

**K2500 Rack and Keyboard**  
**RMB2 Sound ROM Option Kits Installation Manual**

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## **RMB2 Sound ROM Option Kits Installation Manual**

This document instructs Kurzweil service technicians in the installation of a Sound ROM Expansion Board and/or ROM-1 & ROM-2 into a K2500R or a K2500/X Keyboard. It is intended *only* for authorized Kurzweil service technicians. Installation by unauthorized personnel will void the warranty.

### **Before Beginning the Installation**

Back up the K2500's RAM objects by entering Disk mode, pressing the **Save** soft button, and selecting the option "Everything" to save all RAM objects to a floppy or hard disk.

### **Tools and Materials Required For Installation**

- #1 (small) Phillips screwdriver
- #2 (medium) Phillips screwdriver
- 3/16" Nut Driver
- Wire cutters
- Headphones

### **Determine which kit is right for you**

Select the appropriate kit, or combination of kits, depending on the K2500 owner's requirements.

#### **Part Number 140021**

##### ***RMB2 Stereo Piano ROM Expansion Board Kit***

This kit contains the RMB2 Expansion Board with stereo piano, which can subsequently be upgraded with either or both ROM options.

#### **Part Number 140027**

##### ***RMB2 ROM1 Upgrade Kit***

This kit includes the ROM-1 Orchestral Sound Block option. This kit is to be used in conjunction with the Expansion Board Kit (140021) or for a K2500 that already has the Expansion Board installed.

#### **Part Number 140028**

##### ***RMB2 ROM2 Upgrade Kit***

This kit includes the ROM-2 Contemporary Sound Block option. This kit is to be used in conjunction with the Expansion Board Kit (140021) or for a K2500 that already has the Expansion Board installed.

### **Beginning The Installation**

The installation procedure is divided as outlined below:

- A. Disassembly
- B. Installation For an Expansion Kit
- C. Installation For an Upgrade Kit
- D. Reassembly, Diagnostics, Operating System and Object Load

Note that the *Installation* is divided into two parts: one for expansion kits (Part B) and one for upgrade kits (Part C). Follow the instructions that are appropriate for the kit you are installing.

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## Part A – Disassembly

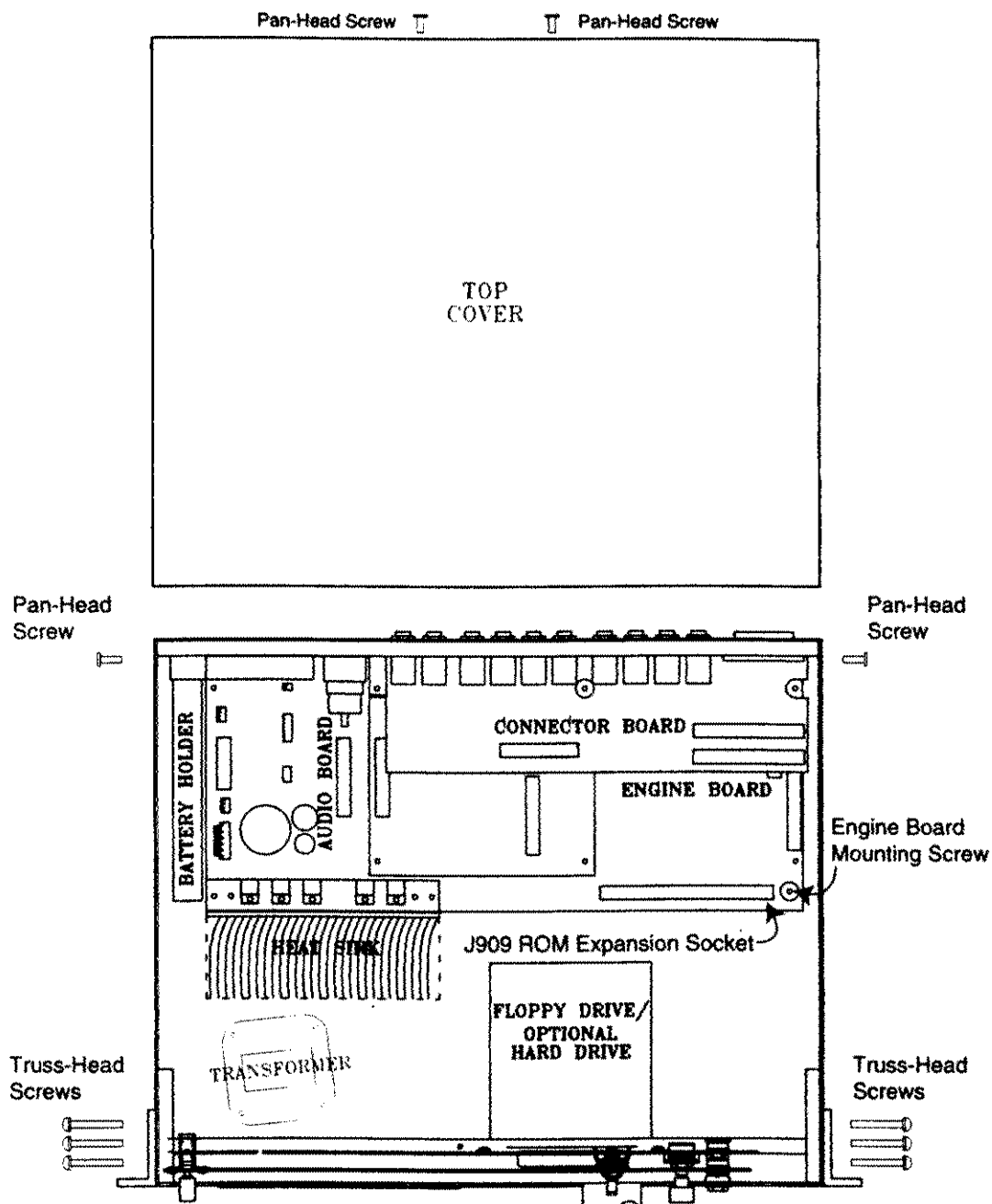
### Disassembly for Rack Units

- A1. Unplug all external wires, cables, and connectors from the K2500R and turn the unit so the front panel is facing you.
- A2. Using a #2 Phillips screwdriver, remove the six large truss-head screws on the left and right sides of the K2500R, towards the front of the unit.
- A3. Using a #1 Phillips screwdriver, remove the two small pan-head screws on the left and right sides of the K2500R, towards the rear of the unit. Then remove the two small pan-head screws located on the top edge of the rear panel.



**WARNING:** *The rear screws on each side of the K2500R are shorter than the other side screws. Make sure to keep these screws separate from the others so that you will use the shorter screws in the back side positions when you reassemble the unit. Using the longer screws in these positions could short out some of the components in the K2500R and damage the unit.*

- A4. Lift the top cover from the back, slide it off and place it aside. Notice that there is a groove on the top edge of the front panel that the top cover fits snugly into. Figure 1 shows a top view of the opened K2500R.

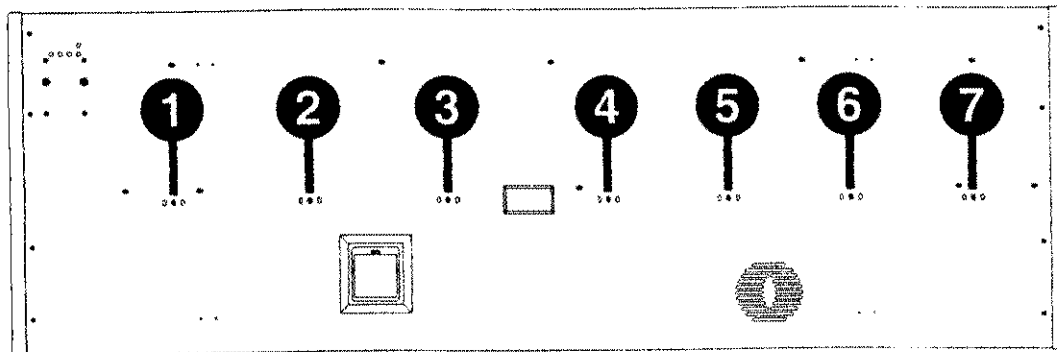


**Figure 1. Top view of K2500R, showing location of J909.**

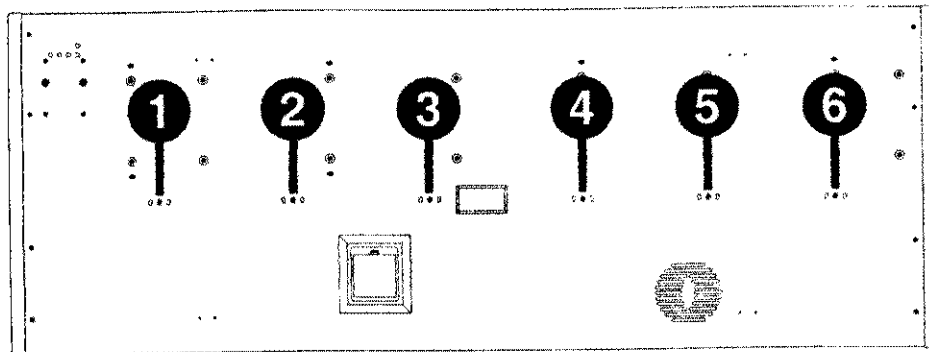
#### *Disassembly for Keyboard Units*

- A5. Unplug all external wires, cables, and connectors from the K2500 and turn the unit so the keyboard is facing you.
- A6. Tilt the entire unit onto a soft surface, so that it rests on its rear panel. Using a #2 Phillips screw-driver, remove the screws on the bottom of the unit, as shown in the following figure. The K2500

has six screws, while the K2500X has seven; each screw may be in any one of the three slots of each group along the bottom of the unit.



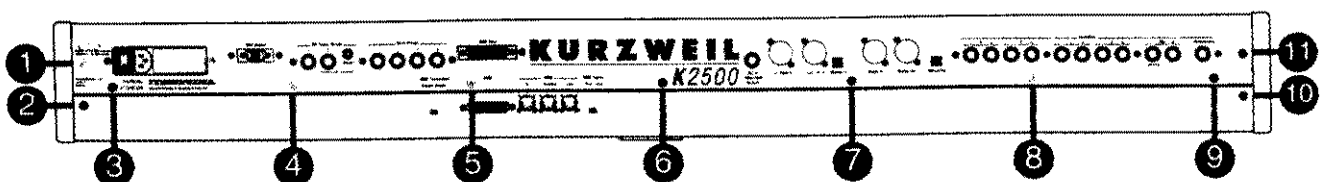
**K2500X (88 Keys)**



**K2500 (76 Keys)**

**Figure 2.**

- A7. Tilt the K2500 so it again rests on its bottom. Then use a #2 Phillips screwdriver to remove the 11 screws on the rear panel of the unit, as shown in the following figure. Be careful to remove only the screws indicated.



**Figure 3.**

- A8. Place two 3" high foam blocks (or other soft items) behind the K2500; again, these blocks will prevent damage to the K2500's sliders and alpha wheel. This will also give you access to the rear-panel jacks.

- 
- A9. Push the top cover with your thumbs, as shown below. You will feel the top become unlocked, and it should slide back about 1/2".

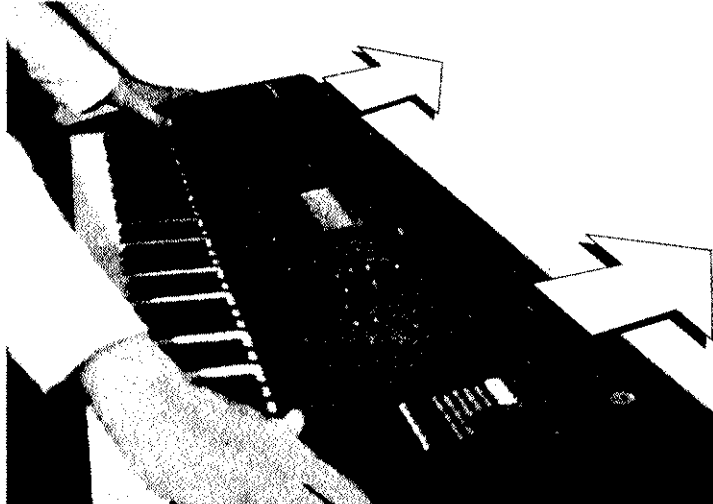


Figure 4.

- A10. Lift the top cover up, then slide it to the right, as shown in the following figure.



Figure 5.

A11. Once the top cover is free, slide your fingers under the felt attached to the front edge of the top, as shown below. Then tilt the top cover back, placing it up-side down on the two foam blocks. The underside of the K2500's top should now face you, exposing the circuit boards for service.



Figure 6.

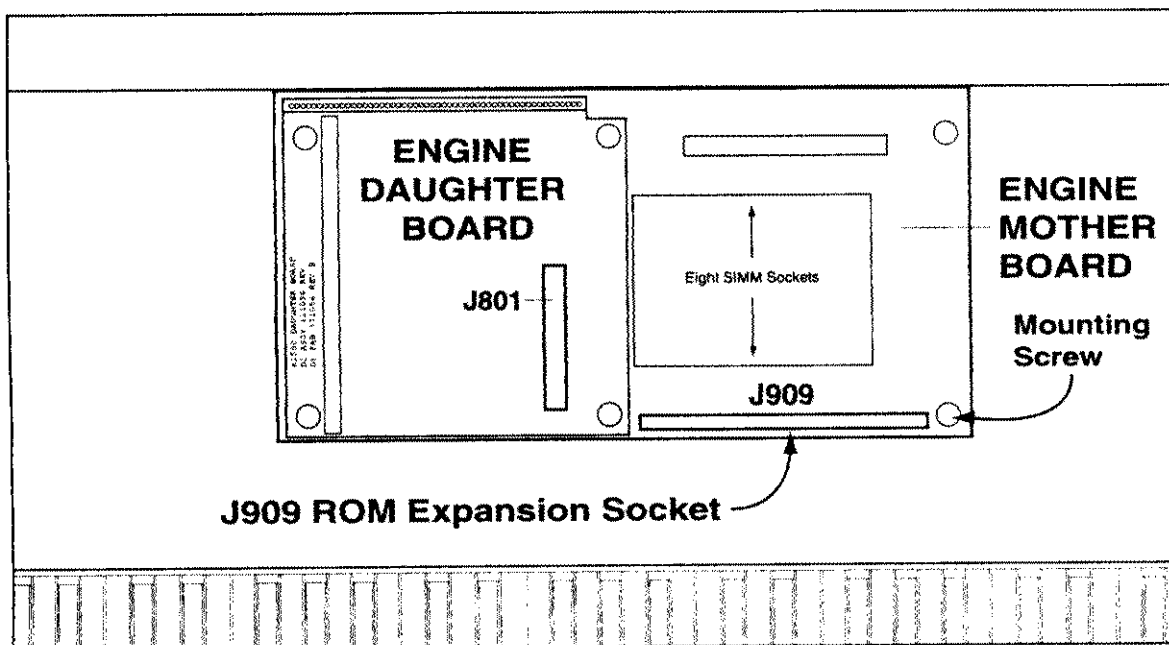


Figure 7. Top view of K2500 Keyboard, showing location of J909.

Continue now with Part B or Part C of these instructions, depending on the kit you are installing.

## Part B: Installation for an Expansion Kit

### Part Number 140021

- B1. If your Mounting Bracket looks like the one in the illustration below, loosely attach the Mounting Bracket to the Expansion Board using the Screw, Nut, Washer, and Lock Washer, as shown in Figure 8.

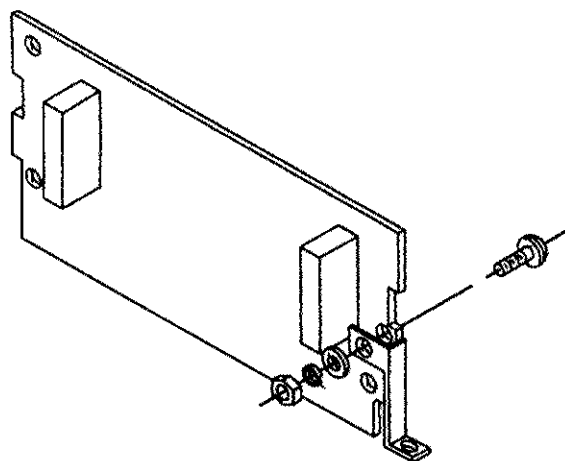


Figure 8.

- B2. If you are only installing the Expansion Board, proceed now to step B4.

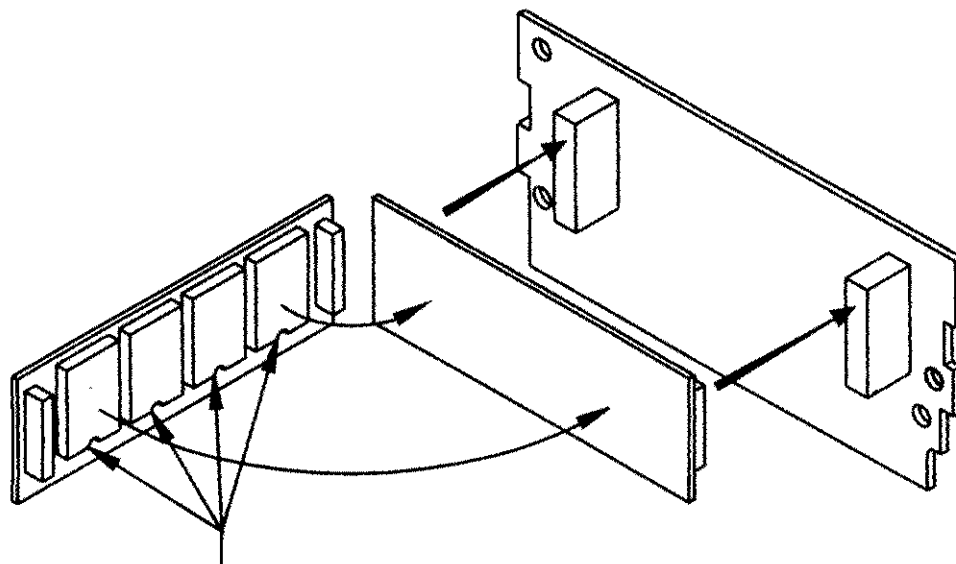
If you are attaching one or both of the Sound ROM Boards to the Expansion Board, determine which ROM board(s) the kit includes. The masked ROMs are labeled 1-1, 1-2, 1-3, 1-4 on the ROM-1 board and 2-1, 2-2, 2-3, 2-4 on the ROM-2 board. Note that the Expansion Board is marked ROM-1 on one side and ROM-2 on the other side. Install the Sound ROM Board(s) onto the appropriate side(s) of the Expansion Board by pushing the two connectors on both sides of the Sound ROM board simultaneously into the matching two connectors on the Expansion Board.



**NOTE:**

*The connectors on both the Expansion Board and the ROM board are keyed so that they can only be installed into their proper connectors. However, it is possible to install them upside down, which may destroy the ROMs. The notch indicating pin one on all four of the masked ROMs should be facing down as shown in Figure 9.*





Pin 1 Indicator on ROMs  
should be down.

Figure 9.

- B3. Use the Cable Tie to securely fasten the ROM Board(s) to the Expansion Board. The Expansion Board has two notches, shown in Figure 10, for the Cable Tie.

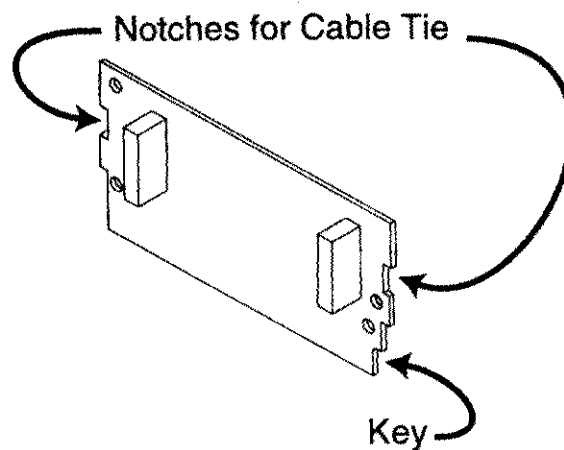
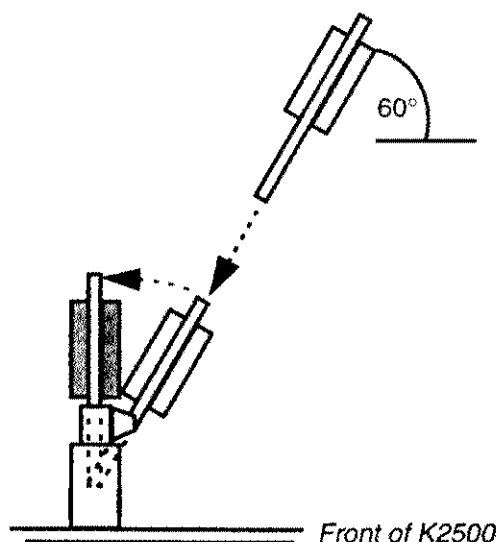


Figure 10.

- B4. See Figure 1 for rack units, or Figure 7 for keyboard units. Looking at the Engine Board with the MIDI & SCSI connectors facing away from you, locate J909, the 64 pin connector labeled "ROM EXP". It is near the front edge of the Engine Board. Remove and save the Engine Board mounting screw to the right side of J909.

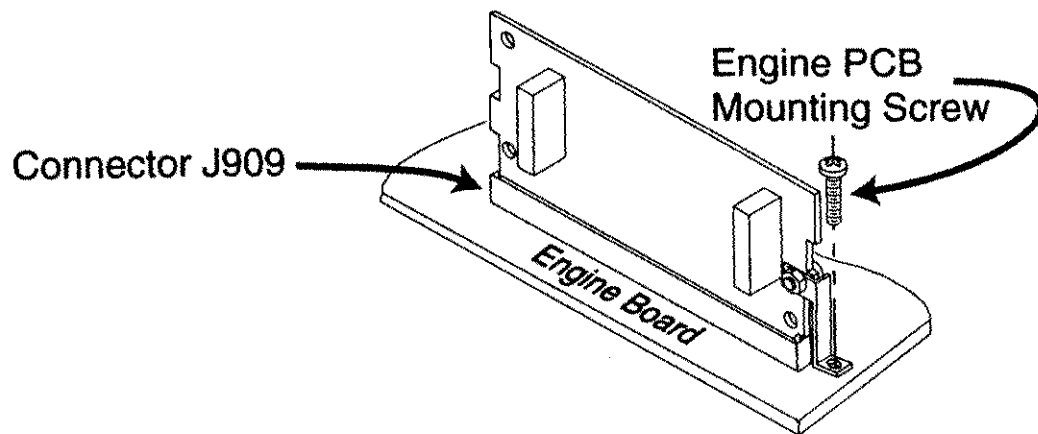
- B5. The Expansion Board is keyed so that there is only one way it can only be inserted into connector J909. The key is shown in Figure 10. Orient the Expansion Board so that the keyed side of the board is closest to the Engine Board Mounting Screw, towards the right side of the unit as you are looking from the front of the K2500.

Take the Expansion Board, with the loosely attached Mounting Bracket and cable-tied ROM board(s) (if they are being installed too), and insert it into connector J909 at a 60° angle (as shown in Figure 11), then snap the board into the upright position.



**Figure 11.**

- B6. Line up the bottom of the Mounting Bracket with the hole for the Engine Board mounting screw you removed in step B4.
- B7. Reattach the Engine Board mounting screw you removed in step B4, inserting it first through the hole in the bottom of the Mounting Bracket, as shown in Figure 5. Then tighten the screw holding the Mounting Bracket to the Expansion Board.



**Figure 12.**

The installation is complete. Go to Part D: Reassembly, Diagnostics, Operating System and Object Load.

## Part C: Installation for an Upgrade Kit

### Part Numbers - 140027 or 140028

- C1. See Figure 1 for rack units, or Figure 7 for keyboard units. Looking at the Engine Board with the MIDI & SCSI connectors facing away from you, locate J909, the 64 pin connector labeled "ROM EXP". Currently installed in this connector is the Expansion Board, and possibly one of the ROM Boards.
- C2. Remove the Engine Board mounting screw which goes through the Expansion Board Mounting Bracket. Now loosen the Mounting Bracket screw on the ROM Option Board. Then carefully remove the Expansion Board from connector J909. To do this, use your thumbs to move the metal latches on the connector so that the Expansion Board can be rotated 30° then pulled out of the connector, as shown in Figure 13.

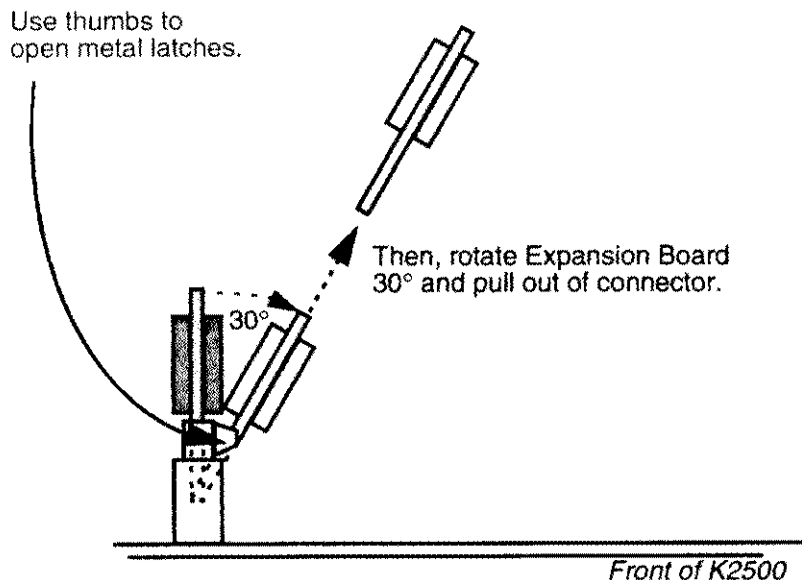


Figure 13.

- C3. If the Expansion Board already has one of the ROM Boards installed, use wire cutters to remove the cable tie securing the ROM Board. A replacement cable tie is provided in the upgrade kit.
- C4. See Figure 9. Install the ROM Board(s), into the appropriate connectors on the Expansion Board by pushing the two connectors on both sides of the ROM board simultaneously into the matching two connectors on the RMB-K Daughter Board.

**NOTE:** The connectors on both the Expansion Board and the ROM board are keyed so that they can only be installed into their proper connectors. However, it is possible to install them upside down, which may destroy the ROMs. The notch indicating pin one on all four of the masked ROMs should be facing down as shown in Figure 9.

- C5. Use the Cable Tie to securely fasten the ROM Board(s) to the Expansion Board. The Expansion Board has two notches, shown in Figure 10, for the Cable Tie.

- 
- C6. The Expansion Board is keyed so that there is only one way it can only be inserted into connector J909. The key is shown in Figure 10. Orient the Expansion Board so that the keyed side of the board is closest to the Engine Board Mounting Screw, towards the right side of the unit as you are looking from the front of the K2500.
  - C7. Take the Expansion Board, with the loosely attached Mounting Bracket and cable-tied ROM board(s), and insert it into connector J909 at a 60° angle (as shown in Figure 11), then snap the board into the upright position.
  - C8. Line up the bottom of the Mounting Bracket with the hole for the Engine Board mounting screw that was removed in step C2.
  - C9. Reattach the Engine Board mounting screw that was removed in step C2, inserting it first through the hole in the bottom of the Mounting Bracket, as shown in Figure 12. Then tighten the screw holding the Mounting Bracket to the Expansion Board.

The installation is complete. Go to Part D: Reassembly, Diagnostics, Operating System and Object Load.

## Part D: Reassembly, Diagnostics, Operating System and Object Load

After you have installed or upgraded the Sound ROM option in the K2500, you will:

- Reassemble the K2500.
- Run the diagnostic tests to make sure that the installation (or upgrade) was successful.
- Load the new operating system from disk.
- Load the new objects (programs, etc.) from disk.

### Reassembly For Rack Units

- D1. Reassemble the K2500R by performing the Disassembly steps in reverse order.
- D2. When you have completed all connections, slide the top cover back on. Be sure to fit the front top edge of the cover into the groove on the top of the front panel.
- D3. Replace the six large truss-head screws and the two small pan-head screws in the left and right sides of the unit. Then replace the two small pan-head screws along the top edge of the rear panel.



**WARNING:** Remember, the rear screws on each side of the K2500R are shorter than the other side screws. Make sure to use the shorter screws in the back side positions when you reassemble the unit. Using the longer screws in these positions could short out some of the components in the K2500R and damage the unit.

### Reassembly For Keyboard Units

- D4. Reassemble the K2500 by performing the Disassembly steps in reverse order.
- D5. When you have completed all connections, tilt the top cover back onto the body of the K2500. First, slide the left end into place, making sure to fit the Floppy Disk Bezel under the left end cap. Figure 14 illustrates the right and wrong way to fit the Floppy Disk Bezel.

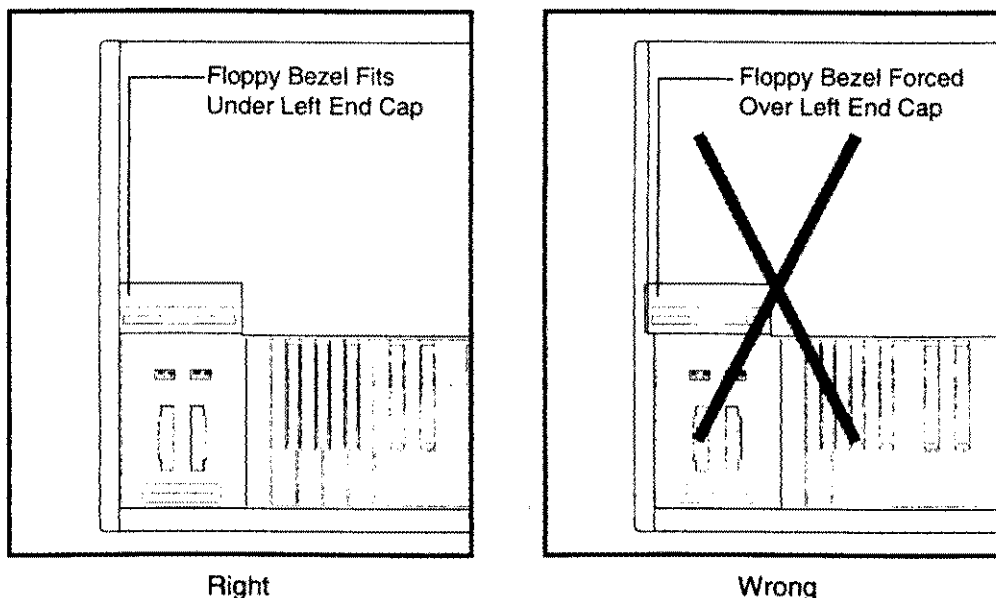


Figure 14.



**CAUTION:** Before you lower the right end of the top cover, be sure that no ribbon cables are covering the fan on the right side of the unit.

- D6. Now lower the right end until it falls into place; be careful not to scratch the right end cap. If you feel any resistance, lift the top cover and look for cables which may be blocking it.
- D7. Pull the top cover toward you until it locks securely in place.
- D8. Replace the 11 screws you removed from the rear panel of the K2500. Then tilt the unit back, and replace the screws in the bottom of the unit. The bottom screws are self-threading, so to avoid stripping the threads, start the screws by hand before using a screwdriver. If a thread does become stripped, use an adjacent screw hole.

#### Run the Diagnostics

- D9. Run the Sound ROM diagnostic tests, as described in the following steps.
- D10. Turn the volume on the K2500 all the way down. Then, remove all cables from your K2500 except the AC power cord and the cables that are specifically required for the diagnostics.
- D11. If the K2500 is on, press the Power button to turn it off, since you will need to restart the K2500 to start the diagnostic tests.

Start the K2500 by pressing the Power button to turn the unit on, then press and release the Exit key while the "Please wait..." message is displayed. This brings up the K2500 Boot Loader (as shown below), which lets you run diagnostics.

```
----- K2500 Boot Loader v1.01 -----  
  
      Install System      Hard Reset  
      Install Objects     Run Diags  
      Run System          Fixed Diags  
  
                        OK
```

The Boot Loader's Menus resemble K2500 dialog boxes. They consist of a series of labels and a highlight bar you use to select one of the labels. You can use the arrow keys to move the highlight bar up, down, right, and left. Press the **OK** soft button to invoke the highlighted menu option. You can use the data wheel and **Enter** key to move the highlight bar and invoke the selected action.

- D12. Select "Run Diags" from the Boot Loader menu. Press any key to continue when the RAM erasure message appears.
- D13. Choose "Sound ROM" from the Diagnostics menu.
- D14. Press **OK** to begin testing.
- D15. When the diagnostic tests finish running, the screen display will tell you if the tests passed or failed. Remember that the tests will fail for any Sound ROM that you haven't installed. For example, if you've installed the Orchestral ROM, but not the Contemporary ROM, then the diagnostic test for "Contem" will fail. If any of the tests have failed unexpectedly, however, turn off power and review the installation procedure for any errors. When the diagnostics complete successfully, continue with the next step.

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## Load the Operating System

D16. Insert the Operating System Disk that came with the ROM Kit into the K2500's floppy drive.



**NOTE:** *It may not be necessary to install a new operating system if the correct version is already loaded. You can check the operating system version of the K2500 by viewing its startup message. If the current operating system level matches the version included with the expansion or upgrade kit, you do not need to reinstall the operating system. In this case, re-enter the Boot Loader (step D17), then continue with step D21.*

D17. Power down and up again, re-entering the Boot Loader by pressing the EXIT button while the "Please wait..." message is displayed.

D18. Choose "Install System" from the Boot Loader menu.

D19. Highlight "floppy" at the "Device to install from:" prompt. Press **OK**.

D20. Highlight the file named "K25V\*\*\*.KOS" (where \*\*\* is the version number). Press **OK**, then **OK** again to confirm. When the operating system has loaded, you will be returned to the Boot Loader menu.

## Load the Objects

D21. Replace the Operating System Disk with the appropriate Factory Objects Disk that came with the Expansion or Upgrade Kit. Then choose "Install Objects" from the Boot Loader menu.



**NOTE:** *Upgrade kits are packaged with two Factory Objects Disks: one with the objects for a fully loaded K2500 (i.e., containing both Orchestral and Contemporary ROM) and one for a K2500 fitted with either the Orchestral or the Contemporary ROM, but not both. Be sure to install the disk whose objects match the current configuration of the K2500.*

D22. Highlight "floppy" at the "Device to install from:" prompt. Press **OK**.

D23. Highlight the file named "OBJ\*\*\*\*.K25" (where \*\*\*\* is the version number). Press **OK**, then **OK** again to confirm.

D24. When the objects have been installed, you will be returned to the Boot Loader menu. "Run System" will be highlighted. Press **OK** to return to normal K2500 operation.



**NOTE:** *You can check the version of the objects installed as follows: press the Master button to bring up the master page, highlight the Intonation parameter and note its setting, scroll to Intonation Table 18, which will list the version of the objects (e.g., "objFv012").*

D25. Finally, insert headphones into the K2500 headphone jack or playback equipment into the "MIX" outs. Set the volume to a useful level. Scroll through the K2500's program list to confirm that the new ROM programs are displayed. The Stereo Piano programs will be in the 700s bank; Contemporary (ROM-2) programs will be in the 800s bank; Orchestral (ROM-1) programs will be in the 900s bank.

D26. When you have confirmed that the installation has been successful and the new sounds are available, you can return the K2500 to its owner, along with the enclosed ROM Option Reference Guide, and the Operating System, Accessory, and Objects Disks.