Compact Disc (CD) Format

Player Piano Control Unit

PIANODISC MODEL PCD

IMPORTANT: BEFORE USING YOUR NEW PIANODISC PRODUCT, WE STRONGLY
RECOMMEND THAT YOU READ THIS MANUAL THOROUGHLY.

PianoDisc

a division of Burgett, Inc.

USER GUIDE AND INSTRUCTION Manual

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*Piano***CD**®

User Guide

Version R-A 3206

4111 North Freeway Blvd.

Sacramento, CA 95834

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www.pianodisc.com

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Important: Read This First!

Care and Safety Information

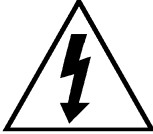This symbol is intended to alert the user to the presence of important operation and maintenance (servicing) instructions in the literature accompanying the product.
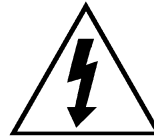
This symbol is intended to alert the user to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: To reduce the risk of electrical shock. Do not remove cover or back. No user-serviceable parts inside. Refer servicing to qualified service personnel.
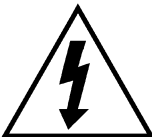
IMPORTANT NOTICE: Complete safety of operation is assured by PianoDisc when the system is properly installed and operated in its normal fashion. Do not attempt or commision others to modify any portion of the PianoDisc system unless specifically authorized by PianoDisc.

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Important Safety Instructions

WARNING: When using electrical appliances, these basic precautions should always be followed:

1. Read and understand all instructions before using the product.
2. Do not open the cover under any circumstances.
3. Power is supplied through a three-prong, grounded AC connector. Connect only to a three-prong, grounded outlet.
4. Keep the power cord away from other objects. Make sure that the cord is not twisted, placed in any lane of traffic, or trapped under the piano.
5. Locate your PianoDisc unit away from direct sunlight, water or moisture, or hot or cold air currents.
6. If the PianoDisc unit is to remain unused for an extended period of time, the power supply should be disconnected.
7. If repair is necessary, refer only to authorized service personnel.
8. This product, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
9. The product should be located so that its location or position does not interfere with its proper ventilation.
10. Care should be taken so that objects do not fall onto and liquids are not spilled into the product through the openings.
11. Care should be taken so that objects do not fall onto and liquids are not spilled into the piano through the keys or inside the piano cabinet
12. The product should be unplugged, and serviced by qualified service personnel when:
    *   The power supply cord or plug has been damaged.
    *   Objects have fallen or liquid has been spilled into the product or piano.
    *   The product or piano has been exposed to rain.
    *   The product does not appear to operate normally or exhibits a marked change in performance.
    *   The product has been dropped or the enclosure is damaged.

Certification Warnings

FCC Part 15 Regulatory Statement

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

> **Caution**: Changes or modifications to this product, which are not expressly approved by the manufacturer, may void the user's right or authority to operate this product.

Industry Canada Regulatory Statement

Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept interference including interference that may cause undesired operation to the device.

Australia. This equipment complies with Australian EMC requirements of AS/NZS 3548 and to IEC 60065 safety standard for mains operated electronic and related apparatus for household and similar general use.

China. This equipment meets the requirements of the Compulsory Product Certification System (symbolized by the CCC mark) for China's established safety approval process as listed under the Audio and Video apparatus category of electronic equipment. The CCC product safety mark became effective August 1, 2003 and is required for all products imported into the People'sRepublic of China for commercial and/or private use with appropriate exemptions.

Japan. This equipment complies with Japanese EMC requirements of VCCI Class B and to IEC 60065 safety standard for mains operated electronic and related apparatus for household and similar general use.

Save These Instructions!

General Operating Notes

- When the control unit is turned off from the front panel, your piano and control unit will continue to consume a small amount of power. Disconnecting your piano from the power source will completely shut down the unit.
- If your piano or PianoCD control unit fails to operate in a manner consistent with the instructions in this manual, please disconnect it from your power source and contact your authorized PianoDisc Dealer, certified PianoDisc technician or PianoDisc.

Technical Assistance

- Technical assistance is available online through the World Wide Web at www.pianodisc.com.
- Direct e-mail to techsupport@pianodisc.com.
- Technical support is available by telephone from 8:00 a.m. to 5:00 p.m. Pacific Time at (916) 567-9999.

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CHAPTER 1: ABOUT PianoCD

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PianoCD combines the original, impossible to duplicate sound of a real acoustic piano with the finest, Compact Disc based (CD) reproducing piano technology available today.

With your new player piano system you can:

- Play your piano as you would normally
- Allow your piano to perform for you
- Control the piano playback volume
- Enjoy hundreds of hours of high quality performances

Mail in your registration. Please take a few moments right now to fill in and mail the Registration Card. Doing so will entitle you to full warranty protection, and enables us to better serve you.

Review all safety information. Please review all care and safety information included in this User Guide. This includes information provided as part of compliance with UL, FCC, and CE (European Community) standards.

In this chapter. The remainder of this chapter gives you an overview of the PianoCD system, how it works, and the many ways you can enjoy this product.

PianoCD at a Glance

The PianoCD system is a combination of amazing mechanics and sophisticated computer technology. It is an enhanced CD player control unit, designed to transmit music and performance information to computer driven solenoids concealed within the piano. Each solenoid is capable of reproducing up to 127 different levels of expression. The system has three different remarkable innovations that, when combined, make the seemingly impossible a reality. These innovations are:

Control Unit
Developed exclusively by PianoDisc, the PianoCD control unit is a CPU and CD player that reads specially encoded PianoDisc CDs and transmits the performance information to the playback mechanism in your piano. The control unit allows you to control various aspects of the performance, including playback volume and, in the case of accompaniment enhanced discs, the volume balance between the piano and the prerecorded accompanying music. Features that many PianoCD owners appreciate include:

- Easy push-button control
- Easy connection to a home stereo
- Convenient remote control
- Flexible volume control
- Stereo headphone jack
- Usable as a standard CD player

PianoDisc CDs
Using a format created by PianoDisc exclusively for the PianoCD, 228CFX and Opus7 systems, these remarkable CDs permanently store a wide variety of musical performances, either for solo piano or for accompanied piano performances (including live accompaniments), representing the state of the art in acoustic/digital piano musical reproduction.

Standard CD Player
Your PianoCD system can also be used as a standard CD player. It easily connects to most home stereos. The system is equipped with a stereo headphone jack, enabling you to enjoy standard CDs in complete privacy without disturbing others.

Where to Use PianoCD

At Home   A piano is a welcome enhancement to any household. Pianos are learning tools, decorator items and, to some, as necessary to complete a household as living room furniture or kitchen appliances.

PianoCD systems bring a whole new dimension to the household piano. Homeowners appreciate not only the beauty of the instrument, but also the streamlined implementation of the system's features. Traditional decor can be preserved while still having easy and complete access to an amazing array of new musical possibilities.

At Places of Worship   The PianoCD control unit is uniquely suited for the worship environment. Several of the selections in the PianoDisc CD library include performances by many of the best sacred music pianists ever recorded. Beautiful meditation music can enhance many worship services, and PianoDisc recordings of many sacred masterpieces can enhance seasonal events such as Christmas. Your PianoCD control unit can also be used in the event your pianist is absent from a worship service.

At Work   Many different commercial environments use a piano, including restaurants, bars, hotel lobbies, department stores and shopping centers. Many of these environments are so enhanced by the presence of pianos and pianists that they would never give them up. However, sometimes a pianist simply isn't available. For those times, a PianoCD system can fill the void with performances by many of today's most respected pianists.

Operational Safety

Before using your piano with the PianoCD system, always check the following:

Control Box   Make sure the system's Control Box is properly connected. The technician delivering and setting up your piano will connect and set up the PianoCD control unit.

Power Source   Make sure the correct power source is available.
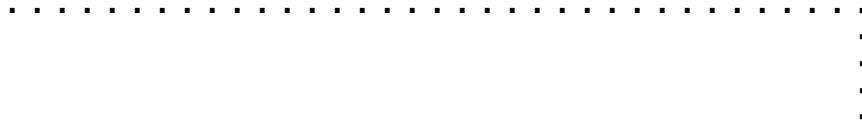
- In the United States, your piano uses a standard 120-volt AC household electrical outlet as a power source.
- In other countries, the piano is usually equipped with a power supply and cord that are compatible with the prevailing voltage standards of that geographic area.

If you have any questions concerning compatibility with local electrical standards, please consult your PianoCD retailer before connecting your piano to a power source.

Make sure the system is properly plugged into the correct power source.

- For systems installed on Vertical (upright) pianos, the electrical cord is usually found extending from a small hole in the back of the piano. Make sure the cord is securely plugged into the outlet before moving the piano against the wall. Do not crush the cord or plug under or against the piano.
- For systems installed on Grand pianos, the electrical cord extends from the power supply. The power supply is usually mounted on a support beam under the piano. Plug the electrical cord securely to a power source and avoid placing the cord where someone may trip over it.

CHAPTER 2: PianoCD BASICS

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This chapter tells you about the location and functions of the various buttons and controls on the front panel of the control unit and the remote control.

Read the chapter to familiarize yourself with:

- Control Unit Buttons
- Control Unit Display
- PianoCD Player
- Remote Control

Control Unit
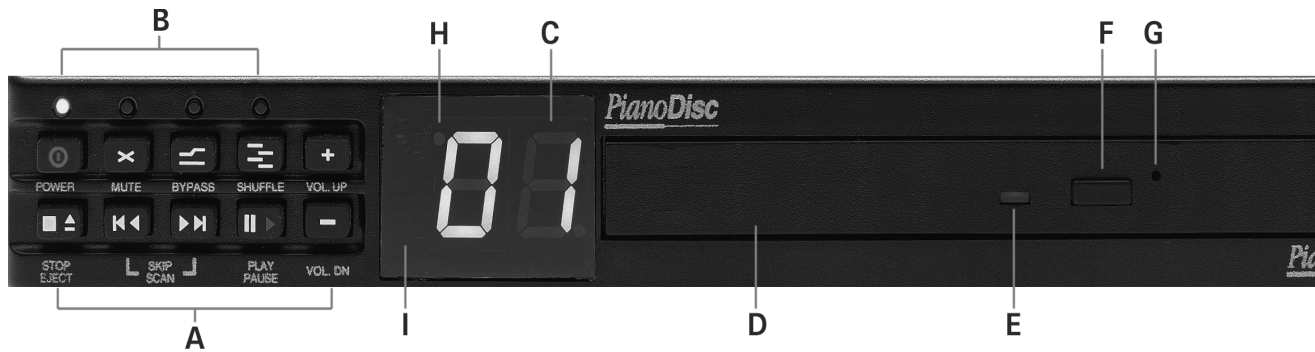
A. Control Buttons

Includes Power, Mute, Bypass, Shuffle, Stop/Eject, Skip/Scan, Play/Pause, and Volume control buttons. Each button is explained in the next section.

B. LED Lights

A small green light above each button illuminates to indicate that the selected feature is active.

C. Numeric Display

The illuminated display indicates the current track number or parameter values (such as volume). Numbers turn red when you adjust a parameter. When the CD tray is empty, the display is blank.

D. CD Tray

Open to insert or remove a CD. Press Stop/Eject to open the tray.

E. Access Light

This light indicates that data is being read from a CD.

F. CD Tray Access Button

Press this button to open the CD tray.

G. Manual Access Hole

Use if a CD becomes stuck in the tray or to open the CD tray when power to the PianoCD unit is disconnected. To use the manual access hole to open the CD tray, insert the end of a straightened paper clip into the hole.

H. Activity light

This light blinks when the PianoCD control unit is receiving the remote control signal or when piano data is being accessed.

I. IR sensor

This sensor receives the signals from the remote control.

J. Headphone jack

Plug for output to stereo headphones. (On left side of unit; not visible in illustration.)

K. Ventilation holes

These holes allow for air circulation to prevent overheating of components. Do not block or cover these ventilation holes. (On top and sides of unit; not visible in illustration.)

Control Buttons

The control buttons on your PianoCD system are easy to use.

A - Power	Turns the power on/off
B - Mute	Silences the piano and audio playback
C - Bypass	Plays standard audio CDs
D - Shuffle	Plays songs in a random order
E - Volume Up	Increases the volume
F - Volume Down	Decreases the volume
G - Stop/Eject	Stops playback or ejects a CD
H - Skip/Scan Left	Restarts a song, skips to a previous song, and scans backwards to any point in a song
I - Skip/Scan Right	Skips forward to a song and scans forward to any point in a song
J - Play/ Pause	Song playback and pause

The rest of the section describes what else you can do with PianoCD controls:

To	Do This
Turn on/off PianoCD	Press Power. While the power is on, the light above the Power button is illuminated. Note: Stop playback before turning the power off.
Eject a CD	Press Stop/Eject.
Mute	Press to silence piano and accompaniment playback. **Note**: The light above the Mute button blinks and the recorded accompaniment is muted automatically if you transpose the piano playback to a key that is not exactly one or two octaves above or below the original key. The piano playback continues in the selected key. The Transpose feature is only accessible on the Remote Control.
Play standard audio CDs	Press Bypass to hear songs on a standard audio CD in stereo. Playing standard audio CDs outside of the Bypass mode outputs pseudo-stereo audio.
Play songs randomly	Press Shuffle.
Start a song over	Press Skip/Scan Left while the song is playing.
Play the next song	Press Skip/Scan Right.
Play the previous song	Press Skip/Scan Left.
Scan forward to any point in a song	Press and hold Skip/Scan Right while the song is playing.

To	Do This
Scan backwards to any point in a song	Press and hold Skip/Scan Left while the song is playing.
Pause playback	Press Play/Pause while the song is playing. Press Play/Pause again to resume playback.

Remote Control

Your PianoCD system comes with an infrared remote control. Many of the features on the remote control are identical to those located and accessed from the PianoCD control unit.

Features

Power	Turn power on/off
Bypass	Plays standard audio CDs
Shuffle	Plays songs in a random order
Keypad	Press track/song number
Select	Press to enter track/song number
Play	Playback/ Pause
Volume +	Increase volume
Stop	Stop playback
Balance P	Piano volume relative to accompaniment
Balance S	Accompaniment volume relative to piano
Mute	Silences piano and accompaniment playback
Volume -	Decrease volume
PMute	Silences piano playback
Piano Transpose	Transpose the key of piano playback

Reset	Reset the volume, balance, piano transpose or synchronization to default settings
Synchronize	Adjust the synchronization between piano and accompaniment playback
Scan	Press and hold to scan forward or backward to any point in a song. Press once to skip forward or backward to another song.
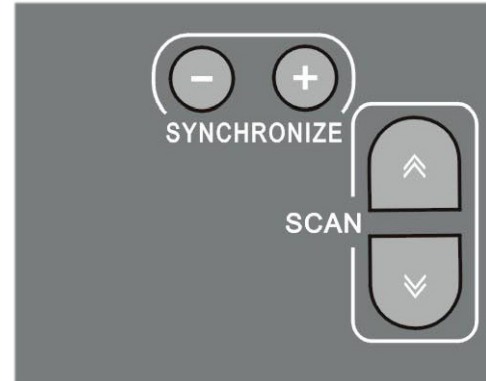
The rest of the section describes what else you can do with the Remote Control:

To	Do This
Enter a song number for playback while the CD is playing	Enter the song number and press Select.
Enter a song number for playback while the CD is stopped.	Enter the song number and press Play.
Increase piano volume above synthesized accompaniment volume.	Press Balance P. The current balance setting appears on the Control Box display.
	Continue to press Balance P until you reach the desired volume balance. As the piano volume increases, the synthesized accompaniment volume decreases.
	Note: Balance settings range from 1 to 99, with a default balance of 50. Use only for PianoDisc CDs.

To	Do This
Increase synthesized accompaniment volume above piano volume.	Press Balance S**.** The current balance setting appears on the Control Box display. Continue to press Balance S until you reach the desired volume balance. As the synthesized accompaniment volume increases, the piano volume decreases. **Note**: Balance settings range from 1 to 99, with a default balance of 50. Use only for PianoDisc CDs.
Transpose the key of the piano during song playback.	Locate the Piano Transpose **+** and **-** buttons. Press **+** once for each half step to transpose above the original key. The number of half steps selected appears on the Control Box display. Press **-** once for each half step to transpose below the original key. The number of half steps selected appears on the Control Box display and is blinking.
Restore piano playback to its original key.	Press either the Piano Transpose **+** or **-** buttons, then press Reset.

To	Do This
Synchronize piano and synthesized accompaniment	Locate the Synchronize **+** and **-** buttons.
	Press **-** to shift the piano playback forward to synchronize with synthesized accompaniment.
	Press **+** to shift the piano playback backward to synchronize with synthesized accompaniment.
Restore volume, balance, piano transpose or synchronization to their original settings.	Press the button of the feature you want to restore (e.g. Balance P, Piano Transpose, etc.)
	Press Reset.

Battery Installation

The remote control is powered by two AA batteries.

To insert batteries in your remote control:

1. Remove the battery compartment cover on the back of your PianoCD remote control.
2. Insert the batteries, making sure they are in the correct positive/negative orientation.
3. Replace the battery compartment cover.

Operating Conditions

Your PianoCD remote control operates best when you point it directly at the front of the PianoCD control unit.

Using PianoCD

Playing a PianoDisc CD

PianoDisc CDs are formatted to play music only on PianoDisc systems. CDs permanently store a variety of musical performances recorded for the solo piano, piano-with-live or synthesized accompaniment, and piano-with-vocal accompaniment.

To play a PianoDisc CD:

1.   Press **Stop/Eject** to open the CD tray.
2.   Insert a PianoDisc CD and close the CD tray.
3.   Wait for **01** to appear on the display.
4.   Press **Play/Pause** to start playback.
5.   Press **Stop/Eject** to stop playback when done.

Playing a Standard CD

PianoCD can also play standard audio CDs.

To play a standard audio CD.

1.   Press **Stop/Eject** to open the CD tray.
2.   Insert a standard CD and close the CD tray.
3.   Wait for **01** to appear on the display.
4.   Press **Bypass** to enter Bypass mode.
5.   Press **Play/Pause**.
6.   Press **Stop/Eject** to stop playback when done.
7.   Press **Bypass** again to exit Bypass mode and resume playing PianoDisc CDs.

Shuffle Songs

You can set your PianoCD system to play songs in random order.

To shuffle music:

1.   Press **Shuffle** to play songs randomly.
2.   Press **Shuffle** again to return to normal playback.

Transpose Keys

On PianoDisc CDs, you can transpose the key of piano playback by half step increments above or below the original key.

To transpose the piano playback up a key:

1. Locate the Piano Tranpose **+** and **-** buttons on the remote control.

2. Press **+** once for each half step you want to move the playback above the original key.

To transpose the piano playback down a key:

1. Locate the Piano Tranpose **+** and **-** buttons on the remote control.

2. Press **-** once for each half step you want to move the playback below the original key.

To restore piano playback to the original key:

1. Press either the **+** or **-** Piano Transpose button.

2. Press **Reset.**

Note: The key of synthesized or vocal accompaniment cannot be transposed. If piano playback is transposed, accompaniment is muted *unless* the transpose value is 12, 24, -12 or -24 (exactly one to two octaves higher or lower than the original key.

While accompaniment is muted the light above the Mute is illuminated and blinking.

Synchronization   You can adjust the synchronization between the piano playback and the accompaniment on PianoDisc CDs.

To shift the piano playback forward to synchronize with accompaniment:

1. Locate the **+** and **-** Synchronize buttons.
2. Press the **-** Synchronize button.

To shift the piano playback backward to synchronize with accompaniment:

1. Locate the **+** and **-** Synchronize buttons.
2. Press the **+** Synchronize button.

CHAPTER 3: PORTS

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This chapter provides information about the ports located on the rear panel of the control unit. Ports are used to connect the control unit to audio and/or electronic devices, the piano and a power outlet. Also located on the rear panel are buttons for system settings and controls.

Familiarize yourself with information in this chapter before you connect anything to your PianoCD system. The PianoCD system has ports available for:

- Amplifier
- Standard CD player/changer
- Headphones
- Microphone
- Piano
- Power Outlet
- Speakers

Ports and Controls
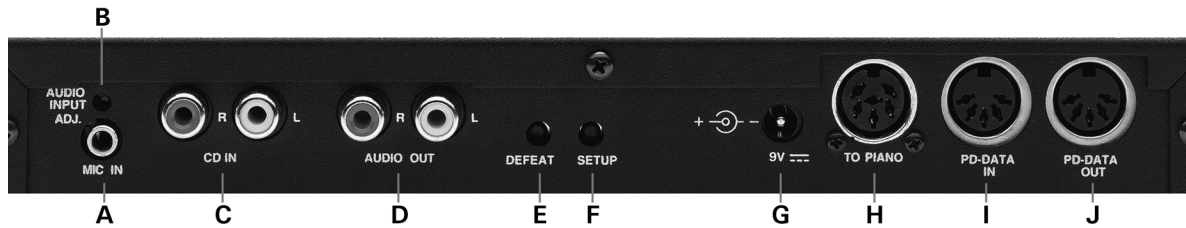
A. MIC IN

Use this port to connect a PianoAmp Pickup to the piano. This port picks up the piano output and sends it through the audio ports.

B. AUDIO INPUT ADJ.

Use this control to adjust the balance between the MIC audio and the CD audio. You can easily adjust this control by turning it to the left or right with a flathead screwdriver.

C. CD IN

Use these ports to connect a CD changer to your PianoCD control unit.

> **Note**: Not all commercial CD changers will work properly with the PianoCD system. See Technical Specifications in the back of the User Guide for more detail.

D. AUDIO OUT

Use these ports to connect your output, such as amplified speakers or a home stereo system, to your PianoCD control unit.

> **Note**: A convenient feature of the PianoCD control unit is the permanent connection between the CD IN ports and the AUDIO OUT ports, even when the PianoCD control unit is turned off. Therefore, if you connect both a CD changer and an audio output to your PianoCD unit, you do not need to have the PianoCD unit turned on in order to play standard CDs in the CD changer and listen to them through the audio output.

E. DEFAULT (formerly Defeat)

Press Default to return sync, balance, volume, and transpose back to default values.

F. SETUP

Only the technician setting up your PianoCD system should use this button. You should never press this button during normal operation. If you accidentally press Setup, press Play/Pause to exit Setup mode.

G. 9V Power

If necessary, connect a 9V power supply to this port.

H. TO PIANO

Use this port to connect the PianoCD control unit to the piano.
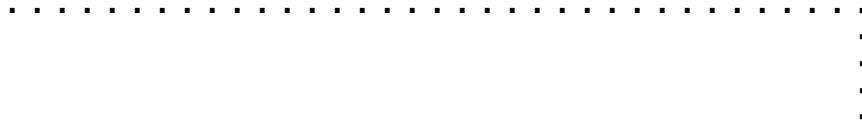
I. PD Data In

Use the port to connect an external PianoDisc device.

J. MIDI Out (formerly PD Data Out)

Use the port to connect an external MIDI device.

CHAPTER 4: **FAQS**

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This section addresses some of the common questions that PianoCD owners have while using their units. If you experience difficulties while using your PianoCD system, use the FAQs to help you remedy the problem.

If you have additional questions or need assistance, call or write to PianoDisc Technical Support at:

4111 North Freeway Blvd.

Sacramento, CA 95834

Phone: 916.567.9999

Fax: 916.567.1941

Visit our website www.pianodisc.com to learn about other PianoDisc products and support information.

Troubleshooting

When I'm playing a CD and I enter a track number, why is there a delay before the new track starts playing?

You probably didn't press the Select button after entering the track number. If you want a specific track to start playing immediately, enter the track number and then press Select. If you don't press Select, there is slight delay before the track begins.

Why is the light above the Mute button blinking?

You may have pressed one of the Piano Transpose buttons, which can cause the recorded accompaniment to stop playing. To reset the track to its original key, press either Piano Transpose button and then press Reset

Why is the light above the Bypass button on?

If the light is solid, you are in Bypass mode, which allows you to play standard audio CDs in your PianoCD control unit.

A high-pitched sound is coming out of my right speaker. How do I fix this?

You are probably trying to play a PianoDisc CD while the PianoCD control unit is in Bypass mode. If the light above the Bypass button is on, press Bypass to exit Bypass mode. If the light is not on, there may be a problem with your audio output connection or your speaker.

Why did the piano stop playing in the middle of a track?

Usually, the piano stops playing because you pressed Play/Pause or Stop/Eject. Press Play/Pause and the piano should start playing again.

Why did the recorded accompaniment stop playing in the middle of a track, while the piano kept playing?

You probably pressed one of the Piano Transpose buttons. To reset the track to its original key, press Piano Transpose, and then press Reset.

I want to sing along with a track on a PianoCD disc, but the song is keyed too high (or low) for my voice. How can I fix this?

Use the Transpose feature to raise or lower the key in which the track is playing.

The piano seems too loud (or soft) in relation to the recorded accompaniment. How can I fix this?

Use the Balance feature to increase the relative volume of either the piano or the recorded accompaniment.

When I play a standard audio CD in the PianoCD unit, it doesn't sound quite right (flat or muted). How can I fix this?

The PianoCD is probably not running in Bypass mode. Although the PianoCD will play standard audio CDs even if it is not in Bypass mode, the output will be in pseudo stereo sound. To switch to true stereo sound, press Bypass.

The piano seems to be slightly behind (or ahead of) the recorded accompaniment. How can I fix it? Why does this happen?

Use the Sync feature to shift the piano playback forward or backward to be in sync with the recorded accompaniment.

To explain why the piano playback might not be exactly in sync with the recorded accompaniment, we need to start with a brief explanation of how your PianoCD control unit works. The PianoCD control unit is specially designed to read the unique data on a PianoDisc CD. It interprets this data and then sends the recorded accompaniment audio output to your speakers at the same time that it sends the piano playback commands to your piano. Your speakers respond to the prerecorded audio almost instantaneously. However, the components inside your piano (solenoids, hammers, etc.) must respond to the playback commands in order to move the appropriate piano keys. This process takes just slightly longer than the playback of the prerecorded audio, resulting in the piano being slightly behind the recorded accompaniment. To allow for this discrepancy, PianoDisc CDs are recorded with the piano playback already shifted forward relative to the recorded accompaniment. The Sync feature lets you fine tune how much the piano playback is shifted.

Why do I use Sync + to shift the piano playback forward relative to the recorded accompaniment, and Sync - to shift the piano playback backward? Shouldn't the opposite buttons be used?

This answer relates to the delay discussed in the answer to the previous question. If the piano playback seems ahead of the recorded accompaniment, it means that the piano is shifted too far ahead of the accompaniment; in other words, the piano is delayed too little. If the piano playback seems behind the recorded accompaniment, it means the piano isn't shifted far enough ahead of the accompaniment; in other words, the piano is delayed too much. Each Sync button adjusts the amount that the piano playback is delayed relative to the recorded accompaniment.

Thus, you use Sync **+** to decrease the delay of the piano playback, effectively moving the piano playback forward. Similarly, you use Sync **-** to increase the delay of the piano playback, effectively moving the piano playback backward.

CHAPTER 5: SPECIFICATIONS

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PianoDisc® provides the technical specifications of the PianoCD system to help you accurately and safely use it as a standalone system or in conjunction with your own sound/music system.

System Specifications

Physical Dimensions	9.2" Width 1.2" Height 8.0" Depth 3.2 lbs.
Voltage &Power	**Power**: 2.0 amps at 9V D.C. (18 Watts) **Min. Input Operating Voltage**: 7.5 Volts D.C. **Max. Input Operating Voltag**e: 13.0 Volts D.C.
CD Input	**Connector Type**: RCA **Input Impedance**: 10 Ohms (left & right channels) **Max. Input Voltage Level**: 1.0V R.M.S. (into 10k Ohms) **Min. Data Input Amplitude**: 125 mV peak-to-peak (into 10k Ohms)
Microphone In	**Connector Type:** Mono 1/8" **Input Impedance**: 1.8k Ohms (unbalanced) **Max. Input Voltage Level**: 1.0 Volt R.M.S. (unbalanced) **Output Gain Adjustment Range**: 0 - 100% **Max. Power Gain**: Greater than 55 db (Mic-In to Headphone Out)
Audio Out	**Connector Type**: RCA **Max. Output Voltage Level**: 1.6 Volts R.M.S (left & right channels into 600 Ohms load) **Total Harmonic Distortion (THD)**: Less than 0.2% max. at 100mW/channel
Headphone Out	**Connector Type**: Stereo 1/8" **Max. Power Output**: 80 mW/channel (into 32 Ohms) **Total Harmonic Distortion (THD)**: Less than 0.2% max. at 100mW/channel **Output Impedance**: 2.0 Ohms