

Pianocorder Audio Interface Kit Installation Guide

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Introduction

The Pianocorder Audio Interface enables you to modernize your 1970s Marantz Pianocorder Reproducing System by replacing the original cassette deck with a compact device connected to the audio output of your personal computer or mobile device. Its control box provides the familiar Pianissimo and Fortissimo dynamic range controls plus a red LED that will glow whenever the Pianocorder is idle or experiencing a “loss of sync” condition (such as when the Pianocorder is not receiving a valid control signal from your audio source).

The interface also provides a pass-through connection for powered speakers so that you can enjoy the acoustic accompaniment tracks available in some music content, playing in sync with your Pianocorder.



Installation is designed to be quick and easy, requiring no permanent modifications to the Pianocorder system and no soldering. The cassette deck can be easily reinstalled at any time.



WARNING: In the event of a catastrophic electrical failure of your Pianocorder's circuitry, there is the risk that devices connected to the interface's audio jacks could be damaged, particularly if the devices are not battery powered.

Although there have been no cases to date of such damage actually occurring, please keep this warning in mind before connecting expensive equipment to your Pianocorder: *By installing and using this product, you assume all responsibility for damage to connected equipment and/or the Pianocorder itself.*

To eliminate this risk, consider using a Bluetooth audio receiver (or similar wireless audio link) to isolate your audio source from the aging Pianocorder circuitry.

Contents of the Kit

The following items are included in this upgrade kit:

- (1) Installation guide
- (1) Pianocorder audio interface
- (1) Power supply dongle (North American kits only)
- (4) Cable ties
- (1) Velcro pad set
- (1) Logitech Bluetooth receiver*
- (1) 6-foot stereo audio cable**

*Wireless version of the kit

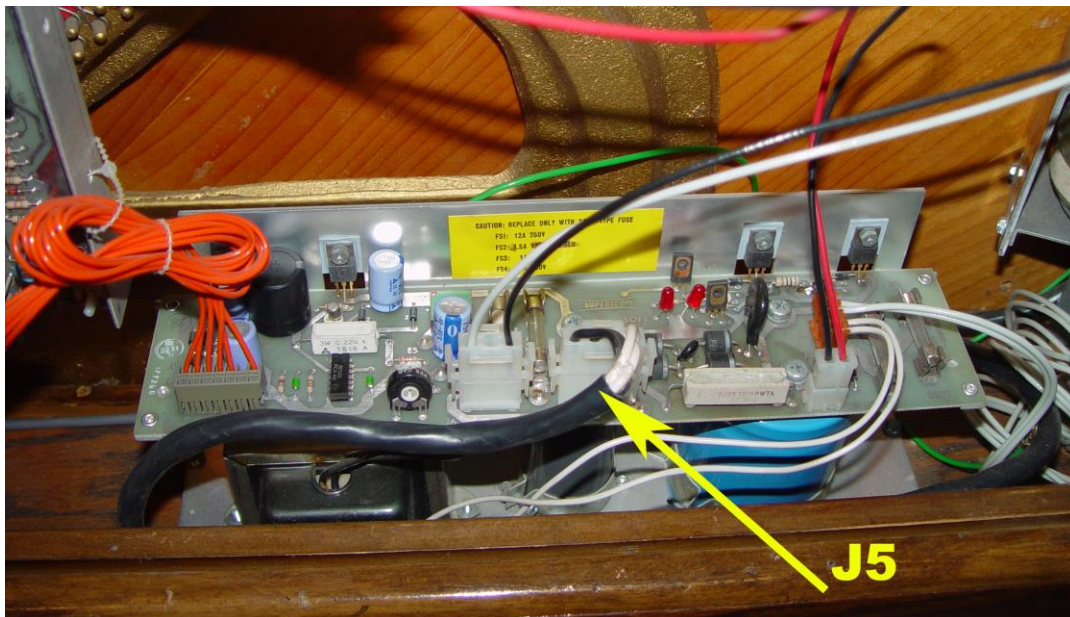
** Standard version of the kit

Installation

Please follow the steps on the following pages to install your Pianocorder Audio Interface.

Removing the Pianocorder Cassette Deck

1. **Unplug the Pianocorder, then wait 60 seconds before proceeding further.** The Pianocorder circuitry uses dangerous voltages that present an electrical shock hazard. To ensure your safety, the Pianocorder must be **completely unplugged from the wall outlet** while you work on it (not merely switched off).
2. With the Pianocorder unplugged, turn the power switch of the Pianocorder (near the cassette deck) to the **ON** position. Check that the **POWER** indicator on the front of the cassette deck does **not** light up. (If it does, go back to step 1 and ensure the Pianocorder truly is unplugged.)
3. Remove the lower cover of the piano beneath the keyboard (upright pianos), or remove any protective covers over the Pianocorder circuitry (grand pianos).
4. Locate the Pianocorder power supply:

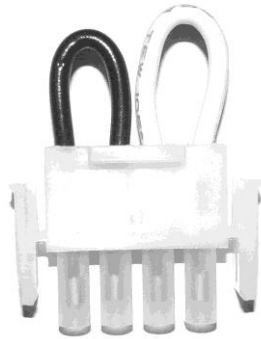


Find the white connector labeled **J5**. It usually has two black wires and two white wires protruding from the top, entering a thick black cable that runs to the power switch located near the cassette player.

CAUTION: If your Pianocorder was adapted for use in a country outside North America, there might be a factory-installed step-up or step-down transformer connected at J5, and the cabling may appear different. If so, do not use the power supply dongle included in this kit, and instead skip to step 7. **Bypassing an integrated transformer will damage your Pianocorder system.**

Unplug the white connector labeled **J5**. To unplug it, squeeze the two “ears” of the top half of the connector, releasing the bottom latches, and gently pull upwards on the plug with a slight side-to-side rocking motion. Be sure to pull only on the plug, not the wires. If the plug will not release, use a small flat blade screwdriver to gently pry the latches away from the protrusions on the socket as you pull upwards on the plug.

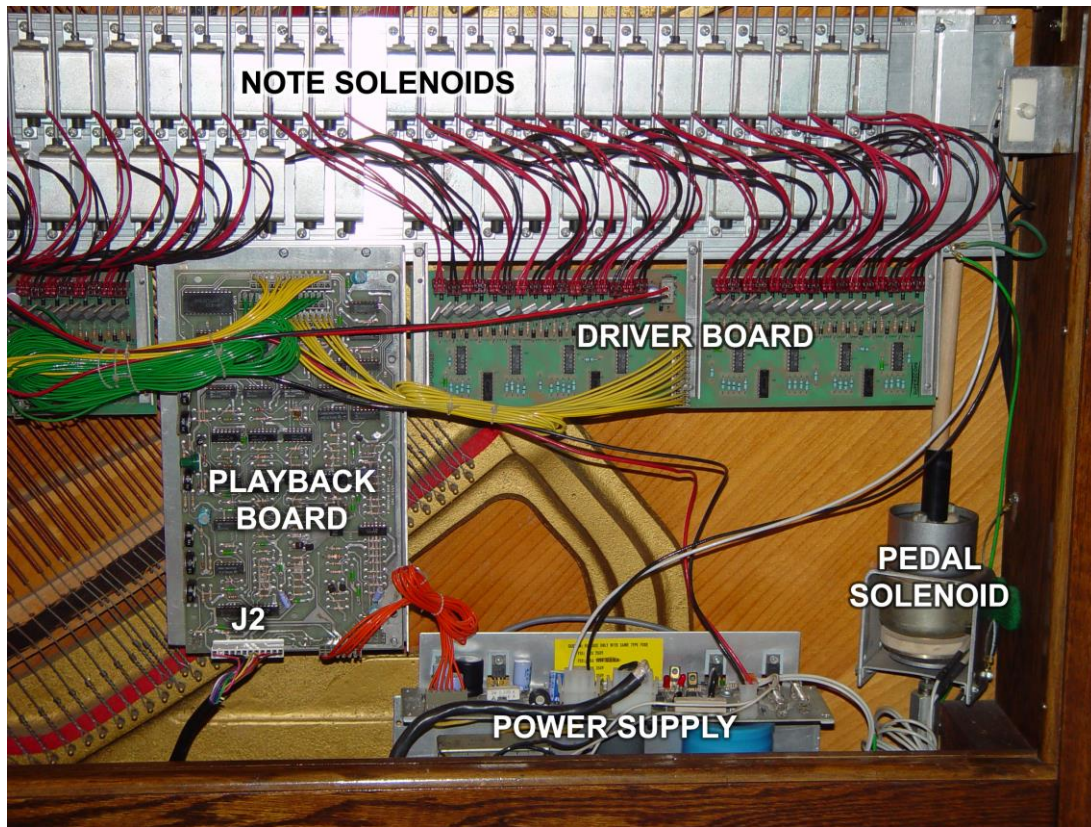
5. In your kit, locate the power supply dongle:



6. Notice that the two end pins have a flat side. Align the flat side with the corresponding flat side within socket **J5** of the power supply, and carefully push the dongle into the socket until it is fully seated and the latches snap into place as shown below.



7. Locate the Pianocorder playback board, referring to the photo on the following page. It is the largest circuit board in the system, measuring approximately 5-3/4 x 10 inches. (If your Pianocorder is equipped with the ability to record, you will see a smaller circuit board “piggybacked” on top of the playback board.)



8. Locate the 12-pin connector labeled **J2** at the bottom edge of the playback board (see photo). It is the only connector that has multi-colored wires. Carefully unplug this connector by rocking the plastic housing *very slightly* from side to side while pulling it straight away from the board. This plug is sometimes rather difficult to remove. While pulling on the plug, be careful not to pull on its wires, and use the fingers of your other hand to support the circuit board and prevent it from flexing or pulling off its mounts. **Do not use any sharp objects to pry the connector free, as they could damage the circuit board.** When the connector is finally off, inspect the pins protruding from the board. If any are bent, gently straighten them using needle nose pliers.

If you have a Superscan Display Console or MC-1/MC-2 MIDI interface attached to your Pianocorder, you will find the 12-pin cable plugged into a small circuit board which is, in turn, plugged into the playback board. Leave the small circuit board in place and disconnect only the 12-pin connector from the cassette deck. Be extra careful when unplugging the connector to avoid damaging either of the circuit boards.

9. Isolate the two thick, black cables attached to the two plugs you disconnected, and carefully extract them from the piano so that they hang freely from the cassette deck outside the piano. If you must remove any cable ties shared with other wiring, be sure to replace them using some of the cable ties included in the kit.
10. Swing the cassette deck into a position that exposes the four screws holding the mounting bracket to the underside of the keybed. Remove the screws and separate the cassette deck from the piano. Place the screws in a small envelope and store the folded envelope inside the cassette compartment of the cassette deck, in case it ever becomes necessary to reinstall the cassette deck.

Installing the Interface

Locate the Pianocorder Audio Interface and consider where you would like to place the control box. If aesthetic considerations permit it, you may wish to install it outside of the piano case, as doing so will permit you to easily see when the Pianocorder is turned on and permit easy adjustment of the Pianissimo and Fortissimo dials.

If you would prefer the cleaner look of having no visible electronics external to the piano, you may mount the box inside the piano instead. If you will be using the WINAMP-based software to control the piano, access to the Pianissimo and Fortissimo controls is not a concern, since these dials usually will not require further adjustment once the system is calibrated (the Pianocorder's volume is adjustable from within the control software). However, keep in mind that if the control box is completely hidden, it will not be easy to tell whether the Pianocorder is turned on.

If you will be controlling your Pianocorder from a Mac or mobile device playing MP3 files, it is best to keep the control box outside of the piano so that you can easily adjust the playback volume.

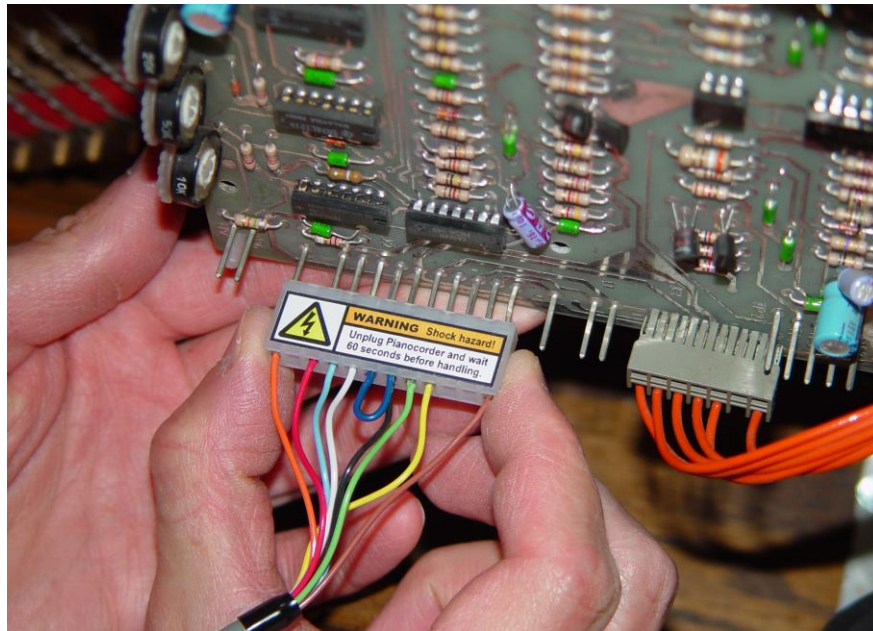
Please follow these guidelines if you choose to mount the control box internally:

- **On a grand piano**, the box should be mounted to the side or bottom of one of the beams beneath the soundboard, such that neither the case nor the grey cable makes contact with the soundboard.
- **On an upright piano**, it is usually best to mount the box against the inside of the right side of the piano case, or in some cases, on the harp near the bottom of the case. Be sure to choose a location that will not interfere with your piano technician's access to the action and tuning pins.
- **In an external Vorsetzer Pianocorder system**, you should mount the box such that it is accessible through the swing-out door where the cassette deck was located.
- Industrial-strength Velcro pads are provided for convenience in mounting and ease of removal. If you do not wish to use Velcro, mount the control box to a suitable surface within the piano using cable ties or other straps around its shorter dimension. **Do not drill holes into the control box housing or attempt to open it. Damage or electric shock could result.**

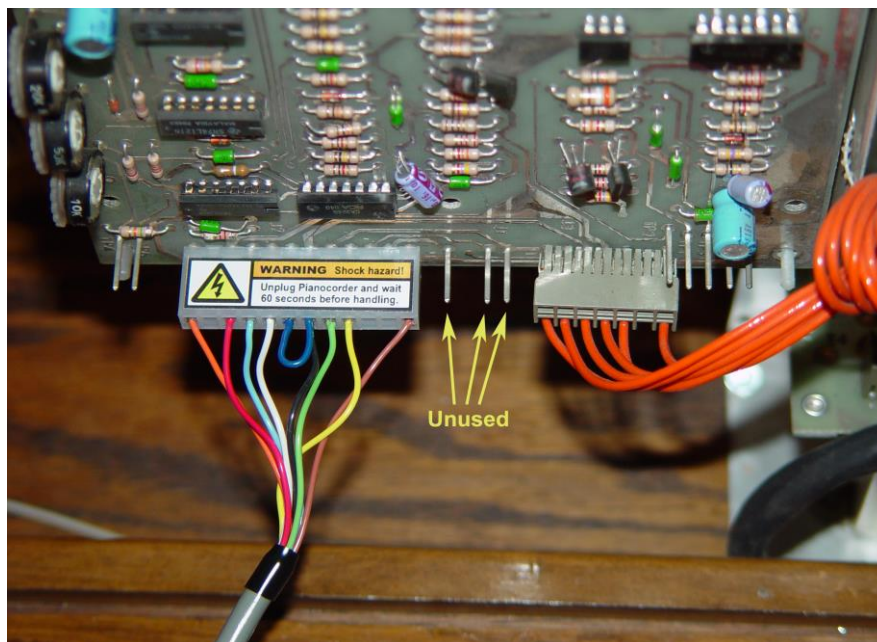
Follow the steps below to connect and install the control box.

1. Place the control box in the approximate location you have chosen and route the grey cable and 12-pin connector to the playback board. **Do not mount the control box permanently yet.**
2. Examine the holes of the 12-pin connector and notice that it is keyed (one hole has a plug in it). Align the plugged hole with the missing pin of connector **J2** of the playback board, as shown in the photo on the following page. The **orange** wire should be closest to the edge of the board, and the **brown** wire should be closest to the middle of the board.

Applying force only to the plastic plug (not the wires), push the connector into place until it is fully seated. Use the fingers of your other hand to support the playback board directly behind the pins to prevent the board from flexing.



When the connector is in place, it should look like this:



WARNING: Make absolutely certain that the connector is installed as shown in the above photo. If the connector is offset by a pin or more, the interface and Pianocorder circuitry could be damaged or destroyed.

3. **If you have the Standard (non-wireless) version of the kit,** locate the included 6-foot stereo audio cable. Plug one end into the green jack labeled **IN** on the back of the Pianocorder interface. Plug the other end into the headphone/speaker jack of your audio source:



If you have the wireless version of the kit, locate the audio cable included with the Logitech Bluetooth receiver. Plug the mini headphone plug end of that cable into the green jack labeled **IN** on the back of the Pianocorder interface. Connect the RCA plugs at the other end of the cable into the RCA jacks on the back of the Bluetooth receiver, making sure to match the color coding:



Connect the Bluetooth receiver's power adapter to the receiver and plug it into a nearby outlet.

Pair your mobile device or computer with the Bluetooth receiver, following the instructions provided by Logitech and your device's manufacturer.

4. Plug the Pianocorder into a wall outlet and turn it on by pulling outwards on the safety interlock switch plunger until it clicks into position:



The Pianocorder interface's **IDLE** indicator will illuminate, showing that the Pianocorder is powered up. Keep in mind that dangerous voltages are now present on all of the Pianocorder circuitry.



WARNING: Electric shock hazard! Never touch any internal components while the Pianocorder is powered on. Be certain to unplug the Pianocorder if you must leave it opened up and unattended, especially if you have small children or pets!

5. Begin playing a Pianocorder stream from your audio source (if using a Windows PC, start a song playing in WINAMP; if using a Mac or mobile device, select and play a Pianocorder MP3 file). The volume control of the audio source should be set to around 90% of its maximum.
6. Confirm that the piano plays properly. The red **IDLE** / loss-of-sync indicator on the control box should go out and remain OFF during playback. If the piano stutters or the red light flickers, slowly adjust the volume control of your audio source. Set the volume control to the middle of the range in which the piano plays most reliably. (If the piano will not play at all, confirm that your audio source is functioning properly by plugging speakers or headphones into it. When playing a Pianocorder stream, you should a loud, high-pitched digital FAX-machine-like tone on the right stereo channel and either silence or accompaniment audio on the left stereo channel.)

If problems persist, check that all audio enhancement features of your audio source are disabled, including equalizer (EQ), bass boost, sound enhancer, surround sound, ambience etc.

7. Adjust the Pianissimo and Fortissimo controls on the control box as you prefer. For optimal playback on most pianos, set Pianissimo to about 9 o'clock and Fortissimo to about 1 o'clock.



If the piano is playing too loudly, decrease Fortissimo slightly by turning it counterclockwise. If soft notes fail to play reliably, increase Pianissimo slightly by turning it clockwise.

Keep in mind that increasing Pianissimo and reducing Fortissimo will both decrease the level of expressive contrast in the musical performance.

8. Push the Pianocorder's safety interlock switch plunger inwards until the system turns off (the control box's **IDLE** indicator will go out). **Unplug the Pianocorder from the wall outlet and wait 60 seconds before proceeding.**
9. If installing the control box internally, mount it in place using the supplied Velcro pads.
10. Coil any unused length of the grey cable into loops about 6 inches in diameter, and use two of the supplied cable ties to secure them. Do not make any sharp bends or kinks in the grey cable.
11. Use the remaining cable ties to arrange the grey cable neatly within the piano. Be sure to keep the cable several inches from any moving parts, such as the pedal trapwork and solenoids. **Do not permit the control box or cables to contact the strings or soundboard.**
12. Reinstall any protective covers you removed, and be sure they fully depress the Pianocorder's safety interlock switch.

Controlling Power to the Pianocorder

With the power supply dongle in place, the Pianocorder will receive power continuously whenever it is plugged in. Though it consumes only about 15 Watts of power while idle, it is recommended that you set up a new means of shutting the Pianocorder off when it is not in use.

An easy solution for controlling power to the Pianocorder is to plug it into a switched outlet, switched power strip, etc. You can also find inexpensive remote control appliance switches at hardware stores and home centers; be sure to purchase one specifically marked for use with appliances (not lamps) and with a current rating of at least 6 Amps. For a more sophisticated solution, look into the growing assortment of Wi-Fi home automation products, which would allow you to switch the Pianocorder on and off from your mobile device. Be sure to use devices intended to control appliances, not lighting.

Unplugging the Pianocorder during electrical storms and power outages is recommended to eliminate the risk of damage to the Pianocorder interface, your attached audio source, and the Pianocorder circuitry. Unplugging the Pianocorder before going on vacation will ensure it is protected from these hazards while you are away.

Using the Accompaniment Jack

Some music sources include accompaniment audio playing in sync with the Pianocorder. To hear the accompaniment, you can plug a set of powered multimedia speakers into the green mini headphone jack labeled **OUT** on the back of the Pianocorder Audio Interface. Adjust the speakers' volume control to achieve a proper balance between the piano and accompaniment.

Alternatively, the accompaniment jack can be connected to an external amplifier or stereo system using a 3.5" mini stereo plug to dual RCA plug cable.

Improving Bluetooth Audio Quality from the Mac

If you are using the optional Logitech Bluetooth receiver in conjunction with an Apple Mac computer, you'll want to follow the procedure below to improve the reliability of the connection.

By default, MacOS X negotiates a rather poor quality audio link with Bluetooth audio devices. This can lead to dropouts, glitches and other undesired effects when transmitting digital signals such as Pianocorder streams.

To fix this, open a Terminal window, carefully type the following command, and press Enter.

```
defaults write com.apple.BluetoothAudioAgent "Apple Bitpool Min (editable)" 40
```

Then restart your Mac to ensure that the setting takes effect.

Obtaining Technical Support

For general Pianocorder questions, visit the Pianocorder Forum at <http://www.voy.com/33099/>.

For assistance with the Pianocorder Audio Interface and music library, contact Mark Fontana <mfontana@pianocorder.info>.