

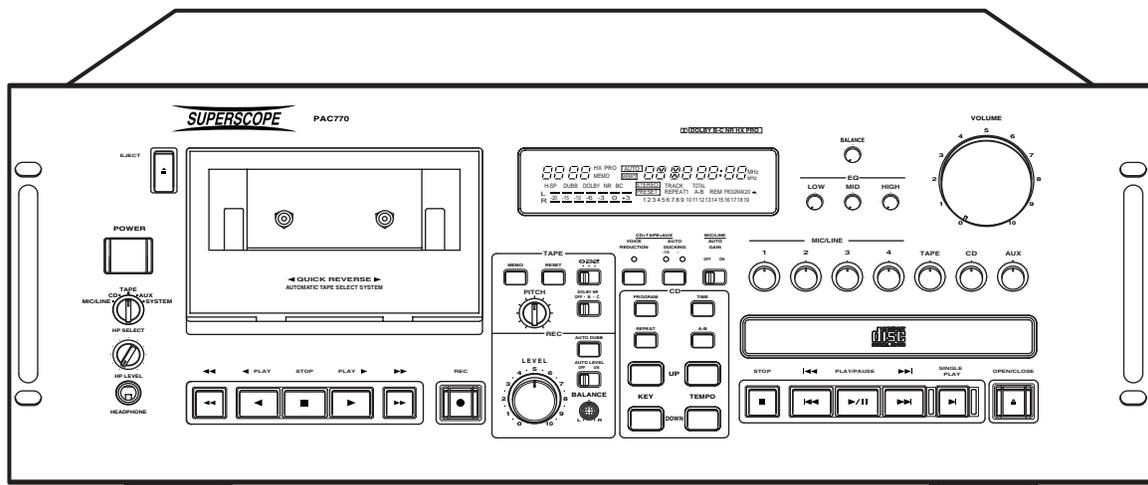
# SUPERSCOPE®

## PAC750

## Professional CD/Cassette/Mixer/ System

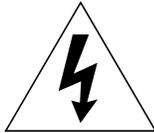
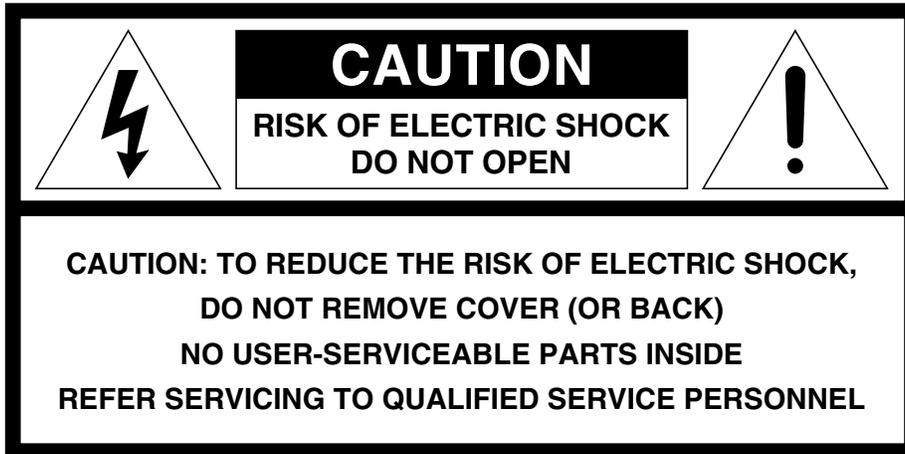
## PAC770

## Professional CD/Cassette/Mixer/ Amplifier System



COMPACT  
**disc**  
DIGITAL AUDIO

## Owners Manual



The lightning flash with arrowhead symbol, within an equilateral triangle, 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.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

## WARNING

**TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK,  
DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.**

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### 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 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.

**NOTE: Changes or modifications may cause this unit to fail to comply with Part 15 of the FCC Rules and may void the user's authority to operate the equipment.**

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**This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.**

Cet appareil numérique de la Classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

# SAFETY INSTRUCTIONS

## READ BEFORE OPERATING EQUIPMENT

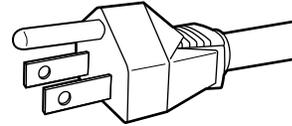
This product was designed and manufactured to meet strict quality and safety standards. There are, however, some installation and operation precautions which you should be particularly aware of.

1. Read Instructions — All the safety and operating instructions should be read before the appliance is operated.
2. Retain Instructions — The safety and operating instructions should be retained for future reference.
3. Heed Warnings — All warnings on the appliance and in the operating instructions should be adhered to.
4. Follow Instructions — All operating and use instructions should be followed.
5. Water and Moisture — The appliance should not be used near water — for example, near a bathtub, wash-bowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.
6. Carts and Stands — The appliance should be used only with a cart or stand that is recommended by the manufacturer.
7. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.



8. Wall or Ceiling Mounting — The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
9. Ventilation — The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
10. Heat — The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
11. Power Sources — The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

12. Grounding or Polarization — The precautions that should be taken so that the grounding or polarization means of an appliance is not defeated.



13. Power-Cord Protection — Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
14. Cleaning — The appliance should be cleaned only as recommended by the manufacturer.
15. Nonuse Periods — The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
16. Object and Liquid Entry — Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
17. Damage Requiring Service — The appliance should be serviced by qualified service personnel when:
  - A. The power-supply cord or the plug has been damaged; or
  - B. Objects have fallen, or liquid has spilled into the appliance; or
  - C. The appliance has been exposed to rain; or
  - D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
  - E. The appliance has been dropped, or the enclosure damaged.
18. Servicing — The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

# **LASER SAFETY**

This unit employs a laser. Only a qualified service person should remove the cover or attempt to service this device, due to possible eye injury.

## **CAUTION :**

**USE OF CONTROLS OR ADJUSTMENTS  
OR PERFORMANCE OF PROCEDURE  
OTHER THAN THOSE SPECIFIED HEREIN  
MAY RESULT IN HAZARDOUS RADIATION  
EXPOSURE.**

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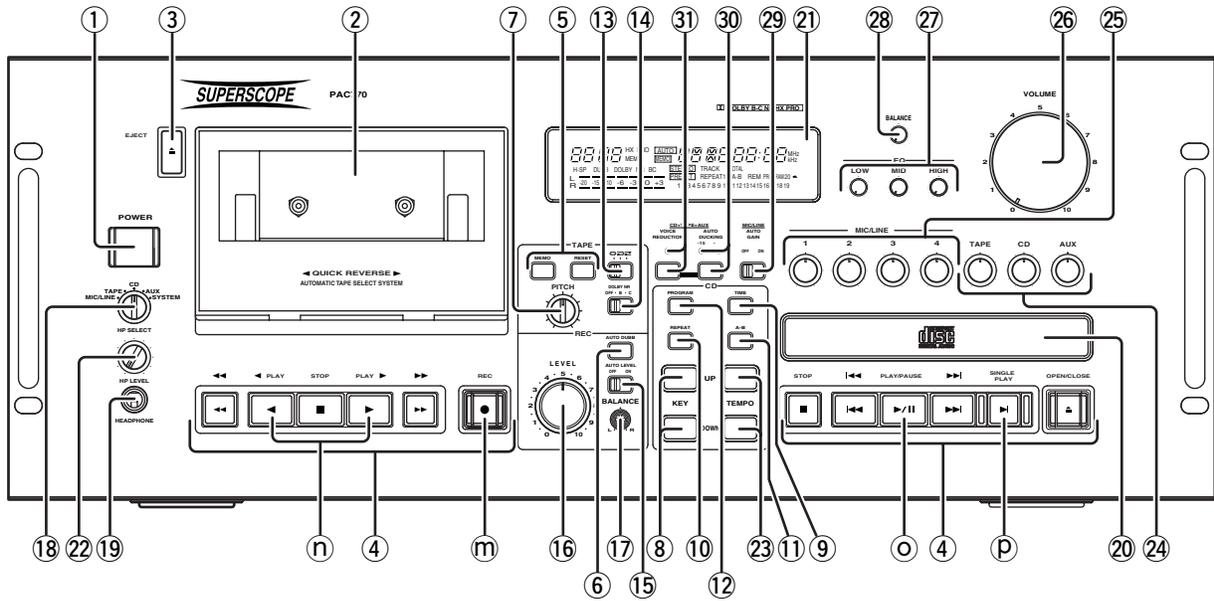
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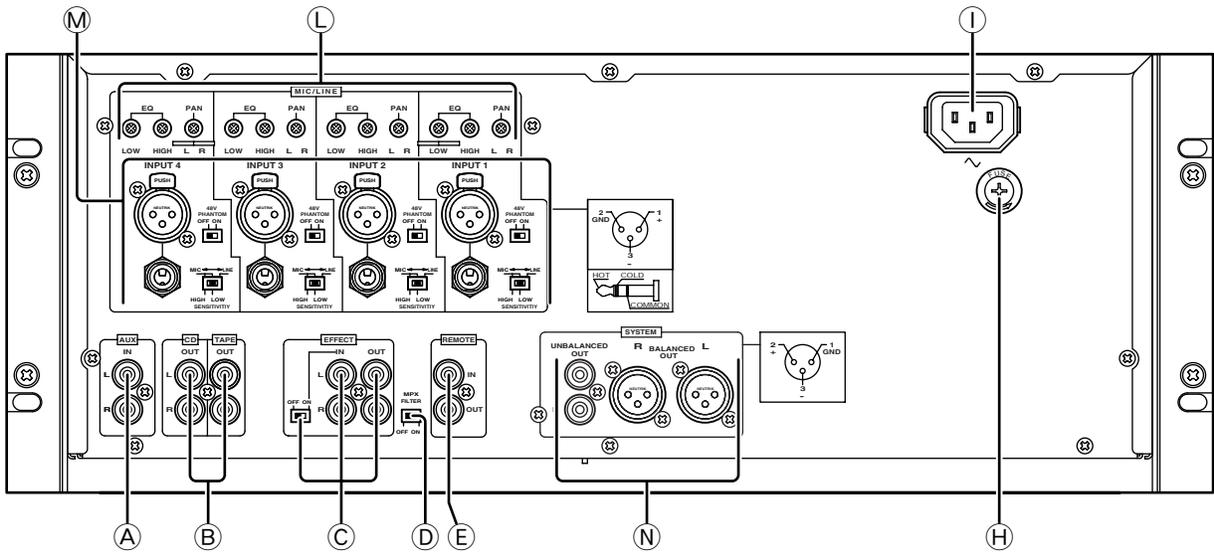
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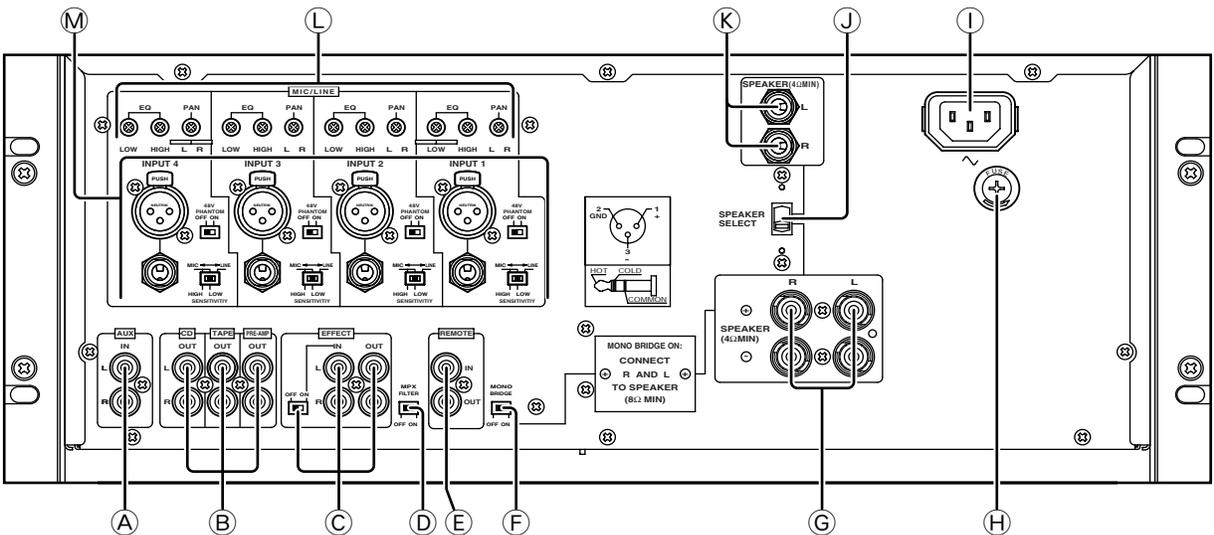
## PAC750/PAC770 FRONT PANEL



## PAC750 REAR PANEL



## PAC770 REAR PANEL



# SPECIFICATIONS

## MIXER

Input sensitivity	
MIC HIGH .....	4mV
MIC LOW .....	40mV
LINE .....	1000mV
PHANTOM output voltage .....	DC 48V
Input	
AUX in .....	1000mV/47kΩ
Pre-Out Output Level / Impedance (PAC770 Only) .....	200mV / 1.5kohm
System (RCA) Output Level / Impedance (PAC750 Only) .....	1000mV / 1.5kohm
System (XLR) Output Level / Impedance (PAC750 Only) .....	1000mV / 150ohm
EQ - MASTER & MIC/LINE	
Low Band Center .....	100Hz
Mid Band Center .....	1kHz
High Band Center .....	15kHz

## POWER AMPLIFIER (PAC770 Only)

Power output (RMS Continuous <0.08% THD)	
Stereo 8ohm Load .....	90W + 90W
Stereo 4ohm Load .....	110W + 110W
Mono 8ohm Load .....	210W
Frequency response .....	5Hz-30kHz (+/- 3dB)
Rated input level .....	0.5Vrms

## TAPE DECK

Track System .....	4 Track, 2 Channel
Record/Erase system .....	AC105kHz Bias
Head System (Rotary type combination)	
Rec/Play .....	Hard metal alloy
Erase .....	Dual gap ferrite
Motor System	
Capstan .....	DC Servo Control
Reel .....	DC
Wow and Flutter (JIS weighted) .....	<0.07%
Frequency Characteristics	
Frequency response (no Dolby NR)	
type I (Normal position) .....	40Hz-15kHz±3dB
type II (High position) .....	40Hz-16kHz±3dB
type III (Metal position) .....	40Hz-16kHz±3dB
Overall S/N (no Dolby NR, IEC-A WTD)	
type I (Normal position) .....	53dB
type II (High position) .....	54dB
type III (Metal position) .....	55dB
Dolby NR effect (B/C S/N improvement, CCIR-ARM WTD) .....	9dB/18dB
Analog output	
Output level .....	500mV
Output impedance .....	1kΩ

## CD

Channels .....	2 channels
Sampling frequency .....	44.1kHz
Quantization .....	16bit linear/channel
Error correction .....	Cross-interleave read solomon code (CIRC)
D/A conversion .....	1-bit linear/channel
Wow & flutter .....	Precision of quartz
Optical Readout System	
Laser .....	GaAlAs semiconductor
Wavelength .....	780nm
Frequency Characteristics (Tempo control off)	
Frequency response .....	20Hz-20kHz -1.5dB
Dynamic range .....	80dB
S/N ratio .....	70dB
Channel separation .....	70dB
Distortion (THD 1kHz) .....	0.05%
Analog output	
Output level .....	2V RMS
Output impedance .....	1.5kΩ

## COMMON PART:

Power Consumption	
PAC770 .....	500W
PAC750 .....	30W
Dimensions	
Width .....	19 inches (483mm)
Height (4U) .....	7 inches (180mm)
Depth .....	18 inches (455mm)
Net Weight .....	PAC770 : 39.7 lbs (18kg)
	PAC750 : 26.4 lbs (12kg)

These specifications represent design standards, Higher levels of performance can be expected under most conditions.  
Subject to change without prior notice.

## INTRODUCTION

Thank you for selecting the Superscope PAC750/PAC770. Please read these operating instructions carefully. We recommend that you read the entire user guide prior to connecting and operating the unit. It is also recommended that all connections be made prior to operating the unit.

Please refer to this manual to identify controls and connections for operation of the unit.

## PRECAUTIONS

The following precautions should be considered when operating the equipment.

When setting the equipment ensure that :

- air is allowed to circulate freely around the equipment
- the equipment is on a vibration free surface
- the equipment will not be exposed to interference from an external source
- the equipment will not be exposed to excessive heat, cold, moisture or dust
- the equipment will not be exposed to direct sunlight
- the equipment will not be exposed to electrostatic discharges
- In addition, never place heavy objects on the equipment.
- If a foreign body or water does enter the equipment, contact your nearest dealer or service center.
- Do not pull out the plug by pulling on the mains lead. Hold the plug.

## FEATURES

### BUILT-IN MIXER

The PAC750/PAC770 incorporate a built-in mixer that includes inputs and control for the built-in Tape and CD players, the stereo Aux input, and the 4 mono Mic/Line inputs. The Aux input allows an unbalanced stereo line level source to be connected. The 4 mono Mic/Line inputs allow either a microphone (either high or low sensitivity) or line input to be connected. EQ and pan controls are provided on those inputs to allow for feedback elimination and mixer customization.

### AUTO DUCKING

The PAC750/PAC770 incorporate an Auto Ducking feature that allows the Mic/Line inputs to work in conjunction with the Tape, CD, and Aux inputs. With the Auto Ducking feature set to -15dB, everything works as normal except for when any of the Mic/Line inputs has an active signal. When this occurs, the Tape, CD, and Aux inputs drop down in level by -15dB. When Auto Ducking is set to  $-\infty$ , the Tape, CD, and Aux inputs are dropped out completely when the Mic/Line inputs are active.

### VOICE REDUCTION

The Tape, CD, and Aux inputs to the mixer contain a Voice Reduction circuit that can effectively reduce the vocal tracks in most music. Please be aware that results vary according to the music and the way it was recorded.

### AMPLIFIER (PAC770)

The PAC770 contains a powerful amplifier that allows versatile speaker connection. The 1/4" connectors are very convenient for portable use while the binding posts allow connection of single-ended banana plugs or a secure bare wire connection.

### TEMPO CONTROL

The PAC750/PAC770 CD player allows for the adjustment of the playing speed (Tempo) from -50% to +50%. This feature is similar to Pitch control except that the Key (musical pitch) of the CD output does not change when the Tempo is adjusted.

### KEY CONTROL

The PAC750/PAC770 CD player allows for the adjustment of the Key (frequency/musical pitch) from -1 octave to +1 octave during playback. This feature allows the music to be adjusted in order to match correctly to an instrument or a voice.

### A-B LOOP

The PAC750/PAC770 allows two points within the CD to be selected and the audio within these points will be repeated until a stop command is issued.

### SINGLE TRACK PLAY

The PAC750/PAC770 can be set for the CD player to play the selected track and then stop and cue up the next track.

### AUTO CUE

This feature allows the CD player to advance to the beginning of the audio within the track rather than start from the track start flag. This feature helps to minimize the silence at the beginning of a CD track.

### PITCH CONTROL

The PAC750/PAC770 tape player allows for adjustment of the playback pitch (key + tempo) from -12% to +12%. The feature is particularly useful to tune a tape to accompanying instruments and choirs.

### QUICK OPTICAL AUTOREVERSE

In addition to the normal tension reversing circuitry the PAC750/PAC770 tape transport also employs optically sensing quick autoreverse circuitry. This circuitry reacts to the clear areas of the tape, usually the leader tape, and when detected will reverse the direction of the tape transport. This process minimizes the loss of signal being recorded or played back. This reverse process applies to all tape playback and recording modes, including autoreverse and continuous mode.

### DOLBY NR SYSTEMS

The Dolby Noise Reduction systems compress and amplifies the input signal during recording in order to raise the signal-to-noise ratio on the tape. During playback, these signals are expanded and attenuated by the same amount in order to regain the original dynamic range of the music. An additional result of this expansion and attenuation is that the noise floor of the recording is reduced significantly. Dolby B typically reduces noise by 10dB and Dolby C typically reduces noise by 20 dB.

### DOLBY HX PRO HEADROOM EXTENSION

The Dolby HX PRO system monitors the total amount of effective bias during recording and instantaneously compensates for any excess bias by reducing the tape deck's bias signal level accordingly. The system operates independently on each channel. HX Pro is unlike a noise reduction system because it functions only during recording and no decoding is required. Therefore a tape recorded with the HX Pro system can be played back on any other cassette deck while retaining the benefits of HX Pro.

### ONE TOUCH DUBBING

The PAC750/PAC770 allows dubbing of the CD to the tape with one button start control. This feature allows manual or automatic record level control.

### RC5 REMOTE CONTROL COMPATIBILITY

The PAC750/PAC770 comes equipped with an RC5 remote in and out port. Through the use of various remote control options, major functions of the unit can be operated via wired or wireless remote control.

## REAR PANEL CONNECTIONS

### A AUX INPUT JACKS

These jacks should be connected to the LINE OUTPUT of your source.

### B LINE OUTPUT (CD, TAPE, PRE-AMP(MIX)) JACKS

These jacks can be connected to the appropriate LINE INPUT of a power amp, PA or monitoring system.

### C EFFECT INPUT & OUTPUT JACKS

These jacks are used to connect to a graphic equalizer or an effects processor. When such a device is connected, set the **EFFECT** switch to the ON position. When such a device is not connected, set the **EFFECT** switch to the OFF position.

- If the switch is left ON without anything connected, no audio will be output through the pre-out or the speakers.

### D MPX FILTER SWITCH

When recording FM broadcasts, set this switch to the ON position to eliminate the FM carrier signal.

### E REMOTE CONTROL JACKS

These jacks are used with an infrared or wired remote control to provide remote operation of the PAC750/PAC770. The signal format of this interface is Philips RC5.

- These jacks can be serially linked to provide serial remote control operation of multiple RC5 equipped products as well.

### F MONO BRIDGE SWITCH (PAC770)

- This switch is used to select between mono bridge and stereo amplified output mode. When this switch is in the OFF position, the unit functions as a stereo power amp. When this switch is in the ON position, the unit functions as a monaural amp. (For details on how to connect the speakers, refer to page 52.)
- This switch only effects the binding post speaker outputs and not the 1/4" speaker outputs.
- Make sure this switch is OFF when the 1/4" speaker outputs are used.

### G, K AMPLIFIED SPEAKER OUTPUTS (PAC770)

These jacks are used to connect to passive (non-powered) speakers. When using a speaker system in stereo mode with left and right channels, connect the right channel speaker to the output terminal ㊦ labeled "R," and the left channel speaker to the output terminal ㊦ labeled "L". In stereo mode, use a speaker system with an impedance of 4 to 16 ohms.

When using a single (mono) speaker system, set the **MONO BRIDGE** switch to "ON". Connect the speaker to the red terminals for both the "L" and "R" speaker terminals ㊦. Do not use the black terminals. In mono mode, use a speaker system with an impedance of 8 to 16 ohms.

- MONO BRIDGE mode is only available on the binding post speaker outputs and not the 1/4" speaker outputs.

### H FUSE Holder

**CAUTION : Disconnect AC power before removing.**

This receptacle holds a specific fuse that is used to prevent overload and shorting.

### I AC TERMINAL

Connect the AC cord that is provided with the unit to this terminal.

### J SPEAKER SELECT SWITCH (PAC770)

This switch is used to select between the two sets of speaker terminals (㊦ and ㊦).

- Speaker terminals ㊦ and ㊦ cannot both be used simultaneously.
- Speaker terminal ㊦ does not permit mono bridge connection. However, make sure the **MONO BRIDGE** switch is in the OFF position.

### L EQ & PAN CONTROLS

The recessed EQ controls allow the tone of each MIC/LINE input to be adjusted to obtain optimum sound quality. Turning each control to the right boosts the corresponding frequency range and to the left attenuates it.

LOW : Controls the tone of the lower frequencies. (100Hz)

HIGH : Controls the tone of the higher frequencies. (15kHz)

The recessed PAN control adjusts the MIC/LINE input to the desired position (L, R or L + R) in the mixing bus.

When the knob is at the center position, the MIC/LINE signal is centered between the left and right. To position the output on the left side, turn the knob towards "L". To position the output on the right side, turn the knob towards "R".

### M MIC/LINE INPUT JACKS

Each set of these inputs is designed to accept either a microphone (MIC) or line (LINE) level signal. All of the input jacks are balanced. For a microphone level signal, set the MIC ↔ LINE switch to the MIC position. For all MIC inputs, set the SENSITIVITY to either HIGH or LOW, according to the sensitivity of the microphone. If a microphone that requires phantom power is used with the XLR input, set the **PHANTOM** switch to the "ON" position. For a line level input, set the MIC ↔ LINE switch to the LINE position.

- The XLR input and the 1/4" input cannot be used at the same time.

### N SYSTEM OUTPUT JACKS (PAC750)

The system output jacks are the final output of the mixer and can be used when connecting the PAC750 to a power amp, PA, or monitoring system. The RCA jacks are unbalanced outputs. The XLR jacks are balanced outputs.

# FRONT PANEL FEATURES

## ① POWER BUTTON

Push this switch in to turn the unit on and off. When power is turned off, all past settings are removed from memory and the unit returns to its default setting upon the next power up.

## ② CASSETTE TAPE HOLDER

This holds the cassette tape for playback and record functionality. Tapes that have the record protect tab removed will not enter into the record mode.

## ③ EJECT BUTTON

Press this button to open the cassette tape holder.

## ④ TAPE DECK AND CD PLAYER CONTROL

### TAPE DECK CONTROL BUTTONS

#### ■ STOP BUTTON

Press this button to cancel all current operations of the tape deck.

#### ▶ FORWARD PLAY BUTTON

Press this button to engage the tape deck into the forward play function.

#### ◀ REVERSE PLAY BUTTON

Press this button to engage the tape deck into the reverse play function.

#### ◀◀ REWIND BUTTON

Press this button to engage the tape transport into the fast rewind mode from the right (take-up) to the left (supply) reels. When this button is pressed during playback, the tape deck will search for the next program in the reverse direction.

#### ▶▶ FAST FORWARD BUTTON

Press this button to engage the tape transport into the fast forward wind mode from the left (supply) to the right (take-up) reels. When this button is pressed during playback, the tape deck will search for the next program in the forward direction.

#### ● REC/PAUSE BUTTON

Press this button to engage the tape transport into the record-pause mode. In this mode the tape deck is ready to begin recording. The tape record mode can be engaged by pressing the **FORWARD PLAY ▶** or **REVERSE PLAY ◀** buttons.

### CD PLAYER CONTROL BUTTONS

#### ▲ OPEN/CLOSE BUTTON

Press this button to open the CD door and eject the disk. Press this button again to close the CD door and read the disc.

- The OPEN/CLOSE button is disabled during the play mode.

#### ■ STOP BUTTON

Press this button to stop the CD player while in the play mode. During the program mode, the STOP button will cancel the current program when the CD player is in the stop mode.

#### ▶/|| PLAY/PAUSE BUTTON

When this button is pressed during the stop mode, the CD player will start playback from the beginning of the disc or program, and then continue to play until the end of the disc or program.

When this button is pressed during the play mode, the CD player will enter the pause mode.

When this button is pressed during the pause mode, the CD player will enter the play mode.

## ◀◀ PREVIOUS/REVERSE SEARCH BUTTON

When this button is pressed during the stop mode, tracks can be selected for playback by searching in the reverse order, starting from the last track on the disc.

When this button is pressed during the play mode, the CD player will skip back to the beginning of the current track. If immediately pressed again, the CD player will skip back one track for every time the button is pushed.

During the program mode, this button is used to select the tracks to be saved in the program.

If this button is pressed and held during playback, the CD player will enter audible reverse search mode until the button is released.

## ▶▶ NEXT/FORWARD SEARCH BUTTON

When this button is pressed during the stop mode, tracks can be selected for playback by searching in the forward direction, starting from track number 1.

When this button is pressed during the play mode, the CD player will skip forward one track for every time the button is pushed.

During the program mode, this button is used to select the tracks to be saved in the program.

If this button is pressed and held during playback, the CD player will enter the audible forward search mode until the button is released.

## ▶ SINGLE PLAY BUTTON

Press this button to toggle the Single Track Play feature on and off. When on, the TRACK (g) indicator in the display will flash and, during playback only, the Single Play button will light. When the CD player is stopped, only the TRACK indicator will flash to indicate that the Single Track play mode is active. The Single Track button will not light so it does not look like the CD player is playing while it is stopped.

Once the Single Track play mode has been activated, it will stay on, even if discs are changed, until it is turned off or the power has been switched off.

When Single Track Play is activated, the CD player will do two things differently than normal: first, each time a track is selected via the ◀◀ and ▶▶ buttons, the track will not start playing but will enter the Pause mode at the beginning of the audio (cued up). Second, when a track that is playing comes to an end, the next track will not start playing but will be cued up to the audio in Pause mode.

- While the CD player is stopped, Single Track play can be turned on and off but is only indicated by the flashing TRACK (g) indicator. Once playback starts, the Single Play button will light.
- Single Track play can be switched on or off at any time by pressing the Single Track button.

## ⑤ TAPE COUNTER BUTTON

### MEMO BUTTON

Press this button to store the current tape location into the counter memory. Once this memory point is set, the tape deck will rewind or fast forward until it reaches this point in the tape and will stop. To clear the memory press the MEMO button again.

### RESET BUTTON

Press this button to reset the current tape counter reading from its existing point to "0000".

## ⑥ AUTO DUBB BUTTON

Press this button to engage the tape transport into the dubbing mode from the CD player.

- See page 15 for more information on the operation of this function.

**⑦ TAPE PITCH KNOB**

Rotate this knob to adjust the tape deck playback pitch (key + tempo) from -12% to +12%. While the control is in the center detent position, the tape deck is at normal (0% variance) pitch.

- This control has no effect on the tape pitch during the record mode.

**⑧ KEY BUTTONS**

These buttons can be used to change the key (frequency/musical pitch) of the sound from the CD by up to  $\pm 1$  octave.

The "+" key raises the key in 12 1/2 cent increments. Press and hold the "+" button to quickly increase the key.

The "-" key lowers the key in 12 1/2 cent increments. Press and hold the "-" button to quickly decrease the key.

Press both "+" and "-" at the same time to quickly return the key back to 0.00 position (normal key).

- See page 15 for more information on the operation of this function.

**⑨ TIME BUTTON**

By pressing the **TIME** button you can toggle the CD player time display with the following. Normal (no indication) - Displays the time elapsed within the current track being played. REM- Displays the remaining time left of the current track being played. TOTAL REM- Displays the total time remaining on the current disc being played.

**⑩ REPEAT BUTTON**

This button can be used to set the CD player in all track or single track repeat play mode. The first press of the **REPEAT** button places the CD player in the all track repeat mode and the "REPEAT" indicator will light in the display. The second press of the **REPEAT** button places the CD player in single track repeat mode and the "REPEAT" and "1" indicator will light in the display. The third press of the **REPEAT** button will exit all repeat play modes.

**⑪ A-B BUTTON**

This button allows you to repeat a specific section in the current CD track that is being played. When this control is pressed the first time, the A-B indicator flashes and this position on the track is noted as the start or A point.

When this control is pressed again, the A-B indicator lights continuously, and this position on the track is noted as the end or B point. After setting the end point, the CD player returns to the start point (A), and plays until it reaches the end point (B). The CD player will repeat this function until the **STOP** or **REPEAT** button is pressed. Subsequent press of this button will change the B point into the A point and allow a new B point to be set.

- See page 14 for more information on the operation of this function.

**⑫ PROGRAM BUTTON**

When this button is pressed once, the CD player enters the program entry mode and the program indicator will begin to flash. Pressing the **PROGRAM** button again will return the CD player to the normal play mode.

- See page 14 for more information on the operation of this function.

**⑬ REVERSE MODE SWITCH**

This switch sets the automatic tape direction of the tape transport during playback, normal recording, or dubbing.

: **One-way mode.**

In this position the tape will play or record one side of the tape and stop.

: **Two-way mode.**

In this position the tape will play or record both sides of the tape and stop.

: **Continuous mode**

In this position the tape will play the tape in a continuous loop until the stop command is given. In the record mode the tape will record both sides of the tape and stop.

**⑭ DOLBY NOISE REDUCTION SWITCH**

This switch allows for the encoding or decoding of Dolby B or C Noise Reduction. When recording with Dolby Noise Reduction, select the type (B or C) of noise reduction desired and place the switch in the appropriate position. When playing a tape with Dolby Noise Reduction encoded onto it, place this switch in the same position (B or C) as it was recorded in.

**⑮ ALC (AUTOMATIC RECORD LEVEL CONTROL) SWITCH**

This switch performs automatic control of the input level during recording. When this switch is set to the OFF position, the recording level is controlled by the record level knob. When this switch is set to the ON position, the record level is set automatically and the record level knob is disabled.

**⑯ RECORD LEVEL KNOB**

This knob controls the record level up or down during manual recording.

**⑰ RECORD BALANCE CONTROL**

This recessed control allows for the adjustment of the record level between the left and right channels. By using a phillips type screwdriver, you can adjust this balance control between left (counter-clockwise) and right (clockwise).

**⑱ HP (HEADPHONE) SELECT SWITCH**

This switch is used to select which source is monitored through the headphone jack.

**⑲ HEADPHONE JACK**

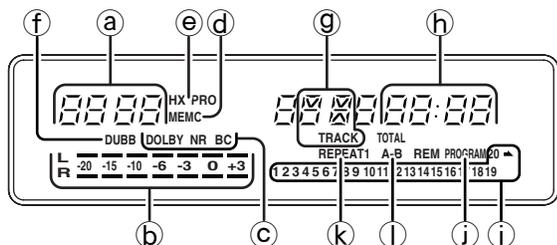
This output jack is used to connect to a set of headphones.

- This jack requires a 1/4" type connector.

**⑳ CD TRAY**

The CD tray is used to hold a CD for playback.

## 21 DISPLAY INDICATORS



- a COUNTER display indicates the amount of tape that has travelled across the head.
- b LEVEL indicators display the record or playback signal levels of the tape deck.
- c DOLBY NR B C indicators display the type of Dolby noise reduction that has been selected.
- d MEMO indicator is displayed when the tape deck memory function is turned on.
- e HX PRO indicator is displayed showing HX PRO is activated.
- f DUBB indicator is displayed when dubbing from the CD player to the tape deck.
- g TRACK number indicator displays the total amount of CD tracks in the disc or program during stop and the current track playing in the play mode.  
TRACK indicator will flash when the CD player is in the Single Track Play mode.
- h TIME indicator displays the playing time of the CD in 4 digits representing minutes and seconds. This display typically represents elapsed time of the track being played. When the REM indicator is displayed, the time shown represents the remaining time of the track being played. When the TOTAL REM indicator is displayed, this represents the total remaining time of the CD or of the program currently being played. In the stop mode the total playing time of the CD is displayed.
- i TRACK number indicator (1 through 20) displays the track numbers on the CD. When in the program mode, the tracks programmed are displayed. Upon completion of playing a track, the number will disappear. When playing a CD with more than 20 tracks on it, the "=>" indicator is displayed.
- j PROGRAM indicator is displayed to indicate that the CD player is in the program mode. The indicator flashes during the program entry mode. This indicator can be turned on and off by pressing the program button.
- k REPEAT indicator is displayed when the CD player is in the all track repeat mode. REPEAT 1 is displayed when the CD player is in the single track repeat mode.
- l A-B indicator is displayed when the CD player is in the A-B repeat mode. When the A-B indicator is flashing, this indicates standby for the setting of point B.
- m REC indicator is displayed when the tape deck is in the record mode. When the REC indicator is flashing, this indicates the tape deck is in the record pause mode.
- n TAPE DECK PLAY indicators (located inside the tape PLAY buttons) displays the direction and mode of the tape transport. When the indicator is flashing, this indicates the transport is in the pause mode in the indicated direction. When the indicator is constantly on, this indicates that the transport is in the play or record mode in the indicated direction. This indicator will not light if there is not a tape in the transport.
- o CD PLAYER PLAY indicator (located inside of the CD PLAY/PAUSE button) displays a constant indicator when the CD player is in the play mode and a flashing indicator when in the pause mode.
- p CD PLAYER SINGLE PLAY indicator (located inside the SINGLE PLAY button) displays a constant indicator when the CD player is in the single track play mode and a flashing indicator when in the single track pause mode.  
When the CD player is stopped and the Single Track play feature has been turned on, the indicator will not light but the Single Track play mode is still active and is indicated by the flashing TRACK (g) indicator.

## 22 HP (HEADPHONE) LEVEL KNOB

This knob is used to control the volume level of the headphone output.

## 23 TEMPO BUTTONS

These buttons are used to change the tempo (speed) of the sound from the CD by up to  $\pm 50\%$ .

The UP button increases the speed in steps of 1%.

The DOWN button decreases the speed in steps of 1%.

If both the UP and DOWN buttons are pressed at the same time, the TEMPO will return to the 0% position (normal speed).

- See page 14 for more information on the operation of this function.

## 24 TAPE/CD/AUX GAIN KNOBS

These knobs are used to determine the amount of signal from the TAPE, CD and AUX sources that is input to the mixer.

## 25 MIC/LINE (1 to 4) GAIN KNOBS

These knobs are used to determine the amount of signal from the 4 MIC/LINE sources that is input to the mixer.

## 26 MASTER VOLUME KNOB

This large knob is used to control the final output level of the mixer through the PRE-OUT (PAC770), SYSTEM OUT (PAC750), and AMPLIFIED OUT (PAC770).

## 27 EQ (LOW, MID, HIGH) CONTROLS

Turn these knobs to adjust the tone of the mixed output. Each a knob controls the level of the corresponding frequency range. Turning each control toward "+" boosts the corresponding frequency range and toward "-" attenuates it.

LOW : Controls the tone of the lower frequencies. (100 Hz)

MID : Controls the tone of the midrange frequencies. (1 kHz)

HIGH : Controls the tone of the upper frequencies. (15 kHz)

## 28 BALANCE CONTROL

This knob can be used to correct a left/right imbalance, to isolate the left or right channel during mono playback, or to compensate for different left/right acoustics in a room or in a particular situation.

- Please note that when this knob is turned fully clockwise or counter-clockwise all sound is muted on the opposite channel.

## 29 AUTO GAIN CONTROL SWITCH (MIC/LINE)

This switch is used to select if the mixer level of the MIC/LINE inputs are controlled automatically or manually.

OFF : The MIC/LINE gain knobs are used to adjust the mixer level.

ON : The MIC/LINE mixer levels are controlled automatically and the gain knobs are disabled.

## 30 AUTO DUCKING SWITCH

This switch is used to automatically adjust the CD, TAPE and AUX mixer levels in response to the MIC/LINE inputs.

The reduction level can be selected by pressing the button. Pressing the button cycles through the following settings: -15  $\rightarrow$   $\infty$   $\rightarrow$  OFF.

-15 : The CD, Tape and AUX levels are reduced by 15dB when any MIC/LINE input is active.

$\infty$  : The CD, Tape and AUX levels are eliminated when any MIC/LINE input is active.

If the MIC/LINE input level goes down, the CD, TAPE and AUX output levels return to their original levels after 1 to 3 seconds.

## 31 VOICE REDUCTION SWITCH

This switch automatically reduces the vocals on the TAPE, CD and AUX sources.

- The performance of this function is determined by the way the source material was recorded. Recordings with the vocals centered equally between the left and right channels works best.

## OPERATION

The following operating procedures are based on the assumption that the power is on and that all necessary input and output connections have already been made. Please refer to the section in this manual marked "Rear Panel Connections".

## MIXER OPERATION

The PAC750/770 includes a versatile built-in Mixer that allows the output to be coordinated with the Tape deck, CD player, AUX input, and the four Mic/Line inputs. Each input to the Mixer has a gain control knob on the front panel that controls the amount of signal that is added to the mix. The final output of the Mixer is controlled by the **MASTER VOLUME** knob 26, the **EQ** controls 27, and the **BALANCE** knob 28.

The final output of the Mixer is then sent to the PRE-OUT (SYSTEM OUT on the PAC750) as a line level signal. On the PAC770, the signal is also sent to the internal amplifier and then output on the **SPEAKER** terminals, which can be attached directly to an appropriate speaker system.

## The Mixer In Relation To The Tape Deck

The recording circuitry of the Tape Deck is directly patched into the mixer, meaning that the Tape Deck will record whatever the Mixer outputs. Therefore, the final level recorded onto the tape will be determined by the setting of the Mixer gain controls and the Tape Deck record level control.

## CASSETTE DECK OPERATION

### Cassette Tape Playback

1. Open the cassette holder by pressing the eject button. Load a cassette tape into the cassette holder and close. The ► indicator on the play forward button will begin to flash.
2. Set the **DOLBY NOISE REDUCTION** switch to the same position as the tape was originally recorded in (i.e. tapes recorded with Dolby B noise reduction need to have this switch in the Dolby B position, tapes recorded with Dolby C noise reduction need to have this switch in the Dolby C position, and tapes recorded without Dolby Noise Reduction need to have this control set to the Off position).
3. Set the reverse mode switch to the desired position.
4. Press the ► **PLAY** button to begin playback in the forward direction. Press the ◀ **PLAY** button to begin playback in the reverse direction. When the tape enters into the playback mode the indicator on the play control button will change from the flashing mode to a constant on mode.
5. Adjust the gain into the mixer using the **TAPE** knob 24.
6. Adjust the volume with the **VOLUME** knob 26.
7. Pressing the **STOP** button 4 will stop the tape.

### Searching For Tracks

While a tape is playing back, pressing the ►► (Fast Forward) or ◀◀ (Rewind) button will cause the tape deck to forward search for the next track or reverse search to the beginning of the current track, depending on the direction of playback.

When the search is concluded, the tape deck will stop.

#### Notes

- For normal Fast Forward and Rewind, the **STOP** button must first be pressed.

### Rewind & Fast Forward

When the tape deck is stopped, and regardless of the current direction, pressing the ►► (Fast Forward) button will place the tape transport in the high speed fast forward mode and the tape will advance quickly from left to right. Pressing the ◀◀ (Rewind) button will place the tape transport in the high speed rewind mode and the tape will retract quickly from right to left.

In either the fast forward or the rewind mode, the tape transport will continue to fast forward or rewind until the stop control button is pressed or the end of the tape or a saved memo point is reached.

## Cassette Tape Record

1. Open the cassette holder by pressing the eject button. Load a recordable cassette tape into the cassette holder and close. The ► indicator on the play button will begin to flash. (If you wish to change the tape direction, press the ◀ **PLAY** button and then press the **STOP** button).
2. Set the **DOLBY NOISE REDUCTION** switch to the desired position to record the tapes with noise reduction (i.e. tapes to be recorded with Dolby B noise reduction need to have this switch in the Dolby B position, tapes to be recorded with Dolby C noise reduction need to have this switch in the Dolby C position, and tapes to be recorded without Dolby Noise Reduction need to have this switch set to the OFF position).
3. Set the reverse mode switch to the desired position.
4. Set the **AUTO LEVEL** switch to the desired position.
5. Press the **REC** button. The **REC** indicator will begin to flash indicating the tape transport is in the record-pause mode.
6. If the **AUTO LEVEL** switch is in the OFF position, use the manual record level control to adjust the input signal to the desired recording level.
7. Press the ► **PLAY** control button to begin recording in the forward direction.
8. To pause recording, press the **REC** button. Press the **PLAY** button to resume recording.
9. Pressing the **STOP** button will stop recording.

### Erasure Of Tape

When a program source is recorded onto a tape, the previously recorded sound is erased automatically, and replaced with the new recording. If you wish to erase a tape without recording, set the **RECORD LEVEL** control to the minimum (0) position and record. Set the **AUTO LEVEL** off.

### To Protect Valuable Recordings

In the record mode, information previously recorded on the tape will automatically be erased. To prevent this from happening, use a small screwdriver to break out one or both safety tabs (See Figure 2 on pg. 17). It is possible to restore the recording capability of either side of the cassette by covering the opening with clear adhesive tape (See Figure 4 on pg. 17).

### Auto Tape Selector

This unit is equipped with an auto tape selector which automatically sets the bias and equalizer level using the detection holes provided in the cassette shell. The bias and equalizer levels are automatically set according to the type of cassette as follows. (See Figure 3 on pg. 17)

- |                |             |              |
|----------------|-------------|--------------|
| • Normal tapes | EQ = 120μS, | Bias = Low   |
| • High tapes   | EQ = 70μS,  | Bias = High  |
| • Metal tapes  | EQ = 70μS,  | Bias = Metal |

## CD PLAYER OPERATION

### CD Playback

1. Open the CD tray by pressing the **OPEN/CLOSE** button. Place a CD onto the tray and close the tray by pressing the **OPEN/CLOSE** button. The display will show the general data of the current CD after it has been read.
2. To begin playback of the CD, press the **PLAY/PAUSE** button. The ► indicator in the **PLAY/PAUSE** button will illuminate, the display will show the data for the first track, and the track will begin to play.
3. Adjust the gain into the mixer using the **CD knob** 24.
4. Adjust the volume with the **VOLUME knob** 26.
5. To pause the CD during playback, press the **PLAY/PAUSE** button. The CD will remain in the current position and the ► indicator in the **PLAY/PAUSE** button will begin to flash. Pressing the **PLAY/PAUSE** button will resume playback from the point that the CD player was paused.
6. Playback will continue until the end of disc is reached or the **STOP** button is pressed.

### Selecting The Playback Track

By pressing the ►► **NEXT** or ◀◀ **PREVIOUS** buttons you can select the track to be played. Each press of the ►► button will advance the player to the beginning of the next track.

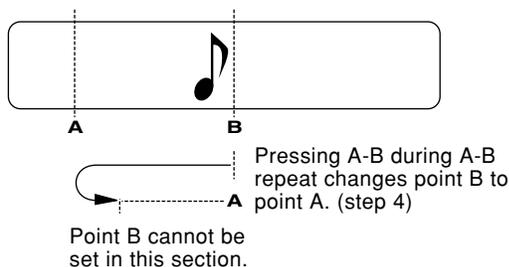
Each press of the ◀◀ button will cause the CD player to skip to the beginning of the current track. If immediately pressed again, the CD player will skip back one track for every time the button is pushed.

### A-B Repeat

1. Start playback.
2. Press the **A-B** button at the beginning of the part you want to repeat. "REPEAT" lights and "A-B" blinks in the display.
3. Press the **A-B** button again at the end of the part you want to repeat to start the A-B repeat. "REPEAT A-B" lights in the display.
4. Press the **A-B** button again to change the end point (point B) to the new start point (new point A).
5. After the new start point is passed, press the **A-B** button again to set the new end point (new point B) and re-start A-B repeat.
6. To continue to re-mark the A-B repeat points, repeat steps 4 and 5.
7. Press the **REPEAT** button to return to the normal play mode.

#### Notes

- A-B repeat across more than one track is not possible. (If the next track starts after having set point A in a track, A-B repeat is canceled automatically.)



## Programming Playback Tracks

### (PROGRAM PLAY MODE)

This procedure allows a program of selected tracks for playback in any order.

1. By pressing the **PROGRAM** button once you will place the CD player into the programming mode. Once the **PROGRAM** button is pressed, the **PROGRAM** indicator in the CD display will begin to flash. This indicates the CD player is in the program entry mode.
2. By pressing the ►► **NEXT** or ◀◀ **PREVIOUS** button, tracks to be programmed are selected. Each press of the ►► button will advance the CD player to the next track. Each press of the ◀◀ button will cause the CD player to skip to the previous track. When the desired track number has been selected, leave the CD player untouched for approximately 1.5 seconds and the selected track will be stored in the program. Continue this procedure until all desired tracks (30 tracks maximum) have been programmed.
3. By pressing the **PLAY/PAUSE** button, the CD player will exit the program entry mode and enter the program play mode. The **PROGRAM** indicator in the CD display will light constantly and the CD player will begin to play in the order selected during the program entry mode.
4. By pressing the **STOP** button, the CD player will stop playing but will remain in the program play mode. The program will remain in memory.
5. When the **STOP** button is pressed while the CD player is in the stop mode, the memorized program will be cleared.

### Tempo Control

The PAC750/PAC770 is equipped with the ability to change the CD playback speed by up to  $\pm 50\%$  without changing the key (musical pitch) of the sound from the CD.

The "+" button increases the speed in steps of 1%.

The "-" button decreases the speed in steps of 1%.

Holding down either the "+" or "-" buttons for more than 1 second causes the speed to change rapidly.

Pressing both the "+" and "-" buttons at the same time will return the **TEMPO** to the 0% position (normal speed).

#### Display

Pressing the "+" key		Pressing the "-" key	
TEMPO	0%	TEMPO	0%
⋮	+1%	⋮	-1%
⋮	+2%	⋮	-2%
⋮	+3%	⋮	-3%
⋮	⋮	⋮	⋮
TEMPO	+50%	TEMPO	-50%

- If the "+" or "-" buttons are pressed while the time display is shown, the current position of the **TEMPO** control is displayed the first. Once one of the "+" or "-" are pressed a second time, the position then changes.
- If the **KEY** has been changed, **TEMPO** control is not available. Restore **KEY** control to the 0.00 position in order to use **TEMPO** control.

## Key Control

The PAC750/PAC770 is equipped with the ability to change the key (or musical pitch) of the sound of the CD by up to  $\pm 1$  octave.

The key control system works on the following musical principles:

100 cents=1 half step  
12 half steps=1 octave

The "+" button raises the key in steps of 12.5 cents and is displayed as a percent of the next half step up, rounded to the nearest tenth. For example, to raise the key of the CD by 2 1/2 half steps, the display should show 2.50.

The "-" button lowers the key in steps of 12.5 cents and is displayed as a percent of the next half step down, rounded to the nearest tenth. For example, to lower the key of the CD by 3 1/4 half steps, the display should show -3.25.

Holding down either the "+" or "-" buttons for more than 1 second causes the key to change rapidly as long as the button is held down.

Pressing both the "+" and "-" buttons at the same time will return the KEY to the 0.00 position (normal key).

### Display

Pressing the "+" key		Pressing the "-" key	
KEY		KEY	
0.00		0.00	
+0.13		-0.13	
+0.25		-0.25	
+0.38		-0.38	
+0.50		-0.50	
+0.63		-0.63	
+0.75		-0.75	
+0.88		-0.88	
+1.00		-1.00	
+1.13		-1.13	
KEY	+12.00	KEY	-12.00

- If the "+" or "-" buttons are pressed while the time display is shown, the current position of the KEY control is displayed first. Once one of the "+" or "-" keys are pressed a second time, the position then changes.
- If the TEMPO has been changed, KEY control is not available. Restore TEMPO control to the 0% position in order to use KEY control.

## CD-RW/CD-R Playback

The PAC750/PAC770 can play back CD-RW (ReWritable) discs as well as ordinary music CD and CD-R (Recordable) discs.

- \* The CD-R and CD-RW discs should contain properly-recorded TOC information so that they can be played back. With the CD recorder system, writing the TOC information in a disc is referred to as finalizing the disc. A disc cannot be recognized as a CD disc and played back unless it has been finalized properly. For details, please read the instruction manual provided with a CD recorder.
- \* TOC stands for Table Of Contents and contains information such as the total number of tracks and total playing time of the disc.
- \* The PAC750/PAC770 can play only the discs recorded in the CD-DA format designed for music reproduction. Do not attempt to play a disc containing other data, such as a CD-ROM for PCs, on this unit.
- \* As the playback of a CD-RW disc necessitates partial change of the player setup, it may take longer to read the TOC information compared to a music CD or CD-R disc.
- \* Because CD-RW discs have lower reflectivity than CDs and CD-R discs, dirt on the surface of a CD-RW disc can generate noise, make the CD-RW disc unplayable, or cause misoperation. If any of these symptoms occur, wipe the surface of the CD-RW disc as indicated on page 17.

## CD TO TAPE DUBBING

The CD player can dubb directly to the tape deck either manually or automatically. Manual dubbing allows the recording level to be set by the RECORD LEVEL knob and then recording is started manually. Automatic dubbing adjusts the recording level automatically based on the peak levels of the CD and then starts recording automatically.

### Manual Record Level Dubbing

1. By pressing the OPEN/CLOSE button and the tape EJECT button, load the source CD onto the CD tray and a recordable tape into the tape holder. Close both the CD tray and the tape holder. The display will show the general CD data and the tape play indicator located inside the tape PLAY button will begin to flash.
2. Prepare the tape for dubbing by rewinding it to the beginning of the first side that the tape is to be recorded onto.
3. Set the AUTO LEVEL switch to the OFF position.
4. Press the AUTO DUBB button once. The REC indicator will begin to flash, the DUBB indicator will light, and the CD player will enter the play mode. At this point you can adjust the record level to achieve the desired recording level.
5. After adjusting the record level, press the AUTO DUBB button again. The CD player will return to the stop mode, and the tape transport will enter into the record mode. After approximately 5 seconds, the CD player will enter the playback mode and begin to play the first track, dubbing it onto the tape.
6. When either the CD transport or the tape transport have reached the end and stopped, the other transport will also stop.
7. To end the dubbing during a session, press the STOP on the tape deck or the STOP button on the CD player.

### Automatic Record Level Dubbing

1. By pressing the OPEN/CLOSE button and the tape EJECT button, load the source CD onto the CD tray and a recordable tape into the tape holder. Close both the CD tray and the tape holder. The display will show the general CD data and the tape play indicator located inside the tape PLAY button will begin to flash.
  2. Prepare the tape for dubbing by rewinding it to the beginning of the first side that the tape is to be recorded onto.
  3. Set the AUTO LEVEL switch to the ON position.
  4. Press the AUTO DUBB button once. The REC indicator will begin to flash, the DUBB indicator will light and the CD player will enter play mode. The CD player will automatically begin to search the CD for the peak level. This procedure could take as long as 5 minutes to complete. Once the peak level has been determined, the record level for dubbing will be set automatically.
  5. After the record level has been set, the tape transport will enter into the record mode. After approximately 5 seconds, the CD player will enter the playback mode and begin to play the first track, dubbing it onto the tape.
  6. When either the CD transport or the tape transport have reached the end and stopped, the other transport will also stop.
  7. To end the dubbing during a session, press the STOP on the tape deck or the STOP button on the CD player.
- When dubbing is started with a program of CD tracks, the tracks are dubbed in the order of the program.
  - During dubbing, a blank space of approximately 4 seconds is automatically inserted between CD tracks. This may hinder some dubbing such as live recordings on CD. If this is a problem, dubb from the CD to the tape manually using the mixer.
  - When recording with the reverse mode switch set to the two way or the continuous mode, there may be an interruption in recording of approximately 1 second during the optical reversing of the tape transport.

## TROUBLESHOOTING

Should faults occur, it is, in many cases, not necessary to consult your dealer or technical service department. On the basis of the following checks you will be able to rectify a number of conditions yourself without difficulty.

If the condition cannot be remedied after the following checks, please consult your dealer or the Superscope technical service department at (630) 820-4800.

### POWER AMP (PAC770)

#### Both speakers output monaural sound.

1. Check that the MONO BRIDGE switch is set to OFF.

#### Sound is output only from one of the speakers.

1. Check the setting of the BALANCE control.
2. Turn the power off and change the connections of the left and right speakers. If sound is still not output from the same speaker, check its connection cord or the speaker itself.

#### Sound is not produced at all.

1. Check that the speaker cords are connected properly.
2. Check that the VOLUME control is not set at the minimum level.
3. Check that the EFFECT ON/OFF switch is OFF, if nothing is connected with the EFFECT jacks.

#### Sound consistently cuts off.

1. Check the temperature of the unit by placing your hand on the top or bottom. If the temperature is extremely hot, the amplifier is cutting off to protect itself. The output level must be decreased in order to maintain a consistent output.

## MIXER

#### MIC/LINE sound is not produced at all

1. Check that the MIC/LINE gain is not too low.
2. Check that the SENSITIVITY switch is set correctly based on the type of input.

#### MIC/LINE sound is distorted

1. Check that the MIC/LINE sensitivity is set correctly.
2. Check that the MIC phantom power is turned on or off.

#### Hum interferes with the sound.

1. Check that cords are connected properly.
2. Check that there is not any source of magnetism (TV, motor, transformer, etc.) placed near the unit.

## TAPE DECK

#### The tape does not travel.

1. Check that the power cord is plugged in properly.
2. Check that the POWER switch is set to ON.
3. Check that the tape is rewound.

#### The tape travels, but no sound is output.

1. Check that the cassette tape is recorded.
2. Check that the speakers are connected and functioning properly.
3. Check that the TAPE gain and volume control is not set at the minimum level.

#### Tape will not record.

1. Check that the protection tabs of cassette tape are not broken.

#### Sound is distorted.

1. Check that the recording level is not too high.
2. Check that the head is not dirty.

#### Sound is unstable.

1. Check that the head is not dirty.
2. Check that the pinch wheels and capstans are not dirty.
3. Check that the tape is wound tightly.

#### Noise is noticeable.

1. Check that the head is not dirty.
2. Check that the head is not magnetized.
3. Check that the DOLBY NR switch is set properly according to the tape.

## CD PLAYER

#### The disc fails to play.

1. Check that the power cord is plugged in properly.
2. Check that the POWER switch is set to ON.
3. Check that the disc is placed in the correct position on disc tray.
4. Check that the disc is placed properly with the label side facing up.
5. Check that the disc is not dirty, scratched, or warped.

#### The disc is playing but no sound is heard.

1. Check that the speakers are connected and functioning properly.
2. Check that the CD gain and volume control is not set at the minimum level.

#### The disc stops in mid-operation.

1. Check that the disc is not dirty, scratched, or warped.

#### The sound drops out or noise is heard.

1. Check that the disc is not dirty, scratched, or warped.

## REPAIRS

Only the most competent and qualified technicians should be allowed to service your unit. Superscope and its factory trained warranty station personnel have the knowledge and special equipment needed for repair and calibration of this precision instrument.

In the event of difficulty, call the telephone number listed in this owners manual to obtain service. Please include the model and serial number of your unit together with a copy of your purchase receipt and a full description of what you feel is abnormal in its behavior.

## CLEANING OF EXTERIOR SURFACES

With proper care and cleaning, the exterior finish of your equipment will last indefinitely. Never use scouring pads, steel wool, scouring powders or harsh chemical agents (e.g. lye solution), alcohol, thinners, benzene, insecticide or other volatile substances, as these will mar the finish of the cabinet. Likewise, never use cloths containing chemical substances. If the equipment becomes dirty, wipe the external surfaces with a soft, lint-free cloth.

If the cabinet becomes heavily soiled:

- dilute some liquid soap in water
- dip a soft, lint-free cloth in the solution and wring the cloth out until it is damp
- wipe the equipment with the damp cloth
- dry the equipment by wiping it with a dry cloth

## COMPACT DISC CARE

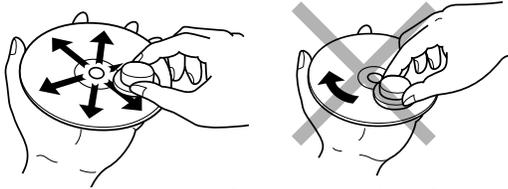
Handle discs carefully so as not to damage or scratch the front side.

To protect the disc, avoid placing it in the following locations:

- In direct sunlight or near a source of heat like a heater.
- In a place which is damp or dirty.
- In a place which could be exposed to rain, such as near a window.

Always keep the disc surface clean.

Up to six billion data units are recorded on the front side of the disc. When cleaning the disc surface, always be sure to use a special compact disc cleaner and wipe as shown below.



Wipe in a radial direction. Do not wipe in circumferential direction.

- Do not use cleaner for analog records, as this will adversely affect the disc surface.  
Store discs properly by placing them in their disc cases.
- Do not attach a piece of paper or sticker on the label side of disc.  
When a disc has a piece of plastic tape or a rental CD label with paste protruding from the edge or when a disc has a trace of such a sticky object, do not attempt to play the disc. If such a disc is played on the CD player, impossibility of taking out the disc or other malfunction may result.

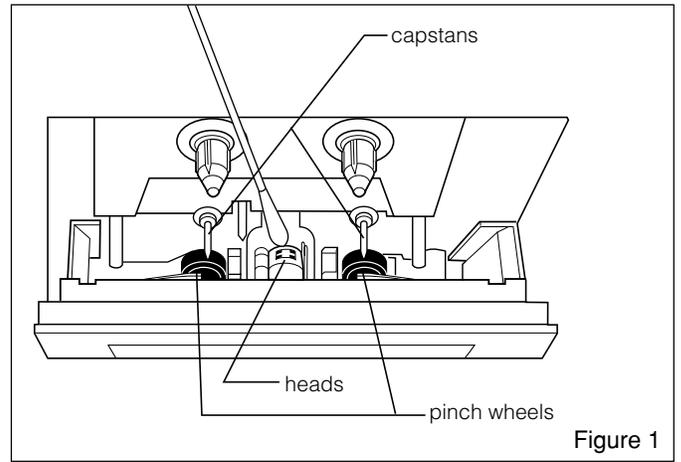


Figure 1

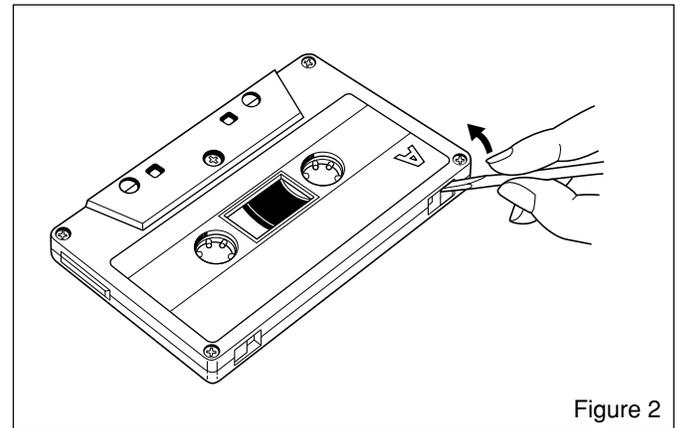


Figure 2

## CASSETTE TAPE CARE

### HEAD CLEANING

If the heads are not cleaned for a long period, dirt or dust may be deposited on the heads and capstans, causing degraded high-frequency characteristics, volume drop, or degraded recording and erasure performances.

To prevent this, clean the heads, etc., periodically as follows.

1. Turn the power off.
2. As shown in Figure 1, clean the parts which come in contact with tape, including the heads, capstans, tape guides, pinch wheels, etc., with a cotton swab soaked in head cleaning solution or denatured alcohol.

### HEAD DEMAGNETIZATION

When a magnetized metallic objects (such as a screwdriver tip, etc.) comes in contact with a head or capstan, or when the deck has been used for a long period of time, the head may be magnetized and noise may be generated. If the head is extremely magnetized, the high frequencies in recorded tapes could even be erased due to it. To prevent this, demagnetize the heads and capstans periodically (every 20 hours of use) using a commercially-available head demagnetizer. (For the operation, please refer to the instruction manual supplied with your head demagnetizer.)

#### Caution:

Be sure to turn the power of the cassette deck off before using a head demagnetizer.

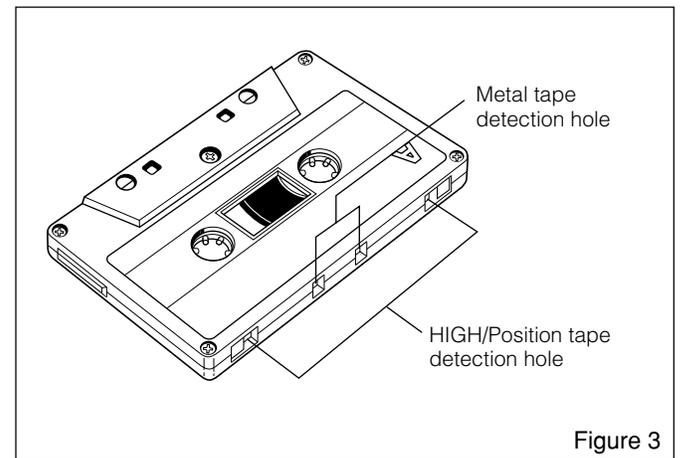


Figure 3

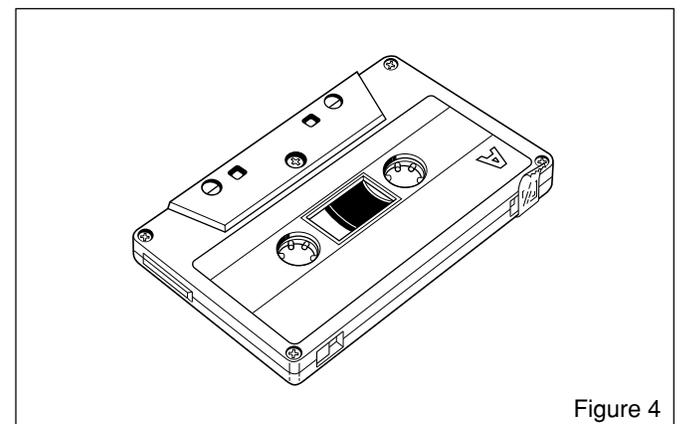


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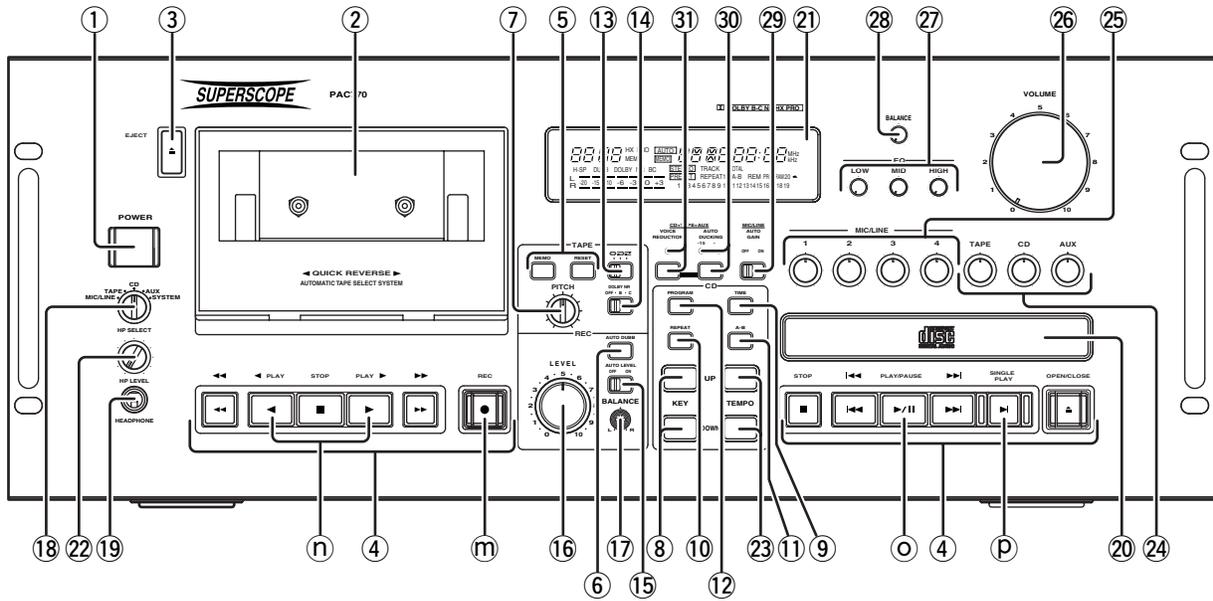
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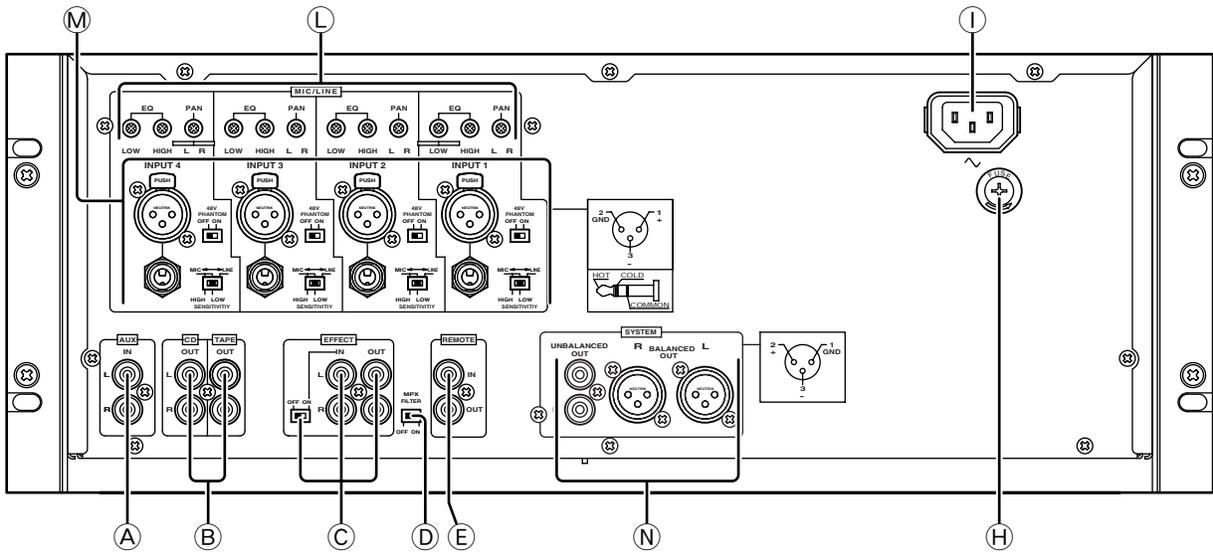
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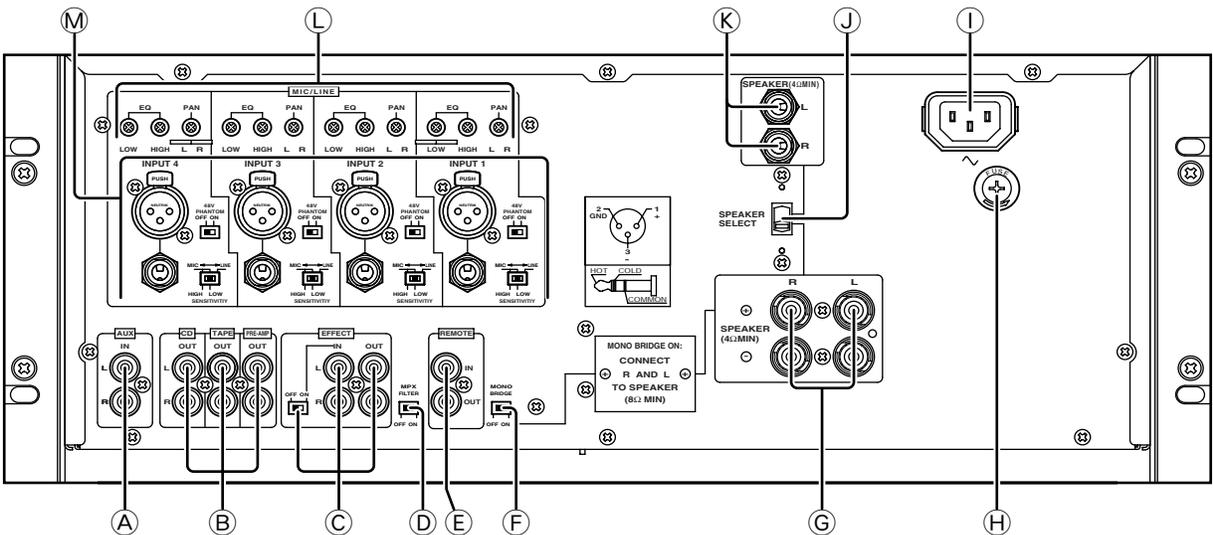
## PAC750/PAC770 FRONT PANEL



## PAC750 REAR PANEL



## PAC770 REAR PANEL



# SPECIFICATIONS

## MIXER

Input sensitivity	
MIC HIGH .....	4mV
MIC LOW .....	40mV
LINE .....	1000mV
PHANTOM output voltage .....	DC 48V
Input	
AUX in .....	1000mV/47kΩ
Pre-Out Output Level / Impedance (PAC770 Only) .....	200mV / 1.5kohm
System (RCA) Output Level / Impedance (PAC750 Only) .....	1000mV / 1.5kohm
System (XLR) Output Level / Impedance (PAC750 Only) .....	1000mV / 150ohm
EQ - MASTER & MIC/LINE	
Low Band Center .....	100Hz
Mid Band Center .....	1kHz
High Band Center .....	15kHz

## POWER AMPLIFIER (PAC770 Only)

Power output (RMS Continuous <0.08% THD)	
Stereo 8ohm Load .....	90W + 90W
Stereo 4ohm Load .....	110W + 110W
Mono 8ohm Load .....	210W
Frequency response .....	5Hz-30kHz (+/- 3dB)
Rated input level .....	0.5Vrms

## TAPE DECK

Track System .....	4 Track, 2 Channel
Record/Erase system .....	AC105kHz Bias
Head System (Rotary type combination)	
Rec/Play .....	Hard metal alloy
Erase .....	Dual gap ferrite
Motor System	
Capstan .....	DC Servo Control
Reel .....	DC
Wow and Flutter (JIS weighted) .....	<0.07%
Frequency Characteristics	
Frequency response (no Dolby NR)	
type I (Normal position) .....	40Hz-15kHz±3dB
type II (High position) .....	40Hz-16kHz±3dB
type III (Metal position) .....	40Hz-16kHz±3dB
Overall S/N (no Dolby NR, IEC-A WTD)	
type I (Normal position) .....	53dB
type II (High position) .....	54dB
type III (Metal position) .....	55dB
Dolby NR effect (B/C S/N improvement, CCIR-ARM WTD) .....	9dB/18dB
Analog output	
Output level .....	500mV
Output impedance .....	1kΩ

## CD

Channels .....	2 channels
Sampling frequency .....	44.1kHz
Quantization .....	16bit linear/channel
Error correction .....	Cross-interleave read solomon code (CIRC)
D/A conversion .....	1-bit linear/channel
Wow & flutter .....	Precision of quartz
Optical Readout System	
Laser .....	GaAlAs semiconductor
Wavelength .....	780nm
Frequency Characteristics (Tempo control off)	
Frequency response .....	20Hz-20kHz -1.5dB
Dynamic range .....	80dB
S/N ratio .....	70dB
Channel separation .....	70dB
Distortion (THD 1kHz) .....	0.05%
Analog output	
Output level .....	2V RMS
Output impedance .....	1.5kΩ

## COMMON PART:

Power Consumption	
PAC770 .....	500W
PAC750 .....	30W
Dimensions	
Width .....	19 inches (483mm)
Height (4U) .....	7 inches (180mm)
Depth .....	18 inches (455mm)
Net Weight .....	PAC770 : 39.7 lbs (18kg)
	PAC750 : 26.4 lbs (12kg)

These specifications represent design standards, Higher levels of performance can be expected under most conditions.  
Subject to change without prior notice.

## INTRODUCTION

Thank you for selecting the Superscope PAC750/PAC770. Please read these operating instructions carefully. We recommend that you read the entire user guide prior to connecting and operating the unit. It is also recommended that all connections be made prior to operating the unit.

Please refer to this manual to identify controls and connections for operation of the unit.

## PRECAUTIONS

The following precautions should be considered when operating the equipment.

When setting the equipment ensure that :

- air is allowed to circulate freely around the equipment
- the equipment is on a vibration free surface
- the equipment will not be exposed to interference from an external source
- the equipment will not be exposed to excessive heat, cold, moisture or dust
- the equipment will not be exposed to direct sunlight
- the equipment will not be exposed to electrostatic discharges
- In addition, never place heavy objects on the equipment.
- If a foreign body or water does enter the equipment, contact your nearest dealer or service center.
- Do not pull out the plug by pulling on the mains lead. Hold the plug.

## FEATURES

### BUILT-IN MIXER

The PAC750/PAC770 incorporate a built-in mixer that includes inputs and control for the built-in Tape and CD players, the stereo Aux input, and the 4 mono Mic/Line inputs. The Aux input allows an unbalanced stereo line level source to be connected. The 4 mono Mic/Line inputs allow either a microphone (either high or low sensitivity) or line input to be connected. EQ and pan controls are provided on those inputs to allow for feedback elimination and mixer customization.

### AUTO DUCKING

The PAC750/PAC770 incorporate an Auto Ducking feature that allows the Mic/Line inputs to work in conjunction with the Tape, CD, and Aux inputs. With the Auto Ducking feature set to -15dB, everything works as normal except for when any of the Mic/Line inputs has an active signal. When this occurs, the Tape, CD, and Aux inputs drop down in level by -15dB. When Auto Ducking is set to  $-\infty$ , the Tape, CD, and Aux inputs are dropped out completely when the Mic/Line inputs are active.

### VOICE REDUCTION

The Tape, CD, and Aux inputs to the mixer contain a Voice Reduction circuit that can effectively reduce the vocal tracks in most music. Please be aware that results vary according to the music and the way it was recorded.

### AMPLIFIER (PAC770)

The PAC770 contains a powerful amplifier that allows versatile speaker connection. The 1/4" connectors are very convenient for portable use while the binding posts allow connection of single-ended banana plugs or a secure bare wire connection.

### TEMPO CONTROL

The PAC750/PAC770 CD player allows for the adjustment of the playing speed (Tempo) from -50% to +50%. This feature is similar to Pitch control except that the Key (musical pitch) of the CD output does not change when the Tempo is adjusted.

### KEY CONTROL

The PAC750/PAC770 CD player allows for the adjustment of the Key (frequency/musical pitch) from -1 octave to +1 octave during playback. This feature allows the music to be adjusted in order to match correctly to an instrument or a voice.

### A-B LOOP

The PAC750/PAC770 allows two points within the CD to be selected and the audio within these points will be repeated until a stop command is issued.

### SINGLE TRACK PLAY

The PAC750/PAC770 can be set for the CD player to play the selected track and then stop and cue up the next track.

### AUTO CUE

This feature allows the CD player to advance to the beginning of the audio within the track rather than start from the track start flag. This feature helps to minimize the silence at the beginning of a CD track.

### PITCH CONTROL

The PAC750/PAC770 tape player allows for adjustment of the playback pitch (key + tempo) from -12% to +12%. The feature is particularly useful to tune a tape to accompanying instruments and choirs.

### QUICK OPTICAL AUTOREVERSE

In addition to the normal tension reversing circuitry the PAC750/PAC770 tape transport also employs optically sensing quick autoreverse circuitry. This circuitry reacts to the clear areas of the tape, usually the leader tape, and when detected will reverse the direction of the tape transport. This process minimizes the loss of signal being recorded or played back. This reverse process applies to all tape playback and recording modes, including autoreverse and continuous mode.

### DOLBY NR SYSTEMS

The Dolby Noise Reduction systems compress and amplifies the input signal during recording in order to raise the signal-to-noise ratio on the tape. During playback, these signals are expanded and attenuated by the same amount in order to regain the original dynamic range of the music. An additional result of this expansion and attenuation is that the noise floor of the recording is reduced significantly. Dolby B typically reduces noise by 10dB and Dolby C typically reduces noise by 20 dB.

### DOLBY HX PRO HEADROOM EXTENSION

The Dolby HX PRO system monitors the total amount of effective bias during recording and instantaneously compensates for any excess bias by reducing the tape deck's bias signal level accordingly. The system operates independently on each channel. HX Pro is unlike a noise reduction system because it functions only during recording and no decoding is required. Therefore a tape recorded with the HX Pro system can be played back on any other cassette deck while retaining the benefits of HX Pro.

### ONE TOUCH DUBBING

The PAC750/PAC770 allows dubbing of the CD to the tape with one button start control. This feature allows manual or automatic record level control.

### RC5 REMOTE CONTROL COMPATIBILITY

The PAC750/PAC770 comes equipped with an RC5 remote in and out port. Through the use of various remote control options, major functions of the unit can be operated via wired or wireless remote control.

# REAR PANEL CONNECTIONS

## A AUX INPUT JACKS

These jacks should be connected to the LINE OUTPUT of your source.

## B LINE OUTPUT (CD, TAPE, PRE-AMP(MIX)) JACKS

These jacks can be connected to the appropriate LINE INPUT of a power amp, PA or monitoring system.

## C EFFECT INPUT & OUTPUT JACKS

These jacks are used to connect to a graphic equalizer or an effects processor. When such a device is connected, set the EFFECT switch to the ON position. When such a device is not connected, set the EFFECT switch to the OFF position.

- If the switch is left ON without anything connected, no audio will be output through the pre-out or the speakers.

## D MPX FILTER SWITCH

When recording FM broadcasts, set this switch to the ON position to eliminate the FM carrier signal.

## E REMOTE CONTROL JACKS

These jacks are used with an infrared or wired remote control to provide remote operation of the PAC750/PAC770.

The signal format of this interface is Philips RC5.

- These jacks can be serially linked to provide serial remote control operation of multiple RC5 equipped products as well.

## F MONO BRIDGE SWITCH (PAC770)

- This switch is used to select between mono bridge and stereo amplified output mode.

When this switch is in the OFF position, the unit functions as a stereo power amp. When this switch is in the ON position, the unit functions as a monaural amp. (For details on how to connect the speakers, refer to page 52.)

- This switch only effects the binding post speaker outputs and not the 1/4" speaker outputs.
- Make sure this switch is OFF when the 1/4" speaker outputs are used.

## G, K AMPLIFIED SPEAKER OUTPUTS (PAC770)

These jacks are used to connect to passive (non-powered) speakers. When using a speaker system in stereo mode with left and right channels, connect the right channel speaker to the output terminal ㊦ labeled "R," and the left channel speaker to the output terminal ㊦ labeled "L". In stereo mode, use a speaker system with an impedance of 4 to 16 ohms.

When using a single (mono) speaker system, set the MONO BRIDGE switch to "ON". Connect the speaker to the red terminals for both the "L" and "R" speaker terminals ㊦. Do not use the black terminals. In mono mode, use a speaker system with an impedance of 8 to 16 ohms.

- MONO BRIDGE mode is only available on the binding post speaker outputs and not the 1/4" speaker outputs.

## H FUSE Holder

**CAUTION : Disconnect AC power before removing.**

This receptacle holds a specific fuse that is used to prevent overload and shorting.

## I AC TERMINAL

Connect the AC cord that is provided with the unit to this terminal.

## J SPEAKER SELECT SWITCH (PAC770)

This switch is used to select between the two sets of speaker terminals (㊦ and ㊦).

- Speaker terminals ㊦ and ㊦ cannot both be used simultaneously.
- Speaker terminal ㊦ does not permit mono bridge connection. However, make sure the MONO BRIDGE switch is in the OFF position.

## L EQ & PAN CONTROLS

The recessed EQ controls allow the tone of each MIC/LINE input to be adjusted to obtain optimum sound quality. Turning each control to the right boosts the corresponding frequency range and to the left attenuates it.

LOW : Controls the tone of the lower frequencies. (100Hz)

HIGH : Controls the tone of the higher frequencies. (15kHz)

The recessed PAN control adjusts the MIC/LINE input to the desired position (L, R or L + R) in the mixing bus.

When the knob is at the center position, the MIC/LINE signal is centered between the left and right. To position the output on the left side, turn the knob towards "L". To position the output on the right side, turn the knob towards "R".

## M MIC/LINE INPUT JACKS

Each set of these inputs is designed to accept either a microphone (MIC) or line (LINE) level signal. All of the input jacks are balanced. For a microphone level signal, set the MIC ↔ LINE switch to the MIC position. For all MIC inputs, set the SENSITIVITY to either HIGH or LOW, according to the sensitivity of the microphone. If a microphone that requires phantom power is used with the XLR input, set the PHANTOM switch to the "ON" position.

For a line level input, set the MIC ↔ LINE switch to the LINE position.

- The XLR input and the 1/4" input cannot be used at the same time.

## N SYSTEM OUTPUT JACKS (PAC750)

The system output jacks are the final output of the mixer and can be used when connecting the PAC750 to a power amp, PA, or monitoring system. The RCA jacks are unbalanced outputs. The XLR jacks are balanced outputs.

# FRONT PANEL FEATURES

## ① POWER BUTTON

Push this switch in to turn the unit on and off. When power is turned off, all past settings are removed from memory and the unit returns to its default setting upon the next power up.

## ② CASSETTE TAPE HOLDER

This holds the cassette tape for playback and record functionality. Tapes that have the record protect tab removed will not enter into the record mode.

## ③ EJECT BUTTON

Press this button to open the cassette tape holder.

## ④ TAPE DECK AND CD PLAYER CONTROL

### TAPE DECK CONTROL BUTTONS

#### ■ STOP BUTTON

Press this button to cancel all current operations of the tape deck.

#### ▶ FORWARD PLAY BUTTON

Press this button to engage the tape deck into the forward play function.

#### ◀ REVERSE PLAY BUTTON

Press this button to engage the tape deck into the reverse play function.

#### ◀◀ REWIND BUTTON

Press this button to engage the tape transport into the fast rewind mode from the right (take-up) to the left (supply) reels. When this button is pressed during playback, the tape deck will search for the next program in the reverse direction.

#### ▶▶ FAST FORWARD BUTTON

Press this button to engage the tape transport into the fast forward wind mode from the left (supply) to the right (take-up) reels. When this button is pressed during playback, the tape deck will search for the next program in the forward direction.

#### ● REC/PAUSE BUTTON

Press this button to engage the tape transport into the record-pause mode. In this mode the tape deck is ready to begin recording. The tape record mode can be engaged by pressing the **FORWARD PLAY ▶** or **REVERSE PLAY ◀** buttons.

### CD PLAYER CONTROL BUTTONS

#### ▲ OPEN/CLOSE BUTTON

Press this button to open the CD door and eject the disk. Press this button again to close the CD door and read the disc.

- The OPEN/CLOSE button is disabled during the play mode.

#### ■ STOP BUTTON

Press this button to stop the CD player while in the play mode. During the program mode, the STOP button will cancel the current program when the CD player is in the stop mode.

#### ▶/|| PLAY/PAUSE BUTTON

When this button is pressed during the stop mode, the CD player will start playback from the beginning of the disc or program, and then continue to play until the end of the disc or program.

When this button is pressed during the play mode, the CD player will enter the pause mode.

When this button is pressed during the pause mode, the CD player will enter the play mode.

## ◀◀ PREVIOUS/REVERSE SEARCH BUTTON

When this button is pressed during the stop mode, tracks can be selected for playback by searching in the reverse order, starting from the last track on the disc.

When this button is pressed during the play mode, the CD player will skip back to the beginning of the current track. If immediately pressed again, the CD player will skip back one track for every time the button is pushed.

During the program mode, this button is used to select the tracks to be saved in the program.

If this button is pressed and held during playback, the CD player will enter audible reverse search mode until the button is released.

## ▶▶ NEXT/FORWARD SEARCH BUTTON

When this button is pressed during the stop mode, tracks can be selected for playback by searching in the forward direction, starting from track number 1.

When this button is pressed during the play mode, the CD player will skip forward one track for every time the button is pushed.

During the program mode, this button is used to select the tracks to be saved in the program.

If this button is pressed and held during playback, the CD player will enter the audible forward search mode until the button is released.

## ▶ SINGLE PLAY BUTTON

Press this button to toggle the Single Track Play feature on and off. When on, the TRACK (g) indicator in the display will flash and, during playback only, the Single Play button will light. When the CD player is stopped, only the TRACK indicator will flash to indicate that the Single Track play mode is active. The Single Track button will not light so it does not look like the CD player is playing while it is stopped.

Once the Single Track play mode has been activated, it will stay on, even if discs are changed, until it is turned off or the power has been switched off.

When Single Track Play is activated, the CD player will do two things differently than normal: first, each time a track is selected via the ◀◀ and ▶▶ buttons, the track will not start playing but will enter the Pause mode at the beginning of the audio (cued up). Second, when a track that is playing comes to an end, the next track will not start playing but will be cued up to the audio in Pause mode.

- While the CD player is stopped, Single Track play can be turned on and off but is only indicated by the flashing TRACK (g) indicator. Once playback starts, the Single Play button will light.
- Single Track play can be switched on or off at any time by pressing the Single Track button.

## ⑤ TAPE COUNTER BUTTON

### MEMO BUTTON

Press this button to store the current tape location into the counter memory. Once this memory point is set, the tape deck will rewind or fast forward until it reaches this point in the tape and will stop. To clear the memory press the MEMO button again.

### RESET BUTTON

Press this button to reset the current tape counter reading from its existing point to "0000".

## ⑥ AUTO DUBB BUTTON

Press this button to engage the tape transport into the dubbing mode from the CD player.

- See page 15 for more information on the operation of this function.

**⑦ TAPE PITCH KNOB**

Rotate this knob to adjust the tape deck playback pitch (key + tempo) from -12% to +12%. While the control is in the center detent position, the tape deck is at normal (0% variance) pitch.

- This control has no effect on the tape pitch during the record mode.

**⑧ KEY BUTTONS**

These buttons can be used to change the key (frequency/musical pitch) of the sound from the CD by up to  $\pm 1$  octave.

The "+" key raises the key in 12 1/2 cent increments. Press and hold the "+" button to quickly increase the key.

The "-" key lowers the key in 12 1/2 cent increments. Press and hold the "-" button to quickly decrease the key.

Press both "+" and "-" at the same time to quickly return the key back to 0.00 position (normal key).

- See page 15 for more information on the operation of this function.

**⑨ TIME BUTTON**

By pressing the **TIME** button you can toggle the CD player time display with the following. Normal (no indication) - Displays the time elapsed within the current track being played. REM- Displays the remaining time left of the current track being played. TOTAL REM- Displays the total time remaining on the current disc being played.

**⑩ REPEAT BUTTON**

This button can be used to set the CD player in all track or single track repeat play mode. The first press of the **REPEAT** button places the CD player in the all track repeat mode and the "REPEAT" indicator will light in the display. The second press of the **REPEAT** button places the CD player in single track repeat mode and the "REPEAT" and "1" indicator will light in the display. The third press of the **REPEAT** button will exit all repeat play modes.

**⑪ A-B BUTTON**

This button allows you to repeat a specific section in the current CD track that is being played. When this control is pressed the first time, the A-B indicator flashes and this position on the track is noted as the start or A point.

When this control is pressed again, the A-B indicator lights continuously, and this position on the track is noted as the end or B point. After setting the end point, the CD player returns to the start point (A), and plays until it reaches the end point (B). The CD player will repeat this function until the **STOP** or **REPEAT** button is pressed. Subsequent press of this button will change the B point into the A point and allow a new B point to be set.

- See page 14 for more information on the operation of this function.

**⑫ PROGRAM BUTTON**

When this button is pressed once, the CD player enters the program entry mode and the program indicator will begin to flash. Pressing the **PROGRAM** button again will return the CD player to the normal play mode.

- See page 14 for more information on the operation of this function.

**⑬ REVERSE MODE SWITCH**

This switch sets the automatic tape direction of the tape transport during playback, normal recording, or dubbing.

: **One-way mode.**

In this position the tape will play or record one side of the tape and stop.

: **Two-way mode.**

In this position the tape will play or record both sides of the tape and stop.

: **Continuous mode**

In this position the tape will play the tape in a continuous loop until the stop command is given. In the record mode the tape will record both sides of the tape and stop.

**⑭ DOLBY NOISE REDUCTION SWITCH**

This switch allows for the encoding or decoding of Dolby B or C Noise Reduction. When recording with Dolby Noise Reduction, select the type (B or C) of noise reduction desired and place the switch in the appropriate position. When playing a tape with Dolby Noise Reduction encoded onto it, place this switch in the same position (B or C) as it was recorded in.

**⑮ ALC (AUTOMATIC RECORD LEVEL CONTROL) SWITCH**

This switch performs automatic control of the input level during recording. When this switch is set to the OFF position, the recording level is controlled by the record level knob. When this switch is set to the ON position, the record level is set automatically and the record level knob is disabled.

**⑯ RECORD LEVEL KNOB**

This knob controls the record level up or down during manual recording.

**⑰ RECORD BALANCE CONTROL**

This recessed control allows for the adjustment of the record level between the left and right channels. By using a phillips type screwdriver, you can adjust this balance control between left (counter-clockwise) and right (clockwise).

**⑱ HP (HEADPHONE) SELECT SWITCH**

This switch is used to select which source is monitored through the headphone jack.

**⑲ HEADPHONE JACK**

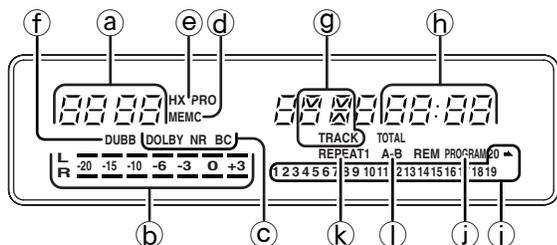
This output jack is used to connect to a set of headphones.

- This jack requires a 1/4" type connector.

**⑳ CD TRAY**

The CD tray is used to hold a CD for playback.

## 21 DISPLAY INDICATORS



- a COUNTER display indicates the amount of tape that has travelled across the head.
- b LEVEL indicators display the record or playback signal levels of the tape deck.
- c DOLBY NR B C indicators display the type of Dolby noise reduction that has been selected.
- d MEMO indicator is displayed when the tape deck memory function is turned on.
- e HX PRO indicator is displayed showing HX PRO is activated.
- f DUBB indicator is displayed when dubbing from the CD player to the tape deck.
- g TRACK number indicator displays the total amount of CD tracks in the disc or program during stop and the current track playing in the play mode.  
TRACK indicator will flash when the CD player is in the Single Track Play mode.
- h TIME indicator displays the playing time of the CD in 4 digits representing minutes and seconds. This display typically represents elapsed time of the track being played. When the REM indicator is displayed, the time shown represents the remaining time of the track being played. When the TOTAL REM indicator is displayed, this represents the total remaining time of the CD or of the program currently being played. In the stop mode the total playing time of the CD is displayed.
- i TRACK number indicator (1 through 20) displays the track numbers on the CD. When in the program mode, the tracks programmed are displayed. Upon completion of playing a track, the number will disappear. When playing a CD with more than 20 tracks on it, the "=>" indicator is displayed.
- j PROGRAM indicator is displayed to indicate that the CD player is in the program mode. The indicator flashes during the program entry mode. This indicator can be turned on and off by pressing the program button.
- k REPEAT indicator is displayed when the CD player is in the all track repeat mode. REPEAT 1 is displayed when the CD player is in the single track repeat mode.
- l A-B indicator is displayed when the CD player is in the A-B repeat mode. When the A-B indicator is flashing, this indicates standby for the setting of point B.
- m REC indicator is displayed when the tape deck is in the record mode. When the REC indicator is flashing, this indicates the tape deck is in the record pause mode.
- n TAPE DECK PLAY indicators (located inside the tape PLAY buttons) displays the direction and mode of the tape transport. When the indicator is flashing, this indicates the transport is in the pause mode in the indicated direction. When the indicator is constantly on, this indicates that the transport is in the play or record mode in the indicated direction. This indicator will not light if there is not a tape in the transport.
- o CD PLAYER PLAY indicator (located inside of the CD PLAY/PAUSE button) displays a constant indicator when the CD player is in the play mode and a flashing indicator when in the pause mode.
- p CD PLAYER SINGLE PLAY indicator (located inside the SINGLE PLAY button) displays a constant indicator when the CD player is in the single track play mode and a flashing indicator when in the single track pause mode.  
When the CD player is stopped and the Single Track play feature has been turned on, the indicator will not light but the Single Track play mode is still active and is indicated by the flashing TRACK (g) indicator.

## 22 HP (HEADPHONE) LEVEL KNOB

This knob is used to control the volume level of the headphone output.

## 23 TEMPO BUTTONS

These buttons are used to change the tempo (speed) of the sound from the CD by up to  $\pm 50\%$ .

The UP button increases the speed in steps of 1%.

The DOWN button decreases the speed in steps of 1%.

If both the UP and DOWN buttons are pressed at the same time, the TEMPO will return to the 0% position (normal speed).

- See page 14 for more information on the operation of this function.

## 24 TAPE/CD/AUX GAIN KNOBS

These knobs are used to determine the amount of signal from the TAPE, CD and AUX sources that is input to the mixer.

## 25 MIC/LINE (1 to 4) GAIN KNOBS

These knobs are used to determine the amount of signal from the 4 MIC/LINE sources that is input to the mixer.

## 26 MASTER VOLUME KNOB

This large knob is used to control the final output level of the mixer through the PRE-OUT (PAC770), SYSTEM OUT (PAC750), and AMPLIFIED OUT (PAC770).

## 27 EQ (LOW, MID, HIGH) CONTROLS

Turn these knobs to adjust the tone of the mixed output. Each a knob controls the level of the corresponding frequency range. Turning each control toward "+" boosts the corresponding frequency range and toward "-" attenuates it.

LOW : Controls the tone of the lower frequencies. (100 Hz)

MID : Controls the tone of the midrange frequencies. (1 kHz)

HIGH : Controls the tone of the upper frequencies. (15 kHz)

## 28 BALANCE CONTROL

This knob can be used to correct a left/right imbalance, to isolate the left or right channel during mono playback, or to compensate for different left/right acoustics in a room or in a particular situation.

- Please note that when this knob is turned fully clockwise or counter-clockwise all sound is muted on the opposite channel.

## 29 AUTO GAIN CONTROL SWITCH (MIC/LINE)

This switch is used to select if the mixer level of the MIC/LINE inputs are controlled automatically or manually.

OFF : The MIC/LINE gain knobs are used to adjust the mixer level.

ON : The MIC/LINE mixer levels are controlled automatically and the gain knobs are disabled.

## 30 AUTO DUCKING SWITCH

This switch is used to automatically adjust the CD, TAPE and AUX mixer levels in response to the MIC/LINE inputs.

The reduction level can be selected by pressing the button. Pressing the button cycles through the following settings: -15  $\rightarrow$   $\infty$   $\rightarrow$  OFF.

-15 : The CD, Tape and AUX levels are reduced by 15dB when any MIC/LINE input is active.

$\infty$  : The CD, Tape and AUX levels are eliminated when any MIC/LINE input is active.

If the MIC/LINE input level goes down, the CD, TAPE and AUX output levels return to their original levels after 1 to 3 seconds.

## 31 VOICE REDUCTION SWITCH

This switch automatically reduces the vocals on the TAPE, CD and AUX sources.

- The performance of this function is determined by the way the source material was recorded. Recordings with the vocals centered equally between the left and right channels works best.

## OPERATION

The following operating procedures are based on the assumption that the power is on and that all necessary input and output connections have already been made. Please refer to the section in this manual marked "Rear Panel Connections".

## MIXER OPERATION

The PAC750/770 includes a versatile built-in Mixer that allows the output to be coordinated with the Tape deck, CD player, AUX input, and the four Mic/Line inputs. Each input to the Mixer has a gain control knob on the front panel that controls the amount of signal that is added to the mix. The final output of the Mixer is controlled by the **MASTER VOLUME** knob 26, the **EQ** controls 27, and the **BALANCE** knob 28.

The final output of the Mixer is then sent to the PRE-OUT (SYSTEM OUT on the PAC750) as a line level signal. On the PAC770, the signal is also sent to the internal amplifier and then output on the **SPEAKER** terminals, which can be attached directly to an appropriate speaker system.

## The Mixer In Relation To The Tape Deck

The recording circuitry of the Tape Deck is directly patched into the mixer, meaning that the Tape Deck will record whatever the Mixer outputs. Therefore, the final level recorded onto the tape will be determined by the setting of the Mixer gain controls and the Tape Deck record level control.

## CASSETTE DECK OPERATION

### Cassette Tape Playback

1. Open the cassette holder by pressing the eject button. Load a cassette tape into the cassette holder and close. The ► indicator on the play forward button will begin to flash.
2. Set the **DOLBY NOISE REDUCTION** switch to the same position as the tape was originally recorded in (i.e. tapes recorded with Dolby B noise reduction need to have this switch in the Dolby B position, tapes recorded with Dolby C noise reduction need to have this switch in the Dolby C position, and tapes recorded without Dolby Noise Reduction need to have this control set to the Off position).
3. Set the reverse mode switch to the desired position.
4. Press the ► **PLAY** button to begin playback in the forward direction. Press the ◀ **PLAY** button to begin playback in the reverse direction. When the tape enters into the playback mode the indicator on the play control button will change from the flashing mode to a constant on mode.
5. Adjust the gain into the mixer using the **TAPE** knob 24.
6. Adjust the volume with the **VOLUME** knob 26.
7. Pressing the **STOP** button 4 will stop the tape.

### Searching For Tracks

While a tape is playing back, pressing the ►► (Fast Forward) or ◀◀ (Rewind) button will cause the tape deck to forward search for the next track or reverse search to the beginning of the current track, depending on the direction of playback.

When the search is concluded, the tape deck will stop.

#### Notes

- For normal Fast Forward and Rewind, the **STOP** button must first be pressed.

### Rewind & Fast Forward

When the tape deck is stopped, and regardless of the current direction, pressing the ►► (Fast Forward) button will place the tape transport in the high speed fast forward mode and the tape will advance quickly from left to right. Pressing the ◀◀ (Rewind) button will place the tape transport in the high speed rewind mode and the tape will retract quickly from right to left.

In either the fast forward or the rewind mode, the tape transport will continue to fast forward or rewind until the stop control button is pressed or the end of the tape or a saved memo point is reached.

## Cassette Tape Record

1. Open the cassette holder by pressing the eject button. Load a recordable cassette tape into the cassette holder and close. The ► indicator on the play button will begin to flash. (If you wish to change the tape direction, press the ◀ **PLAY** button and then press the **STOP** button).
2. Set the **DOLBY NOISE REDUCTION** switch to the desired position to record the tapes with noise reduction (i.e. tapes to be recorded with Dolby B noise reduction need to have this switch in the Dolby B position, tapes to be recorded with Dolby C noise reduction need to have this switch in the Dolby C position, and tapes to be recorded without Dolby Noise Reduction need to have this switch set to the OFF position).
3. Set the reverse mode switch to the desired position.
4. Set the **AUTO LEVEL** switch to the desired position.
5. Press the **REC** button. The **REC** indicator will begin to flash indicating the tape transport is in the record-pause mode.
6. If the **AUTO LEVEL** switch is in the OFF position, use the manual record level control to adjust the input signal to the desired recording level.
7. Press the ► **PLAY** control button to begin recording in the forward direction.
8. To pause recording, press the **REC** button. Press the **PLAY** button to resume recording.
9. Pressing the **STOP** button will stop recording.

### Erasure Of Tape

When a program source is recorded onto a tape, the previously recorded sound is erased automatically, and replaced with the new recording. If you wish to erase a tape without recording, set the **RECORD LEVEL** control to the minimum (0) position and record. Set the **AUTO LEVEL** off.

### To Protect Valuable Recordings

In the record mode, information previously recorded on the tape will automatically be erased. To prevent this from happening, use a small screwdriver to break out one or both safety tabs (See Figure 2 on pg. 17). It is possible to restore the recording capability of either side of the cassette by covering the opening with clear adhesive tape (See Figure 4 on pg. 17).

### Auto Tape Selector

This unit is equipped with an auto tape selector which automatically sets the bias and equalizer level using the detection holes provided in the cassette shell. The bias and equalizer levels are automatically set according to the type of cassette as follows. (See Figure 3 on pg. 17)

- |                |                   |              |
|----------------|-------------------|--------------|
| • Normal tapes | EQ = 120 $\mu$ S, | Bias = Low   |
| • High tapes   | EQ = 70 $\mu$ S,  | Bias = High  |
| • Metal tapes  | EQ = 70 $\mu$ S,  | Bias = Metal |

## CD PLAYER OPERATION

### CD Playback

1. Open the CD tray by pressing the **OPEN/CLOSE** button. Place a CD onto the tray and close the tray by pressing the **OPEN/CLOSE** button. The display will show the general data of the current CD after it has been read.
2. To begin playback of the CD, press the **PLAY/PAUSE** button. The ► indicator in the **PLAY/PAUSE** button will illuminate, the display will show the data for the first track, and the track will begin to play.
3. Adjust the gain into the mixer using the **CD** knob 24.
4. Adjust the volume with the **VOLUME** knob 26.
5. To pause the CD during playback, press the **PLAY/PAUSE** button. The CD will remain in the current position and the ► indicator in the **PLAY/PAUSE** button will begin to flash. Pressing the **PLAY/PAUSE** button will resume playback from the point that the CD player was paused.
6. Playback will continue until the end of disc is reached or the **STOP** button is pressed.

### Selecting The Playback Track

By pressing the ►► **NEXT** or ◀◀ **PREVIOUS** buttons you can select the track to be played. Each press of the ►► button will advance the player to the beginning of the next track.

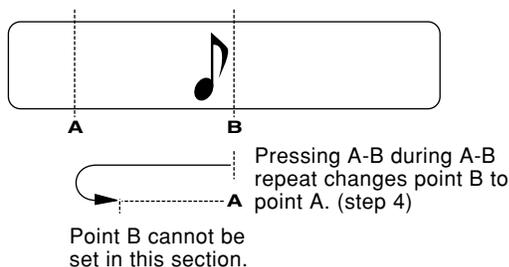
Each press of the ◀◀ button will cause the CD player to skip to the beginning of the current track. If immediately pressed again, the CD player will skip back one track for every time the button is pushed.

### A-B Repeat

1. Start playback.
2. Press the **A-B** button at the beginning of the part you want to repeat. "REPEAT" lights and "A-B" blinks in the display.
3. Press the **A-B** button again at the end of the part you want to repeat to start the A-B repeat. "REPEAT A-B" lights in the display.
4. Press the **A-B** button again to change the end point (point B) to the new start point (new point A).
5. After the new start point is passed, press the **A-B** button again to set the new end point (new point B) and re-start A-B repeat.
6. To continue to re-mark the A-B repeat points, repeat steps 4 and 5.
7. Press the **REPEAT** button to return to the normal play mode.

#### Notes

- A-B repeat across more than one track is not possible. (If the next track starts after having set point A in a track, A-B repeat is canceled automatically.)



## Programming Playback Tracks

### (PROGRAM PLAY MODE)

This procedure allows a program of selected tracks for playback in any order.

1. By pressing the **PROGRAM** button once you will place the CD player into the programming mode. Once the **PROGRAM** button is pressed, the **PROGRAM** indicator in the CD display will begin to flash. This indicates the CD player is in the program entry mode.
2. By pressing the ►► **NEXT** or ◀◀ **PREVIOUS** button, tracks to be programmed are selected. Each press of the ►► button will advance the CD player to the next track. Each press of the ◀◀ button will cause the CD player to skip to the previous track. When the desired track number has been selected, leave the CD player untouched for approximately 1.5 seconds and the selected track will be stored in the program. Continue this procedure until all desired tracks (30 tracks maximum) have been programmed.
3. By pressing the **PLAY/PAUSE** button, the CD player will exit the program entry mode and enter the program play mode. The **PROGRAM** indicator in the CD display will light constantly and the CD player will begin to play in the order selected during the program entry mode.
4. By pressing the **STOP** button, the CD player will stop playing but will remain in the program play mode. The program will remain in memory.
5. When the **STOP** button is pressed while the CD player is in the stop mode, the memorized program will be cleared.

### Tempo Control

The PAC750/PAC770 is equipped with the ability to change the CD playback speed by up to  $\pm 50\%$  without changing the key (musical pitch) of the sound from the CD.

The "+" button increases the speed in steps of 1%.

The "-" button decreases the speed in steps of 1%.

Holding down either the "+" or "-" buttons for more than 1 second causes the speed to change rapidly.

Pressing both the "+" and "-" buttons at the same time will return the **TEMPO** to the 0% position (normal speed).

#### Display

Pressing the "+" key		Pressing the "-" key	
TEMPO	0%	TEMPO	0%
⋮	+1%	⋮	-1%
⋮	+2%	⋮	-2%
⋮	+3%	⋮	-3%
⋮	⋮	⋮	⋮
TEMPO	+50%	TEMPO	-50%

- If the "+" or "-" buttons are pressed while the time display is shown, the current position of the **TEMPO** control is displayed the first. Once one of the "+" or "-" are pressed a second time, the position then changes.
- If the **KEY** has been changed, **TEMPO** control is not available. Restore **KEY** control to the 0.00 position in order to use **TEMPO** control.

## Key Control

The PAC750/PAC770 is equipped with the ability to change the key (or musical pitch) of the sound of the CD by up to  $\pm 1$  octave.

The key control system works on the following musical principles:

100 cents=1 half step  
12 half steps=1 octave

The "+" button raises the key in steps of 12.5 cents and is displayed as a percent of the next half step up, rounded to the nearest tenth. For example, to raise the key of the CD by 2 1/2 half steps, the display should show 2.50.

The "-" button lowers the key in steps of 12.5 cents and is displayed as a percent of the next half step down, rounded to the nearest tenth. For example, to lower the key of the CD by 3 1/4 half steps, the display should show -3.25.

Holding down either the "+" or "-" buttons for more than 1 second causes the key to change rapidly as long as the button is held down.

Pressing both the "+" and "-" buttons at the same time will return the KEY to the 0.00 position (normal key).

### Display

Pressing the "+" key		Pressing the "-" key	
KEY		KEY	
0.00		0.00	
+0.13		-0.13	
+0.25		-0.25	
+0.38		-0.38	
+0.50		-0.50	
+0.63		-0.63	
+0.75		-0.75	
+0.88		-0.88	
+1.00		-1.00	
+1.13		-1.13	
KEY	+12.00	KEY	-12.00

- If the "+" or "-" buttons are pressed while the time display is shown, the current position of the KEY control is displayed first. Once one of the "+" or "-" keys are pressed a second time, the position then changes.
- If the TEMPO has been changed, KEY control is not available. Restore TEMPO control to the 0% position in order to use KEY control.

## CD-RW/CD-R Playback

The PAC750/PAC770 can play back CD-RW (ReWritable) discs as well as ordinary music CD and CD-R (Recordable) discs.

- \* The CD-R and CD-RW discs should contain properly-recorded TOC information so that they can be played back. With the CD recorder system, writing the TOC information in a disc is referred to as finalizing the disc. A disc cannot be recognized as a CD disc and played back unless it has been finalized properly. For details, please read the instruction manual provided with a CD recorder.
- \* TOC stands for Table Of Contents and contains information such as the total number of tracks and total playing time of the disc.
- \* The PAC750/PAC770 can play only the discs recorded in the CD-DA format designed for music reproduction. Do not attempt to play a disc containing other data, such as a CD-ROM for PCs, on this unit.
- \* As the playback of a CD-RW disc necessitates partial change of the player setup, it may take longer to read the TOC information compared to a music CD or CD-R disc.
- \* Because CD-RW discs have lower reflectivity than CDs and CD-R discs, dirt on the surface of a CD-RW disc can generate noise, make the CD-RW disc unplayable, or cause misoperation. If any of these symptoms occur, wipe the surface of the CD-RW disc as indicated on page 17.

## CD TO TAPE DUBBING

The CD player can dubb directly to the tape deck either manually or automatically. Manual dubbing allows the recording level to be set by the RECORD LEVEL knob and then recording is started manually. Automatic dubbing adjusts the recording level automatically based on the peak levels of the CD and then starts recording automatically.

### Manual Record Level Dubbing

1. By pressing the OPEN/CLOSE button and the tape EJECT button, load the source CD onto the CD tray and a recordable tape into the tape holder. Close both the CD tray and the tape holder. The display will show the general CD data and the tape play indicator located inside the tape PLAY button will begin to flash.
2. Prepare the tape for dubbing by rewinding it to the beginning of the first side that the tape is to be recorded onto.
3. Set the AUTO LEVEL switch to the OFF position.
4. Press the AUTO DUBB button once. The REC indicator will begin to flash, the DUBB indicator will light, and the CD player will enter the play mode. At this point you can adjust the record level to achieve the desired recording level.
5. After adjusting the record level, press the AUTO DUBB button again. The CD player will return to the stop mode, and the tape transport will enter into the record mode. After approximately 5 seconds, the CD player will enter the playback mode and begin to play the first track, dubbing it onto the tape.
6. When either the CD transport or the tape transport have reached the end and stopped, the other transport will also stop.
7. To end the dubbing during a session, press the STOP on the tape deck or the STOP button on the CD player.

### Automatic Record Level Dubbing

1. By pressing the OPEN/CLOSE button and the tape EJECT button, load the source CD onto the CD tray and a recordable tape into the tape holder. Close both the CD tray and the tape holder. The display will show the general CD data and the tape play indicator located inside the tape PLAY button will begin to flash.
  2. Prepare the tape for dubbing by rewinding it to the beginning of the first side that the tape is to be recorded onto.
  3. Set the AUTO LEVEL switch to the ON position.
  4. Press the AUTO DUBB button once. The REC indicator will begin to flash, the DUBB indicator will light and the CD player will enter play mode. The CD player will automatically begin to search the CD for the peak level. This procedure could take as long as 5 minutes to complete. Once the peak level has been determined, the record level for dubbing will be set automatically.
  5. After the record level has been set, the tape transport will enter into the record mode. After approximately 5 seconds, the CD player will enter the playback mode and begin to play the first track, dubbing it onto the tape.
  6. When either the CD transport or the tape transport have reached the end and stopped, the other transport will also stop.
  7. To end the dubbing during a session, press the STOP on the tape deck or the STOP button on the CD player.
- When dubbing is started with a program of CD tracks, the tracks are dubbed in the order of the program.
  - During dubbing, a blank space of approximately 4 seconds is automatically inserted between CD tracks. This may hinder some dubbing such as live recordings on CD. If this is a problem, dubb from the CD to the tape manually using the mixer.
  - When recording with the reverse mode switch set to the two way or the continuous mode, there may be an interruption in recording of approximately 1 second during the optical reversing of the tape transport.

## TROUBLESHOOTING

Should faults occur, it is, in many cases, not necessary to consult your dealer or technical service department. On the basis of the following checks you will be able to rectify a number of conditions yourself without difficulty.

If the condition cannot be remedied after the following checks, please consult your dealer or the Superscope technical service department at (630) 820-4800.

### POWER AMP (PAC770)

#### Both speakers output monaural sound.

1. Check that the MONO BRIDGE switch is set to OFF.

#### Sound is output only from one of the speakers.

1. Check the setting of the BALANCE control.
2. Turn the power off and change the connections of the left and right speakers. If sound is still not output from the same speaker, check its connection cord or the speaker itself.

#### Sound is not produced at all.

1. Check that the speaker cords are connected properly.
2. Check that the VOLUME control is not set at the minimum level.
3. Check that the EFFECT ON/OFF switch is OFF, if nothing is connected with the EFFECT jacks.

#### Sound consistently cuts off.

1. Check the temperature of the unit by placing your hand on the top or bottom. If the temperature is extremely hot, the amplifier is cutting off to protect itself. The output level must be decreased in order to maintain a consistent output.

## MIXER

#### MIC/LINE sound is not produced at all

1. Check that the MIC/LINE gain is not too low.
2. Check that the SENSITIVITY switch is set correctly based on the type of input.

#### MIC/LINE sound is distorted

1. Check that the MIC/LINE sensitivity is set correctly.
2. Check that the MIC phantom power is turned on or off.

#### Hum interferes with the sound.

1. Check that cords are connected properly.
2. Check that there is not any source of magnetism (TV, motor, transformer, etc.) placed near the unit.

## TAPE DECK

#### The tape does not travel.

1. Check that the power cord is plugged in properly.
2. Check that the POWER switch is set to ON.
3. Check that the tape is rewind.

#### The tape travels, but no sound is output.

1. Check that the cassette tape is recorded.
2. Check that the speakers are connected and functioning properly.
3. Check that the TAPE gain and volume control is not set at the minimum level.

#### Tape will not record.

1. Check that the protection tabs of cassette tape are not broken.

#### Sound is distorted.

1. Check that the recording level is not too high.
2. Check that the head is not dirty.

#### Sound is unstable.

1. Check that the head is not dirty.
2. Check that the pinch wheels and capstans are not dirty.
3. Check that the tape is wound tightly.

#### Noise is noticeable.

1. Check that the head is not dirty.
2. Check that the head is not magnetized.
3. Check that the DOLBY NR switch is set properly according to the tape.

## CD PLAYER

#### The disc fails to play.

1. Check that the power cord is plugged in properly.
2. Check that the POWER switch is set to ON.
3. Check that the disc is placed in the correct position on disc tray.
4. Check that the disc is placed properly with the label side facing up.
5. Check that the disc is not dirty, scratched, or warped.

#### The disc is playing but no sound is heard.

1. Check that the speakers are connected and functioning properly.
2. Check that the CD gain and volume control is not set at the minimum level.

#### The disc stops in mid-operation.

1. Check that the disc is not dirty, scratched, or warped.

#### The sound drops out or noise is heard.

1. Check that the disc is not dirty, scratched, or warped.

## REPAIRS

Only the most competent and qualified technicians should be allowed to service your unit. Superscope and its factory trained warranty station personnel have the knowledge and special equipment needed for repair and calibration of this precision instrument.

In the event of difficulty, call the telephone number listed in this owners manual to obtain service. Please include the model and serial number of your unit together with a copy of your purchase receipt and a full description of what you feel is abnormal in its behavior.

## CLEANING OF EXTERIOR SURFACES

With proper care and cleaning, the exterior finish of your equipment will last indefinitely. Never use scouring pads, steel wool, scouring powders or harsh chemical agents (e.g. lye solution), alcohol, thinners, benzene, insecticide or other volatile substances, as these will mar the finish of the cabinet. Likewise, never use cloths containing chemical substances. If the equipment becomes dirty, wipe the external surfaces with a soft, lint-free cloth.

If the cabinet becomes heavily soiled:

- dilute some liquid soap in water
- dip a soft, lint-free cloth in the solution and wring the cloth out until it is damp
- wipe the equipment with the damp cloth
- dry the equipment by wiping it with a dry cloth

## COMPACT DISC CARE

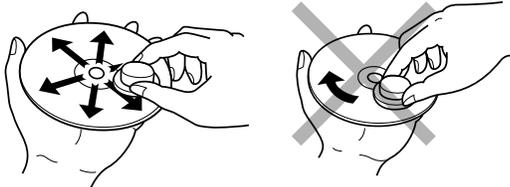
Handle discs carefully so as not to damage or scratch the front side.

To protect the disc, avoid placing it in the following locations:

- In direct sunlight or near a source of heat like a heater.
- In a place which is damp or dirty.
- In a place which could be exposed to rain, such as near a window.

Always keep the disc surface clean.

Up to six billion data units are recorded on the front side of the disc. When cleaning the disc surface, always be sure to use a special compact disc cleaner and wipe as shown below.



Wipe in a radial direction. Do not wipe in circumferential direction.

- Do not use cleaner for analog records, as this will adversely affect the disc surface.  
Store discs properly by placing them in their disc cases.
- Do not attach a piece of paper or sticker on the label side of disc.  
When a disc has a piece of plastic tape or a rental CD label with paste protruding from the edge or when a disc has a trace of such a sticky object, do not attempt to play the disc. If such a disc is played on the CD player, impossibility of taking out the disc or other malfunction may result.

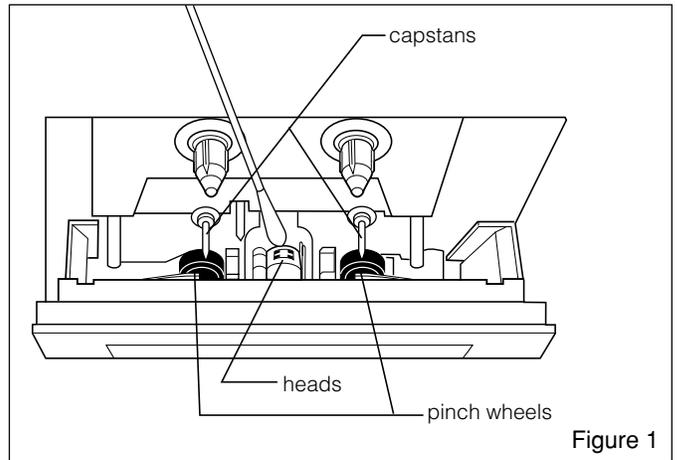


Figure 1

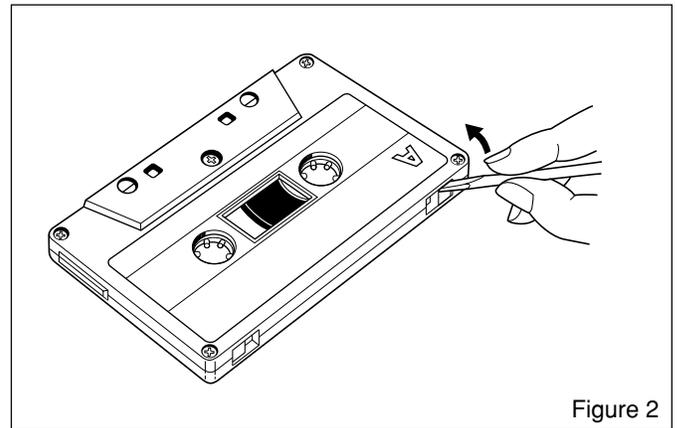


Figure 2

## CASSETTE TAPE CARE

### HEAD CLEANING

If the heads are not cleaned for a long period, dirt or dust may be deposited on the heads and capstans, causing degraded high-frequency characteristics, volume drop, or degraded recording and erasure performances.

To prevent this, clean the heads, etc., periodically as follows.

1. Turn the power off.
2. As shown in Figure 1, clean the parts which come in contact with tape, including the heads, capstans, tape guides, pinch wheels, etc., with a cotton swab soaked in head cleaning solution or denatured alcohol.

### HEAD DEMAGNETIZATION

When a magnetized metallic objects (such as a screwdriver tip, etc.) comes in contact with a head or capstan, or when the deck has been used for a long period of time, the head may be magnetized and noise may be generated. If the head is extremely magnetized, the high frequencies in recorded tapes could even be erased due to it. To prevent this, demagnetize the heads and capstans periodically (every 20 hours of use) using a commercially-available head demagnetizer. (For the operation, please refer to the instruction manual supplied with your head demagnetizer.)

#### Caution:

Be sure to turn the power of the cassette deck off before using a head demagnetizer.

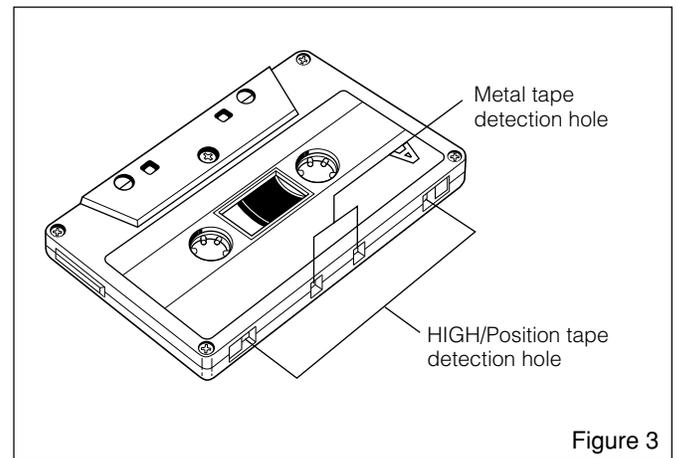


Figure 3

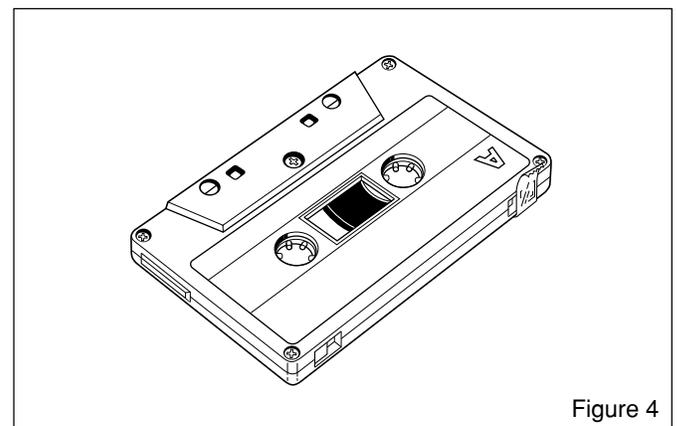
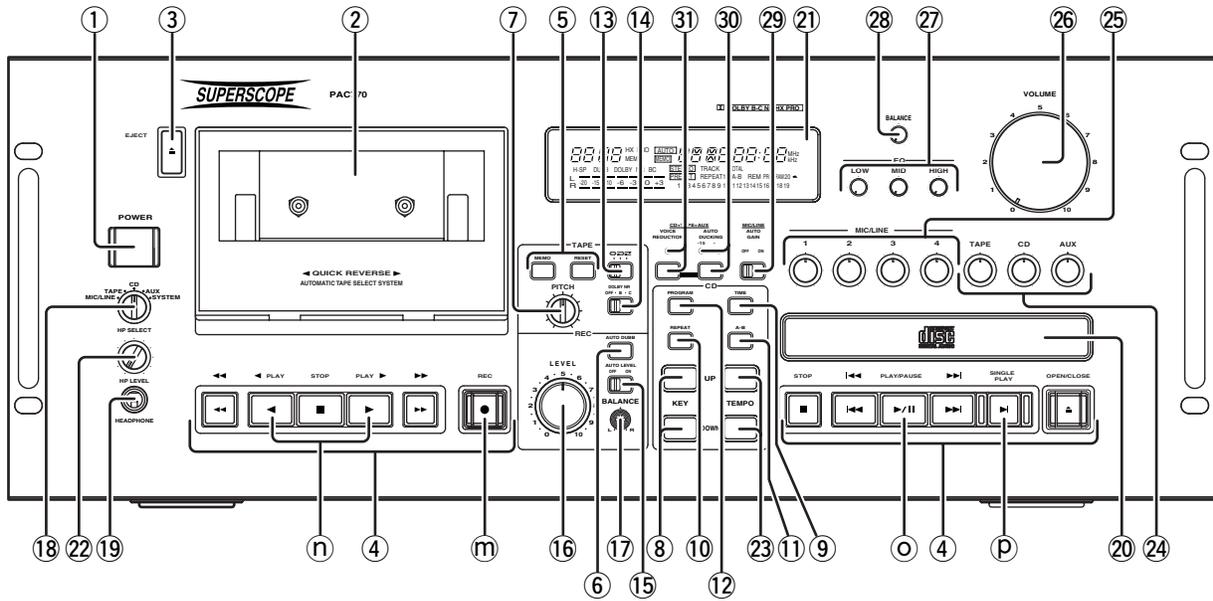
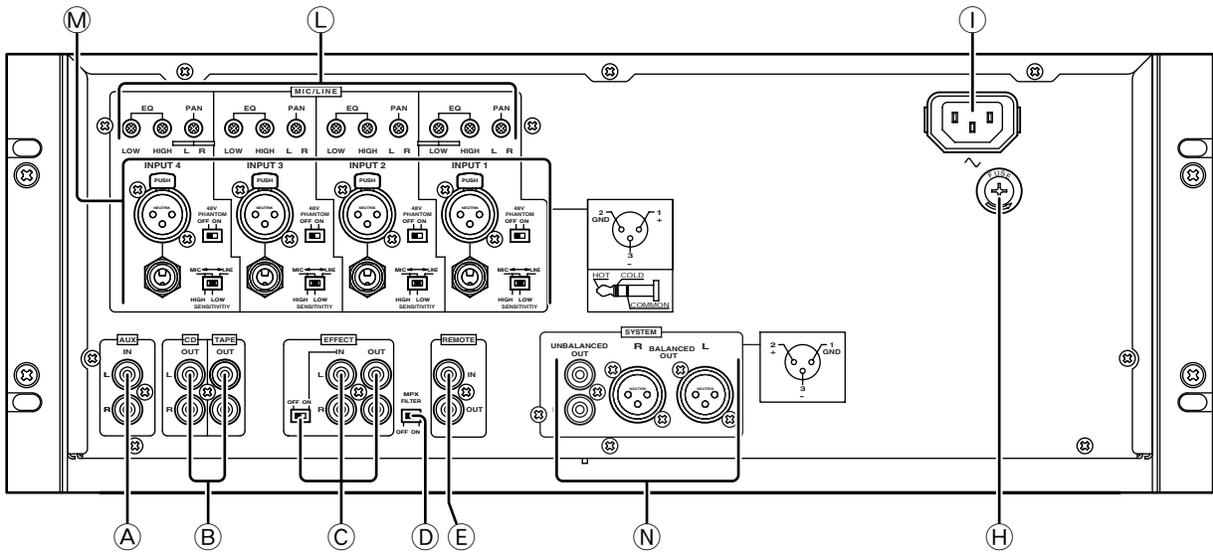


Figure 4

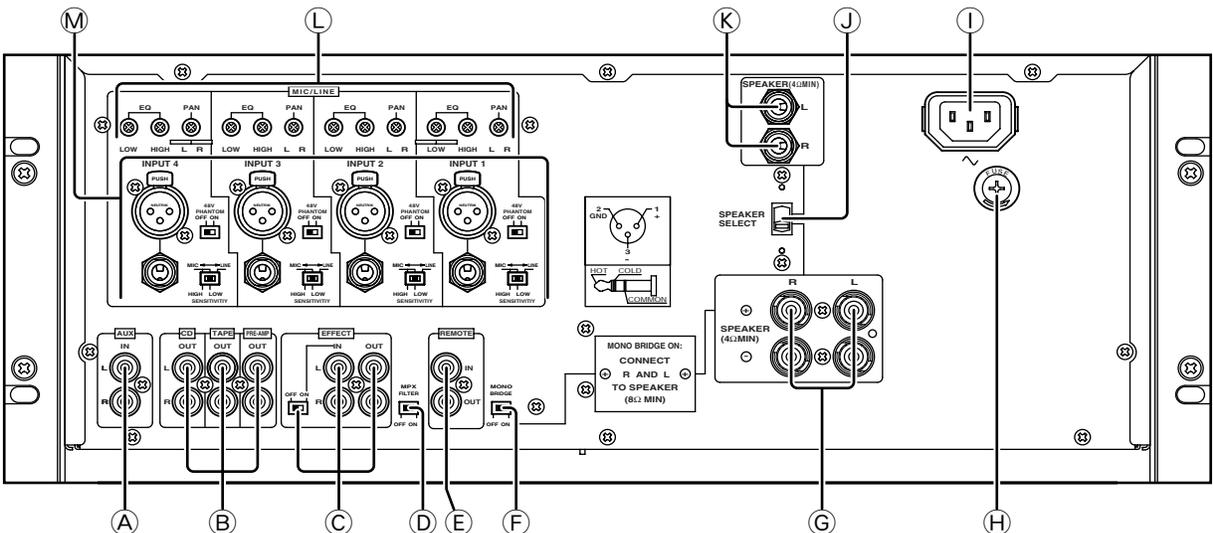
## PAC750/PAC770 FRONT PANEL



## PAC750 REAR PANEL



## PAC770 REAR PANEL



# SPECIFICATIONS

## MIXER

Input sensitivity	
MIC HIGH .....	4mV
MIC LOW .....	40mV
LINE .....	1000mV
PHANTOM output voltage .....	DC 48V
Input	
AUX in .....	1000mV/47k $\Omega$
Pre-Out Output Level / Impedance (PAC770 Only) .....	200mV / 1.5k $\Omega$
System (RCA) Output Level / Impedance (PAC750 Only) .....	1000mV / 1.5k $\Omega$
System (XLR) Output Level / Impedance (PAC750 Only) .....	1000mV / 150 $\Omega$
EQ - MASTER & MIC/LINE	
Low Band Center .....	100Hz
Mid Band Center .....	1kHz
High Band Center .....	15kHz

## POWER AMPLIFIER (PAC770 Only)

Power output (RMS Continuous <0.08% THD)	
Stereo 8 $\Omega$ Load .....	90W + 90W
Stereo 4 $\Omega$ Load .....	110W + 110W
Mono 8 $\Omega$ Load .....	210W
Frequency response .....	5Hz-30kHz (+/- 3dB)
Rated input level .....	0.5Vrms

## TAPE DECK

Track System .....	4 Track, 2 Channel
Record/Erase system .....	AC105kHz Bias
Head System (Rotary type combination)	
Rec/Play .....	Hard metal alloy
Erase .....	Dual gap ferrite
Motor System	
Capstan .....	DC Servo Control
Reel .....	DC
Wow and Flutter (JIS weighted) .....	<0.07%
Frequency Characteristics	
Frequency response (no Dolby NR)	
type I (Normal position) .....	40Hz-15kHz $\pm$ 3dB
type II (High position) .....	40Hz-16kHz $\pm$ 3dB
type III (Metal position) .....	40Hz-16kHz $\pm$ 3dB
Overall S/N (no Dolby NR, IEC-A WTD)	
type I (Normal position) .....	53dB
type II (High position) .....	54dB
type III (Metal position) .....	55dB
Dolby NR effect (B/C S/N improvement, CCIR-ARM WTD) .....	9dB/18dB
Analog output	
Output level .....	500mV
Output impedance .....	1k $\Omega$

## CD

Channels .....	2 channels
Sampling frequency .....	44.1kHz
Quantization .....	16bit linear/channel
Error correction .....	Cross-interleave read solomon code (CIRC)
D/A conversion .....	1-bit linear/channel
Wow & flutter .....	Precision of quartz
Optical Readout System	
Laser .....	GaAlAs semiconductor
Wavelength .....	780nm
Frequency Characteristics (Tempo control off)	
Frequency response .....	20Hz-20kHz -1.5dB
Dynamic range .....	80dB
S/N ratio .....	70dB
Channel separation .....	70dB
Distortion (THD 1kHz) .....	0.05%
Analog output	
Output level .....	2V RMS
Output impedance .....	1.5k $\Omega$

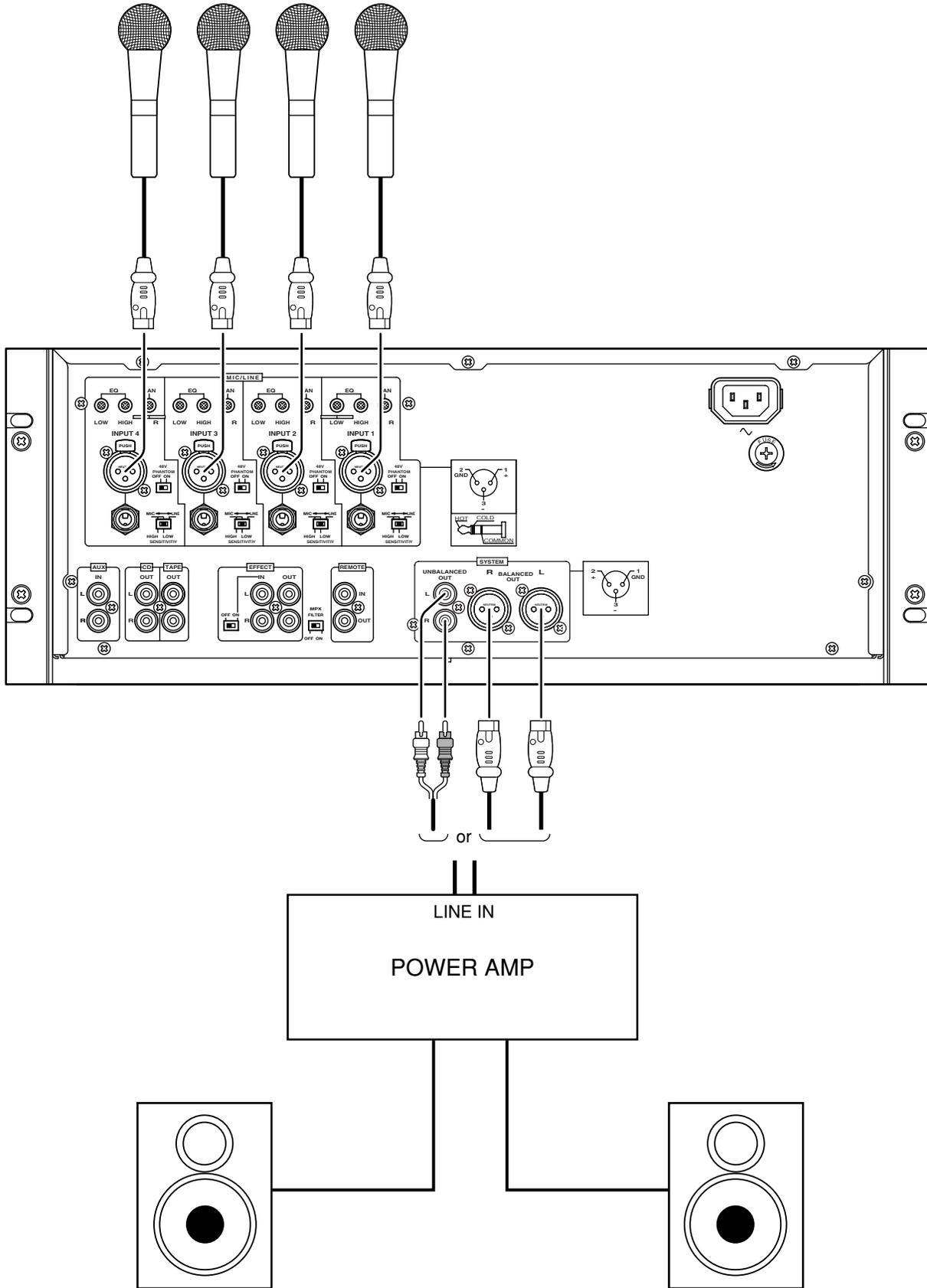
## COMMON PART:

Power Consumption	
PAC770 .....	500W
PAC750 .....	30W
Dimensions	
Width .....	19 inches (483mm)
Height (4U) .....	7 inches (180mm)
Depth .....	18 inches (455mm)
Net Weight .....	PAC770 : 39.7 lbs (18kg)
	PAC750 : 26.4 lbs (12kg)

These specifications represent design standards, Higher levels of performance can be expected under most conditions.  
Subject to change without prior notice.

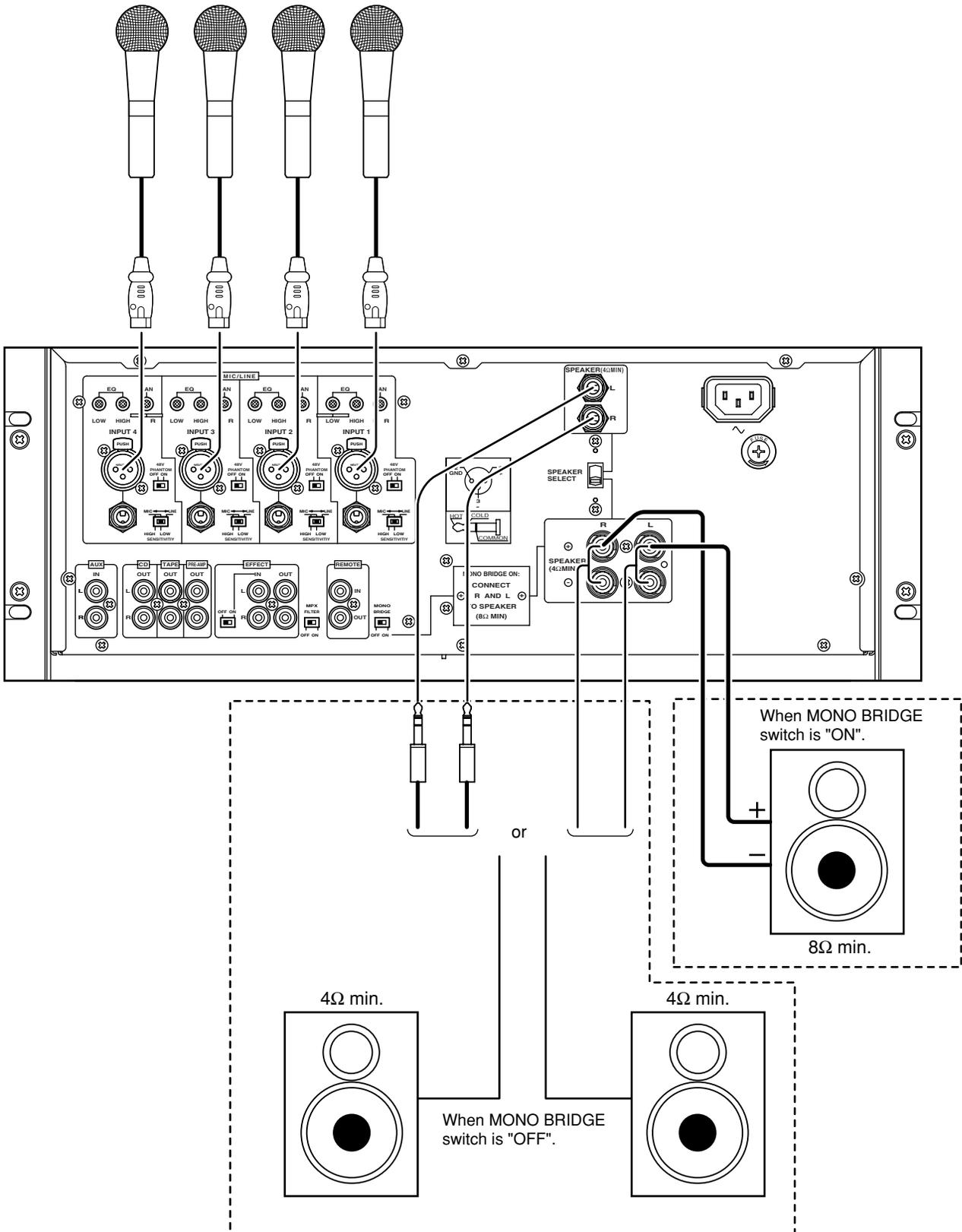
# PAC750 BASIC HOOKUP

## MICROPHONES



# PAC770 BASIC HOOKUP

## MICROPHONES



## SPEAKER CONNECTION

This equipment, being a high audio output power amplifier, has a hazardous energy at its speaker terminal. Please be sure to make an appropriate speaker connection according to the following procedures:

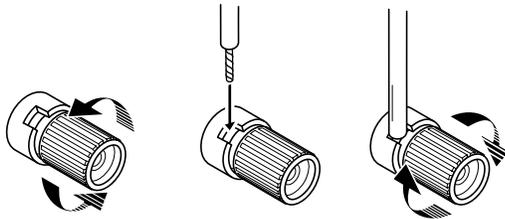
- Confirm that the power switch of the equipment is at "OFF" position. If it is at "ON", turn it to "OFF" position to connect a speaker cable.
- Use a speaker cable with the flame retardant rating of type SPT12 or more.
- Don't strip the insulation off more than shown in the figure, at the speaker terminal connection of speaker cable.

Speaker cable (Type SPT12 )

 Strip the insulation off the tip of the cord.

 Twist the cord.

- Connect speakers in correct polarity, according to the indication for the polarity of speaker terminals.
- Prevent any stress from being applied to the speaker cable connected to the speaker terminal.
- Don't touch the speaker terminals during operation.



Losen the Terminal    Insert the core    Tighten the Terminal  
Connection of speaker cable Terminal

## RACCORDEMENT DES ENCEINTES

Cet appareil, amplificateur de puissance à haute sortie audio, présente une énergie dangereuse au niveau de ses bornes d'enceintes. Veuillez à effectuer les raccordements d'enceintes corrects conformément aux procédures suivantes:

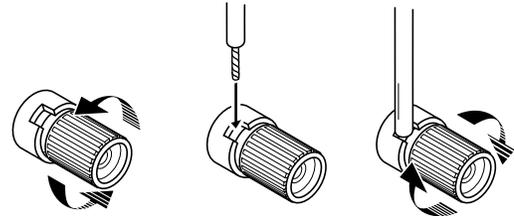
- Vérifiez que l'interrupteur d'alimentation de l'appareil est réglé sur la position "OFF". S'il est en position "ON", réglez-le sur "OFF" pour raccorder des câbles d'enceintes.
- Utilisez des câbles d'enceintes ayant des caractéristiques de retardateur d'inflammation de type SPT12 ou plus.
- Ne dénudez pas le cordon sur une longueur supérieure à celle illustrée sur la figure, à la connexion de borne d'enceinte du câble d'enceinte.

Câble d'enceinte (Type SPT12 )

 Dénudez l'extrémité du cordon.

 Torsadez le cordon.

- Raccordez les enceintes selon la polarité correcte, conformément aux indications de polarité des bornes d'enceintes.
- Evitez qu'une tension soit appliquée aux câbles d'enceintes raccordés aux bornes d'enceintes.
- Ne touchez pas les bornes d'enceintes pendant que l'appareil est en service.



Desserrez la borne    Introduisez l'âme    Serrez la borne  
Raccordement d'une borne de câble d'enceinte

Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing corporation. HX Pro originated by Bang & Olufsen.

"DOLBY" the double-D symbol  and "HXPRO" are trademarks of Dolby Laboratories Licensing Corporation.

# WARRANTY

## One Year Limited Warranty:

Your Superscope PAC750/PAC770 is warranted against manufacturer defects in material and workmanship for one year parts and 90 days labor.

## Non-transferable warranty:

This warranty may be enforced only by the original purchaser.

## The following are not covered under warranty:

1. Damage, deterioration, malfunction or failure to meet performance specifications resulting from:
  - accident, acts of nature, misuse, abuse, neglect or unauthorized product modification.
  - improper installation, removal or maintenance, or failure to follow supplied instructions.
  - repair or attempted repair by a non-Superscope authorized agent.
  - any shipment (claims must be presented to the carrier).
  - any cause other than a defect in manufacturing.
2. Cleaning, check-ups with no fault found.
3. Any product on which the serial number has been defaced, modified or removed.
4. Accessories, including but not limited to, cables and adaptors.
5. Product purchased outside of the United States, its possessions or territories.

## The following are covered under warranty:

All labor and material expenses for items covered by the warranty.

## To obtain service:

1. If your unit needs service, contact Superscope at (630) 820-4800. A service representative will advise you of how to obtain service. Please do not return the unit directly to Superscope Technologies, unless specified by our service representative.
2. You must pay any shipping charges if it is necessary to ship the product for service. If the necessary repairs are covered by the warranty, we will pay return shipping charges to your location anywhere in the United States.
3. Whenever warranty service is required, you must present the original dated sales receipt, or other proof of purchase.

## Limitation of implied warranties

All implied warranties, including warranties of merchantability and fitness for a particular purpose, are limited in duration to the length of this warranty.

## Exclusion of damages

Liability for any defective product is limited to repair or replacement of the product at Superscope's option. Superscope shall not be liable for damage to other products caused by any defects in Superscope products, damages based on inconvenience or loss of use of the product, or any other damages, whether incidental, consequential, or otherwise.

Some States do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

## How State law relates to the warranty

This warranty gives you specific legal rights, and you may have other rights which may vary from State to State.

This warranty is enforceable only in the United States and its possessions or territories.



Superscope Technologies, inc.

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