Handling of Discs

This explains care that should be taken in the handling of discs.

Important Points on Handling

- Fingerprints or other marks on the read surface of the disc may result in its content being more difficult to read. When holding the disc, grip both edges, or one edge and the centre hole, in order that the read surface is not touched.
- Do not affix paper or stickers, or otherwise damage the disc.
- Do not forcefully insert a disc if a disc is already within the device. This can result in damage to discs, or malfunction.

Cleaning

- Periodically clean the read surface of the disc. When cleaning, do not wipe in a circular motion. Instead, wipe gently outwards from the centre of the disc to the outer edge.
- New discs may have burring around the outer edge or in the hole in the centre. Ensure you check for these. If there are burrs, these may lead to faulty operation, therefore ensure these are removed.

Important Points on Storage

- When not using discs, ensure these are kept in cases, and stored out of direct sunlight.
- If discs are not going to be used for a long period of time, remove these from the product.

Disc Playback Environment

In cold environments such as in mid-winter when the interior of the vehicle is cold, turning the heater on and immediately trying to use the product may cause condensation (water droplets) to form on the disc and internal optical components, and this may prevent the product from operating correctly.
In these conditions, remove the disc, and wait a short time before use.

Copyright

Actions such as unauthorized reproduction, broadcast, public performance, or rental of discs that comprise other than personal use are prohibited by law.

Types of Disc That Can Be Played Back

The following marks are printed on the disc label, package, or jacket.

Type	Size	Maximum playback time	Comments
DVDVideo	12 cm/single-sided 12 cm/double-sided	133 min. (single-layer)/ 242 min. (dual-layer) 266 min. (single-layer)/ 484 min. (dual-layer) (MPEG-2 type)	• Has the region code including "3". Or "ALL"
DVD-R/RW DVD+R/RW	12 cm/single-sided 12 cm/double-sided	—	• Includes CPRM/dual-layer discs • Discs recorded conforming DVD video/DVD-VR format standards • Discs in which MP3, WMA or AAC file is recorded
CD-DA	12 cm	74 minutes	—
CD-TEXT	12 cm	74 minutes	—
CD-R/RW	12 cm	—	• Disc containing MP3/WMA/AAC files

Discs That May Not Be Played Back

• Playback of discs other than those described in "Types of Disc That Can Be Played Back" is not guaranteed.

• 8 cm discs may not be used.

• Do not insert irregularly-shaped discs (for example, heart-shaped), as these may result in malfunction.
  Additionally, discs that have transparent portions may not be played back.

• Discs that have not been finalised cannot be played back.

• Even if recorded using the correct format on a recorder or computer, application software settings and environments; disc peculiarities, damage, or marking; or dirt or condensation on the lens inside the product may render the disc unplayable.

• Depending on the disc, some functions may not be used, or the disc may not play back.

• Do not use discs with cracks or warps.

• If the disc has stickers affixed, remains from removed stickers, or affixed adhesive, then do not use the disc.

• Discs that have decorative labels or stickers may not be used.

Nonstandard CDs

This product will play back audio CDs, however please be aware of the following points regarding CD standards.

- Ensure that you use discs with ▨▨▨ on the label surface.
- Playback of other than standard CDs is not guaranteed. Even if the audio can be played back, the audio quality cannot be guaranteed.
- When playing back other than standard CDs, the following may occur.
  - There may be noise during playback.
  - There may be jumping in the audio.
  - The disc may not be recognized.
  - The first track may not be played back.
  - It may take longer than usual until start of playback of tracks.
  - Playback may start from within the track.
  - Some parts may not be played back.
  - Tracks may freeze during playback.
  - Tracks may be displayed erroneously.

DVDs

Depending on the DVD, some functions may not be used, or the DVD may not be played.

Meanings of the marks on DVDs

The following marks are printed on the DVD disc labels and packages. Each mark indicates the type of video recorded in the disc, language, or functions available.

(2)))	Number of audio languages
(.2...)	Number of subtitle languages
🎥3	Number of angles
16:9 LB	Types of screen sizes (aspect ratio)
2 ALL	Codes that limit the areas where the DVD can be played. DVDs that can be played on this product have the region code of "ALL" or the code including "3".

Audio Files (MP3/WMA/AAC)

This product can play back MP3/WMA/AAC format audio files recorded on CD-ROM, CD-R/RW, and USB devices.

There are limitations on the files and media that can be used, therefore read the following prior to recording MP3/WMA/AAC format audio files on discs or USB devices. Additionally, ensure you read the user manuals for your CD-R/RW drive and the writing software, and ensure these are used correctly.

If the MP3/WMA/AAC format audio files includes title information or other data, then this can be displayed.

⚠ **CAUTION**

- Actions such as copying audio CDs or files and either distributing these to others for free or for charge, or uploading files via the Internet or other means to servers is an infringement of the law.
- Do not append the file extensions ".mp3", ".wma", or ".m4a", to other than MP3/WMA/AAC format files. Playing back discs with these types of files recorded upon them may cause the files to be incorrectly identified for playback, which may lead to loud noise, resulting in speaker damage or accident.

ADVICE

- Depending on the condition of the disc recorder or recording software used, correct playback may not be possible. In these cases, refer to the user manual for your product or software.
- Depending on your computer's operating system, version, software, or settings, files may not have a file extension appended. In these cases, append the file extensions ".mp3", ".wma", or ".m4a" when copying the files.
- Files larger than 2GB in size cannot be played back.
- This product can also play back discs that mix audio files in different formats, MP3, WMA, and AAC.

AV

Audio Functions

Folder Structure

Up to 8 folder levels can be recognized.
You can create a folder structure as in Genre - Artist - Album - Track (MP3/WMA/AAC format audio files) for management of tracks.
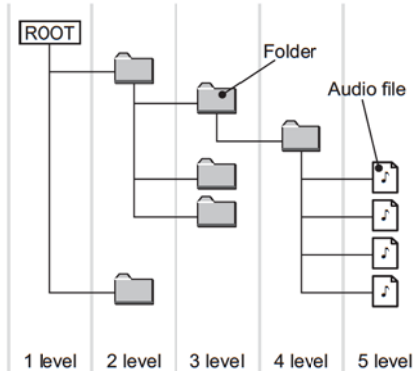
Name	Specification		Explanation
Format specifications	ISO9660	Level 1	Maximum 8 character file name, and 3 character file extension. (single-byte alphanumeric capital letters, numerals, "_" may be used)
	ISO9660 extension	Joliet	Files names up to a maximum 30 characters can be used.
Multisession	Not supported (only first session supported)		
Maximum number of levels	8 levels (if the root is the 1st level)		
Maximum folder number	Disc: 349 folders; USB device: 999 folders (including root)		
Maximum file number[*1]	Disc: 2478 files; USB device: 65535 files (total number on media. Other than MP3, WMA, and AAC files not included)		
File name and folder name restrictions	Maximum 30 bytes (30 characters), files/folders with file/folder names longer than this will not be displayed or played back.		
USB supported formats	The recommended file system is FAT16 and FAT32. 1 partition only		

*1) Do not include other than MP3/WMA/AAC files. However, if storing many tracks within the same folder, these may not be recognized even if less than the maximum number of tracks. In these cases, divide the tracks up into multiple folders.

NOTE

• The order in which folders and audio files are displayed on this product may be different to how they are displayed on a computer.

What Is MP3?

MP3 is an abbreviation of "MPEG-1 Audio Layer 3". MPEG is an abbreviation of "Motion Picture Experts Group", and this is a video compression standard used in video CDs, etc. MP3 is one of the audio compression methods contained in the MPEG audio standard, and reduces the quality of sounds that are beyond the auditory resolution of the human ear and that are hidden by louder sounds, thus creating high-quality data with a lower data size.

Because this can compress CD audio to approximately 1/10 its original data size without perceptible loss, approximately 10 CDs can be written to a single CD-R/RW disc.

⚠ **CAUTION**

• MP3 files different to the standards at right may not play back correctly, or file/folder names may not be displayed correctly.

Standards for MP3 Files That Can Be Played Back

Specifications for MP3 files that can be played are as below.

Item		Details
Specification	DISC	MPEG-1 AUDIO LAYER3
	USB	MPEG-2 AUDIO LAYER3
Sampling frequency [kHz]	DISC	MPEG-1 : 32/44.1/48
	USB	MPEG-2 : 8/11.025/12/16/22.05/24
Bit rate [kbps]	DISC	MPEG-1 : 32 to 320
	USB	MPEG-2 : 8 to 160
VBR (variable bit rate)		Support
Channel mode		Stereo/Joint stereo/Dual channel/Monaural
File extension		mp3
Supported tag information		ID3 tags: Ver. 1.0, Ver. 1.1, Ver. 2.2, Ver. 2.3, Ver.2.4 Title, Artist name, Album name

What Is WMA?

WMA is an abbreviation of Windows Media Audio, and this is an audio compression format from Microsoft. This is a compression format that has a higher compression ratio than MP3.

* Microsoft, Windows Media, and Windows are registered trademarks of Microsoft Corporation (USA) and in other countries.

⚠ CAUTION

- WMA supports digital rights management (DRM). This product cannot play back WMA files protected using this system.
- WMA files different to the standards at right may not play back correctly, or file/folder names may not be displayed correctly.
- "Pro", "Lossless", and "Voice" are not supported.

Standards for WMA Files That Can Be Played Back

Specifications for WMA files that can be played are as below.

Item		Details
Specification	DISC	Windows Media Audio Version7.0/8.0/9.0
	USB	
Sampling frequency [kHz]	DISC	8/11.025/16/22.05/32/44.1/48
	USB	
Bit rate [kbps]	DISC	5 to 320
	USB	
VBR (variable bit rate)		Support
Channel mode		Stereo/Monaural
File extension		wma
Supported tag information		WMA tags Title, Artist name, Album name

What Is AAC?

AAC is an abbreviation of Advanced Audio Coding, and this is an audio compression standard used in "MPEG-2" and "MPEG-4". This features 1.4x the compression of MP3, with comparable audio quality.

⚠ CAUTION

• AAC supports digital rights management (DRM). This product cannot play back AAC files protected using this system.

• AAC files different to the standards at right may not play back correctly, or file/folder names may not be displayed correctly.

Standards for AAC Files That Can Be Played Back

Specifications for AAC files that can be played are as below.

Item		Details
Specification	DISC	MPEG4/AAC-LC
	USB	MPEG2/AAC-LC
Sampling frequency [kHz]	DISC	8/11.025/12/16/22.05/24/32/44.1/48
	USB	
Bit rate [kbps]	DISC	8 to 320
	USB	
VBR (variable bit rate)		Support
Channel mode		Stereo/Monaural
File extension		m4a
Supported tag information		AAC tags or ID3 tags Title, Artist name, Album name

Video files (DivX/ MP4)

This product can play back DivX/MP4 format movie files recorded on CD-ROM and CD-R/RW.

There are limitations on the files and media that can be used, therefore read the following prior to recording DivX/MP4 format movie files on discs.
Additionally, ensure you read the user manuals for your CD-R/RW drive and the writing software, and ensure these are used correctly.

ADVICE

• Depending on the condition of the disc recorder or recording software used, correct playback may not be possible. In these cases, refer to the user manual for your product or software.

File format

File format	File extension	Image codec	Audio codec
MP4	.mp4	MPEG-4(ISO/IEC 14496 Part.2)	MP3
	.m4v	H.264/MPEG-4 AVC	AAC
DivX v3 - 6(DMF) *Home Theater Profile	.divx	DivX	MP3
	.div		

Image codec

| Image codec	Profile/Level	Max. resolution	Max. bit rate/Max. frame rate
H.264/MPEG-4 AVC	BaselineProfile/3	720*480	10Mbps/30fps
		720*576	10Mbps/25fps
MPEG-4 (ISO/IEC 14496 Part.2)	SimpleProfile/5	720*480	8Mbps/30fps
		720*576	8Mbps/25fps
DivX	Home Theater Profile	720*480	8Mbps/30fps

Radio

Listen to Radio

This explains how to listen to AM and FM radio broadcasts.

1 Press the HOME key.

The home screen is displayed.

2 Touch AM or FM .

▼
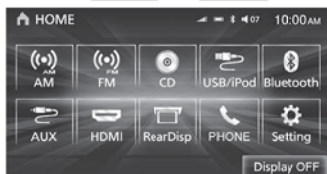
The radio broadcast information screen is displayed.
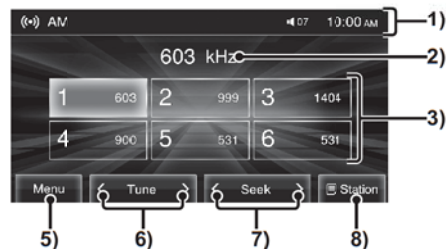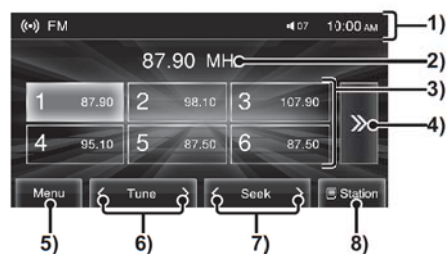
3 Touch < Tune or Tune > to tune in a station.

▼

The station at the selected frequency is played.

Display Contents

Radio Broadcast Information Screen

1) Source plate

Displays the name of the currently selected source, clock, and volume.

2) Frequency

Displays the frequency being received.

---

3) Preset switch

Allows you to register your favourite stations. Touch and hold the switch for the desired preset channel number until you hear the beep. This registers the station currently being received. →*"Register Your Favourite Broadcast Stations" (P28)* Touch the switch to receive the registered station.

4) >>

Allows you to change the preset switch screen. Allows you to register your favourite 6 stations for each band.

5) Menu

Touching it displays the FM/AM menu that allows you to perform [Scan] and [Sound Setting] *(P62)*.

6) < Tune , Tune >

Allows you to change the frequency.

7) < Seek , Seek >

Allows you to search for stations that can be received one at a time.

8) Station

Displays a list of the broadcast stations that can be received.
→*"Search for Broadcast Stations from the Station List" (P28)*

AV

Radio

Register Your Favourite Broadcast Stations

You can register your favourite 12 stations for FM and 6 stations for AM.

1 **On the radio broadcast information screen, touch** `< Tune` **or** `Tune >` **to search for the "broadcast station" to register.**

2 **Touch and hold the "preset switch" to register to until you hear the "beep".**

This registers the selected broadcast station to the preset channel number whose switch you touched.

Search for Broadcast Stations with Strong Signals

This is handy for searching for broadcast stations you can receive when you drive to a different area, for example for vacation.

Starting the Seek

A receivable station can be searched one at a time.

1 **On the radio broadcast information screen, touch** `< Seek` **or** `Seek >` **.**

▼

When a receivable station is found, it is played.

Search for Broadcast Stations from the Station List

You can select a station from the list of receivable broadcast stations.

1 **On the radio broadcast information screen, touch** `Station` **.**

The station list is displayed.

NOTE

• For AM, the station list is automatically updated before it is displayed.

2 **Select the broadcast stations you want from the station list and touch it.**

▼

Reception of the selected broadcast station starts.

3 **Touch** `Back` **.**

▼

The display returns to the original radio broadcast information screen.

Updating the Station List

You can manually update the station list.

1 **On the station list, touch**
Refresh .

Updating starts.

▼

The updated station list is displayed.

AV

Radio

DISC

Listen to CDs

This explains how to listen to audio CDs (CD-DA/CD-TEXT).

Insert a disc in this product to automatically start playback.
→*"Inserting the Disc"(P16)*

NOTE

- Operate with an audio CD loaded into this product.

1 **Press the** `HOME` **key.**

The home screen is displayed.

2 **Touch** `CD` **.**

The audio CD playback information screen is displayed.

3 **Touch** `|◄◄` **or** `►►|` **to select a track.**

▼

The selected track is played back.

ADVICE

- You can fast forward or rewind the track being played by touching and holding `|◄◄` or `►►|` .

Display a List

You can display a track list.

1 **On the audio CD playback information screen, touch** `List` **.**

▼
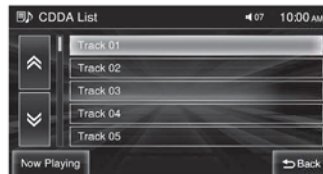
A track list is displayed.

2 **Touch** `Back` **.**

▼

The display returns to the audio CD playback information screen.

Playback Information Screen

1) Source plate

Displays the name of the currently selected source, clock, and volume.

2) Track name

If there is title information, displays the track name.

3) Playback time

4) ▶ / ⏸

Allows you to play or pause.

5) ⏮

Plays back the previous track. Allows you to fast rewind by continuing touching.

6) Menu

Displays the CDDA menu screen that allows you to change the playback mode or perform [Scan] and [Sound Setting] (P62).

7) Playback mode display

Displays the current playback mode.
→"Switch Playback Mode" (P32)

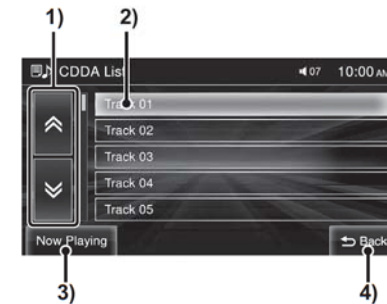|	
🔁 Repeat Song	: Repeat play
🔍 All Scan	: Scan play
🔀 Shuffle	: Shuffle play

8) ⏭

Plays back the next track. Allows you to fast forward by continuing touching.

9) List

Displays a track list.
→"Display a List" (P30)

1) Cursor switch

Scrolls pages.

2) Track name

Displays the track name.
If the track name information is blank, displays "Track (track number)".

3) Now Playing

Displays a list of the tracks in the folder currently being played back.

4) Back

Returns to the audio CD playback information screen.
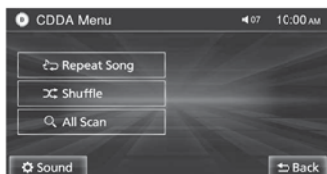
AV

DISC

Switch Playback Mode

Repeat playback, random playback, and scan playback are possible.

1 **On the audio CD playback information screen, touch Menu .**

The CDDA menu is displayed.

2 **Touch the "mode" to change to.**

3 **Touch Back .**

▼

Playback in the selected mode starts.

CDDA Menu

Touching [Menu] on the CDDA playback information screen displays the CDDA menu.

Repeat Song	Repeat playback of the track currently being played.
Shuffle	Play the tracks on the disc in a random order.
All Scan	Play the first 10 seconds of each of the tracks on the whole disc in order.
Sound	Adjusts the sound quality. →"Adjust the Sound Quality" (P62)

Listen to Audio Files on a Disc

This explains how to listen to audio files on a disc.

Insert a disc in this product to automatically start playback.→*"Inserting the Disc" (P16)*

> **NOTE**
> • Operate with an audio file disc loaded into this product.

1 **Press the** `HOME` **key.**

The home screen is displayed.

2 **Touch** `CD` **.**

The audio file playback information screen is displayed.

3 **Touch** ⟲ **or** ⟳ **to select a folder.**

4 **Touch** |◄◄ **or** ►►| **to select a track.**

▼

The selected track is played back.

> **ADVICE**
> • You can fast forward or rewind the track being played by touching and holding |◄◄ or ►►| .

Display a List

When you display a list, you can check the folder levels while searching for tracks.

1 **On the audio file playback information screen, touch** `List` **.**

A folder list is displayed.

2 **Touch the folder that contains a track to play.**

3 **Touch the track to play.**

4 **Touch** `Back` **.**

▼

The display returns to the audio file playback information screen.

> **ADVICE**
> • You can select a folder by touching ∨ or ∧ .

AV

DISC

Display Contents

Playback Information Screen

1) Source plate

Displays the name of the currently selected source, clock, and volume.

2) Track name

If there is title information, displays the track name.

3) Album name

If there is title information, displays the album name. If there is no title information, displays "unknown".

4) Playback time

5) [icon]

Used to select a folder. Touching this switches to the previous folder and plays back from the first track in that folder.

6) [Menu]

Displays the CDROM menu screen that allows you to change the playback mode or perform [Scan], [Sound Setting] *(P62)* and [Display Setting] *(P64)*.

7) [◄◄]

Plays back the previous track. Allows you to fast rewind by continuing touching.

8) Artist name

If there is an artist name in the title information, displays it.

9) Playback mode display

Displays the current playback mode.
→*"Switch Playback Mode" (P36)*

Repeat Song	: Repeat play
Repeat Folder	: Folder repeat play
Shuffle	: Shuffle play
All Scan	: Scan play

10) [►] / [II]

Allows you to play or pause.

11) [icon]

Used to select a folder. Touching this switches to the next folder and plays back from the first track in that folder.
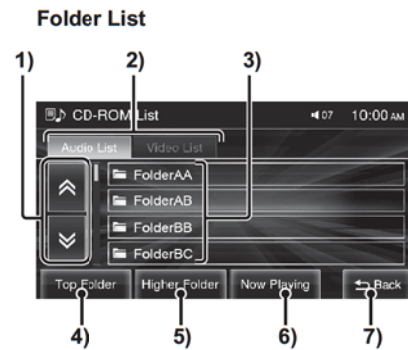
12) [List]

Displays a folder list.
→*"Lists" (P35)*

13) [►►]

Plays back the next track. Allows you to fast forward by continuing touching.

Lists

Folder List

Track List

1) Cursor switch
Allows you to select a folder.

2) Audio List / Video List
Switches between the audio data folder list and the video data folder list.

3) Folder name
Touching this expands the folder.

4) Top Folder
Displays the top folder.

5) Higher Folder
Switches to the list of the tracks in the folder one level up.

6) Now Playing
Displays a list of the tracks in the folder currently being played back.

7) Back
Returns to the playback information screen.
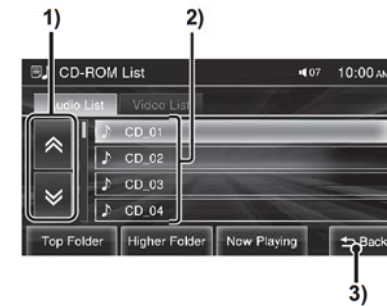
1) Cursor switch
Scrolls pages.

2) File name
Touching this starts playback of the tracks.

3) Back
Returns to the playback information screen.

Switch Playback Mode

Repeat playback, random playback, and scan playback are possible.

1 On the audio file playback information screen or on the list display, touch [Menu].

The CDROM menu is displayed.

2 Touch the "mode" to change to.

3 Touch [Back].

▼

Playback in the selected mode starts.

CDROM Menu

Touching [Menu] on the CDROM playback information screen displays the CDROM menu.

Repeat Song	Repeat playback of the track currently being played.
Repeat Folder	Repeat playback of the tracks within the folder currently being played.
Shuffle	Play tracks in the folder currently being played in a random order.
All Scan	Play the first 10 seconds of each of the tracks in order.
Sound	Adjusts the sound quality. →"Adjust the Sound Quality" (P62)
Back	Returns to the playback information screen. →"Playback Information Screen" (P34)