N.S.P.

New Sample Pr$_{(p)}$eparator
Operator's Manual

BIO·RAD

Before using this product

Thank you for choosing the New Sample Pr$_{(p)}$eparator (N.S.P) system.

The N.S.P. system is an automatic sampling device with 96-well format compatible incubation system that semi-automatically carries out the sample purification process for TSE testing (Transmissible Spongiform Encephalopathy). It provides safe and accurate sample/reagent dispensing with a significant reduction of tube handling.

A windows$^®$ PC with exclusive application software installed is necessary for operation of the N.S.P. system.

About this operator's manual

● Please be sure to read this manual thoroughly before using the N.S.P. system.

● After reading this manual, please keep it in a convenient place for quick reference.

● Please observe the product's instructions as well as the instructions outlined in the operator's manual.

● Please read and follow this manual's safety precautions.

● Instructions in the manual presume that the operator of the N.S.P. system has experience with the general operation method of applications installed in a windows$^®$ operating system.

● The content of this manual is subject to future change without prior notification.

● Reproduction or copying of this manual without permission is prohibited.

● Although all possible measures have been taken to ensure the accuracy of this manual's content, if you are in doubt about any point, or find any errors or omissions, please contact your Bio-Rad representative.

Direct all enquiries to:

BIO-RAD Laboratories
Life Science Group
3 Boulevard Raymond POINCARE
92430 MARNES LA COQUETTE
Tel : +33 1 47 95 60 00
Fax : +33 1 47 95 61 21
Hot line dpt.: +33 1 47 95 61 85
Internet : http://www.bio-rad.com

● Windows$^®$ is a registered trademark of Microsoft Corp USA for the United States and other countries.

● Pentium$^®$ is a registered trademark of Intel Corp USA for the United States and other countries.

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Safety precautions

Please observe the following cautions to ensure safe and correct operation of this product.

(1) To ensure safe and correct usage of the N.S.P. system, please read these "safety precautions" prior to use.

(2) Disregarding these safety precautions may result in injury to the user and/or other persons or physical damage to this instrument and/or other equipment.

(3) The following classified precautions indicate the degree of damage or injury that will occur if the particular operation is carried out incorrectly. Please read and understand these precautions prior to running the unit.

⚠ **WARNING**
This mark indicates content that, if improperly handled,   may cause death or serious injury.

⚠ **CAUTION**
This mark indicates content that, if improperly handled, may cause bodily injury or physical damage to the instrument.

⚠ **INFORMATON**
This mark indicates procedures that need to be carried out with care in order to ensure efficient use of the instrument.

Examples of symbol warnings

⚠ The △ symbol indicates content that must be handled with care.

🚫 The ⊘ symbol indicates actions that are prohibited. Details of what is prohibited are shown inside the symbol or near it. (The symbol at the left indicates that the power outlet must not be touched with wet

The ⬤ symbol emphasizes or specifies actions. Specified content is shown inside the mark or near it. (The symbol at the left indicates that the power cord must be disconnected from the power outlet)

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⚠️
WARNING

Category	Description
🚫	Set up the instrument on a leveled surface. Placing the instrument on an inclined surface may cause improper operation of the unit resulting in possible accident.
🚫	If a foreign object or liquid gets inside the instrument this may cause fire, electric shock, or breakdown. If water gets inside the unit, disconnect the power plug from the power outlet immediately and contact your Bio-Rad representative.
🚫	The inside of this unit includes high voltage areas. Touching these areas may result in electric shock. Contact your contact your Bio-Rad representative when inspecting or repairing the internal parts.
🚫	Do not use any fuse other than the one specified. Using the incorrect type of fuse may cause breakdown or fire.
🚫	Never touch the power cord with wet hands. This may cause electric shock.
🚫	Do not bend, pull, twist or stand on the power cord. This may cause breakdown or fire.
🚫	Do not remove the unit's cover, or alter or modify the internal parts. This may cause damage or result in electric shock etc.
🚫	In the event of breakdown, stop usage immediately and request that your Bio-Rad representative repair the unit. Do not use the unit while broken, or have it repaired by anyone other that an accredited service engineer. This may cause further breakdown or accident.
🚫	This unit weighs approx. 90 kg and is 120 cm long. Carrying it by yourself is dangerous. Always use two people when moving the unit.
⚠️	When moving the unit first remove all containers etc., from the table top before doing so. If not removed, leakage may occur, exposing your hands etc., to dangerous liquid.
🚫	Do not place your hands or any part of your body near the unit while it is operating. If you need to touch the unit etc., first stop it before doing so. Also be sure to use caution when restarting the unit.
🚫	Do not touch samples or tips with your hands, as any material should be considered as potentially contaminated. If touching cannot be avoided, be sure to wear gloves.

⚠️
CAUTION

Category	Description
🚫	Do not use near fire or in places subject to high temperature or high humidity. Doing so may cause an accident.
🚫	Make sure that the rear of the unit is 10 cm or more away from any wall. If placed near a wall, the internal temperature will rise and the unit may emit smoke. Also, do not place anything on top of the unit. This may cause breakdown.
🚫	Do not use the unit outside the Bio-Rad's standard specifications. This may damage to the unit or cause an accident.
🚫	Do not use the unit outside the indicated power voltage. The may result in fire or electric shock.
⚠️	When using, be sure to connect the power cable to a power outlet that is grounded.
🔌	When disconnecting the power plug, unplug by holding the power plug, not by pulling on the power cord. Pulling on the cord may lead to breakage of the cord.

- III -

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Contents

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- IV -

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1. Product specifications

1.1 Basic specifications

Product name	New Sample Pr(p)eparator System (N.S.P.)
Reference number	90 130
Dimensions	1200 (W) x 780 (H) x 430 (D) mm
Weight	Approx. 90 kg
Sampling system	Tip system, 8 nozzles
Tip used	300ul disposable tip (ref. number : 90 131)
Standard protocol	Semi-automatic sample purification for Bio-Rad TeSeE Assay®
Container used	Deepwell plate (Ref. number : 90132) Reagent reservoirs (Ref. number : 90 158)
Sampling volume	250µl per nozzle
Min. required sampling vol.	300µl per well
Max. required sampling vol.	750µl per well
Samp. accuracy/reproducibility	±1.0% / </=1.0%
Sampling speed	Fixed
Mixing method	Pipetting
Water surface detection	Differential pressure method
Nozzle	Replaceable tip system
Tip disposal mechanism	Tip disposal box input method
Incubator temperature	Fixed at 37°C
Temp. adjustment accuracy	±1.0°C
Temp. adjustment system	Silicone rubber heater
Built-in barcode scanner	Optical (red LED)
Hand-held scanner	LED, Good Read Spot, beeper
Buttons on unit	Power button, Abort button, Abort recovery button
Sensing mode	Liquid surface detection Tip attachment recognition Deepwell plate set up recognition Reservoir set up recognition Unused tip rack number recognition Used tip rack number recognition Cover open/close recognition
Operation system	Windows® format PC and N.S.P system application software
Operating systems	Windows® 2000, XP
Communication system	RS232C
Environmental requirements - Operation environment -	
Operational Environment	Indoor use only
Operating temperature range	15°C - 30°C Maximum relative humidity of 80% for temperatures up to 31°C, decreasing linearly to 50% of relative humidity at 40°C.
Storage temperature range	-5°C to + 50°C
Altitude	Up to 2,000m
Supply voltage fluctuations	AC 100 - 230V ±10%
Installation category	II
Pollution degree	2
Power	AC 100 - 240V ±10%, 50/60Hz, 100VA
Fuse	Time-lag type, AC250V, 5A
Power consumption	Within 900VA

1.2 External view and part names

Unit Covers

Nozzle Head

Tip Rack Stackers

Barcode
Scanner

Waste Tip Drawer

Abort Button   Abort Recover Button

Main Switch

Power Inlet

Fuse

Earth Connector   RS232C Port

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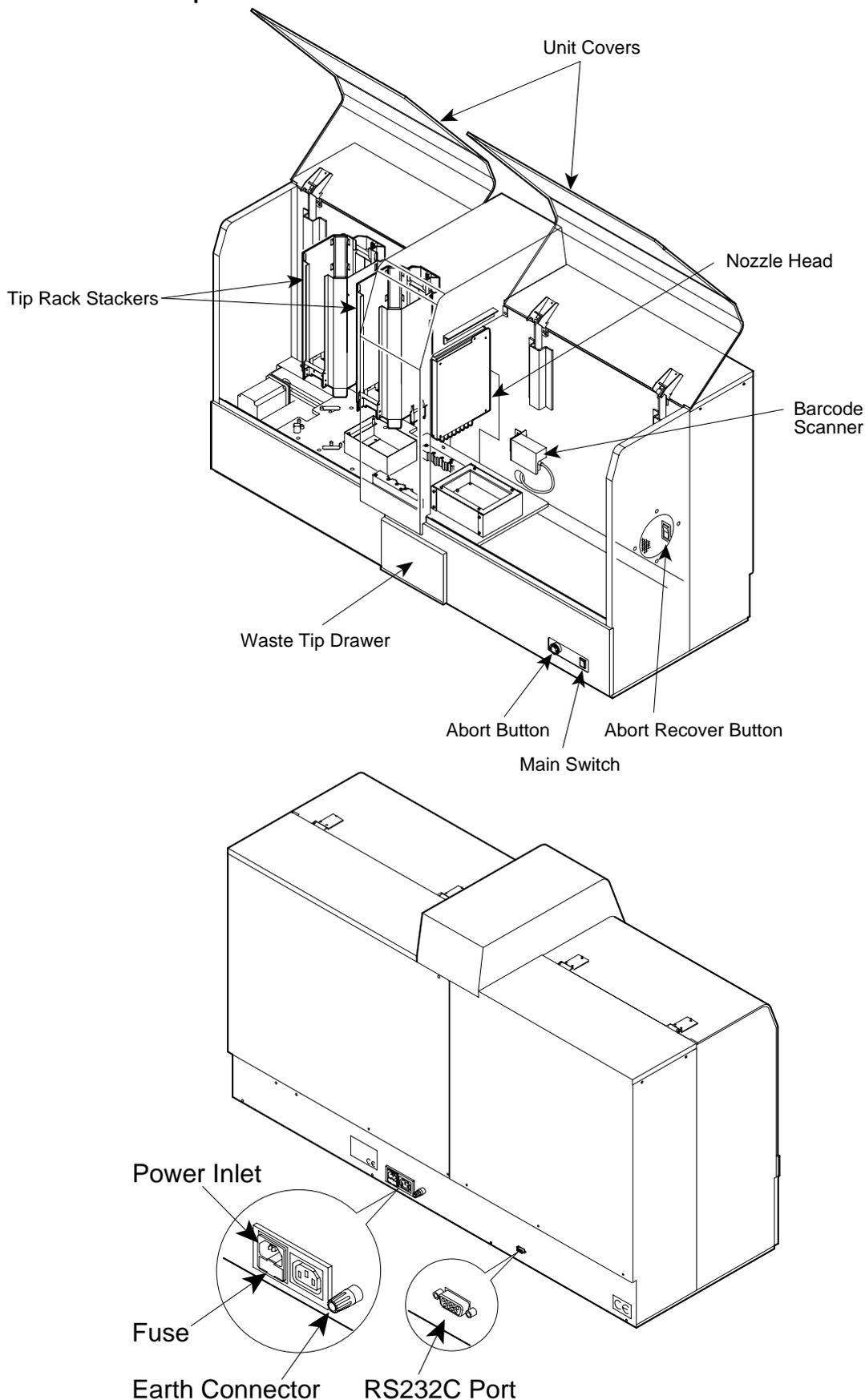
1.3 Table (Table structure)
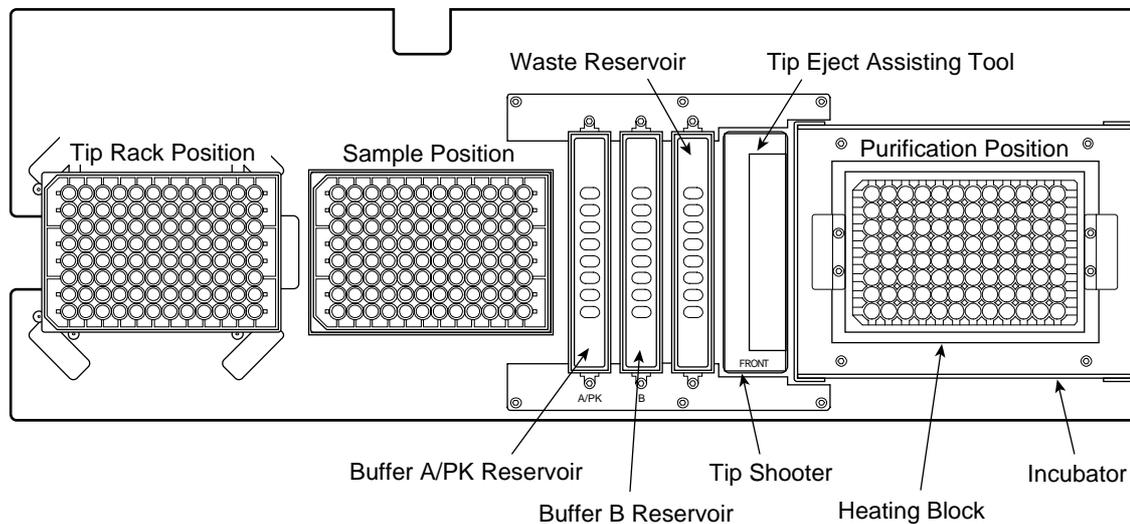
1.4 Containers

96 Tip Rack : ref. 90 131*
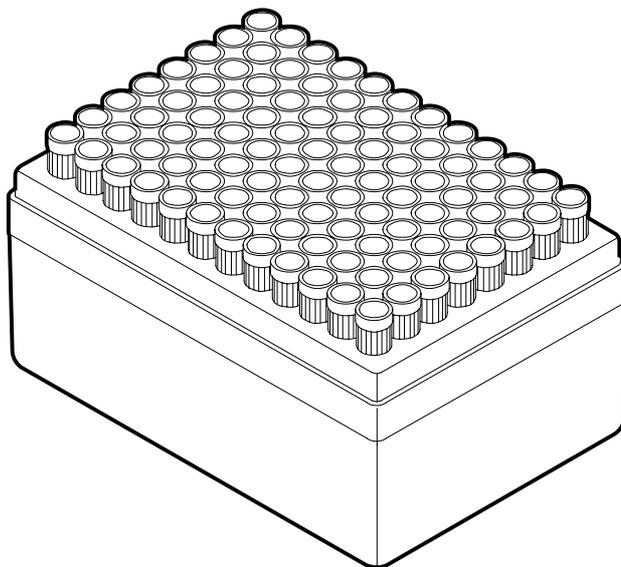
* (Ref. 90 131 = 10 racks of 96 disposables tips)

Deepwell Plate : ref . 90 132 *
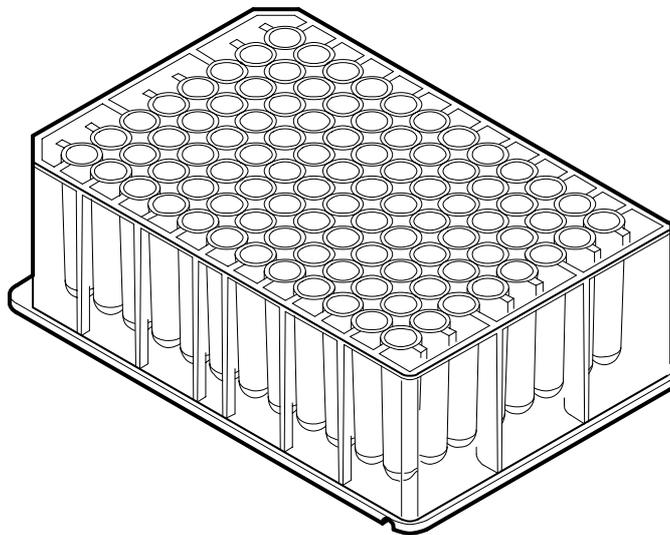
* (Ref. 90 132 = 50 deepwell plates)

Reagent/Waste Reservoirs : ref. 90 158 *

Reagent Reservoir
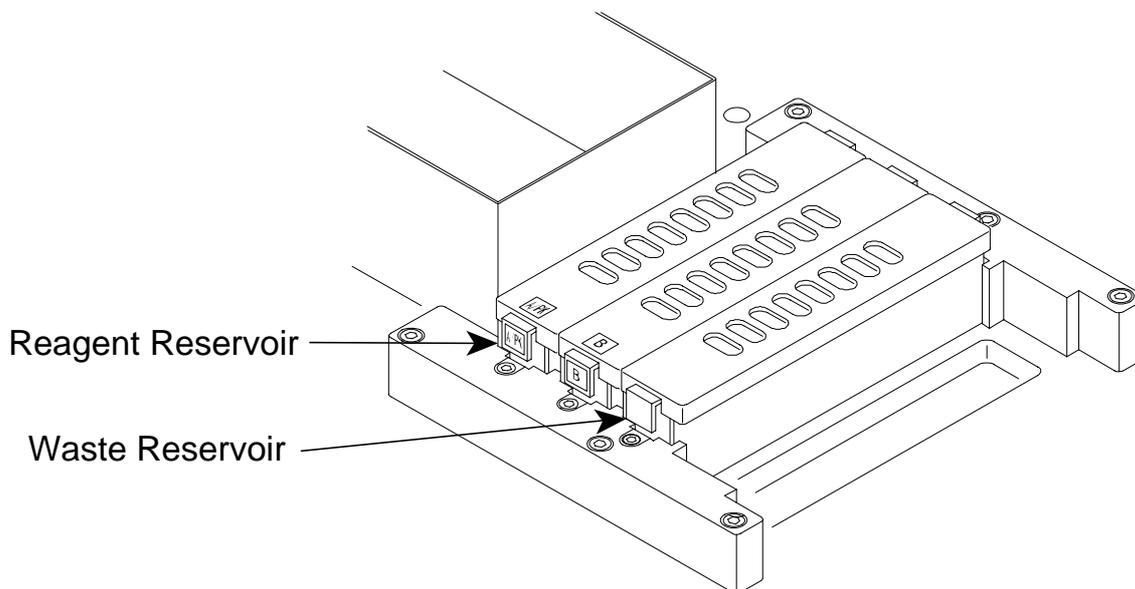
Waste Reservoir

* (Ref. 90 158 = NSP reagent/waste reservoirs set)

includes buffer A/PK reservoir + buffer B reservoir + waste reservoir

Buffer / Waste Reservoirs :
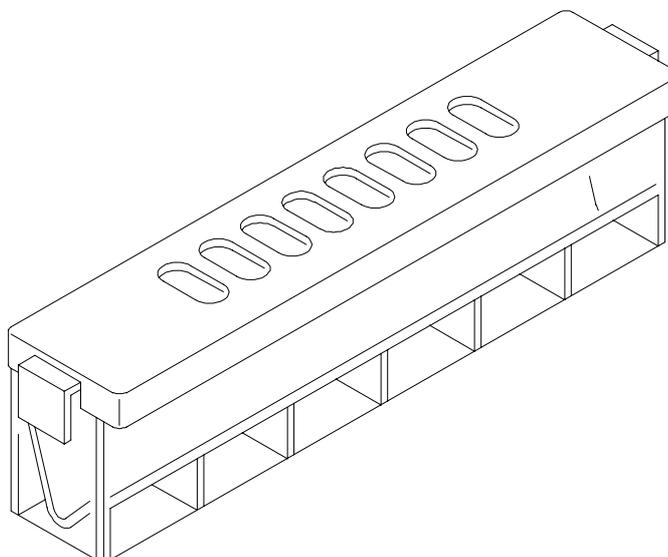
Heating Block :
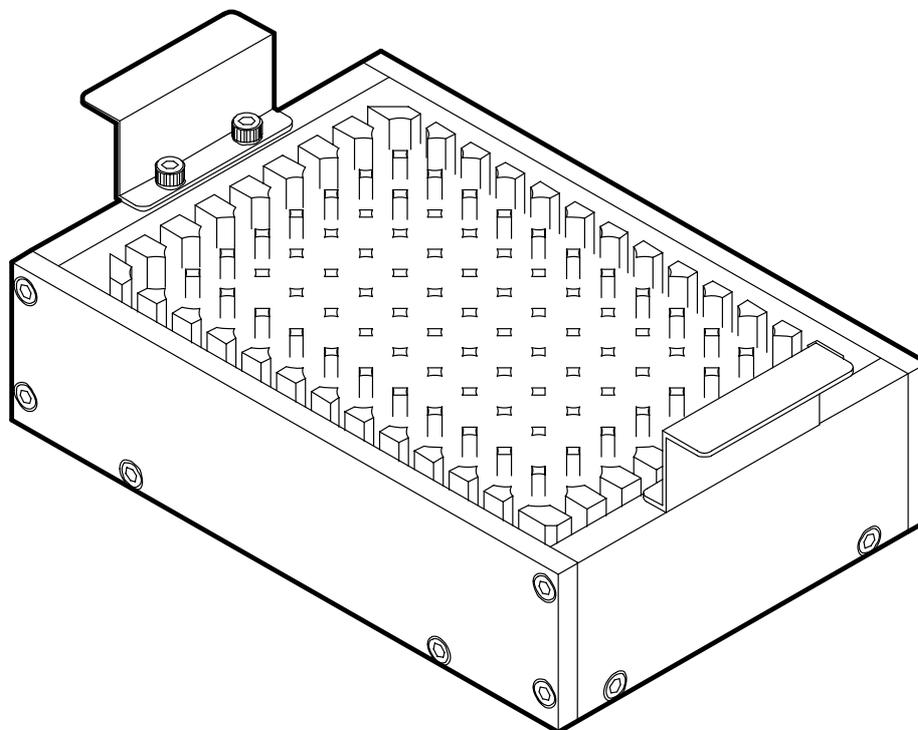
2 Protocol

The procedure hereafter describes the purification protocol steps with TeSeE® NSP system and DW 40.

It is accepted that samples have been previously collected and ground according to the procedure described in TeSeE® package insert – chapters 2.6-1 to 2.6-2.

2.1 Sample calibration

Remove the grinding tube from the homogenizer, resuspend the homogenate by inversion before opening the tubes and take 300µl to 750 µl with the calibration syringe taking care to immerse the needle in the pellet of beads to avoid sampling poorly homogenized tissue fragments.

Transfer each sample into the sample deepwell plate from position G1. Exclude the first 6 positions (A1 to F1).

Unused homogenate can be stored at -20°C in the grinding tube. In case of subsequent use, thaw at room temperature (+18°C to +30°C) and homogenize after thawing by inversion before taking a new volume of sample.

Sample can be submitted to a maximum of 3 freezing /thawing cycles.

Note :

At this stage, sample deepwell plate can also be stored, sealed with aluminum film (ref. 90 133) :

- at room temperature (+18°C to +30°C) for 8 hours.
- at +2°C to +8°C (in ice or in the refrigerator) for 15 hours.

Samples deepwell plate will need to be adjusted to room temperature (+18°C to +30°C) for 2 hours minimum before use on NSP.

2.2 Sample purification with TeSeE® NSP system

Please refer to chapter 6.1 to 6.5 of this manual for operation setup.

Please refer to chapter 7.1 to 7.4 of this manual to start NSP system operation. The following protocol steps will be performed by the NSP system.

2.2.1 Sample transfer:

250 µl of sample homogenate from each sample plate well is transferred to the purification plate.

Before each sample transfer, NSP system is detecting that the volume of sample to be transferred is sufficient in every wells of the sample plate and each sample is re-suspended (x2).

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2.2.2 <u>Pre-incubation period</u>:

The samples that were transferred to the purification plate (§ 2.2.1) on the incubator are heated.

The 12 minutes pre-incubation period is starting since the first sample has been transferred to purification plate.

<u>Note</u> :

During pre-incubation period, NSP system is checking that the volume of liquid in buffer A/PK reservoir is sufficient for the quantity of samples to be treated (if insufficient reservoir can be replenished on software request).

2.2.3 <u>PK treatment</u>:

250µl of buffer A/PK liquid is added to each purification plate well and mixed thoroughly (x 5).

The 10 minutes incubation period is starting since buffer A/PK has been dispensed and mixed with the first sample in purification plate well.

<u>Note</u> :

During PK incubation period, NSP system is checking that the volume of liquid in buffer B reservoir is sufficient for the quantity of samples to be treated (if insufficient reservoir can be replenished on software request).

2.2.4 <u>Precipitation of PrP^{res} with buffer B</u>:

250µl of buffer B liquid is added to each purification plate well and mixed thoroughly (x 5).

Buffer B dispensing procedure is the same than buffer A/PK dispensing procedure.

A 5 minutes incubation period is starting since buffer B has been dispensed and mixed with the last sample in purification plate well.

<u>Note</u> :

During buffer B incubation period, NSP system is checking - if liquid check option was selected - that the level of liquid in each purification plate well is within acceptable ranges.

2.3 Concentration of the PrPres (centrifugation)

Within 15 minutes, after the end of operation on TeSeE® NSP system, centrifuge the purification plate for 10 minutes at 2000 g (centrifuge must be set at +4°C). Purification plate must be sealed with plastic film during centrifugation (ref. 90 139).

<u>Note</u> :

Centrifuge must be equipped with deepwell microplate rotor (ref. 90 136, for 5804R eppendorf centrifuge).

2.4 Sample clarifying:

Load the purification plate on DW40 unit. Select 'TSE DW' program and select number of strips to be performed.

Purification plate wells must be dried at the end of the DW40 process, by inverting the plate on absorbant paper for 5 minutes.

Distribute 25 µl of buffer C with a multichanel pipette into each purification plate well.

Do not exceed an interval of 10 minutes between the end of the drying operation and distribution of buffer C.

Incubate immediately for 5 ± 1 minute at 100°C ± 5°C. Do not seal the plate during incubation.

Note :

Heating block must be equipped with a deepwell rack adaptor for heating block (ref. 90 134).

Do not exceed 2 minutes between the buffer C distribution and the beginning of the incubation.

Remove the purification plate from the incubator.

Samples can be stored in the purification plate for 5 hours at + 2°C to + 8°C or frozen for 72 hours at – 20°C. Frozen samples must be thawed at room temperature (+ 18°C to + 30°C).

Please refer to information on TeSeE® detection package insert (ref. 355 1145) for detailed detection assay protocol.

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3 Set up

3.1 Unpacking the instrument and parts inspection

After removing the N.S.P. system from the box first inspect it to make sure that the instrument has not been damaged during shipment. Make sure that none of the provided parts are missing. If there is any damage to the N.S.P. system, or if any parts are missing, please contact your Bio-Rad representative.

Provided parts are as follows:

No.	Items	Qty.
1	Declaration of conformity	1
2	Operator's manual	1
3	NSP quality inspection report	1
4	Individual setting sheet (titled "INDIVIDUAL SETTINGS")	1
5	Stacker A (supply)	1
6	Stacker B (collection)	1
7	Heating block for incubator	1
8	Reservoir set	1
9	Power cable (French type)	1
10	RS-232C cable (D-sub 9 pin)	1
11	TeSeE$^®$ NSP application software (CD x 1)	1
12	Individual setting value for TeSeE$^®$ NSP (FD x 1)	1
13	Care kit	1

3.2 Setup environment

To ensure safe and proper operation of the unit, please be sure to observe the following when installing the instrument.

(1) Install on a stable flat surface
The N.S.P. system weighs approx. 90 kg. Install on a flat surface that can support the unit's weight.

(2) Install in a well-ventilated area that is not dusty.
The N.S.P. system has ventilation openings for heat radiation on the back panel. Install the unit in a well-ventilated place, making sure that the rear side of the unit is 10 cm or more from any wall.

(3) Operate in an environment that has a suitable temperature and humidity
Operating temperature range: +15°C to +30°C
Maximum relative humidity of 80% for temperatures up to 31˚C, decreasing linearly to 50% of relative humidity at 40˚C.

(4) Avoid installing in the following places.
• Places that are not sturdy or not level.

- 9 -

- Places that have poor ventilation and are very dusty.

- Places with high temperature, excessive humidity, low temperatures, or low humidity.

- In places exposed to direct sunlight.

- Directly in front of a stove or other such heating device.

- In places prone to strong vibration.

- In places subject to strong electromagnetic noise or high frequencies.

3.3 Heating block

Install the heating block in the purification position's incubator. The pin on the bottom of the incubator fits in the heating block's hole. Align the pin and hole and install in the correct direction (Fig. 3.3-1).
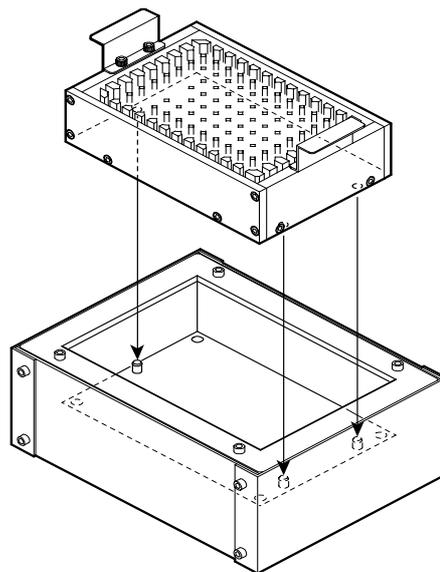
Fig. 3.3-1

3.4 Supply and collection stacker

Install supply and collection stackers (Fig. 3.4-1).

Install of the stacker   Uninstall of the stacker

Fig. 3.4-1

- 10 -

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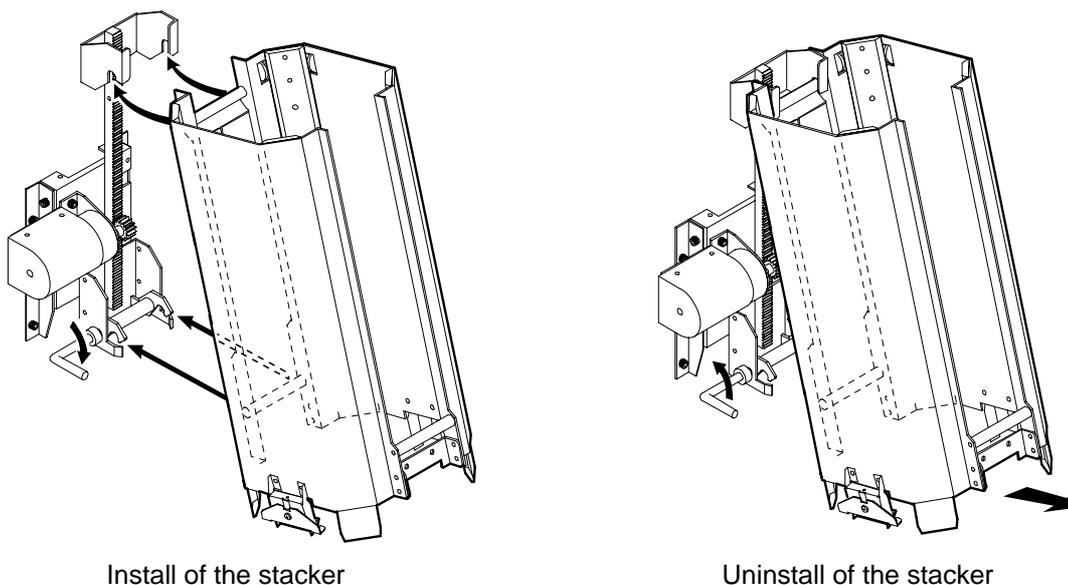
3.5 Power supply requirements

Insert the power plug directing into a single phase AC100V - 230V, 50Hz or 60Hz power outlet that has a current capacity of over 5A and a voltage fluctuation range of 10%. For PC power specifications, please refer to your PC's operator's manual.

⚠
CAUTION

- Confirming electricity volume

Because most power outlets of laboratories and other such places are used to supply power to various electric components at the same time, there may be an insufficient volume of electricity. Please make sure that the power voltage range is within AC 100 – 230V ±10% when this instrument is operating.

- Power plug insertion

Insert the power plug firmly into the power outlet. If not inserted firmly, the plug may overheat resulting in fire.

Carry out the following inspections on a regular basis

- Check to make sure that the power plug is inserted into the proper type of power outlet.
- Check to make sure that the power plug or power cord is not abnormally hot.
- Check to make sure that the power plug is not cracked or damaged.

3.6 Ground wire connection

⚠
CAUTION
- To prevent electric shock in the event of a short circuit, be sure to connect the ground wire.

3.7 RS232C cable

Connect the RS232C cable between the N.S.P. system and the PC.

3.8 Hand barcode scanner

PS/2 keyboard connector is required for PC.

Pull off the keyboard from the PC and attach it to the connector of the barcode scanner, then attach the second connector of the barcode scanner to the PC's keyboard connector (Fig. 3.8-1)
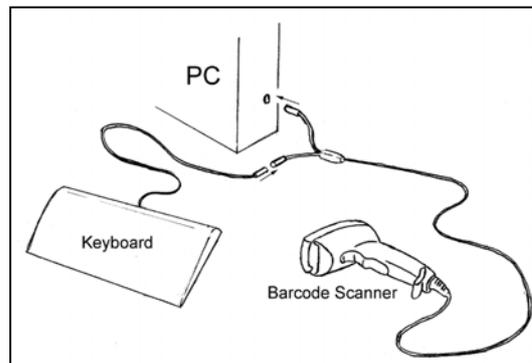
Fig. 3.8-1 : Hand barcode scanner

- 11 -

3.9 Installing the NSP application software

The N.S.P. system is operated by exclusive application software installed in a PC.
Communication between the N.S.P. system and PC is via the RS232C cable.

3.9.1 PC environment

The PC environment needed for installation and control of the N.S.P. system application software is as follows.

Operation system:	Windows$^®$ 2000
CPU:	Pentium III or above, or a PC/AT converter that includes a completely compatible, equal or higher CPU.
Screen size:	1024 x 768 pixel selectable
Memory capacity:	Above 256MB
Hard disc capacity:	Above 5GB
RS232C port:	D-sub 9 pin
Power supply:	When using a desk top PC, connect the PC to a power supply that is not subject to power outages.
Others:	The PC should be equipped with a P/S2 terminal, FD drive, CD Rom drive, and USB port.

3.9.2 Installation procedure

CAUTION

- The exclusive N.S.P. system application software is contained within 1 CD-ROM and 1 floppy disc. Before installation we recommend that you make back up of the original discs and install the software using the back up discs.

- Close all other applications currently running before installing the N.S.P. system application software.

- In the event that the software cannot be installed using the following procedure, please contact your Bio-Rad representative.

(1) Start up the Windows$^®$ application.

(2) Insert the N.S.P. system application software CD-ROM into the PC's CD-ROM drive   The installation screen will be automatically displayed.

(3) Click on the "Adobe" button, the click on the "Adobe" icon. The Adobe setup screen will open. Follow onscreen instructions.

(4) Click on the "N.S.P. control software" button. The N.S.P. application software setup screen will open. Follow the onscreen instructions.

- 12 -

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4 Turning ON the system

4.1 N.S.P. unit power switch

The N.S.P. system's power switch (MAIN) is located on the front of the unit, on the lower right side. "1" is ON and "0" is OFF.
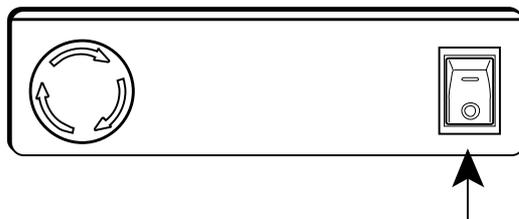
Main Switch

4.2 Abort button

4.2.1 Stopping the N.S.P. system in an emergency

To stop the N.S.P. system in the event of an emergency during operation, press the Abort button located on the front of the unit, on the lower right side. Power supply to the unit will be cut allowing the nozzle head and table to be moved by hand.
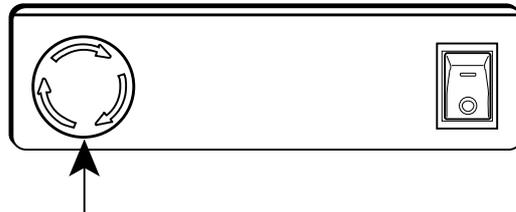
Abort Button

4.2.2 Recovery from emergency stoppage

Use the following procedure to recover from emergency stoppage of the unit.

(1) Press the N.S.P. system's Main switch to turn the unit OFF.

(2) Turn the Abort button clockwise and release it.

(3) Open the cover on the right of the unit and press the Abort Recovery button located on the right side.

(4) Press the N.S.P. system's Main switch to turn the unit ON.

Abort Recovery
Button

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- 13 -
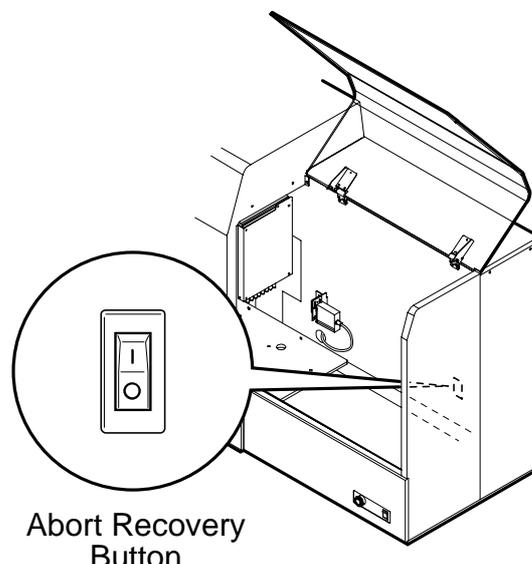
4.3 Application software start up

⚠️
INFORMATON

Before start up of the exclusive N.S.P. system application software, be sure to first turn the N.S.P. system's power ON.

Select N.S.P. system from the start screen's program. The password input screen will appear after the title screen.

4.3.1 Password entry

4.3.1.1 Initial startup password entry

When the software is started up for the first time after installation, the manager level password needs to be input and registered (Fig. 4.3.1.1-1).

Fig. 4.3.1.1-1 : Add User

(1)   Input the user name, description, and confirmation password (repeat input of password).

(2)   Confirm with OK button. The main screen will appear.

4.3.1.2 Following startup

When the unit is started up the second time and following, the user name and password will normally need to be entered (Fig. 4.3.1.2-1).

Fig. 4.3.1.2-1 : Password Entry

Input your previously registered user name and password (taking care to capital letters or small letters) and click OK. The Main screen will be displayed.

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4.3.2 Main screen start up

After the password is entered, click on OK to display the Main screen. (Fig. 4.3.2-1)
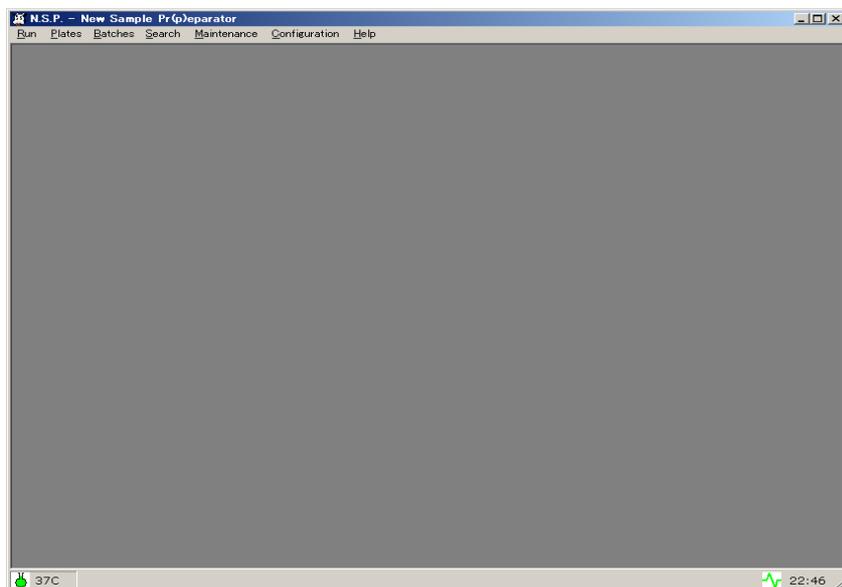
Fig. 4.3.2-1 : Main screen

Main function description

Function		
Run	Start	Run the N.S.P. system
	BootRun	Initialize motors and sensors
Plates	New	Register new sample plate in the N.S.P. software
	Edit	Edit/Modify sample plate
	Delete	Delete one sample plate
Batches	New	Register new reagent batch in the N.S.P. software
	Edit	Edit/Modify reagent batch
	Delete	Delete one reagent batch
Search		Search for plates corresponding to specified criteria
Maintenance	Daily	N.S.P. Daily maintenance
	Weekly	N.S.P. Weekly maintenance
	Monthly	N.S.P. Monthly maintenance
	Report	Display maintenance report: (Daily/Weekly/Monthly)
	Service	Service engineer use only
Configuration	Communication	Communication port selection
	Slaughterhouse	Register new slaughterhouse
	Password	Define new password
	User list	Add/delete users
	Event	Record of all events: (Error messages/Event log)
	Temperature	Edit the temperature programmed for incubator.
	Liquid check	Activate/inactivate liquid check option
Help	Help	User manual
	About N.S.P.	Version number and notification

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- 15 -

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Icons

Temperature icon

Temperature of the incubator must be in the range of 37°C +/- 2°C

Icon	Status	Description
37C	Green icon : 35 °C < temperature <= 39 °C	System operable.
33C	Blue icon : Temperature <= 35 °C	System not operable when temperature of incubator is below 35°C.
39C	Red icon : Temperature > 39 °C	System not operable when temperature of incubator is higher than 39 °C.

Communication icon

Communication status between NSP and PC
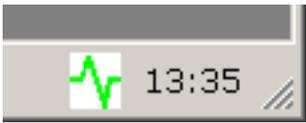
Icon	Status	Description
13:35	Green icon	Communication with NSP is maintained.
8:39	Red icon	Communication with NSP is not active.

4.4 Closing the NSP application software

Application software is closed by clicking on ⊠ on the top right of the main screen. A confirmation message will appear.

Before to exit the NSP application software, please do not forget to perform the maintenance procedures (see chapter 10). If not, the software will ask you to perform the maintenance procedures before to leave.

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5 Plates menu

Select "Plates" from the Main menu, to open the Plates menu.
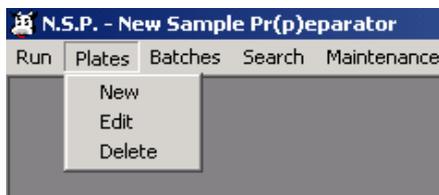
Fig. 5-1 : Plates menu

5.1 Registration of a new sample plate (New)

(1) Select "New" from the "Plates" menu (Fig 5.1-1).
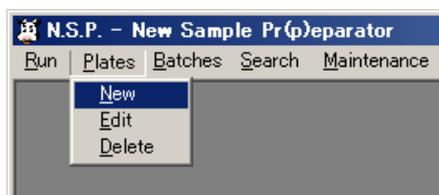
Fig. 5.1-1 : New sample plate

(2) The "New Plate Registration" screen is displayed (Fig. 5.1-2). Make sure that the cursor is in the "Plate ID" box and use the hand barcode scanner to scan the barcode of the new deepwell plate (or input by keyboard and press Enter).
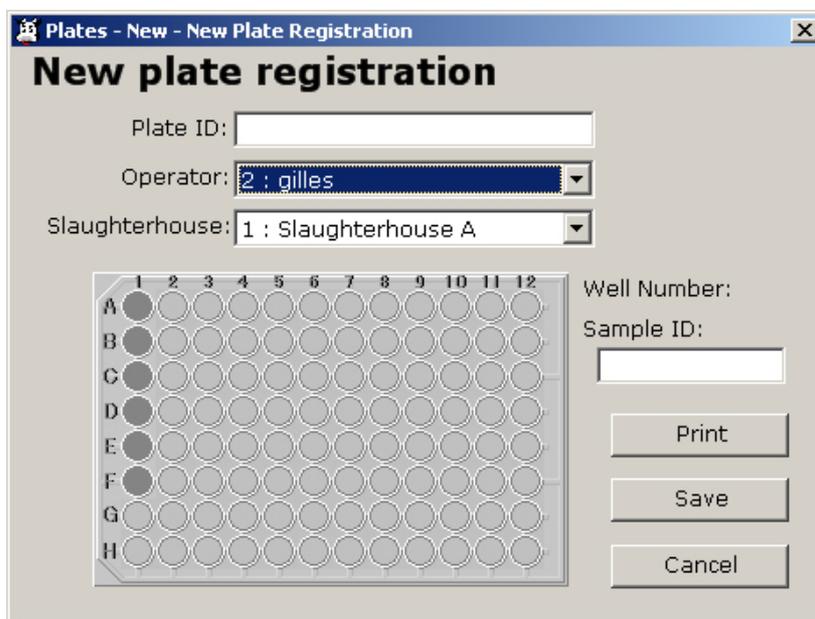
Fig. 5.1-2 : New Plate registration

(3) Click on the right edge of the "Operator" box and select the operator name in the list.

(4) Click on the right edge of the "Slaughterhouse" box and select one of the slaughterhouse ID in the list.

_____

_____

(5) The G1 well in the deepwell plate layout is circled in red, and the position G1 is indicated in the Sample ID box. Make sure that the cursor is in the "Sample ID" box, then use the hand barcode scanner to scan the barcode of the first sample (or input by keyboard and press Enter). The sample will be registered in the well and the next well position (H1) will be circled.

<u>Note</u> :

Sample Ids are 11 characters maximum. Both alphabetic and numeric characters can be used to identify the samples.

5.1.1 Manual entry mode

(6) To continue editing samples manually, repeat the above (5) step for the number of samples that you wish to process. (when sample editing is completed, proceed to step 8).

5.1.2 Automatic increment entry mode

(7) To continue editing samples with the automatic increment entry mode, click on the intended well, and, while holding simultaneously the mouse's left button down and control (Ctrl) key, drag the mouse up to the last sample position. The highlighted area will automatically be incremented and registered one by one starting from the first sample ID input (Fig. 5.1.2-1).
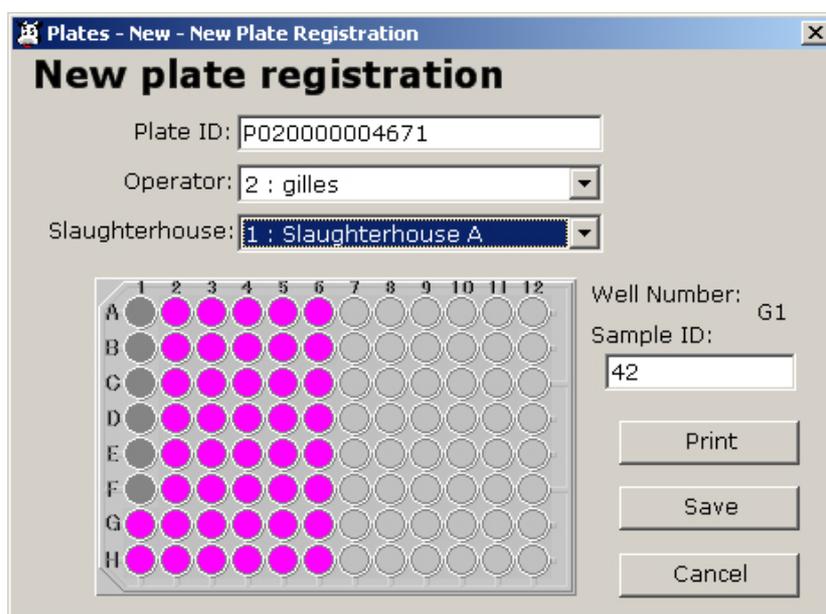
<u>Fig 5.1.2-1</u> : Sample entry

<u>Note</u> :

From this step, the plate layout can be printed. Click on "Print" then confirm that the plate layout will be saved before to be displayed (see next page)

(8) When sample registration is completed, click on the "Save" button. The input sample IDs will be registered.

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- 18 -

Plate layout report

10/17/2002
16:05:52

New Sample Pr(p)eparator
– Plate Layout Report –

Sample Result :

Plate ID : P020000004908

Sample Plate Status : **Registered**

Date of Registration : **08/22/2002**

Operation Result : **Operation Ready**

	1	2	3	4	5	6	7	8	9	10	11	12
A		2002/03	2002/11	2002/19	2002/27	2002/35	2002/43	2002/51	2002/59	2002/67	2002/75	2002/83
B		2002/04	2002/12	2002/20	2002/28	2002/36	2002/44	2002/52	2002/60	2002/68	2002/76	2002/84
C		2002/05	2002/13	2002/21	2002/29	2002/37	2002/45	2002/53	2002/61	2002/69	2002/77	2002/85
D		2002/06	2002/14	2002/22	2002/30	2002/38	2002/46	2002/54	2002/62	2002/70	2002/78	2002/86
E		2002/07	2002/15	2002/23	2002/31	2002/39	2002/47	2002/55	2002/63	2002/71	2002/79	2002/87
F		2002/08	2002/16	2002/24	2002/32	2002/40	2002/48	2002/56	2002/64	2002/72	2002/80	2002/88
G	2002/01	2002/09	2002/17	2002/25	2002/33	2002/41	2002/49	2002/57	2002/65	2002/73	2002/81	2002/89
H	2002/02	2002/10	2002/18	2002/26	2002/34	2002/42	2002/50	2002/58	2002/66	2002/74	2002/82	2002/90

BIO-RAD

1/1

5.2 Edit/Modify a plate layout (Edit)

(1) Select "Edit" from the "Plates" menu (Fig 5.2-1).
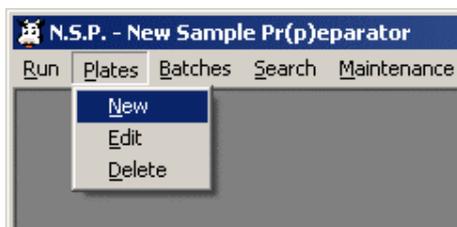
Fig. 5.2-1 : Edit sample plate

Note :

Only sample plates with "Registered" status can be edited or modified.

(2) Select the plate to be modified in the list of plates with "registered" status (Fig 5.2-2)
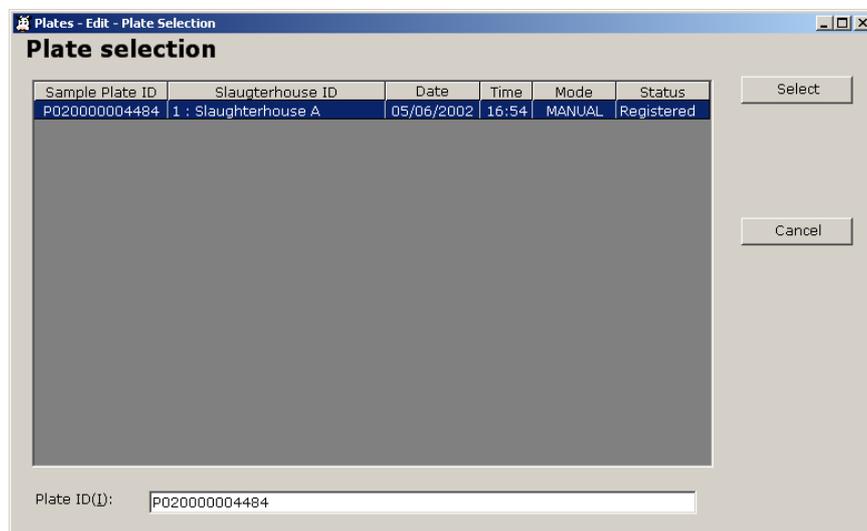
Fig. 5.2-2 : Plate selection

Note :

Click on the corresponding column header to sort the plates by : plate ID, slaughterhouse ID, date, time, mode, or status.

_____

(3) The selected plate layout is displayed (Fig 5.2-3).
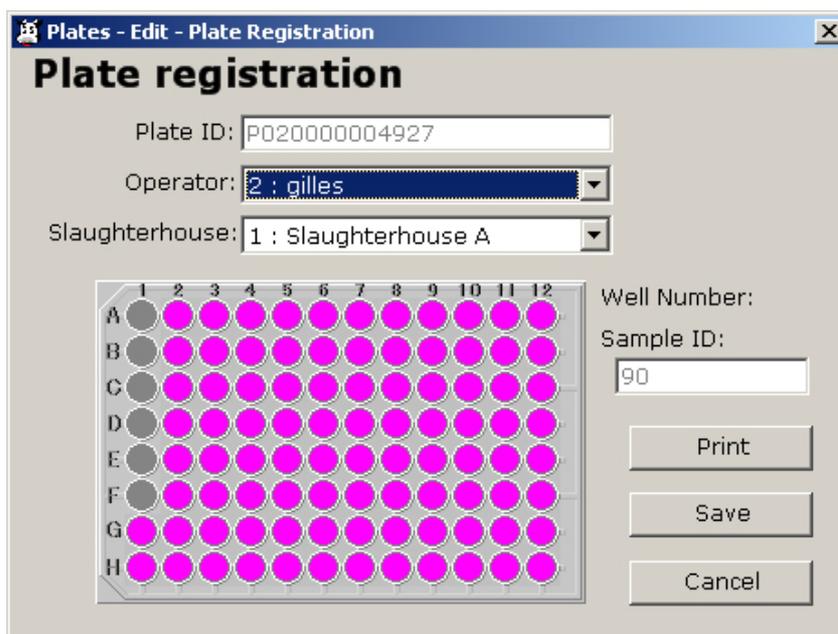
Fig. 5.2-3 : Plates menu

Note :

The following information can be changed from the Edit menu : operator name, slaughterhouse
ID, and sample ID.

(4) When modifications are complete click on "Save" to register the new plate layout
     information.

5.3 Delete a sample plate (Delete)

(1) Select "Delete" from the "Plates" menu (Fig 5.3-1).
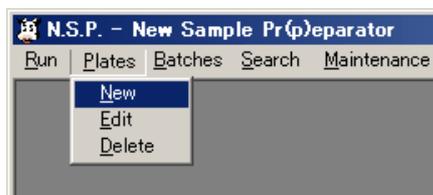
Fig. 5.3-1 : Delete a sample plate

Note :

Only sample plates with "Registered" status can be deleted.

_____

(2) Select the plate to delete in the list of plates with "registered" status (Fig 5.3-2), then click on "Delete".
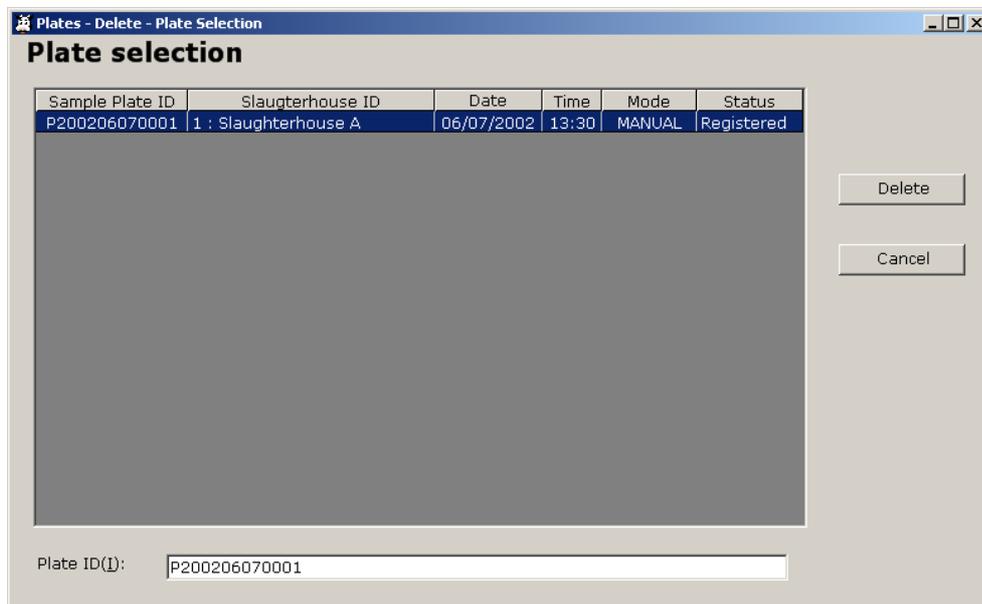
Fig. 5.3-2 : Plate selection

(3) Only operator with Manager level is authorized to delete a plate. Enter your user name and corresponding password (Fig. 5.3-3).
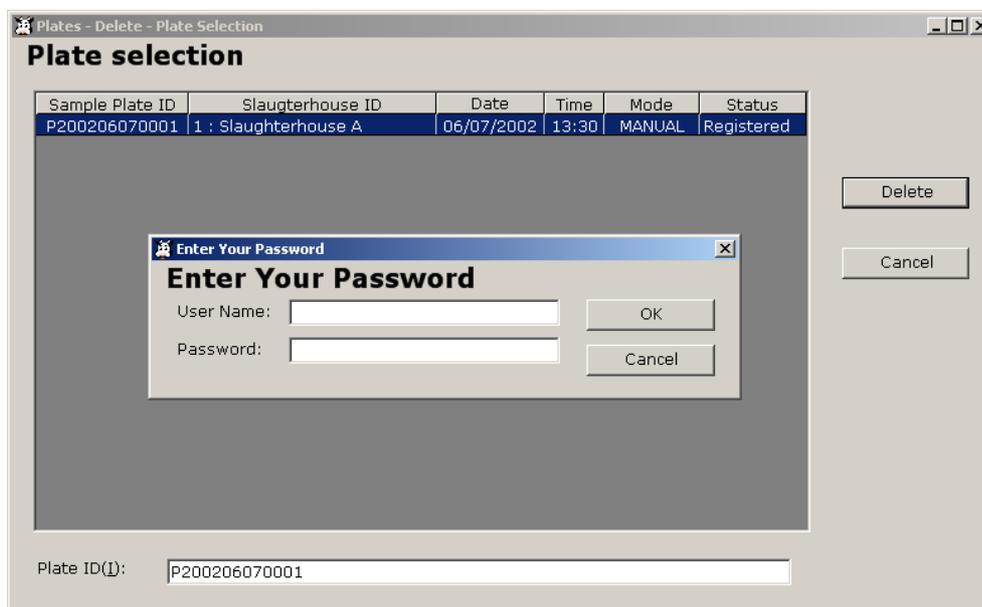
Fig. 5.3-3 : Password entry

(4) A Confirmation message is indicated. Press "YES" to confirm and delete the plate.

_____

6   Batches menu

Select "Batches" from the Main menu, to open the Batches menu.
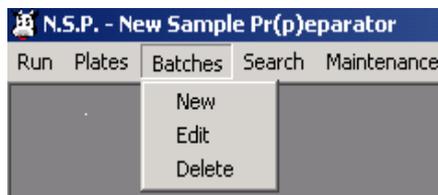
Fig. 6-1 : Batches menu

6.1   Registration of a new reagent batch (New)

(1)   Select "New" from the "Batches" menu (Fig 6.1-1).
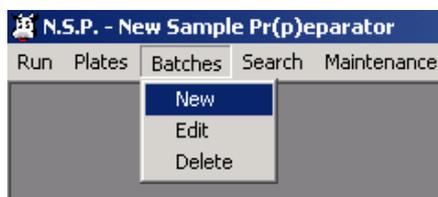
Fig. 6.1-1 : New reagent batch

(2)   The "New reagent batches registration" screen is displayed (Fig. 6.1-2). Make sure that the cursor is in the "Buffer A - test ID Code" box and use the hand barcode scanner to scan the barcode of the buffer A container (or input by keyboard and press Enter).

Fig. 6.1-2 : New reagent batches

_____

(3)   Make sure that the cursor is in the "PK – Test ID Code" box, then use the hand barcode scanner to scan the barcode label of the PK reagent bottle (or input by keyboard and press Enter).

(4)   Make sure that the cursor is in the "Buffer B – Test ID Code" box, then use the hand barcode scanner to scan the barcode label of the Buffer B reagent bottle (or input by keyboard and press Enter).

(5)   Make sure that the cursor is in the "Buffer C – Test ID Code" box, then use the hand barcode scanner to scan the barcode label of the Buffer C reagent bottle (or input by keyboard and press Enter).

(6)   Make sure that the cursor is in the "Purification kit" box, then use the hand barcode scanner to scan the external label of the Purification Kit (or input by keyboard and press Enter).

Note :

From this step, the Reagent batch can be printed. Click on "Print" (see BATCH REPORT, on next page).

(7)   When all fields have been entered, click the "Save" button. The input Purification kit data will be registered.

(8)   To register other Purification batches repeat the above steps 2 to 7.

- 24 -

Reagent batch report

10/17/2002
16:05:52

New Sample Pr(p)eparator
– BATCH REPORT –

Batch number   : 0B0012

Expiration date   : 07/17/2003

Reagents	Batch numbers	Expiration dates
Buffer A	2M0016	06/15/2004
Proteinase K	8B171U	07/17/2003
Buffer B	2D0023	08/22/2004
Buffer C	2F0014	01/15/2004

BIO·RAD

1/1

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6.2 Edit/Modify a reagent batch (Edit)

(1)   Select "Edit" from the "Batches" menu (Fig 6.2-1).
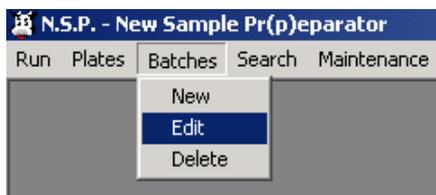
Fig. 6.2-1 : Edit reagent batch

(2)   Select the reagent batch to be edited or modified in the list of reagent batches (Fig 6.2-2).
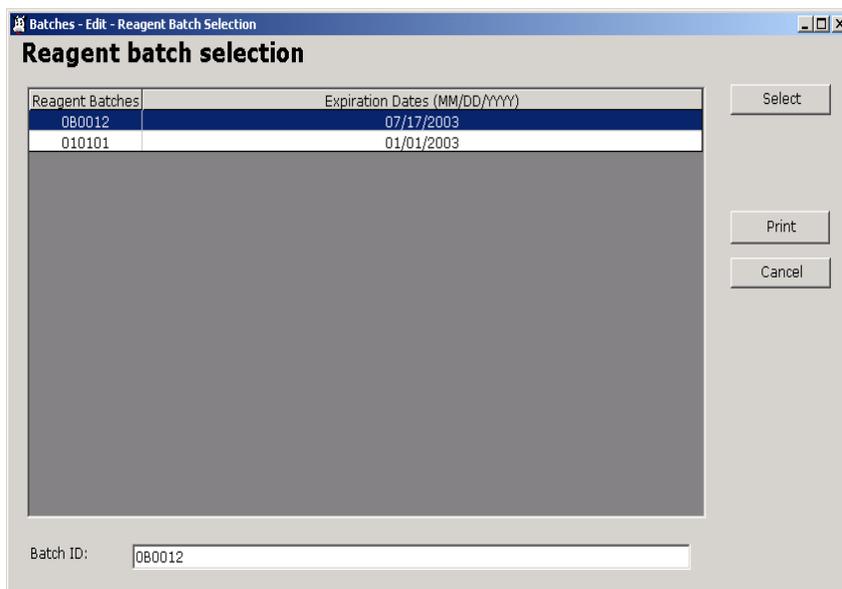
Fig. 6.2-2 : Reagent Batch selection

Notes :

Click on the corresponding column header to sort the Reagent batches by : batch number or expiration date.

The reagent batch already expired is indicated with red characters.

From this step, the list of the Reagent batches can be printed. Click on "Print" (see BATCH LIST report, on next page).

- 27 -

Reagent batch list report

10/17/2002
11:24:33

New Sample Pr(p)eparator
– BATCH LIST –

#	Batch numbers	Expiration date
1	2F0017	04/01/2003
2	4C171U	08/22/2003
3	2D0023	02/14/2004
4	2F0014	03/06/2004

BIO·RAD

1/1

The selected reagent batch is displayed (Fig 6.2-3).

Fig. 6.2-3 : Reagent Batch registration

Note :

The following information can be changed from the Batches Edit menu : test ID Code, lot. No.,

expiration date for each reagent (buffer A, PK, buffer B, buffer C).

Only reagent batch that was never been used before for a plate process can be modified.

(3)   When modifications are complete click on "Save" to register the reagent batch information.

6.3   Delete a reagent batch (Delete)

(1)   Select "Delete" from the "Batches" menu (Fig 6.3-1).
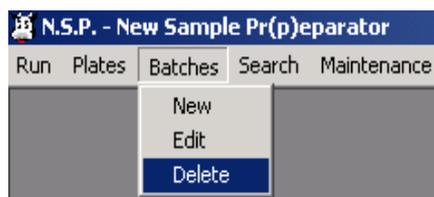
Fig. 6.3-1 : Delete a reagent batch

Note :

Only reagent batch that was never been used before for a plate process can be deleted.

(2) Select the reagent batch to delete in the list of reagent batch (Fig 6.3-2), then click on "Delete".
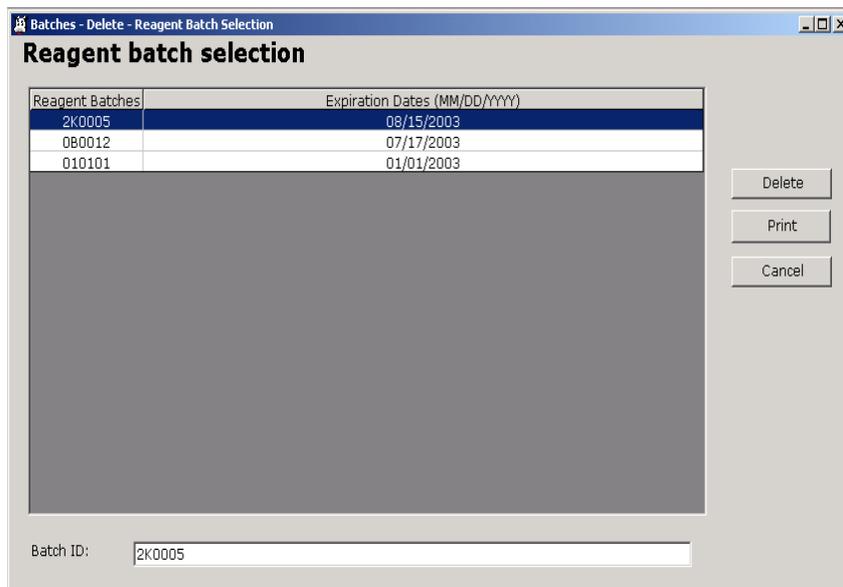
Fig. 6.3-2 : Reagent batch selection

(3) Only operator with Manager level is authorized to delete a reagent batch. Enter your user name and corresponding password (Fig. 6.3-3).
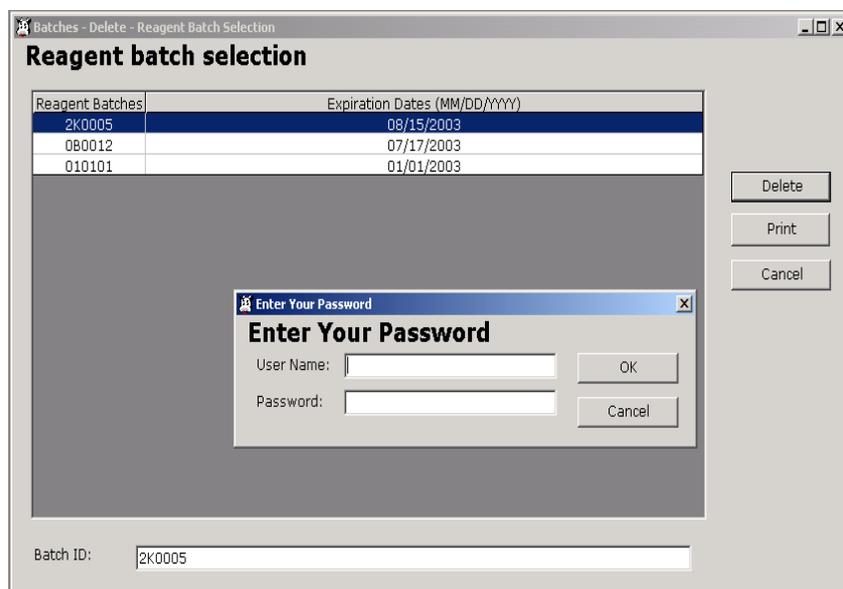
Fig. 6.3-3 : Password entry

(4) A Confirmation message is indicated. Press "YES" to confirm and delete the reagent batch.

_____

7 Operation procedure

N.S.P. system operation is carried out using the following procedure.

Register a New Reagent Batch

(Batches -> New)

Register a New Sample Plate

(Plates -> New)

(New)

(New)

Sample Plate selection

(Run -> Start -> Plate selection)

Reagent Batch selection

(-> Batch selection)

Reagent/Disposable tips inventory

(-> Reagent/Disposable)

Setup

(1) Place the selected sample plate in the unit's sample plate position.

(2) Place the empty deepwell plate in the unit's purification plate position.

(3) Fill the reservoirs with the selected batches of Buffer A/PK and Buffer B and place them in the appropriate positions on the table.

(4) Place new tip racks in the supply stacker. Close the unit's covers.

(5) Empty the waste drawer if required.

Start operation

(-> Do operation)

Operation completed

Completion of operation is indicated by a warning sound and message

See chapter 6.1 to 7.6 for detailed description of each step.

_____

The following is an explanation of the set up of containers and expendables used for operation.
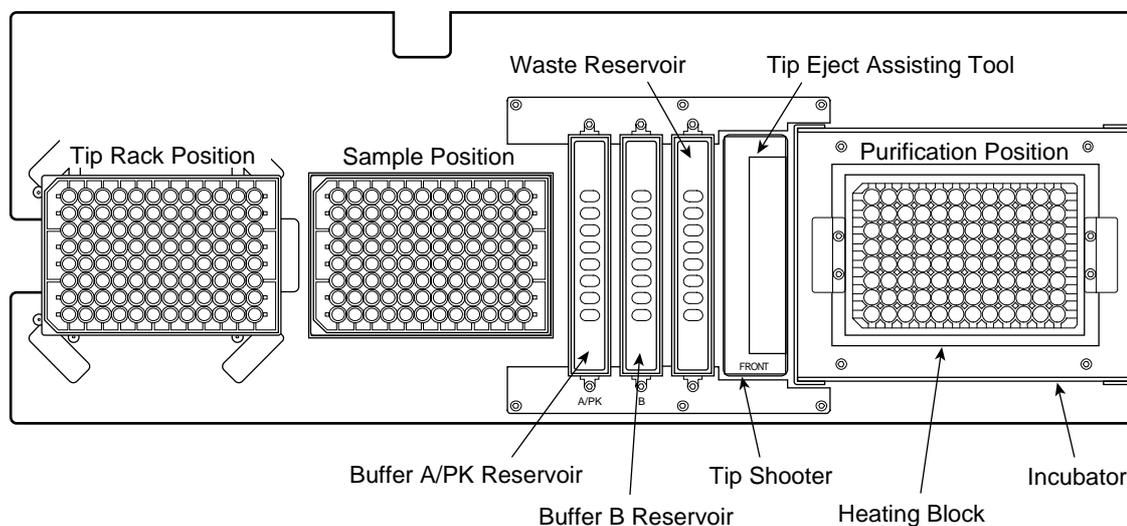
7.1 Container setup

(1) Set the sample plate in the sample position.

Set the sample plate in the direction shown in the diagram (Fig. 7.1-1). The holder is designed so that the sample plate cannot be set in the opposite direction.
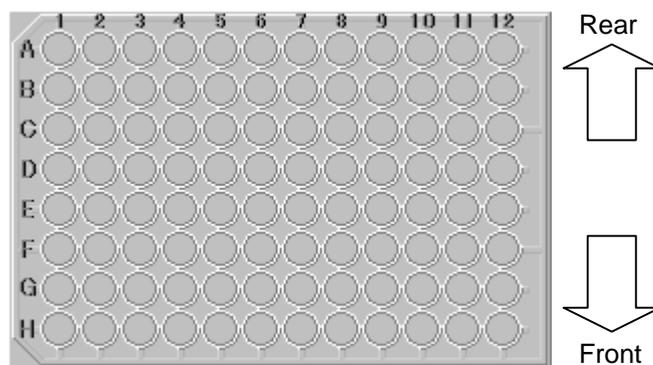
Fig. 7.1-1

(2) Facing the reservoir holder set the Buffer A/PK reservoir on the left side and the Buffer B reservoir on the right side. Set with the A/PK or B indication facing to the front.

(3) Facing the reservoir holder, set the waste reservoir on the right side (set in the same direction than the two others).

(4) Install an empty deepwell plate in the Heating block on top of the purification plate position. Set securely in the correct position. The heating block is designed so that the purification plate cannot be set in the opposite direction.

7.2 Filling containers

The volume of reagent needed will differ depending on the number of samples. The volume needed for the operation that will be carried out will be displayed on the Reagent/Disposable tips inventory screen (Fig. 7.2-1).

Fig. 7.2-1 : Reagent/Disposable tips inventory

(1) Using the "Measured volume" screen for reference, fill the Buffer A/PK reservoir with the appropriate amount of Buffer A + PK liquid preparation (4µl of proteinase K for 1ml of buffer A).

(2) Using the "Measured volume" screen for reference, fill the Buffer B reservoir with the appropriate amount of Buffer B.

7.3 Tip setup

(1)   Remove the supply stacker (stacker A, left side of unit) (Fig. 7.3-1).

(2)   Using the "Reagent/Disposable tips inventory" screen for reference, set the tip racks in the stacker (Fig. 7.3-2). A maximum of 5 tip racks can be loaded in the stacker.

(3)   Install the supply stacker (Fig.7.3-3).
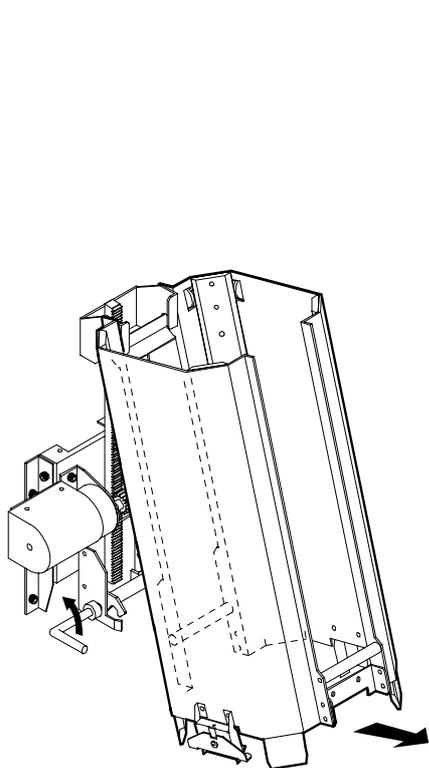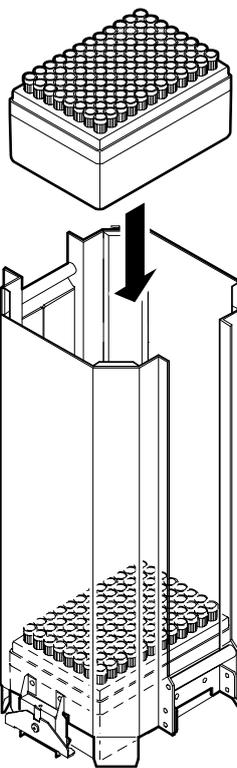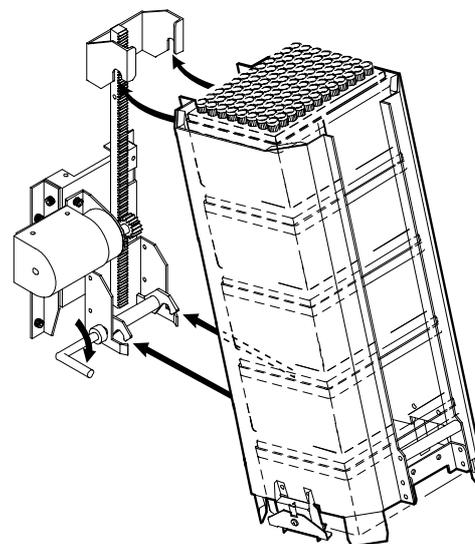
Fig. 7.3-1   Fig. 7.3-2   Fig. 7.3-3

⚠️
CAUTION

- The number of tip racks needed for operation will be displayed in the disposable tips box on the "Reagent/Disposable tip inventory" screen (Fig. 7.2-1). Please be sure to set up a sufficient number of tip racks (1 rack contains 96 tips).

- Be sure to use new tip racks that contain 96 tips.

- When there are empty tip racks in the collection stacker, be sure to remove them at this time.

_____

7.4 Waste tip drawer

The amount of used tips currently in the waste tip drawer is displayed in the "Waste bag" column on the "Reagent/Disposable tips inventory" screen. When you want to dispose of the tips, open the waste tip drawer, remove the waste tip container and replace with a new waste tip container. After replacement be sure to click on "Yes" while the software is indicating "Did you empty the waste tip drawer ?" in the reagent and tip inventory screen. The waste tip counter will be reset.

⚠
WARNING

Be sure not to touch used tips with your hands as there is possible risks of contamination from used tips. Be sure to wear gloves when disposing of tips, and remove and replace the whole waste container with a new container, avoiding touching tips directly.

(1) Place the waste tip container in the Waste tip drawer.

(2) Set the Waste tip drawer in the N.S.P. system (Fig. 7.4-1).
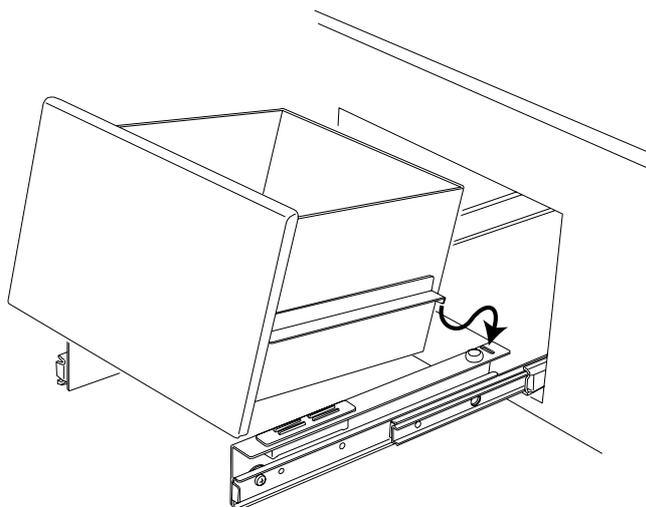
Fig. 7.4-1 : Waste tip drawer

7.5 Unit covers

When all preparations are complete, close the left and right unit covers.

⚠
CAUTION

- The unit will not operate when the covers are open.
- During operation, never open covers except when otherwise indicated. Operation will stop if the cover is opened and resumption of operation will not be possible.

_____

8 Operation (Run)

Operation is started once preparations are complete.

⚠

INFORMATON

Please refer to "**7 Operation procedure**" for details concerning operation preparation.

---

(1) Click "Run" in the menu bar to open the 'Run' menu. (Fig. 8-1).
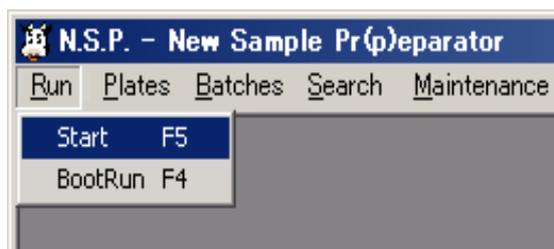
Fig. 8-1 : Run / Start

8.1 Sample plate selection

(1) Select "Start" from "Run" (Fig. 8-1) in the main menu to open the "Plate selection" screen (Fig. 8.1-1)
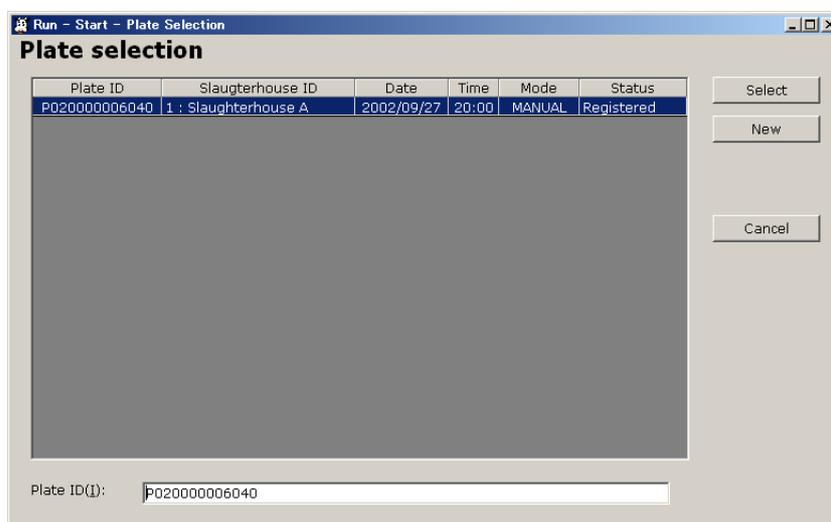
Fig. 8.1-2 : Sample Plate selection

Note :

Click on the corresponding column header to sort the plates by : plate ID, slaughterhouse ID, date, time, mode, or status.

From this point, you can also create a new sample plate. Click "New" in the plate selection screen (fig 8.1-1), then follow instructions on chapter 5.1, point (2).

- 35 -

(2)   In the "Plate selection" screen, click the plate to be processed then click "Select" button. The Reagent batch selection screen will be displayed (Fig. 8.2-1).

8.2 Reagent Batch selection
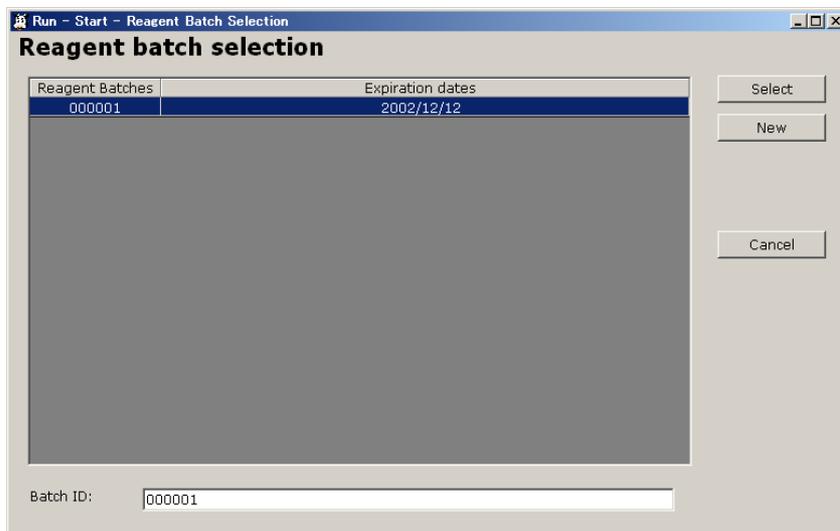
Fig. 8.2-1 : Reagent Batch selection

Note :

Click on the corresponding column header to sort the batches by : batch ID or expiration dates.

From this point, you can also create a new reagent batch. Click "New" in the reagent batch selection screen (fig 8.2-1), then follow instructions on chapter 6.1, point (2).

(1)   In the Reagent batch selection screen, select the reagent batch to be used then click "Select". The "Reagent/Disposable tips inventory" screen will be displayed. (Fig. 8.3-1)

8.3 Reagent/Disposable tips inventory

Fig. 8.3-1 : Reagent/Disposable tips inventory

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- 36 -

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(1) Use the onscreen display to confirm reagents, tip number and status of stackers and tip disposal box, and if necessary, carry out any necessary preparations or adjustment.

   a. The "required" column indicates the necessary volume of reagents and number of disposables that will be needed to perform the run.

   b. The "detected" column indicates the number of disposables detected on the NSP system.

   c. Click "Check" button (Refer to "7. Operation setup") to control the number of disposables and plates Ids loaded on the NSP system.

Note :

If covers or waste tip drawer are opened "Confirm" button will not be selectable anymore.

"Check" button must be clicked again to access "Confirm".

(2) When all preparations are finished, click the "Confirm" button. The "Protocol check" screen will be displayed (Fig. 8.4-1).

8.4 Operation start
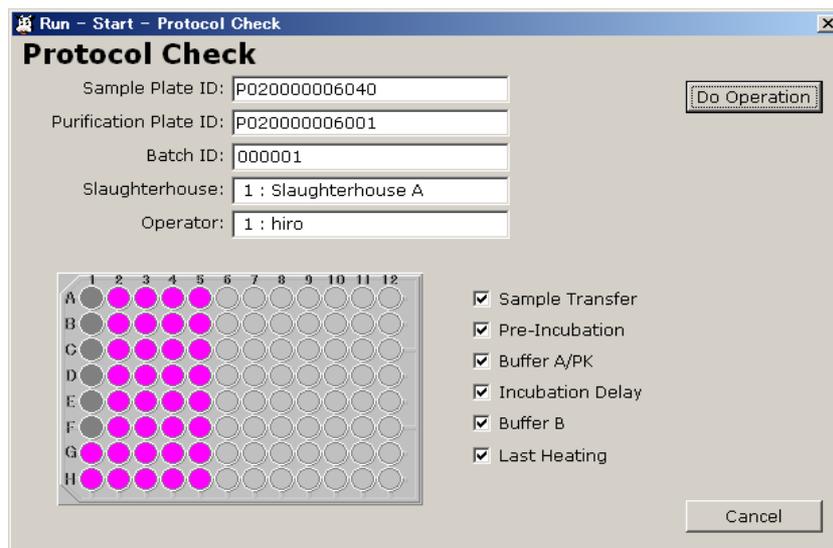
Fig. 8.4-1 : Protocol check

(1) Select the operator name from the "User Name" list.

Confirm that there is a check mark in front of all operation steps.

Note :

If instrument covers or waste tip drawer are opened at this stage, operations 8 to 8.4 must be repeated.

(2) Click on "Do operation" button to start the operation.

_____

8.5 Screen during operation
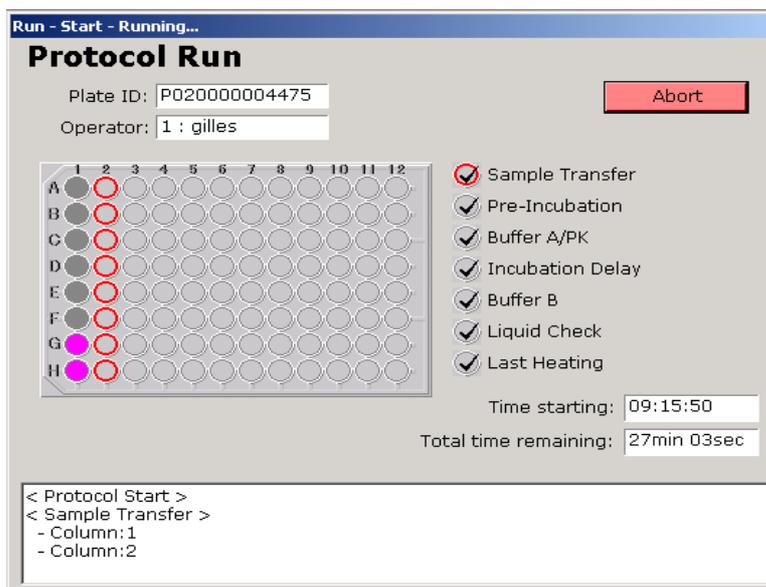
Fig. 8.5-1 : screen during run

The "Total remaining time" indicates the time needed before the end of the operation of the NSP system.

The following information are indicated :

- the step under progress is circled in red (right part of the screen);
- the step(s) already preformed are highlighted in purple (right part of the screen);
- the samples under progress are circled in red (in plate layout);
- the sample successfully treated are highlighted in purple (in plate layout);
- if an error has been detected during a step the corresponding sample positions remain uncolored (in plate layout).

8.6 Operation complete

When the delay period ends a warning sound will be heard and a message will be displayed to indicate that operation has finished.
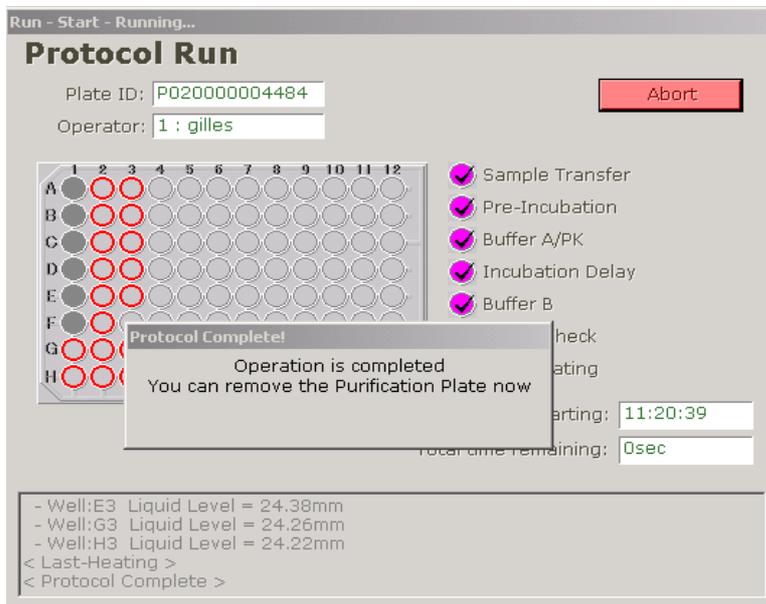
Fig. 8.6-1 : NSP operation complete

Open the right instrument cover to take the purification plate and perform the next step of the TeSeE® assay. Opening the right instrument cover will automatically end the NSP protocol.

_____

9 Search mode (<u>S</u>earch)

Operation results generated during N.S.P. processing are stored in the NSP application software database. The NSP application software database is divided in two parts :

- Transaction file ('BSEData' file) : contains all results generated during the last 30 days of activity.
- Back-up file ('BSEDatabackup file') : contains all results generated over the last 30 days of activity.

Information in the database can be recalled using the search mode and printed out. **Backup file is only accessible by search option when the NSP system is not running.**

9.1 Search procedure

(1) Click "<u>S</u>earch" in the menu bar (Fig. 9.1-1) to open the 'Search' screen. (Fig.9.1-2).
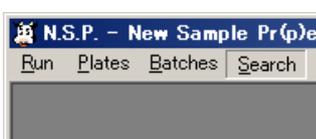
<u>Fig. 9.1-1</u>

<u>Fig. 9.1-2</u> : Search screen

(2) In the "Search" screen, set the search conditions (refer to "9.2 Search condition setup") and then click the "Search" button. The "Plate Selection" screen will be displayed (Fig. 9.1-3).

<u>Fig. 9.1-3</u> : Plate selection screen

<u>Note</u> :

Plates can be stored by column criteria if you click on the corresponding column header.

_____

_____

(3) In the "Plate Selection" screen select one plate from the plate list, then press "Select" button.

The "Plate View" screen will be displayed (Fig. 9.1-4).

Fig. 9.1-4 : Plate view

The following data for operations (up to the second operation) that have been carried out for specified sample plate can be viewed on the upper part of the plate view screen.

1) Plate statuses (Processed x1 for a first run ; Processed x2 for a second run)
2) Operator's name
3) Sample plate ID
4) Batch ID (for the purification kit)
5) ID for each reagent (buffer A, Proteinase K, buffer B, buffer C)
6) Slaughterhouse ID
7) Data for each well

The following data for operations (up to the second operation) that have been carried out for specified sample plate can be viewed on the lower part of the plate view screen.

1) Sample position (well number) and sample ID
2) Protocol step number (#) and designation
3) Time the corresponding protocol step was started
4) Minimum and maximum temperature during the step
5) Comment (result)
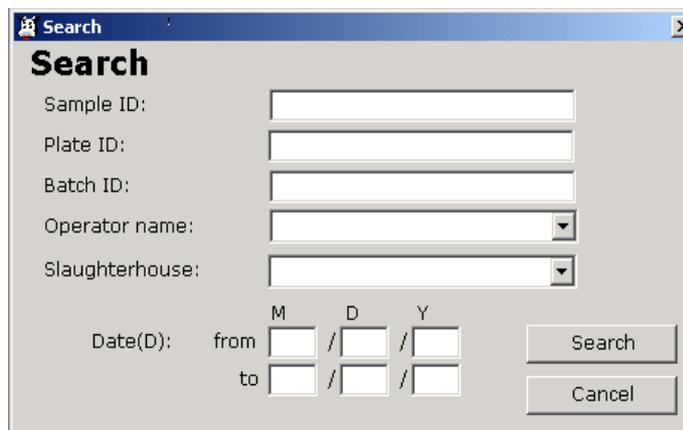
_____

- 41 -

9.2 Search condition setup

Fig. 9.2-1 : Search condition setup

9.2.1 Search by sample

To search for a specific sample, move the cursor to the "Sample ID" box, then use the hand-held barcode scanner to scan the sample ID (or input by keyboard and press Enter). No other entry on this screen is needed.

9.2.2 Search by plate ID

To search for specific sample plate data, move the cursor to the "Plate ID" box, then use the hand-held barcode scanner to scan the plate ID (or input by keyboard) and press Enter. No other entry on this screen is needed. Search by both sample plate and Purification plate is possible.

9.2.3 Search by reagent kit

To search for a processed sample plate using a reagent kit, move the cursor to the "Batch ID" box, then use the hand-held barcode scanner to scan the batch ID barcode (or input by keyboard) and press Enter. No other entry on this screen is needed.

9.2.4 Search by operator name

To search for a sample plate that has been processed by a specific operator, select the operator number or operator name from the "Operator name" list. To limit the time period of search, first enter the time period in the "Date" boxes, then click the "Search" button.

9.2.5 Search by slaughterhouse

To search for a sample plate of a specific slaughterhouse, select the slaughterhouse code or slaughterhouse name from the "Slaughterhouse" list. To limit the time period of search, first enter the time period in the "Date" boxes, then click the "Search" button.

- 42 -
User manual reference number : 90362
Version 1.17
Last modification – Dernière modification : February 2004

9.2.6   Search by time period

To search for a sample plate that has been processed within a certain time period, enter the time period in the "Date" boxes. When searching by period, the operator name or slaughterhouse name can also be input to help specify search conditions.

9.3   Data report printout

9.3.1   Sample report printout

To print out the operation results of a sample, in the bottom left of the plate view (Fig. 9.1-4), click on "Sample". Click on the Print button to display the report. Then click on the top left printing icon to print it.

The following is an example of a printed sample report.

10/17/2002
16:05:52

New Sample Pr(p)eparator
- Sample Report -

Sample ID :	G0200000041
Sample Plate Status :	Processed x 2
Date of Operation :	08/22/2002 10:34:37
Operation Result :	NOT COMPLETED
Well No :	D3
Operator Name :	1 : GILLES
Sample Plate ID :	P020000004908
Purification Plate ID:	P020000004912
Slaughterhouse Name :	1 : xxxxxxxxxxxxxxxx
N.S.P. Operation Started at :	10 :05 :45
N.S.P. Protocol Completed at :	10:34:22
N.S.P. Operation Completed at :	10:36:05
Purification Kit Batch ID :	2B0090
Buffer A Batch ID :	52RA1M0030
PK Batch ID :	52PK2C0024
Buffer B Batch ID :	52RB2A0027
Liquid Check :	Performed
Protocol Step :	All steps preformed

Error Record :

Code	Description
# 36	Purification Plate short volume Error

BIO·RAD

1/1

9.3.2 Plate report printout

To print out the operation results of the entire plate, click on "Complete" located on the bottom left side of the "Plate view" screen. Click "Print" to display the report, then click on the top left printing icon to print it.

The following is an example of a printed plate report.

10/17/2002
16:05:52

New Sample Pr(p)eparator
- Plate Report -

Sample Plate ID :	P020000004908
Purification Plate ID :	P020000004905
Sample Plate Status :	Processed x 2
Date Of Operation :	08/22/2002 10 :34 :37
Operation Result :	NOT COMPLETED
No. of Sample on the Plate :	18
Operator Name :	1 : GILLES
Slaughterhouse Name :	1 : xxxxxxxxxxxxxxx
N.S.P. Operation Started at :	10 :05 :45
N.S.P. Protocol Completed at :	10 :34 :22
N.S.P. Operation Completed at :	10 :36 :05
Purification Kit Batch ID :	2B0090
Buffer A Batch ID :	52RA1M0030
PK Batch ID :	52PK2C0024
Buffer B Batch ID :	52RB2A0027
Liquid Check :	Performed
Temperature of Incubator When Operation Started :	37.0 °C
Incubator Highest Temperature :	37.1 °C
Incubator Lowest Temperature :	36.9 °C
Incubator Result :	OK
Cover Opened at :	-
Cover Closed at :	-
Buffer A/PK Added at :	-
Buffer B Added at :	-
Tip Rack Added at :	-
Protocol Step :	All steps preformed

1/2

10/17/2002

16:05:52

New Sample Pr(p)eparator
-Plate Report –

Sample Results :

Sample Plate ID :	**P020000004908**
Purification Plate ID :	**P020000004912**
Sample Plate Status :	**Processed x 2**
Date of Operation :	**08/22/2002 10:34:37**
Operation Result :	**NOT COMPLETED**

	1	2	3	4	5	6	7	8	9	10	11	12
A		G0200000012 OK	G0200000020 OK	G0200000028 OK	G0200000036 OK	G0200000044 OK	G0200000052 OK	G0200000060 OK	G0200000068 OK	G0200000076 OK	G0200000084 OK	G0200000092 ERROR: 43
B		G0200000013 OK	G0200000021 OK	G0200000029 OK	G020000003 OK	G0200000045 OK	G0200000053 OK	G0200000061 OK	G0200000069 OK	G0200000077 OK	G0200000085 OK	G0200000093 ERROR: 43
C		G0200000014 OK	G0200000022 ERROR: 36	G0200000030 ERROR: 47	G0200000038 OK	G0200000046 OK	G0200000054 OK	G0200000062 OK	G0200000070 OK	G0200000078 OK	G0200000086 OK	G0200000094 ERROR: 43
D		G0200000015 OK	G0200000023 OK	G0200000031 OK	G0200000039 OK	G0200000047 OK	G0200000055 OK	G0200000063 OK	G0200000071 OK	G0200000079 OK	G0200000087 OK	G0200000095 ERROR: 43
E		G0200000016 OK	G0200000024 OK	G0200000032 OK	G0200000040 OK	G0200000048 OK	G0200000056 OK	G0200000064 OK	G0200000072 OK	G0200000080 OK	G0200000088 OK	G0200000096 ERROR: 43
F		G0200000017 OK	G0200000025 OK	G0200000033 OK	G0200000041 OK	G0200000049 OK	G0200000057 OK	G0200000065 OK	G0200000073 OK	G0200000081 OK	G0200000089 OK	G0200000097 ERROR: 43
G	G0200000010 OK	G0200000018 OK	G0200000026 OK	G0200000034 OK	G0200000042 OK	G0200000050 OK	G0200000058 OK	G0200000066 OK	G0200000074 OK	G0200000082 OK	G0200000090 OK	G0200000098 ERROR: 43
H	G0200000011 OK	G0200000019 OK	G0200000027 OK	G0200000035 OK	G0200000043 OK	G0200000051 OK	G0200000059 OK	G0200000067 OK	G0200000075 OK	G0200000083 OK	G0200000091 OK	G0200000099 ERROR: 43

Error Record :

Code	Description
# 36	Purification Plate short volume Error
# 47	Sample not detected
# 43	Unit Abort Stop

2/2

10 Maintenance and inspection (Maintenance).

10.1   Daily Maintenance

In order to keep the unit clean, daily maintenance needs to be carried out once a day after completion of operation. Daily maintenance menu can be accessed in either of the following 2 ways :

(1)   Select "Daily" from the "Maintenance" in the menu bar (Fig. 10.1-1).
(2)   If you try to close the NSP application software without carrying out daily maintenance, a message will be displayed with a warning sound. Operator will be then invited to perform the Daily Maintenance.

⚠
INFORMATION

Execution of daily maintenance can be postponed. However, please be sure to carry out daily maintenance at the end of the day's operation.
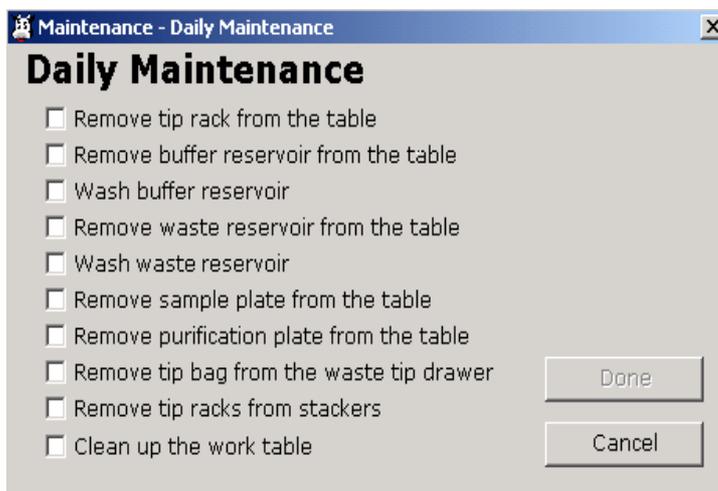
Fig. 10.1-1 : Daily Maintenance screen

10.1.1   Daily maintenance operations

⚠️
CAUTION

Be sure to wear gloves when carrying out maintenance. After maintenance, dispose of gloves and any pieces of cloth used.

The following operations are carried out during daily maintenance.

(1) Tip rack is removed from the table.

(2) Buffer A/PK reservoir is removed from the table.

(3) Buffer A/PK reservoir is washed.

(4) Buffer B reservoir is removed from the table.

(5) Buffer B reservoir is washed.

(6) Waste reservoir is removed from the table.

(7) Waste reservoir is washed (If there is sample waste liquid in the reservoir, first dispose of it).

(8) Sample plate is removed from the table.

(9) Purification plate is removed from the table.

(10) Waste tip container is removed from the tip waste drawer and disposed of.

(11) Tip racks are removed from the stackers (supply stacker and collection stacker can be removed from the machine).

(12) With a swab soaked in distilled water, clean correctly every sensor on the worktable (tip rack position ; buffer A/PK position ; buffer B position ; waste position). Then clean movable table with a paper towel soaked in distilled water, then dry with ethanol.

(13) Liquid drop prevention tray is cleaned using paper towel soaked in distilled water, then ethanol.

(14) Tip eject assisting tool is cleaned with paper towel soaked in distilled water, then ethanol

10.1.2   Daily maintenance procedure

(1) As each maintenance function is carried out, add a check mark in front of the maintenance item displayed on the Daily maintenance screen by clicking the box in front of that item (Fig. 10.1-1).

(2) When all maintenance functions have finished, confirm that all boxes have a check mark and then click "Done".

(3) Completion of Daily maintenance will be recorded.

Note :

When daily maintenance is carried out once, the message displayed upon application closure will not be activated again until the next day. However, if the unit is dirtied by spillage of reagent on the table etc., we recommend that you carry out daily maintenance again.

- 49 -

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10.2 Weekly maintenance

Weekly maintenance is maintenance that is carried out once a week. One week after beginning use of the N.S.P. system, the first day for weekly maintenance will arrive. Weekly maintenance menu can be accessed in either of the following two ways.

(1) Select "Weekly" from "Maintenance" in the menu bar (Fig. 10.2-1).
(2) On the day that weekly maintenance is to be carried out, if the NSP application software is closed, a warning message will appear. Operator will be then invited to perform the Weekly Maintenance.

⚠
INFORMATION

Execution of weekly maintenance can be postponed. However, please be sure to carry out weekly maintenance at the end of the week's operation.

Fig. 10.2-1 : Weekly Maintenance screen

10.2.1 Weekly maintenance operations

(1) Daily maintenance is carried out. (Refer to "10.1 Daily maintenance")
(2) Leaking test is carried out.

10.2.2 Weekly maintenance procedure

(1) Daily maintenance. (Refer to "10.1.1 Daily maintenance operation")
(2) Leaking test
  1. Install a tip rack on the table.
  2. Pour approx. 20 ml of distilled water into the waste reservoir and place the reservoir **in the buffer A/PK position**.
  3. Click on the "Leaking test" box.
  4. After the nozzle loads the tips, it senses the liquid surface in the reservoir.
  5. Open the cover when the software is asking for ("Please open the right system cover to start leaking test procedure").

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6. The nozzles will pipette the water up and down (10 times). Then tips are filled with water before staying in the liquid during 60 seconds.

7. Close the door when the software is asking.

8. If you constate that the liquid level is homogeneous in every tips, and if there is no water drip from the nozzle tips for a period of 60 seconds, this indicates that there is no problem with leakage.

9. Then click "yes" on the following message :

10. "Pass the leaking test?

    a) liquid level among tips are the same

    b) And no leakage from any tips".

11. If there is water drip, please change external nozzle O-ring, reference 35 91 049 (See below, "Replacement of external O-ring"). If the dripping does not stop, inspection by a service engineer will be necessary. In this case please contact Bio-Rad.

(4) As each maintenance function is carried out add a check mark in front of the maintenance item displayed on the weekly maintenance screen (Fig. 10.2-1) by clicking the box in front of that item.

(5) When all maintenance functions have finished, confirm that all boxes have a check mark and then click "Done".

(6) Completion of weekly maintenance will be recorded.

Note :

When weekly maintenance is carried out once, the message displayed upon application closure will not be activated again until the next week.

10.2.3 Replacement of external O-ring

Note :

The following procedure must be applied only if leaking was detected during weekly maintenance procedure.

(1) Open the right side of the unit cover.

(2) Remove external O-rings with forceps (Fig. 10.2.3-1).
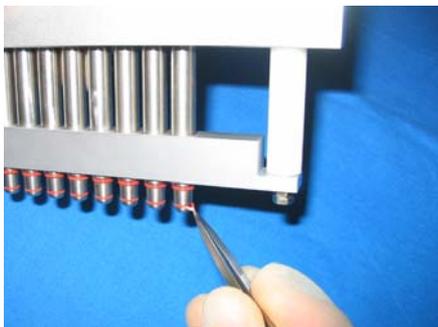
Fig. 10.2.3-1 : Removing O-ring

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(3) Place smaller O-ring in the bay near to the top of the nozzle (Fig. 10.2.3-2, 10.2.3-3).

Please do not place bigger O-ring first since it can be stuck in the bay for smaller O-ring.
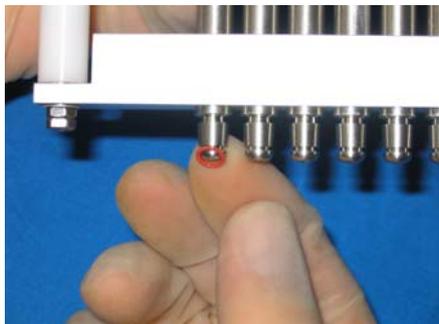
Fig. 10.2.3-2 : Placing smaller O-ring
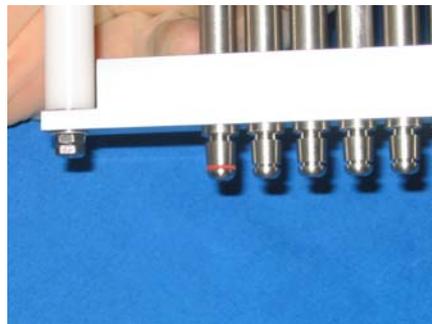
Fig. 10.2.3-3 : Small O-ring in the bay

(4) Place bigger O-ring in the bay (Fig. 10.2.3-4, 10.2.3-5)
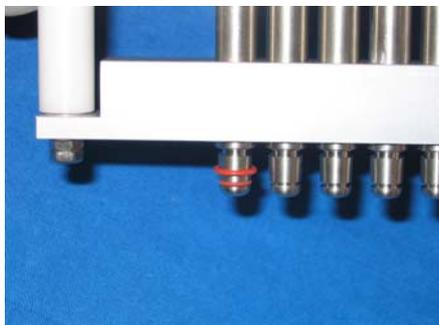
Fig. 10.2.3-4 : Placing bigger O-ring
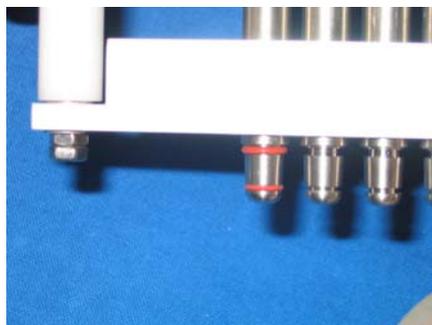
Fig. 10.2.3-5 : O-rings correctly placed

(5) Repeat step (3) and (4) and place O-rings on all nozzles.

(6) Close the unit cover.

10.3   Monthly Maintenance

Monthly maintenance is maintenance that is carried out once a month. One month after beginning use of the N.S.P. system, the first day for monthly maintenance will arrive. Monthly maintenance menu can be accessed in either of the following two ways.

(1) Select "Monthly" from "Maintenance" in the menu bar (Fig. 10.3-1).

(2) On the day that monthly maintenance is carried out, if the NSP application software is closed, a warning message will appear. Operator will be then invited to perform the Monthly Maintenance.
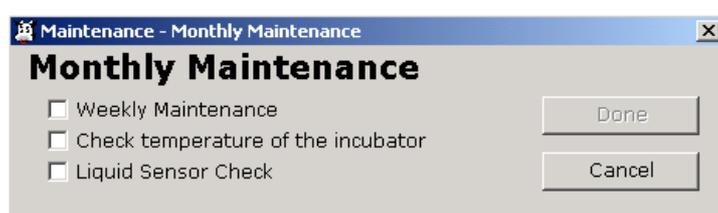
Fig. 10.3-1 : Monthly Maintenance screen

10.3.1   Monthly maintenance operations

(1) Daily maintenance is carried out. (Refer to "10.1 Daily maintenance")

(2) Weekly maintenance is carried out. (Refer to "10.2 Weekly maintenance")

(3) Incubator temperature is checked.

(4) Liquid sensors are checked.

10.3.2   Monthly maintenance procedure

(1) Daily maintenance (Refer to "10.1.1 Daily maintenance operation")

(2) Weekly maintenance (Refer to "10.2.1 Weekly maintenance operation")

(3) Incubator temperature check

   1.   Using a pipette, dispense 500 µl of distilled water stored at room temperature into all the wells of a deepwell plate, then place in the purification plate position.

   2.   Wait 10 minutes until the distilled water's temperature rises.

   3.   Place thermometers in the E7, wait for 3 minutes, then check the temperature.

   4.   If the water temperature of all wells is between 35 to 39 degrees, incubator temperature is normal.

   5.   If the water temperature is outside the 35 to 39 degree range, inspection by a service engineer will be necessary. In this case please contact Bio-Rad.

(4) Liquid sensor check

   1.   Install a tip rack in the supply stacker.

   2.   Click on the "Liquid Sensor Check" box.

3.   As requested, pour precisely 30 ml of distilled water into the waste reservoir and place the reservoir in the buffer A/PK position (Fig 10.3.2-1).
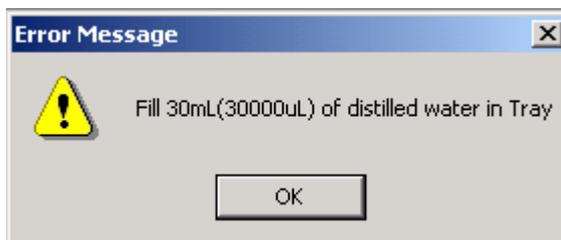
Fig. 10.3.2-1 : Liquid sensor check procedure

4.   The liquid surface is sensed
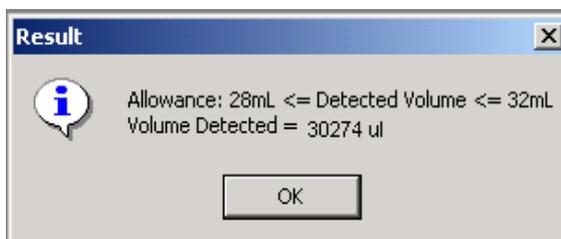
Fig. 10.3.2-2 : Liquid sensor check result

5.   If the measured volume is in the 28 ml to 32 ml range, liquid sensing is normal.

6.   If the measured volume is outside the 28 000 µl to 32 000 µl range, inspection by a service engineer will be necessary. In this case please contact Bio-Rad.

(5)   When all maintenance functions have finished, confirm that all boxes have a check mark and then click "Done".

(6)   Completion of monthly maintenance will be recorded.

10.4   Maintenance Report

10.4.1   Daily maintenance report

(1)   Select "Report" from "Maintenance" in the menu bar.

(2)   Select "Daily report" in the selection list indicated. The 'Daily maintenance report' screen will
be displayed (Fig. 10.4.1-1).

Fig. 10.4.1-1 : Daily maintenance report

The following information can be accessed from the 'Daily maintenance report' screen.

Date : date the daily maintenance menu was opened.

User ID & User name : Id and name of the log-in operator

Status : status of the daily maintenance at the indicated date and time.

- "1" indicates that the daily maintenance menu has been opened and daily maintenance has
  been completely performed.

- "0" indicates that the daily maintenance menu has not been opened at this date.

- "-1" indicates that the daily maintenance menu has been opened, but the maintenance has not
  been performed.

Following columns indicate every step of the daily maintenance procedure.

10.4.2 Weekly maintenance repot

(1) Select "Report" from "Maintenance" in the menu bar.

(2) Select "Weekly report" in the selection list indicated. The 'Weekly maintenance report' screen
will be displayed (Fig. 10.4.2-1).

Fig. 10.4.2-1 : Weekly maintenance report

The following information can be accessed from the 'Weekly maintenance report' screen.

Date : date the weekly maintenance menu was opened.

User ID & User name : Id and name of the log-in operator

Status : status of the weekly maintenance at the indicated date and time.

- "1" indicates that the weekly maintenance menu has been opened and weekly maintenance has
  been completely performed.

- "0" indicates that the weekly maintenance menu has not been opened at this date.

- "-1" indicates that the weekly maintenance menu has been opened, but the maintenance has
  not been performed.

Daily maintenance : status of the daily maintenance the day the weekly maintenance has been
performed.

Following columns indicate other steps of the weekly maintenance procedure.

- 56 -

10.4.3   Monthly maintenance report

(1)   Select "Report" from "Maintenance" in the menu bar.

(2)   Select "Monthly report" in the selection list indicated. The 'Monthly maintenance report' screen will be displayed (Fig. 10.4.3-1).

Fig. 10.4.3-1 : Monthly maintenance report

The following information can be accessed from the 'Monthly maintenance report' screen.

Date : date the monthly maintenance menu was opened.

User ID & User name : Id and name of the log-in operator

Status : status of the monthly maintenance at the indicated date and time.

- "1" indicates that the monthly maintenance menu has been opened and monthly maintenance has been completely performed.

- "0" indicates that the monthly maintenance menu has not been opened at this date.

- "-1" indicates that the monthly maintenance menu has been opened, but the maintenance has not been performed.

Weekly maintenance : status of the weekly maintenance the day the monthly maintenance has been performed.

Following columns indicate other steps of the monthly maintenance procedure.

10.5   Service

Restricted to Bio-Rad Service Engineer.

11 Configuration menu (Configuration)

Select "Configuration" from the Main menu, to open the 'Configuration' menu.
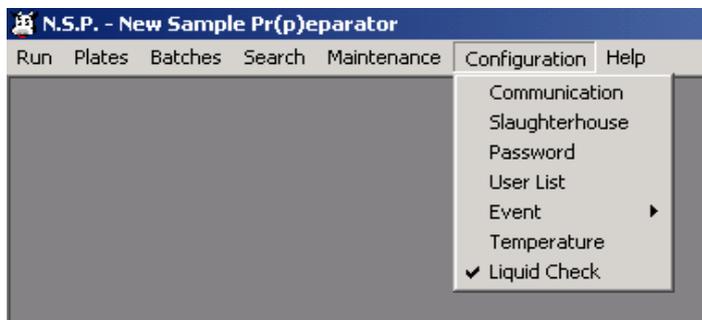
Fig. 11-1 : Configuration menu

11.1 Communication port

Communication port of the PC to connect the N.S.P. system can be changed by following the procedure below.

Note :

Manger level is requested to modify the communication port between NSP and PC.

(1)   Click on "Communication" in the Configuration menu.

(2)   Enter your User Name and Password (Fig. 11.1-1), then click "OK" to confirm.

Fig. 11.1-1 : Password entry

(3)   Select intended communication port (Fig. 11.1-2).
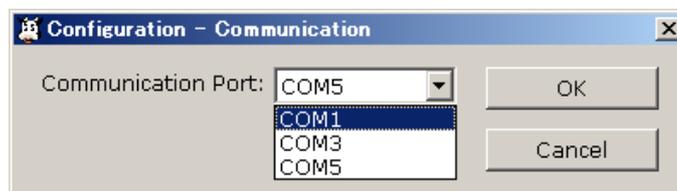
Fig. 11.1-2 : Communication port selection

11.2 Slaughterhouse.

(1)   Click on "Slaughterhouse" in the Configuration menu. The 'Slaughterhouse' screen is opened (Fig. 11.2-1) and the slaughterhouses already defined are listed.
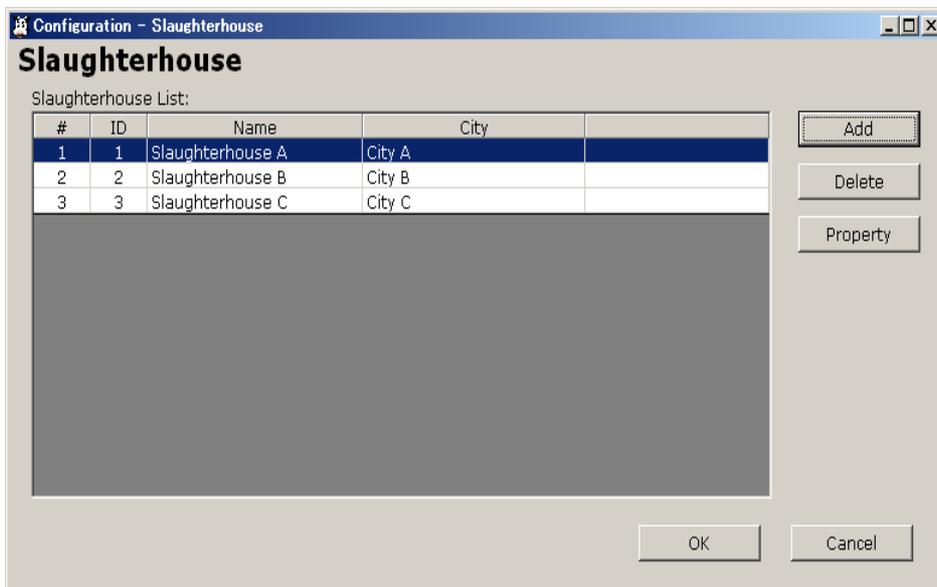
Fig. 11.2-1 : Slaughterhouses list

11.2.1   Addition of a new slaughterhouse

(1)   From the 'Slaughterhouse' screen (Fig. 11.2-1), click "Add" button.

Note :

Manager level is requested to define a new Slaughterhouse.

(2)   Enter your User name and password (Fig. 11.2.1-1), then click "OK" to confirm.

Fig. 11.2.1-1 : Password entry

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(3)   The 'Add Slaughterhouse' screen comes up (Fig. 11.2.1-2). Information such as : Name of the slaughterhouse, address(1) and address(2), city code and city name can be entered.
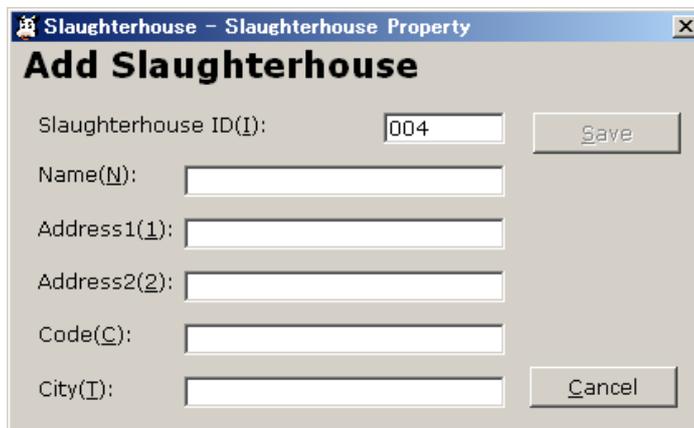
Fig. 11.2.1-2 : Add slaughterhouse

(4)   When all information have been entered, click "Save" button to save all data. The list of slaughterhouses is indicated, including the new slaughterhouse.

(5)   Click "OK" to close the 'Slaughterhouse' screen. Main menu will be displayed.

11.2.2   Deletion of one slaughterhouse.

(1)   From the 'Slaughterhouse' screen (Fig. 11.2-1), select intended slaughterhouse then click "Delete" button.

Note :

Manager level is requested to delete a Slaughterhouse.

Only slaughterhouses that were never used can be deleted

(2)   Enter your user name and password (Fig. 11.2.1-1), then click "OK" to confirm.

(3)   Click "OK" on the 'Slaughterhouse Delete' screen (Fig. 11.2.2-1). The list of remaining slaughterhouses is indicated.

Fig. 11.2.2-1 : Slaughterhouse delete

(4)   Click "OK" to close the 'Slaughterhouse' screen. Main menu will be displayed.

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- 61 -

11.2.3 Modification of one slaughterhouse property

(1) From the 'Slaughterhouse' screen, select intended slaughterhouse and click "Property" button.

Note :

Manager level is requested to change the properties of one slaughterhouse.

(2) Enter your user name and password (Fig. 11.2.1-1), then click "OK" to confirm.

(3) The 'Slaughterhouse Property' screen comes up (Fig. 11.2.3-1). Information such as : Name of the slaughterhouse, address(1) and address(2), city code and city name can be modified.

Fig. 11.2.3-1 : Slaughterhouse property

(4) Change property then click "Save".

(5) Click "OK" to close the 'Slaughterhouse' screen. Main menu will be displayed.

11.3 Password

(1)   Click on Password in the Configuration menu. The 'Password' screen is opened (Fig. 11.3-1).
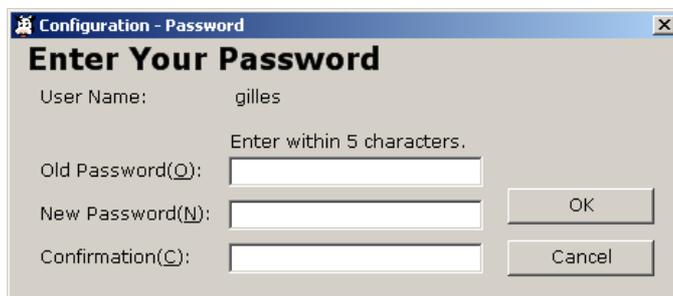
Fig. 11.3-1 : Password

(2)   You can modify the password of the currently log-in session.

(3)   Click "OK" to close the 'Password' screen. Main menu will be displayed.

11.4 User list

(1)   Click on "User list" in the Configuration menu. The 'User list' screen is opened (Fig. 11.4-1).
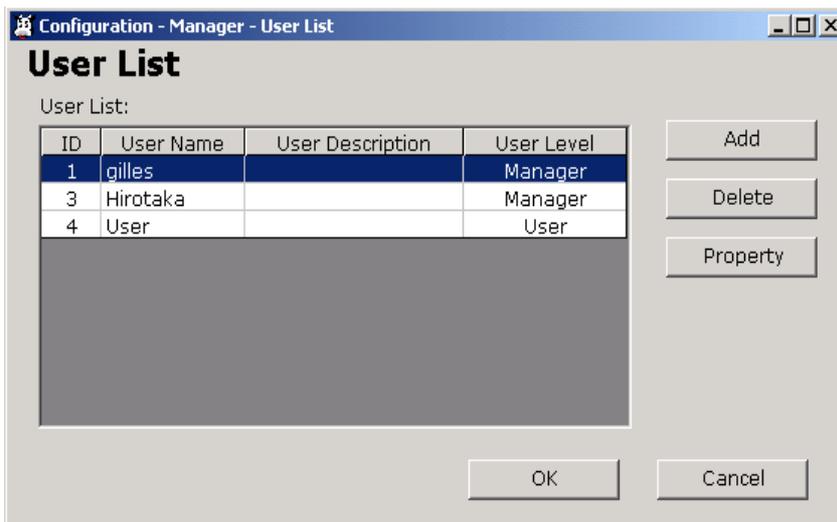
Fig. 11.4-1 : User list

11.4.1   Addition of one User

(1)   From the 'User List' screen, click "Add" button.

Note :

Manager level is requested to add a new user in the list.

(2)   Enter user name and password (Fig. 11.4.1-1), then click "OK" to confirm.

Fig. 11.4.1-1 : Password entry

(3)   The 'Add User' screen comes up (Fig. 11.4.1-2).
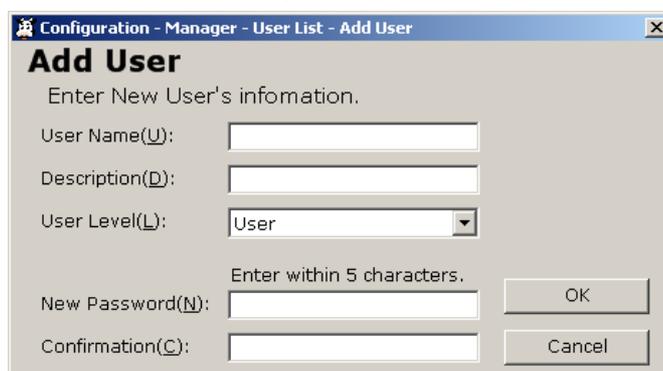
Fig. 11.4.1-2 : Add user screen

(4)   Enter required information then click "OK".

(5)   Click "OK" to close the 'User List' screen. Main menu will be displayed.

11.4.2   Deletion of one User

(1) From the 'User List' screen, select intended user then click "Delete" button.

Note :

Manager level is requested to add a new user in the list.

(2)   Enter user name and password (Fig. 11.4.1-1), then click "OK" to confirm.

(3)   Click "OK" on the 'User Delete' screen (Fig. 11.4.2-1).

Fig. 11.4.2-1 : User delete

(4)   Click 'OK' to close the 'User List' screen. Main menu will be displayed.

11.4.3 Modification of User property

(1) From the 'User List' screen, select intended user then click "Property" button.

Note :

Manager level is requested to change the properties of one user in the list.

(2) Enter user name and password (Fig. 11.4.1-1). The 'User Property' screen comes up   (Fig. 11.4.3-1).
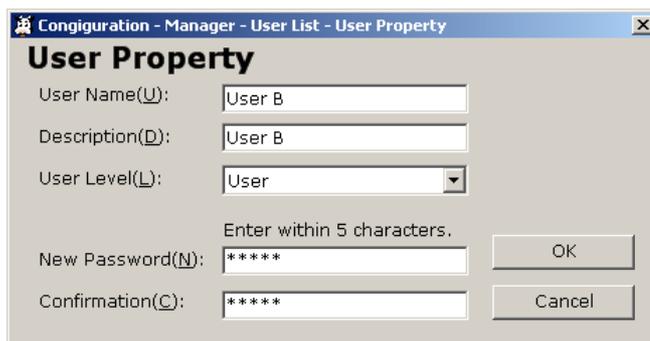
Fig. 11.4.3-1 : User property

(3) Change property then click "OK".

(4) Click "OK" to close the 'User List' screen. Main menu will be displayed.

11.5 Events

11.5.1 Error history

The error history option gives the list and reasons for non terminated operations (Run).

(1) Click "Event" ->"Error History". The 'Error History' screen comes up (Fig. 11.5.1-1).
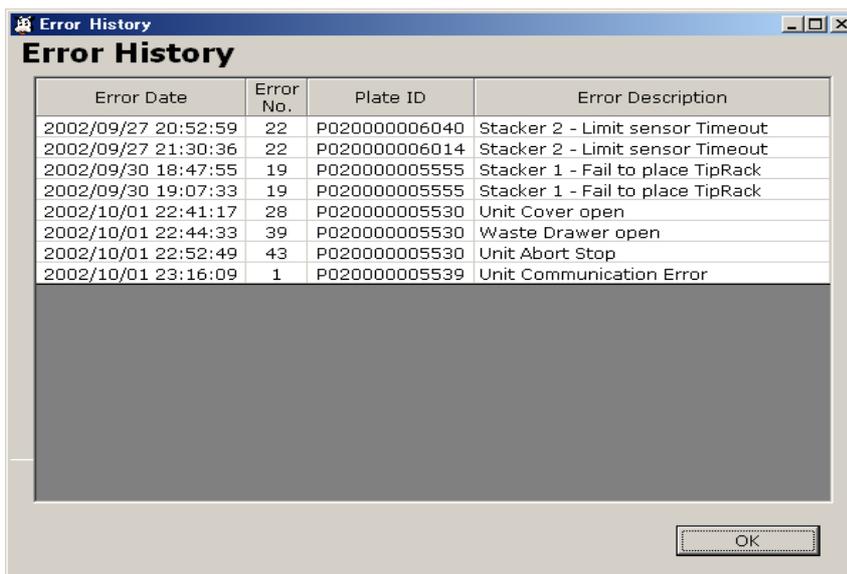
Fig. 11.5.1-1 : Error history

(2) Use scroll bar to find intended record.

(3) Click "OK"' to close 'Error History' screen. Main menu will be displayed.

_____

11.5.2 Event log

The Event log option gives the description of the last 1000 events occurred on the NSP application software.

(1)   Click "Event" -> "Event log". The 'Event log' screen comes up (Fig. 11.5.2-1).
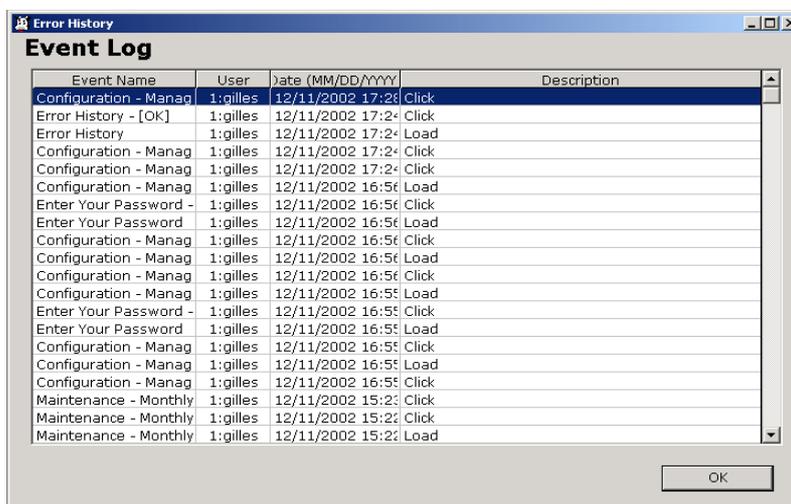
Fig 11.5.2-1 : Event log

(2)   Use scroll bar to find intended event.
(3)   Click "OK" to close 'Event log' screen. Main menu will be displayed.

11.6 Data location

The data location of the Database ('BSEData') and Backup ('BSEDatabackup') files can be changed by following the procedure below.

(1)   Click " Configuration" -> "Data location".

Note :

Manager level is requested to modify the location of the database and backup file.

(2)   Enter use name and password (Fig. 11.2.1-1). The 'Data location' screen will appear (Fig. 11.6-1)
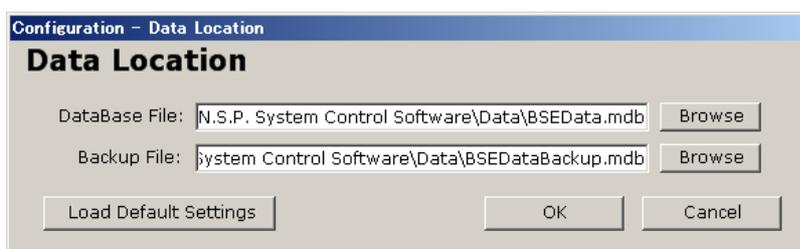
Fig. 11.6-1 : Data location

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- 66 -

11.7 Temperature

Consultation of temperature unit and target temperature is available in this option.

(1)   Click "Configuration" -> "Temperature". The 'Temperature Unit' screen comes up (Fig. 11.7-1).
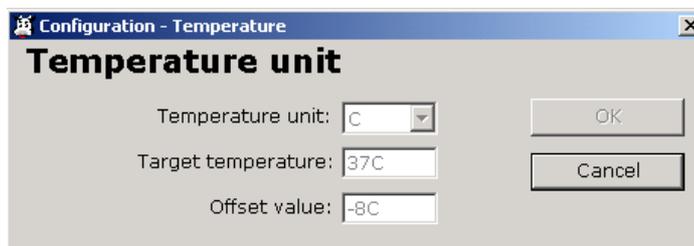
Fig. 11.7-1 : Temperature unit

(2)   Click "OK" to close "Temperature" screen. Main menu will be displayed.

11.8 Liquid check

When liquid check option is activated, the NSP system automatically detects the liquid level in every individual well of the purification plate, at the end of buffer B dispensing.
If the volume detected by NSP system is within the acceptable ranges it confirms that sampling has been carried out accurately.
"Liquid Check" can be activated/un-activated in this option.

(1)   Click "Configuration -> "Liquid Check".
The "Liquid Check" option is ON if check mark is placed in the menu (Fig. 11.8-1).
The "Liquid Check" option is OFF if no check mark is placed in the menu.
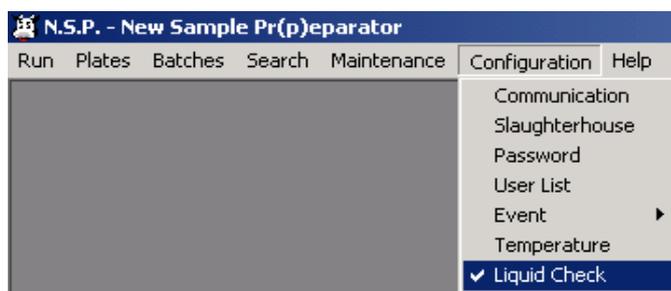
Fig 11.8-1 : Liquid check option

(2)   Click "Configuration" -> "Liquid Check".

Note :

Manager level is requested to change the status of Liquid Check.

(3)   Enter user name and password (Fig. 11.2.1-1).

(4)   Confirm the message in the 'Protocol Configuration' screen then click "OK".
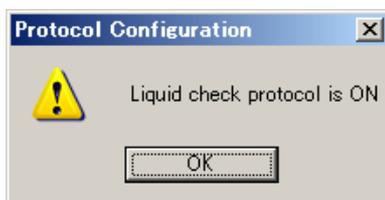
Fig. 11.8-2 : Liquid check option activated

12 Help

12.1   Operator's manual (Help)

Reference and print out of the Operator's manual in PDF format is available in this option.

12.2   About N.S.P. system control software (About NSP)

Version number of the N.S.P. system control software can be referenced in this option.

13 User level and access rights

Some of the software options are protected with a password, to ensure high level of safety of all data generated by the NSP system. There are three different levels of password protection : user level – manager lever – service level.

13.1   User level (regular users)

Unit operation can be carried out. Main access rights are as follows.

1) Sample plate registration

2) Reagent batch registration

3) Unit operation

4) Operation data review

5) Daily, weekly and monthly maintenance

6) Revision of personal password

13.2   Manager level

The manager level is higher than the User level. In addition to the access available to regular users, main access rights are as follows.

1) Deletion of unprocessed plates that have been registered

2) Deletion of unused reagent batches that have been registered

3) Addition, deletion or modification of one slaughterhouse

4) Addition, deletion or modification of a user

5) Activation or deactivation of the liquid check

13.3   Service

Functions that Bio-Rad service personnel have access rights to. The main functions that can be accessed are as follows.

1) Mechanical settings

2) Maintenance program execution

3) Change of storage location of data base file

4) Change of incubator temperature setting

- 70 -

13.4 User level and access rights list

Function			Manager	User
Run				
	Start		Yes	Yes
	BootRun		Yes	Yes
Plates				
	New		Yes	Yes
	Edit		Yes	Yes
	Delete		Yes	No
Batches				
	New		Yes	Yes
	Edit		Yes	Yes
	Delete		Yes	No
Search			Yes	Yes
Maintenance				
	Daily		Yes	Yes
	Weekly		Yes	Yes
	Monthly		Yes	Yes
	Report		Yes	Yes
		Daily	Yes	Yes
		Weekly	Yes	Yes
		Monthly	Yes	Yes
	Service		No	No
Configuration				
	Communication		Yes	No
	Slaughterhouse		Yes	No
	Password		Yes	(Yes)
	User List		Yes	No
	Event		Yes	No
		Event Log	Yes	Yes
		Error History	Yes	Yes
	Temperature		No	No
	Liquid Check		Yes	No
Help			Yes	Yes

14 Error messages

When a problem has occurred on the N.S.P. system, an error message will be displayed on the computer screen. After confirming the error content, click OK on the Error message screen and either restart or stop operation (some error occurrences do not necessitate the stoppage of operation).

The error will be recorded and can be confirmed on the results report after operation is finished. Error history can also be referred to.

14.1 Error message screen

Error number error name and error content can be checked on the Error message screen. After checking, click on OK.

14.2 Error contents/cause

Refer to the following chart for details concerning error content.

No.	Error Descriptions	Treatment	Note
1	Unit Communication Error	HALT	Communication fault of N.S.P. system and PC
2	Barcode Reader Communication Error	HALT	Communication fault of Barcode Reader and PC
3	Incubator Communication Error	HALT	Communication fault of incubator and PC
4	I/O Communication Error	HALT	Communication fault of EXDIO (I/O board) and PC
5	X Axis – Home sensor Timeout	HALT	No response from X Axis left sensor
6	X Axis – Home sensor Hit Error	HALT	Unexpected response from X Axis left sensor
7	X Axis – Limit sensor Timeout	HALT	No response from X Axis right sensor
8	X Axis – Limit sensor Hit Error	HALT	Unexpected response from X Axis right sensor
9	Z Axis – Home sensor Timeout	HALT	No response from Z Axis left sensor
10	Z Axis – Home sensor Hit Error	HALT	Unexpected response from Z Axis left sensor
11	Z Axis – Limit sensor Timeout	HALT	No response from Z Axis right sensor
12	Z Axis – Limit sensor Hit Error	HALT	Unexpected response from Z Axis right sensor
13	P Axis – Home sensor Timeout	HALT	No response from P Axis left sensor
14	P Axis – Home sensor Hit Error	HALT	Unexpected response from P Axis left sensor
15	P Axis – Limit sensor Timeout	HALT	No response from P Axis right sensor
16	P Axis – Limit sensor Hit Error	HALT	Unexpected response from P Axis right sensor
17	Stacker 1 – Home sensor Timeout	HALT	No response from supply stacker upper sensor
18	Stacker 1 – Limit sensor Timeout	HALT	No response from supply stacker lower sensor
19	Stacker 1 –Failure to place TipRack	HALT	TipRack placement failure by supply stacker
20	Stacker 1 – TipRack Empty	Continue	Insufficient TipRack in supply stacker
21	Stacker 2 – Home sensor Timeout	HALT	No response from collection stacker upper sensor
22	Stacker 2 – Limit sensor Timeout	HALT	No response from collection stacker lower sensor

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No.	Error Descriptions	Treatment	Note
23	Stacker 2 –Failure to collect TipRack	HALT	TipRack collection failure by collection stacker
24	Incubator – Over Heat	HALT	Incubator temp. is above 39°C
25	Incubator – Over Cool	HALT	Incubator temp. is below 35°C
26	Liquid Cover – Home sensor Timeout	HALT	No response from Liquid Cover rear sensor
27	Liquid Cover – Limit sensor Timeout	HALT	No response from Liquid Cover front sensor
28	Unit Cover open	HALT	Cover opened during Protocol operation
		Continue	Operation can be continued if Unit cover open occur during Incubation period
29	Buffer A/PK Reservoir set Error	Pause	Reservoir is not mounted
30	Waste Reservoir set Error	Pause	Waste tray is not mounted
31	Sample Plate set Error	Pause	Sample plate is not mounted
32	Purification Plate set Error	Pause	Purification plate is not mounted
33	Buffer A/PK short volume Error	Continue	Insufficient Buffer A/PK liquid volume.
34	Buffer B short volume Error	Continue	Insufficient Buffer B liquid volume.
35	Tip set Error	Continue	Nozzle head failed to load tip
36	Purification Plate short volume Error	Continue	Insufficient liquid volume in Purification Plate
37	Purification Plate over volume Error	Continue	Too much liquid volume in Purification Plate
38	Liquid level sensor Error	Continue	Liquid level sensor fault (when Reservoir is used)
39	Waste Drawer open	HALT	Waste drawer opened during protocol operation
40	TipRack Lock – Front sensor Timeout	HALT	No response from TipRack lock system front sensor
41	TipRack Lock – Rear sensor Timeout	HALT	No response from TipRack lock system rear sensor
42	Buffer B Reservoir set Error	Pause	Reservoir is not mounted
43	Unit Abort Stop	HALT	Abortion of operation
44	Database update Error	HALT	Update of the database interrupted
45	Tip catch failed -> Retry same row	Continue	If fail to catch tip for the first time in the row, try same row again
46	Tip catch failed -> Next row	Continue	If fail to catch tip in the same row twice, proceed to the next row.
47	Sample not detected		Sample in the sample plate does not exist or volume of sample is lower than requirement
48	Buffer A/PK Addition	Pause	Need to add Buffer A/PK for operation to complete. Operation can be continued after addition of Buffer A/PK
49	Buffer B Addition	Pause	Need to add Buffer B for operation to complete. Operation can be continued after addition of Buffer B
50	TipRack Addition	Pause	Need to add TipRack for operation to complete. Operation can be continued after addition of TipRack
51	Tip catch failed	HALT	After two cycle of Error #45 and 46, if 'Tip catch failed' occur again on the same TipRack, the operation will be aborted.

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14.3   Treatment after an error occurrence

Once an error has occurred treatment differs according to the type of error. Types of treatment are as

follows.

(2)   HALT:

Press the error message OK button to stop the application. To redo the operation again, turn the

N.S.P. system power off and redo from the beginning.

(3)   CONTINUE:

Even though error has occurred the operation can be continued or there will be chance to fix the

problem during a standby period during operation.

(4)   PAUSE:

The unit is paused. Operation can be resumed once the error is fixed.

15 Troubleshooting

In case of trouble, please refer to the table below to recover the status. However, if the status does not

come to normal, stop operation immediately and contact Bio-Rad representative.

No.	Condition	Check item	Measure
1	N.S.P. control software can not be activated even though a correct password is entered.	✓ Isn't the Caps lock of the keyboard effective?	Cancel Caps lock.
2	N.S.P. control software can not be activated.	✓ Is the power cable connected to the outlet?	Connect power cable.
		✓ Are the N.S.P. and the PC connected with RS232C cable?	Connect RS232C cable.
		✓ Is power of the N.S.P. turned on?	Turn the power on.
		✓ Is the Abort recover button turn off?	Turn the Abort recover button on.
3	Start of Run menu can not be selected.	✓ Have the BootRun executed before selecting Start?	Execute BootRun before selecting Start.
4	N.S.P. doesn't start operation.	✓ Are unit covers closed?	
		✓ Is waste tip drawer closed?	

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16   Appendices

16.1   Configuration of the hand barcode – Hand barcode type : MWG100

16.1.1   Setting for QWERTY keyboard

If your PC is equipped with keyboard type "QWERTY", read all codes from here :

Default configuration

Enter configuration

Mode PC ALT Mode
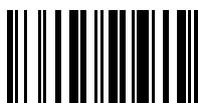
Barcode font erasement

Activate code128

Activate EAN128

Exit and save

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16.1.2 Setting for AZERTY keyboard

If your PC is equipped with keyboard type "AZERTY", read all codes from here :

Default configuration

Enter configuration

PC ALT Mode

French keyboard
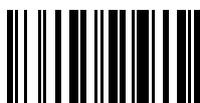
Barcode font erasement

Activate code128

Activate EAN128

Exit and save

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16.2   Reagent reservoirs cleaning procedure

(1) Precaution before use :

- Please, use only reservoirs and associated covers adapted to the NSP system.
- Please, use reservoirs and associated covers perfectly cleaned and dried.
- Please, check that reservoirs and associated covers are correctly set up on the instrument (position, direction, dip).

(2) Cleaning procedure for reagent reservoirs and associated covers (buffer A/PK and B) :

Every day, during daily maintenance procedure :

- Rinse with distilled water the two reservoirs and associated covers.
- Rinse with ethanol.
- Dry on paper towel.

Never let residual volume of reagents that could dry in the reservoirs.

(3) Decontamination procedure for the waste reservoir and associated cover:

Only if the waste reservoir has been contaminated :

- Soak the tray and its cover in 1N sodium hydroxide or in 6°CHL hypochlorite sodium during 1 hour minimum.
- Rinse with distilled water to eliminate any traces and/or vapours of the decontaminating solution.
- Rinse with ethanol.
- Dry on a paper towel.

(4) Frequency of replacement :

Although the waste and buffer reservoirs and associated covers are correctly maintained (see cleaning procedure above), their use must be limited to 4 weeks maximum.

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16.3   NSP decontamination procedure

Biosafety measures must be in agreement with recommendations of regular authorities of the country.

(1)   All the materials directly in contact with the samples and the wasted liquids must be considered as contaminated.

(2)   Contaminated surfaces of the NSP system (tip rack position ; buffer A/PK position ; buffer B position ; waste position ...) must be cleaned with 6° chlorometric (CHL) sodium hypochlorite solution (bleach). Surfaces must be rinsed with a paper towel soaked in distilled water, then dried with ethanol. The material use for cleaning must be discarded in a special container for contaminated wastes.

16.4 Ordering information

16.4.1 Disposables

Reference	Description	
35 90 132	Deepwell microplate Greiner	(x 50)
35 90 139	Sealing film (plastic)	(x 50)
35 90 133	Sealing film (aluminium)	(x 100)
35 90 131	NSP Disposable tips	(x 960)
35 90 158	NSP Reservoirs set	(x 3)
35 90 135	NSP Waste container	(x 20)
35 91 049	Nozzle head External O-rings	(2 x 8)

16.4.2 Instrument and accessories

	Reference	Description
	35 90 200	TeSeE® Precess® 48
	35 89 158	Ribolyser®
	35 89 046	Heating block (for 3x20 tubes or 1 deepwell)
alternative	35 89 198	Heating block (for 3x20 tubes or 1 deepwell)
	35 90 134	Deepwell rack for heating block
	35 89 190	5804R Centrifuge
	35 90 136	Eppendorf rotor 2 µplates
	35 90 155	NSP Complete system (English)
alternative	35 90 156	NSP Complete system (French)
	35 90 138*	Hand barcode scanner
	35 90 137*	DW 40 Deepwell microplate washer
	35 90 140*	NSP mouse pad

* These references are included in the 'NSP Complete system'