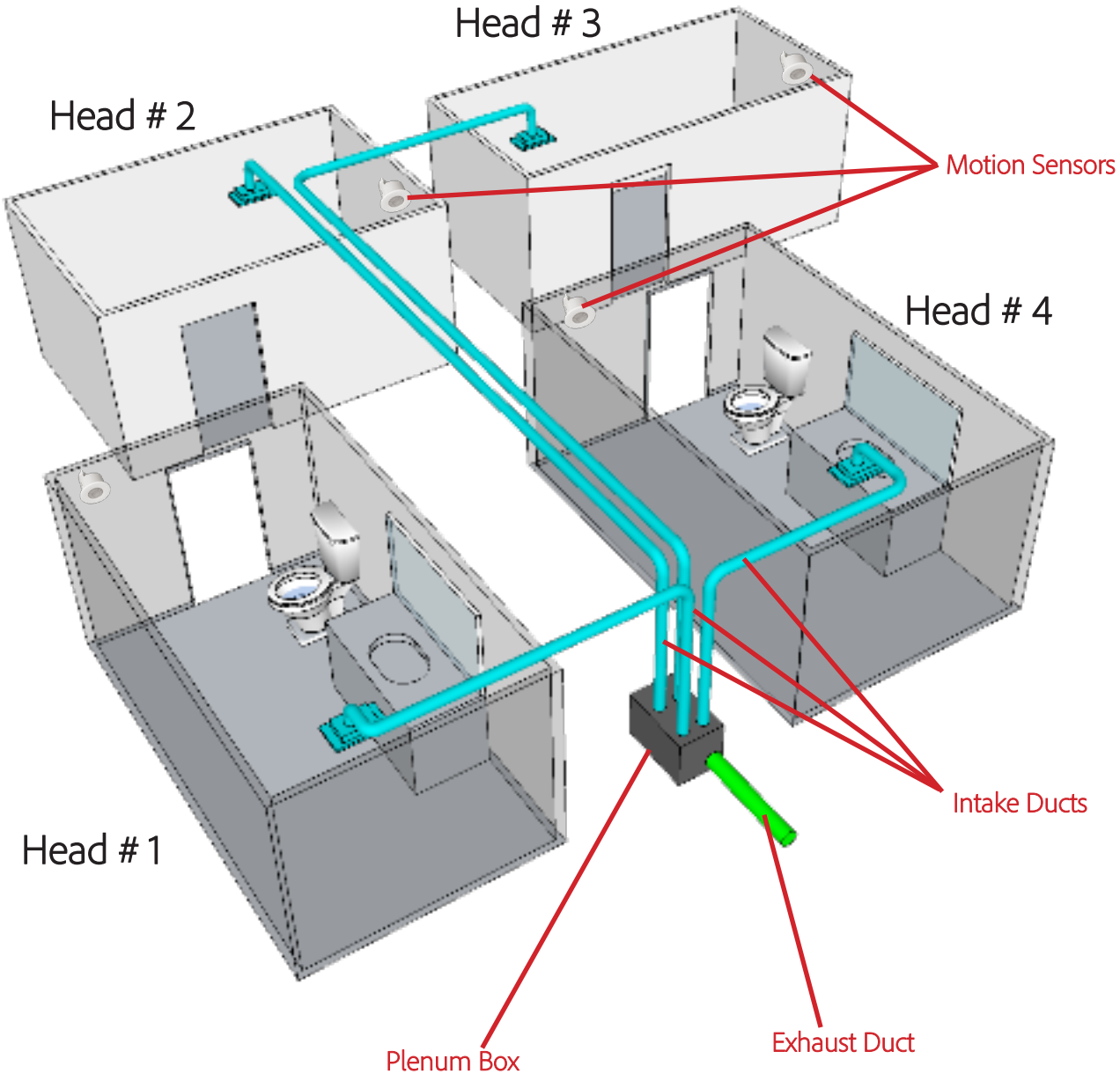
CENTEK MARINE

INSTALLATION & OPERATION MANUAL

600-HVS-24W

Automatic Marine *Head Vent System*

System Layout
Automatic Marine *Head Vent System*



Introduction
Automatic Marine *Head Vent System*

Theory of Operation

The Head Vent System was designed to fill the need for simple yet effective ventilation of the heads or other small spaces on board a vessel. It has been designed to be a self-contained unit that houses all of the main components inside one central plenum box. When an occupant enters one of the heads on board the vessel, an occupancy sensor within the head initiates the system. Once started, the Head Vent System will continue to provide quiet yet efficient air extraction from the occupied head. When the occupant leaves the head the system will continue to run for several minutes and then shut down automatically.

NOTE: The Head Vent System has been designed to provide a minimal amount of ventilation to the non-occupied heads when any one of the other heads is in use. This is a normal part of the opera-tion of the Head Vent System and has been specifically designed into the system in order to promote adequate ventilation for all of a vessel's heads.

System Location

The plenum box, which is the heart of the Head Vent System, should be located with the following considerations in mind:

-Locate the plenum box centrally between heads
-The plenum box may be mounted in any orientation
-Do not mount the plenum box in areas of excessive heat, vibration or moisture

Piping Considerations

Piping for the Head Vent System should be well thought out. The following considerations will ensure optimal performance of the system:

-Use 3" or 4" solid piping such as PVC for all intake ducts wherever possible
-Avoid excessive turns and twists in piping – the fewer 90 degree fittings the better
-Use sweeps to make turns in piping wherever possible
-Do not plumb rigid piping directly to the plenum box fittings – use duct adapters provided to facilitate ease of installation and avoid unnecessary stresses on plenum box

The Plenum Box

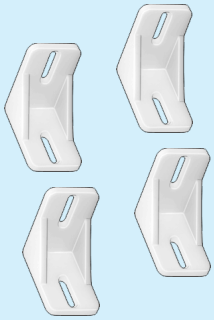
The plenum box is the heart of the Head Vent System. It has been assembled and tested at the fac-tory and requires no maintenance whatsoever. The plenum box has been sealed and does not require the installer or user to open it for any reason. Attempting to open the plenum box will damage the casing and/or the internal components and will *void the warranty*. All service to the Head Vent Sys-tem will require the plenum box to be removed and sent back to the factory. The plenum box may be mounted in any orientation. It has been designed in this manner so that the installer may utilize many different options when choosing a space for installation. The box should be securely mounted using the brackets provided. If the plenum box is going to be mounted anywhere other than on the floor, the installer should not depend only on the mounting brackets to secure the unit. For example, if the plenum box is to be mounted to a wall or to the ceiling, great care should be taken to support it using a shelf or other means so that it does not come loose in heavy seas.

System Component Identification
Automatic Marine *Head Vent System*

Duct Adapters

Occupancy Detectors

Mounting Brackets

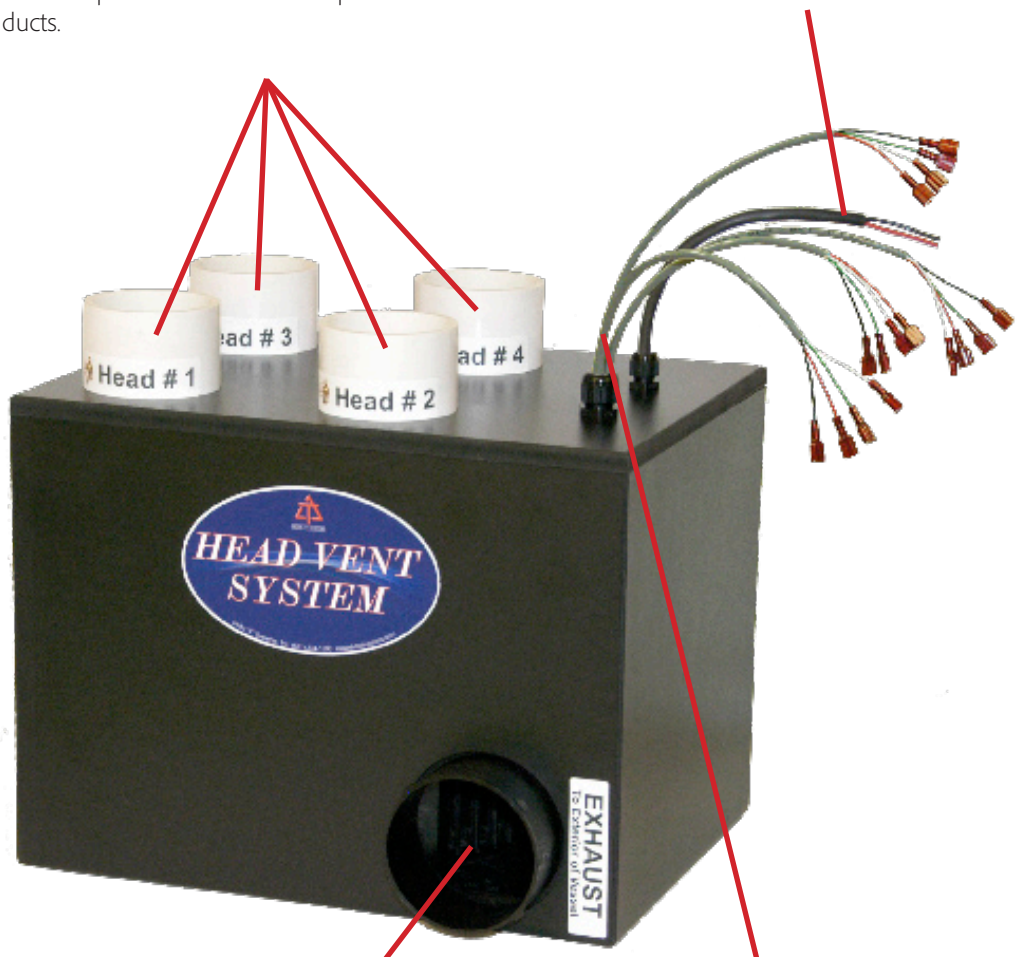


Intake Ports

The intake ports for the Head Vent System are connected via three or four inch solid wall ducts to each head on the vessel. Use the Head Vent Duct Adapters to connect intake ports to head ducts.

Power Connection

Main power connection for the Head Vent System. Connect through a 20 Amp breaker to a 24 VDC, 20 Amp circuit.



Exhaust Port

The exhaust port for the Head Vent System is plumbed to the exterior of the vessel using a four inch solid wall duct. Use the Head Vent Duct Adapters to connect the exhaust port to exhaust duct.

Occupancy Detector Connections

The occupancy detector connections are made up of four individual leads. Each lead is labeled to correspond to a particular head number. Run each lead to the corresponding numbered head and connect to motion detector (occupancy sensor).

System Installation
Automatic Marine *Head Vent System*

STEP 1 - Mounting the Plenum Box

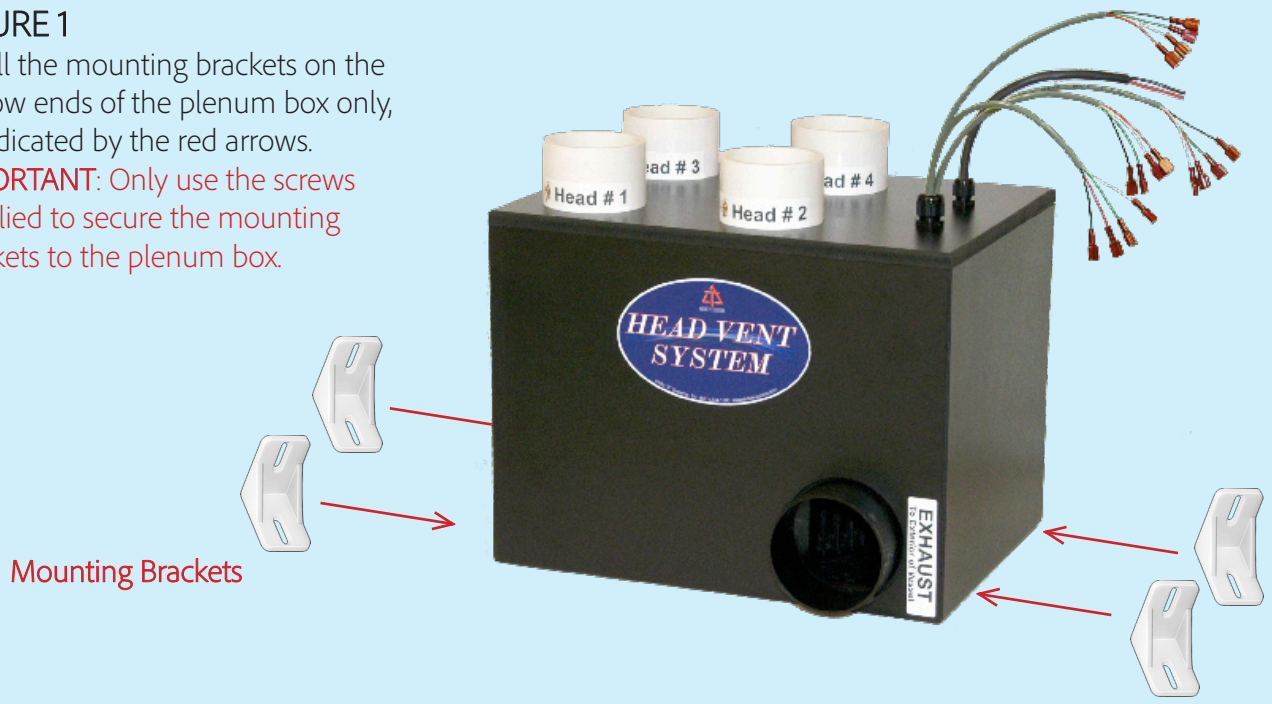
Find a suitable location for installation of the plenum box. It may be located remotely in a space of opportunity, however, if at all possible, it should be located centrally between the heads so that all of the piping runs from each head to the plenum box will be approximately equal in length. The exhaust pipe run should also be as short as possible with the fewest amount of turns.

The plenum box may be oriented in any way in order to suit the location and the piping runs. Use the mounting brackets provided to secure the plenum box in place. It is very important that the mounting brackets be secured to the base of the narrow sides of the plenum box ONLY (Refer to FIGURE 1). Securing the mounting brackets in any other location on the plenum box may damage the electronics or other internal components of the system, thereby rendering it inoperative and *voiding the warranty*.

FIGURE 1

Install the mounting brackets on the narrow ends of the plenum box only, as indicated by the red arrows.

IMPORTANT: Only use the screws supplied to secure the mounting brackets to the plenum box.



STEP 2 - Run the Intake Ducts

Plumb the intake ducts from each head to the plenum box. The ideal duct size is four inch in inside diameter (ID), however, three inch ID ducts will also suffice. Ducts may be built with PVC, metal, flexible tubing or any other solid material. Long runs of dryer vent type of wire supported hose should be avoided as they will reduce the efficiency of the system.

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Duct pipes should NOT be hard plumbed directly to the plenum box. Instead, the use of the duct adapters that have been provided with your Head Vent System (Refer to **FIGURE 2**). The use of the duct adapter sections will reduces vibration and stresses on the plenum box and will also provide for a simple and straightforward installation of the Head Vent System.

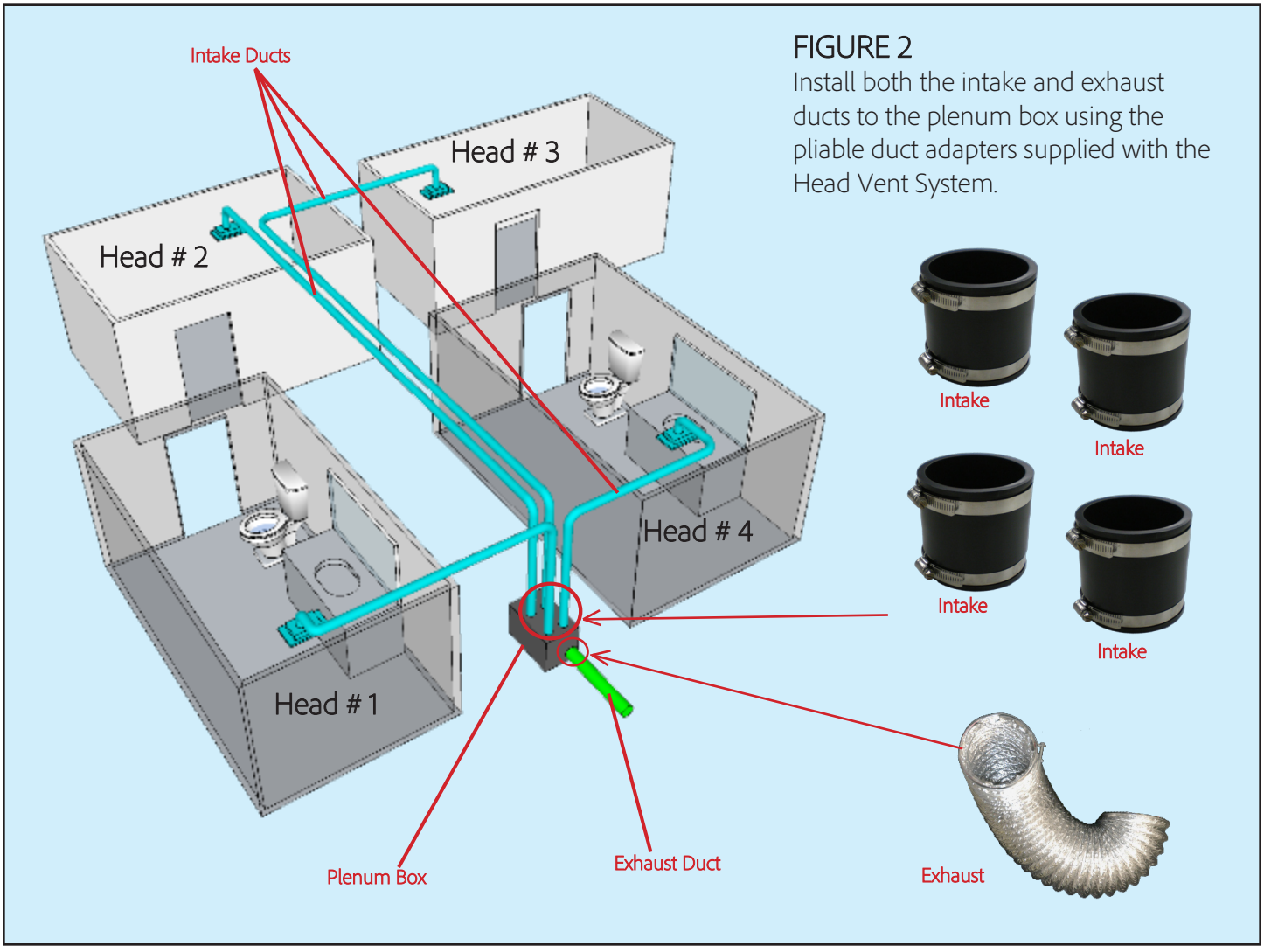

FIGURE 2
Install both the intake and exhaust ducts to the plenum box using the pliable duct adapters supplied with the Head Vent System.

STEP 3 - Run the Exhaust Duct

Plumb the exhaust duct from the black coupling on the plenum box to the exterior of the vessel. The ideal duct size is four inch in inside diameter (ID). It is important that this duct be as short and straight as possible in order to ensure optimal performance of the system. Ducts may be built with PVC, metal, flexible tubing or any other solid material.

The exhaust duct pipe should NOT be hard plumbed directly from the plenum box. Instead, use the duct adapter that has been provided with your Head Vent System (Refer to **FIGURE 2**). The use of the duct adapter section will reduces vibration and stresses on the plenum box and will also provide for a simple and straightforward installation of the Head Vent System.

System Installation
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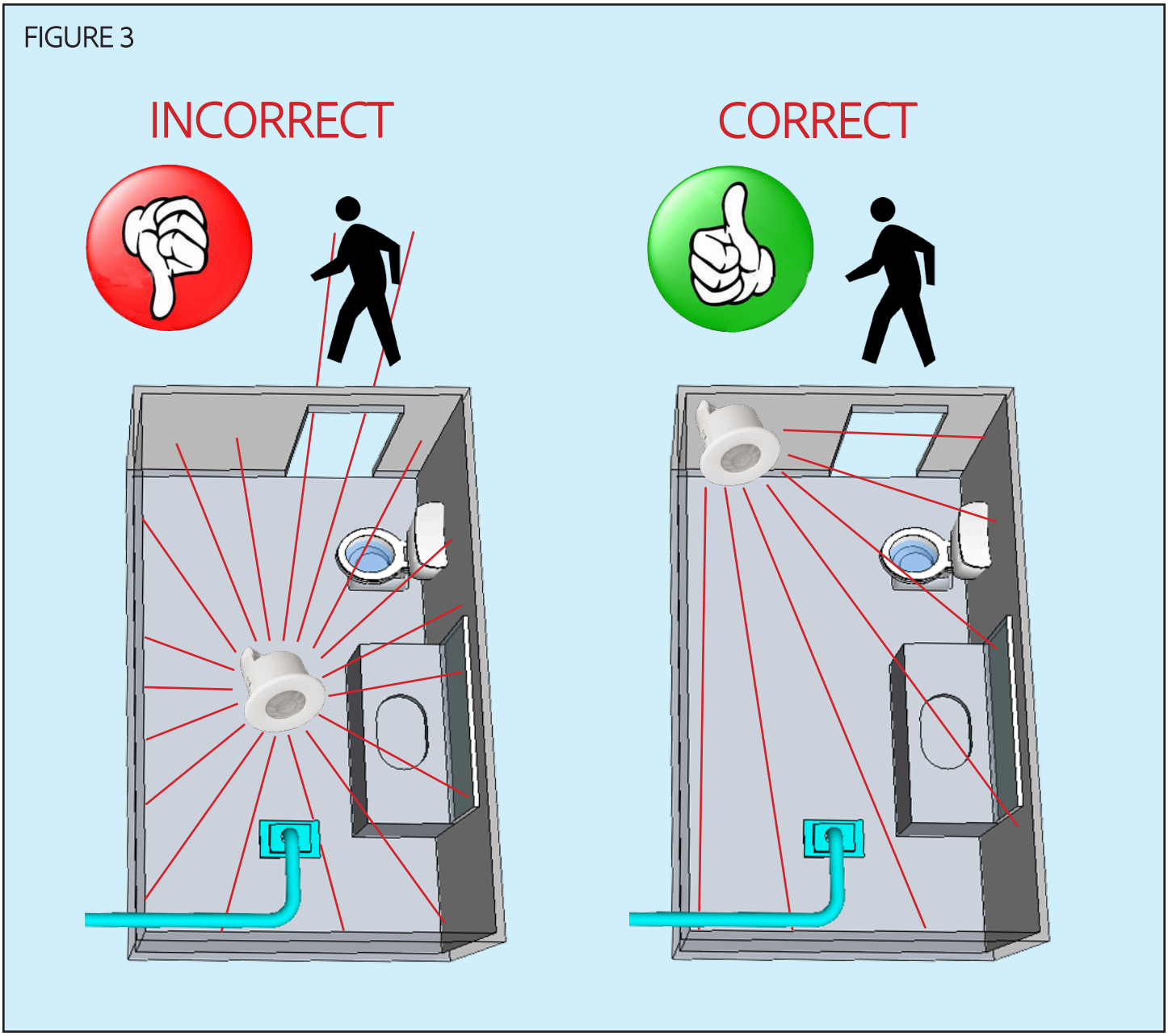
Proper operation of the Head Vent System depends on mounting the motion sensors in the correct location within each head. The motion sensors that come with the Head Vent System are very sensi-tive. If they are mounted incorrectly, they will read movement outside of the head, and the system will be triggered to turn on constantly as people move past the doorway just outside of each head.

*The correct location for the motion sensors are inside the door and off to one side in the ceiling of each head. If the installer wishes to locate the motion sensor in a wall panel, then they should do so in the same wall that the door is located in. **DO NOT** locate the motion sensor in the center of the head. In general, if the motion sensor can be seen from **anywhere** outside of the head, then it is not properly located and will start the head vent system at undesired times.*
(Refer to **Figure 3**)

FIGURE 3



System Installation
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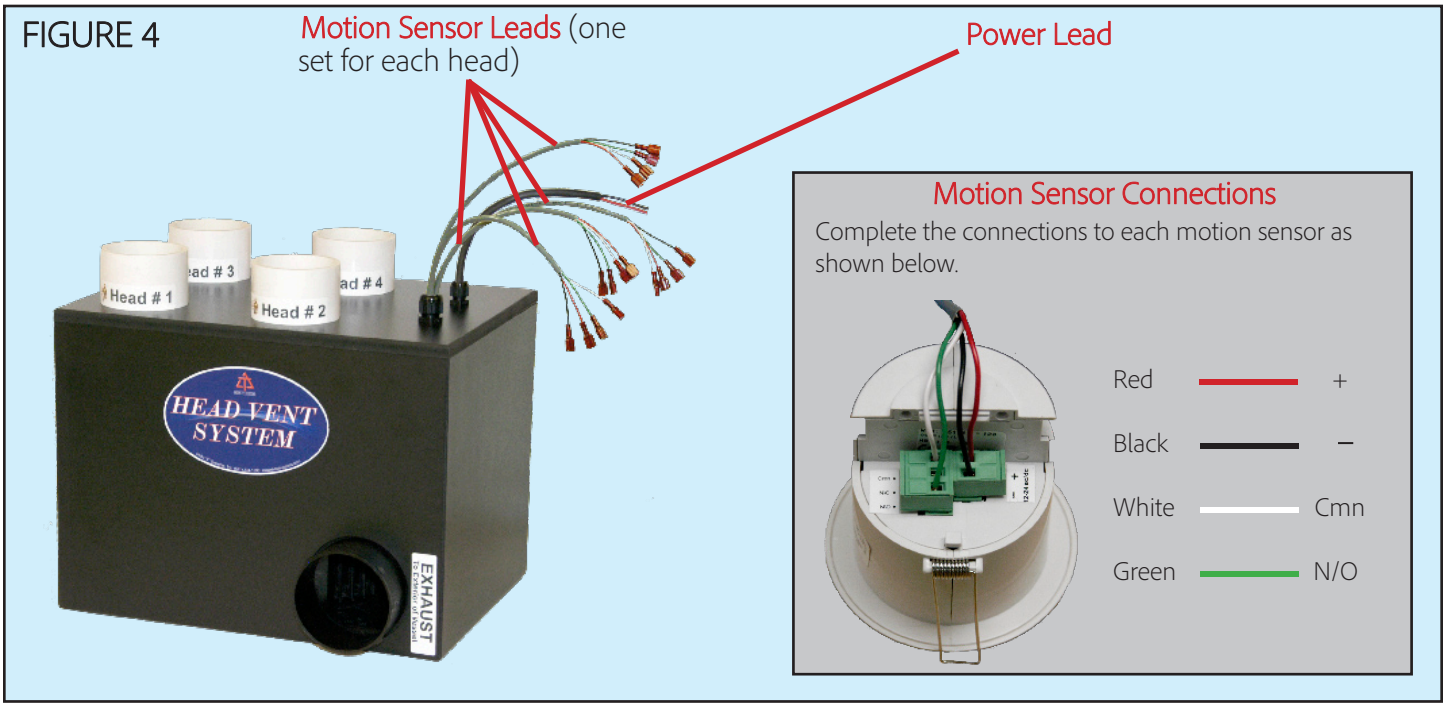
STEP 5 - Wire the Motion Sensors

There are four sets of wires emerging from the plenum box for connection to the motion sensors in each head (A three head system will have only three sets of leads). Each set is made up of four wires (Red, Black, White, Green) and is labeled to correspond to a particular head. Each set of motion sen-sor leads should be extended as needed and matched up with the corresponding head. For the pur-pose of extending the motion sensor leads to each head, use a minimum of 18 AWG, four conductor wire. Once the leads have been extended from the plenum box to each head, wire them to the motion detector as shown below. (Refer to **FIGURE 4** and the Wiring Diagram **Figure 5**)

FIGURE 4



STEP 6 - Connect the Head Vent System to Power

There is a single power lead emerging from the Head Vent plenum box consisting of two conductors (Refer to **FIGURE 4** and Wiring Diagram **Figure 5**). Connect these two leads to a 24 Volt DC power source with at least 20 Amps worth of current capacity.

STEP 7 - Powering Up and Testing

When all connections have been made, power the Head Vent System up by flipping on the breaker. Test each head by entering the space. The system will initiate and the flow of air will begin. After a moment, exit the head. A time delay will begin and the system will remain on for the span of that time delay, and then automatically shut down in that head when the time delay runs out. The duration of the time delay has been set at the factory to be approximately five minutes, however, the user may ad-just this setting with a screwdriver up to a thirty minute duration. It should be noted that this adjustment is very sensitive, and a small adjustment will increase the time delay by a relatively large margin.

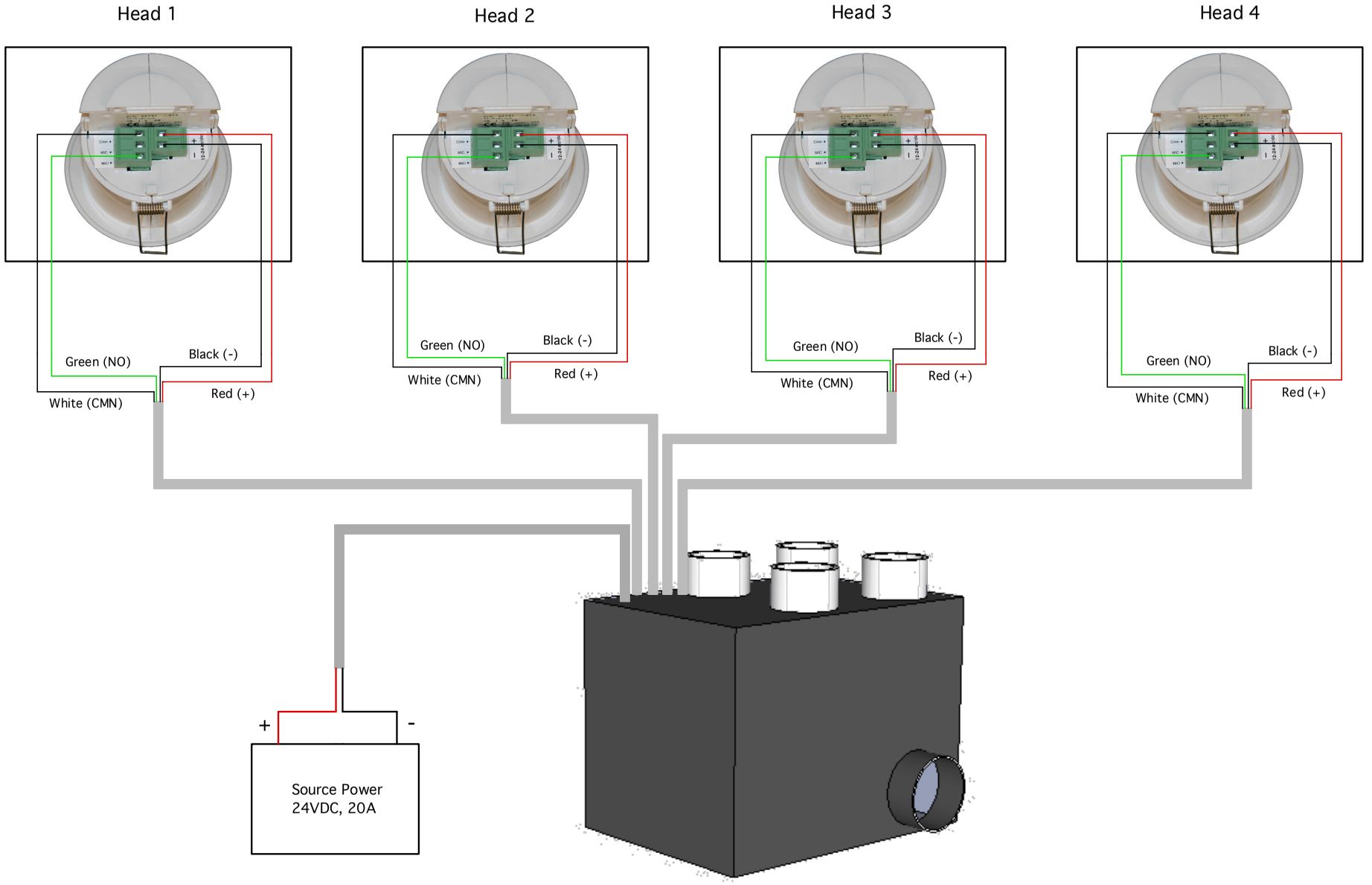


FIGURE 5

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

NO SCALE

600-HVS-24-4 Electrical Block Diagram

PROJECT NO.:		DRAWN BY: EWB	
DATE: 3/1/11	SHT: 1	OF: 1	
DWG NO.: XXX	REV NO.: NEW		

PLOT DATE: Wed, Aug 23, 2006

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