

## Hoisting and compensation system

**With a legacy of more than 30 years, MHWirth's RamRig™ hoisting system provides cutting edge performance and reliability for hoisting and compensation operations.**

Hoisting and lowering with our RamRig™ system is done by hydraulic cylinders instead of the conventional draw-works and derrick.

The hoisting lines are parallel, fixed length wires with one end anchored at the drill floor, and the other end at the top drive. The lines are run over the yoke sheaves, transforming the push from the cylinders to an upward lifting force to the guide dolly and top drive.

The travelling distance and speed of the top drive is twice that of the cylinders. The maximum stroking velocity of the cylinders is 4.1 ft/s (1.25 m/s), allowing the top drive to travel 8.2 ft/s (2.5 m/s).

Our RamRig™ system is powered by a central hydraulic power unit (HPU).

With integrated accumulators, the system allows for both passive and active heave compensation.

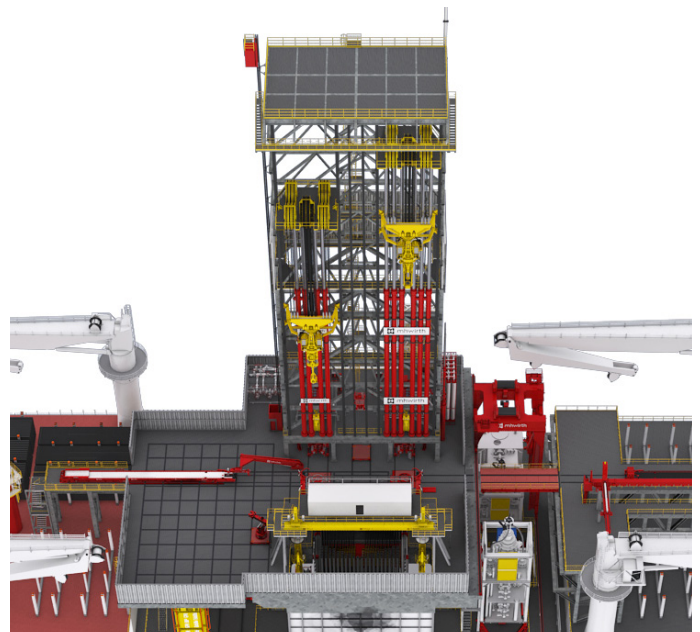
Our RamRig™ technology is a highly energy efficient solution. Lowering the cylinders generates energy; the amount of energy depends on the load hanging in the top drive. The energy is transferred through the HPU, to either to the integrated passive/active accumulators, or back to the grid (power management system/batteries). Using a hybrid solution requires less installed power than the conventional hoisting systems.

### Key Features

- Power regeneration
- Integrated energy storage
- High operational redundancy
- Condition monitoring
- No cut and slip required
- Emergency lift-off/lowering
- High hoisting speed with up to 8.2 ft/s (2.5 m/s)
- Auto driller
- Integrated compensation system

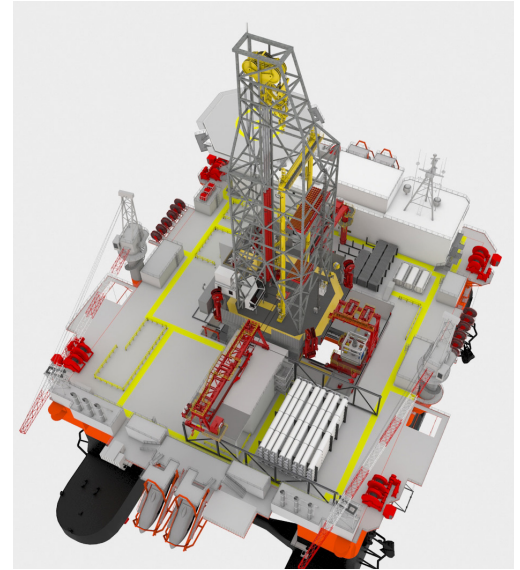
## Benefits

- Lower installed power and fuel consumption compared to conventional hoisting systems
- High uptime
- High performance
- No deadline compensator



RamRig™ solution for drillships

RamRig™ solution for semi submersibles



## Technical Specifications

|                                     | RamRig™<br>350                         | RamRig™<br>500                           | RamRig™<br>750                           | RamRig™<br>1000                            | RamRig™<br>1250                              | RamRig™<br>1500                              | RamRig™<br>1750                              | RamRig™<br>2000                              |
|-------------------------------------|--|--|--|--|--|--|--|--|
| Hosting capacity                    | 350 short tons<br>318 mT<br>700 000 lb | 500 short tons<br>454 mT<br>1 000 000 lb | 750 short tons<br>680 mT<br>1 500 000 lb | 1 000 short tons<br>907 mT<br>2 000 000 lb | 1 250 short tons<br>1 134 mT<br>2 500 000 lb | 1 500 short tons<br>1 361 mT<br>3 000 000 lb | 1 750 short tons<br>1 588 mT<br>3 500 000 lb | 2 000 short tons<br>1 814 mT<br>4 000 000 lb |
| Hoisting speed, max.                | 4.9 ft/s<br>(1.5 m/s)                  | 6.5 ft/s<br>(2.0 m/s)                    | 8.2 ft/s<br>(2.5 m/s)                    | 8.2 ft/s<br>(2.5 m/s)                      | 8.2 ft/s<br>(2.5 m/s)                        | 8.2 ft/s<br>(2.5 m/s)                        | 8.2 ft/s<br>(2.5 m/s)                        | 8.2 ft/s<br>(2.5 m/s)                        |
| Power regeneration                  | ●                                      | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| Heave compensation                  | ●                                      | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| Anti recoil                         | ●                                      | ●  | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| Locked to bottom +<br>anti recoil   | ●                                      | ●  | ●  | ●  | ✓  | ✓  | ✓  | ✓  |
| Auto driller                        | ✓                                      | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| Emergency lowering                  | ✓                                      | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| Emergency lift-off                  | ●                                      | ●  | ●  | ●  | ●  | ●  | ●  | ●  |
| Condition monitoring                | ●                                      | ●  | ●  | ●  | ●  | ●  | ●  | ●  |
| Prognostic and health<br>management | ●                                      | ●  | ●  | ●  | ●  | ●  | ●  | ●  |
| Performance analyzer (PA)           | ●                                      | ●  | ●  | ●  | ●  | ●  | ●  | ●  |

Standard = ✓ | Option = ●

Data is subject to confirmation by the manufacturer.