



CD-45z

Mobile Receiver / CD Player

Owner's Manual

Nakamichi Mobile Sound System

Nakamichi Mobile Sound System

Before installing or using the unit, please read this manual carefully, to ensure correct operation.

Keep the manual at hand for future reference.

English

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

CAUTION
- Prolonged exposure to sound at excessive levels has been proven to cause temporary and, in some instances, permanent hearing loss. In order to protect your hearing and your future enjoyment of music, it is strongly recommended that you avoid exposure to excessive listening levels.
- For reasons of traffic safety, you should keep the listening volume to a level which will not mask outside noises while driving.

DANGER - Invisible laser radiation when opened and interlock failed or defeated. Avoid direct exposure to beam.

CAUTION - Use of the controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

LASER DIODE PROPERTIES

MAXIMUM RADIANT POWER: 0.5 mW

WAVE LENGTH: 780 nm - 815 nm

EMISSION DURATION: CONTINUOUS

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

designed to provide reasonable protection against harmful interference in a residential 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 try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

WARNING - The Federal Communications Commission does not allow any modifications or changes to the unit EXCEPT as that specified by Nakamichi in this manual. Failure to comply with this government regulation could void your authority to operate the equipment.

Complies with FDA radiation performance standards, 21 CFR Subchapter J.

Please record the Serial Number in the space provided below and retain this number.

The Serial Number is located on the top panel of the unit.

Model Number: CD-45z

Serial Number: _____

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Precautions

Important Notice

We thank you for your purchase of this Nakamichi product and trust it will provide you with many years of trouble-free performance.

Should you be using your Nakamichi product in a country other than the one in which it was originally purchased, we ask you note the following:

- 1) The appointed Nakamichi distributor for any given country is responsible for warranty servicing only on units distributed by or through it in that country in accordance with its applicable warranty.
- 2) Should a Nakamichi product require servicing in a country other than the one in which it was originally purchased, the end user may seek to have repairs performed by the nearest Nakamichi distributor, subject to that distributor's local servicing policies, but all costs of repair (parts, labor, transportation) must be born by the owner of the Nakamichi product.

Thank you again for your purchase.

Nakamichi Corporation
Tokyo, Japan

- This unit is designed for use in cars with 12 V negative ground systems only.
- Do not use the unit while the car's engine is not running, to prevent draining the car battery.
- If a fuse has blown, check whether all connections are correct, and replace the fuse only with a fuse of identical type and rating.
- When a closed car is parked in the sun, the temperature inside the car can reach very high levels. If a car is parked outdoors in winter, it may cool down considerably. In such cases, use the unit only after the interior temperature of the car has returned to normal.
- Do not attempt to open the unit or make any internal alterations, since this involves the risk of damage and will void the warranty. Also pay attention that no foreign objects enter the unit.

- Clean the unit only by wiping it with a soft, dry cloth. Avoid using solvents or alcohol-based cleaners.
- Do not leave the remote control unit in a location that may be exposed to direct sunlight, rain, or splashes of water. Otherwise deformation or damage may occur.

On CDs

- Never use any CD player accessories such as disc adapters, disc stabilizers, disc protectors, etc.
- Use only discs with a  mark or similar, which indicates compliance with official Compact Disc standards.
- Do not use discs which are not round, such as novelty discs with octagonal or heart shape, because this may lead to damage.
- Some CDs may have a certain amount of flash (flaky plastic deposit resulting from the grinding process) near the center hole or the outer circumference. Remove any such remnants before using the disc, otherwise it may not be possible to eject the CD properly, or skipping may occur.
- CDs bearing labels or stickers with excess glue around the edges or CDs with glue residue from removed adhesive tape, stickers or similar may give problems during eject or cause other damage.
- CD-R discs (recordable CDs) cannot be played on this unit.

Installation

English

Installation should be performed by an authorized professional installer. Please consult your dealer regarding details.

Avoid locations which may be exposed to:

- direct sunlight
- hot air from heater outlets
- rain or moisture
- high levels of dust
- high levels of vibration

Verify that the supplied accessories are complete:

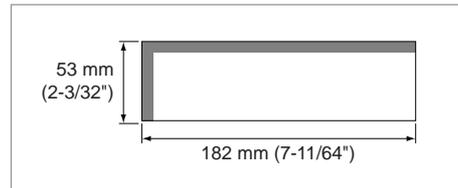
- Mounting sleeve (1)
- Metal stay (1)
- M5 hex screw (4)
- M5 flat cross-recess screw (4)
- M5 spring washer (5)
- M5 washer (5)
- M5 nut (1)
- M5 fastening screw (1)
- Masking tape
(for sealing off clearances in the installation location) (4)
- Trim panel rim (1)
- Rubber bushing (1)
- 14-pin connector (1)
- 10A spare fuse (for battery) (1)
- Remote control unit (1)
- IEC R03 (size AAA) battery
(for remote control) (2)
- Hook-and-loop fastener strips
(for remote control) (hook 1, loop 2)
- Front panel carrying case (1)

Precaution concerning side fastening holes
When installing the unit using the side or rear fastening holes, make sure that the fastening screws are not longer than M5x8 (mm). Never use longer screws, because this can cause internal damage to the unit!

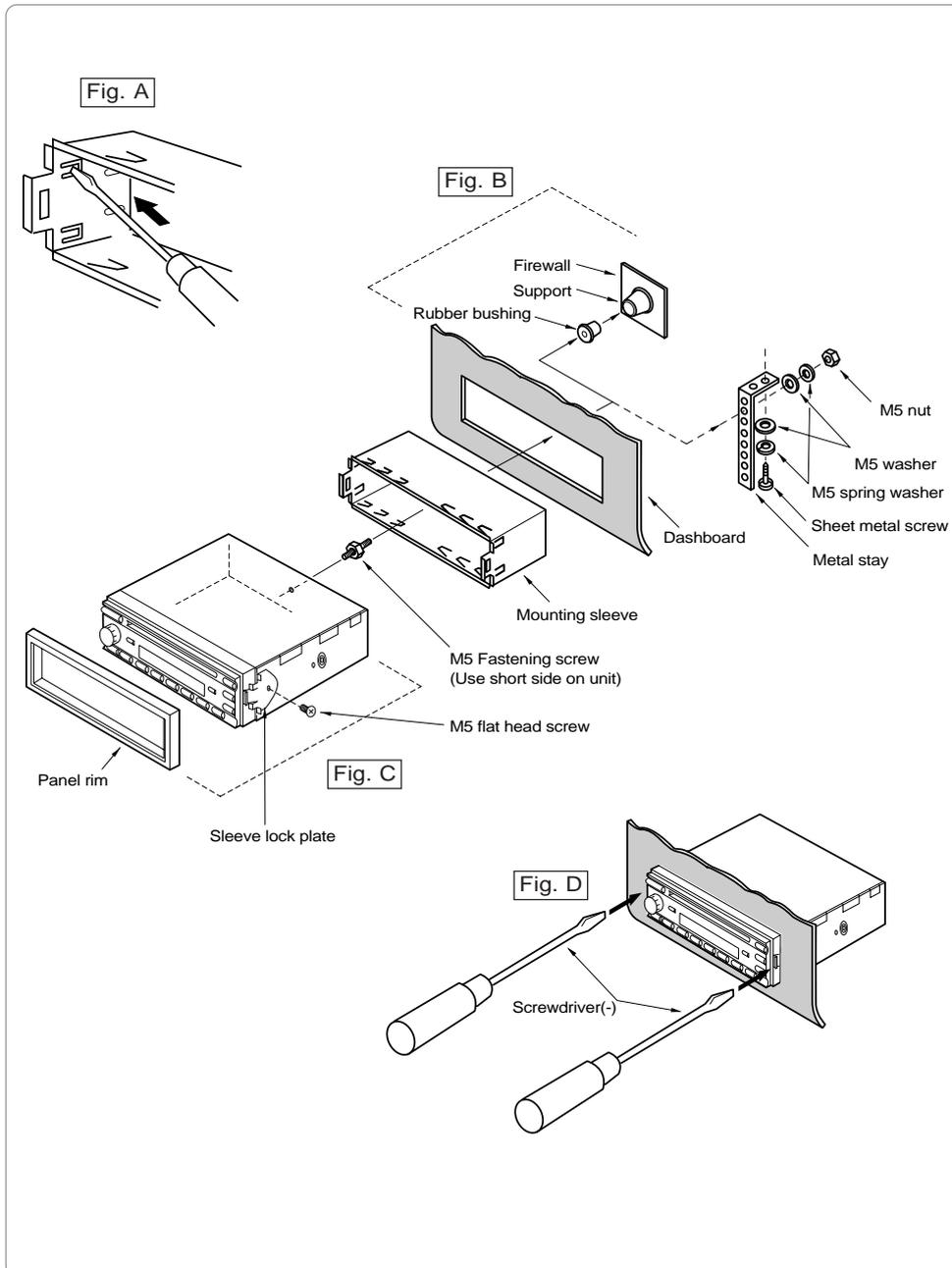
Installation angle
Keep the installation angle of the unit within the following range: horizontal (0 degrees) to slight upwards inclination (+30 degrees). If the unit is mounted at a different angle, sound quality may be impaired or damage may occur.

Dashboard installation

The dimensions of this unit correspond to the DIN standard. If the dashboard of the car provides a DIN-sized mounting slot, installation can be accomplished very easily, using the supplied mounting sleeve. If the mounting cutout is smaller than the standard DIN size, it must be enlarged to the following dimensions: Height 53 mm (2-3/32") x Width 182 mm (7-11/64")



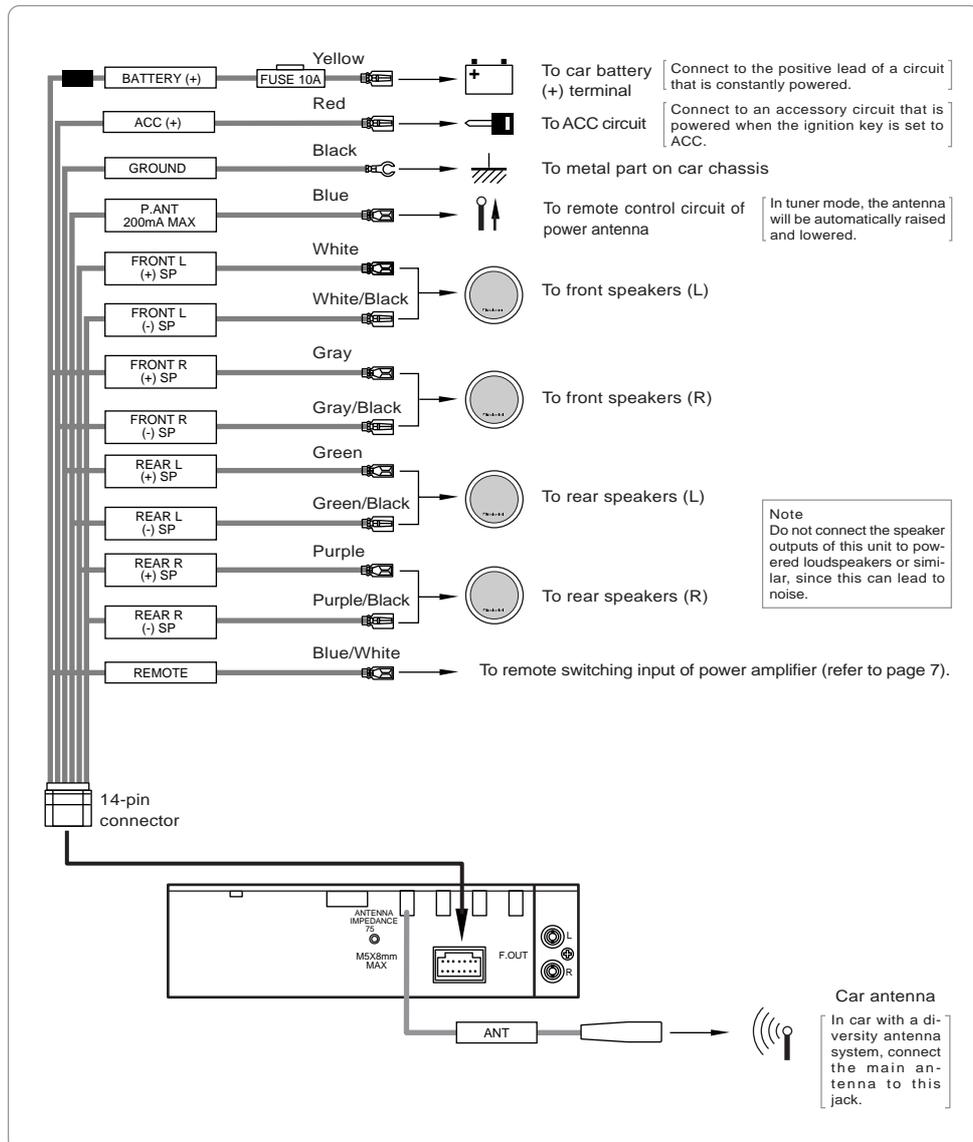
1. Insert the supplied mounting sleeve into the mounting slot.
2. Bend the flanges of the mounting sleeve with a screwdriver to fasten it. **(Fig. A)**
3. Fasten the sleeve lock plates to both sides of the unit. If the mounting has sufficient depth, use the long sleeve lock plates, otherwise use the short sleeve lock plates.
4. Make sure that the mounting sleeve is securely fixed, then install the main unit.
5. Use the supplied M5 fastening screw and metal stay to fasten the rear section of the main unit to the car. If a suitable support is provided inside the mounting slot, the rubber bushing can be used instead of the metal stay. **(Fig. B)**
6. After the unit is securely fixed, attach the supplied trim panel rim. **(Fig. C)**
7. To remove the unit, remove the trim panel rim and the metal stay (if it was used for rear support of the unit). Then insert the two screwdrivers(-) into the grooves on the left and right of the unit and pull it out **(Fig. D)**, taking care not to damage the wiring on the rear.



Connections

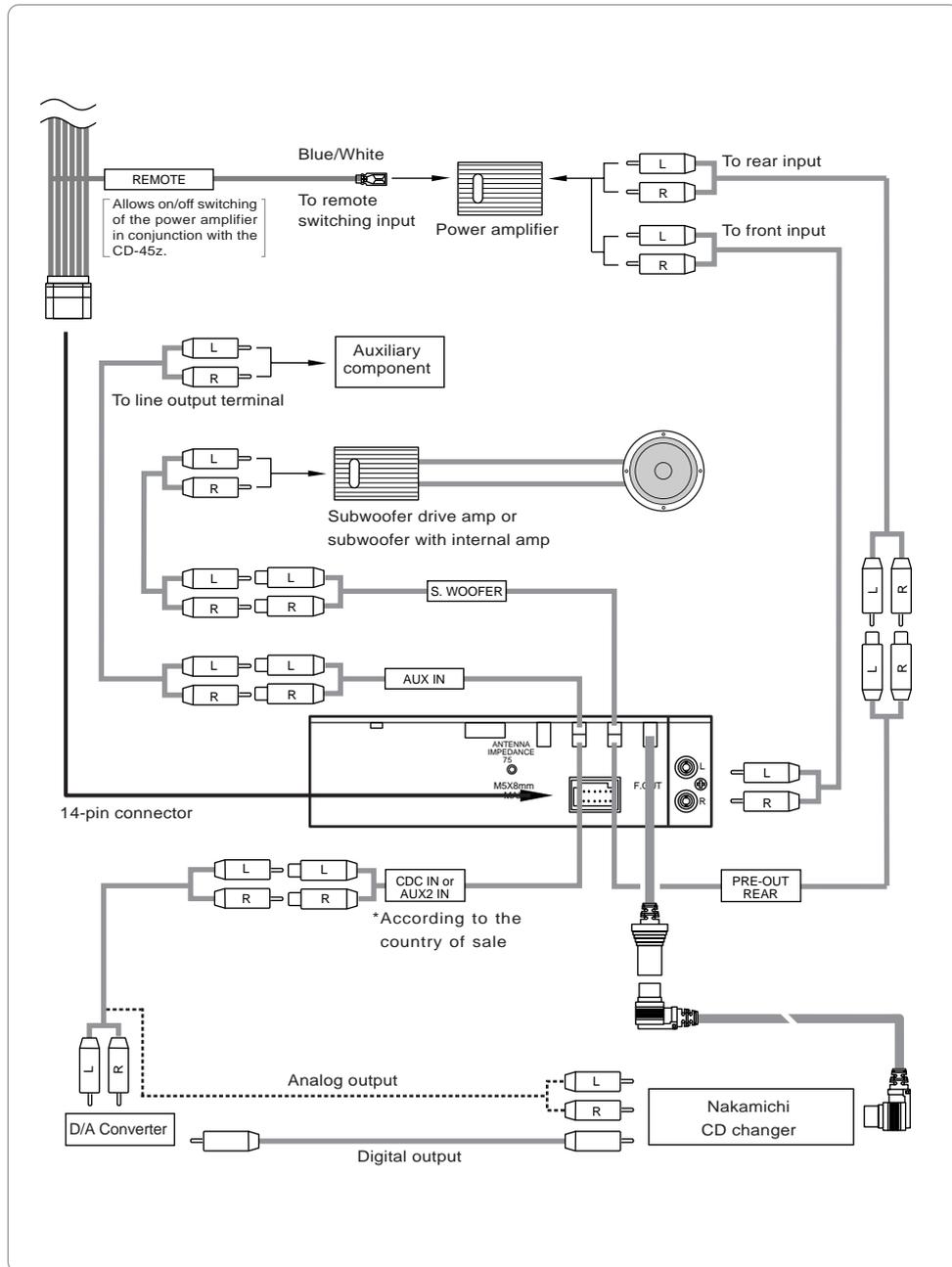
English

WARNING This unit is designed for use in cars with 12 V negative ground systems only. Be sure to remove the negative (-) terminal from your car battery before making any connections, to prevent damage due to short-circuiting.



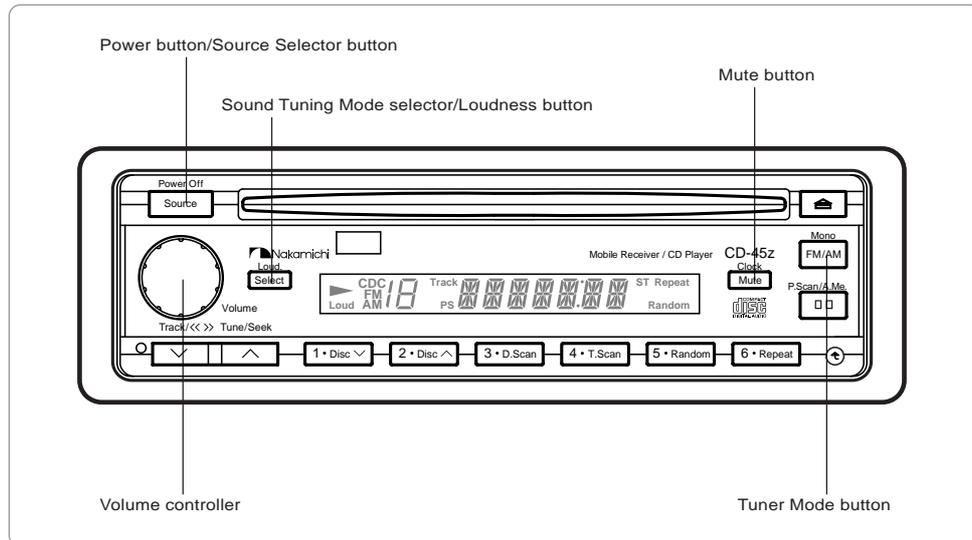
External Equipment Connections

English



Basic Operation Steps

English



Power on/off

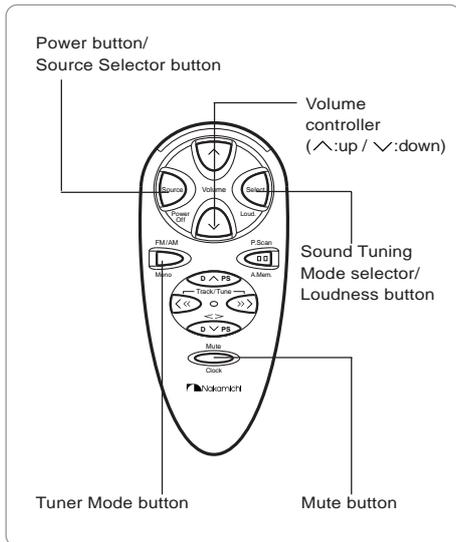
1. To turn the unit on, press the Power button. Pressing the Tuner Mode button will also activate the unit in the tuner mode. Inserting a CD will activate the unit in the CD mode.
2. To turn the unit off, press and hold the Power button for at least two seconds.

Volume control

- Turning the Volume controller clockwise raises the volume and turning the Volume controller counterclockwise decreases it. The indication "VOL" appears on the display.
- A short beep tone sounds to show that the volume level is zero.

Muting

1. When the Mute button is pressed while the unit is on, the indication "MUTE" appears on the display and the volume level is cut back instantly.
2. To release the muting condition, press the Mute button once more or turn the Volume controller

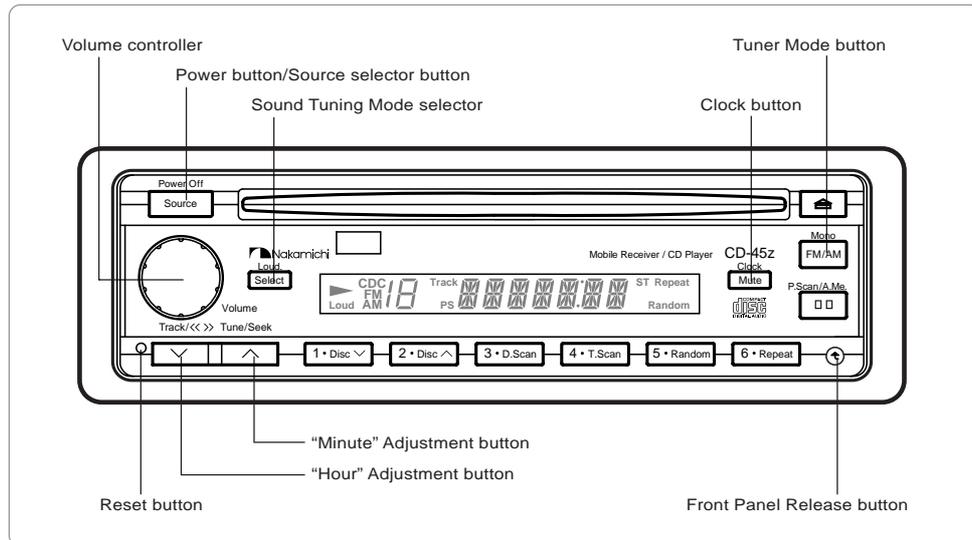


Tone/balance/fader control

1. Press the sound tuning mode selector until the desired adjustment mode is indicated on the display: *BAS* (bass), *MID* (mid range), *TRE* (treble), *BAL* (balance), *FAD* (fader).
2. In the respective mode, turning the volume controller clockwise works as follows: emphasize low range (bass), emphasize mid range (mid range), emphasize high range (treble), increase right volume level (balance), increase front volume level (fader).
3. In the respective mode, turning the volume controller counterclockwise works as follows: attenuate low range (bass), attenuate mid range (mid range), attenuate high range (treble), increase left volume level (balance), increase rear volume level (fader).

Loudness

1. When you keep the Loudness button depressed for about 1 second or more, the indication "*LOUD*" appears on the display for about 2 seconds, and loudness compensation is enabled. Low frequencies which are hard to hear at low levels will be emphasized.
2. To cancel loudness compensation, press the Loudness button again for about 1 second or more.



Selecting a program source

Each push of the Source Selector button changes the operation mode of the unit in the following order: tuner, CD, CD changer, AUX, tuner... If no CD is inserted in the unit, the CD mode is skipped.

- Inserting the CD in the CD slot directly activates the CD mode.
- Pressing the Tuner Mode button directly activates the tuner mode.

Time indication

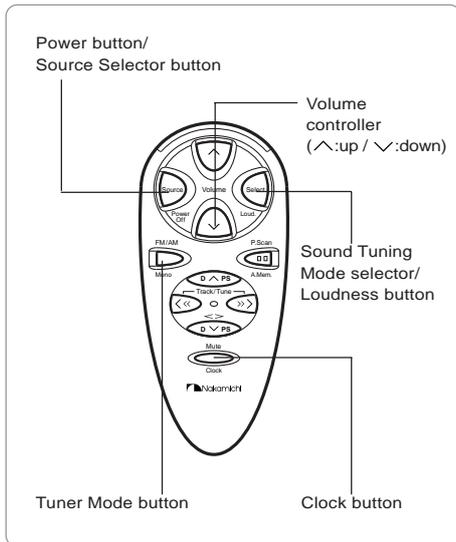
When you keep the Clock button depressed for about 1 second or more, the current time is shown on the display. To cancel the clock display, press the Clock button again for about 1 second or more.

Adjusting the clock

1. While the unit is turned off, keep the Clock button depressed and press the "Hour" Adjustment button to set the hours.
2. While the unit is turned off, keep the Clock button depressed and press the "Minute" Adjustment button to set the minutes.

* The clock may be somewhat fast or slow. This is caused by temperature changes inside the car and is not a defect. Simply adjust the clock again.

* Normally, the time will be shown on the display also while the unit is turned off. When wishing to disable this feature, keep the Clock button depressed while pressing the Reset button. This will also disable the illumination of the unit while it is turned off. To re-enable clock display and illumination, press only the Reset button.



Beep sound

Normally, when a button on the unit or a button on the remote control is pressed, a short beep is heard which serves as a confirmation that the command was received. To disable this feature, proceed as follows. While the unit is turned off, keep the Mute button depressed and press the Power button to turn the unit on. Repeat this procedure when you wish to re-enable the beep sound.

* The beep sound is output from the front speakers. If only rear speakers are connected, no beep will be heard.

Reset button

In normal operation, this button is not needed. Only if the controls of the unit for any reason do not seem to operate correctly, press this button.

Detachable front panel

When the Front Panel Release button is pressed, the front panel can be separated from the main unit for safekeeping. To reattach the front panel, press it against the main unit until you hear a click.

* Do not touch the connector pads on the front panel and the main unit, to prevent contact problems. If a contact pads has become dirty, wipe it with a dry, clean cloth.

Changing the playback mode indication

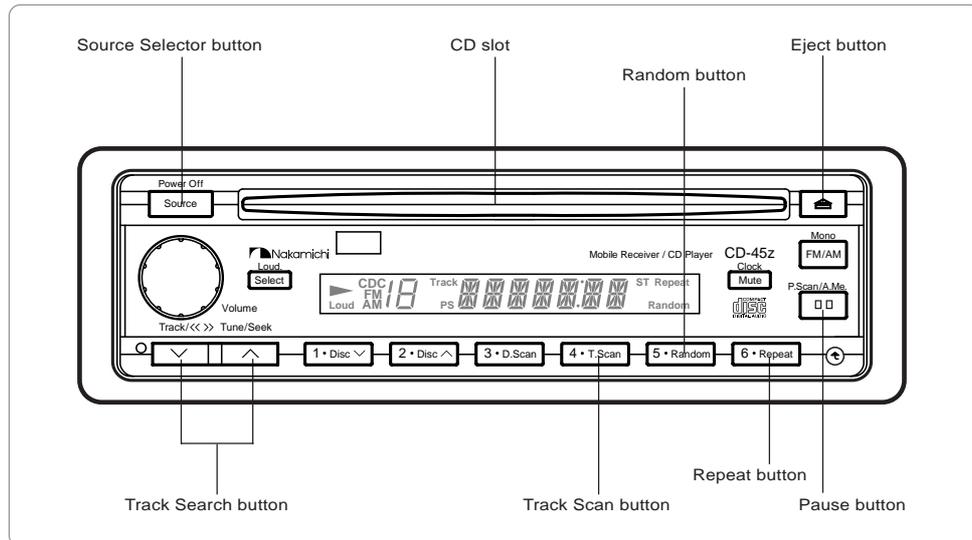
Use the following procedure if you want to change the playback mode indication when equipment was connected to the "AUX IN" or the "CDC IN" jacks*.

1. Use the Source Selector button to select AUX mode (or CD changer mode).
 2. Pressing the Sound Tuning Mode selector switches the display in the following order: "BAS", "MID", "TRE", "BAL", "FAD", "AUX" (or "CDC"), "VOL", "BAS" ...
 3. Turning the Volume controller clockwise while "AUX" (or "CDC") is flashing calls the indication "CD", "MD", "TV", "AUX", "CD" ... (or "AUX", "CD", "MD", "TV", "CDC", "AUX" ... in CD changer mode) onto the display. This allows you to match the display to any kind of connected equipment.
- When the mode indication was changed as described above, the selected indication will be shown again the next time the AUX mode (or CD changer mode) is activated.

* Connecting equipment is only possible when the CD changer is not connected. Note that the "CDC IN" jack name may vary depending on the sales region where purchased

CD Playback

English



CD playback

When the CD is inserted in the CD slot, the indication "CD" appears on the display for about 2 seconds, and CD playback starts. If a CD is already inserted in the unit and the mode is changed from another mode to the CD mode with the Source Selector button, the indication "CD" appears on the display for about 2 seconds, and CD playback starts.

CD playback pause

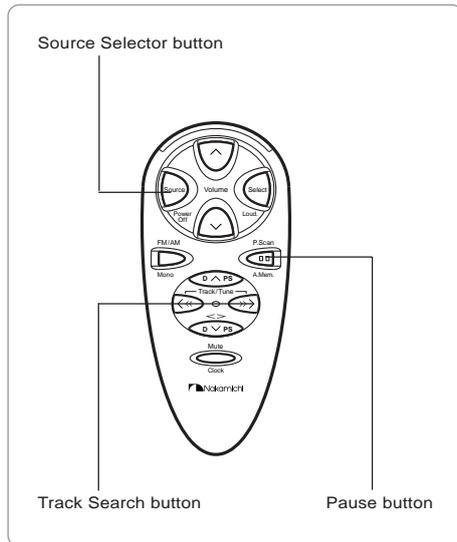
When the Pause button is pressed, the indication "PAUSE" appears on the display and CD playback is paused. Pressing the Pause button again resumes playback.

Track search

- Tap the Track Search button (∧) to locate the start of the next track. Tap the button repeatedly to locate later tracks.
- Tap the Track Search button (∨) to locate the start of the current track. Tap the button repeatedly to locate earlier tracks.

Forward search/reverse search

- Keep the Track Search button (∧) depressed (for one second or more) to quickly move through the disc in the forward direction. Release the button to resume playback.
- Keep the Track Search button (∨) depressed (for one second or more) to quickly move through the disc in the reverse direction. Release the button to resume playback.



Track scan

1. Pressing the Track Scan button causes the first 8 seconds of every track on every disc to be played back.
2. When you want to continue to listen to a track, press the Track Scan button again. Regular playback then continues with this track.

* If the elapsed playing time of the current track is less than 8 seconds, track scan is carried out from the current track. If it is 8 seconds or more, track scan is carried out from the next track.

Track repeat

1. When the Repeat button is pressed, the indication "Repeat" appears on the display, and the current track is repeated.
2. Pressing the Repeat button once more cancels repeat playback. The indication "Repeat" goes out, and regular playback resumes.

Random play

1. When the Random button is pressed during CD playback, the indication "Random" appears on the display, and all tracks on the current CD are played back in random order.
2. Pressing the Track Search button (^) locates the start of the next track in the random sequence.
3. Pressing the Random button once more cancels random playback. The indication "Random" goes out, and regular playback resumes from the current track.

* This unit chooses tracks so that the currently playing track and the next track are not the same. Therefore it is possible that the same track is played more than once during random play.

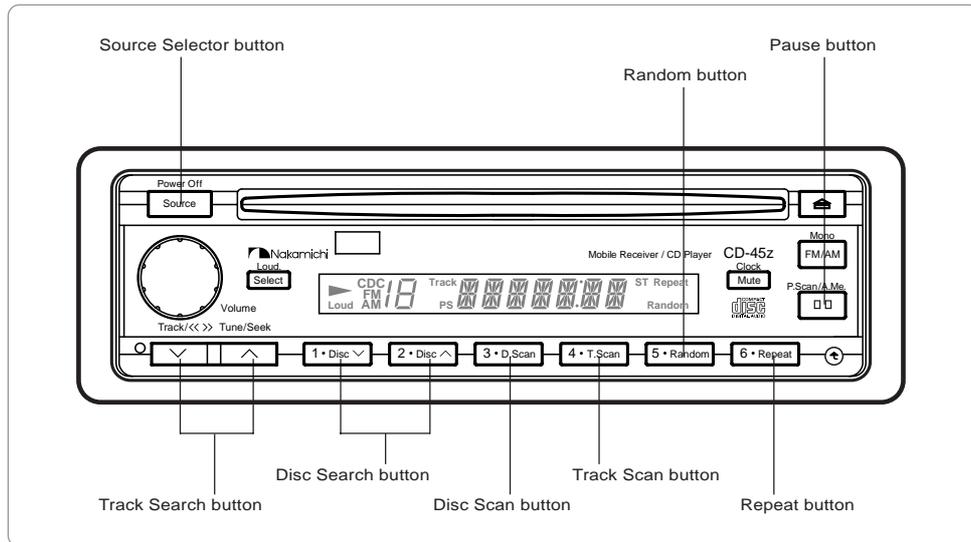
Ejecting the CD

When the Eject button is pressed, CD playback terminates and the CD is ejected. If the CD is not removed from the unit, it will automatically be drawn in again after about 10 seconds, to protect it against damage. The unit then enters the standby mode.

CD Changer Control

When a Nakamichi CD changer is connected to the unit.

English



CD playback

When the CD changer mode is selected with the Source Selector button, the indication "CDC" appears on the display for about 2 seconds, and CD playback is carried out. When changing back to CD changer mode from another mode, CD playback continues from the point where playback stopped previously.

CD playback pause

When the Pause button is pressed, the indication "PAUSE" appears on the display and CD playback is paused. Pressing the Pause button again resumes playback.

Track search

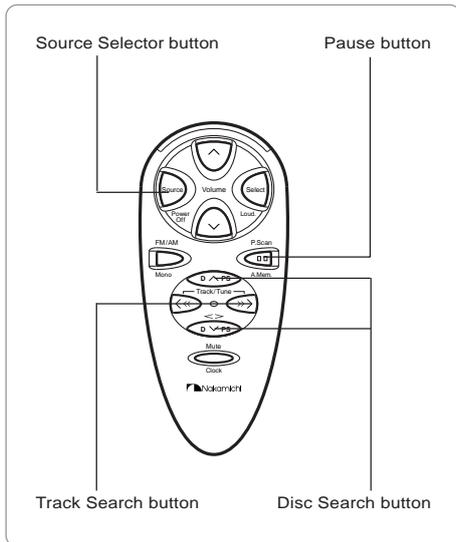
- Tap the Track Search button (∧) to locate the start of the next track. Tap the button repeatedly to locate later tracks.
- Tap the Track Search button (∨) to locate the start of the current track. Tap the button repeatedly to locate earlier tracks.

Forward search/reverse search

- Keep the Track Search button (∧) depressed (for about 1 second or more) to quickly move through the disc in the forward direction. Release the button to resume playback.
- Keep the Track Search button (∨) depressed (for about 1 second or more) to quickly move through the disc in the reverse direction. Release the button to resume playback.

Disc search

- Press the Disc Search button (∧) to move to the next disc. During disc search, the indication "CHANGE" appears on the display. Keep the button depressed (for about 1 second or more) to jump to later discs.
- Press the Disc search button (∨) to move to the previous disc. During disc search, the indication "CHANGE" appears on the display. Keep the button depressed (for about 1 second or more) to jump to earlier discs.



Track repeat

1. When the Repeat button is pressed, the indication "Repeat" appears on the display, and the current track is repeated.
2. Pressing the Repeat button once more cancels repeat playback. The indication "Repeat" goes out, and regular playback resumes.

Random play

1. When the Random button is pressed during CD playback, the indication "Random" appears on the display, and all tracks on all discs in the CD changer are played back in random order.
2. Pressing the Track Search button (^) locates the start of the next track in the random sequence.
3. Pressing the Random button once more cancels random playback. The indication "Random" goes out, and regular playback resumes from the current track.

* This unit remembers only the last 5 tracks that were already played and controls random play so that these tracks are not selected. This means that it is possible for the same track to be played more than once during random play.

Disc scan

1. When the Disc Scan button is pressed, the first 8 seconds of the first track on each disc are played back.
2. When you want to continue to listen to a disc, press the Disc Scan button again. Regular playback then continues with this disc.

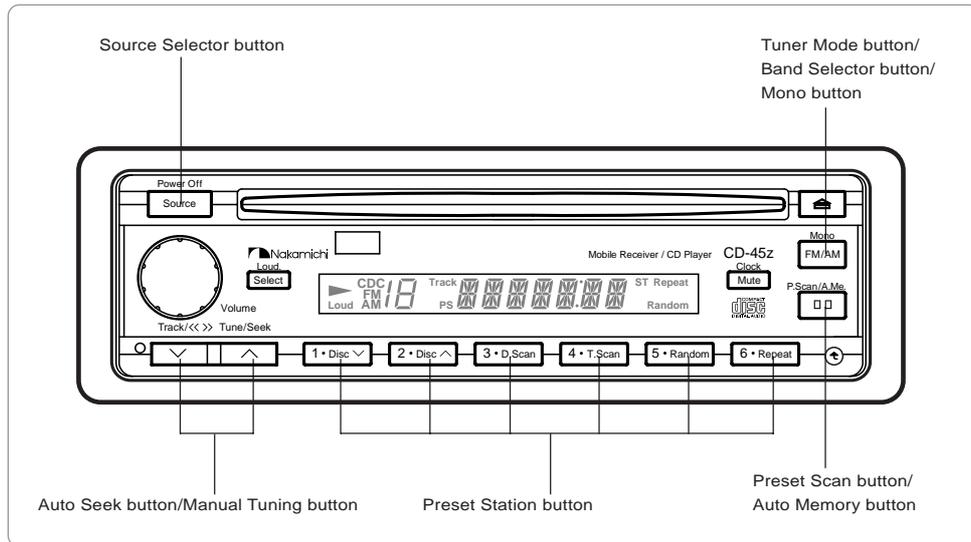
Track scan

1. Pressing the Track Scan button causes the first 8 seconds of every track on every disc to be played back.
2. When you want to continue to listen to a track, press the Track Scan button again. Regular playback then continues with this track.

* If the elapsed playing time of the current track is less than 8 seconds, track scan is carried out from the current track. If it is 8 seconds or more, track scan is carried out from the next track.

FM/AM Reception

English



FM/AM reception

When the tuner mode is selected with the Source Selector button or by pressing the Tuner Mode button, the band indication (FM1, FM2, FM3, AM1, AM2) appears on the display for about 2 seconds, and FM/AM broadcast reception is carried out. When changing back to tuner mode from another mode, broadcast reception continues with the same station that was tuned in previously.

Band selection

With each push of the Band Selector button, the tuner band cycles through the settings FM1, FM2, FM3, AM1, AM2.

Auto seek

When the Auto seek button is depressed for about 1 second or more, the unit automatically searches for the next strong station that can be received.

- If no station is found on the first pass, the unit switches to the higher-sensitivity DX mode (the indication "DX" appears on the display) and auto seek continues.

Manual tuning

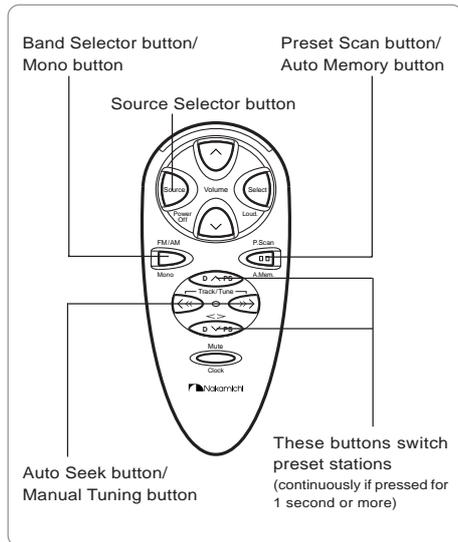
Press the Manual Tuning button to activate manual tuning. This makes it possible to receive also weak stations where the automatic seek tuning function does not stop.

Manual memory

1. Select the frequency band (FM1, FM2, FM3, AM1, AM2) with the Band Selector button and adjust the tuner to receive the desired broadcast station.
2. Keep the desired Preset Station button (1-6) depressed for about 2 seconds or more. When the preset number on the display stops flashing and stays constantly lit, the station is stored in memory.

Memory tuning

1. Select the frequency band (FM1, FM2, FM3, AM1, AM2) with the Band Selector button.
2. Press the desired Preset Station button (1-6). The station stored in that button is received.



Auto memory

1. Select the frequency band (FM1, FM2, FM3, AM1, AM2) with the Band Selector button.
2. Keep the Auto Memory button depressed for about 2 seconds or more. The unit then automatically assigns six of the strongest stations to the Preset Station buttons 1 - 6.
 - If fewer than six stations were found on the first pass, the unit switches to the higher-sensitivity DX mode, and the auto memory function continues.
 - If fewer than six stations were found on the second pass, the stations found so far are assigned to the preset station buttons, and the first programmed station is received.
 - If no stations could be programmed, the unit remains tuned to the frequency of the station that was received when the auto memory button was pressed.
 - Since six stations can be memorized for each tuner band, the total memory capacity is 30 stations.

Preset scan

1. Select the frequency band (FM1, FM2, FM3, AM1, AM2) with the Band Selector button.
2. When the Preset Scan button is pressed, all stored broadcast stations in the selected frequency band (FM or AM) are tuned in consecutively for 5 seconds each.
3. When you have found a station you want to listen to, press the Preset Scan button once more. The preset scan stops and the unit stays tuned to that station.

Stereo/mono switching

If excessive noise is heard during reception of an FM station, keep the Mono button depressed for about 1 second or more to switch to monaural mode. The indication "ST" disappears from the display and the sound will be in mono, but noise will be reduced.

- To cancel the monaural mode, press the Mono button again for about 1 second or more. The monaural mode is also canceled when you tune to a different frequency or turn the unit off.

Troubleshooting

English

In case of an apparent malfunction, please check the following points.

If the problem persists, contact your dealer or an authorized service station.

Condition	Countermeasure
Unit cannot be turned on.	Check the fuses.
CD cannot be inserted.	Eject any CD already inside the unit.
CD is ejected immediately.	Insert CD with the label facing up.
Cannot playback.	Check all connections.
Dropouts, mistracking or skipping occurs even with slight vibrations.	Clean the CD.
No radio reception possible.	Check antenna connection. If a window antenna is used, make sure that the antenna booster is operating.
Ignition noise is heard during broadcast reception.	Connect ground cable securely. Choose a different ground point.
Controls cannot be operated. Malfunction occurs.	Check whether the car battery is exhausted. Push the reset button.

CD changer/CD player error messages

When a problem is detected in a connected CD changer or the internal CD player, an error message as shown below is displayed. Try the indicated countermeasures.

If the problem persists, contact an authorized service station.

Error message	Meaning	Countermeasure
<i>NO DISC</i>	No CD is inserted. (MB-70, MB-600, MF-51, MF-31 etc.) Disc tray is in the extended position, or no CD is inserted. (MB-9, MB-7, 100mb etc.) No magazine is inserted, or no CD is inserted. (CDC-111, 100cdc etc.)	Load one or more CDs. Close the disc tray or load CDs. Insert the disc magazine or load CDs.
<i>E-DISC</i>	CD is inserted upside down. CD is very dirty. CD is scratched or otherwise damaged.	Insert CD correctly. Clean the CD. Use a different CD.
<i>E-MECHA</i>	Unit has become non-functional for some reason.	Switch the program source, press the eject button, or turn the unit off. If this does not remove the problem, press the reset button.

Specifications

English

Amplifier section

Maximum Power Output 43 W x 4 (4 ohms)
 Frequency Response 15 - 30,000 Hz \pm 1 dB
 Total Harmonic Distortion 0.1%
 (4 ohms, 1 kHz, 3 W x 4)
 AUX Input Level/Impedance 1 V/50 kohms
 CDC Input Level/Impedance 1 V/50 kohms
 Output Level 4 V
 Tone Controls
 Bass 100 Hz \pm 11 dB
 Mid 1 kHz \pm 11 dB
 Treble 10 kHz \pm 11 dB
 Loudness 20 Hz +14 dB (Volume level 20)

FM tuner section

Frequency Range
 U.S.A. 87.5 - 107.9 MHz in 100-kHz steps
 Other Area .. 87.5 - 108.0 MHz in 50-kHz steps
 Sensitivity 15 dBf (IHF)
 Signal-to-Noise Ratio 60 dB (Mono)
 Stereo Separation 35 dB
 Antenna Input 75 ohms (Unbalanced)

AM tuner section

Frequency Range
 U.S.A. 530 - 1,710 kHz in 10-kHz steps
 Other Area 531 - 1,602 kHz in 9-kHz steps
 Sensitivity 32 dB μ
 Signal-to-Noise Ratio 45 dB

CD player section

System Compact Disc digital audio
 Error Correction CIRC Principle
 Sampling Frequency 44.1 kHz
 D/A Converter Type 20-bit D/A converter with
 8-times oversampling digital filter
 Frequency Response 20 - 20,000 Hz
 Signal-to-Noise Ratio Better than 95 dB
 Dynamic Range Better than 90 dB
 Total Harmonic Distortion 0.005% (1 kHz)

General

Power Source 14.4 V DC, negative ground
 (10.8 - 15.6 V allowable)
 Current Consumption 9.0 A (At rated power output)
 Installation dimensions 178 (W) x 50 (H) x 158 (D) mm
 7 (W) x 1-15/16 (H) x 6-1/4 (D) inches
 Outer dimensions * ... 178 (W) x 50 (H) x 170 (D) mm
 7 (W) x 1-15/16 (H) x 6-11/16 (D) inches
 Mass Approx. 1.5 kg / 3 lbs. 5 oz.

Remote control unit

Principle Infrared pulse system
 Power Supply 3 V DC (1.5 V x 2)
 Dimensions * 49 (W) x 26 (H) x 110 (D) mm
 1-15/16 (W) x 1 (H) x 4-5/16 (D) inches
 Mass Approx. 60 g / 2 oz.
 (including batteries)

* Dimensions do not include protruding parts. Height is the panel height.
 • Specifications and design are subject to change for further improvement without notice.