

MAC♦N♦HOM

MARINE EQUIPMENTS (P) LTD.

Let's make sailing safer



“Let's Make the Sailing Safer”

MAC-N-HOM make **Hydraulic Steering Systems** are now Available for **Out Board Engines also** with Safety and Steering control at its best.

With the strength of 33 years of dedicated Professional Service to the industry and a decade long experience on manufacturing and installation of Electro-Hydraulic & Manual- Hydraulic Steering Systems to the IN-BOARD marine vessels, in India and abroad, Mac-N-Hom Group, is now offering Electro-Hydraulic and Manual-Hydraulic Steering systems for vessels with OUT-BOARD ENGINES.

'Mac-N-Hom' make Hydraulic Steering Systems have Following **Sub-systems:**

1. Hydraulic Helm Pump-Valve Assembly, with Built-in Valve systems for Pressure Control, and Direction Control of Hydraulic Oil, Self-Priming Mechanism, which automatically releases any trapped air in the circuit
2. Hydraulic Actuators-2 Models, each with 2 Versions to select, to suit your application.
 - Models: Rapid-Prince and Rapid-Emperor
 - Both models have two versions, Butterfly type and Rod-on-Drive type

Well protected Hydraulic Hoses and Stainless Steel Fittings to transfer Hydraulic Oil from Helm Pump-Valve Assembly to Hydraulic Actuator

How it Works

We have provided a Hydraulic Helm Pump, which houses

- a) Oil Pumping System on Rotation of a Steering Wheel
- b) A Self-Priming System, which automatically releases air bubbles, trapped in the hydraulic circuit, and replaces that with hydraulic oil, by venting them out through a specially designed manifold
- c) A valve assembly which will direct oil to the ports of Hydraulic Actuator, based on Clockwise or Anti-Clockwise direction of rotation. As a standard feature, the angular position of the OB Engine and hence the sailing curve of the boat remains locked, if the steering is not turned, featuring stay-where-you-stop facility of steering wheel. Hydraulic Pressure is set to safe values considering elements used in the system (Factory Setting) with relief Valve.

When the steering wheel is rotated, Hydraulic Oil gets pumped from the Helm Pump, with Pressure Controlled through relief valves, and direction depending on direction of rotation, to the oil ports of Hydraulic Actuators, which will exert axial force on Pistons and get transmitted either to Piston-rod in “Rod-On-Drive” versions, or to Butterflies in “Butterfly” versions. This force applied on Tiller arms of Out-Board Engine results in angular movement of Outboard engine and get the vessel turned.

“Let's Make the Sailing Safer”

Selection of Model & Version to Suit your Requirement

We have TWO Models and each models has TWO Versions

- A) Model: Rapid-Prince with Butterfly Drive (B) Model: Rapid-Prince with Rod-On-Drive
C) Model: Rapid-Emperor with Butterfly Drive (D) Model: Rapid-Emperor with Rod-On-Drive

Model: Rapid- Prince

is planned for Outboard Engines upto 115HP
A Cute Model for Small and Medium HP Boats
Very Compact and Quick Responding Type



Model: Rapid-Emperor

is planned for Outboard engines above 115HP to 400 HP
Ideal for Twin Out Board Engine configurations,

Selection of Hydraulic Helm Pump

Hydraulic Helm Pump Assembly is selected based on number of Turns of Steering wheel, from Port Side Hard to Star board side Hard movement of Outboard Engine. “Lesser the Number of Turns, More the Effort to turn” is the Rule of Manual-Hydraulic Steering. Please refer the Technical Data Chart to know the details.

Selection of Hydraulic Hose / Stainless Steel Fittings

We recommend, Flexible Braided Hydraulic Hoses for transmission of Oil for Small Boats, and a combination of small length Hydraulic Braided hoses at the Helm Pump and Actuator ends for flexibility and Marine Protective coated Seamless Steel Tube in the middle area of vessel. We recommend and Supply Hydraulic Fittings with SS316L material.

Other factors to be considered during selection

Propeller Selection:- Larger The Propeller, Heavier Actuator to be selected

Sea Going / Inland Vessel: Sea Going demand Heavier Actuator

Speed Of Vessel: Our Model: Rapid-Prince has a Limiting Speed of 35Knots

Our Model: Rapid-Emperor has a limiting speed of 50 Knots

Features

- ❶ SS316L material for Construction of all metallic components.
- ❷ IACS member M/s Indian Register of Shipping (IRS) Approved Design
- ❸ No PURGING required, as our Self Priming System, releases Air trapped in the circuit automatically.
- ❹ Compact, Zero-leak Hydraulic System.
- ❺ Smooth and Firm Steering Drive with “Stay-where-you-stop” facility
- ❻ Hands-Free experience, even in turns.
- ❼ Zero maintenance for long service years.

Technical Data Chart		
Description	Prince	Emperor
1.Axial Thrust	207 Kgf @50 Kg/Cm ²	471 Kgf @50Kg/Cm ²
2. Torque (Pivot to Tillerpin-180mm)	37 Kg.m	84 Kg.m
3.Turns of Steering with		
42cc/rev Helm Pump (Approx.)	1 + 1	2½ + 2½
20cc/rev Helm Pump(Approx.)	2 + 2	5 + 5

Manufactured by:

MAC•N•HOM
SYSTEMS
An ISO 9001:2015 Certified Company
macnhom@gmail.com
www.macnhom.com,

57/187-C, 'Vrindavan', Chilavannur Road,
Kadavanthra, Kochi-682 020, Kerala, India.
Ph: +91 484 2312396, 2319998



Marketed by:

MAC•N•HOM
MARINE EQUIPMENTS (P) LTD.
Let's make sailing safer
info@macnhomsystems.com
www.macnhomsystems.com