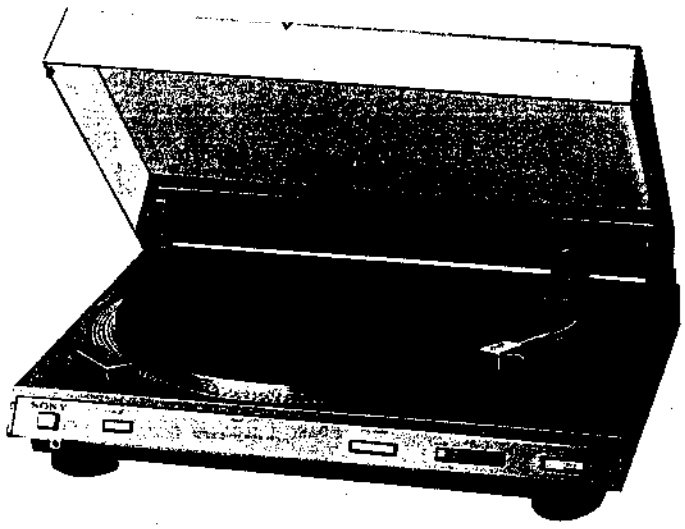
PS-333

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



STEREO TURNTABLE SYSTEM

SPECIFICATIONS

GENERAL

Power Requirements:	120 V ac, 60 Hz (US, Canadian model) 220 V ac, 50/60 Hz (or 240 V ac adjustable by authorized Sony personnel) (AEP, SCN model) 240 V ac, 50/60 Hz (or 220 V ac adjustable by authorized Sony personnel) (UK model) 110, 120, 220, 240 V ac adjustable, 50/60 Hz (E model)
Power Consumption:	6W
Dimensions:	Approx. 430 (w) x 125 (h) x 365 (d) mm 17 (w) x 4 7/8 (h) x 14 3/8 (d) inches including projecting parts and controls
Weight:	Approx. 5.5 kg, 12 lb 2 oz (net) Approx. 6.7 kg, 14 lb 12 oz (in shipping carton)

TURNTABLE

Platter:	32.4 cm (12¾ inches), aluminum-alloy diecas
Motor:	Linear BSL (brushless and slotless) motor
Drive System:	Direct drive
Speed:	33 1/3 rpm, 45 rpm
Starting Characteristics:	Comes to nominal speed within a half revolution (33 1/3 rpm)
Wow and Flutter:	±0.045% (DIN) (AEP, UK, E, SCN model) 0.03% (WRMS)
Signal-to-Noise Ratio:	70 dB (DIN-B)
Automatic System:	Lead-in, return, reject

– Continued on page 2 –

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UN TRAMÉ ET UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES, 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 DES 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

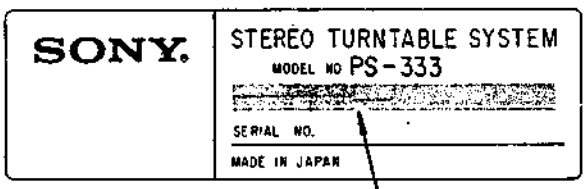
Type:	Statically balanced, universal
Pivot-to-Stylus Length:	216.5 mm (8 1/2 inches)
Overall Arm Length:	290 mm (11 1/2 inches)
Overhang:	16.5 mm (21/32 inches)
Tracking Error:	+3°, -1°
Tracking Force Adjustment Range:	0–3 g
Total of Cartridge and Headshell Weight Range:	11.5–19 g

CARTRIDGE VL-37G

Type:	Moving magnet
Frequency Range:	10–20,000 Hz
Channel Separation:	More than 23 dB (1 kHz)
Output Voltage:	3 mV (1 kHz, 3.54 cm/s, 45°)
Suitable Load Impedance:	50 kΩ
Tracking Force: (recommended value)	1.5–2.5 g (2 g)
Replacement Stylus:	Sony ND-137G (conical 0.6 mil diamond)
Weight:	13 g including the headshell

MODEL IDENTIFICATION

— Specification Label —



US, Canadian model	AC 120 V	60 Hz	6W
AEP, SCN model	AC 220 V	50 Hz	6W
E model	AC 110, 120, 220, 240 V	50 Hz	6W
UK model	AC 240 V	50 Hz	6W

MELF (Metal Electodes Face-Bonding) Components (AEP, E Model)

Warning

If MELF components are forcibly removed from the printed circuit board with pincers or pliers, the circuit board pattern is likely to peel away. Always remove MELF components according to the procedure described on the next page. Replace MELF components with the lead type components.

MELF components are soldered directly to the surface of the printed circuit board.

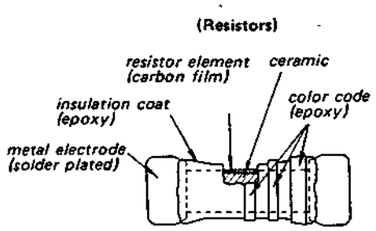
MELF resistors and capacitors have the same dimensions and are distinguished by their background colors: light brown for resistors, and pink or light green for capacitors.

The MELF resistor color coding is the same as for conventional resistors, and MELF capacitor color coding is the same as for tube-type ceramic capacitors. Note, however, that all MELF resistors are rated at ¼W and ±5%.

Components larger than resistors and without a color code are cross conductors, which are used instead of jumper wires.

1. Structure

(Resistors)



(Capacitors)

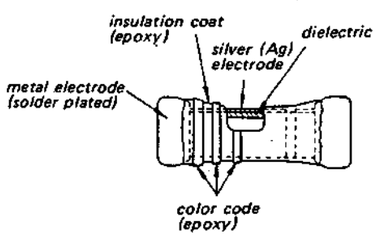
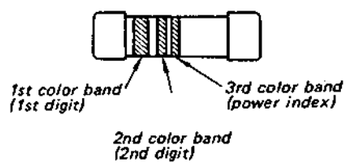
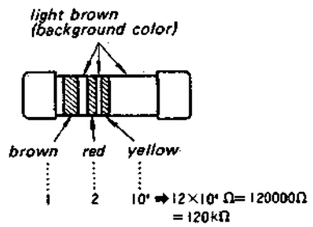


Fig. 1

2. Color Code Reading



(Example of Resistor)



(Example of Capacitor)

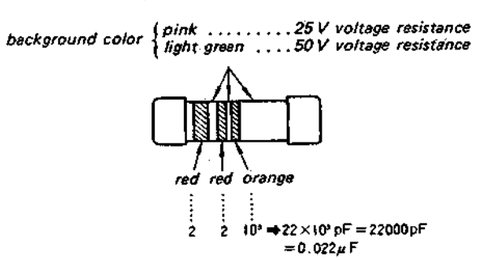


Fig. 2

3. How to Remove MELF Components and Mount Replacements

Use a soldering iron of at least 40W with an iron tip 4 mm in diameter and file the tip down to the angle shown in the diagram.

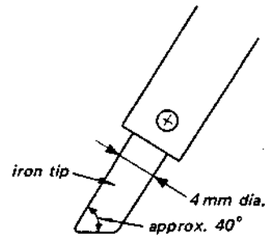


Fig. 3

1. Bring the flat surface of the soldering iron in equal contact with both soldered ends of the component.
2. The solder should melt in about 4 seconds. (The solder will melt more readily if a small amount of solder is attached to the iron tip and the iron tip is placed against the component.)
3. Once the solder has melted, tap the component aside with the tip of the soldering iron, and remove it from the board.

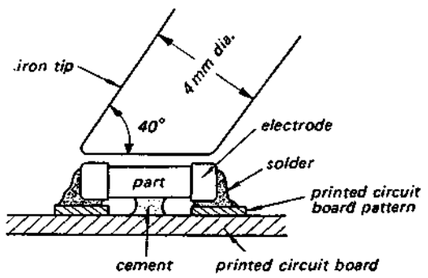


Fig. 4

4. Use lead type resistors or capacitors to replace the MELF components.
These replacements may be mounted either with short leads (see Fig. 5), or by covering a lead with tubing (see Fig. 6).

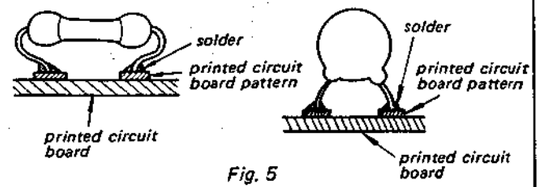


Fig. 5

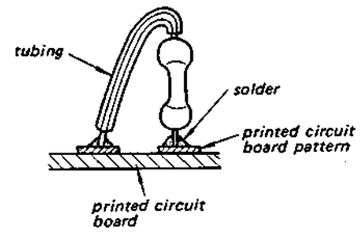
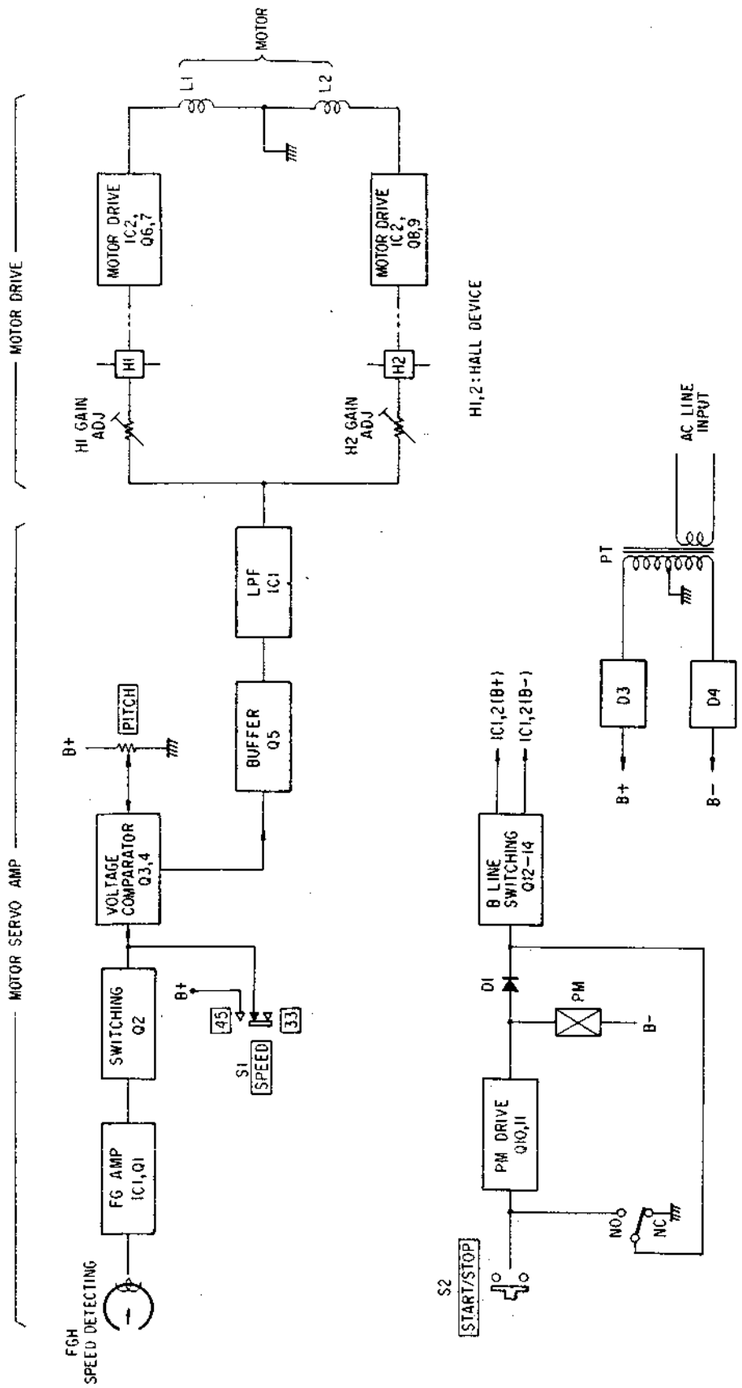


Fig. 6

SECTION 1
OUTLINE

1-1. BLOCK DIAGRAM



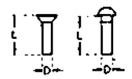
1/4 WATT CARBON RESISTORS Ⓐ

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	1-246-588-00	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		brazier-head screw	

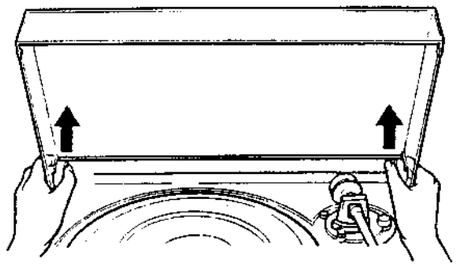
Reference Designation	Shape	Description	Remarks
SELF-TAPPING SCREWS			
TA		self-tapping screw	ex: TA, P3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self tapping (TA, B) screw and flat washer 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 26x 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	

SECTION 2
DISASSEMBLY

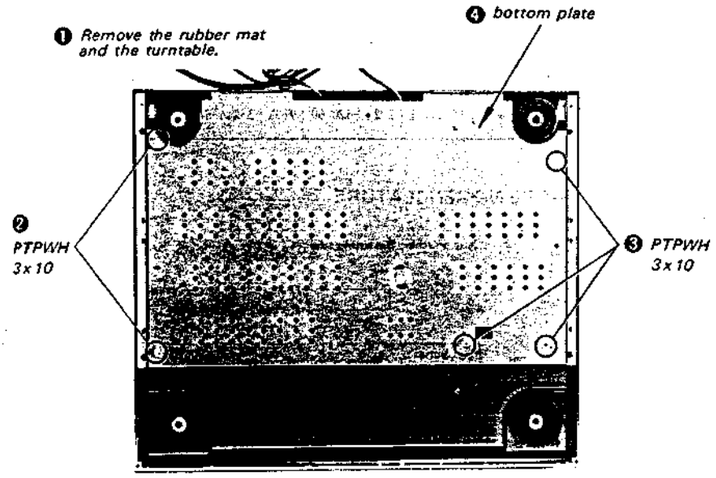
Note: Follow the disassembly procedure in the numerical order given.

DUST COVER

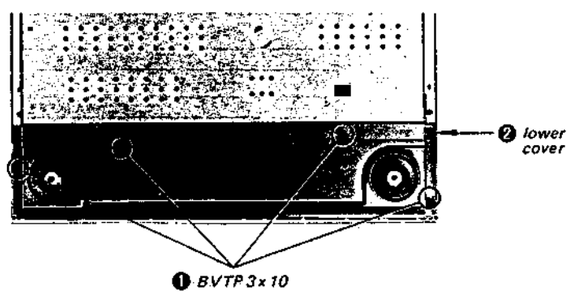
To remove the dust cover, open the dust cover fully and slide it as illustrated while holding it with both hands.



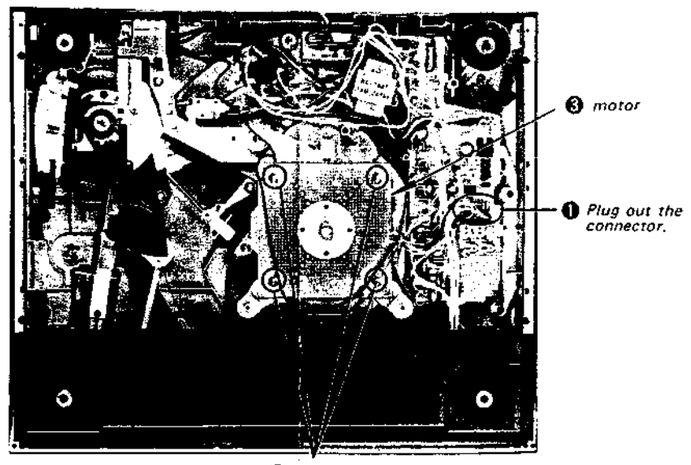
BOTTOM PLATE



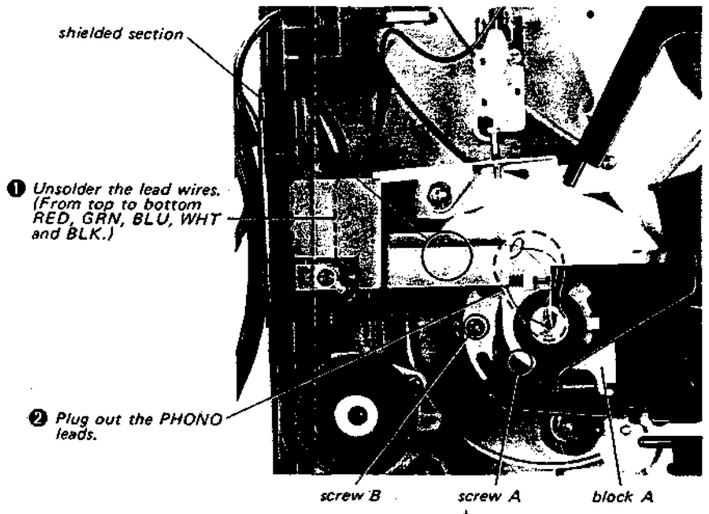
LOWER COVER



MOTOR

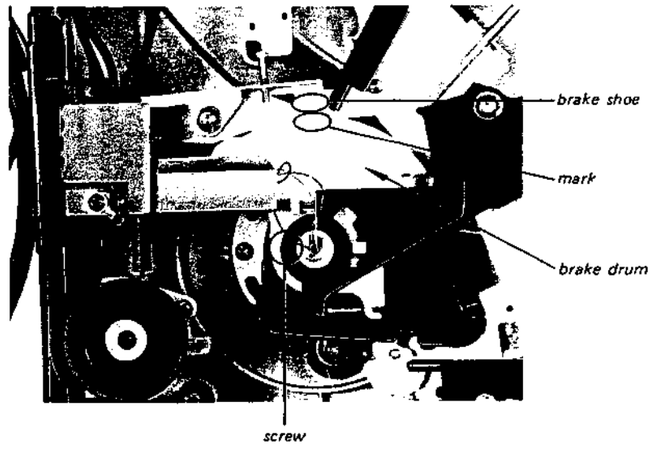


TONEARM BLOCK



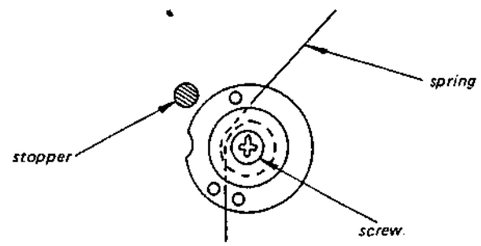
BRAKE DRUM INSTALLATION

1. Secure the tonearm to the arm rest.
2. Loosen the screw and adjust the brake drum mark to the brake shoe as shown.
3. Tighten the screw.



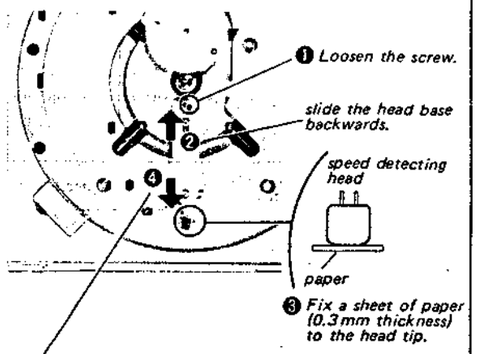
ANTI-SKATING COMPENSATOR KNOB INSTALLATION

1. Set the anti-skating compensator knob to mark "0".
2. Install the spring as illustrated.
3. Tighten the screw.



3-2. ELECTRICAL ADJUSTMENT

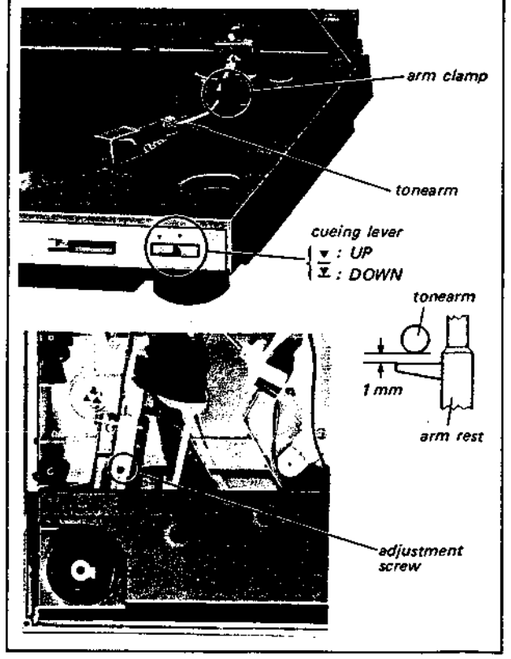
Speed Detecting Head Position Adjustment



Install the turntable and slide the head base forwards so that the head tip touches the turntable rim. Remove the turntable and tighten the screw. Finally, peel off the paper from head tip.

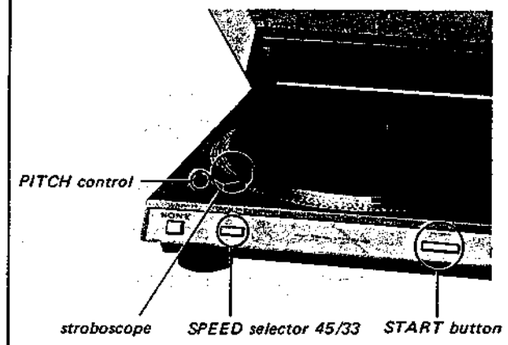
Tonearm Height Adjustment

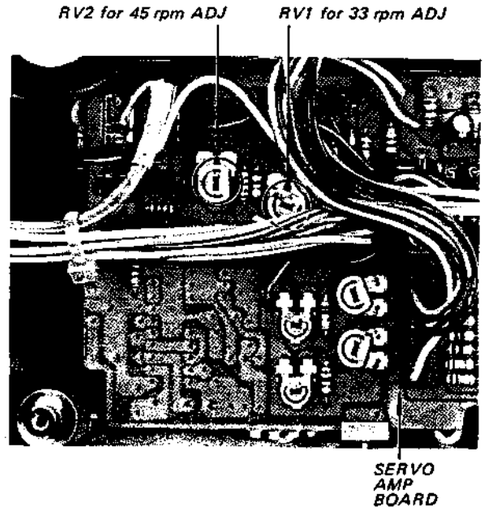
1. Release the tonearm from the clamp and place the tonearm on the arm rest.
2. Set the cueing lever to the up-position.
3. Adjust the screw so that the clearance between the tonearm and the arm rest is 1 mm.



Speed Adjustment

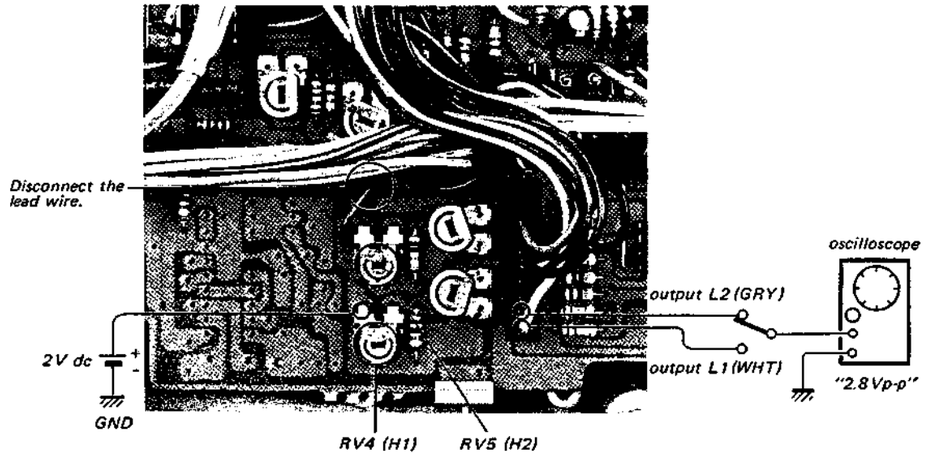
1. Set the PITCH control at center position and push the START button.
2. Set the SPEED selector to the 33 rpm position and adjust RV1 so that the stroboscope pattern seems to be stopped.
3. Set the SPEED selector to the 33 rpm position and adjust RV2 so that the stroboscope pattern seems to be stopped.





Hall Device Gain Adjustment

1. Disconnect the lead wire and connect the regulated power supply as shown below.
2. Connect an oscilloscope to L1 and adjust RV4 to obtain 2.8 V peak to peak.
3. Likewise, adjust RV5 for L2.

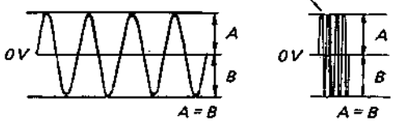


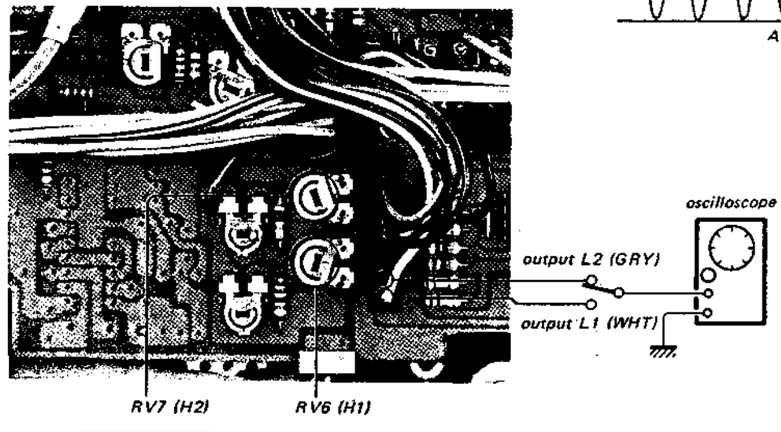
Motor Amp Offset Adjustment

1. Connect an oscilloscope to L1 and adjust RV6 to observe the waveform on an oscilloscope as shown below.
2. Connect an oscilloscope to L2 and adjust RV7 to observe the waveform on an oscilloscope as shown below.

Waveform on Oscilloscope:

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



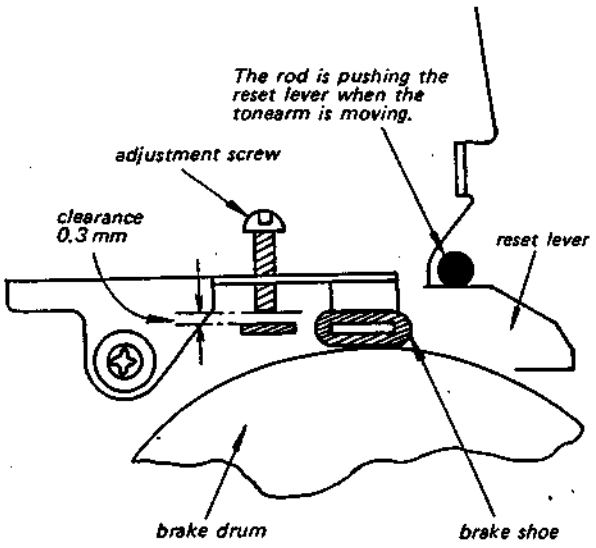


SECTION 3
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

Brake Adjustment

1. Turn the drive gear counterclockwise, and the tonearm moves inwards and the brake shoe touches the brake drum.
2. Adjust the screw so that the clearance is 0.3 mm as shown.

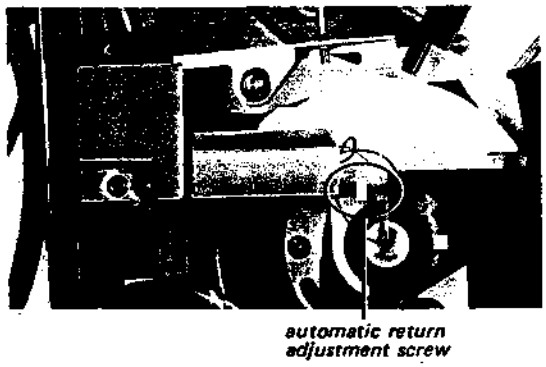


Auto Return Position Adjustment

1. Turn the turntable by hand, and the tonearm moves inwards.
2. Adjust the screw so that the tonearm returns at the position where the distance between the stylus and the spindle is 61–64 mm.

Return position	Adjustment screw
early	clockwise
later	counterclockwise

Play the test record (YFSC-16) and confirm that the tonearm returns at count of 4–11.



Tonearm Drop-point Adjustment

1. Remove the rubber cap of the tonearm drop-point adjustment hole.
2. Set the record size selector lever to the 30 (12") position and make sure that the stylus gets down on the specified point of the test record.

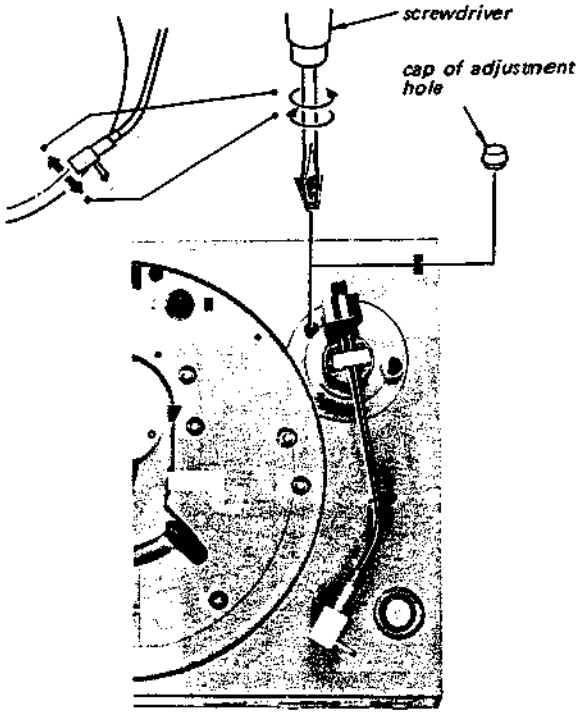
   test record: YFSC-16

Record size selector lever position	Count of drop-point
30 (12")	4 to 16
25 (10")	6 to 24
17 (7")	7 to 25

3. If necessary, insert the screwdriver into the hole and adjust the drop-point by turning the adjustment screw.

   To change the drop-point inward:
   Turn the adjustment screw slightly counterclockwise.
   To change the drop-point outward:
   Turn the adjustment screw slightly clockwise.
4. Once it is properly adjusted with a 30 cm (12") record, the drop-point will be correct for 17 cm (7") and 25 cm (10") records as well.

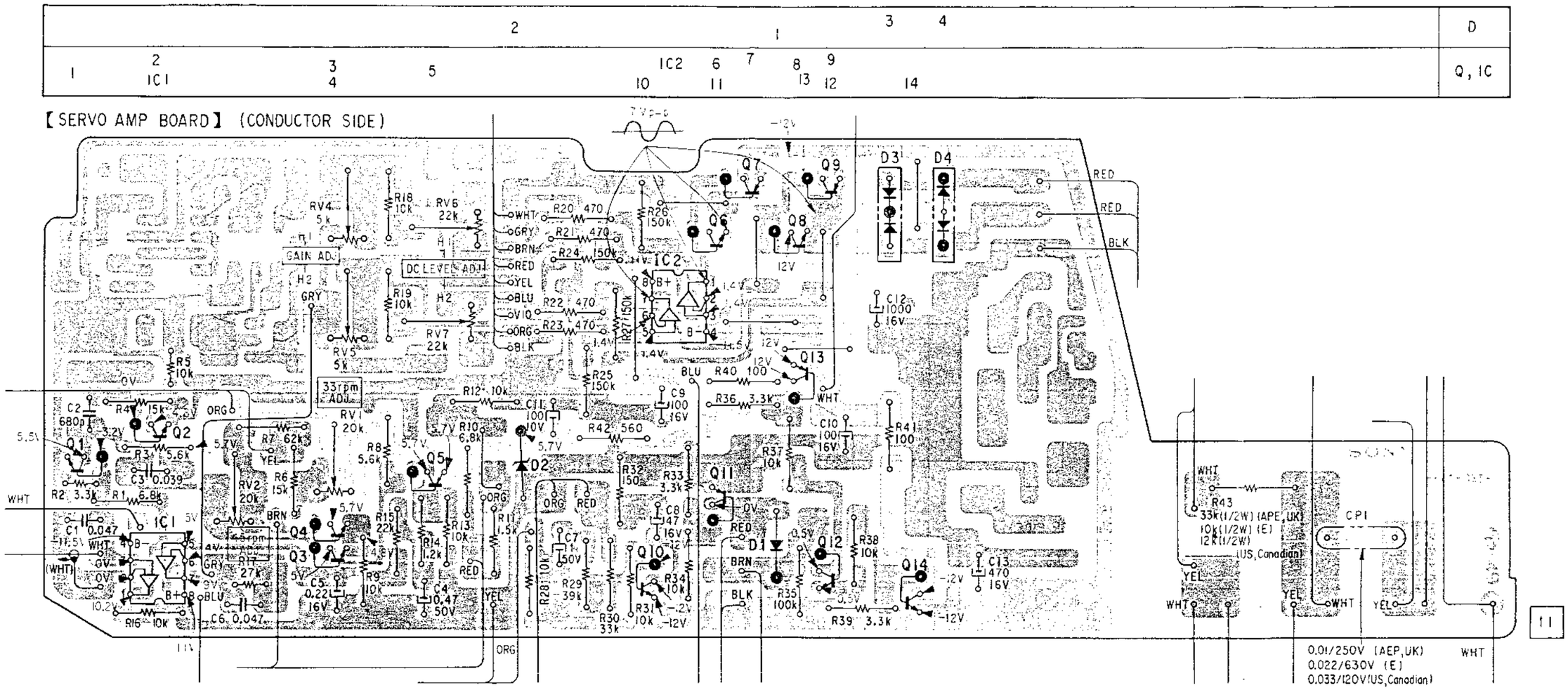
Note: The tonearm drop-point is changed about 12 mm (½") by one turn of the adjustment screw.



4-1. MOUNTING DIAGRAM

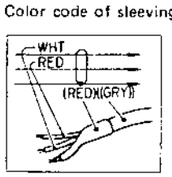
US, Canadian, UK, SCN Model

– Conductor Side –



Note:

- : B+ pattern
- Color code of sleeving over the end of the jacket.



4-2. MOUNTING DIAGRAM

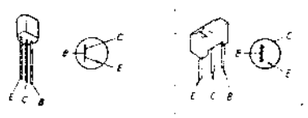
US, Canadian, UK, SCN Model

— Component Side —

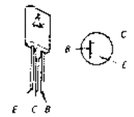
Replacement Semiconductors

For replacement, use semiconductors except in ( ).

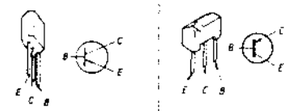
Q1–4, Q10, 12, 14: 2SC1364 (2SD637)



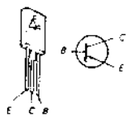
Q6, 8: 2SD809 (2SD973)



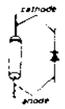
Q5, 13: 2SA1027R
Q11: 2SA1027R (2SB642)



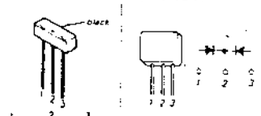
Q7, 9: 2SB731 (2SB793)



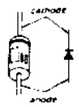
D1: 1S1555



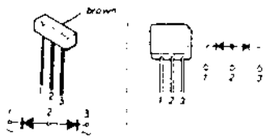
D3: S3VC40 (MI-151)



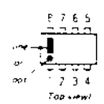
D2: EQ801-06



D4: S3VC40R (MI-151R)



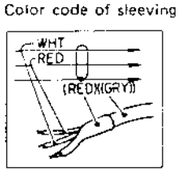
IC1, 2: μPC4558C



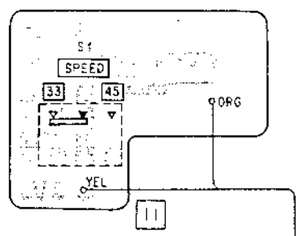
H1, 2: F-1409

Note:

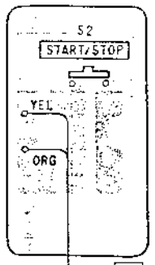
- : B+ pattern
- : B– pattern
- Color code of sleeving over the end of the jacket.



【SW (B) BOARD】
(CONDUCTOR SIDE)

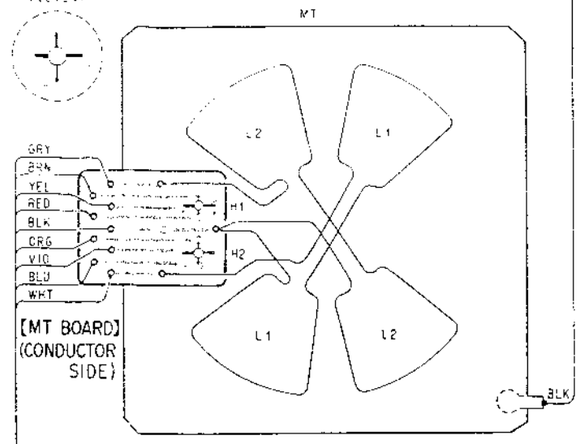


【SW(C) BOARD】
(CONDUCTOR SIDE)

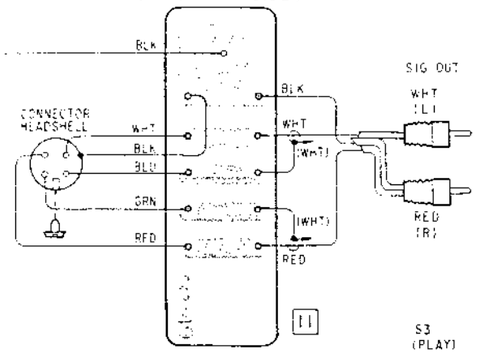


HALL ELEMENT

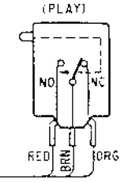
【MT BOARD】
(CONDUCTOR SIDE)



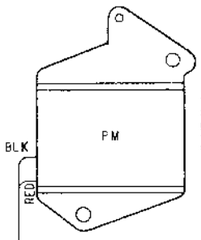
【PHONO BOARD】
(CONDUCTOR SIDE)



S3 (PLAY)

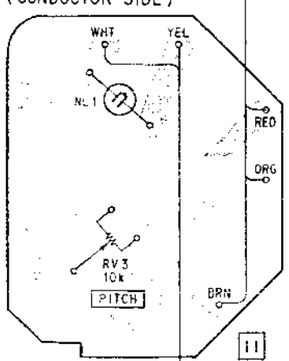


PM

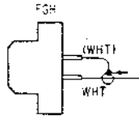


【SERVO AMP BOARD】
(COMPONENT SIDE)

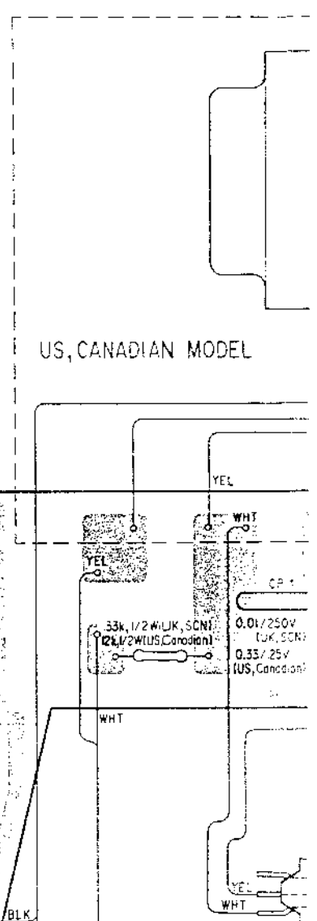
【VR BOARD】
(CONDUCTOR SIDE)



FGH

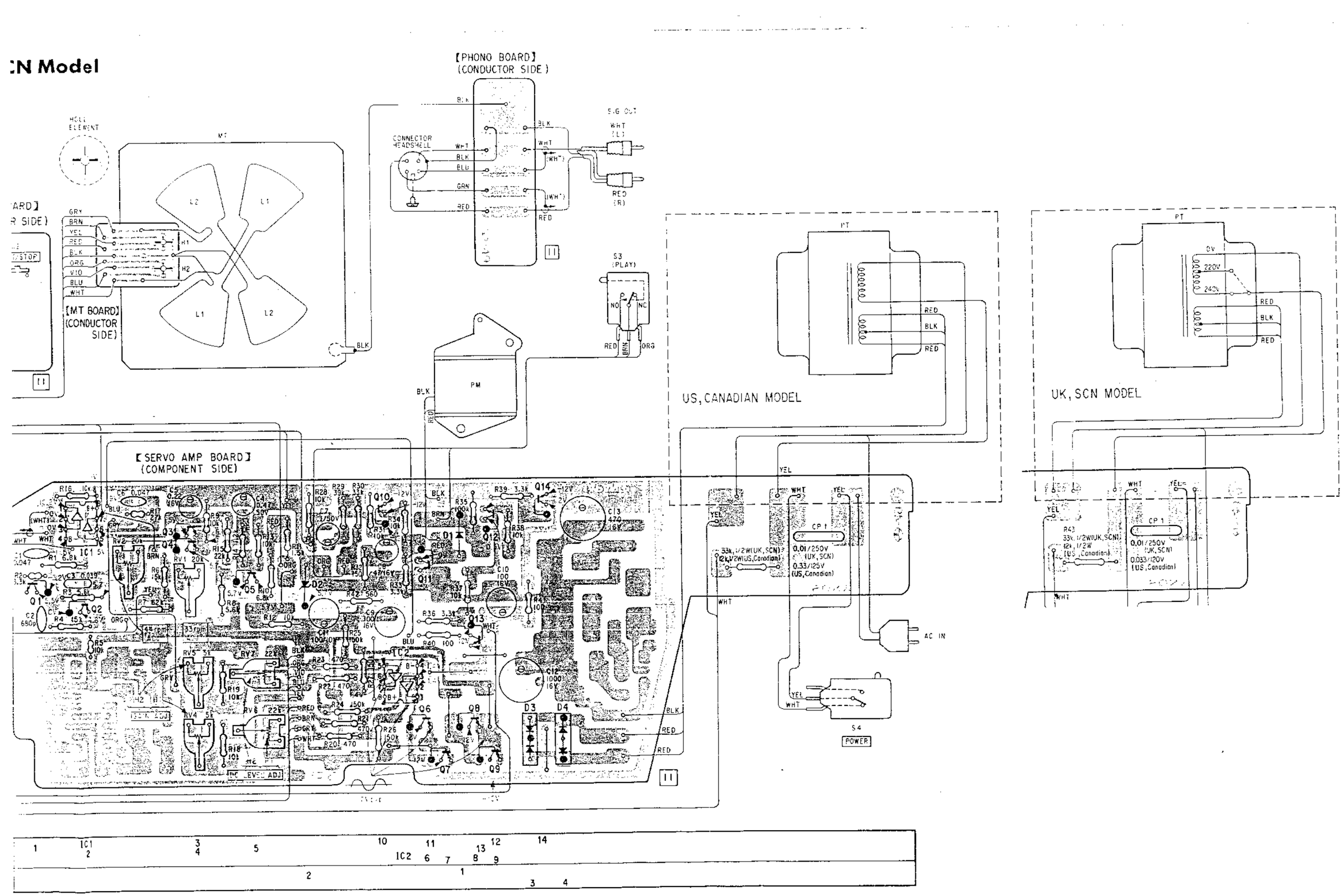


US, CANADIAN MODEL



Q IC	1	IC1 2	3 4	5	10	11	12 13	14
					IC2 6	7	8 9	
D				2		1		
							3	4

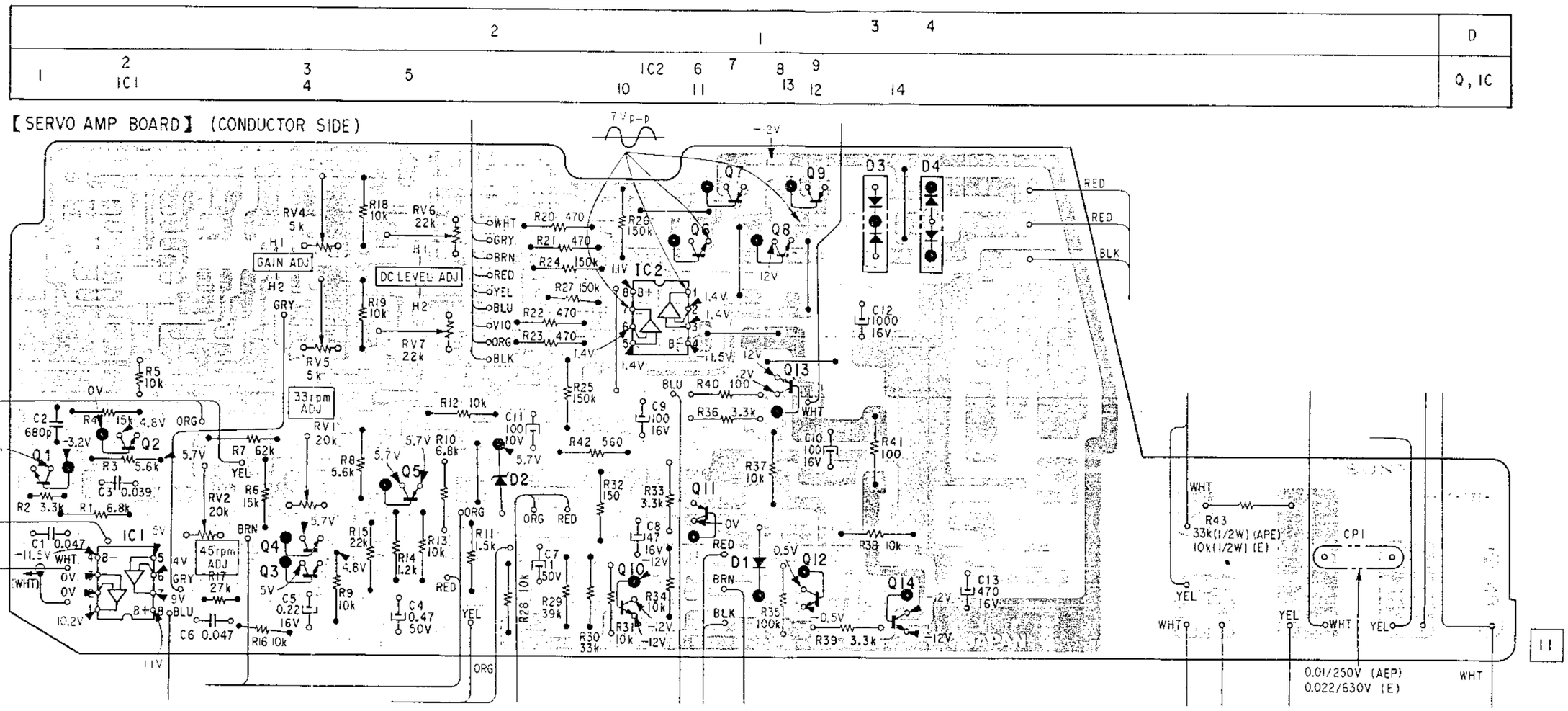
:N Model


【PHONO BOARD】
(CONDUCTOR SIDE)
HALL ELEMENT
MT
CONNECTOR HEADSHELL
S.G OUT
WHT (L)
RED (R)
GRY
BRN
YEL
RED
BLK
ORG
VIO
BLU
WHT
H1
H2
L1
L2
【MT BOARD】
(CONDUCTOR SIDE)
S3 (PLAY)
NO
NC
PM
【SERVO AMP BOARD】
(COMPONENT SIDE)
US, CANADIAN MODEL
PT
0.01/250V (UK, SCN)
0.33/125V (US, Canadian)
AC IN
S4
POWER
UK, SCN MODEL
0V
220V
240V
R43
33k, 1/2W(UK, SCN)
12k, 1/2W (US, Canadian)
0.01/250V (UK, SCN)
0.033/120V (US, Canadian)

4-3. MOUNTING DIAGRAM

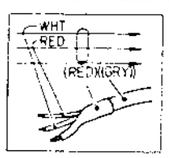
E, AEP Model

– Conductor Side –



Note

- : B+ pattern
- : MELF components.
- Color code of sleeving over the end of the jacket.



E, AEP Model

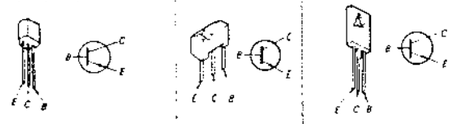
4-4. MOUNTING DIAGRAM

– Component Side –

Replacement Semiconductors

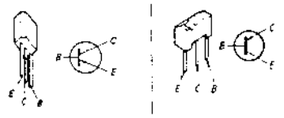
For replacement, use semiconductors except in ( ).

Q1–4, Q10, 12, 14: 2SC1364 (2SD637)

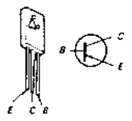


Q6, 8: 2SD809 (2SD973)

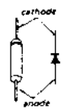
Q5, 13: 2SA1027R
Q11: 2SA1027R (2SB642)



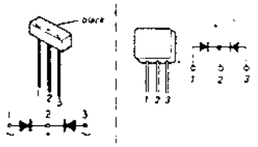
Q7, 9: 2SB731 (2SB793)



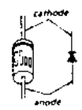
D1: 1S1555



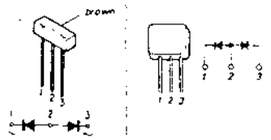
D3: S3VC40 (MI-151)



D2: EQB01-06



D4: S3VC40R (MI-151R)

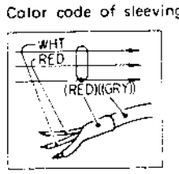


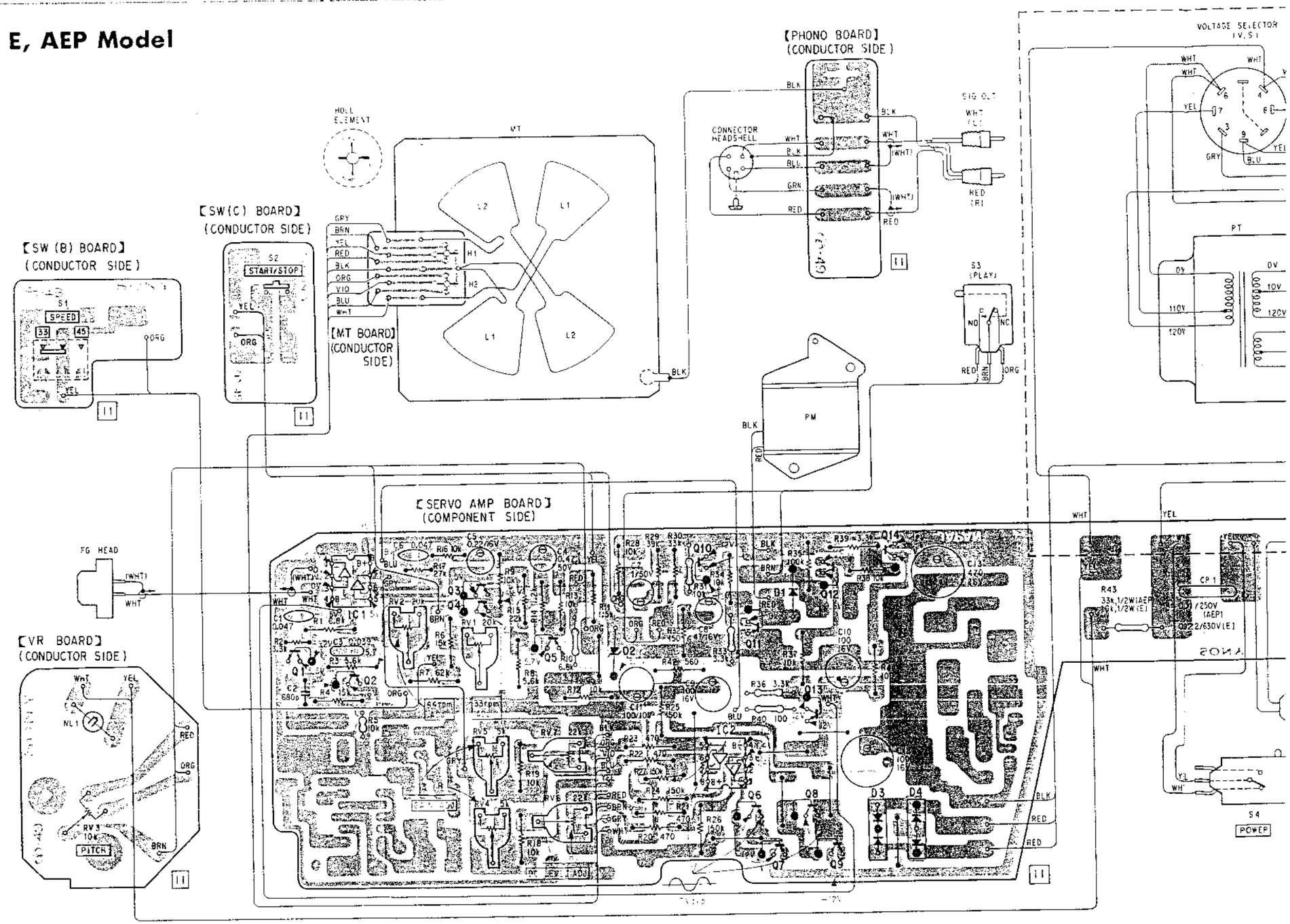
IC1, 2: μPC4558C

H1, 2: F-1409

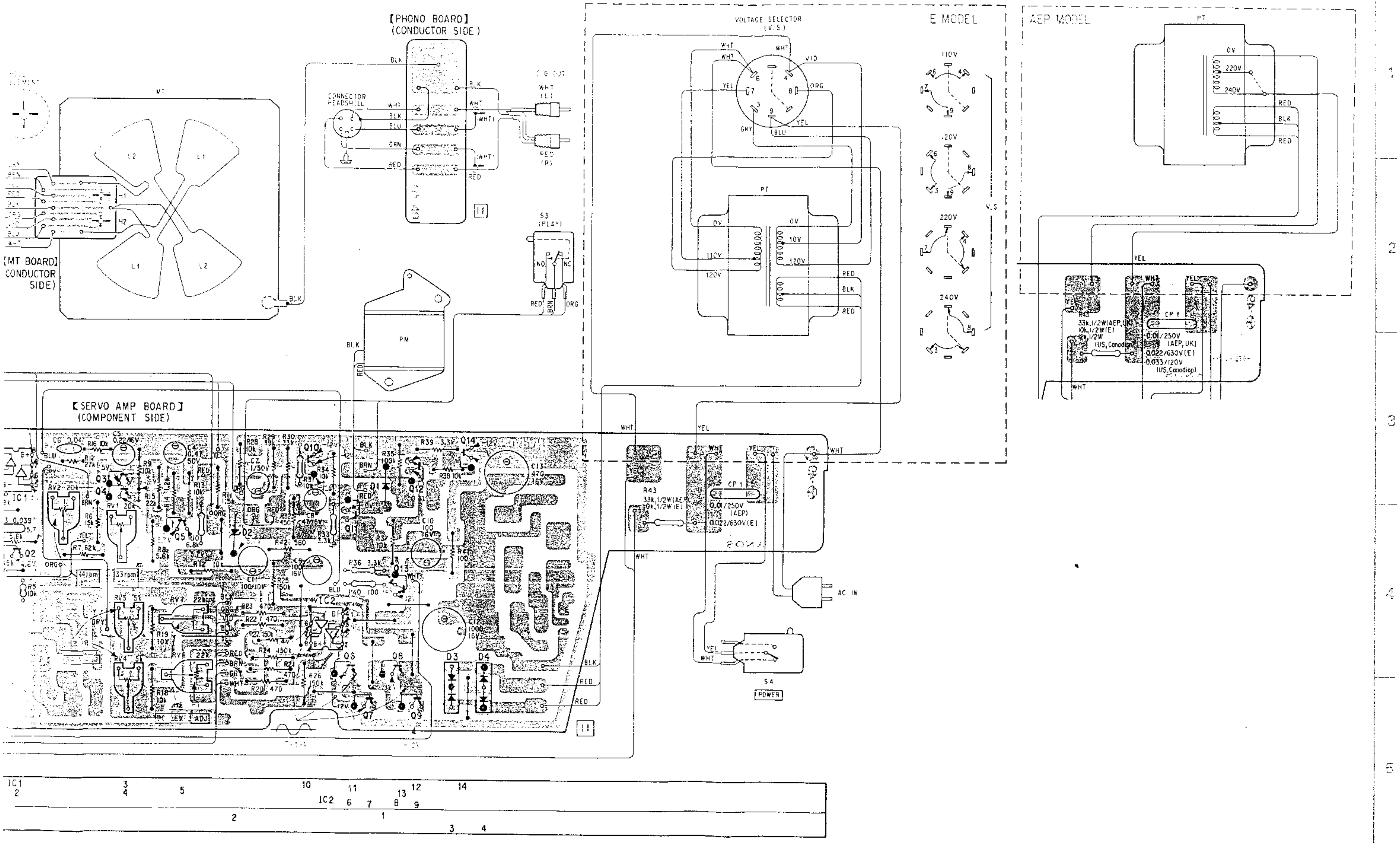
Note

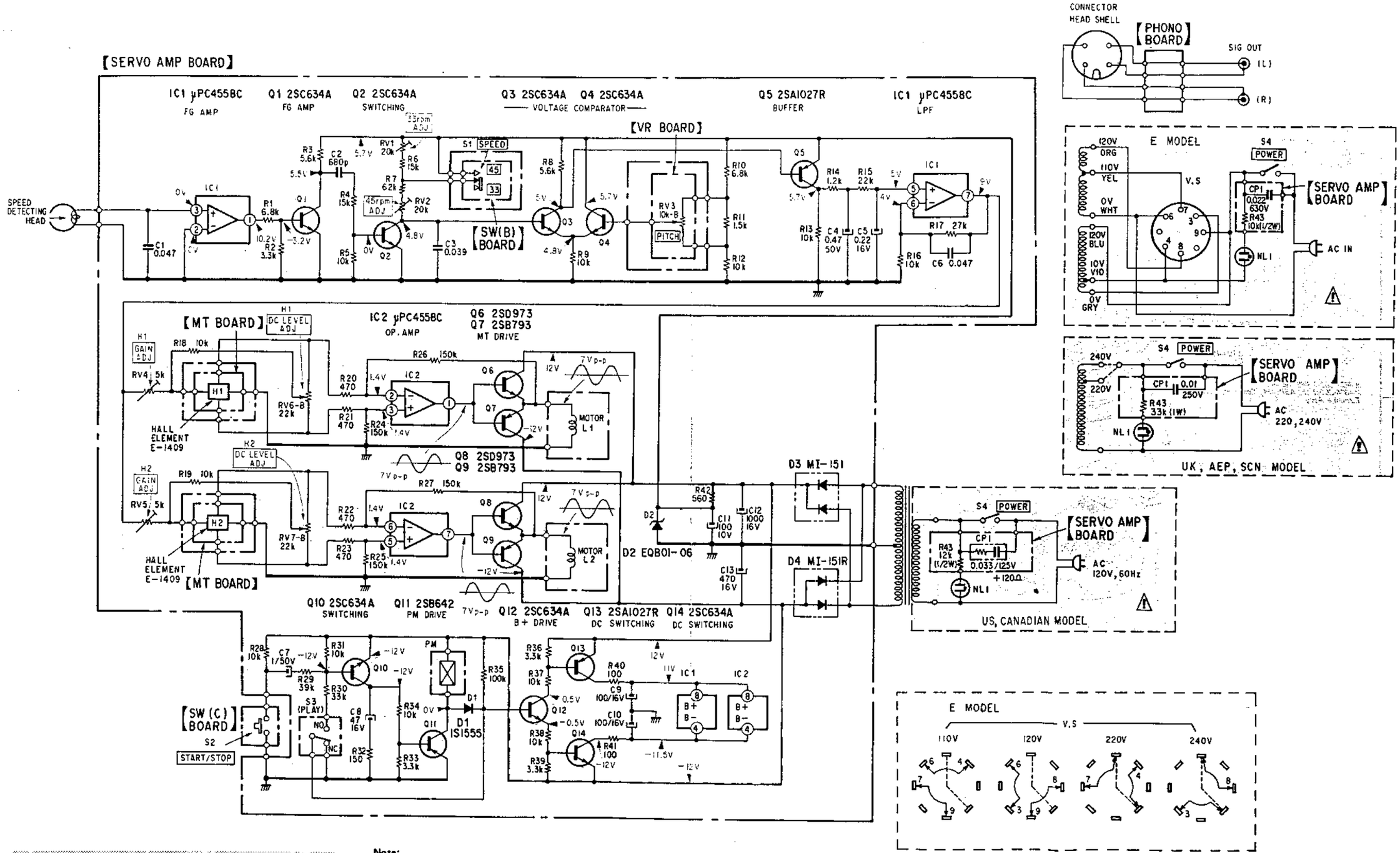
- : B+ pattern
- : B– pattern
- : MELF components
- Color code of sleeving over the end of the jacket.





Q IC	1	IC1 2		3 4	5			10	11	IC2 6	7	8	13 9	12	14
D						2			1					3	4


[PHONO BOARD]
(CONDUCTOR SIDE)
CONNECTOR HEADSHELL
[MT BOARD]
CONDUCTOR SIDE)
S3
(PLAY)
PM
[SERVO AMP BOARD]
(COMPONENT SIDE)
VOLTAGE SELECTOR
(V.S)
E MODEL
AEP MODEL
PT
110V
120V
220V
240V
V.S
R43
33k,1/2W(AEP)
10k,1/2W(E)
CP 1
0.01/250V
(AEP)
0.022/630V(E)
33k,1/2W(AEP,UK)
10k,1/2W(E)
12k,1/2W
(US, Canadian)
0.01/250V
(AEP, UK)
0.022/630V(E)
0.033/120V
(US, Canadian)
AC IN
S4
POWER
IC1
IC2



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

Note:

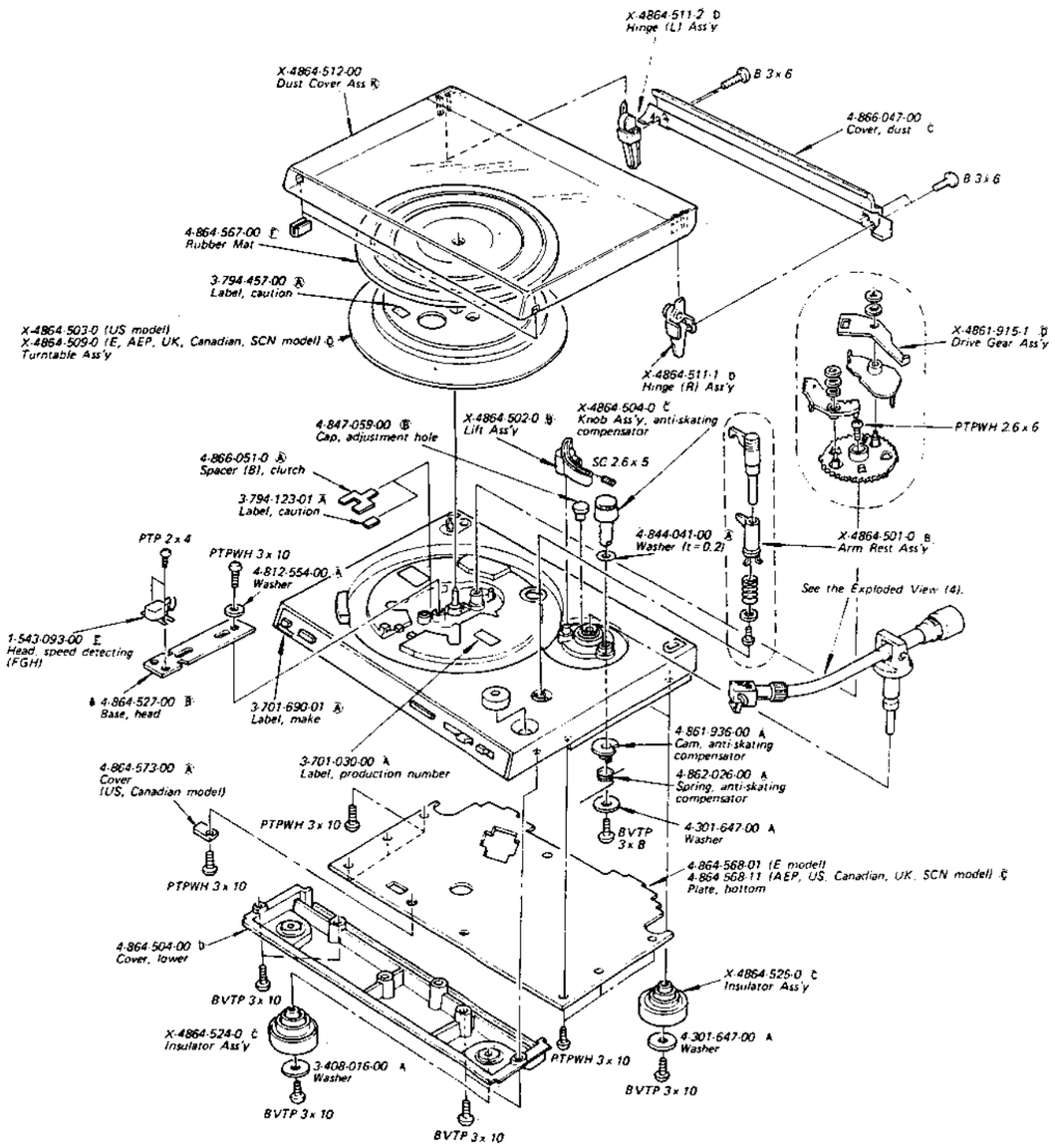
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ: 1000Ω; MΩ: 1000kΩ
- Voltage variations may be noted due to normal production tolerances.
- Readings are taken under no-signal 33 rpm X'TAL LOCK conditions with a VOM (20kΩ/V).
- Transistor base-emitter voltages are measured on the 2.5V range.
- ——: B+ bus.
- – – –: B– bus.
- ▭: panel designation.
- ▭: adjustment for repair.

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

SECTION 5
EXPLODED VIEWS

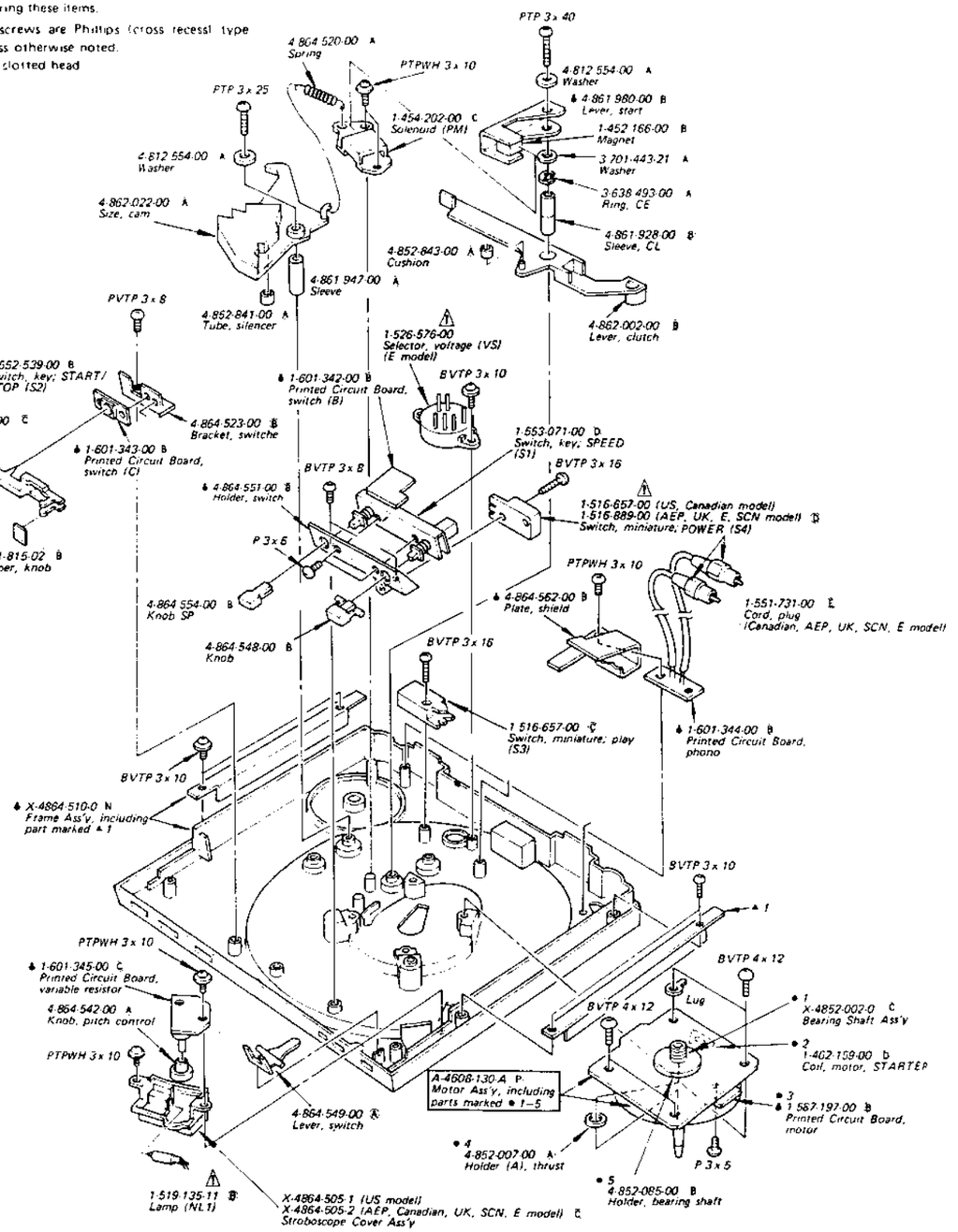
(1)

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 (Ⓐ to Ⓩ) are applicable to European models only.



(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 (Ⓐ to Ⓩ) are applicable to European models only.

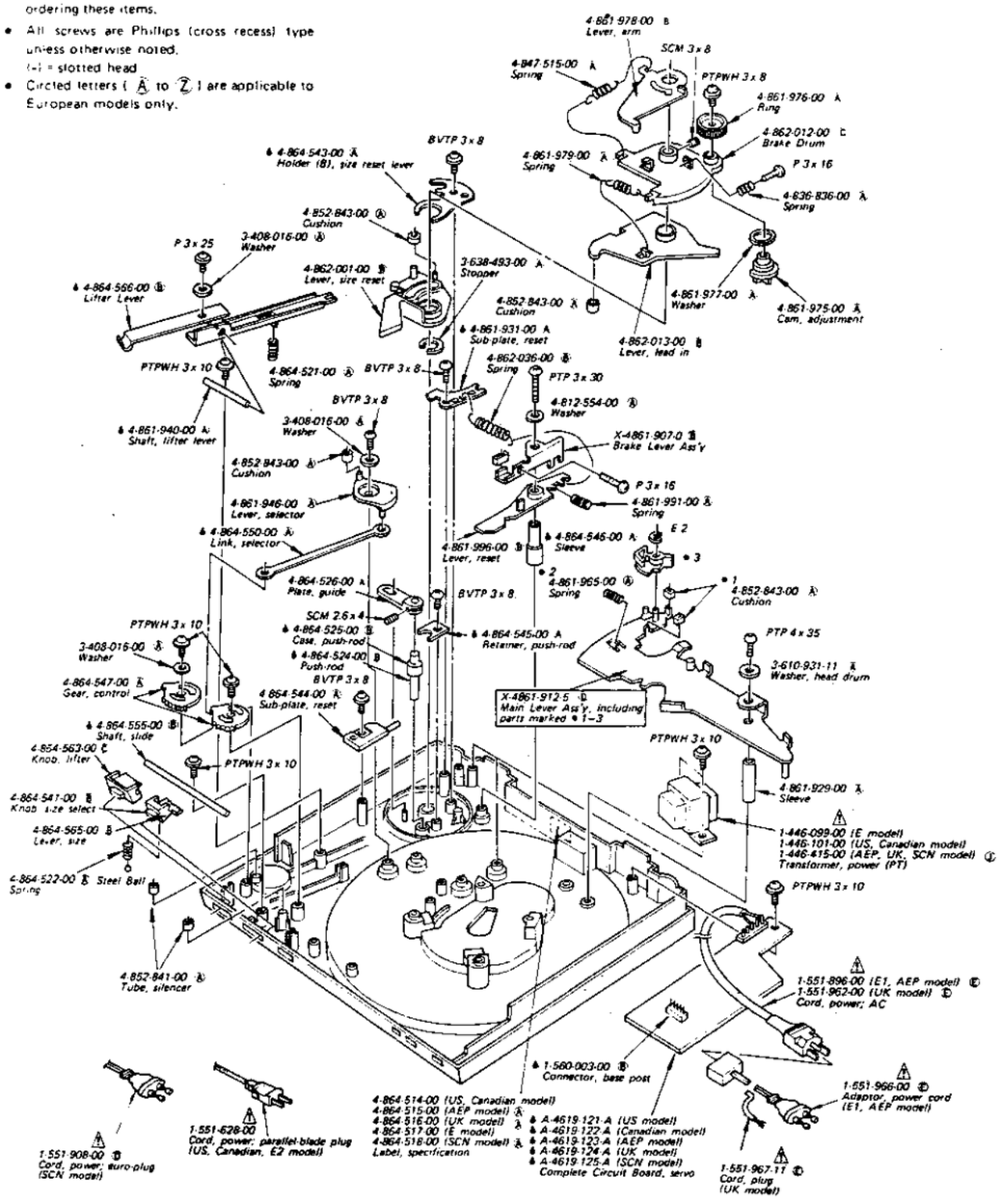


Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

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

(3)

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 (Ⓐ to Ⓩ) are applicable to European models only.

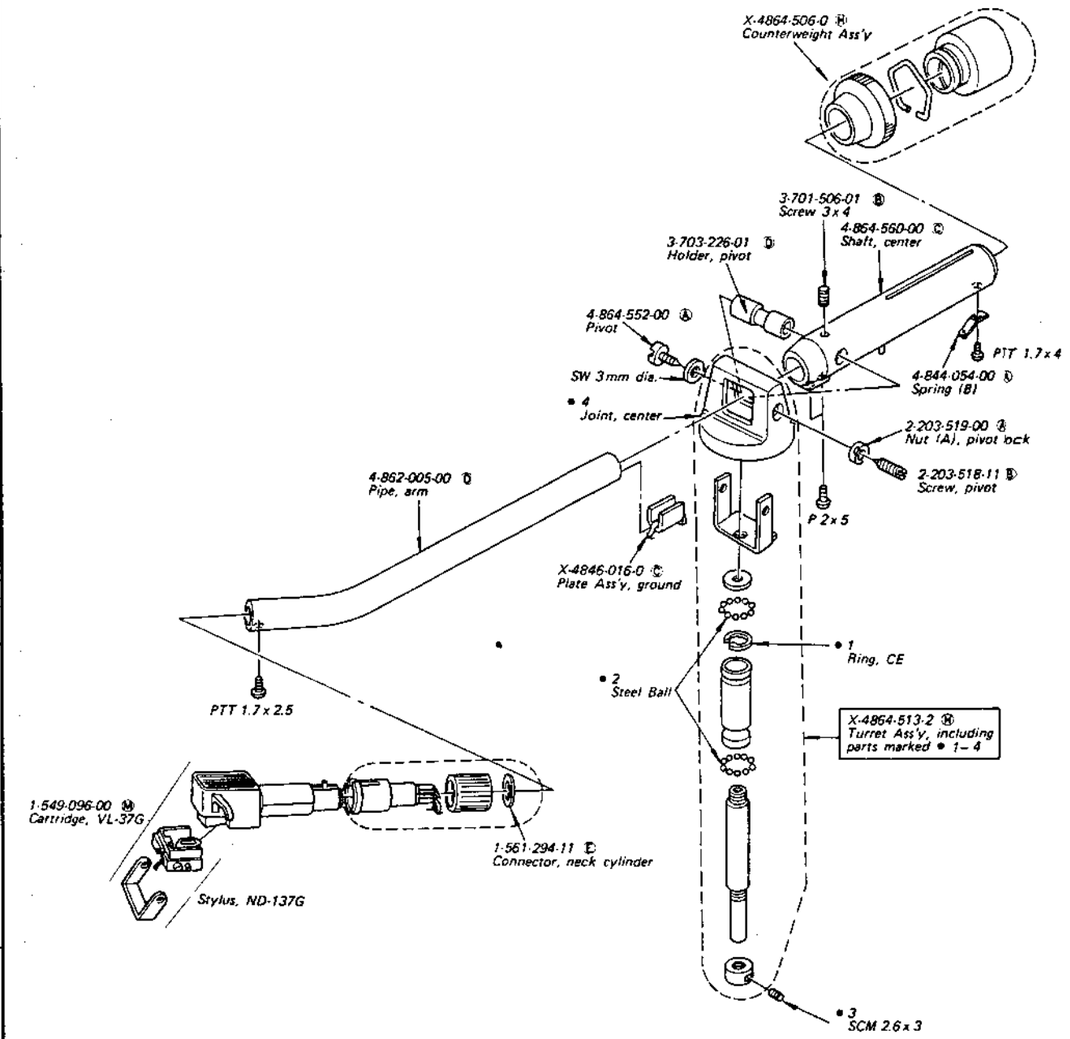


Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

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

(4)

Note:
- All screws are Phillips (cross recess) type unless otherwise noted.
  (-) = slotted head
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.



SECTION 6

ELECTRICAL PARTS LIST

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

Ref. No.	Part No.		Description
			COMPLETE CIRCUIT BOARDS
♦	A-4619-121-0		Servo Amp (US model)
♦	A-4619-122-0		Servo Amp (Canadian model)
♦	A-4619-123-0		Servo Amp (AEP model)
♦	A-4619-124-0		Servo Amp (UK model)
♦	A-4619-125-0		Servo Amp (SCN model)
♦	A-4619-126-0		Servo Amp (E model)
			PRINTED CIRCUIT BOARD
♦	1-587-197-00		Motor
♦	1-601-342-00		Switch (B)
♦	1-601-344-00		Phono
♦	1-601-345-00		Variable Resistor
			SEMICONDUCTORS
			Transistors
⇒Q1–4	8-729-663-47	Ⓑ	2SC1364
Q5	8-729-612-77	Ⓑ	2SA1027R
⇒Q6	8-729-180-93	Ⓑ	2SD809
⇒Q7	7-729-173-13	Ⓑ	2SB731
⇒Q8	8-729-180-93	Ⓑ	2SD809
⇒Q9	8-729-173-13	Ⓑ	2SB731
⇒Q10	8-726-388-00	Ⓑ	2SC1364
⇒Q11	8-729-612-77	Ⓑ	2SA1027R
⇒Q12	8-726-388-00	Ⓑ	2SC1364
Q13	8-729-612-77	Ⓑ	2SA1027R
⇒Q14	8-726-388-00	Ⓑ	2SC1364
			ICs
IC1,2	8-759-145-58	Ⓓ	μPC4558C
			Diodes
D1	8-719-815-55	Ⓑ	1S1555
D2	8-719-931-06	Ⓑ	EQB01-06
⇒D3	8-719-500-34	Ⓒ	S3VC40
⇒D4	8-719-501-34	Ⓒ	S3VC40R

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.

Ref. No.	Part No.		Description
			Hall Devices
H1,2	8-719-814-09	Ⓓ	F-1409
			TRANSFORMERS
PT	⚠ 1-446-099-00		Power (E model)
PT	⚠ 1-446-101-00		Power (US, Canadian model)
PT	⚠ 1-446-415-00	Ⓙ	Power (AEP, UK, SCN model)
			CAPACITORS

All capacitors are in μF and ceramic unless otherwise noted.
50WV or less are not indicated except for electrolytics. p: μμF, elect: electrolytic

C1	1-101-006-00	Ⓑ	0.047		
C2	1-102-116-00	Ⓐ	680p		
C3	1-108-360-00	Ⓑ	0.039		mylar
C4	1-123-351-00	Ⓑ	0.47	50V	elect
C5	1-131-453-00	Ⓑ	0.22	16V	tantalum
C6	1-101-006-00	Ⓐ	0.047		
C7	1-123-352-00	Ⓑ	1	50V	elect
C8	1-123-319-00	Ⓑ	47	16V	elect
C9,10	1-123-320-00	Ⓑ	100	16V	elect
C11	1-123-307-00	Ⓑ	100	10V	elect
C12	1-123-324-00	Ⓑ	1000	16V	elect
C13	1-123-323-00	Ⓑ	470	16V	elect

RESISTORS

All resistors are in ohms. Common ¼W carbon resistors are omitted.
Refer to the list on page 6 for their part numbers.
Check schematic diagram for values.

R43	⚠ 1-213-161-00	Ⓐ	33k	1W	metal oxide (AEP, UK, SCN model)
R43	⚠ 1-244-897-00		10k	½W	(E model)
R43	⚠ 1-244-899-00		12k	½W	(US, Canadian model)

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

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

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

Ref. No.	Part No.		Description
RV1,2	1-226-237-00	Ⓑ	22k, variable
RV3	1-226-196-00	Ⓑ	10k-B, adjustable
RV4,5	1-226-235-00	Ⓑ	5k, variable
RV6,7	1-226-237-00	Ⓑ	22k-B, adjustable
			SWITCHES
S1	1-553-071-00	Ⓓ	Key, SPEED
S2	1-552-539-00	Ⓑ	Key, START/STOP
S3	1-516-657-00	Ⓒ	Miniature, play
S4	⚠ 1-516-657-00		Miniature, POWER (US, Canadian model)
S4	⚠ 1-516-889-00	Ⓓ	Miniature, POWER (AEP, UK, SCN, E model)
			MISCELLANEOUS
CP1	⚠ 1-129-718-00		Capacitor 0.022 630V film (E model)
CP1	⚠ 1-130-196-00	Ⓓ	Capacitor 0.01 250V film (AEP, UK, SCN model)
CP1	⚠ 1-231-326-11		Encapsulated Component (US model)
CP1	⚠ 1-231-341-00		Encapsulated Component (Canadian model)
FGH	1-543-093-00	Ⓔ	Head, speed detecting
NL1	⚠ 1-519-135-11	Ⓑ	Lamp
PM	1-454-202-00	Ⓒ	Solenoid
VS	⚠ 1-526-576-00		Voltage Selector (E model)
	A-4608-130-A	Ⓟ	Motor Ass'y, TMD-35
	1-452-166-00	Ⓑ	Magnet
	1-462-159-00	Ⓓ	Coil, motor; STARTER
♦	1-535-115-00	Ⓐ	Terminal with Base, 2p
♦	1-535-116-00	Ⓐ	Terminal with Base, 3p
♦	1-535-121-00		Terminal with Base, 8p (US, Canadian model)
♦	1-535-123-00	Ⓐ	Terminal with Base, 10p (AEP, UK, SCN, E model)
⚠	1-551-628-00		Cord, power; parallel-blade plug (US, Canadian, E2 model)

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

Ref. No.	Part No.		Description
	1-551-731-00	Ⓔ	Cord, plug (Canadian, AEP, UK, SCN, E model)
	1-551-835-21		Cord, plug (US model)
⚠	1-551-896-00	Ⓓ	Cord, power; 3p (AEP, E1 model)
⚠	1-551-908-00	Ⓓ	Cord, power; euro-plug (SCN model)
⚠	1-551-962-00	Ⓔ	Cord, power; 3p (UK model)
⚠	1-551-966-00	Ⓔ	Adaptor, power cord (E1, AEP model)
⚠	1-551-967-00	Ⓔ	Cord, power (UK model)
♦	1-560-003-00	Ⓑ	Connector, base post
	1-561-294-11	Ⓔ	Connector, neckcylinder
	1-601-344-00	Ⓑ	Phono Board

ACCESSORIES AND PACKING MATERIALS

Part No.		Description
1-549-096-00	Ⓜ	Cartridge, VL-37G
3-701-613-00	Ⓐ	Bag, plastic
3-701-616-00	Ⓐ	Bag, plastic
3-701-630-00	Ⓐ	Bag, plastic
3-701-634-00	Ⓑ	Bag, plastic
3-701-730-00	Ⓑ	Bag, plastic
3-701-806-00	Ⓐ	45 rpm Adapter
3-703-106-00		Label, distination (E2 model)
3-703-157-01		Label, distination (US model)
3-770-988-11	Ⓓ	Manual, instruction (UK, AEP, SCN, E model)
3-770-988-21		Manual, instruction (US, Canadian model)
3-794-123-11	Ⓐ	Label, caution
3-794-552-21		Card, customer (US model)
3-794-574-31		Manual, instruction; french (Canadian model)
4-858-407-00	Ⓑ	Adjustor, DP Stylus, DN-137G

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

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

Sony Corporation

79106121-1
Printed in Japan

9-958-701-01

STEREO TURNTABLE SYSTEM

PS-333

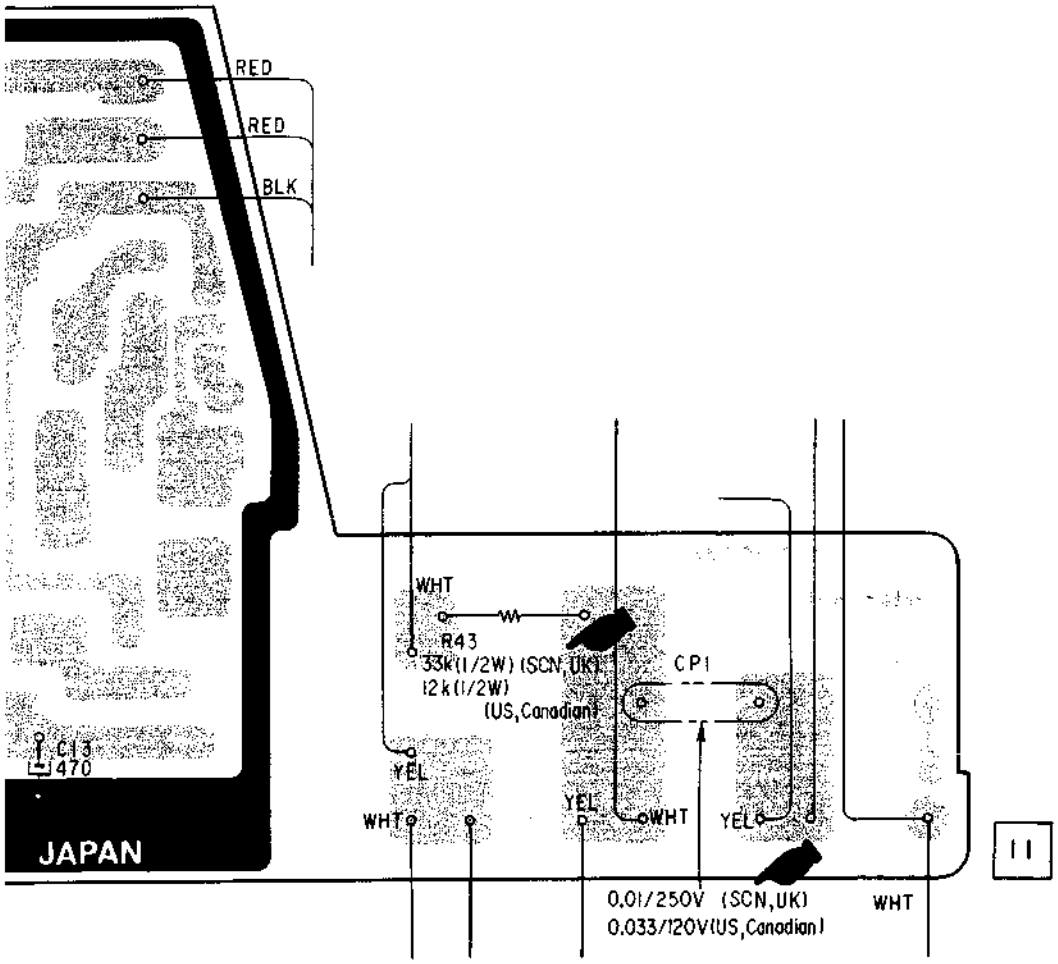
US Model
AEP Model
E Model
SCN Model
Canadian Model
UK Model

CORRECTION

No. 1
September, 1979

☛ : Corrected portions.

– Page 13 –



SONY
SERVICE MANUAL

9-958-701-91

Sony Corporation

79106121-1
Printed in Japan

注：先に発行した 暫定版 と差替えて下さい。 2855

SONY

サービスガイド

1979年9月 発売

ステレオ ターンテーブル システム

PS-333

概 略 仕 様

電 源	AC 100V、50/60Hz
消費電力	6W
大きさ	430×110×365mm (幅／高さ／奥行) 最大突起部を含む
重 さ	約4.7kg

ターンテーブル部

ターンテーブル	直径32.4cm、アルミダイキャスト
モータ・モーター	薄型リニアBSL（ブラシレス＆スロットレス）DCサーボモーター
駆動方式	ダイレクトドライブ
回転数	33 1/3 、45rpm
速度調整範囲	±6%
ワウ・フラッター	0.03%以下 WRMS
S／N	70dB以上(DIN-B)
オートマチック機構	リードイン、リジェクト、リターン

トーンアーム部

タイプ	スタティックバランス型 ユニバーサルトーンアーム
有効長	216.5mm
全 長	290mm
オーバーハング	16.5mm
トラッキングエラー	+3°～−1°
針圧調整範囲	0～3g
使用可能カートリッジシェル合計重量範囲	11.5～19g

カートリッジ VL-37G

タイプ	MM型
周波 周波数特性	10Hz～20kHz
チャンネルセパレーション	23dB以上(1kHz)
出力電圧	3mV(1kHz、3.54cm/s、45°)
針 圧	1.5～2.5g（最適針圧2g）
交換針	ND-137G
重 さ	13g（シェル含む）

安全・性能維持のため，必ず指定の部品をご使用下さい。

【外観写真】

・外観名称は2ページ参照。

【概 要】

・薄型リニアBSL(ブラシレス＆スロットレス)モーター採用。

・回転速度の検出にマグネディスクサーボ方式を使用。

・操作スイッチ類はすべて前面配置。

【海外では使用できません】

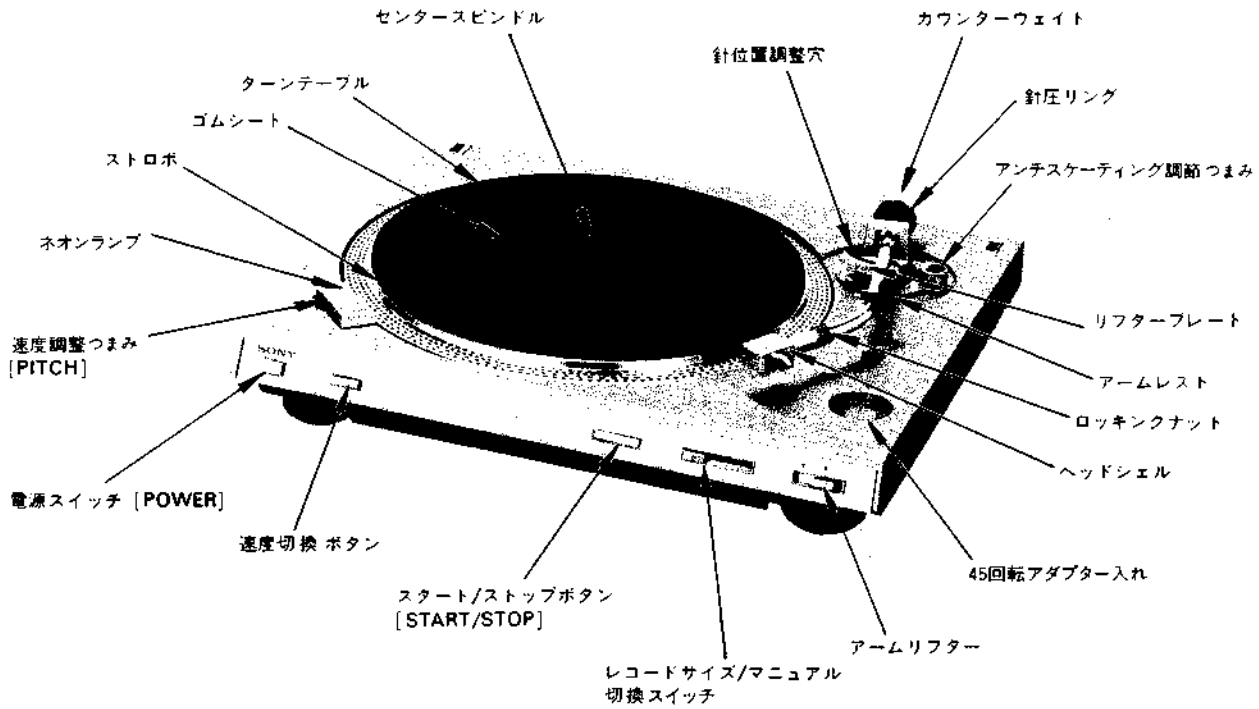
本機は，電気用品取締法（安全規格）に基づいて，日本国内用につくられております。海外向けの変更は，製品の安全規格が日本と異なるためできません。

【電源周波数の切換えについて】

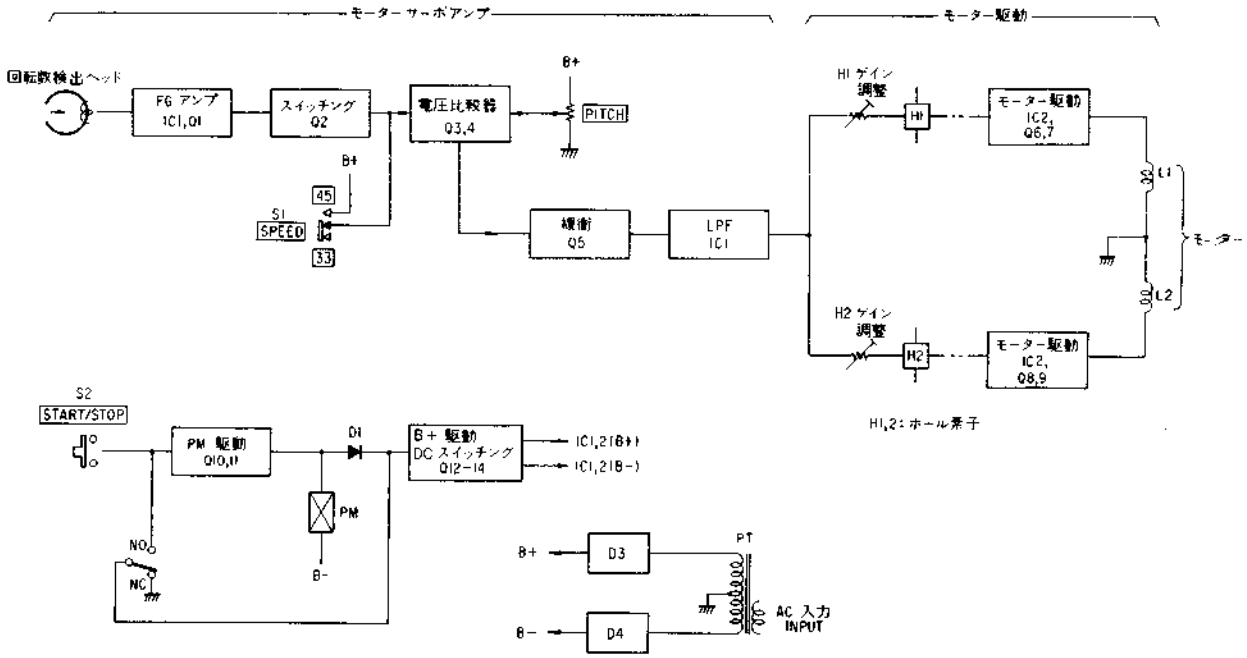
本機は，ＤＣモーターを使用しているため，電源周波数の切換えは不要です。

AUD

【外観名称】



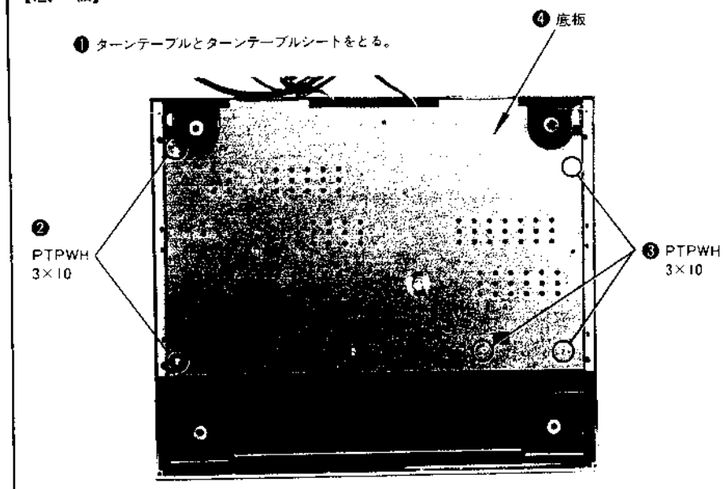
【ブロックダイヤグラム】



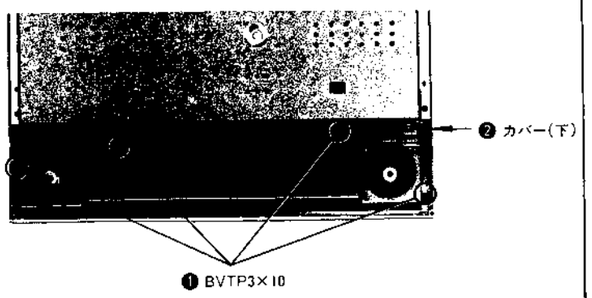
各部の外し方

・図中に❶など番号のあるものは，その番号順に外す。

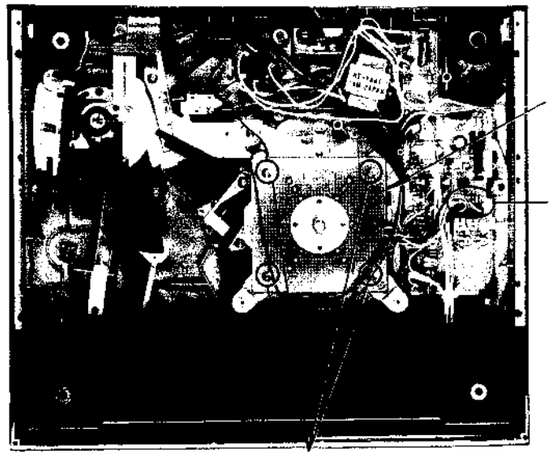
【底　板】



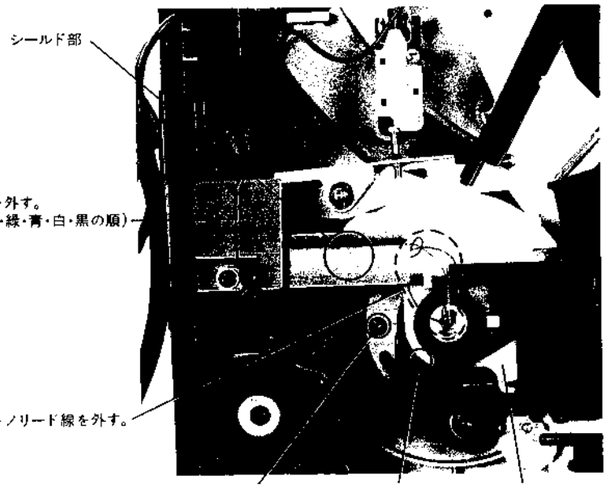
【カバー(下)】



【モーター】



【トーンアーム部】

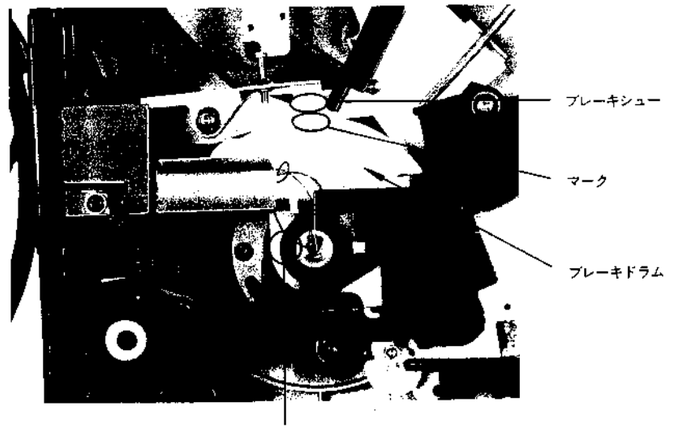


❸ L型レンチで止めねじAをゆるめブロックAを外す。 (1.4mm)

❹ 止めねじBと トーンアーム部を外す。

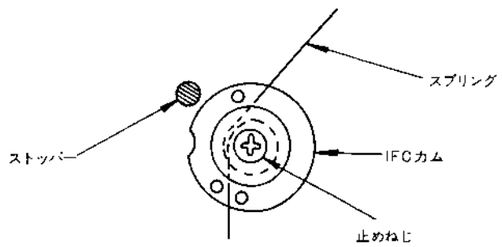
【ブレーキドラムの取付け】

1．トーンアームをアームレストに固定する。
2．止めねじをゆるめブレーキドラムのマークをブレーキシューにあわせる。
3．止めねじをしめる。



【アンチスケーティング(IFC)調節つまみの取付け】

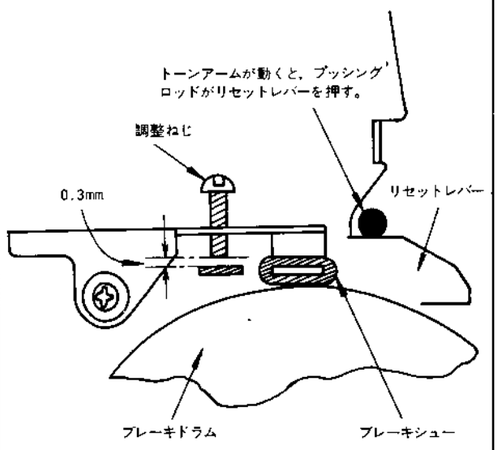
1．アンチスケーティング(IFC)調節つまみを"0"にあわせる。
2．図のようにスプリングを取付ける。
3．止めねじをしめる。



機構部調整

【ブレーキ調整】

1．ドライブギヤを反時計方向に回すとトーンアームが内側へ動き，ブレーキシューがブレーキドラムに接触する。
2．すき間が0.3mmになるようにねじを調節する。

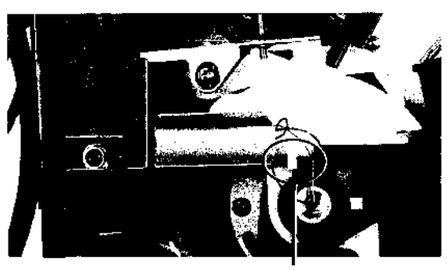


【リターン位置調整】

1．ターンテーブルを手でまわし，トーンアームが内側へ動くようにする。
2．針とスピンドル間が61～64mmの位置でトーンアームがリターンするようにねじを調節する。

リターン時期	ねじを回す方向
早くなる	時計方向
遅くなる	反時計方向

テストレコード(YFSC−16)をかけ，リターンカウントが15～17でリターンすることを確認する。

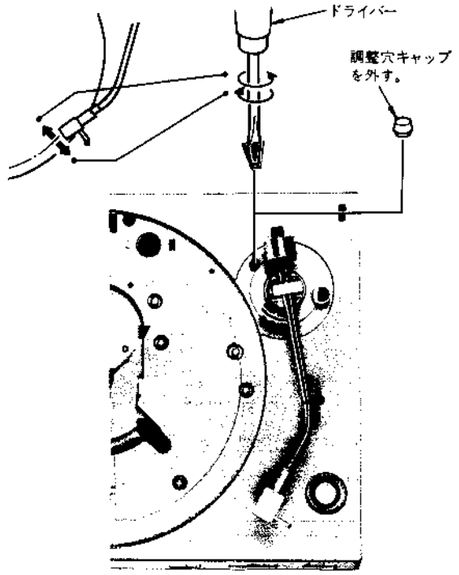


【針位置調整】

1．レコードをオートスタートさせたとき，針がレコード盤上の正しい位置へ降りるように，針位置調整ねじを回す。
（調整目安：調整ねじ1回転で12mmくらい移動する。）

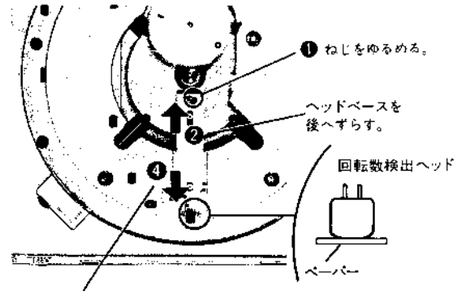
注：レコードサイズセレクターつまみの位置を30cmにして調整しておけば，25cm，17cmでも正しい位置に降ります。

テストレコード(YFSC-16)
を使用したとき
30cm……4～16カウント
25cm……6～24カウント
17cm……7～25カウント



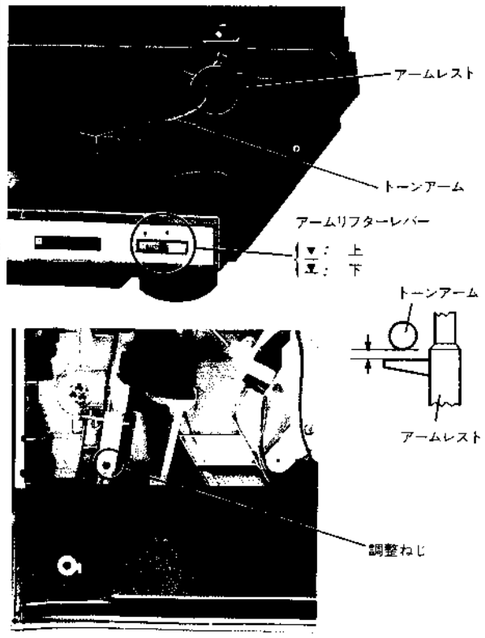
電気部調整

【回転数検出ヘッド位置調整】



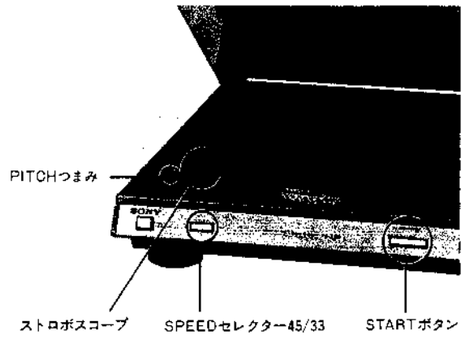
【トーンアーム高さ調整】

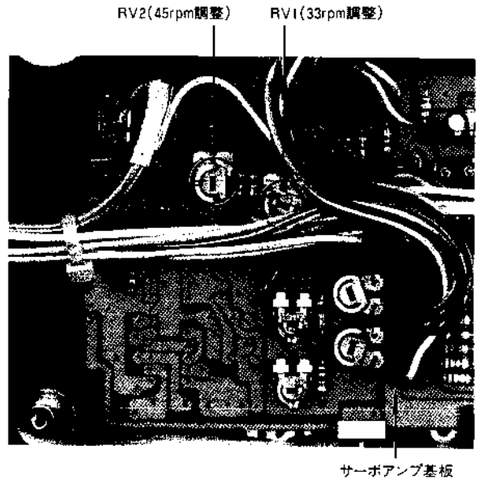
1．アームレストの止めを外す。
2．アームリフターレバーを上にする。
3．トーンアームとアームレストの間隔が1mmになるように調整ねじを回す。



【速度調整】

1．PITCHつまみを回転角中央にあわせSTARTボタンを押す。
2．SPEEDセレクターを33回転にセットする。RV1を回して縞目が止まって見えるように調整する。
3．SPEEDセレクターを45回転にセットする。RV2を回して縞目が止まって見えるように調整する。



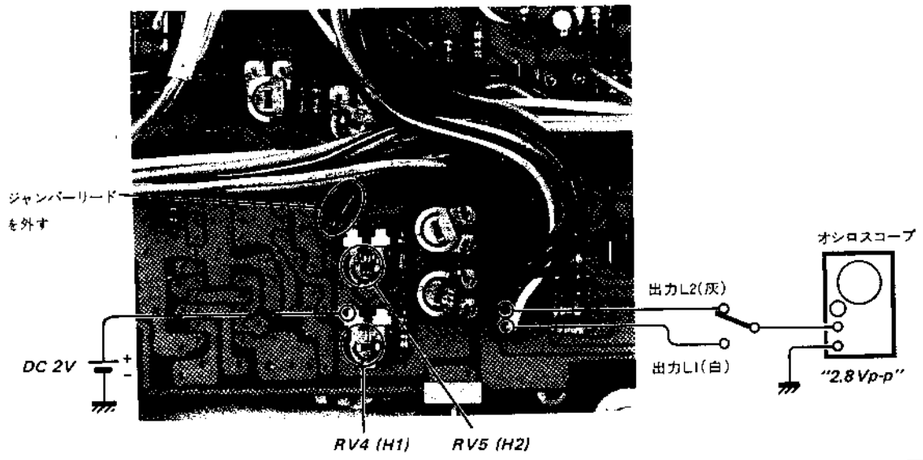


【ゲイン調整】

1．図のジャンパーリードを外す。

2．DC 2Vを加える。

3．図の出力が2.8Vp-pとなるよう，L1に対してはRV4
　で調整する，L2に対してはRV5で調整する。

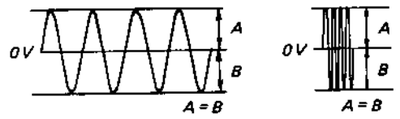


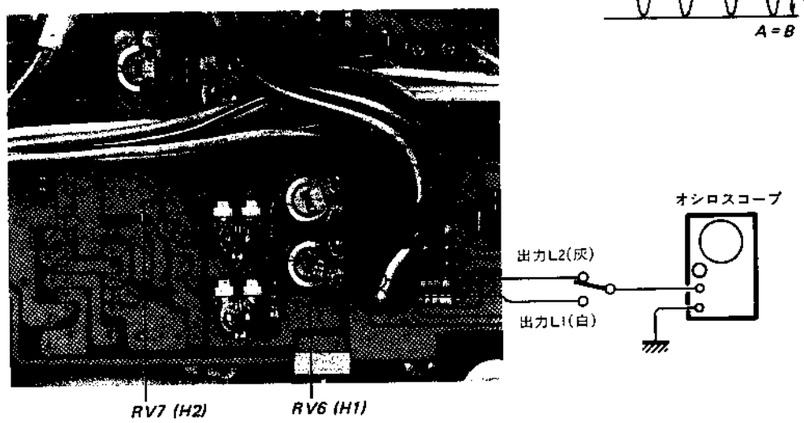
【オフセット調整】

この調整は，ゲイン調整の次に続けて行なう。

1．L1，L2にオシロスコープを接続する。

2．L1，L2の出力がGNDレベルに対してA＝Bつまり
　DCレベルオフセットしないようRV6,7を調整する。
　L1に対してはRV6で調整する。
　L2に対してはRV7で調整する。

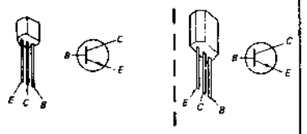




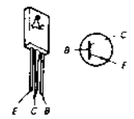
半導体外形図

（　）内は，補修用として在庫しません。

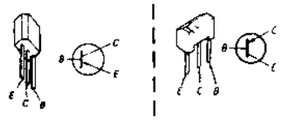
Q1～4
Q10, 12, 14: 2SC1364 (2SC634A)



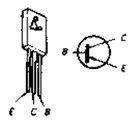
Q6, 8: 2SD809 (2SD973)



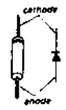
Q5, 13: 2SA1027R
Q11: 2SA1027R (2SB642)



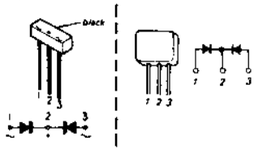
Q7, 9: 2SB731 (2SB793)



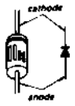
D1: 1S1555



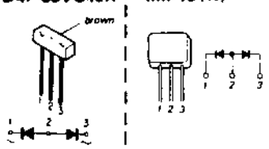
D3: S3VC40 (MI-151)



D2: EQB01-06



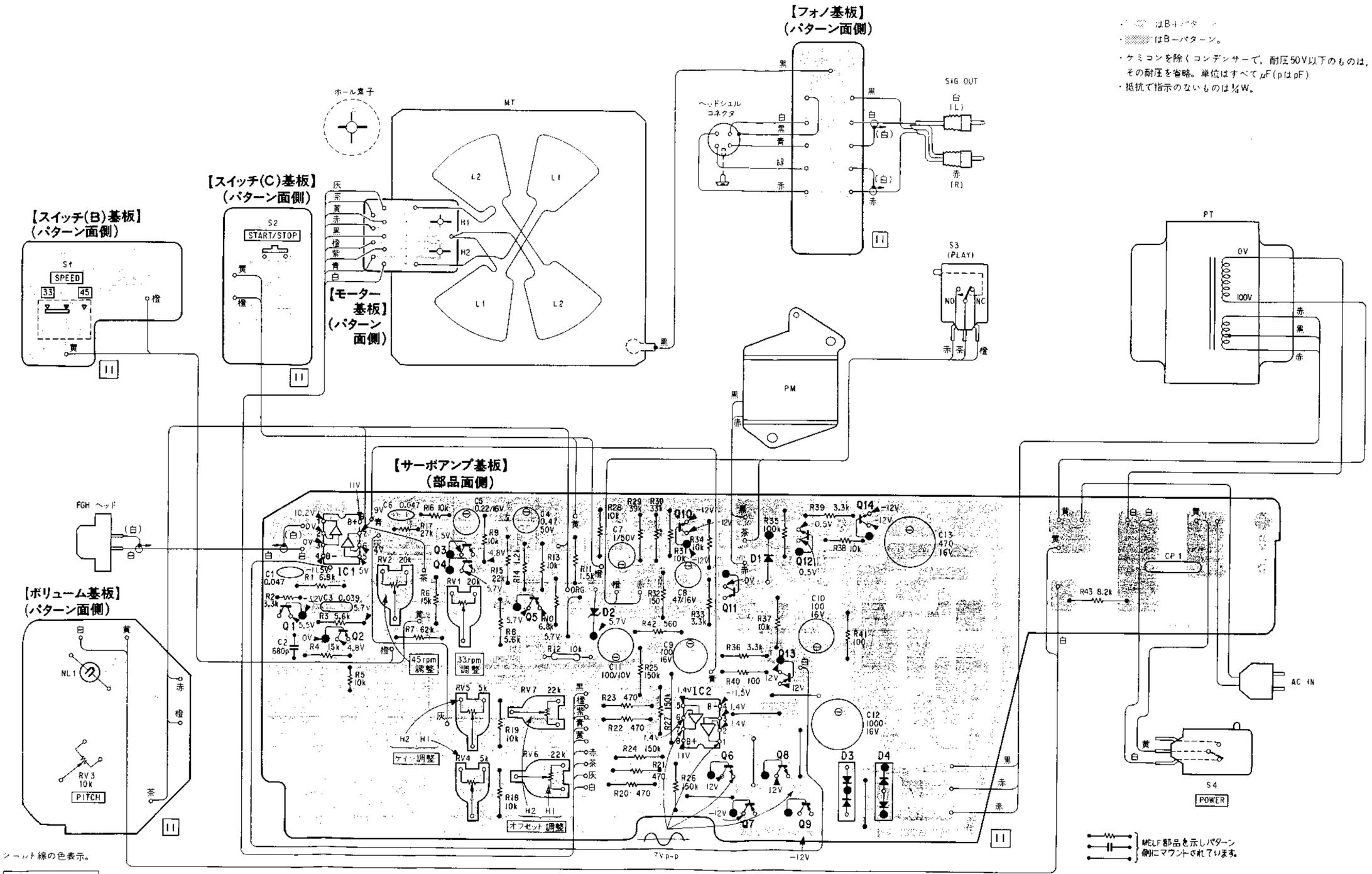
D4: S3VC40R (MI-151R)



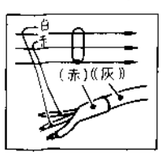
IC1, 2: μPC4558C

H1, 2: F-1409

【プリント図】



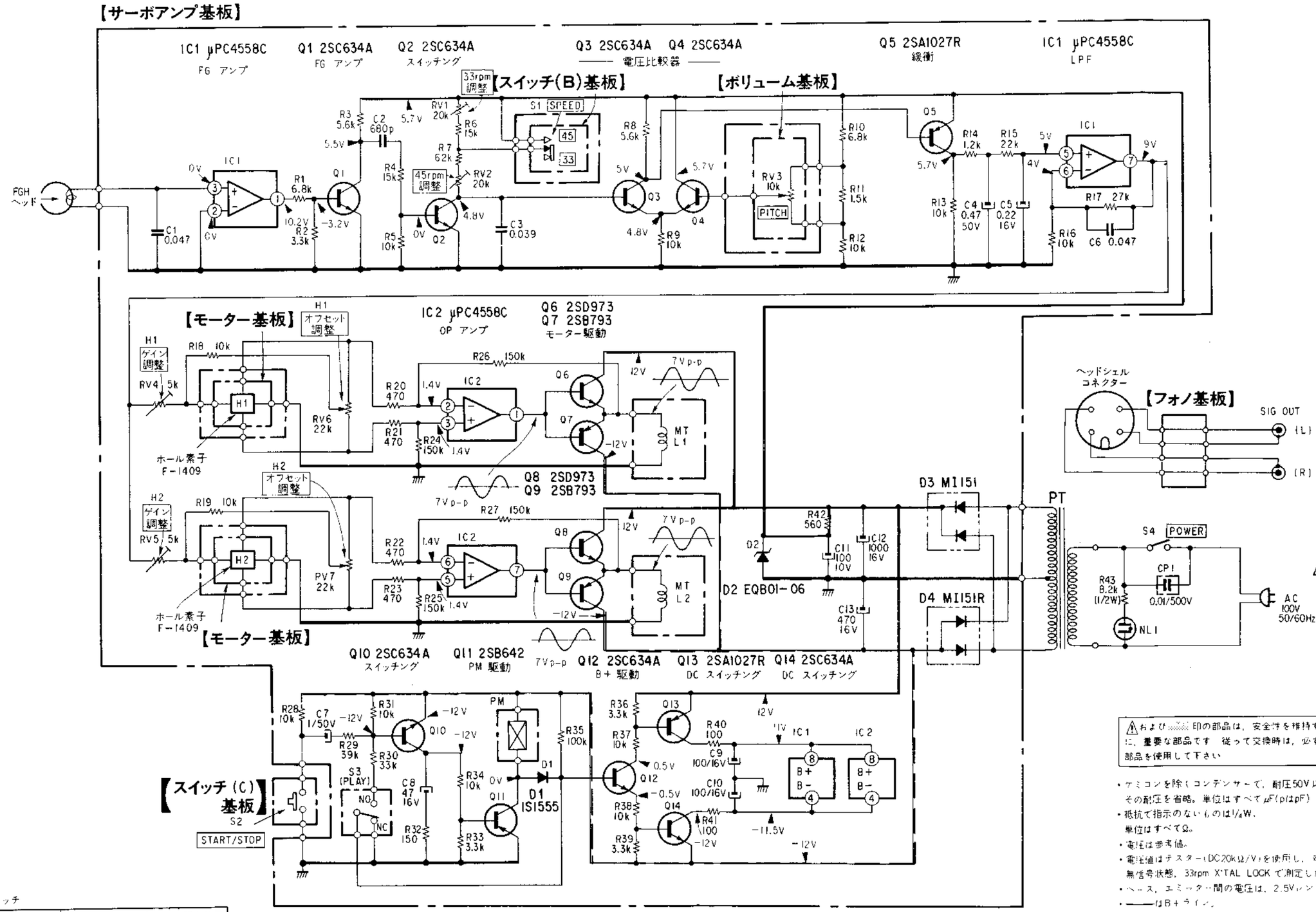
・ シールド線の色表示。



Q IC	1	IC1 2	3 4	5			10	11	12 13	14			
D								IC2 6	7	8	9		
		2							1				
										3	4		

・ ▒ はB+パターン。
・ ▒ はB−パターン。
・ ケミコンを除くコンデンサーで，耐圧50V以下のものは，その耐圧を省略。単位はすべてμF(pはpF)
・ 抵抗で指示のないものは1/4W。

【回路図】



⚠および▨印の部品は，安全性を維持するために，重要な部品です．従って交換時は，必ず指定の部品を使用して下さい

- ケミコンを除くコンデンサーで，耐圧50V以下のものは，その耐圧を省略。単位はすべてμF(pはpF)
- 抵抗で指示のないものは1/4W，単位はすべてΩ。
- 電圧は参考値。
- 電圧値はテスター(DC20kΩ/V)を使用し，対アース間を無信号状態，33rpm X'TAL LOCK で測定した参考値。
- ベース，エミッター間の電圧は，2.5Vレンジで測定。
- ——はB+ライン。
- - - -はB−ライン。
- □はパネル表示名称。
- □は調整名称。

・スイッチ

リファレンスNo.	名　　称	現在位置
S 1	SPEED	33
S 2	START/STOP	OFF
S 3	PLAY	OFF
S 4	POWER	OFF

【主要部品表】

✚：補修用のため，回路図，プリント図とは定数または型名が異なります。

・抵抗，コンデンサーは，特殊なものだけ載せてあります。
それ以外のものは，別冊の補修用標準抵抗・コンデンサー価格表を参照して下さい。

記号	部品コード	品名	定価	備考
		半導体		
		（半導体は改良のため予告なく変更することがあります。）		
Q				
I－4	8-729-663-47	2SC1364	A	✚
5	〃 -612-77	2SA1027R	A	
6	〃 -180-93	2SD809	C	✚
7	〃 -173-13	2SB731	C	✚
8	〃 -180-93	2SD809	C	✚
9	〃 -173-13	2SB731	C	✚
10	〃 -663-47	2SC1364	A	✚
11	〃 -612-77	2SA1027R	A	✚
12	〃 -663-47	2SC1364	A	✚
13	〃 -612-77	2SA1027R	A	
14	〃 -663-47	2SC1364	A	✚
IC1,2	8-759-145-58	μPC4558C	F	
D				
1	8-719-815-55	1S1555	A	
2	〃 -931-06	EQB01-06	D	
3	〃 -500-34	S3VC40	E	✚
4	〃 -501-34	S3VC40R	E	✚
H1,2	〃 -814-09	F-1409	F	
		コンデンサー		
		（すべて標準部品のため省略）		
		抵抗		
⚠ R43	1-244-895-00	8.2kΩ ½W カーボン	A	

記号	部品コード	品名	定価	備考
		電気部品		
CP1	1-102-050-00	セラミックコンデンサー 0.01μF 500V	A	⚠
FGH	1-543-093-00	回転数検出ヘッド	G	
L1,2	1-462-159-00	モーターコイル	E	
NL1	1-519-135-00	ネオンランプ	E	⚠
PM	1-454-202-00	ソレノイド	D	
PT	1-446-134-00	電源トランス	J	⚠
RV1,2	1-226-237-00	半固定抵抗 22kΩ 33,45rpm	A	
RV3	〃 -196-00	可変抵抗 10kΩ-B PITCH	C	
RV4,5	〃 -235-00	半固定抵抗 5kΩ ゲイン	A	
RV6,7	〃 -237-00	可変抵抗 22kΩ-B オフセット	A	
S1	1-553-071-00	キースイッチ SPEED	E	
S2	〃	〃 START/STOP	B	
S3	1-516-657-00	マイクロスイッチ Play	D	
S4	〃 -657-00	〃 POWER	D	⚠
	1-452-127-00	マグネット	G	
	〃 -166-00	〃	B	
1	1-549-096-00	カートリッジ VL-37G	S	
2	1-551-472-00	電源コード	D	⚠
3	〃 -731-00	プラグ付コード	F	
4	1-561-294-11	ヘッドシェルコネクター	G	

⚠および※印の部品は，安全性を維持するために，重要な部品です。従って交換時は，必ず指定の部品を使用して下さい。

【分解図】

・ねじ類で特に表示のないものは㊐を示す

㊟の部品及び部品コード，品名のない部品は在庫しません。