

OLFACTORY SYSTEM

**FIVE NOSE POKE WALL WITH STIMULUS LIGHTS AND
OLFACTORY STIMULUS**

ASSEMBLY MANUAL

DOC-182

Rev. 1.2

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notes

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CHAPTER 1 | INTRODUCTION

The Five Nose Poke Wall with Olfactory and Light Stimulus includes modified walls (ENV-115A-OF for rats and ENV-115C-OF for mice) that allow individual olfactory stimulus in each nose poke. A pressurized laboratory air supply or air pump (sold separately) provides air to each individual scent source. A check valve between the one-to-five manifold and the scent source container prevents the mixing of scents when the system is not pressurized. A normally closed valve prevents the scent stimulus from reaching the nose poke until the valve is activated. Only one scent source is connected to each nose poke. Activation of the control valve allows the olfactory stimulus to be presented in the nose poke.

One or more of the valves may be activated at the same time depending on the protocol of the experiment. The olfactory stimulus is removed from the nose poke cavity via an exhaust port located in the roof of the cavity. All five nose pokes are connected to a five-into-one manifold that needs to be connected to a vacuum pump (sold separately). This system provides a continuous evacuation of air from all five nose pokes simultaneously when connected to a vacuum source.

Hardware Guide

Figure 1-1- Optional Air and Vacuum Pumps

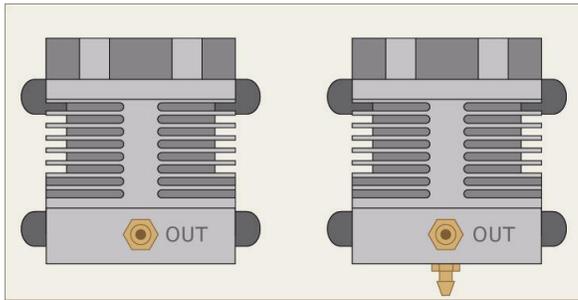


Figure 1-2 – One-into-Five Manifold

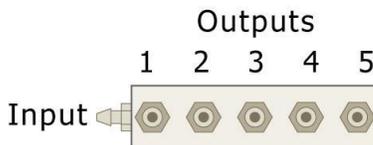


Figure 1-3 - Scent Jars

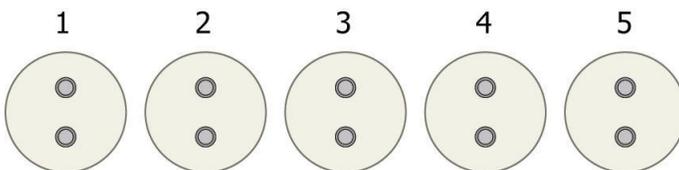


Figure 1-4 – Solenoid Valves

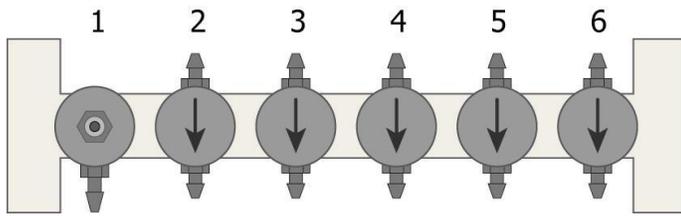


Figure 1-5 - Nose Poke Ports (Mounted on the Nose Poke Wall)

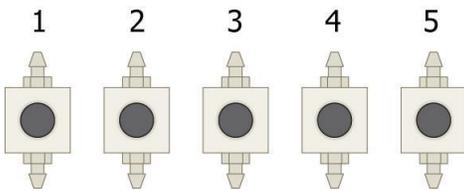
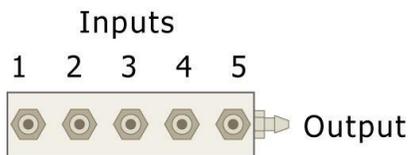


Figure 1-6 – Five-into-One Manifold (Mounted on the Back of the Nose Poke Wall)

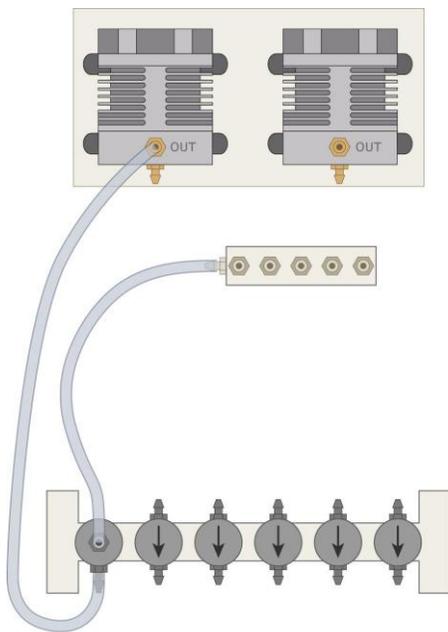


CHAPTER 2 | PLUMBING INSTRUCTIONS

The Five Nose Poke Wall with Olfactory and Light Stimulus requires minimal assembly; however a detailed plumbing guide is included in the event that the system is disassembled for maintenance. All tubing used in this system is 3/16-inch O.D. Tygon.

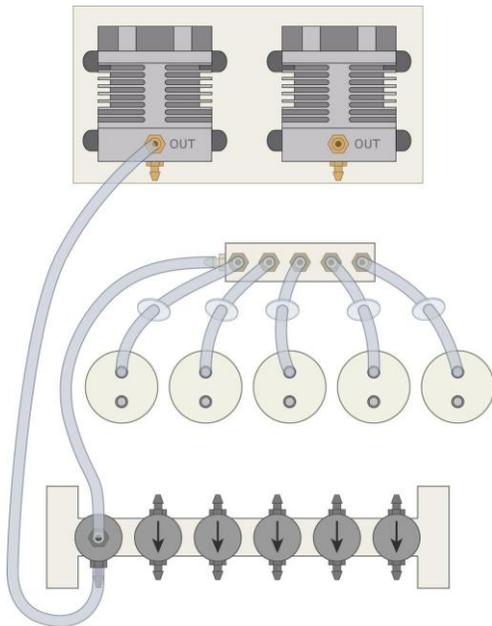
1. Use a 24-inch length of tubing to connect the OUT fitting on the optional air pump or pressurized laboratory air supply to the input on solenoid valve #1, shown in Figure 1-4.
2. Using a 12-inch length of tubing connect the output on solenoid valve #1 to the Input on the 1-into-5 manifold (Figure 1-2). The system will now appear as shown below.

Figure 2-1 - Solenoid Valve #1 Properly Connected



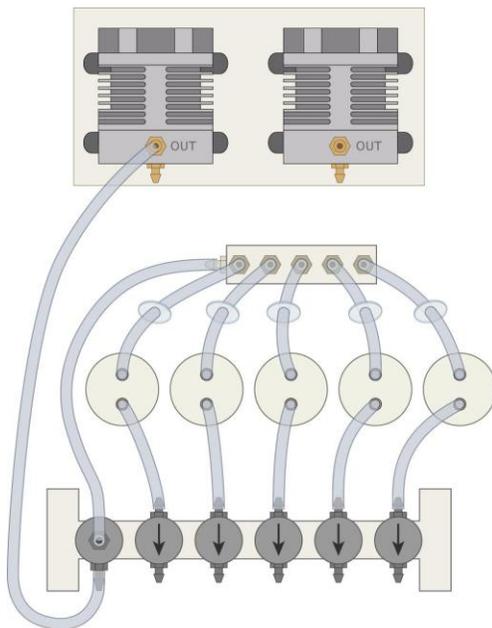
3. Connect Outputs 1-5 on the 1-into-5 manifold (Figure 1-2) to the inputs on the scent jars (the inputs have the black tubes inside the jar) using the lengths of tubing that include check valves. Each of these lengths is constructed of a 3.5-inch section of tubing, a check valve and a 4.5-inch section of tubing. Refer to Figure 2-2.

Figure 2-2 - 1-Into-5 Manifold Connected Properly



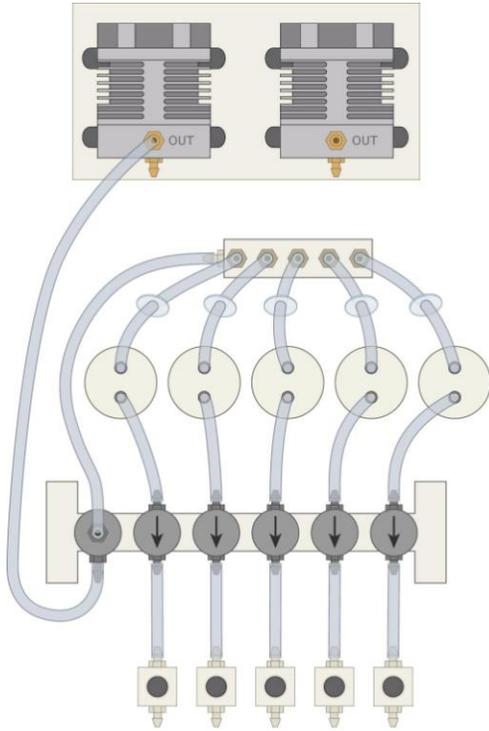
4. Using 10.5-inch lengths of tubing connect the outputs on the scent jars to inputs on solenoid valves 2-6, as shown in Figure 2-3.

Figure 2-3 - Scent Jars Connected to Solenoid Valves



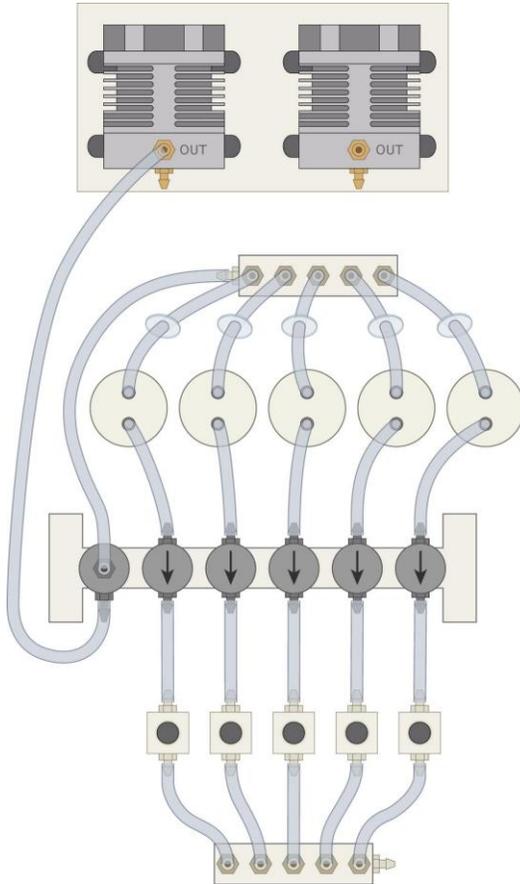
- Using 7-inch lengths of tubing, connect the solenoid valve outputs to the barb fittings on the bottom of the nose pokes. The system will appear as shown in Figure 2-4.

Figure 2-4 - Solenoid Valve Outputs Connected to Nose Pokes



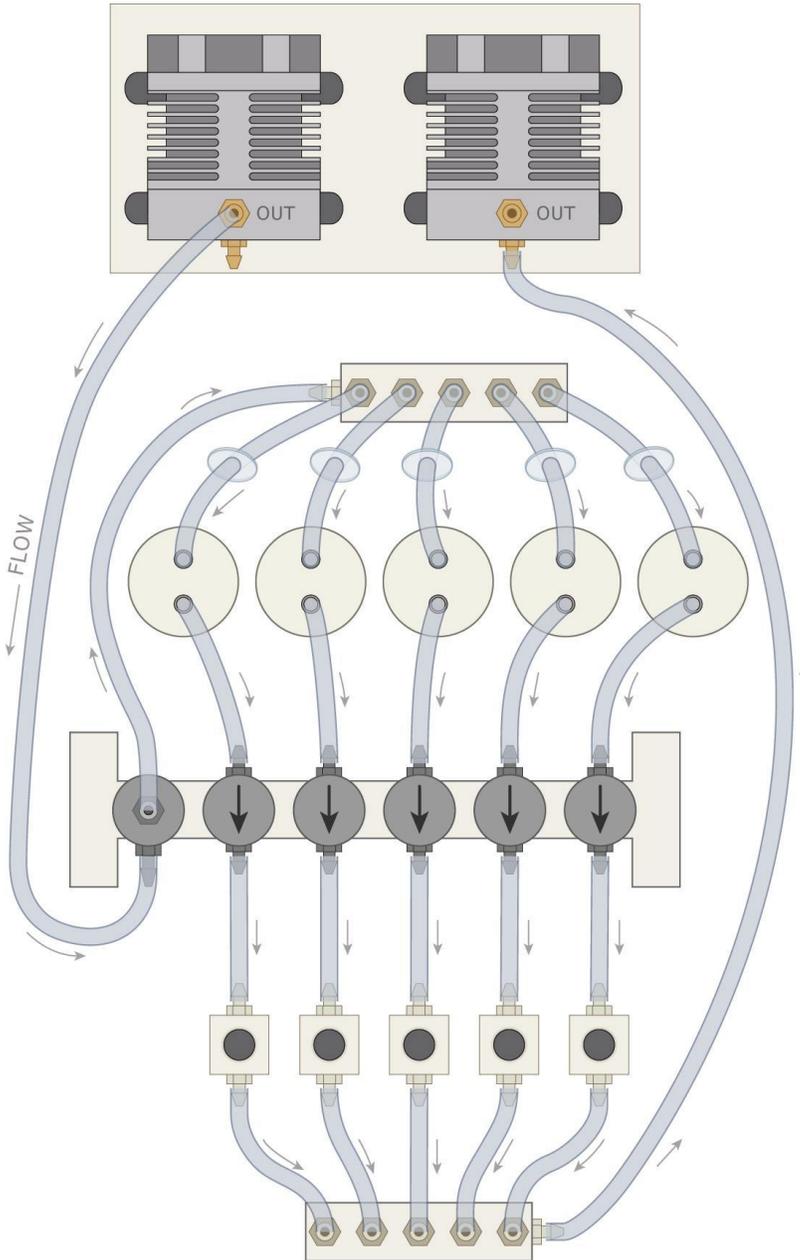
- Using the tubing included with the Nose Poke Wall, connect the barb fittings on the top of the top of the nose pokes to the inputs on the 5-into-1 manifold, as shown in Figure 2-5.

Figure 2-5 - Nose Pokes Connected to 5-Into-1 Manifold



- Using the length of tubing included with the Nose Poke Wall, connect the output on the 5-into-1 manifold to the optional vacuum pump, as shown in Figure 2-6. The plumbing is now complete. Figure 2-6 also indicates the flow of air through the completed system.

Figure 2-6 - Manifold Output Connected to Vacuum Pump



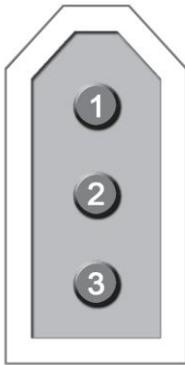
CHAPTER 3 | WIRING INSTRUCTIONS

Solenoid Valves

There are six 3-pin Molex connectors that correspond to each of the six solenoid valves. The Olfactory System solenoid valves have been designed to connect to the outputs on a standard Med Associates connection panel (Smart Control or Passive). Activating the output will open the solenoid.

If the plumbing of the system is completed as shown above then connector 1 allows air flow from the air pump to enter the 1-into-5 manifold. Connector 2 controls scent jar 1, connector 3 controls scent jar 2, etc.

Figure 3-1 - Numbered Molex Connector



The following chart includes the pinouts for each connector. Pin 1 is not used on any of the connectors, and therefore is not included in the table. If a connection panel is not to be used, connect Pin 2 on each connector to 28 Volt ground and the Pin 3 on each connector to +28 Volts.

Table 3-1 - Wire Colors for Solenoid Connectors

Connector #	Pin 2	Pin 3
1	Gray	Purple
2	Brown	Yellow
3	Tan	Pink
4	White	Green
5	Blue	Orange
6	Black	Red

Nose Pokes

Each of the five nose pokes has a control cable that terminates in two 3-pin Molex connectors. One of these connectors controls the light stimulus and the other controls the response signal. The response connectors provide voltage for the light stimulus and therefore must be connected for the lights to function. The pinouts for each are shown in the following tables. Refer to Figure 3-1 for the Molex pin numbers.

Light Conductor Connector

Table 3-2 - Light Conductor Connector Pinout

Molex Pin #	Function	Wire Color
1	Not Used	
2	Yellow Light Activate	Green
3	Not Used	

This connects to any available Output on a Standard MED Connection Panel. When the output is activated the light will turn on.

Response Connector

Table 3-3 - Nose Poke Response Connector Pinout

Molex Pin #	Function	Wire Color
1	28 Volt Ground	Black
2	Nose Poke Response	White
3	+ 28 Volts	Red

This connects to any available Input on a Standard MED Connection Panel. When the infrared beam is broken an input will be generated.

Optional Air and Vacuum Pump

Use the included power cords to connect the optional air and vacuum pumps to standard wall outlets.

Appendix A | Contact Information

Please contact MED Associates, Inc. for information regarding any of our products.

Visit our website at www.med-associates.com for contact information.

For technical questions, email support@med-associates.com.