

**Model 3800  
Stereo  
Control Console**

*Handbook of Instructions*

**innovaudio®**

*We Sound Better*



**marantz**®

**Model 3800  
Stereo  
Control Console**

MARANTZ CO., INC. • P.O. BOX 99 • SUN VALLEY, CALIFORNIA • 91352  
A WHOLLY-OWNED SUBSIDIARY OF SUPERSCOPE, INC., SUN VALLEY, CALIFORNIA 91352

# TABLE OF CONTENTS

INTRODUCTION .....	iv
AFTER UNPACKING .....	iv
GENERAL DESCRIPTION .....	1
PREPARATION FOR USE	
Phono Inputs .....	1
Tuner Inputs .....	2
Aux Inputs .....	2
Tape Inputs .....	2
Preamplifier Outputs .....	2
Scope Outputs .....	2
Tape Outputs .....	2
Speaker Connections .....	3
AC Power Connections .....	3
AC Outlets .....	3
OPERATING INSTRUCTIONS	
Preliminary Procedure .....	4
MAIN CONTROLS AND SWITCHES	
Power Switch .....	5
Program Selector Pushswitches .....	5
Tape Monitor Switch .....	5
Volume Control .....	5
Balance Control .....	5
Mode Switch .....	6
Tone Controls (Left and Right) .....	6
Tone Control Turnover Switches .....	6
Filter Switches .....	6
Loudness Switch .....	7
Main and Remote Speaker Switches .....	7
Phones Jack .....	7
Tape Rec-Eq Switch .....	7
Microphone Jacks .....	7
Tone Defeat Switch .....	7
USING TAPE RECORDERS WITH YOUR MODEL 3800	
Dubbing Jacks .....	8
Making Tape Recordings .....	8
Tape Monitoring .....	8
How to Make Tape-to-Tape Copies .....	8
Making Modified Tape Recordings .....	11
DOLBY SYSTEM	
Basic Dolby Process .....	11
Using the Dolby System .....	11
Dolby System Switch .....	12

DOLBY CALIBRATION	
How Often Calibration Is Necessary .....	12
Procedure for Record Calibration .....	13
For Recorders With Three Heads .....	13
For All Recorders .....	14
Use of the Dolby System as a Dynamic Noise Filter .....	14
Using the Dolby System on FM Broadcasts .....	14
FUNCTIONAL DESCRIPTION	
Technical Section .....	16
System Operation .....	16
TECHNICAL HIGHLIGHTS	
Phono Amplifier .....	18
Active Filter Networks .....	19
Time Delay Relay .....	19
Tone Control/Turnover Network .....	19
TECHNICAL SPECIFICATIONS .....	21
SERVICE NOTES	
Fuse Replacement .....	22
Cleaning .....	22
Repairs .....	22
Repacking for Shipment .....	22

# LIST OF ILLUSTRATIONS

1. Rear Panel .....	1
2. Typical Input/Output Connections .....	2
3. Speaker Switching Inputs Connection ..	3
4. Loudspeaker Connection .....	4
5. Operation of Speaker Switching Terminals .....	4
6. Front Panel .....	5
7. Stereo Phone Plug .....	7
8. Typical Connection for "Main" Recorder .....	9
9. Typical Connection for "External" Recorder .....	9
10. Typical Connection for "Main" and "External" Recorders .....	9
11. Typical Connection for "Main" and "Secondary" Recorders .....	10
12. Typical Connection for Three Recorders .....	10
13. Dolby Processing Chart .....	15
14. Functional Block Diagram .....	16 & 17
15. Fletcher-Munson Loudness Curves ....	18
16. Active Filter Network Characteristics .....	20
17. Tone Control/Turnover Network Characteristics .....	20
18. Repacking for Shipment .....	22

To achieve maximum performance and enjoyment from your Model 3800 Stereo Control Console, please study these instructions carefully. Follow the step-by-step procedures until thoroughly familiar with Stereo Control Console operation.

This handbook is divided into two parts. The first part covers installation and operation in simple, non-technical language. The second part covers the Model 3800 in more detail with a functional description of circuit operation.

For quick identification, references to the Model 3800 controls and connections are printed in **BOLDFACE TYPE**.

# AFTER UNPACKING

It is advisable to retain all original packing material to prevent damage should you wish to transport or ship the Model 3800 (refer to page 22 for repacking and shipping instructions). Be careful that you do not inadvertently throw away or lose the parts packed with the unit.

Please inspect your Model 3800 Stereo Control Console carefully for any signs of shipping damage. Our very strict quality control and professional pride ensure that each Model 3800 left the factory in perfect condition. If the unit is damaged or fails to operate, immediately notify your dealer. If the unit was shipped to you directly, notify the transportation company without delay. Only you, the consignee, may institute a claim against the carrier for shipping damage. Save the carton and all packing material as evidence of damage for their inspection. Should assistance be required, the Marantz Company will cooperate fully in assisting your claim.

To validate your warranty, fill out and mail the Warranty Registration Card within ten days of purchase.

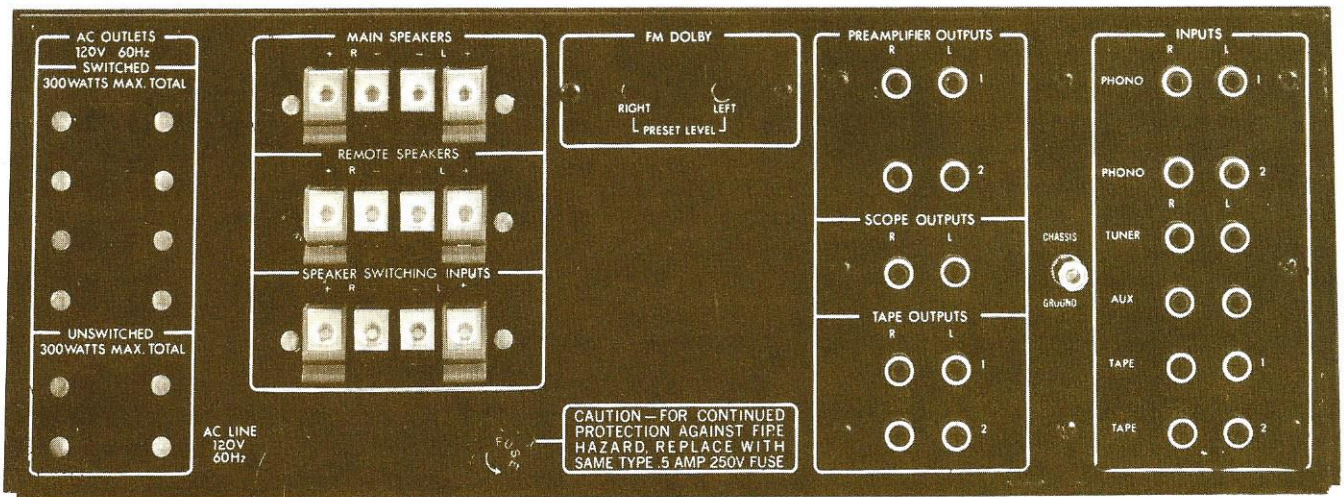


Figure 1. Rear Panel

## GENERAL DESCRIPTION

Your Model 3800 Stereo Control Console is the heart of your stereo system, the controlling point at which the program source is selected and processed for listening or recording. As you read this manual, you will realize that the Model 3800 is an extremely versatile instrument offering unparalleled flexibility. In addition to normal preamp functions, the Model 3800 features a full-process Dolby Noise Reduction System, variable-frequency turnover tone controls, and inputs for two turntables, three tape recorders, and two microphones. The 3800 can even make tape-to-tape copies while you listen to an entirely different program.

Along with innovative design, the Model 3800 features Marantz state-of-the-art technology. All electronic components used in the Model 3800 are precision devices selected for their close operating tolerances and long operating life. Your Stereo Control Console is thereby guaranteed to provide continuous high-quality low distortion performance.

## PREPARATION FOR USE

Figure 1 shows the location of the input and output jacks on the rear panel. These jacks are for "permanent" connections. Front panel jacks and their use will be discussed later.

All connections to the rear panel should be made with the power to the entire system turned off. The rear panel signal connections are arranged in stereo pairs. With the exception of loudspeakers, all signal connections to the Model 3800 should be made with shielded audio cables. To avoid confusion, connect one cable at a time between the 3800 and the other components of your system. This is the safest way to avoid cross-connecting channels or confusing signal source outputs with inputs.

### PHONO INPUTS

The two sets of **PHONO** jacks are intended for use with turntables having magnetic phono cartridges. Connect the turntable as shown in Figure 2.

If a hum is heard when playing records, this is an indication that the record player or its connections are inadequately grounded. Connect a separate ground wire from the turntable or record changer frame to the **CHASSIS GROUND** binding post of the Model 3800. If this is ineffective, try reversing the polarity of the turntable's power plug.

If hum persists, consult the instruction booklets for the turntable and/or phono cartridge.

**NOTE:** The supplied shorting plugs should be inserted into the **R** and **L PHONO** input jacks when no turntable is connected. The high gain and high impedance of the phono amplifier may introduce noise into the system if the jacks are not shorted with the plugs.

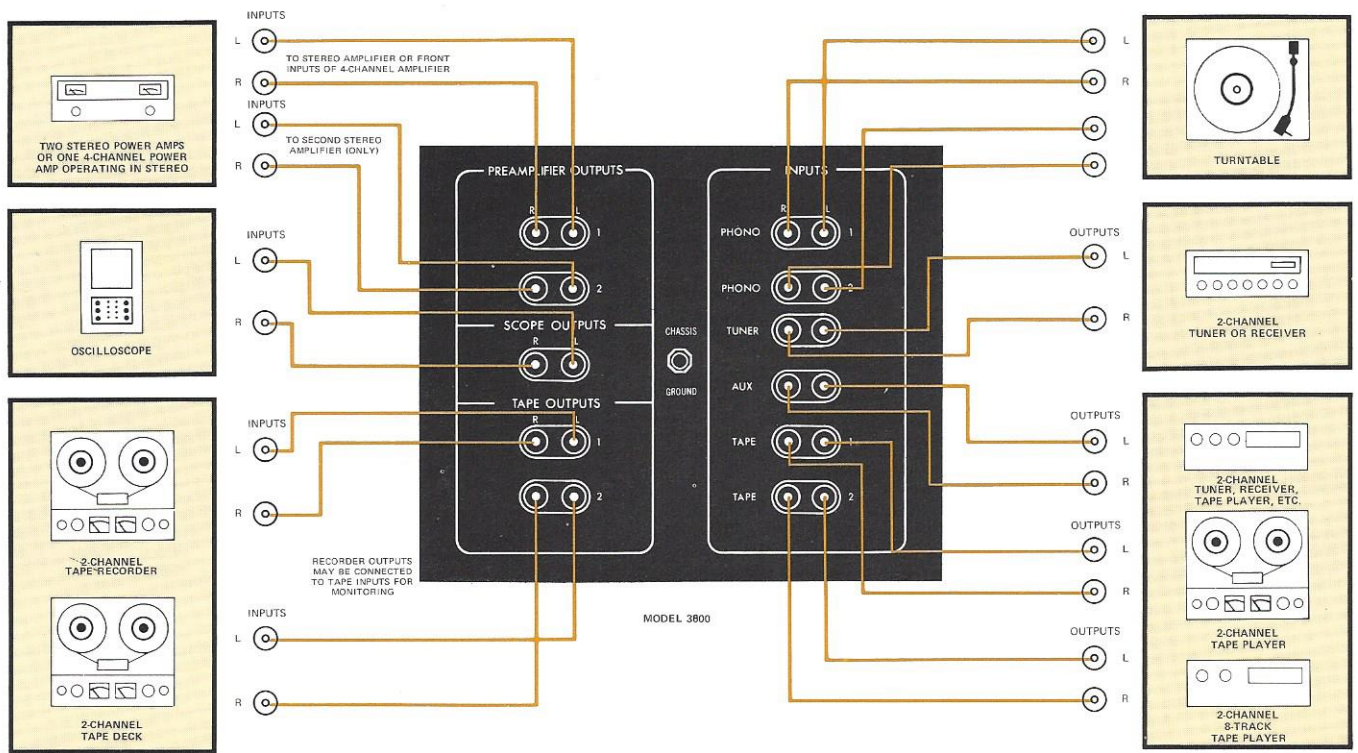


Figure 2. Typical Input/Output Connections

## TUNER INPUTS

The **TUNER** input jacks are used for connecting the line outputs of a stereo or monaural AM or FM tuner to the Model 3800. Connect the tuner as shown in Figure 2.

## AUX INPUTS

The **AUX** (auxiliary) input jacks permit connecting miscellaneous high-level program sources such as tape players with built-in preamplifiers, record players with RIAA equalized line outputs, or additional tuners or receivers.

## TAPE INPUTS

These jacks are the inputs to the tape monitoring sections of the Model 3800. They permit a tape recorder, tape player, or any high-level source to be played through the Model 3800. (See "Tape Monitoring", page 8).

## PREAMPLIFIER OUTPUTS

The Model 3800 uses dual **PREAMPLIFIER OUTPUTS** for the right and left (R and L) channels and has the capability to drive two

stereo power amplifiers simultaneously. When only one stereo power amplifier is used, its inputs may be connected to either set of **PREAMPLIFIER OUTPUT** jacks. The second pair of **PREAMPLIFIER OUTPUT** jacks may also be connected to a tape recorder so that the Model 3800 noise filters and tone controls may be used to improve the signal before recording. When recordings are made using this method, stereo headphones should be connected to the recorder for tape monitoring purposes. (See "Making Modified Tape Recordings", page 11.)

## SCOPE OUTPUTS

If you have a Marantz tuner with a built-in oscilloscope, connect the **SCOPE OUTPUTS** from the 3800 to the scope inputs on the tuner. You may then use the oscilloscope to evaluate the phasing, balance, and channel separation of any program source.

## TAPE OUTPUTS

These jacks feed the source signal, as selected by the program selector pushswitches, to the line inputs of each tape recorder for recording purposes. (See "Making Tape Recordings", page 8).

## SPEAKER CONNECTIONS

These terminals are used for connecting two sets of speakers to a power amplifier having only one set of outputs.

Using ordinary #18 gauge stranded two-conductor lamp cord, connect the outputs of the power amplifier directly to the **SPEAKER SWITCHING INPUTS** on the Model 3800 as shown in Figure 3. Then, connect the speakers to the **MAIN** and **REMOTE** terminals as shown in Figure 4, observing correct phasing (polarity) throughout. If the total length from amplifier to speaker for either channel exceeds 30 feet, use #16 gauge wire or heavier. The terminals operate as shown in Figure 5.

**CAUTION:** Ensure that the total power output connected to the **SPEAKER SWITCHING INPUTS** does not exceed 250 watts RMS per channel, continuous power.

## AC POWER CONNECTIONS

With the front panel **POWER** pushswitch "OUT", plug the **AC LINE** cord into an electrical outlet supplying the proper voltage.

## AC OUTLETS

Six **AC OUTLETS** on the rear panel supply power to associated components of the stereo system, including power amplifiers, tuners, tape recorders, and turntables. The four **SWITCHED** outlets are controlled by the Model 3800 **POWER** switch. The two **UNSWITCHED** outlets are not controlled by the **POWER** switch and can be used to supply power to any component having its own on-off switch.

**CAUTION:** Do not exceed the maximum total power ratings of the AC outlets. The **POWER** switch and other circuitry in the 3800 may suffer damage if forced to conduct excessive current.

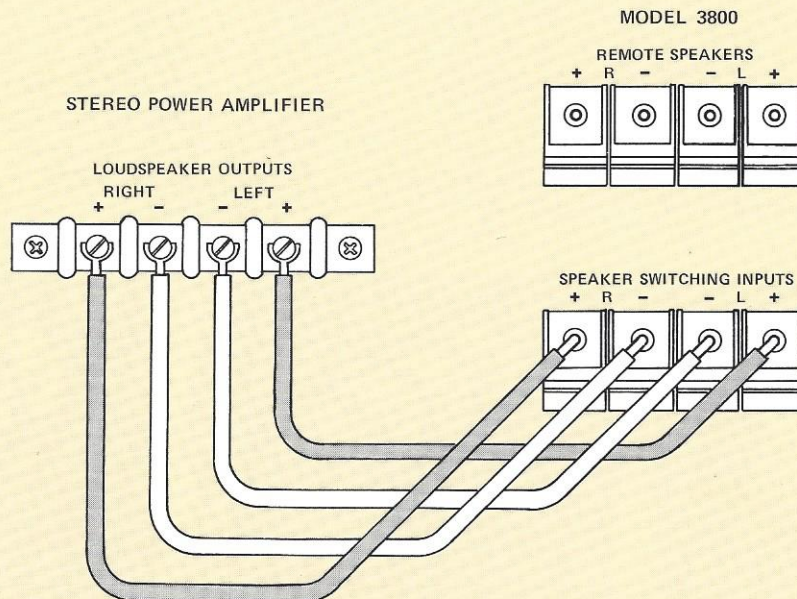


Figure 3. Speaker Switching Inputs Connections

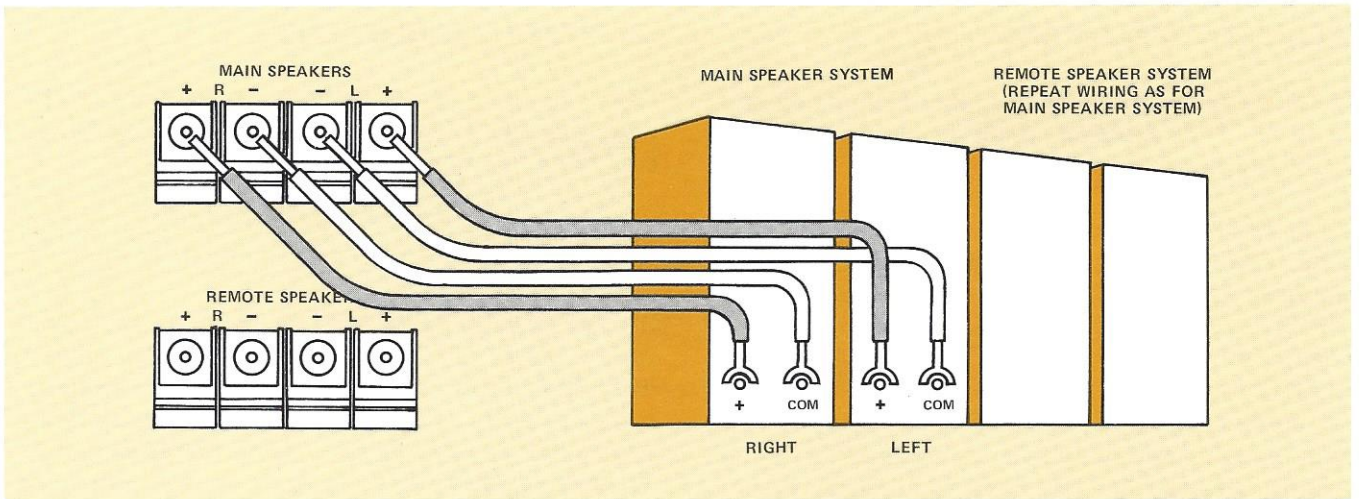


Figure 4. Speaker Connections

## OPERATING INSTRUCTIONS

When operating the Model 3800 for the first time, follow the step-by-step instructions as described in the Preliminary Procedure that follows. After becoming familiar with the Stereo Control Console, you may take full advantage of its many features and operating versatility.

### PRELIMINARY PROCEDURE

Connect the program source, power amplifier, and speakers as described in the section on "PREPARATION FOR USE". Then, set the controls and switches as follows:

<b>POWER</b> Switch	Out (off)
<b>VOLUME</b> Control	Minimum (Fully Counterclockwise)
<b>DOLBY SYSTEM</b> Switch	OFF
Program Selector Pushswitches	Desired Program Source
<b>MODE</b> Selector Switch	STEREO

<b>TAPE MONITOR</b> Switch	SOURCE Out (off)
<b>TAPE REC-EQ</b> Switch	Out (off)
<b>TONE DEFEAT</b> Switch	Mid Position
<b>TONE</b> Controls	Mid Position
<b>BALANCE</b> Control	Mid Position
<b>MAIN SPEAKERS</b> Switch	In (on)

After setting the controls and switches, proceed as follows:

- Depress the **POWER** switch. The pilot light will illuminate indicating that the unit power is on.  
NOTE: A time delay relay will momentarily mute the preamplifier output until all circuits have stabilized. Wait for the relay to "click in" before turning up the **VOLUME**.
- Play the desired program source.
- Rotate the **VOLUME** control to the desired listening level.

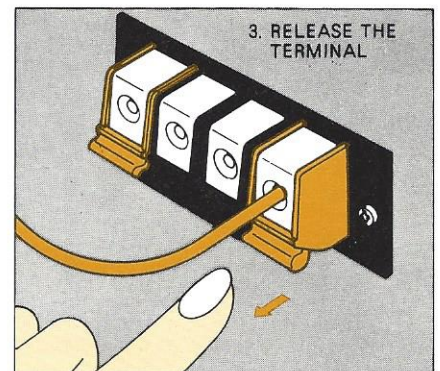
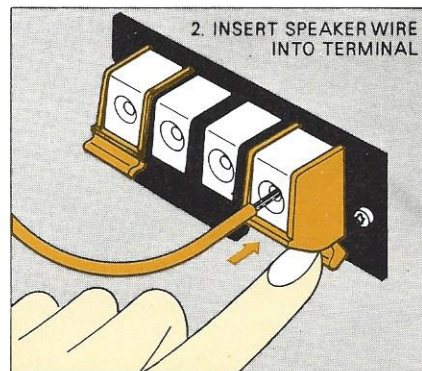
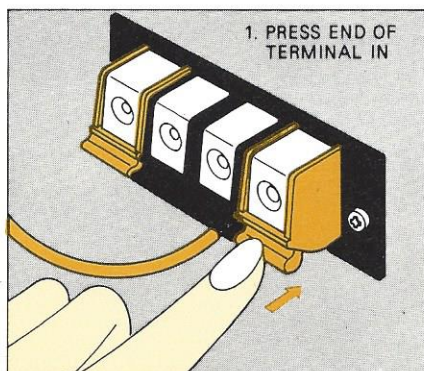


Figure 5. Speaker Wire Connection



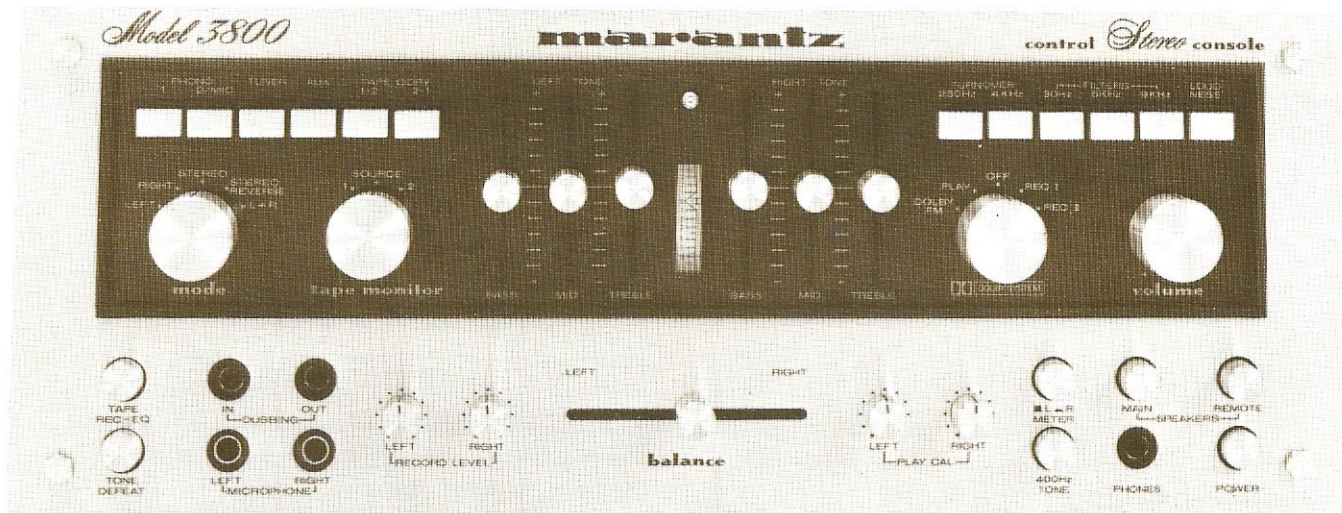


Figure 6. Front Panel

## MAIN CONTROLS AND SWITCHES

The following section will explain the front panel controls (see Figure 6). The controls will be discussed in order of usage, with the most commonly used controls discussed first.

### POWER SWITCH

The **POWER** switch, when depressed, supplies AC power to the Model 3800 and to the SWITCHED outlets on its rear panel.

### PROGRAM SELECTOR PUSHSWITCHES

The program selector pushswitches select any one of six program sources for listening or recording: **PHONO 1**, **PHONO 2/MIC**, **TUNER**, **AUX**, **TAPE 1**, or **TAPE 2**.

The **PHONO 2/MIC** pushswitch selects a turntable connected to the rear panel. However, if microphones are plugged into the front panel jacks, they will pre-empt the turntable and become the source input instead.

For information on the **TAPE COPY** pushswitches, see "How to Make Tape-to-Tape Copies," page 8.

### TAPE MONITOR SWITCH

The three-position **TAPE MONITOR** switch selects **TAPE 1**, the program **SOURCE**, or **TAPE 2**. When the **TAPE MONITOR** switch is set to position **1** or **2**, the signal applied to the **TAPE 1** or **TAPE 2** input jacks will be heard, respectively. When the **TAPE MONITOR** switch is set to the **SOURCE** position, the program source selected by the program selector switches will be heard. For tape recording, refer to "TAPE RECORDERS AND THE MODEL 3800", page 8.

### VOLUME CONTROL

The **VOLUME** control simultaneously adjusts the signal level of both channels while maintaining stereo balance. The **VOLUME** control does not affect the signal level available at the **TAPE**, **DUBBING**, or **SCOPE** output jacks.

### BALANCE CONTROL

This control alters the level of either output channel in situations where it is necessary to correct unbalanced programs sometimes encountered in older stereo recordings or in stereo broadcasts. As it is moved from its center position, it decreases the level in one output channel while maintaining the level in the other channel.

## MODE SWITCH

The five-position **MODE** Selector switch chooses the mode or manner in which program source signals are reproduced by the stereo system.

With the switch set to **LEFT**, the left channel signal of the program source is applied to the left and right channel outputs. When set to **RIGHT**, the right channel signal of the program source is applied to the left and right channel outputs. These **MODE** switch positions are useful in evaluating stereo separation.

When set to **STEREO**, the left channel signal of the program source is applied to the left channel outputs and the right channel signal of the program source is applied to the right channel outputs.

When set to **STEREO REVERSE**, the left and right channels of the program source are transposed, reversing the apparent left-right placement of the stereo program.

When set to **L + R**, the left and right channel signals of the program source are combined, and the combination (a monaural equivalent of the stereo program) is applied to the left and right preamplifier outputs.

## TONE CONTROLS (LEFT AND RIGHT)

Three **TONE** controls for each output channel, **BASS**, **MID**, and **TREBLE**, adjust the normally "flat" frequency response of the Model 3800 to suit individual listening preference.

The **BASS** control adjusts the low frequency tones, the **MID** control adjusts the middle frequency tones, and the **TREBLE** control adjusts the high frequency tones.

These controls may be adjusted to compensate for unbalanced room acoustics or any other tonal difference between the left and right channels of the stereo program. The **TONE** controls have no effect on the signals present at the **TAPE 1** or **TAPE 2** output jacks, unless the **TAPE REC-EQ** pushswitch is depressed. (See "Making Modified Tape Recordings," page 11).

## TONE CONTROL TURNOVER SWITCHES

Two **TURNOVER** switches are provided to vary the effect of the **BASS** and **TREBLE** tone controls.

When the **250 Hz TURNOVER** switch is depressed to the on (in) position, the frequency at which the **BASS** tone controls become effective is shifted from 1 kHz to 250 Hz. When the **4 KHz TURNOVER** switch is depressed to the on (in) position, the frequency at which the **TREBLE** tone controls become effective is shifted from 1 kHz to 4 kHz.

The **TURNOVER** switches are useful for altering the frequency response at the extreme ends of the audio spectrum without affecting the midrange. For example, the bass response may be boosted without causing the midrange to become "boomy".

## FILTER SWITCHES

Three **FILTER** switches permit suppressing low- or high-frequency noise that may originate at the program source.

The **30 Hz FILTER** pushswitch activates a low frequency filter which reduces signal levels at or below 30 Hz (see Figure 16). The filter has little or no adverse effect on the system's overall frequency response, because frequencies of 30 Hz and lower are below the range of most program material. The filter will, however, substantially improve system performance when you play phonograph records at a high volume level. A high quality phono cartridge will faithfully reproduce turntable rumble, record cutting lathe rumble, and even the slight warp of a new record in the form of a low frequency (0.5 Hz to 20 Hz) noise. If this noise is allowed to pass through the preamp and amplifier, it will cause the speaker's woofers to "flutter" or pulsate. The pulsations produce extremely high intermodulation distortion throughout the bass and lower midrange of the program material. The amplifier power required to reproduce this noise will wastefully contribute to the overheating and possible failure of the woofers.

When the **5 KHz** or **9 KHz FILTER** switch is depressed, high frequency noise, such as the hiss associated with noisy FM, poorly recorded tapes, or scratchy phonograph records, will be reduced sharply. The **5 KHz FILTER** should only be used under extreme conditions, because it reduces high frequency response appreciably. (See Figure 16.)

## LOUDNESS SWITCH

The **LOUDNESS** switch compensates for human hearing characteristics by boosting the bass and treble response at low volume levels to achieve a more pleasing tonal balance.

## MAIN AND REMOTE SPEAKER SWITCHES

When the outputs of a power amplifier are connected to the rear panel **SPEAKER SWITCHING INPUTS**, these pushswitches will select the speaker terminals to which audio power is applied. The **MAIN** and **REMOTE** speakers may be operated separately or simultaneously. With both speaker pushswitches set to their off (out) positions, all speakers are disconnected, allowing "private listening" through stereo headphones.

**CAUTION:** We strongly recommend that the **VOLUME** be reduced **before** switching speaker systems to prevent possible damage to your loudspeakers.

## PHONES JACK

This jack accepts headphones utilizing a standard binaural three conductor, quarter-inch phone plug (see Figure 7). It is internally connected to the power amplifier section through isolation resistors to provide adequate sound level with popular low impedance headphones as well as with high impedance units. Two or more sets of headphones may be used with the aid of "Y" connectors. However, output level will drop as additional headphones are added. The headphone jack output is not affected by the **MAIN** or **REMOTE SPEAKER** switches.

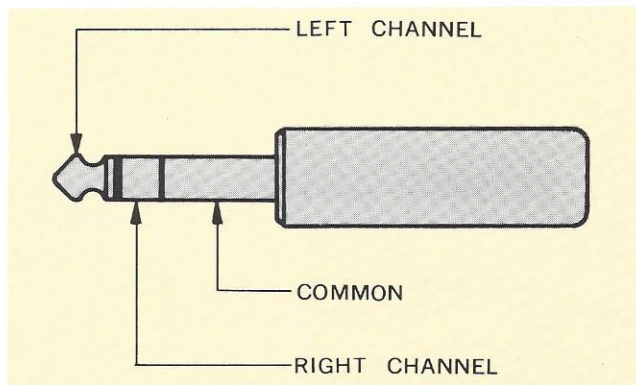


Figure 7. Stereo Phone Plug

## TAPE REC-EQ SWITCH

See "Making Modified Tape Recordings," page 11.

## MICROPHONE JACKS

The **LEFT** and **RIGHT MICROPHONE** input jacks are intended for use with low level (one millivolt) microphones wired for unbalanced line operation. Microphone impedance may be either high or low.

When a two conductor microphone plug is inserted into the jack, the rear panel **PHONO 2 INPUTS** are automatically disconnected.

## TONE DEFEAT SWITCH

The **TONE DEFEAT** switch, when depressed, causes the audio signals to bypass the tone control circuitry in the 3800, thereby assuring a precision "flat" frequency response (assuming no filters are activated). Without having to change the position of the **TONE** controls, their effect can thereby be weighed against the true flat signal.

## DOLBY SYSTEM CONTROLS AND SWITCHES

For an explanation of the controls and switches listed below see "Dolby System," page 11.

DOLBY SYSTEM SWITCH  
PLAY CAL CONTROLS  
400 Hz TONE SWITCH  
DOLBY LEVEL METER  
RECORD LEVEL CONTROLS  
LR METER SWITCH

# USING TAPE RECORDERS WITH YOUR MODEL 3800

The Model 3800 provides three sets of inputs and outputs for tape recorders: **TAPE 1**, **TAPE 2**, and **DUBBING (In and Out)**. To simplify this discussion, the tape recorder connected to the **TAPE 1** jacks will be referred to as the "MAIN" recorder; the tape recorder connected to **TAPE 2** will be referred to as the "SECONDARY" recorder; the recorder connected to the **DUBBING** facilities on the front panel will be referred to as the "EXTERNAL" recorder.

## DUBBING JACKS

The **DUBBING IN** jack is the front panel equivalent to the rear panel **TAPE 2 INPUT** jacks. To connect an "EXTERNAL" tape recorder, it is necessary to use a patch cord having a standard, three-conductor stereo phone plug on one end (Figure 7). Connect the patch cord from the tape recorder line outputs to the Model 3800 **DUBBING IN** jack as shown in Figure 9. When the stereo phone plug is inserted into the **DUBBING IN** jack, the "EXTERNAL" tape recorder pre-empts the "SECONDARY" tape recorder by automatically disconnecting the rear panel **TAPE 2** input jacks.

The **DUBBING OUT** jack is the front panel equivalent to the rear panel **TAPE 2 OUTPUT** jacks and is permanently connected in parallel with the **TAPE 2 OUTPUT** jacks. Therefore, any source material available at the rear panel output jacks, except that from the **TAPE 2 INPUTS** (when **DUBBING IN** is connected), is simultaneously available at the **DUBBING OUT** jack. The line inputs of the "EXTERNAL" tape recorder are connected to the **DUBBING OUT** jack using the same type of patch cord described in the preceding paragraph.

## MAKING TAPE RECORDINGS

The Program Selector Pushswitches determine the source input for tape recording. When **PHONO 1**, **PHONO 2/MIC**, **TUNER**, or **AUX** are chosen, the source input can be recorded on to the "MAIN", "SECONDARY", and "EXTERNAL" tape recorders individually or simultaneously. See Figures 8 through 12 for typical tape recorder connections.

## TAPE MONITORING

Notice that the **TAPE MONITOR** switch operates independently of the Program Selector Pushswitches. Thus, any tape recorder can be monitored regardless of which input is chosen as a source. Monitoring the recorders may be accomplished as follows:

"MAIN" recorder – Switch the **TAPE MONITOR** to **1**.

"SECONDARY" recorder – Switch the **TAPE MONITOR** to **2**.

"EXTERNAL" recorder – Switch the **TAPE MONITOR** to **2**, and plug the "EXTERNAL" recorder into the **DUBBING IN** jack.

## HOW TO MAKE TAPE-TO-TAPE COPIES

The tape copying feature on the Model 3800 functions independently of the Program Selector Pushswitches and the **TAPE MONITOR** switch. This means that tapes can be copied while listening to an entirely different program source. Operation is as follows: To make a dub (tape copy) from the "MAIN" recorder onto the "SECONDARY" and/or "EXTERNAL" recorders, depress the **TAPE COPY 1-2** switch. The "MAIN" tape recorder then becomes the tape copy source. When this is the case, the **TAPE 1 OUT** jacks are muted to prevent feedback oscillations that would occur if the "MAIN" recorder were inadvertently placed in the record mode.

To make a dub from the "SECONDARY" or "EXTERNAL" recorder on to the "MAIN" recorder, depress the **TAPE COPY 2-1** switch. The "SECONDARY" recorder then becomes the tape copy source.

If the "EXTERNAL" tape recorder is connected to the **DUBBING IN** jack, then it pre-empts the "SECONDARY" recorder and becomes the tape copy source instead. The **TAPE 2 OUT** and **DUBBING OUT** jacks are muted to prevent feedback oscillations. Therefore, dubs to the "MAIN" recorder may only be made from one of these two recorders at a time.

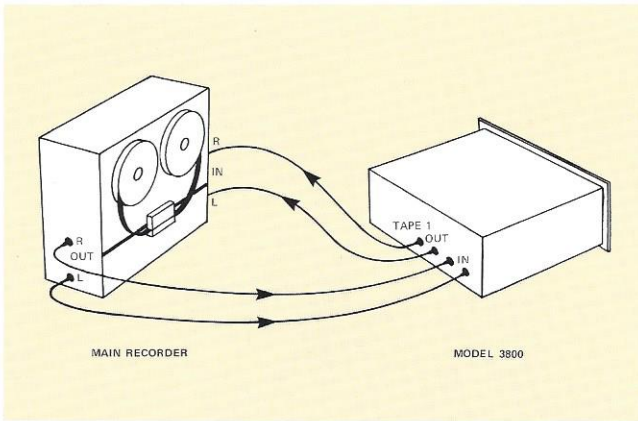


Figure 8. Typical Connection for "Main" Recorder

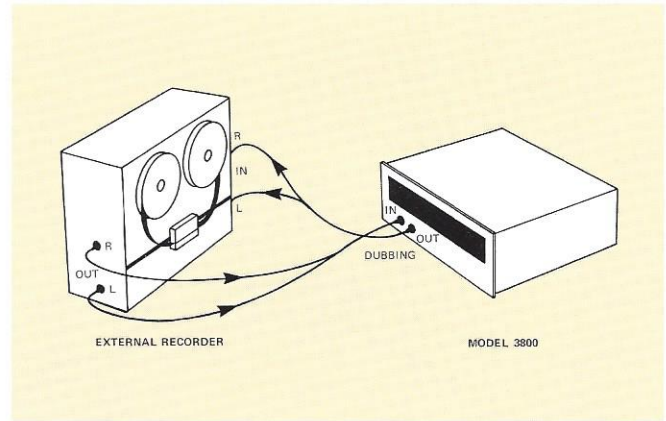


Figure 9. Typical Connection for "External" Recorder

The Dolby system can be used during the tape copying function to encode or decode any tape being copied. When either one of the **TAPE COPY** pushswitches is depressed, the action of the Dolby circuitry, as determined by the **DOLBY SYSTEM** switch, is applied to the tape copy function. Use the Dolby System in the same manner as usual. (Refer to "Using the Dolby System", page 11).

To cue up the tapes for copying, to set recording levels and the Dolby controls, or to check the progress of the copying operation, switch the **TAPE MONITOR** to 1 or 2.

To listen to a different program (such as a tuner or phonograph) during the time a tape is being copied, switch the **TAPE MONITOR** to **SOURCE**. Select the source material by means of the Program Selector pushswitches and play it as usual.

**NOTE:** The **DOLBY FM** position on the **DOLBY SYSTEM** switch defeats all other program source inputs. Therefore, do not use this switch setting while making tape-to-tape copies.

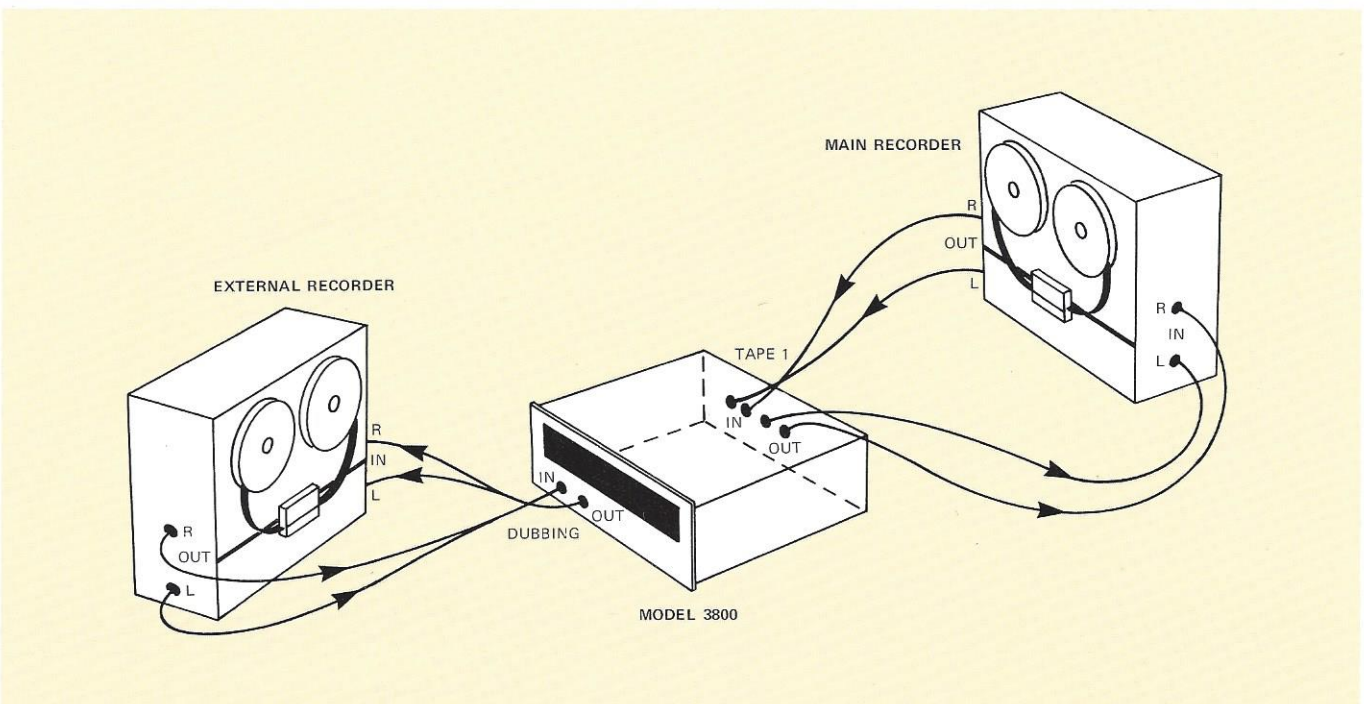


Figure 10. Typical Connection for "Main" and "External" Recorders

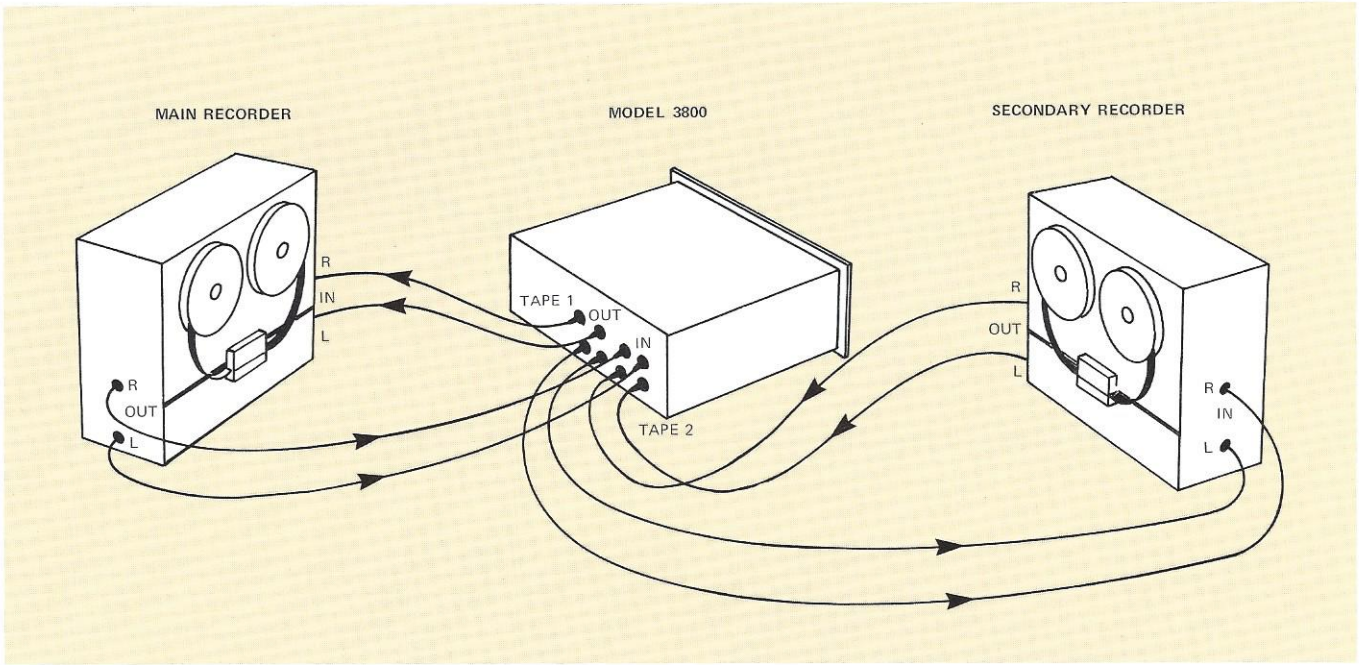


Figure 11. Typical Connection for "Main" and "Secondary" Recorders

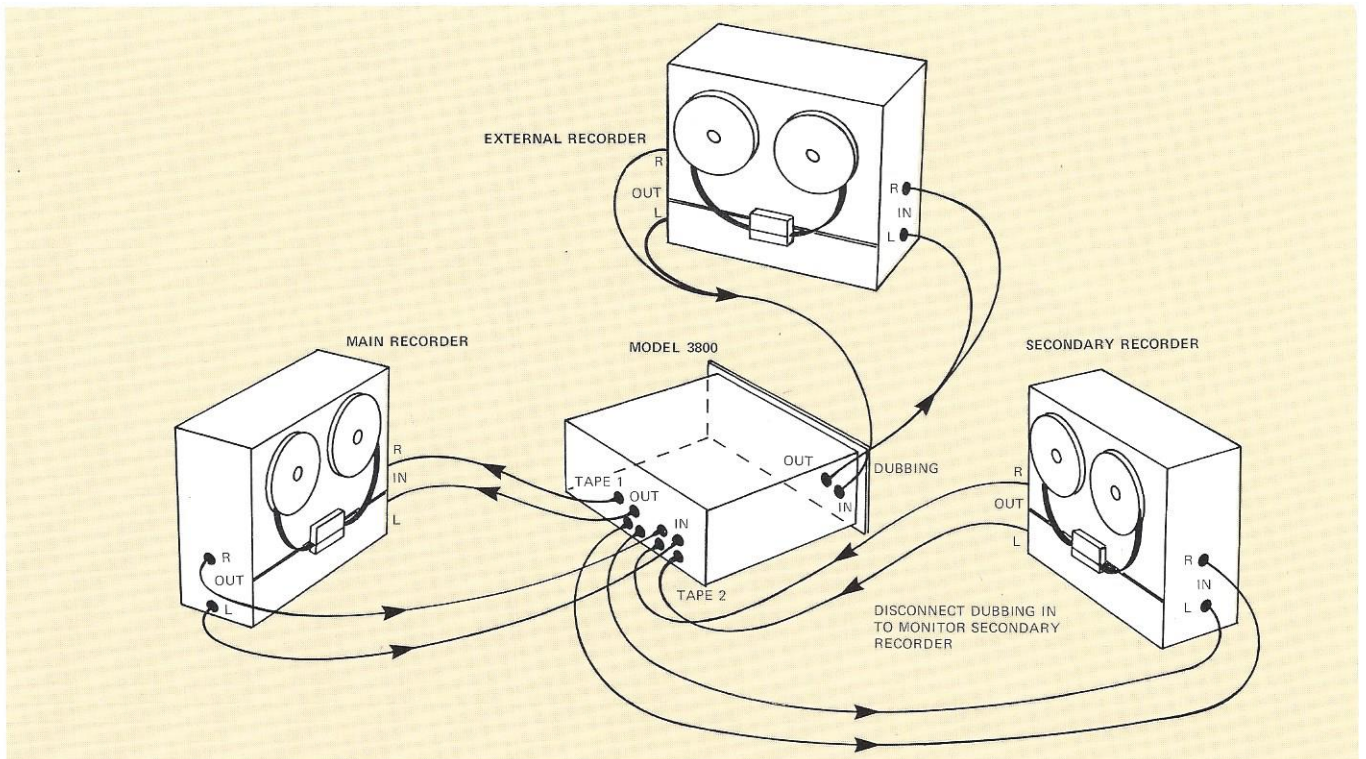


Figure 12. Typical Connection for Three Recorders

## MAKING MODIFIED TAPE RECORDINGS

An outstanding unique feature of the Model 3800 is the **TAPE REC-EQ** (recorder equalization) switch. When this switch is depressed, it connects the tone control and turnover circuits to **TAPE OUTPUTS 1** and **2**. The tonal quality of a normally "flat" program source may then be enhanced by the **BASS**, **MID**, and **TREBLE TONE** controls **prior to recording**.

This feature is particularly useful in the following areas:

When recording live music through microphones connected to the front panel **MICROPHONE** jacks, the tone controls can bring out the highlights in certain musical instruments or voices. For example, you may wish to brighten the sound of an acoustical guitar by increasing the treble response. Experiment with the **TURNOVER** and **TONE** controls to discover their effects on various instruments.

The **TAPE REC-EQ** feature can be used to correct noisy program conditions before they are recorded on to the tape. "Boominess," ambient noise, and FM hiss can be reduced.

Special effects are possible when recording through the tone control circuits. For example, simulated "telephone" conversations can be made by fully boosting the midrange and reducing the bass and treble response.

To operate this feature, first listen to the source signal with the **TAPE REC-EQ** button "out". Adjust the **TONE** controls for the desired effect. Next, depress the **TAPE REC-EQ** button. Then, switch the **TAPE MONITOR** to **TAPE 1** or **2** to hear the modified signal, and to **SOURCE** to hear the original "flat" signal.

Modified tape copies can be made by combining the tape copy feature with the recorder equalization feature. Depress the appropriate **TAPE COPY** pushswitch and the **TAPE REC-EQ** pushswitch, and record as usual.

## DOLBY SYSTEM

### BASIC DOLBY PROCESS

The Model 3800 contains a "full-process" Dolby Noise Reduction System. This means that Dolby encoding and decoding can be performed simultaneously. Thus, an incoming "flat" signal can be Dolby encoded, recorded onto tape, monitored from the tape, and Dolby decoded in one operation, allowing the end result to be immediately compared to the original source signal.

The Dolby system increases the amplitude of low level mid- and high- frequency signals during recording and reduces the amplitude of these signals by an identical amount during playback. As a result, the playback signal is identical to the original source signal, but the level of background noise generated by the tape recorder is greatly reduced. A Dolby FM broadcast is subjected to the first phase of the noise reduction process before being transmitted. When these signals pass through the Dolby playback circuitry, the mid- and high-frequency noise is greatly reduced.

The following section explains the operating procedures for the Dolby System in the Model 3800. However, before the Dolby System can be operated effectively, it must be calibrated. Please refer to the "Dolby Calibration" procedures on page 12.

### USING THE DOLBY SYSTEM

The Model 3800 is capable of processing signals from a tape recorder or from any other signal source.

**NOTE:** The Dolby system can be used with most types of tape recorders. However, it cannot be used with a recorder utilizing one set of level controls which govern both record and playback levels nor with a recorder utilizing an Automatic Level Control (A.L.C.) system.

## DOLBY SYSTEM SWITCH

The **DOLBY SYSTEM** switch is the main control for the Dolby circuitry in the Model 3800. It allows any input signal to be Dolby encoded or decoded. The five settings available route the signal through the Dolby Noise Reduction circuitry to the **PREAMPLIFIER OUTPUTS** and **TAPE OUTPUTS** as follows:

- 1. DOLBY FM:** This position is used for listening to Dolby FM broadcasts and defeats all other program source inputs. The **PREAMPLIFIER OUTPUTS** receive the de-processed Dolby signal; the **TAPE OUTPUTS** receive Dolby-encoded signals so that a Dolby recording can be made.
- 2. PLAY:** This position is used for playing back any Dolby-encoded source except FM. The **PREAMPLIFIER OUTPUTS** jacks receive de-processed Dolby signals. The **TAPE OUTPUTS** deliver Dolby-encoded signals so that Dolby recordings can be made.
- 3. OFF:** In this position, the Dolby circuitry is bypassed, and the input signals are directly applied to the **TAPE** and **PREAMPLIFIER OUTPUTS**.
- 4. RECORD I:** This position is used for making a Dolby-encoded recording of a "flat" (non-Dolby) signal source. The **TAPE OUTPUTS** receive Dolby-encoded signals. The **PREAMPLIFIER OUTPUTS** receive flat signals.  
**NOTE:** By using the **TAPE MONITOR** switch, the original flat source signal can be immediately compared to the fully Dolby-processed signal from the tape.
- 5. RECORD II:** This position is used for making a "flat" (Dolby-decoded) recording from an incoming Dolby-encoded signal. Both the amplifier and the **TAPE OUTPUTS** jacks receive "flat" signals.

The **DOLBY SYSTEM** switch also controls the Dolby Level Meter located between the **TONE** controls. Whenever the Dolby circuits are activated, the meter illuminates and displays the relative "Dolby level" in decibels.

For further details on the use of the **DOLBY SYSTEM** switch, refer to the Dolby Processing Chart on page 15.

## DOLBY CALIBRATION

### HOW OFTEN CALIBRATION IS NECESSARY

It is necessary to check the Dolby playback calibration to suit each source being played. When recording on tape, recalibrating the entire system is required whenever a change in tape speed has been made or whenever a different type or brand of tape is used.

The following sections will outline methods for playback and record calibrations:

1. Turn on the Model 3800 and your recorder.
2. Set the **DOLBY SYSTEM** switch to **PLAY**.
3. If your recorder has a tape/source monitor switch, set it to "tape".
4. Load a Dolby NR Standard Alignment Tape (see "NOTE" below).
5. Play the tape.
6. If your recorder does not have playback level controls, proceed to Step 9.
7. If your recorder has playback level controls and meters, adjust the controls for a meter indication of 0 VU. Then proceed to Step 9.
8. If Step 7 does not apply to your recorder, set the playback level controls to about two-thirds of full output.
9. Adjust the **PLAY CAL** controls for a Dolby meter indication of 0 VU (Dolby Level) for both channels. To calibrate the right channel, depress the **METER L R** switch to **R** (in) position and rotate the **RIGHT PLAY CAL** control. Release the switch to **L** (out) position and rotate the **LEFT PLAY CAL** control.
10. You have now calibrated the Dolby NR playback level. From here on, do not change your recorder playback level controls nor the Model 3800 **PLAY CAL** controls.



Since the calibration is extremely stable and should not have to be repeated (except to periodically check it), we suggest that you mark the settings of your recorder's output level controls with a felt-tipped pen. Doing so will enable you to easily reset the controls if they are inadvertently moved.

**NOTE:** It is possible to use the Dolby system for recording and playing back tapes through your system using a homemade standard alignment tape.

## HOW TO MAKE A DOLBY ALIGNMENT TAPE

1. Thread a blank tape onto your recorder (or insert a cassette).
2. Set the **DOLBY SYSTEM** switch to **PLAY**.
3. Depress the **400 Hz TONE** switch.
4. Set your recorder tape/source monitor switch to the "source" position.
5. Adjust the controls for 0 VU reading on the recording level meter.
6. Commence recording. Record about 30 seconds of the tone. The tape you have just made is used to calibrate the Model 3800 Dolby Noise Reduction circuit with the recorder.
7. Depress and release the **400 Hz TONE** switch.

You may wish to record about 30 seconds of the 400 Hz tone onto the beginning of every tape that will be used for Dolby-processed recording. By using this method, you can check (and, if necessary, adjust) the playback calibration settings without having to fumble with a separate alignment tape.

Dolby-processed tape recordings made with the alignment tape you have just recorded may not necessarily be compatible with the Dolby NR circuits in different recorders or systems. For universal compatibility, Marantz offers a standard alignment tape which is available from your local Marantz dealer.

## PROCEDURE FOR RECORD CALIBRATION

**NOTE:** Before proceeding with the record calibration, ensure that playback adjustments have been performed. Do not change the positions of the recorder playback level controls (if any) or the Model 3800's **PLAY CAL** control.

## For Recorders With Three Heads

1. Thread a blank tape onto your recorder (or insert a cassette).
2. Set the Model 3800 **DOLBY SYSTEM** switch to **PLAY**.
3. Set both the Model 3800's and the recorder's **MONITOR** switches in the **TAPE** position.
4. Depress the **400 Hz TONE** switch to the on (in) position.
5. Commence recording.
6. Adjust the recorder's record level controls so that the Model 3800's Dolby Meter indicates 0 VU (Dolby Level).
7. Release the **400 Hz TONE** switch.

## For Recorders With Two Heads

1. Thread a blank tape onto your recorder (or insert a cassette).
2. Set the Model 3800 **DOLBY SYSTEM** switch to **PLAY**.
3. Depress the **400 Hz TONE** switch to the on (in) position.
4. Commence recording.
5. Adjust the record level controls of your recorder for a VU meter indication of 0 VU.
6. Record the tone for about 30 seconds.
7. Stop the recorder and rewind the tape to the beginning of the tone recording. Release the **400 Hz TONE** switch.
8. Play back the tape.
9. Observe the Dolby Meter and note the value. To check the right channel level, depress the **METER LR** switch to the **R** (in) position. To check the left channel level, release the **METER LR** switch to the **L** (out) position.
10. If the Dolby Meter indicated 0 VU for both channels, calibration is completed.
11. If the Dolby Meter indicates other than 0 VU, readjustment is necessary, as follows. The object is to adjust the recorder's record level controls so the playback level achieved indicates 0 VU on the Dolby Meter.
  - a. If the Dolby Meter indication is more than 0 VU, repeat Steps 2 through 10, but decrease the record level in Step 5 to slightly below 0 VU on the recorder VU meters.
  - b. If the Dolby Meter indication is less than 0 VU, repeat Steps 2 through 10, but increase the record level in Step 5 to slightly above 0 VU on the recorder VU meters.

## For All Recorders

After the 0 VU has been achieved on the Dolby Level Meter, DO NOT change the recorder's input or output level controls or the 3800's PLAY CAL controls.

**CHANGING THE RECORD OR PLAYBACK LEVELS OF YOUR RECORDER OR THE MODEL 3800's PLAY CAL CONTROLS WILL NECESSITATE REPEATING THE DOLBY CALIBRATION PROCEDURE.**

Mark the calibration positions of the recorder's record and playback level controls to avoid the necessity of recalibrating after making a non-Dolby recording.

To adjust the recording level during Dolby-processed recording, use the **RECORD LEVEL** controls on the Model 3800 rather than the tape recorder's record level control. The recorder's VU meters will indicate the recording level.

When the Dolby process is not desired on a recording, record in the normal manner—adjusting the record levels with the recorder's record level controls. DO NOT change the Model 3800's **PLAY CAL** controls.

## USE OF THE DOLBY SYSTEM AS A DYNAMIC NOISE FILTER

As stated previously the Basic Dolby Process increases the amplitude of low level mid- and high-frequency signals during recording and reduces the amplitude of these signals by an identical amount during playback. High level, high frequency signals pass through unchanged in both phases of the Dolby Process. As the level decreases, however, more and more filtering action (during playback) occurs until the signals are 35 dB or more below the level determined by the **PLAY CAL** controls at which point the maximum filtering effect takes place. The Dolby playback (decode) circuitry is, in effect, a variable or "dynamic" noise filter.

In this regard, the Dolby playback circuitry can be used as a substitute for a high filter. But unlike a regular high filter whose effect on treble response is constant at all loudness levels, the Dolby-derived "filter" activates itself only when needed, that is only during soft passages where background noise becomes noticeable.

To use the Dolby playback circuit as a dynamic noise filter, set the **DOLBY SYSTEM** switch to **PLAY**. The amount of filtering action is determined by the setting of the **PLAY CAL** controls. For normal programs, adjust the **PLAY CAL** controls on each channel so that the average program level, as indicated on the Dolby Level Meter, indicates approximately 0 VU.

## USING THE DOLBY SYSTEM ON FM BROADCASTS

Most FM broadcasts do not currently use the Dolby Noise Reduction system. To receive these broadcasts, leave the **DOLBY SYSTEM** switch in the OFF position. However, if a local station is broadcasting a Dolby FM signal, full advantage of the increase in signal-to-noise ratio may be obtained by putting the **DOLBY SYSTEM** switch in the **DOLBY FM** position.

The Dolby FM level has been pre-adjusted at the factory and should not normally need to be re-adjusted. However, should the Dolby FM level require recalibration, adjustment potentiometers are located on the rear panel (**DOLBY FM PRE-SET LEVEL**) and can be adjusted to the proper Dolby level by using the Dolby reference tone transmitted by the FM station at the beginning of the broadcast.

**NOTE:** Tuner should have proper 25 microsecond de-emphasis. A 25 microsecond FM de-emphasis circuit is built into the Marantz Model 112, 125, and 150 Tuners and should be activated when listening to Dolby FM broadcasts through your Model 3800. If your present tuner does not have such a circuit, an outboard FM de-emphasis adaptor is available from Switchcraft. Please consult your dealer regarding this adaptor.

## DOLBY PROCESSING CHART

This chart, Figure 13, indicates the correct **DOLBY SYSTEM** switch positions for various types of input material. The input format is indicated in the left column and the appropriate **DOLBY SYSTEM** switch position is shown under the desired mode of operation.



If the INPUT is 	and you want 	to listen, set the DOLBY SYSTEM switch to	to record <i>with</i> Dolby, set the DOLBY SYSTEM switch to	to record <i>without</i> Dolby, set the DOLBY SYSTEM switch to	Notes:
a non-Dolby Source (Phono, Tape, Aux, AM Tuner)	OFF or REC I	REC I	OFF	Manufacturers of pre-recorded tape indicate when the material has been recorded in a Dolbyized format. Home recorded tapes should also be clearly marked as to format to ensure correct playback mode.	
a Dolby-encoded source (except FM)	PLAY or REC II	PLAY	REC II	Tuner must apply 25 $\mu$ sec de-emphasis	
FM (with Dolby)	DOLBY FM	DOLBY FM	REC II		
FM (Normal)	OFF	REC I	OFF		

Figure 13. Dolby Processing Chart

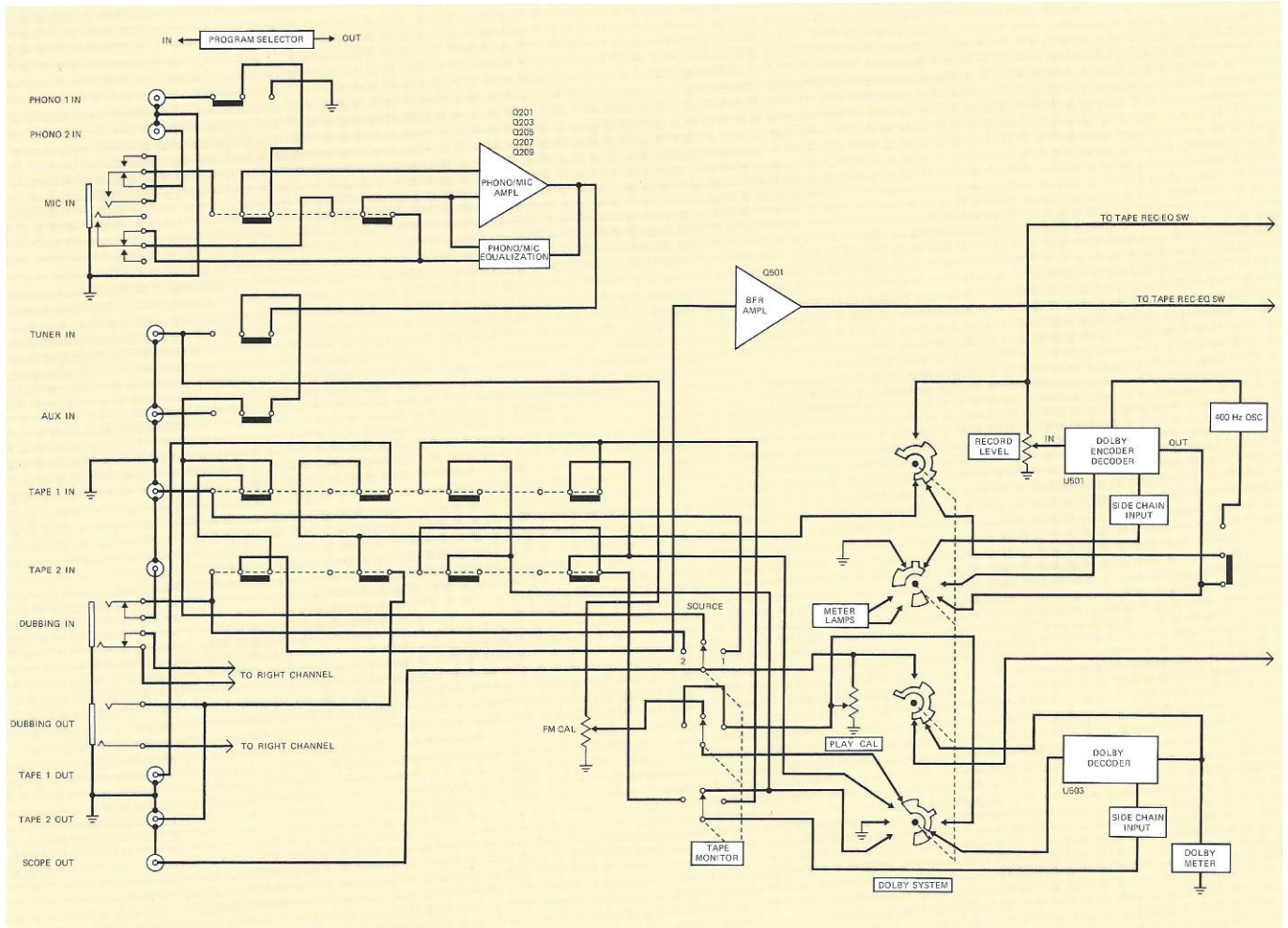


Figure 14. Functional Block Diagram

## FUNCTIONAL DESCRIPTION

### TECHNICAL SECTION

The following pages will explain the Model 3800 from a more technical standpoint. This section contains a block diagram with an explanation of system operation, a description of some of the outstanding technical features of the Model 3800, graphs depicting typical filter and tone control characteristics, and a complete list of technical specifications.

### SYSTEM OPERATION

Figure 14 is a Functional Block Diagram of the Model 3800 left audio channel, showing the principal circuit elements and signal flow paths. Since the left and right channels are identical, and process audio signals simultaneously, only the left channel will be discussed in the following paragraphs.

High- and low-level inputs (program sources) are selected by the Program Selector Pushswitches and routed in accordance with signal level. When low-level sources are selected (PHONO or MIC), the Selector Pushswitch routes the input signal to the Phono/Mic Amplifier circuit and selects the proper equalization, RIAA or Mic. The output of the Phono/Mic Amplifier is then returned to the Selector Pushswitches where it is handled as another high-level input.

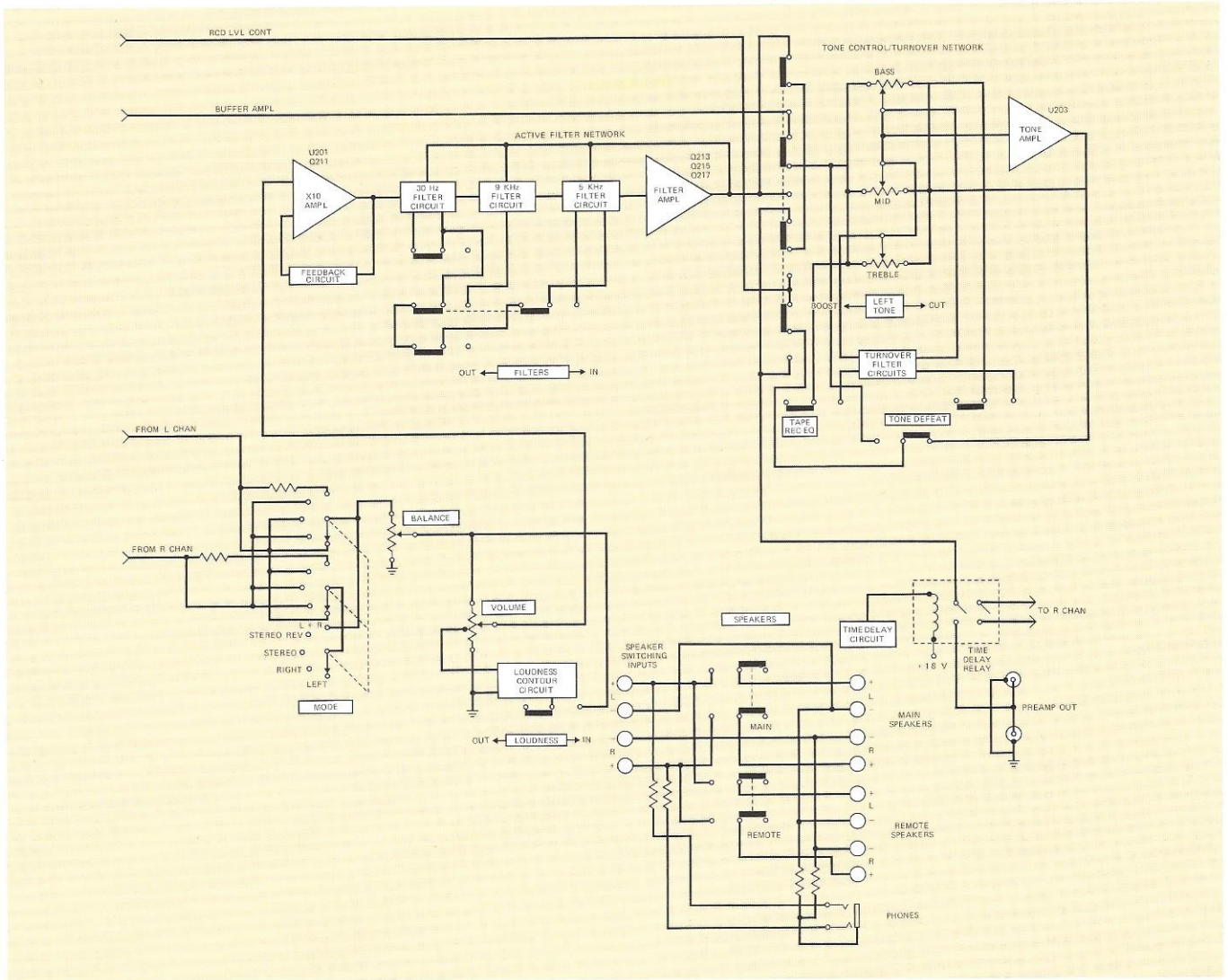


Figure 14. Functional Block Diagram

High-level input signals (**TUNER, AUX, TAPE 1, TAPE 2** or the output of the Phono/Mic Amplifier) are routed through the **TAPE REC-EQ** and **DOLBY SYSTEM** Switches to the Dolby encoder/decoder. The input level to the encoder/decoder is regulated by the **RECORD LEVEL** Controls. The output of the Dolby encoder/decoder is applied to the **TAPE OUTPUTS** and **DUBBING OUT** jacks. With the **DOLBY SYSTEM** Switch set to **OFF**, the encoder/decoder is bypassed and the high-level input signals are applied directly to the **TAPE OUTPUT** and **DUBBING OUT** jacks. The Dolby encoder/decoder functions as a flat amplifier, an encoder, or a decoder depending on the position of the **DOLBY SYSTEM** Switch (Figure 14).

The high-level input signals are concurrently applied to the **SCOPE OUTPUTS** and to the Dolby decoder, through the **TAPE MONITOR** Switch and **PLAY CAL** Controls. The decoder functions as a flat amplifier, or a decoder, depending on the position of the **DOLBY SYSTEM** Switch, the **TAPE MONITOR** Switch, and the **TAPE COPY** Switches (Figure 14). The output signal of the decoder is monitored by the Dolby Level Meter and applied to the **MODE** Selector Switch.

The **MODE** Switch determines the manner in which the left- and right-channel signals of the program source are presented to the Model 3800: **LEFT** channel only, **RIGHT** channel only, two-channel **STEREO**, **STEREO REVERSE**, or **L + R** (left and right channels combined). The signal selected by the **MODE** Switch is then applied to the **BALANCE** Control. The **BALANCE** Control adjusts the relative signal level of the left and right channels by attenuating the level of one channel while maintaining the level of the other. From the **BALANCE** Control, the signal is applied to the **VOLUME** Control, which varies the level of the output signal available at the **PREAMPLIFIER OUTPUTS**. The signal is also applied to a Loudness Contour Circuit which, when activated, boosts low and high frequencies at low listening levels so that all frequencies appear to have equal loudness. The Loudness Contour Circuit adjusts the frequency response of the Model 3800 to approximate the Fletcher-Munson loudness curves (Figure 15). The signal from the **VOLUME** Control is then applied to the input of the Times-Ten (X10) Amplifier Circuit.

The X10 Amplifier increases the signal level to that required to drive power amplifiers. The output of the X10 Amplifier is applied to an Active Filter Network comprised of three filter circuits (30Hz, 5KHz and 9KHz) and a Filter Amplifier. The Active Filter Network sharply reduces low- and/or high-frequency noise that may originate at the program source. The output of the Filter Amplifier is then applied to the Tone Control/Turnover Network comprised of the **BASS**, **MID** and **TREBLE** Tone Controls, the **250Hz** and the **4KHz TURNOVER**

circuitry, and a Tone Amplifier stage. The output of the Filter Amplifier is also applied to the **TONE** Switch.

The Tone Control/Turnover Network performs a dual function: the tone control portion of the network boosts or attenuates low, middle and high frequencies; the turnover portion of the network, when activated, decreases the point at which low frequencies are affected by the **BASS** Control (250Hz) and increases the point at which high frequencies are affected by the **TREBLE** Control (4KHz). The **TONE** Switch selects either the flat output of the Filter Amplifier (bypassing the tone controls) or the tone-control-altered output of the Tone Amplifier. From the **TONE** Switch, the signal is applied to the Time Delay Relay.

From the relay contacts the signal is applied to the **PREAMPLIFIER OUTPUTS** to drive an external power amplifier. The power amplifier outputs are connected to the **SPEAKER SWITCHING INPUTS** Terminals and the signal is applied to the stereo **PHONES** jacks. The power amplifier signal is also applied to the **MAIN** and/or **REMOTE SPEAKER** Terminals by the corresponding **SPEAKERS** Switch.

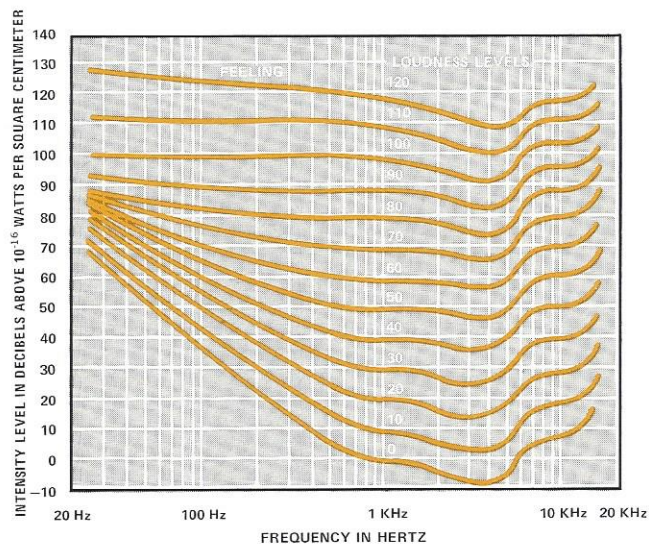


Figure 15. Fletcher-Munson Loudness Curves

## TECHNICAL HIGHLIGHTS

### PHONO AMPLIFIER

The Model 3800 phono amplifier is a user-oriented design. Its greatest virtue is its excellent ability to interface with a phono cartridge during actual playing conditions.

For example, most phono amplifier circuits are optimized to have good noise characteristics on the test bench when using a 1 kohm resistor as a source impedance. But in actuality, the source impedance offered by a phono cartridge may vary from 500 ohms to as much as 50 kohms, depending on what frequency is being reproduced, and a circuit designed around a 1 kohm source impedance would become noisier during actual playing conditions. The optimum source impedance range of the Model 3800 phono amplifier, though, has been expanded to accept the wide

range of source impedances that a cartridge would normally present. The result is that noise is appreciably reduced.

Distortion at 20 Hz has been minimized by specially tailoring the open loop gain of the amplifier. The phono amplifier is thereby able to maintain its **THD** specification throughout the entire audio range. Also, careful component selection and design have minimized the low frequency random transistor noise known as "1/f" noise.

The input overload capability of the phono amplifier is 100 mV. Since most phono cartridges produce a maximum of 10 to 20 mV, the phono amplifier has plenty of headroom.

The overall effect is that phonograph records played through the Model 3800 sound amazingly clean.

## ACTIVE FILTER NETWORKS

The design of the active filter networks is based on the philosophy that an audio noise filter should eliminate as much noise as possible without adversely affecting the desired program material. To that end, the filters in the Model 3800 provide a sharp roll-off at relatively unobtrusive points in the frequency spectrum. The active filter networks consist of cascaded filter components at the input of a non-inverting unity gain amplifier with a constant current source in the output. Associated switches connect appropriate filter components in the amplifier feedback circuit for a 12 dB per octave roll-off at 30 Hz and/or 5 kHz or 9 kHz. Characteristic curves for the active filter networks are shown in Figure 16. Frequency response through the network is flat when the filters are deactivated.

## TIME DELAY RELAY

The circuit associated with the Time Delay Relay holds the relay contacts open for approximately five seconds after power is applied to the Model 3800. After the power supply circuits have stabilized, the relay contacts close. Audible "pops" that may arise from power supply transients are thereby eliminated.

## TONE CONTROL/TURNOVER NETWORK

The band of audio frequencies to which the human ear is most sensitive is the midrange.

Conveniently enough, most speaker systems and most listening environments faithfully reproduce midrange frequencies. On the other hand, the reproduction of the low bass and high treble regions are considerably influenced by room acoustics and speaker design.

To provide flexibility in coping with these conditions, the **TURNOVER** switches shift the frequency locus (turnover points) for the **BASS** and **TREBLE** controls. This allows the bass and treble response to be adjusted with minimum influence on the critical midrange frequencies (see Figure 17). The turnover frequency designations (250 Hz and 4 kHz) refer to the lower and upper limits of the band of midrange frequencies which would not be effected by the **BASS** or **TREBLE** controls.

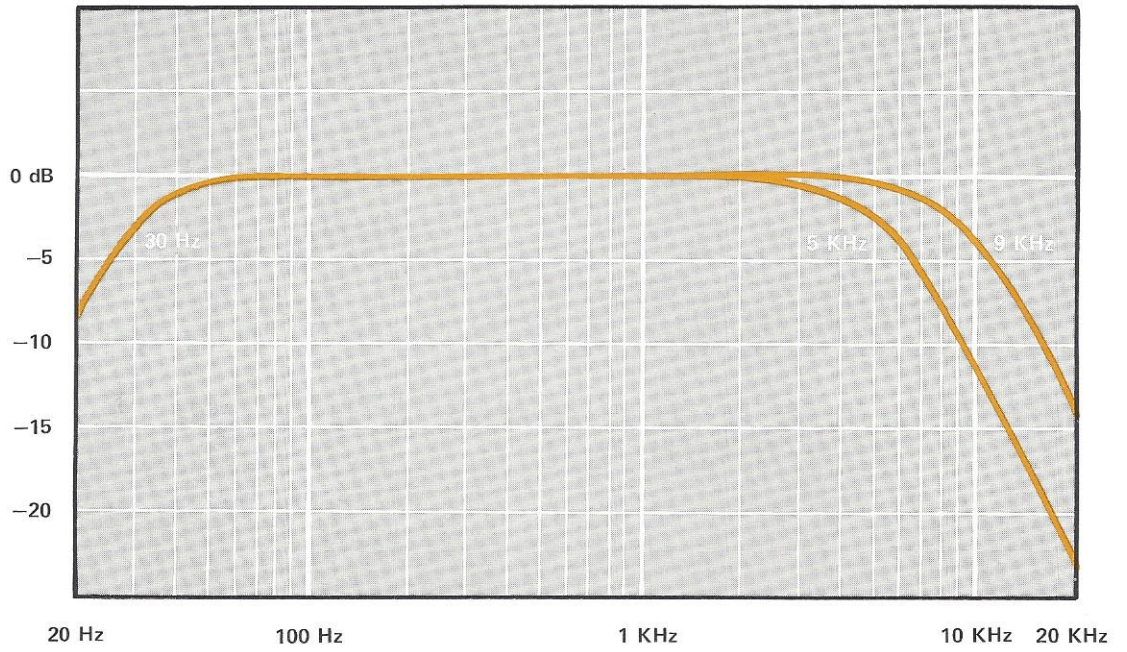


Figure 16. Active Filter Network Characteristics

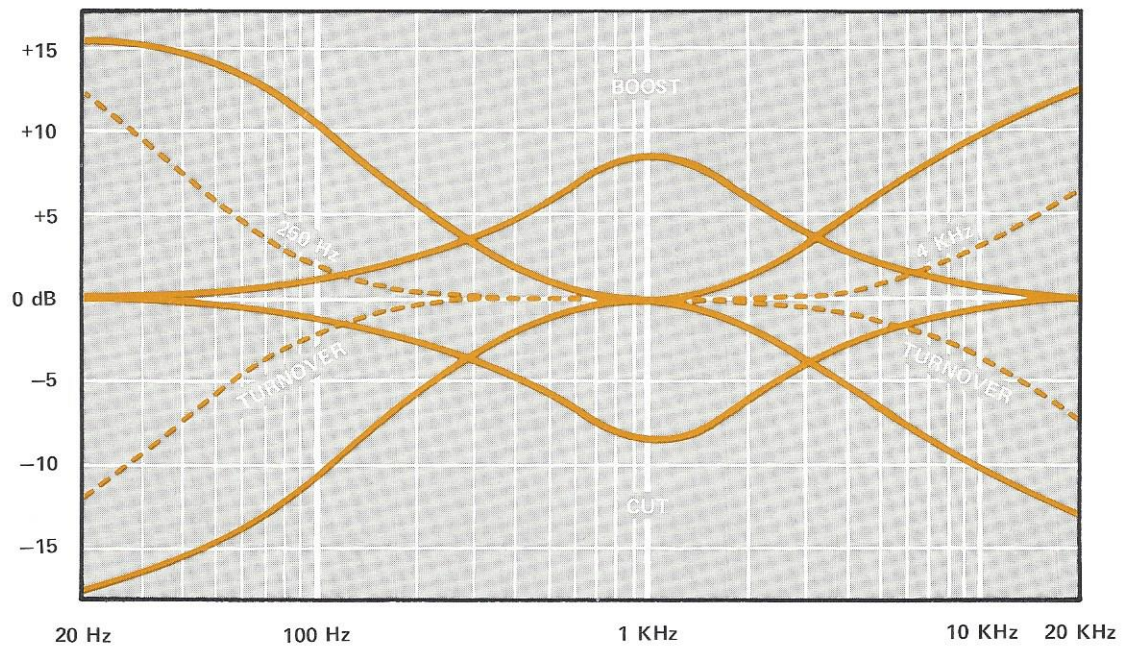


Figure 17. Tone Control/Turnover Network Characteristics



# TECHNICAL SPECIFICATIONS

Note: DOLBY circuit OFF

<b>RATED OUTPUT LEVEL</b>	
Preamp Output	3.0 V RMS
Phono Amplifier at Scope Output	3.0 V RMS
<b>GAIN</b>	
Phono*/Mic to Preamp Output	60 dB
Phono*/Mic to Recording Output	40 dB
High Level Input to Preamp Output	20 dB
<b>INPUT IMPEDANCE</b>	
Phono	47 k ohms
Mic	8 k ohms
High Level	11 k ohms
<b>INPUT SENSITIVITY</b>	
Phono*/Mic	1 mV to equal 1 volt at Preamp Output
High Level	100 mV to equal 1 volt at Preamp Output
<b>FREQUENCY RESPONSE</b>	
Phono	± 0.5 dB maximum variation from RIAA standard Typical variation is ± 0.2 dB.
High Level	± 0.25 dB, 20 Hz to 20 kHz ± 1 dB, 5 Hz to 60 kHz into 10 kohm load or standard IHF load
<b>SLEWING RATE</b>	Greater than 5V/uSec
<b>TOTAL HARMONIC DISTORTION</b>	
Phono*	Less than 0.02% at Recording Output Typical value: 0.01%
High Level	Less than 0.02% at Preamp Output Typical value: 0.01%
<b>INTERMODULATION DISTORTION</b>	
Phono	0.012% maximum at 6 V RMS into IHF load Typical value: 0.005% at rated output
High Level	0.01% maximum at 8 V RMS into IHF load Typical value: 0.003% at rated output
<b>HUM AND NOISE</b>	
(Noise Bandwidth: 20 Hz to 20 kHz)	
Phono	Less than 0.78 uV equivalent input noise, input terminated into 600 ohms. S/N greater than 82 dB below 10 mV input
High Level	100 dB below rated output, input terminated into 600 ohms. Total output noise, worst case: less than 30 uV.
<b>CHANNEL SEPARATION</b>	Greater than 40 dB, 20 Hz to 20 kHz
<b>VOLUME TRACKING</b>	± 1.5 dB
<b>PREAMPLIFIER OUTPUT DATA</b>	
Maximum output before overload: 10 V RMS	
Preamp can drive loads as low as 2 kohms	
Output Stability: Preamp is stable driving long cables and capacitive loads with no evidence of ringing or overshoot.	
Overload Recovery: Less than 100 nanoseconds for 10 dB overdrive. No DC instability.	
<b>OPERATING POWER REQUIREMENTS</b>	120 V AC, 60 Hz, 10 Watts (Voltage Operating Range: 100 volts to 130 volts.)
<b>DIMENSIONS AND WEIGHT</b>	
Width	15-3/8 inches
Height	5-3/4 inches
Depth	9-1/4 inches
Weight (Model 3800 only)	16 pounds
(Packed for shipment)	21 pounds
<b>ACCESSORIES</b>	Walnut Cabinet, Model WC-2U Rack Adaptor, 19-inch rack, Model RA-2  *at 1 kHz

## SERVICE NOTES

Because the Model 3800 Stereo Control Console is completely solid state, replacement of parts should rarely be required. If a pilot lamp or meter lamp fails, have your servicemen replace it.

### FUSE REPLACEMENT

The Model 3800 is protected by a 0.5 amp fuse. If the fuse blows out, replace it **ONLY** with a fuse of the same type and rating. Replacement with a fuse of higher rating will not protect the instrument and will void the warranty.

### CLEANING

Your Model 3800 Stereo Control Console has a very durable finish. The front panel and knobs are gold anodized for lasting beauty. You may clean the panel and knobs with a soft cloth dampened with a mild solution of liquid detergent and water. Never use scouring powder or any abrasive cleaner.

### REPAIRS

Only the most competent and qualified service technicians should service the Model 3800 Stereo Control Console. The Marantz Company and its factory-trained warranty station personnel have the knowledge and special equipment needed for repair and calibration of this precision instrument.

For service or repair refer to the list of Authorized Marantz Service Stations packed with your Model 3800, or write directly to the Marantz Technical Service Department, P.O. Box 99, Sun Valley, California, 91352, for the name and address of the service facility nearest your home or business. Include the model and serial number of your unit and a description of what you feel is abnormal about its operation.

### REPACKING FOR SHIPMENT

Should your Model 3800 require repacking for shipment to an authorized service station, to the factory, or elsewhere, observe the following precautions:

1. Do not ship your unit to the factory without an Authorized Return Label, which the Marantz Company will supply if the description of difficulties appear to warrant factory service.
2. Do not ship the unit installed in its walnut cabinet; remove the unit from the cabinet before packing.
3. Pack the unit carefully, using the original material as shown in Figure 18.  
NOTE: If you have discarded, lost or damaged the packing material, new packing material may be obtained by writing to the Marantz Technical Services Department. The carton, its filler, and packing instructions will be returned to you at a nominal charge.
4. Ship by a reputable carrier (do not use Parcel Post) and obtain a shipping receipt from the carrier.
5. Insure the unit for its full value.
6. Be sure to include your return address on the shipping label.

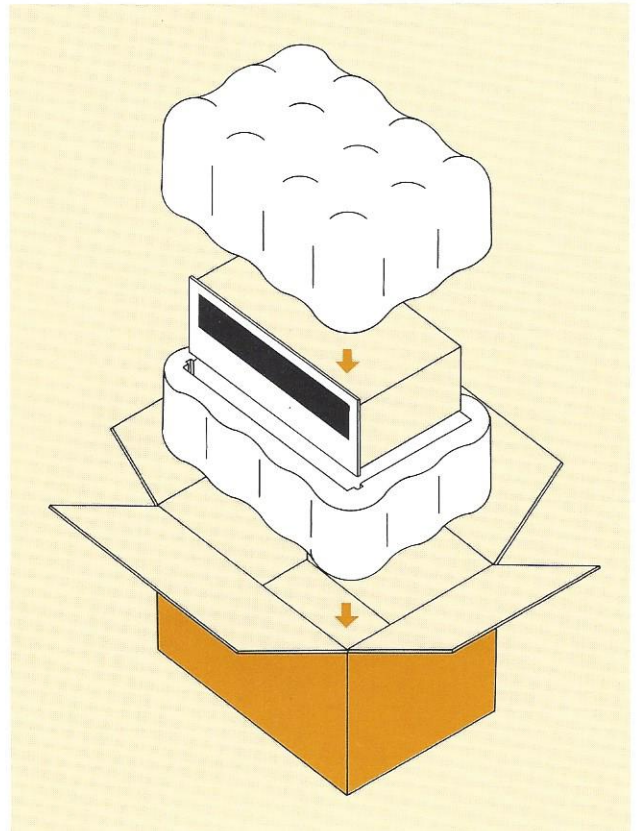


Figure 18. Repacking Illustration

The Sound of Marantz  
is the compelling warmth of a Stradivarius.  
It is a dancing flute, a haughty bassoon  
and the plaintive call of a lone French horn.  
The Sound of Marantz is the sound of beauty,  
and Marantz equipment is designed to bring you  
the subtle joy of its delight.  
Wonderful adventures in sound await you  
when you discover that the Sound of Marantz  
is the sound of music at its very best.

# marantz®

## WARRANTY

Marantz Company, Inc., warrants to the original registered owner that all Marantz electronic components will be free of manufacturing defects in material and workmanship and will perform within published Marantz specifications for a period of three years from purchase date, except oscilloscope tubes, which are guaranteed for ninety days.

The following are guaranteed against manufacturing defects in material and workmanship only, for the periods listed: Speakers and cabinets, 5 years; Headphones and other accessories, 3 years.

TO VALIDATE YOUR WARRANTY, YOU MUST FILL OUT AND MAIL THE WARRANTY REGISTRATION CARD TO MARANTZ COMPANY, INC., P.O. BOX 99, SUN VALLEY, CALIFORNIA 91352, WITHIN TEN DAYS FOLLOWING DATE OF PURCHASE.

This Warranty shall be valid only if the purchase was made within the United States of America. It is the owner's responsibility to establish the date and place of purchase by acceptable evidence, at the time service is sought. The Warranty shall not apply unless shipment is made by the purchaser to an AUTHORIZED MARANTZ Service Station. All shipping charges must be prepaid. Marantz will pay return shipping charges, provided that such return shipment is to be made to an address located within the United States.

This Warranty is void if the serial number has been altered or removed; if the product is modified or repaired in any manner which Marantz believes may affect the reliability of the product; if the product is not operated in accordance with the instruction manual; if the product is not properly maintained as set forth in the instruction manual.

This Warranty does not include maintenance, cleaning, or periodic check-up.

Marantz shall have no liability whatsoever for consequential damages. The sole responsibility of Marantz Company, Inc., under this Warranty shall be limited to the repair of the product, or replacement thereof, in the sole discretion of Marantz Company, Inc.

EXCEPT TO THE EXTENT THAT APPLICABLE LAW PRECLUDES A DISCLAIMER OF WARRANTY, THERE IS NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS WITH RESPECT TO THIS PRODUCT, NOR ARE THERE ANY OTHER WARRANTIES WHICH EXTEND BEYOND THE PROVISIONS OF THIS WARRANTY.

### REGISTRATION FOR MARANTZ PERFORMANCE, PARTS, AND LABOR WARRANTY

Model: Marantz Model 3800

Serial No. \_\_\_\_\_

Purchaser's Name \_\_\_\_\_

Purchased From (Name) \_\_\_\_\_

Address \_\_\_\_\_

Price Paid \$ \_\_\_\_\_ Date Purchased \_\_\_\_\_

Date Warranty Reply Card Mailed \_\_\_\_\_

## PURCHASER'S RECORD



### WARNING

TO PREVENT FIRE OR SHOCK HAZARD,  
DO NOT EXPOSE THIS INSTRUMENT  
TO RAIN OR MOISTURE.

The above information becomes your permanent record of a valuable purchase. It should be promptly filled in at the same time that you fill in and mail the warranty registration reply card to Marantz. This information provides a valuable insurance record and must also be referred to should you have any correspondence with Marantz.



**maramitz**