

HEAVY DUTY POWER ASSIST HYDRAULIC STEERING SYSTEMS

Power assist steering from Hynautic offers the boat owner and commercial fisherman a marine steering system which combines quick turning ease (as few as 2 1/2 turns port to port) with complete manual steering backup. The system is entirely hydraulic and has no connection to the ship's electrical power. If the hydraulic power steering pump is disabled, the system automatically reverts to manual operation.

Hynautic power assist steering systems are designed to meet the steering requirements of vessels up to approximately 150 feet. Smaller boats up to 80 feet in length would use the "open center" system described below. Larger commercial vessels and motor yachts require the custom-designed "closed center" system. Further information on both types are available from Hynautic or its sales representatives.

How The Power Assist Steering System Works

The various Hynautic power steering systems utilize two distinct hydraulic circuits: the control circuit which is a manual system with a standard hand-operated hydraulic helm pump and the power circuit which gets a boost from an engine or electrically driven pump.

The control circuit is essentially Hynautic's manual hydraulic steering system but instead of sending fluid directly to the steering cylinders, the helm unit activates a servo cylinder. Fluid from the helm unit is first diverted through a sequence-relief valve which protects the circuit from overpressure.

assists in air purging, and provides the automatic transfer to manual steering when necessary. The servo cylinder senses the current location of the rudder arm relative to the direction you want to steer and directs fluid from the power pump to the steering cylinders to alter course in that direction.

The power circuit of the system uses one or two hydraulic power steering pumps of various designs, depending upon the system and application. These pumps may be driven by any continuous running engine or directly coupled to a constant 110 volt electric motor. The fluid output from the single or dual pumps is metered and controlled to ensure sufficient flow and smooth steering operation. Fluid from the power pump(s) is sent to the proper side of the steering cylinders. When course correction has been achieved, the servo valve is neutralized and fluid is returned to the reservoir. Circulating fluid from the power pumps is cooled and kept clean with the heat exchanger and filter.

Specifying A Power Assist Steering System

The basic power assist steering system is for a single steering station and includes a single belt drive pump. Additional helm units and another pump may be added or substituted to meet the application requirements.

