POWERMASTER 8-47100-347

Powermaster 8-47100-347 Natural Alternator Instruction Manual

Model: 8-47100-347

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of your Powermaster 8-47100-347 Natural Alternator. Please read this manual thoroughly before installation and use to ensure proper function and safety. This alternator is designed for high-performance automotive applications, delivering 100 amps with a smooth look and a 6-groove pulley, featuring a 1-wire connection for simplified setup.

2. Product Overview

The Powermaster 8-47100-347 is an upgrade natural alternator engineered for demanding electrical systems. It features a 100-amp output, a smooth finish, and a 6-groove pulley. The 1-wire design simplifies the wiring process, making it an efficient choice for various vehicle setups. This unit is built to provide reliable power for your vehicle's electrical components.

Figure 2.1: Front view of the Powermaster 8-47100-347 Natural Alternator, showing the 6-groove pulley and main housing.

3. Specifications

Feature	Detail
Model Name	8-47100-347
Brand Name	POWERMASTER
Output Amperage	100A
Pulley Type	6 Groove
Wiring Type	1-Wire
Item Weight	13.5 Pounds
Item Dimensions (LxWxH)	9 x 7.5 x 7.5 inches
Material	Plastic *(Note: This might refer to internal components or specific parts, the main housing is typically metal)*
Included Components	Powermaster - Alt Ford Upgrade Natural 100A Smooth

4. Setup and Installation

Safety First: Before beginning any installation, disconnect the vehicle's battery to prevent electrical shorts and injury. It is highly recommended that installation be performed by a qualified automotive technician.

4.1 Pre-Installation Checks

- Ensure the new alternator matches the mounting points and pulley alignment of the original unit.
- Verify that the vehicle's battery is in good condition and fully charged.
- Inspect all wiring for damage, corrosion, or loose connections.

4.2 Installation Steps

1. **Remove Old Alternator:** Disconnect all wiring from the old alternator. Remove mounting bolts and carefully detach the old unit.
2. **Mount New Alternator:** Position the Powermaster 8-47100-347 alternator into the mounting brackets. Secure it with the appropriate bolts, ensuring proper belt tension.
3. **Wiring (1-Wire System):** Connect the main output terminal of the alternator directly to the positive (+) terminal of the battery or the main power distribution point using appropriate gauge wire. The 1-wire system simplifies connections by integrating the voltage regulator internally.
4. **Ground Connection:** Ensure the alternator housing has a good ground connection to the engine block. This is typically achieved through the mounting brackets.
5. **Reconnect Battery:** Once all connections are secure and verified, reconnect the vehicle's battery.

4.3 Recommended Wiring Size

Proper wire gauge is critical for optimal performance and safety. Refer to the chart below for recommended wire sizes for alternator to battery connections based on system voltage, amperage, and length.

Recommended Wiring Size For Alternator to Battery Connections

System Voltage	Amps	Length and Recommended Gauge of Wire					
		< 5 Ft	5-10 Ft	10-15 Ft	15-20 Ft	20-25 Ft	25-30 Ft
12 Volt	0-60	8 AWG wire	4 AWGwire	2 AWG wire	2 AWG wire	1 AWG wire	2/0 AWG wire
12 Volt	60-100	6 AWG	4 AWG	1 AWG	1/0 AWG	1/0 AWG	2/0 AWG
12 Volt	100-150	4 AWG	2 AWG	1/0 AWG	2/0 AWG	2/0 AWG	3/0 AWG
12 Volt	150-190	4 AWG	1 AWG	2/0 AWG	3/0 AWG	4/0 AWG	4/0 AWG
12 Volt	190-250	2 AWG	1/0 AWG	2/0 AWG	4/0 AWG	4/0 AWG	4/0 AWG
12 Volt	250-300	1/0 AWG	2/0 AWG	3/0 AWG	4/0 AWG	4/0 AWG	4/0 AWG

Figure 4.1: Recommended Wiring Size Chart for Alternator to Battery Connections.

Always use high-quality, automotive-grade wiring and terminals.

5. Operating Instructions

Once installed, the Powermaster 8-47100-347 alternator operates automatically to maintain the vehicle's electrical system voltage and recharge the battery. No manual intervention is typically required during normal operation.

5.1 Initial Start-Up

- After installation, start the engine and allow it to idle.
- Observe the vehicle's voltmeter (if equipped) or use a multimeter to check the charging voltage at the battery terminals. A healthy charging system should show approximately 13.8 to 14.8 volts.
- Ensure no battery warning lights or charging system fault indicators are illuminated on the dashboard.

5.2 Normal Operation

The alternator will continuously regulate voltage and supply current to meet the vehicle's electrical demands while driving. The 1-wire design means the internal regulator handles all necessary functions without external excitation wires.

6. Maintenance

Regular maintenance helps ensure the longevity and optimal performance of your alternator.

- **Belt Tension:** Periodically check the serpentine belt tension. A loose belt can cause slippage, reducing alternator output and potentially damaging the belt or pulley.
- **Wiring Connections:** Inspect all electrical connections to the alternator and battery for tightness and corrosion. Clean any corroded terminals.
- **Cleanliness:** Keep the alternator free from excessive dirt, oil, and debris, which can impede cooling and affect performance.
- **Battery Health:** Ensure your vehicle's battery is in good condition. A weak or failing battery can put undue strain on the alternator.

7. Troubleshooting

If you experience issues with your vehicle's charging system, consider the following troubleshooting steps:

Symptom	Possible Cause	Solution
Battery warning light on / Low voltage	Loose or worn serpentine belt; Loose or corroded wiring connections; Faulty battery; Alternator failure.	Check belt tension and condition; Inspect and clean all connections; Test battery; Consult a technician for alternator diagnosis.
Overcharging / High voltage	Internal voltage regulator failure.	This typically indicates an internal fault requiring professional diagnosis and potentially alternator replacement.
Noisy alternator	Worn bearings; Loose pulley; Loose mounting bolts.	Inspect for loose components; Professional diagnosis for internal bearing issues.

If troubleshooting steps do not resolve the issue, it is recommended to seek assistance from a certified automotive technician.

8. Warranty and Support

This Powermaster alternator is covered by a manufacturer's warranty. For specific warranty terms, conditions, and duration, please refer to the documentation provided with your purchase or contact Powermaster customer support directly.
For technical support or warranty claims, please contact Powermaster through their official website or customer service channels. When contacting support, please have your model number (8-47100-347) and purchase information readily available.