Active Heave Compensated Drawworks

Leading-edge offshore hoisting system

Our active heave compensated (AHC) drawworks are designed to maximize the operational time frame for high-load operations - even under severe weather conditions.

MHWirth’s field-proven drawworks are the hoisting system which raises and lowers the travelling block and the equipment underneath.

Based on our compact single gear drawworks design, these hoisting systems set new standards for a well-balanced ratio between load and speed performance and allow for flexible and cost-efficient rig setups. With the built-in cutting-edge control system and powerful motors it is possible to drill even in rough weather conditions, using active heave compensation (AHC).

During severe weather conditions continuous operations and safety can be particularly challenging. Our redundant PLC control system prevents machine stop due to a single point failure. Redundant hydraulic systems with independent pumps, pressure lines and triple redundant instrumentation ensure high availability and safety. Our skid-mounted HMI enables maintenance and feedback directly on the drawworks and our unique rope clamping device with a detachable wire line anchor eases cut-and-slip operations, and scales back non-productive time and risks.

The intuitive and flexible-to-configure human machine interface (HMI) of our drawworks’ control system allows the driller to focus on the most critical information. This results in higher drilling efficiency and safer working conditions.

Our unique AC water jacket motors reduce noise to less than 75 dB(A) and feature market leading vibration levels. Our active heave compensated drawworks are accredited in accordance with API Spec 7K and fully comply with the third party certifications of ABS and DNV.

Additional Options:
- Automated single calipers brake test to simplify brake performance testing
- Automated greasing functionality for main bearings to ease maintenance
- Online system allows our 24/7 technical service to diagnose and assist remotely
- Extended verification of drawworks and its control system on our unique in-house test facilities
- Condition based maintenance (CBM) system

Benefits
- Low-maintenance design and CBM capabilities maximize availability and uptime, resulting in lowest operational costs
- Compensates for high loads even in harsh weather conditions
- Redundant control system extends availability
- More cost-efficient rigs with
  - Lighter derrick and substructure
  - Lower centre of gravity (COG) and higher available deck loads compared to conventional compensation systems
- Up to 30% reduced noise level with AC water jacket motor compared to other AC motors in the market
- Extended in-house testing facilities
Technical Specifications

Our AHC drawworks are available with hoisting capacities ranging from 700 to 1 500 short tons (635 to 1361 mT). The typical variants shown in the table below can be selected depending on rig requirements.

<table>
<thead>
<tr>
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<th>HCGH-6000-EG-AC-1G</th>
<th>HCGH-9000-EG-AC-1G</th>
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<tbody>
<tr>
<td>Rig performance rating, max.</td>
<td>6 000 hp (4 479 kW)</td>
<td>9 000 hp (6 711 kW)</td>
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<tr>
<td>Rig capacity, max.</td>
<td>1 000 short tons (907 mT)</td>
<td>1 500 short tons (1 361 mT)</td>
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<td>Standard main motors</td>
<td>Three AC, water jacket</td>
<td>Four AC, water jacket</td>
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<tr>
<td>Lifting capacity first layer, max.</td>
<td>1 227 short tons (2 456 lbs x 1 000) with 16 lines</td>
<td>1 637 short tons (3 275 lbs x 1 000) with 16 lines</td>
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<tr>
<td>Lifting capacity third layer</td>
<td>1 107 short tons (2 214 lbs x 1 000) with 16 lines</td>
<td>1 461 short tons (2 922 lbs x 1 000) with 16 lines</td>
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<tr>
<td>Block speed, max.</td>
<td>262 ft/min (1.3 m/sec) with 16 lines</td>
<td>262 ft/min (1.3 m/sec) with 16 lines</td>
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<tr>
<td>Dry weight</td>
<td>220 462 lb (100 000 kg)</td>
<td>242 508 lb (110 000 kg)</td>
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<tr>
<td>Dimensions</td>
<td>Length: 371 in (9 435 mm)</td>
<td>Width: 138 in (3 500 mm)</td>
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Heave performance depends on the actual load and number of lines.
Hazardous area classification (according to IEC 60079-10-1 and API RP 505): zone 2.
Data is subject to confirmation by the manufacturer.