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> VEVOR Hydraulic Steering Kit YSH-150HP User Manual

VEVOR YSH-150HP

VEVOR Hydraulic Steering Kit YSH-150HP User Manual

For Marine Boats up to 150 HP

[Introduction](#) [Components](#) [Specifications](#) [Setup & Support](#) [Operation](#) [Maintenance](#) [Troubleshooting](#) [Warranty](#)

1. INTRODUCTION

This manual provides essential information for the safe and efficient installation, operation, and maintenance of your VEVOR Hydraulic Steering Kit (Model YSH-150HP). Please read these instructions thoroughly before beginning any procedures. Proper installation and maintenance are crucial for optimal performance and safety.

Safety Information

Always wear appropriate personal protective equipment (PPE) during installation and maintenance. Ensure the boat is securely docked or trailered and the engine is off before working on the steering system. Hydraulic fluid can be under high pressure; exercise caution to prevent injury. Refer to your boat and engine manuals for additional safety guidelines.

Fit Most Boats

Compatible with most hydraulic steering systems up to 150 HP



Yachts



Patrol Boats



Fishing Boats



Sailboats

Figure 1: The VEVOR Hydraulic Steering Kit is compatible with a wide range of marine vessels, including yachts, patrol boats, fishing boats, and sailboats, for engines up to 150 HP.

2. PRODUCT COMPONENTS

The VEVOR Hydraulic Steering Kit (Model YSH-150HP) includes the following main components and accessories:



Figure 2: Overview of the VEVOR Hydraulic Steering Kit components.

- **Hydraulic Helm Pump:** Designed for efficient steering, featuring a check valve, fill port, stainless steel ORB fittings, and a replaceable shaft seal. Constructed with an aluminum alloy housing for durability.

- **Hydraulic Steering Cylinder:** A compact, two-way lock cylinder with a reinforced sealing structure, ensuring smooth performance and durability.
- **2 x 20ft High-Strength Hoses:** Premium hoses with a maximum working pressure of 25MPa, resistant to bursting, kinking, and leaking. Equipped with quick-fit 5/16-inch fittings.
- **Complete Accessories:** Includes quick connectors, mounting bushings, washers & nuts, a plastic oil nozzle, and an oil bottle (without oil).

Detailed Component Features

Helm Pump



Figure 3: Key features of the hydraulic helm pump, including the replaceable shaft seal, fill port, and robust aluminum alloy body.

- **Replaceable Shaft Seal:** Allows for easy maintenance and extends product lifespan.
- **Fill Port:** For convenient hydraulic fluid replenishment.
- **Aluminum Alloy Body:** Provides corrosion resistance against seawater, abrasion, and wear.
- **ORB Hose Fitting:** Ensures easy hose routing and quick installation.

Hydraulic Cylinder

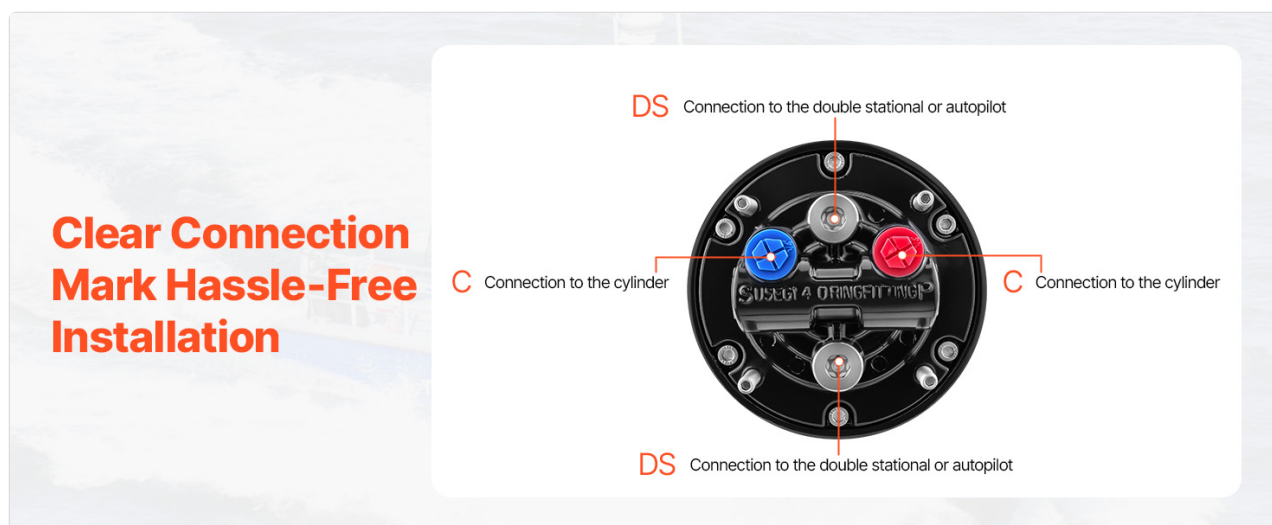


Figure 4: Features of the hydraulic steering cylinder, including the steering control arm, stainless steel components, and air bleed nut.

- **Corrosion-Resistant & Wear-Resistant Aluminum Alloy Housing:** Ensures longevity in marine environments.
- **Engine Steering Tiller Arm:** Connects the cylinder to the engine.
- **Stainless Steel Engine Tilt Rod:** Provides robust connection and movement.

- **Premium Stainless Steel Mounting Rod:** For secure attachment.
- **Air Bleed Nut:** Facilitates bleeding air from the system.

High-Pressure Hydraulic Hoses

Experience Effortless Control and Confident Navigation



Steering Control Arm for Outboard Engine



High-Strength Stainless Steel Mounting Shaft



Durable Stainless Steel Tilt Shaft



Rugged Aluminum Alloy Body, Corrosion-proof & Wear-Resistant



Hydraulic Air Release Valve



Figure 5: Construction of the high-pressure hydraulic hoses, designed for durability and resistance to marine conditions.

- **PU Protective Outer Layer:** Provides wear, anti-aging, and sun protection.
- **Reinforced Fiber Layer:** Resists pressure and prevents bursting.
- **Rubber Inner Layer:** Oil-resistant and corrosion-resistant for lasting reliability.
- **Quick-Fit 5/16 Inch Pipe Fitting:** Allows for flexible and fast installation.
- **Cut-to-Length Flexibility:** Hoses can be customized to the required length.

3. SPECIFICATIONS



Item Model Number: **YSH-150HP** Lock-to-Lock Turns (Pump): **5.5 ± 0.5 turns**
 Steering Wheel Mount Thread: **5/8"-18 UNF** Max Working Pressure: **6.9 MPa/1,000 psi $\pm 10\%$**
 Cylinder Capacity: **$101 \pm 10\%$ mL** Bore Diameter: **30 ± 0.5 mm** Rod Diameter: **16 ± 0.5 mm**
 Stroke: **198 ± 2 mm** Applicable Engine Horsepower: **Up to 150 HP** Color: **Black**
 Material: **Aluminum Alloy + 304 Stainless Steel** Net Weight: **16.8 lbs/7.6 kg**
 Cylinder Dimensions: **21.9 x 5.3 x 3.9 in/555 x 135 x 100 mm**
 Pump Dimensions: **4.5 x 8.5 in/115 x 215 mm**
 Package Content: **1 x Hydraulic Steering Pump, 1 x Hydraulic Steering Cylinder**
2 x 20 ft High-Pressure Oil Hoses, 1 x Mounting Plate, 2 x 135° Elbow Fittings (with O-rings)
2 x Quick Connectors, 4 x Mounting Bushings, 1 x Set of Washers & Nuts
2 x Hoses, 1 x Plastic Oil Nozzle, 1 x Oil Bottle (Without Oil) , 1 x User Manual

Figure 6: Product dimensions and detailed specifications for the VEVOR Hydraulic Steering Kit.

Feature	Specification
Item Model Number	YSH-150HP
Lock-to-Lock Turns (Pump)	5.5 ± 0.5 turns
Steering Wheel Mount Thread	5/8"-18 UNF
Max Working Pressure	6.9 MPa / 1000 psi ± 10%
Cylinder Capacity	101 ± 10% mL
Bore Diameter	30 ± 0.5 mm
Rod Diameter	16 ± 0.5 mm
Stroke	198 ± 2 mm
Applicable Engine Horsepower	Up to 150 HP
Color	Black
Material	Aluminum Alloy + 304 Stainless Steel
Net Weight	16.8 lbs / 7.6 kg
Cylinder Dimensions	21.9 x 5.3 x 3.9 in / 555 x 135 x 100 mm
Pump Dimensions	4.5 x 8.5 in / 115 x 215 mm
Included Components	1 x Hydraulic Steering Pump, 1 x Hydraulic Steering Cylinder, 2 x 20 ft High-Pressure Oil Hoses, 1 x Mounting Plate, 2 x 135° Elbow Fittings (with O-rings), 2 x Quick Connectors, 4 x Mounting Bushings, 1 x Set of Washers & Nuts, 2 x Hoses, 1 x Plastic Oil Nozzle, 1 x Oil Bottle (Without Oil), 1 x User Manual

Engine Compatibility

The VEVOR Hydraulic Steering Kit is designed for seamless compatibility with hydraulic steering systems for outboard engines up to 150 HP. Refer to the table below for specific engine models.



Figure 7: Engine compatibility chart for the VEVOR Hydraulic Steering Kit.

4. SETUP AND INSTALLATION

Follow these steps for proper installation of the hydraulic steering kit. Ensure all connections are secure and leak-free.

Cylinder Installation

The hydraulic cylinder connects to the outboard engine's steering arm. The following steps outline the general installation process:

1. **Prepare the Engine:** Ensure the engine is in a neutral position and secured.
2. **Attach Mounting Rods:** Loosen the lock nut on the piston end of the cylinder and detach the mounting rod.
3. **Position the Bracket:** Detach the bolt from the bracket hole, adjust the engine angle, then align the bracket with the engine mounting holes. Secure it using appropriate bolts and nuts.
4. **Connect Cylinder to Engine:** Insert the stainless steel C-clip into the proper groove based on the spacing.
5. **Secure Connections:** After installation, tighten the locking nut to avoid piston movement clearance.



Figure 8: Step-by-step guide for installing the hydraulic steering cylinder.

For a visual guide on cylinder installation, refer to the video below:

Video 1: Detailed installation process for the hydraulic steering cylinder (ZA0300 model shown, similar principles apply).

Helm Pump and Hose Installation

1. **Mount the Helm Pump:** Install the helm pump at the desired steering station. Ensure it is securely fastened.

2. **Connect Hoses:** Connect the high-pressure hydraulic hoses from the helm pump to the hydraulic cylinder. Use the quick-fit 5/16-inch pipe fittings and ensure all connections are tightened with a wrench to prevent leaks.
3. **Fill with Hydraulic Fluid:** Remove the fill port cap on the helm pump. Use the provided oil bottle and a suitable hydraulic fluid (not included) to fill the system. Ensure no air enters the system during filling.
4. **Bleed the System:** After filling, turn the steering wheel from lock to lock several times to bleed any air from the system. Check the fluid level and top up as necessary. Repeat until steering feels firm and consistent.

For a visual overview of the installation and filling process, refer to the video below:

Video 2: Overview of VEVOR Hydraulic Steering Pump installation and initial setup, including filling with fluid.

5. OPERATION

Once installed and bled, the VEVOR Hydraulic Steering Kit provides smooth and responsive steering. The helm pump offers 5.5 turns lock-to-lock for precise control.

- **Steering:** Turn the steering wheel clockwise to steer to starboard (right) and counter-clockwise to steer to port (left).
- **Responsiveness:** The hydraulic system ensures immediate response to steering input, enhancing maneuverability.
- **Two-Way Lock Cylinder:** The cylinder maintains the rudder position, preventing feedback from the engine and holding the course even when the steering wheel is released.

6. MAINTENANCE

Regular maintenance ensures the longevity and reliable performance of your hydraulic steering system.

- **Check Fluid Level:** Periodically check the hydraulic fluid level in the helm pump reservoir. Top up with recommended hydraulic fluid if necessary.
- **Inspect for Leaks:** Regularly inspect all hose connections, the helm pump, and the cylinder for any signs of hydraulic fluid leaks. Tighten connections or replace seals/hoses as needed.
- **Inspect Hoses:** Check hoses for cracks, kinks, or abrasion. Replace damaged hoses immediately.
- **Clean Components:** Keep the helm pump and cylinder clean and free from salt, dirt, and debris. Rinse with fresh water after use in saltwater environments.
- **Shaft Seal Replacement:** The helm pump features a replaceable shaft seal. If you notice fluid leaking from the steering shaft, replace the seal according to service instructions.
- **Bleed Air:** If steering feels spongy or unresponsive, air may have entered the system. Re-bleed the system as described in the setup section.

7. TROUBLESHOOTING

This section addresses common issues you might encounter with your hydraulic steering system.

Problem	Possible Cause	Solution
Spongy or unresponsive steering	Air in the hydraulic system	Bleed the hydraulic system thoroughly. Check fluid level.
Steering wheel turns freely but rudder does not move	Low hydraulic fluid level or severe air lock	Check fluid level and refill. Bleed the system repeatedly. Inspect for major leaks.
Hydraulic fluid leak	Loose fittings, damaged hoses, or worn seals	Tighten all fittings. Inspect hoses for damage and replace if necessary. Replace worn shaft seals on the helm pump or cylinder.
Stiff steering	Insufficient lubrication, mechanical binding, or incorrect fluid type	Check for mechanical obstructions. Ensure proper hydraulic fluid is used. Consult a professional if the issue persists.

8. WARRANTY & SUPPORT

Warranty Information

VEVOR products are designed for quality and durability. For specific warranty terms and conditions applicable to your Hydraulic Steering Kit, please refer to the warranty card included with your product or visit the official VEVOR website. Keep your purchase receipt as proof of purchase for warranty claims.

Customer Support

If you encounter any issues or have questions regarding the installation, operation, or maintenance of your VEVOR Hydraulic Steering Kit, please contact VEVOR customer support. You can typically find contact information on the VEVOR website or in the packaging materials.

For further assistance, you may visit the VEVOR Store online: [VEVOR Official Store](#)