

A.D. SHAKE



User Manual

Version 5.0 / 1

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The A.D. Shake manual was written and produced with the utmost care. However, errors cannot be fully excluded. **apDia** does not take any responsibility and accepts no liabilities of any kind that may occur because of errors in the manual.



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INSTALLATION CUM WARRANTY CERTIFICATE (Original)

(2 copies: original for **apDia** and duplicate for customer)

ONE-YEAR WARRANTY FROM THE DATE OF INSTALLATION

Customer's name : _____

Customer's complete address : _____
(includes postal address, tel. n° _____
and e-mail address) _____

Instrument serial n° : _____

Date of installation : _____

Invoice n° : _____

Invoice date : _____

Date of commencing under Annual Maintenance Contract : _____

We hereby agree that the instrument is working satisfactorily.

Date:

Customers' signature with seal:

Note: This warranty, however, would not apply to instruments damaged by misuse or due to circumstances beyond the control of **apDia** or due to the failure to follow the operating instructions given in the manual.

INSTALLATION CUM WARRANTY CERTIFICATE (Duplicate)

(2 copies: original for **apDia** and duplicate for customer)

ONE-YEAR WARRANTY FROM THE DATE OF INSTALLATION

Customer's name : _____

Customer's complete address : _____
(includes postal address, tel. n° _____
and e-mail address) _____

Instrument serial n° : _____

Date of installation : _____

Invoice n° : _____

Invoice date : _____

Date of commencing under Annual Maintenance Contract : _____

We hereby agree that the instrument is working satisfactorily.

Date:

Customers' signature with seal:

Note: This warranty, however, would not apply to instruments damaged by misuse or due to circumstances beyond the control of **apDia** or due to the failure to follow the operating instructions given in the manual.

1. GENERAL INFORMATION

1.1. WARRANTY INFORMATION

Each instrument is completely tested and guaranteed for twelve months from delivery. The warranty applies to all the mechanical and electrical parts. It is valid only for proper installation, use and maintenance in compliance with the instructions given in this manual.

apDia will at its discretion repair or replace parts, which may be found defective in the warranty period. The warranty does not include any responsibility for direct or indirect personal and/or material damages, caused by improper use or maintenance of the instrument.

Parts that are inherently subject to deterioration are excluded from the warranty. In case of defects due to misuse of the instrument, any incidental expenses like travel and man-hour service charges will be charged extra.

1.2. TECHNICAL SERVICE

apDia is always accessible to the customers for any kind of information about installation, use, maintenance, etc. When asking for service, please refer to this manual and report the printed serial n° on the identification label.

Only qualified technicians are entitled to repair the instrument.

apDia's technical service or an authorized service center with specialized technicians, with suitable instrumentation and original spare parts is always available for extraordinary maintenance (repair), under an annual maintenance contract or on specific demand.

1.3. DISPOSAL INSTRUCTIONS

In case of removal or disposal of the instrument, the instructions below need to be followed:

- Do not dispose in municipal waste; follow local regulations for instrument disposal.
- Plastic parts, electronic PCBs and components can be recycled, so return back the instrument to the manufacturer.

1.4. CONTACT



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2. GENERAL SAFETY WARNINGS

2.1. DANGER – WARNING SYMBOLS

The following symbols are used to inform the user of the safety rules.



This symbol represents generic danger. It indicates that serious damage can occur to the operator if the described precautions are not taken.



This symbol represents HIGH ELECTRIC VOLTAGE. It indicates that it is dangerous to touch any part having this label. Only qualified operators can access these components, after unplugging the instrument from the electrical power supply.



This symbol indicates that the instrument involves the handling of samples, which can be infected (human serum or urine). In this condition, infection or contamination might occur. Pay attention to the general safety warnings when in presence of such biological substances. Use protective clothing, gloves and glasses.



This symbol in the user manual indicates that damages to the instrument or erroneous results could occur if the given warnings are not followed.



This symbol indicates a paragraph which is particularly important and should be studied carefully.



This symbol indicates a protective earth or ground terminal.

General Symbols



Symbol for "Manufacturer"



Symbol for " IN VITRO DIAGNOSTIC MEDICAL DEVICE"

2.2. USE OF THE INSTRUMENT

- The instrument has to be used by qualified personnel for the designed purposes under specified conditions, following proper procedures and safety rules.
- **THIS MANUAL CONTAINS INSTRUCTIONS FOR OPERATION BY QUALIFIED PERSONNEL ONLY.**
- A qualified user has to make sure that the environmental conditions are suitable, the installation is correct, the use and maintenance are proper, according to the general safety rules as well as to the particular precautions described in this manual. However, the user is not entitled to repair the instrument.
- A qualified technician is entitled to maintain and fix the instrument, according to the instructions given, using the original spare parts.
- Maintain room temperature and humidity as specified in the manual.
- The instrument must be used as described in this manual only. Usage in any other way will be regarded as improper.
- Alterations to the instrument are strictly prohibited. The user is liable and solely responsible for any improper modification to the instrument, and for the consequences derived as a result.
- Should the instrument need extraordinary maintenance, contact **apDia** service or an authorized service center. Specialized technicians, who will be able to repair the instrument using original spare parts, will carry out the maintenance.

3. INTRODUCTION

3.1. SPECIAL FEATURES

- Simultaneous shaking & incubation operation
- Buzzer indication on completion of incubation
- Indication of remaining time
- Current temperature of incubation on display by pressing TEMP key
- Separate timer ON indication on keypad

3.2. SPECIFICATIONS

Operating modes	<ul style="list-style-type: none"> • Shaker • Incubator • Shaker & Incubator
Temperature modes	<ul style="list-style-type: none"> • Room temperature (ambient) • Controlled elevated temperature
Temperature control	
Temperature range	+37°C to +42°C
Resolution	1°C
Incubation time	1 to 999 min
Shaker	
Frequency	400 to 700 rpm
Amplitude	2 mm
Operating position	On horizontal flat, rigid and vibration-free surface
Operating conditions	
Temperature	From +18°C to +35°C
Relative humidity	Up to 85 %
Storage conditions	
Temperature	From -10°C to +60°C
Relative humidity	Up to 85 %
Enclosure	ABS Fire retardant
Size (cm)	28 x 25 x 16 (l x b x h)
Weight	Ca. 3 kg

4. PACKING, TRANSPORT AND STORAGE

4.1. GENERAL WARNINGS

The instrument has to be decontaminated before packing for transportation.

4.2. PACKING

Packaging is needed whenever the instrument is to be transported or shipped by courier or other means.

To pack the instrument follow the instructions as described below:

- Decontaminate the instrument as explained in chapter n° 13 (Decontamination) of this manual.
- Place the instrument into the original packaging box. The instrument has to be properly protected by plastic protective material. Add a copy of the completed safety clearance certificate (copy of Safety Clearance Certificate is attached at the end of this manual, chapter n° 14).
- Mark the package with address, instrument identification and warning labels.

4.3. INSTRUMENT TRANSPORTATION

The transportation of the instrument in unpacked conditions must be limited within the room where it is used, to avoid damage.

4.4. STORAGE OF THE INSTRUMENT

Before storing the instrument for a long period, pack it carefully as described above and store indoors.

Relative humidity has to be less than 85 % and temperature between -10°C and +60°C.

5. INSTRUMENT DESCRIPTION

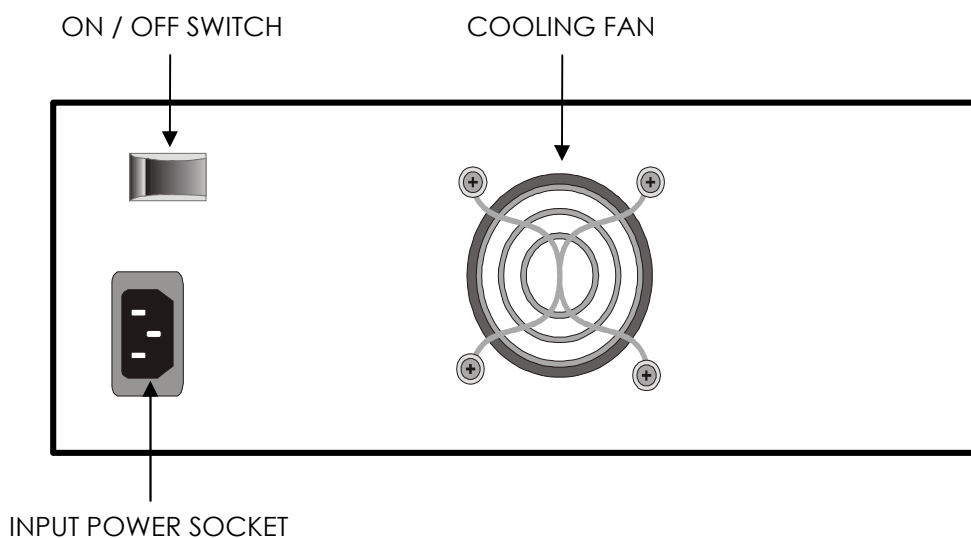
Components of different views of the below pictured instrument.

5.1. PERSPECTIVE VIEW

(A) Front View



(B) Rear View



6. INSTALLATION PROCEDURE & VERIFICATION CRITERIA

6.1. UNPACKING INSTRUCTIONS



Check accessories as per packing list.

Kindly store all packing materials so as to use it to repack and ship for maintenance or servicing.

6.2. PLACING THE INSTRUMENT

- The instrument has to be placed on a leveled bench.
- Room temperature has to be between +18°C and +35°C with a relative humidity below 85%.
- The shaker has to be protected from direct sunlight.

6.3. POWER SUPPLY REQUIREMENTS



Once the instrument has been placed, plug it into a power source by the locally available approved plug-in cable. Power cord should be CE, CSA, and UL marked.

115 – 230 Volt \pm 10V, 50 – 60 Hz

6.4. PROTECTIVE GROUNDING



Warning: Please make sure that the electrical power source is properly grounded.

6.5. START UP INSTRUCTIONS

- Switch on the instrument.
- The instrument initializes all the parameters internally, and carries out a power on self-test. It then displays AD SHAKE + current software version. By default condition the incubator heating is off, the instrument will show room temperature.
- The instrument is now in IDLE mode, and ready for use.

7. PRECAUTIONS



- Keep the place dry and clean
- Check all the grounding wires properly
- Use original packaging for transportation

8. GENERAL KEYS AND OPERATION

8.1. KEYPAD



8.1.1. START / YES KEY

This option helps the user to **START** the process of shaking. Similarly, the YES key is used when the instrument asks certain questions such as:

CREATE TEST **Y** / N ?

OR

START SHAKE **Y** / N ?

8.1.2. STOP / NO KEY

This option helps the user to **STOP** the process of shaking or to **STOP** the timers. Additionally, the NO key is used to answer certain questions such as:

CREATE TEST Y / **N** ?

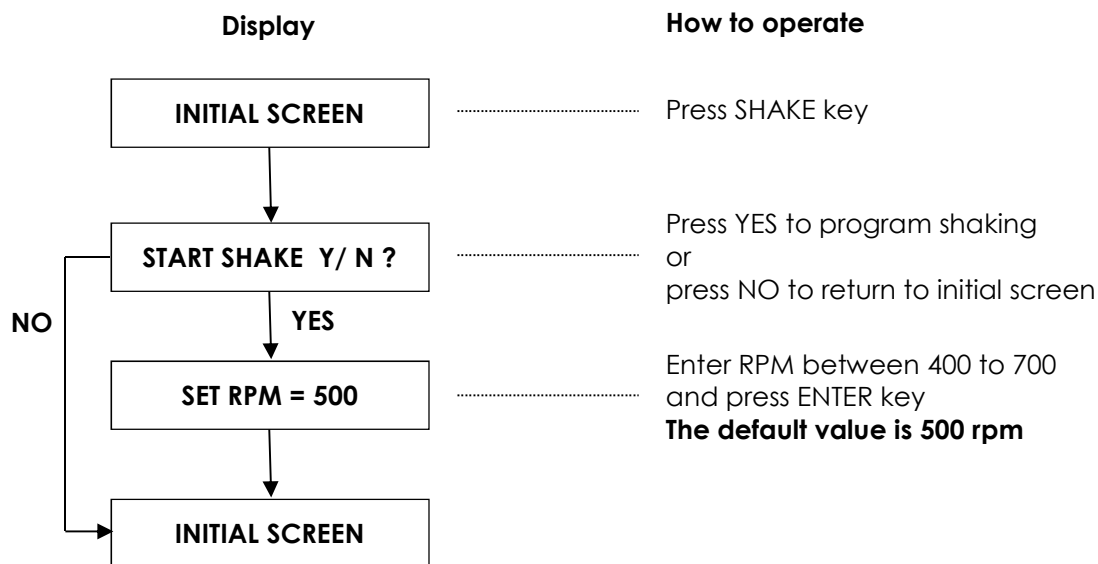
OR

START SHAKE Y / **N** ?

In such a case, the user must select either the “YES” or “NO” option to proceed.

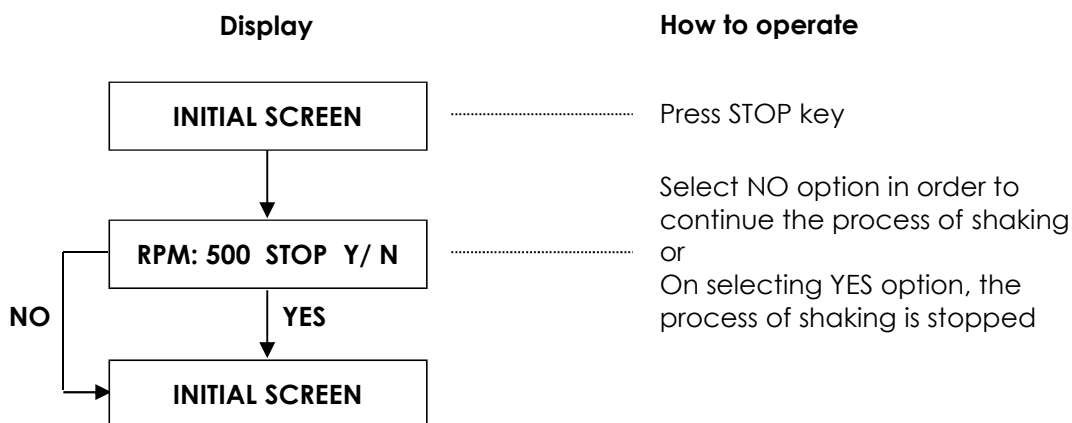
8.1.3. SHAKE KEY

The user can directly start the process of shaking just by selecting the SHAKE key present on the keypad.

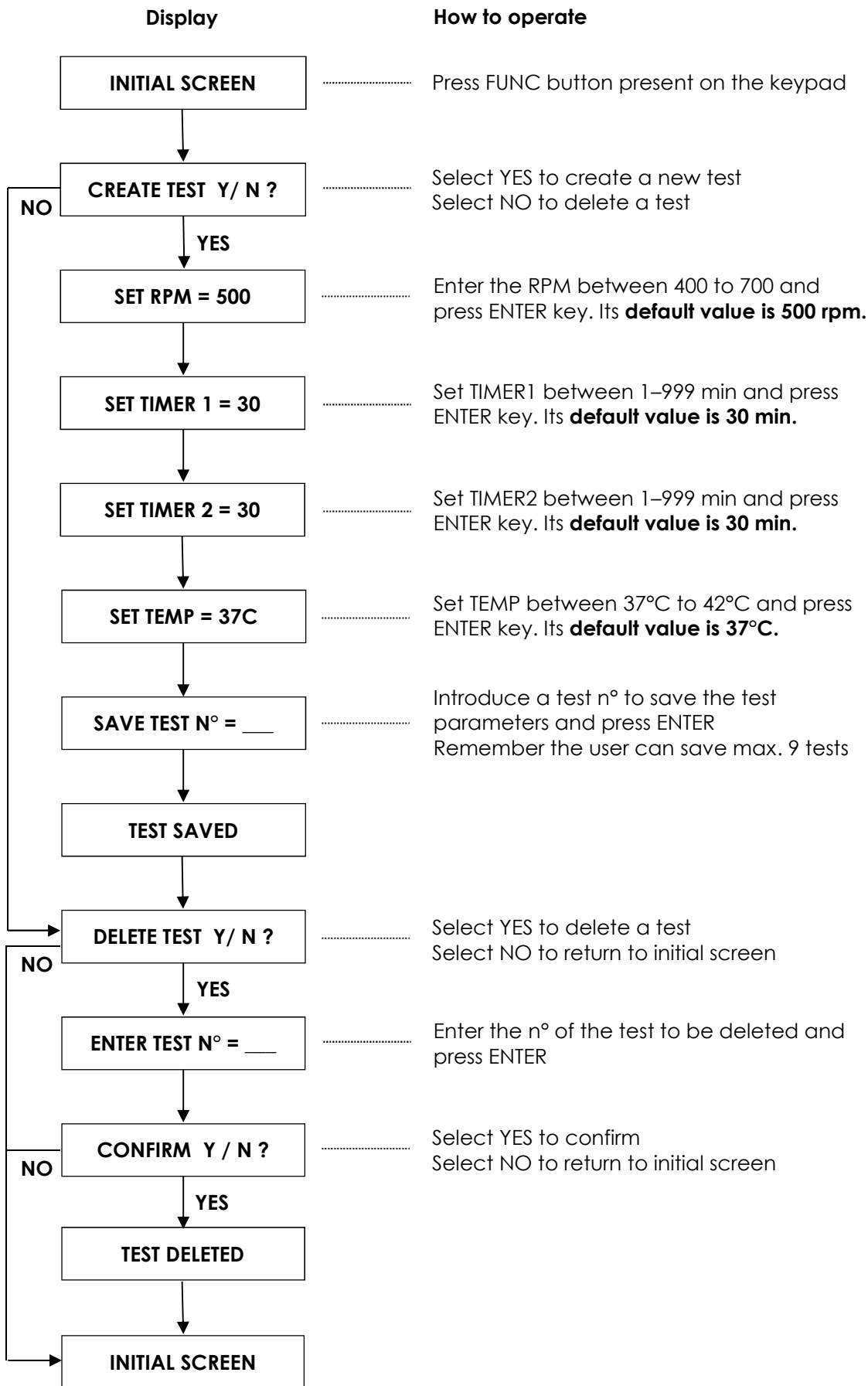


Finally the instruments starts shaking at the chosen rpm. This process continues until the user presses the STOP button present on the keypad.

For terminating the shaking process, press the STOP button.

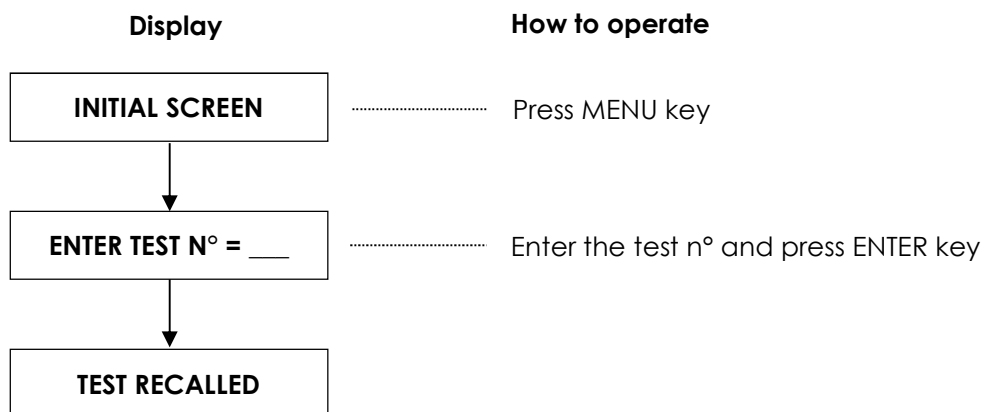


8.1.4. FUNC KEY



8.1.5. MENU KEY

This option helps the user to recall a saved test by entering its test n°.



A valid test n° should be entered, or else the instrument will display following string:

INVALID TEST N°

Since the user can save maximum 9 tests, one has to enter a test n° in between 1 – 9 in order to recall the test.

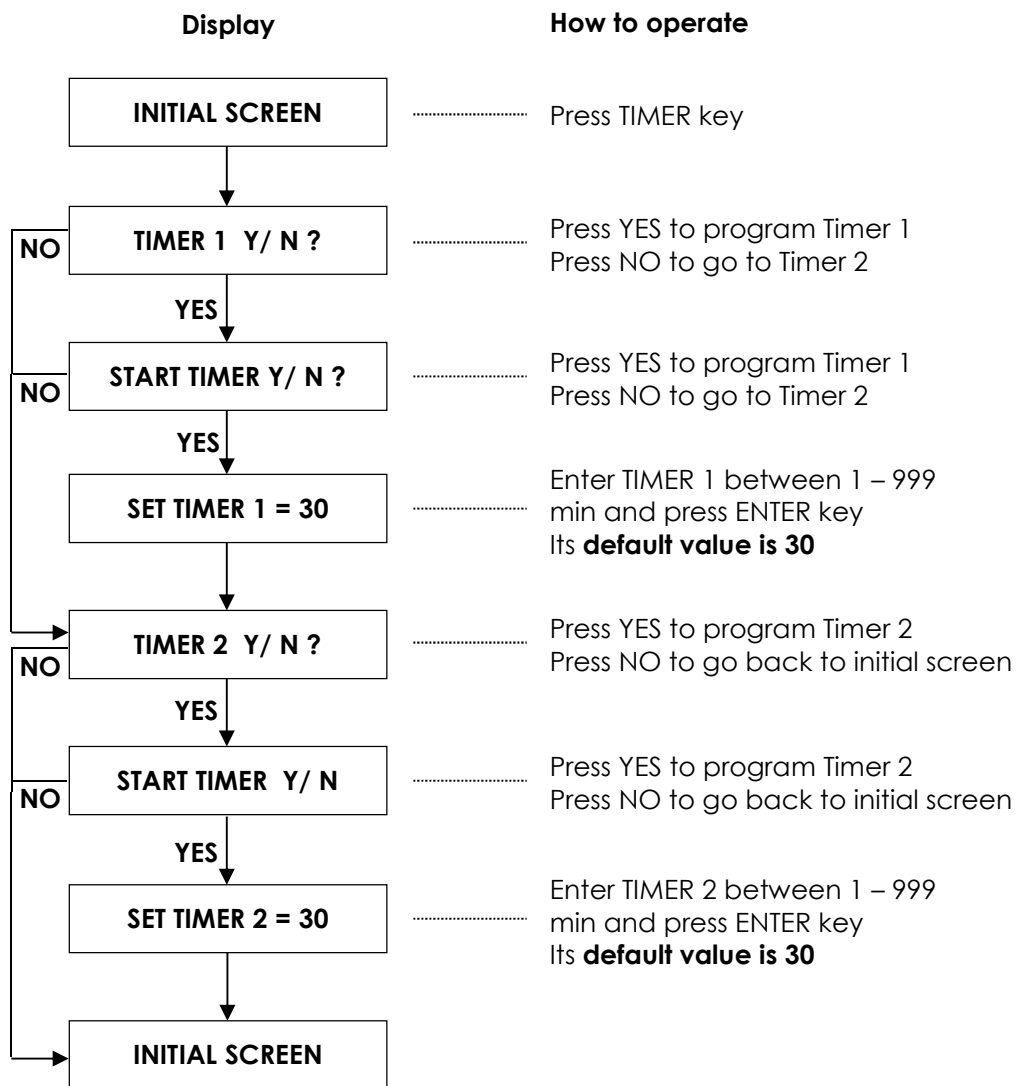
If a user enters a number which does not exist or in other words, if no test is saved with that particular number, the instrument will display following string:

TEST NOT EXIST

After a test has been recalled, the instrument shows all test parameters, followed by the current temperature. As soon as the pre-set temperature is reached, it will ask to load the plate and press ENTER (see chapter n° 11).

8.1.6. TIMER KEY

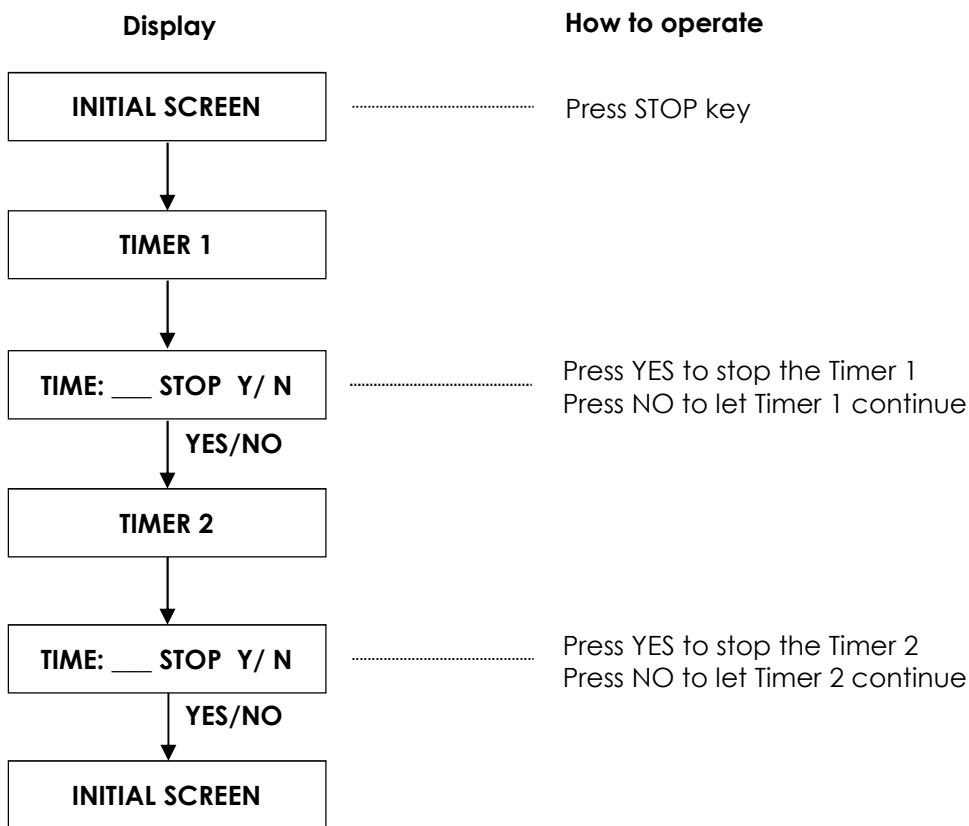
This option is used to set the timer(s) for the respective plates.



After programming Timer1 and/or Timer2, the LED of the respective timer(s) glow(s). On completion the LED is switched off and the buzzer beeps in order to indicate that the timer has reached its set value. Now press the ENTER key to stop the buzzer.

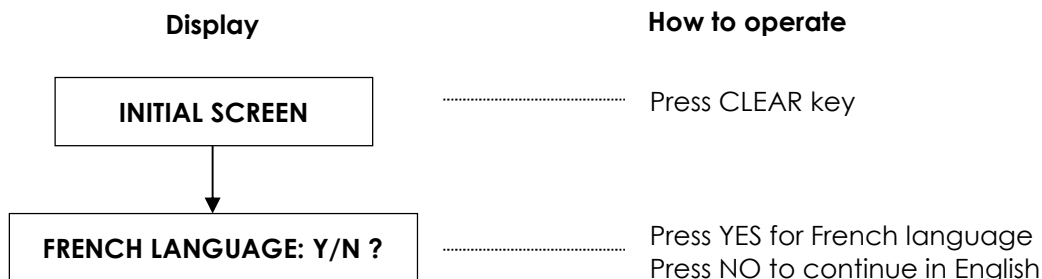
The timer continues until the user presses the STOP button present on the keypad.

For terminating the timing process, select the STOP button:

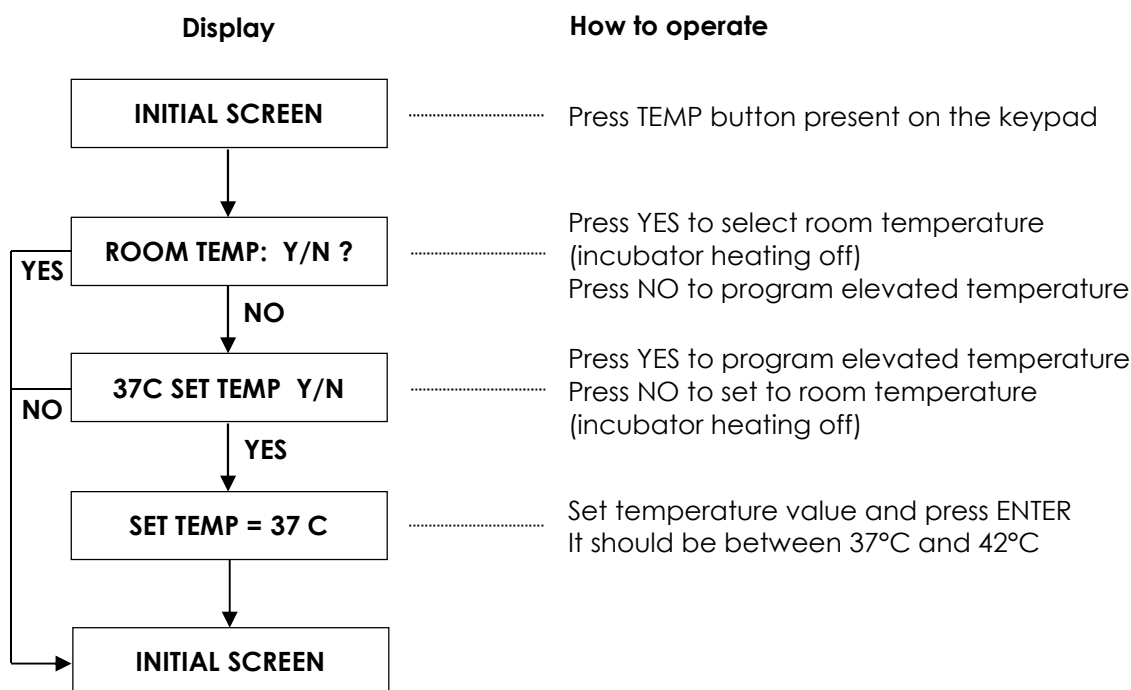


8.1.7. CLEAR KEY

This key is used to select the language option and also to clear a test entry. In other words, the user can abort a test by pressing the CLEAR key.



8.1.8. TEMP KEY



NOTE: By default condition the incubator heating is off, the instrument will show room temperature.

To turn off the incubator, press the TEMP key again and select room temperature.

8.1.9. ENTER KEY

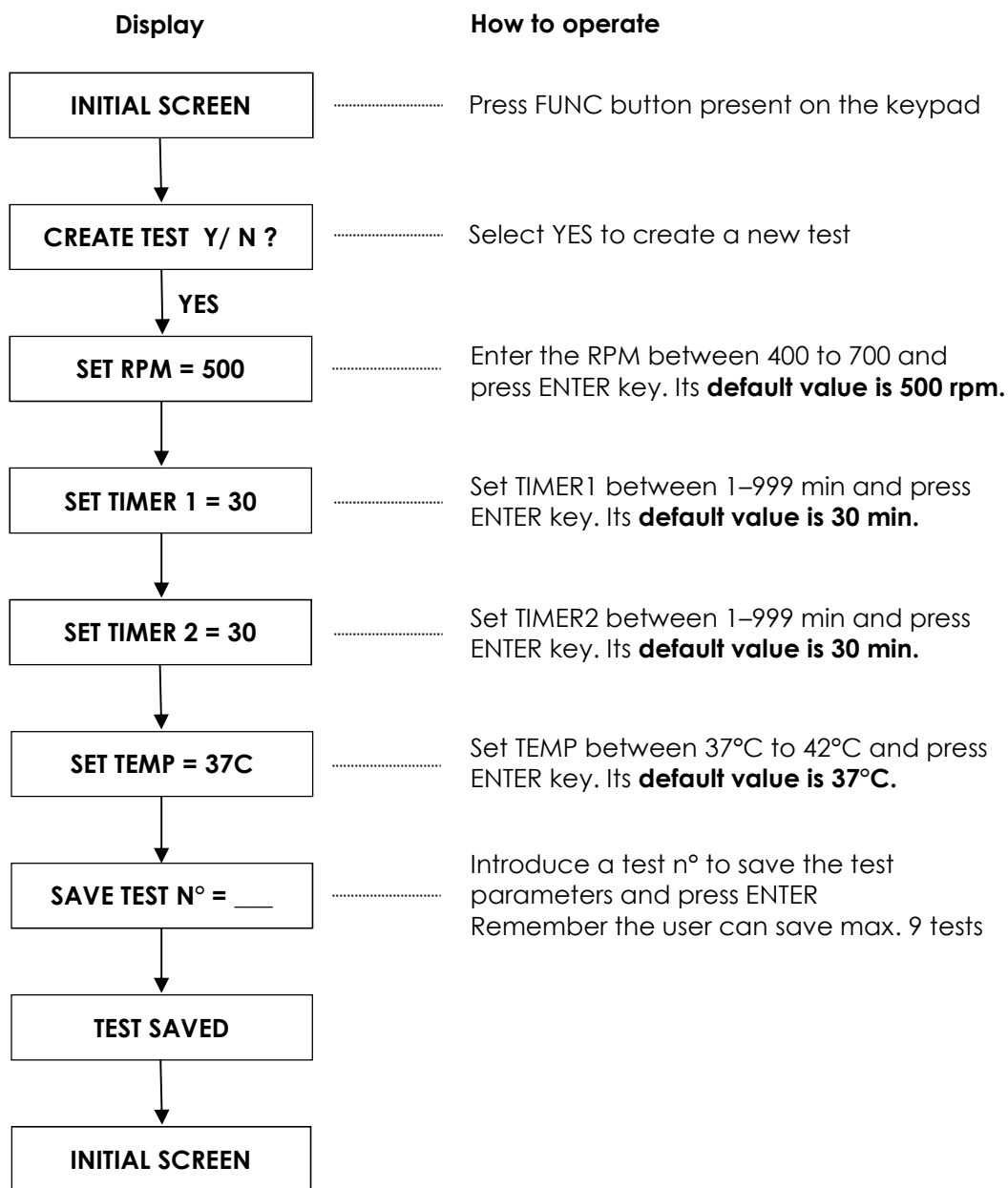
The ENTER button present on the keypad helps the user to set the value for the selected parameters (i.e. on completion of data entry).

8.2. DEFAULT SETTING (OPERATING MODE)

PARAMETERS	DEFAULT VALUES	RANGES
RPM	500 rpm	400 to 700 rpm
Temperature range (controlled elevated temperature mode)	+37°C	+37°C to +42°C
Incubation Time		
Timer 1	30 min	1 – 999 min
Timer 2	30 min	1 – 999 min

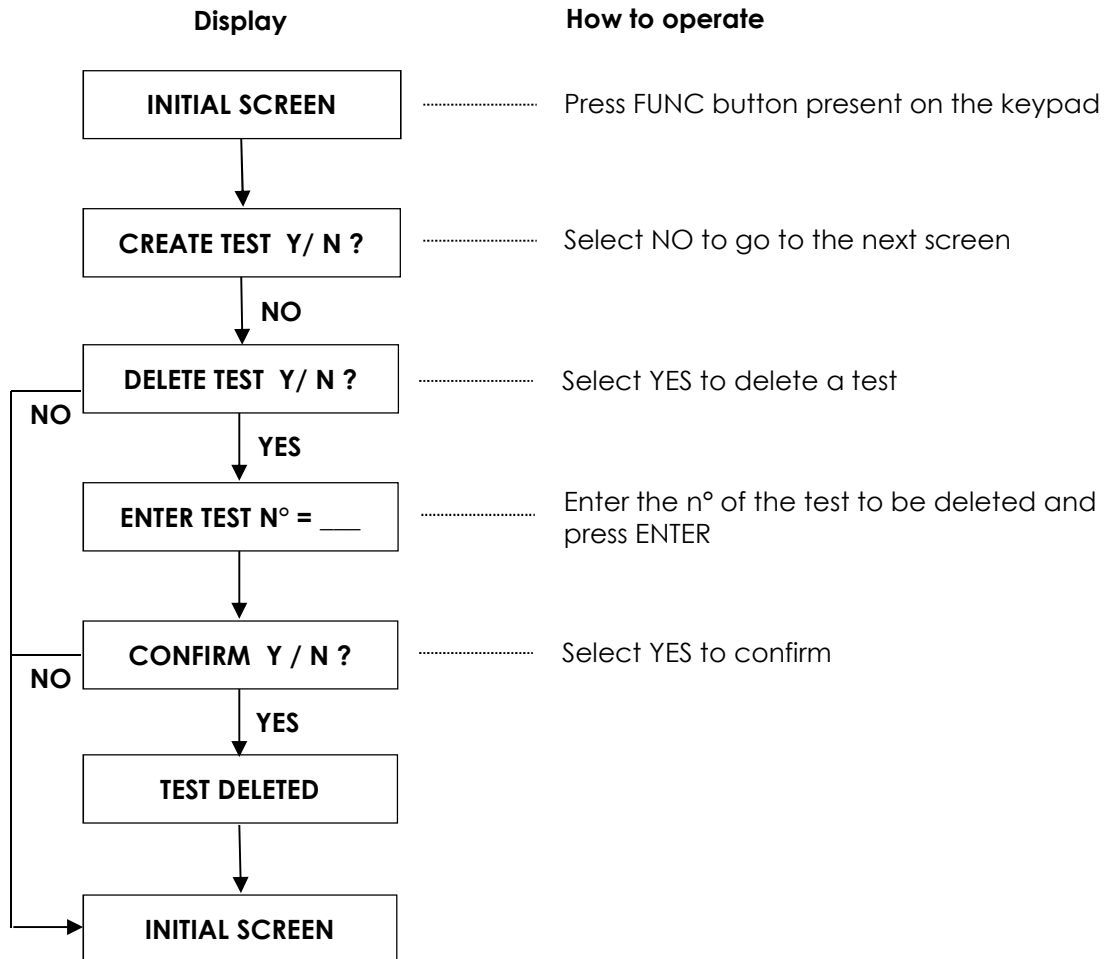
9. SAVING A TEST

Saving a test means creating a new test with new parameters.



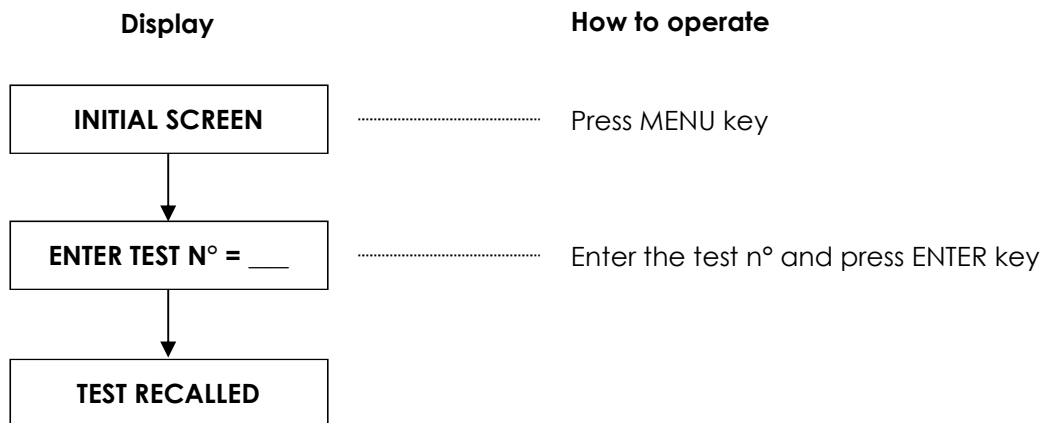
10. DELETING A TEST

One can delete a saved test by following the procedure mentioned below:



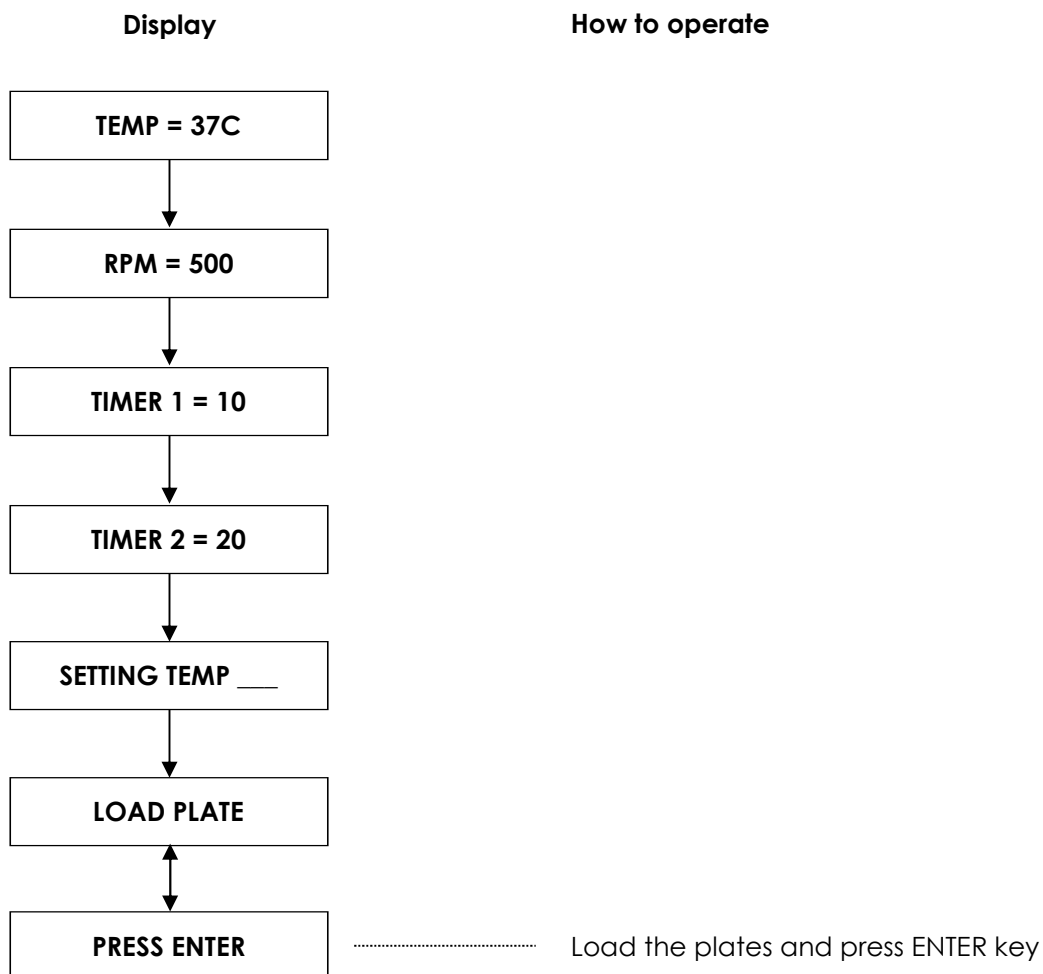
11. RECALLING A TEST

Use the MENU key to recall a previously stored test.



After recalling a test the instrument will flash all test parameters (see below for an example) and finally ask the user to load the plate(s) and press the ENTER key.

Example:



Since both timers are programmed the instrument will beep twice after reaching its time set for both the corresponding plates.

Note: The instrument will attain its pre-set temperature before it ask to load the plate(s).

12. ERROR MESSAGES

MESSAGES	CAUSE /CORRECTIVE ACTION
Test Not Exist	This message appears only when a test n° is recalled that does not correspond with a stored test.
Test Present	This message appears when one wants to save a test using a test n° for which a test already exists.
Test Not Present	This message appears when one wants to delete a test using a test n° that does not correspond to a stored test.
Invalid Test N°	This message appears when the test n° entered is out of the given range (1 – 9).
Invalid RPM	This message appears when the rpm value entered is out of the given range (400 – 700 rpm).
Invalid TM1 / TM2 Val	This message appears when the timer value entered is out of the given range (1 – 999 min).
Invalid Temp	This message appears when the temperature value entered is out of the given range (37 – 42°C).

13. DECONTAMINATION

13.1. DECONTAMINATION PROCEDURE

If the instrument is to be shipped after being exposed to potentially hazardous material, it should be decontaminated. The following procedure outlines the method to decontaminate the instrument before packaging and shipment.

13.2. PURPOSE OF DECONTAMINATION

Decontamination minimizes the risk to all who come in contact with the instrument during shipping, handling, and servicing.

13.3. GENERAL CONSIDERATIONS

- Any laboratory instrument that has been used for clinical analysis is considered a bio-hazard and should be decontaminated prior to handling. Intact skin is generally considered an effective barrier against infectious organisms. However, small abrasions and cuts may not always be visible. Prophylactic gloves must be worn when handling instruments that have not been decontaminated. Gloved hands should be considered contaminated and must be kept away from eyes, mouth and nose at all times.
- Mucous membranes are considered as the primary entry routes for infectious agents. Wear eye protection and a surgical mask when there is a possibility of aerosols.
- Eating and/or drinking while decontaminating instruments is not advisable.

13.4. PROCEDURE

- A solution of 0.5% Sodium Hypo Chlorite (NaOCL) solution (Bleach) is used. Commercial bleach is 5% NaOCL; household bleach is 3% NaOCL. When using commercial bleach, use a 10:1 mixture; if using household bleach, a 6:1 mixture is required. This is a caustic solution. It is important to wear gloves and eye protection when handling it.
- Wipe down the carrier and all exposed surfaces of the unit with the bleach solution. Remove the top shroud of the instrument and wipe down the top surface of the instrument base, as well as the inside of the top shroud.
- Reassemble the unit and discard the used gloves and towels.

14. SAFETY CLEARANCE CERTIFICATE

Please complete all information requests on this form prior to returning the instrument to the manufacturer or your local distributor for servicing, repairs or return. Thank you for your co-operation.

Customer:	_____	Contact:	_____
Address:	_____	Position:	_____
	_____	Dept:	_____
	_____	Tel:	_____
Country:	_____	Fax:	_____
Post Code:	_____		
Model n°:	_____	Serial n°:	_____

Accessories returned: _____

Date of Purchase (if known): _____

Complaint: _____

Has the equipment been exposed to any of the following: (*delete as applicable)

a) Blood, body fluids, pathological specimens * YES / NO

If YES, please specify _____

b) Other Biohazard * YES / NO

If YES, please specify _____

15. PACKING LIST

Name instrument: _____

Serial n° instrument: _____

Number	Particulars	Quantity	Tick
1	A.D. Shake	1	
2	Power Cord	1	
3	Dust cover	1	
4	User manual	1	

Packed by: _____

Signature: _____