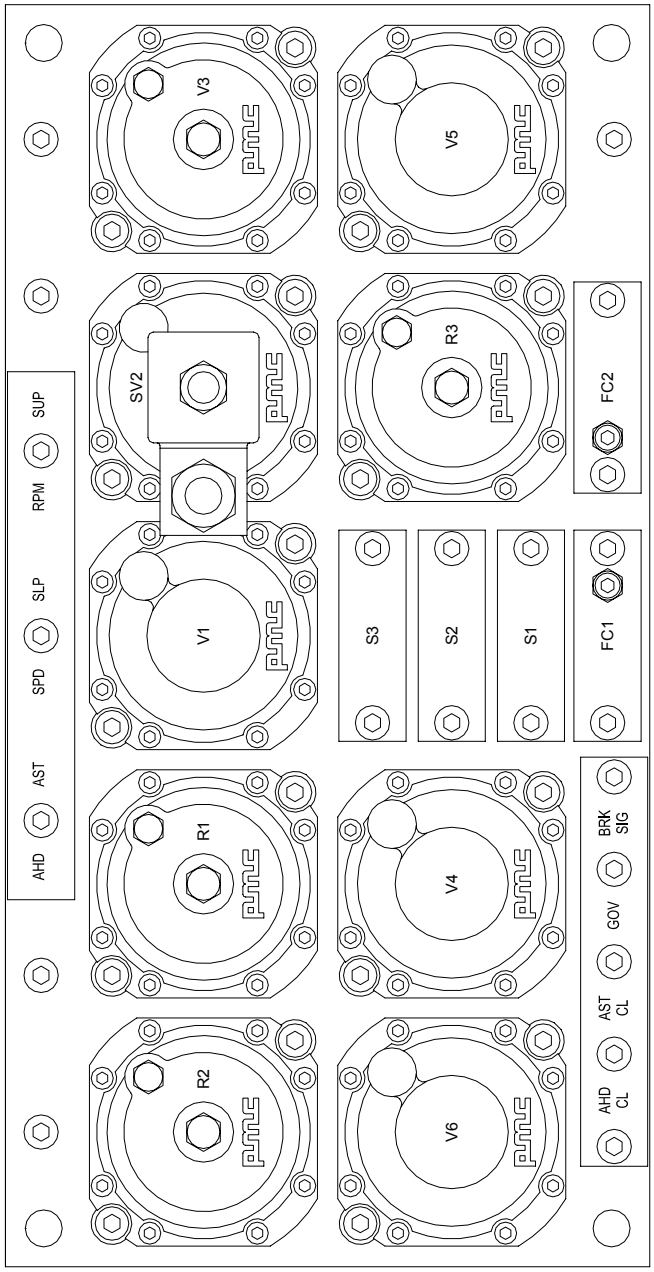
COMPONENT
BULLETIN SB-1110-3000

MARINE PROPULSION CONTROL

PNEUMATIC LOGIC AND CONTROL PANEL

Type MPC-10H Slip Clutch Control Panel



APPLICATION

Propulsion control for vessels with fixed pitch propeller, reverse gear and hydraulic slip clutch

FEATURES

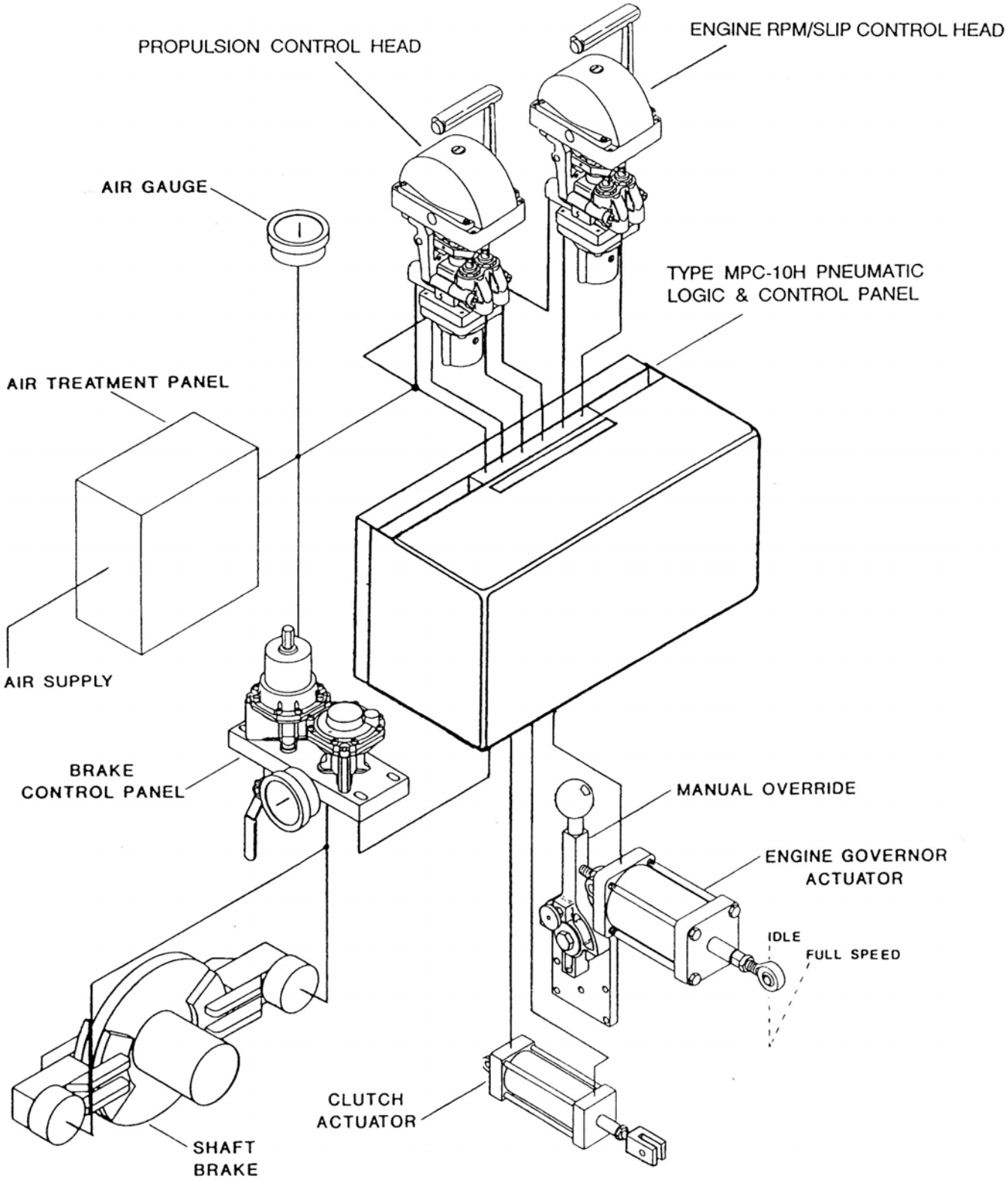
- Compact Size
- Easy Installation
- Manifold Mounted Components
- High Flow
- Controlled Engine Acceleration
- Dynamic Braking
- Shaft Brake Signal

PRIME MOVER CONTROLS INC.
VANCOUVER, BC, CANADA

DESIGN MANUFACTURE AND SERVICE OF MARINE AND INDUSTRIAL CONTROL COMPONENTS AND SYSTEMS

Electronic - Pneumatic - Hydraulic - Mechanical

Typical Slip Clutch Propulsion Control System



Introduction

The MPC-10H pneumatic panel is a compact modular unit, designed to provide propulsion control for vessels with fixed pitch propellers, reverse gears and hydraulic slip clutches. The MPC-10H panel features two propulsion modes: slip clutch and non slip. A pneumatic signal is also provided to automatically operate a shaft holding brake.

A laminated manifold with air channels eliminates the need for piping between the individual valves. Installation is fast and simple. All valves are base mounted and can be removed for servicing without breaking any pipe connections.

Description of Operation

Standard Propulsion Mode (non-slip)

In the non-slip mode the MPC-10H panel functions as a standard reversing gear propulsion control system. The propulsion control head controls speed and direction. As the control head is moved in the ahead direction The ahead clutch is engaged and the engine speed begins to increase. The rate of increase is adjustable on the MPC-10H panel. When the propeller shaft reaches a preset speed in the ahead direction, a speed switch is activated, which enables the dynamic braking circuit.

When the control head is moved in the astern direction, the engine speed setting is reduced to minimum, but the dynamic braking circuit holds the ahead clutch in until the shaft speed falls below the preset speed. At this point the ahead clutch is released, the astern clutch is engaged and the engine speed increases to the proper speed for the control head position. This allows the propeller to slow the speed of the vessel before the reversal takes place. The dynamic braking circuit only operates for ahead to astern maneuvers.

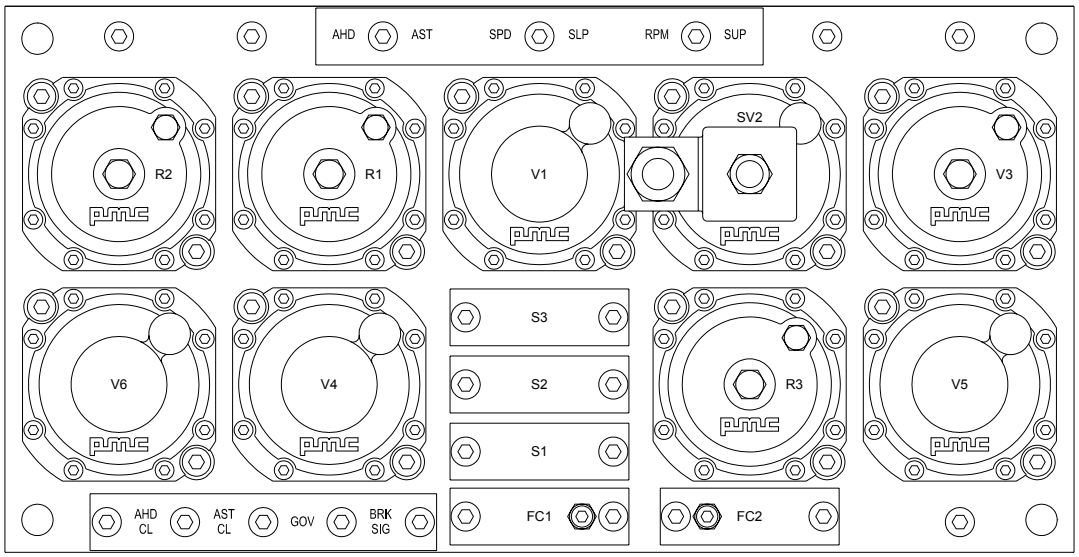
Slip Clutch Mode

The purpose of slip clutch mode is to obtain slower propeller shaft speeds than are possible in standard propulsion mode. This mode is useful for delicate maneuvering, or when slow vessel speed is required. In slip clutch mode the engine RPM/slip control head controls engine RPM, while the propulsion control head controls the amount of slip and the direction.

When the engine RPM/slip control head is moved to the first detent position, it puts the control system into slip mode. As it is moved further the engine speed increases.

The engine RPM/slip control head can be used to set the desired engine speed. Then the propulsion control head is used to control the propulsion of the vessel.

The drawing on page 2 shows a typical propulsion control system using the MPC-10H control panel.



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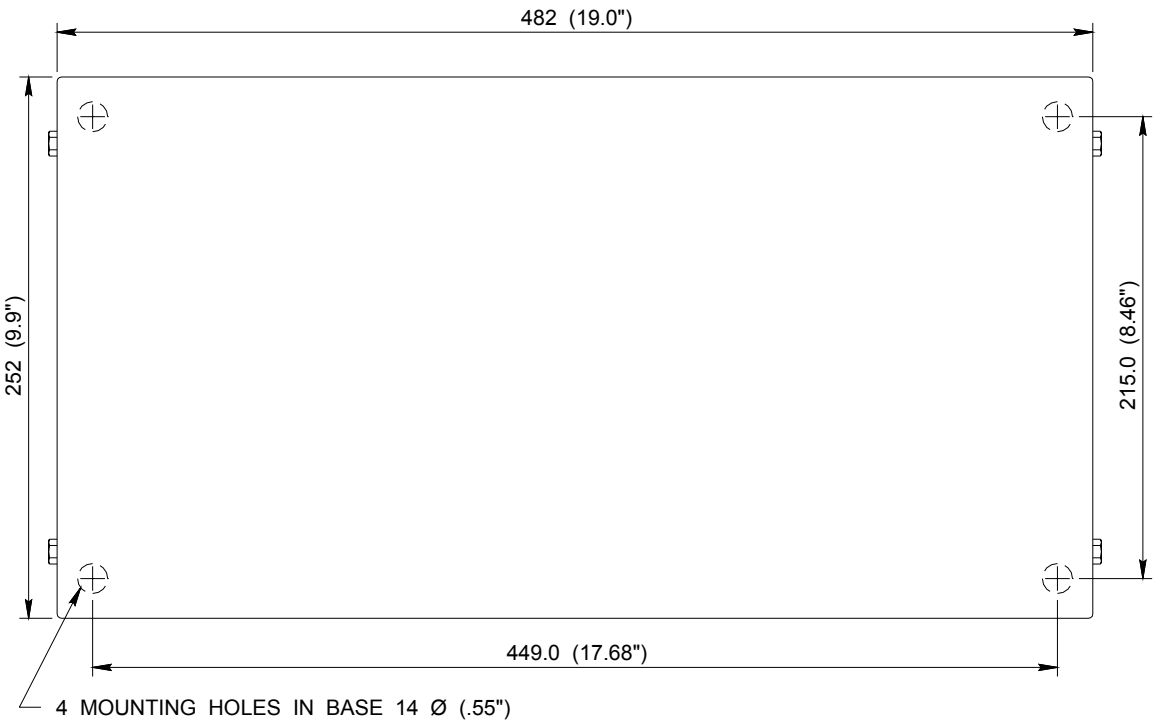

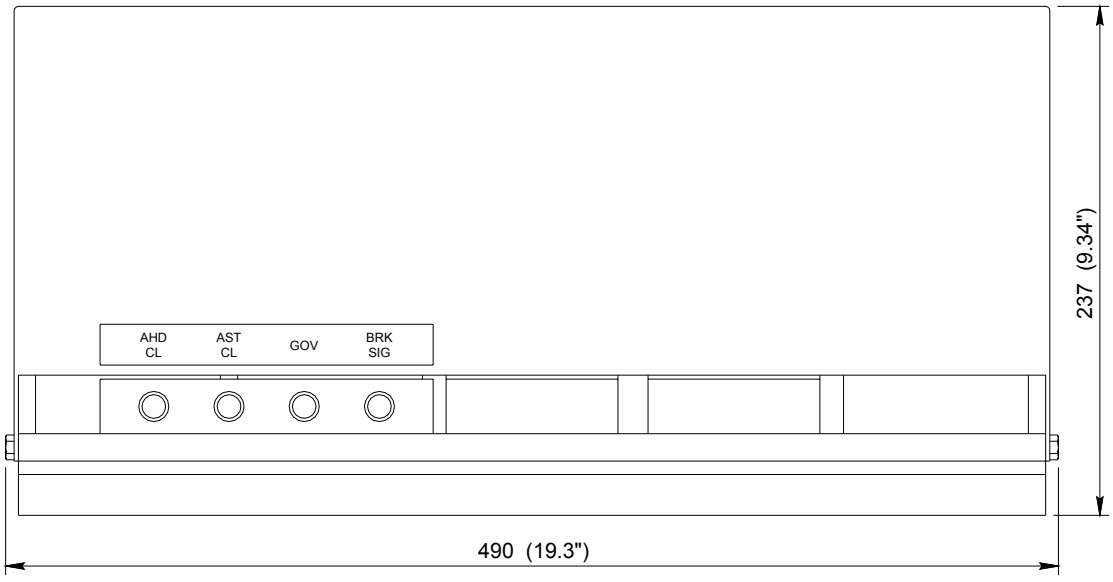

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