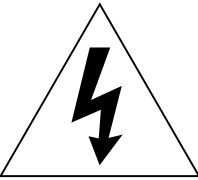

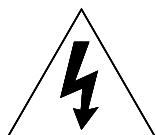


marantz®

Model TT-15S1 User Guide

Turntable

	CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN	
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK) NO USER-SERVICEABLE PARTS INSIDE REFER SERVICING TO QUALIFIED SERVICE PERSONNEL		



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

WARNING

**TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK,
DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.**

**CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE
BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.**

**ATTENTION: POUR ÉVITER LES CHOC ÉLECTRIQUES,
INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS
LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER
JUSQU'AU FOND.**

NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by tuning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

NOTE:

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE TO CATV SYSTEM INSTALLER:

This reminder is provided to call the CATV (Cable-TV) system installer's attention to Section 820-40 of the NEC which provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

IMPORTANT SAFETY INSTRUCTIONS

READ BEFORE OPERATING EQUIPMENT

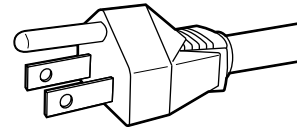
This product was designed and manufactured to meet strict quality and safety standards. There are, however, some installation and operation precautions which you should be particularly aware of.

1. Read Instructions – All the safety and operating instructions should be read before the product is operated.
2. Retain Instructions – The safety and operating instructions should be retained for future reference.
3. Heed Warnings – All warnings on the product and in the operating instructions should be adhered to.
4. Follow Instructions – All operating and use instructions should be followed.
5. Cleaning – Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
6. Attachments – Do not use attachments not recommended by the product manufacturer as they may cause hazards.
7. Water and Moisture – Do not use this product near water-for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, and the like.
8. Accessories – Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.
9. A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.



10. Ventilation – Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
11. Power Sources – This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.

12. Grounding or Polarization – This product may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

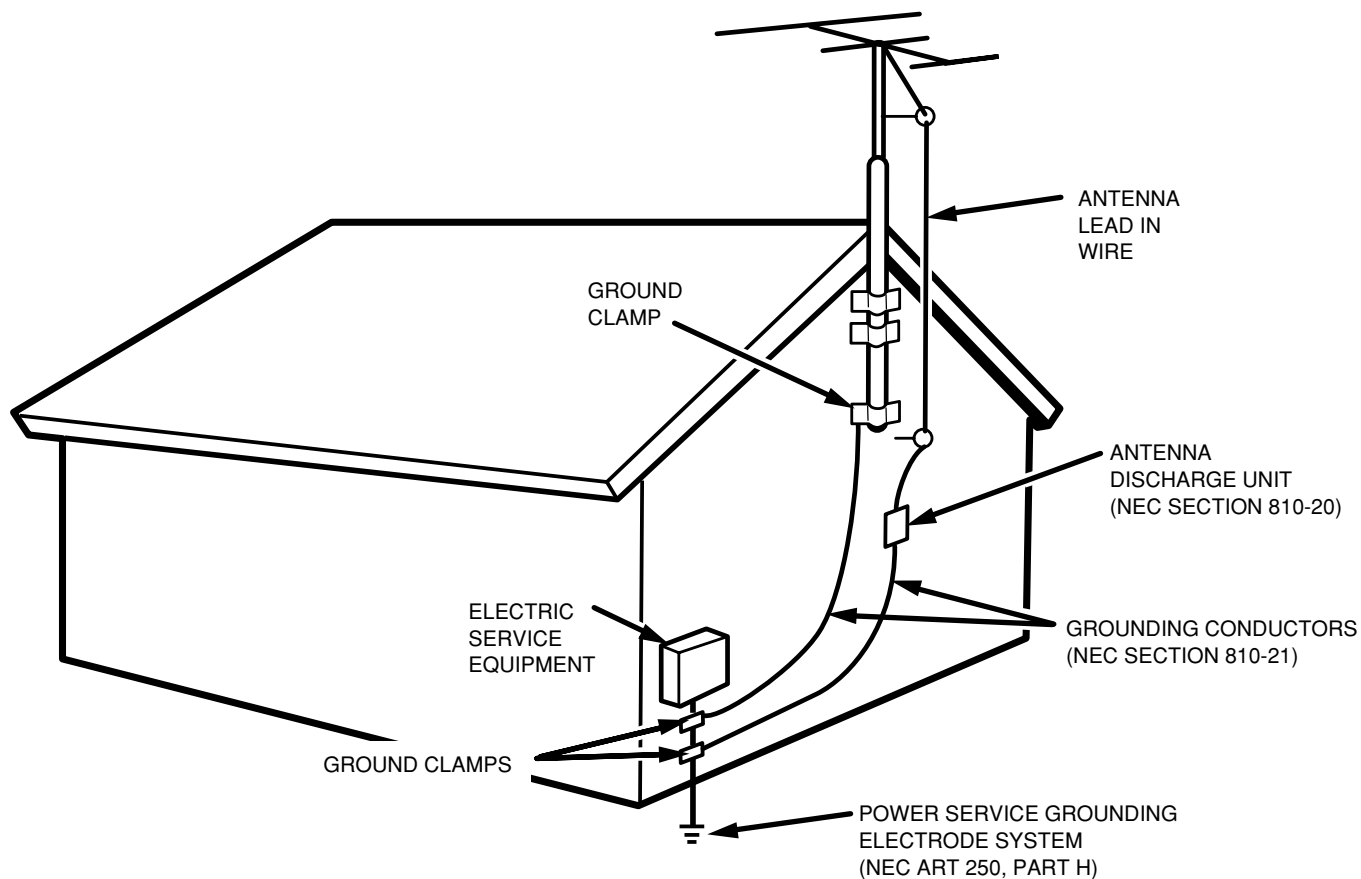


AC POLARIZED PLUG

13. Mains Cord Protection – Mains cord should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.
14. Protective Attachment Plug – The product is equipped with an attachment plug having overload protection. This is a safety feature. See Instruction Manual for replacement or resetting of protective device. If replacement of the plug is required, be sure the service technician has used a replacement plug specified by the manufacturer that has the same overload protection as the original plug.
15. Outdoor Antenna Grounding – If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure 1.
16. Lightning – For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.
17. Power Lines – An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.
18. Overloading – Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.
19. Object and Liquid Entry – Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

20. Servicing – Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
21. Damage Requiring Service – Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - a. When the Mains cord or plug is damaged.
 - b. If liquid has been spilled, or objects have fallen into the product.
 - c. If the product has been exposed to rain or water.
 - d. If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
 - e. If the product has been dropped or damaged in any way, and
 - f. When the product exhibits a distinct change in performance – this indicates a need for service.
22. Replacement Parts – When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
23. Safety Check – Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
24. Wall or Ceiling Mounting – The product should be mounted to a wall or ceiling only as recommended by the manufacturer.
25. Heat – The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

**FIGURE 1
EXAMPLE OF ANTENNA GROUNDING AS PER
NATIONAL ELECTRICAL CODE, ANSI/NFPA 70**



NEC - NATIONAL ELECTRICAL CODE

CONTENTS

CONTENTS	1
BEFORE USE	2
ACCESSORIES	3
ASSEMBLING AND ADJUSTING.....	5
NAMES AND FUNCTIONS.....	10
CONNECTIONS AND OPERATION.....	11
TROUBLE SHOOTING	12
SPECIFICATIONS AND EXTERNAL DIMENSIONS DIAGRAM	13
OTHERS	14

BEFORE USE

This section must be read before any connection is made to the mains supply.

■ Equipment Main Power Setting

Your Marantz product has been prepared to comply with the household power and safety requirements that exist in your area.

TT-15S1 can be powered by 120V AC only.

■ Copyright

Recording and playback of any material may require consent. For further information refer to the following:

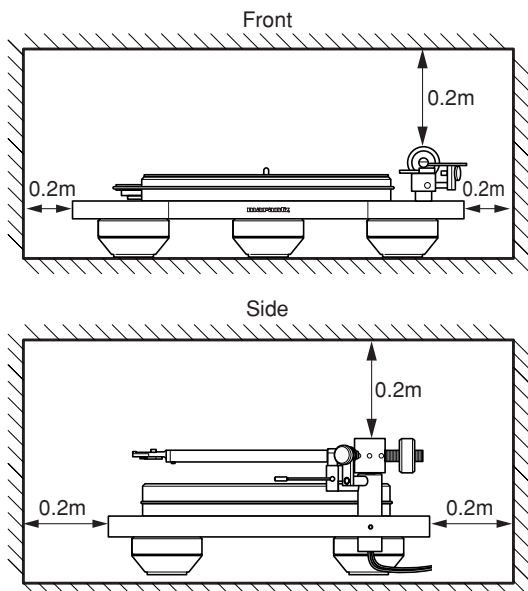
- Copyright Act 1956
- Dramatic and Musical Performers Act 1958
- Performers Protection Acts 1963 and 1972
- Any subsequent statutory enactments and orders

■ Do Not Locate in the Following Places

To ensure long-lasting use, do not locate the TT-15S1 where:

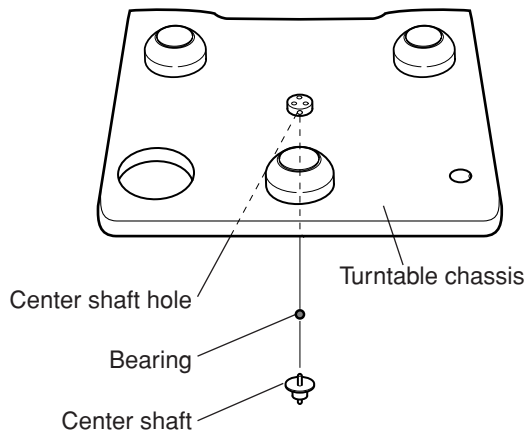
- Exposed to direct sunlight.
- Near to sources of heat such as heaters.
- Highly humid or poorly ventilated.
- Dusty.
- Subjected to mechanical vibrations.
- On wobbly, inclined or otherwise unstable surfaces
- Radiated heat is blocked such as in cramped audio racks.

To ensure proper heat radiation, ensure the below clearance from walls and other equipment.



■ Caution: Do not lose the bearing.

(View from underneath the turntable chassis)



There is a bearing located inside the center shaft hole in the turntable chassis. When the turntable leaves the factory, the center shaft hole is covered with tape to prevent the bearing from falling out. Sometimes after removing the tape, the bearing falls out when the turntable is turned over. If the center shaft is inserted when there is no bearing in the center shaft hole, the turntable will not rotate. Therefore, make sure that the bearing does not fall out of the center shaft hole when assembling the turntable.

Furthermore, if the turntable is disassembled for transportation etc. cover the center shaft hole with tape etc. to prevent the bearing from falling out.

■ Before using

• Thoroughly remove dust or dirt from the stylus point and record.

If you play records when there is dirt/dust on the stylus, not only will the stylus have poor contact with the record causing poor sound quality, it will also increase the rate of wear of both the stylus and record. Gently remove dirt/dust by brushing with a soft tipped brush from the base of the stylus to the tip. Also wipe the record with a good quality record cleaner.

• Install the turntable chassis and turntable so that they are level.

It is possible to adjust the height of the legs by rotating them. However, as there are only 3 legs, the height may not be adjustable in some cases.

In such cases, adjust the rack itself so that it is horizontal.

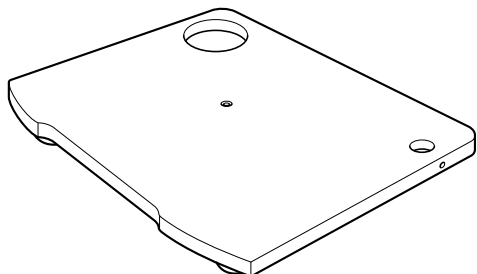
• About howling and hum

Howling occurs when sound from the speaker or vibration is transmitted to the player and is picked up by the cartridge again. If howling occurs when the volume is increased, check the positions of the speakers and turntable, and move them to locations where neither vibration nor sound is transmitted to the turntable. Hum noise occurs because of electromagnetic waves that are generated from other electronic devices. Check the position of other electronic devices that are near to the turntable, especially the amplifier. Also, hum or noise occurs if the ground is not connected correctly. Check that the ground wire is securely connected to the GND terminal on the amp/mixer.

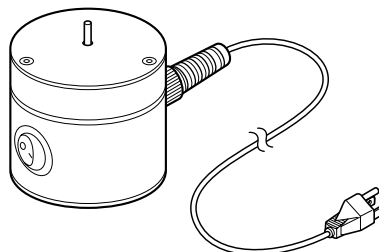
ACCESSORIES

Before using the turntable, please make sure that you have all of the following accessories.

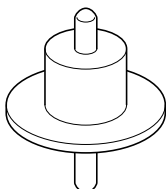
1. Turntable chassis



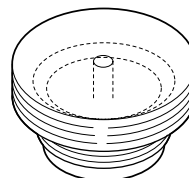
5. Motor



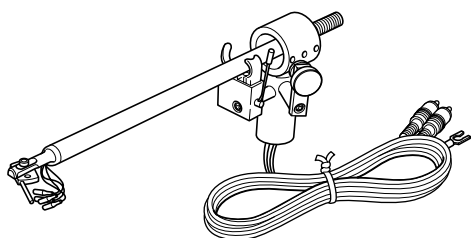
2. Center shaft



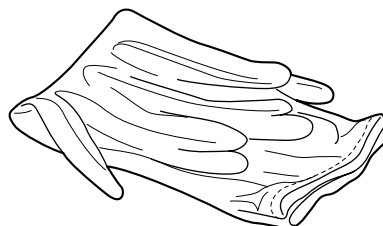
6. Motor pulley (for 60Hz areas)



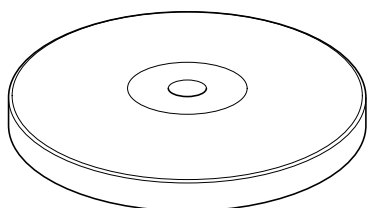
3. Tone arm



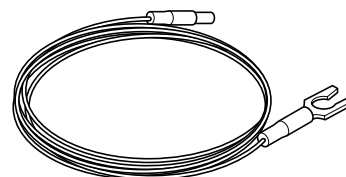
7. Gloves (pair)



4. Turntable

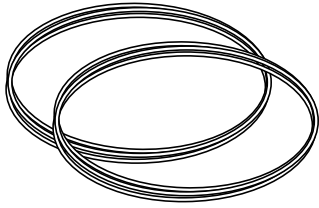


8. Ground wire

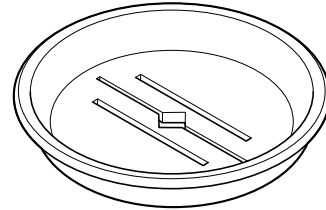


ACCESSORIES

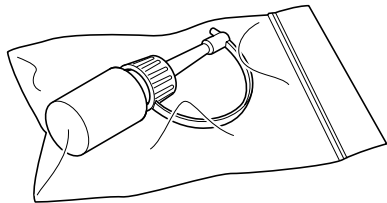
9. 2 Drive belts (1 spare belt)



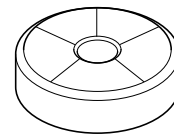
13. Record clamp ("Clever clamp" produced by Southern Engineering)



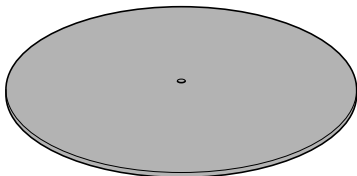
10. Bearing oil



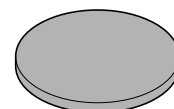
14. Counter weight



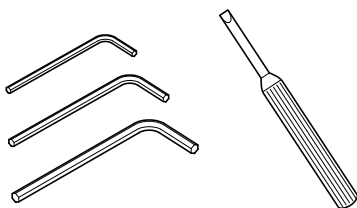
11. Turntable sheet



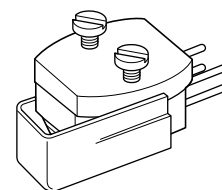
15. Tone arm height adjustment sheet



12. 3 Allen wrenches (large/medium/small)
1 adjustment screwdriver



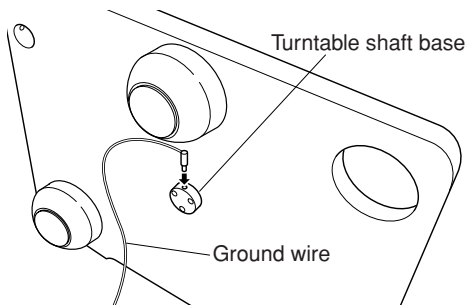
16. Cartridge (MM type) by Clearaudio



ASSEMBLING AND ADJUSTING

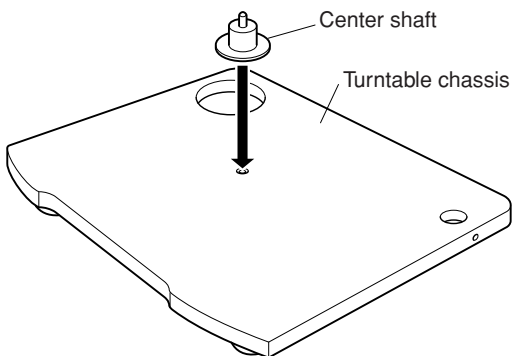
1. Installing the ground wire

Connect the ground wire to the turntable shaft base.



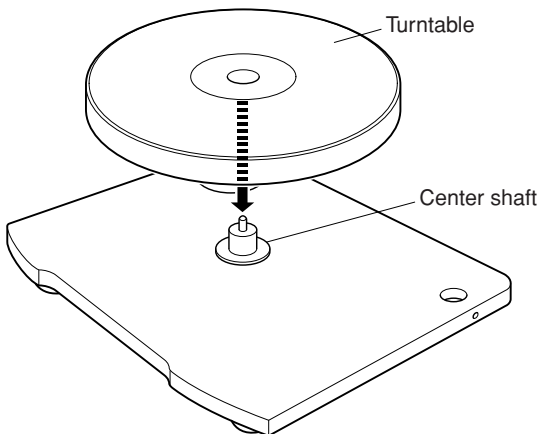
2. Inserting the center shaft

Insert the center shaft into the turntable chassis.



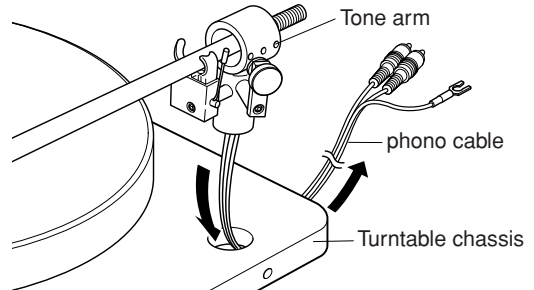
3. Installing the turntable

Place the turntable onto the center shaft.



4. Attaching the tone arm

a) Pass the Phono cable that is connected to the tone arm through the tone arm attachment hole.



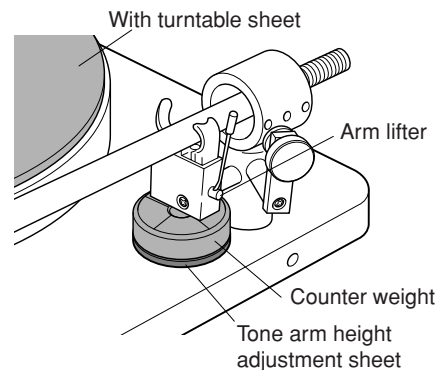
b) Determine the height and direction of the tone arm attachment position.

b-1) Height

Bear in mind that the height position of the tone arm is different depending on whether or not the turntable sheet is used.

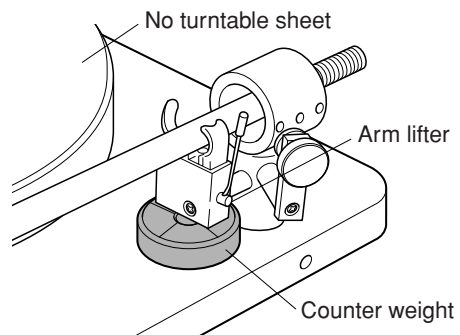
- **When using the turntable sheet**

The correct height position is achieved when the counter weight and tone arm height adjustment sheet are placed beneath the arm lifter.



- **When not using the turntable sheet**

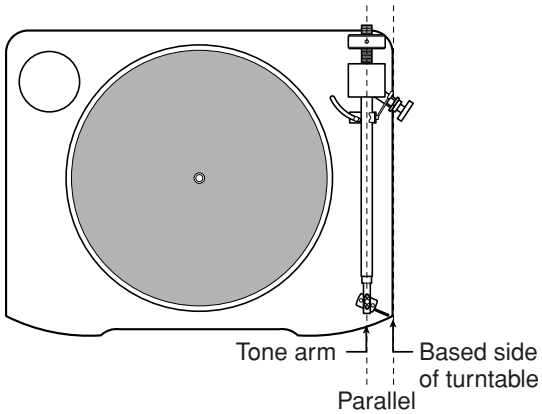
The correct height position is achieved when just the counter weight is placed beneath the arm lifter. (Tone arm height adjustment sheet is not used.)



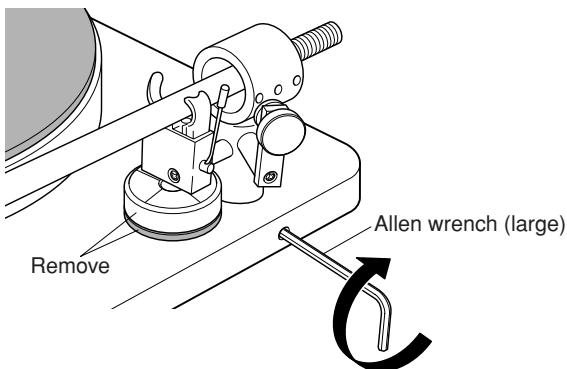
ASSEMBLING AND ADJUSTING

b-2) Direction

The direction position is correct when the tone arm is parallel with the side of the turntable base.



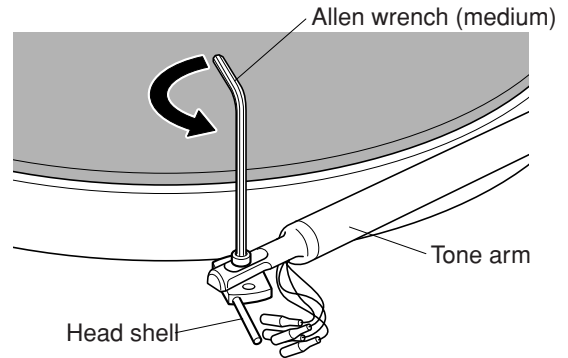
b-3) When you have determined the height and direction of the tone arm attachment position, tighten the tone arm fixing screw using the Allen wrench (large).



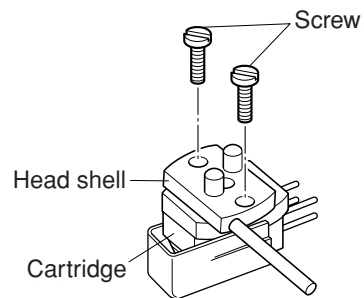
After fixing the tone arm in place, remove the counter weight and tone arm height adjustment sheet.

5. Attaching the cartridge

a) Use the Allen wrench (medium) to remove the head shell from the tone arm.



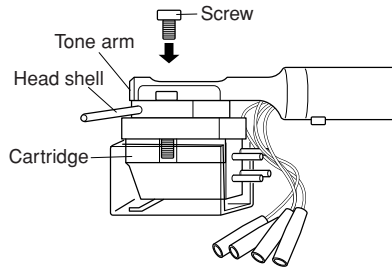
b) Attach the cartridge to the head shell.



- When attaching the cartridge that was included with the turntable, use the aluminum screw and slotted screwdriver that are also included.
- When attaching a different cartridge, choose a cartridge that is compatible with the cartridge weight range for the tone arm.
Compatible cartridge weight: 3-18g

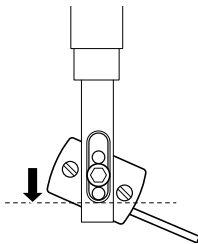
ASSEMBLING AND ADJUSTING

- c) Attach the cartridge that you attached in the previous step to the tone arm.



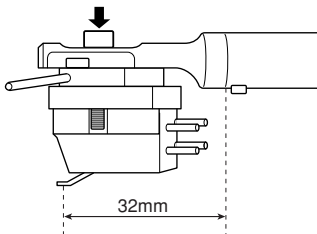
- **When using the included cartridge**

Attach to the front attachment hole position on the tone arm.

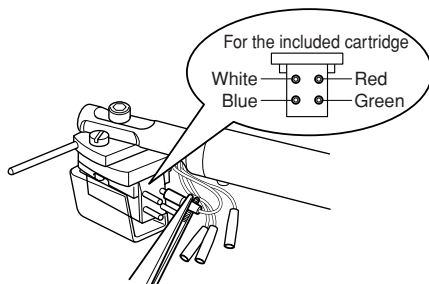


- **When using a different cartridge**

Attach the cartridge so that it is 32mm from the stylus tip.



- d) Connect the 4 tone arm wires to their respective terminals on the attached cartridge.



When using a different cartridge, refer to the cartridge instruction manual to connect the wires.

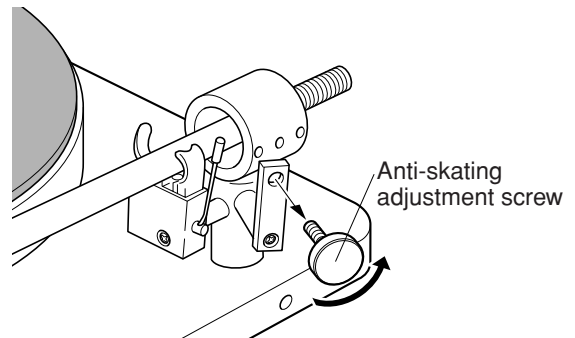
Caution:

Be careful when connecting the wires, as they are thin and break easily.

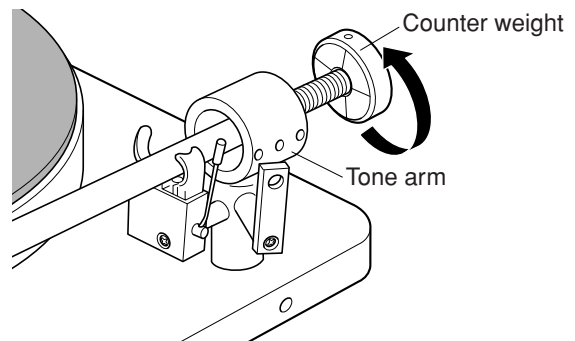
It is easy to connect the wires if you use tweezers etc.

6. Adjusting arm balance

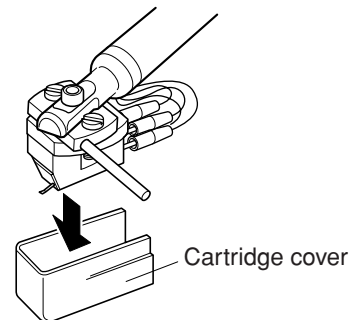
- a) Remove the anti-skating adjustment screw.



- b) Attach the counter weight to the back of the arm.



- c) Remove the cartridge cover.

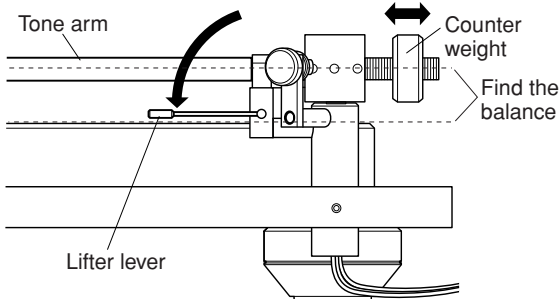


Caution:

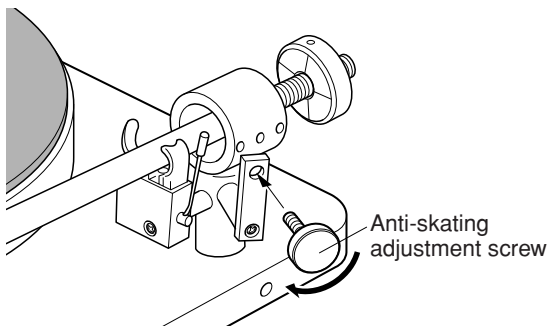
Make sure that the cartridge stylus tip does not touch the turntable etc. and that the stylus tip does not get damaged.

ASSEMBLING AND ADJUSTING

- d) Lower the lifter lever, and rotate the counter weight to balance the tone arm so that it is parallel with the turntable.



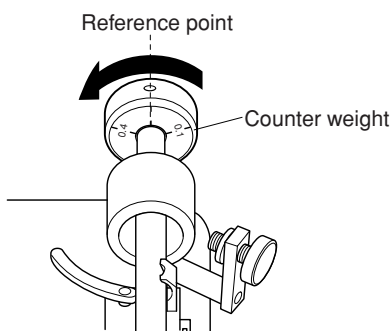
- e) After finding the balance, raise the lifter lever and attach the anti-skating adjustment screw.



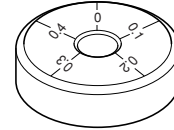
7. Stylus pressure adjustment

Adjust to the recommended stylus pressure of the cartridge being used.

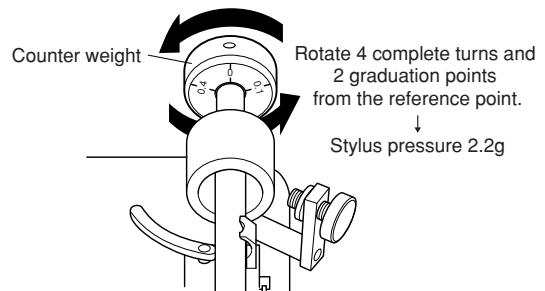
When the tone arm is balanced, rotate the counter weight in the direction of the arrow using the counter weight "0" point display as a reference point.



Rotating the counter weight by 1 scale graduation adds 0.1g of pressure. Therefore, as the counter weight has 5 graduations, one complete turn will add 0.5g of pressure.



As the recommended stylus pressure for the included cartridge is 2.2g, rotate the counter weight 4 complete turns and 2 scale graduations from the reference point at balance adjustment to reach the correct stylus pressure position.

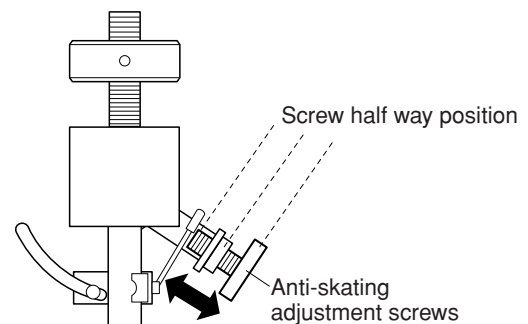


When using a different stylus, check the recommended stylus pressure and adjust to the correct stylus pressure.

8. Anti-skating adjustment

Adjust the anti-skating adjustment screw in line with the stylus pressure of the cartridge being used.

For the included cartridge, adjust so that the screw position is approximately half way out.



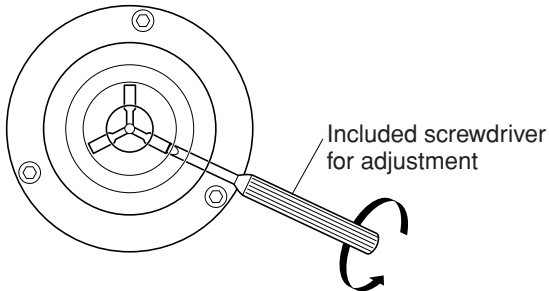
ASSEMBLING AND ADJUSTING

9. Attaching the motor pulley

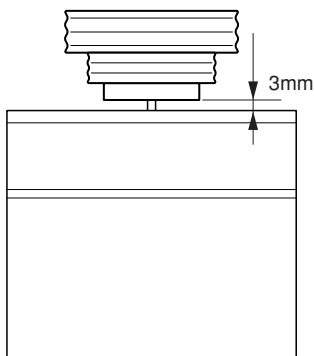
Attach the motor pulley to the motor.

Using the adjustment screwdriver included to fix the pulley's 3 plastic screws.

Be careful not to turn the screws with too much force, as they are made from plastic and can break easily.



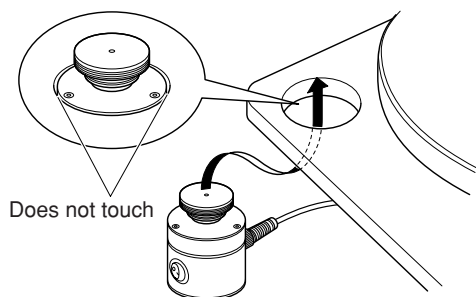
When attaching the pulley, fix with approximately 3mm space between the pulley and motor.



10. Installing the motor

From underneath the turntable chassis, place the motor in the hole section at the back left of the turntable chassis.

(Do not fix it to the turntable base)



Caution:

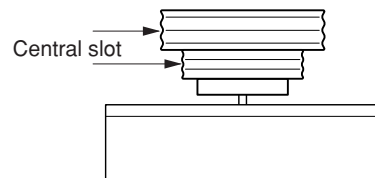
When installing the motor, in order to prevent motor vibrations from being transmitted to the turntable base, install the motor so that it does not touch the base.

11. Installing the belt

Use one of the belts included and attach it between the motor pulley and turntable.

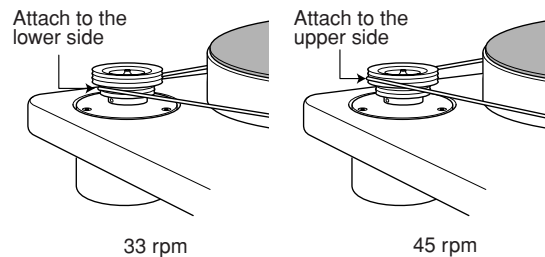
When attaching the belt, hook it over the central slot.

(There are 2 belts included with the turntable. Please keep one as a spare.)



The positions for attaching the motor pulley belt are different when playing 45 or 33 rpm records.

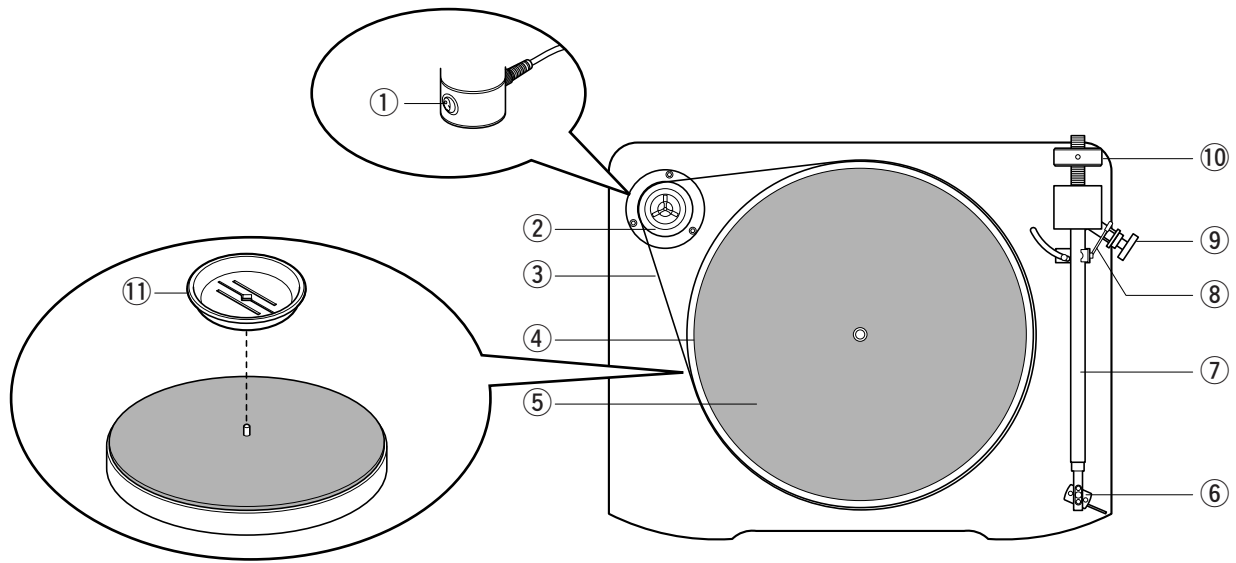
Change the position of the belt to suit the record that you want to play.



Caution:

When changing the position of the belt, use the gloves included, and be careful not to damage the belt in any way.

NAMES AND FUNCTIONS



① Power switch (OFF, ON)

When it is switched ON, the turntable rotates.

② Pulley

This is changed to suit the rpm speed of the record to be played.

33 1/3 rpm record[Lower side]

45 rpm record[Upper side]

③ Belt

④ Turntable

⑤ Turntable sheet

⑥ Cartridge

⑦ Tone arm

⑧ Lifter lever

This is used to raise and lower the tone arm.

⑨ Anti-skating knob

When a record is being played, a certain amount of force is exerted on the stylus that pulls it towards the center. This knob is used to perform adjustments that cancel out that force.

⑩ Counter weight

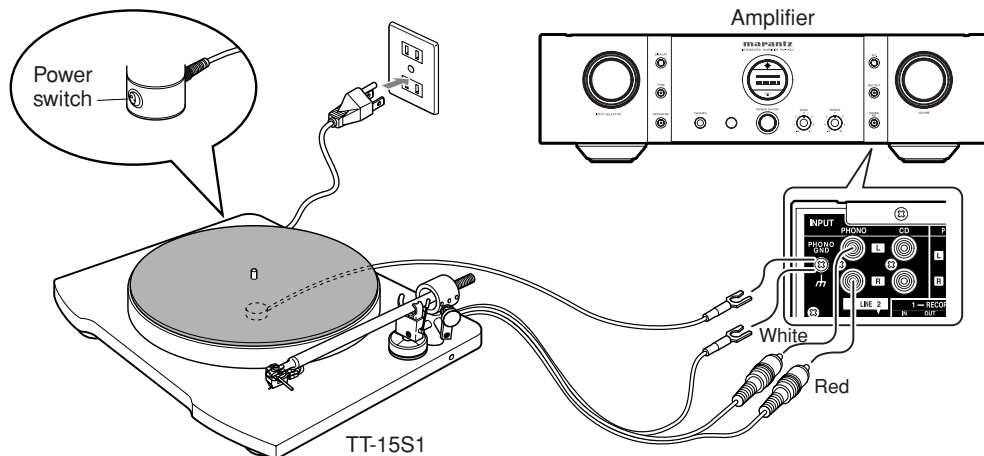
This is used to balance the toner arm and to adjust the stylus pressure.

⑪ Record clamp

This is effective in holding the record when records are being played without a turntable sheet, or when playing warped records.

Use it as shown in the diagram.

CONNECTIONS AND OPERATION



■ Connections

Make sure that the power supply to both this turntable and the amplifier are OFF before you start connecting.

1. Connect the PHONO cables (L: white, R: red) that are connected to the toner arm to the corresponding L and R [PHONO] input terminals on your amplifier.
2. Connect both the ground wire that is connected to the bottom of the turntable and GND cable that is connected to the toner arm to the GND terminal (ground terminal) on your amplifier.
3. Plug the motor power cord into an AC 120V outlet.

Caution

If your amplifier etc. has power outlets on the back panel, plug the turntable into one of these outlets. In this case, refer to the instruction manual for amplifier, etc. and check that the power outlet has enough power capacity.

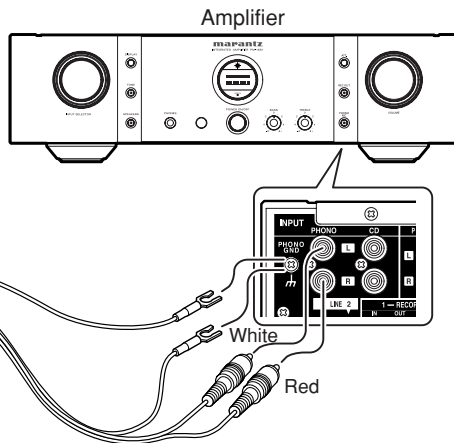
■ Operation

■ Starting to play records

1. Plug the turntable power cable into an AC outlet.
2. Turn on the amplifier, and select input to [PHONO]. Also, set the amplifier phono equalizer to either [MM] or [MC] to suit the attached cartridge. (If you are using the included cartridge, set to [MM])
3. Set a record on the turntable.
* If you are playing an EP record, use a commercially available EP adapter.
4. Attach the belt to the motor pulley in the correct position for the chosen record.
5. Switch the power button ON.
The turntable will begin to rotate at the speed selected in operation 4 above.

Caution

In order to reduce noise, the motor torque has been set to the minimum level in this turntable. Therefore, the turntable sometimes does not rotate when the power is switched on. If this happens, gently rotate the turntable a little in the clockwise direction by hand.



6. Lift the lifter lever, then use the head shell finger hook to move the tonearm to the play position of the record.
7. Lower the lifter lever.
The tonearm slowly lowers the stylus onto the record, and the record starts to play.

Caution

- Do not allow the turntable to be jolted or vibrated while playing a record.
- Always stop the turntable when changing records.
- Always turn down the amplifier volume when placing the stylus on or removing it from the record.

■ When the record has finished

1. Gently raise the lifter lever.
The tone arm raises, and the stylus separates from the record.
2. Return the tone arm to the arm rest using the head shell finger hook.
3. Lock the tone arm in the arm rest.
4. Switch the power button OFF.
The turntable stops rotating.

TROUBLE SHOOTING

If you think a malfunction has occurred, first check the points listed below.

■ Are each of the connections correct?

■ Are you operating the turntable correctly as described in this instruction manual?

If the turntable does not operate correctly, check all of the items in the following table.

However, if none of the items in the following table correspond to the problem, it is possible there is a fault with your turntable. In this case, turn off the power, un-plug the power cord from the AC outlet, and contact your dealer.

If you do not remember where you bought this turntable, contact the Marantz Authorized Service Center.

■ About the included cartridge

You cannot replace the stylus in the cartridge that is included with this turntable.

If you wish to exchange the cartridge itself, contact the Marantz Authorized Dealer.

■ Check Items

The stylus won't lower onto the record.

- Is the tone arm height adjusted correctly?
- Is the stylus pressure adjusted correctly?
- Is the arm balanced correctly?

There is no sound.

- Are the cartridge and head shell connected correctly?
- Is the output cord connected to the amplifier correctly?
- Are the amplifier knobs adjusted and switched correctly?

A humming noise is emitted.

- Is the output cord ground wire connected to the amplifier?
- Is the output cord plug connected securely?
- Is the head shell fixed securely with the lock nut?

The stylus jumps.

- Is the stylus pressure adjusted to the correct stylus pressure?
- Is the record warped or scratched?
- Is there a lot of dust collected on the stylus?

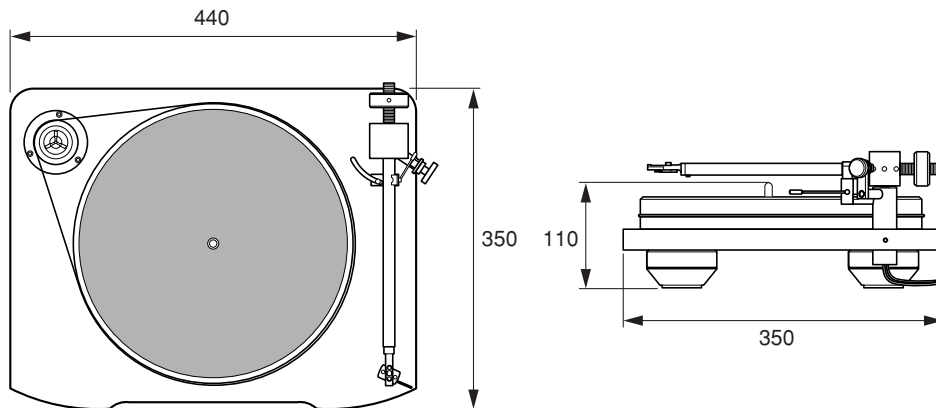
The arm stops progressing half way through the record.

- Is the record scratched?
- Is there something touching the arm?

The sound is too quiet. Or too loud.

- Is the amplifier connection switching suitable for the type of cartridge being used (MC/MM)?

SPECIFICATIONS AND EXTERNAL DIMENSIONS DIAGRAM



■ Turntable section

RPM	33 1/3 rpm, 45 rpm
Drive system	Belt drive system
Turntable	High density acrylic
Turntable depth	28 mm
RPM deviation	±0.2 %
S/N ratio	80 dB

■ Tone Arm section

Arm type	2 point radial tone arm
Effective length	239mm
Overhang	17mm
Stylus pressure adjustable range	0-5g(1 Graduation = 0.1g)
Compatible cartridge weight	33-18g (excluding head shell)

■ Included Cartridge (Clearaudio)

Frequency response	20Hz - 20 kHz
Output voltage (1kHz, 5cm/s)	~ 3.6 mV
Channel separation	> 30 dB
Channel balance	< 0.2 dB
Recommended stylus pressure	2.2 g
Impedance	0.66 kΩ
Cantilever	Aluminum
Cartridge weight	6.0 g

■ General Specifications

Power supply	AC120V, 60 Hz
Power consumption	5W
Dimensions	
....Width 440mm x depth 350mm x height 110mm	
(Excluding tone arm)	
Net weight	8.9kg(including tone arm/motor)

OTHERS

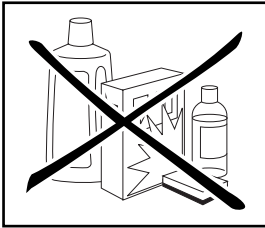
The section describes the care and maintenance tasks that must be performed to optimize the operation of your Marantz equipment.

■ Cleaning external surfaces of equipment

The exterior finish of your unit will last indefinitely with proper care and cleaning. Never use scouring pads, steel wool, scouring powders or harsh chemical agents (e.g., lye solution), alcohol, thinner, benzine, insecticide or other volatile substances as these will mar the finish of the equipment. Likewise, never use cloths containing chemical substances. If the equipment gets dirty, wipe the external surfaces with a soft, lint-free cloth.

If the equipment becomes heavily soiled:

- dilute some neutral detergents suitable for acrylic material.
- dip a soft, lint-free cloth in the solution and wring the cloth till it is damp.
- wipe the equipment with the damp cloth.
- dry the equipment by wiping it with a dry cloth.



■ Repairs

In the unlikely event your TT-15S1 should need adjustment or repairs, contact a Marantz Authorized Service Center. Their factory trained technicians have the knowledge, facilities, and access to replacement parts needed for repair and calibration of your turntable. After the warranty period has expired, repairs will be performed for a charge if the equipment can be returned to normal operation.

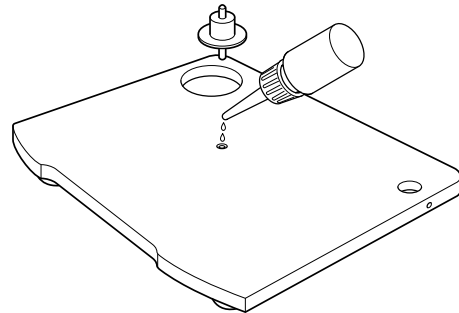
In the event of difficulty, refer to your Marantz Authorized Dealer or Marantz Authorized Service Center.

If writing, please include the model and serial number of the equipment together with a full description of what you think is abnormal about the equipment's behaviour.

You can find your Marantz Authorized Dealer or Service Center on our website "www.marantz.com".

- Approximately every two years you can lubricate (only if you will recognize speed variations) the bearing of the center shaft with the delivered oil. In this case it is enough to put 4 or 5 drops into the center shaft hole in the turntable chassis.

Be careful not to add too much oil.



www.marantz.com

You can find your nearest Marantz Authorized Dealer on our website.

U.S.A. Marantz America, Inc. 1100 Maplewood Drive, Itasca, IL 60143, U.S.A.

marantz[®] is a registered trademark.