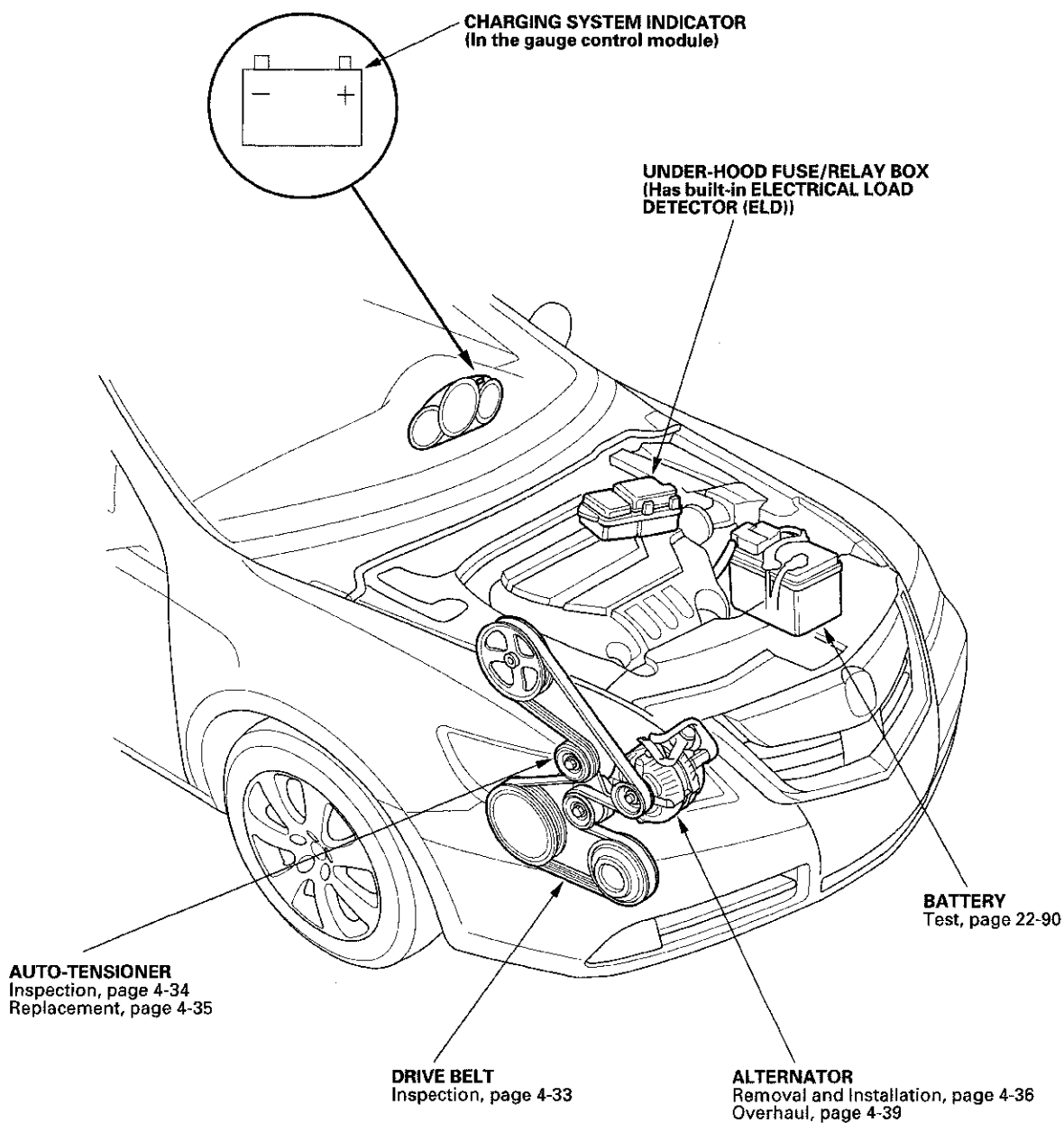


Charging System



Component Location Index



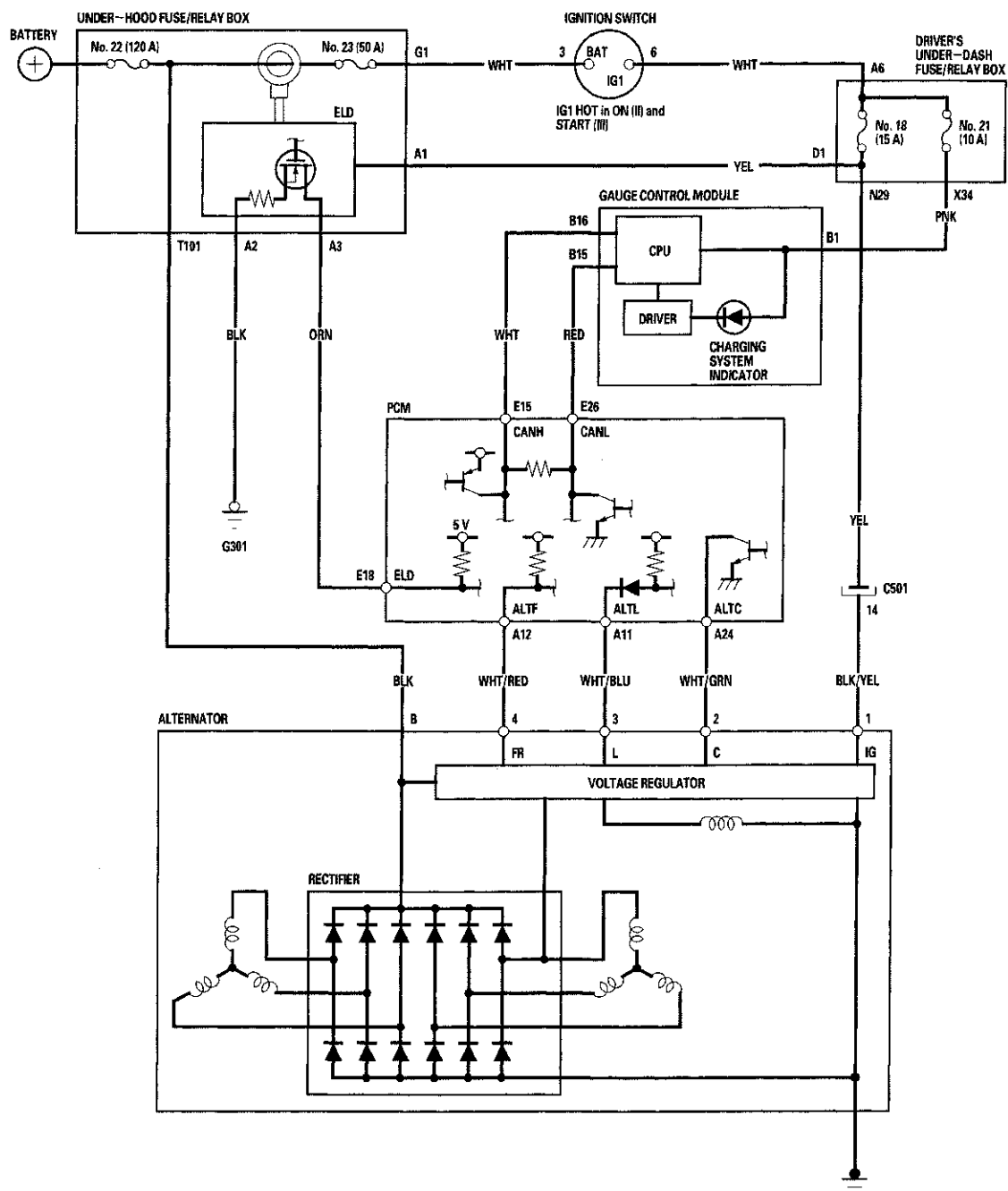
Charging System

Symptom Troubleshooting Index

Symptom	Diagnostic procedure	Also check for
Charging system indicator does not come on with the ignition switch in ON (II)	Troubleshoot the charging system indicator circuit (see page 4-28).	
Charging system indicator stays on	1. Check for PGM-FI DTCs. 2. Troubleshoot the charging system indicator circuit (see page 4-28). 3. Check for a broken drive belt (see page 4-33). 4. Check the drive belt auto-tensioner (see page 4-34).	
Battery discharged	1. Check for a poor connection at the battery terminal. 2. Check for a broken drive belt (see page 4-33). 3. Test the battery (see page 22-90). 4. Troubleshoot the alternator and regulator circuit (see page 4-30). 5. Check the drive belt auto-tensioner (see page 4-34). 6. Check for excessive parasitic current draw with the ignition switch in LOCK (0), and the key removed. The multiplex control units may take up to 10 minutes to turn off (sleep mode) for some models.	
Battery overcharged	1. Test the battery (see page 22-90). 2. Troubleshoot the alternator and regulator circuit (see page 4-30).	



Circuit Diagram



Charging System

Charging System Indicator Circuit Troubleshooting

1. Turn the ignition switch to ON (II).

Does the charging system indicator come on?

YES—Go to step 2.

NO—Go to step 14.

2. Start the engine. Hold the engine speed at 2,000 rpm for 1 minute.

Does the charging system indicator go off?

YES—Charging system indicator circuit is OK. Go to the alternator and regulator circuit troubleshooting (see page 4-30). ■

NO—Go to step 3.

3. Do the gauge control module self-diagnostic function procedure (see page 22-396).

Does the charging system indicator flash?

YES—Go to step 4.

NO—Replace the gauge control module (see page 22-419). ■

4. Turn the ignition switch to LOCK (0).

5. Disconnect the alternator 4P connector.

6. Turn the ignition switch to ON (II).

NOTE: The charging system indicator may come on, and then go off.

Does the charging system indicator go off?

YES—Replace the alternator (see page 4-36), or repair the alternator (see page 4-39). ■

NO—Go to step 7.

7. Turn the ignition switch to LOCK (0).

8. Connect the Honda Diagnostic System (HDS) to the data link connector (DLC) (see step 2 on page 11-3).

9. Turn the ignition switch to ON (II).

10. Make sure the HDS communicates with the vehicle and the powertrain control module (PCM). If it doesn't communicate, troubleshoot the DLC circuit (see page 11-211).

11. Jump the SCS line with the HDS, then turn the ignition switch to LOCK (0).

NOTE: This step must be done to protect the PCM from damage.

12. Disconnect PCM connector A (31P).

13. Check for continuity between PCM connector terminal A11 and body ground.

PCM CONNECTOR A (31P)



ALT L (WHT/BLU)



Wire side of female terminals

Is there continuity?

YES—Repair a short in the wire between the alternator and the PCM. ■

NO—Update the PCM if it does not have the latest software (see page 11-230), or substitute a known-good PCM (see page 11-7), then recheck. If the symptom/indication goes away with a known-good PCM, replace the original PCM (see page 11-232). ■



14. Do the gauge control module self-diagnostic function procedure (see page 22-396).

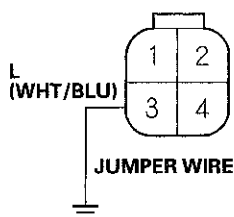
Does the charging system indicator flash?

YES—Go to step 15.

NO—Replace the gauge control module (see page 22-419). ■

15. Turn the ignition switch to LOCK (0).
16. Disconnect the alternator 4P connector.
17. Connect alternator 4P connector terminal No. 3 and body ground with a jumper wire.

ALTERNATOR 4P CONNECTOR



Wire side of female terminals

18. Turn the ignition switch to ON (II).

Does the charging system indicator come on?

YES—Replace the alternator (see page 4-36), or repair the alternator (see page 4-39). ■

NO—Go to step 19.

19. Connect the HDS to the DLC (see step 2 on page 11-3).

20. Turn the ignition switch to ON (II).

21. Make sure the HDS communicates with the vehicle and the PCM. If it doesn't communicate, troubleshoot the DLC circuit (see page 11-211).

22. Jump the SCS line with the HDS, then turn the ignition switch to LOCK (0).

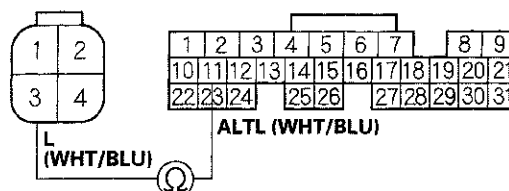
NOTE: This step must be done to protect the PCM from damage.

23. Disconnect PCM connector A (31P).

24. Check for continuity between PCM connector terminal A11 and alternator 4P connector terminal No. 3.

ALTERNATOR 4P CONNECTOR

PCM CONNECTOR A (31P)



Wire side of female terminals

Is there continuity?

YES—Update the PCM if it does not have the latest software (see page 11-230), or substitute a known-good PCM (see page 11-7), then recheck. If the symptom/indication goes away with a known-good PCM, replace the original PCM (see page 11-232). ■

NO—Repair an open in the wire between the alternator and the PCM. ■

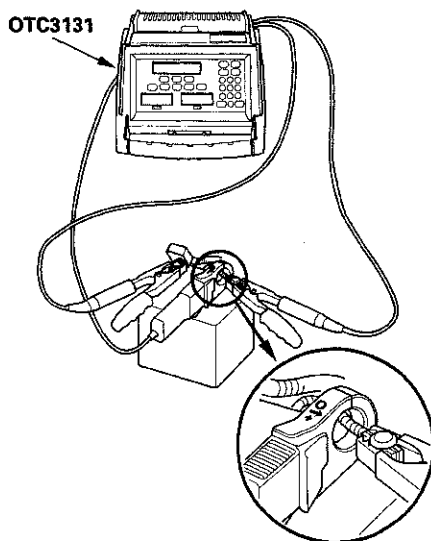
Charging System

Alternator and Regulator Circuit Troubleshooting

Special Tools Required

Alternator, Regulator, Battery & Starter tester OTC3131
Available through the Acura Tool and Equipment
Program 888-424-6857

1. Make sure the battery connections are good, and the battery is sufficiently charged.
2. Connect the alternator, regulator, battery & starter tester (OTC3131) to the battery as shown.



3. Start the engine. Hold the engine speed at 3,000 rpm with no load until the radiator fan comes on, then let it idle.
4. Do the charging system test.
5. Raise the engine speed to 2,000 rpm and hold it there.

Is the voltage within 13.5— 15.1 V?

YES—Go to step 6.

NO—Based on the following symptoms, take the appropriate action:

- If the voltage is less than 13.5 V, go to alternator control circuit troubleshooting (see page 4-31).
- If the voltage is over 15.1 V, go to replace alternator (see page 4-36) or repair the rear housing assembly (see page 4-39). ■

6. Check the alternator, regulator, battery & starter tester (OTC3131) display.

Is the amperage 87.5 A or more?

YES—The charging system is OK. ■

NOTE: If the charging system indicator is still on, replace the alternator (see page 4-36).

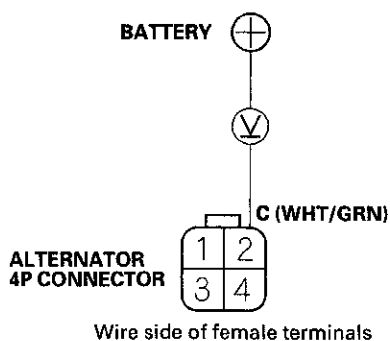
NO—Replace the alternator (see page 4-36) or repair the alternator (see page 4-39). ■



Alternator Control Circuit Troubleshooting

NOTE: Do this troubleshooting if, in step 5 of the Alternator and Regulator Circuit Troubleshooting (see page 4-30), the battery voltage is less than 13.5 V.

1. Connect the Honda Diagnostic System (HDS) to the data link connector (DLC) (see step 2 on page 11-3).
2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the powertrain control module (PCM). If it doesn't communicate, troubleshoot the DLC circuit (see page 11-211).
4. Check for DTCs (see page 11-3). If a DTC is present, diagnose and repair the cause before continuing with this test.
5. Disconnect the alternator 4P connector from the alternator.
6. Start the engine, and turn on the headlights to high beam.
7. Measure the voltage between alternator 4P connector terminal No. 2 and the positive terminal of the battery.



Is there 1 V or less?

YES—Go to step 11.

NO—Go to step 8.

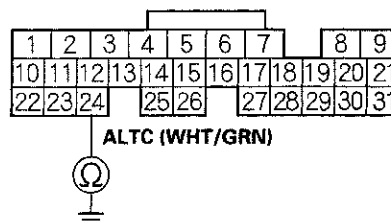
8. Jump the SCS line with the HDS, then turn the ignition switch to LOCK (0).

NOTE: This step must be done to protect the PCM from damage.

9. Disconnect PCM connector A (31P).

10. Check for continuity between PCM connector terminal A24 and body ground.

PCM CONNECTOR A (31P)



Is there continuity?

YES—Repair a short in the wire between the alternator and the PCM. ■

NO—Update the PCM if it does not have the latest software (see page 11-230), or substitute a known-good PCM (see page 11-7), then recheck. If the symptom/indication goes away with a known-good PCM, replace the original PCM (see page 11-232). ■

11. Jump the SCS line with the HDS, then turn the ignition switch to LOCK (0).

NOTE: This step must be done to protect the PCM from damage.

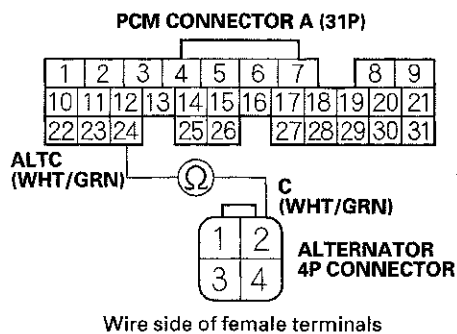
12. Disconnect PCM connector A (31P).

(cont'd)

Charging System

Alternator Control Circuit Troubleshooting (cont'd)

13. Check for continuity between PCM connector terminal A24 and alternator 4P connector terminal No. 2.



Is there continuity?

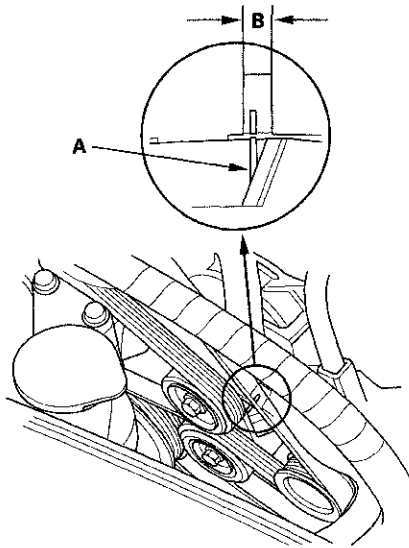
YES—Replace the alternator (see page 4-36), or repair the alternator (see page 4-39). ■

NO—Repair an open in the wire between the alternator and the PCM. ■



Drive Belt Inspection

1. Remove the right upper fender trim (see page 20-162).
2. Inspect the belt for cracks or damage. If the belt is cracked or damaged, replace it.
3. Check that the auto-tensioner indicator (A) is within the standard range (B) as shown. If it is out of the standard range, replace the drive belt (see page 4-33).

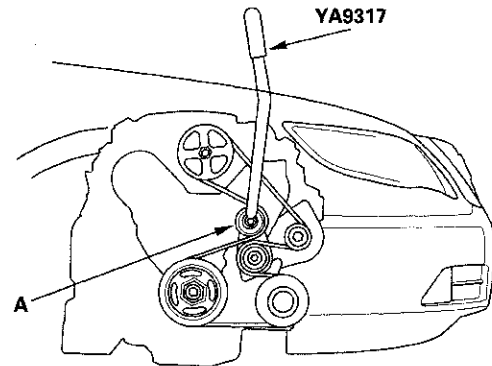


Drive Belt Replacement

Special Tools Required

Belt tension release tool Snap-on YA9317 or equivalent, commercially available

1. Remove the right upper fender trim (see page 20-162).
2. Remove the engine cover (see page 4-21).
3. Move the auto-tensioner (A) using the belt tension release tool in the direction shown to relieve tension from the drive belt, then remove the drive belt.



4. Install the new belt in the reverse order of removal.

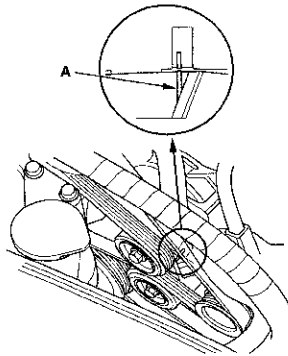
Charging System

Drive Belt Auto-tensioner Inspection

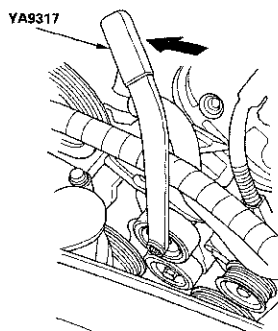
Special Tools Required

Belt tension release tool Snap-on YA9317 or equivalent, commercially available

1. Remove the right upper fender trim (see page 20-162).
2. Turn the ignition switch to ON (II), and make sure to turn the A/C switch OFF. Turn the ignition switch to LOCK (0).
3. Check the position of the auto-tensioner's indicator pointer (A). Start the engine, then check the position again with the engine idling. If the position of the indicator moves or fluctuates a lot, replace the auto-tensioner (see page 4-35).

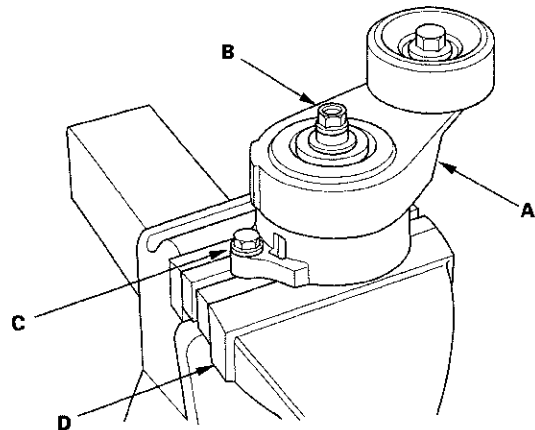


4. Check for abnormal noise from the tensioner pulley. If you hear any abnormal noise, replace the auto-tensioner pulley (see page 4-35).
5. Remove the drive belt (see page 4-33).
6. Move the auto-tensioner within its limit using the belt tension release tool in the direction shown. Check that the tensioner moves smoothly and without any abnormal noise. If the tensioner does not move smoothly, or you hear abnormal noises, replace the auto-tensioner (see page 4-35).



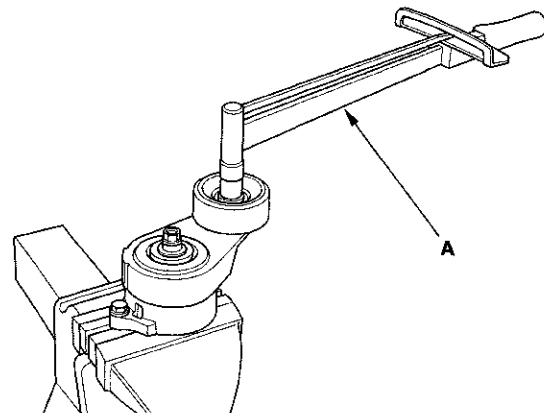
7. Remove the auto-tensioner (see page 4-35).

8. Clamp the auto-tensioner (A) by using a 10 mm bolt (B), 8 mm bolt (C), and a vise (D) as shown. Do not clamp the auto-tensioner itself.



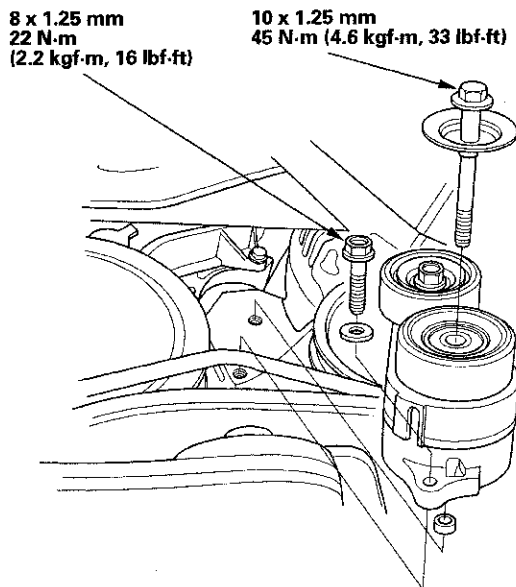
9. Attach a torque wrench (A) to the pulley bolt. Measure the torque when the tensioner is turned counterclockwise. If the torque is less than the specified value, replace the auto-tensioner (see page 4-35).

Auto-tensioner Spring Torque
76.6 N·m (7.81 kgf·m, 56.5 lbf·ft)



Drive Belt Auto-tensioner Replacement

1. Remove the drive belt (see page 4-33).
2. Remove the splash shield (see step 4 on page 4-36).
3. Remove the auto-tensioner.

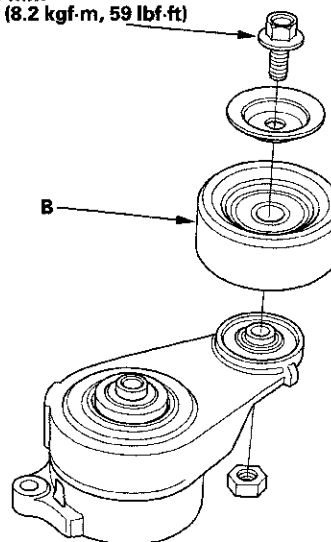


4. Install the auto-tensioner in the reverse order of removal.

Tensioner Pulley Replacement

1. Remove the auto-tensioner (see page 4-35).
2. Remove the pulley bolt (A) (left-hand threads), and remove the tensioner pulley (B).

A
10 x 1.5 mm
80 N·m (8.2 kgf·m, 59 lbf·ft)



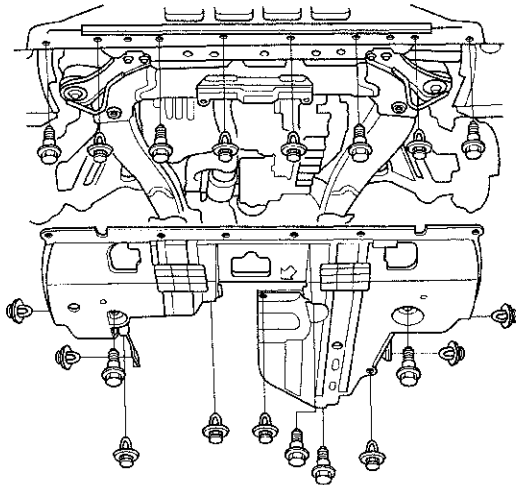
3. Install the tensioner pulley in the reverse order of removal.

Charging System

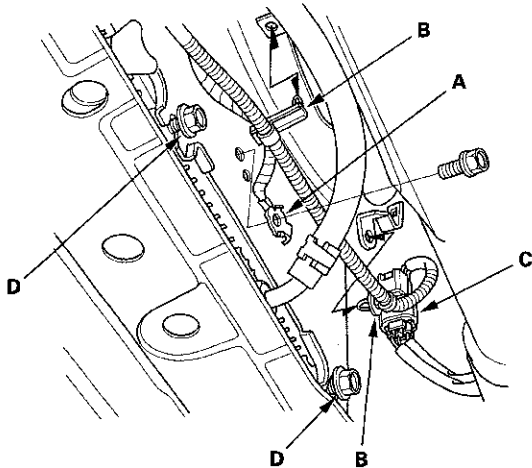
Alternator Removal and Installation

Removal

1. Do the battery terminal disconnection procedure (see page 22-91).
2. Remove the upper grille cover (see page 20-163).
3. Raise the vehicle on the lift to full height.
4. Remove the shield.

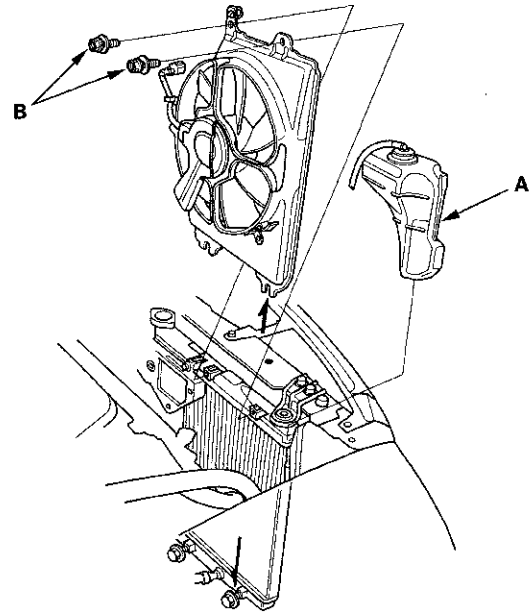


5. Remove the ground cable (A), the harness clamps (B), and the connector (C) from the A/C condenser fan shroud.



6. Loosen the two bolts (D) securing the A/C condenser fan shroud.

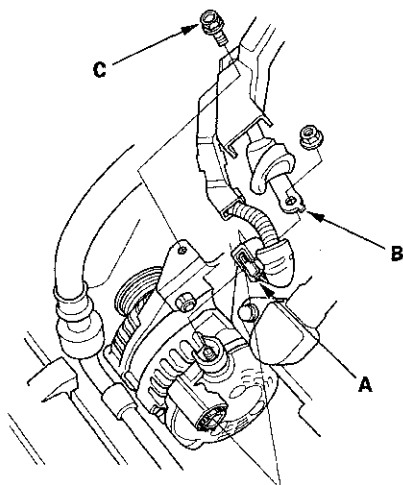
7. Lower the vehicle on the lift.
8. Remove the radiator fan control (RFC) unit (see page 10-22).
9. Remove the coolant reservoir (A).



10. Remove the two bolts (B), then remove the A/C condenser fan shroud.
11. Remove the drive belt (see page 4-33).

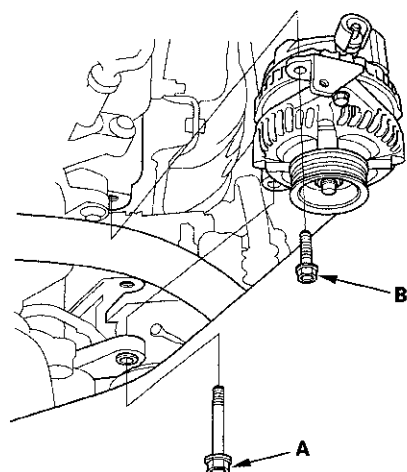


12. Disconnect the alternator connector (A) and BLK wire (B) from the alternator.



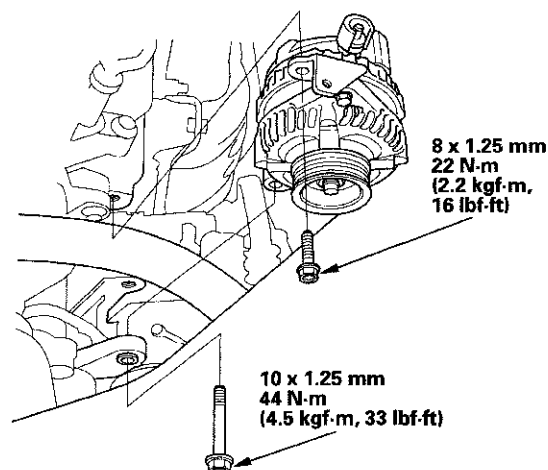
13. Remove the bolt (C) securing the harness holder.

14. Remove the mounting bolt (A) and alternator bracket mounting bolt (B), then remove the alternator.

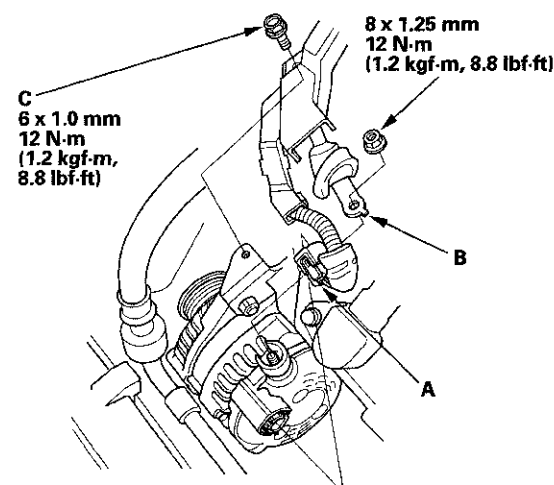


Installation

1. Install the alternator.



2. Connect the alternator connector (A) and the BLK wire (B) to the alternator.



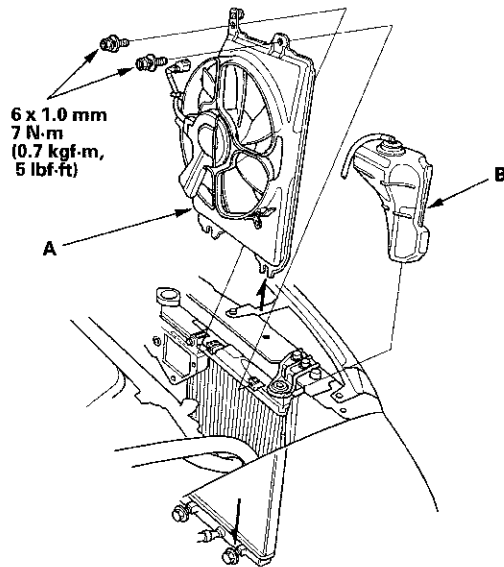
3. Install the bolt (C) securing the harness holder.
4. Install the drive belt (see page 4-33).

(cont'd)

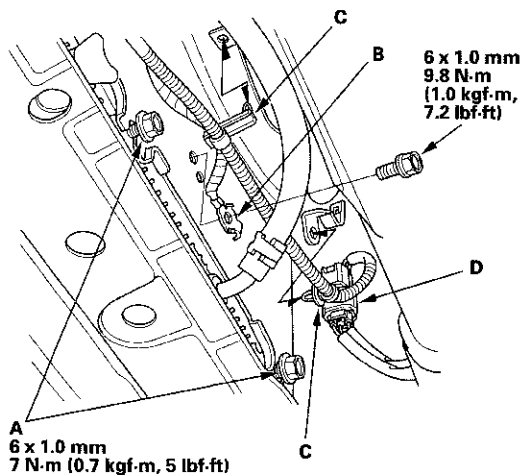
Charging System

Alternator Removal and Installation (cont'd)

5. Install the A/C condenser fan shroud (A), and tighten the bolts.

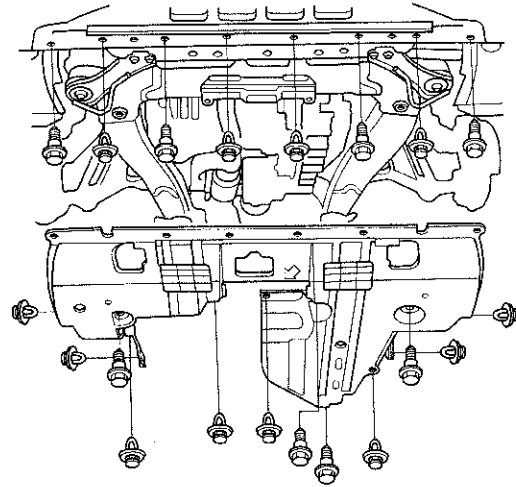


6. Install the coolant reservoir (B).
7. Install the RFC unit (see page 10-22).
8. Raise the vehicle on the lift to full height.
9. Tighten the two bolts (A) securing the A/C condenser fan shroud.



10. Install the ground cable (B), the harness clamps (C), and the connector (D) to the A/C condenser fan shroud.

11. Install the splash shield.

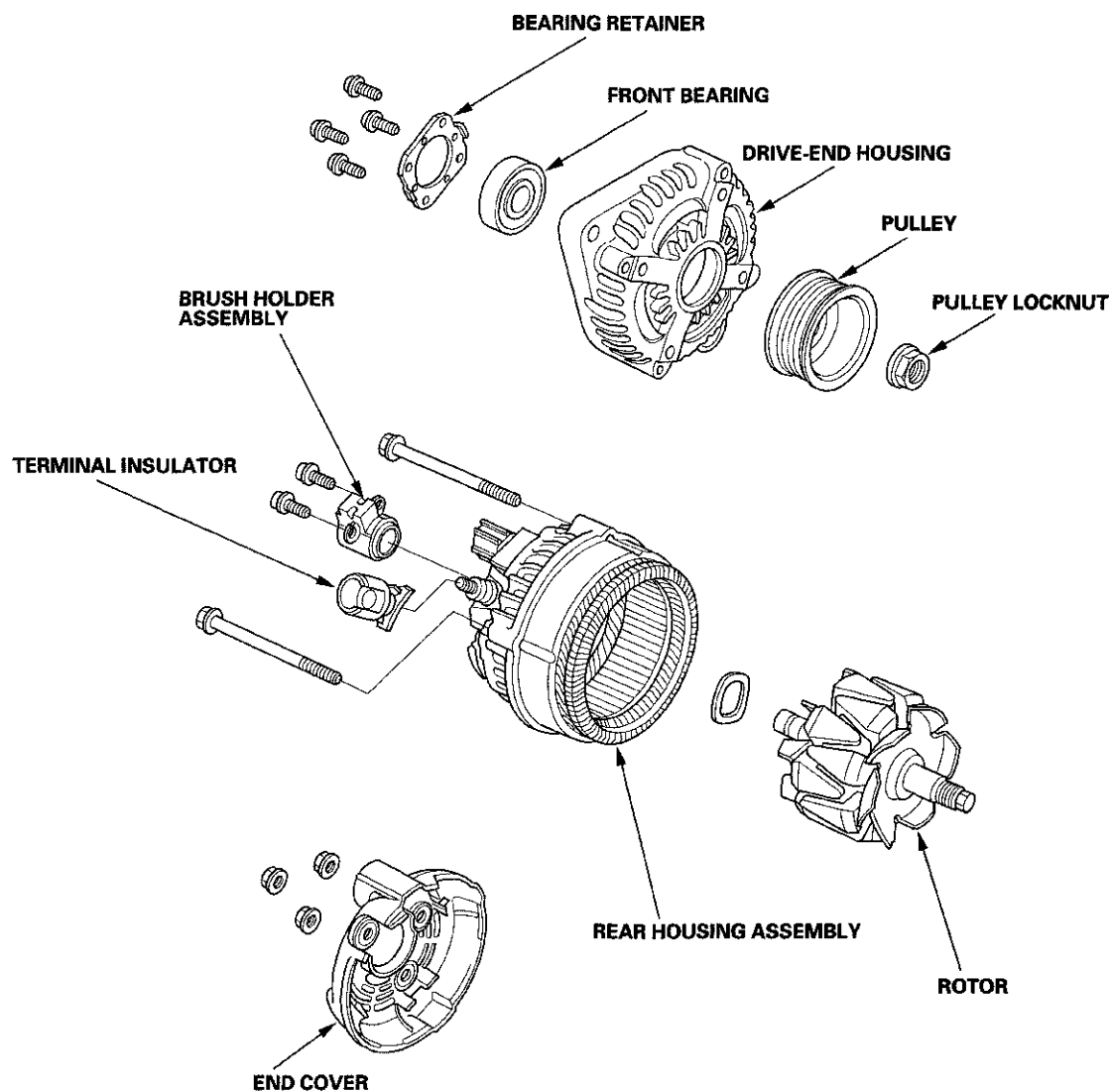


12. Lower the vehicle on the lift.
13. Install the upper grille cover (see page 20-163).
14. Do the battery terminal reconnection procedure (see page 22-91).



Alternator Overhaul

Exploded View



(cont'd)

Charging System

Alternator Overhaul (cont'd)

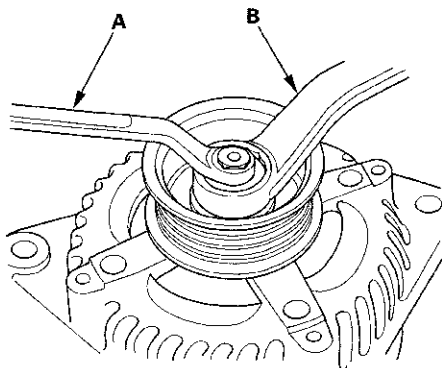
Special Tools Required

- Driver handle, 15 x 135L 07749-0010000
- Attachment, 42 x 47 mm 07746-0010300

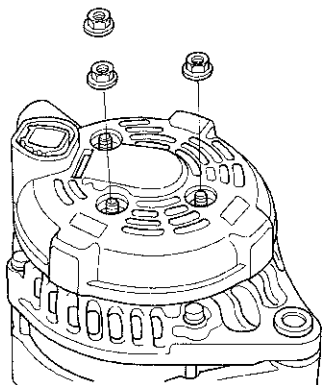
NOTE: Refer to the Exploded View as needed during this procedure.

Alternator Disassembly

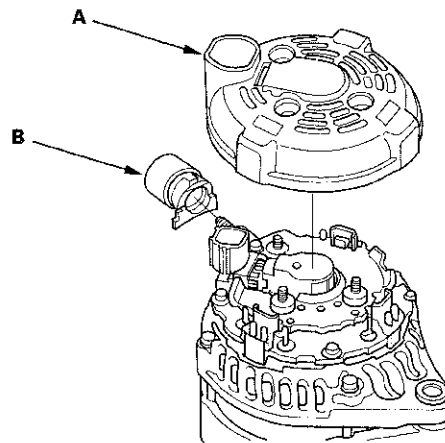
1. Test the alternator and regulator before you remove them (see page 4-30).
2. Remove the alternator (see page 4-36).
3. If the front bearing needs replacing, remove the pulley locknut with a 10 mm wrench (A) and a 22 mm wrench (B). If necessary, use an impact wrench.



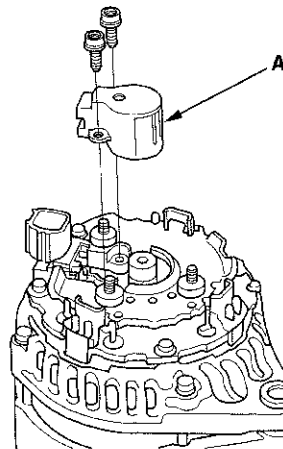
4. Remove the three flange nuts.



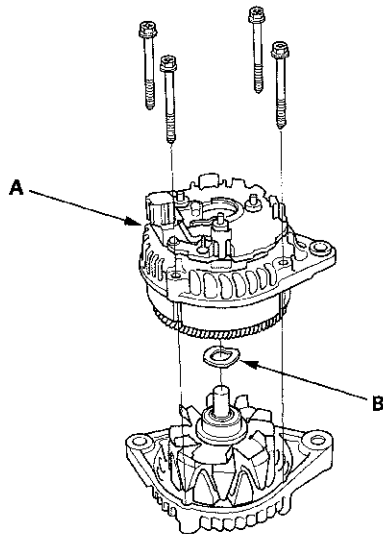
5. Remove the end cover (A) and the insulator (B).



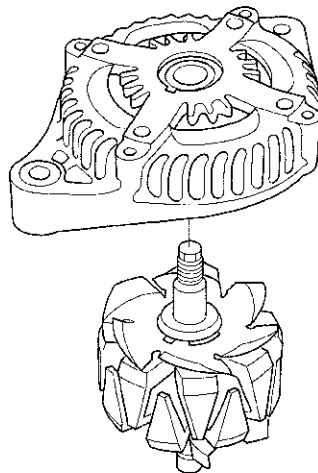
6. Remove the brush holder (A).



7. Remove the four bolts, then remove the rear housing assembly (A) and washer (B).



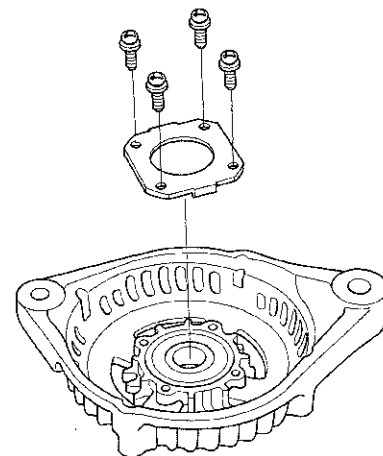
8. If you are not replacing the front bearing, go to step 13. Remove the rotor from the drive-end housing.



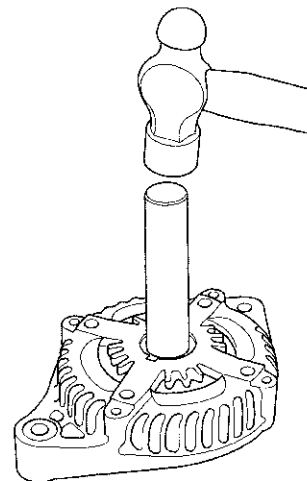
9. Inspect the rotor shaft for scoring, and inspect the bearing journal surface in the drive-end housing for seizure marks.

- If the rotor is damaged, replace the rotor assembly.
- If the rotor is OK, go to step 10.

10. Remove the front bearing retainer plate.



11. Drive out the front bearing with a brass drift and hammer.

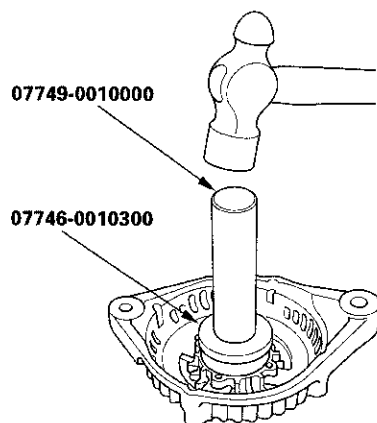


(cont'd)

Charging System

Alternator Overhaul (cont'd)

12. Install a new front bearing in the drive-end housing with a hammer, the driver handle, 15 x 135L, and the attachment, 42 x 47 mm.



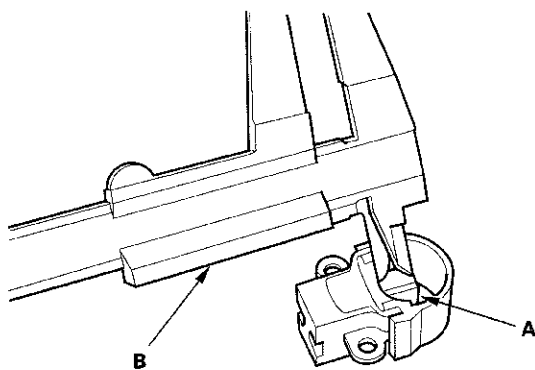
Alternator Brush Inspection

13. Measure the length of both brushes (A) with a vernier caliper (B).
- If either brush is shorter than the service limit, replace the brush holder assembly.
 - If the brush length is OK, go to step 14.

Alternator Brush Length

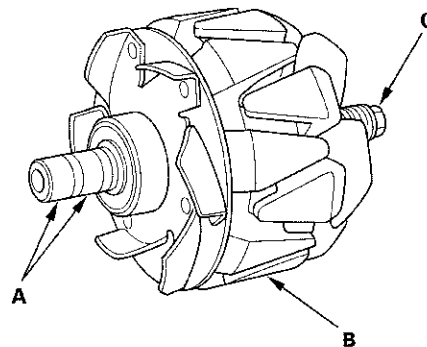
Standard (New): 10.5 mm (0.41 in)

Service Limit: 1.5 mm (0.06 in)



Rotor Slip Ring Test

14. Check for continuity between the slip rings (A).
- If there is continuity, go to step 15.
 - If there is no continuity, replace the rotor assembly.



15. Check for continuity between each slip ring and the rotor (B) and the rotor shaft (C).
- If there is no continuity, replace the rear housing assembly, and go to step 16.
 - If there is continuity, replace the rotor assembly.
16. Assemble the alternator in the reverse order of disassembly, and note these items:
- Be careful not to get any grease or oil on the slip rings.
 - If you removed the pulley, tighten its locknut to 110 N·m (11.2 kgf·m, 81.0 lbf·ft) when you reinstall it.