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PS-636

*US Model
AEP Model
E Model
SCN Model
Canadian Model
UK Model*



STEREO TURNTABLE SYSTEM

SPECIFICATIONS

GENERAL

Power Requirements:	120V ac, 60 Hz (US, Canadian model)
	220V ac, 50/60 Hz (or 240V ac adjustable by authorized Sony personnel) (AEP, SCN model)
	240V ac, 50/60 Hz (or 220V ac adjustable by authorized Sony personnel) (UK model)
	110, 120, 220, 240V ac adjustable, 50/60 Hz (E model)
Power Consumption:	22W
Dimensions:	Approx. 430 (w) x 125 (h) x 375 (d) mm
	17 (w) x 4 7/8 (h) x 14 3/4 (d) inches including projecting parts and controls
Weight:	Approx. 7.9 kg, 17 lb 7 oz (net)
	Approx. 9.6 kg, 21 lb 2 oz (in shipping carton)

TURNTABLE

Platter:	31.8 cm (12 1/2 inches), aluminum-alloy diecast
Motor:	Linear BSL (brushless and slotless) motor
Drive System:	Direct drive
Servo System:	X'tal-lock, Magnedisc servo control
Speed:	33 1/3 rpm, 45 rpm
Pitch Control Range:	±6%
Wow and Flutter:	±0.04% (DIN) (AEP, UK, E, SCN model) 0.025% (WRMS)
Signal-to-Noise Ratio:	70 dB (DIN-B)
Automatic System:	Lead-in, return, reject, repeat, record size selection

— Continued on page 2 —

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHEMATIQUES, LES VUES EXPLOSÉES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SONY
SERVICE MANUAL

TONEARM

Type:	Electronically controlled, universal
Pivot-to-Stylus Length:	216.5 mm (8½ inches)
Overall Arm Length:	280 mm (11 inches)
Overhang:	16.5 mm (²¹ / ₃₂ inches)
Tracking Error:	+3°, -1°
Tracking Force Adjustment Range:	0–3 g
Headshell Weight Range:	10.5 g
Cartridge Weight (with headshell):	14.5–20.5 g

CARTRIDGE VL-34G

Type:	Moving magnet
Frequency Range:	10–30,000 Hz
Channel Separation:	25 dB (1 kHz)
Output Voltage:	3 mV (1 kHz, 5 cm/s, 45°)
Load Impedance:	50 kΩ
Tracking Force:	1.5–2.5 g (2 g recommended)
Stylus:	Sony ND-134G (conical 0.6 mil diamond)
Weight:	5.5 g

MODEL IDENTIFICATION

— Specification Label —

SONY	STEREO TURNTABLE SYSTEM
	MODEL NO PS-636
	SERIAL NO.
	MADE IN JAPAN

{	US, Canadian model	AC 120 V	60 Hz	22 W
	AEP, SCN model	AC 220 V	50 Hz	22 W
	E model	AC 110, 120, 220, 240 V	50 Hz	22 W
	UK model	AC 240 V	50 Hz	22 W

Handling Precautions for MOS ICs

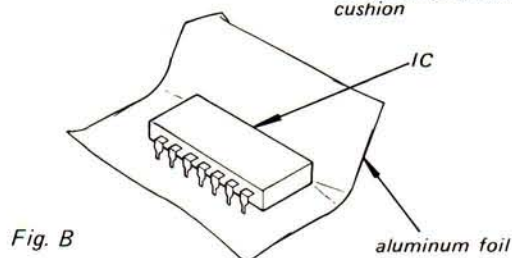
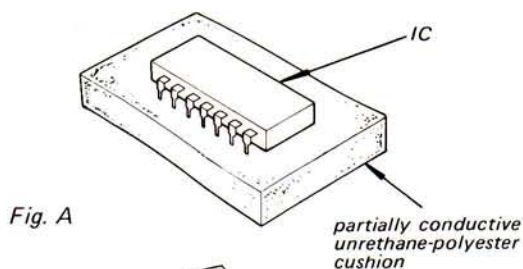
Generally, the insulation resistance of the oxide layer in MOS IC structures is very high, and the oxide layer is very thin. Because of this, it is possible that the static voltages usually present on clothes and the human body will be enough to generate a potential difference across the insulator, high enough to cause a breakdown of the insulating layer.

The following precautions should be taken while handling these ICs.

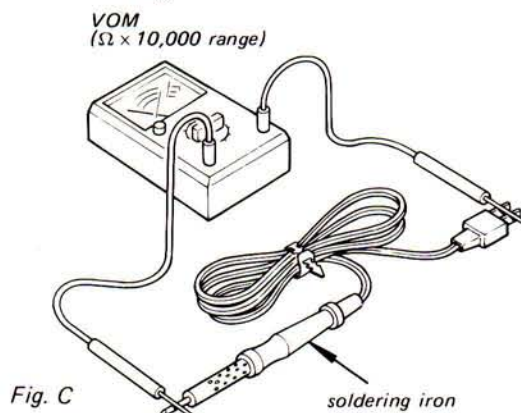
(Particular care should be taken under conditions of low humidity.)

Precautions in Replacing MOS ICs

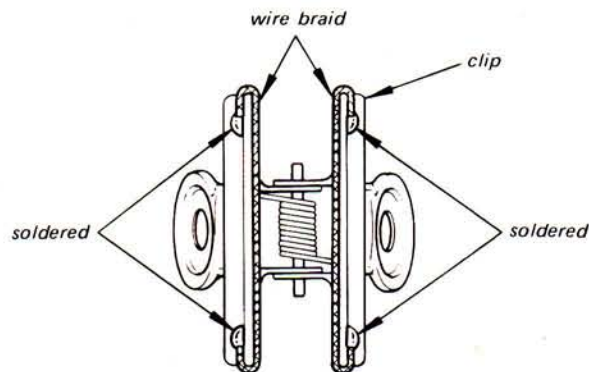
1. Store new ICs by inserting them into a urethane-polyester cushion (which is somewhat conductive), or wrapping it in aluminum foil, so that all the pins are at the same potential. (The ICs should be stored in that manner until mounted on the circuit board.)



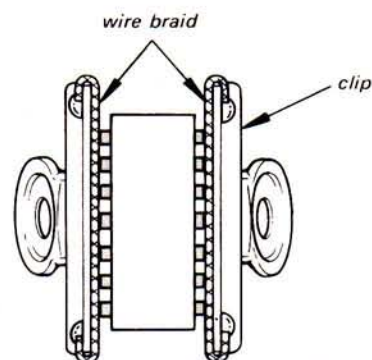
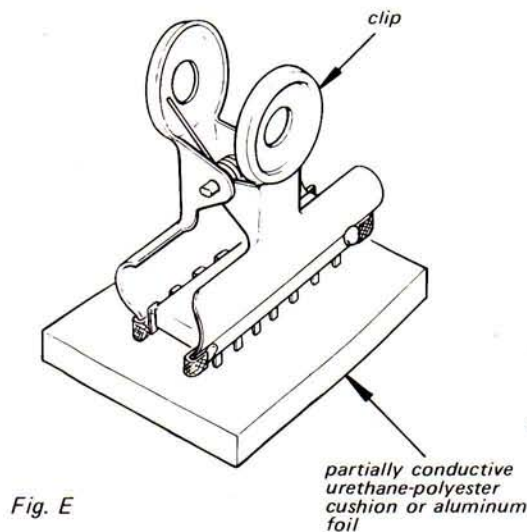
2. Check the soldering iron for possible power-line leakage current. Make sure that there is no leakage path by connecting an ohmmeter to the tip of the soldering iron and the plug as shown in Fig. C. If there is a leakage path, use some other soldering iron.



3. Equalize any potential difference between the clothes, the tools in use, the work bench, the set being worked on, and the packaged IC by touching them all in succession with the hands or a conductive wire or tool.
4. The following are effective methods for handling ICs that remove the potential difference across the oxide layer.
 - Use a paper clip modified by soldering in a wire braid insert.



Make sure that there is no solder on the inside.



Make sure that all the pins are in contact with the wire braid (all the pins will then be at the same potential.).

- Take a short length of fine bare wire and wind it around the IC so that it shorts all the pins of the IC, while it is still in the urethane-polyester cushion or aluminum foil. This ensures that all the pins are at the same potential.

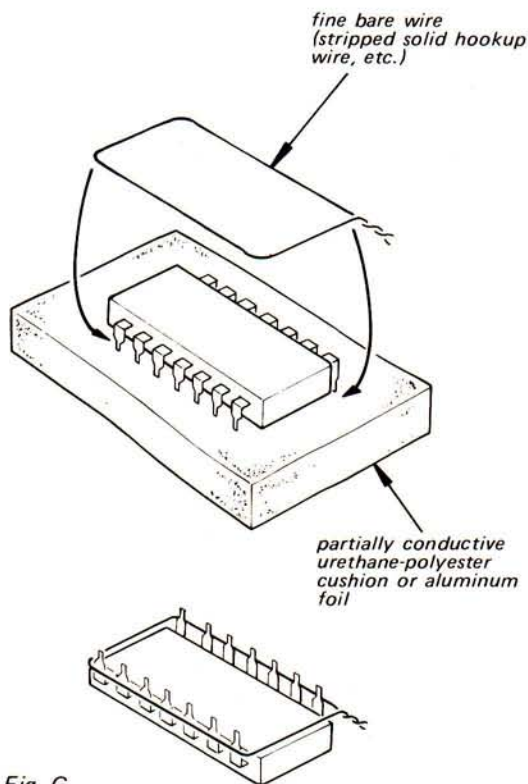


Fig. G

- When it is necessary to handle the IC with the fingers, do not touch any pin, and hold the IC at the ends of its plastic-package case as shown in Fig. H.

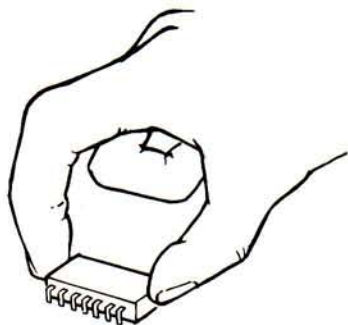


Fig. H

5. Method of Mounting

Insert the IC while holding it with the modified clip, and solder all the pins with the clip still shorting the pins. (Similarly, solder all the pins while the bare shorting wire is still wound around them.). Remove the clip or the bare shorting wire only after all the pins have been soldered.

Precaution while Checking C-MOS ICs

The C-MOS ICs (Complementary MOS) are MOS ICs that have their output sections made up of N-channel and P-channel push-pull stages to increase their speed of operation. If the output terminal of these ICs comes into contact with B+ or B- voltage, then the FET which is ON at that time will either become shorted or open.

This is valid for all the output sections that are connected together by the interconnections. Even the circuits that are physically separated (and not on the same board) can be destroyed simultaneously.

Example:

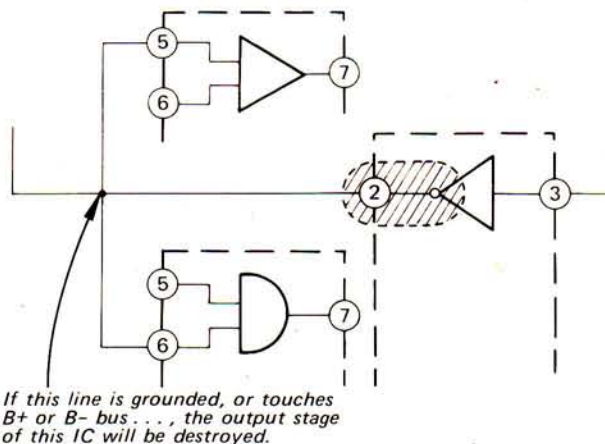


Fig. I

SECTION 1 OUTLINE

1-1. SERVICING NOTES

• Polarities of the Horizontal Drive Components

Confirm that the polarities of the two magnets are as shown in Fig. 1-1 when mounting the arm drive and sensor coils.

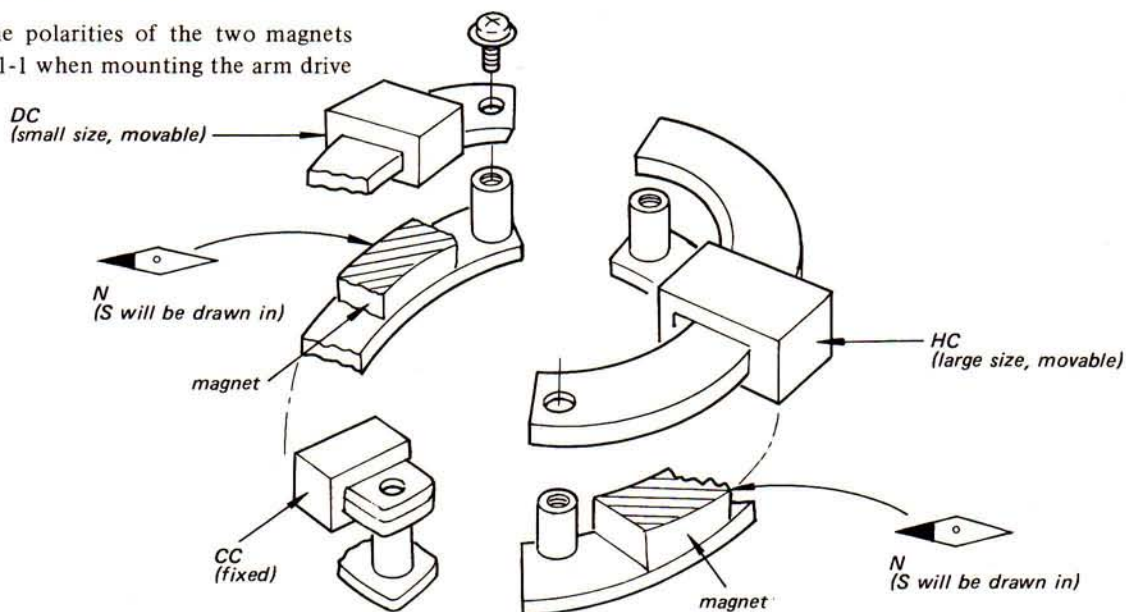


Fig. 1-1

The terminal connections on the system control board are as shown in Fig. 1-2. The colors of the wires are indicated in the mounting diagram.

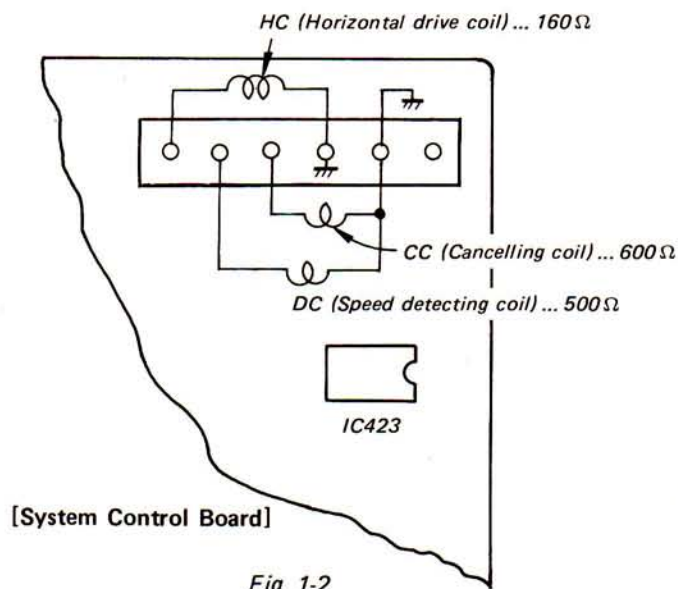


Fig. 1-2

— Testing Method —

Check the following under power OFF condition.

+1V DC applied to HC. . . . Arm moves IN

+1V DC applied to DC. . . . Arm moves IN

+1V DC applied to CC. . . . Arm does not move.

The voltages can be measured by a multimeter in the R × 1 range.

• Power Transistor Symbols

The following symbol on the PC board indicates power transistors. Note that this is the opposite of the marked side of IFT's, etc.

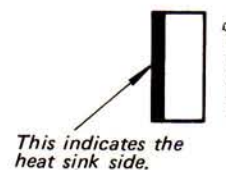


Fig. 1-3

• Correspondence between the IC Symbols in the Schematic Diagram and the Mounting Diagram

The IC symbols in the system control section are quite different from those in the mounting diagram because different symbols are being used depending on their usage.

Example: Circuit Diagram Mounting Diagram

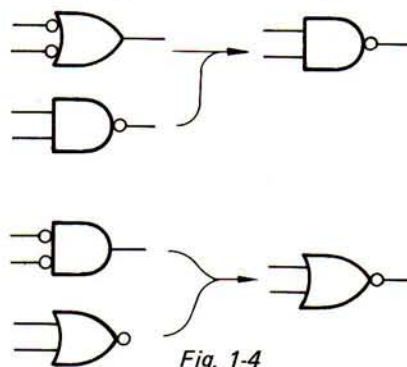


Fig. 1-4

1-2. CIRCUIT DESCRIPTION

• Introduction

1. The Symbols Used in the System Control Section

1. D-Flip Flop (abbreviated hereafter as FF)

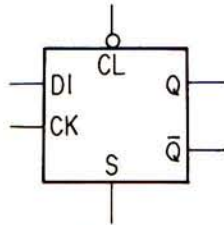


Fig. 1-5

- The CL(R) (clear or reset) and the S (set) input in a D type FF get the priority over the D (data) and the CK (clock) inputs. That is, the D and CK inputs will be ignored if the CL(R) or the S input is present.
- The input symbol represents that the input is active HIGH if there is no circle at the input at the gate and if a circle is present, then that input will be active LOW. For example, the FF in Fig. 1-5 is cleared when the CL (clear) input drops LOW.
- Fig. 1-6 shows the timing chart of the operations of a D type FF shown in Fig. 1-5.

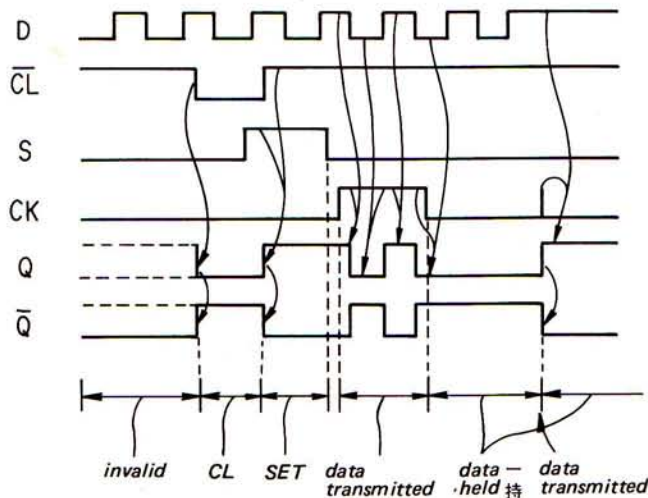


Fig. 1-6

2. Inverter

The circle at the input or the output indicates the purpose of using the inverter; that is, the gate in Fig. 1-7 is an inverter for giving output "0" while the gate in Fig. 1-8 is used for giving output "1".

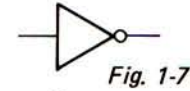


Fig. 1-7



Fig. 1-8

3. AND Gate

This is an AND gate for giving a "0" output. The output of this circuit will be "1" when both inputs are "0" and will be "0" when any one of the inputs is "1".

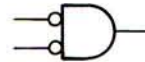


Fig. 1-9

4. NOR Gate

This gate has the function of OR + NOT. The output is "0" when either one of the inputs is "1". Although a different symbol is used in Fig. 1-9 and Fig. 1-10, it is because the purpose is not the same and the same IC is used in both cases.

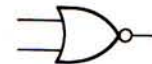


Fig. 1-10

5. NAND Gate

This gate has the function of AND + NOT.

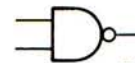


Fig. 1-11

6. OR Gate

This is an OR gate for getting a "0" output, that is, the output will be "1" if either one of the inputs is "0". The same IC as for the NAND gate is used here but a different symbol is used because of the different purpose.

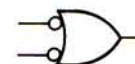


Fig. 1-12

Although the symbols above appear to be very confusing because they represent the same IC using different symbols, they are extremely useful in tracing the circuit in smaller units.

2. Combined Operation

Although a variety of functions can be realized by combining the IC's, the following major combinations are used in the system control section.

1. Fig. 1-13 shows a controllable oscillator. IC21 is an MOS type of oscillator circuit in which the first stage gate operates as an analog amplifier due to the negative feedback by R and oscillates due to the positive feedback provided by C.

The frequency can be controlled by the value of RC because the feedback is given in either the "0" or the "1" mode.

Note: Low frequency (or low duty cycle) oscillations can be obtained easily using MOS ICs.

18-A is a gate for controlling the oscillator output. Because of the circles at the inputs, the oscillator output will be transmitted when the gating input is "0".

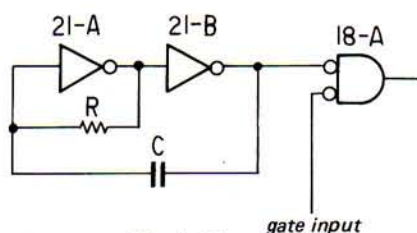


Fig. 1-13

2. Fig. 1-14 shows a Set-reset type of FF basically constituted by 10-D and 14-B (both set and reset are zero priority inputs) with the gate 10-C added for determining the priority of the inputs.

The circuit in this example is a reset priority type of RS FF because the S input will be ineffective when $\bar{R}$ is 1 (that is R = 0).

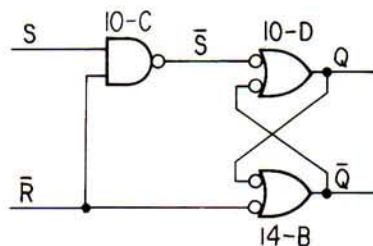


Fig. 1-14

3. The circuits of Figs. 1-15 and 1-16 are not oscillators but are integrators using the very high input impedance of MOS ICs. The purpose of using these circuits is to obtain some delay which is achieved by C and R.

A square wave input applied to these circuits results in a triangular wave output. However, because of the diode (D), the resistor R' will only be included in either the changing or the discharging path of the capacitor and hence the output will be a triangular wave only during the positive or the negative portion of the input wave, depending on the polarity of the diode. The waveforms of these circuits will be as shown in Fig. 1-17 if we assume $R \gg R'$.

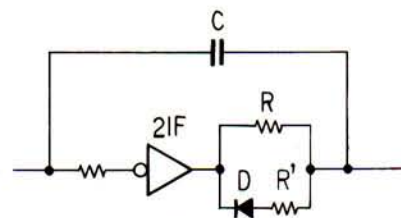


Fig. 1-15

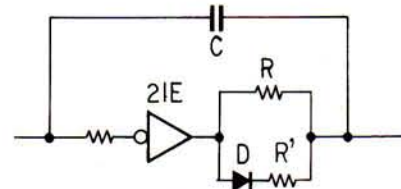


Fig. 1-16

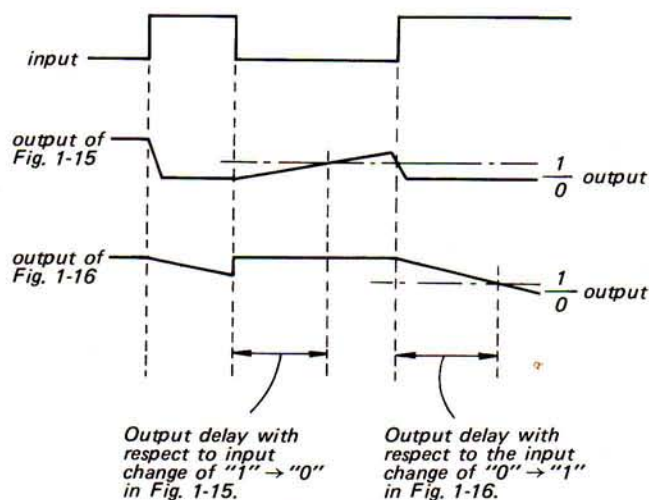


Fig. 1-17

4. The connection of Fig. 1-18 is used for eliminating any narrow pulses superimposed on the input or for obtaining short delays of the rising and falling edges, etc. This circuit is very useful in preventing the oscillation of the entire system (racing), or for preventing chattering of the inputs, etc.

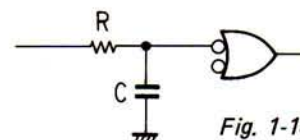


Fig. 1-18

5. The circuit in Fig. 1-19 operates only when the input mode changes from "0" or "1". The gate is operated by the negative edge "1" → "0" in the combination RC, and by the positive edge "0" → "1" in the condition R'C'.

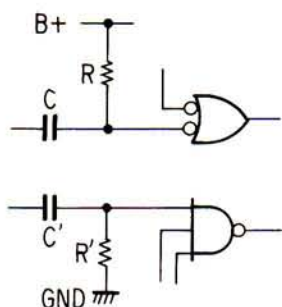


Fig. 1-19

3. Reading the IC Numbers

The ICs in the system control circuit are separated in individual units. Therefore the IC numbers are shown beside each unit as follows.

Example:

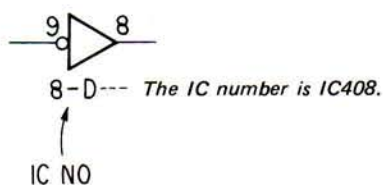


Fig. 1-20

● Record Size Detection

This function is used for:

- detecting whether or not a record is placed on the turntable.
- detecting the record size (30, 25, 17 cm).

A disk light (DL) illuminates the face of the turntable. This light passes through the turntable prism and reaches the sensors Q201–203 of the record size detecting board.

The outputs of Q201–203 will be as follows.

Output Record	Q201	Q202	Q203
30 cm	1	1	1
25 cm	0	1	1
17 cm	0	0	1
No record	0	0	0

Two pulses per one rotation of the turntable are necessary (except when a 30 cm record is placed on the turntable) to obtain the output pulses shown above.

The sensor output is amplified in the size selecting board by the operational amplifiers IC201, 202 which supply a positive pulse output when the signal pulse at the $\ominus$ terminal drops lower than the bias applied to the $\oplus$ terminal.

The bias applied to the $\oplus$ terminal will be different for different disk sizes as follows.

For a 30 cm disk (terminal 5 of IC202) –
bias voltage: $-7V$

For a 25 cm disk (terminal 3 of IC201) –
bias voltage: $-5.8V$

For a 17 cm disk (terminal 5 of IC201) –
bias voltage: $-4V$

These bias voltages are different because the amount of light reaching the sensor from the disk lamp (DL) differs in each case.

The record size detecting signal is supplied to the D type FF IC1 via IC5 in the system control board. This FF is used for ignoring the input for about 2 seconds until the turntable starts rotating.

• Tonearm Position Detector

The tonearm position is detected by the tonearm position sensor. This detects the position of the tonearm by means of three rows of slits which are provided on a shutter attached below the tonearm. The following sensor outputs are obtained, in which "0" denotes that the light was received from two slits and in which "1" denotes that no light was received.

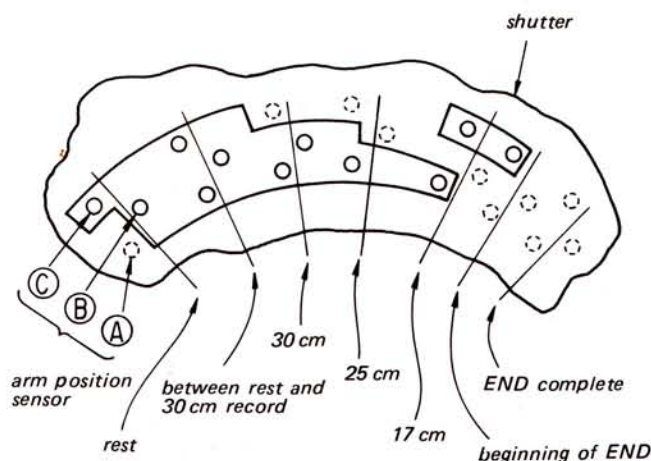


Fig. 1-21

Actually the shutter moves with respect to the sensor but the figure shown here indicates the position by changing the position of the arm position sensor.

Sensor output Tonearm position	Sensor A	Sensor B	Sensor C
Arm at rest	1	0	0
Between the rest and the record edge (30 cm)	0	0	0
30 cm	0	0	1
25 cm	0	1	1
17 cm	0	1	0
Beginning of END	1	1	0
END complete	1	1	1

The output of the arm position sensor is supplied to IC5, 6 via Q406–408 and the Rest, Beginning of END, and END complete signals are generated in these ICs.

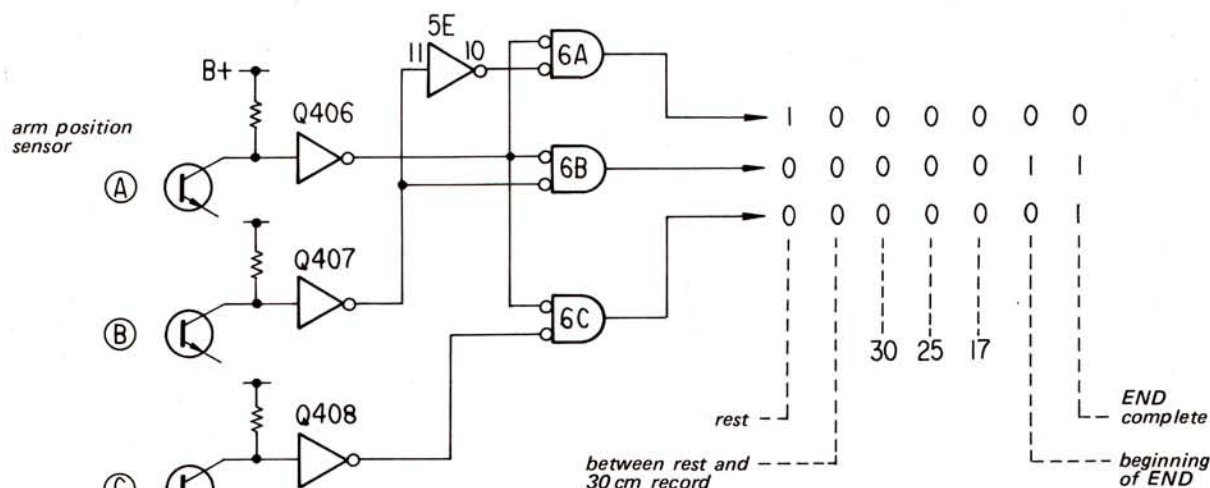


Fig. 1-22

The outputs of the arm position detector and the record size detector are combined together to generate the drop point output.

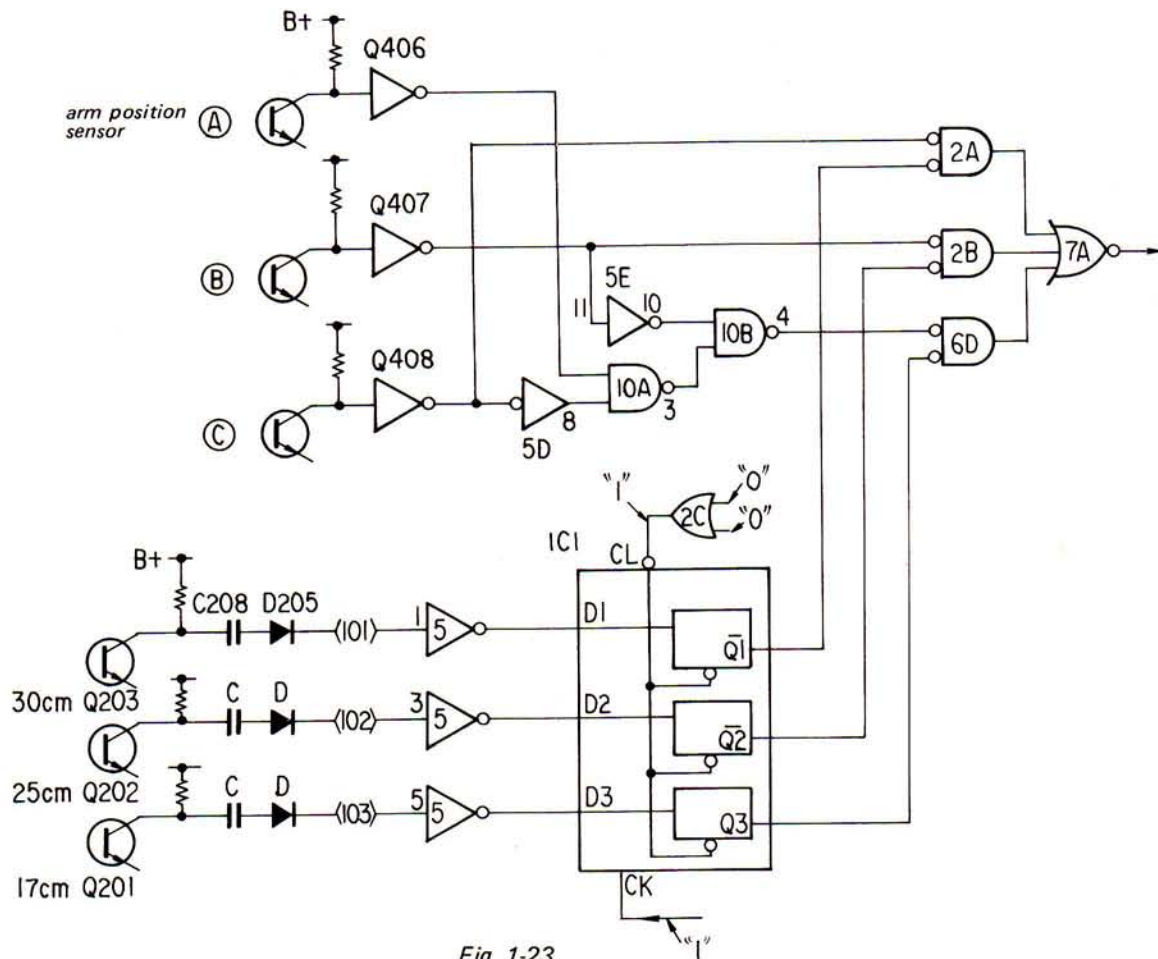


Fig. 1-23

The arm position sensor outputs are combined with IC6D as follows.

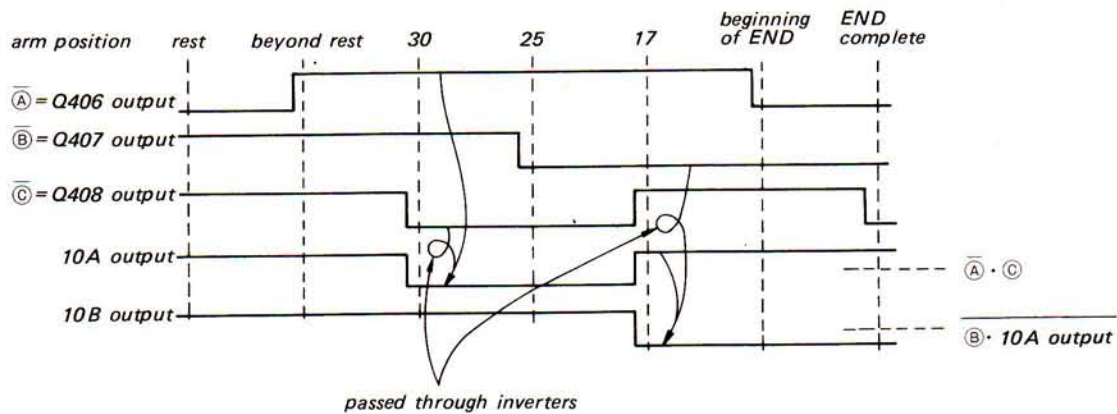


Fig. 1-24

For example, here the 10B output changes from "1" to "0" when the tonearm reaches the 17 cm disk position.

The record size detector signal is obtained from IC1 as follows when the clear input to IC1 is "1" (that is, the data will not be cleared) and the CK input is "1" (strobe clock signal; D input is valid). Thus when the record size is detected and the drop point has been reached, the outputs 2A, 2B, and 6D are combined to give the negative drop point signal at 7A.

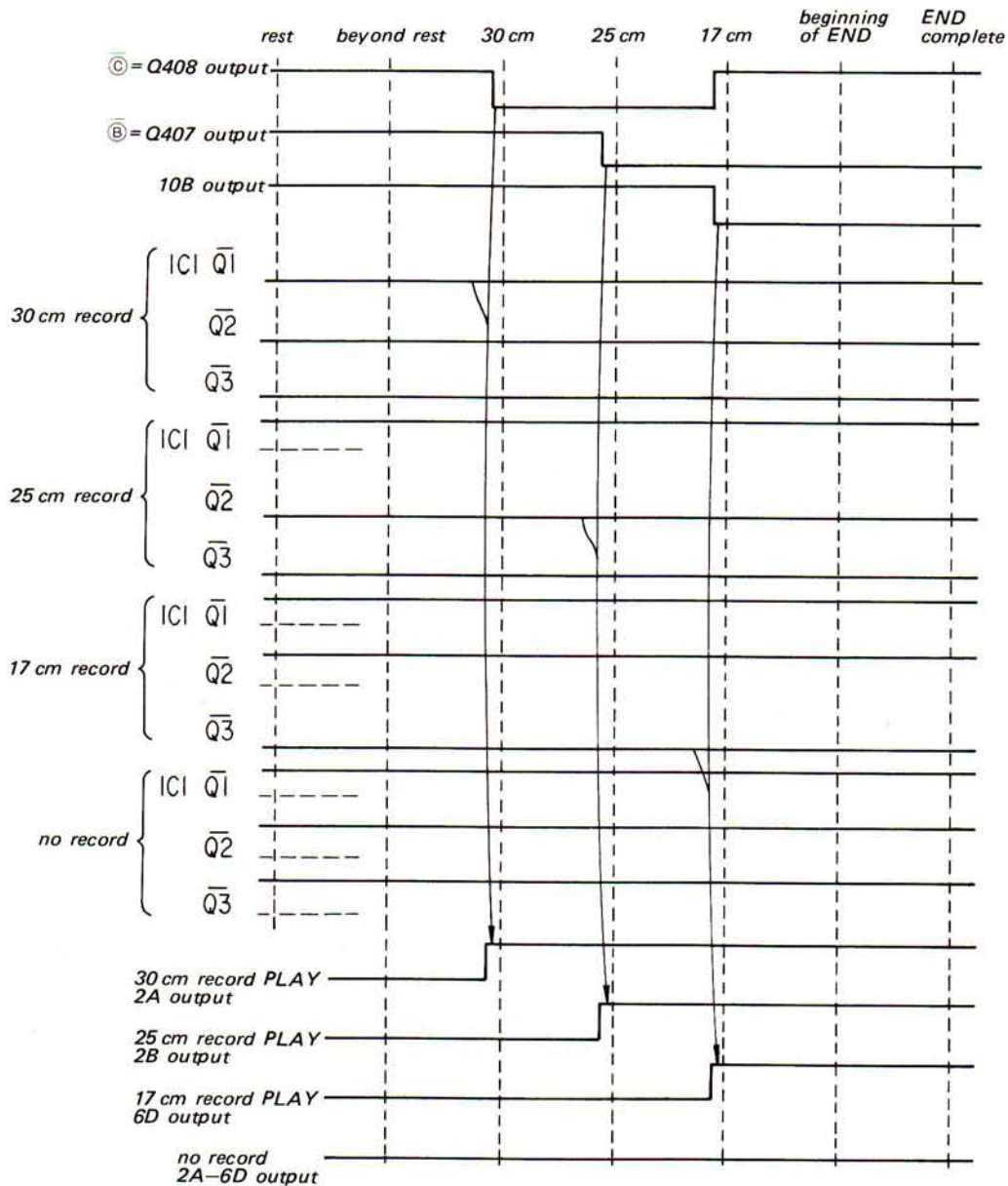


Fig. 1-25

• "No Record" Detection

The size of the standard records placed on the turntable is detected by the amount of light cut off by the record. When a record of a certain size is placed on the turntable, the lights for the smaller record size is also cut off. Therefore, the absence of a record can be determined from the signal for the 17 cm record size detector.

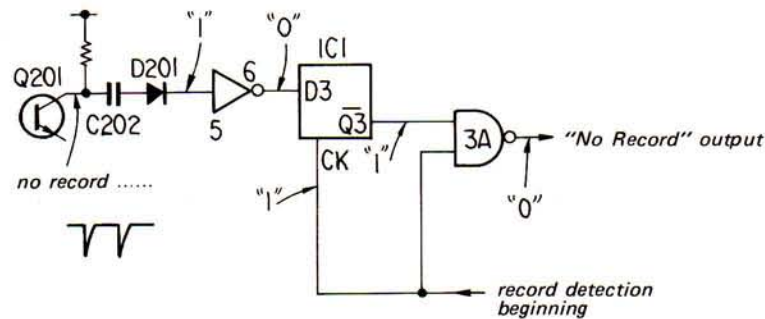


Fig. 1-26

The turntable does not start rotating immediately after the START button is pressed. Therefore, the "No Record" detection is not performed until the turntable starts rotating. IC1 is used for this purpose. Therefore, it is evident that the turntable stops rotating after about 2 seconds if the START button is pressed with no record placed on the turntable.

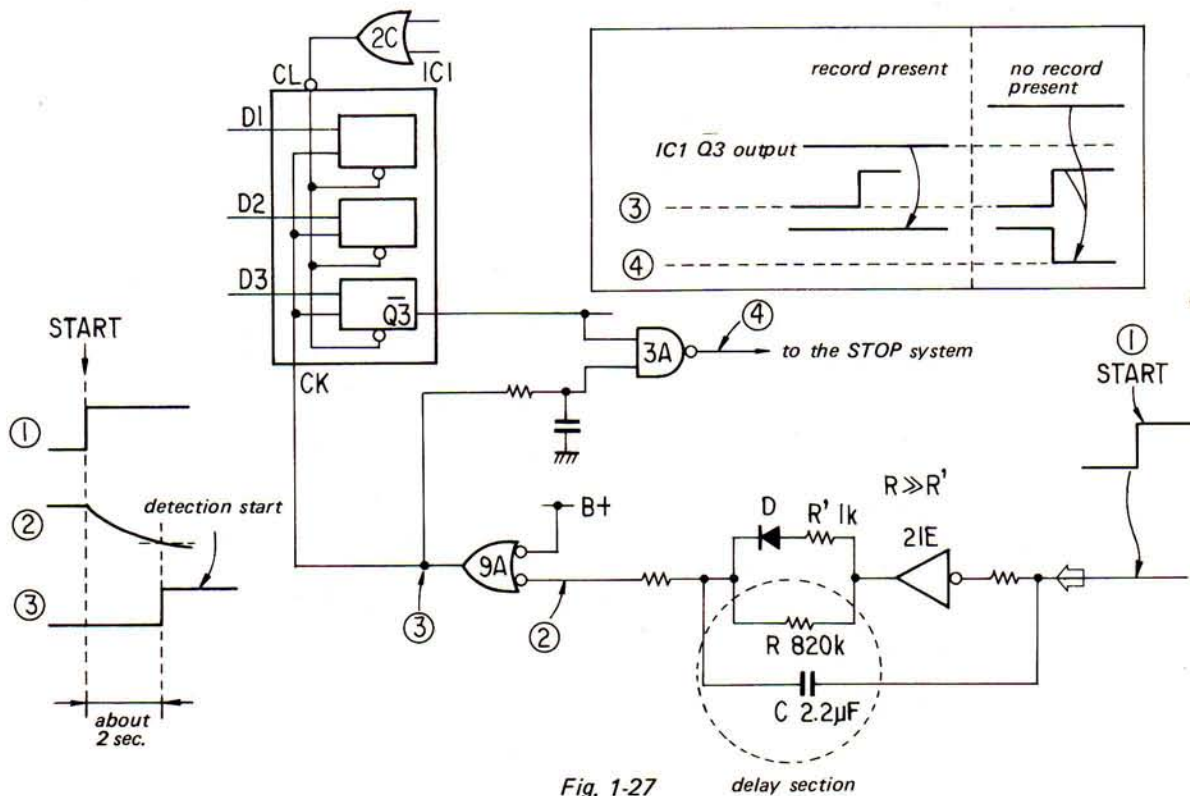


Fig. 1-27

1. Tonearm Position During Power On

The tonearm does not move in either direction during POWER ON because both the arm FWD and the arm REV signals would be off. This is indicated in Fig. 1-29.

As shown in Fig. 1-29, the portion enclosed within the line — — — will be ignored during POWER ON because of the negative feedback (NF) provided by a coil to the high gain amplifier (IC422, Q412, Q413).

Since the drive to the tonearm is given via the horizontal drive coil (HC) the arm does not move if neither a positive nor a negative voltage is applied to this coil. Therefore, the stopping position can be adjusted by the horizontal offset control RV402.

The voltage output by the speed detecting coil (DC) is supplied to the servo amplifier as the negative feedback signal and acts as a brake on the movement of the arm.

There is a cancel coil (CC) apart from the fixed coils HC and DC.

The purpose of this cancel coil is to neutralize within the servo system the component of the signal when the arm is moving at a constant speed. Because of this it becomes possible to extract only the variation in the speed from the DC coil system.

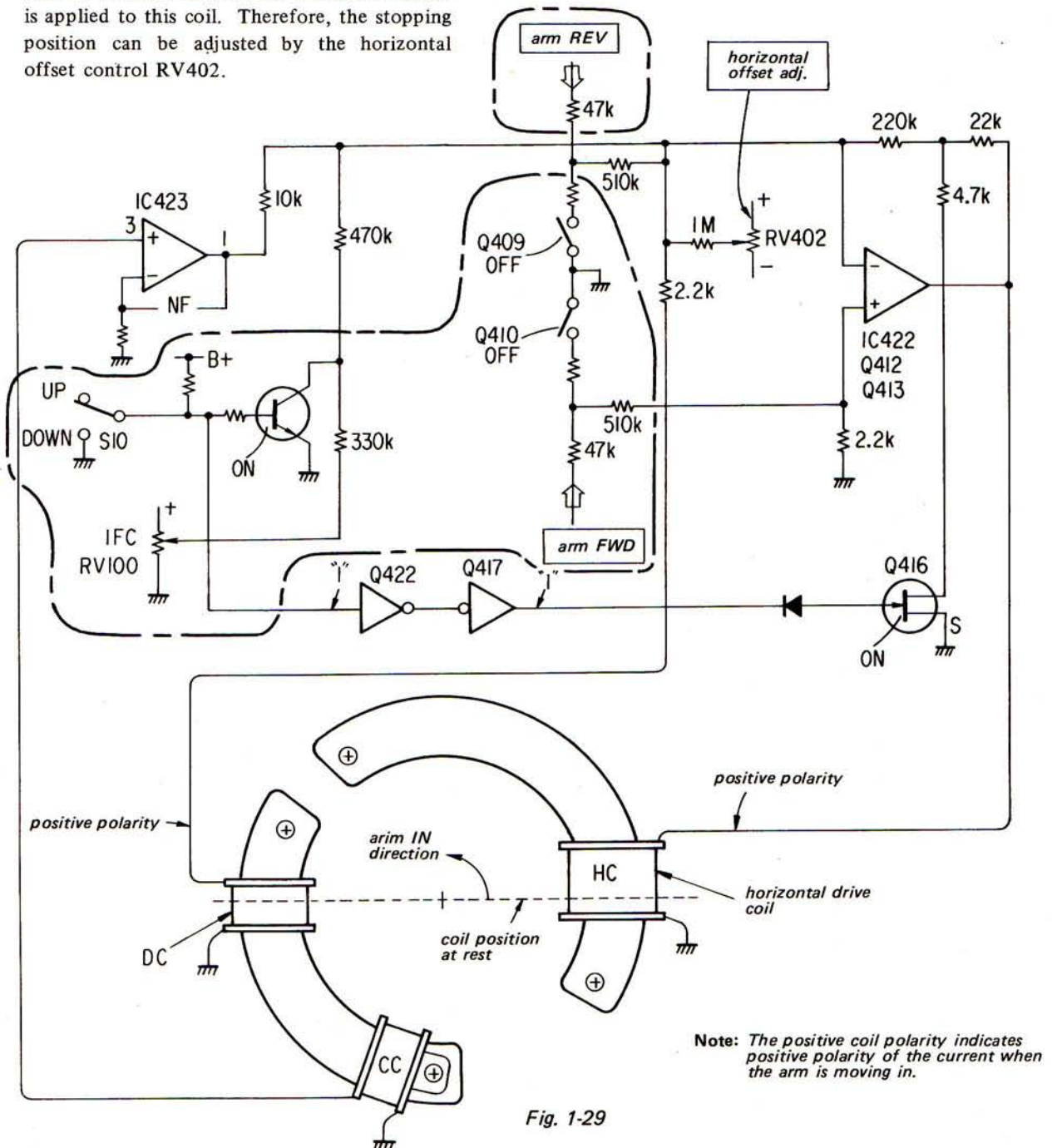


Fig. 1-29

• Disk Light Circuit

The disk light (DL) brightness is reduced after leading in because then it is no longer necessary. The transistors Q418, 419 in the system control board are used when the full voltage is to be applied to the disk light and when these are OFF, the current flows through R506.

• Lifter Coil Circuit

The lifter coil circuit is as shown in Fig. 1-30.

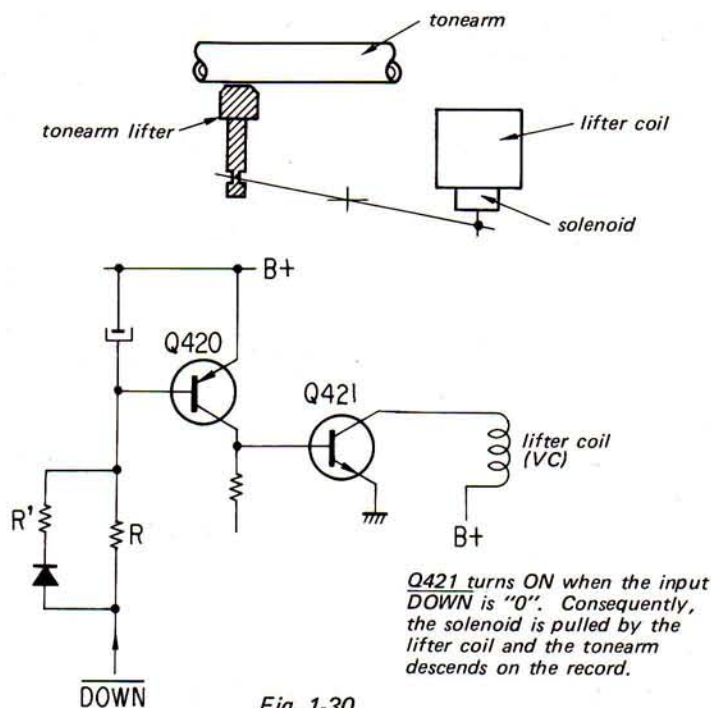


Fig. 1-30

• Return Detection

The return detection is performed as shown in Fig. 1-31 by IC423, Q414, Q415, IC422, etc., in the system control board.

Q414 turns OFF and Q415 turns ON in the PLAY zone because "Beginning of END" will be "1", and therefore there will be no gain in IC423.

When the "Beginning of END" signal is applied and Q414 turns ON, Q415 turns OFF and IC423 is in the high gain state. In this state, IC423 amplifies the voltage generated by the speed detection coil (DC). Consequently, a pulse output is obtained from IC422. The "0" level portion of this pulse output is used as the END signal.

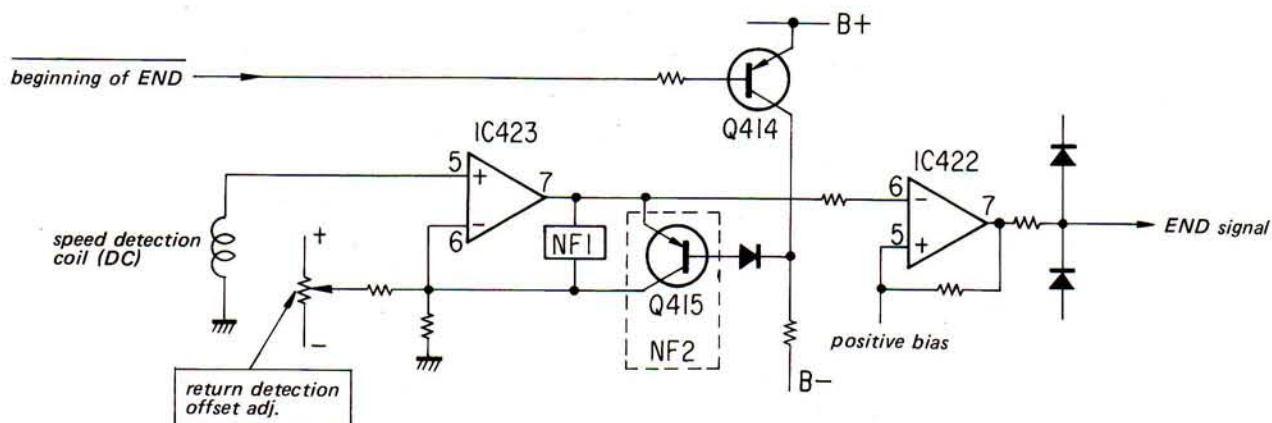


Fig. 1-31

• The LED of the Arm Position Sensor

The LED and the light detectors used here are infrared devices. Therefore these devices should be tested by checking the voltages across them.

• Zero Balance Circuit

The system does not operate when the zero balance switch S11 is in the BALANCE (ON) position, but only the START display blinks.

This circuit is shown in Fig. 1-32.

- Refer to the diagrams on page 00 for the respective modes for the operations in the FWD, Lead In, END, Return, IN, OUT, REPEAT and other modes.

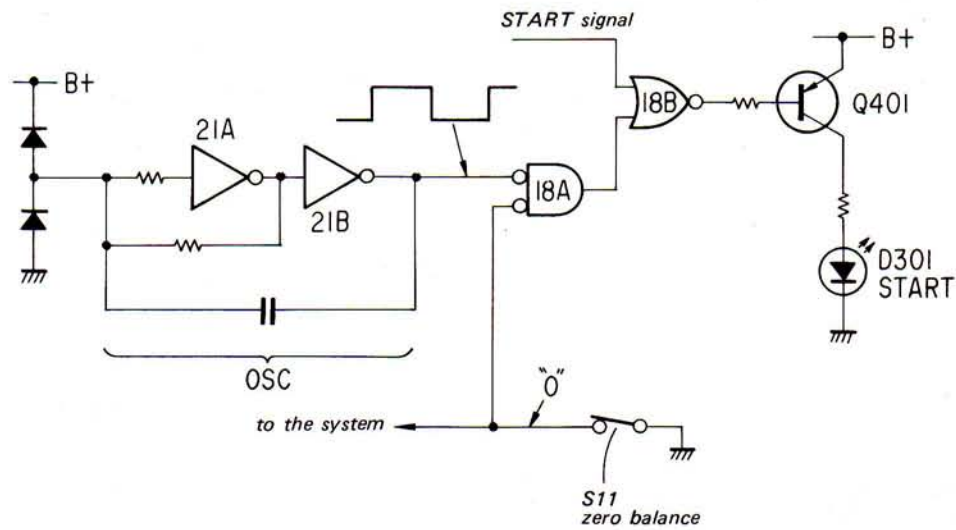
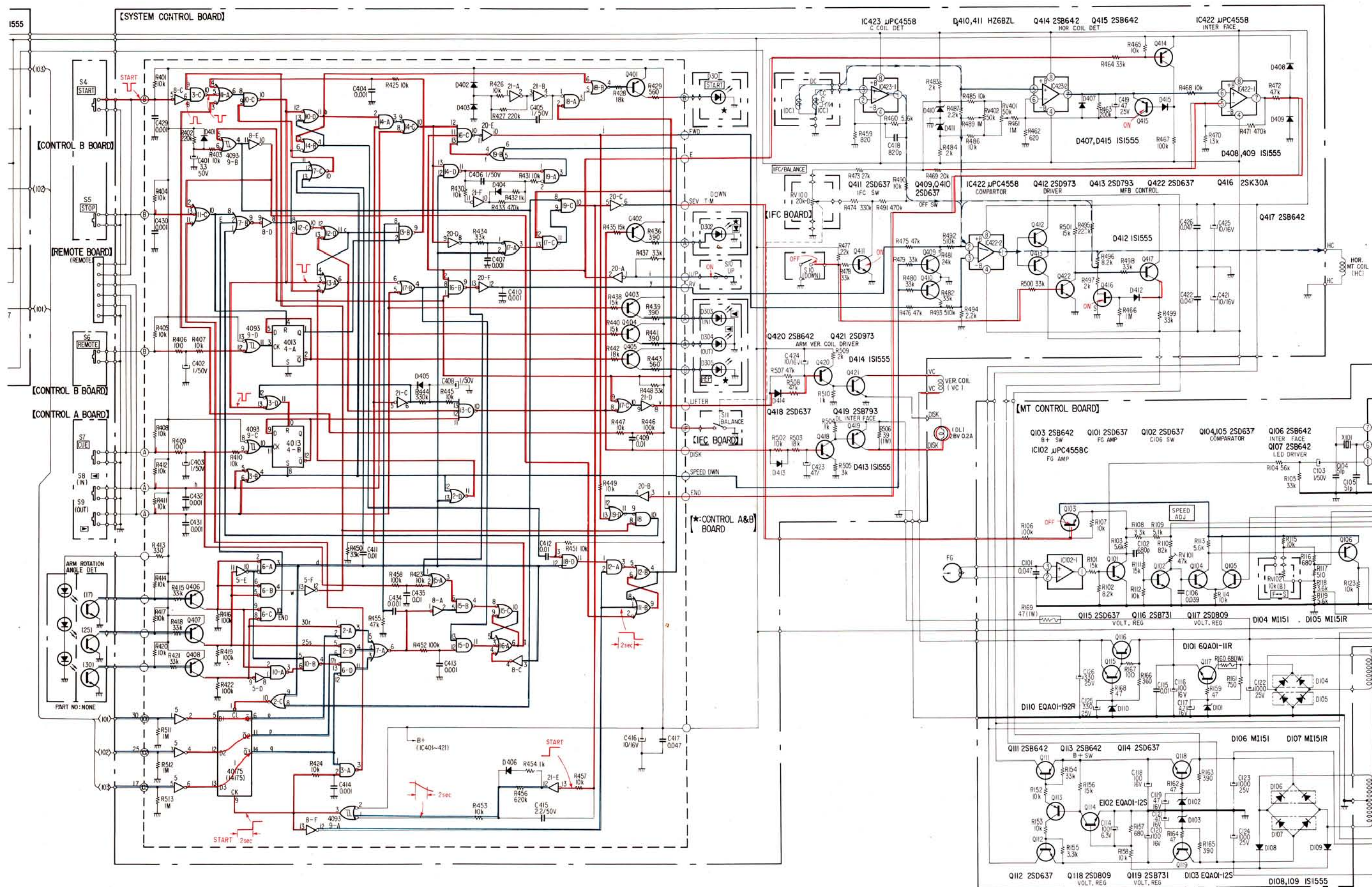


Fig. 1-32

START
(30 cm)

PS-636 PS-636

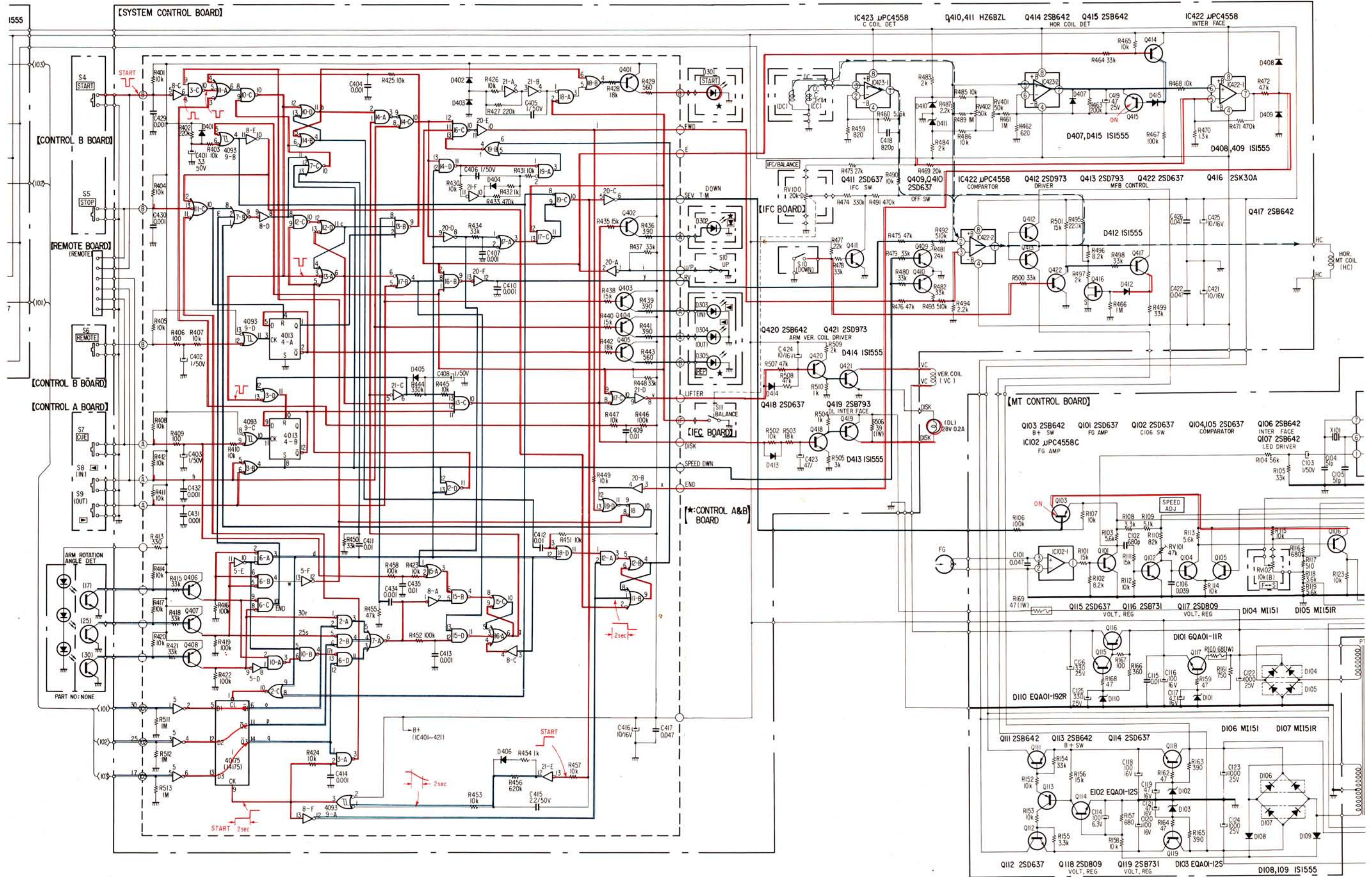
— "1" (high voltage)
— "0" (low voltage)



START
(30 cm)

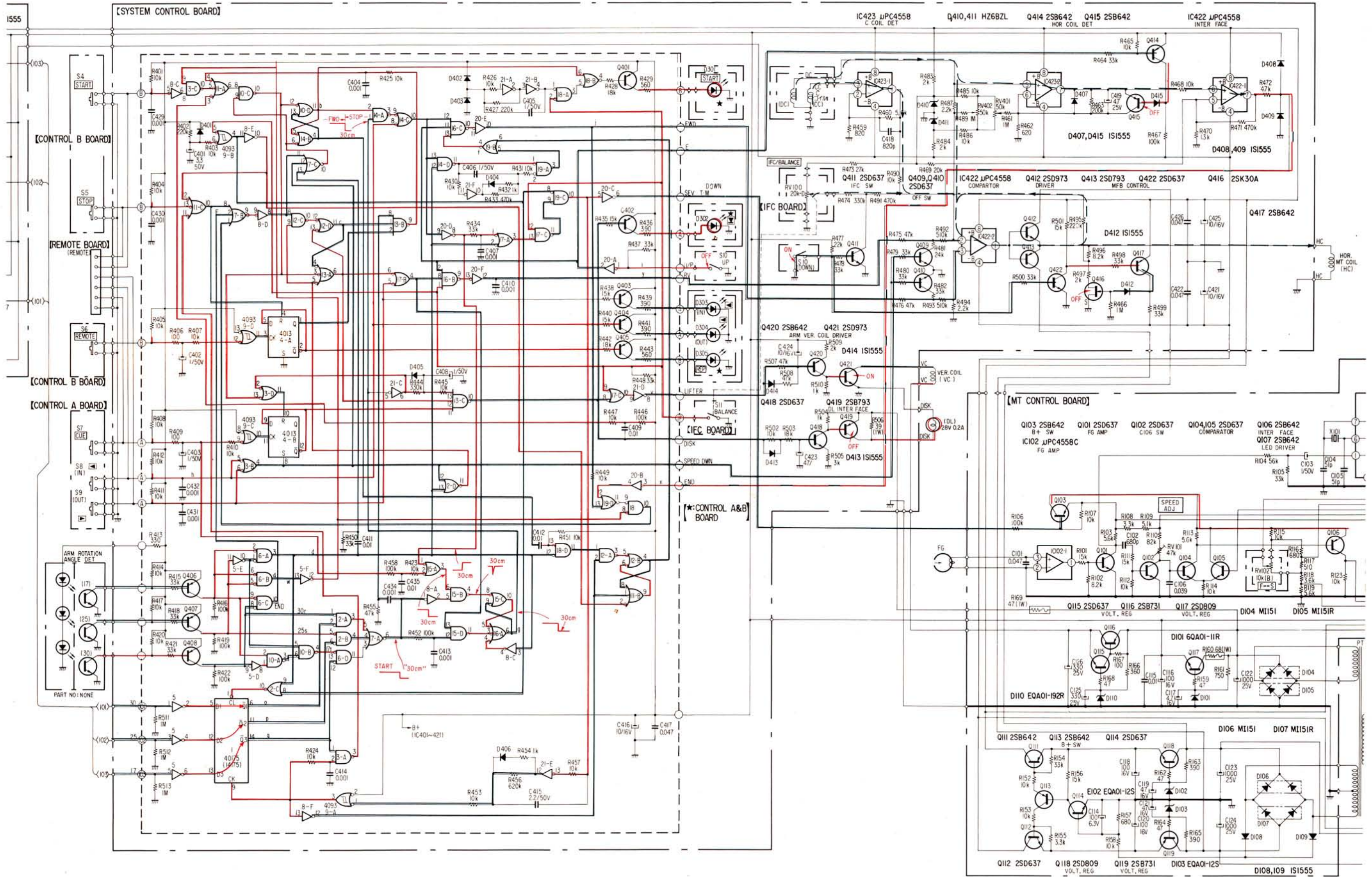
— "1" (high voltage)
— "0" (low voltage)

PS-636 PS-636



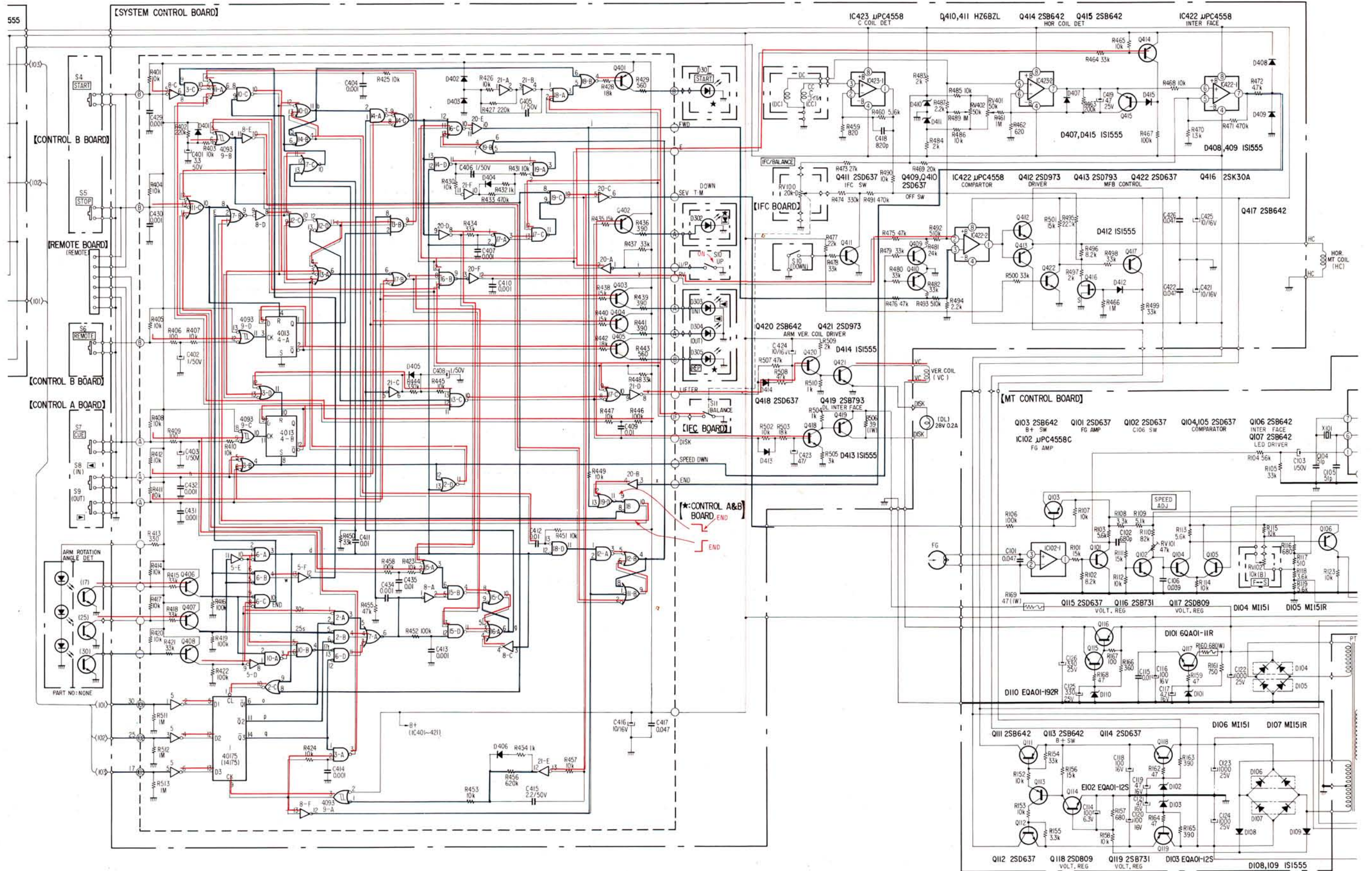
— : "1" (high voltage)
— : "0" (low voltage)

["30 cm" DOWN]



— "1" (high voltage)
— "0" (low voltage)

[END~]

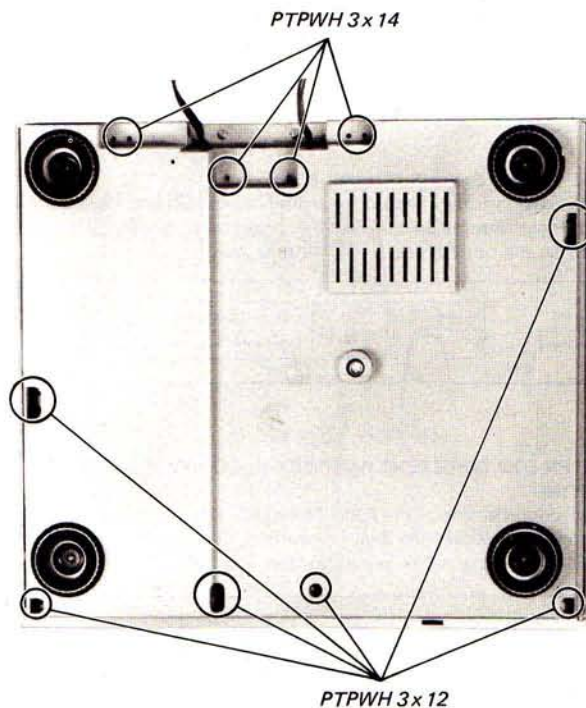
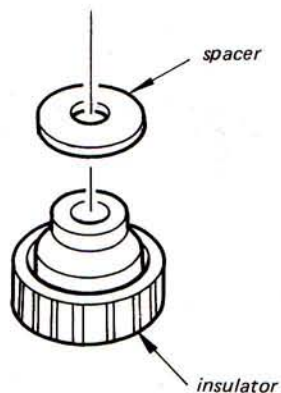


SECTION 2 DISASSEMBLY

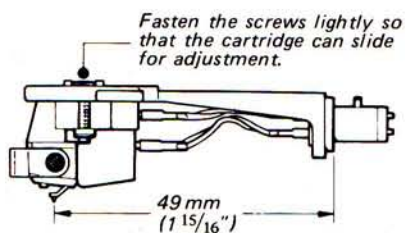
BOTTOM BOARD

Remove ten screws as shown on the right.

Note: The insulator placed at the bottom of the tonearm board is installed together with a spacer.



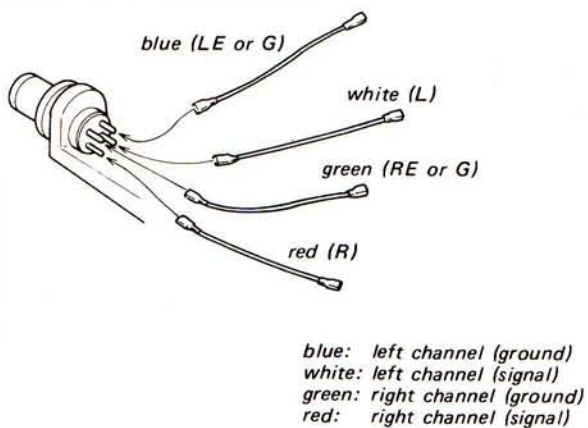
CARTRIDGE INSTALLATION



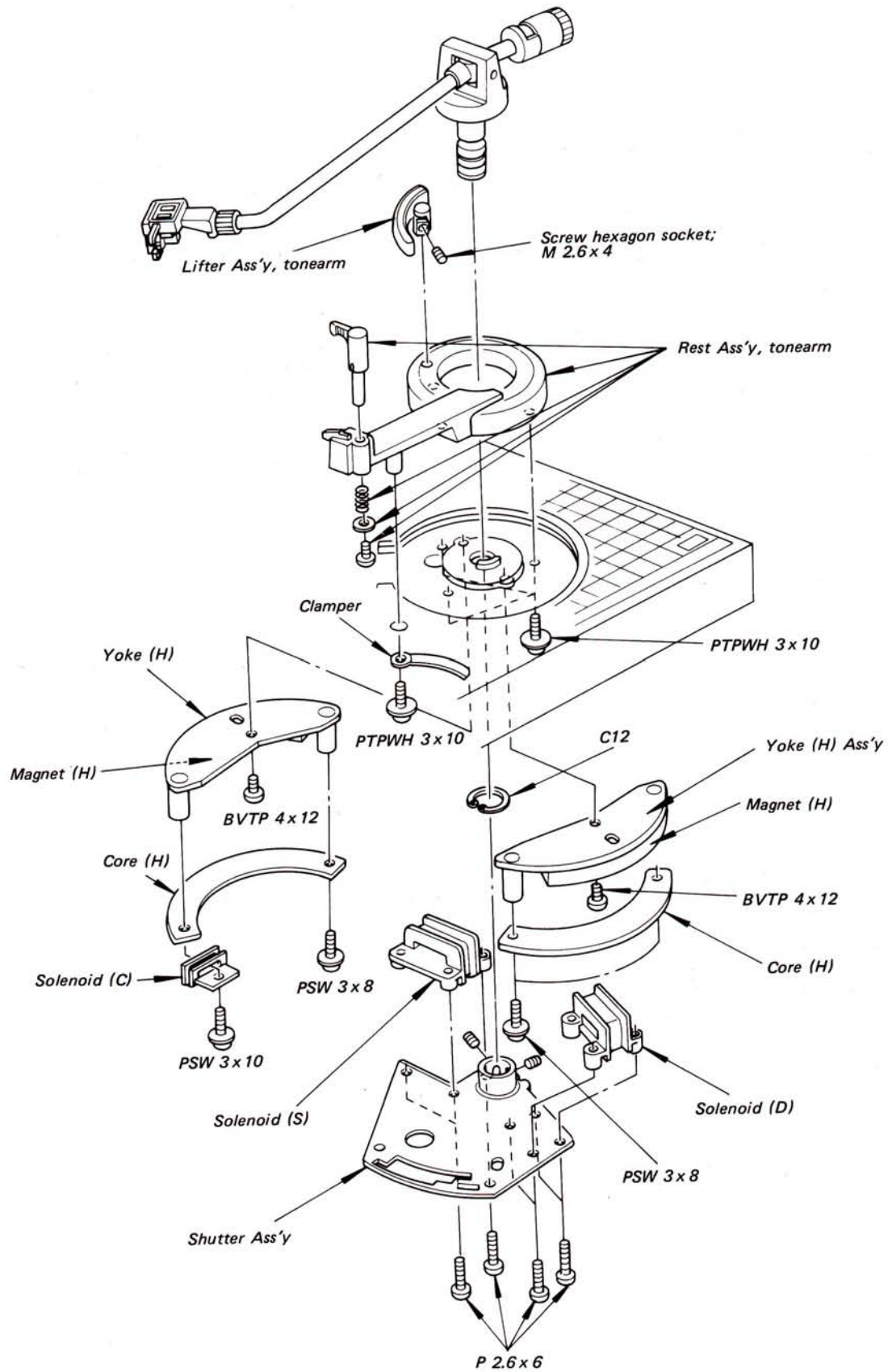
TONEARM, BOTTOM SHUTTER

Refer to the exploded views (pages 26, 27) and the Servicing Notes (page 5).

LEAD WIRE CONNECTION

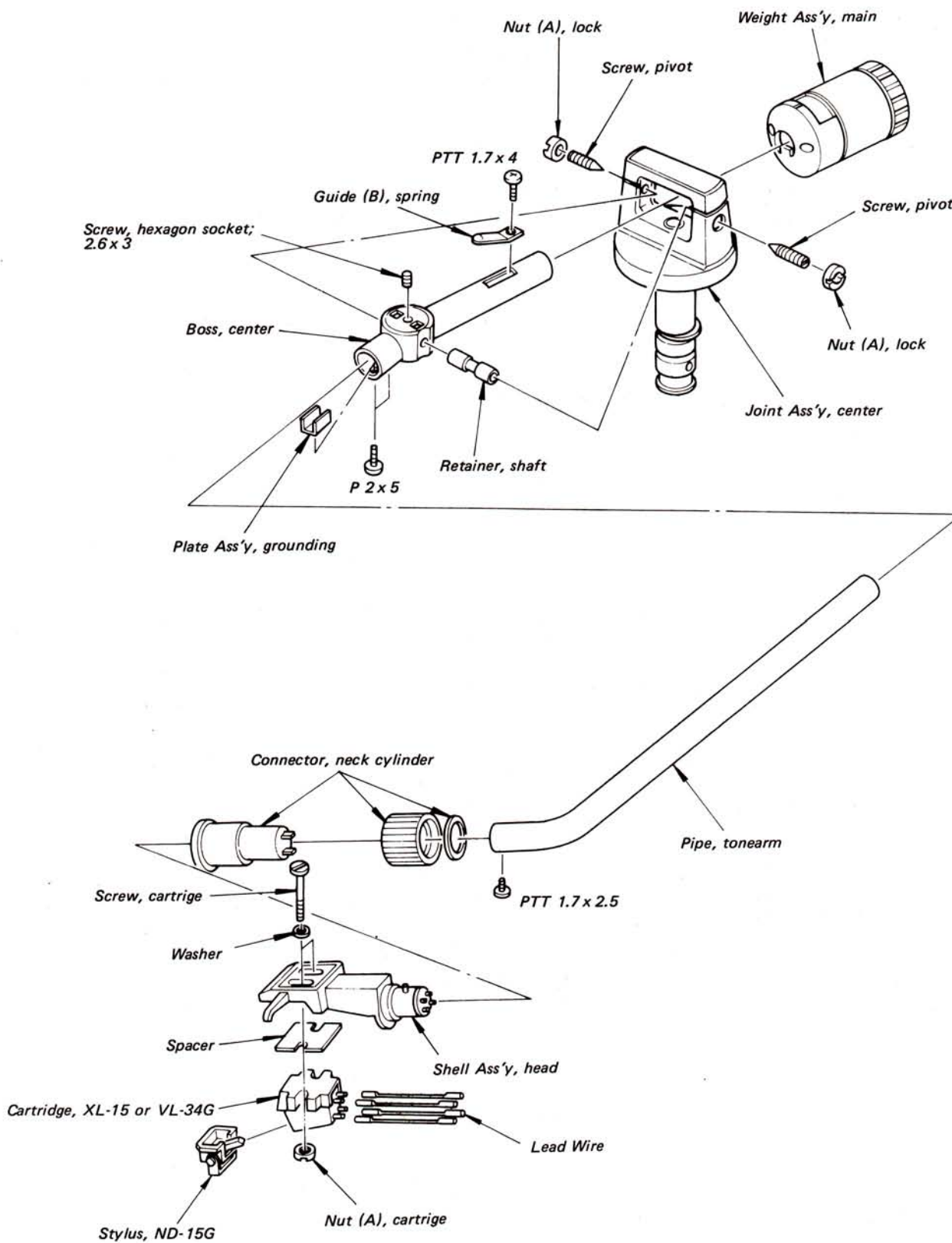


EXPLODED VIEW



SECTION 3 ADJUSTMENTS

EXPLODED VIEW



3-1. PRECAUTION

Note: The digital circuit, tonearm and the motor circuit are all related together in this set. The precaution in handling is given below.

TO LIFT UP THE STYLUS DURING PLAY

To lift the stylus from a record for a brief movement and then start playing from the same point, press the cueing button. To lower the tonearm on the record, press the button again.



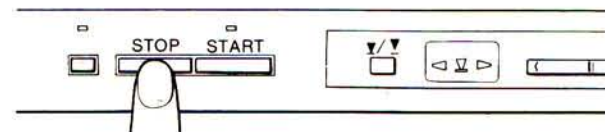
TO LISTEN TO A DIFFERENT PART OF A RECORD WHILE RECORD IS PLAYING

Keep appropriate side of the ARM TRANSPORT button pressed until the tonearm reaches the desired position. To lower the tonearm onto the record, press the cueing button.



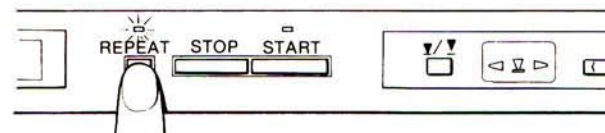
TO STOP DURING PLAY

Press the STOP button. The tonearm will return to the arm rest and the turntable will stop rotating.



TO REPEAT PLAY

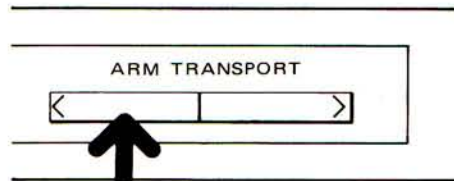
Press the REPEAT button either before or after starting play. The tonearm continues repeat play unless the button is pressed again to turn off the repeat function. To stop during repeat play, press the STOP button.



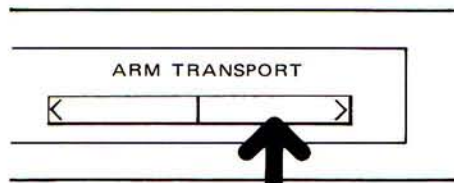
ARM TRANSPORT OPERATION

The tonearm will move either inward or outward while this button is depressed.

Push the left side of the button and the tonearm will move inward.



Push the right side of the button and the tonearm will move outward.



※ Push both sides of the button and the tonearm will slowly move inwards. This function is useful when determining and adjusting the stylus drop point.



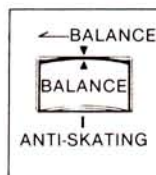
※ Note that this is one of the functions and is not a misoperation.

3-2. MECHANICAL ADJUSTMENTS

LONGITUDINAL BALANCE ADJUSTMENT*1

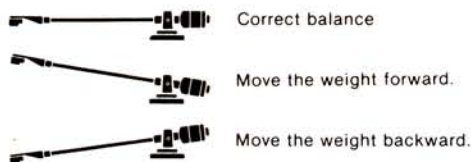
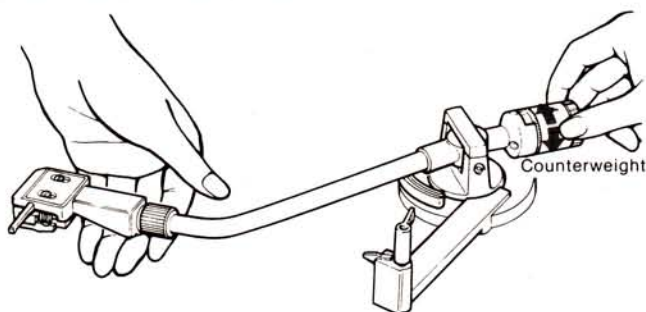
① Connect the power cord to an ac outlet and press the POWER switch to turn on the unit.

② Set the ANTI-SKATING gauge so that the BALANCE position is aligned with the guide mark. The indicator of the START button will flicker and the cueing platform will lower to permit easy adjustment.



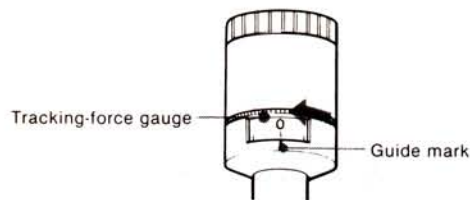
③ Remove the stylus guard and release the tonearm from the arm rest.

④ Turn the counterweight as required until the tonearm is in a horizontally balanced position.



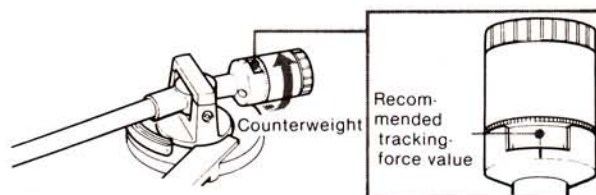
⑤ Secure the tonearm to the arm rest.

⑥ While holding the counterweight at the balanced position, separately turn the tracking-force gauge until the "0" indication is aligned with the red guide mark.



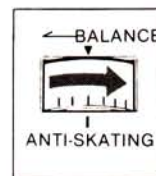
TRACKING-FORCE ADJUSTMENT*2

Turn the counterweight in the direction indicated by the arrow so that the recommended tracking-force value for your cartridge is aligned with the red guide mark. Your cartridge's proper tracking-force is given on the separate cartridge instruction sheet.



ANTI-SKATING COMPENSATION*3

Turn the ANTI-SKATING gauge so that the tracking-force value used is aligned with the guide mark.



*1 Longitudinal balance adjustment

While playing the record, the weight of the tonearm is supported by the arm pivot and only tracking force is applied to the stylus tip. To accomplish this, the tonearm must first be balanced horizontally, with the tracking force indicator set at "0".

*2 Tracking force

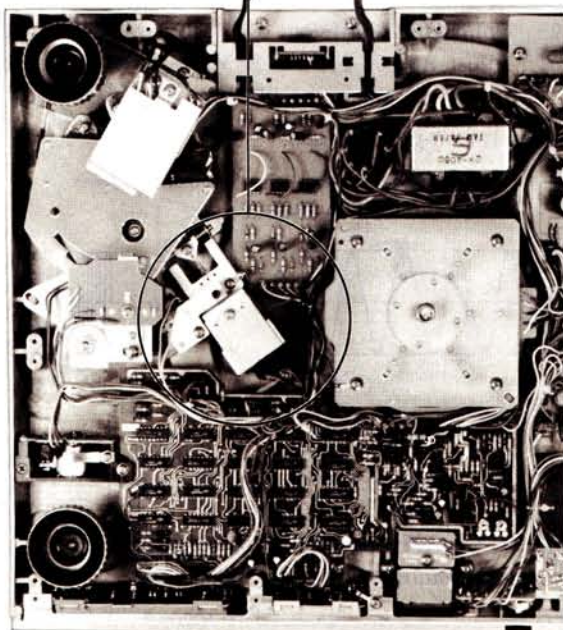
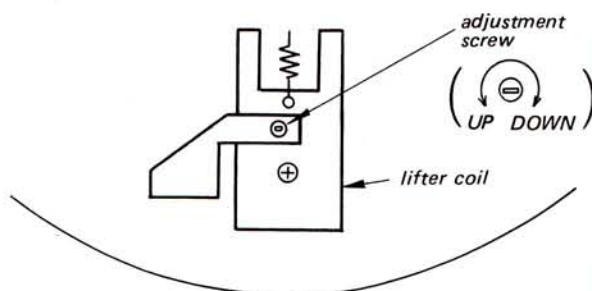
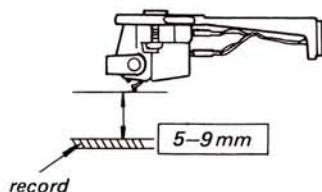
After the longitudinal balance adjustment, apply the recommended tracking force weight so that the stylus tip will trace the music groove accurately.

*3 Anti-skating compensation

While the record is being played, the frictional force between the record groove and the stylus produces a force that tends to drive the tonearm toward the center of the record. The anti-skating compensation cancels the above mentioned incorrect anti-skating compensation results in sound distortion and uneven wear on both the stylus and the record.

Stylus Height Adjustment

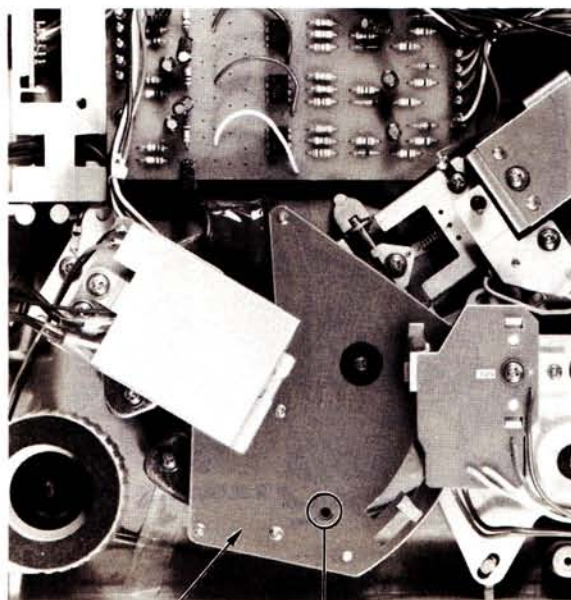
1. Place the tonearm over the record.
2. Confirm that there is 5–9 mm clearance between the stylus tip and the record.
3. If necessary, adjust by turning the adjustment screw.



Shutter Position Adjustment

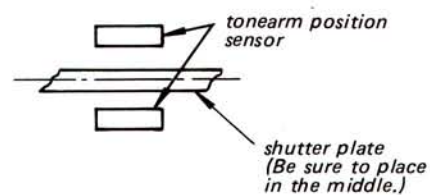
When installing the shutter plate, install as follows.

1. Fix the tonearm to the tonearm rest.
2. Install the shutter plate so that the hole of the shutter plate match with the screw hole in the frame.



shutter plate match the holes

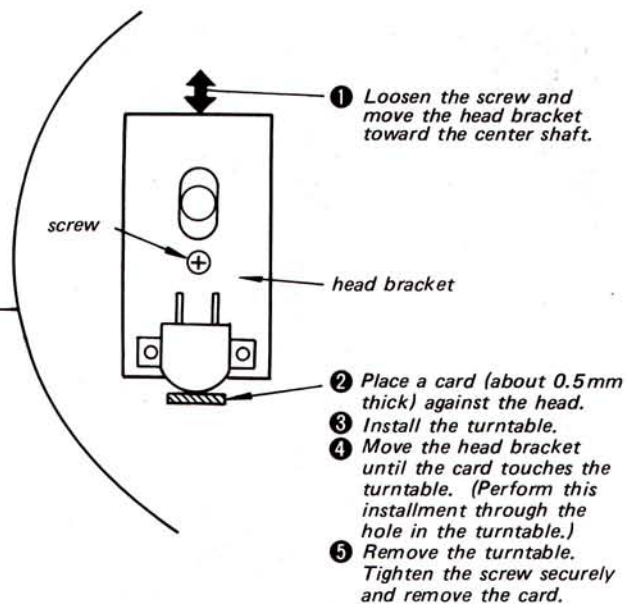
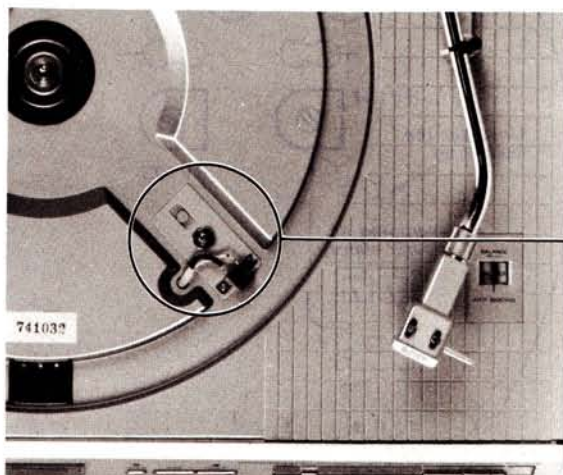
Note: Confirm that the shutter plate is placed accurately.



3.3. ELECTRICAL ADJUSTMENT

Speed Detection Head Output Adjustment

Note: Before performing the adjustment, install the speed detection head as shown below. (Follow the numerical order given.)

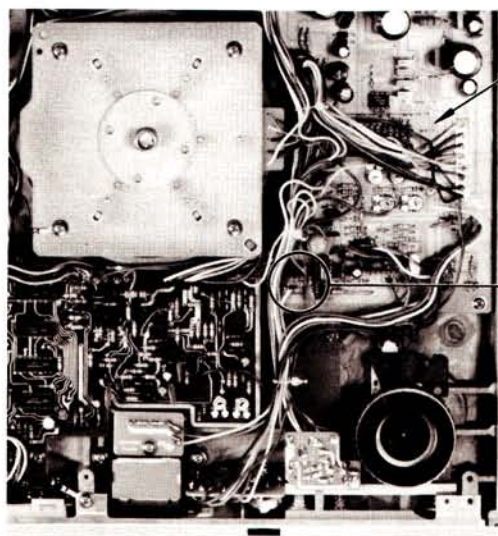


Setting:

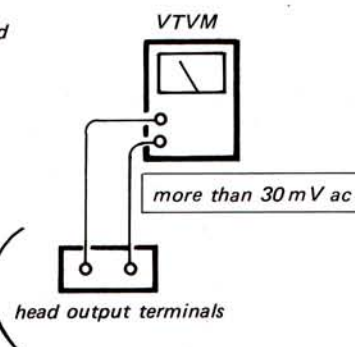
speed: 33 rpm
turntable: rotating

1. Loosen the screw and adjust the position of the head bracket to obtain 30 mV ac at the head output terminals.
2. After performing the adjustment, confirm that the rotation of the turntable is normal. If the adjustment is not proper, it will result in worse wow and flutter.

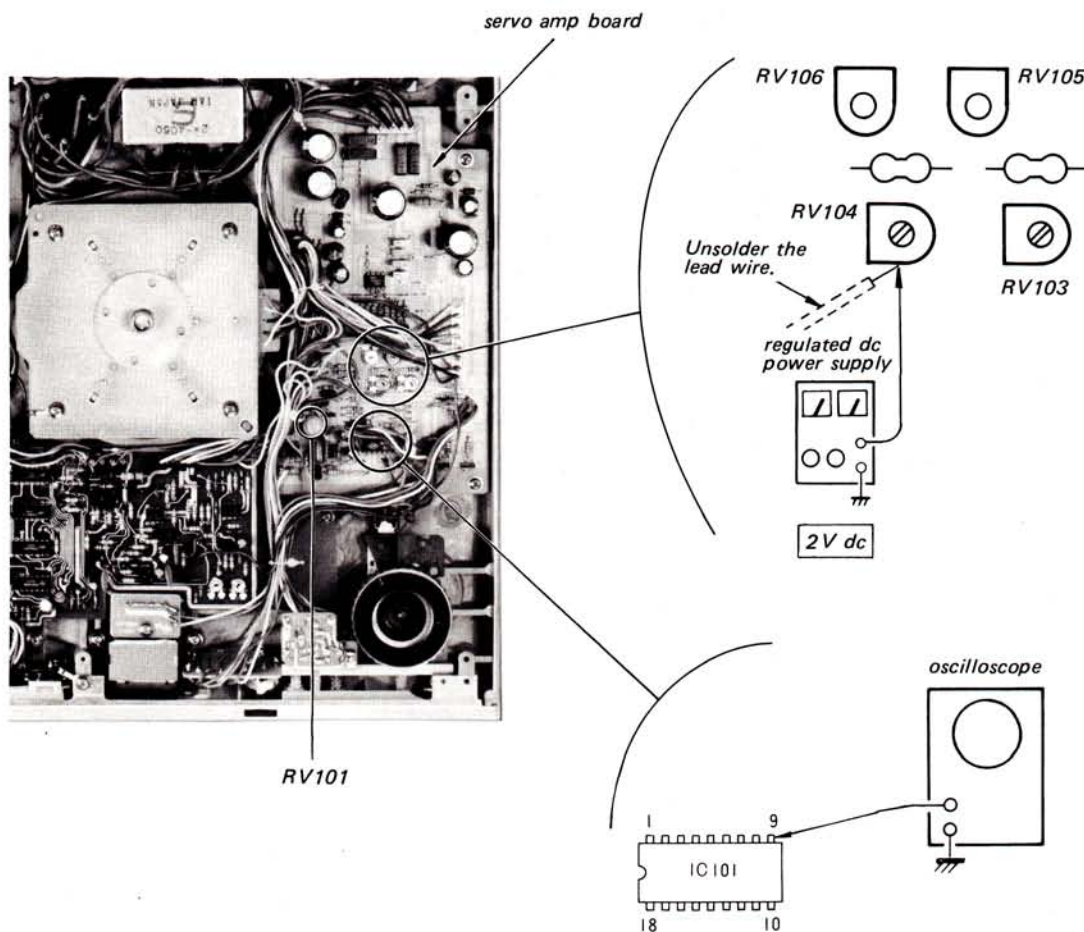
Note: Confirm that there is more than 0.3 mm clearance between the magnetic coated rim of the turntable and the speed detecting head.



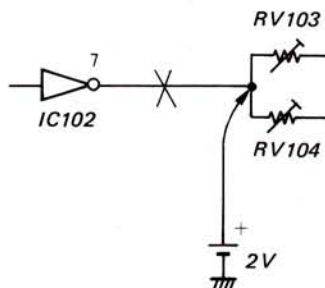
servo amp board



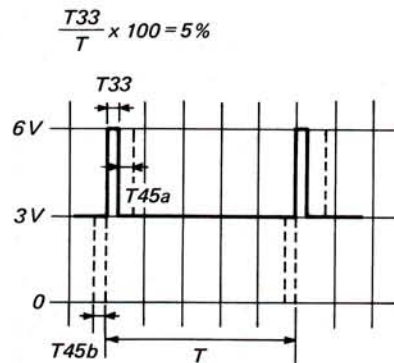
X'tal Lock Adjustment



1. Unsolder the lead wire as shown above and apply 2V dc to RV103, 104.



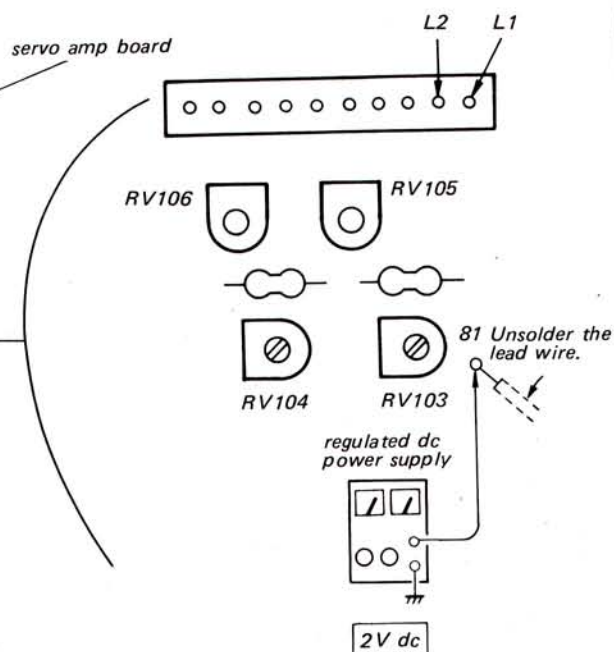
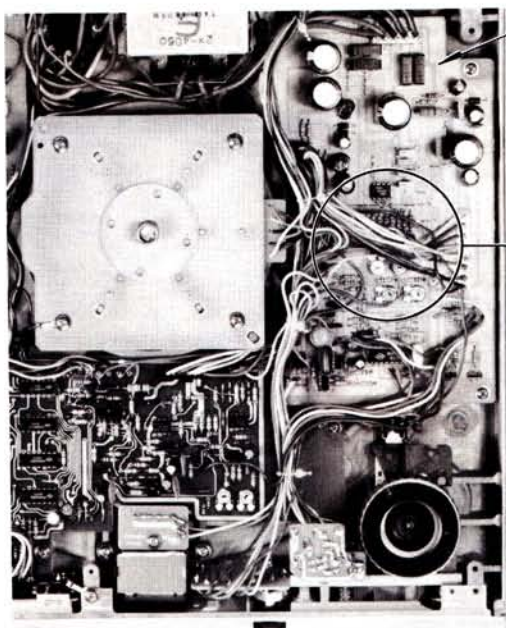
- The waveform on the oscilloscope:



2. Adjust RV101 so that the waveform at terminal 9 of IC101 becomes as shown on the right at 33 rpm.

Gain Offset Adjustment

Unsolder the lead wire and apply regulated dc power supply (2V dc).

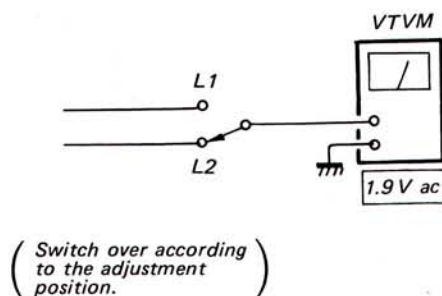


Hall Device Gain Adjustment

Setting:

SPEED switch: 33

1. Connect VTVM to L1 and adjust RV103 for 2V ac reading on VTVM.
2. Connect VTVM to L2 and adjust RV104 for 2V ac reading on VTVM.



Motor Amp Offset Adjustment

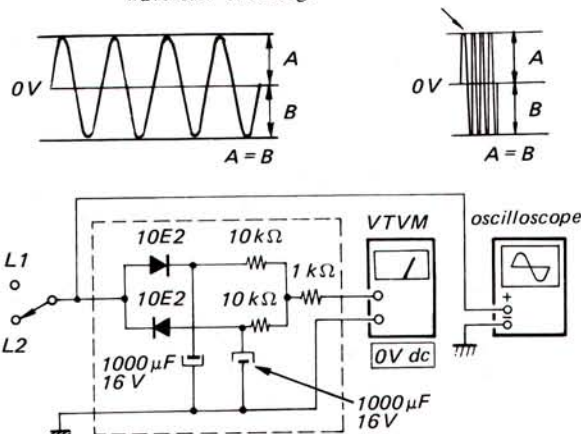
Setting:

SPEED switch: 33

1. Connect VTVM or oscilloscope to L1 and adjust RV105 for 0V dc VTVM reading or for the waveform on oscilloscope as shown below.
2. Connect VTVM or oscilloscope to L2 and adjust RV106 for 0V dc VTVM reading or for the waveform on oscilloscope as shown below.

Waveform on Oscilloscope:

Note: Set the sweep time longer for easy waveform checking.



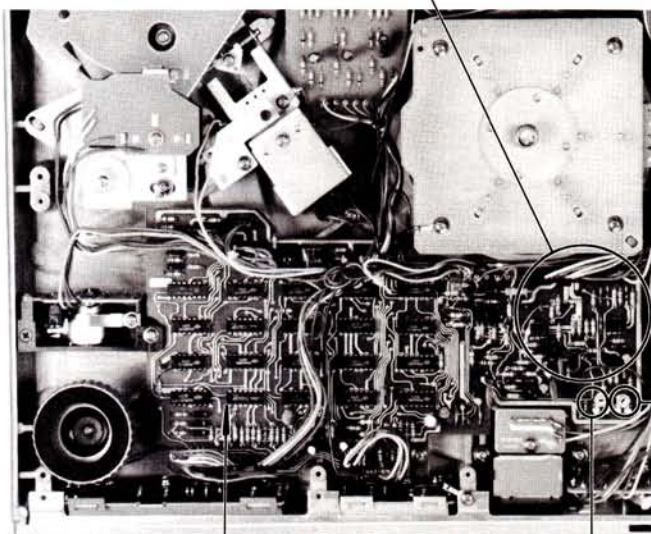
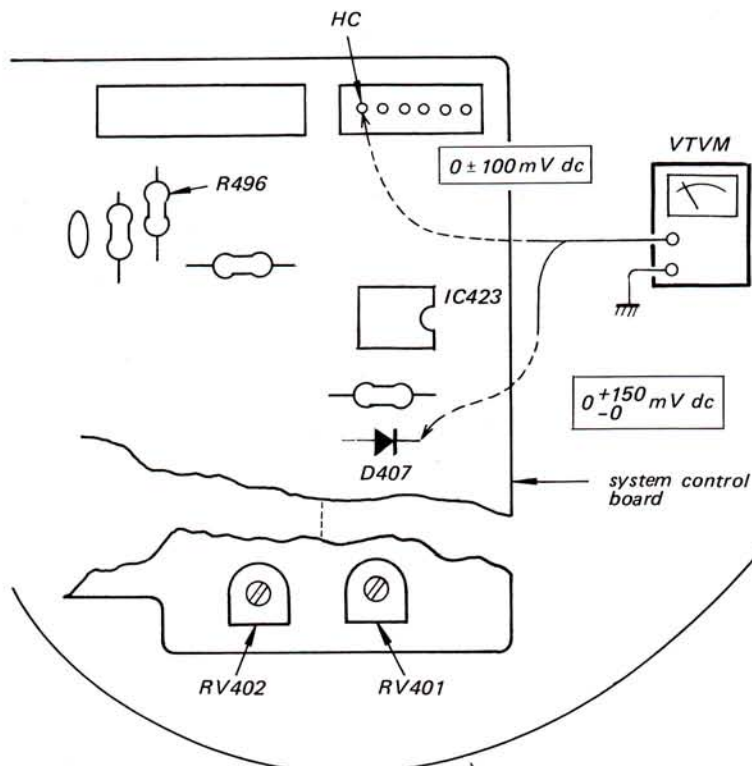
Serial No. up to : US — 802,000 UK — 600,700 SCN — 550,600
 Canadian — 700,100 E1 — 400,700 E2 — 450,400
 AEP — 502,805

Horizontal Offset Adjustment

1. Set the ANTI-SKATING knob to the position other than BALANCE.
2. Fix the tonearm to the tonearm rest.
3. Adjust RV402 so that the HC voltage is within $0 \pm 100 \text{ mV dc}$.

Return Detection Offset Adjustment

1. Set the ANTI-SKATING knob to the 'BALANCE' position.
2. Fix the tonearm to the tonearm rest.
3. Adjust RV401 to obtain $0^{+150}_{-0} \text{ mV dc}$ at D407 (cathode side).



system control board

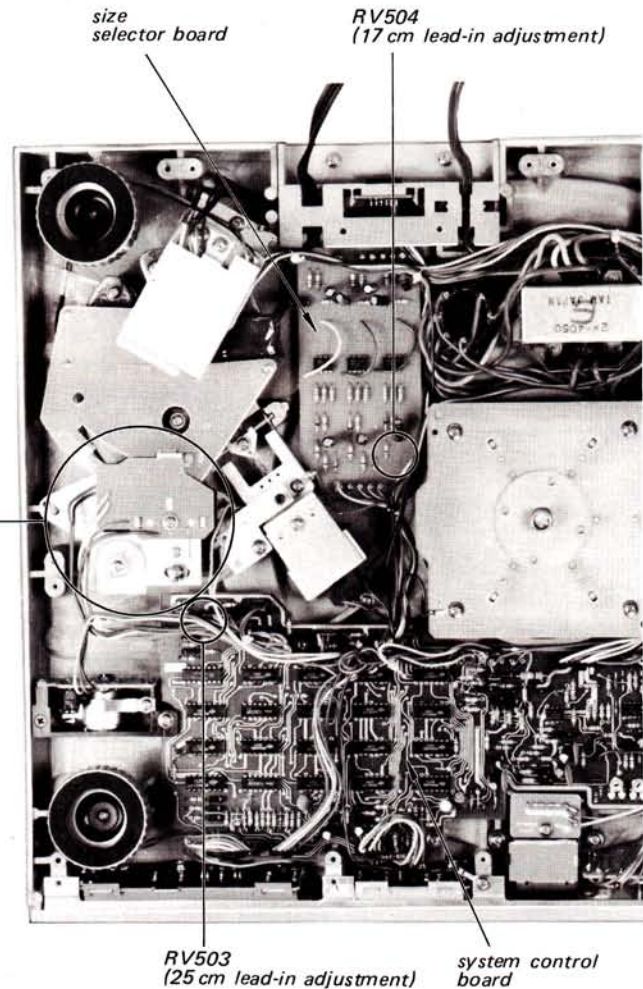
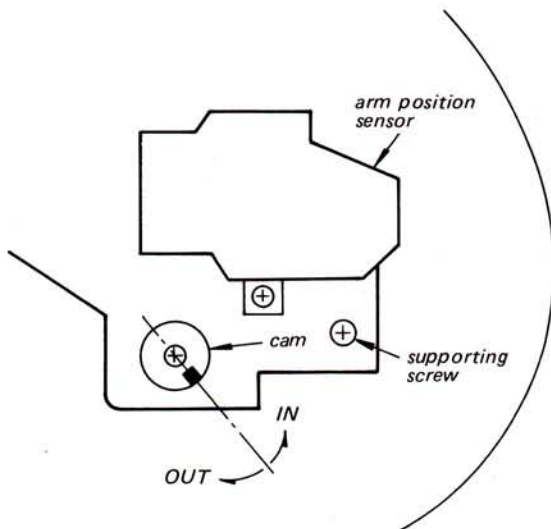
RV402
(horizontal offset adjustment)

Serial No. up to : US — 802,000 UK — 600,700 SCN — 550,600
 Canadian — 700,100 E1 — 400,700 E2 — 450,400
 AEP — 502,805

Lead-in Adjustment

To adjust 30, 25, 17 cm lead-in position at the same time, adjust by moving the position of the arm position sensor.

1. Loosen the supporting screw.
2. Adjust the lead-in position by moving the cam IN or OUT.
3. Tighten supporting screw securely.

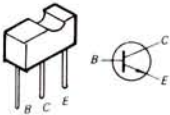
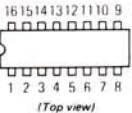
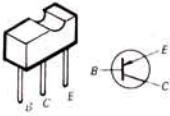
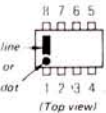
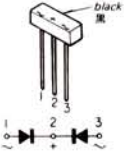
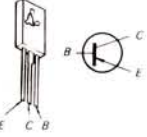
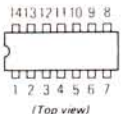
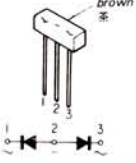
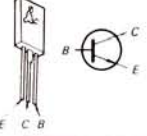
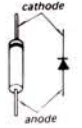
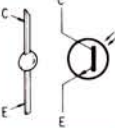
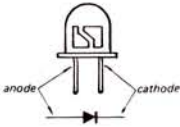
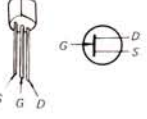
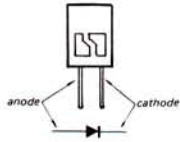
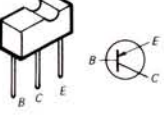
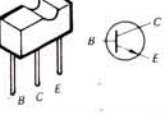


- 25 cm lead-in
To adjust only the 25 cm lead-in position, adjust RV503.
- 17 cm lead-in
To adjust only the 17 cm lead-in position, adjust RV504.

Serial No. up to : US — 802,000 UK — 600,700 SCN — 550,600
 Canadian — 700,100 E1 — 400,700 E2 — 450,400
 AEP — 502,805

Replacement Semiconductors

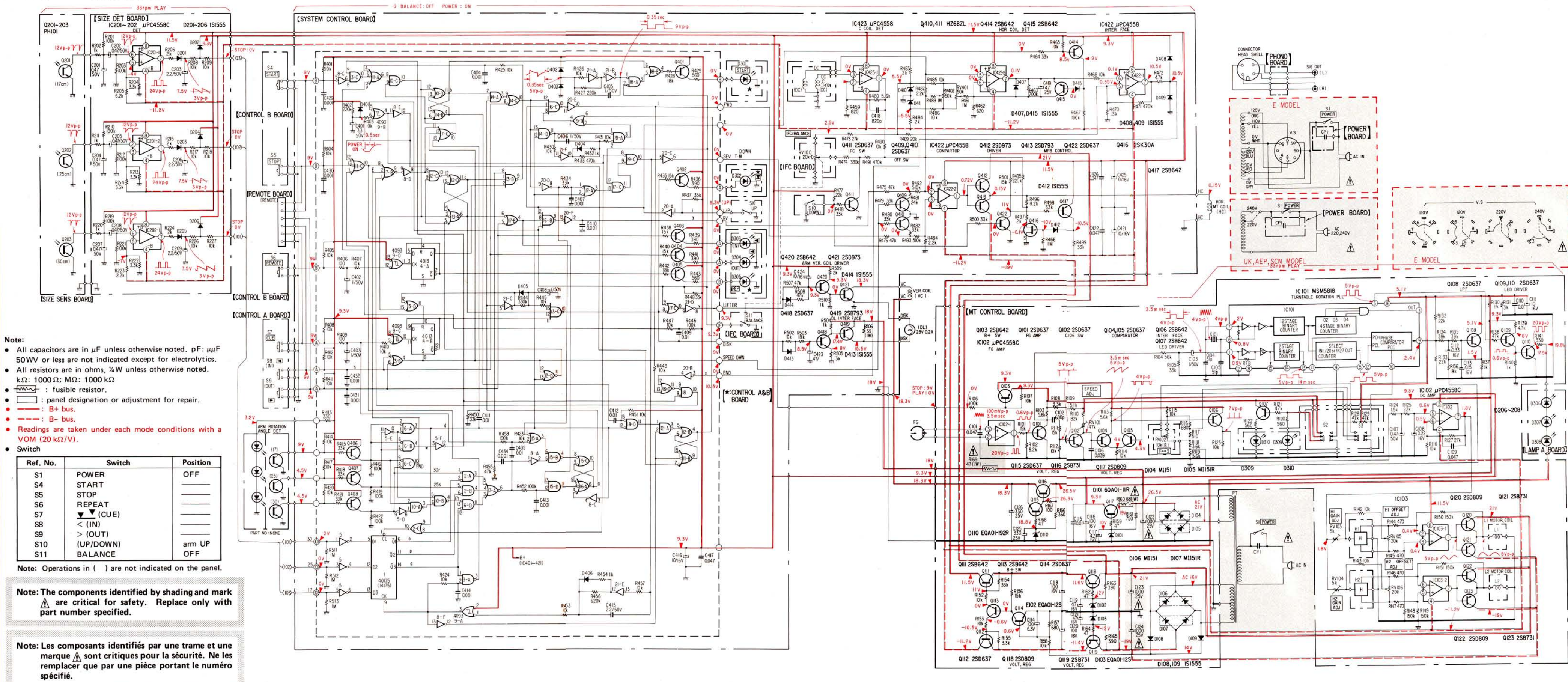
For replacement, use semiconductors except in ().

Q101, 102, 105 Q108-110, 112 Q114, 115 : 2SD2021 (2SD637) Q409-411, 418 Q422 	IC101: MSM5818 IC401: TC40175  (Top view)	D101: EQB01-11Z (EQA01-11) D102, 103: EQB01-12Z (EQA01-12) D110: EQB01-19Z (EQA01-19) 
Q103, 106, 107 Q113, 111 : 2SA786 (2SB642) Q401-408, 414 Q415, 417, 420 	IC102, 103 IC201, 202 } : μPC4558C IC422, 423  (Top view)	D104, 106: S3VC40 (MI-151) 
Q116, 119 } : 2SB731 Q121, 123 } 	IC402, 406 } : MSM4001 IC418, 419 } IC403, 410 } : TC4011BP IC412, 414 } IC415, 417 } IC404: TC4013P IC405, 408 } : MSM4069 (TC4069P) IC420, 421 } IC407: TC4025BP (TC4025) IC409: TC4093BP (TC4093) IC411, 413 } : TC4023BP (TC4023) IC416  (Top view)	D105, 107: S3VC40R (MI-151R) 
Q117, 118 } : 2SD809 Q120, 122 } 	H1, 2: F-1409 (E-1409) 	D108, 109 D201-206 : 1S1555 D401-409 D412-415 D410, 411: EQB01-06 (HZ6B2L) 
Q201-203: PH101 		D306-308: PY5525S 
Q416: 2SK30A 		D301, 305 D309, 310 } : AA5531K D302, 304: PG5531KX 
Q413, 419: 2SB793 		
Q412, 421: 2SD973 		

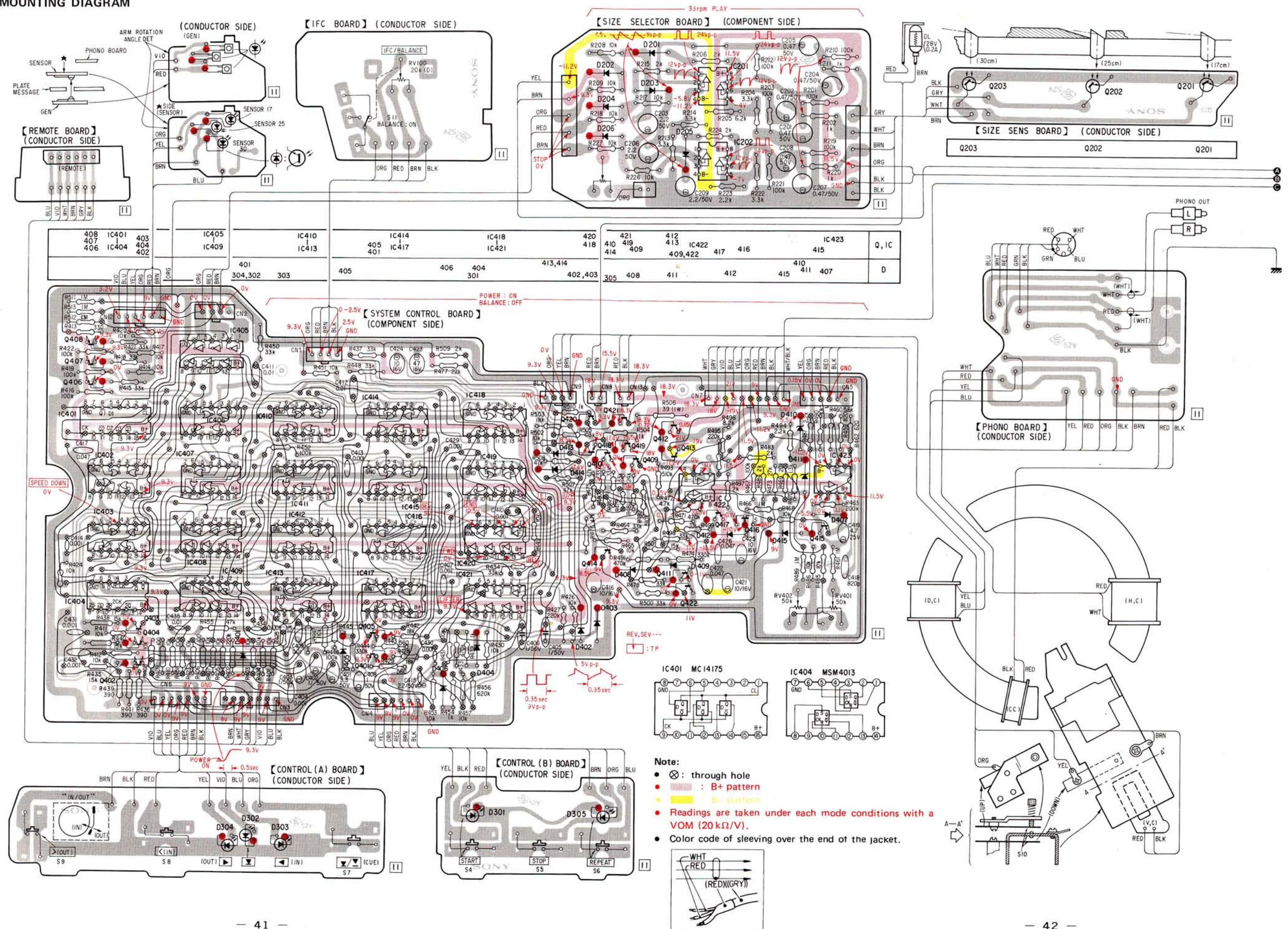
MEMO

[illegible]

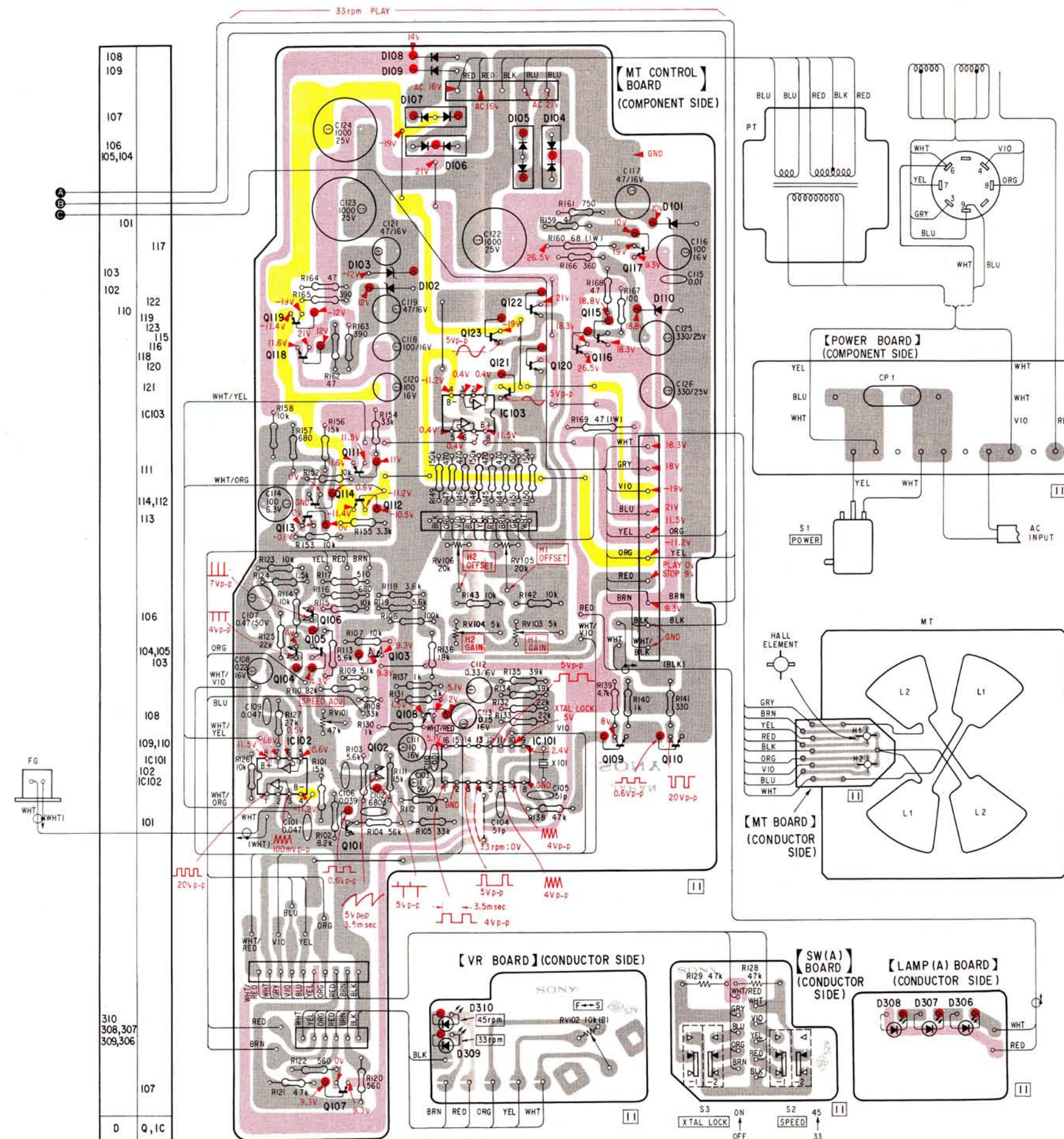
SECTION 4 DIAGRAMS 4-1. SCHEMATIC DIAGRAM



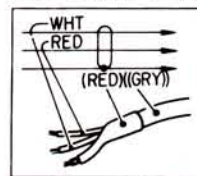
4-2. MOUNTING DIAGRAM



4-3. MOUNTING DIAGRAM



- Note:**
- B+ pattern
 - B- pattern
 - Readings are taken under each mode conditions with a VOM (20 k Ω /V).
 - Color code of sleeving over the end of the jacket.



SECTION 5 EXPLODED VIEWS

PS-636

A

B

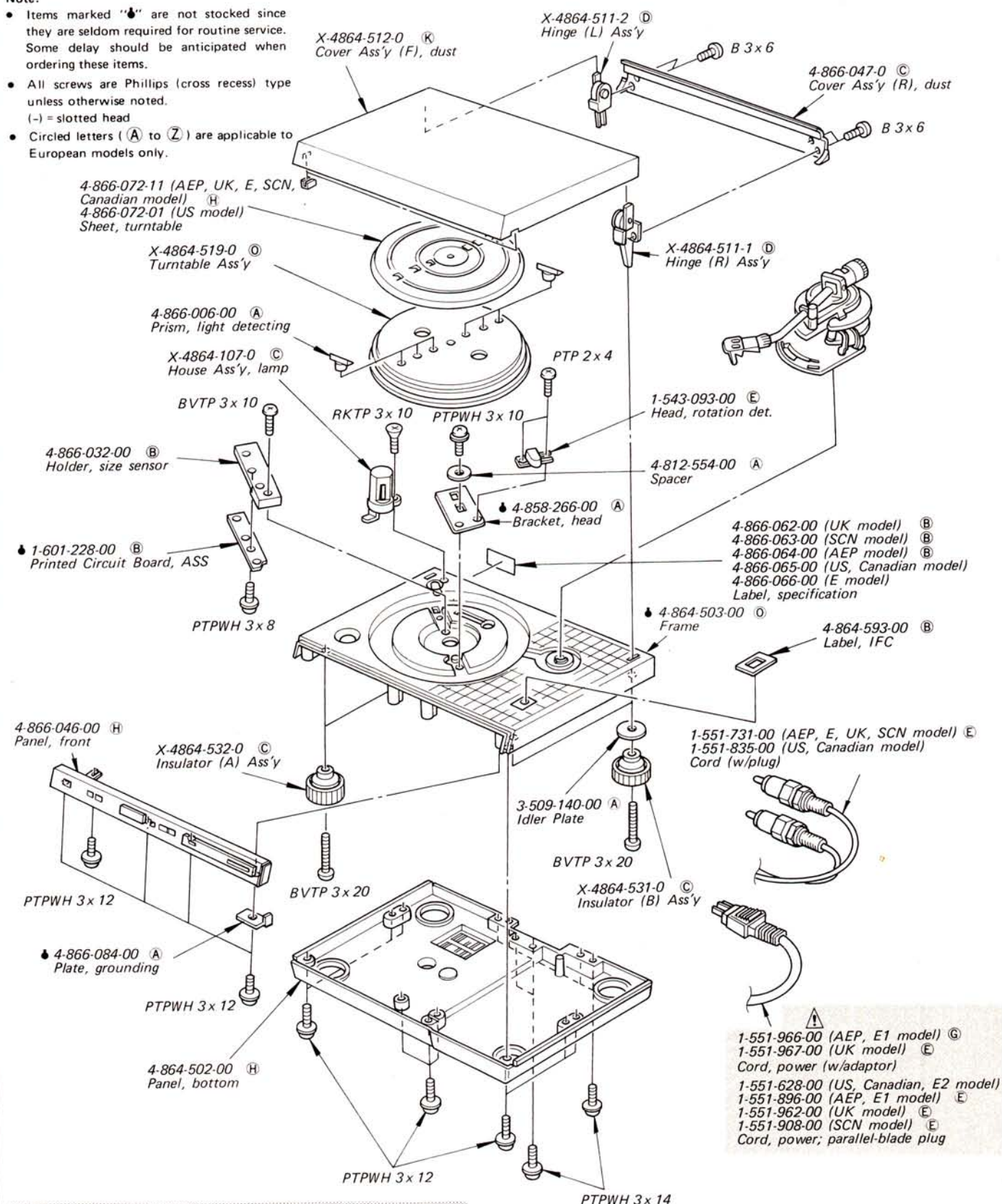
C

D

5-1.

Note:

- Items marked "▲" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All screws are Phillips (cross recess) type unless otherwise noted.
(-) = slotted head
- Circled letters (A) to (Z) are applicable to European models only.



Note: The components identified by shading and mark ▲ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque ▲ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

5-2.

Note:

- Items marked "▲" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All screws are Phillips (cross recess) type unless otherwise noted.
(-) = slotted head
- Circled letters (A) to (Z) are applicable to European models only.

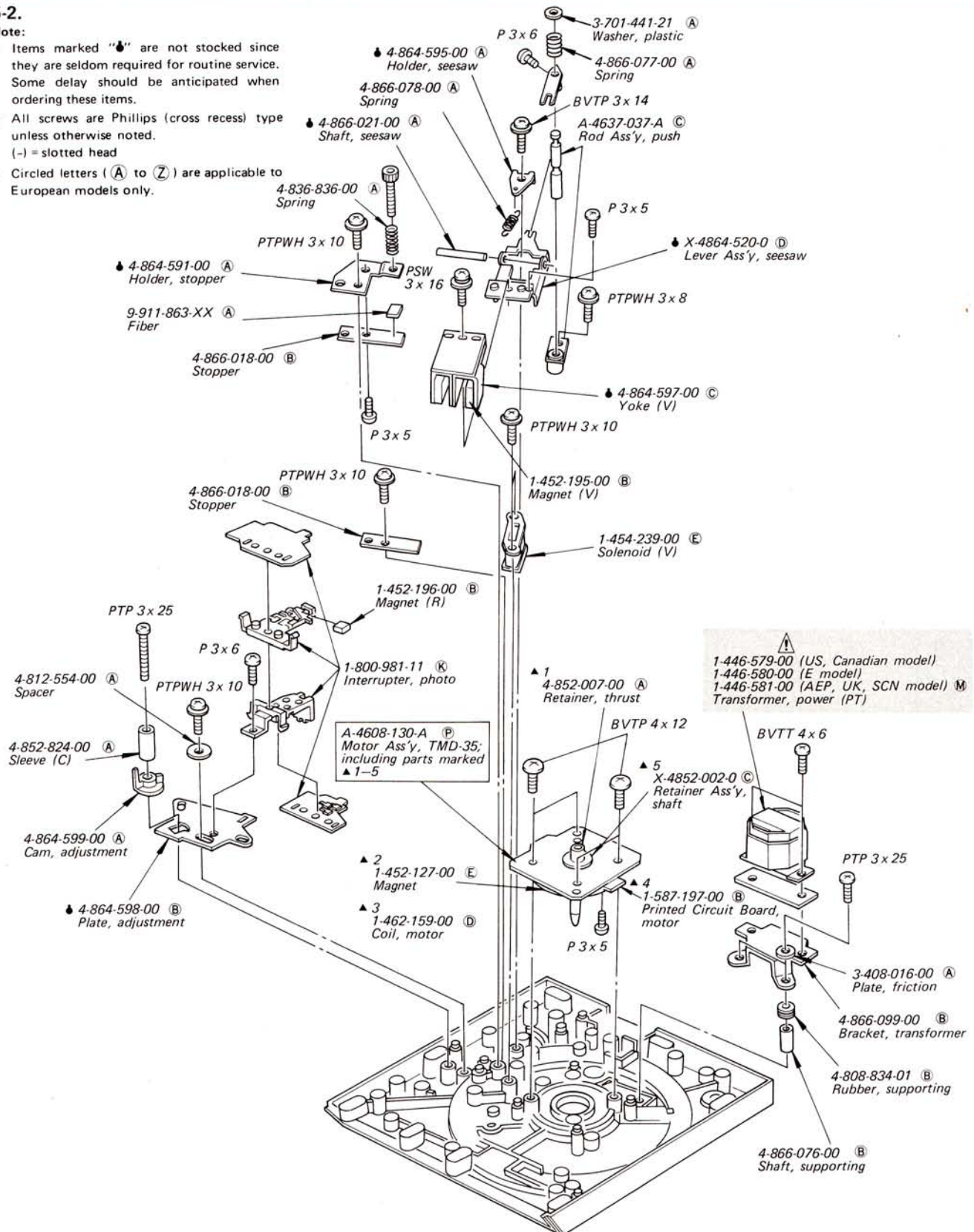
1

2

3

4

5



Note: Les composants identifiés par une trame et une marque ▲ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Note: The components identified by shading and mark ▲ are critical for safety. Replace only with part number specified.

A

B

C

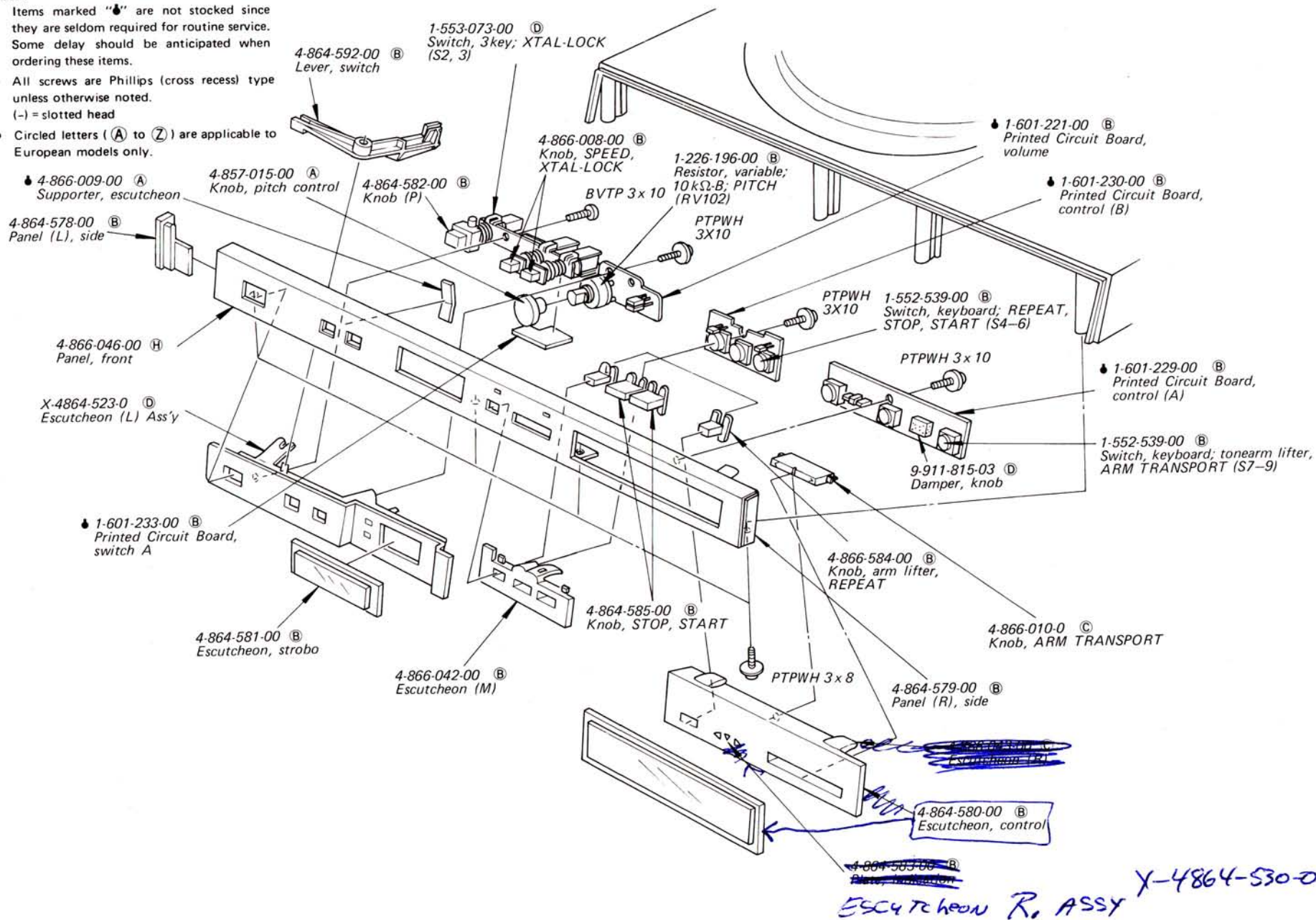
D

E

5-3.

Note:

- Items marked "B" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All screws are Phillips (cross recess) type unless otherwise noted.
(-) = slotted head
- Circled letters (A) to (Z) are applicable to European models only.



SECTION 6

ELECTRICAL PARTS LIST

Note: Circled letters (**A** to **Z**) are applicable to European models only.

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
COMPLETE CIRCUIT BOARDS			Q116	8-729-173-13	(B) 2SB731
♣ A-4619-129-A		Servo Mount (US model)	Q117,118	8-729-180-93	(B) 2SD809
♣ A-4619-130-A		Servo Mount (AEP, UK, SCN model)	Q119,121	8-729-173-13	(B) 2SB731
♣ A-4619-131-A		Servo Mount (Canadian model)	Q120,122	8-729-180-93	(B) 2SD809
♣ A-4619-132-A		Servo Mount (E model)	Q123	8-729-173-13	(B) 2SB731
♣ A-4644-045-A		System Control (AEP, UK, E, US, Canadian model)	Q201-203	8-729-101-01	(C) PH101
♣ A-4644-048-A		System Control (SCN model)	⇒ Q401-408	8-729-978-62	(B) 2SA786
PRINTED CIRCUIT BOARDS			⇒ Q409-411	8-729-902-11	(B) 2SC2021
♣ 1-587-197-00	(B)	Motor	Q412	8-729-497-32	(B) 2SD973
♣ 1-601-220-00	(B)	Power	Q413	8-729-479-32	(B) 2SB793
♣ 1-601-221-00	(B)	Volume	⇒ Q414,415	8-729-978-62	(B) 2SA786
♣ 1-601-223-00	(B)	Phono	Q416	8-729-203-04	(B) 2SK30A
♣ 1-601-225-00	(B)	Size Sens	⇒ Q417	8-729-978-62	(B) 2SA786
♣ 1-601-227-00	(B)	IFC	⇒ Q418	8-729-902-11	(B) 2SC2021
♣ 1-601-228-00	(B)	ASS	Q419	8-729-479-32	(B) 2SB793
♣ 1-601-229-00	(B)	Control (A)	⇒ Q420	8-729-978-62	(B) 2SA786
♣ 1-601-230-00	(B)	Control (B)	Q421	8-729-497-32	(B) 2SD973
♣ 1-601-231-00	(B)	Remote Control	⇒ Q422	8-729-902-11	(B) 2SC2021
♣ 1-601-232-00	(B)	Strobo	ICs		
♣ 1-601-233-00	(B)	Switch (A)	IC101	8-759-958-18	(K) MSM5818
SEMICONDUCTORS			⇒ IC102,103	8-759-145-58	(D) μ PC4558C
Transistors			⇒ IC201,202		
⇒ Q101,102	8-729-902-11	(B) 2SC2021	⇒ IC401	8-759-241-75	(F) TC40175BP
⇒ Q103	8-729-978-62	(B) 2SA786	IC402	8-759-940-01	(C) MSM4001
⇒ Q105	8-729-902-11	(B) 2SC2021	⇒ IC403	8-759-240-11	(B) TC4011BP
⇒ Q106,107	8-729-978-62	(B) 2SA786	⇒ IC404	8-759-240-13	(D) TC4013BP
⇒ Q108-110	8-729-902-11	(B) 2SC2021	⇒ IC405	8-759-904-69	(C) MSM4069
⇒ Q111,113	8-729-978-62	(B) 2SA786	IC406	8-759-940-01	(C) MSM4001
⇒ Q112	8-729-902-11	(B) 2SC2021	⇒ IC407	8-759-240-25	(C) TC4025BP
⇒ Q114,115			⇒ IC408	8-759-904-69	(C) MSM4069
			⇒ IC409	8-759-240-93	(G) TC4093BP
			IC410	8-759-240-11	(B) TC4011BP
			⇒ IC411,413	8-759-240-23	(D) TC4023BP

⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Items marked "♣" are not stocked because they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Note: Circled letters (A to Z) are applicable to European models only.

Ref. No.	Part No.	Description
IC412,414 IC415,417	8-759-240-11	(B) TC4011BP
⇒ IC416	8-759-240-23	(D) TC4023BP
IC418,419	8-759-940-01	(C) MSM4001
⇒ IC420,421	8-759-904-69	(C) MSM4069
⇒ IC422,423	8-759-145-58	(D) μ PC4558C

Diodes

⇒ D101	8-719-930-11	(B) EQB01-11Z
⇒ D102,103	8-719-930-12	(B) EQB01-12Z
⇒ D104,106	8-719-500-34	(C) S3VC40
⇒ D105,107	8-719-501-34	(C) S3VC40R
D108,109	8-719-815-55	(B) 1S1555
⇒ D110	8-719-930-19	(B) EQB01-19Z

D201-206	8-719-815-55	(B) 1S1555
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D301	8-719-955-33	(B) AA5531K
D302,304	8-719-955-32	(B) PG5531KX
D305	8-719-955-33	(B) AA5531K
D306-308	8-719-955-25	(B) PY5525S
D309,310	8-719-955-33	(B) AA5531K

D401-409	8-719-815-55	(B) 1S1555
⇒ D410,411	8-719-931-06	(B) EQB01-06
D412-415	8-719-815-55	(B) 1S1555

Hall Devices

⇒ H1,2	8-719-814-09	(D) F-1409
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TRANSFORMERS

PT	(A)	1-446-579-00	Power (US, Canadian model)
		1-446-580-00	Power (E model)
		1-446-581-00	(M) Power (AEP, UK, SCN model)

CAPACITORS

All capacitors are in μ F. Common capacitors are omitted.
Refer to the lists on pages 55 and 56 for their part numbers.

C122-124	(A) 1-123-337-00	(B) 1000 μ F 25V elect
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⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Note: The components identified by shading and mark (A) are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description
C405,406	1-123-228-00	(B) 1 50V bipolar
C415	1-123-230-00	(B) 2.2 50V bipolar
CP1	(A)	1-129-718-00 Encapsulated Component (E model)
		1-231-326-00 Encapsulated Component (US model)
		1-231-341-00 Encapsulated Component (Canadian model)
		1-130-196-00 (D) Encapsulated Component (AEP, UK, SCN model)

RESISTORS

All resistors are in ohms. Common $\frac{1}{4}$ W carbon resistors are omitted.

Refer to the list on page 54 for their part numbers.

R108	1-214-168-00	(A) 33 k	$\frac{1}{4}$ W	metal-oxide
R109	1-214-149-00	(A) 5.1 k	$\frac{1}{4}$ W	metal-oxide
R160	(A) 1-213-080-00	(A) 68	1W	fusible
R169	(A) 1-213-076-00	(A) 47	1W	fusible

R506	(A) 1-213-074-00	(A) 39	1W	fusible
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RV100	1-226-720-00	(B) 20 k Ω -D, variable; IFC/BALANCE
RV101	1-224-254-XX	(B) 47 k Ω -B, adjustable; XTAL LOCK
RV102	1-226-196-00	(B) 10 k Ω -B, variable; PITCH
RV103,104	1-226-235-00	(A) 5 k Ω -B, adjustable; gain
RV105,106	1-226-237-00	(B) 20 k Ω -B, adjustable; offset

RV401,402 RV503,504	1-226-238-00	(A) 50 k Ω -B, return, horizontal offset, 17/25 cm lead in
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SWITCHES

S1	(A)	1-516-889-00	(D) Miniature, POWER (AEP, UK, SCN model)
		1-552-103-00	Miniature, POWER (US, E, Canadian model)
S2,3		1-553-073-00	(D) 3 Key, SPEED, XTAL LOCK
S4-6		1-552-539-00	(B) Keyboard, START/STOP/REPEAT
S7		1-552-539-00	(B) Keyboard, tonearm lifter

Note: Les composants identifiés par une trame et une marque (A) sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Serial No. up to : US — 802,000
 Canadian — 700,100
 AEP — 502,805

UK — 600,700 SCN — 550,600
 E1 — 400,700 E2 — 450,400

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Note: Circled letters (A to Z) are applicable to European models only.

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
S8,9	1-552-539-00	(B) Keyboard, ARM TRANSPORT
S11	1-553-112-00	(C) Miniature, BALANCE

MISCELLANEOUS

DL	1-518-399-00	(B) Lamp, pilot
FG	1-543-093-00	(E) Head, rotation det.
VS	(A) 1-526-576-00	Selector, voltage (E model)
X101	1-527-348-00	(D) Crystal Osc
	A-4505-003-A	Cartridge (E model)
	A-4608-130-A	(P) Motor Ass'y, TMD-35
	1-452-127-00	(E) Magnet
	1-452-194-00	(C) Magnet (H)
	1-452-195-00	(B) Magnet (V)
	1-452-196-00	(B) Magnet (R)
	1-454-236-00	(C) Solenoid (C)
	1-454-237-00	(D) Solenoid (D)
	1-454-238-00	(D) Solenoid (S)
	1-454-239-00	(E) Solenoid (V)
	1-462-159-00	(D) Coil, motor
	1-517-079-00	(C) Socket, lamp
	1-549-088-00	(M) Cartridge (AEP, US, Canadian, UK, SCN model)
	(A) 1-551-628-00	Cord, power; parallel-blade plug (US, E2, Canadian model)
	1-551-731-00	(E) Cord (w/plug) (AEP, UK, SCN, E model)
	1-551-835-00	Cord (w/plug) (US, Canadian model)
	(A) 1-551-896-00	(E) Cord, power (AEP, E1 model)
	(A) 1-551-908-00	(E) Cord, power; euro-plug (SCN model)
	(A) 1-551-962-00	(E) Cord, power (UK model)
	(A) 1-551-966-00	(G) Cord, power (w/adaptor) (AEP, E1 model)
	(A) 1-551-967-00	(E) Cord, power (w/adaptor) (UK model)

Items marked "A" are not stocked because they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Note: The components identified by shading and mark (A) are critical for safety. Replace only with part number specified.

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
	1-561-294-11	(E) Connector, neck cylinder
	1-800-981-11	(K) Photo Interrupter
	(A) 1-508-594-00	(B) Connector, 6p
	(A) 1-535-115-00	(A) Terminal (w/base), 2p
	(A) 1-535-118-00	(A) Terminal (w/base), 5p
	(A) 1-535-123-00	(B) Terminal (w/base), 10p
	(A) 1-560-003-00	(B) Connector
	(A) 1-560-282-00	(A) Pin, 7p connector
	(A) 1-560-286-00	(B) Pin, 2p connector

ACCESSORIES AND PACKING MATERIALS

<u>Part No.</u>	<u>Description</u>
3-701-616-00	(A) Bag, plastic (E, UK, SCN, AEP, Canadian model)
3-701-634-00	Bag, plastic (US model)
3-701-806-00	(A) 45, adaptor
3-703-106-00	Label, destination (E model)
3-770-996-11	(D) Manual, instruction (E, AEP, UK, SCN model)
3-770-996-21	Manual, instruction (US, Canadian model)
3-794-265-11	Leaflet (XL-15) (E model)
3-794-504-11	(A) Leaflet (SCN, AEP model)
3-794-580-31	Leaflet, French (Canadian model)
4-858-292-00	(C) Bag, protection
4-862-039-00	(A) Holder, dust cover
4-862-043-00	(A) Cushion, tonearm
4-866-048-00	(E) Carton, individual
4-866-052-00	(B) Holder, turntable
4-866-053-00	(B) Cushion (upper)
4-866-056-00	(B) Cushion (lower-right)
4-866-057-00	(B) Cushion (lower-left)
4-866-072-01	Sheet, turntable (US model)
4-866-072-11	(I) Sheet, turntable (UK, SCN, Canadian, AEP, E model)
4-866-082-00	(A) Stopper (A)
4-866-083-00	(A) Stopper (B)

Note: Les composants identifiés par une trame et une marque (A) sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

1/4 WATT CARBON RESISTORS [Ⓐ]

Note: Circled letter [Ⓐ] is applicable to European models only.

Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-246-401-00	10	1-246-425-00	100	1-246-449-00	1.0k	1-246-473-00	10k	1-246-497-00	100k	1-246-521-00	1.0M	1-246-545-00
1.1	1-246-402-00	11	1-246-426-00	110	1-246-450-00	1.1k	1-246-474-00	11k	1-246-498-00	110k	1-246-522-00	1.1M	1-210-814-00
1.2	1-246-403-00	12	1-246-427-00	120	1-246-451-00	1.2k	1-246-475-00	12k	1-246-499-00	120k	1-246-523-00	1.2M	1-210-815-00
1.3	1-246-404-00	13	1-246-428-00	130	1-246-452-00	1.3k	1-246-576-00	13k	1-246-500-00	130k	1-246-524-00	1.3M	1-210-816-00
1.5	1-246-405-00	15	1-246-429-00	150	1-246-453-00	1.5k	1-246-577-00	15k	1-246-501-00	150k	1-246-525-00	1.5M	1-210-817-00
1.6	1-246-406-00	16	1-246-430-00	160	1-246-454-00	1.6k	1-246-578-00	16k	1-246-502-00	160k	1-246-526-00	1.6M	1-210-818-00
1.8	1-246-407-00	18	1-246-431-00	180	1-246-455-00	1.8k	1-246-579-00	18k	1-246-503-00	180k	1-246-527-00	1.8M	1-210-819-00
2.0	1-246-408-00	20	1-246-432-00	200	1-246-456-00	2.0k	1-246-580-00	20k	1-246-504-00	200k	1-246-528-00	2.0M	1-210-820-00
2.2	1-246-409-00	22	1-246-433-00	220	1-246-457-00	2.2k	1-246-581-00	22k	1-246-505-00	220k	1-246-529-00	2.2M	1-210-821-00
2.4	1-246-410-00	24	1-246-434-00	240	1-246-458-00	2.4k	1-246-582-00	24k	1-246-506-00	240k	1-246-530-00	2.4M	1-244-754-00
2.7	1-246-411-00	27	1-246-435-00	270	1-246-459-00	2.7k	1-246-583-00	27k	1-246-507-00	270k	1-246-531-00	2.7M	1-244-755-00
3.0	1-246-412-00	30	1-246-436-00	300	1-246-460-00	3.0k	1-246-584-00	30k	1-246-508-00	300k	1-246-532-00	3.0M	1-244-756-00
3.3	1-246-413-00	33	1-246-437-00	330	1-246-461-00	3.3k	1-246-585-00	33k	1-246-509-00	330k	1-246-533-00	3.3M	1-244-757-00
3.6	1-246-414-00	36	1-246-438-00	360	1-246-462-00	3.6k	1-246-586-00	36k	1-246-510-00	360k	1-246-534-00	3.6M	1-244-758-00
3.9	1-246-415-00	39	1-246-439-00	390	1-246-463-00	3.9k	1-246-587-00	39k	1-246-511-00	390k	1-246-535-00	3.9M	1-244-759-00
4.3	1-246-416-00	43	1-246-440-00	430	1-246-464-00	4.3k	1-246-488-00	43k	1-246-512-00	430k	1-246-536-00	4.3M	1-244-760-00
4.7	1-246-417-00	47	1-246-441-00	470	1-246-465-00	4.7k	1-246-489-00	47k	1-246-513-00	470k	1-246-537-00	4.7M	1-244-761-00
5.1	1-246-418-00	51	1-246-442-00	510	1-246-466-00	5.1k	1-246-490-00	51k	1-246-514-00	510k	1-246-538-00	5.1M	1-244-762-00
5.6	1-246-419-00	56	1-246-443-00	560	1-246-467-00	5.6k	1-246-491-00	56k	1-246-515-00	560k	1-246-539-00		
6.2	1-246-420-00	62	1-246-444-00	620	1-246-468-00	6.2k	1-246-492-00	62k	1-246-516-00	620k	1-246-540-00		
6.8	1-246-421-00	68	1-246-445-00	680	1-246-469-00	6.8k	1-246-493-00	68k	1-246-517-00	680k	1-246-541-00		
7.5	1-246-422-00	75	1-246-446-00	750	1-246-470-00	7.5k	1-246-494-00	75k	1-246-518-00	750k	1-246-542-00		
8.2	1-246-423-00	82	1-246-447-00	820	1-246-471-00	8.2k	1-246-495-00	82k	1-246-519-00	820k	1-246-543-00		
9.1	1-246-424-00	91	1-246-448-00	910	1-246-472-00	9.1k	1-246-496-00	91k	1-246-520-00	910k	1-246-544-00		

HARDWARE NOMENCLATURE

Screw:

P 3 x 10

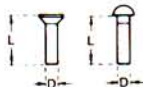
L: Length in mm

D: Diameter in mm

Type of head

Indicated slotted-head only.

Unless otherwise indicated, it means cross-recessed head (Phillips type).



Nut, Washer, Retaining ring:

N 3

Diameter of usable screw or shaft

Reference designation

Reference Designation	Shape	Description	Remarks
SCREWS			
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		brazer-head screw	

Reference Designation	Shape	Description	Remarks
SELF-TAPPING SCREWS			
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self-tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
SET SCREWS			
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
NUT			
N		nut	
WASHERS			
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
RETAINING RINGS			
E		retaining ring	
G		grip-type retaining ring	

ELECTROLYTIC CAPACITORS

Note: Circled letter (A) to (Z) are applicable to European models only.

CAP. (μF)	RATING					
	6.3 VOLT.	10 VOLT.	16 VOLT.	25 VOLT.	35 VOLT.	50 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.47					→	1-121-726-00 (A)
1.0					→	1-121-391-00 (A)
2.2					→	1-121-450-00 (A)
3.3	→	→	→	1-121-392-00 (A)	→	1-121-393-00 (A)
4.7	→	→	→	1-121-395-00 (A)	→	1-121-396-00 (A)
10	→	→	1-121-651-00 (A)	1-121-398-00 (A)	→	1-121-738-00 (A)
22	→	→	1-121-479-00 (A)	1-121-480-00 (A)	1-121-662-00 (A)	1-121-152-00 (A)
33	→	→	1-121-403-00 (A)	1-121-404-00 (A)	1-121-652-00 (B)	1-121-405-00 (A)
47	→	1-121-352-00 (A)	1-121-409-00 (A)	1-121-410-00 (A)	1-121-653-00 (B)	1-121-411-00 (A)
100	→	1-121-414-00 (A)	1-121-415-00 (A)	1-121-416-00 (A)	1-121-357-00 (B)	1-121-417-00 (B)
220	1-121-419-00 (B)	1-121-420-00 (B)	1-121-421-00 (A)	1-121-422-00 (B)	1-121-261-00 (C)	1-121-423-00 (B)
330	1-121-751-00 (B)	1-121-805-00 (B)	1-121-521-00 (C)	1-121-654-00 (B)	1-121-655-00 (D)	1-121-656-00 (C)
470	1-121-424-00 (B)	1-121-425-00 (C)	1-121-426-00 (C)	1-121-733-00 (B)	1-121-361-00 (E)	1-121-810-00 (D)
1000	—	1-121-736-00 (C)	1-121-245-00 (D)	1-121-657-00 (D)	1-121-388-00 (E)	1-123-061-00 (F)
2200	1-121-658-00 (B)	1-121-659-00 (C)	1-121-660-00 (D)	1-123-067-00 (F)	1-121-984-00 (F)	—
3300	1-121-661-00 (D)	1-123-075-00 (E)	1-123-071-00 (F)	—	—	—

CAP. (μF)	100 VOLT.	160 VOLT.	250 VOLT.	350 VOLT.
	PART No.	PART No.	PART No.	PART No.
0.47	—	—	—	—
1.0	1-123-249-00 (A)	1-123-252-00 (A)	1-123-003-00 (B)	1-121-168-00 (B)
2.2	1-123-250-00 (A)	1-123-026-00 (B)	—	1-123-028-00 (B)
3.3	1-121-995-00 (A)	—	1-123-004-00 (B)	1-123-006-00 (C)
4.7	1-123-255-00 (A)	1-121-246-00 (B)	1-121-759-00 (B)	1-123-007-00 (D)
10	1-121-126-00 (B)	1-121-999-00 (B)	1-123-254-00 (C)	1-123-008-00 (D)
22	1-121-996-00 (C)	1-123-253-00 (C)	1-123-005-00 (D)	1-123-022-00 (D)
33	1-121-997-00 (C)	1-121-757-00 (C)	—	—
47	1-123-251-00 (C)	1-121-919-00 (C)	—	—
100	1-123-084-00 (E)	—	—	—

CERAMIC CAPACITORS (A)

RATING							
CAP. (pF)	50 VOLT.	CAP. (pF)	50 VOLT.	CAP. (pF)	50 VOLT.	CAP. (μF)	50 VOLT.
	PART No.		PART No.		PART No.		PART No.
0.5	1-101-837-00	22	1-102-959-00	150	1-101-361-00	0.001	1-102-074-00
0.75	1-101-586-00	24	1-102-960-00	160	1-101-367-00	0.0012	1-102-118-00
1.0	1-102-934-00	27	1-102-961-00	180	1-102-976-00	0.0015	1-102-119-00
1.5	1-101-576-00	30	1-102-962-00	200	1-102-977-00	0.0018	1-102-120-00
2.0	1-102-935-00	33	1-102-963-00	220	1-102-978-00	0.0022	1-102-121-00
3	1-102-936-00	36	1-102-964-00	240	1-102-979-00	0.0027	1-102-122-00
4	1-102-937-00	39	1-102-965-00	270	1-102-980-00	0.0033	1-102-123-00
5	1-102-942-00	43	1-102-966-00	300	1-102-981-00	0.0039	1-102-124-00
6	1-102-943-00	47	1-101-880-00	330	1-102-820-00	0.0047	1-102-125-00
7	1-102-944-00	51	1-101-882-00	360	1-102-821-00	0.0056	1-102-126-00
8	1-102-945-00	56	1-101-884-00	390	1-102-822-00	0.0068	1-102-127-00
9	1-102-946-00	62	1-101-886-00	430	1-102-823-00	0.0082	1-102-128-00
10	1-102-947-00	68	1-101-888-00	470	1-102-824-00	0.01	1-102-129-00
11	1-102-948-00	75	1-101-890-00	510	1-101-059-00	0.022	1-101-005-00
12	1-102-949-00	82	1-102-971-00	560	1-102-115-00	0.047	1-101-006-00
13	1-102-950-00	91	1-102-972-00	680	1-102-116-00		
15	1-102-951-00	100	1-102-973-00	820	1-102-117-00		
16	1-102-952-00	110	1-102-815-00				
18	1-102-953-00	120	1-102-816-00				
20	1-102-958-00	130	1-101-081-00				

0.001μF = 1,000pF

CERAMIC (SEMICONDUCTOR) CAPACITORS (A)

RATING					
CAP. (μF)	25 VOLT.	50 VOLT.	CAP. (μF)	25 VOLT.	50 VOLT.
	PART No.	PART No.		PART No.	PART No.
0.001	→	1-161-039-00	0.018	1-161-016-00	1-161-054-00
0.0012	→	1-161-040-00	0.022	1-161-017-00	1-161-055-00
0.0015		1-161-041-00	0.027	1-161-018-00	1-161-056-00
0.0018		1-161-042-00	0.033	1-161-019-00	1-161-057-00
0.0022		1-161-043-00	0.039	1-161-010-00	1-161-058-00
0.0027	→	1-161-044-00	0.047	1-161-021-00	1-161-059-00
0.0033	→	1-161-045-00	0.056	→	1-161-060-00
0.0039	→	1-161-046-00	0.068	→	1-161-061-00
0.0047	→	1-161-047-00	0.082	1-161-024-00	1-161-062-00
0.0056	→	1-161-048-00	0.1	1-161-025-00	1-161-063-00
0.0068	→	1-161-049-00			
0.0082	1-161-012-00	1-161-050-00			
0.01	1-161-013-00	1-161-051-00			
0.012	→	1-161-052-00			
0.015	1-161-015-00	1-161-053-00			

MYLAR CAPACITORS (A)

Note: Circled letters (A) to (Z) are applicable to European models only.

RATING											
CAP. (μF)	50 VOLT. PART No.	100 VOLT. PART No.	200 VOLT. PART No.	CAP. (μF)	50 VOLT. PART No.	100 VOLT. PART No.	200 VOLT. PART No.	CAP. (μF)	50 VOLT. PART No.	100 VOLT. PART No.	200 VOLT. PART No.
0.001	1-108-227-00	1-108-365-00	1-108-409-00	0.01	1-108-239-00	1-108-377-00	1-108-421-00	0.1	1-108-251-00	1-108-389-00	1-108-433-00
0.0012	1-108-351-00	1-108-366-00	1-108-410-00	0.012	1-108-357-00	1-108-378-00	1-108-422-00	0.12	1-108-363-00	1-108-390-00	1-108-434-00
0.0015	1-108-228-00	1-108-367-00	1-108-411-00	0.015	1-108-240-00	1-108-379-00	1-108-423-00	0.15	1-108-252-00	1-108-391-00	1-108-435-00
0.0018	1-108-352-00	1-108-368-00	1-108-412-00	0.018	1-108-358-00	1-108-380-00	1-108-424-00	0.18	1-108-364-00	1-108-392-00	1-108-436-00
0.0022	1-108-230-00	1-108-369-00	1-108-413-00	0.022	1-108-242-00	1-108-381-00	1-108-425-00	0.22	1-108-254-00	1-108-393-00	1-108-437-00
0.0027	1-108-353-00	1-108-370-00	1-108-414-00	0.027	1-108-359-00	1-108-382-00	1-108-426-00	0.27	1-108-854-00	—	—
0.0033	1-108-232-00	1-108-371-00	1-108-415-00	0.033	1-108-244-00	1-108-383-00	1-108-427-00	0.33	1-108-855-00	—	—
0.0039	1-108-354-00	1-108-372-00	1-108-416-00	0.039	1-108-360-00	1-108-384-00	1-108-428-00	0.39	1-108-856-00	—	—
0.0047	1-108-234-00	1-108-373-00	1-108-417-00	0.047	1-108-246-00	1-108-385-00	1-108-429-00	0.47	1-108-857-00	—	—
0.0056	1-108-355-00	1-108-374-00	1-108-418-00	0.056	1-108-361-00	1-108-386-00	1-108-430-00				
0.0068	1-108-237-00	1-108-375-00	1-108-419-00	0.068	1-108-249-00	1-108-387-00	1-108-431-00				
0.0082	1-108-356-00	1-108-376-00	1-108-420-00	0.082	1-108-362-00	1-108-388-00	1-108-432-00				



TANTALUM CAPACITORS

RATING							
→ : Use the high voltage rated one.							
CAP. (μF)	3.15 VOLT. PART No.	6.3 VOLT. PART No.	10 VOLT. PART No.	16 VOLT. PART No.	20 VOLT. PART No.	25 VOLT. PART No.	35 VOLT. PART No.
0.01					→	→	1-131-396-00 (B)
0.015					→	→	1-131-397-00 (B)
0.022					→	→	1-131-398-00 (B)
0.033					→	→	1-131-399-00 (B)
0.047					→	→	1-131-400-00 (B)
0.068					→	→	1-131-401-00 (B)
0.1					→	→	1-131-402-00 (B)
0.15					→	→	1-131-403-00 (B)
0.22					→	→	1-131-404-00 (B)
0.33					→	1-131-409-00 (B)	1-131-405-00 (B)
0.47	—	—	—	—	1-131-412-00 (B)	→	1-131-406-00 (B)
0.68	—	—	—	1-131-415-00 (B)	→	1-131-410-00 (B)	1-131-407-00 (B)
1.0	—	—	1-131-418-00 (B)	1-131-416-00 (B)	1-131-413-00 (B)	→	1-131-408-00 (B)
1.5	—	1-131-421-00 (B)	—	1-131-416-00 (B)	→	1-131-411-00 (B)	1-131-348-00 (B)
2.2	1-131-424-00 (B)	—	1-131-419-00 (B)	—	1-131-414-00 (B)	1-131-355-00 (B)	1-131-349-00 (B)
3.3	—	1-131-422-00 (B)	—	1-131-417-00 (B)	1-131-362-00 (B)	1-131-356-00 (B)	1-131-350-00 (B)
4.7	1-131-425-00 (B)	—	1-131-420-00 (B)	1-131-369-00 (B)	1-131-363-00 (B)	1-131-357-00 (B)	1-131-351-00 (C)
6.8	—	1-131-423-00 (B)	1-131-376-00 (B)	1-131-370-00 (B)	1-131-364-00 (B)	1-131-358-00 (C)	1-131-352-00 (C)
10	1-131-426-00 (B)	1-131-383-00 (B)	1-131-377-00 (B)	1-131-371-00 (B)	1-131-365-00 (C)	1-131-359-00 (C)	1-131-353-00 (D)
15	1-131-390-00 (B)	1-131-384-00 (B)	1-131-378-00 (B)	1-131-372-00 (B)	1-131-366-00 (C)	1-131-360-00 (D)	—
22	1-131-391-00 (B)	1-131-385-00 (B)	1-131-379-00 (C)	1-131-373-00 (C)	1-131-367-00 (D)		
33	1-131-392-00 (B)	1-131-386-00 (C)	1-131-380-00 (C)	1-131-374-00 (D)			
47	1-131-393-00 (C)	1-131-387-00 (C)	1-131-381-00 (D)	—			
68	1-131-394-00 (B)	1-131-388-00 (C)	—	—			
100	1-131-395-00 (D)	—	—	—			



TANTALUM CAPACITORS

RATING						
CAP. (μF)	3 VOLT. PART No.	6.3 VOLT. PART No.	10 VOLT. PART No.	16 VOLT. PART No.	20 VOLT. PART No.	35 VOLT. PART No.
0.033						1-131-273-00 (E)
0.047						1-131-274-00 (E)
0.068						1-131-275-00 (E)
0.1						1-131-276-00 (D)
0.15						1-131-277-00 (D)
0.22			—	—	1-131-262-00 (D)	1-131-278-00 (D)
0.33			—	—	1-131-263-00 (D)	1-131-279-00 (D)
0.47			1-131-169-00 (D)	—	1-131-264-00 (D)	1-131-280-00 (D)
0.68			—	1-131-258-00 (D)	1-131-265-00 (D)	1-131-281-00 (D)
1.0			1-131-254-00 (D)	—	1-131-266-00 (D)	1-131-282-00 (D)
1.5		1-131-250-00 (D)	—	—	1-131-267-00 (D)	1-131-283-00 (E)
2.2		—	—	1-131-259-00 (D)	1-131-268-00 (D)	1-131-284-00 (E)
3.3		—	1-131-255-00 (D)	—	1-131-269-00 (D)	—
4.7		1-131-251-00 (E)	1-131-171-00 (D)	—	1-131-270-00 (D)	—
6.8		—	—	1-131-260-00 (D)	1-131-271-00 (E)	—
10	—	—	1-131-256-00 (D)	—	1-131-272-00 (E)	—
15	—	1-131-252-00 (D)	—	1-131-261-00 (E)	—	—
22	—	—	1-131-257-00 (E)	—	—	—
33	1-131-176-00 (D)	1-131-253-00 (E)	1-131-173-00 (C)	—	—	—
47	1-131-288-00 (F)	1-131-174-00 (D)	—	—	—	—
100	1-131-177-00 (D)	—	—	—	—	—

Sony Corporation

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STEREO TURNTABLE SYSTEM

PS-636

US Model
AEP Model
E Model
SCN Model
Canadian Model
UK Model

SUPPLEMENT

This supplement updates the service manual to include production changes.
File this supplement with the Service Manual.

No. 1
January, 1979

	Production Change
US model	Serial No. 802,001 and later
AEP model	Serial No. 502,806 and later
E1 model	Serial No. 400,701 and later
E2 model	Serial No. 450,401 and later
SCN model	Serial No. 550,601 and later
Canadian model	Serial No. 700,101 and later
UK model	Serial No. 600,701 and later

Main Production Change

The system control board has been changed
into a CPU (micro computer) type.

SONY
SERVICE MANUAL

SECTION 1

NOTE

1. SERVICING NOTE

As all of the designated operations are memorized within the computer, all the information for repairing cannot be obtained from the schematic diagram itself. In order to repair sets equipped with a computer (referred to as CPU from now on), faster, you must know the adequate operation and the caution signs the set offer you. That is, if the cause of the fault is in misoperation, then the set cannot be repaired. This is because the program memorized within the CPU can only point out the misoperation and cannot correct the operation by itself.

The operation is carefully explained in the Instruction Manual, but some of the operations are picked out and referred to in the Service Manual for convenience.

By considering the CPU as follows, anyone can easily repair such sets equipped with a CPU.

- Consider that the CPU is a lead wire connecting the input and the output of the designated input.
- By considering that the CPU is a lead wire, the fault lies not in the CPU but between the input circuit and the CPU input terminal, or CPU output terminal and the output circuit.

The CPU can be divided into three main circuits:

- input and output circuit,
- circuits especially equipped for the CPU (including the related circuits when the CPU is under operation),
- power circuit (including the back up power).

The circuits that are especially related to the CPU are:

- the RESET circuit which orders the beginning of the program to the CPU,
- the CLOCK oscillating circuit which decides the speed of the CPU,
- the circuits between the related circuits and the CPU.

When there are any faults in these circuits, all of the functions stop. That is, if all of the functions do not work right, the three circuits (mentioned above) must be examined.

SECTION 2

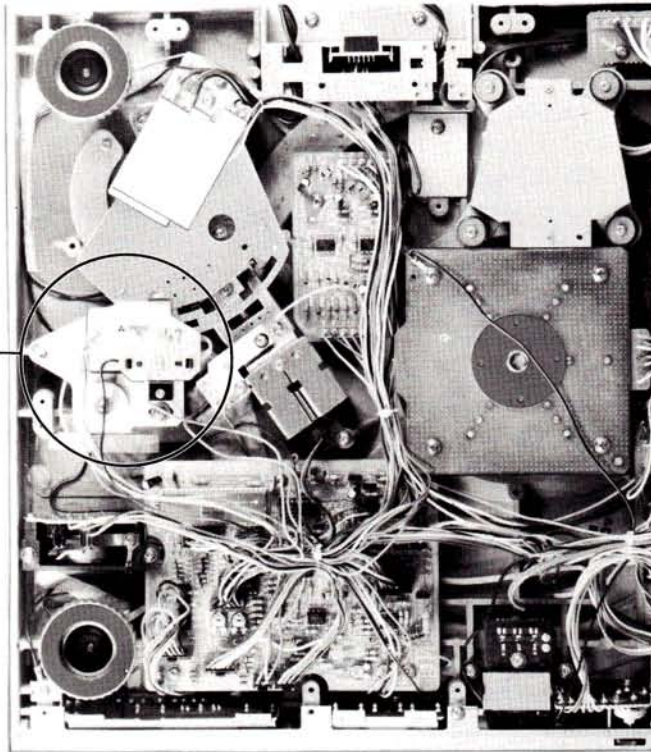
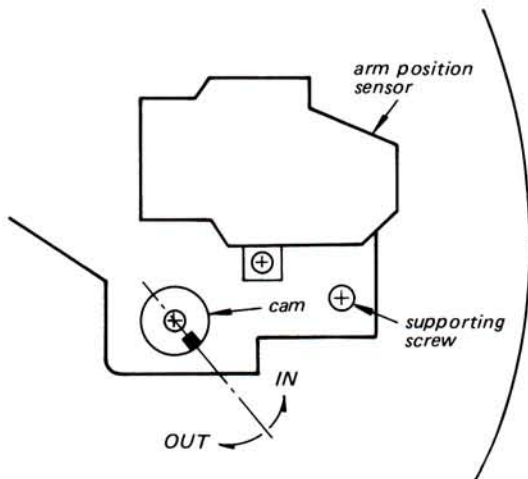
ADJUSTMENTS

* Refer to the Service Manual for other adjustments.

Lead-in Adjustment

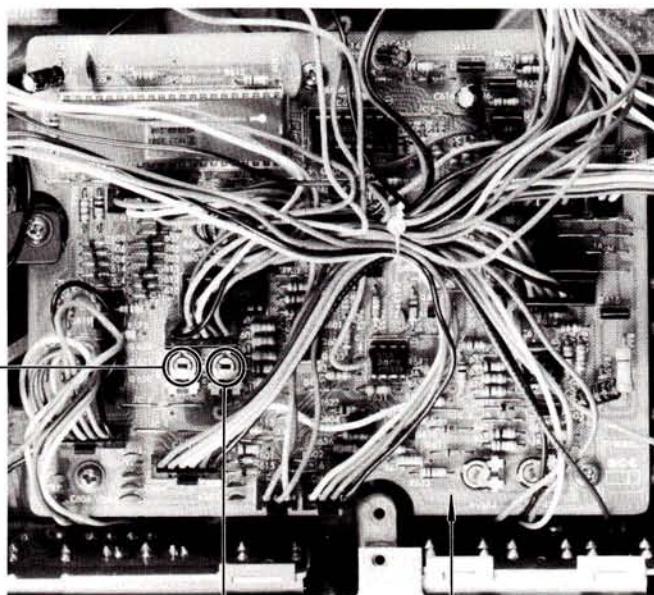
To adjust 30, 25, 17 cm lead-in position at the same time, adjust by moving the position of the arm position sensor.

1. Loosen the supporting screw.
2. Adjust the lead-in position by moving the cam IN or OUT.
3. Tighten supporting screw securely.



- 25 cm lead-in
To adjust only the 25 cm lead-in position, adjust RV602.
- 17 cm lead-in
To adjust only the 17 cm lead-in position, adjust RV601.

RV601
(17 cm lead-in)



RV602
(25 cm lead-in)

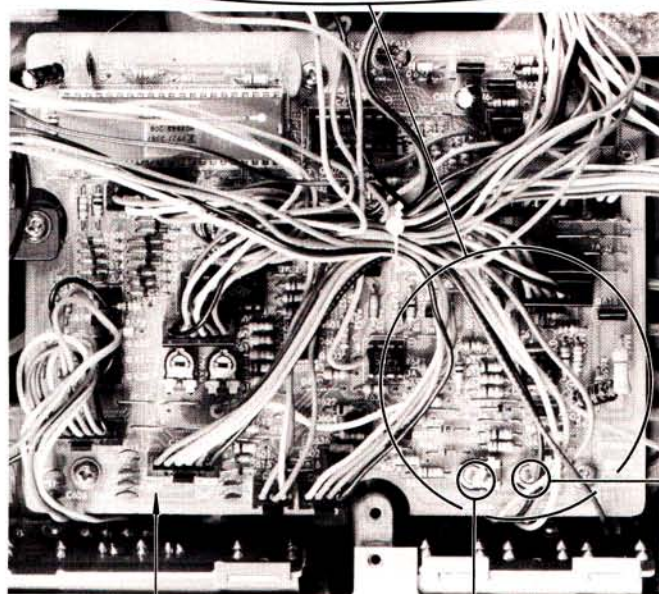
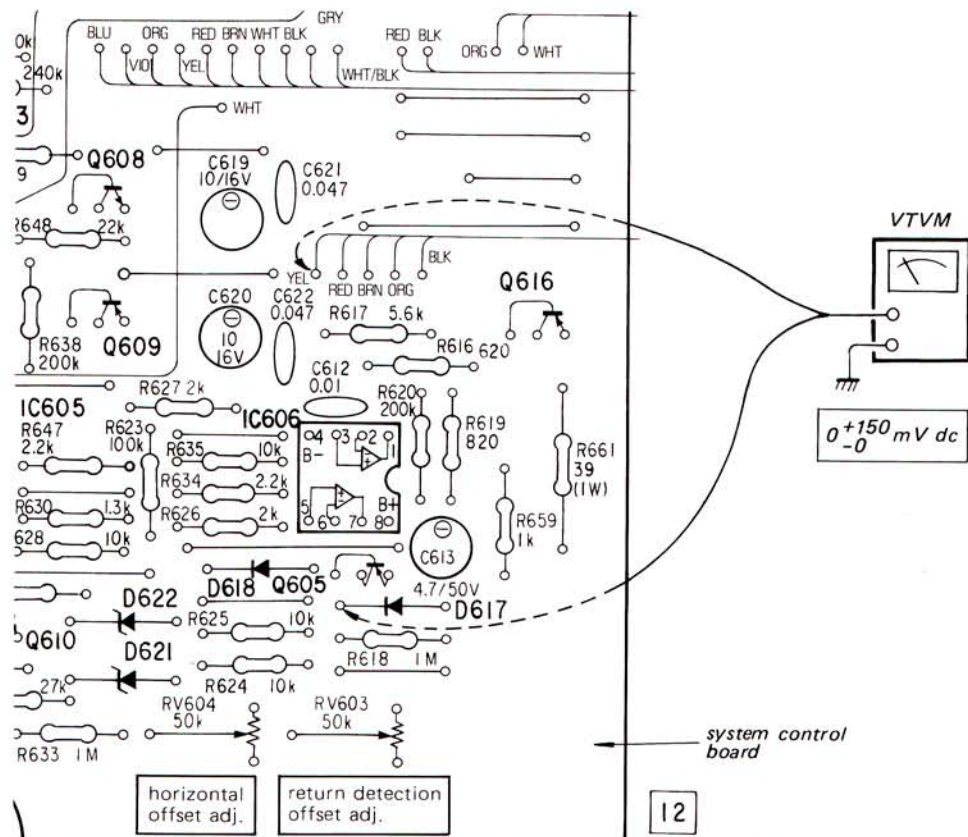
system control board

Horizontal Offset Adjustment

1. Set the ANTI-SKATING knob to the position other than BALANCE.
2. Fix the tonearm to the tonearm rest.
3. Adjust RV402 so that the HC voltage is within 0 ± 100 mV dc.

Return Detection Offset Adjustment

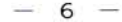
1. Set the ANTI-SKATING knob to the 'BALANCE' position.
2. Fix the tonearm to the tonearm rest.
3. Adjust RV401 to obtain 0^{+150}_{-0} mV dc at D407 (cathode side).



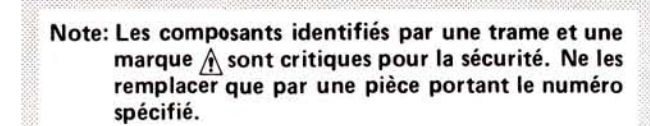
system control board

RV604
(horizontal
offset adj.)RV603
(return detection
offset adj.)

3-1. MOUNTING DIAGRAM (Continued on page 7, 8.)







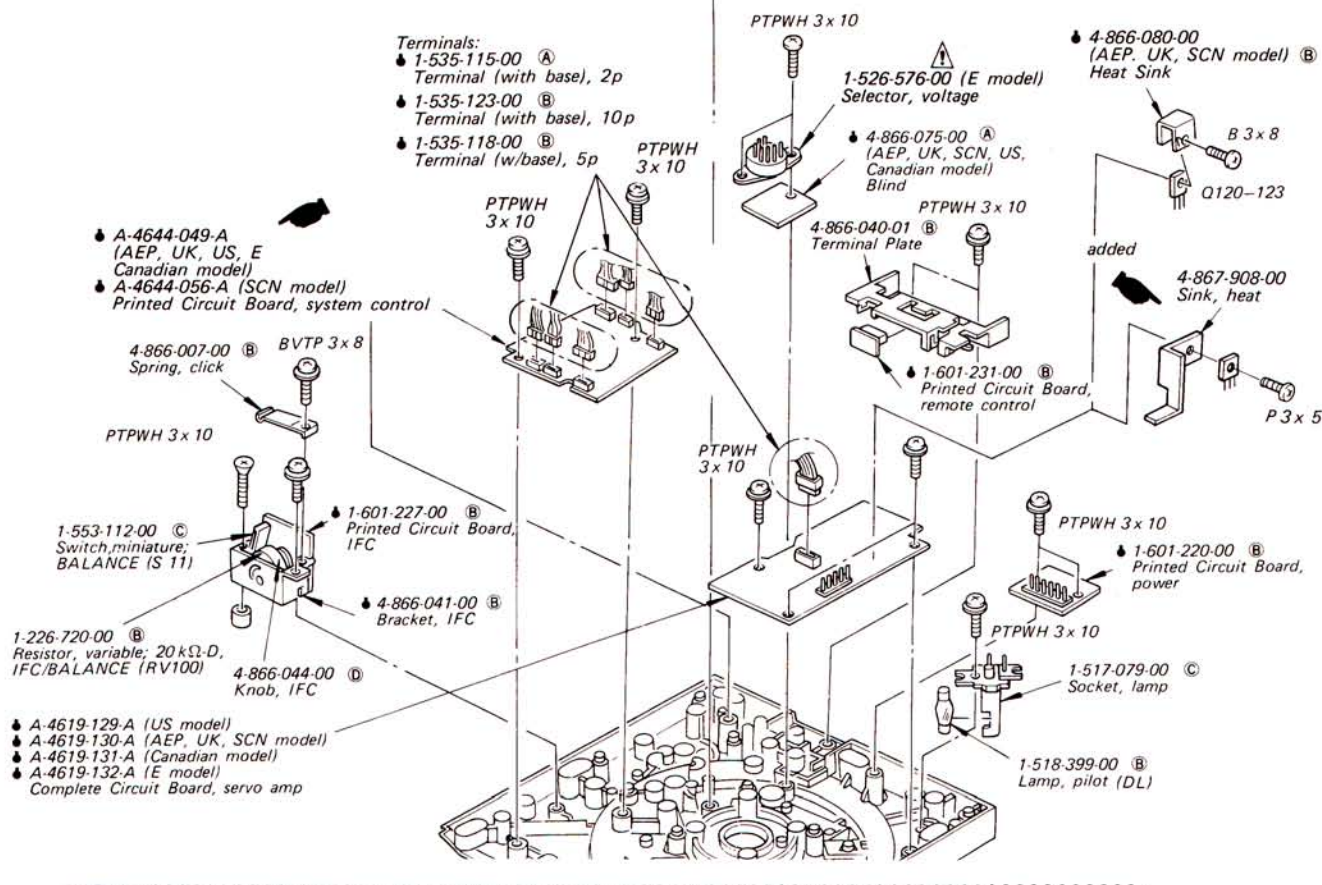
Note: Operations in () are not indicated on the panel

SECTION 4 EXPLODED VIEWS

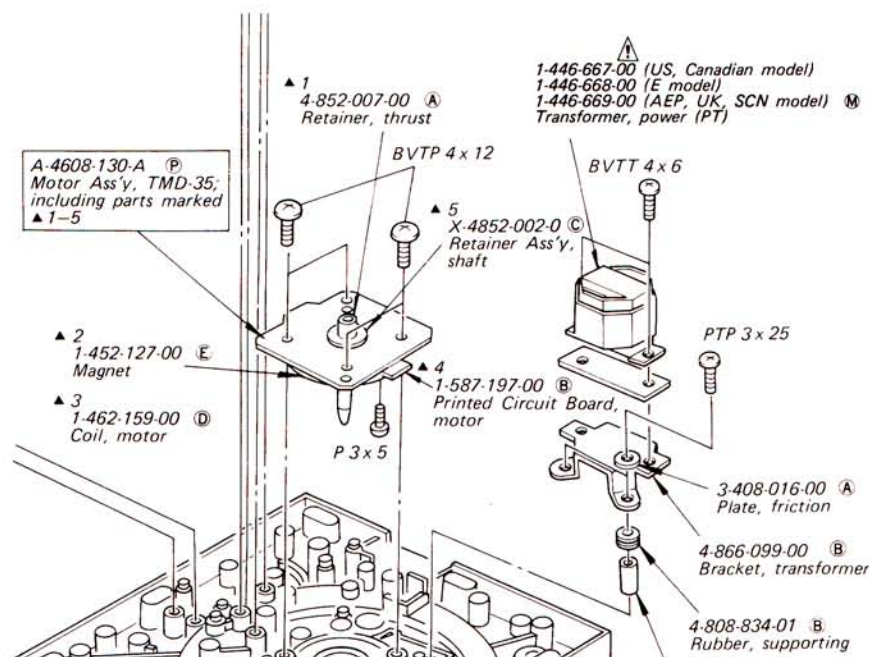
5-2.

(Refer to the Service Manual for other exploded views.)

 : Changed Portion



5-4.



Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

SECTION 5

ELECTRICAL PARTS LIST

Note: Circled letters (A) to (Z) are applicable to European models only.

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
COMPLETE CIRCUIT BOARDS					
♣ A-4619-129-A		Servo Mount (US model)	Q120,122	8-729-180-93	(B) 2SD809
♣ A-4619-130-A		Servo Mount (AEP, UK, SCN model)	Q123	8-729-173-13	(B) 2SB731
♣ A-4619-131-A		Servo Mount (Canadian model)	Q201-203	8-729-101-01	(C) PH101
♣ A-4619-132-A		Servo Mount (E model)	⇒ Q601-605	8-729-978-62	(B) 2SA786
♣ A-4644-049-A		System Control	⇒ Q606,607	8-729-902-11	(B) 2SC2021
		(AEP, UK, E, US, Canadian model)	Q608	8-729-497-32	(B) 2SD973
♣ A-4644-056-A		System Control (SCN model)	Q609	8-729-479-32	(B) 2SB793
			⇒ Q610,611	8-729-902-11	(B) 2SC2021
PRINTED CIRCUIT BOARDS			⇒ Q612	8-729-978-62	(B) 2SA786
♣ 1-587-197-00	(B)	Motor	Q613	8-729-203-04	(B) 2SK30A
♣ 1-601-220-00	(B)	Power	⇒ Q614,615	8-729-902-11	(B) 2SC2021
♣ 1-601-221-00	(B)	Volume	Q616	8-729-479-32	(B) 2SB793
♣ 1-601-223-00	(B)	Phono	Q617	8-729-180-93	(B) 2SD809
♣ 1-601-225-00	(B)	Size Sens	⇒ Q618-623	8-729-978-62	(B) 2SA786
♣ 1-601-227-00	(B)	IFC	Q624	8-729-497-32	(B) 2SD973
♣ 1-601-228-00	(B)	ASS	ICs		
♣ 1-601-229-00	(B)	Control (A)	IC101	8-759-958-18	(K) MSM5818
♣ 1-601-230-00	(B)	Control (B)	⇒ IC102,103	8-759-145-58	(D) μPC4558C
♣ 1-601-231-00	(B)	Remote Control	⇒ IC201,202		
♣ 1-601-232-00	(B)	Strobo	IC601	8-759-982-08	(L) MB8843-208
♣ 1-601-233-00	(B)	Switch (A)	IC602	8-759-045-84	(Z) MC1458BCP
SEMICONDUCTORS			⇒ IC603, 604	8-759-240-50	(E) TC4050BP
Transistors			⇒ IC605, 606	8-759-700-58	(D) NJM4558DFA
⇒ Q101,102	8-729-902-11	(B) 2SC2021	Diodes		
⇒ Q103	8-729-978-62	(B) 2SA786	D101	8-719-930-11	(B) EQB01-11Z
⇒ Q104,105	8-729-902-11	(B) 2SC2021	D102,103	8-719-930-12	(B) EQB01-12Z
⇒ Q106,107	8-729-978-62	(B) 2SA786	⇒ D104,106	8-719-500-34	(C) S3VC40
⇒ Q108-110	8-729-902-11	(B) 2SC2021	⇒ D105,107	8-719-501-34	(C) S3VC40R
⇒ Q111,113	8-729-978-62	(B) 2SA786	D108,109	8-719-815-55	(B) 1S1555
⇒ Q112	8-729-902-11	(B) 2SC2021	⇒ D110	8-719-930-19	EQB01-19Z
⇒ Q114,115			D201-206	8-719-815-55	(B) 1S1555
Q116	8-729-173-13	(B) 2SB731	D301	8-719-955-33	(B) AA5531K
Q117,118	8-729-180-93	(B) 2SD809	D302-304	8-719-955-32	(B) PG5531KX
Q119,121	8-729-173-13	(B) 2SB731	D305	8-719-955-33	(B) AA5531K
			D306-308	8-719-955-25	(B) PY5525S

⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Items marked "♣" are not stocked because they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Note: Circled letters (A) to (Z) are applicable to European models only.

Ref. No.	Part No.	Description
D309,310	8-719-955-33 (B)	AA5531K
D601-620	8-719-815-55 (B)	1S1555
D621,622	8-719-910-65 (B)	HZ6B2L
D623-625	8-719-815-55 (B)	1S1555
D626	8-719-931-06 (B)	EQB01-06

Hall Devices

⇒ H1,2 8-719-814-09 (D) F-1409

TRANSFORMERS

PT	(A)	1-446-667-00	Power (US, Canadian model)
		1-446-668-00	Power (E model)
		1-446-669-00 (M)	Power (AEP, UK, SCN model)

CAPACITORS

All capacitors are in μF . Common capacitors are omitted.

Refer to the lists on the Service Manual for their part numbers.

C122-124 (A) 1-123-337-00 (B) 1000 μF 25V elect

C405,406 1-123-228-00 (B) 1 50V bipolar
C415 1-123-230-00 (B) 2.2 50V bipolar

CP1	(A)	1-129-718-00	Encapsulated Component (E model)
		1-231-326-00	Encapsulated Component (US model)
		1-231-341-00	Encapsulated Component (Canadian model)
		1-130-196-00 (D)	Encapsulated Component (AEP, UK, SCN model)

⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Note: The components identified by shading and mark (A) are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description
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RESISTORS

All resistors are in ohms. Common $\frac{1}{4}\text{W}$ carbon resistors are omitted.

Refer to the list on the Service Manual for their part numbers.

R108 1-214-168-00 (A) 33 k $\frac{1}{4}\text{W}$ metal-oxide
R109 1-214-149-00 (A) 5.1 k $\frac{1}{4}\text{W}$ metal-oxide
R160 (A) 1-213-080-00 (A) 68 1W fusible
R169 (A) 1-213-076-00 (A) 47 1W fusible

R661 (A) 1-213-074-00 (A) 39 1W fusible

RV100 1-226-720-00 (B) 20 k-D, variable; IFC/BALANCE
RV101 1-224-254-XX (B) 47 k-B, adjustable; XTAL LOCK
RV102 1-226-196-00 (B) 10 k-B, variable; PITCH
RV103,104 1-226-235-00 (A) 5 k-B, adjustable; gain
RV105,106 1-226-237-00 (B) 20 k-B, adjustable; offset

RV601-604 1-226-238-00 (A) 50 k-B, return, horizontal offset, 17/25 cm lead in

SWITCHES

S1 (A) { 1-516-889-00 (D) Miniature, POWER (AEP, UK, SCN model)
1-552-103-00 Miniature, POWER (US, E, Canadian model)
S2,3 1-553-073-00 (D) 3 Key, SPEED, XTAL LOCK
S4-6 1-552-539-00 (B) Keyboard, START/STOP/REPEAT
S7 1-552-539-00 (B) Keyboard, tonearm lifter
S8,9 1-552-539-00 (B) Keyboard, ARM TRANSPORT
S11 1-553-112-00 (C) Miniature, BALANCE

MISCELLANEOUS

DL 1-518-399-00 (B) Lamp, pilot
FG 1-543-093-00 (E) Head, rotation det.
VS (A) 1-526-576-00 Selector, voltage (E model)
X101 1-527-348-00 (D) Crystal Osc

A-4505-003-A Cartridge (E model)

A-4608-130-A (P) Motor Ass'y, TMD-35

Note: Les composants identifiés par une trame et une marque (A) sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Note: Circled letters (A) to (Z) are applicable to European models only.

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
	1-452-127-00	(E) Magnet
	1-452-194-00	(C) Magnet (H)
	1-452-195-00	(B) Magnet (V)
	1-452-196-00	(B) Magnet (R)
	1-454-236-00	(C) Solenoid (C)
	1-454-237-00	(D) Solenoid (D)
	1-454-238-00	(D) Solenoid (S)
	1-454-239-00	(E) Solenoid (V)
	1-462-159-00	(D) Coil, motor
	1-517-079-00	(C) Socket, lamp
	1-549-088-00	(M) Cartridge (AEP, US, Canadian, UK, SCN model)
▲	1-551-628-00	Cord, power; parallel-blade plug (US, E2, Canadian model)
	1-551-731-00	(E) Cord (w/plug) (AEP, UK, SCN, E model)
	1-551-835-00	Cord (w/plug) (US, Canadian model)
▲	1-551-896-00	(E) Cord, power (AEP, E1 model)
▲	1-551-908-00	(E) Cord, power; euro-plug (SCN model)
▲	1-551-962-00	(E) Cord, power (UK model)
▲	1-551-966-00	(G) Cord, power (w/adaptor) (AEP, E1 model)
▲	1-551-967-00	(E) Cord, power (w/adaptor) (UK model)
	1-561-294-11	(E) Connector, neck cylinder
	1-800-981-11	(K) Photo Interrupter
♣	1-508-594-00	(B) Connector, 6p
♣	1-535-115-00	(A) Terminal (w/base), 2p
♣	1-535-118-00	(A) Terminal (w/base), 5p
♣	1-535-123-00	(B) Terminal (w/base), 10p
♣	1-560-003-00	(B) Connector
♣	1-560-280-00	(B) Pin, 3p connector
♣	1-560-282-00	(A) Pin, 7p connector
♣	1-560-286-00	(B) Pin, 2p connector

Items marked "♣" are not stocked because they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Note: The components identified by shading and mark ▲ are critical for safety. Replace only with part number specified.

ACCESSORIES AND PACKING MATERIALS

<u>Part No.</u>	<u>Description</u>
3-701-616-00	(A) Bag, plastic (E, UK, SCN, AEP, Canadian model)
3-701-634-00	Bag, plastic (US model)
3-701-806-00	(A) 45, adaptor
3-703-106-00	Label, destination (E model)
3-770-996-11	(D) Manual, instruction (E, AEP, UK, SCN model)
3-770-996-21	Manual, instruction (US, Canadian model)
3-794-265-11	Leaflet (XL-15) (E model)
3-794-504-11	(A) Leaflet (SCN, AEP model)
3-794-580-31	Leaflet, French (Canadian model)
4-858-292-00	(C) Bag, protection
4-862-039-00	(A) Holder, dust cover
4-862-043-00	(A) Cushion, tonearm
4-866-048-00	(E) Carton, individual
4-866-052-00	(B) Holder, turntable
4-866-053-00	(B) Cushion (upper)
4-866-056-00	(B) Cushion (lower-right)
4-866-057-00	(B) Cushion (lower-left)
4-866-072-01	Sheet, turntable (US model)
4-866-072-11	(I) Sheet, turntable (UK, SCN, Canadian, AEP, E model)
4-866-082-00	(A) Stopper (A)
4-866-083-00	(A) Stopper (B)

Note: Les composants identifiés par une trame et une marque ▲ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Sony Corporation

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