



SUCCESS STORY

New Hydraulic Motors for Marine and Offshore winches Exceed Performance Goals

Parker's Pump and Motor Division (PMDE) develop hydraulic motors to improve winch performance by increased controllability

CHALLENGE

Under sea conditions, the demand on vessels and ships are very high. Operating in a very remote and harsh environment requires the highest degree of reliability and safety. As a result, market demand over the past years has increased for marine and offshore winches' controllability and accuracy. The winches are expected to provide more precision and increased performance and efficiency. Overall productivity is a key factor to success in this industry.

An offshore crane OEM identified the opportunity for improved crane efficiency and partnered with Parker's Pump and Motor Division (PMDE) to develop a new hydraulic motor to support their winch system. The new motor offers an extended speed range and improved efficiencies thus enabling the OEM to meet their performance goals in the most severe weather conditions offshore. Other benefits with the new motor are ease of installation and a simplified start-up procedure, which contributes to reduced overall installation costs.

Market

- Marine - Offshore

Customer

- OEM

Application

- Deck cranes
- Davit

Solution

- V16 Variable Motor

Results

- Easy and flexible installation
- Increased productivity
- Reduced emissions



ENGINEERING YOUR SUCCESS.

SOLUTION-V16

The solution to increase the winch system's speed and accuracy was achieved through the development of the new V16 Variable Bent Axis motor. V16's unique lightweight, spherical piston concept has a 30% speed capability over competitors. This feature resulted in greater winch performance and productivity.

In terms of accuracy and controllability, the V16's world class displacement ratio (5,5:1) provides the winches with a high resolution, resulting in better accuracy and controllability.

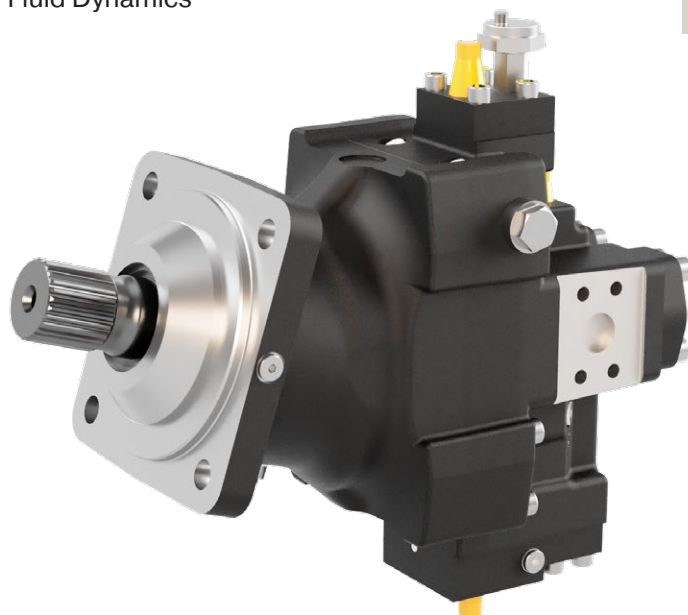
The new V16 is an excellent choice when coming to offshore cranes and other high performance handling equipment requiring precise operation and high power. Active Heave Compensated cranes, with their strong demand for accuracy and high rope speed is a typical example of such an application.

The development of the motor has been done in close cooperation with a major marine OEM, thus ensuring an end result aimed 100 % at marine applications, with unsurpassed performance data.

The V16 can also be installed with a position sensor, which provides the OEM with the ability to monitor the motor displacement and make system adjustments. Finally, with the V16's machined axial and radial main ports, an OEM has both ease and flexibility in its installation of the V16.

Parker's well-known spherical piston concept and CFD* optimized design gives the V16 greater efficiency all while reducing heat generation and power losses. This reduction in power loss and heat generation translates to fuel savings and therefore less CO2 emissions. Down stroking the motor to a zero-displacement and idling will also result in a significant power savings.

*CFD - Computational Fluid Dynamics



V16-270 motor with position sensor

Results

- High system controllability, passed **Active Heave Compensation** test and performed within **±2 cm deviation**
- Higher **Speed Capability** than the original winch system by **30 %** thanks to the V16's light weight, spherical piston design
- **Fuel savings** due to V16's patented, spherical piston design and CFD* optimized design
- **15% better power-to-weight ratio** compared to competitors