

PASSIVE HEAVE COMPENSATED WINCH

Installation of Subsea Equipment

Customised and tailored to Clients requirements

ICON **Passive Heave Compensated Winch (PHCW)** is designed to eliminate the variations in line tension due to the heaving motion of the while installing a subsea equipment in a considerable water depth.

The PHCW system is used to lower a tubing head spool onto a well head. The system is deployable from either a semi submersible or supply vessel.

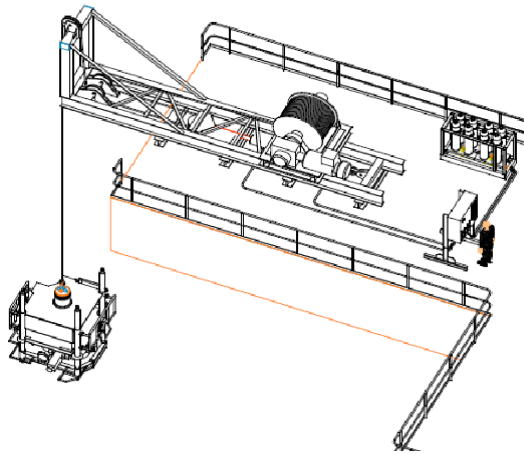


Figure 1- General Arrangement of PHCW assembly (shown on a semisubmersible drilling rig).

The PHCW consists of a hydraulic cylinder and a set of hydraulic accumulators that are located on a sub frame assembly that carries the winching unit and a 'flying sheave' assembly.

Standard Features:

- **Flying Sheave**
The general configuration of the flying sheave is similar to a block and tackle, but with a means to forcibly expand and contract the distance between the sheaves.
- **Winch Unit**
The winch is mounted to a skid with the wire rope taking a path through the flying sheave block that is connected to the compensating cylinder unit.

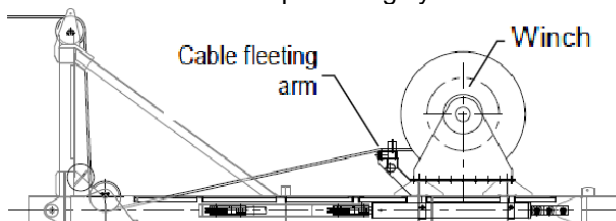


Figure 2- General Arrangement of flying sheave winch assembly.



Figure 3- General Layout Schematics

- **Winch Power Pack**
The winch power pack can be either electric driven or diesel driven.
- **Compensator Unit**
The compensator unit consists of a compensating cylinder and several accumulators that reduce the load variation as the cylinder strokes. The compensating cylinder is dual action type and the pressure in the cylinder can be adjusted to suit the operating conditions as required.
- **Control Panel with Power Pack**
The control panel is integrated with the power pack, to control an air supply either taken from the vessel or a separate bank of high pressure quads which are used to charge the accumulators to the necessary pressure.
- **High Pressure Quads**
The quads can be topped up from the vessels utility supply and offer a contingency should the vessel air supply fail.

Optional Features:

- **Additional Certification**
Unit can be supplied with ABS certification and can include DNV on request.
- **Training**
ICON can provide training in use of the PHCW equipment as well as advice on the correct pressure settings for the cylinder and accumulators.