

# Instruction Sheet

## SOLID STATE SWITCH MODULE REPLACEMENT

### SWITCH MODULE REMOVAL

1. Remove the button from the module being replaced and as many adjacent buttons as required to furnish adequate work space. The buttons can be removed by pulling upward or by prying upward, with a padded tool, on their under surface.

#### NOTE

Remove buttons from alternate action modules only when they are in the free position. Failure to do this will result in damage to the module.

2. Refer to figure 1. Slip the module extraction tools (which are included with the replacement module) down the inside face of each "D" bracket. Place one through each window so the tip of the tool rests against the bottom outside of the mounting rail.



Figure 1

3. With the extraction tools in the same position, grip the switch module plunger with a padded pliers and pull straight out.
4. Refer to figure 2. Unsolder and remove the black plastic lead frame package from the termination board. When unsoldering the terminals, use a solder sucker to remove all solder from the pin holes in the printed circuit board.

### CAUTION

If the lead frame is to be returned for evaluation, do not apply the soldering iron (a 15 watt iron is recommended) for longer than 4 seconds as the heat could cause damage to the lead frame package.

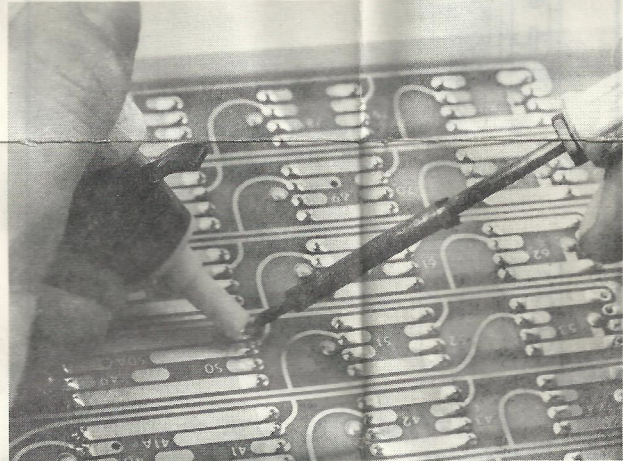


Figure 2

### SWITCH MODULE INSTALLATION

#### NOTE

If the switch mounting frame has been distorted, during the removal of the module housing, it should be formed back to the position shown in figure 3 before installing the replacement module.

### CAUTION

Do not disassemble the replacement module as the chips and plungers are matched during assembly.

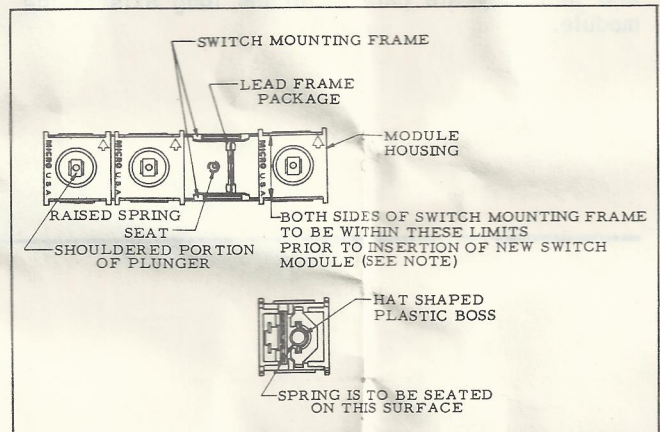


Figure 3



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Refer to figure 4. Assemble the return spring on the spring boss located on the bottom of the switch plunger.

### NOTE

Refer to figure 4 to determine which switch plunger is applicable.

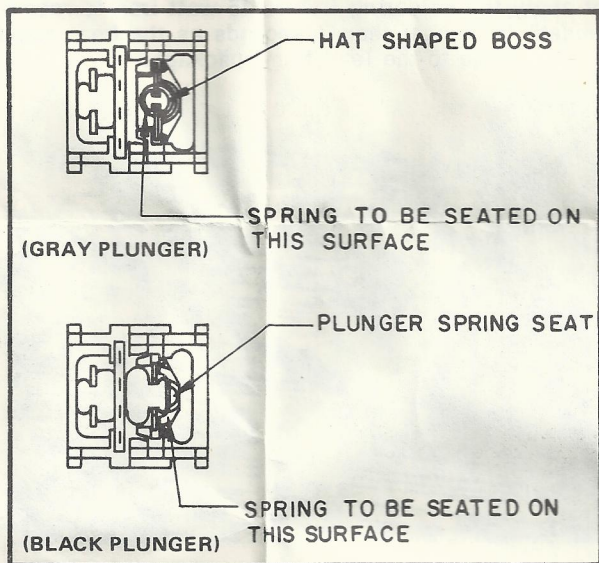


Figure 4

This can be accomplished by inverting the switch module so the lead frame terminals are up. PLACE THE SPRING ON THE SPRING BOSS AND COMPRESS AND ROTATE IT UNTIL THE LAST COIL OF THE SPRING EXPANDS AROUND THE BOSS. (A PENCIL ERASER WORKS WELL FOR COMPRESSING AND ROTATING THE SPRING.) The spring, when properly seated, should be parallel to the long axis of the switch module.

### NOTE

When the operation is completed, check the four switch terminals to see that they haven't been bent and that they are parallel to the long axis of the module.

2. Refer to figure 3. Insert the module in the keyboard switch mounting frame. (Be sure that the orientation arrow on top of the module housing is pointed in the same direction as the other modules in the row.) As the module is installed make sure the return spring seats on the raised boss on the bottom of the mounting frame and the four terminals extend through the printed circuit board. Once the switch module has been installed check for the following conditions:

- A. The plunger moves freely with no noise.
- B. The top surface of the module does not extend above those of the other modules.
- C. The 'D' brackets on the mounting frame have locked the module in place.
- D. All the terminals extend through the printed circuit board.

### NOTE

Should it be necessary to remove the module to correct any of the above conditions, care must be taken not to disfigure any portion of the plunger since it will affect the operation of the module and/or the retention of the button.

3. Solder the terminals in place using 60-40 tin lead solder. To assure a good solder joint it is recommended that a minimum amount of .050 diameter solder be applied 90° to the terminal. If an excess of solder is used, it could wick up the terminal causing a short to the mounting frame.

### CAUTION

Do not apply the soldering iron (a 15 watt iron is recommended) for longer than 4 seconds as the heat could cause damage to the lead frame package.

- 4. Cleaning solvents should be kept away from switch modules.
- 5. Reassemble the buttons on the switch modules. When work has been completed, perform a visual check to see that the correct buttons are returned to the correct modules.

## MICRO SWITCH

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