

Source: Leece-Neville Heavy Duty Systems Division - Arcade, NY USA
Date: July 7, 2017
Bulletin No: TSB-1118
Models: 4700, 4800 and 2800 Series 6 diodes
Subject: Convert alternator to solid lead frame rectifiers

This procedure will explain how to convert a 4000 and 2800series alternator (SAE J-180) to a solid lead frame rectifier.

Alternator Disassembly

Step 1: Remove 4 screws that attach the regulator to alternator.
See Fig 1.

Step 2: Lift regulator from alternator.
See Fig 2.

Step 3: Remove brushes from brushbox.
See Fig 2.

Step 4: Remove through bolts from alternator.
See Fig 3

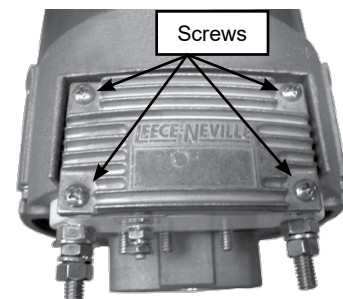


Fig 1

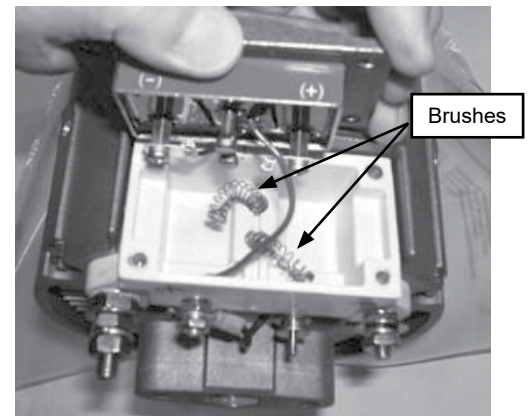


Fig 2

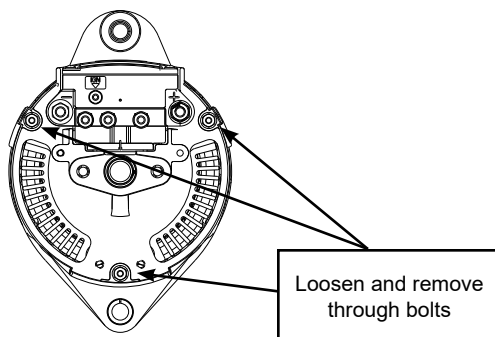


Fig 3

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Bulletin No: TSB-1118

Step 5: Tap front housing with a soft face mallet to separate the front housing/ rotor assembly from the rear housing/ stator assembly.
See Fig 5.

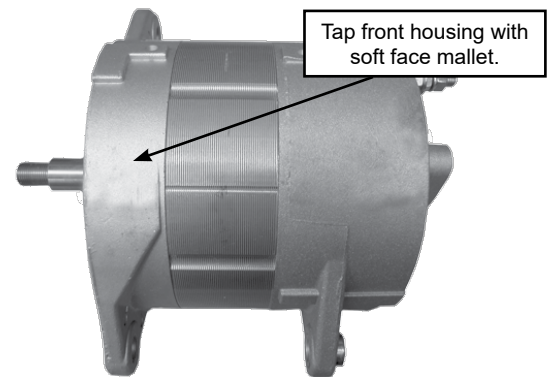


Fig 5

Step 6: Pull front housing/ rotor assembly from rear housing/ stator assembly.
See Fig 6.

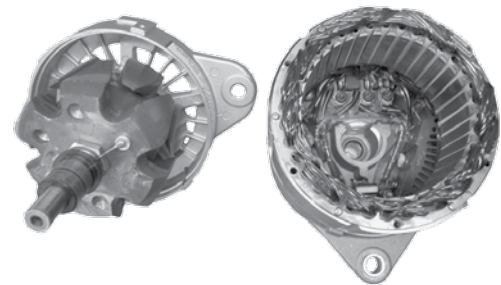


Fig 6

Step 7: Remove three stator nuts holding stator to rear housing and remove stator.
See Fig 7 and 8.

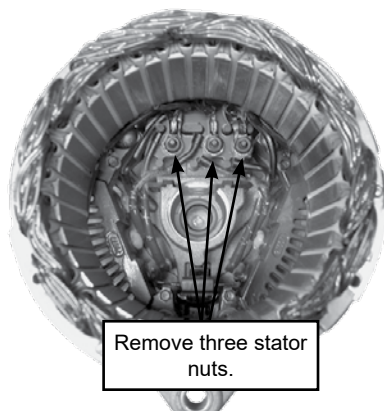


Fig 7

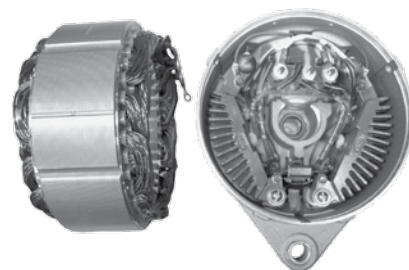


Fig 8

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Positive and Negative Ring Removal and Installation

Step 1: Remove wires from AC taps.

Step 2: Remove hardware.

See Fig 1 for Steps 1 and 2.

Step 3: Please discard items shown in Fig 2.

New hardware will be furnished with new rectifier.
If alternator has yellow filter capacitor, you must purchase a replacement capacitor.
Refer to SP-1011 or SP-1013 for proper part numbers.

Step 4: Flip alternator housing and remove hardware. Remove output studs.
See Fig 3.

Step 5: Remove rectifiers from rear housing.
See Fig 4.

Note: Make sure insulators are in place before installing new rectifier.

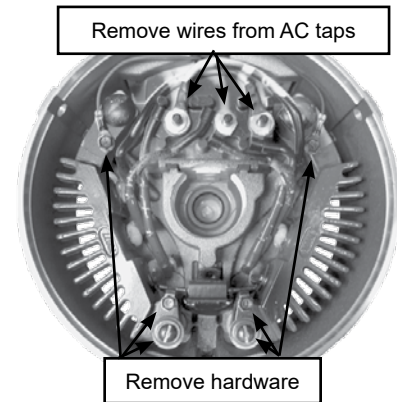


Fig 1

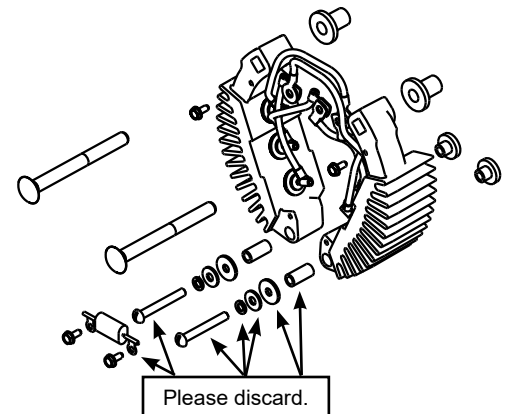


Fig 2

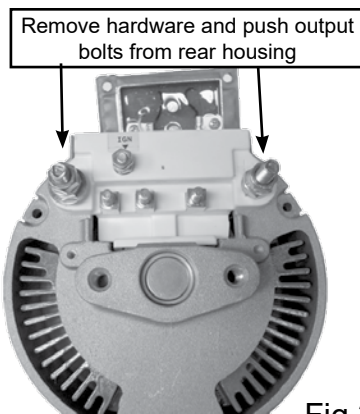


Fig 3

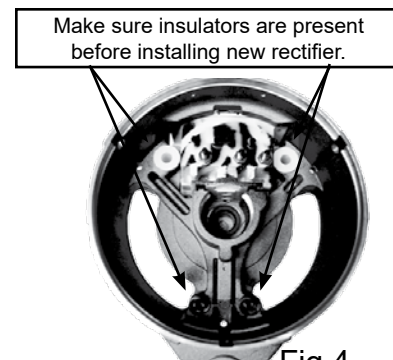


Fig 4

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Step 6: Snap off three standoffs on brush box with needle nose pliers before installing rectifier. See Fig 5

If not, damage to the rectifier ring will be the result!!

Step 7: Install rectifier and make sure insulators are properly seated. See Fig 6

Step 8: Install hardware and insulators per Fig 7.

Three standoffs need to be snapped off flush to top of brush box. If not, damage to the rectifier ring will be the results. This can be done gently with needle nose pliers.

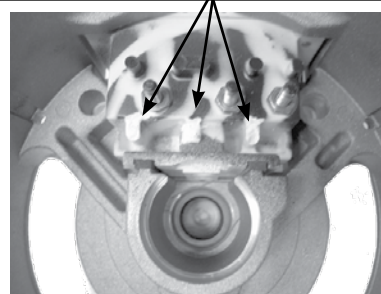


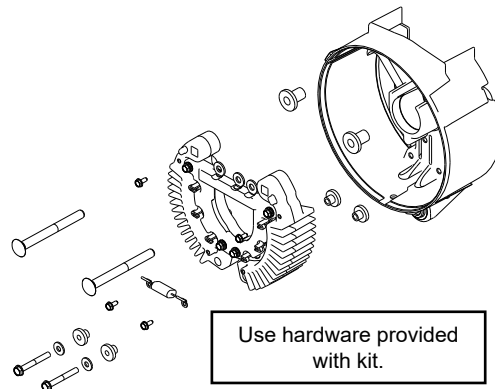
Fig 5

Insert rectifier ring in housing



Make sure insulators are properly seated into rectifier rings.

Fig 6



Use hardware provided with kit.

Fig 7

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Step 9: Torque hardware per Fig 8.

Step 10: Flip alternator over and install hardware to alternator output studs. See Fig 9.

Step 11: To properly install the new filter capacitor Please refer to Fig 10.

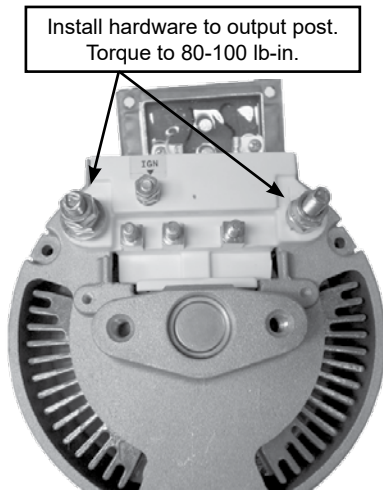


Fig 9

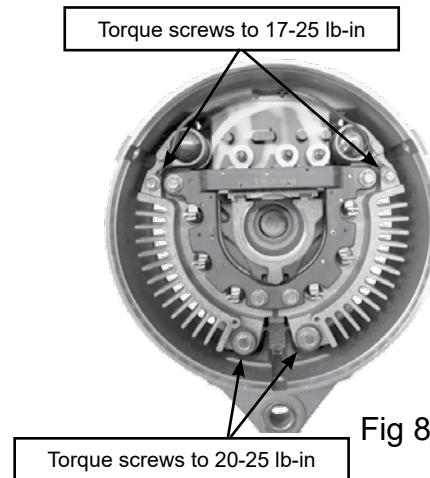


Fig 8

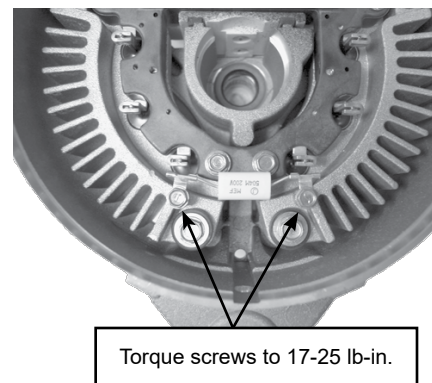


Fig 10

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Alternator Assembly Procedure.

Step 1: Place stator on rear housing and attach stator terminals to alternator AC taps. Attach nuts and tighten to 17-23 lb-in. See Fig 1.

Note: It is important to line up the stator through bolt holes with the rear housing holes in order to insert through bolts. See Fig 2.

Step 3: Insert front housing/ rotor assembly into rear housing/ stator assembly.

Note: Insert a 1/2" diameter rod through the two mounting holes. This will aid in lining up the through bolt holes. See Fig 3.

Step 4: Insert through bolts and torque nuts to 45-50 lb-in.

Insert stator terminals on AC taps. Install nuts and torque to 17-23 lb-in.

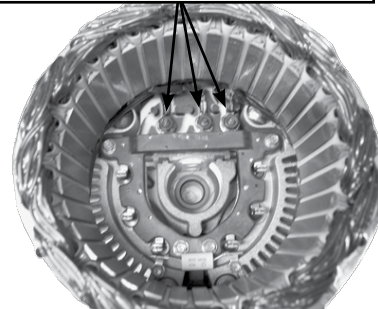
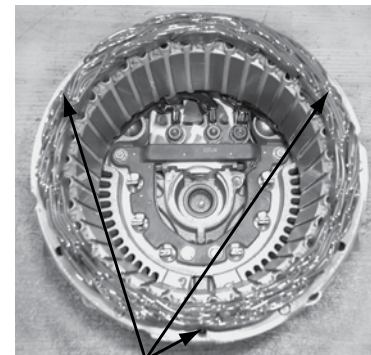
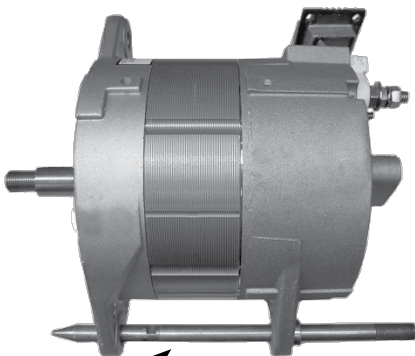


Fig 1



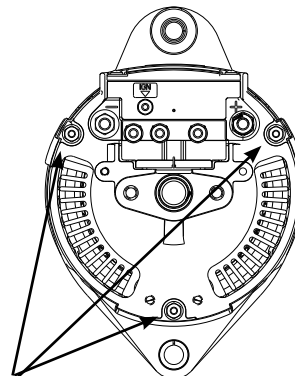
Stator through bolt holes must line up with rear housing holes.

Fig 2



Insert 1/2" rod through mounting holes.

Fig 3



Torque to 45-50 lb-in.

Fig 4

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Step 5: Reinstall brushes into brush holder.

If existing brushes are reinstalled make certain to match wear pattern to slip ring. See Fig 5. With brush placed into holder compress entire spring into holder and retain brush contact into opening with a 1/16" drill bit or mechanics wire. Install second brush following same procedure; slipping retaining pin forward through front opening of brush box to secure both brushes. See Fig 6.

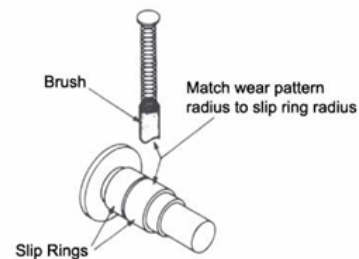


Fig 5

Note: If brushes length is 3/16" or less then brushes will need to be replaced. See Fig 7.

Step 5: Place regulator back onto alternator.

Use caution not to pinch regulator sense wires. See Fig 8.

Holding regulator firmly into place remove the retaining pin (See Fig 6) from the Access Hole to release the brush springs. Hold down the regulator and secure it with 4 #8-32 screws.

Torque screws to 11-13 lb-in.

See Fig 11.

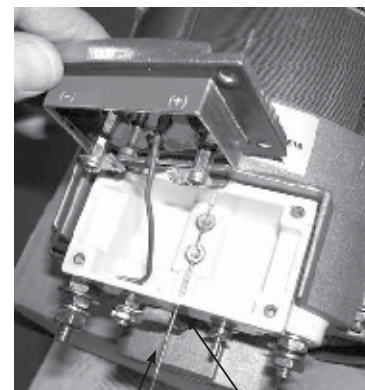
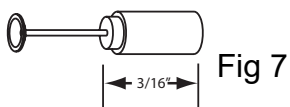
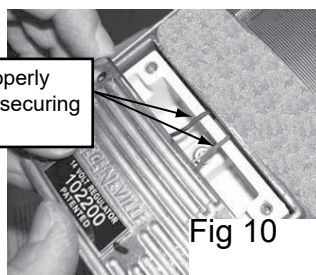


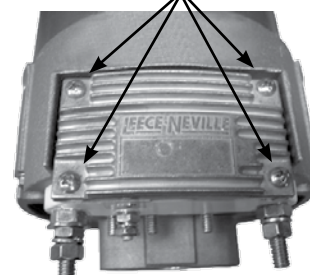
Fig 6



Make sure leads are properly seated into notches before securing regulator



Install regulator screws



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