Matrix
by MIDMARK

Veterinary Anesthesia Gas
Scavenging System (Active)
Installation and Operation Manual
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## Safety Symbols

- **WARNING**  
  Indicates a potentially hazardous situation which *could result in serious injury if not avoided.*

- **CAUTION**  
  Indicates a potentially hazardous situation which *may* result in minor or moderate injury if not avoided. It may also be used to alert against unsafe practices.

- **Equipment Alert**  
  Indicates a potentially hazardous situation which *could result in equipment damage if not avoided*.

- **Note**  
  Amplifies a procedure, practice, or condition.
Section 1 UNPACKING

1.1 Examining Packaged Components

Step 1: Examine the shipping carton for external shipping damage.
Step 2: Remove content from each plastic bag and examine for visible damage.

Note: Contact shipping company immediately if any damaged or broken parts are discovered.
Step 3: Inspect and inventory components (in individual plastic bag) as shown in illustration below.

Note: Notify your Matrx by Midmark dealer representative if any parts are missing.

### Item 1 Quantity Description
A 1 Interface Assembly
B 1 Interface Installation Manual
C 1 Wall Plate
D 1 Tube Clamp
E 1 1.25" Worm Gear Clamp
F 1 #10 Wood Screw
G 1 Gas Disposal Subassembly
H 1 Gas Disposal Installation Instructions
I 1 Scavenger Hose Suspension Installation Instructions
J 8 Cable Tie
K 2 1.25" Worm Gear Clamp
L 1 .5" Worm Gear Clamp
M 8 Cable Tie Holder

### Item Quantity Description
N 8 #6 Screw
O 20 ft. 32mm Magenta Tubing
P 1 Post Mount Installation Instructions
Q 5 ft. 19mm Magenta Tubing
R 1 Interface Mounting Bracket
S 2 U-Bolt
T 4 1/4" Nut
U 4 1/4" Flat Washer
V 18 ft. 19mm Magenta Tubing
W 1 Wall Mount Installation Instructions
X 2 ft. 32mm Magenta Tubing
Y 2 1/4" Flat Washer
Z 2 1/4" Nut
AA 1 Interface Mounting Bracket

Refer to page 11 for Replacement Part Number Identification

Figure 1. Packaged Active Scavenger Interface Components
Section 2   DESCRIPTION & IDENTIFICATION

2.1 About the System
This veterinary anesthesia scavenging system is intended for veterinary use only. It is not intended for use in health care facilities that provide services to human beings. This device is not intended for use with flammable anesthetics. Installation of this device and its components in a veterinary operatory should be made by competent individuals.

The Matrx by Midmark Veterinary Anesthesia Gas Scavenging System (Active) is a device that captures excess anesthesia gas from the anesthesia machine and disperses it to the outside of your facility. This system can be used with any Matrx by Midmark Anesthesia Machine or with comparable machines. The Matrx by Midmark Veterinary Anesthesia Gas Scavenging System (Active) can also be used with an extracorporeal oxygenator.

2.2 About your Components
This Matrx by Midmark Veterinary Anesthesia Gas Scavenging System (Active) incorporates the following components with some supplied in individual kits (*).

SCAVENGER KIT:
The scavenger interface provides positive and negative pressure relief, provides reservoir capacity, and directs the collected gas to the Gas Disposal Vent through the disposal tubing. The interface may be mounted to either the Anesthesia Machine’s base post or an exterior wall.

WARNING
This devise is not intended for use with flammable anesthetics.

CAUTION
This devise will exert pressures between atmospheric pressure and -0.5 cm-H₂O on an oxygenator gas vent. Compatibility must be checked.

MOUNTING KIT (*):
The Mounting Kit enables you to mount the interface to either a post or to an exterior (outside) wall. Refer to Figure 2 for an illustration depicting both of these mounting configurations.

GAS DISPOSAL KIT (*):
The Gas Disposal Kit is designed to mount through an exterior wall of a building and to disperse the anesthetic gas from your anesthesia machine to a disposal point that is normally isolated from personnel, doors, windows, and any air intake(s) or outlet(s).

WARNING
Do not install the Gas Disposal Kit through the ceiling or roof.

TUBING KIT (*):
TRANSFER TUBING
The Transfer Tubing fastens to the outlet tube of the Gas Collecting Assembly (APL valve) on your Anesthesia machine and the input port on the Active Scavenger System Interface, which is located on the bottom of the interface. The Transfer Tubing is 19mm in diameter and magenta in color.

CAUTION
Do not clamp the transfer tubing to the APL valve. Do not allow the transfer tubing to run along the floor.

DISPOSAL TUBING
The Disposal Tubing is 32mm in diameter and is also magenta in color. The Disposal Tubing fastens between the outlet (downstream) opening which is located on top of the interface and the Gas Disposal Vent.
Section 2  DESCRIPTION & IDENTIFICATION (cont.)

2.2 About your Components (cont.)

**Figure 2. Anesthesia Gas Scavenging System Configuration Options**

- **Post Mount**
  - Total Tubing From Anesthesia Machine to Exterior Wall Can Not Exceed 100 Ft.
  - Post Mount Tubing Kit Components
  - Anesthesia Machine (not included)
  - Active Scavenger System Interface Components (post mounted)
  - Gas Disposal Kit Components

- **Wall Mount**
  - Total Tubing From Anesthesia Machine to Exterior Wall Can Not Exceed 100 Ft.
  - Wall Mount Tubing Kit Components
  - Anesthesia Machine (not included)
  - Active Scavenger System Interface Components (wall mounted)
  - Gas Disposal Kit Components

- **Tubing Kit Components**
- **Gas Disposal Kit Components**
Section 3   INSTALLATION

3.1 Getting Started

Check the location you have selected to install your Gas Disposal Vent carefully to make sure it meets all safety requirements as explained in the Instructions. The kits and components should be installed in the following order:

- Gas Disposal System
- Scavenger Interface
- Tubing

3.2 Installing the Gas Disposal Vent Kit

The location of the access hole for the Gas Disposal Vent depends on whether your system is a wall-mounted or post-mounted application. Refer to the illustrations in Figure 3 for correct vent hole placement. Complete the Gas Disposal Kit installation in accordance with the Installation Instructions [10420300] supplied with this kit; it is important that you heed all safety alerts stated in the Installation Instructions.

**Figure 3. Gas Disposal Vent Location**
3.3 Installing the Scavenger Interface

Note
Check your location to make sure the tubing reaches from the anesthesia machine to the Interface and from the Interface to the Gas Disposal Vent (lengths vary based on interface mounting configuration [wall or post]).

3.3.1 WALL MOUNT

Note
Before mounting interface bracket to the wall, make sure the interface’s power cord will reach the nearest grounded wall receptacle. Refer to “Wall Mount” illustration in Figure 3.

Install the wall interface mounting bracket in accordance with the illustration in Figure 4. Once the mount has been successfully secured, the interface can be hung on to the hanger mounting tabs.

Figure 4. Wall Mounted Scavenger Interface Bracket Mounting
Section 3  INSTALLATION (cont.)

3.3 Installing the Scavenger Interface (cont.)

3.3.2 POST MOUNT
Install the post interface mounting bracket in accordance with the illustration in Figure 5. Once the mount has been successfully secured, the interface can be hung on to the hanger mounting tabs.

**Figure 5. Post Mounted Scavenger Interface Bracket Mounting**

- **Step 1:** Position bracket onto post.
  
  *Note: Make sure tabs face upward.

- **Step 2:** Slide U-bolts around post and through mounting holes in bracket.

- **Step 3:** Install washers and nuts and secure to post.

- **Step 4:** Slide Interface onto mounting bracket tabs.
  
  *Note: Make sure tabs on both brackets are fully engaged.

3.4 Installing the Scavenger Tubing

Complete the tubing installation in accordance with the Tubing Kit Instructions (Post Mount [10428200] or Wall Mount [10428300]) supplied with this kit. It is important that you heed any safety symbols and alerts stated in the Installation Instructions. Refer to Scavenging Hose Suspension Installation Instructions (10428100) for “Preferred” and “Alternate” tubing mounting methods.

**WARNING**

Do not install the tubing up through the roof or down along the floor.
4.1 Operating your Anesthesia Gas Scavenging System (Active)

**Note**
This is an active scavenger system, do not use anesthesia machine unless scavenger interface is energized.

Plug the Matrx by Midmark Scavenger Interface 12 volt power supply into a grounded receptacle. Turn the Scavenger on by activating the rocker switch, located on the upper side of the interface, to the ON position. A green light will illuminate when the interface is energized. Always energize the interface prior to activating your anesthesia machine and do not de-energize the interface until after you have turned your anesthesia machine off.

![Interface ON/OFF Switch](MX104400i)

**Figure 6. Interface ON/OFF Switch**

**Note**
The leak rate from the Matrx by Midmark Veterinary Anesthesia Gas Scavenging System (Active) is less than 100 ml/min during normal administration of anesthesia (excess gas flows of 10L/min or less). Test procedures are available upon request.

4.2 Tips for Optimal Scavenger Interface Performance

- Energize the Scavenger before you use it. To energize, switch the ON/OFF switch to ON.
- Do not clamp the 19mm tubing to the APL valve. Use your fingers to fasten the tubing to the APL valve by securing it over the fitting.
- Make sure all tube fittings are secure before turning the Scavenger on.
- Use only the tubing supplied with your Scavenger or Matrx by Midmark replacement tubing to avoid kinks or pressure in the tubing.
- Use the original tubing length or shorter. Never add additional tubing lengths to circuit.
- Make sure that the vent on the outside of the gas disposal assembly is clear and that air movement is not blocked or obstructed.
- Make sure that the vent on the outside of the gas disposal assembly is located away from people, doors, windows, and any air intakes or outlets.
- Make sure that the tubing is not lying on the floor.
Section 5 MAINTENANCE

5.1 General Cleaning and Replacement

Inspect the Scavenger Interface and tubing circuit for damage before each use. If the unit appears to be damaged, do not use it; call your Matrx by Midmark Service Representative for replacement parts if necessary.

5.2 Periodic Maintenance

<table>
<thead>
<tr>
<th>Once A Week</th>
<th>Once A Month</th>
<th>Once A Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Clean the screen at the bottom of</td>
<td>• Clean the Interface vents in the</td>
<td>• Replace all 19mm tubing from</td>
</tr>
<tr>
<td>the Interface.</td>
<td>Interface Outlet Assembly; refer to</td>
<td>APL valve to Interface.</td>
</tr>
<tr>
<td></td>
<td>Figure 8 for cleaning procedure.</td>
<td>• Replace all 32mm tubing from</td>
</tr>
<tr>
<td></td>
<td>• Check the Gas Disposal Vent</td>
<td>Interface to Gas Disposal Vent.</td>
</tr>
<tr>
<td></td>
<td>outlet to make sure that it is not</td>
<td></td>
</tr>
<tr>
<td></td>
<td>blocked by ice or other debris.</td>
<td></td>
</tr>
</tbody>
</table>

*Figure 7. Periodic Maintenance Chart*

*Equipment Alert*

In most cases the interface can be disassembled for this procedure while it remains mounted to a post or wall. Care should be taken in the event that it is removed from its mounting bracket as tubing damage could result.

*Step 1:*
Remove (3) thumbscrews from the lower portion of interface body and slide the interface outlet assembly out through the bottom of the interface.

*Note:*
Make sure to support the assembly during process.

*Step 2:*
Clean all lint and debris from unit especially around (7) vent screens.

*Step 3:*
Reinsert the interface outlet assembly into the interface body and install and secure the (3) thumbscrews.

*Figure 8. Cleaning Interface Vents*
### Section 5 MAINTENANCE (cont.)

#### 5.3 Troubleshooting Guide

The following troubleshooting guide is helpful in analyzing problems. For any service questions contact Matrx by Midmark Technical Support at 1-888-279-1260 or your Matrx by Midmark dealer.

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Possible Remedies</th>
</tr>
</thead>
<tbody>
<tr>
<td>No power to unit.</td>
<td>- Make sure unit is plugged in to the receptacle.</td>
</tr>
<tr>
<td></td>
<td>- Check receptacle for power.</td>
</tr>
<tr>
<td></td>
<td>- Make sure switch is in the ON position.</td>
</tr>
<tr>
<td>Green “In Use” light does not go on when switch is in the ON position.</td>
<td>- Make sure unit is plugged in to the receptacle.</td>
</tr>
<tr>
<td></td>
<td>- Check receptacle for power.</td>
</tr>
<tr>
<td>19mm tubing does not fit snugly on APL valve.</td>
<td>- If your anesthesia machine is not a Matrx by Midmark Animal Anesthesia Machine, check the manufacturer’s specifications to determine the diameter of their APL outlet fitting. If the fitting is not compatible, replace it with a Matrx by Midmark APL valve.</td>
</tr>
<tr>
<td></td>
<td>- Tubing is stretched or worn and should be replaced.</td>
</tr>
<tr>
<td>19mm tubing does not fit on Interface input port.</td>
<td>- Make sure that you are fastening the tubing to the input port on the bottom of the Interface.</td>
</tr>
<tr>
<td></td>
<td>- Tubing is stretched or worn and should be replaced.</td>
</tr>
<tr>
<td>32mm tubing does not fit on Interface outlet port.</td>
<td>- Make sure that you are fastening the tubing to the outlet port on the bottom of the Interface.</td>
</tr>
<tr>
<td></td>
<td>- Tubing is stretched or worn and should be replaced.</td>
</tr>
</tbody>
</table>
Section 5  MAINTENANCE (cont.)

5.4 Replacement Parts

The following illustration shows all available replacement parts for this product. To order replacement parts or for any service questions, contact Matrx by Midmark Technical Support at 1-888-279-1260 or your Matrx by Midmark dealer.

Figure 10. Replacement Parts Exploded View
Section 6  INFORMATION & WARRANTY

6.1 General Information
All repairs, unless otherwise specified, should be performed by an authorized Matrx by Midmark service representative.
Call 1-800-MIDMARK for Customer Service.

6.2 Return Goods Procedure
All returns must be made through an authorized dealer. Units for repair should be sent to Midmark and packaged in the original shipping container if possible. Please contact our Customer Service Department prior to shipping the unit prepaid to receive authorization RMA number. Specify the RMA number on the outside of the box and label it to the attention of Repair Service Center.

Ship to:
Midmark Corporation
Plant A Returns Dept
Attn: Repair Service Center
60 Vista Drive
Versailles OH 45380

For international returns, contact your local Midmark dealer.

6.3 Warranty
This warranty is given in lieu of all other warranties, expressed or implied, of merchantability, fitness for a particular purpose, or otherwise.

No statement or claim about the product by any employee, agent, representative, or dealer of Matrx by Midmark shall constitute a warranty by Matrx by Midmark or give rise to any liability or obligation of Matrx by Midmark.

Subject to the next sentences, Matrx by Midmark warrants that each product be free from defects in workmanship and materials, under normal use and with appropriate maintenance, for the time listed below, commencing from the date of delivery to the customer.

  Veterinary Anesthesia Gas Active Scavenger Interface: 2 year

Matrx by Midmark’s obligations for breach of this warranty, or for negligence or otherwise, shall be strictly and exclusively limited to Matrx by Midmark’s choice of repair or replacement of the product. This warranty shall be void for any product on which the serial number has been altered, defaced, or removed.

Matrx by Midmark shall not be liable for any damage, injury, or loss arising out of the use of the product, whether as a result of a defect of the product or otherwise, if, prior to such damage, injury, or loss, the product was (1) damaged or misused; (2) repaired, altered or modified by persons other than Matrx by Midmark; (3) not installed in strict compliance with applicable codes and ordinances; or (4) not installed by Matrx by Midmark or an authorized Matrx by Midmark dealer.

Under no circumstances shall Matrx by Midmark be liable for incidental or consequential damages as those terms are defined in the Uniform Commercial Code.
## Notes and Contact Information

<table>
<thead>
<tr>
<th>Unit Serial Number</th>
<th>Date Purchased</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dealer Name</th>
<th>Dealer Phone Number</th>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:

**Contact Information:**

Matrix by MIDMARK

1-800-Midmark (643-6275)
www.midmark.com