

**ACS SERVICE BULLETIN SB92-01**

**PURPOSE:**

This Service Bulletin provides instructions for inspection and lubrication of ignition switches manufactured by Gerdes Products Co. or ACS Products Co. and for installation of a diode across the starter solenoid coil.

This Bulletin applies to all Gerdes and ACS ignition switches except the following:

- (1) ACS ignition switches without a "Start" position (models A-510-1 and A-510-5) manufactured on or after February 20, 1989, and which have not reached 2,000 hours of service, need not be lubricated.
- (2) Gerdes and ACS ignition switches which have been manufactured for Cessna Aircraft Company. All Cessna switches will be inspected in accordance with Cessna Service Bulletin No. SEB91-5R1 or later revision. Any required replacement parts and/or starter solenoid diodes will be obtained from a Cessna Service Center. Operators should contact a Cessna Service Center for further information.

**NOTE:** All ACS ignition switches manufactured on or after February 20, 1989 have been lubricated. These switches may be identified by the presence of red paint in the screw heads on the back of the switch and by the manufacturing date stamped on the switch body. Those lubricated switches with a "Start" position which have been operated without a starter solenoid diode must still be inspected as described in this Service Bulletin. After compliance with this Service Bulletin, these switches need not be reinspected until they have reached 2,000 hours of operation.

**COMPLIANCE TIME:**

Compliance with this Service Bulletin should be accomplished within the next 100 hours of operation or at annual inspection, whichever occurs first.

After initial compliance with this Service Bulletin, the ignition switch should be reinspected and lubricated after every 2,000 hours of operation.

**APPROVAL:**

FAA approval has been obtained on technical data in this Service Bulletin.

**MATERIALS:**

The items required for accomplishment of this Service Bulletin are available from Aircraft Spruce & Specialty Co., 225 Airport Circle, Corona, CA 92880-2527.

Phone: (800) 861-3192.

<u>ITEM</u>	<u>PART NO.</u>	<u>PRICE</u>
Ignition Switch Parts/Lubricant/Diode Kit	A-3650-2	\$18.00
Diode Kit for Starter Solenoid Coil	16050-2	\$8.00

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**ACCOMPLISHMENT INSTRUCTIONS:**

**NOTE: COMPLIANCE WITH THIS SERVICE BULLETIN ON CERTIFICATED AIRCRAFT MUST BE ACCOMPLISHED BY A LICENSED AIRCRAFT MECHANIC.**

**Disassembly:**

1. Disconnect the battery.
2. Remove the ignition switch from the instrument panel.
3. Disconnect all wires and label the wires for re-installation.

**CAUTION! WHEN THE IGNITION SWITCH WIRES ARE DISCONNECTED, OR WHEN THE IGNITION SWITCH IS DISASSEMBLED (STEP 4, BELOW), BOTH MAGNETOS ARE "HOT". IF THE PROPELLER IS MOVED DURING THIS TIME, THE ENGINE MAY FIRE AND CAUSE SERIOUS OR FATAL INJURY TO PERSONNEL.**

4. Hold the switch assembly with the terminal board on top. Remove two screws and two washers from the terminal board. Lift the terminal board from the switch body, being careful not to lose the springs and triangular cups.
5. Remove the three springs and three triangular cups from the switch body.

**Cleaning:**

Clean the contacts on the terminal board and on the three triangular cups with alcohol.

**Inspection:**

Inspect the contacts on the terminal board and on the three triangular cups for excessive wear or corrosion.

If the silver plating on the terminal board or triangular cups is worn through to the brass or if they are burned or pitted from arcing or are corroded, they should be replaced.

**Lubrication:**

Apply a THIN coating of Mobile Grease 33 lubricant to the contacts on the terminal board and the three triangular cups. Be sure that all contacts are coated but avoid heavy lubricant buildups.

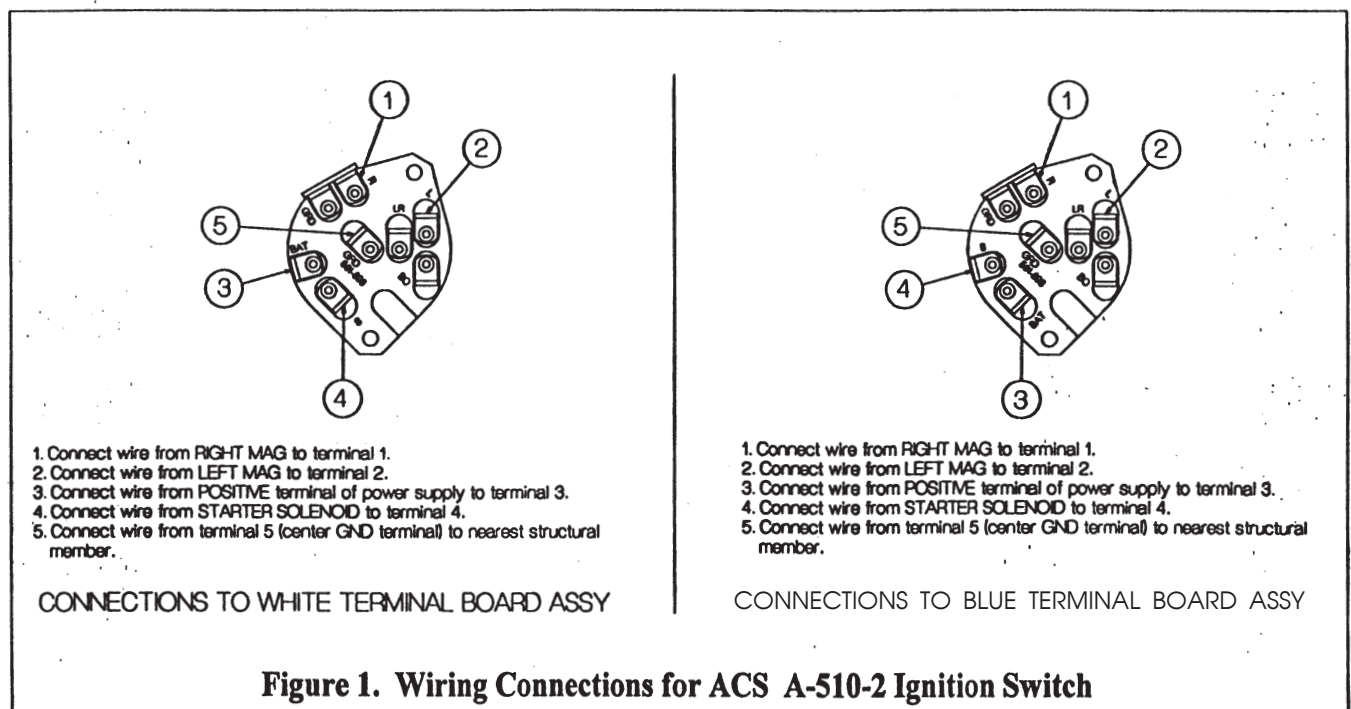
**Reassembly:**

1. Reassemble the switch, using new parts if required. Position the springs and triangular cups so that there is no binding between the cups and the triangular cavities in the switch body. Secure the terminal board assembly to the switch body with the two screws and retaining washers.

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2. Fill the heads of the two screws on the terminal board assembly with red paint to indicate compliance with this Service Bulletin.
3. Connect the labeled wires to the proper terminals on the terminal board assembly.
4. Reinstall the ignition switch in the panel.

NOTE: The locations of the "S" and "BAT" terminals on the new blue terminal board assembly are reversed from their positions on the old white terminal board assembly (see Figure 1).



#### INSTALLATION OF STARTER SOLENOID SURGE SUPPRESSOR DIODE:

The following instructions describe the installation of the diode assembly, P/N 16050-2, on one-terminal and two-terminal starter relays such as those used in Cessna aircraft. Other aircraft may have starter relays which differ in external appearance from those illustrated in Figures 2 and 3, but the general method of installation remains basically the same, i.e., the small ring terminal of the diode assembly (with a red band near the small terminal) is attached to the positive (starter switch) terminal of the solenoid coil of the starter relay and the large ring terminal (with black cover on the diode lead at the terminal) is attached to ground. "Ground" may be the other solenoid terminal on a two-terminal relay or the case of a single-terminal relay.

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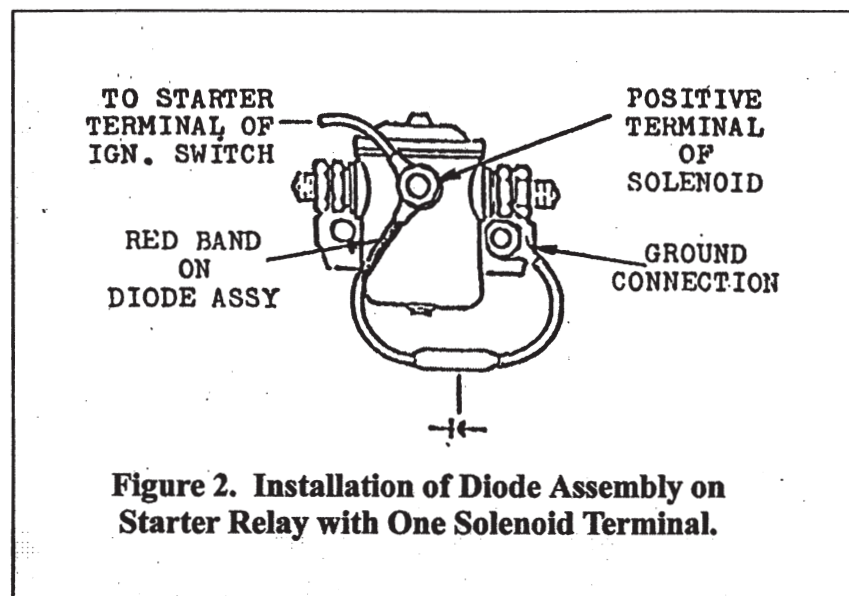
The length of the diode assembly has been designed to fit the one-terminal and two-terminal starter relays of the Cessna type. If your installation requires a different length diode assembly, please contact ACS Products Co. Phone: (928) 855-8613.

### 1. PRELIMINARY OPERATIONS:

With a customer-furnished starter relay, an ACS A-510-2 ignition switch, and all required wiring to these items in place, proceed to Step No. 2 or Step No. 3.

**CAUTION!** The ignition switch must be in the "Off" position and the leads to the left and right magnetos must be connected to the ignition switch during installation of the diode assembly to prevent the engine from firing if the propeller is moved.

### 2. INSTALLATION OF DIODE ASSY ON STARTER RELAY WITH ONE SOLENOID COIL TERMINAL:



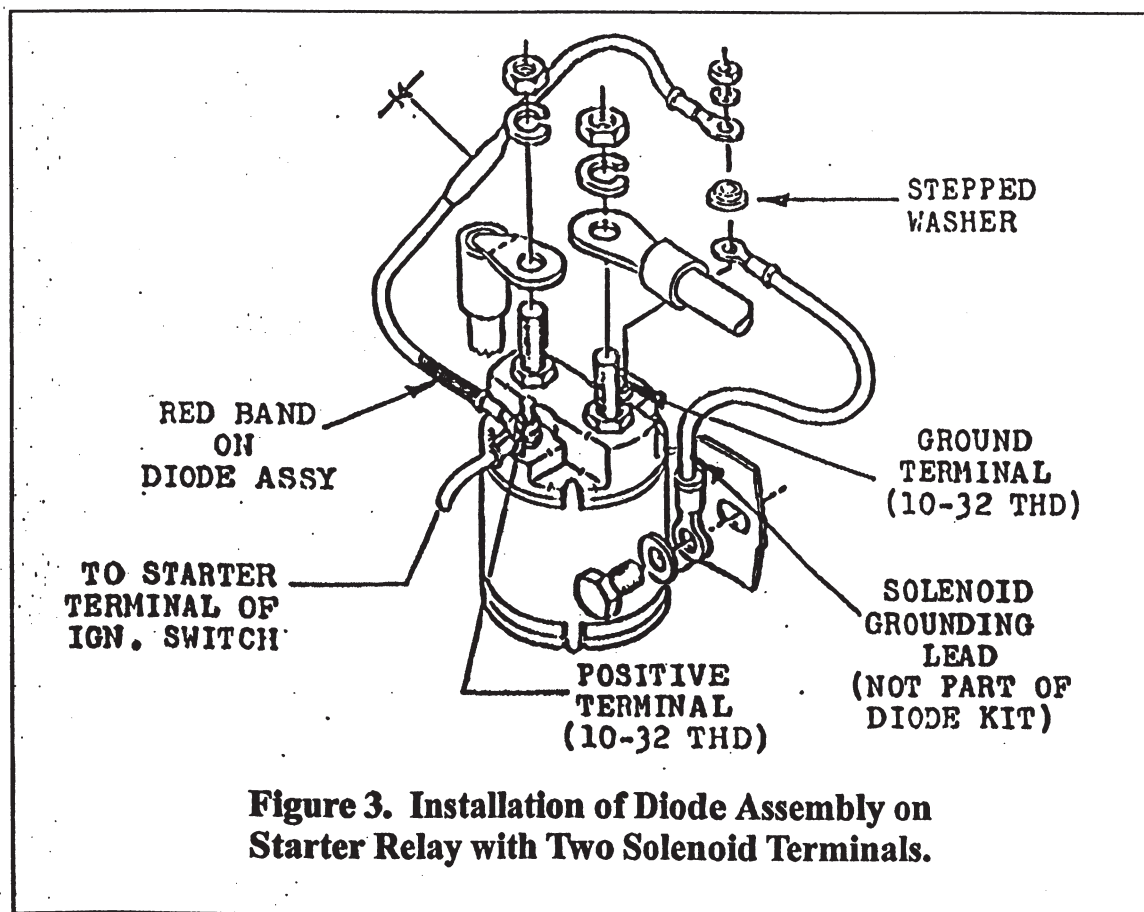
- Refer to Figure 2. Remove one mounting bolt and hardware from the starter relay mounting base.
- Place the large ring terminal of the diode assembly (this end of the diode assembly has a black cover on the diode lead) on the mounting bolt and reinstall the bolt through the starter relay base. The bolt is now the "ground" connection for the diode assembly.
- Remove the nut and washer from the solenoid terminal on the starter relay.

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- d. Install the small ring terminal of the diode assembly on the starter switch terminal of the relay (this end of the diode assembly has a red band at the small ring terminal). Reinstall the washer and nut on the terminal.

NOTE: The stepped washer in the diode kit is not used in this installation.

3. INSTALLATION OF DIODE ASSY ON STARTER RELAY WITH TWO SOLENOID COIL TERMINALS:



**Figure 3. Installation of Diode Assembly on Starter Relay with Two Solenoid Terminals.**

- a. Refer to Figure 3. Remove the nut and washer from the positive (starter switch) terminal on the starter relay solenoid coil.
- b. Place the small terminal of the diode assembly on the positive terminal (this end of the diode assembly has a red band at the small ring terminal). Reinstall the washer and nut on the terminal.

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- c. Remove the nut and washer from the ground terminal on the starter relay solenoid coil.
- d. Place the stepped washer on the ground terminal, with the large face of the washer toward the base of the ground terminal stud.
- e. Place the large ring terminal of the diode assembly over the stepped washer (this end of the diode assembly has a black cover over the diode lead).
- f. Reinstall the washer and nut on the ground terminal, being careful to have the ring terminal centered on the stepped washer.

**FUNCTIONAL CHECK:**

- 1. Reconnect the battery.
- 2. Perform a functional check of the switch by starting the engine and checking the magnetos for normal engine RPM drop. Reduce engine RPM to idle and turn the switch off momentarily to verify that the "Off" position stops the engine.
- 3. Make an entry in the airplane logbook stating that compliance with this Service Bulletin has been accomplished.