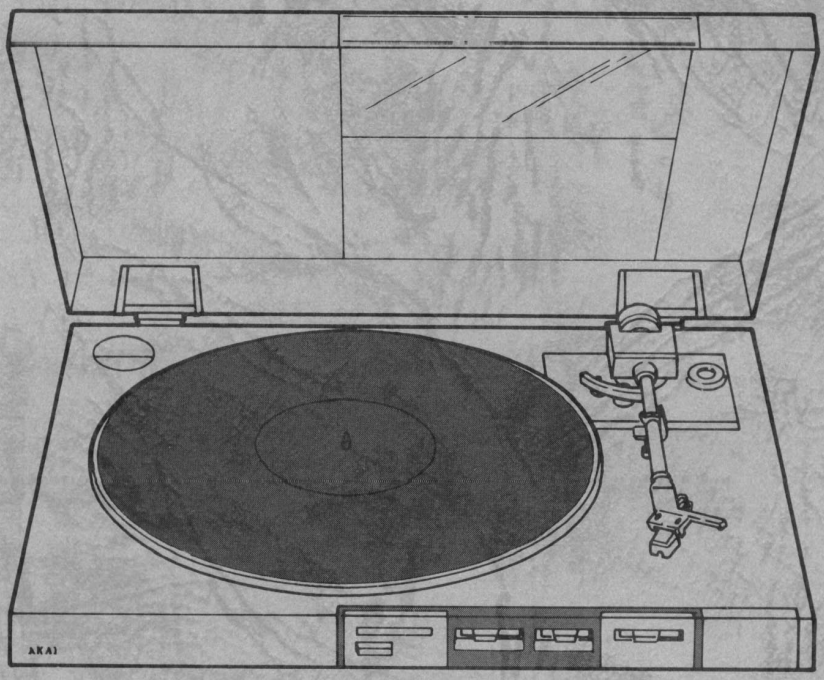
AP-D3/C

AKAI SERVICE MANUAL



FULL AUTO DD TURNTABLE

MODEL **AP-D3/C**

FULL AUTO DD TURNTABLE

MODEL AP-D3/C

This manual is applicable to both silver and pearl shadow panel models.

TABLE OF CONTENTS

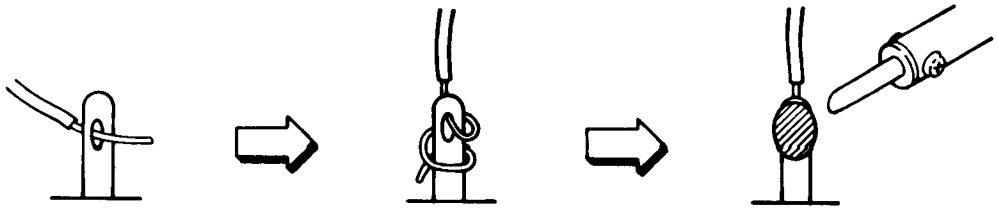
SAFETY INSTRUCTION

SAFETY CHECK AFTER SERVICING

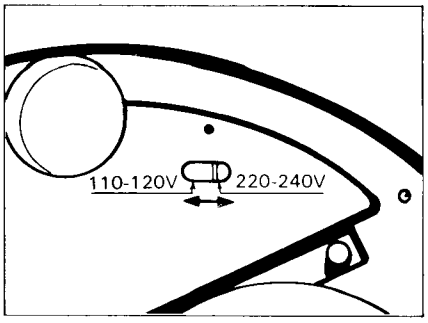
Confirm the specified insulation resistance between power cord plug prongs and externally exposed parts of the set is greater than 10 Mohms, but for equipment with external antenna terminals (tuner, receiver, etc.) and is intended for [C] or [A], specified insulation resistance should be more than 2.2 Mohms (ground terminals, microphone jacks, headphone jacks, line-in out jacks etc.).

PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ symbol parts are critical for safety.
   Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (Insulating Barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.
10. Voltage Conversion
    Models for Canada, USA, Europe, UK and Australia are not equipped with this facility. Each machine is preset at the factory according to destination, but some machines can be set to 110V – 120V or 220V – 240V as required. If your machine's voltage can be converted:
    1) Disconnect the power cord.
    2) Move the VOLTAGE SELECTOR located on the cabinet, under the platter, with a screwdriver so that the marker is below the voltage for your area.



SECTION 1

SERVICE MANUAL

TABLE OF CONTENTS

For basic adjustments, measuring methods, and operating principles, refer to GENERAL TECHNICAL MANUAL.

I. SPECIFICATIONS

Turntable (Platter)	Aluminum Alloy Diecast
Drive System	FG Servo Direct Drive Full Automatic
Motor	DC Servo Motor
Speed	33-1/3 & 45 rpm
Wow & Flutter	0.03% (W.RMS)
Rumble	73 dB (DIN-B)
Tone Arm	Static Balanced Straight Type
Effective Arm Length	220 mm
Stylus Pressure/Adjustment Range	0 to 2.5 g
Applicable Cartridge Weight	3 to 7 g
Arm Lifter	Oil Damped
Over Hang	15 mm
Cartridge** Output Voltage Channel Separation	Moving Magnet Type (Replacement Stylus RS-85) 2.5 mV (DIN) 20 dB
Power Requirement	120V, 60 Hz for USA & Canada 220V, 50 Hz for Europe except UK 240V, 50 Hz for UK & Australia 110V to 120V/220V to 240V, 50/60 Hz switchable for other countries
Dimensions	440(W) × 98(H) × 342(D) mm (17.3 × 3.9 × 13.5 inches)
Weight	4.4 kg (9.7 lbs)

** AP-D3 does not include cartridge.

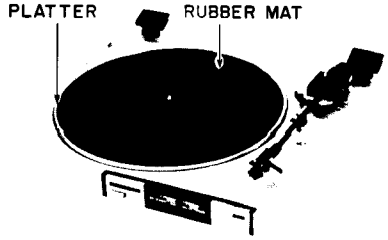
* For improvement purposes, design and specifications are subject to change without notice.

II. DISMANTLING OF UNIT

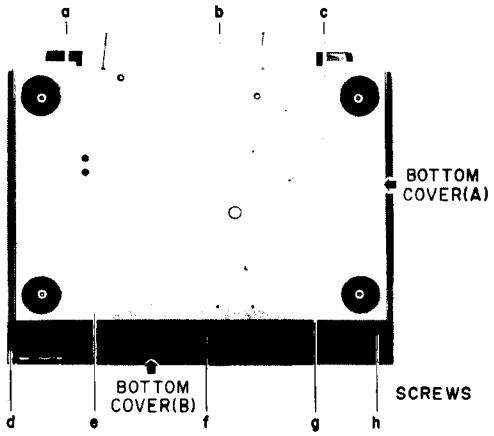
In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the photographs.
Reassemble in reverse order.

1

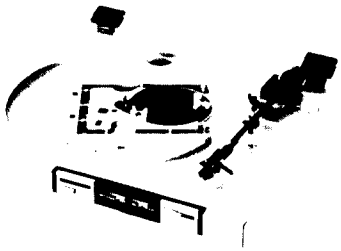
2



3



4



III. CONTROLS

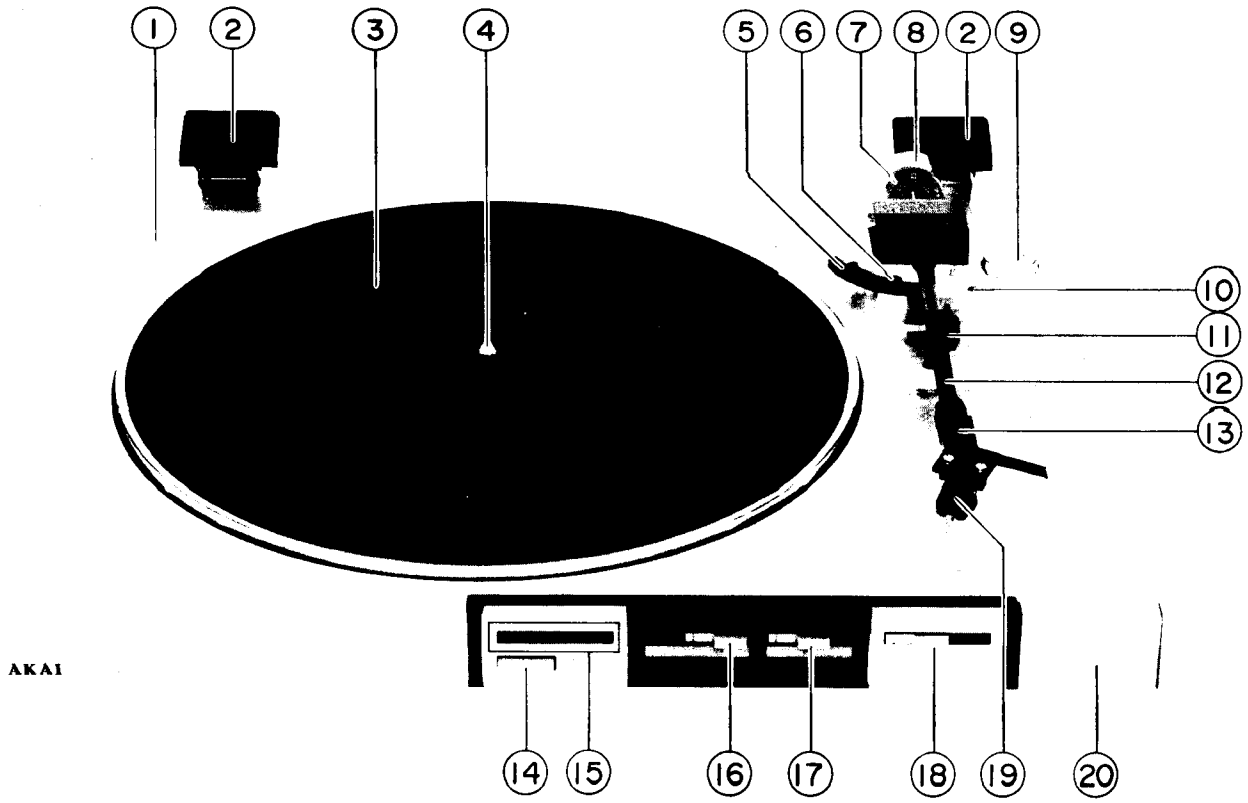


Fig. 3-1 Controls

1. 45 rpm ADAPTOR HOLDER
2. HINGE
3. RABBER MAT
4. SPINDLE
5. TONE ARM LIFTER
6. TONE ARM LIFTER HIGHT ADJUSTMENT SCREW
7. STYLUS PRESSURE SCALE RING
8. MAIN WEIGHT
9. ANTISKATING ADJUSTER
10. LEAD-IN/LEAD-OUT ADJUSTMENT SCREWS
11. TONE ARM REST with CLAMP
12. TONE ARM
13. HEAD SHELL
14. SPEED SELECTOR SWITCH
15. SPEED INDICATOR
16. SIZE SELECTOR SWITCH
17. REPEAT SWITCH
18. CUEING SWITCH
19. CARTRIDGE (AP-D3C ONLY)
20. START/CUT BUTTON

IV. PRINCIPAL PARTS LOCATION

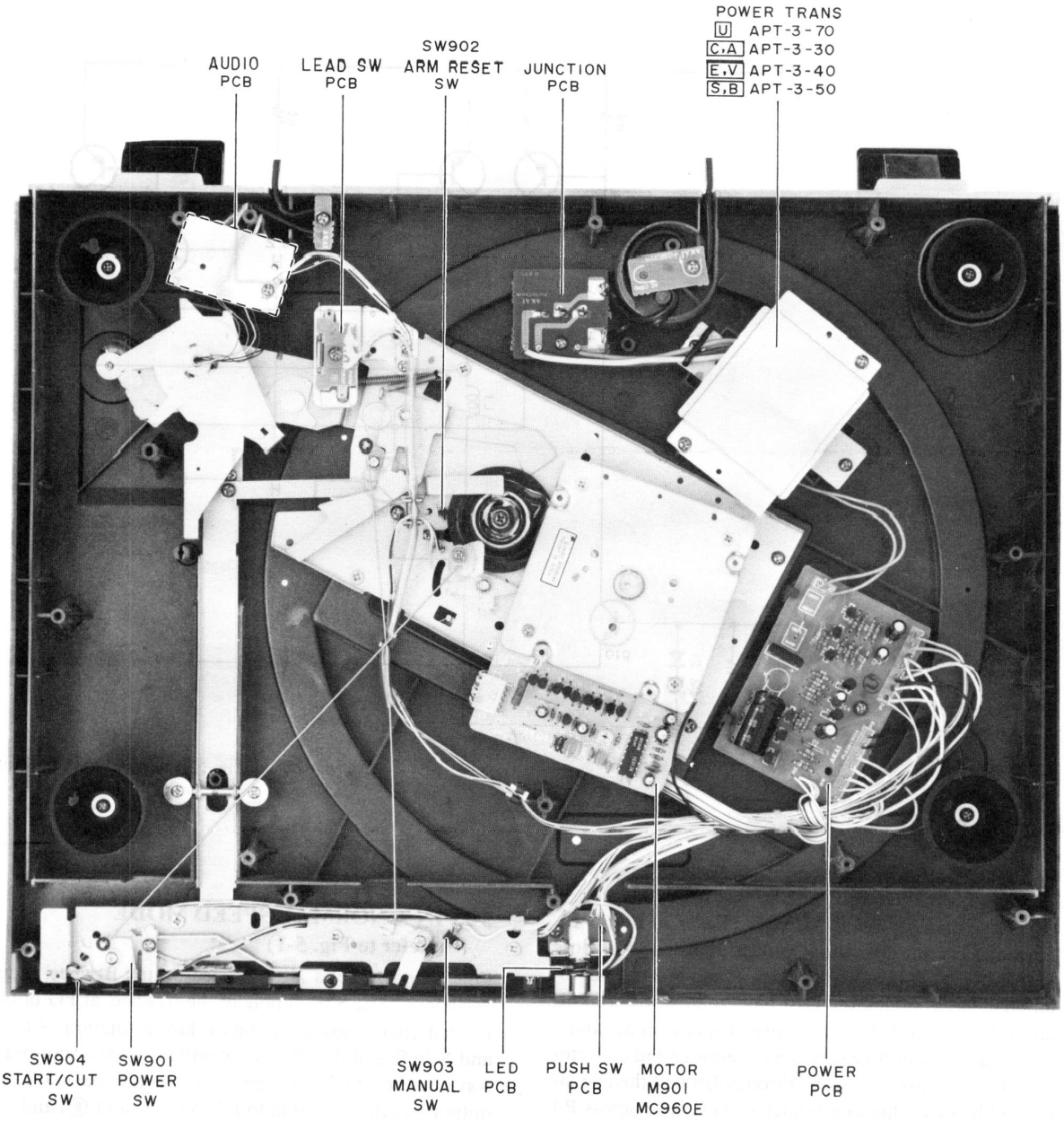


Fig. 4-1 Principal Parts Location (Bottom View)

V. DESCRIPTION OF MOTOR DRIVE CIRCUIT

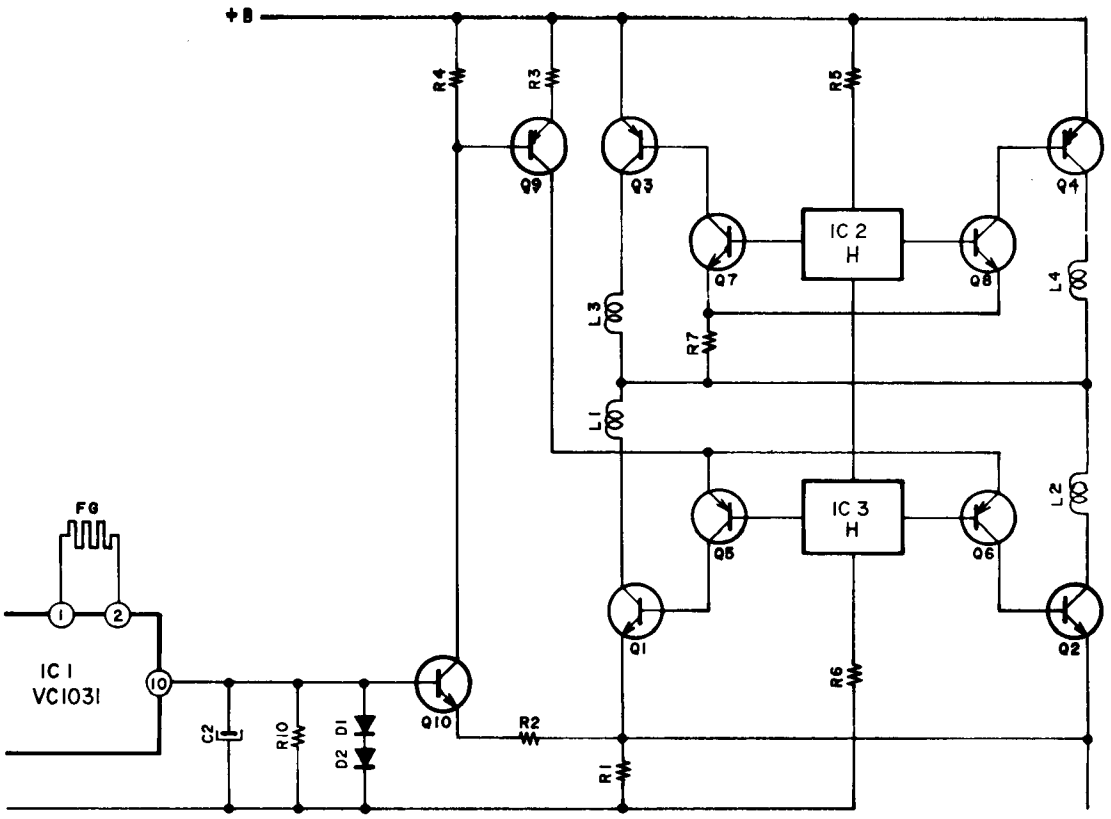


Fig. 5-1 Motor Drive Circuit

5-1. IN A START-UP MODE (Refer to Fig. 5-1)

Since the IC1 pin ⑩ output voltage attains a level close to that of pin ⑧ (at a higher voltage than in a normal rotational speed mode), the Q10 base voltage will also attain a higher level than in a normal speed mode, and a larger current will flow between the emitter and collector of Q10. The current flowing through Q9 will then be increased by Q10, due to a greater voltage drop across R4 than in a normal speed mode which consequently lowers the voltage applied to the Q9 base, and as a result, increases the current flowing between the Q9 emitter and collector.

Since due to the above situation, a larger current will flow from Q1 to the Q4 emitter and collector, the current flowing through coils L1 to L4 will also increase, the force to rotate the flywheel, in turn, will be made greater, and a start-up will be effected.

5-2. IN A NORMAL SPEED MODE (Refer to Fig. 5-1)

Fine S and N poles are provided on the flywheel outer periphery. The S or N pole of the flywheel at FG of the printed circuit board alternates due to rotation, S to N and N to S, and the FG output will be made a sinusoidal wave by their magnetic fluxes. The sinusoidal wave FG output will then be input to IC1 pins ① and ②, and the IC output will appear at pin ⑩ as a DC voltage.

As the motor revolution slows down, the sinusoidal FG wavelength will become longer, and the DC voltage at IC10 pin ⑩ will become higher. As the motor revolution speeds up, the DC voltage at the IC pin ⑩ will become lower.

5-3. ROTATING METHOD (Refer to Fig. 5-1 to Fig. 5-3)

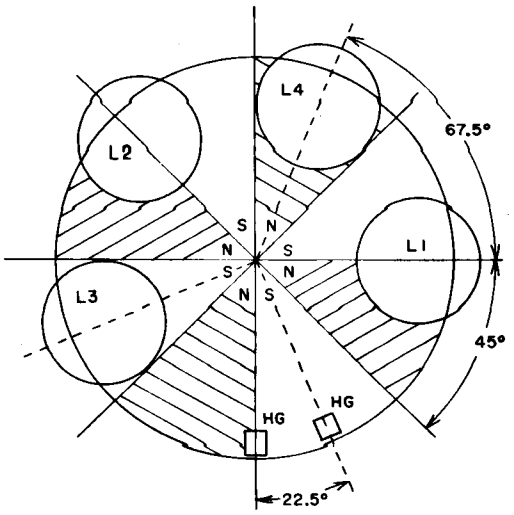


Fig. 5-2 Located of Various Parts

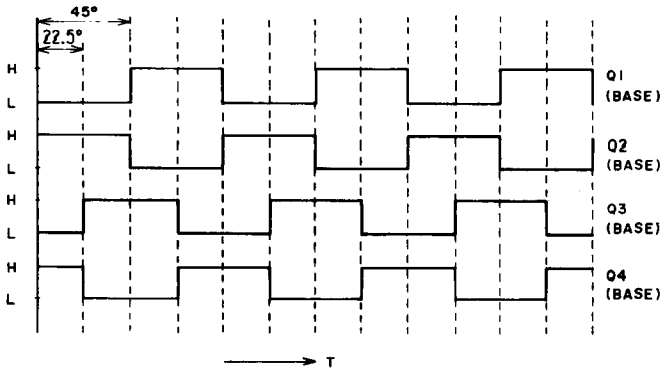


Fig. 5-3 Input Waveform of Q1 to Q4

As a voltage is applied to the Q10 base, turning it on, the Q10 collector will become L, and Q9 will turn on, flowing a current between its emitter and collector.

When due to rotation, the S and N poles provided on the motor alternate, S to N and N to S, outputs of the Hall ICs (IC2 and IC3) will also vary, H to L and L to H. Each Hall IC has two outputs, one becoming H when the other is L and vice versa, without fail. The Hall IC output variation drives the transistors that flow currents through coils.

For instance, when the IC2 outputs make the Q7 base H and the Q8 base L, Q7 will turn on, making its collector L and also the Q3 base L, and Q3 will turn on. At that point, a current will flow between the Q3 emitter and collector, and consequently through L3 as well. Since the other transistor, Q8, turns off due to its base at L, and its collector will become H, Q4 will also turn off, and due to no current flow between the Q4 emitter and collector, no current will flow through L4 either.

The IC3 block also operates similarly to the IC2 block described above.

Magnetic poles provided on the flywheel are octosectorial (at 45° sectorial angles individually) and equally divided into S and N poles. (These magnets differ from those for FG.) Hall ICs (IC2 and IC3), on the other hand, are mounted at 22.5° individual sectorial angles. (See Fig. 5-2)

Accordingly, the Q1 to Q4 base voltages will vary in accordance with the flywheel angular position as shown in Fig. 5-3, where a 180° phase difference exists between Q1 and Q2, as well as between Q3 and Q4, all of which are inverted in 45° cyclic periods. Further, a 22.5° phase difference has been provided between Q1 and Q3 as well as between Q2 and Q4.

Because of the above arrangement, currents flow through coils L3 and L1 first, followed by L4 and L1, L4 and L2, and L3 and L2, in that order to form the sequence of a cycle. (Refer to Figs. 1 and 5-2)

The force driving the flywheel is varied by the currents following through coils. The larger the current flowing through a coil, the greater will its flywheel driving force become, and the faster will the flywheel tend to revolve. The smaller the current flowing through a coil, the small will its flywheel driving force become, and the slower will the flywheel tend to rovolve toward halting ultimately.

VI. ORDINARY ADJUSTMENT

6-1. STYLUS PRESSURE ADJUSTMENT (Refer to Fig. 6-1)

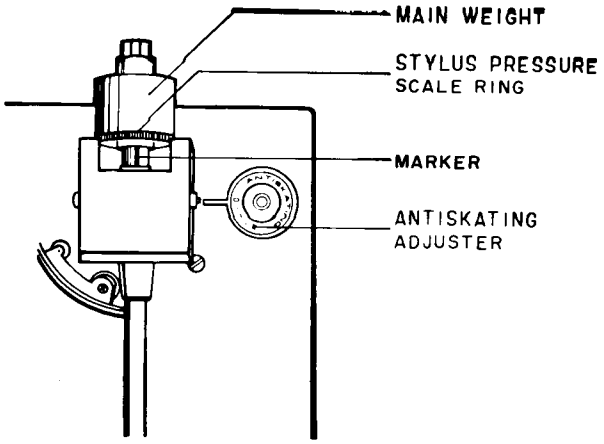


Fig. 6-1 Stylus Pressure Adjustment

1) Connect the Power Cord.
2) Set the ANTISKATING adjuster to "0".
3) Set the CUE level to ▼.
4) Set the SIZE/MANUAL Mode selector to MANUAL.
5) Unlock the Tone Arm and bring it towards the Platter.
   * Remove the Stylus Guard being careful not to damage the Stylus.
6) Depress the START/CUT switch.
   The Tone Arm Lifter will be lowered.
7) With the Tone Arm held midway between the Tone Arm Rest and the rim of the Platter, adjust the Main Weight until the Tone Arm is in perfect horizontal balance.
8) Without moving the Main Weight, rotate the Stylus Pressure Scale Ring only to match the "0" mark with the mark on the weight shaft.
9) Lock the Tone Arm in place and rotate the Main Weight counterclockwise, as viewed from the front (the Stylus Pressure Scale Ring will move with it), until the desired Stylus Pressure Scale indication is at the mark on the shaft. The range of adjustment is from 0 to 2.5 grams.
   * For AP-D3/C only: The recommended stylus pressure for the cartridge supplied, RS-85, is 2 grams.
10) Set the ANTISKATING adjuster to the corresponding stylus pressure.

6-2. OVERHANG ADJUSTMENT (Refer to Fig. 6-2)

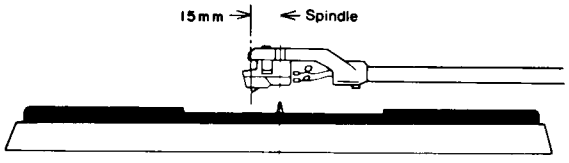


Fig. 6-2 Overhang Adjustment

The Distance between the Spindle and the Stylus when the Tone Arm is centered over the Platter is known as the Overhang.

1) Disconnect the power cord.
2) Place the 45 rpm adaptor (standard accessory) on the platter.
3) Center the tone arm over the platter.
4) Adjust the cartridge so that the stylus position is even with the groove for overhang adjustment (45 rpm adaptor's ring).
   * The cartridge position can be adjusted by resetting the cartridge re-setting screws in the head shell.

VII. MECHANICAL ADJUSTMENT

7-1. TONE ARM HEIGHT ADJUSTMENT

7-1-1. WHEN AUTO-CUT MODE (Refer to Fig. 7-1)

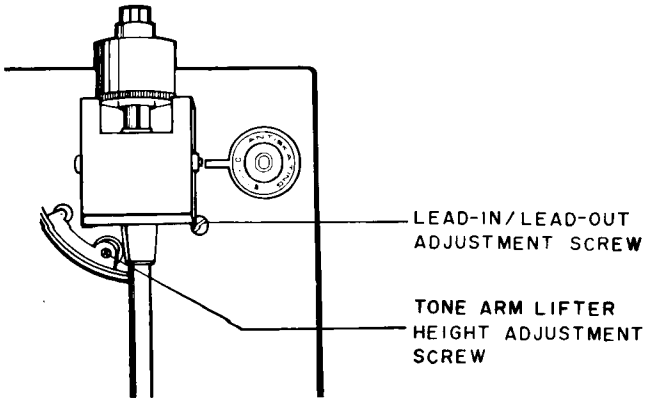


Fig. 7-1

1) Set the SIZE SELECTOR to 17 cm position.
2) Set the play mode, and push the Cut Button.
3) While returning the Tone Arm, confirm the height of the Stylus from surface of the Record is 4.0 to 10.0 mm.
4) If the height is without 4.0 to 10.0 mm, adjust Tone Arm Lifter Height Adjustment Screw.
   up: Counterclockwise
   down: Clockwise

7-1-2. WHEN MANUAL (Cueing) MODE (Refer to Fig. 7-2)

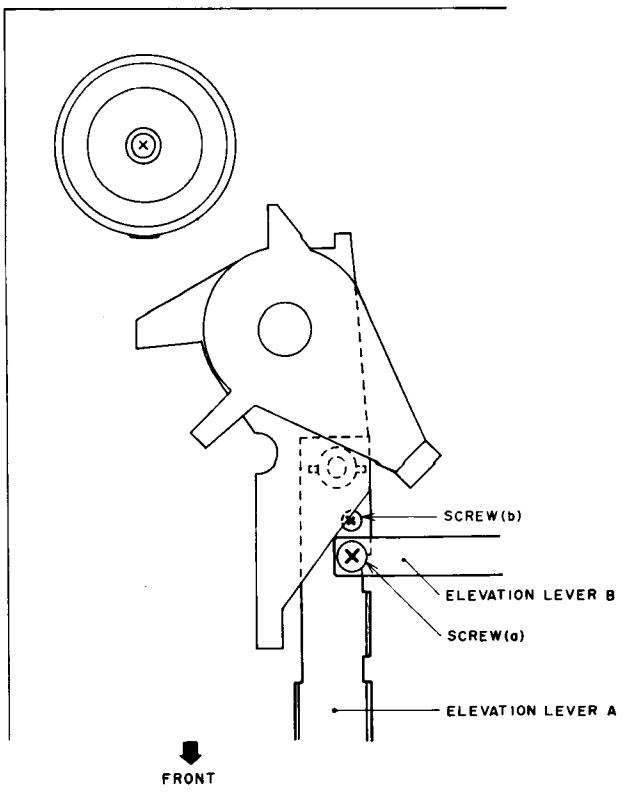


Fig. 7-2 Tone Arm Lifter Adjustment at Manual Mode

1) Set the SIZE SELECTOR to 17 cm position.
2) Set the play mode, then set the CUEING Switch to up position.
3) Confirm the height difference of the Stylus between Auto-Cut mode, and Manual (cueing) Cut mode is within ± 2.0 mm.
4) If the height difference of Stylus is more than ± 2.0 mm, Adjust Screw (b) of the Elevation Lever A so that the height difference of the Stylus is within ± 2.0 mm.
5) After adjustment, paint lock the Screw (b).

7-2. LEAD-IN/LEAD-OUT ADJUSTMENT (Refer to Fig. 7-1)

1) Lead-in position
   a) Place a record on the Platter.
   b) Auto-play the record and confirm where the Stylus descends.
   c) Depress the START/CUT switch to return the Tone Arm to the Tone Arm Rest.
   d) Move the Tone Arm towards the Platter until the Lead-in Adjustment Screw is visible.
   e) Turn the Lead-in Adjustment Screw with a screwdriver:
      Clockwise: To make the Stylus descend towards the Spindle.
      Counterclockwise: To make the Stylus descend away from the Spindle.

2) Lead-out position
   a) Auto-play the record and confirm where auto-return begins.
   b) Turn the Lead-out Adjustment Screw with a screwdriver:
      * The Lead-out Adjustment Screw is visible without moving the Tone Arm.
      Clockwise: To delay auto-return.
      Counterclockwise: To hasten auto-return.

NOTE: Carry out both adjustments little at a time and confirm the position after each adjustment.

7-3. RETURN PLUNGER POSITION ADJUSTMENT (Refer to Fig. 7-3)

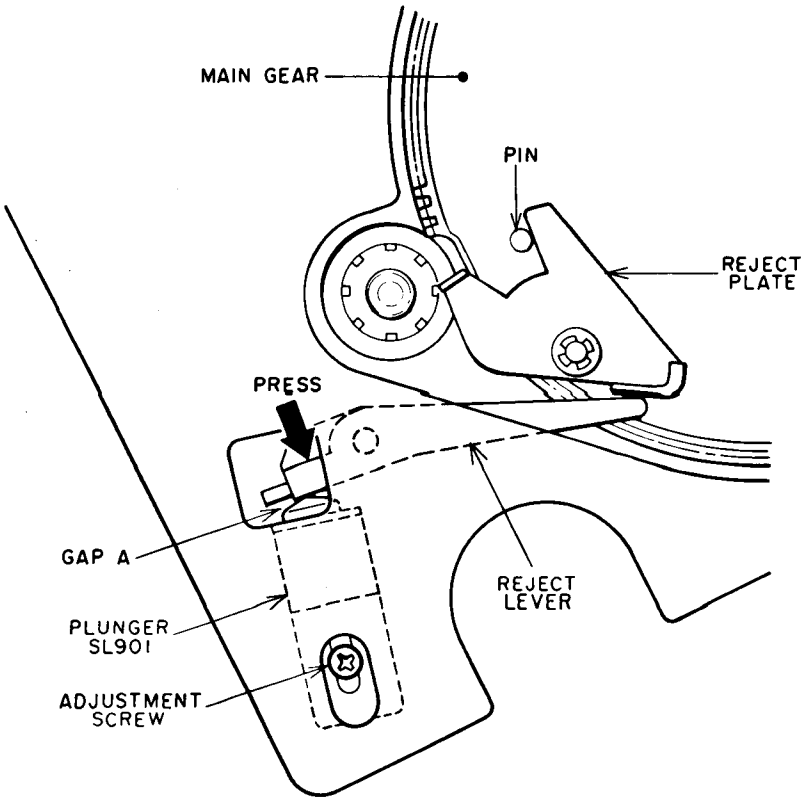


Fig. 7-3 Return Plunger Position Adjustment

Press the Reject Lever down with a finger until the Reject Plate touches the main gear pin. Operare the Plunger (SL901) in this position and adjust the installation screw at exactly the point where the gap A between the Reject Lever and Plunger disappears. (Refer to Fig. 7-3)
After adjustment, confirm that the Auto Play is operating.

VIII. ELECTRICAL ADJUSTMENT

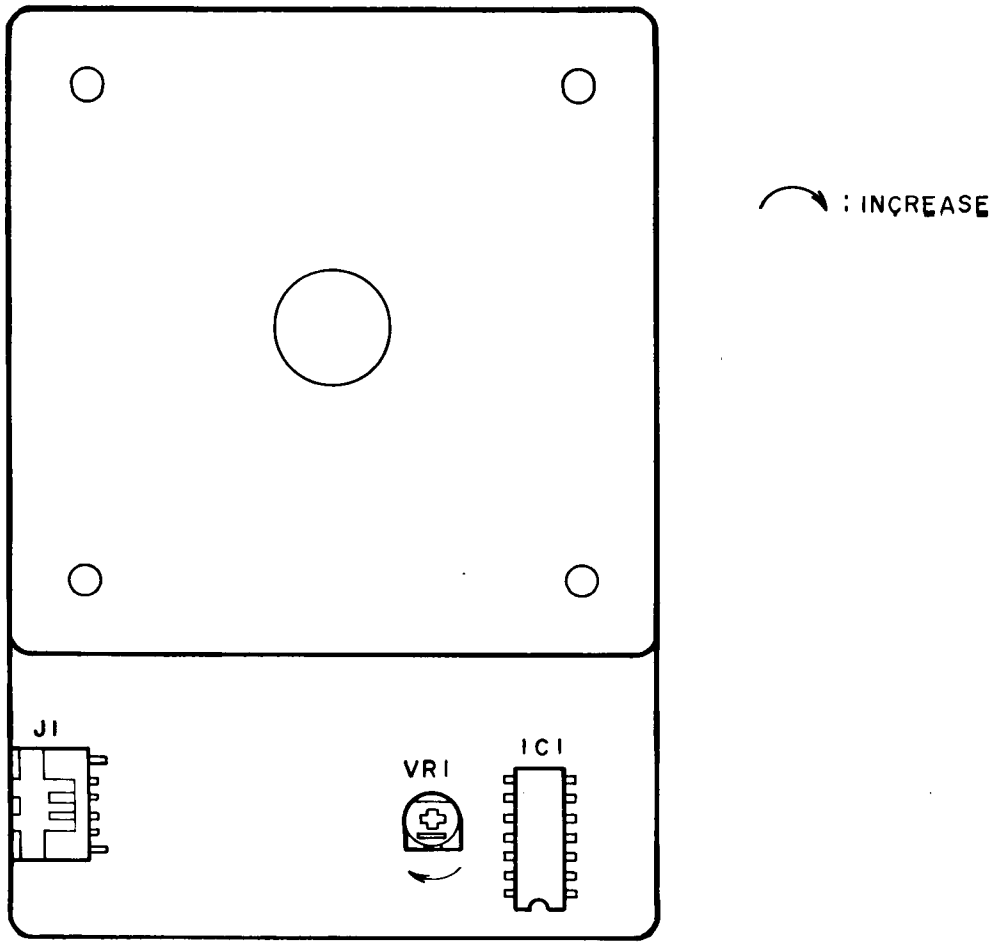


Fig. 8-1 Speed Adjustment

8-1. SPEED ADJUSTMENT

1) Set the Speed Selector to 33-1/3 rpm.
2) Playback the Test Record (33-1/3 rpm, 1,000 Hz).
3) Adjust VR1 (10 kohms) so that the speed is 1,000 ± 5 Hz.
4) Set the Speed Selector to 45 rpm.
5) Playback the Test Record (45 rpm, 1,000 Hz).
6) Confirm that the Speed is 1,000 ± 5 Hz.

8-2. WOW AND FLUTTER CONFIRMATION

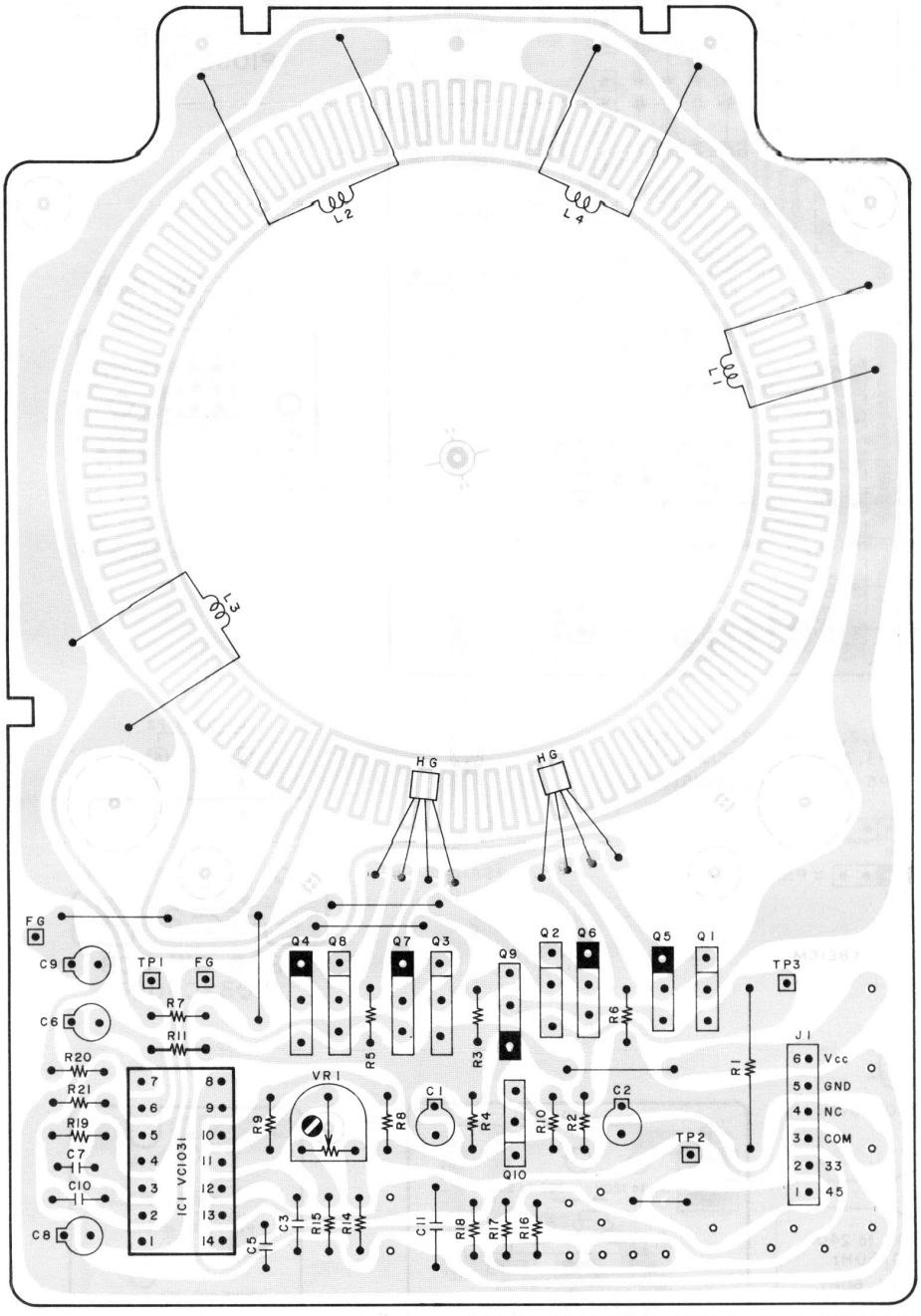
1) Playback the Test Record (3,000 Hz).
2) Confirm that the Wow and Flutter is within 0.03% (JIS).
3) If not, re-adjust VR1.

IX. CLASSIFICATION OF VARIOUS P.C BOARDS

9-1. P.C BOARD TITLES AND IDENTIFICATION NUMBERS

P.C BOARD TITLES		P.C BOARD NUMBER
POWER	P.C Board	P1032C501A
JUNCTION	P.C Board	P1032C501B
LED	P.C Board	P1032C501C
PUSH SW	P.C Board	P1032C501D
AUDIO	P.C Board	P1032C501E
LEAD SW	P.C Board	P1032C501F
MOTOR	P.C Board	MC960E

9-2. COMPOSITION OF VARIOUS P.C BOARD



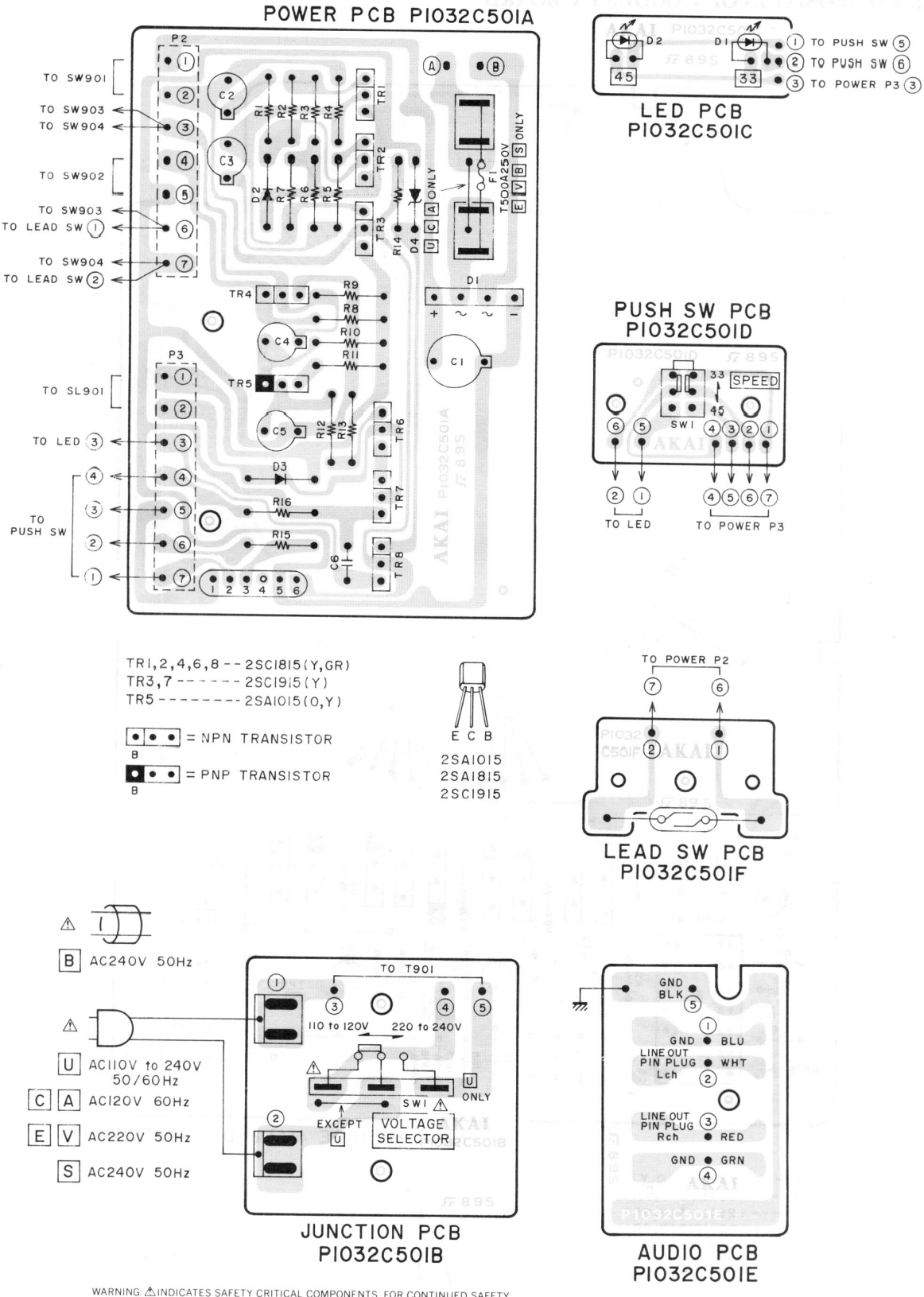
M901 MC960E HALL D.D. MOTOR

Q1, 2 ----- 2SC2120(O,Y)
Q3, 4 ----- 2SA950(O,Y)
Q5, 6 ----- 2SA1015(Y,GR)
Q7, 8 ----- 2SC1815(Y,GR)
Q9 ------ 2SA1015(GR)
Q10 ------ 2SC1815(GR,BL)

= NPN TRANSISTOR

= PNP TRANSISTOR

2SA950
2SA1015
2SC1815
2SC2120



WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

SECTION 2

PARTS LIST

TABLE OF CONTENTS

Resistor and Capacitor which are not listed in this parts list, please refer to COMMON LIST FOR SERVICE PARTS.

ATTENTION

1. When placing an order for parts, be sure to list the parts no. model no., and description. There are instances in which if any of this information is omitted, parts cannot be shipped or the wrong parts will be delivered.
2. Please be careful not to make a mistake in the parts no. If the parts no. is in error, a part different from the one ordered may be delivered.
3. Because parts number and parts unit supply in the Preliminary Parts List may be partially changed, please use this parts list for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List shows the parts that are considered necessary for repairs. Other parts, such as resistors and capacitors, are shown in the "Common List for Service Parts". Select and order such parts from the "Common List for Service Parts".
2. The Recommended Spare Parts shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not be supplied in principle.
4. How to read list

a) Mechanism Block

2. HEAD BASE BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
2-1x	BH-T2023A320A	HEAD BASE BLOCK GX-F66R
2-2	HP-H2206A010A	HEAD R/P PR4-8FU C
2-3	ZS-477876	PAN20x03STL CMT
2-4	ZS-536488	BID20x08STL CMT
2-5	ZG-402895	CS ANGLE ADJUST SPRING

SP (Service Parts) Classification

A small "x" indicates the inability to show that particular part in the Photo or Illustration.

This number corresponds with the individual parts index number in that figure

This number corresponds with the Figure Number

b) P.C Board Block

6. SYS. CON. P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
6-1	BA-T2034A070A	PC SYS CON BLK GX-F44R
6-IC1	EI-324536	IC HD14049BP
6-IC2	EI-336801	IC MB8841-564M
6-IC3	EI-331661	IC SN7405N
6-IC4	EI-336725	IC M54527P
6-TR1to4	ET-200985	TR 2SC2603 F,G
6-TR5to28	ET-554657	TR 2SA733A P,Q
6-D1	ED-318292	D SILICON H 1S2473T-77 T26
6-D2to4	ED-308952	D GERMA V 1K34A-LR F07
6-D5to10	ED-318292	D SILICON H 1S2473T-77 T26
6-X1	EI-318384	OSC X'TAL NC-18C 3.579545MHZ

SP (Service Parts) Classification

This reference numbers corresponds with symbol numbers of Schematic Diagrams.

5. Both the kind of part and installation position can be determined by the Parts Number. To determine where a parts number is listed, utilize Parts Index at end of Parts List. It is necessary first of all to find the Parts Number. This can be accomplished by using the Reference Number listed at right of parts number in the Parts Index.

WARNING

⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT

⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

RECOMMENDED SPARE PARTS LIST

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

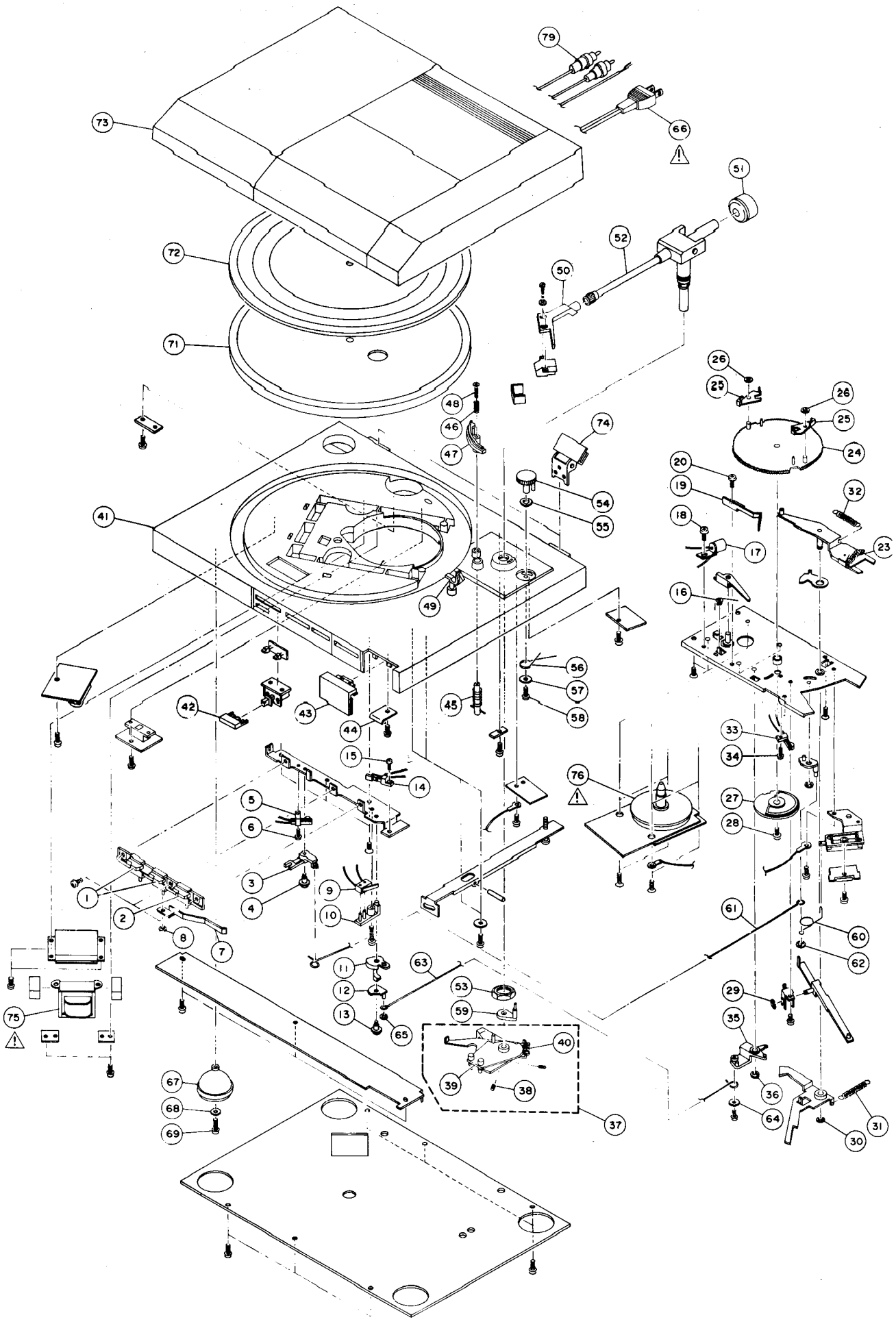
REF. NO.	PARTS NO.	DESCRIPTION
1	BM-348286	⚠ MOTOR MC960E
2	BT-348283	⚠ TRANS POWER APT-3-30 (C, A)
3	BT-348284	⚠ TRANS POWER APT-3-40 (E, V)
4	BT-348285	⚠ TRANS POWER APT-3-50 (B, S)
5	BT-348281	⚠ TRANS POWER APT-3-70 (U)
6	ED-322215	D LED SLP251D GRN
7	ED-337892	D LED SLP451D AMBER
8	ED-321115	D SILICON H 1S1588LB-5 F10
9	ED-322238	D SILICON 1B4B41 100/1.0A
10	ED-303036	D ZENER H 05Z5.6 x
11	EF-300601	⚠ FUSE FST3100 T 250V 0.50A (E, V, B, S)
12	EI-780137	IC VC1031
13	EP-P1003A150A	SOLENOID ASSY NX-9331H
14	ES-516036	SW LEAD ORD-225
15	ES-326961	SW LEAF MSW-0026TU 01-1 NO
16	ES-326961	SW LEAF MSW-0026TU 01-1 NO
17	ES-337895	SW LEAF MSW-0094NBK 01-1 NO
18	ES-348288	SW MICRO D2F-L 01-2
19	ES-337898	SW SLIDE 00120163 01-2 (U)
20	ET-325501	TR 2SA1015 O, Y
21	ET-308867	TR 2SA1015 O, Y, GR
22	ET-742510	TR 2SA950 O,Y
23	ET-308976	TR 2SC1815 BL,GR
24	ET-307234	TR 2SC1815 Y, GR
25	ET-325482	TR 2SC1959 Y
26	ET-328844	TR 2SC2120 O, Y
27	EV-780138	R S-FIX 103
28	TP-332472	GEAR MAIN

1. POWER P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
	POWER P.C BOARD	
1-TR1A, 2A	ET-307234	TR 2SC1815 Y, GR
1-TR3A	ET-325482	TR 2SC1959 Y
1-TR4A	ET-307234	TR 2SC1815 Y, GR
1-TR5A	ET-325501	TR 2SA1015 O, Y
1-TR6A	ET-307234	TR 2SC1815 Y, GR
1-TR7A	ET-325482	TR 2SC1959 Y
1-TR8A	ET-307234	TR 2SC1815 Y, GR
1-D1A	ED-322238	D SILICON 1B4B41 100/1.0A
1-D2A, 3A	ED-321115	D SILICON H 1S1588LB-5 F10
1-D4A	ED-303036	D ZENER H 05Z5.6 x
1-F1EA	EF-300601	⚠ FUSE FST3100 T 250V 0.50A (E, V, B, S)
1-R15A	ER-318322	⚠ R MF H F10 1/4W 3901F
	JUNCTION P.C BOARD	
1-SW1B	ES-337898	SW SLIDE 00120163 01-2 (U)
	LED P.C BOARD	
1-D1C	ED-322215	D LED SLP251D GRN
1-D2C	ED-337892	D LED SLP451D AMBER
	PUSH SW P.C BOARD	
1-SW1D	ES-348289	SW PUSH ESB-62671
	LEAD SW P.C BOARD	
1-SW1F	ES-516036	SW LEAD ORD-225

2. MOTOR P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
2-IC1	EI-780137	IC VC1031
2-Q1, 2	ET-328844	TR 2SC2120 O, Y
2-Q3, 4	ET-742510	TR 2SA950 O, Y
2-Q5, 6	ET-308867	TR 2SA1015 O, Y, GR
2-Q7, 8	ET-308976	TR 2SC1815 BL, GR
2-Q9	ET-308867	TR 2SA1015 O, Y, GR
2-Q10	ET-308976	TR 2SC1815 BL, GR
2-VR1	EV-780138	R S-FIX 103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3. FINAL ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
3-1	SK-B348258A	KNOB (A) PART
3-1P	SK-B348258C	KNOB (A)-P PART
3-2	SK-B348258B	KNOB (B) PART
3-2P	SK-B348258D	KNOB (B)-P PART
3-3	TP-348243	LEVER SIZE SELECT
3-4	ZS-321338	MOTOR SCREW
3-5	ES-326961	SW LEAF MSW-0026TU 01-1 NO (SW903)
3-6	ZS-468101	T2PAN26×06STL CMT
3-7	TP-348245	LEVER REPEAT
3-8	ZW-340648	RING CS190STL PKR (SW901)
3-9	ES-348288	SW MICRO D2F-L 01-2
3-10	ZS-462802	T2BR30×15STL CMT
3-11	TP-348247	CAM MICRO SWITCH
3-12	TP-348269	LEVER MICRO SWITCH
3-13	ZS-321338	MOTOR SCREW
3-14	ES-337895	SW LEAF MSW-0094NBK 01-1 NO (SW904)
3-15	ZS-468101	T2PAN26×06STL CMT
3-16	ZG-336678	SP TORSION REJECT
3-17	EP-P1003A150A	SOLENOID ASSY NX-9331H
3-18	ZS-343165	CT BR30×06STL CMT
3-19	ZG-332480	SP PLATE MAIN GEAR
3-20	ZS-346987	CT BID30×05STL CMT
3-21	TP-332501	CAM SELECT (A)
3-22	ZW-270101	RING E300SUP CMT
3-23	ZG-336680	SP PULL (C)
3-24	TP-332472	GEAR MAIN
3-25	TP-325428	REJECT PLATE
3-26	ZW-653163	RING CS280STL PKR
3-27	TP-348255	CAM ROTOR
3-28	ZS-302024	T2PAN30×08STL CMT PW100
3-29, 30	ZW-270101	RING E300SUP CMT
3-31	ZG-312947	SP T1-3.2/0.29-18.0 T1-063
3-32	ZG-336679B	SP PULL (B)
3-33	ES-326961	SW LEAF MSW-0026TU 01-1 NO (SW902)
3-34	ZS-346989	CT PAN26×06STL CMT
3-35	TP-348270	LEVER RETURN
3-36	ZW-270101	RING E300SUP CMT
3-37	TP-P1032A050A	LEVER PU BLK AP-D3
3-38	ZS-286312	6SET26×050SCM PKR HP
3-39	TP-331706	CAM PU LEVER
3-40	ZG-312944	SP T1-3.2/0.29-12.5 T1-060
3-41	BC-348263A	CABINET
3-41P	BC-348263B	CABINET-P
3-42	SK-348262	KNOB (D)
3-42P	SK-348262B	KNOB (D)-P
3-43	SK-348261	KNOB (C)
3-43P	SK-348261B	KNOB (C)-P
3-44	ZG-349210	SP PLATE START KNOB
3-45	ZG-325402	SP ELEVATION
3-46	ZG-332548	SP PUSH (A)
3-47	TP-B332568	ARM ELEVATION PART
3-48	ZS-336690	PAN20×10STL BNI
3-49	TP-B332571	CLAMPER ARM PART
3-50	TP-711673	HEAD SHELL HS-1
3-51	TP-711675	MAIN WEIGHT
3-52	TP-711677	TONE ARM ASSY ARM-3
3-53	ZW-325521	N120×170×30STL CMT P100
3-54	SK-332551C	KNOB CANCELLER (B)
3-54P	SK-332551B	KNOB CANCELLER-P
3-55	ZW-315478	WAVE WASHER D5 SUS
3-56	ZG-348256	SP TORSION CANCELLER
3-57	ZW-346988	PW23×130×050STL CMT
3-58	ZS-669104	T2PAN23×06STL CMT
3-59	TP-348257	LEVER CANCELLER
3-60	TP-332504	JOINT (C)
3-61	TP-348244	JOINT (A)
3-62	ZW-340648	RING CS190STL PKR
3-63	TP-348248	JOINT (B)
3-64	ZW-429120	PW23×090×050STL CMT
3-65	ZW-340648	RING CS190STL PKR
3-66U	EW-374894	⚠ AC CORD 2 CORES VM-0129A, VFF U/T (U)
3-66C	EW-207742	⚠ AC CORD 2 CORES VM-0238, SPT-1 UC (C,A)
3-66E	EW-336923	⚠ AC CORD 2 CORES KP-419C, LTCE-2F EV (E, V)
3-66B	EW-347023	⚠ AC CORD LTBS-2F 42/0.15×2 B (B)
3-66S	EW-336924	⚠ AC CORD 2 CORES KP-560, LTSA-2F S (S)
3-67	SA-336281B	INSULATOR (B)
3-68	ZW-556828	PW32×100×050STL CMT
3-69	ZS-699197	T2BR30×20STL CMT
3-70x	ZW-305013	RV POP32 (A)
3-71	TP-B348264	PLATTER PART
3-72	TP-348266B	TABLE SHEET B
3-73	BC-348267A	DUST COVER
3-73P	BC-348267B	DUST COVER-P
3-74	TP-348313	HINGE
3-75U	BT-348281	⚠ TRANS POWER APT-3-70 (U)
3-75C	BT-348283	⚠ TRANS POWER APT-3-30 (C,A)
3-75E	BT-348284	⚠ TRANS POWER APT-3-40 (E,V)
3-75B	BT-348285	⚠ TRANS POWER APT-3-50 (B,S)
3-76	BM-348286	⚠ MOTOR MC960E
3-77	ZS-425103	CTS30×10STL CMT
3-78x	ZS-349118	SCREW W/FRANGE
3-79	EW-344164	CORD 2P AUDIO PIN×2

SYMBOL FOR COLOR VARIATION

NONE – SILVER
P – PEARL SHADOW

INDEX

AP-D3

SECTION 3

SCHEMATIC DIAGRAM

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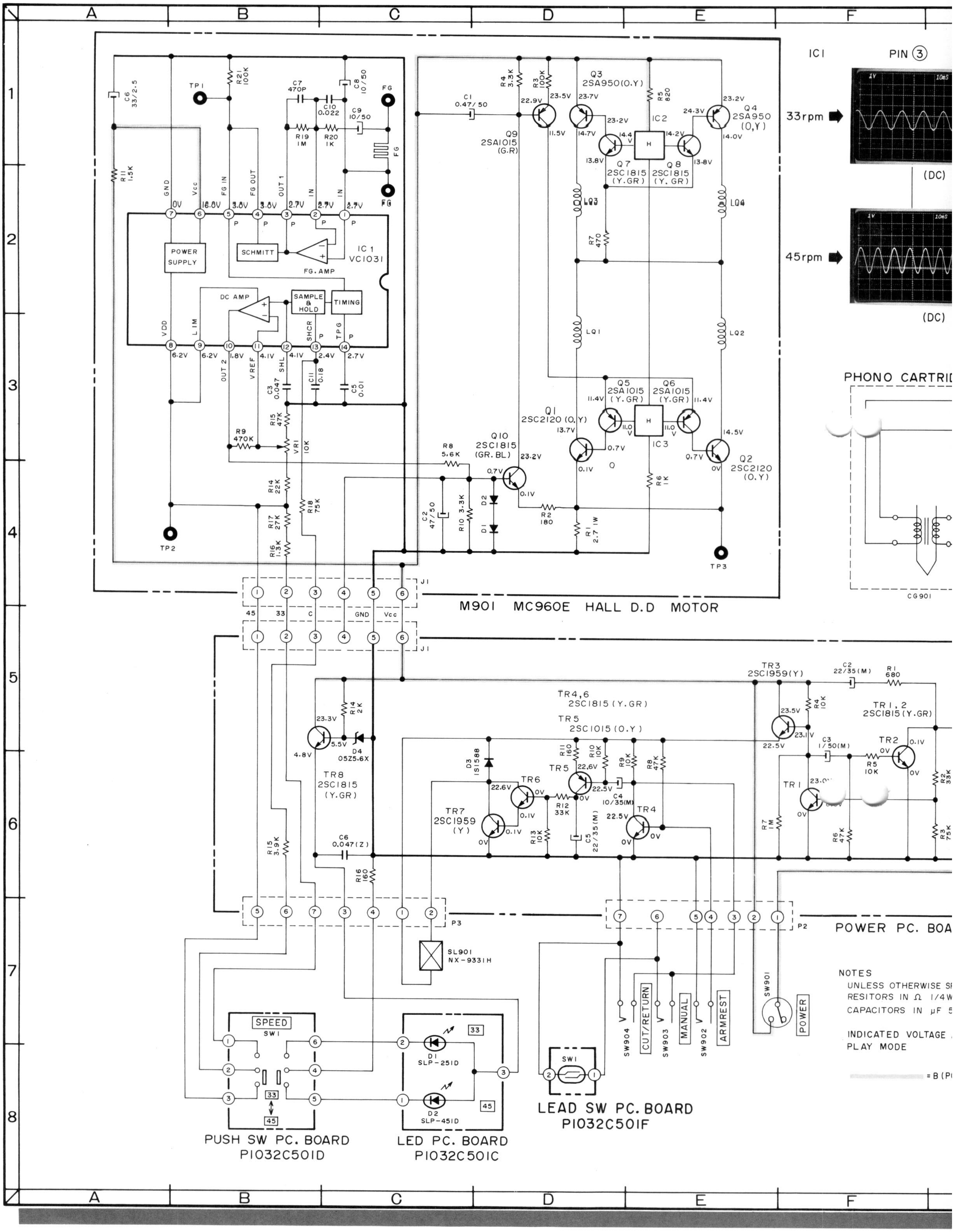
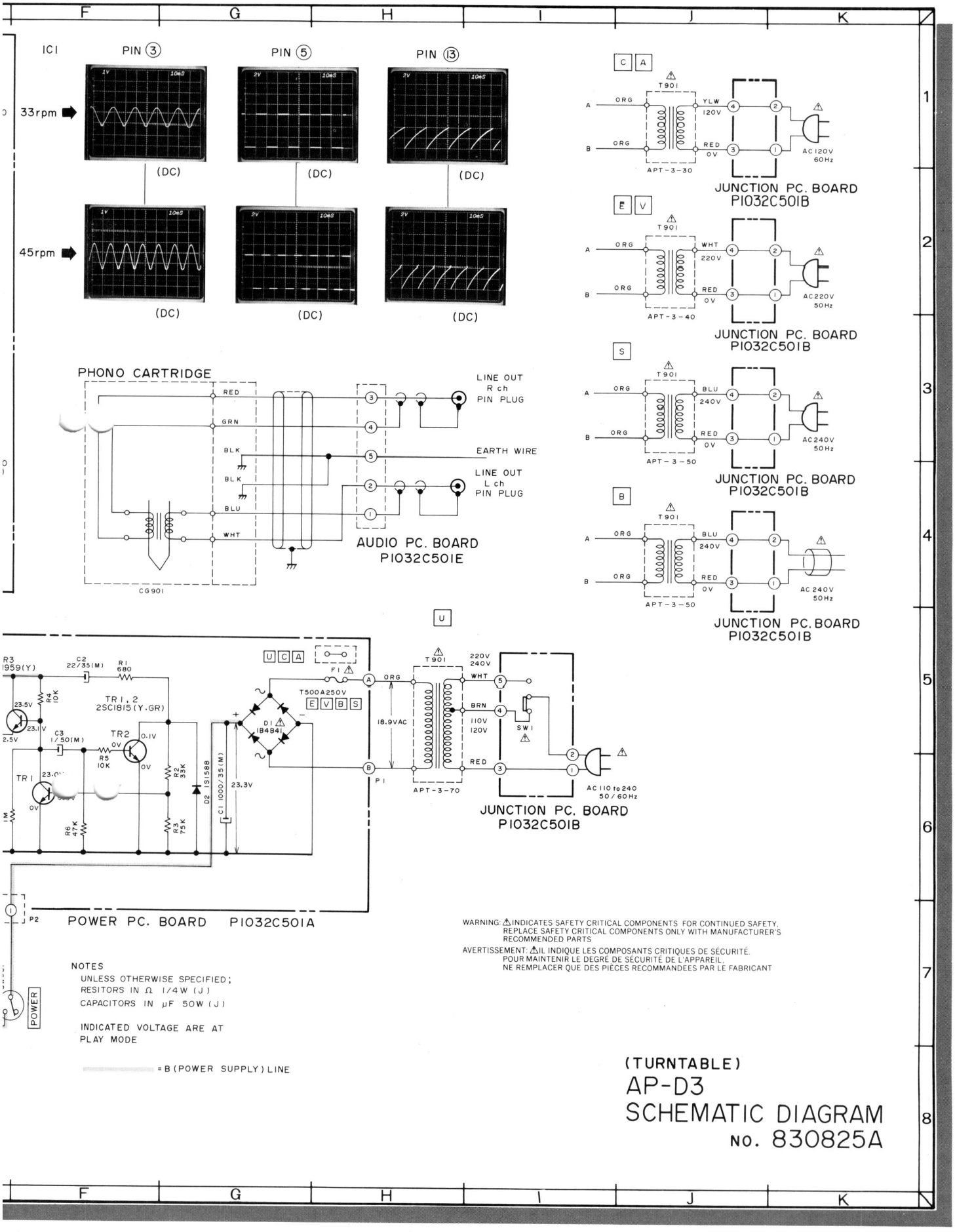


IC1
PIN ③
33rpm
45rpm
(DC)
(DC)
IC 1 VC1031
POWER SUPPLY
SCHMITT
FG. AMP
DC AMP
SAMPLE & HOLD
TIMING
TP1
TP2
TP3
FG
Q1 2SC2120 (O,Y)
Q2 2SC2120 (O,Y)
Q3 2SA950(O.Y)
Q4 2SA950 (O,Y)
Q5 2SA1015 (Y.GR)
Q6 2SA1015 (Y.GR)
Q7 2SC1815 (Y.GR)
Q8 2SC1815 (Y.GR)
Q9 2SA1015 (G.R)
Q10 2SC1815 (GR.BL)
IC2
IC3
LQ1
LQ2
LQ3
LQ4
M901 MC960E HALL D.D MOTOR
J1
45
33
C
GND
Vcc
PHONO CARTRIDGE
CG901
TR3 2SC1959(Y)
TR1, 2 2SC1815(Y.GR)
TR4,6 2SC1815 (Y.GR)
TR5 2SC1015 (O.Y)
TR7 2SC1959 (Y)
TR8 2SC1815 (Y.GR)
D3 1S1588
D4 05Z5.6X
P3
P2
SL901 NX-9331H
POWER PC. BOARD
SW901
POWER
SW904
CUT/RETURN
SW903
MANUAL
SW902
ARMREST
NOTES
UNLESS OTHERWISE SPECIFIED
RESITORS IN Ω 1/4W
CAPACITORS IN μF
INDICATED VOLTAGE
PLAY MODE
SPEED
SW1
PUSH SW PC. BOARD
P1032C501D
D1 SLP-251D
D2 SLP-451D
LED PC. BOARD
P1032C501C
LEAD SW PC. BOARD
P1032C501F



WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

NOTES

UNLESS OTHERWISE SPECIFIED;
RESITORS IN Ω 1/4W (J)
CAPACITORS IN μF 50W (J)

INDICATED VOLTAGE ARE AT PLAY MODE

= B (POWER SUPPLY) LINE

(TURNTABLE)

AP-D3
SCHEMATIC DIAGRAM
NO. 830825A