Air Science®

EvidenceBENCH™

Air Science Evidence Processing Table

USER OPERATION MANUAL

Air Science Manual Revision No.:
EVIDENCE-BENCH-SERIES.V4.2024

pictured: Evidence-Bench™ EVB-72

MADE IN AMERICA BY THE NEW AMERICA

ENERGY STAR PARTNER

GSA Schedule Contract # GS-07F5832P

CERTIFIED ISO 9001:2015 ISO 14001:2015

Table of Contents

Safety Warnings

- This unit does not offer product and/or sample protection.
- Read all instructions before proceeding and observe the installation procedure and environmental/electrical requirements.
- Anyone working with, on or around this equipment should read this manual. Failure to read, understand and follow the instructions given in this documentation may result in damage to the unit, injury to operating personnel, and/or poor equipment performance.
- Any internal adjustment, modification or maintenance to this equipment must be undertaken by qualified service personnel.
- The use of any hazardous material in the unit must be monitored by an industrial hygienist, safety officer or some other suitably qualified individual.
- Explosive or inflammable substances should never be used in the unit unless a qualified safety professional has evaluated the risk involved.
- If chemical, radiological or other non-microbiological hazards are being used in the cabinet, additional protective measures should be taken. Additionally, the operation should be monitored by a suitably trained individual.
- Before proceeding, you should thoroughly understand the installation procedures and take note of the environmental/electrical requirements of this equipment.
- If the equipment is used in a manner not specified by this manual, the protection provided by this equipment may be impaired.

Symbols

	Warning of hazardous area or situation

Limitation of Liability

The disposal and/or emission of substances used in connection with this cabinet may be governed by various local regulations. Familiarization and compliance with any such regulation are the sole responsibility of the users of the cabinet. The liablity of Air Science® is limited with respect to user compliance with such regulations.

European Directive on Waste Electrical and Electronic Equipment (WEEE)

At the end of your product / accessories life, it must not be discarded as domestic waste. Ref: EU Directive 2012/19/EU on Waste Electrical and Electronic Equipment Directive (WEEE). Please contact your distributor / supplier for further information. For end users outside of the EU consult applicable regulations.

Warranty

Air Science products come with a Legacy Limited Lifetime Warranty™ and can be registered online by visiting our website: www.airscience.com/warranty-registration.

Read more about our Legacy Limited Lifetime Warranty and Damaged Freight Claim Information.

- Legacy Limited Lifetime Warranty: www.airscience.com/warranty.
- Damaged Freight Claim Information: www.airscience.com/damage-claims-policy.

Warranty Registration

Register your new Air Science product online by visiting: www.airscience.com/warranty-registration.

Customer Satisfaction Survey

Air Science values your business, so your satisfaction is important to us. To help serve you better, please take a few minutes to complete our Customer Satisfaction Survey.

I. Product Information

The Air Science Evidence-Bench™ series of laboratory work tables are designed specifically for high volume processing of forensic evidence by multiple users. Professional design and construction features offer convenience during use, cleaning and maintenance. This unit does not offer product and/or sample protection.

Visit our website for Evidence-Bench specifications:
https://www.airscience.com/mobile-forensic-evidence-benches.

II. Unpacking Your Evidence-Bench

This chapter aims to provide relevant information on how to handle the unit properly upon receipt. Failure to follow these instructions may damage the unit. We strongly advise you to read this chapter carefully before proceeding further.

2.1 Step-By-Step Procedure

1. Inspecting the Crate, Pallet, Boxes.
   - » Upon receipt of your new Evidence-Bench, inspect all cartons. If there is any visible damage to the exterior please refer to Damaged Freight Claim Information on our website.
2. Moving the Pallet.
   - » The pallet is designed to protect the unit from any foreseeable circumstances. However, excessive impact onto the boxes or pallet may also damage the unit. Prevent any direct impact or hitting to the pallet when moving.
   - » When lifting the pallet, always ensure that the floor jack or mechanical lift truck has fully entered under the pallet in order to achieve stability. Failure to do so will increase the risk of the pallet falling off the floor jack or mechanical lift truck during handling. Please use a suitable extension bar when necessary.
3. Opening the Boxes.
   - » If you did not receive one or more of the parts listed on the packing checklist, or if any of the items are damaged, please refer to the Damaged Freight Claim Information on our website.
4. Removing the Packaging Material.
   - » The Evidence-Bench is protected by Styrofoam, cardboard and/or shrink-wrap.
   - » If you find any damage during this stage of unpacking please refer to the Damaged Freight Claim Information on our website.
   - » We recommend leaving the unit secured with straps to the pallet until it is located in its approximate final position to facilitate ease and safety in handling.

Note: Choosing the best location to achieve optimum operating performance is determined by a number of factors. Please refer to the next chapter for some guidelines.

5. Moving the Unit.
   - » When lifting the pallet with the unit, always ensure that the floor jack or mechanical lift truck has fully entered under the pallet. This is to increase the stability of the unit and reduce the risk of the unit falling down. Please use a suitable extension bar when necessary. During the moving of the unit, ensure there is enough distance between the supports of the pallet and the ground. Dragging the pallet against the ground will damage the pallet and possibly your new equipment.
   - » When removing unit from pallet or placing unit onto pallet, use at least two people.
6. Removing the Strapping.
   - » Remove the strapping by cutting it at a safe position to prevent any scratching the surface of your new equipment.
   - » Do not discard the packaging material until you have checked all of the components, installed and tested the unit.

2.2 Packaging Contents

A copy of your factory test report and certificate of conformance can be obtained by contacting Air Science and providing the product model and serial numbers.

III. Installing Your Evidence-Bench

3.1 Choosing a Suitable Location

Location impacts the nature and extent of external airflow disturbances, which may affect performance of the equipment when it is exposed to these disturbances.

When installing, the unit should be located as far away as possible from sources of airflow disturbance and in an orientation which optimally shields the airflow of the unit from all external airflow disturbances.

Please follow these guidelines when choosing a suitable location for your Evidence-Bench:

- The location must be far away from:
  - » Personnel traffic flows.
  - » Air vents (in and out).
  - » Doors and windows.
  - » Any other sources of disruptive air currents or air drafts.

3.2 Environmental / Electrical Conditions (units equipped with airflow pod)

The equipment is designed to be safe for at least the following conditions:

- » Indoor use.
- » Altitude < 2,000 m (6,562 ft).
- » Temperature range 5°C to 40°C (41°F to 104°F) ambient.
- » Relative humidity <80% up to 31°C (88°F) decreasing to <50% at 40°C (104°F).
- » UL Installation Category II.
- » UL Pollution Degree 2.
- » Continuous operation.
- » Electrical supply tolerance of –10% / +10%.
- » 120VAC, 60Hz, 10A or 230VAC, 50Hz, 5A.
- » Fuse: 250V, 10A, Time Lag for 120VAC or Fuse: 250V, 5A, Time Lag for 230VAC.
- » Always ensure unit is connected to a reliable and properly grounded receptacle.
- » Appliance inlet on this device is the disconnect device; appliance should not be positioned so that it is difficult to operate it.

Power Cord:

» 1) For units intended to be operated at 120 volts (North America): Use a UL-listed and CSA-certified cord set consisting of a minimum 18 AWG, Type SVT or SJT, three-conductor cord, a maximum of 15 feet in length and a parallel blade, grounding-type attachment plug rated 15 amperes, 125 volts.

» 2) For units intended to be operated at 230 volts: Use a cord set with a grounding-type attachment plug. The cord set should have the appropriate safety approvals for the country in which the equipment will be installed.

3.3 Installing Your Evidence-Bench

1. Please refer to Unpacking Your Evidence-Bench - page 5. on lifting the unit.
2. Inspect your equipment carefully. Should you find any defect please refer to the our Legacy Warranty.
3. Peel off any protective masking that was left on the equipment during manufacturing.
4. Wipe down the interior and exterior of the unit with water or a mild household detergent.
5. Connect unit to the main power supply and turn on the blower. Each unit requires its own dedicated 13A (230V) or 15A (115V) power outlet which should not be shared with other appliances.

3.4 Set Up

Your Air Science product is shipped in one piece. Do not lift the table by the work surface.

IV. Operating Your Evidence-Bench

4.1 Control System for Airflow Pod Option

Basic Control Panel (Standard)

The **basic control panel** is standard and includes an On/Off switch and Filter Blockage alarm. If the indicator lamp starts to flash intermittently or stays illuminated, the filters are beginning to become blocked and airflow may be reduced to unsafe levels. Check airflow and/or replace filters as needed. Alarm may be reset and tested.

4.2 Evidence-Bench Operating Procedure

1. The air flow pod should only be operated with the correct filter installed for the application. Refer to Filter Information – page 21.
2. To start the system, apply power to the system and switch on the green power On/Off switch.
3. Check the airflow and the filter condition of the unit on a regular basis.
4. Please note, filter blocks do not absorb carbon monoxide or hydrogen. Small quantities will not cause hazards because of the large dilution factor from the amount of air passing through the unit and the retardation of the chemical in the filter matrix.
5. Air Science air flow pods have been designed to handle fumes and vapors given off during everyday laboratory procedures. These will be at the parts per million (PPM) level in the air stream entering the filter block. It is not recommended that large quantities of solvents or acids be used or boiled off in the unit.
6. In the event of a large spillage, the amount of fumes entering the filter block may temporarily reduce the efficiency of the filter. For this reason, any major spillage must be cleaned up immediately, preferably using spillage absorption granules rather than paper, which may aggravate the evaporation of toxic fumes from the spillage area.
7. Following a major spillage, the filters must be changed, as the heat of wetting may reduce the efficiency of the filter. After a period of stabilization, the old filters may be reused, providing they have not reached the saturation level.
8. The electrical equipment in the unit is not in the dirty air stream of the system.
9. The system should not be used in a flammable room atmosphere. Specially modified cabinets are available

for use in these areas.

10. Operators should maintain the normal safety equipment and procedures for working with hazardous chemicals.

WARNING!

- The equipment should not be used in a flammable room atmosphere.
- The air flow pod should only be operated with the correct filter installed for the application and must not be used for work in which chemicals of different types are used that do not match the filter type or that the primary chemicals or their byproducts are unknown. It should not be used for different chemical processes where chemicals from these processes may react in the filter.
- Do not use a gas flame (Bunsen burners) whenever possible, as it interferes with airflow
- Do not change the original blower speed unless the change is required by a decrease in measured air velocity. Adjustment should be made only by a qualified technician. Do not operate the cabinet if fan fails to run.
- Minimize arm movement. Move arms in and out slowly to avoid disrupting airflow.
- Use absorbent pads on the work surface where appropriate to minimize splatter and aerosol generation in case of spillage.
- Keep lids/covers on all containers, dishes or sample plates.

V. Monitoring

5.1 General

The purpose of the monitoring program is to ensure consistent reliability from the system. This is achieved by the checking of the following:

» Condition of the pre-filters. If these are becoming blocked, the velocity of the unit will begin to fall and will eventually cause the filter blockage alarm to illuminate.

» Manual checking of the main filters.

5.2 Manual Monitoring

Manual monitoring should be carried out at least once per year. This will ensure the monitoring systems are all within calibration and performing correctly.

Airflow Measurements
The inflow velocity of the hood should be checked at the worksurface with a device such as a hot wire, vane or propeller type anemometer.

VI. Maintenance

6.1 General

In some countries it is mandatory to maintain written records of checks, tests and repairs carried out on safety equipment. These records must be kept for 5 years. A full list of Occupational Exposure Limits should be obtained from your safety officer.

Regular preventative maintenance will reduce the possibility of hazard to the operator and ensure reliable performance.

WARNING! Before attempting inspection and repairs, please ensure main power to the system has been removed and that the power lead has been removed. It should also be noted that fume cabinets are sometimes used to contain and protect users from hazardous or harmful substances. Before commencing this schedule it is important to ensure the unit is safe to work on.

6.2 General Cleaning

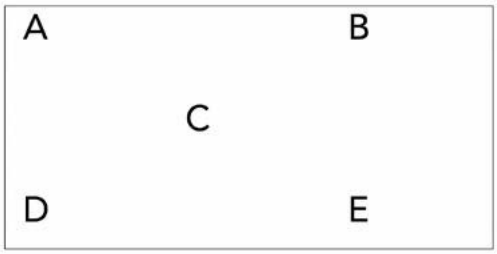
Wipe down the unit with only soapy water.

6.3 Pre-Filters

Check condition and replace if required.

6.4 Airflow

Check and record the inflow air velocity at the working surface as follows: Using a calibrated hot wire or vane anemometer or similar approved airflow meter, take a minimum of 5 readings across stainless steel aperture as shown below. Calculate the average airflow, which should be greater than 0.5 m/sec or 100 fpm +/- 10%. The readings should be recorded on the service sheet or system log.



$$\frac{A+B+C+D+E}{5} = \text{Average}$$

6.5 Calibration Instructions

Testing the Filter Blockage Alarm

- Ensure the fitted pre-filters are new. Switch on the unit; the red/amber neon should not be illuminated.
- Switch the unit off. Block the pre-filter using paper or cardboard to permit airflow of <0.3 m/sec or 60 fpm.
- Switch the unit on. The red/amber neon should illuminate. If not, the calibration should be reset.

Calibration
The filter blockage alarm operates using a differential pressure switch to detect a "high vacuum" situation when the pre-filter is blocked or blocking up. The pressure switch is calibrated and tested prior to leaving our factory and under normal circumstances will not require any adjustment.

- With the unit running and the pre-filter blocked as described above, locate the grey pressure switch through the hole in the right hand sidewall. Adjustment is made by turning the small screw in the end of the switch.
- Adjust the screw to make the alarm show. You may have to repeat these steps to ensure an accurate setting has been achieved.
- Remove the blockage and restart the machine. The red/amber neon should not be illuminated.

6.6 Changing Out Filters

WARNING! Ensure persons removing filters are made aware of any potential hazards and that they are provided with any necessary protective clothing and equipment.

Hazards associated with the removal and disposal of used filters will depend on the application of the hood. If an activated carbon filter is used with hydrocarbon solvents, the filter will retain the solvents without loss, and can be removed in the laboratory. The used filter should be sealed into a plastic bag prior to disposal, preferably by incineration.

If the filter has contained any dangerous materials such as asbestos dust or radioactive chemicals, operator protection is advised, including the use of a respirator. The used filters may require disposal by a specialist company.

NOTE: CONSULT YOUR SAFETY OFFICER OR INDUSTRIAL HYGIENIST BEFORE REMOVING OR DISPOSING ANY FILTERS.

Pre-Filters
The pre-filter is located below the main filter. Remove the perforated pre-filter tray. Remove the old pre-filter and place it into a bag. Seal for disposal. Refit the new filter and refit the pre-filter tray.

Main Carbon / HEPA Filter

WARNING! Disconnect the power supply before removing filter access cover.

- Remove the front cover to gain access to the filter. Loosen the filter clamps. Lift the filter slightly to break the seal and then withdraw the filter. Place the filter in a plastic bag. Seal the bag for disposal.
- Slide the new filter into position by pushing the filter fully into the module. Refit the front cover and lock it in position.
- Please note, sometimes after new filters are fitted, it may be necessary to recalibrate the airflow system. This procedure can be found in Calibration - page 12.

6.7 Airflow Adjustment

The speed controller can be accessed behind the main control panel.

6.8 Maintenance Schedule

Please follow the suggested maintenance schedule in order to maintain your Air Science product at its optimum performance.

Monthly

1. Using a damp cloth, clean the exterior surfaces, particularly the front and top, to remove any accumulated dust. When needed use soap or other household mild detergent.

Quarterly

1. Replace pre-filters.
2. All monthly activities.

Semiannually

1. Replace all HEPA filters.
2. All quarterly activities.

Annually

1. Replace all main carbon filters.
2. All semiannual activities.

Biennially

1. Replace fluorescent lamps.
2. All annual activities.

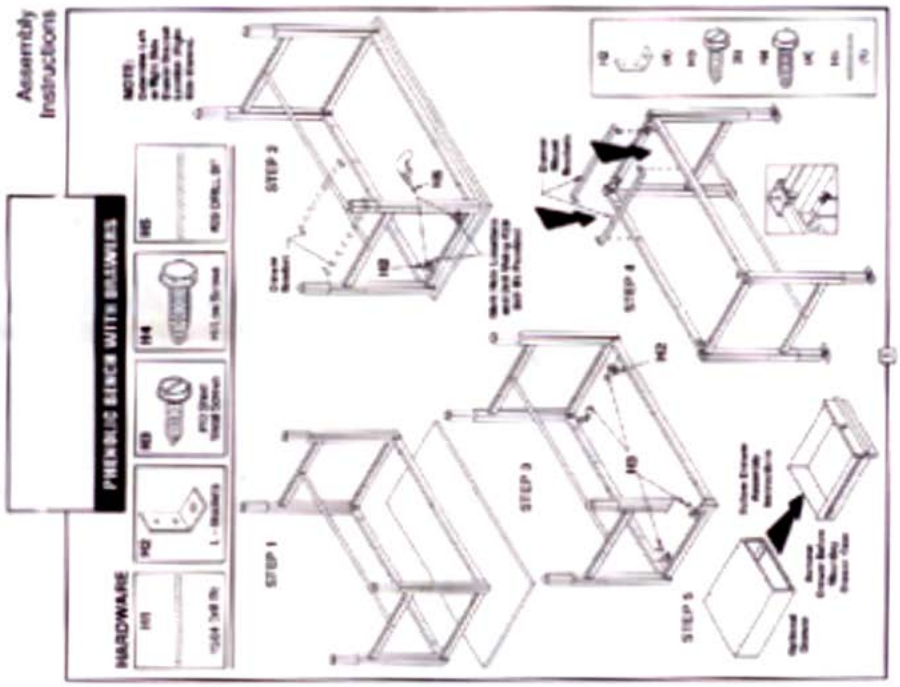
6.9 User Monthly Maintenance Schedule

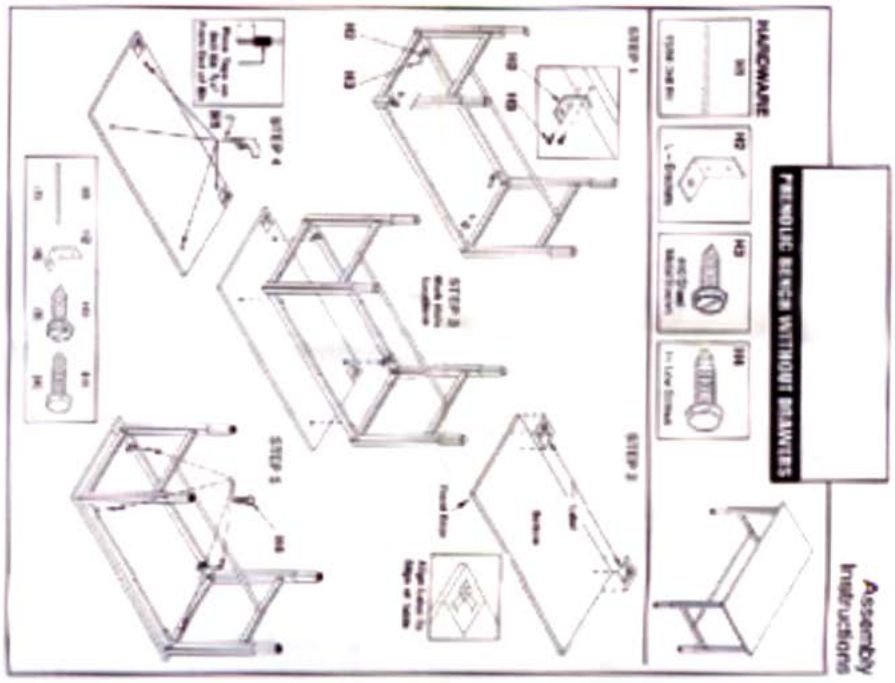
Model:	**Year:**
Serial Number:	**Responsible Person:**

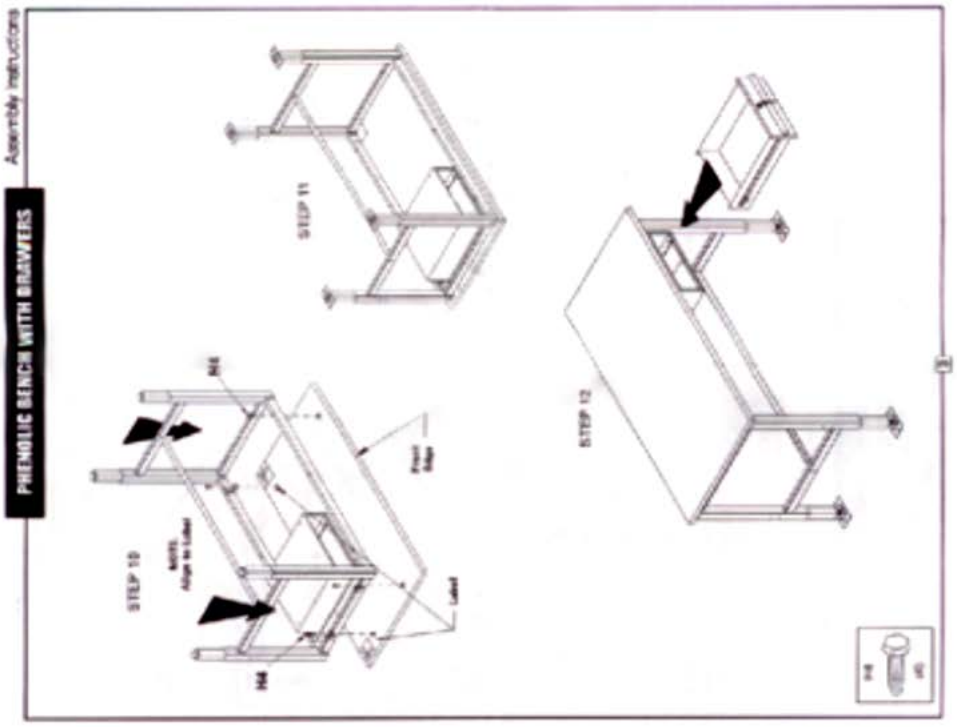
Month	Clean Exterior Surface	Notes	By Who
Jan			
Feb			
Mar			
Apr			
May			
Jun			
Jul			
Aug			
Sep			
Oct			
Nov			
Dec			

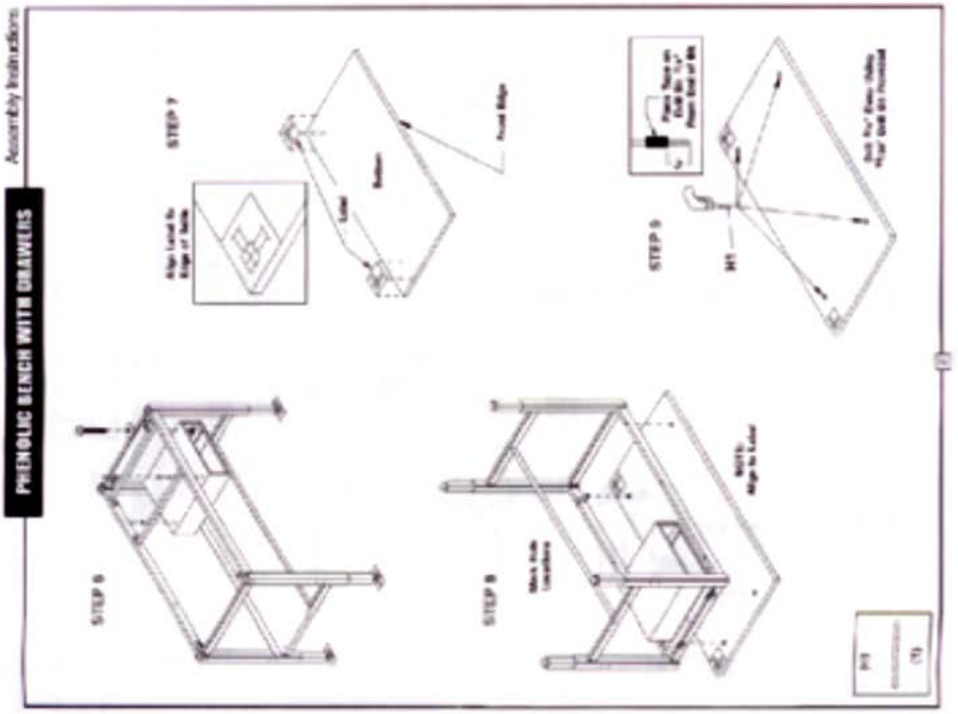
VII. Unit Assembly

7.1 Assembly For Flat Pack Units






Assembly Instructions
PHENOLIC BENCH WITH DRAWERS
STEP 11
STEP 12
STEP 10
Front Edge
Label
H6
H4


Assembly Instructions
PHENOLIC BENCH WITH DRAWERS
STEP 7
Label
Bottom
Front Edge
STEP 9
H1
STEP 8
STEP 8

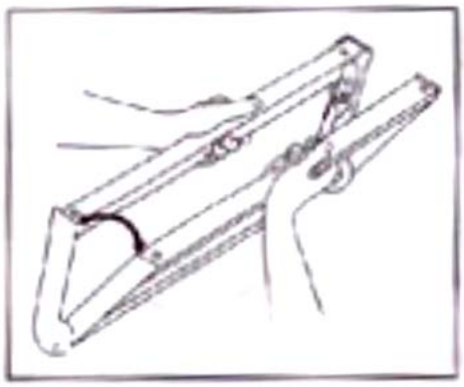
VIII. Paper Dispenser

8.1 Paper Dispenser Assembly

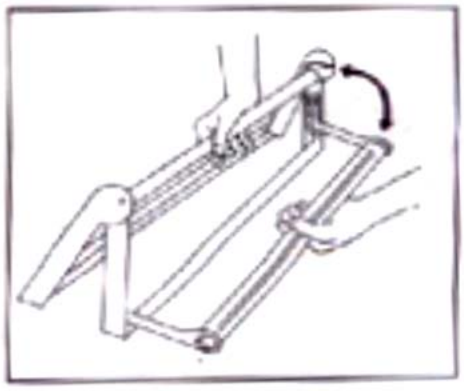
Directions for Using the A500/501, A502/503 Paper Dispenser

1. Grasp both bottom crossbars and pull apart until the unit locks open (Figure A).
2. To install a roll of material, position the dispenser in the desired location: on a counter using the supplied rubber bumpers or mounted to a wall or under a counter (hardware not included).
3. Next, place one hand on the dowel while pulling open the spring-loaded blade until it locks (Figure B). NOTE: USE CAUTION WHEN OPENING/CLOSING SERRATED UNITS TO AVOID INJURY.
4. Remove the dowel and slide it through the core plugs of the material.
5. Carefully install the roll of material by placing the exposed ends of the dowel into the dowel sockets. Lastly, a simple push on the blade will rest it securely against the material. It is now ready to dispense.

A.



B.



IX. Magnifying Lamp

9.1 Optional Magnifying Lamp Assembly

LTS176 (UL) Instructions

Assembly Instructions

1. Remove the lamp and clamp from the package box.
2. Screw the T-shaped screw (4), fix the clamp on the table.
3. As shown in Figure 1, remover the screw (1) of the clamp, insert the lamp post (2) into clamp; then screw (1) into clamp and secure the post (2) tightly.
4. Loosen the round knob (3) and adjust it to applicable position; then screw the round knob tightly.

Clamp Assembly

1. As shown in Figure 2, rotate the T-shaped screw in a counterclockwise direction; adjust the opening to desired position.
2. As shown in Figure 3, rotate the T-shaped screw in a clockwise direction; fix the clamp tightly on the table.

Replacement Lamp

1. Turn off/unplug and allow to cool before replacing the lamp.
2. As shown in Figure 1, prize up the protective shield of the lamp (5) with a screwdriver or a coin at the position of the arrow (6); remove the exhausted tubes.
3. Reinstall a fluorescent tube which is 9W or smaller than 9W, according to the Lamp Replacement Label.
4. Recover the protective shield.
5. Plug in the power supply and turn on the switch. There are two switched on the shade; (7) is the power switch, (8) is the branch switch.

NOTE:

1. Turn off/unplug and allow to cool before cleaning the lamp; use a soft cloth for cleaning.
2. This portable lamp is polarized (one blade is wider than the other) as a feature to reduce the risk of electric shock. This plug will fit in a polarized outlet only one way. If the plug does not fully fit in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician. Never use with an extension cord unless the plug can be fully inserted. Do not alter the plug.

LTS176(UL) INSTRUCTIONS

Assembly Instruction:

1.Remove the lamp and clamp from the package box.
2.Screw the T shape screw (4), fix the clamp on the table.
3.As fig.1, remove the screw(1)of the clamp, insert the lamp post(2) into clamp. Then screw (1) into clamp and secure the post (2) tightly
4.Loosen the round knob(3) and adjust it to applicable position, then screw the round knob tightly.

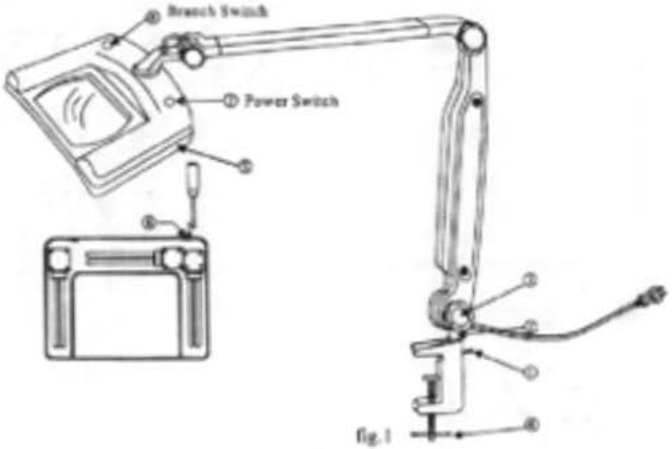


fig.1

Clamp Assembly:

1.As fig.2, rotate the T shape screw in anti-clockwise direction, adjust the open to desirable position
2.As fig.3, rotate the T shape screw in clockwise direction, fix the clamp tightly on the table.

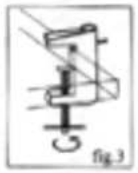


fig.3


fig.2

Replacement Lamp:

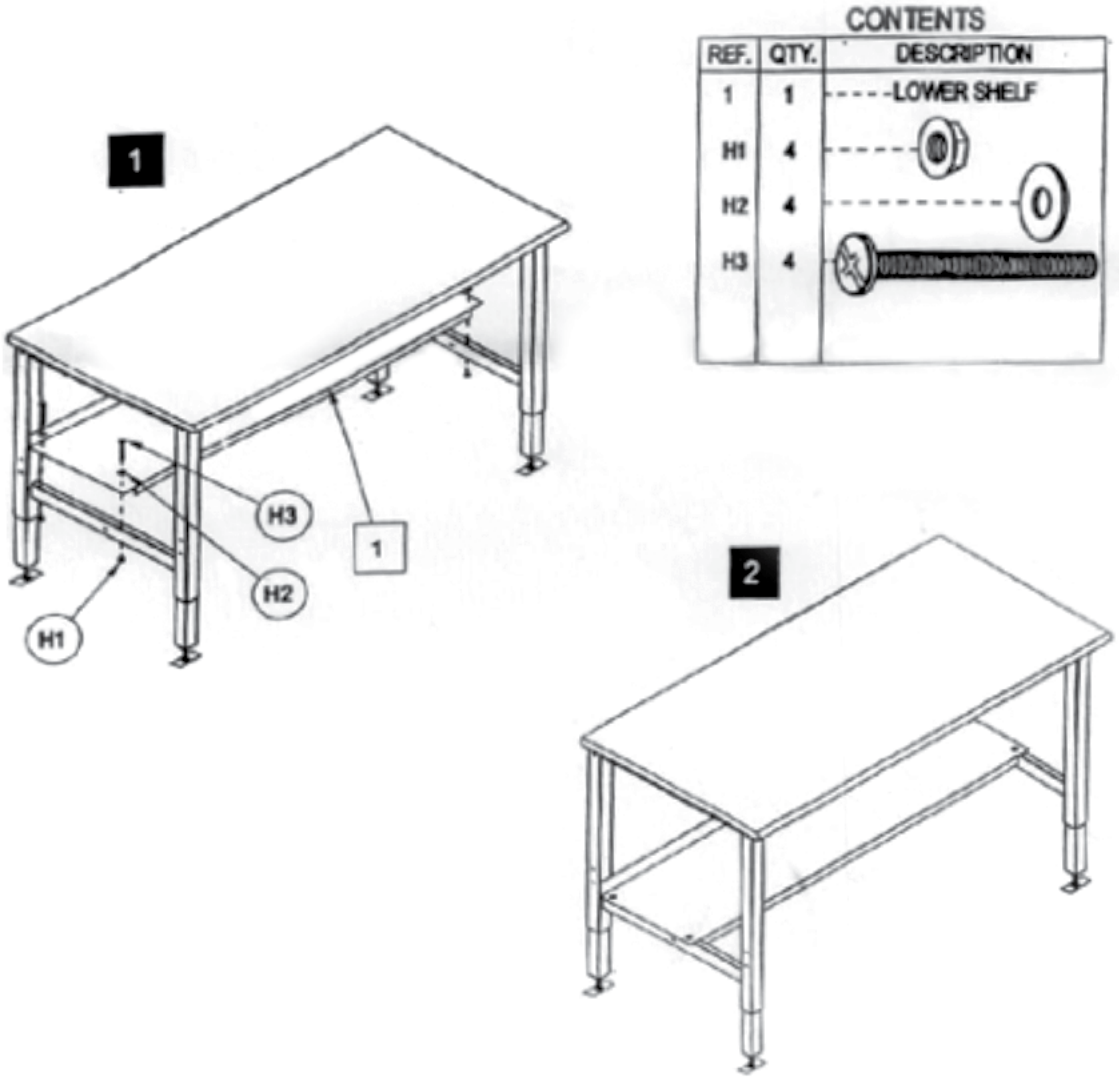
1.Turn off/unplug and allow to cool before replacing the lamp.
2 .As fig.1, prize up the lamp's protective shield (5) with a screwdriver or a coin at the position of arrow (6), take out the exhausted tubes.
3.Reinstall a fluorescent tube which is 9W or smaller than 9W according to the Lamp Replacement Label.
4.Recover the protective shield.
5.Plug the power supply and turn on the switch.
There are two switches on the shade, (7) is the power switch, (8) is the branch switch.

Attention:

1.Unplug/turn off and allow to cool before cleaning lamp, use a soft cloth to clean it.
2.This portable lamp has a polarized (one blade is wider than the other) as a feature to reduce the risk of electric shock. This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician. Never use with an extension cord unless plug can be fully inserted. Do not alter the plug.

X. Lower Shelf

10.1 Optional Lower Shelf Assembly



XI. Filter Information

For detailed information on filtration types and how to customize your application, visit the Filtration Guide on our website: www.airscience.com/filtration-guide.

Filter Types
Air Science offers over 12 types of activated carbon and particulate filter media. These formulas can be customized or layered into nearly limitless combinations to best suit your specific application. HEPA filters are available for applications involving particulates and can be combined together with any of our activated carbon filters.

11.1 Filter Descriptions

Formula	Description
GP Plus!	The most widely used filter in the range, primarily for solvent, organic and alcohol removal.
ACI Plus!	Neutralizes volatile inorganic acid vapors.
ACR	Iodine and methyl iodide vapors as well as low level radioactive iodine.
ACM	Mercury vapor.
AMM	Removes vapors from dilute ammonia solutions; removes low molecular weight amines.
SUL	Designed to remove hydrogen sulphide and low molecular weight mercaptans.
CYN	Removal of hydrogen cyanide. Many cyanide compounds will evolve HCN gas if acidified, so this filter is normally specified if working with any cyanide compound.
FOR	Designed to oxidize formaldehyde and glutaraldehyde fumes; widely used in hospital pathology laboratories.
EDU	Designed to handle chemicals normally used in a university level chemistry curriculum.
MIL	Designed for military applications involving war gasses.
HEPA/UPLA	Powders, particulates and biologicals.
EFT	Universal filtration.

XII. Product Specifications

For additional product information, drawings, dimensions and specifications:
Evidence-Bench

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www.airscience.com

ENERGY STAR PARTNER

GSA Schedule Contract # GS-07F5832P

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