

JVC

SERVICE MANUAL

ELECTRO-SERVO FULLY-AUTOMATIC TURNTABLE

MODEL **QL-Y66F**

Marengo 14 May'06



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1. Safety Precautions

1. The design of this product contains special hardware, many circuits and components specially for safety purposes.

For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.

2. Alterations of the design or circuitry of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the product have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. Electrical components having such features are identified by shading on the schematics and by (Δ) on the parts list in Service manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list in Service manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and/or the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard.

When service is required, the original lead routing and dress should be observed, and they should be confirmed to be returned to normal, after reassembling.

5. Leakage current check

(Safety for electrical shock hazard)

After reassembling the product, always perform an isolation check on the exposed metal parts of the Products (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

Do not use a line isolation transformer during this check.

- Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5 mA AC (r.m.s.).

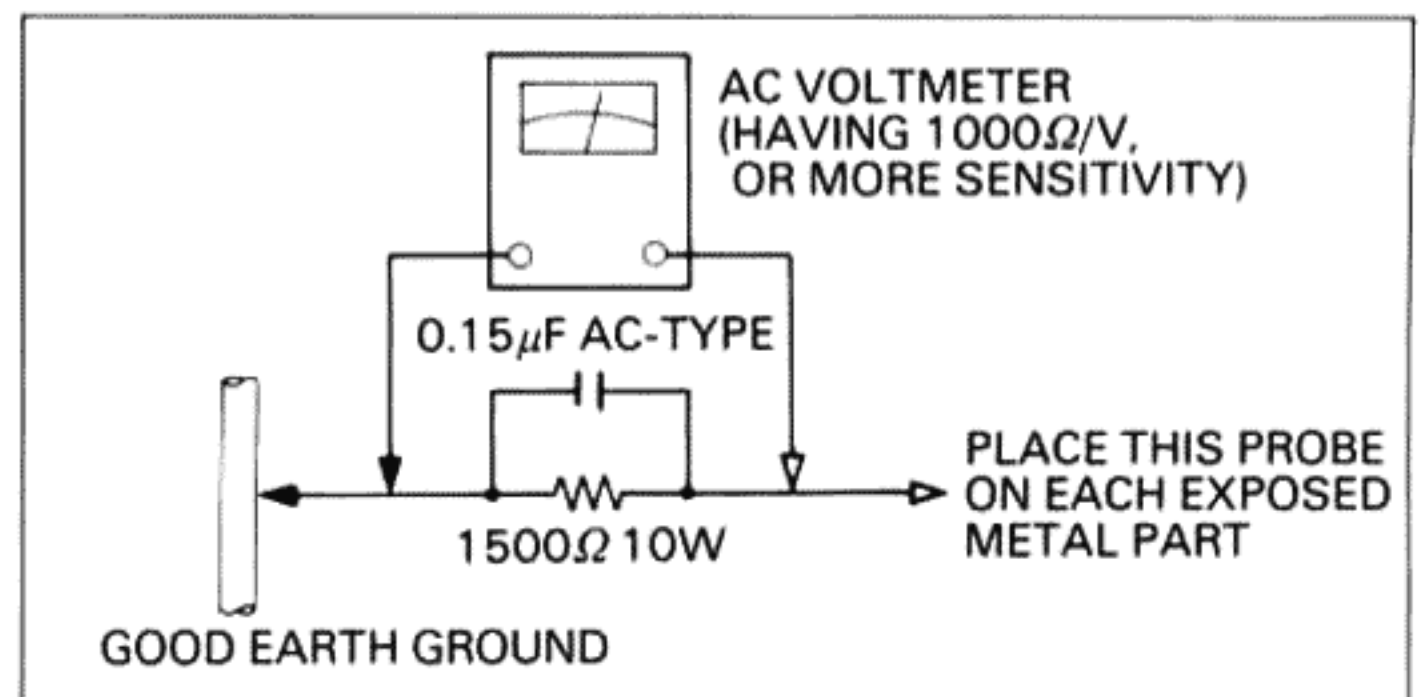
- Alternate check method.

Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1500 ohms 10W resistor paralleled by a 0.15 μ F AC-type capacitor between an exposed metal part and a known good earth ground.

Measure the AC voltage across the resistor with the AC voltmeter.

Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75V AC (r.m.s.).

This corresponds to 0.5 mA AC (r.m.s.).



2. Specifications

MOTOR SECTION

Motor	: Coreless, DC, Quartz lock FG servomotor
Drive system	: Direct drive
Speeds	: 33-1/3 rpm, 45 rpm
Speed detection	: Frequency generator
Servo system	: Bidirectional servo quartz lock
Start-up characteristics	: 1/2 rotation (33-1/3 rpm)
Wow and flutter	: 0.015 % (WRMS) 0.005 % (FG) 0.03 % (DIN)
Signal-to-noise ratio	: 80 dB (DIN-B)
Starting torque	: 1.4 kg·cm
Speed deviation	: 0.002 %
Load characteristics	: 0 %
Drift	: 0.0001 %/h
Thermal drift	: 0.00005 %/°C
Platter	: 35 cm, 2.9 kg (including platter mat)

TO NEARM SECTION

Effective length	: 254 mm
Tracking error	: -1° 12' - +1° 48'
Overhang	: 15 mm
Applicable tracking force range	: 0 g - 3 g (direct reading system of 0.25g step)
Applicable cartridge weight	: (S-shaped arm pipe including the headshell weight)
Straight arm pipe	: 4.5 g - 10.5 g (Counterweight only) 11.5 g - 17.5 g (Counterweight and sub-weight combined)
S-shaped arm pipe	: 8 g - 14 g (Counterweight only) 15 g - 21 g (Counterweight and sub-weight combined)
Tonearm height adjustable range	: 48 mm - 55 mm (preset to 50 mm)

CARTRIDGE SECTION

Model	: MC-200E
Type	: Moving coil (MC)
Frequency response	: 10 Hz - 25,000 Hz
Output	: 2.3 mV (1,000 Hz)
Channel separation	: 25 dB (1,000 Hz) (Test record TRS-1)
Load impedance	: 47 kohms
Tracking ability	: 70 μm at 315 Hz
Compliance	: 8 × 10 ⁻⁶ cm/dyne (Dynamic)
Stylus tip	: 0.3 × 0.7 mil diamond
Stylus	: DT-200E
Tracking force	: 1.75 g ± 0.25 g
Applicable cartridge weight	: 4.3 g (Not provided for the U.S.A., Canada, U.K. and W. Germany)

GENERAL

Power source	: Refer to the table below.
Power consumption	: Refer to the table below.
Dimensions	: 495(W) × 187(H) × 405(D) mm (19-1/2" × 7-3/8" × 16")
Weight	: 12.3 kg (27.1 lbs)

Accessories

EP adapter (not included in the parts box)	1
Hexagonal key	1
Straight-type arm pipe with MC-200E (with cartridge except for the U.S.A., Canada, U.K. and W. Germany)	1
S-shaped arm pipe	1
Counterweight	1
Sub-weight	1
Screw ass'y	1 set
Ring washer	1

Note:

Turntables for the U.S.A., Canada, U.K. and W. Germany are provided with the screw ass'y and not provided with the cartridge.

Design and specifications subject to change without notice.

POWER SPECIFICATIONS

Areas	Line Voltage & Frequency	Power Consumption
U.S.A.	AC 120V~, 60Hz	15 watts
Canada		
Continental Europe	AC 220V~, 50 Hz	15 watts
U.K.	AC 240V~, 50 Hz	15 watts
Australia		
Other areas	AC 110/120/220/240 V~ selectable, 50/60 Hz	15 watts

3. Service Precautions

- Concerning the removed wire or clamp of a board, be sure to set it as arranged previously when remounting it.
For handling the solderless connector, see page 1-29.
- When replacing the parts marked with Δ , be sure to use the designated parts to ensure safety.
- When servicing the motor for proper rotation or the tonearm for proper movement, be sure to place the turntable level.
- When powering the unit with the motor connector disconnected, the power transformer are unavoidably destructed. To avoid this, never disconnect the connector when powering.
- When repairing a P.C. board, note that when powering the unit with the heatsink removed, the transistor temperature rises due to insufficient heat radiation.
- For repairing the tonearm section, refer to the exploded view of tonearm ass'y and pay adequate attention to handling the coil section.
- Be careful never to attach iron dusts or similar others to the motor and tonearm which use magnets.
- When removing wood screws on the cabinet, wood dusts occur. Intrusion of wood dusts into the bearing section of motor or tonearm or into a clearance between magnets may cause the performance to be degraded. To avoid this, clear off the dusts with adhesive tape or the like.
When reassembling the cabinet, note that forcibly tightening a wood screw causes damage to the thread so that the screw does not work.
- When replacing parts of tonearm, motor, etc. and completing the repair, be sure to perform the lead-in and motor phase adjustment.
- Placing the tuner antenna and the turntable signal cord near each other gives interference to the tuner, thereby causing noise. For favorable listening, place them away from each other as much as possible.

4. How to Clean and Repair the Cabinet

● Cleaning

To clean the cabinet, soak a piece of dry, soft cloth with silicone wax available on market, wipe the cabinet thoroughly, and finish with dry, soft cloth evenly.

● Repairing

Slight scratches

Apply fine rubbing compound to cloth and polish the surface with slight force until the scratches disappear.

Finally, apply silicone wax to dry, soft cloth and wipe the surface with it totally.

Serious scratches

Coat the scratched part with lacquer enamel two or three times in such a manner that the color is first lighter than that at the surroundings and then color becomes deeper and identical to that at the surroundings.

Apply thick transparent lacquer thickly to the part with the tip of a thin brush. When it has dried up (it takes about 8 hours), grind with water-resistance sand-paper of #800 – 1000 using water. When the surface has become level, spray it two or three times with the transparent lacquer for polyvinyl chloride which is diluted appropriately.

When it has dried up, polish it with fine rubbing compound. Finally, apply silicone wax to dry, soft cloth and wipe the surface with it totally.

Deep concave

Put lacquer putty or annealed lac in the concaved part, then write grains with lacquer enamel of the same color as the surrounding grains in such a manner that the color is first lighter and then deeper and identical to that at the surroundings. Spray it two or three times with the transparent lacquer for polyvinyl chloride which is diluted appropriately. When it has dried up, polish it with fine rubbing compound. Finally, apply silicone wax to dry, soft cloth and wipe the surface with it totally.

Note: If the rubbing compound and silicone wax are not available, consult your nearest JVC dealer.

5. Preparation

– Until completion of the tonearm height adjustment, k

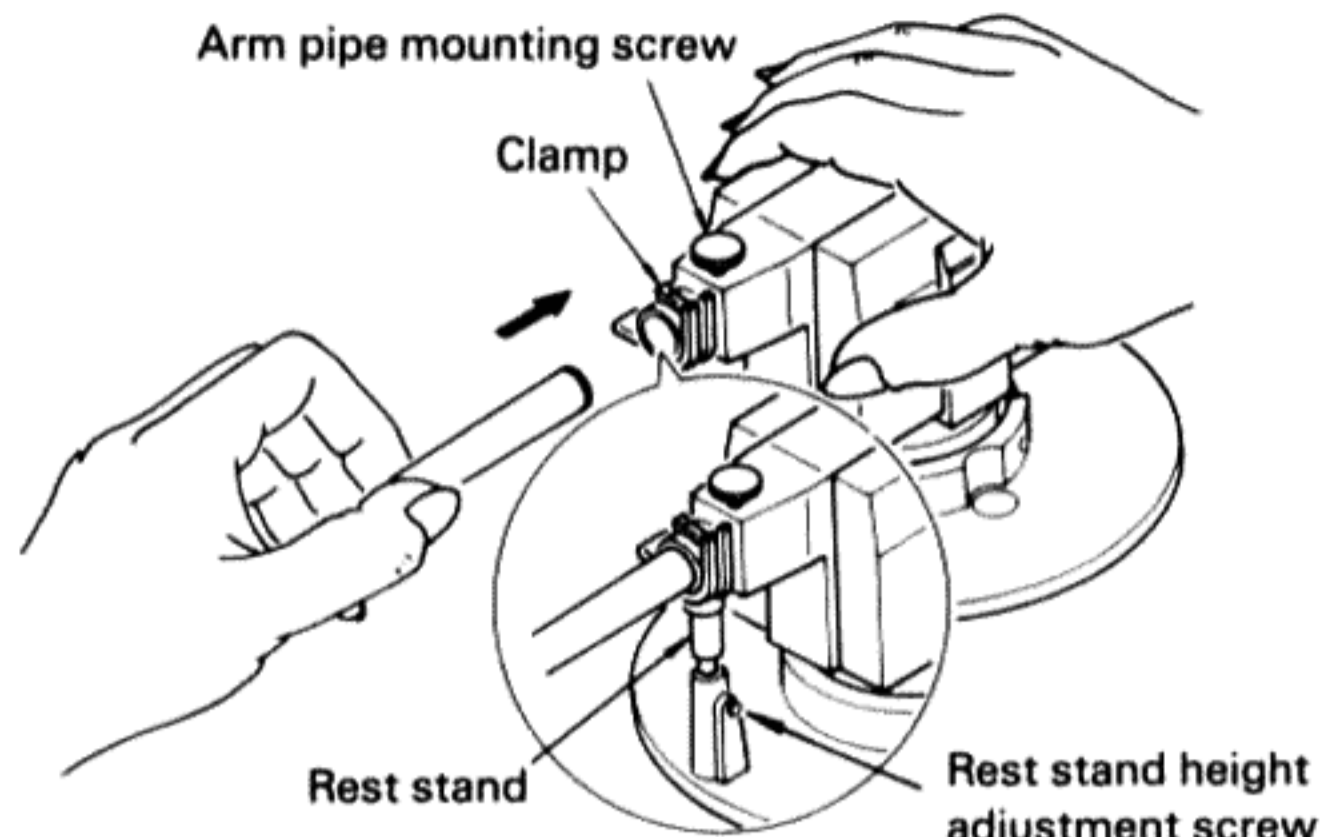


Fig. 1

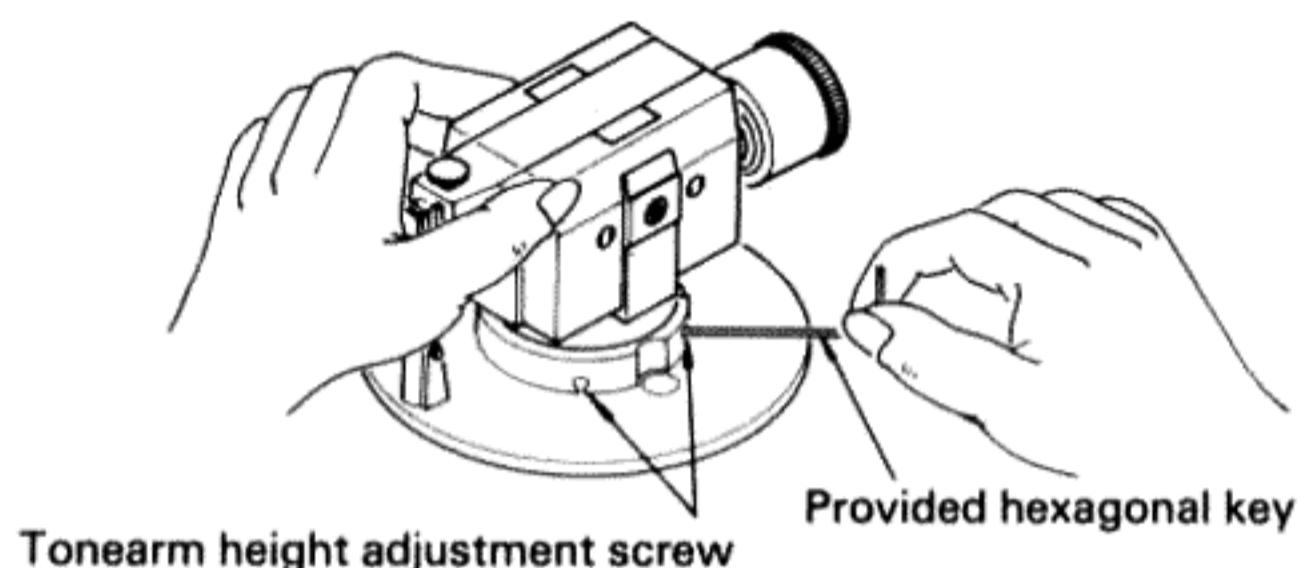


Fig. 2

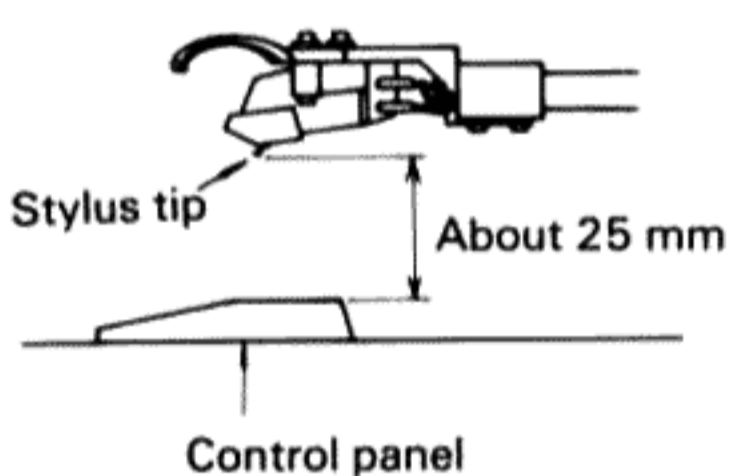


Fig. 3

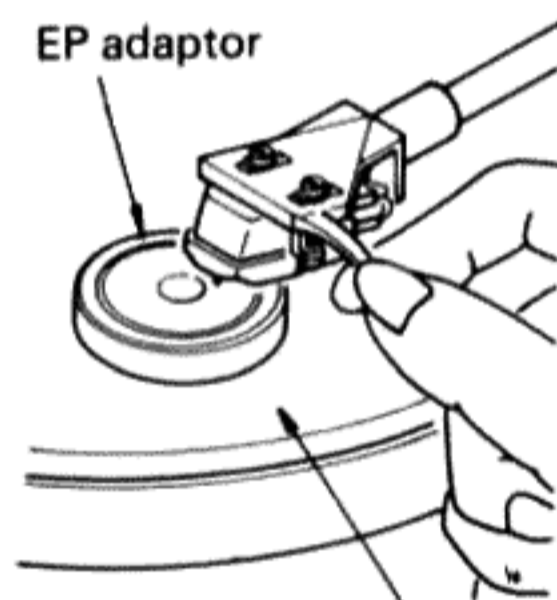


Fig. 4 Platter mat

ZERO BALANCE indicator

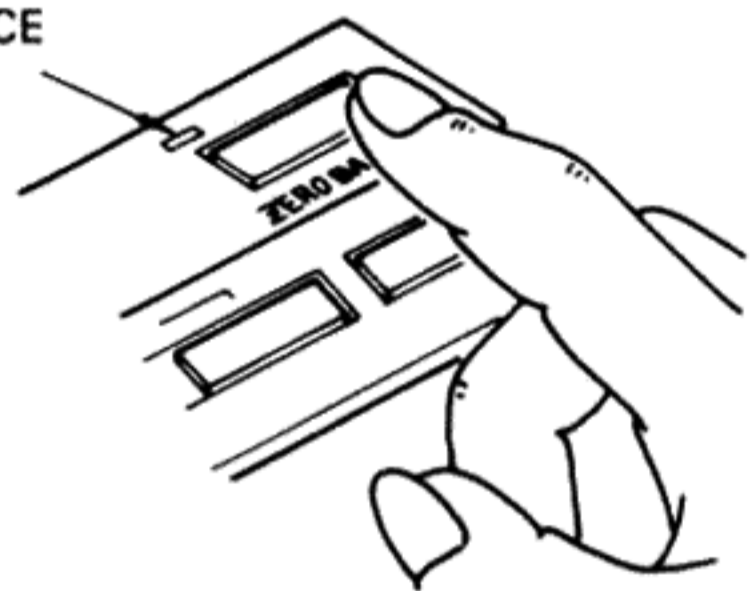


Fig. 5

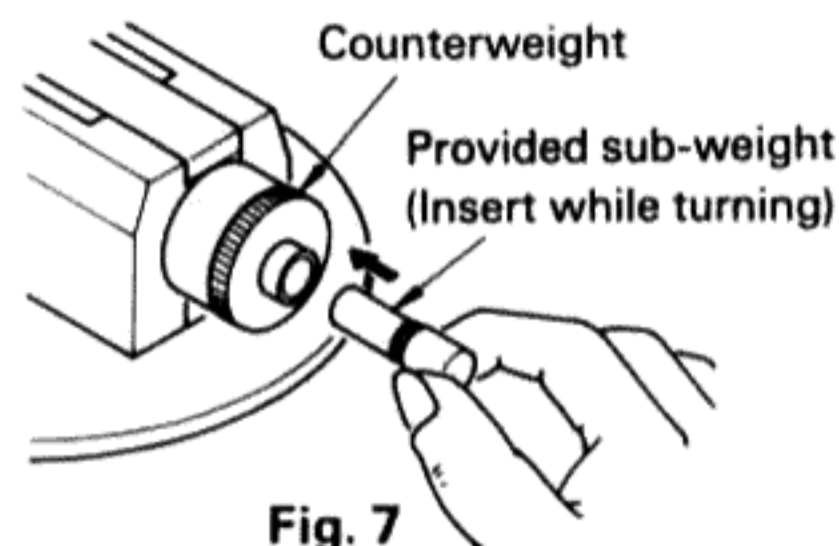


Fig. 7

When the stylus pressure cannot be adjusted because of the excessive weight of the cartridge, carry out readjustment with the provided sub-weight.

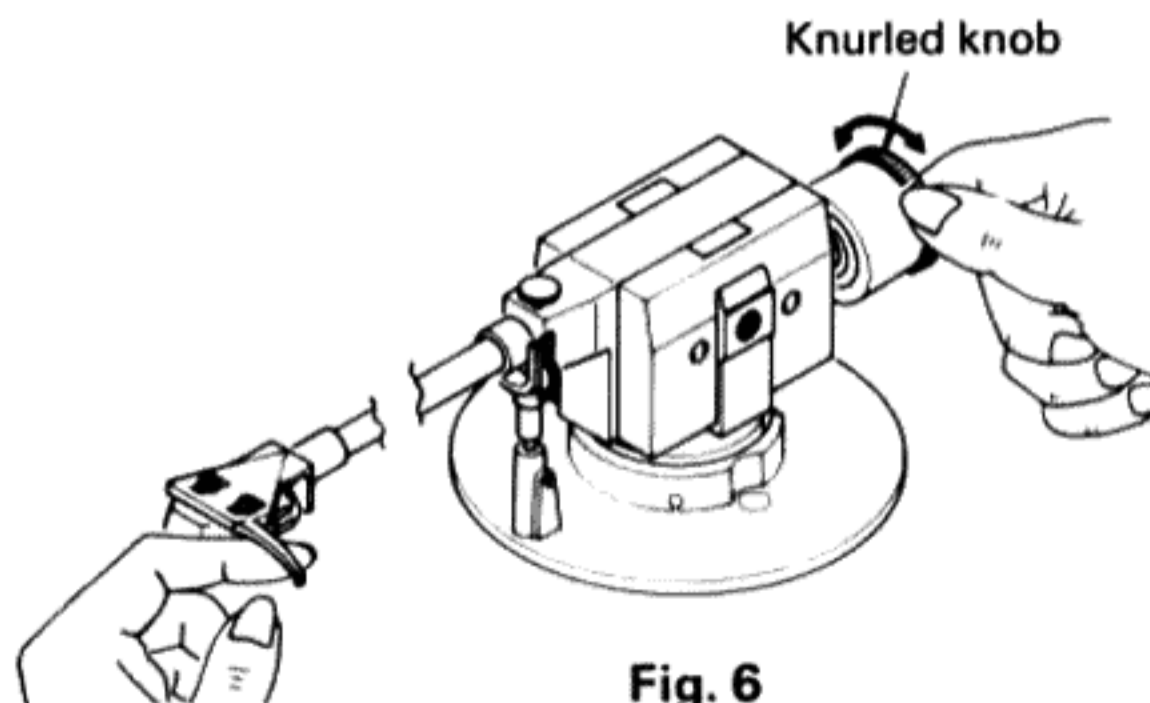


Fig. 6

■ Attaching the arm pipe

Loosen the mounting screw of the arm pipe, fully insert the arm pipe with a cartridge, then secure it. (See Fig. 1.)

■ Tonearm height and rest stand height adjustments

1. With the arm clamped to the rest, loosen the tonearm height adjustment screws with a provided hexagonal key as shown. Then, adjust the arm height by moving the arm up and down so that the stylus tip is about 25 mm up from the control panel. (See Fig. 3.) After adjustment, securely tighten the adjustment screws. (See Fig. 2.)
2. Release the arm from clamping and slightly lift it up until it stops, then confirm that the stylus tip is about 7 – 9 mm above the platter mat. (See Fig. 4)
3. Loosen the rest stand height adjustment screw, adjust the height so that the tonearm is level, then secure it.

■ Tracking force adjustment

1. Turn the power on and press the ZERO BALANCE button. At this time, the ZERO BALANCE indicator lights.
2. Turn the knurled knob of the counterweight and stop it at the position that the stylus tip almost touches the record surface. (See Fig. 6.)

Note: When an especially heavy cartridge is used with the S-shaped arm pipe and tracking force adjustment is impossible even when the provided sub-weight is used, use optional JVC sub-weight SW-Y66F. (See Fig. 7.)

3. Press the ZERO BALANCE button again, and the ZERO BALANCE indicator goes out and the arm returns to the rest automatically. After this, clamp the arm to the rest.

Note: Even when the power is turned off mistakenly or power failure occurs, the record and stylus are protected against any damage since a bias of about 0.5g is applied beforehand.

Therefore, since the zero balance at power off differs from that at the ZERO BALANCE button on, the arm is intended to lift up at power off.

4. Adjust the TRACKING FORCE, ANTI-SKATING and Q DAMPING scales to the tracking force of the cartridge to be used. (See Fig. 9, 10.)

Note: When using a conical stylus, adjust the ● marked index to the tracking force of the cartridge to be used. When using an elliptical or a Shibata stylus, adjust the ● marked index to it.

TRACKING FORCE control

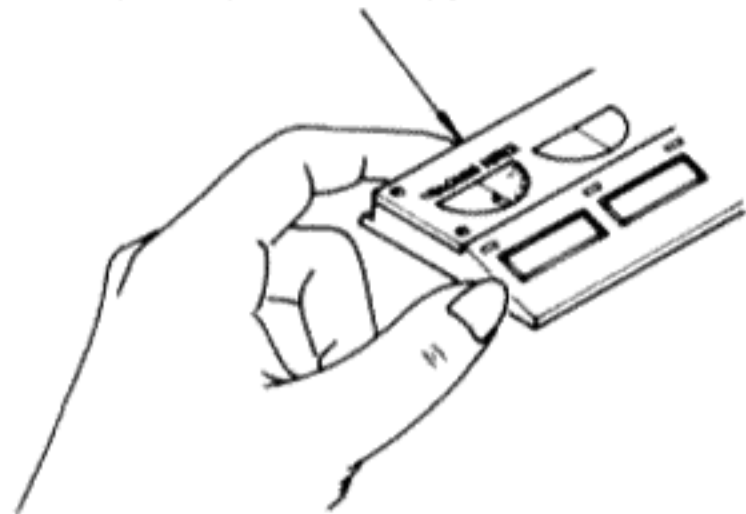


Fig. 8

ANTI-SKATING control

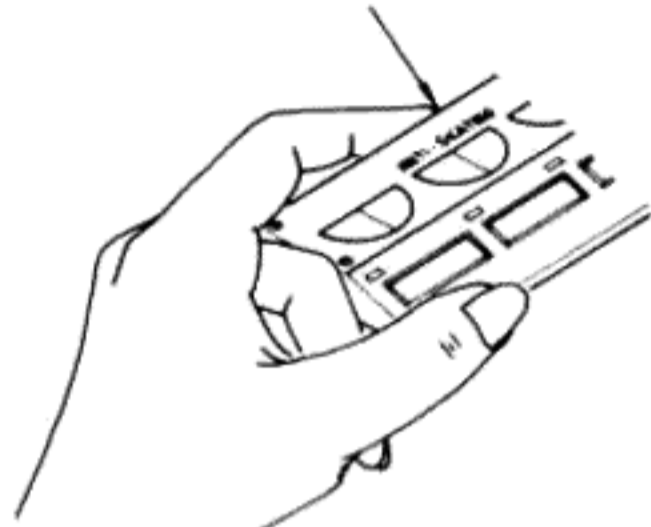


Fig. 9

Q DAMPING control

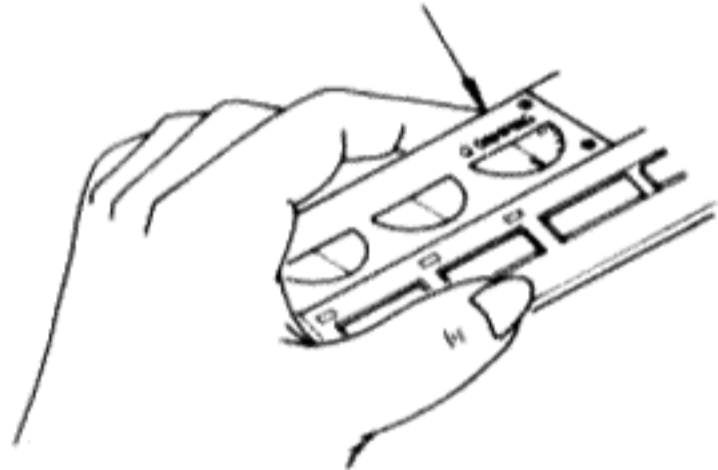


Fig. 10

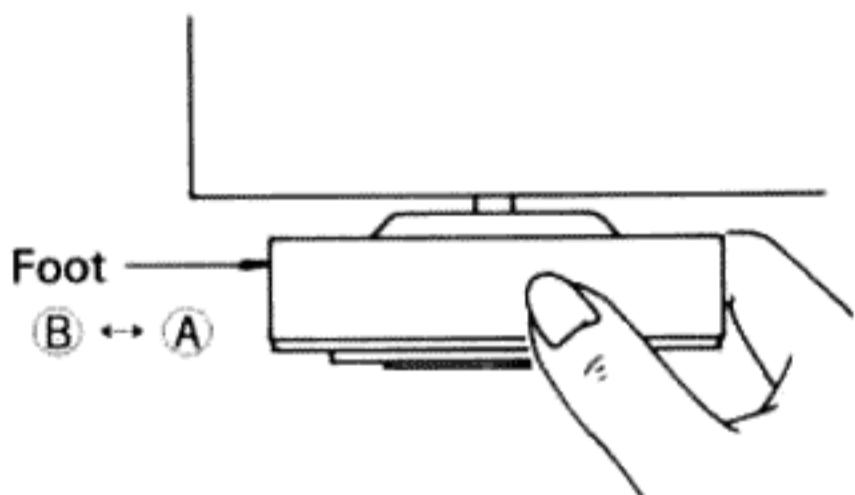
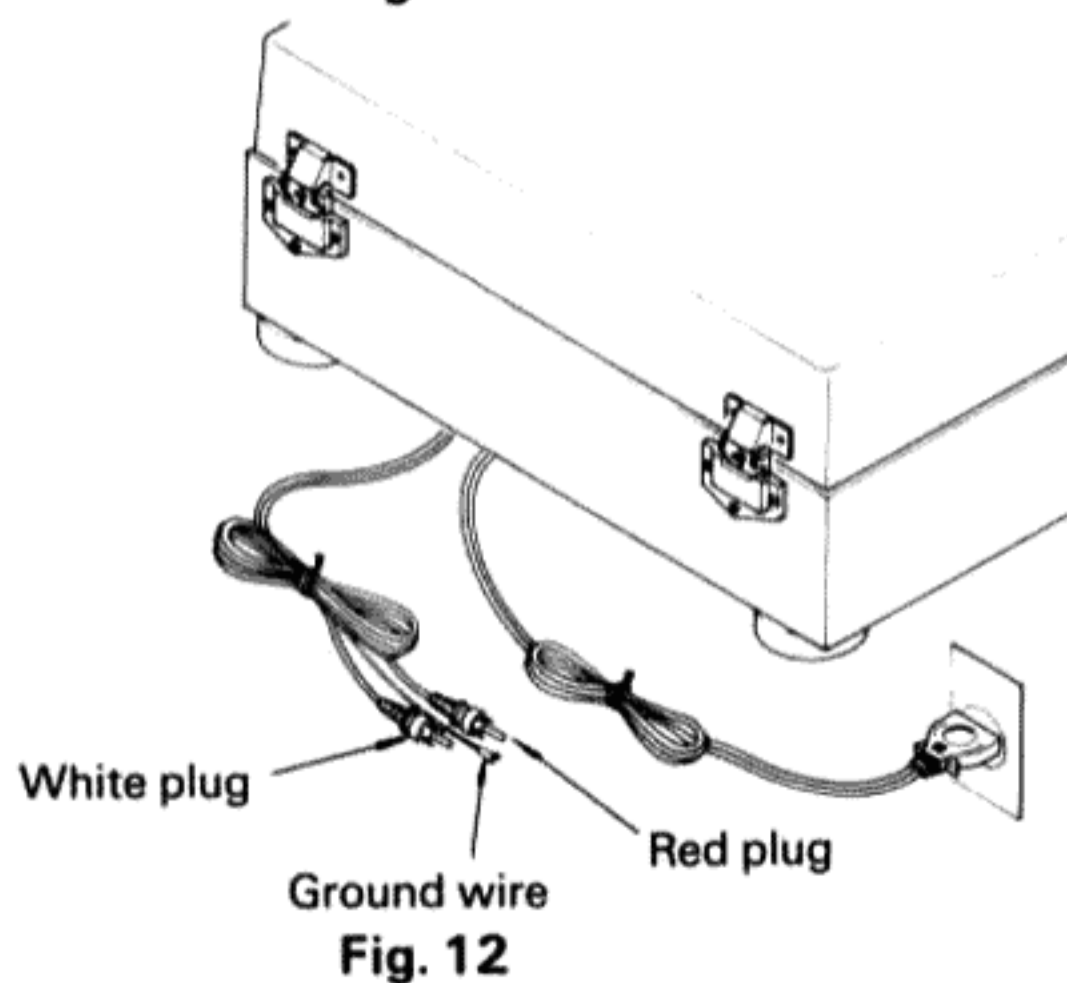


Fig. 11



■ Cabinet level adjustment

Adjust the feet by turning them so that the cabinet is level. Rotating a foot in the direction of **Ⓑ** heightens the cabinet position, while rotating in the direction of **Ⓐ** lowers it. (See Fig. 11.)

Note: Dragging the cabinet may twist the foot (feet).

If this does happen, hold up the cabinet once again to make the twisted foot (feet) level.

■ Connections to the amplifier unit

Connect the white plug of the signal cord to the L-channel jack of the "PHONO" terminal and the red plug to the R-channel jack. Connect the ground wire to the GND terminal. (See Fig. 12.)

6. Names of Parts and their Functions

Q DAMPING knob

Set this knob to the specified tracking force of the cartridge to smoothen horizontal and vertical stylus tracing of the record grooves and lower the resonance peak levels of the tonearm.

ANTI-SKATING knob

Set this knob to the specified tracking force of the cartridge using the ● marked index for a conical stylus, ● marked index for an elliptical or a Shibata stylus. This cancels the centripetal force (sliding force of the tonearm to the center of the record) and prevents the stylus tip from exerting unwanted force to the inner side of the record groove.

TRACKING FORCE knob

Turn this knob to add tracking force according to the specified tracking force of the cartridge.

POWER button

Press this button to turn the power on. The speed indicator "33" and the SIZE indicator "30" will light to show that the power is on and the tracking force set with the TRACKING FORCE control is applied to the tonearm. Press it again to turn the power off.

Note:

Even when the POWER switch is pressed to STAND BY, about 3 watts is consumed. Accordingly, unplug the power cord from the wall outlet when not in use.

SPEED select button

Used to select the record speed. When the "33" indicator lights, the turntable rotates at a speed of 33-1/3 rpm.

When the "45" indicator lights, the turntable rotates at a speed of 45 rpm. When the rotating speed stabilizes, the "33" or "45" indicator changes from red to green.

TT-START/STOP button

Press this button to start or stop the rotation of the platter only for manual operation.

Tonearm

All functions, the TRACKING FORCE, ANTI-SKATING, Q DAMPING, etc. are done electrically to reduce the mechanical loss.

ZERO BALANCE button

Press this button only for zero balance adjustment. The ZERO BALANCE indicator will light and all buttons except the POWER button become non-functional.

Make sure that this button is pressed again and the ZERO BALANCE indicator goes out after ZERO BALANCE adjustment.

START/STOP button

Press this button to start automatic play or to stop playing in the middle of a record. This button acts as a start button for starting play of a record and when this button is pressed while a record is being played, it acts as a stop button.

UP/DOWN button

If this button is pressed when the tonearm is raised, the tonearm will be lowered; if this button is pressed when the tonearm is lowered, the tonearm will be raised. This is useful for manual play.

<, > buttons

It is possible to move the tonearm to a desired position by hand or by using the following buttons.

<: Press this button to move the tonearm to the left and release this button to stop it.

>: Press this button to move the tonearm to the right and release this button to stop it.

REPEAT button

Press this button to repeat play of a record. The REPEAT indicator will light. To release the repeat play, press this switch again and the REPEAT indicator will go out.

Note:

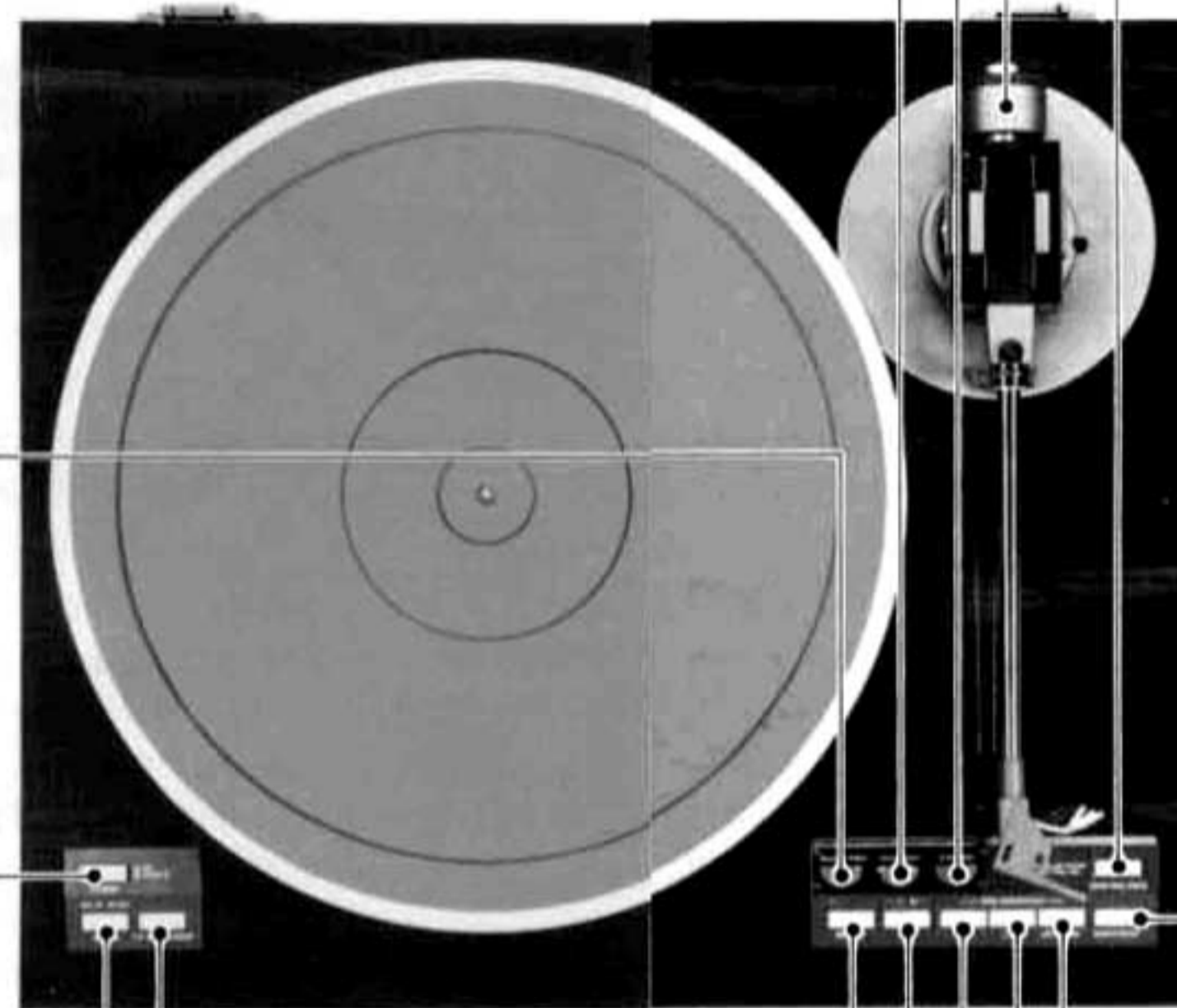
If the START/STOP button is pressed while playing a record, the repeat play is automatically released and the tonearm is returned to the rest.

SIZE select button

Use this button to select the record size for automatic play. The tonearm is lowered on the outer groove of a 17-cm record when "17" on the SIZE indicator is lit and of a 30-cm record when "30" is lit.

Note:

It is possible to change the tonearm descent position when the tonearm is moving but it is impossible to change it when the tonearm starts to descend.



7. Technical Explanation

- Turntable controlling microcomputer (LM6405A-277)

1. Pin arrangement

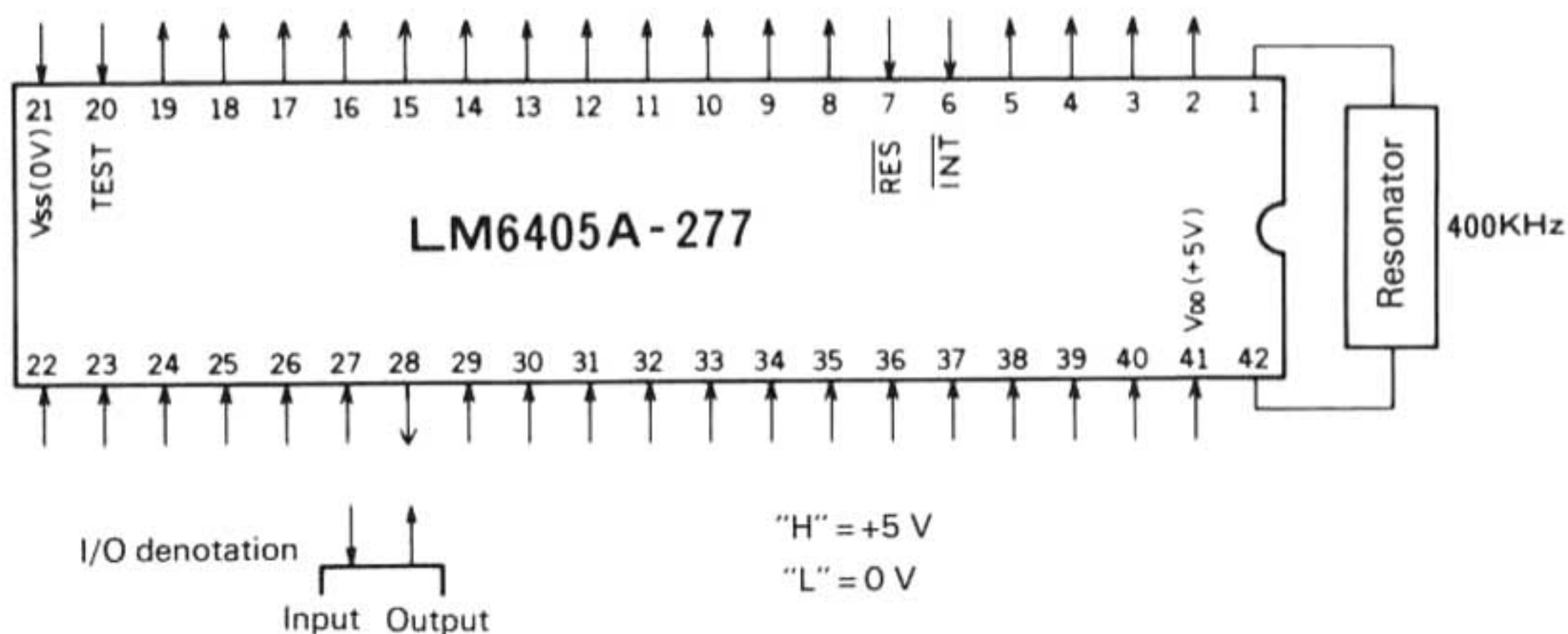


Fig. 13

2. Pin function

- | | |
|--|--|
| <p>Pins 1 and 42: The oscillator which generates the clock pulse for the microcomputer is connected.</p> <p>Pin 2: "L" to rotate the turntable motor.</p> <p>Pin 3: Output pin, "H" to provide slow tonearm motion for the first 0.16 sec when the tonearm begins to move horizontally.</p> <p>Pin 4: "L" when operating an arm operation button or when the arm stops at the UP position. (Because of discharging C815.)</p> <p>Pin 5: Stand-by pin</p> <p>Pin 6: Interrupt input pin</p> <p>Pin 7: Microcomputer reset pin</p> <p>Pins 8, 9, 10 and 11: Output A, B, C and D pins (described on page 10)
pin 8 = output A, pin 9 = output B, pin 10 = output C, pin 11 = output D</p> <p>Pin 12: "33 rpm" red LED drive pin
The LED lights when this pin is at "L".</p> <p>Pin 13: "33 rpm" green LED drive pin
The LED lights when this pin is at "L".</p> <p>Pin 14: "45 rpm" red LED drive pin
The LED lights when this pin is at "L".</p> <p>Pin 15: "45 rpm" green LED drive pin
The LED lights when this pin is at "L".</p> <p>Pin 16: "30 cm" LED drive pin
The LED lights when this pin is at "L".</p> <p>Pin 17: "17 cm" LED drive pin
The LED lights when this pin is at "L".</p> <p>Pin 18: "Repeat" LED drive pin
The LED lights when this pin is at "L".</p> <p>Pin 19: "Zero balance" LED drive pin
The LED lights when this pin is at "L".</p> <p>Pin 21: Connected to 0 V power supply.</p> <p>Pins 22 and 23: Stand-by pins</p> <p>Pin 24: An "L" signal is entered to this pin via the interface circuit from the motor when the motor is quartz-locked.</p> <p>Pin 25: When the tonearm moves at the lead-out speed, an "H" signal is entered to this pin from the detection circuit.</p> | <p>Pin 26: When the tonearm lowers down on the record, an "H" signal is entered to this pin.</p> <p>Pin 27: When the tonearm lifts up to the UP position, an "L" signal is entered to this pin.</p> <p>Pin 28: Turntable motor speed select pin.
"L": 33 rpm, "H": 45 rpm</p> <p>Pin 29: The pin which accepts the signal from the "SPEED" switch.</p> <p>Pins 30, 31 and 32: The signal from the tonearm encoder is entered to these pins to inform the microcomputer of the horizontal tonearm position (e.g. rest, 30 cm, 17 cm, etc.).</p> <p>Pin 33: The pin which accepts the signal from the TT-START/STOP switch.</p> <p>Pin 34: The pin which accepts the signal from the REPEAT switch. "H" when the switch is pressed.</p> <p>Pin 35: The pin which accepts the signal from the SIZE switch. "H" when the switch is pressed.</p> <p>Pin 36: The pin which accepts the signal from the UP/DOWN switch. "H" when the switch is pressed.</p> <p>Pin 37: The pin which accepts the signal from the "<" (left motion) switch. "H" when the switch is pressed.</p> <p>Pin 38: The pin which accepts the signal from the ">" (right motion) switch. "H" when the switch is pressed.</p> <p>Pin 39: The pin which accepts the signal from the tonearm START/STOP switch. "H" when the switch is pressed.</p> <p>Pin 40: The pin which accepts the signal from the ZERO BALANCE switch. "H" when the switch is pressed.</p> <p>Pin 41: Connected to +5 V power supply.</p> |
|--|--|

3. Block diagram of servo IC AN6995

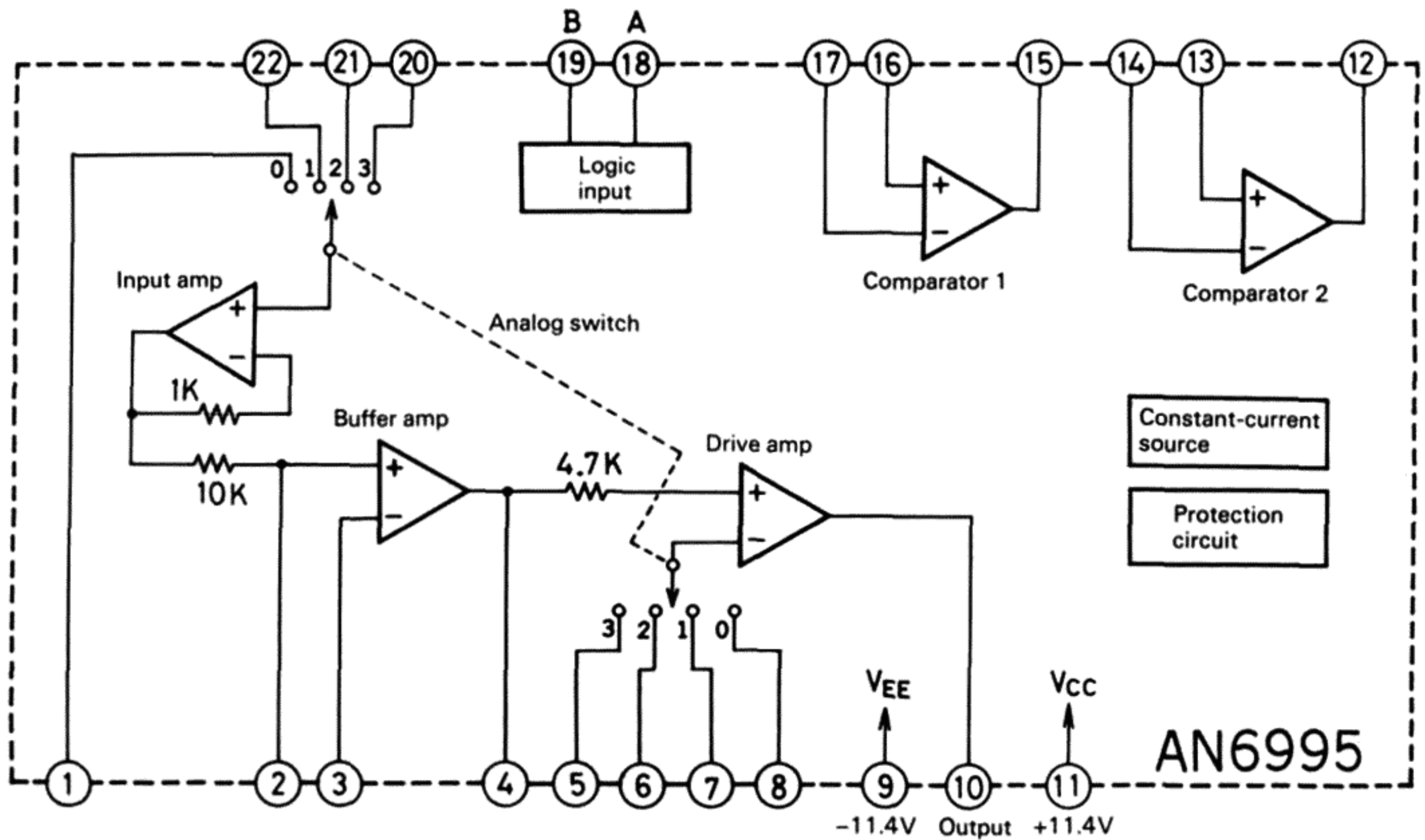


Fig. 14

Note:

1. PLAY refers to the arm which is on the record on play or is at the rest position.
2. DOWN refers to the arm which is lowering down.
3. UP refers to the arm which is to lift up or is lifting up.
4. LEFT and RIGHT refer to the arm which is moving left or right.
5. STOP refers to the arm which stops at the UP position.

Note: Logic 0 = 0V ("L")
Logic 1 = +5V ("H")

Respective modes according to logic inputs

Analog SW	Logic inputs		Mode	
	A	B	Horizontal direction	Vertical direction
0	0	0	PLAY	PLAY
1	1	0	L	DOWN
2	0	1	R	UP
3	1	1	STOP	ZERO BAL.

4. Arm position sensor/encoder output

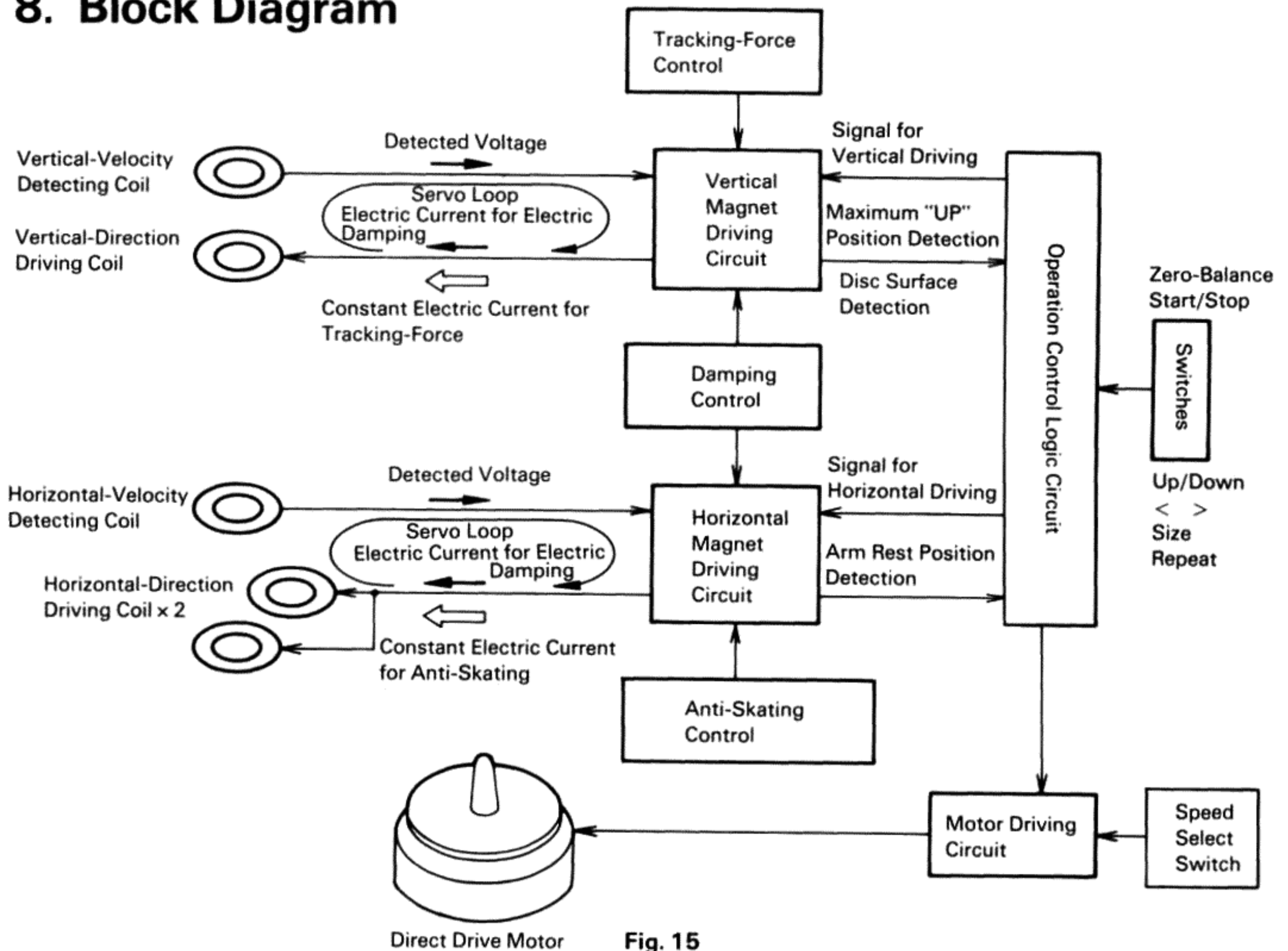
This inputs the indicating signal of the current arm position to the microprocessor to detect the lead-in and lead-out locations of the 30-cm or 17-cm record. As the tonearm moves horizontally, the output of the encoder changes, indicating the tonearm position (address).

The respective tonearm addresses are as shown in the table below. The table shows that, unless specific signals are input to the microprocessor from the encoder, the tonearm does not operate normally.

Tonearm position and operation	Encoder outputs		
	1 (Pin 30)	2 (Pin 31)	3 (Pin 32)
On rest	0	0	0
Just released from rest	0	0	1
When lead in to 30-cm record	0	1	1
On play of 30-cm record	0	1	0
When lead in to 17-cm record	1	1	0
On play of 17-cm record	1	0	0
When lead out to 30-cm record	1	0	1
When lead out to 17-cm record	1	1	1

Note: The order of the items under "Tonearm position and operation" corresponds to the sequence of the tonearm movement.

8. Block Diagram



Direct Drive Motor Fig. 15

9. Adjustment Procedures

■ Headshell Angle

If the headshell is not horizontal and the stylus tip is not perpendicular to the record surface, loosen the lock screws as shown in the illustration and move the headshell to adjust the stylus to be at right angles (90°) with the platter. Eye-measurement is sufficient. Be sure to retighten the screws after the adjustment is completed.

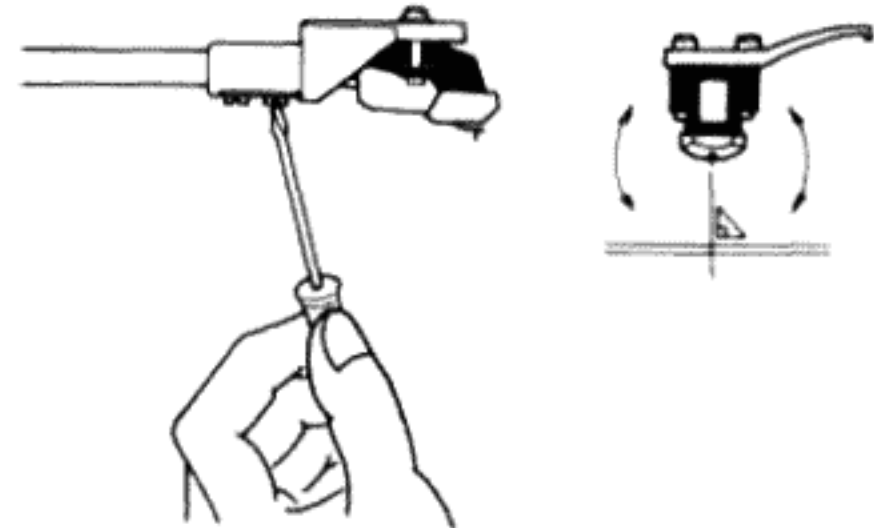


Fig. 16

■ Overhang adjustment

● Straight-type arm pipe

Adjust the overhang so that the distance between the headshell edge and the stylus tip is 47 mm as shown in Fig. 17.

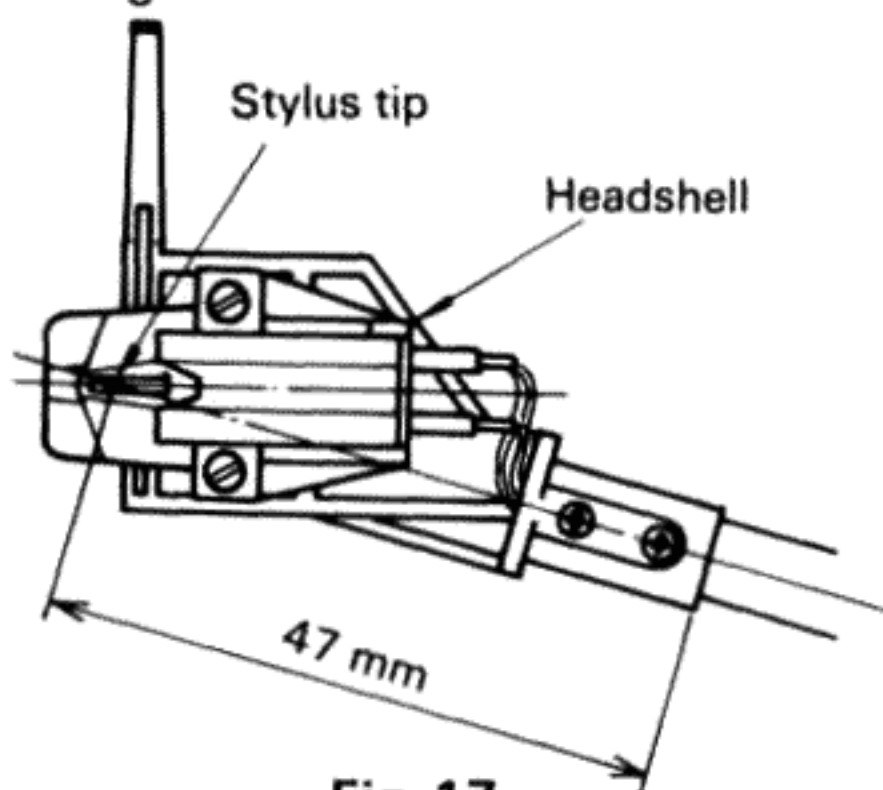


Fig. 17

● S-shaped arm pipe

Adjust the overhang so that the distance between the headshell edge and the stylus tip is 48 mm as shown in Fig. 18. The ring washer in the parts box is to be used as shown in Fig. 18 and should be fixed firmly.

Note: A difference of ± 1 mm will not degrade the performance.

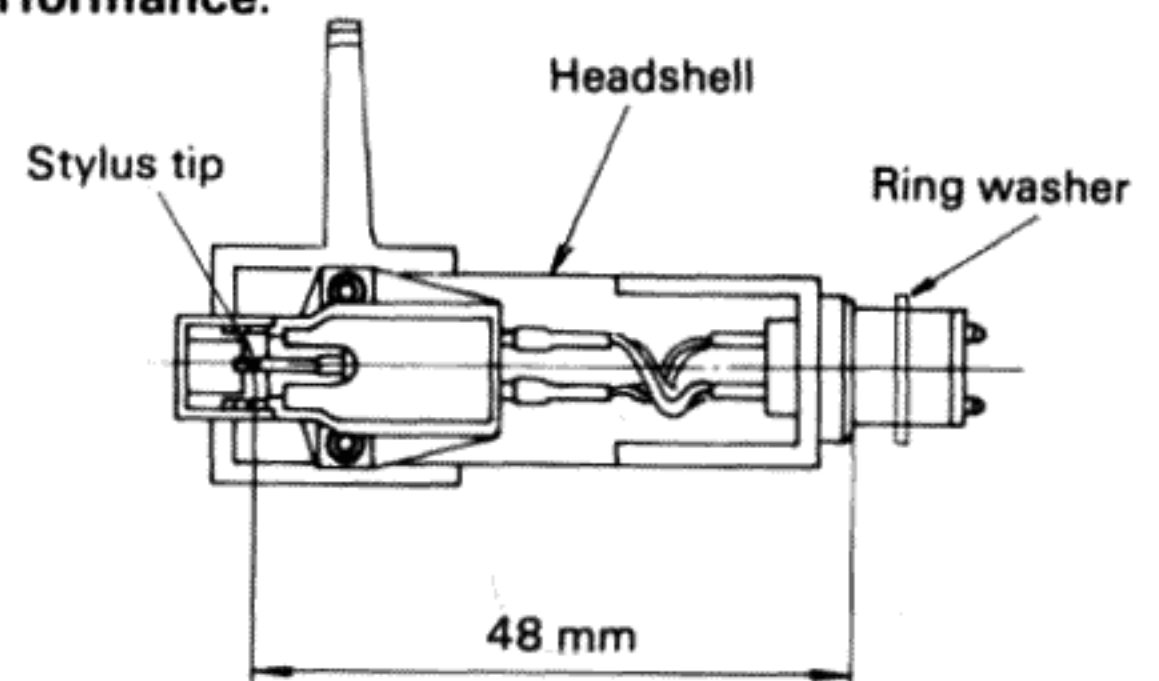


Fig. 18

■ Stylus height adjustment

Perform this adjustment after completion of tonearm height adjustment.

1. Turn the POWER switch on, then lift up the arm by the UP/DOWN button.
2. Turning the adjustment screw clockwise causes the stylus to rise, while turning counterclockwise causes it to lower. The height from the stylus tip to the record surface is appropriate at about 6 mm. (See Fig. 19)

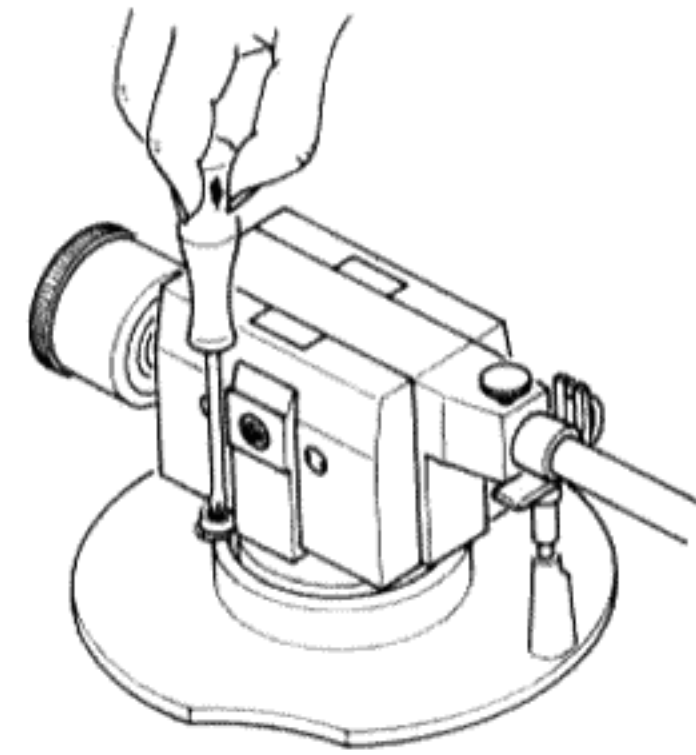
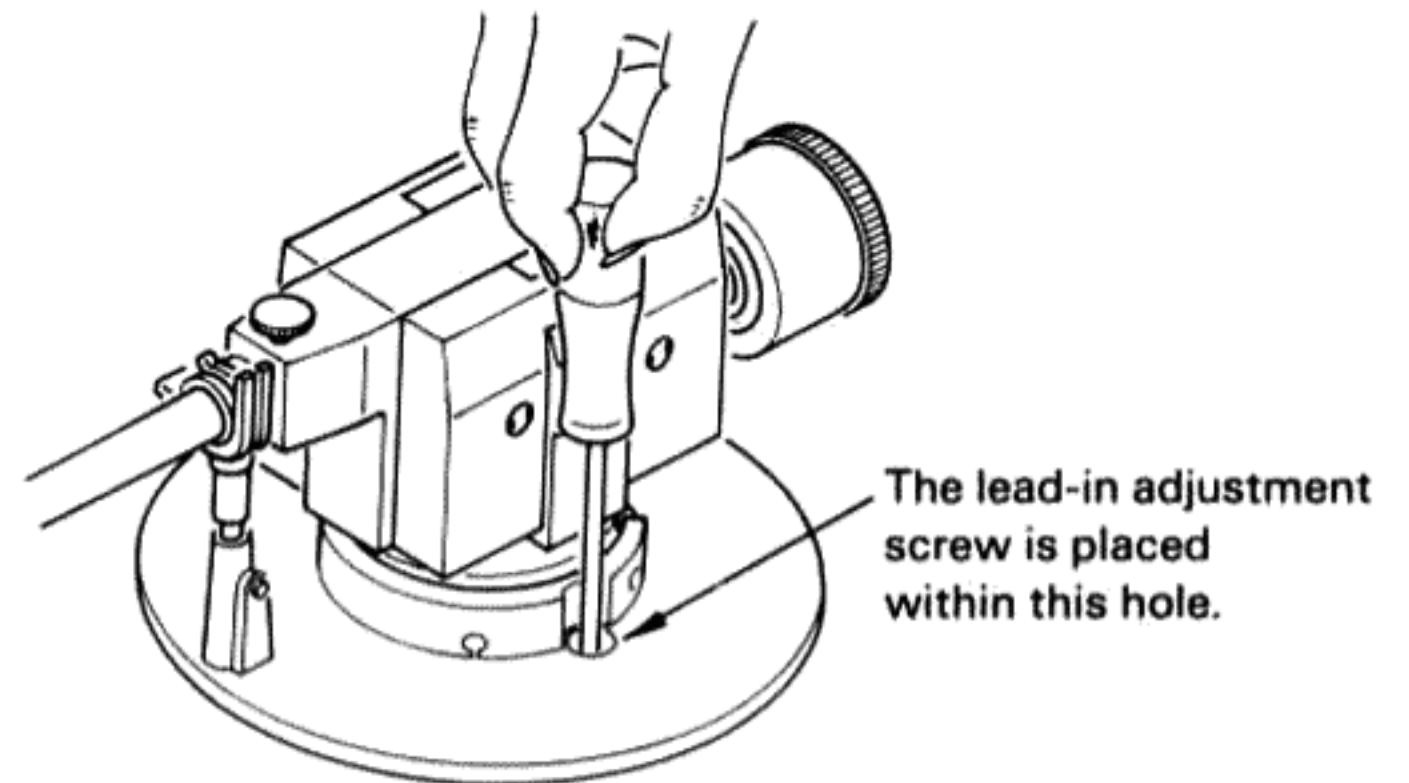


Fig. 19

■ Lead-in adjustment

Set the SIZE button to "17", then adjust by the lead-in adjustment screw so that the lead-in count on the test record (RG-325) is 16 ± 3 . (See Fig. 20.)

- Note:** When the lead-in count is more than the above value, turn the adjustment screw counterclockwise, while when it is less, turn the screw clockwise. Since the adjustment screw is not provided with the stopper, be careful not to turn it excessively, because this causes the directionality of the screw to be reversed.



The lead-in adjustment screw is placed within this hole.

Fig. 20

■ Motor phase adjustment

The quartz-locked phase adjustment is usually unnecessary, because the phase locking range is wide. However, when replacing IC1 (VC4053), perform this adjustment as indicated below.

1. Prepare an impedance conversion circuit as shown in Fig. 21.
2. Adjust VR1 at 33-1/3 rpm so that a waveform as shown in Fig. 22 is obtained.

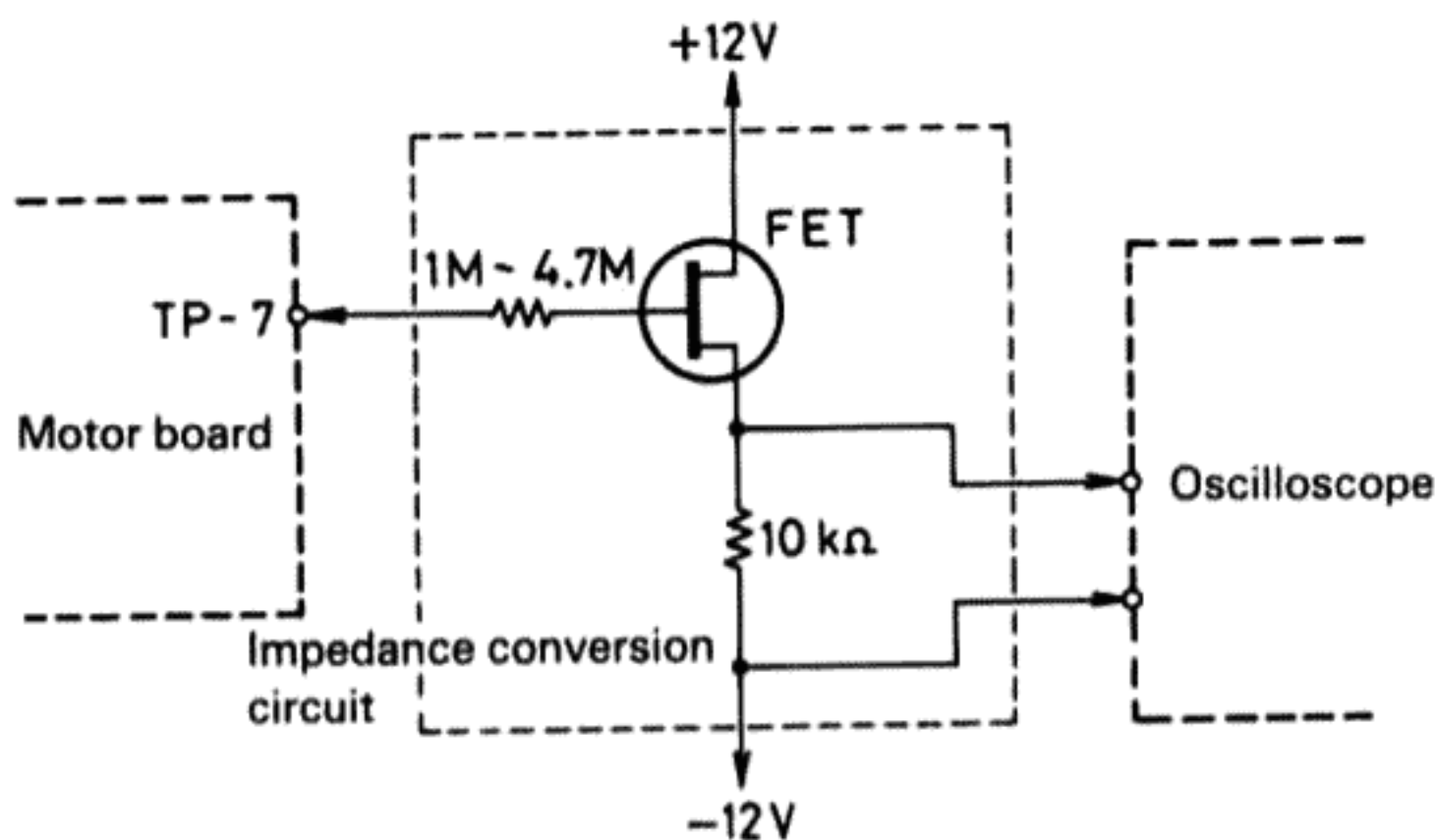


Fig. 21

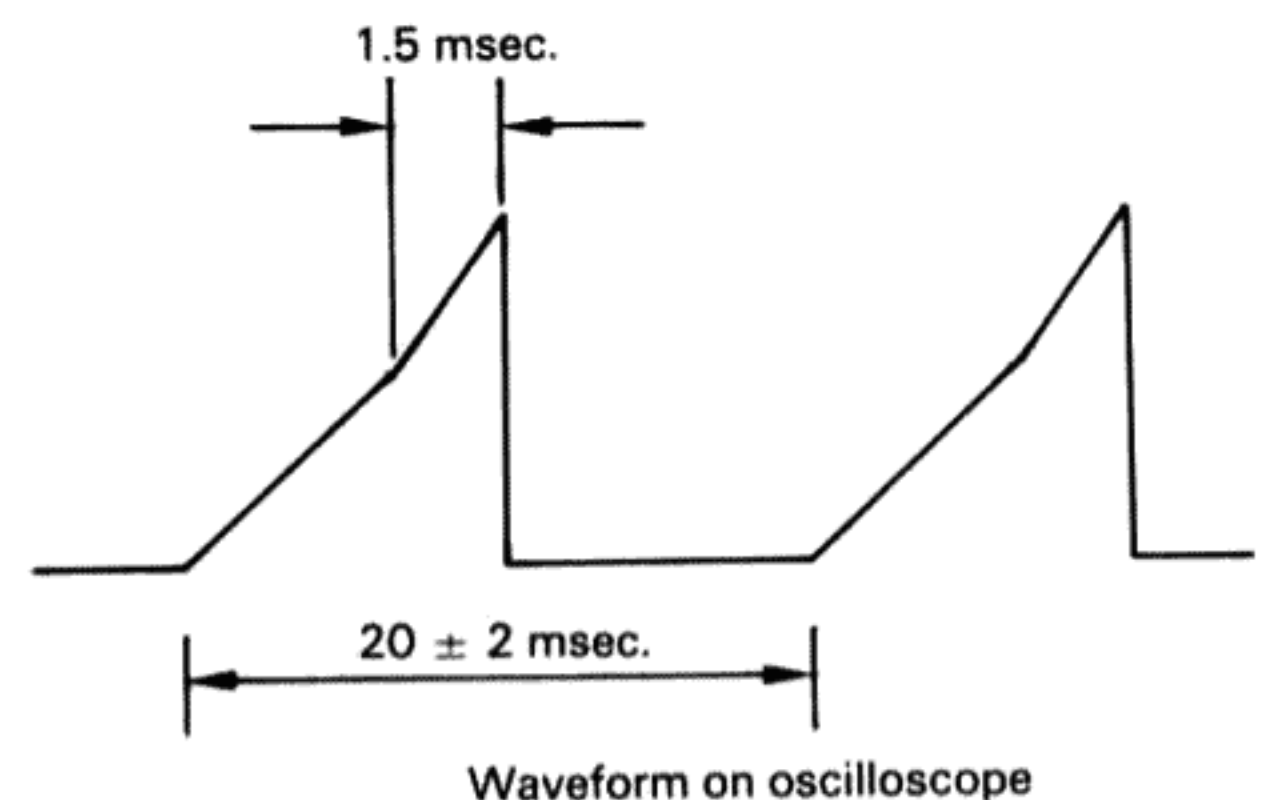


Fig. 22

■ Horizontal drive stage offset adjustment

1. With the arm clamped to the rest, enter the unit into the PLAY mode by pressing the START/STOP button.
(tracking force 0, Q damping 0, anti-skating 0)
2. Adjust VR804 so that the voltage between TP-3 and TP-4 is minimum (within ± 5 mV).

■ Horizontal first stage offset adjustment

1. With the arm clamped to the rest, enter the unit into the arm UP mode by pressing the UP/DOWN button.
(tracking force 0, Q damping maximum, anti-skating 0)
2. Adjust VR802 so that the voltage between TP-3 and TP-4 is minimum (within ± 5 mV).

■ Vertical offset adjustment

1. With the arm clamped to the rest, enter the unit into the PLAY mode by pressing the START/STOP button.
(tracking force 0, Q damping maximum, anti-skating 0)
2. Adjust VR803 so that the voltage between TP-1 and TP-2 is minimum (within ± 5 mV).

■ Tracking force adjustment

1. Set the TRACKING FORCE scale to 1.5 g. (Q damping 0, anti-skating 0, PLAY mode)
2. With the stylus set on the tracking force gauge, adjust VR801 so that the tracking force gauge reads 1.5 ± 0.1 g.

Adjustment locations

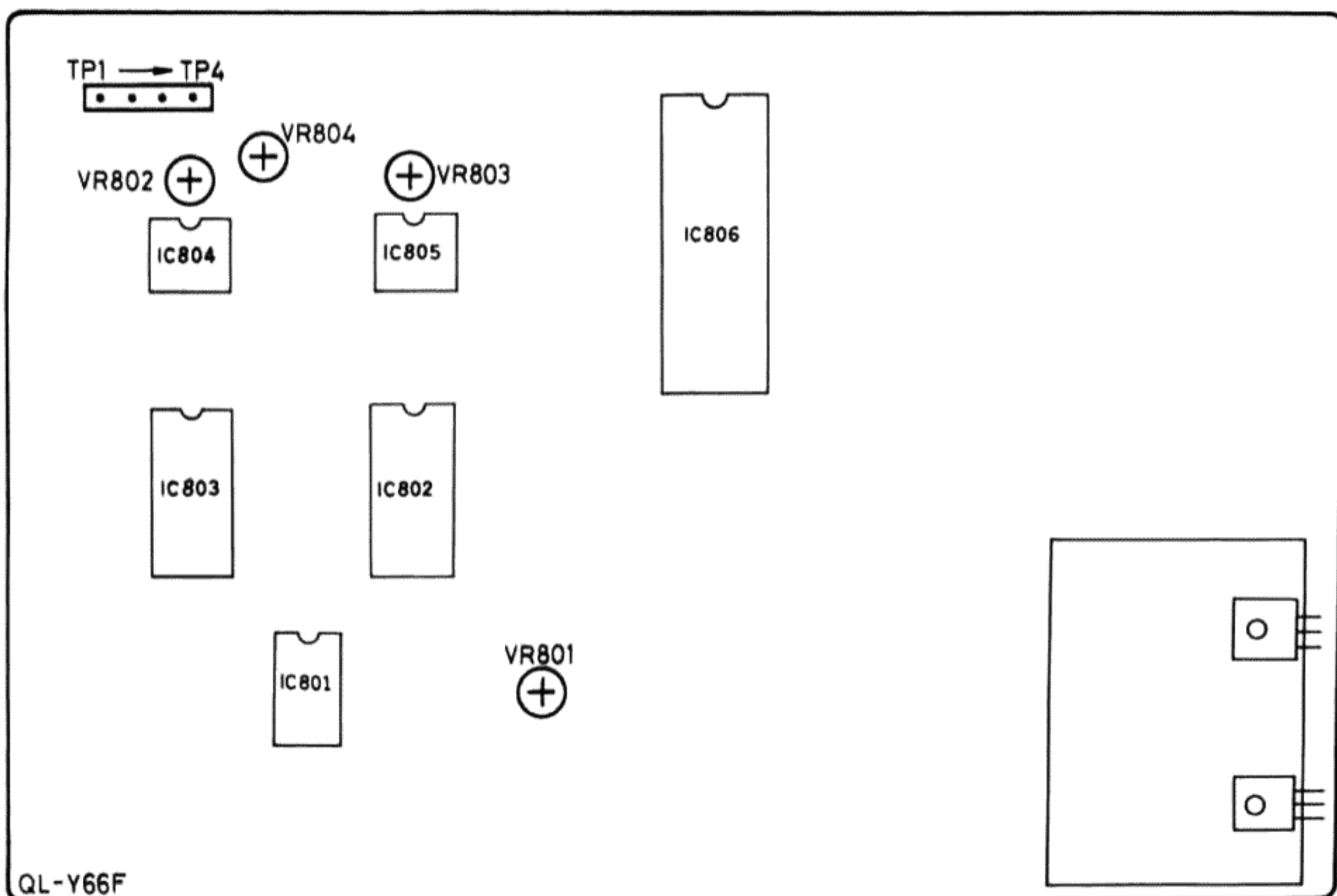


Fig. 23

10. Removal Procedures

* First detach the platter before disassembling work.

■ Removal of bottom board

1. Remove the 9 screws mounting the bottom board.
2. Remove in the following manner to avoid damaging the signal board. Hold the signal cord while raising the front side of the unit, then pull out the bottom board towards the front side of the unit.
3. Remove two power cord clamber retaining screws. (U.S.A. and Canada only)

■ Removal of motor

1. Remove the bottom board. (See item above.)
2. Remove the 2 screws mounting the motor board.
3. Disconnect the 2 ground wires.
4. Return the unit to its normal position.
5. Remove the 4 screws mounting the motor cover.
6. Remove the 3 hexagon socket headed cap screws and 2 oval flat-headed wood screws. Be careful not to lose the washers.
7. Lift up the motor and disconnect the 5-P connector.

■ Removal of vertical coil (Figs. 24 and 25)

1. Remove the 4 screws mounting the coil cover. (Use a screwdriver for pin faced screws.)
2. Taking care not to cut any coil lead, remove the coil soldering on the board.
3. Pull out the main weight.
4. Remove the 4 screws and nuts securing the coil clamp.
5. Lift up the coil clamp, and pull out the coil taking care not to damage it.

Note: As the coil leads are thin and easy to cut, be careful in handling them.

■ Removal of tonearm section (Figs. 26 and 27)

1. Remove the bottom board. (Refer to "Removal of bottom board".)
2. Remove the soldering of the 5 leads running to the signal board.
3. Disconnect the ground wire.
4. Disconnect the connectors (10-P and 6-P) connected to the horizontal coil board and the lamp house.
5. Remove the 3 special screws mounting the arm base.
6. Return the unit to its normal position.

Note: When the arm pipe has been removed by loosening its setscrew to protect the cartridge, etc. against damage, the removal operation is easily performed.

■ Removal of V.D. Generator (Figs. 25 and 27)

1. Remove the bottom board.
2. Remove the soldering of the 5 leads leading to the signal P.C. board and that of the 6 leads leading to the horizontal drive coil board.
3. Remove the coil cover.
4. Remove the 2 screws securing the V.D. generator. (With a hex wrench of opposite side distance 1.5 mm)

Notes:

- When mounting the V.D. generator, position the generator by turning the yoke so that the lead-in adjustment screw is located at the center of the adjustment hole.
- When inserting the generator in the bearing shaft, insertion should be carried out with a slight pull of the wire to protect the wire from being caught or cut.

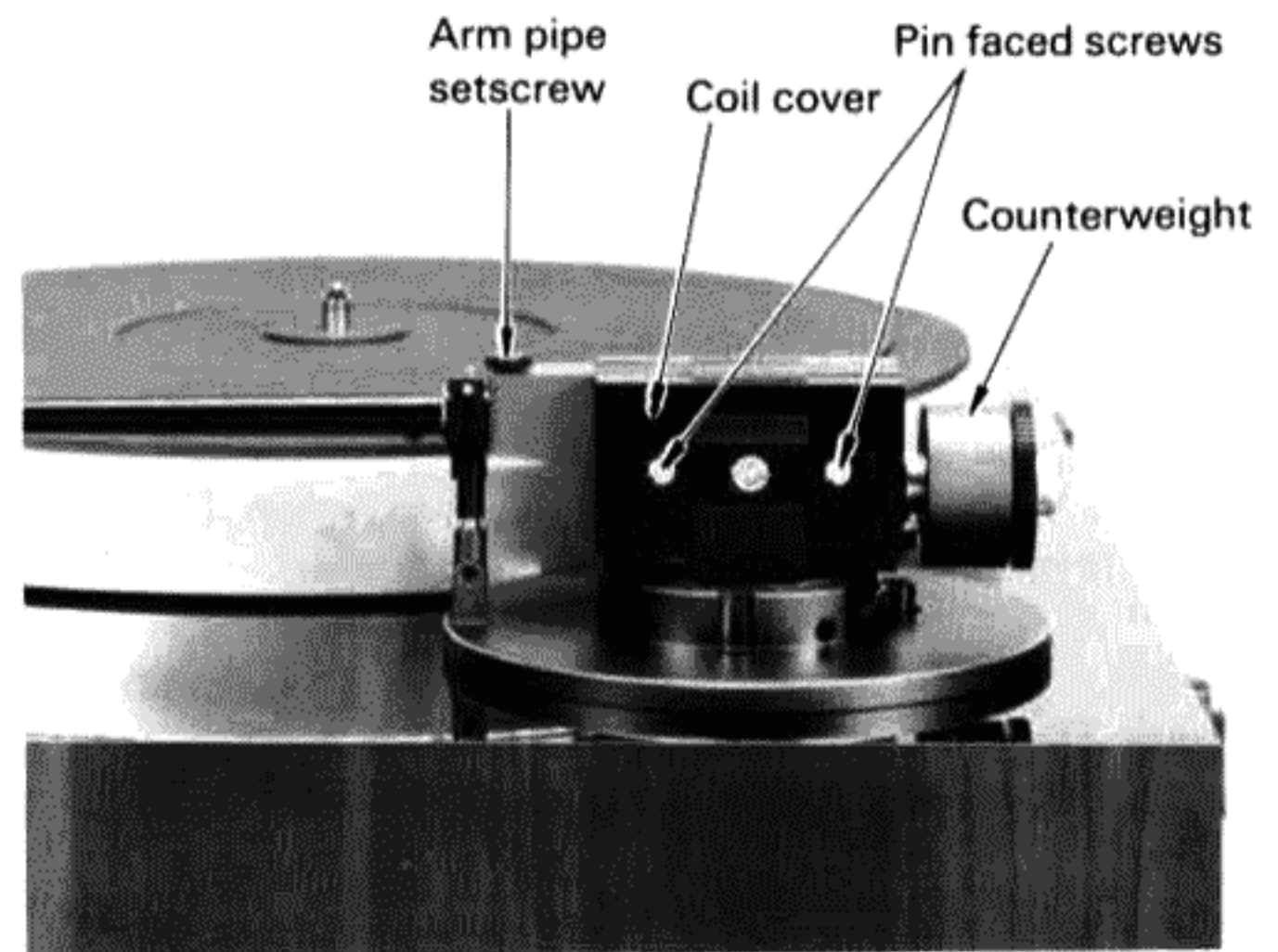


Fig. 24

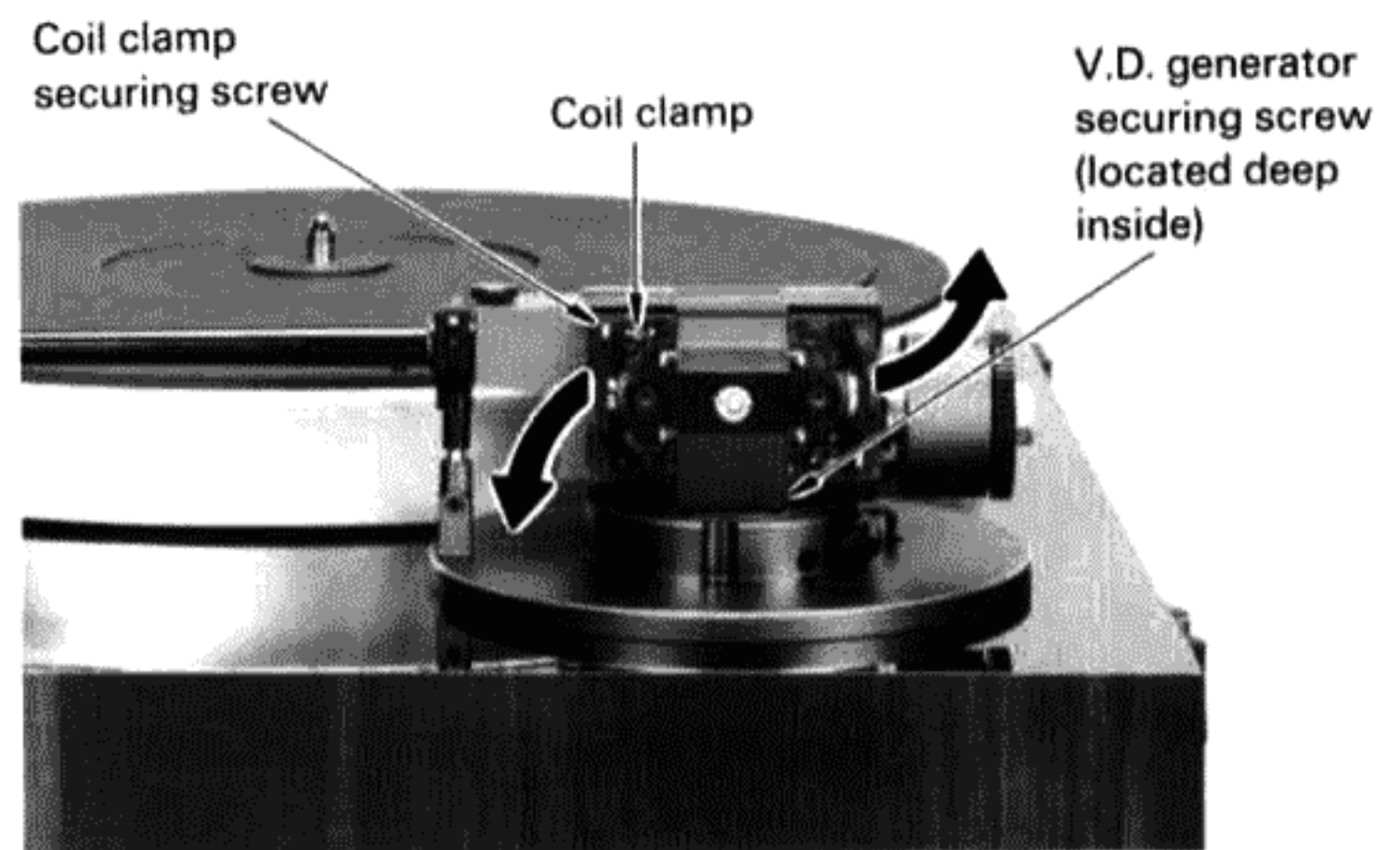


Fig. 25

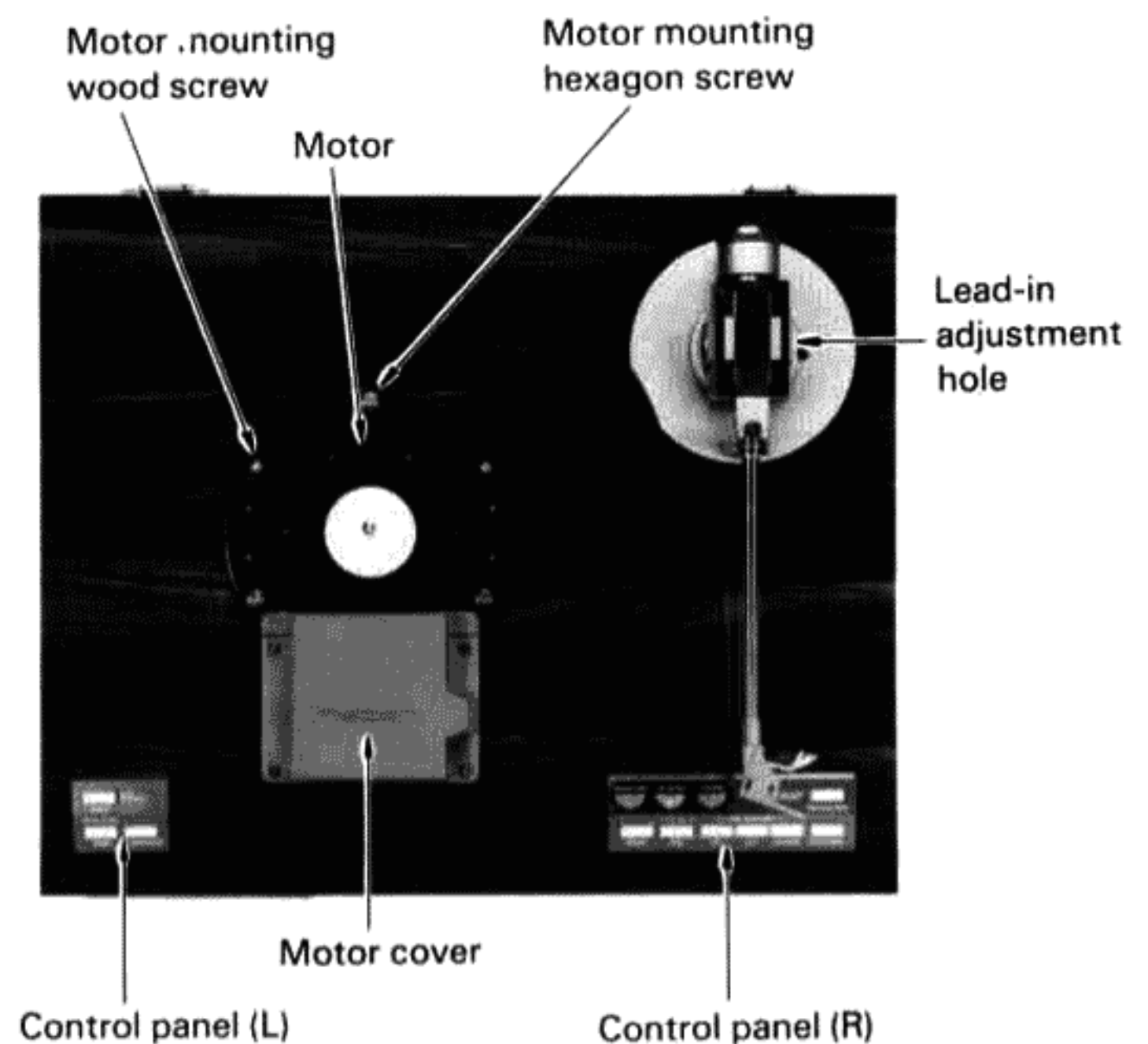


Fig. 26

■ **Removal of horizontal coil P.C. board (Fig. 27)**

1. Remove the bottom board.
2. Remove the soldering of the 6 leads leading to the coil board.
3. Remove the 3 screws mounting the coil board. (These screws mount the 2 wire holders and the lug strip for ground wire at the same time.)
4. Pull out the coil board, taking care not to damage the coil.

■ **Removal of lamp house ass'y (Fig. 28)**

1. Remove the bottom board. (Refer to "Removal of bottom board".)
2. Remove the screw mounting the lamp house ass'y.
3. Slight lift the positioning boss and pull out the lamp house ass'y.

Note: When removal is difficult in the above manner, removing the horizontal coil board in advance makes it easier.

■ **Removal of control panel section (Figs. 26 and 29)**

1. Remove the bottom board.
2. Remove the 5 washer faced screws mounting the control panel section.
3. As the plate (spring) which is mounted by 2 screws together with the control scale bracket may cut into the cabinet, loosen these 2 screws if necessary.

■ **Removal of LEDs on control panel section (Figs. 26 and 29)**

1. Remove the 4 screws mounting the control scale windows.
(With a small screwdriver)
2. Pull out the 3 control knobs.
3. Remove the control panel section. (Refer to "Removal of control panel section".)
4. Remove the 2 screws mounting the control scale bracket.
Take care not to lose the plate (spring) as it comes off together.
5. Remove the 5 screws mounting the LED board.

Note: As LEDs are provided with springs and the control knobs are likely to come off, take care not to lose any of these parts.

■ **Removal of control panel (L) section**

1. Remove the bottom board.
2. Remove the 4 washer faced screws mounting the control panel (L) section.

■ **Removal of LEDs on control panel (L) section**

1. Remove the 4 screw mounting the board.
- Note:** When mounting LEDs, there should be no clearance between any two of board, spacer and LED.

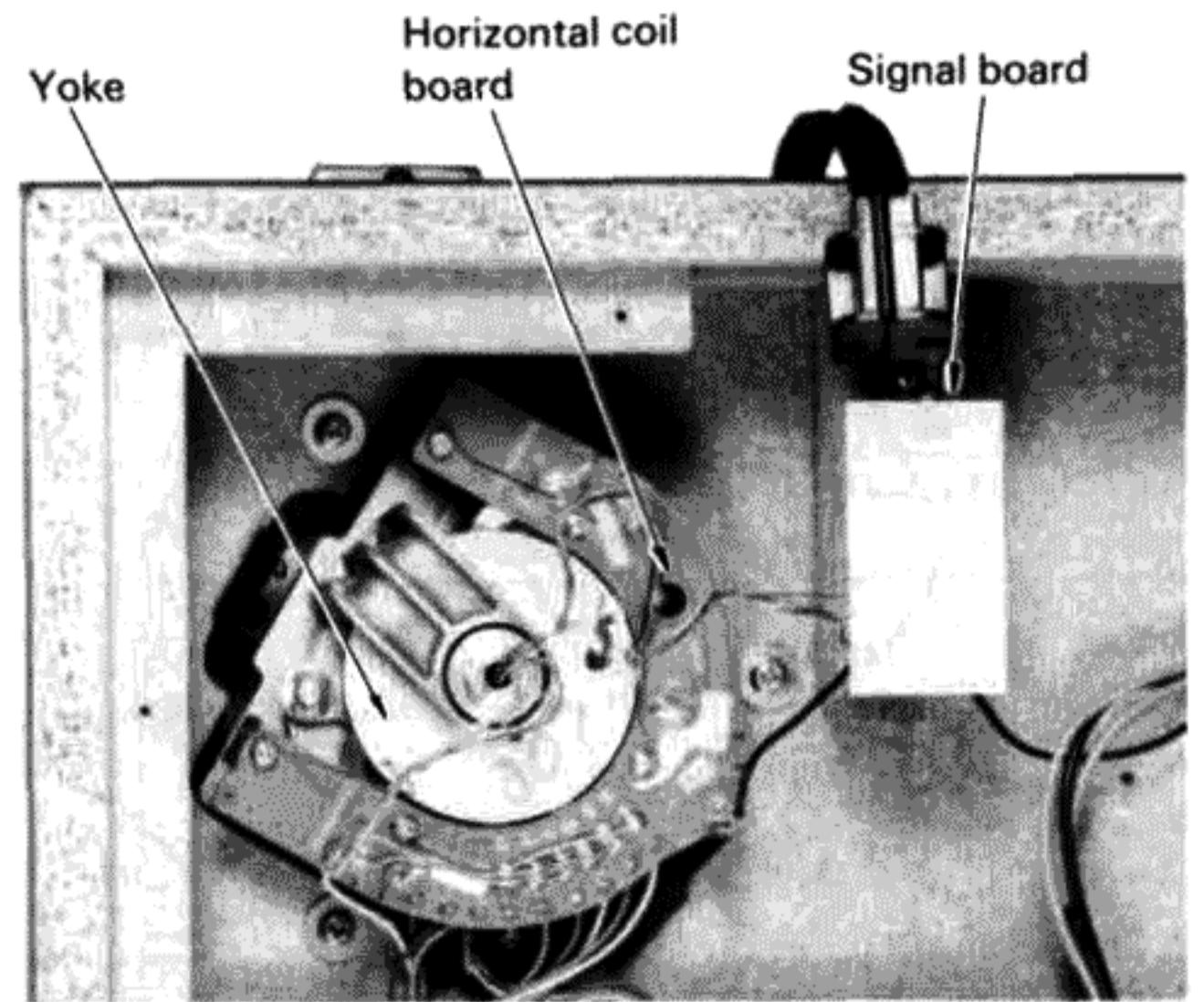


Fig. 27

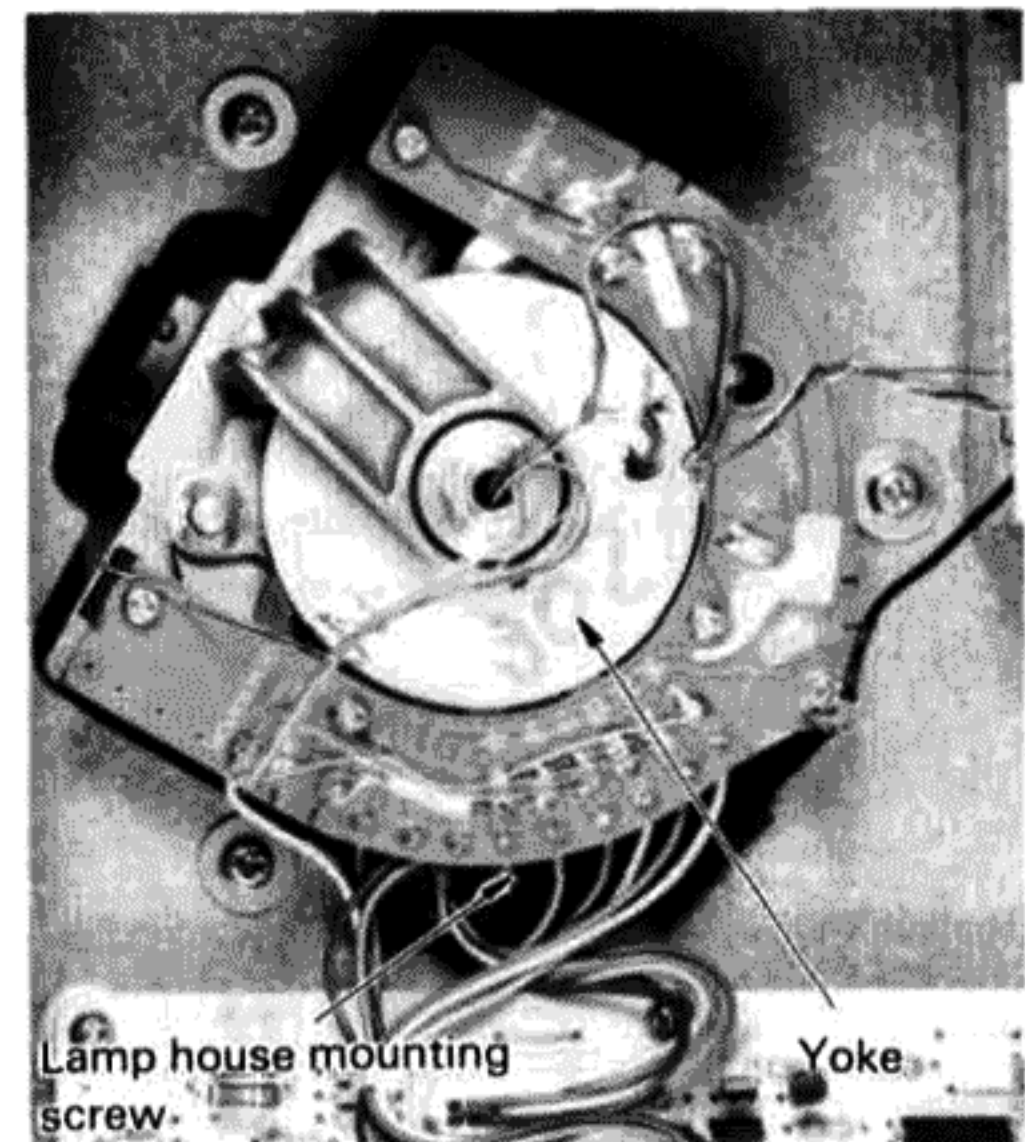


Fig. 28

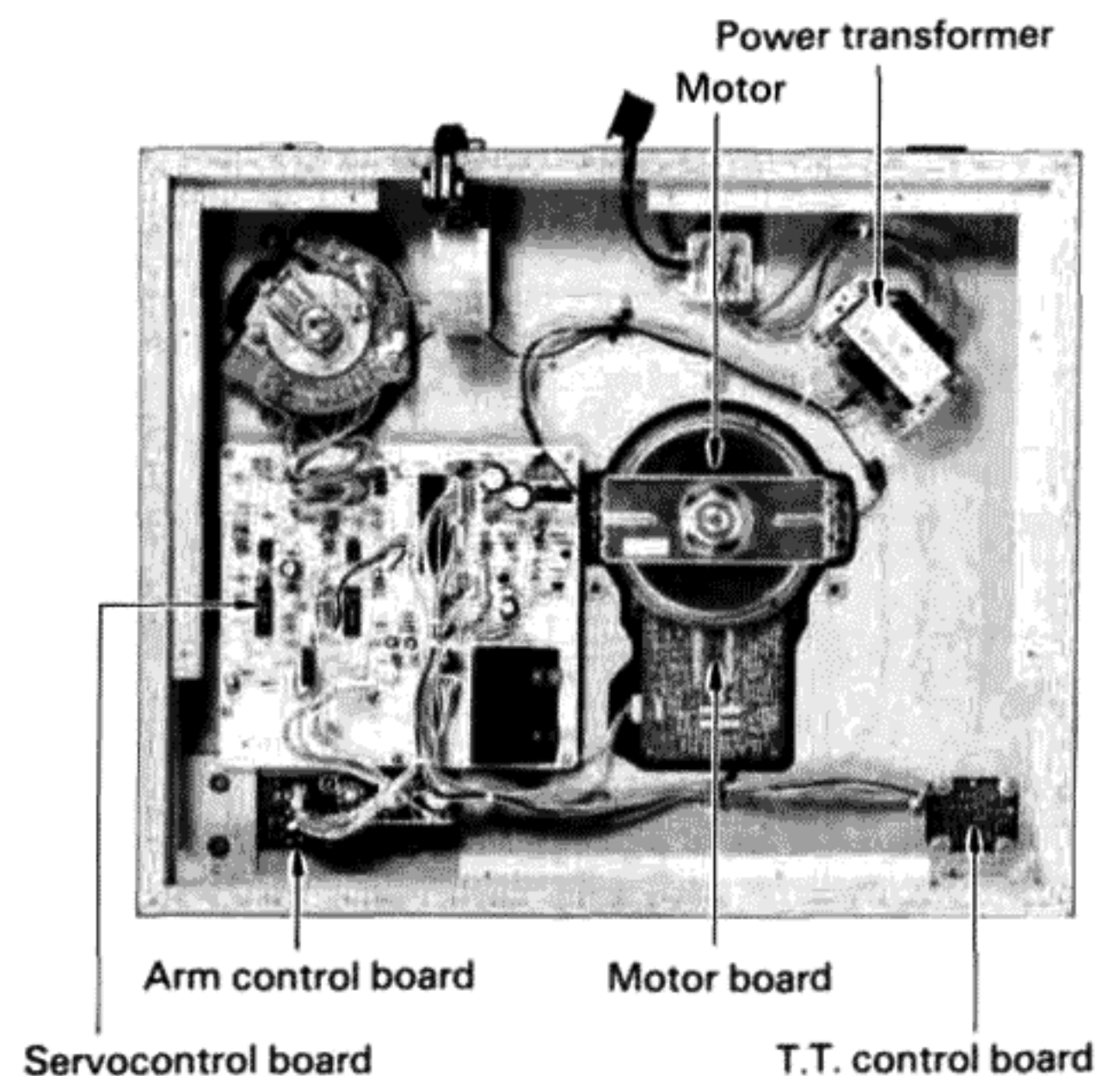
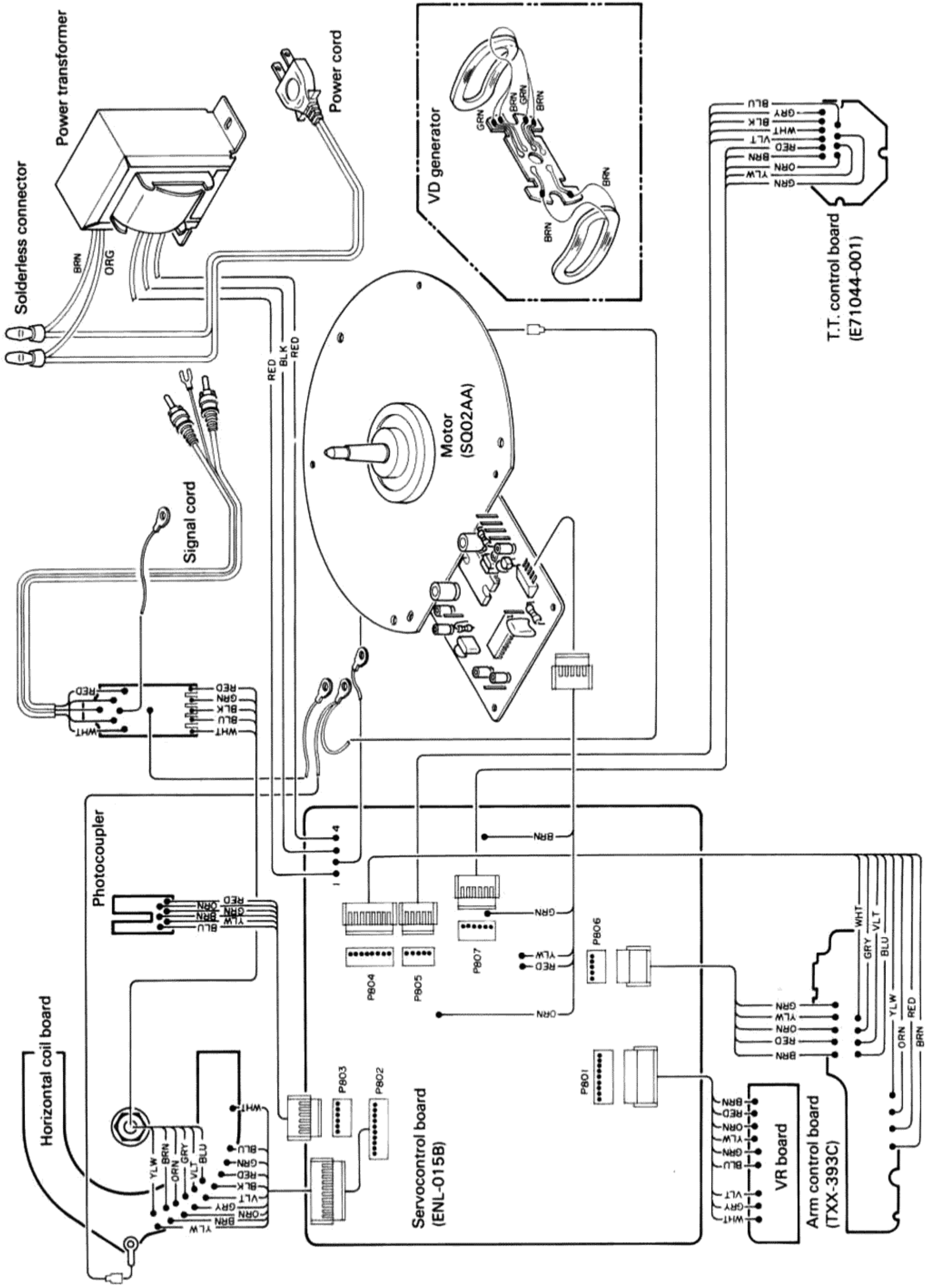


Fig. 29

11. Connection Diagram



12. Troubleshooting

■ Q damping is ineffective

Vertical Q damping is ineffective.

IC802 is defective, or C826 or VR809 is short-circuited.

Horizontal Q damping is ineffective.

IC803 is defective, or C827 or VR809 is short-circuited.

The tonearm does not rise.

Are Pins 18 and 19 of IC802 "L" and "H" respectively?

No

Microprocessor IC806 is defective.

Yes

Does about -0.45V appear at Pin 21 of IC802?

No

R823 or R825 is defective.

Yes

Does the same voltage appear at Pins 2 and 21 of IC802?

No

IC802 is defective.

Yes

Does about -8V appear at Pin 10 of IC802?

No

IC802 is defective.

Yes

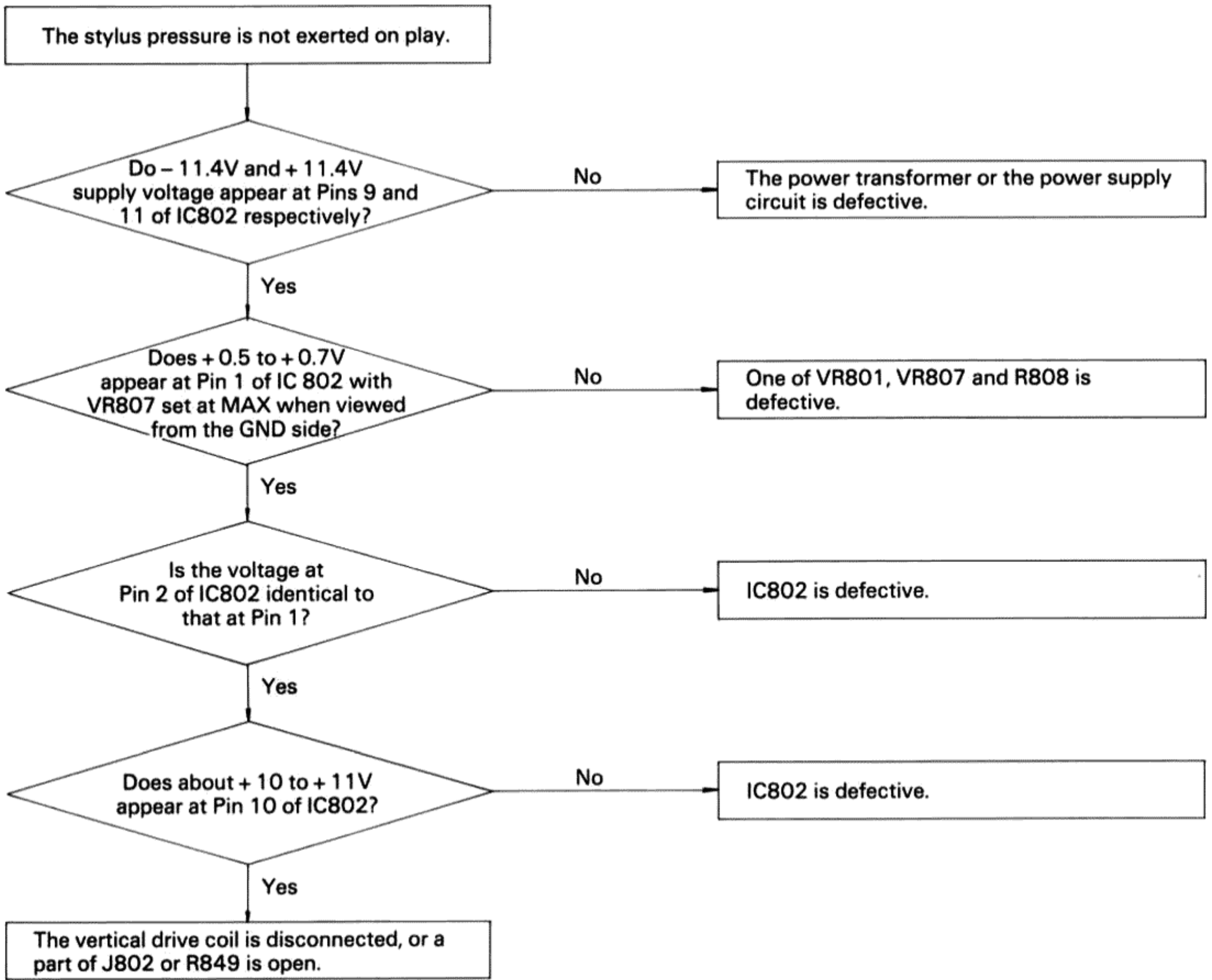
The vertical drive coil is disconnected or a part of J802 or R849 is open.

Vertical Q damping is not released.

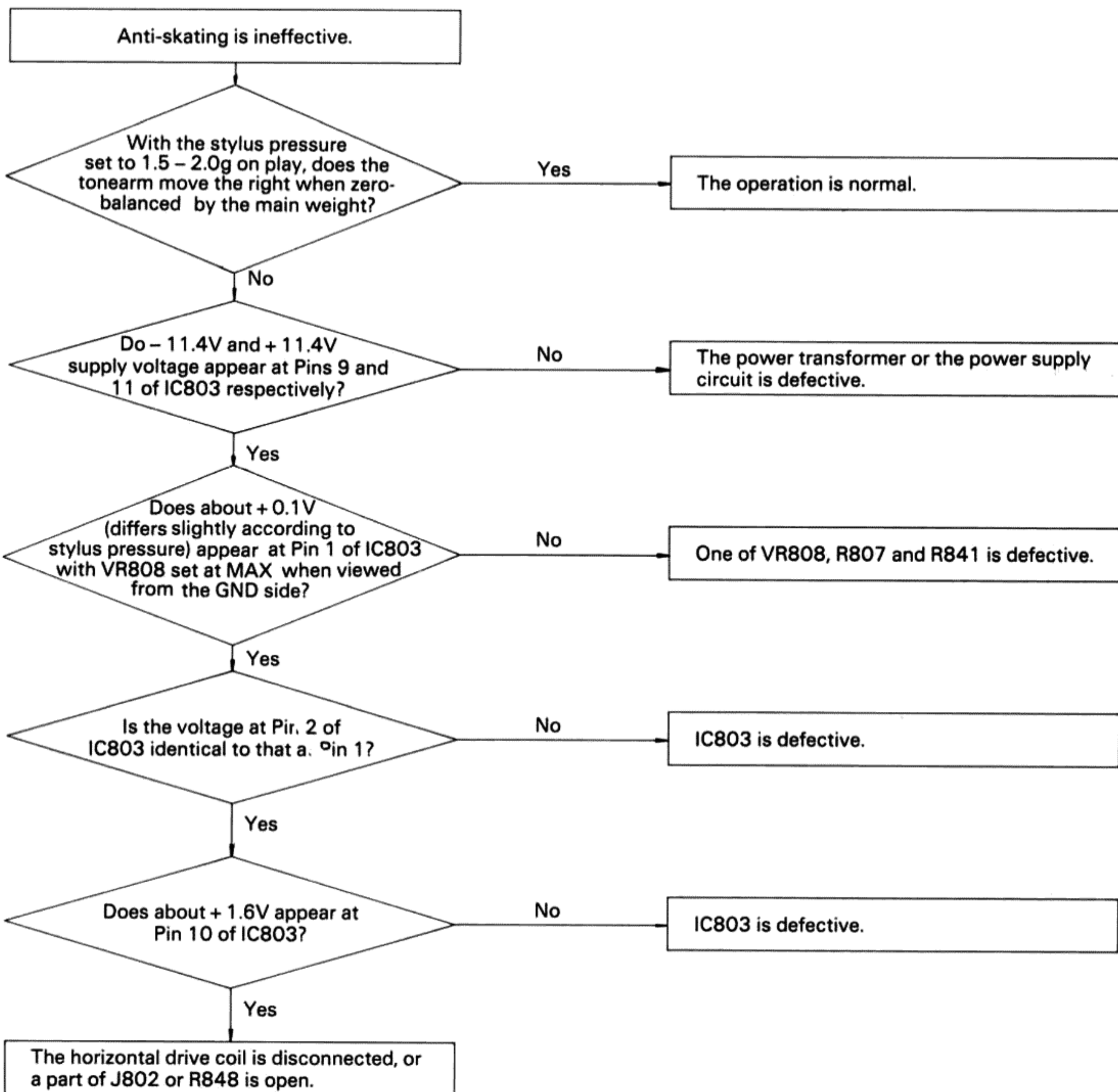
VR809 is open, or the connection of the socket for J801 is defective.

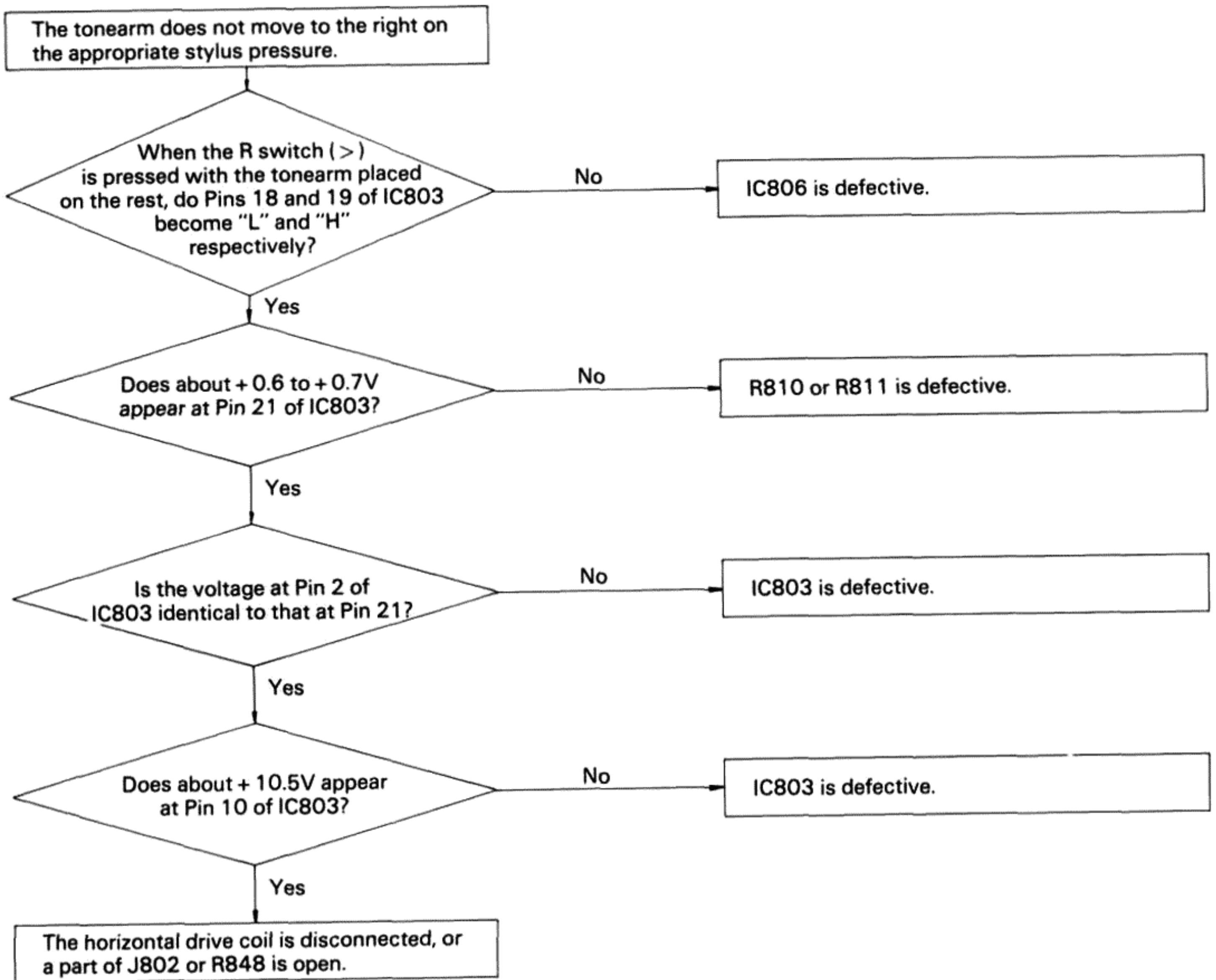
Horizontal Q damping is not released.

VR809 is open, or the connection of J801 is defective.

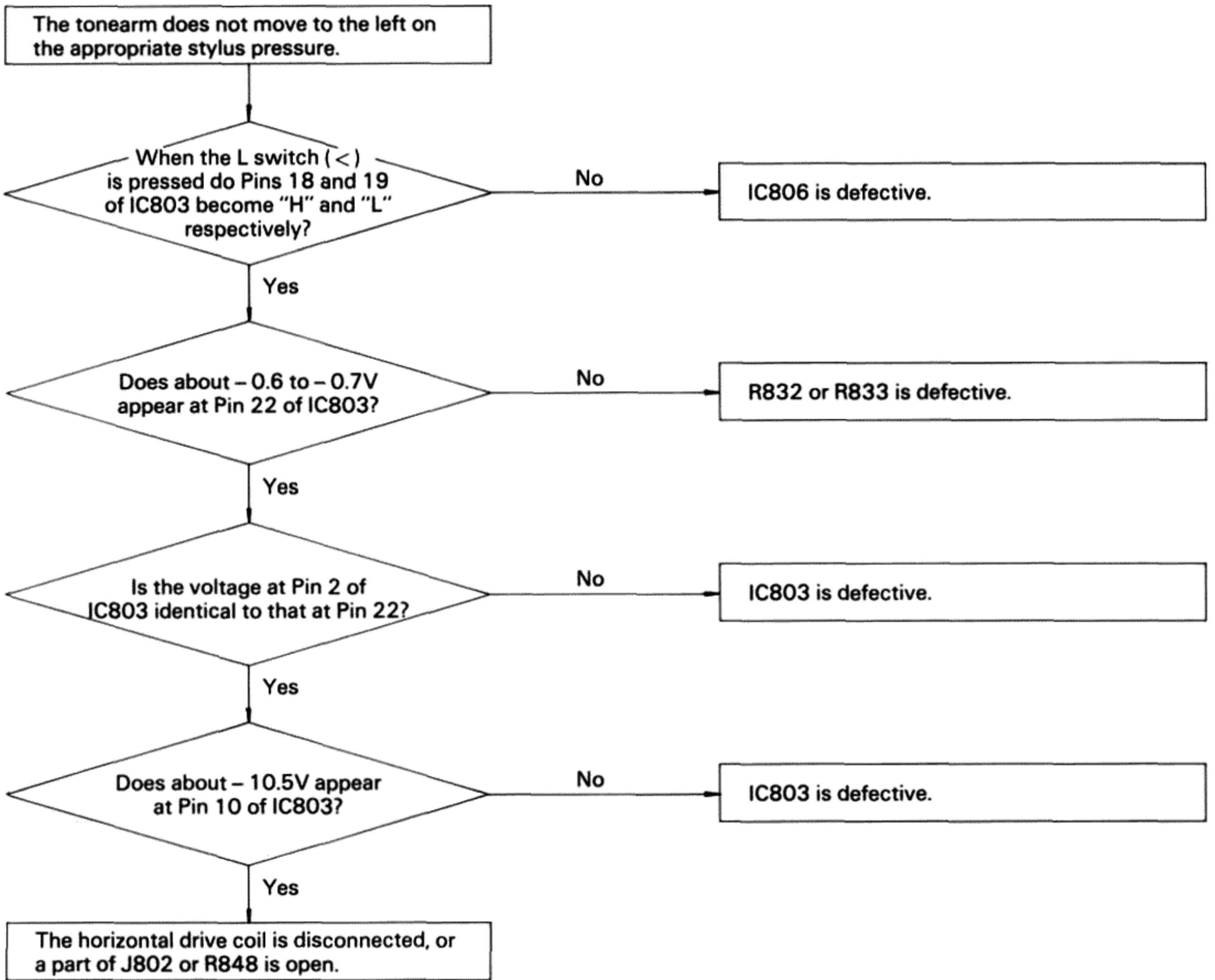


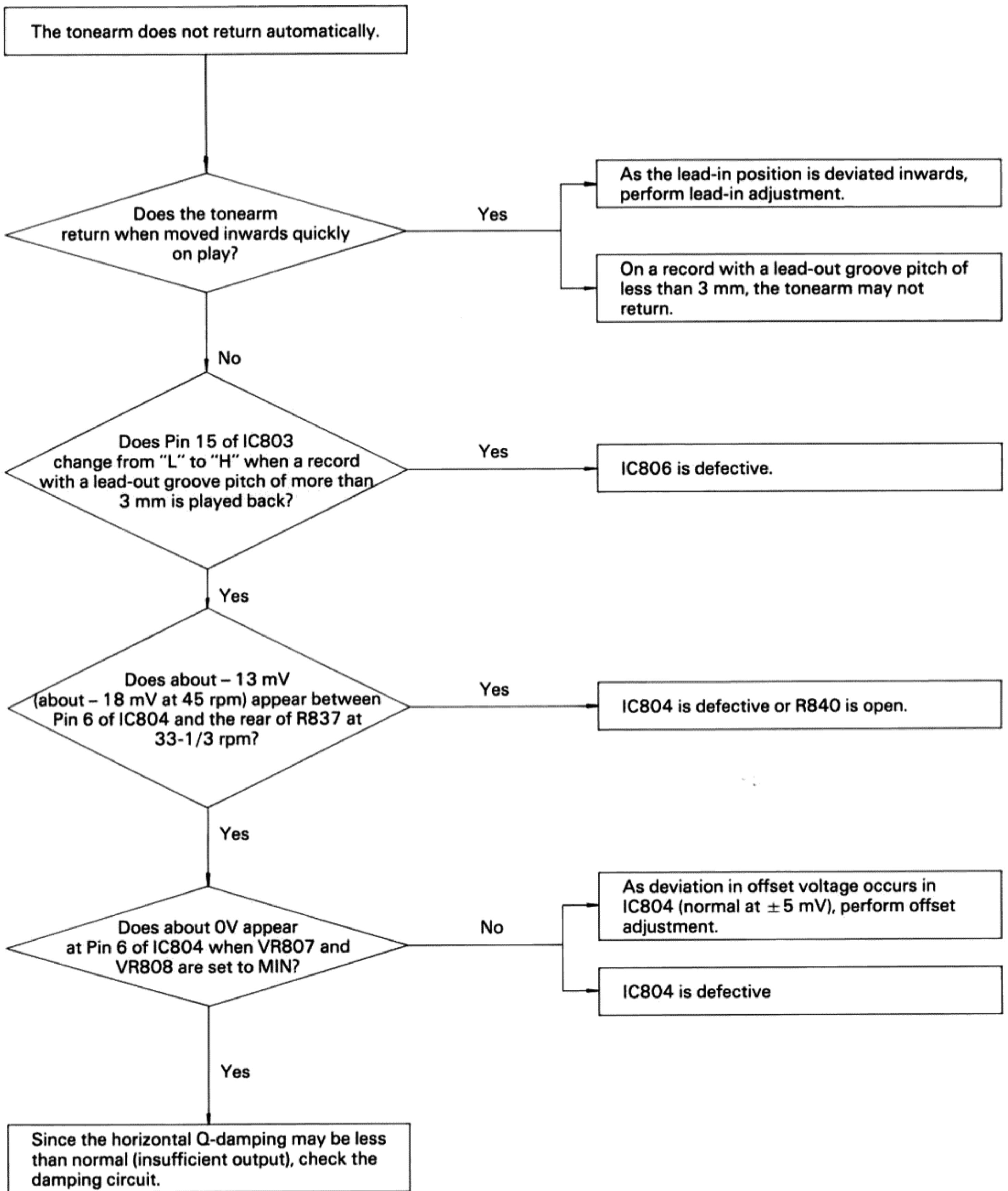
Note: The impedance of the vertical drive coil is around 80 – 82 ohms. The impedance of the vertical detection coil is around 210 – 220 ohms.

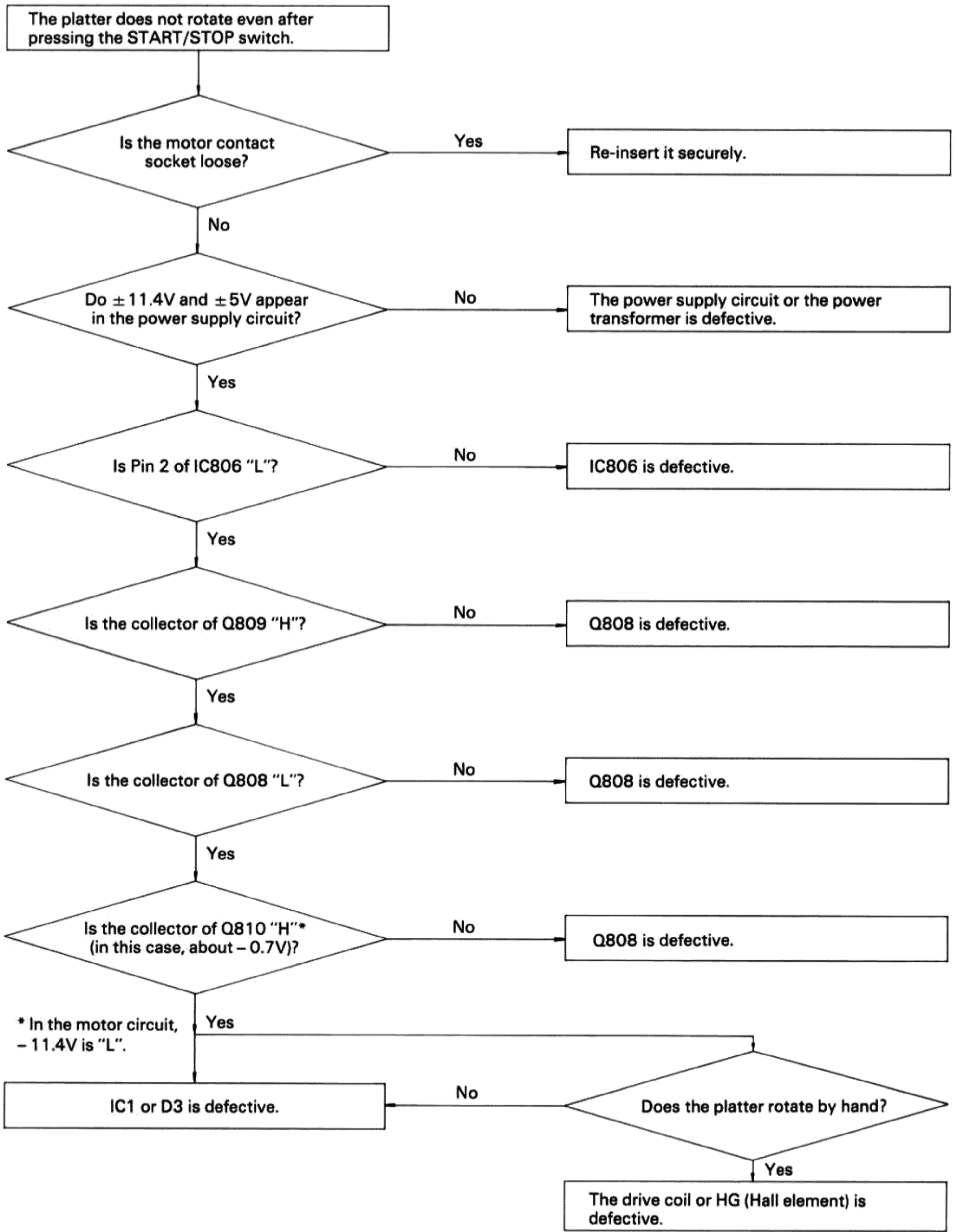


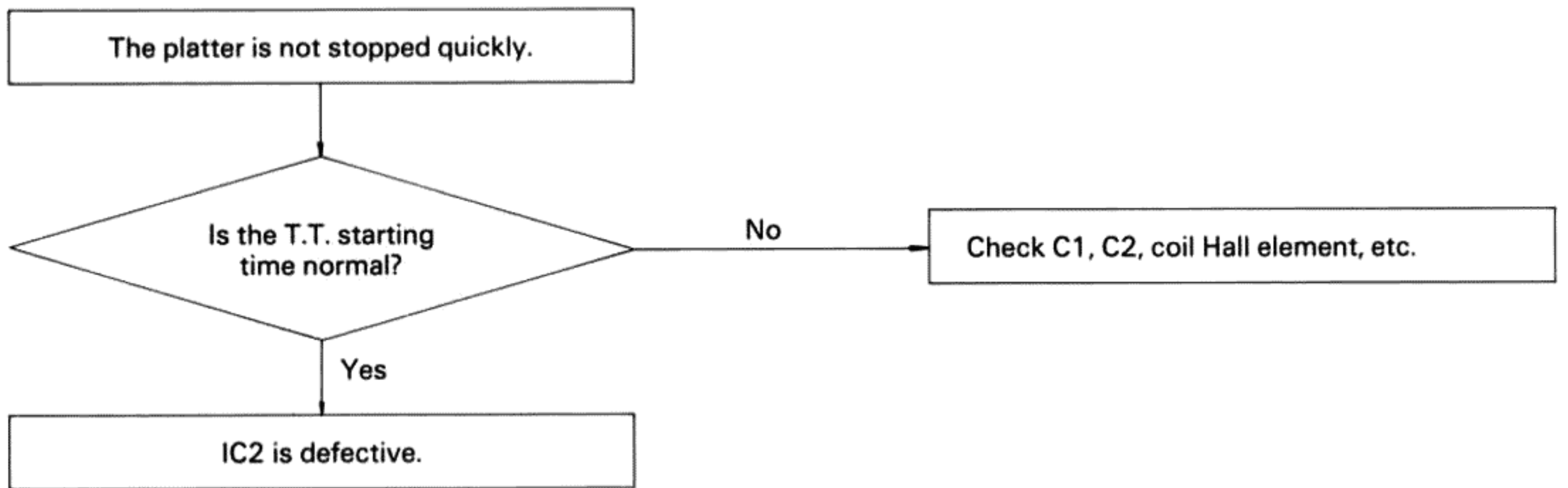
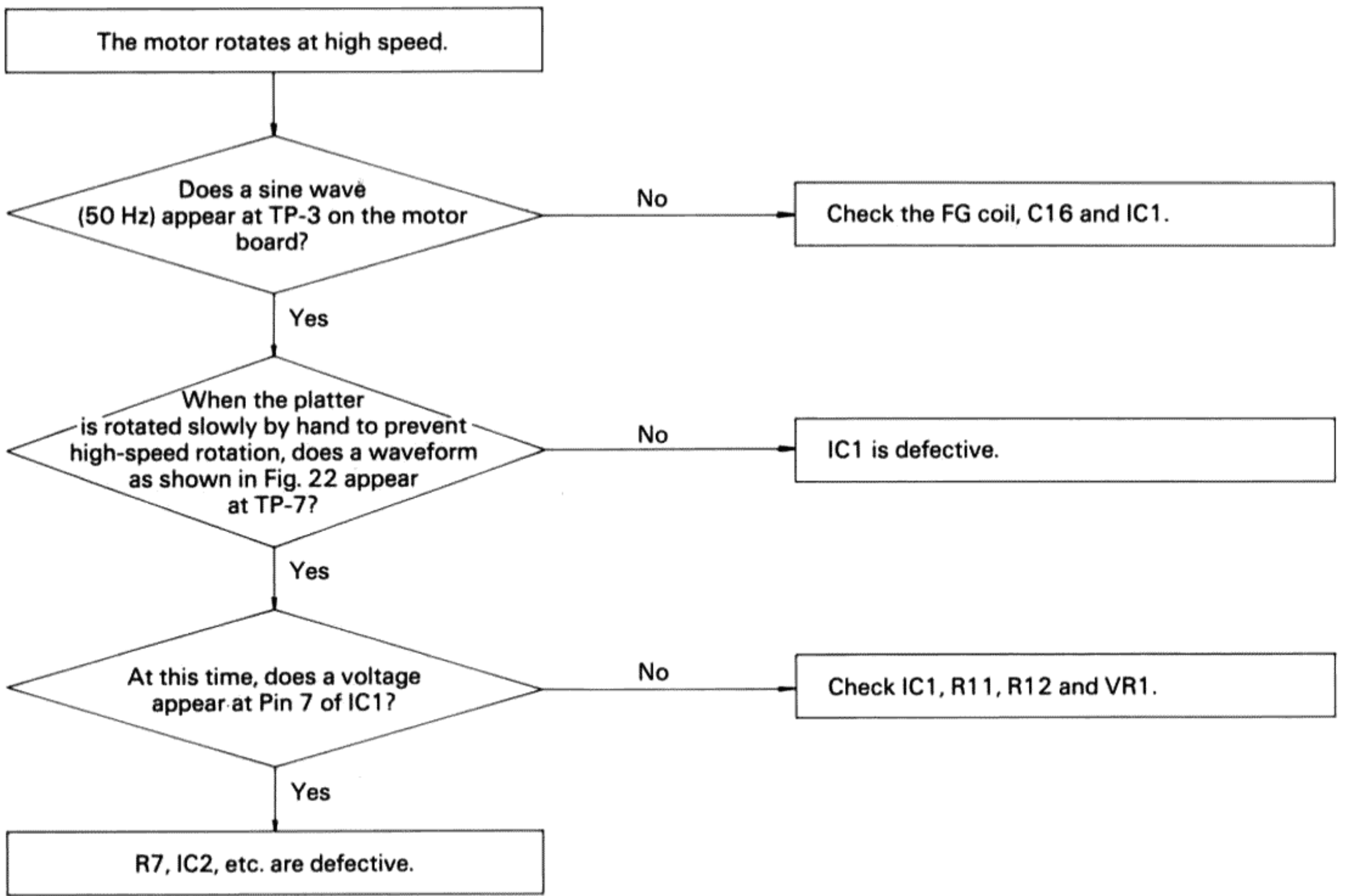


Note: The impedance of the horizontal drive coil is around 70 – 72 ohms. The impedance of the horizontal detection coil is around 570 – 580 ohms.





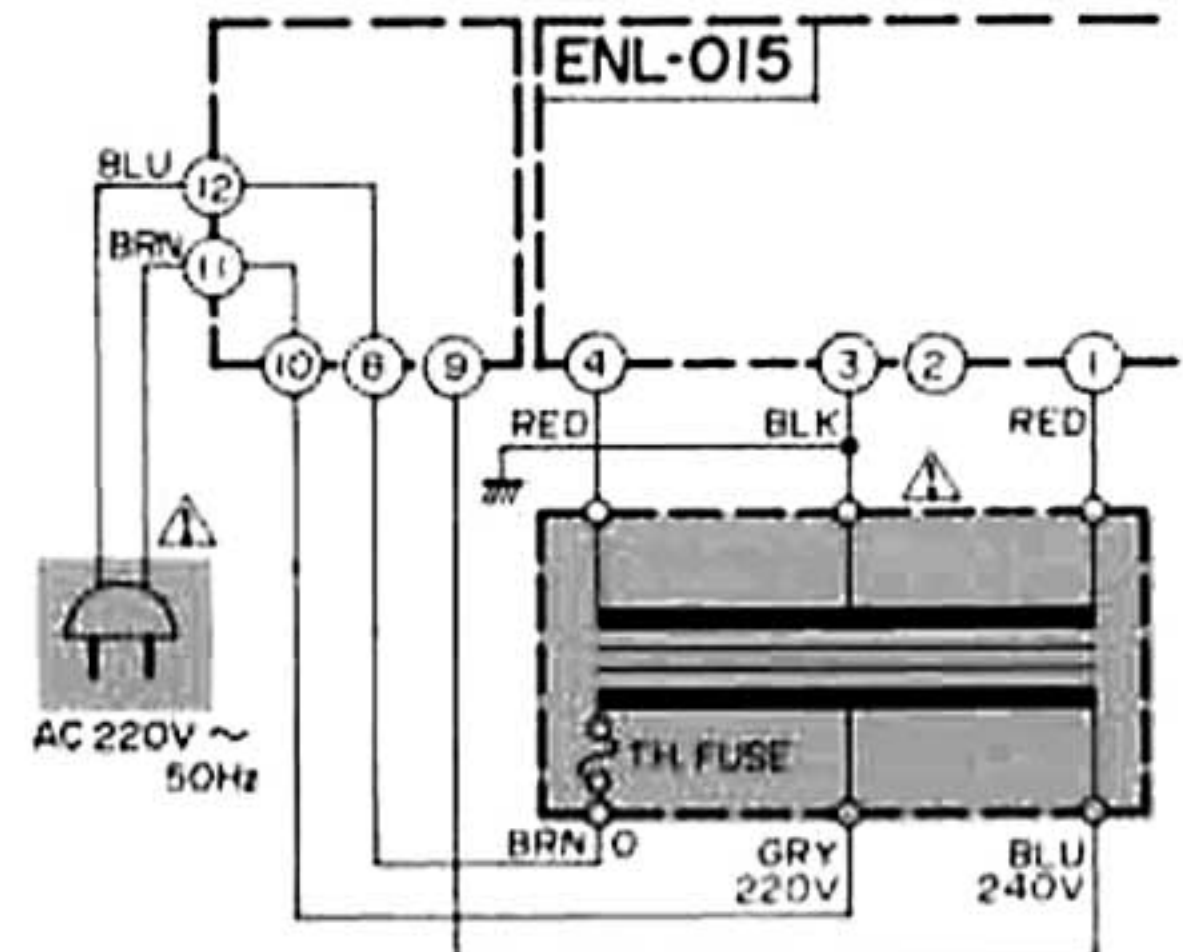




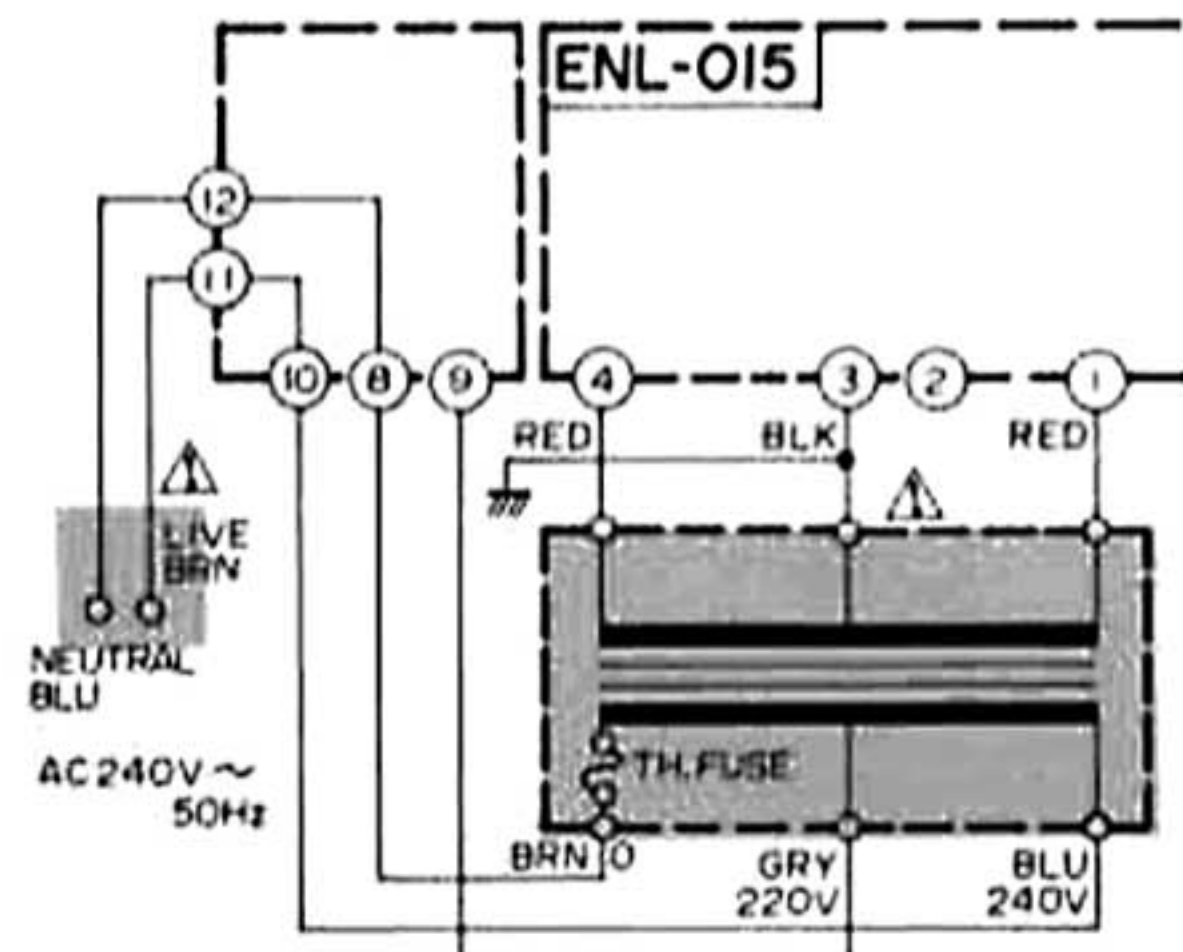
13. QL-Y66F Schematic Diagram

1. Tonearm Control Section

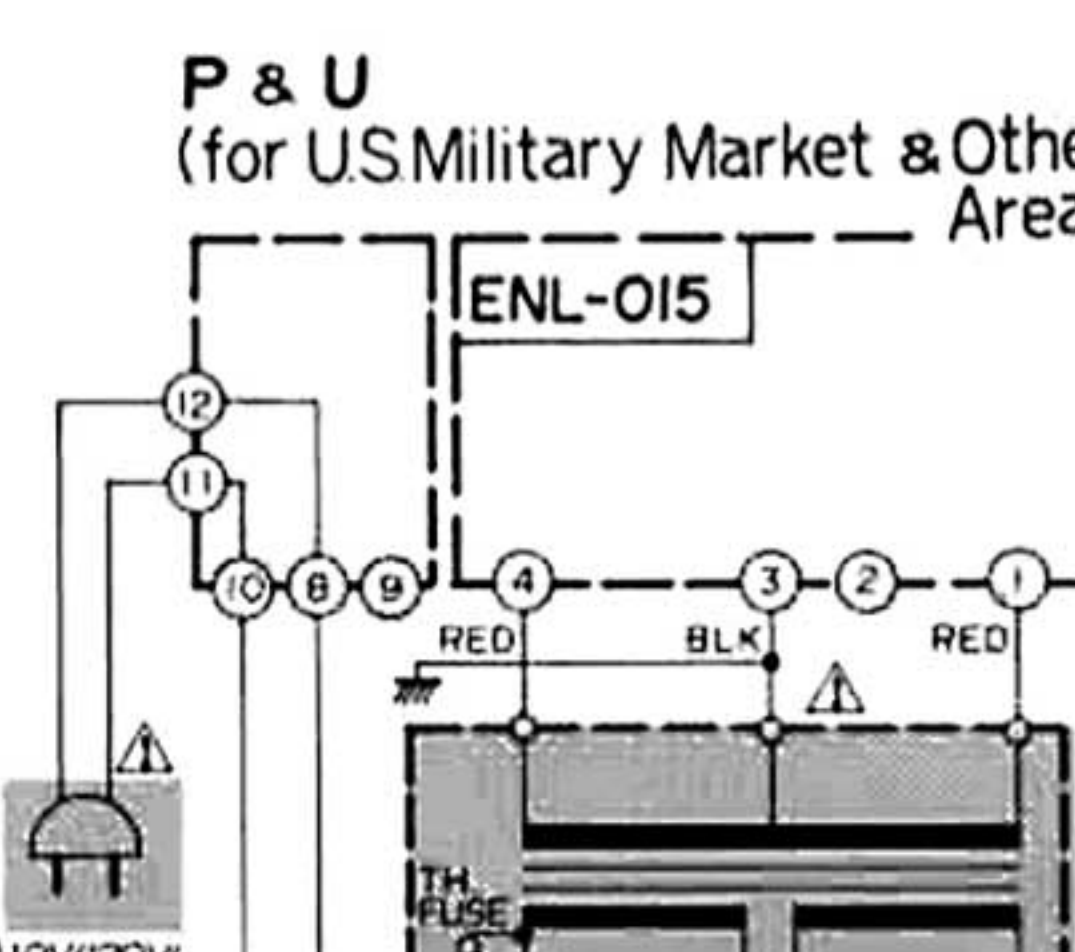
E & G
(for Europe & West Germany)



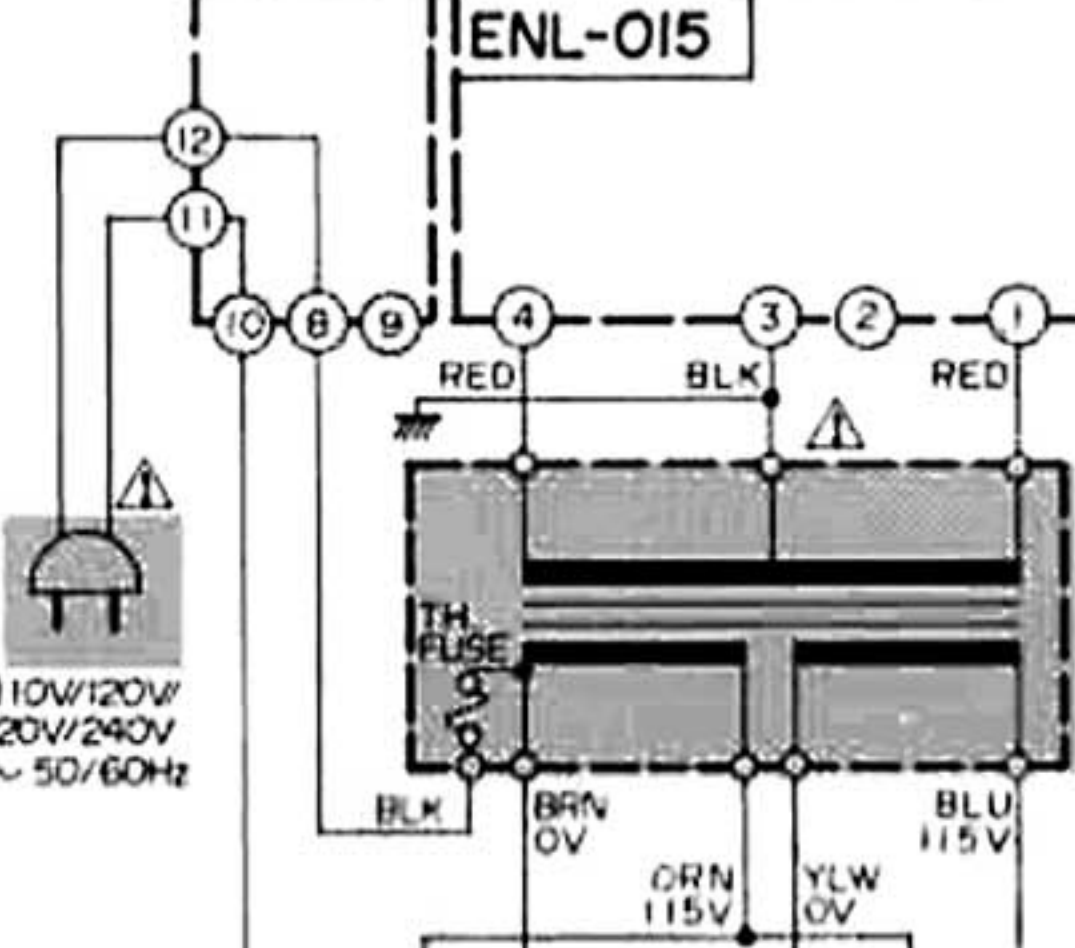
BS (for U.K.)



J & C
(for USA & Canada)

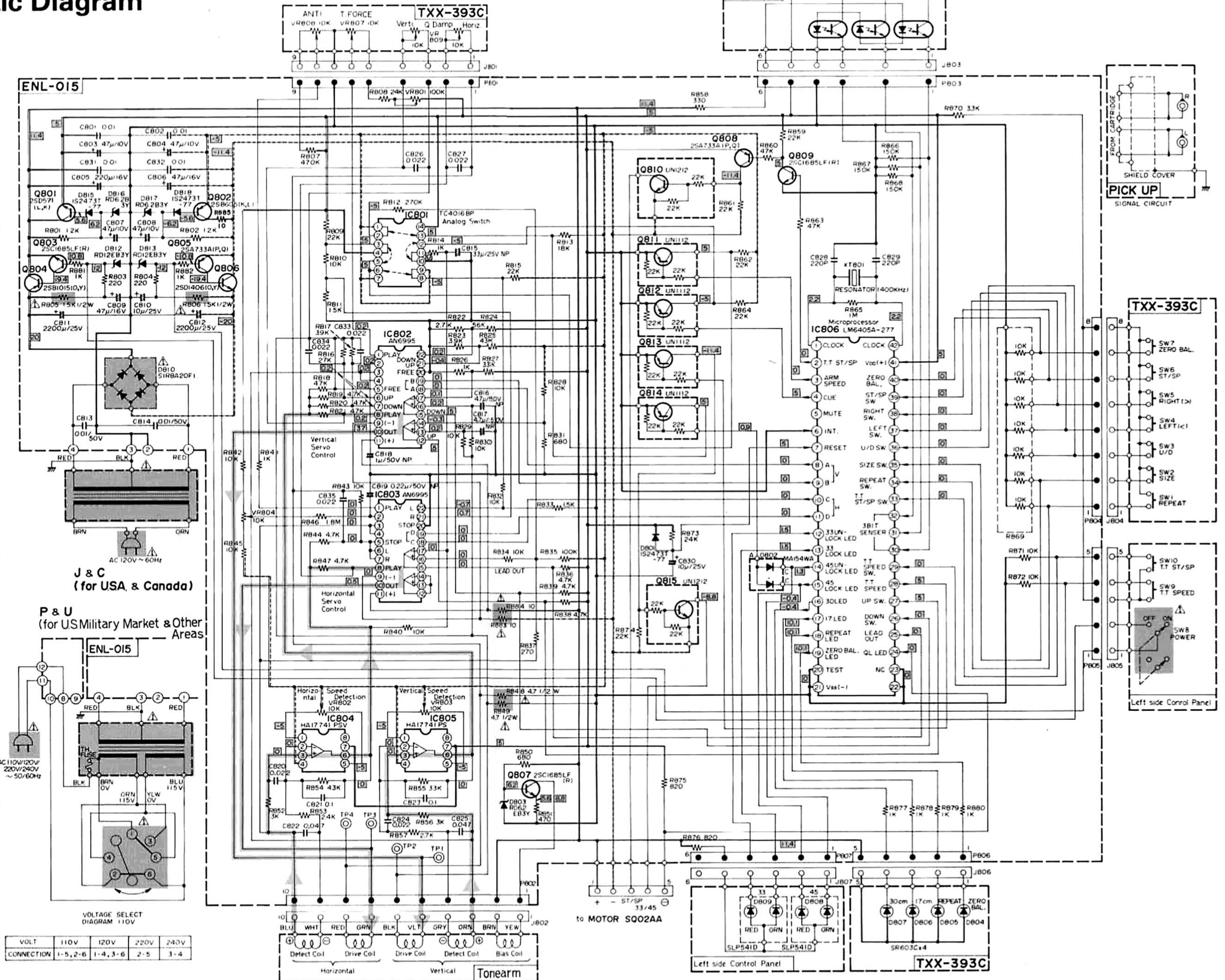


P & U
(for US Military Market & Other Areas)



VOLTAGE SELECT DIAGRAM 110V

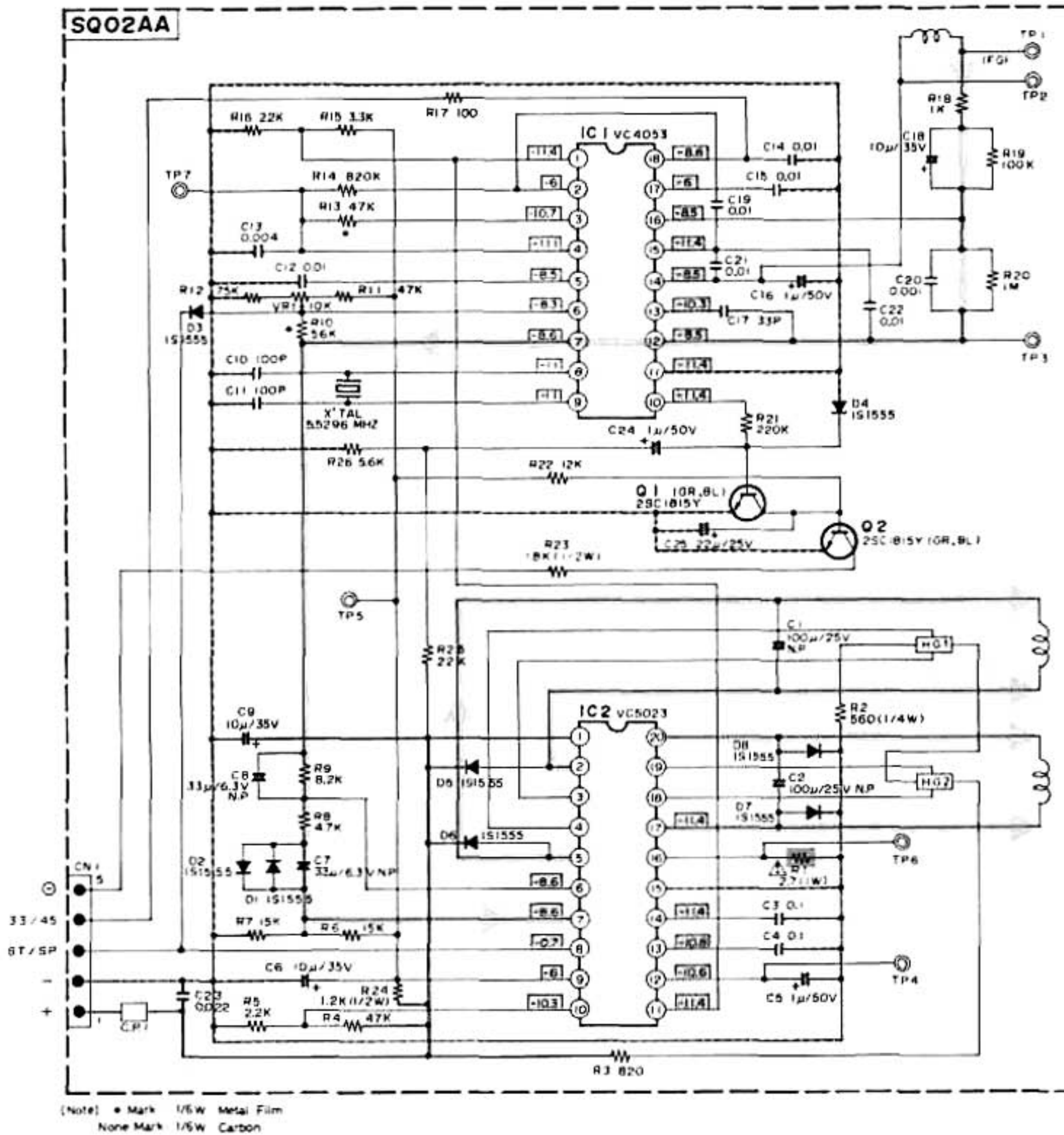
VOLT	110V	120V	220V	240V
CONNECTION	1-5, 2-6	1-4, 3-6	2-5	3-4



- Notes:**
- shows DC voltage to the chassis with no signal input.
 - indicates positive B power supply.
 - indicates negative B power supply.
 - indicates signal path.

- When replacing the parts in the darkened area (■) and those marked with △, be sure to use the designated parts to ensure safety.
- This is the standard circuit diagram. The design and contents are subject to change without notice.

2. Motor Drive Section



Δ : Safety Parts

Power Transformer

: ETP1010-25JA (for U.S.A. & Canada)
 ETP1010-25EA (for Europe, Australia & West Germany)
 ETP1010-25EABS (for U.K.)
 ETP1010-25ZA (for U.S. Military Market & Other Area)

Power Cord

: QMP1200-200 (for U.S.A. & Canada)
 QMP3900-200 (for Europe & West Germany)
 QMP2560-244 (for Australia)
 QMP9017-008BS (for U.K.)

Voltage Selector

: QSR0085-008U (Except for U.S.A., Canada, Europe, Australia, U.K. & West Germany)

Power Switch

: QSP2256-001 (SW8)

Diode

: S1RBA20F1 (D810)

UNF. Carbon Resistor

: QRD125J-152 (R805, 806)
 QRD125J-4R7 (R848, 849)

Fusible Resistor

: QRZ0062-100 (R883, 884, 885)

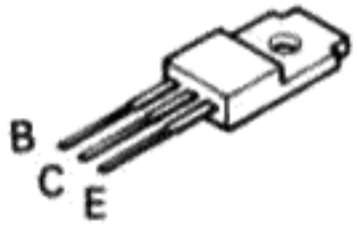
Notes:

1. \square shows DC voltage to the chassis with no signal input.
2. --- indicates positive B power supply.
3. --- indicates negative B power supply.
4. --- indicates signal path.

5. When replacing the parts in the darkened area (\blacksquare) and those marked with Δ , be sure to use the designated parts to ensure safety.
6. This is the standard circuit diagram. The design and contents are subject to change without notice.

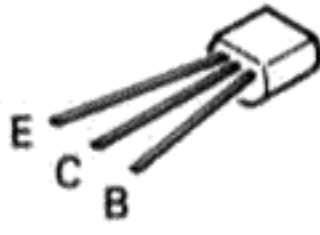
14. Appearance of Semiconductors

2SB1015 (O, Y),
2SD1406 (O, Y)



Q804, Q806

2SA733A (P, Q), 2SC1685LF(R),
2SC1815Y (GR, BL)



Q1, Q2, Q803, Q805
Q807, Q808, Q809

UN1112, UN1212



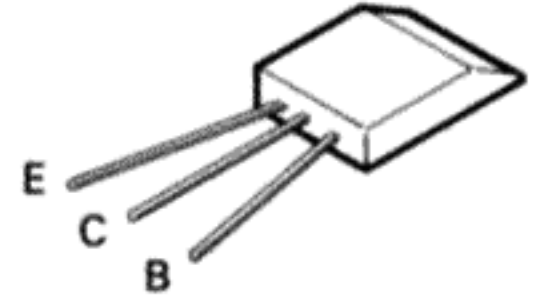
Q810, Q811, Q812
Q813, Q814, Q815

ERGS7XK-103



R869

2SB605 (L, K),
2SD571 (L, K)



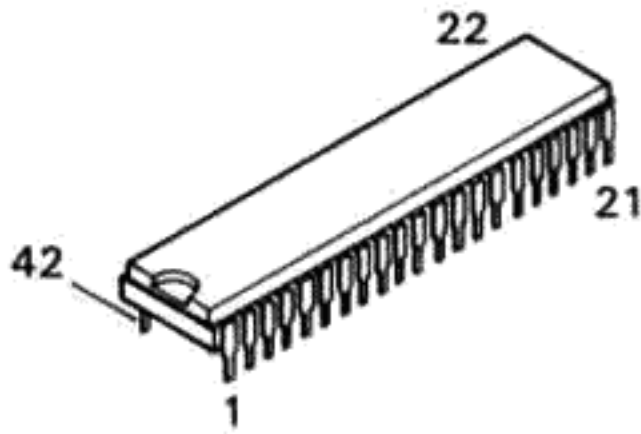
Q801, Q802

SR603C



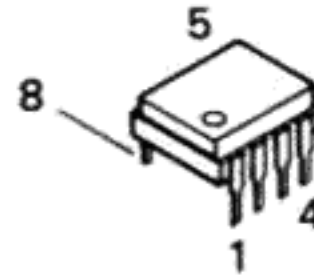
D804, D805, D806
D807

LM6405A-277



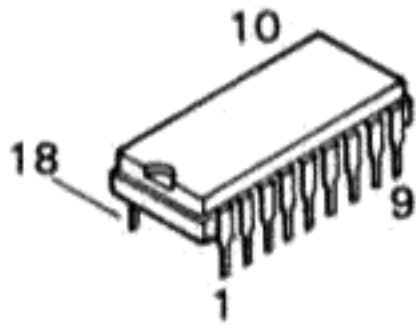
IC806

HA17741PSV, HA17741PS



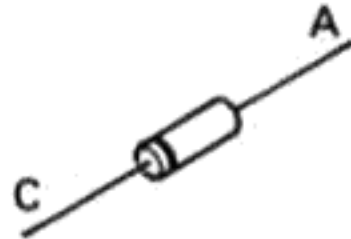
IC804, IC805

VC4053



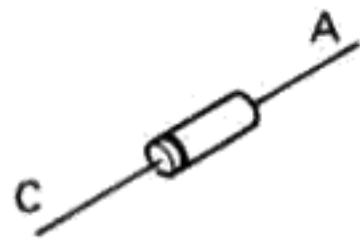
IC1

RD6.2EB3, RD12EB3



D803, D812, D813
D816, D818

1S2473T-77, 1S1555



D1, D2, D3, D801
D815, D817

MA154WA



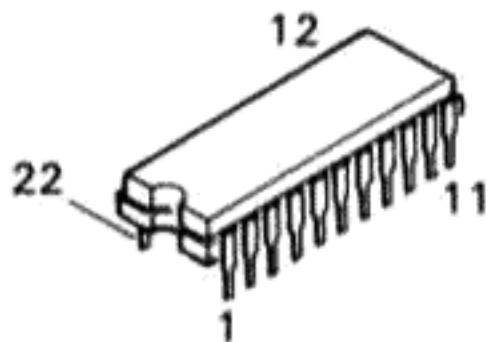
D802

SLP541D



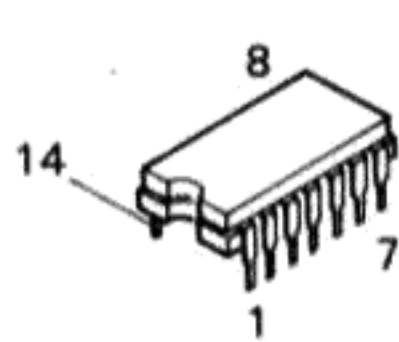
D808, D809

AN6995



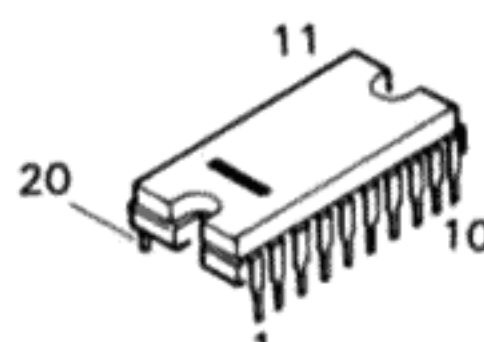
IC802, IC803

TC4016BP



IC801

VC5023



IC2

15. How to Handle the Solderless Connector

In this turntable, a solderless connector is used to connect the power cord with the primary lead wire of the power transformer.

When it is unavoidable to replace this connector for replacement of the power transformer, or the like, positively perform the replacement in accordance with the following procedure to avoid dangers.

- **Connector part number**
E03830-001

- **Tools**

Tool for installing solderless connectors.
Do not use those (small cutting pliers, etc.) other than regular tools.

Example: VACO No. 1963 (Courtesy Vaco Products Co.)

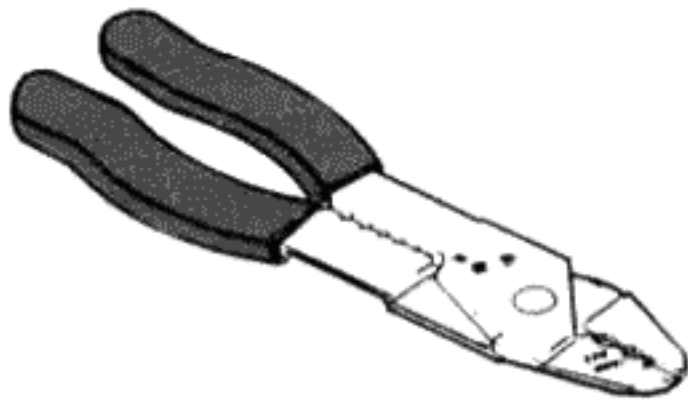


Fig. 31

- **Replacement**

1. Cut both the power cord and the primary lead wire at near the edge of the connector to be replaced.

Note: Do not re-use the used connector.



Fig. 32

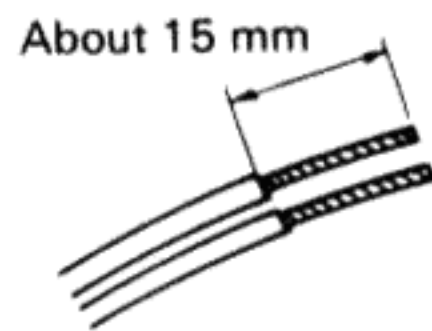


Fig. 33

2. Peel off the coverings so that the respective conductor tops appear by about 15 mm as shown in Fig. 33.
Note: In the case of stranded wires, test each wire.
3. Adjust the tips of the power cord and the primary lead wire with each other, then securely insert them into the connector as shown in Fig. 34.

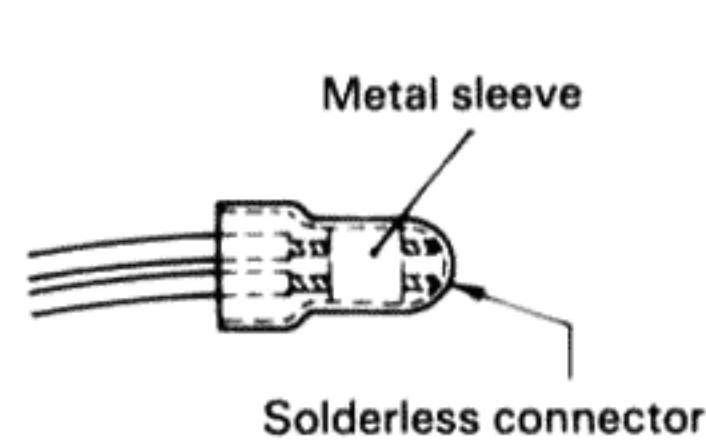


Fig. 34

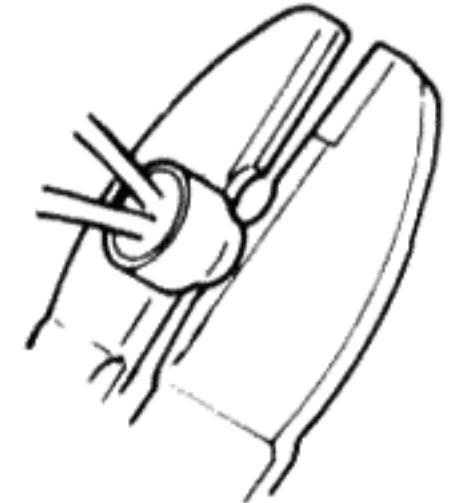


Fig. 35

4. Secure the nearly equal central part of the metal sleeve with the second concave of the tool for solderless securing as shown in Fig. 35.

Note: Perform a complete securing.

5. After solderless securing, check the following as shown in Fig. 36.

Note: Protect the connector with isolation tape or vinyl tube for safety. Furthermore, clamp it for out of touch with metal part.

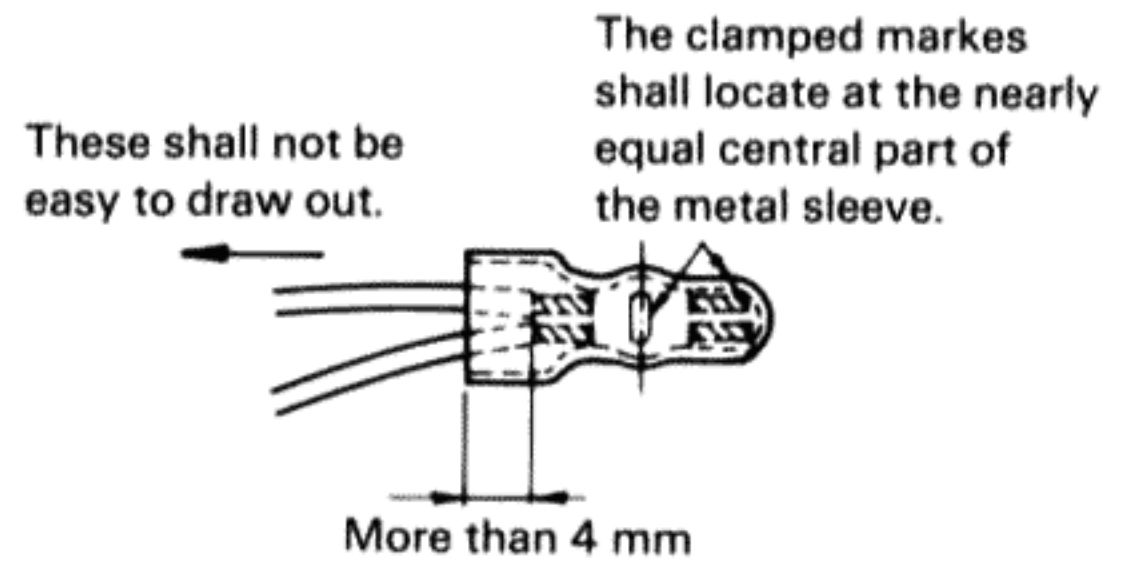
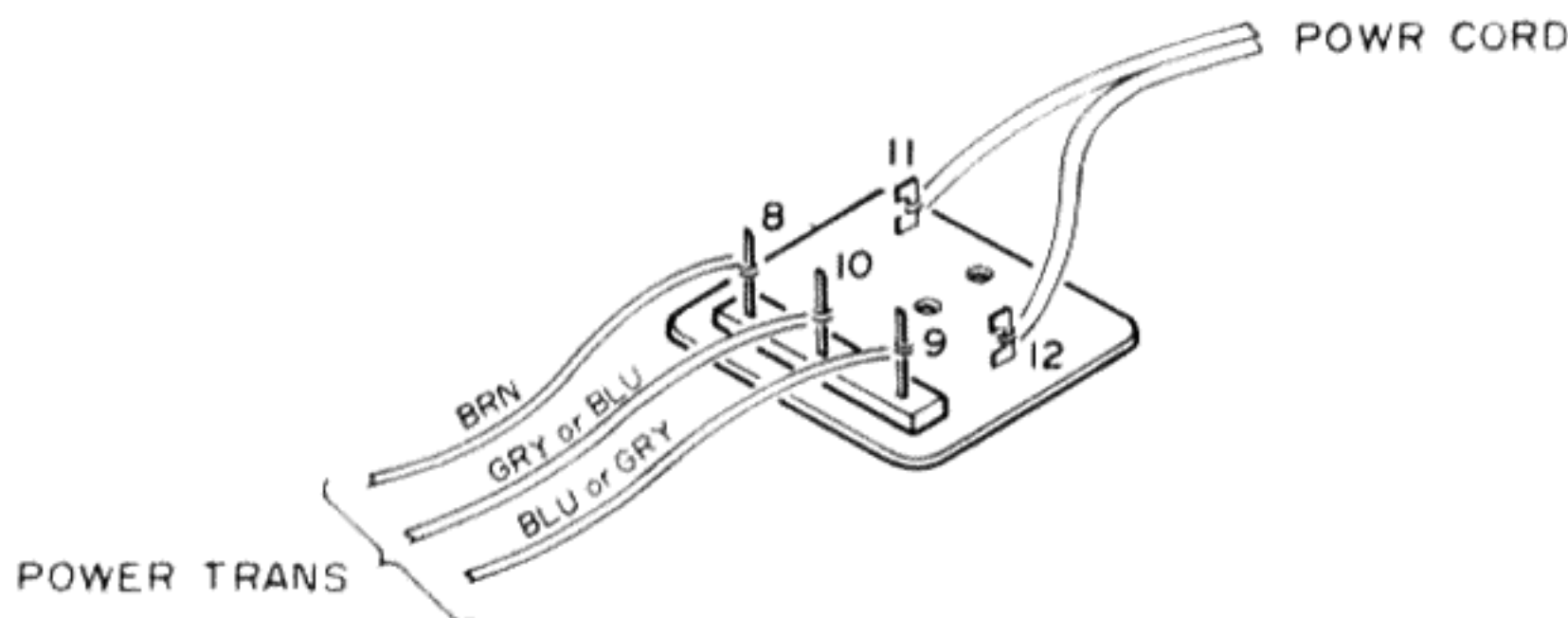


Fig. 36

16. Power Cord Connections in Different Areas

■ for U.K., Australia & Europe



	U.K, A	E
8	BRN	BRN
9	GRY	BLU
10	BLU	GRY

JVC

VICTOR COMPANY OF JAPAN, LIMITED
STEREO DIVISION, YAMATO PLANT, 1644, SHIMOTSURUMA, YAMATO-SHI, KANAGAWA-KEN, 242, JAPAN

(No. 2767)



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5904-G