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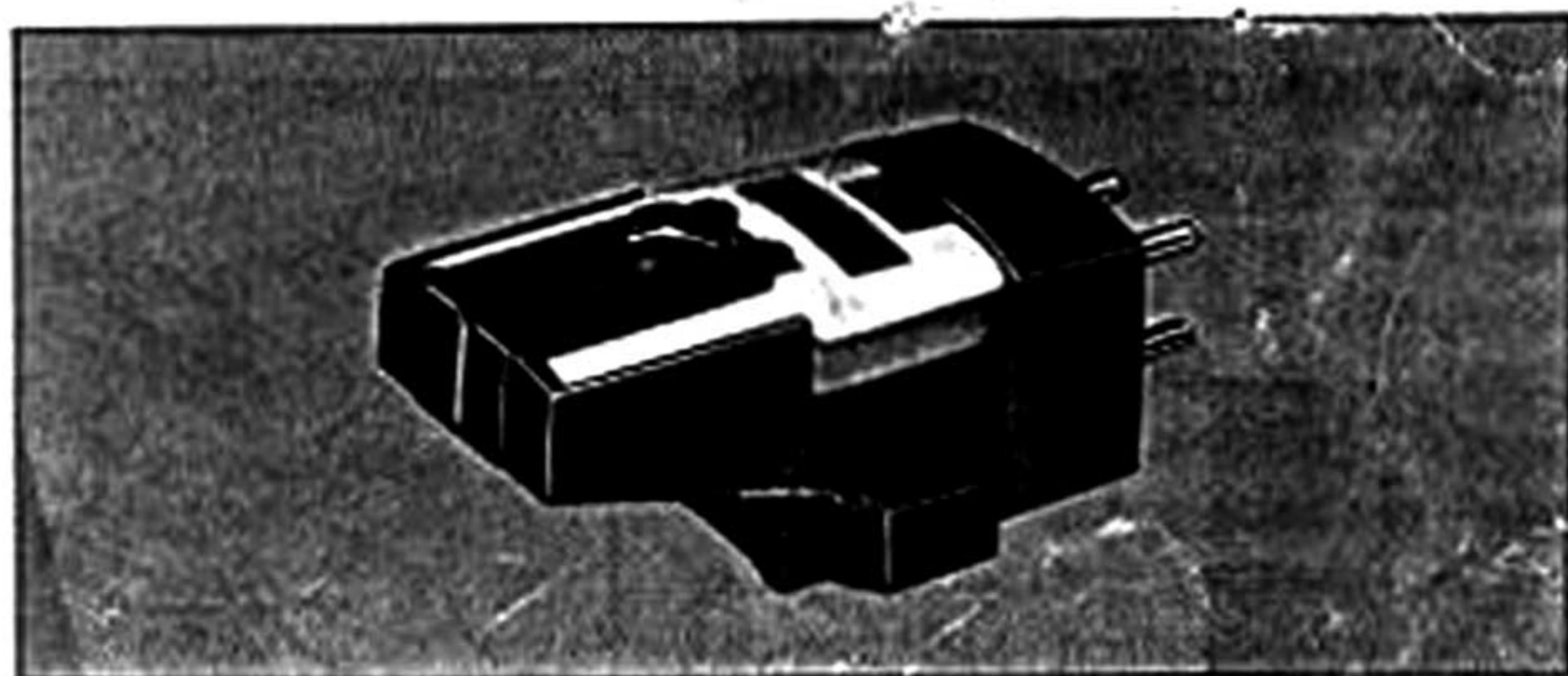
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Operating Instructions

Panasonic

HI-FI COMPONENTS

Panasonic



MODEL EPC-451C

Before operating this set, please read these instructions completely

- In mounting the cartridge, consult the instruction booklet by which your turntable or pickup has been accompanied.
- Cartridge installation is easier if the head shell of the pickup is first removed, if this is possible.
- After the cartridge has been installed, insert the stylus assembly.

SHELL WEIGHT

A	3.3 g
C	2.5 g
D	8 g

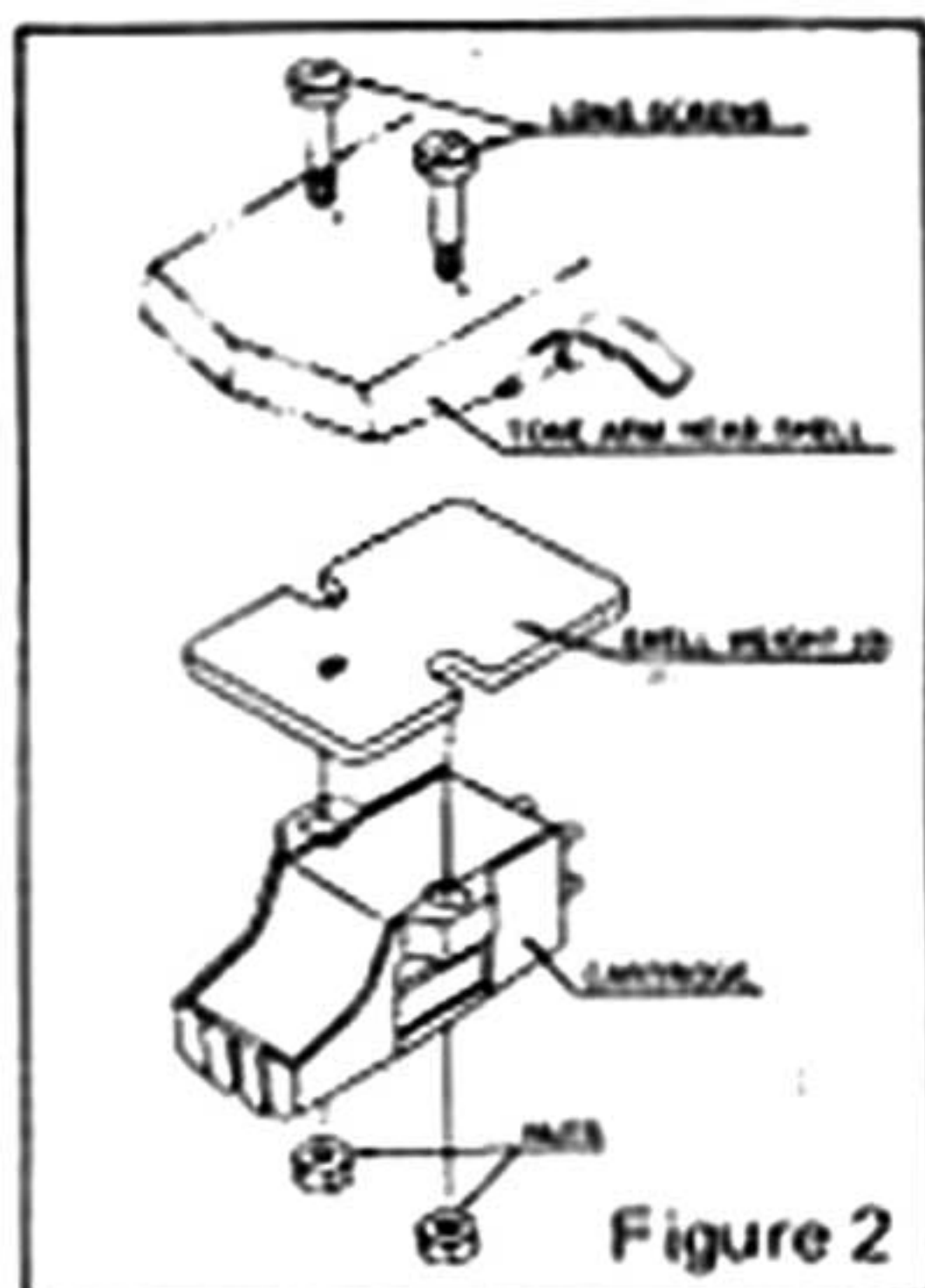


Figure 2

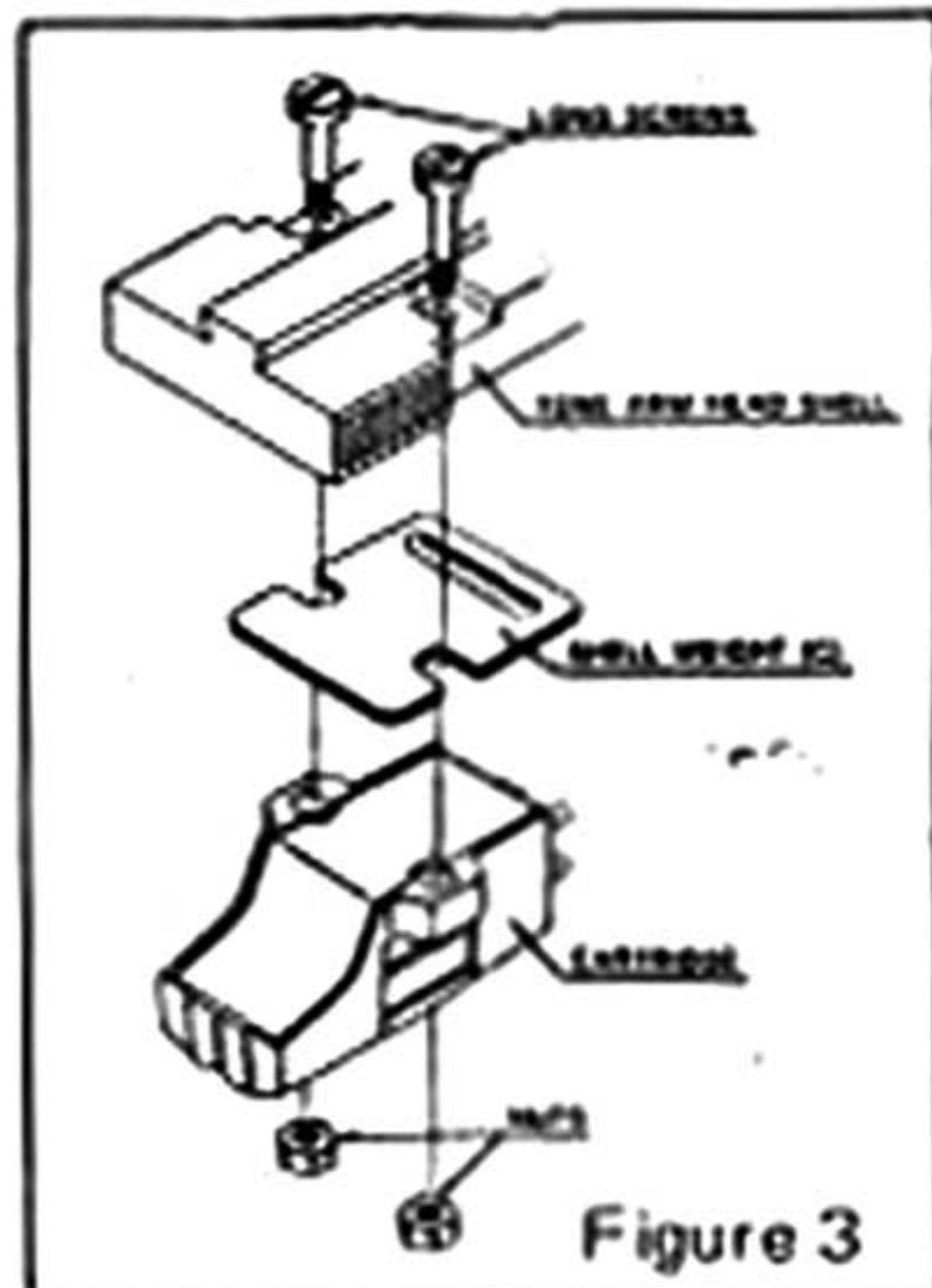


Figure 3

CONNECTION OF THE CD-4 DEMODULATOR

- Connect the output terminals of the player to the CD-4 DEMODULATOR. This cartridge utilizes "the piezo resistance effect" in semiconductor material, and therefore, requires the phono input terminals for semiconductor cartridge like MODEL SE-405H DEMODULATOR has.
- When connecting to the DEMODULATOR, follow the instructions of the DEMODULATOR.

ADJUSTMENT OF THE STYLUS PRESSURE

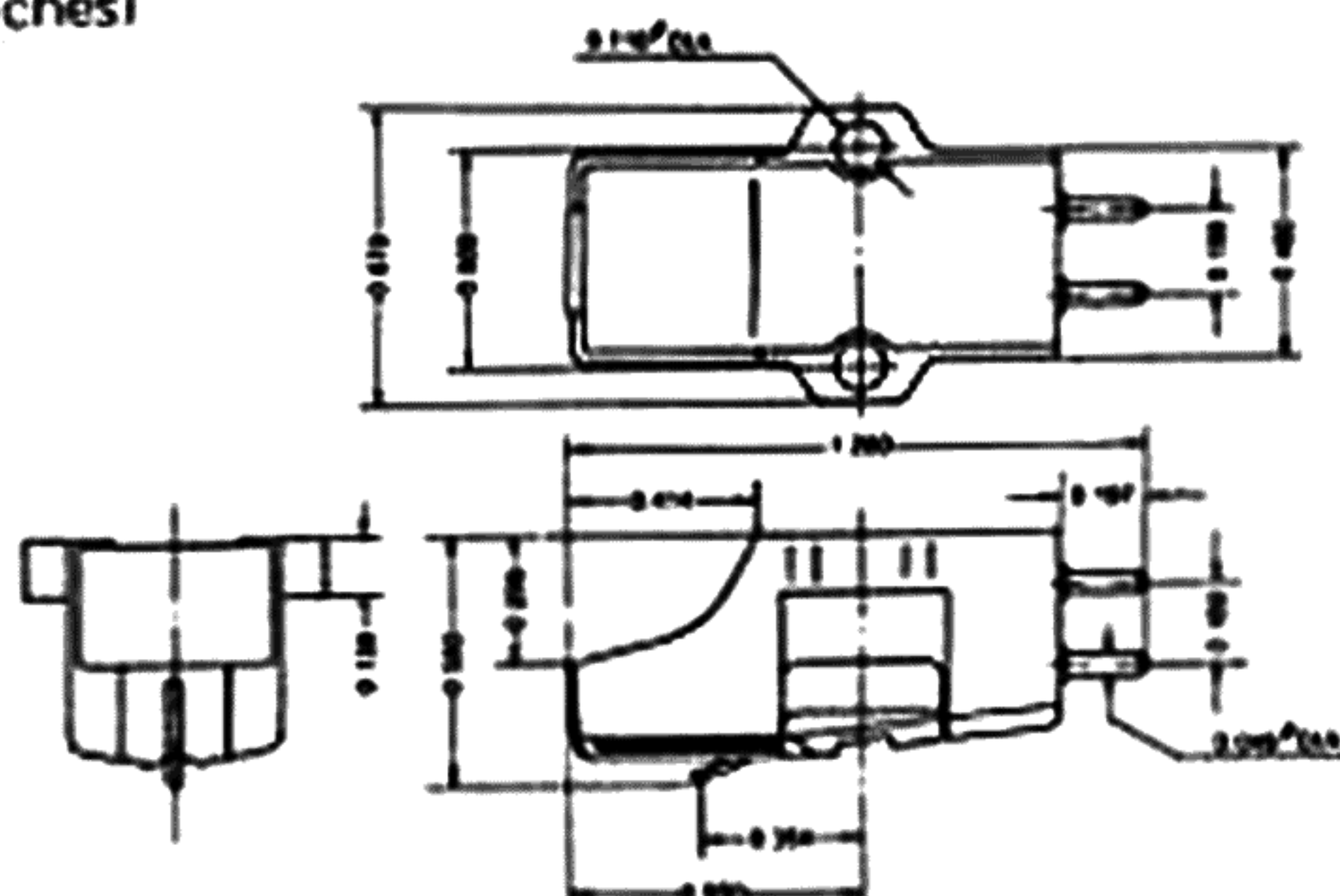
- Adjust the stylus pressure when you have installed the cartridge EPC-451C on the pickup of your turntable. In adjusting the stylus pressure the cartridge EPC-451C should be used only with a stylus pressure of 2.0 to 3.0 grams.

STYLUS REPLACEMENT

- Carefully grasp the stylus holder and pull it as shown in figure 1.
- When replacing with a new stylus, be careful not to touch the stylus tip, and insert the stylus hole of the cartridge until it is securely fixed. (Click is heard)

DIMENSIONS

(in inches)



Matsushita Electric Corp. of America
1 Panasonic Way, Secaucus, New Jersey, 07094.
Matsushita Electric of Hawaii, Inc.
320 Waiakamilo Road, Honolulu, Hawaii 96817
Matsushita Electric of Canada Ltd.
40 Ronson Drive, Rexdale, Ont, M9W 1B5 Canada

Printed in Japan

S1175D1 SFC-DS45101

This stylus, of course can playback ordinary stereo and matrix 4-channel records with high fidelity.

WELL MATCHED TO THE TRANSISTORIZED CIRCUIT AND HUM FREE

- This cartridge can be matched well to the transistorized circuit because its internal impedance is pure resistance of 1000 Ohms. In other words, it does not contain any coil nor capacitance like the magnetic or the ceramic has, so, it is hum free caused by leakage flux from phono motor and transformer, and also free from fluctuations of power supply frequency.

"MICRO-COUPLER" SYSTEM

- In this system, the vibration picked up with stylus tip from a fine record groove (especially, fine in CD-4 records) is transmitted directly to the semiconductor elements through a tiny synthetic rubber ring ("Micro Coupler").
"Micro-Coupler" system overcomes the defects in conventional "V-shape resolver" type.
"Micro-Coupler" can transmit more ultra-sonic frequency, and get

FEATURES

FREQUENCY RESPONSE OF 0 TO 50,000 Hz

- In order to play CD-4 records perfectly, it is necessary that the cartridge has a frequency response range from 20 to 45,000Hz. The frequency response of this cartridge is from 0 to 50,000Hz. This is sufficient for CD-4 playback.
This cartridge can play not only CD-4 records but also conventional stereo records and matrix 4-channel records with accuracy and high fidelity.

HIGH SENSITIVITY WHICH DERIVES FROM THE "PIEZO RESISTANCE EFFECT" OF SEMICONDUCTOR STRAINGAGE ELEMENTS

- This cartridge utilizes the "piezo resistance effect". That is, the resistance value of the semiconductor materials varies in proportion to the force applied to it.
In the transducer, element a tiny silicon pellet precisely processed is used to convert mechanical energy into electrical energy. There is no problem of noise generation, because the noise level of this cartridge is the same as that of carbon film resistor, different from a transistor or a diode.

We want to thank you for selecting the Panasonic EPC-451C cartridge. This is a semiconductor cartridge especially designed for CD-4 discrete records. And of course, ordinary stereo records and MATRIX 4-channel records can be played with optimum performance. To receive optimum performance from this cartridge, we recommend that you carefully read these instructions.

INSTALLATION OF THE CARTRIDGE

- Before installing the cartridge into the head shell, we recommend that the stylus assembly be temporarily removed to prevent damage to the stylus tip. (Figure 1.)
- Install the cartridge so that it is perpendicular to the record surface (when looking from the front and the side), using the included screws and shell weight
- Select the shell weight according to your tonearm.

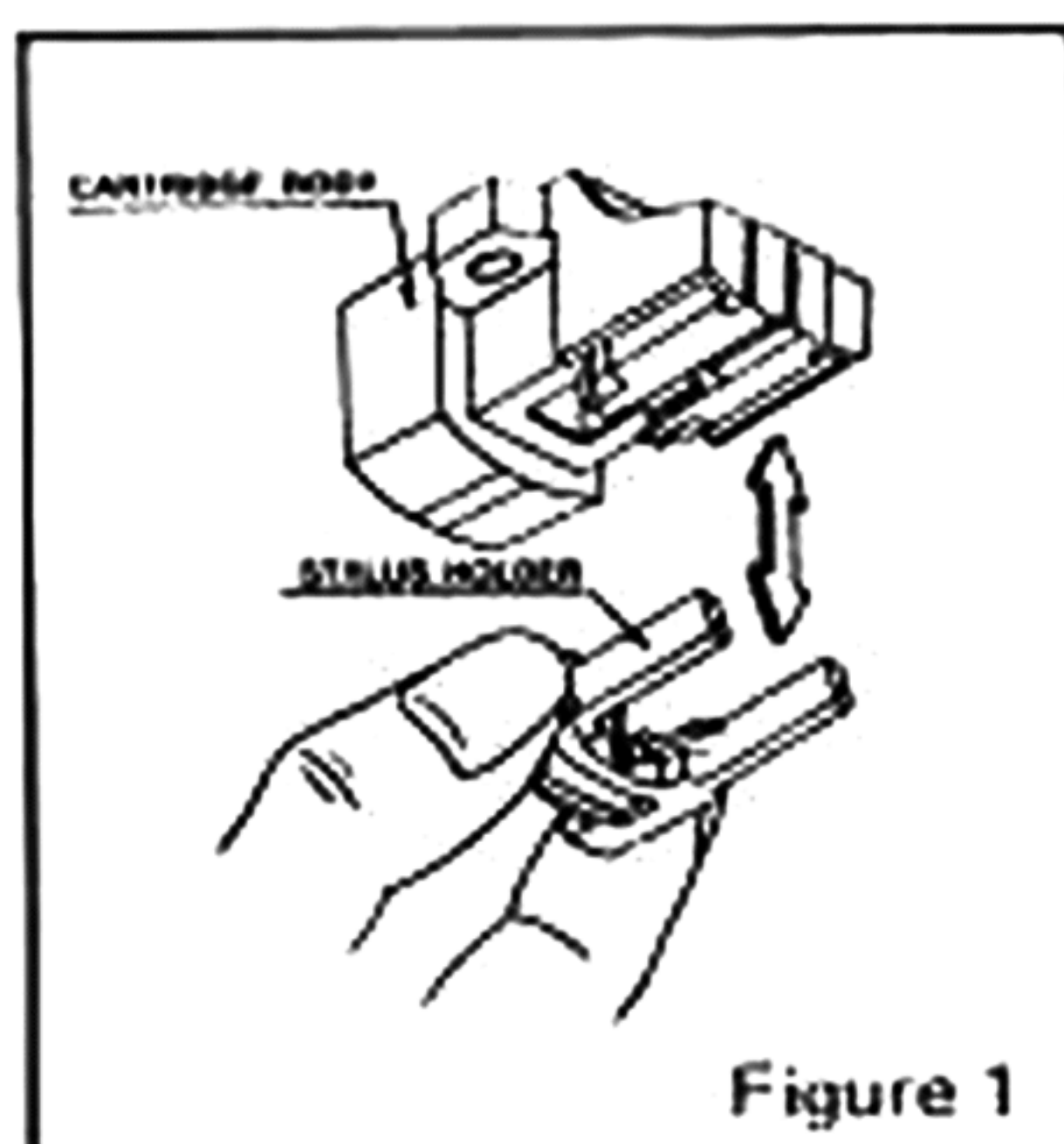


Figure 1

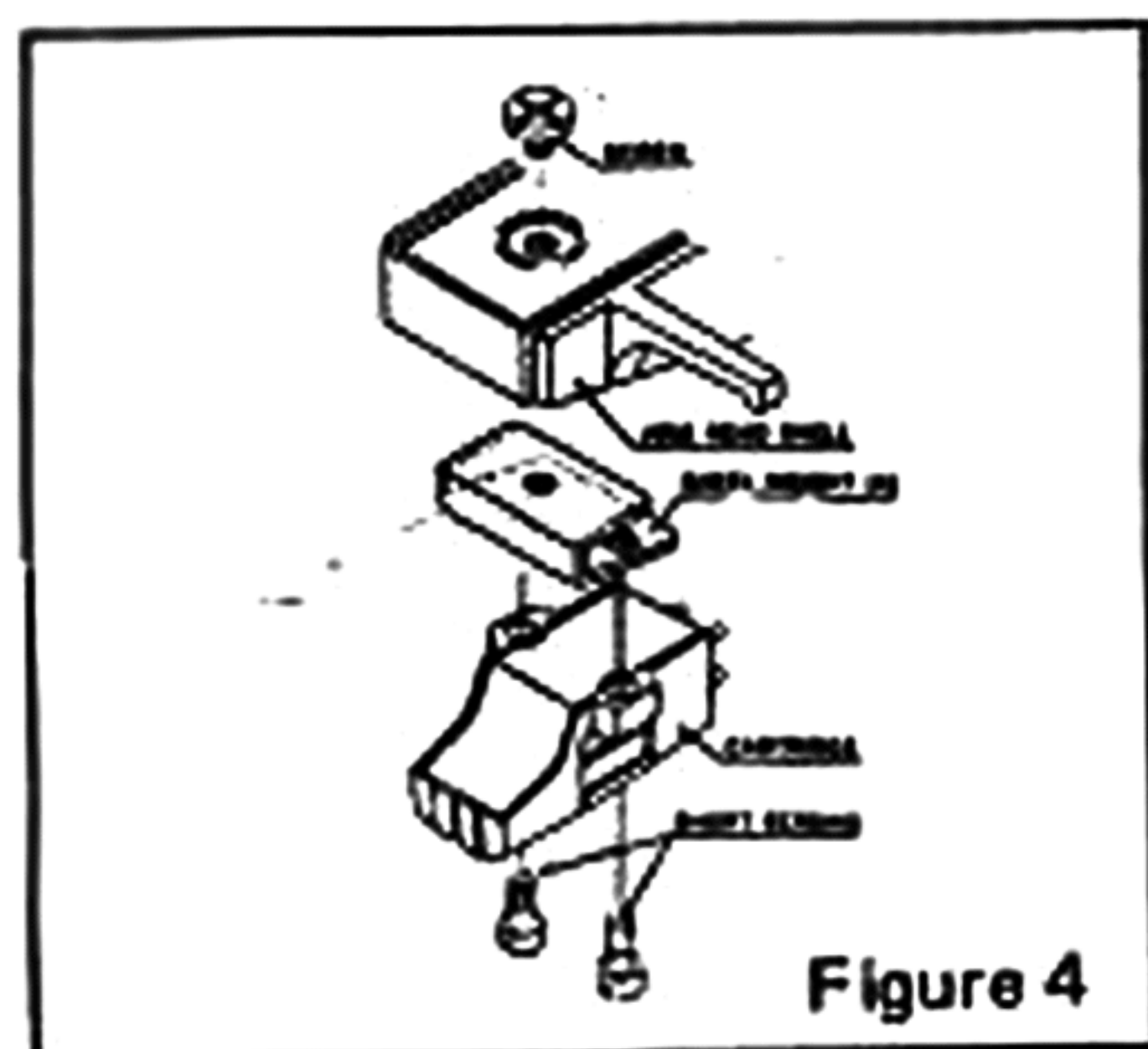


Figure 4

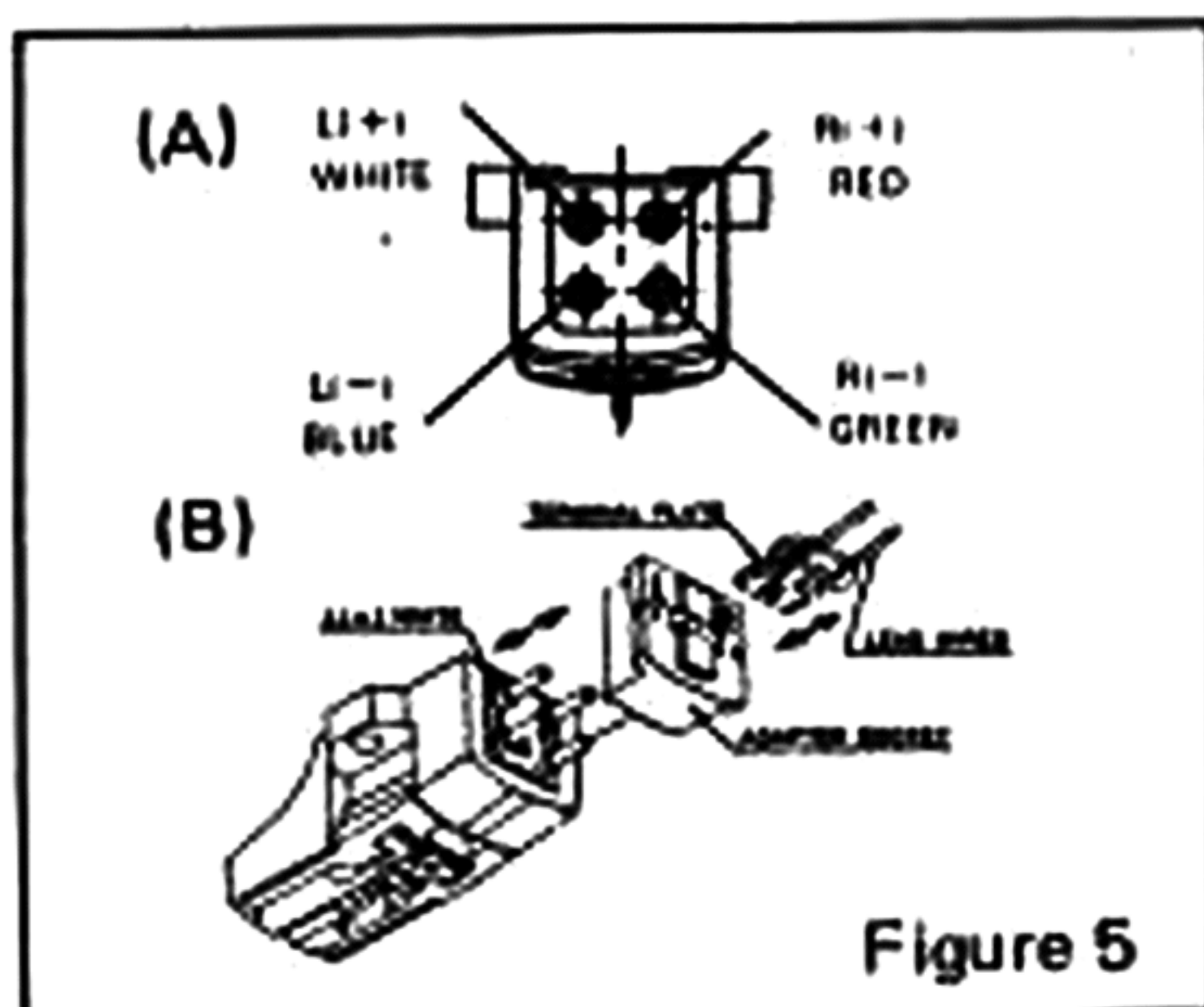


Figure 5

CONNECTION OF THE LEAD WIRES

- Make connection of lead wires as shown in figure 5-(A).
- If this unit is used with panasonic model #300, connect the read wires by using the included adaptor socket as shown in figure 5-(B).
- Never attempt to solder the lead wires directly to the cartridge terminal pins.

- The stylus life is approximately 300 to 400 hours, and should be replaced at or before that time.

OPERATION NOTES

HANDLE THE STYLUS TIP CAREFULLY

- The stylus has been very precisely produced so that it traces the grooves with micro exactness. Be sure to avoid moving it with finger tip or applying force to it. Be careful never to drop the stylus tip to the surface of the record. For additional protection, use the stylus cover when the cartridge is not being used.

REMOVE ALL DUST AND DIRT FROM THE STYLUS TIP AND THE RECORD

- If the stylus is used with dust or dirt on its tip, it will not contact the record groove completely, nor trace perfectly,

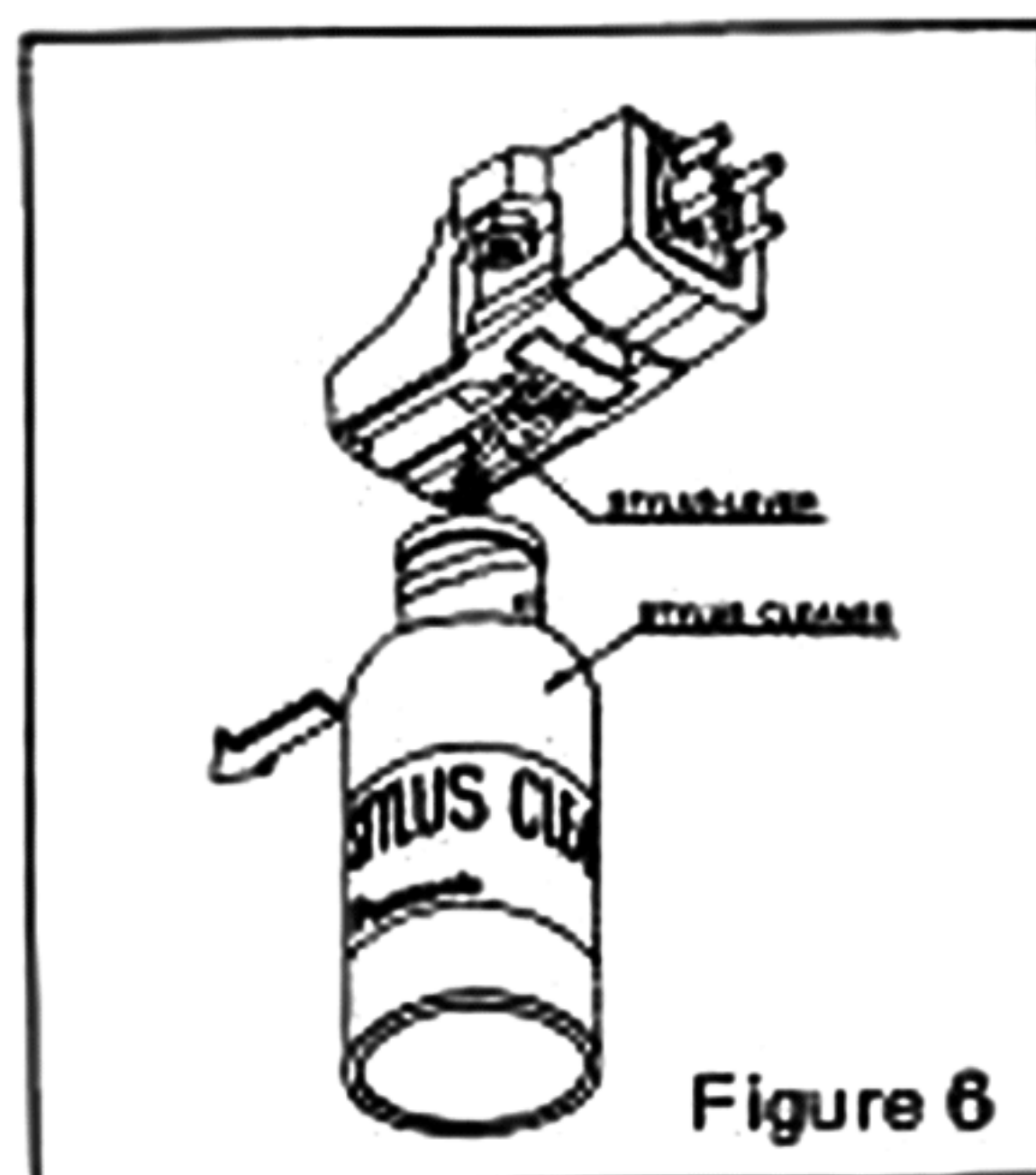


Figure 6

more channel separation especially at high frequency than the conventional "V-shape resolver".

Therefore, this "Micro-Coupler" (cartridge EPC-451C) can play CD-4 records successfully, and leads you to excellent CD-4 sound.

SPECIFICATIONS

Model	EPC-451C
Type	Semiconductor cartridge
Frequency characteristics . . .	0 ~ 50,000Hz
Rated output level	3mV (5cm/sec, 1 kHz, lateral, 4mA)
Separation	More than 20 dB (1 kHz)
Impedance	1000Ω pure resistance
Compliance	8×10^{-6} cm/dyne
Stylus pressure range	2.0 ~ 3.0 g
Stylus tip	Special diamond for 4-channel, stereo records
Cartridge weight	3.2g
Replacement stylus	EPS-451QD

Specifications, design and other details are subject to change, without prior notice, at any time in order to improve performance.

When 4mA is applied to the cartridge per channel, the output voltage of the cartridge is about 3mV, the noise to signal ratio of this cartridge results more than 70dB. And the frequency response characteristics of this cartridge is equalized for RIAA recording curve in it self. Therefore, it does not requires the equalizer, amplifier and virtually can produce about 30 times greater than ordinary magnetic cartridges. Internal impedance of EPC-451C (non-inductive and non-capacitive) is about 1000 Ohms pure resistance, different from ordinary magnetic or ceramic type cartridges.

Therefore, there is no loss at high or low frequency response according to the capacitance of the output shield cables between the cartridge and the DEMODULATOR or the amplifier. That is, the ordinary shield cables can be used even for CD-4 reproductions.

So, there are no problems even when the record player is placed separate far from the DEMODULATOR or the amplifier.

SPECIAL NAKED DIAMOND STYLUS TIP FOR CD-4

- In order to pick up the high frequency signals of CD-4 records, the stylus tip is made of the tiniest naked diamond tip which is polished by special method.

resulting in sound deterioration as well as damage to both the record 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. (Refer to figure 6.)

- Be careful to clean away all dust and dirt from the stylus tip before playing discrete 4-channel record 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 stylus tip by brushing it several times.

(CAUTION)

- Tighten cap after use.
- Non toxic, but don't swallow contents.
- Combustible, keep from heat or flame.
- Avoid prolonged exposure to sunlight.
- Keep out of reach of children.

CLEAN THE RECORD WITH A GOOD QUALITY RECORD CLEANER