

Charging System

Troubleshooting

If the charging system light does not come on or does not go off, or the battery is dead or low, test the following items in the order listed below:

1. Battery (see page 23-70)
2. Charging System Light
3. Alternator/Regulator

Charging System Light Test

1. Turn the ignition switch ON (II).
 - Does the charging system light come on?

YES NO

1. Start the engine.
 - Does the charging system light go off?

YES NO

Charging system light circuit is OK.

1. Turn the ignition switch off.
2. Disconnect the 4-P connector from the alternator.
3. Turn the ignition switch ON (II).
 - Does the charging system light come on?

YES NO

Disconnect the ABS control unit (C471), and the integrated control unit (C401), as applicable. If the charging system light stays on, repair the short to ground in the WHT/BLU wire.

WHT/BLU wire is OK; perform alternator/regulator test (see page 23-111).

1. Turn the ignition switch off.
2. Check fuse No. 4 (7.5 A) in the under-dash fuse/relay box.
 - Is the fuse OK?

YES NO

Replace the fuse.

1. Disconnect the 4-P connector from the alternator.
2. Turn the ignition switch ON (II).
3. Check for voltage at the IG (BLK/YEL wire) terminal of the 4-P connector.
 - Is there battery voltage?

YES NO

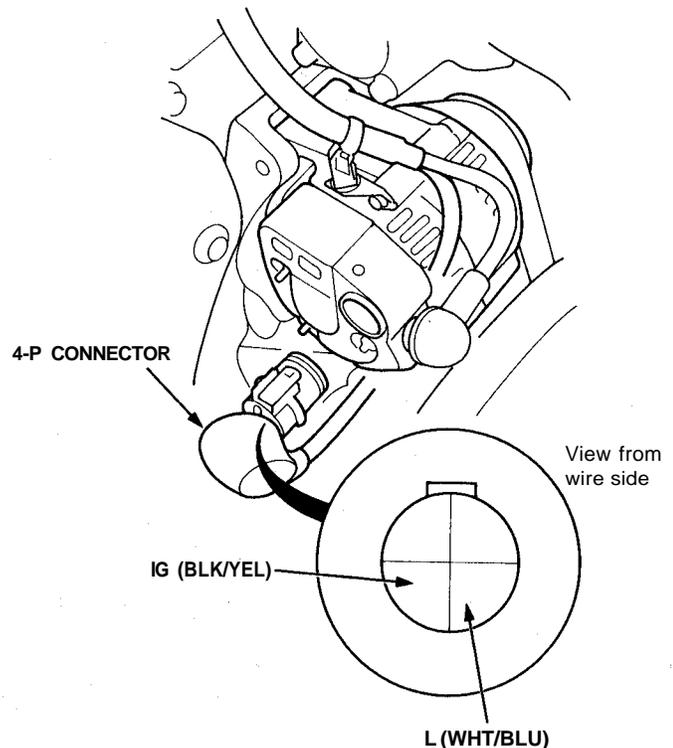
Repair open in the BLK/YEL wire.

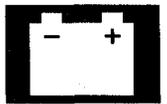
1. Ground the WHT/BLU wire at the L terminal of the 4-P connector.
 - Does the charging system light come on?

YES NO

Check for a blown charging system light bulb. If the bulb is OK, repair open in the WHT/BLU wire.

Replace the voltage regulator.





Alternator/Regulator Test

NOTE: Be sure the battery is sufficiently charged (see page 23-70).

1. Connect the Sun VAT-40 (or equivalent tester), and turn the selector switch to position 1 (starting).
2. Shift to neutral or park and start the engine. Hold the engine at 3,000 rpm with no load until the radiator fan comes on, then let it idle.
3. Raise the engine speed to 2,000 rpm and hold it there.
 - Is the voltage over 15.1 V?

YES NO

Replace the voltage regulator.

1. Release the accelerator pedal, and let the engine idle.
2. Make sure all accessories are turned off. Turn the selector switch to position 2 (charging).
3. Remove the inductive pick-up, and zero the ammeter.
4. Place the inductive pick-up over the B terminal wire so that the arrow points away from the B terminal.
5. Raise the engine speed to 2,000 rpm and hold it there.
 - Is the voltage less than 13.5 V?

YES NO

Test and repair the alternator components.

1. Apply a load with the VAT-40 until the battery voltage drops to between 12 - 13.5 V.
 - Is the amperage *A or more?

YES NO

Charging system is OK.

1. With the engine speed still at 2,000 rpm, full-field the alternator.
 - Is the alternator output *A or more?

YES NO

Test and repair the alternator components.

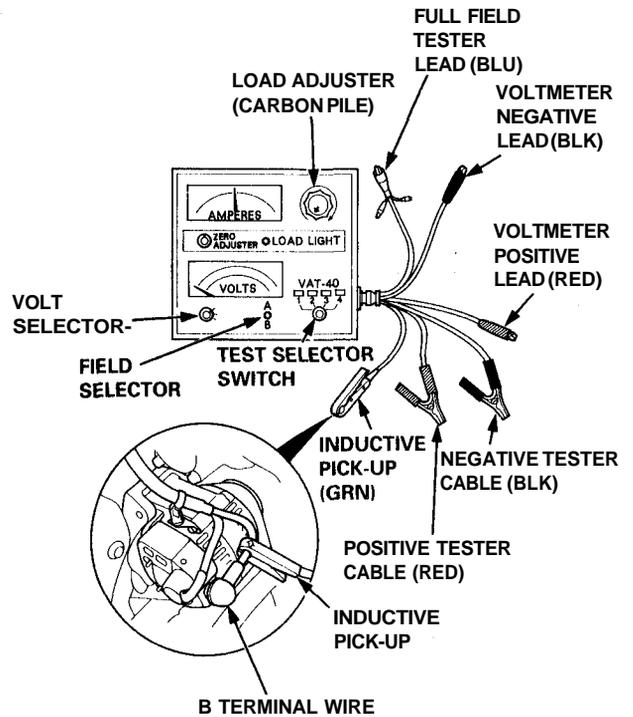
1. Turn the ignition switch off; then turn it on (II) again.
2. Disconnect the 4-P connector from the alternator.
3. Check for voltage at the IG (BLK/YEL wire) terminal of the 4-P connector.
 - Is there battery voltage?

YES NO

Repair open in the BLK/YEL wire.

Replace the voltage regulator.

*A: F22B1 engine (70 A)
F22B2 engine (65A)



CAUTION: The voltage will rise quickly when the alternator is full-fielded. Do not allow the voltage to exceed 18 V; it may damage the electrical system.

NOTE: Attach a probe to the VAT-40 full-field test lead, and insert the probe into the full-field access hole at the back of the alternator. Switch the field selector to "A (Ground)" position momentarily, and check the amperage reading.

