

Auto Store

Traffic



FM

RDS

In-Car Entertainment

Geluidsinstallatie in voertuig

Equipement de sonorisation automobile

Stereoanlage

Antenna dell'autoradio

Equipo de sonido

Sistema audio

Compact Disc





DISCOVERY

In-Car Entertainment

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AUDIO SYSTEMS FITTED TO YOUR VEHICLE



ICE0218

R660 Audio System



ICE0217

C-42 Audio System



ICE0219

R990 Audio System

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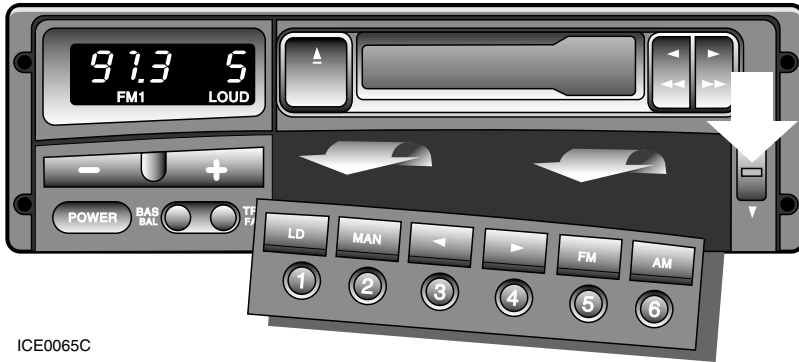
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R660 - Radio



ICE0065C

DETACHABLE KEYBOARD

The R660 radio/cassette player has a detachable keyboard, providing additional anti-theft protection.

ALWAYS TAKE THE KEYBOARD WITH YOU WHEN YOU LEAVE THE VEHICLE.

Removing the keyboard

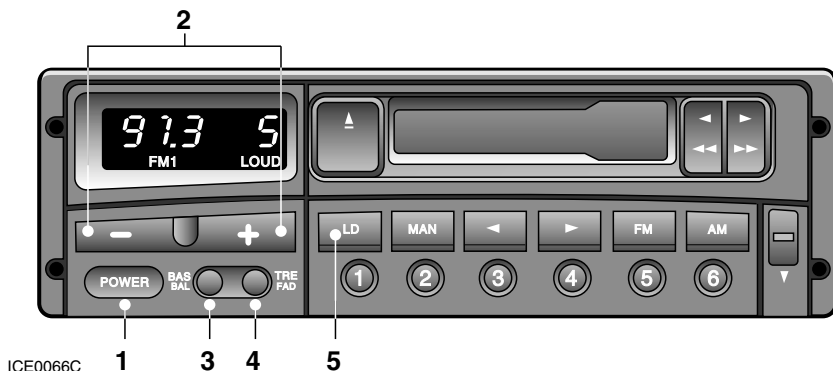
Push the release key down (arrowed in illustration) to remove the keyboard.

ALWAYS protect the keyboard from dirt and damage by keeping it in its protective case.

Replacing the keyboard

Place the left side of the keyboard in position, then press the right hand side fully home, ensuring that it is locked in position.

R660 - Radio



SOUND CONTROLS

1. On/off switch

Press to switch on (display illuminates). Press again to switch off.

IMPORTANT

The word 'CodE' should appear briefly whenever the radio is switched on. If 'CodE' appears continuously, an incorrect security code has been entered, or the power supply has been interrupted (see 'ENTERING THE SECURITY CODE', page 38).

2. Volume control

Press the '+' symbol to increase and the '-' symbol to decrease the volume.

3. Bass and balance control

Adjusts bass and balance levels when used in conjunction with the volume control (display confirms selection), as described below.

Bass: Press once, the display shows:

- 'bAS -4' = minimum bass
- 'bAS 0' = normal bass
- 'bAS +4' = maximum bass

Balance: Press twice, the display shows:

- 'bAL 0 - 9' = max sound from RIGHT
- 'bAL 9 - 9' = equal balance
- 'bAL 9 - 0' = max sound from LEFT

Then use the volume +/- control to change the level.

4. Treble and fader control

Adjusts treble and fader levels when used in conjunction with the volume control.

Treble: Press once, the display shows:

- 'trE - 4' = minimum treble
- 'trE 0' = normal treble
- 'trE +4' = maximum treble

Fader: Press twice, the display shows:

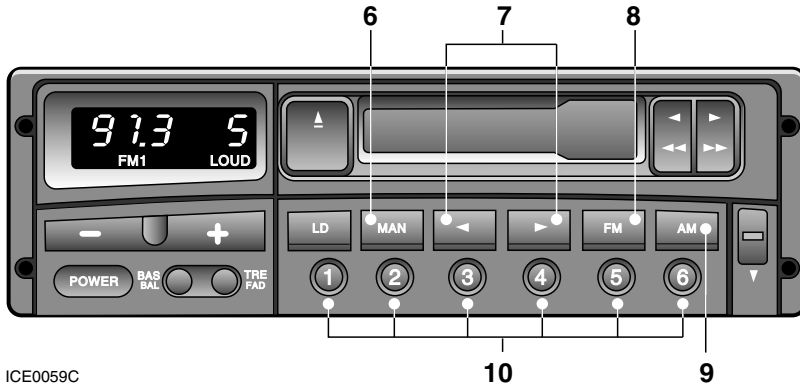
- 'fAd 0 - 9' = max sound from FRONT
- 'fAd 9 - 9' = equal balance
- 'fAd 9 - 0' = max sound from REAR

Then use the volume +/- control to change the level.

5. Loudness mode

Press to activate or deactivate ('LOUD' appears in the display). Loudness mode emphasises bass and treble responses to give a more dynamic sound (useful to combat traffic noise).

R660 - Radio



ICE0059C

RADIO CONTROLS

6. Manual tuning selector

Press to activate manual tuning mode, a two-tone bleep will sound to confirm selection (see '*Manual tuning*', page 8).

7. Tuning buttons

Briefly press either button to search (manually or automatically) up or down the frequency range (see '*RADIO TUNING*', page 8).

8. FM waveband/auto-store selector

Press briefly to select FM1 or FM2. Press and hold to auto-store the six strongest radio stations on FM2, a two-tone bleep will sound to confirm selection.

9. AM waveband/auto-store selector

Press briefly to select MW1, MW2 or LW wavebands. Press and hold to auto-store the six strongest radio stations on MW2, a two-tone bleep will sound to confirm selection.

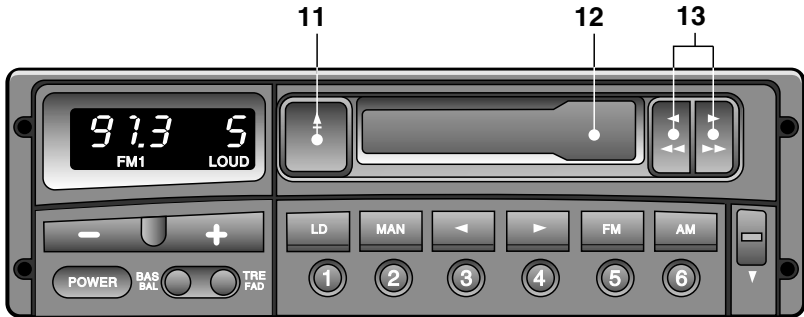
10. Radio pre-set buttons

Use to store up to 6 radio stations on each waveband.

Press briefly to select a stored frequency.

Press and hold (until radio beeps) to store a frequency on a pre-set (see '*Programming the pre-sets*', page 9).

R660 - Cassette Player



ICE0063C

CASSETTE PLAYER CONTROLS

11. Cassette eject button

Press to eject the tape. The unit returns to radio mode, selecting the waveband and frequency last in use.

12. Cassette compartment

Insert the tape with the open side to the right and push in gently. The radio mutes and tape play starts immediately. The display shows 'TAPE' and an arrow (indicating the direction of play).

IMPORTANT

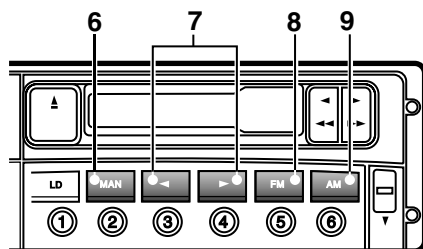
DO NOT leave cassette tapes in the cassette compartment for long periods when the player is not in use.

13. Fast forward/rewind & reverse buttons

- To forward wind, press the button corresponding to the direction of the arrow in the display (during tape play).
- To rewind, press the button opposite to the direction of the arrow appearing in the display (during tape play).
- To stop tape winding, lightly press the remaining (unlocked) wind button.
- To reverse the direction of tape play, half press both buttons simultaneously. Tape play automatically resumes.

R660 - Radio Tuning

RADIO TUNING



ICE0061A

Waveband selection

There are two waveband selection buttons:

- FM selector button (8)

Press BRIEFLY to select the FM waveband ('FM1' or 'FM2' appears in the display - whichever was last selected). Note that the FM waveband is duplicated (hence FM1 and FM2) to enable you to store twice as many FM radio stations on the pre-set buttons. Press the waveband selector again to change between FM1 and FM2.

- AM selector button (9)

Press BRIEFLY to select the AM waveband ('MW1', 'MW2' or 'LW' appears in the display - whichever was last selected). Note that the medium waveband is duplicated (MW1 and MW2); this enables twice as many radio stations to be stored on the pre-set buttons. Press the waveband selector to change between MW1, MW2 or LW.

NOTE: The two waveband selection buttons are also used to activate auto-store.

Automatic tuning

Select the desired waveband and then briefly press one of the tuning buttons (7). The radio automatically searches up or down the frequency range until a radio station is located. Each time a signal is found the search stops unless you elect to continue by again pressing one of the tuning buttons. Initially, the radio only locates strong signals. However, by searching the frequency range a second time, weaker signals may also be found.

Manual tuning

Use manual tuning when you know the frequency of the radio station you are seeking, or for selecting stations that are too weak to be found by automatic tuning.

Press the MAN button (6) (a two-tone bleep sounds) to select manual tuning. Then, by briefly pressing either tuning button (7), the frequency changes (either up or down) in steps of 0.05 MHz for FM, or 1 kHz for MW and LW.

Fast manual tuning

By keeping either tuning button depressed, the waveband is scanned rapidly (up or down) until the button is released.

Automatic tuning returns if:

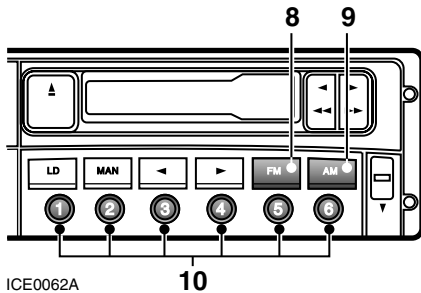
- the MAN button is pressed again (a two-tone bleep sounds).
- the tuning buttons are not used for 60 seconds.
- the radio is switched off and on again.
- one of the waveband selector or pre-set buttons is pressed.

MONO/STEREO

Whenever the FM waveband is selected, the radio automatically reproduces stereo sound, provided a suitable signal is available. However, if a signal becomes too weak for good stereo reception, only mono sound is produced until the signal strengthens sufficiently for stereo sound reproduction.

R660 - Radio Tuning

RADIO PRE-SET BUTTONS



The six pre-set buttons (10) can be used to manually store up to twelve FM stations (six each on FM1 and FM2), twelve MW stations (six each on MW1 and MW2), and six LW stations. The pre-sets are programmed as follows:

Programming the pre-sets

- Select the required waveband (FM1, FM2, MW1, MW2 or LW).
- Tune to the desired frequency using either automatic or manual tuning.
- Press and hold one of the pre-set buttons until a two-tone bleep sounds. The frequency is now stored (the display shows the pre-set number, waveband and frequency you have chosen).

Now repeat this procedure to store the remaining frequencies on this and the other wavebands.

If you do not require different radio stations on every pre-set, use any spare pre-set buttons to store alternative frequencies for the national radio stations - this is particularly useful if you frequently travel between different transmitter areas.

NOTE: The pre-set frequencies are retained when the ignition is switched off, but will be lost if the battery is disconnected for any length of time.

Operating the pre-sets

Once the pre-set buttons have been programmed, operation is simple; select the desired waveband, then press the pre-set button of your choice.

AUTO-STORE

Auto-store enables you to rapidly tune and store the strongest FM and MW radio signals in a single operation. This facility is particularly useful if you are in an unfamiliar area and have little knowledge of local transmitter frequencies.

Programming auto-store

Press and hold the appropriate waveband selection button (8 for FM2 or 9 for MW2) until a two-tone bleep sounds ('Ast' appears briefly in the display).

Auto-store scans the waveband to find the six strongest frequencies and then stores them on either the FM2 or MW2 pre-set buttons in order of signal strength (each time a station is stored the display shows the frequency and relevant pre-set number).

A second two-tone bleep indicates that the auto-store operation is complete.

Auto-store overwrites any stations already stored on the FM2 or MW2 pre-set buttons.

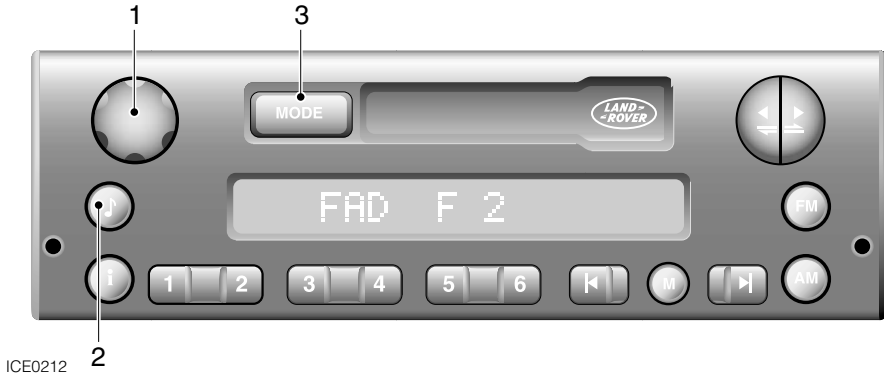
NOTE: If auto-store is unable to find six strong stations, the remaining pre-set buttons will remain blank (the display showing: '000').

NOTE: The auto-store frequencies remain stored until either the auto-store selection process is repeated or until you elect to change them by manually tuning different frequencies.

Operating auto-store

To tune to one of the auto-store frequencies, select FM2 or MW2, then press the pre-set button of your choice; the frequency or radio station name will appear on the display.

C-42 - Radio



1. On/off and volume control

Press to switch on (display briefly shows 'CODE ENABLED'). Press again to switch off.

Rotate steadily to right or left to adjust the volume.

The volume can also be adjusted using the remote switches* on the steering wheel (see 'Owner's handbook').

NOTE: If you have a car telephone with a mute signal output connected to the stereo system, radio, tape or CD play automatically mutes when the telephone is in use.

2. Audio selection button

Press one or more times to select bass, treble, fader or balance (display confirms selection), as described below.

Press and hold for at least two seconds to reset all audio settings to their default values (display shows 'FLAT').

Bass: Press once, then rotate the volume control to the left or right to reduce or increase bass response. The display shows:

- 'BASS -6' = minimum bass
- 'BASS 0' = normal bass
- 'BASS +6' = maximum bass

Treble: Press twice, then rotate the volume control to the left or right to reduce or increase treble response. The display shows:

- 'TREB -6' = minimum treble
- 'TREB 0' = normal treble
- 'TREB +6' = maximum treble

Fader: Press three times, then rotate the volume control to the left or right to adjust the balance between front and rear speakers. The display shows:

- 'FADE F 6' = max sound from FRONT
- 'FADE 0' = equal balance
- 'FADE R 6' = max sound from REAR

Balance: Press four times, then rotate the volume control to the left or right to adjust the balance between left and right speakers. The display shows:

- 'BAL R 6' = max sound from RIGHT
- 'BAL 0' = equal balance
- 'BAL L 6' = max sound from LEFT

NOTE: After approximately 8 seconds without further adjustment, the audio selection mode is cancelled automatically.

C-42 - Radio

3. Mode selector (MODE)

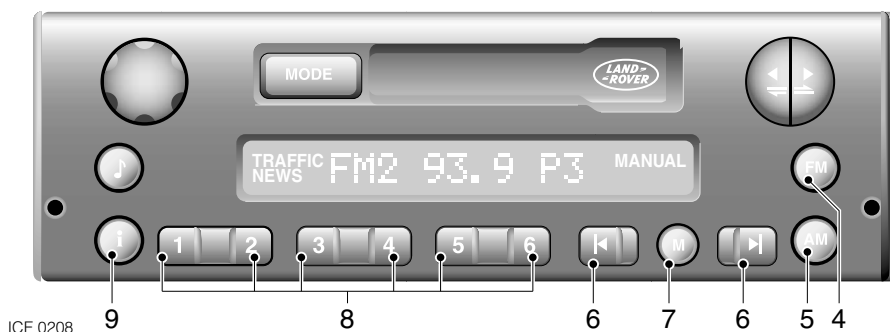
Press briefly to select radio, tape or CD play.

Press to change to radio reception during tape or CD play. Tape or CD play will stop and the radio automatically selects the frequency and waveband last in use.

NOTE: *The remote switches* on the steering wheel can also be used to change to or from radio, tape or CD play (see 'Owner's handbook').*

C-42 - Radio

RADIO CONTROLS



4. FM waveband selector

Press briefly once or twice to select FM frequencies. There are two FM bands (FM1 and FM2), both have the same tuning range and six frequencies can be stored on each one, using the pre-set buttons (see *'Programming the pre-sets'*, page 16).

Press and hold to activate auto-store (on FM2 only - see *'AUTO-STORE'*, page 17).

5. AM waveband selector

Press briefly to select one of the three AM bands (MW1, MW2 and LW). Six frequencies can be stored on each one, using the pre-set buttons (see *'Programming the pre-sets'*, page 16).

Press and hold to activate auto-store (on MW2 only - see *'AUTO-STORE'*, page 17).

6. Tuning buttons

Briefly press either button to search up or down the frequency range (see *'RADIO TUNING'*, page 15).

7. Manual tuning selector

Press to select manual tuning mode ('MANUAL' is displayed) - use in conjunction with the tuning buttons (see *'RADIO TUNING'*, page 15). Press again to return to automatic tuning.

The frequency can also be selected using the remote switches on the steering wheel (see *'Owner's handbook'*).

NOTE: *Tuning defaults to automatic mode, if unused for more than 8 seconds.*

8. Pre-set buttons

Use to store up to 6 radio stations on each waveband.

Press briefly to select a stored frequency.

Press and hold (for approximately 2 seconds) to store a frequency on a pre-set (see *'Programming the pre-sets'*, page 16).

9. Traffic and news information

Press briefly to switch on (or switch off) traffic information mode - FM waveband only (see *'Selecting traffic information'*, page 18).

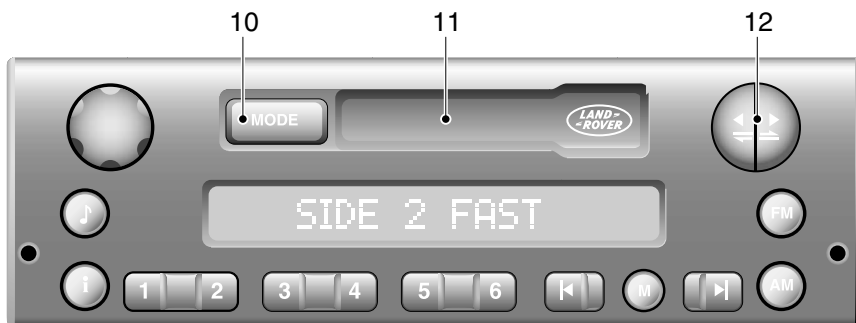
Press and hold for approximately 2 seconds to switch on (or switch off) news mode - FM waveband only (see *'Selecting news information'*, page 18).

Press briefly to return to normal radio, tape or CD reception during a traffic or news announcement.

NOTE: *Both traffic and news information can be operational at the same time.*

C-42 - Cassette Player

CASSETTE PLAYER CONTROLS



ICE0209

10. Mode selector (MODE)

Press briefly to change to radio or CD operation during tape play. The cassette player remains in stand-by mode until the button is pressed again to return to tape play.

11. Cassette compartment

Insert the tape with the open side to the right and push in carefully. The radio mutes and tape play starts immediately (display shows 'SIDE 1').

At the end of either side of the tape, play will automatically continue in the opposite direction.

If the set is switched off during tape play, the cassette player remains in stand-by mode. Play resumes when the set is switched on again.

NOTE: If a metal type cassette is loaded, the tape player automatically adjusts to the equalisation required for metal and any other high bias tape.

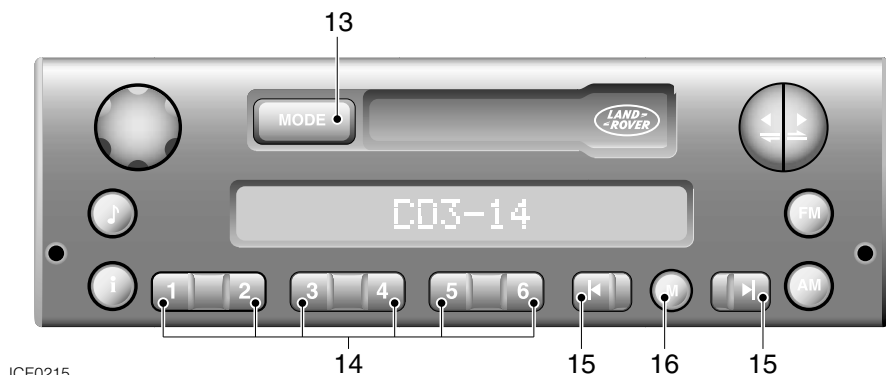
12. Fast forward/rewind/reverse and eject buttons

During tape winding, 'FAST' shows in the display.

- To forward wind, press the right hand button.
- To rewind, press the left hand button.
- To stop tape winding, lightly press the remaining (unlocked) button. Tape play will automatically resume.
- To reverse the direction of tape play, lightly press both buttons simultaneously.
- To eject the tape, FULLY press both buttons simultaneously. The unit returns to radio mode, selecting the waveband and frequency last in use.

C-42 - Compact Disc Player

COMPACT DISC PLAYER* CONTROLS



13. Mode selector (MODE)

Press to select CD play, or to change to radio or tape operation during CD play. With CD selected, the display shows the disc and track number ('CD3 - 14'). If the audio system is operating when the magazine is inserted, 'CD CHECK' is displayed, while the autochanger checks the loaded CDs. If a magazine has not been inserted into the autochanger, 'NO MAGAZINE' is displayed, if an empty magazine has been inserted, 'NO DISCS' is displayed.

14. Disc selection buttons (1-6)

Press the appropriate button to select the desired disc. Playback will start from the beginning of that disc. If an empty compartment is selected, a faulty CD is inserted or a CD is inserted the wrong way up, the display shows 'NO DISC' and the next available disc is selected instead.

15. Track search buttons

Skip: Briefly press the appropriate button to skip to the beginning of the next track, or return to the start of the current track (the display shows disc and track numbers). Press the search buttons as many times as necessary to reach the desired track.

NOTE: If either button is pressed and held (for more than 1 second), the CD player performs the 'search' function (forward or back) until the button is released.

Search: Press the Manual mode button (16), then press and hold the appropriate search button to move forward or backward (display shows '>>' or '<<') through the track at a greatly increased play speed (volume mutes). When the search key is released, CD playback starts at the current position of the selected CD/track. The CD search mode remains active.

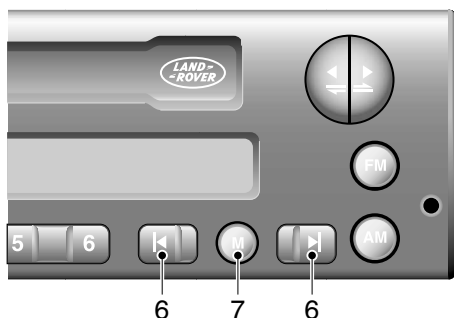
The same operation can be carried out, without the need to press the manual mode button (16), by pressing and holding the appropriate search button for more than 1 second.

NOTE: The compact disc player controls will operate only with the optional CD changer unit.

NOTE: Skip, search and mode selection can be operated using the remote switches* on the steering wheel (see 'Owner's handbook').

C-42 - Radio Tuning

RADIO TUNING



Manual tuning

If you know the frequency of the radio station you are seeking, or you need to select a radio station that is too weak to be found by automatic tuning, use manual tuning, as follows:

Select the desired waveband (FM or AM), then press the manual tuning button (7) ('MANUAL' appears in the display). By pressing either tuning button (6), the frequency changes (either up or down) in steps of 0.1 MHz for FM, or 9 kHz for MW, or 1 kHz for LW.

Fast manual tuning

By keeping either tuning button depressed, the waveband is scanned rapidly up or down until the button is released.

Automatic tuning

Select the required waveband (FM or AM), then briefly press one of the tuning buttons (6).

The radio automatically searches the frequency range (either up or down depending upon which of the tuning buttons is pressed) looking for a radio station of acceptable strength. Once a suitable station is found, the search stops unless you choose to continue by pressing the tuning button again.

The search can be stopped at any time, by pressing any pre-set button.

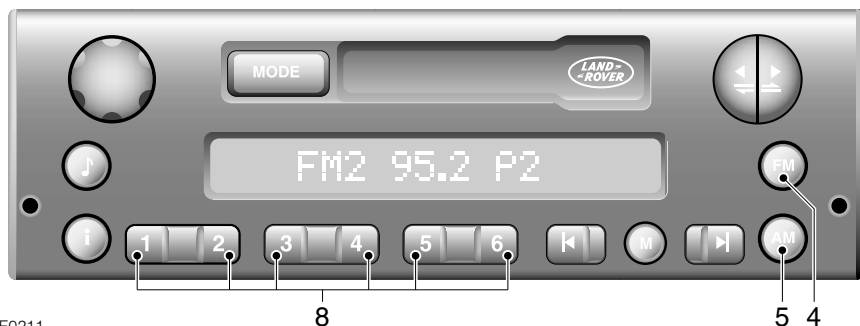
NOTE: If you have a car telephone with a mute signal output connected to the radio, the radio automatically mutes when the telephone is in use.

Mono/Stereo

Whenever the FM waveband is selected, the radio automatically reproduces stereo sound, provided a suitable signal is available. However, if a signal becomes too weak for good stereo reception, only mono sound is produced until the signal strengthens sufficiently for stereo sound reproduction.

C-42 - Radio Tuning

RADIO PRE-SET BUTTONS



ICE0211

The six pre-set buttons (8) can be used to manually store up to twelve FM stations (six each on FM1 and FM2), twelve MW stations (six each on MW1 and MW2), and six LW stations.

Programming the pre-sets

- Select the required waveband (FM1, FM2, MW1, MW2 or LW).
- Tune to the desired frequency using either automatic or manual tuning (see 'RADIO TUNING', page 15).
- Press and hold one of the pre-set buttons. The radio will mute while the frequency you have chosen is stored on the pre-set. The display briefly shows the frequency and station name (where appropriate) of the radio station previously stored on the pre-set, and then the new frequency (and station name).
- Release the pre-set as soon as radio sound is restored and the new frequency details are displayed.

NOTE: Once the pre-sets have been programmed, they will be retained by the unit until either; they are re-programmed, or power to the audio unit is disturbed (vehicle battery disconnection, for example).

Operating the pre-sets

Once the pre-set buttons have been programmed, operation is simple; select the desired waveband, then press the pre-set button of your choice.

C-42 - Radio Tuning

AUTO-STORE



Auto-store enables you to rapidly tune and store the strongest FM and MW radio signals in a single operation. This facility is particularly useful if you are in an unfamiliar area and have little knowledge of local transmitter frequencies.

Programming auto-store

Press and hold the appropriate waveband selection button (4 or 5) - the radio mutes and the display shows either 'FM AUTOSTORE' or 'MW AUTOSTORE'.

Auto-store scans the waveband to find the six strongest frequencies and then stores them on either the FM2 or MW2 pre-set buttons in order of signal strength. Radio sound is restored once the operation is complete.

If auto-store is unable to find six strong stations, the remaining pre-sets are not used (display shows 'NO STATION').

NOTE: Auto-store overwrites any stations already stored on the FM2 or MW2 pre-set buttons.

NOTE: If FM auto-store is programmed with the traffic facility switched on, then programming will be limited to those stations capable of providing traffic information only. For this reason, it is recommended that the traffic information facility is switched off before the pre-set stations are stored and before auto-store is programmed.

Operating auto-store

To tune to one of the auto-store frequencies, select FM2 or MW2, then press the pre-set button of your choice.

C-42 - Traffic & News Information

INFORMATION BROADCASTS



ICE0216

9

On the FM waveband, the RDS facility enables your radio to receive traffic and news information broadcasts from local radio stations that are linked to the same network as the station to which it is tuned.

Traffic and news information broadcasts can be selected by pressing the information button (9).

Once selected any available traffic and news information broadcasts are then received automatically as and when they occur (even if you are listening to cassette tapes or CDs).

Selecting traffic information

BRIEFLY press the information button - the word 'TRAFFIC' illuminates in the display.

During traffic announcements the display flashes 'TRAFFIC' alternately with the name of the radio station providing the information.

If the radio is tuned to a weak FM signal or a radio station that cannot provide traffic information, the display briefly shows 'NO TRAFFIC', then the message 'STATION SEEK' flashes in the display while the radio searches the waveband. It then tunes to a radio station that does provide traffic information broadcasts.

In remote areas, it may be impossible to find a traffic information station. The radio will search the waveband twice; if a station cannot be found, the radio displays 'NO TRAFFIC' and returns to the station to which it was previously tuned.

NOTE: When traffic information is switched on, occasional, and very brief, muting of the radio may occur while the set searches for traffic broadcasts. For this reason, it is recommended that traffic information is switched off when not needed.

Selecting news information

Press and hold the information button for approximately 2 seconds - the word 'NEWS' illuminates in the display.

During news broadcasts the display flashes 'NEWS' alternately with the name of the radio station providing the news information.

NOTE: Both traffic and news information can be selected at the same time. However, the radio gives priority to traffic information.

C-42 - Traffic & News Information

Switching off information broadcasts

Traffic information: To switch off traffic information, briefly press the information button ('TRAFFIC' disappears from the display). This action will prevent traffic information broadcasts from being received until the button is pressed again.

News information: To switch off news information, press and hold the information button for approximately 2 seconds ('NEWS' disappears from the display). This action will prevent future news broadcasts from being received until the feature is reselected.

Unwanted information broadcasts can be aborted by similarly pressing the information button. In this case, because the feature is being disabled DURING an information broadcast, disablement is only temporary - the feature will return as soon as the next traffic or news information bulletin is broadcast.

Information broadcasts during tape or CD play

When the radio is in either traffic or news information mode, CD or tape play will be interrupted by information broadcasts automatically as and when they occur.

The display will alternatively flash the station name and 'TRAFFIC' or 'NEWS'. At the end of the broadcast, tape or CD play will resume.

Volume for Traffic and News announcements

The volume of traffic and news information broadcasts can be set independently from the volume required for other audio output (e.g. radio, cassette and CD), as follows:

Wait for a traffic or news announcement, then during the broadcast, adjust the volume to the desired level (this is likely to be greater than that required for other audio output). Once this volume has been set, it will be memorised by the audio unit and replicated automatically next time a traffic or news announcement is broadcast.

Note that further adjustments to the volume can be made during any subsequent traffic or news announcements.

NOTE: *The volume level for traffic announcements will never be lower than the current volume.*

Emergency alarm announcement

Emergency announcements cannot be activated or deactivated by the user. If an emergency traffic or news announcement is transmitted ('ALARM' appears in the display), all other audio functions will be overridden.

R990 - Radio



ICE0078

SOUND CONTROLS

1. On/off and volume control

Press to switch on (display shows 'LAND', then 'ROVER', followed briefly by 'CODE'. Press again to switch off.

Rotate steadily to right or left to adjust the volume. Note that turning the control rapidly has no effect!

The volume can also be adjusted using the remote switches on the steering wheel (see 'Owner's handbook').

NOTE: If you have a car telephone with a mute signal output connected to the stereo system, radio, tape or CD play automatically mutes when the telephone is in use.

IMPORTANT

This unit is equipped with a 20 minute time-out function. This enables the unit to be switched on and then used for up to 20 minutes after the vehicle starter switch has been turned to position '0', even if the key is removed. This means that if a passenger is to be left in the vehicle, music can be listened to, without the security risk of leaving the keys in the starter switch (at the end of the 20 minutes, the unit will switch off automatically).

2. Audio selection button

Press one or more times to select bass, treble, balance, fader or spatial (display confirms selection), as described below.

Bass: Press once then rotate the volume control to left or right to increase or reduce bass response. Display shows:

- 'BASS -9' = minimum bass
- 'BASS 0' = normal bass
- 'BASS +9' = maximum bass

Treble: Press twice then rotate volume control to left or right to increase or reduce treble response. Display shows:

- 'TREB -9' = minimum treble
- 'TREB 0' = normal treble
- 'TREB +9' = maximum treble

Balance: Press three times then rotate volume control to left or right to adjust balance between left and right speakers. Display shows:

- 'BAL R9' = max sound from RIGHT
- 'BAL 0' = equal balance
- 'BAL L9' = max sound from LEFT

R990 - Radio

Fader: Press four times then rotate volume control to left or right to adjust balance between front and rear speakers. Display shows:

- 'FAD F9' = max sound from FRONT
- 'FAD 0' = equal balance
- 'FAD R9' = max sound from REAR

Spatial: Press five times, then rotate volume control left or right to turn spatial mode off or on. Display shows:

'SPATIAL OFF' / 'SPATIAL ON'

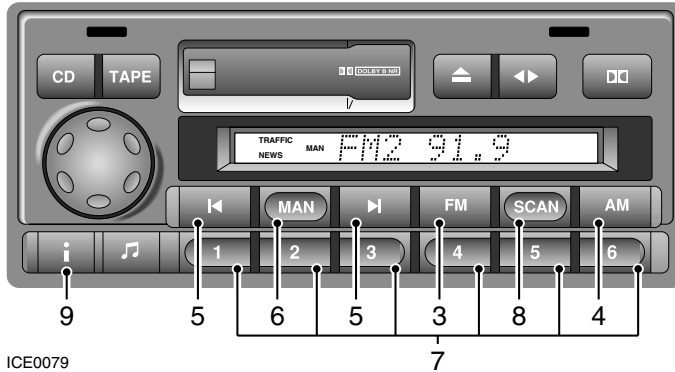
Spatial mode emphasises bass and treble responses, optimising the height and width of the sound, to give a more dynamic output.

Press the button again to return to volume control.

NOTE: After 5 seconds without further adjustment, audio mode is deselected and reverts to volume control.

Press and hold the button to reset the audio settings to their default values.

R990 - Radio



ICE0079

RADIO CONTROLS

3. FM waveband selector

Press briefly to select FM frequencies. There are two FM bands (FM1 and FM2). Both have the same tuning range, and each one can be used to store six frequencies on the pre-set buttons.

Press and hold to activate auto-store (on FM2 only - see 'AUTO-STORE', page 27).

4. AM waveband selector

Press briefly to select one of the three AM bands (MW1, MW2 and LW). Each can be used to store six stations on the pre-set buttons.

Press and hold to activate auto-store (on MW2 only - see 'AUTO-STORE', page 27).

5. Tuning buttons

Briefly press either button to search (manually or automatically) up or down the frequency range (see 'RADIO TUNING', page 26).

6. Manual tuning selector

Press to select manual tuning mode ('MAN') is displayed - use in conjunction with the tuning buttons (see 'RADIO TUNING', page 26). Press again to return to automatic tuning.

NOTE: The frequency can also be adjusted by using the remote switches on the steering wheel (see 'Owner's handbook').

7. Radio pre-set buttons (1-6)

Use to store up to 6 radio stations on each waveband.

Press briefly to select a stored frequency.

Press and hold (until radio beeps) to store a frequency on a pre-set (see 'Programming the pre-sets', page 27).

8. Scan mode button

Press the button to scan through all frequencies on the chosen waveband 10 seconds of each frequency will be played).

Press again to cancel the scan.

9. Traffic and news information

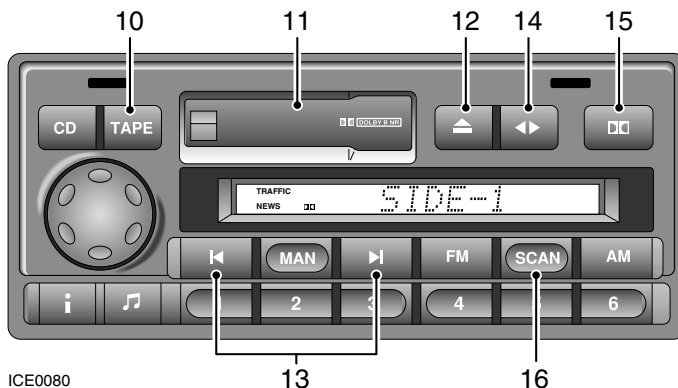
Press briefly to receive (or switch off) traffic information broadcasts - FM waveband only (see 'Selecting traffic information', page 29).

Press and hold for 2 seconds to receive (or switch off) news bulletins - FM waveband only (see 'Selecting news information', page 29).

Press briefly to return to normal radio, tape or CD reception during a traffic or news announcement.

NOTE: Both traffic and news information can be operational at the same time.

R990 - Cassette Player



CASSETTE PLAYER CONTROLS

10. Tape mode selector

Press to select tape play (display shows 'SIDE-1' or 'SIDE-2').

If the set is switched off during tape play, the cassette remains in stand-by mode. Play resumes when the set is switched on again.

11. Cassette compartment

Insert the tape with the open side to the right and push in gently. The radio mutes and tape play starts immediately.

NOTE: At the end of either side of the tape, play will automatically continue in the opposite direction.

12. Cassette eject button

Press to eject the tape (display shows 'TAPE EJECT'). The unit returns to radio mode, selecting the waveband and frequency last in use.

NOTE: If the tape is ejected when the set is in radio or CD mode, sound briefly mutes.

13. Tape search controls

Fast forward/rewind:

Press the manual mode button ('MAN'), then press and hold (for at least 1 second) the appropriate search button ('TAPE FFWD' or 'TAPE FREW' appear in the display). The tape will fast forward/rewind until either the search button or the 'MAN' button are pressed again.

Skip:

With the unit in automatic mode, press the appropriate search button to skip to either the beginning of the next track, or the beginning of the current track ('SEEK' and chevrons indicating direction appear in the display).

NOTE: The skip function may not find spaces between tracks of less than three seconds duration, and also may be confused by excessive background noise, very soft musical passages and intermittent pauses in music or speech.

NOTE: Skip and mode selection can be operated using the remote switches on the steering wheel (see 'Owner's handbook').

R990 - Cassette Player

14. Tape reverse

Press to play the opposite side of the tape.

15. Dolby B noise reduction[†]

Press when playing tapes recorded using the Dolby B NR system (display shows 'DD').

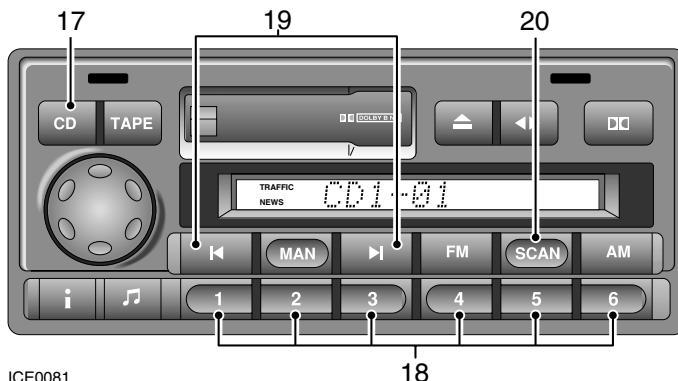
16. Tape scan button

Press the SCAN button to listen to the first 10 seconds of each track on the tape (both sides).

The display shows 'TAPE SCAN'. The scan continues until the button is pressed again or until another function is selected.

[†] Noise reduction manufactured under license. Dolby and the DD symbol are trade marks of Dolby Laboratories Licensing Corporation.

R990 - Compact Disc Player



COMPACT DISC PLAYER CONTROLS

17. CD mode selector

Press to select CD player mode. Playback starts from the point on the disc at which play last stopped, or from the start of the first disc if the magazine is newly inserted. The display shows disc number ('CD1') and track number ('01'). If no magazine has been inserted into the autochanger, 'NO MAGAZINE' is displayed.

At the end of each disc, playback automatically continues with the next disc (missing discs are skipped if less than six have been loaded).

18. Disc selection buttons (1-6)

Press the appropriate button to select the desired disc. If an empty compartment is selected, the display shows 'NO DISC' and the next available disc is selected instead.

NOTE: Skip and mode selection can be operated using the remote switches on the steering wheel (see 'Owner's handbook').

19. Track search buttons

Skip:

Press the appropriate button to skip to the beginning of the next, or back to the beginning of the current track (the display shows disc and track numbers). If the button is pressed and held, the CD player continues to skip tracks until the button is released.

Search:

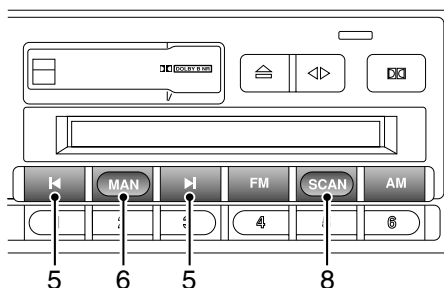
Press the Manual mode button ('MAN'), then press and hold the appropriate search button to move forward or backward (display shows 'FFWD' or 'FREW') through the track at a greatly increased play speed (volume reduces).

20. Scan mode button (SCAN)

Press the SCAN button to listen to the first 10 seconds of every track on the selected disc. 'SCAN' appears in the display, along with the numbers of the disc and the scanned track. The scan continues until the button is pressed again or until another function is selected.

R990 - Radio Tuning

RADIO TUNING



ICE0082

Manual tuning

If you know the frequency of the radio station you are seeking, or you need to select a radio station that is too weak to be found by automatic tuning, use manual tuning, as follows:

Select the desired waveband (FM or AM), then press the 'MAN' button (6). By briefly pressing either tuning button (5), the frequency changes (either up or down) in steps of 0.1 MHz for FM, or 1 kHz for MW and LW.

Fast manual tuning

By keeping either tuning button depressed, the waveband will be scanned rapidly (up or down) until the button is released.

Automatic tuning

Select the required waveband (FM or AM), then briefly press one of the tuning buttons (5) - ('SEEK' along with the chosen waveband appear in the display).

The radio automatically searches the frequency range (either up or down depending upon which of the tuning buttons is pressed) looking for a radio station of acceptable strength. Once a suitable station is found, the search stops unless you choose to continue by pressing the tuning button again.

The search can be stopped at any time by pressing any pre-set button.

Waveband scan

Select the desired waveband (FM or AM) and press the SCAN button (8). The radio scans through the waveband, seeking stations of acceptable strength (the waveband, frequency and 'SC' are displayed). The radio stops at each one it finds and plays that station for 10 seconds, the radio then mutes and scans for the next station.

To stop the scan, press the button again - the radio commences playing the station at which the scan was stopped.

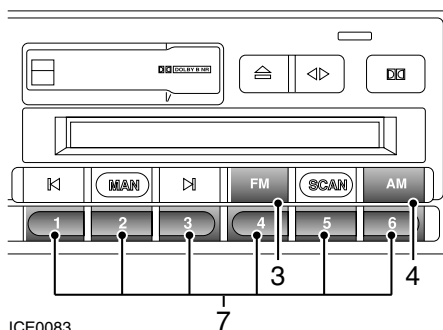
NOTE: If you have a car telephone with a mute signal output connected to the radio, the radio automatically mutes when the telephone is in use.

MONO/STEREO

Whenever the FM waveband is selected, the radio automatically reproduces stereo sound, provided a suitable signal is available. However, if a signal becomes too weak for good stereo reception, only mono sound is produced until the signal strengthens sufficiently for stereo sound reproduction.

R990 - Radio Tuning

RADIO PRE-SET BUTTONS



The six pre-set buttons (7) can be used to manually store up to twelve FM stations (six each on FM1 and FM2), twelve MW stations (six each on MW1 and MW2), and six LW stations. The pre-sets are programmed as follows:

Programming the pre-sets

- Select the required waveband (FM1, FM2, MW1, MW2 or LW).
- Tune to the desired frequency using either automatic or manual tuning.
- Press and hold one of the pre-set buttons until a bleep sounds. The frequency is now stored (the display shows the waveband and frequency or name of the station you have tuned).

NOTE: Once the pre-sets have been programmed, they will be retained by the unit until they are re-programmed or until the battery is disconnected.

Operating the pre-sets

Once the pre-set buttons have been programmed, operation is simple; select the desired waveband, then press the pre-set button of your choice.

AUTO-STORE

Auto-store enables you to rapidly tune and store the strongest FM and MW radio signals in a single operation. This facility is particularly useful if you are in an unfamiliar area and have little knowledge of local transmitter frequencies.

Programming auto-store

Press and hold the appropriate waveband selection button (3 or 4) until a bleep sounds (the radio mutes and the display shows either 'FM AUTOSTORE' or 'MW AUTOSTORE').

Auto-store scans the waveband to find the six strongest frequencies and then stores them on either the FM2 or MW2 pre-set buttons in order of signal strength.

Auto-store overwrites any stations already stored on the FM2 or MW2 pre-set buttons.

Radio play restores when the operation is complete.

NOTE: If FM auto-store is programmed with the traffic facility active, then only stations capable of providing traffic information will be stored.

NOTE: If auto-store is unable to find six strong stations, the remaining pre-set buttons remain blank.

Operating auto-store

To tune to one of the auto-store frequencies, select FM2 or MW2, then press the pre-set button of your choice; the frequency or radio station name will appear on the display.

NOTE: It is recommended that both traffic and news information facilities are switched off before the pre-set stations are stored and before auto-store is programmed.

R990 - Radio Data System

RADIO DATA SYSTEM (RDS)

This radio is equipped with RDS (Radio Data System). RDS is being introduced in European countries and operates on the FM waveband. The system enables the radio to receive other information in addition to radio signals, including:

- *the programme service name*: this enables the set to display the radio station name instead of the frequency.
- *alternative frequencies for the FM radio station being received*: this enables the audio unit to automatically select the strongest available signal, thereby maintaining the best possible reception.
- *a traffic or news information facility*: this enables the set to give priority to traffic or news information broadcasts over other radio, tape or CD programmes.
- *an alarm announcement facility*: this enables the set to give priority to emergency information broadcasts; e.g. a very serious accident or natural disaster.
- *EON (enhanced other networks)*: this enables the radio to broadcast traffic or news information from radio stations other than the one to which the radio is currently tuned (provided they are all members of a linked EON network).

Receiving RDS stations

The radio is automatically in the RDS mode whenever the FM waveband is selected.

Whenever an RDS radio station is selected, the radio station name illuminates in the display. The set will constantly scan all alternative frequencies on which that station can be received, and automatically switch to the strongest signal it can find.

This is particularly useful on long journeys where the car travels through several different transmitter areas which serve the same radio station.

NOTE: *In some countries, not all FM radio stations broadcast RDS. If a non-RDS station is received the features described previously will not be available.*

Local radio stations

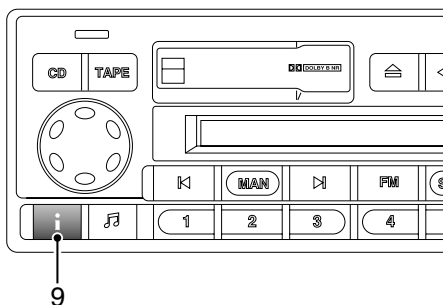
Reception of most local radio stations is intentionally limited to a comparatively small area around the transmitter.

Once the limit of the reception range is reached, it is unlikely that the RDS facility will be able to locate an alternative frequency to the local radio station being received.

If the signal is weak but no alternative frequencies are available, the set will stay tuned to that frequency until the signal is unreceivable. At this point SEARCH mode will operate.

R990 - Traffic & News Information

INFORMATION BROADCASTS



ICE0084

On the FM waveband, the RDS facility enables your radio to receive traffic and news information broadcasts from local radio stations that are linked to the same network as the station to which it is tuned.

Traffic and news information broadcasts can be selected by pressing the information button (9).

Once selected any available traffic and news information broadcasts are then received automatically as and when they occur (even if you are listening to cassette tapes or CDs).

Selecting traffic information

BRIEFLY press the information button (9) - the TRAFFIC indicator illuminates in the display.

During traffic announcements the display flashes 'TRAFFIC INFO' alternately with the name of the radio station providing the information.

If the radio is tuned to an FM station that is not networked to a station that does provide traffic information, the display flashes 'NO TRAFFIC'. In this case, either switch off traffic information, or switch to an FM station that does broadcast traffic information.

In remote areas, it may be impossible to find a traffic information station. The radio will search the waveband twice; if a station cannot be found, the radio will switch off traffic and return to the station to which it was previously tuned.

NOTE: When traffic information is switched on, occasional, and very brief, muting of the radio may occur while the set searches for traffic broadcasts. For this reason, it is recommended that traffic information is switched off when not needed.

Selecting news information

Press and hold the information button (9) until a bleep sounds - the NEWS indicator illuminates in the display.

During news broadcasts the display flashes 'NEWS' alternately with the name of the radio station providing the news information.

NOTE: If both Traffic and News information are selected, the radio will give priority to which ever broadcast commenced first - one information source cannot interrupt another!

Switching off information broadcasts

Traffic information: To switch off traffic information, briefly press the information button (the TRAFFIC indicator disappears from the display). This action will prevent traffic information broadcasts from being received until the button is pressed again.

News information: To switch off news information, press and hold the information button for approximately 2 seconds (a bleep will sound and the NEWS indicator disappears from the display). This action will prevent future news broadcasts from being received until the feature is reselected.

Unwanted information broadcasts can be aborted by BRIEFLY pressing the information button. In this case, because the feature is being disabled DURING an information broadcast, disablement is only temporary - the feature will return as soon as the next traffic or news information bulletin is broadcast.

R990 - Traffic & News Information

Information broadcasts during tape or CD play

When the radio is in either traffic or news information mode, CD or tape play will be interrupted by information broadcasts automatically as and when they occur.

Volume for information broadcasts

The volume of traffic and news information broadcasts can be set independently from the volume required for other audio output (e.g. radio, cassette tape and CD), as follows:

Wait for a traffic or news announcement, then during the broadcast, adjust the volume to the desired level (this is likely to be greater than that required for other audio output). Once this volume has been set, it will be memorised by the audio unit and replicated automatically next time a traffic or news announcement is broadcast.

Note that further adjustments to the volume can be made during any subsequent traffic or news announcement.

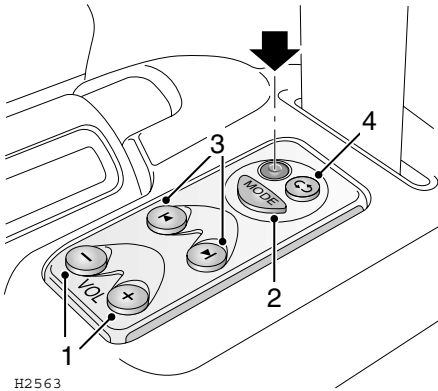
NOTE: *The volume level for traffic announcements will never be lower than the current volume.*

Emergency alarm announcement

Emergency announcements cannot be activated or deactivated by the user. If an emergency traffic or news announcement is transmitted ('ALARM' appears in the display), all other audio functions will be overridden.

R990 - Headphones

HEADPHONE CONTROLS



The rear passenger headphone controls only operate with the radio/cassette player switched on. Plug the headphones into the socket (arrowed in illustration) to activate the controls - bass response from the vehicle speakers reduces and the headphone symbol, along with a symbol indicating the current headphone unit mode, appears in the display.

NOTE: To override the drop in bass response, press and hold the on/off volume control on the radio/cassette player.

NOTE: Only headphones compatible with a 3.5 mm jack plug socket can be used. To obtain optimum sound quality, use headphones with a resistance of 16 Ohms.

1. Volume controls

Press the +/- buttons to increase/reduce headphone volume output.

2. Mode control

If a tape and CDs have been loaded, press the control to change between cassette, CD and radio play back.

NOTE: Changing mode using the headphone control unit does NOT effect the audio output for the rest of the vehicle.

3. Auto search controls

The auto search controls has no effect if the headphone control unit is in the same mode as the radio/cassette player. For example; if the radio/cassette player AND the headphone unit are both in tape mode, the control does not operate.

During radio play:

Press the appropriate button to search up or down the selected waveband to locate the next or previous radio station.

During tape play:

Press the appropriate button to skip to the beginning of the next, or current track. Press repeatedly to search through more than one track.

During CD play:

Press the appropriate button to skip to the beginning of the next, or current track.

Press and hold the button to search through more than one track on the currently selected CD. The search stops when the button is released.

4. Selection button

The selection button has no effect if the headphone control unit is in the same mode as the radio/cassette player.

During radio play:

Press to select the next pre-set station on the current waveband.

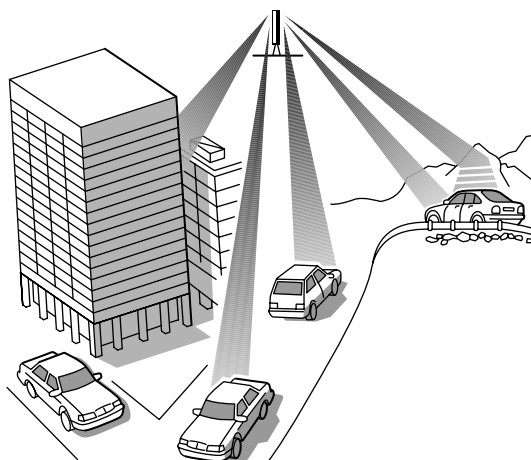
During tape play:

Press to reverse the direction of play.

During CD play:

Press to select the next CD in the autochanger.

Radio Reception



ICE 0052A

RADIO RECEPTION

Distortion, interference and lack of signal clarity, are often attributed to a fault in the radio - this is rarely the case.

Problems of this kind are usually caused by phenomena such as atmospheric conditions, signal strength, hilly terrain, tall buildings, bridges and even electrical interference from power lines.

Please remember: A car radio receives signals while the vehicle is in motion (unlike a domestic set) - constantly changing direction and moving away from, or nearer to, the transmitter whilst negotiating terrain with widely differing reception characteristics. Some interference is to be expected from time to time.

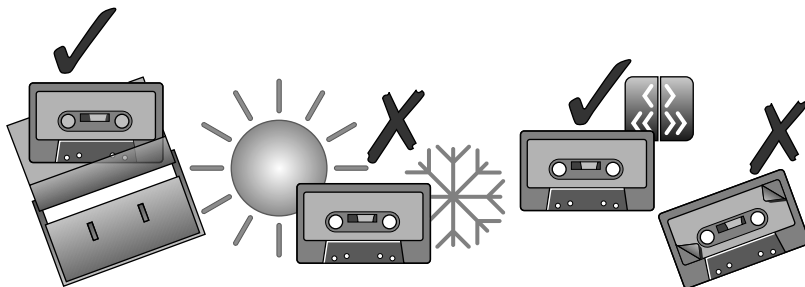
FM transmitters can only broadcast over a limited range and good, clear signals will only be received in the immediate area of the transmitter. When travelling, it may be necessary to re-tune the radio from time to time, to offset the effects of moving from one transmitter area to another.

While RDS automatic retuning eases this problem, some manual retuning may still be needed (especially for local stations) in areas of weak reception.

The broadcast range for good stereo reception (usually within a 50 to 65 km radius of the transmitter) is noticeably less than it is for mono. FM Signals (like light waves) travel in a straight line, so large obstacles, such as tall buildings, can shield the car from the signal causing distortion or loss of reception (known as dead spots).

Distortion can also occur if FM signals received directly from the transmitter mix with signals which have been reflected by obstructions such as mountains, hills and tall buildings (this is known as multi-path distortion).

Care of Cassette Player and Tapes



ICE 0054

CARE OF CASSETTE PLAYER AND TAPES

Use only good quality tapes with a maximum capacity of ninety minutes (C90). Check that both spools rotate freely and remove any loose turns at the start of the tape by winding one spool with a pen or pencil.

Cassette player

In use, the tape head accumulates dust and contamination, gradually impairing sound reproduction and, in extreme cases, reducing volume too. To combat contamination, clean the tape head periodically (after approximately every 20 hours playing time) by passing a wet type cleaning cassette through the player.

NOTE: *Because your cassette player is fitted with auto reverse, the cleaning cassette must be played in both directions.*

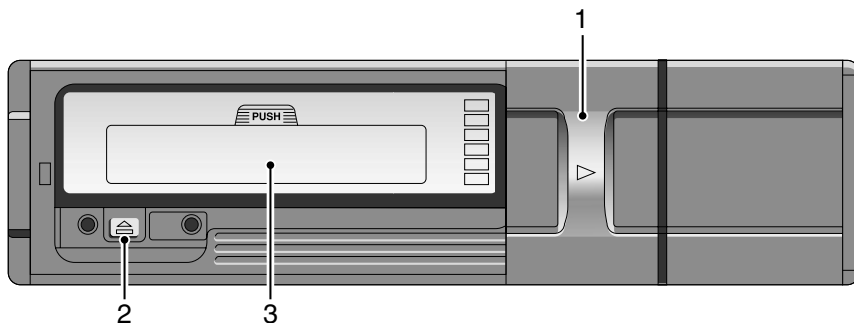
The tape will require more frequent cleaning in winter, as contamination is greater in conditions of low temperature and increased humidity. However, the use of good quality tapes keeps the build up to a minimum.

Cassette tapes

- Always store cassettes in their boxes when not in use.
- Never leave cassettes in the vehicle during extremes of temperature. In particular, do not leave tapes in direct sunlight as they may warp and become unusable, or jam the tape player mechanism.
- Fast forward, or rewind tapes every 8 to 10 plays to prevent them from becoming too tightly wound.
- Ensure that labels attached to the cassette are glued firmly in place.
- DO NOT leave tapes in the cassette player for more than a few hours in very cold or humid conditions - the oxides on the tape surface may contaminate the cassette player mechanism.

NOTE: *After continuous playing, cassettes may become hot to touch. This is normal and will not harm good quality tape.*

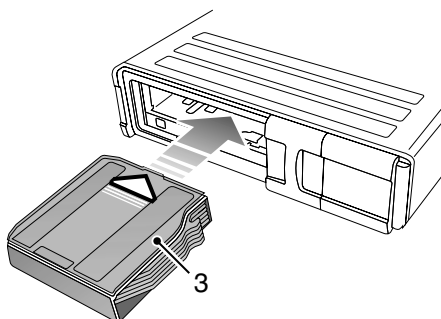
CD Changer Unit



ICE0096

COMPACT DISC CHANGER UNIT*

Removing/inserting the magazine



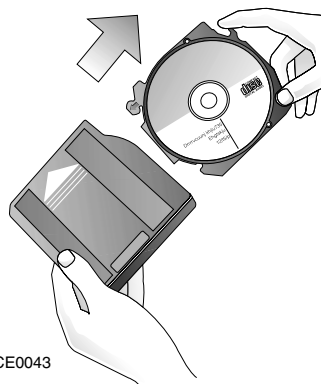
ICE0097A

Fully open the sliding cover (1) to insert or remove the magazine. Keep the cover closed at all other times to prevent dust and dirt from entering the changer unit.

Press the button (2) to eject the magazine.

Insert the magazine (3) in the direction of the arrow marked on the magazine casing and push it fully into the changer. Finally, close the sliding cover.

Loading & unloading the magazine



ICE0043

Holding the magazine as shown (arrow on magazine casing uppermost), remove each CD tray in turn.

Place a disc (label side uppermost) onto each tray - holding **ONLY** the outside edge and centre hole of the disc. Load only one disc in each tray.

Correctly align the tray with the parallel slots on each side of the magazine and slide the tray into the magazine.

NOTE: On C-42 audio systems: If a CD is inserted the wrong way up, or a faulty disc is inserted, 'NO DISC' will be displayed on the audio unit.

CD Changer Unit

To unload the magazine, hold the magazine with the arrow uppermost, pull out each tray in turn, holding the tray securely so as not to drop the disc. Unload one disc at a time and handle only the edge and centre of the disc.

Important:

- Use standard 12cm CDs only.
- DO NOT use irregularly shaped or damaged CDs - these may damage the compact disc changer.
- 8cm CD singles must NOT be used, even if a CD adaptor is fitted.
- Closed session CD-R discs can be played, but CD-RW discs will not operate with the CD autochanger.
- The CD autochanger should not be used in temperatures outside the range -10°C to +60°C.

NOTE: *If the CD autochanger reaches temperatures higher than recommended for normal use, 'CD HIGH TEMP' appears in the audio unit display. If this occurs, stop using the CD player, eject the magazine and allow the autochanger to cool down. If the problem persists, consult your dealer.*

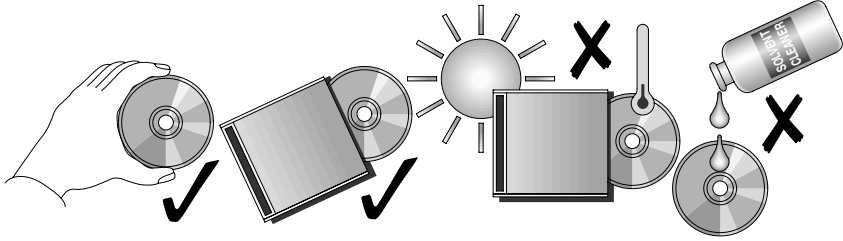
- The CD autochanger should only be used as described - any other application or method of use could result in the user being exposed to invisible laser radiation exceeding the limit of laser class 1.

NOTE: *Additional magazines can be obtained from a Land Rover dealer.*

CD autochanger maintenance

In use, the laser lens of the CD autochanger may accumulate dirt and dust. This will gradually impair sound reproduction and, in extreme cases, may cause slipping and mistracking. To combat this, periodically use a CD lens cleaning disc.

Caring for Compact Discs



ICE 0022

CARING FOR COMPACT DISCS

Dirt, dust, condensation and heat can damage discs. Always observe the following precautions:

NEVER touch the horizontal playing surface (the unlabelled side) of a disc! Handle discs by holding the outer edges, or the edge of the central hole and the outer edge, between finger and thumb.

ALWAYS return discs to their boxes after use (dirt detracts from the sound quality).

NEVER leave the disc or the box exposed to excessive heat or direct sunlight!

NEVER use a solvent or abrasive cleaner! Dust or dirt should be removed from the playing surface by wiping with a clean, dry, lint-free cloth always wipe in a straight line from the centre to the edge of the disc!

If minor scratches on the surface of the compact disc cause skipping or mistracking, use CD restorer polish to remove the scratches and improve the performance of the disc. When using CD restorer polish, always follow the manufacturer's instructions.

Security Code

SECURITY CODE INFORMATION

To reduce the risk of theft, your audio unit is programmed with a four digit security code. Once activated, this code prevents the unit from functioning if it is illegally removed from the vehicle. There are 10,000 different codes - making your audio unit valueless to a thief unless he has the correct one. In addition, each unit is further protected by a time delay penalty system that effectively defies even the most systematic attempt to break the code.

NOTE: *If an incorrect code is entered, a one minute time delay is imposed before a second code can be attempted. Each time a wrong code is entered, the time delay doubles (2 min, 4 min, 8 min, etc.) making theft a very unattractive proposition.*

On delivery of the vehicle you were supplied with a Security Information card. This card contains a record of the four digit security code, as well as the unit's unique serial number. The serial number is also stamped into the metal side of the unit and, in the event of theft, would confirm proof of ownership.

It is VERY IMPORTANT that you keep a safe record of the security code and heed the following advice:

- NEVER keep a record of the security code in the car.
- If you lose your code number, contact the nearest Land Rover dealer, who will be able to obtain this information for you.

NOTE: *A spare Security Information card is supplied inside the back cover of the Service Portfolio in the literature pack. For further information on the Security Information card, consult the Owner's Handbook.*

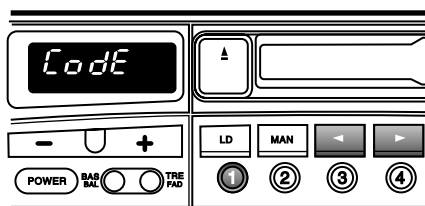
Activating the code

Your dealer will have correctly activated the security code before you took delivery of the vehicle. This will be confirmed whenever you switch the unit on by 'CODE' appearing BRIEFLY in the display.

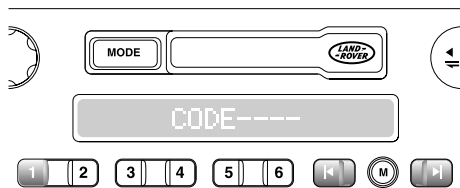
If this display is absent, the radio will still work, but will not be protected by the security code. If this is the case, you should activate the code by keeping the 'up' tuning button depressed while turning the set on. Before activating the code, ensure that you have the Security Information card with the security code on it.

Security Code

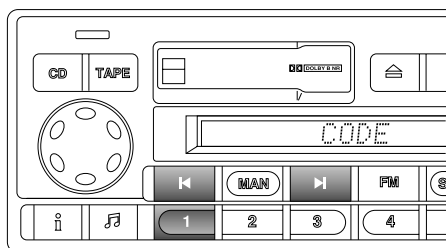
ENTERING THE SECURITY CODE



R660 audio system



C-42 audio system

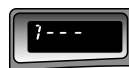


ICE0085

R990 audio system

If the code has not already been entered, or power to the set has been interrupted, the code **MUST** be entered before the set will operate. Enter the code as follows:

Switch on the radio ('CODE' appears in the display). Press pre-set button 1.



Press either the up or down tuning button (highlighted in illustration) until the first digit of the security code appears in the display. Press pre-set 1 to store the first digit in the unit's memory.



Use either tuning button to select the second digit of the code (until the correct digit appears in the display). Press pre-set 1 to store the second digit.



Select the third digit, again using the tuning buttons (until the correct digit is displayed). Press pre-set 1 to store the third digit.



Select the final digit (the display now shows the full four digit code). Press pre-set 1 to store the final digit.

If the correct code has been selected, a two-tone beep will sound and the radio will operate.

If an incorrect code has been entered, the first time delay period commences. During the delay period, 'Err', 'CODE WAIT' or 'WAIT' appears in the display - DO NOT switch off. At the end of the delay period, 'CODE' reappears in the display and you can then enter the correct code. Remember; the time delay period doubles each time an incorrect code is entered.

NOTE: On R660 models, a warning bleep sounds at the beginning of the first time delay period.