6–3 FAN BELT

Check the drive belt for correct tension. A loose belt can cause charging problems. Correct tension is 0.375 inch (10 mm) play at the midway point (Fig. 6–2).

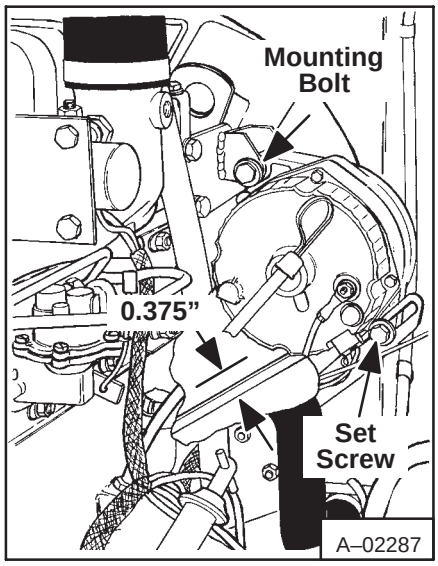

Fig. 6–2 Fan Belt Adjustment

A new belt must be installed when:

1. It is worn narrow.
2. It has cracks or is separating.
3. It has oil on it.
4. There is no more adjustment.

To check wiring:

1. Turn the ignition switch on. Connect a voltmeter from chassis to: (Fig. 6–3)

   No. 1 alternator connection

   No. 2 alternator connection

   Bat connection

2. If any of these connections show zero voltage, the wiring has defect. Find defect and make repair. Then check voltage again.

6–4 TO CHECK ALTERNATOR OUTPUT

1. Put the machine on safe blocks.
2. Disconnect negative battery cable. Connect an ammeter in line with the *Bat* terminal of the generator. Connect the battery cable.
3. Lower the electric charge in battery. (Turn engine with starter, connect lights, etc.)
4. Start engine and run at full throttle. The minimum indication on the ammeter must be 22 amperes.
5. If the indication is correct, the alternator is good. If the indication is high or low, check the regulator.

6–5 TO CHECK THE REGULATOR

1. Leave the ammeter connected as in Paragraph 6–4.

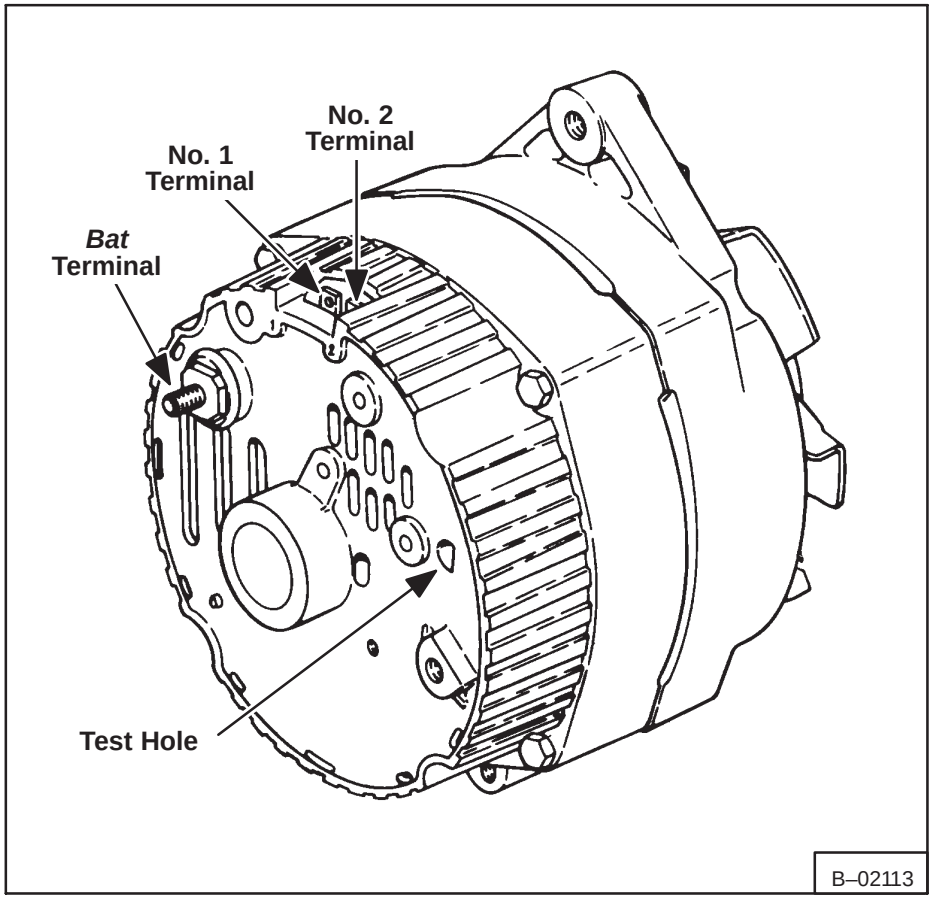

Fig. 6–3 Alternator

2. Lower the electric charge in battery. (Turn engine with starter, connect lights, etc.)

3. With the engine running at full throttle, connect the alternator field to chassis with a small screwdriver or wire (Fig. 6–4).

4. Check the ammeter. The indication must be 8 – 28 amperes. If indication is correct, the regulator probably has a defect. If indication is not correct, the problem is in the diode trio, the rectifier, the stator or the rotor.

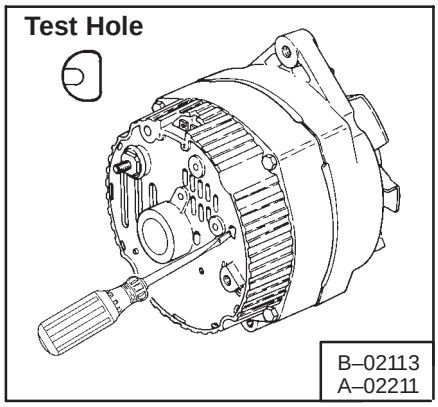

Fig. 6–4 To Check The Regulator

6–6 ALTERNATOR SERVICE

6–6.1 Removal (ROPS Must Be Tilted)

1. Disconnect negative battery cable.

2. Disconnect wires from alternator.

3. Remove the two bolts that hold alternator in place and lift alternator from the Bobcat.

4. Installation is the reverse of removal.

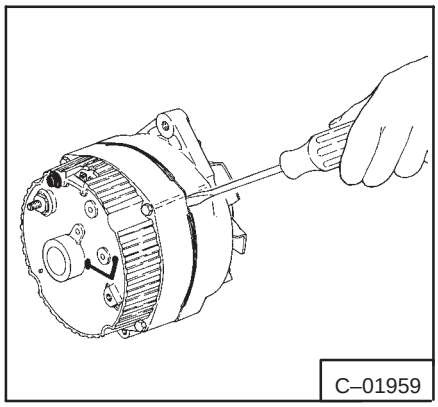

Fig. 6–5 Separating Alternator Housing

6–6.2 Disassembly

1. Put a mark across each housing half to help in correct assembly.

2. Remove the pulley from the shaft.

3. Remove the four bolts which hold the housing together.

4. Use a screwdriver to separate each half of housing (Fig. 6–5). Slide the rotor out of the housing.

5. Remove the nuts which hold the three stator wires to the frame. Remove the stator.

6. Disconnect the diode trio.

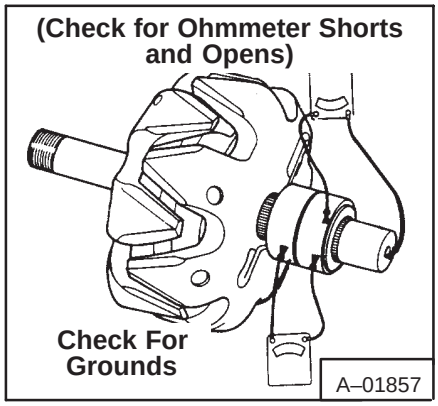

Fig. 6–6 Checking Rotor Coil Wires

6–6.3 To Check Rotor (Fig. 6–6)

1. Connect an ohmmeter from one slip ring to the shaft. There must be maximum resistance.

2. Connect an ohmmeter to both slip rings. There must be 21.8 to 24.0 ohms of resistance on the alternator. If not, there is a defect in the rotor.

6–6.4 To Check Stator (Fig. 6–7)

1. Connect a test light from the middle wire connection to one of the outside wire connections. If the light doesn't come on, there is a defect in the stator.

2. Connect the test light from the middle connection to the other outside connection. If the light doesn't come on, there is a defect in the stator.

3. Connect the test light from one of the connections to the frame of the stator. If the light comes on, there is a defect in the stator.

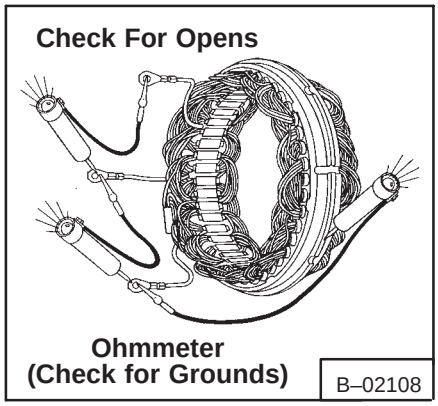

Fig. 6–7 Checking Stator Coil Wires

6–6.5 To Check Diode Trio (Fig. 6–8)

1. Connect a D.C. test light from one of the three connections to the single connection. Then, reverse the connections. The light must come on when connected one way, but not when connected the other way.

⚠ WARNING

Do not use high voltage to check diode trio or rectifier.

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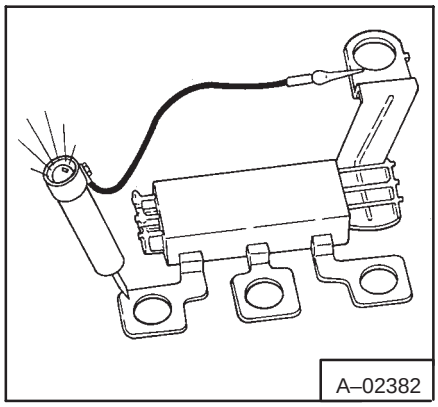

Fig. 6–8 Checking Diode Trio

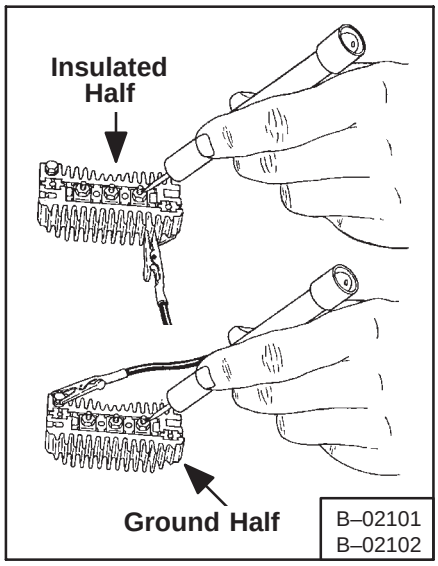

Fig. 6–9 Checking Rectifier

2. Do Step 1 for the other two diodes.

3. Connect the test light from the middle connection to each outside connection. If the light comes on, there is a defect in the diode trio.

6–6.6 To Check Rectifier (Fig. 6–9)

1. Remove the rectifier from the generator.

2. Tighten the three nuts on the connections.

3. Connect the test light from one connection, to the insulated heat sink. Then, reverse the connections. The light should come on when connected one way, but not when connected the other way.

4. Connect the test light from the grounded heat sink to the same connection. Then, reverse the connections. The light must come on when connected one way, but not when connected the other way.

5. Repeat Steps 3 and 4 on both the other connections. If any of the tests are bad, complete rectifier replacement is necessary.

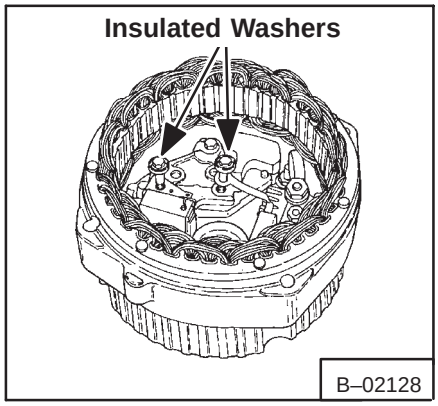

Fig. 6–10 Insulation Washers And Spacers

6–6.7 Assembly

Assembly is basically the reverse of disassembly.

If the regulator is removed, make sure the insulation washers and spacers are in good condition on the two regulator screws (Fig. 6–10).

To install the rotor, put a piece of straight wire through the case to hold the brushes in place (Fig. 6–11).

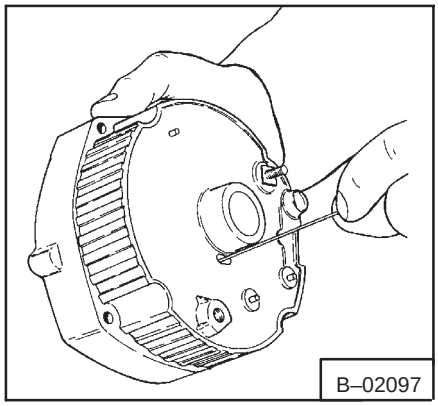

Fig. 6–11 Holding Brushes

6–7 STARTER SERVICE

6–7.1 To Check The Starter

1. Lift the Bobcat on safe blocks. Keep the ignition switch off. Be sure the battery has full charge and the connections are clean and tight.

2. Connect a jumper wire from the *S* connection on solenoid to the *Batt* connection on solenoid (Fig. 6–12). The engine will turn rapidly. If the starter turns, but not the engine, the defect is in starter drive. If the starter doesn't turn, do this:

3. Connect the jumper from the *Batt* connection on solenoid to the *M* terminal on starter (Fig. 6–13). If the starter will turn rapidly, the defect is in the solenoid. If starter does not turn, the defect is in the starter.

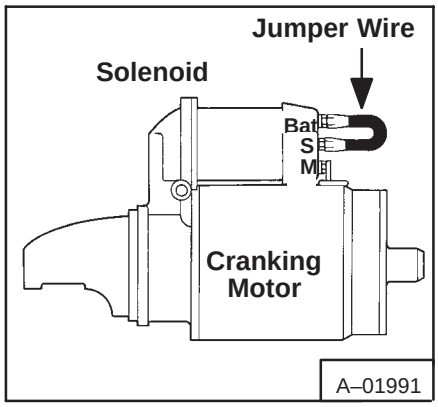

Fig.6–12 Checking Solenoid

6–7.2 To Remove Starter

1. Disconnect negative battery cable.

2. Disconnect the wires from starter connections.

3. Remove the bracket which holds the rear of the starter. Remove the three nuts which hold the starter in place, and lift it out.

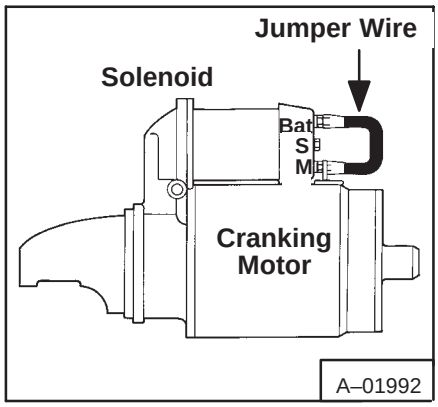

Fig. 6–13 Checking Operation

6–7.3 Disassembly And Inspection

1. Remove the three screws which hold the solenoid in place. Twist the solenoid 1/4 turn and slide it off.

2. Remove the thru bolts and the shift lever bolt. The starter will now come apart.

3. Check the armature by connecting a test light from the outside of the armature to the commutator (Fig. 6–14). If the light comes on, the defect is in the armature.

4. Check the armature on an armature tester (Fig. 6–15).

5. Check the condition of the commutator, and make repairs as needed.

6. Connect a test light from the outside connection to each of the inside connections (Fig. 6–16). If the light doesn't come on, the field coils have a defect.

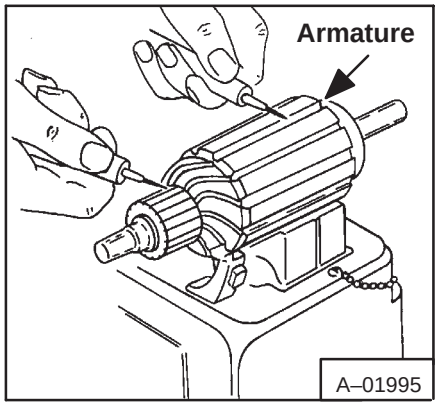

Fig. 6–14 Armature Testing (Grounds)

6–7.4 Assembly

Assembly is the reverse of disassembly.

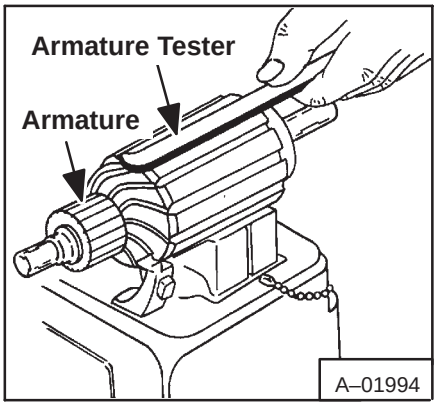

Fig. 6–15 Armature Testing (Shorts)

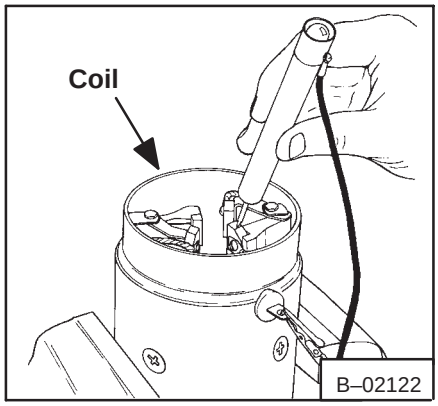

Fig. 6–16 Checking Field Coil Wires