



Service Bulletin

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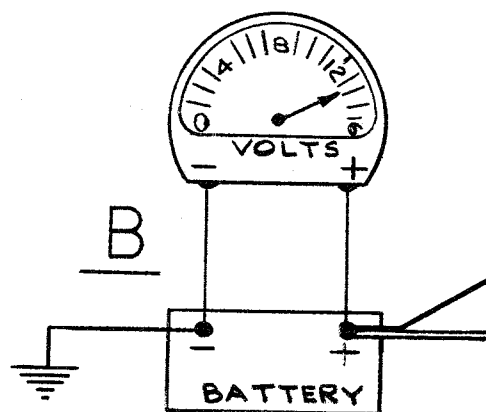
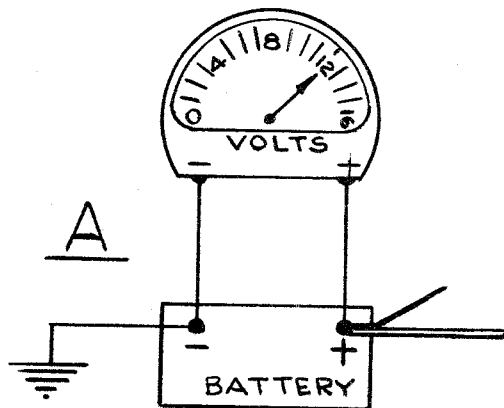
CHARGING SYSTEM RAIDER AND CHARGER MODELS with 10 Amp Alternators

The battery charging systems on both the 10 and 12 H.P. models (HH 100-115095B Lauson and (K301-S-47147B Kohler) are identical in their functions, and service procedures for checking and testing are the same for both.

It is important that the charging systems be checked for proper operation whenever new tractors are being set up and when units are in for service.

A simple procedure for checking to see if the system is charging is outlined below. (For more complete testing and diagnosis the attached Lauson and Kohler Service Bulletins are furnished for your information and guidance.)

1. With the engine stopped, turn the lights on for approximately two minutes to remove the surface charge from the battery.
2. With the engine stopped, use a voltmeter and check the voltage across the battery. See diagram A. The indicated voltage reading should be approximately 12 volts with a good, fully charged battery.



3. Start engine and run at near full governed speed. The indicated voltage should slowly increase from the 12 volt area toward 13 volts, and over, depending on the condition of the battery and the voltage setting of the regulator-rectifier unit. With a low battery the voltage reading should be approximately 12 to 13 volts. With a nearly full charged battery the voltage reading should be approximately 13 to 14 volts. See diagram B.

4. If the voltmeter reading does not increase as outlined in Step 3 check the following.
- a. Make sure the wiring lead connector is properly connected to the regulator-rectifier unit and double check to see that the lead terminals are secure in the plastic connector.
 - b. Make sure that there is a good ground between the regulator-rectifier unit and the hood stand. This can easily be determined by connecting a jumper lead between the battery ground post (negative) and the regulator-rectifier. Recheck as outlined in Step 3. If the voltage reading now increases, indicating there has been a poor ground, remove the regulator-rectifier and scrape off any excess paint or foreign matter from the hood stand and regulator-rectifier which could be the cause of a poor ground and re-install the regulator-rectifier.
5. If a voltage increase is not indicated after Step 4. the system should be further checked to determine if the problem is in the regulator-rectifier unit or in the stator assembly located under the fly-wheel. This may be determined without additional instruments by using a known good regulator-rectifier assembly as a test unit as outlined in Step 6.
6. With a good regulator-rectifier used as a test unit proceed as follows:
- a. Remove the connector and leads from the original regulator-rectifier unit and connect to the test unit.
 - b. Install a jumper wire between the battery ground post (negative) and the housing of the regulator-rectifier test unit.
 - c. Start the engine and run near full speed and check battery voltage as described in Step 3. If the voltmeter reading indicates the system to be charging--install a new regulator-rectifier assembly.

If the voltmeter does not indicate that the system is charging, further checks should be made as outlined in the Lauson or Kohler bulletins to determine if the stator or flywheel units are involved.

Enclosures: Lauson Bulletin 3-C-8
Kohler Bulletin 49

Atwood S. Kidder
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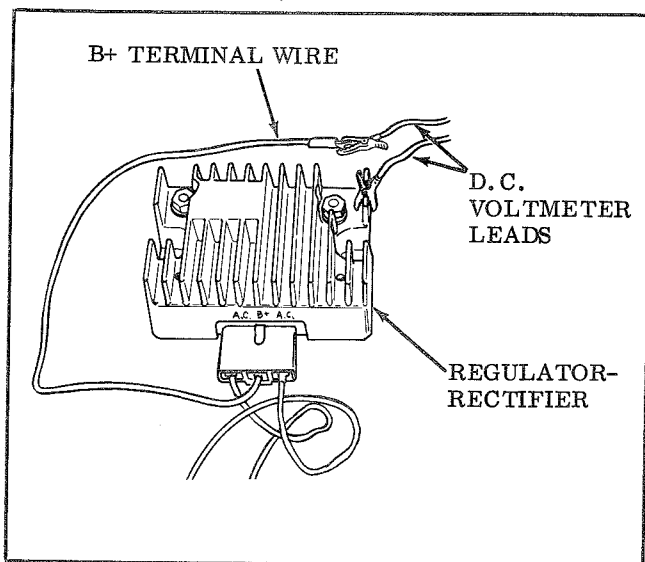


Figure 3-C-4

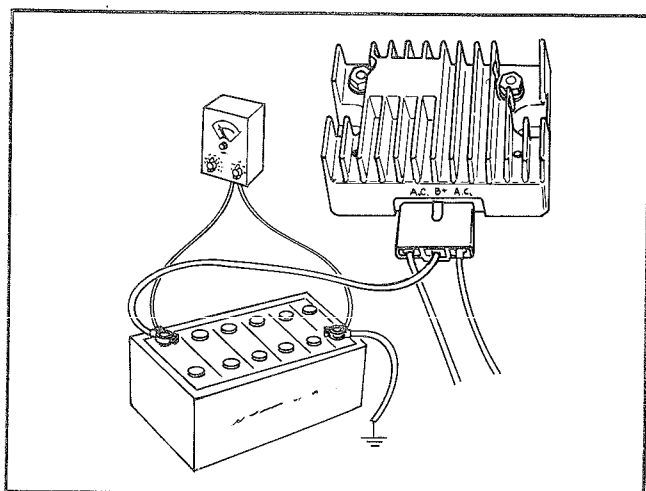


Figure 3-C-5

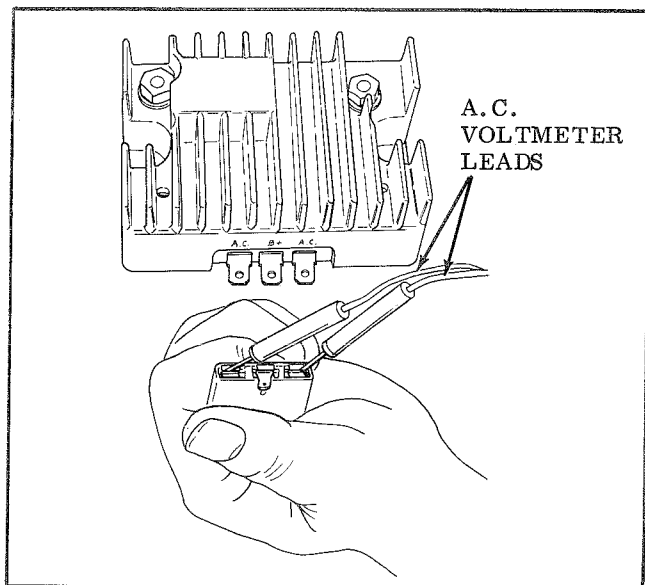


Figure 3-C-6

3-C-8 ALTERNATOR CHARGING SYSTEM EQUIPPED WITH A SOLID STATE REGULATOR-RECTIFIER.

a. Precautions.

- (1) Do not connect battery to cables in wrong polarity. This will cause regulator-rectifier damage.
- (2) Break continuity between the regulator-rectifier unit and battery when using a remote charger on the battery, or when "jumping" from another battery. This will eliminate damage to the regulator-rectifier if polarity is reversed.
- (3) Disconnect wiring harness at regulator-rectifier before using arc welder on equipment.

b. Pre-Service Checks.

- (1) Check for good ground between regulator-rectifier and mounting.
- (2) Check for poor connections or broken wires.

c. Troubleshooting.

- (1) Battery not fully charged.
 - (a) Disconnect B+ at battery and check D.C. voltage between cable and ground with engine running near full throttle.
 1. If above 14 volts D.C., system is OK; check for defective ammeter.
 2. If less than 14 volts D.C., but greater than 0 volts; check for defective regulator-rectifier.
 - (b) With battery connected, check B+ to ground voltage with D.C. voltmeter. If 13.8 volts or higher, place load (turn on headlights) on battery to reduce battery voltage to or below 13.6 volts.
 1. If charge rate increases, system is OK. Battery was fully charged.
 2. If charge rate does not increase, check for defective stator (Fig. 8-C-7) or regulator-rectifier.

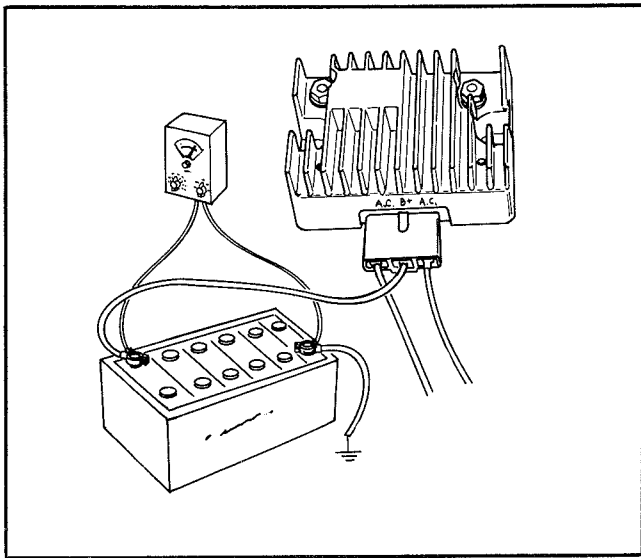


Figure 3-C-7

(c) Disconnect plug from regulator-rectifier and test A.C. voltage at plug with the engine running near full throttle.

1. Voltage reads less than 20 volts; check for defective regulator-rectifier.

(2) Battery always charging at a high rate; check B+ to ground voltage with a D.C. voltmeter.

(a) If over 14.7 volts; the regulator is not functioning.

(b) If under 14.7 volts; the battery charge is low. The alternator is OK. Make a battery check.

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