

Seica

Test Solutions



PILOT V8

Guide d'installation

Usage et exclusivement à titre de présentation du produit

PILOT V8
OPERATOR MANUAL

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1. GENERAL

This manual provides all the necessary information on the PILOT V8 Automatic system, on the operations to be performed to test a mounted board and on inspection and maintenance procedures on the system. Operators are advised to read this manual before starting the test activities. A technical knowledge of test procedures and fundamentals in electronics is recommended. The system is configured for in-line operation.

1.1 USERS OF THIS MANUAL

This manual contains useful information for:

- Operators in charge of testing mounted boards
- Developers of test programs
- Technicians in charge of maintenance operations on the system

1.2 REFERENCE DOCUMENTATION


This manual is also based on the information contained in the following documents:

- User's Manual of Microsoft Windows™

1.3 SYMBOLS

To facilitate the understanding of the sentences used to describe the software, we have used the following symbols:

 **WARNING** Indicates a potential hazard for the operator or the system that could result from the action described in the Warning.

 **NOTE:** Indicates a note, a recommendation or a point on which readers should focus more carefully.

The keyboard selection is indicated as follows:

- Key 1+ Key 2 = Press key 1 together with key 2.
- Key 1, Key 2 = Press key 1, release it and press key 2.

The files are indicated using the following syntax:

File.xml

where "File" generically indicates the file name and ".xml" represents its extension.

Dialogue windows and their components are described by means of the terms described in Fig. 1-1

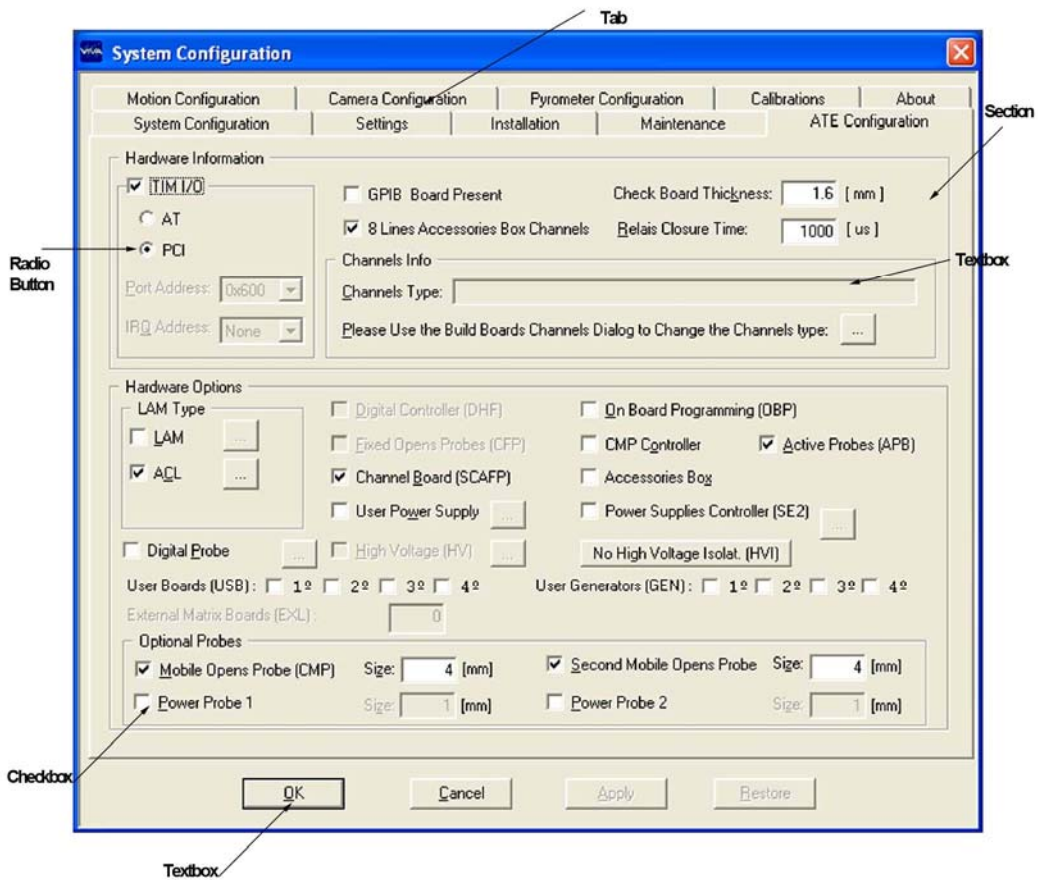


Fig. 1-1 PILOT V8 : Dialog "System configuration"

1. 4 SAFETY RECOMMENDATIONS

1.4.1 PROJECT CRITERIA

The system PILOT V8 has been designed and manufactured in accordance with the essential safety requirements contained in the EMC DIRECTIVE 89/336/EEC (and subsequent amendments) on electromagnetic compatibility and in the DIRECTIVE 73/23/EEC (and subsequent amendments) on electric safety.

The compliance with the aforementioned directives has eliminated or reduced hazards to the minimum, both during ordinary operation and servicing.

The system is manufactured with premium quality components. All components used are thoroughly tested in accordance with the quality standards set forth in the laws in force.

1.4.2 SAFETY DEVICES

The systems are equipped with several safety devices to reduce operators' hazards to a minimum. It follows a list:

- **Protection panels (P1):** to protect the system from environmental hazards and prevent users from coming into contact with life internal components.
- **Protective cover (P2):** To prevent users from inadvertently inserting their hands in the work area during the execution of a program. The program is immediately stopped if the cover is opened during the testing phase.
- **EMERGENCY OFF Button (P3):** When pressed, it disconnects the system (PC excluded).
- **Magneto thermal relays (P4):** A magneto thermal relays respectively protect the system and the instrumentation. Both relays disconnect the components from the power supply if the absorption value is above the limit.
- **Ground protection circuit (P5):** All components that may come into contact with the operator are grounded to avoid potential hazardous electric shocks.

Fig. 1-2 illustrates the location of safety devices installed on the system

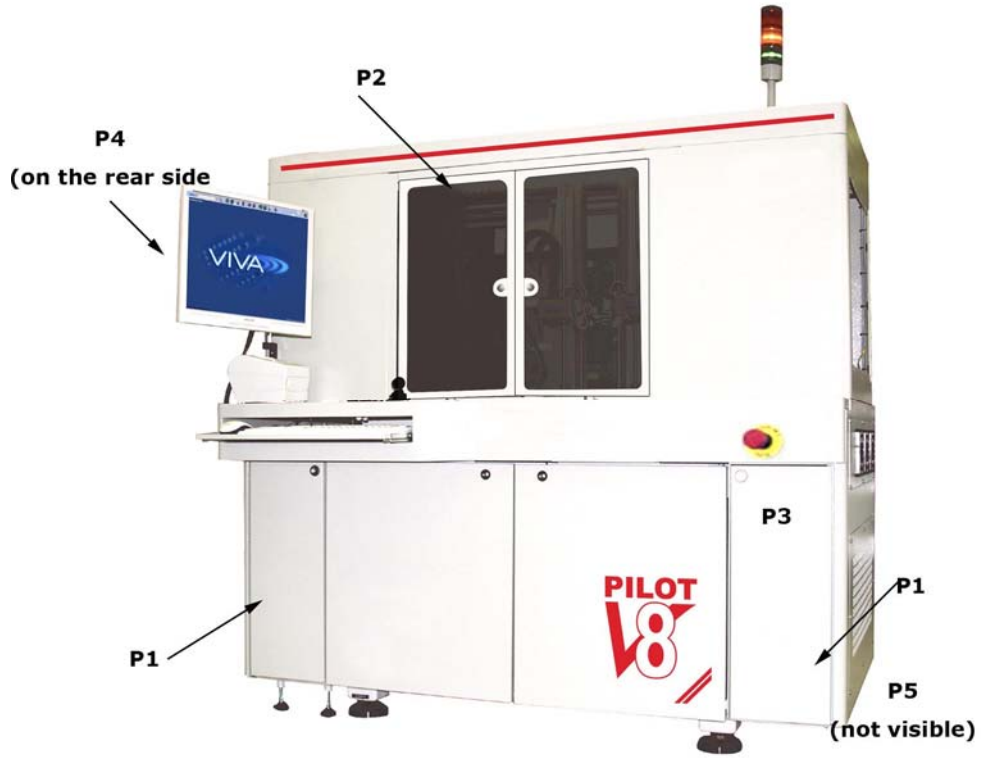




Fig. 1-2 PILOT V8 : Safety devices location

1.4.3 WARNINGS AND RECOMMENDED BEHAVIOR


Users should follow the warnings and recommended behavior described in this section to avoid injuring others or damaging the system during its operation.

 **WARNING** Never perform operations that differ from those specified in the maintenance procedures described in Section MAINTENANCE of this manual on mechanical and electronic parts.

 **WARNING** If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired. See paragraph 1.4.4 RECOMMENDED USE OF THE SYSTEM.


 **WARNING** Seica S.p.A. shall not be liable for damages caused by operations that are not compliant with the instructions provided in this manual.


 **WARNING** The introduction of hands and/or other objects into the system may damage it and cause serious injuries.

 **WARNING** Never lean on the protective frames of the system during its operation.

 **WARNING** When the system is testing, do not introduce into it any object different from the board to be tested.

 **WARNING** Do not put any liquids into the system

 **WARNING** For cleaning, inspection and maintenance instructions, refer to Section MAINTENANCE of this manual.

 **WARNING** If the system needs to be moved from the installation site, make sure that this operation is carried out by qualified and authorized personnel only.

1.4.4 RECOMMENDED USE OF THE SYSTEM

System PILOT V8 should be used **only** to test mounted boards. The use of system for applications other than those described (for example to test boards with dimensions above the set limits or to test parts containing inflammable fluids or materials) can damage the system and injure users, and is therefore regarded as **improper use** for which Seica S.p.A. declines all responsibility.

1.4.5 IMPROPER USE

The use of the system for applications other than those described is regarded as improper.

1.4.6 RESIDUAL HAZARDS

To protect the users and the system from residual hazards, that is from unpredictable risks or from hazards that cannot be completely eliminated, we recommend users to strictly follow the warnings listed in paragraph WARNINGS AND RECOMMENDED BEHAVIOR and to follow the instructions given here below.

- Avoid wearing loose clothing or apparel with parts (sleeves, hems,...) that could be clamped or get tangled during work.
- Avoid wearing ties or scarves.
- Avoid wearing long necklaces, bracelets or rings.
- If necessary, wear a cap to keep long hair out of the way.

1.4.7 WARNINGS FOR MAINTENANCE ACTIVITIES

Due to the complexity and the high technological level of the PILOT V8 , maintenance operations are classified in detail along with the requirements for the personnel authorized to perform them.

The customer is authorized to carry out the ordinary maintenance operations described in the MAINTENANCE section of this manual. For different operations, customers should contact the Customer Service of Seica S.p.A., which will decide whether to provide specific instructions to allow the customer to carry out the necessary operations directly or organize an on-site inspection.

 **WARNING** Customers must always contact the technical personnel of Seica S.p.A. before carrying out any operation.

1.5 REQUIREMENTS FOR CORRECT OPERATION



To ensure a correct operation of the system, it is necessary to verify that the requirements described here below are met.

1.5.1 ENVIRONMENT

Temperature:	from 15° to 30° C
Humidity:	Min. 20% Max. 80%
Floor surface planarity:	5mm/m
Altitude:	< 4000m
Pollution degree:	2
Installation category:	II
Class:	I

- The power supply should be located at a maximum distance of 5 meters (approx. 6.5 feet) from the test system and always be accessible to users.
- The electric source should be equipped with a switch situated next to the socket.
- The electric source should be equipped with a ground contact.
- The noise level, measured under the worst operating conditions, is not to exceed 70dba.

1.5.2 TECHNICAL SPECIFICATIONS

Power supply:	220 VAC/ 50Hz @12A 110 VAC/ 60 Hz @ 24A
Absorbed power	Max. 2.5 KW
Power cables	<ul style="list-style-type: none"> • PVC 600V. 90°C section . 3xAWG12 for 230VAC Adaptable with a 60 IEC 309 2P+  50-60Hz ±15% IP44 220VAC (200-250) plug • PVC 600V. 90°C section 3xAWG10 for 110VAC Adaptable with a NEMA L5-30P plug
Power socket:	Series 62 IEC 309 2P+  50-60Hz ±15% IP44 220VAC (200-250) NEMA L5-30R for 110VAC 50-60 Hz ±15%.
Characteristics of the air:	Filtered at 3 µm 99.9% of the oil should be eliminated with the air. Air should be dry and have a condensing temperature of 10 °C
Compressor capacity	Min. 300 l/min
Air flow:	Min. 20 l/min
Air supply line	ID 3/8" minimum
Air inlet	3/8" fitting with GAS threading
Pressure gauge settings	Min. 6.5 Atm.

1.5.3 WEIGHT

The system weight is 1200 Kg. (1360Kg. with packaging)

1.5.4 OVERALL DIMENSIONS

It is necessary to maintain a safety distance between the system and possible external equipment to guarantee a good circulation of air for the electronics on board and to provide sufficient space for the operators to access to maintenance and inspection points. Fig. 1-3 and Fig. 1-4 show two drawings of the work area and system layout.

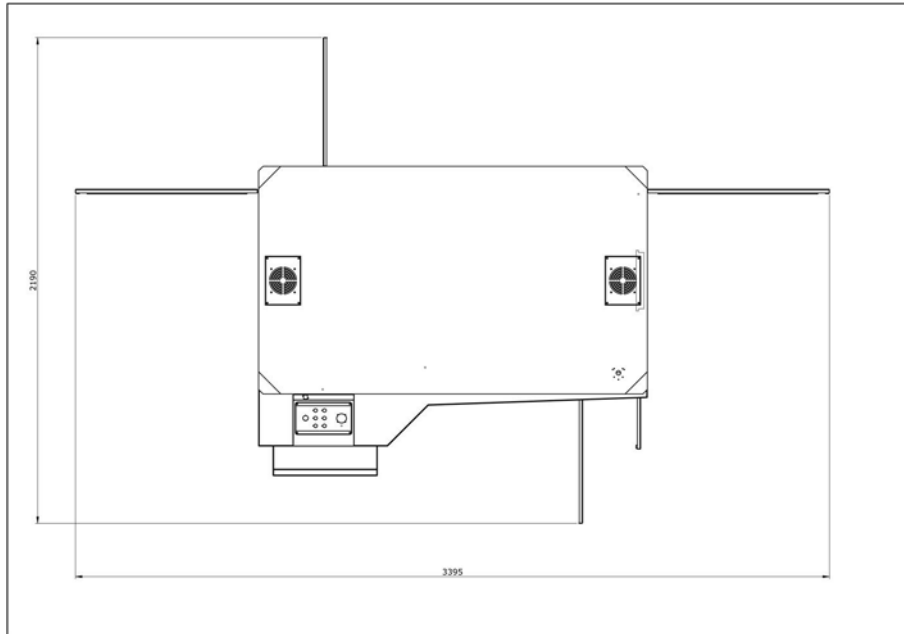


Fig. 1-3 PILOT V8 : Work area

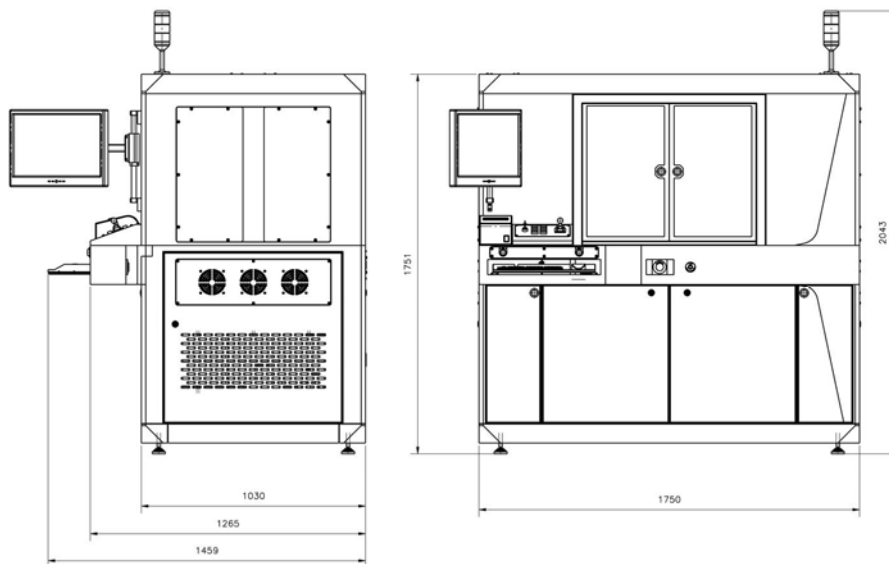


Fig. 1-4 PILOT V8 : Front view

Length: 175cm (444,4")
Width: 123cm (312,42")
Height: 203cm (515,62")

2. CONTROL PANELS

The PILOT V8 Automatic systems have an innovative control panel, which enables the complete control of the system through a set of soft-touch keys.

The Control Panel located on the right side of the system, is used to switch on/off the system and to control the camera movements. There are specific buttons used to start/stop the test and the light indicator that shows the operator the system status.

A set of LED lights on the control panel, help identifying the operating status of the test system.

2.1 THE CONTROL PANEL

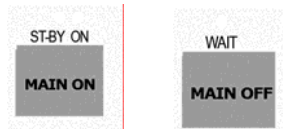
This section provides a description of the control panel:



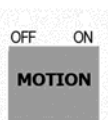
Fig. 2-1 PILOT V8 : Control Panel

Buttons Description

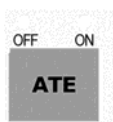
The control panel presents a set of soft-key buttons and led status. Below, a short description of their function and capabilities



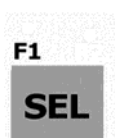
BUTTON	DESCRIPTION	LIGHT
MAIN ON	Switches the main electronics ON	MAIN ON = ON MAIN OFF = OFF
MAIN OFF	Switches the main electronics OFF	MAIN ON = OFF MAIN OFF = OFF



BUTTON	DESCRIPTION	LIGHT
MOTION ON	Powers motor axes ON	MOTOR ON = ON MOTOR OFF = OFF
MOTOR OFF	Powers motor axes OFF	MOTOR ON = OFF MOTOR OFF = OFF

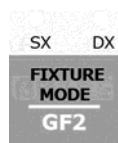


LED	DESCRIPTION	LIGHT
ATE ON	All test system instruments are powered	ATE ON=ON ATE OFF=OFF
ATE OFF	All test system instruments are depowered	ATE ON=OFF ATE OFF=OFF



SEL: The SEL soft-touch key, allows to activate the second function possibly present on some buttons of the control panel. If the button **SEL** is pressed, the F2 led turns on (the LED indicates the current function enabled).

The **F2** function (where available) is reported in white characters on the lower side of the button. Upon an idle condition of the buttons (3 sec. approximately) the main function (**F1**) is automatically restored.



According to the LED light (sx, dx) the **FIXTURE MODE** button allows to manage the right/left clamps, using the related buttons (FIX UP, for upper clamps and FIX DOWN for lower clamps). When the button **FIXTURE MODE** is hold pressed for a while, the LEDs condition may be as follows:

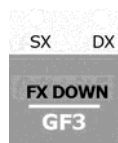
SX= ON (control of left side)

DX= ON (control of right side)


DX/SX= ON (control of left and right side)




Depending on the light LED on the **FIXTURE MODE** button, the button **FX UP** enables to drive the left or the right side of the upper clamp. When LED is **ON**, the clamp is open.



Depending on the light LED on the **FIXTURE MODE** button, the button **FX UP** enables to drive the left or the right side of the upper clamp. When LED is **ON**, the clamp is open

 *Note: The mobile rail is managed with the joystick, but only when COVER is open and no VIVA dialog window is active. Move the joystick upwards to raise the upper rail, and downwards to lower the mobile rail. This function is active only when the safety key is present and set to Debug position.*

 To open/close the doors of the test system, use the buttons



LEDs DESCRIPTION

The upper part of the control panel has a set of LED to provide system information. Below, a short description of the same.



Section **SYSTEM**

OK: indicates system is ON

ERR: Indicates a communication issue with Main PC, which determines an error condition possibly affecting the operation of automation

RT: Intermittent, when the system is in good and correct operating conditions

Section **ATE**

READY: Indicates the test environment (VIVA) active and running. The system is ready for test execution (waiting for command)

ERR: This function is not currently implemented

TEST: The system is in test stage.

Section **AUTOMATION**

FREE: Not implemented on this test system

ERR: General condition of automation error. To diagnose the problem, use the second function. Press the button **SEL** and view detailed error messages in the section **DIAGNOSTIC**

LOAD: Not to consider on this test system

R1: Not to consider on this test system

R2: Not to consider on this test system

UNLOAD: Not to consider on this test system

Section **DIAGNOSTIC**

The LEDs in the **DIAGNOSTIC** section, indicate *TEST* messages, provided this diagnostic mode is enabled in VIVA System Configuration dialog window.

When first function (**F1**) is active:

S0: Not to consider on this test system

S1: Not to consider on this test system

S2: Not to consider on this test system

S3: Not to consider on this test system **S3:**

S4: Not to consider on this test system

S5: Not to consider on this test system

When second function (**F2**) is active:

S0: Problem connected to MOTION ON signal

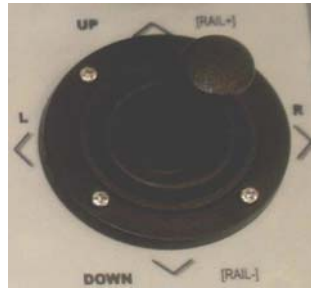
S1: Problem connected to AIR or AIR sensor

S2: Problem on COVER (door-work area)

S3: Not implemented

S4: Not implemented

S5: Not implemented



	DESCRIPTION
JOYSTICK	It used to raise (UP) and lower (DOWN) the mobile rail height



BUTTON	DESCRIPTION
EMERGENCY	It immediately stops the system (it stops any movements of axes and probes), switching OFF the power. The Personal Computer remains ON

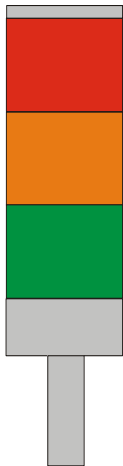


BUTTON	DESCRIPTION
START	It starts the test
	Close the doors of the test area



BUTTON	DESCRIPTION
STOP	<ul style="list-style-type: none"> It stops the TEST It resets the condition "insufficient air" caused by a inadvertently fall of pressure
	<ul style="list-style-type: none"> Opens the doors of the test area

2.2 LIGHT INDICATOR



This indicator is made up by three bulbs of different colors mounted into a luminous indicator similar to a semaphore, as illustrated in Fig. 2-2. This tells the general status of the equipment.

Red light: indicates an error condition

Orange light: indicates XY axes movement or access to the test environment.

Green light: after a homing operation, indicates that the system is ready to execute any operation.

Fig. 2-2 PILOT V8 : Light indicator

2.3 SMEMA

The Pilot V8 Automatic is equipped with a SMEMA connector, to interface an external loader (optional). Vertical loader architecture is recommended.

The SMEMA connector/interface is located on the rear side of the system.



3. MAINTENANCE

This section describes the inspection and maintenance operations to be executed on the PILOT V8 system. Although the pneumatic parts and the linear guides of the system do not require particular maintenance procedures, there are several operations that must be executed periodically to ensure a correct system operation, as explained in the following pages.

OPERATION	RECOMMENDED INTERVAL...
Cleaning the system	Daily
Inspection of the air filters	Daily
Filters replacement	When the filter is damp
System diagnostics	When a problem occurs
Probe replacement	When its operation is impaired by wear
Calibrations (Joystick, probe)	<ul style="list-style-type: none">• After the replacement of measuring probes• Periodically, to compensate wear
Lubrication of the worm screws	According to the working environment (normally every 400 hours)

3. 1 CLEANING THE SYSTEM

Daily inspect the degree of cleanliness of the system and in particular the guides of Y axis. All cleaning operations should be performed using a vacuum cleaner for the larger components and paper soaked in alcohol for the smaller ones. Never use compressed air for cleaning purposes to avoid pushing the dirt in locations where it could interfere with the operation of the system.

3. 2 INSPECTION OF THE AIR FILTERS

The filtering unit, located in the rear side of the system, as shown in Fig. 3-1, is made up by:

- An air tap
- A pressure regulator
- A pressure gauge
- Air Filter



Fig. 3-1PILOT V8 Air filter

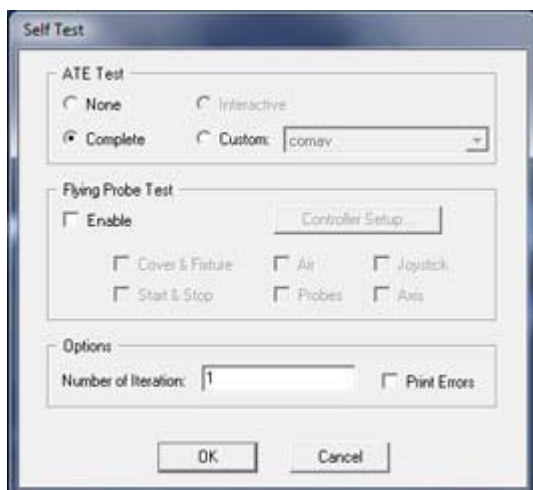
To maintain the system in good working order, it is advisable to periodically inspect the status of the filters. The frequency of inspections obviously varies according to the type of system employed to supply air to the system. Air containing higher percentages of impurities requires more frequent inspections and, occasionally, the replacement of the filters. To assess the working order of the filters, close the cock and unscrew the pots. Filters should appear dry and have a consistent color. The presence of marks may indicate signs of oil or water. If signs of contaminations are evident, replace the filters and verify that air is regularly supplied to the system.

3.3 REPLACEMENT OF THE FILTERS


To perform this operation, follow the instructions given below and refer to Fig. 3-1.

1. Close the air
2. Unscrew the pot
3. Remove the internal filter and replace it with a new one
4. Screw the pot
5. Open air

3.4 SYSTEM DIAGNOSTICS



The status of the system can also be checked by running the diagnostic procedure. To start the procedure, from VIVA

main window, click the icon SELF TEST . The dialog reproduced on the left is displayed. From this other dialog, the operator can set several options to check the system.


Section ATE Test:

Option None: No test is performed on the ATE section.

Option Complete: It performs a diagnostic test on all the ATE modules installed and configured, as

indicated in the System Configuration (icon , Folder ATE Configuration). See Fig. 3-2

Option Interactive: The diagnostic program is executed in the interactive mode to allow the user to select which ATE modules must be checked. At the end of the diagnostic test, the user can store the diagnostic configuration set and recall it at a later stage.

Option CUSTOM: this option allows to recall a diagnostic configuration stored during an interactive diagnostic procedure. The button  opens a dialog which facilitates the choice of the required configuration.

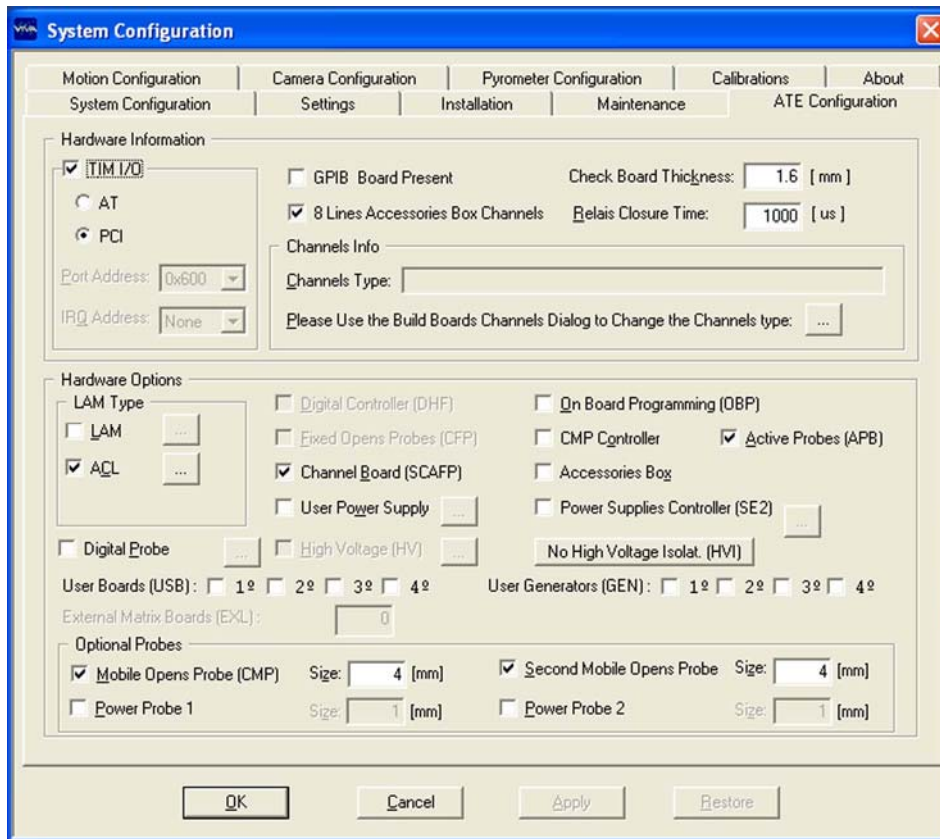


Fig. 3-2 PILOT V8 : Dialog "System configuration, tab "Ate Configuration"

Section Flying Probe Test:

Enable: this field enables to test all the parts not included in the ATE section.

Cover & Fixture: this field enables to check the operation of the protection cover and of the clamps that fix the board.

Air: this field enables to check the operation of the pressure switch.

Joystick: this field enables to check the operation of the joystick.

Start & Stop: this field enables to check the operation of the START and STOP buttons.

Probes: this field enables to check the motion of the four mobile probes along the Z axis.

Axis: this field enables to check the motion of the four mobile probes along X and Y axes.

Section Options:

Number of Iteration: tells how many times the diagnostic test has been performed.

Field Print Errors: if checked, this field enables to print the results of the diagnostic program

3.4.1 MEANING OF THE ERROR MESSAGES

At the end of the diagnostics, the system displays the results of the individual tests in a final report, as shown in Fig. 3-3.

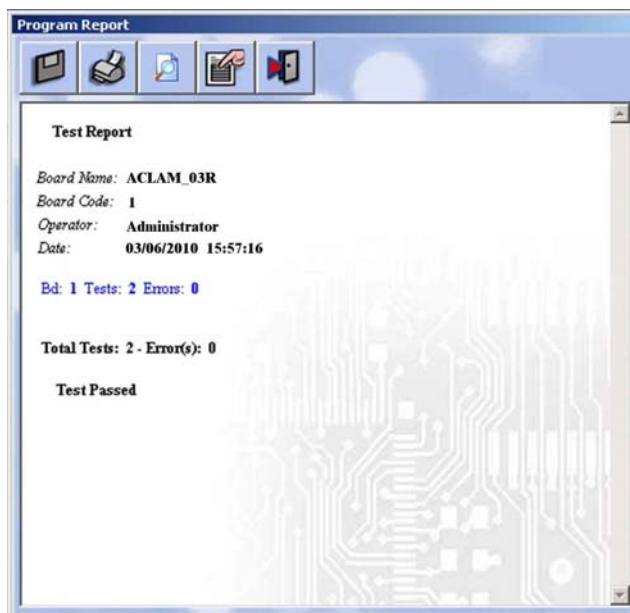


Fig. 3-3 PILOT V8 : Diagnostic report

The table Tab. 3-1 lists the possible corrective actions for the problems detected by the diagnostic test.

MODULE	ERROR	CORRECTIVE ACTION
LAM		Contact Seica's customer service
SCAFP	% SH LN 1 CH <i>n</i> (<i>p</i> /65) ⁽¹⁾	Replace the faulty relay on Line 1
	% SH LN 2/3 CH <i>n</i> (<i>p</i> /65) ⁽¹⁾	Replace the faulty relay on Line 2 and/or 3
	% SH LN 4 CH <i>n</i> (<i>p</i> /65) ⁽¹⁾	Replace the faulty relay on Line 4
	% OP LN 1/2 CH <i>n</i> (<i>p</i> /65) ⁽¹⁾	Replace the faulty relay on Line 1 and/or 2
	% OP LN 3/4 CH <i>n</i> (<i>p</i> /65) ⁽¹⁾	Replace the faulty relay on Line 3 and/or 4
FEMTO		Contact Seica's customer service

Tab. 3-1 PILOT V8 Table for corrective actions

⁽¹⁾ *n*: indicates the channel number, from 4097 to 4112.
p: indicates the channel number of the board, from 1 to 16.

If the error originates from module SCA FP, it is advisable to try and replace the relays listed in column "Corrective Action". To locate the faulty relays on module SCA FP, refer to the layout of the module shown in Fig. 3-5 and use the report messages as co-ordinates for a two-dimension array, where the line number indicates the line and the channel number identifies the column. For example, if report message is:

% SH LN 2/3 CH 4101 (5/65)

it is necessary to replace the relays CH 4101 LN 2 and CH 4101 LN 3. if the message is:

% SH LN 1 CH 4101 (5/65)

it is necessary to replace relay: CH 4101 LN 1.

3.4.2 ARRANGEMENT OF THE MODULES IN THE ATE RACK

The ATE rack is located in the rear side of the system. Its modules are arranged as shown in Fig. 3-4.

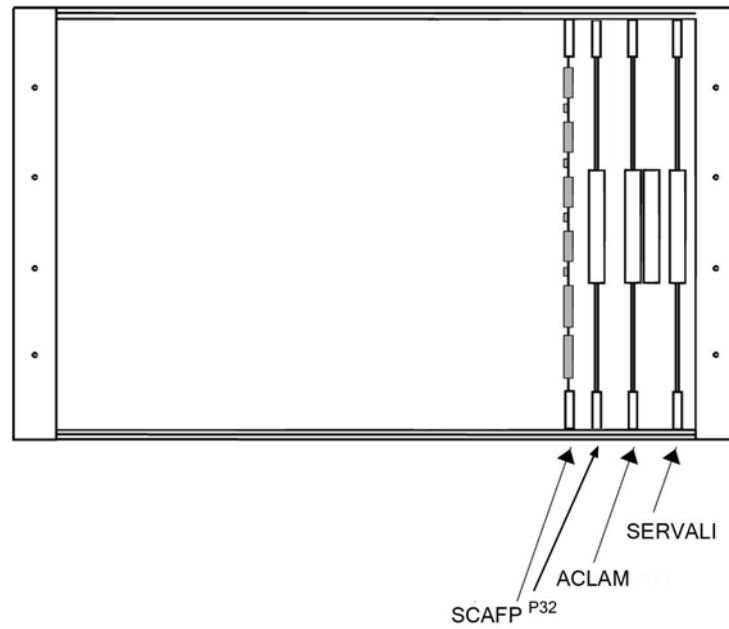


Fig. 3-4 PILOT V8 The ATE Rack

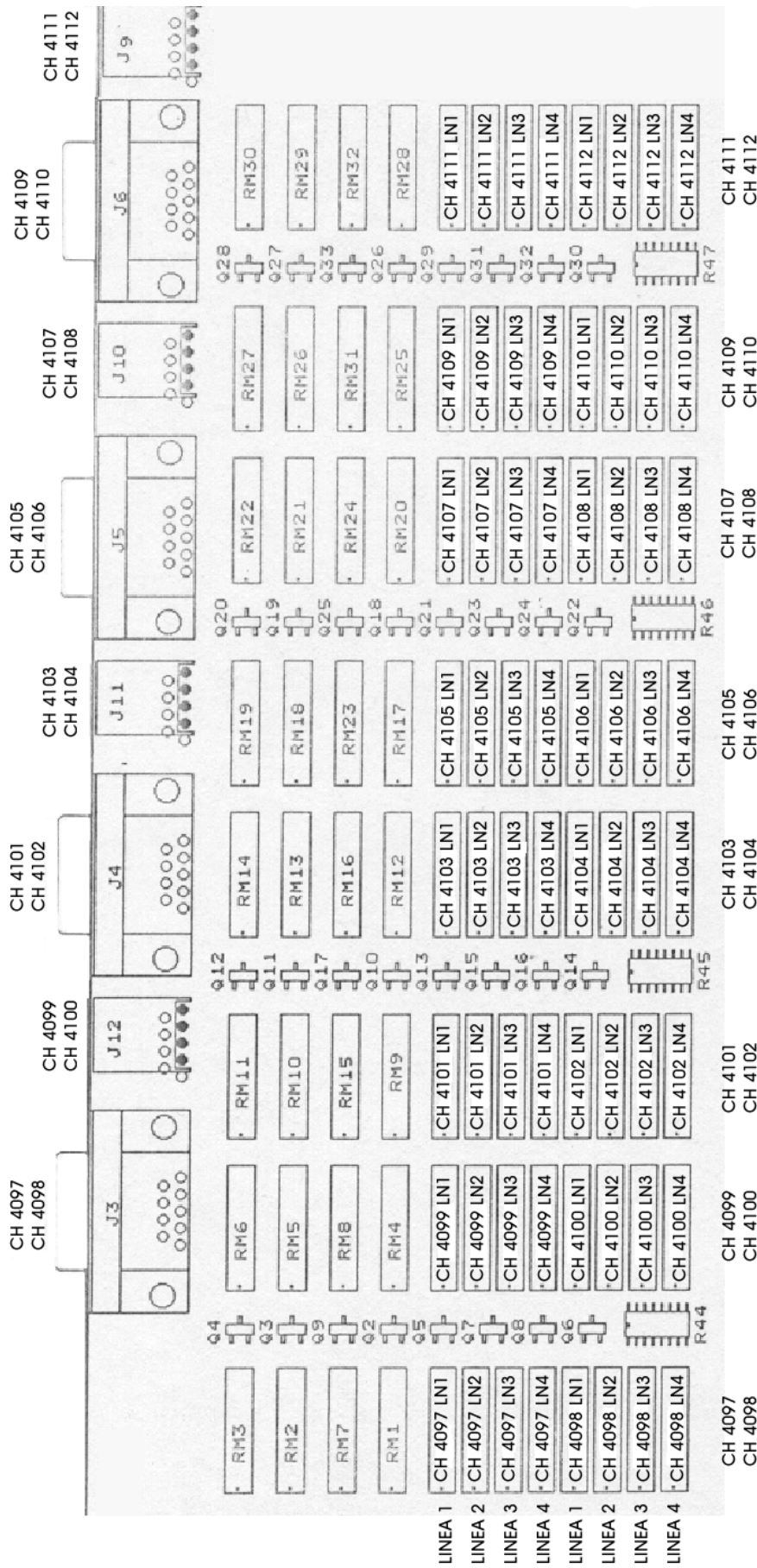


Fig. 3-5 PILOT V8 SCAFP Module Layout

3. 5 REPLACING THE PROBE NAIL

When the probe nail is worn out, it must be replaced. To do this, follo the instructions here below and see Fig. 3-6:

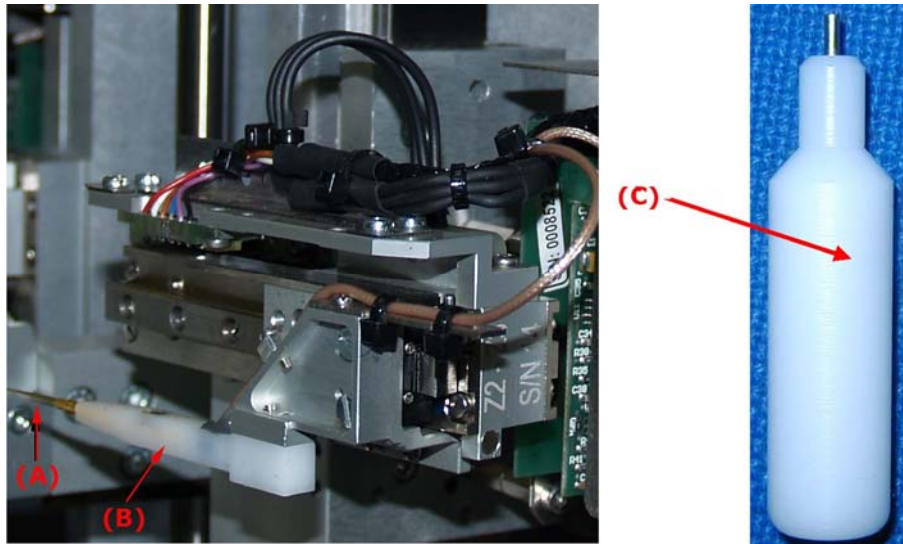



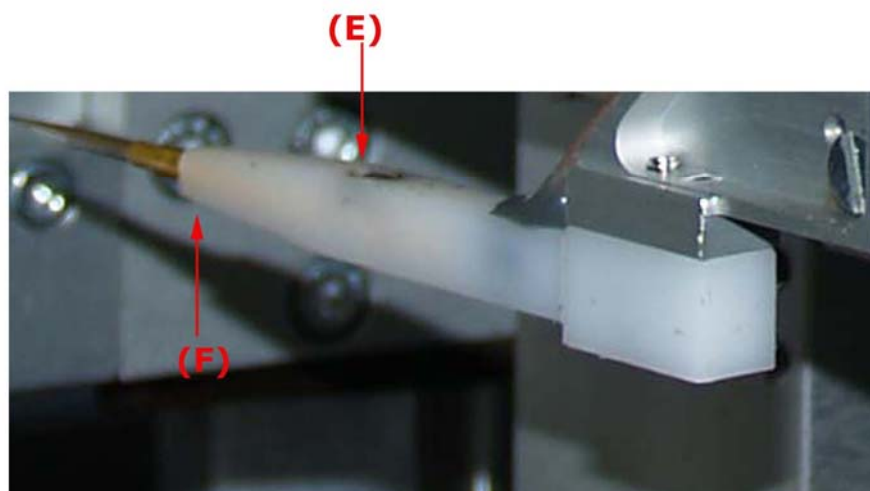
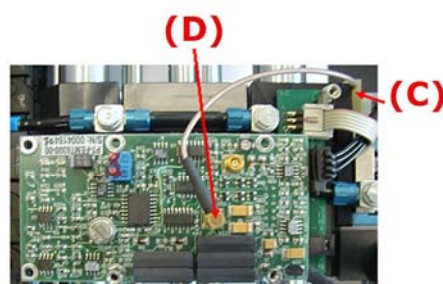
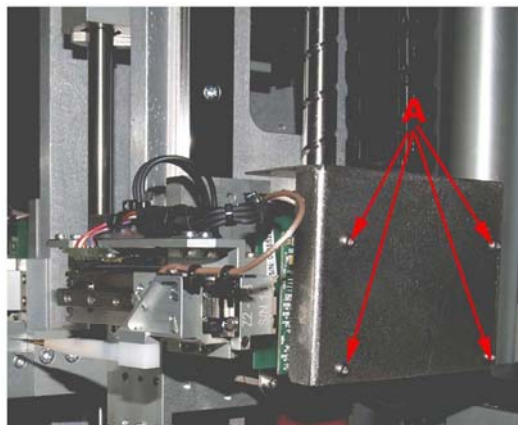
Fig. 3-6 PILOT V8 The measuring probe (on the left) and the nail replacer (on the right)

1. Press the EMERGENCY button.
2. Using a pair of pliers, grasp the needle (A) and remove it from its housing (B).
3. Insert a new needle in the probe housing (B).
4. Using the nail replacer (C) included in the system kit (cod.INSPUNFP-00), pull the needle into the probe housing until the nail replacer touches the probe housing.
5. Press MOTOR-ON button on the control panel.
6. Perform the homing procedure
7. Perform the automatic calibration (XYZ axes) and then the fine XY calibration.

3. 6 REPLACING THE PROBE HOLDER

When the probe holder does not hold the nail in it, it is worn out and must be replaced. To perform this operation, follow the instructions given here below:

 Note: The pictures in this page will be replaced)



- 1). Press the EMERGENCY button on the control panel in order to work safely.
- 2). Remove the screws (A) using a 2 mm Allen wrench. Remove the cover as well.
- 3). Disconnect the connector (D) shown in the figure above
- 4). Remove the screws (E) with a 2.5mm Allen wrench.
- 5). Remove the probe holder (F).
- 6). Install a new probe holder
- 7). Insert and fasten the screws (E) using a 2.5mm Allen wrench.
- 8). Connect the connector (D) shown above.
- 9). Put the cover again
- 10). Insert and fasten the screws (A) with a 2mm Allen wrench.
- 11). Press button MOTOR-ON on the control panel.
- 12). Perform the homing procedure.
- 13) Perform the automatic XYZ calibration and then the XY fine calibration.

3. 7 CALIBRATIONS

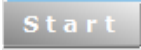

All the probes, as well as all the moving parts installed on the heads of a Flying Prober, should be occasionally calibrated when the part is replaced, and periodically, in order to guarantee the best performance.

Typically a calibration must be performed:

- a. every time a probe is replaced
- b. if the camera has been moved from its original position
- c. every time the system is moved from its original position
- d. if the system has not been used for a long time.
- e. Every time any of the probes appears to be out of its position during the test
- f. All the calibrations are carried out using the OVP check-board, hence this board should be loaded into the system before starting the calibration procedures.

Run VIVA  software.

In the  page of the Wizard Environment, press  and select the Template .

Now from page  of System Library press the button .

The system Maintenance dialog will be displayed on the screen.

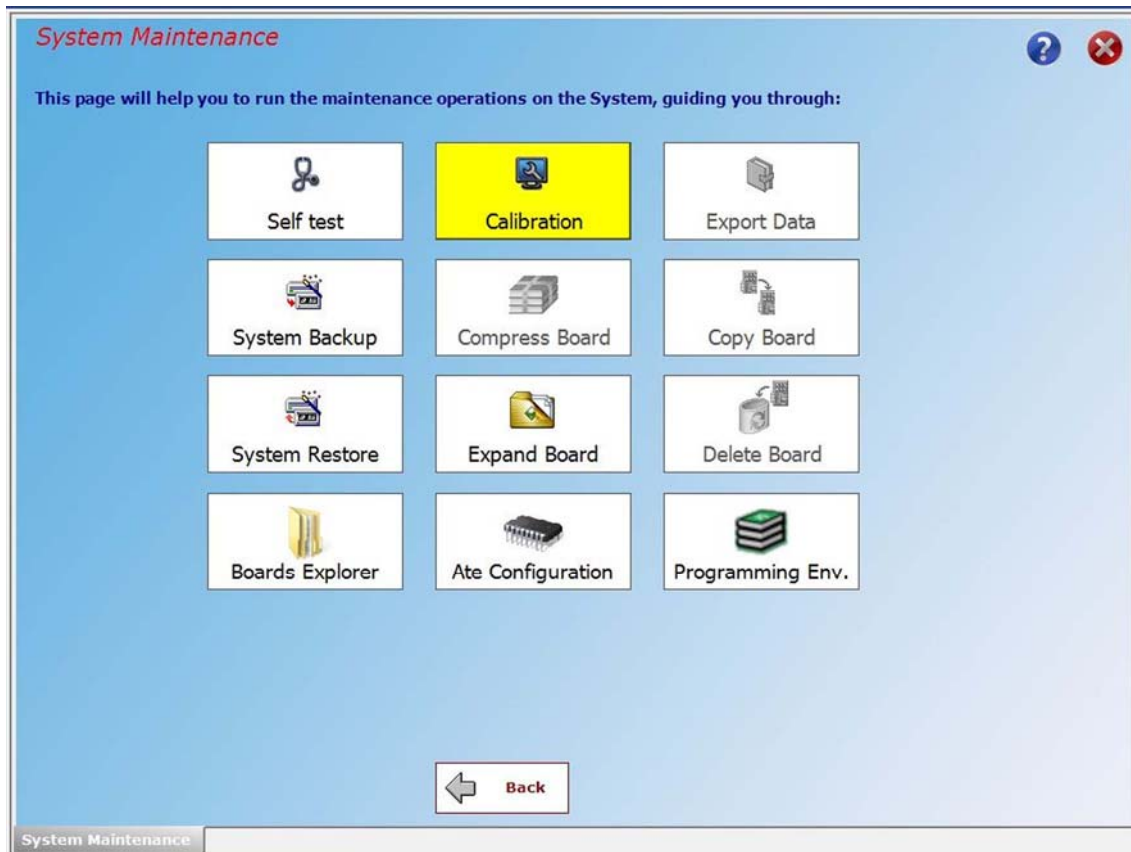


Fig. 3-7 PILOT V8 : Dialog "System Maintenance", "Calibration"

The tab Calibrations of the System Configuration Environment will open.

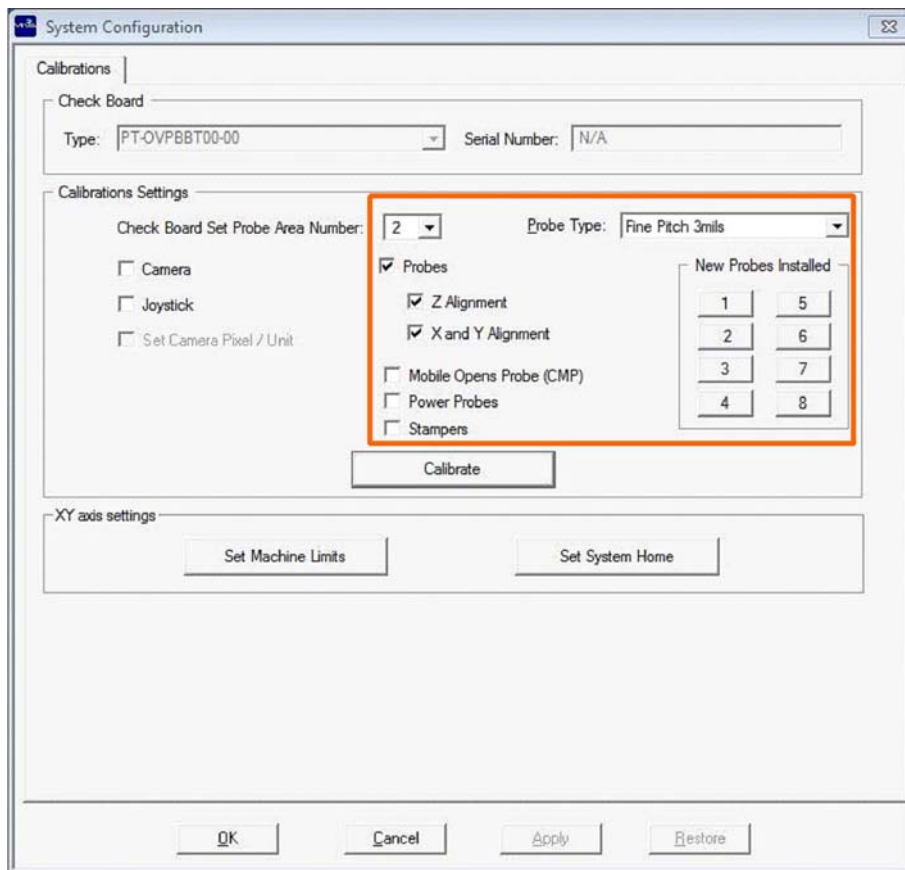



Fig. 3-8 PILOT V8 : Dialog "System Configuration", "Calibration"

Here the operator may select all the options to calibrate the electrical probes and launch the calibration of the following items installed on the heads:

- Electrical Probes
- Mobile Capacitive Probe
- Power Probes
- Stampers

 *Note: It is always recommended to perform the Electric Probe calibration first, regardless of the type of calibration needed. Please refer to the instructions reported in the dedicated chapters below.*

3.7.1 JOYSTICK CALIBRATION

This procedure checks the status of the joystick and determines the coordinates of its rest position.

- 1 – Select the “Joystick” Radio Button
- 2 – Press “Calibrate”

N.B. DO NOT move the joystick during this procedure.

3.7.2 CAMERA CALIBRATION

It is not necessary for the operator to execute this calibration. It is performed by Seica before delivering the system.

3.7.3 ELECTRICAL PROBES CALIBRATION

This procedure allows to automatically calibrate the measuring probes as compared to XY-Z axes.

1. Insert the OVP board into the work area positioning it as shown in Fig. 3-9.

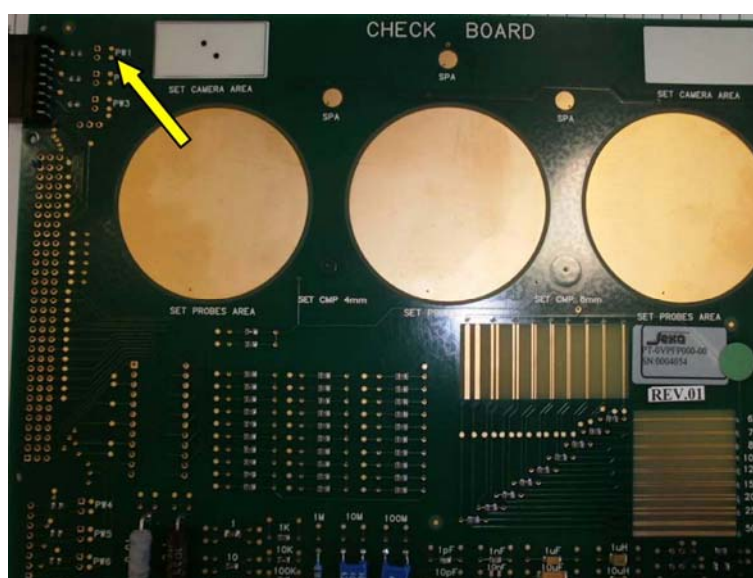


Fig. 3-9 PILOT V8 OVP Board

2. Close the protective .
3. Select the checkboxes as indicated in Fig. 3-7 (Probes, Z Alignment, X and Y alignment)
4. Press CALIBRATE
5. Follow the instructions on the screen.



NOTE: CHOOSE THE CENTRAL GOLD CIRCLE ONLY, TO EXECUTE THE CALIBRATION.

In the System Configuration dialog, select items: **"Probes"**; **"Z Alignment"** and **"X and Y Alignment"** (See fig.3-10):

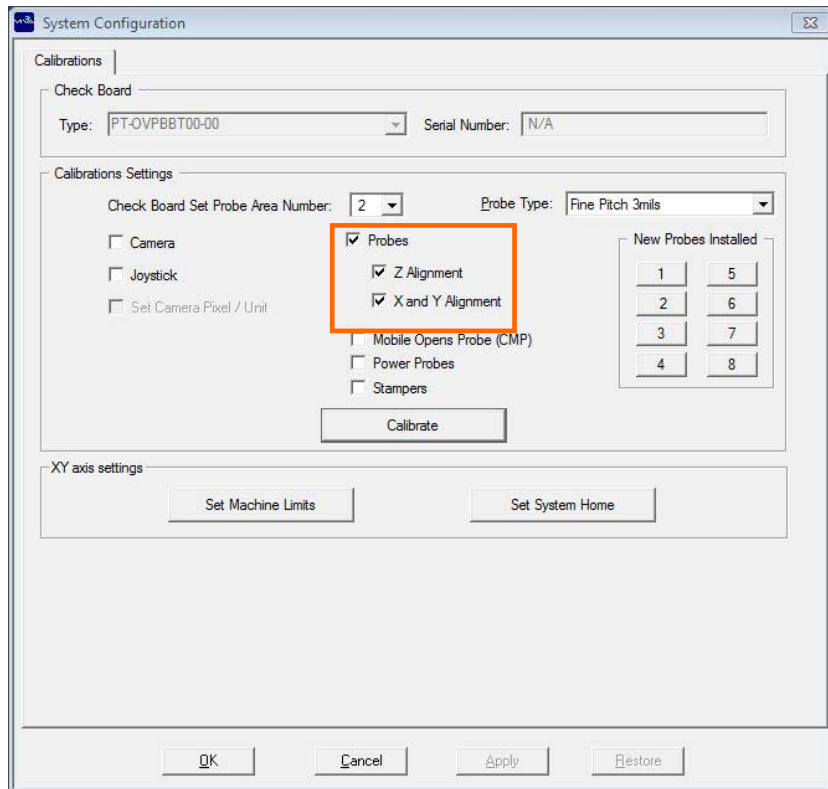
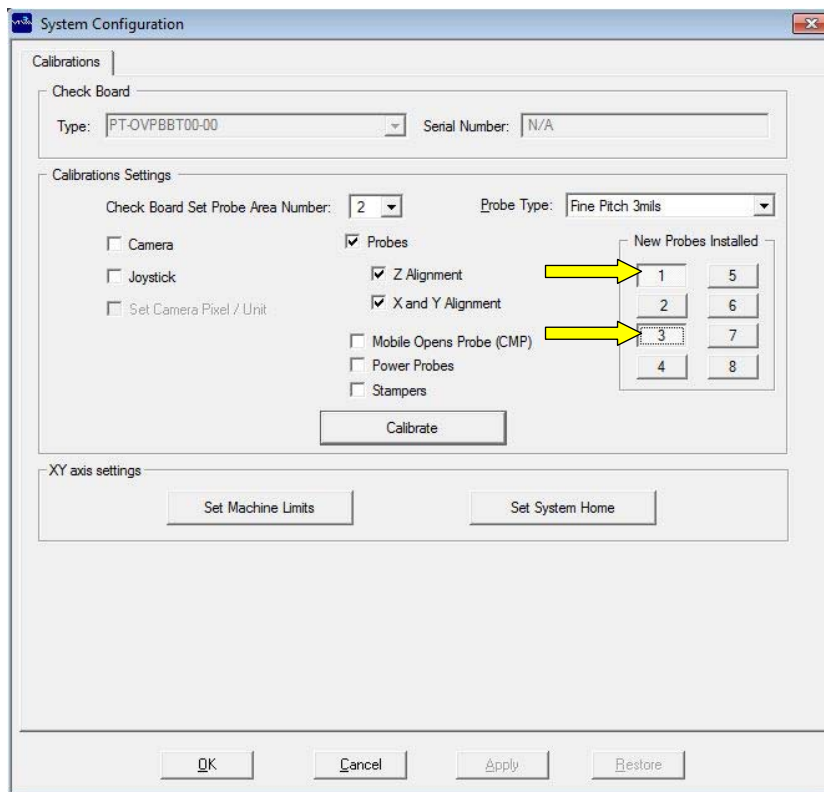


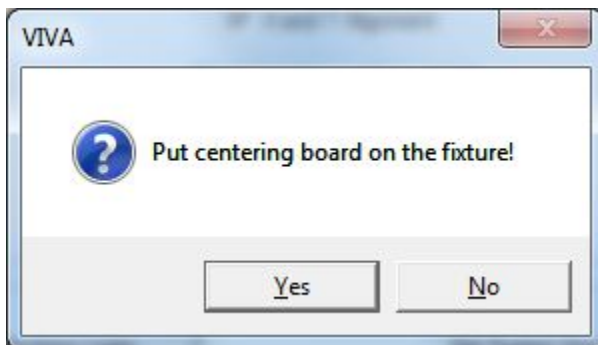
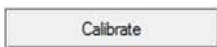
Fig. 3-10 PILOT V8 Setting the Electrical Probe Calibration

Set the value of field **"Check Board Set Area Number"** to 2
Select **"Probe type"** as shown in the picture

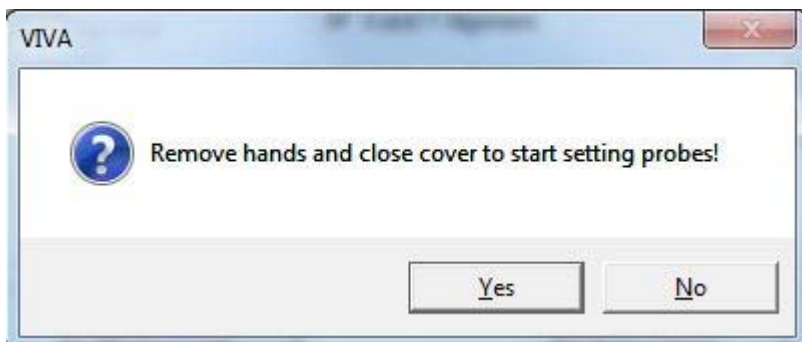
Press the button for each electrical probe installed (Here: 1 and 3)



and press



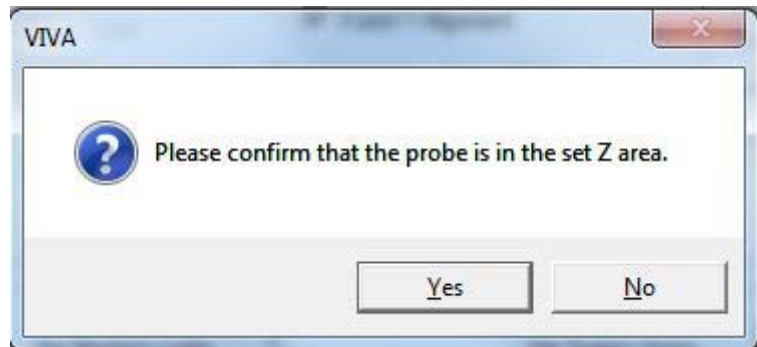
Follow the instructions on screen and press **YES** to continue



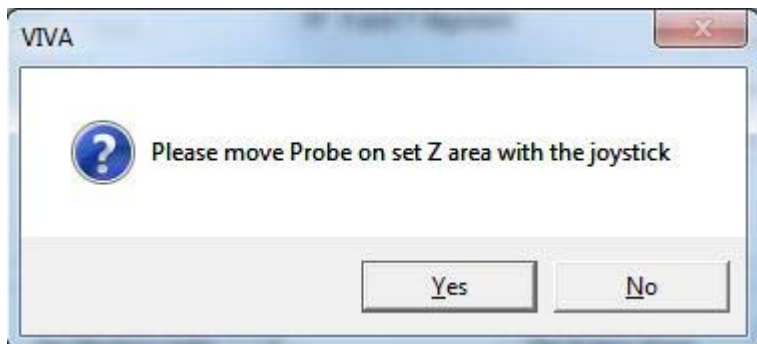
Follow the instructions on screen and press **YES** to continue

Check if the position of the probe 1 is over the central round probing area of the check-board and press . Skip the next picture to continue.

Press if the probe is not in that area and go on the next picture.



Use the joystick to move the Probe 1 over the central round probing area of the check board and press to continue



When the electrical probe calibration has been completed, a dialog will be displayed to perform the **X** alignment of the **Top** camera. (see fig. 3-11)

Press the button for higher accuracy

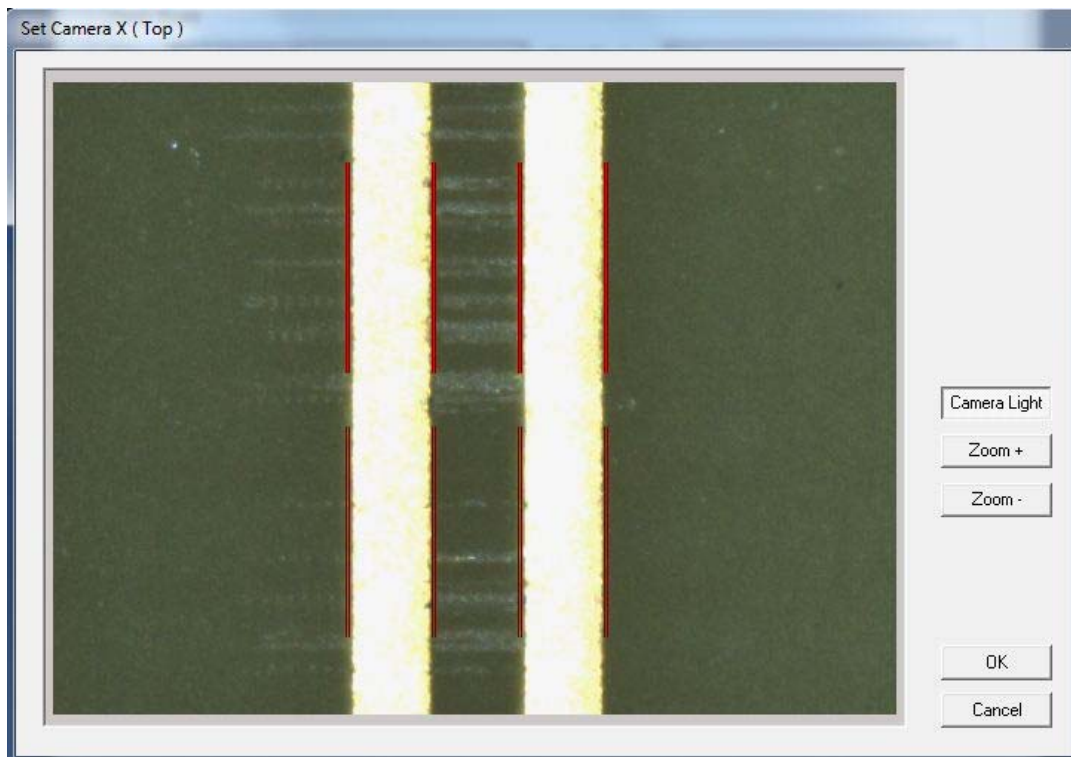


Fig. 3-11 PILOT V8 Dialog "Set Camera X (TOP)"

Now adjust the **X** alignment of the **Top** camera with the arrows keys



Press to continue

Another dialog will be displayed to perform the **Y** alignment of the **Top** camera.

Press the button for higher accuracy

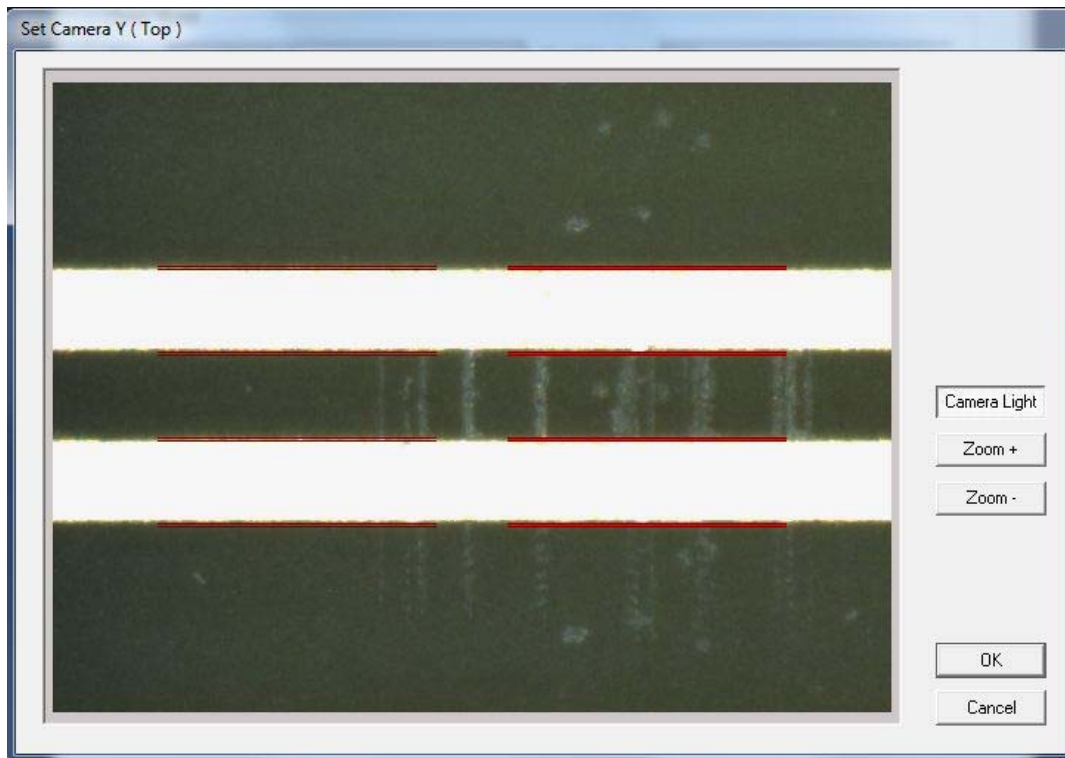


Fig. 3-12 PILOT V8 Dialog "Set Camera Y (TOP)"

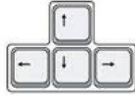
Now adjust the **Y** alignment of the **Top** camera with the arrows keys



Press to continue

A dialog will be displayed to perform the **X** alignment of the **Bottom** camera.

Press the button for higher accuracy, then adjust the camera alignment using the



arrows keys

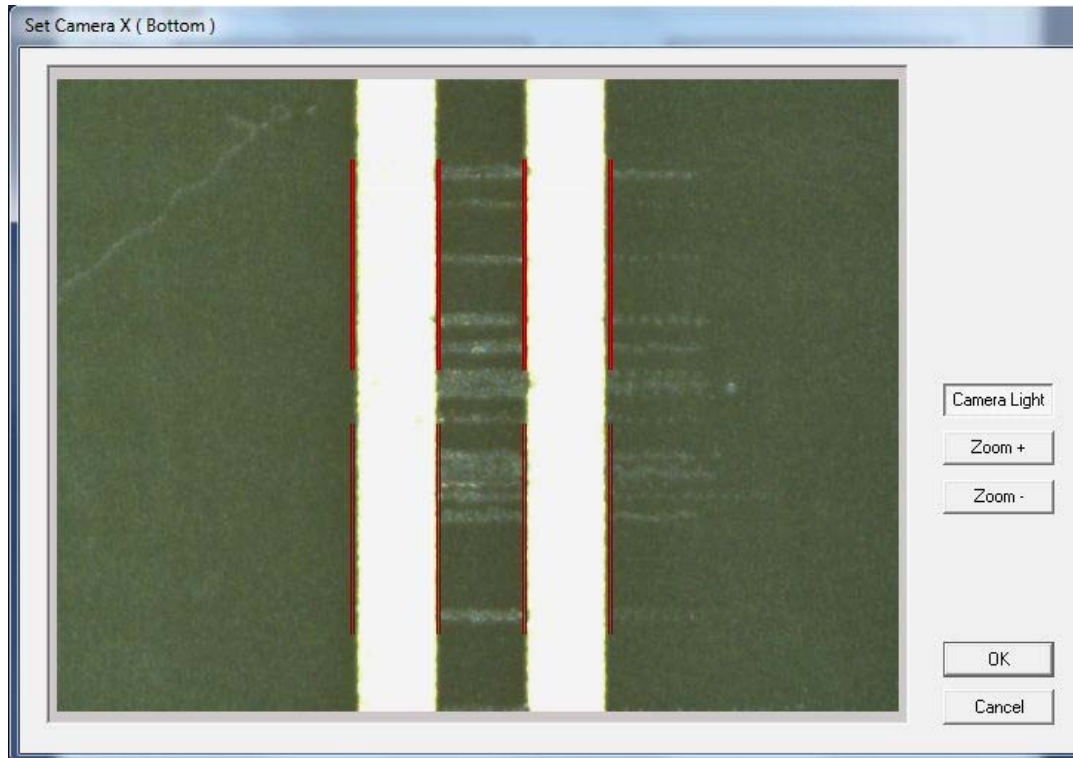




Fig. 3-13 PILOT V8 Dialog "Set Camera X (BOTTOM)"

Press to continue

A dialog window will be displayed to perform the **Y** alignment of the **Bottom** camera.

Press the  button for higher accuracy, then adjust the camera alignment using the arrows keys  arrows keys

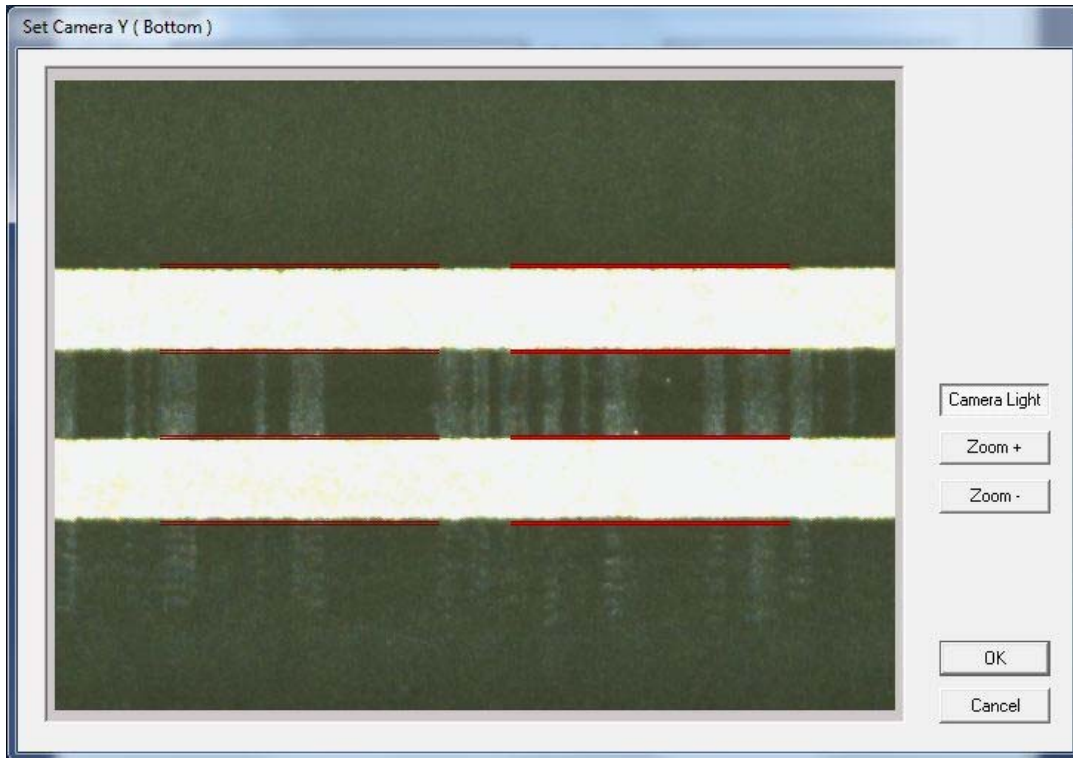
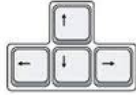


Fig. 3-14 PILOT V8 Dialog "Set Camera Y (BOTTOM)"

Press  to continue

Align the Top Camera and the Bottom camera on the same hole on the Check Board.



Use the arrow keys to center the view-finder on the hole for the Top camera

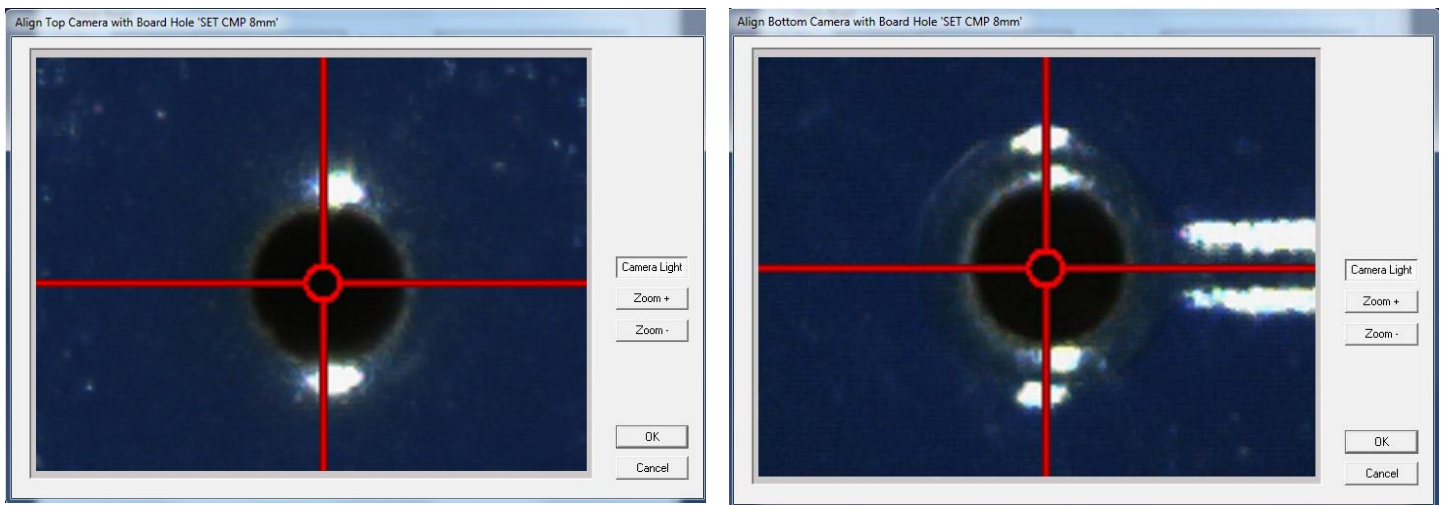


Fig. 3-15 PILOT V8 Align top and Bottom Cameras

Press to continue

3.7.4 MOBILE CAPACITIVE PROBE CALIBRATION

In the dialog "System Configuration" select the checkbox "Mobile Opens Probe CPM", then press

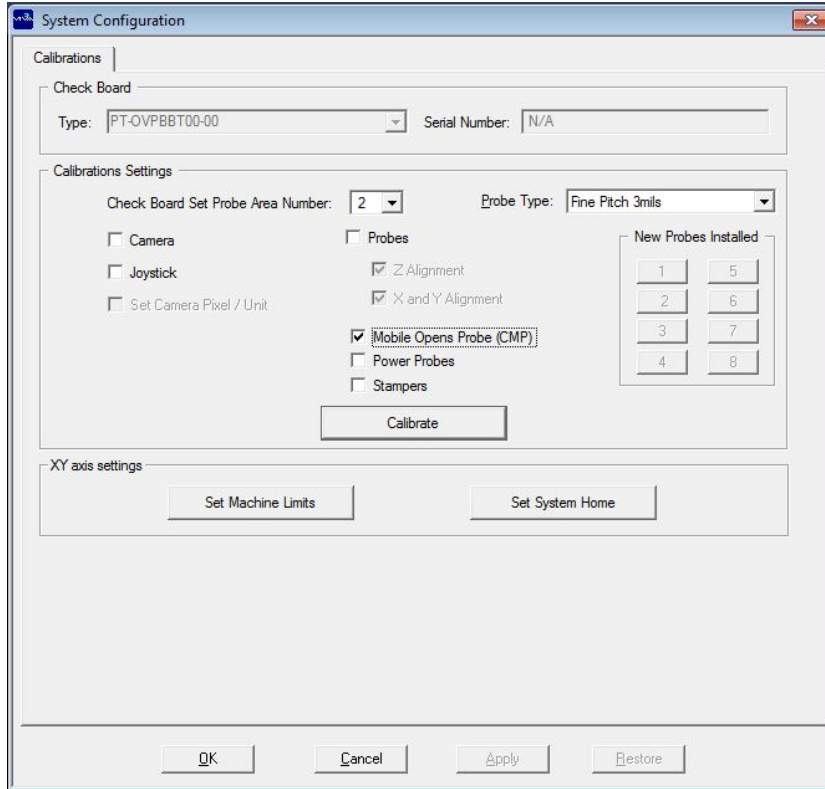
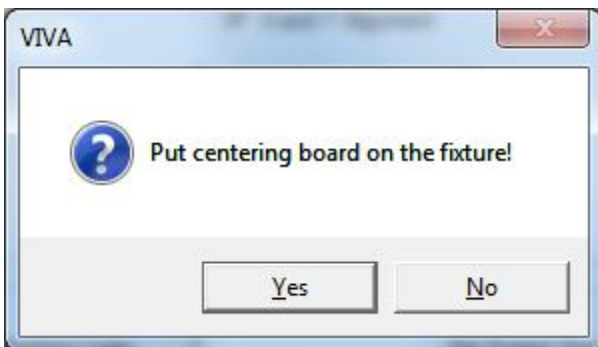
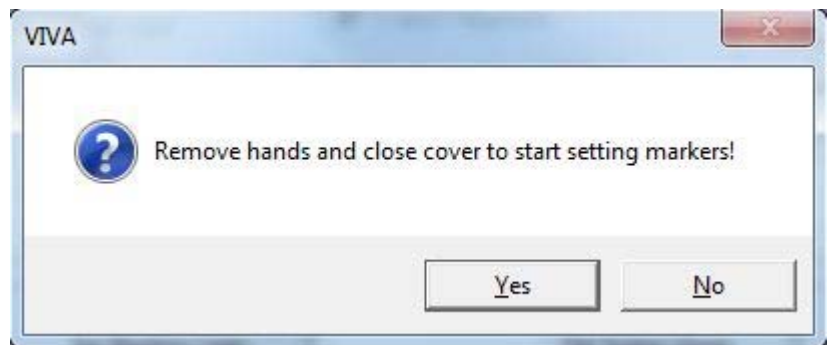



Fig. 3-16 PILOT V8 Setting the "Mobile Opens Probe" Calibration"



Follow the instructions on screen and press **YES** to continue when done.

Follow the instructions and press **YES** to continue when done.



In the dialog "Calibration Mobile Open Probe" press the button  to zoom in for more accuracy

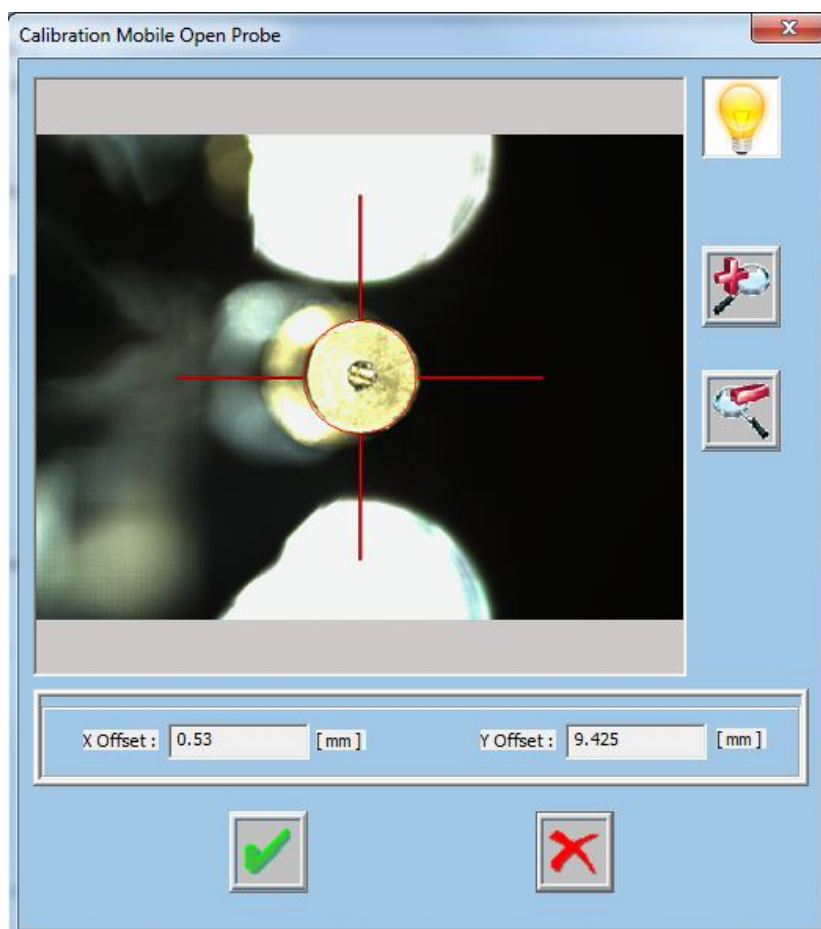
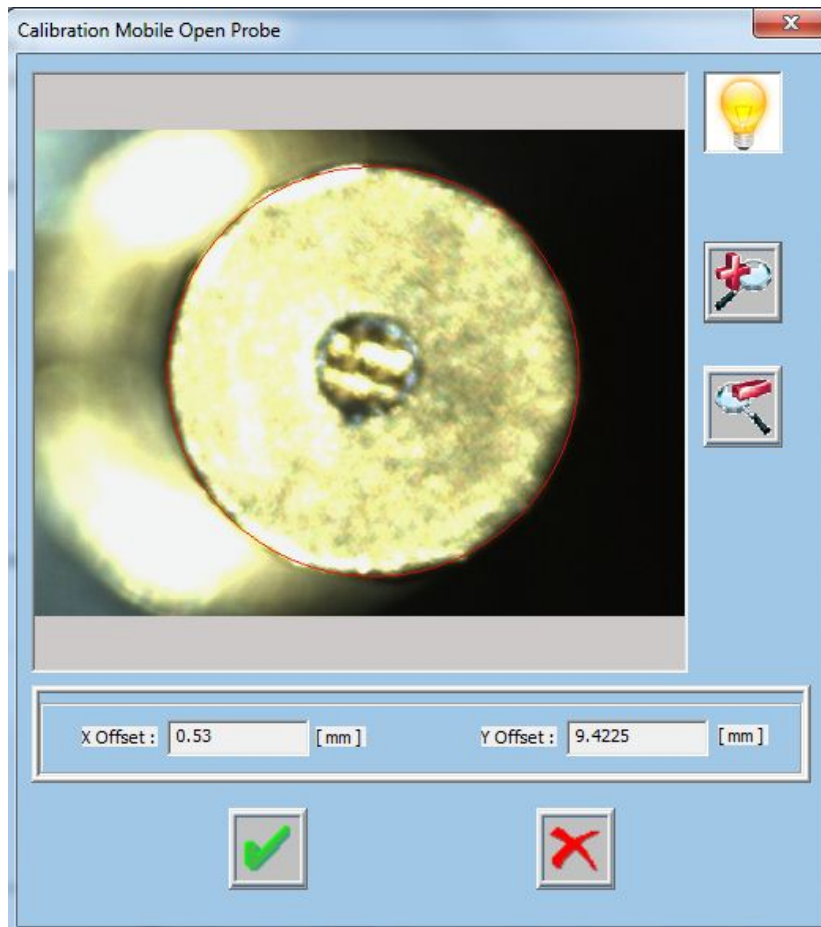




Fig. 3-17 PILOT V8 Dialog "Calibration Mobile Open Probe"



Use the arrow keys to adjust the alignment of the red circle over the top of the capacitive probe

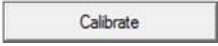


Press  to save the new X,Y position

Repeat the same steps to align the bottom side of the capacitive probe and press  to save the new X,Y position.

3.7.5 POWER PROBES CALIBRATION

If the PILOT V8 in use comes with the power probe option installed, please follow this section for specific instructions concerning the power probe calibration procedure.

In the System Configuration Environment, select the checkbox **“Power Probes”** (See fig. 3-18) and press .

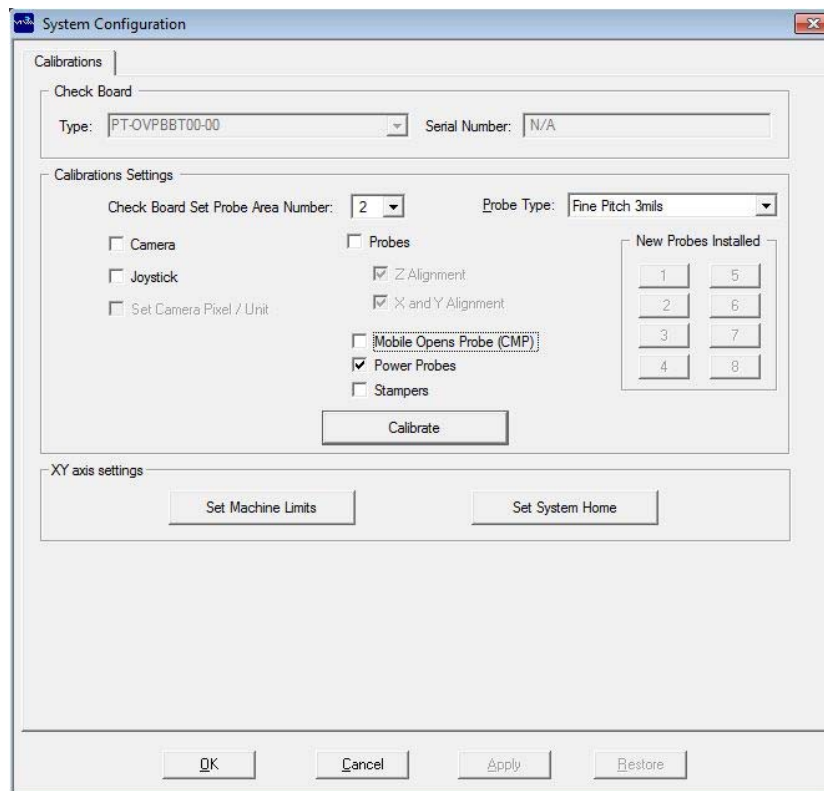
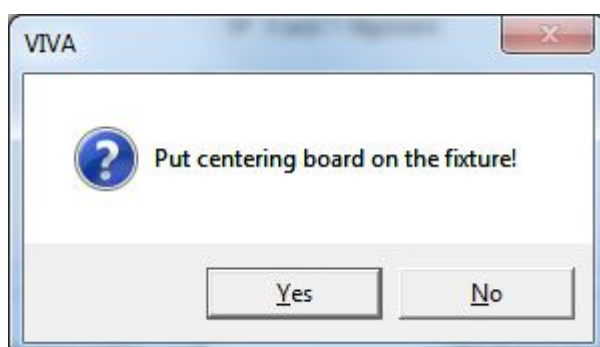
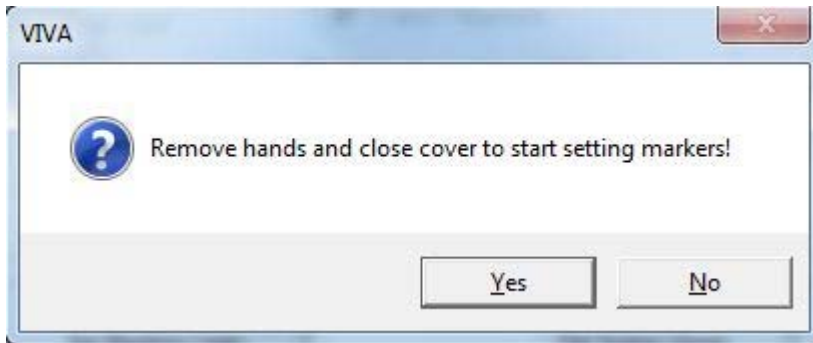


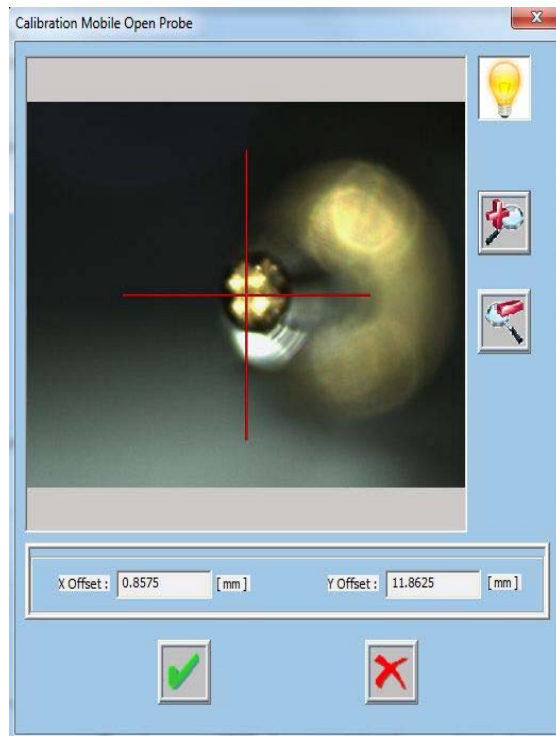
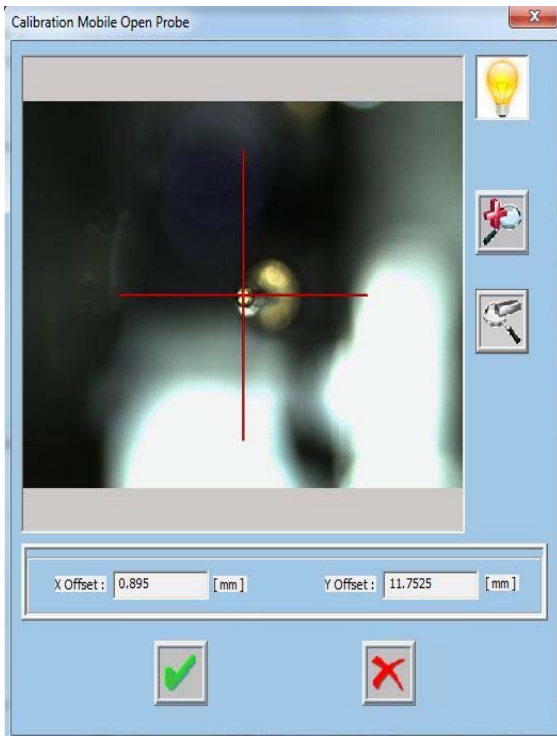
Fig. 3-18 PILOT V8 Setting the Power Probe Calibration






Follow the instructions and press **YES** to continue




Follow the instructions and press **YES** to continue



Press the button  to zoom in for more accuracy and use the arrow keys  to adjust the alignment of the red cross over the center of the power probe top

Press  to save the new XY position

Repeat the same steps to align the bottom side of the power probe. When finished, press  to save the new XY position

3.7.6 STAMPER CALIBRATION

In the System Configuration dialog, select the checkbox **“Stamper”** (See fig. 3-19) and press

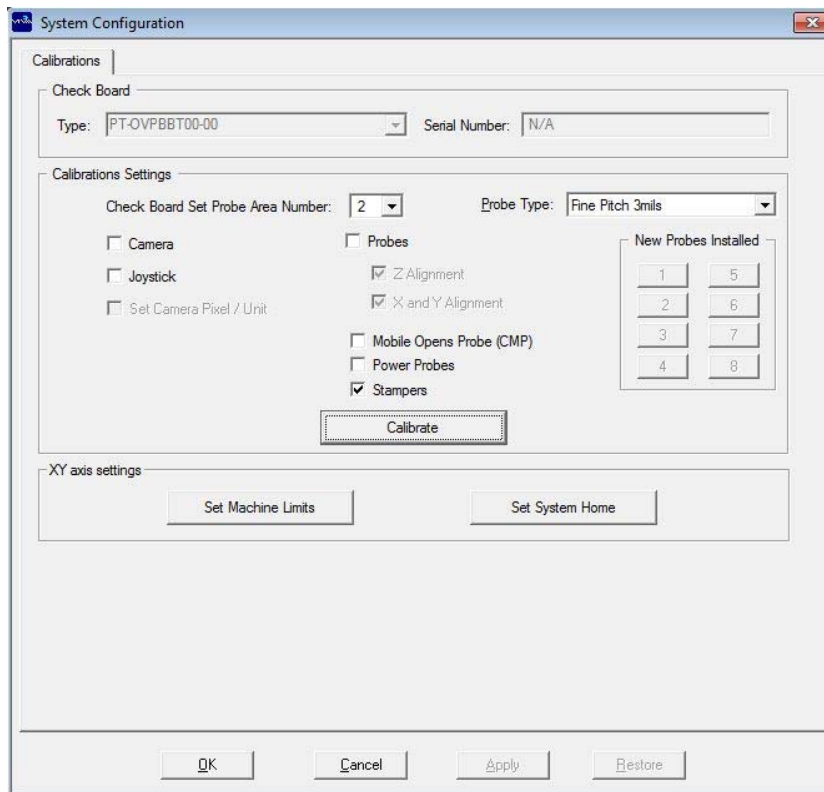
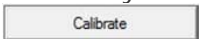
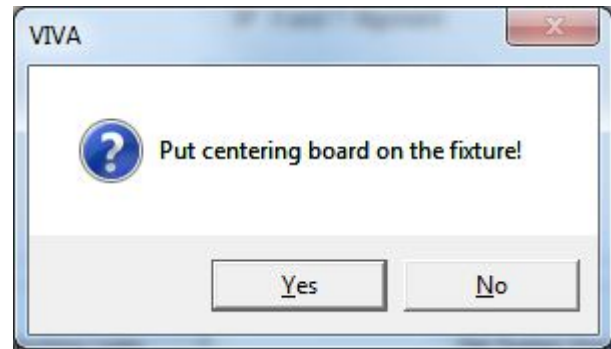
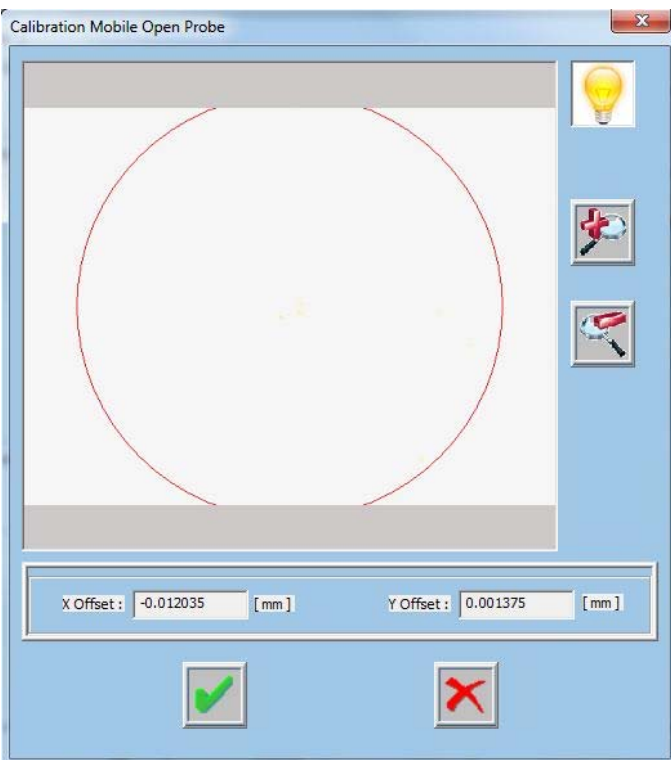
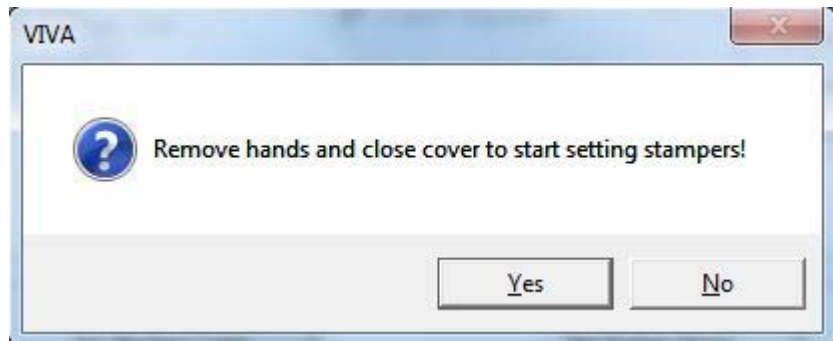



Fig. 3-19 PILOT V8 Setting the “Stamper” Calibration”

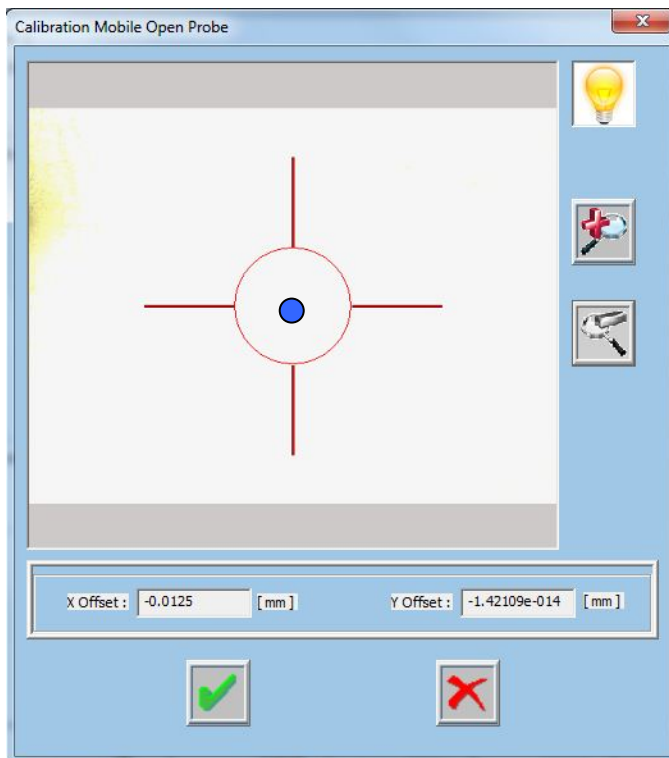
Follow the instructions and press **YES** to continue



Follow the instructions and press **YES** to continue




In the dialog displayed, press the button  to zoom out and enlarge the view to search the mark, if it is not displayed



Center the mark with the red circle using the

joystick or the arrow keys



Press  to save the new calibration

3. 8 UPS (UNINTERRUPTIBLE POWER SUPPLY)

If the test system is equipped with a UPS; it is recommended to check its correct operation. To check the UPS is correctly operating, do as follows:

- 1) Cut the mains supply to the test system
- 2) If the UPS is working properly, the PC will remain ON and the user will have the time to shutdown the computer properly.



WARNING: Remember that, in the event of a blackout, the UPS will grants some minutes to shutdown the system correctly, thus avoiding damages.



Fig. 3-20 PILOT V8 : Example of UPS

4. GETTING STARTED

This section aims to walk the customer through the steps needed and the procedures to be carried out to test a board correctly.

Further information concerning the features and capabilities of the VIVA software, are available in the manual "Viva Software for Flying probe systems"

4. 1 SYSTEM STARTING

1. Open the air tap located on the rear side of the system.
2. Set the MAIN-SWITCH on the rear side of the system to "1".



3. Press the button **MAIN ON**
4. Press the button **MOTOR ON**
5. Press the button **ATE ON**



Note: For system shutdown, repeat the steps described above, from 5 to 1

4. 2 SELECT A TEST PROGRAM

The VIVA Wizard Environment allows to select an existing test program or to create a test program for a new board. To select an existing test program, follow the steps provided in the following chapter.

4.2.1 WIZARD ENVIRONMENT – START PAGE

The page "Start" of the Wizard Environment allows to:

- Create and execute a test program for a board through a simple guided procedure indicated by the wizard itself.
- Select an existing program for execution or to interfere in the steps scheduled for its development.
- Execute System Maintenance operations.
- Examine the documentation supplied with the system as manuals or help on line.

4.2.2 CREATE A NEW BOARD

- Enter the Wizard Environment, in the page “Start”, press button “CREATE A NEW BOARD”.
- In the dialog displayed:
 - Fill in the fields “Name:” and “Description”. (“Description” is optional)
 - Select, from the list of templates available the more suitable one for the kind of board for which you are creating the test program.
- Press button “OK” to continue; the page “Import Data” is now active.

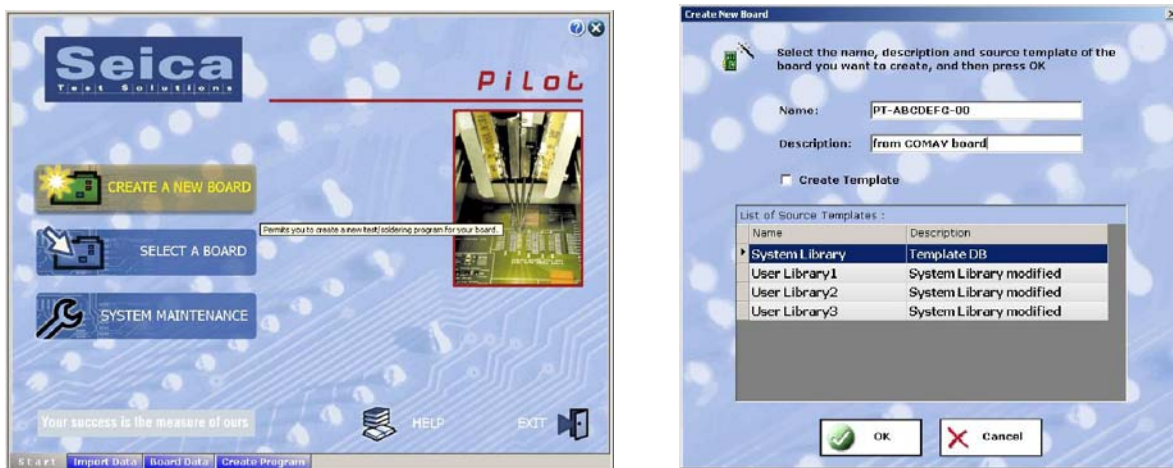







Fig. 4-1 - VIVA: “Start” page and “Create New Board” dialogs.

4.2.3 SELECT A BOARD

- Enter the Wizard Environment; in the page “Start”, press button “SELECT A BOARD”.
- In the dialog displayed:
 - From the list “Boards:” select a board to open a work session.
 - If the work session is related to the execution of different programs, and if the system operates in the in-line mode, the button “Configure Board Loader” allows to configure the database which identifies the boards to be loaded through the SMEMA interface.
 - In the section Board Preview, if available, is displayed the layout for the selected board, aligned to the data stored in the board database.
 - In the list “Boards”, near to field “Name” there’s a field identified as “!” which tells the program belongs to one of the three possible steps scheduled to develop a test program. It can also identify a template Database used to develop the test program.

-  Prepare
-  Verify
-  Execute
-  Template database to develop programs


 **NOTE:** A “Template” is a sample database where are recorded the default settings used in the Wizard Environment pages to create a new program. It is important to consider that possible changes made on a Template database will affect the values of the default settings in the subsequent executions of “CREATE NEW BOARD” with this Template.

- To continue, press button Select; the page “Import Data” is now available, or the page active during last program execution.

- The four buttons “Copy”, “Delete”, “Compress” and “Expand” allow to execute these operations directly on the selected program with no need to select button SYSTEM MAINTENANCE.



Fig. 4-2 - VIVA: “Start” page and “Select a Board” dialogs

 **NOTE:** *If the selected board is a Template”, (e.g. “System Library”) the only page available in the Wizard Environment dialog, in addition to page “Start”, is the page “Template Option”. This page allows to define some default settings for some of the attributes used when creating programs.*

4. 3 TRANSLATION

To test the board in a correct way it is very important to perform a correct translation and marker setting. The translation procedure is used to reference the board coordinates to the test system and it is executed by the operator on the first board. On subsequent boards the translation is performed automatically by the test system with the markers recognition. The details on these procedures are given here below.

4.3.1 TRANSLATION

- Translating a board means moving all the test points as compared to a specific point of the testing system referred to as system zero. This enables the system to acquire the position of the board that needs to be tested and to attain a common reference so that the translation of a probe has the same value of the translation of the board. Translation is a very important phase of the testing because if it is not carried out accurately, the probe will not be positioned correctly on the supports and could yield to a higher percentage of false errors. To attain a correct translation, make sure that appropriate measures are taken. It is advisable to select the points visually holding the board sample in order to verify that the points selected are appropriate for testing purposes. It is preferable to select areas with a squared shape or with limited dimensions as translation points in order to facilitate centering and limit positioning errors.

It is also very important to select the position of the points on the board, that should be as distant as possible and in diagonal, as shown in the figure below. It is advisable to avoid the pair 1-2 and prefer, instead, pairs 3-4 and 5-6.

The following sections describe in detail the recommended steps for a correct translation.

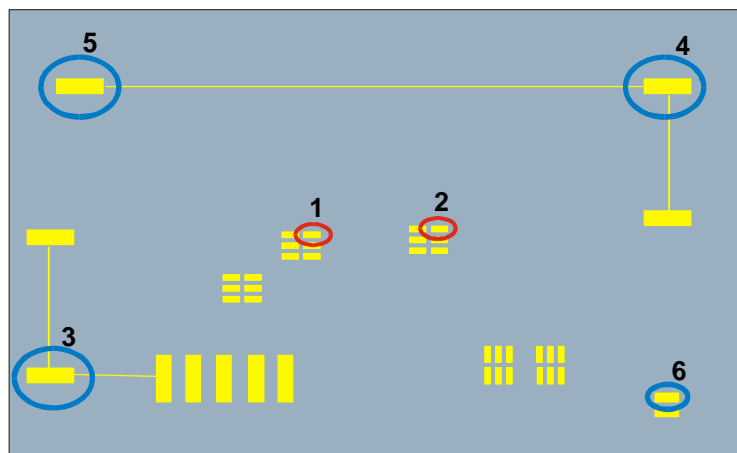
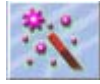


Fig. 3-3-1

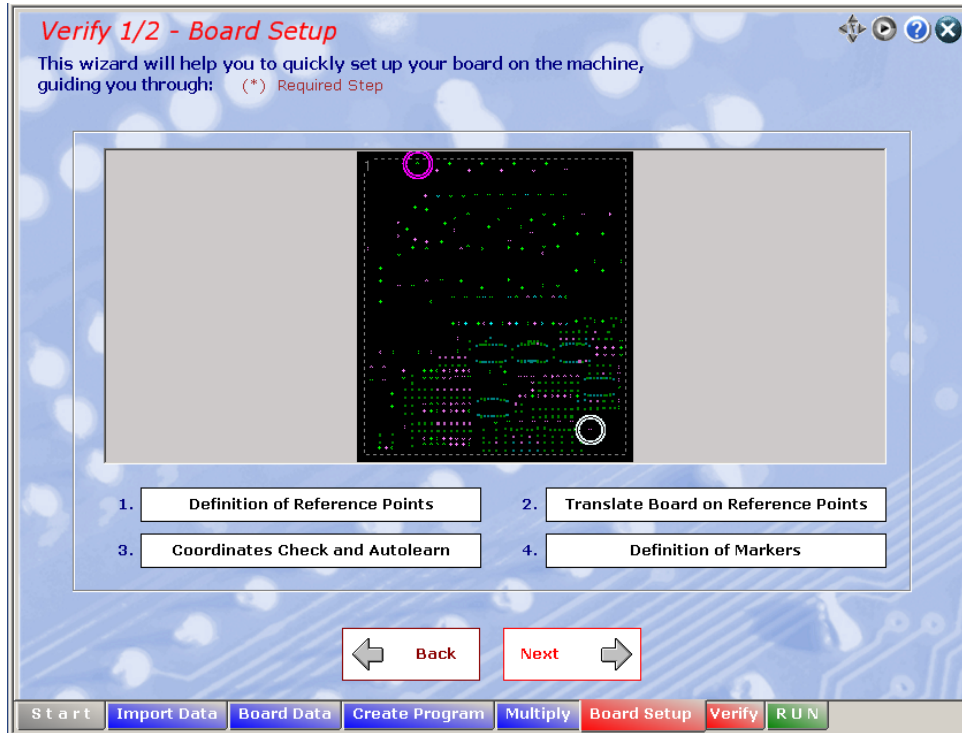


1. If not already opened, press the  button to enter the Wizard Environment.



2. Select the Board setup page:

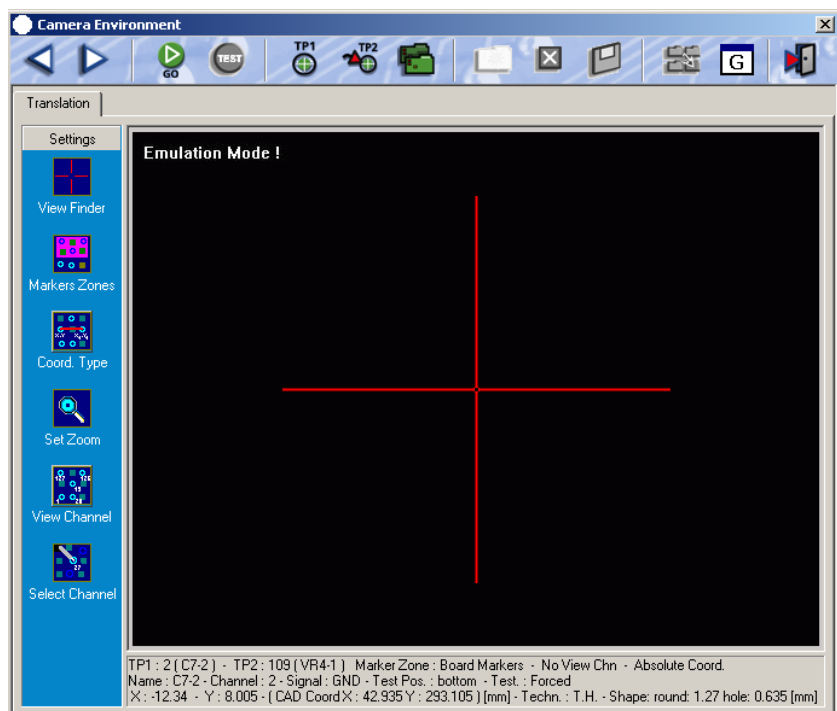
The system displays a window that shows the board layout:



3. Press the Translate Board on Reference Points. The system will display window *Translation*.



The translation procedure is the alignment of the board reference system to the test system. In this way the test system acquires the position of the board to be tested and use it as a common reference. **The translation is a very important test phase because if it isn't performed properly, the position accuracy of the probes on the pads will not be precise with a result of false diagnosis.**

The camera will be positioned on the co-ordinate of the first point selected for the translation, displayed in window Set Reference points. The co-ordinate reached by the camera may not





correspond to the correct position on the board. In this case, it is necessary to align the two points. The following step explains how to perform this operation.

4. Position the cross displayed on the center of the selected point. This can be done in three ways:
 - o Use the directional buttons or the joystick (option) on the Control Panel until the correct position is reached.
 - o Keep the left button of the mouse pressed and simultaneously move it in the correct direction to center the point.
 - o Position the mouse pointer on the point that has to be reached, then press the right button of the mouse. The cross will reach the position indicated by the point of the arrow before the pressing of the right button of the mouse.

5. When the pad center and the pointer are aligned, click on the  icon. The system will move the camera on the second point (defined as TP2).
6. Align TP2 in the same way as for TP1.
7. Press the  icon again. The system checks that the coordinates acquired with the camera correspond to the theoretical points previously selected in the *Definition of Reference Points*.

If there is an error on the two point distance, the system will give a fail report and suggest to cancel the operation or to acquire the two values again.

8. If no error is visualized, press the  icon to save the translation and then press the  icon to exit.

At this point the translation has been successfully completed and it is possible to continue with the next steps.


4. 4 TEST PROGRAM EXECUTION

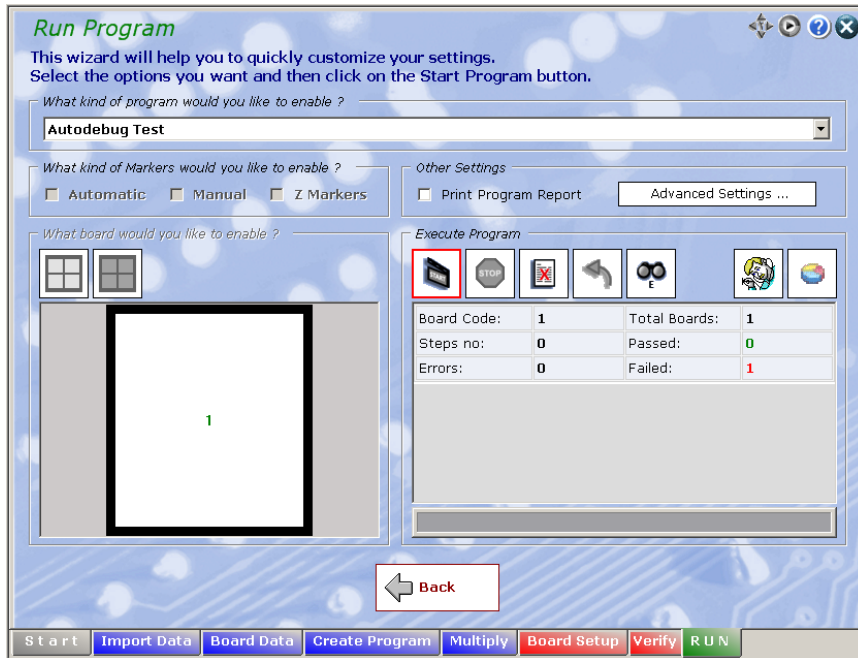
The system can work in two operation modes:


- AUTO** Mode
- MANUAL** Mode.

This paragraph provides a short description of the test environment and of the two operating modes available (see below).

4.4.1 TESTING ENVIRONMENT


1. If not already opened, press the  button to enter the Wizard Environment. This page will open





Once you are in the “Run page”, press the button  to start the test program.


Other buttons available in the Run page toolbar are as follows (in brackets is reported the corresponding command from keyboard):





- 





Start Program (Spacebar) To start the test program for the selected board.
- 


Stop Program (Esc) To stop the test program for the selected board.
- 


Failed Step Only To display a list showing the program executions.. Select a row where the test result is "Fail"; then press the butto "Start Program". This will not execute the complete test program, but only the test (or tests) which output a "fail" result.
- 

Retry on Error To disable/enable the option Retry on error, to repeat each test for a given number of times, moving the probe on the test point. This button is available only in you have defined the corresponding values in the section "Retry XY Axis" or "Z Axis Retry" in the Board Configuration Environment.
- 

Retest Errors To disable/enable the option Retest errors; to repeat the tests with "fail" result upon completing the test program execution. If the checkbox "Automatic Error Retest after Test" in the Board Configuration Environment is selected, the button is selected. You may change its status from the Debug Environment.
- 

Stop and retest on Error In case of error, the program is stopped and the system prompts a dialog to display the information related to the measurements performed. Besides, the dialog contains three other buttons ,  and  to continue the test program execution, end the test program execution or view the position of the probes in the work area.
- 

Open the Debug Environment To open the Debug Environment used to verify and adjust the test program execution.
- 

Open the Repair Station Environment To open the Repair Station Environment used to identify the components where errors have been detected (**Note:** the availability of this environment depends on a hardware key which can enable the access to the environment). If the option "RPE or RPSE is not configured the button is greyed out.
- 

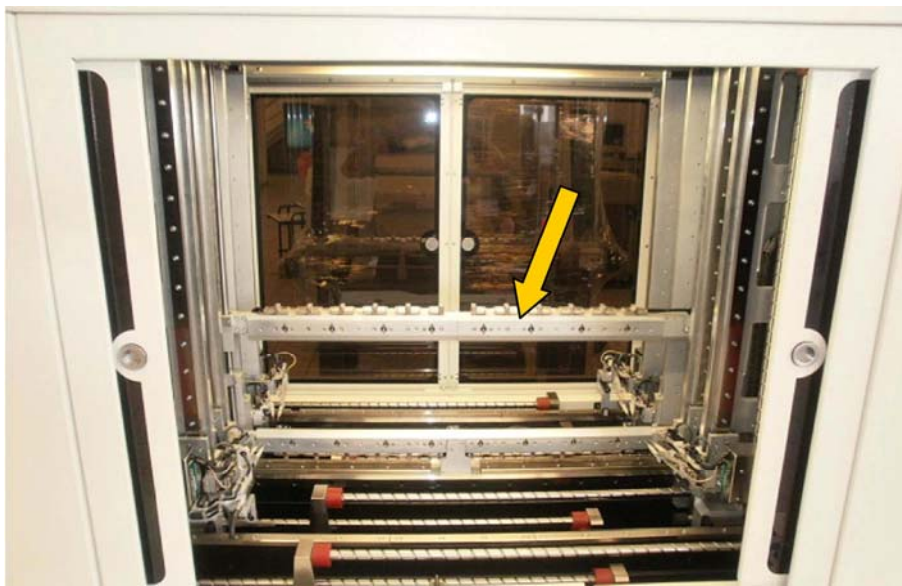
Statistics To display statistics information related to the test program execution.

4.4.2 AUTOMATIC MODE

This chapter details the instructions to operate the system in **AUTOMATIC** mode. To do this, set the key switch to position “**DEBUG/AUTO**” like in the picture.



The upper rail motion is motor-controlled. Its position can be adjusted to fit the board size. The operator can control the system through the operator control panel.



To adjust the mobile rail position:

The upper rail motion is motorized. To adjust the upper rail (mobile) position: press the following buttons in sequence



1) Press the button  to open the doors and access the work area



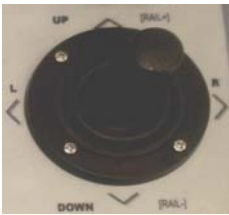
2) Press Button  to enable the control of right/left clamps



3) The LEDs of the button **FXUP** are ON



4) Press the button **JOG**  to enable the joystick.



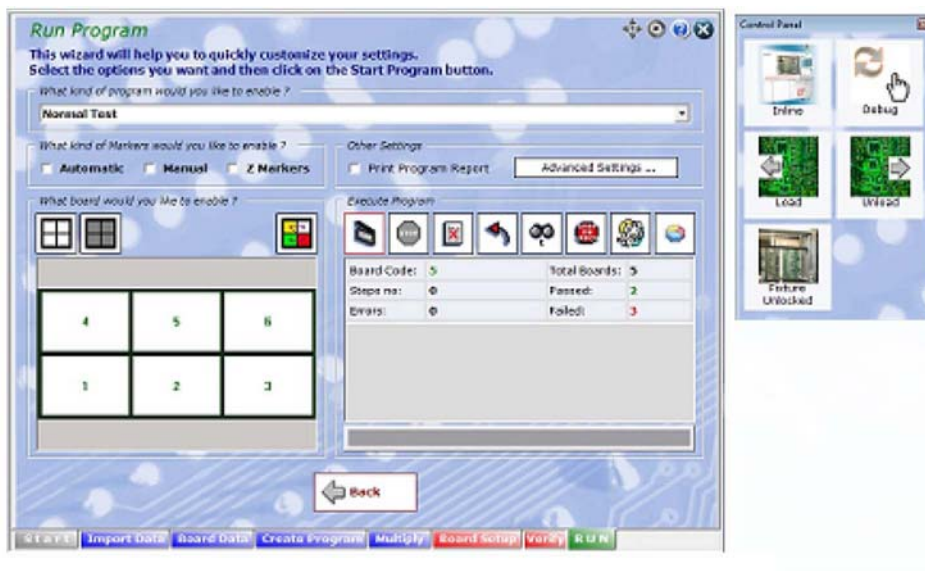
Now, move the joystick **UP** to raise the upper mobile rail and **DOWN** to lower the upper mobile rail.

Close the front door

Press the button **START** to lock the front door and the **STOP** buttons to unlock the front/rear safety door. On **"Wait : close fixture"** click **"Cancel"** and ignore the error message.



Click the button **START** of the **RUN** page to start the test.



The Pilot V8 Automatic is configured for in-line operation, so the loading/unloading of the UUT is automatic.

4. 5 SYSTEM SHUTDOWN



1. Press the button **MAIN OFF**
2. Press the button **MOTOR OFF**
3. Press the button **ATE OFF**
4. Exit **VIVA**
5. Open the air tap located on the rear side of the system.
6. Set the **MAIN-SWITCH** on the rear side of the system to "1".

5. APPENDIX

This sections provides instructions for the proper use of the HDU Recovery Utilities. Please, read carefully before you proceed.

5. 1 USE THE HDU RECOVERY UTILITY

These instructions are valid solely to restore the HDU (Hard Disk Unit) to the factory settings. The recovery will irretrievably delete any data stored in the HDU, so any programme or information stored in the HDU after the date of creation of the recovery disk will be lost. It is recommended the user performs a backup copy of the data stored in the HDU periodically, using the dedicated tools, or to save data on external storage units (e.g. server o external disks).

The HDU allowed for recovery are the same as the factory configuration (same model and type).

Before performing any HDU replacement on the PC, ensure the part is replaced with an equivalent part as OEM.

Seica S.p.A. declines any liability for data loss caused by the fault to comply with the instructions included in this section.


It is always recommended to make a backup copy of the Recovery DVD and store it in a safe place.

5. 2 PC SETTINGS

Before performing the system recovery, configure your PC to bootstrap from CD/DVD. Refer to the instructions provided in the PC User Guide, included in the documentation provided.

5. 3 RESTORING THE FACTORY CONFIGURATION

Restore the system to the factory configuration and settings using the **Bootable Image Archive DVD** system specific. Follow the instructions included in the "[Seagate DiscWizard™ User's Guide](#)" or "[Acronis® True Image WD Edition User's Guide](#)" included in the CD "User Guides for System Recovery".

 **WARNING – Always make sure the "Bootable Image Archive DVD" in use has been produced for the system you intend to restore; this information is reported on the DVD cover and identified with S/N (Serial Number) which shall correspond to the system serial number (see the label on the rear side of your Seica System)**



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