Nakamichi

Service Manual

Nakamichi

DRAGON-CT

Computing Turntable

CONTENTS

1. GENERAL

1.1. Voltage Selector
Voltage selector is installed on the bottom of the DRAGON-CT for Other version.
This voltage selector can select either 120 V or 220-240 V at customer's disposal.

1.2. Packing Materials and Owner's Manual

Part No.	Description	Q'ty
0C80079A	Inner Carton	1
0C80080A	Outer Carton	1
CA80031A	Cushion Ass'y	2
CA80033A	Platter Case Ass'y	1
CA80034A	Main Case Ass'y	1
0D04219A	Owner's Manual (U.S.A., Canada, UK & Australia)	1
0D04220A	Owner's Manual (220 V Class 2 & Others)	1
0D04221A	Owner's Manual (Japan)	1

2. JIGS AND GAUGES FOR ADJUSTMENT

No.	Description	Part No.	Q'ty
1	Stand	0D09023A	4
2	10, 11P Cord Ass'y (50 cm)	DA09072A	1
3	2P Cord Ass'y (50 cm)	DA09073A	1
4	2P Power Cord Ass'y (70 cm)	DA09074A	2
5	3P Cord Ass'y (70 cm)	DA09075A	1
6	Stylus Positioning Disc	0D09022B	1
7	Stylus Position Check Gauge	0D09024A	1
8	Test Record	0D09031A	1
9	Center Search Rod Positioning Gauge	DA09076A	1
10	Level Gauge	HA08057B	1
11	Cueing Height Adj. Screwdriver	0D09025A	1
12	Tonearm Socket Wrench	DA09077A	1
13	Sensor Arm Socket Wrench (Serves as Torque Wrench)	DA09078A	1
14	Screwdriver (large)	0D09027A	1
15	Screwdriver (small)	0D09028A	1
16	Philips Screwdriver for Main Motor	0D09029A	1
17	Socket Wrench for Main Motor	0D09030A	1

3. SETUP FOR ADJUSTMENTS

Separate the Top Board from the Bottom Board following the next steps and then set them up by using jigs (four Stands and five connector cables indicated in Nos. 1 to 5 of 2. "Jigs and Gauges for Adjustment".

This setup allows the following items without damaging the DRAGON-CT (especially arms).

- Disassembly of Mechanical Parts
- Mechanical Adjustments
- Electrical Adjustments with power supplied.

3.1. Removal of Dust Cover, Platters and Insulator Covers

(1) Remove F01 (Dust Cover), F02 (Disc Stabilizer), F03 (Turntable Mat), F04 (Center Search Platter) and F05 (Main Platter) in that order and then pull out F06 (Insulator Covers — 4 pcs.).

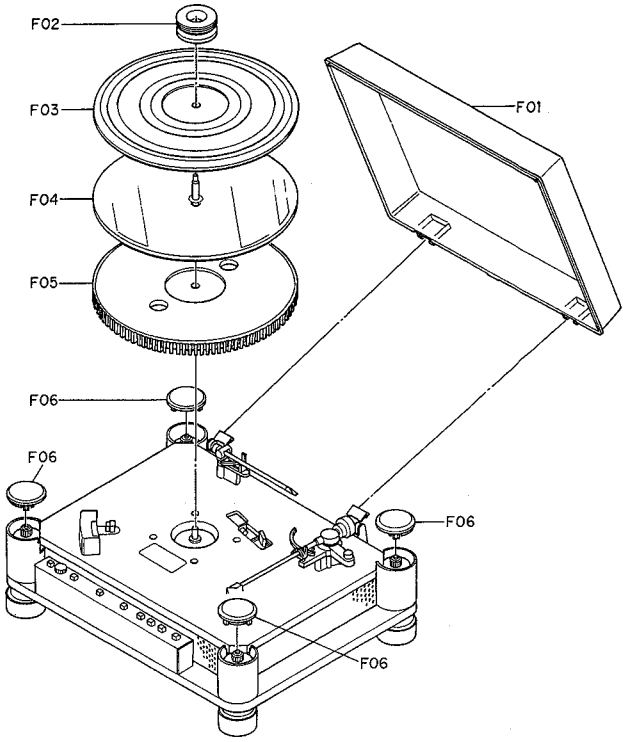

Fig. 3.1

3.2. Removal of Connectors

(1) Remove F07 and F08 and disconnect two connector cables.
(2) Remove F09 and lift F10 (Control Switch Ass'y).
(3) Pull out connector CNP-001 and disconnect three connector cables.
(4) Assemble F10 (Control Switch Ass'y) with F09.
(5) Loosen F11 (red Transport Fastening Screws — 5 pcs.) and F12 to release the Top Board from the Bottom Board.

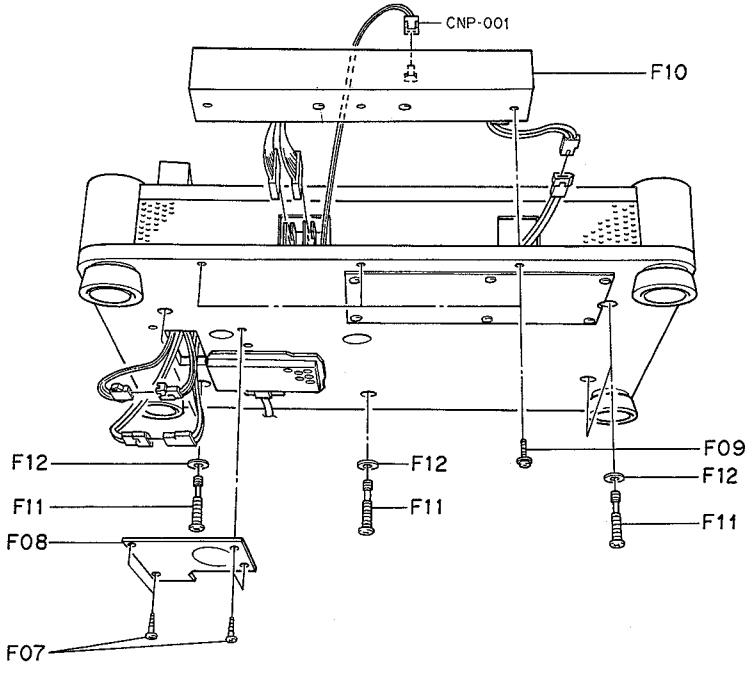

Fig. 3.2

3.3. How to Set up Top Board Upside Down

(1) Lift up the Top Board with hands and insert four Stands (0D09023A) in the Insulator Housing at every corner of the Bottom Board. Refer to Fig. 3.3.

(2) Turn over the Top Board as shown in Fig. 3.3 and carefully place it on the Stands.

(3) Remove F13, F14 and F15.

(4) Connect five connector cables (DA09072A, DA09073A, DA09074A (2 pcs.) and DA09075A) between the Top Board and the Bottom Board.

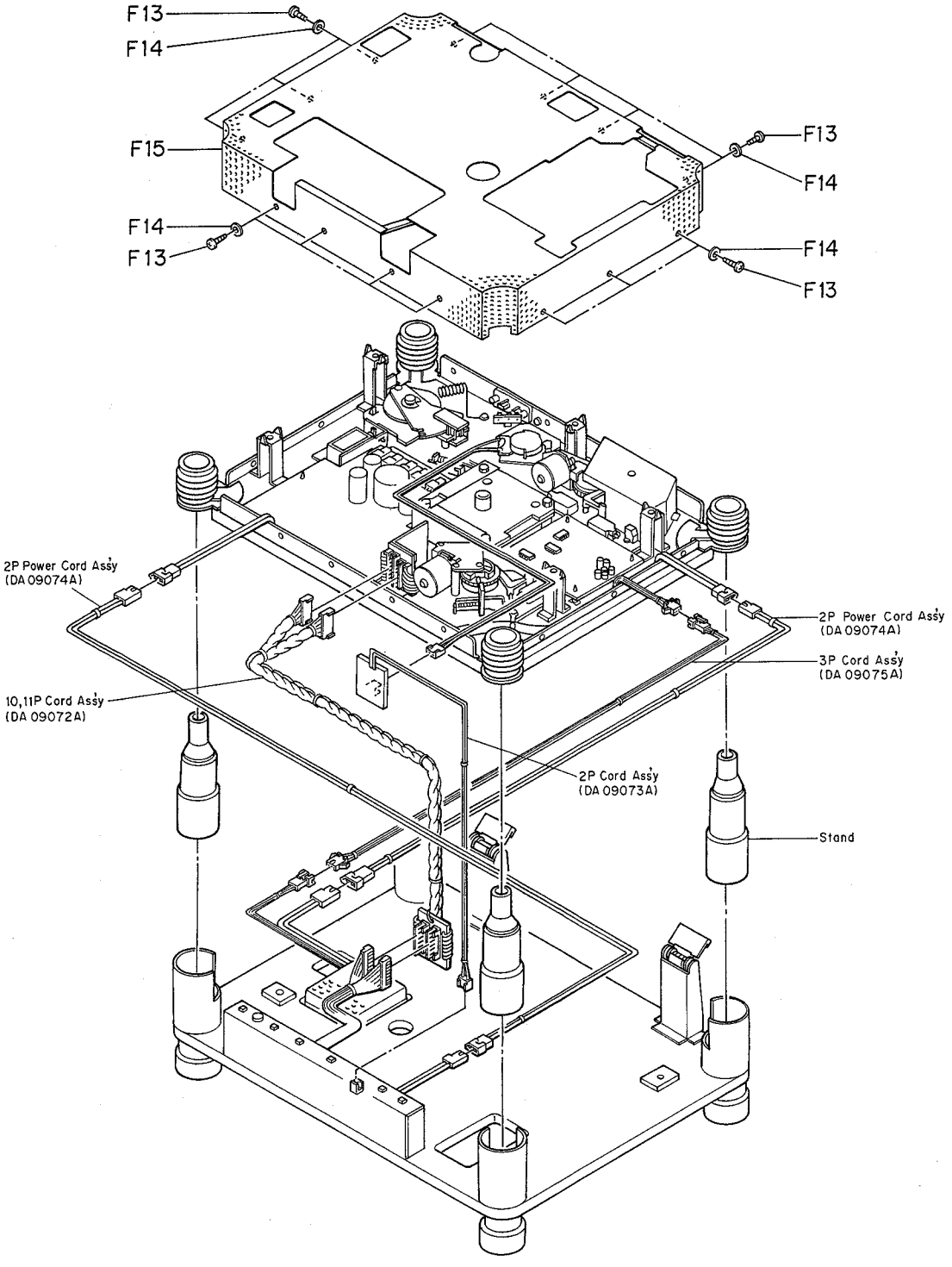

Fig. 3.3

3.4. How to Set up Top Board Normally

(1) Hold the Top Board and turn it over and place it on the Stands as shown in Fig. 3.4.

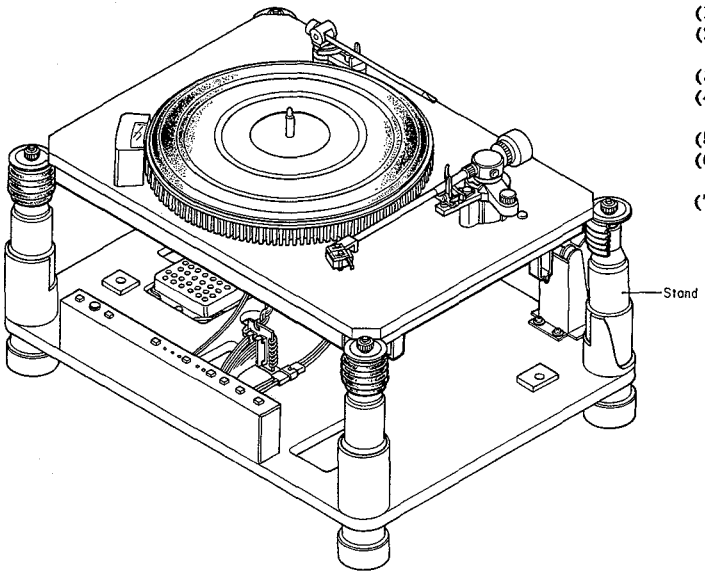

Fig. 3.4

4. REMOVAL OF MAIN PARTS

Before removal, set up the DRAGON-CT upside down as indicated in item 3.3.

4.1. Tonearm

(1) Remove soldering of five signal wires from the Tonearm.
(2) Loosen F01 with a hexagon wrench (M3) and remove F02 (Arm Sensor Ass'y).
(3) Remove F03 and F04 (Drive Coil Ass'y).
(4) Loosen F05 with a hexagon wrench (M3) and remove F06 (Sensor Plate Ass'y).
(5) Remove F07 and F08 (Arm Elevation Solenoid Ass'y).
(6) Remove F09 with the Cueing Height Adj. Screwdriver (0D09025A), F10 and F11, and pull out F12.
(7) Hold F14 and loosen F13 with the Tonearm Socket Wrench (DA09077A), and then remove F14 (Tonearm Ass'y) carefully.

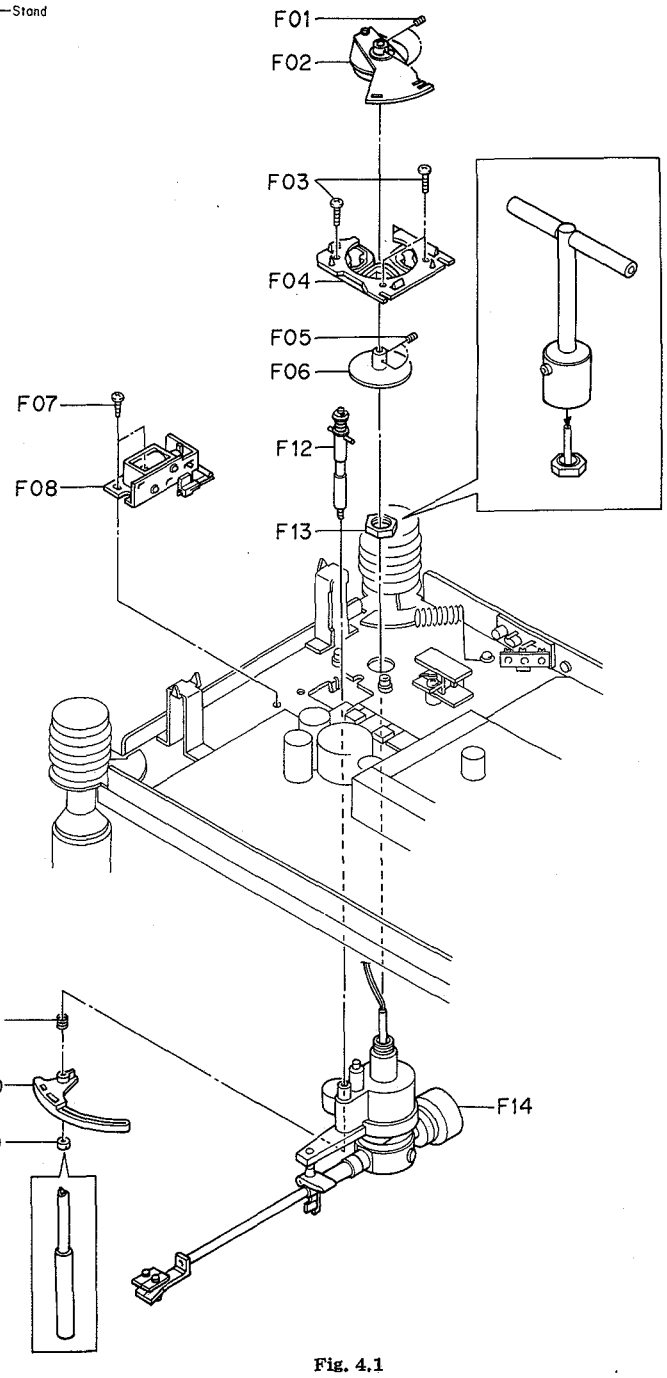

Fig. 4.1

4.2. Sensor Arm

(1) Remove F01 and F02 (Light Shielding Cover).
(2) Loosen F03 with a socket wrench (8 mm) and pull out F04 (Sensor Shutter Ass'y) gently without touching other parts.
(3) Unscrew F05 with the Sensor Arm Socket Wrench (DA0-9078A).
(4) Hold F08 and remove F06, F07 and then F08 (Sensor Arm Ass'y).
(5) Loosen F09 with a hexagon wrench (M3) and separate F10 and F11.

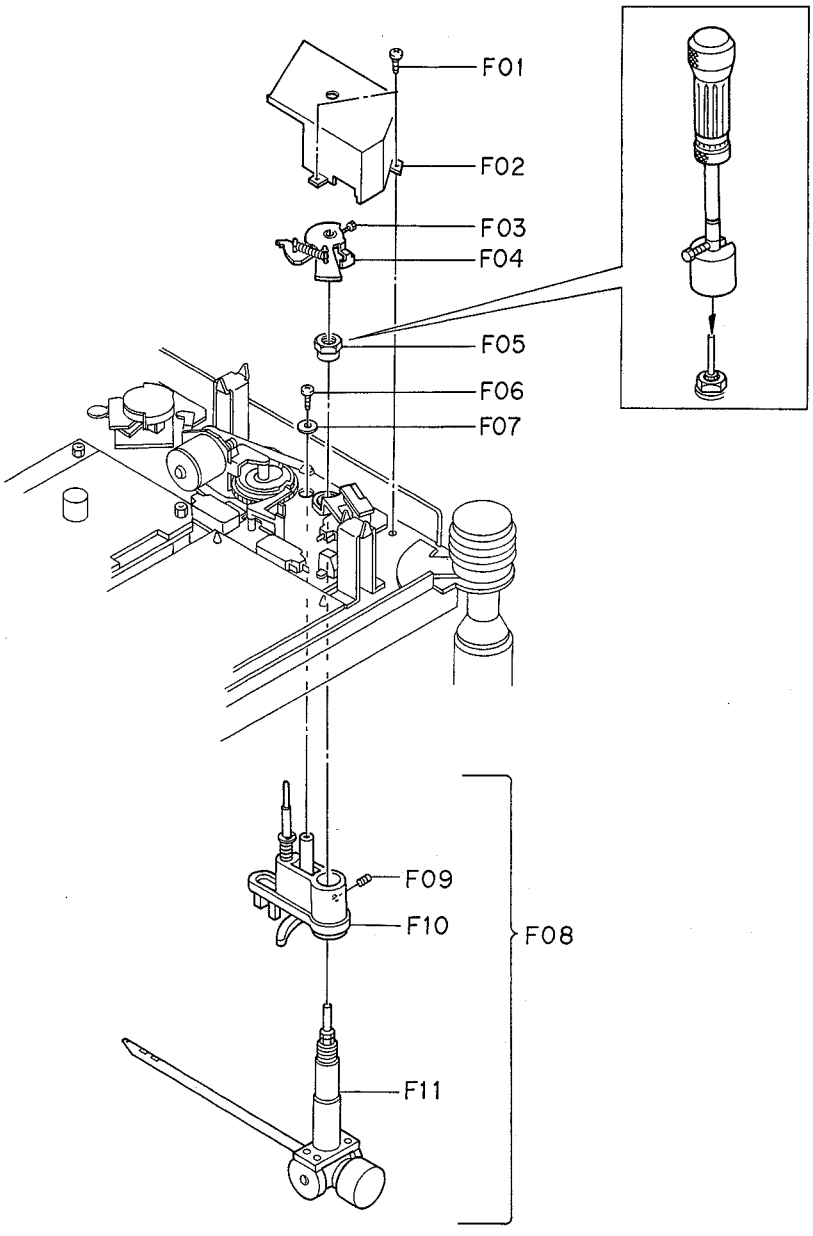

Fig. 4.2

Note: Assembly procedure is the reversal of the above procedure. However, note the followings:

1. Fastening F05 (Sensor Arm fixing screw):
   Tighten F05 with 5 kg-cm torque using the Sensor Arm Socket Wrench which also serves as a torque wrench.
2. Mounting F04 (Sensor Shutter Ass'y):
   (1) Align the position of the eccentric screw (A) as shown in Fig. 4.3.
   (2) Insert F04 into the shaft without contacting with the LED & Photo Detector Ass'y. Refer to Fig. 4.4.
   (3) While pushing the protrusion of the microswitch with a screwdriver, insert F04 until it stops. Refer to Figs. 4.4 and 4.5.
   (4) Turn F04 and align so that it is located as shown in Fig. 4.6. Tighten F03 with a socket wrench.
   Be sure that the Sensor Arm stays on the Sensor Arm Rest.

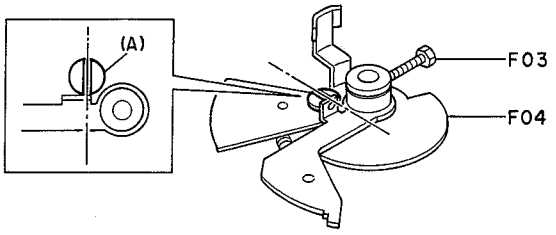

Fig. 4.3

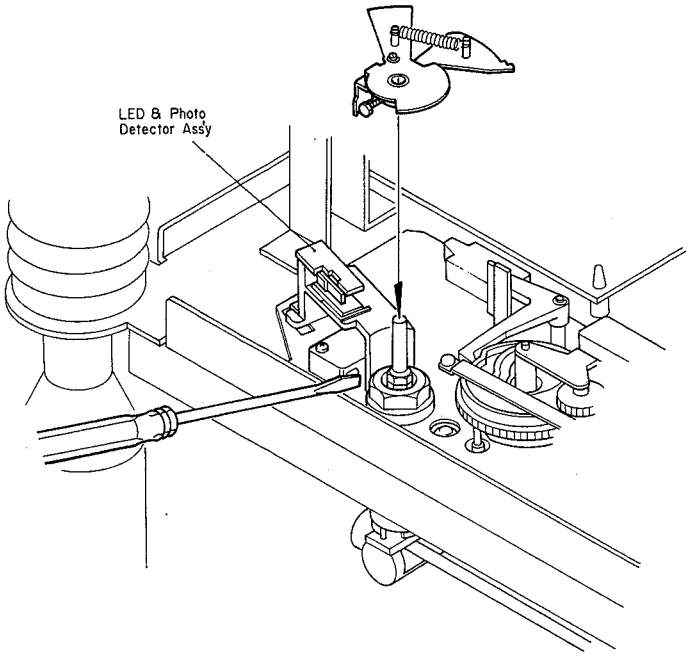

Fig. 4.4

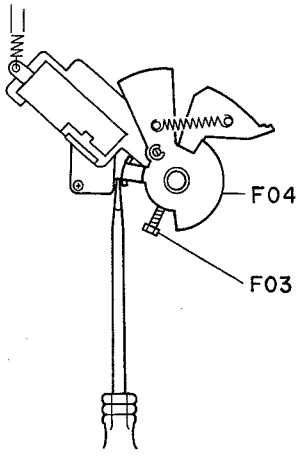

Fig. 4.5

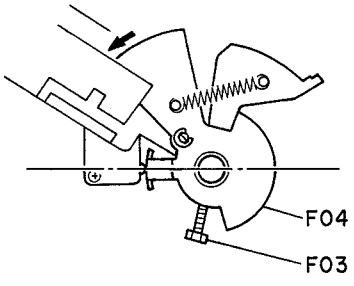

Fig. 4.6

4.3. Center Search Rod Housing Ass'y

(1) Remove F01 and F02, and then pull F03 (Center Search Rod Housing Ass'y).
(2) Remove F04 (Pitch Control LED P.C.B. Ass'y), F05 (Pitch Control Sensor P.C.B. Ass'y) and F06 (Strobo P.C.B. Ass'y).

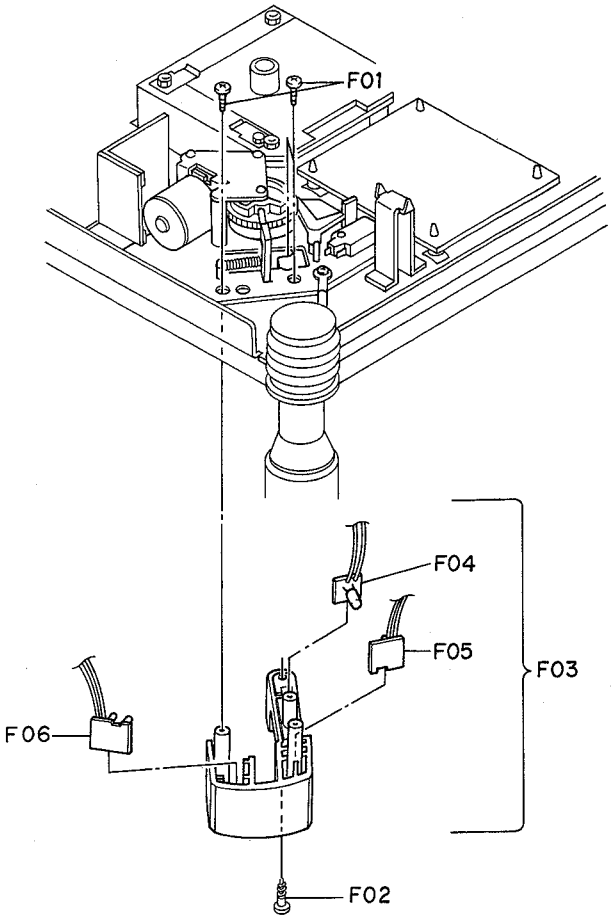

Fig. 4.7

5. MECHANICAL ADJUSTMENTS

5.1. Name of Main Parts

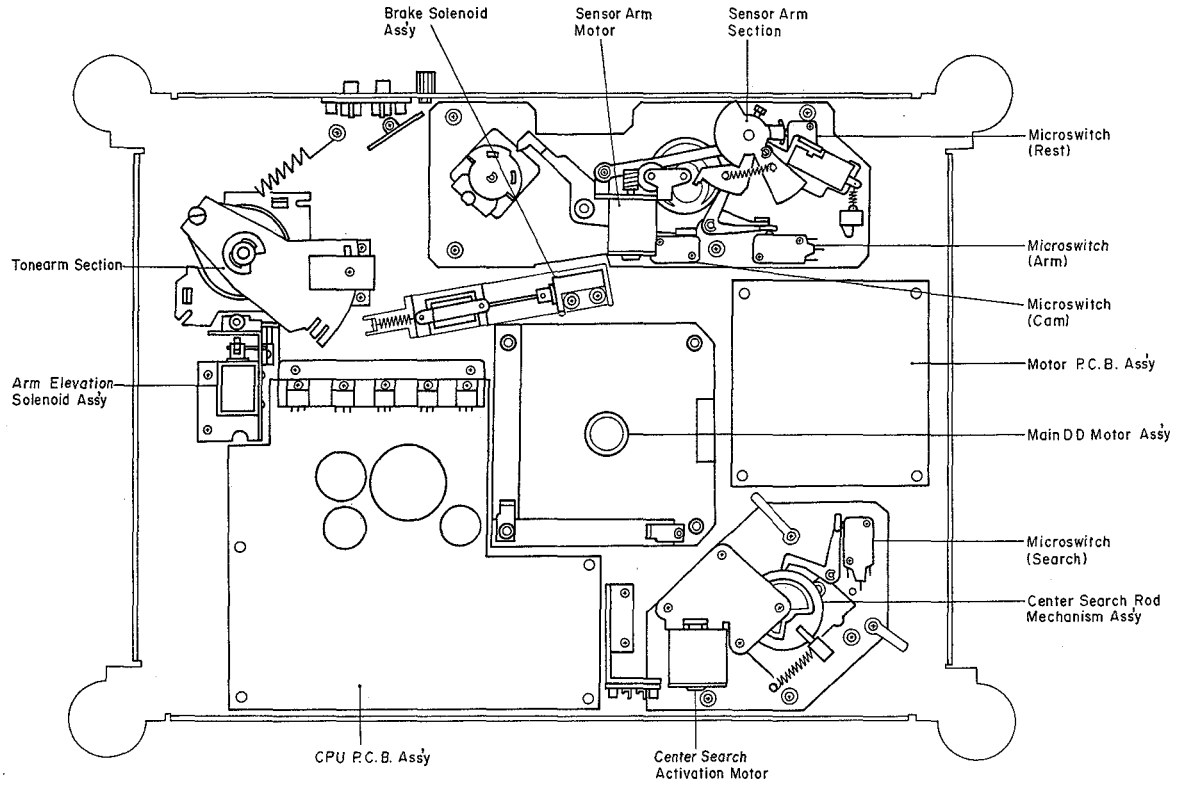

Fig. 5.1

5.2. Tonearm Auto-return Start Position Adjustment

(1) Push the Nominal Center Reset Button (Center Spindle) with finger tip.
(2) Remove the Rubber Cap.
(3) Place the Test Record (0D09031A) on the turntable to play back side 2 of the Record.
(4) Put the Tonearm on the counting section at the end of the Record. Where, tracks are pitched by 1 mm space.
Listen to the counting and check if the Tonearm returns within the following count range.
Disc Size 30/25 cm — 17 to 20 counts
Disc Size 17 cm — 23 to 26 counts
(5) If the count is not in the above range, adjust the auto-return position by turning the eccentric screw with a screwdriver while putting the Tonearm on the Tonearm Rest.
(6) After adjustment, put the Rubber Cap in the original place.

Note: Do not activate the center search operation as the endless groove of the Test Record is not located in normal position.

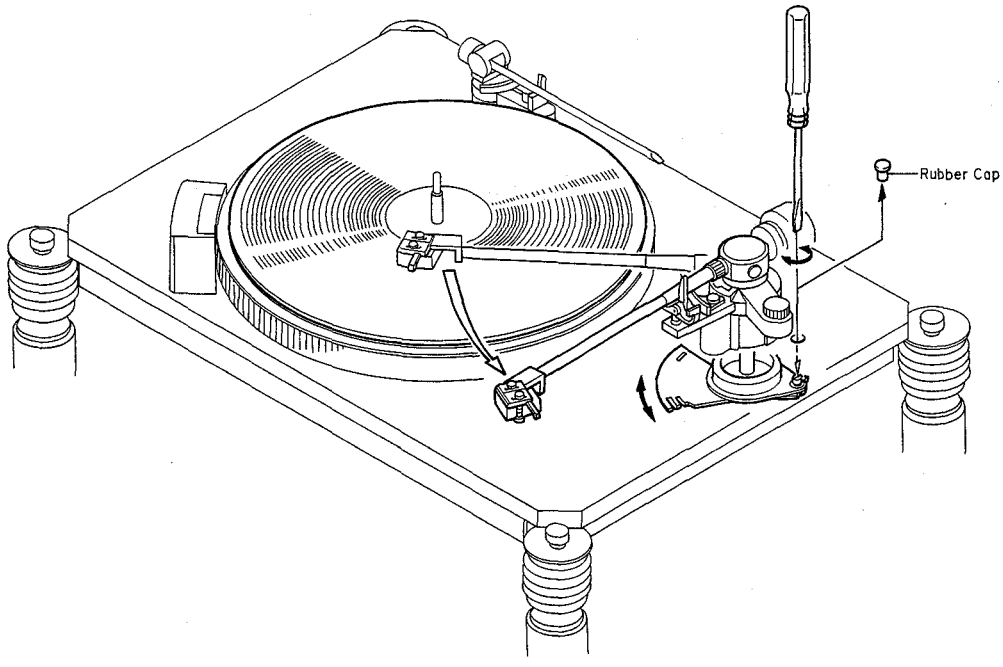

Fig. 5.2

5.3. Sensor Arm Descending Position Adjustment

(1) Push the Nominal Center Reset Button (Center Spindle) with finger tip.
(2) Put the Stylus Positioning Disc (0D09022B) on the turntable.
(3) Press the Disc Size Selector Switch 17 to select size 17.
(4) Press the Center Search Switch and check the stylus descending position on the Disc.
(5) If stylus is not located within the scribed lines for disc size 17, place the Sensor Arm to the Sensor Arm Rest and turn the eccentric screw (A) to locate the stylus on the specified range.

5.4. Tonearm Cueing Height Adjustment

(1) Move the Tonearm away from the Rest.
(2) Turn the screw of Arm Elevator with the Cueing Height Adj. Screwdriver (0D09025A) to adjust the cueing height of the Tonearm as shown in Fig. 5.4.

5.5. Leaf Switch Adjustment

(1) Remove the Arm Elevation Solenoid Ass'y referring to item 4.1.
(2) With pushing the solenoid shaft in the direction of arrow, adjust the screw (B) so that the deflection of the switch is approx. 0.5 mm as shown in Fig. 5.5.
Note: If deflection is insufficient, the Tonearm tends to rise slantwise when the Tonearm returns to the Arm Rest.
(3) Install the Arm Elevation Solenoid Ass'y.

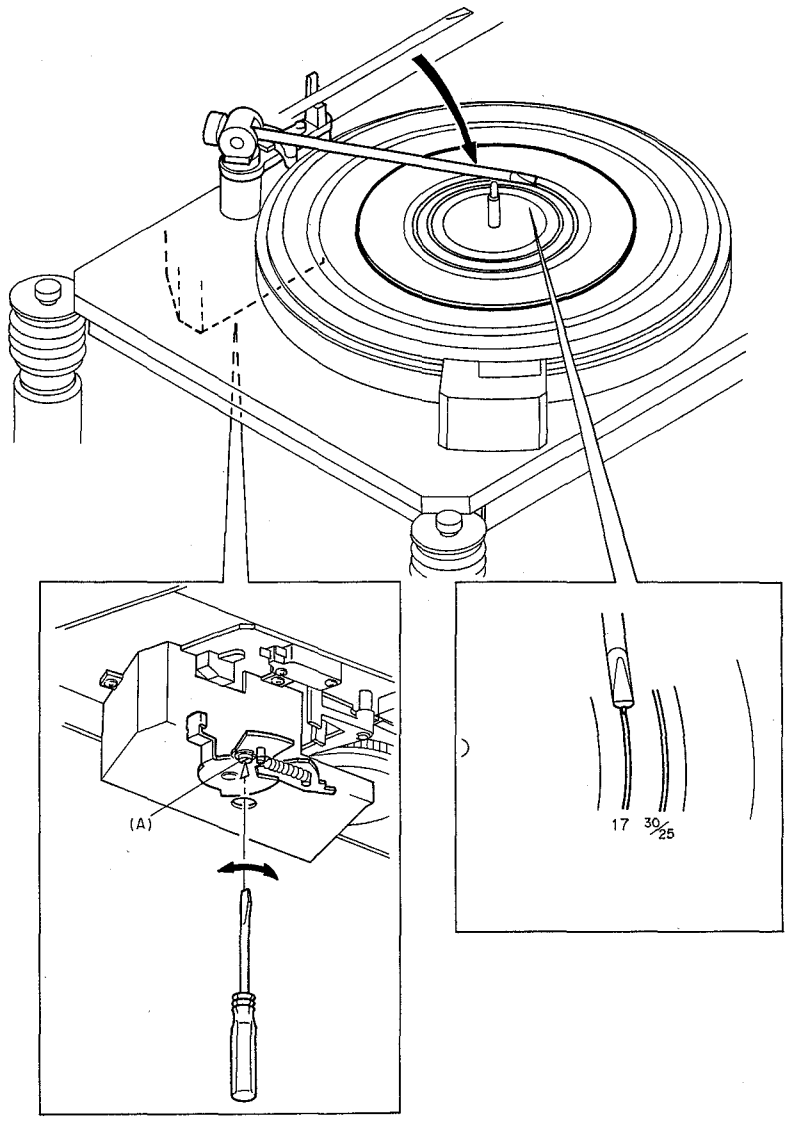

Fig. 5.3

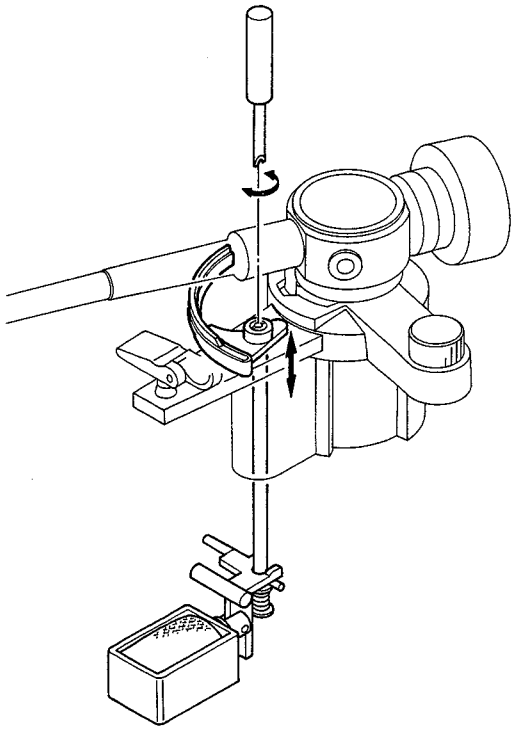

Fig. 5.4

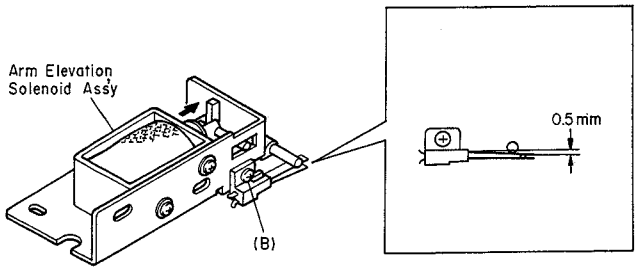

Fig. 5.5

5.6. Center Search Rod Mechanism Chassis Position Adjustment

(1) Remove screw (C) from the Center Search Rod Mechanism Chassis and loosen three screws (D).

(2) Install the Center Search Rod Positioning Gauge (DA0-9076A) as shown in Fig. 5.6.
Protruding shaft of the Main DD Motor Ass'y is inserted into the hole of the Gauge, and the protruding pin of the Gauge is inserted into the hole where screw (C) was mounted.

(3) Move the Mechanism Chassis so that the pin (E) of the Arm Ass'y is centered in the slit of the Gauge.

(4) Fasten three screws (D).

(5) Remove the Gauge and mount screw (C) on the original place.

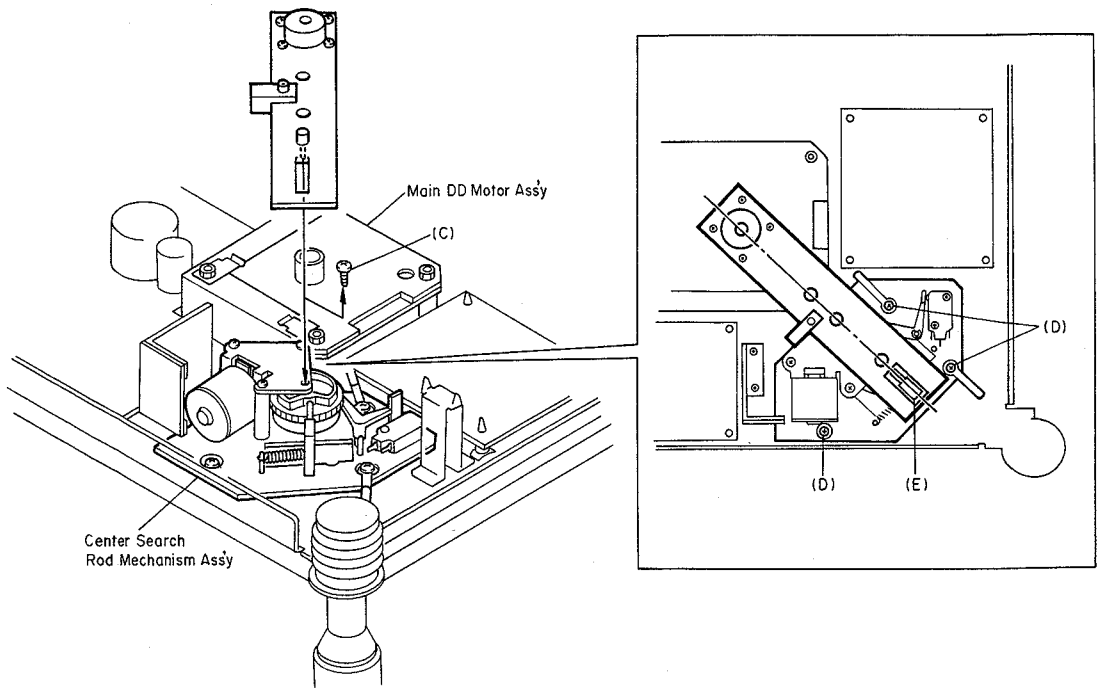

Fig. 5.6

5.7. Leveling of Turntable

It is important to level the turntable to securely perform the center search operation.

Leveling must be made with the Stands (0D09023A) removed and the Top Board putted on the Bottom Board normally.

(1) Place the Level Gauge (HA08057B) on the Top Board.

(2) Turn the Top Board Height Adjustment Screws at every corner to level the turntable.

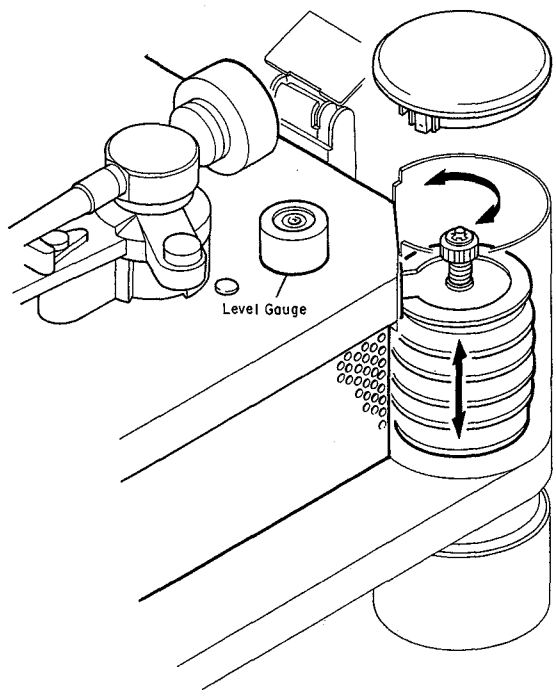

Fig. 5.7

5.8. Search Arm Stylus Position Check

(1) Put a record on the turntable and press the Center Search Switch to conduct center search operation.

(2) Turn the power OFF just before the Center Search Rod contacts with the Center Search Platter.
Return the Sensor Arm to the Arm Rest by hand.

(3) Remove the record and the Turntable Mat.

(4) Press the Nominal Center Reset Button (Center Spindle).

(5) Insert the Stylus Position Check Gauge (0D09024A) into the Center Spindle and place it so that the Rod is located between the scribed lines on the Gauge as shown in Fig. 5.8 (A).

(6) Position the tip of the Stylus to the intersection of vertical and horizontal scribed lines as shown in Fig. 5.8 (B) and check whether it is located between the scribed short parallel lines on the Gauge.

(7) Return the Sensor Arm and remove the Gauge.

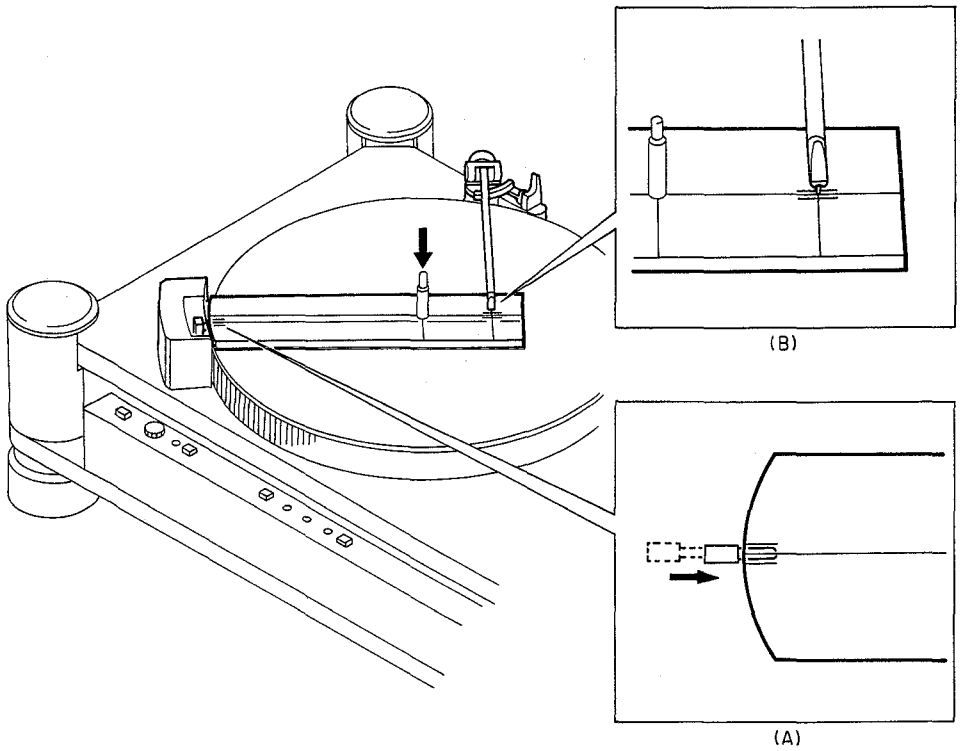

Fig. 5.8

6. ELECTRICAL ADJUSTMENTS

6.1. Parts Location for Adjustment

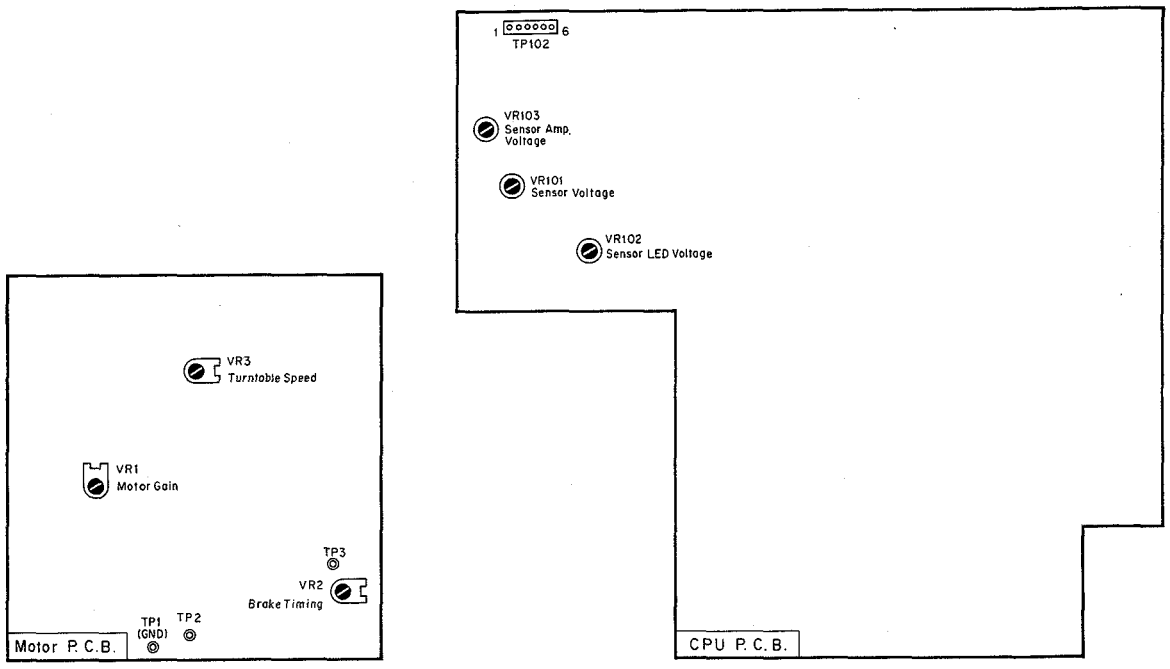

Fig. 6.1

6.2. Sensor LED Voltage Adjustment

(1) Connect a DC voltmeter between pins 1 (GND) and 2 of the test terminal TP102 on the CPU P.C.B. Ass'y.
(2) Adjust VR102 on the CPU P.C.B. Ass'y to obtain 0 ±50 mV on the DC voltmeter.

6.3. Sensor Voltage Adjustment

(1) Place the Stylus Positioning Disc (0D09022B) on the turntable.
(2) Press the Nominal Center Reset Button (Center Spindle).
(3) Turn the power ON.
(4) Press the Center Search Switch and, after the Sensor Arm Stylus is descended on the Disc, turn the power OFF.
(5) Turn the power ON again after about 15 seconds.
(6) Connect a DC voltmeter between pins 1 (GND) and 3 of TP102.
(7) Remove the Rubber Cap.
(8) Place the Sensor Arm Stylus in the outmost groove (R60) on the Disc by hand.
(9) With combining the adjustments of turning the VR101 on the CPU P.C.B. Ass'y and turning the eccentric screw with a screwdriver, obtain 0.5 V reading on the DC voltmeter.
Note: Adjustment of the eccentric screw must be made with the Sensor Arm placed on the Arm Rest.
(10) Move the Sensor Arm Stylus to the inmost groove (R45) on the Disc by hand.
(11) Perform the same adjustment as in (9) to obtain 1.333 V on the DC voltmeter.
(12) Repeat above steps (8) to (11) a few times.
(13) Return the Sensor Arm Stylus to the Arm Rest.

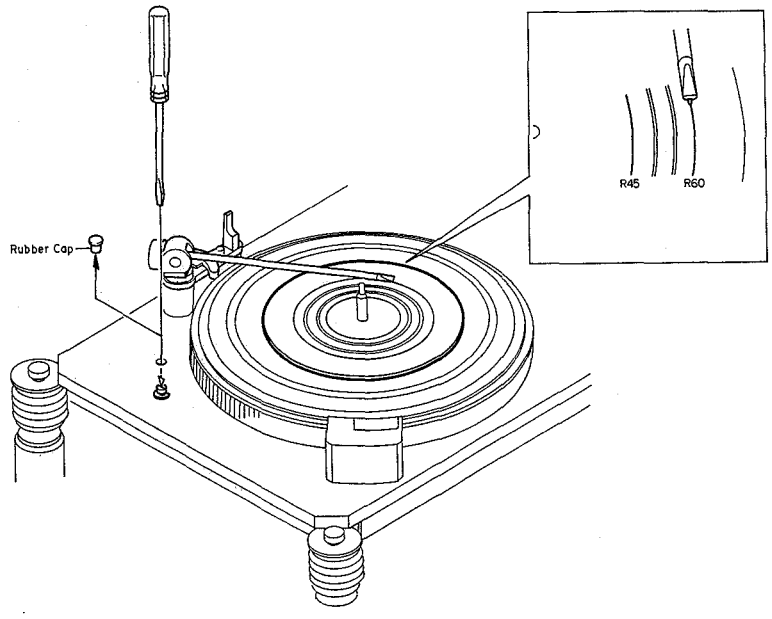

Fig. 6.2

6.4. Sensor Amp. Voltage Adjustment

Note: Perform this adjustment after "Sensor Voltage Adjustment" in item 6.3 is completed.

(1) Repeat (1) to (5) in item 6.3.
(2) Connect a DC voltmeter between pins 1 (GND) and 4 of TP102.
(3) Put the Sensor Arm Stylus in the outmost groove (R60) on the Disc.
(4) Adjust VR103 on the CPU P.C.B. Ass'y to obtain 2.45 ±0.01 V on the DC voltmeter.
(5) Return the Sensor Arm Stylus to the Arm Rest.

6.5. Motor Gain Adjustment

(1) Connect a wide band wow meter between TP1 (GND) and TP2 on the Motor P.C.B. Ass'y.
(2) Place the Center Search Platter, Turntable Mat and Disc Stabilizer on the Main Platter and then press the Nominal Center Reset Button (Center Spindle).
(3) Press the Disc Size Selector Switch 30/25.
(4) Move the Tonearm towards the center of the platter to turn the turntable.
(5) Adjust VR1 on the Motor P.C.B. Ass'y to obtain minimum reading on the wow meter.

6.6. Speed Adjustment

(1) Press the Quartz Lock Switch to turn OFF the Quartz Lock.
(2) Set the Pitch Control Knob to its mechanical center position.
(3) Turn the power ON.
(4) Move the Tonearm towards the center of the platter to turn the turntable.
(5) Adjust VR3 on the Motor P.C.B. Ass'y so that dark and light stripes around the Main Platter rest while observing stroboscope.

6.7. Brake Timing Adjustment

(1) Connect a DC voltmeter between TP1 (GND) and TP3 on the Motor P.C.B. Ass'y.
(2) Adjust VR2 on the Motor P.C.B. Ass'y to obtain 5V ±0.2 V on the DC voltmeter.

7. MECHANISM ASS'Y AND PARTS LIST

7.1. Synthesis

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
		Synthesis		30	0C80288A	Insulator Case B	4
		Serial No.: V10201001 -		31	CA80115A	Rubber Insulator Ass'y	4
				32	0C80365A	Lock Screw	5
01	CA80030A	Dust Cover Ass'y	1	33	0C80303A	Cord Stopper	1
02	CA80116A	Dust Cover Hinge Ass'y	2	34	0C80438A	Bottom Cover B	1
03	0C80304A	Dust Cover Support	2	35	0C80448A	Label	1
04	0C80073A	Disc Stabilizer	1	36	0C80437A	Bottom Cover A	1
05	0C80264A	Turntable Mat (U.S.A.)	1	37	0C80449A	Label	1
	0C80263A	Turntable Mat (except for U.S.A.)	1	38	0C80358A	Audio Cable	1
06	CA80109A	Center Search Platter Ass'y	1	39	0C80300A	Power Coard (U.S.A., Canada & Others)	1
07	CA80262A	Main Platter Ass'y	1				
08	CA80166A	Top Board Ass'y	1		0C80298A	Power Coard (UK)	1
09	CA80163A	Insulator Cap Ass'y	4		0C80302A	Power Coard (Australia)	1
10	0C80433A	Top Board Height Adjustment Screw	4		0C80301A	Power Coard (220V Class 2)	1
					0C80299A	Power Coard (Japan)	1
11	CA80132A	Spring Insulator Ass'y	4	—	0C80570A	Fuse 2A 250V (U.S.A., Canada & Others)	2
12	0C80446A	Vibration Isolating Rubber B	1				
13	0C80447A	Vibration Isolating Rubber C	1	—	0C80569A	Fuse 2A 125V (Japan)	2
14	0C80445A	Vibration Isolating Rubber A	1	—	0B08588A	Fuse 1.6AT (UK, Australia & 220V Class 2)	2
15	0C80364A	Punched Metal	1				
16	CA80165A	Control Switch Ass'y	1	—	0C80572A	Fuse Holder (U.S.A., Canada, Others & Japan)	4
17	0C80297A	Motor Cover	1				
18	CA80136A	Fuse P.C.B. Ass'y	1	—	0C80571A	Fuse Holder (UK, Australia, & 220V Class 2)	4
19	0C80434A	P.C.B. Spacer	1				
20	0C80450A	Insulator	1	—	0C80573A	Voltage Selector (Others)	1
21	0C80328A	UL Tube ϕ3.3x60	1	L01	0C80469A	M3x4 ⊕ Binding	6
22	0C80468A	Bushing B	2	L02	0C80470A	M3x20 ⊕ Binding Washer-faced	8
23	0C80295A	Rubber Fitting	2	L03	0E00132A	CS Ring 4mm	4
24	0C80291A	Power Transformer (U.S.A. & Canada)	1	L04	0C80453A	Plastic Washer 5.2x9x0.5	4
				L05	0E00181A	E-Ring 3mm	4
	0C80294A	Power Transformer (UK & Australia)	1	L06	0E00921A	BT 3x8 ⊕ Binding (Black Chromate)	14
	0C80293A	Power Transformer (220V Class 2)	1	L07	0C80454A	Fiber Washer 3.2x6x0.5	14
				L08	0C80452A	M3.1x13 ⊕ Pan (Wood Screw)	11
	0C80292A	Power Transformer (Others)	1	L09	0C80327A	Wire Clamper	1
	0C80290A	Power Transformer (Japan)	1	L10	0C80471A	M4x45 ⊕ Pan	2
				L11	0C80472A	Washer 4.2x20x0.5	2
25	0C80296A	Power Transformer Holder	2	L12	0C80473A	M3x30 ⊕ Pan	12
26	0C80436A	Bushing A	2	L13	0E00581A	Spring Washer 3mm	12
27	0C80286A	Bottom Board	1	L14	0E00030A	Washer 3x8x0.5	12
28	0C80289A	Spring Insulator Receiver	4	L15	0E00507A	Nut Hex. M3 (Chromate)	12
29	0C80287A	Insulator Case A	4	L16	0C80451A	Washer 6.5x13x1	5

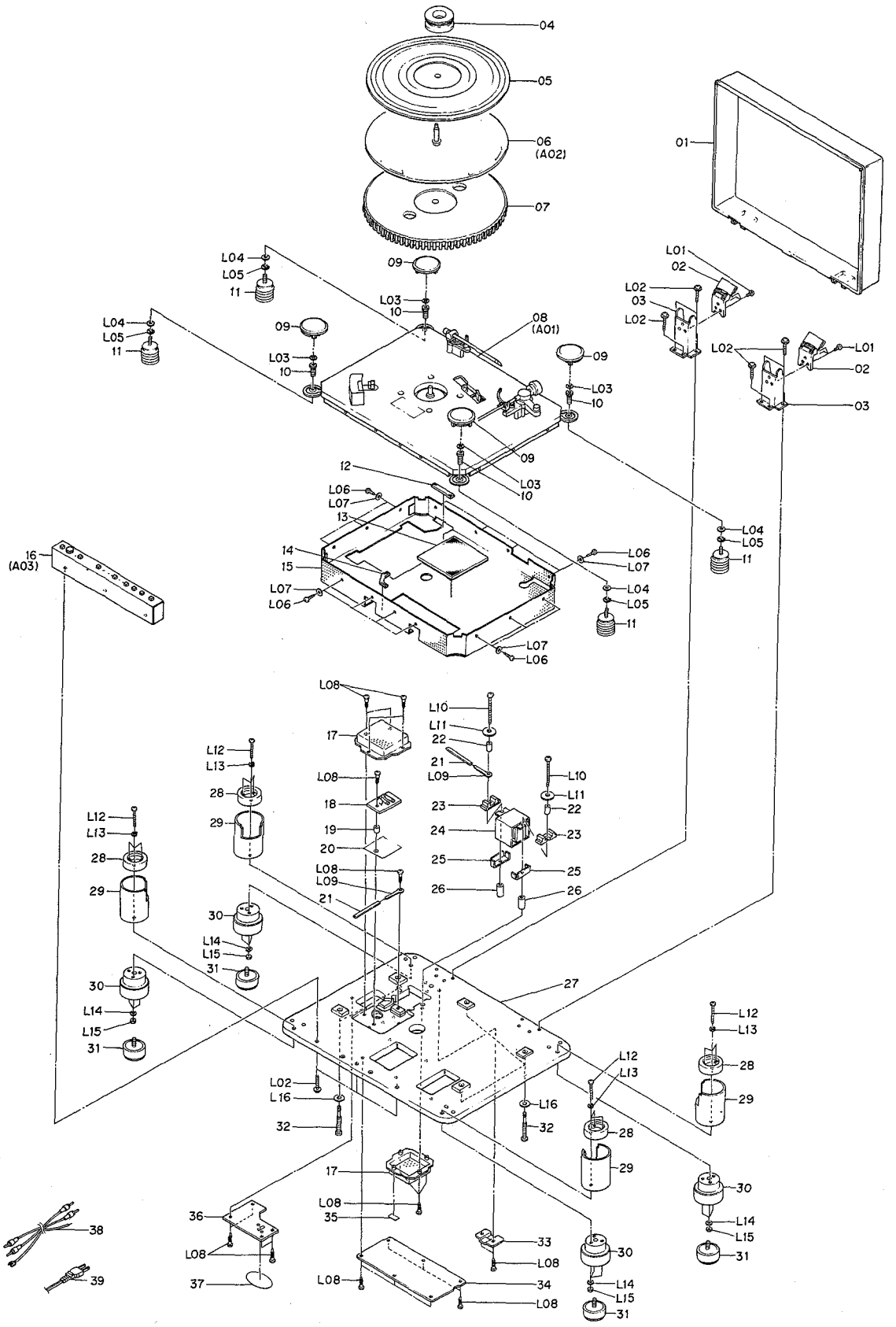
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Fig. 7.1

7.2. Top Board (A01)

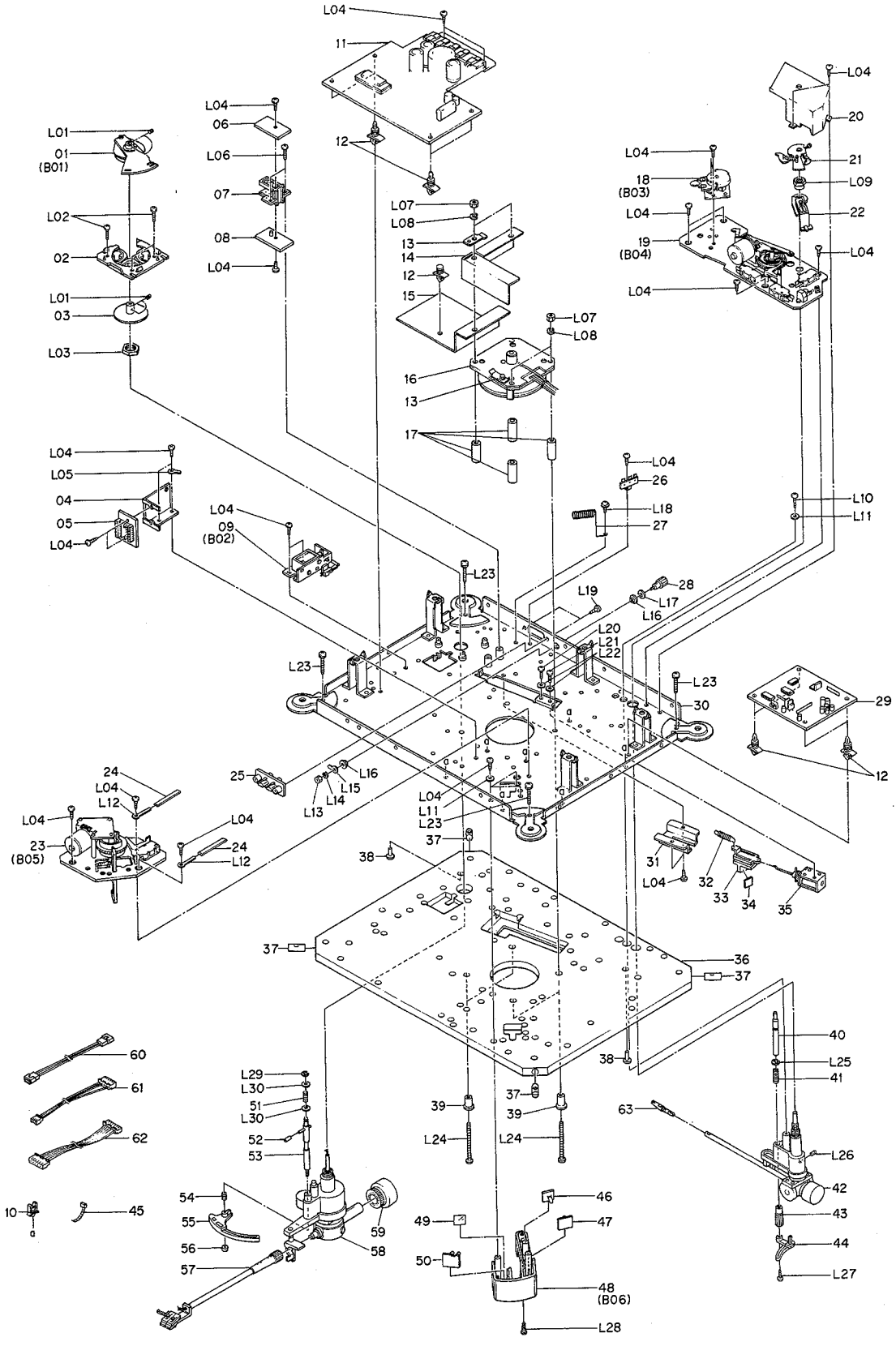


Fig. 7.2

Schematic Ref. No.	Part No.	Description	Q'ty
A01	CA80166A	Top Board Ass'y Serial No.: V10201001 -	1
01	CA80126A	Arm Sensor Ass'y	1
02	CA80125A	Drive Coil Ass'y	1
03	CA80124A	Sensor Plate Ass'y	1
04	0C80362A	Metal Angle	1
05	CA80138A	Connector P.C.B. Ass'y	1
06	CA80135A	Photo Detector P.C.B. Ass'y	1
07	0C80355A	Sensor Holder	1
08	CA80134A	Sensor LED P.C.B. Ass'y	1
09	CA80127A	Arm Elevation Solenoid Ass'y	1
10	0C80309A	Wire Clamper	7
11	CA80133A	CPU P.C.B. Ass'y	1
12	0C80308A	P.C.B. Supporter	11
13	0C80444A	Leaf Spring	2
14	0C80442A	Shield Plate A	1
15	0C80443A	Shield Plate B	1
16	CA80179A	Main DD Motor Ass'y	1
17	0C80313A	Spacer	4
18	CA80100A	Sensor Arm Positioner Ass'y	1
19	CA80095A	Sensor Arm Mechanism Ass'y	1
20	0C80363A	Light Shielding Cover	1
21	CA80121A	Sensor Shutter Ass'y	1
22	CA80120A	LED & Photo Detector Ass'y	1
23	CA80090A	Center Search Rod Mechanism Ass'y	1
24	0C80328A	UL Tube ϕ3.3x60	2
25	0C80439A	2P Pin Jack	1
26	0C80441A	Lug Terminal	1
27	0C80356A	Wire Clamper	1
28	0C80440A	Earth Terminal	1
29	CA80084A	Motor P.C.B. Ass'y	1
30	CA80087A	Steel Chassis Ass'y	1
31	0C80305A	Brake Plate	1
32	0C80307A	Coil Spring for Brake	1
33	0C80306A	Brake Shoe	1
34	0C80432A	Brake Pad	1
35	CA80088A	Brake Solenoid Ass'y	1
36	0C80310A	Top Board	1
37	0C80311A	Nut Bar	4
38	0C80435A	Rubber Cap	2
39	0C80312A	Bushing	4
40	0C80331A	Lifter Rod	1
41	0C80332A	Coil Spring for Lifter	1
42	CA80119A	Sensor Arm Ass'y	1
43	0C80330A	Lifter Base	1
44	0C80333A	Sensor Arm Lifter	1
45	0B08515A	Insu-Lock	15
46	CA80139A	Pitch Control LED P.C.B. Ass'y	1
47	CA80140A	Pitch Control Sensor P.C.B. Ass'y	1
48	CA80162A	Center Search Rod Housing Ass'y	1
49	0C80316A	Cover	1
50	CA80141A	Strobo P.C.B. Ass'y	1
51	0C80345A	Elevator Spring A	1
52	0C80431A	Collar	1
53	CA80123A	Elevator Shaft	1
54	0C80346A	Elevator Spring B	1
55	0C80347A	Elevator	1
56	0C80348A	Elevator Nut	1
57	0H04397A	Tonearm Pipe	1
58	CA80178A	Tonearm Hinge Ass'y	1
59	0C80479A	Tonearm Counterweight	1
60	0C80582A	2P Power Cord (Canada)	1
	0C80581A	2P Power Cord (except for Canada)	1
61	0C80457A	6P Connector Cord	1
62	0C80456A	7P Connector Cord	1
63	0C80579A	Sensor Stylus	1
L01	0E03005A	M3x5 Hex. Socket Head	4
L02	0C80476A	M3x10 ⊕Pan (Plastic)	3
L03	—	Nut included in Tonearm Hinge Ass'y	(1)
L04	0E00846A	BT 3x8 ⊕Pan	27
L05	0E00037A	Earth Lug B-5	1
L06	0E00659A	M3x10 ⊕Pan	2
L07	0C80455A	Flange Hex. Nut M5	4
L08	0E00819A	Spring Washer 5mm	4
L09	—	Nut included in Sensor Arm Ass'y	(1)
L10	0E00831A	BT 3x10 ⊕Pan	1
L11	0E00178A	Washer 3.3x8x0.5	4
L12	0C80327A	Wire Clamper	1
L13	—	Nut	(1)
L14	—	Washer Spring	(1)
L15	—	Lug	(1)
L16	—	Collar	(2)
L17	—	Washer	(1)
L18	0C80458A	BT 3x8 ⊕Pan Washer-faced	1
L19	0E00594A	BT 3x8 ⊕Binding (Black Chromate)	2
L20	0E00509A	M3x6 ⊕Pan	1
L21	0C80461A	M3.5x6 ⊕Pan Washer-faced	1
L22	0C80460A	Washer 3.2x8x1	2
L23	0C80459A	M4x16 ⊕Pan	4
L24	0C80478A	M5x65 ⊕Pan	4
L25	0E00181A	E-Ring 3mm	1
L26	—	Set Screw included in Sensor Arm Ass'y	(1)
L27	0E00818A	M3x8 ⊕Binding	1
L28	0C80452A	M3.1x13 ⊕Pan (Wood Screw)	1
L29	0E00222A	E-Ring 2mm	1
L30	0E03001A	Washer 2mm (Nickel)	1
A02	CA80109A	Center Search Platter Ass'y Serial No.: V10201001 -	1
01	CA80110A	Shaft Ass'y	1
02	0C80260A	Spring	1
03	0C80259A	Stud	1
04	0C80256A	Center Search Platter	1
05	0C80261A	Rubber Washer	1
L01	0C80474A	Fiber Washer	1
L02	0C80475A	Nut Hex. M5 (threaded CCW)	1
L03	0E00222A	E-Ring 2mm	1

7.3. Center Search Platter Ass'y (A02)

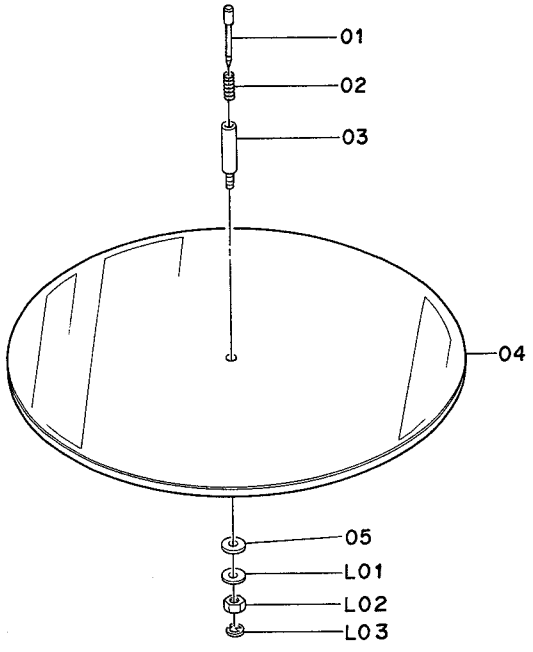


Fig. 7.3

7.4. Control Switch Ass'y (A03)

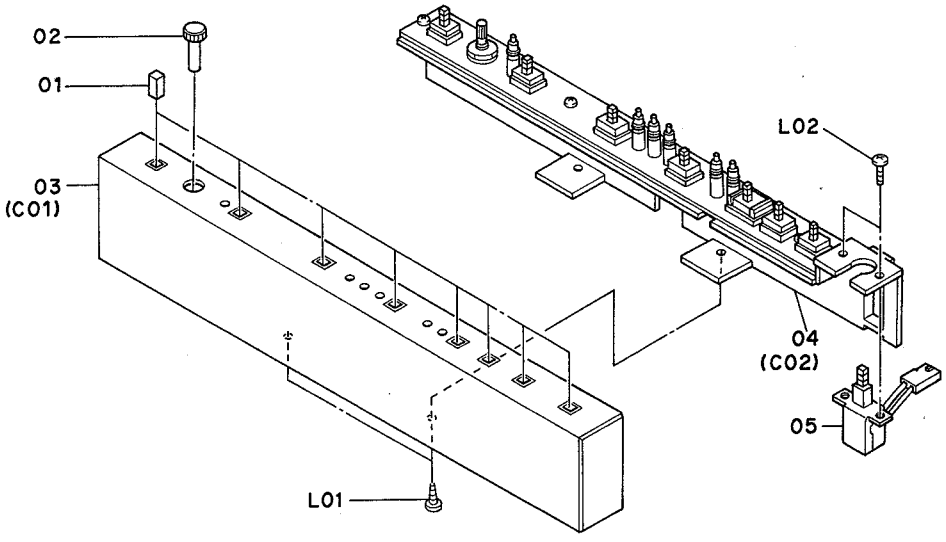


Fig. 7.4

7.5. Arm Sensor Ass'y (B01)

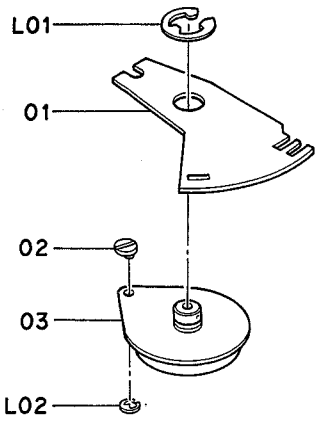


Fig. 7.5

7.6. Arm Elevation Solenoid Ass'y (B02)

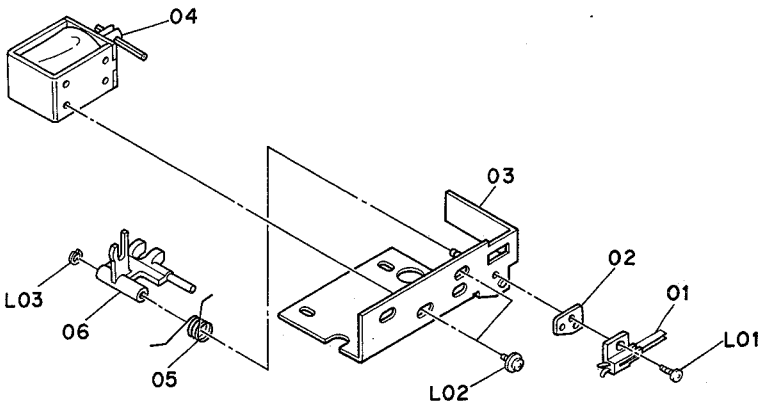


Fig. 7.6

Schematic Ref. No.	Part No.	Description	Q'ty
A03	**CA80165A**	**Control Switch Ass'y** Serial No.: V10201001 -	**1**
01	0C80284A	Push Switch Button	8
02	0C80285A	Volume Knob	1
03	CA80111A	Control Panel Ass'y	1
04	CA80085A	Control Switch P.C.B. Ass'y	1
05	CA80112A	Power Switch Ass'y	1
L01	0E00846A	BT 3x8 ⊕Pan	2
L02	0E00589A	M3x6 ⊕Pan (Bronze)	2
B01	**CA80126A**	**Arm Sensor Ass'y** Serial No.: V10201001 -	**1**
01	0C80351A	Arm Sensor	1
02	0C80350A	Eccentric Pin A	1
03	CA80144A	Rotor Magnet Ass'y	1
L01	0E03108A	E-Ring 10mm	1
L02	0E03101A	E-Ring 3mm	1

Schematic Ref. No.	Part No.	Description	Q'ty
B02	**CA80127A**	**Arm Elevation Solenoid Ass'y** Serial No.: V10201001 -	**1**
01	CA80130A	Leaf Switch	1
02	0C80354A	Spacer	1
03	CA80128A	Angle Ass'y	1
04	CA80129A	Solenoid Ass'y	1
05	0C80352A	Coil Spring	1
06	0C80353A	Lever	1
L01	0E00219A	M2.6x5 ⊕Pan	1
L02	0E00618A	M3x4 ⊕ Pan Washer-faced	2
L03	0E00222A	E-Ring 2mm	1

7.7. Sensor Arm Positioner Ass'y (B03)

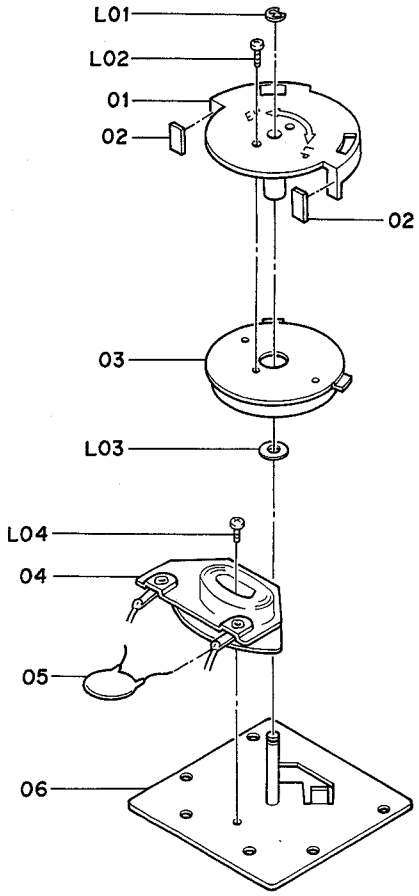


Fig. 7.7

7.8. Sensor Arm Mechanism Ass'y (B04)

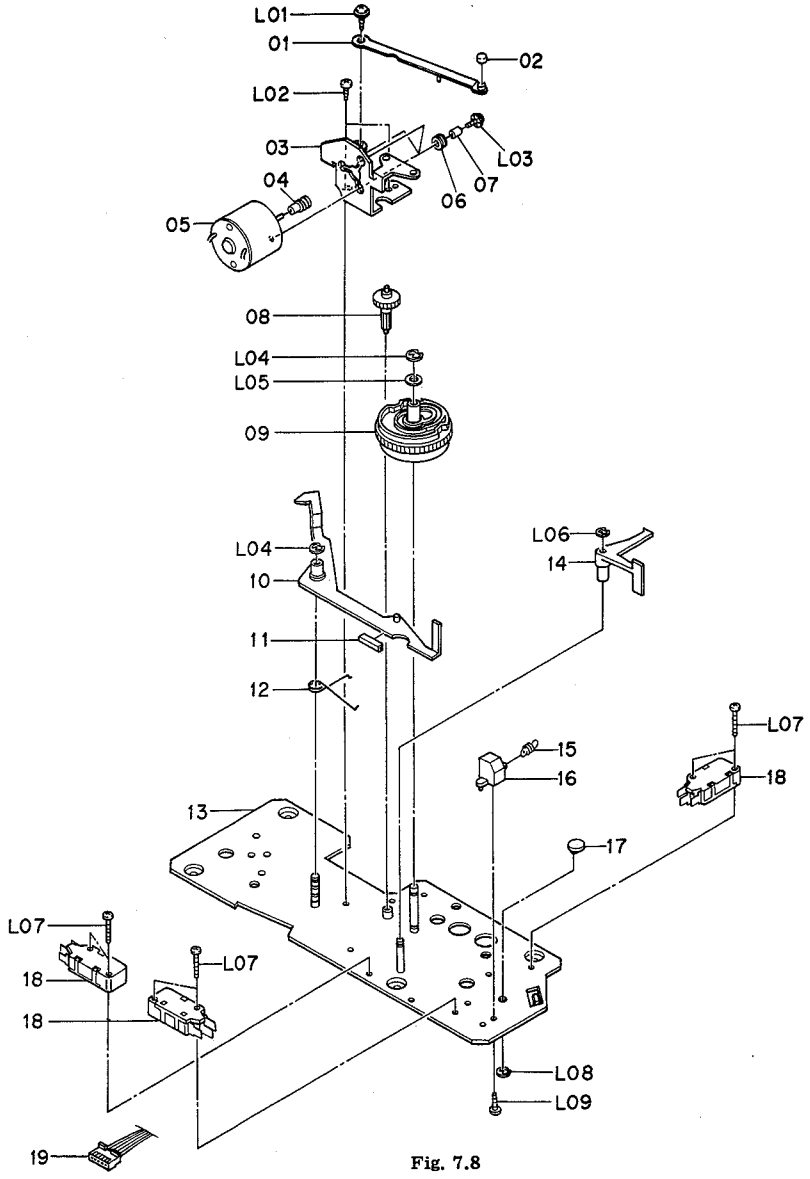


Fig. 7.8

Schematic Ref. No.	Part No.	Description	Q'ty
B03	**CA80100A**	**Sensor Arm Positioner Ass'y** Serial No.: V10201001 -	**1**
01	0C80340A	Selector Cam	1
02	0C80342A	Cushion	2
03	CA80117A	Magnet Ass'y	1
04	CA80118A	Spool Ass'y	1
05	0B01356A	Ceramic Capacitor 0.1μF	1
06	CA80101A	Positioner Chassis Ass'y	1
L01	0E00222A	E-Ring 2mm	1
L02	0E00217A	M2x6 ⊕Pan	1
L03	0C80341A	Mylar Washer 3.1x6x0.1	1
L04	0E00226A	M2.6x4 ⊕Pan	1
B04	**CA80095A**	**Sensor Arm Mechanism Ass'y** Serial No.: V10201001 -	**1**
01	CA80098A	Arm	1
02	0C80337A	Friction Rubber	1
03	0C80336A	Gear Bracket	1
04	0C80322A	Worm Gear	1
05	0C80282A	Sensor Arm Motor	1
06	0C80318A	Rubber Cushion	3
07	0C80319A	Collar A	3
08	0C80321A	Spur Gear A	1
09	0C80320A	Main Gear	1
10	CA80097A	Disc Size Selector Arm Ass'y	1
11	0C80426A	Arm Cover	1
12	0C80334A	Spring A	1
13	CA80096A	Sensor Mechanism Chassis Ass'y	1
14	0C80427A	Switch Arm B	1
15	0C80343A	Spring C	1
16	0C80338A	Guide	1
17	0C80339A	Eccentric Pin B	1
18	0C80576A	Micro Switch	3
19	0C80583A	5P Connector Cord	1
L01	0C80464A	BT 3x8 ⊕Pan	1
L02	0E00862A	BT 3x6 ⊕Pan	2
L03	0C80465A	M2.6x6 ⊕Pan Washer-faced	3
L04	0E00043A	E-Ring 3.2mm	2
L05	0C80467A	Washer 5.2x10x0.2	1
L06	0E00222A	E-Ring 2mm	1
L07	0C80466A	M2.6x14 ⊕Pan	6
L08	0E03101A	E-Ring 3mm	1
L09	0E00846A	BT3x8 ⊕Pan	1

7.9. Center Search Rod Mechanism Ass'y (B05)

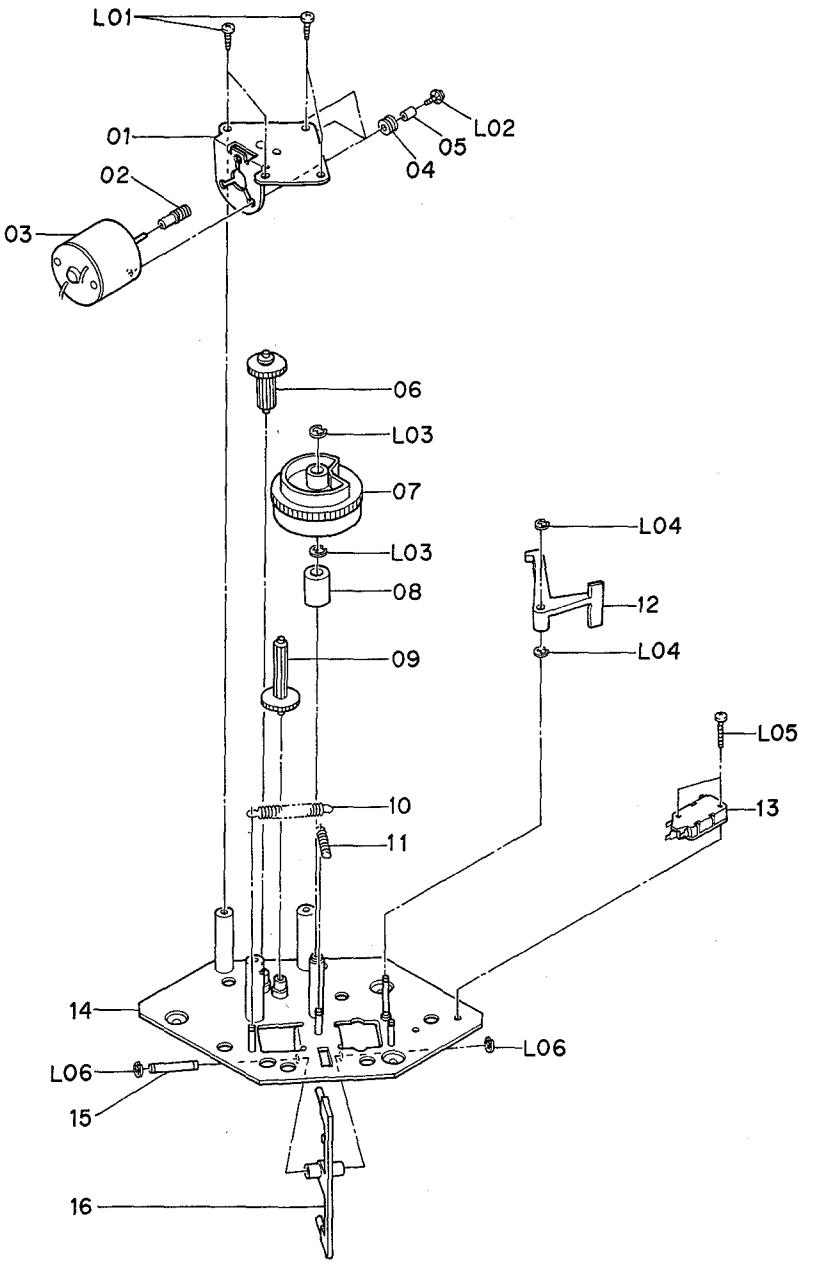


Fig. 7.9

7.10. Center Search Rod Housing Ass'y (B06)

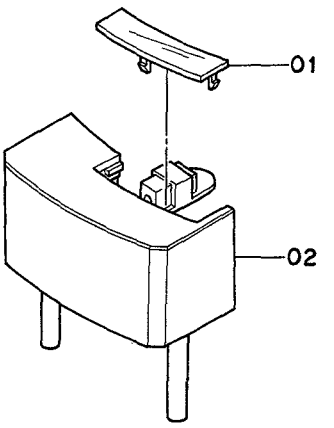


Fig. 7.10

Schematic Ref. No.	Part No.	Description	Q'ty
B05	**CA80090A**	**Center Search Rod Mechanism Ass'y** Serial No.: V10201001 -	**1**
01	CA80092A	Motor Holder Ass'y	1
02	0C80322A	Worm Gear	1
03	0C80317A	Center Search Rod Activation Motor	1
04	0C80318A	Rubber Cushion	3
05	0C80319A	Collar A	3
06	0C80423A	Spur Gear B	1
07	0C80335A	Control Cam	1
08	0C80425A	Collar B	1
09	0C80323A	Pinion Gear	1
10	0C80424A	Spring A	1
11	0C80326A	Spring B	1
12	0C80324A	Switch Arm A	1
13	0C80576A	Micro Switch	1
14	CA80091A	Mechanism Chassis Ass'y	1
15	0C80325A	Arm Shaft	1
16	CA80093A	Arm Ass'y	1
L01	0E00846A	BT 3x8 ⊕Pan	4
L02	0C80465A	M2.6x6 ⊕Pan Washer-faced	3
L03	0E00134A	E-Ring 4mm	2
L04	0E00222A	E-Ring 2mm	2
L05	0C80466A	M2.6x14 ⊕Pan	2
L06	0E00181A	E-Ring 3mm	2
B06	**CA80162A**	**Center Search Rod Housing Ass'y** Serial No.: V10201001 -	**1**
01	0C80315A	Window	1
02	0C80314A	Center Search Rod Housing	1

7.11. Control Panel Ass'y (C01)

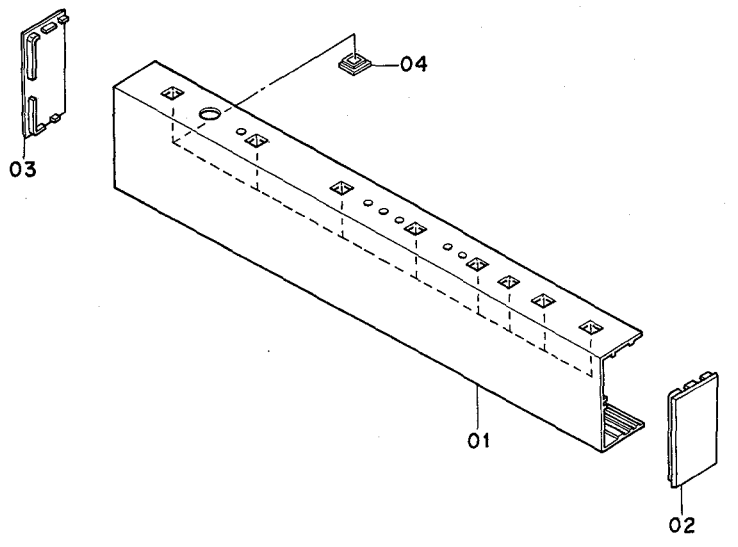


Fig. 7.11

7.12. Control Switch P.C.B. Ass'y (C02)

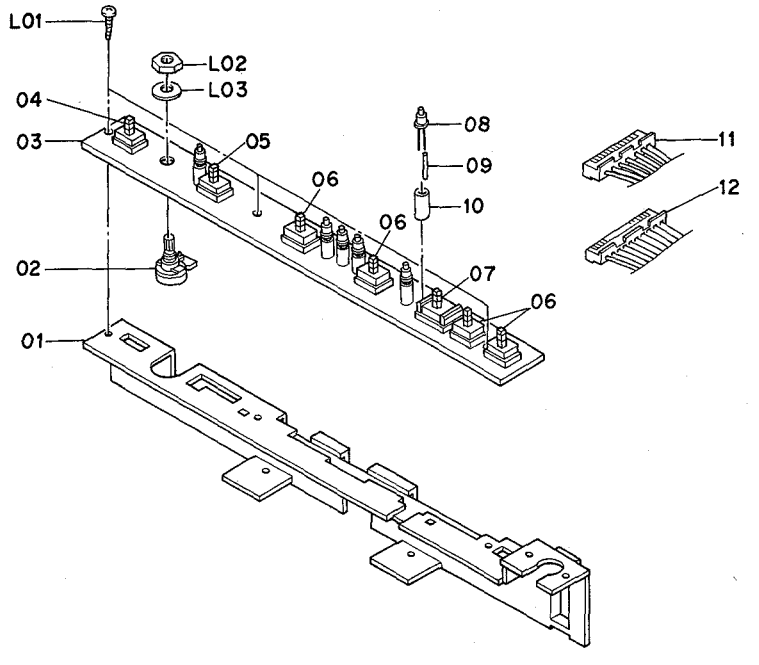


Fig. 7.12

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
C01	CA80111A	Control Panel Ass'y Serial No.: V10201001 -	1	03	0C80241A	Control Switch P.C.B.	1
				04	0C80273A	Push Switch (Speed)	1
				05	0C80275A	Push Switch (Quartz Lock)	1
01	0C80267A	Control Panel	1	06	0C80274A	Push Switch	4
02	0C80268A	Side Panel R	1	07	0C80276A	Push Switch (Disc Size)	1
03	0C80269A	Side Panel L	1	08	0C80279A	LED	6
04	0C80270A	Push Switch Escutcheon	8	09	0C80280A	UL Tube ϕ1x11	6
				10	0C80281A	UL Tube ϕ3.3x11	6
C02	CA80085A	Control Switch P.C.B. Ass'y Serial No.: V10201001 -	1	11	0C80277A	11P Connector	1
				12	0C80278A	10P Connector	1
				L01	0E00864A	BT 3x8 ⊕Pan	3
01	0C80271A	P.C.B. Holder	1	L02	—	Nut for Volume	(1)
02	0C80272A	Volume 5K B	1	L03	—	Washer for Volume	(1)

8. MOUNTING DIAGRAMS AND PARTS LIST

Notes: 1. Mounting diagram shows a dip side view of the printed circuit board.
2. Diode is 1SS53, 1S1555, or 1SS176 unless otherwise specified.
3. Following transistors are interchangeable with each other.
   a. 2SA733, 2SA608SP, 2SA1048, 2SA1175
   b. 2SC945, 2SC536SP, 2SC2458, 2SC2785
4. Abbreviation for part name:
   TR — Transistor, SiD — Silicon Diode, GD — Germanium Diode, ZD — Zener Diode
   RK — Carbon Resistor, RM — Metal Film Resistor, RF — Fail Safe Type Resistor, RC — Cement Resistor, RW — Wire Wound Resistor
   CE — Electrolytic Capacitor, CM — Mylar Capacitor, CC — Ceramic Capacitor, CP — PP Capacitor, CT — Tantalum Capacitor, CM — Film Capacitor, C — Mica Capacitor

8.1. Return Sensor P.C.B. Ass'y

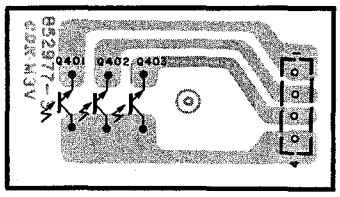


Fig. 8.1

8.2. Strobo P.C.B. Ass'y

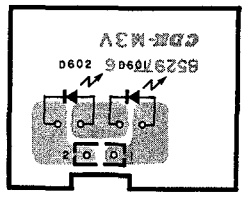


Fig. 8.2

8.3. Pitch Control LED P.C.B. Ass'y

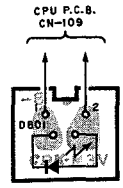


Fig. 8.3

8.4. Return Signal LED P.C.B. Ass'y

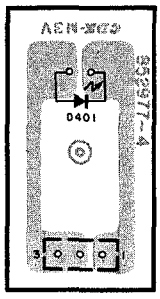


Fig. 8.4

8.5. Connector P.C.B. Ass'y

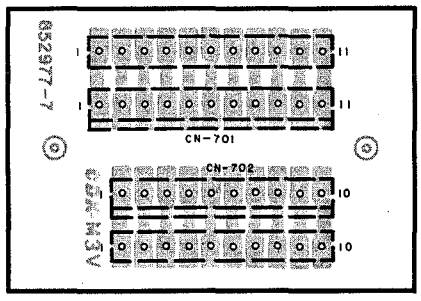


Fig. 8.5

8.6. Fuse P.C.B. Ass'y

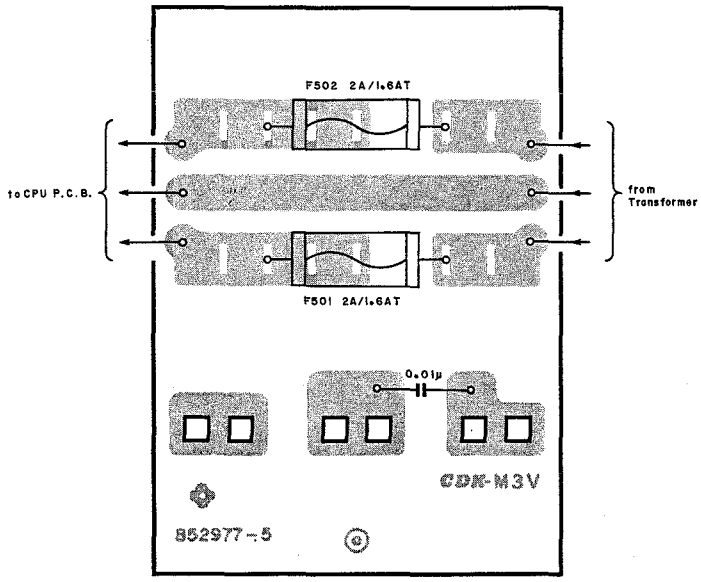


Fig. 8.6

Schematic Ref. No.	Part No.	Description
	CA80134A	**Return Sensor P.C.B. Ass'y**
Q401,402 403	0C80244A 0C80556A 0C80484A	Return Sensor P.C.B. Photo TR PN120S Connector (1)
	CA80141A	**Strobo P.C.B. Ass'y**
D601,602	0C80247A 0C80558A	Strobo P.C.B. Strobo LED
	CA80139A	**Pitch Control LED P.C.B. Ass'y**
D801	0C80249A 0C80559A	Pitch Control LED P.C.B. Pitch Control LED
	CA80135A	**Return Signal LED P.C.B. Ass'y**
D401	0C80245A 0C80557A	Return Signal LED P.C.B. Return Signal LED
	CA80138A	**Connector P.C.B. Ass'y**
CN701 CN702	0C80248A 0C80555A 0C80554A 0C80486A 0C80485A	Connector P.C.B. 11P-LP Connector 10P-LP Connector Connector 72V Connector 71V
	CA80136A	**Fuse P.C.B. Ass'y**
	0C80246A 0C80564A 0C80565A 0C80566A	Fuse P.C.B. CM 0.01μ (1) Terminal Pin (6) Connector F1 (1) (Fuses F501 and F502 are listed on synthesis mechanism parts list.)

8.7. Pitch Control Sensor P.C.B. Ass'y

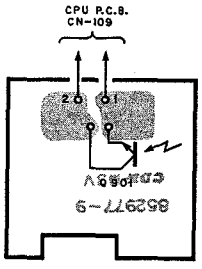


Fig. 8.7

8.8. Motor P.C.B. Ass'y

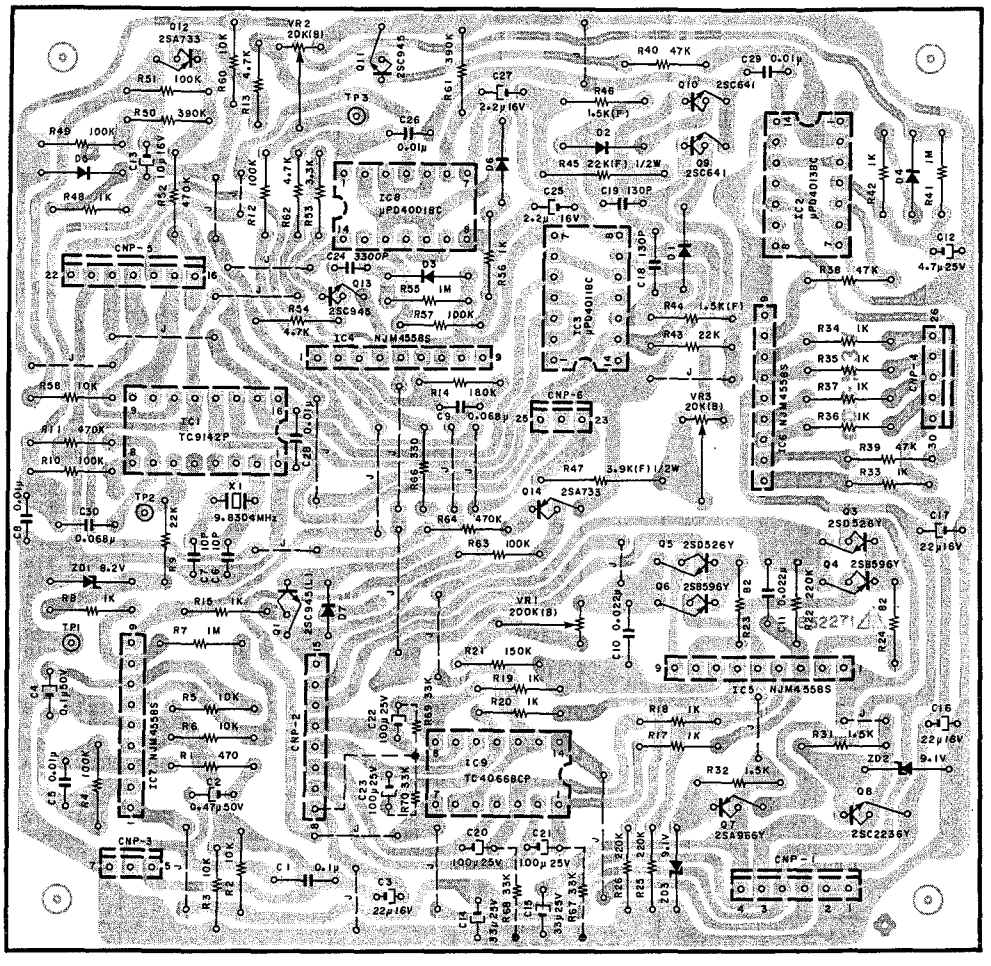


Fig. 8.8

Schematic Ref. No.	Part No.	Description
	CA80140A	Pitch Control Sensor P.C.B. Ass'y
	0C80250A	Pitch Control Sensor P.C.B.
Q901	0C80556A	Photo TR PN120S
	CA80084A	Motor P.C.B. Ass'y
	0C80252A	Motor P.C.B.
IC1	0B06357A	IC TC9142P
IC2	0B06358A	IC μPD4013BC
IC3	0B06178A	IC μPD4011BC
IC4,5 6,7	0B11050A	IC NJM4558S
IC8	0B06143A	IC μPD4001BC
IC9	0B06169A	IC TC4066BP
X1	0C80521A	Xtal 9.8304MHz
ZD1	0B06298A	ZD 8.2V RD8.2EB3
ZD2,3	0C80508A	ZD 9.1V RD9.1EB1
D1-7	0B06181A	SiD 1SS53
Q1,11 13	0B01872A	TR 2SC945L (P,Q)
Q3,5	0C80502A	TR 2SD526Y
Q4,6	0C80499A	TR 2SB596Y
Q7	0C80498A	TR 2SA966Y
Q8	0C80500A	TR 2SC2236Y
Q9,10	0C80501A	TR 2SC641K
Q12,14	0B06013A	TR 2SA733 (P,Q)
VR1	0C80517A	Semi-fixed VR 200K
VR2,3	0C80518A	Semi-fixed VR 20K

Schematic Ref. No.	Part No.	Description
R1	0B05576A	RK 470 1/4W J
R2,3 5,6 58,60	0B01888A	RK 10K 1/4W J
R4,10 12,49 51,57 63	0B01889A	RK 100K 1/4W J
R7,41 55	0B05776A	RK 1M 1/4W J
R8,15 17-20 33-37 42,48 56	0B01857A	RK 1K 1/4W J (15)
R9,43	0B05615A	RK 22K 1/4W J
R11,52 64	0B01684A	RK 470K 1/4W J
R13,54 62	0B01846A	RK 4.7K 1/4W J
R14	0B05640A	RK 180K 1/4W J
R21	0B05626A	RK 150K 1/4W J
R22,25 26	0B05625A	RK 220K 1/4W J
R23,24	0B05631A	RK 82 1/4W J
R31,32	0B05698A	RK 1.5K 1/4W J
R38,39 40	0B05641A	RK 47K 1/4W J
R44,46	0B22247A	RM 1.5K 1/4W F
R45	0C80513A	RM 22K 1/2W F
R47	0C80512A	RM 3.9K 1/2W F
R50,61	0B05676A	RK 390K 1/4W J

Schematic Ref. No.	Part No.	Description
R53	0B01681A	RK 3.3K 1/4W J
R66	0B05577A	RK 330 1/4W J
R67,68 69,70	0B05509A	RK 33K 1/4W J
C1	0B00093A	CM 0.1μ 50V
C2	0C80531A	CE 0.47μ 50V
C3,16 17	0C80527A	CE 22μ 16V
C4	0C80532A	CE 0.1μ 50V
C5,26	0B09856A	CM 0.01μ 50V J
C6,7	0B09277A	CC 10P 50V D
C8,28 29	0B09290A	CC 0.01μ 50V Z
C9,30	0B05586A	CM 0.068μ 50V K
C10,11	0B09860A	CM 0.022μ 50V J
C12	0C80528A	CE 4.7μ 25V
C13	0C80526A	CE 10μ 16V
C14,15	0C80529A	CE 33μ 25V
C18,19	0C80523A	CC 130P 50V
C20,21 22,23	0C80530A	CE 100μ 25V
C24	0B09850A	CM 3300P 50V J
C25,27	0C80525A	CE 2.2μ 16V
CNP1	0C80551A	6P-LP Connector
CNP2	0C80553A	8P-LP Connector
CNP3,6	0C80548A	3P-LP Connector
CNP4	0C80550A	5P-LP Connector
CNP5	0C80552A	7P-LP Connector
TP1,2,3	0C80545A	Test Pin 1

8.9. Control Switch P.C.B. Ass'y

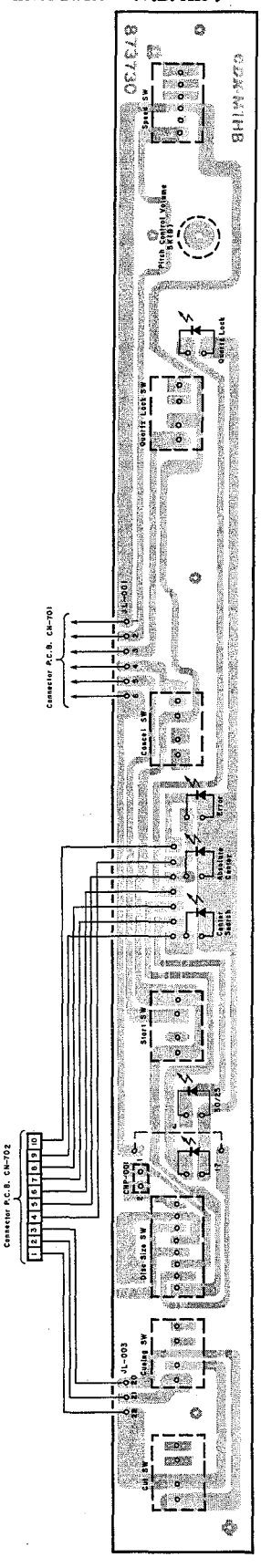


Fig. 8.9

Schematic Ref. No.	Part No.	Description
	CA80085A	Control Switch P.C.B. Ass'y
	0C80241A	Control Switch P.C.B.
	0C80279A	LED (6)
	0C80272A	Volume 5K B (1)
	0C80273A	Push Switch (Speed) (1)
	0C80275A	Push Switch (Quartz Lock) (1)
	0C80276A	Push Switch (Disc Size) (1)
	0C80274A	Push Switch (4)
	0C80277A	11P Connector (1)
	0C80278A	10P Connector (1)
	0C80271A	P.C.B. Holder (1)
	0E00864A	BT 3x8 ⊕Pan (3)
	0C80280A	UL Tube ϕ1x11 (6)
	0C80281A	UL Tube ϕ3.3x11 (6)
	CA80133A	CPU P.C.B. Ass'y
	— Center Search —	
IC101,102 106	0B06124B	IC NJM4558D
IC103	0B06169A	IC TC4066BP
IC104	0B06348A	IC μPD7001C
IC105	0C80494A	IC μPD7507C
IC107,109	0C80496A	IC μPA2004C
IC108	0C80495A	IC TC4049UPB
Q101,106 108	0B06303A	TR 2SB772 (P,Q)
Q102	0B06299A	TR 2SC2878
Q103	0C80504A	TR 2SK240GR
Q104	0B06013A	TR 2SA733 (P,Q)
Q105,107	0B06316A	TR 2SD882 (P,Q)
ZD101	0C80508A	ZD 9.1V RD9.1EB1
ZD102,103	0B06230A	ZD 5.1V RD5.1EB2
D101-107	0B06181A	SiD 1SS53
VR101,103	0C80519A	Semi-fixed VR 100K
VR102	0C80520A	Semi-fixed VR 200K
R101,104 120,121 134,138 139,140 141,142 143,156 157,162	0B01857A	RK 1K 1/4W J
R102,116 133	0B01888A	RK 10K 1/4W J
R103,144	0B01846A	RK 4.7K 1/4W J
R105,136	0B05625A	RK 220K 1/4W J
R106	0C80509A	RM 330 2W F
R107	0B01679A	RK 100 1/4W J
R108	0B05614A	RK 1.8K 1/4W J
R109	0B09557A	RM 13K 1/4W F
R110	0B09929A	RM 10K 1/4W F
R111	0B09776A	RM 1.8M 1/4W F
R112,114 119,122 123,128 129,131 135,145	0B05615A	RK 22K 1/4W J
R113	0B05692A	RK 68K 1/4W J
R115	0B05676A	RK 390K 1/4W J
R117	0B09446A	RM 33.2K 1/4W F
R118	0B09777A	RM 180K 1/4W F
R124	0B01889A	RK 100K 1/4W J
R125,126	0B09491A	RM 1K 1/4W F
R127,149 150,151 152	0B05743A	RK 27K 1/4W J
R130	0C80514A	R Array 22Kx5
R132	0B05560A	RK 18K 1/4W J
R137	0B05784A	RK 560K 1/4W J
R146	0B09305A	RM 100K 1/4W F
R153,161	0B01680A	RK 820 1/4W J
R158,159	0B05626A	RK 150K 1/4W J
R160	0C80511A	R Array 1Kx4
C101,107	0B41071A	CC 100P 50V J
C102,103	0B04059A	CM 1000P 50V K
C104	0B09789A	CP 0.47μ 100V K
C105,109	0C80536A	CE 1μ 25V
C106	0C80533A	CE 22μ 16V
C108	0C80522A	CC 0.1μ 25V
C110,114 115	0C80524A	CC 0.1μ 25V J
C111,112	0C80534A	CE 220μ 16V
113		
CN101	0C80551A	6P-LP Connector
CN103	0C80550A	5P-LP Connector
CN104,106 110	0C80547A	2P-LP Connector
CN107	0C80552A	7P-LP Connector
CN109	0C80549A	4P-LP Connector
TP101,102	0C80560A	5P Post
TP103-106	0C80546A	Test Pin 2
	— Arm. Control —	
IC201	0C80574A	IC μPD4081C
IC202,204	0B06178A	IC μPD4011BC
IC203	0C80497A	IC μPD4023BC
IC205	0B06124B	IC NJM4558D
Q201,202 204,206	0B01872A	TR 2SC945L (P,Q)
Q203	0B06013A	TR 2SA733 (P,Q)
Q205	0C80503A	TR 2SD677 (C,D)
Q207	0B06316A	TR 2SD882 (P,Q)
D201-205	0B06181A	SiD 1SS53
D206	0C80506A	SiD F14C
R201	0B05578A	RK 180 1/4W J
R202,203 204,211	0B01889A	RK 100K 1/4W J
R205,206 212,213 217,218 229,231	0B05615A	RK 22K 1/4W J
R207,208 225,226 227,228	0B01887A	RK 5.6K 1/4W J
R209,219 220	0B01888A	RK 10K 1/4W J
R210	0B01854A	RK 39K 1/4W J
R214,216	0B01684A	RK 470K 1/4W J
R215	0B05675A	RK 3.9K 1/4W J
R221,222	0B01857A	RK 1K 1/4W J
R223,224	0B05641A	RK 47K 1/4W J
R230	0C80516A	RC 330 5W
R232	0C80510A	RK 270 1/2W
C201,202 203,206 207,212	0B09290A	CC 0.01μ 50V Z
C204,211	0C80528A	CE 4.7μ 25V
C205	0B05796A	CM 0.047μ 50V J
C208	0C80538A	CE 10μ 25V
C209	0C80542A	CE 1000μ 50V
C210	0B01780A	CM 0.1μ 50V J
CN201	0C80550A	5P-LP Connector
CN202	0C80549A	4P-LP Connector
CN203,204	0C80548A	3P-LP Connector
	— DC Supply —	
IC301	0C80561A	IC NJM78M05A
IC302	0B11013A	IC μPC7818H
IC303	0C80562A	IC μPC7918H
IC304	0B06124B	IC NJM4558D
Q301	0B06094A	TR 2SB536 (2) (L)
Q302	0B06095A	TR 2SD381 (2) (L)
Q303	0C80498A	TR 2SA966Y
Q304	0B06013A	TR 2SA733 (P,Q)
Q305	0C80500A	TR 2SC2236Y
Q306	0B01872A	TR 2SC945L (P,Q)
ZD301	0B06230A	ZD 5.1V RD5.1EB2
D301	0C80507A	Diode Bridge RB401
R301,305	0B01857A	RK 1K 1/4W J
R302,306	0B01846A	RK 4.7K 1/4W J
R303,307	0B01679A	RK 100 1/4W J
R304	0B01888A	RK 10K 1/4W J
R308,309 313,314	0B09929A	RM 10K 1/4W F
R311,316	0B01887A	RK 5.6K 1/4W J
R312,317	0B05627A	RK 330K 1/4W J
R315	0C80515A	RM 14.5K 1/4W F
R318	0B05794A	RK 680 1/4W J
C301	0C80541A	CE 6800μ 35V
C302,303	0C80563A	CM 0.33μ 100V
C304	0C80535A	CE 2200μ 16V
C305	0C80540A	CE 2200μ 35V
C306,307 308,309	0C80530A	CE 100μ 25V
C310,311	0C80534A	CE 220μ 16V
CN301	0C80548A	3P-LP Connector
	— Miscellaneous —	
	0C80243A	CPU P.C.B.
	0C80483A	Connector (1)

8.10. CPU P.C.B. Ass'y

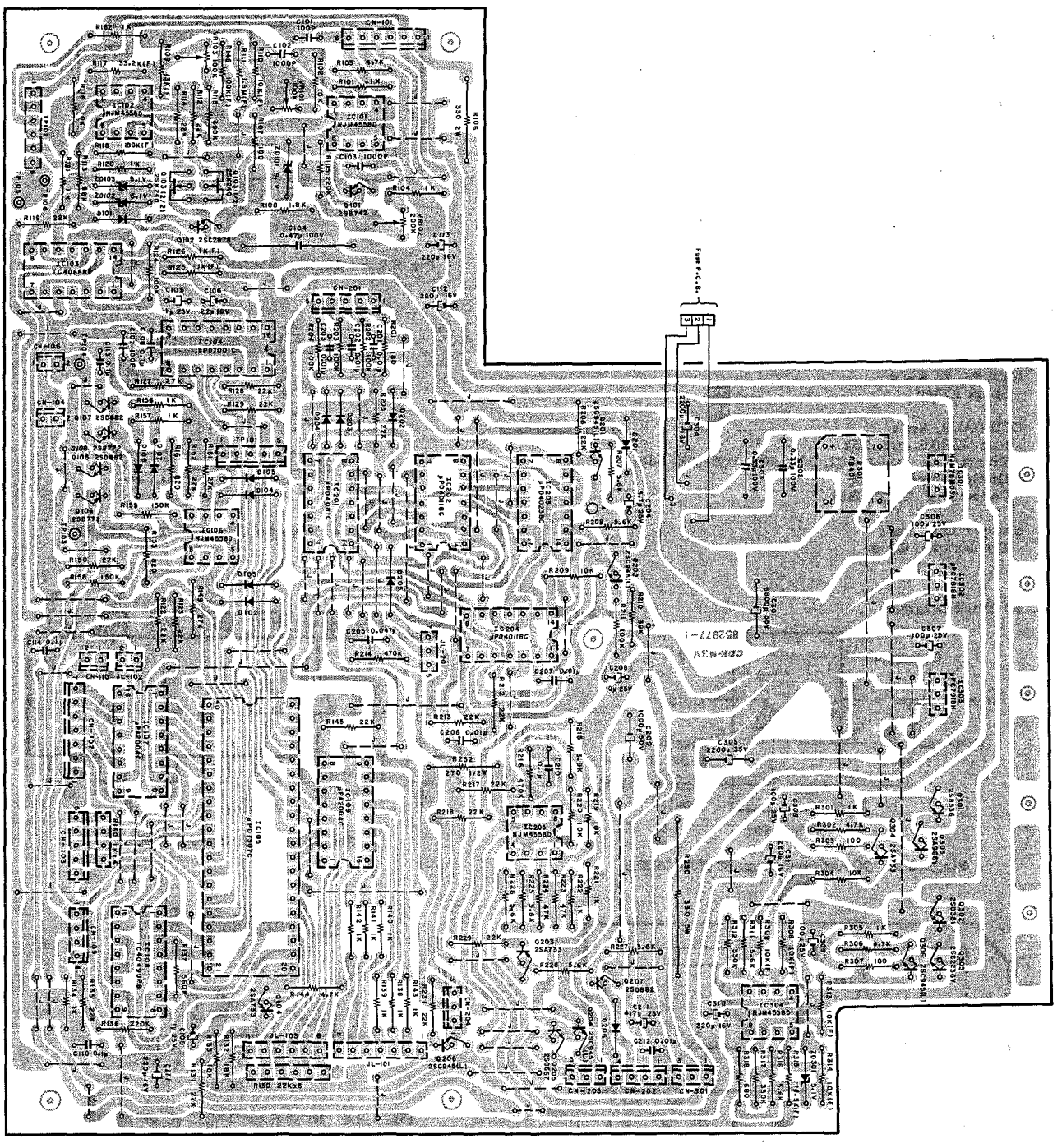


Fig. 8.10

Schematic Ref. No.	Part No.	Description
	0C80543A	Heat Sink Angle (1)
	0E00507A	Nut Hex. M3 (2) (Chromate)
	0E00509A	M3x6 ⊕Pan (3) (Chromate)
	0E00659A	M3x10 ⊕Pan (2) (Chromate)

9. SCHEMATIC DIAGRAM

9.1. Attention to Servicemen

(1) Caution

(a) If a part is in need of removing (or replacing) for service, it should be remounted (or replaced with specified parts) by the same methods as before after servicing.

(b) The appliance should be used only specified parts for preventing a risk of fire and electric shock and maintaining the characteristics.

(c) Before returning the repaired appliance to a customer, check to insure that the exposed part is accurately insulated from the Power Supply by measuring the leakage current or the insulation resistance between them.

(2) Parts Replacement

Following parts shall be replaced with the specified ones.
Refer to the parts list.

(a) Power Supply Circuit
Power Cord
Power Switch
Power Transformer: T1
Fuses: F501, F502

(b) Fuse P.C.B. Ass'y
Spark Killer

(c) CPU P.C.B. Ass'y
ICs: IC301, 302, 303
Transistors: Q301, 302, 303, 305, 105-108, 205, 207
Diode Bridge: D301
Capacitors: C301, 305

(d) Motor P.C.B. Ass'y
Transistors: Q1-8

9.2. IC Block Diagrams

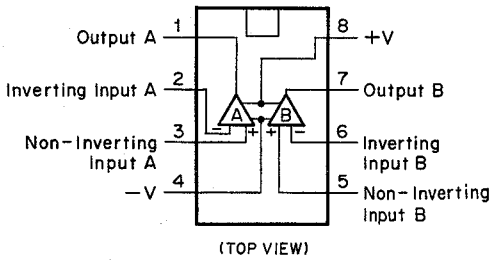


Fig. 9.2.1 Operational Amp. IC NJM4558D

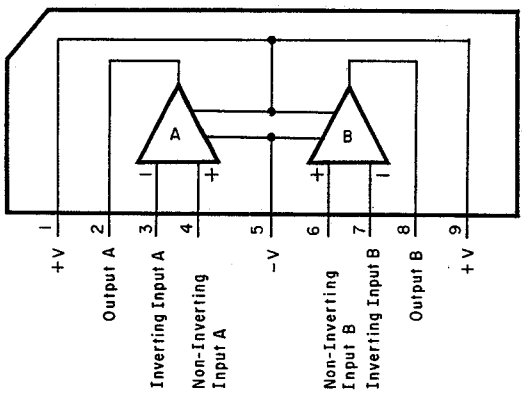


Fig. 9.2.2 Operational Amp. IC NJM4558S

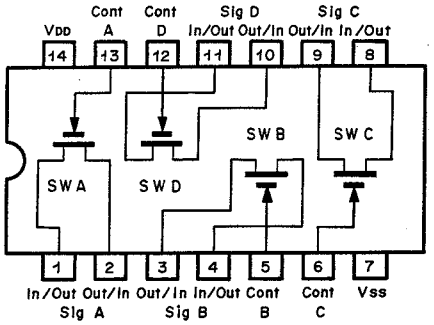


Fig. 9.2.3 Bilateral Switch C-MOS IC TC4066BP

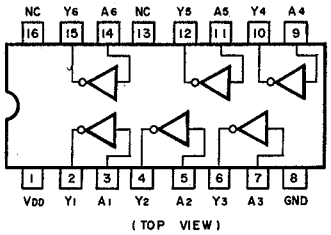


Fig. 9.2.4 Inverter C-MOS IC TC4049UPB

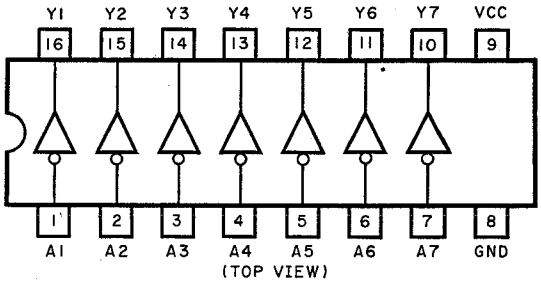


Fig. 9.2.5 Driver μPA2004C

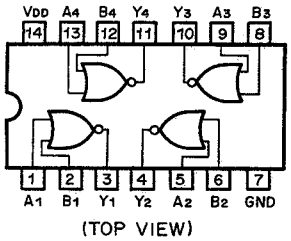


Fig. 9.2.6 NOR Gate C-MOS IC μPD4001BC

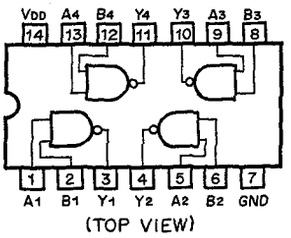


Fig. 9.2.7 NAND Gate C-MOS IC μPD4011BC

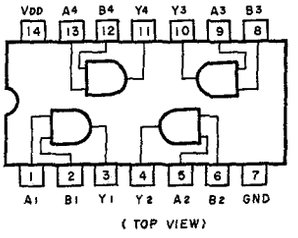


Fig. 9.2.8 AND Gate C-MOS IC μPD4081BC

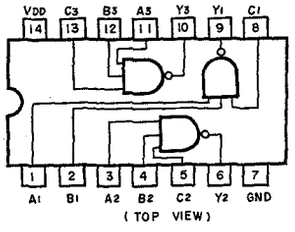


Fig. 9.2.9 NAND Gate C-MOS IC μPD4023BC

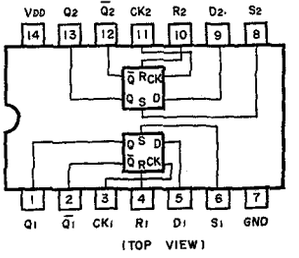


Fig. 9.2.10 D-Type Flip-Flop C-MOS IC TC4013BP

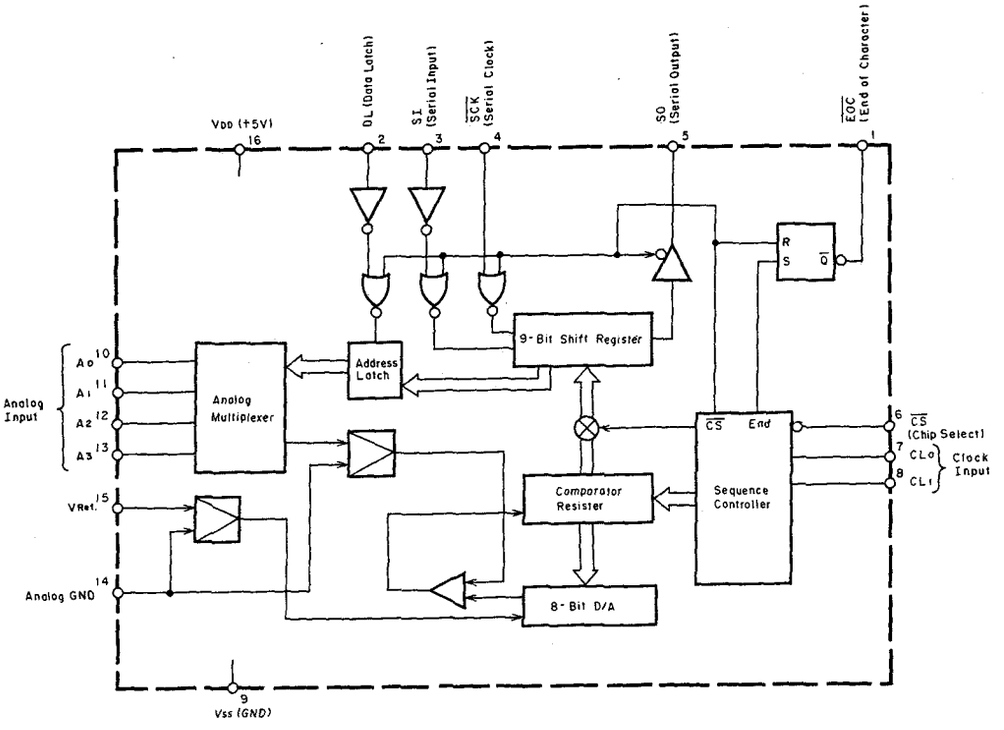


Fig. 9.2.11 C-MOS 8-Bit A/D Converter μPD7001C

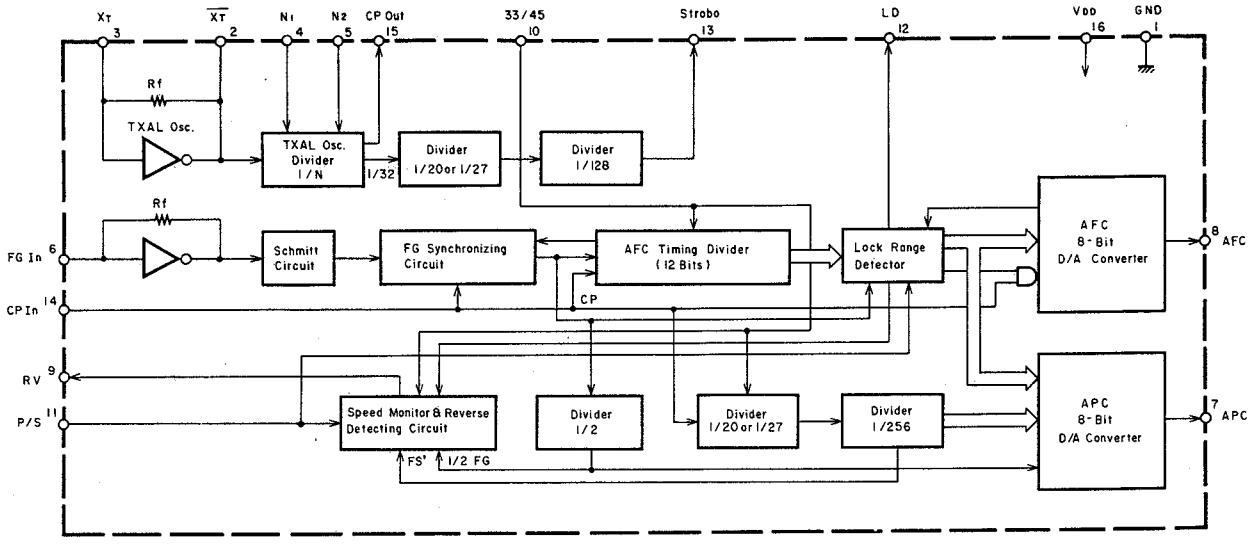
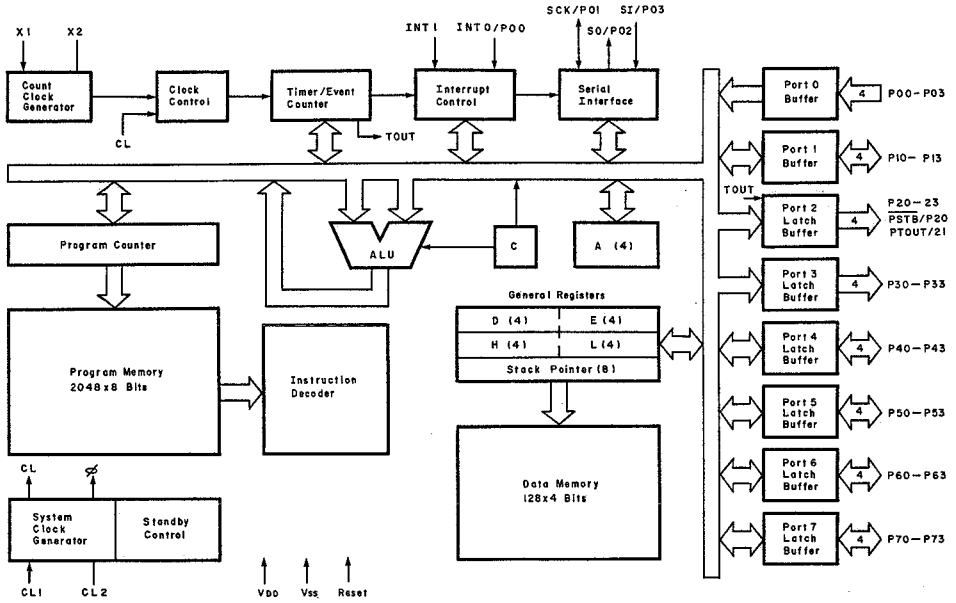
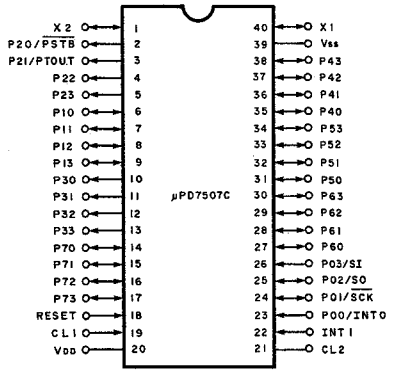


Fig. 9.2.12 C^2-MOS IC Quartz PLL Motor Control TC9142P





X1,2 : Crystal Input for Counter Clock
INT1,0 : Interrupt
RESET : Reset
CL1,2 : R,C Input for System Clock
P00-P03, P10-P13 : Input Port
P20-P23, P30-P33 : Output Port
P40-P43, P50-P53, P60-P63, P70-P73 : Bidirectional Port
SI : Serial Data Input
SO : Serial Data Output
SCK : Serial Data Clock
PTOUT : PTOUT Signal Output
PSTB : Port Strobe

Fig. 9.2.13 MOS 4-Bit Micro-processor μPD7507C

9.3. Schematic Diagram

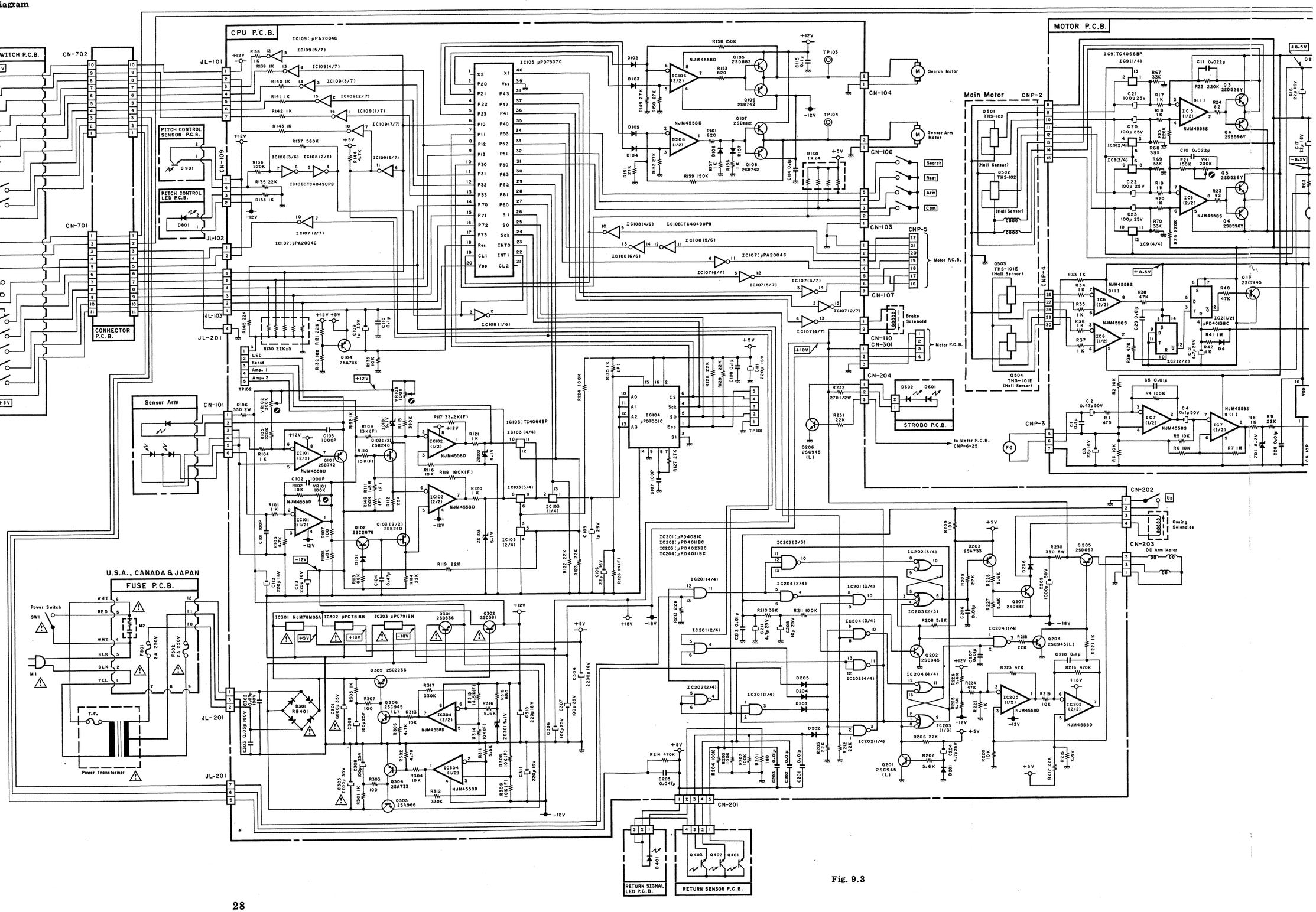
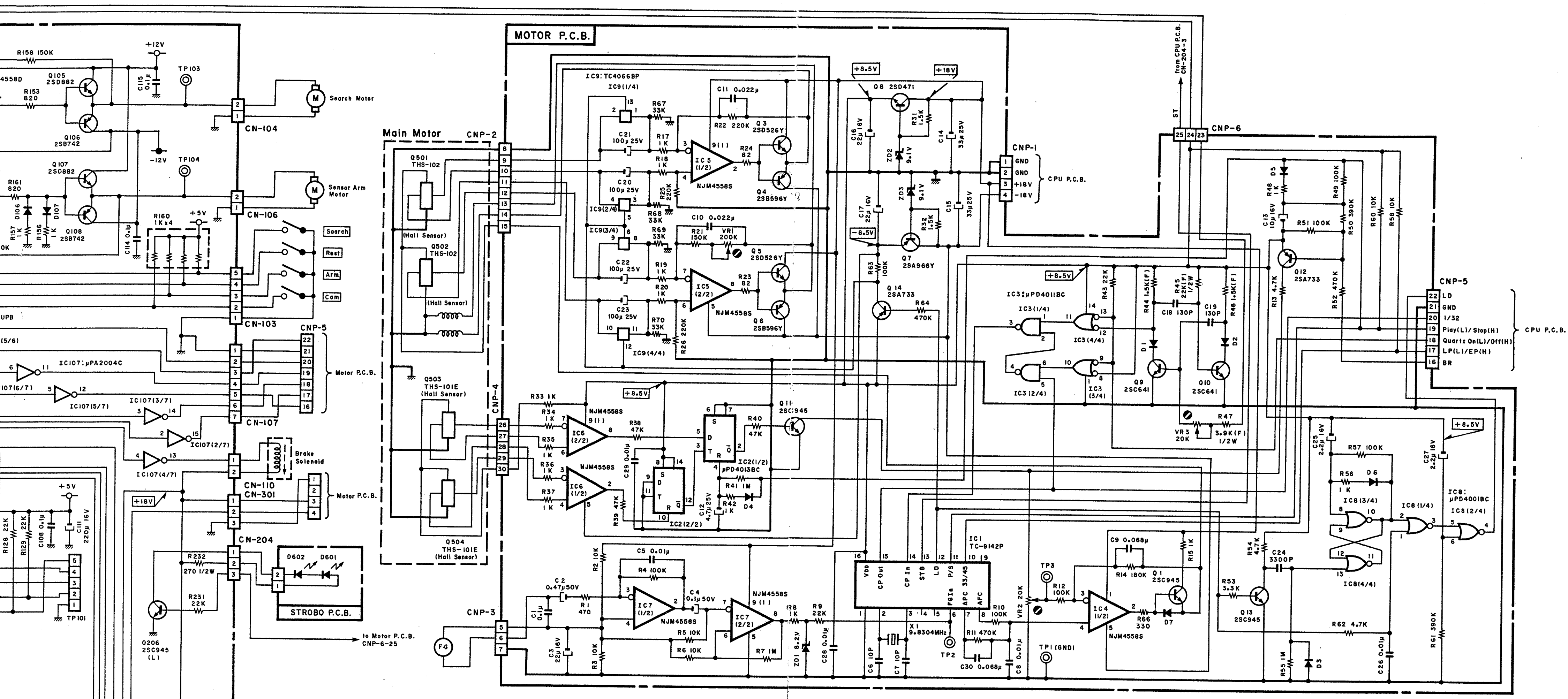


Fig. 9.3



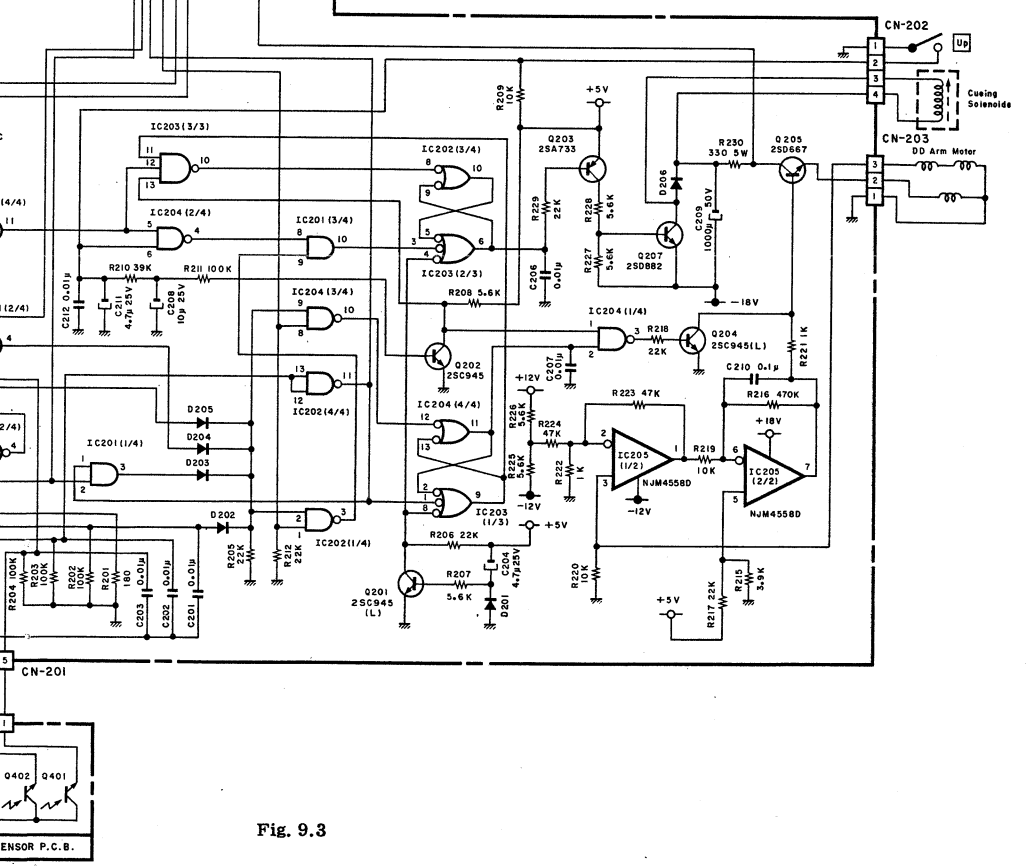
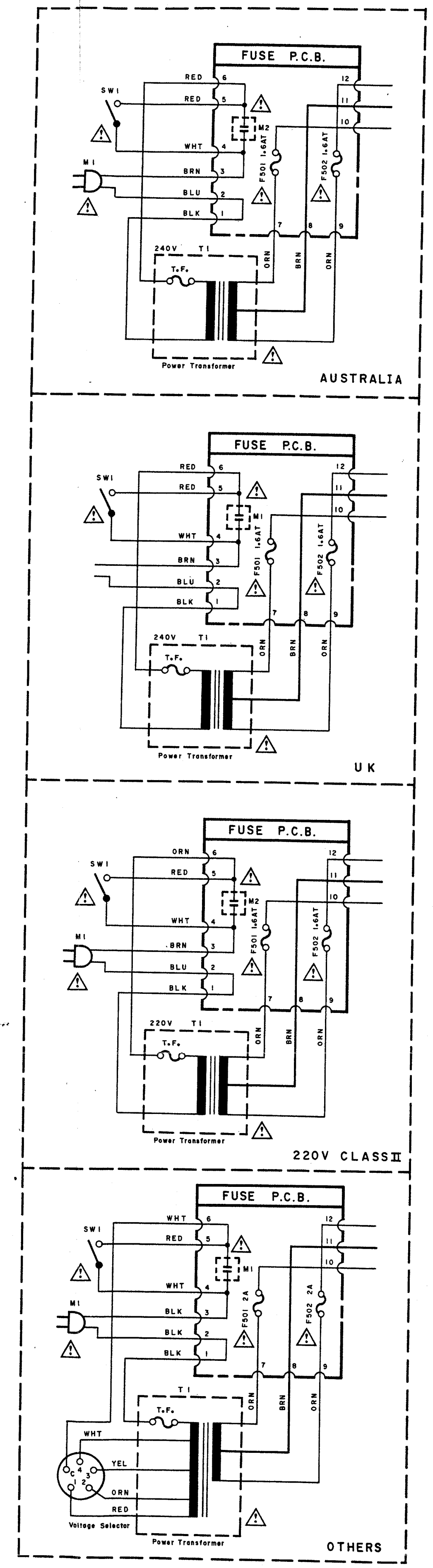


Fig. 9.3



WARNING:

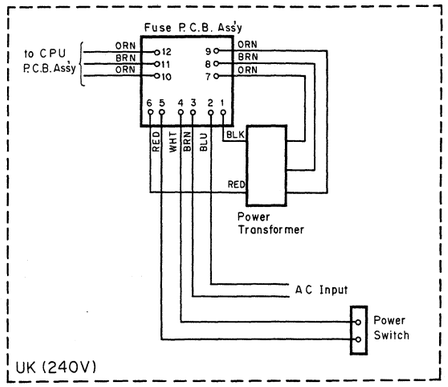
Parts marked with the symbol ⚠ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.
It is recommended that the unit be operated from a suitable DC supply or batteries during initial check-out procedures.

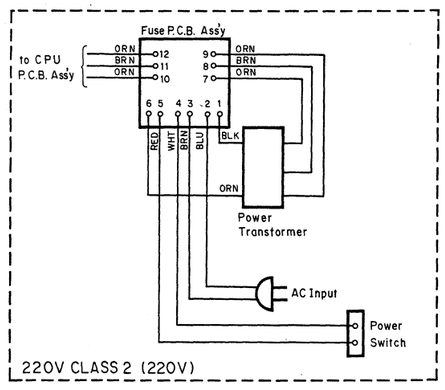
CAUTION:

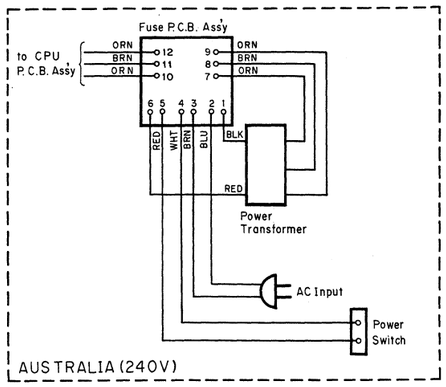
Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamp, or if the resistance from chassis to either side of the power cord is less than 240 k ohms, the unit is defective.
WARNING — DO NOT return the unit to the customer until the problem is located and corrected.

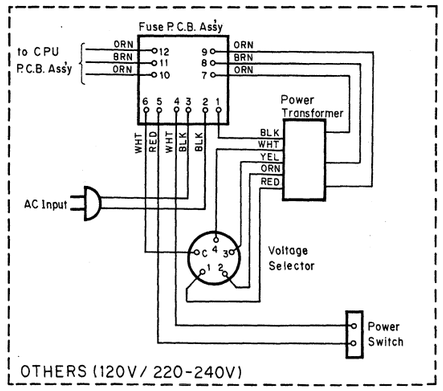
Notes: 1. Diode is 1SS53, 1S1555, or 1SS176 unless otherwise specified.
2. Resistor and capacitor marked with * show typical value.
3. 2SA733, 2SA608SP, 2SA1048 and 2SA1175 are interchangeable with each other.
4. 2SC945, 2SC536SP, 2SC2458 and 2SC2785 are interchangeable with each other.

10. WIRING DIAGRAM









Notes: 1. Table of wire colors

BRN	— Brown	BLU	— Blue
RED	— Red	VIO	— Violet
ORN	— Orange	GRY	— Gray
YEL	— Yellow	WHT	— White
GRN	— Green	BLK	— Black

2. Component side view of the P.C.B. is illustrated unless otherwise specified.

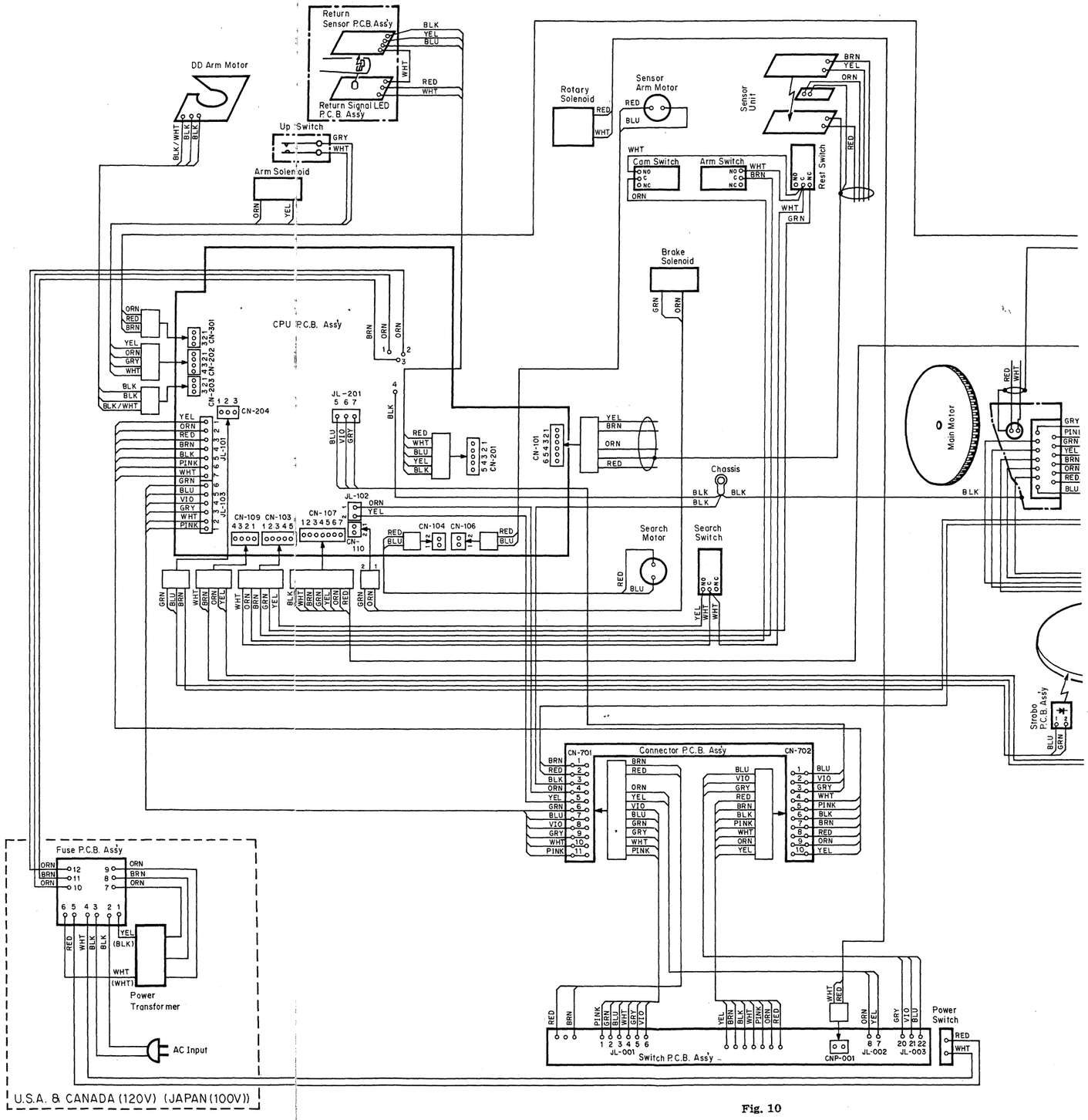


Fig. 10

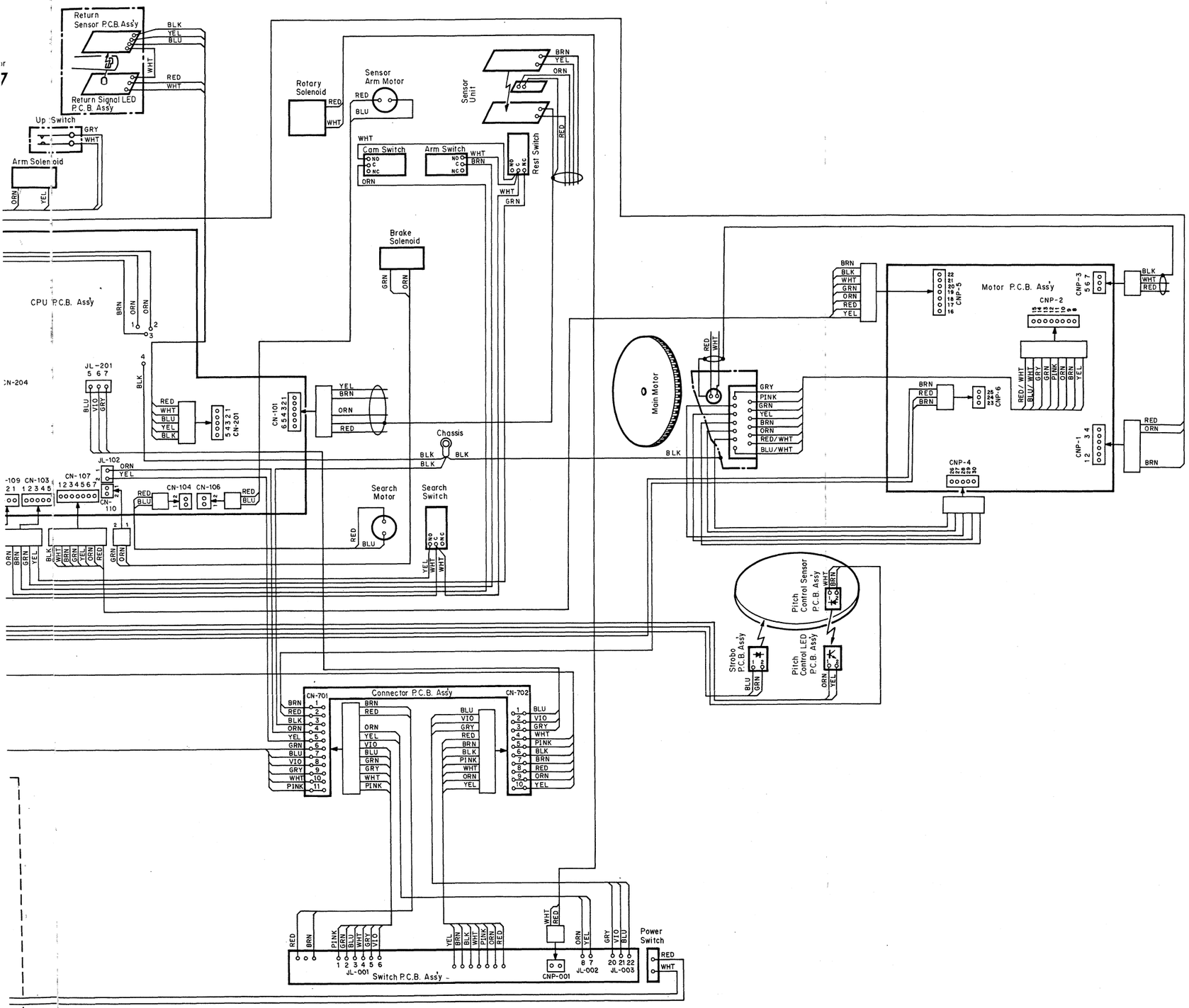

Return Sensor P.C.B. Assy
Return Signal LED P.C.B. Assy
Up Switch
Arm Solenoid
Rotary Solenoid
Sensor Arm Motor
Sensor Unit
Cam Switch
Arm Switch
Rest Switch
Brake Solenoid
CPU P.C.B. Assy
Motor P.C.B. Assy
Main Motor
Chassis
Search Motor
Search Switch
Pitch Control Sensor P.C.B. Assy
Strobo P.C.B. Assy
Pitch Control LED P.C.B. Assy
Connector P.C.B. Assy
Switch P.C.B. Assy
Power Switch

Fig. 10

11. BLOCK DIAGRAM

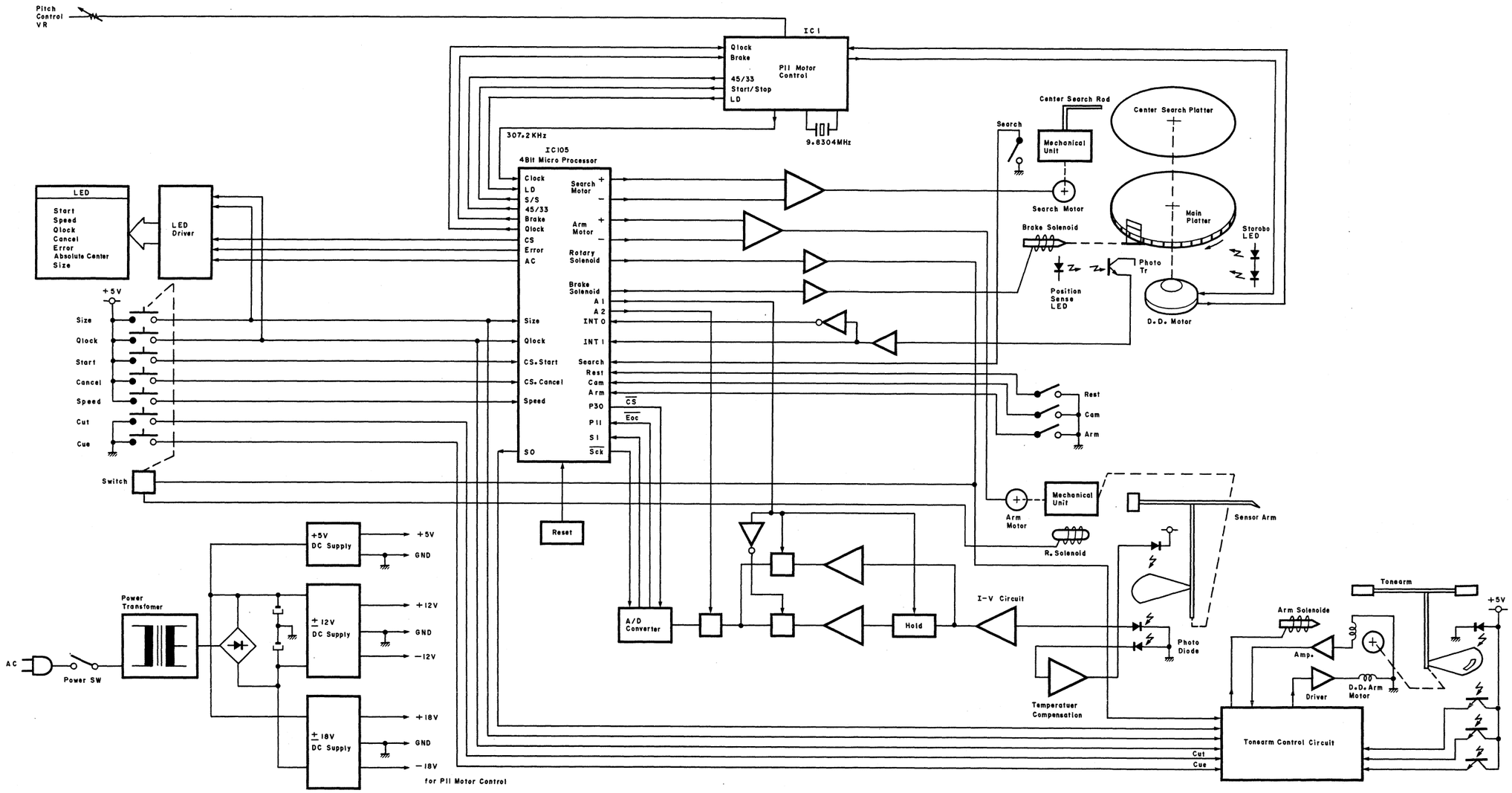


Fig. 11

Phono Motor Section

Drive System	Direct Drive
Drive Motor	Quartz PLL DC, brushless, slotless, coreless Super Linear Torque Motor
Revolution Speeds	33-1/3, 45 rpm
Pitch Control	Adjustment range ±6 %
Main Platter	Aluminium diecast (thickness 18 mm, diameter 310 mm, weight 1.4 kg)
Center Search Platter	Glass (thickness 6 mm, diameter 303 mm, weight 550 g)
Start-up Time	Within one revolution
Speed Deviation	Unmeasurable (with quartz lock)
Speed Drift	Unmeasurable (with quartz lock)
Wow-and-Flutter	0.008% (Wtd rms, FG direct) 0.03% (Wtd rms, after center search)
Signal-to-Noise Ratio	Better than 78 dB (DIN-B)
Inertia Moment	380 kg/cm^2

Tonearm Section

Type	Static balance, straight arm pipe ● oil-damping feature ● exchangeable arm pipe
Total Arm Length	305 mm
Effective Arm Length	237 mm
Effective Arm Weight	14 g (without cartridge)
Tracking Force Adjustment Range	0—3 g
Allowable Cartridge Weight	4—11 g
Cartridge Change Principle	By exchanging pipes (chuck joint principle)
Offset Angle	21°30′
Overhang	15 mm
Tracking Error	+2.5° to −1°
Arm Lifter	Oil-damped

General

Power Requirements	100, 120, 120/220-240, 220 or 240 V AC; 50/60 Hz (according to country of sale)
Power Consumption	23 W
Dimensions	546 (W) x 230 (H) x 421 (D) millimeters 21-1/2 (W) x 9-1/16 (H) x 16-9/16 (D) inches
Weight	Approx. 20 kg 44 lb 1 oz

● Design and specifications are subject to change for further improvement without notice.

Service Manual

Nakamichi DRAGON-CT

Nakamichi Corporation
Tokyo Office
Shinjuku Daiichi Seimei Bldg.
2-7-1 Nishishinjuku, Tokyo
Phone (03) 342-4461
Telex : 2324721 (NAKAM J)

Nakamichi U.S.A. Corporation
19701 South Vermont Avenue
Torrance, California 90502
Phone : (213) 538-8150

Nakamichi GmbH
Stephanienstrasse 6, 4000 Düsseldorf 1
Phone : (0211) 359036

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