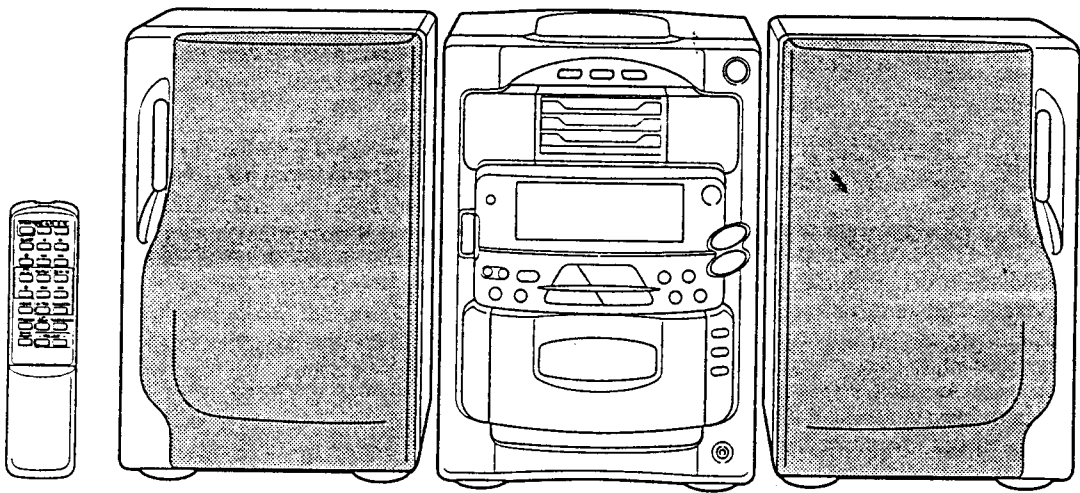


SANYO

INSTRUCTION MANUAL

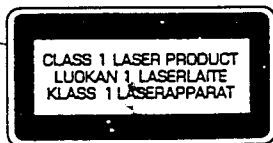
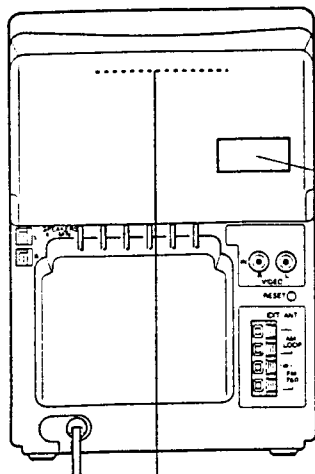
DC-MS5

Micro CD Hi-Fi System



CAUTION - USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED IN THE OPERATING INSTRUCTIONS MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

THE COMPACT DISC PLAYER SHOULD NOT BE ADJUSTED OR REPAIRED BY ANYONE EXCEPT PROPERLY QUALIFIED PERSONNEL.



CAUTION - INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.
ADVARSEL - OSYNLIG LASER STRÅLNING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION, UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARNING - OSYNLIG LASER STRÅLNING NÅR DENNA DEL ÅR ÖPPNAD OCH SPÄRR ÅR URKOPPLAD. STRÅLEN ÅR FARLIG.
VORSICHT - UNSICHTBARE LASERSTRAHLUNG TRITT AUS, WENN DECKEL GEÖFFNET UND WENN SICHERHEITSVERRIEGELUNG ÜBERBRÜCKT IST. NICHT, DEM STRAHL AUSSETZEN.
VARO! Avattaessa ja suojalukitus ohitettaessa olet alltiina näkymättömälle lasersäteilylle. Älä katso äleeseen.

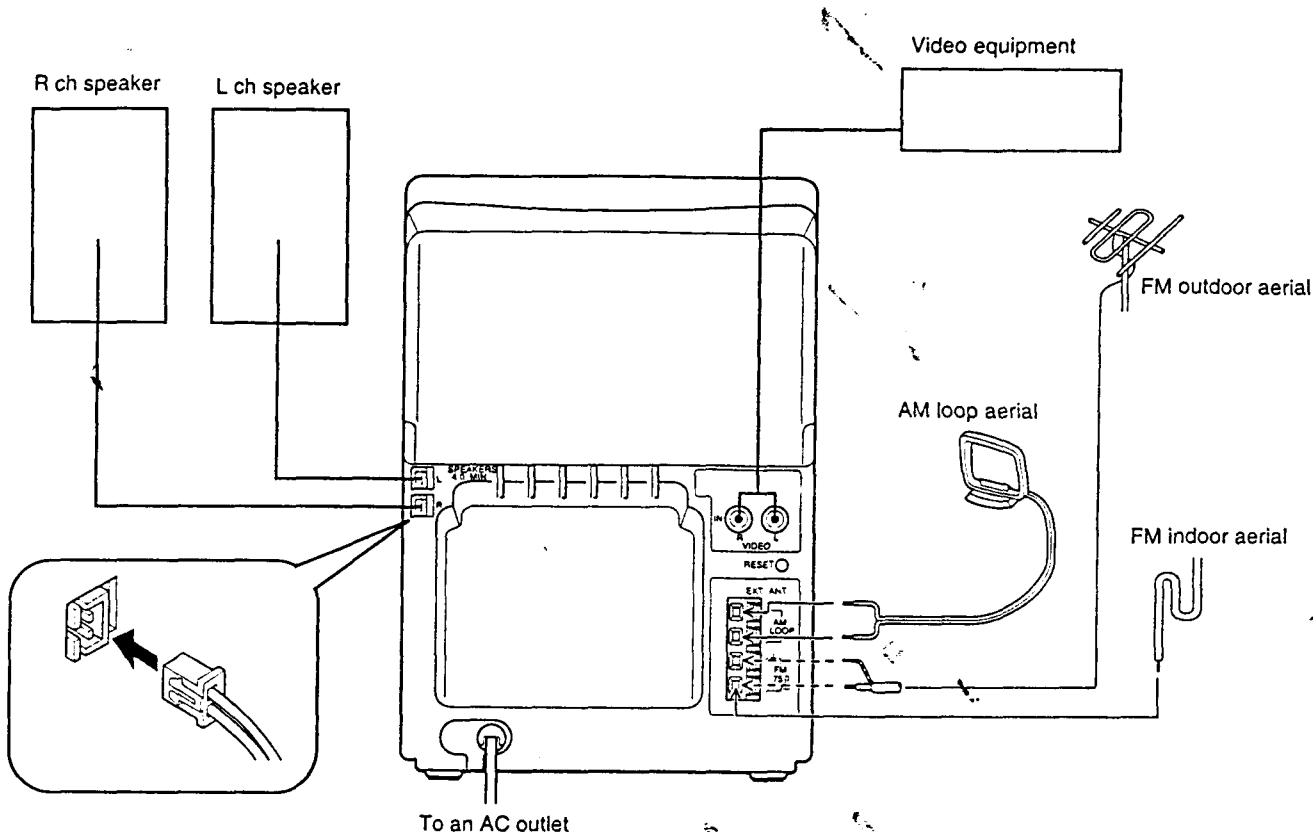


PRECAUTIONS

- If water should enter the unit, electrical shock or malfunction may result. Always use it in a place where there is low humidity and little dust.
- Do not use where there are extremes of temperature (below 5°C or exceeding 35°C) or where direct sunlight may strike it.
- Because of the CD player's extremely low noise and wide dynamic range, there might be a tendency to set the volume on the amplifier unnecessarily high. Doing so may produce an excessively large output from the amplifier which could damage your speakers.
- Sudden changes in the ambient temperature may cause condensation to form on the optical lens inside the unit. If this happens, take out the disc, leave the unit for about 1 hour, and then proceed to operate.
- When carrying the unit, be sure to remove any discs which may be inside and turn the power off. The STANDBY indicator lights. Then unplug the mains lead from the AC outlet. Carrying the unit with any discs inside may damage the discs and/or the unit.
- The system's speakers use powerful magnets. Do not place timepieces, credit cards, cassette tapes or video tapes, etc. near the speakers.

Do not install this equipment in a confined space, such as a book case or built in cabinet.

CONNECTIONS



Note:
Do not connect the mains lead to an AC outlet until all connections have been made.

When the unit is first connected, the display switches automatically to the demonstration mode. To cancel this mode, turn the power on.

The system is not disconnected from the mains unless the mains lead is unplugged from the AC outlet.

Speakers

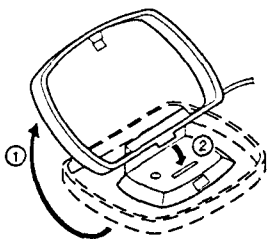
Connect the connector of the left speaker lead to the "L" SPEAKERS socket and the connector of the right speaker lead to the "R" socket. If you have difficulty inserting the speaker lead connector, turn it over and reinsert it.

FM aerial

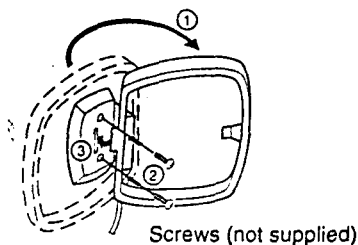
The FM indoor aerial is sufficient to receive most local FM broadcasts and should be connected to the "FM 75-ohm" EXT. ANT. terminal. Extend the aerial wire as straight as possible and, while listening to the sound from the system, secure it in a position which yields minimal distortion and noise. In fringe areas or where reception is distorted or noisy, an FM outdoor aerial (not supplied) should be connected instead of the indoor aerial. The terminals will accept 75-ohm coaxial cable. Consult your dealer.

AM loop aerial

Assemble the loop aerial as shown in figure.



Unwind the aerial wires, then connect them to the "AM LOOP" EXT. ANT. terminals. Place the loop aerial in a position which yields the best AM reception, or attach it to a wall or other surface as shown in figure.



Note:
To minimize noise, the speaker, mains and any other leads should not come close to the FM indoor or outdoor aerial lead and AM loop aerial. Do not place the aerial leads close to the system.

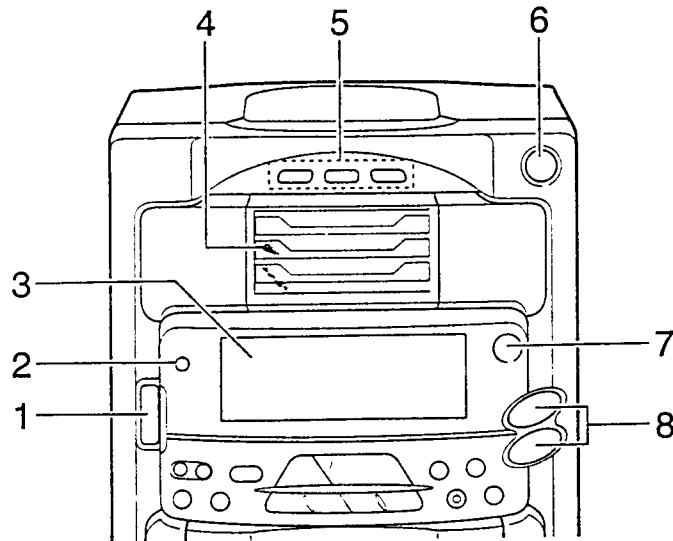
Video equipment

Connect leads (not supplied) from the audio output sockets of a video equipment to the VIDEO sockets.

Headphones

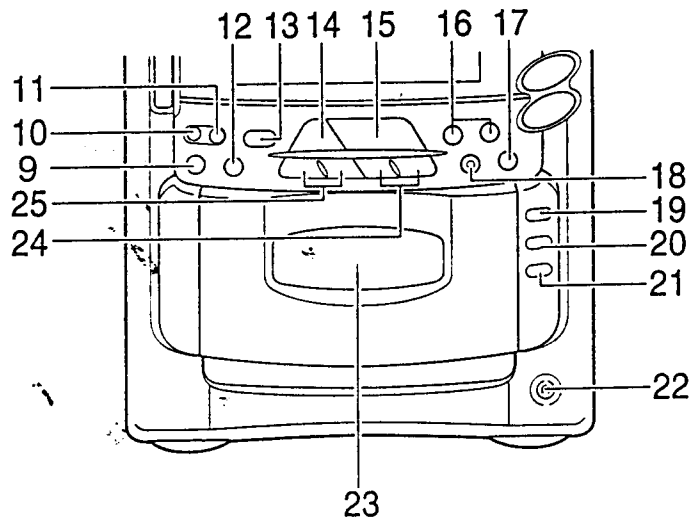
Connect stereo headphones (not supplied) to the PHONES socket for monitoring or for private listening. The speakers are automatically disconnected when headphones are connected.

CONTROLS



- 1. Power button/indicator (POWER)
- 2. Standby indicator (STANDBY)
- 3. Display
- 4. Disc trays (inside the door)

- 5. Disc select buttons/indicators (DISC 1/DISC 2/DISC 3)
- 6. Disc tray open/close button (OPEN/CLOSE)
- 7. Remote sensor (IR)
- 8. Volume buttons/indicators (+ VOLUME -)

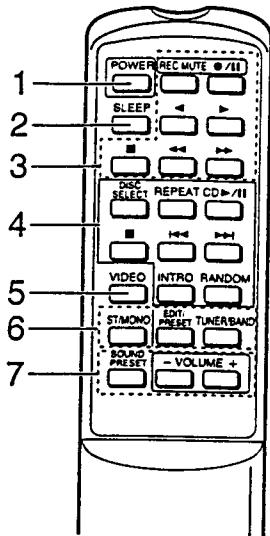


- 9. Function button (FUNCTION)
- 10. Clock button (CLOCK)
- 11. On/Off timer button (TIMER)
- 12. Memory/Adjust button (MEMORY/ADJUST)
- 13. Tuner function/Band select button (TUNER/BAND)
- 14. Stop button (■)
- 15. CD Play/Pause button (CD ►/||)
- 16. Computer recording (NOR COMPU. REC HIGH) and TUNER Tuning (- TUNE +) buttons
- 17. Reverse mode button (REV MODE)

- 18. Record/Record pause button/indicator (REC PAUSE)
- 19. Bass expander button (BASSXPANDER)
- 20. Sound preset button (SOUND PRESET)
- 21. Dolby NR button (DOLBY NR)
- 22. Headphones socket (PHONES)
- 23. Cassette holder
- 24. TAPE Play buttons (TAPE ◀▶)
- 25. CD Skip/Search, TAPE Fast wind (CD TAPE ◀◀/◀◀▶▶/▶▶▶▶) and TUNER Preset (- PRESET +) buttons

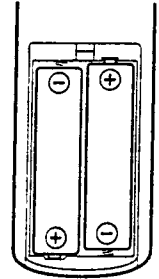
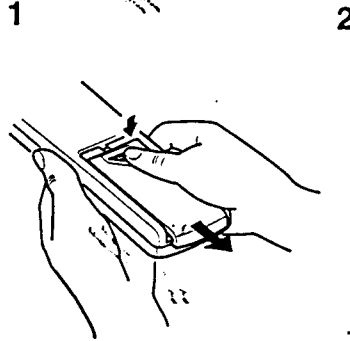
REMOTE CONTROL

Controls



1. Power button (POWER)
2. Sleep timer button (SLEEP)
3. Deck controls
 REC MUTE: Record muting button
 ●/II: Record/Record pause button
 ◀: Reverse play button
 ▶: Forward play button
 ■: Stop button
 ◀◀, ▶▶: Fast wind buttons
4. CD player controls
 DISC SELECT: Disc select button
 REPEAT: Repeat button
 CD ▶/II: CD function/Play/Pause button
 ■: Stop button
 ◀◀, ▶▶: Skip/Search buttons
 INTRO: Introsan button
 RANDOM: Random play button
5. Video function button (VIDEO)
6. Tuner controls
 ST/MONO: FM mode button
 EDIT/PRESET: CD Edit/TUNER Preset tuning up button
 TUNER/BAND: Tuner function/Band select button
7. Amplifier controls
 SOUND PRESET: Sound preset button
 - VOLUME +: Volume buttons

Inserting batteries

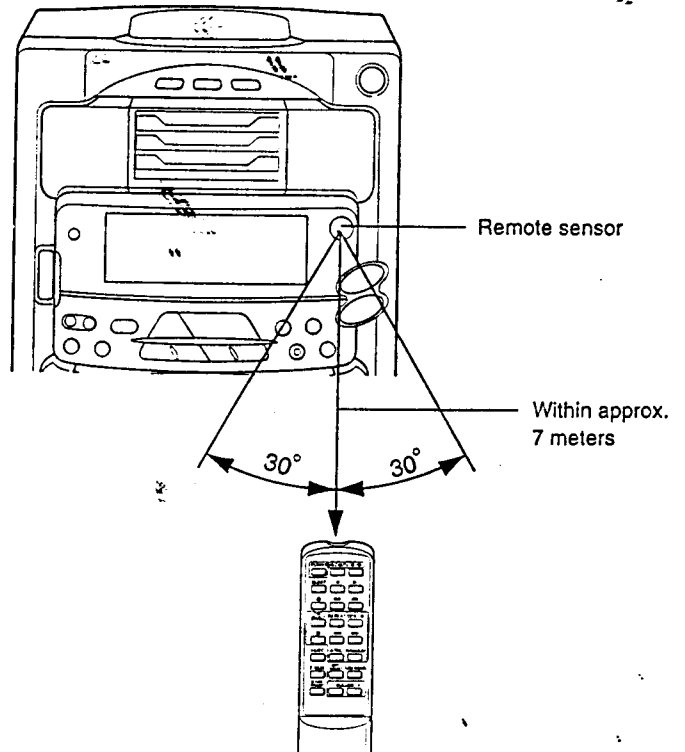


Two AA/SUM-3/R6 batteries
(not supplied)

Note:

Always remove batteries if the remote control is not to be used for a month or more. Batteries left in the unit may leak and cause damage.

Remote control range



The buttons on the remote control perform similar functions to similarly marked buttons on the front panel. See "REMOTE CONTROL OPERATION" for more details.

ADJUSTING THE CLOCK

Example: To set "PM 7:30".

1. Press the CLOCK button. The clock display appears.
 - After connecting the mains lead for the first time, when you press the CLOCK button, the clock display blinks.
2. Press the ADJUST button.

AM 12:00

The hours display blinks.

3. Press the ►►/►► or ◀◀/◀◀ button to set the "hours."

PM 7:00

4. Press the ADJUST button.

PM 7:00

The minutes display blinks.

5. Press the ►►/►► or ◀◀/◀◀ button to set the "minutes."

PM 7:30

6. Press the ADJUST button. The clock starts.

PM 7:30

- The time can be set accurately by pressing the ADJUST button when a time signal is heard.
- These operations can be done, even if the power is off.
- To display the clock during operation, press the CLOCK button. Press it again to return to the original display.
- The clock operation and memory are backed up even with a power failure lasting 30 seconds or less. When a power failure lasts for more than 30 seconds, the memory contents will be retained for several days, but the clock display will blink. Reset the time when the display blinks because of a power failure.

BEFORE OPERATION

Turning the power on and off

Press the POWER button. The indicators and displays light and the STANDBY indicator goes out. (After connecting the mains lead, when you press the POWER button for the first time, the volume reset feature automatically sets the initial volume level "VOL 4".)

To turn off the power, press the POWER button again. The STANDBY indicator lights. The clock display remains lit.

- When the mains lead is connected to the AC outlet, the STANDBY indicator lights and the unit will respond to commands from the remote control.

Smart start function

If the following buttons are pressed when the power is turned off, the unit turns on automatically and the selected function is set.

CD player section	CD ►/ , DISC 1, DISC 2, DISC 3,
	OPEN/CLOSE
Tuner section	TUNER/BAND
Cassette section	TAPE ►, ◀

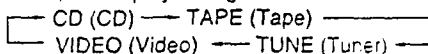
Graphic display

Below indication appears on the display for a few seconds when corresponding operation button is pressed.

►, ◀, ►►, ◀◀, ||, ■, ●, ○, AL, 1, 2, 99

Selecting the function

Press the FUNCTION button to select the desired function. Each time the button is pressed, the display changes as follows:



The function is automatically selected when CD play or tape playback is started, or when the TUNER/BAND button has been pressed (except during recording).

- When the function selection is changed, CD play or tape playback is automatically stopped.

Adjusting the volume

Press the "+" or "-" VOLUME button.

The volume level appears by the digital reading (VOL 0 - VOL 10) and spectrum bars in the LEVEL part on the display, then the digital display disappears.

Bass expander system

Press the BASSXPANDER button to enhance the bass sound. "BASS" appears on the display.

- The initial setting of this function is ON.

Selecting the sound mode

Press the SOUND PRESET button to select the sound mode which matches the frequency response of the music heard.

VIVID : For emphasizing the bass and treble ranges

MILD: For a little emphasizing the bass and treble ranges

VOCAL: For de-emphasizing the treble range, and emphasizing the bass range

NORMAL: For listening to sound extending from the bass to treble range with a flat response

Spectrum analyzer

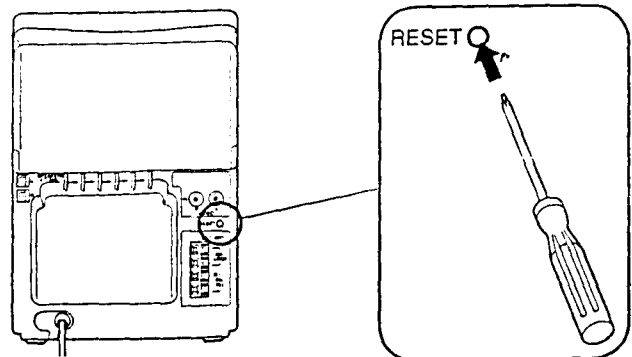
Indicates the input level and peak value of each sound range.

To turn the changer mechanism lights off

1. Press the FUNCTION button to select "CD".
2. While pressing the MEMORY button, press the OPEN/CLOSE button. To turn the lights on, repeat steps above.

WHAT TO DO IF ...

If the operation of the unit or display is not normal or when all the memory contents are to be cleared, disconnect the mains lead from the AC outlet, then press the RESET button (rear of the unit) for 30 seconds or more.



CD PLAY

Use compact discs bearing the symbol shown below. In addition to conventional 12 cm CDs, this system can be used to play 8 cm CDs without an adapter.



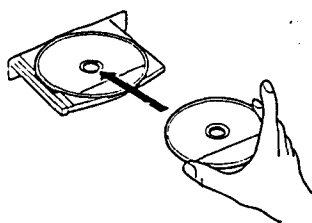
Note:

- Do not touch the disc tray while it is moving.
- Never place anything except a compact disc on the disc tray. Foreign objects can damage the unit.
- Do not apply excessive force to the disc tray.
- Discs must be placed on the disc tray one at a time.

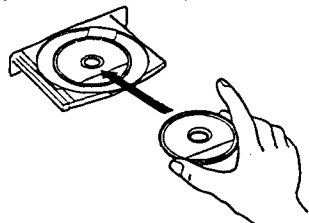
If discs are loaded, you can turn the unit on and begin play immediately by pressing the CD ►/||, DISC 1, DISC 2 or DISC 3 button.

1. Select "CD" function by pressing the FUNCTION button. "CD" appears on the display, then "CD" is replaced by "dISC". "1" disc number blinks.
2. Press one of the disc select buttons (DISC 1, DISC 2 or DISC 3), then press the OPEN/CLOSE button.
 - If the disc select button which "no disc" has been detected by the changer mechanism is pressed, that disc tray slides out automatically.

The selected disc tray slides out. "OPEN" appears and the selected disc number blinks on the display.
3. Place the disc with the label facing up on the disc tray.



For 12 cm CD

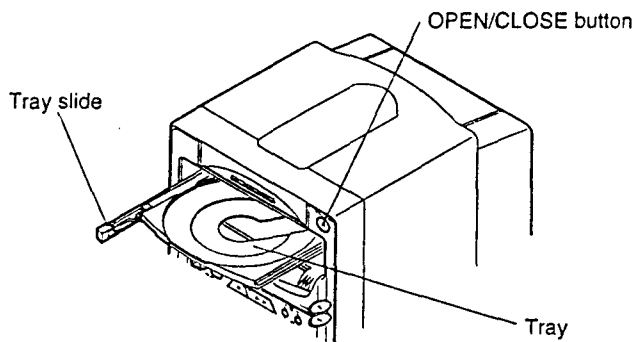


For 8 cm CD

4. Press the OPEN/CLOSE button again to close the disc tray.

Note:

To open or close the disc tray, be sure to use the OPEN/CLOSE button. If you push the disc tray by hand, only the tray slips in and the tray slide remains out as shown in figure.



In this case, press the OPEN/CLOSE button. Do not touch the disc tray by hand.

5. Repeat steps 2 - 4 to load another disc.
6. Press one of the disc select buttons (DISC 1, DISC 2 or DISC 3). The selected disc indicator blinks.



"▷" appears, and play starts from the first track of the selected disc. The track number and elapsed play time for the current track are displayed.

Also, the whole track numbers (up to track 16) on the disc are displayed on the music calendar.

- When playing tracks numbered 17 or higher, no track number appears on the music calendar.

- If the desired disc number has been selected, the CD ►/|| button can also be used to start play.

Note:

If the disc is loaded with the label facing downward, or if a badly scratched disc is loaded, "NO DISC" appears on the display. If this occurs, load the disc correctly or replace the damage disc.

7. Press the ■ button to end disc play.
 - When the last track of the last disc has been played, the player stops automatically.
- When the OPEN/CLOSE button is pressed during play, play will stop and the disc tray will slide out.

Ejecting or replacing discs

1. While in the CD play or stop mode, press one of the disc select buttons to be ejected, then press the OPEN/CLOSE button.
 - While the player is playing one disc, you can eject or replace another disc without stopping play.
2. Remove or replace the disc.
3. Press the OPEN/CLOSE button.

Notes on handling compact discs

- Do not expose the disc to direct sunlight, high humidity or high temperatures for extended periods of time.
- Discs should be returned to their cases after use.
- Do not apply paper or write anything on the disc surface.
- Handle the disc by its edge. Do not touch the playing surface (glossy side).
- Fingerprints and dust should be carefully wiped off the playing surface of the disc with a soft cloth. Wipe in a straight motion from the centre to the outside of the disc.
- Never use chemicals such as record cleaning sprays, antistatic sprays or fluids, benzene or thinner to clean compact discs.

Temporarily stopping play

Press the CD ►/|| button. "▷" blinks on the display. To resume play, press the button again.

Skip play

To skip to track 6 while track 3 is playing, press the ►►/►► button repeatedly until "6" appears in TRACK on the display. To skip back to track 3 while track 6 is playing, press the ◀◀/◀◀ button repeatedly until "3" appears.

Search (forward/reverse)

If the ►►/►► or ◀◀/◀◀ button is pressed during play, the player will search at high speed in the forward or reverse direction while the button is being pressed. When the button is released, normal play will continue.

Introscan

Press the INTRO button on the remote control to play the first 10 seconds of each track. "INTRO" appears on the display.

- Press the INTRO button again to return to normal play.
- Introscan play will not function during random play or programmed play.

Random play

Press the RANDOM button on the remote control to begin random play. The player will automatically select and play discs and tracks at random. "RANDOM" appears on the display.

- Random play will not function during introscan play or programmed play.

Repeat play

Press the REPEAT button on the remote control repeatedly to select the desired repeat mode in the following sequence. The selected repeat mode is shown on the display.

- REPEAT ONE: Repeat one track.
- REPEAT ALL: Repeat all tracks on the selected disc.
- REPEAT CONT: Repeat all tracks on all discs.
- Released: Normal play mode

Note:

During programmed play, "REPEAT CONT" can not be selected.

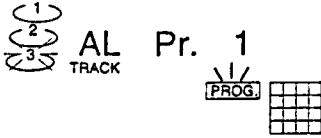
PROGRAMMED PLAY

Up to 24 selections, from up to 3 discs, can be programmed for play in any order.

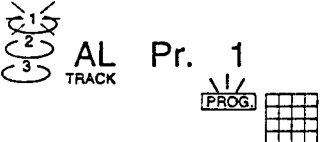
- To begin the programming procedure, select "CD" function first.
- The discs or tracks must be programmed in the stop mode.
- The same disc or track can be programmed more than once.

Follow the example below to programme tracks 2 and 6 on DISC 1 and all tracks on DISC 3. In this example, each disc has 9 tracks and DISC 3 is in playing position.

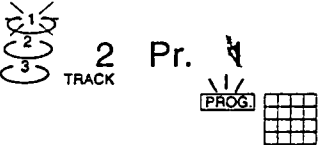
1. Press the MEMORY button.



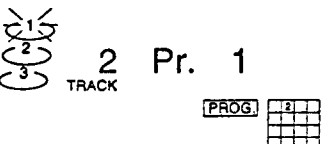
2. Select disc 1 by pressing the DISC 1 button.



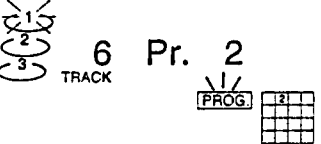
3. Select track 2 by pressing the >>>/>>> button.



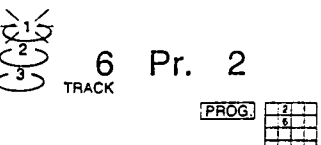
4. Press the MEMORY button.



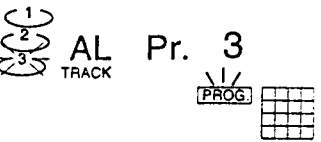
5. Select track 6 by pressing the >>>/>>> button.



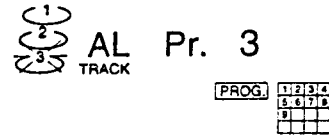
6. Press the MEMORY button.



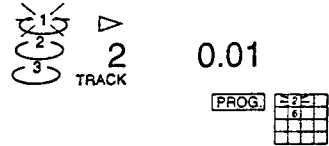
7. Select disc 3 by pressing the DISC 3 button.



8. Press the MEMORY button.



9. Press the CD >/|| button to start play. The DISC 1 indicator blinks.



When all programmed selections have played, the player stops automatically. "0 0.00" appears on the display.

- The programme contents are retained in memory.

- Any attempt to programme more than 24 selections will result in "FULL" being displayed and discontinuation of the programming.
- If a non-existent disc or track number is programmed, that disc or track will be skipped during play.
- The programme is cleared when the ■ button is pressed in the stop mode.

Checking the programme

Each time the MEMORY button is pressed in the stop mode, the programmed details sequentially appear on the display.

Changing a programme

To add a new selection to a programme:

1. In the stop mode, press the MEMORY button repeatedly until "- - -" is displayed.
2. Select a disc and track number as explained above.
3. Press the MEMORY button.

To change a selection:

1. In the stop mode, press the MEMORY button repeatedly until the selection to be replaced is displayed.
2. Select a disc and track number as explained above.
3. Press the MEMORY button.

Note:

Programmed details cannot be partially deleted or inserted.

WHAT TO DO IF ...

If "ME dISC" appears.

1. Press the POWER button to turn the power off.
2. Press the POWER button to turn the power on.

If the operation of the unit or display is not normal, even though the appropriate buttons have been pressed.

1. Disconnect the mains lead.
2. Press the RESET button (rear of the unit) for 30 seconds or more.
3. Connect the mains lead.
4. Press the POWER button to turn the power on.
5. Press the desired function button.

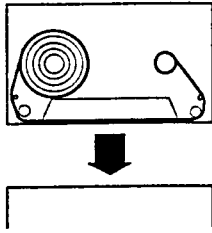
Note:

If the unit does not operate correctly, or "ME dISC" appears again, please contact your nearest SANYO Authorized Service Centre.

LISTENING TO TAPES

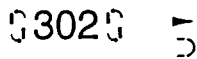
If a cassette is loaded, you can turn the unit on and begin play immediately by pressing the TAPE ► or ◀ button.

1. Select "TAPE". "TAPE" appears on the display, then "TAPE" is replaced by the tape mode display.
2. Press the cassette holder (EJECT portion) to open it.
3. Load the cassette.



After loading the cassette, push the cassette holder (EJECT portion) back into position.

4. Set the DOLBY NR button according to whether the tape has been recorded with the Dolby NR system or not.
 - With Dolby NR "DD B NR" appears
 - Without Dolby NR "DD B NR" disappears
5. Select the reverse mode with the REV MODE button as desired.
6. Press the TAPE ► or ◀ button to begin playback. "►" or "◀" appears on the display.
 - : For forward play
 - ◀ : For reverse play



7. Press the ■ button to stop playback at any time. When the end of the tape has been reached, automatic stop or reverse will be activated.

Types of usable tapes

The type of tape used is automatically identified by the system since the deck employs an auto tape selection system. The following types of tape can be used with this system.

- Normal
- CrO2
- Metal (Only for playback)

Note:

- Metal and CrO2 tapes without sensing holes cannot be used since they cannot be identified by the auto tape selector.
- Endless tapes cannot be used.
- Do not use C-120 tapes. They may jam in the mechanism.

Auto reverse

Press the REV MODE button to select the reverse mode as desired.



For listening to one side of the tape only.



For listening to both sides of the tape in succession.

- If playback has been started from the reverse side, only the reverse side will be played back.



For listening repeatedly to both sides of the tape.

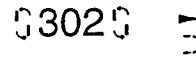
Fast forward and rewind

Press the ►►/►► or ◀◀/◀◀ button. "►" or "◀" blinks.

When the tape has been wound to the end, the deck stops automatically.

Tape counter

The counter appears on the display and helps you to quickly locate the recorded selection for playback.



Both sides of the counter indicate tape movement with rotating graphic displays.

To reset the tape counter to "000"

In the stop mode, press the ■ button.

- When CD computer recording is started, the counter automatically resets to "000".

Dolby NR system

Dolby Noise Reduction circuitry provides superior recording and playback results by suppressing tape hiss by up to 10 dB.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.

"DOLBY" and the double-D symbol DD are trademarks of Dolby Laboratories Licensing Corporation.

LISTENING TO THE RADIO

To turn the unit on and listen to the last received station, press the TUNER/BAND button.

Automatic/Manual tuning

1. Press the TUNER/BAND button to select FM or AM.
 - "TUNER" is selected automatically. "TUNE" appears on the display, then "TUNE" is replaced by the tuner mode display.

2. Automatic tuning

Press the "+" or "-" TUNE button (more than 0.7 seconds) to tune in a station. The unit will scan up or down the band and receive the next receivable station. Press the button again to continue.

Manual tuning

Press the "+" or "-" TUNE button briefly (less than 0.7 seconds) until the desired frequency is displayed. Each time the button is pressed, the frequency changes in 0.05 MHz steps for FM and 9 kHz steps for AM.

FM 103.25 MHz

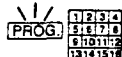


To preset stations

Up to 16 stations in each band (FM and AM) can be preset.

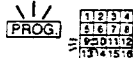
1. Tune in the station to be preset as described in "Automatic/Manual tuning".
2. Press the MEMORY button.

-- 103.25 MHz



3. Press the "+" or "-" PRESET button to select the channel number to be preset.

9 103.25 MHz



4. Press the MEMORY button.
 - In this example, "103.25 MHz" FM station is preset on FM channel number 9.

FM 103.25 MHz



Note:

If the next step is not taken within 10 seconds while performing steps 2 - 4, "PROG." disappears and the preset operation is cancelled. Press the MEMORY button to continue.

5. Repeat the steps above to add more preset stations.


- When presetting a new station, the previously preset station on the same channel number of the same band is cleared.
 - The preset stations will be retained in the memory even if the unit is turned off.
- If the memory contents are lost due to a power failure or other condition, preset the stations again.

Listening to preset stations

1. Press the TUNER/BAND button to select FM or AM.
 2. Press the "+" or "-" PRESET button to select the desired channel number. The selected channel number blinks on the display.
- To receive an FM stereo broadcast, make sure that "MONO" is not displayed. If "MONO" appears, press the ST/MONO button on the remote control to turn the "MONO" indication off. "ST" appears when an FM stereo broadcast is received.
 - If the signal from an FM stereo station is weak and reception is poor, press the ST/MONO button to change to monaural reception. ("ST" is replaced by "MONO" in the display.)

Changing the AM reception frequencies

It is not necessary to perform this procedure in the Australia and New Zealand.

1. Press the TUNER/BAND button to select "AM".
2. While pressing the MEMORY button on the front panel, press the  button on the front panel.

522 - 1710 kHz (9 kHz steps) \longleftrightarrow 520 - 1710 kHz (10 kHz steps)

LISTENING TO VIDEO SOURCES

1. Select "VIDEO". "VIDEO" appears on the display.
2. Follow the instructions supplied with the video equipment.

Recording copyright material without permission of the copyright owners is usually an infringement. If you wish to re-record copyright material, permission from the copyright owner is necessary. SANYO does not approve of, and cannot be held responsible for, any unlawful use of this machine.

1. Press the cassette holder (EJECT portion) to open it and load the cassette for recording.
2. Set the DOLBY NR button to ON or OFF as desired.
Dolby NR ON "DOLBY NR" appears
Dolby NR OFF "DOLBY NR" disappears
3. Set the reverse mode with the REV MODE button.

⏮ :

For recording one side only.

⏪ :

For recording both sides in succession.

- If recording has been started from the reverse side, only the reverse side will be recorded.
- If a tape with one of its tabs already broken out is used for recording, the tape will not be reversed automatically, and it will stop.
- If the REC PAUSE or COMPU. REC button is pressed while the ⏮ mode is selected, the ⏪ is selected automatically.

Recording will start in the forward direction under the following conditions:

- When CD computer recording is used
- When using the timer for unattended recording

Automatic record muting

Undesirable parts of a programme can be omitted while recording.

Press the REC MUTE button on the remote control once while recording.

The REC PAUSE indicator blinks and a 5-second unrecorded blank space is created, then the cassette deck enters the record pause mode. The REC PAUSE indicator lights and "▶" or "◀" blinks on the display.

- To add another 5-second blank space, press the REC MUTE button again.
- To resume recording, press the TAPE ▶ or ◀ button whose "▶" or "◀" is blinking.

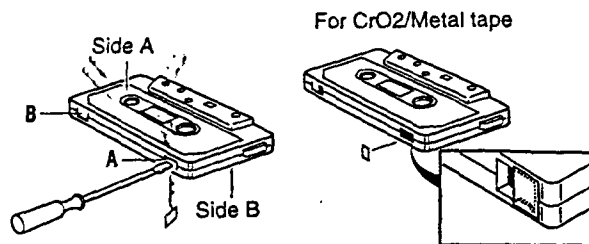
Note:

The record muting function does not operate during CD computer recording.

Accidental erasure prevention tabs (for protecting valuable recordings)

Accidental erasure can be prevented by breaking out the tabs on the end of the cassette tape (where the tape is not exposed) using a screwdriver or similar implement.

If a tab is broken out in error and you wish to re-record the tape, simply block the tab hole using adhesive tape and the tape can be used for recording again.



Break out tab A for side A.
Break out tab B for side B.

RECORDING

RECORDING COMPACT DISCS

Computer recording

With computer recording, you can record a CD onto a cassette by pressing just one button.

1. Load the disc(s) to be recorded.
2. Load a blank cassette.
3. Select "CD".
 - For programmed recording, programme the material in advance (as described under "PROGRAMMED PLAY").
4. Press the disc select button (DISC 1, DISC 2 or DISC 3) to select the disc to be recorded first, then press the ■ button.
 - For programmed recording, this step is unnecessary.
5. Select "▶" mode.
6. Press the "HIGH" or "NOR" COMPU. REC button.
 - HIGH: For high speed recording
 - NOR: For normal speed recording

The system automatically performs the following functions:

Deck:

- The tape rewinds to the beginning.
- Recording starts.

CD player:

- The player searches for the first track to be recorded, then enters the pause mode.
- CD play starts.

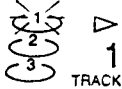
Manual edit recording

Recording starts without rewinding the tape initially. Press the EDIT/PRESET button on the remote control to turn the "MANUAL" indication on before proceed step 6.

- To cancel this mode, press the button again. "MANUAL" disappears.
- After loading the cassette, the tape must be wound to the point where you would like to start recording.

The REC PAUSE indicator lights, "COMPU. REC" and "A" appear on the display as recording begins.

COMPU.REC



0.01



If the tape reverses from side A to B while a track is still playing, the CD player enters the pause mode at the beginning of the track that was playing. This track will be recorded at the beginning of side B.

When the end of the tape (side B) is reached, the CD player and deck stop automatically.

- If the last track on the CD plays completely before the end of the tape, disc play stops automatically. The deck also stops.

Note:

- Recording starts automatically after 4 seconds for high speed recording or 8 seconds for normal speed recording, so the recording will not be interrupted by the leader tape at the beginning of sides A and B.
- A 5-second blank space is automatically recorded at the end of each track.
- To stop computer recording at any time, press the ■ button. The CD player and deck will stop.
- When CD computer recording is used, repeat play mode is canceled automatically.
- When high speed CD computer recording is used, Dolby NR recording mode is canceled automatically.
- During high speed recording, normal monitoring is not possible.

Manual recording

1. Follow the steps 1 - 3 under "Computer recording" above.
 - If required, press the disc select button (DISC 1, DISC 2 or DISC 3) to select the disc, then press the ■ button. Select the track number to be recorded.
2. Press the REC PAUSE button. The deck enters the record pause mode. The REC PAUSE indicator lights. Both "▶" and "◀" blink on the display.
3. Press the TAPE ▶ or ◀ button. "▶" or "◀" lights and recording starts.
4. To stop recording, press the ■ button.

When the end of the tape (side B) is reached, the CD player and deck stop automatically.

- If the last track on the CD plays completely before the end of the tape, disc play stops automatically. The deck also stops.

RECORDING FROM THE TUNER OR VIDEO INPUT

1. Load a blank cassette.
2. Tune in the radio station to be recorded, or play a video cassette or video disc.
3. Press the REC PAUSE button. The deck enters the record pause mode.
4. Press the TAPE ▶ or ◀ button. Recording starts.
5. Press the REC PAUSE button to temporarily stop recording. Press again the TAPE ▶ or ◀ button whose "▶" or "◀" is blinking to continue.
6. Press the ■ button to stop recording.

When beat interference is heard

A high-pitched noise called "beat" is sometimes heard during the recording of radio broadcasts.

If this occurs,

1. Press the MEMORY button.
2. While "PROG." is blinking, press the "+" TUNE button to select "bc-1" or "bc-2". Select the setting that gives the best results.

TIMER OPERATION

Using the on/off timer

Set the on and off times, function to be used and volume level. Operation will start with the selected function at the on time. The sound will be gradually increased from a no-sound level to the volume setting (fade-in). The power will be switched off at the off time.

The on/off timer will function every day unless it is released.

Preparation

Note:

Make absolutely sure that the clock is set to the correct time before setting the timer.

- Select the function for timer operation and prepare the sources to be used.
- If the function selected is tuner, tune in to the desired band and station.
- Tape playback and recording will start only from the forward side.
- Adjust the volume level as desired.

Operation

1. Press the TIMER button.



 AM 1:10

The previous timer on time setting appears.

2. Press the ADJUST button within 10 seconds.



 AM 1:10

3. Set the timer on time by pressing the **▶▶/▶▶▶▶** or **◀◀/◀◀◀◀** button, then press the ADJUST button (as described under "ADJUSTING THE CLOCK").

 PM 10:20 →  PM 10:20

The timer off time setting appears.

4. Set the timer off time as described in step 3.

 PM 11:00 →  CD

The previous timer mode setting (play or recording) and the current function appear.

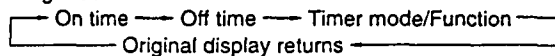
5. Select the timer mode by pressing the **▶▶/▶▶▶▶** or **◀◀/◀◀◀◀** button.
 - Each time the button is pressed, "⊙ REC" and "⊙" blinks alternately. Select the "⊙ REC" for unattended recording.
 - If you wish to change the function, press the FUNCTION button to select the desired function.
6. Press the ADJUST button.

The original display returns, then the timer operation standby mode is activated. "⊙" (or "⊙ REC") remains lit.
7. Press the POWER button to switch off the power.

- "⊙" (or "⊙ REC") blinks during a timer controlled operation.
- To switch off the power during a timer controlled operation, press the POWER button. The timer will be set in the standby mode.

To check the timer settings

Press the TIMER button repeatedly. The timer settings are displayed in the following order:



To change the settings, press the TIMER button to select the setting to be changed, then press the ADJUST button so that the display blinks. Change the setting as explained above.

To release the timer

After turning the power on, press the TIMER button, then press the ■.

To set the timer again with the same settings

1. Press the TIMER button, then press the ■.
2. Press the POWER button to switch off the power.

Note:

- If the ■ button is pressed while the timer is being set, the original display returns.
- The timer mode is released if a power failure occurs during timer controlled operation.
- The timer may not operate if a power failure occurs during timer operation standby mode.

Using the sleep timer

The sleep timer automatically switches off the power after a preset time has elapsed. The volume will gradually be reduced (fade-out) during the 1-minute period before the unit turns off. There are 12 time periods available: 120, 110, 100, 90, 80, 70, 60, 50, 40, 30, 20, and 10 minutes.

Press the SLEEP button on the remote control repeatedly to select the desired sleep time.

 30 

"SLEEP" and the selected time blink on the display. After several seconds, the original display returns. "SLEEP" blinks.

To check the remaining sleep time

Press the SLEEP button. The remaining time is displayed. After several seconds, the original display returns.

To release the sleep timer while in operation

Press the SLEEP button repeatedly until "SLEEP" disappears. The timer is also released if the power is switched off.

MAINTENANCE

Cleaning the deck heads

To ensure playback and recording with good-quality sound, use cotton swab to clean the heads, pinch rollers and capstans of the deck after about every 10 hours of use.

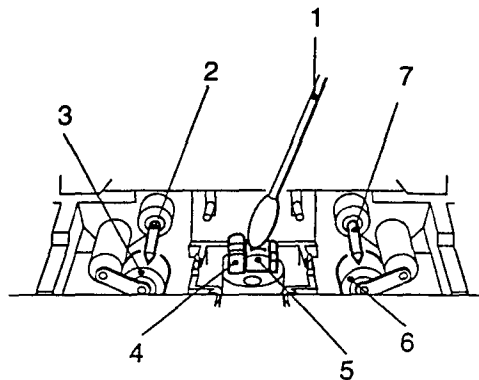
If the dirt persists, soak the swab in a little methylated spirit or head cleaning fluid and then clean.

Main unit

Use a soft cloth to remove dirt on the main unit.

If the dirt persists, dip a soft cloth into a diluted solution of neutral detergent, wring it out, wipe away the dirt, and then take up any moisture with a dry cloth.

Do not use benzene, thinners or alcohol since they will mar the finish of the surfaces.



- 1. Cotton swab
- 2, 7. Capstan
- 3, 6. Pinch roller
- 4, 5. Head

REMOTE CONTROL OPERATION

Note:

The buttons on the remote control perform similar functions to similarly marked buttons on the front panel.

Common section

Power on/off	POWER
Adjust volume	- or + VOLUME
Select sound preset	SOUND PRESET
Select "VIDEO" function	VIDEO
- "CD" is automatically selected when the CD ►/ or DISC SELECT button is pressed.	
- "TUNER" is automatically selected when the TUNER/BAND button is pressed.	
- "TAPE" is automatically selected when the ► or ◀ button is pressed.	
Set/Check sleep time	SLEEP

Tuner section

Select "TUNER" and/or Select band	TUNER/BAND
Select preset station	In TUNER mode EDIT/PRESET
Select FM mode	In TUNER mode ST/MONO

CD player section

Select "CD" and/or Start play	CD ►/
Select the desired disc and track	In CD mode DISC SELECT — ◀◀ or ▶▶
Select manual edit recording mode	In CD mode EDIT/PRESET
Temporarily stop play	During play CD ►/
Skip play	During play ◀◀ or ▶▶ (press once)
Search	During play ◀◀ or ▶▶ (press continuously)
Repeat play	REPEAT
Intros can play	INTRO
Random play	RANDOM
Stop	■

Cassette deck section

Select "TAPE" and/or Start playback	► or ◀
Fast wind	►► or ◀◀
Start recording	●/ — ► or ◀
Temporarily stop recording	During recording ●/
Record mute	During recording REC MUTE
Stop	■

SPECIFICATIONS

Tuner section

Reception frequency:
FM: 87.5 - 108 MHz
AM: 522 - 1710 kHz

CD player section

Type: Changer, 3-disc
Channels: 2-channel stereo
Sampling frequency: 44.1 kHz
Pick-up: Optical 3-beam semiconductor laser
Laser output: 0.6 mW (Continuous wave max.)
Wave length: 790 nm
Frequency response: 20 Hz to 20 kHz
Wow/flutter: Below measurable limits

Cassette deck section

Track system: 4-track, 2-channel stereo
Frequency response: 50 Hz to 14.5 kHz (CrO2 tape)
50 Hz to 13.5 kHz (Normal tape)
Signal-to-noise ratio: 60 dB (Dolby NR ON)
Wow/flutter: 0.12% (WRMS)
Fast forward/rewind time: Approx. 110 sec. (C-60)

Amplifier section

Output power: 20 W x 2 (at 4 ohms, 10% distortion)
Sound preset: Four electronic presets
Inputs: VIDEO: 400 mV/50k ohms
Outputs: SPEAKERS: 4 ohms
PHONES: 8 - 32 ohms
Power requirements: AC 230 - 240 V, 50 Hz
Power consumption: 75 W
Dimensions: 180(W) x 260(H) x 288(D) mm
Weight: 5.7 kg

Speaker systems

Type: 2 way bass reflex
Unit used: Woofer: 10 cm cone type
Tweeter: piezoelectric
Maximum power-handling capacity: 40 W (peak)
Nominal impedance: 4 ohms
Dimensions: 165(W) x 260(H) x 215(D) mm
Weight: 1.7 kg (per speaker)

Specifications subject to change without notice.

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