![mac MEDICAL logo]

INSTRUCTION MANUAL

(shown with optional slope top)

Interior of Endoscope Cabinet

Vented Endoscope Cabinets

⚠**CAUTION**

Read and understand all of the instructions and safety information in this manual before operating this product.

Table of Contents

DESCRIPTION OF PRODUCT

This manual covers ambient vented and power scope cabinet models manufactured for commercial use only.

PURPOSE OF THIS MANUAL

This manual provides the user instructions in the installation, operation and maintenance of scope cabinets models.

Functional and operational requirements are consistent with all MAC Medical scope cabinets. However, custom scope cabinets may use part numbers not specified in this manual. Call Customer Service for assistance.

This manual also contains general specifications, warnings and cautions.

KEEP THIS MANUAL

Warnings and Cautions

The following is a list identifying the various warning and caution icons used in this manual.

Icon Type	Icon	Description
Cautions	⚠️ ⚠️	(Yellow triangle with an exclamation point) indicates the potential for minor injury to personnel and damage to equipment. Note: The exclamation point will not be visible where only equipment damage is present.
Electrical Warnings	⚡	(Yellow triangle with a lightning bolt) indicates a possible shock hazard is present. Severe shock hazards shall be a lightning bolt in a red triangle.

The following is a list of safety precautions that must be observed when operating this equipment.

⚠️ *Warning – Injury Hazard*

REPAIRS AND ADJUSTMENTS should be attempted only by experienced service representatives. Use of unqualified persons to work on this equipment could result in personal injury or costly damage. Remove the cabinet from its power source before attempting repairs.

⚡ *Warning – Electric Shock Hazard*

Do NOT remove control tray. Contact a qualified service representative. Some of the troubleshooting procedures can require access to live electrical circuitry. Dangerous accidental contact with line voltage is possible. Only qualified service personnel should be allowed to perform these procedures.

⚠️ *Caution: Repairs and Adjustments* should be attempted only by experienced service personnel who are fully acquainted with this equipment. Use of unqualified or inexperienced personnel to work on the equipment, or the installation of unauthorized parts, could result in serious personal injury, or result in costly damage. Always unplug power cord from power source before attempting any repairs or servicing of this equipment.

Special User Attention

Prior to use, all personnel who will operate the Endoscope Cabinet must be instructed in the correct usage and operation. All personnel who will use the Endoscope Cabinet should be aware that sensible care must be exercised to maintain patient safety and to keep the Endoscope Cabinet performing at peak efficiency.

Intended Use Notice

This product is intended to be used by medical personnel for the purpose of providing storage for endoscopes used in the care of patients in surgery, recovery, OB/GYN, ICU, ER and trauma areas in healthcare facilities where all operators are instructed on the usage, limitations and hazards. No other use is authorized or recommended.

This product is to be used strictly for the purpose for which it was designed. Using this product in a manner not specified by MAC Medical, Inc., can void the protection provided by the equipment manufacturer. MAC Medical, Inc., disclaims all liability for the consequences of this product being used for other than what it was designed for. Product modification or misuse can be dangerous. MAC Medical, Inc., disclaims all liability for the consequences of product alterations or modifications, as well as for the consequence that can result from the combination of this product with other products, whether supplied by MAC Medical, Inc., or by other manufacturers, unless such a combination has been specifically endorsed, in writing, by MAC Medical, Inc.

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General Specifications

Cabinet Construction: 300 series Stainless Steel, welded construction, with glass doors

Optional Power Vented Model Specifications

Power Cord: hospital grade 10a-125V
Ventilation Fan: 120V AC, 0.1/2A, 50Hz/60Hz, 105 cfm, 44dB

Dimensions, Options and Capacity –

The Table below lists the standard sizes. The function and operation of the cabinet models are the same. Based on cabinet volume, drying time may vary. Custom cabinet physical sizes are also available. Call customer service if interested in a custom size.

Model #	Vent Style	Top	Scope Qty	Dimensions
MSCA23618-301	Ambient Vent	Flat Top	9	36" X 18" X 92"
MSCA23624-301			18	36" X 24" X 92"
MSCA24218-301			11	42" X 18" X 92"
MSCA24224-301			22	42" X 24" X 92"
MSCA23618-501		Slope Top	9	36" X 18" X 101"
MSCA23624-501			18	36" X 24" X 104"
MSCA24218-501			11	42" X 18" X 101"
MSCA24224-501			22	42" X 24" X 104"
MSCA43618-301	Power Vent	Flat Top	9	36" X 18" X 92"
MSCA43624-301			18	36" X 24" X 92"
MSCA44218-301			11	42" X 18" X 92"
MSCA44224-301			22	42" X 24" X 92"
MSCA43618-501		Slope Top	9	36" X 18" X 101"
MSCA43624-501			18	36" X 24" X 104"
MSCA44218-501			11	42" X 18" X 101"
MSCA44224-501			22	42" X 24" X 104"

Fig. 1: Shown with Optional Slop Top

Fig. 2: Shown with Flat Top

Scope Cabinet Features

Door Panel Vents

Top Panel Vent

Door Panel Vents
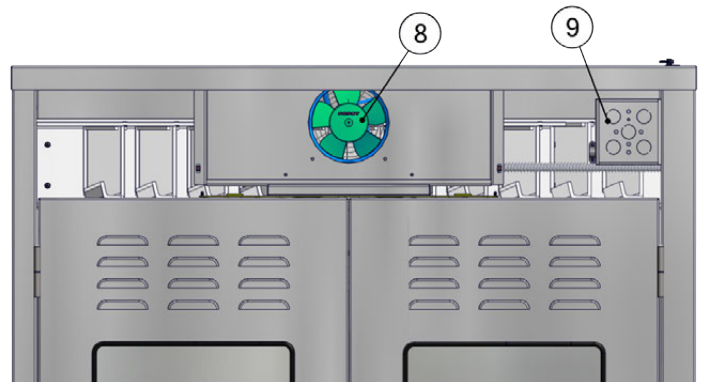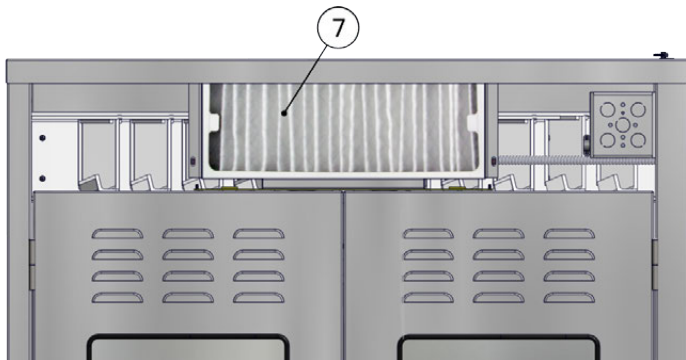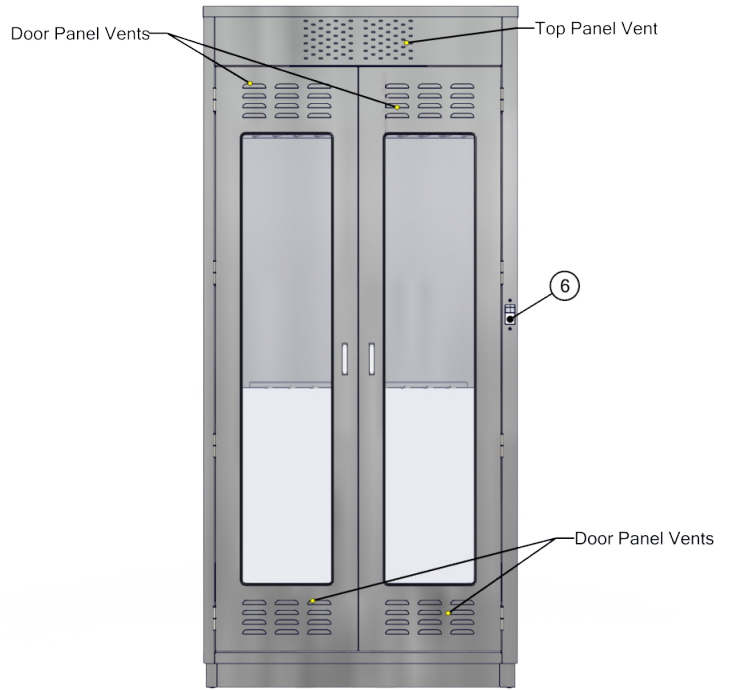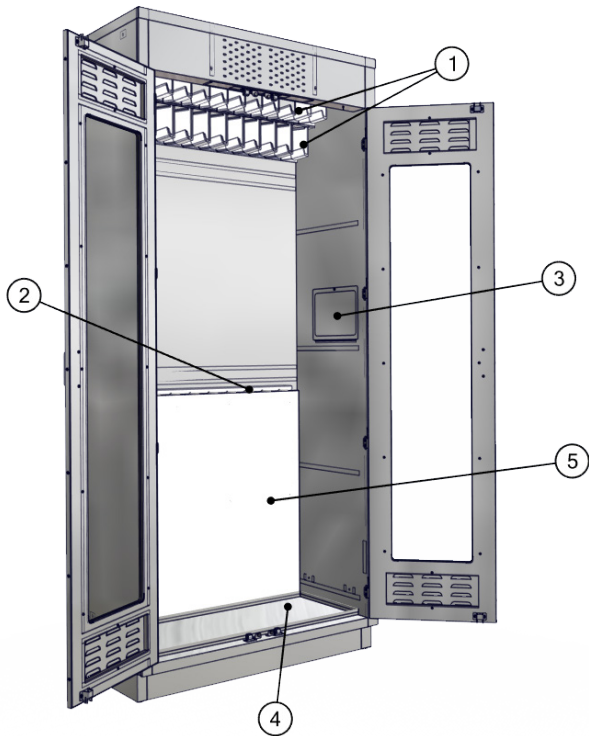
Item #	Description	QTY
1	Scope Hangers	9-22
2	Lower Scope Rack	1
3	Access Panel	1
4	Drain Pan	1
5	Padded Back	1
6	Digital Time Switch	1
7	HEPA Filter	1
8	Fan	1
9	Electrical Box	1

Unpacking and Inspection Instructions

⚠️ CAUTION: The Endoscope Cabinet is heavy, and it is recommended that at least two people assist with the unpacking.

Inspection

1. Receiving area must meet all State and Local regulations prior to unpacking.
2. Customer must inspect skid and Cabinet both before and after unpacking to determine if any items were damaged during shipping. If the skid or Cabinet appear damaged in any way, contact the shipping company immediately. Save all damaged packing material.
3. All damaged items must be listed on the Bill of Lading.
4. Customer is responsible for the proper disposal of all packing materials. The disposal of these items must meet all State and Local regulations.

Unpacking the Endoscope Cabinet

Stainless steel Endoscope Cabinets are shipped on well-constructed wooden skids. Steel bands secure the cabinet to the skid. The stainless steel surfaces of the part are protected by layers of plastic wrapping, and the corners are protected by heavy cardboard.

IMPORTANT: Wear gloves and eyewear during the unpacking operation.

⚠️ **Caution!** Do not use a box cutter or any other cutting utensil to remove the plastic wrapping around the cabinet. These items can scratch the protective coating on the stainless steel, allowing the surface to rust.

1. Use tin snips to cut the metal bands holding the box to the wooden skid.
2. Remove the cardboard corner protectors.
3. Remove the plastic protective wrapping.

Carefully inspect the Endoscope Cabinet while unpacking. If it appears damaged or defective in any way, call your MAC Medical representative.

Retain all shipping materials until the cabinet is completely unpacked and inspected for damage.

Installation Requirements

The following instructions should be followed during the installation of the Endoscope Cabinet.

- Check all local building codes prior to installation of the Endoscope Cabinet.
- Do not lift cabinets by their handles or by the front flanges on recessed models in order to avoid damaging the cabinets.
- To prevent cabinet damage, do not overtighten mounting hardware.
- Cabinets must be installed square to ensure proper door functionality.
- Only transport the Cabinet when empty. Properly secure while being transported.
- Install the Cabinet in its final position. The Cabinet is difficult to move after assembly is complete.
- Install Cabinets completely before adjusting doors.

Caution! The Cabinet and its components are heavy. It is recommended that at least two people assist in the installation of the unit(s).

Caution! Free-standing versions of the Endoscope Cabinet are a tipping hazard. The cabinet MUST BE anchored against the wall per local code. Holes may be drilled in the back of the cabinet where needed and installer-provided mounting hardware may be used to secure the cabinet against a wall.

Installation

According to the latest AORN guidelines, endoscope storage cabinets should not be placed in the medical procedure room.

1. Place the scope cabinet in a separate clean and secure location close to the procedure room.
2. IMPORTANT: Clean and thoroughly disinfect the endoscope cabinet prior to its first use. Then afterward follow a regular schedule for cleaning and disinfecting the cabinet.
3. For Power Vented models, plug the cabinet's power cord into a 110V outlet. Set the timing of the Digital Timer Switch (Fig. 3) to the desired setting.

Switch Setting and Operation for Power Vented Models

The switch controls the fan operation. The scope cabinet is equipped with a digital time switch that automatically turns the fan off after a preset amount of time. The fan can also be turned off anytime during the timer's countdown by pushing the ON/OFF button. The time switcher has four adjustable features: time-out period, time scroll direction, time-out visual and audible warnings. See the Timer countdown chart (Fig. 4).

Time-Out Period

The timer can be adjusted to hold the fan on for 5 minutes to 12 hours. The default setting is 3 hours. See the DELAY switch adjustment procedure to set the length of the time-out period.

Time Scrolling

The user can manually and temporarily override the time-out period without changing the DELAY adjustment. The SCROLL adjustment determines whether the user's override options decrease from a longer time to a shorter time (scroll down) or increase from a shorter time to a longer time (scroll up). To choose the scrolling direction, consider the time-out DELAY setting, and then whether the usual temporary need will be for more or less time.

Override Operation

Holding the ON/OFF button for longer than 4 seconds causes the timer to scroll through time increments, starting from the time-out DELAY setting. Releasing the ON/OFF switch resumes the countdown from that point. The minimum override setting is 5 minutes, maximum 12 hours.

The timer resets automatically to the time-out DELAY setting when the countdown runs out or the ON/OFF button is pushed.

Visual (Flash) Option

If this option is on, there are two occasions when the controlled lights flash. They flash one time when the countdown reaches 5 minutes and twice when the countdown reaches 1 minute.

Audible (Sound) Option

If this option is on, the timer beeps every 5 seconds during the last minute of the time-out period.

Fig. 3: Digital Timer Switch

Timer Countdown

Since the time-out period can be set for 5 minutes to 12 hours, the time is displayed in two different ways. For a countdown of less than an hour, the display shows **minutes:seconds**. The seconds count down. For a countdown of more than an hour, the display shows **hours:minutes**, the colon flashes every second.

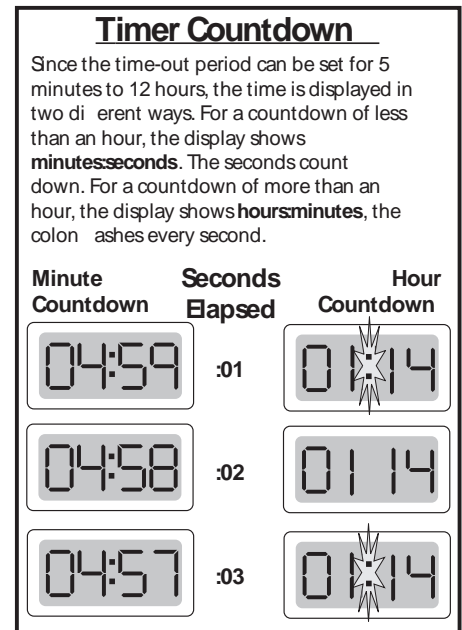| Minute Countdown	Seconds Elapsed	Hour Countdown
04:59	:01	01:14
04:58	:02	01:14
04:57	:03	01:14

Fig. 4: Timer Countdown Chart

Accessing the Switch

The switch must be accessed through the access panel located in the interior righthand side of the cabinet. The switch must be partially removed from the cabinet in order to access the switch Calibration button.

1. At the front of the cabinet, remove the two bolts that hold the switch in place (Fig. 5). Set the bolts aside

Fig. 5: Remove switch bolts

   for later use.
2. Remove the bolt from the access plate from inside the cabinet and remove the access plate (Fig. 6).
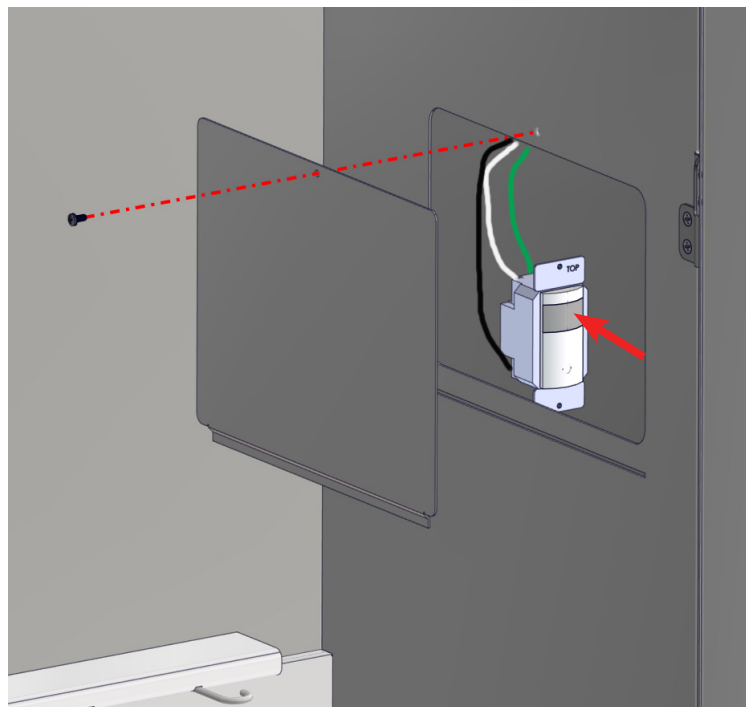3. Pull the switch out (Fig. 5). Do not detach the wires.

Fig. 6: Remove Access Panel and pull out Switch

Adjust Switch

1. Enter Settings Mode by pressing the Calibration Button (located on the left, behind the faceplate - Fig. 7).

   A. If no input occurs within four seconds, the display flashes then moves to the next setting.

   B. Press the Calibration Button to view the settings without making changes.

   C. Press the ON/OFF button within four seconds to change the setting.

   DELAY: 5 min. to 12 hr.

   DELAY sets the time-out period. The selections begin at the currently set time (3 hours, default).

   When the time is less than an hour, the time increases by 5 minutes each time you press the ON/OFF button. When the time is more than an hour, it increases by 15 minutes. When the selection passes 12 hours, it restarts the selection scrolling at 5 minutes.

   Scroll: UP or down (dn)

   To have the user's time override options decrease from a longer time to a shorter time, set Scroll for dn (down). To increase from a shorter time to a longer time, set Scroll for UP.

   FLASH: ON or OFF and Sound: ON or OFF

   When the setting selection is complete the unit will either:

   - Beep once and display END if the calibration button is being held; release the button to continue.

   - Beep three times while it displays END. This gives you a chance to press the ON/OFF button to restart the setting procedure.

   If you don't press either button within three seconds, the unit exits the Settings.

2. When finished adjusting the switch, place it back into the recessed area (Fig. 8). Make sure its wires were not accidently disconnected. Align its bolt holes with the holes on the cabinet front. Insert the bolts through the cabinet front to secure the switch.

3. Align the holes of the access panel with the interior side panel holes and reinsert the bolt to secure the plate to the cabinet.
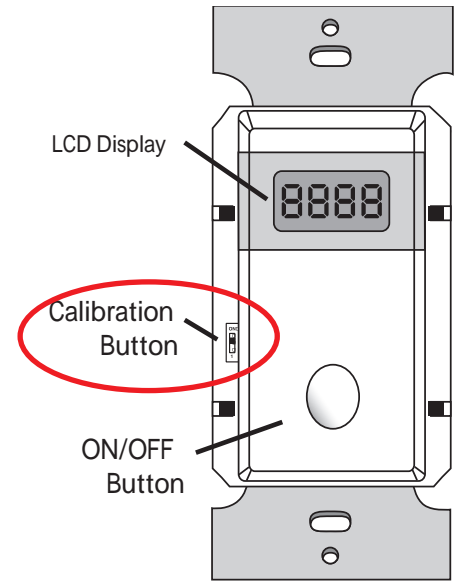

LCD Display

Calibration Button

ON/OFF Button

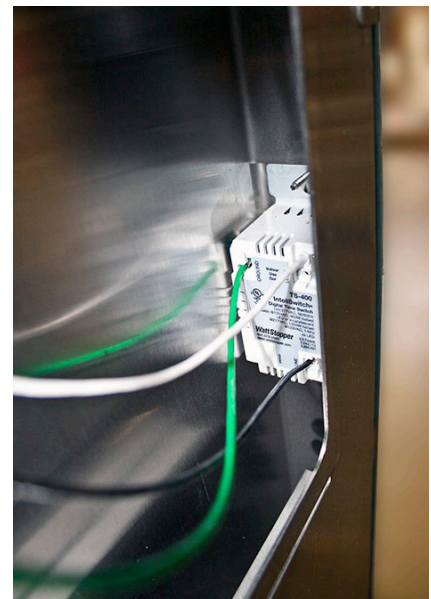*Fig. 7: Location of Calibration Button*

Fig. 8: Re-insert Switch into its original position

Replacing the HEPA Filter

1. Turn off the fan or unplug the cabinet for power vented models.

2. To access the HEPA filter (part #H0213), remove the two screws (shown in green) from the Filter Access Panel (Fig. 9 - shown in yellow).

3. Remove the Filter Access Panel assembly from the air vent panel (Fig. 10).

4. Remove the HEPA filter from the recessed filter box (Fig. 10).

5. Insert a new HEPA filter into the recessed filter box. Make sure the filter backing is toward the fan.

6. Align the screw holes of the Filter Access Panel assembly with the holes on the bottom of the air vent panel.

7. Reinsert the screws into the Filter Access Panel to secure.

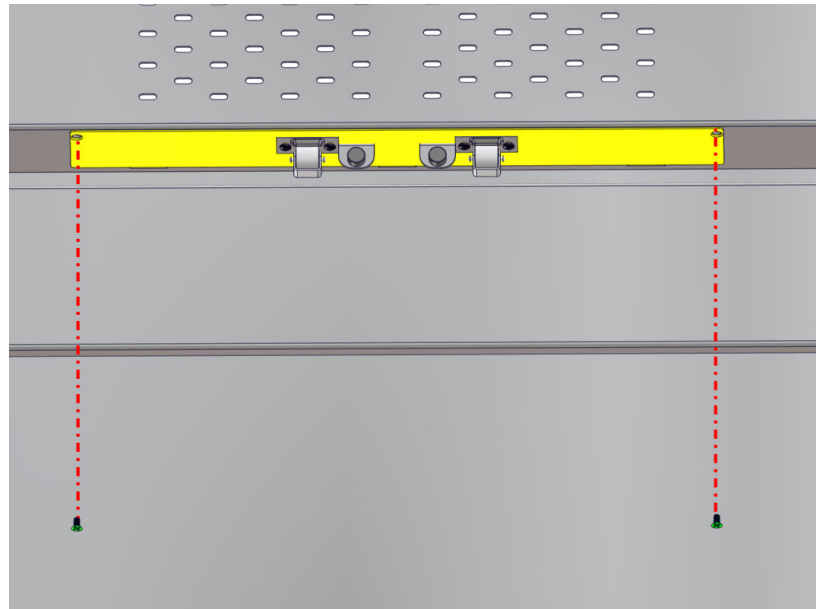8. Turn on the cabinet fan for power vented models.
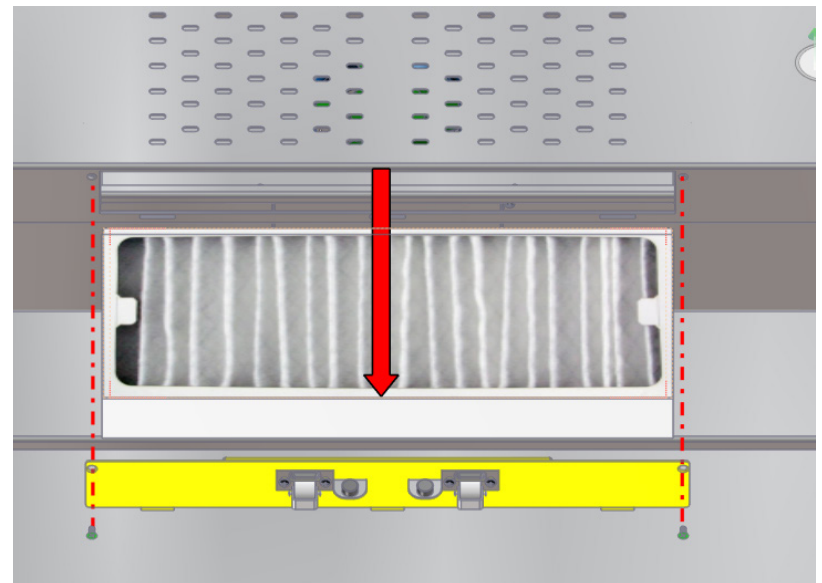

Fig. 9: Remove Access Panel

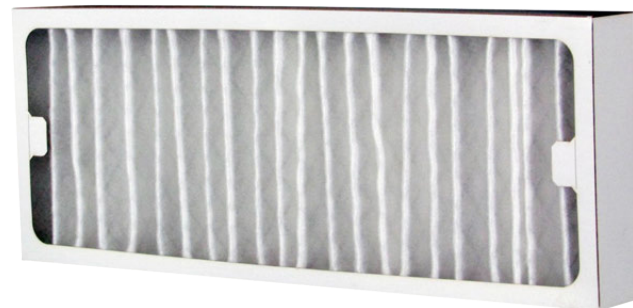*Fig. 10: Remove HEPA Filter*

Fig. 11: HEPA Filter (part #H0213)

Operation and Best Practices

IMPORTANT: The user is responsible for thoroughly cleaning, performing high-level disinfecting, and thorough leak testing of the endoscopes used in any medical procedures BEFORE placing them in the scope cabinet for storage. Follow your institution's cleaning and disinfection procedures.

According to the SGNA 2016 guidelines, the drying operation provided by the scope cabinet is a critical last step in the disinfection of endoscopes. The cabinet aids to decrease the potential for contamination, and provides protection from environmental contaminants. The circulating and HEPA filtered air within the scope cabinet forces itself through the endoscope channels. This suppresses bacterial growth and limits bacterial proliferation during storage.

IMPORTANT: To obtain the maximum benefit of the endoscope cabinet, certain procedures must be followed:

1. NEVER place dirty endoscopes in the endoscope cabinet.

2. Hang the cleaned and thoroughly disinfected endoscopes in the provided holders. Make sure the endoscopes hang freely so that they are not damaged or contaminated by contact with one another.

    A. Remove scope valves and caps and set locks in the "free" position.

    B. Keep the endoscopes vertical in the cabinet. Endoscopes tubing must not drag on the floor of the cabinet. This risks contamination if the cabinet is not 100% cleaned.

    C. Do NOT allow coiling or kinking of the endoscope cables. Moisture must be allowed to drain from the scopes. Reducing moisture decreases the potential of contamination.

3. Keep cabinet doors closed at all times to decrease the risk of contaminants reaching the scopes.

4. Make sure the cabinet ventilation is working properly throughout the storage process. Do not allow the air to become stagnant, which increases the risk of infection.

5. Clean and disinfect the cabinet thoroughly on a regular cleaning protocol, or when the cabinet becomes soiled. Take the following factors into account when establishing a disinfection protocol for the scope cabinet:

    A. Frequency of opening cabinet doors

    B. Presence of any visible debris

    C. Any wet stains, marks or droplets

    D. Volume and turnover of the cabinet's contents

Cleaning the Endoscope Cabinet

1. Remove dirt, blood, and other organic soil.

2. Always clean the cabinet prior to disinfection to avoid compromising the disinfectant's effectiveness.

3. Dust first, then remove any stubborn deposits with a damp sponge.

4. Using a soft cloth, clean with a non-abrasive, neutral liquid detergent at a 10-20% solution. Use a stronger concentration in the presence of excessive dirt.

5. Lightly rinse before disinfection, being careful to minimize moisture in the cabinet.

6. Avoid using bleach for cleaning or disinfecting your cabinet's surface, as bleach causes permanent damage through oxidation and staining.

7. Do not use abrasives, such as steel wool, wire brushes or scrapers on the stainless steel surface. For detailed instructions in stainless steel cabinet care, see page 12.

Disinfecting the Endoscope Cabinet

1. It is recommended to use quaternary ammonium compounds for regular disinfecting of stainless steel surfaces. Follow the medical facility's direction for the proper concentration and use.

    A. This low-level disinfectant comes highly recommended for general housekeeping of medical storage cabinets and other non-critical items.

    B. Quaternary ammonium compounds are bactericidal, fungicidal, and virucidal against lipophilic (enveloped) viruses.

    C. At hospital-strength concentration, quaternary ammonium compounds can destroy HIV, hepatitis B and C, influenza, and more.

2. Ensure maximum effectiveness by adhering to the disinfectant manufacturer's recommended contact time.

Endoscope Cabinet Component Care

1. It is recommended to use quaternary ammonium compounds for disinfecting the stainless steel components of the scope cabinet. Follow the medical facility's direction for the proper concentration and use.

2. Regularly clean the scope hangers with a mild, anti-bacterial, non-abrasive detergent. Then use hospital grade disinfectants that are suitable for acrylic plastic (PMMA) to disinfect the scope hangers and other plastic surfaces of the cabinet. Avoid disinfectants that contain glycol ethers as an ingredient. Do not use alcohol or ammonia which causes cracking.

3. Remove the cabinet drain pan to clean every surface of the pan.

    A. Clean and disinfect the stainless steel drain pan in the same manner as outlined above. Dry completely before replacing.

4. HEPA filters should be replaced every six months (or sooner, depending on the amount of use). See page 12 for replacement instructions.

Cleaning Solutions and Materials for Stainless Steel Endoscope Cabinets

Stainless steel Endoscope Cabinets must be cleaned on a regular basis to prevent any unnecessary damage to the stainless steel surfaces and to prevent contamination. Spilled liquids and standing water should be cleaned up immediately.

When cleaning stainless steel Endoscope Cabinets, make sure to use the proper, approved cleaning agents and cleaning materials to protect the surface and prevent damage or corrosion.

⚠️ *CAUTION:* **DO NOT USE** these Cleaning Materials	⚠️ *CAUTION:* **DO NOT USE** these Cleaning Agents
Abrasive Pads	Hard Water (water with a pH reading above 7.0)
Scrapers (metal or plastic)	Hydrochloric Acid
Steel Wool	Steam or high pressure water
Wire Brushes	Bleach or any compounds containing chlorine or Sodium hypochlorate, or ammonium chloride salts

Approved cleaning materials and agents		
Soft, clean lint-free cloth	Non-abrasive cleaning pads	Soft bristle brush
Mild detergents	Sodium Bicarbonate (baking soda)	Distilled water (pH rating 7) alone or with a mild detergent
White vinegar (in a spray bottle)	Isopropyl Alcohol	Hospital-grade non-bleach disinfectants
Cleaners approved for use on stainless steel		

Cleaning Stainless Steel Surfaces

- Using a damp, lint-free cloth and approved cleaner, wipe down the entire exterior surface of the stainless steel endoscope cabinet. Using a damp, lint-free cloth with distilled water and a mild detergent, wipe down the entire exterior surface of the stainless steel scope cabinets.

- Clean the Endoscope Cabinet with the stainless steel surface grain as shown here.

- Let the cleaned Endoscope Cabinet air dry. For power vented models, close the doors and run the circulation fan.

Disinfecting Stainless Steel

- Use a hospital grade non-bleach disinfectant. Always follow the manufacturer's instruction for proper use of these products.

Cleaning the Endoscope Cabinet Interior:

- Unplug power vented models to remove the Endoscope Cabinet from its power supply.

- Clean and disinfect the plastic endoscope hanger racks and cable retainers.

- Using a damp, lint-free cloth and approved cleaner, wipe down the interior of the cabinet.

- Use a dry lint-free cloth to dry the cabinet's interior or let air dry. If air drying power vented models, plug in the cabinet, close the door and run the circulation fan.

Cleaning Glass Doors:

Use a commercially prepared ammonia-free glass disinfectant cleaner applied with a lint-free cloth.

Replacement Parts

Replacement parts listed and illustrated on this page are serviceable by facility technicians and are available for purchase. To obtain MAC Medical, Inc., certified parts, contact your MAC Medical, Inc., representative.

| Part #	Description
H0213	HEPA Filter
H0121	Digital Timer Switch
IC0461-1836	Drain Pan (for 18" x 36" cabinets)
IC0461-1842	Drain Pan (for 18" x 42" cabinets)
IC0461-2436	Drain Pan (for 24" x 36" cabinets)
IC0461-2442	Drain Pan (for 24" x 42" cabinets)
IC40L-36	Lower Scope Rack, 9
IC40L-36-2	Lower Scope Rack, 18
IC40L-42	Lower Scope Rack, 11 (not shown)
IC40L-42-2	Lower Scope Rack, 22 (not shown)
IC45-00	Scope Hook
H0110	Fan
IC0110C-34563825	Padded Back - for 42" cabinet (not shown)
IC0110C-34563225	Padded Back - for 36" cabinet (not shown)
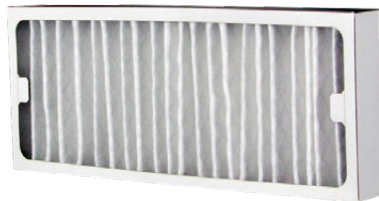
Scope Hook

HEPA Filter

Digital Timer Switch

Drain Pan

Fan
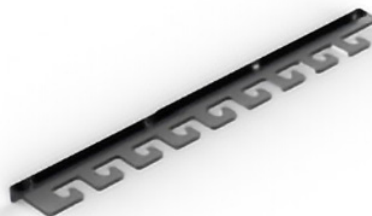
Lower Scope Rack, 9

Lower Scope Rack, 18

Training, Cleaning and Maintenance Record

For your convenience, here is a simple chart to use to note which personnel have been trained to safely use and maintain the scope cabinet.

Personnel Trained	Date of Training	Cabinet Operation (Y/N)	Cleaning Procedures (Y/N)	Disinfecting Procedures (Y/N)

This chart refers to the procedures on page 12 through page 15.

Date of Cleaning/Disinfection	Date of Cabinet Inspection	Date of HEPA Filter Replacement

Notes

Warranty Information

Limited Lifetime Warranty

MAC Medical warrants to the original purchaser that its Proprietary Products will be free from defects in workmanship or materials under normal use and service for the life of the product, so long as owned by the original purchaser, according to the limitations set forth below. Defective products shall be repaired or replaced at MAC Medical's option at no cost to the original purchaser provided:

1. The customer must obtain a written return authorization supplied by MAC Medical's customer service department. The product must be returned, properly packaged, with a copy of the original sales receipt and copy of the RMA authorization. Please call (877) 828-9975 or (618) 476-3550 to receive a return authorization.

2. The customer must pre-pay freight charges to and from MAC Medical and must ship merchandise properly packaged, in a way the product will not be damaged during transit to the factory. MAC Medical does not warranty any freight damage to or from the factory. It is the customer's responsibility to inspect the product for packaging damage before signing the BOL.

This warranty does not apply to products, which have been subject to abuse, misuse, accident, modification, alteration, tampering, negligence, lack of routine maintenance or misapplication; or products that have been repaired by other than MAC Medical or its authorized representatives.

This warranty does not apply to glass, fabrics, vinyl, seat coverings, cushions, padding or their stitching, gluing or installation. Component parts not manufactured by MAC Medical, such as casters, caster inserts, any components made from rubber or plastic, circuit boards, fan heaters, plumbing parts, electrical switches and other components are also excluded. For these component parts, MAC Medical will pass on the original manufacturer's warranty to MAC Medical equipment original purchasers. Please consult factory for questions regarding the warranties of these component parts. This warranty does not apply to custom fabricated products. Consult factory.

UNLESS EXPRESSLY SET FORTH IN THIS WARRANTY, THERE ARE NO OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, OF FITNESS AND / OR MERCHANTABILITY OR ANY OTHER WARRANTY IMPLIED BY CUSTOM, USAGE OR COURSE OF DEALING.

Liability of MAC Medical under this warranty is limited to the repair and / or replacement of any products. MAC Medical specifically excludes and disclaims any responsibility for any incidental or consequential damages claimed to have arisen from any defect in workmanship or materials. No representative has any authority to change or enlarge the above warranty or MAC Medical liability. This supersedes all previous warranty provisions.

To place an order, contact our customer service department at **618-476-3550** or **877-828-9975** or by email at **sales@macmedical.com**

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