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The innovative swiss made products

# *Ultra Pure Nitrogen Station*

# *U Z N 2*

# *OPERATING MANUAL*

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# *CHAPTER 1.*
# *INTRODUCTION*

This document provides the necessary information for the installation and operation for the NITROGEN GENERATOR and his options; it also describes the simple maintenance operations as well as its troubleshooting.
It is applicable to the following models of the V1 generation produced since September 2009:

- UZN2-500
- UZN2-750
- UZN2-1300
- UZN2-4000

The operating manual consider and describe an instrument generally equipped with the most complex configuration ; should the explanation concerning the most complex instrument be too different from the simpler instrument, both cases will be described separately.

# CHAPTER 2.
# GENERAL INFORMATION and
# COMPATIBILITY TO NORMALISATIONS

## 2.1 Notes on the FCC compatibility

This equipment has been tested and found compatible within the Class B limits of the digital instruments, chapter 15 of the FCC regulation. These limits have been defined in order to provide a reasonable protection against the strong electrical interferences in the installations inside a residential area. This instrument generate, use and can send out some radio frequency if it's installed without following the manufacturer instructions; moreover it can generate in the case of certain installations some interferences to the electrical radio communication.

Should this instrument produce some significant interference to the radio and television, this case can be identified by plugging and unplugging the instrument. We recommend, in order to eliminate the interferences, to take one or more of the following actions:

Re-orientate or redirect the antenna

- Increase the distance between the equipment and the receiver
- Plug the equipment in a different electric circuit from the one alimenting the receiver
- If none of the above mentioned actions are giving results, contact an experienced technician or selling agent in radio/TV..

## 2.2 CE Conformity

This equipment was built in compliance and is compatible with EC recommendations concerning electrical safety and electromagnetic emissions. It complies with 89/336/EWG, 93/98/EWG, standards EN 50 081-1, in 50 081-2, EN 50 082 - 1 and EN 50 082 - 2.

### Note

Any modifications on the instrument which have not been approved in writing by the manufacturer will automatically cancel the manufacturer warranty. If such modifications are nevertheless undertaken, they are under the user responsibility; the manufacturer will under no circumstances be responsible for any damages direct or indirect which they would cause

## 2.3 W.E.E.E. product Recycling declaration

In agreement with the European EC/2002/96 directive on electrical and electronic equipment recycling, this product may not be disposed of in the garbage. For recycling information, contact the company who sold this product. If you want to get rid of this instrument, identify it as such and direct it to a certified recycling centre.

### *2.4 Security Instructions and correct use*

This Hydrogen generator has been designed in order to produce Hydrogen for laboratories' applications. This instrument must only be used for such applications respecting the specifications and recommendations for its proper use described in this operating manual. The main recommendations are:

- Instrument can only be use indoors.
- It can only be use at temperatures above 4℃ in a well ventilated room.
- In case of maintenance inside the instrument, always unplug it before opening the casing.
- Only the spare parts described in chapter 5 can be changed by the user. Other maintenances action on this instrument must be undertaken by trained and authorized technician

# *CHAPTER 3.*
# *SPECIFICATIONS and DESCRIPTION*

## *3.1 Specifications*

| | |
|---|---|
| Ultra Pure Nitrogen Station<br><br>values at 20℃ and 1013 mbar of atmospheric pressure) ( | UZN2-500: 0.5 Nl/min maximum<br>UZN2-750: 0.75 Nl/min maximum<br>UZN2-1300: 1.3 Nl/min maximum<br>UZN2-4000: 4.0 Nl/min maximum |
| Outlet pressure | 5 bar relative maximum |
| Ultra Pure Nitrogen Station purity | UZN2-500: 99.999%<br>UZN2-750: 99.999%<br>UZN2-1300: 99.99%<br>UZN2-4000: 98%<br><br>< 0.1ppm total Hydrocarbons, < 0.05ppm CO (only if catalytic oven option is installed) |
| Purification technologies | • Catalysis on high temperature Pt+Pd (option)<br>• PSA |
| Particule filtration level | 0.1 µm |
| Display | Monochrome LCD graphic display, resolution 128 x 64 pixels |
| Keyboard | Contextual, touch sensitive |
| Manual interface control | Adjust operating points, system status<br>Functioning diagnosis, users settings,<br>keyboard and screen adjustment. |
| Remote control | Through USB interface: alarms standard reading<br>Remote control software on option<br>Through dry rely ; 1 entry (Start/Stop) and 1 alarm |
| Supply voltage | 100 V/60Hz; 110-117V/50-60Hz; 220- 240V / 50-60 Hz |
| Maximum electric consumption | 550W maximum |
| Pressure display accuracy | 0.1 bar (± 0.5 %) |
| Outlet fitting | Stainless steel double ring ¼" |
| Functioning conditions :<br>- Temperature<br>- Relative Humidity | <br>+10℃ to +35℃<br>0-80%, non condensing |
| Transport and storage conditions :<br>- Temperature<br>- Relative Humidity | <br>+0℃ to +35℃<br>0-90%, non condensing |
| Category of surge | II |
| Grade of pollution | 2 |
| Sound pressure | <50 to 55 dB(A), according to model |
| Net weight : | 70 Kg |
| Dimentions : all models | 360 x 640 x 695 mm (LxPxH) |
| Packaging size | 450 x 800 x 800 mm (LxPxH) |

### *3.2 Presentation of the Instrument*

All members of the family are presented in the form of a single casing instrument, to be placed on the floor under the working desk. The family is based on a interchangeable module concept in the shape of drawers.

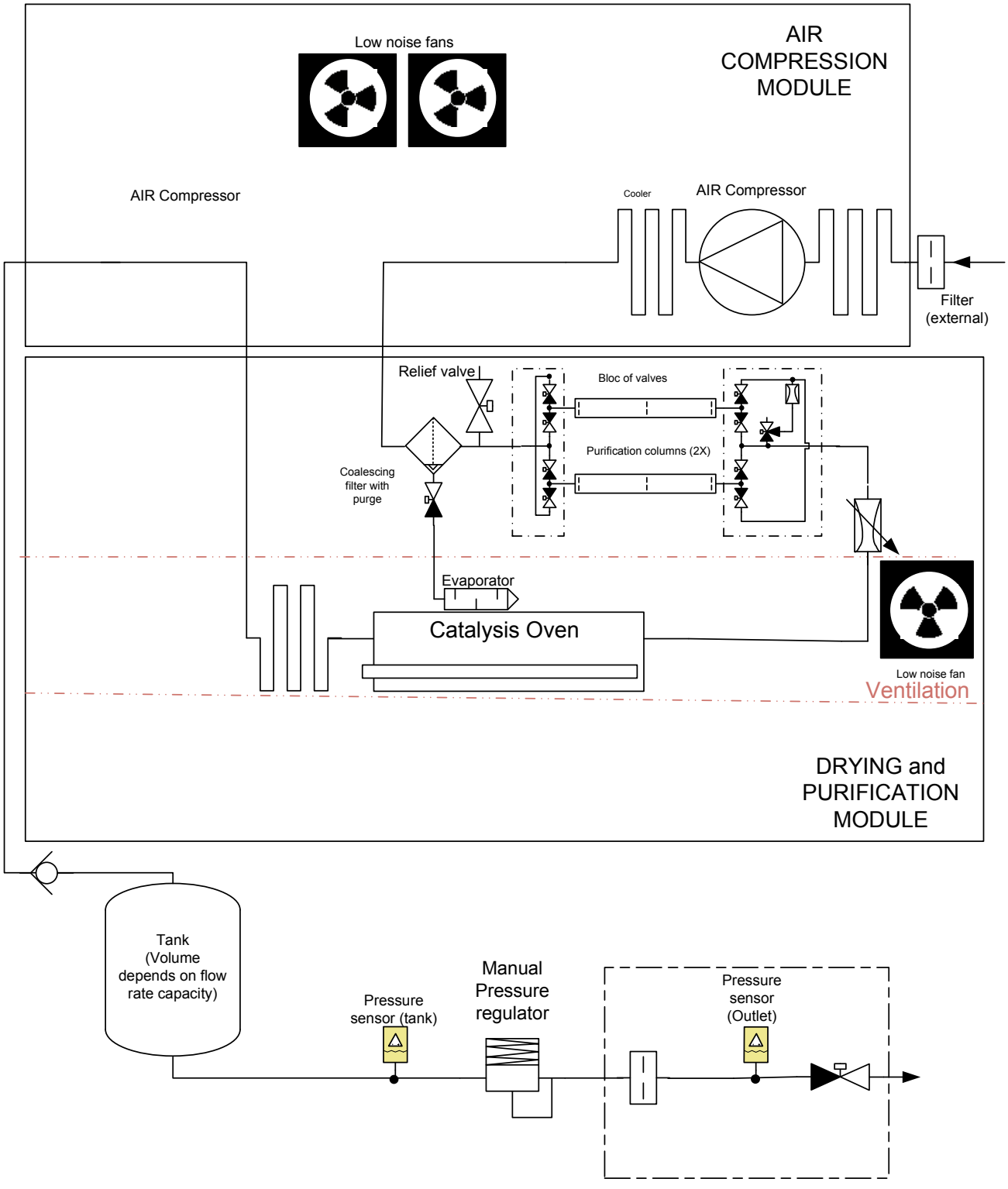
The front face is divided into two parts, the upper part has the screen and tactile key board ; the lower part fitted with hinges allow to accede to the pressure setting and inlet filter.


The back face is composed of 3 parts, 2 modules and one cache:
The lower module is the compression group, the upper module is the purification module.
The upper module control the compression group, it also has the main switch with fuse as well as the generator outlet.

### *3.3 Functioning principle : basic equipment*

The ambient Air is compressed by the internal compressor. Once compressed, the Air is cooled and dried through a coalescent filter. Air is passed into a dual column pressure swing adsorbtion system to remove water vapor and oxygen. While one of the dryer columns is active, the other one is regenerating by back flushing with pure nitrogen. The adsorbed moisture and oxygen are vented to atmosphere. A group of solenoid valves automatically switches the air supply to the newly regenerated column, when the regeneration process is complete. By option, pure nitrogen is next carried to a stainless steel catalytic oven where all hydrocarbons (HTC) and CH4 as well as the CO are oxidized. The oven is fitted with a high performance catalyst based on a Platinum-Palladium mixture. Heated to a high temperature, the catalyst allow to reduce the HTC and CO to less than 0.1ppm (100ppb).

The pressurized nitrogen is send to a tank, the capacity of which depends on the UZN2 capacity. The N2 is pressure regulated and go through a fine filter which holds 99.99 % of particles larger than 0.5µm.
At this point the Nitrogen is available at the outlet fitting.
The compressor is driven by the tank pressure ; it will stop itself when the upper set pressure value is reached and start again when the lower set pressure is reached; the lower tank pressure is above the outlet set pressure.



### *3.4 Functioning principle: options*

*3.4.1 Remote control by dry relay*

The option remote control by dry relay can perform a simple remote control between the UZN2 and a external compatible « controller ». This remote control enable the start up and shut down of the Station through a voltage between 2 terminals of the connector. The UZN2 responds by closing or opening a relay in the event of an alarm. The remote control can be NC (normally closed) or NO (normally open).

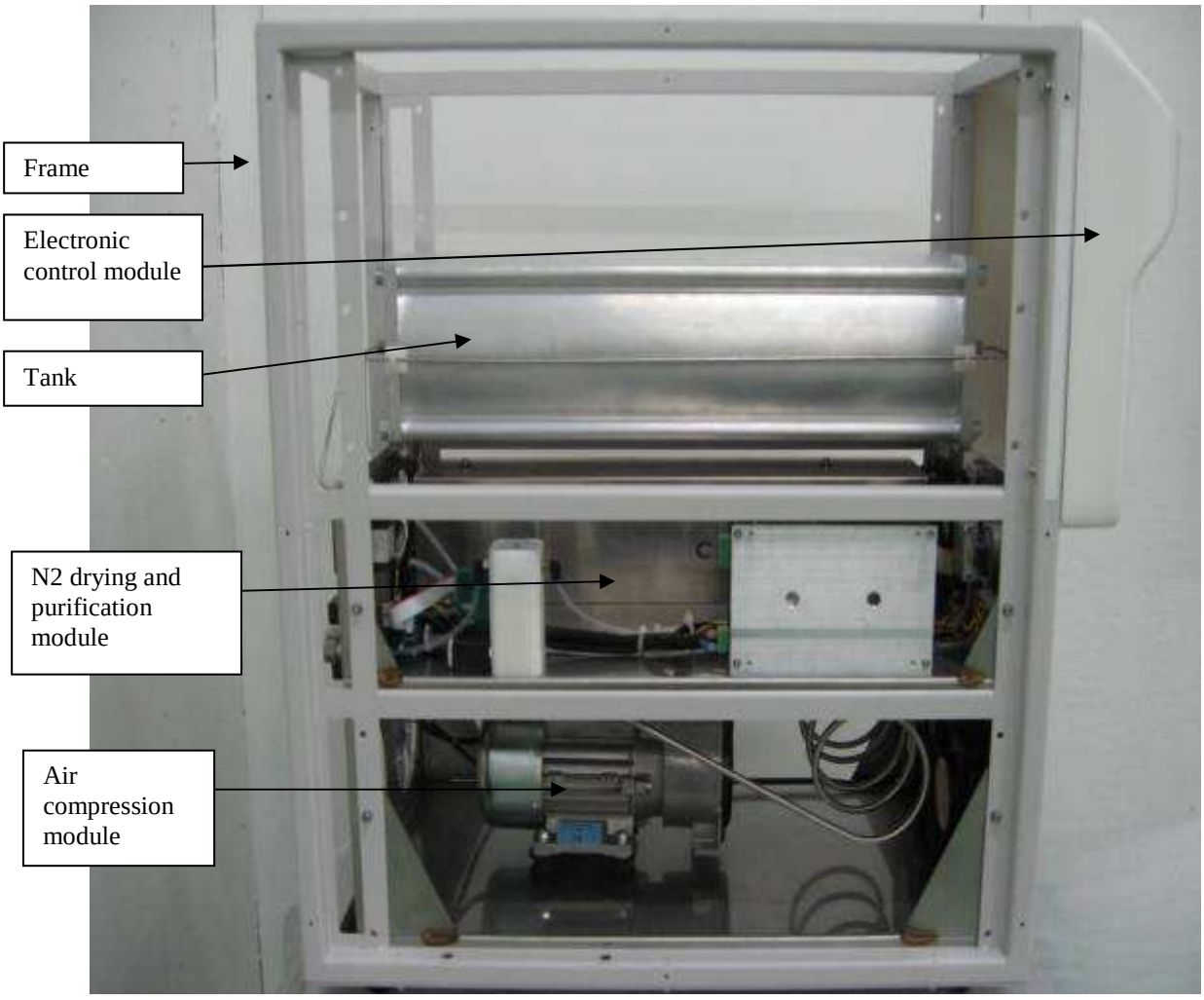
*3.4.2 Remote control via USB interface*

USB remote control option allows you to read and monitor the operation of the instrument from a PC. The delivery of the option is a software owner running under Windows (Windows 2000, XP, VISTA and Windows7) , a USB cable and operating manual.
The details of this option are described under 4.10

### *3.5 Internal structures*

The NITROGEN station, as the other instruments of NEW TECH LINE family, is built on a modular concept, it is mainly composed of a control module and service module(s)

- a tropicalized and light grey coated steel case , composed of a frame with sheet – metal protection panels.
- an electronic control module
- an Air compression module
- a purification module
- tanks and linking tubes with the filtration module



*3.5.1 Electronic control module*

The electronic control module is composed of a plastic fire proof cover, upper part of front face and one board, MB3800

- The main board **MB3800** has the following functions
- Touch screen display support and control
- External communications
- Communications with other modules (internal communications)
- Main processor

Note : the MB3800 is powered from the purification module.

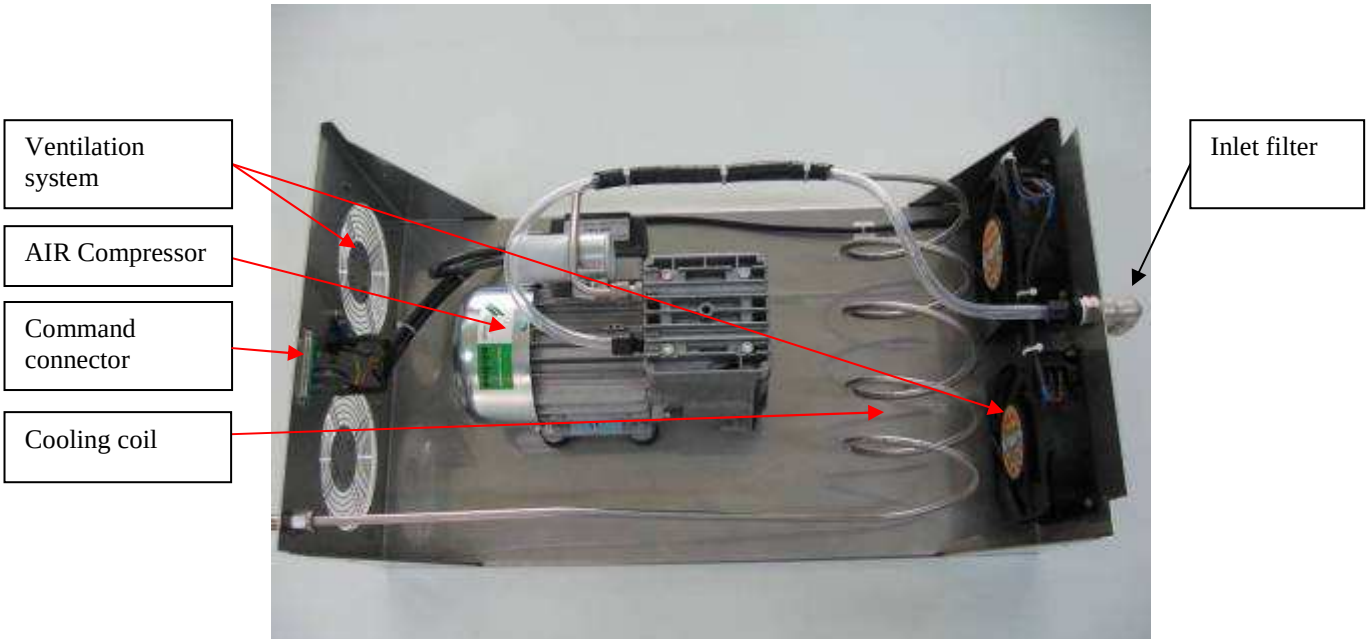
*MB3800 card fixed inside the lead ( vue from inside)*

*3.5.2 Air Compression module*

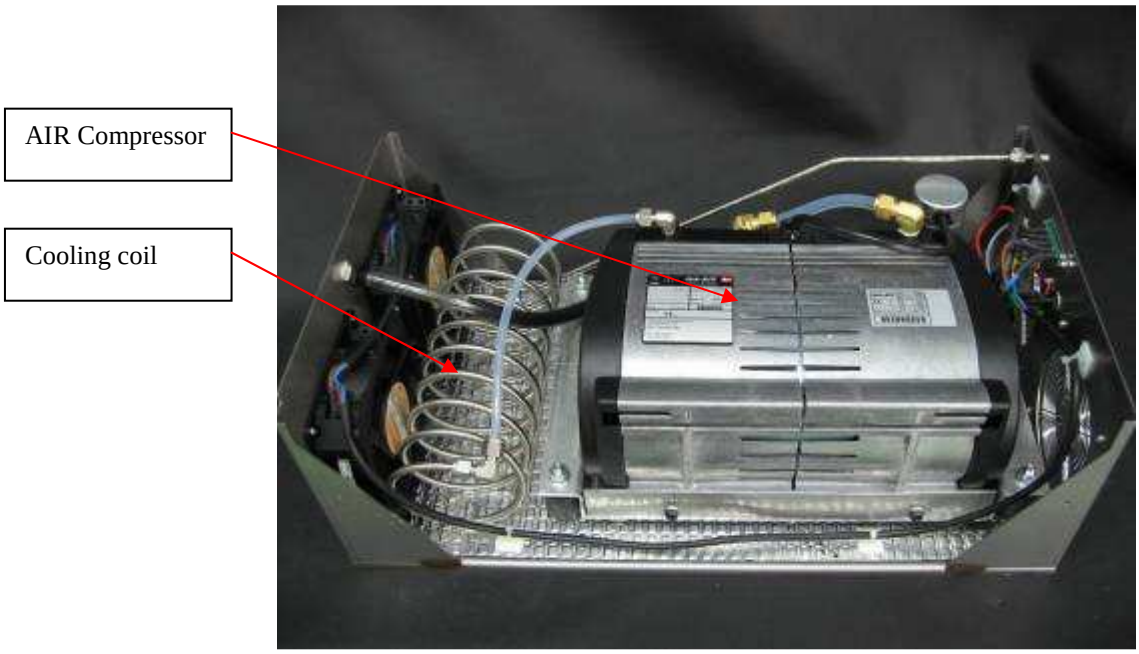
This module has:

- One Inlet filter(s), can be reached from the back of the lower front face
- The compressor, the type vary depending on the UZN2 capacity,
- A stainless steel cooling coil
- the ventilation system

low capacity Air compression module




high capacity Air compression module

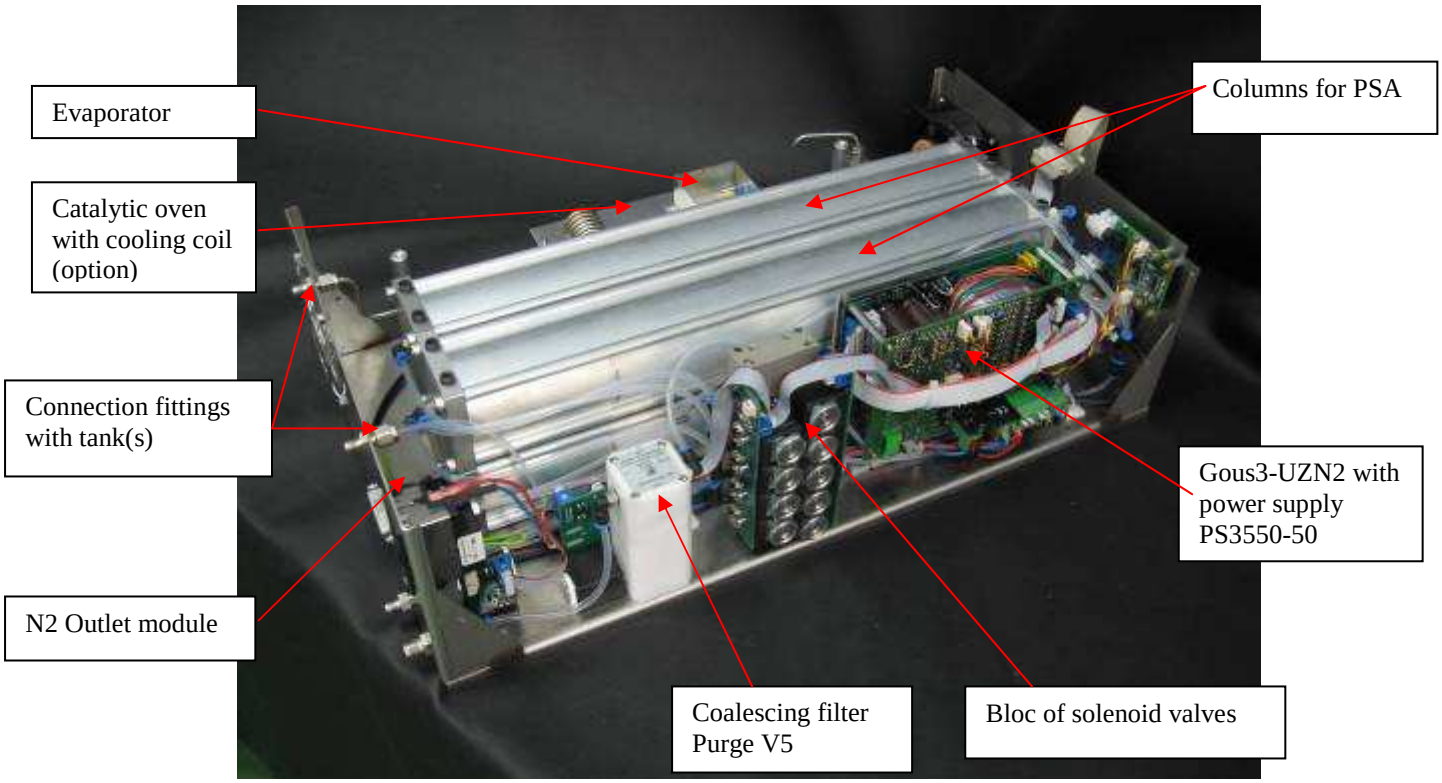


*3.5.3 Air purification module*

This module is composed of :

- The coalescing filter with automatic purge (Purge V5)
- The bloc of solenoid valves
- The columns for PSA
- The catalytic oven with cooling coil and forced ventilation. (OPTION) Evaporator fixed on top
- The outlet block
- The electronic control board
- The power supply board
- The pressure regulator with 2 sensors fitted on a board

This image represents the module without the ventilation tunnel.



# *CHAPTER 4.*
# *INSTALLATION and OPERATION*

## *4.1 Receipt of Instrument and check*

Each instrument is inspected and packaged prior to transport with great attention.
Immediately after receipt, we recommend to perform a quick visual inspection of the package as well as the LABELCHOCS shock detector. If it turned red, report it in writing to the carrier at the time of delivery

The UZN2 is set on an individual wooden mini-palette 40x80cm, which is the basis of its transport packaging. Its upper part is protected by shaped foams and a thick cardboard. The thick cardboard is screwed on the palette. The UZN2 extraction from its packaging start by unscrewing the cardboard, then cutting the straps. At this stage it is possible to verify the visual integrity of the instrument.

Any damages must be immediately identified and photographed; It should be reported to the carrier as well as to your local Distributor or LNISchmidlin SA.
For major damages, the UZN2 shall be returned to the manufacturer after synchronization with the after-sales service, which can be reached by e-mail at the SAV-LNS@lnindustries.com .

## *4.2 Delivery content*

| Quantity | Description |
|---|---|
| 1 | NITROGEN STATION (UZN2) |
| 1 | Quick starting guide (QSG) |
| 1 | Operating manual on CD |
| 1 | Verification and calibration certificate |
| 1 | Electric cable 230V, CE |
| 1 | Shipping box |

## *4.3 Station installation*

- The UZN2 must be installed on a flat surface, without vibrations, avoiding potential shocks and excessive heat source. The UZN2 should not be in contact with other devices on any of its walls, a sufficient distance is necessary to avoid communicating to other instrument the small vibrations produced.
- Operate the instrument in an open and well ventilated area, in which the temperature does not go **below 0℃**. The good functioning of the instrument is guaranteed for a temperature between +10 and +35℃.
- **To ensure proper ventilation, a clear space of at least 20cm is necessary at the back of the instrument. The Air cooling admission is located on the lower front panel and should under no circumstances be obstructed.**

### *4.4 Electric connections*

**Mains:** Connect the UZN2 with the electrical cable provided; If it was not possible, verify that the cable use has a sufficient section and has a ground wire ( 3X1.5 mm2 minimum). Make sure laboratory differential circuit breaker can absorb an inrush current of at least 10A without switching off.
Note : the UZN2 is equipped with fuses to protect the compressor on one hand, the Catalysis oven and electronics control on the other hand. They are placed on the back of each tray.

### *4.5 Fluidic connections*

The PURE NITROGEN is available at the N2 OUTLET placed at the back of the instrument. This outlet is fitted with a stainless steel Swagelock fitting, it must be connected to the consumer through a clean and free from grease stainless tube of 1/8". The use of AFP and TEFLON are not recommanded, because HC and other gases diffuse through their walls and degrade the NITROGEN purity.

**Make the connection to the consumer after the purge cycle described thereafter**

The instrument pressure outlet is adjusted by the pressure regulator placed under the lower panel and can be visualized permanently on the screen.

**CAUTION** : your UZN2 was tested for several hours at the factory and all its tubes have been cleaned of all ambient air contaminants. After a break of several days to several weeks of operation, Air ambient has slightly dirty the circuit of the instrument. The walls of the tubes need again to be cleaned. A purge cycle must be performed as described in the next chapter.

### *4.6 Initial Start-up*

**CAUTION** : the dialogue between the instrument and its user is initially done via the touch screen placed on the front top Panel. Orders or submenus are obtained by pressing lightly with a finger on the chosen area. We strongly discourage the use of objects such as pen pointing, the sensitive side of the screen might be irretrievably degraded.

#### *4.6.1 Start-up*

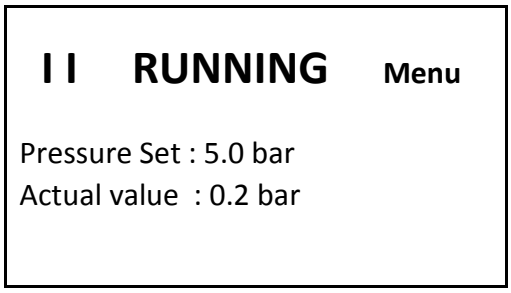
Turn the instrument on with the switch placed on the back of the instrument. The identification image appears during approximately 30 seconds the following information will be shown, the maker, model, serial number as well as the software revision.

**LNI SCHMIDLIN SA**
**Ultra Pure Nitrogen Station**

**Model : UZN2 500 EU**
**S/N : UZN2-100204219**
**Software Rev V1.3**
**Innovative Swiss Made Products**

Note : In order to facilitate the first start-up in your laboratory, the UZN2 has been set in the factory for an automatic start-up and produce a pressure of 5 bar.

After the presentation, the main image appear




It is possible to check the filling up progression of tank by pressing on MENU then select Diagnostic and Internal Pressure.
The image present the tank pressure, the outlet pressure, the maximum pressure (alarm), and the functioning state of the compressor.

### *4.6.2 Purge Cycle*

Before connecting the UZN2 and the alimentation tube to the consumer, it is necessary to proceed to a purge of the system:

Leave the instrument continuously working between 4 to 6 hours, limiting the outflow to about 100 NMl/min. The outflow could be limited with a restrictor or needle valve connected on the NITROGEN output.

**From this moment, it is recommended to connect the outlet tube to the consumer and proceed to the pressure setting.**

### *4.6.3 Outlet pressure setting*

The outlet pressure is regulates by a manual regulator, its setting is made manually while reading on the screen the pressure value:

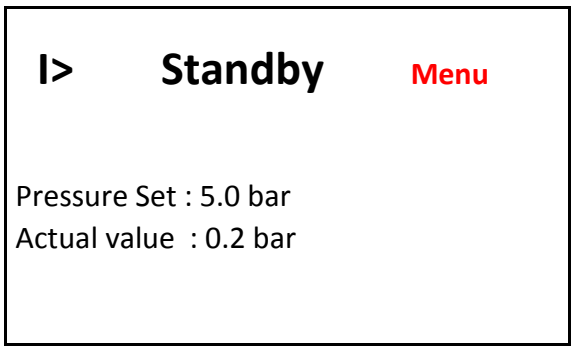
- Open the front lower panel,
- Pull the security button to set it free from its security setting
- Adjust the indicated pressure value requested for the installation: turn clockwise to increase the value.
- Push back the button into its security setting.

**Note** : The setting procedure of the outlet pressure automatically execute a rough setting (+/- 0.5bar) of the alarms pressure setting. A different or finer setting can be done through the function N2 PRESSURE ADJUSTMENT.
At this stage, the instrument is working with its factory settings. In order to improve your skills on performance, software, maintenance period, alarms and trouble shooting, we recommend that you read the further chapters and paragraphs of this document.

## *4.7 Control software description*

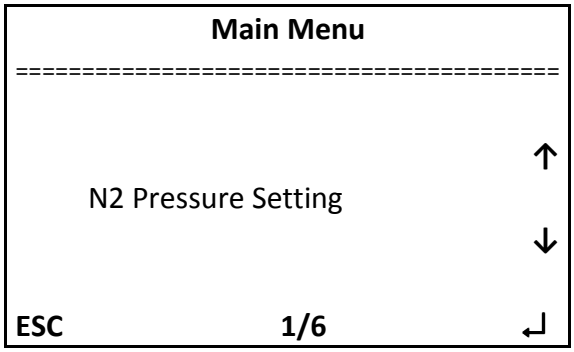
### *4.7.0 Features overview*

Once the initial boot is made, the next screen appears:




This is the main menu allowing to set the instrument in mode :
Generation (running) or stand-by.

Before generating some NITROGEN, it is useful to adjust some settings of the instrument. By pressing « MENU » it is possible to access to the following menus :




The First menu « N2 pressure setting » (setting of the NITROGEN output pressure) allows as its name indicate to adjust the N2 output pressure.

In General, for navigation, the following symbols are used:

↑***and***↓ To navigate from one menu to another or from one page to another

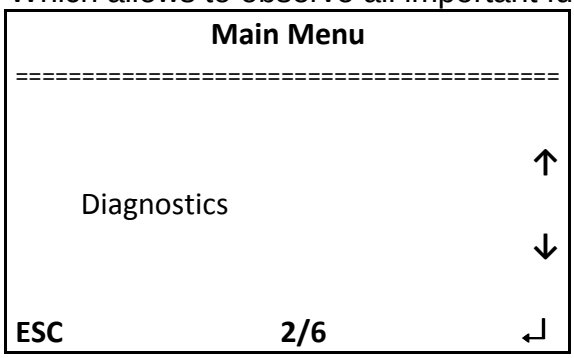
↵ To enter the relevant menu

***ESC*** To exit the current MENU and return to the previous menu

***1/6*** the current page number and the number of pages of the relevant menu

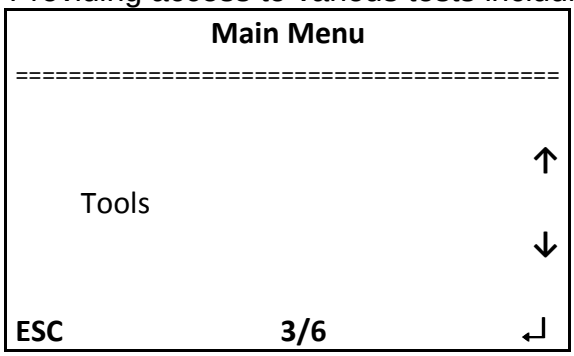
By pressing the arrow ↓ we reach the menu « **Diagnostics** »,

Which allows to observe all important functioning settings of the station

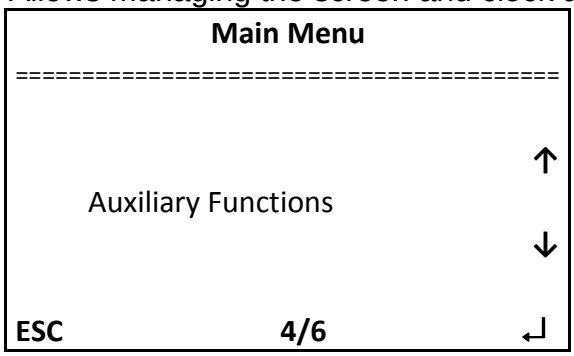



Other menus are :

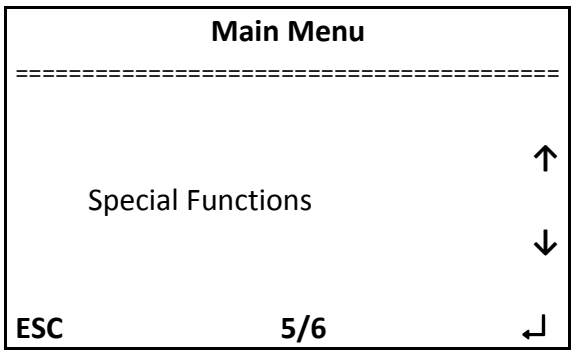
**Tools** :
Providing access to various tests including the compressor test



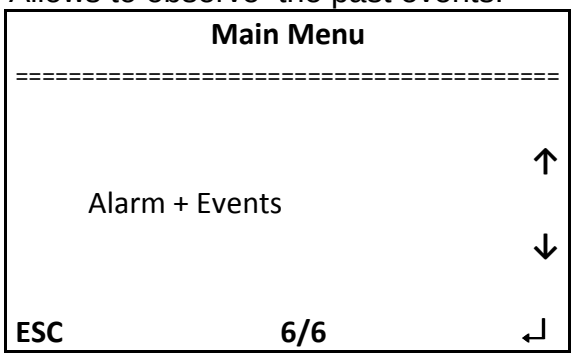

**Auxilary functions** :
Allows managing the screen and clock as well as setting the working units.



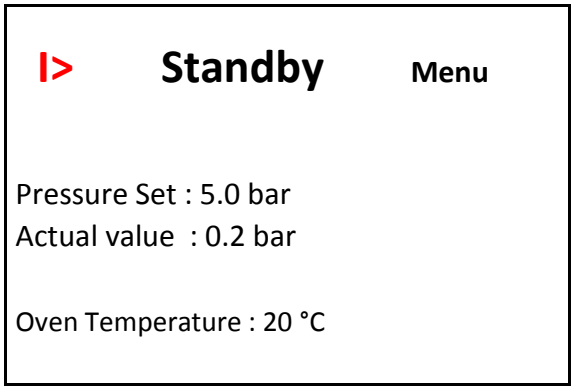

**Special functions** :
Which allow to set the restart mode in case of power cut as well as the remote control and the mode alarms.



**Alarms and events** :
Allows to observe the past events.

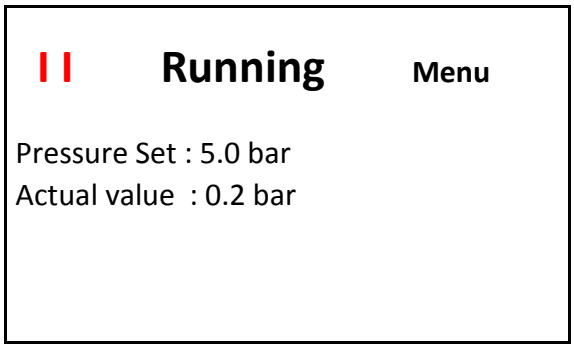



**Start up of the NITROGEN generation :**

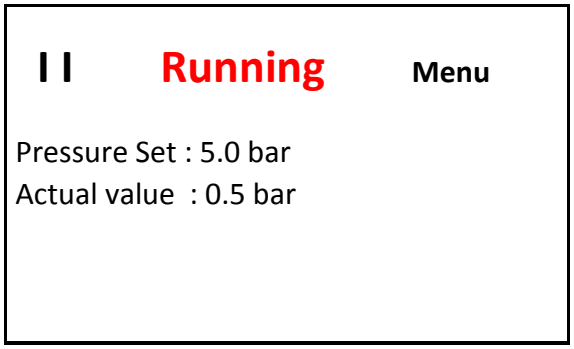


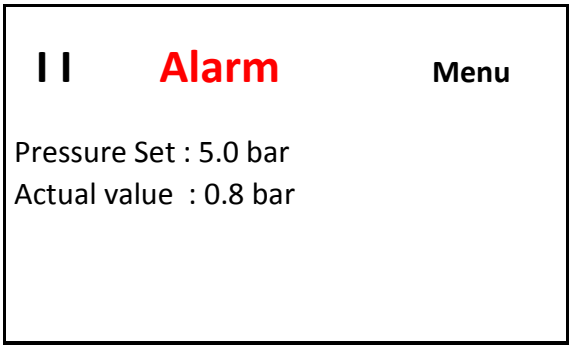

Once the pressure has been selected (see next chapter), just press on **«** I> **»** to start the generation.

Then the following window appears:

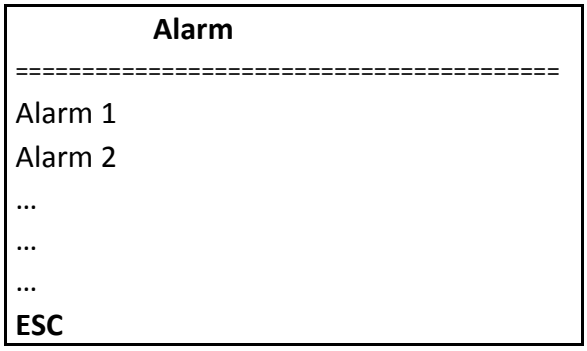


To stop the generation press **«** I I **»** the instrument goes automatically on « Stand by ».
In case of alarm, the message « ALARM » appears alternating with the message "Running" or "standby".



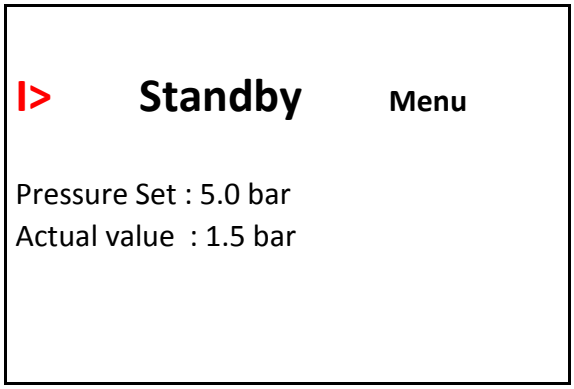




By pressing on « Alarm » the window with the list of alarms appears:




In general the main page indicate

- The state of the instrumet: Stand-by, Running, alarm
- The set pressure
- The actual pressure



In addition, the main page allows you to:

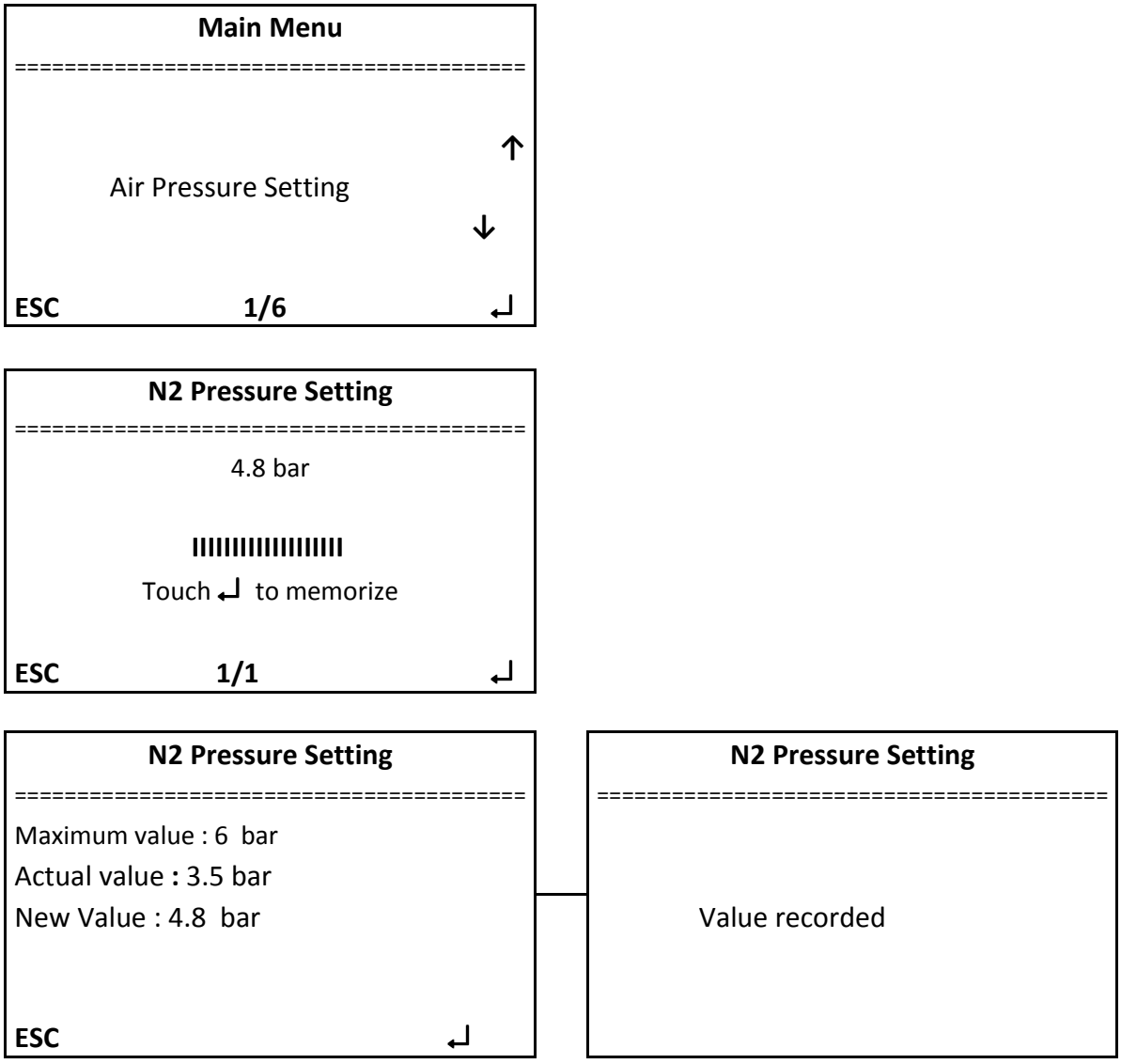
- To start or stop the generation
- To have access to the sub menu
- To see the alarms.

**Shortcut :**
*The center of the screen below is an active area to directly reach the pressure adjustment window.*

| |
|---|
| Pressure Set : 5.0 bar<br>Actual value : 0.2 bar |

### *4.7.1 Menu « N2 pressure setting »*

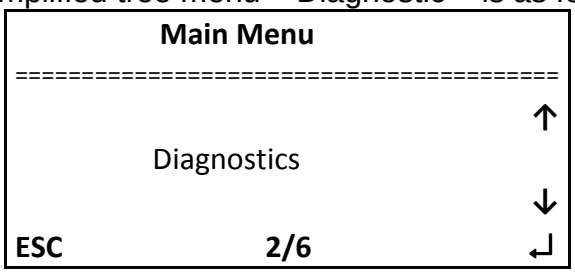
The tree menu « N2 pressure setting » is as follow:

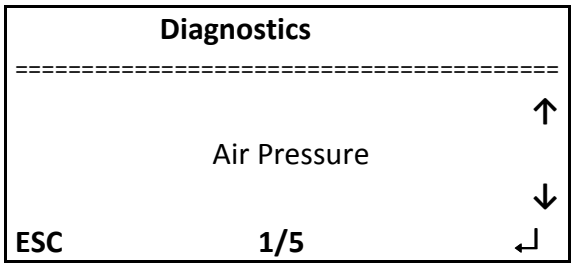


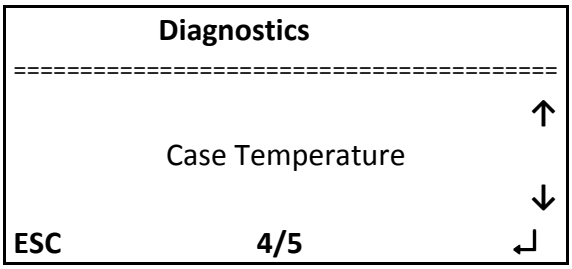
In order to set the outlet pressure, proceed as follow :

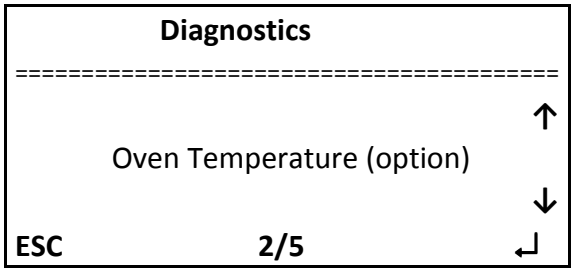
### *4.7.2 Menu « Diagnostic »*

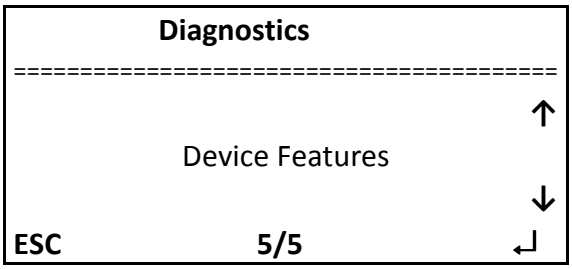
The simplified tree menu « Diagnostic » is as follow :

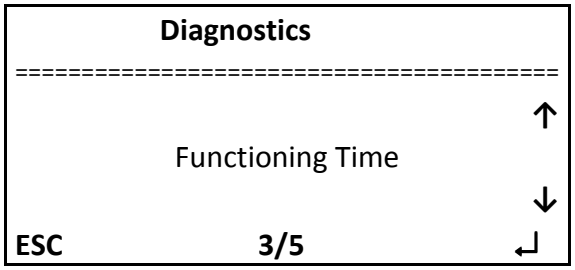


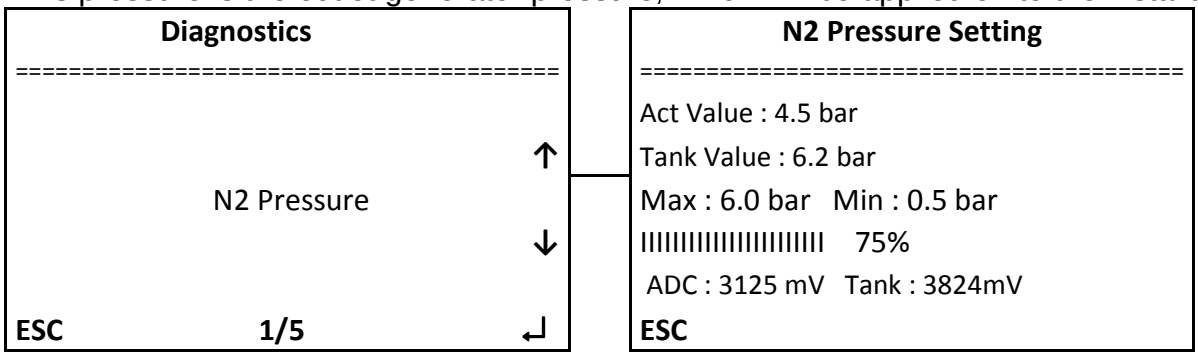




This menu allows **only to observe** the various functioning parameters of the instrument. Moving within the tree is done by using the arrows « ↑ » and « ↓ ». Once the requested setting is found, press on « ↵ » to enter into the sub-menu and « ESC » to come out.

### *4.7.2.1 Sub-menu « N2 pressure »*

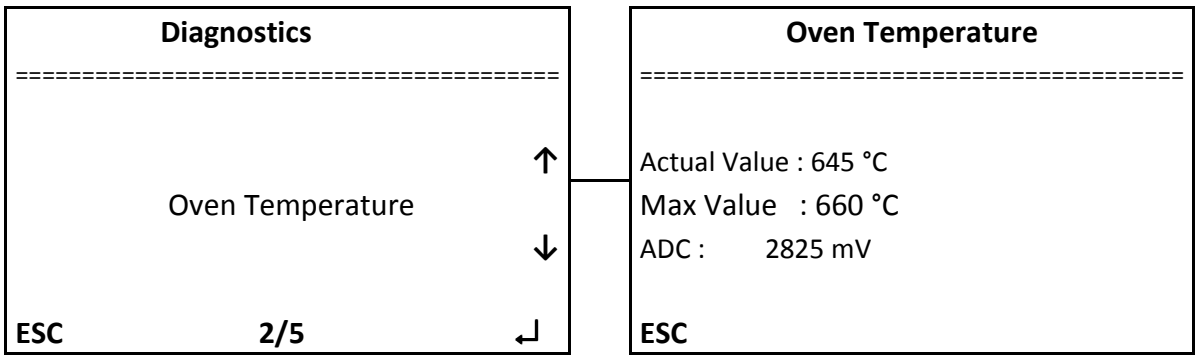
This pressure is the outlet generator pressure, which will be applied on to the installation




« Set Value »represent the requested pressure value
« Act Value »represent the outlet pressure measured by the sensor
« Tank Value » represent the pressure value inside the tank
« Max » and « Min » are the maximum and minimum pressure values.
The sign « **IIIIIIIIIIIIIIIIIIII** 98% » indicate at which % max of the pressure the setting is.
« ADC » indicate the value of the pressure analogous digital converter.

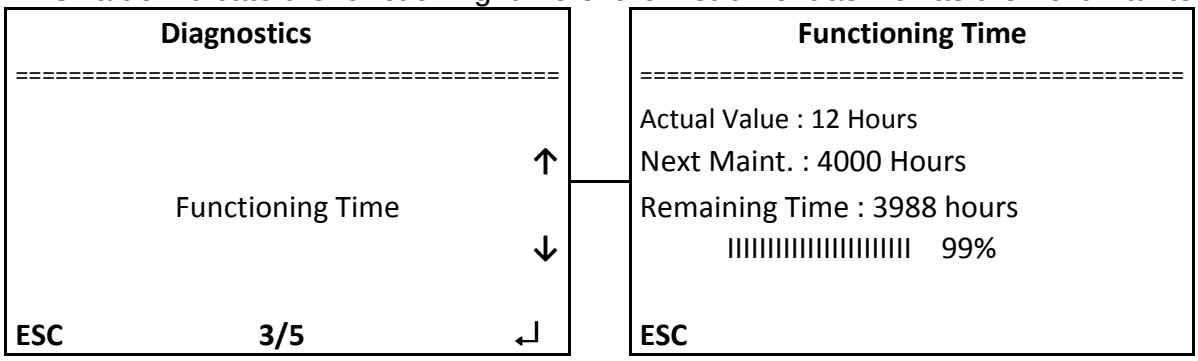
### *4.7.2.2 Sub-menu « Oven Temperature » (option)*

This value indicates the catalysis oven temperature




### *4.7.2.3 Sub-menu « Functioning Time »*

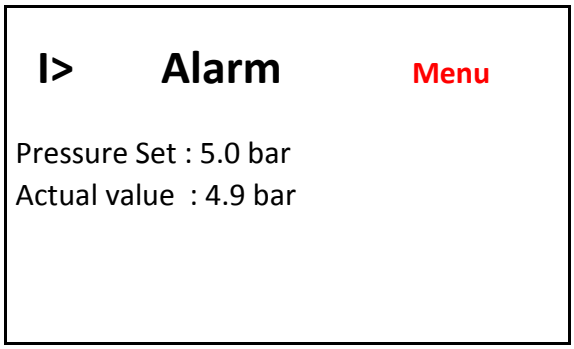
This value indicate the functioning time of the instrument as well as the next maintenance.



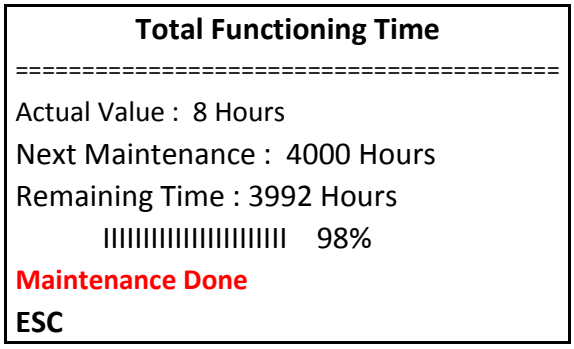

« Actual Value » functioning time since beginning of the instrument life

« Next Maint. »is the functioning time corresponding to the next maintenance .
« Remaining Time » remaining time before the next maintenance.
The sign « IIIIIIIIIIIIIIIIII 99% » indicates the functioning « reserve » before maintenance

Once the « remaining time » reaches zero, an indication « Alarm » appears on the screen main menu :



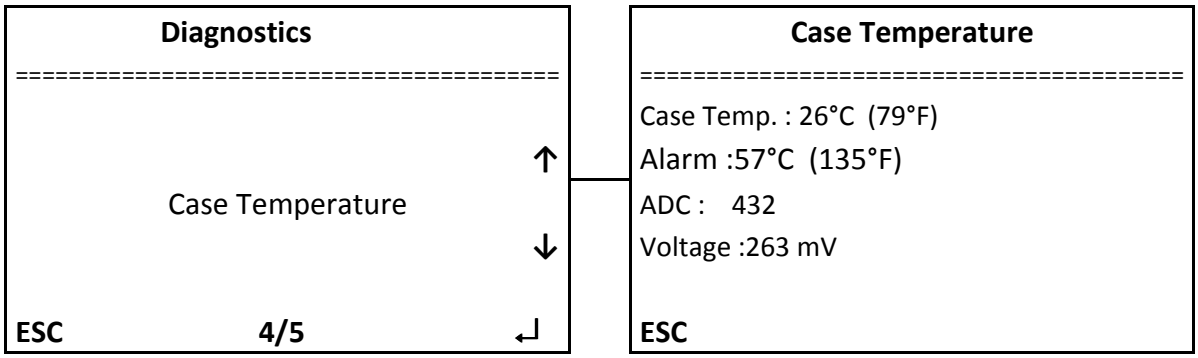

When the maintenance is done, go back to the menu « Diagnostic »\ « Total functioning time » and press on « Maintenance done »




At this time « maintenance done » disappear, the messages « Next maintenance » is incremented by 4000H and the message « Remaining time » is up dated.
Moreover, the message « Alarm » on the main menu disappear.

### *4.7.2.4 Sub-menu « Case Temperature »*

This value tells about electronic case temperature.

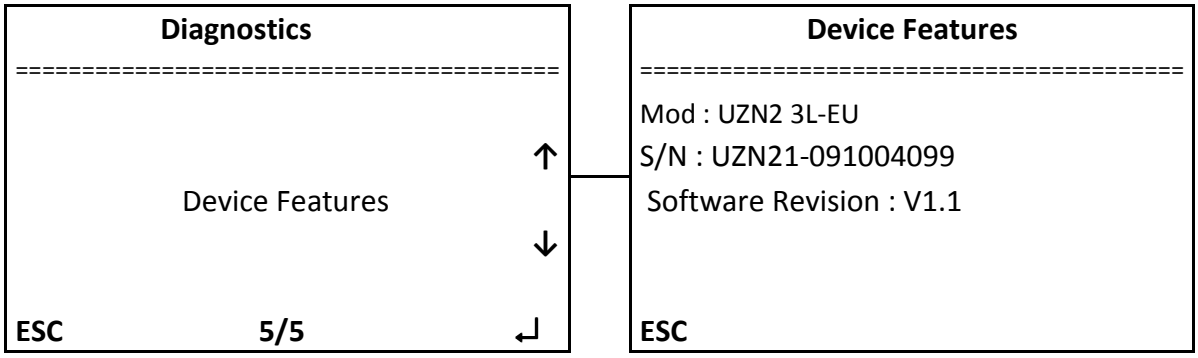



« Case Temp.» represents the temperature of the electronic module
« Alarm » is the Alarm value.
« ADC » represents the value of the analogue to digital voltage converter

### *4.7.2.5 Sub-menu « Device Features »*

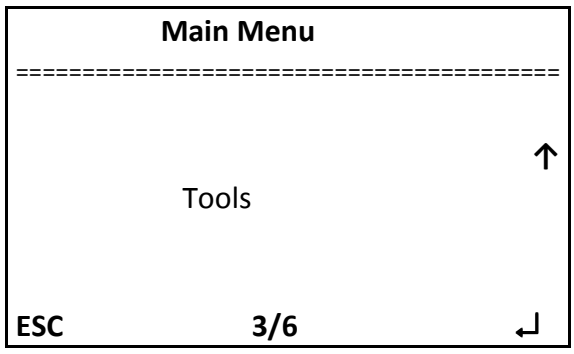
This sub menu allows to view the instrument model, the serial number as well as the version of the software.

.

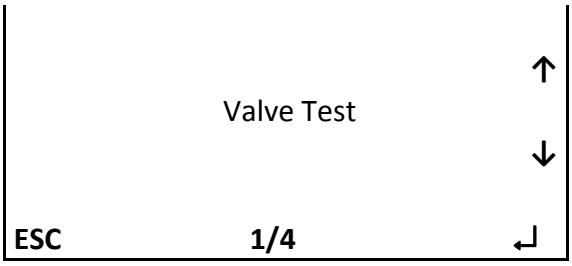


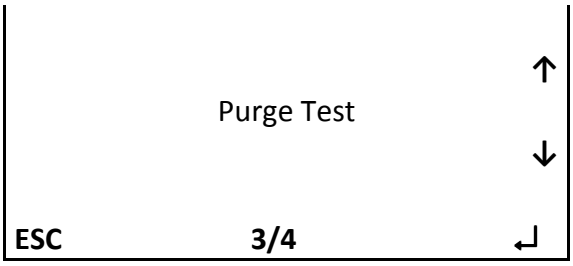

### *4.7.3 Menu « Tools »*

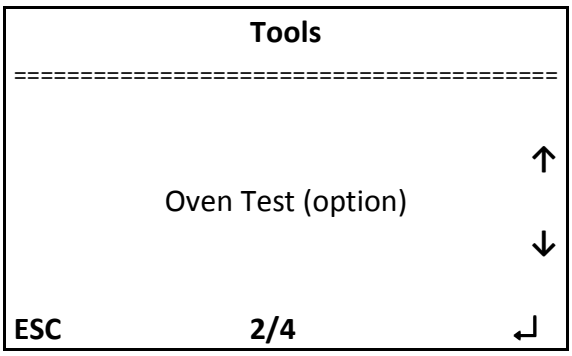
The tree of this menu is the following ::

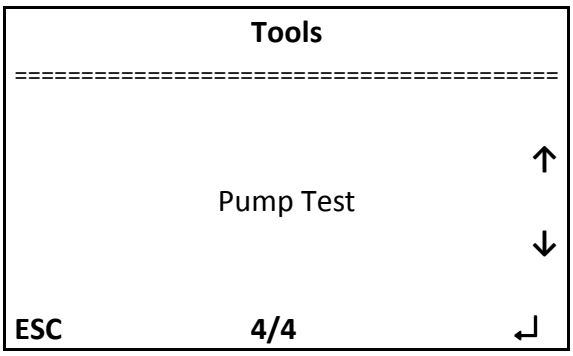




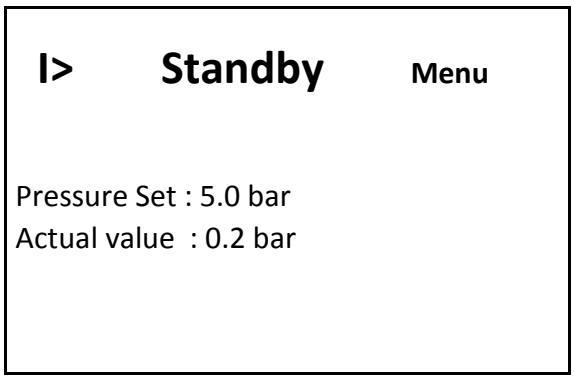


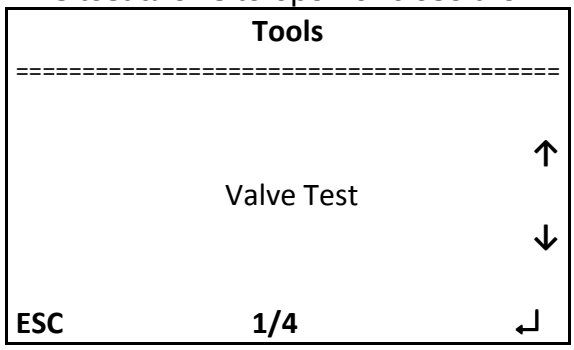



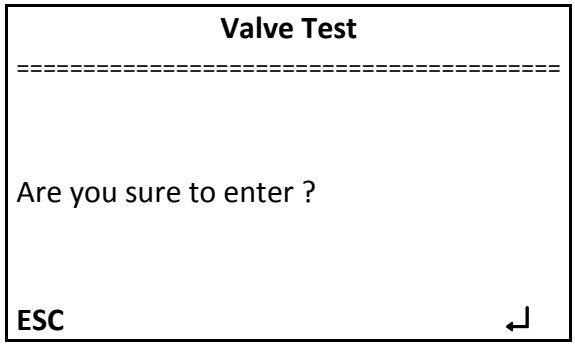

**In order to use these tools, it is absolutely necessary to place the instrument in "Stand-By" State mode, as below.**



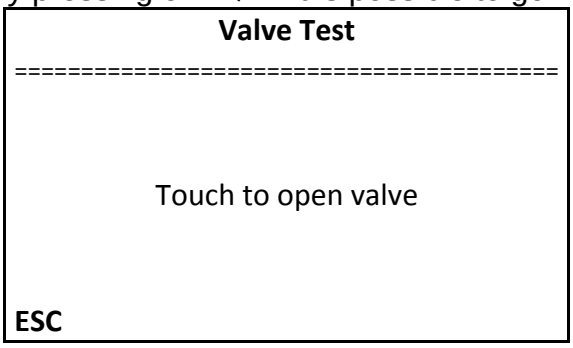
### *4.7.3.1 Sub-Menu « Valve Test »*

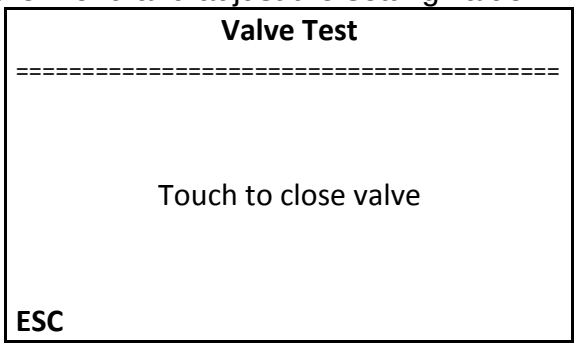
This test allows to open or close the N2 outlet valves.



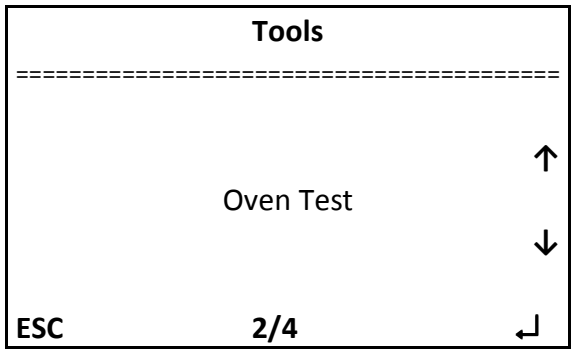

By pressing on « ↵ » It is possible to go into the menu and adjust the setting value

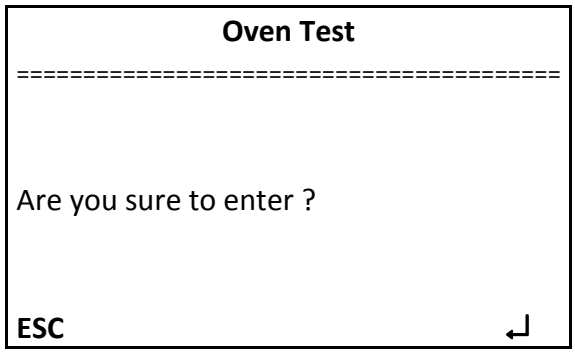


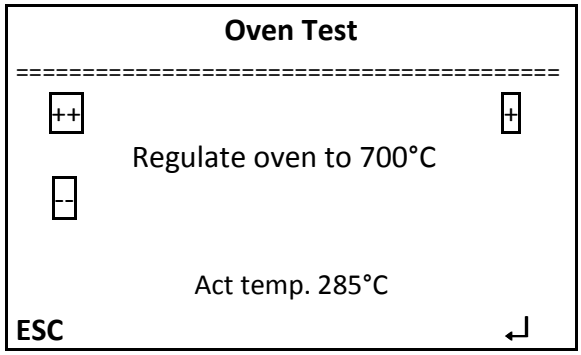




### *4.7.3.2 Sub-Menu « Oven Test »(option)*

This test allows direct access to the catalysis oven setting which can be modified as requested. WARNING: in order to allow for a very different setting to factory default setting, this feature is little protected against excessive adjustment values. A constant temperature setting above 750 °C temperature can damage the instrument.



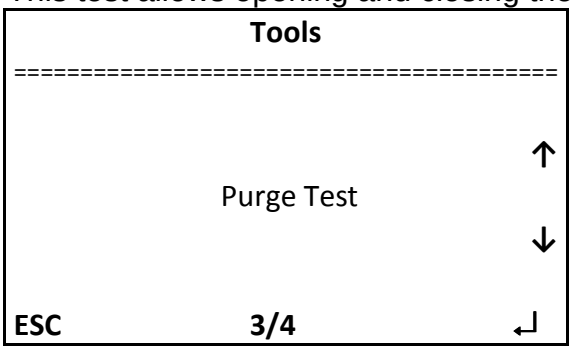



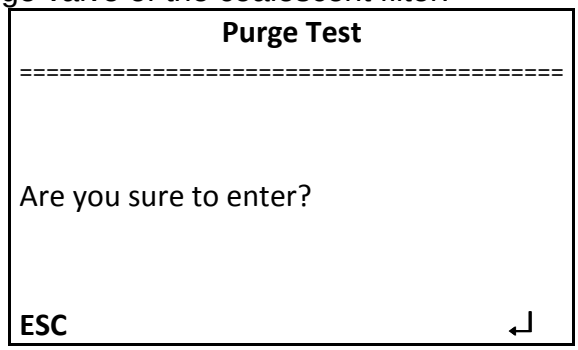



By pressing keys ++and –as well as keys + and -, the temperature setting of the catalysis oven is modified. It should be noted that the measure is done inside the heating body and not on the outskirt of the oven; this explain the quick reaction of the temperature value.

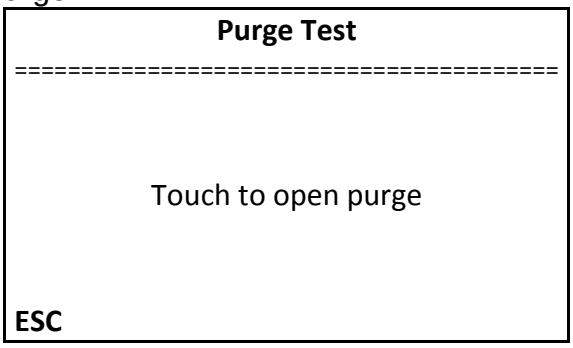
### *4.7.3.3 Sub-Menu « Purge Test »*

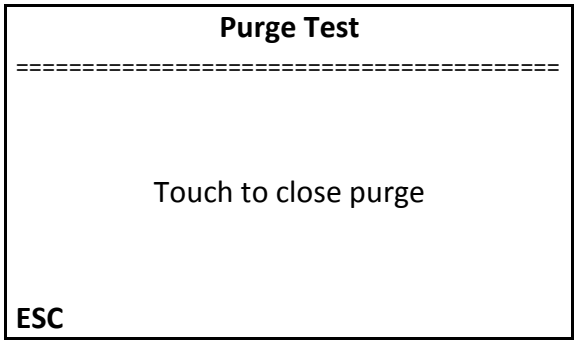
This test allows opening and closing the purge valve of the coalescent filter.



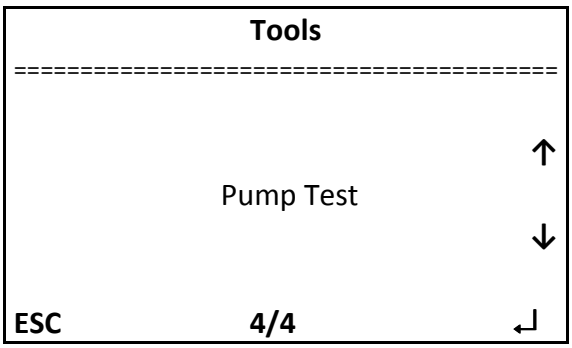

By pressing on key « ↵ » it is possible to enter into the menu and opening or closing the purge.

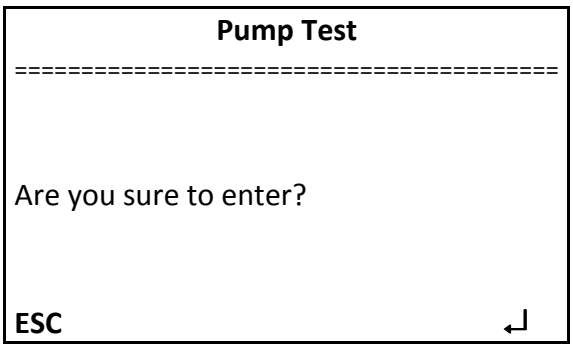


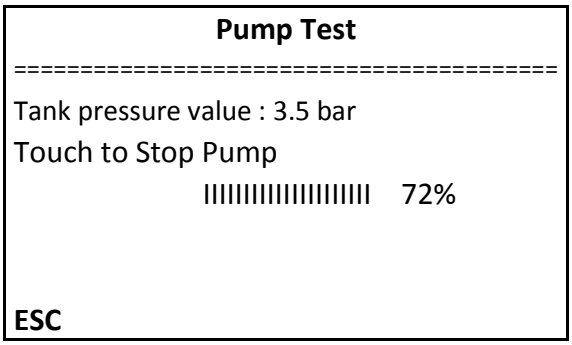

### *4.7.3.4 Sous-Menu « Pump Test »*

This test allows starting or stopping the internal compressor



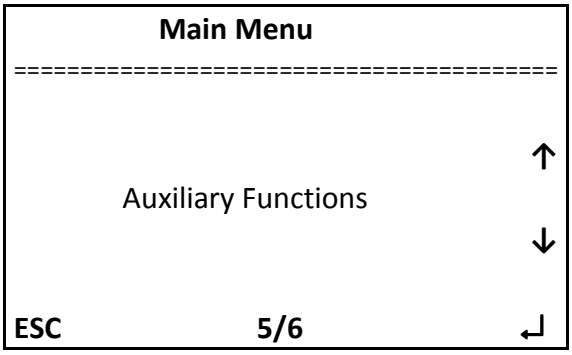



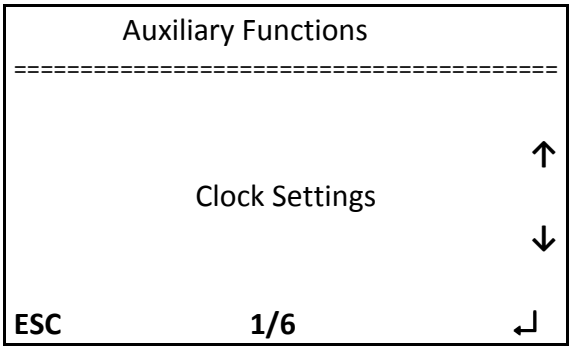

By pressing on key « ↵ » It's possible to enter into the menu and control the start of the compressor as well as checking the Air pressure variation inside the tank.

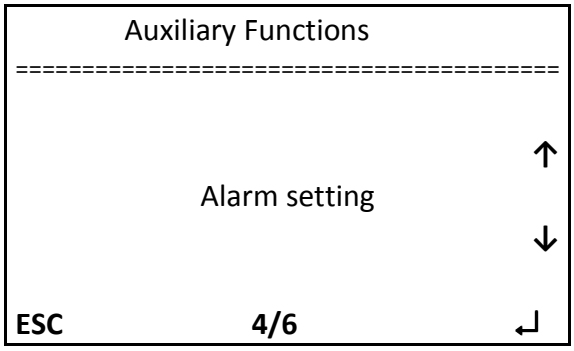


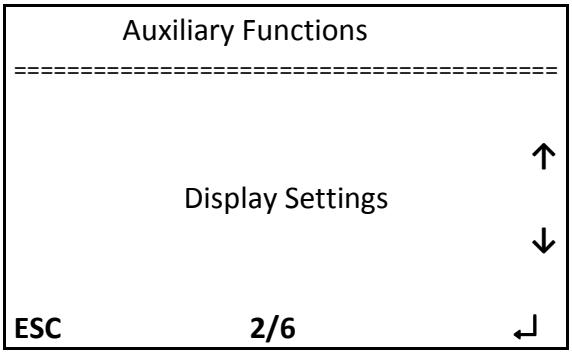

### *4.7.4 Menu « Auxiliary functions »*

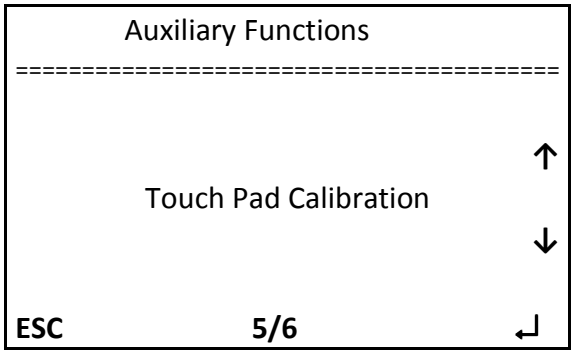
This menu tree is the following :

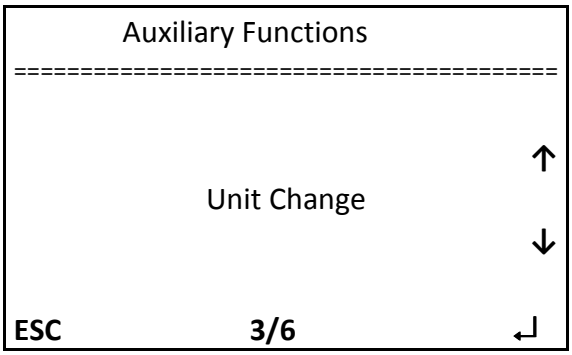


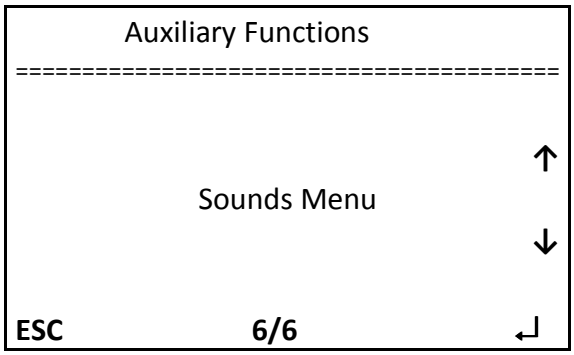



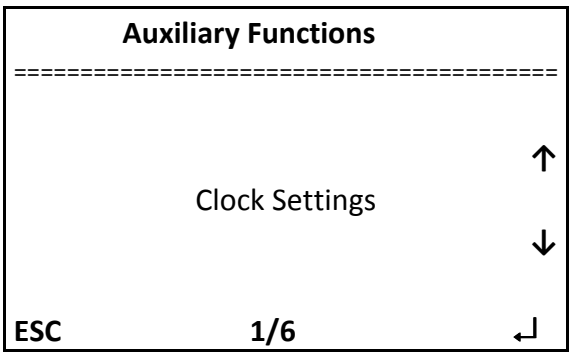



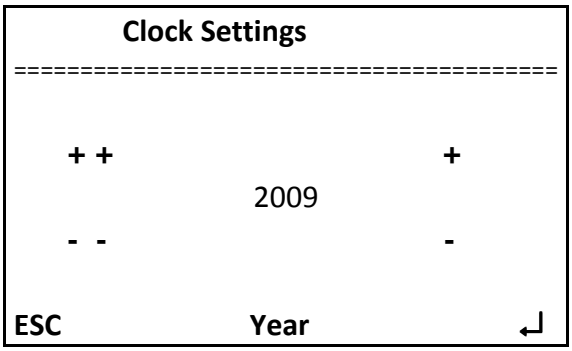


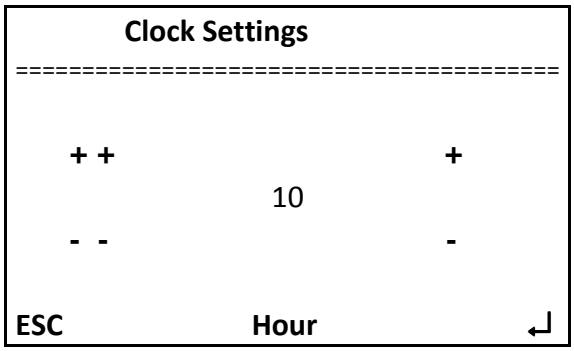



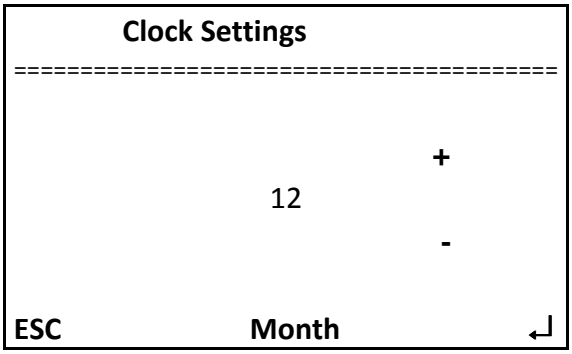

### *4.7.4.1 Sub-Menu « Clock setting »*

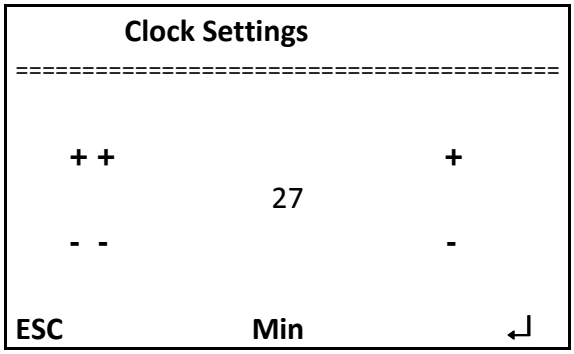
This sub menu is used to set the time and date of the instrument

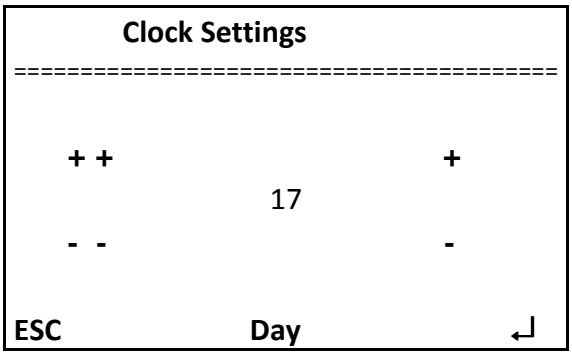


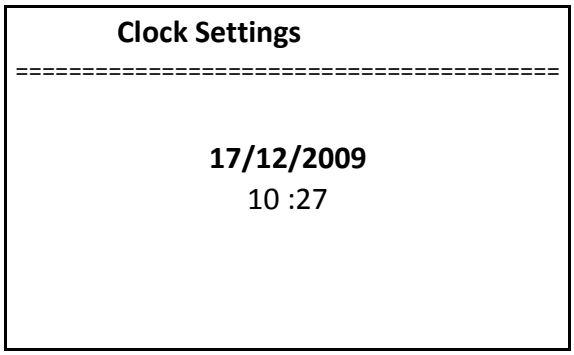





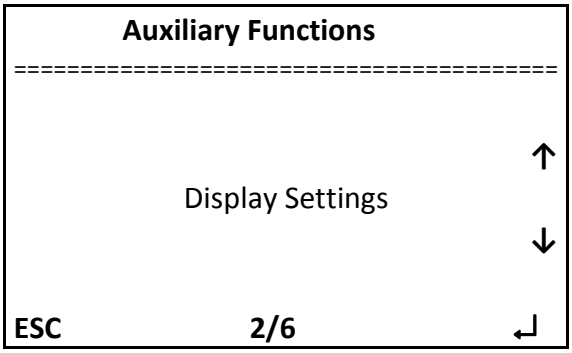



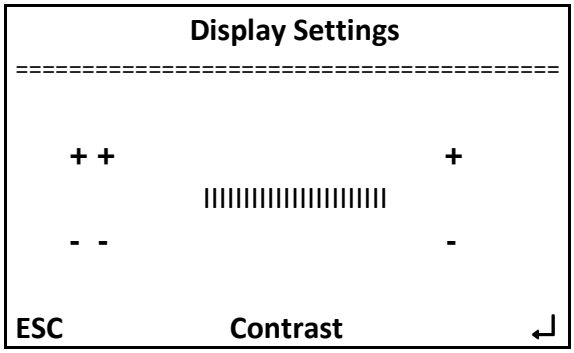

Once entered in the menu « Clock setting », the software requires in turn the year (Year), the month (Month),the day (Day), the time (hour) and the minute (Min). Once in the menu, the « + » and the « ++ » allows to increase the value, the « - » and the « - - » allows to decrease the value. The « ++ » and « - - » allow a rapid scroll of the values, the « + » and « - » allows a slow scroll of values.

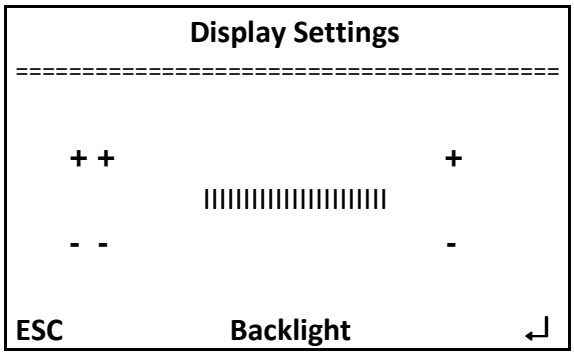
The entered value is validated by pressing « ↵ ». The software automatically advances to the next value.

Once all the values are entered the last "page" displays the date and time set.

### *4.7.4.2 Sub- Menu « Display Setting »*



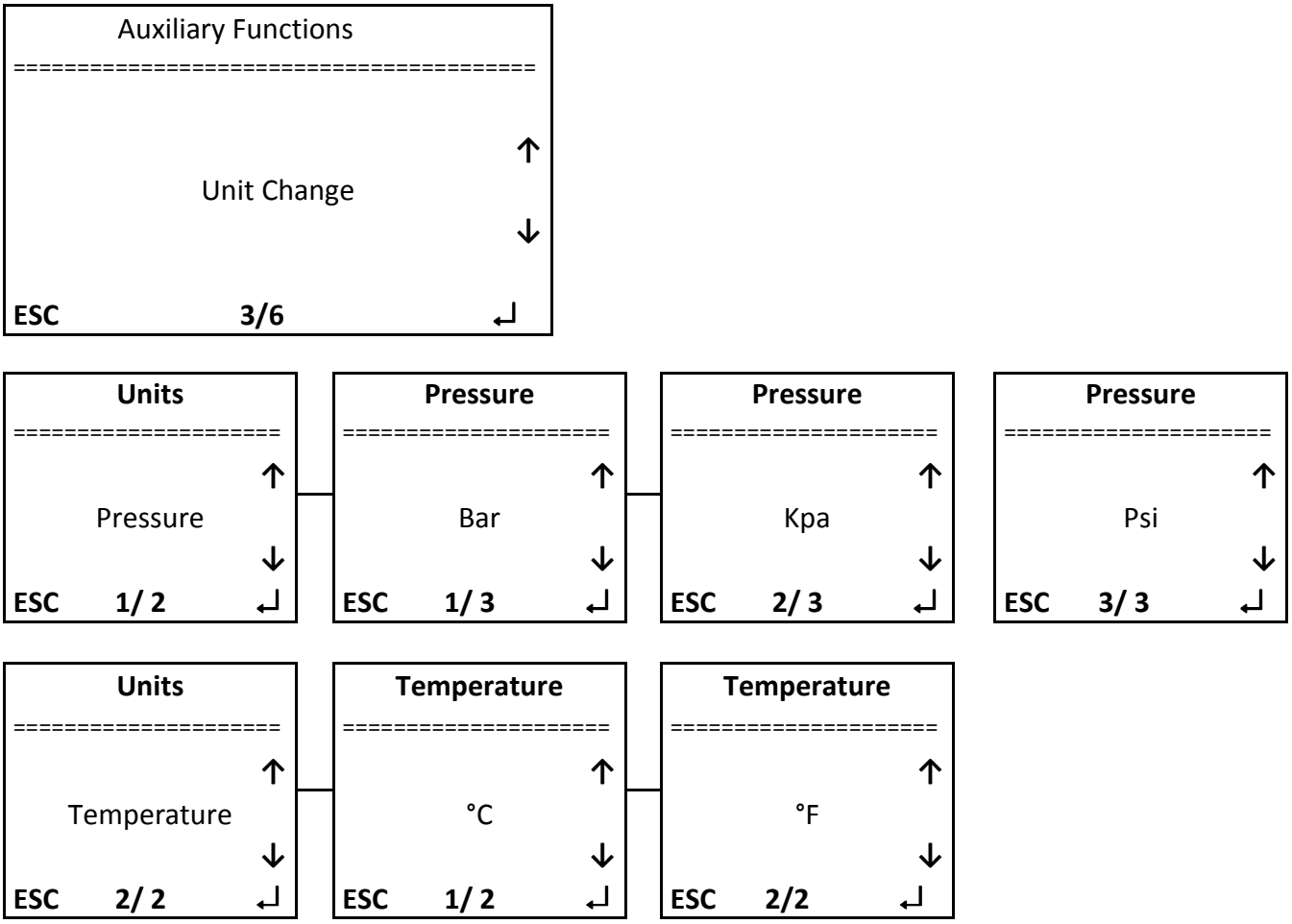




This sub menu allows to set the contrast (Contrast) as well as the reverse light screen (light back). Proceed adjustments with buttons « + », « ++ » and « - » and « - - »

The value entered is validated be pressing on « ↵ ». The software automatically advances to the next value.

### *4.7.4.3 Sub- Menu « Unit Change »*

This menu allows choosing the working units

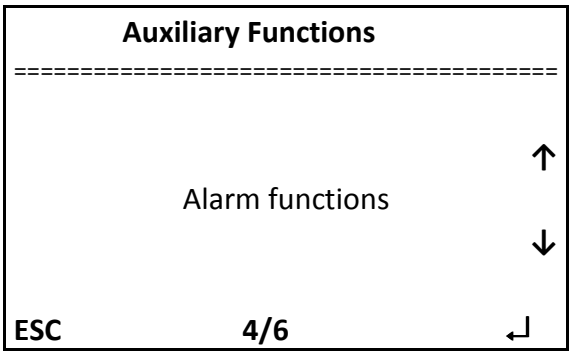


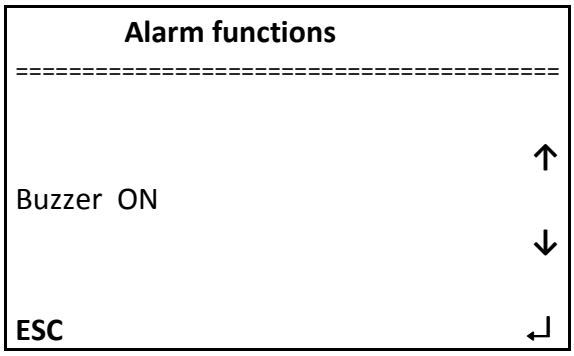

Once in the « UNIT » menu it is possible with the keys « ↑ » and « ↓ » to change the following units : Pressure and Temperature.

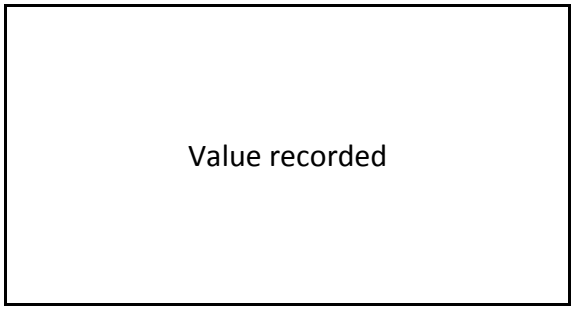
Once in the requested window (Pressure or Temperature) press on « ↵ » and choose with the arrows « ↑ » and « ↓ » **then** validate with « ↵ » the requested unit.

For the pressure, the units are: Bar, Kilo Pascal and PSI
For the temperature the units are: Degree Celsius and Fahrenheit

### *4.7.4.4 Sub- Menu « Alarm Setting»*



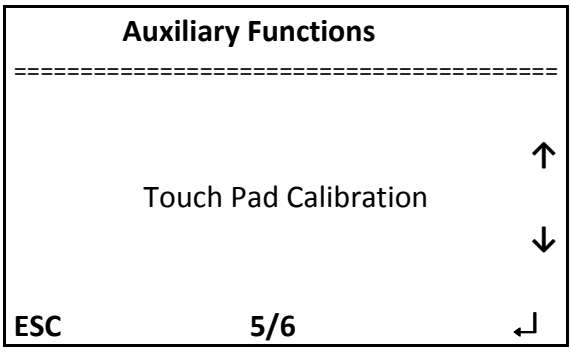



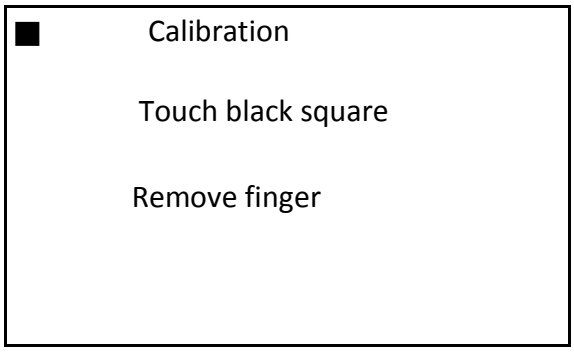



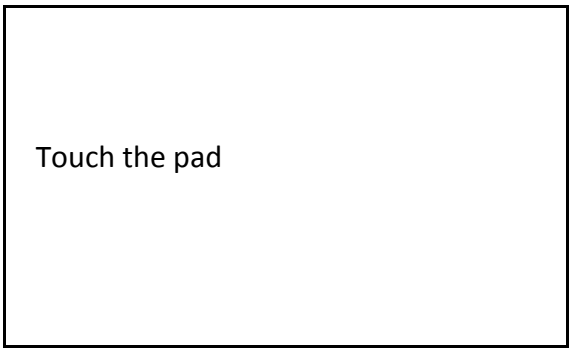

This sub menu allows enabling or disabling the sound signal in case of alarm (Buzzer). Once in the menu, choose between “ON” or “OFF” with the arrows then valid with « ↵ ».

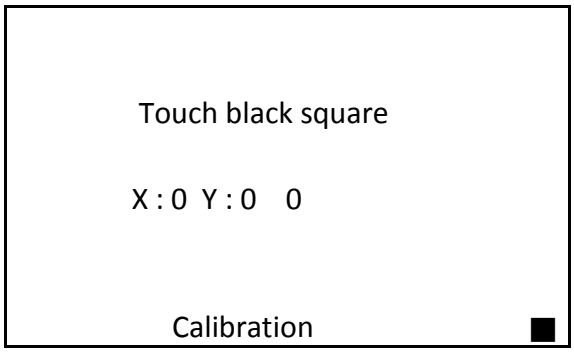
### *4.7.4.5 Sub- Menu « Touch pad Calibration »*

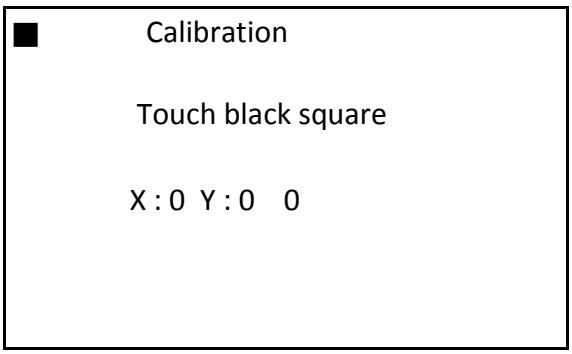
This sub menu allows calibrating the touch screen.

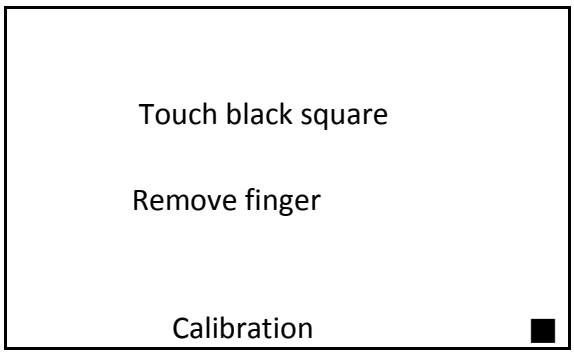


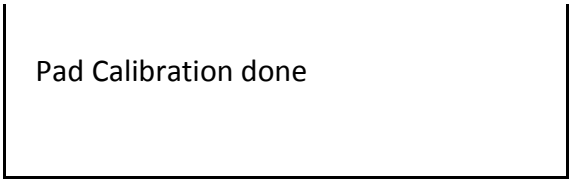



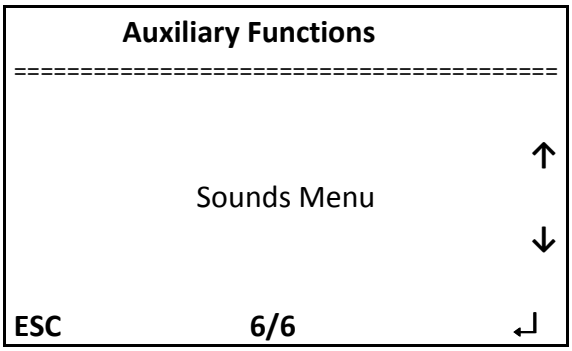


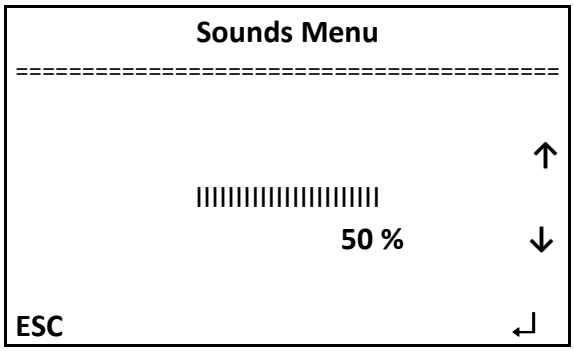




Once in the sub menu « touch pad setting » the software ask to press on the screen (Touch the pad). After having press on the screen, the software ask to press on the square placed on the top left hand corner and to **keep the finger on it** (touch black square). At that time a counter starts up. Once arrived at the value 10, the next page ask to remove the finger (remove finger) appears. Then another calibration point is requested (bottom right hand corner). When done, the message « calibration done » (Pad Calibration done) appears.




### *4.7.4.6 Sub- Menu « Sounds Menu»*

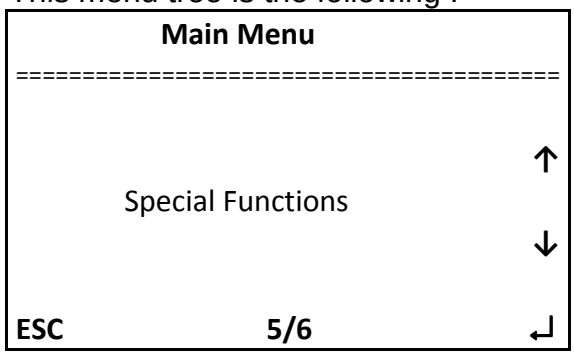


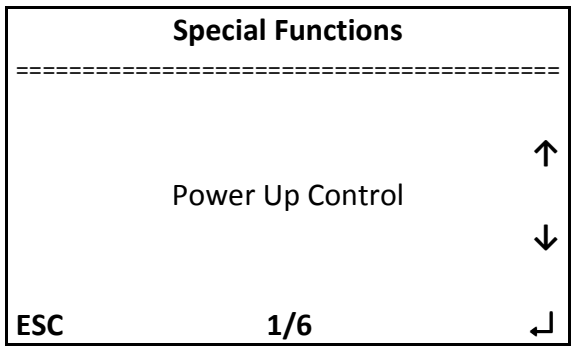



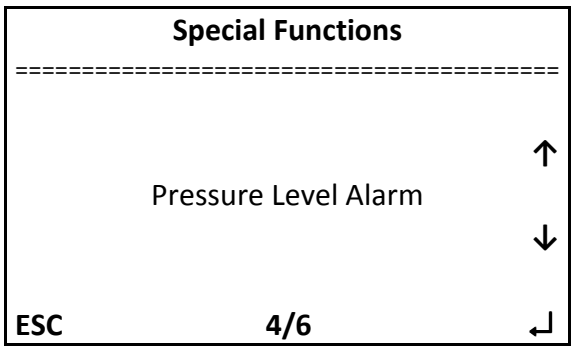

This sub menu lets you adjust the duration of the sound emitted when the screen is touched. A setting to 0 % totally removes the sound.

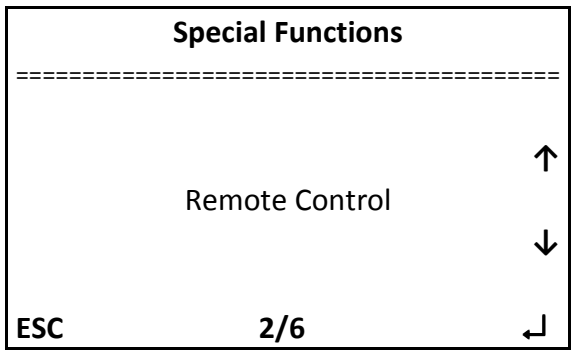
### *4.7.5 Menu « Special functions »*

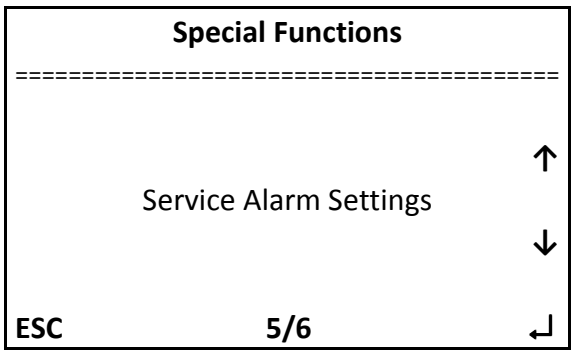
This menu tree is the following :

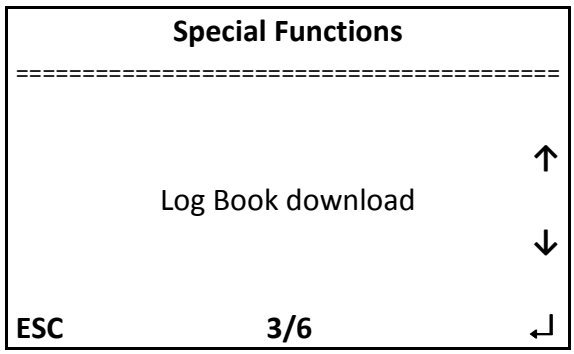


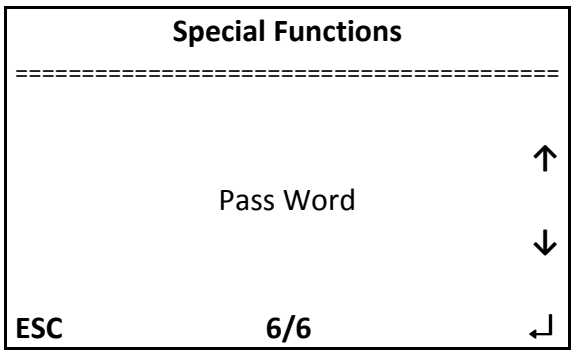



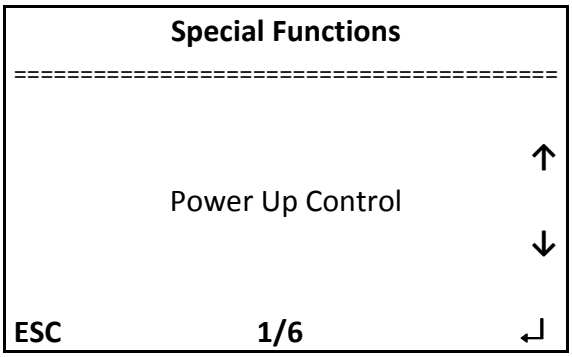



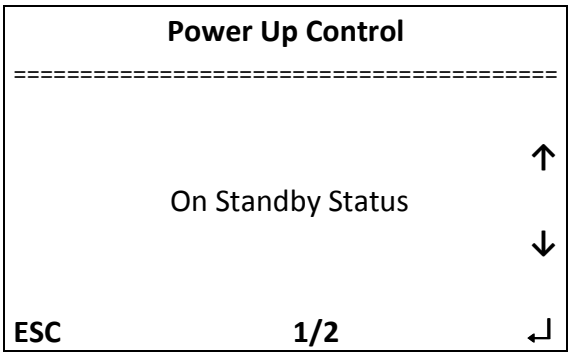



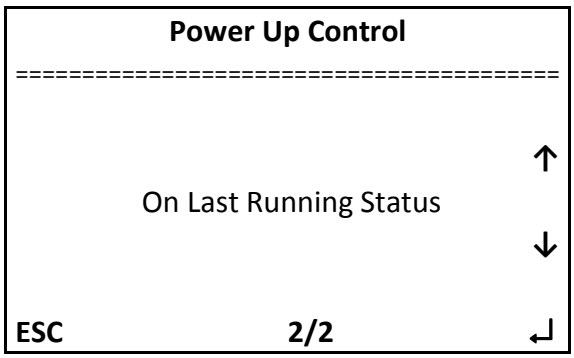
### *4.7.5.1 Sub- Menu « Power Up Control »*

This menu is used to determine, in the event of power failure, in which state the instrument must restart. There are two possibilities:

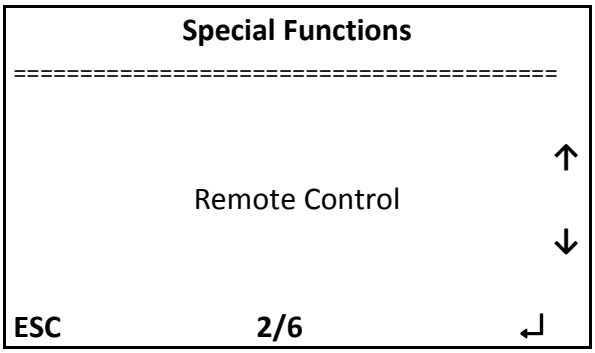
Restart in the same Status it was before the power failure (On Last Running Status)
Restart and go in « stand-By » Status (On Standby Status)



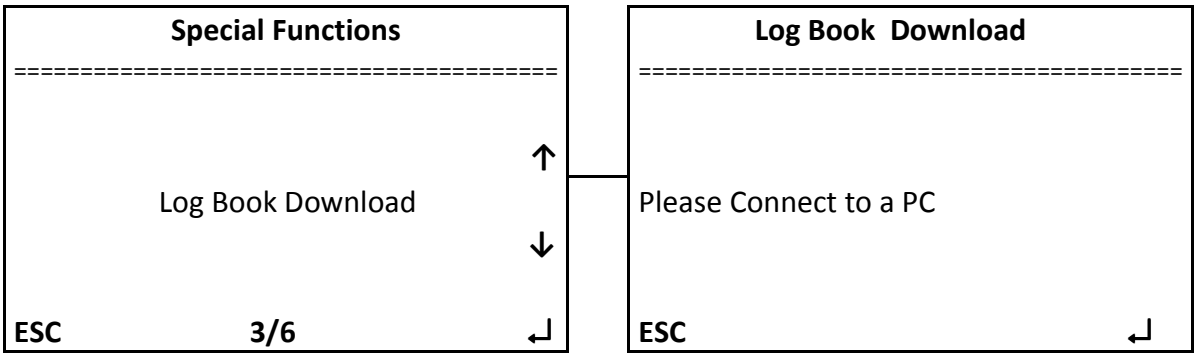




### *4.7.5.2 Sub- Menu « Remote Control »*



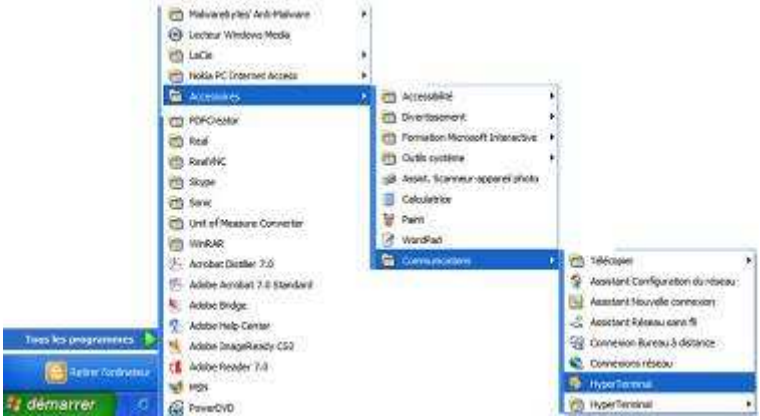
### *4.7.5.3 Sub- Menu « Log Book Download »*

This menu allows you to download the log book on a PC in order to send it to the after sale service for a help in the diagnosis.

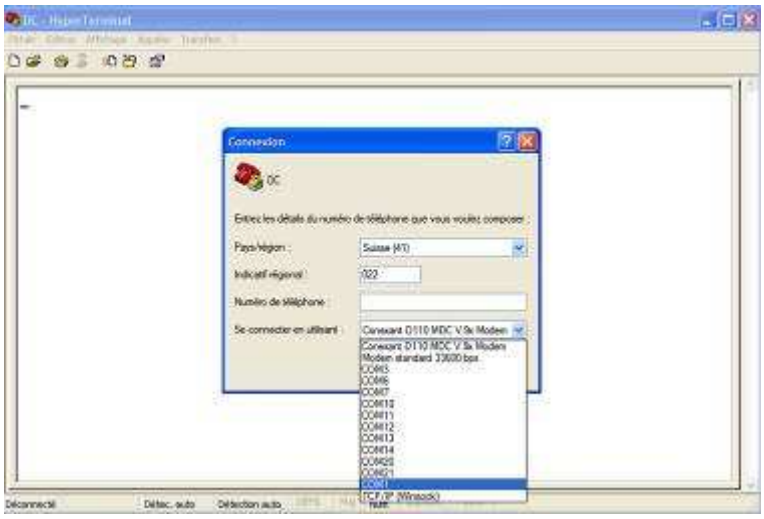



Once the page « log Book Download » is reached, it is necessary to connect the generator to a PC through a USB link. If it's the first time the generator is connected to a PC, he will request to proceed to the set up of the « driver ». It is stored on the CD provided with the instrument in the directory « driver »

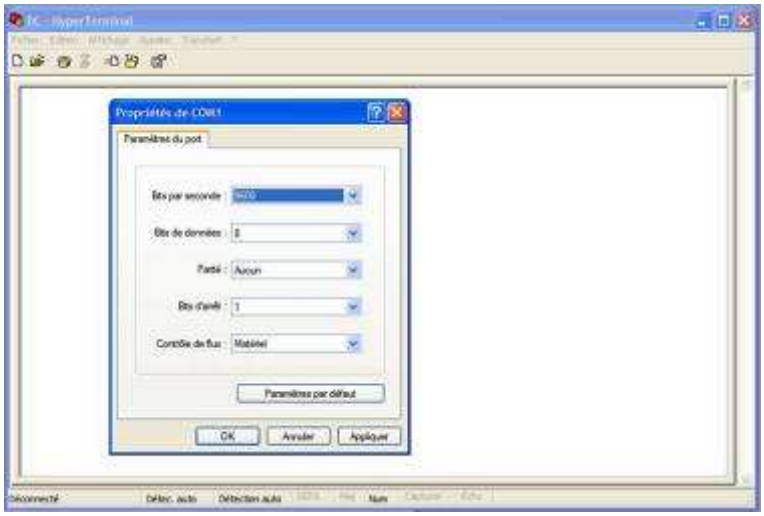
Then, on the PC menu
***\Start up \all programs \accessories \communication \Hyper Terminal*** open the Hyper Terminal program



Enter a name and validate with « ENTER »



Choose « port COM » on which is plugged the USB link



Make adjustments as on the above image

Then validate with « ENTER ». Then validate on the instrument by pressing on « ↵ «.

**Log Book Download**

==========

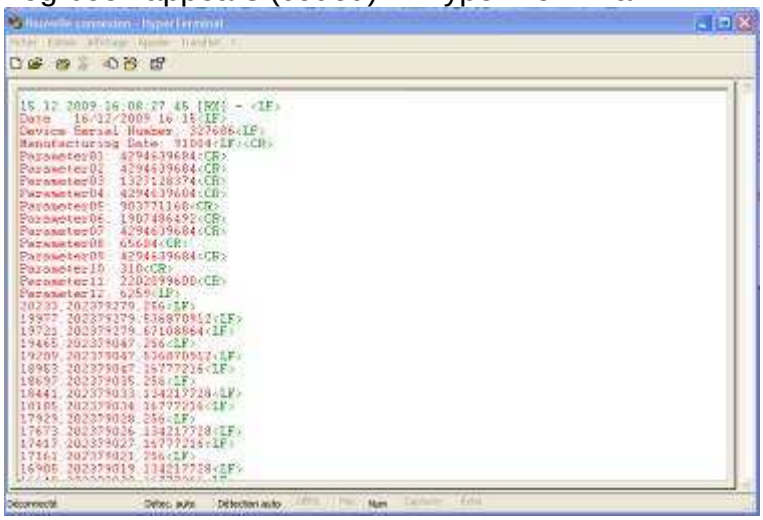
Please Connect to a PC

**ESC** ↵

The following window appears

OK

Log book appears (coded) in Hyper Terminal.



### *4.7.5.4 Sub- Menu « Pressure Level Alarm»*

This submenu allows to adjust the value corresponding to the minimum pressure alarm.

**Special Functions**

==========

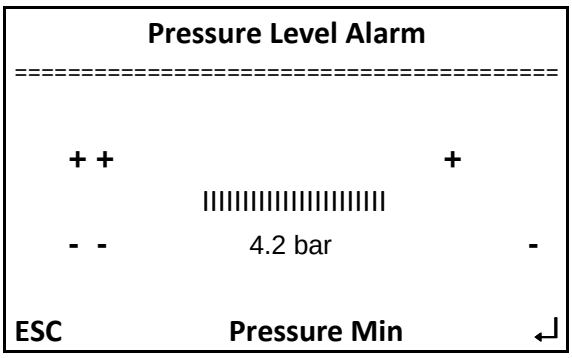
↑

Pressure Level Alarm

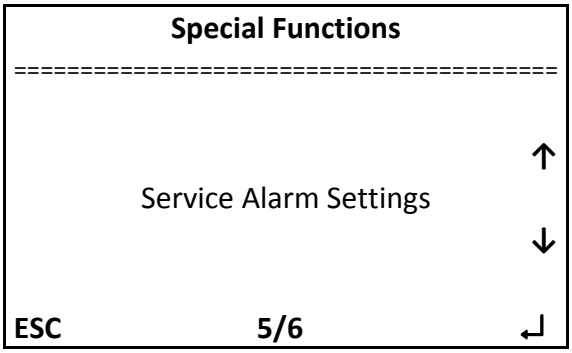
↓

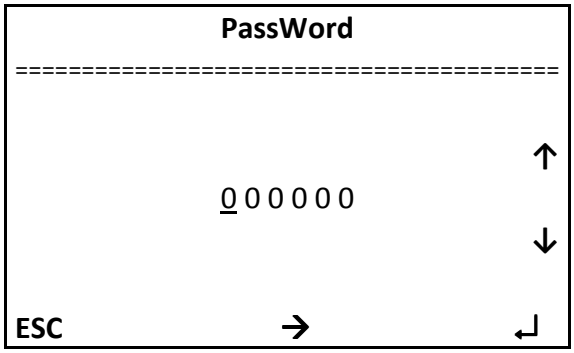
**ESC** **4/6** ↵

By pressing on « ↵ »,the setting window appears

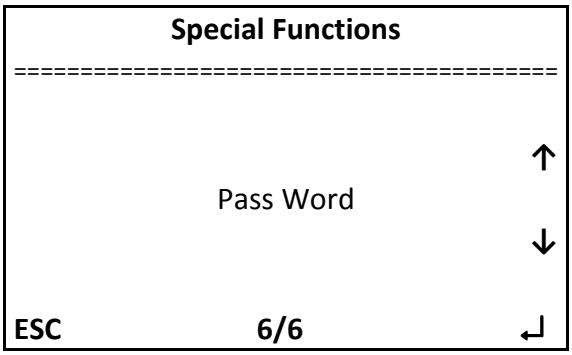


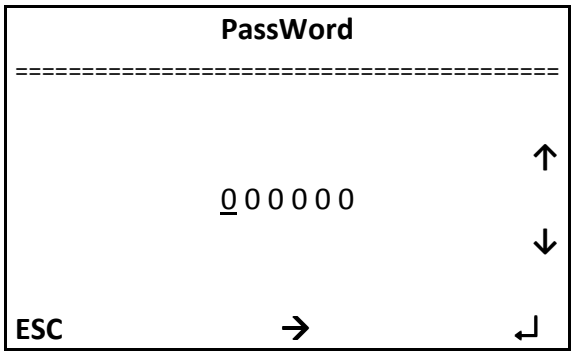

### *4.7.5.5 Sub- Menu « Service Alarm Settings »*




### *4.7.5.6 Sub- Menu « Pass Word »*

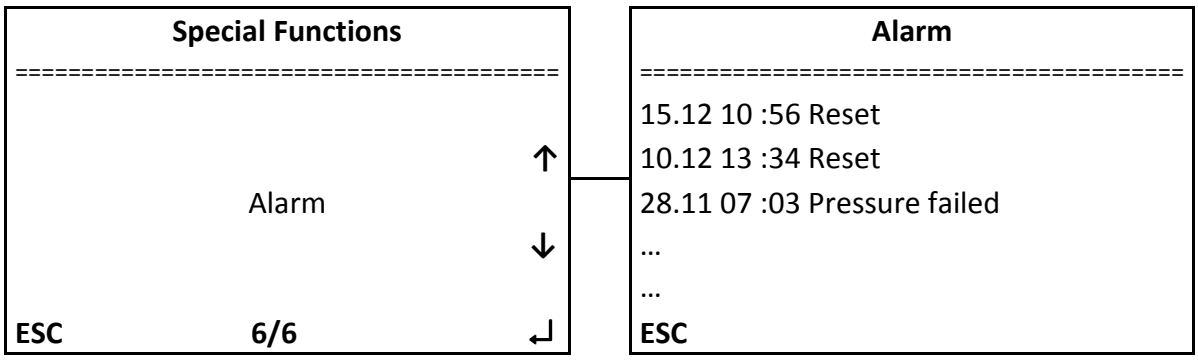



This sub menu allows access to the function « USINE » is not accessible to persons who have not received adequate training.

### *4.7.6 Menu « Alarm »*

This menu allows to check the list of the latest alarmes :



# CHAPTER 5.
# MAINTENANCE

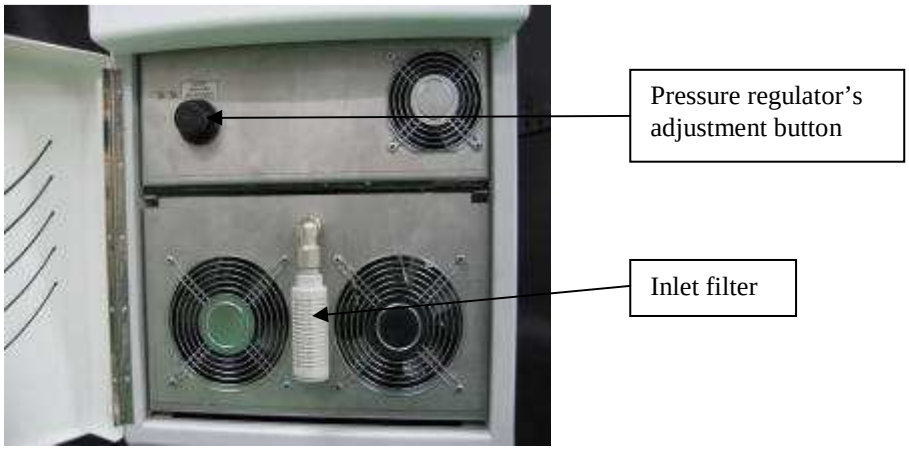
## 5.1 Regular maintenance of UZN2

The following table summarizes the acts of maintenance as well as consumables probable replacement frequency.

| Maintenance | Frequence | Article Number |
|---|---|---|
| Air inlet filter | Every 6 months (4000H) | |
| Coalescing filter with silencer | Every 6 months (4000H) | |
| Catalysis oven with heating cartridge (option) | Every 3 years (24000H) | |

### *5.1.1 Air inlet filter*

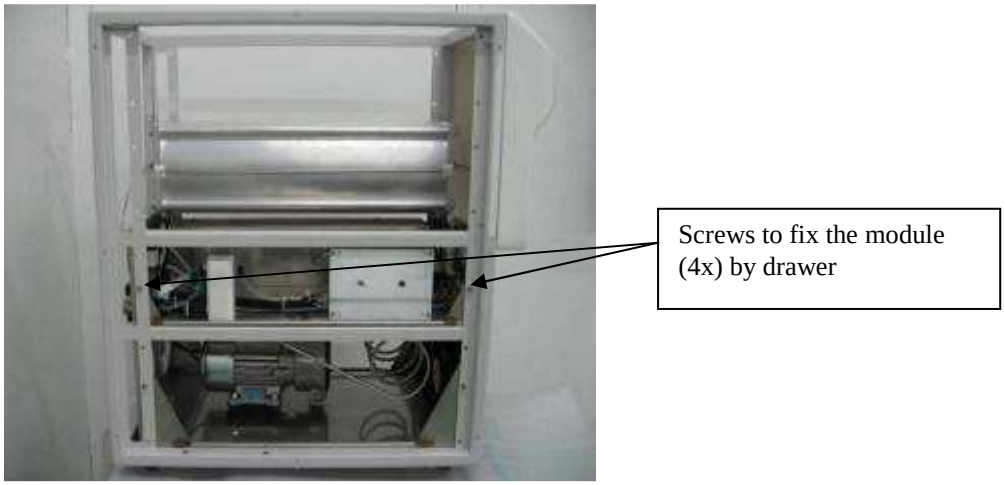
- Open the lower part of front face, in order to access to the inlet filter.
- Unscrew the filter and replace it by a new one



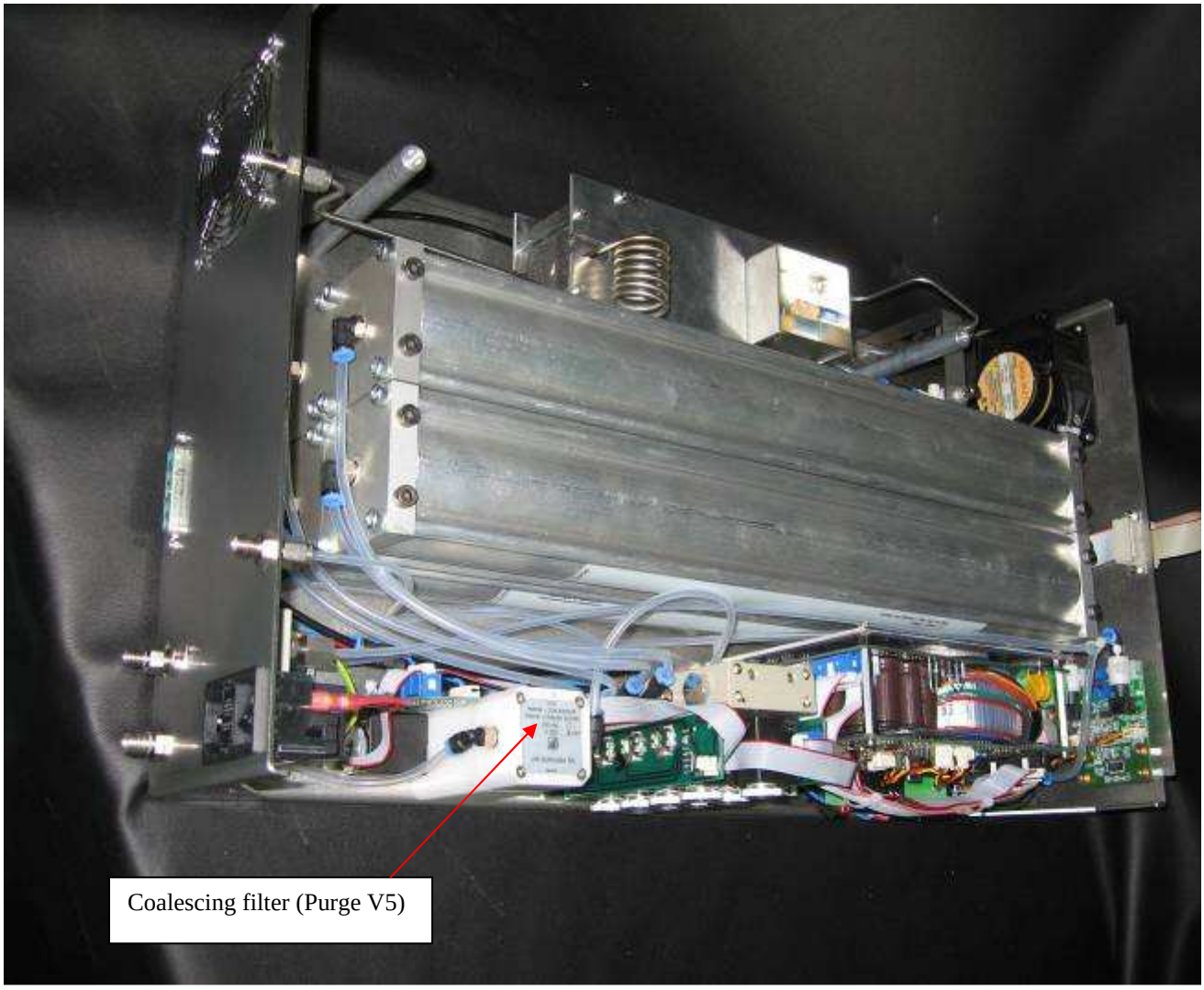

### *5.1.2 Coalescing filter with silencer*

To replace the coalescing filter and silencer, we recommend to remove the Air purifier module:

- Unscrew the lateral protection plates on both sides
- Disconnect the cable and tubes on the rear face
- Unscrew the 4 screws which fix the drawer



- Remove the drawer and place it on a table




(drawer shown without oven streamline body)

- Remove the oven ventilation streamline body
- Unscrew the silencer and replace by a new one
- Open the coalescing filter and replace the filtering media,
- Reassemble and verify tightness

*5.1.3 Catalysis oven (option)*

- Remove the drawer and place it on a table
- Remove the oven ventilation streamline body
- Disconnect the tubes
- Disconnect the heating cartridge cable from the electronic board (Phoenix 5 pins)
- Unscrew, from under the drawer, the 4 screws which fix the oven.
- Exchange with the new one and replug.

### *5.2 List of Consumables and accessories*

The following table lists the available LNI Schmidlin SA items for light maintenance on the NITROGEN generator (UZN2), as well as the recommended accessories::

| # article LNS | DESCRIPTION |
|---|---|
| 6711 02 220 | Air : set of filters (coalescent V4 + dust) Model Purge V4 |
| 6711 02 224 | Air : set of filters (coalescent V5 + dust) Model Purge V5 |

**IMPORTANT!**

*The manufacturer reserves the right to change or modify its products without prior notice.*

### *5.4 Return the instrument to the retailer or the factory*

In the event your instrument must be returned to the factory for a repair which cannot be carried out on the spot, please contact your agent by specifying in detail the problem as well as the instrument operating environment, the type and the serial number.
This done, your agent will provide all the necessary instructions to return the instrument in the best conditions.
In case where the warranty period would have expired, or in case the default would be due to misuse of the instrument, all transport and repair costs incurred would be the sole responsibility of the user, unless special arrangement between the manufacturer and the client had been undertaken.

- Disconnect the Nitrogen generator from its application
- Place the instrument in its original packaging box or in another box where the instrument cannot move
- Fixe the FRAGILE label
- Fill in and send back to your provider or to the factory the form called « Return Autorization Sheet » presented below. This document is necessary in order to link to the instrument all the information given to the SAV by phone, e-mail or other means.

**Make sure that the instrument will never be exposed during transport or storage, to a temperature below - 5 °C.**

### *5.5 How to receive your return authorization sheet*

**LNI Schmidlin SA**
46, Chemin de l'Etang CH-1219 Genève, Suisse
Tel : + 41 22 979 37 24 Fax : + 41 22 979 37 20
www.LNSGAS.com e-mail: info@LNSGAS.com
The innovative swiss made products

| | |
|---|---|
| To: | Fax: |
| Attn.: | Date: |
| From: Mr. Laurent Boucher | Pages: 1 (this front page included) |
| Subject: **RA#** | |

**Return Authorisation Sheet**

Referring to various e-mails, phone calls or personal talks between Mr. L.Boucher and you, please forward all spare parts or instruments **directly back to SWITZERLAND** via the forwarder of your choice to the following address:

**LNI Schmidlin SA**
**attention to: After Sales Dpt**
**46, Chemin de l'Etang**
**CH-1219 Châtelaine, Genève, Switzerland**
Phone: +41 22 979 37 24; Fax: +41 22 979 37 20
E-mail: SAV-LNS@lnindustries.com

Please clearly note on all the shipping documents: Your RA no.: **RA#**

and clearly describe (absolutely required!) what the returned items are:

**Model / part (description):** **serial no. / part no.**

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**For customs purpose, the max. value of the shipped goods should not be more than: EURO 400.00**. Without any other agreement (which should be confirmed by written letter or e-mail through LNI Schmidlin SA ) **ALL shipment -and assurance costs, no matter if billable –or warranty case, will be at your or customer's charge**. Please make sure that material is properly packed. For further assistance, please contact us anytime.

Best regards,
LNI Schmidlin SA
SAV Dept

# *CHAPTER 6.*
# *TROUBLESHOOTING and ALARMS*

## *6.1 Troubleshooting*

The following table describes major cases of malfunctions which the user will be able to fix without the help of trained technicians on this product. In case of more complex failures, the modular concept of the LINEA10 line, allow to do a standard exchange of the faulty module without having to send back the full instrument to the retailer or the factory. Refer to the service manual.

| *SYMPTOM* | *CAUSE(S) + CORRECTION(S)* |
|---|---|
| The instrument does not start, nothing appears on the screen. | 1) Faulty or badly connected electric cable ; check<br>2) Fuse melted, replace by a fuse of similar value( value depend on compressor power)<br>3) Power cable between PS3550 and MB3800 or between MB3800 and screen not connected or faulty ; check<br>4) MB3800 board is faulty. |
| It is not possible to adjust the pressure to the expected value. | 1) The alimentation pressure is inferior to the expected value. Verify the alimenting line<br>2) The nitrogen consumption is superior to the instrument's capacity, verify there is some flow restrictor (the consumer) fixed at the Air Outlet.<br>3) The pressure sensor is out of order. Verify with a gage |
| The instrument does not reach the expected pressure. N2 pressure Alarm | 1) The alimenting pressure is inferior to the Air pressure setting<br>2) nitrogen consumption is superior to the instrument's capacity<br>3) The UZN2 supplies a circuit with a large dead volume, the pressure increase but too slowly. If there is no leak on the circuit the desired pressure will be reached. To speed up the rise, reduce the circuit volume or acquire another generator and mount them in parallel mode.<br>4) There is an important leak on the circuit between UZN2 and user. Verify and reduce leak |
| The instrument does not generate a constant pressure | 1) The consumption is not constant and grows quickly, the instrument cannot keep up; install a small extra tank as well as a pressure regulator.<br>2) The consumption is very close to the maximum, even go over it ; Reduce the consumption or increase the generation capacity. |
| Oven temperature close to ambient temperature | 1) The heating cartridge is not functioning properly. Verify the connector and wiring<br>2) The control board GOUS3 is not connected to the internal communication bus. Verify connection and plug again the module |
| Oven temperature over 750℃ | 1) The heating cartridge is probably melted. The temperature sensor (thermocouple K-type) inside is out of order. Verify voltage by "Diagnostics" Menu and eventually wiring. Call SAV-LNS for help on diagnostics.<br>If heating cartridge is melted, the complete oven must be replaced. |

# *NOTES*

# Certificate of conformity

We,

Company: **LNI SCHMIDLIN SA**
**46, ch. de l'Etang**
**CH-1219 Châtelaine-Genève**

Declare and certify that our

**Products:** GAS Generators

**Brand:** H2 FID / H2 Carrier / H2-Air FID station
Compressed Air station / Mini compressed Air station
Zero Air / Ultra Zero Air
Zero Air station / Ultra zero Air station
PG-H2 / NM-H2
N-GC / N-GT
N2-SIROCCO
N2-MISTRAL LCMS / Whisper Series
High Purity Nitrogen Generator / Nitrogen Station

Are in conformity with the following CE rules :

Machines 2006/42/CE.
Equipment under pressure 97/23/CE
Low voltage 2006/95/CE
Electromagnetic compability 2004/108/CE :
EN 61000-3-3
EN 61000-4-3
EN 61000-4-4
EN 61000-4-5
EN 61000-4-6
EN 61000-4-8
EN 61000-4-11

RoHS, WEEE

Geneva, the 10.03.2011

Name: Daniel Calabrese
Position: Product Manager