Quiet **Time**™

GT–90 User Guide

Version 1.0   February 1, 1997

a product of

M U S I C

S Y S T E M S

R E S E A R C H

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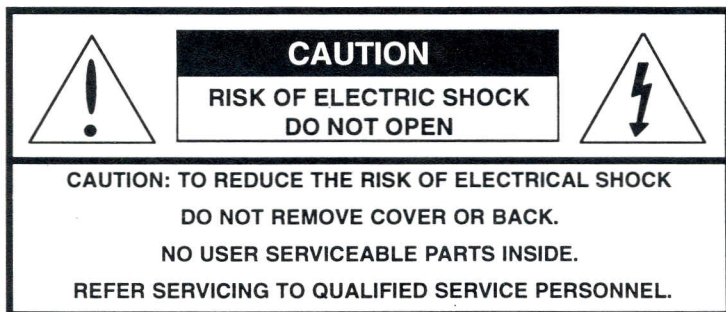
Care and safety information

Important: Read This First!
Safety Instructions

This symbol is intended to alert the user to the presence of important operating 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 Music Systems Research when the QuietTime system is installed and operated in its normal fashion. Do not attempt, or commission others, to modify any portion of the QuietTime system unless specifically authorized by Music Systems Research.

Important Safety and Installation Instructions

Information relating to possible personal injury, electric shock and fire hazard possibilities has been included in this list.
Warning—When using electrical appliances, basic precautions should always be followed, including the following:

Read all instructions before using the product.

The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.

Do not open the cover of the GT–90 under any circumstances.

Power is supplied through a polarized plug (one wide blade). Connect only to an outlet designed for a polarized plug.

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.

Locate your QuietTime piano and GT–90 control unit away from direct sunlight, water or moisture, or hot or cold air currents.

If the QuietTime piano or the GT–90 control unit is to remain unused for an extended period of time, its power supply should be disconnected.

If repair is necessary, refer only to qualified service personnel.

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.

This product should be located so that its location or position does not interfere with proper ventilation.

Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

The product should be serviced by qualified service personnel when:

The power supply cord or plug has been damaged; or

Objects have fallen on, or liquid has been spilled onto the product; or

The product has been exposed to rain; or

The product does not appear to operate normally or exhibits a marked change in performance; or

The product has been dropped, or the enclosure damaged.

FCC Information

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, uses, 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 not expressly approved by the party responsible for compliance (MSR) could void the user's (your) authority to operate the equipment

General Operating Notes

When the control unit is turned off from the front panel, the GT–90 will continue to consume power (approximately 5 watts). Disconnecting your QuietTime piano or the GT–90 from the power source will completely shut down the unit.

Make sure that the GT–90 has adequate ventilation underneath, behind and on top. Do not place the GT–90 on any type of soft, yielding surface such as a pillow or towel. Also, do not place objects or containers on the GT–90.

If your QuietTime piano or GT–90 fails to operate in a manner consistent with the instructions in this manual please disconnect it from your power source and contact your piano retailer, piano technician or Music Systems Research.

Technical Assistance

Technical assistance is available online through the World Wide Web at **www.pianodisc.com**.
E-mail may be directed to **techsupport@pianodisc.com**.
Technical support is available by telephone from 8:00AM—Noon and 1:00PM—5:00PM Pacific time at **(916) 567-9999**.

Contents

Note: Important care and safety information has been included on pages iii and iv of this manual. Please review and understand all of this information before using your QuietTime piano and GT–90.

Chapter 1　*About QuietTime*

Welcome

Welcome to QuietTime, the most advanced product of its kind available today.

QuietTime combines the original, impossible to duplicate "feel" of a real acoustic piano with the latest in digital piano technology. It truly is the best of both worlds!

With your new QuietTime system and GT–90 control unit you can:

- Play your piano as you would normally;
- Convert your acoustic piano to a digital with the flip of a switch;
- Practice or play without disturbing others;
- Enjoy a variety of high performance sounds;
- Use your piano as a MIDI controller; and
- Many, many other wonderful possibilities.

This User Guide will get you started on your musical exploration of the QuietTime system and your GT–90 control unit. We've tried to make the instructions as friendly as possible to ensure your maximum enjoyment of our product. Your satisfaction is our primary goal!

Mail in your Registration Card

Take a moment now to fill in and mail the Registration Card. Doing so will entitle you to full warranty protection, and will enable us at Music Systems Research to better serve you.

Review all safety information

Please review all care and safety information included in this manual (see pages iii and iv). This includes information provided as part of compliance with UL and FCC standards.

In this section

The remainder of this chapter gives you a general overview of QuietTime, how it works and what you might do with it. Included is information about QuietTime's compatibility with home, studio, commercial and worship environments. If you want to start using your QuietTime right away, turn to Chapter 2, "The QuietTime User Interface" for operating instructions.

What is QuietTime?

QuietTime is a combination of amazing mechanics and clever computer technology. This new product is really three different remarkable innovations that, when combined, make the seemingly impossible a reality. These are:

The Mute Rail. Controlled by a lever under the keyboard of your QuietTime piano, this mechanism mechanically silences your piano with a specially designed padded rail located just below the hammers. When moved into position this rail stops the hammer motion just before hitting the strings. This unique innovation preserves the "feel" of your acoustic piano while opening up a whole range of musical possibilities never before available.

The Touch Film Technology (TFT) Strip. Sitting invisibly under the piano keys, the TFT strip captures each note played and transmits that information to the GT–90 control unit. It can also receive information from the unit, allowing the QuietTime system to mold itself to the idiosyncrasies of virtually any piano. The TFT strip is composed of 88 thin touch responsive "fingers", each about the thickness of a piece of paper. These fingers are thin enough to be virtually undetectable by the player but resilient enough to withstand millions of key impacts over many years of service.

The GT–90 QuietTime control unit. Created by Music Systems Research exclusively for the QuietTime product, this little box is designed to sit comfortably atop any vertical or grand piano, and represents the state of the art in acoustic/digital piano synthesis. Features that many QuietTime owners will appreciate include:

- Easy push button control
- Versatile sound combinations
- Two headphone jacks
- Up to 32 note polyphony
- Flexible volume control
- Connects easily to your home stereo

QuietTime in your 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.

QuietTime brings a whole new dimension to the household piano. Homeowners will appreciate not only the beauty of the instrument but the streamlined implementation of the QuietTime features. Traditional decor can be preserved while still having easy and complete access to an amazing array of new musical possibilities.

QuietTime allows the student in your home to practice privately, without disturbing others and free of the discomfort of knowing that others may be listening critically.

QuietTime may also be used to make a private performance into a public one. The control unit is easily connected to most home stereos, allowing you to record a performance directly from the piano, without microphones and without recording household noises. Also through a home stereo the pianist's performance can be heard through your speaker system, making it easier to hear piano music in different household locations. For instance, by placing speakers outside, garden party attendees can enjoy the music without having to move the piano outdoors.

QuietTime in your teaching studio

QuietTime is an excellent teaching tool. Since it is first and foremost a piano, piano teachers are usually satisfied with the operation and "feel" of a QuietTime piano.

When the piano lesson needs to be private, QuietTime is equipped with two headphone jacks, one each for student and teacher. A teacher can work with a student without disturbing others.

QuietTime for the professional pianist

Professional pianists often turn their noses up at the prospect of practicing or performing on a "keyboard". Because electronic keyboards do not have the same "feel" as an authentic piano, many performers deny themselves the benefits of modern technology to preserve the integrity of their performance standards. QuietTime gives accomplished pianists access to technology without sacrificing tradition or compromising musical standards.

QuietTime in your recording studio

QuietTime is a welcome addition to the recording studio environment. Each of the components which make up QuietTime—the TFT strip, mute rail and GT–90 control unit—have applications uniquely suited to the studio. Pianists can generate MIDI performance information from a real piano, technicians can access the GT–90's preset sounds and layers via the MIDI In and MIDI Out ports, and performers can create ensemble recordings without having to place the piano and pianist in another room.

QuietTime in your place of worship

QuietTime is uniquely suited for the worship environment. Not only do many of the sounds lend themselves to enhancement of the worship experience, but many of the features meet or exceed the needs of the modern church musician, helping to solve several common problems in the process. Some of these problems could include:

You have an organ but no organist. Many pianists are helpless when faced with a real church organ. Knobs to pull, notes to play with your feet—the playing field just isn't the same. QuietTime lets pianists be pianists but SOUND like organists.

You would like an organ and a piano but cannot afford both. Sometimes an organ is simply too big and loud, and sometimes the piano isn't big enough. Many worship environments need the flexibility of both but simply cannot justify the expense. QuietTime offers the best of both piano and organ sounds. QuietTime is the only real choice when faced with this common dilemma.

Your pianist can't make it today. By combining your QuietTime piano and GT–90 with an external sequencer, church hymns and meditation music can be created ahead of time and performed automatically, without the pianist present. It will sound as if your pianist were actually there!

The piano isn't loud enough. The performance can be amplified through the public address system using the audio outputs of the GT–90. Most organs need their own amplification system. This additional expense can be avoided by using a regular public address system or sound system.

QuietTime in your place of business

Many different commercial environments include a piano. Some examples of these are restaurants, cocktail lounges, hotel lobbies, department stores and many others. Many of these environments are so enhanced by the presence of pianos and pianists that they would never give them up. However, there can be challenges, some of which include:

- Those seated farthest from the piano can't hear the performance.
- Those seated nearest to the piano can't hear themselves think.

Your QuietTime GT–90 control unit comes equipped with audio outputs which are just as compatible with commercial sound systems as they are with home stereos. By muting the piano and amplifying the GT–90 your establishment can distribute the sound evenly throughout their environment, often through the same system that you use to provide background music.

QuietTime as a digital piano

Like many of the digital pianos on the market today your QuietTime piano has a substantial selection of instrument sounds that you can select when playing. With the simple touch of a button you can select from among sixteen different sounds including piano, organ, and strings. Also, sounds may be layered by pressing two sound buttons at the same time. In all there are forty sounds and layering combinations available.

Conclusion

The examples in this chapter represent just a fraction of the potential applications of QuietTime. A product as versatile and unique as QuietTime lends itself well to many musical environments and applications. We at Music Systems Research are confident that QuietTime has a rightful place at the forefront of the music industry, in the music profession and in every musician's home or studio.

Chapter 2 *The QuietTime User Interface*

What is an interface?

The user interface consists of everything that you do to interact with your QuietTime piano: playing the piano, operating the mute rail, and, most importantly, operating the GT–90 control box that comes with your QuietTime piano.

Chances are that you already know something about playing the piano, and operating the mute rail is a snap. Therefore this chapter will focus on the third element of QuietTime: the GT–90 control box.

Before you get started

Before operating your QuietTime piano be sure of the following:

The GT–90 control box is properly connected. Usually the technician who delivers and sets up your QuietTime piano will hook up the QuietTime control box. If for some reason you have to do this yourself, please refer to "Appendix A: Setting up your GT–90" for instructions on how to properly hook up the QuietTime control box.

The correct power source is available. In the United States your QuietTime piano uses a standard 120 volt AC household electrical outlet as a power source. In other countries the QuietTime piano is usually equipped with a power supply and cord that is compatible with the prevailing voltage standards of that geographic area. If you have any questions concerning compatibility with local electrical standards, please consult your QuietTime retailer **BEFORE** connecting your QuietTime piano to a power source.

The piano is properly plugged in. In vertical (upright) pianos the electrical cord leading to the power supply can usually be found extending out from a small hole in the back of the piano. Vertical piano owners should be sure that the cord is securely plugged into the outlet before moving the piano against the wall. Also be careful not to crush the cord or plug under or against the piano. Grand pianos will have a cord extending from the power supply which is usually mounted on one of the support beams under the piano. Connect this cord securely to a power source and avoid placing the cord where someone may trip over it.

Operating the GT–90
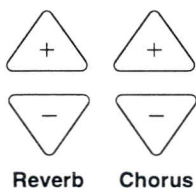
Your GT–90 is designed for easy and quick operation and access to features. By taking a moment to review the following information you will be well on your way to enjoying the exciting array of features available to you.

On the opposite page is a drawing of the front panel of the GT–90. Each button or item on the front panel is indicated by an arrow and indexed. A brief explanation of each item appears below the drawing.

Turning it on and off

To turn on the GT–90:

Press the Volume knob in. When activated the red LEDs (Light Emitting Diodes) above the sound selector buttons will flash sequentially and "count down" while information stored in the GT–90's permanent memory is loaded into memory. After the "countdown" is complete the GT–90 will automatically select the first sound, "Acoustic Piano".

To turn off the GT–90:

Press the Volume Knob. Pressing the knob again places the GT–90 in standby mode. When placed in standby mode there is still a small amount of power to the unit but all lights on the front panel will turn off.

The reverb and chorus controls

The four triangular buttons allow you to modify the chorus and reverb settings for the currently selected sound or sound combination. When pressed the LEDs above one of the rows of preset buttons will light up and give you an approximate indicator of the current reverb or chorus settings.

Take a moment and press a few of these buttons to see how they feel and to observe the behavior of the LEDs. Notice that pressing and holding the "plus" reverb button will cause the LEDs above the top row of preset buttons to illuminate sequentially from left to right, indicating that the reverb amount is increasing. Pressing and holding the "minus" reverb button will cause the LEDs above the top row of presets to turn off sequentially from right to left, indicating that the reverb amount for the selected sound has been decreased. The "chorus" feature operates in the same manner, with the LEDs on the bottom row indicating progress of chorus control.

The MIDI activity indicator

This light will illuminate whenever MIDI information is received by the GT–90 (either through the MIDI In port on the back of the unit or from the TFT strip). It will also flash whenever a sound button or valid combination of sound buttons is pressed.

The GT–90 control unit (front view)
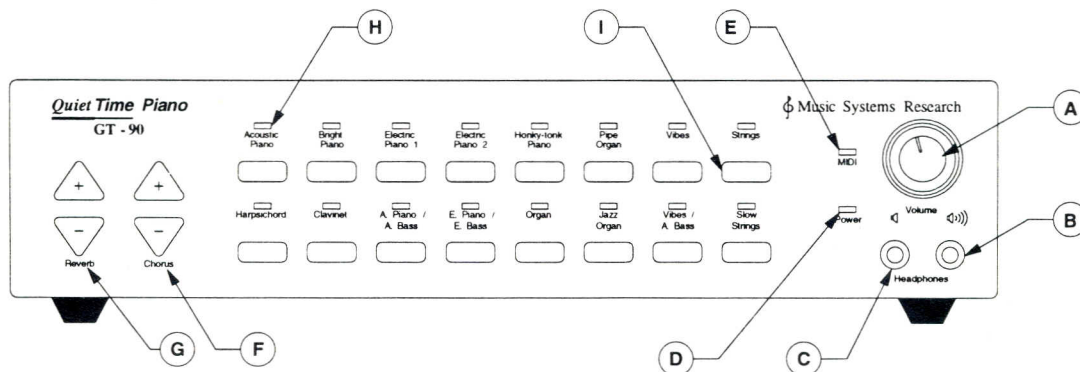
A   **Power/Volume** Controls overall volume for the unit. Pushing the Volume knob will also turn the control box on and off.

B,C **Headphone jacks** For use with MSR's headphones or equivalent. Plugging headphones into the left jack (C) will automatically mute any externally amplified sound from the GT–90. Plugging them into the right jack (B) will have no effect on externally amplified sound. Both may be used simultaneously (externally amplified sounds will be muted).

D   **Power Indicator Light** This green LED will illuminate whenever the GT–90 control box is on.

E   **MIDI Activity Monitor** This amber LED will turn on or flash whenever the GT–90 either generates MIDI data internally or processes MIDI from an external source.

F   **Chorus Controls** These buttons allow you to adjust the chorus amount for the selected sound or sound combination.

G   **Reverb Controls** These buttons allow you to adjust the reverb amount for the selected sound or sound combination.

H   **Sound Indicator Lights** These red LEDs will illuminate to indicate which sound or sound combination is currently selected. When two sounds are layered the LED above each of the selected sounds will illuminate.

I   **Sound Buttons** These sixteen buttons allow you to select various sounds. Certain buttons may be pressed in tandem to allow sound layering. A small red LED above each button will illuminate to indicate a selected sound.

Working with your GT–90

To summarize, the way you will operate your GT–90 is as follows:

- Use the Volume knob to turn the unit on and off, and to control the volume (the green power LED will illuminate and stay lit while the GT–90 unit is active);

- Press a sound button or combination of buttons to access different sounds in your GT–90; and

- Use the Reverb and Chorus controls to modify the reverb and chorus settings of a selected sound or combination of sounds.

Chapter 3   *Basic QuietTime Operation*

Silent Play Mode

For those times when you want to play or practice without disturbing your family or neighbors, use the Silent Play Mode. When activated the Silent Play Mode allows you (and only you) to hear your performance through stereo headphones. Now you can play or practice in complete privacy!

To activate Silent Play Mode:

1. **Locate the muting lever.** Under the keyboard of your piano (usually towards the left side) there is a lever. When rotated this lever will mute your piano. This mechanism, developed exclusively by Music Systems Research, allows you to play all of the keys on your piano without having the hammers actually hit the strings.

2. **Rotate the lever.** Move the lever into position (usually clockwise) and play a few notes on the piano. The piano should now be muted. Rotating the lever counter-clockwise will allow you to once again play your piano as you would normally.

3. **Press "Volume" to turn on the QuietTime control box.** If your QuietTime GT–90 control box is already properly hooked up, simply press the "Volume" knob inward once to activate the control box. The display will light up and count down while it is loading the GT–90's sounds from memory. This only takes a few seconds after which your QuietTime system is ready for use.

4. **Locate the headphone jacks.** The two headphone jacks are located below the Volume knob on the right side of your GT–90 control box front panel. Using the left jack will automatically disable any other sound amplification devices (such as your home stereo) you may have hooked up to your GT–90; using the right jack will not.

5. **Plug in and put on your headphones.** Your QuietTime piano comes equipped with a set of stereo headphones. Look on the headphones to see which earpiece goes on the left or right side and put them on. Now plug the headphones into one of the headphone jacks. If you are not using any other device to amplify the QuietTime piano it does not matter which jack you use, otherwise you should use the left jack.

6. **Adjust the volume and play.** Play a few notes and adjust the volume by turning the "Volume" knob until you reach a level that you are comfortable with. Play a few notes. Notice that, just like an acoustic piano, the harder you hit a key the louder the note sounds. Also, try the damper (right) and soft (left) pedals. These also operate just as you would expect from a regular acoustic piano.

Note: Usually the technician who delivers and sets up your QuietTime piano will hook up the QuietTime control box. If for some reason you have elected to do this yourself, please refer to "Appendix A: Setting up your GT–90" for instructions on how to properly hook your QuietTime piano to the GT–90 control box.

Selecting different instrument sounds

When your piano is in Silent Play Mode it is, of course, not actually producing the sounds you hear through your headphones. Instead what is happening is that the TFT strip under the keys of your QuietTime piano is sending signals to the GT–90 control box. These signals tell the GT–90 which notes you are hitting, how hard you are hitting them and when you are releasing them. The GT–90 is then adding the currently selected instrument sound and sending that through the headphones for you to hear

After turning on your GT–90 control box the first sound selection, "Acoustic Piano", will be automatically selected. You may change this sound to one of the fifteen other sounds simply by pressing the button under the desired sound. These sixteen sounds are described in the table on the next page (page 19).

There are a total of forty different sounds available in your GT–90. The first sixteen can be accessed by pressing each of the sixteen sound buttons. The remaining twenty–four are actually combinations of some of these original sixteen sounds. Not all combinations are possible or desirable; the valid combinations (called "layers") are listed on page 20.

GT–90 instrument sounds

Acoustic Piano A rich and expressive stereo grand piano sound. This sound is automatically selected by the GT–90 every time the power to the control box is turned on.

Bright Piano A modern sounding piano. This preset makes maximum use of the GT–90's polyphonic capabilities by spreading the sound out evenly across the stereo horizon.

Electric Piano 1 A luscious modern keyboard sound similar to those often heard in today's music.

Electric Piano 2 Another electronic keyboard sound, this one layered with a higher octave bell-like quality.

Honky–Tonk Piano Sounds just like an old saloon piano. Great for barrel house, ragtime, stride or early jazz styles.

Pipe Organ This selection emulates a two manual church organ. When the soft pedal is depressed a softer organ sound is heard; when it is raised a full cathedral organ sound is heard.

Vibes Short for vibraphones, a percussion instrument with tuned metal bars that are struck with mallets. An oscillator creates a vibrato, thus the name.

Strings A rich and expressive string ensemble sound. Very useful for layering with other sounds.

Harpsichord This selection emulates an authentic two manual harpsichord. The damper (right) pedal

is deactivated, and depressing the soft (left) pedal will add another set of harpsichord strings one octave lower. Also, all notes sound at a uniform volume regardless of how hard or soft they are struck.

Clavinet Another plucked string keyboard instrument sound similar to the harpsichord. Useful for baroque keyboard music.

A Piano/ A Bass A split selection featuring the acoustic piano sound, but with an acoustic bass sound from the far left of the keyboard up to the E below middle C. Playing single notes in the bass and chords in the right hand simulates a string bass/piano combo.

E Piano/ E Bass Another split selection featuring electronic keyboard and bass sounds. E below middle C and down is a cool bass sound, the rest of the keyboard features a smooth electric piano sound.

Organ An electronic organ sound with a slight vibrato string feel. Reminiscent of some old electronic organ sounds that are regaining popularity in modern music.

Jazz Organ A slightly percussive organ sound often used for jazz and gospel music.

Vibes/A Bass An acoustic bass and vibraphone split. The far left of the keyboard up to the E below middle C features an acoustic bass sound, the remaining keyboard is a vibraphone sound. This combination is a popular one for modern jazz.

Slow Strings A deep, beautiful string sound that is useful for slow, expressive music. A very popular preset for layering with other sounds for a rich full effect.

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Layering Sounds

By layering or combining sounds many additional sound possibilities are available. To access these, simply press the desired buttons simultaneously. If the two button combination you selected is valid then the red LEDs above each of the selected sounds will illuminate.

Not all combinations of sounds are desirable or possible, so we have listed all valid layering combinations below:

Acoustic Piano may be layered with Electric Piano 1, Electric Piano 2, Strings and Slow Strings.

Bright Piano may be layered with Electric Piano 1, Electric Piano 2, Strings and Slow Strings.

Electric Piano 1 may be layered with Acoustic Piano, Bright Piano, Strings and Slow Strings.

Electric Piano 2 may be layered with Acoustic Piano, Bright Piano, Strings and Slow Strings

Pipe Organ may be layered with Harpsichord, Clavinet, Strings and Slow Strings.

Strings may be layered with Acoustic Piano, Bright Piano, Electric Piano 1, Electric Piano 2, Pipe Organ, Harpsichord, Clavinet, APiano/ABass and EPiano/EBass.

Harpsichord may be layered with Strings, Slow Strings and Pipe Organ.

Clavinet may be layered with Strings, Slow Strings and Pipe Organ.

APiano/ABass may be layered with Strings and Slow Strings.

EPiano/EBass may be layered with Strings and Slow Strings.

Slow Strings may be layered with Acoustic Piano, Bright Piano, Electric Piano 1, Electric Piano 2, Pipe Organ, Harpsichord, Clavinet, APiano/ABass and EPiano/EBass.

Effects

Effects are changes to the nature of the sounds produced by the GT–90. Two of the more popular effects, Reverb and Chorus, can be easily adjusted to suit the taste of the listener.

Both the reverb and chorus effects can be adjusted using the control buttons on the front panel of the GT–90.
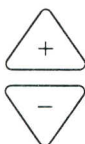
Reverb

Reverb is an effect that adds reverberation to a sound, as you would hear in a concert hall. You can control the apparent amount of reverb for any selected sound or sound combination by using the buttons provided for this purpose. Pressing the "plus" button above the word "reverb" on the front panel of your GT–90 will increase the amount of reverb; pressing the "minus" button will decrease reverb amount.

Reverb

When adjusting the reverb the LEDs above the top row of sound selector buttons will illuminate to give you an approximate indication of the amount of reverb. As reverb increases the lights above the top row of buttons will illuminate sequentially from left to right. When all eight lights are illuminated, this indicates that maximum reverb has been applied to the selected sound. Conversely, as reverb is decreased the LEDs will go out sequentially from right to left. When there are no more LEDs lit this indicates that no reverb effect is being applied to the selected sound.

Chorus

Chorus is an effect that simulates the presence of more than one instrument by "thickening" the sound. For instance, if you want the string sound in your GT–90 to sound like a larger ensemble of strings you would adjust the chorus setting to achieve that effect. With your GT–90 you can adjust the overall chorus setting by using the buttons provided for this purpose. Pressing the "plus" button above the word "chorus" on the front panel of your GT–90 will increase the amount of chorus; pressing the "minus" button will decrease chorus amount.
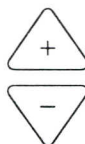

Chorus

When adjusting the chorus the LEDs above the bottom row of sound selector buttons will illuminate to give you an approximate indication of the amount of chorus. As chorus increases the lights above the bottom row of buttons will illuminate sequentially from left to right. When all eight lights are illuminated this indicates that that maximum chorus has been applied to the selected sound. Conversely, as chorus is decreased the LEDs will go out sequentially from right to left. When there are no more LEDs lit this indicates that no chorus effect is being applied to the selected sound.

Demonstration Mode

Your GT–90 has a built–in demonstration mode that allows you to listen to and evaluate each of the sounds and combinations without actually having to play the instrument. To access the demonstration mode simply turn on the GT–90 while holding down the "plus" reverb button. After the GT–90 goes through its startup routine you can hear a short sample of music in a style appropriate to any sound or sound combination by selecting any sound or valid combination of sounds. Each time a sound button or valid combination of buttons is pressed a short musical segment featuring the selected sound or layer will automatically play, after which the GT–90 may be played normally. To leave the demonstration mode simply turn the GT–90 control box off and back on again.

Auto Demonstration Mode

An auto demonstration mode is also available. While in this mode the GT–90 will automatically play every pre–recorded demo sequence for every possible sound and valid sound combination in an endless loop until the control box is turned off. To activate the auto demonstration mode power up the GT–90 while pressing and holding the "plus" chorus button. After the GT–90 finishes starting up press the "Slow String" button. After a short LED test, playback of each of the pre–recorded demos will begin and will not stop until the unit is turned off. While in this mode the QuietTime piano will not play. To once again play your QuietTime piano and GT–90 normally simply turn the GT–90 control box off and then on again.

MIDI In

The sounds and layers in the GT–90 can be accessed from another keyboard or MIDI transmitting device by using the MIDI In port on the back of your GT–90. Simply connect the MIDI Out port of an external keyboard, MIDI controller or other MIDI transmitting device to the MIDI In port of the GT–90 with a MIDI cable. Once this connection is made any MIDI note and pedal information transmitted on MIDI channel 1 from an external MIDI source will activate the GT–90.

MIDI Out

Any MIDI information generated from the keyboard of your QuietTime piano or from an external MIDI device via MIDI In (see above) is communicated to a sound generating card in your GT–90. This information is also transmitted to the MIDI Out port. Depending on the sound or layering combination selected the data may be on more than one MIDI channel. Therefore, in order to ensure that data is only being transmitted on MIDI channel 1 (the most practical use for generating MIDI from your QuietTime piano), you should select "Acoustic Piano" when transmitting MIDI data to an external device via the MIDI Out port.

MIDI Thru

Any MIDI data transmitted to your GT–90 via the MIDI In port is automatically echoed through the MIDI Thru port. This allows the GT–90 to be used as part of a chain of MIDI devices, if necessary.

Setting up your GT–90

Overview

You will rarely need to hook up or disconnect your QuietTime piano or the GT–90 control unit. However, on occasion, circumstances may arise in which you will need to disconnect and/or connect the GT–90. Such circumstances may include (but are not limited to):

- You need to move the piano to another location.

- You bought the piano second hand and want to set it up yourself.

- For safety reasons (electrical storm, natural disaster, etc.) you feel it prudent to disconnect your piano.

- You need to store your piano.

- You need to return the GT–90 for service or repair.

Proper care and safety

While connecting or disconnecting your GT–90 is a very easy, simple and completely safe procedure, we are obliged to ask you to please review the safety information on pages iii and iv of this manual before attempting to connect or disconnect the GT–90 control box from your QuietTime piano. Also, please take all common–sense precautions you would ordinarily observe when working with electronic equipment.

Lastly, whenever possible and practical, it is highly recommended that you allow a Music Systems Research–trained technician to disconnect, move or connect your QuietTime piano and GT–90.

IMPORTANT

One more note: Please DO NOT attempt any repairs to the GT–90 yourself. Not only could you injure yourself or the unit, but you will also be voiding your warranty by opening the GT–90 control unit.

The mute rail

The mute rail requires no special handling when a QuietTime piano is moved or stored. However, please be sure that anyone who moves your QuietTime piano is aware that your piano has a mute rail so that they can take special care to avoid inadvertently knocking it out of adjustment.

Cable connections

If a GT–90 has already been disconnected from a QuietTime piano, then there are usually three cables protruding (if you are facing the piano) from behind the upper right region of the piano. These are, in order of size:

* a thin DC connector which connects to an AC/DC converter inside your QuietTime piano (the other end of which, by the way, is usually protruding from behind the bottom right of your piano and is the plug that you would plug into the wall—but not yet!!);

* a 9–pin connector which is attached to the pedal circuit board inside your QuietTime piano (this board detects the movement of the soft, sostenuto and damper pedals); and

* a 15–pin connector which connects your GT–90 to the TFT strip under the keys of your QuietTime piano.

Basic connection

On the back of your GT–90 control box (refer to the illustration on the next page) are the receptacles for each of these plugs. Connect them in the following order (note: for maximum safety please be sure that the piano is disconnected from the main power source before proceeding):

1. Connect the 9–pin connector to the receptacle labeled "Pedal".

2. Connect the 15–pin connector to the receptacle labeled "TFT Record".

3. Connect the thin power cable to the receptacle labeled "9VDC".

Lastly, plug the power cable that protrudes from the bottom of your QuietTime piano into your power source. Your QuietTime system is now ready for operation.

Basic disconnection

To disconnect your GT–90 control box, first unplug the piano from your power source, then disconnect the three cables described above. Be sure to store or place the GT–90 away from moisture or any locations where the unit may be jarred or damaged. DO NOT pull on the cables themselves—instead grasp and gently pull the actual connectors until they come away from the back of your GT–90.

The GT –90 control unit (rear view)
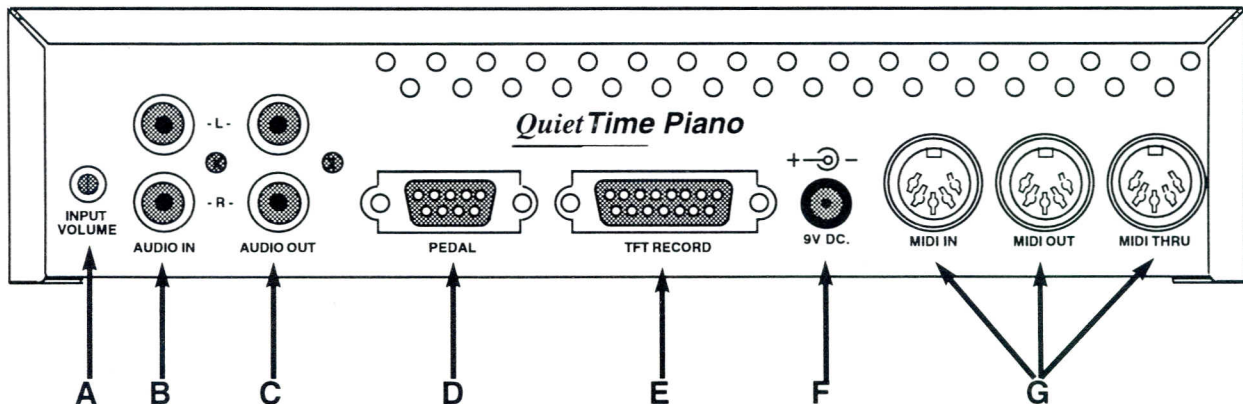
A **Input Volume** Allows you to control the volume of audio signals from Audio In and balance them with the sound level generated by the GT–90. Use a small flat–blade screwdriver to adjust.

B **Audio In** These jacks provide opportunity for mixing of other audio signals with those generated by your GT–90.

C **Audio Out** These jacks allow you to connect your GT–90 to an external powered speaker system, such as a home stereo or other amplification system. Output can be controlled by the Volume knob on the front of your GT–90.

D **9–pin pedal connector** Connects the GT–90 to a circuit board that monitors your pedal motion.

E **15–pin TFT strip connector** Connects the GT–90 to a circuit board that monitors the TFT strip under the keys of your QuietTime piano.

F **DC connector** Connects the GT–90 to a 9 volt AC/DC power converter inside your QuietTime piano. May also be used in conjunction with a 9 volt power supply to provide power to the GT–90 as a stand alone tone generator.

G **MIDI connectors** These connectors are standard for any MIDI–compatible device. They allow MIDI signals to travel to and from any other MIDI device, such as a sequencer, tone generator or keyboard controller.

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