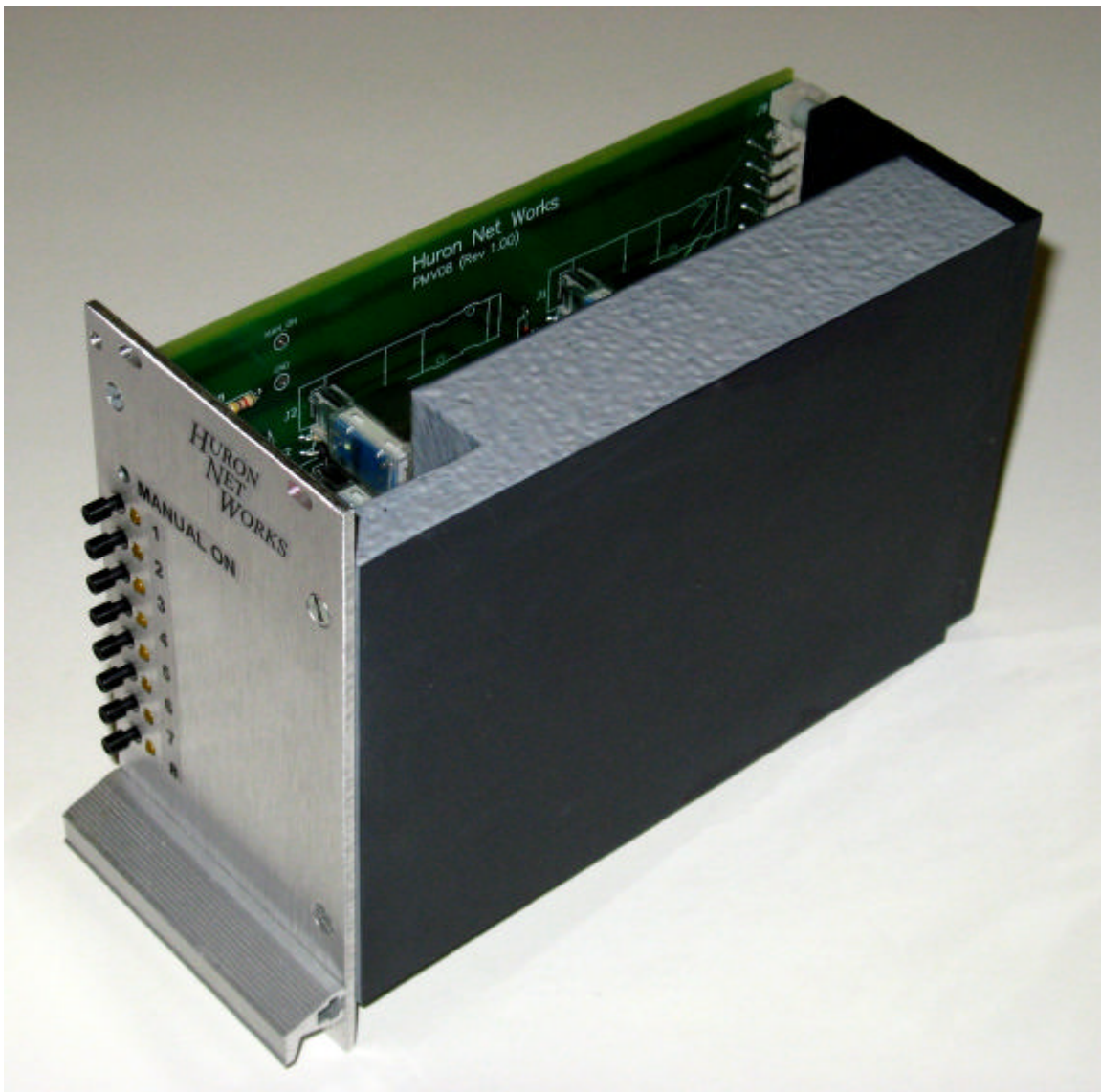


Huron Net Works

PNEUMATIC MANIFOLD VALVE

PMV08 (Rev 1.00) Operating Manual

P/N: 2505005 Rev 1.00



Introduction

The PMV08 Pneumatic Manifold Valve module is designed to eliminate any potential of fire or explosion hazard from the manufacturing environment. The module is intended to be located outside of and away from any hazardous areas. Only the pneumatic output of the module should be used inside of a hazardous environment. Also, the electrical and pneumatic connections to the manifold identified in this PMV08 Operating Manual should be strictly adhered to insure safe operation. Before installing the PMV08 module:

READ AND UNDERSTAND THE CONTENTS OF THIS OPERATING MANUAL BEFORE INSTALLING OR OPERATING THE EQUIPMENT CONTROLLED BY THIS MODULE

The PMV08 has been designed and manufactured without silicone or any other potential contaminants. The manifold consists of PVC (Poly-Vinyl Chloride) and two-part epoxy plastics. The solenoid consists of aluminum valves and body with polymeric seals. No lubricants are used anywhere within the pneumatic system.

System Overview

The PMV08 module consists of three major sub-systems. The electronic PCB (Printed Circuit Board), the solenoid valves, and the pneumatic manifold.

The electronic PCB is controlled with a 24-volt input from an external controller. The 24-volts actuates the solenoid through control circuits on the PCB. A PCB mounted LED (light emitting diode) is used to identify when the solenoid is actuated and that circuit may be pressurized. An integral push button switch is used to manually actuate the solenoid for electrical testing and system checks. An additional LED is provided to define when an external "MANUAL ON" command is supplied.

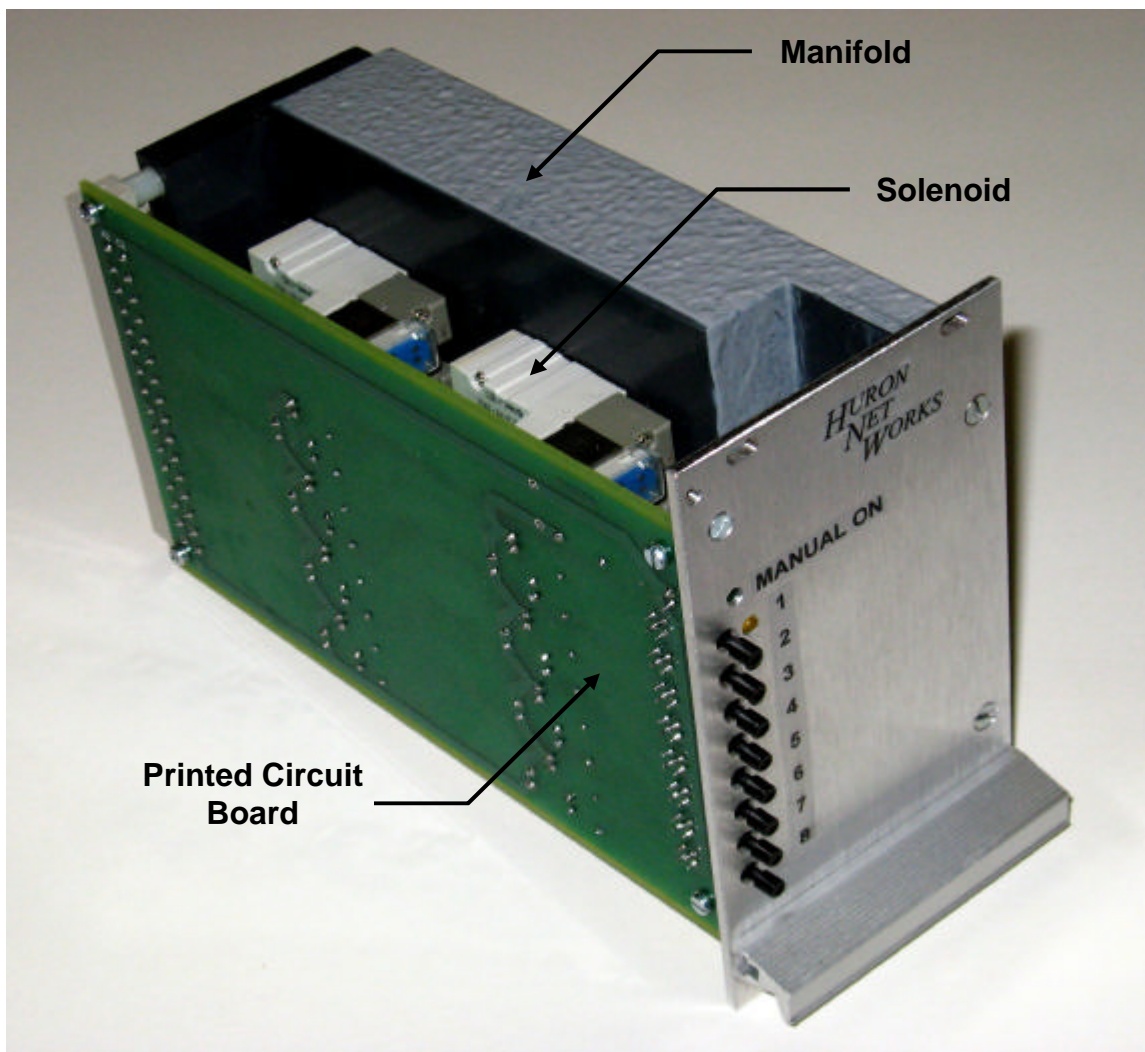
The solenoid controls the pressure supplied to the PMV08 through the manifold to the Apply port and exhausts the apply pressure when the electrical command is removed. This particular solenoid is a "normally closed" valve. Pilot pressure control of the slave valve in the solenoid is obtained internally from the supply port. A minimum supply pressure is required to control the operation of the solenoid.

The pneumatic manifold consists of several layers of PVC Type I material. The PVC is machined with several ports and channels to direct the externally supplied air pressure. The ports are:

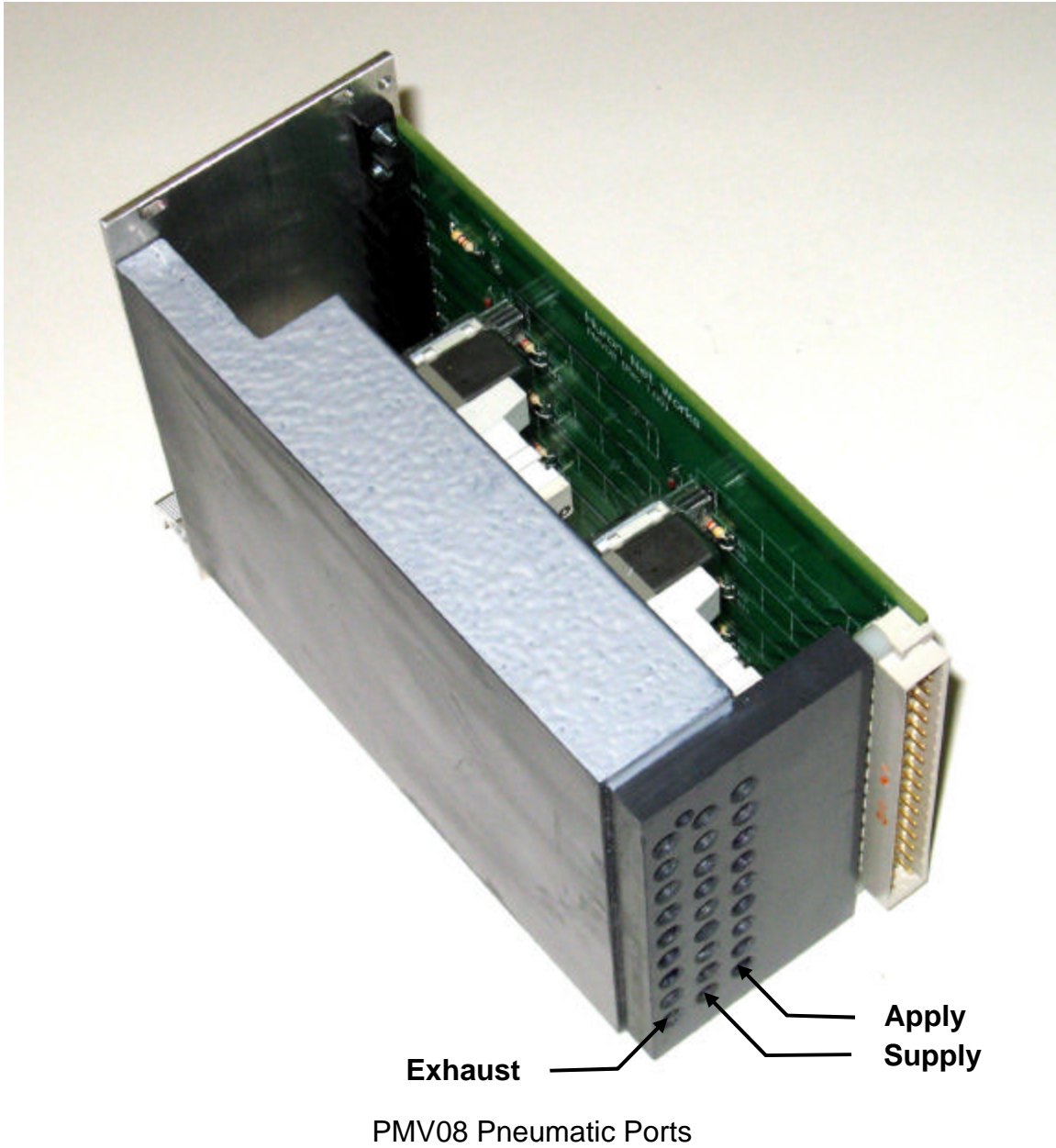
Supply – The Supply port accepts externally supplied pre-conditioned air as required by the system to be controlled. The only requirement of the PMV08 is air that is clean and free of foreign particles. The PMV08 module does not require a “dry” air to function.

Apply – Directed output from the Supply port to control the manufacturing system. The Apply port is normally connected to the Exhaust port. Only a commanded signal to the solenoid will apply a pressure to this port.

Exhaust - Port used to release pressure from the controlled manufacturing system. While a backpressure can be maintained at the Exhaust port, this is not recommended. Without an electrical signal applied to the solenoid the Apply port is connected to the Exhaust port.



PMV08 Module Systems



Installation

The PMV08 module is designed to be a rack mount. Any rack similar to the Schroff Subracks – *europacPRO* can be used to mount the module. The procedure for installation of the PMV08 is as follows:

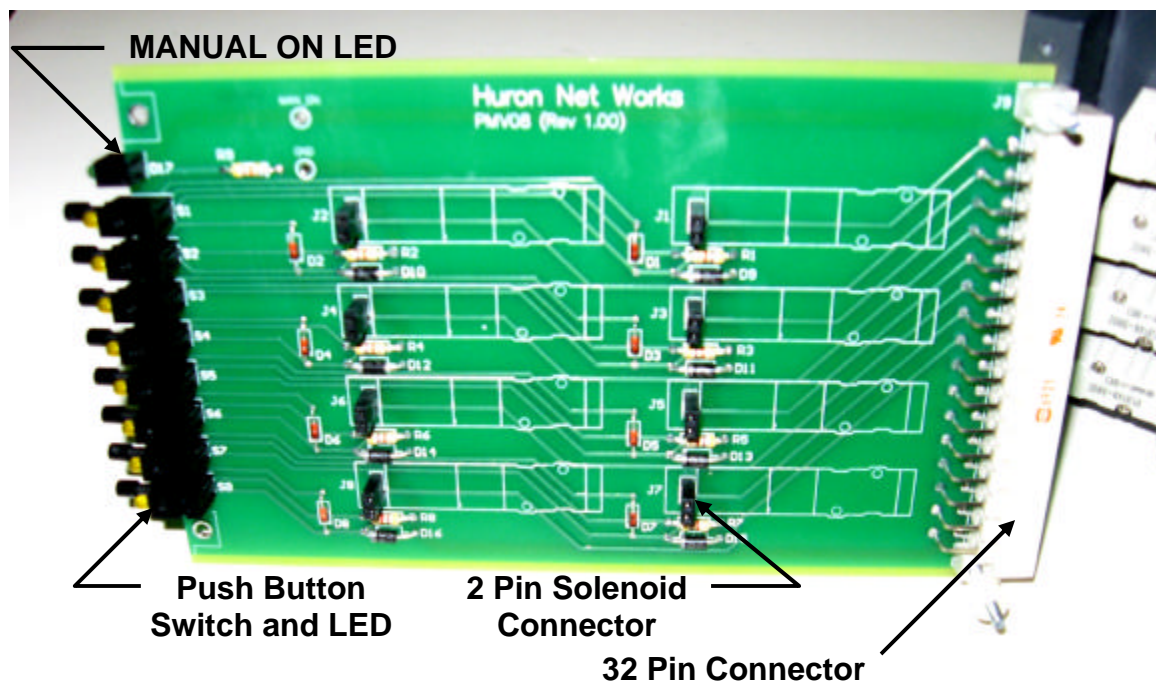
1. Install the pressure transfer gasket into the ports at the rear of the PMV08 module. (GASKET IS NOT PROVIDED WITH THE MODULE)
2. Lubricate the Outside Diameter of the exposed gasket transfer tubes with an approved lubricant.

Extreme caution should be used in the selection of a lubricant to insure the manufacturing system does not become contaminated.

3. Insure the rack mounted mating electrical connector and pressure block is mounted to the rack at a total width of 14T. (ELECTRICAL CONNECTOR AND PRESSURE BLOCK ARE NOT PROVIDED)
4. Align upper and lower guide rails with the left side of the electrical connector.
5. Slide PMV08 module into the rack using the PCB in the guide rails for alignment.
6. Push module firmly into place until gasket and electrical connector are completely seated.
7. Screw the four retaining screws (included with the PMV08 module) into the rack until seated.

NOTE: A slot is provided at the bottom of the PMV08 module to allow easy removal for maintenance or repair. Insure that the retaining screws are fully removed from the rack before prying on the module at the slot. Damage to the module will occur if the screws are not removed before disassembly.

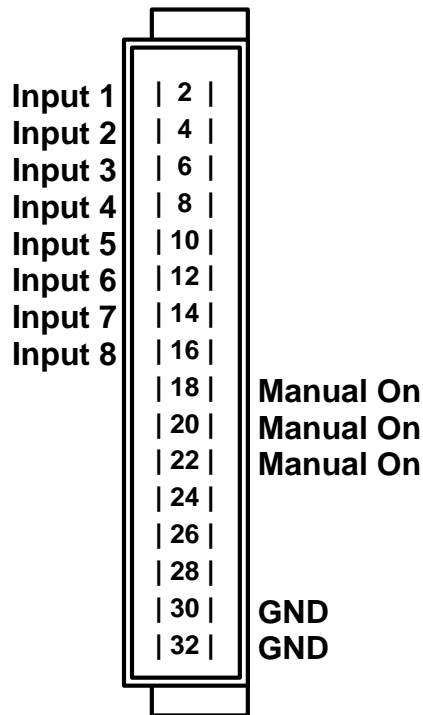
Electrical Connection



PMV08 Printed Circuit Board

The PCB interfaces consist of a 32-pin connector, 8 - 2 pin solenoid connectors, and 8 push button manual switches with integral LED.

Control of the PMV08 is provided through a 32 pin Harding 6921 male connector mounted to the PCB. Connection to the rack mounted female connector is accomplished when the module is inserted and seated into the rack. The electrical connector pin assignments are as follows:



32 Pin PCB Connector
Electrical Pin Assignments

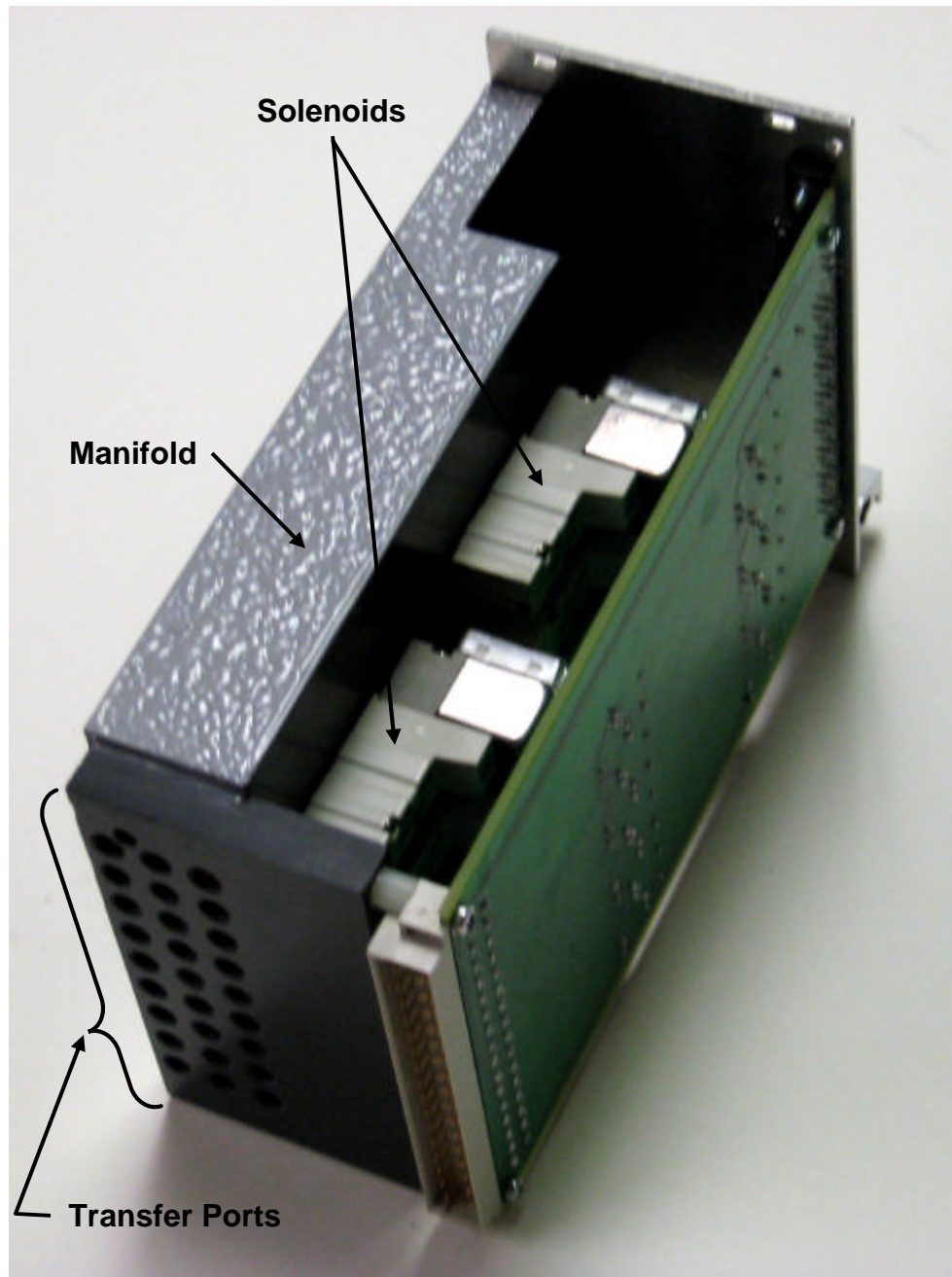
Control of each of the eight solenoids is provided through a two-pin connector integrated into the PCB. The connection with the solenoid is completed during the assembly of the PCB to the module and secured with the four PCB mounting screws.

The push button manual switches are accessible from the front panel. Depressing a button switch activates that particular solenoid. Simultaneously, the LED is illuminated. The LED is also illuminated when an external command is applied to the solenoid.

An additional LED is used to indicate the MANUAL ON is applied through the 32-pin PCB connector.

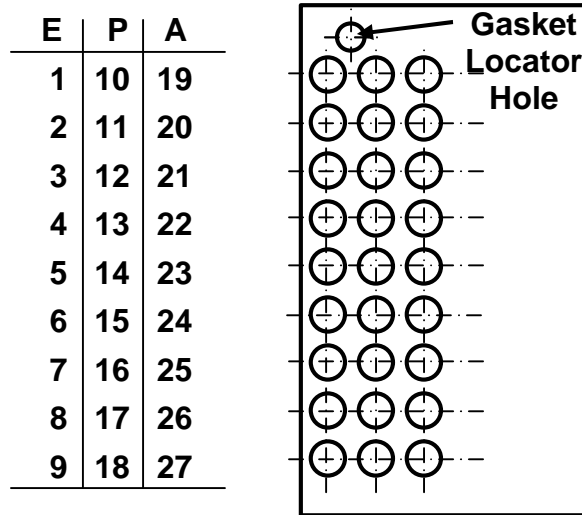
Pneumatic Control

Eight SMC SYJ314 solenoids mounted to the manifold provide pneumatic control. The solenoids are “Normally Closed” to insure that the Apply circuit is connected to the Exhaust circuit until the electrical command is applied to the solenoid. With a command signal applied the Supply pressure is applied to the Apply circuit.



PMV08 Assembly Showing Solenoids and Pneumatic Ports

The transfer ports are designed to match an existing gasket used in paint booth systems. Unlike the existing control module the PMV08 module uses internal pilot pressure to control the solenoid. Therefore, the external pilot pressure is not required, or used. These are identified in the drawing as E1, and P10. The A19 is not used with either of the control modules.



Pneumatic Transfer Port Identification

An additional hole is used for locating the transfer gasket. While this hole does not affect the operation of the system it does insure that the transfer tubes are in the same location. Therefore, the lubricated surface of the gasket transfer tubes will always be inserted into the pressure block mounted to the sub-rack. This will insure that the gasket will stay with the module when separated.

Maintenance

No maintenance is required for any of the components in the PMV08. However, in the unlikely event that one of the components requires servicing you should contact Huron Net Works for the replacement part. This will insure the PMV08 will continue to operate at peak performance.