HX3.7 Hammond XB2 Retrofit Kit

Installation Guide

The **kit** consists of the following components:

- HX3.7 mainboard (variant XB Kit), four Spax screws 3x12mm, four spacer sleeves 5mm, 5 core crimp cable with 10pin connector.
- Interface board 1 with 6.3mm jacks, 6 core crimp cable 22cm for swell pedal and foot switch connection, two 3 core crimp cables 40cm for audio out and headphone, 14 core ribbon cable 48cm for external rotary speaker.
- Interface board 2 for keyboard, drawbars, buttons, mod wheel and pitch wheel, three Spax screws 3x12mm, three spacer sleeves 5mm, two 10 core ribbon cables 25cm, one 10 core ribbon cable 30cm, one 10 core ribbon cable 40cm for connections to the HX3.7 main board, 6-pin ribbon cable 55cm for Tone Control.
- USB extension to screw on.
- Control board with rotary encoder and up/down buttons, two black screws M3, 6 core ribbon cable 35cm.
- Cable ties, heat shrink tubing.

The installation of the control board requires five precise drill holes (2x 3.2mm, 2x 7mm, 1x 14mm) in the steel profile to the right of the display.

Tools required:

Small slotted screwdriver (blade <3mm), Phillips screwdriver PH1, Torx screwdriver T10, Hexagon screwdriver 2mm, flat nose pliers or combination pliers, flat side cutter, center punch, steel drill bit 3mm, small round file. For installation of the control board with encoder: steel drill bit 3.2mm, steel drill bit 7mm, step drill bit (>14mm).

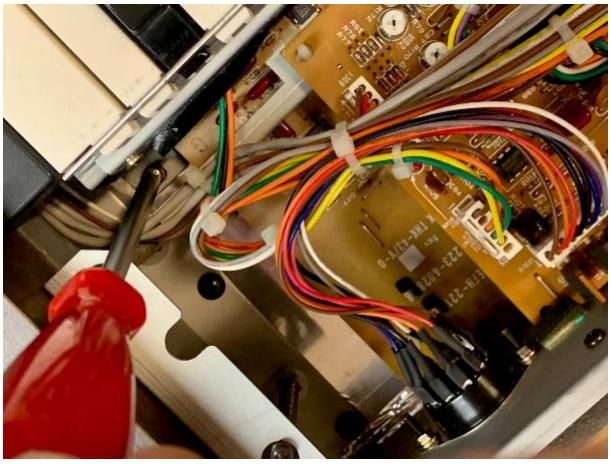
Decoring the XB2

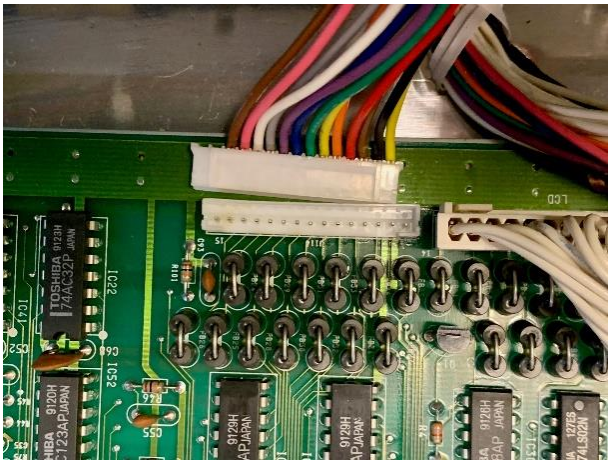
Loosen the 5 large screws on the bottom. Then the wooden lid can be removed.

Now dismantle the keyboard. The keyboard is fixed with 5 M5 screws on the bottom and 3 M4 screws on the inside.

Make sure that no screw gets lost and **remember which screw goes where.**

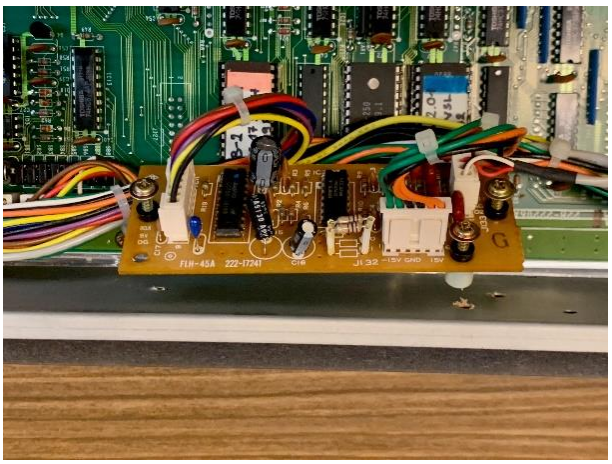
Note the ground connection lug on the left, which must be reattached during reassembly.





Before removing the keyboard, disconnect the connector from the motherboard.

The interface board on the rear panel is no longer required and can be removed. Disconnect all plug connections and remove the board.



Remove all cable ties holding various harnesses together.

Disassemble the MIDI connector board and put it aside. **This board will be reinstalled later**.

Remove the circuit board with the 6.3mm jacks, the potentiometers and the jack for the expression pedal.

The socket for the expression pedal may be attached with plastic rivets. Pinch these off on the inside with the side cutter.

Disconnect all connectors and remove the large main board and the boards to the right of it.

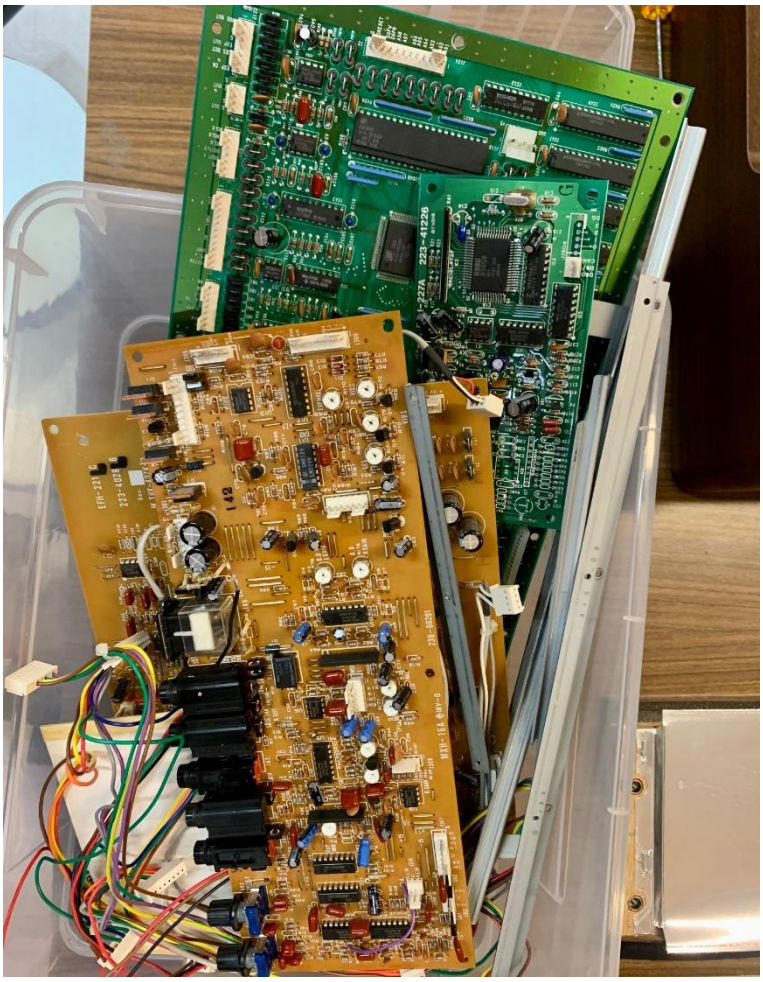
To do this, the metal bracket above it must be removed.

Remove all loose cables.

The metal rails can also be removed and sent for disposal.

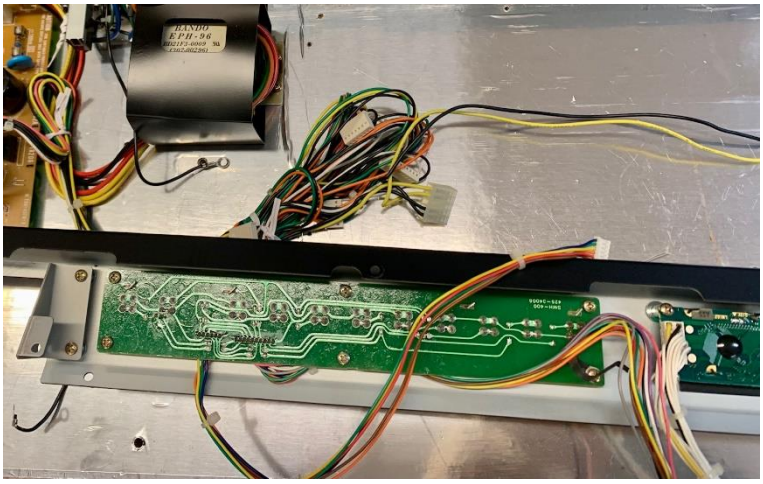
Remove the knobs from the Bass and Treble pots and attach them to the pots on Interface Board 1.

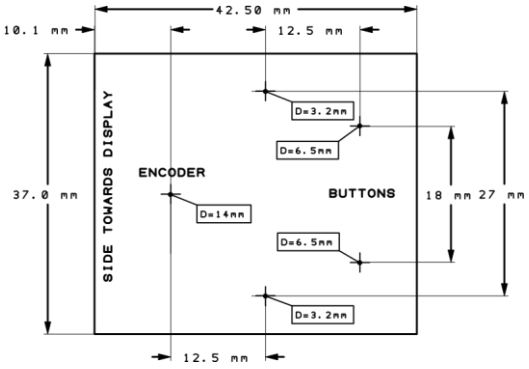
Only the power supply, the MIDI connection board and the boards with the controls at the front and in the left end block remain.



Installation of the control board

To install the control board with rotary encoder next to the display, holes must be drilled. To do this, remove the steel profile on which the display is located. First you must remove the left end block with the drawbars. It is attached to the base with four wood screws from above and two long plastic screws from below. Disconnect the cable to the front panel from the slot on the end block.

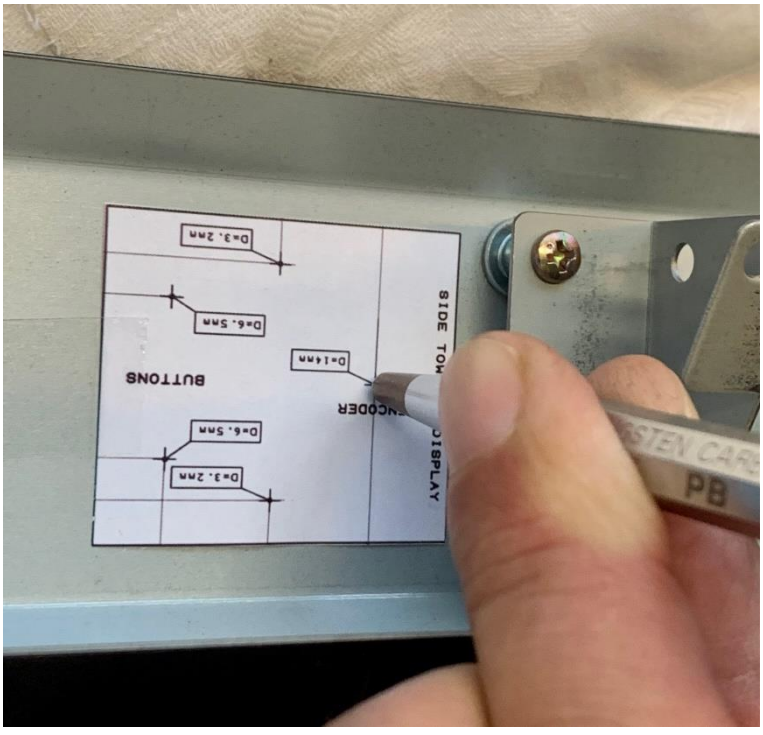




To place the drill holes precisely, they must be punched. For this purpose, print out the drilling template shown opposite. **Check the dimensions** to ensure that the printout is on a scale of 1:1, i.e. that it has not been enlarged or reduced. Cut out the drawing along the contour lines.

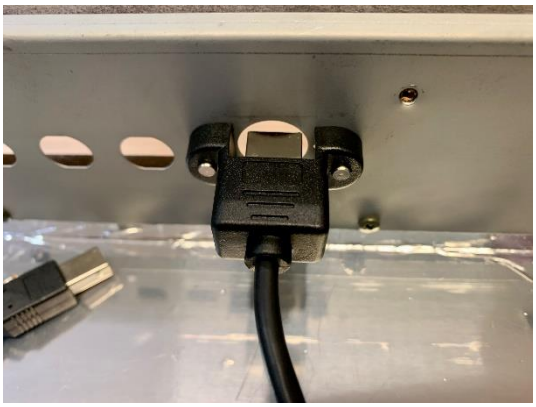
Place the metal profile upside down on a soft surface so that it does not get scratched. Attach the drawing with adhesive tape in the center of the metal surface, about 6cm next to the display, with some distance to the screwed-on strut.

Center punch the five drill holes at the positions marked with crosses. Pre-drill all five with 3.2mm. Then enlarge the two drill holes for the buttons to 7mm. Enlarge the drill hole for the encoder to 14mm with the step drill. Deburr the holes on both sides with the step drill.



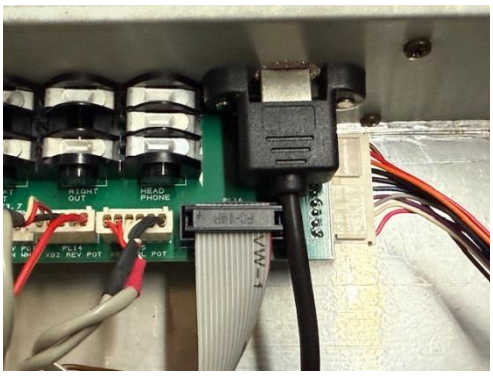
Now attach the control board with the two black screws and connect the shorter of the two 6-pole cables. Refit the steel profile with the display and the left-hand end block. Reassemble the steel profile with the display and the left end block. When doing so, do not neglect to reattach the ground connection under the screw on the left and restore the cable connection between the two assemblies.

Installing the components



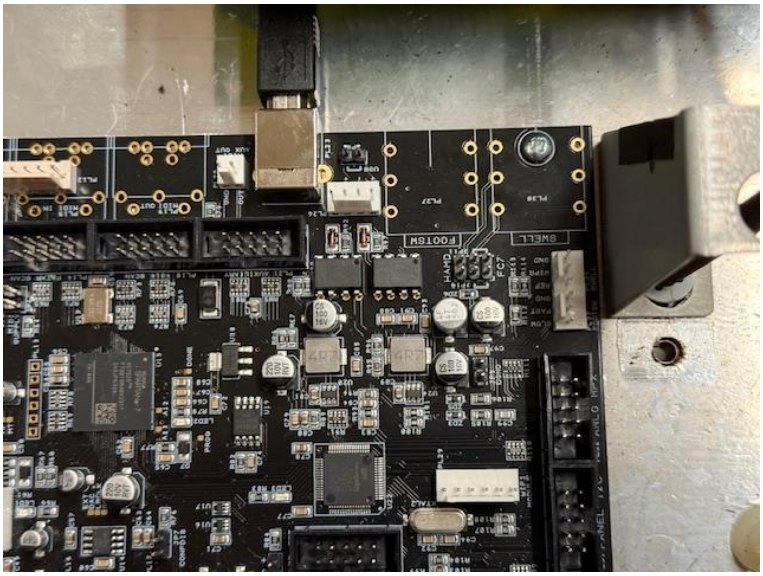
The USB socket is installed in the rear panel where the socket for the expression pedal was located. To do this, drill two 3 mm holes at a suitable distance (29 mm) close to the existing holes or enlarge them with a round file.

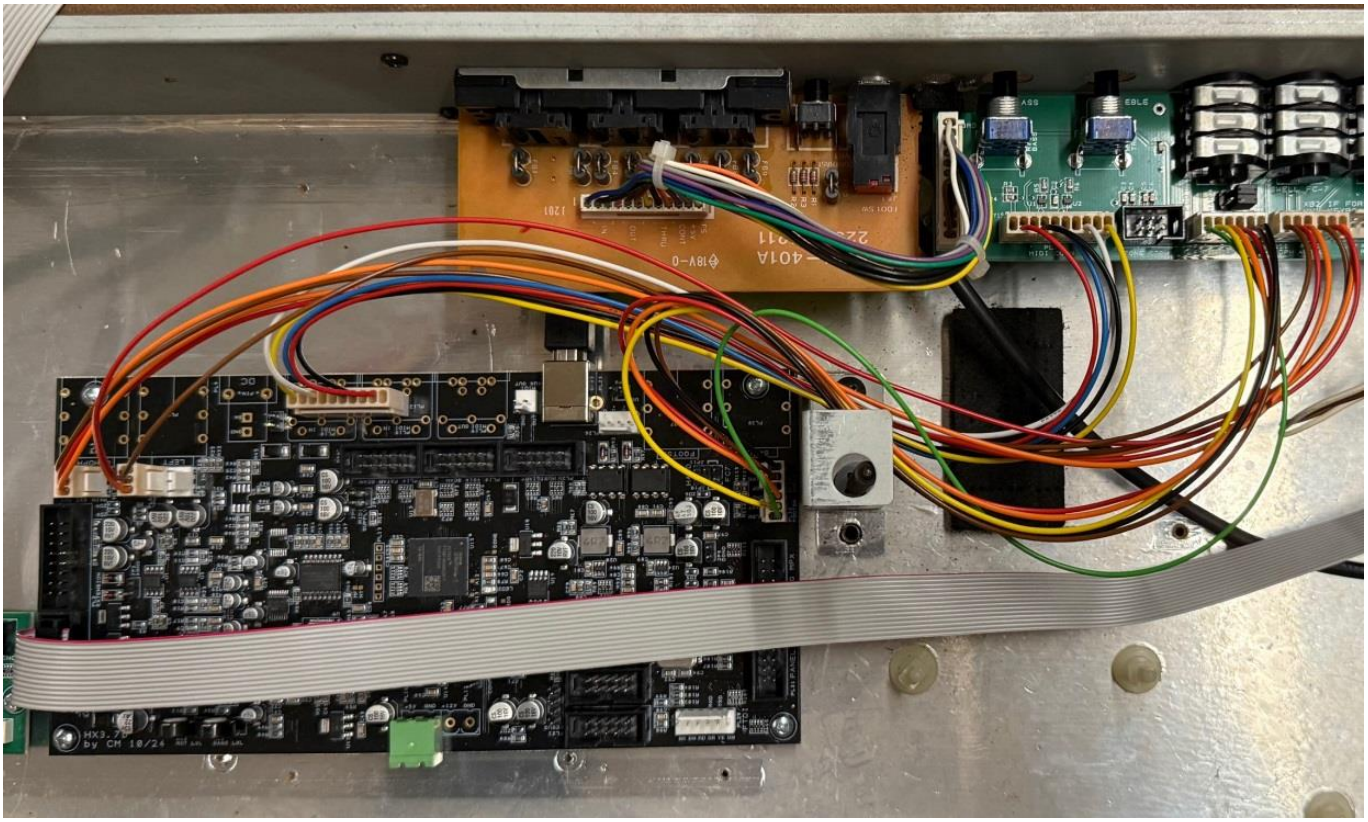
Install the interface board 1. Plug the connector with the long 14-pin ribbon cable into PL16. Connect the plug of the 11pin Leslie socket to PL17 and the three plugs of the potentiometers on the front to PL13, PL14 and PL15.



On some XB2 you will find a 3-pin and a 4-pin connector instead of the 8-pin connector for PL12. Then please proceed as follows: Press down the barbs of the connector contacts carefully with a pointed object and pull the cables with the contact out of the housing. Find an 8-pin connector from the removed cable harness and remove the plug contacts on this one as well. Then push the cables into the 8-pin housing, the red to 3, the brown to 5, the white to 7. Make sure that the barbs snap into place.

Plug the USB cable into the socket on the HX3 board. Place the board close to the metal strut that supports the lid. Place the four 5mm spacer sleeves underneath and screw the board to the base using the Spax screws.





Reinstall the MIDI connection board and plug the cable into PL1 on the interface board.

Connect the 5-pin crimp cable with the white 10-pin connectors to PL12 on the mainboard and PL7 on the interface board 1.

Using the 3-pin crimp cables, connect the connection on the main board labeled “MAIN” to PL12 on the interface board and the connection on the main board labeled “PL6 HEADPH” to PL11 on the interface board.

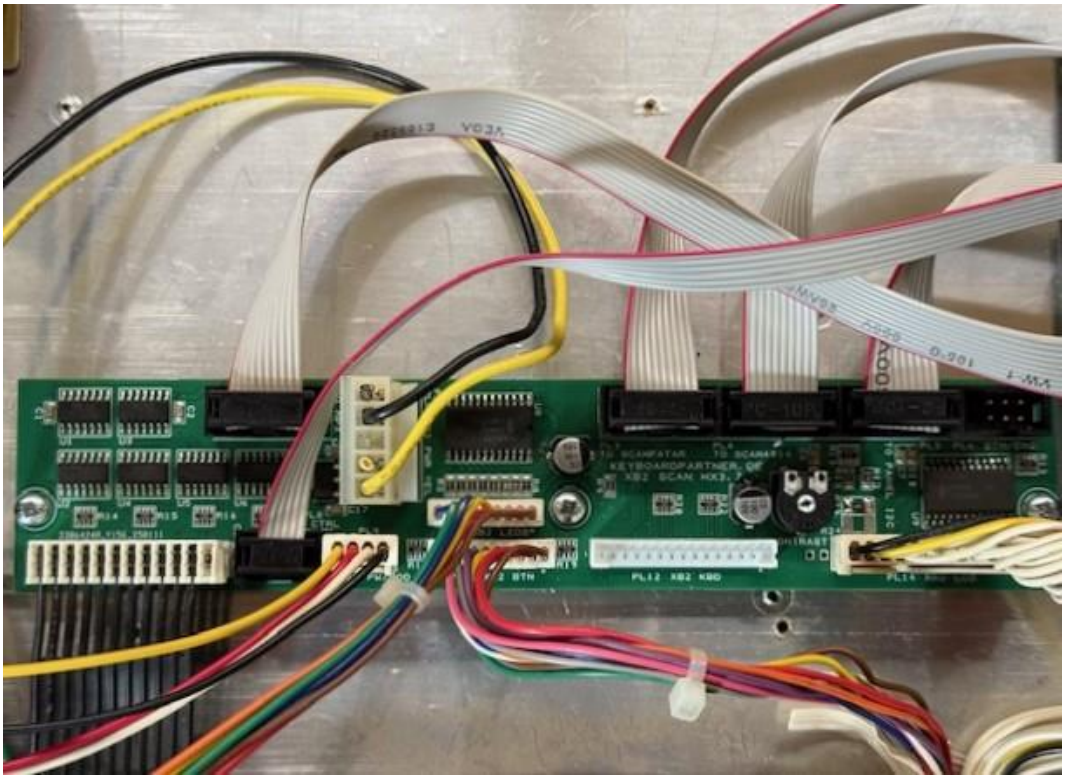
Use the 6-pin crimp cable to connect PL33/PL34 on the main board to PL9/PL10 on the interface board.

Run the 14-pin ribbon cable from the interface board to PL1 on the main board.

Hint: Refer to the illustration in the HX3.7 Installation Manual to help locate the connectors on the HX3 mainboard.

Now it's time to install the interface board 2. Screw it close to the left side of the HX3 mainboard.

Identify the harness coming from the power supply with cables in the colors yellow, black, green, black, orange and a 5-pin connector. Remove three cables in the colors black, green and orange so that one yellow and one black cable remain in the connector, as shown in the picture below.



Connect the white connectors that lead to XB2 modules from the left:

12-pin connector with black cables (drawbars) to PL7 of the interface board 2,

4-pin connector (pitch/mod wheel) to PL9,

5-pin connector with black and yellow cable (power supply unit) to PL2,

9pin connector Connector (LEDs) to PL10,

10-pin connector (buttons) to PL11,

14-pin connector (display) to PL14.

The 6-pin ribbon cable from the control board goes to PL6 on interface board 2.

The 6-pin ribbon cable from interface board 1 goes to PL8 TONE CTRL on interface board 2.

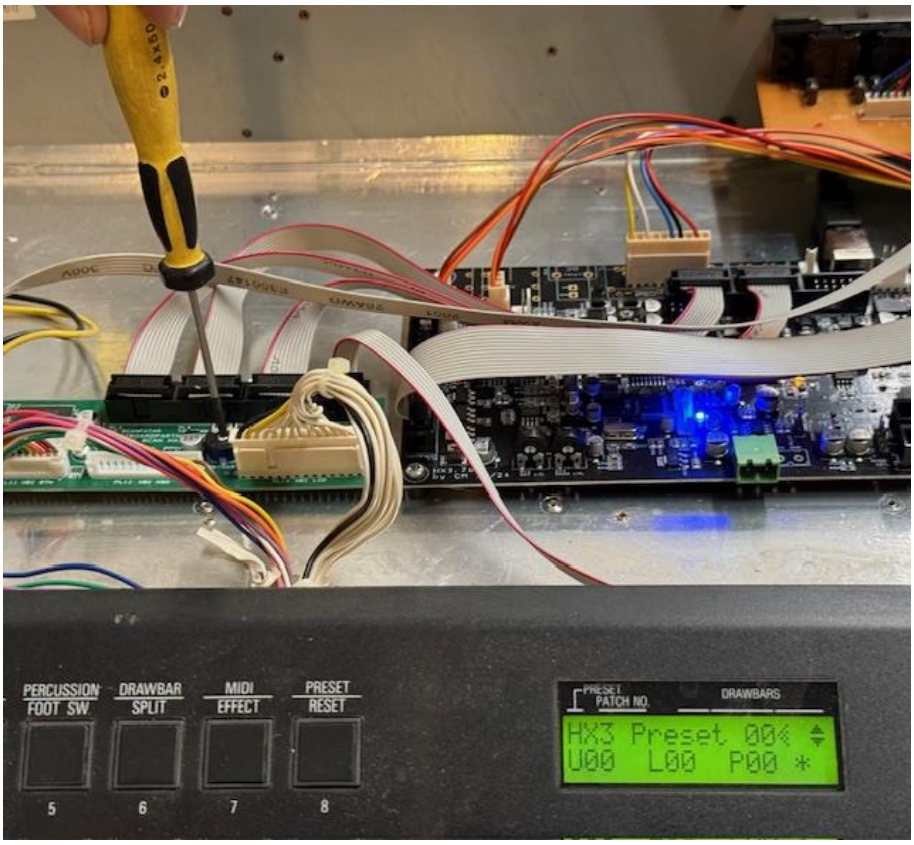
Make the connections to the HX3.7 mainboard using the 10-pin ribbon cables:

PL1 goes to HX3.7 PL32 ANL MPX , PL3 goes to HX3.7 PL14, PL4 goes to HX3.7 PL18, PL5 (panel) goes to HX3.7 PL31 PANEL I2C.

Another cable harness remains from the power supply unit with four connectors and six cables in the colors white, 2x black, 2x orange, green or 2x black, orange, green and pink. Cut this off at a distance of about 20 cm from the power supply unit and insulate the cable ends with insulating tape or shrink tubing.

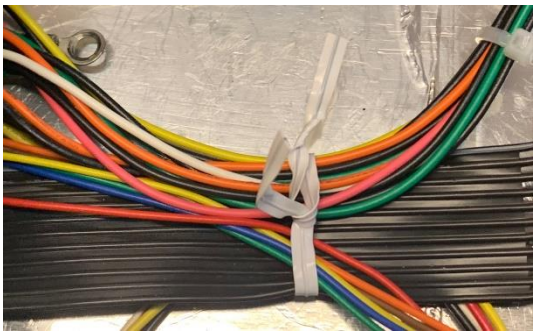
You can now connect the mains cable and switch on the XB2 with HX3 soul for the first time. The HX3 start message should now appear on the display.

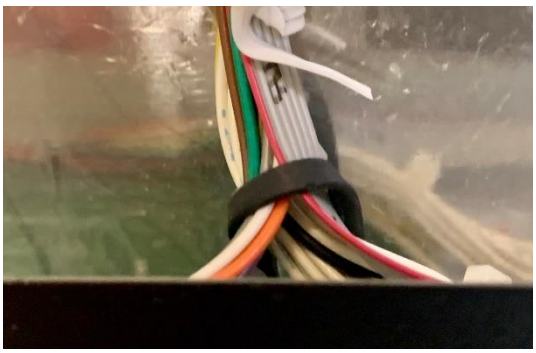
Take the opportunity to adjust the display contrast using the trimmer on the interface board 2.



Switch off the XB2 and disconnect the power cable.

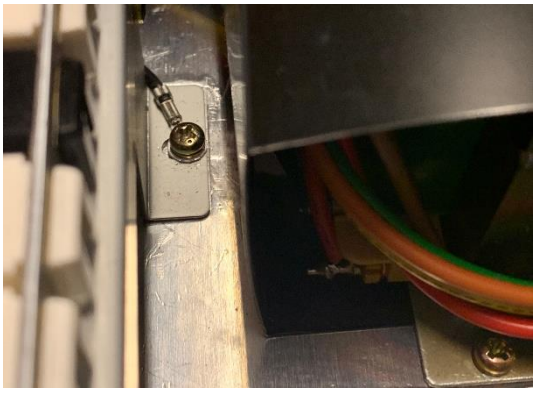
Arrange all cables and fix them with cable ties and the white cable holders at the bottom of the XB2.





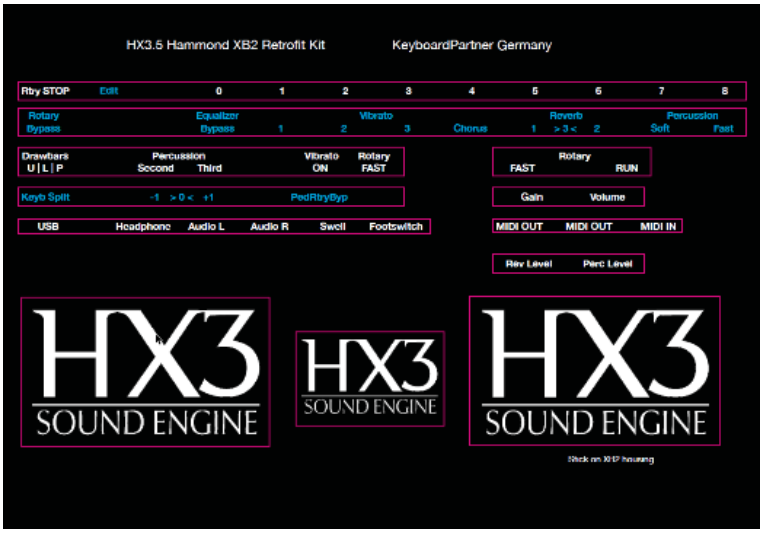
Fix the cables to the display and the buttons on the front tightly with the cable holder.

Now reassemble the keyboard. First plug the connector into PL12 on the interface board 2. Be careful not to pinch any cables when moving the keyboard into position. Fix the ground connection with a toothed lock washer under the brass screw near the power supply.



You can now reattach the lid and secure it with the five large screws on the underside.

The conversion of the Hammond XB2 to an HX3 organ is now complete.



Download the User Manual HX3_XB2 if you have not already done so.

Using the manual, attach the stickers from the stickers sheet to the controls of the XB2.

Then you can put the organ into operation with a new soul.

The KeyboardPartner team hopes you enjoy!