

OPTIMUS *EPS* BY *Seastar* ELECTRONIC POWER STEERING



THE ULTIMATE ART OF STEERING



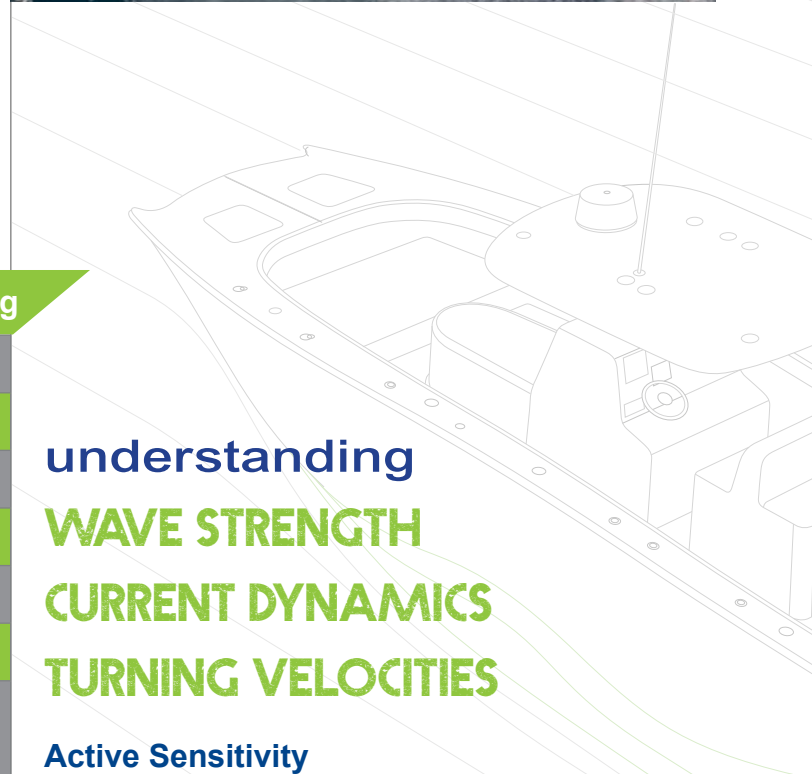
from the **MASTERS** in electronic power steering

Redefining steering for power boats

For centuries, people have been steering boats by brute force. While cable steering, and more recently hydraulics, have made steering easier, the prime mover is still the arms and hands of the skipper at the wheel. But all of that is about to change. SeaStar Solutions is proud to announce a historic change in boat handling, with its revolutionary Optimus Electronic Power Steering (EPS) for twin, triple and quad outboard engine boats. With Optimus EPS, you can take command of your boat without having to arm-wrestle for control.

Enjoy a higher level of engineering sophistication

Optimus EPS truly raises the bar when it comes to comfort, control and maneuverability, especially for the new breed of high performance powerboats, saltwater fishing vessels, catamarans, RIBS and high end pontoon boats. It's unlike anything you've ever experienced when it comes to steering. We know you will be impressed.



understanding
WAVE STRENGTH
CURRENT DYNAMICS
TURNING VELOCITIES

Active Sensitivity

Lock-to-lock turns and wheel effort are programmed to change with engine RPM. At slow speeds, Optimus EPS can be set to reduce the number of turns lock-to-lock, for example 4 and make it easier to steer. When you're negotiating through traffic or in a tight spot, those smaller moves of the wheel give you precise control. When you're running at speed in open water, Optimus EPS can be set to increase lock-to-lock turns, for example, 6 or 7 and increase steering effort giving the driver more stability to comfortably keep on course. And through it all, Optimus EPS does the work, so you can relax and take it easy.

Advantages of Optimus Electronic Power Steering

No oil at helm

Boat that steers like a sports car

Plug and play autopilot compatibility

No auto pilot pump or rudder feedback unit

Adjustable speed sensitive wheel effort

Adjustable speed sensitive turns lock to lock

Can be retrofitted to existing mechanical and electronic controlled engines. You do not have to buy new engines.

No tie-bars (twin configuration)

No liquid tie-bar (CAT)

On demand pumps which extend battery life

Components based on existing SeaStar reliability and quality

NMEA 2000 Certified



Key Components of Optimus EPS

Optimus Electronic Helm



Features

- Adjustable helm turns and steering wheel effort
- Speed sensitive helm turns, effort and steering response
- Dual independent sensors and circuits
- Electronic helm
- Optional tilt helms available
- Optional 2nd helm

Benefits

- • Adjustable steering sensitivity and resistance for maximum comfort
- • Driver comfort, control and performance as speed varies
- • Provides redundancy for reliable operation
- • No hydraulic oil at helm
- • Adjustable position of steering wheel for personal comfort
- • Easy installation, requires only a harness connection

Optimus SmartCylinder



Features

- Dual independent non-contact sensors and proven SeaStar cylinder design
- Integrated rudder feedback unit (RFU)
- Adjustable stainless steel ORB fittings

Benefits

- • System reliability and operation
- • No additional RFU required for autopilot system
- • Simplifies the installation and allows for easy orientation in any direction

Optimus Hydraulic Steering Pump



Features

- On demand hydraulic steering pump
- Simplified semi auto-purge mode
- Designed using SAE J-1171 rated motor
- Third party auto-pilot certified

Benefits

- • Significantly reduces overall power consumption
- • Allows user to purge system with existing components
- • Meets Coast Guard requirement for ignition protection
- • A separate auto-pilot pump is not required.

Optimus CANtrak Display



Features

- CANtrak digital display for messaging and user interface
- Displays visual information on system status

Benefits

- • Provides interface for adjusting helm turns and steering effort
- • Dealer adjustable toe in/out and engine turning ratio
- • Real-time system status rudder direction and RPM

Optimus Pump Control Module



Features

- Fault tolerant CANbus network
- Sealed locking cable connections
- Accommodates certified 3rd party autopilot systems
- Automatic battery selector

Benefits

- • Ensures system reliability and operation
- • Ensures reliable cable connection protection from vibration
- • No additional autopilot pump and RFU
- • Ensures system operates at peak performance

TWIN/TRIPLE/QUAD

The technology behind the system

The incredible feel you get when you're behind the wheel of a boat equipped with Optimus EPS is the result of an incredible array of technology and engineering. Each component has been designed to complement the other, resulting in a seamless experience of steering control in virtually every situation on the water. The high level of engineering also extends to the reliability of the system, with quality materials, careful manufacturing and redundant systems, all to stand up to the rigors of life on the water.

Ackerman Steering

Intelligent programming allows the Optimus EPS system to separately control the steering angle of inner and outer outboards. This eliminates under-steer caused by the outside outboard "pushing" against the curve of the turn. Ackerman steering is especially important in power catamarans where the engines are located farther apart.

Specifications and Installation Information

Features & Benefits of the Optimus EPS System.

- Optimus is designed to be Optimus 360 ready.
- ABYC, CE and ISO compliant - adheres to established safety standards.
- Compatible with select autopilot models from SIMRAD, Garmin and Raymarine.
- When adding 2nd station helm, no oil, just electrical connection.

Options for Optimus EPS

- Second station electronic helm.
- Heavy-duty tournament cylinders.
- Triple with tie-bars.
- Quad with tie-bars.

Applications for Optimus EPS

- All twin, triple and quad outboard engine boats - electronic and mechanical controlled.
- Single and dual helm station boats.
- High performance powerboats, saltwater fishing vessels, RIBS, catamarans, houseboats and pontoon boats.



D ENGINE SYSTEM

Redundancy

Everything in the Optimus EPS system is covered with built-in fail-safe features.

Autopilot Interface

The Optimus EPS electronic control system interfaces directly with the latest generation of autopilots from Garmin, Raymarine and SIMRAD, without the need for a second pump and the lengthy installation and purging procedure.



Twin Engine



Triple Engine



Quad Engine

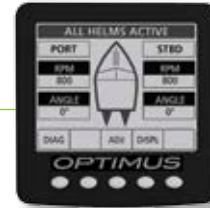


Adjustability – CANtrak Display

The CANtrak Digital Display for messaging helps you set key steering system parameters to match the performance characteristics of the boat – and the boat owner.

- Displays visual information on system status.
- Provides simple interface for adjusting helm turns lock to lock, and steering wheel effort.
- Able to purge Optimus EPS system using the CANtrak display.

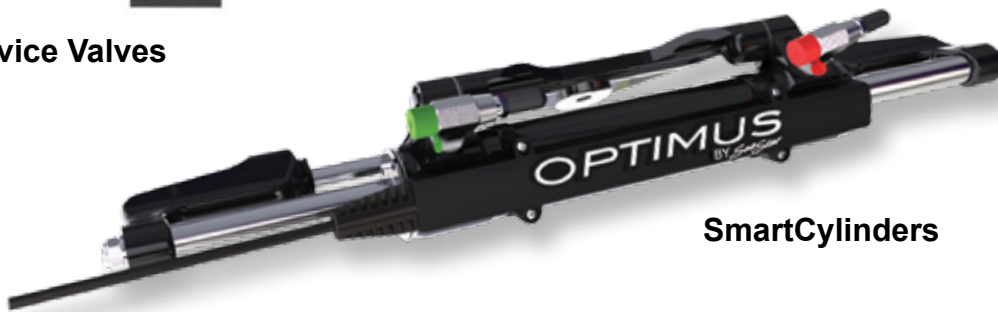
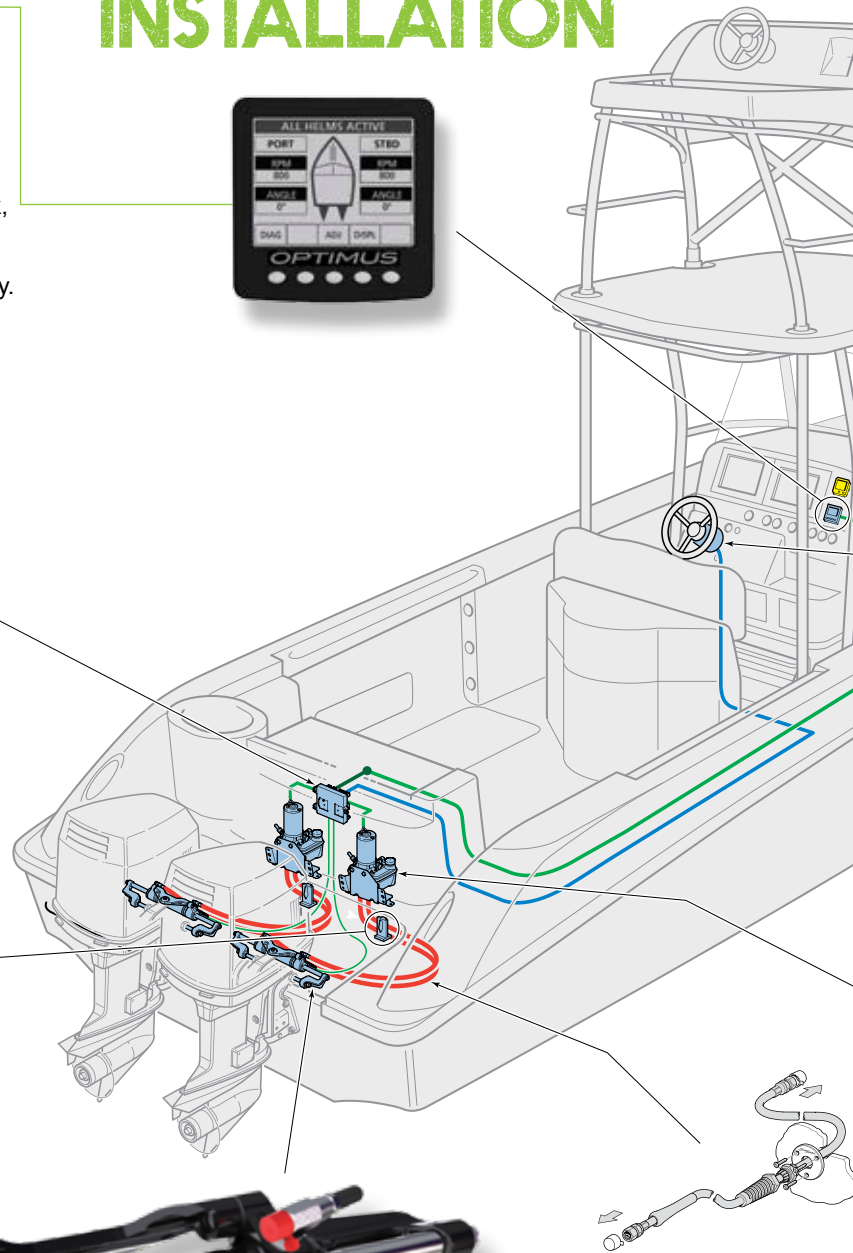
INSTALLATION



Pump Control Module (PCM)



Service Valves



SmartCylinders

Hydraulic Lines

Pump Control Module (PCM)

The electronic brain of the system monitors multiple system sensors and input from the helm to control all aspects of steering.

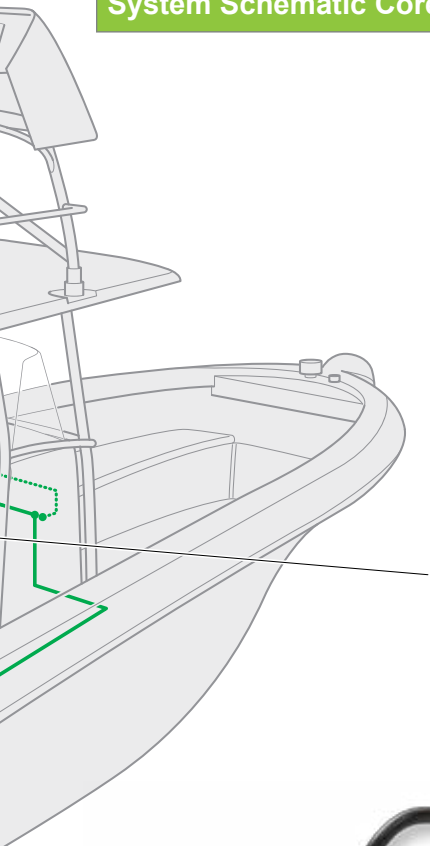
- Fault tolerant CANbus network ensures system reliability and operation.
- Sealed, locking cable connections ensures reliable cable connection protection from vibration.
- Automatic battery selector ensures system operates at peak performance.

SmartCylinders

High performance hydraulic cylinders are equipped with sensors so the system always knows exactly where the engines are pointing.

- Dual independent non-contact sensors and proven SeaStar cylinder design provides system reliability and operation.
- Adjustable stainless steel ORB fittings simplify the installation and allow for easy orientation in any direction.
- Optional tournament cylinders available.

System Schematic Core Installation



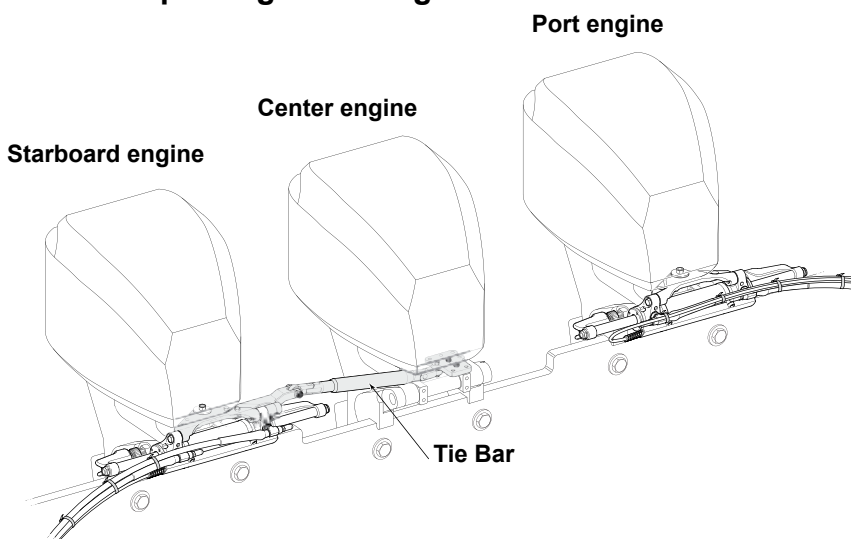
Electronic Helm

Electronic Helm

The Optimus experience is the result of revolutionary technology that delivers incredible “feel”. The new electronic helm electronically controls steering and adjusts wheel resistance (friction). Like all components, the helm plugs in easily via CANbus network.

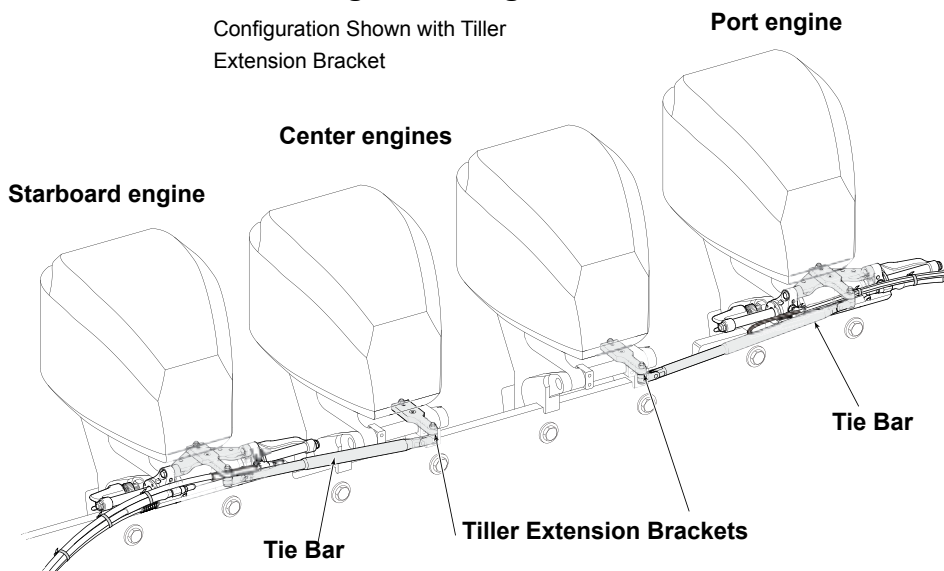
- Adjustable helm turns and steering wheel effort allows user to adjust steering sensitivity and resistance for maximum comfort.
- Speed sensitive helm turns, effort and steering response provide the ability to adjust effort and steering sensitivity at speed.
- Dual independent sensors and circuits provide redundancy for reliable operation.
- No oil at helm means you do not have to worry about leaks and oil at helm.
- Optional 2nd helm allows for easy installation which involves a harness connection and no hydraulic lines.

Triple Engine Configuration



Quad Engine Configuration

Configuration Shown with Tiller Extension Bracket



Hydraulic Steering Pump



