

Operating Instructions

Panasonic
STEREO
Panasonic

“WARNING. TO PREVENT DAMAGE WHICH MAY RESULT IN FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR EXCESSIVE MOISTURE.”



MODEL **SE-5070D**

Before operating this set, please read these instructions completely.

Panasonic

FM/AM

CD-4

**Component
System**

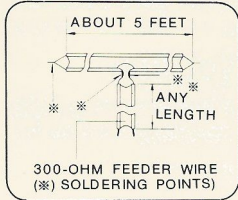
Model SE-5070D



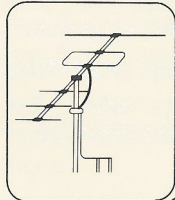
Dear Stereo Fan

Thank you very much for selecting
the Panasonic model SE-5070D
FM/AM CD-4 COMPONENT SYSTEM.

300-OHM FEEDER WIRE T-SHAPE ANTENNA



SPECIAL ANTENNA

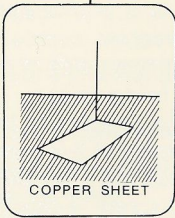
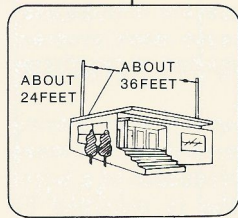


OR

Separation control volume (R & L)
Separation adjustment has already been made in our factory to the extent of ensuring satisfactory playing. It may possibly become necessary to make any minor readjustment for separation only when the cartridge or the stylus is replaced, in which case see page 5 for further particulars.

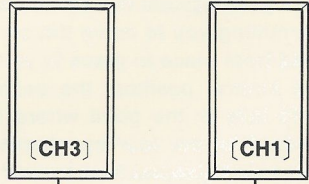
Phono input jacks
Will accept outputs of a phonograph provided with a semiconductor type cartridge. Outputs of phonographs provided with other type cartridges cannot be accepted.

300-OHM FEEDER WIRE

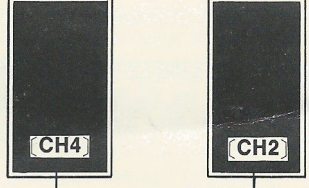


4CH BALANCE TERMINAL
(See page 10)

FRONT SPEAKERS RIGHT LEFT



REAR SPEAKERS RIGHT LEFT



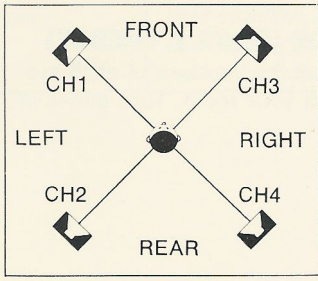
PICKUP OUTPUT CORD

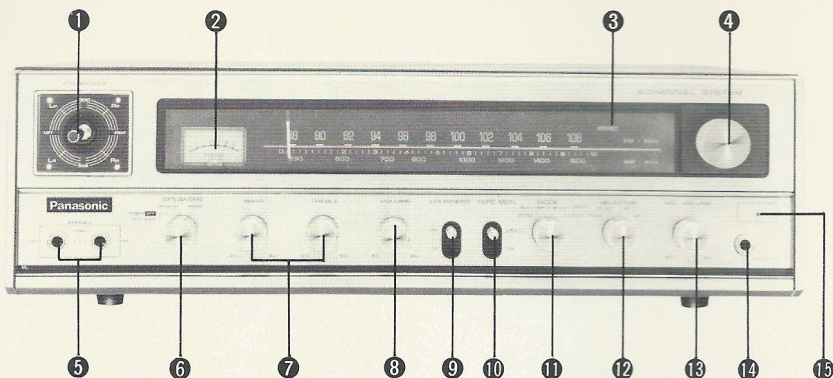
POWER CORD

Figure indications are as follows:

- Front Left signal(CH 1)
- Front Right signal(CH 3)
- Rear Left signal.....(CH 2)
- Rear Right signal.....(CH 4)

Speaker System Locations





CONTROL PANEL

① 4-CHANNEL BALANCE CONTROL LEVER

Lets you regulate the volume balance on all four speakers, permitting you to move the center of the reproduced sound field from place to place in your room. When this lever is in the neutral position, the center of the reproduced sound field falls in the point where two diagonals of the square formed by the four speakers intersect. The center of the reproduced sound field moves in the same direction as this lever is tilted; and the sound ceases to come out of the speaker in the opposite direction to which this lever is tilted to the utmost limit.

② TUNING METER

Permits fast, accurate tuning. Deflection of the needle to the utmost right provides the best condition.

③ FM STEREO INDICATOR

When lit, it shows that the program is being broadcast in FM stereo, and you are listening to a stereo broadcast.

④ TUNING

Use this knob to choose the desired program source.

⑤ HEADPHONES JACKS (PHONES)

Connect 2- or 4-channel stereo headphones to these jacks. To hear a 2-channel stereo program source:

Two sets of headphones can be connected to the jacks A and B respectively, so that two persons can hear the program simultaneously. (In this case, set the mode selector ⑪ to STEREO.)

To hear a 4-channel stereo program source:

The FRONT terminal of 4-channel headphones must be connected to the FRONT jack, and the REAR terminal to the REAR jack.

⑥ POWER OFF/SPEAKERS SELECTOR

POWER OFF: The power source of this unit is turned off.

SPEAKERS: Used to listen through the speaker system.

PHONES: Used to listen only through the headphones.

⑦ TONE CONTROL KNOBS (BASS & TREBLE)

Let you "tailor" the sound to suit the contents of each program source to the acoustics of your room. Turn either of

these knobs clockwise for intensified bass or treble, and counterclockwise for the reverse effect. The middle position provides the most natural tone quality.

⑧ VOLUME CONTROL KNOB (VOLUME)

Controls the volume of four channels simultaneously. Turn clockwise for raising the volume, and counterclockwise for lowering it.

⑨ LOUDNESS SWITCH

To reduce the volume level, set this switch to the ON position.

At low volume level, the human ear has difficulty in clearly hearing treble and bass sounds. For this reason, when this switch is set to the ON position, only the bass and treble sounds are compensated, and a dynamic performance can be enjoyed.

⑩ SOURCE/TAPE SELECTOR

TAPE: For playback of recorded tape.

(If a recording is made on a 3-head tape deck...record head and playback head are separate...and the TAPE setting is selected, operation will change to the tape monitor circuit. (See page 6.)

⑪ MODE SELECTOR

Set this selector to a proper position every time you reproduce some program source, because each program source has its optimum mode of reproduction. This selector has the following four positions.

STEREO: Set the selector to this position when playing conventional 2-channel stereo discs and tapes or when the 4-channel reproduction of a worn-out discrete 4-channel disc is disturbed by noises. In the latter case, namely, when a worn-out discrete 4-channel disc is reproduced with the selector set to STEREO, the sounds through the right channels get mixed with front and rear and come out of the right-front speaker and, likewise, the sounds through the left channels get mixed and come out of the left-front speaker.

MATRIX 1: Set the selector to this position when making matrix 4-channel stereo reproduction out of conventional 2-channel stereo discs, when play-



PILOT LAMPS

Interlocked with the mode selector and lighted in accordance with a position to which the said selector is set. (See the table shown below.)

- MATRIX 2: ing regular matrix (RM) discs or when receiving matrix FM 4-channel broadcasts. Set the selector to this position when playing matrix 4-channel discs other than mentioned above (e.g., SQ discs).
- DISCRETE: Set the selector to this position when making discrete 4-channel stereo reproduction (e.g., when playing CD-4 discs).

12 PROGRAM SELECTOR

- PHONOTo listen to phonograph discs.
- FM STEREO...For reception of FM stereo broadcasts only. Monaural broadcasts can not be received. If the broadcast changes to a monaural broadcast with this control in the FM STEREO position no sound will be heard from speakers.
- FM AUTO ...Automatic circuitry operates to change to stereo (for a stereo broadcast) or to monaural (for a monaural broadcast).
- AM.....To listen to AM broadcasts.

13 MICROPHONE VOLUME

This control is for adjustment of the volume level of the microphone.

14 MICROPHONE JACK

For connection of a microphone.

15 CD-4 RADAR

When a discrete 4-channel disc is played, this lamp lights up. When a conventional 2-channel disc is played, or when the mode selector is set to the "STEREO, MATRIX 1 and MATRIX 2" position, this lamp will not light. This lamp may possibly be lighted when a conventional 2-channel disc is played with the mode selector set to "DISCRETE". This abnormal lighting is simply caused by some recording characteristics of the disc and by no means indicates that something is wrong with this unit. (It is not a proper way of operating this unit to play a conventional 2-channel disc with the mode selector set to "DISCRETE".)

What Is Brought Forth by Each "Mode Selector" Position?

"Mode selector" position	Program source to be reproduced	Number of pilot lamps lighted (They are interlocked with the mode selector.)	Mode of reproduction
DISCRETE	* Discrete 4-channel disc (CD-4 etc.) * Discrete 4-channel tapes	Four	Discrete 4-channel reproduction through four speakers
MATRIX 1	* Regular matrix (RM) discs * 2-channel discs * Matrix FM 4-channel broadcasts	Four	Matrix 4-channel reproduction through four speakers
MATRIX 2	* Matrix discs other than regular matrix ones (e.g., SQ discs)	Four	Ditto
STEREO	* 2-channel discs * FM stereo broadcasts * AM broadcasts	Upper two	The same sound as that coming out of the right-front speaker comes out of the right-rear speaker, and the same sound as that coming out of the left-front speaker comes out of the left-rear speaker.

OPERATING THE AUTOMATIC TURNTABLE

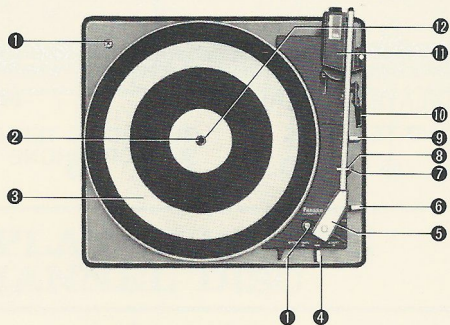


Fig. 1

- | | |
|---------------------|------------------|
| ① TRANSIT SCREW | ④ START LEVER |
| ② AUTOMATIC SPINDLE | ⑤ PICKUP |
| ③ TURNTABLE | ⑥ SPEED SELECTOR |

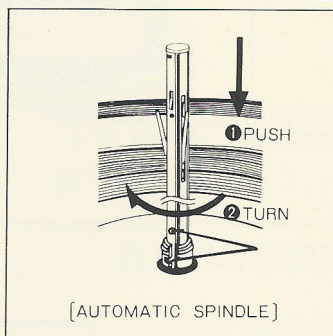


Fig. 2

- | |
|-----------------|
| ⑦ PICKUP REST |
| ⑧ PICKUP CLIP |
| ⑨ SIZE SELECTOR |

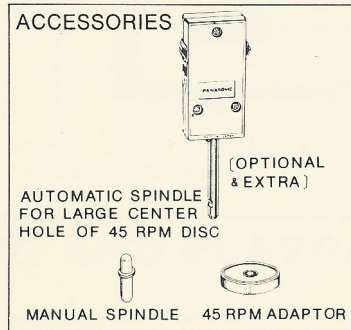


Fig. 3

- | |
|------------------|
| ⑩ CUEING LEVER |
| ⑪ BALANCER |
| ⑫ TURNTABLE CLIP |

OPERATING

AUTOMATIC PLAY

- (1) Insert the automatic spindle by placing the key on its base into the slot of the turntable shaft, (See Figs. 1 and 2.) Then push the spindle downward and turn clockwise until it stops. Use the 45 rpm automatic spindle in the same manner as the automatic spindle.
 - (2) Unclip the pickup clip.
 - (3) Rotate the turntable by hand five times to ensure that the mechanism is in the neutral position.
 - (4) Check that the speed selector and the size selector are set for the type of discs to be played.
 - (5) Place discs of the same speed on the finger of the automatic spindle.
 - (6) Move the start lever to the "START" position, and pause for a moment to let the mechanism engage. Then the lever will return by itself to the (⊥) position.
 - (7) To reject a disc while the unit is in operation, move the start lever to the "START" position.
 - (8) After playing the last disc, the pickup will return to its rest and the unit will shut off automatically.
- If it becomes necessary to stop the unit during the play, move the start lever to the "STOP" position.

Note: To interrupt playing a disc.

Raise the cueing lever to lift the pickup arm.

When the cueing lever is lowered, the pickup will descend slowly and resume playing in the same groove.

SINGLE PLAY

- (1) Insert the manual spindle into the turntable. To play 7"

45 rpm discs with a large center hole, use the 45 rpm adaptor.

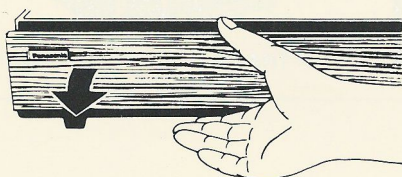
- (2) Set the speed selector and the size selector in the same manner as for automatic play.
- (3) Automatic start
Move the start lever to the "START" position and pause for a moment; play will start automatically.
- (4) Manual start
Move the start lever to the "MAN" position and place the pickup on the disc manually.
- (5) Cue-control start
 - a. Raise the cueing lever to lift the pickup arm.
 - b. Place the pickup over the lead-in groove (or over any other groove).
 - c. Move the start lever to the "MAN" position.
 - d. Lower the cueing lever.
- (6) To stop
To stop after playing the disc follow the same procedure as for "Automatic play".
- (7) To stop during playing
Move the start lever to the "STOP" position. Arm will return to its rest.

CUEING CONTROL

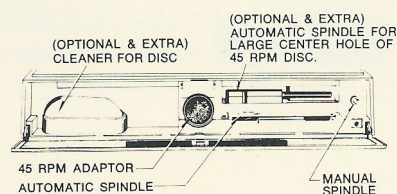
- (1) To interrupt playing a disc.
Raise the cueing lever to the ▽ position.
- (2) To resume playing the disc.
Lower the cueing lever to the ▽ position.
The pickup will descend slowly and resume playing in the same groove.

BUILT-IN ACCESSORIES BOX

- Pull the front panel of the automatic turntable in the direction as indicated with the arrow, and the accessories box will show itself.
- The right-hand compartment of the accessories box is



for keeping the accessories of the record player such as the record adaptor and the spindle, while the left-hand compartment can be used for keeping fancy goods and cigarettes.

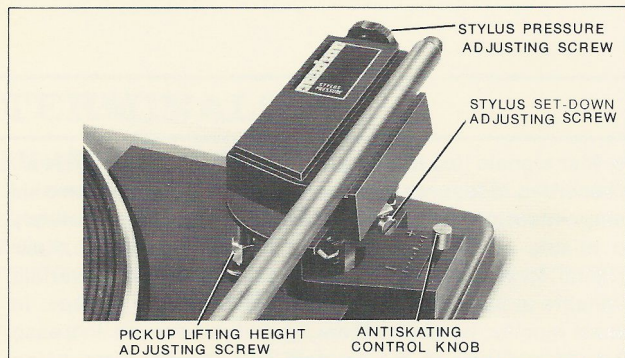


MAINTENANCE

ADJUSTMENT

This unit has been subjected to the most rigorous checks and tests before leaving the factory where all necessary adjustments have been made to ensure the satisfactory playing of records.

The following information is provided should it become necessary to make any minor adjustments.



STYLUS PRESSURE

The stylus pressure should always be set as recommended by the cartridge manufacturer. The pressure is adjusted by means of the stylus pressure adjusting screw. Turning clockwise as viewed from the front increases the pressure, and counterclockwise reduces the pressure.

ANTI-SKATING CONTROL

Having set the required stylus pressure at 3.0g and the anti-skating control knob to the ► position, the anti-skating force is adjusted to correspond to the stylus pressure applied.

Moving the knob toward + increases the anti-skating force and toward - reduces the force.

Note: The anti-skating control adjustment described is that required for ideal conditions.

Slight variations from the optimum may be necessary depending on the condition of the stylus.

STYLUS SET-DOWN ADJUSTING SCREW

The position of stylus set-down is adjusted by moving this screw.

PICKUP LIFTING HEIGHT

If the pickup does not lift high enough to clear the top disc on the stack when returning to its rest, turn the pickup lifting height adjusting screw counterclockwise for raising the pickup.

The stylus should be 0.625 inches above the face of a single disc on the turntable as the pickup returns to its rest.

Turn the pickup lifting height adjusting screw clockwise, and the pickup will be lowered.

TO REMOVE THE TURNTABLE

Disconnect the power supply and withdraw the disc spindle, then remove the turntable rubber mat and pry off turntable clip (12) noting its position (small hole facing rear for assembly, and lift the turntable with equal pressure on opposite sides.

LUBRICATION

When the need for lubrication is apparent, remove the turntable and apply a drop or two of light machine oil (sewing machine oil is suitable) to the bearings of the rubber intermediate wheel, turntable spindle and motor. Take great care to keep all driving surfaces clean and dry to prevent them from slipping. The control arm must lower freely. If it does not, clean and lightly oil its spindle.

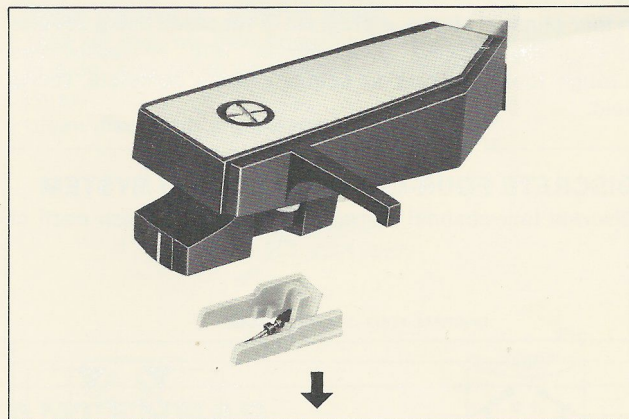
DUST COVER REMOVAL

The dust cover of this unit is removable, if desired, depending upon the location in which this unit is used. To remove the cover, close it and lift it up.

REPLACEMENT OF STYLUS

A diamond stylus is used in this pickup. If the diamond stylus is used for about 400 hours, the point of the diamond stylus will become worn, resulting in poor tone quality, and easily spoiling discs.

Replace with stylus:EPS-451QD (diamond) for discrete 4-channel discs.



DETACHABLE HINGE

The dust cover hinge remains in its place after the dust cover itself is removed. Detach the hinge from the cabinet whenever you consider it to be an eyesore. And attach it again to the cabinet whenever it is required.

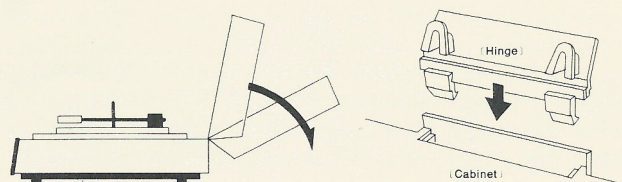
How To Detach the Hinge from the Cabinet

- Push the dust cover gently in the direction of the arrow while pressing down the front part of the record player.

Note: Don't do this so often, to prevent the engagement of the hinge from becoming loose.

How To Attach the Hinge to the Cabinet

- Press the hinge hard into the receptacle until a click is heard.



WHAT IS 4-CHANNEL STEREO?

In an ordinary stereo system, signals from left and right are reproduced from the left and right speakers respectively. In a four-channel system, however, two additional speakers are included for the rear left and right sounds. The sound is therefore reproduced from the front and rear, which results in a stereophonic sound field that is as realistic as that in a concert hall.

When we listen to a performance in a concert hall, we think of the sound as coming to us from the concert stage which is in front of us. But, in reality, the essence, or the effect that the "live" concert produces is due to subtle tone variations that occur when the sound waves are reflected from the ceiling and walls of the concert hall. The ear, of course, is readily able to detect the changes that occur as the sound is reflected and reverberated. The extent to which the sound is changed is dependent on the size of the concert hall, but the overall effect that the listener "feels" can be summed up with the words "stereophonic feeling".

It is impossible to reproduce such an all-encompassing sound field using two-channel stereo.

In four-channel stereo, a program is recorded using several strategically located microphones, and is reproduced through four speakers to obtain a more complete sound field.

DISCRETE FOUR-CHANNEL STEREO SYSTEM

Discrete four-channel stereo is a system in which each of

the four signals (left front, right front, left rear and right rear) is recorded independently and, when reproduced, remains independent of each other. There is, therefore, absolutely no mixing of the signals. They are reproduced in their original form. Until recently, almost all program materials available in the discrete four-channel form were on tape. In recent months, however, there has also been an increase of discs available in the discrete four-channel form, using the newly-developed CD-4 system. These CD-4 discs can also be played as ordinary two-channel stereo discs, using conventional two-channel stereo equipment. Because these discs are lower in cost than tape, they are expected to become very popular in the near future.

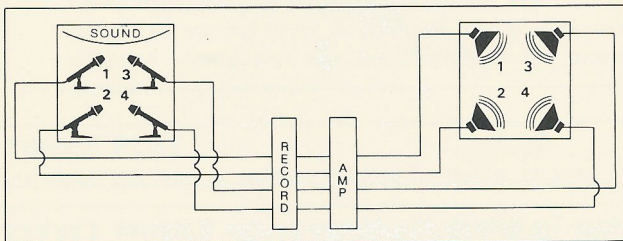
MATRIX FOUR-CHANNEL STEREO SYSTEM

In this method, four signals are encoded into two signals and, in the receiver or amplifier, they are separated into four signals again for playback using the matrix decoder.

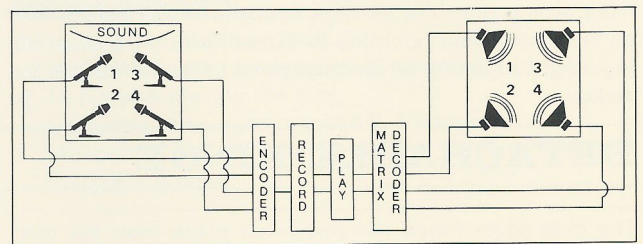
Ordinary two-channel stereo sources include not only left and right signals but also a multitude of other signals which indicate depth between the front and the rear. These other signals are detected by the matrix circuit and reproduced by the rear speakers to gain a full stereophonic sound field.

Therefore, this method has the feature of being able to reproduce a four-channel effect from all two-channel stereo sources.

DISCRETE FOUR-CHANNEL STEREO



MATRIX FOUR-CHANNEL STEREO

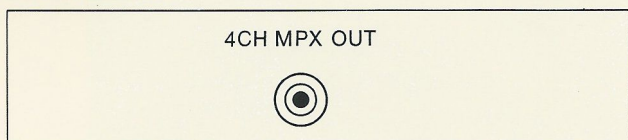


The term CD-4 disc used in these operating instructions refers to any discrete 4-channel disc, including those labeled "Quadradisc (RCA)", "CD-4", etc.

TERMINALS

FM 4CH MPX OUT terminal

This terminal is included for connection of a four-channel decoder when FM four-channel broadcasting begins at some time in the future.



4 CHANNEL BALANCER

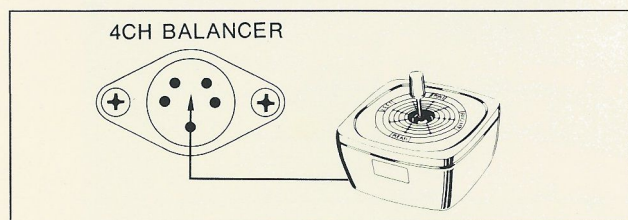
Connection

Plug the connection jack of the 4-CHANNEL BALANCER into the 4 CH BALANCE terminal of this unit.

Operation

The control lever can be adjusted to any angle within 360° horizontally. As it is moved toward the right, the listening area moves toward the left. In this way, the ideal listening area moves according to the direction in which the control lever is moved. When the control lever is moved down completely in any direction, no sound is produced from the opposite direction.

For instance, when the lever is moved down to the right completely, the left speakers do not produce any sound, and if it is moved down to the front, the rear speakers are muted. When the lever is set in the center position, the 4 speakers are well balanced with each other. For special use, you can even make the sound circle around you by turning the lever in a circular pattern.



AC OUTLETS/UNSWITCHED 150W

These power outlets can be used as the AC power source for equipment rated up to 150W.

Use this outlet for the power of a cassette deck or similar equipment.

This power source is always "live", regardless of the setting of the power switch of this unit.

SOME HELPFUL HINTS

- The record change mechanism is well lubricated before leaving the factory; however, after prolonged use, it is advisable to have certain parts relubricated, such as the turntable shaft, gear teeth, bearing, cam track and idler pulley shaft. Only high-quality grease should be used. Grease should never contact any rubber or parts which contact rubber parts.

SOME HELPFUL HINTS

- Keep the stereo music system away from heating appliances and electrical noise-generating devices such as fluorescent lamps and motors.
- The cabinet of your stereo music system should be given the care which you would afford to any piece of fine furniture. The front window should be cleaned with a soft cloth moistened with a mild soap-and-water solution. NEVER USE A SOLUTION CONTAINING BENZOL OR PETROLEUM.

HOW TO USE THE STYLUS CLEANER

- If the stylus is used with dust or dirt on its tip, it will not contact the disc groove completely, nor trace perfectly, resulting in sound deterioration as well as damage to both the disc and the stylus tip. Be sure, therefore, to clean away dust and dirt carefully with the included stylus cleaner, moving it from the base of the stylus-lever toward the stylus tip.

Be especially careful to clean away all dust and dirt from the stylus tip before playing discrete 4-channel discs because such dust may result in abnormal noise.

Stylus Cleaner for superior sound

Take off cap, moisten brush by moving bottle from side to side, and clean up stylus tip by brushing it several times.

- Clean discs with a good quality disc cleaner.

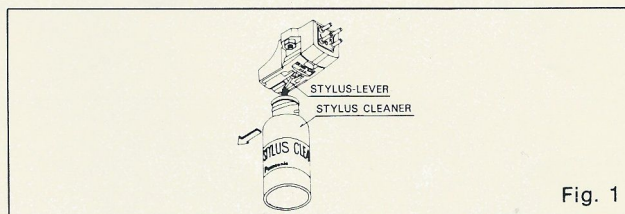


Fig. 1

ANTENNAS

AM Antenna: The built-in extra-sensitive ferrite core antenna assures excellent AM reception in most areas.

FM Antennas: Built-in line antenna: This unit has been connected to the built-in FM line antenna at the factory.

Extend the power cord completely and change the direction of the power cord until optimum FM or FM stereo reception is obtained.

External FM Antenna: Convenient FM antenna terminals are provided at the back of the receiver to connect an external antenna. For FM or FM stereo reception in fringe areas, or where the built-in line antenna does not provide satisfactory reception, connect an FM dipole antenna to the FM antenna terminals. Always disconnect the built-in antenna when connecting an external FM antenna. Your Panasonic dealer is most familiar with the type of reception in your particular area and, if necessary, should be consulted for further information.

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MATSUSHITA ELECTRIC OF CANADA LTD.

40 Ronson Drive, Rexdale, Ont.

TECHNICAL SPECIFICATIONS

AMPLIFIER SECTION

Power Output (P.M.P.O.)	56 watts at 8 ohms
Power Output (M.P.O.)	28 watts (IHF) at 8 ohms
Frequency Response	20 Hz to 30,000 Hz (-3 dB, CPO)
Input Sensitivity and Impedance (for rated output)	
Phono	2.5 mV: 18 k ohms 66 dB
Tape	170 mV, 60 k ohms 70 dB
Tape Output Level	170 mV 4.7 k ohms

FM TUNER SECTION

FM Usable Sensitivity	2.8 μ V (IHF)
FM Harmonic Distortion	0.7% (30%, 60 dB)
Signal-to-Noise Ratio	60 dB (100%, 60 dB)
FM Stereo Separation	37 dB 30%, 60 dB at 1 kHz
Capture Ratio	1.5 dB (IHF)

AM TUNER SECTION

AM Sensitivity	20 μ V 300 μ V/m (IHF)
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RECORD PLAYER SECTION

System	Fully automatic turntable
Motor and Turntable	2-pole induction motor 11" turntable
Cartridge	Semiconductor for discrete 4-channel disc
Stylus	Diamond

SPEAKER SYSTEM

Speaker	2-way (6 $\frac{1}{2}$ " + 2 $\frac{1}{2}$ ") air-suspension type
Impedance	8 ohms

DIMENSIONS (W x H x D)

Receiver	17 $\frac{13}{16}$ " x 5 $\frac{11}{16}$ " x 15 $\frac{3}{8}$ "
Automatic turntable	17 $\frac{1}{2}$ " x 8 $\frac{1}{16}$ " x 14 $\frac{3}{16}$ "
Speaker system	11 $\frac{7}{16}$ " x 18 $\frac{1}{8}$ " x 7 $\frac{11}{16}$ "

WEIGHT

Receiver	16 lb. 5 oz.
Automatic turntable	13 lb. 4 oz.
Speaker system	9 lb. 8 oz. each

POWER SUPPLY

AC	120V 60 Hz
Power	66 watts (Receiver 50 watts, Automatic turntable 16 watts)

ACCESSORIES

• Discrete 4-channel test disc	1
• Stylus cleaner	1
• Manual spindle	1
• 45 RPM adaptor	1
• Automatic spindle	1

SERVICE

Warning concerning cover removal.

NOTE: To be serviced by qualified technicians only.

No service information is provided for customers.

LOCATION OF SERIAL NUMBER

You will find the SERIAL NUMBER on the bottom of receiver cabinet.