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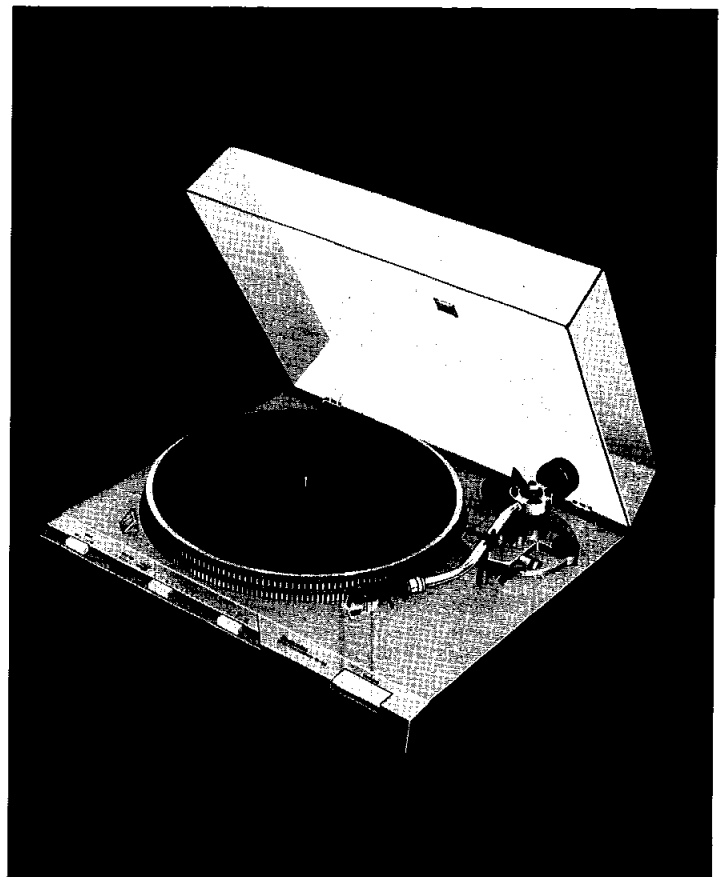
Technics

Turntable System

SL-D3

1979.

Operating instructions



We want to thank you for selecting the SL-D3.
For optimum performance, we recommend that you read these instructions carefully.

Caution for safe use of this apparatus

Caution

- This apparatus is double insulated, safety earth not required.

Important

- The wires in this mains lead are coloured in accordance with the following code:

Blue:	Neutral
Brown:	Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows. The wire which is coloured **BLUE** must be connected to the terminal which is marked with the letter **N** or coloured **BLACK**.

The wire which is coloured **BROWN** must be connected to the terminal which is marked with the letter **L** or coloured **RED**.

- This equipment should be disconnected from the mains when not in use.

Before use

Caution:

Never connect the AC power plug before assembly has been completed.

Attach the dust cover last, so that assembly and adjustments can be made most conveniently.

■ Checklist of parts

Turntable unit	1
Turntable platter	1
Turntable mat	1
Dust cover	1
45-rpm adaptor	1
Balance weight	1
Headshell/cartridge	1
Shell weight	1

Assembly and set-up

■ Installation of turntable platter

1. Place the turntable platter on the center spindle.

Note:

The rotor is connected to the underside of the turntable platter. (The magnet of the motor is attached to the turntable platter.) To maintain optimum performance, extra care should be taken to prevent adhesion of dust or iron filings to the magnet and not to damage the magnet by dropping it.

Do not remove or loosen the screws. Should the position of the fixed magnet be altered by loosening the securing screws, the rated performance of the unit cannot be guaranteed. (See Fig. 2.)

2. Place the turntable mat on the platter.

Note:

After having placed the turntable mat on the turntable platter, manually rotate the turntable platter clockwise about 10 times.

This will disengage the automatic mechanism from the tonearm gear, which, in rare cases, may have moved out of its normal position during transportation.

■ Installation of headshell (See Fig. 3.)

Insert the headshell into the front end of the tubular arm, and turn the locking nut clockwise (in the direction shown by the arrow "A"), with the headshell firmly held horizontally.

■ Installation of balance weight (See Fig. 4.)

Place the balance weight on the rear shaft of the tonearm.

■ Adjustments of horizontal zero (0) balance and stylus pressure

1. Remove the stylus protector, if your cartridge has a detachable one. Be careful not to touch your fingers to the stylus tip.
2. Release the arm clamp and lift the tonearm from the arm rest to free it.
3. Turn the entire balance weight clockwise (indicated by the arrow "A") or counterclockwise (indicated by the arrow "B") until the tonearm is approximately balanced horizontally (floats freely). (See Figs. 5 and 6.)

Note:

Fig. 6-1

Excessive forward advancement of the balance weight, causes the cartridge side to be lowered.

Fig. 6-2

Excessive backward retreatment of the balance weight causes the cartridge side to be raised.

Fig. 6-3

Upon balancing between the balance weight and cartridge, the tonearm is held horizontal.

During the adjustment of the horizontal zero (0) balance, be careful that the stylus tip of the cartridge does not contact the turntable mat or turntable base.

4. After the tonearm is horizontally zero (0) balanced, temporarily refasten the tonearm with the arm clamp.

(See Fig. 7.)

5. Hold the balance weight stationary with one hand as shown in the picture, and rotate only the stylus-pressure ring to bring the numeral "0" of the ring into alignment with the center line on the tonearm rear shaft.

The adjustment of the horizontal zero (0) balance is now completed. (See Fig. 7.)

6. After adjusting the horizontal zero (0) balance, turn the balance weight clockwise in the direction of the arrow and align to the correct stylus pressure. (See Fig. 8.)

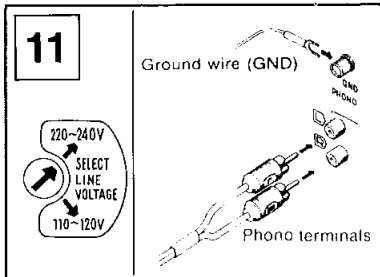
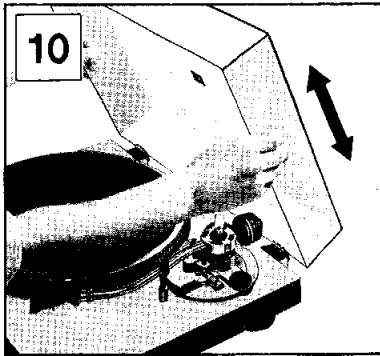
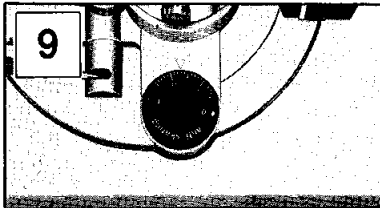
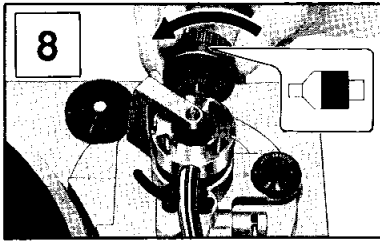
(The stylus pressure of this unit is 1.75 g.)

As the stylus-pressure ring moves in step with the balance weight, proper stylus pressure can be selected by directly reading the graduated ring.

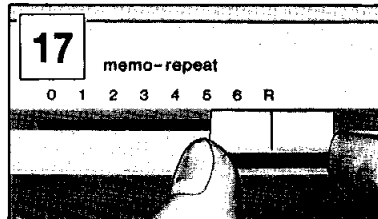
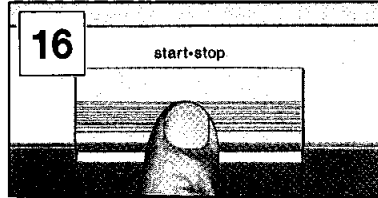
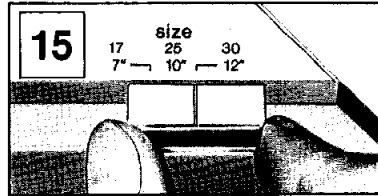
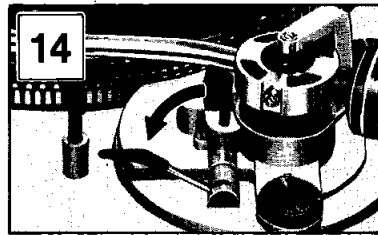
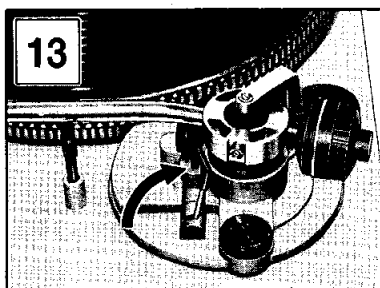
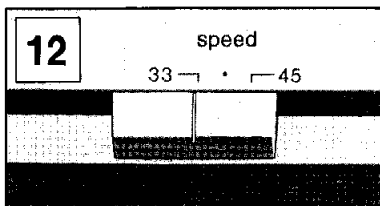
Note:

Set the stylus pressure to the maximum recommended value for your cartridge in cases where the record has an extremely high recording level, or where the unit is operated in a room at low temperature, or in places in which the unit is subjected to vibrations.

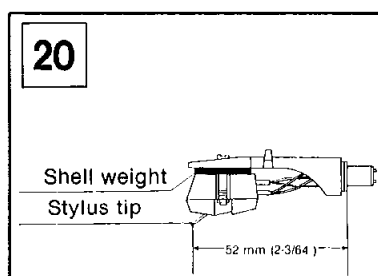
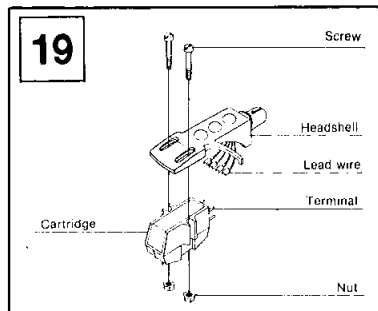
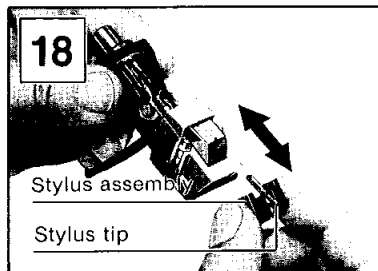
Assembly and set-up



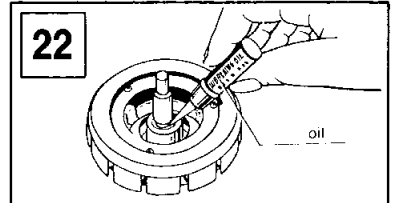
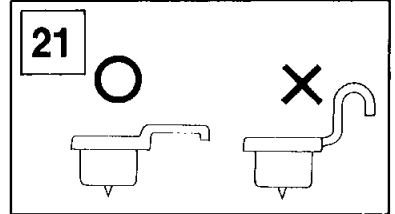
How to operate



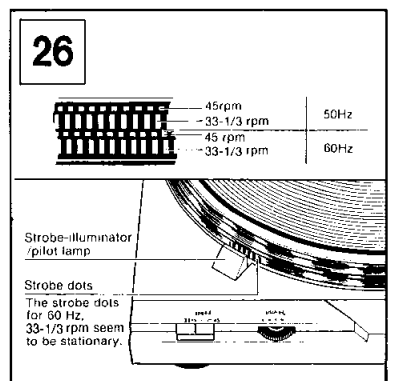
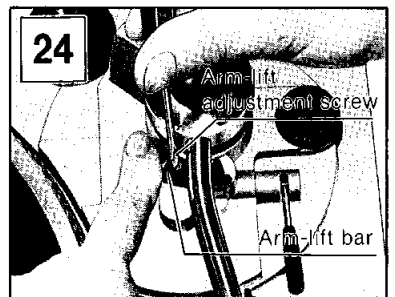
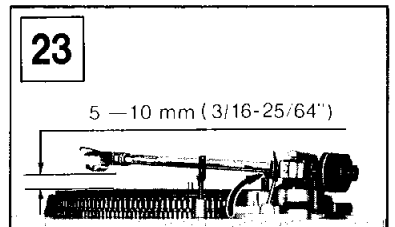
Replacement of parts



Notes and maintenance

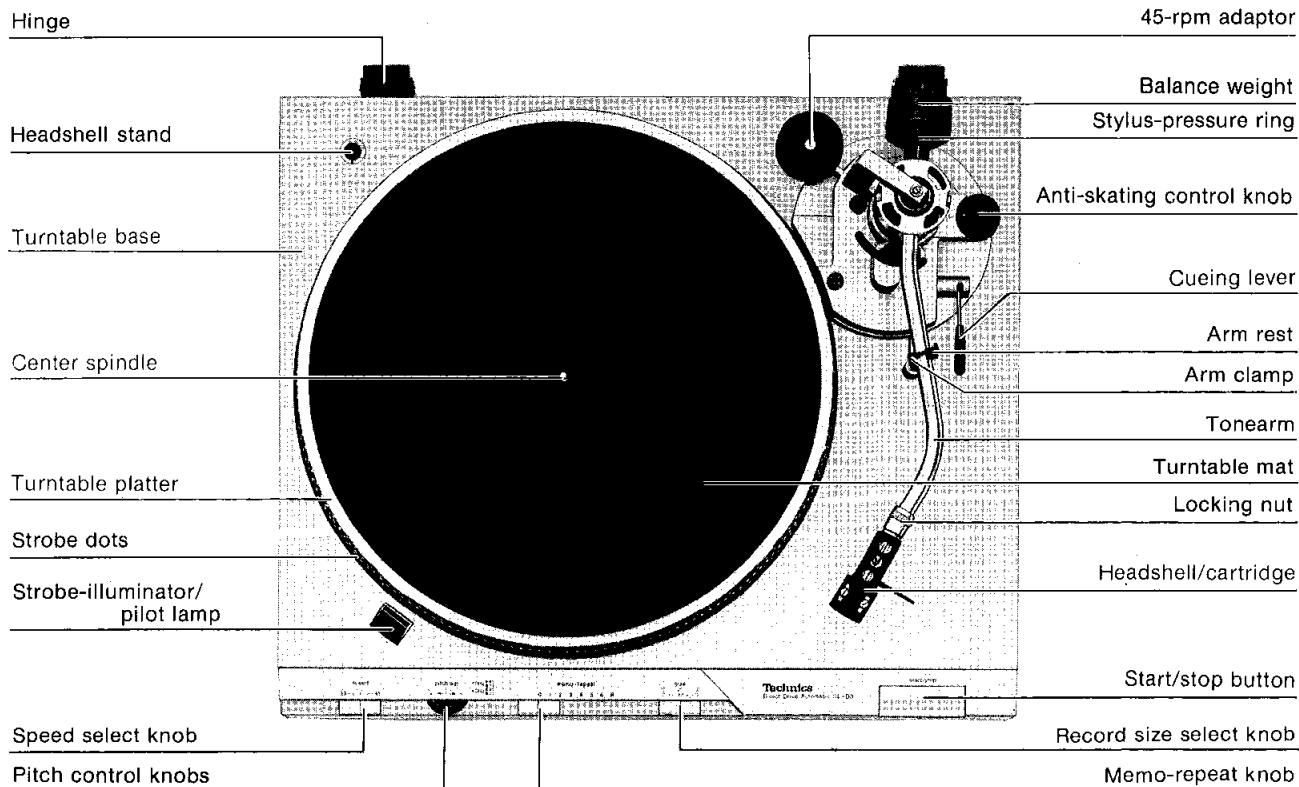


Adjustments

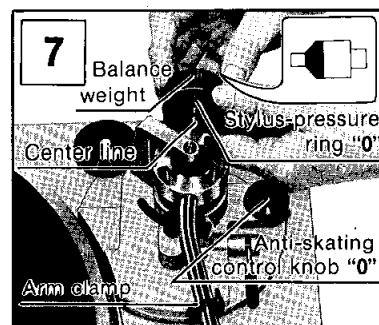
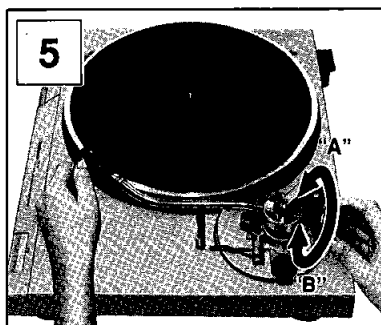
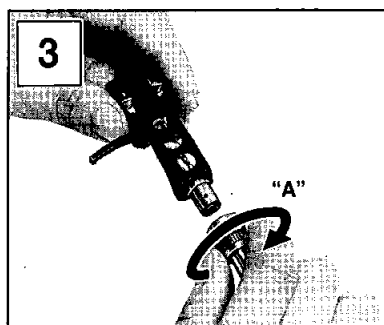
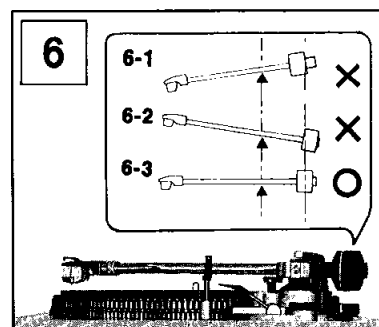
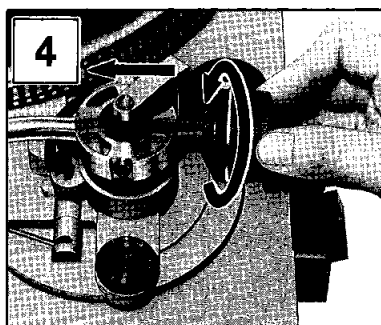
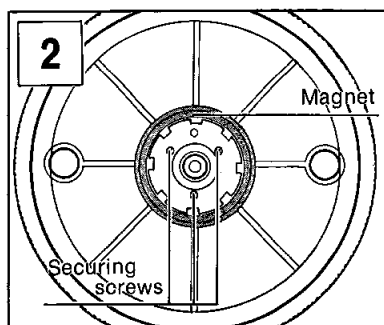


Parts identification

1



Assembly and set-up



■ Adjustment of anti-skating control

Set the anti-skating control knob to the same value as the stylus pressure. (See Fig. 9.)

Note:

When a cartridge with integral dust brush is used, follow the cartridge manufacturer's recommendation for adjusting both stylus pressure and anti-skating force.

■ Installation of dust cover

Place the dust cover into position from directly above, holding it at both sides. For detaching the dust cover, be certain first to raise it as illustrated before removal. (See Fig. 10.)

Note:

Opening or closing of the dust cover during play should be avoided. This may not only cause undesired vibrations, but also result in skipping of the stylus.

If you must open the dust cover during play, do so as gently as possible.

Placement

- Place the unit in a stable and horizontal position, where there is little or no vibration.

- Locate the unit as far away from the speakers as possible and isolate the unit from sound radiation from them.

- Do not place the unit where it is exposed to direct sun, dust, moisture or heat.

- Keep it in a well ventilated place.

Connections

■ Connect the AC power plug (See Fig. 11.)

Connect the AC power plug to an AC wall socket.

Caution:

Make sure that the turntable's AC line-voltage selector is matched to your local voltage before connecting the AC power plug.

Never connect to a DC socket.

If the pre-selected voltage is different from your local voltage, turn the AC line-voltage selector with a screw-driver so that it corresponds to your local voltage.

The AC line-voltage selector is located under the turntable platter.

■ Connect the output terminals (See Fig. 11.)

Output terminals	Amplifier or Receiver
L (White) —————→	L Channel
R (Red) —————→	R Channel
GND (Spade lug) —————→	GND

Note:

Be sure to connect the ground terminal firmly to the amplifier or receiver. If this connection is not made or is loose, a power source "HUM" will result.

How to operate

1. Place a record on the turntable mat.
2. Set the speed select knob to the desired record speed. (See Fig. 12.)
3. Remove the stylus protector, if your cartridge has a detachable one.
4. Release the arm clamp.
5. Set the cueing lever to the up position. (See Fig. 13.)
6. Move the tonearm over the desired groove.
The strobe-illuminator/pilot lamp will light up and the turntable platter will start to rotate.
7. Set the cueing lever to the down position. (See Fig. 14.)
The tonearm will descend slowly onto the record and play will begin.

When play is finished, the tonearm will automatically return to the arm rest (auto-return), and the turntable platter will stop rotation.

If the unit is not to be used for some time, set the speed select knob to the neutral "•" position.

Attach the stylus protector, if you have one, to guard the stylus tip from damage.

■ Automatic play

1. Set the speed select knob in the same manner as in manual play and release the arm clamp.
2. Set the record size select knob to the diameter of the record (7" [17 cm], 10" [25 cm], or 12" [30 cm]) you wish to play. (See Fig. 15.)
3. Push the start/stop button. (See Fig. 16.)
The tonearm will move automatically over the lead-in groove and descend slowly onto the record (auto-start). Play will begin.
4. When play has finished, the tonearm will automatically return to the arm rest (auto-return).

■ Repeat play of a record

1. Set the "memo-repeat" knob to the desired number of times you wish to play. (See Fig. 17.)
"R" position enables you to repeat play continuously.

Note:

The "memo-repeat" knob may be set to a desired number, except during automatic start or automatic return cycle. If you start play manually while the "memo-repeat" knob is set to a number, there will be an additional repeat play.

2. Start play in the same way as for automatic play.

■ How to stop play

Push the start/stop button.

The tonearm automatically returns to the arm rest, and the turntable stops rotating.

Note:

Before you operate the start/stop knob, make sure that the "memo-repeat" knob is set at the "0" position.

If this knob is set at any position other than "0", the repeat play is continued by the number of times indicated, even if you Push the start/stop button.

■ How to suspend play

Set the cueing lever to the up position.

The stylus tip of the cartridge will be lifted from the record.

■ When you play a 45-rpm record with a large center hole

Place the 45-rpm adaptor on the center spindle. Set the speed select knob to the "45" position.

Replacement of parts

■ Replacement of stylus (See Fig. 18.)

The unit is furnished with a diamond stylus.

The life of the stylus differs depending on the conditions of use, but it is recommended that you replace the stylus at the first sign of wear. About 500 hours of use is an approximate standard.

The replacement stylus for the unit is the EPS-270SD.

1. Remove the headshell/cartridge from the tubular arm.
Hold the stylus assembly with your fingers and withdraw it slantwise, as shown in the picture.
2. Align the new stylus assembly with the square opening of the cartridge main body, and push it into the opening positively as far as it will go.

■ Installation of cartridge (See Fig. 19.)

When you install a cartridge, refer to the operation instructions of that cartridge.

During installation, attach the stylus protector to guard the stylus tip from damage.

1. Connect the lead wires to the cartridge terminals.
The terminals of most cartridges are colour coded. Connect each lead wire to the terminal of the colour.
White (L+) Left channel+
Blue (L-) Left channel-
Red (R+) Right channel+
Green (R-) Right channel-

2. Install a cartridge to the headshell, and tighten it with screws provided with the cartridge.

Note:

Use the shell weight only for a light weight cartridge.
(Less than 6.0 g.). (See Fig. 20.)

■ Adjustment of overhang (See Fig. 20.)

The overhang of this unit is 15 mm.

Loosen the mounting screws and move the cartridge forward or backward until the distance between the stylus tip and the plug becomes 52 mm (2-3/64") as shown in the picture.

Tighten the mounting screws without moving the cartridge. Adjust horizontal zero balance, stylus pressure and arm-lift height whenever you change the cartridge.

Notes and maintenance

- Do not grasp or hold the tonearm during operation of the automatic mechanism.

- Use utmost care when handling the platter and when placing it on the motor shaft to prevent possible damage to the magnet.

- Records having sizes other than 17 cm, 25 cm and 30 cm (7", 10" and 12") should be played manually.

Your turntable is designed for automatic handling of records that adhere to accepted industry dimensions. Therefore, use the unit manually for records other than standard sizes.

- When using other headshells, make sure that the headshell configuration is compatible. (See Fig. 21.)

When other types of headshells are employed, the handle portion of the headshell may strike against the inner upper surface of the dust cover during automatic motion of the tonearm. In such a case, we recommend that the dust cover be left open during play.

- Before detaching or attaching the headshell, be sure to turn the power of the amplifier or receiver off.

Detaching or attaching of the headshell with the volume control turned up may cause damage to the speakers.

- Dust and dirt should be carefully removed from stylus tip or records.

Dust and dirt on the stylus tip or record may not only result in deterioration of tone quality, but also cause undue wear of the record and the stylus tip itself.

Special stylus tip brushes and record cleaners can be purchased in most electronic supply houses.

- Wipe the headshell terminals from time to time.

Dust and dirt at the headshell terminals may result in increased "HUM" noise or intermittent sound. Use soft dry cloth to clean the headshell terminals.

- Care should be exercised in handling the turntable platter.

The turntable platter has the rotor (the magnet of the motor) directly connected to it. Therefore, the turntable platter should not be removed from the motor shaft unnecessarily.

Should it become necessary to remove the turntable platter, be sure first to pull the AC power plug out of the socket.

- Wipe the dust cover and turntable base with a soft, dry cloth.

Never use any cleaners containing alcohol, benzine or thinner. Use of a chemical dust cloth should also be avoided. Be sure that the dust cover is not exposed to insecticide spray.

To remove stubborn finger prints or grease spots, detach the dust cover and disconnect the AC power plug.

Use a soft cloth slightly moistened with a mild soap and water solution.

Do not wipe the dust cover during play, or the tonearm may be attracted toward the dust cover due to the generation of static electricity.

- Lubrication (See Fig. 22.)

Apply 2 or 3 drops of oil once after every 2000 hours of operation.

The time interval is much longer than that for conventional type motors (200—500 hours).

Please purchase original oil. (Part number is SFWO 010.)

Adjustments

■ Adjustment of the arm-lift height (See Figs. 23 and 24.)

The arm-lift height (distance between the stylus tip and record surface when cueing lever is raised) has been adjusted at the factory before shipping to approximately 5 to 10 mm. If the clearance becomes too narrow or too wide, turn the adjustment screw clockwise or counterclockwise, while pushing the arm lift down.

Clockwise rotation

—distance between the record and stylus tip is decreased.

Counterclockwise rotation

—distance between the record and stylus tip is increased.

Note:

As the adjusting screw has a hexagonal head, be sure to make the adjustment while depressing the arm lift, or the screw will not move freely.

Also be sure that the hexagonal head retracts correctly into the arm lift when the latter is released.

■ Adjustment for automatic start position (See Fig. 25.) (Remove the rubber cap.)

In cases where the stylus tip sets down outside of the record —**rotate clockwise.**

In cases where the stylus tip sets down too far in the recorded groove —**rotate counterclockwise.**

■ Adjustment for automatic return position (See Fig. 25.)

(Remove the turntable mat.)

In cases where the tonearm tends to return before the playing has finished —**rotate clockwise.**

In cases where the tonearm fails to return after the last groove of the record has been played —**rotate counterclockwise.**

■ Speed adjustment (with pitch-control knob) (See Fig. 26.)

Strobe dots are set on the rim of the turntable platter according to the power-line frequency and the speed of the records. Make adjustment, referring to the strobe-dot indication.

1. Set the speed select knob to the speed to be adjusted.
2. Release the arm clamp and move the tonearm toward the record.

The strobe-illuminator/pilot lamp will light up and the turntable platter will rotate.

3. While turning the pitch-control knob either to the "+" side or "-" side, adjust so that the strobe dots of the turntable platter look as if they were stationary. This represents the correct speed.

"+" direction

The speed of the turntable platter will increase. Turn the knob in this direction if the strobe dots seem to be "**falling back**", i.e. seem to be moving counterclockwise. When the dots appear to be stationary, turntable speed is accurate.

"-" direction

The speed of the turntable platter will decrease. Turn the knob in this direction if the dots seem to be "**running ahead**", i.e. seem to be moving clockwise, until they appear stationary.

Moreover, the pitch control knob can be used for both 33-1/3 rpm and 45 rpm.

Adjustment is to be made according to the selected speed (33-1/3 rpm or 45 rpm).

Note:

Strobe dot pattern

The strobe-illuminator/pilot lamp of this unit employs the standard commercial power source. The frequency of such

power source, when actually measured, has a fluctuation of about 0.2%.

As such a fluctuation of the power source affects the strobe illuminator, the strobe dot pattern also seems to fluctuate to a certain extent. But the unit is not affected by these fluctuations of the power source, since a DC motor is employed.

In other words, rotation of the platter will be constant, and slight shifts in the movement of the dots simply reflect normal drift in the power-source frequency.

Features

- **Front panel controls provide exceptional convenience**
- **Integral rotor/platter structure for stable rotation**
- **"TNRC"* base material provides an acoustic shield**
*"TNRC".....Technics Non-Resonance Compound
- **Low-mass, low-friction gimbal suspension tonearm**
- **Pitch control with illuminated stroboscope**
- **Viscous-damped cueing**
- **Anti-skating control**
- **Hinged, detachable dust cover**
- **Auto-start, auto-stop, auto-return and programmable repeat play make the SL-D3 a pleasure to use.**
Since everything is automatic, you don't need to touch the tonearm unless you want to move to a particular cut on the record. The "memo-repeat" feature allows you to repeat a record up to six times, or indefinitely if you prefer.

Specifications

■ General

Power supply:	~110-120/220-240V, 50 or 60 Hz
Power consumption:	4.5 W
Dimensions:	43.0 × 13.0 × 37.5 cm
(W×H×D)	(16-59/64" × 5-7/64" × 14-49/64")
Weight:	7.0 kg (15.4 lb.)

■ Turntable section

Type:	Automatic turntable Auto start Auto return Auto stop Repeat play
Drive method:	Direct drive
Motor:	Brushless DC motor
Drive control method:	B-FG servo control
Turntable platter:	Aluminum die-cast Diameter 31.2 cm (12-9/32")
Turntable speeds:	33-1/3 rpm and 45 rpm
Pitch control:	10% adjustment range
Wow and flutter:	0.014% WRMS* 0.03% WRMS (JIS C5521) ±0.042% peak (IEC 98A Weighted)

*This rating refers to turntable assembly alone, excluding effects of record, cartridge or tonearm, but including platter. Measured by obtaining signal from frequency generator attached to motor assembly.

Rumble:	-53 dB (IEC 98A Unweighted) -75 dB (IEC 98A Weighted)
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■ Tonearm section

Type:	Universal tonearm
Effective length:	230 mm (9-1/16")
Overhang	15 mm (19/32")
Friction:	Less than 7 mg (lateral, vertical)
Effective mass:	12 g (without cartridge)
Tracking error angle:	Within 2°32' at the outer groove of 30 cm (12") record Within 0°32' at the inner groove of 30 cm (12") record
Offset angle:	22°
Stylus pressure	
adjustment range:	0—2.5 g
Applicable cartridge	
weight range:	6—9.5 g 13.5—17 g (including headshell)
(with shellweight)	3—6.5 g 10.5—14 g (including headshell)
Headshell weight:	7.5 g

■ Cartridge section

Model No.:	EPC-270C
Type:	Moving magnet
Frequency response:	20 Hz to 25 kHz 20 Hz to 15 kHz ±2 dB
Output voltage:	3.2 mV at 1 kHz 5 cm/s. zero to peak lateral velocity (9 mV at 1 kHz, 10 cm/s. zero to peak 45° velocity [DIN 45 500])
Channel separation:	25 dB at 1 kHz
Channel balance:	Within 2 dB at 1 kHz
Compliance (dynamic):	10 × 10 ⁻⁶ cm/dyne at 100 Hz
Stylus pressure:	1.75 ± 0.25 g (17.5 ± 2.5mN)
Load impedance:	47 kΩ to 100 kΩ
Weight:	6.0 g (cartridge only)
Replacement stylus:	EPS-270SD (Elliptical stylus)

Specifications subject to change without notice.
Weight and dimensions shown are approximate.

For longer and safer use of this unit

In order to receive the best service from this unit, and for the safest operation, carefully read the following information.

■ Power source

It is very dangerous to use this unit at a voltage which is different from the rated voltage.

There is danger of combustion if the unit is connected to a power source which is different from the rated voltage.

Be very careful concerning this point.

Direct current cannot be used.

There are some places, such as ships, where direct current is used as the power source. Before connecting the unit, confirm the power source.

■ Connection of power cord

Be sure to never touch the power cord with wet hands because there is danger of electric shock. This is true, of course, of all electric equipment.

Do not pull the power cord.

Never pull the power cord to disconnect it. Always pull the plug only.

■ Location of unit

Choose a place which is not in direct sunlight.

Select a place which will assure good ventilation.

■ Never place heating equipment nearby.

Be sure to keep stoves and other sources of heat away from this unit, because heat radiated by such equipment may cause deformation of plastic parts or damage the cabinet, or, at worst, cause a fire.

■ Especially for families with children

Take care that no small items, such as metal objects, are put inside this unit.

In addition, children should be especially warned not to put anything into the ventilation holes, such as toys or a screwdriver, because these things may cause an electric shock or result in a malfunction of the unit.

■ If water spills on the unit

If water should happen to spill on the unit, from an overturned vase for example, there is danger of fire or electric shock. Disconnect the power plug from the electric outlet immediately, and contact the store from which the unit was purchased.

■ Reconstruction can cause accidents

Absolutely never try to remodel, reconstruct or repair this unit yourself. Do not attempt to touch any internal parts because to do so may result in an electric shock or other accident.

■ Be sure the power is off.

After you have finished using this unit, check once more to be sure that the power is off. If the unit is left with the power on for a long period of time, it may not only be damaged, thus shortening its useful life, but may also lead to a dangerous accident.

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

Printed in Japan

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S0579A0

Technics

'83

Turntable System

SL-Q210 series

Operating instructions



TAP is the standard mark for plug-in-connector type. Products carrying this mark are interchangeable and adaptable among each other.

This apparatus was produced to "BS800: 1977"

Before operating this products, please read these instructions completely.

Assembly

Place the turntable mat on the platter.

Note:

After placing the mat on the platter, turn the platter clockwise about ten full rotations by hand. This is necessary to assure correct operation of the automatic mechanism.

■ Attaching the dust cover (Fig. 3)

Hold both sides of the cover and lower it into the hinge slots. To remove the cover, open it fully and pull upward.

Note:

Opening or closing the cover during play may cause vibrations and groove skipping. If you must open the cover during play, do so very gently.

Placement

■ Place the unit in a stable and horizontal position where there is little or no vibration.

This unit features double-isolated suspension system. To take maximum advantage of this feature, place the unit on a stable, level surface. Do not put anything between the turntable base and the surface on which it is placed.

■ Place the unit away from the speakers so that it will be subject to as little direct sound radiation as possible.

■ Do not place the unit where it will be exposed to direct sunlight, dust, moisture or heat.

■ Place it in a well ventilated location.

■ If you try to listen to a radio near the turntable while it is turning, you may hear some interference.

Operation

1. Put a record on the turntable mat.
2. Remove detachable stylus protector if fitted.
3. Set the speed selector to the correct speed.
4. Set the cueing control to the "▼" position.
5. Move the tonearm over the record.

* (The strobe-illuminator/pilot lamp will light up and the platter will rotate.) *

6. Set the cueing control to the "▼" position. The tonearm will descend and play will begin. At the end of the record, the tonearm will automatically return to the arm rest and the turntable will stop.

* WRONG

■ Stopping the turntable

Push the stop switch.

The tonearm will return to the arm rest and the turntable will stop.

■ Temporarily interrupting play

Set the cueing control to the "▼" position.

This will make the tonearm rise from the record.

■ Playing 45-rpm records having large center holes

Place the 45-rpm adaptor over the center spindle.

Set the speed selector to the "45" position.

■ If the unit is not to be used for some time

If the cartridge has a detachable stylus protector, replace after use.

Close the dust cover.

Adjustments

■ Arm-lift height adjustment

The arm-lift height (distance between the stylus tip and the record surface when the cueing control is at the "▼" position) has been adjusted at the factory to approximately 5 to 7 mm (3/16"~9/32"). (Fig. 4)

If the clearance is too narrow or too wide, turn the adjustment screw clockwise or counterclockwise. (Fig. 5)

Clockwise rotation

—distance between the record and stylus tip is decreased.

Counterclockwise rotation

—distance between the record and stylus tip is increased.

■ Adjustment of automatic return position (Fig. 6)

(Remove the rubber cap.)

1. Put the stylus protector on the cartridge.
2. Move the tonearm toward the center of the record. The auto-return adjustment screw will appear. If the tonearm tends to return to the arm rest before the play has finished,

—turn counterclockwise.

If the tonearm fails to return after the final groove,

—turn clockwise.

Stylus replacement

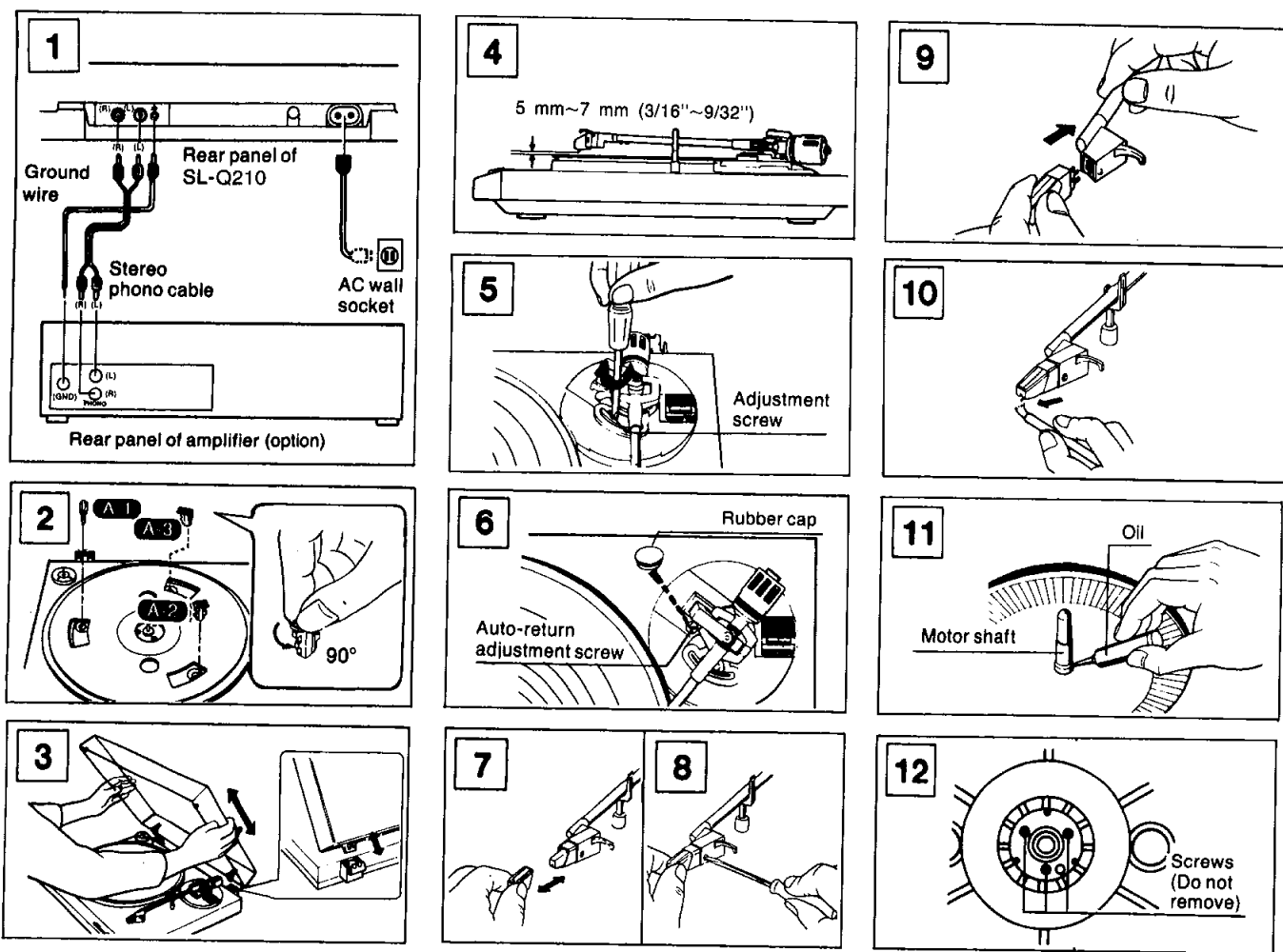
The replacement stylus for this cartridge is EPS-30ES.

Stylus life varies with the conditions of use.

Noise or scratchiness may indicate a worn or damaged stylus. Stylus replacement is recommended after about 500 hours of playing time. Holding the sides of the stylus assembly, pull out to remove the old stylus. Line up the new stylus assembly with the cartridge and push in firmly so that the stylus is securely in place. (Fig. 7)

Notes:

- Be very careful not to touch the stylus tip or cantilever during above procedures.
- There should be no gap between the stylus assembly and the cartridge body.



Caution:

- Attach the dust cover last to make assembly and adjustments easier.

Checklist of parts

Turntable unit	1
Turntable mat	1
Dust cover	1
45-rpm adaptor	1
Stereo phono cable	1
Ground wire (GND)	1
AC power cord	1

Connections

Use the stereo phono cable to connect the turntable to your amplifier or receiver. Be sure that the white plugs are connected to the left channel sockets and the red plugs are connected to the right channel sockets. Plug the ground earth wire's plug into the turntable's ground socket and connect the wire to the amplifier or receiver's ground (GND) screw. Regarding the mains cord, plug the female end into the turntable AC socket and plug the other end into an AC wall socket. (Fig. 1)
Note that hum may occur if you neglect to connect the ground wire.

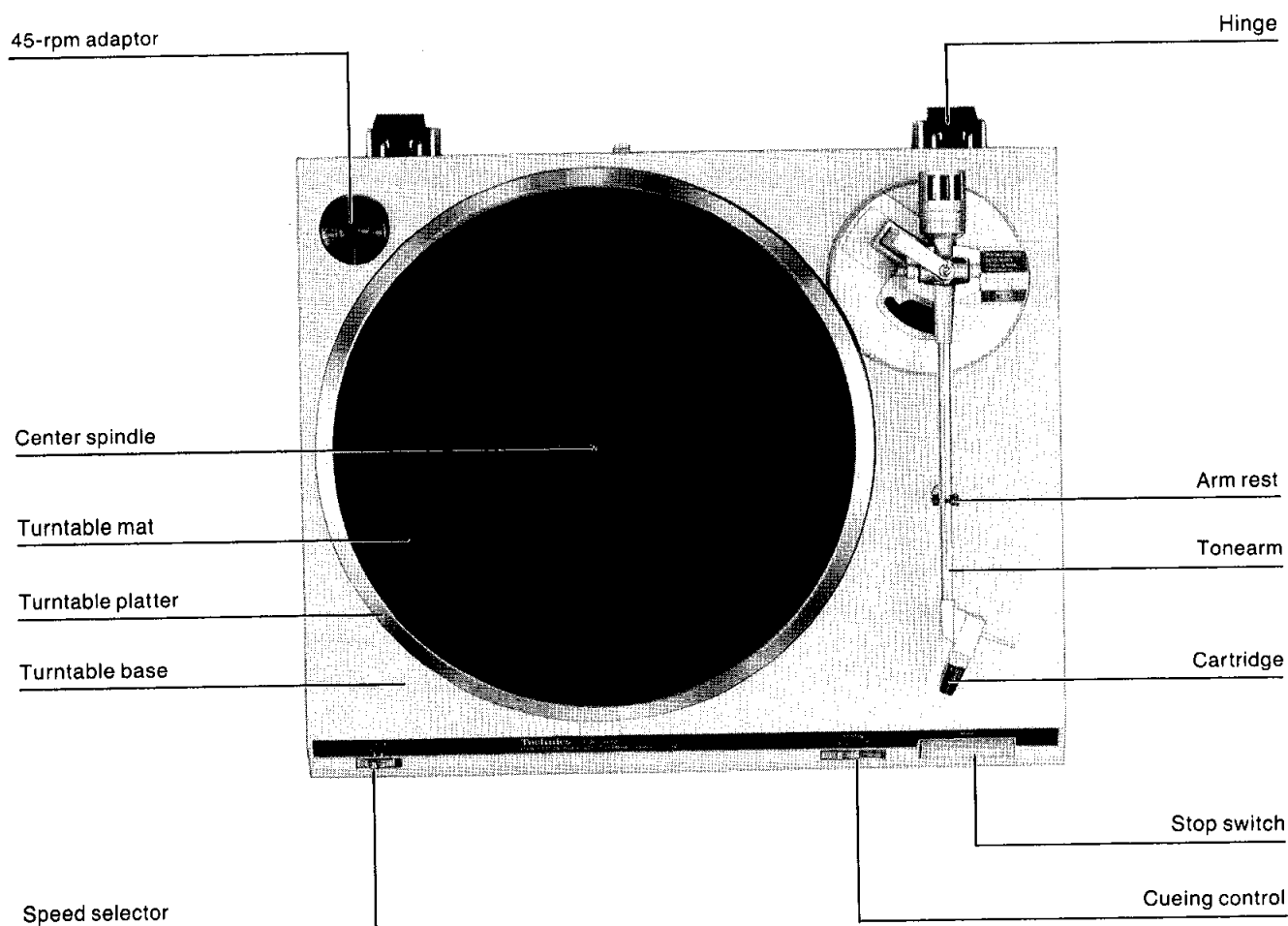
Before use

In order to avoid damage due to vibration or shock incurred during shipment, this unit is packed with protective materials A. Be sure to remove these before use. Keep these materials for reuse should it become necessary to transport the turntable again.

- Remove turntable spacers A-1 ~ A-3 (Fig. 2)

Thank you for choosing the SL-Q210 series.
For optimum performance and safety, please read these instructions carefully.

Parts identification



Caution for safe use of this apparatus for UK standard model SL-Q210:

Caution

- This apparatus is double insulated, safety earth not required.

Important

- The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral
Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows. The wire which is coloured **BLUE** must be connected to the terminal which is marked with the letter **N** or coloured **BLACK**. The wire which is coloured **BROWN** must be connected to the terminal which is marked with the letter **L** or coloured **RED**.

This equipment should be disconnected from the mains when not in use.

Cartridge replacement

Plug-in connector cartridges are now available from Ortofon (Denmark), Shure (U.S.A.), Audio Technica (Japan) as well as from Technics. All of these cartridges are designed for perfect matching with this turntable in all areas including weight, tracking force, stylus tip position, and center of gravity. Therefore, you have the option of employing a wide range of cartridges from the world's top manufacturers without the trouble of lead wire connections or tracking force adjustment.

1. Remove the cartridge attachment screw. (Fig. 8)
2. Carefully pull the cartridge out from the tonearm being sure you don't touch the stylus.
3. Align the pins on the new cartridge with the tonearm connector and plug it into the tonearm as far as it will go. (Fig. 9)
4. Tighten the cartridge attachment screw.

Notes and maintenance

- **Do not touch or hold the tonearm during automatic operation.**
- **Carefully remove dust and dirt from records and stylus. (Fig. 10)**
Dust and dirt degrade sound quality and cause excessive wear of the stylus and grooves.
- **Wipe the dust cover and turntable base with a soft, dry cloth.**
Never use volatile cleaners such as alcohol, benzine or thinner.
Do not use chemically treated dust cloths. Do not expose the cover to insecticide spray.
To remove stubborn spots, first pull out the mains plug and detach the cover.
Then wipe the cover with a soft cloth slightly moistened with a mild soap and water solution.
Do not wipe the cover during play, or the tonearm may be attracted toward the cover due to the generation of static electricity.
- **Transporting and shipping the turntable**
Pack the unit in the reverse order from unpacking. Use the original packing material if possible. Otherwise, take these steps:
 - Remove the platter and mat and wrap them.
 - Tape or tie the tonearm to the arm rest so it cannot shake free.
 - Wrap the turntable base with a blanket or soft paper to avoid scratches or damage.

■ Lubricating the motor shaft (Fig. 11)

Apply 2 or 3 drops of oil after every 2000 hours of operation. Note that the interval between lubrication is much longer than for conventional motors (200–500 hours). Be sure to use only special oil (part number SFWO 010) available from your audio dealer.

Note:

Handle the platter carefully during assembly and be sure the rotor-magnet does not get dusty or attract iron filings. Do not remove or loosen the rotor-magnet screws. (Fig. 12) Tampering with the rotor-magnet may interfere with motor performance.

Suggestions for safety

Before using this unit, be sure to read applicable items of the operating instructions and these safety suggestions carefully; and afterwards keep them handy for future reference. Take special care to follow the warnings indicated on the unit itself as well as in the operating instructions.

1. **Avoid places where there is water or humidity.**
Do not use this unit near a bathtub, washbasin, swimming pool, or the like. Damp basements should also be avoided.
2. **Do not allow water or any foreign object to get inside this unit.**
Do not place small metal objects or anything containing liquid on or near the unit.
3. **Avoid placement of the unit where it will be exposed to the direct rays of the sun, or where ventilation is inadequate.**
Do not place this unit in a bookcase or between cabinets, unless proper ventilation is provided, or where curtains or furniture may obstruct the ventilation holes.
4. **Place this unit away from heat-emitting appliances.**
Never place this unit on or near a radiator, heat register, stove, or any other heat-emitting equipment. (Including Amplifiers).
5. **Placement**
Place the unit on a stable, vibration-free, level shelf or stand.
6. **Check the voltage rating of this unit before connecting the unit to a power source.**
Be sure to connect the unit only to the type of power source indicated in the operating instructions, or as indicated on the unit itself.
7. **Care of the mains cord and plug.**
Take care that the cord is not bent sharply (especially near its connection to the unit or near the plug), that nothing is placed on it, and that it is not pinched or crushed or frayed. Never take hold of the plug or cord if your hand is wet, and always be sure to grasp the plug body when connecting or disconnecting it.
8. **Maintenance**
Refer to the operating instructions for details.
9. **Repairs**
Except for adjustments explained in the operating instructions, do not attempt any repairs yourself. Be sure to request service from a qualified technician (or your dealer or nearest service center).

Specifications

■ General

Power supply:	240 V AC, 50 Hz
Power consumption:	4.5 W
Dimensions: (W×H×D)	43×10×37.5 cm (16-15/16"×3-15/16"×14-3/4")
	Maximum height when top (dust cover) is open. 43×37×41 cm (16-15/16"×14-9/16"×16-1/8")
Weight:	4.4 kg (9.7 lb.)

■ Turntable section

Type:	Quartz direct drive Automatic turntable Auto return Auto stop
Drive method:	Direct drive
Motor:	Brushless DC motor
Drive control method:	Quartz-phase-locked control
Turntable platter:	Aluminum die-cast Diameter 31.2 cm
Turntable speeds:	33-1/3 rpm and 45 rpm
Wow and flutter:	0.012% WRMS* 0.025% WRMS (JIS C5521) ±0.035% peak (IEC 98A Weighted)
*This rating refers to turntable assembly alone, excluding effects of record, cartridge or tonearm, but including platter. Measured by obtaining signal from built-in frequency generator of motor assembly.	
Rumble:	-56 dB (IEC 98A Unweighted) -78 dB (IEC 98A Weighted)

■ Tonearm section

Type:	Statically-balanced straight tonearm Plug-in connector cartridge system
Effective length:	230 mm (9-1/16")
Overhang:	15 mm (19/32")
Tracking error angle:	Within 2°32' at the outer groove of 30 cm (12") record Within 0°32' at the inner groove of 30 cm (12") record
Effective mass:	7.5 g (without cartridge) 13.5 g (including cartridge)
Stylus pressure adjustment range:	1.25 g
Applicable cartridge weight:	6 g

■ Cartridge section

Model No:	EPC-P30
Type:	Moving magnet stereo cartridge
Magnetic circuit:	All laminated core
Frequency response:	10 Hz~40 kHz 20 Hz~10 kHz ±1 dB
Output voltage:	2.5 mV at 1 kHz 5 cm/s. zero to peak lateral velocity (7 mV at 1 kHz, 10 cm/s. zero to peak 45° velocity [DIN 45 500])
Channel separation:	22 dB at 1 kHz
Channel balance:	Within 2 dB at 1 kHz
Recommended load impedance:	47 kΩ~100 kΩ
Compliance (dynamic):	12×10 ⁻⁶ cm/dyne at 100 Hz
Stylus pressure range:	1.25±0.25 g (12.5±2.5 mN)
Weight:	6 g (cartridge only)
Replacement stylus:	EPS-30ES

Specifications subject to change without notice.
Weight and dimensions shown are approximate.

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan



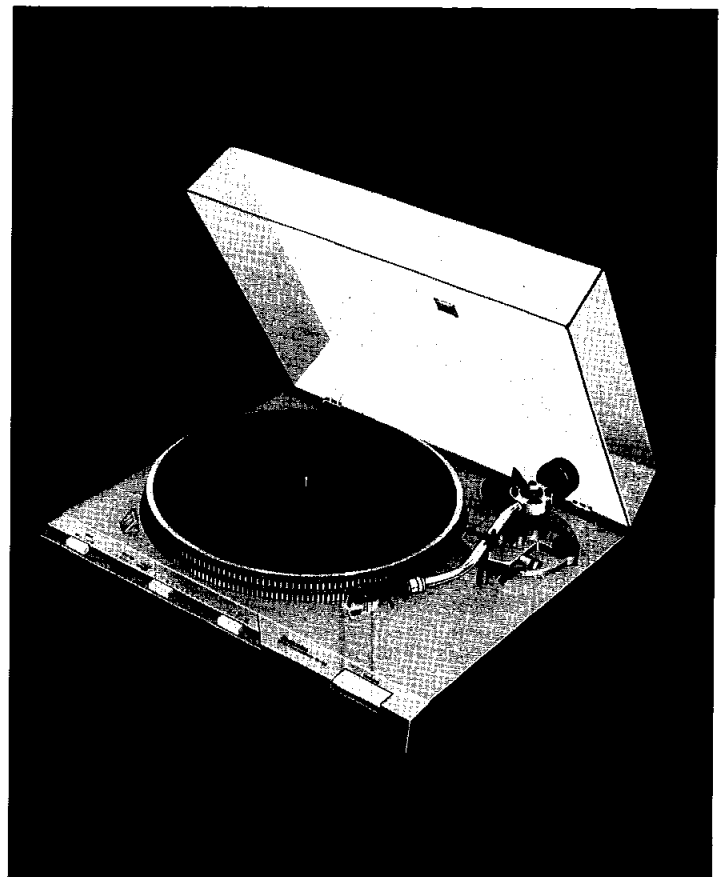
Technics

Turntable System

SL-D3

1979.

Operating instructions



We want to thank you for selecting the SL-D3.
For optimum performance, we recommend that you read these instructions carefully.

Caution for safe use of this apparatus

Caution

- This apparatus is double insulated, safety earth not required.

Important

- The wires in this mains lead are coloured in accordance with the following code:

Blue:	Neutral
Brown:	Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows. The wire which is coloured **BLUE** must be connected to the terminal which is marked with the letter **N** or coloured **BLACK**.

The wire which is coloured **BROWN** must be connected to the terminal which is marked with the letter **L** or coloured **RED**.

- This equipment should be disconnected from the mains when not in use.

Before use

Caution:

Never connect the AC power plug before assembly has been completed.

Attach the dust cover last, so that assembly and adjustments can be made most conveniently.

■ Checklist of parts

Turntable unit	1
Turntable platter	1
Turntable mat	1
Dust cover	1
45-rpm adaptor	1
Balance weight	1
Headshell/cartridge	1
Shell weight	1

Assembly and set-up

■ Installation of turntable platter

1. Place the turntable platter on the center spindle.

Note:

The rotor is connected to the underside of the turntable platter. (The magnet of the motor is attached to the turntable platter.) To maintain optimum performance, extra care should be taken to prevent adhesion of dust or iron filings to the magnet and not to damage the magnet by dropping it.

Do not remove or loosen the screws. Should the position of the fixed magnet be altered by loosening the securing screws, the rated performance of the unit cannot be guaranteed. (See Fig. 2.)

2. Place the turntable mat on the platter.

Note:

After having placed the turntable mat on the turntable platter, manually rotate the turntable platter clockwise about 10 times.

This will disengage the automatic mechanism from the tonearm gear, which, in rare cases, may have moved out of its normal position during transportation.

■ Installation of headshell (See Fig. 3.)

Insert the headshell into the front end of the tubular arm, and turn the locking nut clockwise (in the direction shown by the arrow "A"), with the headshell firmly held horizontally.

■ Installation of balance weight (See Fig. 4.)

Place the balance weight on the rear shaft of the tonearm.

■ Adjustments of horizontal zero (0) balance and stylus pressure

1. Remove the stylus protector, if your cartridge has a detachable one. Be careful not to touch your fingers to the stylus tip.
2. Release the arm clamp and lift the tonearm from the arm rest to free it.
3. Turn the entire balance weight clockwise (indicated by the arrow "A") or counterclockwise (indicated by the arrow "B") until the tonearm is approximately balanced horizontally (floats freely). (See Figs. 5 and 6.)

Note:

Fig. 6-1

Excessive forward advancement of the balance weight causes the cartridge side to be lowered.

Fig. 6-2

Excessive backward retreatment of the balance weight causes the cartridge side to be raised.

Fig. 6-3

Upon balancing between the balance weight and cartridge, the tonearm is held horizontal.

During the adjustment of the horizontal zero (0) balance, be careful that the stylus tip of the cartridge does not contact the turntable mat or turntable base.

4. After the tonearm is horizontally zero (0) balanced, temporarily refasten the tonearm with the arm clamp. (See Fig. 7.)

5. Hold the balance weight stationary with one hand as shown in the picture, and rotate only the stylus-pressure ring to bring the numeral "0" of the ring into alignment with the center line on the tonearm rear shaft.

The adjustment of the horizontal zero (0) balance is now completed. (See Fig. 7.)

6. After adjusting the horizontal zero (0) balance, turn the balance weight clockwise in the direction of the arrow and align to the correct stylus pressure. (See Fig. 8.)

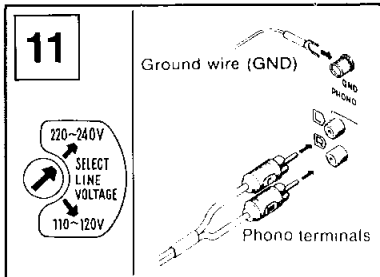
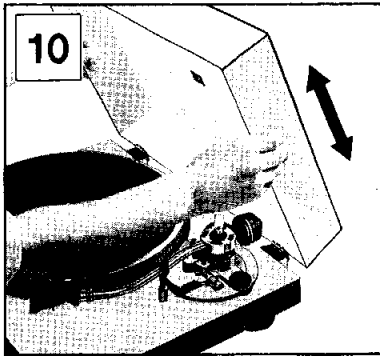
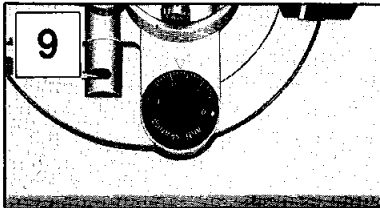
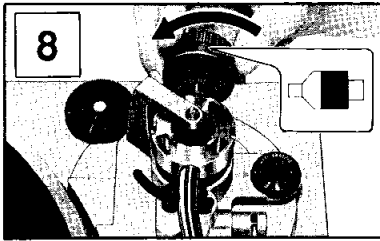
(The stylus pressure of this unit is 1.75 g.)

As the stylus-pressure ring moves in step with the balance weight, proper stylus pressure can be selected by directly reading the graduated ring.

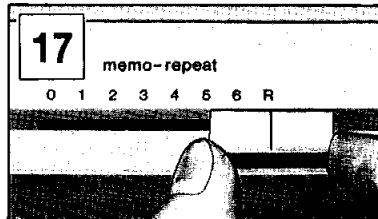
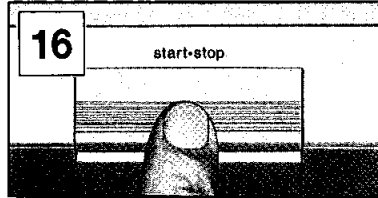
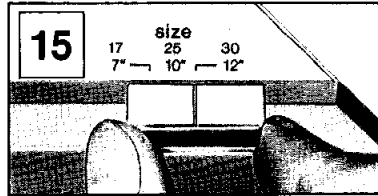
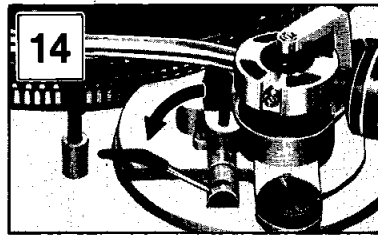
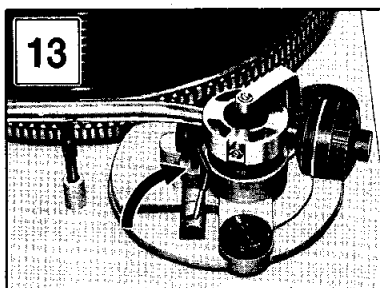
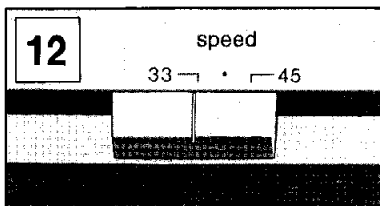
Note:

Set the stylus pressure to the maximum recommended value for your cartridge in cases where the record has an extremely high recording level, or where the unit is operated in a room at low temperature, or in places in which the unit is subjected to vibrations.

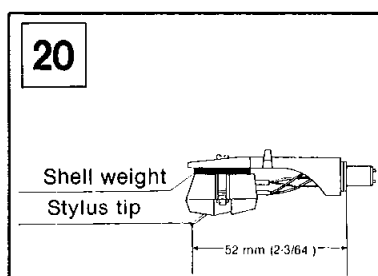
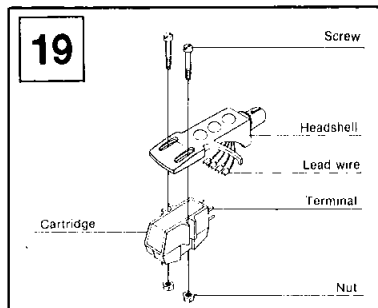
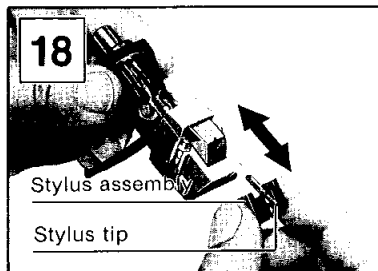
Assembly and set-up



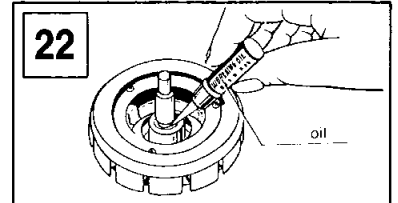
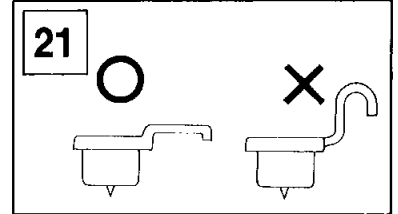
How to operate



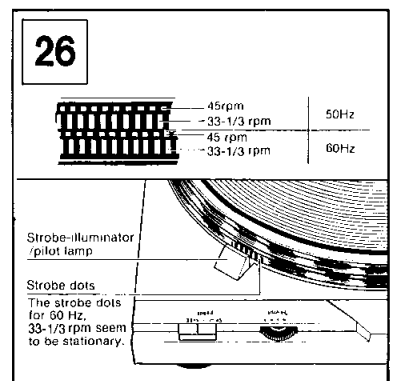
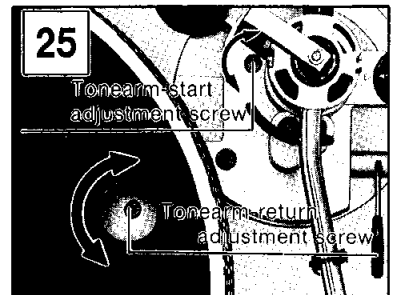
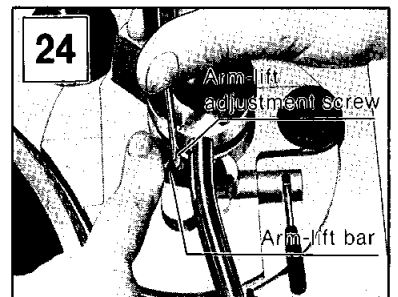
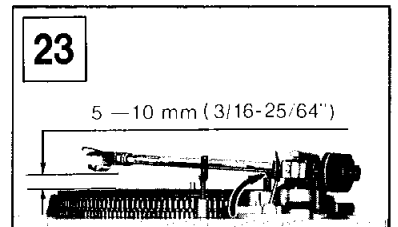
Replacement of parts



Notes and maintenance

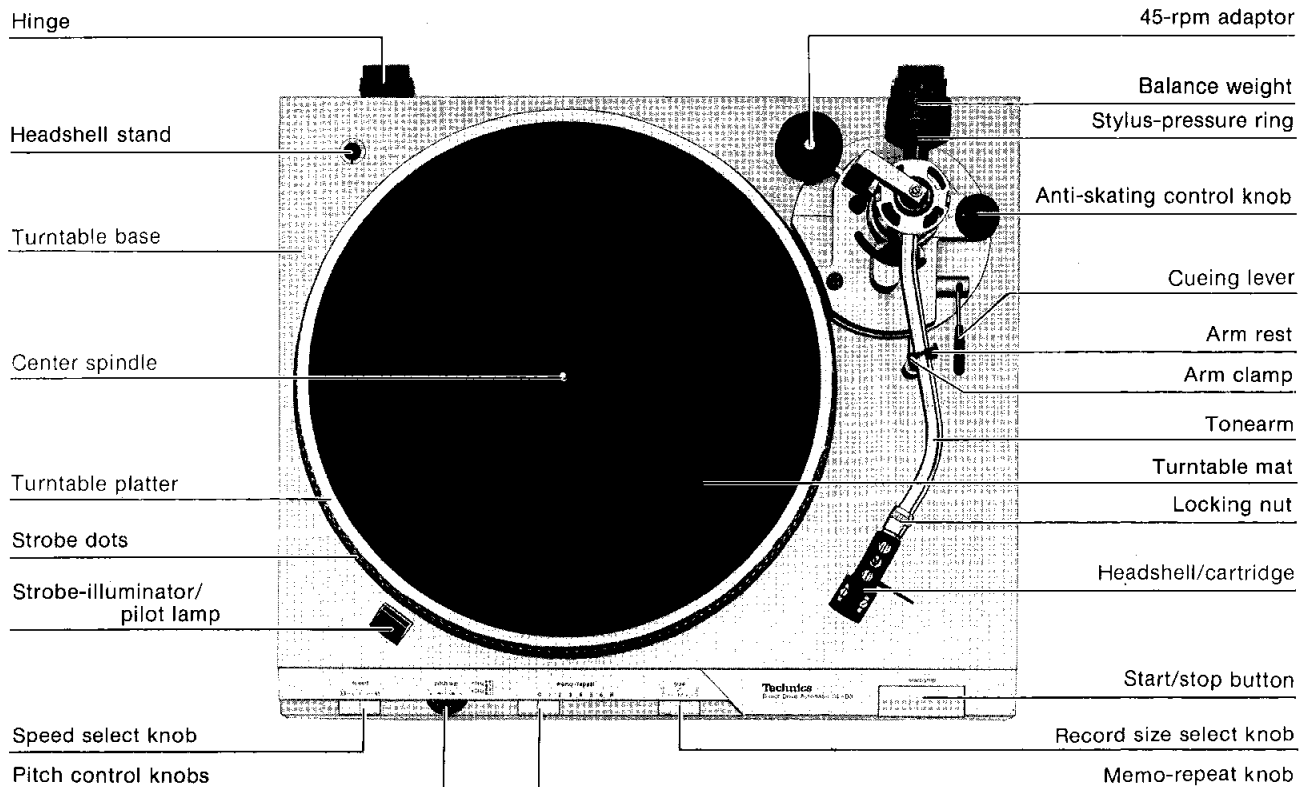


Adjustments

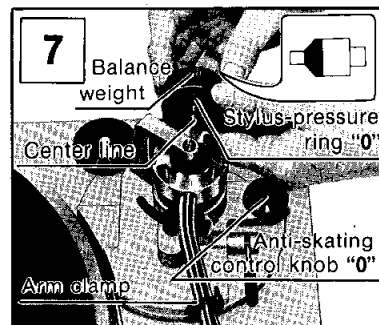
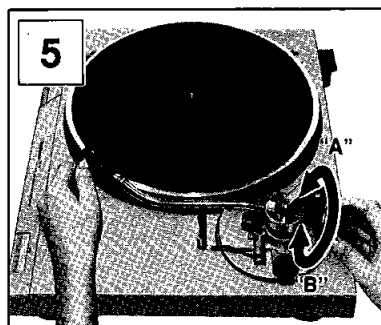
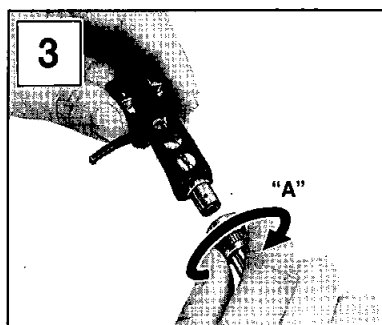
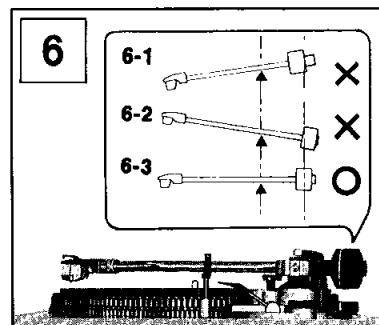
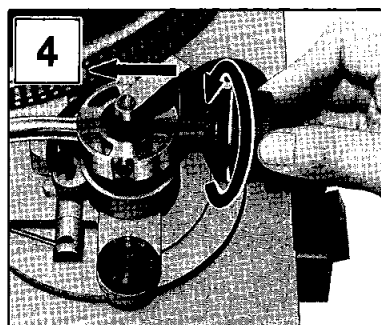
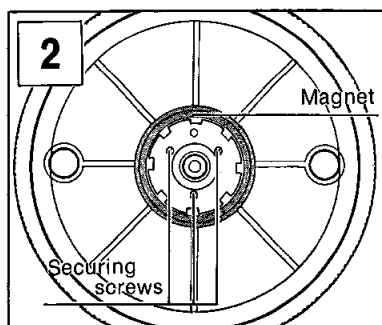


Parts identification

1



Assembly and set-up



■ Adjustment of anti-skating control

Set the anti-skating control knob to the same value as the stylus pressure. (See Fig. 9.)

Note:

When a cartridge with integral dust brush is used, follow the cartridge manufacturer's recommendation for adjusting both stylus pressure and anti-skating force.

■ Installation of dust cover

Place the dust cover into position from directly above, holding it at both sides. For detaching the dust cover, be certain first to raise it as illustrated before removal. (See Fig. 10.)

Note:

Opening or closing of the dust cover during play should be avoided. This may not only cause undesired vibrations, but also result in skipping of the stylus.

If you must open the dust cover during play, do so as gently as possible.

Placement

- Place the unit in a stable and horizontal position, where there is little or no vibration.

- Locate the unit as far away from the speakers as possible and isolate the unit from sound radiation from them.

- Do not place the unit where it is exposed to direct sun, dust, moisture or heat.

- Keep it in a well ventilated place.

Connections

■ Connect the AC power plug (See Fig. 11.)

Connect the AC power plug to an AC wall socket.

Caution:

Make sure that the turntable's AC line-voltage selector is matched to your local voltage before connecting the AC power plug.

Never connect to a DC socket.

If the pre-selected voltage is different from your local voltage, turn the AC line-voltage selector with a screw-driver so that it corresponds to your local voltage.

The AC line-voltage selector is located under the turntable platter.

■ Connect the output terminals (See Fig. 11.)



Note:

Be sure to connect the ground terminal firmly to the amplifier or receiver. If this connection is not made or is loose, a power source "HUM" will result.

How to operate

1. Place a record on the turntable mat.
2. Set the speed select knob to the desired record speed. (See Fig. 12.)
3. Remove the stylus protector, if your cartridge has a detachable one.
4. Release the arm clamp.
5. Set the cueing lever to the up position. (See Fig. 13.)
6. Move the tonearm over the desired groove.
The strobe-illuminator/pilot lamp will light up and the turntable platter will start to rotate.
7. Set the cueing lever to the down position. (See Fig. 14.)
The tonearm will descend slowly onto the record and play will begin.

When play is finished, the tonearm will automatically return to the arm rest (auto-return), and the turntable platter will stop rotation.

If the unit is not to be used for some time, set the speed select knob to the neutral "•" position.

Attach the stylus protector, if you have one, to guard the stylus tip from damage.

■ Automatic play

1. Set the speed select knob in the same manner as in manual play and release the arm clamp.
2. Set the record size select knob to the diameter of the record (7" [17 cm], 10" [25 cm], or 12" [30 cm]) you wish to play. (See Fig. 15.)
3. Push the start/stop button. (See Fig. 16.)
The tonearm will move automatically over the lead-in groove and descend slowly onto the record (auto-start). Play will begin.
4. When play has finished, the tonearm will automatically return to the arm rest (auto-return).

■ Repeat play of a record

1. Set the "memo-repeat" knob to the desired number of times you wish to play. (See Fig. 17.)
"R" position enables you to repeat play continuously.

Note:

The "memo-repeat" knob may be set to a desired number, except during automatic start or automatic return cycle. If you start play manually while the "memo-repeat" knob is set to a number, there will be an additional repeat play.

2. Start play in the same way as for automatic play.

■ How to stop play

Push the start/stop button.

The tonearm automatically returns to the arm rest, and the turntable stops rotating.

Note:

Before you operate the start/stop knob, make sure that the "memo-repeat" knob is set at the "0" position.

If this knob is set at any position other than "0", the repeat play is continued by the number of times indicated, even if you Push the start/stop button.

■ How to suspend play

Set the cueing lever to the up position.

The stylus tip of the cartridge will be lifted from the record.

■ When you play a 45-rpm record with a large center hole

Place the 45-rpm adaptor on the center spindle. Set the speed select knob to the "45" position.

Replacement of parts

■ Replacement of stylus (See Fig. 18.)

The unit is furnished with a diamond stylus.

The life of the stylus differs depending on the conditions of use, but it is recommended that you replace the stylus at the first sign of wear. About 500 hours of use is an approximate standard.

The replacement stylus for the unit is the EPS-270SD.

1. Remove the headshell/cartridge from the tubular arm.
Hold the stylus assembly with your fingers and withdraw it slantwise, as shown in the picture.
2. Align the new stylus assembly with the square opening of the cartridge main body, and push it into the opening positively as far as it will go.

■ Installation of cartridge (See Fig. 19.)

When you install a cartridge, refer to the operation instructions of that cartridge.

During installation, attach the stylus protector to guard the stylus tip from damage.

1. Connect the lead wires to the cartridge terminals.
The terminals of most cartridges are colour coded. Connect each lead wire to the terminal of the colour.
White (L+) Left channel+
Blue (L-) Left channel-
Red (R+) Right channel+
Green (R-) Right channel-
2. Install a cartridge to the headshell, and tighten it with screws provided with the cartridge.

Note:

Use the shell weight only for a light weight cartridge.
(Less than 6.0 g.). (See Fig. 20.)

■ Adjustment of overhang (See Fig. 20.)

The overhang of this unit is 15 mm.

Loosen the mounting screws and move the cartridge forward or backward until the distance between the stylus tip and the plug becomes 52 mm (2-3/64") as shown in the picture.

Tighten the mounting screws without moving the cartridge. Adjust horizontal zero balance, stylus pressure and arm-lift height whenever you change the cartridge.

Notes and maintenance

- Do not grasp or hold the tonearm during operation of the automatic mechanism.

- Use utmost care when handling the platter and when placing it on the motor shaft to prevent possible damage to the magnet.

- Records having sizes other than 17 cm, 25 cm and 30 cm (7", 10" and 12") should be played manually.

Your turntable is designed for automatic handling of records that adhere to accepted industry dimensions. Therefore, use the unit manually for records other than standard sizes.

- When using other headshells, make sure that the headshell configuration is compatible. (See Fig. 21.)

When other types of headshells are employed, the handle portion of the headshell may strike against the inner upper surface of the dust cover during automatic motion of the tonearm. In such a case, we recommend that the dust cover be left open during play.

- Before detaching or attaching the headshell, be sure to turn the power of the amplifier or receiver off.

Detaching or attaching of the headshell with the volume control turned up may cause damage to the speakers.

- Dust and dirt should be carefully removed from stylus tip or records.

Dust and dirt on the stylus tip or record may not only result in deterioration of tone quality, but also cause undue wear of the record and the stylus tip itself.

Special stylus tip brushes and record cleaners can be purchased in most electronic supply houses.

- Wipe the headshell terminals from time to time.

Dust and dirt at the headshell terminals may result in increased "HUM" noise or intermittent sound. Use soft dry cloth to clean the headshell terminals.

- Care should be exercised in handling the turntable platter.

The turntable platter has the rotor (the magnet of the motor) directly connected to it. Therefore, the turntable platter should not be removed from the motor shaft unnecessarily.

Should it become necessary to remove the turntable platter, be sure first to pull the AC power plug out of the socket.

- Wipe the dust cover and turntable base with a soft, dry cloth.

Never use any cleaners containing alcohol, benzine or thinner. Use of a chemical dust cloth should also be avoided. Be sure that the dust cover is not exposed to insecticide spray.

To remove stubborn finger prints or grease spots, detach the dust cover and disconnect the AC power plug.

Use a soft cloth slightly moistened with a mild soap and water solution.

Do not wipe the dust cover during play, or the tonearm may be attracted toward the dust cover due to the generation of static electricity.

- Lubrication (See Fig. 22.)

Apply 2 or 3 drops of oil once after every 2000 hours of operation.

The time interval is much longer than that for conventional type motors (200—500 hours).

Please purchase original oil. (Part number is SFWO 010.)

Adjustments

■ Adjustment of the arm-lift height (See Figs. 23 and 24.)

The arm-lift height (distance between the stylus tip and record surface when cueing lever is raised) has been adjusted at the factory before shipping to approximately 5 to 10 mm. If the clearance becomes too narrow or too wide, turn the adjustment screw clockwise or counterclockwise, while pushing the arm lift down.

Clockwise rotation

—distance between the record and stylus tip is decreased.

Counterclockwise rotation

—distance between the record and stylus tip is increased.

Note:

As the adjusting screw has a hexagonal head, be sure to make the adjustment while depressing the arm lift, or the screw will not move freely.

Also be sure that the hexagonal head retracts correctly into the arm lift when the latter is released.

■ Adjustment for automatic start position (See Fig. 25.) (Remove the rubber cap.)

In cases where the stylus tip sets down outside of the record —**rotate clockwise.**

In cases where the stylus tip sets down too far in the recorded groove

—**rotate counterclockwise.**

■ Adjustment for automatic return position (See Fig. 25.)

(Remove the turntable mat.)

In cases where the tonearm tends to return before the playing has finished

—**rotate clockwise.**

In cases where the tonearm fails to return after the last groove of the record has been played

—**rotate counterclockwise.**

■ Speed adjustment (with pitch-control knob) (See Fig. 26.)

Strobe dots are set on the rim of the turntable platter according to the power-line frequency and the speed of the records. Make adjustment, referring to the strobe-dot indication.

1. Set the speed select knob to the speed to be adjusted.
2. Release the arm clamp and move the tonearm toward the record.

The strobe-illuminator/pilot lamp will light up and the turntable platter will rotate.

3. While turning the pitch-control knob either to the "+" side or "-" side, adjust so that the strobe dots of the turntable platter look as if they were stationary. This represents the correct speed.

"+" direction

The speed of the turntable platter will increase. Turn the knob in this direction if the strobe dots seem to be "**falling back**", i.e. seem to be moving counterclockwise. When the dots appear to be stationary, turntable speed is accurate.

"-" direction

The speed of the turntable platter will decrease. Turn the knob in this direction if the dots seem to be "**running ahead**", i.e. seem to be moving clockwise, until they appear stationary.

Moreover, the pitch control knob can be used for both 33-1/3 rpm and 45 rpm.

Adjustment is to be made according to the selected speed (33-1/3 rpm or 45 rpm).

Note:

Strobe dot pattern

The strobe-illuminator/pilot lamp of this unit employs the standard commercial power source. The frequency of such

power source, when actually measured, has a fluctuation of about 0.2%.

As such a fluctuation of the power source affects the strobe illuminator, the strobe dot pattern also seems to fluctuate to a certain extent. But the unit is not affected by these fluctuations of the power source, since a DC motor is employed.

In other words, rotation of the platter will be constant, and slight shifts in the movement of the dots simply reflect normal drift in the power-source frequency.

Features

- **Front panel controls provide exceptional convenience**
- **Integral rotor/platter structure for stable rotation**
- **"TNRC"* base material provides an acoustic shield**
*"TNRC".....Technics Non-Resonance Compound
- **Low-mass, low-friction gimbal suspension tonearm**
- **Pitch control with illuminated stroboscope**
- **Viscous-damped cueing**
- **Anti-skating control**
- **Hinged, detachable dust cover**
- **Auto-start, auto-stop, auto-return and programmable repeat play make the SL-D3 a pleasure to use.**
Since everything is automatic, you don't need to touch the tonearm unless you want to move to a particular cut on the record. The "memo-repeat" feature allows you to repeat a record up to six times, or indefinitely if you prefer.

Specifications

■ General

Power supply:	~110-120/220-240V, 50 or 60 Hz
Power consumption:	4.5 W
Dimensions: (W×H×D)	43.0 × 13.0 × 37.5 cm (16-59/64" × 5-7/64" × 14-49/64")
Weight:	7.0 kg (15.4 lb.)

■ Turntable section

Type:	Automatic turntable Auto start Auto return Auto stop Repeat play
Drive method:	Direct drive
Motor:	Brushless DC motor
Drive control method:	B-FG servo control
Turntable platter:	Aluminum die-cast Diameter 31.2 cm (12-9/32")
Turntable speeds:	33-1/3 rpm and 45 rpm
Pitch control:	10% adjustment range
Wow and flutter:	0.014% WRMS* 0.03% WRMS (JIS C5521) ±0.042% peak (IEC 98A Weighted)

*This rating refers to turntable assembly alone, excluding effects of record, cartridge or tonearm, but including platter. Measured by obtaining signal from frequency generator attached to motor assembly.

Rumble:	-53 dB (IEC 98A Unweighted) -75 dB (IEC 98A Weighted)
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■ Tonearm section

Type:	Universal tonearm
Effective length:	230 mm (9-1/16")
Overhang	15 mm (19/32")
Friction:	Less than 7 mg (lateral, vertical)
Effective mass:	12 g (without cartridge)
Tracking error angle:	Within 2°32' at the outer groove of 30 cm (12") record Within 0°32' at the inner groove of 30 cm (12") record
Offset angle:	22°
Stylus pressure adjustment range:	0—2.5 g
Applicable cartridge weight range:	6—9.5 g 13.5—17 g (including headshell)
(with shellweight)	3—6.5 g 10.5—14 g (including headshell)
Headshell weight:	7.5 g

■ Cartridge section

Model No.:	EPC-270C
Type:	Moving magnet
Frequency response:	20 Hz to 25 kHz 20 Hz to 15 kHz ±2 dB
Output voltage:	3.2 mV at 1 kHz 5 cm/s. zero to peak lateral velocity (9 mV at 1 kHz, 10 cm/s. zero to peak 45° velocity [DIN 45 500])
Channel separation:	25 dB at 1 kHz
Channel balance:	Within 2 dB at 1 kHz
Compliance (dynamic):	10 × 10 ⁻⁶ cm/dyne at 100 Hz
Stylus pressure:	1.75 ± 0.25 g (17.5 ± 2.5mN)
Load impedance:	47 kΩ to 100 kΩ
Weight:	6.0 g (cartridge only)
Replacement stylus:	EPS-270SD (Elliptical stylus)

Specifications subject to change without notice.
Weight and dimensions shown are approximate.

For longer and safer use of this unit

In order to receive the best service from this unit, and for the safest operation, carefully read the following information.

■ Power source

It is very dangerous to use this unit at a voltage which is different from the rated voltage.

There is danger of combustion if the unit is connected to a power source which is different from the rated voltage.

Be very careful concerning this point.

Direct current cannot be used.

There are some places, such as ships, where direct current is used as the power source. Before connecting the unit, confirm the power source.

■ Connection of power cord

Be sure to never touch the power cord with wet hands because there is danger of electric shock. This is true, of course, of all electric equipment.

Do not pull the power cord.

Never pull the power cord to disconnect it. Always pull the plug only.

■ Location of unit

Choose a place which is not in direct sunlight.

Select a place which will assure good ventilation.

■ Never place heating equipment nearby.

Be sure to keep stoves and other sources of heat away from this unit, because heat radiated by such equipment may cause deformation of plastic parts or damage the cabinet, or, at worst, cause a fire.

■ Especially for families with children

Take care that no small items, such as metal objects, are put inside this unit.

In addition, children should be especially warned not to put anything into the ventilation holes, such as toys or a screwdriver, because these things may cause an electric shock or result in a malfunction of the unit.

■ If water spills on the unit

If water should happen to spill on the unit, from an overturned vase for example, there is danger of fire or electric shock. Disconnect the power plug from the electric outlet immediately, and contact the store from which the unit was purchased.

■ Reconstruction can cause accidents

Absolutely never try to remodel, reconstruct or repair this unit yourself. Do not attempt to touch any internal parts because to do so may result in an electric shock or other accident.

■ Be sure the power is off.

After you have finished using this unit, check once more to be sure that the power is off. If the unit is left with the power on for a long period of time, it may not only be damaged, thus shortening its useful life, but may also lead to a dangerous accident.

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

Printed in Japan

SFNUD30G01
S0579A0

Technics

'83

Turntable System

SL-Q210 series

Operating instructions



TP is the standard mark for plug-in-connector type. Products carrying this mark are interchangeable and adaptable among each other.

This apparatus was produced to "BS800: 1977"

Before operating this products, please read these instructions completely.

Assembly

Place the turntable mat on the platter.

Note:

After placing the mat on the platter, turn the platter clockwise about ten full rotations by hand. This is necessary to assure correct operation of the automatic mechanism.

■ Attaching the dust cover (Fig. 3)

Hold both sides of the cover and lower it into the hinge slots. To remove the cover, open it fully and pull upward.

Note:

Opening or closing the cover during play may cause vibrations and groove skipping. If you must open the cover during play, do so very gently.

Placement

- **Place the unit in a stable and horizontal position where there is little or no vibration.**
This unit features double-isolated suspension system. To take maximum advantage of this feature, place the unit on a stable, level surface. Do not put anything between the turntable base and the surface on which it is placed.
- **Place the unit away from the speakers so that it will be subject to as little direct sound radiation as possible.**
- **Do not place the unit where it will be exposed to direct sunlight, dust, moisture or heat.**
- **Place it in a well ventilated location.**
- **If you try to listen to a radio near the turntable while it is turning, you may hear some interference.**

Operation

1. Put a record on the turntable mat.
2. Remove detachable stylus protector if fitted.
3. Set the speed selector to the correct speed.
4. Set the cueing control to the "▼" position.
5. Move the tonearm over the record.
6. Set the cueing control to the "▼" position.
The tonearm will descend and play will begin.
At the end of the record, the tonearm will automatically return to the arm rest and the turntable will stop.

* (The strobe-illuminator/pilot lamp will light up and the platter will rotate.) *

* WRONG

■ Stopping the turntable

Push the stop switch.

The tonearm will return to the arm rest and the turntable will stop.

■ Temporarily interrupting play

Set the cueing control to the "▼" position.

This will make the tonearm rise from the record.

■ Playing 45-rpm records having large center holes

Place the 45-rpm adaptor over the center spindle.

Set the speed selector to the "45" position.

■ If the unit is not to be used for some time

If the cartridge has a detachable stylus protector, replace after use.

Close the dust cover.

Adjustments

■ Arm-lift height adjustment

The arm-lift height (distance between the stylus tip and the record surface when the cueing control is at the "▼" position) has been adjusted at the factory to approximately 5 to 7 mm (3/16"~9/32"). (Fig. 4)

If the clearance is too narrow or too wide, turn the adjustment screw clockwise or counterclockwise. (Fig. 5)

Clockwise rotation

—distance between the record and stylus tip is decreased.

Counterclockwise rotation

—distance between the record and stylus tip is increased.

■ Adjustment of automatic return position (Fig. 6)

(Remove the rubber cap.)

1. Put the stylus protector on the cartridge.
2. Move the tonearm toward the center of the record. The auto-return adjustment screw will appear.
If the tonearm tends to return to the arm rest before the play has finished,
—turn counterclockwise.
If the tonearm fails to return after the final groove,
—turn clockwise.

Stylus replacement

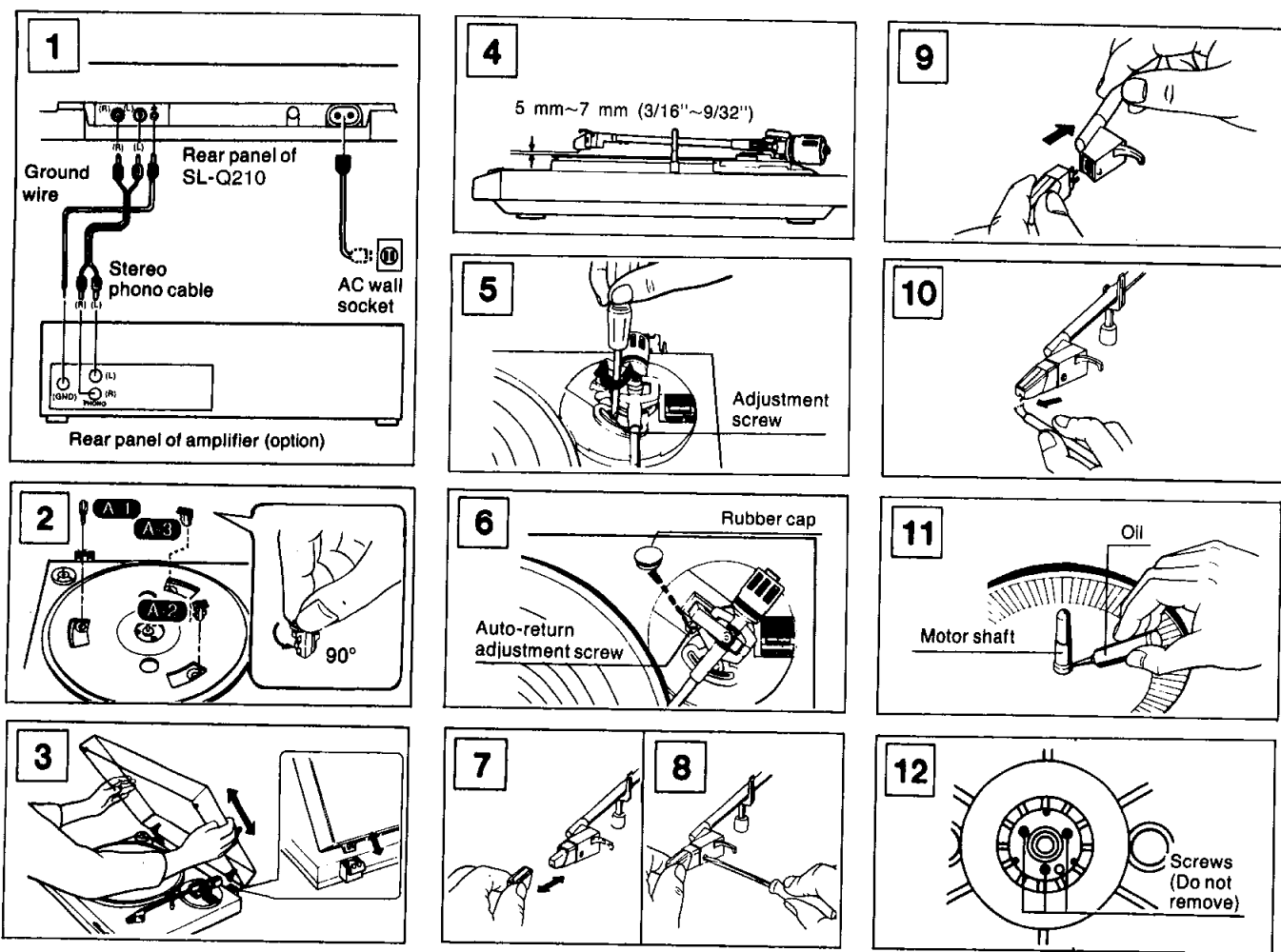
The replacement stylus for this cartridge is EPS-30ES.

Stylus life varies with the conditions of use.

Noise or scratchiness may indicate a worn or damaged stylus. Stylus replacement is recommended after about 500 hours of playing time. Holding the sides of the stylus assembly, pull out to remove the old stylus. Line up the new stylus assembly with the cartridge and push in firmly so that the stylus is securely in place. (Fig. 7)

Notes:

- Be very careful not to touch the stylus tip or cantilever during above procedures.
- There should be no gap between the stylus assembly and the cartridge body.



Caution:

- Attach the dust cover last to make assembly and adjustments easier.

■ Checklist of parts

Turntable unit	1
Turntable mat	1
Dust cover	1
45-rpm adaptor	1
Stereo phono cable	1
Ground wire (GND)	1
AC power cord	1

Connections

Use the stereo phono cable to connect the turntable to your amplifier or receiver. Be sure that the white plugs are connected to the left channel sockets and the red plugs are connected to the right channel sockets. Plug the ground earth wire's plug into the turntable's ground socket and connect the wire to the amplifier or receiver's ground (GND) screw. Regarding the mains cord, plug the female end into the turntable AC socket and plug the other end into an AC wall socket. (Fig. 1)
Note that hum may occur if you neglect to connect the ground wire.

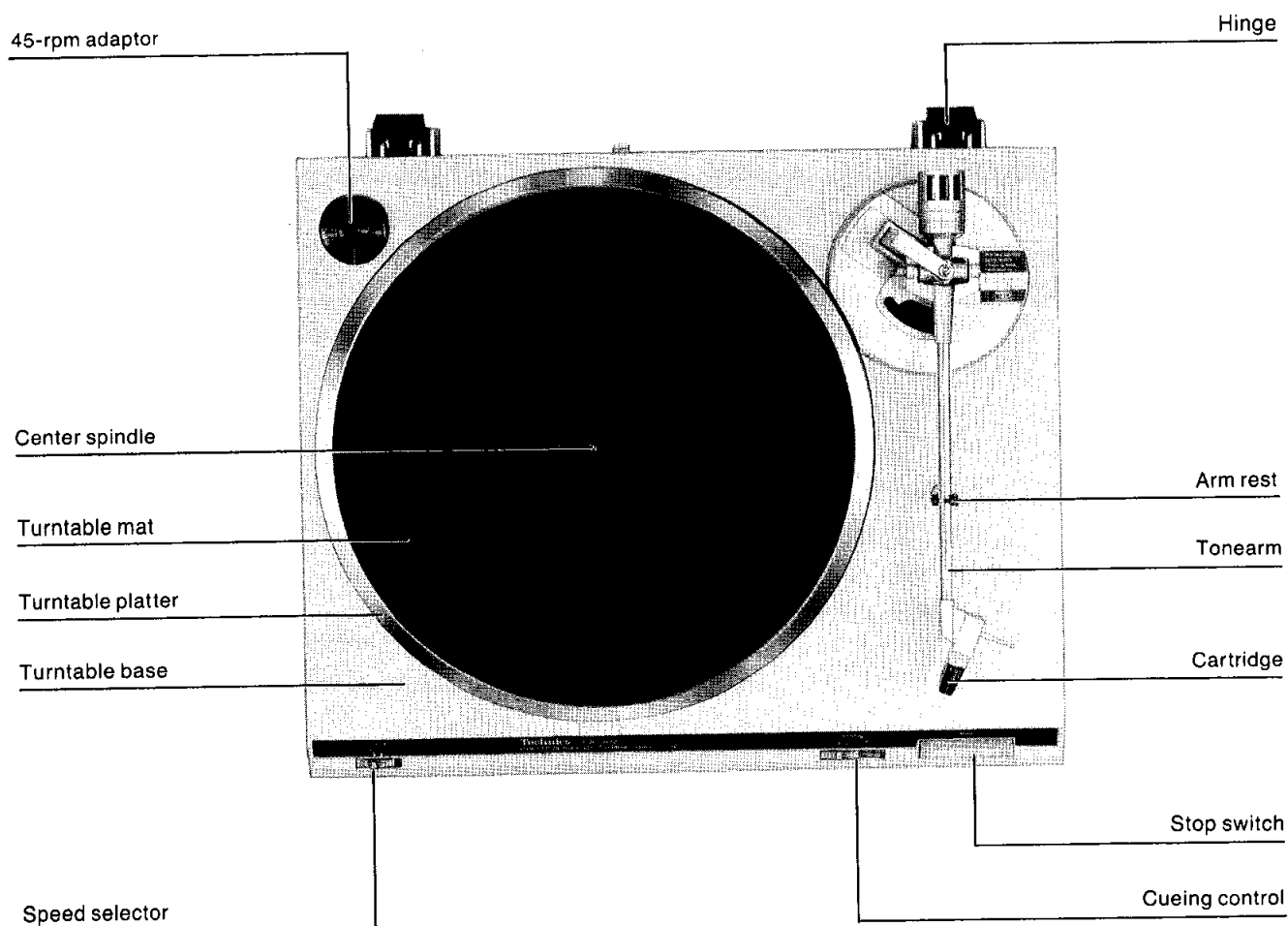
Before use

In order to avoid damage due to vibration or shock incurred during shipment, this unit is packed with protective materials **A**. Be sure to remove these before use. Keep these materials for reuse should it become necessary to transport the turntable again.

- Remove turntable spacers **A-1** ~ **A-3** (Fig. 2)

Thank you for choosing the SL-Q210 series.
For optimum performance and safety, please read these instructions carefully.

Parts identification



Caution for safe use of this apparatus for UK standard model SL-Q210:

Caution

- This apparatus is double insulated, safety earth not required.

Important

- The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral
Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows. The wire which is coloured **BLUE** must be connected to the terminal which is marked with the letter **N** or coloured **BLACK**. The wire which is coloured **BROWN** must be connected to the terminal which is marked with the letter **L** or coloured **RED**.

This equipment should be disconnected from the mains when not in use.

Cartridge replacement

Plug-in connector cartridges are now available from Ortofon (Denmark), Shure (U.S.A.), Audio Technica (Japan) as well as from Technics. All of these cartridges are designed for perfect matching with this turntable in all areas including weight, tracking force, stylus tip position, and center of gravity. Therefore, you have the option of employing a wide range of cartridges from the world's top manufacturers without the trouble of lead wire connections or tracking force adjustment.

1. Remove the cartridge attachment screw. (Fig. 8)
2. Carefully pull the cartridge out from the tonearm being sure you don't touch the stylus.
3. Align the pins on the new cartridge with the tonearm connector and plug it into the tonearm as far as it will go. (Fig. 9)
4. Tighten the cartridge attachment screw.

Notes and maintenance

- **Do not touch or hold the tonearm during automatic operation.**
- **Carefully remove dust and dirt from records and stylus. (Fig. 10)**
Dust and dirt degrade sound quality and cause excessive wear of the stylus and grooves.
- **Wipe the dust cover and turntable base with a soft, dry cloth.**
Never use volatile cleaners such as alcohol, benzine or thinner.
Do not use chemically treated dust cloths. Do not expose the cover to insecticide spray.
To remove stubborn spots, first pull out the mains plug and detach the cover.
Then wipe the cover with a soft cloth slightly moistened with a mild soap and water solution.
Do not wipe the cover during play, or the tonearm may be attracted toward the cover due to the generation of static electricity.
- **Transporting and shipping the turntable**
Pack the unit in the reverse order from unpacking. Use the original packing material if possible. Otherwise, take these steps:
 - Remove the platter and mat and wrap them.
 - Tape or tie the tonearm to the arm rest so it cannot shake free.
 - Wrap the turntable base with a blanket or soft paper to avoid scratches or damage.

■ Lubricating the motor shaft (Fig. 11)

Apply 2 or 3 drops of oil after every 2000 hours of operation. Note that the interval between lubrication is much longer than for conventional motors (200–500 hours). Be sure to use only special oil (part number SFWO 010) available from your audio dealer.

Note:

Handle the platter carefully during assembly and be sure the rotor-magnet does not get dusty or attract iron filings. Do not remove or loosen the rotor-magnet screws. (Fig. 12) Tampering with the rotor-magnet may interfere with motor performance.

Suggestions for safety

Before using this unit, be sure to read applicable items of the operating instructions and these safety suggestions carefully; and afterwards keep them handy for future reference. Take special care to follow the warnings indicated on the unit itself as well as in the operating instructions.

1. **Avoid places where there is water or humidity.**
Do not use this unit near a bathtub, washbasin, swimming pool, or the like. Damp basements should also be avoided.
2. **Do not allow water or any foreign object to get inside this unit.**
Do not place small metal objects or anything containing liquid on or near the unit.
3. **Avoid placement of the unit where it will be exposed to the direct rays of the sun, or where ventilation is inadequate.**
Do not place this unit in a bookcase or between cabinets, unless proper ventilation is provided, or where curtains or furniture may obstruct the ventilation holes.
4. **Place this unit away from heat-emitting appliances.**
Never place this unit on or near a radiator, heat register, stove, or any other heat-emitting equipment. (Including Amplifiers).
5. **Placement**
Place the unit on a stable, vibration-free, level shelf or stand.
6. **Check the voltage rating of this unit before connecting the unit to a power source.**
Be sure to connect the unit only to the type of power source indicated in the operating instructions, or as indicated on the unit itself.
7. **Care of the mains cord and plug.**
Take care that the cord is not bent sharply (especially near its connection to the unit or near the plug), that nothing is placed on it, and that it is not pinched or crushed or frayed. Never take hold of the plug or cord if your hand is wet, and always be sure to grasp the plug body when connecting or disconnecting it.
8. **Maintenance**
Refer to the operating instructions for details.
9. **Repairs**
Except for adjustments explained in the operating instructions, do not attempt any repairs yourself. Be sure to request service from a qualified technician (or your dealer or nearest service center).

Specifications

■ General

Power supply:	240 V AC, 50 Hz
Power consumption:	4.5 W
Dimensions: (W×H×D)	43×10×37.5 cm (16-15/16"×3-15/16"×14-3/4")
	Maximum height when top (dust cover) is open. 43×37×41 cm (16-15/16"×14-9/16"×16-1/8")
Weight:	4.4 kg (9.7 lb.)

■ Turntable section

Type:	Quartz direct drive Automatic turntable Auto return Auto stop
Drive method:	Direct drive
Motor:	Brushless DC motor
Drive control method:	Quartz-phase-locked control
Turntable platter:	Aluminum die-cast Diameter 31.2 cm
Turntable speeds:	33-1/3 rpm and 45 rpm
Wow and flutter:	0.012% WRMS* 0.025% WRMS (JIS C5521) ±0.035% peak (IEC 98A Weighted)
*This rating refers to turntable assembly alone, excluding effects of record, cartridge or tonearm, but including platter. Measured by obtaining signal from built-in frequency generator of motor assembly.	
Rumble:	-56 dB (IEC 98A Unweighted) -78 dB (IEC 98A Weighted)

■ Tonearm section

Type:	Statically-balanced straight tonearm Plug-in connector cartridge system
Effective length:	230 mm (9-1/16")
Overhang:	15 mm (19/32")
Tracking error angle:	Within 2°32' at the outer groove of 30 cm (12") record Within 0°32' at the inner groove of 30 cm (12") record
Effective mass:	7.5 g (without cartridge) 13.5 g (including cartridge)
Stylus pressure adjustment range:	1.25 g
Applicable cartridge weight:	6 g

■ Cartridge section

Model No:	EPC-P30
Type:	Moving magnet stereo cartridge
Magnetic circuit:	All laminated core
Frequency response:	10 Hz~40 kHz 20 Hz~10 kHz ±1 dB
Output voltage:	2.5 mV at 1 kHz 5 cm/s. zero to peak lateral velocity (7 mV at 1 kHz, 10 cm/s. zero to peak 45° velocity [DIN 45 500])
Channel separation:	22 dB at 1 kHz
Channel balance:	Within 2 dB at 1 kHz
Recommended load impedance:	47 kΩ~100 kΩ
Compliance (dynamic):	12×10 ⁻⁶ cm/dyne at 100 Hz
Stylus pressure range:	1.25±0.25 g (12.5±2.5 mN)
Weight:	6 g (cartridge only)
Replacement stylus:	EPS-30ES

Specifications subject to change without notice.
Weight and dimensions shown are approximate.

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