

## DB Electrical 400-24030

# DB Electrical 400-24030 Alternator Instruction Manual

Your guide to installation, operation, and maintenance for the DB Electrical 400-24030 Alternator.

## 1. INTRODUCTION

This manual provides essential information for the DB Electrical 400-24030 Alternator, designed as a compatible replacement for specific Saturn L Series vehicles. The alternator is a critical component of your vehicle's electrical system, responsible for generating electricity to power the vehicle's electrical components and recharge the battery.

Proper installation and maintenance are crucial for the longevity and optimal performance of this unit. Please read all instructions carefully before proceeding with any procedures.

## 2. PRODUCT OVERVIEW

The DB Electrical 400-24030 Alternator is a new aftermarket unit built to meet OEM specifications, ensuring reliable performance. It features a 12-volt system with a 120-amp output, designed for clockwise rotation and equipped with an internal regulator and internal fan.

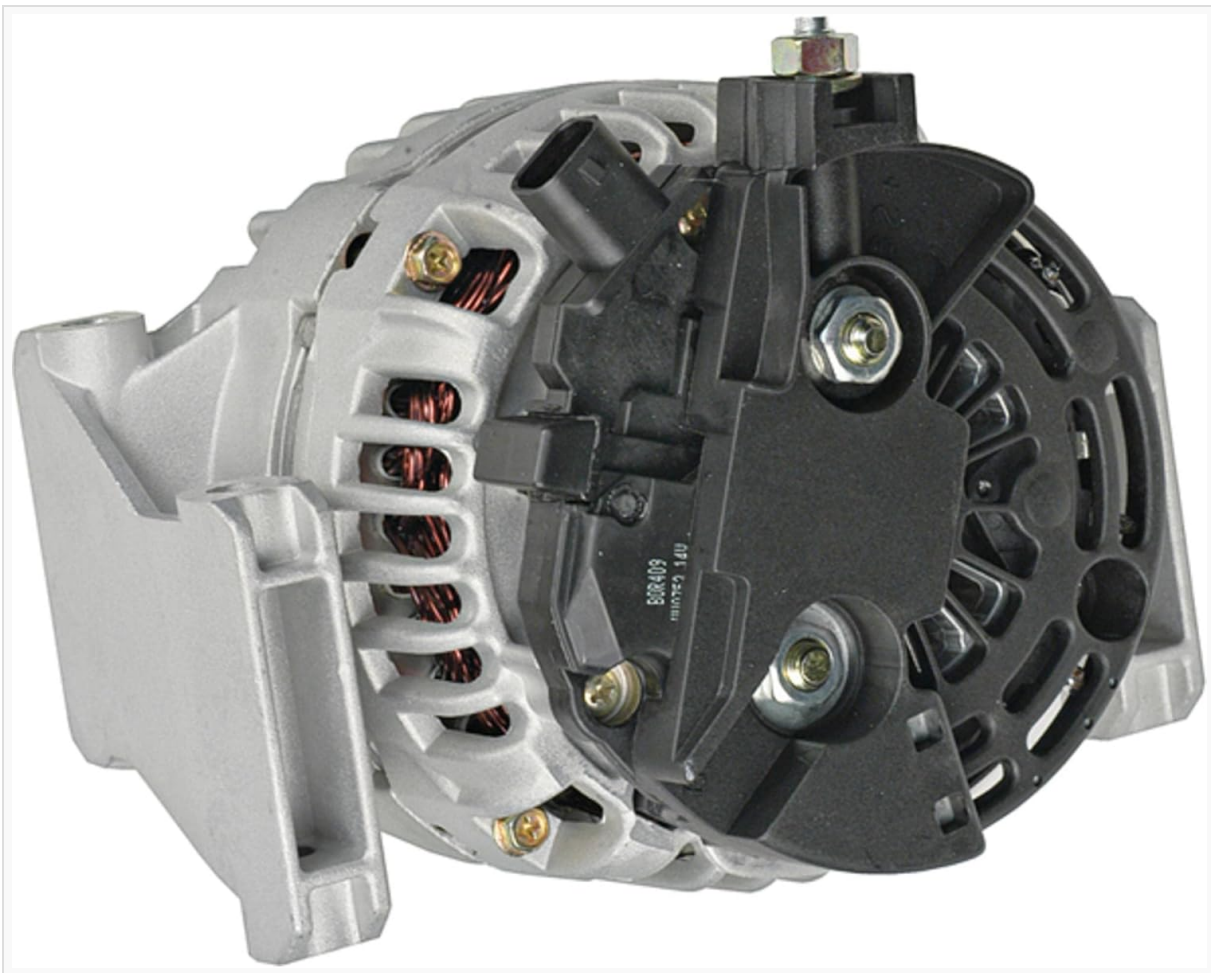


Figure 2.1: Front view of the DB Electrical 400-24030 Alternator, showing the main housing and electrical connections.

### 3. COMPATIBILITY

This alternator is compatible with and serves as a direct replacement for the following vehicle models:

- **SATURN:** L SERIES (2000-2004)

It replaces the following OEM and aftermarket part numbers:

- ARROWHEAD: ABO0125, 400-24030
- BOSCH: 0-124-515-016, B-120-516-147
- CARGO: 113798
- GENERAL MOTORS: 21019215, 22674549, 90585955
- J & N: 400-24030
- LESTER: 13804
- REMY LIGHT DUTY: 12102

Always verify part fitment with your vehicle's specific make, model, and year before purchasing and installing.

### 4. INSTALLATION AND SETUP

Installation of an alternator requires mechanical knowledge and proper tools. If you are not experienced with automotive electrical systems, it is highly recommended to seek professional assistance for installation.

## 4.1. Safety Precautions

- Always disconnect the negative battery terminal before working on any electrical components to prevent accidental short circuits or electrical shock.
- Ensure the engine is cool before beginning work.
- Wear appropriate personal protective equipment, including safety glasses and gloves.
- Refer to your vehicle's specific service manual for detailed removal and installation procedures.

## 4.2. General Installation Steps (Consult Vehicle Manual for Specifics)

1. **Disconnect Battery:** Disconnect the negative battery cable.
2. **Access Alternator:** Locate the alternator in your engine bay. You may need to remove other components (e.g., belts, hoses, covers) to gain access.
3. **Remove Drive Belt:** Loosen the tensioner and remove the serpentine belt from the alternator pulley.
4. **Disconnect Wiring:** Carefully disconnect all electrical connections from the old alternator. This typically includes the main power wire (B+ terminal) and the connector for the regulator/field wires.
5. **Remove Mounting Bolts:** Unbolt the old alternator from its mounting brackets. Note the position of any spacers or washers.
6. **Install New Alternator:** Position the new DB Electrical 400-24030 Alternator into place and secure it with the mounting bolts. Do not overtighten.
7. **Reconnect Wiring:** Reconnect all electrical connections securely. Ensure the main power wire is clean and tight.



Figure 4.1: Diagram illustrating the electrical connector for the alternator, typically labeled 'L' for Lamp/Load and 'DFM' for Digital Field Monitor.

7. **Reinstall Drive Belt:** Route the serpentine belt correctly around all pulleys and tension it according to your vehicle's specifications.
8. **Reconnect Battery:** Reconnect the negative battery cable.
9. **Test System:** Start the vehicle and check for proper charging system operation. Observe the battery warning light on the dashboard; it should turn off after the engine starts.

## 5. OPERATION

Once installed, the alternator operates automatically to maintain your vehicle's electrical system. When the engine is running, the alternator converts mechanical energy from the engine's crankshaft (via the serpentine belt) into electrical energy. This electrical energy is used to:

- Power all electrical components in the vehicle (lights, radio, air conditioning, ignition system, etc.).
- Recharge the vehicle's 12-volt battery, ensuring it has sufficient charge for starting the engine and providing supplemental power when the alternator's output is insufficient (e.g., at idle with many accessories on).

The internal regulator within the alternator controls the voltage output to prevent overcharging or undercharging the battery, maintaining a stable voltage for the vehicle's electrical system, typically between 13.5 and 14.5 volts.



Figure 5.1: View of the alternator from the pulley side, showing the mechanism that connects to the engine's serpentine belt.

## 6. MAINTENANCE

Alternators are generally low-maintenance components. However, regular checks of related systems can help ensure its longevity:

- **Battery Health:** Ensure your vehicle's battery is in good condition. A weak or failing battery can put excessive strain on the alternator.
- **Belt Condition:** Regularly inspect the serpentine belt for cracks, fraying, or excessive wear. A worn belt can slip, reducing the alternator's efficiency.
- **Belt Tension:** Ensure the serpentine belt has proper tension. Too loose, and it will slip; too tight, and it can put undue stress on the alternator bearings.
- **Wiring Connections:** Periodically check all electrical connections to the alternator for corrosion or looseness. Clean any corrosion and ensure connections are tight.
- **Avoid Overloading:** Minimize the use of high-draw electrical accessories when the engine is at idle or low RPMs, as this can strain the charging system.

## 7. TROUBLESHOOTING

If you experience issues with your vehicle's charging system, the alternator may be a contributing factor. Here are common symptoms and potential causes:

Symptom	Possible Cause
Battery Warning Light On	Failing alternator, loose or corroded battery/alternator connections, faulty voltage regulator.
Dim Headlights or Interior Lights	Alternator not producing enough power, weak battery.
Dead Battery	Alternator not charging, parasitic drain, old battery.
Growling or Whining Noise	Worn alternator bearings, loose or misaligned serpentine belt.
Burning Rubber Smell	Slipping serpentine belt due to worn tensioner or pulley.

If you suspect an alternator issue, it is advisable to have the charging system tested by a qualified mechanic or at an automotive parts store.

## 8. SPECIFICATIONS

Detailed technical specifications for the DB Electrical 400-24030 Alternator:



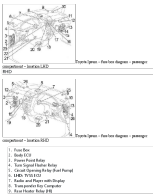

Specification	Value
Unit Type	Alternator
Model Number	400-24030
Voltage	12 Volts
Amperage	120 Amps
Rotation	CW (Clockwise)
Clock Position	2
Pulley Class	S5
Regulator Type	IR (Internal Regulator)
Fan Type	IF (Internal Fan)
Item Weight	14.87 pounds
Product Dimensions	5.71 x 4.91 x 5.05 inches

## 9. WARRANTY AND SUPPORT

The DB Electrical 400-24030 Alternator is backed by a **1-year warranty** from the date of purchase. This

If you encounter any issues with the product within the warranty period, please contact DB Electrical customer support for assistance or a replacement. Ensure you retain your proof of purchase for warranty claims.

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<div data-bbox="143 647 296 781"> <p>©2005 GM Corp.  <b>Toyota Yaris / Echo / Vitz (XP10; 1999-2005) fuses and relays</b></p>  </div>	<div data-bbox="339 714 1482 826"> <h3><a href="#">Toyota Yaris / Echo / Vitz (XP10) 1999-2005 Fuses and Relays Guide</a></h3> <p>Comprehensive guide to the fuse box diagrams, fuse assignments, and relay locations for the first-generation Toyota Yaris, Echo, and Vitz (XP10) models produced between 1999 and 2005.</p> </div>
<div data-bbox="122 952 304 1214">  </div>	<div data-bbox="339 1012 1482 1162"> <h3><a href="#">Volkswagen Golf IV / Bora (mk4; 1997-2004) Fuse and Relay Diagrams</a></h3> <p>Comprehensive guide to the fuse box diagrams, locations, and assignments for Volkswagen Golf IV and Bora (mk4) models manufactured between 1997 and 2004. Includes details on instrument panel fuses, battery fuses, and relay configurations.</p> </div>
<div data-bbox="143 1274 296 1512"> <p>Toyota Ipsum 2000 - 2006 fuse box diagrams</p>  </div>	<div data-bbox="339 1326 1482 1476"> <h3><a href="#">Toyota Ipsum 2000-2006 Fuse Box Diagrams and Schematics</a></h3> <p>Detailed fuse box diagrams and circuit information for Toyota Ipsum models produced between 2000 and 2006, covering both Left-Hand Drive (LHD) and Right-Hand Drive (RHD) configurations. Includes fuse and relay assignments for passenger and engine compartments.</p> </div>
<div data-bbox="122 1579 304 1841">  </div>	<div data-bbox="339 1758 1482 1908"> <h3><a href="#">Volkswagen New Beetle (1998-2011) Fuse Box Diagrams and Relay Assignments</a></h3> <p>Comprehensive guide detailing fuse box locations, fuse diagrams, and relay assignments for the Volkswagen New Beetle models manufactured between 1998 and 2011. Includes fuse color codes, amperage ratings, and specific component functions.</p> </div>

