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BMW of North America, Inc.  
Montvale, New Jersey 07645

P/N 65 141 467 293 (Manual)  
280-5145-03

# Anti-Theft Radio Remote Control Unit

## Owner's Manual





**BMW of North America, Inc.**

**Dear BMW Owner :**

Congratulations on your purchase of one of the finest motorcycles manufactured today. We at BMW of North America, Inc. are confident that you will experience many pleasurable miles in the years to come.

To enhance these miles and your listening pleasure, your BMW is equipped with one of the finest motorcycle sound systems available today. Its design is evolutionary and its technology advanced.

This sound system offers many features not commonly found in the average motorcycle radio: such as unique electronic anti-theft provisions. Therefore, we suggest that you study this manual thoroughly, in order to enjoy them all.

Please pay special attention to section 1, which provides instructions for safe, courteous operation and handling of your new BMW Anti-Theft Radio.



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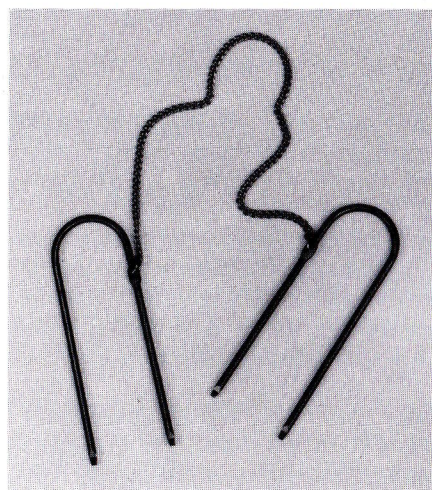
## Caution in Operation and Handling

- Always adjust the controls prior to beginning your ride so that both hands can be kept on the handlebars at all times. A remote control, located on the left handlebar control area, facilitates volume and channel selection while riding.
- Be courteous toward others. Be aware that the volume, while driving in city areas, may be disturbing to others and should be kept to a minimum.
- Prior to turning on ignition, ensure that radio controls are set at a low volume so as not to cause harm to hearing or startle others.
- Changing volume from time to time will help you stay alert.
- Protect the radio from excess moisture and dirt. Always remove the radio prior to washing or winter storage. Never clean or dry radio with compressed air or heat gun/hair dryer.
- If the radio or cassette are operated with the engine stopped for an extended period of time, the battery will discharge and motorcycle may not restart. Increased volume of radio or cassette will increase power consumption. Reduce the volume as far as is practical when listening with motorcycle stopped for extended periods.
- Always turn off the ignition prior to removing radio from motorcycle. Ensure that pin terminal connections on radio and mounting are protected from damage or contamination when radio is removed.
- When radio is released from motorcycle with special tools provided, grasp radio with your hands when lifting away from motorcycle. Do not use the special tools to carry the radio.
- The use of helmet speaker systems or headphones by a motorcycle operator is unlawful in certain states. Please check State and Local regulations prior to use where you live or plan to travel.



## The Surest Protection: Removing Your Radio

Since there is no foolproof way to prevent a determined thief from breaking into your motorcycle, the most effective deterrent is to remove the incentive to do so: Nobody can take something that is not there to be stolen. That is why your BMW AM/FM stereo cassette/receiver has been designed on a removable chassis.



Simply insert the special tools provided into the holes on both sides of the cassette/receiver faceplate until they lock in place. Withdraw the unit from the motorcycle. Grasp the radio with your hands when lifting away from motorcycle. Do not use the special tools to carry the radio.



It takes just a few seconds and presents would-be thieves with an empty space instead of a valuable target. You can either take the unit with you or store it in your motorcycle saddlebag.

To reinstall your radio, just slide it back into position. Gently apply pressure between the two removal holes on each side of the unit simultaneously until it locks into place. There are no wires to worry about and nothing for you to connect.

### ■ When the radio is removed

It will retain any preset stations in its memory for approximately 30 days.

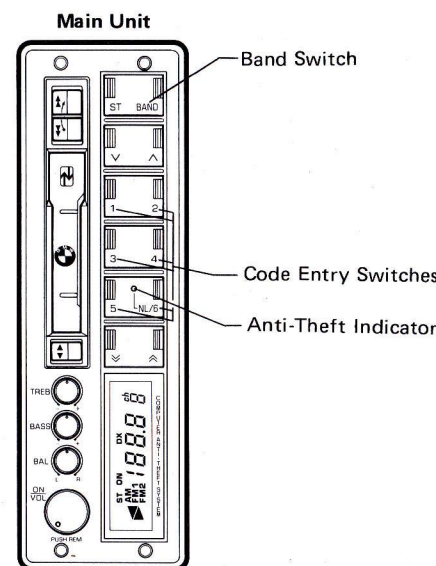
## Using The Computer Anti-Theft Electronic Lock-Out Code System

The radio will be rendered inoperative if it is removed or if the radio power is disconnected during servicing or for any other reason. The only way to make your radio work again is by entering a special four digit electronic lock-out code which only you know.

Entering your anti-theft code is easy. After reinstalling the radio, simply:

1. Turn on the ignition.
2. Turn on the radio.
3. Depress the appropriately numbered preset buttons according to your code.

After the last code number is entered the radio will operate. **If you make a mistake while entering the code, press and hold the band (BAND) switch until the code numbers disappear from the display. Then enter the correct code.**



In your storage compartment, you will find an Owner Identification Card attached to a card carrier on which your computer anti-theft system code and other important information is recorded. Your card also explains step-by-step code re-entry procedures previously outlined.

When you have transferred the owner identification information from your card carrier to your card, place the card in your wallet. Do not leave it in your storage compartment where it can fall prey to vandals. File the card carrier with your other important documents, where it will not be available to anyone except you.

If you look at your card you will see that your Radio Part Number has already been recorded on your Owner Identification Card.

### Be sure to record your ...

- Radio serial number
- Anti-theft lock-out code
- Vehicle identification number
- Theft I.D. number (stamped in chassis)

... onto your card before placing it in your wallet or other safe place. If you lose your Owner Identification Card, contact your BMW dealer for replacement.

### ■ Anti-theft indicator

To warn that your radio has a computer anti-theft system the NL indicator flashes when radio is turned off.

- A) To set indicator on:
1. Turn off the radio.
  2. Press the BAND switch.
- B) To clear the indicator:
1. Turn off the radio.
  2. Press and hold the BAND switch until the light goes out.



## Convenience Features

### ■ Advanced FM Circuit Design

Incorporates an automatic distance/local circuit (Keyed Automatic Gain Control) that automatically adjusts FM tuner sensitivity for ideal reception based on signal strength. Also, a dual-gate Field Effect Transistor/Balanced Mixer reduces interference from strong adjacent signals. A Signal Actuated Stereo Control (SASC) circuit reduces noise and resists multipath interference, while a special noise cancelling circuit blocks strong noise impulses received through the antenna. It all adds up to clear, clean FM reception under virtually any operating conditions.

### ■ Cassette Head Release System

Protects tape and tape player from damage by automatically withdrawing the head from the tape when power is turned off.

### ■ Cassette Auto Reverse, Automatic Program Control

Cassette will automatically reverse at the end of tape and can be manually reversed at any point during play.

### ■ Night Illumination

All switches are fully illuminated for night viewing.

### ■ Handling Precautions

Protect the unit from moisture, high ambient temperature and humidity. Please shut the cover to reduce risks of water damage. Always remove radio prior to washing motorcycle. Wipe the unit with a soft dry cloth for cleaning. In cases of severe contamination, use some cleaning alcohol. Never use benzine, solvent or the like. Never try to dry radio with compressed air or hair dryers/heat gun.

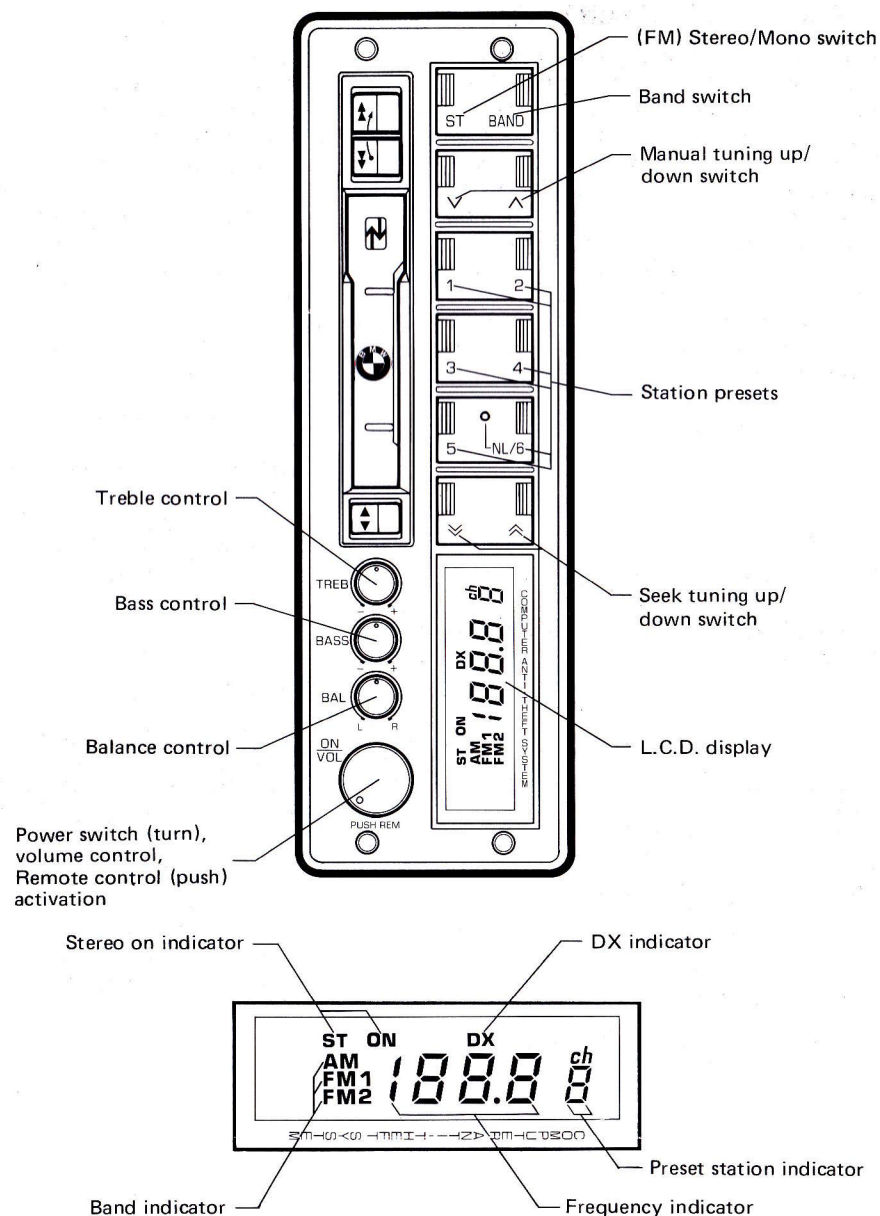
**Warning:** The use of helmet speaker systems or headphones by a motorcycle operator is unlawful in certain states. Please check State and Local regulations prior to use where you live or where you plan to travel.

### ■ Headphones

Only use headphones with a 16–32Ω impedance 50 mW Max. current when the optional headphone system is installed.

**Warning:** Prior to turning on ignition, insure that radio controls are set at a low volume so as not to cause harm to hearing or startle others.

## AM/FM Tuner Controls



# Radio Operation

## ■ Power/Volume Control

Rotate the power/volume knob clockwise to turn on the radio. Rotating the knob more will increase the volume.

## ■ Balance

Depress the balance knob and it will spring outward so that the balance can be controlled. Rotate the knob clockwise from the center click-stop position to emphasize the sound to the right speaker and counter-clockwise to emphasize the sound to the left speaker. After the adjustment is made, push the knob back into its original position.

## ■ Treble

Depress the treble knob and it will spring outward so that the treble can be controlled. Rotate the knob clockwise from the center click-stop position to increase the treble. Turn it counter-clockwise to decrease the treble. After the adjustment is made, push the knob back into its original position.

## ■ Bass

Depress the bass knob and it will spring outward so that the bass can be controlled. Rotate the knob clockwise from the center click-stop position to increase the bass. Turn it counter-clockwise to decrease the bass. After the adjustment is made, push the knob back into its original position.

## ■ Stereo Indicator

Whenever the radio is receiving a stereo signal, the stereo (ST) indicator will illuminate in the frequency display.

## ■ Manual Tuning

Manual tuning is accomplished by pressing the  $\wedge$  or  $\vee$  end of the tuning switch. The  $\vee$  position lowers the frequency. The  $\wedge$  position raises the frequency.

## ■ Seek Tuning

Seek tuning is accomplished by pressing the  $\wedge$  or  $\vee$  end of the seek tuning switch. Pressing the  $\wedge$  will automatically seek out the next higher clear station. Use the  $\vee$  to seek out the next lower clear station.

**Distant seek tuning is accomplished by pressing either seek tune switch twice. In this case only distant clear stations will be received.**

## ■ Station Presets

You can preset up to 18 stations — six on each of the three indicated bands. Once you know which stations you will enjoy listening to regularly, you can use the preset function to summon them instantly.

First use the BAND switch to select the AM, FM1 or FM2 band. Note that FM1 and FM2 both represent the regular FM band. The duplicate listing merely allows you to store six FM stations on one band and six different FM stations on the other.

Using the Tuning switch, select the first station to be preset. Generally, this will either be the station you listen to most often or the first station on the dial that you listen to frequently. Use whatever sequence is easy for you to remember. To enter this station in memory, depress

and hold the No. 1 memory preset switch. Ch(annel) 1 will illuminate on the tuning display. While this switch is held, you will hear the volume decrease and then return to its original level, release the switch and that station is memorized. Tune to the next station you want memorized and repeat the procedure on the next channel switch. To call up a memorized station, simply tap the appropriately numbered memory preset.

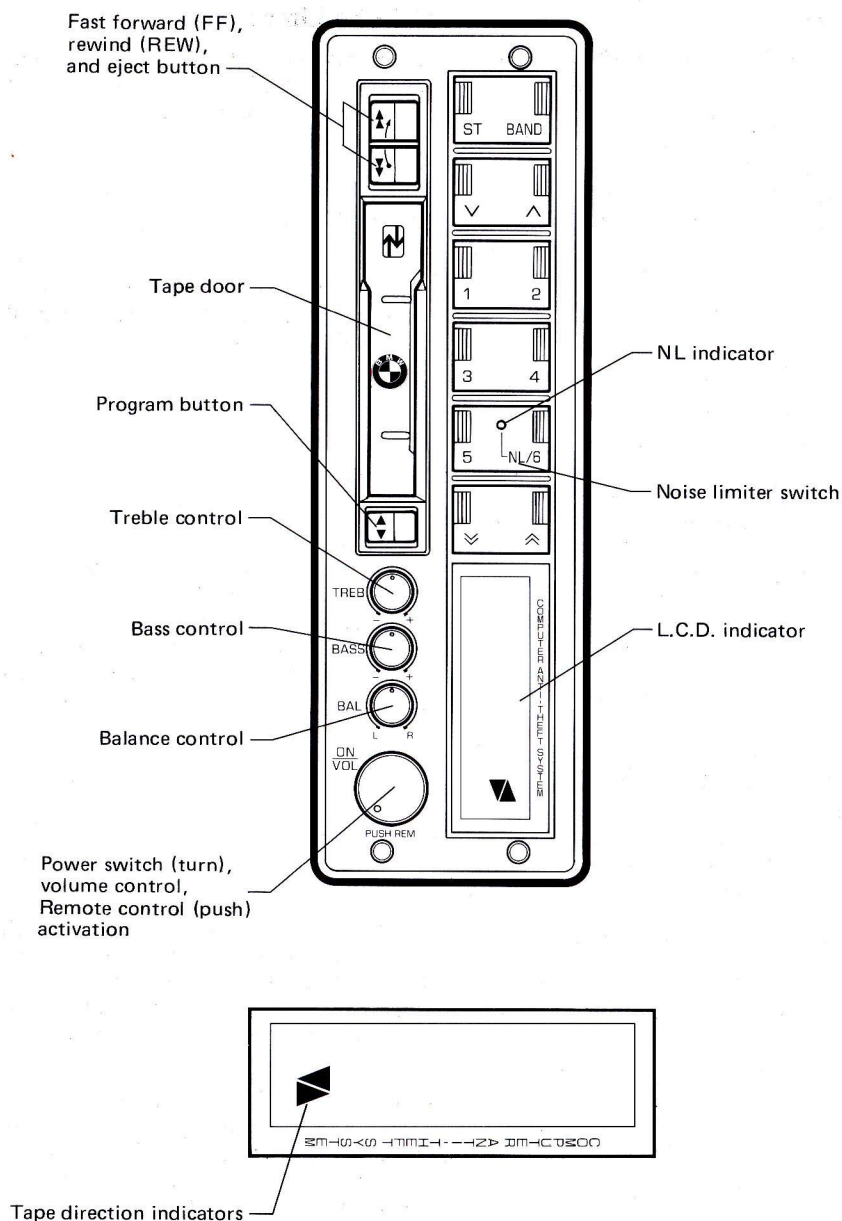
## ■ Stereo

This radio is equipped with a mono/stereo (ST) switch. This switch can be used to override the stereo circuit in the tuner to produce a monaural sound. This is useful when listening to a talk show or news broadcast where it will sound better without the stereo effect. Simply depress the switch and the illuminated (ST) will disappear in the frequency display. You will be listening to a monaural sound.

**Warning:** Always adjust controls prior to beginning your ride so that both hands can be kept on the handlebars at all times.



## Cassette Controls



## Cassette Operation

### ■ To Start

Turn on the Power switch to activate the unit, and the radio will begin playing. Insert a cassette — desired side left and the exposed tape side of the cassette forward. The tape will begin playing, and the appropriate tape direction indicator will light. (▲ = forward play, ▼▲ = reverse.) Next, adjust volume with the volume knob.

### ■ Cassette Programming

The tape player features Auto Reverse, which means the second side of the cassette will automatically be played when the first side is finished. But, if you decide you'd like to listen to Side B midway through side A, you can switch instantly simply by pressing the Tape Program switch ▲.

### ■ Fast Forward or Rewind

Fast forward or rewind is accomplished by pressing the ▲ or ▼ switch. It is not necessary to hold the switch while the tape is forwarding or rewinding. The tape will wind at a high speed in the direction the arrows are pointed. Check tape direction indicator before pressing FF or REW to verify tape direction.

To release the cassette from the fast forward or rewinding mode, partially depress the opposite function. Example: If the cassette is rewinding, depress fast forward partially to release.

If the tape is in the FF or REW mode and the Program switch is pressed, the tape will stop and begin play in the opposite direction.

### ■ Noise Limiter (NL)

When playing a tape press the (NL) switch, the LED will illuminate. This will reduce tape hiss noise.

### ■ Head Release System

If the power is turned off while the tape is playing, the tape head will automatically release. When the power is turned on the tape will begin normal play.

### ■ Eject

When you're finished listening to a tape, simply press both the fast forward and rewind switches at the same time (↵). The cassette will be released for retrieval from the tape slot, and the radio will resume playing the most recently tuned station. To eject a cassette after the power has been turned off, depress the Eject switch.

### ■ Routine Maintenance

To perform at its peak, your tape player requires periodic cleaning and demagnetization (elimination of the magnetic field that gradually builds up around the playback head). Of the two tasks, cleaning is the most important. Dulled high frequencies will result if it is not carried out regularly.

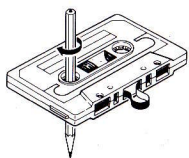
Cleaning should be performed after every eight to ten hours of playing time. We do not recommend the use of a cotton swab. The BMW head cleaner kit, available from all BMW dealers, will

provide cleaning and promote trouble — free operation. Demagnetizing should be carried out every 50 to 100 hours of playing time, using a quality head demagnetizer (available from most car stereo and audio stores.)

### ■ Handling Tips:

A motorcycle by definition is a poor location to store cassette tapes because the temperature in most storage compartments can become extreme, damaging the tapes. Usually the cartridge becomes warped which results in irregular tape speed or jamming. Pay special attention to tape cartridge quality.

1. Store cassettes in their plastic cases when not in use.
2. Do not leave cassettes in your motorcycle particularly during warm weather.
3. Take up any slack in the cassette before playing.

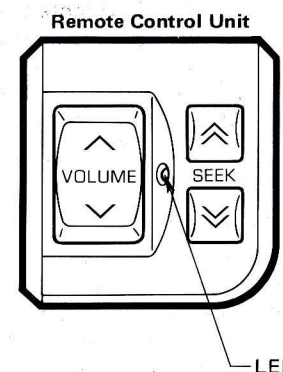
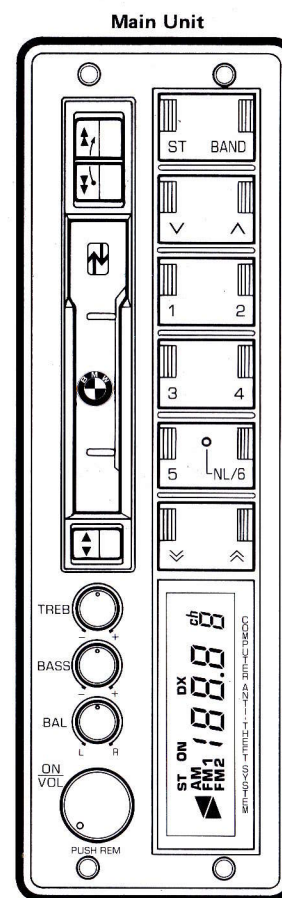


4. Do not play C-120 (or longer) cassettes. The tape in these cassettes is very thin and prone to breakage.

**Notice:** Damage to cassette tapes caused by environmental influences is the largest cause of cassette player malfunction. Exercise caution when storing/transporting your cassette tapes in your motorcycle.

**Warning:** Do not change cassettes or channel while the motorcycle is in motion. Always keep both hands on the handlebars while the motorcycle is in motion.

## Remote Control Unit



### ■ Seek Tuning

Seek tuning is accomplished by pressing the  $\wedge$  or  $\vee$  end of the seek tuning switch. Pressing the  $\wedge$  will automatically seek out the next higher clear station. Use the  $\vee$  to seek out the next lower clear station.

**Distant seek tuning is accomplished by pressing either seek tune switch twice. In this case only distant clear stations will be received.**

### ■ Volume Control

To increase the volume, press and hold the volume switch  $\wedge$  until you reach the desired loudness.

To decrease the volume, press and hold the volume switch  $\vee$  until you reach the desired loudness.

### ■ Remote Control Unit

To activate the remote control unit, press the ON/Volume switch on the radio. This will deactivate the rotary volume control of the radio and a LED will illuminate on the remote control unit. At this time the remote control unit will activate volume and seek tuning.

**Warning:** When activating or deactivating remote control unit, ensure that volume is lowered as Radio and Remote control unit will retain their previously adjusted volume levels.



## Broadcast Reception Performance Characteristics

FM reception poses particularly challenging problems because FM radio waves are transmitted at very high frequencies in straight lines like light waves. Any number of obstacles can and do get in the way: Tall buildings, hills, etc. Such obstacles can cause "shadows" with momentary loss of signal.

In addition, FM signals can also be reflected by obstruction. When this happens, direct and reflected signals from the same station can arrive at the motorcycle's antenna simultaneously. The noise this causes is known as multipath interference.

The tuner in this unit was designed to minimize interference and other common reception problems.

Under weak signal conditions, the Signal Actuated Stereo Control (SASC) circuit takes over switching to mono reception when circumstances warrant. An automatic distance/local reception circuit (Keyed Automatic Gain Control) provides full sensitivity, while a dualgate FET RF amplifier provides a high signal-to-noise ratio.

Optimum selectivity virtually eliminates interference from strong nearby stations, and a special FM noise canceller works to suppress ignition noise and other pulse interference. Wide dynamic range

avoids overload distortion and the unpleasant noise it causes.

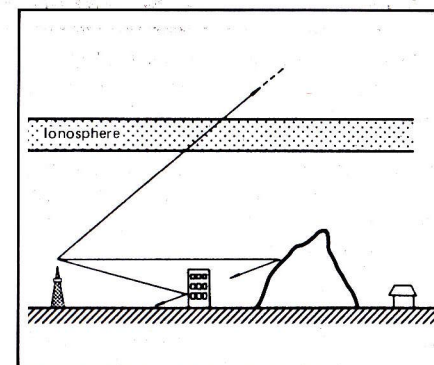
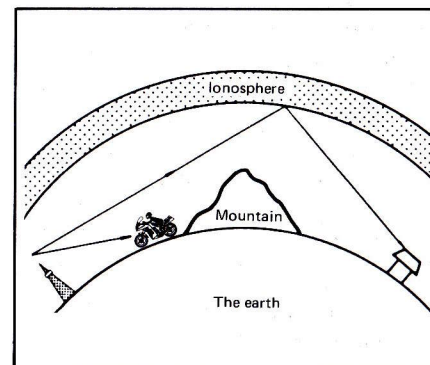
Nor has AM reception been neglected in the design of this tuner. A special circuit feature permits only the strongest, clearest stations to get through when broadcast conditions are less than optimum. It is one more refinement that accounts for the superb performance of the tuner and adds to your listening enjoyment.

### ■ AM and FM

Both AM and FM reception have advantages and disadvantages resulting from their differing properties. AM waves can reach longer distances than FM waves. They can bend around buildings or mountains and bounce off the ionosphere. This means that an AM service area is very wide.

FM waves, on the other hand, have much higher frequencies and shorter wave lengths. Unlike AM waves, they cannot travel around corners. They reflect off solid objects in their path, which limit the areas they can reach. An average FM signal can be heard only within a 25-mile to 35-mile radius of a transmitter.

	Arrival Distance	Sound Quality	Frequency
AM	60 — 120 miles	Fair	540 — 1,610 kHz
FM	25 — 30 miles	Good	88.1 — 107.9 MHz

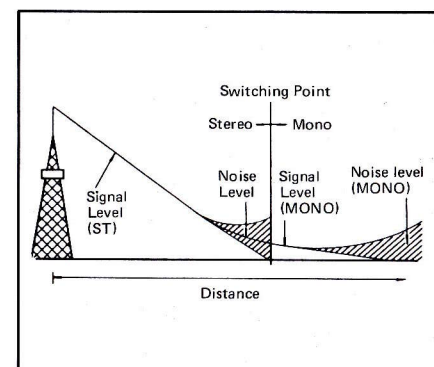
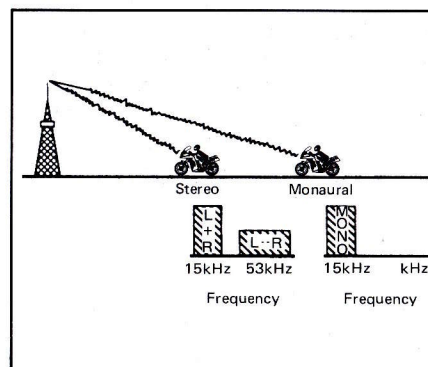


### ■ Stereo and Monaural

Stereo and Monaural FM reception characteristics are also different. Monaural transmission utilizes the range of audio frequencies audible to the human ear. Stereo transmission relies on a range of frequencies that extend beyond human hearing limits on both the high and low ends. This broadened frequency range requires more power,

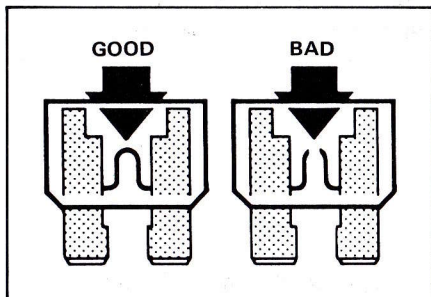
thereby reducing the range of a station broadcasting in stereo.

In weak signal areas — called fringe areas — there will be increased noise on stereo broadcasts. When signal strength diminishes significantly in the stereo mode, the radio will automatically switch to monaural transmission.



## Fuse Replacement

If your radio will not activate when you turn it on a fuse may have blown. Check the motorcycle fuse first. (15 amp blade) fuse, location #5 (K-Model) in the motorcycle fuse block. Part number 61 13 1 372 626).



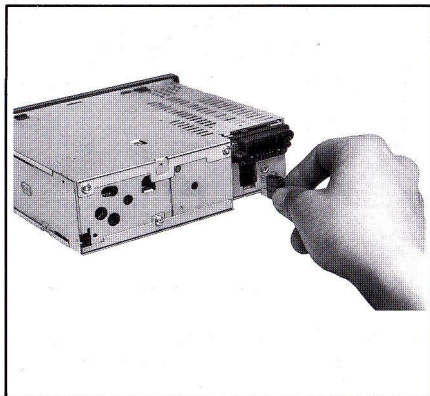
If the fuses are good, check the radio fuse.

See directions below

1. Insert the radio removal tools into the four holes in the face of the radio, until they lock into place.
2. Slide the unit out and locate the single blade type fuse at the rear of the radio.

3. Check and replace the fuse as necessary using a fuse removal tool.

7.5 amp (brown) — radio power fuse

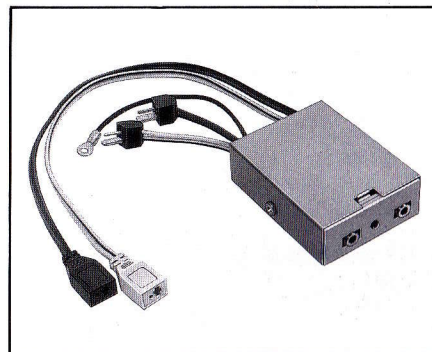


Never replace a "blown" fuse with a fuse of a higher rating.

4. Reinstall the radio by sliding it back into place. Gently apply pressure between the two removal holes on each side of the unit simultaneously to "lock" the radio into the radio slide mounting bracket.

## Optional Accessories

### ■ Headphone Adaptor



A headphone adaptor kit is available from your BMW dealer under P/N 95 65 1 000 111, providing both driver and passenger jacks. Designed for use with headphones with a 16 to 32  $\Omega$  impedance, 50 mW maximum current.

The jack labeled passenger will not interrupt audio to the fairing speakers. The jack labeled driver will interrupt audio to the fairing speakers but allow the passenger jack to also operate.

**Warning:** The use of helmet speaker systems or headphones by a motorcycle operator is unlawful in certain states. Please check State and Local regulations prior to use where you live or where you plan to travel.

### ■ Tape Head Cleaner Kit



To keep the tape section of your radio operating at its peak a tape head cleaner kit is available from your BMW dealer under P/N 88 88 1 600 116.



# Specifications

## ■ AM/FM Cassette Specification

### General

Power supply voltage ..... 14.4V (10.8 to 15.6V allowable)  
Current consumption ..... Less than 6 Amps

### Audio Section

\* Tone action .....  $\pm 8$  dB at 100 Hz  
.....  $\pm 5$  dB at 10 kHz  
Power output ..... 20 x 2 Watts at maximum power output

### FM Section

Frequency range ..... 87.9 to 107.9 MHz  
\* Usable sensitivity ..... 13 dBf  
\* 50 dB quieting sensitivity ..... 18 dBf  
\* Capture ratio ..... 1.5 dB  
\* Alternate channel selectivity ..... 70 dB  
\* Stereo separation ..... 35 dB at 1 kHz  
\* Frequency response ..... 50 to 15,000 Hz  $\pm 3$  dB

### AM Section

Frequency range ..... 530 to 1,620 kHz  
Usable sensitivity (20 dB S/N) ..... 28  $\mu$ V

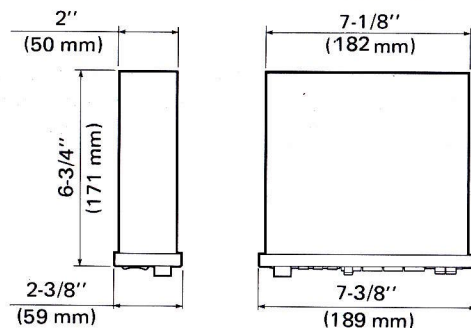
### Tape Section

Tape speed ..... 4.75 cm/s (1-7/8 ips)  
\* WOW & Flutter ..... 0.13% WRMS  
\* Signal to noise ratio  
Standard tape (120  $\mu$ s) ..... 53 dB  
\* Frequency response ..... 50 to 12,500 Hz  $\pm 3$  dB  
\* Stereo separation ..... 42 dB

### Weight

AM/FM Cassette ..... 4.62 lbs (2.1 kg)

### Dimensions

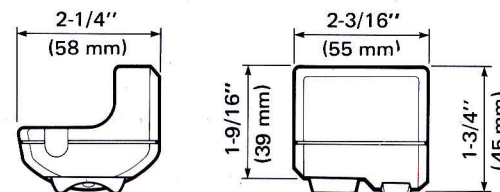


Specifications subject to design change without notice.

\* Marks comply with AD-HOC committee standards

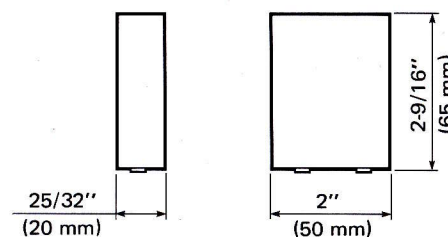
## ■ Remote Control Unit

### Dimensions



## ■ Optional Headphone Control Unit

Power output ..... 50 mW x 2 max.  
Dimensions ..... Power output at 32  $\Omega$

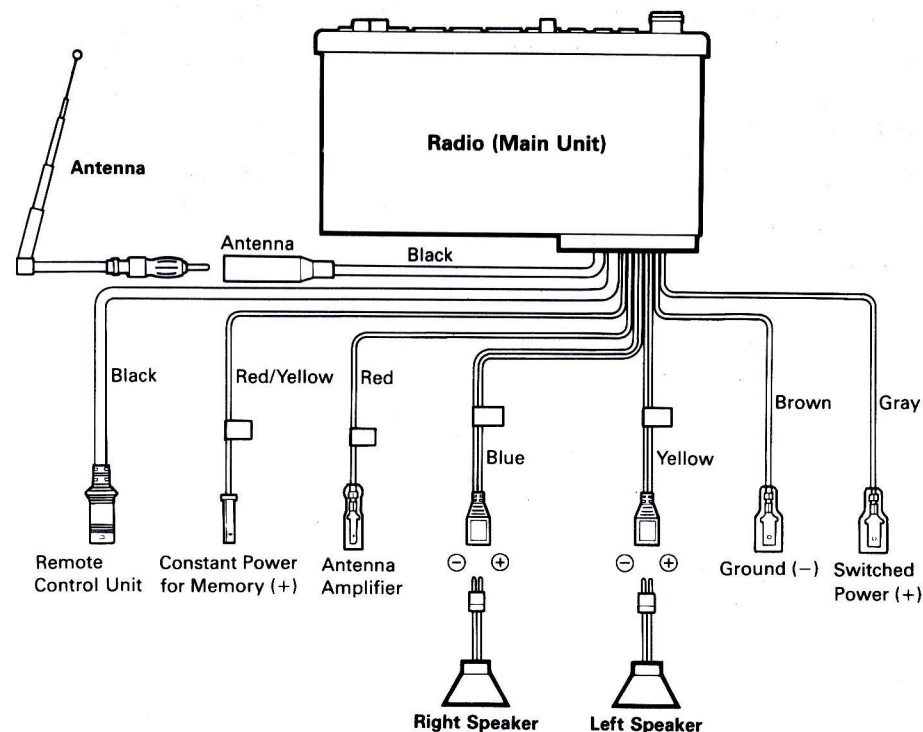


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## Part Number List

Description	Part Number			
AM/FM Stereo Cassette Radio Kit . . . . .	65	101	467	286
Warranty Exchange Radio Chassis . . . . .	65	101	467	287
Radio Slide Mounting Bracket . . . . .	65	141	467	288
Radio Removal Tools . . . . .	65	141	467	289
Radio Power/Volume, Balance, Bass and Treble Knobs (4) . . . . .	65	141	467	290
Radio Tape/Direction, Fast Forward, Rewind Knobs (3) . . . . .	65	141	467	291
Radio Fuse 7.5 Amp . . . . .	65	141	467	292
Radio Owners Manual . . . . .	65	141	467	293
Remote Control Unit . . . . .	65	141	467	295
Headphone Adaptor Kit . . . . .	65	141	467	296
Windscreen Sticker . . . . .	65	141	467	297
Storage Cover Sticker . . . . .	65	141	467	298
ELO Card Carrier . . . . .	65	141	467	299
ELO Cards (2) . . . . .	65	141	467	300
Head Cleaner Kit . . . . .	65	141	467	301

## Radio Wiring Diagram (K-Model Only)





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## Memo

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