## 2

# Operator Instruction
# Software MXNT, Unipas

# E+H EICHHORN + HAUSMANN GMBH

MESSGERÄTEBAU

# MX204-608-DRA-5C
# MXNT Operator Instruction

Before you can work with the gauge, be sure the machine is installed and has the Status "RELAISED".

## 1 Start the program MXNT

Normally you find a short link on your windows main desktop.



If you do not find how to start the program ask your local administrator. After you double click the icon the MXNT program starts. The program initialise all hardware parts. This can take some seconds. Please wait until the blue start screen disappears.

If a error message appears on the screen ask your local administrator or maintenance people.

The MXNT main screen can be look a little bit different but the most parts are always the same:
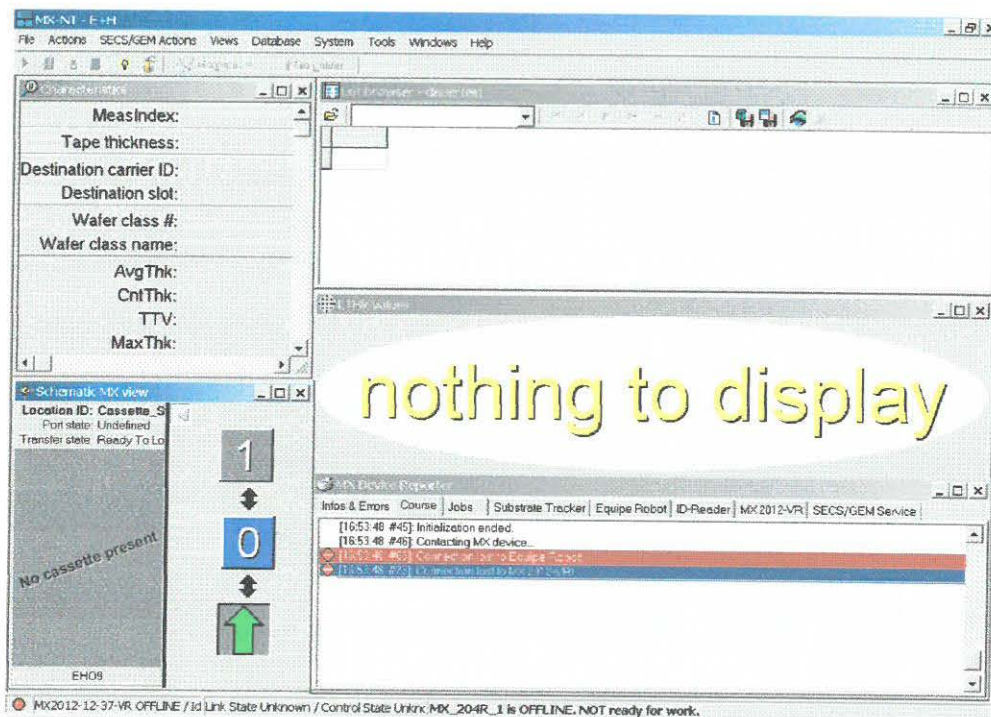
## 2 Put a cassette onto station

Please use only cassettes whitch are compatible with the gauge. Be sure that the cassette stand correct on his station.
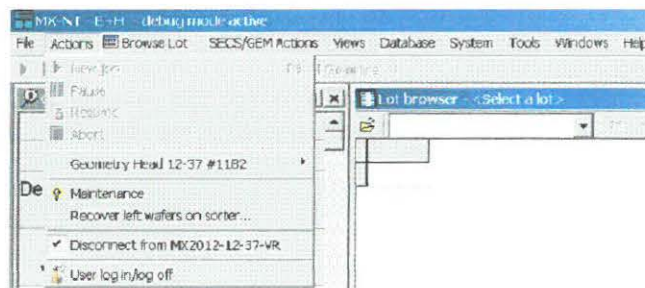
Attention!!!

After you start a measurement job do not remove a cassette before a measurement is finished. Measurements or even a wafer can by distroyed.

## 3 Start a measurement job

You have three possibilities to start a measurement job.

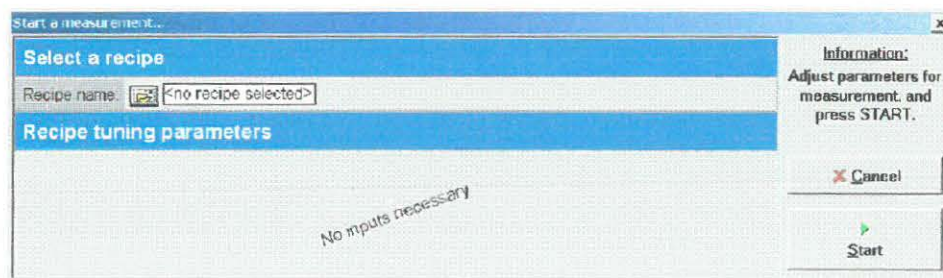### 3.1 Open and start the menu item Action > New job



### 3.2 Use the Toolbar



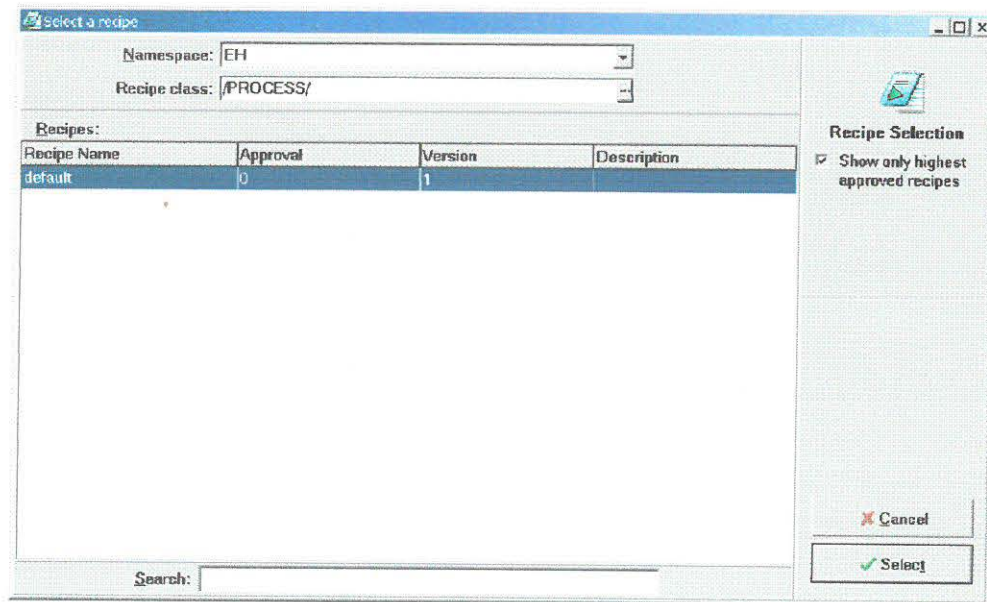Click on the triangle sign to start the measurement job.

### 3.3 Press the F9 hotkey on your keyboard.
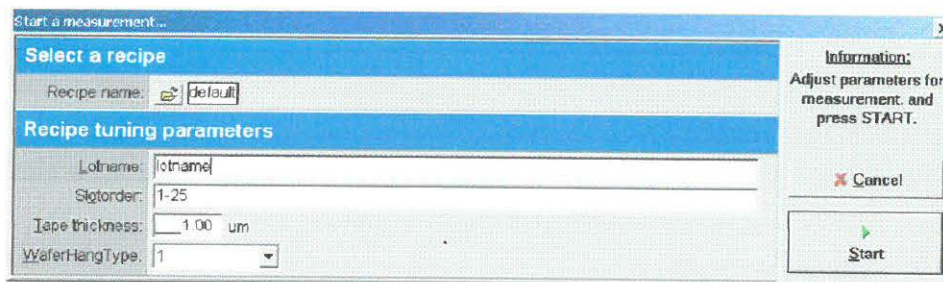
## 4 Select a recipe

Click with the mouse on the small directory sign near "Recipe name".
A new window opens:



Select the recipe you are instructed to use. Click on "Select" and the window
disappears. Enter inside the selected recipe the requested information. If you are
not instructed ask the local administrator.



## 5   Start Measurement

Press the "Start" Button and wait until the measurement job are finished.

## 6   Endless Sorting

If endless sorting is switched on inside a recipe MXNT give the operator the
information which cassettes are proceeded and can be changed. Press any key to
stop sorting.

# E+H EICHHORN + HAUSMANN GMBH

MESSGERÄTEBAU

## Operating instructions

# MX-NT Version 2 for Windows NT®

# Host-Software for E+H MX series

Professional equipment for
the semiconductor industry

## Table of contents

# 1 Quick start

## 1.1 Installing the software

### 1.1.1 System requirements

In order to be able to install and use MX-NT, you will require at least the following equipment configuration **(for the recommended equipment configuration, please refer to the relevant current E+H information sheet):**

- Intel/AMD based PC with at least 500 MHz CPU or higher or a 100% compatible computer
    - At least 128 MB RAM
      If MS SQL Server 2000 is used as a database, at least 256MB RAM and one 1GHz CPU should be available.
    - Hard disk with at least 2 GB free memory capacity
    - CD ROM drive, 3 ½" floppy
    - Graphics card and monitor with at least 1024x768 pixel resolution with 16 bit color depth
    - Ethernet network interface card
    - Keyboard
    - Mouse or other pointer

- Windows 2000 Professional with service pack 2 (or higher) or
  MS Windows NT 4.0 with service pack 6 (or higher)
    - At least one printer driver set up (if no printer is available, any driver can be installed and connected to FILE instead of to LPT/USB)
    - The installation of MS Internet Explorer 5 or higher is also required for Windows NT 4.0

- MS Access 2000 or SQL Server 2000 based database
    - Access 2000 only database engine or complete package
        - MS Jet 4.0 with service pack 3 (or higher)
        - MS MDAC_TYP V2.6 service pack 1 (or higher)
        - Or alternatively MS Access 2000 with the most up-to-date service pack
    - MS SQL Server 2000

**All instrument-specific options are based on the assumption that only the operating system and MX-NT are running on the computer concerned. We do not give any guarantee for functionality, performance or wafer throughput for your device and software when further software is installed on the PC.**

## 1.2 Installing the software

### 1.2.1 Preparing the operating system

Before installing or setting up the database system (RDBMS), you should ensure that the relevant most up-to-date service pack for your Windows operating system is installed and that your computer's software and hardware is ready for operation.

**If MS Windows NT 4.0 is installed on your PC, also ensure that Internet Explorer 5.0 or higher is installed.**

### 1.2.2 Selecting and installing the database system

Before installing the software, you should decide whether you want to use MS Access **OR** MS SQL Server 2000 as the database system (RDBMS). Basically, you can change between these two alternatives at any time; subsequently transferring the measurement data created from one database system to another is, however, not that simple.

MS Access is more suitable for measuring instruments with a relatively low wafer throughput. It is the most favorable variant of the database systems supported and probably one you are already familiar with. If you intend to store little or no local measurement data at all in the database, or if throughput is not critical for your application, you may opt for this variant.
The maximum database size of MS Access is approx. 2 GB. If, on ordering, you do not give any further specifications about the desired RDBMS, MS Access is assumed as standard.

SQL Server 2000 is suitable for instruments used for creating larger quantities of data and for which throughput is important. You can choose between two SQL server variants. In the case of the Personal Edition (may only be purchased in conjunction with the Standard/Enterprise Edition), the SQL server is installed locally on the computer on which the database application (MX-NT) is running. A standard operating system, such as Windows NT 4.0 or Windows 2000 Professional, is sufficient for this variant. The database system can only be accessed locally.
The SQL server (Standard/Enterprise Edition) variant, on the other hand, also enables access by other PCs from the network. However, this installation variant requires a server operating system (Windows 2000 server / NT 4.0 server). If you wish to operate more than 2-3 E+H instruments with SQL Server 2000, we recommend that you set up a small database server in your LAN (network). This server enables all E+H instruments' (using MX-NT 2 operating software) measurement data to be stored centrally. Further advantages of this variant are: generally lower costs compared with local installation, centralized data back-up, practically unrestricted large databases (max 1,048,516 TB[1]), the possibility of establishing failure security by means of redundancy (e.g. by means of RAID and

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[1] Does not apply to SQL Server 2000 Desktop Engine or Microsoft Data Engine (MSDE). The maximum size here is restricted to 2GB.

no-break power supply), online backups and a centralized node for access to databases, e.g. from your workplace.
All PCs which access the database server require a CAL (Client Access License) and all servers require a server license.

Within the scope of the Microsoft PIP (Product Integration Plan), we are able to offer you such a pre-configured database server at relatively low cost. We would be pleased to receive your inquiry.

### 1.2.2.1 Installing the MS Access 2000 RDBMS

If you have purchased an MS Access 2000 license together with the instrument, or if you already have a complete version, you may now install software. Go to the Microsoft homepage on the Internet at www.microsoft.com to check whether more recent service packs are available for Access and, if applicable, install them.

If you do not have an Access 2000 license, you must install the Jet database engine and MDAC_TYP (in doing so please observe the Microsoft license terms and conditions). You will find both software packages on the CD provided. However, in this case also check whether more up-to-date versions are available on the Microsoft homepage:
You will find the relevant up-to-date MS Jet service pack and MDAC_TYP at www.microsoft.com/data/

At this point, it is not necessary to install a database, as a database is already installed with the installation of the MX-NT software package.

## 1.2.2.2 Installing the MS SQL Server 2000 RDBMS

Please read the MS SQL Server 2000 installation instructions supplied by Microsoft. Basically, you can choose whether you want to use the Personal Edition for operation on a single terminal or the Server Edition for operation on a database server. The use of a database server is recommended if more than one E+H instrument is to store its data on a SQL server. You can execute centralized data back-up and install hardware redundancy (failure security!) on such a server. In doing so, please observe the Microsoft license terms and conditions that all PCs which access the server require a so-called CAL license (Client Access License) and each server a server license.

Once the MS SQL server has been installed, please start the SQL Server Manager in order to create an empty MXNT database.

With the right-hand mouse button, click on the SQL server group and register your server. Next open your server's path in the console:
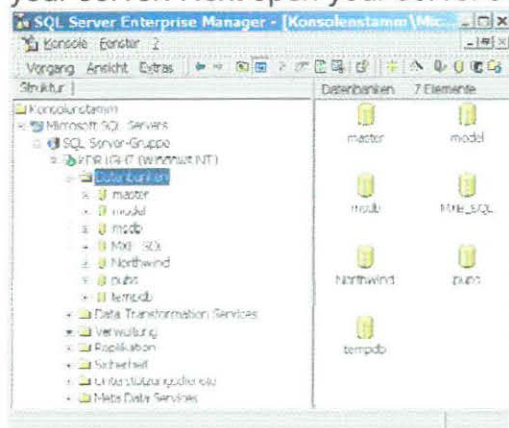


With the right-hand mouse button, click on Databases and select "New database".



Enter "MXNT" as the name and click on OK. This generates an empty database for MX-NT.

In order to check this, you can open the database by double-clicking on MXNT:

SQL Server Enterprise Manager - [Konsolenstamm \Microsoft SQL Serv...
Konsole Fenster ?

Close the SQL Manager. The MXNT database is now installed.

If you have installed the SQL server on a computer in the network and want to access this server from the local PC (client) on which the MX-NT is running, you must now also install the SQL server client driver software on the client side.

### 1.2.3 Installing MX-NT

It is very easy to install the MX-NT operating software:

Start the self-extracting MX-NT archive supplied on the CD and unzip it to the C: drive.
If the extraction is successful you will obtain a new directory C:\EH_APP with further sub-directories on the C: drive.

Ensure that all extracted files and directories are **NOT WRITE-PROTECTED (READ ONLY)**. If necessary, delete this file/directory attribute using MS Windows Explorer.

Create a link to C:\EH_APP\MXNT2\MXNT.EXE on your desktop.

It should then be possible to start MX-NT by double-clicking on this symbol.

## 1.3   Program interface



The program interface consists of a menu, a symbol toolbar for rapid access to frequently required program functions, a section for the MDI (Multi Document Interface) window and a status line.

Above is an exemplary layout of MDI windows to depict measurement characteristics and the current state of the measuring instrument.

To begin with, briefly familiarize yourself with the menu items. They will be explained in more detail in the following chapters.

## 1.4 Installing and configuring MX-NT

The following steps must be carried out in order to completely configure MX-NT for your production:

- Installing and configuring the database

- Layout of the MDI window to depict measurement characteristics, the instruments and process states

- Configuring the process runs

### 1.4.1 Installing and configuring the database

The steps that must carried out in order to install a database are as follows:

- MX-NT uses Microsoft ADO (Active Data Objects) technology for accessing a database. Therefore, the first step is to create an ADO connection configuration.

- If necessary, create MX-NT administration tables in the database

- Install one or several data collections

- Define the process steps

- Establish the default process step for the current instrument

### 1.4.1.1 Selecting the ADO database connection

Open the "Database" menu and select "Select ADO database connection...".
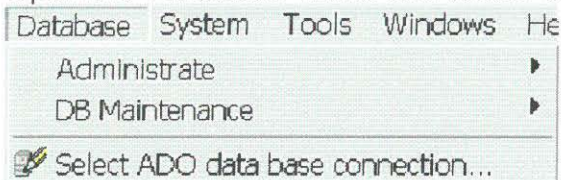


The connection is then configured in the following window:
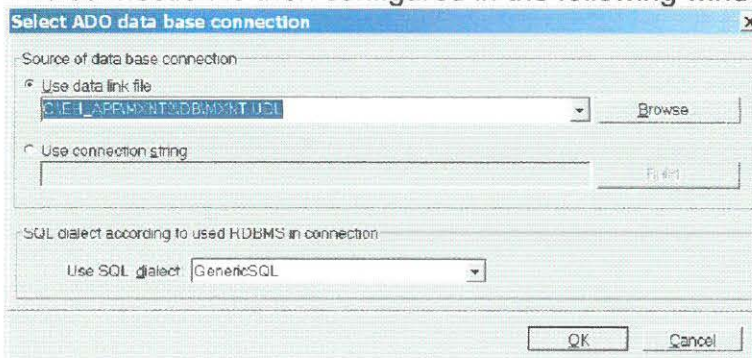
You have two possibilities for configuring the connection to a database:

- Use data link file (cf. 1.4.1.1.1)
  In this case, the information about the connection is stored in a small file with the extension *.UDL. This file can also be subsequently copied onto other PCs. In principle the content of the file corresponds to the "connection string" of the second possibility.

- Use connection string (cf. 1.4.1.1.2)
  In this case, the information about the connection is stored in a MX-NT configuration file.

Since all RDBMS (relational data base management systems) use different SQL dialects for addressing, dialects that have already been pre-configured and tested are available for selection in the bottom section of the window. At present only "GenericSQL" is supported, which is designed for Microsoft databases.

1.4.1.1.1 Use data link file

Open Windows Explorer and create an empty file with the name C:\EH_APP\MXNT2\DB\MXNTSQLSVR.UDL.

- For this purpose change to the C:\EH_APP\MXNT2\DB\. directory using Explorer.
- With the right-hand mouse button, click in Explorer in the white section on the right-hand side and select "New text file". Rename the file in MXNTSQLSVR.UDL and confirm any warnings.
- Double-click on this file. The "Data link properties" window will open. Proceed as in the following chapter 1.4.1.1.2 in order to configure this window.
- Change back to MX-NT and select the UDL configuration file you have just created using the "Browse" button.
- Proceed with 1.4.1.2.

## 1.4.1.1.2 Use connection string

Click on "Build" to open the "Data link properties" window.
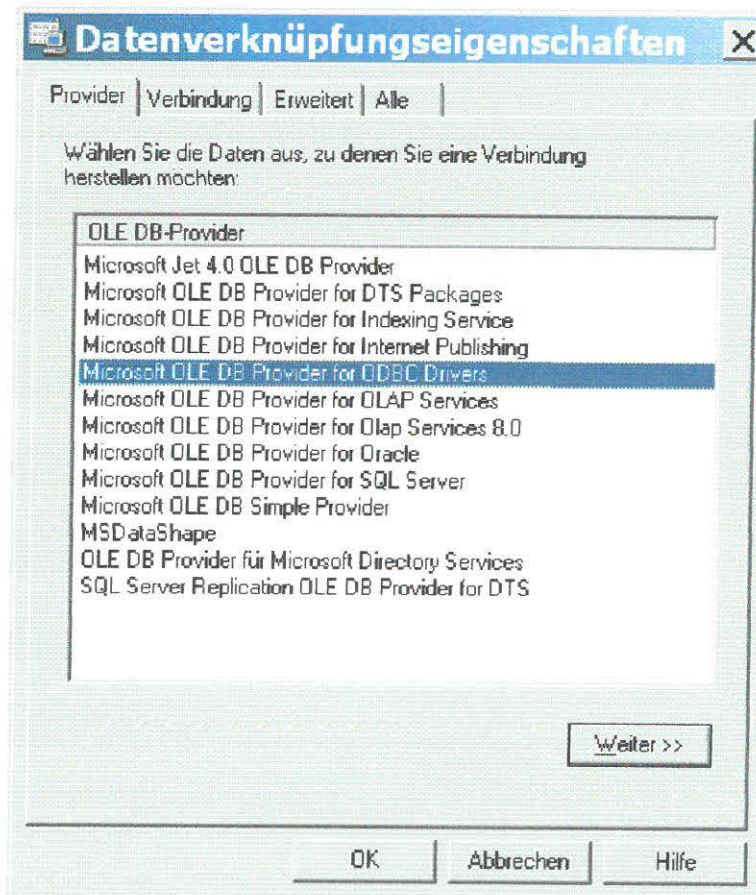


If you have chosen MS Access as the database system, please select "Microsoft Jet 4.0 OLE DB Provider" on the "Provider" register as the OLE DB provider.
If you have chosen MS SQL Server 2000, please select "Microsoft OLE DB Provider for SQL Server".

Next click on "Continue >>" or on the "Connection" register.

The window that now opens differs depending on which provider has been selected. In the case of MS Access, an Access database file must now be selected. In the case of SQL server, on the other hand, select the server and the database already on the server.

If you have selected MS Access ("Microsoft Jet 4.0 OLE DB Provider"), you will see the following window:
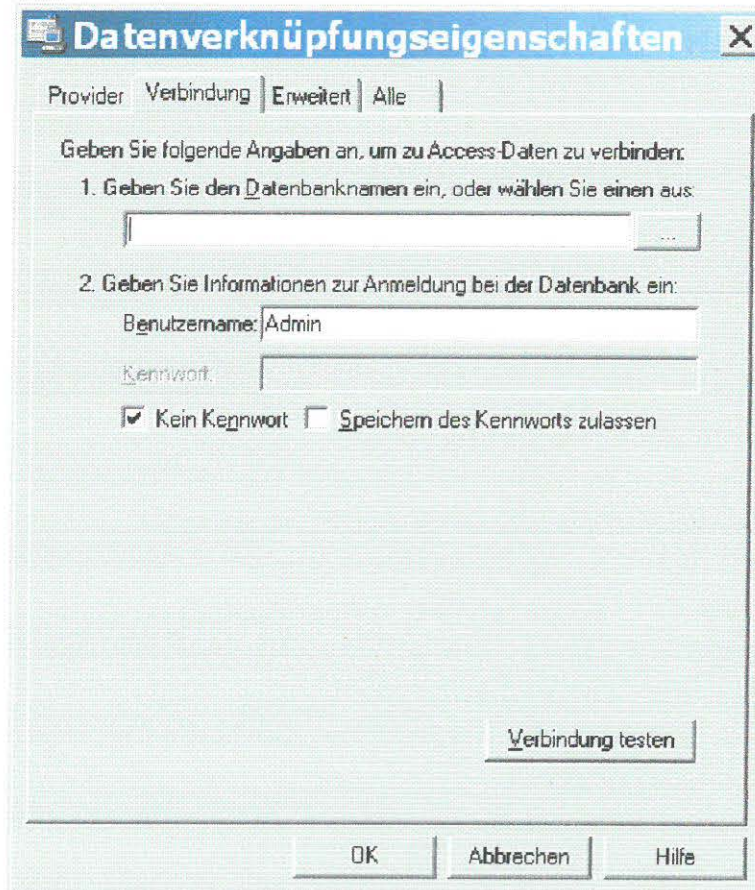


Click on the "…" button and select the MS Access C:\EH_APP\MXNT2\DB\MXNT.MDB database prepared. If you wish to completely recreate the database, you can first copy an empty Access database model "EMPTYDB_DONT_TOUCH.MDB" into the MXNT.MDB file (C:\EH_APP\MXNT2\DB\ directory). If you have installed the complete version of Access 2000 on your PC, you can also alternatively set up a new, empty database in the C:\EH_APP\MXNT2\DB\ directory using Access 2000 and select the database in the window shown above.

However, we recommend that **under no circumstances** do you select a database via the network. MS Access has not been developed and designed for operation as a database server. Doing so could result in serious failures and non-tolerable performance losses.

Click on OK. The ADO configuration for connecting the database is concluded.

If you have chosen SQL Server 2000 ("Microsoft OLE DB Provider for SQL Server"), you will obtain the following window:



Under the first point, enter the name of your SQL Server PC. If you have installed the SQL Server 2000 locally on your computer, you may alternatively also enter 127.0.0.1.

Under the second point, select the security guidelines governing access to the database. In general, select "Integrated security of Windows NT" here.

Under the third and final point, select the "MXNT" database which has been created by the SQL Manager (see also 1.2.2.2).

Click on OK. The ADO configuration for the database connection is concluded.

## 1.4.1.2  Creating MX-NT administration tables in the database

If you have just produced the ADO database connection in MX-NT, close MX-NT
and restart the software. Confirm any arising error messages that are caused by the
absence of E+H system tables.



If you have selected a **completely empty** database beforehand, MX-NT
administration tables (system tables) **must** now first of all be created in the
database. MX-NT operation will be faulty without these tables.

Select "Database | DB Maintenance| Create all E+H system tables" from the menu:
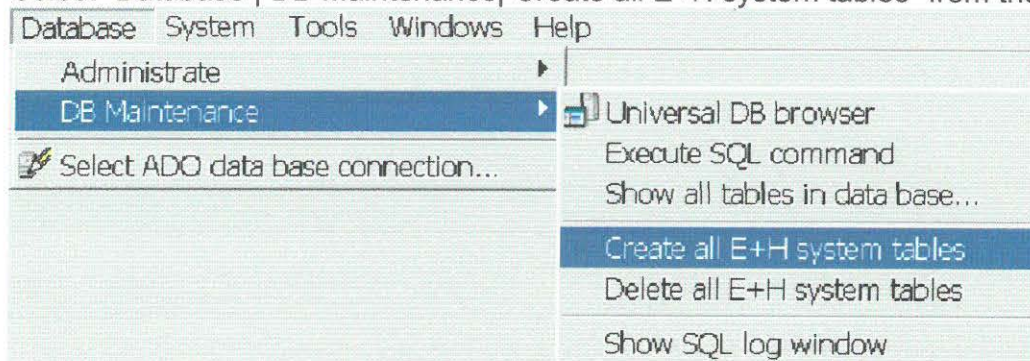


MX-NT then creates administration tables for correctly operating the database. The
window that now appears informs you whether or not this operation has been
successful.
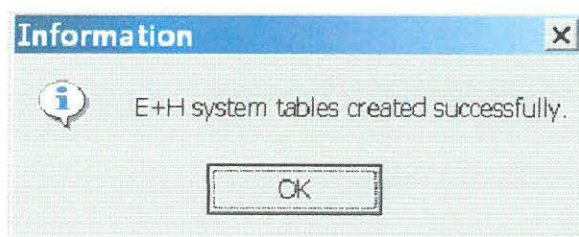
Note:
If you receive an error message, this can also be because the system tables already exist. You can check this by selecting "Database | DB Maintenance| Show all tables in database" from the menu. All MX-NT system tables begin with the character string "EHS_" (E+H system). The following tables must be available: EHS_COLL, EHS_Instruments, EHS_Lots, EHS_LotsPS, EHS_LUR, EHS_LVT and EHS_PS

**Next close MX-NT and restart the software.**
**No error messages should now appear on restarting.**

### 1.4.1.3 Installing one or several data collections

MX-NT provides many measurement characteristics, statistical characteristics and much logistic data to be stored in a database. To be able to systematically store the measurement data of a wafer in a database, this data must be organized.
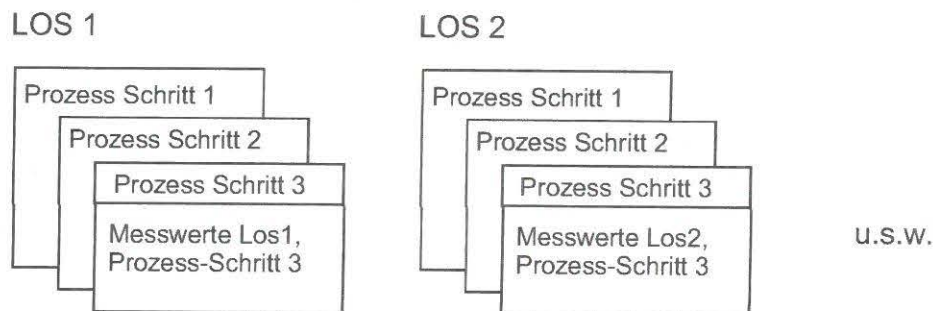
MX-NT organizes measurement data into lots and process steps, i.e. all measurements stored in the database implicitly contain information about which lot and process step these belong to.

LOS 1                              LOS 2

| Prozess Schritt 1 |
| Prozess Schritt 2 |
| Prozess Schritt 3 |
| Messwerte Los1, Prozess-Schritt 3 |

| Prozess Schritt 1 |
| Prozess Schritt 2 |
| Prozess Schritt 3 |
| Messwerte Los2, Prozess-Schritt 3 |

u.s.w.

**A lot is a number of measurements belonging together, e.g. the measurement data for a production series of wafers.**
**We understand process steps to be current recordings of a lot at different production times (e.g. before and after grinding).**

The decision about which values are stored in the database in the end must be made on creating the data collection (DC). A data collection provides a framework for this.
Simply imagine this as a table. This table has columns and rows. The column headings represent the names of the characteristics stored in this table. Each row in this table represents a measurement. In addition, a record is automatically kept for each row about to which lot and process step the row belongs.

Setting up process steps is dealt with in the next chapter. Depending on your application of the measuring instrument, each process step can use another data collection for storing measurement data. Several process steps can also however use one and the same data collection without causing measurements to become mixed up. This is ensured on the one hand by the RDBMS together with the E+H administration tables and on the other by MX-NT.
A data collection is filtered via database quantity operations so that only the measurement data of one lot or process step is displayed to you. To the operator, who later examines the measurement data in the lot browser, it therefore seems like the displayed lot or process step measurement data has been stored in a table of its own.

Depending on what measurement data is to be stored in the database for which process step, you may create one or several data collections.

In general, data collections can be created once only.

The connection between lots, process steps and data collections:
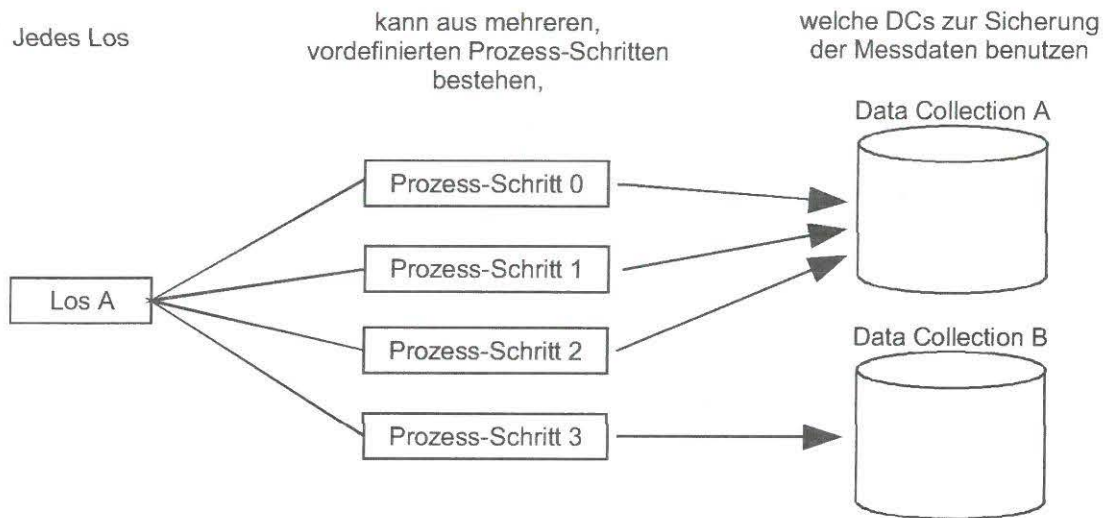
Jedes Los        kann aus mehreren, vordefinierten Prozess-Schritten bestehen,        welche DCs zur Sicherung der Messdaten benutzen

Data Collection A

| Los A |

- Prozess-Schritt 0
- Prozess-Schritt 1
- Prozess-Schritt 2
- Prozess-Schritt 3

Data Collection B

Representation as an ER model:

| Los | 1,N     0,N | Prozess-Schritt | 1     0,N | Data Collection |

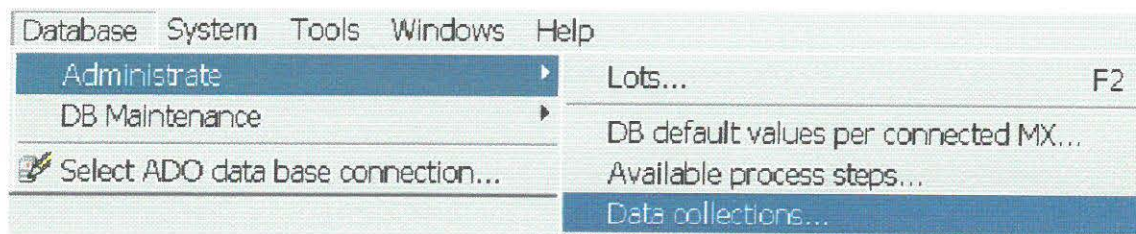To create a data collection, select "Database | Administrate | Data collections..." from the menu.

| Database | System | Tools | Windows | Help | | |
|---|---|---|---|---|---|---|
| Administrate | | | ▶ | Lots... | | F2 |
| DB Maintenance | | | ▶ | DB default values per connected MX... | | |
| Select ADO data base connection... | | | | Available process steps... | | |
| | | | | Data collections... | | |

The data collection administration window appears:

**Administrate data collections**

Available data collections:

| Name | Created |
|---|---|
| ▶ | |

Create DC

Edit DC

Delete DC

✓ OK
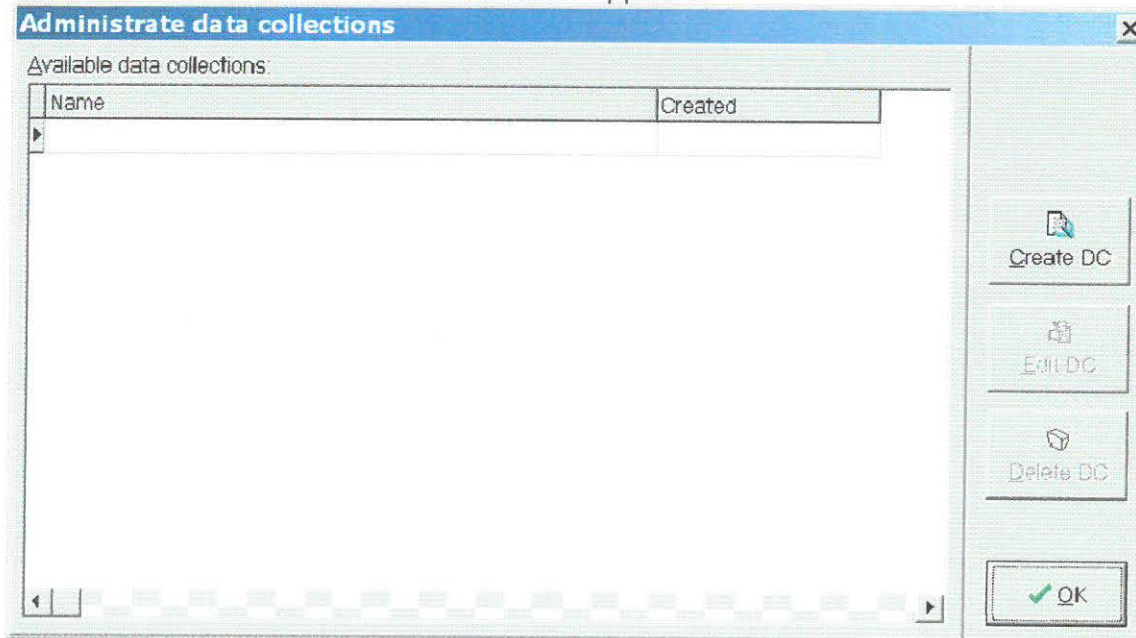
Click on "Create DC" to start the data collection creation wizard.

**Create new Data Collection - Step 1 of 4**

This wizard helps you to create a Data Collection in the data base.

A Data Collections (DC) is a storage container for measurement and additional data. You can compare it to a kind of table which contains your data

Later on Process Steps will use Data Collections to store measurements. To each Process step a DC will be assigned. More than one Process Step may use the same DC

✗ Cancel    Continue

Click on Continue to proceed.

## Compile stored fields of Data Collection - Step 2 of 4

Available field definitions:

| Field ID | Displayed name | Field type |
|---|---|---|
| SourceCarrierID | SourceCarrierID | String[20] |
| SourceSlot | SourceSlot | Integer |
| StdRes | StdRes | Double |
| StressEnabled | StressEnabled | Boolean |
| SubstrateType | SubstrateType | String[20] |
| TapeThk | TapeThk | Double |
| TestZahl | TestZahl | Double |
| THKValid | THKValid | Boolean |
| TIR | TIR | Double |
| Top | Top | LVT |
| TTV | TTV | Double |
| WaferClass | WaferClass | Integer |
| WaferClassName | WaferClassName | String[20] |
| WaferClassType | WaferClassType | Integer |
| WaferHangType | WaferHangType | Integer |
| WaferID | WaferID | String[20] |
| WaferSizeType | WaferSizeType | Integer |
| WaferTypeName | WaferTypeName | String[20] |
| WarpValid | WarpValid | Boolean |
| WBottom | WBottom | LVT |

Activated field definitions of Data Collection:

| Field ID | Displayed name | Field type |
|---|---|---|
| CntThk | CntThk | Double |
| MinThk | MinThk | Double |
| MaxThk | MaxThk | Double |
| AvgThk | AvgThk | Double |
| StdThk | StdThk | Double |
| TotWarp | TotWarp | Double |
| LTHk | LTHk | LVT |

[ Back ] [ X Cancel ] [ Continue ]

The fields to be stored in a DC are selected in this window. Depending on your MX instrument and use of the measuring instrument, only a partial selection from the fields available makes sense.
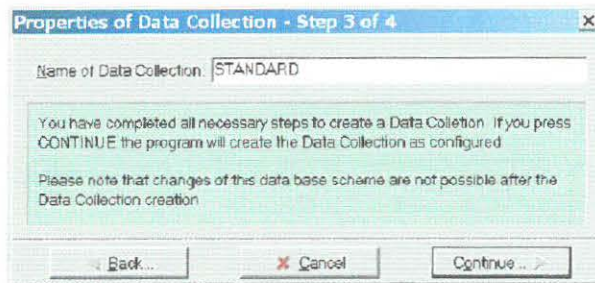
The available, but non-active fields are on the left-hand side of the window.
On the right-hand side, you can see the fields that will later be stored in the database.
Use the arrow keys to move the fields you wish to store in the database from the left to the right-hand side.
The order of the fields in the right-hand list is also important. The column headings will later appear in exactly this order in the lot browser. You can change the order of the fields in the right-hand list by using the red arrow buttons.
Please note that it is not possible to make any later changes to the data collection; it is in particular not possible to delete or add fields. In case, however, you later need to add further fields, please create a new data collection. It is however possible to hide and rearrange columns, at least for the lot browser view.

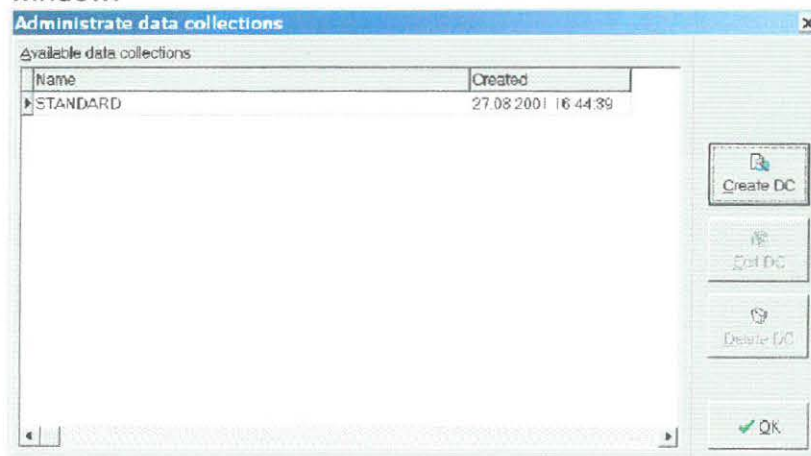Once you have finished compiling the fields, please click on Continue.

**Properties of Data Collection - Step 3 of 4** ✕

Name of Data Collection: STANDARD

You have completed all necessary steps to create a Data Collection. If you press CONTINUE the program will create the Data Collection as configured

Please note that changes of this data base scheme are not possible after the Data Collection creation

| ‹ Back... | ✗ Cancel | Continue ... › |

Name your created DC in this window. In order to do this, use an identification that begins with a letter and that does not contain any spaces or symbols (e.g. "Standard"). Please note that each DC must have a unique name, i.e. no two DCs may have the same name.

Press Continue to finish creating the DC.

**Information** ✕

ⓘ The Data Collection "STANDARD" was created successfully.

OK
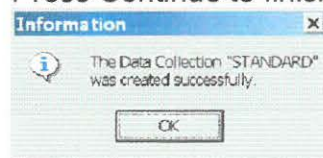
You will then see the data collection you have just created in the administration window:

**Administrate data collections** ✕

Available data collections

| Name | Created |
|------|---------|
| ▶ STANDARD | 27.08.2001 16:44:39 |

Create DC
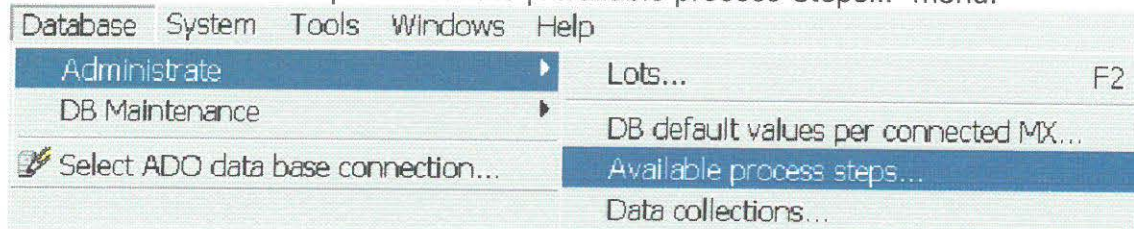
Edit DC

Delete DC

✓ OK

## 1.4.1.4 Defining process steps

The previous chapter described how MX-NT measurement data is organized into lots and process steps. Process steps are current recordings of lots in different production/process phases. The times at which lots within production phases are randomly or completely measured on E+H measuring instruments are defined milestones within a production cycle. This in particular means that there is only a limited and previously known amount of process steps within each semiconductor production plant.

Example:

| Process step ID | Production step |
|---|---|
| 0 | Grinding |
| 1 | Lapping |

Activate the "Database | Administrate | Available process Steps..." menu.

| Database | System | Tools | Windows | Help |
|---|---|---|---|---|

| Administrate ▶ | Lots... | F2 |
|---|---|---|
| DB Maintenance ▶ | DB default values per connected MX... | |
| ✏ Select ADO data base connection... | Available process steps... | |
| | Data collections... | |

The process steps administration window opens.

**Administrate process steps**

Process steps — Data navigation

| Process ID | Process Name |
|---|---|
| ▶ | |

Process ID: [          ] (use a unique ID)

Process name: [          ]

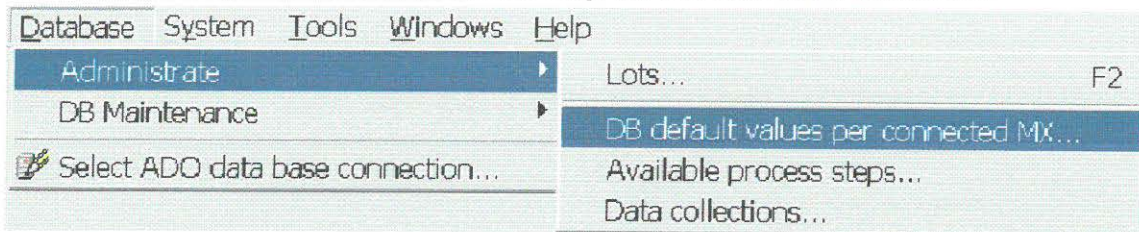Stored in data collection: [          ▼]

Description:
[                    ]

ⓘ Process steps define the check points of wafers in your fab. At these check points wafers are measured to control the production steps. The process steps you define above are used to distinguish one lot between different production phases.
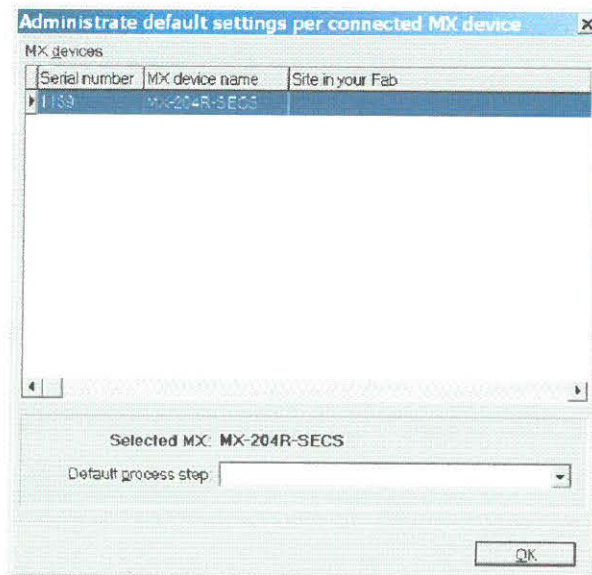
✓ OK

Click on the "+" button in the upper section in Data Navigation to create a new empty process step.

At Process ID, enter a unique number between 0 and 999 for clear recognition of the process step. This number will be used again later.
Next enter a brief description of the process step (e.g. grinding).
Then select the DC in which measurement data of this process step is to be stored.
Optionally, you may enter a further description of the process step in the Description text field.

Click "+" in the upper section in order to set up further process steps or click on OK to close the configuration.

## 1.4.1.5 Creating the default process step for the current instrument

| Database | System | Tools | Windows | Help | | |
|----------|--------|-------|---------|------|---|---|
| Administrate | ▶ | | Lots... | | | F2 |
| DB Maintenance | ▶ | | DB default values per connected MX... | | | |
| 🖉 Select ADO data base connection... | | | Available process steps... | | | |
| | | | Data collections... | | | |

Depending on how you later create lots, it is in each case necessary that you determine a process step to be created for a lot. If the process step is not determined, the system will use the default process step specified here for creating.

Automatic entries are created in the following window for each measuring instrument whose MX-NT software is connected to one and the same database.

**Administrate default settings per connected MX device**

MX devices

| Serial number | MX device name | Site in your Fab |
|---------------|----------------|------------------|
| 1189 | MX-204R-SECS | |

Selected MX: MX-204R-SECS

Default process step [                    ▼]

[ OK ]

Select a default process step for each measuring instrument, if it has not yet been configured.

It is much easier to create lots than the basic configuration carried out up until now. In general, lots are later implicitly and automatically created in the background without the operator having to carry out complicated operations. Up to now, you have created the prerequisites for this.

### 1.4.2 Layout of the MDI window to depict measurement characteristics, the instruments and process states

The presentation of software to a user is one of the essentially ergonomic features of software. MX-NT offers a more or less sophisticated presentation, depending on how the measuring instrument is to be used. For this purpose, you can arrange various windows on the MX-NT desktop in order to achieve this.

You can open all MDI windows that can be placed on the desktop via the "Views" menu:
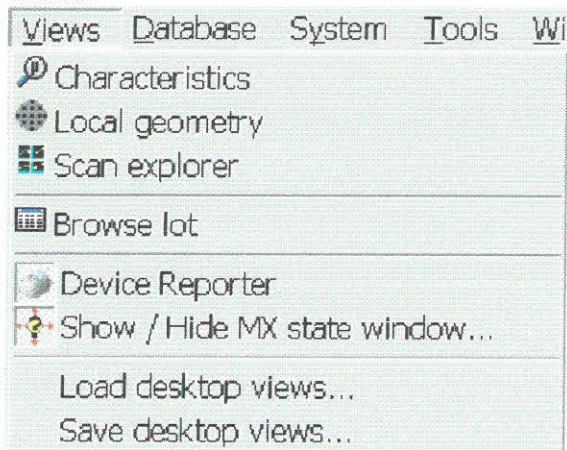


If you have opened or selected a MDI window, you will generally find a new menu item in the main menu after "Views". The properties of the active MDI window can be changed or adjusted via this menu item. All windows, excluding the Device Reporter and the MX state window, can be multiply placed on the desktop in order to meet your individual needs.

The first three types of views, "Characteristics", "Local Geometry" and "Scan Explorer", serve to represent the current measurement.
"Browse lot" serves to represent the measurement data of a process step from the current lot in tabular form.
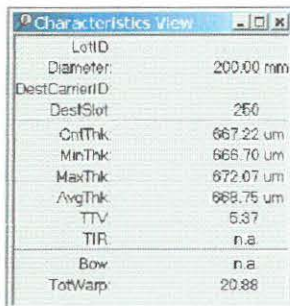
The "Device Reporter" represents instructions, errors, program runs, processes and communications and is always available on the desktop. Only the size of this may be reduced.
The "MX state window" is a schematic and standardized representation of your measuring instrument in its current state.

The arrangement and configuration of all MDI windows can be stored in a "Desktop View" file so that the arrangement and configuration carried out can be reloaded from a file.

## 1.4.2.1 Characteristics View



The Characteristics View displays data for the measurement of a wafer which has just been completely concluded. The content, font style and size and colors can be edited in the Properties window.

Open a new characteristics view via the Views menu. When the window is selected, you will see a new "Characteristics View" menu item after the Views menu:
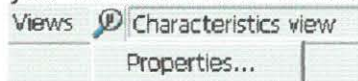


Click on Properties and the configuration window for this view appears.
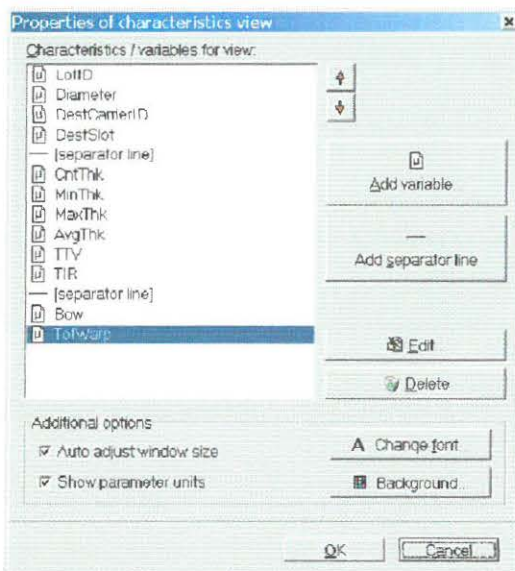
You can change the list of the parameters displayed via the "Add variable", "Edit" and "Delete" buttons. The "Add separator line" adds a horizontal line to the optical separation of parameters in the list.

You can change the order of the parameters in the list via the two red arrow keys. Use the mouse to select a parameter and move the parameter to the desired position.

Additional options can be found in the lower section of the window:

"Auto adjust window size" automatically adjusts the size of the window to its content. If you wish to preset a fixed height and width, remove the tick in front of this option.

"Show parameter units" displays your units behind the parameters, if these have been configured.

With "Change Font" you can change the font style and its attributes (size, color, pitch etc.).

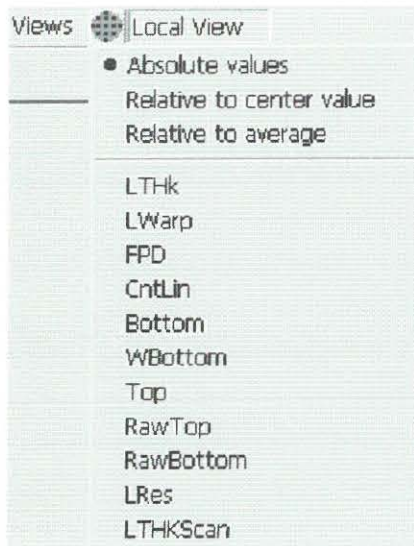You can change the background color of the window via "Background".

## 1.4.2.2 Local Geometry view
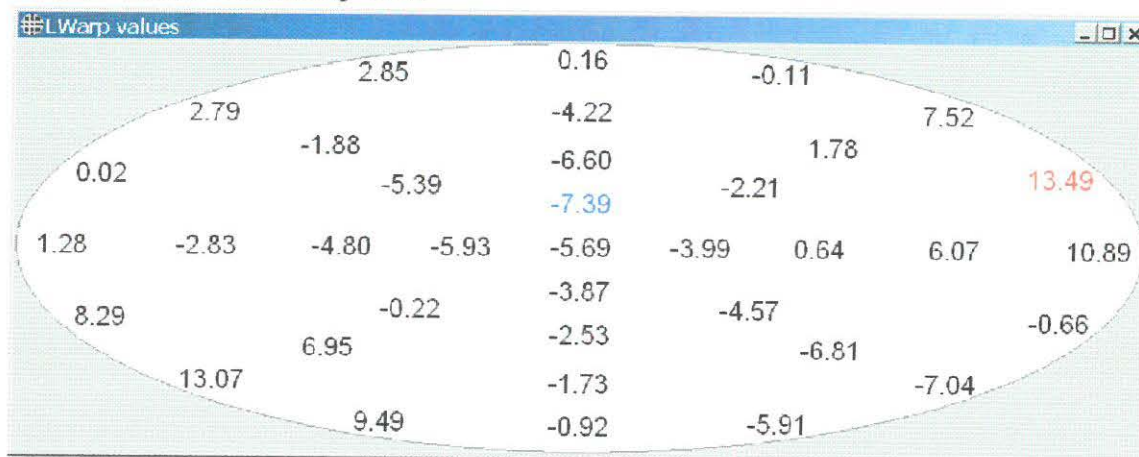


The Local Geometry view displays local measurement data in two-dimensional form at its measurement position on the wafer. This view is only suitable for measurements containing a relatively low number of measurement values.

In each case, the largest value is shown in red and the smallest value in blue.

You can carry out the following settings in the "Local View" menu by selecting one of these windows:

Views ⊕ Local View
- ● Absolute values
  Relative to center value
  Relative to average

  LTHk
  LWarp
  FPD
  CntLin
  Bottom
  WBottom
  Top
  RawTop
  RawBottom
  LRes
  LTHKScan

The first three menu items determine the reference, with regards to which the measurement values are represented.
"Absolute values" displays the measurement values unchanged. "Relative to center value" causes the measurement values to be displayed relative to the center point. "Relative to average" causes the measurement points to be displayed relative to the average value of all the measurement values.

All parameters that can be represented in this view are listed below the reference options. Here you should choose a parameter you wish to represent.
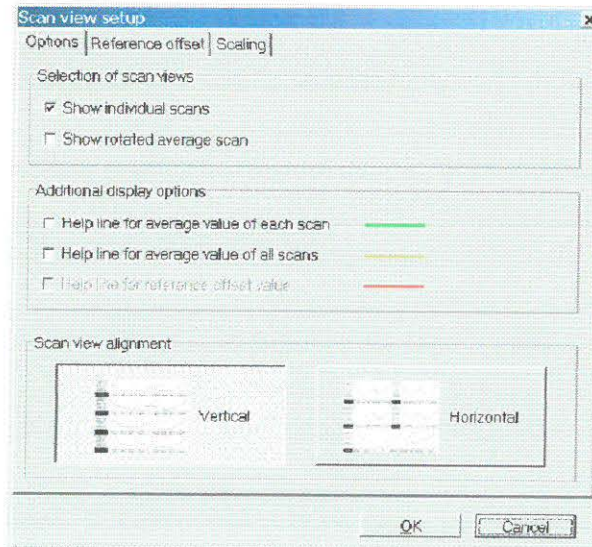
### 1.4.2.3  Scan Explorer view
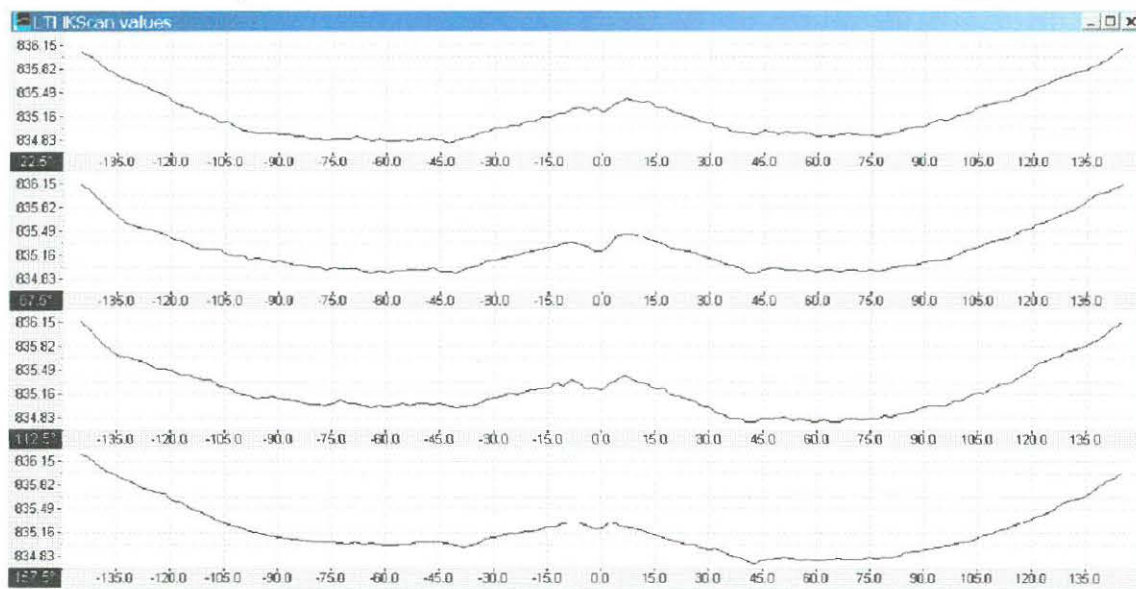


The Scan Explorer view also displays local measurement data in two-dimensional form. The measurement data here is, however, shown as diametrical averages through the wafer.

Only measurement values whose measuring methods are based on the principle of diametrical averages may be selected in this view (at present only for MX102-based measuring instruments).

Views ⊞ Scan view
Properties of scan view...

● LTHKScan
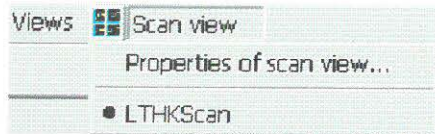
The representation of the averages can be changed in the Properties window (Properties of scan view):

Scan view setup ✕

Options | Reference offset | Scaling

Selection of scan views

☑ Show individual scans

☐ Show rotated average scan

Additional display options

☐ Help line for average value of each scan _____

☐ Help line for average value of all scans _____

☐ Help line for reference offset value _____

Scan view alignment

Vertical          Horizontal

OK          Cancel

### Register options

"Show individual scans" displays all averages in the current window. If "Show rotated average scan" is highlighted, a rotation scan of the radial average values is additionally calculated from the averages.

You can show additional auxiliary lines in the "Additional display options" section.

In "Scan view alignment" you can determine the alignment of individual average representations in the Scan Explorer window.

## Reference Offset and Scaling registers
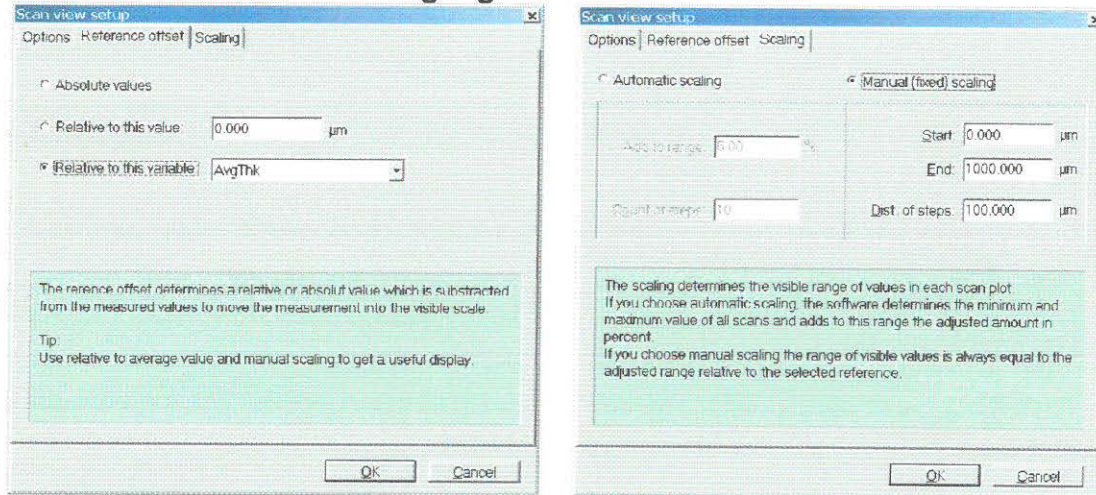


You can determine the scaling and the visible Y axis section for the measurement values of each scan via the Reference Offset and Scaling registers.

First, decide if you want an automatic section determination (smallest up to the largest measurement value) or if you want to determine the visible section manually. For production, we recommend presetting a fixed visible section.

If you opt for automatic scaling, all settings except for "Absolute values" are deactivated and cannot be selected. The represented scale is then automatically calculated from the available measurement by determining the minimum and maximum and this section is extended by "Add to range" percent. This section is then divided into "Count of Steps" sub-sections, at the boundaries of which a marking is represented with values in each case.

If you want a fixed scaling, you can indicate a visible section relative to the selected reference. If you have chosen "absolute values" as the reference, indicate either the smallest or largest visible measurement value for "Start" and "End". If you have chosen "Relative to this value" or "Relative to this variable", select the section relative to the indicated reference (e.g. start= -10 and end=+10).
"Dist. of steps" presets the spacing of markings on the scale beginning at the lower visible boundary.

## 1.4.2.4 Browse Lot view



This window represents the measurement data of a process step from the current lot. When a new measuring process is started for which the storage of measurement data in a database is configured, the view automatically changes to the current lot and process step.

You will find the buttons for navigating and manipulating the displayed data in the upper section of the window. In particular, the minus symbol "-" serves to delete a measurement.

If the Browse Lot window is selected, the Properties window of this view appears in the main menu after Views:
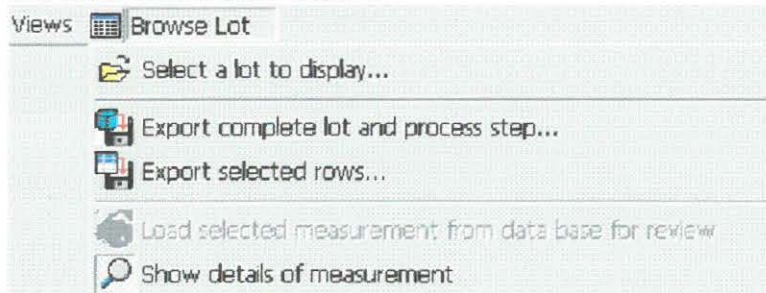


These menu points can also be activated via the window's tool bar.

You can select a lot and a process step to be displayed in "Browse Lot" via "Select a lot to display". Please ensure that in doing so you only display one lot. Alternatively, you can use F2 to enter the lot administration window and there you can change the lot. This is however only important for manually loaded measuring instruments because the selection of the lot plays a role in the case of these instruments.

You can export either all the current process step's measurements or just some of these into the Comma Separated Value Format (CSV format) via the export functions. This file format is supported by many common programs, such as e.g. MS Excel, so that you are able to easily process the measurement data collected.

If a measurement is selected in the window, you can load this measurement via "Load selected measurement from data base for review". All values stored in the database are then reconfigured from the database and all representations on your

desktop are updated. Of course, only the values that were also stored in the database can then be displayed.

**Tip:**

Also add the "WaferTypeName" data field to your data collection. This enables the "Local geometry" and "Scan Explorer" displays to reconfigure the representation in such a way as it was depicted at the time of measuring.

Local measurement values in the Browse Lot window on the right-hand side can be shown or hidden via "Show details of measurement". These values display the appertaining local measurement values for the relevant selected measurement, if they exist in the database. You can select the local characteristics to be displayed via the "Local values" selection list.

Please ensure that there is a black separation line between the tabular representation of the measurement values and the representation of the local measurement values which you can move with the mouse to change the size of the display.

### 1.4.2.5 Device Reporter
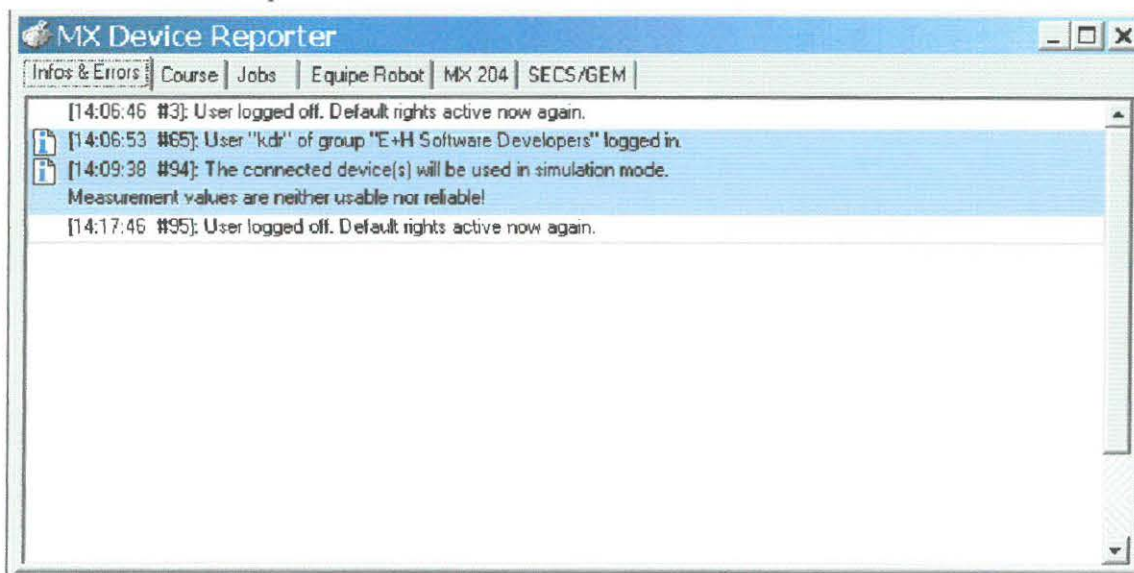


The Device Reporter is the centralized interface for information exchange between the program and the user. For this reason, we recommend that this window is always displayed.

The window consists of three basic registers: "Infos & Errors", "Course" and "Jobs", as well as further communications detail registers.

"Infos & Errors" briefly represents the measurement job procedure and also displays arising errors and how the user has reacted to these.
In general, it only contains a small amount of information, such as "measuring started", "measuring concluded", for example, or reported errors.

"Course" represents a detailed course of operations and errors.
You should also look more closely at these two registers, "Infos & Errors" and "Course", in the event of errors, such as "errors when checking the syntax of the

recipes" or configuration errors. In general, information is available about the more exact cause of errors.

The Job register displays current, on-hold and in-queue measurement jobs.

All other registers display communication details with sub-instruments of your overall instrument or also SECS/GEM host communications (if ordered as an option). In some cases of errors (e.g. instrument not online), these can detect more exact causes.

### 1.4.2.6 MX State window
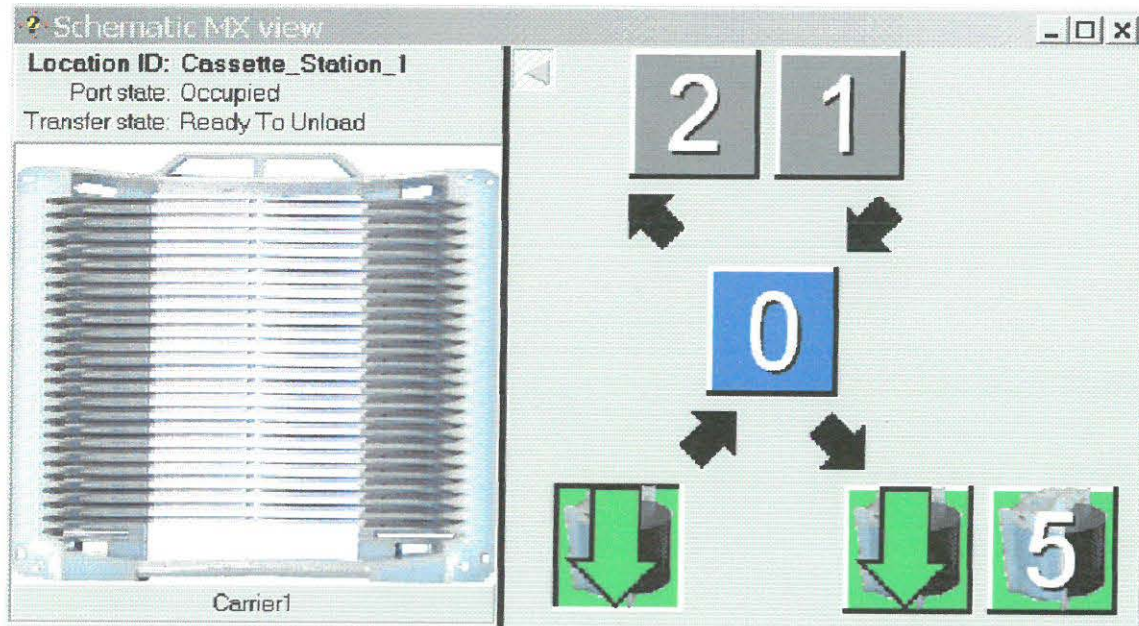


This window displays the instrument state of individual stations in a schematic view, which need not necessarily correspond with the actual arrangement of the instrument's stations.

Each of your measuring instrument's stations is represented by a square, on which the station's number (ID) can be seen. You can obtain a detailed view of the station in the left part of the window by clicking on a station (right).

The stations in the upper section of the view represent measurement or process stations (e.g. test probes, aligners, etc.)

The blue station in the middle represents the transport mechanism (e.g. robot fork). Cassette stations are represented in the lower section. Emitter cassettes are represented on the left-hand side and receiver cassettes on the right-hand side. If cassette stations are configured as both emitter and receiver, no separation takes place and all cassette stations are displayed in the lower section with equal rights.

If you move the mouse over a station, further details about this station will appear:

```
"Cassette_Station_1" at station #3
Type: Cassette Station
Transfer state: Ready To Unload
Clamp state: Not Available
Dock state: Not Available
Door state: Not Available
```

The actual name of the station (LocationID) is displayed in the first line, together with its station number (StationID).

The type of station is displayed below this.

"Transfer state" displays whether or not the relevant station is ready for loading or unloading or whether the station is already being used.

"Clamp state", "Dock state" and "Door state" are only of practical value for cassette stations with clamps, docking mechanisms and doors and are also only displayed for "Cassette Station" station types.

Depending on the recipe selected, the schematic view of your instrument changes. If, e.g., a test probe is "dropped" in the recipe, it will not be represented.

### 1.4.3 Configuring measurement processes (jobs)
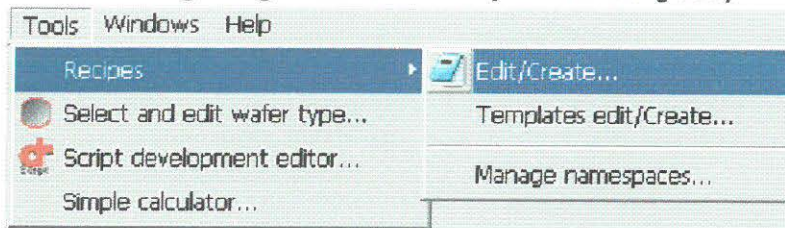


MX-NT V2 realizes the measurement procedure by means of recipes. You will find a recipe administration in line with the Semi standard in the Tools|Recipes menu.
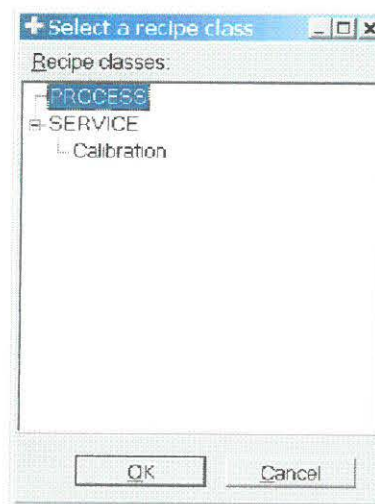
### 1.4.3.1 Administering recipes

MX-NT supports the administration of recipes in various namespaces. This enables different generations of recipes, for example, to be maintained in separate namespaces, although the recipes have the same name.
Furthermore, three recipe classes are defined by MX-NT V2 which separate recipes with different uses from each other.



The PROCESS class is reserved for recipes which have been created for production.

Service or Service/Calibration contains, among other things, recipes for adjusting individual test probes and may contain other service recipes.

Only the PROCESS class can be selected for production.

According to Semi, a recipe is identified by the namespace, the recipe class, the recipe name and the recipe version. In general, only recipes with the highest version number can be used.

An example of a completely qualified recipe name:
EH>PROCESS/THKSORT;1
Means: the recipe from the namespace "EH", with the recipe class "PROCESS", the name "THKSORT" and the version 1.0

Open the following window via the Tools|Recipes|Edit/Create menu:

| Recipe Name | Approval | Version | Description |
|---|---|---|---|
| MX204-R-3 | 0 | 1 | Test recipe for the fairy |
| MX204-R-3-Post | 0 | 1 | |
| Thk Sorting | 0 | 1 | #1139 |

**Edit recipes**

Namespace: EH

Recipe class: /PROCESS/

Recipes:

**Recipe Management**

☑ Show only highest approved recipes

☐ New

🖰 Edit

🗑 Delete

✓ Finished

Search:

Here you can administer recipes, i.e. create, edit and delete.

You can obtain a window structured in the same way via Tools|Recipes|Templates Edit/Create; however, here you administer recipe templates which can be used later for creating new recipes.

## 1.4.3.2 Creating new recipes

Click on "New" in the "Edit recipes" window.

You will see the following window:
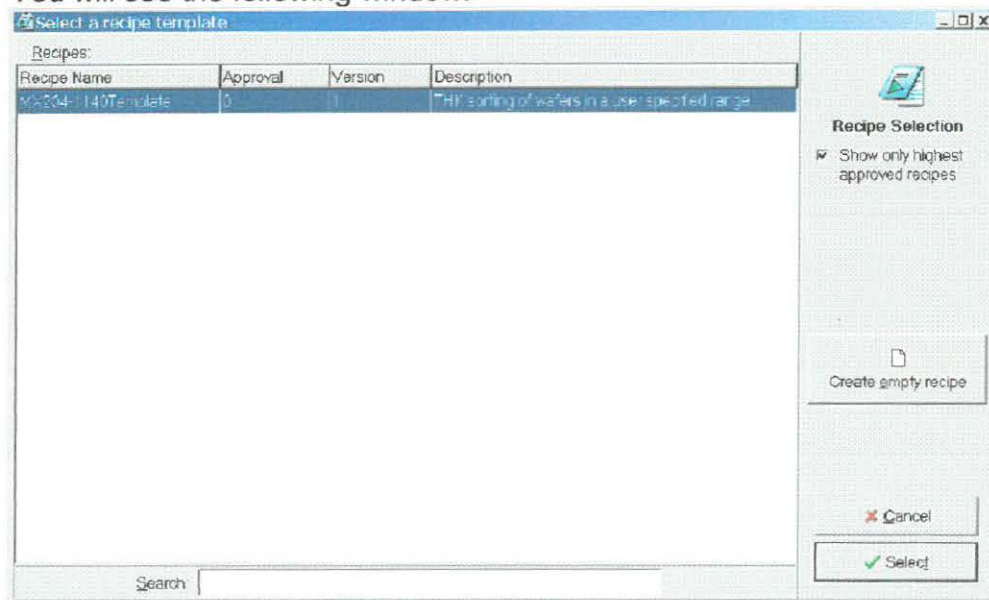


If you wish to use a template to create a new recipe, select the template and click on SELECT.

To create a new recipe without a template, click on "Create empty recipe". MX-NT then creates a recipe using a basic structure (skeletal structure).

You then obtain the Properties window for the new recipe:
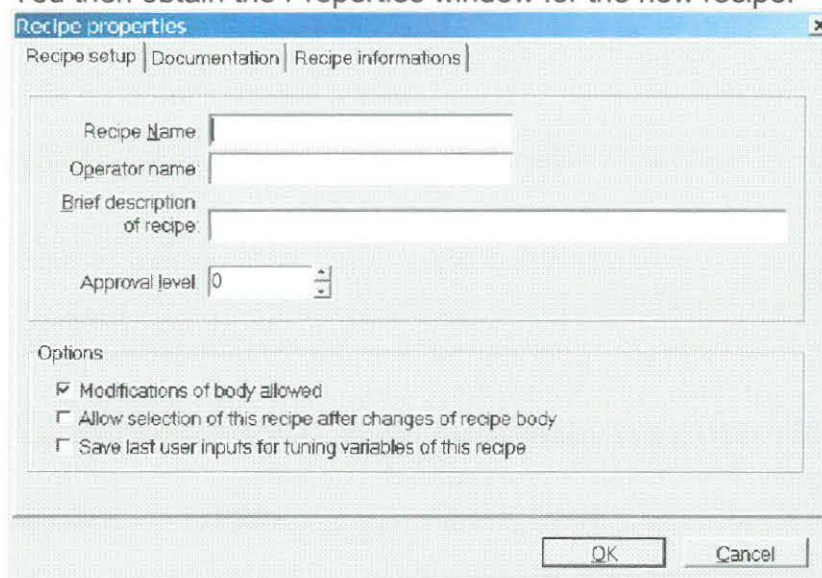


Enter a unique recipe name for the recipe class and then select "Allow selection of this recipe after changes to recipe body".

**Recipe properties**

Recipe setup | Documentation | Recipe informations

Recipe Name: Testrezept

Operator name:

Brief description of recipe:

Approval level: 0

Options

☑ Modifications of body allowed
☑ Allow selection of this recipe after changes of recipe body
☐ Save last user inputs for tuning variables of this recipe

OK          Cancel

Click on OK. You will then see the recipe editor.

Recipe editor - EH:/PROCESS/Testrezept

```
[DATA Recording]
          LotID= "Test"
   ProcessStepID= 0
; Save measurements to data base
SaveMeasurements= Yes
; Perform host communication for this job
      NotifyHost= Yes

[Device_Options]
      WaferType= "Default200mm"
;
; Cassette type no / designation / capacity
             1 /      CAS25 /        25
;
   CassetteType= 0
;
; Wafer hang type no / designation
             1 /   NormalWarp
             2 /     HighWarp
;
   WaferHangType= 0

   EnableStress= NO
;
; Substrate type for stress calculations
; "100", "111"
   SubstrateType= "100"
   FilmThickness= 0

   Res_Enabled= Yes
   Geo_Enabled= Yes


[ClassDefinition]
; Definition of classes
; Syntax: DefineClass(<Standard/RestClass/ErrorClass>,
;                    <Unique_Class_Number>,
;                    "<ClassName>"
;                    [,"<Boolean_Expression_for_class_hit_if_STANDARD>"])
; Example: DefineClass(Standard, 1, "Low thickness", "(AvgThk (= 450.50) OR (CntThk < 501.20)")
;
   DefineClass(RestClass, 1001, "Unspecified")
```

Recipe

Version  Revision

1      0

Properties

Tuning Variables

Check Syntax

Update body

Discard & Exit

Save & Exit

1:1          Original. Not modified.

The syntax of recipes is described in more detail in the appendix. You can control the measurement process procedure via this data.

You can display the properties page via the "Properties" button. The recipe name cannot however be changed once it has been stored.

You can carry out a rudimentary check of the created recipe's syntax via "Check Syntax". You will receive a success or failure message.

Besides "Check Syntax", "Update Body" updates the recipe body. If in the meantime you have obtained an update of MX-NT, new recipe commands/entries will be added with default values.

"Tuning-Variables" administrates recipe variables. If need be, these can be entered later by the user after selecting this recipe. The content of the variables can be added to the recipe so that the number of recipe variants you require for operating the measuring instrument can be very greatly reduced. In order to enter a tuning variable in the recipe, indicate the name of the variable in braces at the corresponding position (e.g. "{LotID}"). You can also calculate mathematical expressions in the recipe by using braces (e.g. {TargetTHK+10} or {TargetTHK+Deviation}). Only tuning variables of the relevant recipe are permitted as variables within the braces.

Tuning variables are administered as follows:
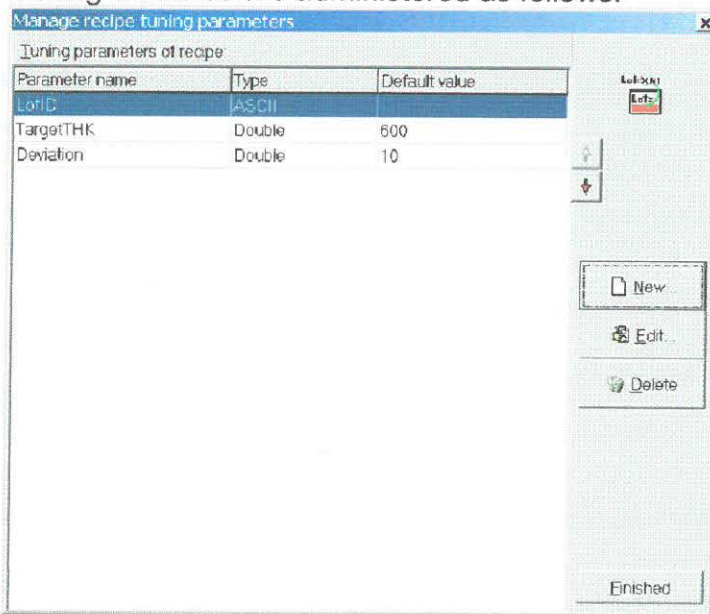


The order of the variables plays a role later in the user's entry window. You can change the order via the ↑ and ↓ buttons.

A definition of a tuning variable is as follows:

**Edit / Create a recipe tuning parameter** ☒

Name: TargetTHK

Type: Double ▾

Unit: [ ] (according to SEMI E5-0600)

Default value: 600.00

**Options**

☑ Parameter enabled     ☐ Internal parameter
☑ User can edit this param     ☑ Required parameter

Restriction for numeric parameter

Numeric format
   ⦿ Normal          Precision: 7
   ○ Scientific      Decimals after comma: 2

Lower limit: <no limit>    ☑ no lower limit

Upper limit: <no limit>    ☑ no upper limit

[ OK ]   [ Cancel ]

In the case of numerical data types (Int64, Double, LongInt64), please ensure that you indicate a precision, as otherwise the input field will not contain enough positions.

The example would produce the following input window when selecting the recipe for the measurement process start (Menu Action|New Job):

**Start a measurement...** ☒

**Select a recipe**     Information

Recipe name: 🗁 Testrezept     Adjust parameters for measurement and press START.

**Recipe tuning parameters**

LotID: [ ]
TargetTHK: 600.00     ✗ Cancel
Deviation: 10.00

    ▶ Start

The data entered by the user is added at the corresponding positions in the recipe before the recipe is used for the measurement process start – the recipe is, so to say, compiled.

If, when checking the recipe, errors arise, the more exact cause of these errors can be looked up in the "MX Device Reporter" window in the "Course" register. This can be the case with both "Check Syntax" and "Update Recipe Body", as well as after pressing F9 (New Job).
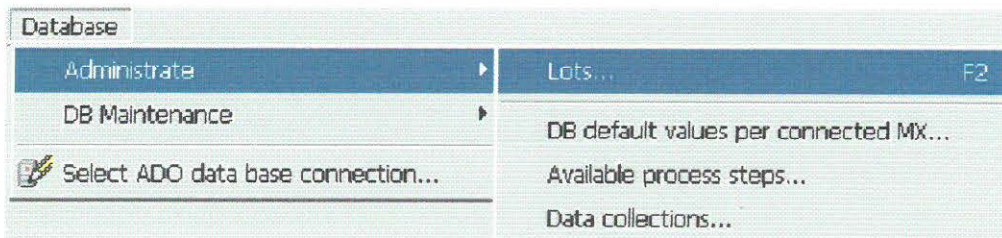
## 1.5 Creating lots
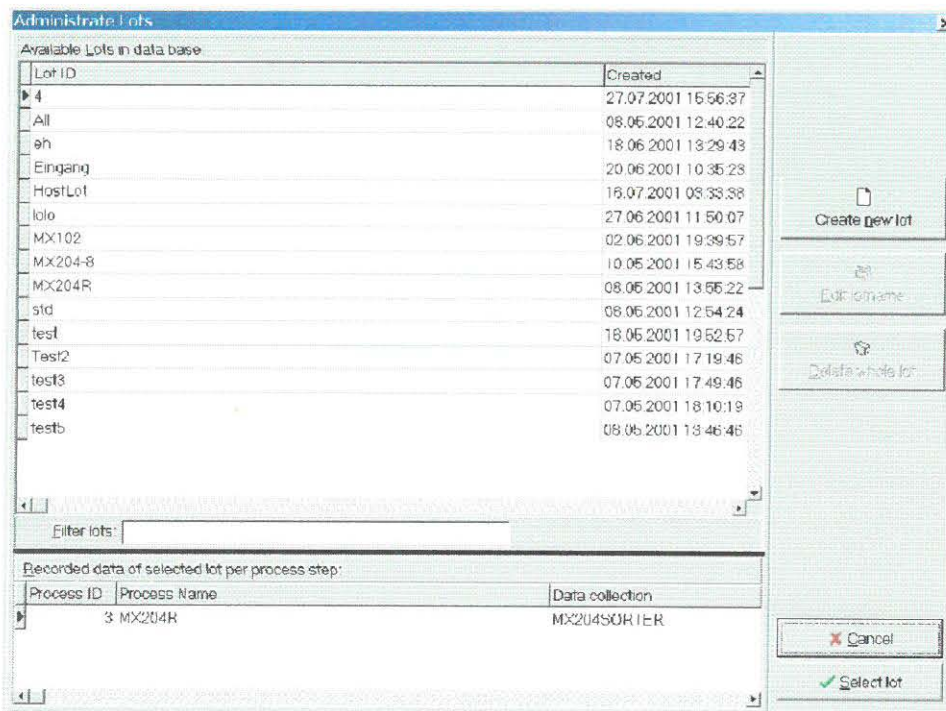
Lots can be created either explicitly or implicitly.
In general, operators create lots implicitly, as this does not involve any work (zero operation).

### 1.5.1 Explicitly creating lots

To create explicitly, create a new lot with process steps via the lots and process steps administration window.

| Database | | |
|---|---|---|
| Administrate ▶ | Lots... | F2 |
| DB Maintenance ▶ | DB default values per connected MX... | |
| Select ADO data base connection... | Available process steps... | |
| | Data collections... | |

You can create and delete lots and process steps in this administration window; you can also change properties here:

**Administrate Lots**

Available Lots in data base

| Lot ID | Created |
|---|---|
| ▶ 4 | 27.07.2001 15:56:37 |
| All | 08.05.2001 12:40:22 |
| eh | 18.06.2001 13:29:43 |
| Eingang | 20.06.2001 10:35:23 |
| HostLot | 16.07.2001 09:33:38 |
| lolo | 27.06.2001 11:50:07 |
| MX102 | 02.06.2001 19:39:57 |
| MX204-8 | 10.05.2001 15:43:58 |
| MX204R | 08.05.2001 13:55:22 |
| std | 08.05.2001 12:54:24 |
| test | 18.05.2001 19:52:57 |
| Test2 | 07.05.2001 17:19:46 |
| test3 | 07.05.2001 17:49:46 |
| test4 | 07.05.2001 18:10:19 |
| testb | 08.05.2001 13:46:46 |

Create new lot

Edit lot name

Delete whole lot

Filter lots:

Recorded data of selected lot per process step:

| Process ID | Process Name | Data collection |
|---|---|---|
| ▶ 3 | MX204R | MX204SORTER |

✗ Cancel

✓ Select lot

For a lot to exist, it must contain at least one process step. When you create a new lot, give the lot a unique name. The default process step (cf. 1.4.1.5) is suggested as the process step.



If you want to add a new process step to a lot, enter either the name of the existing lot or select an existing lot via the ☞ selection button.
Please note that each process step can and may only be created exactly once per lot.

If you have ordered MX-NT together with the stress/delta option, you will see the additional possibility of selecting a reference lot and reference process step in the lower section of the window.

Please note that the "Edit" and "Delete" buttons change, depending on whether you have selected a lot or a process step.

### 1.5.2 Implicitly creating lots

Although the steps necessary for explicitly creating lots give you visual control over which lots are created and referenced, but are, in general, "too much" for operators who are not experienced.

For this reason, in MX-NT version 2, the process of creating lots has been simplified so much in comparison with its DOS and Windows predecessors that the operator does not need to carry out any additional operations in order to create a lot (zero operation).
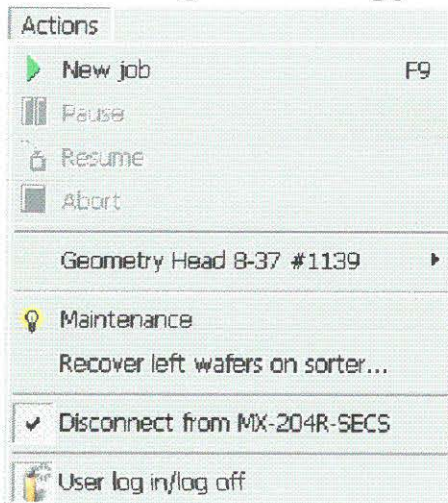
When starting a measurement process, the operator specifies a recipe for a measurement job. If you use tuning variables in the recipe, the operator can possibly enter a lot name in the start window and select a process step (in general, entered permanently in the recipe). If you do not use a tuning variable, the lot name and/or process step is permanently entered in the recipe.

If an indicated process step or lot does not exist, MX-NT simply creates this lot without the user having to enter anything else.

If a process step with the ID <N> has been selected in the recipe, MX-NT checks whether there is a process step with the ID <N-1> in the same lot. If this is the case, MX-NT determines the process step <N-1> of the same lot as the reference for stress/delta calculations. In this case too, the operator does not need to enter anything else for the corresponding configuration.

## 1.6   Starting a measuring job

Actions

▶  New job                                    F9

▮▮  Pause

⬡  Resume

▮  Abort

     Geometry Head 8-37 #1139            ▸

💡  Maintenance

     Recover left wafers on sorter...

✔  Disconnect from MX-204R-SECS

     User log in/log off

You can start controlling a measuring job either via the Actions menu or via the tool bar.

▶  ▮▮  ⬡  ▮   💡  (Tool bar)

A measuring process can be started, paused, resumed or aborted via "New Job" (F9 function key), "Pause", "Resume" and "Abort" or via the quick access keys on the main program's tool bar. Only the commands permitted are available.

# 2 Appendix

## 2.1 Recipes

### 2.1.1 Overview

Recipes are instructions interpreted by the software in order to configure the measuring process. Recipes consist of text commands which can be entered in the recipe editor.
The body and structure of recipes are generally different depending on the MX type. A large part of the data is however identical for all instruments.

### 2.1.2 Miscellaneous

In the case of recipe commands, MX-NT V2 does not make any difference between upper and lower case letters; the syntax indicated must however be unconditionally complied with, otherwise the recipe will not be accepted.
The recipe is divided into different sections. A recipe section is initiated by [<section name>] (e.g. "[Data_Recording]") and ends by indicating the next section part or the recipe end. Certain commands are permitted within each section.
Most commands have default values and therefore does not necessarily have to be listed.
You can add comments to the recipe by prefixing a semicolon ";".

### 2.1.3 The sections of a recipe

The individual sections of a recipe and their commands will be explained in the following.

#### 2.1.3.1 The [Data_Recording] section

**LotID= "<Lot_Name>"**
*Default value ""*
Indicates the name of the lot to be measured. This lot name is also used for storing the measurement data in the database.

**ProcessStepID= <Process_Step_ID>**
*Default value is the standard value which has been set in the*
*"Database|Administrate|DB default values per connected MX".*
Indicates the process step to be used of the lot selected.

**SaveMeasurements= <Yes|No>**
*Default value YES*
Determines that lot measurements should be stored in the database.

**NotifyHost= <Yes|No>**
*Default value YES*
If you have ordered your MX instrument with the additional SECS/GEM option, you can determine here whether measurements are to be transmitted to your host, i.e. whether or not the measuring process is "visible" to the host.

### 2.1.3.2  The [Device_Options] section

**WaferType= "<WaferTypeName>"**
*Default value is the specification from your MXG file (generally "Default200mm")*
Determines the wafer type that is to be measured. This must be defined in the "Tools|Select and edit wafer type" menu.

**CassetteType= <Cassette_Type_ID>**
*Default value 0*
Determines the cassette type that is to be used. If your instrument supports several cassette types, you can select these here.
Note: When creating a new recipe, comments with a list of valid cassette types are added before this entry.

**WaferHangType= <Wafer_Hang_Type_ID>**
*Default value 0*
Determines the hang type of the wafer to be measured. How a wafer is handled depends on the wafer hang (warp).
Note: When creating a new recipe, comments with a list of valid wafer hang types are added before this entry.

**EnableStress= <Yes|No>**
*Default value NO*
If you have ordered your MX instrument with the additional STRESS option, you can determine here whether stress calculations should be made for the lot.

**SubstrateType= "100"**
*Default value is the first valid substrate type (generally, "100")*
If stress calculations are to be made, the substrate type is selected here.
Note: When creating a new recipe, comments with a list of valid substrate types are added before this entry.

**FilmThickness= <Film_Thk>**
*Default value 0*
If stress calculations are to be made, indicate the film thickness here.

**<Geo|Res|Scan>.Enabled= <Yes|No>**
*Default value YES*
Depending on whether your measuring instrument is equipped with a geometry, resistance or scan test probe, you can determine here whether or not this test probe is to be used for the measuring process.

## 2.1.3.3  The [ClassDefinition] section

**DefineClass( <Standard/RestClass/ErrorClass>,**
**<Unique_Class_Number>,**
**"<ClassName>",**
**[,"<Boolean_Expression_for_class_hit_if_STANDARD"])**
*No default value. Specification RestClass and ErrorClass compulsory.*

Independent of the measuring instrument, class definitions can be made here. A default class definition consists of unique class number data, a natural class designator (freely selectable) and a Boolean expression that determines a class hit. Only measurement result variables of a measurement are permitted as variables in the Boolean expression (despite this, you may however use tuning variables as described in 1.4.3.2). Any number of standard classes can be carried out.
MX-NT tests for class hits, starting with the lowest class. The class is determined if a class hit is found (expression is TRUE).
Example:
DefineClass(Standard, 0, "Too thin", "CntThk < 500.00")
DefineClass(Standard, 1, "Too thick", "(CntThk > 700.50) OR (AvgThk > 690.00)")


The two special classes, RestClass and ErrorClass, must always be defined uniquely and only once. The RestClass could be said to be the collector sieve. If no standard class hit is made, the wafer is assigned to the RestClass.
The ErrorClass is used in the event of serious errors in which no classes can be determined.
Example:
DefineClass(RestClass, 1001, "No preceding standard class")
DefineClass(ErrorClass, 1000, "Serious error")

## 2.1.3.4 The [JobSetup] section

**EmitterStations= (<Station1>[,<Station2>[,...]])**
*The standard emitter stations from the MXG file are the default value.*
Determines which stations are used as emitters.
e.g. EmitterStations= (5)

**ReceiverStations= (<Station1>[,<Station2>[,...]])**
*The standard receiver stations from the MXG file are the default value.*
Determines which stations are used as receivers.
e.g. ReceiverStations= (4,5,6)

Please note that not all emitter station and receiver station combinations are permitted! Please contact the software department at E+H if you do not wish to use the default values.

Emitter stations and receiver stations are used exclusively for sorters. These parameters are of no use for any other MX instruments, in particular stand-alone instruments, and are also not defined.

## 2.1.3.5 The [StationBinding] section

**BindClass(<StationID>,**
   **"<StationDisplayText>",**
   **(<Class1>[, <Class2>[, ...]]))**
*No default value. All classes defined via DefineClass() must be assigned to a station. All receiver stations must be listed here.*

With the BindClass() command, a quantity of classes are assigned to a cassette station. In this way, MX-NT can, after determining the wafer class, sort the wafer into a preset station.

<StationID> indicates the number of the station which should be assigned.

<StationDisplayText> is only important for instruments with clear text displays at each cassette station. If your instrument has such clear text displays, the text indicated here is displayed at the corresponding station. If your instrument does not have any clear text displays, leave this entry empty "".

You can determine the quantity of the classes to be assigned via (<Class1>[, <Class2>[, ...]]). A wafer from the listed class(es) is sorted to the <StationID> station.

Example:
BindClass(4, "", (0,1))
BindClass(5, "", (1000,1001))

Causes wafers from classes 0 and 1 to be sorted into station no. 4 and wafers from classes 1000 and 1001 to be sorted into station no. 5.

**DefineCarrier( <StationID>,**
   **"<CarrierID>",**
   **"<SlotOrder>")**
*Defines a carrier with the ID <CarrierID> for <StationID> station. The slots to be processed are indicated in <SlotOrder>. If no DefineCarrier is indicated for a station, all slots are processed and an internal CarrierID is issued.*
e.g.
DefineCarrier(3, "Carrier ABC", "1-25")
DefineCarrier(4, "Carrier DEF", "1,4,10-13,15,20-25")

The SlotOrder parameter has the following syntax:
[<LowSlot>-<HighSlot>|<SlotNumber>][,[<LowSlot>-<HighSlot>|<SlotNumber>][,...]]
with <LowSlot> as the start slot and <HighSlot> as the end slot
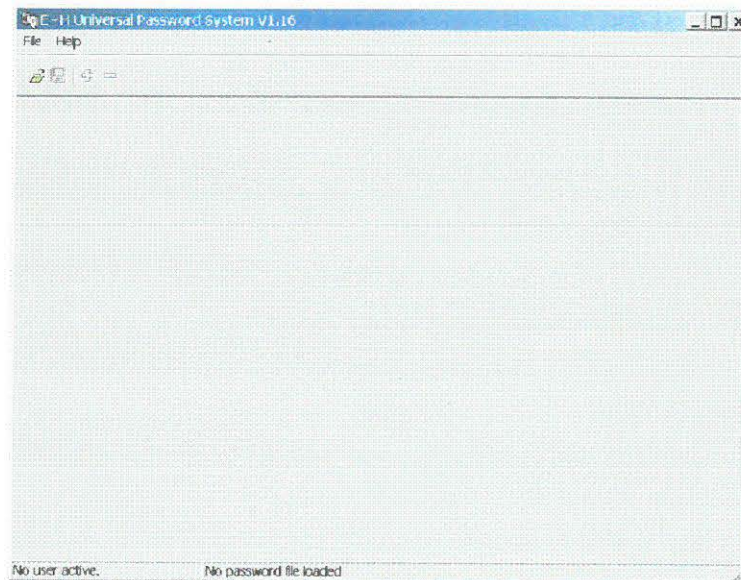and <SlotNumber> as the explicit slot data.

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# UNIPAS Password Utility Software User Manual

Unipas is a new utility to modify the rights of users to access the manifold functions of the programs MXNT and EHMASTER.

Unipas starting screen:



# 1 Menu



## 1.1 File

### 1.1.1 Open

Open the password file you want to modify. For example "MXNT.PSW".

### 1.1.2 Save

Save the changes you made.

### 1.1.3 Quit

Leave the program.

## 1.2 Help

### 1.2.1 Info…



The information about the software version and our software design partner.

## 2 Toolbar



- Open a password file
- Save current password file
- Expand whole tree with users
- Collapse whole tree with users

## 3 Open Password File

Select File>Open or use the Toolbar.
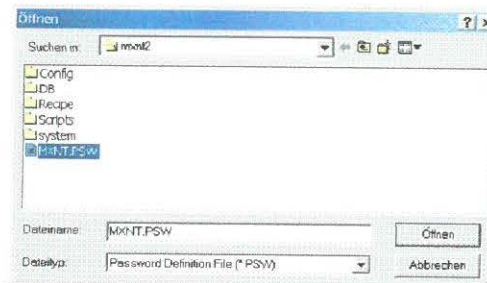


Change to the directory C:\EH_APP\MXNT2 and select the password file "MXNT.PSW". Open the file. A red window appears. The password file is also password protected. Enter your user name and password. If your user priority is high enough you can enter the password file.
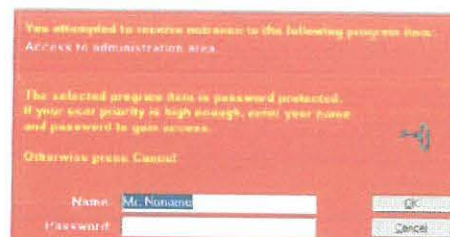
Every person using UNIPAS is prompted to log in, i.e. enter his user name and password. Every user known to UNIPAS is a member of one (and only one) user group. Every user group has a certain priority level.

Every user having successfully logged in is permitted to change access rights of entire user groups or individual members of user groups whose priority is equal or less to his own priority.

Every such user does only see the subset of functions which he himself is entitled (by a still superordinate administrator) to modify.

By way of an example, we will describe now how such an administrator can
- create a new user group
- create new users in this group
- assign or restrict certain rights to these users

On the UNIPAS main window, three register tabs appear, **User Groups**, **Protected Program Items**, and **Information**. Click the tab '**User Groups**', a listing of available user groups appears, displayed in the Windows 95 Explorer style.
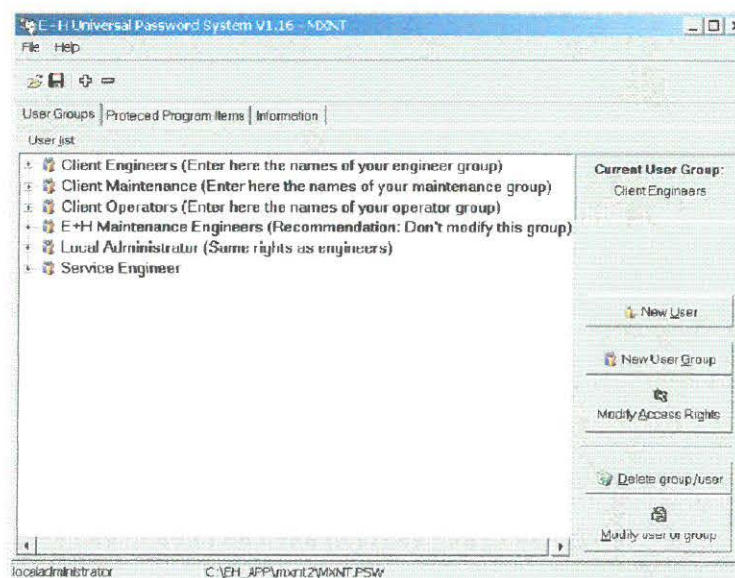


You can click the **+** icon in the icon bar to expand the user groups so you can see their members, and you can use the **–** icon to shrink the groups so only the group names are visible.

On the right hand side, there are a number of buttons:

## 3.1 New User

Click on the new title, then use the **Create User** buttons three times to create three users, say 'Arnie', 'Bernie', and 'Charlie, and assign a different password to each of these new users.
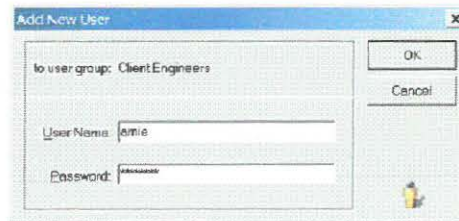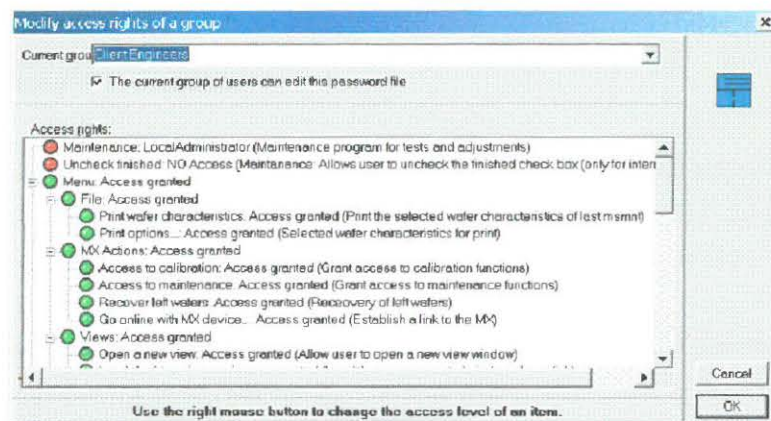


## 3.2 New User Group

Click on the **New User Group** button. Enter the name of the new group, say 'Experienced operators', also enter a description, say 'Can calibrate and create wafer types'. Both texts appear in the 'Explorer' window as a new title.

## 3.3 Modify Access Rights

Modify the access rights of a group.



Click with the right mouse switch on the red or green password items to change the access for the current group.

## 3.4 Delete group/user

Delete the whole selected user group and all users inside.

## 3.5 Modify user group

Change the group name or the user group description.

## 4  Protected Program Items

Press on the big buttons to modify the "default" defined protected program items.

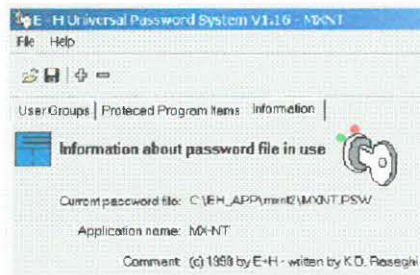Press button below to define the default access rights of any user.

Define protected program items

You start MXNT automatically in "default" modus. This is the password protection for the normal operator with minimum rights.
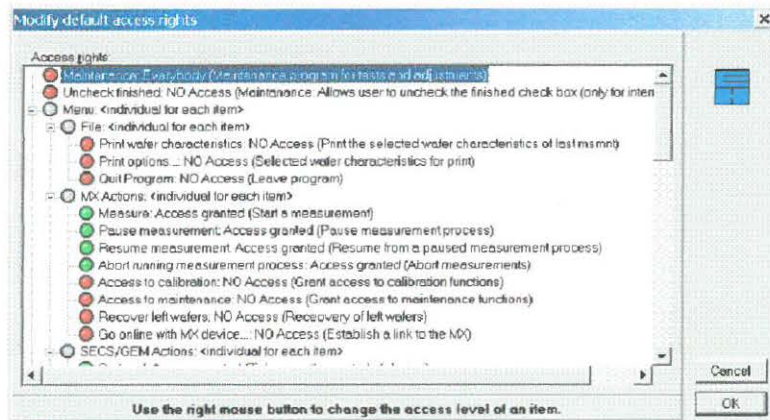


## 5  Information

Information about the position of the password file and the protected program.



## 6  Example

In our example, you have decided that these experienced operators are allowed to calibrate and to create new wafer types, however they have to use passwords to access these functions. All other functions are open to them.

The first thing there is to do is to make a preselection: Which of the many program functions need to be protected at all from somebody? In other words: the program items that do not need to appear in the protection selection for anybody. What protected menu items are concerned, any user will have to log into them.

The second step will be to decide: From which of the functions worth protecting do we have to totally exclude a given group of users, in this case my new group?

Step 1: The Preselection
Click on the tab **Protected Program Items**, a new window opens showing in its bottom part an 'Explorer' view of the tree structure of all available MXNT menu functions, represented by nodes and red, green, or grey LEDs and associated titles. A similar tree will later on appear on the **User Groups** tab page.

For modifying nodes in these trees the following rules apply:
- To modify a node, select a LED or the title text next to it
- Right click on the LED or title, in the context menu now opening, you can left click one or more of the options:
  - **<individual for each item>.** This will turn a LED grey
  - **Access granted.** This will turn a LED green
  - **NO Access.** This will turn a LED red.
- If a super ordinate LED is clicked green, all subordinate branches will also turn green
- If a super ordinate LED is clicked red, all subordinate branches will also turn red.
- For a LED to change its color individually, the next super ordinate LED must be grey. And this LED can only be grey when the previous node in the tree is also grey. Ultimately, for a tree to have individual colors in at least some of its branches, the root or top-level node must be grey. If you select 'Access' for the top level node, the entire tree will turn green. If you click 'No Access' for the top level node, the entire tree will turn red. If you re-click grey, all LEDs regain the colors they had before.
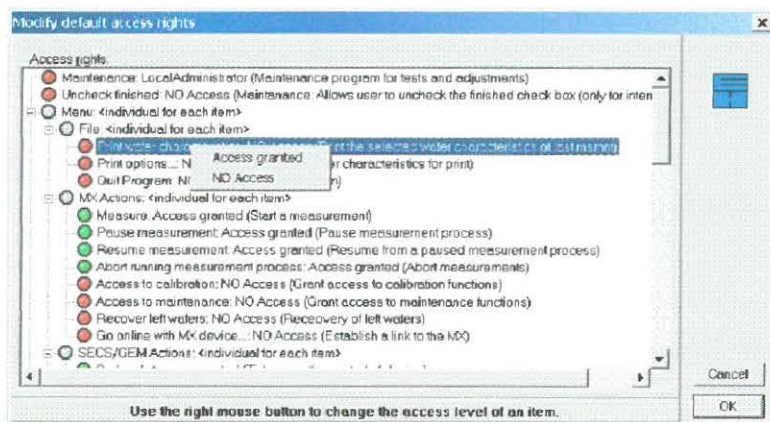


First of all, click correspondingly until the entire tree starting from the top-level node labelled 'menu' is green. Next, red-click the branches of the tree that you wish to protect at all. We suggest to grey-click **MX Actions**, and to red-click **SECS/GEM Actions**, **Options**, and **Calibrate** in **MX Actions**.

Step 2: Exclusion of a particular group

Return to the tab page **User Groups**. Click on the title 'My new operators', then click on the button **Modify Access Rights**. Next, click the check mark on the top part of this window, labelled **The current group of users can edit this password file** so it turns unchecked. In the bottom part of that window, you will see the restricted menu tree. Green-click it starting from the top-level node labelled 'menu', and leave it that way.

When you quit UNIPAS, you will be prompted to save the file.