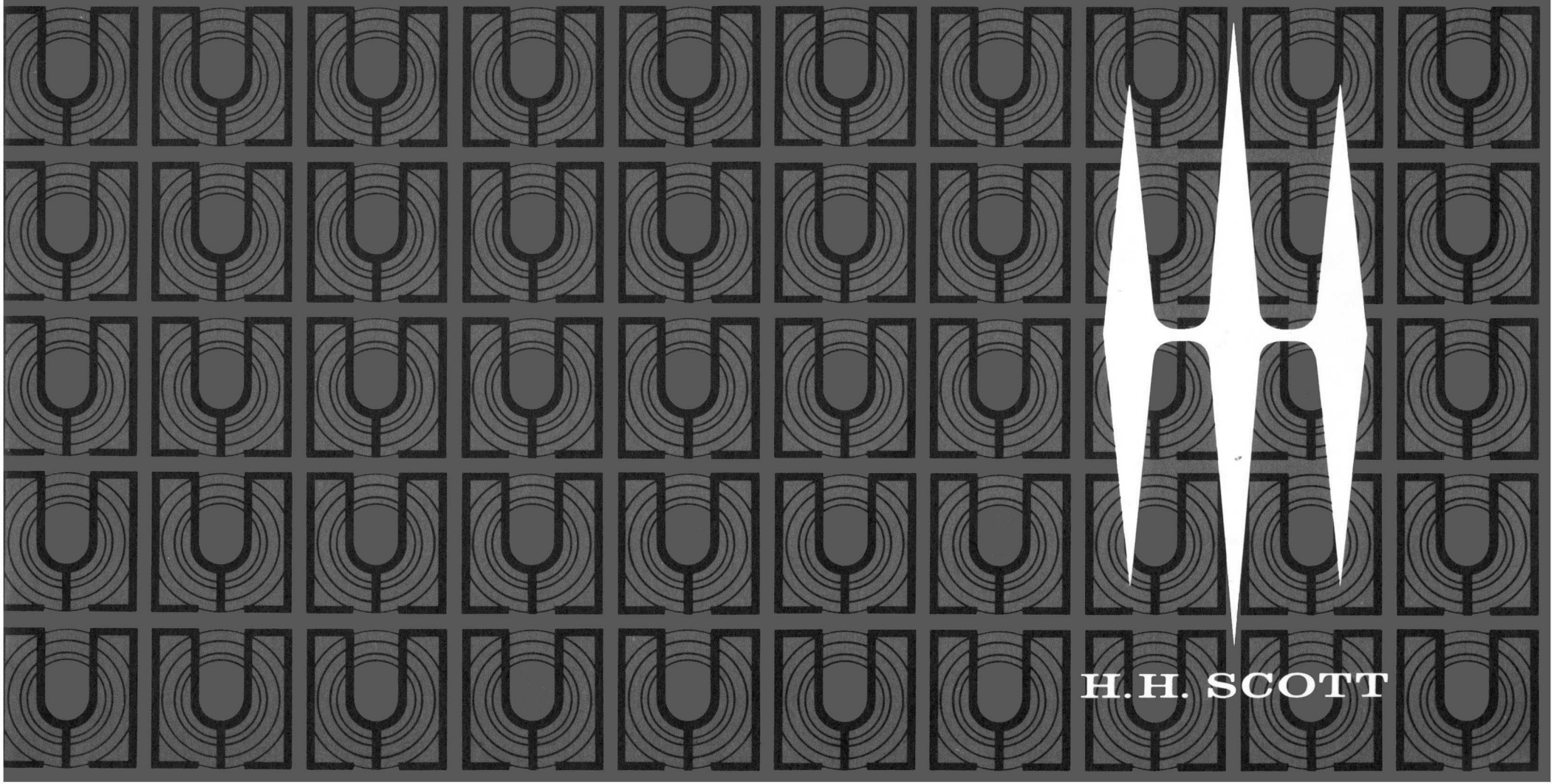
OPERATING MANUAL

SCOTT STEREO AMPLIFIER



H.H. SCOTT

LOOK HOW EASY IT IS TO OPERATE YOUR 200B/LK-30, STEREO AMPLIFIER

This simplified photo-guide shows how to use your new amplifier. A similar guide on the inside back cover shows how to connect the amplifier to the rest of your music system. However, we strongly suggest that you read the complete instruction book thoroughly. Only then will you get the utmost enjoyment and maximum performance from this superb instrument.

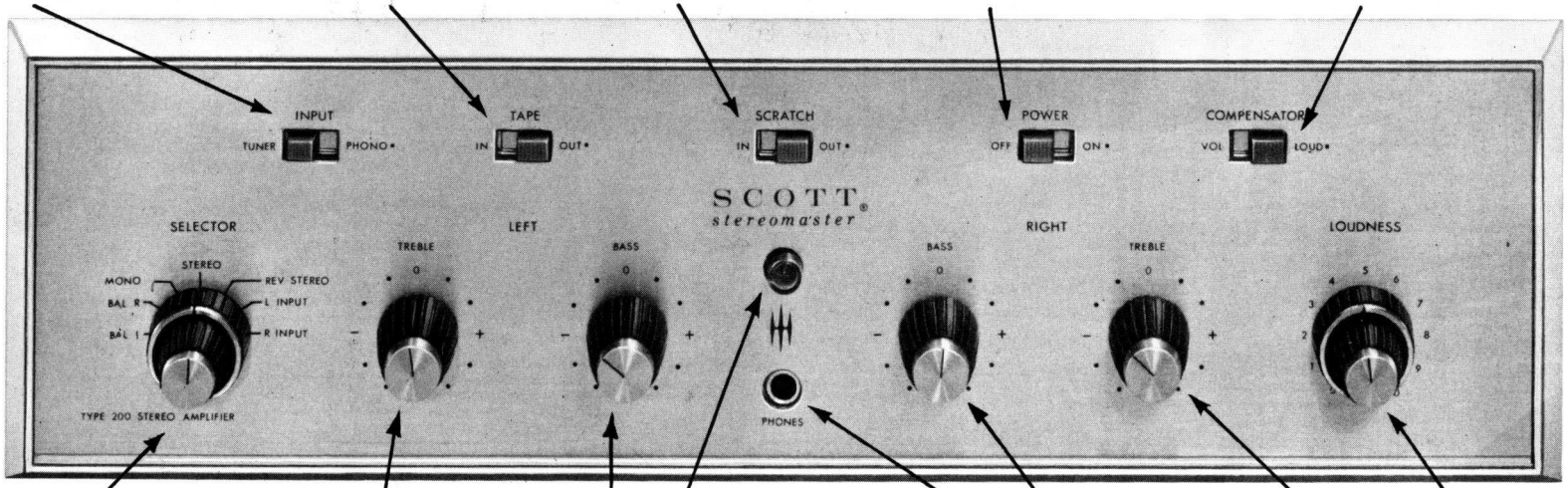
INPUT
Phono — for phonograph records
Tuner — for FM or AM tuner

TAPE
To listen to tape played on a regular Tape Recorder. (see page 10)
This switch can also be used to monitor a recording when used with a tape recorder with separate playback and record heads. (see page 15)

SCRATCH
To reduce high frequency noises such as record surface noise. (see page 15)

POWER
To turn the amplifier on or off. Will also supply power to any device connected to switched AC outlet on the back. (see page 10)

COMPENSATOR
In "Loud." position introduces a circuit that boosts the extreme high notes and low notes for listening at low levels, and is out of operation automatically at loud levels. "Vol." position removes circuit completely. (see page 13)



SELECTOR
For all stereophonic program material, set to Stereo position. Other positions are for monophonic material, or for balancing the system. (see page 13 and 12)

TREBLE
Modifies high frequency sounds. Set to suit your taste. (see page 14)

BASS
Modifies low frequency sounds. Set to suit your taste. (see page 14)

PILOT LIGHT
Lights up a few seconds after the unit has been turned on.

PHONES
To connect a set of low impedance stereo headphones. (see page 5)

BASS
Modifies low frequency sounds. Set to suit your taste. (see page 14)

TREBLE
Modifies high frequency sounds. Set to suit your taste. (see page 14)

LOUDNESS
Makes system louder or softer to suit your taste. (see page 13)

LK-30 uses different panel but has same controls as 200B pictured above.

HERE'S WHAT MAKES SCOTT AMPLIFIERS SO OUTSTANDING

The first true high fidelity amplifier was Scott's world famous 210A which appeared in 1947. This remarkable instrument introduced a score of unusual design features which today are accepted and used by all manufacturers. The engineering innovations in the 210A are typical of H. H. Scott, a company which has continued to pioneer in the audio field. The exceptional design and careful manufacture that went into the 210A have been proven over the years . . . most are still in service — working perfectly.

Scott's philosophy is not only to develop new and better instruments, but also to produce equipment that will last. There is no built-in obsolescence in Scott products. Here are a few of the "extras" Scott has included in your new amplifier:

- Non-magnetic electrolytic aluminum is used as chassis material on all Scott amplifiers rather than low cost steel. Aluminum acts as a shield against induced hum, and is an ideal heat dissipator guaranteeing long life and cool operation of the vital output stages.
- To avoid unpleasant hum and noise, Scott uses specially selected preamplifier tubes.
- All Scott amplifiers are 100% stable with any type of load or with no load. You never have to worry about harming your amplifier if a speaker wire is disconnected.
- The oversized output transformers on all Scott amplifiers mean that you will get plenty of output power at the low frequencies where power is really needed. Any amplifier can meet its rated specifications in the midrange. It is in the vital low frequency region that Scott amplifiers stand out as the leaders.
- All Scott amplifiers incorporate a subsonic sharp cutoff filter. This prevents all noise and rumble below 20 cps from entering the amplifier stage and causing the amplifier to waste its power on undesirable noises. By concentrating on the audible range, a Scott amplifier gives usable power far in excess of its conservative rating.
- All components and parts are carefully checked. They are used far below their rated values. You can be sure that your new Scott amplifier will meet its specifications, both now and for years to come.

Your new Scott amplifier is an investment in years of trouble-free, listening pleasure. To maximize this investment read this booklet carefully and follow the easy directions exactly. If you have any questions or if any problems arise, please refer to the address at the back of the booklet and write immediately. Scott feels that its responsibility for your satisfaction is just beginning now that you have purchased one of our instruments.

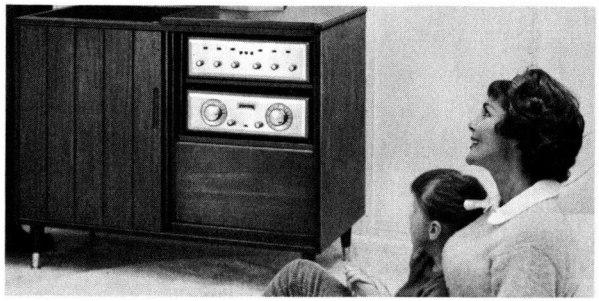
INSTALLING YOUR SCOTT AMPLIFIER

Your Scott amplifier can be placed on a table or bookshelf, in existing furniture like an end-table, buffet, or room divider, or in a specially designed equipment cabinet. A handsome hand rubbed wood accessory case is available from your dealer in finishes to blend with your decor.

Wherever it is placed, adequate provision should be made for ventilation. If this is not done, the life of the internal components will be appreciably shortened. By adequate ventilation we mean about 4″ of space above and behind the unit where air may circulate freely, or if it is installed in a cabinet, the cabinet should have an open back.

To help disperse heat rapidly, Scott employs aluminum in the construction of the chassis and panel. Aluminum is an excellent conductor of heat. Therefore, the panel may seem warm to the touch. As long as the unit is adequately ventilated, this is of no consequence.

The amplifier should always be mounted horizontally because of the necessity for proper heat dissipation. If vertical mounting is desired, forced air ventilation with a fan is a must. Fans specially designed for this purpose can be obtained from your dealer.



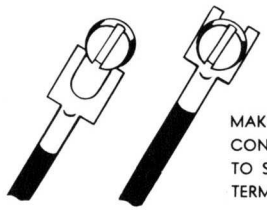
If the amplifier is to be installed in the same cabinet with an FM tuner, always place the amplifier above the tuner or alongside it. Never mount it below the tuner, as the heat from the amplifier will cause drift in your tuner.

CONNECTING YOUR SCOTT AMPLIFIER
To A Stereo Speaker System

Terminal strips for speaker connections are located on the rear of your amplifier. The screws marked Right are for connecting the right-hand speaker (as you face them from your listening area), the ones marked Left are for the left hand speaker. Every speaker is rated by its manufacturer at a certain impedance. This information is either marked on the speaker or can be supplied by your dealer. You will note that there are screws marked 4, 8, and 16 on the terminal strips. These numbers indicate the correct connection to the loudspeaker, and permit you to match the output of your amplifier to the impedance of the speaker.

When making connections, you can use almost any type of wire if the lengths are under 50 feet. We highly recommend ordinary lamp wire (#22 wire according to the electrical code). If you want to run the wire under a rug you can also use flat TV antenna wire. If you plan to use wire lengths considerably in excess of 50 feet, it is advisable to use #18 wire to prevent excessive losses of power.

When attaching the wire to the amplifier or the speaker be certain that strands of wire from one screw do not accidentally touch strands on any other screw or the speaker will not perform properly. After the speakers are connected they should be properly phased to give a well-spread stereo effect with full bass. Phasing instructions are to be found at the back of this manual.

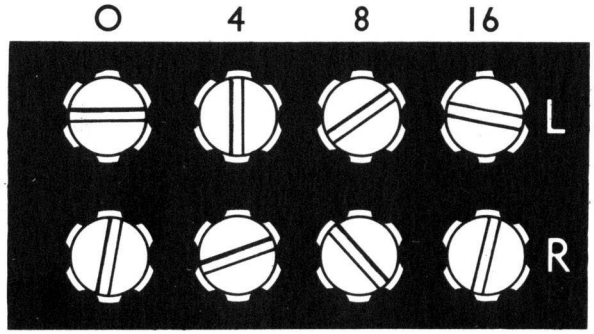


MAKING CONNECTIONS TO SPEAKER TERMINALS

If you would like to connect more than one stereo speaker system to your amplifier, you can readily obtain an inexpensive switching box from your dealer that permits you to switch between stereo speaker systems in different rooms.

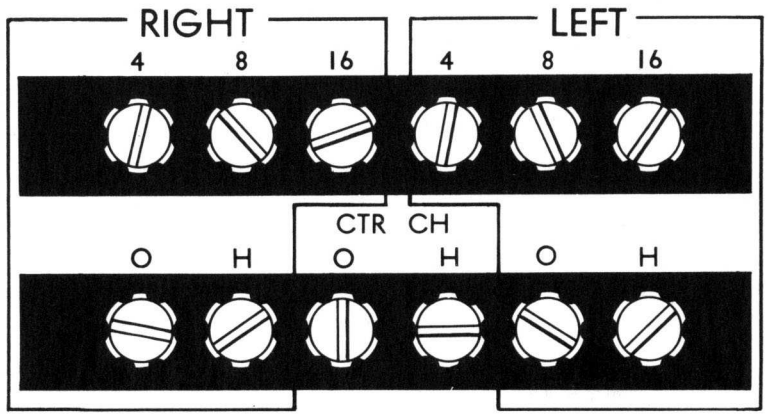
Making the Speaker Connections

(200 and LK-30 series)



Connect one end of the speaker wire to the two terminals on the back of the left hand speaker or speaker enclosure. At the other end connect one lead to a "0" screw on the left terminal strip (if more than one "0" terminal is present, use either, they are identical) and the other to the screw number closest to the value of the loudspeaker impedance. Repeat for the right hand speaker.

(222, 299. LK-48, LK-72 series)—



Your amplifier includes two terminal strips on the rear. The upper strip is designed solely for setting the amplifier to match the impedance of your speaker. Connect the cables with the spade lugs on the end to the terminal screw (either 4, 8, or 16) that most closely coincides with the rated impedance of your speaker. One cable and set of screws are for the right speaker and one for the left speaker. By having two sets, you can match impedances properly even if you are using speakers with different impedances.

The bottom terminal strip is for connecting the speaker wire. Connect one end of the speaker wire to the two terminals on your left hand speaker or speaker enclosure. Connect the other end to the "O" and "H" terminals for the left channel. Repeat for the right hand speaker.

To A Single Speaker System

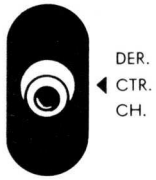
If you only own one speaker system and plan to add a second speaker for stereo at a later date treat the single speaker as a left channel speaker and operate the amplifier with the **Selector** in the Bal L. position at all times. It is not safe to operate conventional amplifiers without a speaker load. However, all Scott amplifiers are completely stable with resistive, capacitative, inductive, or no load. You need never fear injury to your amplifier by using it with no load on the right channel. Do not attempt to parallel the outputs of the amplifier. Such a procedure may reduce the power output and increase the distortion.

To a Center Channel Speaker or Monophonic Extension Speakers

One of the many exclusive stereo features pioneered by H. H. Scott is the derived third (or center) channel. This extra output is used in conjunction with an auxiliary amplifier to fulfill several important needs: 1. It gives fuller sound, particularly in large rooms where it is necessary to separate speakers by more than eight feet. 2. It allows ideal seating for full stereo in a much greater portion of your listening room giving you greater freedom in placement of speakers and furniture. 3. It lets you feed a full monophonic signal to single extension speaker systems in other rooms like kitchen, den, porch, bedroom or bath. With an ordinary two channel system you feed just half the signal to an extension speaker.

Derived Center Channel Preamp Output Jack

Connect a shielded audio cable from the Derived Center Channel Output jack (labeled "Der. Ctr. Ch.") on the back of your Scott amplifier to the input of a separate power amplifier. Use the 1.5 volt input if it is an H. H. Scott power amplifier and a high level input (such as tuner, extra, etc.) on any complete amplifier. Set the level control so that the center channel loudspeaker's sound is lower in volume as compared with the left and right stereophonic speakers. If the center channel is driving extension speakers, the separate loudspeakers can be equalized by using individual "T" pads on each speaker. A "T" pad is a specially designed level control that is readily available from your dealer.

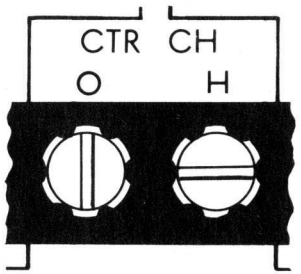


The center channel output is controlled by all the front panel controls, therefore, the auxiliary amplifier should have a volume or level control to be able to obtain the proper balance. It is essential that the center channel speaker be in phase with the right and left channel speakers for proper operation. See section on phasing found later in the manual.

Powered Center Channel Output

(222, 299, LK-48, LK-72 series)

In addition to the derived center channel output described above, these amplifiers also provide a powered center channel output capable of directly driving center channel or extension speakers. Connect one end of the speaker wire to the two terminals on the back of the speaker system. Connect the other end to the "O" and "H" terminals under Center Channel (on the same strip that you con-



nected the right and left speakers). If this output is to be used as a center channel, then the speaker should be in phase with the right and left speakers. Phasing instructions will be found in the back of the manual.

Using the derived center channel preamp output described in the previous section provides greater flexibility, depending on the power of the separate amplifier. If many extension speakers are desired, this method is preferable. However, for most normal requirements, the powered center channel output is certainly adequate and more convenient in that a separate amplifier is not needed.

Front Panel Stereo Headphone Output

A low impedance headphone output jack is located on the front panel. This jack will accept the standard three conductor phone plugs found on most popular low impedance stereo headphones. When using this jack, make sure that it is pushed in firmly.

(200/LK-30) When the headphone plug is connected to the front panel headphone output jack, the sound level from the loudspeakers will drop considerably. This allows you to obtain the full benefit of stereo headphone listening without interference from the sound of the loudspeakers.

(299D, 222D, LK-72, LK-48) When the headphone plug is inserted in the front panel headphone jack, the **Speaker** switch on the front panel should be switched to OFF position. This will completely cut out the sound from the loudspeakers permitting private headphone listening. If desired, the speakers and the headphones can be operated simultaneously.

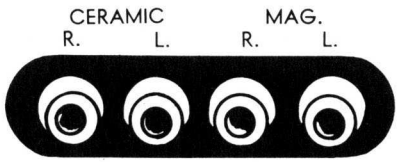
CONNECTING TO LOW LEVEL INPUTS

Stereo Record Player with Magnetic Cartridge

Magnetic cartridges are generally considered the best for faithful reproduction of the sound in the record groove. However, their electrical output is very small, on the order of a few millivolts (thousandths of a volt). The output is so small that your amplifier incorporates a special circuit known as a preamplifier section, specially designed to give this tiny signal a large boost before it goes into the regular power amplifier section.

200 and LK-30 series —

Connect leads from your record player to the Mag. inputs on the back of the amplifier. The lead carrying the left channel signal is connected to the Left input, and the one carrying the right channel goes to the Right input. When you wish to hear records, switch the **Input** on the front to Phono.



222, 299, LK-48, LK-72 series

There is a wide variation in output from one make and model of magnetic cartridge to another. Some cartridges produce outputs as low as 3 millivolts while others are over 12 millivolts. If the preamplifier is designed to amplify only a 3 millivolt signal, a 12 millivolt cartridge will overload the amplifier and create too much

volume (at higher distortion). On the other hand, using a 3 millivolt cartridge with an input designed for 12, will not provide adequate listening volume.

Scott engineers have solved this problem by designing two different sets of inputs — one designed for low output magnetic cartridges and one designed for high output magnetic cartridges. If your cartridge has an output of 6 millivolts or less, use the Mag Low inputs. If it has an output of 7 millivolts or higher, use Mag High. Most cartridges will be used in the Mag High inputs.

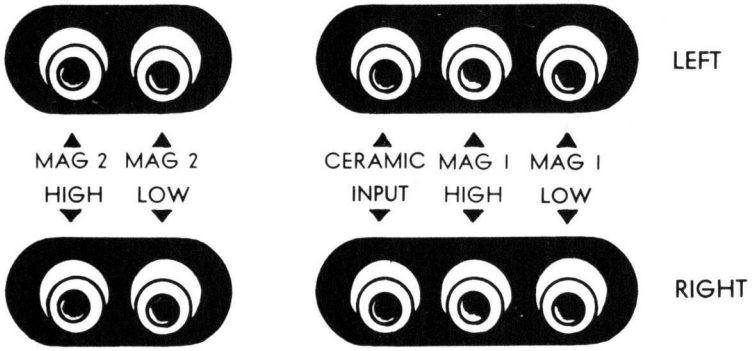
Information on cartridge output is undoubtedly listed in the literature that came with it. If it is not, your dealer can supply the needed information.

222, LK-72, LK-48 series —

To connect a turntable or changer utilizing a magnetic stereo cartridge, connect the shielded leads from the player to the Magnetic inputs on the back of the amplifier. Check the instructions provided by the record player manufacturer to be certain that you are inserting the left channel lead into the left input of the amplifier and the right input into the right channel.*

299 series —

The 299 is especially flexible as to number and type of low level signals that can be connected to the amplifier and switched from the front panel. On the back of the amplifier you will find two sets of low and high mag inputs. There is a Mag 1 High and Low, as well as a Mag 2 high and low. This for example, permits you to connect both a turntable and a record changer. By moving the **Pickup** switch on the front panel between 1 and 2, you can choose between the two units.



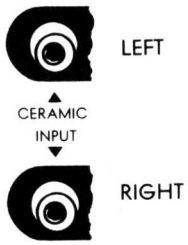
Check the output from your cartridge and connect the leads from the turntable to either Mag 1 high or low.* Insert the leads from the left channel into the Left input and those from the right channel into the Right input. If you have a second turntable or changer, repeat this procedure by using the Mag 2 high or low inputs.*

Stereo Record Player with Ceramic or Crystal Cartridge

A ceramic or crystal cartridge differs from a magnetic cartridge in the amount of output generated. Whereas a magnetic cartridge produces a signal of a few thousandths of a volt, a ceramic or crystal cartridge is capable of outputs of at least one half volt. For this reason, your Scott amplifier provides a special high input.

* Use either Mag High or Low. Do not use both Mag High and Low at the same time.

When using a ceramic or crystal cartridge, the inputs marked Ceramic on the rear of the amplifier should be used. The lead carrying the left channel information should be connected to the Left Channel Ceramic input; the lead carrying the right channel information should be connected to the Right Channel Ceramic input.



(222D, 200, LK-72, LK-48) Either the ceramic or *magnetic high and low inputs may be used; not all three at the same time. In other words, if you are using a ceramic cartridge connected to the Ceramic inputs, neither Magnetic High or Magnetic Low may be used.*

(299D) Mag 1 high or Low should not be used if you are using a Ceramic cartridge. The **Pickup** *switch on the front panel must be in "1" position. Mag 2, High or Low, can, of course, be used for any other low level device.*

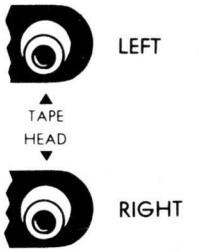
Monophonic Record Player

The instructions outlined above for your amplifier are equally valid here. The only difference is that there will be only one lead to connect and this should be inserted in the Left input. To play the monophonic record so it is heard over both loudspeakers, turn the **Selector** switch to L. Input.

Stereo Tape Deck

(222, 299, LK-48, LK-72 series) A tape deck is a machine without playback preamplifiers. The signal is fed directly from the tape heads without any additional amplification. A very small electrical signal is produced similar to that obtained from a magnetic phonograph cartridge. With your Scott amplifier you can connect both a tape deck and a record player, and select either from the front panel.

222, LK-48, LK-72 series — Connect the leads to the Tape Head input on the back panel. To listen to tape, move the **Equalization** switch to the NAB Tape position. This will switch the input from phono to tape head. The **Input** must be in the Phono position in order to listen to either the tape head or record player.



299 series — Connect the leads to either Mag 1 low or Mag 2 low. If your magnetic cartridge is connected to either Mag 1 high or low, then use Mag 2 low.* The **Pickup** switch in the front panel will permit you to choose between the record player and the tape deck. In addition, set the **Input** selector to NAB tape to get the proper sound. More about this in the section on "Equalization."

Microphone

(299 series) — A microphone can be connected in much the same way as a tape deck or a magnetic cartridge. Use either Mag 1 or 2 high or low.* The **Pickup** switch on the front will permit you to choose between the microphone and some other low level source. When using the microphone, turn the **Input** selector to the Mic position. This will assure the proper balance of sound. For more information, see the section on "Equalization."

* You cannot use Mag 1 high and low, or Mag 2 high and low at the same time.

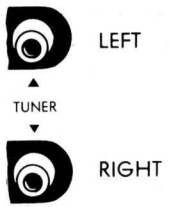
Grounding Your Record Player or Tape Deck

Many turntables, changers, and tape decks must be grounded to reduce hum to unobjectionable levels. A copper colored screw will be found on the top rear of your amplifier. A few turns with a screwdriver will loosen it. Connect any grounding wires to this screw, and then tighten. Carefully read all the instructions provided with your cartridge, record player, or tape deck relating to hum reduction. If unusual problems present themselves write to the address given at the back of this manual.

CONNECTING TO THE HIGH LEVEL INPUTS

Stereo Tuners (or monophonic tuners with multiplex adaptors)

Whether you use an integrated stereo tuner or a monophonic tuner with a multiplex adaptor, you will have two leads to connect to the amplifier. One lead will carry the left channel information and this should be connected to the left channel Tuner input. The one carrying the right channel information should be connected to the right Tuner input.



If the tuner has a level control it should be adjusted so that the overall loudness does not vary when switching between records and tuner. If your tuner does not have a level control, but does have a choice of outputs marked high or low, use the outputs most closely matching the over-all loudness when playing records.

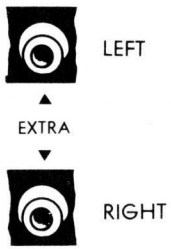
Monophonic Tuners (AM or FM)

Some early Scott FM tuners (like the 310D, 314, LT-10, 311D) have pairs of outputs on the back. Connect the one marked Channel A output to the left channel Tuner input of the amplifier. Connect Channel B to the right input. While you are not feeding a stereo signal into the amplifier, you will be able to leave your amplifier in the stereo mode at all times and still get monophonic sound from both speakers.

If your tuner has only a single set of outputs (perhaps one is marked audio or amplifier output and the other is called tape), connect a single lead from the audio output to the left channel Tuner input of the amplifier. In order to hear monophonic sound from both loudspeaker systems, turn the **Selector** switch on your amplifier to L. Input.

Extra Input

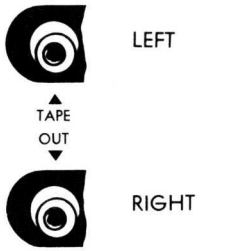
(222, 299, LK-48, LK-72 series) — An extra stereo input is provided for any other high level source you may wish to connect to your amplifier. You can connect a second tape recorder, ceramic microphone or cartridge, or sound from your TV set. If this extra source is a stereophonic device with two leads, connect the left channel lead to the left channel Extra input and the other to the right channel Extra input. Set the **Input** selector to Extra. If it is a monophonic device with only one lead, connect it to the left channel Extra input. To listen to this latter signal over both speakers you should turn the **Selector** switch to L. Input position and the **Input** selector to the Extra position.



CONNECTING YOUR TAPE RECORDER

To Make Tape Recordings

Your Scott amplifier has a special set of outputs which permit you to record any signal passing through the amplifier. You can make tapes from your records or off-the-air from a tuner. The tape recorder output is completely unaffected by the volume and tone controls of the amplifier. If you want to turn the volume down to "O", you can and it will not affect the output to the tape recorder.



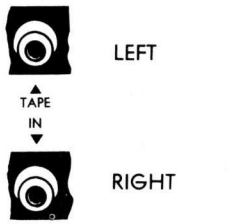
Connect an audio cable from the left channel Tape Output on the amplifier to the left input of the tape recorder. Repeat for the right channel. Some tape recorders have both a high level (or tuner) input and a low level (or microphone) input. Use the high level input for all connections from the amplifier. If there is any question, refer to the recorder instructions and follow accordingly.

If you have a monophonic tape recorder, connect the left channel Tape Output of the amplifier to the tape recorder.

To Playback Tape Recordings

If your machine has no playback preamplifiers, it is feeding a signal directly from the tape heads to the amplifier without any additional amplification. Such a device is commonly called a tape deck and its use is covered under "Low Level Inputs" on a previous page.

If your stereo tape recorder has its own playback preamplifier, connect an audio cable from the left channel output to the left channel



Tape Input jack on your amplifier. Repeat for the right channel. In order to listen to the tapes, slide the **Tape** switch on the front panel to the IN position. When the tape switch is in this position, it completely bypasses the **Input** switch and permits you to hear the tapes regardless of the position of that switch. When you are finished listening to the tapes, immediately return the **Tape** switch to the **OUT** position so that the **Input** selector becomes operative again.

If you are listening to a monophonic tape recorder connect the tape recorder's output cable to the left channel Tape Input jack. Use the **Tape** switch as described above, but in addition, turn the **Selector** switch to L. Input so that the sound can be heard over both speakers.

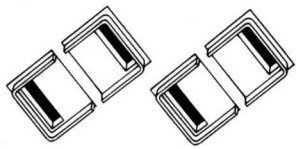
If your tape recorder has a separate record and playback head, it may be possible to monitor the tape while you are making a recording. This will be described in the section on TAPE MONITOR.

POWER

The power cord should be plugged into any 105 to 125 volt, 50 or 60 cycle AC source (wall outlet). Do not attempt to use with a DC outlet.

Accessory AC Outlets

Accessory AC outlets are found on the rear of your Scott amplifier.



(299D, 222D, LK-72, LK-48)
There are two accessory AC outlets on the rear panel. One of the outlets is controlled by the front panel **On-Off** switch and is colored black. Your tuner, tape deck or recorder may be plugged into this outlet. When you turn off your amplifier anything plugged into this outlet will automatically be turned off as well.

The second accessory AC outlet (colored red) remains "live" as long as the amplifier itself is plugged in. It is suggested that your record player be connected to this outlet. This will insure that no rumble-producing "flat spot" will occur in your record player if you turn the amplifier off before the record player has completed its cycle. When this output is used you must independently shut off the device plugged into it.

200, LK-30 series

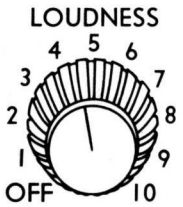
An accessory switched 117 volt output is available on the back panel to supply current for a tuner or tape recorder motor. If more than one device is used, a 3-way plug should be inserted into the outlet, permitting the use of up to three devices. The outlet is rated at 2½ amperes so the total current drain of all the devices connected should not exceed this amount. When the amplifier is turned off, all items plugged into this outlet will also be turned off.

HOW TO USE YOUR SCOTT AMPLIFIER

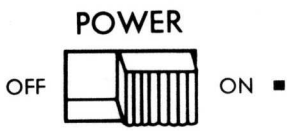
Your new Scott amplifier has a wide variety of controls. Yet, it is extremely easy to operate. Most of the controls are only used occasionally. The two indispensable operating features are the **Input** selector and the **Volume** (or **Loudness**) control. The former permits you to choose between different sources, such as phono or tuner. The latter allows you to vary the overall loudness to suit your taste. Become familiar with these immediately.

Turning the Amplifier On

LK-48 and LK-72 — Turn the **Loudness** control clockwise. This will turn the amplifier on as well as provide power to any instruments connected to the switched accessory outlet on the back. The pilot light on the front of the amplifier will light up a few seconds after the unit has been turned on.

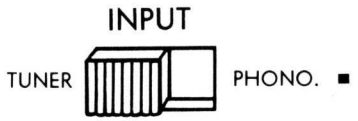


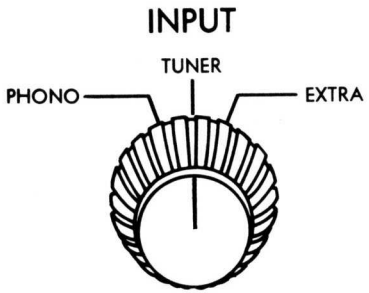
200, 222, 299 series — A separate **on-off** switch is provided. This permits you to leave all the front panel controls in their normal operating position without having to reset them. When the amplifier is turned on, power will also be provided to any instruments connected to the switched accessory outlet on the back. The pilot light on the front panel will light up a few seconds after the unit is on.

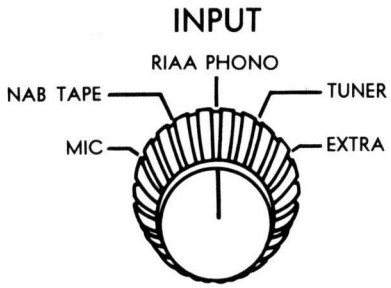


Choosing the Source

NOTE: To listen to (or play back) a tape recording, slide the **Tape** switch to the IN position. In this position, the **Input** selector is completely bypassed. *Immediately return the* **Tape** *switch to OUT as soon as you are finished with the tape.* Otherwise, it will be impossible to listen to any other source. Anytime the amplifier appears to be inoperative, check to make sure someone hasn't accidentally left the **Tape** switch in the IN position.







200 and LK-30 — The **Input** selector switch chooses between phono and tuner. (Any high level signal such as TV sound can be used in the Tuner input if desired.)

222, LK-48, LK-72 series — The three position rotary switch offers a choice of phonograph, tuner, or extra.

299 series — Starting with the control in the extreme counter-clockwise position, the first three positions automatically select the low level inputs on the back of the amplifier. To choose between Mag 1 (high or low) or Mag 2 (high or low) use the **Pickup** switch on the front panel. While all three positions of the **Input** selector choose the same inputs, they do affect the signal in different ways. This will be explained in greater detail in the section on Equalization. However, you use the Mic position for a microphone, NAB tape when listening to a tape deck, and RIAA when using a record player. The next position is for tuner, and the last is to select any high level source (TV, Crystal Microphone) that might be connected to the Extra input.

Equalization

In the process of making a disc or tape recording, the engineers have found it expedient to deliberately reduce the low frequencies and boost the high frequencies. This makes it possible to get more music on the record and reduce annoying background hiss and surface noise. To return the overall frequency response to normal (flat), your amplifier must incorporate a corresponding amount of bass boost and treble cut. This process is referred to as equalization.

To perform its function properly the equalization curve used in the amplifier must correspond exactly to the one used in making the recording. Since 1956, all phonograph records have been made with what is known as the RIAA equalization curve. All Scott amplifiers made since 1951 incorporate this equalization curve. If you have a few older records which may have been made using slightly different curves, small adjustments of the tone controls can easily correct for proper response.

(200 and LK-30 series) — The RIAA curve is built into your amplifier and automatically takes effect whenever you operate the system in the phono position.

222, LK-48, LK-72 series — When you put the **Equalization** switch on the front panel in the RIAA phono position, it will automatically switch the record player into the circuit with the proper RIAA equalization.

In addition to this feature, your amplifier provides an additional equalization curve specially designed for playback of pre-recorded tape from a tape deck. A tape deck does not include playback preamplifiers and signal is fed directly from the tape head to the amplifier without additional ampli-

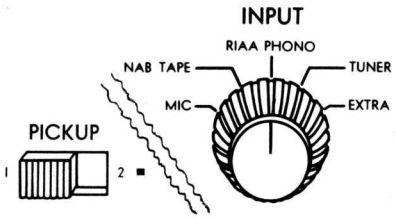
fication. If you have such a device, connect it to the Tape Head input on the back of the amplifier and move the **Equalization** switch on the front panel to the NAB tape position. This will switch the tape head input into the circuit and simultaneously provide the proper tape equalization.

NOTE: In order to use the **Equalization** switch and to listen to either records or tape (as played on a tape deck), the **Input** switch must be in the Phono position.

Equalization and Pickup Switch

299 series —

The 299 series provides unparalleled flexibility in the number and type of signal sources that can be used. As described in the section on "Connections", two turntables, record changers, tape decks, microphones or combinations thereof can be connected to the amplifier and selected from the front panel by means of the **Pickup** switch. In position "1" it switches into the circuit any device connected to either Mag 1 High or Mag 1 Low on the back panel. In position "2" it does the same for any device connected to Mag 2 high or Mag 2 low.



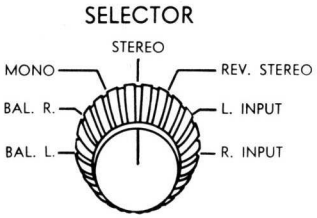
After you have turned to the proper **Pickup** switch position you must select the proper equalization position on the **Input** selector. If you are listening to records played on a turntable or a record player with a magnetic cartridge, then the **Input** selector should be in the RIAA position.

If you are listening to pre-recorded tape with a tape deck, then the NAB position on the **Input** selector is required. A tape deck is a device that does not have playback preamplifiers. The signal is fed directly from the tape head to the amplifier without additional amplification.

If you are using a microphone, the **Input** selector should be set to Mic. A microphone does not require any equalization but it does need a big boost in volume. With the switch in the Mic position the signal will get lots of amplification without frequency equalization.

Selector

This versatile switch controls the mode of operation of your music system. If you are primarily interested in stereo program material, the switch will usually be in the Stereo position. If you occasionally play monophonic records or other monophonic material, it is an excellent idea to familiarize yourself with the various positions of this control. Starting in the extreme counterclockwise position:



Bal L. — signals coming in on both left and right inputs are combined in the amplifier and then sent out to the left speaker only.

Bal R. — signals coming in on both left and right inputs are combined in the amplifier and then sent out to the right speaker only.

(These two positions are part of Scott's patented balancing network . . . an easy way to match the loudness of your right and left speakers perfectly. Their use will be discussed in the section on "Balancing The System.")

Mono — If a stereophonic cartridge is being used to play monophonic records, use this position. It automatically combines the outputs from the left and right channels of the cartridge into a single monophonic signal. In the process of combining the two channels, noise and rumble present in the original record, and noise caused by vertical motion in your stereo cartridge is cancelled, resulting in much cleaner reproduction of your mono records.

Stereo — This is the normal position for this switch and should be used for listening to stereo program material of all types.

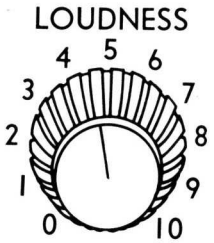
Rev. Stereo — Basically this is identical to the stereo position except that it reverses the two channels. The Left input will now be heard over the right hand speaker, and vice versa. This can be used, for example, to move the violins from the left side to the right, . . . the drums from the right to the left . . . if you so desire.

L. Input — Any Left input signal will be fed through both amplifier channels and into both loudspeakers. This is useful if you have a monophonic cartridge or tuner connected to the left input of the amplifier. By using this position you can hear this single source over the full dual channel music system.

R. Input — Any Right input signal will be fed through both amplifier channels and into both loudspeaker systems.

Loudness

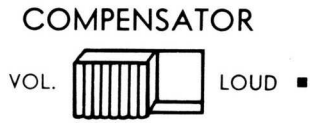
This control varies the volume of sound emanating from the music system. It is so designed that it will vary both channels at the same time. As the control is turned clockwise, the volume increases.



For some music systems using low output cartridges and inefficient loudspeakers it may be necessary to turn the control to the far right for real loudness. With high output cartridges and efficient speakers, the sound may become very loud at low settings of the control. This is not unusual. The actual position of the control is not critical as long as you obtain the range of volume desired.

Compensator

It is a phenomenon of the human hearing mechanism that when volume is low, the ear is less sensitive to extreme low and high notes. Thus, whenever the system is being operated at a low level, the sound will not seem to be as wide range as it is at higher levels. To compensate for this deficiency, your amplifier incorporates a special circuit which automatically boosts the extreme lows and highs whenever the volume is reduced. To introduce this compensating network into the system, move the slide switch to "Loud." When the sound level is increased, this compensation automatically decreases since it is no longer needed. When the switch is in the "Vol." position the compensation network is inactive.



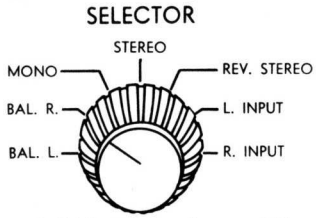
Balancing the System

Whether the system is being used stereophonically or monophonically it is important that the sound from the two speaker systems be of equal volume. They may differ because of room acoustics, differences in speaker efficiencies, differences in output between the two channels of a stereo cartridge, speaker placement, discrepancies between the two channels in the original program material, etc.

Scott's patented stereo balancing system makes it easy to detect and correct any differences in loudness between channels. First, set the volume at full room level. It makes no difference what program material you use to check balance. It can be stereo or mono, FM or phono.

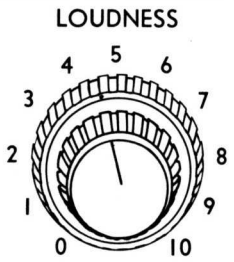
Then turn the **Selector** to Bal. L. Listen to the overall loudness of the sound coming from the left speaker. Quickly turn to Bal. R.

The volume from the right speaker should be at the same level. Switch back and forth quickly between these two positions to check your findings. If the amplifier is not situated near your usual listening area, have someone else turn the switch while you are in the standard listening location.

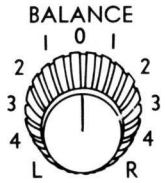


If the volume is the same at each position, the system is in balance. If it is not, then it is out of balance and this must be corrected by the following simple methods:

200 and LK-30 series — The **Loudness** control on your amplifier is a clutched control. It is actually two separate controls, one for each channel, locked together by friction. If one channel is louder than the other it is easy to correct this problem. Firmly grasp the knob that controls the channel that was louder in the balancing test. With your other hand, rotate the knob on the softer channel slightly clockwise. Re-check the balance by the method described above. Repeat the procedure until both channels are equal. You can now use the clutched control as a regular volume control. The loudness between channels will be equal over a wide range of rotation.

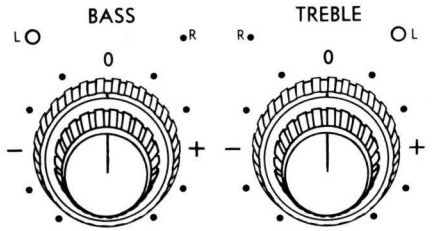


222, 299, LK-48, LK-72 — The **Balance** control on your amplifier is designed to correct for any differences in volume between channels. By rotating the control clockwise, the right channel increases in volume in comparison to the left channel. Rotation counter-clockwise has the opposite effect. By moving the control to its extreme position it is possible to eliminate one channel completely, if desired.



To balance the level, rotate the **Selector** between Bal. L. and Bal. R. rapidly, and vary the setting of the **Balance** until the sound from both speakers is equally loud. Unless there are discrepancies introduced by out-of-balance records or stereo broadcasts, the control should not have to be varied frequently.

Tone Controls



The tone controls used in your amplifier are actually two separate controls (one for each channel) held together by friction. When you turn the treble control, you are changing the high frequencies on both channels. If you desire to modify one channel only, firmly grasp the knob that affects the channel you do NOT want to change. Then turn the other knob as you wish.

These controls modify the sound to suit the user's taste, the room acoustics, and the program material being used. H. H. Scott provides separate controls for each channel to permit you to adjust for differences between speakers, and differences due to placement of the speakers in the room. The **Bass Control** modifies the low frequencies while the **Treble Control** modifies the high notes. Rotating the controls clockwise causes an increase in the amplitude of the frequencies, while rotating counter-clockwise causes a reduction.

Feel free to use these controls as you see fit. You are the one who must be satisfied with the over-all sound, and the tone controls are the principal way of seeing that you are. However, boosting the treble will accent surface noise on phonograph records and hiss on tapes, while boosting the bass will emphasize record player motor noise.

By having separate tone controls, Scott makes it possible for you to simulate stereophonic sound on your older monophonic records. Simply turn up the **Treble Control** on the left speaker and turn down the one for the right speaker. Then turn up the **Bass Control** for the right speaker and turn down the one for the left. The amount of boost or cut is strictly a matter of taste. You will find that the higher pitched instruments like violins and flutes appear to be coming from the left speaker, while the deeper ones such as drums and cellos appear to be on the right. This will add to your enjoyment of monophonic material.

Tape

To listen to the playback of recorded tape, you simply slide the **Tape** switch to the IN position. In this position it automatically bypasses the **Input** selector switch and permits you to listen to tape only. When you are finished with the tape, immediately return the switch to the OUT position. Otherwise you will be unable to hear any other program material.

If your tape recorder incorporates a separate playback head (with playback electronics) it is possible to listen to the recording a fraction of a second after it is made as a quality check. Let us assume that a recording is being made from a stereo tuner. The **Input** selector will be in the Tuner position. With the **Tape** switch in the OUT position, the system will be playing the actual broadcast. With the switch moved to IN, the system will now be playing the tape recording of the broadcast just after it has been recorded. By moving the switch back and forth it is possible to hear whether the recording is equivalent to the actual broadcast.

This method will work only for recorders with separate record and playback heads.

Scratch

If the surface noise of a phonograph record, or the hiss of the tape recording, or the background noise on a stereo multiplex broadcast becomes objectionable, the **Scratch** filter is the answer. By sliding the switch to the IN position, most of the high frequency noises will be sharply reduced. If you are listening to especially old 78 RPM records, it may be necessary to turn down the treble controls, too.

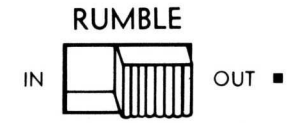
Rumble

All mechanical devices generate some low frequency noises. Even the finest turntable or tape recorder produces some undesirable sounds. Much of this noise is below the audible range (below 20 cps.) so you may not actually hear it. However, your amplifier is capable of reproducing these objectionable noises and, in doing so it may waste much of its usable power.

Scott engineers have designed a special low frequency sharp cutoff into your amplifier. This circuitry attenuates all sounds below the audible range, insuring that your amplifier will be able to devote all of its power to the audible frequencies.

Rumble Filter

(299 and LK-72 series) — In addition to the standard subsonic sharp cutoff described above, a filter is available to remove annoying

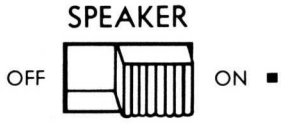


low frequency sounds in the audible range. Generally these are caused by poorly designed record changers or by turntables in need of adjustment. Some phonograph records have rumble recorded right into the grooves. Sliding the **Rumble** filter to the IN position will greatly reduce these noises. However, some low frequency music will be lost as well.

Speaker Switch

(222, 299, LK-48, LK-72 series)

This switch is designed to complement the front panel stereo headphone output. When using headphones you may wish to turn off the loudspeakers to avoid disturbing others in the room. By sliding the **Speaker** switch to the OFF position, all signals to the speakers will be turned off without affecting the signals to the headphones. In the ON position both headphones and loudspeakers will be operative.



Phasing the Loudspeakers

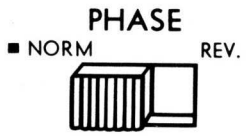
A loudspeaker produces sound when the "cone" or diaphragm "pushes" the air in such a manner that our ears detect sound. When two loudspeakers are in operation in a stereo system, it is essential that the cones move back and forth at the same time. If the right cone is moving forward at the same instant that the left cone is moving backward, there will be a noticeable reduction in bass response as well as a poor stereophonic effect.

To be certain that your system is in phase at all times, the following method is suggested:

Tune to a monophonic broadcast with a male voice speaking, or else, play a monophonic record with a male singing voice. Turn the volume to full room level. Stand in front of the two speaker systems and midway between them. Have someone quickly reverse the leads to one speaker. In the correct position, the voice will sound full and appear to be coming from directly between the two speakers. In the wrong position, the voice will lose some of its bass response, and will appear to be coming from both speakers.

If a center channel speaker is used, the same procedure can be employed except that the **Selector** should be turned to Bal. L. The lead to the center speaker is then reversed until the center and left speakers are in phase. The only time it will be necessary to repeat the phasing operation is if one of the speakers should be disconnected for some reason.

299, 222 series — A phase-reverse switch will be found on the back of the amplifier. Follow the instructions above, except that instead of reversing the leads to one of the speakers you simply slide the **phase** switch instead. If the switch turns out to be in the reverse position when the system is in phase, reverse the leads to one of the speakers, and return the switch to normal.

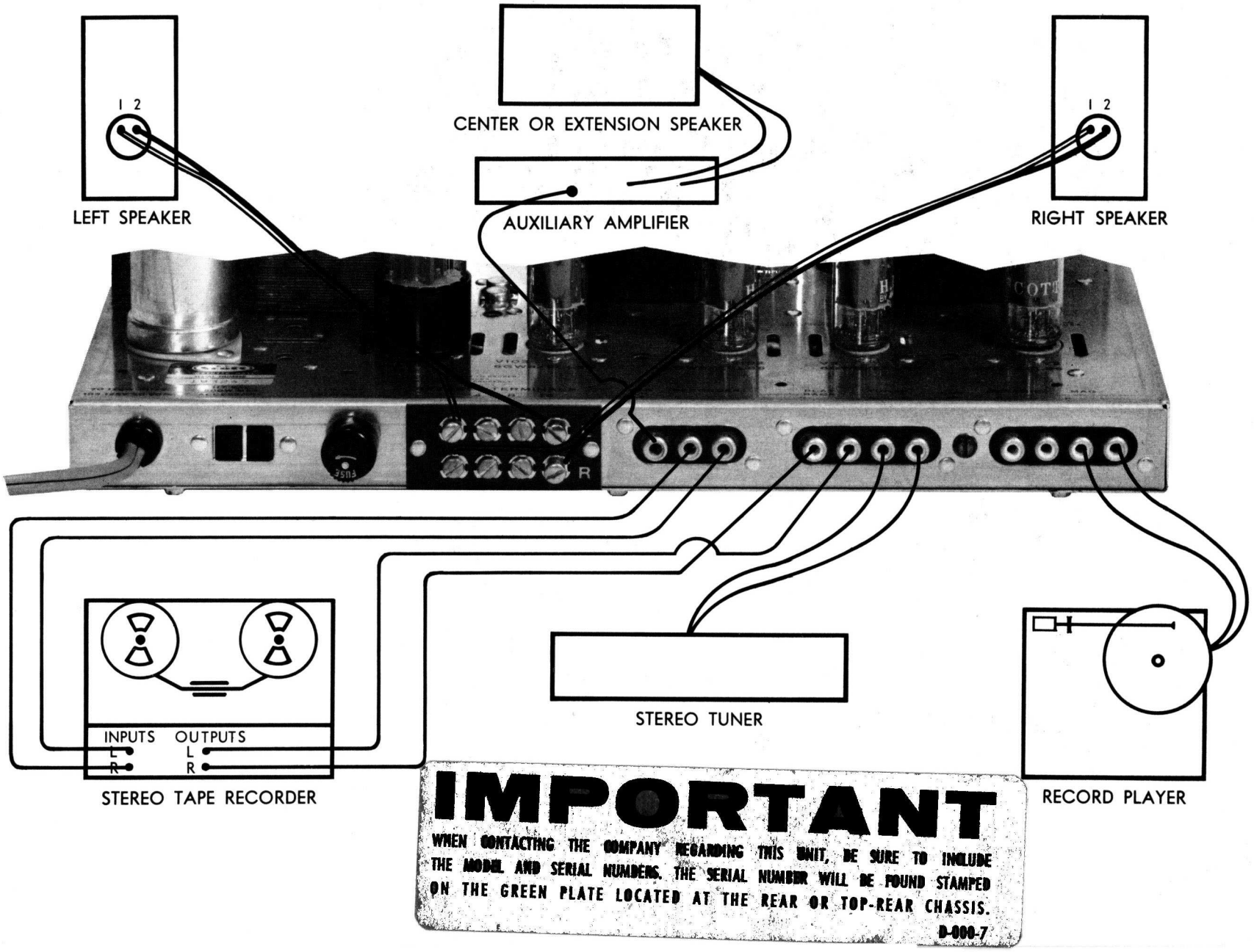


A FINAL WORD

If you have any questions concerning the operation of this instrument, a letter to the following address will bring a prompt, personal reply.

TECHNICAL SERVICES DEPT.
H. H. SCOTT, INC.
111 POWDERMILL ROAD · MAYNARD, MASS.

LOOK HOW EASY IT IS TO CONNECT YOUR STEREO AMPLIFIER



IMPORTANT

WHEN CONTACTING THE COMPANY REGARDING THIS UNIT, BE SURE TO INCLUDE THE MODEL AND SERIAL NUMBERS. THE SERIAL NUMBER WILL BE FOUND STAMPED ON THE GREEN PLATE LOCATED AT THE REAR OR TOP-REAR CHASSIS.

D-000-7