

SERVICE PROCEDURE JD0040

PRODUCT: SCR/SCRF Battery Chargers

SUBJECT: Field Installaton of Float/Equalize Switch with  
Indicating Lights

SCOPE: All SCR/SCRF Chargers with manual equalize switch  
or manual equalize timer

Reference:

EJ0093, Manual Switch with Indicating Lights  
EJ0869, Manual Timer with Switch & Indicating Lights

Materials Required

Float/Equalize Switch Kit, EJ1018-00

Tools Required

Standard hand tools  
Terminal crimping tool

**IMPORTANT: Read the safety notice on page 2 before starting work.**

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## SAFETY PRECAUTIONS

**DISCONNECT ALL AC AND DC POWER SOURCES TO THE BATTERY CHARGER.**  
All external power must be disconnected; turning off front panel circuit breakers is not sufficient to remove power from every point inside the charger. Use a voltmeter to verify that no AC or DC voltage is present on any circuit breaker or fuse terminal. Disconnect the (-) lead of the battery at the battery terminal.

DO NOT PROCEED UNTIL YOU ARE CERTAIN THAT ALL DANGEROUS VOLTAGES  
HAVE BEEN REMOVED FROM THE BATTERY CHARGER.

### A. REPLACEMENT OF EXISTING FLOAT/EQUALIZE SWITCH

1. Remove the wires to the existing Float/Equalize switch (SW1). Remove the switch from the front panel.
2. Install the indicator lights supplied with the parts kit in the front panel holes above the Float and Equalize potentiometers (green for Float). If the panel is not predrilled, punch two 1/2" diameter holes in the panel.
3. Install the new Float/Equalize switch in the panel, using the same hole as for the old switch. reconnect the existing wires to one pole of the switch, using the center and bottom terminals.
4. Refer to drawing EJ0093. Wire DS5 (Float indicator) and DS6 (Equalize indicator) to SW7 (Float/Equalize switch) as shown in the drawing. Use the quick-disconnect terminals supplied with the kit. Note that DS5 is wired to the top terminal, and DS6 to the bottom terminal of one pole of the switch.
5. The remaining wires are shown connected to T1-Y1 and T1-Y2 on drawing EJ0093. These wires should be connected instead to the two terminals of the "AC ON" indicator. This lamp is located at the upper right corner of the front panel, viewed from the rear. Using "piggy-back" terminals and standard quick-connect terminals, wire from one AC ON terminal to the indicators DS5 and DS6, and from the other AC ON terminal to the center terminal of SW7 as shown in the drawing.

NOTE: One pole of the switch is left unused.

6. Check all wiring carefully. Reconnect the battery, and apply ac power to the charger. Test the switch and indicator lights by setting the Float/Equalize switch to the Float position, and verify that the Float indicator lights, and that the charger is in the Float mode. Then set the Float/Equalize switch to the Equalize position, and verify that the Equalized indicator lights, and that the charger is set to the Equalize mode.
7. Adjust the Float and Equalize voltage settings, if necessary, to be sure that they conform to the battery manufacturer's recommendations.

## B. ADDING SWITCH AND INDICATORS TO EXISTING MANUAL TIMER

1. Install the indicator lights supplied with the parts kit in the front panel holes above the Float and Equalize potentiometers (green for Float). If necessary, punch two 1/2" holes in the panel.
2. Install the Float/Equalize switch in any convenient location in the panel. Label the panel with the "Equalize" and "Timer" labels supplied with the parts kit ("Timer" is the lower position).
3. Refer to drawing EJ0869. The terminals of switch SW7 are numbered from top to bottom, left to right, as viewed from the rear. Terminal 1, for example, is the upper left terminal of the switch. In the picture of the timer, TM3, terminals 1 - 6 are quick-connect terminals on the cam switches.

**NOTE: SW7 terminals 2, 5, and 8 are the center terminals on each pole.**

4. Remove the wire from TM3 terminal 6. Connect this wire instead to SW7-8.
5. Locate three "piggy-back" QC (quick-connect) terminals in the parts kit. Follow the schematic in drawing EJ0869, and wire switch SW7 to the terminals of the timer TM3 as follows:

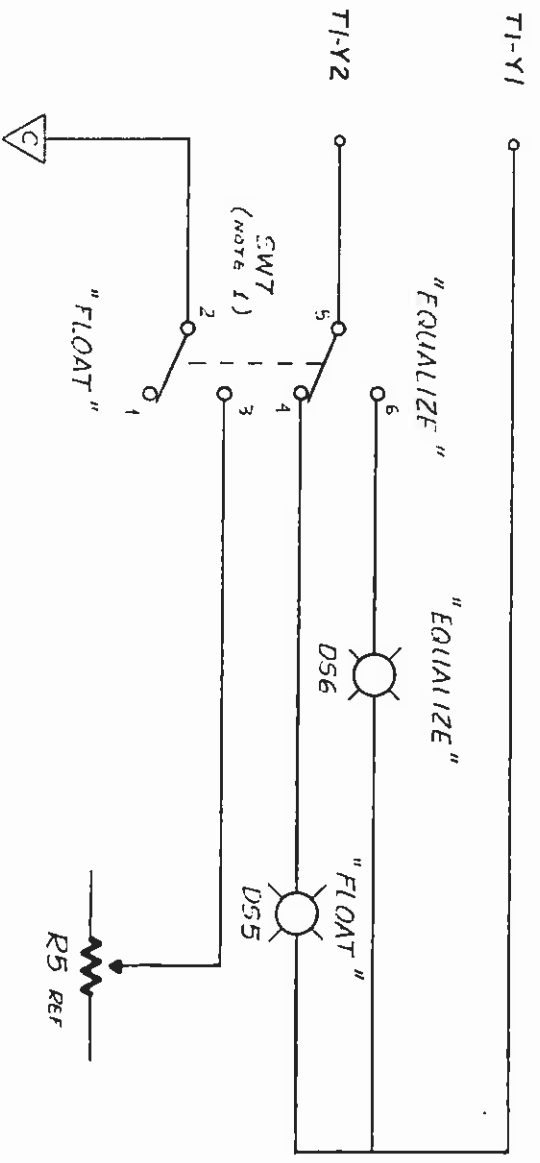
SW7-2 to TM3-3  
SW7-3 to TM3-2  
SW7-4 to TM3-5

6. Using QC terminals, wire one terminal of DS5 to TM3-4, and one terminal of DS6 to SW7-5. Wire TM3-6 to SW7-7. Wire a jumper from SW7-6 to SW7-9.
7. The remaining wire is shown connected to T1-Y1 on drawing EJ0869. This wire should be connected instead to one of the terminals of the "AC ON" indicator, located at the upper right corner of the panel, viewed from the rear. Using "piggy-back" and standard QC terminals, wire from one AC ON terminal to the indicators DS5 and DS6. Use either AC ON terminal for now; you will be able to change it later if necessary.

NOTE: The wiring to TM3-8 is done at the factory. There should be no wire on SW7-1.

8. Check all wiring carefully. Reconnect the battery and turn on the charger. Set the Equalize timer, TM3, to zero. Test the circuit by setting SW7 to Equalize, and verify that the Equalize indicator lights, and that the charger is in the Equalize mode. Set the switch to the Timer position, and verify that the Float indicator lights, and the charger returns to the Float mode. When the switch is in the Timer position, the Manual Timer, TM3, should control the indicators and the equalize mode of the charger.

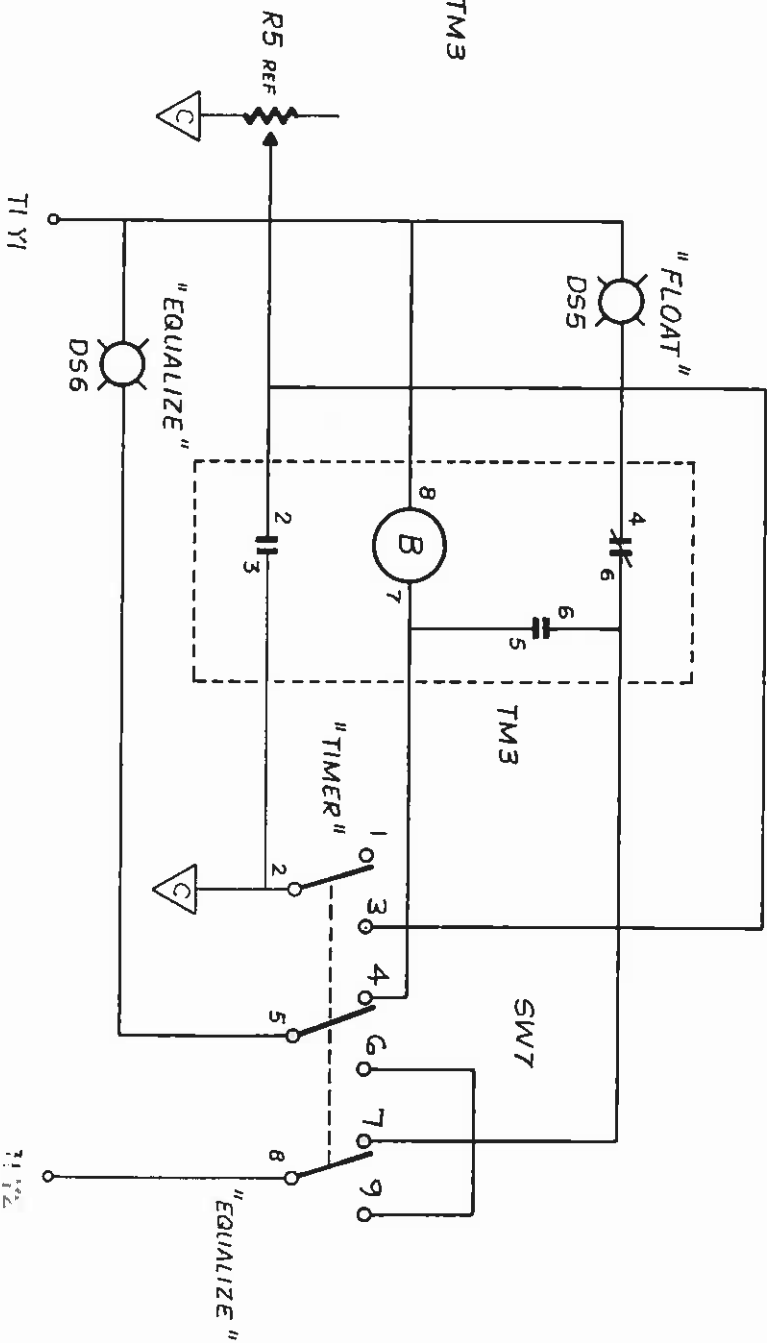
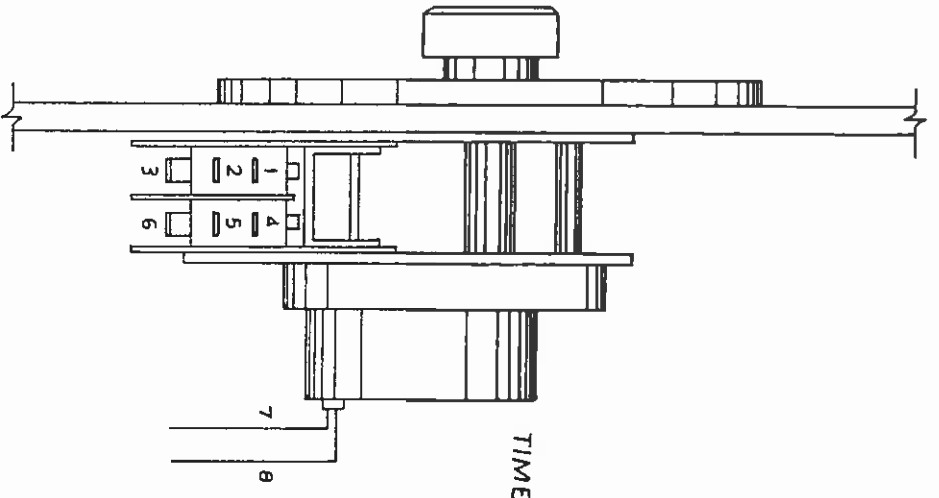
**NOTE: If the Float and Equalize indicators do not light, turn off ac power, and move the "piggy-back" terminal to the other terminal of the AC ON indicator (see step 7 above). Retest according to step 8 above.**



NOTES: 1.. SWT SHOWN IN "FLOAT" POSITION  
 SWT REPLACES SW1 IN MAINTENANCE SCHEMATIC.

|     |       |         |          |
|-----|-------|---------|----------|
| REV | ECN # | DATE    | APPROVED |
| 2   | 1698  | 6-17-85 | WJK      |
|     |       |         |          |
|     |       |         |          |

|                                    |          |            |             |
|------------------------------------|----------|------------|-------------|
| TITLE                              |          |            |             |
| FLOAT & EQUALIZE INDICATING LIGHTS |          |            |             |
| J.N.                               | SHEET OF | DATE       | DRAWN BY    |
|                                    | 4        | 6/10/85    | QAI         |
| SHEETS                             |          | EU 0093    | REV.        |
| TOLERANCES UNLESS FRACT. 1/64      |          | SCALE - 1- | APPROVED BY |
| OTHERWISE NOTED: DECIM. 1.005      |          |            | WJK         |



TIMER CONTACTS AND SWT SWITCH SHOWN IN FLOAT MODE  
(TIMER POSITION OF SWT SWITCH.)

| REV. | ECN NO. | DATE    | CHECKED BY. | APPROVED BY. |
|------|---------|---------|-------------|--------------|
| 3    | 4352    | 10-1-87 | WAH         | WAH          |
| 2    | 4137    | 7-16-87 | WAH         | WAH          |
| 1    | 3442    | 12-5-86 | WAH         | WAH          |
| 0    | 3087    | 8-20-86 | TPP         | TPP          |

|                                   |              |                                                                      |              |
|-----------------------------------|--------------|----------------------------------------------------------------------|--------------|
| TITLE                             |              | 0-72 HRS. MANUAL EQUALIZE TIMER<br>WITH MANUAL SWITCH AND INDICATORS |              |
| SHEET                             | OF           | REV.                                                                 |              |
| 4                                 | 2            | 3                                                                    |              |
| J.N.                              |              | DATE                                                                 | DRAWN BY.    |
| TOLERANCES UNLESS OTHERWISE NOTE: |              | 07-16-87                                                             | WAH          |
| FRACT. 1/100                      | DECIM. ±.008 | SCALE                                                                | APPROVED BY. |
|                                   |              | 1                                                                    | WAH          |