



Model 7060 Alternator 12-Volt Offshore Parts Kit Installation Instructions

Professional Installation Is Required

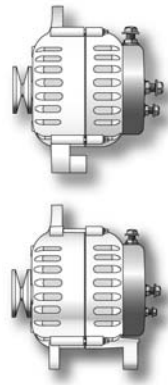
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1. Kit Compatibility

The Model 7060 Alternator Offshore Parts Kit is intended for use with the following 12-volt alternator models:

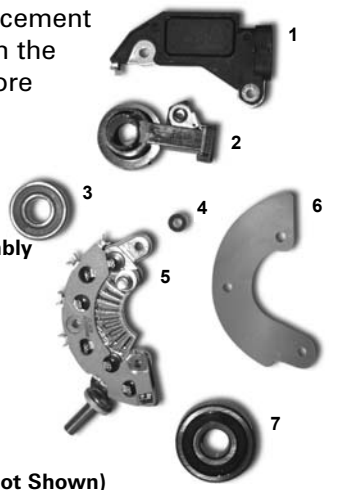
- Model: 60-70-SR-IG
60-100-SR-IG
60-120-SR-IG
60-150-SR-IG
- Model: 621-70-SR-IG
621-100-SR-IG
621-120-SR-IG
621-150-SR-IG
- Model: 604-120-SR-IG
604-150-SR-IG



2. Offshore Parts Included

The offshore replacement parts included with the Model 7060 Offshore Parts Kit are:

1. Regulator
2. Brush Holder Assembly
3. Rear Bearing
4. Regulator Washer
5. Rectifier Assembly
6. Rectifier Gasket
7. Front Bearing
8. Instruction Sheet (Not Shown)



3. Tools Required

The following tools will be required to install the parts included in the Offshore Kit:

1. Adjustable Wrench
2. Flat Head Screwdriver
3. Wire Cutter
4. Needlenose Plier
5. Allen Wrench Set
6. Ratchet / Deep Well Socket Set
7. Non-Marring Mallet
8. Heavy Duty Gear Puller
9. High Temperature Soldering Iron
10. E-5 Torx Socket/Driver



4. Remove Pulley

The 6-Series alternator's pulley is held in place by a nut and lockwasher. A hexagonal indent is provided in the end of the pulley shaft, should it be necessary to remove the nut with hand tools.

It is preferable to use an electrical or pneumatic impact wrench to remove the pulley nut from the pulley shaft. A 15/16" or 24mm impact wrench socket is required. To remove the pulley:

1. Loosen and remove pulley nut.
2. Remove lock washer.
3. Remove pulley.

During disassembly, keep parts separated and in order to ensure they are properly replaced when the alternator is re-assembled.

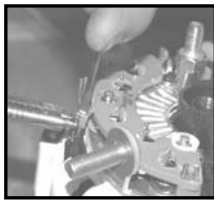
5. Remove Rear Cover

The black plastic case at the rear of the alternator provides access to the rectifier assembly, brushholder assembly and Smart Ready internal regulator. To remove the rear cover:

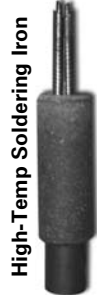
1. Remove any wires or cables connected to the alternator's positive or negative output terminals.
2. Remove nut and washers from D+ stud.
3. Carefully pry the plastic retainer tabs away from the alternator case to allow the rear case cover to be released from the alternator case. Be sure that the D+ terminal assembly is free from the cover before fully removing cover.

6. De-Solder Stator & D+ Wires

The 3 wires supplying the D+ terminal on the rear cover of the alternator must be de-soldered prior to removal. A high-temperature iron like that shown below must be used, as high-temperature solder is used.



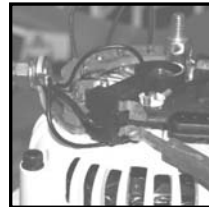
1. Heat wire terminal at rectifier until solder becomes fluid.
2. Use small flat screwdriver to carefully pry terminal open.
3. Remove D+ wire and stator wire from terminal jaws and remove excess solder.
4. Repeat at remaining terminals.



7. De-Solder Ground Wires

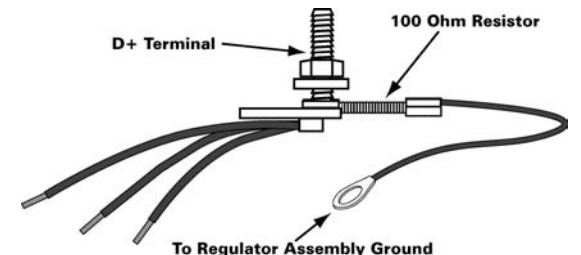
The alternator's ground is connected to the rectifier, regulator and brushholder assemblies via a three-wire connector that attaches to the alternator's ground terminal stud. One of the three wire leads is soldered to the brushholder assembly. The remaining wires are connected to the rectifier and regulator with ring terminals. To remove the brushholder wire:

1. Heat wire terminal at brushholder until solder becomes fluid.
2. Use small flat screwdriver to carefully pry terminal open.
3. Remove B- wire and remove excess solder.



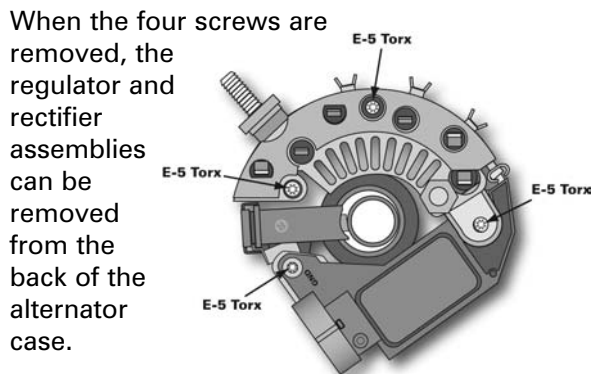
8. D+ Circuit Resistor

Some 6-Series alternators include a 100 ohm resistor that's mounted between the regulator ground terminal and the alternator's D+ terminal. The resistor must be re-installed on the same connection points when replacement parts are installed.



9. Remove Screws

Four E-5 Torx head screws secure the rectifier, brushholder and internal regulator assemblies to the rear alternator case. Remove the Torx screws indicated in the illustration below. When the four screws are removed, the regulator and rectifier assemblies can be removed from the back of the alternator case.



10. Separate Front & Rear Cases

Once the rear assemblies have been removed, the alternator case can be opened. To split the case:

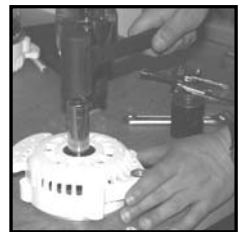
1. Remove the stator wire isolating retainer from the wires and save.
2. Carefully pry the front and rear cases apart, using care to ensure the cases are spread evenly around their perimeters. The humps where the the four case bolt holes extend through the front and rear cases provide optimal pry points.

Note: The stator and front bearing will typically remain in the faceplate when the case is opened. The rear bearing may remain on the rotor shaft or in the brushholder assembly. The following steps describe bearing removal.

11. Removing Front Bearing

We strongly recommend the use of a press to remove the front bearing from the faceplate.

1. Place the faceplate face up on a flat working surface. Provide support under the faceplate (surrounding the underside of the bearing) to ensure the faceplate does not crack.
2. If a press is not available, use a dead blow hammer and deep well socket, to tap the bearing out of the faceplate. Use care to ensure that the bearing is tapped evenly to avoid damage to the faceplate.



12. Removing Rear Bearing

If the rear bearing remains on the rotor shaft as shown in the photo below, a puller may be required to remove the bearing for replacement.

If the bearing remains in the brushholder assembly, the bearing and brushholder may both be removed by tapping the bearing out from the inside of the rear alternator case.



13. Installing Front Bearing

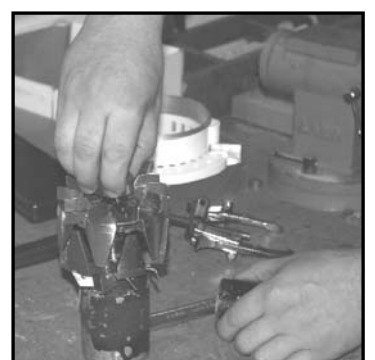
The front bearing can be pressed in, or tapped in by hand if a press is unavailable. See photos below. Use care to ensure that the bearing is inserted squarely into the faceplate. The bearing can be chilled prior to installation to reduce force required to seat the bearing when installing.



14. Installing Rear Bearing

Slip the rear bearing over the rear end of the rotor shaft. The bearing will slide past the positive and negative rotor sleeves and will seat just shy of the rear rotor fan. A deep well socket works well to drive the bearing in place.

Chilling the rear bearing prior to installation will reduce force required to properly seat the bearing on the rotor shaft.



15. Re-Assemble Case

To re-assemble the case:

1. Insert rotor shaft through the front bearing and press until bearing is seated.
2. Slide the rear case onto the rear portion of the rotor assembly. Ensure that stator wires extend properly through the case.
3. Maintain pressure until the bearings and rotor assembly are seated in front and rear cases
4. Insert the four case mount bolts, align front and rear cases to their proper positions and tighten the case mount bolts.

Ensure that the case bolts are tightened in a uniform manner to ensure proper alignment.

16. Isolating Fiber Washer

The isolating Fiber Washer (#4 in parts list) must be installed on the alternator before installing the brushholder or regulator assemblies:

1. Place the fiber washer included in the repair kit on the bolt hole located on the rear case of the alternator. See photo.



17. Install Brushholder

To install the brushholder:

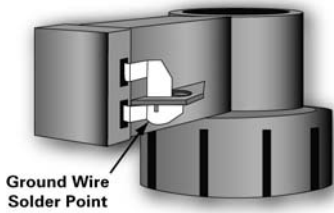
1. Slide the slotted tabs of the brushholder base around the rear bearing and rear of the rotor shaft. Temporarily install Torx bolt to ensure alignment.
2. Tap the brushholder in place. Ensure the brushholder stays straight when tapped into position. Fiber washer must stay in position under bolt hole.
3. Remove the brush retainer ring to seat brushes on rotor sleeves.



18. Brushholder Ground

Prior to installing the brushholder, the ground wire connection should be soldered to the assembly:

1. Insert ground wire (without ring terminal) into the notch in the negative tab of the brushholder assembly.
2. Using high-temperature solder, fuse the wire to the ground tab.



19. Install Rectifier Gasket

To install the replacement rectifier gasket:

1. Place gasket on bare metal portion of the rear case, as shown below.
2. Align bolt holes with pre-drilled holes in the alternator case.



20. Pre-Drill Rectifier

Prior to installing the rectifier assembly:

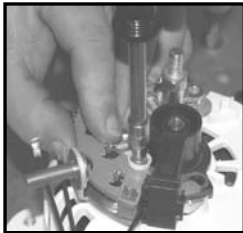
1. Insert a step drill into the bolt hole near the rectifier's ground post. See photo.
2. Enlarge hole enough to allow the white isolating washer to be inserted in the bolt hole.



21. Install Rectifier

To install the replacement rectifier:

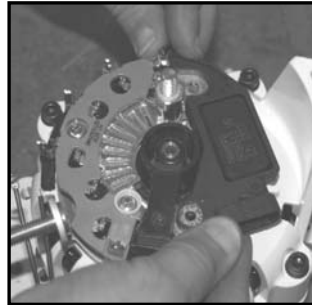
1. Connect main ground wire terminal to regulator ground stud.
2. Insert and tighten Torx bolt at center of the rectifier assembly.
3. Insert contoured ring terminal in the ground wire harness (ring terminal is offset to allow the ground wire to fit between the rectifier plate and the brushholder assembly) under the white insulating washer, and insert and tighten the remaining Torx bolt.



22. Install Regulator

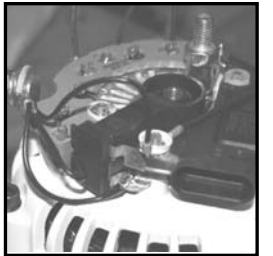
To complete the installation:

1. Place the regulator on the rear case of the alternator, with the bolt holes aligned with the rectifier and the brushholder.
2. Insert the tab at the end of the regulator with the crimp tabs on the rectifier. Crimp and solder.
3. Insert and tighten Torx bolt with short isolating washer in mounting hole furthest from regulator plug (leave loose enough for minor adjustment).



23. Install Regulator (continued)

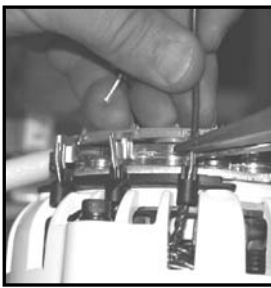
4. Place ring terminal connections for ground and 100-ohm (D+) resistor wires, and star washer on the underside of the white isolator and push into bolt hole marked GND on regulator. Star washer should be at the bottom as shown in the wiring diagram below. Insert and tighten Torx bolt.
5. Wrap ground wires around outside of brushholder to avoid pinching wires when re-installing rear cover.



24. Attach Stator / D+ Wires

The rectifier assembly has three terminals required to provide connection to the alternator's stator and D+ circuit wires. After the rectifier is installed:

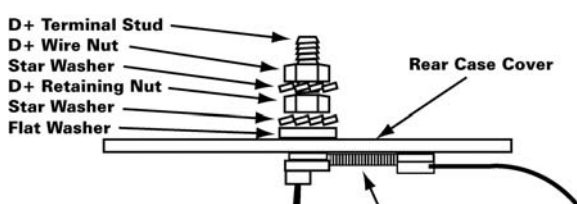
1. Place the three stator wires and the three D+ wires in their crimp terminals as shown in the photo.
2. Squeeze the crimp tabs to hold the stator and D+ wires in place.
3. Solder wires in place with high-temperature solder.



25. Install D+ Circuit/Rear Cover

To re-install the D+ terminal:

1. Slip 100 ohm resistor ring terminal onto the D+ terminal stud.
2. Insert the D+ terminal stud through the D+ terminal hole in rear case cover.
3. Re-install flat washers (2), star washer and retaining nut on outside of rear cover.
4. Snap rear case cover onto alternator case.



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Model 7060 Offshore Parts Kit Wiring Diagram

