

# SERVICE MANUAL

FULLY AUTOMATIC DD TURNTABLE

## SANSUI P-D30



### ● SPECIFICATIONS

Type . . . .	Two-speed direct-driven
Speeds .	33-1/3, 45 rpm
Platter . .	Aluminum alloy die-cast 304 mm (12") diameter
Motor . . . .	FG Servo DC Motor
Wow and flutter	0.03 % (W.R.M.S.)
S/N . . . .	Better than 60 dB (IEC-B)
Rumble . . . .	Better than 72 dB (DIN-B)
Tonearm	
Tonearm length .	220 mm (8-11/16")
Overhang . . . .	17.5 mm (3/4")
Applicable cartridge weight	
. . . . .	4 to 9 g
Dimensions	430 mm (16-29/32") W 120 mm (4-23/32") H 360 mm (14-3/16") D
Weight	4.4 kg (9.7 lbs.) net 5.2 kg (11.5 lbs.) packed
Power consumption	12 W

- The power voltage is adjusted to the one of the area where you bought the unit.

Specifications of the cartridge (applicable only to the units with cartridge)

#### Model SC-37A

Type . . . .	Induced magnet
Frequency response	20 ~ 20,000 Hz
Output voltage . .	3.5 mV per channel (1,000 Hz, 50 mm/sec)
Load impedance . .	47 kΩ
Tracking force	2.5 g
Stylus . . . .	0.5 mil, diamond spherical (SN-37A)

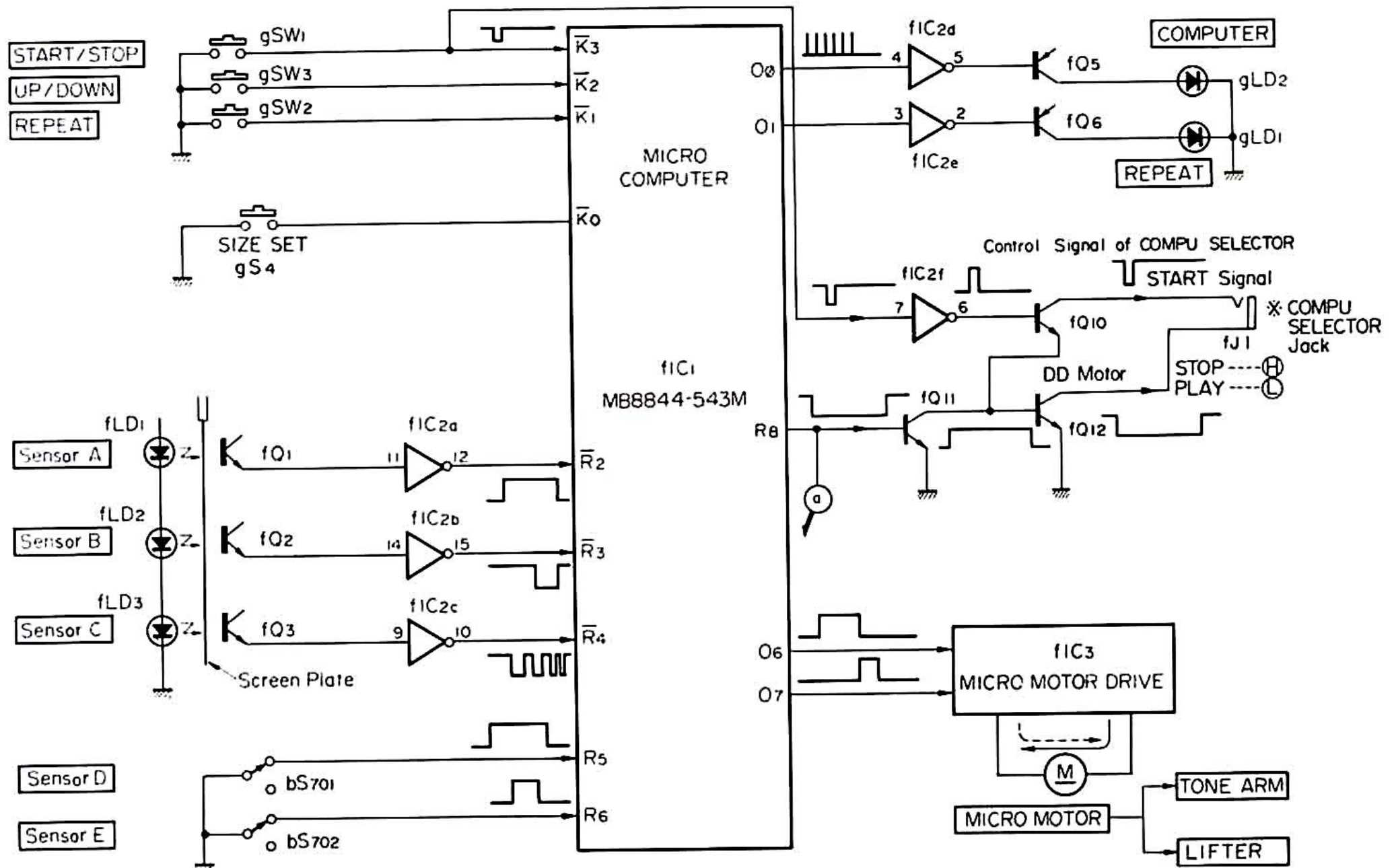
- \* Design and specifications subject to change without notice for improvements.

**Sansui**

SANSUI ELECTRIC CO., LTD.

# 1. BLOCK DIAGRAM

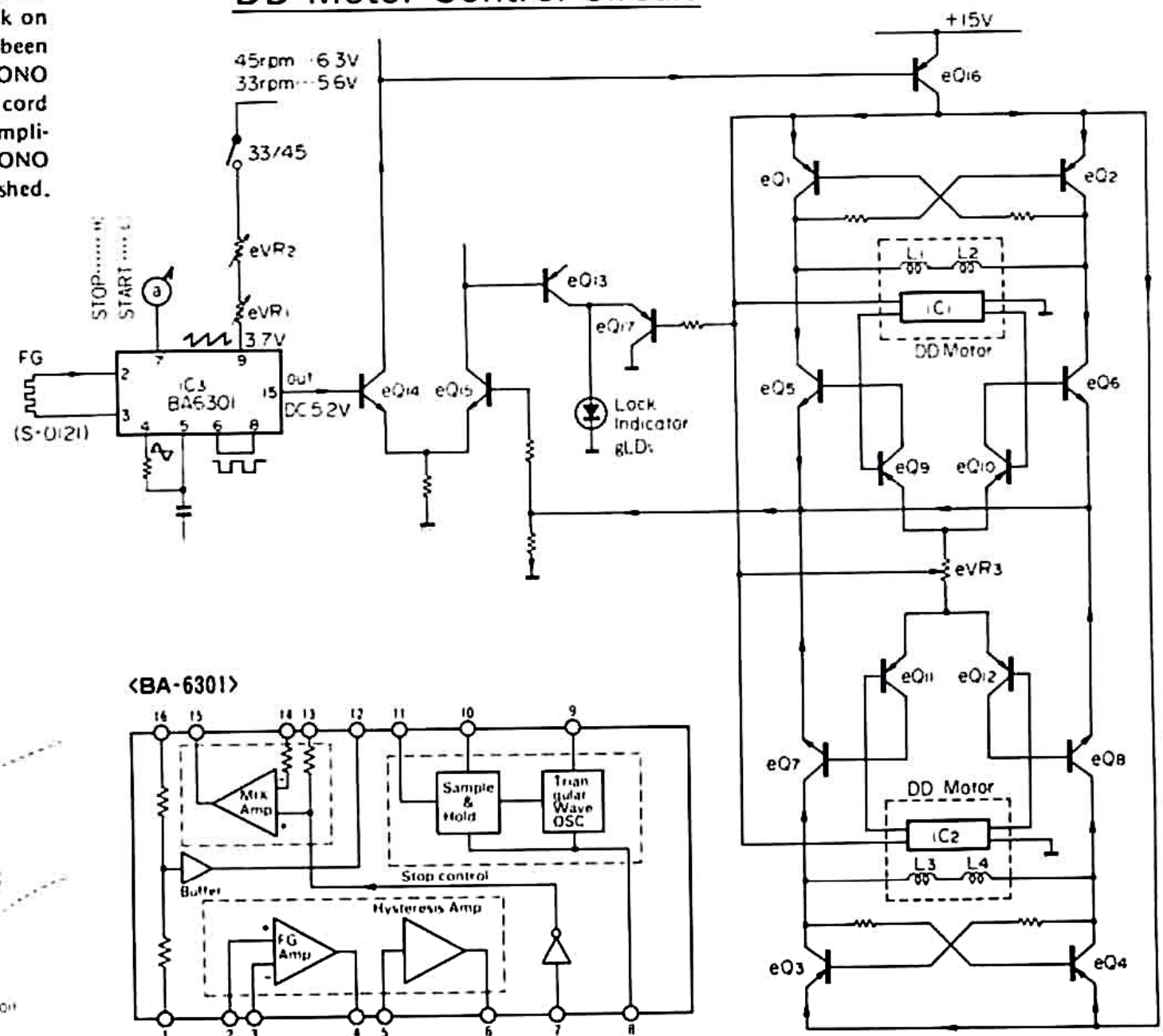
\* See FR-D40 Service Manual for operations of the microcomputer MB8844-543M and its peripheral circuits.



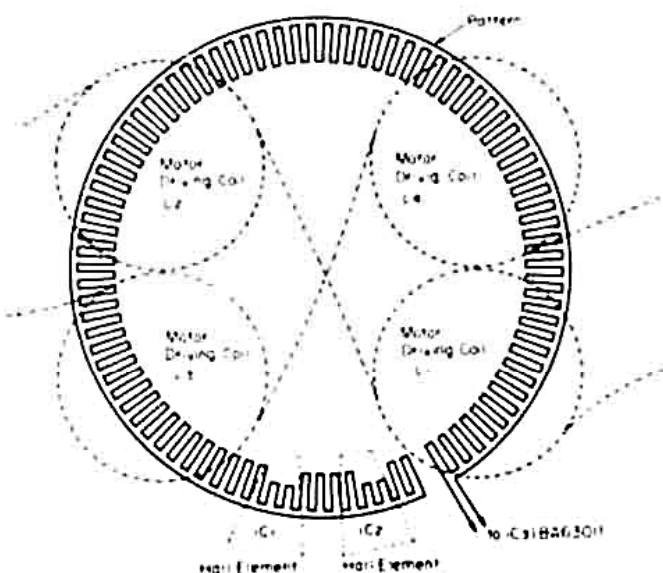
## \* COMPU SELECTOR Jack

The rear panel COMPU SELECTOR jack is for connection to the COMPU SELECTOR jack on the amplifier or receiver. Once this jack has been connected to the COMPU SELECTOR-PHONO jack on the amplifier or receiver using the cord with mini plugs, the input selector on the amplifier or receiver is set automatically to PHONO when the unit's START/STOP switch is pushed.

## DD Motor Control Circuit



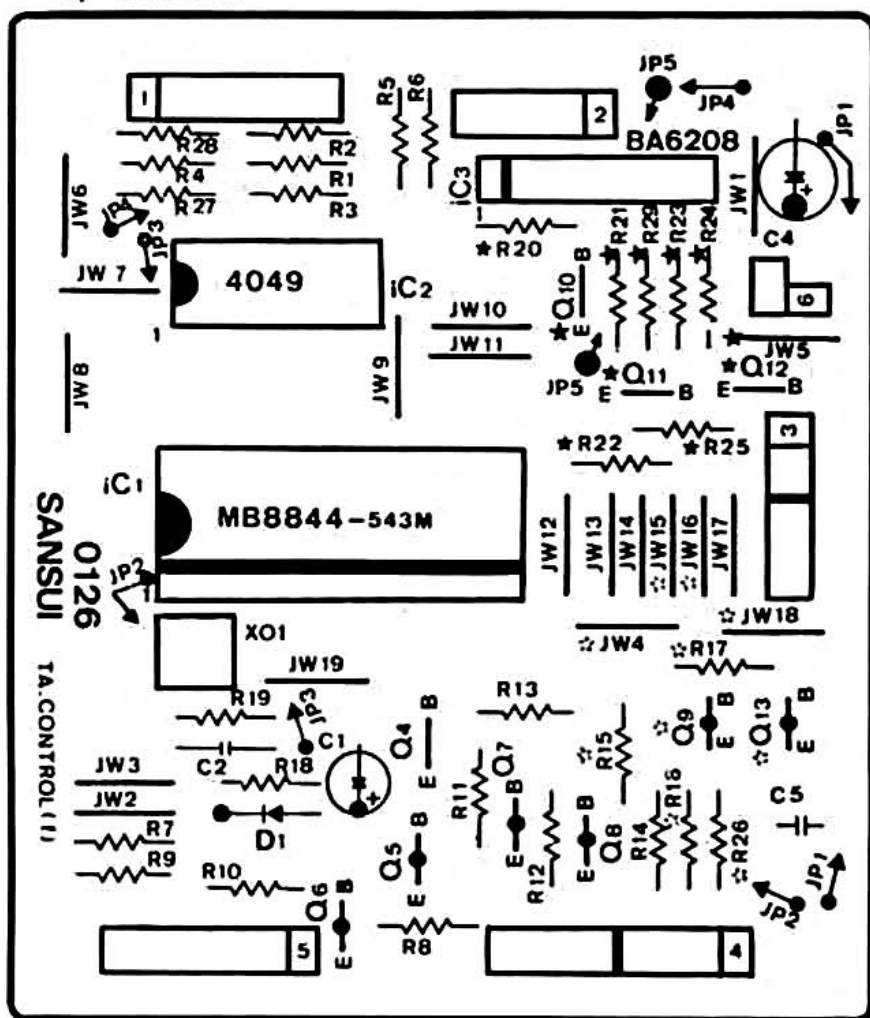
Pattern drawing of motor section (S0121 Motor Control Circuit Board)



## 2. PARTS LOCATION & PARTS LIST

### 2-1. S-0126 T.A. Control Circuit Board (Stock No. 13152001)

Component Side



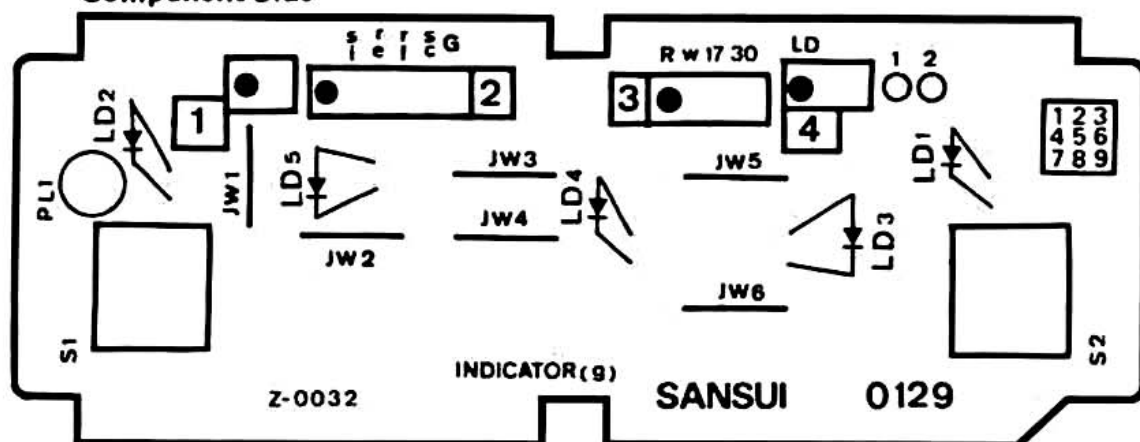
#### Parts List

Parts No.	Stock No.	Description
fXO1	46149200	Ceramic Osc Element 3.58 MHz
●Transistor		
fQ4	46367101	2SC2603
	or 46367301	2SC2458
	or 46367501	2SC945A
fQ5	46367001	2SA1115
	or 46367201	2SA1048
	or 46367401	2SA733A
fQ6	46367001	2SA1115
	or 46367201	2SA1048
	or 46367401	2SA733A
fQ7	46367001	2SA1115
	or 46367201	2SA1048
	or 46367401	2SA733A
fQ8	46367001	2SA1115
	or 46367201	2SA1048
	or 46367401	2SA733A
fQ10	46367101	2SC2603
	or 46367301	2SC2458
	or 46367501	2SC945A
fQ11	46367101	2SC2603
	or 46367301	2SC2458
	or 46367501	2SC945A
fQ12	46367101	2SC2603
	or 46367301	2SC2458
	or 46367501	2SC945A
●IC		
fIC1	46149500	MB8844-543M
fIC2	46160400	MB84049B
	or 46160500	TC4049BP
	or 03611800	MSM4049RS
fIC3	46149600	BA6208
●Diode		
fD1	03117600	1S2473

● Note: The circuit board, S-0129, S-0121, S-0128, S-0122, S-0155, S-0156 & S-0130 are not supplied as the assembled. However, the individual parts on the circuit boards are provided for orders.

### 2-2. S-0129 Indicator Circuit Board

Component Side



#### Parts List

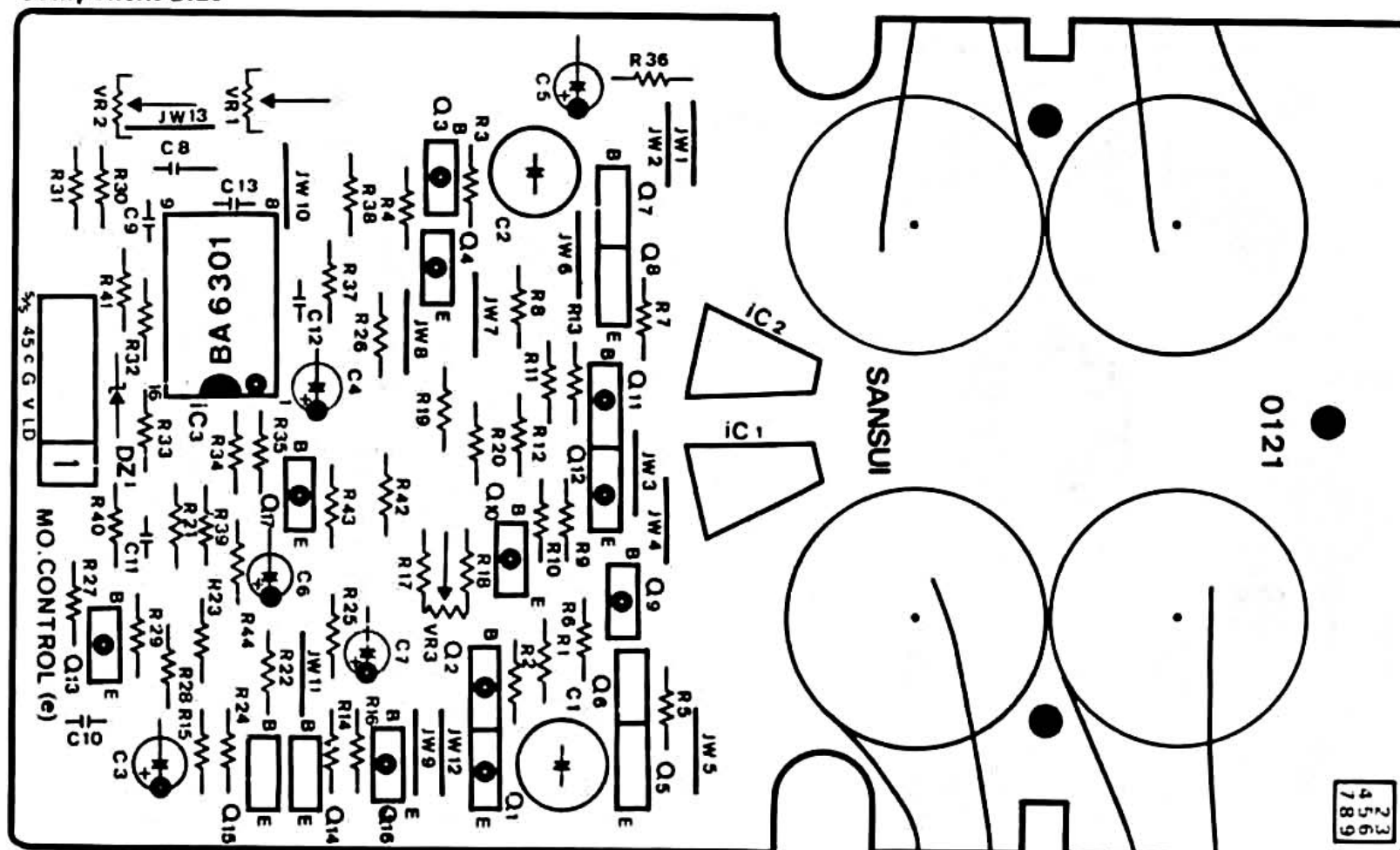
Parts No.	Stock No.	Description
gLD1	46095200	Light Emitting Diode TLR123
gLD2	46095200	Light Emitting Diode TLR123
gLD3	46095200	Light Emitting Diode TLR123
gLD4	46095200	Light Emitting Diode TLR123
gLD5	07250900	Light Emitting Diode TLG-123A

Parts No.	Stock No.	Description
gPL1	46438300	Pilot Lamp 12V 0.1A
gSW1	46395900	Push Switch, START/STOP
gSW2	46395900	Push Switch, REPEAT



## 2-3. S-0121 DD Motor Control Circuit Board

Component Side



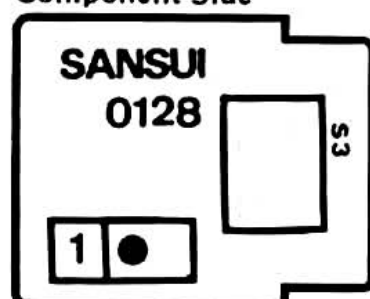
### Parts List

Parts No.	Stock No.	Description
• Transistor		
eQ1	46359701	2SA952
eQ2	46359701	2SA952
eQ3	46359701	2SA952
eQ4	46359701	2SA952
eQ5	46359801	2SC2001
eQ6	46359801	2SC2001
eQ7	46359801	2SC2001
eQ8	46359801	2SC2001
eQ9	46367401	2SA733A
	or 46367001	2SA1115
	or 46367201	2SA1048
eQ10	46367401	2SA733A
	or 46367001	2SA1115
	or 46367201	2SA1048
eQ11	46367401	2SA733A
	or 46367001	2SA1115
	or 46367201	2SA1048
eQ12	46367401	2SA733A
	or 46367001	2SA1115
	or 46367201	2SA1048
eQ13	46367001	2SA1115
	or 46367201	2SA1048
eQ14	46367101	2SC2603
	or 46367301	2SC2458
eQ15	46367101	2SC2603
	or 46367301	2SC2458

Parts No.	Stock No.	Description
eQ16	46149301	2SB744
eQ17	46367001	2SA1115
	or 46367201	2SA1048
• IC		
eIC1	46354301	H-300BC
eIC2	46354301	H-300BC
eIC3	46354400	BA6301
• Zener Diode		
eDZ1	46113900	05Z12
eR41	00205500	240k $\Omega$ 1/4W M.R.
eC1	08451100	22 $\mu$ F 16V E.B.
eC2	08451100	22 $\mu$ F 16V E.B.
eC10	07216600	47000pF 25V C.C.
eC11	07216600	47000pF 25V C.C.
eC12	07211700	1000pF 25V C.C.
eC13	07211700	1000pF 25V C.C.
eVR1	46366600	100k $\Omega$ (B) S.V.R., 33 r.p.m.
eVR2	07241700	200k $\Omega$ (B) S.V.R., 45 r.p.m.
eVR3	07241000	1k $\Omega$ (B) S.V.R., Wow and flutter

## 2-4. S-0128 UP/DOWN Switch Circuit Board

Component Side



### Parts List

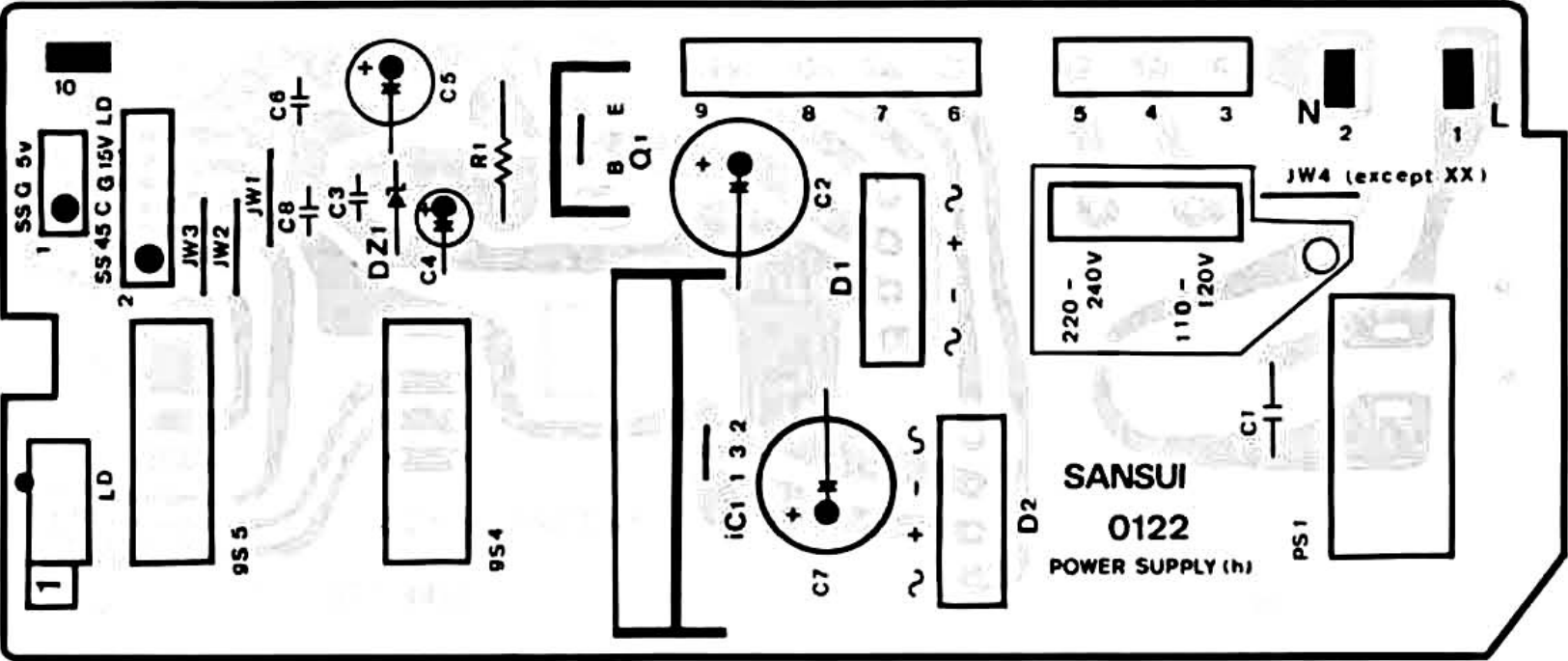
Parts No.	Stock No.	Description
gSW3	46371600	Push Switch, UP/DOWN

### • Abbreviations

C.R.	Carbon Resistor	E.B.	Bi-Polar Electrolytic Capacitor
S.R.	Solid Resistor	E.B.L.	Low Leak Bi-Polar Electrolytic Capacitor
Ce.R.	Cement Resistor	Ta.C.	Tantalum Capacitor
M.R.	Metal Film Resistor	F.C.	Film Capacitor
F.R.	Fusing Resistor	M.P.	Metalized Paper Capacitor
N.I.R.	Non-Inflammable Resistor	P.C.	Polystyrene Capacitor
C.C.	Ceramic Capacitor	G.C.	Gimmic Capacitor
C.T.	Ceramic Capacitor, Temperature Compensation	V.R.	Variable Resistor
E.C.	Electrolytic Capacitor	S.V.R.	Semi-Variable Resistor
E.L.	Low Leak Electrolytic Capacitor	SW	Switch

2-5. S-0122 Power Supply Circuit Board

Component Side



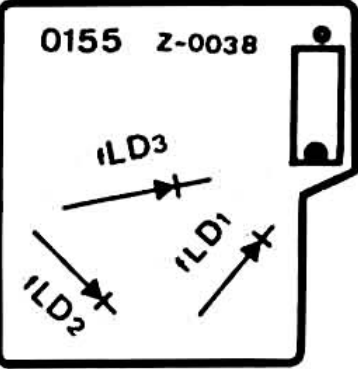
Parts List

Parts No.	Stock No.	Description
gSW4	46371000	Push Switch, SIZE
gSW5	46368500	Push Switch, SPEED
•Transistor		
hQ1	03083902	2SD313AL
•IC		
hIC1	07183500	μPC78M05H
	46144200	NJM78M05A

Parts No.	Stock No.	Description
•Diode		
hD1	03117000	RB-152
hD2	03117000	RB-152
•Zener Diode		
hDZ1	46104500	05Z16
	or 46104600	05Z16
	or 46104700	05Z16
hC1	08302600	10000pF 400V C.C.
hSW1	46364300	Push Switch, POWER

2-6. S-0155 L.E.D. (Sensor (A), (B), (C)) Circuit Board

Component Side

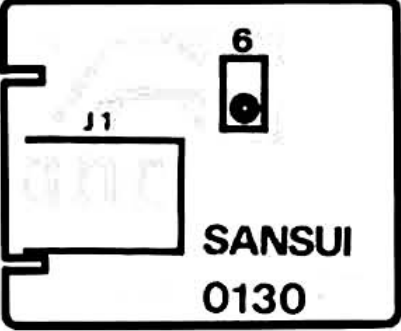


Parts List

Parts No.	Stock No.	Description
fLD1	46150400	LED TLR121
fLD2	46150400	LED TLR121
fLD3	46150400	LED TLR121

2-8. S-0130 COMPU Selector Jack Circuit Board

Component Side



Parts List

Parts No.	Stock No.	Description
	46148200	Jack

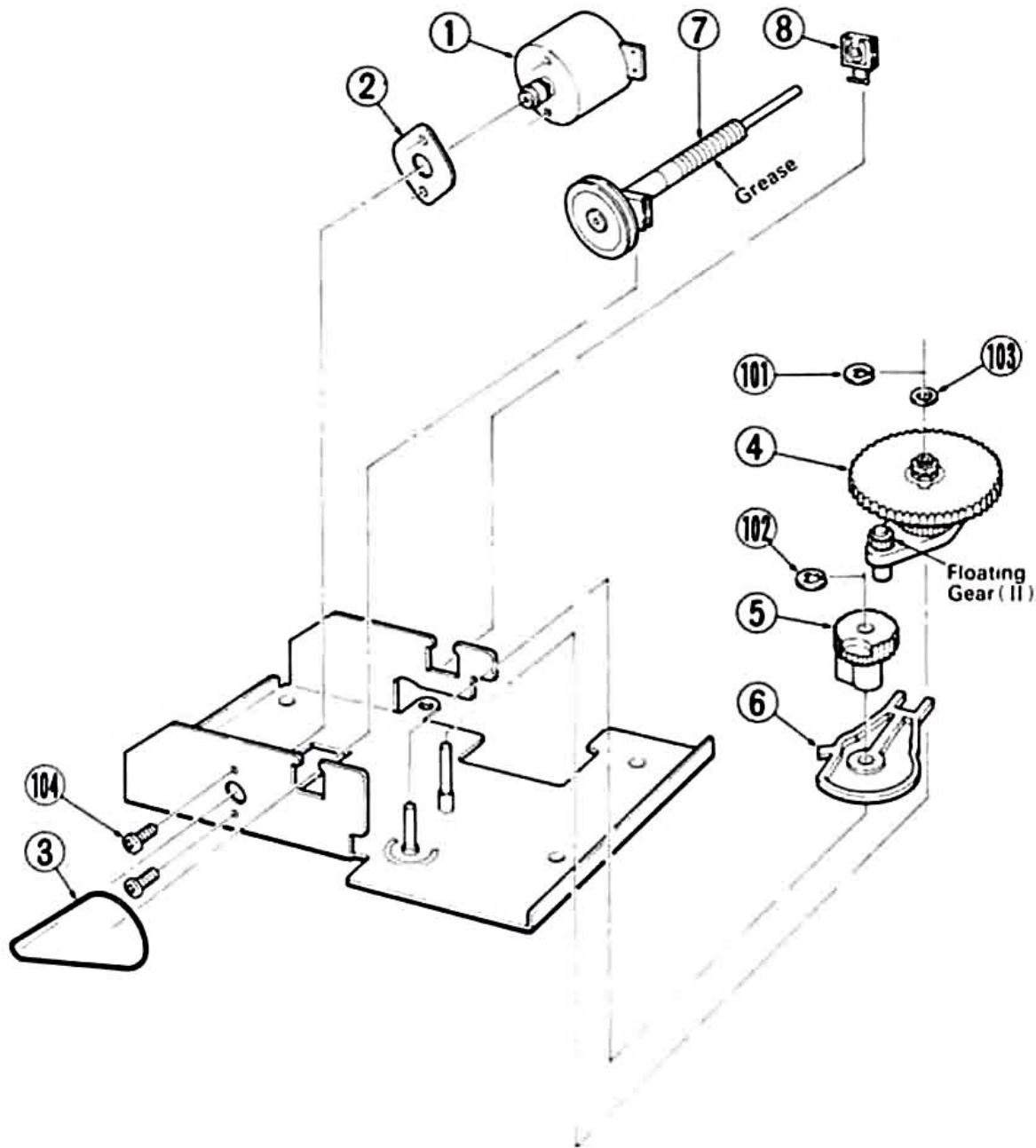
2-7. S-0156 Sensor (A), (B), (C) Circuit Board

Parts List

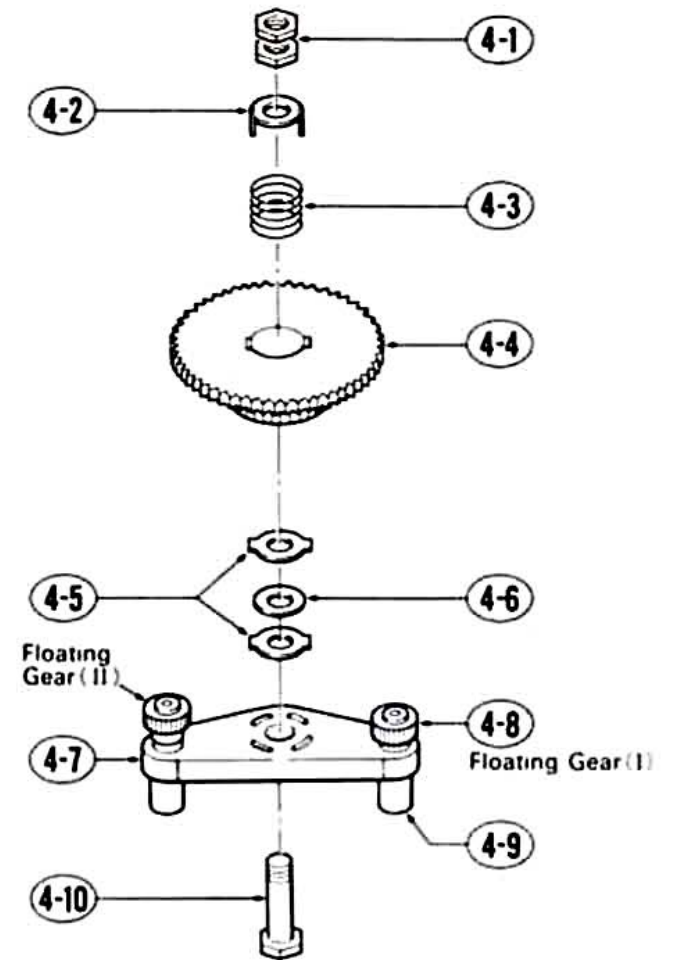
Parts No.	Stock No.	Description
•Transistor		
fQ1	46160000	Photo Transistor TPS605
fQ2	46160000	Photo Transistor TPS605
fQ3	46160000	Photo Transistor TPS605

### 3. EXPLODED VIEW OF MECHANISM Ass'y & PARTS LIST

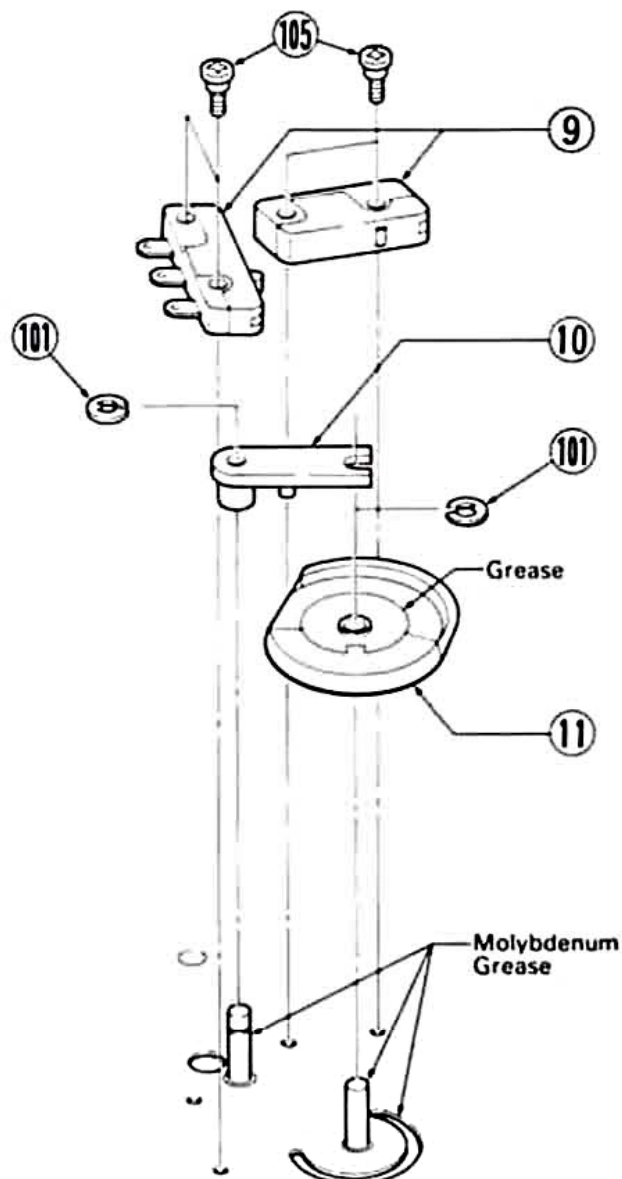
**Fig. 3-1**



**Fig. 3-3**



**Fig. 3-2**



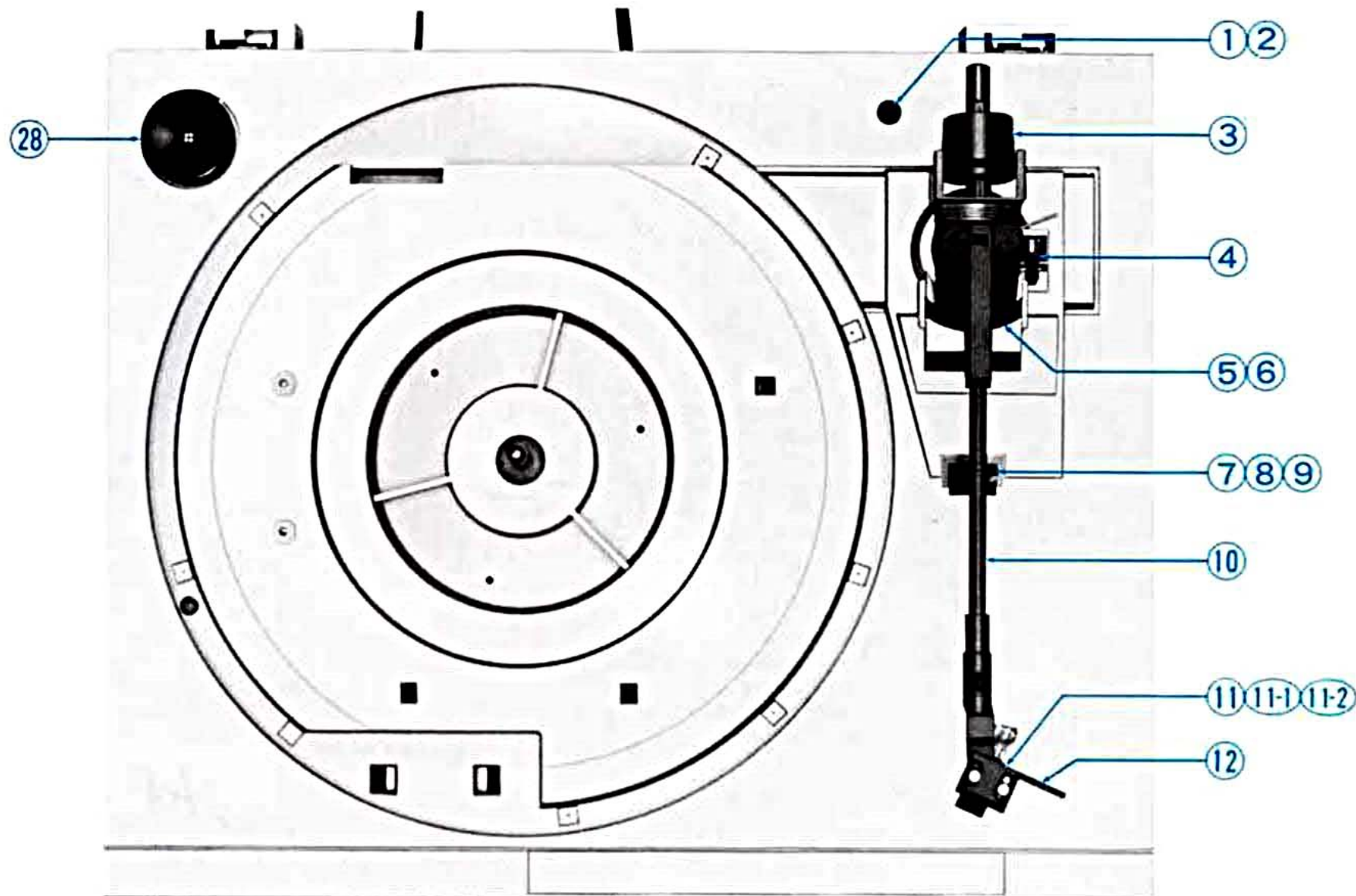
## Parts List

Parts No.	Stock No.	Description
1	46161600	Micro Motor
2	55029810	Rubber Cushion
3	60322310	Drive Belt
4	13110700	Drive Gear Ass'y
4-1	—	Hexagon Nuts
4-2	—	Holding Plate
4-3	—	Compression Spring
4-4	—	Drive Gear
4-5	—	Friction Plate
4-6	—	Friction Disc
4-7	—	Reverse Arm
4-8	—	Floating Gear
4-9	—	Drive Pulley
4-10	—	Boss
5	13082710	Cam Gear
6	13081920	Cam Spring
7	18036100	Worm Gear Ass'y
8	13083700	Bearing Holder
9	11602700	Micro Switch
10	13083900	Lifter Guide
11	13083110	Lifter Cam
<b>●Washer &amp; Screw</b>		
101	08322600	2.5φ E-Type Washer
102	00489200	3φ E-Type Washer
103	51821600	3φ Thrust Washer
104	00436500	M2 x 4 Pan Head Screw
105	13113200	M2 x 10 Pan Head SEMS A

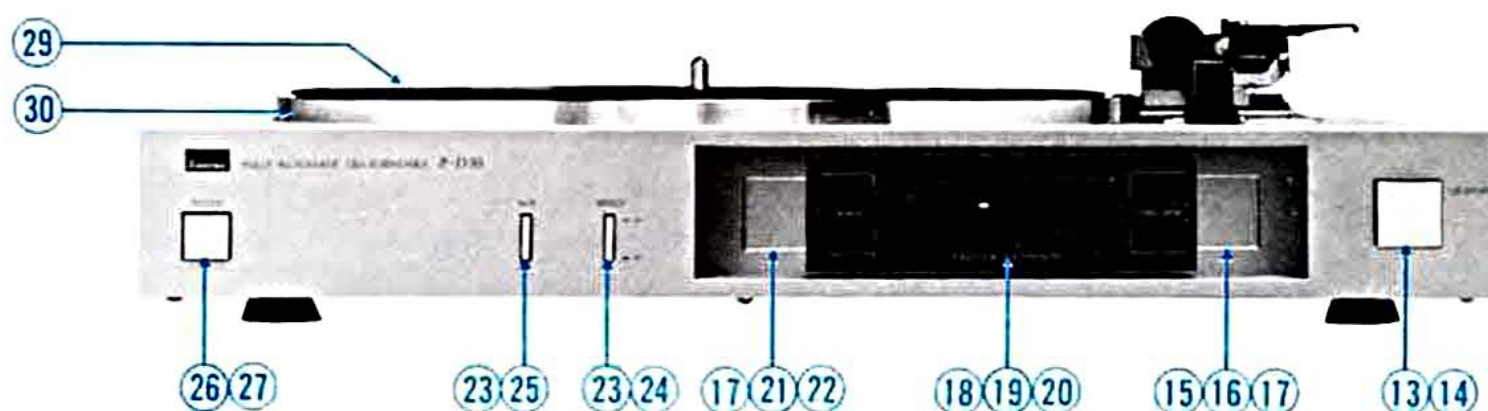


## 4. OTHER PARTS

### 4-1. Top View



### 4-2. Front View



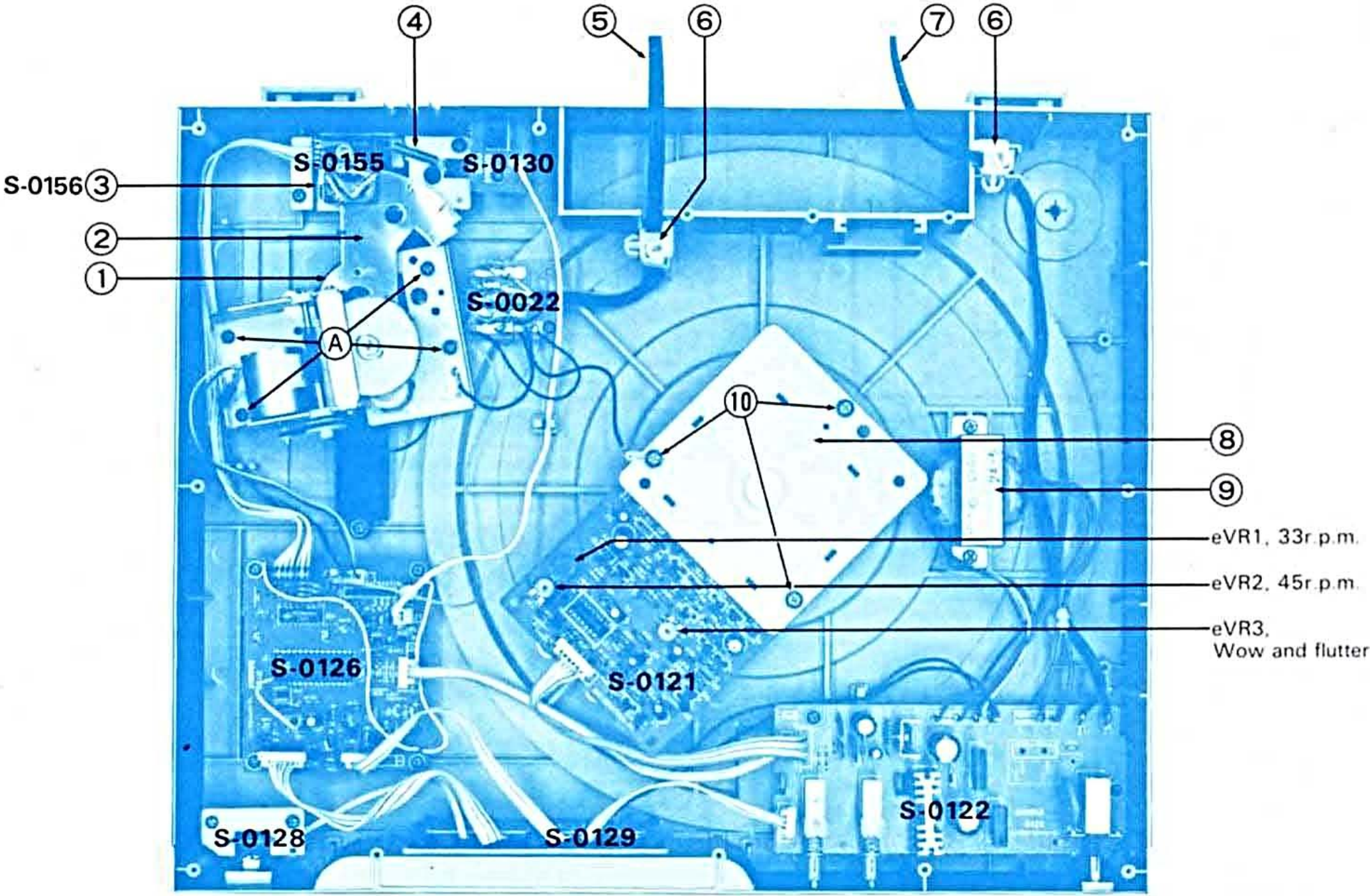
Parts List <Top View/Front View>

Parts No.	Stock No.	Description
1	50624800	Cap
2	13083210	Adjusting Cam
3	13176700	Main Weight Ass'y
4	13141800	I.F.C. Ass'y
5	13139900	Lifter Plate
6	13153400	Lifter Spring
7	13137600	Arm Rest
8	13138500	Rest Hook
9	13167700	Screw 2 x 5, rest hook
10	13176400	Tonearm Ass'y
11	13190700	Cartridge Ass'y, SC-37A (XX, UL, EU, BS, AS)
11-1	13190800	Stylus, SN-37A (XX, UL, EU, BS, AS)
11-2	51921500	Screw Ass'y
12	13176600	Head Shell Ass'y
13	13139700	Push SW. Knob, UP/DOWN (Silver Model)
	13139800	Push SW. Knob, UP/DOWN (Black Model)
14	46371600	Push SW., UP/DOWN
15	07926600	Push SW. Knob, START/STOP
16	46395900	Push SW., START/STOP

Parts No.	Stock No.	Description
17	07962600	Cushion
18	13166400	Indicator Case Cover
19	13146000	Indicator Plate (Silver Model)
	13169200	Indicator Plate (Black Model)
20	13175300	Indicator Holder (Silver Model)
	13145800	Indicator Holder (Black Model)
21	07926500	Push SW. Knob, REPEAT
22	46395900	Push SW., REPEAT
23	07910900	Push SW. Knob, SIZE, SPEED (Silver Model)
	07191100	Push SW. Knob, SIZE, SPEED (Black Model)
24	46368500	Push SW., SPEED
25	46371000	Push SW., SIZE
26	07911100	Push SW. Knob, POWER (Silver Model)
	07911200	Push SW. Knob, POWER (Black Model)
27	46364300	Push SW., POWER
28	13012300	EP Adaptor
29	13147200	Turntable Sheet
30	13140800	Turntable Platter



4-2. Bottom View



Parts List <Bottom View>

Parts No.	Stock No.	Description
1	13137200	TA Drum
2	13083500	Screen Plate (1)
3	13141500	Screen Plate (S), S-0156 circuit board
4	13153200	Spring
5	13154300	P.U. Output Cord (XX, CSA, EU, BS, AS)
6	13154400	P.U. Output Cord (UL)
	07254700	Strain Relief

Parts No.	Stock No.	Description
7	46413200	Power Supply Cord (XX, CSA)
	38004800	Power Supply Cord (UL)
	38004500	Power Supply Cord (EU)
	38004300	Power Supply Cord (BS)
	07204200	Power Supply Cord (AS)
8	13028800	DD Motor (with control circuit board)
9	15007811	Power Transformer (XX)
	15007812	Power Transformer (UL, CSA)
	15007815	Power Transformer (EU, BS, AS)
10	08320700	Screw 4 x 12
	13153500	Insulator

● Note 1:

As to UL, CSA, BS, ES, AS and xx marked in the Parts Lists, note the followings:

UL, CSA . . . Parts used in the unit which is applicable to the USA and Canada under industrial standards.

BS . . . Parts used in the unit which is applicable to British under industrial standards.

EU . . . Parts used in the unit which is applicable to Sweden, Denmark, Norway, Finland, West Germany, and Switzerland under industrial standards.

AS . . . Parts used in the unit which is applicable to Australia under industrial standards.

XX . . . Parts used in the unit which is applicable to other countries excepting mentioned above.

\* In this parts list, those parts with no above mark in the place of Description are all the same as XX marked parts.

● Note 2:

Please note that htis unit, P-D30, includes a cartridge or not depending on the cabinet color and the unit sold in specific area shown in the left description.

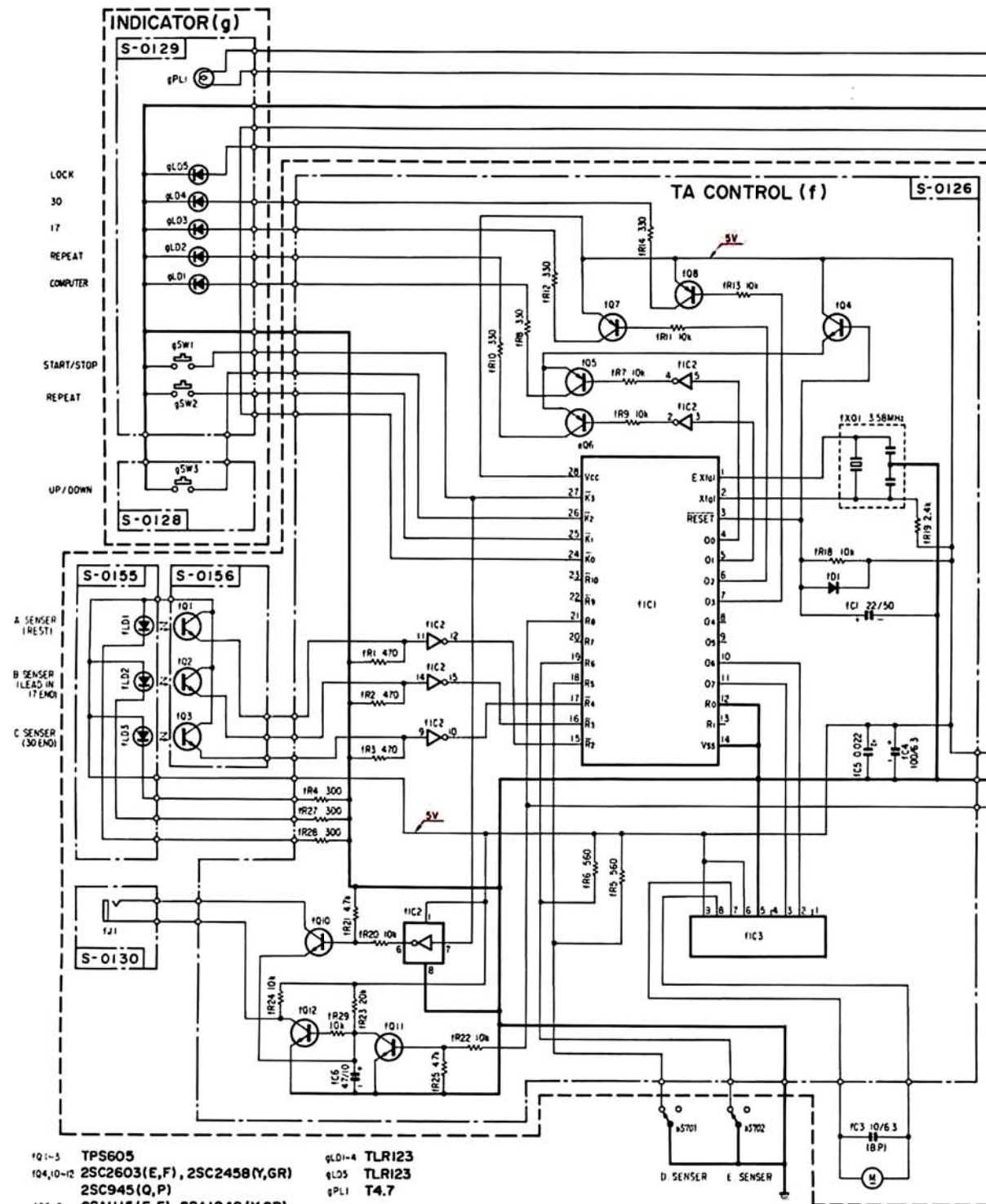
Model	Cabinet Color	Cartridge	Indication of Carton Case
XX, UL, EU, BS, AS	Silver	With Cartridge	Silver
XX, UL, EU, BS, AS	Black	With Cartridge	Black
XX, UL, CSA, BS	Silver	Without Cartridge	Silver, (E)
XX, UL, CSA, BS	Black	Without Cartridge	Black, (E)

(Cartridge, Stylus, Stylus Cover, and Screw Ass'y are not included in the unit stamped (E) on carton case.



## 5. SCHEMATIC DIAGRAM

\* Design and specifications subject to change without notice for improvement.  
\* La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.  
\* Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.



SYMBOL OF FUNCTION  
(e) MO CONTROL  
(f) TA CONTROL  
(g) INDICATOR  
(h) POWER SUPPLY

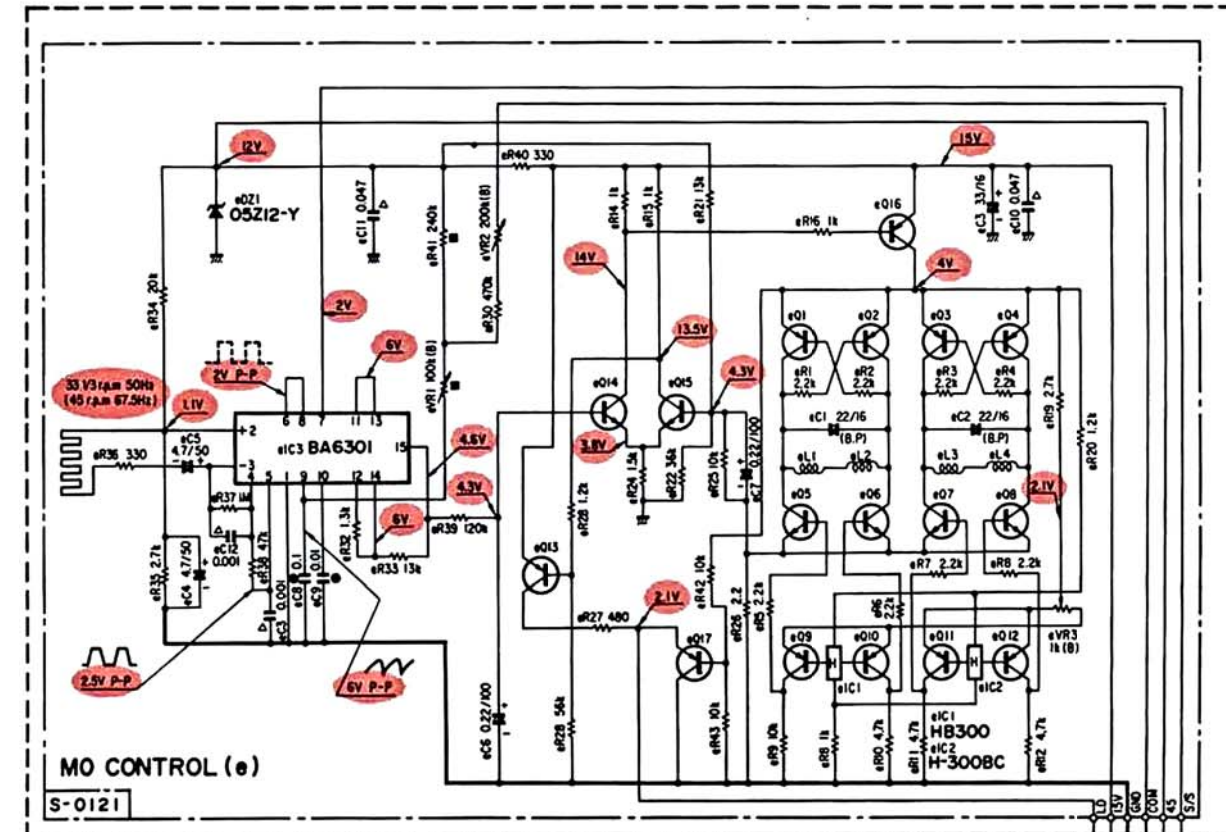
- 101-5 TPS605  
104,10-12 2SC2603(E,F), 2SC2458(Y,GR)  
2SC945(Q,P)  
105-8 2SA1115(E,F), 2SA1048(Y,GR)  
2SA733A(P,Q)  
11C1 MB8844-543M  
11C2 MSM4049RS, TC4049B  
11C3 BA6208  
101 IS2473D  
101-5 TLR-121

SYMBOL  
A Ceramic  
ΔT Ceramic (Temperature Compensation)  
ΔF Ceramic (Frequency Through)  
L Low-Leak Electrolytic  
(BP) Bi-Polar Electrolytic  
QBP Low-Leak Bi-Polar Electrolytic  
(Ta) Tantalum Electrolytic  
F Film  
(M) Mylar  
(PC) Polycarbonate  
(PP) Polypropylene  
P Polyester Paper  
PS Polystyrene  
G Gimmic  
M Mic  
OC OH

Resistor  
Non-Inductive Resistor  
Metal Film Resistor  
Cement Resistor  
Non-Inductive Cement Resistor

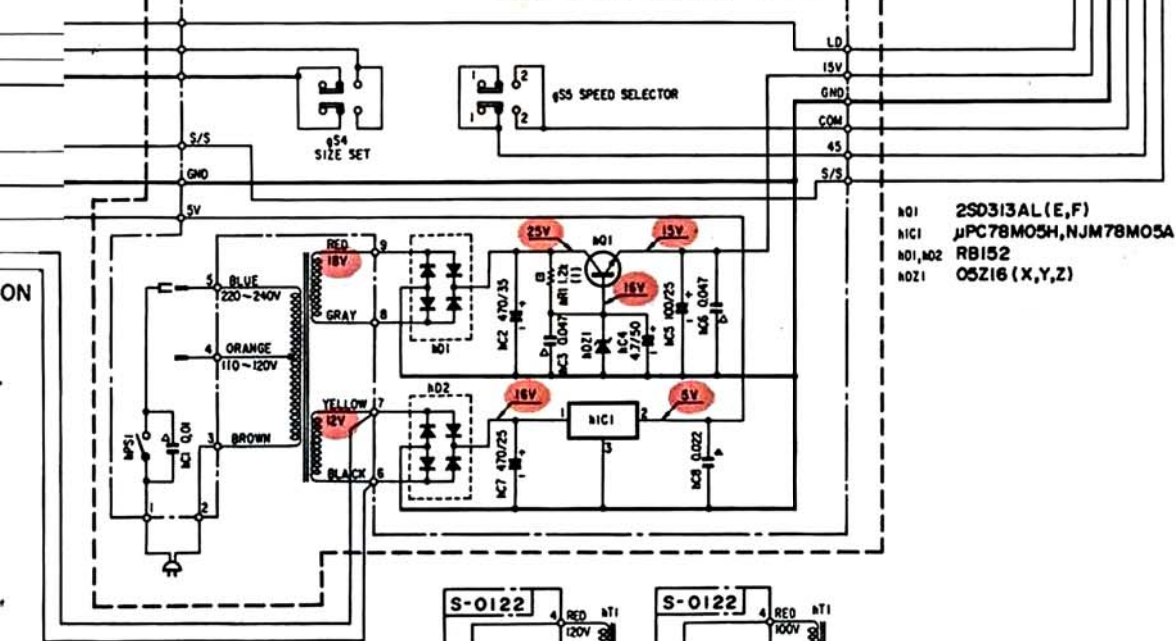
RESISTORS  
Are in ohms, 1/4 Watts, ±5% Tolerance  
Unless Otherwise Noted, R, K, M, MΩ  
CAPACITORS  
Are in pF, Unless Otherwise Noted, P, pF  
TOLERANCE  
J ±5%, G ±2%, F ±1%

Each DC Voltage shows the nominal value in volts at input signal during recording.  
Each DC Voltage measured by the instruments described below shows the nominal value in volts at 33 Ω/37m.  
Measuring instruments  
Volt Meter DC 200Ω/V, AC 10Ω/V  
Oscilloscope 5MHz  
Electrolytic Capacitor  
Capacitance (pF)/Volt (V)

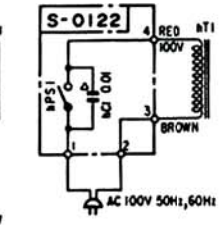
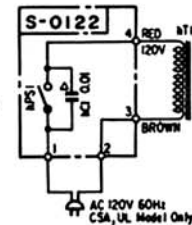
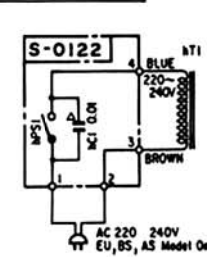


- 101-4 2SA952(M,L) 109-12 2SA733A(Q,P) 1013 2SA733A(P), 2SA1115(E), 2SA1048(G,R) 1017 2SA733A(P)  
105-8 2SC2001(M,L) 2SA1115(E,F) 1014,15 2SC945A(P), 2SC2603(F), 2SC2458(G,R) 2SA1115(F)  
2SA1048(Y,GR) 1016 2SB744(Q,P) 2SA1048(G,R)

POWER SUPPLY (h) S-0122



- 101 2SD313AL(E,F)  
11C1 μPC78M05H, NJM78M05A  
101,102 RB152  
1021 05Z16(X,Y,Z)



- 2SA733 2SC2603  
2SA952 2SA1048  
2SA1115 2SC945  
2SC2001 2SC2458  
2SD313AL  
2SB744 μPC78M05H  
BA6208 NJM78M05A  
MSM4049RS  
MB8844-543M  
BA6301  
TC4049BP  
MB884049B  
RB152  
05Z12  
05Z16  
1S2473

## 6. ADJUSTMENTS

### 6-1. Adjustment of Screen Plate Installation Position

Adjust the position whenever the tonearm is replaced. With the tonearm placed on the arm rest, install the screen plate to the tonearm shaft, as shown in Fig. 6-1 and 6-2.

Fig. 6-1 Side View of Screen Plate

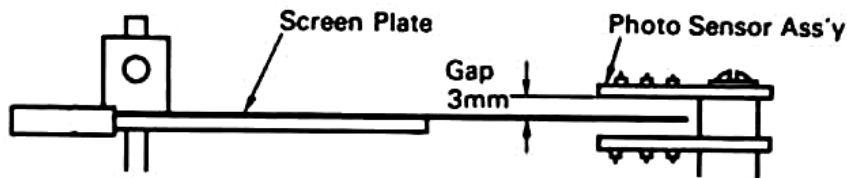
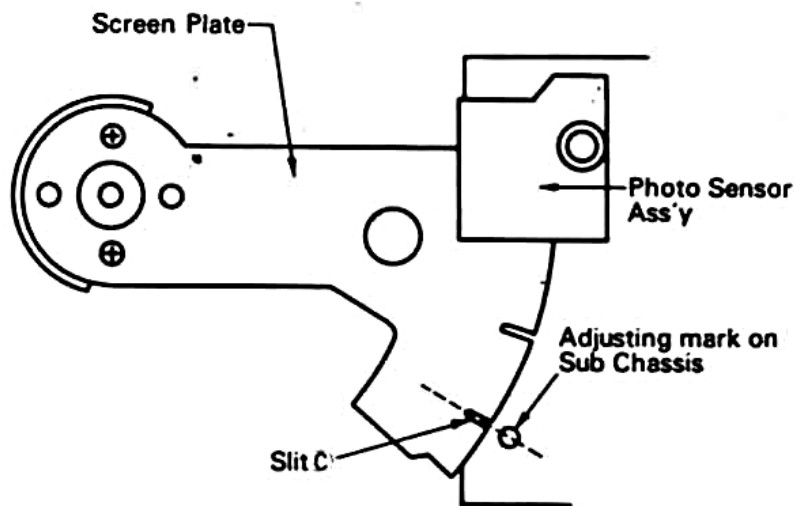


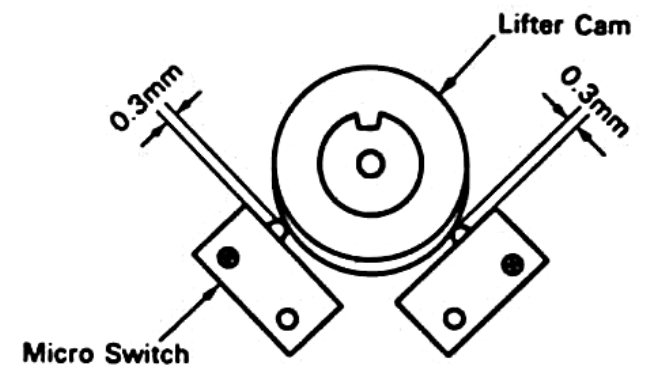
Fig. 6-2 Bottom View of Screen Plate



### 6-2. Adjustment of Micro Switch Position

When the micro switch is replaced, adjust its position as shown in Fig. 6-3.

Fig. 6-3



### 6-3. Lead-in Position Adjustment

- 1) Confirm that the screen plate is installed as shown in Fig. 6-2.
- 2) Turn the adjusting cam ② (See 4-1. Top View on Page 5) so as to lower the stylus to the middle of lead-in groove.

### 6-4. Speed Adjustment

- 1-a) Set the Speed Selector to 33 (r.p.m.)
- 1-b) Adjust eVR1 on the D.D. Motor Control Circuit Board (4-2. Bottom View on Page 5) so as to standstill the stripe marking pattern.
- 2-a) Set the Speed Selector to 45 (r.p.m.)
- 2-b) Adjust eVR2 on the D.D. Motor Control Circuit Board (4-2. Bottom View on Page 5) so as to standstill the stripe marking pattern.
- Set eVR3 (S-0121) center position.

## 7. MAIN PARTS REPLACEMENT

### 7-1. How to remove the mechanical assembly (See bottom view on Page 5)

- 1) Set the arm lifter at the down position.
- 2) Remove the bottom plate.
- 3) Unscrew four ① screws fastening the mechanical assembly, and pull the mechanical assembly toward the front panel.
- When installing the mechanical assembly, pull the arm lifter upward.

### 7-2. How to replace the tone-arm (See bottom view on Page 5)

- 1) Remove the mechanical assembly in accordance with the procedures as stated under 7-1 above.
- 2) Remove the cords connected to the S-0022 circuit board.
- 3) Loosen a screw fastening the screen plate by using a 1.5 mm-hexagon wrench to remove the slit plate.
- 4) Unscrew a nut fastening the tone-arm assembly.

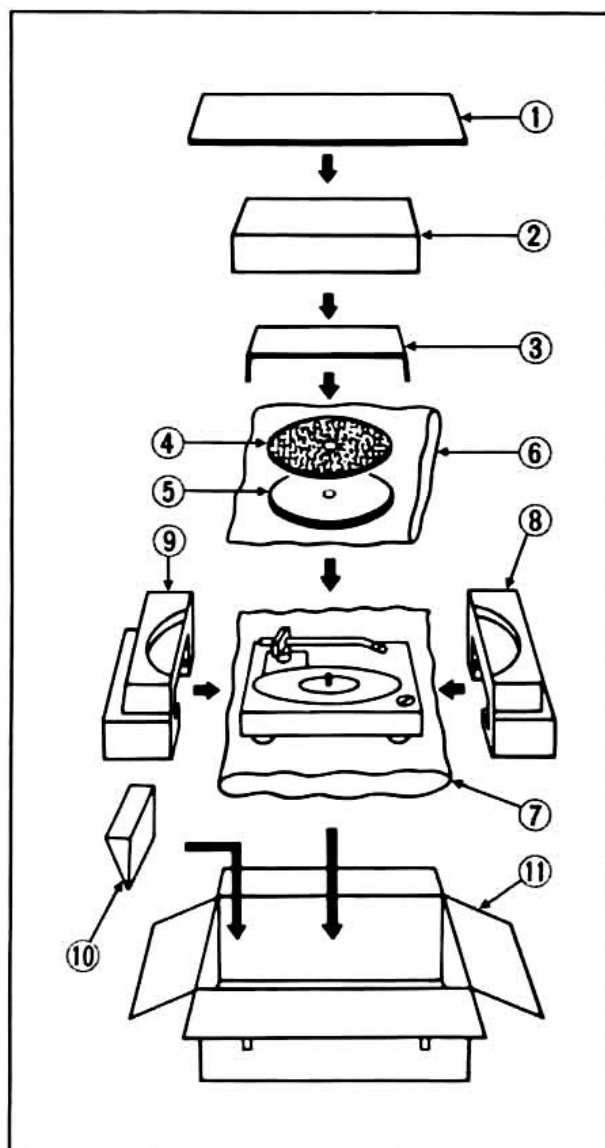
### 7-3. How to replace drive gear assembly ④ and take precautions (See Fig. 3-1 on Page 4)

- 1) Remove the mechanical assembly in accordance with the procedures as stated under 7-1 above.
- 2) Remove the E-ring 101 to remove the drive gear assembly ④.
- When installing the drive gear assembly ④, use care to gear positions of the floating gears I and II. (See Figs. 3-1 and 3-2 on Page 4)



## 8. PACKING LIST

Parts No.	Stock No.	Description
1	—	Protector Board, upper
2	13142400	Dust Cover Ass'y
3	—	Protector Board, platter
4	13140800	Turntable Sheet
5	13147200	Turntable Platter
6	91166000	Polyethylene Bag, turntable platter
7	91122710	Polyethylene Bag, turntable unit
8	13170400	Styrofoam Packing, front
9	13170500	Styrofoam Packing, rear
10	—	Accessory Box
11	13146500	Carton Case (Silver)
	13146600	Carton Case (Black)



## 9. ACCESSORY LIST

Stock No.	Description
13176700	Main Weight Ass'y
13012300	EP Adaptor
13176600	Head Shell
46358500	Operating Instruction
13190700	Cartridge Ass'y, SC-37A
13190800	Stylus, SN-37A (SN-70)
13142600	Auto Hinge, dust cover

• Note: There are two types of units in P-D30.

1) The unit with a cartridge, SC-37A.

2) The unit without a cartridge.

The mark  $\textcircled{E}$  is stamped on the side of carton case.

• In particular area, either type of these unit is sold.



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