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VEVOR YSH-90HP

VEVOR Hydraulic Steering Kit 90 HP User Manual

Model: YSH-90HP

1. Introduction

This manual provides essential information for the safe installation, operation, and maintenance of your VEVOR Hydraulic Steering Kit. This kit is designed for marine outboard engines up to 90 HP, offering precise and responsive steering control. Please read this manual thoroughly before installation and use to ensure proper function and safety.

2. Safety Information

Warning: Failure to follow these safety instructions may result in serious injury, property damage, or death.

- Always wear appropriate personal protective equipment (PPE) during installation and maintenance.
- Ensure the engine is turned off and the battery is disconnected before performing any installation or maintenance.
- Verify all connections are secure and leak-free before operating the vessel.
- Use only hydraulic fluid recommended by the manufacturer. Mixing different types of hydraulic fluid can cause system failure.
- Regularly inspect the steering system for signs of wear, damage, or leaks. Address any issues immediately.
- Do not exceed the maximum rated engine horsepower (90 HP) for this steering kit.
- If you are unsure about any part of the installation or operation, consult a qualified marine technician.

3. Product Components

The VEVOR Hydraulic Steering Kit includes the following components:

- 1 x Hydraulic Steering Pump (Helm Pump)
- 1 x Hydraulic Steering Cylinder (Two-Way Lock Cylinder)
- 2 x High-Strength Hydraulic Hoses (24 ft each)
- Complete Accessories:
  - 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 Small Bleed Hoses
- 1 x Plastic Oil Nozzle
- 1 x Oil Bottle (supplied without oil)
- 1 x User Manual (this document)



Figure 3.1: Overview of VEVOR Hydraulic Steering Kit components.



Figure 3.2: Main components of the hydraulic steering system.

4. Setup and Installation

Proper installation is crucial for the safe and effective operation of your hydraulic steering system. Follow these steps carefully.

4.1 Helm Pump Installation

- Mount the helm pump in a suitable location at the steering station, ensuring easy access for operation and maintenance.
- Ensure the mounting surface is flat and strong enough to support the pump.
- Connect the steering wheel to the helm pump shaft.



Figure 4.1: Helm Pump features including fill port and replaceable shaft seal.

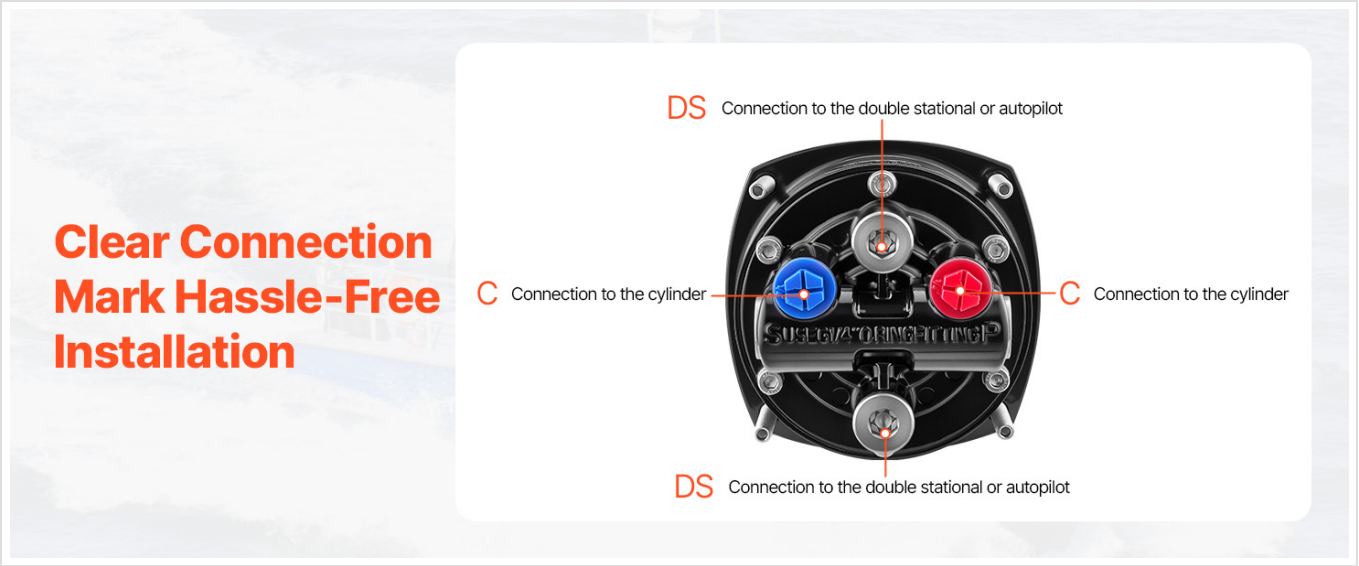

Figure 4.2: Helm Pump connection points.

4.2 Steering Cylinder Installation

- Mount the hydraulic cylinder to the outboard engine and transom according to the engine manufacturer's guidelines.
- Ensure the cylinder is securely fastened and has full range of motion without obstruction.

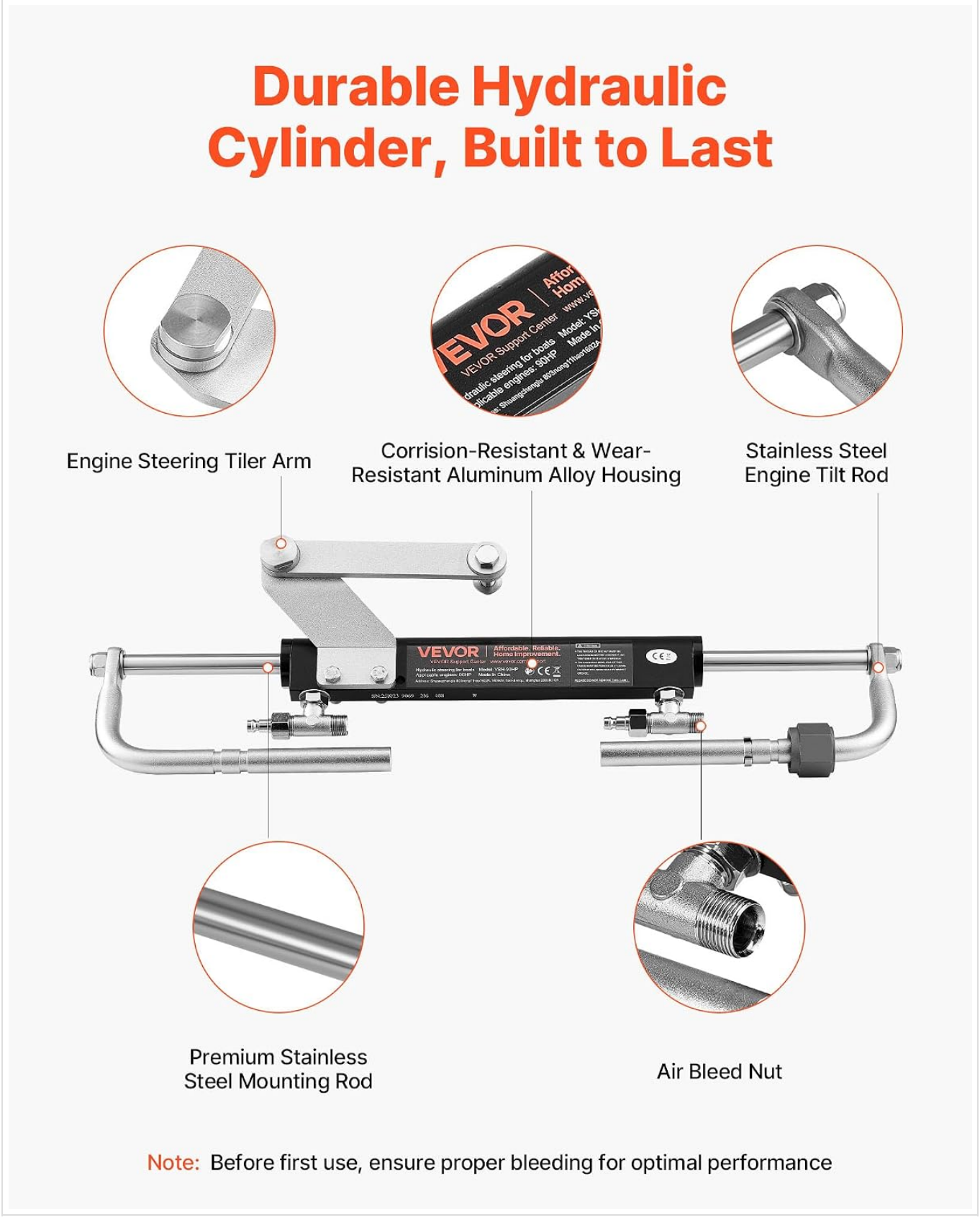

Figure 4.3: Hydraulic Cylinder components.

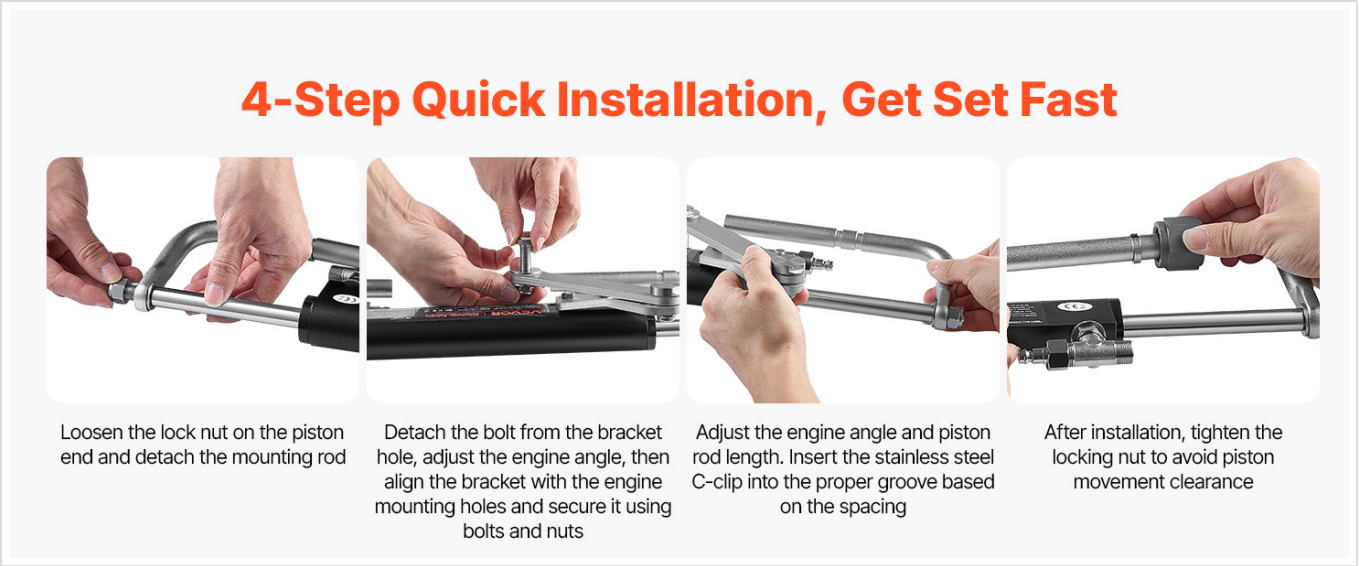

Figure 4.4: 4-Step Quick Installation for the cylinder.

1. Loosen the lock nut on the piston end and detach the mounting rod.
2. Detach the bolt from the bracket hole, adjust the engine angle, then align the bracket with the engine mounting holes and secure it using bolts and nuts.
3. Adjust the engine angle and piston rod length. Insert the stainless steel C-clip into the proper groove based on the spacing.
4. After installation, tighten the locking nut to avoid piston movement clearance.

4.3 Hose Connection and Bleeding

- Connect the high-strength hydraulic hoses between the helm pump and the steering cylinder using the provided quick-fit 5/16-inch fittings and elbow fittings.
- Ensure all connections are tight to prevent leaks.
- **Bleeding the System:** Before first use, the hydraulic system must be properly bled to remove all air. This ensures optimal performance and prevents spongy steering. Refer to the detailed bleeding instructions in the separate user manual provided with the kit.



Figure 4.5: High-strength hydraulic hoses with quick-fit fittings.

4.4 Compatibility

This hydraulic steering kit is compatible with most hydraulic steering systems for outboard engines up to 90 HP. Refer to the table below for specific engine compatibility.

Seamlessly compatible with hydraulic steering systems up to 90 HP

ENGINE	POWER
Yamaha	60-70 2 Stroke(1990-2008)、75C-90 2 Stroke (1998-2008)、F40G-F70 4 Stroke (2010-today)、F40-F60-F75-F80-F90 EFFI 4 Stroke (1990-2007) F80 4 Stroke (2000-today)、F40D-F50F-F60C EFI 4 Stroke (2004-today)
Honda	BF40-50-60-75-90 4 Stroke(1995-today)、BF90 V-TEC 4 Stroke(2008-today)
Suzuki	DF40-50-60-70-80-90 4 Stroke (1998-today)
Tohatsu Nissan	40-50-60-70-90 2 Stroke (2004-today)、75-90 2 Stroke (2004-today)、40-50TLDI 4 Stroke (2004-today)、70-90 TLDI 4 Stroke (2004-today)
Mercury Mariner	50-75-90 2 Stroke (1990-2008)、75-90-115 Optimax 2 Stroke (2004-today)、40-50-60-EFI 4 Stroke (2004-today)、75-80-90 EFI 4 Stroke (2000-today)
Evinrude	E40-E50-E55-E60 2 Stroke (2004-today)、E75-E90 2 Stroke (2004-today)
Selva	40XS-50 Madeira 2 Stroke、40XS-50 Bull shark 2 Stroke、40XS-60 Grey shark 2 Stroke、40XS-70 Mako shark、2 Stroke、40XS-60 St.Tropez 2 Stroke 80 Portofino/Tigershark 2 Stroke、40 Aruana 4 Stroke 40 Aruana 4 Stroke、40XS-40XSR-50-60 Dorado EFI 4 Stroke、40XSR EFI Murena 4 Stroke (1995-today)
Johnson	BJ60-70 4 Stroke (2001-2007)、BJ90 4 Stroke (2001-2007)、J90 V4 2 Stroke (1995-2007)

Figure 4.6: Engine compatibility chart.

The kit is suitable for various boat types:

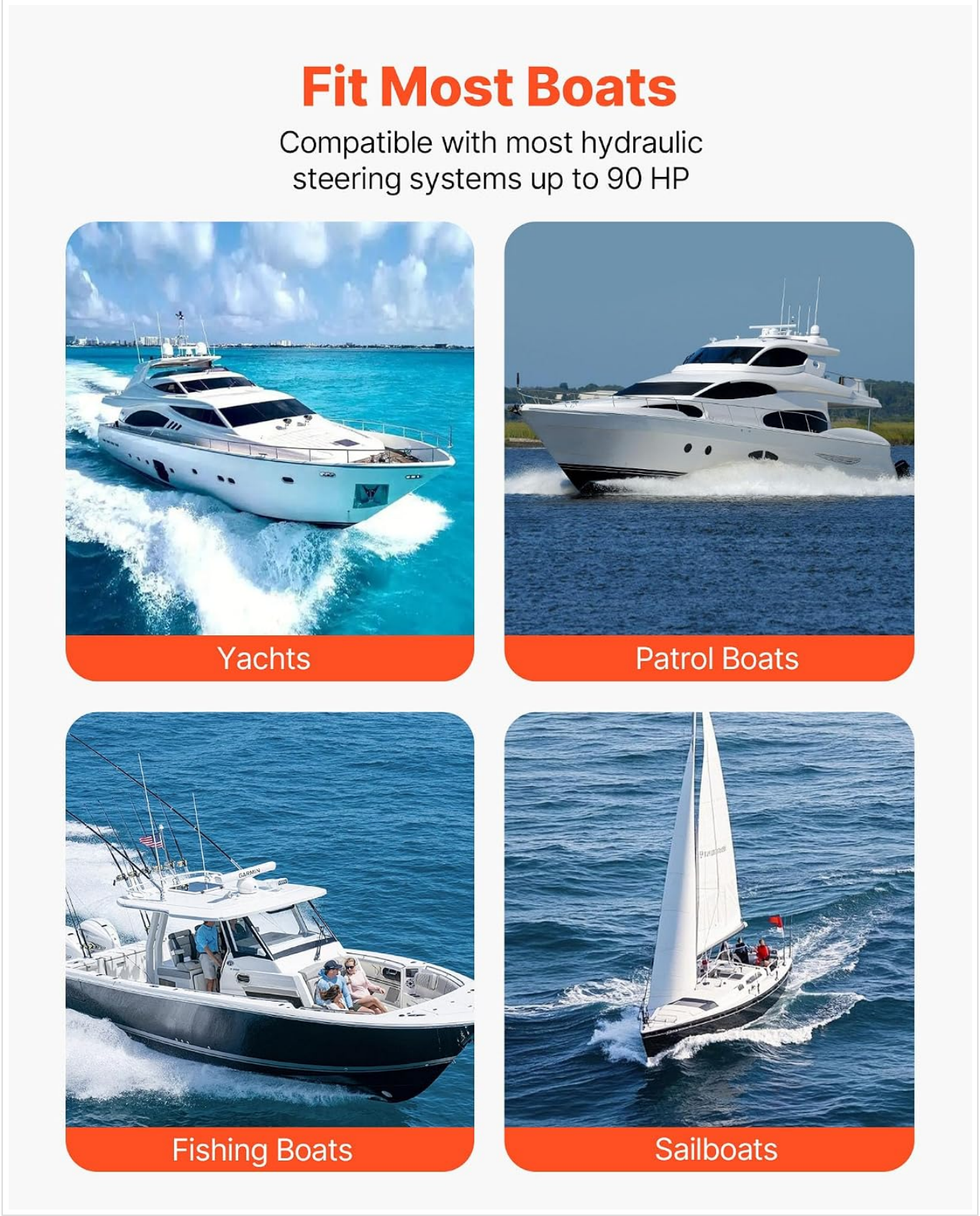

Figure 4.7: Compatible boat types.

5. Operating Instructions

Once the system is properly installed and bled, operating your hydraulic steering system is straightforward.

- **Steering:** Turn the steering wheel clockwise to steer the boat to starboard (right) and counter-clockwise to steer to port (left). The hydraulic system provides smooth and responsive control.
- **Lock-to-Lock Turns:** The system provides approximately 5 turns lock-to-lock for precise maneuvering.

- **Engine Trim/Tilt:** The hydraulic steering system operates independently of the engine's trim and tilt functions. Ensure these are adjusted as needed for optimal boat performance.
- **Pre-Operation Check:** Before each use, visually inspect the steering system for any leaks, loose connections, or damage. Confirm the steering operates smoothly from lock to lock.

6. Maintenance

Regular maintenance will extend the life of your hydraulic steering system and ensure safe operation.

- **Fluid Level Check:** Periodically check the hydraulic fluid level in the helm pump reservoir. Top up with the recommended hydraulic fluid if necessary. The fill port is located on the top of the helm pump.
- **Leak Inspection:** Regularly inspect all hoses, fittings, and seals for any signs of hydraulic fluid leaks. Address any leaks immediately to prevent system failure.
- **Hose Condition:** Check hydraulic hoses for cracks, chafing, or kinks. Replace damaged hoses promptly.
- **Cylinder Rod Inspection:** Inspect the cylinder rod for corrosion or pitting. Keep the rod clean and free of debris.
- **Shaft Seal:** The helm pump features a replaceable shaft seal. If leakage occurs around the steering wheel shaft, the seal may need replacement.
- **Bleeding:** If steering becomes spongy or unresponsive, the system may have air and require re-bleeding.

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.
Loss of steering	Low hydraulic fluid level Major leak in the system Damaged helm pump or cylinder	Check and refill hydraulic fluid. Inspect for and repair leaks. If components are damaged, replace them.
Stiff steering	Insufficient hydraulic fluid Air in the system Mechanical obstruction Damaged helm pump or cylinder	Check fluid level and refill. Bleed the system. Inspect for and remove any obstructions. Inspect components for damage.
Visible fluid leaks	Loose fittings Damaged hoses or seals	Tighten all fittings. Replace damaged hoses or seals (e.g., helm pump shaft seal).

8. Specifications

Detailed specifications for the VEVOR Hydraulic Steering Kit (Model YSH-90HP):

Feature	Specification
Item Model Number	YSH-90HP
Lock-to-Lock Turns (Pump)	5 ± 0.5 turns
Steering Wheel Mount Thread	5/8"-18 UNF
Max Working Pressure	6.9 MPa / 1000 psi ± 10%
Cylinder Capacity	67 ± 10% ml
Bore Diameter	25 ± 0.5 mm
Rod Diameter	14 ± 0.5 mm
Stroke	200 ± 2 mm
Applicable Engine Horsepower	Up to 90 HP
Color	Black
Material	Aluminum Alloy + 304 Stainless Steel
Net Weight	15 lbs / 6.8 kg
Cylinder Dimensions	20.9 x 6.3 x 2.8 in / 530 x 160 x 70 mm
Pump Dimensions	4.5 x 8.3 in / 115 x 210 mm



Figure 8.1: Dimensional and technical specifications.

9. Warranty and Support

Warranty: For information regarding the product warranty, please refer to the warranty card included with your purchase or visit the official VEVOR website. Warranty terms and conditions may vary by region and product.

Customer Support: If you have any questions, require technical assistance, or need to report an issue, please contact VEVOR customer service through their official website or the contact information provided in your purchase documentation.

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