

APPLICATION

The Pneumatic Plug-In Control System is designed to ease the assembly and Installation of a pneumatic control system in several ways. The modularity of design and assembly speeds the prebuilding of panels and simplifies field hookup through the use of easily identified connections. The modular format allows the use of simplified engineering drawing symbols developed specifically for Plug-in controls so that panels may be built "as drawn" directly from the submittal drawings. In addition, final system start-up and calibration checks are made easier because the panels match the drawings they were built from, thereby saving field labor time.

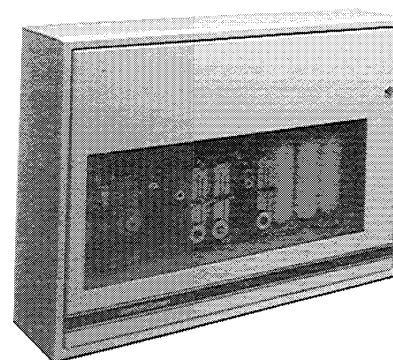
Table-1 SPECIFICATIONS.

Model Number	Dimensions inches	Description
PCP-12W-BC	30 x 21 x 7	Window Door, Left Hinge 12 Place
PCP-12WR-B C	30 x 21 x 7	Window Door, Right Hinge 12 Place
PCP-6WL-BC	18 x 21 x 7	Window Door, Left Hinge 6 Place
PCP-6WR-BC	18 x 21 x 7	Window Door, Right Hinge 6 Place
MCS-BP1-P*	10 x 2	1 Place Bracket
MCS-BP4-P*	10 x 8	4 Place Bracket
MCS-BP6-P*	10 x 12	6 Place Bracket
MCS-BP10-P*	10 x 20	10 Place Bracket
MCS-BP12-P*	10 x 24	12 Place Bracket
MCS-S-P	N/A	Socket Assembly (includes one MCS-PS, one MCS-G, four MCS-Screw and fifteen MCS-Plug)

*Includes necessary mounting screws.

ACCESSORIES & REPLACEMENT PARTS

PLEX-12	Plexiglass Window, 12 Place Panel
PLEX-6	Plexiglass Window, 6 Place Panel
N100-9915	Lock and Key Assembly
MCS-PS	Plug Strip
MCS-Label	Card of Socket Labels (24 per card)
MCS-CV	Check Valve
MCS-GA	Gauge Adapter
MCS-CP	Cover Plate (for an unused MCS-S-P Socket)
MCS-CT	Check Valve Tee
MCS-GM-P	Gauge Module & Mounting Screws
MCS-GMF-P	Gauge Mounting Fitting & Mounting Screws
MCS-MS	Mounting Screw
MCS-Tube	500ft. Roll
N100-2501	In-Line Restrictor
N100-2502-P	Main Air Header 3/8" fpt input port and nine (9) output ports for MCS-Tube Tubing (includes mounting screws)
MCS-Plug	Sealing Plug
MCS-TC	Tubing Connector
MCS-PTS-P	Pneumatic Terminal Strip & Mounting Screws
N4-150	Adjustable Needle Valve



PRE-INSTALLATION

Inspection

Visually inspect the carton for damage. If damaged, notify the appropriate carrier immediately. Visually inspect the device for obvious damage due to shipping. Return damaged parts to place of purchase.

Clean, Dry Oil Free Air Supplies for Pneumatic Systems

Caution: A refrigerated air dryer, particulate filter and a coalescing filter will provide clean dry, oil free air required (reference EN-123).

Compressor oil must be non-paraffin mineral base or naphtha base. Synthetic or paraffin base oils will destroy pneumatic controls and void the warranty.

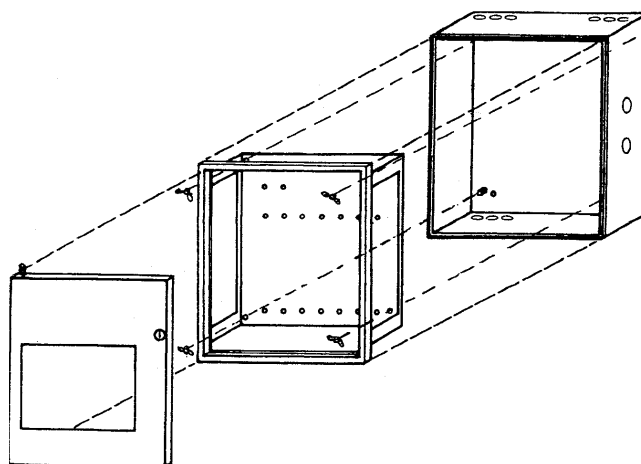


Figure-1 PCP-6WL-BC Control.

CONTROL PANELS

These enclosures are designed expressly for the Pneumatic Plug-in control system, which have a one piece bezel and backplate assembly that is removable. This allows the panels to be stacked or flush mounted.

The window door allows the monitoring of system operation (gauge read-outs and setpoints), while maintaining a locked cabinet to avoid unauthorized tampering. Two sizes are available; one which will accept up to a 6 place backplate and one that will accept up to a 12 place backplate.

The PCP series Control Panels are fabricated in such a way as to permit the mounting of the outer shell or ring to the wall at any time during the construction period. Three 5/16" mounting holes are provided: 2 round and 1 key slotted. The key slotted hole is on the top center to facilitate alignment. This allows all conduit connections and wiring, tubing, etc. to be roughed into the panel without fear of damaging panel-mounted components. The bezel with back pan and the door with all pneumatic devices installed and pneumatic connections made can then be slipped into place and held to the ring by four wing nuts. The removable door is attached to the bezel by means of a spring-loaded top hinge pin.

All models are provided with painted beige finish and include a lock and keys.

BACKPLATES

The backbone of a Plug-In control panel is the backplate. Backplates come in five convenient sizes to accept 1, 4, 6, 10 or 12 devices per backplate. The backplates are predrilled for mounting to panel backs or other mounting surfaces as

necessary (sheet metal screws provided), and may be used singularly or in combination as needed for a particular application.

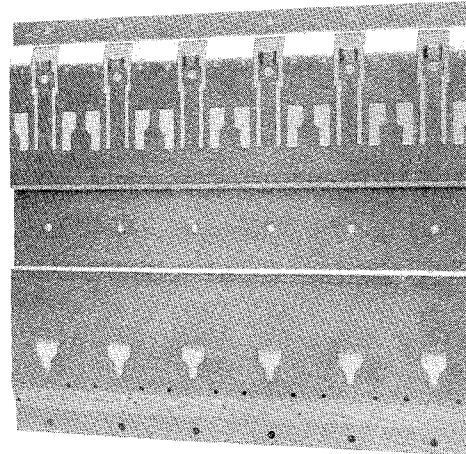


Figure-2 Model MCS-BP6-P Backplate Panel.

SOCKET

The socket assembly (MCS-S-P) snaps directly into the backplate and locks into place providing the mounting base for the Plug-In devices. Each socket is furnished with a plug strip (MCS-PS) preinstalled to seal the five end ports across the top of the socket. Any number of plugs may be removed as needed in order to access these ports which are common to their respective rows of three tubing connections on the socket face. In addition, there is a space provided on the socket for placing a device identification label (MCS-Label). Sockets may be removed by depressing the locking tab on the backplate and pushing the socket upwards.

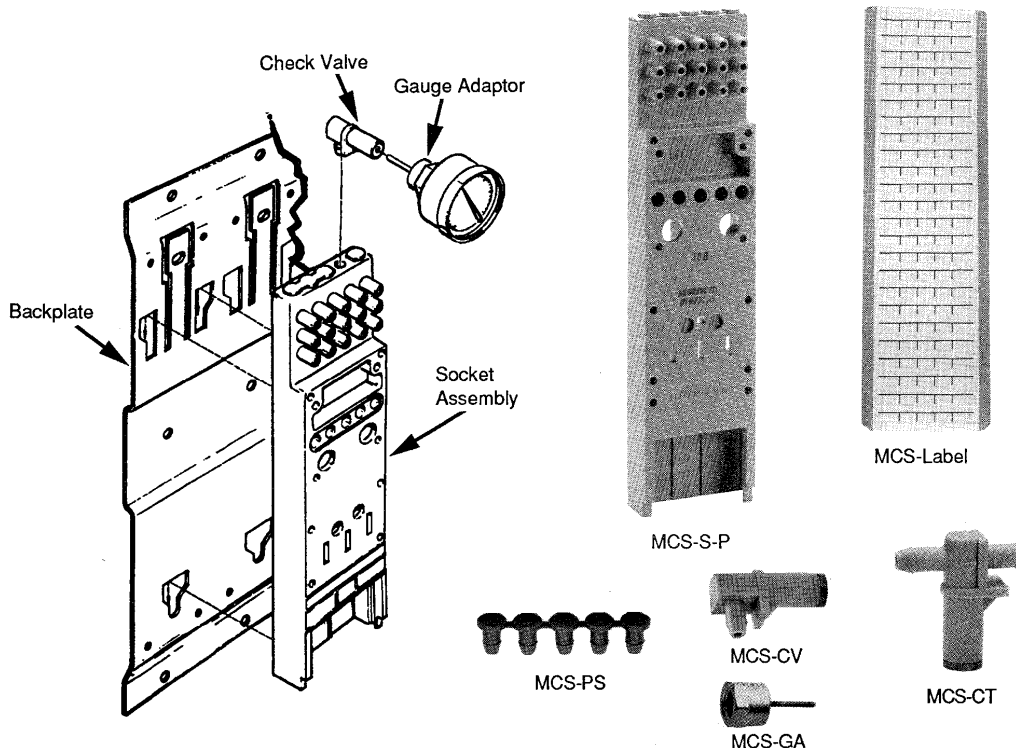


Figure-3 Socket Assembly.

Measurement of selected input or output pressures may be done through the use of a check valve assembly (MCS-CV) which can be installed in the respective end port of the socket. The MCS-CV check valve assembly may be installed temporary or permanently. An air gauge with receiver gauge adapter (MCS-GA) is used to measure the selected pressure. This gauge may be left installed in the check valve assembly if it is desired to continuously monitor the selected pressure. Also, available for in-line mounting in the panel tubing (MCS-Tube) is a check valve tee, MCS-CT.

GAUGE INSTALLATION

To facilitate the mounting of pressure or receiver gauges on the panel, a gauge module (MCS-GM-P) is used. This module will accept up to three 1/8" pipe, back connected gauges, each mounted on a gauge module fitting (MCS-GMF-P). These fittings are installed on the gauge module as needed. Gauges may be either 1-1/2" or 2" diameter sizes. The gauge module is attached to the backplate with four MCS-MS mounting screws. These same screws are used to attach the gauge fittings to the gauge module.

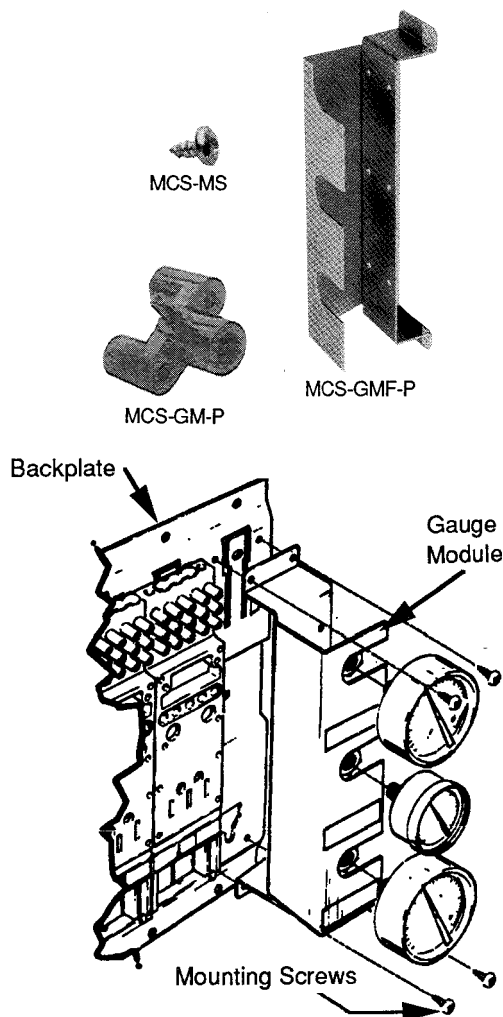


Figure-4 Gauge Module Assembly.

DEVICE INSTALLATION

All Plug-in relays, controllers and switches are designed to be mounted directly to a socket (MCS-S-P). The devices are assembled to the socket by first placing a gasket (MCS-G) over the prongs on the device and then attaching the device to the socket with mounting screws (MCS-Screw).

The R527 and R528 relays require an electrical contact assembly (MCS-EC) which slides into the bottom of the socket and snaps into place. An optional electrical carrier (MCS-EB) may be added if required.

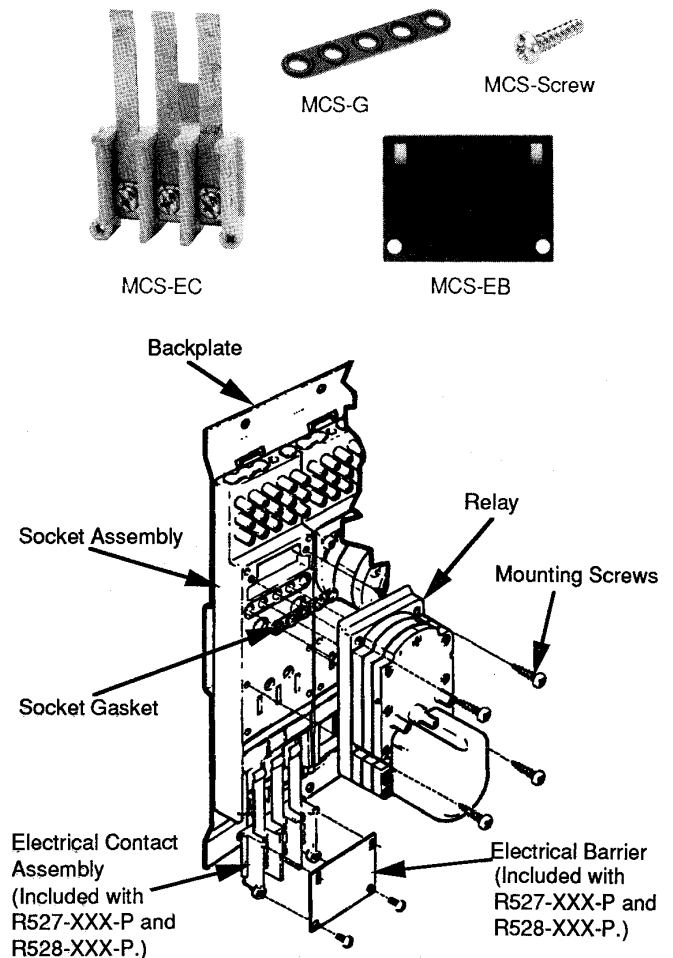


Figure-5 Pneumatic Plug-In Installation.

PIPING INSTRUCTIONS

After the individual controls are installed on sockets and in position on the backplate, it is time to pipe them together as shown in Figure 6. This is done with MCS-Tube. This tubing is a 5/32" I.D., thick wall, polyurethane tubing, formulated specifically for the application. It resists kinking and provides a tight seal under a wide range of environmental conditions. ONLY MCS-TUBE TUBING is recommended for use in these Plug-in panels.

Piping jumpers are cut to length when piping the panel. Care should be taken to use a long enough piece of tubing in order to avoid kinking on short connections. In-line restrictors (N100-2501) may be utilized by inserting them into

appropriate jumpers where necessary. Socket ports that have a signal or main air supply to them, but are not needed for piping connections, must be plugged using MCS-Plug plugs.

External tubing connections to the Plug-in panel are done easily and neatly by utilizing a pneumatic terminal strip (MCS-PTS-P). Tubing connections are numbered 1 thru 10 on one side and 11 thru 20 on the other side in case it is necessary to utilize more than 10 connections per panel. The MCS-PTS-P is mounted to the panel in the appropriate position to allow access for external connections. (See Figure 6.)

Tubing connections to the socket end may be made by removing the pre-installed plug from the appropriate port and installing a connector fitting (MCS-TC). Connections from tubing connector to the terminal strip are made utilizing the MCS-Tube Plug-in tubing. Connections from the terminal strip to the external devices and equipment may be made with standard "FR" type polyethylene tubing.

Clean, Dry Oil Free Air Supplies for Pneumatic Systems

Caution: A refrigerated air dryer, particulate filter and a coalescing filter will provide clean dry, oil free air required (reference EN-123).

Compressor oil must be non-paraffin mineral base or naptha base. Synthetic or paraffin base oils will destroy pneumatic controls and void the warranty.

MAINTENANCE

Regular maintenance of the total system is recommended to assure sustained optimum performance.

REPAIR

NONE- Replace the entire unit.

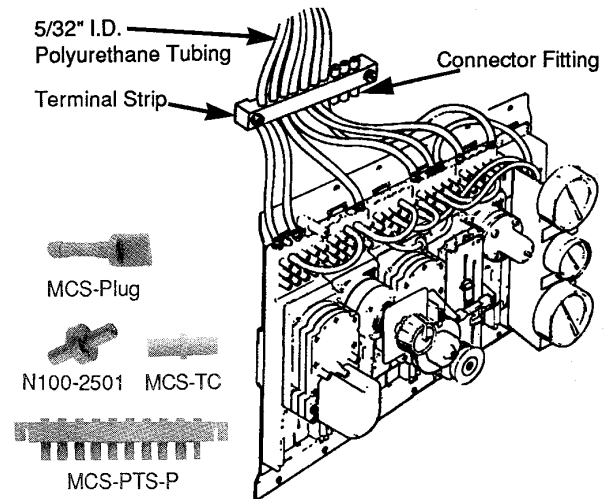


Figure-6 Piping Installation.

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