

NEPTUNE FOLDING FIN STABILISERS



KONGSBERG STABILISER HYDRAULIC POWER UNIT

Hydraulic power units for KONGSBERG Neptune folding fin stabilisers

The stabiliser Hydraulic Power Unit (HPU) incorporates design features that have been refined over many years of experience and operator feedback. In order to ensure high reliability the HPU utilises a duplex, low noise, fixed delivery pump.

Dependant upon specific flow rate requirements either a vane pump or helical pump will be provided.

With their low parts count, the pumps are ideally suited to providing rapid and smooth responses to changes in load.

In order to increase reliability further all valves are directly attached to the manifold unit, this results in reduced external pipework, reduced number of leakage points and optimised flow paths, this in turn reduces pressure drop within the system. The unit incorporates proven valves that operate at half of their rated flow in order to further minimize pressure drop. The manifold block is plated for corrosion protection. Main valves required for the emergency operation of the system are complete with high visibility levers and are designed for ease of access.

The HPU is complete with filters rated to 10 micron absolute, these are located in the return line. These incorporate differential pressure indicators with electrical indication and are sized for extended life and excellent protection of the system. Contamination sensitive components have been rejected.

A robust shell and tube type heat exchanger is provided for cooling the hydraulic fluid. The heat exchanger is designed for use with either fresh water or sea water with a maximum inlet temperature of 38°C.

The system is suitable for operation with mineral oil, biodegradable oil and flame retardant fluids.

SCOPE OF SUPPLY

- Skid mounted oil reservoir
- Low noise and low vibration duplex main and emergency pump
- Oil cooler mounted on reservoir tank
- Manifold block mounted on reservoir tank
- Main and emergency motor starters and local junction boxes
- Instrumentation and monitoring devices
- Flexible connections to hydraulic cylinders
- Return line filter and tank breather

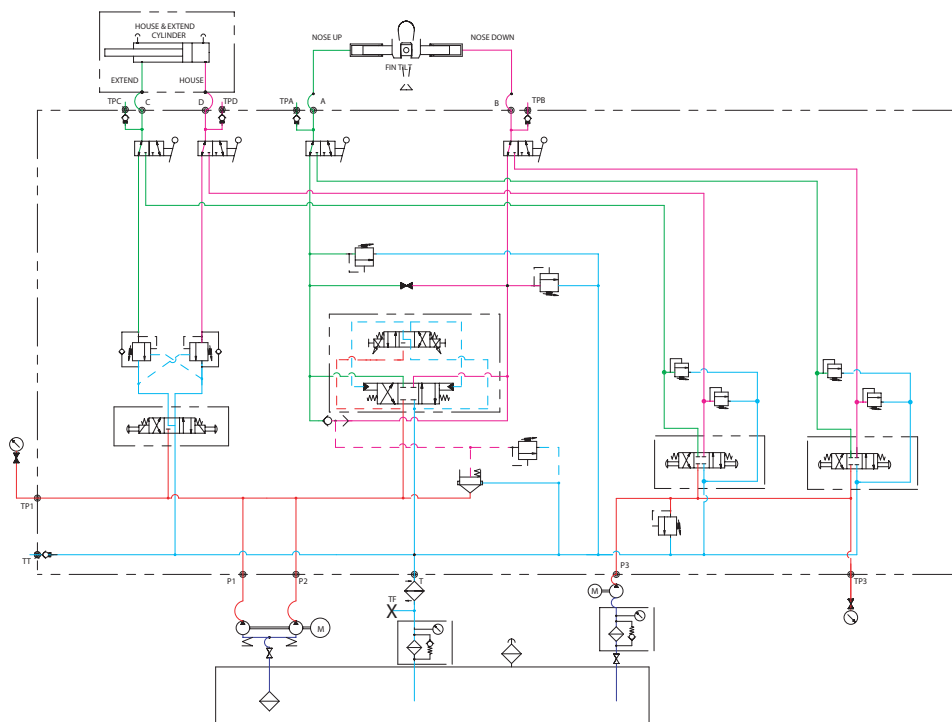
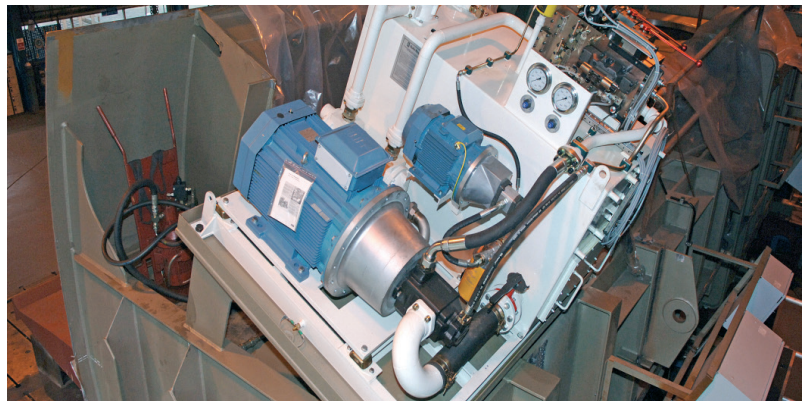
HYDRAULIC POWER UNIT

- Noise 77dB (NR75)
- Vibration BS4999 special grade 0.9mm/s
- Low cost of ownership and ease of access for maintenance
- Modular construction
- Can be mounted on finbox or remotely from the unit
- Main and emergency pumps sets to IP55
- Fully automatic control in normal duty
- Local manual control in emergency / testing conditions
- Main and emergency hydraulic systems can be segregated, no cross contamination
- Common hydraulic and crux lubrication oil
- Biodegradable and flame retardant fluid can be used without system modification
- Positive head on main pump suction reduces wear
- Load sensing to minimise power requirements
- Bespoke designs available if required, including alternative emergency pump arrangements

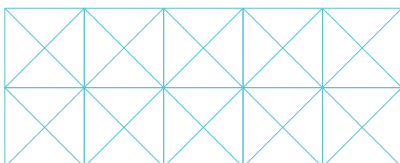
The units have a low noise and vibration signature and are successfully operating on a DNV COMF-V (1) classed Cruise Ferry. The compact and flexible design, which does not require bulky accumulators, is optimised to achieve a fast critically damped response. Step signal +100% to - 100% in 60ms.

In order to reduce the possibility of any cross contamination the emergency system is segregated from the main system through to the Auto/Manual selector valves. In case of emergency, e.g. ship blackout, the emergency system can be operated manually from the HPU using visual indication of fin position and manually operated valves.

Instrumentation includes main and emergency pressure gauges, 0 - 300 bar, low oil level switch & high oil temperature switch. To facilitate commissioning and troubleshooting numerous test-points are located on the manifold.



The typical circuit diagram clearly shows the features available as standard, the main hydraulic pressure lines and emergency hydraulic lines are segregated to the point of Auto/Manual selector valves thus maximising segregation between the systems. Bespoke customer requirements can be accommodated such as, remotely positioned HPU, low temperature operation, provision of alternative emergency pump arrangements.



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