III.3.5. and III.3.6.**)

For example the default settings for an "Gauge inspection" will change the "Gauge status" as follows:

- the inspection result is "in tolerance" → "positiv" → Status will be changed to "usable";
- the inspection result is "out of tolerance" → "negativ" → Status will be changed to "blocked";
- the inspection result is indifferent → "unknown" → Status will not changed;

When a gauge action does update the "Last" and "Next calibration date" (see the related gauge type definition for it) it will also reset the calibration period. Using a fixed inspection period the "Next calibration date" will be calculated based on it. For inspection periods based on the number of usages or the usage time ("booked out" time) these actions does reset the remaining period.

Other actions may count down the usage number or "start" and "stop" the calculation of the remaining usage period in dependance on the settings made in "Settings | Inspection periods".

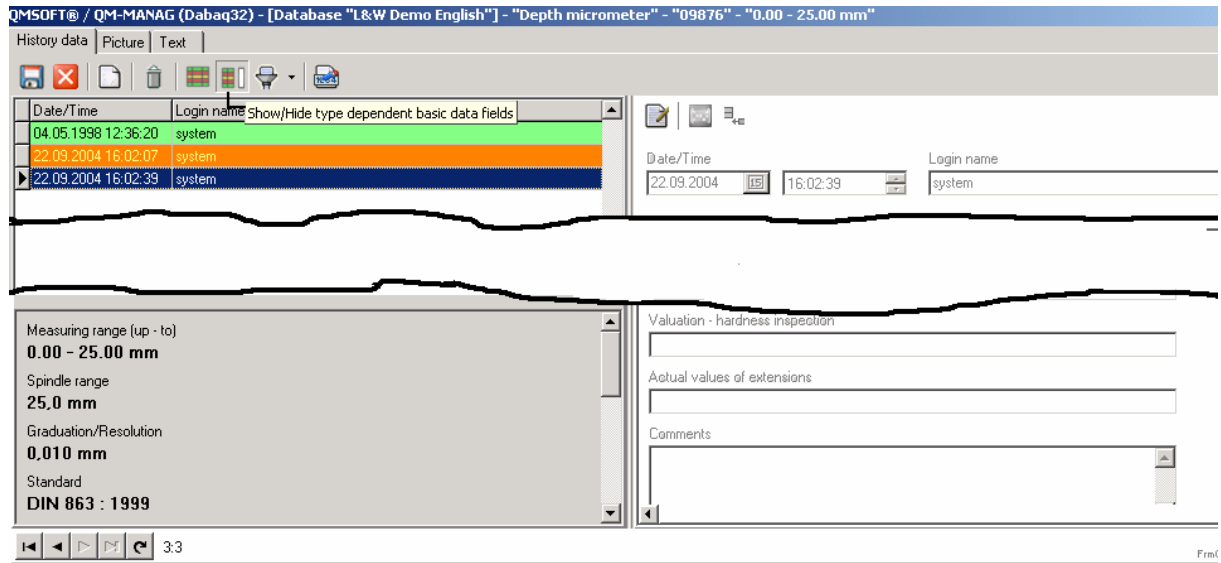
Showing of "Gauge Basic data" in the History screen:

Figure: Show type dependent "Basic data" in the history screen

Sometimes it may be helpful to see the Gauges nominal data and tolerances in the history screen. To show it please use the related button as marked in the figure.

III.3.5.2. The usage of "Joined actions"

If you want to execute the same action with different gauges you can use the function „Joined action“.

Usually you will select the gauges for a “Joined action” by defining a filter or by placing the gauges in the container box. In difference to an action you will do with a single gauge at first you will get a dialogue window at the screen where you can enter the common information which will be used for the history of all selected gauges.



III.3.5.3.

The usage of "Calibration certificate numbers"

Creating a calibration certificate often you need the instruction for a Calibration certificate number. To do this the program QM-MANAG does support the automatic or manual creation of certificate numbers to be print at your calibration certificates.

After opening a client database this function will be called when you are performing a Calibration at the first time. The number you will create or enter now will be kept in the system until the next creation or entering a new certificate number.

When you later need to change the Certificate number you can call this function by using the "Certificate number" button (see above).

Figure: Creating, Entering a certificate number

You can select the following options:

Creation scheme...: Here you can select a "Scheme" for the automatic creation of the next calibration certificate number.

Use actual calibration certificate number: The last certificate number you have used will be shown here. Activate this option if you will use the last number furthermore

Use new calibration certificate number: Activate this to force the creation / entering of a new certificate number for each calibration you will do.

Create new certification number for each calibration: Use this option to create a unique Calibration certificate number for each calibration.

III.3.6. Special functions:

Notice pad: use this function to enter your notes for the active client database



Refresh Gauge status:

This function will be made a selection of all Gauges where the next calibration date is overdue. You can now select a new status you will set for this gauges. Please note, that you can switch on an automatic checking of "Overdue" gauges when you activate the related function in the menu "Settings | Basic settings".



Move gauges to an other client database

you can use this function to move a selected gauge to an other client which is defined in your database.



Change gauge type:

Sometimes you will find that a Gauge does not have the correct assignment to a corresponding Gauge type. Use this function to assign the selected Gauge to a new type.

III.4. Settings/Configuration for the program QM-MANAG

This QM-MANAG main menu option is accessible only to your system administrator.

ATTENTION: As a "normal" user of this program, do not attempt to make changes to certain system parameters go round of the configurations menu.

III.4.1. Settings | Field names and Catalogues

Here you have access to the following functions:

- **Field names:** The program QM-MANAG will be delivered with a pre-defined configuration. This does concern also the field names being used to show the Gauge information. This function will enable you to change this field names. Please note, that this changes can be made active as well for all clients in the opened database as for the currently opened client only.
- **Catalogues:** Using this option you can manage and edit different lists related to the fields in the „Global basic data“ (see section III-2.3.1). This lists may be used to avoid errors while entering data in this fields (see also „Settings | Gauge status“). Here you can add new items, change or delete existing fields. Catalogues may be used with identic lists for all clients which does exist in the database currently opened but you can also modify it only for the current client. To “rebuild” a catalogue to make sure that all entered texts will be exist in a catalogue. Please use the “Rebuild” functions shown in the figure for it. If you activate the option „Input checking” for the related fields only text which corresponds with an entry in the related list can be entered in this fields.
- **Input checking:** If you activate this option the database system will be guarantee that any “text information” you insert in a “catalogue field” has to be inside the related catalogue list (e.g. if you enter the text “Fowler” in the “Manufacturer field” of any gauge the system will check if “Fowler” does exist in the catalogue “Manufacturer”)

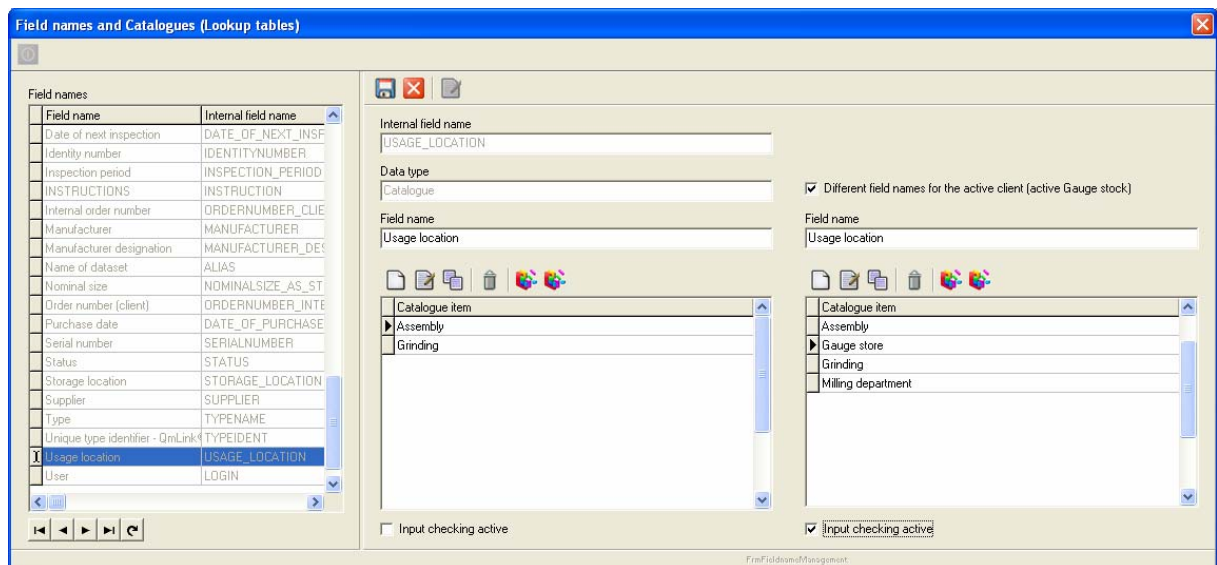


Figure: Field names and Catalogues

III.4.2. Settings | Inspection periods

This option give you the possibility to define "inspection periods" or to change the properties of existing "inspection periods".

Usually it should not be necessary to create new periods because the most common variations are pre-defined in the database system. The more important thing is it to modify the properties of the existing inspection periods especially for periods which are defined as a "counter" or which does depend on "booking" actions.

Generally we have three different types of "inspection periods":

- the standard "inspection period" which does define a fixed period for a gauge; this fixed periods will be started (or reset) by special gauge actions (usually by a gauge inspection); the options "use period as a counter" and "the inspection period is only activ if the gauge is booked out" are not activated!

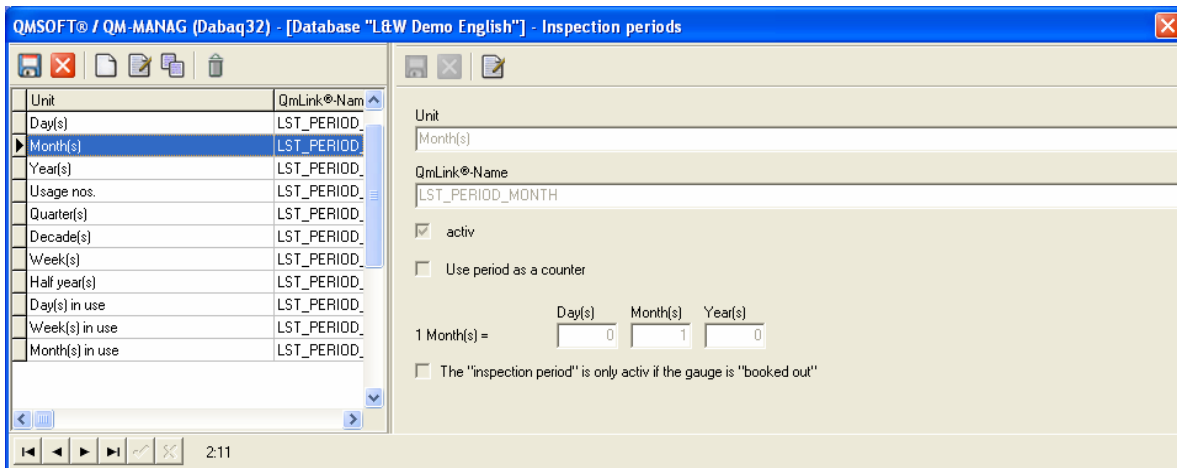


Figure: Example of a fixed period

- simple counter: you can define an inspection period to be used as a simple counter which counts (for example) the number of uses

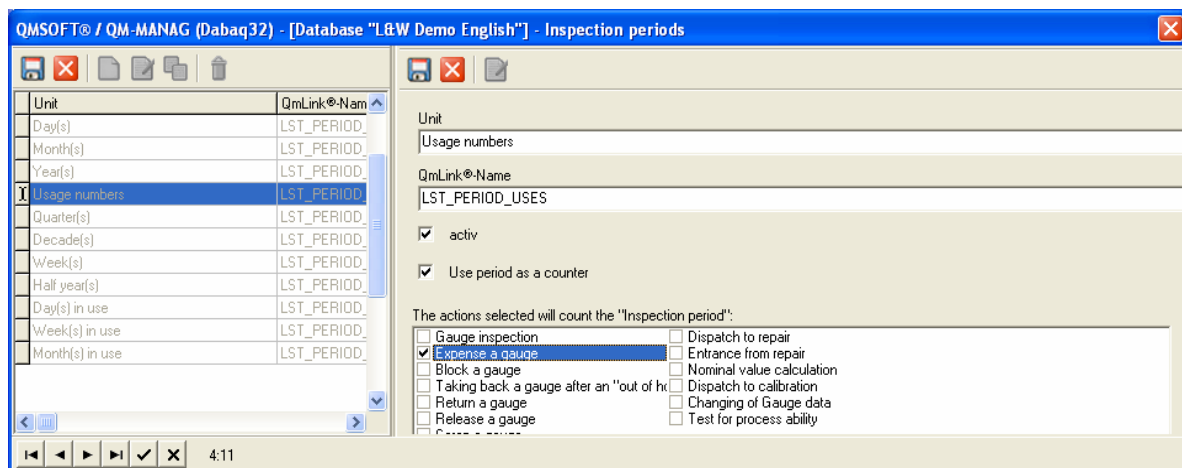


Figure: Use a period as a counter

If you will use an "inspection period" as a counter you have to define all gauge actions count down the defined number (the the figure for it)

- inspection periods based on the amount of time the gauge is "booked out"

QMSOFT® / QM-MANAG (Dabaq32) - [Database "L&W Demo English"] - Inspection periods

Unit	QmLink®-Nam
Day(s)	LST_PERIOD
Month(s)	LST_PERIOD
Year(s)	LST_PERIOD
Usage nos.	LST_PERIOD
Quarter(s)	LST_PERIOD
Decade(s)	LST_PERIOD
Week(s)	LST_PERIOD
Half year(s)	LST_PERIOD
Day(s) in use	LST_PERIOD
Week(s) in use	LST_PERIOD
Month(s) in use	LST_PERIOD

Unit: Week(s) in use

QmLink®-Name: LST_PERIOD_WEEK_INUSE

☒ activ

☐ Use period as a counter

1 Week(s) in use = Day(s) 7 Month(s) 0 Year(s) 0

☒ The "inspection period" is only activ if the gauge is "booked out"

"Booking out" actions (start counting)

<input type="checkbox"/> Gauge inspection	<input type="checkbox"/> Dispatch to repair
<input checked="" type="checkbox"/> Expense a gauge	<input type="checkbox"/> Entrance from repair
<input type="checkbox"/> Block a gauge	<input type="checkbox"/> Nominal value calculation
<input type="checkbox"/> Taking back a gauge after an "out of h	<input type="checkbox"/> Dispatch to calibration
<input type="checkbox"/> Return a gauge	<input type="checkbox"/> Changing of Gauge data
<input type="checkbox"/> Release a gauge	<input type="checkbox"/> Test for process ability
<input type="checkbox"/> Scrap a gauge	

"Booking in" actions (stop counting)

<input type="checkbox"/> Gauge inspection	<input type="checkbox"/> Dispatch to repair
<input type="checkbox"/> Expense a gauge	<input type="checkbox"/> Entrance from repair
<input type="checkbox"/> Block a gauge	<input type="checkbox"/> Nominal value calculation
<input type="checkbox"/> Taking back a gauge after an "out of h	<input type="checkbox"/> Dispatch to calibration
<input checked="" type="checkbox"/> Return a gauge	<input type="checkbox"/> Changing of Gauge data
<input type="checkbox"/> Release a gauge	<input type="checkbox"/> Test for process ability
<input type="checkbox"/> Scrap a gauge	

10:11

Figure: Inspection period based on the "booked out" time

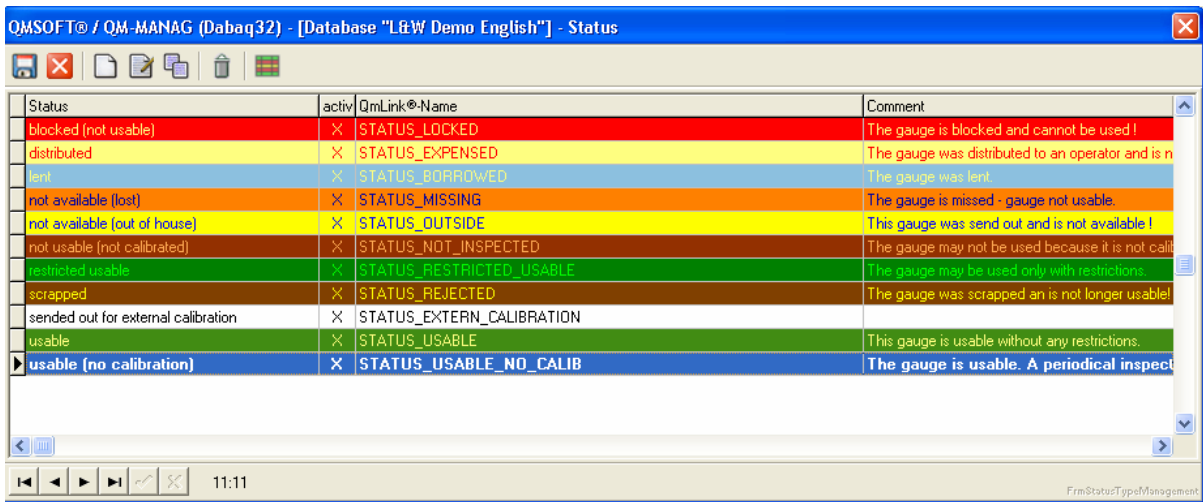
If you want to calculate the "booked out" time for the inspection period you have to set the actions which are starting the "booked out" time and also the actions which stop it as shown in the figure.

For all types of "inspection periods" you have to define the numbers of "Day(s)", "Month(s)" and "Year(s)".

III.4.3. Settings | Gauge status

Using this option you can define a list of valid gauge status. The gauge status table is used to set pre-defined texts for the „Gauge Status“ field. The pre-defined texts are necessary when using the data base inquiries functions so that the program can differentiate between, for example, „Gauge o.k.“ and „Gauge ok“. Therefore, searches can only be done when there is an exact match of the feature and the search criteria. Thus, the program user can make spelling errors in text entries entered from the keyboard.

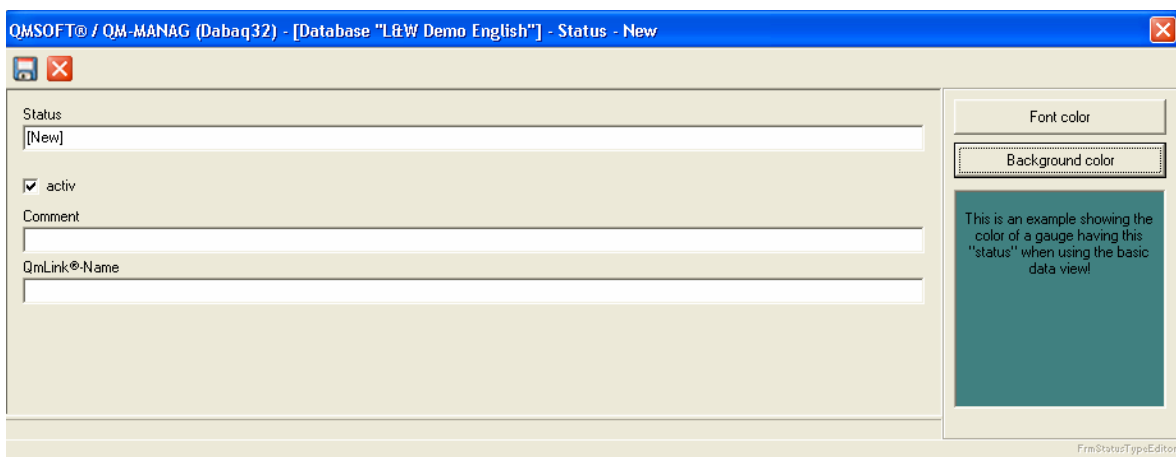
Use the related buttons to edit an existing entry or to create new or delete existing status texts. For each entry you have to enter a „Short designation“ to identify the status and the name of the „Gauge status“.



Status	activ	QmLink®-Name	Comment
blocked (not usable)	X	STATUS_LOCKED	The gauge is blocked and cannot be used !
distributed	X	STATUS_EXPENSED	The gauge was distributed to an operator and is n
lent	X	STATUS_BORROWED	The gauge was lent.
not available (lost)	X	STATUS_MISSING	The gauge is missed - gauge not usable.
not available (out of house)	X	STATUS_OUTSIDE	This gauge was send out and is not available !
not usable (not calibrated)	X	STATUS_NOT_INSPECTED	The gauge may not be used because it is not call
restricted usable	X	STATUS_RESTRICTED_USABLE	The gauge may be used only with restrictions.
scrapped	X	STATUS_REJECTED	The gauge was scrapped an is not longer usable!
send out for external calibration	X	STATUS_EXTERN_CALIBRATION	
usable	X	STATUS_USABLE	This gauge is usable without any restrictions.
usable (no calibration)	X	STATUS_USABLE_NO_CALIB	The gauge is usable. A periodical inspect

Figure: List of defined Gauge status

To create a new status or to change an existing one use the related buttons.



QMSOFT® / QM-MANAG (Dabaq32) - [Database "L&W Demo English"] - Status - New

Status: [New]

☒ activ

Comment: []

QmLink®-Name: []

Font color: []

Background color: []

This is an example showing the color of a gauge having this "status" when using the basic data view!

Figure: Edit a status insformation

Here you can enter or change the status name and you can set the colors being used to show the gauges in the "Basic data view".

By removing the "active" checking you can deactivate a status. This may be useful, if you do not want to use it more and you can not delete it because it is still in use for existing gauges.

The QmLink Name will be used as identifier when you export or import Gauge data and for the translation to an other language.

III.4.4. Settings | Gauge actions (operations)

Here you can define all operations which can be made with a gauge and should be saved in the gauges history. All actions which was done with a Gauge during its "lifetime" will be come to the Gauges history.

☞ **This function is not available in the "QM-MANAG Lite" version!**

III.4.5. Settings | Units

A gauge value, for example a tolerance value, can exist with different units. So, for example, you can have Dial gauges with "inch" or "mm" graduations.

Inside the funtion "Settings | Units" you can define all units you need to describe the different gauge parameters.

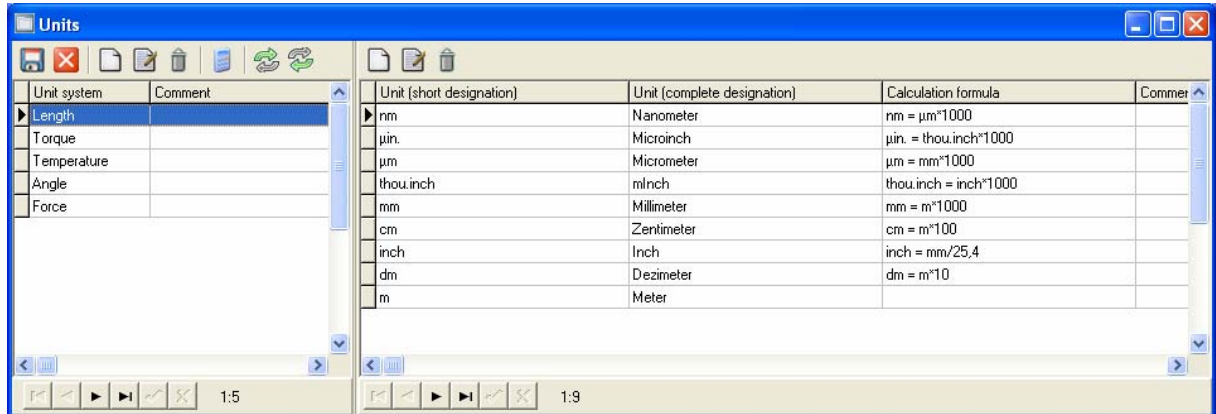


Figure: Defining of "Units"

In the figure you can see a list of pre-defined units. The "units" are divided in a "Unit system", for example "Length", and the related units which are available in this system.

☞ **It is strongly recommended NOT to change the existing unit definitions!**

Using the related button you can add new units as shown in the next figure:

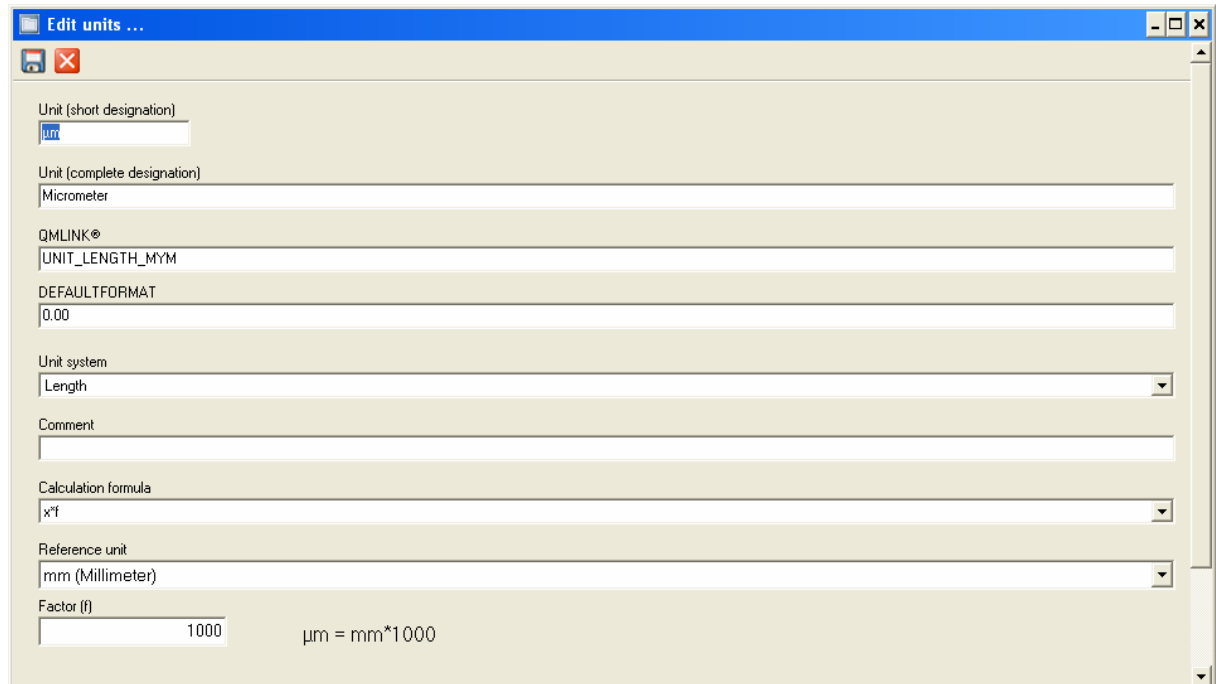


Figure: defining a new "Unit"

III.4.6. Settings | Gauge types

The QM-MANAG system has been specially designed for quality assurance of gauges for dimensional length measurement. This includes not only gauge data management but nominal value generation, tolerance calculations as well as the inspection itself.

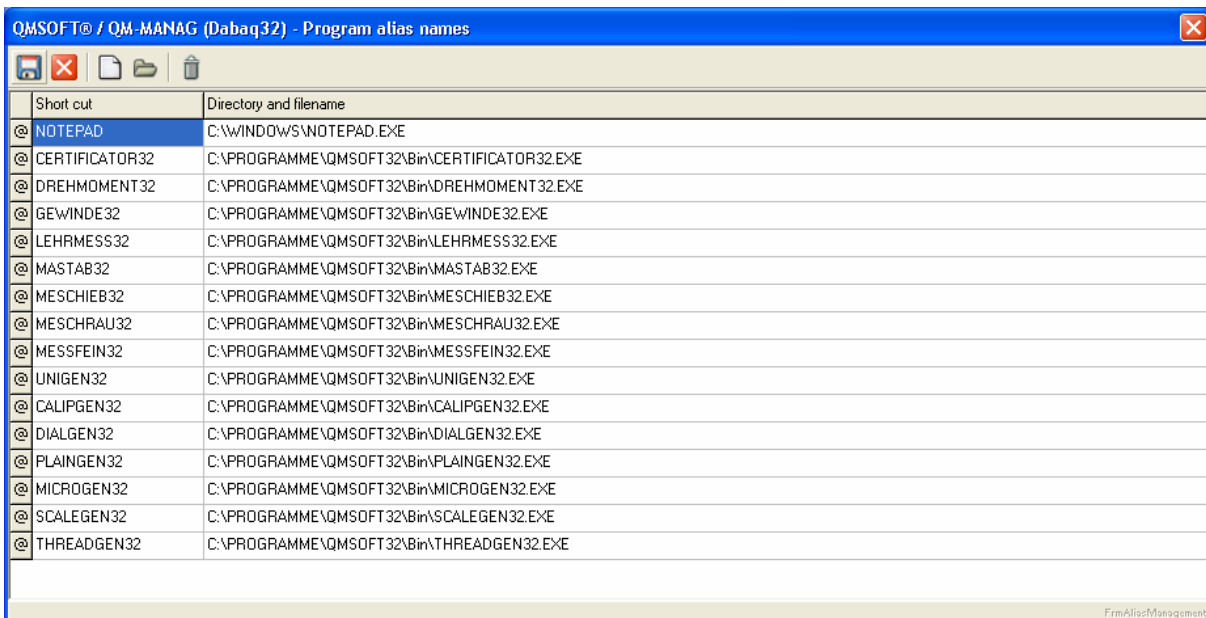
The program can also be expanded to incorporate gauges for other purposes (for example: electrical measurement technique etc.) with relatively little difficulty. Therefore, the gauge basic and inspection data structure as well as the nominal value generation and on-line measurement programs can be defined and configured independent of the administration programs.

☞ **This function is not available in the "QM-MANAG Lite" version!**

III.4.7. Settings | Program aliases

Doing a gauge inspection you have the possibility to call an inspection program especially designed to support the inspection procedure of the related type of gauge. The same procedures will be used to call a "Nominal value generation program" for the calculation of nominal values.

Here you have the possibility to define a list of "Alias names" for all the programs will be used in the program system. For each program "Alias" enter the directory and the program name. You can use the "Search" button to find out a program on the hard disk. See also section III.3.5 about the usage of such "External programs".



Short cut	Directory and filename
@ NOTEPAD	C:\WINDOWS\NOTEPAD.EXE
@ CERTIFICATOR32	C:\PROGRAMME\QMSOFT32\Bin\CERTIFICATOR32.EXE
@ DREHMOMENT32	C:\PROGRAMME\QMSOFT32\Bin\DREHMOMENT32.EXE
@ GEWINDE32	C:\PROGRAMME\QMSOFT32\Bin\GEWINDE32.EXE
@ LEHRMESS32	C:\PROGRAMME\QMSOFT32\Bin\LEHRMESS32.EXE
@ MASTAB32	C:\PROGRAMME\QMSOFT32\Bin\MASTAB32.EXE
@ MESCHIEB32	C:\PROGRAMME\QMSOFT32\Bin\MESCHIEB32.EXE
@ MESCHRAU32	C:\PROGRAMME\QMSOFT32\Bin\MESCHRAU32.EXE
@ MESSFEIN32	C:\PROGRAMME\QMSOFT32\Bin\MESSFEIN32.EXE
@ UNIGEN32	C:\PROGRAMME\QMSOFT32\Bin\UNIGEN32.EXE
@ CALIPGEN32	C:\PROGRAMME\QMSOFT32\Bin\CALIPGEN32.EXE
@ DIALGEN32	C:\PROGRAMME\QMSOFT32\Bin\DIALGEN32.EXE
@ PLAINGEN32	C:\PROGRAMME\QMSOFT32\Bin\PLAINGEN32.EXE
@ MICROGEN32	C:\PROGRAMME\QMSOFT32\Bin\MICROGEN32.EXE
@ SCALEGEN32	C:\PROGRAMME\QMSOFT32\Bin\SCALEGEN32.EXE
@ THREADGEN32	C:\PROGRAMME\QMSOFT32\Bin\THREADGEN32.EXE

Figure: List with the "external" programs joined with the QM-MANAG system

III.4.8. Settings | Basic settings

Please set here some basic settings of the program. They will be set to default values while installing the program.

The "Basic settings" are separated in general settings which are valid for all existing databases and special settings which are valid for the database client being currently opened.

General basic settings

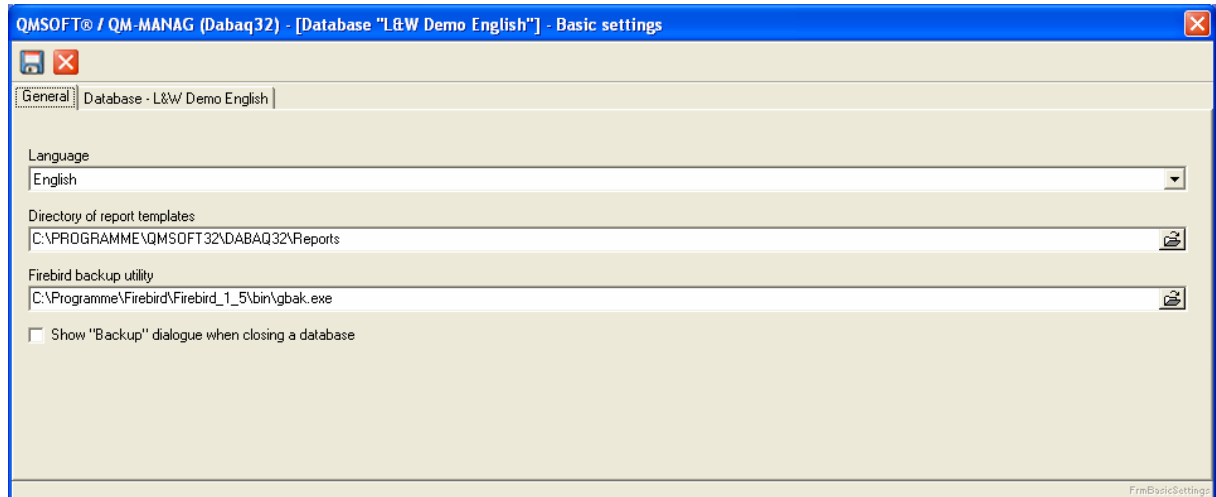


Figure: program Basic settings

The general settings are:

- the programs dialogue language;
- the directory where the report template files are stored;
- the directory with the link to the "Firebird" backup utility and
- the switching on/off of the automatic backup function when closing a database.

"Client dependent " settings

The following settings has to be done for each "client database" separately.

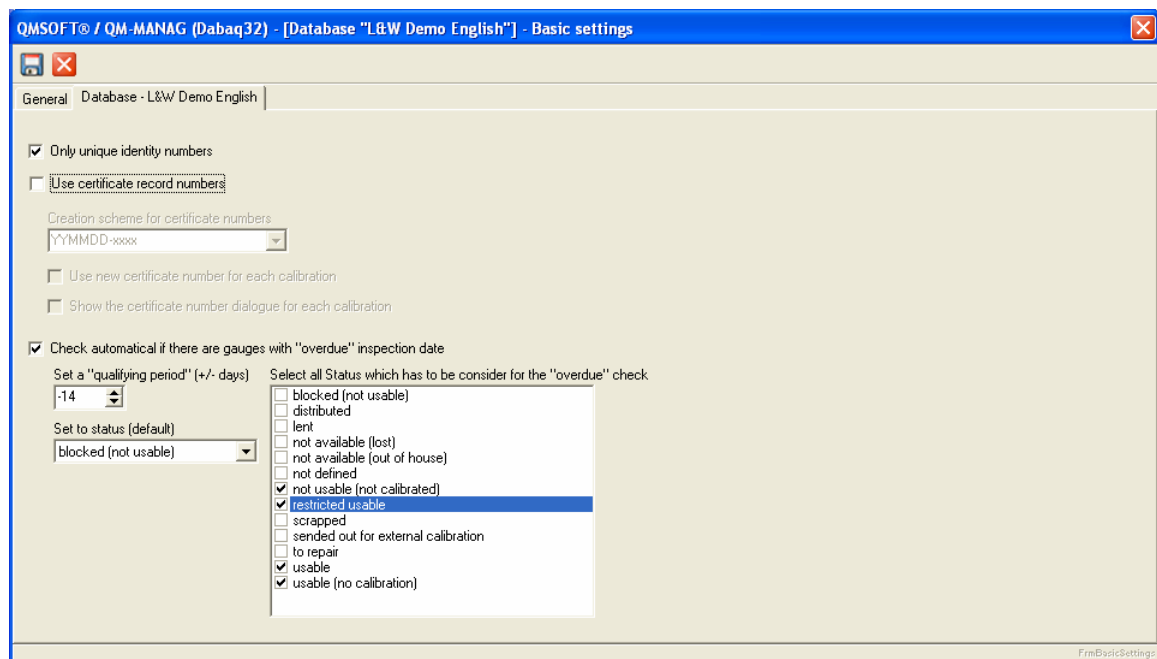


Figure: "client dependent" settings

The client dependent settings are:

Only unique identity numbers:

activate this option when only unique identity numbers should be entered.

Otherwise you can use the same identity number for different gauge types.

Use certificate record numbers:

here you can switch on or off the dialogue for the "certificate numbers".

If it is "switched on" you have to set the following options:

- Creation scheme for certificate numbers:
please select here the scheme you want to use to create the certificate numbers
- Use new certificate number for each calibration:
activate this function if you want to create a new certificate number for each calibration; if this function is not activated you have to set a new certificate number manually;
- Show the certificate number dialogue for each calibration:
please activate this option if you want to show the "certificate number" dialogue for each calibration;

Automatical status actualisation:

If you want to carry out an automatic check for all gauges with an "overdue" inspection date when a database will be opened you have to activate. This function will then be made a selection of all Gauges where the "Next calibration date" is overdue and you can then select a new status you will set for this gauges.

If the "overdue checking" function is activated you have to set the following options:

- set a "qualifying period":
here you can enter a number of days you want to add to (or subtract from) the "Next calibration date" when performing the "overdue check"; for example if you enter "-14" only gauges will be shown where the "Next calibration date" is over the current date minus 14 days;
- set to status (default):
select from the shown status list the status who has to be used as the "default" status you want to set for all gauges with an overdue data;
- when doing the "overdue check" it is useless to check the "Next calibration date" for all gauges. For example: you use this function to set all gauges where the next inspection date is exceeded to set the status for this gauges to "not usable (not calibrated)". Then you will do this check again and there are shown the same gauges again. To avoid this effect you have here to select only these status you want to use for the "overdue check".

III.5. Doing a gauge inspection

A "Gauge inspection" is a special form of a gauge action to perform a periodical or incoming calibration of a gauge. In case that the QMSoft system does include a row of special programs to support the execution of a gauge calibration this action does have a "Special status" which make it different from the most other actions.

Generally the finally result of a "Gauge inspection" should be an "Inspection certificate" does include all measuring results, valuations and comments and can be printed out and stored in the database.

III.5.1. Inspection of "Standard-" gauges

For the most used gauges like Plain plug an Ring gauges, any types of Thread gauges, Calipers, Micrometers or Dial gauges the QMSoft program system does supply special programs to support the gauge inspection, evaluate the values being entered and create a special inspection certificate. You have only to call up this program when performing a "Gauge inspection". See also section III.2.3 on page 17.

III.5.2. Inspection of gauge sets (Gauge block sets / Cylindrical pins)

Generally the inspection of a gauge set is similar the inspection for a single gauge. The main differences will arise when you cancel an inspection of an gauge set and you want later to continue an unfinished inspection.

To understand the background of this procedures here some explanations:

- 1) before starting an inspection the gauge (or gauge set) has to be inserted in the database
- 2) now you can select this gauge in your gauge stock and start the gauge inspection; the database will create a new record in the gauges history (see figure)

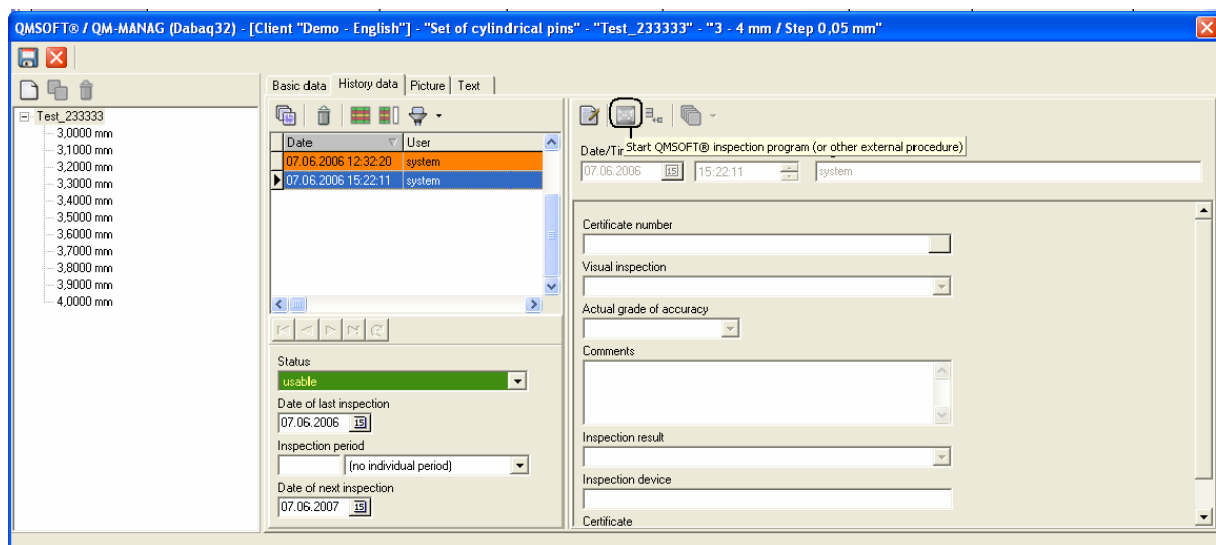


Figure: new history record for a "Set of cylindrical pins"

Click now the icon "Start QMSoft - Inspection program" to execute the related inspection program - in this case it will be the program "QM-PIN". Do there your measurements. After coming back from the measuring program all measuring results for the single pins will be write back to the gauges history.

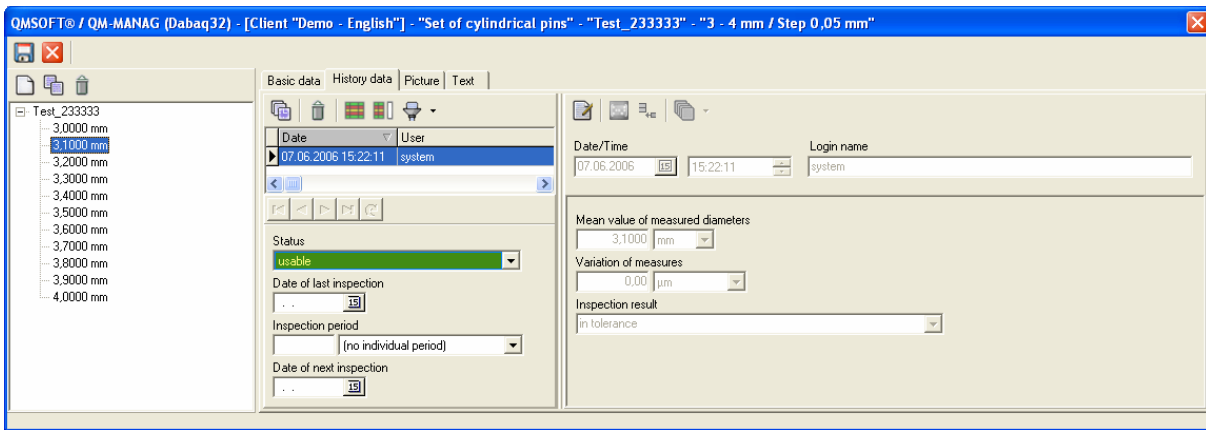


Figure: history record of a single pin after doing an inspection

Managing of an "unfinished inspection"

Caused by the number of items it can quite occur that you can not finish the inspection for a gauge set without a break. In this case cancel the measurement in the inspection program and save the measuring results. The gauge set will now get the marking "unfinished inspection" in the gauge status.

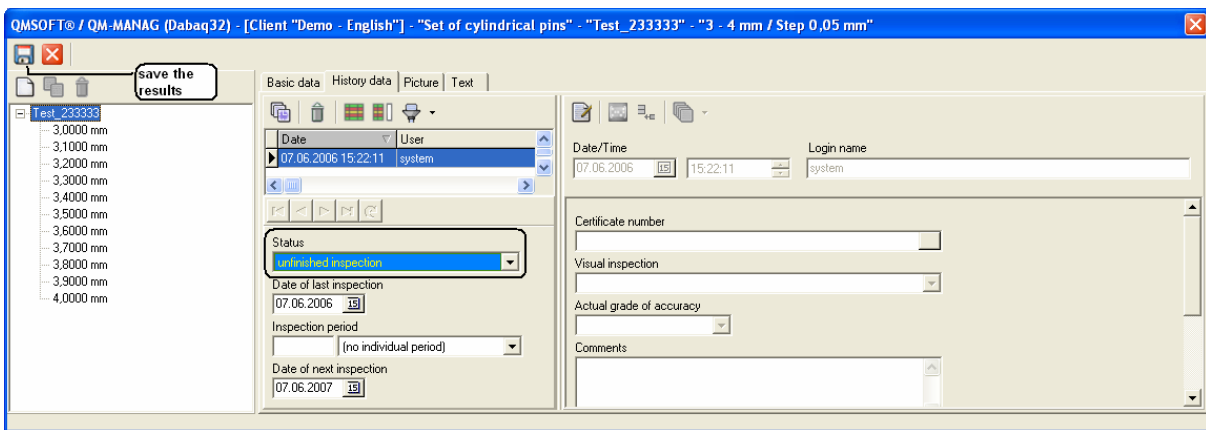


Figure: history record when an inspection was cancelled

Save the results you have collected until now.

To continue an unfinished inspection:

- select the gauge set in you database
- use now the function "Show history" (F5)
- **ATTENTION:** do not click the icon "Gauge inspection"!
- now the last record in the history is marked, click now the "Edit" icon as shown in the figure

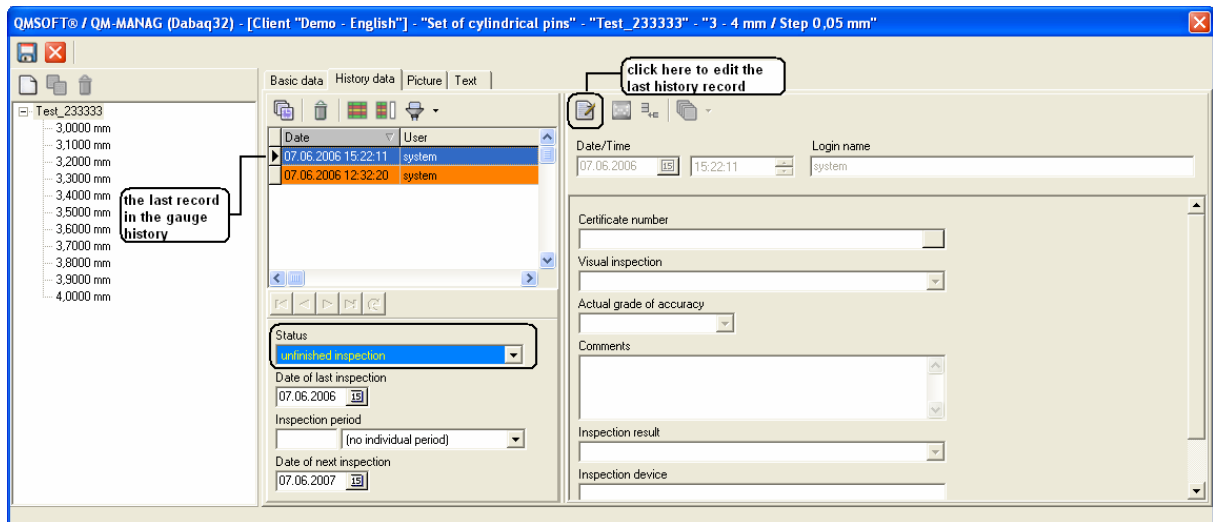


Figure: open the last history record and edit it

- click now the "start inspection" icon to start the inspection again; confirm the message "Do you want to overwrite the existing history data record" with "yes".

You can now continue the measurement as usual.

III.5.3. Inspection of "Special-" gauges

Often you have also to inspect a series of "Special" gauges like Knife edges, Protractors or others where no special program for the valuation and creation of inspection certificate does exist.

To create inspection certificates for this gauge types the QM-MANAG program does include a little tool named "Certificator32" to support this operation.

☞ **This function is not available in the "QM-MANAG Lite" version!**



III.6. Gauge data export and import

The program has special functions to export and import data. For the data exchange the QM-MANAG program is using the "XML" file format combined with the exact definition of all Gauge informations (QMLink data exchange format).

Mainly the export and import of gauge data will be used to transfer Gauge data from one QM-MANAG database to an other QM-MANAG installation located on a different computer. The main usage is the exchange of data between a calibration service provider and its clients.

If you are interested to exchange data with other management systems please contact L&W to get more information about the "QMLink" data interface !



III.6.1. Gauge data export

Use the related button start the export. You will get the shown screen.

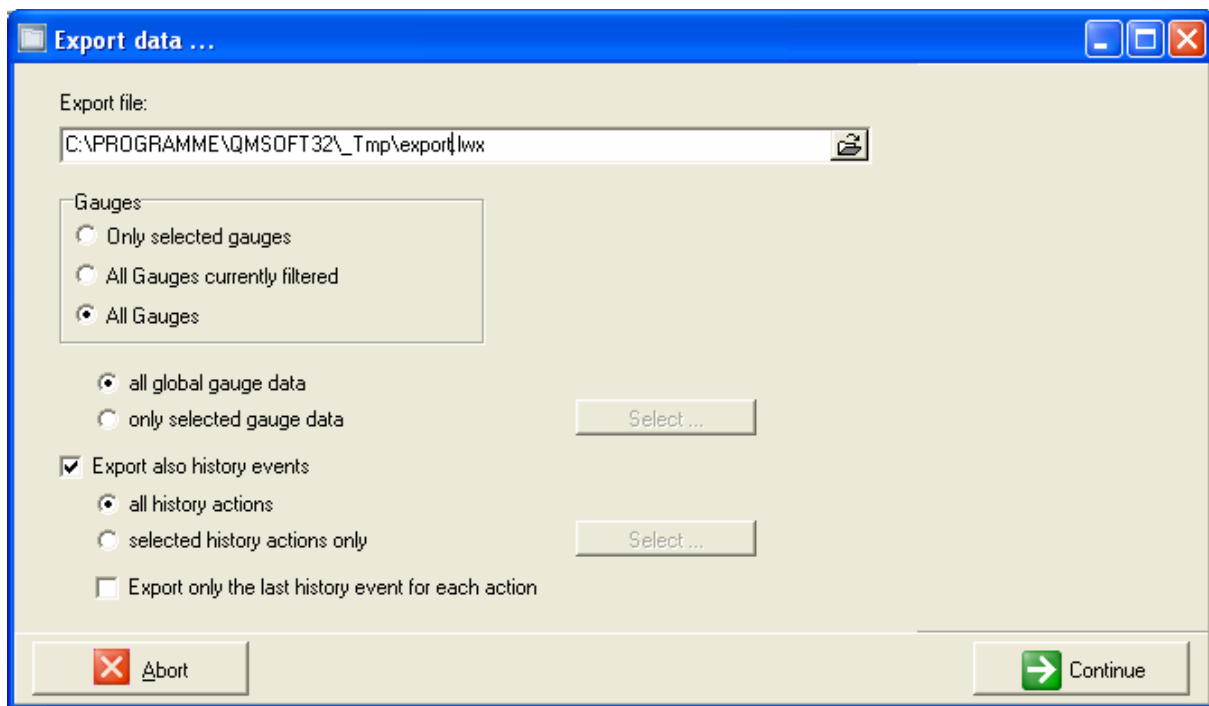


Figure: Select your export options

Please set the export options to select the data you want to export. Use also the "Filter" function to make a pre-selection of the gauges to be exported.

The export function will create a "lwx" file. This is a compressed file containing (if available) all related calibration certificates and gauge pictures and the file "data.xml". The file "data.xml" does contain all related gauge information.

The structure of this XML file is described in the "QMLink interface description. Please contact L&W if you need more information about it.

III.6.2. Gauge data import



Use the related button start the import. Then select your import options as shown in the figure.

Pay attention that you do not overwrite gauge information which should not be changed by the data import. In this case use the option “only selected Gauge data” and use the “Select” button to define only this fields which may be overwritten by the data import. All unselected fields will be kept with its original information.

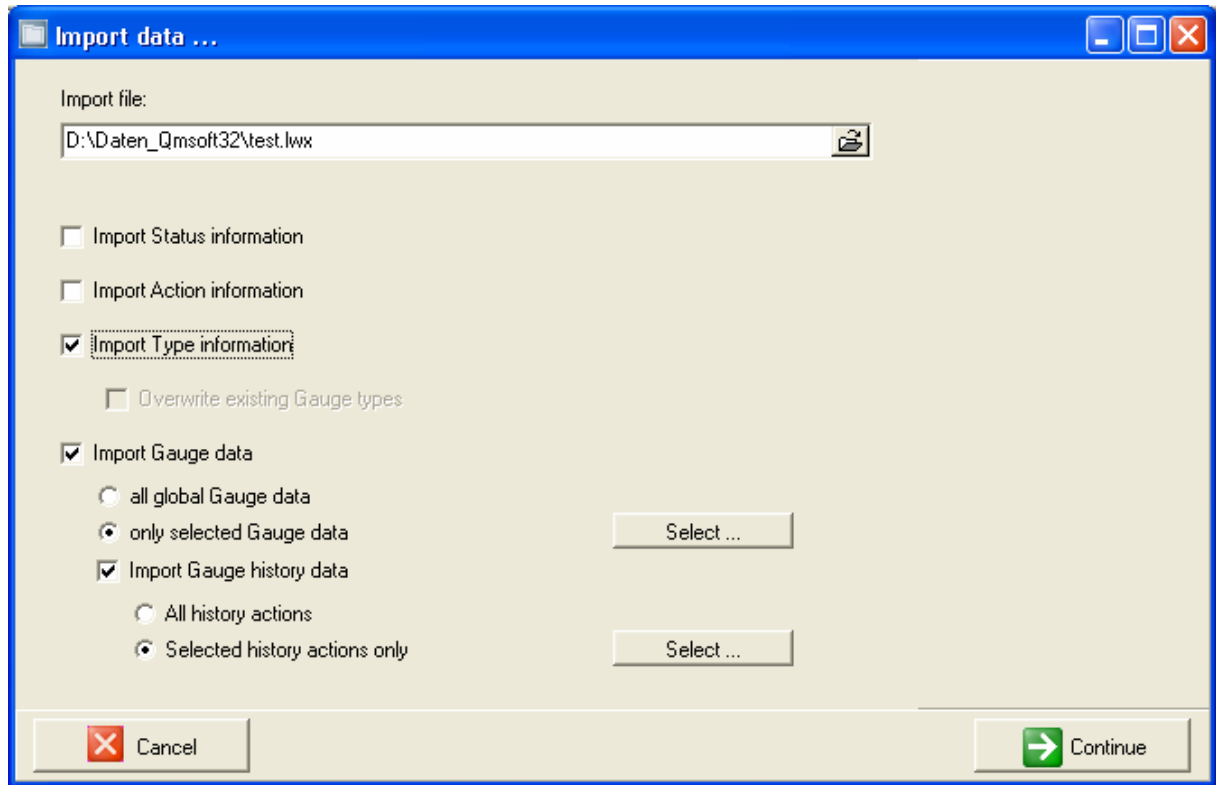


Figure: Setting of Import options

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