Aeromotive 18309

Aeromotive 18309 Fuel Pump System, Dual Phantom 340 Universal In-Tank User Manual

Model: 18309

Product Overview

The Aeromotive 18309 Dual Phantom 340 Universal In-Tank Fuel Pump System is a high-performance aftermarket component designed for fuel delivery. It features two 340 LPH (liters per hour) Stealth Fuel Pumps, an additional set of electrical bulkheads, and a larger capacity foam and bladder. This system is engineered to support significant horsepower while maintaining quiet operation. Its design allows for installation within a stock fuel tank without requiring welding or extensive fabrication.

The dual pump setup enables an on-demand fuel system, which helps reduce returned fuel volume and tank temperature, mitigating issues like vapor lock and cavitation. This redundancy also makes it suitable for extreme conditions such as off-road, desert, and endurance racing.



Figure 1: Components of the Aeromotive 18309 Dual Phantom 340 Universal In-Tank Fuel Pump System. This image displays the main assembly, two fuel pumps, various clamps, bolts, nuts, electrical connectors, and foam baffling.

Setup and Installation

Installation of the Aeromotive 18309 system requires careful attention to detail and adherence to proper automotive practices. It is recommended that installation be performed by a qualified professional.

Key Installation Considerations:

- **Tank Compatibility:** The modular design allows the unit to be cut to height, enabling fitment into a wide range of fuel tanks. Ensure precise measurements are taken before any modifications.
- **In-Tank Use Only:** This system is designed exclusively for in-tank applications. Do not attempt to use it as an external or inline pump.
- **Electrical Connections:** The system includes separate electrical bulkheads for each pump. Proper wiring is crucial for optimal performance and safety. Consult a wiring diagram if unsure.
- **Fuel Line Connections:** The top hat features four ORB-06 ports: two for supply, one for return, and one for vent. Ensure all fuel lines are securely connected and free of leaks.
- **Baffling and Foam:** The larger capacity foam and bladder are designed to combat fuel slosh and ensure consistent fuel supply to the pumps, especially during dynamic driving conditions. Ensure these components are correctly installed within the tank.

For detailed, step-by-step installation instructions, please refer to the official Installation Manual (PDF) provided by Aeromotive. A link to this document may be found on the product's official support page or included with the product packaging.
Note: Always disconnect the vehicle's battery before beginning any electrical work. Ensure the fuel tank is drained and properly ventilated to prevent fire hazards.

Operating Principles

The Dual Phantom 340 system operates by utilizing two high-performance 340 LPH Stealth Fuel Pumps. This dual-pump configuration offers several operational advantages:

- **High Horsepower Support:** The combined flow rate of the two pumps is capable of supporting high horsepower applications, whether EFI (Electronic Fuel Injection) or carbureted, and with or without forced induction.
- **On-Demand Fuel Delivery:** Separate electrical bulkheads allow for independent control of each pump. This enables an "on-demand" fuel system, where one pump can operate during normal conditions and the second pump can be activated when higher fuel flow is required (e.g., under boost or high RPM).
- **Reduced Fuel Return and Tank Temperature:** By operating pumps on demand, the amount of fuel continuously circulated and returned to the tank is reduced. This helps to maintain lower fuel temperatures within the tank, which is critical for preventing vapor lock and cavitation, especially in high-performance scenarios.
- **Redundancy:** In extreme conditions, such as off-road or endurance racing, the dual pump setup provides a crucial layer of redundancy. If one pump experiences an issue, the second pump can potentially maintain fuel delivery, preventing complete system failure.
- **Quiet Operation:** Despite its high performance, the turbine pump mechanisms are designed to operate quietly, similar to original equipment (OE) pumps.

Maintenance

Proper maintenance ensures the longevity and optimal performance of your Aeromotive fuel pump system. While the system is designed for durability, regular checks are recommended.

- **Fuel Quality:** Always use high-quality, clean fuel. Contaminants in fuel can significantly reduce the lifespan of fuel pumps and clog filters.
- **Fuel Filter Replacement:** Regularly inspect and replace your fuel filter(s) as per your vehicle's or system's recommended intervals. A clogged fuel filter can strain the fuel pumps and lead to reduced performance.
- **System Inspection:** Periodically inspect all fuel lines, connections, and electrical wiring for signs of wear, leaks, or corrosion. Address any issues promptly.
- **Tank Cleanliness:** If the fuel tank is ever opened, ensure it is clean and free of debris before reassembly.
- **Professional Check-ups:** Consider professional inspection of your fuel system during routine vehicle maintenance, especially if you notice any changes in performance or fuel delivery.

Troubleshooting

If you experience issues with your Aeromotive fuel pump system, consider the following common troubleshooting steps. Always prioritize safety and consult a professional if you are unsure.

Symptom	Possible Cause	Solution
No fuel pressure / Pump not running	No power to pump, faulty wiring, blown fuse, faulty relay, seized pump.	Check electrical connections, fuses, and relays. Verify power at the pump. Test pump directly if safe to do so.
Low fuel pressure	Clogged fuel filter, restricted fuel line, faulty fuel pressure regulator, weak pump, low voltage.	Replace fuel filter. Inspect fuel lines for kinks. Check fuel pressure regulator. Verify proper voltage to pumps.
Excessive noise from pump	Contaminated fuel, air in fuel system (cavitation), worn pump bearings, loose mounting.	Check fuel quality. Ensure tank is not running critically low on fuel. Inspect pump mounting. Consider pump replacement if noise persists.

Symptom	Possible Cause	Solution
Fuel leaks	Loose fittings, damaged O-rings/seals, cracked lines.	Inspect all connections and lines. Tighten fittings. Replace damaged seals or lines.

If these steps do not resolve the issue, it is recommended to contact Aeromotive customer support or a certified automotive technician.

Specifications

Feature	Detail
Model Number	18309
Pump Type	Dual 340 LPH Stealth Fuel Pumps
Application	Universal In-Tank
Fuel Compatibility	Gasoline
Horsepower Support (EFI - Forced Induction)	Up to 1400 HP
Horsepower Support (EFI - Naturally Aspirated)	Up to 1700 HP
Horsepower Support (Carbureted - Forced Induction)	Up to 1700 HP
Horsepower Support (Carbureted - Naturally Aspirated)	Up to 2000 HP
Ports	(4) ORB-06 Ports (2x Supply, 1x Return, 1x Vent)
Material	Plastic (Body), Black Anodized (Top Hat)
Item Weight	4.93 pounds
Country of Origin	USA

Warranty and Support

Aeromotive products are manufactured to high standards. For specific warranty information regarding the Aeromotive 18309 Fuel Pump System, please refer to the warranty documentation included with your product or visit the official Aeromotive website.

For technical support, product inquiries, or assistance with troubleshooting beyond the scope of this manual, please contact Aeromotive customer service directly. You can often find contact information and additional resources on the official Aeromotive Brand Store or their corporate website.

© 2024 Aeromotive Inc. All rights reserved.
This manual is for informational purposes only. Always follow professional installation guidelines and safety precautions.

Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. Privacy details.

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question