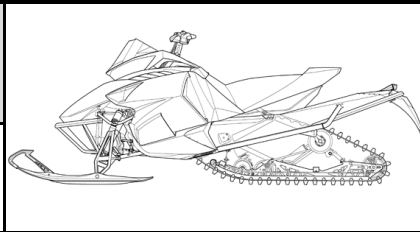


Arctic Cat® Snowmobile

Installation Instructions - Accessory Kit

Electric Start Kit (p/n 7639-846)



■ **NOTE:** Read these Installation Instructions thoroughly before beginning the installation process. Retain these Installation Instructions for future reference.

Kit includes:

p/n	QTY	DESCRIPTION
0123-788	1	Cable Tie (Short)
0430-031	1	15A Fuse
0430-033	1	Relay (12V/30A)
0430-034	1	Mini Diode
0445-082	1	Battery Hardware
0617-667	2	Gas Tank Foam
0623-038	1	M6 Hex Nut w/Washer
0623-144	1	Cable Tie (Long)
0623-677	5	Push-Mount Cable Tie
0623-877	2	Hex Nut (1/4-20)
0624-524	2	Hex Nut w/Star Washer
0645-649	1	Battery-to-Solenoid Cable
0645-673	1	Starter Relay Solenoid
0645-674	1	Battery Hold Down Bracket
0645-731	1	Solenoid-to-Starter Cable
0645-732	1	Battery-to-Ground Cable
0645-778	1	Battery Acid Pack
0645-779	1	Sealed Battery
0745-403	1	Ring Gear
0745-426	1	Starter Assembly
1623-821	6	Machine Screw (M8)
1686-866	1	Harness
8053-212	1	Lock Washer (1/4)
8053-242	1	Lock Washer (5/16)
8409-821	1	Cap Screw (M8 x 20)
8412-841	1	Cap Screw (M8 x 40)
8412-861	2	Cap Screw (M8 x 60)
8412-871	1	Cap Screw (M8 x 70)
8427-602	2	Flange Nylon Nut (M6)
8468-616	2	Machine Screw (M6)
2653-152	1	Instructions

■ **NOTE:** Refer to the appropriate Arctic Cat Snowmobile Service Manual for more detailed instructions. Some photographs used in this instruction are used for clarity purposes only and are not designed to depict actual conditions.

SERVICING/INSTALLING BATTERY

■ **NOTE:** Refer to all warnings and cautions provided with the battery.

Each sealed battery comes with an electrolyte container and proper amount for each specific battery type. DO NOT add additional electrolyte to any sealed battery. Sealed battery electrolyte has a higher concentration of sulfuric acid.

1. Remove the battery from the shipping container.
2. Carefully remove and save the sealing strip from the battery electrolyte container. This will be used to seal the battery later.
3. Remove and discard the foil sealing strip covering the fill holes from the battery.
4. Place electrolyte container with the foil-sealed top of the cells facing down into the fill ports of the battery.

5. Hold the container level in the fill ports of the battery. Push down to break the seals. Air bubbles will appear as the ports fill. Do not tilt the electrolyte container. Do not remove the container from the battery until it is empty.

6. Let the battery stand for 60 minutes (1 Hr) prior to charging.

7. Fully insert the sealing strip over the fill holes by hand. DO NOT use a hammer.

8. Charge battery completely before installation.

Charging New Battery

■ **NOTE:** Refer to all warnings and cautions provided with the battery or battery charger.

■ **NOTE:** Batteries filled with electrolyte are only at 80% of their capacity.

■ **NOTE:** All battery chargers are not the same. Arctic Cat recommends the use of the CTEK Battery Charger (p/n 7639-504).

Batteries can be charged two ways - Standard Charge and Fast Charge. Standard charging is the only recommended way to charge a battery. It gives the battery optimal performance and battery life.

1. Place the battery charger in a location so battery acid will not come in contact with the charger cables. Be sure the charger is unplugged from the 110-volt electrical outlet.
2. Connect the red terminal lead from the charger to the positive terminal of the battery; then connect the black terminal lead of the charger to the negative terminal of the battery.
3. Plug the charger into a 110-volt electrical outlet.
4. By pushing the Mode button on the left of the charger, select the snowmobile/ATV indicator.

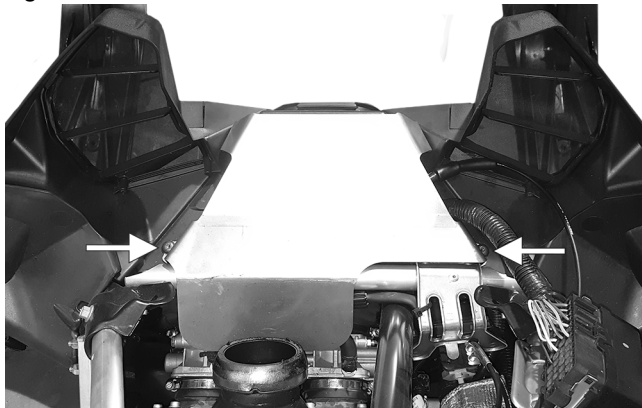
■ **NOTE:** The Maintenance Charge Indicator will illuminate when the battery has accepted its bulk charge, but the charger should remain attached for a minimum of five full hours for optimal battery performance and battery life. If the battery becomes hot to the touch, stop charging. Resume after it has cooled.

5. Once the battery has reached full charge, unplug the charger from the 110-volt electrical outlet and disconnect the charging leads.
6. Allow the battery to sit for 60 min (1 Hr) before testing. Arctic Cat recommends the use of the Yuasa BTY01 Battery Tester (p/n 1436-430).
7. Before installing the battery into the snowmobile, coat the battery terminals with a light coat of grease to minimize battery terminal corrosion.

INSTALLING STARTER COMPONENTS

1. Remove both access panels and hood.
2. Remove the seat, console, and gas tank assembly.
3. Remove the exhaust temperature sensor from the expansion chamber; then remove and retain all springs securing the expansion chamber and resonator. Remove expansion chamber and resonator.
4. Remove the belt, driven clutch, and drive clutch.
5. Remove the two screws securing the heat shield to the chassis; then remove the heat shield from the two front locating pins and remove the heat shield. See Fig. 1.

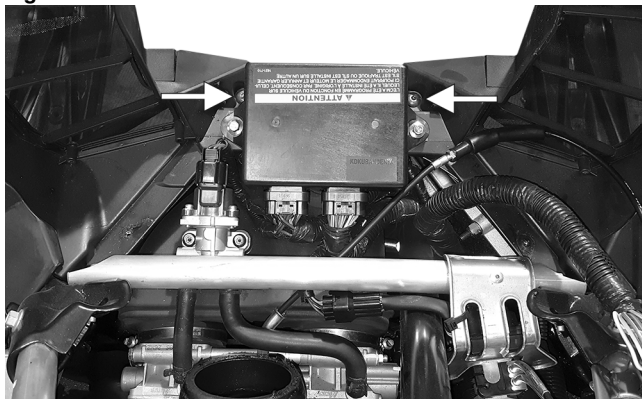
Fig. 1



ZR-133

6. Disconnect the ECM; then remove the screws securing the right and left-side fascia panels to the chassis. Remove the panels and ECM as an assembly. See Fig. 2.

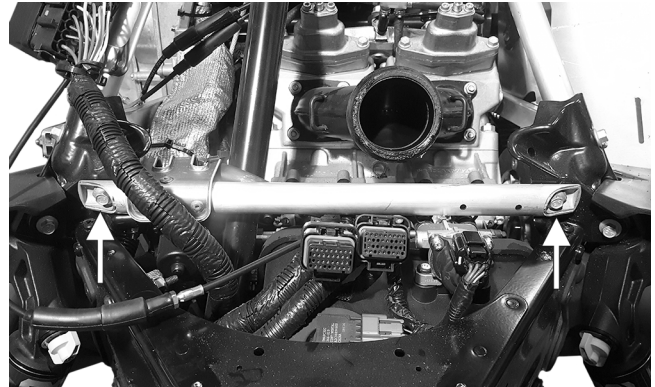
Fig. 2



ZR-134

7. Remove the cap screws and lock nuts securing the shock mount bracket support to the shock mount brackets; then remove the shock mount bracket support. See Fig. 3.

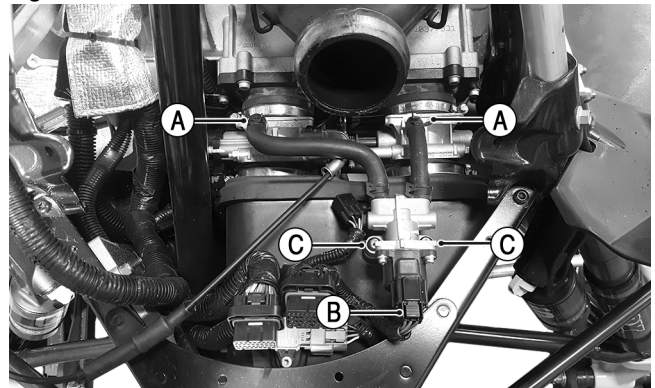
Fig. 3



ZR-136

8. Remove idle speed control (ISC) hoses (A) from the top of the throttle bodies; then disconnect the ISC from the main harness (B). Remove the screws (C) securing the ISC; then remove the ISC. See Fig. 4.

Fig. 4

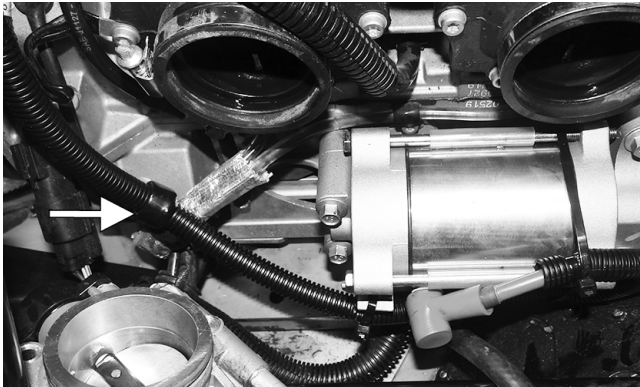


ZR-137

■ **NOTE:** Using suitable hose clamping pliers, clamp off both coolant lines going into the throttle bodies.

9. Loosen the four clamps securing the throttle body; then lift up the throttle body and disconnect the coolant lines. Set the throttle body up and out of the way.
10. Remove the intake boot from the chassis.
11. Route Solenoid-to-Starter Cable through the black P-clamp which is already installed on the engine; then install Red Plastic Cap onto the cable. See Fig. 5.

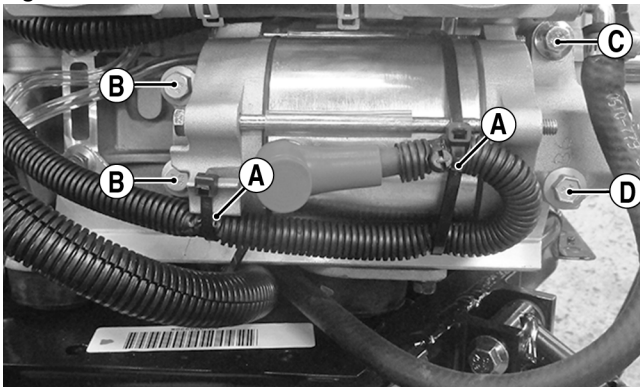
Fig. 5



ZR-039A

12. Secure Starter Motor Assembly using four Cap Screws (M8 x 60) (B), Cap Screw (M8 x 40) (C), and Cap Screw M8 x 70 (D). Tighten to 25 ft-lb. See Fig. 6.
13. Secure Solenoid-to-Starter Cable to the starter motor using 1/4 Lock Washer and M6 Hex Nut. Tighten to 72 in-lb. Secure using Long Cable Ties (A). See Fig. 6.

Fig. 6



CWI-108B

14. Secure Battery-to-Ground Cable to the engine using Cap Screw (M8 x 20) and 5/16 Lock Washer (installed between the engine and the cable). Tighten to 20 ft-lb. See Fig. 7.

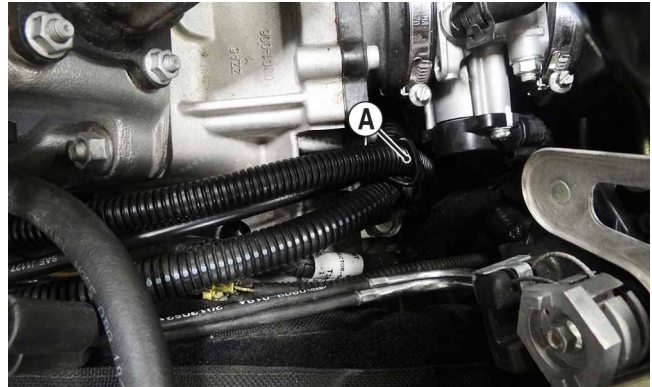
Fig. 7



CWI-108B

■ **NOTE:** Make sure when routing the battery cables around the engine to have to have the positive cable (A) in the retaining clip and the negative and oil line routed underneath. See Fig. 8.

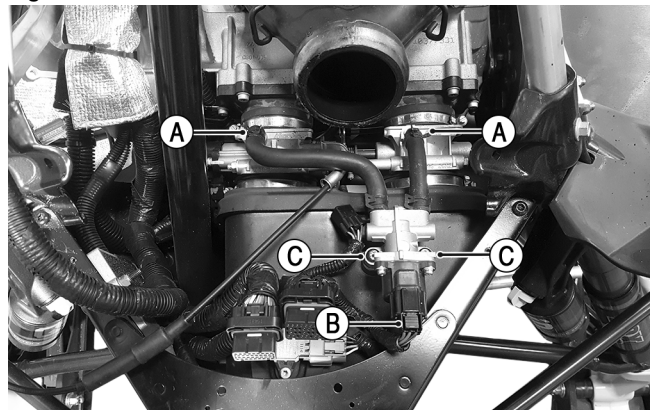
Fig. 8



CWI-108B

15. Install and position the intake boot; then secure the throttle body to the coolant lines using the existing clamps. Tighten securely; then check the coolant level. Add as necessary.
16. Install the throttle body into the intake flanges and the intake boot. Secure using existing clamps.
17. Install the idle speed control (ISC) hoses (A) to the top of the throttle bodies; then secure the ISC using the screws (C). Connect the ISC to the main harness (B). See Fig. 9.

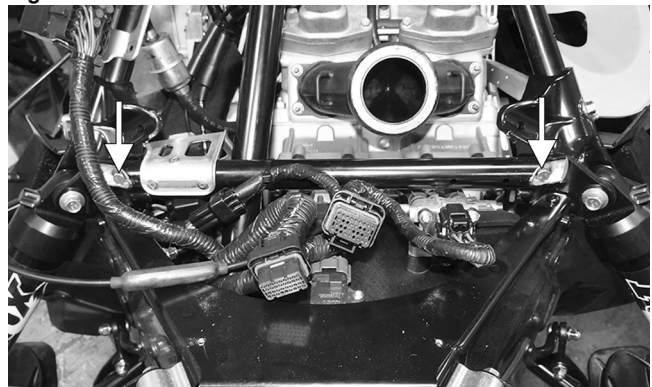
Fig. 9



EL-006A

18. Position the shock mount bracket support and secure using the existing cap screws and nuts. Tighten to 20 ft-lb. See Fig. 10.

Fig. 10



EL-003A

19. Remove the harness wrap located on the MAG side of the engine and locate the connector with one wire; then disconnect the connector. Using a small needle nose pliers, pull out but do not remove the white wire retainer. See Fig. 11.

Fig. 11



ZR-041

20. Using a 1 mm tool, press the white plug from the connector out; then install the single red/white wire into the connector until it snaps into place. Press down on the white retainer to lock the wires. See Fig. 12 and 13.

Fig. 12



ZR-042

Fig. 13



ZR-043

21. Remove the cap screw securing the existing ground wire to the chassis. Account for a washer; then secure the ground cable from the starter harness along with the existing ground cable and washer to the chassis. Tighten securely. See Fig. 14.

Fig. 14



ZR-044

22. Route the PDM and ECM starter wires along the existing wires up to the PDM and ECM; then remove the PTO side ECM connector and press down on the white clip on top of the connector to release the wires. Remove the #9 and #17 plugs from the connector. See Fig. 15.

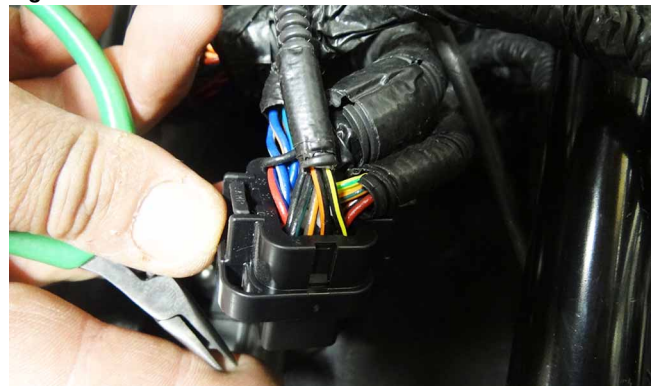
Fig. 15



ZR-045

23. Install the violet/gray wire into the #9 position on the connector; then install the black orange wire into the #17 position making sure to press the wires in until they snap into position. Lock the wires with the white retainer and install into the ECM. See Fig. 16.

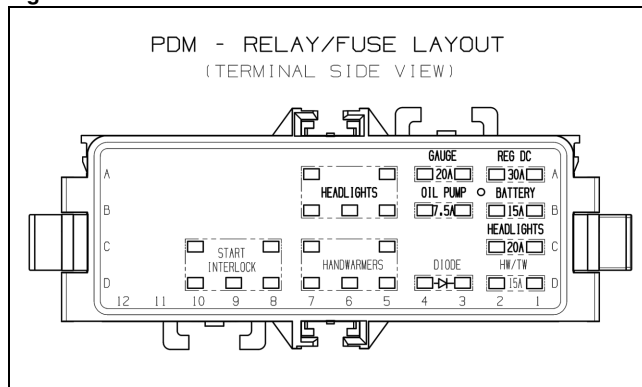
Fig. 16



ZR-046

24. Remove the PDM from the PDM bracket located on the front right spar tube; then remove the PDM cavity plugs C10, D9, C8, D4, D3, B2, and B1. See Fig. 17.

Fig. 17

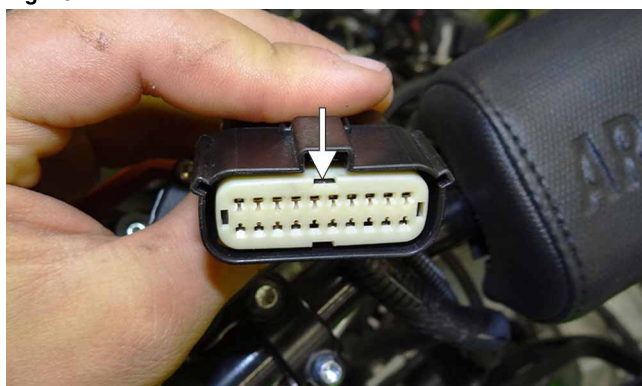


25. Referencing the chart below, install the wires into the correct PDM terminal location (**BLK/YEL wires are interchangeable between terminal positions D9 and C10**). Install PDM into the PDM bracket and install 15A Fuse, Mini Diode, and Relay.

Wire Color	PDM Location
Red/Violet	B1
Red/White	B2
Violet/Gray	C8
Black/Yellow	C10
Black/Orange	D3
Black	D4
Black/Yellow	D9

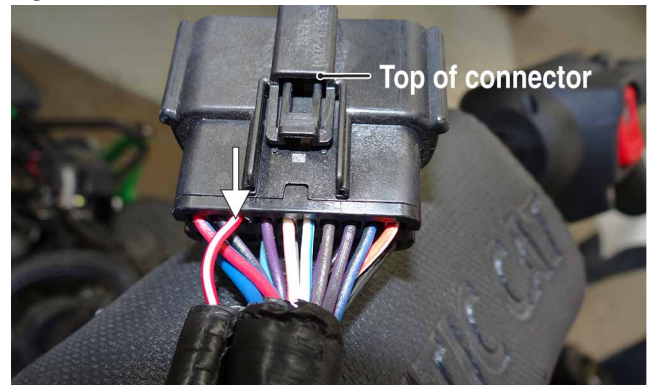
26. Using a small flat-head screwdriver, pull out but do not remove the main harness white connector (which connects to the hood harness). See Fig. 18.

Fig. 18



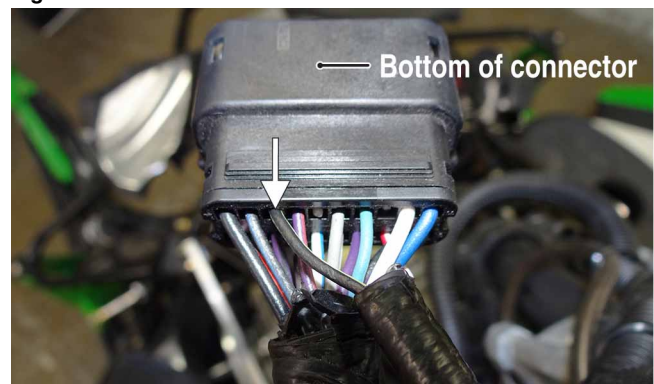
27. Remove the #3 plug from the connector; then install the red/white wire from the accessory harness into that hole. See Fig. 19.

Fig. 19



28. Remove the #15 plug from the connector; then install the black/yellow wire from the accessory harness into that hole. See Fig. 20.

Fig. 20



■ **NOTE:** Once the accessory wires are installed, they should match the hood harness wires.

29. With the wires fully inserted into the connector, press down on the white retainer to lock the wires in place.

■ **NOTE:** When routing the battery cables and the harness, make sure the wires are routed under the drive shaft and away from any moving or hot components. Cable tie as necessary. See Fig. 21.

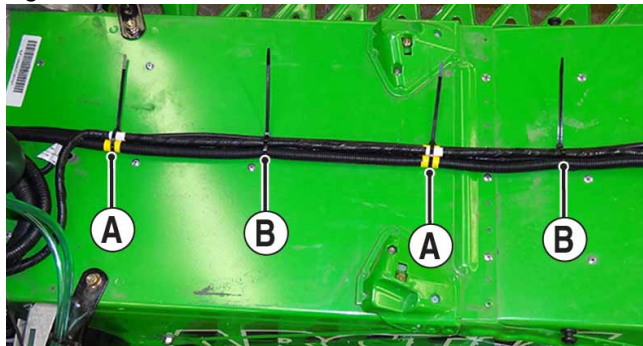
Fig. 21



30. Route the positive cable, ground cable, and harness along the center of the tunnel and back to the rear of the fuel tank. Secure using two push mount cable ties and two regular cable ties.

■ **NOTE:** There are two holes in the tunnel (A) that the push mount cables ties will secure to and the tape on the two cables and harness must be aligned with the tape and the push mount cable ties. The regular cable ties (B) should be in the locations shown below. See Fig. 22.

Fig. 22



SNO-1064A

31. Secure both Fuel Tank Foam pieces to the MAG side of the battery compartment of the fuel tank. See Fig. 23.

Fig. 23



SNO-1069A

32. Install the gas tank assembly onto the chassis making sure the cables and wires are routed in the groove of the gas tank. Secure using existing hardware.
33. Place the battery in the battery compartment in the gas tank making sure the terminals are positioned at the bottom.
34. Route all wires through the hole in the gas tank toward the battery.
35. Secure Starter Solenoid to Battery Hold-Down Bracket using two Machine Screws (M6 x 1 x 25) and two Lock Nuts. See Fig. 24.

Fig. 24



XM108

36. Secure the ground-to-battery cable and the larger end to the negative terminal on the battery. Tighten securely. See Fig. 25.
37. Secure the two smaller-end cables to the solenoid using two nuts. Tighten securely. See Fig. 25.
38. Secure the starter-to-solenoid cable to the PTO side of the solenoid making sure to install a red plastic cap over the wires. Tighten securely. See Fig. 25.
39. Secure Battery-to-Solenoid Cable and the red accessory wire to the PTO side of the solenoid making sure to install a red plastic cap over the wires. Tighten securely. See Fig. 25.

Fig. 25



XM108

40. Secure the battery-to-solenoid cable to the positive terminal on the battery making sure to install a red plastic cap over the wire. Secure using cable ties. See Fig. 26.

Fig. 26



SNO-1044A

41. Secure Ring Gear to the drive clutch using six Torx-Head Screws (M8 x 1.25 x 14) making sure the angled side of the teeth will be installed toward the starter motor. Tighten to 24 ft-lb (threads coated with green Loctite #609). See Fig. 27.

Fig. 27



XM188

42. Install the drive clutch using existing torx-head screw and washer. Tighten to 51 ft-lb.
43. Install the drive belt and driven clutch.
44. Install the resonator and expansion chamber and secure using existing springs.
45. Install the seat, console, hood, and both access panels.
46. Start the engine and allow it to run; then shut the engine off and verify the drive clutch torx-head screw to 51 ft-lb.

■ **NOTE: A small amount of Grease (p/n 1056-300) should be applied to the threads the pinion gear ever 1000 miles or premature wear will result.**