

PMC[®]

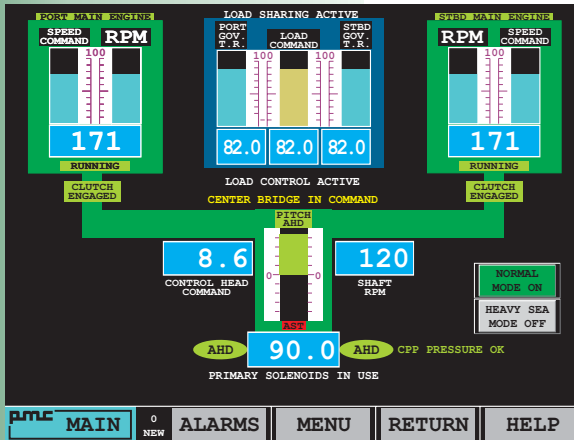
D-MaC[®]

DIGITAL MARINE CONTROL

Propulsion Control

PMC's leading edge Digital Marine Control System, the D-MaC, is a powerful and easy to use micro-processor based propulsion control system.

The D-MaC facilitates maximum efficiency and minimum emissions from marine diesel power plants.



LCD touch screens show typical propulsion control system for two engine one propeller arrangement

FEATURES

High degree of flexibility

- Advanced programming techniques for remote controls, RPM, pitch, automatic load control, clutch logic etc.
- Multiple engine isochronous or speed droop load sharing
- Provides multiple alarms, trends and operator messages

Reduced installation costs

- Simplified modular design reduces discrete components
- Less wiring
- Simplified commissioning and testing

Minimized operating costs

- Fuel savings due to precise automatic load control and load sharing
- Optional fuel management system integration is available
- User friendly graphics, menu system and help screens reduce training and troubleshooting costs

Reliability

- For maximum reliability D-MaC utilizes a touch screen display panel with non-volatile memory and no hard drive
- Optical isolation protection for each individual I/O

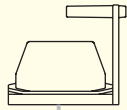


CENTER	Station in Command	IN	Port Clutch
CENTER	Pot in Command	IN	Stbd Clutch
ENGAGED	Pitch Status	OFF	Load Control
OFF	Cpp #1 Pump	OUT	Shaft Turning Gear
OFF	Cpp #2 Pump	OUT	Shaft Brake

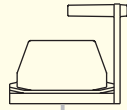
8.6	SIC Head Position	OK	Port Wing Pot
82.0	Load Command	OK	Center Bridge Pot
90.0	Pitch Command	OK	Stbd Wing Pot
90.0	Pitch Feed Back	OK	Engineerom Pot
90.0	Backup Pitch FB	OK	Port Fuel Rack
64.7	Port Speed Command	OK	Stbd Fuel Rack
64.7	Stbd Speed Command	OK	Pitch Feedback
64.7	Port Eng RPM	OK	Pitch Indication
64.7	Stbd Eng RPM	OK	System Variables
171	Shaft RPM	OK	System Battery
82.0	Port Fuel Rack	OK	Pitch Follow Up
82.0	Stbd Fuel Rack	OK	Electric Shaft System
100.0	Port Eng Bias % of Ave.	OK	Brick 0
100.0	Stbd Eng Bias % of Ave.	OK	Brick 1
1.00	Speed Ramp Rate	OK	Brick 2

PMC SYSTEM OVERVIEW 3 NEW ALARMS MENU RETURN HELP

**Port Wing
Control Station**

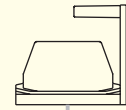


**Center Bridge
Control Station**

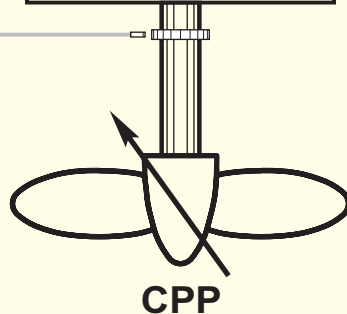
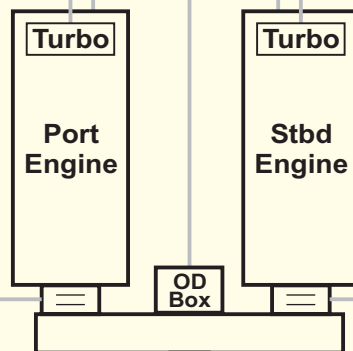
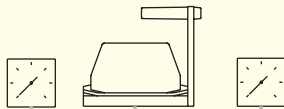


**Emergency
Pitch
Control**

**Stbd Wing
Control Station**



**Engine Room
Control Station**



Notes:

1. **D-MaC** is suitable for single and multi-engine installations as well as complex arrangements with PTO devices.
2. **D-MaC** significantly reduces exhaust smoke. This is achieved by incorporating turbo pressure dependant "feed forward" pitch and load limits with proportional dynamics.
3. **D-MaC** maintains control system integrity under impaired conditions such as loss of command or feedback signals.
4. **D-Mac** incorporates extremely tight integration to enhance real time viewing of system status.
5. Adjustments such as system stability, limit of speed, pitch and load for one or multiple engine operation are easily accomplished as required.
6. Adjustments of critical operating parameters such as speed/power curves and interlocks are secured by an access code which is available only to authorized personnel.

**Simplified
Propulsion
Control
Block
Diagram**

PRIME MOVER CONTROLS INC.

3600 GILMORE WAY, BURNABY B.C. CANADA V5G 4R8