



PrepGilsonST

User Guide

Version 001



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Introduction

1

Introduction

1.1

Preparation Gilson with SampleTrack (PrepGilsonST) is a sample preparation program which controls a Gilson "215" or "235" instrument with additional "8xx" valves and "ValveMate".

Predefined preparation step procedures can be modified by the user and will be executed.

Depending on the application type, a barcode reader identification can be used and orders can be defined by the "SampleTrack" program.

The type of destination racks can be specified and used to define destination positions automatically.

When SampleTrack is not used, the user can create orders when defining source samples, procedures, and push solvents.



Note: Throughout this manual Preparation Gilson with SampleTrack will simply be referred to as **PrepGilsonST**.

How to Request Support

1.2

For further information or technical support please contact the author at:

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The **File menu** offers the following commands:

Table 2.1. *The File Menu Commands*

Open Current Session	Opens the current session file curr_session.pgi .
Open Old Session	Opens an old session file .pgi
Save As	Saves the current session file as a different file name.
Save Current Log Files	Saves the current protocol files.
Exit	Exits the PrepGilsonST program.

Open Current Session

Use this command to open the current session file (**curr_session.pgi**) after checking an old session file.

The current session file is loaded automatically when the program is opened.

Shortcut Keys: CTRL+O

Open Old Session

Use this command to open an old session file (***.pgi**) in the **PrepGilsonST** program.

Save ... As

Saves the current session file as a different file name.

Use this command to save the active session as a file with another name (only used for checking the settings at later time!).

PrepGilsonST displays the **Save As dialog** box so you can save the file under a specific file name. The **Save As** dialog box offers the following options which allow you to specify the name and location of the file you're about to save:

File Name: Used to save a document under a new file name. Type in the new name in this field. The program adds the extension you specify in the **Save File As Type** box.

Drives: Used to select the drive where you want to save the document.

Directories: Used to select the directory where you want to save the document.

Network: This button is used to connect to a network location, assigning it a new drive letter.

Save current ... log files

Saves the current protocol files. During this procedure a copy of the current protocol files are produced as follows:

log_current.log saved to ...\\G215Data\\Exec\\saved_log_current.log

log_exec.log saved to ...\\G215Data\\Exec\\saved_log_exec.log

A copy of the session file is also made:

curr_session.pgi saved to ...\\G215Data\\Exec\\saved_curr_session.pgi

Exit

Exits the PrepGilsonST program.

Use this command to end your „PrepGilsonST“ session. You can also use the **Close** command on the application control menu. The program will prompt you to save documents with any unsaved changes if applicable.

Shortcuts:

Mouse: Double-click the application's **Control** menu button.



Keys: ALT+F4

Edit Settings Menu

2.2

The **Edit Settings** menu opens the **Edit Settings dialog** where the following preparation modes can be defined.

Edit Setting Dialog: SampleTrack

2.2.1

Enable SampleTrack

If checked, the orders are retrieved from the directory **SampleTrack Order Directory + \in**

If unchecked, the orders are retrieved from the directory **SampleTrack Order Directory + \in_no_ST**

Procedure Export Directory

All Procedures in this directory will be written into the file **procedures.txt** at initialization time.

The file **procedures.txt** is also placed into the directory **SampleTrack Order Directory**.

Edit Setting Dialog: Preparation Mode

2.2.2

Using Destination Matrix

If checked, the field **Destination Matrix Type** is used to find an empty destination matrix of this type for orders loaded in the currently inserted source racks.

Check if Destination Tubes Empty

If checked, the program queries SampleTrack and creates an error message if the position in the destination matrix is not empty.

This option is automatically checked if the option **Enable SampleTrack** is checked.

Verify each Procedure Only One Time

Procedures with the same name will be checked only one time before execution.

Edit Setting Dialog: Automatic Clean Procedure

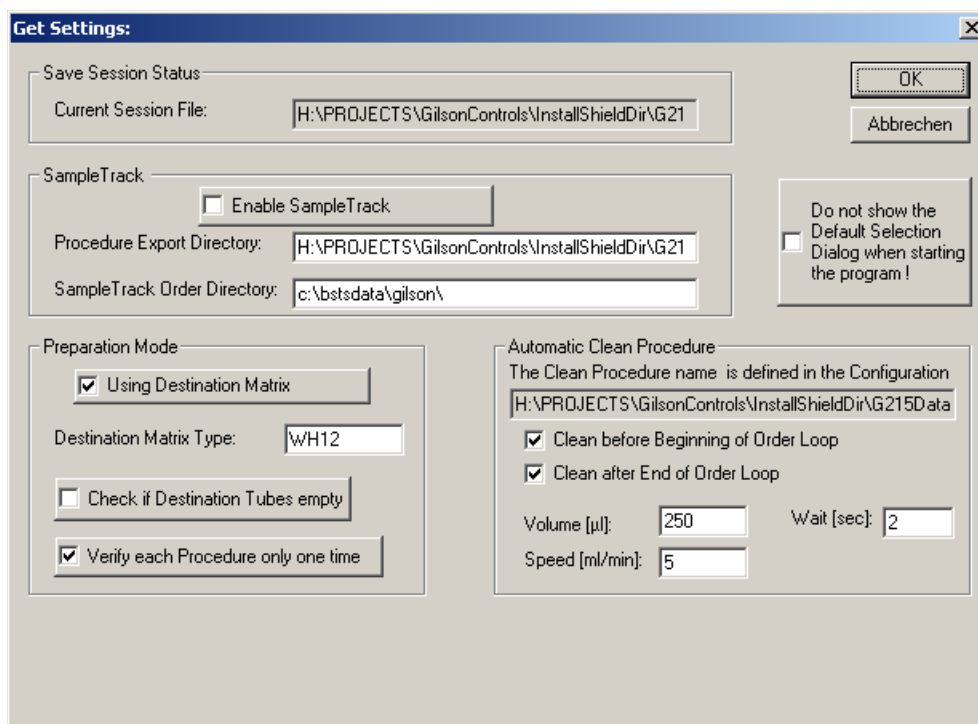
2.2.3

The **Clean Procedure** name is defined in the **"Configuration"** section (see also **"Clean Procedures Menu"**).

Select the appropriate options to run this procedure before the beginning of the order procedure loop or/and after the last order.

The **Volume**, **Speed** and **Wait** values will be used in the clean procedure.

Figure 2.1. The Edit Settings Window









Preparation Menu

2.3

The **Preparation** menu offers the following commands:

Table 2.2. The Preparation Menu Commands

	Start Preparation Automation	Start Automation = Init + Read Barcodes + Read Orders + Verify + Preparation
	Pause after current movement	Preparation Pause: Stop after current movement and wait. Select the menu Continue to continue the preparation.
	Continue	Continue the preparation after Pause .
	End after current order	Stop after the current order and finish order loop.
	Abort current order	Abort the current order and finish order loop.
	Move arm to other side	Moves the Gilson arm into a different position if the barcode reader did not allow the rack exchange.

Start Preparation Automation


Command: **Start All**


Starting automation - A new preparation loop for all available orders will be started:

- Initialize Gilson
- Read Barcodes
- Load Orders
- Verify Orders
- Run default **Clean** procedure if selected in the settings dialog
- Run **Preparation** procedures loop (for all available orders)
- Run default **Clean** procedure if selected in the settings dialog

Select the menu **"Pause After Current Movement"** or the toolbar  to stop the preparation.

Select the menu **"End After Current Order"** or the toolbar  to stop after current order and to finish the order loop.

Select the menu **"Abort Current Order"** or the toolbar  to abort the preparation immediately.

Shortcuts: Toolbar  Keys:CTRL+A

Pause After Current Movement

Preparation pause: Stops after current movement and waits for menu **"Continue"**.

Select the menu **"Continue"** or the toolbar  to continue the preparation

Continue

Select this menu to continue the preparation after **Pause**.

Shortcuts: Toolbar 

End After Current Order

Stops after the currently running order and finishes the order loop.

Shortcuts: Toolbar 

Abort Current Order

1. The currently running order will be stopped immediately with an error status.
2. If the order loop was running it will be stopped.
3. A **Home Seek** will be performed automatically.

Shortcuts: Toolbar 

Move Arm to Other Side

Moves the Gilson arm into a different position if the barcode reader did not allow the rack exchange.

Shortcuts: Toolbar 

The **Service Tools** menu offers the following commands:

Table 2.3. The Preparation Menu Commands

Initialize Gilson	Initialize the Gilson instrument.
Initialize Pump	Initialize the Gilson instrument and the Dilutor pump.
Initialize + Home	Initialize the Gilson instrument and perform a home seek.
Read Barcodes	Runs the Read Barcodes task.
Load Orders and Verify	Load Orders from order directory and Verify orders.
Prepare Orders	Prepare the orders.
Modify Procedure	Shows or hides a Procedure View in the main window in order to modify task procedures at a high edit level for customers.
Set Procedure/Config in Registry	Set Procedure and Configuration in the registry
Preparation of Orders on other Instrument	Enable Preparation of Orders on another instrument: Copy oOrders back from ...\\in\\exec \
Create Test Orders Dialog	Create Test Orders dialog.
Delete Map: Source-Destination Matrix	Delete Map: Source destination matrix
Reload Config File	Reloads configuration file.
Test	Test: Copy orders back from ...\\in\\save\

Initialize Gilson

Runs the **Initialize Gilson** task.

1. Writes a procedure list file of all usable procedures in SampleTrack.
2. Writes a solvent list file of all defined solvents for SampleTrack.
3. Starts to write a new current protocol file.
4. Resets errors.
5. Sets Gilson Z-tower clamp height variable.
6. Sets Gilson liquid level detection threshold variable.
7. Initializes barcode reader (if installed).
8. Checks Z-axis.
9. Checks XY-axis.
10. Checks Dilutor pump.

Initialize Pump

Initializes the Gilson instrument and the Dilutor pump.

Initialize + Home Gilson

Runs the **Initialize + Home Gilson** task.

1. Writes procedure list file of all usable procedures in SampleTrack.
2. Writes solvent list file of all defined solvents for SampleTrack.
3. Start to write a new Current protocol file.
4. Reset errors.
5. Set Gilson Z-tower clamp height variable.
6. Set Gilson liquid level detection threshold variable.
7. Initialize barcode reader (if installed).
8. Homing Z-axis.
9. Homing XY-axis.
10. Homing Dilutor pump at rinse station.

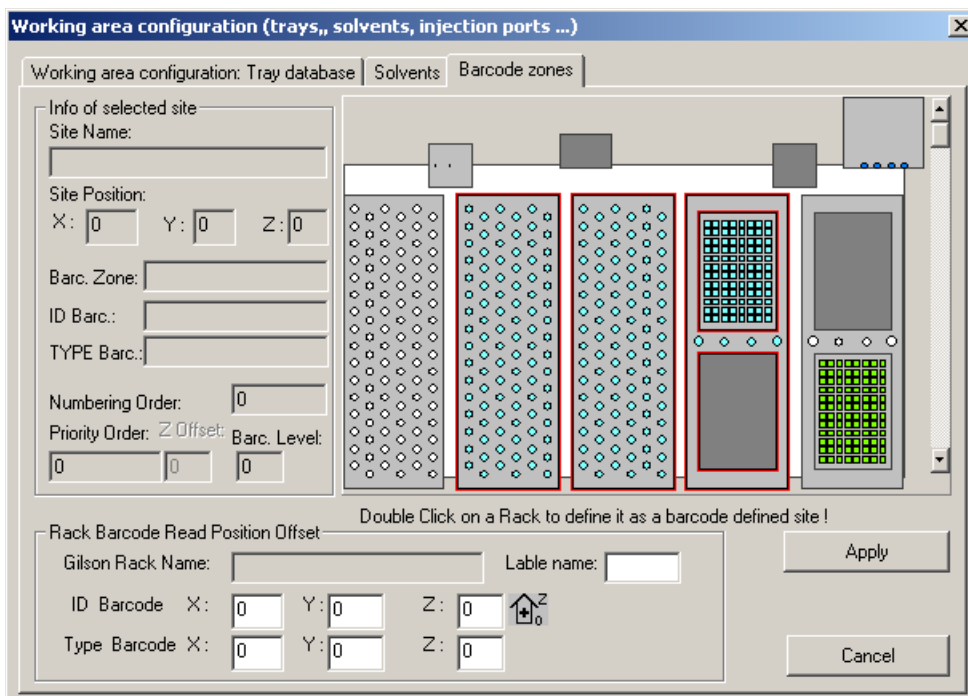
Read Barcodes

Runs the Read Barcodes task.

1. Reads both ID and TYPE barcodes at all defined barcode racks (displayed with red frames in the Barcode view of the Tray Configuration).
2. Deletes old Barcode defined racks in the tray configuration if they are removed from the Gilson.
3. Creates new barcode defined racks and zones (with the name of the Rack ID barcode) in the tray configuration if the barcodes are found.

All sites in the Tray **"Configuration"** can be defined as barcode defined sites with a default rack type. The default rack type is used to define the XYZ positions of the ID and TYPE barcodes on the rack.

Figure 2.2. Working Area Configuration: Barcode Zones



Load Orders and Verify

Runs the Load Orders and Verify task (without **Automation after Initialize and Read Barcodes**).

Prepare Orders

Runs the procedures preparation loop (for all available orders without **Automation after Initialize, Read Barcodes, and Load Orders and Verify**).

Modify Procedure

Modifies the current procedure in the registry and saves as a different procedure (the next free extension „_1”, „_2”, „_9” will be automatically added to the source file name).

To change the source procedure, use the **Service Tools** menu **"Set Procedure and Config File in Registry"**.

Modification of the current procedure works only with „TASK” procedures, a special type of procedures with a customer dialog to change parameters.

After modification of the task values in the dialog, the procedure will be saved under a different file name!

If the current procedure in the registry is not a TASK procedure the following message appears:

„Procedure is not a TASK procedure! ”

The source procedure can be changed by using the menu **"Set Procedure and Config File in Registry"**.

Figure 2.3. Two examples of TASK procedures

Modify Task Procedure "Urine"

Procedure Path Name: H:\PROJECTS\GilsonControls\InstallShieldDir\G215Data\Proc\
 New Procedure Name: default_Urine_4.gsp

Sample Volume [µl]: 100
 Buffer Volume [µl]: 100
 Mixing Volume [µl]: 150
 Mixing Cycles: 1

Cancel Create new procedure

Modify Task Procedure "1mm Samples"

Procedure Path Name: H:\PROJECTS\GilsonControls\InstallShieldDir\G215Data\Proc\
 New Procedure Name: default_1mm_7.gsp

Sample Aspiration Volume [ml]: 333
 Sample Dispense Volume [ml]: 300
 Sample Aspiration Speed [ml/min.]: 33
 Sample Dispense Speed [ml/min.]: 30
 Aspiration Equilibration Time [sec.]: 1
 Dispense Equilibration Time [sec.]: 3

Cancel Create new procedure

Set Procedure and Config File in Registry

The following dialog of the GExec control will be opened:

Figure 2.4. Set Procedure and Configuration in Registry

Set Procedure and Configuration in Registry

Execution Control

Procedure in Execution Control

Name: H:\PROJECTS\GilsonControls\InstallShieldDir\G215Data\Proc\Custom\default_Urine.gsp Select

Config in Procedure: H:\PROJECTS\GilsonControls\InstallShieldDir\G215Data\Config\Urine.cfg

Set Config from Procedure

Config (in Registry): H:\PROJECTS\GilsonControls\InstallShieldDir\G215Data\Config\Urine.cfg Select

Data Path in Config: H:\PROJECTS\GilsonControls\InstallShieldDir\G215Data\

Data Path in Registry: H:\PROJECTS\GilsonControls\InstallShieldDir\G215Data\ ...

Procedure Control in Program EditGilsonSteps.exe

Procedure in Procedure Control

Name (in Registry): H:\PROJECTS\GilsonControls\InstallShieldDir\G215Data\Proc\Custom\default_Urine.gsp Set

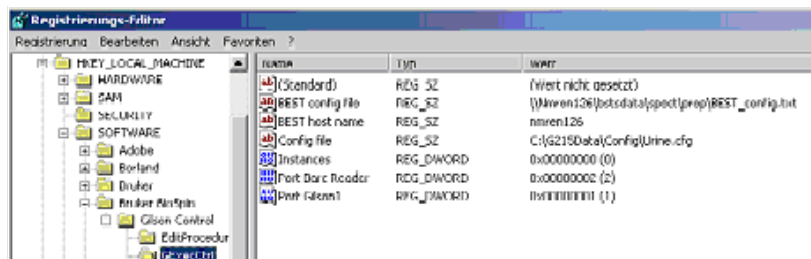
OK Cancel

Pressing OK will write the path and file names into the registry keys:

Procedure file: Bruker BioSpin Gilson Control EditProcedure Procedure

Config file: Bruker BioSpin Gilson Control GexecCtrl Config file

Data Path: Bruker BioSpin Gilson Control DataPath



The Procedure file name is used when opening the **"Modify Procedure"**.

- Dialog menu.

Preparation of Orders on another Instrument

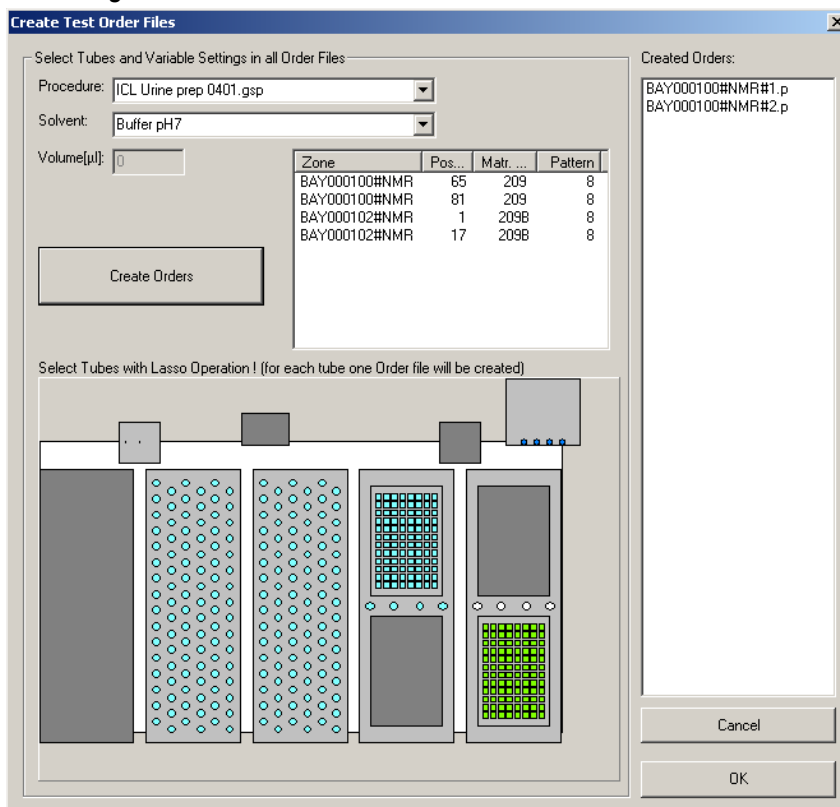
Enables preparation of orders on another Instrument:

Copies orders back from the directory ...\\in\lexec\ into the directory ...\\in\

Create Test Orders Dialog

Opens the **Create Test Orders Dialog** window.

Figure 2.5. Create Test Order Files



Delete Map: Source/Destination Matrix

Deletes all relations between the source Matrix ID Racks and Destination Matrix ID Racks.

Only relevant with option „**Preparation Mode: Using Destination Matrix**” in the **“Edit Settings Menu”** dialog!

After reading the Rack ID barcodes during the „Loading and Verifying Orders” procedure, all orders will be checked if they need a new Destination Rack of the Destination Rack Type, as defined in the field „**Destination Matrix Type**” of the **“Edit Settings Menu”** dialog.

If there is no Destination Rack defined for the current Source Rack in the Source/Destination Map, and an empty Destination Rack is found in the tray, then the current Source Rack of the Order and the empty Destination Rack will be written as “connected” into the **Source/Destination Map**.

The Source/Destination Map will then be saved.

After restarting the program, or for new Source Rack orders in the Source/Destination Map, the Destination Rack will be the same.

If a Barcode ID is used more than one time (not recommended!):

- The customer must clear the Destination Rack and fill the Source Rack.
- If only the Source or the Destination ID has changed, this menu has to be used to delete all Relations between Source Matrix ID Racks and Destination Matrix ID Racks.

Reload Config File

Reloads the configuration file after modifications.

Copy Orders back from ...\\in\\save

Copies orders back from the directory ...\\in\\save\ into the directory ...\\in\

Used for tests or if racks with the same Barcode ID when the same samples are reused.

Clean Procedures Menu

2.5

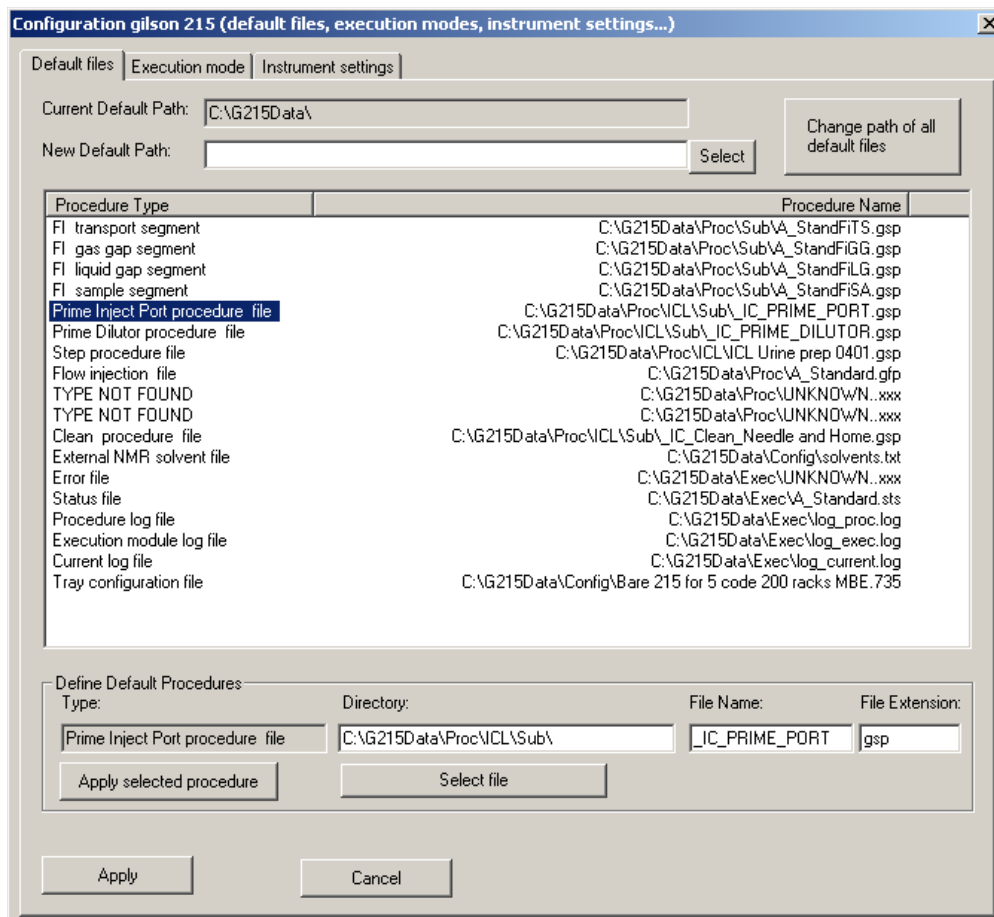
The **Clean Procedures** menu offers the following commands, which enable you to arrange multiple views of multiple documents in the application window:

Table 2.4. The Preparation Menu Commands

Clean Needle	Runs the Clean Needle procedure.
Prime Dilutor	Runs the Prime Dilutor procedure.
Prime Inject Port	Runs the Prime Inject Port procedure.
Set ValveMate default solvent position	Moves ValveMate to the default solvent position (defined in the Dilutor configuration).

The procedures Clean Needle, Prime Dilutor and Prime Inject Port are defined in the configuration:

Figure 2.6. Configuration Gilson 215



Clean Needle menu command

Runs the **Clean Needle** procedure.

The procedure name is defined in the Gilson Liquid Handler 215 section of the configuration.

Prime Dilutor menu command

Runs the **Prime Dilutor** procedure.

The procedure name is defined in the Gilson Liquid Handler 215 section of the configuration.

Prime Inject Port menu command








Runs the **Prime Inject Port** procedure.

The procedure name is defined in the Gilson Liquid Handler 215 section of the configuration.

See also: "**Configuration**"

The View menu offers the following commands:

Table 2.5. The View Menu Commands

	Toolbar	Shows or hides the toolbar.
	Status Bar	Shows or hides the status bar.
	Barcode List	Shows or hides the barcode list of connected source and destination barcode racks.
	Modify Procedure	Shows or hides a Procedure View in the main window to modify Task procedures at a high edit level for customers.
	Configuration	Shows or hides the configuration dialog view.
	Tray	Shows or hides the tray dialog view.
	Main Log File	Shows or hides the main protocol in the protocol dialog view.
	Log File	Shows or hides the current protocol in the protocol dialog view.
	Procedure Steps	Shows or hides the current master step procedure dialog view.

Toolbar command (View menu)

Use this command to display and hide the toolbar, which includes buttons for some of the most common commands in PrepGilsonST, such as **File Open**. A checkmark appears next to the menu item when the toolbar is displayed.

See "[Toolbar command \(View menu\)](#)" for help on using the toolbar.

Status Bar command (View menu)

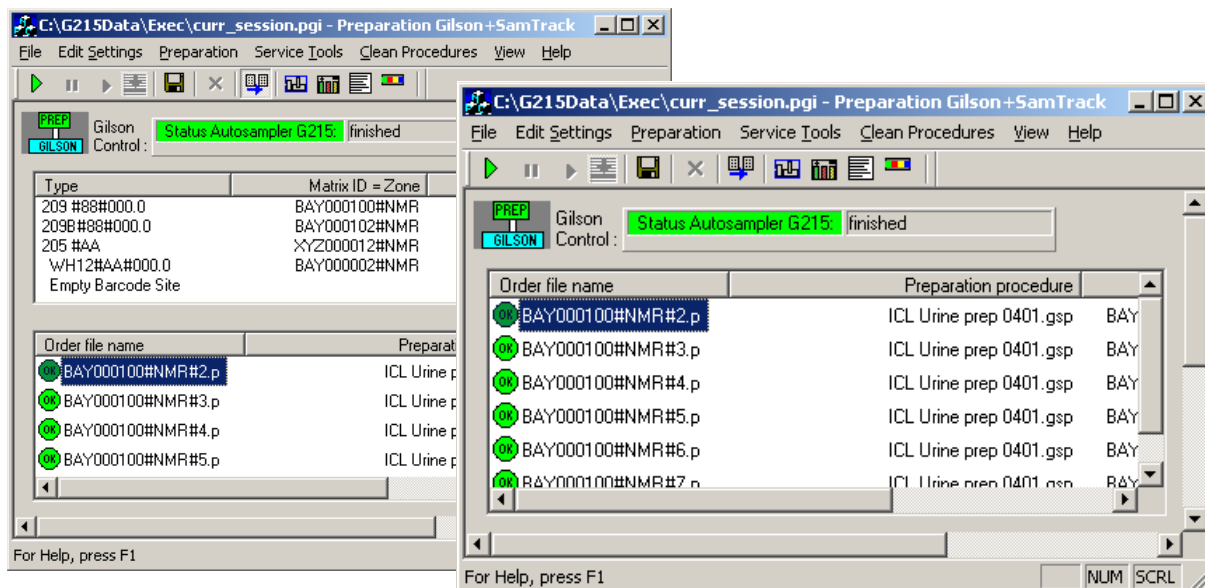
Use this command to display and hide the **Status Bar**, which describes the action to be executed by the selected menu item or depressed toolbar button, and the keyboard latch state. A checkmark appears next to the menu item when the status bar is displayed.

See "[Status Bar command \(View menu\)](#)" for help on using the status bar.

Show or hide the Barcode List

Shows or hides the barcode list dialog view.

Figure 2.7. Barcode List Dialog



Shortcuts: Toolbar 

View Menu Modify Procedure

See **"Modify Procedure"**

Configuration

See all view menu commands: **"View Menu"**

Shows the **Configuration View** to see configuration details or to perform modifications.

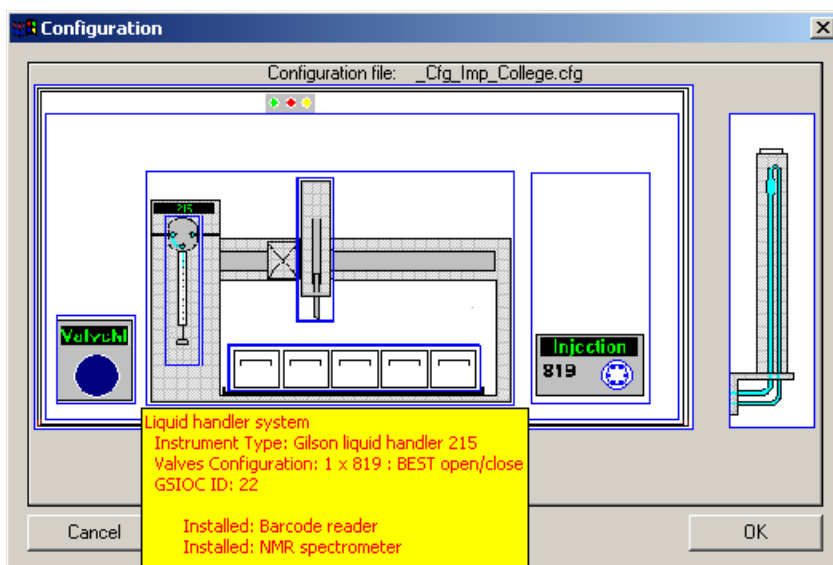
Each of the different configuration sections are displayed inside a blue frame:


- Liquid Handler System: Defines the basic configuration.
- Gilson Liquid Handler 215: Defines default files and Gilson instrument type specific configuration.
- Gilson Cover + LED configuration: Defines the reaction after opening the cover.
- Dilutor: Defines the usable solvent list, the Dilutor syringes and default solvent.
- Valvemate: Defines the Valvemate solvents.
- Working area: Defines the working area (trays, solvents, barcode defined racks).
- Z-tower: Defines the needle adjustment.
- Valves configuration: Valves and capillary configuration.
- NMR probe head: Sample configuration.

Move the mouse cursor inside the blue frames to show tool tips in the configuration section!

Click inside the blue frames to open the dialog box of the configuration section!

Figure 2.8. The Configuration Dialog Window



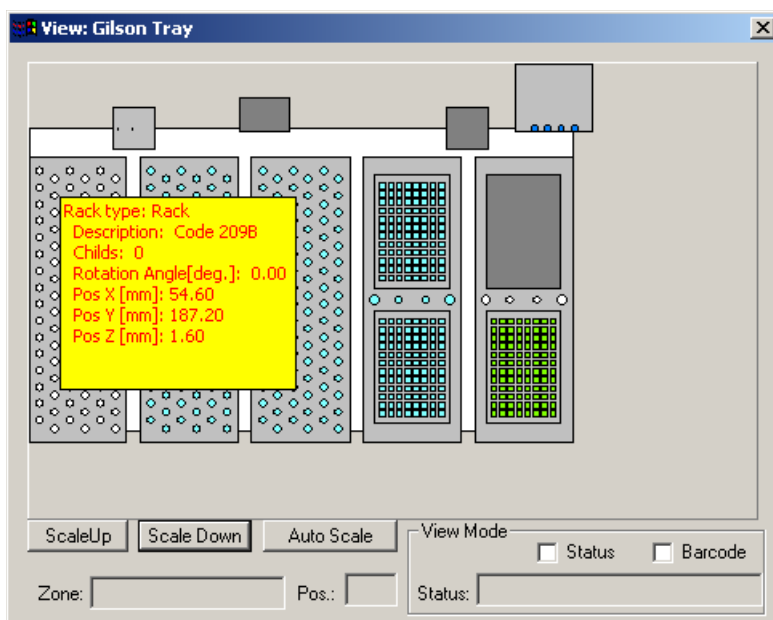
Shortcuts: Toolbar 


Tray View

See all **View Menu** commands: **"View Menu"**

Shows the **Tray View**.

Figure 2.9. The Tray View Dialog Window



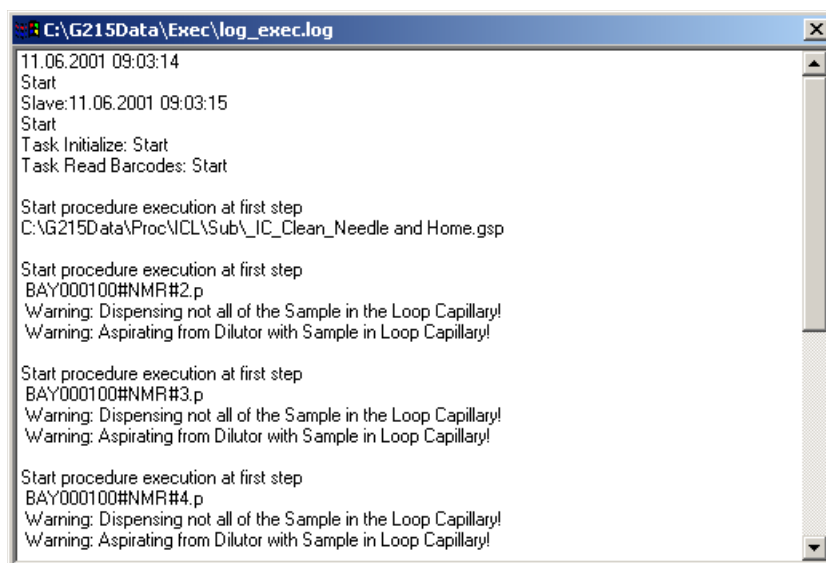
Shortcuts: Toolbar 

Main protocol file

See all view menu commands: **"View Menu"**

Shows or hides the main protocol file.

Figure 2.10. Main Protocol File



See also: View Protocol Files below.

View Protocol files

See all View Menu commands: **"View Menu"**

Shows or hides the **Protocol View**.

Different information can be displayed in the protocol view:

1. Input order files from SampleTrack.
2. Output result order files to SampleTrack.
3. Current procedure protocol file.
4. Procedure protocol file of a finished order.
5. Current main protocol file.

Figure 2.11. Example of a Protocol File View

```

Protocol File - c:\bstsdata\gilson\out_no_ST\protocol\BAY000100#NMR#2.log
11.06.2001 09:03:59

Start procedure execution at first step
PROCEDURE: C:\G215Data\Proc\NCL\NCL Urine prep 0401.gsp
Saving Date/Time of Proc.= 11.04.2001 14:00:28 Config= 05.04.2001 08:56:48

CONFIG : C:\G215Data\Config\Cfg_Imp_College.cfg
Saving Date/Time of used Config= 08.06.2001 16:01:06

CURRENT_ZONE= BAY000100#NMR
PREP_DEST_ZONE= BAY000002#NMR
PREP_DEST_POS= 2
CURRENT_SOLVENT= Buffer pH7
CURRENT_POSITION= 2

Start procedure: C:\G215Data\Proc\NCL\NCL Urine prep 0401.gsp
Saving Date/Time of Proc.= 11.04.2001 14:00:28 Config= 05.04.2001 08:56:48

LEVEL 0 : STEP 1:Step 1: NEW COMMENT STEP
NEW COMMENT
LEVEL 0 : STEP 2:Step 2: Start
Call Clean Needle Procedure
LEVEL 0 : STEP 3:Step 3: Call "Clean Needle"

Sub procedure name= C:\G215Data\Proc\NCL\Sub\IC_Clean_Needle.gsp

```

Shortcuts: Toolbar

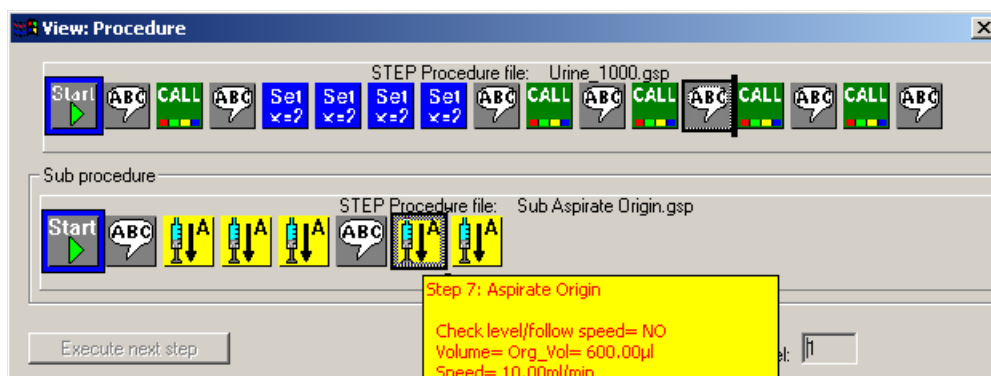
Procedure Step View

See all View Menu commands: [**"View Menu"**](#)

Shows the **Procedure Step View**:

- Move the mouse cursor over one step, or click on the step icon to see details of one step!
- Shows the currently loaded or running main procedure in the upper part of the window
- If there is a sub-procedure running, it is shown in the lower part of the window.

Figure 2.12. Procedure Step View



Note:

- It is not possible to display the procedure as a text file, but only as a protocol text file after execution.

- **For service personal only:** Procedures that are not running can be displayed in the Procedure Editor program

Shortcuts: Toolbar 

Help Menu

2.7

The **Help Menu** offers the following commands, which provide you assistance with this application:

Table 2.6. *The Preparation Menu Commands*

Help Topics	Offers you an index of topics on which you can get help.
About	Displays the version number of this application

Index command (Help menu)

Use this command to display the opening help window. From this window, you can jump to step-by-step instructions on using PrepGilsonST and various other types of reference information.

Once you open the help window you can click the **Contents** button whenever you want to return to the opening screen.

About command (Help menu)

Use this command to display the copyright notice and version number of your copy of PrepGilsonST.

Start Selections

3

Defining Procedure Type

3.1

When starting the program the first time after installation the **"Default Procedure Selection"** dialog appears enabling you to define the type of procedure and configuration settings in the registry.

Four types of procedures can be selected:

- Urine
- 1mm sample
- BEST
- Custom ICL

The procedures can be exported and are shown in the SampleTrack selection box after performing an initialization using menu "Service tools" -> **"Initialize Gilson"**.

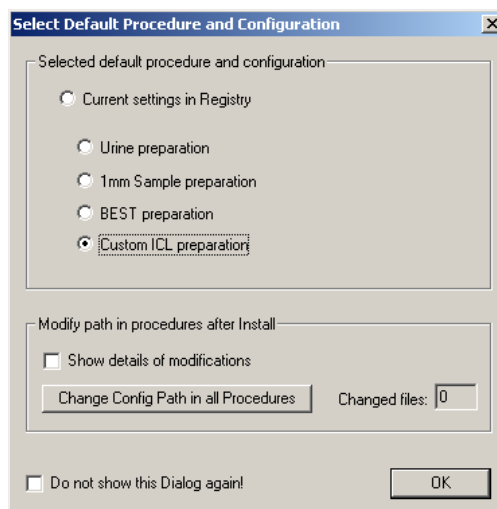
When you select the checkbox „Do not show this dialog again“ in this dialog, or in the **"Edit Settings Menu"** window, this dialog will not be visible when restarting the program.

Default Procedure Selection

3.1.1

When starting the program the **Default Procedure Selection** box appears which allows you to define default settings in the registry, or can modify the path inside all the procedures after installing this program:

Figure 3.1. The Select Default Procedure and Configuration Window



Start Selections

The following files will be set in the registry:

1. Urine preparation

GExecCtrlConfig file= \Config\Urine.cfg\
EditProcedure Procedure= \Proc\Custom\default_Urine.gsp\

2. 1mm Sample preparation

GExecCtrlConfig file= \Config\default_1mm.cfg
EditProcedure Procedure= \Proc\1mm\default_1mm.gsp

3. BEST preparation

GExecCtrlConfig file= \Config\default_BEST.cfg
EditProcedure Procedure= \Proc\BEST\default_BEST.gsp

4. Custom ICL preparation

GExecCtrlConfig file= \Config_Cfg_Imp_College.cfg
EditProcedure Procedure= \Proc\BEST\Test Frame Urine Proc.gsp

The following „Current session” default files will be copied into the file\exec\curr_session.pgi:

1. Urine preparation: default_session_Urine.pgi
2. 1mm Sample preparation: default_session_1mm.pgi
3. BEST preparation: default_session_BEST.pgi
4. Custom ICL preparation: default_session_ICL.pgi

If it is desired that this box does not appear the next time the program is started, please select:

- The checkbox „**Do not show this Dialog again!**” in this dialog, or,
- The checkbox „**Do not show the Default Selection Dialog when starting the program!**” in the **“Edit Settings Menu”** dialog.

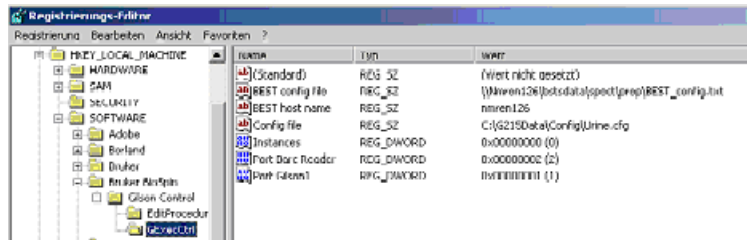
Starting the BEST Sharing Mode

3.1.2

Define procedure type „BEST” in the **“Default Procedure Selection”** window when starting the program.

The files „default_BEST.cfg” and „default_BEST.735” are special configuration files for BEST and will be cross-checked and overwritten automatically when importing the current configuration from BEST.

Check registry entry „BEST host name“ (BEST directory with file „BEST_config.txt“ must be exported):



The text file „Procedures.txt“ in the directory „...\\bstsdata\spect\prep\“ on the BEST host contains the exported procedures.

All the exported procedures must be located in the export directory, which can be defined in the **“Edit Settings Menu”** dialog (default directory: „...\\G215Data\Proc\BEST“).

The file „Procedures.txt“ is written when this program is started and connecting to BEST (connecting to BEST only if no direct RS232 connection to a Gilson 215 found).

The value of variable "NUMBER_OF_DIFF_DEST" defines the number of different destination positions in the procedure.

In the text file „Procedures.txt“, one line defines one procedure (the „Space“ or „Tab“ can be used as delimiter's between the procedure name and the procedure type in one line).

For example:

```
Test_BEST.gsp      new
Test_BEST_S.gsp   same
```


- Type „same“: The source position (defined by the variables ORGMATRIXID and ORGMATRIXFIELDPOSITION in the order file) and destination position of the preparation are the same.
- Type „new“: The source and destination position of the preparation are different: The variables MATRIXID and MATRIXFIELDPOSITION in the order file are necessary to define a different destination position of the preparation.

Start first the BEST program: XWIN-NMR 3.1 Windows ICON-NMR.

Automation Admin User ID: Guest OK Password: "" + Enter

(This program writes the file „BEST_config.txt“ and defines the sharing mode with the variable `###$SHAREMODE=1`).

When starting the PrepGilsonST.exe program the Gilson 215 instrument must be initialized beforehand!

Status bitmap, if in sharing mode OK: 

Other modes: Direct connection:  Gilson link mode: 

Preparation Data Files

4

Data Directory Structure

4.1

Structure:

```
[Install Dir]\G215Data\  
    \Config\  
    \Prep\  
        \Custom\  
        \1mm\  
        \BEST\  
        \ICL\  
        \Temp Test\ temporary directory for service test files  
        \Test\      for release test files  
    \Exec\
```

Main Directory:

[Install Dir]\G215Data*(defined when installing the program)*

Configuration Files Directory:

[Install Dir]\G215Data\Config\
1. All data in the current configuration (file extension: ***.cfg**), including the tray file name, e.g. Current_Config_data.cfg.

2. Data in the current tray (file extension: ***.735**), including the tray geometry database file name, e.g.: Current_Tray_Config.735.

3. Data of tray geometry database (file extension: ***.geo**). This file is used when inserting racks (e.g. after barcode reading). e.g.: GRack_data_all.geo.

Preparation Procedure Files Directory:

[Install Dir]\G215Data\Prep\
1. Common procedure files used by most users (file extension: ***.gsp** or ***.gfp**). e.g.: Prime_only.gsp.

[Install Dir]\G215Data\Prep\TypeOfProcX\
1. Common procedure files used by most users (file extension: ***.gsp** or ***.gfp**). e.g.: Prime_only.gsp.

Preparation Data Files

1. Procedure files specific for one type of procedure (file extension: *.gsp or *.gfp) e.g.: ICL Urine prep 0401.gsp.

Temporary Settings Files:

[Install Dir]\G215Data\Exec\

1. Session files with saved settings (from Settings Dialog - file extension: *.pgi).
2. Saved Session file after an error or Menu Save current ... log files.
3. Current preparation status file (file extension: *.sts - currently not used).

Temporary Protocol Files: (see also ["View Protocol files" on page 22](#)).

[Install Dir]\G215Data\Exec\

1. Current main protocol file of the current session (log_exec.log).
2. Current protocol file of the running procedure (log_current.log).
3. Saved protocol files (saved_log_exec.log and saved_log_current.log) after an error occurs or after saving the file with „menu save current ... log files“.

After completion of the SampleTrack order procedure the current protocol file, [**Install Dir**]\G215Data\Exec\log_current.log, will be renamed (to the order name) and saved in the SampleTrack order files directory:

C:\bstsdata\gilson\out...\protocol\

(See the SampleTrack order files directory structure).

Viewing Data Files

4.2

The currently running procedure is shown in the **Step View**.

To find the file directory see the ["Data Directory Structure" on page 29](#).

Protocol Files

4.3

Current Preparation Protocol File Directory: (see also: ["View Protocol files" on page 22](#)).

[Install Dir]\G215Data\Exec\

Current main procedure protocol file: log_exec.log

Current protocol file of running procedure: log_current.log

After an error or Menu Save current ... log files a copy of the current protocol files will be performed:

log_current.logto ...\G215Data\Exec\saved_log_current.log

log_exec.logto ...\\G215Data\\Exec\\saved_log_exec.log

After completion of the SampleTrack order procedure the current protocol file, **[Install Dir]\\G215Data\\Exec\\log_current.log**, will be renamed (to the order name) and saved in the SampleTrack order files directory:

C:\\bstdata\\gilson\\out...\\protocol\\

(See the ***"Data Directory Structure" on page 29***)

Directory of saved protocol files after execution of SampleTrack orders:

C:\\bstdata\\gilson\\out\\protocol\\ (when running with SampleTrack)

C:\\bstdata\\gilson\\out_no_ST\\protocol\\ (when running without SampleTrack -
e.g. BAY000100 NMR 31.log)

(See the ***"SampleTrack Order Directory Structure:" on page 33***).

SampleTrack Order Files

5

Order Directory Structure

5.1

Note: To allow access to old order information, old files will not be automatically deleted!

The user should delete all old orders in the following subdirectories!

SampleTrack Order Directory Structure:

```
C:\bstsdata\gilson\  
    \in\  
    \in\exec\  
    \in\save\  
    \in\error\  
    \out\  
    \out\save\  
    \out\error\  
    \out\protocol\  
    \in_no_ST\  
    \out_no_ST
```

Main Directory:

C:\bstsdata\gilson\ (defined by SampleTrack)

Input Order Files Directory (to carry out):

C:\bstsdata\gilson\in\ (when running with SampleTrack).

C:\bstsdata\gilson\in_no_ST\ (when running without SampleTrack).

Contains all order files (file extension: *.p) to carry out.

When after verification the status is OK, the files will be moved into the directory \in...\exec\. If an error occurs the files will be moved into the directory \in...\error\.

After execution of the order the files will be moved into the directory \in...\save\.

SampleTrack Order Files

Output Order files directory (results after execution):

C:\bstsdata\gilson\out\ (when running with SampleTrack).

C:\bstsdata\gilson\out_no_ST\ (when running without SampleTrack).

Contains all order files with results after execution (file extension: .r).

After result handling by the SampleTrack Communicator, the files will be moved into the directory **\out\save** if status OK or into the directory **\out\error** if an error occurs.

Order Protocol files directory (after running the order procedure):

C:\bstsdata\gilson\out\protocol\ (when running with SampleTrack).

C:\bstsdata\gilson\out_no_ST\protocol\ (when running without SampleTrack).

After completion of the SampleTrack Order procedure, the current protocol file **[Install Dir]\G215Data\Exec\log_current.log** will be renamed (to the order name) and saved in the SampleTrack order files directory:

C:\bstsdata\gilson\out...\protocol\

(See also **"Data Directory Structure" on page 29**).

Viewing Order Files

5.2

To view the JCAMP SampleTrack order files:

1. Right click on the order in the order list and select **Show input: order from SampleTrack** to see the order from within SampleTrack.
2. Right click on the order in the order list and select **Show output: report to SampleTrack** to send the report to SampleTrack.

To view the protocol files:

1. Double click on the order in the order list!

To find the file directory reference to SampleTrack see **"Order Directory Structure" on page 33**.

See also: **"Viewing Data Files" on page 30**.

Protocol Files

5.3

Current Preparation protocol file directory: [Install Dir]\G215Data\Exec\ (see also: **"View Protocol files" on page 22**)

Current main procedure protocol file: log_exec.log

Current protocol file of running procedure: log_current.log

After an error or „Menu Save current ... log files“, a copy of the current protocol files will be copied from:

log_current.log to ...\\G215Data\\Exec\\saved_log_current.log
log_exec.log to ...\\G215Data\\Exec\\saved_log_exec.log

After completion of the SampleTrack order procedure the current protocol file, **[Install Dir]\\G215Data\\Exec\\log_current.log**, will be renamed (to the order name) and saved in the SampleTrack order files directory:

C:\\bstsdata\\gilson\\out...\\protocol\\

(See the **"Data Directory Structure" on page 29**)

Directory of saved protocol files after execution of SampleTrack orders:

C:\\bstsdata\\gilson\\out\\protocol\\ (when running with SampleTrack)

C:\\bstsdata\\gilson\\out_no_ST\\protocol\\ (when running without SampleTrack)

e.g. BAY000100 NMR 31.log

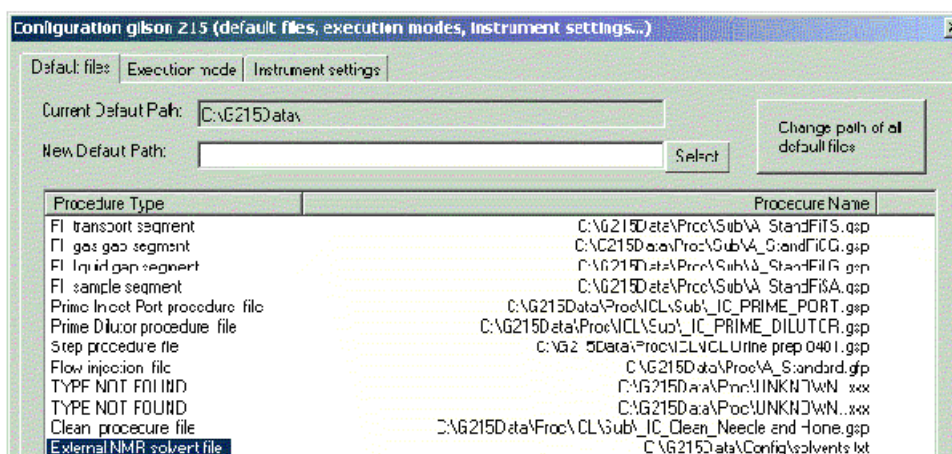
(See the SampleTrack **"Order Directory Structure" on page 33**).

1. External NMR Solvents:

The external NMR solvents are defined in a text file (e.g.: solvents.txt).

The name of his text file can be defined in the configuration dialog window (see **"Configuration" on page 20**) or by clicking on the Gilson liquid handler 215 (default files, ...) to open the configuration Gilson 215 Dialog window.

Figure 6.1. External NMR Solvent Configuration



In the property sheet **Default Files**, the default file name and directory of the type **External NMR solvent file** can be changed to define the ambient solvent file used.

The **External NMR Solvents** are used inside the **Dilutor Configuration** dialog to define the preparation solvents used.

2. Used Preparation solvents:

To edit the solvents used for preparation, open the configuration dialog window (see **"Configuration" on page 20**) and click on the **Dilutor** (dilutor syringe) to open the Dilutor configuration dialog:

- All defined external NMR solvents can be used.
- Additional solvents only for the preparation can be defined.

Solvents

To define the solvent positions in the Gilson instrument for preparation open the configuration dialog window (see **"Configuration" on page 20**) and click on the place where you want to use the solvent:

- **Dilutor** (dilutor syringe): opens the Dilutor Configuration Dialog.
- **Valvemate**: Opens the Valvemate Configuration Dialog
- **Working area**: Opens the working area (trays, solvents, ...) configuration dialog. In the property sheet solvents is the default.

To view or edit the configuration see: **"Configuration" on page 20**.

Edit Procedures

7

Modifying Task Procedures

7.1

If the source TASK procedure is selected in the registry, then you must:

1. Modify the procedure in the menu "Service tools" -> **"Modify Procedure"**.
2. Export the procedures and display them in the SampleTrack selection box using the menu "Service tools" -> **"Initialize Gilson"**

If source TASK procedure is not selected in Registry, then you must:

1. Open selection dialog with menu "Service tools" -> **"Set Procedure and Config File in Registry"**.
2. Press "Select" button to select procedure in the first line of the dialog.
3. Press "Set Config from Procedure" button to define config (in registry) if different.
4. Press "Set" button in the last line to define procedure name (in registry) if different.
5. Press "OK" to exit the dialog.
6. Initialize Gilson with menu "Service tools" -> **"Initialize Gilson"**.
7. Modify procedure with menu "Service tools" -> **"Modify Procedure"**.
8. Export procedures and show it in selection box of SampleTrack with menu "Service tools" -> **"Initialize Gilson"**

Note: New version urine procedures must contain the step "Set Variable: VAR_CUSTOM_PROC_TYPE= 222 " to enable the task editor for users!

Setting Procedure / Configuration Dialog

7.2

See **"Set Procedure and Config File in Registry" on page 15.**

Modifying the Procedure Dialog

7.3

See **"Modify Procedure" on page 14.**

Preparing 1mm Samples

8

Installing the 1mm Gilson Software

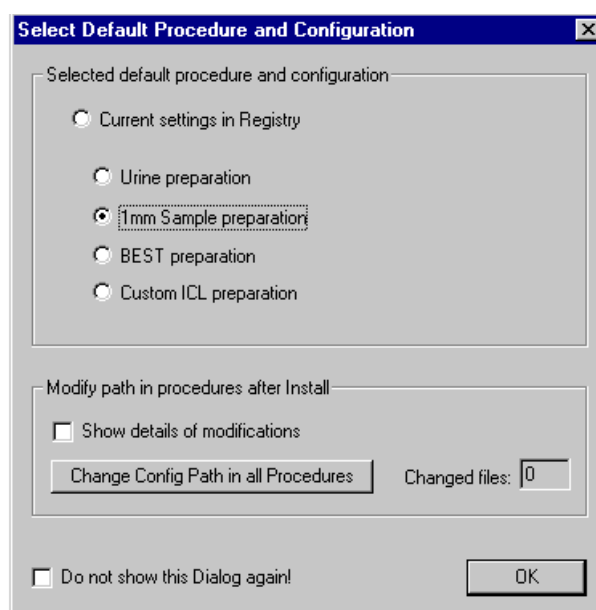
8.1

Start the setup procedure and follow the instructions.

Select the default configuration to be active for “1mm Sample preparation” and press “Change Config Path in all Procedures”, then press OK.

If you intend to run only the 1mm application with this software, check the checkbox: “do not show this dialog again”.

Figure 8.1. Select Default Procedure and Configure



The installation is now finished.

General System Information

8.2

Z-switch

The needle is mobile inside the needle support and it is protected by a position sensor in the Z-arm of the Gilson 215 Liquid handler. This sensor is activated if the needle hits an obstacle in its path. If the switch is activated during the 1 mm filling procedure, the procedure will then skip this sample and put it back into the

Preparing 1mm Samples

source vial. After a cleaning step, the procedure will continue with the next sample. An error message will appear in the log file.

The 1 mm Needle

The 1 mm needle is a flat bottom needle with an outer diameter of 0.5 mm. For safety reasons the needle is grounded.

The 1 mm Rinse Station

The 1 mm rinse station contains a short 1 mm glass tube in order to save solvent when rinsing the needle from the outside.

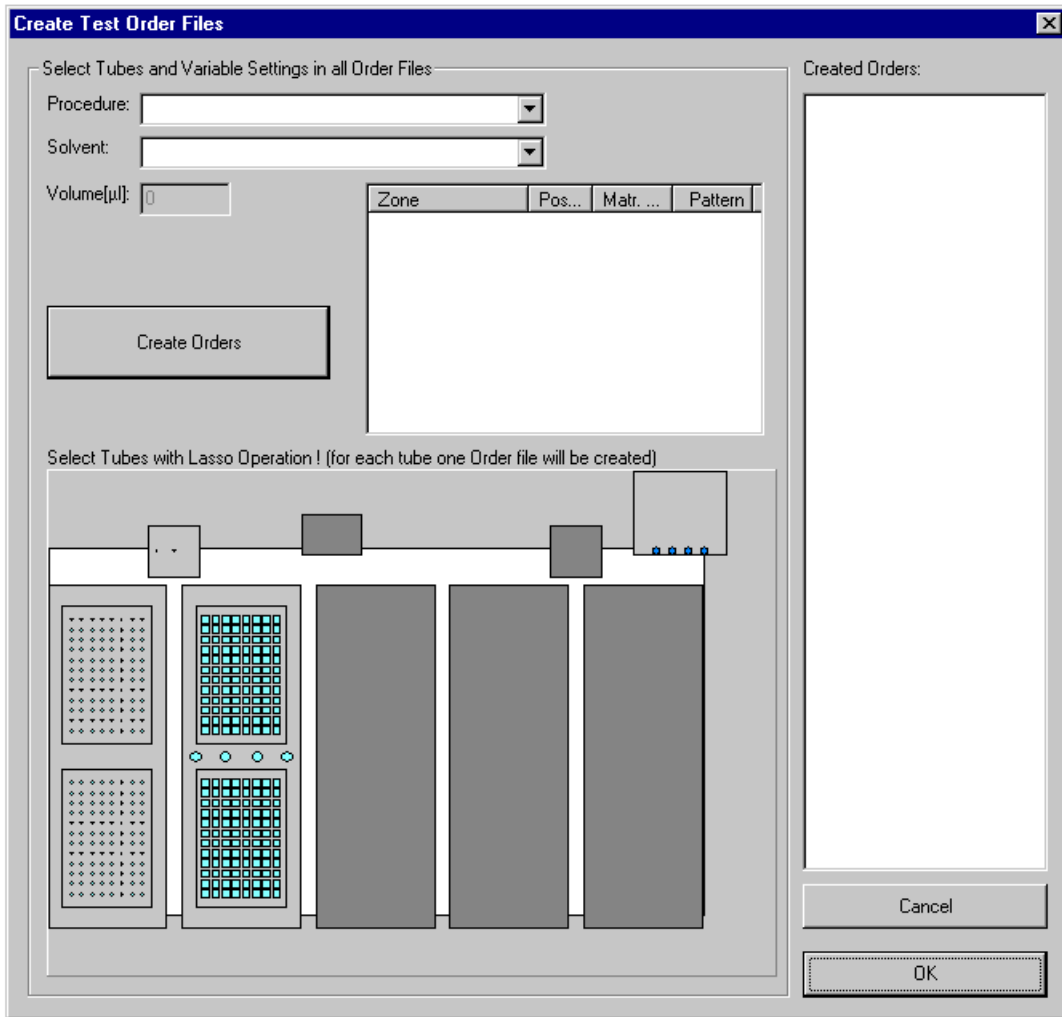
The 1 mm Filling Procedure

8.3

Put the racks on the Gilson wellplate and be sure to label them with the appropriate barcodes.

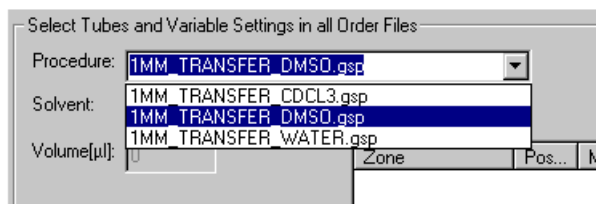
1. Turn on the Gilson 215 liquid handler.
2. Start the PrepGilsonST software (if prompted select the 1 mm sample preparation as the default procedure).
3. Press the top left button to start the automation. The following step will be processed:
 - Initialization of the Gilson axis (first time after the robot startup).
 - Initialization of the syringe pump (first time after the robot startup).
 - The barcodes are read (only on the positions which are defined as "Barcode zones" in the tray configuration. For more information on barcode zones and tray configurations please consult the general help file).
4. The window in ***Figure 8.2.*** will appear with the rack configuration that the barcode reader determined in your specific case:

Figure 8.2. Creating Test Order Files



5. Select a transfer procedure as follows:

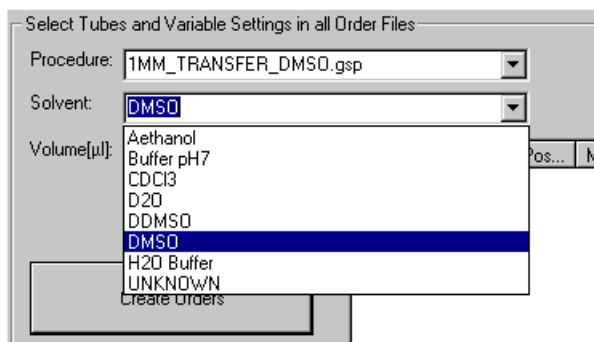
Figure 8.3. Select a Transfer Procedure



6. Select the appropriate solvent that will be used as the system liquid and wash solvent, as shown in the following figure:

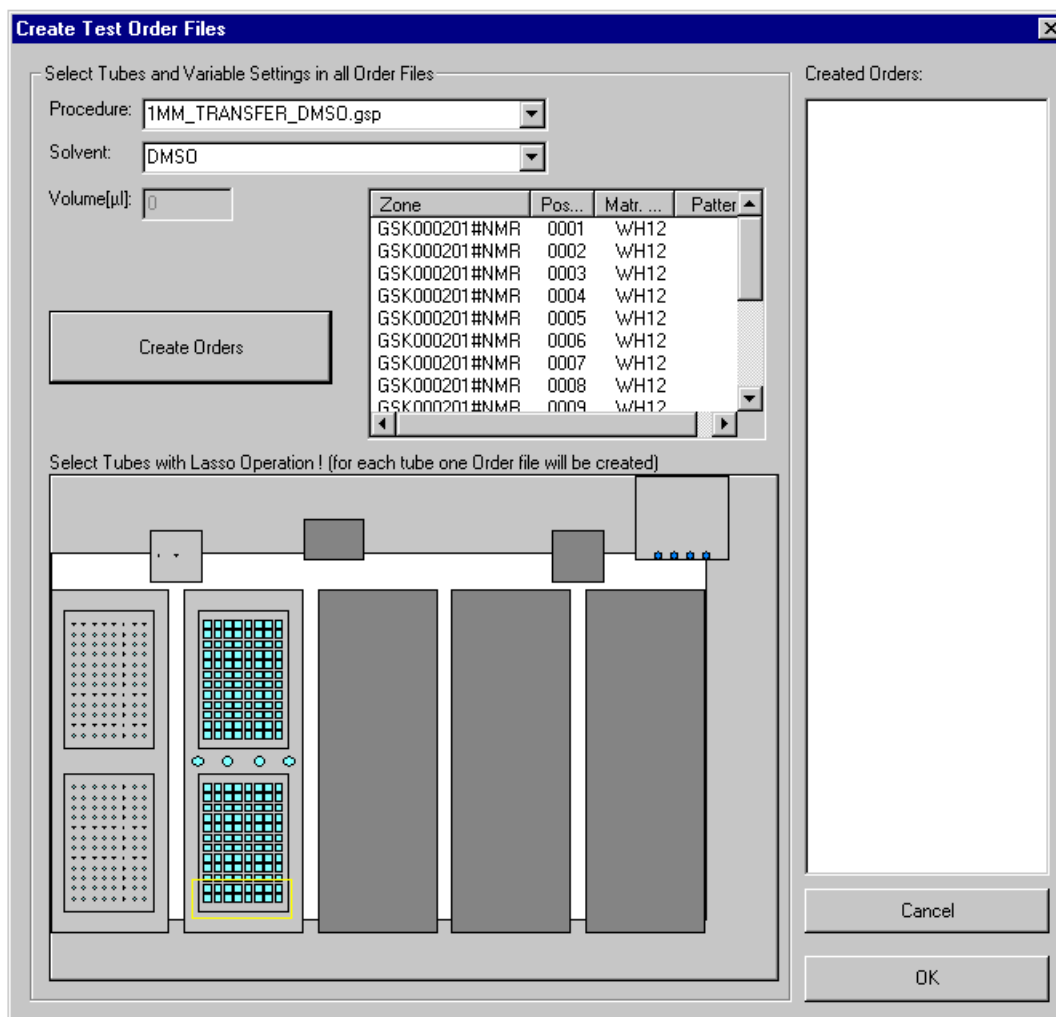
Preparing 1mm Samples

Figure 8.4. Select the Appropriate Solvent



7. In the tray view of the window, select the source tubes where you would like to transfer the samples from. This can be done by using the “lasso” function (keep the left mouse button pressed and drag the pointer over the tubes that you want to select).

Figure 8.5. Select the Source Tubes



You can zoom into the tray view by clicking the right mouse button and selecting “scale up”. For each tube an order will appear next to the “create orders” button.

- To create the orders and transfer them into the field “created orders”, press the “create orders” button.

Figure 8.6. Transferring Orders to the „Created Orders“ Field

Press OK to start the automation.

The 1 mm Filling Parameters

8.4

You can change filling parameters for an existing 1 mm procedure, by using the “modify procedure” button. The following window will appear:

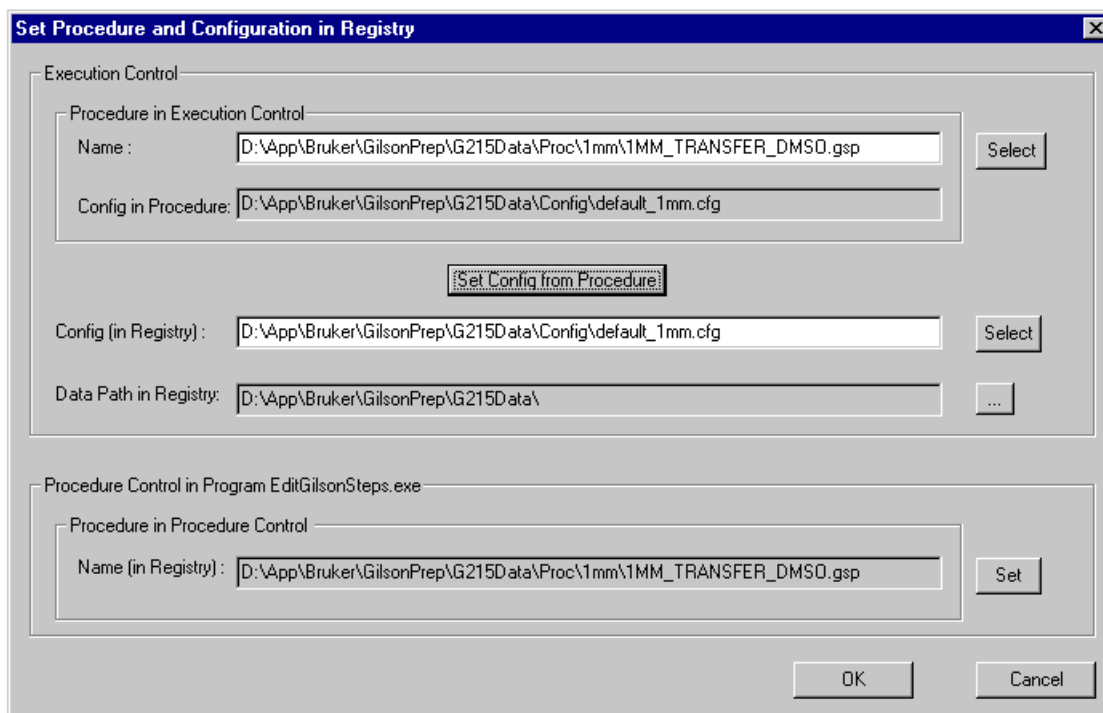
Figure 8.7. Modifying Task Procedure Window

Make sure that the appropriate procedure file is set in the registry by opening the menu field Service Tools >> Set Procedure/ Config in Registry. Make sure you press the “set” button at the bottom of the window, as well as the “OK” button for the changes to take effect.

Change the filling parameters and save the file with a new file name, by clicking on the “create new procedure” button.

Preparing 1mm Samples

Figure 8.8. Saving New Filling Parameters



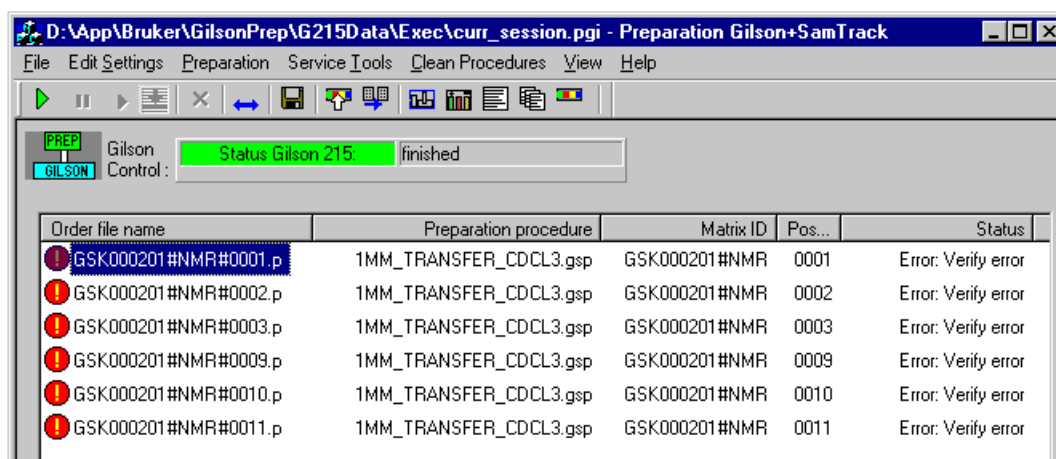
Select the new procedure in “Procedure in Procedure Control” in the menu field Service Tools >> Set Procedure/ Config in Registry (make sure you press the “set” button at the bottom of the window as well as the “OK” button for the changes to take effect).


Note: Make sure you use different file names so that you don’t overwrite the original 1 mm procedure files.

Troubleshooting

8.5

Orders that failed will be marked with a red exclamation mark (see below). You can display a textual description by double clicking on the Order file name.



There is also a main protocol file, that can be viewed by clicking on the  button.

What if ... Error Message:


Error Setting Destination Zone + Position in GExec Control

For safety reasons the entire rack configuration will be monitored. For example you change a single rack with a different barcode ID the original “Source –Destination Matrix” will no longer match your current configuration. You can add your current configuration to the “Source – Destination Matrix” by using the menu selection Service Tools >> Delete Map “Source-Destination Matrix”

What if ... Error Message:

Automatic switch solvent option is off!

For safety reasons you can change the ValveMate only semiautomatically, so if you want to use a procedure that does not match the current ValveMate settings, you must change it by choosing the default solvent as follows:

1. Go to the configuration view ().
2. Change the default solvent to match the solvent actually used.

To write the new default solvent to the ValveMate click in the menu Clean Procedure >> Set ValveMate default solvent position.

What if a Z-Switch Error Occurs? (needle hits an obstacle)

The order in the “order file name” window will be marked with a red ball. Check the protocol file, and you will see that the order has been finished successfully. But this does NOT necessarily mean that the filling was also completed successfully. Scroll through the file and search for “Z-Switch Error”, it will be clearly displayed as follows:

```
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

!!!!
!!!!   WARNING: SAMPLE NOT FILLED
!!!!           (Z_SWITCH ERROR)
!!!!
!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
```

This means that the source sample was not filled in the respective 1 mm tube, but rather it went back into the source flask.

What if you don't get good filling results, or air bubbles or daubed solutions are in the tube?


Try to optimize the filling parameters. If this doesn't work, most likely your needle is broken or clogged up. Take the needle out of the holder and hold it into a waste

Preparing 1mm Samples

bucket in a way that you can see the solvent coming out. Run the cleaning procedure which you can call through the menu Clean Procedure >> Clean Needle. The jet of cleaning solvent coming out of the needle should be almost a clear line. If this isn't the case, it indicates that there is a problem with the needle. Try to clean it with an appropriate solvent or polish it very carefully with fine abrasive paper. If this doesn't help, exchange the needle completely.

The 1 mm Gilson Configuration

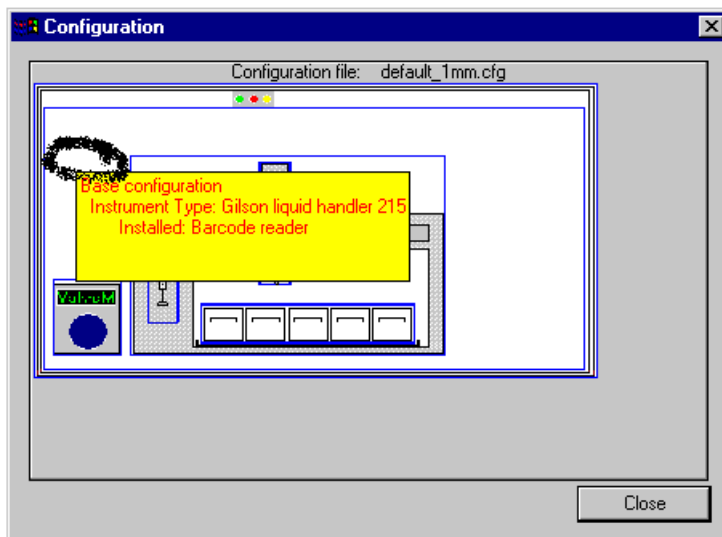
8.6

Click the "Toggle Config View" button below the menu bar:  .

Click on the part of the image that you want to configure.

Click in the white area (upper left side, tool-tip: "Base Configuration") to add or remove components (if you do not have a Valvemate, remove it here from the configuration):

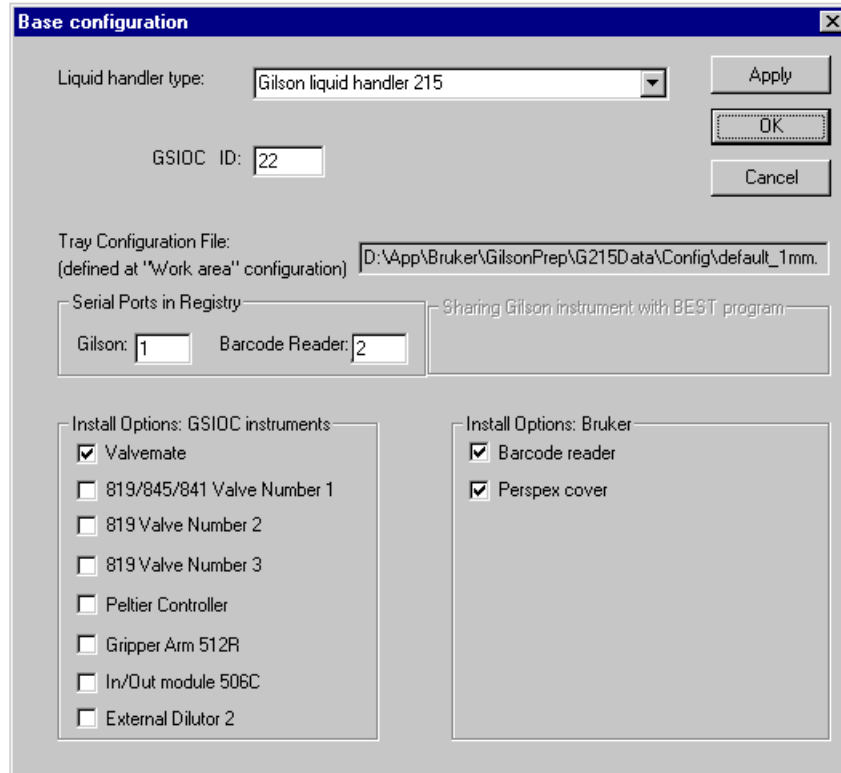
Figure 8.9. 1mm Gilson Configuration



Base Configuration:

If you have a Valvemate activate the corresponding checkbox; if you do not have a Valvemate, deactivate the respective box. No other GSIOC instruments are used in the 1 mm procedure. All the respective checkboxes should be turned off in the configuration even if they are physically present.

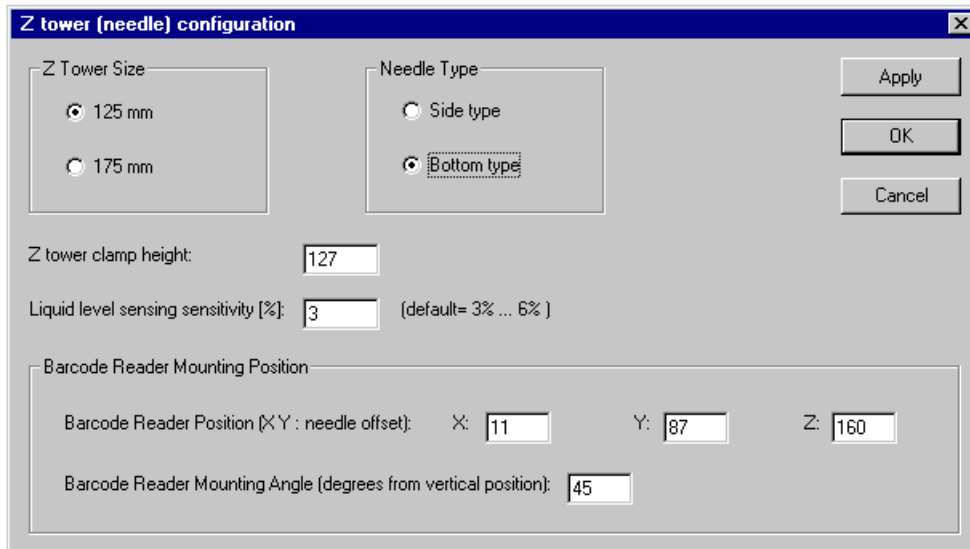
Figure 8.10. 1mm Gilson Base Configuration



Z-Tower:

Use the following configuration for the new barcode reader (introduced December 2002):

Figure 8.11. 1mm Gilson Z-Tower Configuration



Preparing 1mm Samples

Older Barcode Reader Versions

For the older (BEST) barcode reader version use this configuration:

Figure 8.12. 1mm Configuration for Older Barcode Reader Versions #

Z tower (needle) configuration

Z Tower Size

125 mm

175 mm

Needle Type

Side type

Bottom type

Z tower clamp height:

Liquid level sensing sensitivity [%]: (default= 3% ... 6%)

Barcode Reader Mounting Position

Barcode Reader Position (X Y : needle offset): X: Y: Z:

Barcode Reader Mounting Angle (degrees from vertical position):

Apply

OK

Cancel

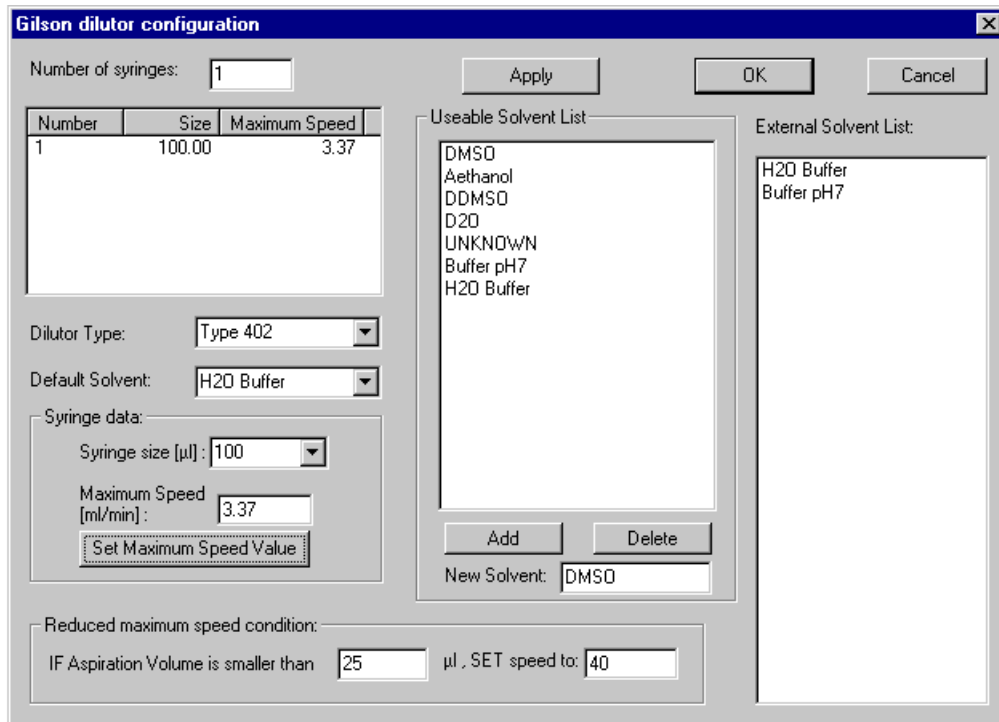
Click APPLY and OK, to save the configuration file (press the right mouse button inside the configuration window).

Close the configuration window and press the save button below the menu bar.

Dilutor:

Start from this configuration and add or remove solvents as described in the general software help file.

Figure 8.13. Gilson Dilutor Configuration



Click APPLY and OK, save the configuration file (press the right mouse button inside the configuration window).

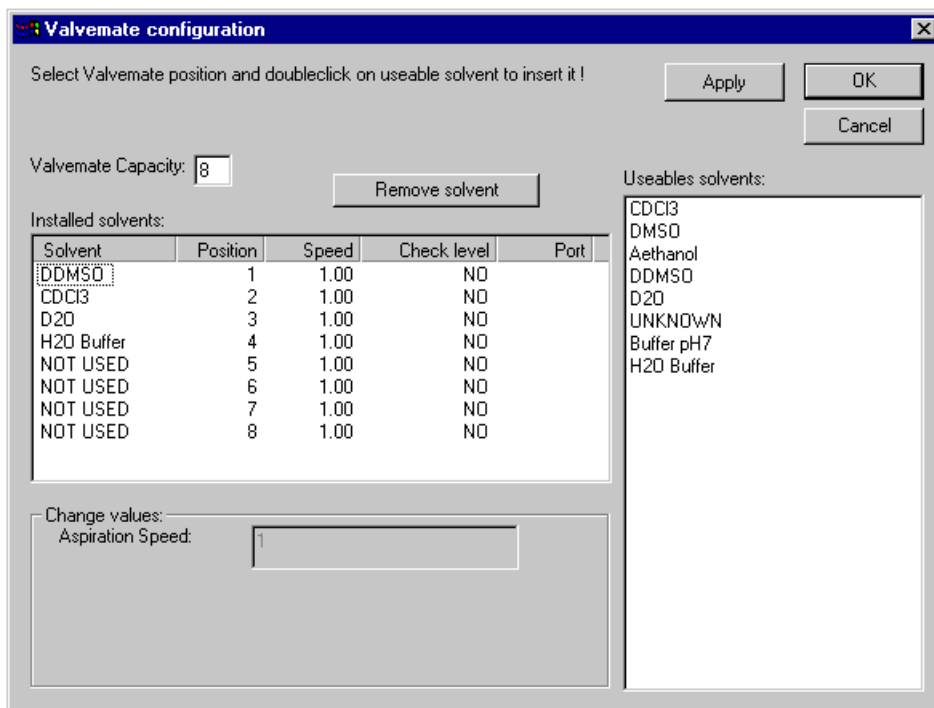
Close the configuration window and press the save button below the menu bar.

Valvemate Configuration

If you have a Valvemate for multiple solvent selection, the solvent positions can be configured here. Add or remove solvents in the Valvemate positions according to your personal configuration in the laboratory. Solvents can be added from the “Usable solvents” list by selecting a solvent position and doubleclicking on the desired solvent in the “Usable solvents” list. (Solvents can be added to – or removed from this list as described in the general software help file.)

Preparing 1mm Samples

Figure 8.14. Valvemate Configuration



Configuration without ValueMate

8.7

If you do not have a Valvemate, click in the white area of the configuration window (upper left side, tool-tip: "Base Configuration") and remove the Valvemate here from the configuration.

Test/Service Tips

9

Testing with SampleTrack

9.1

- Start ST Client (password bstst).
- Start ST Communicator (green circle for polling!).
- ST Client: Select BEST orders from list.
- ST Client: Select create new sample orders from the toolbar (F6).
 - Define matrix ID with the barcode reader by hand.
 - Select rack positions with mouse lasso operation on rack view.
 - Check Instrument name GILSON.
 - Select/Check preparation name in combo-box.
 - Select/Check solvent in combo-box.
 - Start Generate Orders.
- ST Client: BEST orders list of all orders (filter - All; Matrix ID - with current matrix).
 - Select **All**
 - Submit (status changes from created to verified to queued)

Service Information

9.2

1. Default Speed Z Axis
 - Can be defined in the registry: Software > Bruker Biospin > Gilson Control > GExecCtrl > Z Speed
 - Values 1 .. 5 (default= 4)

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