

Technical Bulletin



HAMMOND ORGAN COMPANY
DIVISION OF HAMMOND CORPORATION
4200 DIVERSEY | CHICAGO, ILLINOIS 60639

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TO ALL MAINTENANCE ENGINEERS - CHANGES

NO. MODELS

SUBJECT: STANDARDIZATION OF BRUSH & CYMBAL BOARD
FOR PRODUCTION USE AND SERVICE REPLACEMENT

53 E-100, H-100
Series

New instruments that you will be receiving will incorporate a new type Brush & Cymbal Board (AO-28819-0). This new board replaces older types, AO-28695 and AO-32075, used in E-100 and H-100 series organs, respectively.

This board differs significantly from previous types, in that a special noise diode is used, rather than a transistor, as a source of the brush and cymbal effect.

Three variable controls are incorporated on the board. These controls perform the following functions: (See Figures 1 and 2).

- Control #1 - Brush level
- Control #2 - Cymbal burst level
- Control #3 - Cymbal sustain level.

Selected, "plug-in" components will no longer be required.

When replacing older Brush & Cymbal Boards in the H-100 series organ, install new board with six terminal lugs facing rear of console, see Figure 1. Shielded cable No. 1 passes through hole in stop switch base behind Chorus tablet. Shielded cable No. 2 passes through hole in stop switch base behind Volume Soft tablet.

When replacing older Brush & Cymbal Boards in E-100 series organs, install new board with six terminal lugs facing swell pedal housing. Remove all connections from old board. Remove board and any external controls which may be attached. When using new board, it will be necessary to revise the signal routing of the Brush & Cymbal signal.

Proceed as outlined below:

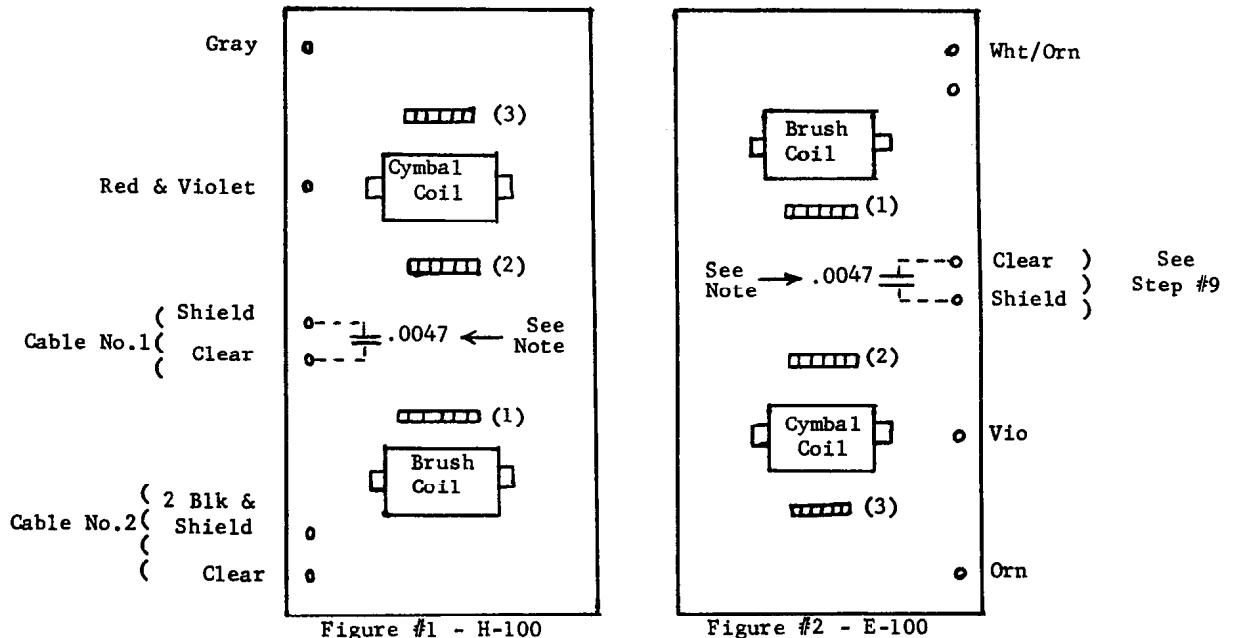
- Step 1. Remove console top.
- Step 2. Locate Yellow and Green shielded cable which previously connected to Brush and Cymbal Board. Free this cable from all ties along bottom and side of case. Reroute cable behind all control tabs to area of Volume Soft switch (cut off excess cable).
- Step 3. Remove the 2.2 meg. ohm resistor and the Red and Black twisted pair from the Volume Soft switch. Slide twisted pair through ties and discard. Install 100K resistor* in same location as 2.2 meg. resistor.

NOTE: This bulletin is a confidential letter to the Hammond dealer organization and is not for general distribution.

- Step 4. Using one of the shielded cables* supplied, attach the inner conductor to the bottom terminal of the 100K resistor. Attach the drain wire to the lug on the top of the switch where a shield wire is already connected.
- Step 5. Connect the Green wire of the Yellow and Green shielded cable to the top terminal of the 100K resistor.
- Step 6. It will be noted that there are four empty terminals on the top of the Volume Soft switch. Connect a 33K* resistor between any two of these empty terminals. Connect the Yellow wire of the Yellow and Green shielded cable to one end of this 33K resistor.
- Step 7. Using the other shielded cable* supplied, connect the inner conductor to the free end of the 33K resistor. Solder the drain wire of this cable and the drain wire of the Yellow and Green shielded cable to same terminal as in Step 4 above, along with other drain wire.
- Step 8. Connect the other end of cable of Step 7 above, to the free end of a short, similar cable, emanating from swell pedal housing, matching inner conductors and drain wires. Tape inner conductors.
- Step 9. Connect free end of shielded cable installed in Step 4, to new board, as shown in Figure 2.
- Step 10. Connect all other wires as shown in Figure 2, and redress as necessary to attain enough lead length.
- Step 11. Redress all cables in a neat and workmanship-like manner.

***NOTE:** When ordering new Brush & Cymbal Board for use in E-100 instruments, the following parts should also be ordered:

- 2 - AO-27095-7 Cable Assembly
- 1 - AO-20305-80 33K Resistors
- 1 - AO-20305-86 100K Resistors



Note: If noise is excessive, add condensers shown above.