

Panasonic®



Removable Full Front CD Player/Receiver with
Changer Control

Lecteur CD/Récepteur avec commande de changeur
de CD et panneau avant entièrement amovible

Reproductor de CD/Receptor con carátula completa
desmontable y control de cambiador de CD

CQ-DP171U

Operating Instructions Manuel d'instructions Manual de instrucciones



COMPACT
disc
DIGITAL AUDIO
TEXT

MP3

- Please read these instructions carefully before using this product and keep this manual for future use.
- Prière de lire ces instructions attentivement avant d'utiliser le produit et garder ce manuel pour l'utilisation ultérieure.
- Lea con atención estas instrucciones antes de utilizar el producto y guarde este manual para poderlo consultar en el futuro.

Safety Information

Radio Frequency Interference Statement (Part 15 of the FCC Rules) : Applies only in U.S.A.

This equipment has been tested and found to comply with the limits for a Class B digital, pursuant to Part 15 of the FCC Rules.

- These limits are designed to provide reasonable protection against harmful interference in an automobile installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to consult the dealer or an experience radio technician for help.

FCC Warning:

Any unauthorized changes or modifications to this equipment would void the user's authority to operate this device.

This device complies with Part 15 of the FCC Rules:
Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

※ For Canada:

This Class B digital apparatus complies with Canadian ICES-003.

WARNING:

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.

CAUTION:

THIS PRODUCT IS A CLASS I LASER PRODUCT. USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE. DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

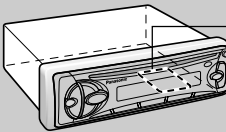
Laser products:

Wave length: 780 nm

Laser power: No hazardous radiation is emitted with safety protection.

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, AND ANNOYING INTERFERENCE, USE ONLY THE INCLUDED COMPONENTS.

Label Indication and Location



Panasonic
Model No. **CQ-DP171U**
N° De Modèle

1 2 V 4-8Ω 15 A FM75Ω

Manufactured by Dalian Matsushita Communication Industrial Co., Ltd.
Dalian China Made in China

Serial No. _____
N° De Série

This device complies with Part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

Find the model number and serial number on either the back or bottom of the unit. Please record them in the space below and retain this booklet as a permanent record of your purchase to help with identification in case of theft.

MODEL NUMBER **CQ-DP171U**

SERIAL NUMBER _____

DATE PURCHASED _____

FROM _____

Panasonic welcomes you to our ever growing family of electronic product owners. We know that this product will bring you many hours of enjoyment. Our reputation is built on precise electronic and mechanical engineering, manufactured with carefully selected components and assembled by people who take pride in their work. Once you discover the quality, reliability, and value we have built into this product, you too will be proud to be a member of our family.

❑ Use This Product Safely

When Driving

Keep the volume level low enough to be aware of road and traffic conditions.

When Washing Your Car

Do not expose the product, including the speakers and CDs, to water or excessive moisture. This could cause electrical shorts, fire, or other damage.

When Parked

Parking in direct sunlight can produce very high temperatures inside your car. Give the interior a chance to cool down before switching the unit on.

Use the Proper Power Supply

This product is designed to operate with a 12 V, negative ground battery system (the normal system in a North American car.)

Disc Mechanism

Do not insert coins or any small objects. Keep screwdrivers and other metallic objects away from the disc mechanism and disc.

Use Authorized Servicenters

Do not attempt to disassemble or adjust this precision product. Please refer to the Servicenter list included with this product for service assistance.

For Installation

The product should be installed in a horizontal position with the front end up at a convenient angle, but not more than 30°.

❑ Components

- Operating instructions 1
- Installation hardware 1 set (⇒ page 24)
- Power connector 1
- Remote control unit 1
- Lithium battery (CR2025) 1
- Warranty card 1

❑ Features

- **A CD-R and a CD-RW that hold CD-DA data can be reproduced.**
- **A CD-ROM, a CD-R and a CD-RW that hold MP3 data can be reproduced.**
- **Title display function**
CD text (disc and track title)* during reproducing a CD that supports CD text.
MP3 folder and file name

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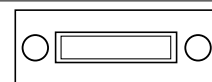
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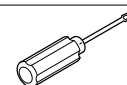
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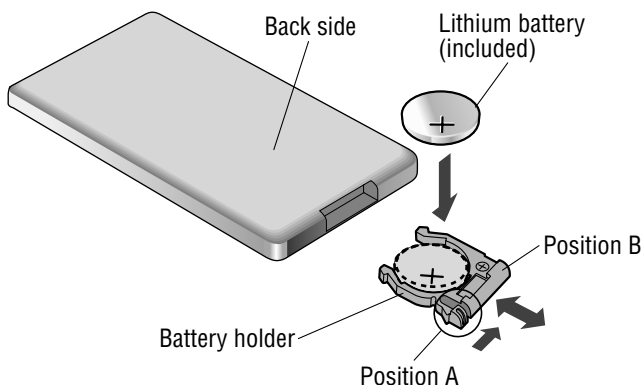
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Remote Control Unit Preparation

Battery Installation

- ❶ Remove the battery holder.
Pull the holder by the position B while pushing position A in the direction indicated by the arrow.
- ❷ Install the battery on the battery holder.
Set a new battery properly with its (+) side facing up as shown in the figure.
- ❸ Insert the battery holder.
Push the battery holder back into its original position.



Battery Notes

Remove and dispose of an old battery immediately.

Battery Information:

- Battery Type: Panasonic lithium battery (CR2025) (Included)
- Battery Life: Approximately 6 months with normal use (at room temperature)

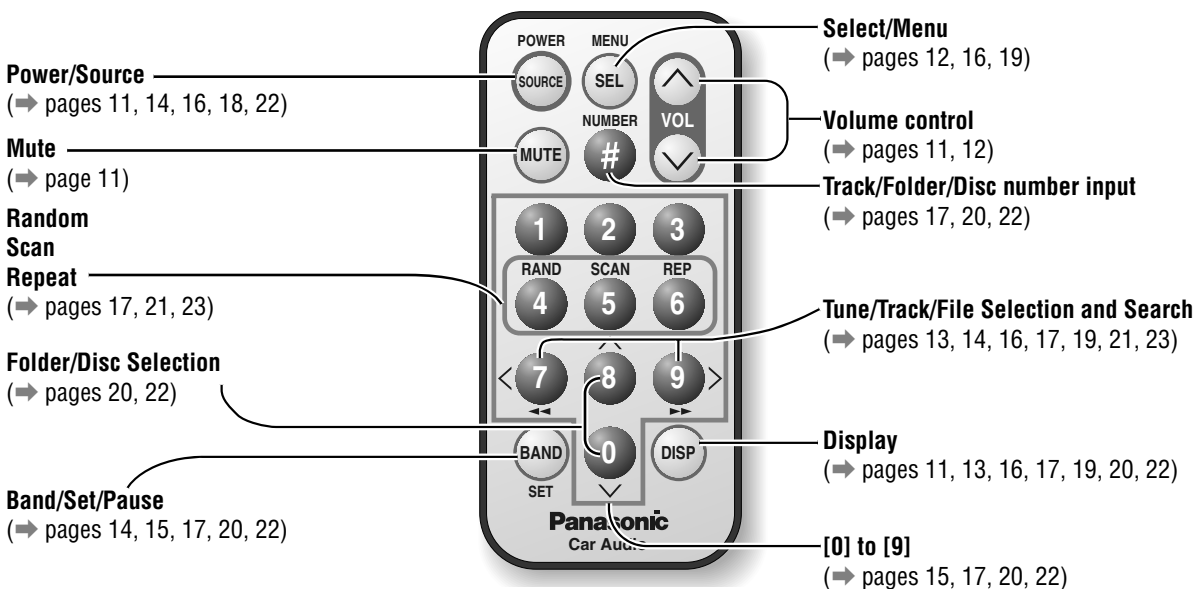
Caution: Improper use of batteries may cause overheating, an explosion, ignition, resulting in injury or a fire. Battery leakage may damage the unit.

- Do not disassemble or short the battery. Do not throw a battery into a fire.
- Keep batteries away from children to avoid the risk of accidents.
- Be careful to observe proper local disposal rules when you dispose of batteries.

Control Reference Guide

Buttons of the remote control function in the same way as the controls on the main unit of the reference page.

Point the remote control unit at the main unit's sensor (REMOTE).



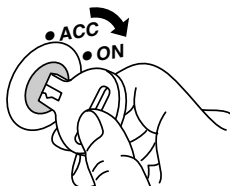
Power and Sound Controls

Power

Turn the key in the ignition until the accessory indicator lights.

Power on : Press [SOURCE] (PWR).

Power off : Press [SOURCE] (PWR) again and hold.



Note: When you use this unit for the first time, a demonstration message appears on the display.

To cancel this display, press [DISP].

Volume

[▲VOL] : Up

[▼VOL] : Down

Press and hold for rapid adjustment.



Volume level (0 to 40)

Anti-Volume-Blast Circuit:

When the power is switched off and on again, the volume slowly rises to the previous level.

The anti-volume-blast circuit will not work when the volume level is set lower than position 20 on the display.

Remote control sensor



Mute

Press [MUTE] to mute the sound completely.



Press [MUTE] again to cancel.

Loudness (Only for main unit)

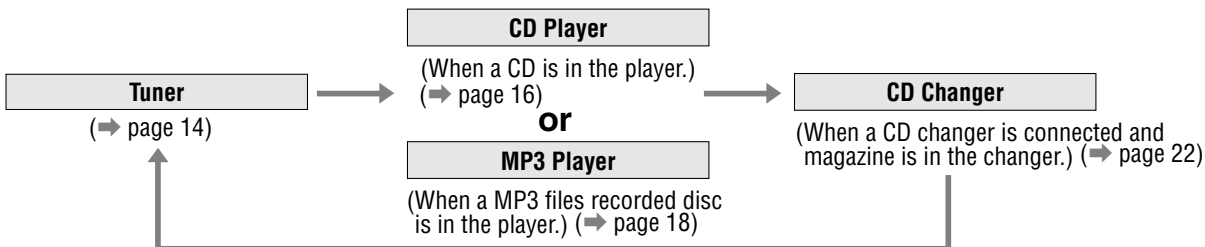
Press [LOUD] to enhance bass and treble tones at low or medium volume.



Press [LOUD] again to cancel.

Mode Selection

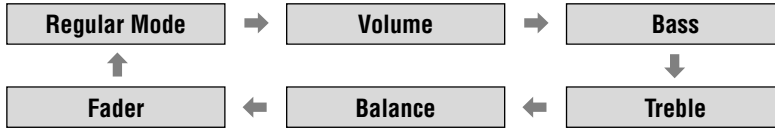
Press [SOURCE] to change the mode.



Power and Sound Controls (Continued)

Audio Mode (Bass/Treble/Balance/Fader)

1 Press [SEL] to select the audio mode.



Note: If no operation takes place for more than 5 seconds in audio mode (2 seconds in volume mode), the display returns to the regular mode.



2 Press [\wedge VOL] or [\vee VOL] to change each level.

Bass:



Adjustable range: -12 to +12 by 3 dB step

Treble:



Adjustable range: -12 to +12 by 3 dB step

Balance:

R (right speaker) or L (left speaker)



Adjustable range: 1 to 15 by 1 step Balance center

Fader:

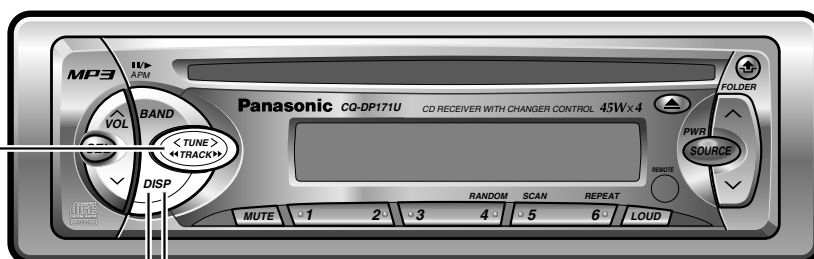
F (front speaker) or R (rear speaker)



Adjustable range: 1 to 15 by 1 step Fader center

Clock Basics

The 12-hour system is used for the clock.



Initial Time

1 Press [DISP] (DISPLAY).



Hours

2 Press and hold [DISP] (DISPLAY).



3 Press [<TUNE] or [>TUNE].



Minutes

4 Press [DISP] (DISPLAY).



5 Press [<TUNE] or [>TUNE].



6 Press [DISP] (DISPLAY).

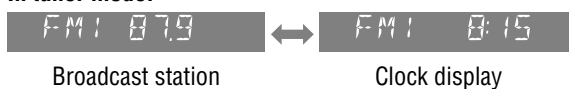


Note: Press and hold [<TUNE] or [>TUNE] to change numbers rapidly.

Clock Display

Press [DISP] (DISPLAY) to switch to the clock display.

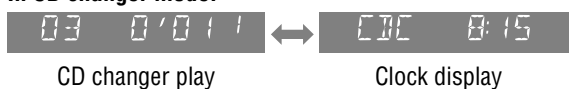
In tuner mode:



Broadcast station

Clock display

In CD changer mode:



CD changer play

Clock display

When the power is off:



No display

Clock display

Note: Refer to each description of the clock display for the modes of CD player and MP3 player (→ pages 16 and 19)

Time Reset

Press and hold [DISP] (DISPLAY) for more than 2 seconds to activate the time setting mode to reset the time. Then, repeat steps 3 to 6.

Note: The clock is not adjustable during Track / Disc / Folder / File name scrolling.

Radio Basics

1 Mode Selection

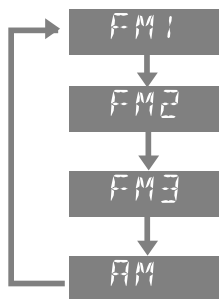
Press [SOURCE] to change to the radio mode.



FM stereo indicator lights during reception of an FM stereo broadcast

2 Band

Press [BAND] to change the band.



3 Manual Tuning

[>TUNE] : Higher frequency
[<TUNE] : Lower frequency

Seek Tuning

Press and hold ...

[>TUNE] : Higher frequency
[<TUNE] : Lower frequency

Tuning will automatically stop when the signals of the next broadcast station are received.

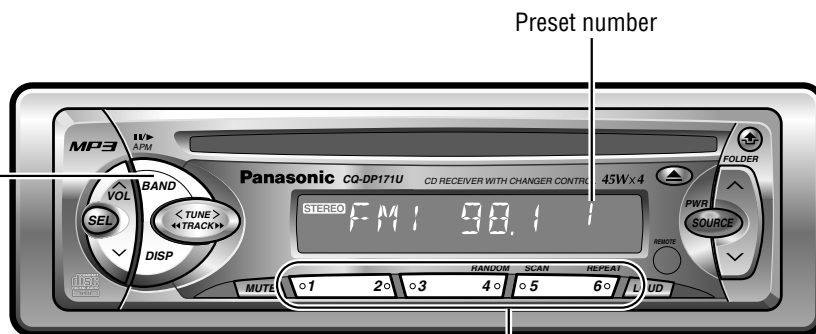
Preset Station Setting

Up to 6 stations each can be saved in the FM1, FM2, FM3 and AM preset station memories.

Caution: To ensure safety, never attempt to preset stations while you are driving.

1 Band

Press **[BAND]** to select a desired band.
(→ page 14)



2 Auto Station Preset

Press and hold **[BAND]** (APM : auto preset memory) for more than 2 seconds.

- The 6 strongest available stations will be automatically saved in the memory under preset buttons **[1]** to **[6]**.
- Once set, the preset stations are sequentially scanned for 5 seconds each.

Note: The stations manually preset on the selected band will be deleted.

Manual Station Preset

- 1 Use manual or seek tuning to find a station.
(→ page 14)
- 2 Press and hold one of the preset buttons **[1]** to **[6]** until the display blinks once.

Tuning in a Preset Station

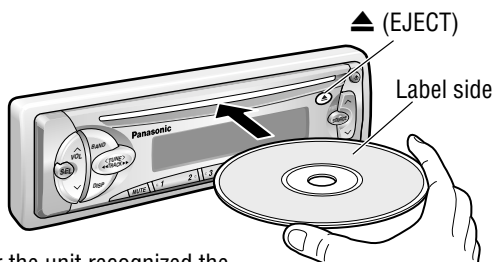
Press the corresponding preset button **[1]** to **[6]** to tune in a preset station.

Note: You can change the memory presetting by repeating the above procedure.

CD Player Basics

Cautions:

- Only 5" (12 cm) CD, CD-DA data recorded CD-R and CD-RW discs are available for this unit.
- Do not use irregular shaped discs.
- Do not use discs that have a seal or label attached.



Disc Insert and Playback

The display changes as shown below. Playback will start automatically after the unit recognized the loaded disc as an ordinary music CD. (When a CD-R or CD-RW which has CD-DA formatted data as the same as an ordinary music CD is loaded, this unit recognizes it as an ordinary music CD.)



Notes:

- Do not insert a disc when this indicator lights. (See below.)
- Loading a disc when the power is off allows the power to be turned on.
- It may take some time to distinguish CD-DA and MP3 before playback starts.

Stop and Disc Eject

Press [**EJECT**] to stop CD play and eject the disc.

Note: Ejecting the disc when the unit is in the CD player mode allows the power to be turned off.

Mode Selection (when a CD is in the player)

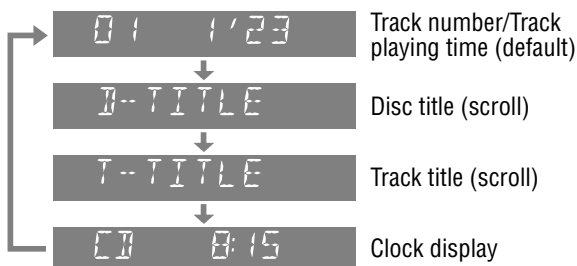
Press [**SOURCE**] to change to CD player mode and playback starts.



Track number Track playing time Lights when the disc is loaded. Blinks in the CD play mode.

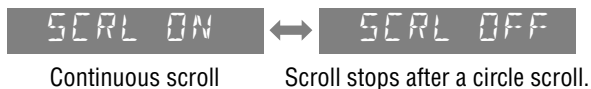
Display Change

Press [**DISP**] (DISPLAY) to change the display as follows.



Disc / Track Title Scroll

- 1 Press and hold [**SEL**] for more than 2 seconds.
- 2 Press [**>TUNE**] or [**<TUNE**] to switch between ON or OFF in turn.



Notes:

- If no keys have been pressed for more than 10 seconds, the display returns to the regular mode.
- Press [**DISP**] (DISPLAY) to return to the regular mode.
- Press and hold [**DISP**] (DISPLAY) for more than 2 seconds to have another circle scroll when set to scroll off.
- Do not watch the scroll display while driving.

Notes:

- The display shows title information only when a disc which has CD text information is loaded. (Up to 62 letters can be displayed when scrolling. Some letters are not serviceable.)
- "NO TITLE" is displayed when there is no information.

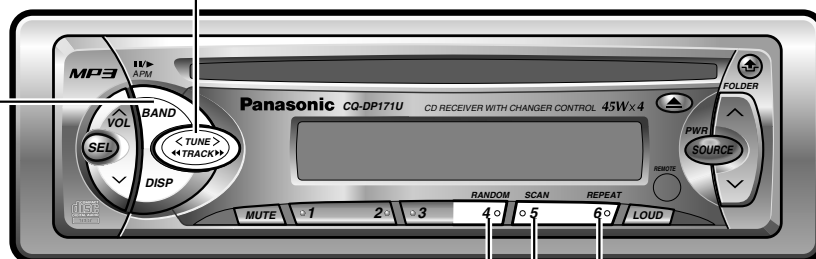
Note: If a disc contains both CD-DA and MP3 data, only one type of data will be played back. For example, if the disc starts with CD-DA data, it will be recognized as an ordinary music CD, if it starts with an MP3 file, it will be recognized as an MP3.

Track Selection

- [▶▶TRACK] : Advance to the next track.
- [◀◀TRACK] : Back to the beginning of the current track.
Back to the previous track. (Press twice.)

Track Search

- Press and hold...
 - [▶▶TRACK] : Fast forward
 - [◀◀TRACK] : Fast reverse
- Release to resume the regular CD play.



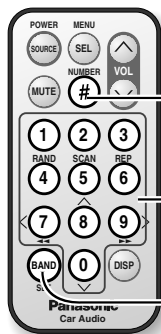
Pause

- Press [BAND] to pause.
- Press [BAND] again to cancel.

PAUSE

- Random play
- Scan play
- Repeat play

Direct Track Selection (Only for remote control)



Example: Track number 12

- 1 Press [#] (NUMBER).
- 2 Press [1] [2].
- 3 Press [BAND] (SET). The corresponding track starts playing.

Notes:

- Press [#] (NUMBER) on the remote control to re-input the number.
- If no keys have been pressed for more than 10 seconds, the display returns to the regular mode.
- Press [DISP] (DISPLAY) to return to the regular mode.

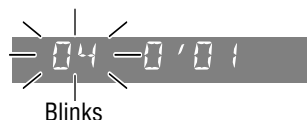
Random Play

- Press [4] (RANDOM). All the tracks are played in random order.
- Press [4] (RANDOM) again to cancel.



Scan Play

- Press [5] (SCAN). The first 10 seconds of each track on the disc are played in sequence.
- Press [5] (SCAN) again to cancel.



Repeat Play

- Press [6] (REPEAT). The current track is repeated.
- Press [6] (REPEAT) again to cancel.



MP3 Player Basics

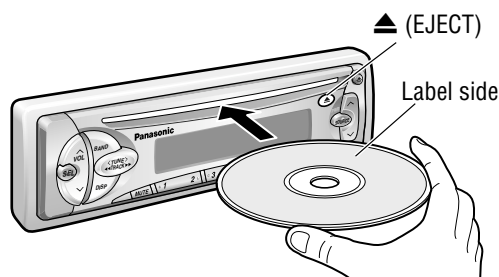
Cautions:

- Only 5" (12 cm) MP3 data recorded CD media (CD-ROM, CD-R, CD-RW) are available for this unit.
- Do not use irregular shaped discs.
- Do not use discs that have a seal or label attached.
- **Never attempt to play a file that is not in the MP3 format by changing its file name extension to ".mp3". This may not only produce noise from the speakers and speaker damage, but can damage your hearing.**

Not all CD media containing MP3s will play back normally. For details see "Notes on MP3" (→ page 38).

Notes:

- When you insert a CD media containing MP3 files (CD-ROM, CD-R, CD-RW) into the slot, this player will automatically enter MP3 mode and start playing the MP3s on the disc.
- A directory is interpreted as a folder in these instructions.




Disc Insert and Playback

The display changes as shown below. Playback will start automatically when an MP3 file has been recognized on the disc.



Notes:

- Do not insert a disc when this indicator lights.  (See below.)
- Loading a disc when the power is off allows the power to be turned on.
- It may take some time to distinguish CD-DA and MP3 before playback starts.
- If you record too many folders and MP3 files onto a disc, it may take some time before playback starts.

Stop and Disc Eject

Press [▲] (EJECT) to stop MP3 play and eject the disc.

Note: Ejecting the disc when the unit is in the MP3 player mode allows the power to be turned off.

Mode Selection (when a MP3 files recorded disc is in the player)

Press [SOURCE] to change to MP3 player mode and playback starts.



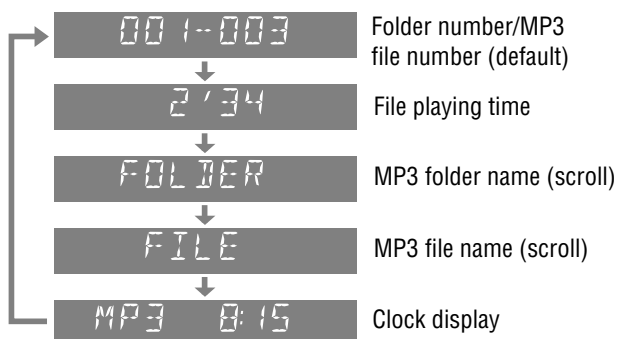
Folder number File number Lights when the disc is loaded.
Blinks in the MP3 play mode.

Note: If the ignition switch of your car is turned to OFF during playback, there may be a time lag between the file playing time on the display and the actual playing time. In addition, playback may start from the beginning of the music when using VBR (Variable Bit Rate) of a MP3 file in the same situation.

Note: If a disc contains both CD-DA and MP3 data, only one type of data will be played back. For example, if the disc starts with CD-DA data, it will be recognized as an ordinary music CD, if it starts with an MP3 file, it will be recognized as an MP3.

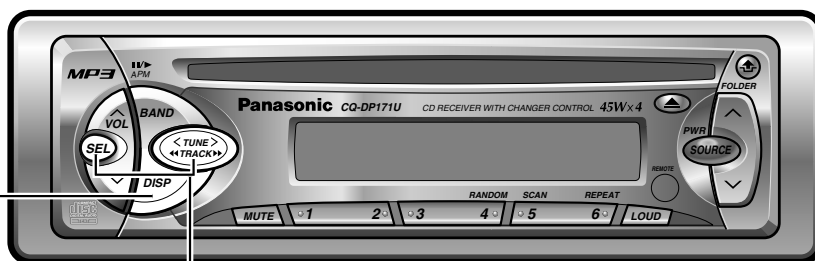
Display Change

Press **[DISP]** (DISPLAY) to change the display as follows.



Notes:

- When VBR (Variable Bit Rate) MP3 file is played back, the file playing time may not be correct. When the reproduction of VBR MP3 file is finished, it will count again.
- Running a file in fast forward or fast reverse may cause an error in the file playing time. The file playing time display will return to normal when you play another file.
- "NO TITLE" is displayed when there is no information.
- MP3 folder and file names can be displayed. Displayable character number varies with file systems. Refer to "Supported file systems and file names" in "Notes on MP3" for details (➔ page 39).
- The ".mp3" file name extension is not displayed.
- When playing a Tree 1 file, the folder name is displayed with the word "ROOT" (root folder).
- Characters that the player cannot display are shown as an asterisk.



Folder / File Name Scroll

- ❶ Press and hold **[SEL]** for more than 2 seconds.

T SCROLL

- ❷ Press **[>TUNE]** or **[<TUNE]** to switch between ON or OFF in turn.

SCRL ON ↔ SCRL OFF

Continuous scroll

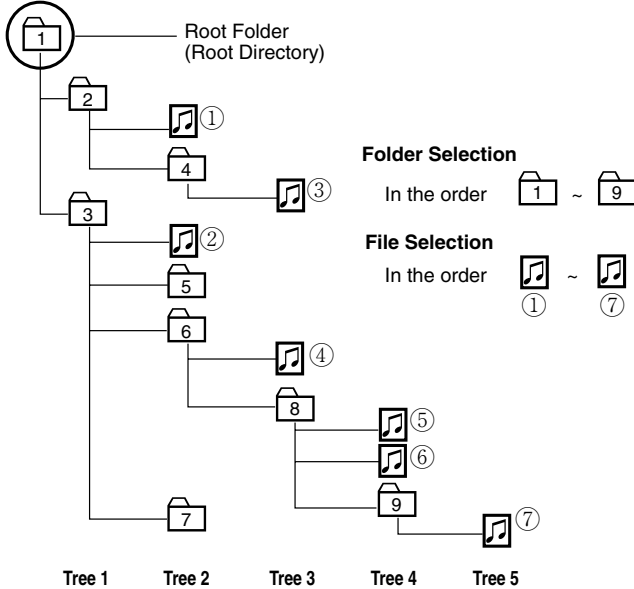
Scroll stops after a circle scroll.

Notes:

- If no keys have been pressed for more than 10 seconds, the display returns to the regular mode.
- Press **[DISP]** (DISPLAY) to return to the regular mode.
- Press and hold **[DISP]** (DISPLAY) for more than 2 seconds to have another circle scroll when set to scroll off.
- Do not watch the scroll display while driving.

MP3 Player Basics (continued)

Folder Selection Order/MP3 file playback order (Example)



Notes:

- This unit counts the number of folders irrespective of the presence or absence of MP3 file. (Example: there is no MP3 file in a root folder as shown in the right drawing, but a folder number “001” is given. In fact, there is no MP3 file to reproduce. Therefore, the next folder is automatically selected.)
- The writing software sometimes changes the order of folders and files on a disc, so the order may differ from what you specified. For details refer to the user manual of your writing software.
- If you record too many folders or files other than MP3s onto a disc, it may take some time before playback starts, and you may have difficulties using fast forward and fast reverse.
- Playback order varies with players even if the same disc is loaded.

Pause

Press **[BAND]** to pause.
Press **[BAND]** again to cancel.



MP3 Folder Selection

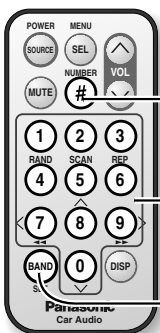
[^] : Next folder
[v] : Previous folder

Notes:

- If the selected folder does not contain any MP3 files, the nearest MP3 file in the order of playback will be played.
- If the total of files and folders exceeds 254, successful playback may not be performed.



Direct MP3 Folder Selection (Only for remote control)



Example: Folder number 5

- 1 Press **[#]** (NUMBER).
- 2 Press **[5]**.
- 3 Press **[BAND]** (SET). The corresponding folder starts playing.

Notes:

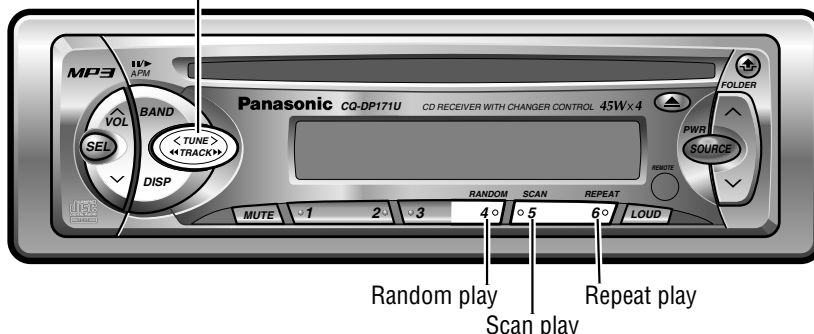
- Press **[#]** (NUMBER) on the remote control to re-input the number.
- If no keys have been pressed for more than 10 seconds, the display returns to the regular mode.
- Press **[DISP]** (DISPLAY) to return to the regular mode.
- If there is no file in the specified folder, error message “E4” appears. Select another folder which contains MP3 files.

MP3 File Selection

- [▶▶TRACK]: Advance to the next MP3 file.
- [◀◀TRACK]: Back to the beginning of the current MP3 file.
Back to the previous MP3 file.
(Press twice.)

MP3 In-file Search

- Press and hold...
 - [▶▶TRACK]: Fast forward
 - [◀◀TRACK]: Fast reverse
- Release to resume the regular MP3 play.



Random Play

File	<ul style="list-style-type: none"> Press [4] (RANDOM). All the MP3 files on all folders play in a random sequence. Press [4] (RANDOM) again to cancel. 	
Folder	<ul style="list-style-type: none"> Press and hold [4] (RANDOM) for more than 2 seconds. All the available MP3 files on the current folder play in a random sequence. Press and hold [4] (RANDOM) again to cancel. 	

Scan Play

File	<ul style="list-style-type: none"> Press [5] (SCAN). The first 10 seconds of each MP3 file on all the folders play in sequence. Press [5] (SCAN) again to cancel. 	
Folder	<ul style="list-style-type: none"> Press and hold [5] (SCAN) for more than 2 seconds. From the next folder, the beginning 10 seconds of the first MP3 file on each folder play in sequence. Press and hold [5] (SCAN) again to cancel. 	

Repeat Play

File	<ul style="list-style-type: none"> Press [6] (REPEAT). Repeat the current MP3 file. Press [6] (REPEAT) again to cancel. 	
Folder	<ul style="list-style-type: none"> Press and hold [6] (REPEAT) for more than 2 seconds. Repeat the current folder. Press and hold [6] (REPEAT) again to cancel. 	

CD Changer Control

CD changer functions are designed for optional Panasonic CD changer unit. Connect the CD changer, and load a magazine.

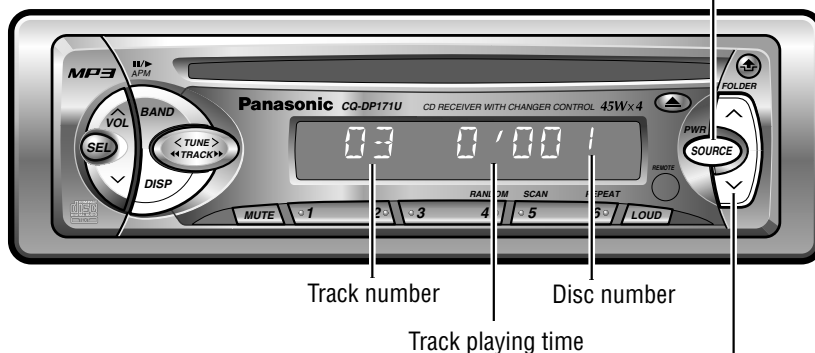
Caution: Do not use irregular shaped CDs.

Notes:

- Loading a magazine when the power is off allows the power to be turned on.
- Ejecting the magazine when the unit is in the CD changer mode allows the power to be turned off.
- The CD changer cannot play back CD-ROM, CD-R and CD-RW. Use the CD changer to listen to normal music CDs exclusively.
- CD text can not be displayed.

Mode Selection (when a CD changer is connected and a magazine is in the changer)

Press [SOURCE] to change to CD changer mode and playback starts.

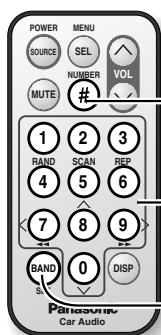


Disc Selection

[^] : Next disc

[v] : Previous disc

Direct Disc Selection (Only for remote control)



Example: Disc number 5

- 1 Press [#] (NUMBER).
- 2 Press [5].
- 3 Press [BAND] (SET). The corresponding disc starts playing.

Notes:

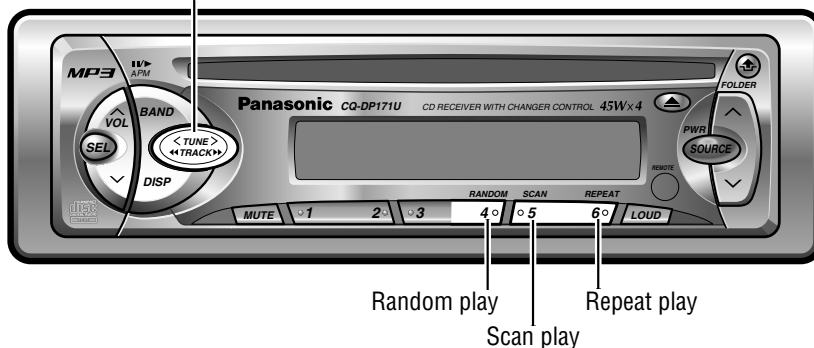
- Press [#] (NUMBER) on the remote control to re-input the number.
- If no keys have been pressed for more than 10 seconds, the display returns to the regular mode.
- Press [DISP] (DISPLAY) to return to the regular mode.

Track Selection

- [▶▶TRACK] : Advance to the next track.
- [◀◀TRACK] : Back to the beginning of the current track.
Back to the previous track. (Press twice.)

Track Search

- Press and hold...
 - [▶▶TRACK] : Fast forward
 - [◀◀TRACK] : Fast reverse
- Release to resume the regular CD play.



Random Play

Track	<ul style="list-style-type: none"> Press [4] (RANDOM). All the available tracks on all discs in the magazine play in a random sequence. Press [4] (RANDOM) again to cancel. 	<p>Lights</p>
Disc	<ul style="list-style-type: none"> Press and hold [4] (RANDOM) for more than 2 seconds. All the available tracks on the current disc play in a random sequence. Press and hold [4] (RANDOM) again to cancel. 	<p>Blinks</p>

Scan Play

Track	<ul style="list-style-type: none"> Press [5] (SCAN). The first 10 seconds of each track on the discs play in sequence. Press [5] (SCAN) again to cancel. 	<p>Blinks</p>
Disc	<ul style="list-style-type: none"> Press and hold [5] (SCAN) for more than 2 seconds. The first 10 seconds of the first track of all the discs in the magazine play in sequence. Press and hold [5] (SCAN) again to cancel. 	<p>Blinks</p>

Repeat Play

Track	<ul style="list-style-type: none"> Press [6] (REPEAT). Repeat the current track. Press [6] (REPEAT) again to cancel. 	<p>Lights</p>
Disc	<ul style="list-style-type: none"> Press and hold [6] (REPEAT) for more than 2 seconds. Repeat the current disc. Press and hold [6] (REPEAT) again to cancel. 	<p>Blinks</p>

Installation Guide



WARNING

This installation information is designed for experienced installers and is not intended for non-technical individuals. It does not contain warnings or cautions of potential dangers involved in attempting to install this product.

Any attempt to install this product in a motor vehicle by anyone other than a qualified installer could cause damage to the electrical system and could result in serious personal injury or death.

Installation Hardware

No.	Item	Diagram	Q'ty
①	Mounting collar		1
②	Hex. nut (5 mmø)		1
③	Rear support strap		1
④	Tapping screw (5 mmø x 16 mm)		1
⑤	Mounting bolt (5 mmø)		1
⑥	Power connector		1
⑦	Removable face plate case		1
⑧	Trim plate		1

Caution: This unit operates with a 12 V DC negative ground auto battery system only. Do not attempt to use it in any other system. Doing so could cause serious damage.

Before you begin installation, look for the items which are packed with your unit.

- **Warranty Card** ... Fill this out promptly.
- **Panasonic Servicenter for Service Directory** ... Keep for future reference in case the product needs servicing.
- **Installation Hardware** ... Needed for in-dash installation.

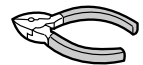
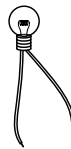
Required Tools

You'll need a screwdriver, a 1.5 V AA battery, and the following:

12 V DC
Test bulb

Electrical
tape

Side-cut
pliers



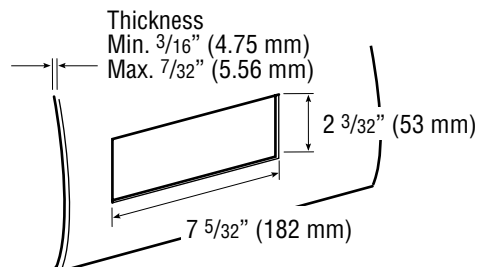
Overview

This product should be installed by a professional. However, if you plan to install this product yourself, your first step is to decide where to install it. The instructions in these pages will guide you through the remaining steps: **(Please refer to the "WARNING" statement above).**

- Identify and label the car wires.
- Connect the car wires to the wires of the power connector.
- Install the unit in the dashboard.
- Check the operation of the unit.

If you encounter problems, please consult your nearest professional installer.

Dashboard Specifications



□ Identify All Leads

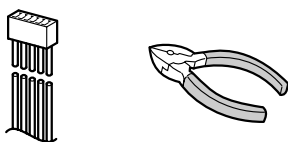
The first step in installation is to identify all the car wires you'll use when hooking up your sound system.

As you identify each wire, we suggest that you label it using masking tape and a permanent marker. This will help avoid confusion when making connections later.

Note: Do not connect the power connector to the stereo unit until you have made all connections. If there are no plastic caps on the stereo hooking wires, insulate all exposed leads with electrical tape until you are ready to use them. Identify the leads in the following order.

Power Lead

If your car has a radio or is pre-wired for one : Cut the connector wires one at a time from the plug (leaving the leads as long as possible) so that you can work with individual leads.



Turn the ignition on to the accessory position, and ground one lead of the test bulb to the chassis.

Touch the other lead of the test bulb to each of the exposed wires from the cut radio connector plug. Touch one wire at a time until you find the outlet that causes the test bulb to light.

Now turn the ignition off and then on. If the bulb also turns off and on, that outlet is the car power lead.

If your car is not wired for an audio unit : Go to the fuse block and find the fuse port for radio (RADIO), accessory (ACC), or ignition (IGN).

Battery Lead

If your stereo unit has a yellow lead, you will need to locate the car's battery lead. Otherwise you may ignore this procedure. (The yellow battery lead provides continuous power to maintain a clock, memory storage, or other function.)

If your car has a radio or is pre-wired for one: With the ignition and headlights off, identify the car battery lead by grounding one lead of the test bulb to the chassis and checking the remaining exposed wires from the cut radio connector plug.

If your car is not wired for an audio unit : Go to the fuse block and find the fuse port for the battery, usually marked BAT.

Speakers

Identify the car speaker leads. There are two leads for each speaker which are usually color coded.

A handy way to identify the speaker leads and the speaker they are connected with is to test the leads using a 1.5 V AA battery as follows:

Hold one lead against one pole of the battery and stroke the other lead across the other pole. You will hear a scraping sound in one of the speakers if you are holding a speaker lead.

If not, keep testing different lead combinations until you have located all the speaker leads. When you label them, include the speaker location for each.

Antenna Motor

If your car is equipped with an automatic power antenna, identify the car motor antenna lead by connecting one bulb tester lead to the car battery lead and touching the remaining exposed wires from the cut radio connector plug one at a time. You will hear the antenna motor activate when you touch the correct wire.

Antenna

The antenna lead is a thick, black wire with a metal plug at the end.

□ Connect All Leads

Now that you have identified all the wires in the car, you are ready to begin connecting them to the stereo unit wires. The wiring diagram (➔ page 30) shows the proper connections and color coding of the leads.

We strongly recommend that you test the unit before making a final installation.

You can set the unit on the floor and make temporary connections to test the unit. Use electrical tape to cover all exposed wires.

Important: Connect the red power lead last, after you have made and insulated all other connections.

Ground

Connect the black ground lead of the power connector to the metal car chassis.

Speakers

Connect the speaker wires. See the wiring diagram (➔ page 30) for the proper hookups. Follow the diagram carefully to avoid damaging the speakers and the stereo unit.

The speaker used must be able to handle more than 45 W of audio power. If using an optional audio amplifier, the speakers should be able to handle the maximum amplifier output power. Speakers with low input ratings can be damaged.

Speaker impedance should measure 4 - 8 Ω, which is typically marked on most speakers. Lower or higher impedance speakers will affect output and can cause both speaker and stereo unit damage.

Installation Guide (continued)

Motor Antenna

Connect the car motor antenna lead to the blue motor antenna relay control lead. (Do not confuse the antenna lead with blue/white stripe lead for a power amplifier.)

Battery

Connect the yellow battery lead to the correct radio wire or to the battery fuse port on the fuse block.

Antenna

Connect the antenna by plugging the antenna lead into the antenna receptacle.

Equipment

Connect any optional equipment such as an amplifier, according to the instructions furnished with the equipment. Leave about 12" (30 cm) of distance between the speaker leads/amplifier unit and the antenna/antenna extension cord. Read the operating and installation instructions of any equipment you will connect to this unit.

Power

Connect the red power lead to the correct car radio wire or to the appropriate fuse port on the fuse block. If the stereo unit functions properly with all these connections made, disconnect the wires and proceed to the final installation.

Final Installation

Lead Connections

Connect all wires, making sure that each connection is insulated and secure. Bundle all loose wires and fasten them with tape so they will not fall down later. Now insert the stereo unit into the mounting collar.

Congratulations! After making a few final checks, you're ready to enjoy your new auto stereo system.

Final Checks

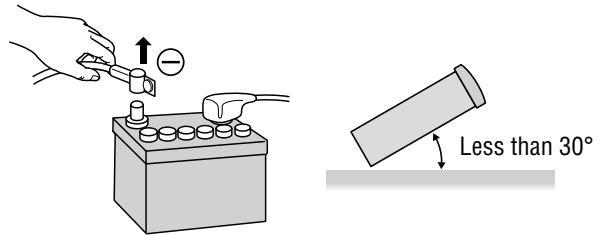
1. Make sure that all wires are properly connected and insulated.
2. Make sure that the stereo unit is securely held in the mounting collar.
3. Turn on the ignition to check the unit for proper operation.

If you have difficulties, consult your nearest authorized professional installer for assistance.

Preparation

- We strongly recommend that you wear gloves for installation work to protect yourself from injuries.
- When bending the mounting tabs of the mounting collar with a screwdriver, be careful not to injure your hands and fingers.

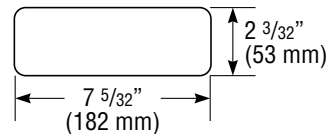
- Disconnect the cable from the negative \ominus battery terminal (see caution below).
- Unit should be installed in a horizontal position with the front end up at a convenient angle, but not more than 30°.



Caution: Do not disconnect the battery terminals of a car with trip or navigational computer since all user settings stored in memory will be lost. Instead take extra care with installing the unit to prevent shorts.

Dashboard Installation

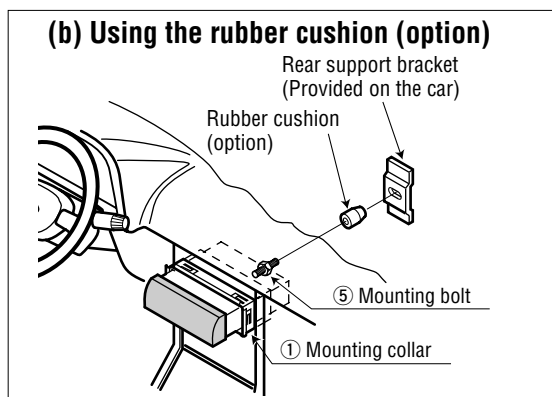
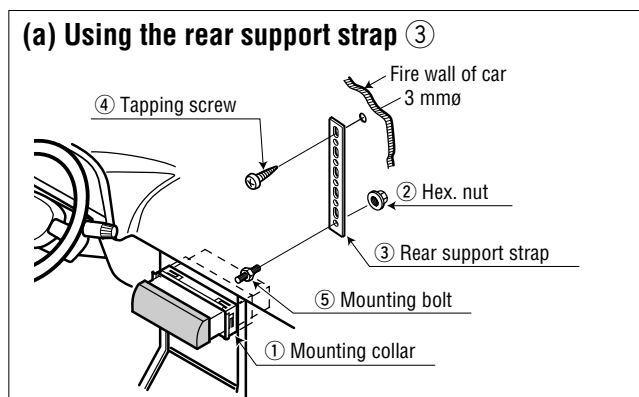
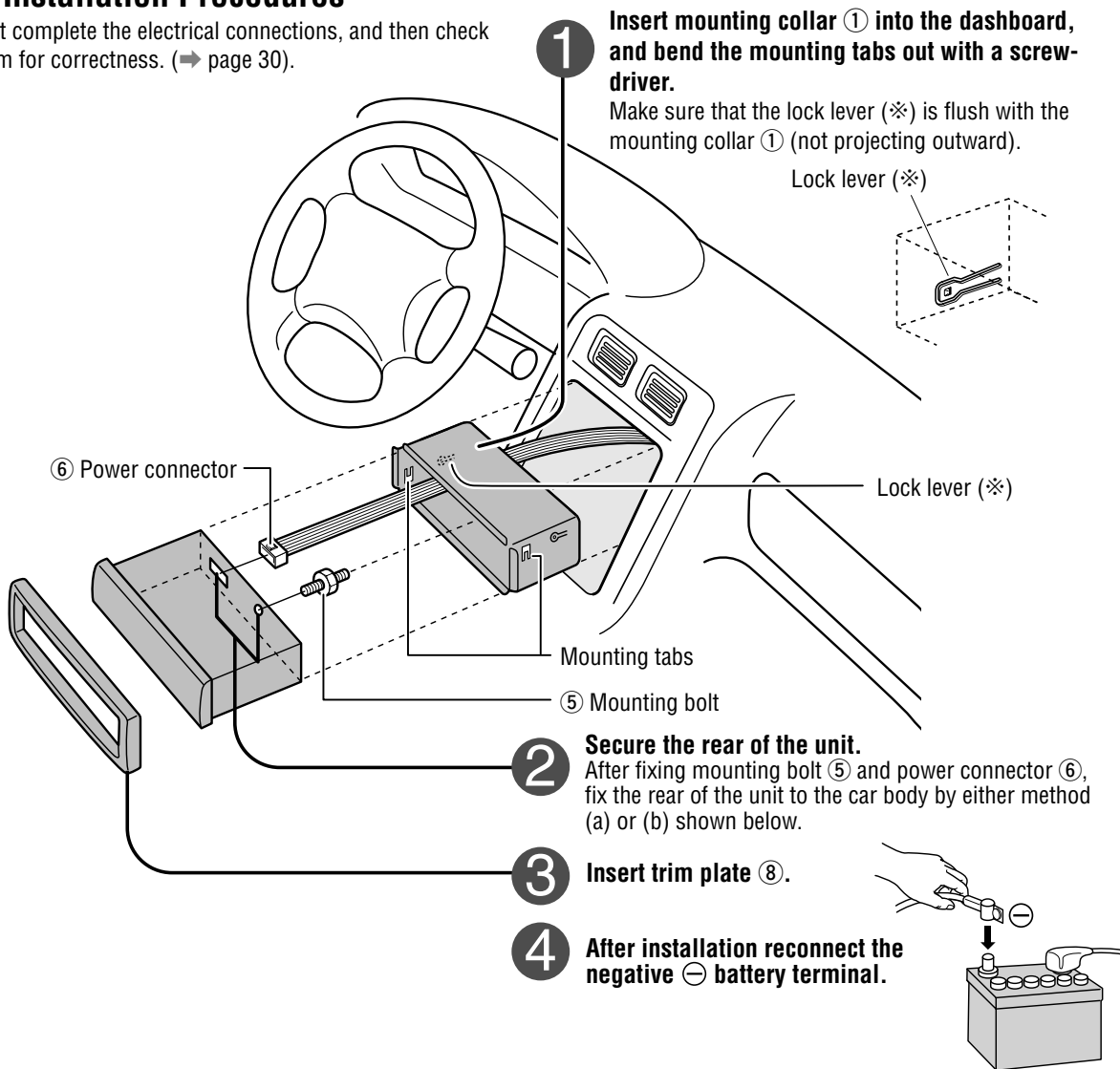
Installation Opening



This unit can be installed in any dashboard having an opening as shown above. The dashboard should be $\frac{3}{16}$ " (4.75 mm) – $\frac{7}{32}$ " (5.56 mm) thick in order to be able to support the unit.

Installation Procedures


First complete the electrical connections, and then check them for correctness. (⇒ page 30).

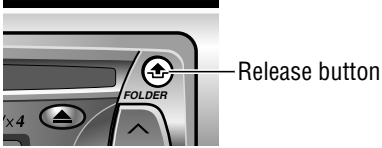


Installation Guide (continued)

Remove the Unit

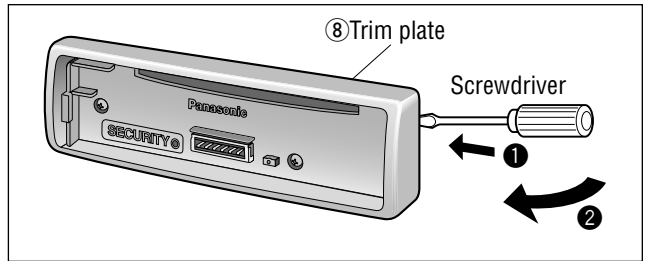
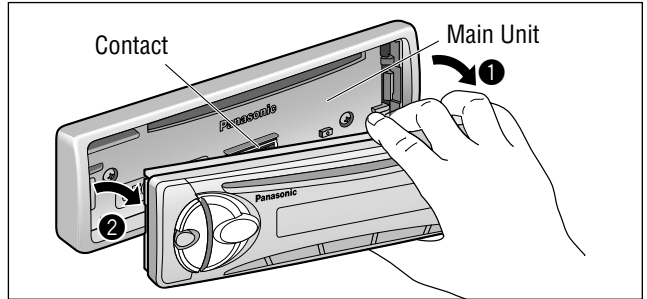
Switch off the power of the unit.

- 1 Remove the removable face plate.**
1 Press [] (release button). The removable face plate will be released.

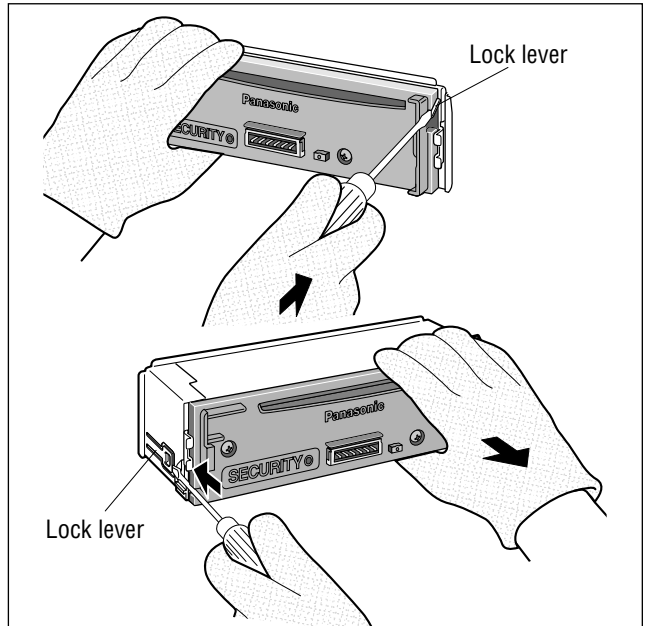


- 2** Pull on the right side of the unit.

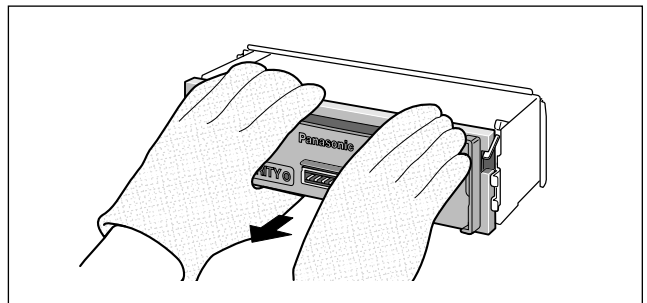
- 2 Remove the trim plate ⑧ with a screwdriver.**



- 3 Pull out the unit while pushing down the lock lever with a screwdriver.**



- 4 Remove the unit pulling with both hands.**

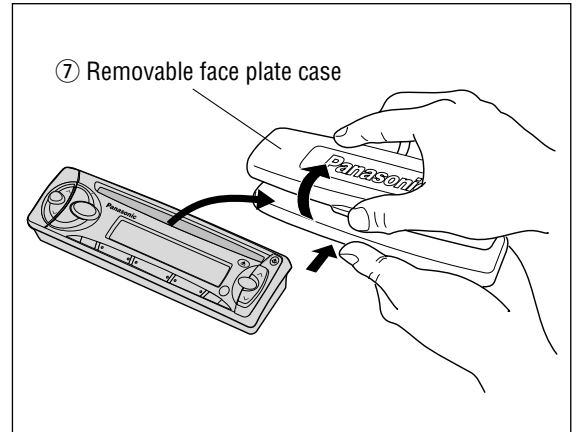


Anti-Theft System

This unit is equipped with a removable face plate. Removing this face plate makes the radio totally inoperable.

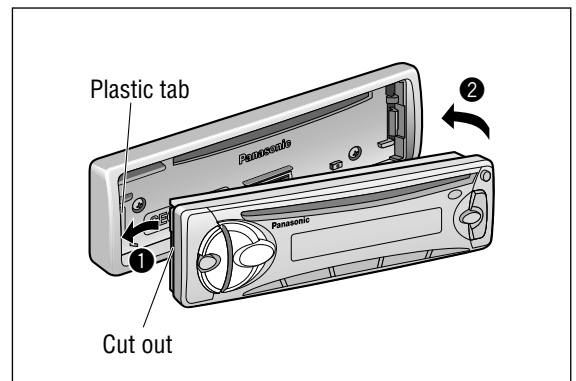
Place Removable Face Plate into Case

- 1 Switch off the power of the unit.
- 2 Remove the removable face plate. (→ page 28)
- 3 Gently press the bottom of the case and open the cover. Place the face plate into the case and take it with you when you leave the car.



Install Removable Face Plate

- 1 Slide the left side of the removable face plate in place.
- 2 Press the right end of removable face plate until "click" is heard.



Cautions:

- This face plate is not waterproof. Do not expose it to water or excessive moisture.
- Do not remove the face plate while driving your car.
- Do not place the face plate on the dashboard or nearby areas where the temperature rises to high level.
- Do not touch the contacts on the face plate or on the main unit, since this may result in poor electrical contacts.
- If dirt or other foreign substances get on the contacts, wipe them off with clean and dry cloth.

Electrical Connections

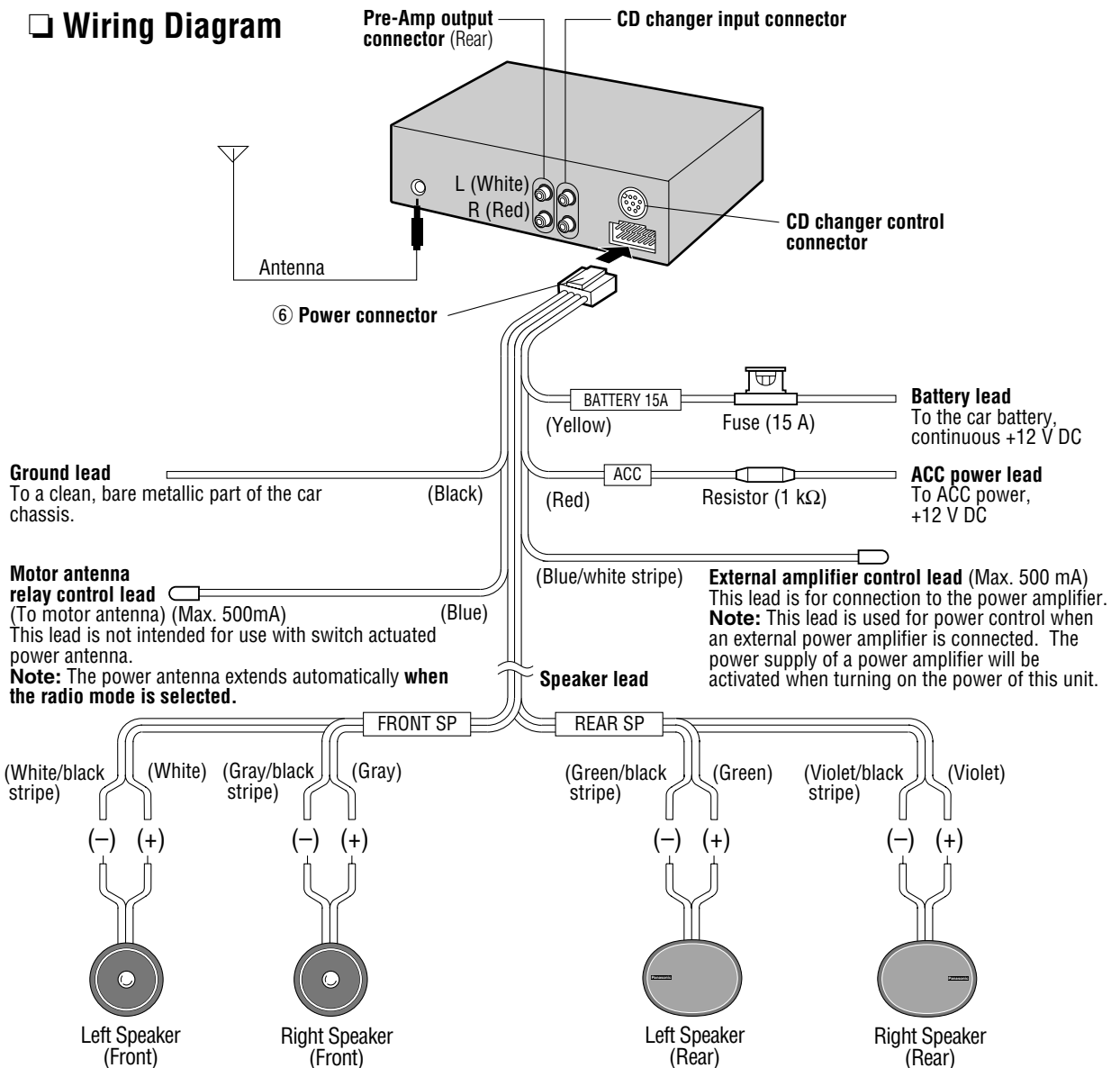
Cautions:

- This product is designed to operate off a 12 V DC, negative ground battery system.
- To prevent damage to the unit, be sure to follow the connection diagram below.
- Remove approx. 1/4" (5 mm) of protective covering from the ends of the leads before connecting.
- Do not insert the power connector into the unit until the wiring is completed.
- Be sure to insulate any exposed wires from a possible short-circuit from the car chassis. Bundle all cables and keep cable terminals free from touching any metal parts.
- Remember, if your car has a drive computer or a navigation computer, the data of its memory may be erased when the battery terminals are disconnected.

Accessory used for wiring

No.	Item	Q'ty
⑥	Power connector	1

Wiring Diagram

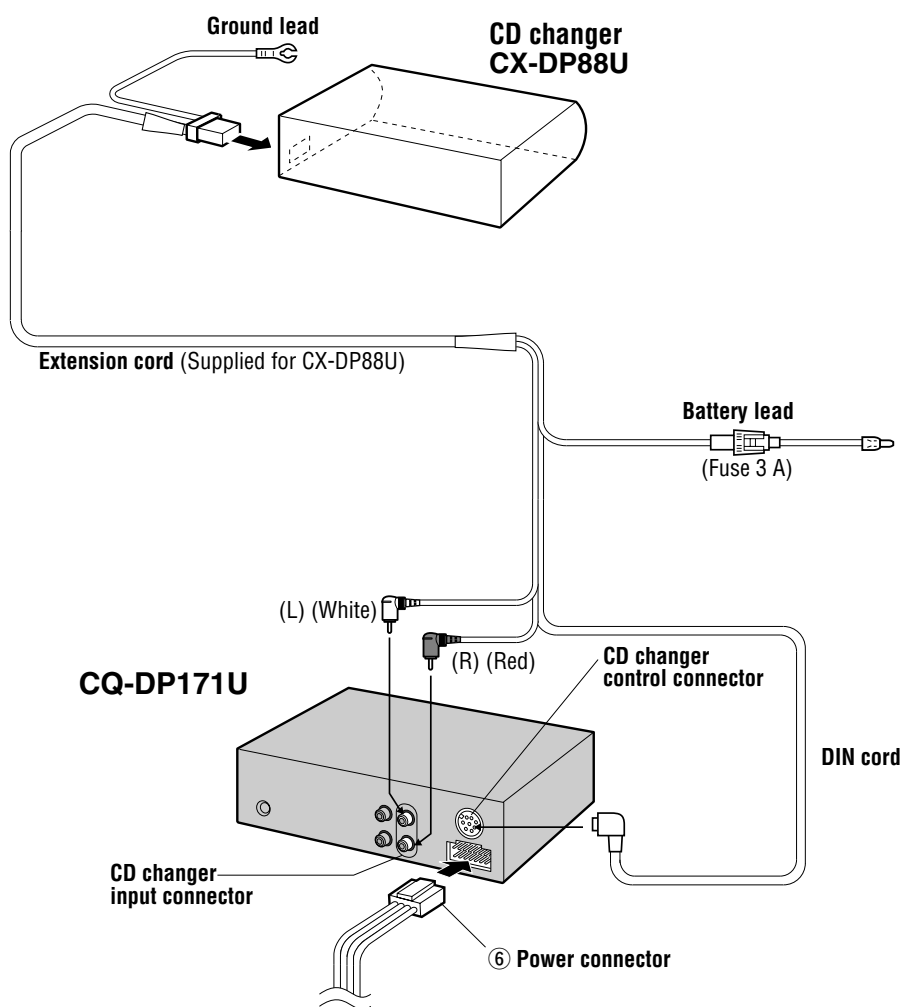


❑ Upgrading the system

Example Combination

CD Changer (CX-DP88U) (option)

Note: For wiring, carefully read the operating instructions for the devices connected.



Troubleshooting

Preliminary Steps

Check and take steps as described in the tables below.

If You Suspect Something Wrong

Immediately switch power off.

Disconnect the power connector and check that there is neither smoke nor heat from the unit before asking for repairs. Never try to repair the unit yourself because it is dangerous to do so.

Cautions:

- Do not use the unit if it malfunctions or something is wrong.
- Do not use the unit in abnormal conditions, for example, without sound, or if it emits smoke or a foul smell, which can cause ignition or electric shock. Immediately stop using the unit and call the store where you purchased it.

Troubleshooting Tips

Common

Trouble	Cause / Step
No power	<p>Car's engine switch is not on. ➔ Turn your car's ignition switch to ACC or ON.</p> <p>Cables are not correctly connected. ➔ Connect cables correctly.</p> <p>Battery cable is not correctly connected. ➔ Connect the battery cable to the terminal that is always live.</p> <p>Accessory cable is not correctly connected. ➔ Connect the accessory cable to your car's ACC source.</p> <p>Grounding wire is not correctly connected. ➔ Connect the grounding wire to a metal part of your car.</p> <p>Fuse is burnt. ➔ Call the store where you purchased the unit, or your nearest Servicenter (see the attached sheet) and ask for fuse replacement.</p>
No sound	<p>Mute is set to ON. ➔ Set it to OFF.</p> <p>Cables are not correctly connected. ➔ Connect cables correctly.</p> <p>Condensation (dew) ➔ Wait for a while before use.</p>
Noise	<p>A mobile phone is used near the unit. ➔ Keep the mobile phone away from the unit.</p>
Audio sound is output but the display shows demonstration message.	<p>Demonstration mode is ON. ➔ Press [DISP] (DISPLAY) to cancel demonstration mode.</p>

Radio

Trouble	Cause / Step
Too much noise in FM stereo and monaural broadcasts.	Station is too far, or signals are too weak. ➔ Select other stations of higher signal level.
	The motor antenna relay control lead is not connected correctly. ➔ If there is a motor antenna in the car, connect the motor antenna relay control lead to the motor antenna lead that is installed in the car correctly.
	The radio antenna is not extended enough. ➔ Fully extend the radio antenna.
Preset station is reset.	Battery cable is not correctly connected. ➔ Connect the battery cable to the terminal that is always live.

CD/MP3

Trouble	Cause / Step
Disc is in the CD compartment but no sound is made, or disc is ejected automatically.	Disc is upside down. ➔ Place disc in the correct direction with the label side up.
	Disc is dirty. ➔ Clean disc, referring to the section on "Notes on CD/CD media (CD-ROM, CD-R, CD-RW)".
	A disc that has data other than CD-DA or MP3 type is loaded. ➔ Discs that have CD-DA or MP3 type data should be used.
	➔ The unit may not successfully play back a CD-R/RW that was made by the combination of writing software, a CD recorder (CD-R/RW drive) and a disc if they are incompatible one another. Refer to instructions for the concerned devices for details.
Sound skips, bad sound quality. (e.g. caused by noise)	Disc is dirty. ➔ Clean disc, referring to the section on "Notes on CD/CD media (CD-ROM, CD-R, CD-RW)".
	➔ The unit may not successfully play back a CD-R/RW that was made by the combination of writing software, a CD recorder (CD-R/RW drive) and a disc if they are incompatible one another. Refer to instructions for the concerned devices for details.
Sound skip due to vibration.	Mounting angle is over 30°. ➔ Adjust mounting angle to less than 30°.
	Unstable mounting. ➔ Mount the unit securely with the mounting parts, referring to the section on Installation.
Disc is not ejected.	<ul style="list-style-type: none"> ● Disc is defective. ● Mechanical trouble. ➔ Press [▲] (EJECT). If normal operation is not restored, call the store where you purchased the unit or the nearest Servicerenter to ask for repairs.

Troubleshooting (continued)

CD

Trouble	Cause/Step
CD text is not displayed normally.	Disc is dirty, or has scratches. → Clean disc, referring to the section on "Notes on CD/CD media (CD-ROM, CD-R, CD-RW)".
Time is counted but no sound comes out.	The 1st track of a mix mode disc was reproduced. (Mix mode is a format in which data except music is recorded on the 1st track and music data is recorded on other than the 1st track in a session.) → Play back music data recorded on other than the 1st track.

MP3

Trouble	Cause/Step
No playback.	The disc does not conform to any of the file systems supported by this player. → Insert a disc that conforms to the file systems supported by this player. For supported file systems see "Notes on MP3" (→ page 38). The MP3 file is missing the ".mp3" file name extension. → Make sure to add the ".mp3" extension to each MP3 file name.
It takes too long for playback to start.	The folders and files recorded on the disc are layered too much. → As checking of files takes longer in this case, do not record any unnecessary folders or files other than MP3s on the disc.
Poor recording quality, sound skipping	→ The recording quality differs depending on the encoding software used, and on settings such as the bit rate. Set the bit rate within the range specified in the specifications chart (→ page 41). It is recommended to set the bit rate to "128 kbps or more" and "Fixed". High-speed writing was executed when MP3 data was recorded on the disc. → Decrease writing speed as low as possible.
Files are not played in the desired order.	Files or folders are not recorded in the desired playback order. → Some writing software lets you specify the recording order by adding a prefix in the range of "01" - "99", etc. to the file name. For details refer to the user manual of your writing software.
Folder/file name is not displayed correctly.	The disc does not conform to the file systems supported by this player. → Insert a disc that conforms to the file systems supported by this player. For supported file systems see "Notes on MP3" (→ page 38). → There may be a problem with your writing software or CD recorder (CD-R/RW drive). For details refer to the user manual of your writing software.
File playing time is not displayed correctly.	You ran the file in fast forward or fast reverse during playback or turned off the ignition switch of the car during playback. → Playing another file will return the file playing time to normal. You played a VBR (Variable Bit Rate) format MP3 file. → The file playing time of VBR (Variable Bit Rate) format MP3 file is sometimes displayed incorrectly.

■ Sound Setting

Trouble	Cause / Step
<p>No sound from left, right, front, or rear speakers.</p>	<p>Left and right balance, or front and rear balance is off on one side. ⇒ Adjust balance / fader mode as appropriate.</p> <p>Cables are not correctly connected. ⇒ Connect the cables correctly.</p>
<p>Left and right sounds are reversed in stereo listening.</p>	<p>The right speaker wire is connected to the left speaker and the left speaker wire to the right speaker. ⇒ Connect the speaker wires to the correct one.</p>





■ Remote Control

Trouble	Cause / Step
<p>Buttons are invalid for operation.</p>	<p>Battery poles (+) (-) are reversed. ⇒ Insert the battery correctly.</p> <p>Wrong battery. ⇒ Check the battery.</p> <p>Battery has run down. ⇒ Replace the battery.</p> <p>Remote control is in the wrong direction. ⇒ Direct the remote control at sensor (REMOTE) on the panel.</p>





Troubleshooting (continued)

Error Display Messages

■ CD / MP3

Display	Cause / Step
 <p>The disc ejected automatically → POWER OFF</p>	<ul style="list-style-type: none"> ● Disc is dirty, or is upside down. ● A disc that has data other than CD-DA or MP3 type is loaded. <p>→ Check disc.</p>
 <p>The disc ejected automatically → POWER OFF</p>	<p>Disc has scratches.</p> <p>→ Check disc.</p>
 <p>→ POWER OFF</p>	<p>No operation by some cause.</p> <p>→ Turn off the car engine (ACC off) and remove the fuse from the battery lead (yellow) for 1 minute. Then reinstall the fuse.</p>
	<p>When there is no MP3 files in the specified folder during direct MP3 folder selection.</p> <p>→ Select another folder which contains MP3 files.</p> <p>The player for some reason cannot read the file you are trying to play. (File recorded in an unsupported file system, compression scheme, data format, file name extension, damaged data, etc.)</p> <p>→ Select a file that the player can read. Confirm the type of data recorded on the disc. Create a new disc if necessary.</p>

■ CD Changer

Display	Cause / Step
 <p>Disc number To next disc automatically</p>	<ul style="list-style-type: none"> ● Disc is dirty, or is upside down. ● A disc other than a music CD (CD-DA type) is loaded. <p>→ Check disc.</p>
 <p>Disc number To next disc automatically</p>	<p>Disc has scratches.</p> <p>→ Check disc.</p>
	<p>No operation by some cause.</p> <p>→ If normal operation is not restored, call the store where you purchased the unit or the nearest Servicenter to ask for repairs.</p> <p>The display continues if you cannot switch off the power.</p>
	<p>No disc is in the changer (magazine).</p> <p>→ Insert discs into the changer (magazine).</p>

Notes:

- Some CD changers will let this unit to be turned off after E3 error message appears.
- For details refer to the operating instructions of your CD changer.

Maintenance

Your product is designed and manufactured to ensure a minimum of maintenance. Use a dry, soft cloth for routine exterior cleaning. Never use benzine, thinner or other solvents.

Product Servicing

If the suggestions in the charts do not solve the problem, we recommend that you take it to your nearest authorized Panasonic Servicenter. The product should be serviced only by a qualified technician.

Replacing the Fuse

Use fuses of the same specified rating (15 A). Using different substitutes or fuses with higher ratings, or connecting the unit directly without a fuse, could cause a fire or damage to the stereo unit.

If the replacement fuse fails, contact your nearest Panasonic Servicenter for service.

Notes on MP3

This player allows you to play MP3 files recorded on CD-ROMs, CD-Rs (Recordable) and CD-RWs (Rewritable).

What is MP3

MP3, short for MPEG Audio Layer-3, is a standard for compressing digital audio data adopted for video CDs and similar media. It is one of the audio compression schemes covered by MPEG's (Motion Picture Experts Group) digital audio compression standards. What it does is reduce the number of bytes in a song without hurting the sound quality by means such as eliminating big sound waves within the sound range that is imperceptible to the human ear. This compression allows you to reduce the contents of a conventional music CD by a factor of around 10. This means that you can record the contents of 10 music CDs on a single CD-R or CD-RW. (The figures refer to data recorded on a 650 MB CD-R or CD-RW at a fixed bit rate of 128 kbps and a sampling frequency of 44.1 kHz.)

Points to remember when recording an MP3 disc

■ Converting (encoding) audio data to an MP3 file

- It is recommended to set the bit rate to "128 kbps or more" and "Fixed".
- Bit rate 8 kbps of MPEG-2 and sampling frequency 16 kHz of MPEG-2 can not be reproduced.
- If set to VBR (Variable Bit Rate), the file playing time may not be displayed correctly.
- The playback sound quality differs depending on the encoding software and the bit rate. For details refer to the user manual of your encoding software.

■ Recording MP3 files on a CD-R/RW

- Do not record files other than MP3s or unnecessary folders on a disc. If too many folders or files other than MP3s are recorded on a disc, it may take some time before playback starts, and you may have difficulties using fast forward and fast reverse.
- Use ISO 9660 file system (Extension of the ISO 9660 file systems are included.) (→ page 39). APPLE HFS file system is not supported. If they do not conform to ISO 9660 file system, the file may not play normally, or the file or folder names may not be displayed correctly.
- Make sure to add the ".mp3" extension to each MP3 file name. A file with a different file name extension or none at all will not play.
- Although Multi session recording is supported, the use of Disc-at-Once is recommended. Make sure to close the session when you finished recording on a disc.
- ID3Tags are not supported. The song information is stored but not displayed.
- Packet writing software is not supported.
- A playlist function is not supported. Record files and folders in the order in which you want them to be played. Some writing software lets you specify the recording order by adding a prefix in the range of "01" - "99", etc. to the file name. For details refer to the user manual of your writing software.

Note: You may encounter trouble in playing MP3s or displaying the information of MP3 files recorded with certain writing softwares or CD recorders (CD-R/RW drives).

Caution: Never assign the ".mp3" file name extension to a file that is not in the MP3 format. This may not only produce noise from the speakers and speaker damage, but can damage your hearing.

Note: MP3 encode software and writing software are not supplied to this model.

Maximum number of files/folders

- Maximum number of trees: 8
- Maximum number of files/folders: 254 (files + folders. Root folder is not included.)

Note: If the total of files and folders exceeds 254, successful playback may not be performed.

Supported file systems and file names

Supported file system	Displayable folder names and file names
ISO 9660 Level 1	<p>Name files and folders in accordance with the standard of each file system. Refer to the instructions of writing software for details.</p> <ul style="list-style-type: none"> • This player can display file names of up to 31 ASCII character set in scroll mode. * Up to 15 letters can be displayed when scrolling in the Joliet system. According to the standard, “á”, “ç”, etc. can be used. However, this unit can not display those letters. • File names entered in lower case will be displayed in upper case. • Characters that the player cannot display are shown as an asterisk.
ISO 9660 Level 2	
Joliet*	
Romeo	
Apple Extension to ISO 9660	

Glossary

ISO 9660

The most common international standard for the logical format for files and directories.

APPLE HFS

The file system used by the Machintosh operating system to organize data. **(Not supported)**

Multi-session

A method of adding data incrementally to a CD-R or CD-RW in more than one recording session.

Disc-at-Once

A method of writing data in a media by just one operation and no more writing after that.

ID3Tag

A function that allows character information (title, artist, album title, date, etc.) to be written onto the disc. **(Not supported)**

Packet writing

A method of writing data on a CD media in small increments. **(Not supported)**

ASCII character set

ASCII character set consisting of A to Z, a to z, digits 0 to 9, and the following symbols: (space) ! " # \$ % & ' () * + , - . / : ; < = > ? @ [\] ^ _ ` { | } ~
(However, lowercase characters are represented as uppercase characters in this unit.)

Copyright

It is prohibited by copyright laws to copy, distribute and deliver copyrighted materials such as music without the approval of copyright holder except enjoying yourself personally.

Maintenance

Care of the Unit

☐ Cleaning this unit

Use a dry, soft cloth to wipe.

☐ Caution on cleaning

Never use solvents such as benzine, thinner as they may mar the surface of the unit.

Notes on CD / CD Media (CD-ROM, CD-R, CD-RW)

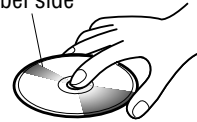
Do not play any ordinary music CDs with labels other than this one.



How to hold the disc

- Do not touch the underside of the disc.
- Do not scratch the disc.
- Do not bend disc.
- When not in use, keep disc in the case.

Label side



Do not use irregular shaped discs.

Do not leave discs on the following places:

- Direct sunlight
- Near car heaters
- Dirty, dusty and damp areas
- Seats and dashboards



Do not use irregular shaped discs.

Disc cleaning

Use a dry, soft cloth to wipe from the center outward.

Caution on new discs

A new disc may have rough edges on its inner and outer perimeter. These may cause malfunction.

Remove the rough edges using a pencil, etc.

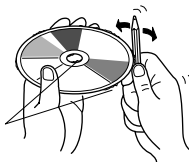
<Right>



<Wrong>



Rough edges



Do not attach any seals or labels to your discs.

Do not write on the disc label in a heavy pen or ballpoint pen stroke.

Notes on CD-Rs/RWs

- You may have trouble playing back some CD-R/RW discs recorded on CD recorders (CD-R/RW drives), either due to their recording characteristics or dirt, fingerprints, scratches, etc. on the disc surface.
- CD-R/RW discs are less resistant to high temperatures and high humidity than ordinary music CDs. Leaving them inside a car for extended periods may damage them and make playback impossible.
- The unit may not successfully play back a CD-R/RW that was made by the combination of writing software, a CD recorder (CD-R/RW drive) and a disc if they are incompatible one another.
- This player cannot play CD-R/RW discs if the session is not closed.
- This player cannot play the CD-R/RW discs which contains other than CD-DA or MP3 data (Video CD, etc.).
- Be sure to observe the instructions of CD-R/RW disc for handling it.

Specifications

□ General

Power supply:	12 V DC (11 V – 16 V), test voltage 14.4 V, negative ground
Current consumption:	Less than 2.2 A (CD play mode; 0.5 W x 4 channels)
Maximum power output:	45 W x 4 channels at 1 kHz, Volume control maximum
Tone adjustment range:	
Bass:	±12 dB at 100 Hz
Treble:	±12 dB at 10 kHz
Suitable speaker impedance:	4 – 8 Ω
Pre-Amp output voltage:	2.0 V (CD play mode; 1 kHz, 0 dB)
Output impedance:	200 Ω
Dimensions (W x H x D):	7" x 1 ¹⁵ / ₁₆ " x 5 ⁷ / ₈ " (178 x 50 x 150 mm)
Weight:	3 lbs. 5 oz (1.5 kg)

□ FM Stereo Radio

Frequency range:	87.9 MHz – 107.9 MHz
Usable sensitivity:	11.0 dBf. (1.25 μV, 75 Ω)
50 dB quieting sensitivity:	15.2 dBf. (1.6 μV, 75 Ω)
Frequency response:	30 Hz – 15 kHz (± 3 dB)
Alternate channel selectivity:	75 dB
Stereo separation:	42 dB (1 kHz)
Image response ratio:	75 dB
IF response ratio:	100 dB
Signal/noise ratio:	70 dB

□ AM Radio

Frequency range:	530 kHz – 1 710 kHz
Usable sensitivity:	28 dB/μV (25 μV, S/N 20 dB)

□ CD Player

Sampling frequency:	32 times oversampling
DA converter:	MASH•1 bit/4 DAC system
Error correction system:	Panasonic super decoding algorithm
Pick-up type:	Astigma 3-beam
Light source:	Semiconductor laser
Wave length:	780 nm
Frequency response:	20 Hz – 20 kHz (±1 dB)
Signal/noise ratio:	96 dB
Total harmonic distortion:	0.01 % (1 kHz)
Wow and flutter:	Below measurable limits
Channel separation:	75 dB
MP3 decoding:	MPEG 1 Audio Layer 3/MPEG 2 Audio Layer 3
Bit rate:	(MPEG 1 Audio Layer 3) 32 kbps – 256 kbps, VBR (Variable Bit Rate) (MPEG 2 Audio Layer 3) 16 kbps – 160 kbps, VBR (Variable Bit Rate)
Sampling frequency:	(MPEG 1 Audio Layer 3) 32 kHz, 44.1 kHz, 48 kHz (MPEG 2 Audio Layer 3) 22.05 kHz, 24 kHz

Above specifications comply with EIA standards.

Note: Specifications and the design are subject to modification without notice due to improvements in technology.

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