

REALISTIC®

Stereo Cassette Tape Deck

SCT-31 Cat. no. 14-614

Your Realistic SCT-31 combines studio-quality recording capabilities with the most deluxe cassette conveniences. Many of its features have previously been available only in the most expensive open reel decks. Read this manual carefully, so you'll be able to take full advantage of all the special controls and functions.

Features include:

2-color LED peak meters with auto peakhold
Separate Right and Left LED Level Meters are illuminated in green and red, incorporate switchable peak hold functions for easy setting of maximum record level. The rapid response of these LED Meters assures true peak indication.

1.4 mm close-gap metal Record and Play heads compatible with Metal Tape
New technology high density ferrite close-gap record and play heads generate the magnetic field required for Metal tape. Head sufaces are super-hard titanium for extra-long life. The double-gap high-density erase head provides the high magnetic field necessary to completely erase Metal tape. This brings all the superb characteristics of Metal Tape to your system -- frequency response, greater dynamic range at high frequencies, reduction of distortion at high input levels, plus sharp improvement of the S/N ratio at high frequencies.

Metal tape Capability
The latest technological break-through in magnetic recording, Metal tape, provides you with the very best record/playback results. Increased output levels of up to 8dB over other premium tapes (without increased distortion) give you greatly increased dynamic range for "studio-quality" recordings.

Dolby* Noise Reduction and Dolby FM Noise Reduction capability
Make and play Dolbyized recordings for reduced hiss and increased dynamic range. Special Dolby FM decoder lets you record superb Dolby FM broadcasts now offered by some FM stations. (You can listen to the decoded broadcast simultaneously if your receiver has tape monitoring facilities.)

Calibration Facilities
Fine Bias Adjust permits you to match the Deck's performance to the exact characteristic of the tape you're using. Dolby FM adjustments assure precise Dolby action for FM stereo stations broadcasting with Dolby NR facilities.

For your own protection, we urge you to record the Serial Number of this unit in the space provided. You'll find the Serial Number on the back panel of the unit.

Serial Number 20382 12A0

SPECIFICATIONS

Tape System:	Standard PHILIPS Cassette 4-track stereo
Tape Speed:	1-7/8 ips (4.75 cm/s)
Frequency Response (overall):	Metal, 30 to 21,000 Hz (±3 dB) CrO_2, 30 to 20,000 Hz (±3 dB) Supertape, 30 to 19,000 Hz (±3 dB)
Signal-to-Noise (overall):	CrO_2 with Dolby NR "in", A weighted, 66 dB (ref. 3% THD, 400 Hz)
Distortion:	Less than 1% (ref. 160 nW/m)
Cross-talk:	Better than 60 dB
Wow and Flutter:	Less than 0.05% WRMS
Erase Ratio:	Better than 65 dB
Output Level:	Preamp out = 0.77 volts maximum (adjustable) DIN = 0.35 volts maximum (DIN OUT Switch: High) 0.14 volts maximum (DIN OUT Switch: Low) · · · · · (EUROPE)
Output Impedance:	Preamp out = 10k ohms DIN = 20k ohms · · · · · (EUROPE) Headphone = 8 ohms
Input Sensitivity:	Mic = -65 dB (0.4 mV) Aux In = -20 dB (80 mV) DIN = -65 dB (0.4 mV) . . . . . (EUROPE)
Input Impedance:	Suitable Microphone impedance = 300 to 5K ohms Aux In = 100k ohms DIN = 4k ohms · · · · (EUROPE)
Record Bias:	85 kHz
Erase System:	85 kHz AC erase
Power Requirements:	AC 120V, 60Hz, 18W (U.S.A., CANADA) AC 220 to 240V, 50/60 Hz, 18W (EUROPE) AC 240V, 50Hz, 18W (AUSTRALIA) AC 100V, 50/60 Hz, 18W (JAPAN)
Dimensions:	4-5/16" x 17-1/8" x 10-3/32" (H.W.D.) (11.0 x 43.5 x 25.6 cm)
Weight:	10 lbs. 2 oz. (4.6 kg)

* Noise reduction system manufactured under license from Dolby Laboratories. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories.

WARNING: TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS TAPE DECK TO RAIN OR MOISTURE.

CONTROL LOCATIO

5 **DOLBY NR Function LED**
Lights up when you set the **DOLBY NR** switch to IN, IN-MPX or FM position.

4 **RECORD Function LED**
Lights up when you are in the Record mode.

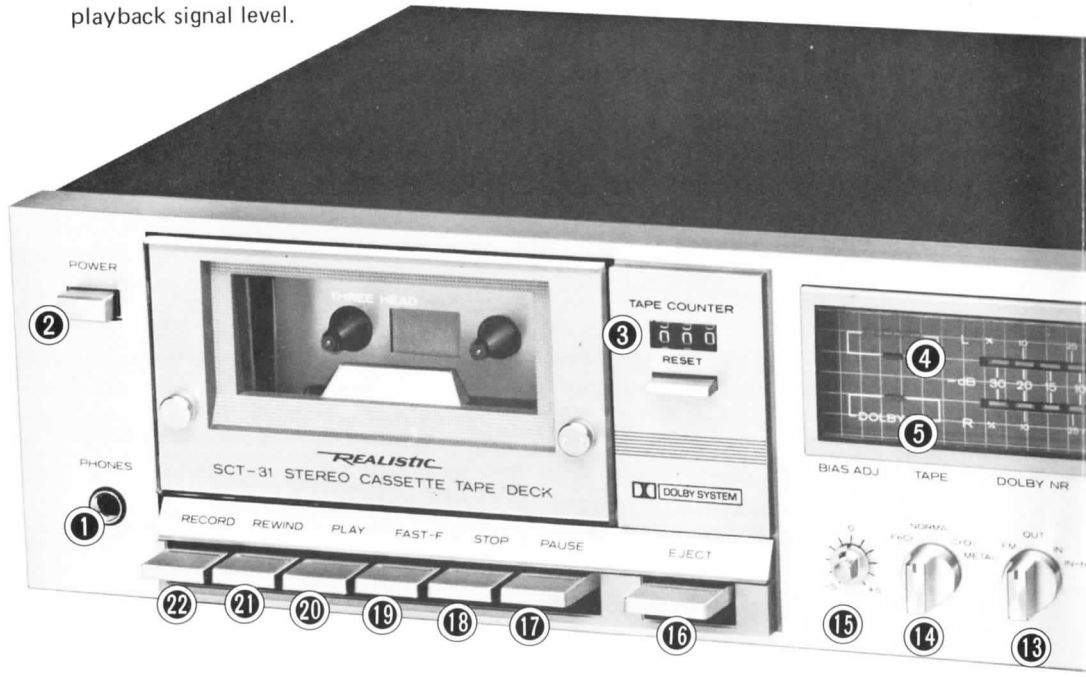
3 **Digital TAPE COUNTER**
Use to aid you in locating desired portions of the tape. Press the button below to reset to "000".

2 **POWER Switch**
Push in to turn "on"; press again to turn power "off."

1 **Stereo PHONES Jack**
Plug a pair of stereo headphones into this jack.

6 **Digital Peak level Meters**
Indicate peak level of recording. When playing tape or monitoring recorded sound, they show playback signal level.

7 **PEAK HOLD Switch**
Press in to hold highest peak level i
on Meters. Release for "auto reset"



22 **RECORD Button**
Press simultaneously with PLAY button to Record. The RECORD LED will light, indicating you are in the Record mode.

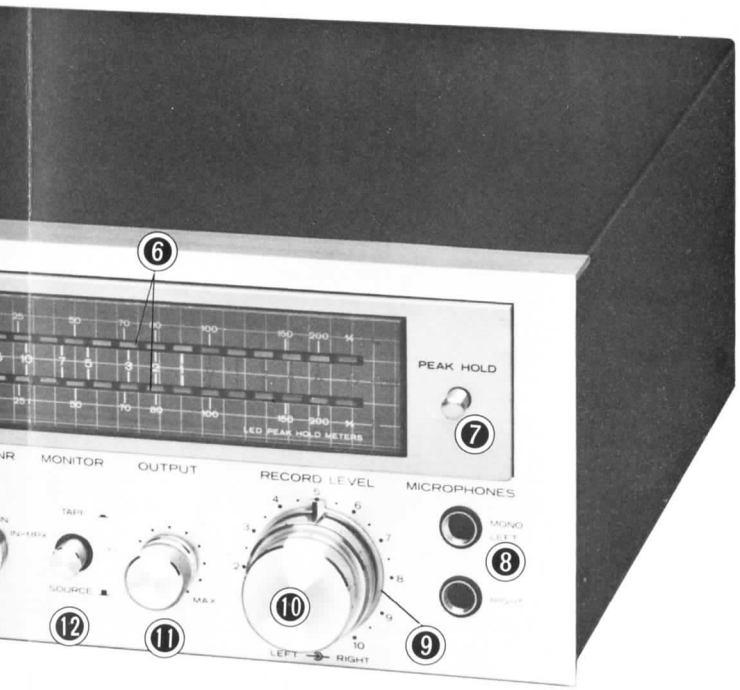
20 **PLAY Button**
Press for Playback operation. For Record, press this button simultaneously with the RECORD button.

21 **REWIND Button**
Press to rewind tape rapidly. To release this function, press STO button.

IONS AND FUNCTION

el indication
set" mode.

8 MICROPHONES LEFT/MONO and RIGHT Jacks
For live recording, plug high quality microphones into these jacks.



9 Memory Ring
Use to set reference point for Record Level.

10 RECORD LEVEL Left and Right Control
This dual clutch-type control adjusts the recording levels of both channels simultaneously – or individually if desired.

11 OUTPUT Level Control
Use to adjust level of the tape play output signal – to match the other input levels to your Amplifier/ Receiver.

12 MONITOR Button
Selects the signal (SOURCE or TAPE) that goes from Deck to your Amplifier/ Receiver (or headphones).

13 DOLBY NR Switch
Set to IN to activate the built-in Dolby Noise Reduction System.
Set to FM position when you are making a recording from a Dolby FM signal or when you listen to Dolby FM broadcasts.
Set to IN-MPX position when you are making a recording from FM stereo broadcasts.
Leave OUT when not using Dolby NR.

14 TAPE Select Switch
Use to set Bias and Equalization for best results with the particular tape formula you're using (METAL, CrO_2, Fe_2O_3, FeCr, etc.).

15 BIAS ADJust
Adjusts Bias to get best results from the kind of tape you use (see CALIBRATION, Page 10).

16 EJECT Button
Press to open the Cassette Compartment and eject the cassette.

17 PAUSE Button
Press to temporarily stop tape travel during Record or Play. Press again to release.

18 STOP Button
Press to stop the tape movement.

19 FAST Forward Button
Press to move tape rapidly in a forward direction. To release this function, press STOP button.

STOP

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Rear Panel

(23) AUX IN Jacks
Connect external signal sources to these jacks from Tape Out or Record Out of your Amplifier/Receiver. **Do not use in addition to DIN connection.**

(24) PREAMP OUT Jacks
Connect these output jacks to the Tape In or Aux In jacks of your Amplifier/Receiver. **Do not use in addition to DIN connection.**



EUROPEAN MODELS

(27) REC/PLAY DIN Jack
If your Amplifier/Receiver is equipped with DIN connectors, you may make connection between this and your Amplifier/Receiver via this jack. **Use only DIN Jack or phono jacks, not both.**

(28) DIN OUTPUT Switch
Set to either HIGH or LOW depending on your Amplifier/Receiver's DIN level. (See NOTES AND APPLICATIONS, DIN Output Setting, Page 11.)

(25) DOLBY FM CALIBRATION Adjustments
These calibration adjustments are to be used only when setting up the calibration of Dolby FM (see Page 10). Once you set these, you may cover these holes with tape to avoid accidental adjustment.

(26) Line Cord
Connect to an AC outlet (check labeling on the rear panel for the correct voltage and frequency – in Volts and Hz).

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INSTALLATION

Using one of the patch cords provided, connect the Left and Right **PREAMP OUT** jacks to the corresponding tape input jacks of your stereo Amplifier/Receiver.

Use the other patch cord to connect the **AUX IN** jacks to the **TAPE OUT** (or **RECORD OUT**) jacks on your Amplifier/Receiver.

EUROPEAN MODELS

If your Amplifier/Receiver has a DIN jack, use a DIN cord (not provided) to connect the rear panel REC/PLAY DIN jack to the DIN jack on your Amplifier/Receiver. **When using DIN jack, disconnect all phono jacks.**

Plug the line cord into an AC outlet.

MICROPHONE CONNECTION

For "live" recordings, connect microphones to the **MICROPHONES** jacks on the front of the Tape Deck. Use two for stereo recordings; for monaural recordings, just use the LEFT/MONO jack.

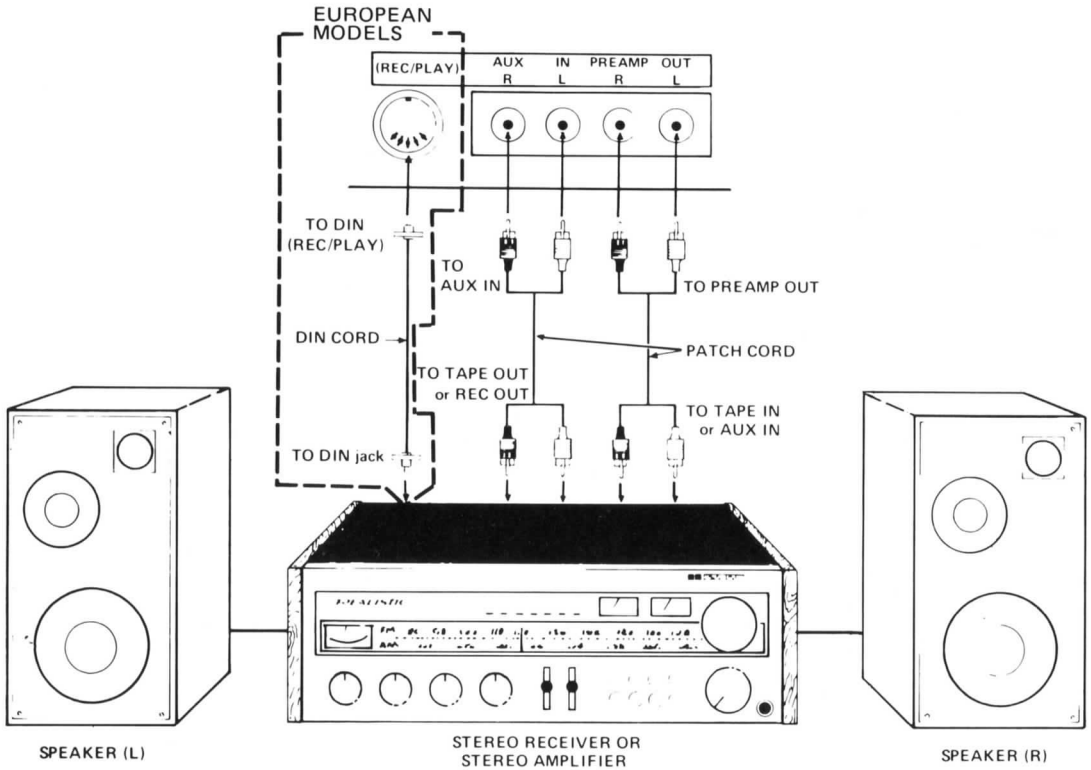
To fully realize the dynamic range, low noise and wide frequency response of this Deck, you should use good microphones. Your local Radio Shack store has a wide selection of microphones (and other accessories). Ask your salesperson for advice on what to use.

STEREO HEADPHONES

You can use Stereo Headphones to monitor the recording process and signal, or to listen to a tape being played back. This gives you complete private monitor/listening capability. Your Radio Shack store has some very fine headphones to choose from. We strongly recommend that you obtain a pair.

To use them, just plug them into the **PHONES** jack at the front of the Tape Deck.





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OPERATION

PLAYING BACK TAPES

To Turn the Deck On
The SCT-31 offers the convenience of a separate ON/OFF switch. To turn the Deck on, push **POWER** once; push again to turn off.

LOADING A CASSETTE

Press the **EJECT** button and the cassette compartment cover will come out towards you.
Insert the Cassette into the cassette compartment, open end down and full reel to left.

Close the cassette compartment cover. When the Cassette is fully recorded or played back, turn it over to side 2 (or B) for recording or playback of the other side.

To remove the Cassette, press EJECT and remove the Cassette.
While the Cassette compartment is open, the buttons will not function.

PLAYING THE TAPE

1. Press **POWER** to turn the unit on. Press the RESET button to reset the counter to 000.
2. Load a pre-recorded Cassette as noted above. Press **MONITOR** button to TAPE position.



3. Set **TAPE** select switch to appropriate position: FeCr position for FeCr tape; NORMAL position for standard tape; CrO_2 position for CrO_2 tape; METAL position for Metal tape.
4. If you are going to play a Dolbyized tape, set **DOLBY NR** to IN position.
5. Press **PLAY** button and tape will begin moving. Adjust Volume, Tone and Balance controls on your Amplifier/Receiver for desired sound. NOTE: You can adjust the front panel **OUTPUT Level** control to match your Deck's output with that of other signal sources (disc records, FM, etc.) connected to your Amplifier/Receiver.
6. To temporarily stop tape playing, press **PAUSE**; to restart the tape, press **PAUSE** again.
7. To stop playing, press **STOP.**

To move tape rapidly in a forward direction, press **FAST-F.**
To move tape rapidly in a reverse direction, press **REWIND.**

In either case, press **STOP** to release.

Use the TAPE COUNTER to aid you in locating approximate positions on the tape.

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To listen to tapes privately (or if you don't have an Amplifier/Receiver), plug a pair of stereo headphones into the **PHONES** jack. Use the **OUTPUT** Level Control to obtain the desired volume.

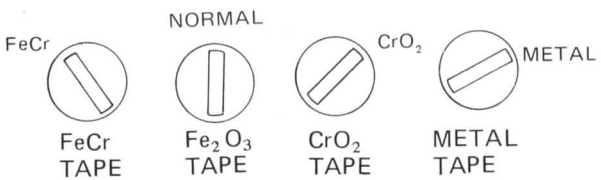
STEREO RECORDING

You can make recordings either from microphones (through **MICROPHONES** jacks) or through the **AUX IN** jacks. Make the appropriate connections before starting the Recording session.

Note: When both **MICROPHONES** and **AUX IN** jacks are connected, only **MICROPHONES** jacks are active, Disconnect Mics when you want to record signals via the **AUX IN** jacks.

We strongly urge you to use only the finest tape with your SCT-31. Only with the finest tape will you realize the fullest capabilities of this Tape Deck. Use Realistic **Supertape® Metal, Chrome** or **Gold** tapes.

1. Load a Cassette into the Cassette Compartment.
2. Set **TAPE** select switch to the appropriate position. When using low noise/high output tape and ferric-oxide tape (Fe_2O_3), set to NORMAL position; when using chrome-dioxide tape (CrO_2), set to CrO_2 position; when using ferri-chrome tape (Fe-Cr), set to FeCr position; when using Metal tape, set to METAL position.



Mark the switch setting on the Cassette so you'll remember to play the tape back with the same setting.

3. Set the **DOLBY NR** switch to IN (IN MPX for FM stereo broadcasts) position if you are going to make a Dolbyized recording (be sure to mark the Cassette if you record with DOLBY NR).
4. Reset the **TAPE COUNTER** to 000.
5. Press **PAUSE, RECORD** and **PLAY** buttons, make sure **MONITOR** button is in SOURCE position (button out) and adjust the **RECORD LEVEL** controls to achieve proper channel balance and recording level. Adjust for meter readings that sometimes light up red LEDs. Normal recording levels will give meter readings between green LED 10 and red LED 0.

   This procedure allows you to preset recording level prior to starting tape motion.
   See NOTES AND APPLICATIONS, page 11, for further Recording tips, especially for Metal tape.

   NOTE: Left and Right channel recording levels can be adjusted individually. The laregr diameter of the **RECORD LEVEL** knob is for Right and smaller is for Left. Once you've set the relative baalnce of levels you can adjust the overall level of both channels at one time (the two sections are clutch-type — rotate together unless you hold one section). Also the outer Memory Ring can be used for setting to a reference point (it has no effect on Record Level — use it only for reference setting and then you can return to the exact setting later on).
6. Press **PAUSE** again to release it. The tape will begin to move and you are recording.
7. To temporarily stop the tape while recording, press **PAUSE**. To restart the tape press **PAUSE** again.
8. To stop recording, press **STOP**.

To advance tape rapidly to any desired point, use **FAST-F** button. Use **REWIND** to move tape rapidly in a reverse direction.

Use **TAPE COUNTER** to aid in returning to original tape position and to locate desired portions of the tape.

CAUTION: Before changing tape motion, always press **STOP** first. It is not a good practice to go from **FAST-F** or **REWIND** to **PLAY** or vice versa without pressing **STOP** in between. Abrupt changes in tape speed can result in tape spill or wrap-up.

TO MONITOR A RECORDING

One of the outstanding features of your **SCT-31** is its ability to monitor a recording right after it is made — without interrupting the recording process. Set **MONITOR** button to TAPE position and set your Amplifier/Receiver's Tape Monitor switch to IN position (or use Headphone connected to **PHONES** jack).

When making Microphone recordings, if you try to monitor through your Amplifier/Receiver, you may experience acoustic feedback (squealing and howling); so it is best to use Headphones when monitoring Microphone recordings.

DOLBY FM

Many FM stations are now broadcasting a Dolby encoded signal. This aids in reducing high frequency noise and hiss which are inherent in the FM stereo signal process. (Your local Radio Shack store can tell you which stations in your area are Dolby-equipped.)

NOTE: Before you record or listen to Dolby FM broadcasts with your SCT-31, you must calibrate the Dolby FM Level. This is generally a one-time operation (you won't need to re-calibrate unless you change the Tuner's output level). For calibration instructions, see page 10.

Be sure your connections are made as previously noted (cables to **AUX IN** and **PREAMP OUT**).

NOTE: If you have a Receiver/Tuner which has a "Dolby Adapter" jack – **do not use it.** Take output from normal TAPE OUT/AUX OUT jack. If it has a "Dolby FM NR" switch, **leave it "off" or "out."**

TO LISTEN TO DOLBY FM

NOTE: Your Receiver/Amplifier MUST HAVE a Monitor Switch to listen to Dolby FM signals via the SCT-31.

1. Set the **DOLBY NR** switch to FM position and **MONITOR** button to SOURCE position.
2. On your Receiver/Amplifier, turn on TAPE MONITOR.

DOLBY FM RECORDING

After you've calibrated the Dolby FM system, it is simple to record the Dolby FM signal.

Set the **DOLBY NR** switch to FM position. Now record as noted previously – except you cannot adjust the front panel Record Level, as that function is pre-set/calibrated by the rear panel Dolby FM Calibration controls.

NOTE 1. With **DOLBY NR** in FM position, front panel **RECORD LEVEL** controls are de-activated. This means you cannot do any level adjustment or fading during Dolby FM recording. If you must make FM level adjustments, leave **DOLBY NR** in OUT position so that front-panel level controls will be functional.

2. When you want to make Dolbyized recording of non-Dolby FM broadcasts, use the IN-MPX position.

DOLBY FM RECORDING THROUGH A RECEIVER WITH "FM 25μs DE-EMPHASIS"

If your Receiver has a 25μs de-emphasis switch you **can** record through the Dolby FM system, and do fading or level adjustment. Set the selector of your Amplifier/Receiver to "FM 25μs" position and leave SCT-31 **DOLBY NR** switch in "OUT" position.
NOTE: Monitor sound will be "bright", because the Dolby signal is not being decoded during this process.

PLAYING BACK A RECORDED DOLBY FM TAPE

1. Set the **DOLBY NR** switch to IN position.
2. Set the **MONITOR** button to TAPE position.
3. Play the tape through as normal and you'll be hearing the final result of your recorded Dolby FM signal (properly decoded for playback).

SUMMARY OF DOLBY NR SWITCH SETTINGS

Position	Dolby Function	Use for
IN MPX	ON	Non-Dolbyized FM.
IN	ON	Normal Function; Don't use for Dolby FM.
OUT	OFF	To record Dolby FM when your Receiver has FM 25μs switch and you are using it.
FM	ON	To record Dolby FM when you don't use a 25μs switch (or your Receiver doesn't have it). See note in center columm.

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CALIBRATION

BIAS ADJUSTMENT

There are now various kinds of tapes on the market. The troubles is, each kind has different magnetic characteristics and it is almost impossible to determine only one bias setting for all kinds of tapes available.

So, before performing critical recording, we recommend that you adjust the bias to suit the kind of tape you are going to use. Do this as follows:

Connect Receiver (or Tuner and Amplifier) as noted previously. Set your Receiver/Tuner to FM and record inter-station hiss noise with the recording level set for green LED meter reading at 20 (**MONITOR** button in SOURCE position). Now, set **MONITOR** button on TAPE and adjust BIAS ADJ so that tone quality of Recorded signal becomes same as Source signal.

This completes the **BIAS** Adjustment. (You won't need to change this BIAS ADJ setting unless you change tape formulas.)

NOTE: If your Tuner/Receiver has "FM MUTE" switch, turn it to "OFF" or "OUT" during **BIAS** Adjustment.

NOTE: Depending on the type of tape being used, the Meters may not read the same, especially with Metal tape. In such a case, turn **BIAS ADJ** fully counterclockwise (or clockwise – in the direction which will result in most nearly equal recordings).

DOLBY FM CALIBRATION

To obtain proper Dolby decoding, you must calibrate the system. Optimum calibration will be obtained when you use the Dolby Calibration Tone broadcast by the FM station. (Your local Radio Shack store can tell you which stations in your area are Dolby-equipped. Some stations broadcast calibration tones in the early morning hours. Call them to find out.)

1. Set the **DOLBY NR** switch to FM position.
2. Press **RECORD** and **PLAY** buttons.
3. While receiving the Dolby Calibration Tone from an FM station, adjust rear panel **DOLBY FM CALIBRATION R** and **L** controls for meter readings to O on the red LED meter.

   NOTE: Once you have made this adjustment with your particular Receiver/Amplifier, you need not make any further re-calibration (unless you have an Output Level control on the Tuner and you adjust that).

For a temporary (but not precise) Dolby FM Calibration, you can detune your FM system to off-station – hiss noise only. Then adjust rear panel Dolby FM Calibration controls for a "0" reading on the meters.
As a double-check for this temporary setting, tune to a station broadcasting Dolby FM signals, set **DOLBY NR** to FM position and see if the meters are deflecting to normal levels (frequent peaks light up the 0 of the red number).

NOTE: Correct Dolby Calibration point is 0 on the meters.

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NOTES AND APPLICATIONS

EUROPEAN MODELS

DIN OUTPUT SETTING

If you connect the SCT-31 to an amplifier (or other equipment) via the DIN jack, be sure you set the **DIN OUTPUT** switch to the appropriate position. For amplifiers with low input requirements for their DIN jack, use LOW position of the **DIN OUTPUT** switch. Otherwise, use the HIGH **DIN OUTPUT** setting.

If you monitor a recording-in-progress while using the LOW position, the sound level will be lower than usual. This prevents feedback from occurring between the tape deck's output and input (a common problem with DIN connections). When you playback the tape (in PLAY mode), the level will be up to normal.

If you don't know which setting to use, try the HIGH setting and make a recording. Play back the recording and listen for a faint echo. If you hear one, you need to switch to the LOW position.

TO ERASE A TAPE

It is not necessary to erase a tape before using it again.

As you record, any previous recordings are automatically erased. However, if you want to erase a previous recording, without making a new one, disconnect microphones and set the **RECORD LEVEL** controls to minimum. Now, load the cassette and run it through with both **RECORD** and **PLAY** buttons pressed (just as though you were making a recording). This will erase the tape clean.

CHOOSING THE RIGHT TAPE

Choice of tape is vital to good recordings. To take full advantage of the **SCT-31** performance capabilities, you should only use the finer-quality tapes designed specifically for music recordings. For low-noise, wide range recordings, we recommend the new Supertape Metal, Chrome or Gold (in conjunction with the special Bias and Equalization for these tapes).

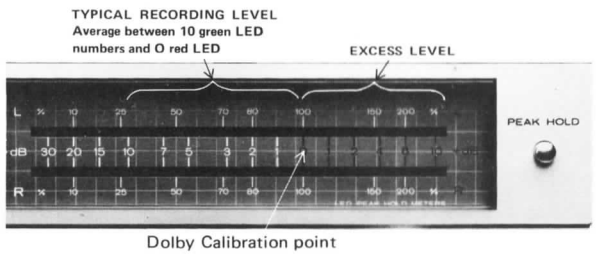
MONAURAL RECORDING AND PLAYBACK

You can use your **SCT-31** for monaural Record or Playback; follow the same procedures as outlined previously for both functions. For mic recordings, just plug the mic into **LEFT/MONO** jack.

When you make monaural recordings through **AUX IN** jacks, it is best if you use both right and left channels for the monaural signal – this assures best sound reproduction, maximum output and lowest noise.

SETTING THE RECORD LEVEL

Record level should not be too high or too low. Proper recording levels will be achieved when meter readings only occasionally light up the red LEDs. Normal Peak levels will produce meter readings up to between 10 of the green LEDs and 0 of the red LEDs. High peaks of recording levels may occasionally flash the +2dB LED.



Recording levels which consistently peak into the 4 to 10 red LEDs may result in distortion and/or poor high frequency response. Recording levels which peak only occasionally to 10 green LED (or lower) will have excessive noise – especially noticeable in the soft passages. Therefore, you must learn to adjust recording levels for a happy medium – to assure lowest noise and widest possible dynamic range.

PEAK HOLD FUNCTION

When the PEAK HOLD Button is out, the Meters function in the Auto Peak Hold mode -- flashing up the peak reading of the signal and holding that peak for a second or so (unless readings are 2 lower of the green LEDs). To hold the peak readings, press in PEAK HOLD -- the Meters then will indicate the highest readings and hold them (unless another, higher peak signal occurs, which then will result in a higher reading). To release peak hold, press button again (to auto peak hold mode). Peak hold will help you never make a recording at too high a level -- just maintain a peak hold meter reading that is appropriate for the type of tape you are using.

SPECIAL NOTE ON METAL TAPE

The new Metal tapes offer the very finest sound reproduction. The technology involved permits greatly extended dynamic range, especially at the high-frequency end of the audio spectrum. This means much less possibility of distortion on peaks of sound (e.g. clash of cymbals, etc.). To take full advantage of this extended high frequency dynamic range, you can record on Metal tapes at higher levels than with other types.

So, instead of limiting Meter peaks to 10 green and 0 red LEDs, when using Metal tape set Record levels for Meter readings peaking up to 0 and +6. (Recording at these higher levels will not produce distortion in the recorded signal, but will result in greater output and greater signal-to-noise ratio.)

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Notes and Applications — Continued

MICROPHONE RECORDING

Enjoy the excitement and fascination of making your own "live" recordings with a pair of Realistic microphones. Realistic has a mic for every purpose, from at-home recordings to live on-stage performances. Knowing the broad distinctions between microphone types will help you make the right choice. There are two basic pickup patterns: cardioid and omnidirectional.

Cardioids pick up sound mostly from the front. That's why they're good for stage work, music recordings, and public address applications where feedback (acoustic "howling") is a problem.

Omnidirectionals have a circular pickup pattern that lets you place a mic almost anywhere in an average-size room and get good sound pickup. Used in pairs, they're good for making live stereo recordings of orchestras and other large groups.

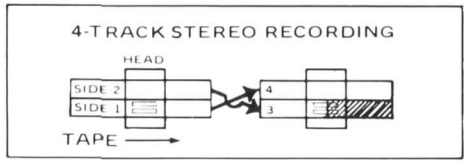
Another distinction is between dynamic and electret condenser microphones. Dynamics are rugged and versatile, great for at-home recording and on-stage work where dependability is a must. Electret condenser mics provide super-sensitive sound pickup along with a very wide and flat response. The finer electrets are used for critical studio work. Electrets require a small, easily replaced battery for their built-in transistor. Battery life averages six to nine months.

Your Realistic SCT-31 is designed for use with any low-impedance (300-5000 ohms) microphones, either electret or dynamic.



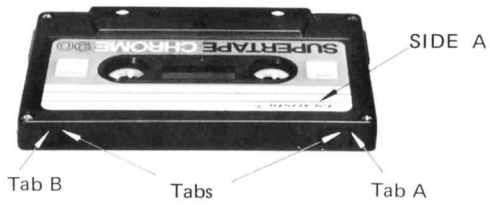
4-TRACK RECORDING AND PLAYBACK

A cassette has two sides.
This Cassette Deck uses the standard four track, two channel (stereo) system for making recordings and playing them back. After you have recorded both right and left channels on one side, remove the cassette, turn it over and reload — recording both channels on the other side.



Cassettes have a built-in erase protection device. On the back are two small tabs. To prevent accidental erasure, carefully break off the appropriate tab as shown below. With side A/1 up, breaking "tab A" will prevent accidental erasure of the material on side A/1. Tab B is for side B/2.

If you decide to erase or re-record a cassette which has the tabs broken off, just cover the appropriate opening with tape.



To re-record a cassette, it is not necessary to erase previous recordings. Previous recordings are automatically erased when a new recording is made.

To erase a tape, follow the same procedure as for Recording, but disconnect inputs and reduce **RECORD LEVEL** controls to minimum. Then run the tape through (press **RECORD** and **PLAY** buttons); this automatically erases previous recordings from the tape. Note that Erase Protect Tabs must be in place for this erase function to work.

To achieve optimum Record results, be sure to use the correct **TAPE** and **DOLBY NR** switch positions. When playing back a Dolbyized tape, always set **DOLBY NR** switch to IN position. When playing back a non-Dolbyized recording, set **DOLBY NR** switch to OUT position.

The Dolby NR System incorporated in your Tape Deck will enable you to make tape recordings with substantially improved signal-to-noise ratio, which gives the effect of extending dynamic range. It will provide approximately 10 dB improvement in signal-to-noise in the frequency range of tape hiss noise.

Dolby FM signals should be recorded using the FM position of the **DOLBY NR** switch. When recording non-Dolby FM stereo signals, use the IN-MPX position. For other signals (mic or aux) use the IN position. When playing back any of these Dolby tapes, just use the IN position (not the other positions).

You can duplicate tapes by recording from another tape deck/player, or put 8-track tape programs on cassettes. Or, you can put your favorite records onto cassettes. Make appropriate connections from another tape player or phonograph to the AUX IN jacks as noted previously.

Storage of tape is no major problem, provided you do not expose it to extreme temperatures or high humidity. Also, do not expose your tapes to magnetic fields (magnets, large transformers, etc.). Avoid dust and dirt. You may find storage containers to be extremely useful accessories; see your local Radio Shack store.

Demagnetize the tape heads and clean the tape handling parts periodically . . . this will insure maximum frequency response and lowest noise. After a few hours of recording or playing, dust, lint and tape oxide will begin to build up on the tape heads and guides; this affects record and play quality. To achieve the professional quality this system is capable of, such dust, lint and oxide must be cleaned off. Also, the heads tend to retain residual magnetism after some hours of use . . . this introduces noise on both record and playback. To clean, we recommend using Radio Shack Catalog Number 44-1160 Cassette Head Cleaner or use cleaning sticks (44-1093) and Recorder Cleaner (44-1010). To remove residual magnetism, use a Tape Head Demagnetizer such as 44-211 or 44-215. Or, the easiest way to do this is to use a 44-631 Cartridge Cleaner/Demagnetizer.

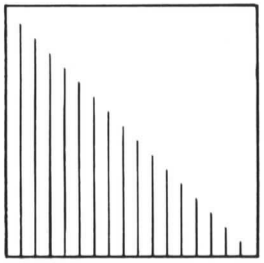


REALISTIC GUIDE TO TAPE RECORDERS is a very helpful publication available at your Radio Shack store. It has a number of interesting chapters covering practical aspects of tapes, recorders and accessories, plus a number of hints to enhance enjoyment of your Realistic Cassette Tape Deck.

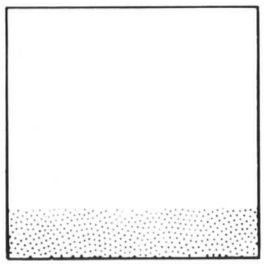
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WHAT DOLBY NR SYSTEM DOES

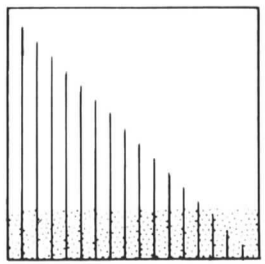
Making An Ordinary Recording



1. Music. Music is made of sounds of different loudness separated by intervals of silence. Loud and soft sounds are shown here as long and short lines. The music represented by this diagram starts loud and gradually becomes very quiet.

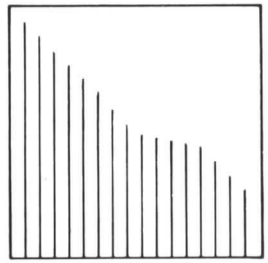


2. Noise. Any recording tape, even the best kind, makes a constant hissing noise when played. At the very slow speeds and narrow track-widths used in tape cassettes, tape noise is much more noticeable than it is in professional tape recordings, although even there it is a problem.

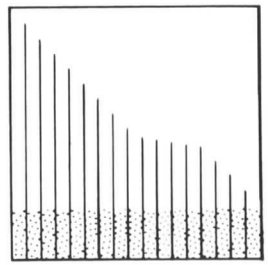


3. Music and Noise. When a tape recording is played, the noise of the tape conceals the quietest musical sounds and fills the silence when no sound should be heard at all. Only when the music is loud will the noise be masked and usually not heard.
However, tape noise is so different from musical sounds that it sometimes can be heard even then.

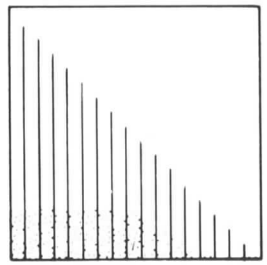
Making A Dolby System Recording



1. What the Dolby® NR system does first.
Before the recording is made, the Dolby NR system "listens" to the music to find the places where a listener might later be able to hear the noise of the tape. This happens mainly during the quietest parts of the music. When it finds such a place, the Dolby system automatically increases the volume so that the music is recorded louder than it would be normally.



2. The Recording. In a Dolby NR system recording the parts of the music which have been made louder stand out clearly from the noise. As a result, Dolby NR system recordings sound brilliant and unusually clear even when played back without the special Dolby NR system circuit.



3. What the Dolby® NR system does during playback.
When the tapes are played on a high-fidelity tape recorder equipped with the Dolby NR system circuit, the loudness is automatically reduced in all of the places at which it was increased before recording. This restores the music to its original loudness again.
At the same time, the noise which has been mixed with the music is reduced in loudness by the same amount—usually enough to make it inaudible.

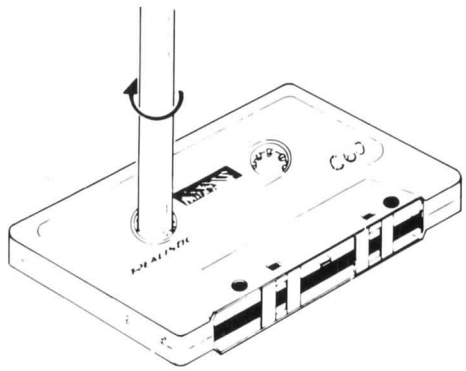
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TO AVOID MACHINE PROBLEMS

Your Tape Deck is a precision electro-mechanical instrument. It is ruggedly constructed and is designed for superior quality tape recordings and playback signals. To assure maximum enjoyment and optimum performance, there are a few things you need to keep in mind.

Always be sure you install a cassette properly before pressing any tape motion controls.

Keep your Tape Deck clean. Don't install it in an area where it will be exposed to concentrations of dust and dirt. Don't expose it to extreme temperatures. **It is absolutely vital that you periodically clean the tape handling parts** – the easiest way to do this is to play a Casette Demagnetizer and Head Cleaner after every 25 hours of use. Get one from your local Radio Shack store, Catalog Number 44-631.



Tape slack in a cassette can cause trouble by getting caught in the Capstan or Pinch Roller. To avoid this, tightly wind up the tape using the pointed end of a pencil as shown.

If you intend to use long play cassettes (C-90 or more), **you must keep your Tape Deck clean and properly maintained.** These longer cassettes use very thin tape which can very easily get caught in the tape handling parts – **the only way to avoid this is by proper care of the machine (keep it clean).**

If you are going to use your Stereo Cassette Tape Deck extensively, we urge you to obtain suitable tape accessories from your local Radio Shack store to insure maximum benefit from your unit. You should consider a Tape Splicer if you intend to do much serious recording.

CAUTIONS

The erase protection tabs on a cassette are a precaution against accidental erasure or re-recording. **Be sure the cassette has erase protection tab before you start recording.**

Before Recording or Playing back, be sure the cassette is properly seated in the cassette compartment.

Do not touch the face of the Tape Heads with any magnetic or metallic object.

Disconnect the AC cord plug from AC outlet when the unit is not to be used for a long period of time or you are away from home.

When you are connecting the Tape Deck to other units which produce a high volume of leakage flux (large power transformers), hum may be induced into this unit, so stack the units with sufficient spacing between them.

Your Tape Recorder has a circuit which generates an electronic signal used in the recording process; sometimes this signal creates noise or a weak steady tone during AM reception/recordings. If this should happen, keep the Tape Deck as far from the tuner as possible.

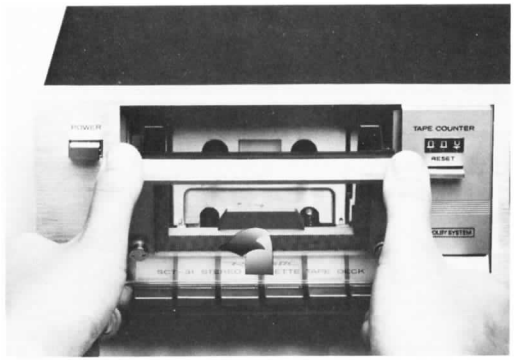
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SERVICE AND MAINTENANCE

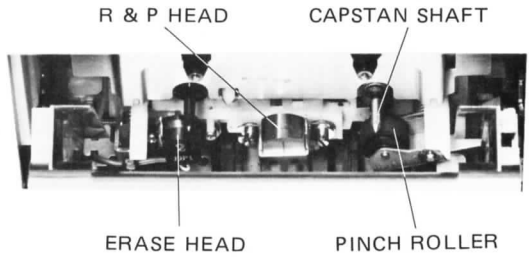
Only the highest quality parts are used in your unit and it should require little or no service as long as you observe a few general rules.

Although the SCT-31 is a ruggedly built unit, reasonable care should be taken to avoid rough handling. Avoid exposure to dirt and dust and areas of high heat and humidity.

Always keep your unit clean – especially the tape heads and tape handling parts – this will insure long life and maximum fidelity. Over a period of time it is normal for a certain amount of dust, lint and powder from the tape to accumulate on these parts. This prevents proper contact of the tape and results in improper tape handling (producing noise, partial "drop-outs" and poor frequency response). Periodically clean the tape heads and tape handling parts with tape head cleaner, cue-tips or a cassette cleaner tape. Your local Radio Shack store carries a complete line of tape care accessories.



When the **EJECT** button is pressed, the cassette compartment comes out toward you.
The cassette lid can be removed for easier cleaning by lifting it while holding both of its ends. You should then close the cassette lid frame to expose the tape handling parts that need cleaning.

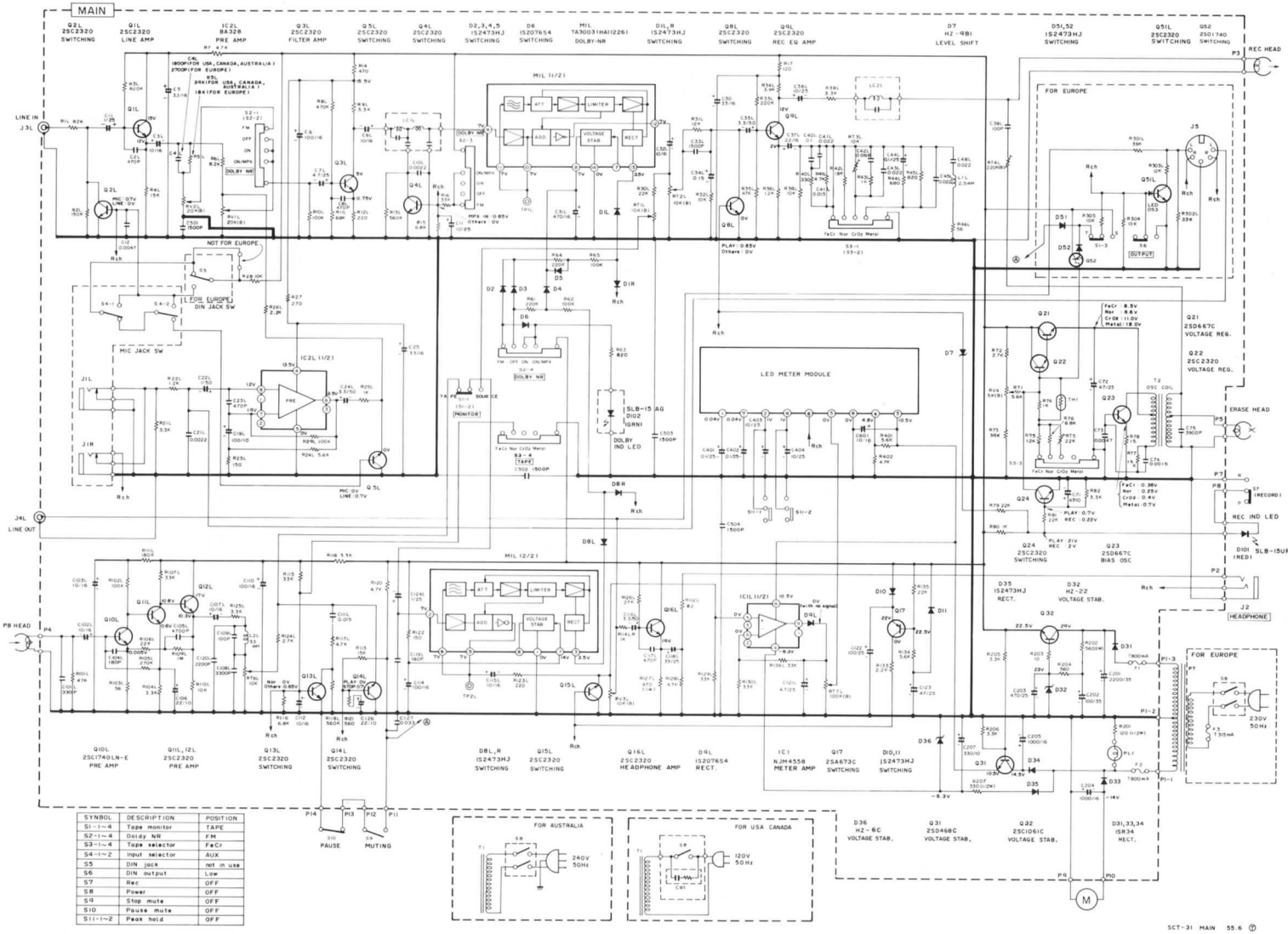


Over long periods of constant use, the tape heads will tend to retain some magnetism. A magnetized head will produce noise. Thus, it is important that the heads be demagnetized periodically.

Periodic lubrication will insure proper operation of all moving parts. At least once a year you should bring your unit into your local Radio Shack store for standard lubrication and simple preventative maintenance by our service technicians.

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SCHEMATIC DIAGRAM



SYMBOL	DESCRIPTION	POSITION
S1-1~4	Tape monitor	TAPE
S2-1~4	Dolby NR	FM
S3-1~4	Tape selector	FeCr
S4-1~2	Input selector	AUX
S5	DIN jack	not in use
S6	DIN output	Low
S7	Rec	OFF
S8	Power	OFF
S9	Stop mute	OFF
S10	Pause mute	OFF
S11-1~2	Peak hold	OFF

NOTE: 1. ALL RESISTANCE VALUES IN OHMS K = 1000
2. ALL CAPACITANCE VALUES IN μF EXCEPT "P" NOTED, D = μμF = PF
3. VOLTAG MEASURED WITH VOLTMETER FROM – SIDE LEVEL CONTROLS AT MINIMUM AND NO SIGNAL

REALISTIC®

RADIO SHACK LIMITED WARRANTY

This equipment is warranteed against defects for 1 year from date of purchase. Within this period, we will repair it without charge for parts and labor. Simply **bring your sales slip** as proof of purchase date to any Radio Shack store. Warranty does not cover transportation costs. Nor does it cover equipment subjected to misuse or accidental damage.

This Warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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