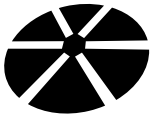

Simplex C76
Retro C80
Nema C88

INSTRUCTION MANUAL

Simplex C76

Retro C80

Nema C88

simplex C76

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WARRANTY

The information provided herein is guaranteed to be accurate at the time of printing. This document is subject to change without notice and does not constitute a warranty of any kind. In the interest of continued product development, the manufacturer reserves the right to make improvements to this guide and the product at any time, without notice or obligation.

AB bioMérieux warrants Simplex C76 to be free from malfunctions and defects in construction, materials and workmanship for a period of 12 months from the date of purchase. The company will repair any defective instrument, or parts thereof, if the instrument is returned within the warranty period. The company shall be relieved of all liability under this warranty if the instrument is not used strictly according to the manufacturer's instructions and is not regularly maintained, or is used for purposes other than that designated. The instrument, or parts thereof, that have been altered without specific authorisation, is excluded from this warranty.

AB bioMérieux makes no other warranties, expressed or implied, including the implied warranty of merchantability and the implied warranty of fitness for particular purpose. There are no warranties which extend beyond the description on the face hereof.

If defective, please return the instrument carefully repacked in the original transport box to the authorised dealer. Freight charges will be at the purchaser's expense.

Do not attempt to repair the instrument yourself. Opening or removing covers of the instrument may expose you to dangerous voltage or other hazards and may compromise components in the system. For warranty service, please return the unit to your authorised dealer.

A. SAFETY ADVICE

Please read the safety advice carefully before using Simplex C76.
The following symbols are used in the instruction manual:

Caution: Non-compliance with caution can cause significant injuries.

Attention: Non-compliance with attention can cause injuries or damage the instrument.

A1. Caution

- Unplug the instrument from the wall socket before cleaning.
- Do not attempt to service the instrument except as explained elsewhere in this manual.
- Only qualified service personnel can service referred components.
- Disconnect the instrument (pull the plug, not the cord) from the wall socket and refer servicing to qualified personnel, or return the instrument to your dealer if:
  - The power cord or the plug are damaged.
  - The instrument does not operate properly when instructions are correctly followed.
  - The instrument shows a distinct change in performance.
- Switch the instrument off and pull the power plug if you judge that it requires servicing or repair.
- Do not walk on the power cord or place anything on it.
- Do not use any other power cord than the one explicitly provided for the unit.

A2. Attention

- Do not use the instrument with accessories other than those listed under Section B/B1.Contents.
- Do not open the instrument if you are not skilled to repair electrical and electronic devices.
- Protect the instrument from humidity and moisture.
- Disconnect the instrument from the wall socket before moving the instrument.
- For environmental reasons, do not dispose of old instruments as household waste. Contact the technical service department or your dealer for help.
- Parts inside the instrument can reach high temperatures and/or high voltages. Do not touch any parts inside the unit.
- Do not place the instrument on an unstable surface.

B. DEVICE DESCRIPTION

B1. Contents

- Instruction manual
- Power cords (240V and 110V)
- Instrument housing
- Cartridge holder
- Agar plate holders (150 mm and 90 mm)
- Suction head with suction cup
- Flexible connector (suction head to vacuum tube)
- Dust cover

B2. Transport and packaging

Remove the instrument from its packaging and check that all parts listed in the contents list are present. Ensure that no parts have been damaged during transportation. Please retain all original packaging for use in further transportation of the instrument, service etc.

B3. Intended use

Simplex C76 is used to pick up Etest® (AB bioMérieux, Solna, Sweden) gradient strips from a specific foam cartridge for placement on an agar surface. Vacuum is used to deliver the strip. One to six Etest strips can be automatically positioned in an optimal pattern on a 150 mm agar plate or one to two strips on a 90 mm plate.

B4. Functional elements

FIG. 1
Simplex C76
(complete device)

A. Reagent strip selection panel
B. Plate holder with 150 mm agar plate
C. Suction head and suction cup attached with the flexible connector
D. Cartridge holder locknut
E. Cartridge holder with foam cartridges containing reagent strips

⚠ Please read the following instructions to correctly install the device

B5. Process description

Simplex C76 can be connected to either a 240V or 110V power source using the power cords provided. The main power switch is at the back of the instrument. When plugged in and switched on, the instrument checks that all functions are operating correctly.

The cartridge holder provided with Simplex C76 is suitable for Etest foam cartridges. Place the foam cartridges with the reagent strips on the cartridge holder such that the handle of the strip is aligned on the indicator arrow and is oriented towards the centre of the instrument (FIG. 2).

Simplex C76 is supplied with two plate holders; one for a large agar plate (150 mm) and the other for a small agar plate (90 mm). Three movable plastic holder pins on the rim of the plate holder hold the agar plate firmly in place and may be adjusted to accomodate slight differences in Petri dish diameters. Before fitting the plate holder on the housing, adjust the position of the holder pins by turning the metal plate on the underside of the plate holder (FIG. 3).

The magnetic hub in the middle of the housing platform needs to be moved forwards or backwards depending on the size of the agar plate to be used. This should be performed before fitting the plate holder to the housing to ensure correct placement of the hub. For large plates, the hub must be in the most outward position (i.e. towards the operator). For small plates, push the hub inwards away from the operator to the innermost position.

To fit the plate holder, place it such that the hole in the centre fits over the magnetic hub on the housing platform, then push the holder downwards to lock in place.

To remove or change the plate holder, hold the sides of the plate, push your thumb down onto the hub and pull the plate holder straight up (FIG. 4).

FIG. 2 Strip orientation

FIG. 3 Adjusting the holding pins

FIG. 4 Removing the plate holder

The suction head supplied with the Simplex C76 is for use with Etest strips. To change suction head, gently remove the flexible connector by pulling it downwards and dislodge it from the vacuum tube (FIG. 1, C.). Remove the suction head and replace it with another head, then refit the connector onto the vacuum tube firmly.

Rotate the cartridge holder so that the opening of a foam cartridge is directly under the suction head. To position the suction head correctly, pull the connector tube down and gently twist the flexible connector to align the suction head parallel to the reagent strips inside the foam cartridge.

Select the reagent strips to be applied to the agar plate by pressing the numbered membrane buttons (1 to 6) on the strip selection panel. The numbering corresponds to the position of each foam cartridge on the cartridge holder. A LED light shines above the numbered buttons to indicate which cartridges have been selected for use.

Start the operation cycle by pressing the green button. The selected reagent strips will then be automatically positioned one by one in an equidistant pattern on the agar surface.

B6. Process risks

The instrument is constructed to minimise operator risks. However, avoid contact with parts in motion to prevent injuries and contamination with the microorganism being tested. If the suction cup comes into contact with the agar surface, clean the contaminated parts with 70% ethanol or an equivalent disinfectant solution.

C. TEST METHOD

C1. First starting up

Check the instrument to ensure nothing was damaged during transport. Slide in the cartridge holder under the locknut (FIG. 1, D.) along the alignment guide, and gently push it down to lock it into place. Screw the locknut in a clockwise direction to tighten.

Connect the appropriate power cord depending on whether there is a 240V or 110V power source. Press the main switch at the back of the instrument to ON. The instrument will now check all functions and the cycle will end without an alarm if no faults are found. If an alarm is heard, turn off the instrument and refer to Section E: Basic trouble shooting.

C2. Function test

The function check is activated each time the instrument is switched on (main switch).

C3. Plate holder

Select the appropriate plate holder for the size of the agar plate to be used. If necessary, adjust the holding pins by rotating the metal plates on the underside of the plate holder (FIG. 3) so that the agar plate is firmly held in place. The plate holder is held in place with magnets in the platform base. To remove the plate holder from the base, hold the sides of the plate, push your thumb down onto the hub and pull the plate holder straight up (FIG. 4).

C4. Choice of agar plate

One to six Etest strips can be positioned on a 150 mm agar plate or one or two strips on a 90 mm agar plate.

C5. Strip application

- Place the foam cartridges with the reagent strips onto the cartridge holder in the same order as the desired pattern on the agar plate. Ensure that the strip ”handle” is aligned towards the centre of the instrument.
- Place an agar plate on the plate holder.
- Select the reagent strips to be applied to the agar plate by pressing the membrane buttons on the selection panel (FIG. 6).
- Press the green start button to initiate the operation cycle (FIG. 7A).
- If a fault occurs during the operation cycle, a red LED will light up (FIG. 7C) and an alarm will sound.
- If the fault can easily be corrected (see Section C6) the operation cycle can be restarted from the position where the fault occurred. Restart the cycle by pressing the green start button.
- If the fault requires further corrective measure, press the red button to return to the default position.
- If a strip is stuck to the suction cup when the operation stops on its own or when the red button is pushed to stop the operation, remove the strip manually before resuming the operation.

C6. Errors and warnings

If an alarm or flashing light are detected or the cycle stops, it may indicate:

- Cartridge holder not correctly installed
- No foam cartridge was selected from selection panel
- Strip lost or dropped during operation cycle
- Suction head not correctly aligned in the opening of the cartridge
- Lost position in operation cycle
- Loss of or too low vacuum
- No strips remaining in the foam cartridge
- Instrument location: Up to 6,560 feet (2000 m)

C7. Device part picture (back)

FIG. 5. The main switch on the back of the instrument is used to turn the power supply ON or OFF. The power cord socket and the identification label are placed on the back of the instrument.

C8. Device part picture (front)

FIG. 6. There are eight buttons on the selection panel on the front of the instrument. Buttons 1-6 correspond to cartridge positions on the cartridge holder. A LED light indicates the chosen reagent strips.

C9. Front panel buttons

FIG. 7A - Start button

FIG. 7B - Position buttons (1-6)

FIG. 7C - Stop button

A. Start button (green)

- Pressing the green start button will signal the instrument to start the operation sequence.
- If an error occurs, pressing the start button will resume the process and complete the remaining steps in the operation sequence.

B. Position buttons (cream)

The numbers correspond to the cartridge positions on the cartridge holder. A yellow LED light indicates the buttons and corresponding cartridges that have been chosen.

C. Stop button (red)

- Pressing the red stop button will immediately stop the operating sequence. The suction head and cartridge holder will stop at the current position while the vacuum will be unaffected.
- Pressing the stop button twice will send the suction head and cartridge holder to home position and the vacuum will be turned off.
- If an error occurs, pressing the stop button will cancel all remaining operating sequences and the suction head and cartridge holder will return to home position.

D. TECHNICAL DATA

D1. Working conditions

Temperature range: 15-35 °C (59-95 °F)
Humidity range: 15-85% RH, non-condensing
Cartridge holder: Accommodates up to six cartridges
Noise level: In accordance with EN 61010 -1, max 60 dB (A)
Vacuum: Min -0.6 bar = -60000 Pa

D2. Size and weight

Size: 290x380x460 (L x D x H) mm. Weight: 7.6 kg

D3. Mains supply

Mains voltage: 100-240V
Mains frequency: 50-60Hz
Power consumption: <75 W_{max} approximately 50 W_{typ}
Current: <1.1 A_{max}
Installation category: 2
IP code: IP 20

⚠ Only skilled personnel can service this instrument

D4. Environmental conditions

- Intended location: Indoor use only
- Pollution Degree: II
- Chemical and organic solvent resistance: Alcohol 70%
- Instrument storage: Below 10,000 feet (3048 m)
- Instrument location: Up to 6,560 feet (2000 m)

D5. Recycling

Only skilled personnel can recycle this instrument. It contains valuable parts and materials. Please contact your technical support department for details.

D6. Maintenance

Life of exchangeable parts: 1 year normal use (200 days/year, 5 hours/day)
Maintenance interval: Approximately 1000 hours

⚠
- Only skilled personnel can service this instrument.
- Disconnect the instrument from the mains before servicing.
- Do not touch any parts inside the instrument if it is connected to the power supply or has been disconnected for less than 5 minutes.

D7. Cleaning

The instrument and all external components should be cleaned regularly to maintain performance. Do not clean the instrument when in operation. Disconnect the instrument from the power source before cleaning. Use a soft cloth to clean surfaces and the suction cup. Use 70% alcohol or suitable disinfectant solution to decontaminate if necessary. Do not immerse the instrument in liquid.

E. BASIC TROUBLE-SHOOTING

This section describes the most common problems that may arise and suggests some solutions.

Instrument does not start:

- Is the power cord plugged in?
- Is power turned on?
- Is the power supply live?
- Is the instrument switched on?
- Is the power cord damaged?

The suction cup does not hold a strip:

- Is the suction cup intact? damaged?
- Is the vacuum head completely pushed into the flexible connector hose?
- Is the flexible connector hose damaged?

For warnings and errors - see Section C6
If the problem encountered cannot be solved, please contact your dealer.

F. CE CONFORMITY DECLARATION

Simplex C76 conforms to EMCD 2004/108/EEG and LVD 2006/95/EEG.

INSTRUCTION MANUAL

Simplex C76

Retro C80

Nema C88

retro C80

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WARRANTY

The information provided herein is guaranteed to be accurate at the time of printing. This document is subject to change without notice and does not constitute a warranty of any kind. In the interest of continued product development, the manufacturer reserves the right to make improvements to this guide and the product at any time, without notice or obligation.

AB bioMérieux warrants Retro C80 to be free from malfunctions and defects in construction, materials and workmanship for a period of 12 months from the date of purchase. The company will repair any defective instrument, or parts thereof, if the instrument is returned within the warranty period. The company shall be relieved of all liability under this warranty if the instrument is not used strictly according to the manufacturer's instructions and is not regularly maintained, or is used for purposes other than that designated. The instrument, or parts thereof, that have been altered without specific authorisation, is excluded from this warranty.

AB bioMérieux makes no other warranties, expressed or implied, including the implied warranty of merchantability and the implied warranty of fitness for particular purpose. There are no warranties which extend beyond the description on the face hereof.

If defective, please return the instrument carefully repacked in the original transport box to the authorised dealer. Freight charges will be at the purchaser's expense.

Do not attempt to repair the instrument yourself. Opening or removing covers of the instrument may expose you to dangerous voltage or other hazards and may compromise components in the system. For warranty service, please return the unit to your authorised dealer.

A. SAFETY ADVICE

Please read the safety advice carefully before using Retro C80.
The following symbols are used in the instruction manual:

Caution: Non-compliance with caution can cause significant injuries.

Attention: Non-compliance with attention can cause injuries or damage the instrument.

A1. Caution

- Unplug the instrument from the wall socket before cleaning.
- Do not attempt to service the instrument except as explained elsewhere in this manual.
- Only qualified service personnel can service referred components.
- Disconnect the instrument (pull the plug, not the cord) from the wall socket and refer servicing to qualified personnel or return the instrument to your dealer if:
  - The power cord or the plug are damaged.
  - The instrument does not operate properly when instructions are correctly followed.
  - The instrument shows a distinct change in performance.
- Switch the instrument off (pull the plug, not the cord) if you judge that the instrument requires servicing or repair.
- Do not walk on the power cord or place anything on it.
- Do not use any other power cord or AC adapter other than those explicitly provided for the unit.

A2. Attention

- Do not use the instrument with accessories other than those listed under Section B/B1.
- Do not open the instrument if you are not skilled to repair electrical and electronic devices.
- Protect the instrument from humidity and moisture.
- Pull the power cord from the wall socket before moving the instrument.
- For environmental reasons, do not dispose of old instruments as household waste. Contact the technical service department or your dealer for help.
- Parts inside the instrument can reach high temperatures and/or high voltages. Do not touch any parts inside the unit.
- Do not place the instrument on an unstable surface.

B. DEVICE DESCRIPTION

B1. Contents

- Instruction manual
- AC adapter and power cords. Input: 110V-240V ~ 50-60Hz Output: 24V = 0.625 A
- Instrument housing
- Agar plate holders (150 mm and 90 mm)
- Foot pedal
- Dust cover

B2. Transport and packaging

Remove the instrument from its packaging and check that all parts listed in the contents list are present. Ensure that no parts have been damaged during transportation. Please retain all original packaging for further transportation of the instrument, service etc.

B3. Intended use

Retro C80 is used to streak an organism suspension evenly over the surface of an agar plate. It can be used with both large (150 mm) and small plates (90 mm).

B4. Functional elements

FIG. 1 Retro C80 (complete device) Main switch (right button) Speed regulator left dial.

FIG. 2 AC adapter with power cord. Power cords (240V and 110V)

Please read the following instructions to correctly install the device

B5. Process description

The instrument can be connected to either 240V or 110V power source using the power cords provided. The ON/OFF button is on the front of the instrument. By pressing the ON/OFF button the instrument is toggled ON and OFF, respectively. The instrument can also be operated using the foot pedal. The plate holder will rotate as long as the foot pedal is pressed down.

The rotation speed of the plate holder can be adjusted with the speed regulator dial (FIG. 6). A switch around the dial can be used to lock the dial at the desired speed. Unlock the dial before attempting to change the speed.

Retro C80 is supplied with two plate holders; one for a large agar plate (150 mm) and one for a small agar plate (90 mm). The three plastic holder pins on the plate holder are used to hold the agar plate firmly in place. The pins may be adjusted to accomodate slight differences in Petri dish diameters. Before fitting the plate holder onto the housing, adjust the position of the holder pins by turning the metal plate on the underside of the plate holder (FIG. 3).

B6. Process risks

The instrument is constructed to minimise operator risks. If any parts of the instrument come into contact with microorganisms, clean the contaminated parts with 70% alcohol or suitable disinfectant solution.

C. TEST METHOD

C1. First starting up

Check that all necessary parts are available. Choose the appropriate plate holder for the size of the agar plate to be inoculated. Before fitting the plate holder onto the housing, adjust the holder pins to hold the agar plate firmly in place on the plate holder.

To fit the plate holder, place the hole in the centre over the magnetic hub on the housing platform, then push the holder downwards to lock in place.

To remove or change the plate holder, hold the sides of the plate, push your thumb down onto the hub and pull the plate holder straight up (FIG. 4).

Connect the AC adapter to the 24V connector on the back of the housing and plug into the wall socket using the appropriate power cord depending on the power source (240V or 110 V).

C2. Function test

Plug the power cord into the outlet and start the instrument by pressing the ON button. Ensure the speed regulator dial is unlocked. The speed can be adjusted by turning the dial; turn clockwise to increase speed. Maximum speed is reached when the dial cannot be turned any further. Do not use force when turning the dial. Turn the dial until the desired speed is attained and then flip the switch so that the speed is locked.

C3. Inoculation

- Place an agar plate on the plate holder.
- Soak a sterile cotton swab into the organism suspension and remove excess fluid by pressing the swab against the inside wall of the test tube.
- Gently draw a cross with the cotton swab over the agar surface.
- Press the button on the front of the instrument or press the foot pedal to activate rotation of the plate.
- Hold the swab at an angle to the agar surface and gently drag the swab from the rim of the plate and move slowly across the diameter to the other rim (FIG. 5). Ensure that the swab is in contact with the agar surface during streaking. Do not press the swab into the agar surface.
- If the swab was moved too fast, drag it back slowly across the agar surface once again. Whenever unsure of the streaking evenness, repeat the procedure.

FIG. 3 Adjusting the plate holder

FIG. 4 Removing the plate holder

FIG. 5 Streaking the agar plate

C4. Device part picture (front)

FIG. 6
ON/OFF button (right button)
Speed regulator dial (left knob) with switch for locking the speed

C5. Device part picture (back)

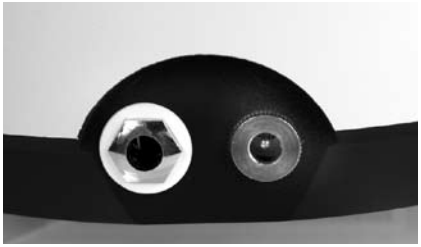

FIG. 7
24V connector (right)
Foot switch connector (left)

C6. Device part picture (bottom)

FIG. 8
Identification plate
(underside of the device)

D. TECHNICAL DATA

D1. Working conditions

Speed range: 0-500 rpm
Temperature range: 15-35 °C (59-95 °F)
Humidity range: 15-85% RH, non-condensing
Noise level: In accordance with EN 61010-1, Max 60 dB (A)

D2. Size and weight

Size: 180x180x90 mm (L x D x H). Weight: 3,5 kg

D3. Mains supply

Mains voltage: 100-240V
Mains frequency: 50-60Hz
Power consumption: <15 W_{max} approximately 13W_{typ}
Current: <0.4 A_{max}
Installation category: 2
IP code: IP 20

⚠ Only skilled personnel can service this instrument

D4. Environmental conditions

- Intended location: Indoor use only
- Pollution level: 2 (according to IEC 664)
- Chemical and organic solvent resistance: Alcohol 70%

D5. Recycling

Only skilled personnel can recycle this instrument. It contains valuable parts and materials. Please contact your technical support department for details.

D6. Maintenance

Life of exchangeable parts: 1 year normal use (200 days/year, 5 hours/day)
Maintenance interval: Approximately 1000 hours

⚠
- Only skilled personnel can service this instrument.
- Disconnect the instrument from the AC adapter before servicing.

D7. Cleaning

The instrument and all external components should be cleaned regularly. Do not clean the instrument when in operation. Disconnect the instrument from the power source before cleaning. Use a soft cloth to clean surfaces. Use 70% alcohol or suitable disinfectant solution to decontaminate when necessary. Do not immerse the instrument in liquid.

E. Basic Trouble-Shooting

This section describes the most common problems that may arise and suggest some solutions.

Instrument does not start:

- Is the AC adapter plugged in?
- Is the 24V connector plugged into the instrument?
- Is the power cord damaged?
- Is the power supply live?

The speed of rotation is too low:

- Is the speed regulator set too low?

If the problem encountered cannot be solved, please contact your dealer.

F. CE conformity declaration

Retro C80 conforms to EMCD 2004/108/EEG and LVD 2006/95/EEG.

INSTRUCTION MANUAL

Simplex C76
Retro C80
Nema C88

nema C88

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WARRANTY

The information provided herein is guaranteed to be accurate at the time of printing. This document is subject to change without notice and does not constitute a warranty of any kind. In the interest of continued product development, the manufacturer reserves the right to make improvements to this guide and the product at any time, without notice or obligation.

AB bioMérieux warrants Nema C88 to be free from malfunctions and defects in construction, materials and workmanship for a period of 12 months from the date of purchase. The company will repair any defective instrument, or parts thereof, if the instrument is returned within the warranty period. The company shall be relieved of all liability under this warranty if the instrument is not used strictly according to the manufacturer's instructions and is not regularly maintained, or is used for purposes other than that designated. The instrument, or parts thereof, that have been altered without specific authorisation, is excluded from this warranty.

AB bioMérieux makes no other warranties, expressed or implied, including the implied warranty of merchantability and the implied warranty of fitness for particular purpose. There are no warranties which extend beyond the description on the face hereof.

If defective, please return the instrument carefully repacked in the original transport box to the authorised dealer. Freight charges will be at the purchaser's expense.

Do not attempt to repair the instrument yourself. Opening or removing covers of the instrument may expose you to dangerous voltage or other hazards and may compromise components in the system. For warranty service, please return the unit to your authorised dealer.

A. SAFETY ADVICE

Please read the safety advice carefully before using Nema C88.
The following symbols are used in the instruction manual:

Caution: Non-compliance with caution can cause significant injuries.

Attention: Non-compliance with attention can cause injuries or damage the device.

A1. Caution

- Unplug the instrument from the wall socket before cleaning.
- Do not attempt to service the instrument except as explained in this manual.
- Only qualified service personnel can service referred components.
- Disconnect the instrument (pull the plug, not the cord) from the wall socket and refer servicing to qualified personnel or return the instrument to your dealer if:
  - The power cord or the plug is damaged.
  - The instrument does not operate properly when instructions are correctly followed.
  - The instrument shows a distinct change in performance.
- Switch the instrument off if you judge that it requires servicing or repair.
- Do not walk on the power cord or place anything on it.
- Do not use any other power cord or AC adapter other than those explicitly provided for the unit.

A2. Attention

- Do not use the instrument with accessories other than those listed under Section B/B1.
- Do not open the instrument if you are not skilled to repair electrical and electronic devices.
- Protect the instrument from humidity and moisture.
- Pull the power cord from the wall socket before moving the instrument.
- For environmental reasons, do not dispose of old instruments as household waste. Contact the technical service department or your dealer for help.
- Parts inside the instrument can reach high temperatures and/or high voltages. Do not touch any parts inside the unit.
- Do not place the instrument on an unstable surface.

B. DEVICE DESCRIPTION

B1. Contents

- Instruction manual
- Instrument housing with vacuum hose and pen
- AC adapter with power cords. Input: 110V-240V ~ 50-60Hz. Output: 24V = 0.625 A
- Dust cover
- 2 suction cups (spare)

B2. Transport and packaging

Remove the instrument from its packaging and check that all parts listed in the content list are present. Ensure that no parts have been damaged during transportation. Please retain all original packaging for use in further transportation of the instrument and service.

B3. Intended use

Nema C88 is used to pick up and manually apply Etest reagent strips to an agar plate.

B4. Functional elements

FIG. 1
Main switch (right button)
Vacuum regulator (left dial)
Vacuum pen with: A - Evacuation hole
B - Suction cup

FIG. 2
AC adapter with power cord
Power cords (240V and 110V)

Please read the following instructions to correctly install the device

B5. Process description

The instrument can be connected to either 240V or 110V power source using the power cords provided. The ON/OFF knob is at the front of the instrument. By pressing this button, the vacuum pump is toggled ON and OFF, respectively.

Place the foam cartridge or applicator tray with Etest reagent strips (or strips on a clean empty Petri dish) and the agar plates to be used on the working surface. Start the vacuum pump by pressing the ON/OFF button. Place a finger over the evacuation hole on the vacuum pen and position the suction cup onto the middle of the reagent strip (scale side up). Lift the strip from the applicator tray (FIG. 3), foam cartridge (FIG. 4) or from the Petri-dish and place it in the desired position on the agar surface. Release the strip from the suction cup by removing your fingertip from the evacuation hole (FIG. 5). Repeat the process until all the strips are positioned. Switch off the vacuum pump by pressing the ON/OFF button again.

FIG. 3 Lifting a strip from an applicator tray

FIG. 4 Lifting a strip from a foam cartridge

FIG. 5 Placing the strip onto the agar surface

B6. Process risks

The instrument is constructed to minimise operator risks. If the suction cup accidentally comes in contact with microorganisms on the agar surface, clean the contaminated parts with 70% alcohol or suitable disinfectant solution.

C. TEST METHOD

C1. First starting up

Check that the instrument is complete and that all necessary parts are in place. Connect the vacuum pen to the housing by firmly pressing the open end of the plastic tubing onto the connector hole on top of the housing. Connect the AC adapter to the 24V connector at the rear of the housing and plug into the wall socket using the appropriate power cord, depending on whether you have 110V or 240V source.

C2. Function test

Start the vacuum pump by pressing the ON/OFF button. Cover the evacuation hole on the pen with a fingertip. Check for the presence of vacuum by placing the suction cup onto a small piece of paper and lifting it. The vacuum strength can be adjusted by turning the vacuum regulator dial anti-clockwise to increase the vacuum. Maximum vacuum is reached when the dial cannot be turned any further. Do not use force when turning the dial.

C3. Strip application

Place the foam cartridges or applicator tray or Petri dish containing the reagent strips and the agar plates to be used on the working surface. Start the vacuum pump by pressing the ON/OFF button. Place a fingertip over the evacuation hole on the vacuum pen and position the suction cup on the middle of the strip. Lift the pen and strip up from the applicator tray or foam cartridge (FIG. 3 and FIG. 4) and place it in the desired position on the agar surface. Release the strip from the suction cup by removing your fingertip from the evacuation hole (FIG. 5). Continue until all strips are in place and switch off the vacuum pump. A template can be placed underneath the agar plate to optimise placement of the reagent strips.

C4. Device part picture (front)

FIG. 6
Main switch (right button)
Vacuum regulator (left dial)

C5. Device part picture (back)

FIG. 7
24V connector (right)
Blank connector (left)

C6. Device part picture (bottom)

FIG. 8
Identification plate
(underside of the device)

D. TECHNICAL DATA

D1. Working conditions

Temperature range: 15-35 °C (59-95 °F)
Humidity range: 15-85% RH, non-condensing
Noise level: In accordance with EN 61010 -1, Max 60 dB (A)
Vacuum: Min -0.6 bar = -60000 Pa

D2. Size and weight

Size: 180x180x90 mm (L x D x H). Weight: 2.7 kg

D3. Mains supply

Mains voltage: 100-240V
Mains frequency: 50-60Hz
Power consumption: < 15 W_{max} approximately 13W_{typ}
Current: <0.4 A_{max}
Installation category: 2
IP code: IP 20

⚠ Only skilled personnel can service this instrument

D4. Environmental conditions

- Intended location: Indoor use only
- Pollution level: 2 (according to IEC 664)
- Chemical and organic solvent resistance: Alcohol 70%
- Instrument storage: Below 10,000 feet (3048 m)
- Instrument location: Up to 6,560 feet (2000 m)

D5. Recycling

Only skilled personnel can recycle this instrument. It contains valuable parts and materials. Please contact your technical support department for details.

D6. Maintenance

Life of exchangeable parts: 1 year normal use (200 days/year, 5 hours/day)
Maintenance interval: Approximately 1000 hours

⚠
- Only skilled personnel can service this instrument.
- Disconnect the instrument from the AC adapter before servicing.

D7. Cleaning

The instrument and all external components should be cleaned regularly. Do not clean the instrument when in operation. Disconnect the instrument from the power source before cleaning. Use a soft cloth to clean surfaces and the suction cup. Use 70% alcohol or suitable disinfectant solution to decontaminate when necessary. Do not immerse the instrument in liquid.

E. Basic trouble-shooting

This section describes the most common problems that may arise and suggest some solutions.

Instrument does not start:

- Is the AC adapter plugged in?
- Is the 24V connector plugged into the instrument?
- Is the power cord damaged?
- Is the power supply live?

The suction cup cannot hold a strip:

- Is the vacuum regulator closed, knob turned to maximum stop position anti-clockwise?
- Is the suction cup intact? damaged?
- Is the evacuation hole closed completely while picking up the strip?
- Is the vacuum hose completely pushed into the connector?
- Is the vacuum hose damaged?

If the problem encountered cannot be solved, please contact your dealer.

F. CE conformity declaration

Nema C88 conforms to EMCD 2004/108/EEG and LVD 2006/95/EEG.

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