

SPICA
TC-50
OWNER'S MANUAL

We at SPICA would like to thank you for purchasing the TC-50 speaker system. We've assumed that you've chosen the TC-50 because you love music as we do. With that in mind, we've attempted to keep the technical wording in this manual to an absolute minimum while stressing the musical benefits of having your TC-50's set up properly.

The TC-50's performance in your home is dictated by three basic parameters:

- 1) the speakers' electrical connection to your stereo system,
- 2) the speakers' physical location in relation to the room,
- 3) and yourself.

To obtain the full sonic benefits from your TC-50's, follow our simple guidelines for optimum set-up. Among these guidelines are some absolute DO's and DON'T's; for clarity, these have been marked with a "*" sign. Other guidelines should be followed as closely as possible, depending on your room geometry. When in doubt, LISTEN! Your ears will always tell you which set-up is the best for your room. For your convenience, we've included descriptions of some of the basic things to listen for.

ELECTRICAL CONNECTIONS:

** Make sure that your amplifier or receiver is off when making or changing electrical connections.

Use high quality wire to interconnect your amplifier and TC-50's. Your dealer can assist you in choosing the wire that's right for your needs. Don't underestimate the importance of your interconnect wire; lower quality wire can seriously affect your system's sound quality. If in doubt, ask your dealer for a demonstration comparing low quality 18 gauge "lamp cord" type wire with the dealer's recommended wire; you can hear the difference.

** Use the same length of wire for both speakers, even if they are at different distances from your amplifier.

All wire, regardless of type, can be classified by certain electrical characteristics (resistance, capacitance, inductance, etc.) To ensure proper sound balance and identical performance for both speakers, it's imperative that the wire's sonic (electrical) contributions be the same for each speaker. For example, if one TC-50 is ten feet away from the amplifier and the other is only six feet away, use two ten-foot lengths of wire. The "extra, unused" four feet of wire for the speaker in our example is not really "extra" or "unused"; as stated above, it serves the important function of ensuring that both speakers will have the same sound qualities.

** Strip only as much insulation from the wire as is needed to make a good connection.

"More" is not "better". Strip just enough wire to make a SINGLE pass around the binding post (3/4 of an inch will do).

Separate your two wire leads by about four inches; use a knife or single edged razor blade for this. If you try to separate the leads by force (i.e. pulling them apart by hand), you will most likely expose bare wire somewhere along the separation (HIGHLY UNDESIRABLE). Pay attention to color coding or other markings on the Insulation; such codings allow you to distinguish "positive" and "negative". For now, we will connect the red input of one TC-50 with the red (positive) output terminal on your amplifier, using the wire's insulation coding as our guide. After that, the black input on the TC-50 will be connected to the black (negative) output from that SAME CHANNEL of your amplifier. We'll then repeat the process for the other speaker.

Choose a lead from the wire to be the "+" (positive) lead; with high quality wire, the difference in leads is only the external marking. Separate and strip the leads now, if you haven't already done so.

Turn the red knob on the TC-50 counterclockwise to expose a metal post. Bring the "+" lead up to the post's LEFT SIDE, and wrap it ONCE around the metal post. (Hobbyists have found that pre-forming the bare wire into a "hook", or upside down "U" shape helps in installation, especially if a very rigid wire is being used. To do this, simply wrap your exposed lead halfway around the shank of a plain screwdriver.)

Now that the wire is around the metal post, tighten the plastic insulating knob by turning clockwise; make this connection as tight as you can by hand. NEVER USE PLIERS OR ANY TOOLS TO TIGHTEN A BINDING POST. If you followed directions, and brought the lead up from the left side, You'll find that the tightening action pulls the lead closer and tighter against the metal post. Repeat the process for the black ("-") input on the TC-50.

Ignore the tiny hole that passes through the center of the metal post; It's used to connect laboratory probe tips, etc., to the binding post.

The TC-50 will easily accept a dual banana plug if necessary.

- * * DO NOT ALLOW BARE WIRE FROM ONE INPUT TO TOUCH THE OTHER INPUT OR ITS BARE WIRE LEAD. Failure to follow this directive will probably result in serious damage to your amplifier.
- * * Follow the amplifier manufacturer's instructions regarding speaker wire connection to the amplifier.
- * * Make sure that the amplifiers "+" output from each channel is connected to the red input on each TC-50. (This will be discussed in detail in a following section.) If one amplifier channel's "+" output is connected to the red speaker input, and the other channel's "+" output is connected to the other speaker's black input, then your system will be OUT-OF-PHASE. This will result in near total loss of bass energy, and total loss of the "stereo image" (detailed below). Double, triple, or quadruple check connections until you are CERTAIN that your system is in-phase.

SPEAKER PLACEMENT:

Your room plays an important role; in fact, we tend to think of your room as one of your stereo components! Proper speaker placement in the room provides very natural, very pleasing, very "musical" sound. Improper speaker placement can cause your system to sound VERY unnatural, VERY unpleasant, and VERY, VERY non-musical.

Before proceeding, we strongly advise YOU to get out your tape measure or yardstick (meterstick); it may also help to have the assistance of a friend who cares as much about good music as you do.

The first step is to decide where, in general, you want the speakers to go. For some people, this is dictated by existing interior decoration; for others, it may be necessary to set up around existing room characteristics, such as fireplaces, door locations, etc. The list of special considerations for speaker placement is nearly endless; however, as we said earlier, the choice is yours. Rather than suggest speaker placement with little drawings of perfect rooms (which none of us have ever seen), we've outlined some absolute rules which are easy to follow and easy to understand. These rules are based on the TC-50's design and the physical laws governing acoustics.

- * * Do not place speakers on opposite sides of a room, facing each other.
- * * Place the pair of speakers as symmetrically as possible. If room geometry allows, place the speakers symmetrically along one wall. In other words, the distance from the "left" wall to the "left" speaker should be the same distance as the "right" speaker to the "right" wall. Also, the distance from the rear wall (behind the speakers) should be the same for each speaker, and the speakers should both be at the same height above the floor. This symmetrical placement will ensure that the room's effect will be the same for both speakers.
- * * Each speaker, relative to nearby room surfaces, should be placed **ASYMMETRICALLY**. For example, if the speakers are on 27 inch high stands, then the distance to the rear wall should be **OTHER** than 27 inches (i.e. 24 inches). The distance to the side wall should also be unique. Following our example, the distance to the side wall should be other than 27" or 24", i.e. 36 inches. These distances are, of course, just used for illustration. The actual distances for your speakers will be governed by your set-up in your room. This asymmetrical placement helps ensure proper tonal balance. With asymmetrical placement, sound reflected from the rear and side walls (and the floor) will reach your ears at different times. (If several reflected sounds arrive at your ears at the same time, severe cancellation/reinforcement will occur, causing some frequencies ("pure tones") to drop out and causing others to be too loud.)
- * * The front-centers of both speakers should be pointed directly at the listener. We've found that this is most easily accomplished with non-tilting, height-adjustable speaker stands. Simply set the height of the stands so that the speakers' center points are at the same height from the floor as the seated listener's ears, then aim the front of each speaker directly at the listener.

* * Both speakers should be the same distance from the listener; this will ensure that the stereo image is balanced.

* * The speakers should be closer to each other than they are to the listener; this will ensure an even stereo image from side to side, with no "holes" in the middle.

Properly set up, your TC-50's will provide an excellent stereo image. This means that the spatial relationships between instruments will be easily perceived. The sound will not seem to come from two speakers, but rather, will seem to come from each instrument, as if the musicians were performing live before you. (Assuming that the music was well-recorded.) This effect is sometimes called the "stereo illusion" because the sound seems to come from places other than the speakers; however, there is no "illusion" in the truest sense of the word. The stereo image is a real acoustical event.

FINAL SET-UP -THE LISTENING TEST:

Choose some favorite recordings; we've found that listening to small acoustical-instrument groups and classical music can reveal much about proper speaker set-up.

Now that your system is generally set up, you may wish to move the speakers about (a little at a time) to "fine tune" the stereo image. You may be surprised to find that just moving the speakers a few inches will add more depth to the image, or, make it more "even" from side to side, etc.

CORRECT POLARITY & THE TC-50:

The TC-50 is a very advanced design; the internal components are wired in correct polarity. In musical terms, this means that the imaging ability of the speaker will be nearly equal for any instrument, regardless of the instruments' tonal range. This wonderful quality makes the speaker depend on a correct polarity signal from the rest of your stereo system. Unfortunately, current technology in electronics design has not produced an industry standard for polarity; a positive signal into your phono preamp may come out as a negative signal! Or, reversed-polarity electronics may have been used in the recording of the music, thus creating a reversed-polarity record!

A reversed-polarity signal sent through a pair of TC-50's will result in extremely poor imaging; tonal character may also suffer, causing the bass to seem "thin", and the midrange to seem "screechy". A recording of a small acoustical group with a female vocalist is an excellent test of correct polarity. Do you get a specific impression of a natural sounding voice, separate from the instruments? If not, proceed as follows.

Shut off your amplifier, and swap the leads at the inputs of BOTH of your TC-50's ("+" from the amp then goes to the black speaker input). This will restore correct polarity and significantly improve the stereo image.

* * When changing polarity, you MUST change both leads on both speakers, to keep your system in-phase.

USE AND OPERATION OF YOUR TC-50's :

** Your TC-50's nominal impedance is 4 ohms. NEVER simultaneously play another pair of speakers off the same amplifier that's driving your TC-50's. If you try to drive the TC-50's and another pair of speakers at the same time, serious damage to the amplifier and/or speakers may result. This sort of damage is not covered by ANY of your warranties.

** Speaker damage caused by an overdriven amplifier is not covered by warranty. Please understand that the volume control on your electronics covers a broader range than your amplifier does; full amplifier output may be achieved even though the volume control is NOT turned all the way up. Turning the volume control past it's full-power position will "overdrive" the amplifier, causing it to send damaging DC voltage into the loudspeaker. This condition can also occur if your amplifier is already at full power output and a loud musical transient comes along, demanding more power than is available.

In simpler terms, this means that if you try to get the volume output and dynamic range of a high powered amplifier out of a lower powered amplifier, damage will result.

** The TC-50 is rated to accept 50 watts of continuous power. This specification assumes continuous "program" material as a signal input; program material is defined as a signal of various frequencies occurring as transients, and does not apply to steady state signals. Playing a low frequency steady state signal at high power levels may overheat the speaker, causing thermal damage. To avoid damaging your speakers, remember: the lower the note, and the more sustained, the lower the power handling of the speaker. (This is true for ALL loudspeakers.)

** Use loudness compensation controls ONLY when listening at low volumes. Refer to your electronics' owner's manual for complete instructions on the use of tone and loudness controls.

** Avoid placing your turntable in close proximity to a loudspeaker, or acoustic feedback will result. Consult your turntable's owner's manual.

** The TC-50's advanced design includes all necessary tonal equalization; this built-in feature is part of the TC-50's internal circuitry. This means that the tonal balance of the music will be correct without additional frequency compensation; for the most natural sound in music, turn your tone controls to the neutral positions, or defeat them altogether (if the electronics has a "tone defeat" or "tone bypass" switch). Remember that proper speaker placement is also important to good tonal balance, as is correct turntable set-up.

Care for your TC-50's as you would for fine furniture, dusting regularly and polishing occasionally. The cloth grill is best cleaned with a lint roller. (Remove the grill assembly from the speaker first.)