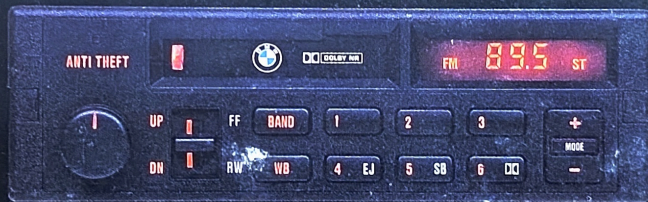


BMW ANTI-THEFT CD-READY RADIO



OWNER'S MANUAL

■ PRESET STATION FREQUENCIES

Record the frequencies of your favorite stations below. In the event you lose push-button station

AM

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

NOTE: Interruption of power to your radio will disrupt the operation of its electronic functions. If the battery is disconnected, push-button station memory will be lost. Enter your anti-theft code, and reprogram the

memory, you'll have the frequencies you want at your fingertips for easy reprogramming.

FM

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

memory when power is restored. Low battery voltage will cause failure in the seek tuning operation. It will operate properly again when power is restored.



Dear BMW Owner:

The sound system in your BMW is one of the finest available for automobiles today. Its advanced technology delivers unsurpassed sound and includes many features not found in most car audio systems.

One of these is an electronic anti-theft feature, which is easy to use and will help protect your radio from falling prey to thieves.

We encourage you to take the time to read this manual—preferably in your car when it's in a stationary position—so that you can enjoy your sound system to the fullest.

BMW OF NORTH AMERICA, INC.

■ PROTECT YOUR RADIO FROM THEFT

Your BMW radio will not operate once it is removed from the console, making it virtually useless to a thief. The only way to restore power to the radio once it is removed is to enter a five-digit security code unique to your radio. The anti-theft features of your radio operate as follows:

1. When the ignition key is removed, the red anti-theft LED indicator will flash continuously. ■
2. If any buttons on the radio are touched after the key is removed, a warning tone will sound for five minutes or until the ignition is turned on. The anti-theft indicator will also flash. ■
3. A dead battery, electrical repairs, radio removal or reduction of voltage supply to less than a preset value will render the radio inoperable until voltage is restored and the security code is entered. The radio must be turned on before the code is entered. The word "code" will show on the display.

4. To enter your security code, which can be found on the two cards supplied to you by BMW, turn the radio on and use the appropriately numbered radio push-button selectors.

If the correct code is not entered in three successive tries, the radio will not accept another entry until it has been left on for one hour. ■

Important: If you make a mistake in entering your code, complete the entire sequence before entering the correct code. For example, if your code is 12345, and you mistakenly enter 125, finish the five-digit sequence (45) to complete that entry. The radio will not operate, and the word "code" will again appear on the display. Enter the correct code at this time.

Exception: If you hear a beep when entering your code, stop immediately! Begin entering the code again, starting with the first digit.

5. Do not leave the code cards in your car. Place them in your wallet or with your vehicle title papers for security. If you lose the code cards, contact the nearest BMW dealer. He will get your code from BMW. There may be a charge for removing the radio to ascertain its chassis number.



6. If radio or electrical repairs become necessary, please give the repair facility your radio code number. If you do not, only authorized BMW personnel can obtain the code from BMW.

WARNING: FOR YOUR PROTECTION, CODES WILL **NOT** BE GIVEN OUT TO ANYONE—UNDER ANY CIRCUMSTANCES—EXCEPT AUTHORIZED BMW DEALER PERSONNEL AFTER PROOF OF VEHICLE OWNERSHIP AND PROPER IDENTIFICATION IS ESTABLISHED.

■ FEATURE DESCRIPTIONS

- Anti-theft microprocessor system.
- Digital phase-locked loop frequency synthesizer automatically tunes and locks onto the broadcast frequency indicated on the frequency display.
- Automatic tape equalization (70 μ sec. or 120 μ sec.).
- Liquid crystal display.
- Separate bass, treble, fader and balance control.
- Seek tuning for radio.
- Up-scan tuning for radio.
- Programmable memory for 6 FM and 6 AM stations.
- Weather band with seek tuning capability.
- Ignition-key-off pause mode for tapes.
- Maintenance indication for tape deck (every 15 hours of use).
- Dual function buttons for radio preset and tape operation.

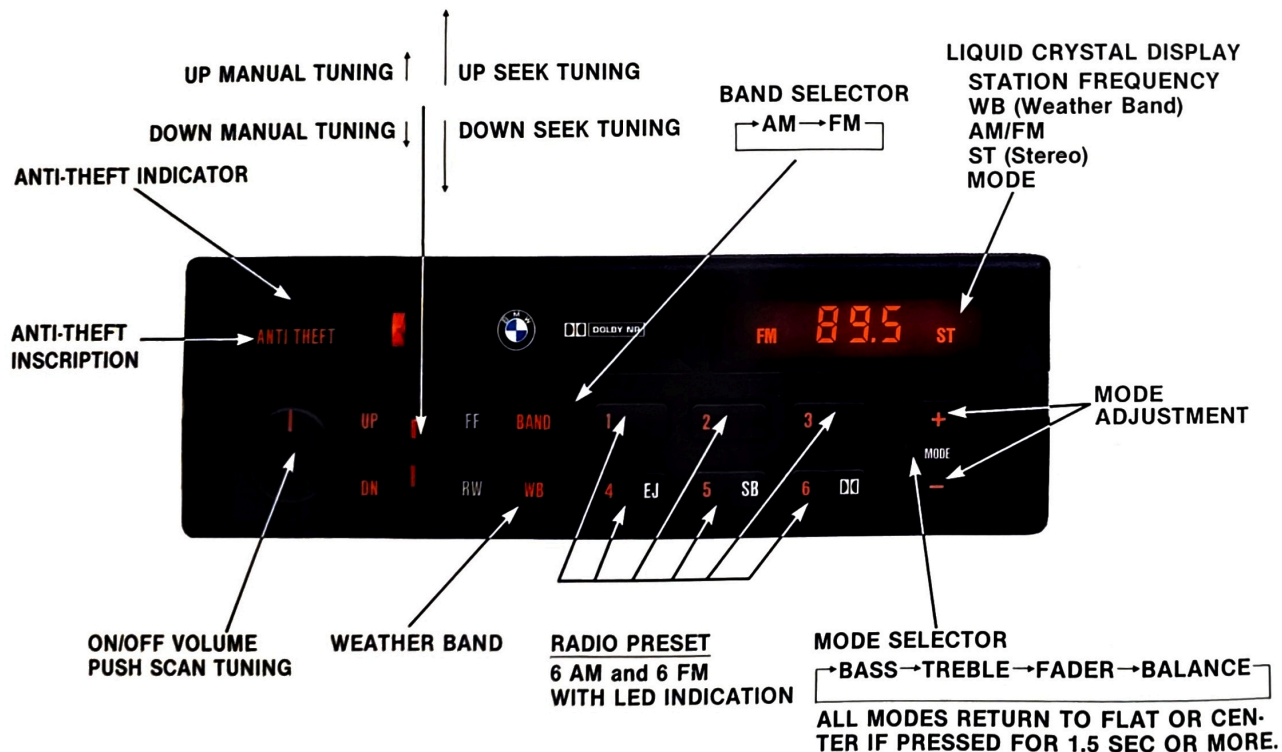
- Electronic tuning.
- Power loading/soft eject.
- Automatic local/distance attenuation.
- Dolby® * noise reduction for tape.
- Auto reverse at end of tape.
- Tape skip blank.
- Built-in automatic tape slack canceller (ATSC).
- Rotating tape head.
- Multi-play Compact Disc player capability.

*Dolby® is a registered trademark of Dolby Laboratories, Inc.

OPTION CD CHANGER FEATURE DESCRIPTIONS

- CD changer plays 6 discs in succession.
- Magazines are compatible with certain home-use Multi-play Compact Disc players.
- Automatic detection of disc in magazine.
- Direct disc selection.
- Double oversampling digital filter circuit.
- Music scan.
- Up and down track change.

■ RADIO MODE CONTROL LOCATION AND OPERATION



■ OPERATING THE RADIO

AM/FM

Press the BAND button and AM or FM will appear on the display indicating which band is being received. When AM or FM is chosen, the currently tuned frequency is also displayed. Press the button to change from band to band.

WEATHER BAND (WB) AUTOMATIC FREQUENCY SELECTION

When the WB button is pressed, regardless of what source you are currently listening to, weather band seek tuning begins automatically and finds the strongest broadcast frequency. If the broadcast frequency in your area is too weak, or nonexistent, a beep will sound after the WB frequencies have been run through three times. If you press the WB button again, the radio returns to the previous source.

MANUAL/SEEK TUNING

The TUNING LEVER is used for both manual and seek tuning. For manual tuning, raise or lower the lever one step—up for higher frequencies, down for lower frequencies. For seek tuning, raise or lower the lever as far as it will go. The unit will automatically tune and lock onto the next higher or lower receivable broadcast frequency.

STEREO

The ST indicator will light up on the display whenever a stereo station is received. The indicator will flash when signal strength diminishes.

AUTOMATIC LOCAL/DISTANCE SWITCHING

New electronic circuitry automatically selects the local/distance mode for best reception, eliminating the need for manual switching.



SCAN TUNING

Signal scan tuning allows you to tune into each medium-to-strong frequency pausing seven seconds at each. Push the ON/OFF button once to begin tuning up scale, and press it again during a pause to stop the scanning.



FM RECEPTION

Signal reflections or blockages caused by hills or tall buildings may cause hissing and fluttering noises in FM reception. FM signal strength diminishes beyond 25 miles from the transmitter.

PRESET STATION INDICATORS WITH LED

Each PRESET button has a built-in LED. When a PRESET button is pushed, the LED will change from orange to green, indicating selection of that preset frequency.



PROGRAMMING/REPROGRAMMING PRESET STATIONS

Tune in the desired radio station. Then push a PRESET selection button for 1.5 seconds. When you hear a beep, the frequency has been memorized. Repeat this procedure for the remaining preset station selectors on the AM and FM bands.

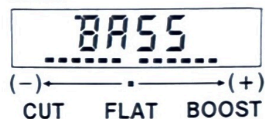
NOTE: *The radio programming controls have dual functions. Each button can be set to one AM and one FM station.*

BASS, TREBLE, FADER AND BALANCE CONTROL

Each time the MODE button is pressed, control of bass, treble, fader, or balance is selected in turn. The selected mode is shown on the display and can be adjusted by the **+** and **-** buttons. About five seconds after adjustment, the display returns to its previous state.

When the MODE button is pressed continuously for more than 1.5 seconds, the level of each mode returns to flat or center. At this time a beep is sounded and "FLAT" is displayed on the display.

BASS



FADER



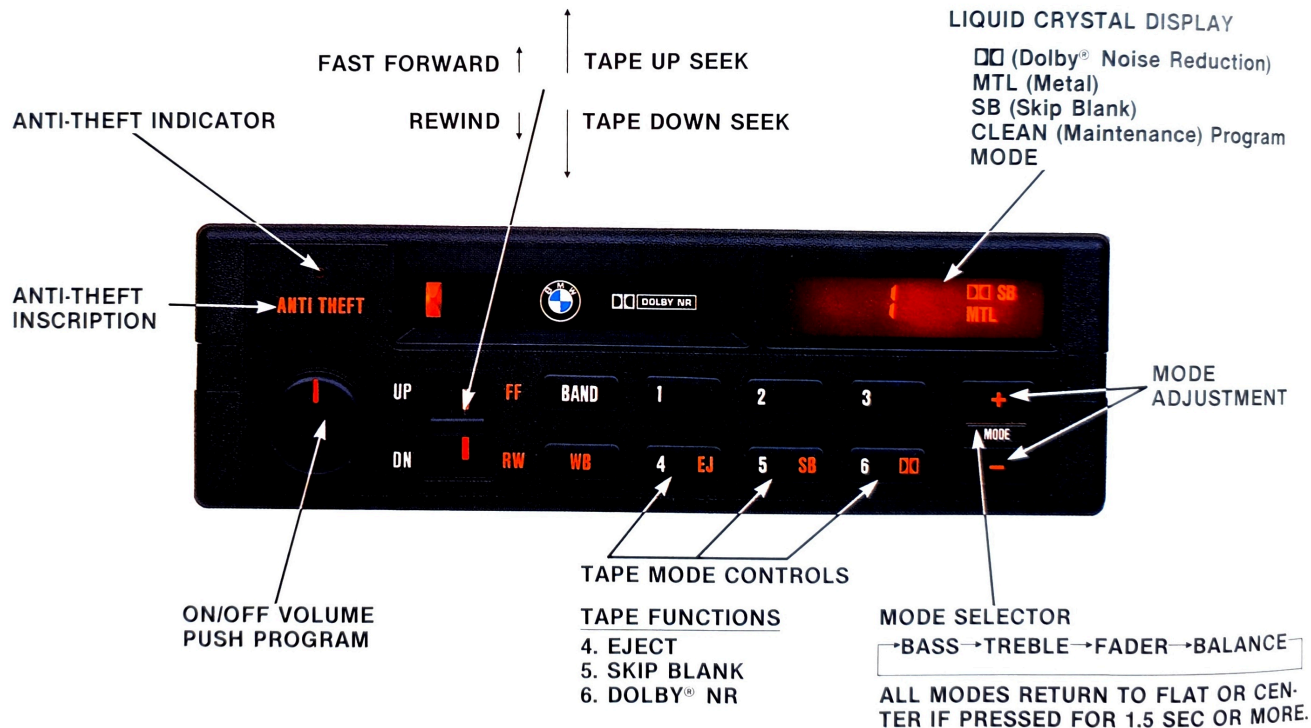
TREBLE



BALANCE



■ TAPE MODE CONTROL LOCATION AND OPERATION



■ **OPERATING THE CASSETTE PLAYER**

CASSETTE OPERATION

To use the cassette player, turn the radio on. When a cassette is inserted, the unit will switch automatically from radio to tape mode.

FAST FORWARD/REWIND

The FF/RW lever has a two-step operation. Raise the lever one step to fast forward; lower it one step to rewind. Repeat the same action to stop the appropriate function. The logic circuitry in your radio will automatically determine the right direction for fast forward or rewind.

A standard cassette has two sides and can be played in either direction. When in play, the top side of a cassette will be indicated as "1" on the display. The bottom side will appear as "2".

TAPE SEEK

Raising or lowering the fast forward/rewind (FF/RW) lever two steps (as far as it can go) activates the seek mode. SEEK will appear on the display. To move to the next selection on your tape, raise the lever as far as it can go. The tape will move rapidly to the next selection. To restart the current selection, lower the lever in the same fashion.

Tape Seek will only function correctly if there are four seconds of silence between the selections on your tape. Excessive noise between selections on home-recorded tapes may interfere with these functions.

The cassette automatically ejects from the unit if tape setting operations cannot be completed within a few seconds. This may be caused by a faulty or damaged cassette. Determine the cause of the problem or use a different cassette.

REVERSING TAPE DIRECTION

To reverse tape direction, push the ON/OFF button. The tape will reverse automatically when a side is complete.

AUTOMATIC EQUALIZATION

The playback equalization of normal tapes differs from that of chrome and metal tapes. When a high-bias tape, including metal, is inserted, the unit will automatically change to the correct equalization level, and MTL will be indicated on the display.

TAPE EJECT (4 EJ)

Press the EJECT button—4 EJ to eject tape cassette and return to the radio mode.

SKIP BLANK (5 SB)

The SKIP BLANK button—5 SB—automatically advances the tape to the next recorded portion when a blank section of tape exceeds approximately 12 seconds. When there is a long, unrecorded portion at the end of the tape, the unit advances the tape to the end and then starts to play the other side. When the SKIP BLANK button is pushed, SB will appear on the display. Additionally, SEEK will be displayed while the tape is advancing.

DOLBY® NOISE REDUCTION (6 DD)

Use the Dolby®* Noise Reduction function—button 6 DD—to reduce the level of hiss on Dolby® -encoded cassettes. If you do not use the Dolby® noise-reduction function with Dolby® encoded tapes, the high-frequency response will be intensified. If you do use this function with non-Dolby® tapes, high-frequency response will be diminished.

*The word "Dolby" and the double-D symbol are registered trademarks of Dolby Laboratories, Inc.

IGNITION-KEY-OFF PAUSE MODE

If the ignition is turned off while a tape is playing, the unit automatically enters the pause mode. The unit will return to normal play mode when the ignition is turned on. The unit will not accept another cassette when it is in the pause mode.

AUTOMATIC TAPE SLACK CANCELLER (ATSC)

The automatic tape slack canceller removes any slack in the tape before play to protect the tape and extend its life.

ROTATING TAPE HEAD

The rotating tape head in your tape cassette player ensures accurate horizontal tape alignment in both directions for optimum sound level reproduction and frequency response.

NOTE: *The BMW Anti-Theft Radio contains a full-logic computer-controlled 3-motor drive which controls the automatic tape slack canceller (ATSC) and rotating tape head mechanism. During cassette tape loading/unloading or tape transport directional changes, the motor drive emits a precision mechanical sound which indicates normal tape cassette player operation.*

PRECAUTIONS

1. Always remove cassette from unit when it is not in use.
2. Protect your tapes by keeping them in a cassette holder. Do not expose them to heat, dust, dirt or strong magnetic sources such as electric motors or television sets.
3. Make sure there is no slack in your tape before you insert it into the unit. A loose tape can damage the unit and/or the tape itself. Loose tape can be tightened by inserting a pencil or similar instrument into the spindle hole and turning it until the tape is no longer slack.
4. Use high-quality cassettes; 90- or 120-minute tapes are not recommended because their thickness cannot accommodate the variations in vehicle interior temperatures.
5. Prevent foreign objects from entering the cassette loading slot as they can damage the precision mechanism and tape heads.
6. Do not insert a tape when the unit is off. This may result in damage to the cassette player or tape.

NOTE: ON VEHICLES SO EQUIPPED: *The electric antenna will automatically fully extend whenever radio or cassette player (or CD player) is on.*

MAINTENANCE

When the cassette player has been used for 15 hours, the CLEAN indicator will appear on the display for 30 seconds, and an audible 2-second signal will be heard. This indicates that the playback heads and capstans should be cleaned. The deterioration of playback sound is another indication that cleaning is necessary.

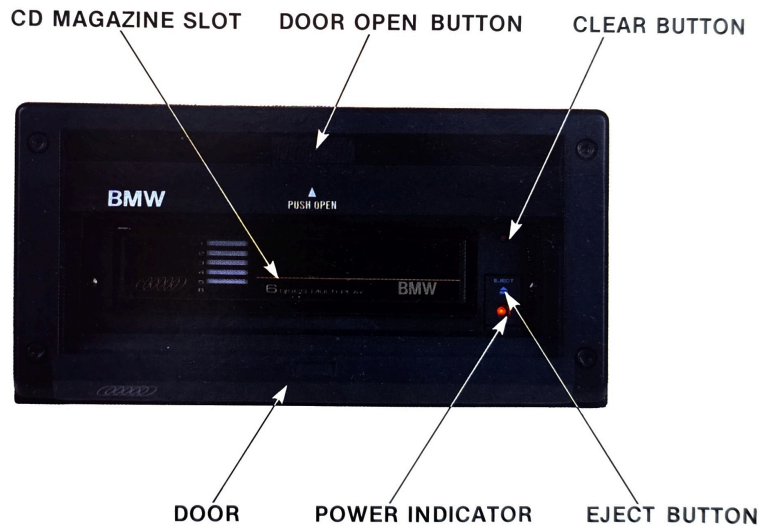
Clean heads and capstans by inserting a head-cleaning cassette into the tape-loading slot, and allowing it to run for approximately 40 seconds. Push the program selector to engage the second capstan and pinch roller for an additional 40 seconds.

NOTE: *Make sure SKIP BLANK function is disengaged before inserting the head-cleaning cassette. Head-cleaning cassette will be ejected in 12 seconds if SKIP BLANK function is not disengaged, resulting in insufficient cleaning of the play back heads and capstans.*

MODIFICATIONS

This unit is designed for use with 4-channel speaker systems. It is not designed for use with additional power boosters. The installation of a power booster may damage the radio, **and such damage will not be covered by your warranty.**

■ CD CHANGER LOCATION AND OPERATION



NOTE: Multi Disc Type Compact Disc Players with the  mark and Magazines with the same mark are compatible for 5-inch(12cm) discs.

■ OPERATING THE CD CHANGER

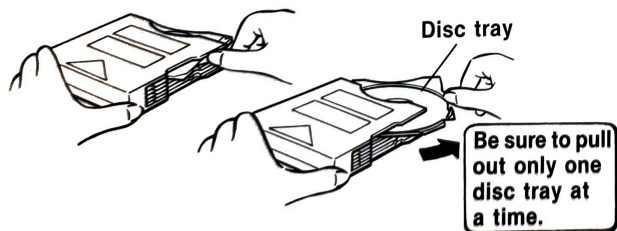
CAUTION:COMPACT DISC PLAYERS CONTAIN AN OPTICAL LASER. ANY UNAUTHORIZED INTERNAL ADJUSTMENTS OR ANY ATTEMPTED REPAIRS BY UNAUTHORIZED PERSONNEL MAY RESULT IN PERSONAL INJURY.

CAUTION:THE USE OF OPTICAL INSTRUMENTS IN CONJUNCTION WITH THIS PRODUCT MAY RESULT IN EYE INJURY. CONTACT AUTHORIZED BMW DEALER FOR SERVICE INFORMATION.

INSERTING DISCS

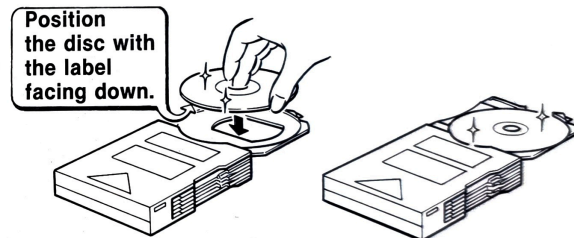
Insert your selected discs into the supplied magazine. Up to 6 discs may be inserted into the magazine. The disc trays are numbered from 1 (top tray) to 6 (bottom tray).

1. Pull out one disc tray from the magazine.

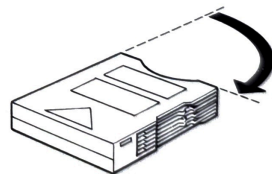


2. Put one disc on the disc tray, label facing down.

NOTE: Do not touch the recorded side (unlabeled side) of a disc when inserting or removing it.



3. Push the disc tray back in.



PRECAUTIONS WHEN HANDLING MAGAZINES

- Keep the magazine in its storage case after use. Do not put the magazine in a place where it will be exposed to high temperatures or direct sunlight.
- Do not disassemble the magazine.
- Take care not to drop the magazine or knock it against anything. Do not force the magazine pull out trays in any way.
- The use of benzine, thinner, insecticide, or other volatile chemicals may damage the magazine surface.
- Do not squeeze the magazine when you insert or remove discs.

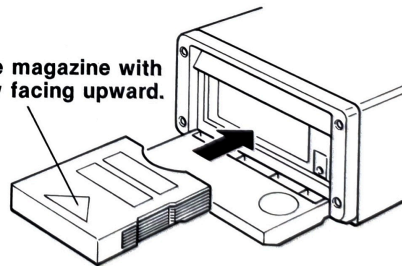
INSERTING THE MAGAZINE

1. Press the DOOR OPEN button.
2. Insert the magazine.

NOTE:

- *Make sure that the magazine is loaded with discs before inserting it into the CD changer.*
- *Be careful to insert the magazine into the CD changer with the arrow mark facing upward.*
- *If the label on the magazines is coming off or wrinkled up, it may damage the eject mechanism, and in some cases, the magazine may not be ejected. Therefore, remove a damaged label completely before use.*

Insert the magazine with
the arrow facing upward.



3. Close the DOOR.

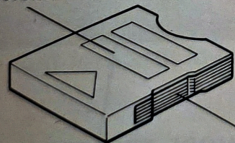
NOTE: *Never leave the door open while playing discs. The entry of dirt, dust, or any other foreign matter into the CD changer may cause it to malfunction.*

CD MAGAZINE COMPATIBILITY

The six-CD magazine supplied with the BMW CD changer can also be used with certain home-use multi-play CD players (ref. BMW magazine P/N 88 88 1 600 188).

NOTE: *The six-CD magazine shown below and the single-CD magazine supplied with home multi-play CD players cannot be used with the BMW CD changer.*

Compact disc visible



Black trays

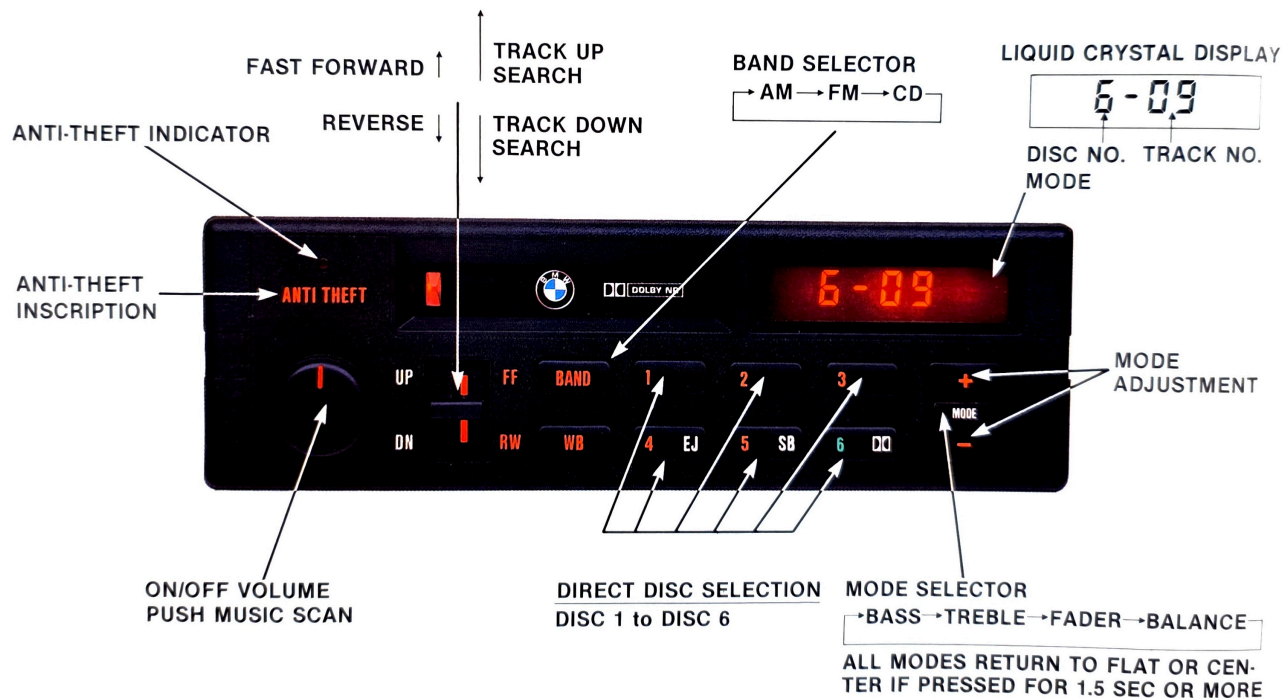
MAGAZINE EJECT

1. Press the DOOR OPEN button.
2. Press the EJECT button to eject the magazine from the CD changer.

NOTE: *If the power does not switch on or if the CD changer does not operate when the button on the radio is pressed, or if the radio display is incorrect, press CLEAR button on the CD changer with the tip of a pencil to restore normal operation.*

Condensation: During winter the inside of the vehicle may be very cold. If the heater is turned on and the CD changer is used soon after, the disc or optical parts (prism, lens, etc.) may become misted up from condensation, and the CD changer will not operate correctly. If the disc is misted up, wipe it with a soft cloth. If the optical parts are misted up, wait for about an hour for them to clear up.

■ CD MODE CONTROL LOCATION AND OPERATION (WITH CD CHANGER OPTION)



■ OPERATING THE CD PLAYER (WITH CD CHANGER OPTION)

CD OPERATION

To use the CD player, turn the radio on and press the BAND button. The display indicates AM, FM, or CD. Select CD to switch from radio mode to CD mode.

DIRECT DISC SELECTION

DIRECT DISC SELECT buttons 1 through 6 correspond to the magazine tray numbers. When there is a disc in a tray, the number lights on the corresponding button. To play a disc in the magazine, press one of the buttons whose indicator is lit.

NOTE: *Nothing will happen if you press a button whose indicator is not lit.*

FAST FORWARD/REVERSE

The UP/DN lever has a two-step operation. Raise the lever one step to fast forward; lower it one step to reverse.

TRACK SEARCH

Raising or lowering the UP/DN lever two steps (as far as it can go) activates the track search mode. To advance to the next track, push the lever fully up. To return to the previous track, push the lever fully down. If you hold the lever in the fully up or fully down position, the player moves forward or backward through the tracks continuously.

MUSIC SCAN

When the ON/OFF button is pressed, the word "SCAN" appears on the display and the player begins playing the first part (approximately 10 seconds) of each track on the current disc. Press the button again when you find a track you want to listen to: the player will return to normal playback and continue with the current track.

MAGAZINE CHECK

When there is no magazine in the CD changer, the word "NO" appears on the display to advise you to load a magazine.

NOTE: After you load a magazine, there is a short pause before playback begins. The changer is checking each of the discs in the magazine. (The display indicates "LOAD".)

DISC CHECK

An "Err" indication is shown on the display and operation of the system becomes impossible when there are no discs in the magazine or when the discs are loaded into the magazine with their labels facing upwards. Whenever this message appears, remove the magazine and check the discs.

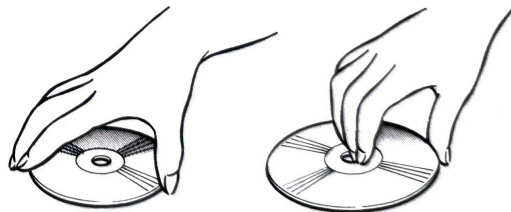
Important: The indicator "HEAT" appears on the display and playback is automatically cut when the temperature around the CD changer becomes too high. This protects the laser mechanism from serious damage. Listen to the radio or a tape until the temperature returns to normal.

PRECAUTIONS

1. Only use compact discs (optical digital audio discs) bearing the mark shown below. **However, never use 3 in. discs, even with an adapter.**



2. Be sure never to touch the signal surface when handling discs. Pick up discs by grasping the outer edges or the edge of the hole and the outer edge.



3. Do not affix paper or tape, and avoid scratching either side of the disc.
4. The disc revolves at high speed within the CD changer, so defective (cracked or badly bent) discs should not be used.



5. Dust and/or finger smudges will have no direct effect on the signal recorded on the disc, but dirt can decrease the amount of light reflected from the recorded surface, thus affecting sound quality. If the disc should become soiled, gently wipe the surface with a soft lint-free cloth, wiping from the center of the disc to the edge.



6. Do not use record sprays or antistatic agents. Such volatile chemicals as benzine and thinner can also damage the surface of the disc and should not be used.
7. As with traditional audio records, compact discs are made of plastic. To avoid warping, keep the discs in their cases and do not store them in places exposed to direct sunlight.



8. When driving on an uneven road surface (e.g. ruts, potholes), the player may not reproduce every sound properly.

■ PERFORMANCE SPECIFICATIONS

TUNER

FM Receiver

Usable Sensitivity (Load)	1 μ V
[30 dB(N + D)/(S + N + D)]	65 dB
Signal/Noise Ratio (1 mV)	1 V
Overload Signal	40 dB
AM Rejection	100 dB
IF Rejection	50 dB
Image Rejection	70 dB
Spurious Rejection	60 dB
Alternate Channel Selectivity	2 dB
Capture Ratio	40 dB
Stereo Separation (1 kHz)	0.5%
Stereo Distortion (1 mV)	87.9 to 107.9 MHz
Frequency Range	10.7 MHz
Intermediate Frequency	

AM Receiver

Usable Sensitivity [20 dB N/(S + N)]	10 μ V
Signal/Noise Ratio (5 mV)	50 dB
Selectivity (± 10 kHz)	100 dB
IF Rejection	100 dB
Image Rejection	60 dB
Distortion (5 mV RF)	0.5%
Frequency Range	530 to 1620 kHz
Intermediate Frequency	450 kHz

WB Receiver

Usable Sensitivity (Load)	
[20 dB(S + N)/(S + N + D)]	0.3 μ V
Signal/Noise Ratio (1 mV)	55 dB
Distortion	1.5%

Frequency Range	162.400 to 162.550 MHz (25 kHz Step)
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Intermediate Frequency	
1st I.F.	10.7 MHz
2nd I.F.	450 kHz

CASSETTE DECK

Wow and Flutter WRMS-JIS	0.07%
Signal/Noise Ratio	50 dB
Dolby® NR Effect	10 dB
Separation	50 dB
Cross Talk	55 dB
Distortion	1%
Frequency Response (-3 dB)	
Normal	40 Hz to 15 kHz
Metal	40 Hz to 18 kHz

AUDIO CONTROL

Tone Control Response	
Treble Boost/Cut 10 kHz	± 10 dB
Bass Boost/Cut 100 Hz	± 10 dB

POWER AMPLIFIER

Power Output (RL = 4 Ω , Vcc = 14.4 V)	
10% THD	5.5 W/Ch
1% THD	4.5 W/Ch
THD(RL = 4 Ω , Vcc = 14.4 V)	
Po = 1 W	0.7%
Frequency Response	
(± 3 dB)	20 Hz to 40 kHz
Signal/Noise Ratio	65 dB

CD CHANGER (OPTION)

General

System	Compact Disc Audio System
Usable Discs	Compact Disc
Signal Format	Sampling Frequency: 44.1 kHz
	Number of Quantization Bits: 16; Linear
Power Source	14.4 V DC (10.8 – 15.6 V allowable)
Power Consumption	5.5 W
Maximum Power Consumption	9 W
Weight	5.0 kg (11.0 lbs.)
Dimensions	210(W) × 110(H) × 330(D) mm
	[8-1/4(W) × 4-3/8(H) × 13(D) in.]

Audio

Frequency Response (± 1 dB)	5 Hz to 20 kHz
Signal/Noise Ratio	85 dB
Dynamic Range	87 dB (1 kHz)
Wow and Flutter WRMS-JIS	Below Measurement Range
Distortion	0.008 %
Output Level	500 mV (1 kHz, 0 dB)
Number of Channels	2 (stereo)

NOTE: Specifications are subject to change without notice.

BMW ANTI-THEFT CD-READY RADIO OWNER'S MANUAL

88 88 1 600 183(Radio)*
88 88 1 600 186(CD Changer)
88 88 1 600 185(Manual)