

*... the sound
approach
to quality*

KENWOOD
HI/FI STEREO COMPONENTS

INSTRUCTION MANUAL



MODEL TK-140U
SOLID STATE AUTOMATIC AM-FM STEREO RECEIVER

WELCOME TO KENWOOD'S NEW EXPERIENCE IN SOUND

Getting acquainted with your new KENWOOD TK-140U is an exciting experience. The all transistor set is ready to give you AM FM AUTOMATIC STEREO RECEPTION of highest quality. You'll find the excitement multiplies as you discover the many other features hidden inside and displayed outside the handsome new chassis.

Your TK-140U is equipped with a newly developed protection circuit which guards against

widespread transistor damage due to a short circuit which could otherwise occur at the output jack. The TK-140U gives extra long-life to output transistors.

A total of 130 watts music power (65 watts on each stereo channel) and FM AUTOMATIC circuit are ready to select FM STEREO stations instantly with the help of a built-in, high standard silent switch system.

Go ahead — enjoy it! Your new KENWOOD TK-140U expects rugged use. It was designed and engineered to take it.

SPECIAL TK-140U FEATURES

1. F.E.T. (Field Effect Transistor) 4 Gang tuning Condenser front-end for superior sensitivity and image rejection, cross modulation ratio.
2. 5 IF Stages with 4 limiters and wideband ratio detector have been incorporated to provide 45 dB alternate channel selectivity and freedom from noise and interference.
3. Automatic STEREO/MONO mode silent switching circuit with stereo light indicator.
4. Interstation muting circuit.
5. 130 watts of total music power — enough to drive even low efficiency Hi-Fi speakers.
6. All silicon transistor amplifier for wide 20 to 30,000 Hz power bandwidth.
7. Exclusive blow-out proof automatic circuit breaker protects power transistors. (USA PAT. No. 3277386)
8. 2 sets stereo speakers and phones with front panel speaker selector switch.

CONNECTIONS TO COMPONENT PARTS

SPEAKER CONNECTIONS

A special circuitry has been incorporated in this unit so that more than one set of speakers (in different rooms, for instance) can be hooked up.

4, 8 or 16 ohm speakers are suitable. In connecting only one set of speakers, connect the right speaker to right speaker terminal and left speaker to left speaker terminal of "A" terminal. Should plus or minus of either right or left channel be reversely connected, sounds from the center section will be affected by a lack of separation. To connect a second set of speakers, connect right speaker to right speaker terminal and left speaker to left speaker terminals of "B" terminals.

The "A • B SPEAKERS" position of the output selector switch will not work unless both A speakers system and B speakers system are connected.

STEREO HEADSET JACK

To the wonderful sounds of stereo or to monitor the playback of tapes as you record them in complete privacy through your headphones, just

plug the headset into the STEREO PHONES JACK and turn the OUTPUT SWITCH selector to PHONES position.

TAPE RECORDERS

You may tape FM MONAURAL, FM STEREO, RECORDS by connecting the output jack of TAPE REC to the input jack of the tape recorder. Play back your recordings by simply connecting the output of your tape recorder to the TAPE PLAY jack of your TK-140U (Diagram, page 2.)

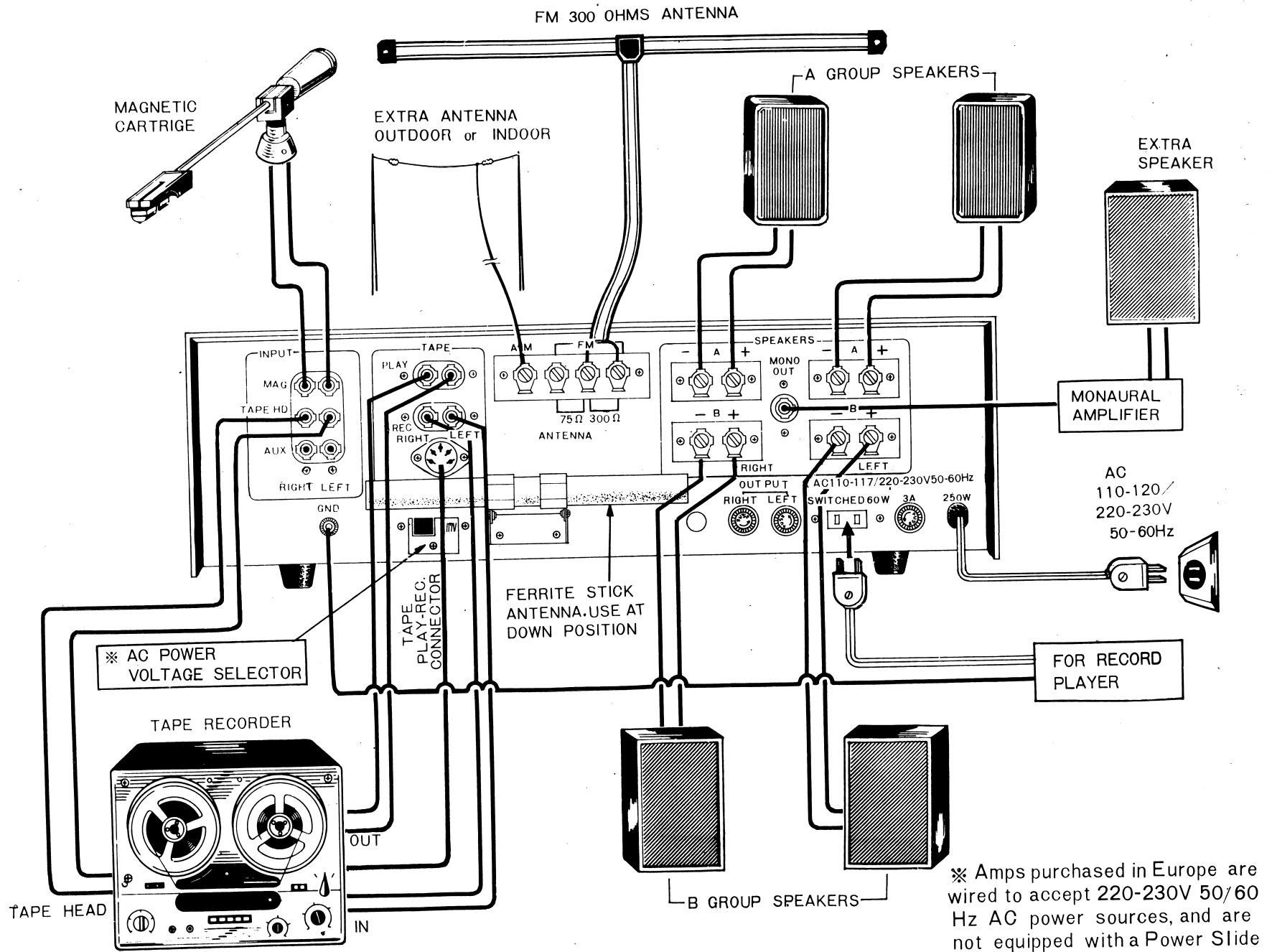
TAPE RECORDER EQUIPPED WITH RP CORD.

If you use a tape recorder equipped with an RP cord, you can reproduce stereo recording merely by plugging the cord into the socket provided for this purpose.

STEREO RECORD PLAYERS

The two lines of shielded cord from your stereo record player should be terminated with RCA type phono plugs. Cords should not exceed ten feet in length. (An excess will create a loss in high frequency range.)

INTERCONNECTING DIAGRAM



※ Amps purchased in Europe are wired to accept 220-230V 50/60 Hz AC power sources, and are not equipped with a Power Slide Switch.

For *Low Level Phono Inputs*: Inputs from a magnetic or variable reluctance cartridge connect to the MAG jacks.

TAPE HD

Tape recorder with direct tape head output

should be connected to the TAPE HD input.

As the output voltage of a tape head is very low the cable will pick up hum; therefore the cable should be carefully positioned to eliminate this hum.

ELECTRICAL CONNECTIONS

POWER

Plug the AC line cord into an outlet furnishing 110 to 120 volts or 220 to 230 volts AC, 50/60 Hz. (Amps purchased in Europe are wired to accept 220 — 230V 50/60 Hz AC power sources, and are not equipped with a Power Slide Switch.) The AC outlet on the rear of your receiver may be used to supply power to another component, such as a record player, tape recorder etc. It is affected by the power switch on the receiver.

CAUTION

This receiver is equipped with an AC power selector switch. It is switched to the 117V side when shipped from the factory for use on 117V AC line outlets.

This switch must be set to the 230V side if a 230V AC line source is to be used. To do so, remove the switch cover plate (near bar antenna on the left side). Reverse the switch and attach the switch cover plate so that the words "230V" will be shown.

FM ANTENNA

Two terminals are provided for connection to a 300 ohm FM antenna as shown in the interconnecting diagram.

For good FM Stereo reception, always use the best antenna possible. In areas close to the transmitter, a simple indoor dipole antenna may suffice. It should be remembered, however, that

the pickup of reflections (similar to "ghosts" on TV) will result in poor Stereo reception. These reflections must therefore be reduced to a minimum, either by careful orientation of the indoor antenna, or, if this will not eliminate them, by using a more directional outdoor type antenna.

In areas a greater distance from the transmitter, the use of an outdoor antenna is highly recommended. These are available in various types. For reception of stations scattered in many directions, a non-directional type may be required. If the desired stations lie mostly in one direction, a high-directional type of antenna will offer better results. When using a directional antenna, always orient it for the best reception of the desired station. The correct position will be indicated by maximum deflection of the tuning meter on your receiver.

AM ANTENNA

The ferrite loop stick built into the Model TK-140U assures adequate reception of all local AM stations. However, in fringe areas, high noise areas, or where surrounding metal objects interfere with normal reception, a regular antenna lead should be connected to the terminal designated AM.

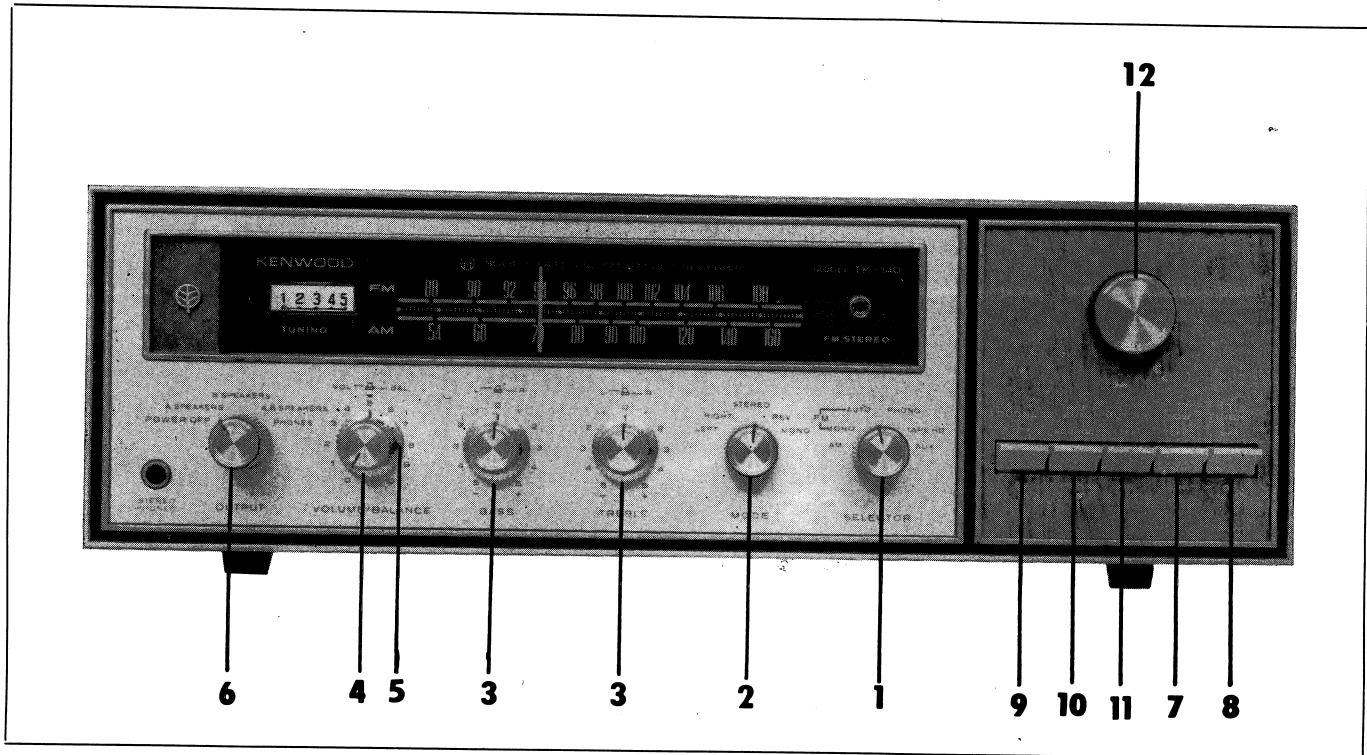
Note: The ferrite loop stick is mounted on a swivel bracket. For maximum pickup, the loop stick should be swung away from the chassis.

CONTROLS AND THEIR FUNCTIONS

1. SELECTOR

This switch selects the program source. The following describes each function:

- a. AM — Selects the output of the AM tuner section for reproduction through the amplifier.
- b. FM MONO — Selects the output of the FM tuner section for reproduction through the amplifier.
- c. FM AUTOMATIC — This position selects FM Broadcasting stations automatically with the help of a built-in high-standard switching system.
- d. PHONO — Selects sources connected to MAG input jacks. It is not desirable to have equipment connected to both pairs of jacks at the same time.
- e. TAPE HD — This position is used only for tape playbacks directly from the tape head.
- f. AUX — Selects sources connected to the AUX input jacks.



2. MODE

This switch determines the manner in which program sources (previously selected by the SELECTOR switch) will go through the amplifier section.

LEFT — Left input program reproduction is provided through both speakers.

RIGHT — Right input program reproduction is provided through both speakers.

STEREO — This provides stereophonic reproduction of any stereo program source. This position will also provide monophonic reproduction through both channels when the SELECTOR switch is in the FM MONO or AM position.

REV — This reverses positions of the two speakers. The left signal is now heard from the right speaker, and right signal from the left speaker.

MONO — Mixes left and right channel.

3. BASS AND TREBLE

This is a friction type tone control for Bass and Treble. To control separately left and right channels, hold one of the two knobs of L and R (inner one and outer one) and operate the other knob, then tone of single channel will be changed. Each channel tone will be controlled simultaneously unless one knob is held. Turning clockwise

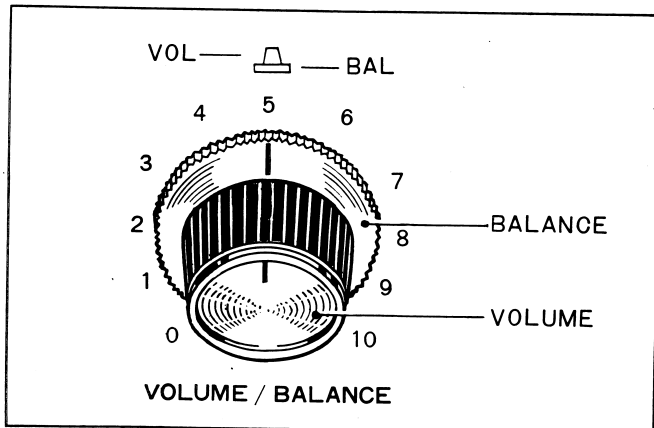
increases tones and counter-clockwise decreases them and center setting is at level.

4. VOLUME

The single control designated **VOLUME** adjusts the level of both channels simultaneously. To adjust one channel only, use the **BALANCE** control.

5. BALANCE

This control provides a simple means of adjusting the levels of both channels for proper balance during stereophonic reproduction.



6. OUTPUT

The OUTPUT selector switch enables you to hook up more than one set of speakers (in different rooms) and then to choose to listen from either set of speakers or both sets.

The OFF position of this switch shuts off the power of the unit. Turn knob to "A SPEAKERS" and the power is on and sound can be heard from the first set of speakers only. Set the knob to "B SPEAKERS" position and reception is heard through the second set of speakers only. To listen to program source through both sets of speakers, then set the selector knob to "A • B SPEAKERS" position. ("A • B SPEAKERS" position of the output selector switch will not work unless both A speakers system and B speakers system are connected.) The same switch permits you to silence both speaker systems for complete privacy when listening with headphones by setting the knob to PHONES position.

7. LOW FILTER

This switch inserts a low frequency filter into the circuit and reduces the rumble — from a noisy turntable or changer with minimum effect on program material. (80Hz roll-off).

8. HIGH FILTER

This switch inserts a filter into the circuit and reduces the high-frequency noise. (6kHz roll-off)

9. LOUDNESS

This switch provides the frequency response change (bass and treble boost) required by the ear at low listening levels, and permits the VOLUME control to function as a compensated loudness control.

10. TAPE MONITOR SWITCH

The TK-140U incorporates a Tape Monitoring

circuitry enabling you to monitor while you record. Connections to the tape recorder are made as explained in the section dealing with "Interconnecting Diagram".

For Two-head Tape Recorders

Ordinary two-head type tape recorders are not equipped with a separate playback monitor amplifier to enable tape recording and simultaneous monitoring. Therefore, when **recording**, set the Switch to SOURCE position, and feed the signal to be recorded through the TK-140U. And, for **playback** of the recorded tape through the TK-140U speaker system, set the TAPE MON Switch to TAPE PLAY position.

For Three-head Tape Recorders

Three-head type tape recorders have separate recording and playback heads, and their respective separate amplifiers. This enables simultaneous playback monitoring of the recording. For operating the TK-140U in conjunction with three-head type recorders, set the TAPE MON switch to TAPE PLAY position. This enables monitoring the recording and fully controlling level, acoustic balance, microphone position, etc.

For playback of the recorded tape, set the TAPE MON switch to TAPE PLAY position.

11. MUTING

This switch silences the strong interstation noise encountered on the FM band, but this switch may also eliminate the signal of a weak and distant station along with the interstation noise. Therefore, in weak and distant station reception, it is better to leave this switch in OFF position.

12. TUNING

Tuning for FM or AM is carried out with the single control designated TUNING. Always tune for maximum deflection of the tuning meter.

RE: PROTECTION CIRCUIT

The newly developed protection circuit is completely effective and prevents damage which may be caused by short circuits at the speaker outputs or the electrical overloading point. When short circuit occurs this protection circuit will act automatically to protect the transistors. The program sound will be heard off and on intermittently about every one second. In this case, there is no fear of damaging the transistors. Just switch off the supply line and check the connections.

RE: FM AUTOMATIC

This position selects, with the function of the switching circuit which tunes out pilot carrier 19 kHz, FM STEREO broadcast stations. Sometimes the external electrical noise will light the FM STEREO RED LAMP and in this case the tuning meter will hardly deflect. This indicates the RED LAMP is not the real stereo broadcasting signal. It is not the failure of the set.

PHASING OF THE SPEAKERS

Proper phasing of the two speakers is important for deriving the best performance. This is to assure that low frequency or bass tones are

not eliminated by speakers that are working in opposition to each other.

After your speakers are connected, listen to the intensity of the bass tone. Then reverse the lead connections of the speakers and listen to the sound again. The position of the lead connections where the bass intensity was the greatest is the proper one and the speakers will then be permanently in phase.

ELECTRICAL SUPPLY VOLTAGE

Your TK-140U is transistorized, but for domestic use, the electrical supply voltage is AC 110-120 or 220-230 volts. The external electrical supply jacks are for record player, tape recorder, etc. The main switch of the set coordinates with these jacks and the specified current is 60 watts. Overloading is impossible.

FUSE

Shield 3A fuse is used. Rotate the fuse holder counter-clockwise for replacing. When the fuse has blown out, check carefully the reason for the blow-out and then replace the fuse. When something is wrong with the supply circuit, the fuse will blow again. Do not, in any case, use copper wire in place of the specified shield fuse.

OPERATING INSTRUCTIONS

Before operating the stereo receiver, make sure you have connected your speakers and any other associated equipment (record player, tape recorder, etc.). Initially, set BASS and TREBLE controls to their mid-positions, MODE switch control to STEREO, VOLUME to minimum.

FM MONO OPERATION

To start the receiver, turn the OUTPUT switch to ON. Set the SELECTOR switch to FM MONO or AM and the MODE switch to STEREO or MONO. Sound will be heard through both speakers. Adjust the VOLUME control as necessary and tune in the desired station.

FM STEREO OR MONO OPERATION

Set MODE switch to STEREO and SELECTOR switch to FM AUTOMATIC. In this position, FM STEREO broadcasting is selected. The indicating lamp will automatically be RED to

show that a stereo broadcast is tuned in. At times, some external noise may cause the indicating lamp to light RED. In such case, see "Remarks Re: FM Automatic" of this pamphlet.

PHONO OPERATION

STEREO — set the SELECTOR switch to PHONO, MODE switch to STEREO. Adjust all other controls as necessary for proper stereo reception.

MONOPHONIC RECORD PLAYERS — set SELECTOR switch to PHONO and MODE switch to MONO, depending on whether the monophonic record player is plugged into the LEFT or RIGHT phono jack. The program source will now be heard through both speakers.

TAPE RECORDER OPERATION

See page 5. (TAPE MONITOR SWITCH)

SPECIFICATIONS

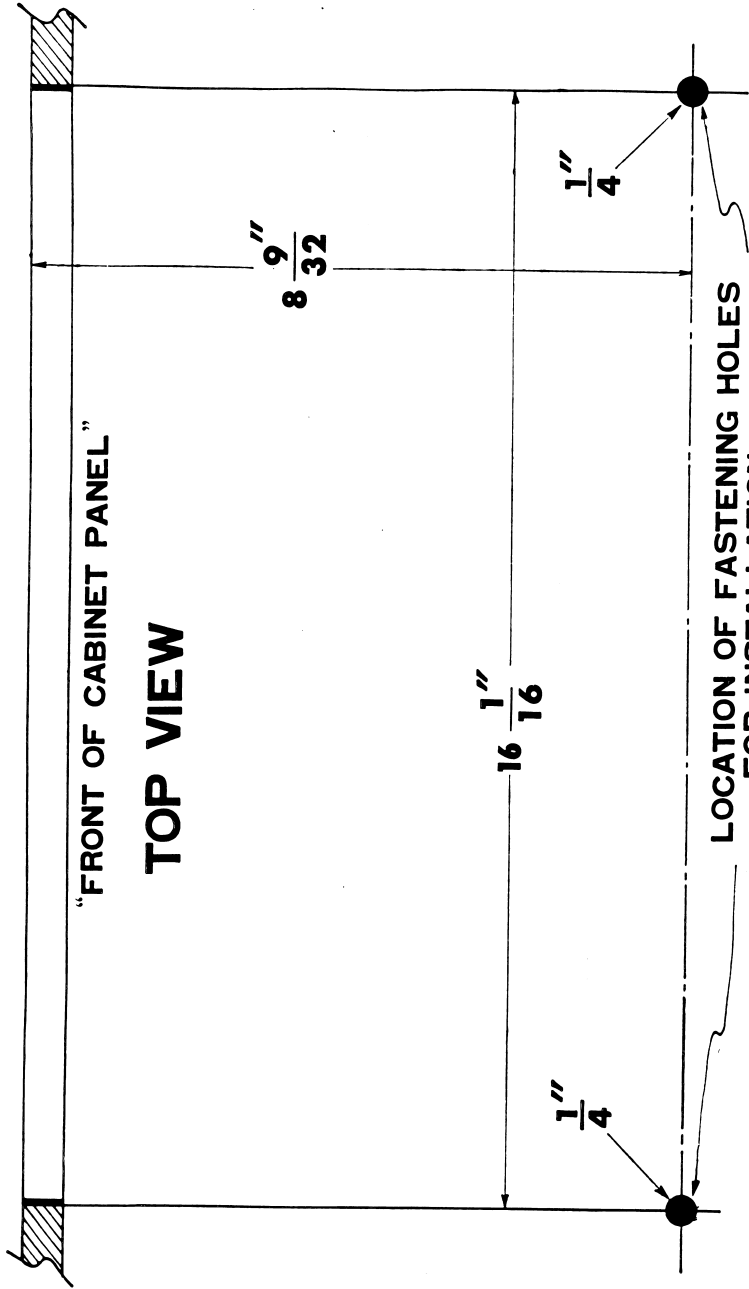
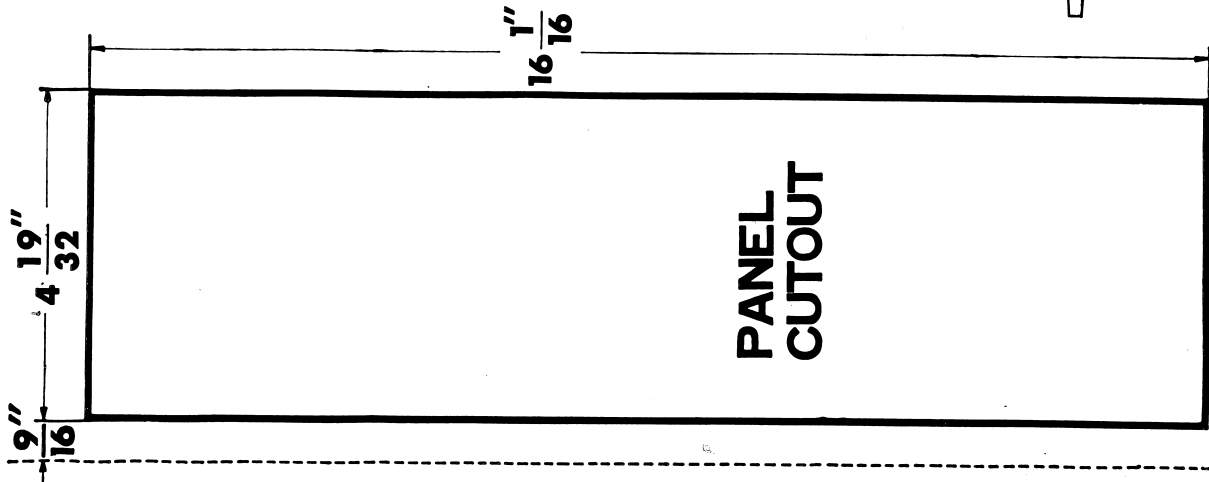
AMPLIFIER SECTION:

TOTAL MUSIC POWER:	130 watts (IHF Standard 4 ohms) 120 watts (IHF Standard 8 ohms)
CONTINUOUS POWER:	50 watts per channel (0.5% T.H.D.)
FREQUENCY RESPONSE:	20 Hz — 50,000 Hz (± 2 dB)
POWER BANDWIDTH:	20 Hz — 30,000 Hz ($- 3$ dB)
SIGNAL TO NOISE RATIO: (below rated output)	Phono $- 63$ dB, Tape HD $- 63$ dB, Tape Play $- 70$ dB, AUX $- 70$ dB
INPUT SENSITIVITY:	Phono 2 mV, Tape HD 2.5 mV, Tape Play 150 mV, AUX 150 mV
MAXIMUM INPUT SIGNAL: (Mag Input)	100 mV P - P (1,000 Hz)
DAMPING FACTOR:	46 (16 ohms), 23 (8 ohms)
LOW FILTER:	80 Hz roll-off
HIGH FILTER:	6,000 Hz roll-off
BASS CONTROL:	± 10 dB (at 50 Hz)
TREBLE CONTROL:	± 10 dB (at 10,000 Hz)
VOLUME CONTROL TRACKING ERROR:	Within 3 dB
CENTER CHANNEL OUTPUT:	Yes
SPEAKER IMPEDANCE:	4, 8 or 16 ohms

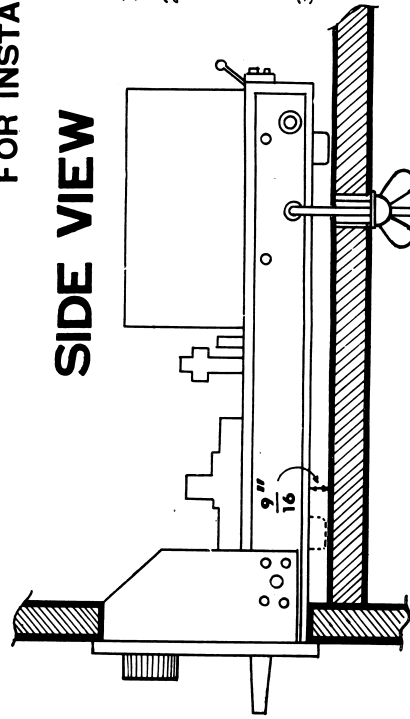
TUNER SECTION:

USABLE SENSITIVITY:	FM; 2 microvolts (IHF Standard) AM; 10 microvolts (IHF Standard)
FM FREQUENCY RESPONSE:	20 — 20,000 Hz ± 2 dB
FM HARMONIC DISTORTION:	0.6% (1,000 Hz 100% mod.)
FM SIGNAL TO NOISE RATIO:	60 dB
FM CAPTURE RATIO:	2.5 dB
FM SELECTIVITY: (Alt. Channel)	45 dB
FM STEREO SEPARATION:	38 dB (at 400 Hz)
FM IMAGE REJECTION:	66 dB
FM CROSS MODULATION REJECTION:	80 dB
FM IF STAGES:	5 stages
FM STEREO MONO AUTO. SWITCHING:	Yes
FM INTERSTATION MUTING:	Yes
AM-FM FRONT END:	FET 4-gang (FM), 3-gang (AM)
POWER CONSUMPTION:	AC 110 — 120 or 220 — 230 volts, 250 watts (at full power) Amps sold in Europe operate only on 220 — 230 volts 50/60 Hz
DIMENSIONS:	16½" W, 5¼" H, 14¼" D
WEIGHT:	31 Lbs.

TK-140U MOUNTING TEMPLATE

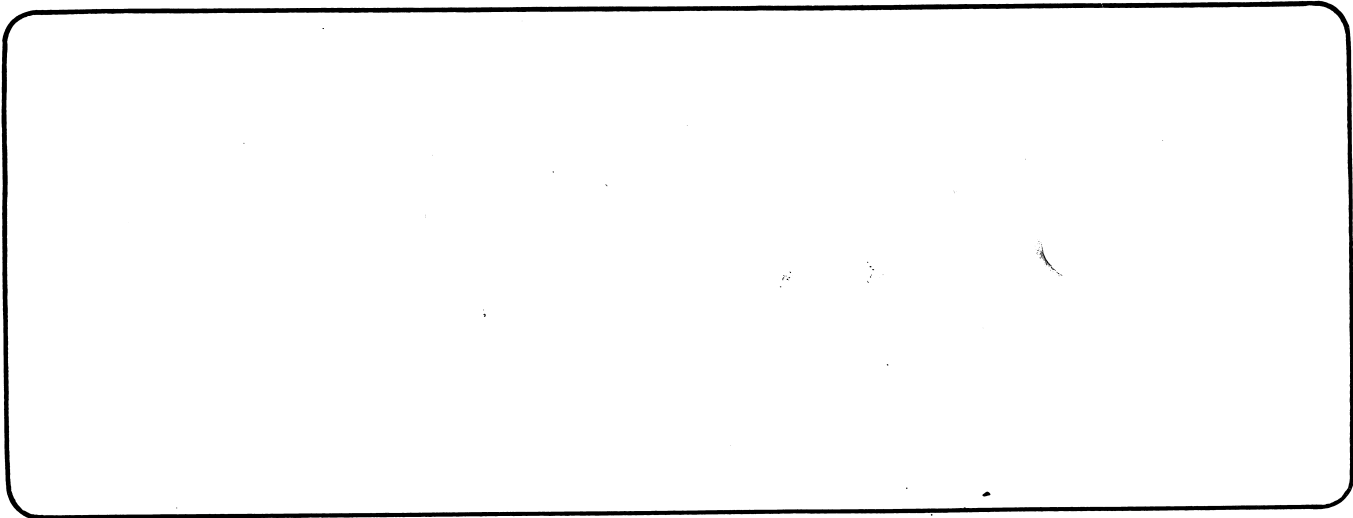


LOCATION OF FASTENING HOLES FOR INSTALLATION



DIRECTIONS FOR PANEL MOUNTING

1. Locate the supporting shelf at the height you wish the receiver positioned.
2. Using the full scale "Cutout Template" make a 4-19/32" x 16-1/16" cutout in the cabinet panel. The bottom of the cutout should be flush with the bottom plate of the receiver, as shown in the side view. The distance between the bottom of the cutout and the top of the supporting shelf is 9/16."
3. The receiver is held in place by two bolts. The holes must be made in the shelf to correspond with the holes in the receiver. Use the "Top View" template to locate these holes on the supporting shelf. The holes should be made 1/4" in diameter or somewhat larger.
4. Remove the front legs before tightening.



Manufactured by TRIO CORPORATION, TOKYO, JAPAN.

TRIO

Owner. _____

TK-140U Serial No. _____