

Technical Bulletin



HAMMOND ORGAN COMPANY
DIVISION OF HAMMOND CORPORATION
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December - 1967

TO ALL MAINTENANCE ENGINEERS - CHANGES

NO. MODELS

SUBJECT: NEW PEDAL LATCHING POWER SUPPLY, AND
MINOR CORRECTIONS IN H-100 SERVICE MANUAL

55 H-100

Current instruments in production incorporate an improved Pedal Latching Power Supply, see Schematic shown on Page 2. Refer to Page 55, Figure 38 of the latest H-100 service manual and note the box located in the lower right-hand corner of the schematic. This box represents the circuit shown in the area below the dotted line on Page 2. Page 3 lists some minor corrections which should be made to your latest H-100 Service Manual.

THEORY OF OPERATION

Transistor Q706 is a constant current source supplying 130MA DC (Approx. 15 volts) for one solenoid. The current is set to 130MA by adjusting control R724, and in this way varies the impedance of transistor Q706.

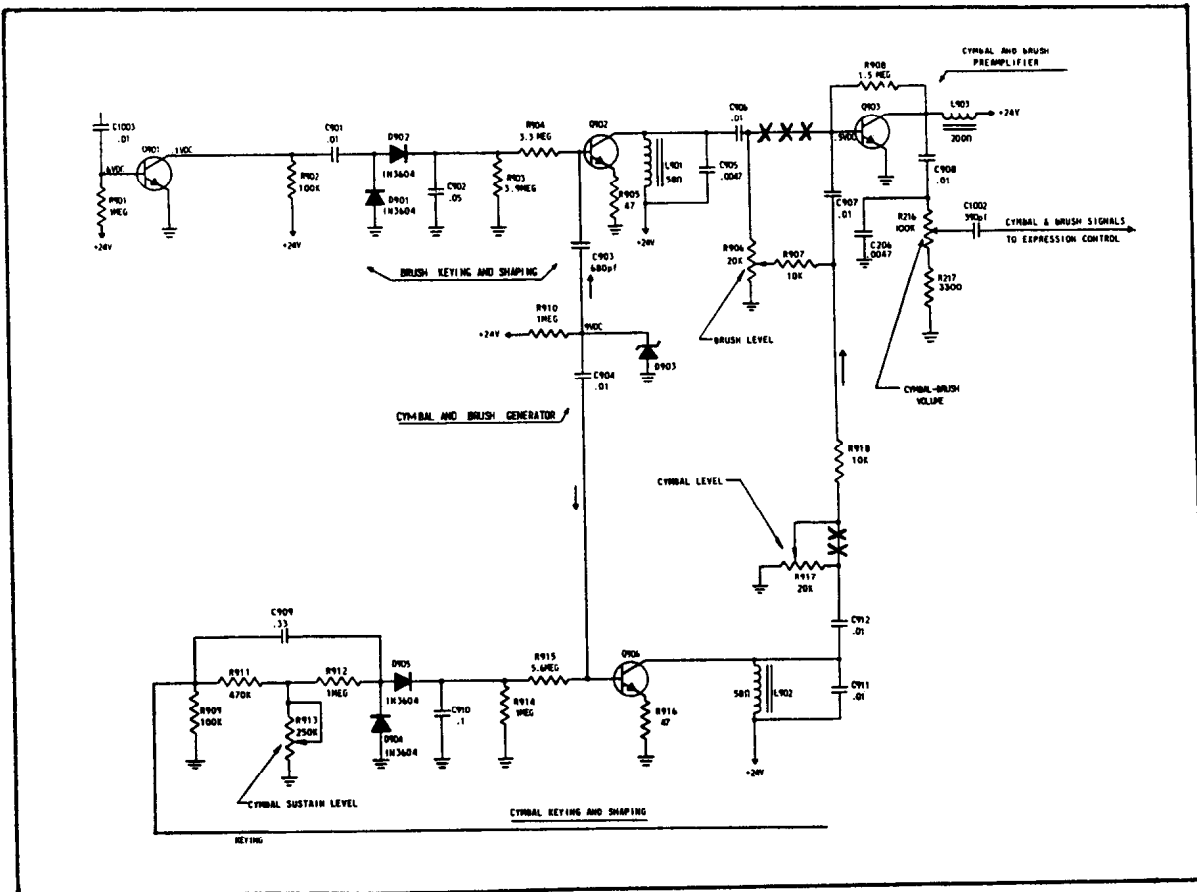
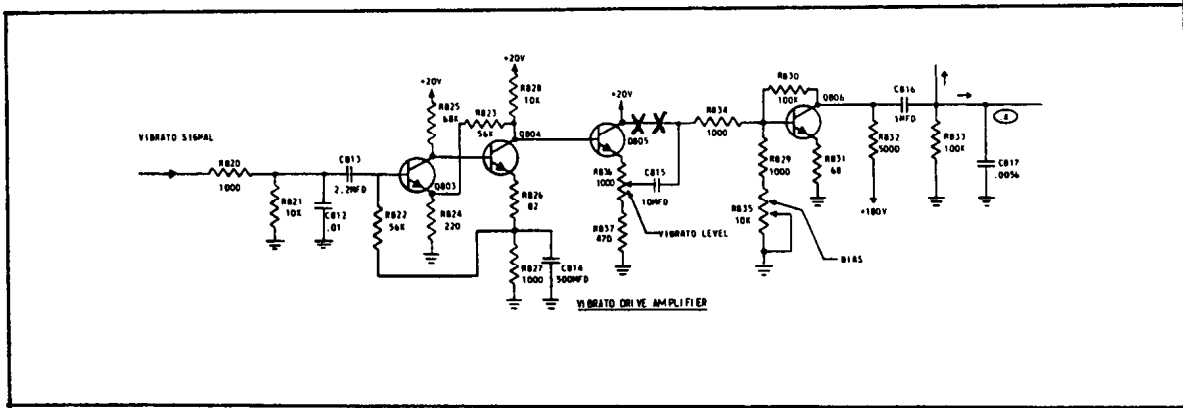
When another solenoid is connected in parallel with the first one, the current divides equal between both solenoids and, because of tolerances, half of the current (65MA) may be sufficient to keep both solenoids latched. When a second solenoid is connected it then becomes necessary to reduce the shared current so that the first solenoid will release.

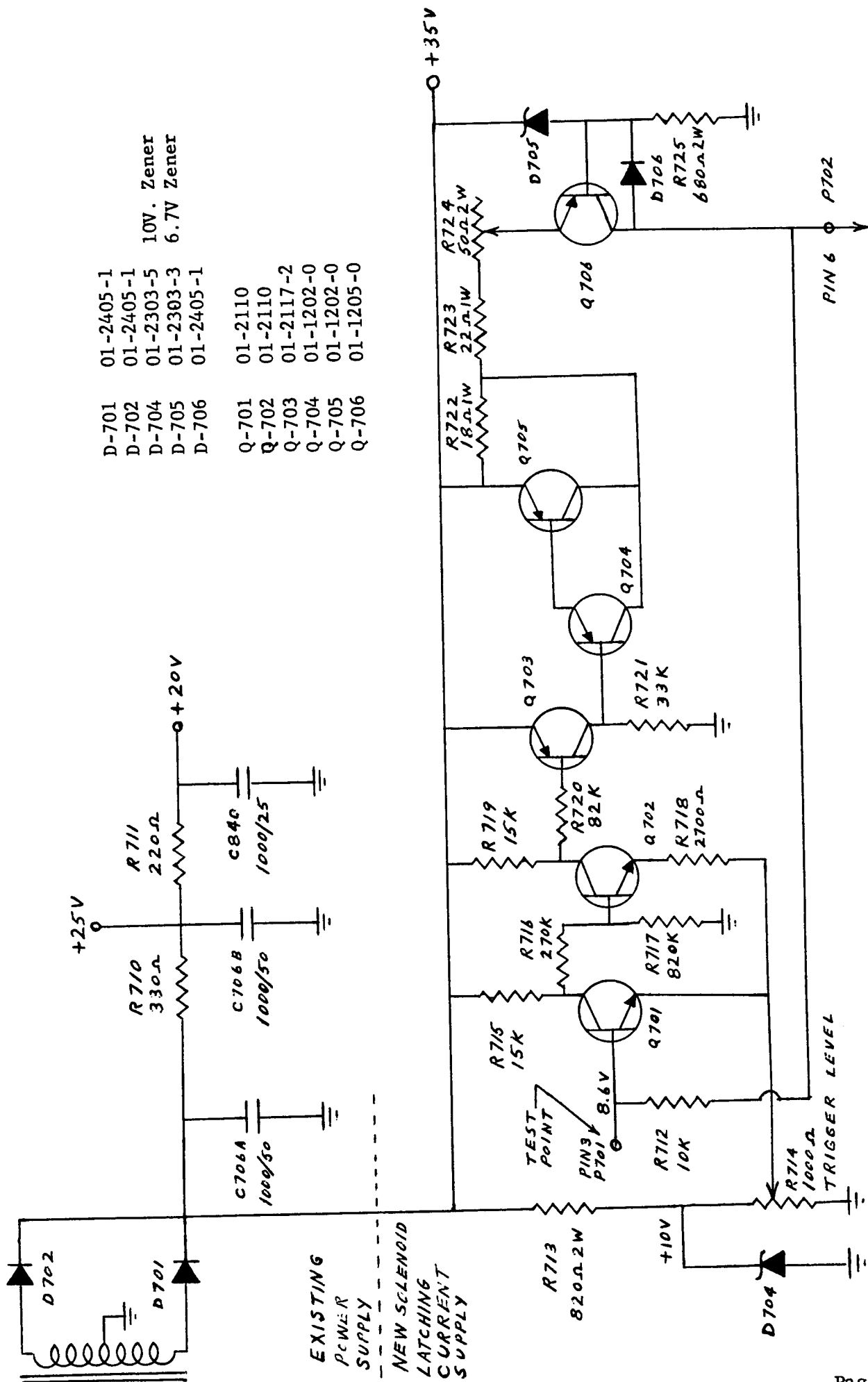
To achieve this, the voltage drop on the collector of transistor Q706 is sensed by transistor Q701. When one solenoid is connected, transistor Q701 is conducting and transistor Q702 is cut off. When the second solenoid is connected, the voltage drop at the collector of transistor Q706 reverses the condition of Q701 and Q702. Transistor Q701 is now cut off and transistor Q702 is conducting. The produced voltage step at the collector Q702 is amplified by transistors Q703 and Q704. This causing transistor Q705 to open, thereby removing the short across R722. The voltage drop across resistor R722 now limits the current that transistor Q706 can now pass to 100MA. This shared current (50MA for each solenoid) is not enough for latching and the solenoid not held down by an external force (pedal) will release.

The purpose of R714 is to adjust the sensitivity of transistor Q701 to the point where the transistor Q701 and Q702 reverse their state of conduction.

SERVICE MANUAL CORRECTIONS

1. Page 5C Step 13: Delete all except first line. Add the following after the word "adjust"; The Pedal Level Control for a meter reading of 6.0 volts.
2. Page 30, Figure 32A: Cymbal sustain control should be designated R913.
3. Page 33, 3rd paragraph, 2nd line: Change Figure 31 to 32.
4. Page 55, Figure 38: Three lines on the schematic should be deleted, (~~XXX~~) as shown below.





- | | |
|-------|-----------|
| D-701 | 01-2405-1 |
| D-702 | 01-2405-1 |
| D-704 | 01-2303-5 |
| D-705 | 01-2303-3 |
| D-706 | 01-2405-1 |
- 10V. Zener
6.7V Zener
- | | |
|-------|-----------|
| Q-701 | 01-2110 |
| Q-702 | 01-2110 |
| Q-703 | 01-2117-2 |
| Q-704 | 01-1202-0 |
| Q-705 | 01-1202-0 |
| Q-706 | 01-1205-0 |

NOTE: When using new power supply on older instruments, set trigger level so that 9.5 volts is present at test point.