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PS-8750

USA Model
E Model



STEREO TURNTABLE SYSTEM

SPECIFICATIONS

TURNTABLE (Semi-auto player)

Platter: 32 cm ($12\frac{5}{8}$ inches), diecast aluminum
Drive System: Direct drive, crystal lock control system
Speed: $33\frac{1}{3}$ rpm, 45 rpm
Pitch Control Range: $\pm 4\%$ (Crystal Lock Switch: OFF)
Wow and Flutter: Less than $\pm 0.04\%$ (DIN, weighted)
Less than 0.025% (NAB, weighted rms)
S/N Ratio: Greater than 70 dB (DIN, B-curve weighted)

	Position of the Xtal Lock Switch	
	ON	OFF
Initial Drift:	within 0.0005%	within 0.1%
Load Characteristics: (at 3 g tracking force)	0%	less than 0.5%
Speed Deviation:	within 0.003%	variable

Tonearm Height Adjustment Range: 7 mm ($\frac{9}{32}$ inches)
Shell Weight: 12.5 g (SH-160)
Cartridge Weight Range: 3–10 g
(8–14 g with extra weight)
(13.5–19.5 g with extra weight)

GENERAL

Power Requirements: 120 V ac, 60 Hz (USA Model)
110, 127, 220 or 240 V ac, 50/60 Hz (E Model)
Power Consumption: 20 W
Dimensions: 458(w) x 184(h) x 395(d) mm
 $18\frac{1}{16}$ (w) x $7\frac{1}{4}$ (h) x $15\frac{9}{16}$ (d) inches
including projecting parts and controls.
Weight: Approx. 14.2 kg, 31 lb 5 oz (net)
Approx. 19 kg, 41 lb 14 oz (with shipping carton)

TONEARM

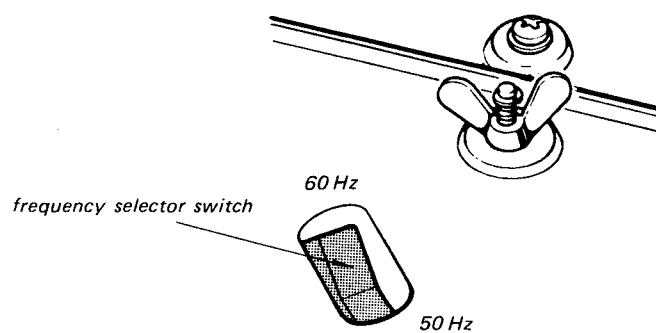
Type: Statically balanced, universal
Arm Length: 320 mm ($12\frac{5}{8}$ inches), overall
237 mm ($9\frac{3}{8}$ inches), pivot-to-stylus
Overhang: 15 mm ($1\frac{9}{32}$ inches)
Tracking Error: $+2^\circ$, -2°
Tracking-force Adjustment Range: 0–2.5 g (calibrated every 0.25 g)

SONY®

SERVICE MANUAL

NOTE: SELECTION OF POWER FREQUENCY**Procedure:**

1. Remove the turntable.
2. Make sure the power frequency of the area this set is used in, and then select the position of Frequency Selector Switch shown in figure below.



SECTION 1 OUTLINE

1-1. BLOCK DIAGRAM

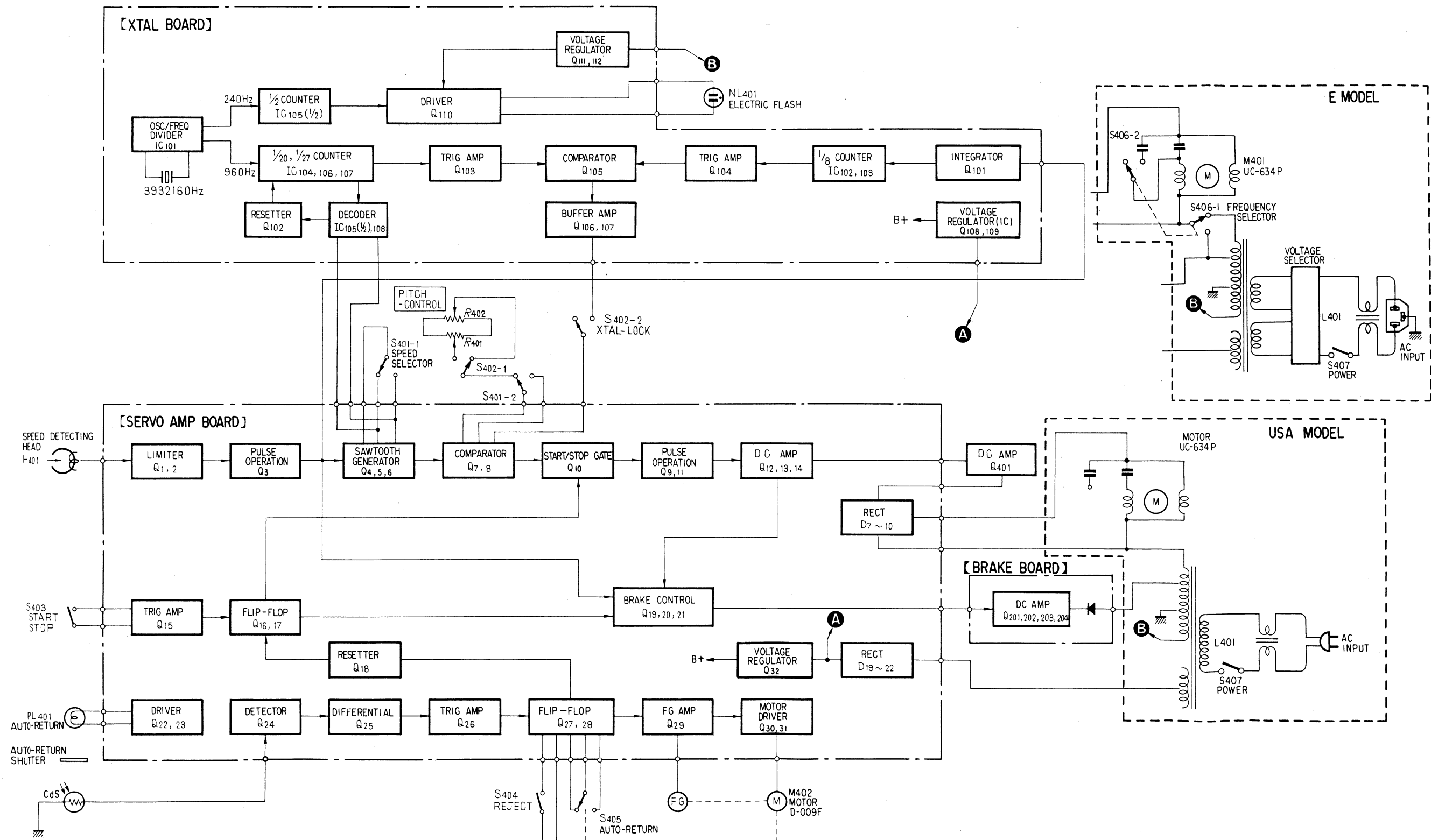


Fig. 1-1. Block diagram

1-2. EXTERNAL VIEW

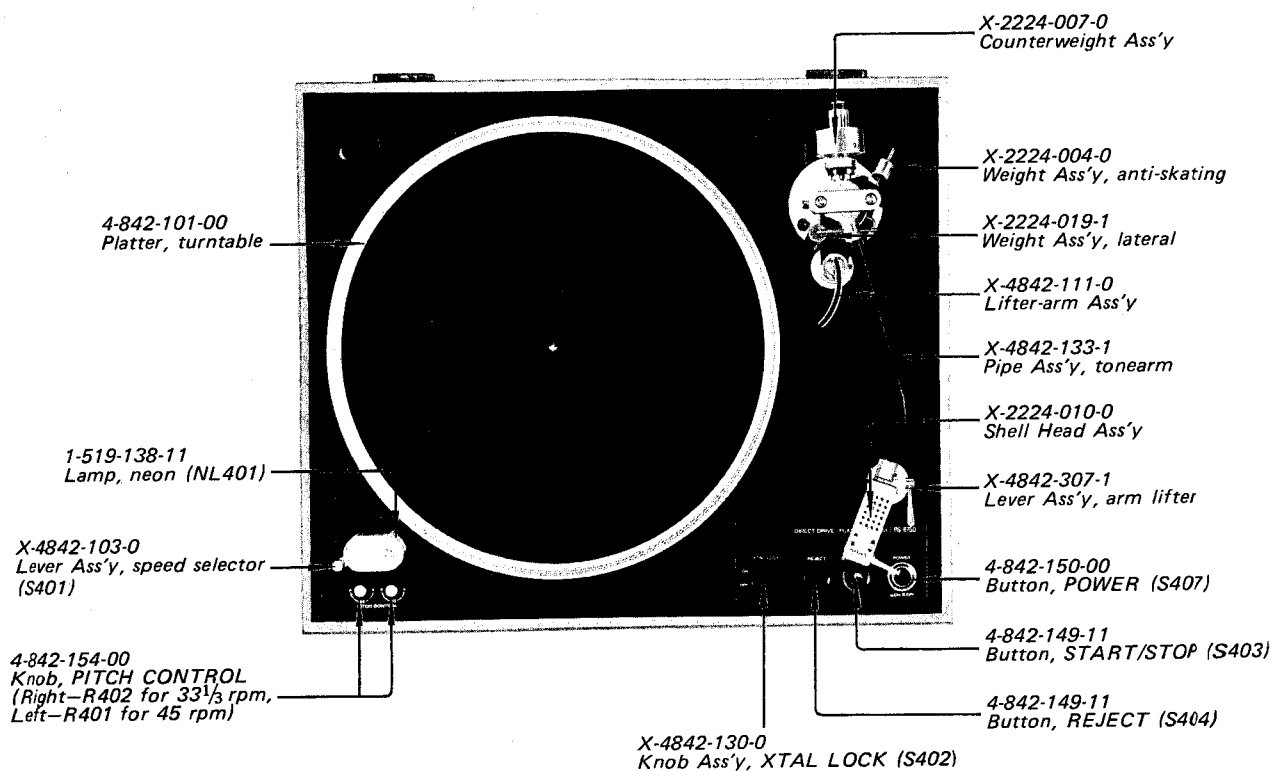


Fig. 1-2. External view

1-3. INTERNAL VIEW

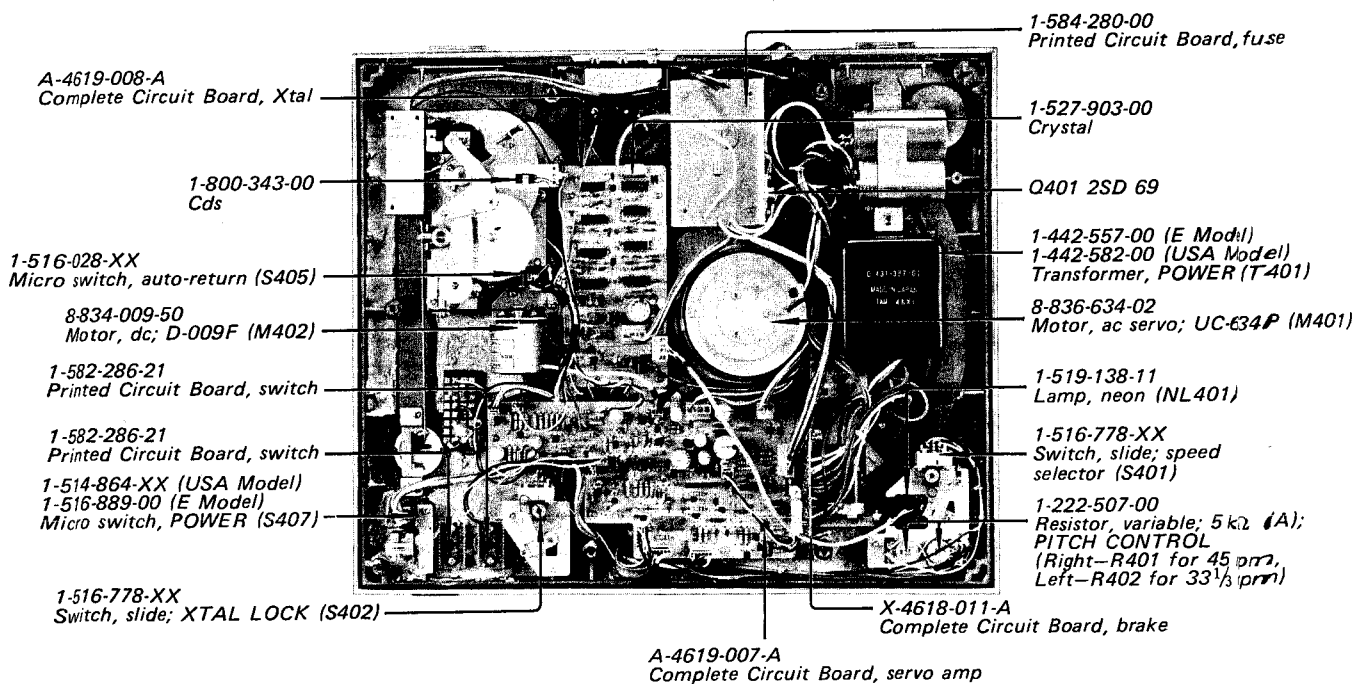


Fig. 1-3. Internal view

SECTION 2 DISASSEMBLY AND REPLACEMENT

2-1. TOP COVER REMOVAL

1. Open the top cover (❶).
2. Lift the top cover toward (❷).

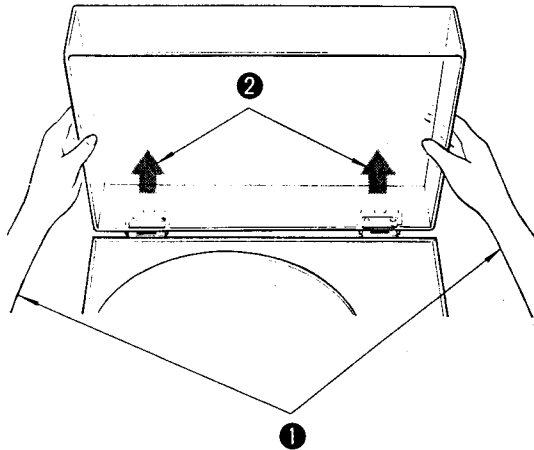


Fig. 2-1. Top cover removal

2-2. BOTTOM BOARD REMOVAL

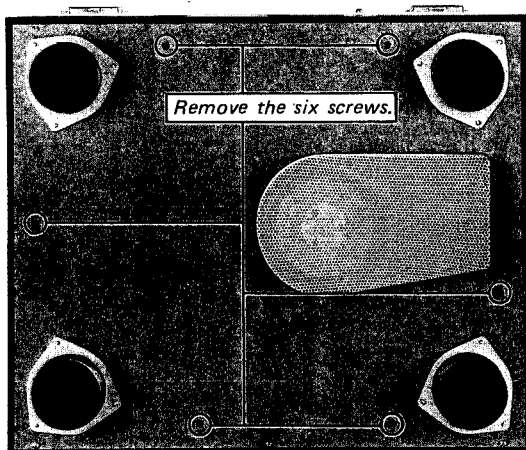


Fig. 2-2. Bottom board removal

2-3. CARTRIDGE REPLACEMENT

1. Pull out the four lead wires (❶).
2. Loosen the two screws and then replace the cartridge (❷).
3. Connect the four lead wires to the cartridge as shown in Fig. 2-3. (c).

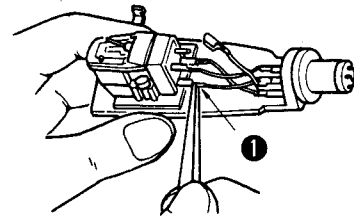


Fig. 2-3. (a) Pulling lead wires

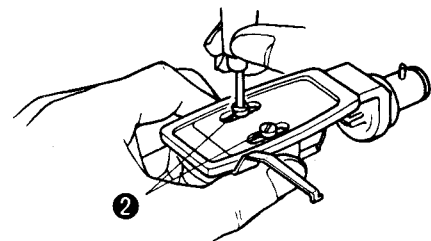


Fig. 2-3. (b) Loosening screws

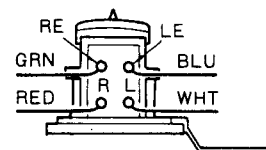
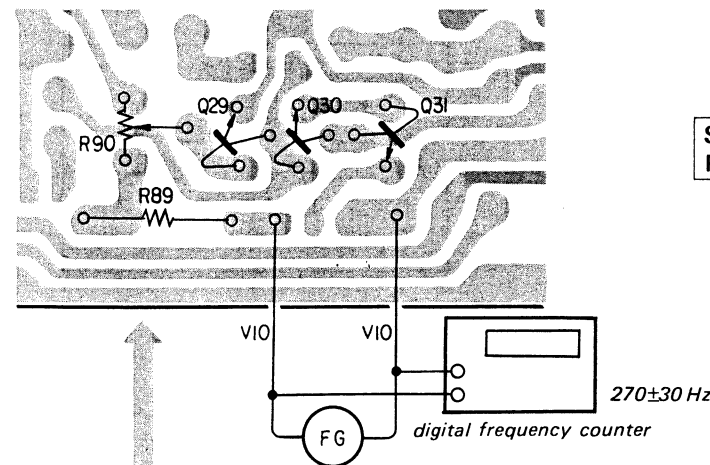


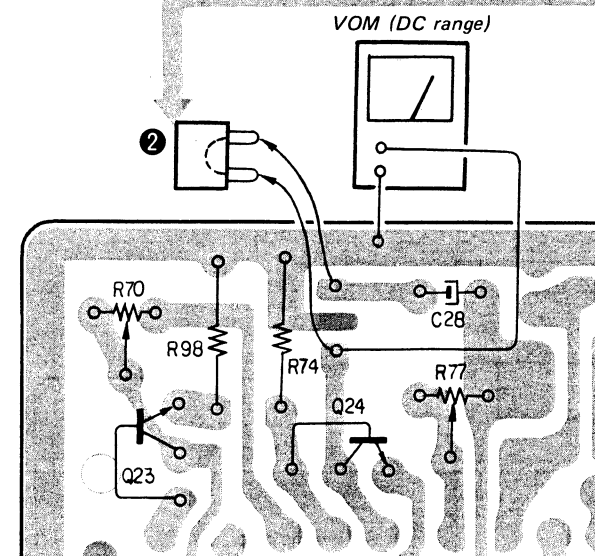
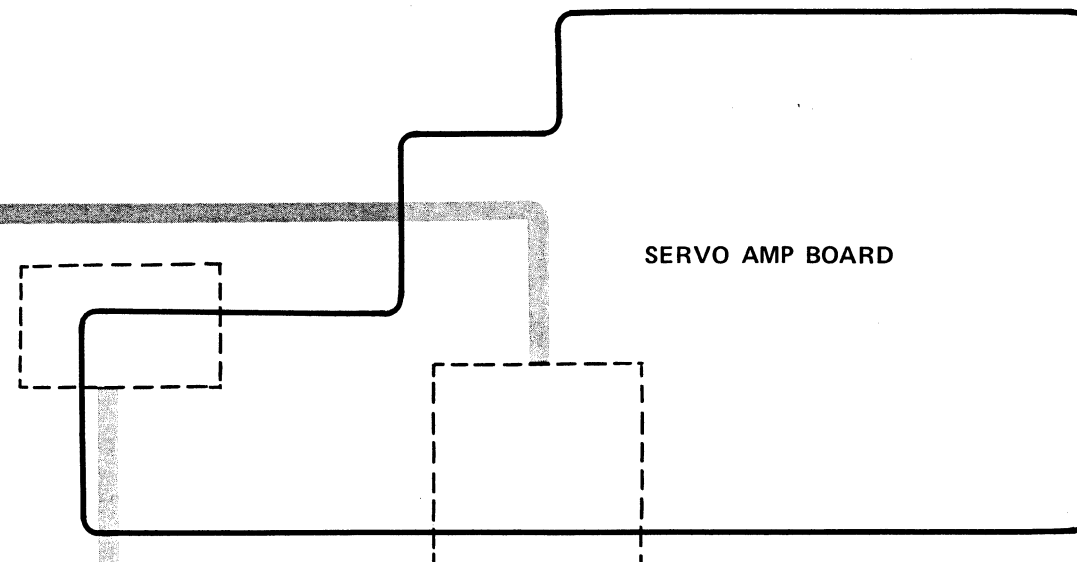
Fig. 2-3. (c) Lead wire connection

SECTION 3 ELECTRICAL ADJUSTMENTS



SPEED ADJUSTMENT OF AUTOMATIC RETURN MOTOR

1. Depress the REJECT button to rotate the motor.
2. Adjust R90 (❶) for the 270 ± 30 Hz reading on the digital frequency counter.



AUTOMATIC RETURN ADJUSTMENT

A. Lamp Brightness Adjustment

1. Remove the connector (❷).
2. Set the tonearm fully close to the center of turntable. Adjust R70 (❸) for the 2 V reading on the VOM.
3. Set the tonearm fully apart from the turntable. Adjust R70 (❸) for 12 ± 0.5 V dc reading on the VOM.

B. Operational Check at Automatic Return by Using a Record.

1. Check the automatic return operation.
2. If it does not work properly, perform the following two procedures.

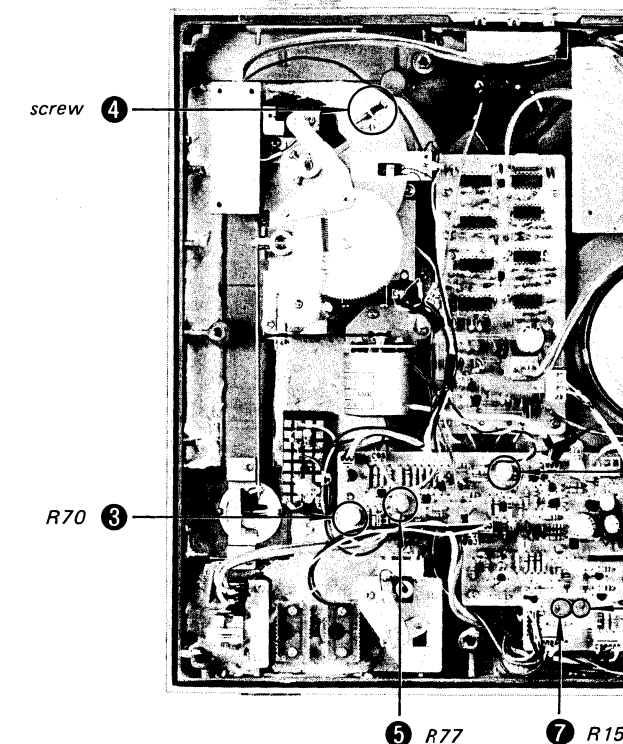
• Procedure (a)

Adjust the screw (❹) referring to the table below.

Time of automatic return	Turning direction of the screw
Too early	Clockwise
Too late	Counterclockwise

• Procedure (b)

Turn carefully R77 (❺) counterclockwise to make the sensitivity of automatic return detector circuit higher.



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AUTOMATIC RETURN ADJUSTMENT

A. Lamp Brightness Adjustment

1. Remove the connector (2).
2. Set the tonearm fully close to the center of turntable. Adjust R70 (3) for the 2 V reading on the VOM.
3. Set the tonearm fully apart from the turntable. Adjust R70 (3) for 12±0.5 V dc reading on the VOM.

B. Operational Check at Automatic Return by Using a Record.

1. Check the automatic return operation.
2. If it does not work properly, perform the following two procedures.

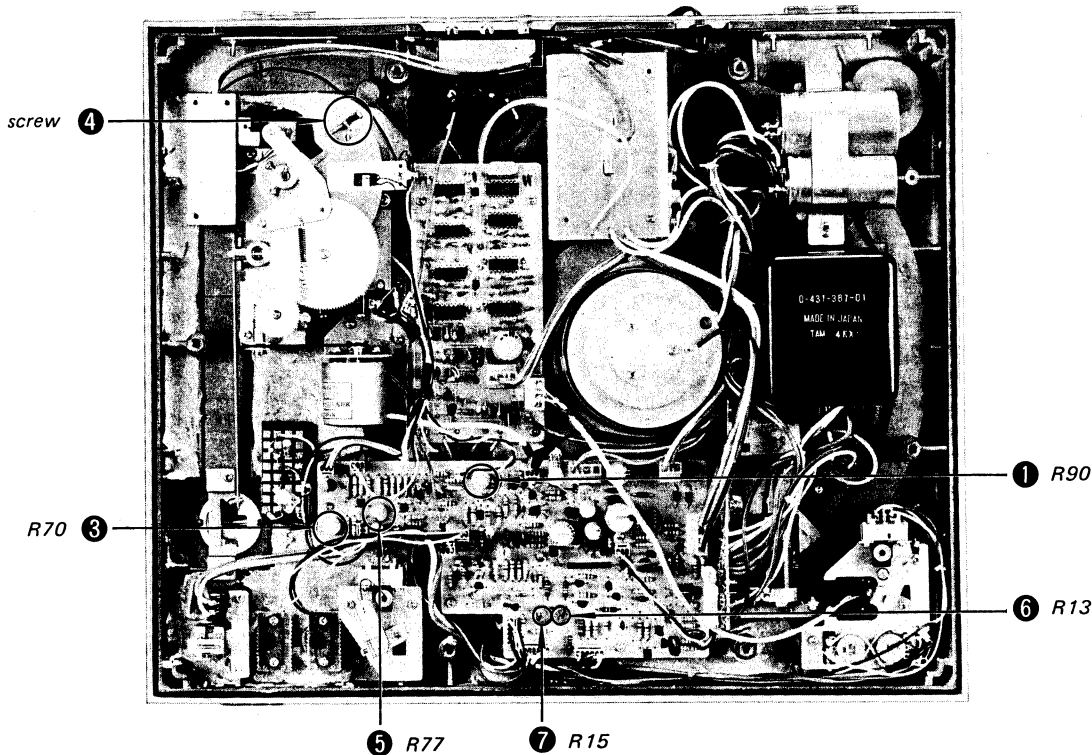
• Procedure (a)

Adjust the screw (4) referring to the table below.

Time of automatic return	Turning direction of the screw
Too early	Clockwise
Too late	Counterclockwise

• Procedure (b)

Turn carefully R77 (5) counterclockwise to make the sensitivity of automatic return detector circuit higher.



TURNTABLE SPEED ADJUSTMENT

1. Set the XTAL LOCK switch to OFF.
2. Set the PITCH CONTROL knob to mechanical mid.
3. To obtain the speed deviation 0% of 45 rpm and 33 1/3 rpm, adjust R13 (6) for 45 rpm and R15 (7) for 33 1/3 rpm.
4. Make sure that the turntable speed is within the specified Pitch Control Range (±4% for each speed) when setting the PITCH CONTROL knob to maximum or minimum.
5. Make sure that the turntable speed is 45 rpm when setting the XTAL LOCK switch to ON and it never deviate by turning the PITCH CONTROL knob. Perform the same procedure for 33 1/3 rpm.
6. Make sure that the turntable speed is certainly 45 rpm after changing the START/STOP switch several times. Perform the same procedure for 33 1/3 rpm.

SECTION 4
DIAGRAMS

4-1. MOUNTING DIAGRAM

Q1~4, 10, 12~21, Q23~30, 101~107, 109

Q111, 201: 2SC926A

Q14: 2SA677

Q204: 2SC867

Q112: 2SC1431

Q22: 2SC1474

Q202, 203: 2SA639S

Q31, 32, 108: 2SC1760

Q5, 6, 9, 11: 2SA677

Q7, 8: 2SC633A

Q110: 2SC1127

Q401: 2SD69

IC101: MSM5576

IC102~106: M-53200P

IC107: M-53210P

IC108: M-53220P

D11~17, 23, 24, D101~105, 107, D7~10, 19~22, D106, 108, 201, 202

D203: 10E-4

D25: 1T40

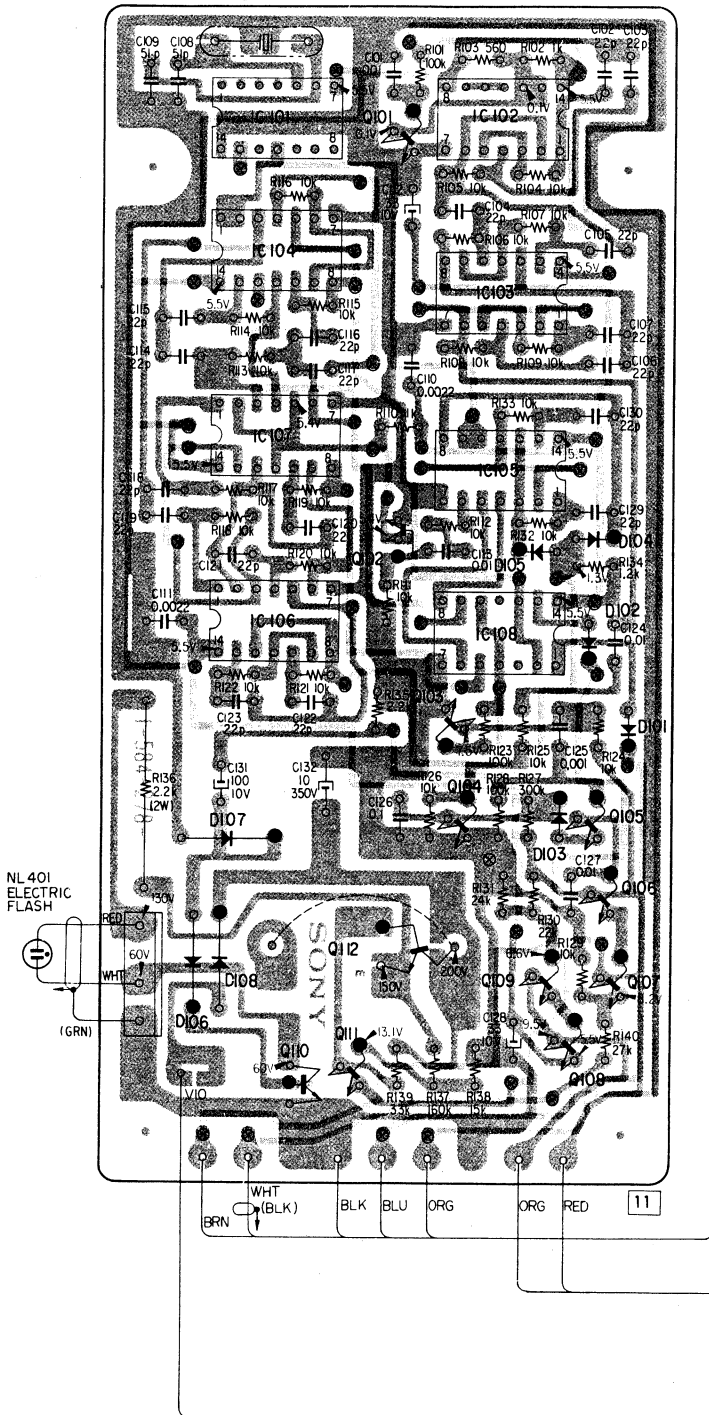
D3, 4: MV-5L

D1, 2: VD-1220

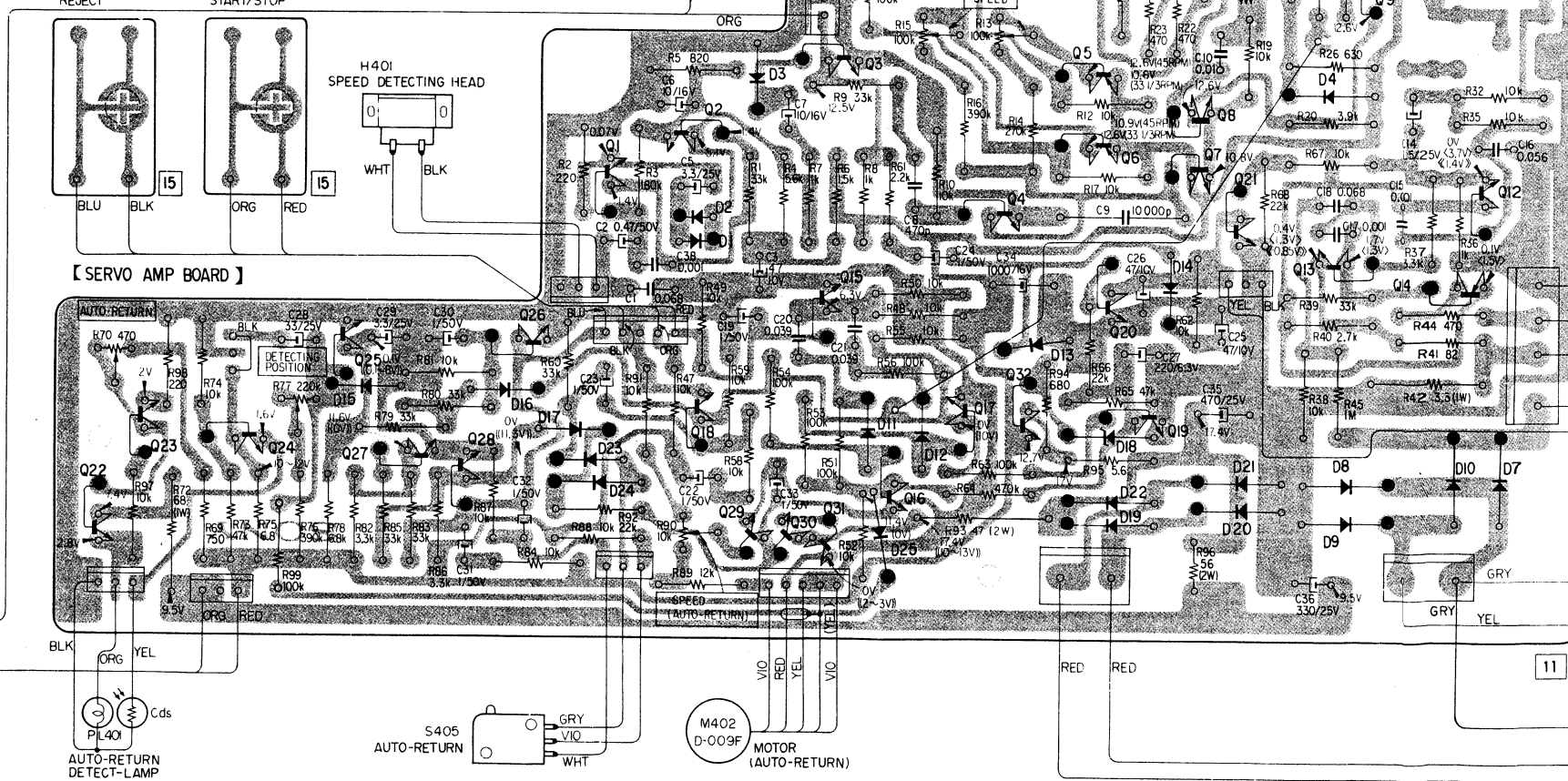
D18: EQA01-12S

(replacement transistor for 2SC1963)

[XTAL BOARD]



[SERVO AMP BOARD]



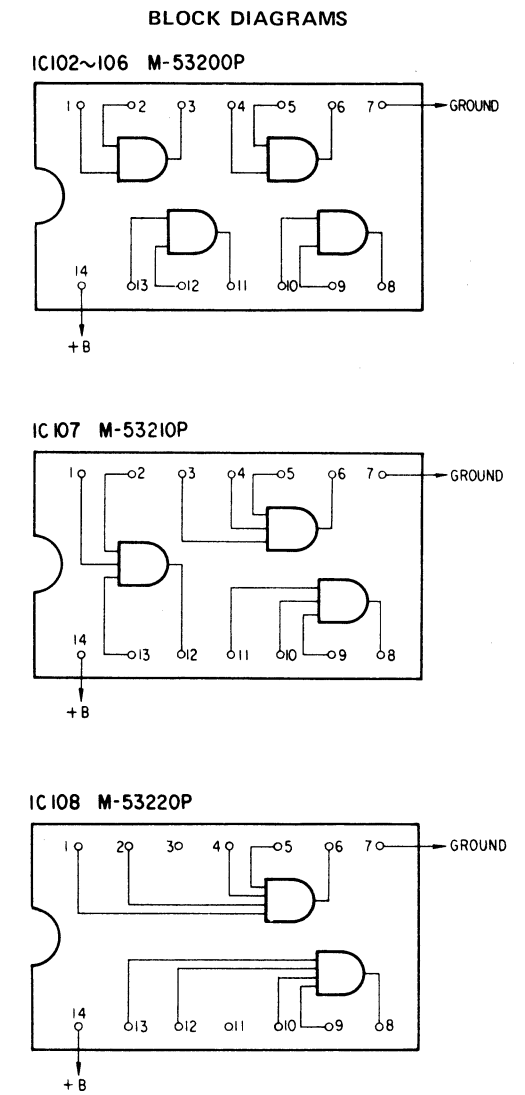
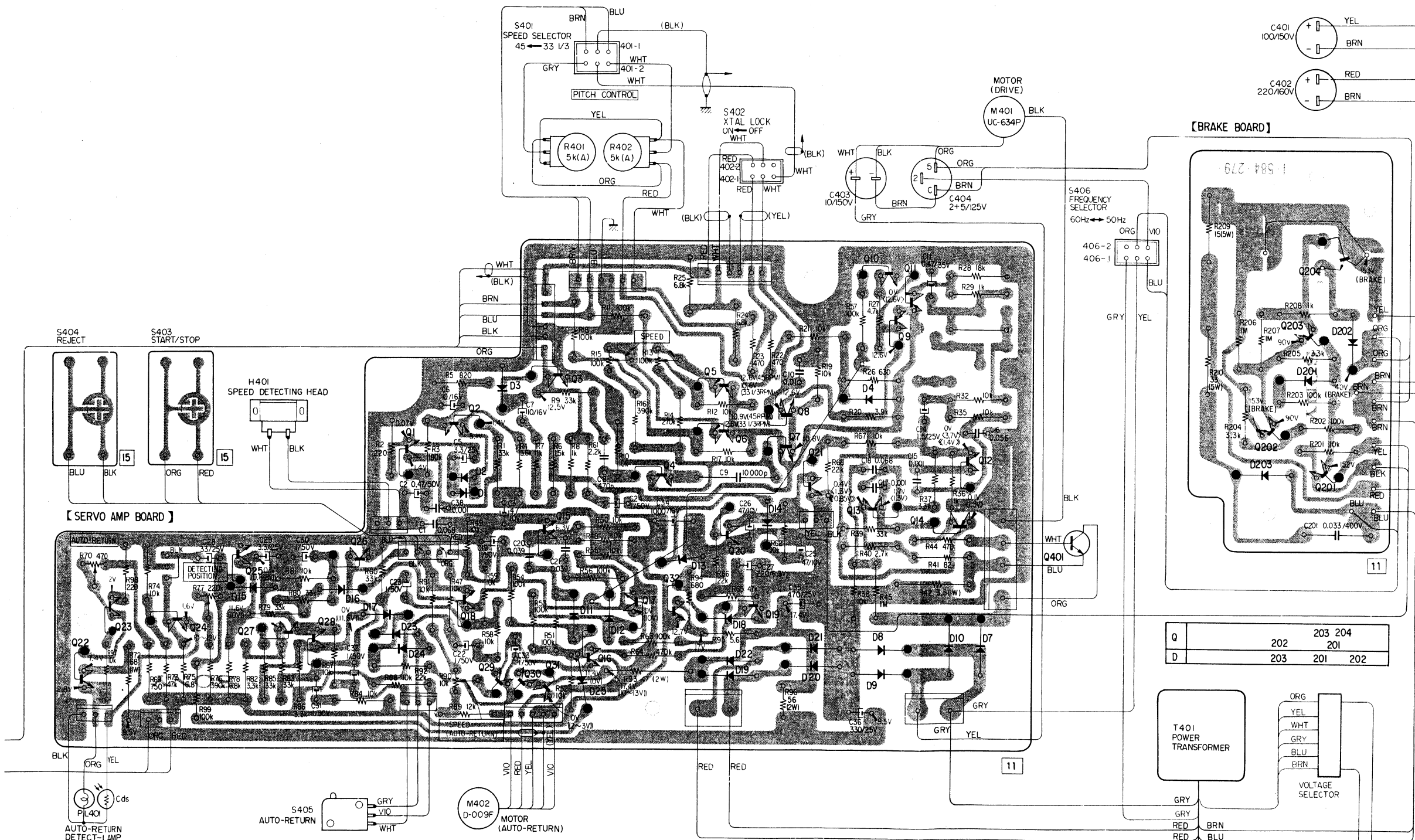
Q	IC101	101	IC102	105
IC	IC104	102	IC103	106
	IC107	104	IC105	107
D	IC106	103	IC108	108
	107	105	104	101
	106	108	103	102

Note:

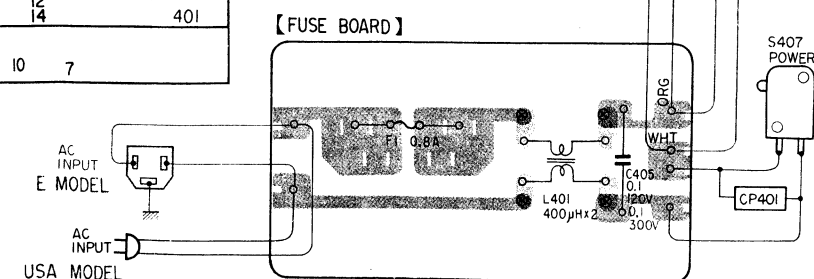
⊗ indicates a hole made to connect the patterns on both sides of the printed circuit board.

⊗ pattern on component side of the printed circuit board.

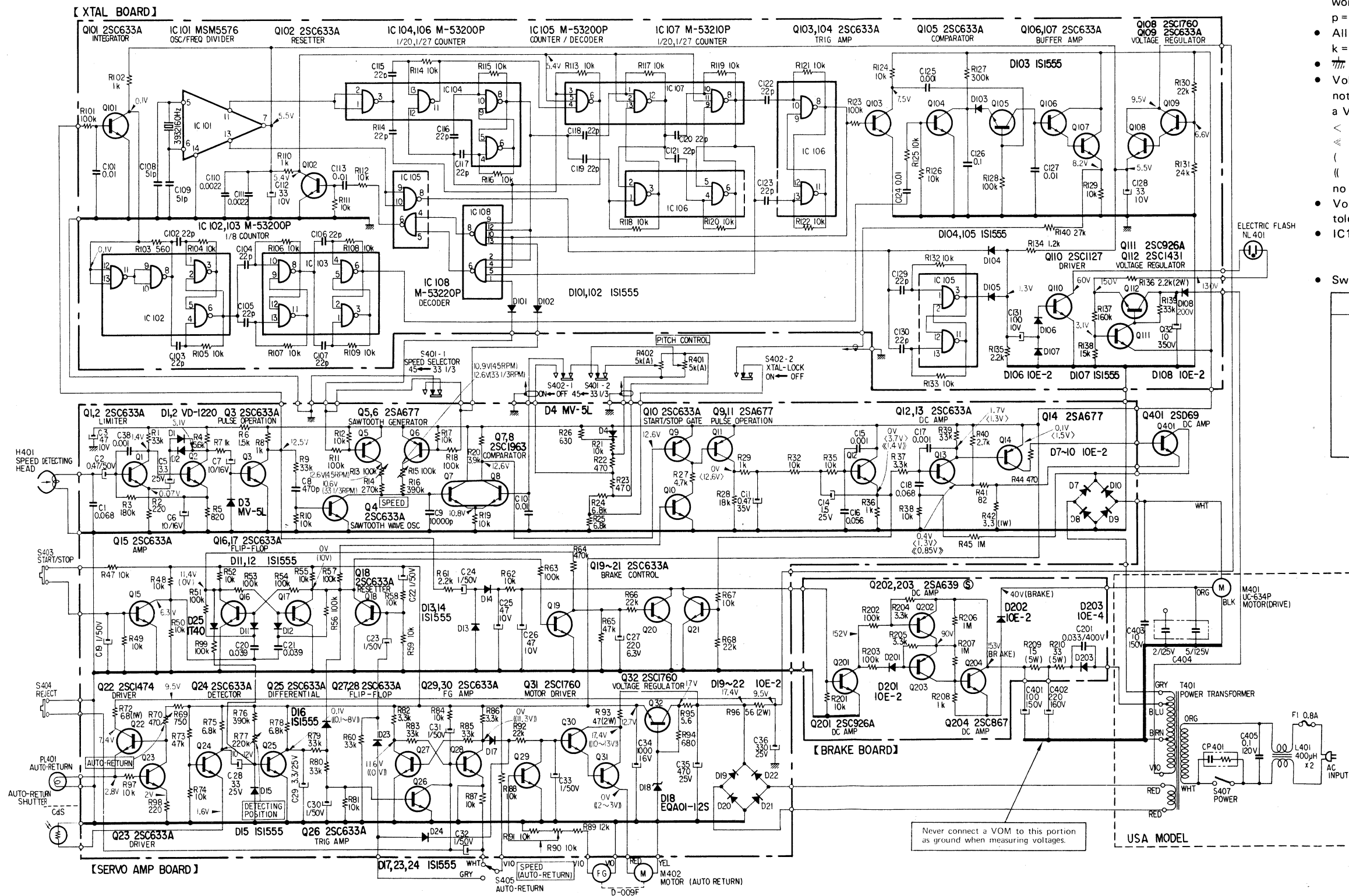
Q	22	23	24	25	27	28	26	1	2	3	4	5	6	7	8	9	10	11
D	15	16	17	23	24	2	3	11	12	13	14	18	19	20	21	2	4	8
	10	7	9	10	12	13	14	18	19	20	21	2	4	8	9	10	12	14



Q	22	23	24	25	27	28	26	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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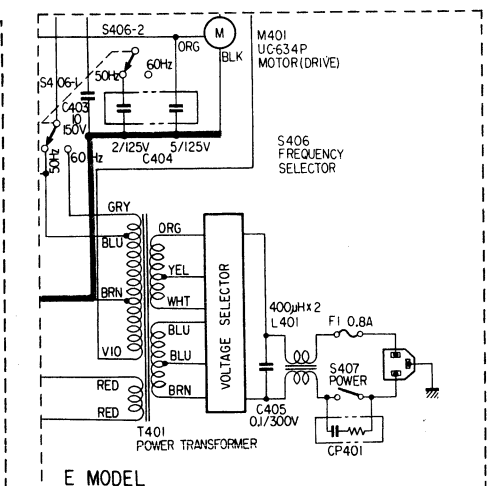
4-2. SCHEMATIC DIAGRAM



Note:

- All capacitors are in μF unless otherwise noted. 50 or less working volts are omitted except for electrolytic type. $\mu = \mu\text{F}$.
- All resistors are in Ω , $\frac{1}{4}W$, unless otherwise noted. $k = 1,000$ $M = 1,000k$
- --- indicates chassis ground.
- Voltages are DC with respect to ground unless otherwise noted. Readings are taken under no-signal conditions with a VOM (20k Ω/V).
- < > When ac servo motor rotates without turntable
- ≡ ≡ When ac servo motor rotates with turntable
- () When depressing start/stop button to "START"
- (()) When depressing reject button
- no mark: common
- Voltage variations may be noted due to normal production tolerances.
- IC102~108: Every terminal of 7 is connected to ground. Every terminal of 14 is connected to B+ circuit.
- Switch Mode:

Ref. No.	Switch	Position
S401	speed selector	33 1/3
S402	XTAL LOCK	OFF
S403	START/STOP	OFF
S404	REJECT	OFF
S405	auto-return	OFF
S406	frequency selector (E model)	50 Hz
S407	POWER	OFF

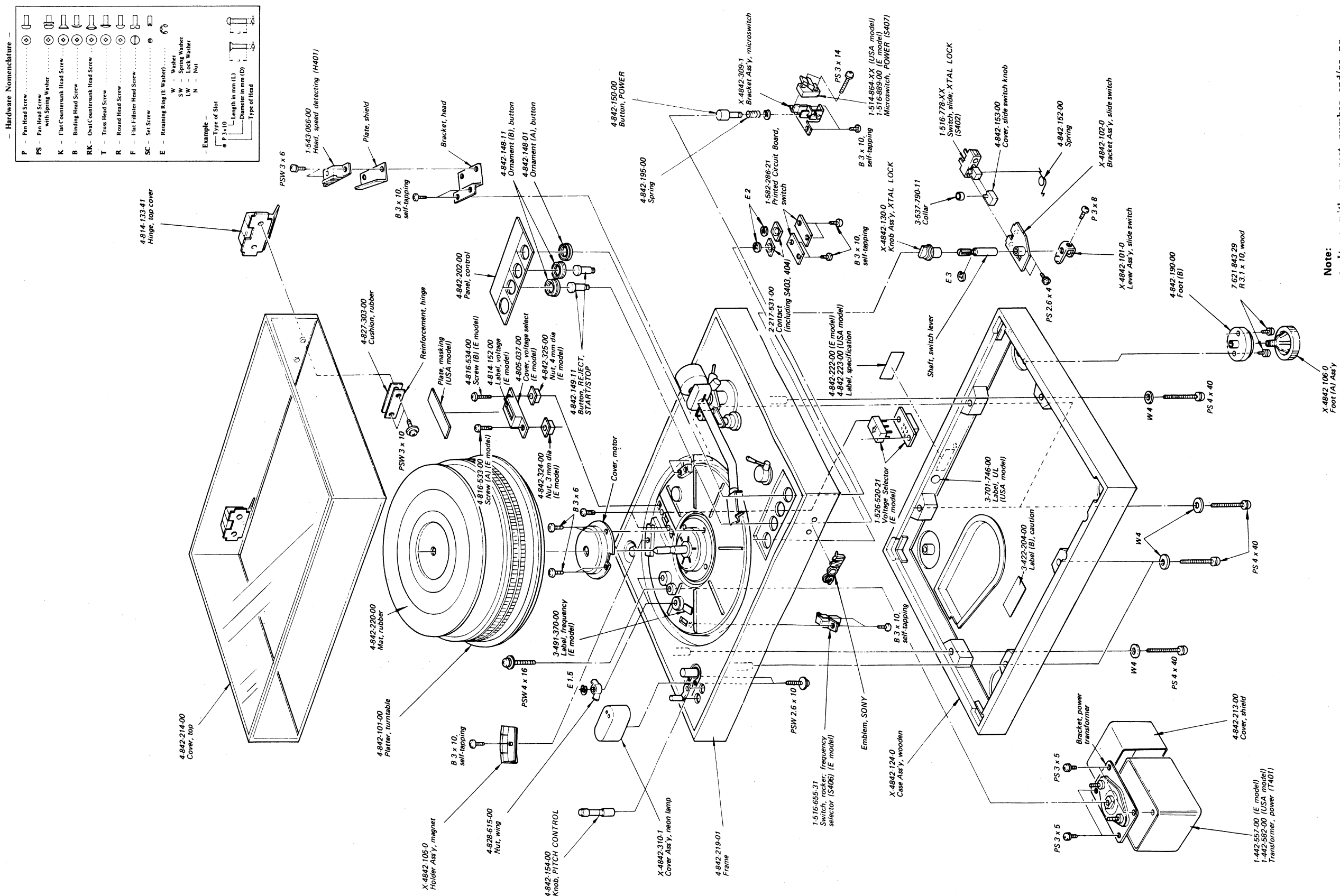


PS-8750 PS-8750

SECTION 5

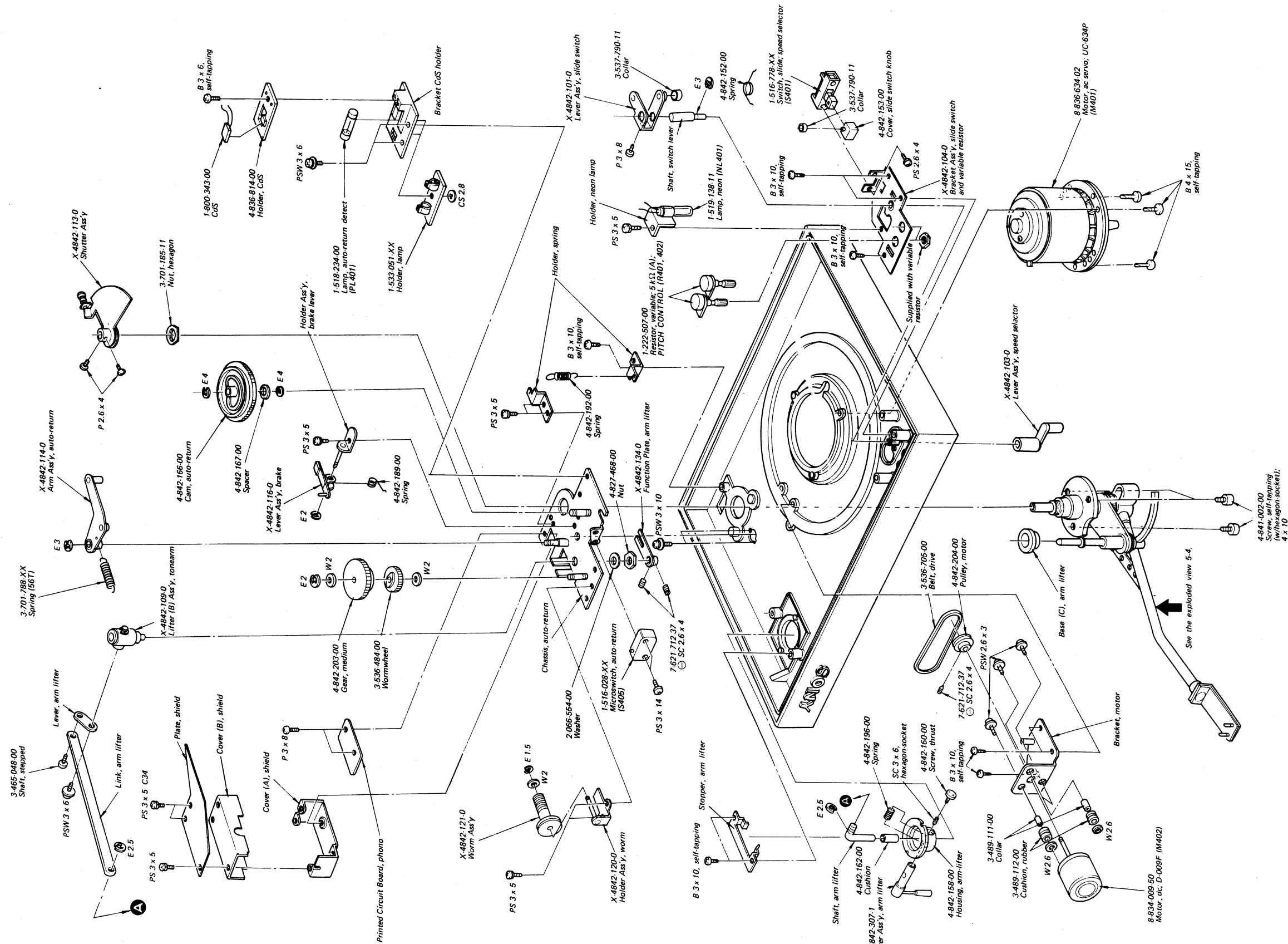
EXPLODED VIEWS

5-1.



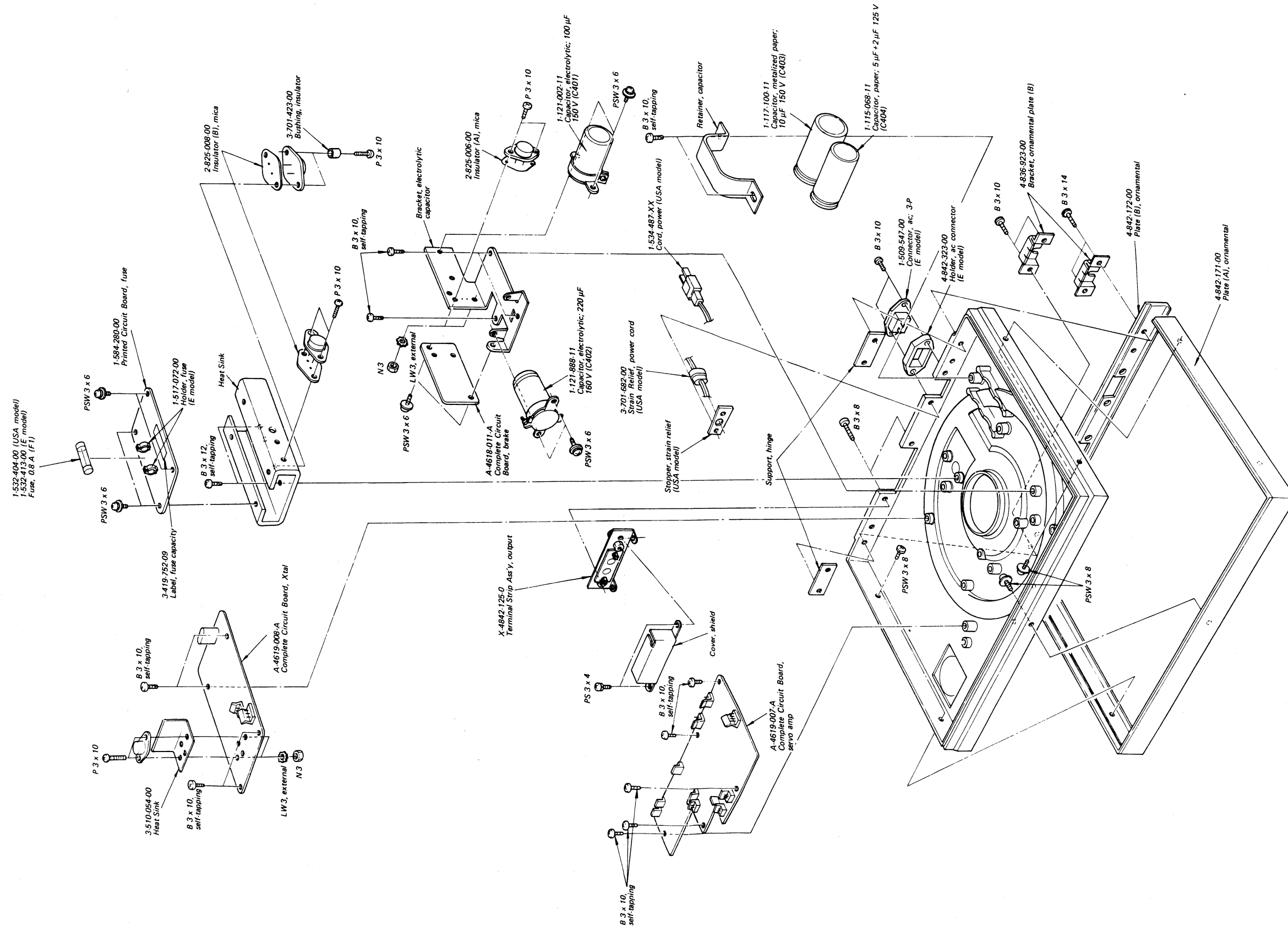
Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
- (-) = slotted head
- (□□T) shows the number of coils in spring.



Note:

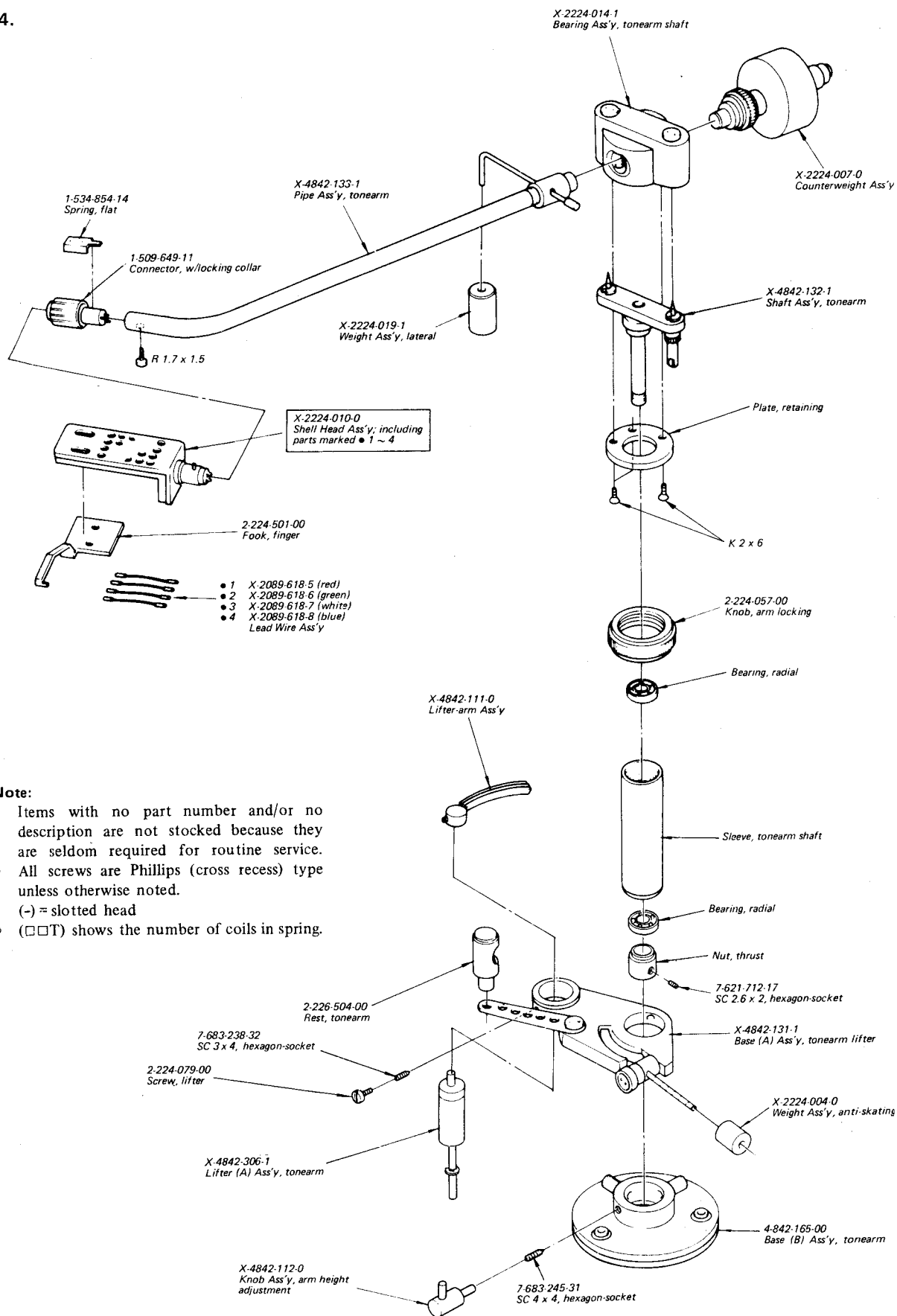
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
- (-) = slotted head
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Note:

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 - (-) = slotted head
 - (□□□) shows the number of coils in spring.

5-4.



Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
- (-) = slotted head
- (□□T) shows the number of coils in spring.

SECTION 6

ELECTRICAL PARTS LIST

<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			Diodes		
A-4618-011-A	brake		D1,2	VD1220	
A-4619-007-A	servo amp		D3,4	MV5L	
A-4619-008-A	Xtal		D7~10	10E2	
			D11~17	1S1555	
			D18	EQA01-12S	
PRINTED CIRCUIT BOARDS			D23,24	2S1555	
1-584-280-00	fuse		D25	1T40	
SEMICONDUCTORS			D101~105	1S1555	
Transistors			D106	10E2	
Q1~4	2SC633A		D107	1S1555	
Q5,6	2SA677		D108	10E2	
Q7,8	2SC633A x 2		D201,202	10E2	
	(replacement transistor for 2SC1963)		D203	10E4	
Q9	2SA677		CAPACITORS		
Q10	2SC633A		All capacitors are in μ F and of electrolytic unless otherwise noted. (p = μ μ F) 50 or less working volts are omitted except for electrolytic type.		
Q11	2SA677		C1	1-108-847-12	0.068 mylar
Q12~21	2SC633A		C2	1-121-726-11	0.47 50 V
Q22	2SC1474		C3	1-121-352-11	47 10 V
Q23~30	2SC633A		C5	1-121-392-11	3.3 25 V
Q31,32	2SC1760		C6,7	1-121-651-11	10 16 V
Q101~107	2SC633A		C8	1-102-836-11	470 p ceramic
Q108	2SC1760		C9	1-103-043-11	10000 p styrol
Q109	2SC633A		C10	1-108-837-12	0.01 mylar
Q110	2SC1127		C11	1-121-726-11	0.47 50 V
Q111	2SC926A		C14	1-131-237-11	1.5 25 V tantalum
Q112	2SC1431		C15	1-108-825-12	0.001 mylar
Q201	2SC926A		C16	1-108-846-12	0.056 mylar
Q202,203	2SA639S		C17	1-108-825-12	0.001 mylar
Q204	2SC867		C18	1-108-847-12	0.068 mylar
Q401	2SD69		C19	1-121-391-11	1 50 V
ICs			C20,21	1-108-844-12	0.039 mylar
IC101	MSM5576		C22~24	1-121-391-11	1 50 V
IC102~106	M53200P		C25,26	1-121-352-11	47 10 V
IC107	M53210P		C27	1-121-419-11	220 6.3 V
IC108	M53220P				

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	
C28	1-121-404-11	33	25 V
C29	1-121-392-11	3.3	25 V
C30~33	1-121-726-11	1	50 V
C34	1-121-245-11	1000	16 V
C35	1-121-410-11	470	25 V
C36	1-121-245-11	330	25 V
C38	1-108-825-12	0.001	mylar
C101	1-108-833-12	0.01	mylar
C102~107	1-102-967-11	22 p	ceramic
C108,109	1-102-491-11	51 p	ceramic
C110,111	1-101-919-11	0.0022	ceramic
C112	1-131-195-11	33	10 V tantalum
C113	1-108-833-12	0.01	mylar
C114~123	1-102-967-11	22 p	ceramic
C124	1-108-833-12	0.01	mylar
C125	1-101-001-11	0.001	ceramic
C126	1-108-816-12	0.1	mylar
C127	1-108-833-12	0.01	mylar
C128	1-131-195-11	33	10 V tantalum
C129,130	1-102-967-11	22 p	ceramic
C131	1-121-414-11	100	10 V
C132	1-123-008-11	10	350 V
C201	1-129-720-11	0.033	400 V plastic
C401	1-121-002-11	100	150 V
C402	1-121-888-11	220	160 V
C403	1-117-100-11	10	150 V metalized paper
C404	1-115-068-11	5 + 2	125 V paper
C405	1-108-747-22	0.1	300 V mylar (E model)
	1-108-747-11	0.1	120 V mylar (USA model)

RESISTORS

All resistors are in ohms. Regular-type ¼ W carbon and composition resistors are omitted. Check schematic diagram for resistance values. k = 1000

R13,15	1-224-255-XX	100 k	adjustable
R14	1-213-200-11	270 k	¼ W metal-oxide
R16	1-213-201-11	390 k	¼ W metal-oxide
R21	1-213-199-11	10 k	metal-oxide
R24,25	1-213-198-11	6.8 k	metal-oxide

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	
R42	1-212-366-11	3.3	1 W carbon
R70	1-222-701-00	470	adjustable
R72	1-213-129-11	68	1 W metal-oxide
R77	1-222-994-00	220 k	adjustable
R90	1-222-805-00	10 k	adjustable
R93	1-206-122-11	420	2 W metal-oxide
R96	1-206-481-11	56	2 W metal-oxide
R136	1-206-672-11	2.2 k	2 W metal-oxide
R209	1-217-300-11	15	5 W wirewound
R210	1-217-304-11	33	5 W wirewound
R401,402	1-222-507-00	5 k (A), variable;	PITCH CONTROL

SWITCHES

S401,402	1-516-778-XX	Slide, speed selector, XTAL LOCK
S403,404		START/STOP, REJECT (included in contact)
S405	1-516-028-XX	Micro, auto-return
S406	1-516-655-31	Rocker, frequency selector (E model)
S407	1-514-864-XX	Micro, POWER (USA model)
	1-516-889-00	Micro, POWER (E model)

MISCELLANEOUS

CP401	1-101-534-00	Encapsulated Component
F1	1-532-404-00	Fuse, 0.8 A (USA model)
	1-532-413-00	Fuse, 0.8 A (E model)
H401	1-543-066-00	Head, speed detecting
M401	8-836-634-02	Motor, ac servo; UC-634P
M402	8-834-009-50	Motor, dc; D-009F
NL401	1-519-138-11	Lamp, neon
PL401	1-518-234-00	Lamp, auto-return detect
T401	1-442-557-00	Transformer, power (E model)
	1-442-582-00	Transformer, power (USA model)
L401	1-421-302-22	Coil, line filter
	1-509-547-00	Connector, ac; 3-p (E model)
	1-509-649-11	Connector, w/locking collar
	1-517-072-00	Holder, fuse (E model)
	1-526-520-21	Voltage Selector (E model)
	1-527-903-00	Crystal
	1-533-051-XX	Holder, lamp
	1-534-487-XX	Cord, power (USA model)
	1-534-854-14	Spring, flat
	1-800-343-00	Cds

ACCESSORIES

<u>Part No.</u>	<u>Description</u>
X-2224-011-0	Screw Ass'y, cartridge
1-534-551-XX	Cord, power (E model)
1-551-085-11	Cord, phono
2-089-697-00	Screwdriver
2-224-086-00	Sub-weight
3-780-752-11	Manual, instruction (E model)
3-780-752-21	Manual, instruction (USA model)
3-793-395-13	Gauge, overhang adjustment
4-808-461-00	Adaptor, 45 rpm