The illustration shows SC-EH790 for the United Kingdom and Eastern Europe.

Note
“EB” on the outer packaging indicates the United Kingdom.

Before connecting, operating or adjusting this product, please read these instructions completely. Please keep this manual for future reference.
Dear customer

Thank you for purchasing this product.

For optimum performance and safety, please read these instructions carefully.

These operating instructions are applicable to the following systems. These operating instructions, however, fundamentally explain the operation of system SC-EH590, and indicates a function which can be enjoyed with SC-EH790 only. For optimum performance and safety, please read these instructions carefully.

This Technical Support Hot Line number is for Panasonic PC software related products only.

For UK customers: 0870 1 505610

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* Order accessory and consumable items for your product with ease and confidence by telephoning our Customer Care Centre Mon.–Fri. 9:00am–5:30pm (excluding public holidays.)
* Don't use a DC power source. Check the source carefully when setting the AC mains lead and contact your dealer or an authorized service center. Electric shock or malfunction. If this occurs, immediately disconnect the unit from the power supply and contact your dealer.
* Do not let metal objects fall into the unit. This can cause electric shock or malfunction.

This product may receive radio interference caused by mobile telephones during use. If such interference is apparent, please increase separation between the product and the mobile telephone.

This UNIT IS INTENDED FOR USE IN MODERATE CLIMATES.
Simple set-up and play

**STEP 1 Locating**

The illustrations show SC-EH790 for the United Kingdom and Eastern Europe.

### Components

- CD changer or CD player
- Sound processor
- Tuner/amplifier
- Cassette deck

### Speakers

- Front speaker (left)
- Center speaker
- Surround speaker (left)
- Surround speaker (right)

### Optimum location

Distance: A=B=C=D=E

### Use only the supplied speakers.

Using other speakers can damage the unit and sound quality will be negatively affected.

### Front speakers

Left and right front speakers are exactly same.

### Surround speakers

Place either side of the listening position, or slightly to the rear, about 1 meter higher than ear level with the Technics logo facing toward the listening position.

### Notes on speaker use

- You can damage your speakers and shorten their useful life if you play sound at high levels over extended periods.
- Reduce the volume in the following cases to avoid damage.
  - When playing distorted sound.
  - When the speakers are receiving howling from a microphone (for Australia and N.Z.) or record player, noise from FM broadcasts, or continuous signals from an oscillator, test disc, or electronic instrument.
  - When adjusting the sound quality.
  - When turning the unit on or off.

If irregular colouring occurs on your television

These speakers are designed to be used close to a television, but the picture may be affected with some televisions and set-up combinations. If this occurs, turn the television off for about 30 minutes. The television’s demagnetizing function should correct the problem. If it persists, move the speakers further away from the television.
Simple set-up and play

**STEP 2** Speaker leads

**Surround and center speakers**

Center speaker

Surround speaker (right)

Surround speaker (left)

**Right**

**Left**

**Front speaker**

Connect the leads to the terminals of the same colour.

**LF** and **HF** stand for low frequency and high frequency.

Connect the left (L) side in the same way.

- **Note**:
  - Never short-circuit positive (+) and negative (−) speaker wires.
  - Be sure to connect only positive (red or grey) wires to positive (+) terminals and negative (black or blue) wires to negative (−) terminals.

Incorrect connection can damage the speakers.

Twist the vinyl tip and pull off.

**STEP 3** Antennas

**FM indoor antenna**

Fix the other end of the antenna where reception is best.

- **Center speaker**

- **Surround speakers (left)**

- **Surround speakers (right)**

**For Australia and N.Z.**

Twist the vinyl tip and pull off.

**AM indoor antenna**

Twist the vinyl tip and pull off.

- **Note**:
  - Keep loose antenna cord away from other wires and cords.

**STEP 4** Flat cables and AC mains lead

**Flat cables**

Keep the cables as flat as possible against the back of the unit. Connect the connectors to the terminals of the same colour. Incorrect connection can damage the unit.

**Connecting**

Even when the connector is perfectly inserted, depending on the type of inlet used, the front part of the connector may jut out as shown in the drawing. However there is no problem using the unit.

**For your reference**:

Information you enter into the unit’s memory, except for time, remains intact for up to two weeks after the mains lead is disconnected.

**Connecting**

To household mains socket

**Disconnecting**

**AC mains lead**

(For the United Kingdom only)

BE SURE TO READ THE CAUTION FOR THE AC MAINS LEAD ON PAGE 4 BEFORE CONNECTION.

**Insertion of connector**

- **Appliance inlet**

- **Connector**

- **Approx. 6 mm**

**For your reference**:

Information you enter into the unit’s memory, except for time, remains intact for up to two weeks after the mains lead is disconnected.
**Simple set-up and play — Listening to a CD —**

The illustrations show SC-EH790 for the United Kingdom and Eastern Europe.

1. **Press [I/II] to turn the unit on.**

2. **EH790**
   - Press DIRECT OPEN [DISC1]–[DISC5] and insert a CD.

3. **Press [A, OPEN/CLOSE] to close the tray.**

4. **Press [>] to start play.**

5. **Adjust the volume.**

**Note**
- You can change discs in other trays while a disc is playing.
- If paused: flashes
- If playing: green
- If stopped: orange

To stop the disc
Press [Ⅲ].

To pause play

**Final disc EH790**
For example, if play starts from disc 4, disc 3 will be the final disc. Order of progression: Disc 4→5→6→1→2→3

**“NO DISC” is displayed**
When the unit is in CD mode but a disc isn’t in the play position* (SC-EH790) or in the player (SC-EH590).
*The disc in the play position is ready to play immediately when you press [>].
The illustration shows the remote control for SC-EH790 for Australia and N.Z.

**Remote control**

- **Buttons such as 1 function in the same way as the controls on the main unit.**
- **Sleep timer button (SLEEP)**
- **Numbered buttons (1-9, 0, 10/11/-)**
- **Cursor buttons (↑, ↓, ⇐, ⇒)**
- **Tape select, deck 1/2 select button**
- **CD pause/tape reverse play button (TAPE EDIT)**
- **Muting button (MUTING)**
- **Program button (PROGRAM)**
- **CD button (CD)**
- **CD play/tape forward playback button (P)**
- **CD skip/search, tape fast forward/rewind buttons**
- **EQ button (EQ)**

**Tuner/amplifier**

- **Channel select button (CH SELECT)**
- **Display button (DISPLAY)**
- **Album skip buttons (↑, ↓, ~, ALBUM)**

**AUX button (AUX)**

**B Batteries**

- Insert the poles (+ and −) match those in the remote control.
- Do not use rechargeable type batteries.

**Do not:**
- Mix old and new batteries.
- Use different types at the same time.
- Heat or expose to flame.
- Take apart or short circuit.
- Attempt to recharge alkaline or manganese batteries.
- Use batteries if the covering has been peeled off.
- Keep together with metallic objects such as necklaces.
- Mishandling of batteries can cause electrolyte leakage which can damage items the fluid contacts and may cause a fire.
- Electrolyte leaks from the batteries, consult your dealer.
- Wash thoroughly with water if electrolyte comes in contact with any part of your body.

Remove if the remote control is not going to be used for a long period of time. Store in a cool, dry place.

Replace if the unit does not respond to the remote control even when held close to the front panel.

**C Use**

- Aim at the sensor, avoiding obstacles, at a maximum range of 7 meters directly in front of the unit.
- Keep the transmission window and the unit's sensor free from dust.
- Operation can be affected by strong light sources, such as direct sunlight, and the glass doors on cabinets.

**Do not:**
- Put heavy objects on the remote control.
- Take the remote control apart.
- Split liquids onto the remote control.

---

**B Sound processor**

- **Display mode button (DISPLAY MODE)**
- **Display**
- **Super sound EQ button (SUPER SOUND EQ)**
- **Jog control and joystick (⇐, ⇒, ✔, ✗, MULTI JOG)**
- **Virtual rear surround button and indicator (VIRTUAL REAR SURROUND)**
- **Multi rear surround button and indicator (MULTI REAR SURROUND)**
- **Seat position button and indicator (SEAT POSITION)**
- **Super 3D AI EQ button (SUPER 3D AI EQ)**
- **DOLBY PRO LOGIC button and indicator (DOLBY PRO LOGIC, Off/On)**
- **Super surround button and indicator (SUPER SURROUND)**
- **Center focus button and indicator (CENTER FOCUS)**

**Cursor buttons (⇐, ⇒, ✔, ✗, MULTI CONTROL)**

**EQ button (EQ)**

**AI EQ button (AI EQ)**

**Manual EQ buttons (M1, M2, M3)**

**Flat button (FLAT)**

**B Cassette deck**

- **Deck 1 cassette holder open button (OPEN)**
- **Deck 1**
- **Fast forward/rewind, TPS buttons (⇐, ⇒, ✗)**
- **Deck 2**
- **Deck 2 cassette holder open button (OPEN)**
- **Counter reset, display buttons (COUNTER, RESET, DISPLAY)**
- **Playback buttons and indicators (⇐, ⇒, ✗)**

The colour of the indicators depends on the operation taking place.

- If stopped, fast forwarding or rewinding: orange
- If playing or recording: green

While carrying out TPS or recording is on standby: flashes

- If playing or recording: green

**RQT6866**

Aim at the sensor, avoiding obstacles, at a maximum range of 7 meters directly in front of the unit.

- Keep the transmission window and the unit's sensor free from dust.
- Operation can be affected by strong light sources, such as direct sunlight, and the glass doors on cabinets.

**Do not:**
- Put heavy objects on the remote control.
- Take the remote control apart.
- Split liquids onto the remote control.
### Control guide and preparatory steps

A. Turning DEMO off

A demonstration of the display is shown if you have not set the clock.
You can reduce the power consumed in standby mode by turning the demonstration off.

While the unit is on:

Press and hold [-DEMO] until “NO DEMO” is displayed.

Each time you press and hold the button:

NO DEMO (off) — DEMO (on)

B. Setting the time

This is a 24-hour clock.

The example shows how to set the clock for 16:25 (4:25 p.m.).

1. Press [CLOCK/TIMER] to turn the unit on.
2. Press [CLOCK/TIMER] to display “CLOCK”.
   Each time you press the button:
   CLOCK > PLAY > REC > Original display
3. Within 5 seconds
   Press [SET].

3. Press [TUNING (X or W)] to set the time.
   The time display can be changed in one minute units by tapping the buttons, and quickly by holding down the buttons.

2. Press [SET].
   The time is set and the original display is restored.

Displaying the clock

Press [CLOCK/TIMER]. The clock is shown for about 5 seconds.

Reset the clock regularly to maintain accuracy.

#### Note on CD-R and CD-RW

This unit can play CD-R/RW (audio recording disc) recorded with CD-DA, WMA (SC-EH790) or MP3 (SC-EH790). Finalize the disc after recording.

A process that allows play on compatible equipment.

See page 14 for details about WMA and MP3.

### CDs

See page 8 for basic CD play.

#### CD selection

Choose discs with this mark (a).

#### Do not:

- use irregularly shaped discs (b).
- attach extra labels and stickers.
- use discs with labels and stickers that are coming off or with adhesive exuding from under labels and stickers (c).
- attach scratch-proof covers or any other kind of accessory.
- write anything on the CD.
- clean CDs with liquids. (Wipe with a soft, dry cloth.)
- use CDs printed with label printers available on the market.

#### To prevent damage

Always observe the following points.

- Load only 1 CD per tray (d).
- Load CDs as shown in figure (e).
- An adaptor is not needed with 8 cm CDs (singles).
- Set the system on a flat, level surface.
- Always unload all CDs before moving the system.

Do not:

- set it on top of magazines, inclined surfaces, etc.
- move the system while tray is opening/closing, or when loaded.
- put anything except CDs in trays.
- use cleaning CDs or CDs which are badly warped or cracked.

#### Skipping and searching through tracks

**Skipping tracks**


**Skipping albums**

(Well/MPE only)


Press and hold [-ALBUM (X or W)] on the remote control.

**Searching through tracks**

**During play**


**Note**

- Skipping is done in the selected order in program play (= page 15).
- You cannot skip to tracks already played in random play (= page 16).
- You can search only within tracks in program and random play.

**EH790**

- You cannot search through tracks.
The unit displays up to 12 characters each for album/track name.

Order of play

- If you play an MP3 track that includes still picture data, it will take some time before the music itself starts playing and the elapsed time will not be displayed during this time. Even after the track starts, the correct play time will take more time for play to start. Keep the number of sessions to a minimum to avoid this.

Changing the display

Remote control only

During play:


The display will change as follows:

- a Disc number, album number and track number
- b Track name (Example: Track name is “LOVE”)
- c Album name (Example: Album name is “ABC”)
- d Disc number, track number and elapsed play time (Normal display)

To display the root (names of albums above the current one)

Press and hold [DISPLAY] during play.

Root also appears when you move to another track (only when the display above is selected).

The unit displays up to 12 characters each for album/track name.

Notes on WMA only

- Noise may occur when playing WMA files.
- When creating a WMA disc, ensure the copyright feature is off.

Notes on MP3 only

- This unit is not compatible with ID3 tags.
- This unit is not compatible with files with a sampling rate of 32 kHz.
- If you play an MP3 track that includes still picture data, it will take some time before the music itself starts playing and the elapsed time will not be displayed during this time. Even after the track starts, the correct play time will not be displayed.

Order of play

- If a track numbered 25 or over was programmed.
- “FULL” is displayed

- “–:–:–” is displayed if;
  - total playing time for the tracks is over 99 minutes and 59 seconds.
  - a track numbered 25 or over was programmed.
  - a disc not in playing position was programmed (SC-EH790).
  - a WMA/MP3 disc was programmed (SC-EH790).

Tracks can still be programmed and played.

To check the contents of the program

1. Press [DISPLAY] (SC-EH790) or [CANCEL] (SC-EH690).
2. Press [ ] or [ ].

To add to the end of the program

Repeat steps 2 and 3 (SC-EH790) or step 3 (SC-EH690) to program additional tracks in the required order.

To cancel tracks

The last track (SC-EH790)

Press [CANCEL].

A particular track

1. Press [DISPLAY] (SC-EH790) or [CANCEL] (SC-EH690).
2. Select the track with [ ] or [ ] then press [CANCEL].

All tracks

Cancel program play (see above).

To program the track you are listening to (SC-EH790 only)

Press [PROGRAM]. The program mode engages and the current track is programmed.

Remote control only

Preparation:

Press [CD] to put the unit in CD mode.

You can use program play only within a disc in the play position tray. Ensure a WMA/MP3 disc is in the play position tray.

1. Press [PROGRAM].

2. For CD (CD-DA)

   a. Press [DISC].
   b. Within 10 seconds or so Press [ ] to select the disc.

   For WMA/MP3

   Press and hold [ALBUM ( or )] to select the album.

3. Select the track with the numbered buttons.

   To add to the end of the program

   e.g. To select track 21, press [ ]

   To select a 3-digit number

   e.g. To select track 123, press [ ]

   Alternatively, press [ ] or [ ] then press [PROGRAM].

Repeat steps 2 through 3 (SC-EH790) or step 3 (SC-EH690) to program additional tracks in the required order.

To cancel

Press [ ] while stopped. (SC-EH590) Alternatively, press [PROGRAM].

All the tracks are canceled.

“FULL” is displayed

If 24 tracks have been programmed.

“–:–:–” is displayed if;

- a track numbered 25 or over was programmed.
- a track not in playing position was programmed (SC-EH790).
- a WMA/MP3 disc was programmed (SC-EH790).

Tracks can still be programmed and played.

All tracks

Cancel program play (see above).

To program the track you are listening to

Press [PROGRAM]. The program mode engages and the current track is automatically recorded as program No. 1.
Basic operations

Radio stations can be tuned manually by selecting the station’s frequency or they can be preset into channels to make it easy to tune (page 18).

Preparation: Press [DISP MODE] to display “MONO”.

1 Press [TUNER/BAND] to select FM or AM.

2 Press [TUNING MODE] to select “MANUAL”.

3 Press [TUNING (↑ or ↓)] to tune in the desired broadcast.

If you press and hold [TUNING (↑ or ↓)] for a moment, the frequency starts changing automatically. It stops when a station is found.

It may also stop if there is outside interference. Press and hold [TUNING (↑ or ↓)] again to restart. You can also stop the frequency changing by pressing [TUNING (↑ or ↓)].

“TUNED” is displayed when a radio station is tuned.

“ST” is displayed when a stereo FM broadcast is being received.

4 Adjust the volume.

If noise is excessive in FM

Press [FM AUTO/MONO] to display “MONO”.

Press [DISP MODE-PTY] to display a program type.

Press [PS-DISP MODE] to display a station name.

Press [DISP MODE-PTY] to display a program type.

Each time you press the button:

Frequency display

PS or PTY display

b

RDS displays may not be available if reception is poor.

**M.O.R M** = Middle of the road music

### Basic operations

**CDs**

Preparation: Press [CD] on the remote control or [INPUT SELECTOR] on the tuner/amplifier to select “CD”.

**A Direct access play**

**EH790**

Starts normal play from a selected track on a selected disc to the last track of the final disc (page 8).

**EH690**

Starts normal play from a selected track to the last track.

**Remote control only**

1 **EH790**

Press [DISC].

2 Within 10 seconds or so

Press [1]-[5] to select the disc.

**EH790** (WMA/MP3 only)

Press and hold [ALBUM (↑ or ↓)] to select the album.

3 Select the track with the numbered buttons.

To select a 3-digit number

e.g. To select track 21, press [2]-[0]-[1]

e.g. To select track 123, press [1]-[2]-[0]-[1]-[2]-[3]

[EH590]

Alternatively, press [←, →, ◀, ▶] or [◄, ◄, ◄, ◄].

**B Random play**

**EH790**

Plays the tracks on all discs once each in random order.

(For WMA/MP3, you cannot use random play.)

**EH590**

Plays the tracks once each in random order.

Press [RANDOM].

To cancel

Press [RANDOM].

“RANDOM” goes out.

**For your reference:** In the program play mode (page 15), the programmed tracks are played randomly.

**C Repeat play**

**EH790**

Repeats all tracks on all discs or all programmed tracks.

**EH590**

Repeats all tracks or programmed tracks.

Press [REPEAT] before or during play.

To cancel

Press [REPEAT] “*” goes out.

To repeat only your favourite track(s)

1 Program the track(s) you want (page 15).

2 Press [REPEAT] and make sure “*” is displayed.

3 Press [PTX]: Play will start.
There are two methods of presetting stations.

**Automatic presetting**

- The stations the tuner can receive are preset.
- You can select the stations you preset for recall.
- There are 30 channels available for presetting.

**Manual presetting**

- Do the following once each for FM and AM.
- Press [TUNER/BAND] on deck 1 or deck 2 and insert the cassette.
- Close the holder by hand.
- Press [DOLBY NR] to select Dolby NR on (“DNR” appears) or off.
- Press [REV MODE] to select the reverse mode.
- Each time you press the button:
  - One side is played.
  - Both sides are played.

**Manual presetting**

- You can select the stations to preset and the order they are preset in.
- You can select the stations for recall.
- There are 30 channels available for presetting.

**Cassette tapes**

See page 39 for tape selection.

1. Press [OPEN] on deck 1 or deck 2 and insert the cassette.
2. Close the holder by hand.
3. Press [DOLBY NR] to select Dolby NR on (“DNR” appears) or off.
4. Press [REV MODE] to select the reverse mode.
5. Play begins and the indicator changes to green.

**To stop the tape**

Press [■].

**To change the deck to be used**

Press [DECK 1/2] to select the deck you want to play.

**To listen to 2 tapes consecutively**

Insert a tape into each deck and select “<<<”. Both tapes will be played 8 times each.

**Finding a place on a tape**

To fast-forward and rewind

Press [←] or [→] while the tape is stopped.

To find the beginning of a track (TPS: Tape program sensor)

Press [←] or [→] during play.

Play resumes from the beginning.

**TPS**

- Each deck’s play direction is stored in the system’s memory.
- You can fast-forward or rewind the tape while you are playing or recording a tape in another deck.

**Dolby noise reduction**

Dolby NR reduces “hissing” when playing tapes. It increases the high frequency region when recording and then reduces it in playback. Use the same system during playback and recording. This unit has Dolby B NR which reduces noise to a third.

Pre-recorded cassettes and equipment marked “Dolby” use Dolby B NR.

Manufactured under license from Dolby Laboratories.

“Dolby” and the double-D symbol are trademarks of Dolby Laboratories.
Changing sound field and quality

A Boosting the super woofer

Boosting the super woofer adds power to the bass.
Press [DIGITAL S.WOOFER].
The indicator turns green.
Each time you press the button: MID (medium) → MAX (high) → cancel (off)

There is only one level when listening through headphones.

To cancel
Press [DIGITAL S.WOOFER] to turn the indicator off.

B Using the super sound equalizer

Turning on the super sound equalizer gives you a more powerful sound.
Press [SUPER SOUND EQ].
The indicator turns green.

To cancel
Press [SUPER SOUND EQ] so the indicator turns orange (SC-EH790) or turns off (SC-EH590).

C Changing sound field and quality

[EH790]

Turn [MULTI JOG] to select a setting.
Each time you turn:
HEAVY: Adds punch to rock.
CLEAR: Clarifies higher sounds.
SOFT: For background music
HALL: Expands sound to make you feel like you were in a hall.
AI-EQ: Adjust sound with the acoustic image equalizer (➡ page 21).
M.EQ: Create your own effects (➡ page 22).
FLAT: Canceled (no effect is added).

Press [EQ] to select a setting.
Each time you press the button:
HEAVY: Adds punch to rock.
CLEAR: Clarifies higher sounds.
SOFT: For background music

On the remote control
Press [EQ].

To cancel
Turn [MULTI JOG] to select “FLAT”.
Press [FLAT].

Note
Turn off the effect if sound quality reduces when using HALL with a source.

Changing sound field and quality

Using the acoustic image equalizer (AI EQ)

Achieve subtle sound quality settings with the soft, sharp, heavy, and light coordinates.

1

Turn [MULTI JOG] to select “AI EQ”.
Press [AI EQ] to select “AI EQ”.
The indicator turns green.

2

Press [SUPER 3D AI EQ] to select the surround level.
Each time you press the button:

AI EQ

SUPER 3D AI 1

SUPER 3D AI 2

^}

SUPER 3D AI 1: Adds a surround effect to the AI EQ.
SUPER 3D AI 2: Adds a stronger surround effect to the AI EQ.

3

Change the sound quality with [↑, ↓, ▲, ▼].
Adjust softness and sharpness with [2, 1].
Adjust heaviness and lightness with [3, 4].
The original display is restored on the display panel in about 5 seconds.

To cancel
Turn [MULTI JOG] to select “FLAT”.
Press [FLAT]. The indicator turns off.
The changes you make are stored and automatically recalled the next time you select AI EQ.

Note
Turn off the effect if sound quality reduces when using SUPER 3D AI EQ with a source.
You cannot select “SUPER 3D AI 1” or “SUPER 3D AI 2” while:
Using a surround system (➡ page 23)
Karaoke mode is on (SC-EH790 for Australia and N.Z. only ➡ page 35)
Listening to the radio
Using headphones
Changing sound field and quality

### Using the manual equalizer (M.EQ)
Create your own sound quality effects. SC-EH590 has three manual equalizers.

1. **Turn [MULTI JOG] to select “MANUAL”.**
   - The indicator turns green.
   - The changes you make are stored and automatically recalled the next time you select the manual equalizer.

2. **Change the sound quality with [◄, ►, ▲, ▼].**
   1. Select the range to be adjusted with [◄] or [►].
   2. Adjust the level with [▲] or [▼].
   - Repeat step 2 to set the desired sound quality.
   - The indicator turns green.
   - The original display is restored on the display panel in about 5 seconds.

To cancel:
- **Turn [MULTI JOG] to select “FLAT”.**
- **Press [FLAT].** The indicator turns off.

### Additional effects
- **Virtual rear surround** (page 26)
  - This mode makes it seem like there are multiple surround speakers in your room, increasing the cinema-like atmosphere.

- **Virtual rear surround** (page 26)
  - This mode adds surround effects to stereo sources.

- **Multi rear surround** (page 26)
  - The center speaker should be placed above the television.

- **Seat position** (page 27)
  - This mode helps maintain the sound position even if the listening position itself is changed.

### Software
- **Dolby Pro Logic** (page 24)
  - This unit has built-in Dolby Pro Logic circuitry so you can enjoy Dolby Surround.
  - Dolby Pro Logic is a decoding system that was developed to get a better sense of presence from sources encoded with Dolby Surround. The feeling of position has been improved by the addition of a separate center speaker channel.
  - If your DVD player only has 2-channel output, you can still enjoy surround sound when playing 5.1 channel software by using Dolby Pro Logic.

- **Super Surround** (page 24)
  - This mode adds surround effects to movie software that hasn’t been recorded with above systems.
  - In MOVIE mode you can adjust the volume of the surround speakers to get the best surround effect.

### Surround system

<table>
<thead>
<tr>
<th>Surround system</th>
<th>Features</th>
<th>Software</th>
<th>Additional effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOLBY PRO LOGIC</td>
<td>Use this input selector to enjoy 5.1 channel sources (e.g. Dolby Digital or DTS) played on a DVD player with 5.1 channel output and a built in Dolby Digital/DTS decoder. (page 36 for connection, page 24 for operation).</td>
<td>DVDs encoded with Dolby Digital or DTS can be identified with this mark.</td>
<td>Center focus, Virtual rear surround, Multi rear surround, Seat position</td>
</tr>
<tr>
<td>DISCRETE INPUT</td>
<td>Connect a subwoofer (not included) to the SUBWOOFER terminal to enhance the surround effect. (page 36).</td>
<td>See the manual for the equipment you have connected for details on the types of software you can use.</td>
<td>Center focus, Virtual rear surround, Multi rear surround, Seat position</td>
</tr>
<tr>
<td>6CH DISCRETE INPUT</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Enjoying surround sound

The following chart gives a summary of this unit’s surround features. It also shows additional effects that can be used to enhance your enjoyment.

<table>
<thead>
<tr>
<th>Surround system</th>
<th>Features</th>
<th>Software</th>
<th>Additional effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOLBY PRO LOGIC</td>
<td>Use this input selector to enjoy 5.1 channel sources (e.g. Dolby Digital or DTS) played on a DVD player with 5.1 channel output and a built in Dolby Digital/DTS decoder. (page 36 for connection, page 24 for operation).</td>
<td>DVDs encoded with Dolby Digital or DTS can be identified with this mark.</td>
<td>Center focus, Virtual rear surround, Multi rear surround, Seat position</td>
</tr>
<tr>
<td>DISCRETE INPUT</td>
<td>Connect a subwoofer (not included) to the SUBWOOFER terminal to enhance the surround effect. (page 36).</td>
<td>See the manual for the equipment you have connected for details on the types of software you can use.</td>
<td>Center focus, Virtual rear surround, Multi rear surround, Seat position</td>
</tr>
<tr>
<td>6CH DISCRETE INPUT</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional features
- **Virtual rear surround** (page 26)
  - This mode adds surround effects to movie software that hasn’t been recorded with above systems.
  - In MOVIE mode you can adjust the volume of the surround speakers to get the best surround effect.

### Notes
- All the features are only effective if speakers are used. No discernible effects will be heard through headphones.
- You may experience a reduction in sound quality when these surround systems and effects are used with some sources. If this occurs, turn the surround system or effect off.
- Additional effects can be used also light.
Enjoying surround sound

See page 25 for speaker level adjustments.

A 6CH DISCRETE INPUT

Preparation: Connect a DVD player with a built-in Dolby Digital or DTS decoder (page 36).
1 Press [6CH DISCRETE INPUT].
2 Playback a Dolby Digital or DTS source.

On the remote control
Press [VCR/AUX/6CH INPUT] to select "6CH INPUT".

To cancel
Press [INPUT SELECTOR] to select another source.

Note
You cannot record or enjoy karaoke (For Australia and N.Z.) when you are using 6CH DISCRETE INPUT. To record or enjoy karaoke with DVDs, ensure the DVD player is also connected to the AUX (DVD) terminals and select "AUX (DVD)" with [INPUT SELECTOR] (page 37).

B DOLBY PRO LOGIC

1 Press [PRO LOGIC, OFF/ON].

2 Playback a Dolby Surround source.

To cancel
Press [PRO LOGIC, OFF/ON] so the indicator turns off.

C SUPER SURROUND

Press [SUPER SURROUND] and select "MOVIE" or "MUSIC".

The indicator turns green.
Each time you press the button:
MUSIC --> MOVIE --> STEREO SOUND (off)

To cancel
Press [SUPER SURROUND] to select "STEREO SOUND".
The indicator turns off.

Speaker level adjustments

6CH DISCRETE INPUT, DOLBY PRO LOGIC

If the level of the speakers appears to be different while listening to a source, adjust the level of the speakers to the same apparent level.

DOLBY PRO LOGIC: Adjust while listening to a surround source.
If your DVD player is able to output a test signal, you can use it instead of playing a source.

Preparation: Set the volume level of the front speakers normally used for enjoying the source.

Remote control only

① 6CH DISCRETE INPUT
1 Press [CH SELECT] to select the speaker.
The speaker channel changes each time you press the button.

② DOLBY PRO LOGIC
Press [TEST].
A test signal is output from each speaker in order.
To stop the test signal, press [TEST] again.

③ SUPER SURROUND
While playing a source
1. Press [CH SELECT].
2. Press [A] (to increase level) or [V] (to decrease level).

Note
You cannot record or enjoy karaoke (For Australia and N.Z.) when you are using 6CH DISCRETE INPUT. To record or enjoy karaoke with DVDs, ensure the DVD player is also connected to the AUX (DVD) terminals and select "AUX (DVD)" with [INPUT SELECTOR] (page 37).
Changing sound field and quality

Surround effects

These effects can be used with the surround systems described on page 24. Refer to the chart on page 23 for details on which effects can be used. These effects are available when the corresponding indicators are alight.

- **CENTER FOCUS**
  - **Press [CENTER FOCUS].**
  - The indicator turns green.

  **To cancel**
  - Press [CENTER FOCUS] so the indicator turns orange.

  **On the remote control**
  1. Press [AV EFFECT].
  2. Press [>] or [<] so the CENTER FOCUS indicator flashes.
  3. Press [ON] or [OFF].

- **VIRTUAL REAR SURROUND**
  - **Press [VIRTUAL REAR SURROUND].**
  - The indicator turns green.

  **To cancel**
  - Press [VIRTUAL REAR SURROUND] so the indicator turns orange.

  **On the remote control**
  1. Press [AV EFFECT].
  2. Press [>] or [<] so the VIRTUAL REAR SURROUND indicator flashes.
  3. Press [ON] or [OFF].

- **MULTI REAR SURROUND**
  - **Press [MULTI REAR SURROUND].**
  - The indicator turns green.

  **To cancel**
  - Press [MULTI REAR SURROUND] so the indicator turns orange.

  **On the remote control**
  1. Press [AV EFFECT].
  2. Press [>] or [<] so the MULTI REAR SURROUND indicator flashes.
  3. Press [ON] or [OFF].

Note

- The seat position is remembered by the unit and is reactivated when you turn seat position on again.
- When used with virtual rear surround, seat position is changed in 3 horizontal steps.

Surround effects

1. Press [SEAT POSITION].
   - The indicator flashes green.

2. While the indicator is flashing (within 10 seconds)
   - Adjust the seat position with [<, >, ▲, ▼].
   - The indicator flashes for 10 seconds then lights green.

   **To cancel**
   1. Press [SEAT POSITION] so the indicator flashes.
   2. Press [SEAT POSITION] again while the indicator is flashing so it turns orange.

   **On the remote control**
   1. Press [AV EFFECT].
   2. Press [>] or [<] so the SEAT POSITION indicator flashes.
   3. Press [ON] or [OFF].
   4. Adjust the seat position with [▲, ▼].
   To turn it off, after steps 1 and 2 press [4] so the indicator turns orange.

Note

- The seat position is remembered by the unit and is reactivated when you turn seat position on again.
- When used with virtual rear surround, seat position is changed in 3 horizontal steps.
Recording operations

Before recording (Deck 2 only)

See page 39 for tape selection.

To display the tape counter while recording

Press [COUNTER DISPLAY].
The counter is displayed for about 5 seconds.
• Press [COUNTER RESET] to reset the counter.
• To display or reset the tape counter for deck 1, first press [DECK 1/2].

Erasing recordings

1. Press [INPUT SELECTOR] to select “TAPE”.
2. Insert the recorded tape into deck 2.
3. Press [DOLBY NR] so the “DOLBY NR” indicator goes out.
4. Select the reverse mode.
5. Press [REV MODE] or [REC PAUSE].
6. Press [-][+] or [=]-.

Erasure prevention

The illustration shows how to remove the tabs to prevent recording. To record on the tape again, cover as shown, being careful not to cover the high position discrimination hole.

Your attention is drawn to the fact that recording pre-recorded tapes or discs or other published or broadcast material may infringe copyright laws.

Preparatory steps

Do these steps before each recording. Wind up the leader tape so recording can begin immediately.

1. Press [OPEN] on deck 2 and insert the cassette.
   Close the holder by hand.
2. Press [DOLBY NR] to select Dolby NR on (“DOLBY NR” appears) or off. (= “Dolby noise reduction”, page 19)
3. Press [REV MODE] to select the reverse mode.
   Each time you press the button:
   - “j” j: One side only records.
   - “j” j and “j” j: Both sides record (forward → reverse).
   - “j” j automatically changes to “j” j when [REC PAUSE] (EDIT) or [TAPE EDIT] is pressed.

Recording CDs

Preparation:
• Do the preparatory steps (page 28).
• Insert the CD(s) you want to record ([ page 8).
• Press DISC 1–5 on the CD changer to select the disc where you want to start recording, then press ( ) to stop the disc.

A Normal recording

1. Press [ ) (reverse side) or [ ) (forward side) then ( ) to set the tape direction.
2. Press [ REC PAUSE].
   The deck goes into the recording standby mode and the indicator “j” j or “j” j starts flashing.
3. Press [■] on the CD changer or CD player.
   Recording starts automatically.

   4 seconds after the CD(s) finishes, the deck goes into the recording standby mode.

   To stop recording

   EITHER
   Press [■] on the CD changer or CD player.
   OR
   Press [■] on the deck. Recording stops immediately but the CD continues to play.

To record programmed tracks

Program tracks before step 1 ( page 15).

B One touch CD editing

This function makes it easier for you to record from discs.
• When recording, if a track is cut off in the middle at the end of the front side, it is recorded from the beginning on the reverse side. (Ensure the reverse mode “j” j is selected.)

• At the end of the reverse side recording stops and the current track will be interrupted.

After pressing [ ) or [ ) then ( ) on the cassette deck to set the tape direction.

Press [EDIT].
Recording starts. In the meantime, “CD EDIT” will scroll across the display.

After edit-recording has finished, the cassette deck automatically stops.

To stop editing

Press [■] on the CD changer or CD player.
The cassette deck also stops. “EDIT OUT” scrolls across the display.

To edit programmed tracks

Program the tracks ( page 15) and press [EDIT].
Using the timers

The play timer

This timer starts play of the selected source at the selected time. The example shows settings for preset radio channel 1 to play between 6:30 and 7:40 at 48 dB.

Preparation: Turn the unit on, set the time (➡ page 12), preset radio stations if you want the timer to start playing the radio (➡ page 18).

1 Press [CLOCK/TIMER] to select “F PLAY”.
   Each time you press the button:
   CLOCK > F PLAY > F REC > F PLAY
   Original display
   ⬇
2 Press [SET] within 3 seconds.
3 Follow these steps to set items a to d.
   a Start time
   b Finish time
   c Source
   d Volume

The play timer is now on standby. The display shows each condition again then restores the original display.

To cancel the timer
Press [F PLAY/F REC] so “F PLAY” goes out.
Each time you press the button:
F PLAY → F REC → F PLAY → Light-off (OFF)
The play timer will be canceled, but the settings stay in the memory.

For your reference:
When you insert cassettes in decks 1 and 2, deck 1 has priority.

Recording the radio

Preparation: Do the preparatory steps (➡ page 28).
1 Tune to the required station.
   ➡ page 17 or 18
2 Press [F REC PAUSE].
   The deck goes into the recording standby mode and the play indicator “!” or “!” starts flashing.
3 Press [<] (reverse side) or [>] (forward side) to start recording.

To stop recording
Press [■].
To temporarily stop recording
Press [F REC PAUSE].
The deck goes into recording standby mode.
To resume recording press [<] or [>] with the flashing indicator.

Tape-to-tape recording

Preparation:
≥ Do the preparatory steps 1 and 3 (➡ page 28).
≥ Insert the tape to be recorded in deck 1.
1 Set the tape direction on both decks.
   ① Press [DECK 1/2] to select “DECK 2”,
   ② First press [<] or [>], and then [■].
   Repeat steps ① and ② for deck 1.
2 Press [TAPE EDIT] to start recording.
   The indicator “!” or “!” shows deck 2 direction.
   If either deck 1 or deck 2 stops, the other deck also stops.

To stop recording
Press [■].
Both decks will stop.
To enjoy another source while recording
Start playing the other sound source.
You can change the volume level and tone quality without affecting the recording.

Note
The recording level and the noise reduction effect of the original (playback) tape will be recorded on the new tape.
Using the timers

The record timer
This timer records the radio at the set time.
The example shows settings for recording preset channel 1 from 18:30 to 19:30.
Preparation: Turn the unit on, set the time (page 12), preset radio stations (page 18).

1 Press [CLOCK/TIMER] to select “REC”.
   Each time you press the button:
   CLOCK—PLAY—REC—Original display

2 Press [SET] within 3 seconds.

2 Follow these steps to set items ①, ② and ③.
   ① Press [TUNING ( or )] to select the condition required and
   ② Press [SET].
      ① Start time
      ② Finish time
      ③ Preset channel
   The record timer is now on standby. The display shows each condition again then restores the original display.

3 Prepare for recording.
   ① Insert a tape into deck 2.
   ② Select the Dolby NR mode.
   ③ Select the reverse mode.
   ④ Select the tape direction.

4 Press [REC] to turn the unit off.
   The record timer indicator remains illuminated to show the record (or play) timer is on.
   Recording starts 30 seconds before the set time with the volume muted during the set time.

To cancel the timer
Press [PLAY/REC] so “REC” goes out.
Each time you press the button:
   REC—PLAY—REC—PLAY—REC—Original display
   Light off (OFF)
   The record timer will be canceled, but the settings stay in the memory.

Using the timers

The play and record timers
The timers come on at the set times if the PLAY/REC indicator is on. They can be turned on and off by pressing [PLAY/REC].

Checking the timers
Press [CLOCK/TIMER] to select “PLAY” or “REC”.
The timer conditions are shown in the following order:
**Play timer:**
   Source—Volume
   Start time—Finish time—Selected radio station
   The timers can be checked even if the unit is off.

**Playing the unit after the timers are set**
The unit can be used after the timers are set. Make sure the unit is off before the start set time.

**Note**
- If you turn the unit off and on again while a timer is functioning, the finish time setting will not be activated.
- If the unit is on, the timer will not function. The system must be in the standby mode.
- This system retains the ON/OFF time settings until you make a new setting. If you make a new ON time setting, you must make a new OFF time setting.
- Do not turn DEMO on after setting a timer. The timers will not work while DEMO is on.

**B The sleep timer**
Remote control only
This timer turns the unit off after a set time.

While playing a source
Press [SLEEP] to select the time (minutes).
Each time you press the button:
   SLEEP 30 — SLEEP 60 — SLEEP 90
   SLEEP OFF — SLEEP 120 —

To cancel the sleep timer
Press [SLEEP] to select “SLEEP OFF”.
“SLEEP” goes out.

To confirm the remaining time
(While the timer is functioning)
Press [SLEEP].
The remaining time is shown for about 5 seconds.

To change the setting
Press [SLEEP] to display the remaining time, then press again to select the required time.

Using the timers together
Any of the timers can be used together, but ensure the unit is off before the start time for the record and play timers.
Enjoying karaoke (For Australia and N.Z.)

You can do karaoke with CDs and tapes.

**Preparation:**
Lower the volume with [MIC VOL] and connect the microphone. Use a dynamic microphone.
Plug type: 6.3 mm monaural

1. **Press [KARAOKE] to select a voice mode.**
   - Each time you press the button:
     - MONO L
     - MONO R
     - VOICE MUTE
     - off (Normal)

2. **Start playing the CD or tape.**

3. **Adjust the main volume and microphone volume.**

To cancel
Press [KARAOKE] to clear the display.

To record your performance
Start recording in deck 2 and then start singing.
Ensure the voice mode is set to off (at step 2 above) when playing the recording.

**Note**
The karaoke modes cannot be used with the radio, SUPER 3D AI EQ, 6CH DISCRETE INPUT or surround effects.

When using the VOICE MUTE function
- Voice mute may not function sufficiently or noise may interfere when using the following software.
- Manaural software
- Software with few musical instruments, including classic music and poetry recitations
- Software with duets or strong choruses
- VOICE MUTE reduces the level of the vocals but does not cancel them out completely.

1. **Press [KARAOKE] to select a voice mode.**
   - MONO L: Only left channel sound (No vocal)
   - MONO R: Only right channel sound (Vocal)
   - VOICE MUTE: Voice mute (Lowers vocal volume)

2. **Start playing the CD or tape.**

3. **Adjust the main volume and microphone volume.**

To cancel
Press [KARAOKE] to clear the display.

To record your performance
Start recording in deck 2 and then start singing.
Ensure the voice mode is set to off (at step 2 above) when playing the recording.

**Note**
The karaoke modes cannot be used with the radio, SUPER 3D AI EQ, 6CH DISCRETE INPUT or surround effects.
## Timer operations and convenient functions

- **Timer operations and convenient functions**
- **Timer operations and convenient functions**

### Optional antenna connections

- Use outdoor antennas if radio reception is poor.

#### FM outdoor antenna

- Disconnect the FM indoor antenna.
- The antenna should be installed by a competent technician.

#### AM outdoor antenna

- Run a piece of vinyl wire horizontally across a window or other convenient location.
- Leave the loop antenna connected.

#### Using other equipment

#### Listening to an external source

1. Press [INPUT SELECTOR] to select the external source.
   - Each time you press the button:
     - **EH790**: TUNER > CD > TAPE > VCR (EXT) > AUX (DVD)
     - **EH590**: TUNER > CD > TAPE > AUX

2. Operate the unit.
   - See the unit’s manual for details on operation and connection.

3. To enjoy Dolby Digital and DTS
   - page 24

4. Recording an external source
   - page 13

#### Recording onto an external unit

- Connect the external unit to VCR (EXT) OUT.
- Select the source to be recorded with [INPUT SELECTOR].
- Start recording on the external unit and start playing the source to be recorded.

#### Connections to SC-EH790

A **DVD player with 5.1ch output**

- This unit has the input terminals for 5.1ch surround systems but it does not have the decoders necessary to play them back. The DVD player should have these decoders and 5.1ch output.
- **To record sound from the DVD player**
  - Connect to AUX (DVD).

B **Subwoofer**

- The included front speakers have superwoofers, but you can enhance surround sound from a unit connected to DVD 6ch INPUT by connecting another subwoofer to SUBWOOFER terminal.

C **DVD player/Laser disc player (without 5.1ch output), etc.**

- This unit has Dolby Pro Logic circuitry. The sound will be reproduced with the same powerful stereophonic effects found in movie theaters.

D **Video cassette recorder**

- You can enjoy the sound from your video cassette recorder.

#### Connections to SC-EH590

A **DVD player/Laser disc player with 5.1ch output**

- This unit has the input terminals for 5.1ch surround systems but it does not have the decoders necessary to play them back. The DVD player should have these decoders and 5.1ch output.
- **To record sound from the DVD player**
  - Connect to AUX (DVD).

B **Subwoofer**

- The included front speakers have superwoofers, but you can enhance surround sound from a unit connected to DVD 6ch INPUT by connecting another subwoofer to SUBWOOFER terminal.

C **DVD player/Laser disc player/Video cassette recorder, etc.**

- You can enjoy the sound from your DVD player/Laser disc player/Video cassette recorder, etc.

### External unit connections

- Turn off all units before making connections.
- Refer to the manual of the other unit for details.
- (Cables and equipment not included.)

#### Stereo phono cable (not included)

- White
- Red

#### Connections to SC-EH790

**For the United Kingdom and Eastern Europe**

- FM outdoor antenna
- 75 Ω coaxial cable (not included)

**For Australia and N.Z.**

- AM outdoor antenna
- Use the antenna plug adaptor included.

**Shield braid Core wire**

- Remove a piece of the outer vinyl.
- Twist the shield braid to expose the core wire.
- 15mm

**Audio connections**

- **AUX (DVD)**
- **DVD 6ch INPUT**
- **AUX (DVD)**
- **AUX (DVD)**
- **AUX (DVD)**

#### Activity Monitor

- Run a piece of vinyl wire horizontally across a window or other convenient location.
- Leave the loop antenna connected.

**Note**

- Disconnect the antenna when the unit is not in use.
- Do not use the antenna during an electrical storm.

### Using other equipment

#### Listening to an external source

1. Press [INPUT SELECTOR] to select the external source.
   - Each time you press the button:
     - **EH790**: TUNER > CD > TAPE > VCR (EXT) > AUX (DVD)
     - **EH590**: TUNER > CD > TAPE > AUX

2. Operate the unit.
   - See the unit’s manual for details on operation and connection.

3. To enjoy Dolby Digital and DTS
   - page 24

4. Recording an external source
   - page 13

#### Recording onto an external unit

- Connect the external unit to VCR (EXT) OUT.
- Select the source to be recorded with [INPUT SELECTOR].
- Start recording on the external unit and start playing the source to be recorded.
Troubleshooting guide

Before requesting service, make the below checks. If you are in doubt about some of the check points, or if the remedies indicated in the chart do not solve the problem, consult your dealer for instructions.

Reference pages are shown as black circled numbers ①.

Common Problems

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause/Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>No sound.</td>
<td>Turn the volume up. Switch off the unit, determine and correct the cause, then switch the unit on. Causes include shorting of the positive and negative speaker wires, straining of the speakers through excessive volume or power, and using the unit in a hot environment.</td>
</tr>
<tr>
<td>Sounds unfixed, reversed or come from one speaker only.</td>
<td>Check the speaker connections. ①</td>
</tr>
<tr>
<td>Humming heard during play.</td>
<td>An AC mains lead or fluorescent light is near the cables. Keep other appliances and leads away from this unit’s cables. If possible in your area, turn the AC mains lead’s plug or connector over to reverse the lead’s polarity.</td>
</tr>
<tr>
<td>“ERROR” is displayed.</td>
<td>Incorrect operation performed. Read the instructions and try again.</td>
</tr>
<tr>
<td>“U70” is displayed.</td>
<td>Connect the flat cables firmly. If “U70” remains on the display, contact the dealer.</td>
</tr>
<tr>
<td>“F60” is displayed.</td>
<td>There is a problem with the amplifier. Consult your dealer.</td>
</tr>
<tr>
<td>“––:––” appears on the display.</td>
<td>You plugged the AC mains lead in for the first time or there was a power failure recently. Set the time. ①</td>
</tr>
<tr>
<td>The display starts up even after the unit is turned off.</td>
<td>The demonstration feature (–DEMO) is on. Turn it off if it is not required. ①</td>
</tr>
</tbody>
</table>

The CD changer or CD player

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause/Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>The display is wrong or play won’t start.</td>
<td>The disc may be upside down. ① Wipe the disc. Replace the disc if it is scratched, warped, or nonstandard. Condensation may have formed in the changer or player due to a sudden change in temperature. Wait about an hour for it to clear and try again.</td>
</tr>
<tr>
<td>“TAKE OUT/DISC” appears on the display.</td>
<td>There is a problem with the CD mechanism. (A power failure may have occurred.) The tray will open automatically. Remove the CD from the tray, and after ensuring there is no CD in the tray, close it. The unit will make the disc changing noises for a few moments and then it should operate normally.</td>
</tr>
</tbody>
</table>

Listening to the radio

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause/Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noise is heard. The stereo indicator flickers or doesn’t light. Sound is distorted.</td>
<td>Use an outdoor antenna. ①</td>
</tr>
<tr>
<td>A beat sound is heard.</td>
<td>Turn the TV off or separate it from the unit.</td>
</tr>
<tr>
<td>A low hum is heard during AM broadcasts.</td>
<td>Separate the antenna from other cables and leads.</td>
</tr>
<tr>
<td>The correct AM frequency can’t be tuned in.</td>
<td>Change the frequency step. Hold [TUNER/BAND] down for 10 seconds to change the step to 9 kHz.</td>
</tr>
</tbody>
</table>

The cassette deck

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause/Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor quality sound.</td>
<td>Clean the heads. ① Check the Dolby NR setting. ①</td>
</tr>
<tr>
<td>Recording is not possible.</td>
<td>If the erasure prevention tabs have been removed, cover the holes with adhesive tape. ①</td>
</tr>
<tr>
<td>“DECK NO TAPE” is displayed during “One touch editing”.</td>
<td>Load a cassette into deck 2. ①</td>
</tr>
<tr>
<td>“DECK CHANGE TAPE” is displayed during “One touch editing”.</td>
<td>If the erasure prevention tabs have been removed, cover the holes with adhesive tape. ①</td>
</tr>
</tbody>
</table>

When there is a television set nearby

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause/Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>The picture on the TV disappears or stripes appear on the screen.</td>
<td>The location and orientation of the antenna are incorrect. If you are using an indoor antenna, change to an outdoor antenna. The TV antenna wire is too close to the unit. Separate the antenna wire of the TV set from the system.</td>
</tr>
</tbody>
</table>

The remote control

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause/Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>The remote control doesn’t work.</td>
<td>Check the batteries are inserted correctly. ① Replace the batteries if they are worn.</td>
</tr>
</tbody>
</table>

Maintenance

If the surfaces are dirty

- Never use alcohol, paint thinner or benzine to clean this unit.
- Replace the batteries if they are worn.

To clean this unit, wipe with a soft, dry cloth.

- Use an outdoor antenna.
- Turn the TV off or separate it from the unit.
- Separate the antenna from other cables and leads.
- Change the frequency step. Hold [TUNER/BAND] down for 10 seconds to change the step to 9 kHz.

Cassette tape selection and care

<table>
<thead>
<tr>
<th>Type</th>
<th>Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal position/TYPE I</td>
<td>✔</td>
</tr>
<tr>
<td>High position/TYPE II</td>
<td>✔</td>
</tr>
<tr>
<td>Metal position/TYPE IV</td>
<td>✔</td>
</tr>
</tbody>
</table>

- Tapes exceeding 100 minutes are thin and can break or get caught in the mechanism.
- Tape slack can get caught up in the mechanism and should be taken up before the tape is played.
- Endless tapes can get caught up in the deck’s moving parts if used incorrectly. Use tapes appropriate to this unit’s auto-reverse mechanism.

For a cleaner crisper sound

- Clean the heads regularly to assure good quality playback and recording. Use a cleaning tape (not included).
### Technical specifications

#### SOUND PROCESSOR
- **EQ/SP section**
  - **Manual EQ**
  - 5-Band EQ
  - CENTER frequency: 70 Hz to 120 kHz
  - Level control
- **EQ/Space control**
  - 4 modes
  - EQ mode: HEAVY, CLEAR, SOFT, HALL
  - 3 modes
  - **EQ/3D AI EQ**
- **Input sensitivity/impedance**
  - **VCR (EXT)**: 250 mV/15 kΩ
  - **AUX**: 250 mV/15 kΩ
  - **Output level**: 150 V/1 kΩ
  - **VCR REC OUT**: 250 mV/15 kΩ
- **DOLBY PRO LOGIC section**
  - **PRO LOGIC mode**: SURROUND CENTER mode
  - **DELAY TIME**: 20 ms (Fixed)
- **AV SURROUND section**
  - **AV SURROUND (MUSIC, MOVIE)**
- **DSP control section**
  - **DSP control mode**: SURROUND CENTER mode
  - **VIRTUAL SURROUND**: NORMAL
  - **MULTI SURROUND**: NORMAL
- **Spectrum analyzer section**
  - **DISPLAY MODE**: NORMAL, PEAK, AURORA
- **General**
  - **Dimensions (W×H×D)**: 322×83×270 mm
  - **Mass**: 15 kg

#### TUNER AMPLIFIER
- **Amplifier section**
  - **Power output**: (L/R both channel driven)
    - Stereo Mode: 1 kHz THD 1% (O/H): 240 W
    - FM: 1 kHz THD 1% (O/H): 240 W
  - **PRO LOGIC mode**
    - 1 kHz THD 1% (O/H): 240 W
    - 1 kHz THD 1% (O/H): 240 W
  - **Center**: 1 kHz THD 1% (O/H): 60 W
  - **RMS**: 500 mV/15 kΩ
  - **Input level**: 20 Hz–16 kHz (DIN)
  - **Total harmonic distortion**: 1%
  - **Load impedance**: 4.5 kΩ
  - **Level (VOL–20 dB)**: 60 Hz
  - **Center frequency**: 80 Hz
  - **FM tuner section**
    - **Frequency range**: 87.50–108.00 MHz
    - **Sensitivity**: 50 dB (S/N 20 dB)
    - **Input sensitivity**: 2.5 μV (S/N 20 dB)
    - **Load impedance**: 16 kΩ
    - **Antenna terminal(s)**: 75 Ω (unbalanced)
  - **AM tuner section**
    - **Frequency range**: 520–1600 kHz
    - **Sensitivity**: 5 μV/m
    - **Input sensitivity**: 2.5 μV (S/N 20 dB)
    - **Antenna terminal(s)**: 75 Ω (unbalanced)
  - **Clock**
    - Quartz-type lock
    - Function: Time (time, day, date), Alarm (time, day), Sleep (120 min, 30 min intervals)
  - **Setting intervals (Play/Rec)**
    - 1 minute – 25 hours 26 minutes (1 minute intervals)

#### FM tuner
- **Frequency range**: 87.50–108.00 MHz
- **Sensitivity**: 50 dB (S/N 20 dB)
- **Input level**: 2.5 μV (S/N 20 dB)
- **Load impedance**: 16 kΩ
- **Antenna terminal(s)**: 75 Ω (unbalanced)

#### CD PLAYER
- **Display mode**: NORMAL, PEAK, AURORA
- **General**
  - **Dimensions (W×H×D)**: 322×83×270 mm
  - **Mass**: 15 kg

#### CASSETTE DECK
- **Deck system**: Stereo cassette deck
- **Track system**: 4-track, 2-channel
- **Recording system**: Bias frequency
- **Erasing system**: AC bias
- **Heads**: AC erase
- **Deck 1**
  - **Deck 2**
  - **Recording/Playback head**
  - **Erasing head**
  - **Double-gap ferite head**
- **Motors**: DC servo motor
- **Tape speed**: 4.8 cm/s
- **Wow and flutter**: 0.16% (AR/AV)
- **Fast forward and rewind times**: Approx. 110 seconds with C-60 cassette tape
- **Frequency response**: 20 Hz–16 kHz (DIN)
- **Type I (NORMAL)**
  - **Type IV (METAL)**
  - **Signal-to-noise ratio**: 55 dB (A-weighted)
  - **Dolby B NR on/off**: 65 dB (A-weighted)
- **Input sensitivity and impedance**: 200 mV/390 Ω
- **REC (IN)**
  - **Output voltage and impedance**: 200 mV/390 Ω

#### SPECIAL SPEAKER
- **Type**: 3 way, 3 speakers, BASSEXTRAFLEX
- **Woofer(s)**
  - **Super woofer**: 17 cm cone type
  - **Tweeter**: 6 cm ring shaped dome type
- **Impedance**: High 8 Ω, Low 8 Ω
- **Input power (Music)**: 80 W
- **Output sound pressure level**: 80 dB (1 m)
- **Frequency range**: 20 Hz–4 kHz
- **Crossover frequency**: 200 Hz
- **Advance level**: 60 Hz (L), 4 kHz (R)
- **Center speaker**: 60 Hz (L), 4 kHz (R)

#### General
- **Dimensions (W×H×D)**: 322×83×270 mm
- **Mass**: 15 kg

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Matsushita Electric Industrial Co., Ltd.