

Davit systems for rescueboats (type:PRHE 20/Gravity lowering/ Hydraulic slewing)

General introduction:

The hydraulic pivoting A-frame davits have been designed for long time operation under adverse and extreme conditions in a highly corrosive marine environment. The hydraulic pivoting davits of the PRHE series are so-called “plug-in and play units” all guaranteeing easy installation on board.

The PRHE davit is a freestanding deck mounted davit consisting of a base frame, davit arm, cylinders, winch and hydraulic power pack unit. The system is suitable for safe and efficient launching and recovery of a fully manned rescue boat against unfavourable conditions of trim of up to 10 degrees and a list of up to 20 degrees either way.

Pivoting out the fully manned rescue boat from its stowed position into launch position is realised by means of accumulated power obtained from a self-containing hydraulic power pack unit. The pivoting motion is actuated from within the rescue boat by means of a remote control pull wire.

Lowering is realised by means of gravity. The lowering motion can be controlled in two ways, either by means of a remote control pull wire from within the rescue boat or by lifting the brake handle of the winch directly.

Recovery of the rescue boat with its crew is realised by using the electric driven winch. In case of a power failure or malfunctioning of the electric system, hoisting can also be done manually by using the crank handle of the winch.

Since the safe working load and outreach of the davit are normally determined by the size of the rescue boat, EO have chosen for a limited range of standard designs which can be adapted to some extent in order to meet individual and specific needs.

The PRHE series meets the latest IMO/SOLAS requirements and LSA Code as well as the European Council Directive 96/98 EC on Marine Equipment (M.E.D.).

PRHE Davit Series: End User Advantages

1. Compact design with minimum height, width and length.
2. Small footprint, for easy installation onboard.
3. Delivered as one complete pre-assembled and tested davit system, “plug and play”, ready for immediate use.
4. Stainless steel HPU (hydraulic power pack unit) is included; all critical components are covered in hydraulic oil.
5. Stainless steel for all shafts, piping and bolts and nuts up to M16.
6. Remote control push button box, for hoisting and emergency stop.
7. Integrated boat cradle, complete with lashings.
8. Easy access for periodic maintenance, service and repair, support by with clear labelling and detailed manuals.
9. Shock absorber (hydraulic dampener), optional.
10. Integrated outer support for (fast) rescue boat, optional.
11. Relatively low davit weight and low deck forces.
12. Light weight aluminium version available on request.

Davit column:

The base frame is a welded steel construction, built up from profiles and steel plates to a stiff rigid frame in order to transfer the system forces to the deck structure. Each frame is provided with all necessary provisions for fastening of relevant accessories such as hydraulic cylinders, power pack unit and starter box.

Davit arm:

The davit arm is built up of hollow sections and steel plates and provided with all necessary provisions for fastening of relevant accessories such as hydraulic cylinders, winch foundation, sheaves and remote control parts. For transportation reasons, the davit arm consists of a base part and an upper part which are easily built together by means of a hinge/flange connection. The davit arm also incorporates the boat chocks with D-fenders and boat lashings.

Hydraulic cylinders:

Each davit will be supplied with two high quality double acting hydraulic cylinders provided with dual over-centre valves. The cylinder rods are made of stainless steel (1.4057)

Winch:

Each davit will be supplied with an electric driven winch built onto the base frame.

The winch is a standard item and consists of the following main components;

- Closed gear casing;
- Built-on electric motor;
- Single winch drum with separate section for remote control wire;
- Speed reducer gear (conventional gear train);
- Centrifugal brake unit for gravity lowering;
- Stop brake of the "dead-man" type;
- Manual cranking gear with safety device;

Hydraulic power pack unit (HPU):

The hydraulic power pack unit consists of the following main components:

- **Stainless steel** hydraulic tank (AISI 316) with drain valve;
- Hydraulic pump;
- Electric motor;
- Pressure switches;
- Pressure relief valve;
- Control valve;
- Accumulator.

Accessoires:

Each davit system will be supplied with the following accessories:

Electric controls

- Motor starter built onto the davit arm and provided with main switch, push button and “power on” indicator;
- Limit switch

Wire rope

- Galvanised non-rotating steel wire rope provided with thimble at one end and of sufficient length for lowering the rescue boat into the water;

Remote control parts

- Stainless steel remote control wire of sufficient length;
- Handgrip for operating from within the rescue boat;
- Remote control sheaves;
- Loose items such as wire rope clips and shackles;

Lashing system

In order to secure the rescue boat in stowed position, each davit system will be supplied with an adequate lashing system consisting of two lashing straps with ratchet spanners.

Ladder

For easy access of rescue boat in stowed position, each davit system will be supplied with a galvanised ladder which should be welded on deck by yard.

Conservation:

Unless agreed otherwise, all steelwork will be shot blasted to SA 2,5 and coated with one layer of 2-component epoxy primer of brand SIGMA. Dry film thickness 60-80 microns. This conservation is not suitable for outdoor storage for a long period of time.

Optional accessoires:

The following accessories are to be seen as non-standard but can be supplied optionally:

- CAR 35 hook, stainless steel automatic release hook (off-load type);
- Shock absorber, to dampen forces on davit structure, winch drum, steel wire rope and boat, during launch and recovery operations;
- Outer boat supports;
- Conservation in 2 or 3 layer paint systems, subject to client specifications;

Spare parts:

Upon request a separate offer for the supply of spare parts can be prepared. A detailed spare parts list with drawings is included in the instruction manual.

Instruction manual:

The davit is supplied with 3 sets of instruction/operation and maintenance manuals in the English language. The manual contains all required information for installation, start-up, operation, maintenance and spare parts. A set of arrangement drawings, diagrams and part drawings is included.

Steel construction / design regulations:

All materials used in steel construction of the davit, are certified in accordance with the various classification rules and regulations with full traceability.

Approvals and certificates:

The davit is supplied with the following test certificates:

- Davit type approval certificates are issued by class, according to IMO/SOLAS, LSA Code and EC/MED;
- Davit factory acceptance test certificate issued by class.
- Winch factory acceptance test certificate issued by class.
- Wire certificate.
- Shackle certificate.
- Hook certificate (optional).

Copies of the relevant approvals and certificates are included in the instruction, maintenance and operations manual of the davit system.