



HYDRAULIC CONTROL PACK

Series 125 HYD

225 HYD

325 HYD Model 250

325 HYD Model 325

With Electronic Thruster Controller

INSTALLATION & MAINTENANCE

THIS MANUAL MUST BE KEPT ONBOARD AT ALL TIMES

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1) GENERAL

WE RECOMMEND THAT YOU CAREFULLY READ THE FOLLOWING INFORMATION BEFORE PROCEEDING.

This equipment should be installed by a professional, authorised dealer-installer and/or with the vendor's authorisation.

Architects, designers, builders' yards and/or other specialists should be consulted about the installation process.

IMPORTANT: For all boats applying for classification, please contact the relevant bodies before installation. The installation must comply with the rules and regulations, relative to the country where the boat is registered.

2) HYDRAULIC CONTROL PACK

IMPORTANT: The standard control pack is for a 24-volt installation. If a 12v Pack is needed and was not specified when ordering the unit please contact your distributor.

The 'Hydraulic Control Pack' consists of the following:

- **Service Valve** (Directional Control Valve + Pressure Relief Valve + Pressure Gauge and Valve)
- **Control Panel & Electronic Thruster Controller.**

General: The above components must be installed in a dry and ventilated space.

The size of control wires to electric battery isolator, power relay, clutch relay & service valve depends on the length of the cable run to & from each unit. The voltage drop in these cables should not exceed 5% of the voltage level that are available at the cable connectors (B & C) of the electronic thrusters controller.

It is recommended that all wires be numbered at each end and tinned.

a) Service Valve (Directional Control Valve + Pressure Relief Valve + Pressure Gauge and Valve):

This valve should be positioned as close as possible to the thruster unit and connected with thermoplastic non-conductive hoses.

b) Control Panel & Electronic Thruster Controller Installation:

Control panels should be protected from the natural elements while the thruster is not in use.

Install the control panel(s) in easily accessible positions, **without** obstructing the main engine and/or steering controls.

When fixing the panel with the black stainless steel screws, make sure to install the pre-cut rubber seal, as supplied with the panel, ensuring that it is in the correct place.

IMPORTANT: Only when totally finished and satisfied with wiring and positioning of the unit, clip-on the face panel/cover.

Please note that panels are only fully waterproof from the front, if installed correctly. However the area behind the dashboard should be kept dry to avoid the risk of oxidation of the cable connector contacts.

For full installation instructions of the control panels please refer to "Installation Guidelines" as supplied with each control panel.

The Hydraulic Thruster Control Box should be securely fixed to a bulkhead in a dry and protected area, close to the service valve.

For complete wiring details of both the Control Panel and Electronic Thruster Controller, please refer to the diagrams at the back of this manual.

3) CONTROL SYSTEM

NOTE: Thrusters supplied with an «electronic thruster controller», can only be used with Max Power's range of control panels as shown in this manual.

Install a breaker/isolator in the supply wiring of the electronic thruster controller on the boats' main electrical switchboard marked THRUSTER(s):

This breaker/isolator should ideally be supplied from an independent battery bank, to the one used for powering the electro-hydraulic pump (if used).

The installer must protect the positive supply cable of the thruster control box using a fuse, as indicated in the drawings at the back of this manual. The size of the supply wires (red & black) depends on the length of the cable run; the voltage drop in these cables should not exceed 5% of the nominal battery voltage.

NOTE: You must install a manual, and if possible, an electric battery isolator at the base of the electro-hydraulic pump's positive supply line. When using a manual battery isolator it must be; visible, clearly marked & easily accessible. It is important to isolate the electro-hydraulic pump's power circuit after having left port & when the manoeuvre is finished, after docking.

For safety reasons and in order to benefit from all the functions provided by the thruster controller, an electric battery isolator needs to be installed in the electro-hydraulic pump's positive supply cable. If an electric battery isolator is not used or needed, then simply ignore the two grey wires in cable connector "B".

Please refer to the drawings in the back of this manual for more detail on the wiring of the controller to the control circuit.

4) CONTROL PANEL AND ELECTRONIC THRUSTER CONTROLLER'S FUNCTIONS

To switch the thruster "ON" or "OFF" follow the instructions on the diagrams below.

When switched "ON" the unit will beep once and the green LED in the red push-button will light up.

When switched "OFF" the unit will beep twice and the green LED in the red push-button will go out.

The thruster controller provides a time delay between left and right thrust in order to avoid rapid direction changes, but no delay when thrusting to same side.

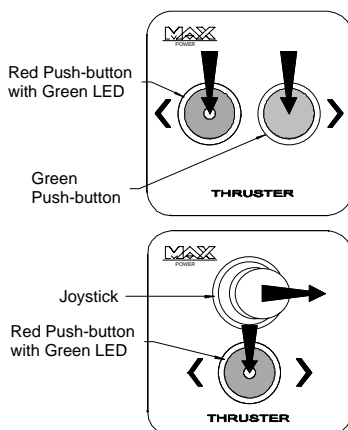
If the electro-hydraulic pump overheats or if optional N/O alarm sensor closes, the unit will start beeping, while the green LED will flash, until the electro-hydraulic pump has cooled down or optional N/O alarm sensors have opened again.

As soon as one of the above alarm conditions has been triggered, you have 10 seconds of actual thruster use before the unit automatically shuts down. The unit will then not be able to be switched on again until the alarm has been cleared.

If the thruster unit has not been used for a period of thirty minutes the unit will automatically switch off.

Before switching off automatically the unit will warn you by beeping once followed by a second beep a few seconds later, after which the unit switches off.

In order to isolate the power circuit of the electro-hydraulic pump as described in the two points above one would need to install an electric battery isolator, as advised by Max Power (see "Control System Connections: Using Electro Hydraulic Pump" in the back of this manual for more detail).

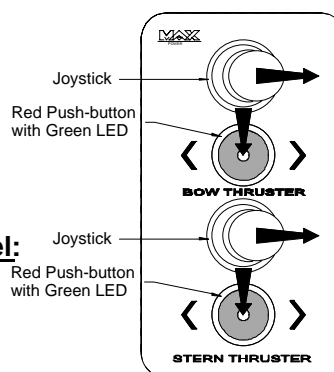


Single Touch Panel:

To Switch "ON" or "OFF" push down both red & green push-button for one second.

Single Joystick Panel:

To Switch "ON" or "OFF" push down the red push-button, while pushing joystick to the right for one second.



Double Joystick Panel:

To Switch "ON" or "OFF" push down the red push-button, while pushing joystick to the right for one second, for both bow and stern thruster.

5) OPERATION

With the control system breaker/isolator and manual battery isolator switched on:

Switch on control panel, as described previously in manual.

Push red button or incline joystick to the left, boat moves to the left.

Push green button or incline joystick to the right, boat moves to the right.

If, during tests the boat moves in the wrong direction, change the blue and the brown wires around on the coils of the directional control valve.

When manoeuvring take into consideration the inertia effects, remember the boats momentum continues after you release the joystick /button, therefore remember to release the control prior to reaching your desired position.

Care must be taken not to use the thruster in swimming areas or areas of floating debris.

6) ALARM (S) OR THERMAL SWITCH-OFF

The electro-hydraulic pump is fitted with a N/O heat sensor as standard. If the electric motor overheats the buzzer in the control panel will start beeping, while the green LED in the red-push button will flash, until the electric motor has cooled down again.

Additional alarms can be added, by using N/O sensors. This can be to indicate overheating of hydraulic oil or the oil level in hydraulic oil reservoir.

As soon as one of the above alarm conditions has been triggered, one has **10 seconds off actual thruster use** before the system automatically shuts down. The unit will then not be able to be switched on again until all the alarm conditions have been cleared.

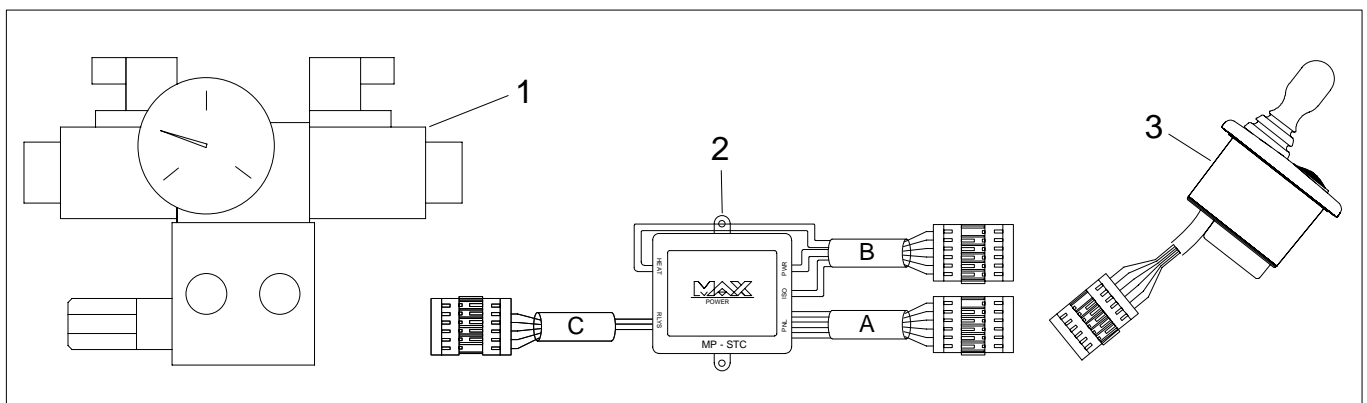
7) SAFETY

Switch off means on both the DC equipment panel (control supply) & the thruster power battery isolator (electro-hydraulic pump's supply) after having left port & when the manoeuvre is finished, after docking. Under no circumstances should any inflammable products be stored next to the electric components of the thruster. Care must be taken not to use the thruster in swimming areas or at any time when people maybe in the water close to the thruster.

WARNING: Never temper with thruster/thruster turbine, if not 100% sure that both control and power circuits have been isolated.

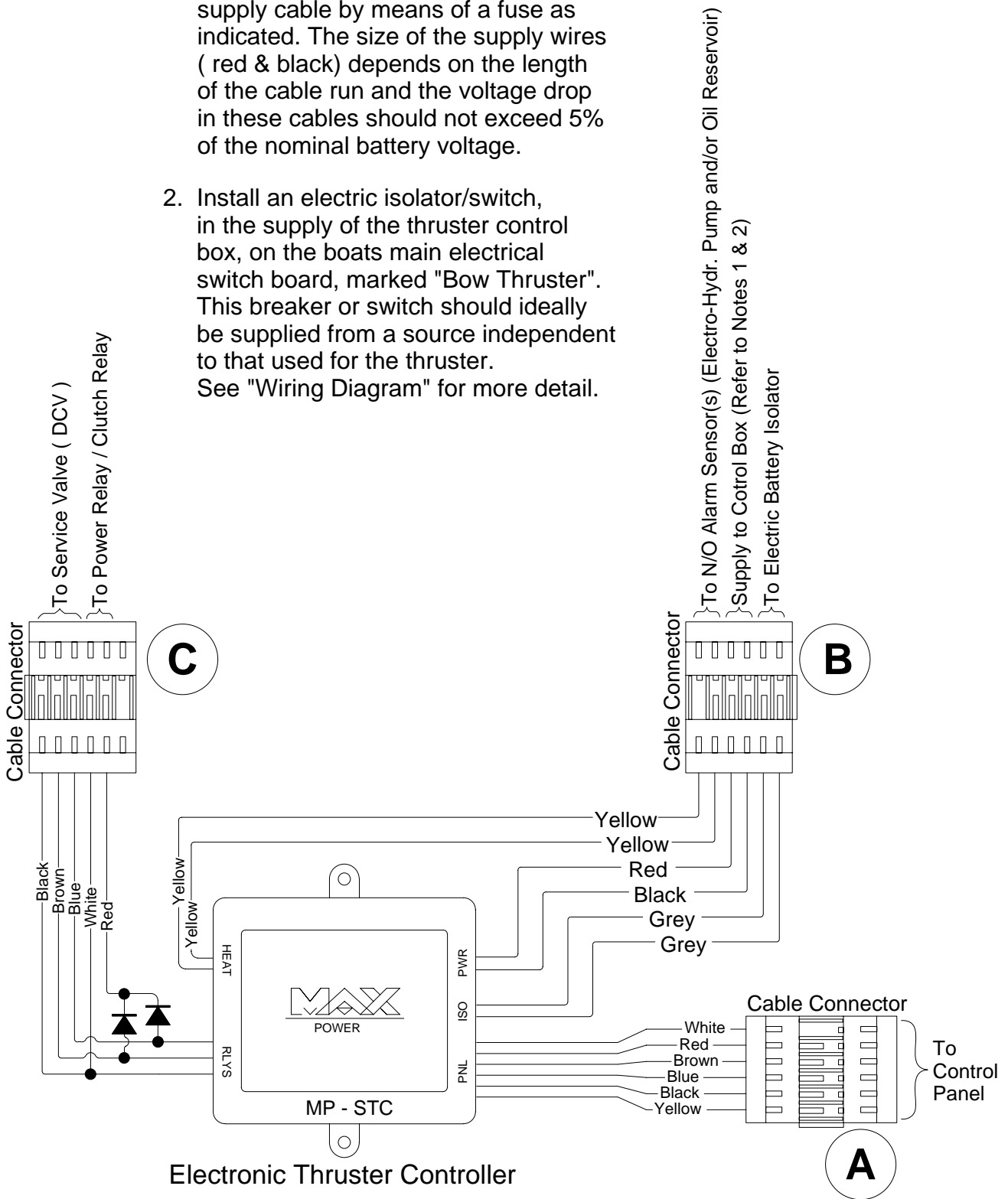
7) PARTS LIST & DIAGRAM

N°	DESCRIPTION	SP 125 HYD	SP 225 HYD	SP 325 HYD, Model 250	SP 325 HYD, Model 325	REFERENCES
1, 2 & 3	Complete Hydraulic Control Pack	1	1	1	1	MPHY 8800
1	Service Valve	1	1	1	1	RT 208031
2	Electronic Thruster Controller	1	1	1	1	MPOP 5701/HYD
3	Control Panel (Black Joystick)	1	1	1	1	MPOP 8105



NOTES:

1. The installer must protect the positive supply cable by means of a fuse as indicated. The size of the supply wires (red & black) depends on the length of the cable run and the voltage drop in these cables should not exceed 5% of the nominal battery voltage.
2. Install an electric isolator/switch, in the supply of the thruster control box, on the boats main electrical switch board, marked "Bow Thruster". This breaker or switch should ideally be supplied from a source independent to that used for the thruster. See "Wiring Diagram" for more detail.



TITLE Electronic Thruster Controller for Super Power Hydraulic Thruster Models.				REVISION 00	PART NO.
REF.		MATERIAL			
DRAWN	CHECK	RELEASE 01	HEAT TREAT & FINISH		
DATE 27/04/2004	DATE	DATE	