



Aqua Manoeuvra Systems

A Division of Innovative Technologies Ltd.



***MANEUVERING and PROPULSION
Systems for...***

360 Degree Control Systems...

Electric “*Rotatable*” Thrusters
- Remote Control

MK-1 Series

Master Control System

- 360 Degree Rotatable Propeller and PumpJet Systems Electric Remote Control Steering Systems

Master Control ...

is a reliable all weather system to operate remote control of Aqua-M Thruster Systems Rotatable Propeller and Azimuthing PumpJet Propulsion and Thruster Systems, in all circumstances and environments (Seaworthy – cold and tropical temperatures).

The control is carried out by 24 vdc electric control hydraulic or electric valves fed with available current on board, with weak sensitiveness to wetness and actual voltage current (the electric control valves are activated with $\pm 15\%$ of the rated voltage).



The Master Control system comprises of the following...

The **HYDRAULIC MOTOR** operating the steering devise for the Rotatable part of the thruster stem or nozzle. Two (2) hydraulic motors are used for systems with higher than 1000 mdaN shaft torque of the propeller system.

A **HYDRAULIC POWER PACK** with one hydraulic pump driven either by the diesel engine or an electric motor. The hydraulic pump is fitted with a capacity regulation system providing a constant speed of steering (180 degree angle in 7 to 8 seconds).



An electric weather proof cabinet to be connected to the main control console is located in the power pack assembly with full local control.

A **PANEL** with controls is either located close to the power pack, or installed in the wheelhouse console.

One or several panels with selector switches can be located at remote stations (wing or fly-bridge) to operate the propulsion systems.

The panels and the electric cabinet in the power pack are electrically connected, without any mechanical devices, by the shipyard.

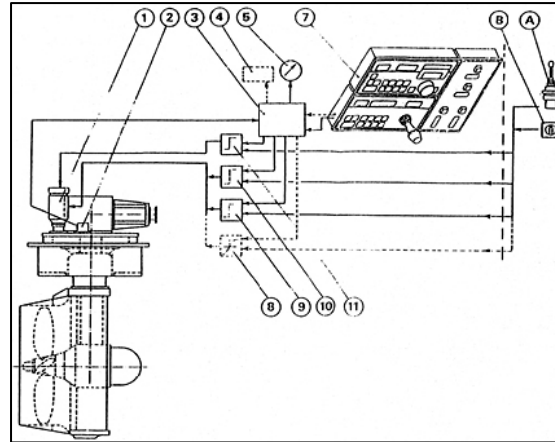


The Standard Main Control Console is fitted with the following:

A Steering hand lever for combined controls

- 360 degree steering control
- clutch and throttle control of the engine or e-motor controller.
- If applicable : a throttle lever combined with reverse
- Diesel engine (e-motor) control and alarms
- Emergency direct steering control (hand lever)
- An independent steering propeller or nozzle position indicator
- A diesel engine RPM control gauge
- An electric cabinet to be connected to the power pack-cabinet with connection wiring.

1. Steering motors
2. Position sensor
3. automat
4. display of stated direction
5. steering indicator
6. sensor of direction
7. control panel
8. proportional control
9. low speed steering control
10. quick speed steering control
11. steering brake control

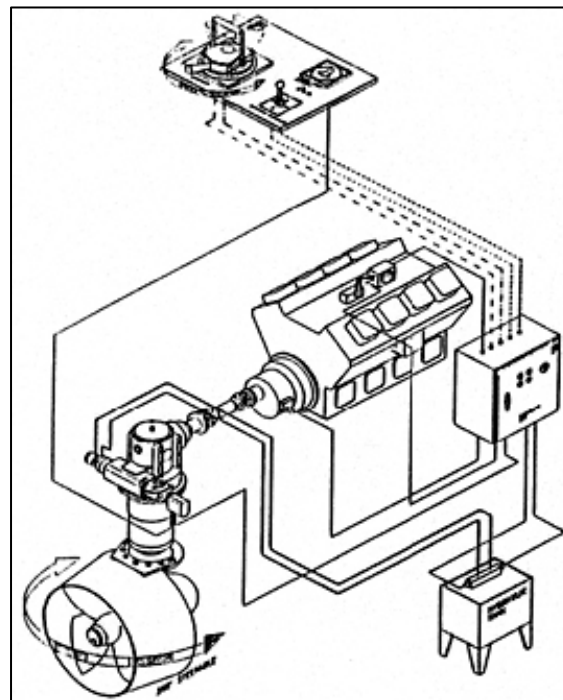


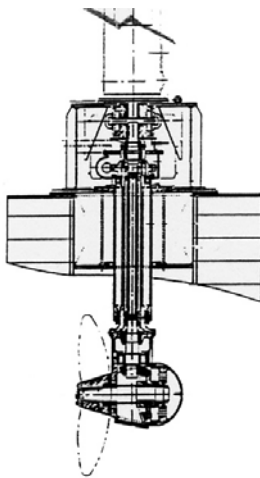
- A. Revolution direction of propeller (in case of reverse).
 B. Selector switch: Automatic operation/ hand-operated – Emergency

As Options:

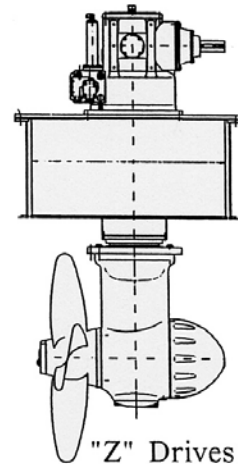
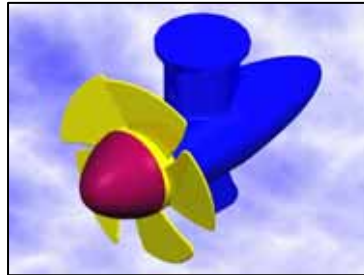
- the standard second main console can be supplied with all above control functions.
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- A remote mobile or fixed simplified console can also be provided with push buttons. Please advice.

Master Control Mk-1 is part of the MASTRONIC CONTROL Mk-II as an Emergency System.





"L" Drives



"Z" Drives

The ElectroPod Propulsion System

Your Reliable Partner in Propulsion -Bow Steering and Dock Assistance,

Aqua Manoeuvra ... Marine Thruster Systems

United Arab Emirates
Head Office



3rd Floor, Spectrum Bldg.
P.O. Box 25457
Dubai, U.A.E.
Tel: +971 4 305 9717
Fax: +971 4 305 9710
info@ams-thrusters.com

USA



GPS - AMS
One Riverway, Suite 1700
Houston, Texas 77057-1997
USA
Tel: +1 713 840 6465
Fax: +1 713 622 1937
info.usa@ams-thrusters.com

Malaysia



GPS - AMS
Level 8, Menara See Hoy Chan
No. 374, Jalan Tun Razak
50400 Kuala Lumpur, Malaysia
P.O. Box 11753
50756 Kuala Lumpur, Malaysia
Tel: +6 03 9145 3000
Fax: +6 03 2161 3234
info@ams-thrusters.com

Germany



Ingenieurbuero – AMS
Schillerberg 21
23611 Serreetz
Germany
Tel: +49 (0) 451 2909320
Fax: +49 (0) 451 2909321
info.ger@ams-thrusters.com