

Specifications

TELEVISION

Picture System

Black and White

OWNER'S MANUAL

Signal to Noise Ratio

More than 45 dB

Channel Separation

More than 30 dB

Cross Talk

More than 45 dB

Frequency Response

20-20 KHz ±15 KHz

TUNER

AM

FM

Tuning Range

530-1607 KHz

88-108 MHz

Intermediate Frequency

455 KHz

10.7 MHz

Sensitivity

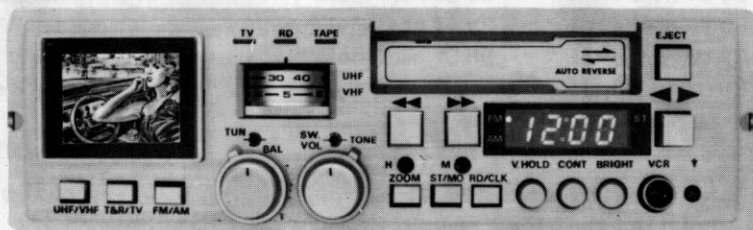
Defining 15 dB

Carrier 500 μV

LF

50-20 KHz

±0.5 dB



**IN-DASH CAR VIDEO COMPONENT SYSTEM
2-INCH MONOCHROME UHF/VHF TV
DIGITAL AM/FM/MPX RADIO AND
FULL AUTO REVERSE STEREO CASSETTE TAPE PLAYER
WITH SEPARATE POWER AMPLIFIER IN BLACK BOX**

Specifications

TELEVISION

Picture System	Black and White
Display Tube Size	1.5 inch
VHF	Channels 2 to 12
UHF	Channels 21 to 69

TAPE PLAYER

Playback System	4-Track, 2-Channels Full Auto-Reversing Dual Capstan Drive
Tape Speed	4.75 cm/Sec (1-7/8")
Wow and Flutter WRMS	Less than 0.25%
Signal to Noise Ratio	More than 45 dB
Channel Separation	More than 35 dB
Cross Talk	More than 45 dB
Frequency Response	30 Hz – 15 KHz

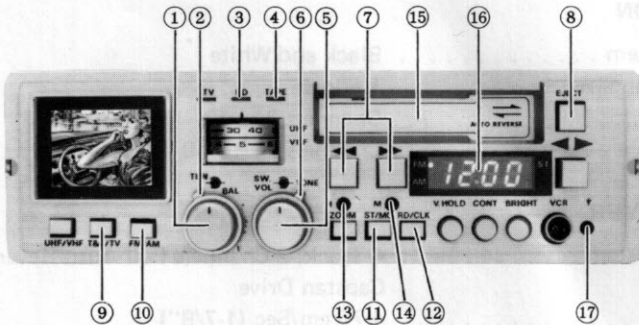
TUNER

	<u>AM</u>	<u>FM</u>
Tuning Range	520 – 1650 KHz	88 – 108 MHz
Intermediate Frequency	455 KHz	10.7 MHz
Sensitivity	Better than 15 dB	Better than 5 dB
I.F. Rejection	More than 38 dB	More than 70 dB
Image Rejection	More than 54 dB	More than 42 dB
Signal to Noise Ratio	More than 40 dB	More than 60 dB
Stereo Separation	N/A	More than 30 dB

GENERAL

Circuitry	16 IC's, 11 Transistors, 23 Diodes, 5 LED, 1 LED Display, 1 X'TAL, 1 LSI
Power Supply	13.8 Volt D.C. Nominal, Negative Ground
Speaker Impedance	4 – 8 Ohm
Maximum Output Power	25 Watts per Channel
Nominal Output Power	18 Watts per Channel @ 10% THD
Dimensions	178 (7") W x 50 (2") H x 150 (6") D
Weight	1.9 Kg
Black Box Dimensions	178 (7") x 50 (2") x 70 (2-3/4") D

Controls & Functions (RADIO/TAPE)



1. RADIO TUNING KNOB

Rotate the knob either clockwise or counter-clockwise to select AM or FM radio stations.

2. BALANCE CONTROL

Rotating the knob clockwise or counter-clockwise will regulate the sound level to the right (clockwise) and left (counter-clockwise) speakers.

3. RADIO INDICATOR

When illuminated, indicates radio operation.

4. TAPE INDICATOR

When illuminated, indicates tape operation.

5. POWER ON/OFF SWITCH AND VOLUME CONTROL

Rotating the knob clockwise will turn power on, and increase the volume level. Rotating the knob counter-clockwise will decrease the volume level, and completely counter-clockwise, until a click is heard, will turn off the power.

6. TONE CONTROL

Turn the knob clockwise to increase, and counter-clockwise to decrease treble response.

7. FAST FORWARD & REWIND BUTTON

Fast Forward control is lock type (as well as Rewind control) and at the end of the tape, the locked condition is released automatically and reverse the direction of play at normal tape speed. To release the locked condition during FAST FORWARD or REWIND mode, press Eject button halfway.

8. EJECT BUTTON

To stop playing the tape or at end of the tape, push EJECT BUTTON fully to eject cassette tape.

9. TV or RADIO/TAPE SELECT SWITCH

Push in the switch for TV mode (switch IN) and depress it for RADIO/TAPE mode (switch OUT).

10. AM/FM RADIO SELECTOR SWITCH

Push in the switch for AM mode (switch IN), and depress it for FM mode (switch OUT).

11. STEREO/MONO SELECTOR SWITCH

Sometimes during normal driving conditions FM Stereo will begin to switch on and off, causing static and popping noise. To reduce this type of interference, set the control in the "IN" position for FM Mono. Normal operation is the "OUT" position for FM Stereo.

12. CLOCK/RADIO SELECTOR SWITCH

The switch changes the digital display to either time or frequency.

13. CLOCK HOUR SET CONTROL

Press the control in with a pen and hold for rapid hour advance.

14. CLOCK MINUTE SET CONTROL

Press the control in with a pen and hold for rapid minute advance.

15. TAPE SLOT

To activate the tape deck, insert a cassette tape through the door. The tape will engage, and the unit will automatically switch from radio to tape play.

16. TIME/FREQUENCY DISPLAY

The LED Display indicates radio frequency of the station being received. It also indicates the time whenever the selector switch (12) is in CLOCK mode.

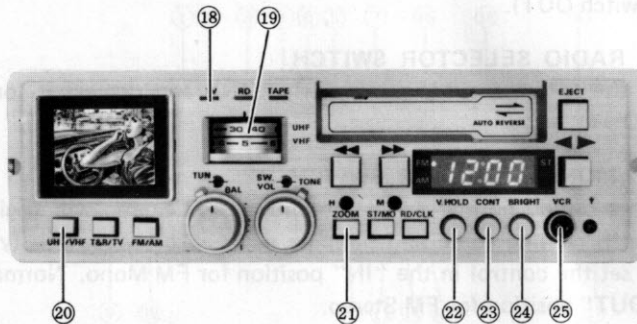
17. ANTENNA TRIMMER

For best AM radio reception, adjust the antenna trimmer as mentioned below.

a) While the radio is in AM mode, tune to a weak station.

b) With an insulated screwdriver, turn the antenna trimmer screw to the point where the sound is the loudest. Set it and forget it.

Controls & Functions (TELEVISION)



18. TV INDICATOR

When illuminated, indicates TV operation.

19. TV TUNING KNOB

Tune to your desired channel or station and obtain vivid picture and clear sound.

20. UHF/VHF SELECTOR SWITCH

Push in the switch for VHF mode (switch IN), and depress it for UHF mode (switch OUT).

21. ZOOM-UP SWITCH

Push in the switch for ZOOM mode (switch IN) to enlarge TV picture by about 30%. Depress it for normal picture size (switch OUT).

22. VERTICAL HOLD CONTROL

When the picture moves up and down or rolls, adjust VERTICAL HOLD CONTROL to stabilize the picture.

23. CONTRAST CONTROL

Turn the knob clockwise to increase, and counter-clockwise to decrease the black and white contrast.

24. BRIGHTNESS CONTROL

Turn the knob clockwise to increase, and counter-clockwise to decrease the brightness of the picture.

25. VCR JACK

When connected to the extra monitor TV or VCR, the video signal will be input.

Installation

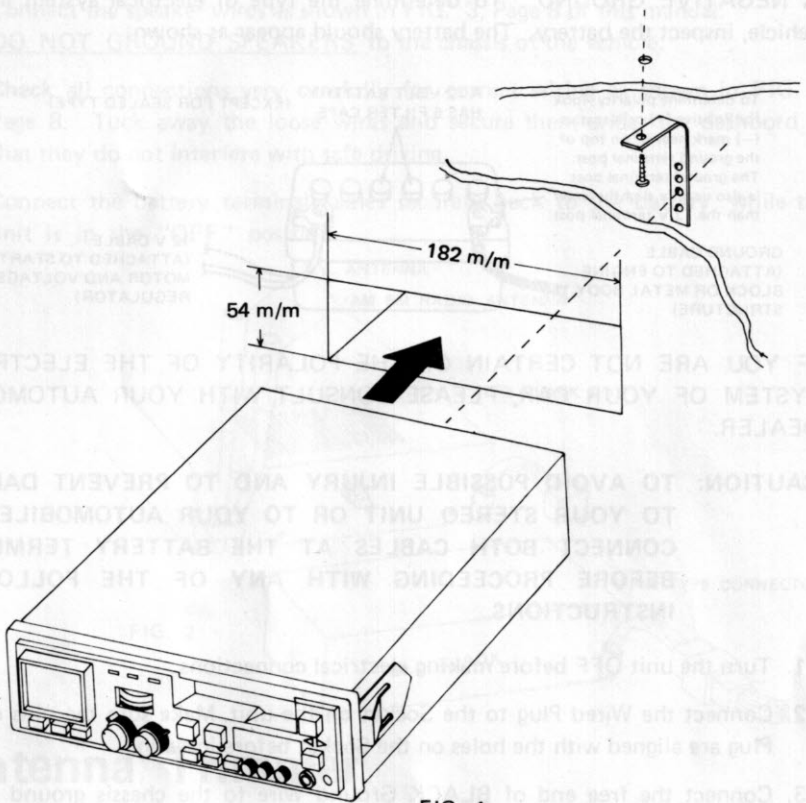
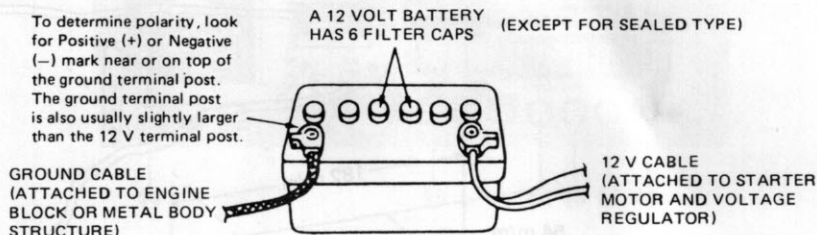


FIG. 1

1. Select a location for mounting your T.V. unit where it does not interfere with safe driving and where the controls on the unit are within easy reach from the driver's seat.
2. Do not expose this appliance to direct sun for a long period of time. It may cause damage to the cabinet. It can become too hot inside a car parked in the sun or at the beach in strong direct sunlight. To prevent damage to the cabinet, shade the set from direct sunlight.

Electrical Connections

THIS UNIT IS FOR USE ONLY WITH A 12 VOLT DC POWER SOURCE WITH A NEGATIVE GROUND. To determine the type of electrical system in your vehicle, inspect the battery. The battery should appear as shown:

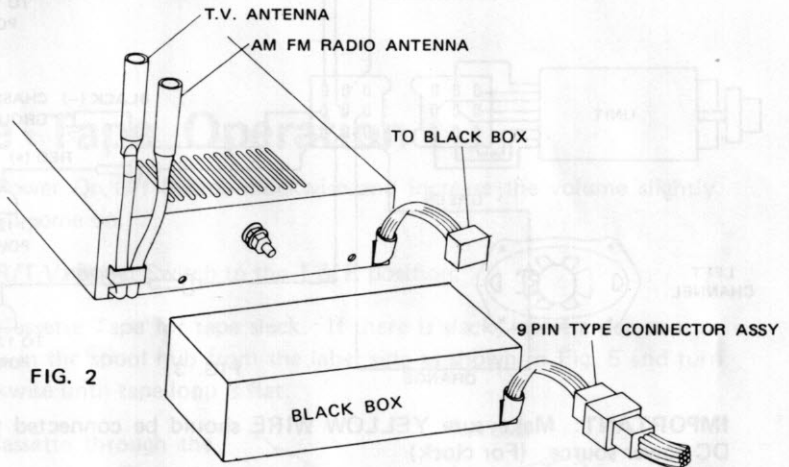


IF YOU ARE NOT CERTAIN OF THE POLARITY OF THE ELECTRICAL SYSTEM OF YOUR CAR, PLEASE CONSULT WITH YOUR AUTOMOBILE DEALER.

CAUTION: TO AVOID POSSIBLE INJURY AND TO PREVENT DAMAGE TO YOUR STEREO UNIT OR TO YOUR AUTOMOBILE, DISCONNECT BOTH CABLES AT THE BATTERY TERMINALS BEFORE PROCEEDING WITH ANY OF THE FOLLOWING INSTRUCTIONS.

1. Turn the unit OFF before making electrical connections.
2. Connect the Wired Plug to the Socket on the unit. Make sure the pins on the Plug are aligned with the holes on the Socket before inserting.
3. Connect the free end of BLACK Ground Wire to the chassis ground (metal framework) of the vehicle.
4. Connect the RED power lead (with in-line fuse) to the ACCESSORY Terminal (or Accessory side of the electrical system) only.
5. Connect the BROWN power lead (with in-line fuse) to the ON position of the Ignition Switch. The Ignition Switch or fuse box terminal are used so that the power to the unit is turned off by the Ignition key.
6. Connect the YELLOW power lead (with in-line fuse) to a direct 12 V positive (+) side of the electrical system. This connection should be made to a constant DC power source not related to the Ignition Switch. This YELLOW wire will operate the digital clock on a constant basis when connected properly.
7. Connect female AM/FM Antenna Socket to a standard automotive type antenna.

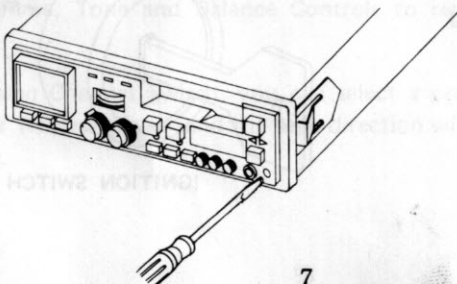
8. Connect female TV Antenna Socket to a 75-ohm unbalanced Mobile TV Antenna. (It is not necessary to use a UHF/VHF Splitter since this is already incorporated in the chassis/circuitry of this unit.)
9. Connect the speaker wires as shown in FIG. 3, Page 8 of this manual. DO NOT GROUND SPEAKERS to the chassis of the vehicle.
10. Check all connections very carefully for correct wiring as shown in FIG. 3, Page 8. Tuck away the loose wires and secure them under the dashbord so that they do not interfere with safe driving.
11. Connect the battery terminal cables securely back to the battery, while the unit is in the "OFF" position.



Antenna Trimmer

For the best AM radio reception, be sure to adjust the Antenna Trimmer.

1. Turn the Radio on and tune to a weak station on AM band, between 1,000 and 1,400 KHz.
2. With a screwdriver, turn the antenna trimmer to the point where the sound is the loudest. No further adjustment will be necessary.



Speaker Connection

In order to fully enjoy Balance Control, connect Unit to speakers. For proper stereo operation, at least one speaker per channel must be connected.

Use Front Left and Front Right speaker wires for two-speaker connection.

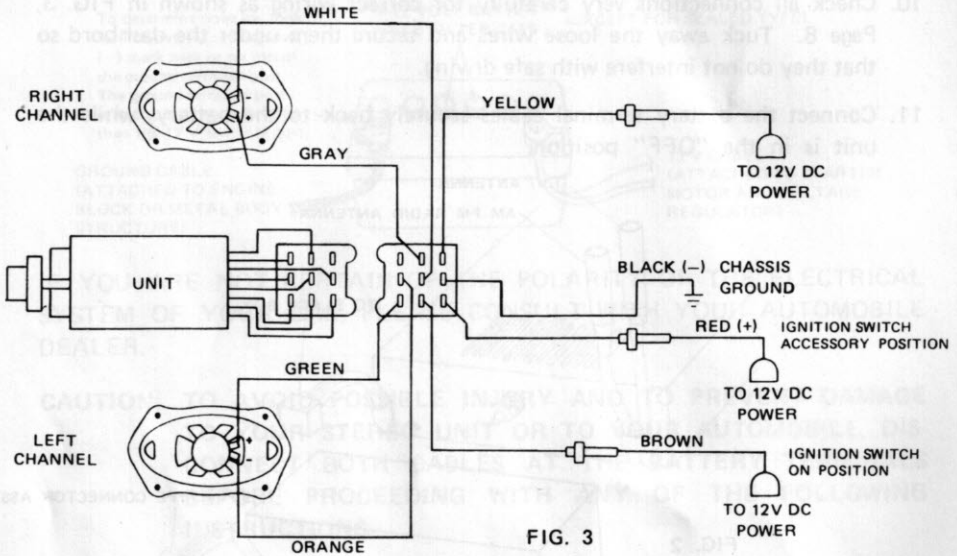


FIG. 3

IMPORTANT: Make sure YELLOW WIRE should be connected to the 12 Volt DC power source. (For clock)

REMARK:

- 1) ACC POSITION
T.V. RADIO and TAPE
- 2) ON POSITION
RADIO and TAPE and
(only T.V. sound)

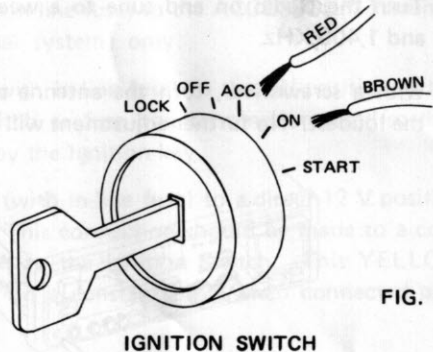
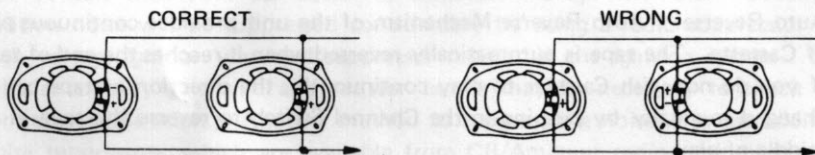


FIG. 4

IMPORTANT: REGARDLESS OF SPEAKER POSITIONS, MAKE SURE THE SAME TERMINALS ARE CONNECTED.

WIRING BOTH PAIRS OF SPEAKERS CORRECTLY ENSURES THE BEST SOUND SYSTEM.

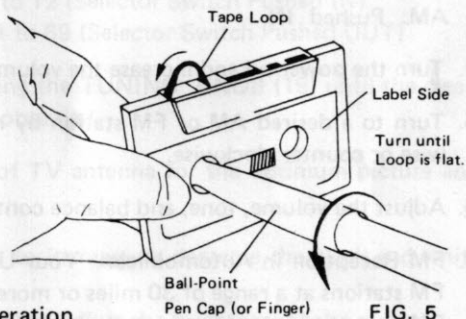


Cassette Tape Operation

1. Rotate the Power On/Off Switch clockwise and increase the volume slightly. The Radio will come on.
2. Set the T & R/T.V. Select Switch to the T & R position.
3. Check your Cassette Tape for tape slack. If there is slack, insert a pen cap (or finger) firmly in the spool hub from the label side as shown in Fig. 5 and turn counter-clockwise until tape loop is flat.

4. Insert the Cassette through the door all the way in. The tape will automatically start to advance.

The Cassette player operation supercedes the Radio operation. Insertion of a Cassette Tape automatically shuts off the Radio and when the Tape is ejected, the Radio will resume operation.



5. Adjust Volume, Tone and Balance Controls to reproduce the sound as you prefer.
6. By depressing Channel Switch, you can select a program of Cassette—either Forward or Reverse play—and the tape direction will be indicated by the green arrow light.

7. **Fast, Forward and Rewind:** To advance tape rapidly to a desired section of Cassette, push the switch in (<<). To Rewind Cassette, push the switch in (>>). This is a "Lock-in" Switch. You do not have to hold the Switch for Fast Forward or Rewind. At the end of Cassette tape when Fast Forward or Rewind is completed, the tape will automatically start playing in opposite direction. In order to release the FF, REW switch, push the EJECT button half way.
8. **Auto Reverse:** Auto Reverse Mechanism of the unit provides continuous play of Cassette. The tape is automatically reversed when it reaches the end of tape. If you do not wish Cassette to play continuously, the direction of tape can be changed manually by pushing in the Channel Switch to reverse the tape in the middle of play.
9. **Eject Switch:** To stop tape operation, push the Switch all the way in to Eject Cassette. Then Radio will start operation. Turn off the power by rotating Power On/Off Switch counter-clockwise until a click is heard.

AM/FM Radio Operation

1. Make sure the Cassette Tape has been removed from the unit.
2. Set the T & R/T.V. Select Switch to the T & R position.
3. Select AM or FM mode on the Selector Switch.
FM: Pushed OUT.
AM: Pushed IN.
4. Turn the power on and increase the volume slightly.
5. Turn to a desired AM or FM station by rotating the Radio Tuning Knob clockwise or counter clockwise.
6. Adjust the volume, tone, and balance controls to desired levels.
7. **FM Reception in Automobiles:** Your Unit will provide excellent reception of FM stations at a range of 30 miles or more over generally flat terrain. FM reception may temporarily be blocked by tall buildings or hills, and reception of a weak FM station may be affected by strong local electrical interference.
8. Turn the Power On/Off Switch counter-clockwise to turn the Radio off until a click is heard.

Interference Noises in Reception

During reception you may find that your radio will pick up interference which makes the reception of weaker stations difficult. The most common source of these noises is the ignition system of your vehicle. Because your radio is placed relatively close to your ignition system (engine). In such a case, we recommend you consult with your car dealer to eliminate the ignition noise. Usually the ignition noise will be suppressed considerably by using a radio suppression type high voltage ignition wire and suppressor resistor in the ignition system. (Most vehicles employ this wire and resistor but it may be necessary to check them for correct operation.) Another method to suppress the noise is to use additional noise suppressors, which are available from CB/Amateur radio equipment supply shops.

Television Operation

1. Set the ignition key switch on "ACC" (Accessory) position. When the ignition key switch is in the "ON" (Driving) position, the TV picture circuit is automatically shutoff and only TV sound is available if desired.
2. Select TV mode by pressing T & R/TV SELECT SWITCH (9).
3. Select VHF or UHF on UHF/VHF SELECTOR SWITCH (20) according to your desired TV station.
VHF Channel 2 to 12 (Selector Switch Pushed IN)
UHF Channel 21 to 69 (Selector Switch Pushed OUT)
4. Tune in a desired station by turning the TUNING KNOB (19) until the clearest sound and sharpest picture are obtained.
5. Adjust the length and direction of TV antenna for the optimum picture and sound quality.
6. Use CONTRAST CONTROL (23) to increase or decrease the black and white contrast of the picture.
Use BRIGHTNESS CONTROL (24) to adjust the brightness of the picture.
7. Adjust the VOLUME CONTROL (5) for your desired sound level.
8. When the picture moves up and down or rolls, adjust VERTICAL HOLD CONTROL (22) to stabilize the picture.