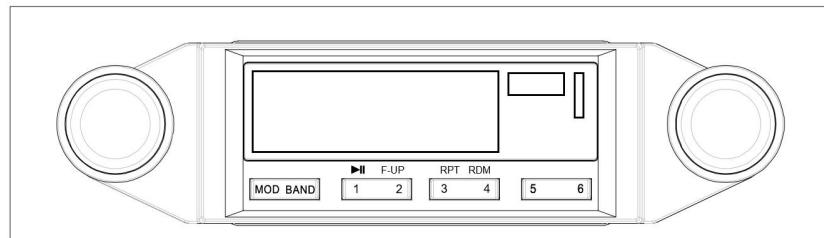


Vintage Car Audio. NC.

KHE SERIES

ELECTRONICALLY TUNED AM/FM RECEIVER



OWNER MANUAL KHE SERIES

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FEATURES

- ELECTRONICALLY TUNED PLL SYNTHESIZED TUNER
- 6 AM & 6 FM STATIONS MEMORY
- PRESET SCAN/AUTO STORE BUTTON
- AUTOMATIC MONO/STEREO FUNCTION
- POWER ON/OFF & VOLUME
- CONTROL • FRONT/REAR FADER
- CONTROL • SEPARATE BASS/TREBLE
- CONTROLS • LIGHT ILLUMINATED
- CONTROLS
- INDICATORS AM FM1/FM2/FM3/STEREO/USB/PRESET CHANNEL
- NUMBER • AUTO-ANTENNA DRIVE POWER LEAD
- ADJUSTABLE SHAFT SPACE

IMPORTANT NOTICE

Please review the "INSTALLATION-WIRING INSTRUCTIONS" and "BENCH TEST" radios before installation. If there is a malfunction or problem, refer to the TROUBLESHOOTING GUIDE for assistance.

DO NOT RETURN defective units to your dealer. There is NO "EXCHANGE" e.g. (as is standard Electronics Industry Policy). Dealers have no radio technicians, test benches, etc., and returning units to factory through your dealer normally extends turn-around time by weeks.

Please call K&C Harrison INC. and request a technician if a problem occurs. We will gladly trouble shoot/advise step by step as needed.

If unit is in need of Warranty REPAIR, Please call for authorization, and shipping address, we will repair or replace and return ASAP! Normal turn around time is 5 working days plus shipping time.

Phone (800)497-5294

VINTAGE CAR AUDIO, INC.

GENERAL INFORMATION

Thank you for your purchase of K&C Harrison INC. product!
Owner-Installer, please review installation and instructions in owner's manual.

Keep in mind that your radio and/or speakers are custom equipment: designed specifically for your year vehicle. It should be handled carefully and installed preferably by an auto radio specialist. We suggest that you "Bench Test" the unit before installation, as we do, before shipping. Therefore if a careless installation occurs, such as "Frying the circuit" or possibly other damages, the installer is responsible. Shipping damage occasionally does occur.

**PLEASE READ THE OWNER'S MANUAL THOROUGHLY BEFORE
USING YOUR RADIO.**

**IT IS RECOMMENDED THAT YOU DISCONNECT THE BATTERY'S
NEGATIVE LEAD BEFORE INSTALLING ANY ELECTRONIC EQUIPMENT
IN YOUR VEHICLE. RE-CONNECT WHEN WIRING IS COMPLETE.**

First you will need to remove the original knobs, bezels and shaft nuts. Unplug the main wire harness and speaker leads from the back of the radio. Disconnect antenna lead and remove mounting strap from the back of the radio. The radio is now ready to be removed from the dash.

Please refer to wiring instructions on pages 5 and 6.

Plug in antenna lead. On speaker leads, make sure the positive lead goes to positive terminal and negative lead to negative terminals of speakers. A minimum of two speakers are required for this stereo radio. **DO NOT CONNECT ANY TWO SPEAKER LEADS TO EACH OTHER OR THE VEHICLE GROUND.**

Plug in or wire the red power wire to an ignition controlled power supply. Plug in or wire the orange wire to the battery terminal or to any constant 12-volt power supply. We recommend not using any of the original radio power wires.

A sound well-grounded antenna is important for optimum function, as well as correctly wired speakers.

POWER /SPEAKER CONNECTION (REFER TO FIG. 1 PAGE 6)

A. RED WIRE (IGNITION)

Connect the RED wire to an accessory fuse that switches OFF when the key is in the OFF position. (This does not apply to vehicles with 6 volt or positive ground systems)

B. ORANGE WIRE (BATTERY)

Connect the orange wire to an accessory fuse that is always ON regardless of the position of the ignition key. This lead supplies power to the program memory and clock circuit when the radio is switched off. (This does not apply to vehicles with 6 volt systems or positive grounds systems)

C. SPEAKER WIRES

Connect the speaker wires as shown in Figure 1 on page 6. Do not connect speaker wires to each other or the vehicle ground. If only two speakers are used, be sure the leads for the rear speakers are taped off to prevent them from shorting out.

D. YELLOW WIRE (AUTO ANTENNA)

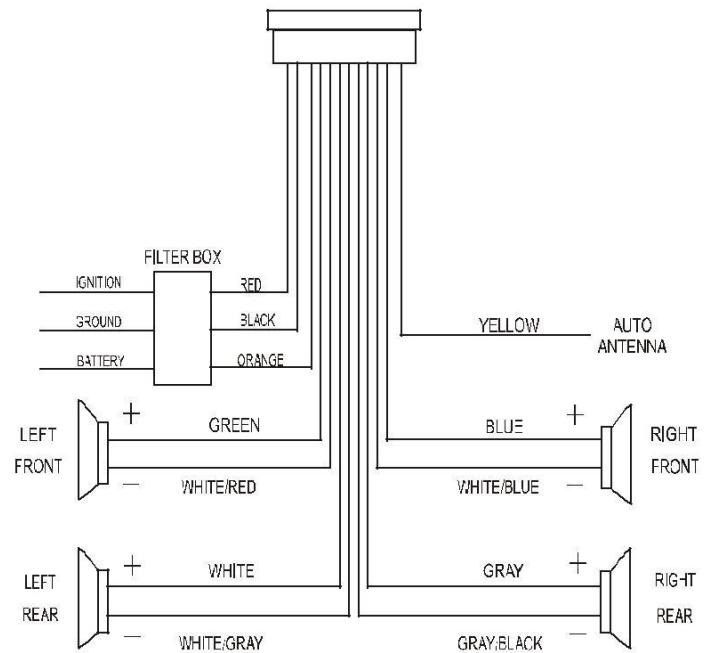
This wire can be connected to the terminal of the automatic power antenna relay (if vehicle is so equipped) or the turn on lead of an optional amplifier. It will provide remote power on/off by using the power switch on the radio.

NOTE: DO NOT connect this wire to a ground or to an accessory that requires high current. Doing so will burn up the on/off power switch. If your vehicle is not equipped with an automatic antenna, tape off wire to prevent shorts.

E. BLACK WIRE (GROUND)

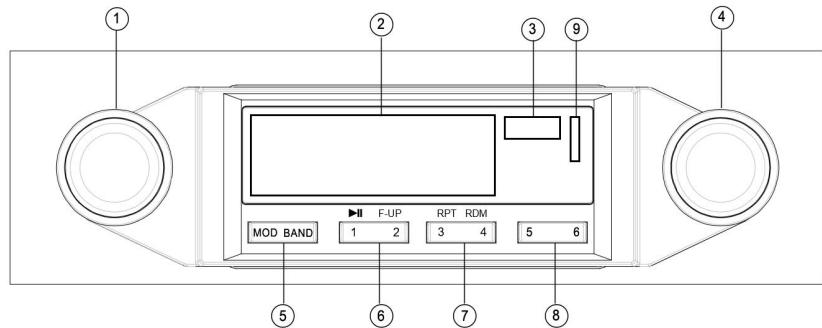
Connect the black ground wire terminal with a ring terminal to the metal chassis of your vehicle. A good ground is important for the optimum performance of your radio.

WIRING DIAGRAM



CONTROLS

KHE series



① VOLUME CONTROL PUSH ON/OFF ROTARY TO ADJUST THE VOLUME	⑥ CH1/CH2-MTL PRESET CHANNEL&PLAY/PAUSE/ FOLDER-UP BUTTON
② TIME/FREQUENCY DISPLAY	⑦ CH3/CH4 PRESET CHANNEL&
③ USB	RPT/RDM BUTTON
④ MANUAL UP-DOWN TUNING CONTROL PUSH AND HOLD FOR 2 SECONDS FOR BASS/TRIBLE/FADER/BALANCE	⑧ CH5/CH6 PRESET
⑤ AUX/BT/MINI SD CONTROL AND BAND CONT	⑨ MINI SD CARD

RECEIVER BASIC OPERATION

1. POWER

Press the volume shaft to turn on the unit. Do not hold the knob **just** simply press and release. Do the same procedure to turn off the unit.

2. AUDIO/VOLUME CONTROL

2.1 VOLUME CONTROL

The volume level can be adjusted at any time by rotating the audio level VOL knob as select mode has been initially defaulted at volume mode.

2.2 BASS CONTROL

A. Press the tune shaft and hold for 2 seconds, release then press until L display.

B. Rotate the Vol knob to adjust the bass effect.

2.3 TREBLE CONTROL

A. Press the tune shaft and hold 2 seconds, release then press until H display.

B. Rotate the VOL knob to adjust the treble effect.

2.4 BALANCE CONTROL

A. Press the tune shaft and hold for 2 seconds, release then press until L and R display..

B. Rotate the VOL knob to increase or decrease the sound level of left or right speaker.

2.5 FADER CONTROL

A. Press the tune shaft and hold for 2 seconds, release then press until R and F display..

B. Rotate the VOL knob to increase or decrease the sound level of front or rear speaker.

PROGRAMMING THE PRESET MEMORY

The KHE series features 6 AM and 6 FM station memory presets and it has a direct memory system by using only preset buttons.

1. Set the AM/FM BAND SELECTOR (④) in the FM position (one of FM band) and view the FM BAND INDICATOR on the LCD DISPLAY (②).
2. Select the station desired by using the MANUAL UP-DOWN TUNING CONTROL (④).
3. Depress one of 6 preset channel buttons and hold down until channel flashes two times, continue same procedure to set all 6 presets.

MINI SD CARD READER

1. Insert SD card into SD card reader slot.
2. The refer to USB operation on page 10 to operate SD card.

BLUE TOOTH

1. Select AUX/BT button until "BLUE" displays on screen.
2. Turn off Bluetooth option on device select "POR 1007BT" and let the unit and device quit.
3. Once paired the device will play through unit.

AUX. INPUT

- ⑤ Press the AUX button to change the unit to the AUXILIARY MODE.
- ⑤ AUX IN Jack on front panel or on back of the unit is for input of an AUXILIARY source.

Notes: Each channel is marked "Right" and "Left". Do not reverse the connections (AUX INPUT Jack is located on the rear of the unit).

DIGITAL DISPLAY

The KHE series features a multi-mode LIQUID CRYSTAL DIGITAL DISPLAY (②). It will perform as follows under the various operating conditions.

- ⑥ When the KHE series is switched OFF, and the ignition key is switched OFF, the internal circuitry will continue to keep the preset memory set.
- ⑥ When the KHE series is switched OFF, the backlight of the LED will not illuminate.
- ⑥ When the KHE series is turned ON, and in the radio mode, the display will indicate the radio.

RECEIVER SPECIAL FUNCTIONS

- ⑦ AUTOMATIC MONO/STEREO (BUILT-IN) & STEREO INDICATOR
The built-in Automatic Mono/Stereo (FMO-Frequency Modulation Optimizer) is used to improve stereo FM reception in weak signal areas without changing mode manually. When the FM decreases, and the noise and interference go up, the KHE series will change its mode to mono automatically. When the KHE series is tuned into FM stereo broadcasting, the stereo indicator "◎" will appear on the LCD.

TUNS/ SEEK

1. Rotate the tuner shaft clockwise to go up on frequency and counter-clockwise to go down on frequency.
2. Single press and release tuner shaft for seek mode, unit will store and next available station.

USB PLAYER BASIC OPERATION

- ⑨ Insert a USB into the USB port ,the USB will auto display the MP3 icon and play time will DIRECTION INDICATOR on the LCD DISPLAY(②).
- ⑨ In USB mode,press PL/PA button to choose play or pause.
- ⑨ Press F-UP button to select folder funtion.
- ⑨ In USB mode, press RPT button the LCD display RPT and play the current track repeatedly.
During RPT mode, press RPT button again to cancel RPT mode.
- ⑨ In USB mode, press RDM button the LCD display RDM and play the track in the current folder in random order.
During RDM mode, press RDM button again to cancel RDM mode.
- ⑨ Press T/F button the LCD will display the MP3 information and clock time.
- ⑨ Manual select track using the MANUAL UP-DOWN TUNING CONTROL(④), clockwise rotate to next track and counter-clockwise to the previous track.
- ⑨ To eject the USB, ejected from the USB port and the unit goes to the radio mode automatically

NOISE SUPPRESSION

ALL KHE systems are designed for maximum electrical noise rejection. However, in some installations electrical noise may affect the quality of sound production. The procedures described under NOISE SUPPRESSION-INSTALLATION are best applied even if no interference is present. If noise is present after installing the KHE series, identify the source of the noise using the description under SOURCES OF ELECTRICAL NOISE. To eliminate the noise, follow the procedures described under SOLUTIONS of the specific noise source.

NOISE ELIMINATION

- B Check all ground connection. If the KHE series is mounted on plastic, be sure there is a heavy gauge ground lead connecting the unit to a solid chassis

ground. Scrape paint away from painted surface to secure a good electrical ground.

- C. Check battery posts. If contacts are corroded or loose, clean and tighten both terminals.
- D. Check battery or add fluid.
- E. Check condition of spark plug and distributor leads. Worn or damaged leads will generate noise that can be very difficult to eliminate.
- F. Check installation of factory noise suppressor(s). Verify that the connections are solid. Refer to the vehicles service manual for noise suppressor location or allow a qualified mechanic to inspect the device(s) for you.
- G. (Optional) Some professional installers will install a simple L.C. noise filter even if there is no noise present in the system. This is a simple and relatively inexpensive device available at your nearest auto-sound dealer or electronic supply store. Most filters designed for car stereos carry a current rating of 5 AMPS. Follow the manufacturer's installation instructions. This filter is installed in the power line of the car stereo.

SOURCES OF ELECTRICAL NOISE

ALTERNATOR NOISE

A light-pitched whine present with the engine running. The pitch of the whine will vary as engine specifications vary. Alternator noise usually becomes more apparent with an electrical load to the system. Switching the headlights on usually accentuates the noise.

SOLUTIONS

- C. Install a L.C. noise filter (available from your auto-sound dealer or your nearby electronic or automotive supply store.) in the power line of the KHE series. This filter should be rated at 4 AMPS.
- D. Start the car's engine, turn on the light (to accentuate the noise), and turn on the KHE series. If noise is still present proceed to step 3.
- E. Install an alternator noise filter (available from your auto-sound dealer or your nearby electronic or automotive supply store). Follow manufacturer's installation instructions.

ANTENNA NOISE

A static crackle heard through the speakers, usually when the car is running, but sometimes present with the ignition off. If a crackling static is present, follow the steps outlined below to confirm the antenna is the cause of noise.

- C. Start the car engine.
- D. Turn on the KHE series.
- E. Adjust volume so that noise is audible.
- F. Reduce volume setting of the car stereo, but do not switch the unit off. If noise decreases, the signal is most likely being picked up by the car antenna. If the noise persists after following the steps listed below, proceed to IGNITION NOISE.

SOLUTIONS

- 4. Remove the nut securing the antenna to the fender or body of the car.

2. Remove any washers or spacers, remembering the way in which they were removed.
3. Scrape away rust or paint below the fender to insure a good electrical connection. Do not scrape the paint on the outside surface of the fender or you will invite rusting of the body metal.
4. Test the antenna lead for any breaks or shorts. Signs of crimping, kinking or fraying usually indicate damage to the cable. Replace the antenna or cable if necessary.

IGNITION NOISE

A popping or cracking noise heard through the speakers. The noise will vary as the engine RPM varies. The noise will only be present with the engine running.

ELIMINATION

1. Install an L.C. Filter Network in the power lead of the KHE series. The filter should be rated at 4 AMPS.
2. Inspect spark plug and distributor cable for signs of wear or damage. Replace as necessary using resistor cable only. Metal conductor ignition cables increase static interference.

NOTE: Do not use spark plug or distributor noise filter as these can create more problems than they solve. They decrease the quality of spark generated by the spark plugs and they may create more static than they eliminate.

ALTERNATOR NOISE

A popping heard when the light, turn indicators, windshield wipers, cigarette lighter, etc., are turned on. This indicates a vehicle wiring deficiency. Most occurrences are minor and present no risk to the stereo system other than the annoyance of the listener. However, severe cases may damage the speakers, minor occurrences can be remedied. Severe occurrences must be taken care of by a professional as they present a threat to not only the stereo system, but to the vehicle wiring itself.

ELIMINATION

1. Install an L.C. filter network in the power lead of the KHE series.
2. If the noise persists, consult a professional automotive service technician.

NOTICE: Repairs, warranty or non-warranty can only be accomplished by K&C Harrison INC. DO NOT RETURN product to other dealers or distributors. In the interest of time saving, please call our technicians if problems are questionable.

Radios and other products that are damaged in any way, disassembled, or with cut wiring are not covered by warranty. Minor operational troubles and incorrect wiring are often mistaken for a breakdown. Check the following points before having your unit repaired.

TROUBLESHOOTING

TROUBLE	CAUSE	SOLUTION
No radio sound	Improper power lead wire(red) connection Power fuse blown Speaker cord disconnected	Connect securely to plug circuit of battery. Replace with 5A fuse. Connect speaker cord securely
Left/Right channel sound reversed with stereo radio broadcasts	Left/Right channel output cord and speaker cords have been connected in reverse	Check color of cords reconnect correctly
Sound heard only through one speaker with radio broadcasts	Speaker cord disconnected Balance control set too far over to one side	Connect speaker cord securely Turn balance control to adjust left/right balance
Noise with radio reception	Antenna is not fully extended Unit improperly grounded	Pull out antenna to its full length and occasionally clean. Ground the earth lead(black) securely to car body or other metal part
Radio lights up-no sound	Orange power wire not hooked up to 12-volts Power fuse blown	Hook-up to constant power circuit Replace fuse

We want to satisfy customers! Should you have a problem, call us, or if you feel it appropriate, carefully ship product to us with detailed note regarding problem, and include copy of your sales receipt. For technical support, please contact us at (800)497-5294.

SPECIFICATIONS

FM Section

Tuner Type:	Phase locked loop	Synthesized	
Frequency	87.5-107.9 MHz	IF Frequency	10.7MHz
Image Rejection:	50dB	Sensitivity	2.6V
Quieting Sensitivity	4uV	S/N Ratio	60dB
T.H.D	1%	Capture Ratio	1.5dB
IF Rejection	60dB	Separation	35Db

AM Section

Frequency Range	530-1710KHz	IF Frequency	455KHz
S/N Ratio	50dB	Sensitivity	20uV
Selectivity:	25Db		

Audio section

Output/Channel	50 watt X 4 channel	System power:	200 watts
Impedance:	4 ohm per speaker	THD:.5	0.5%
Response@ -3dB	40Hz - 18KHz		

General

Nosepiece:	80mm(3.5")W X 35mm(1.5")H X 30 mm(1.25)D
Chassis:	198mm W X 57mm H X 125 mm D
Memory Fuse:	IA
Stand by Current	0.005A(5mA)

Specifications subject to be changed for technical improvement

SETTING THE TIME

The following procedure may be performed on the KHE series to set the time. With the unit on, depress the TIME RECALL BUTTON (⑧) so that the time is displayed, then release the button and then immediately depress the button again and hold it two seconds then the time is flash. Rotate the MANUAL TUNING CONTROL KNOB (④) clockwise to set the minutes and counter-clockwise to set the hours.

CIRCUIT DIAGRAM

FCC Statement:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.