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› Torchbeam Power Steering Pump (Model 96-5498) Instruction Manual

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For Lexus ES350 (2007-2012), Toyota Avalon (2005-2012), Toyota Camry 3.5L (2007-2011)

1. INTRODUCTION

This manual provides essential information for the proper installation, operation, and maintenance of your Torchbeam Power Steering Pump, Model 96-5498. Please read these instructions carefully before proceeding with installation or use to ensure safety and optimal performance.

2. PRODUCT OVERVIEW AND SPECIFICATIONS

The Torchbeam Power Steering Pump is designed to provide reliable power assistance for your vehicle's steering system, enhancing driving comfort and stability.

2.1 Key Features

- **Vehicle Fitment:** Compatible with 2005-2012 Toyota Avalon, 2007-2012 Lexus ES350, and 2007-2011 Toyota Camry 3.5L.
- **OE Equivalent:** Replaces OE part numbers 96-5498, 4431007040, 4431033170, 6051P.
- **High Durability:** Constructed from high-quality aluminum and iron for strength and corrosion resistance, ensuring long-term use.
- **Enhanced Comfort:** Designed to facilitate easy steering, improve vehicle stability, minimize operational noise, and extend the lifespan of the steering system.
- **Complete Unit:** Includes pulley. Reservoir is not included.

2.2 Product Structure



Figure 1: Exploded view of the power steering pump components.

The pump features a pulley slot for belt connection, a high-pressure hose connection, and a main connector. The internal sealing ring is designed to prevent oil leakage under high-pressure conditions.



Figure 2: Internal sealing components of the power steering pump.

2.3 Technical Specifications

Specification	Detail
Brand	Torchbeam
Model Number	96-5498
OEM Part Numbers	4431007040, 4431033170, 6051P, 965498
Item Weight	4.18 pounds
Product Dimensions	6.3 x 6.3 x 5.71 inches
Pulley Included	Yes
Reservoir Included	No

Specification	Detail
Inlet Attachment Type	Hose Barb
Outlet Attachment Type	Threaded
Outlet Inner Diameter Size	16X1.5
Position	Front

2.4 What's in the Box

- 1 x Torchbeam Power Steering Pump (Model 96-5498)

3. SAFETY INFORMATION

Working on automotive systems can be dangerous. Always observe the following safety precautions:

- Always wear appropriate personal protective equipment, including safety glasses and gloves.
- Ensure the vehicle is securely supported on jack stands before working underneath it.
- Disconnect the vehicle's battery before starting any electrical work.
- Power steering fluid is corrosive and can cause skin irritation. Avoid contact and clean up spills immediately.
- Refer to your vehicle's service manual for specific procedures and torque specifications.
- If you are unsure about any step, consult a qualified mechanic.

4. INSTALLATION INSTRUCTIONS

The following steps provide a general guide for replacing the power steering pump. Specific procedures may vary by vehicle model. Always consult your vehicle's service manual for detailed instructions.

1. **Preparation:** Park the vehicle on a level surface, engage the parking brake, and disconnect the negative battery terminal. Allow the engine to cool down.
2. **Drain Fluid:** Place a drain pan under the power steering pump. Disconnect the return line hose from the power steering reservoir and allow the fluid to drain.
3. **Remove Drive Belt:** Loosen the tensioner and remove the serpentine drive belt from the power steering pump pulley.
4. **Disconnect Hoses:** Disconnect the high-pressure line and the return line from the old power steering pump. Be prepared for additional fluid leakage. Cap the lines to prevent contamination.
5. **Remove Old Pump:** Unbolt and remove the old power steering pump from its mounting bracket.
6. **Install New Pump:** Position the new Torchbeam power steering pump onto the mounting bracket and secure it with the bolts. Tighten to the manufacturer's specified torque.
7. **Connect Hoses:** Reconnect the high-pressure line and the return line to the new pump. Ensure all connections are secure to prevent leaks.
8. **Install Drive Belt:** Route the serpentine belt correctly around all pulleys and tension it according to your vehicle's specifications.
9. **Flush Hydraulic System:** Before filling with new fluid, the entire hydraulic system should be flushed to remove any contaminants or old fluid. This helps ensure optimal performance and longevity of the new pump.
10. **Fill with Fluid:** Fill the power steering reservoir with the manufacturer-specified power steering fluid. Do not overfill.

11. **Bleed Air:** Start the engine and slowly turn the steering wheel from lock to lock several times to bleed air from the system. Check the fluid level and add more if necessary. Repeat until the fluid level stabilizes and no air bubbles are visible. Ensure all joints are sealed to prevent air re-entry.
12. **Final Check:** Inspect for any leaks around the pump and hose connections. Reconnect the negative battery terminal.



Figure 3: General power steering pump installation location.

5. OPERATION

Once properly installed and the system is bled of air, the Torchbeam Power Steering Pump operates automatically to assist steering. The primary operational aspect for the user is to monitor the system for proper function.

- **Smooth Steering:** The steering wheel should turn smoothly and with minimal effort.
- **No Unusual Noises:** The power steering system should operate quietly. Any whining, groaning, or squealing noises indicate a potential issue.
- **Fluid Level:** Regularly check the power steering fluid level in the reservoir, ensuring it remains between the MIN and MAX marks.

6. MAINTENANCE

Regular maintenance helps ensure the longevity and optimal performance of your power steering pump and system.

- **Fluid Level Check:** Check the power steering fluid level at least once a month, or as recommended by your vehicle manufacturer.
- **Fluid Condition:** Inspect the fluid for discoloration or burnt smell. If the fluid is dark or smells burnt, it may need to be flushed and replaced.
- **Leak Inspection:** Periodically inspect the power steering pump, hoses, and connections for any signs of fluid leaks. Address any leaks promptly.
- **Belt Condition:** Check the serpentine belt for cracks, fraying, or excessive wear. Replace if necessary.

7. TROUBLESHOOTING

If you experience issues with your power steering system after installing the Torchbeam pump, refer to the common symptoms and potential causes below.



Figure 4: Common symptoms indicating a power steering pump issue.

Symptom	Possible Cause	Solution
Stiff or Stuck Steering	Low power steering fluid, air in the system, faulty pump, worn serpentine belt.	Check fluid level and add if low. Bleed air from the system. Inspect serpentine belt tension and condition. If issues persist, the pump may require further inspection.
Steering Oil Leaking	Loose hose connections, damaged O-rings/seals, cracked reservoir, faulty pump seal.	Inspect all hose connections and tighten as needed. Check for visible damage to hoses, reservoir, or pump seals. Replace damaged components.
Whining or Groaning Noise	Low fluid level, air in the system, contaminated fluid, worn pump bearings.	Check fluid level and add if low. Bleed air from the system. Flush and replace fluid if contaminated. If noise persists, the pump may be failing.
Steering Wheel Slow to Respond	Low fluid pressure, air in the system, worn pump, restricted lines.	Check fluid level and bleed air. Inspect power steering lines for kinks or blockages. If the pump is not generating adequate pressure, it may need replacement.

If troubleshooting steps do not resolve the issue, it is recommended to consult a professional mechanic or contact Torchbeam customer support.

8. WARRANTY AND CUSTOMER SUPPORT

Torchbeam is committed to providing high-quality automotive parts. This power steering pump comes with **a2-year warranty** from the date of purchase.

- **Warranty Coverage:** Covers defects in materials and workmanship under normal use.
- **Exclusions:** Does not cover damage due to improper installation, misuse, neglect, accident, or unauthorized modifications.

For any questions, technical assistance, or warranty claims, please contact Torchbeam customer support. You can find more information and contact details on the official Torchbeam store page:

Visit Torchbeam Store



Figure 5: Torchbeam Professional Customer Service Team.