



Deze download wordt u gratis aangeboden door Pick-upnaalden.nl

Web : www.pickupnaalden.com
Email : info@pick-upnaalden.nl
Facebook : www.facebook.com/pickupnaalden
Twitter : twitter.com/Pickupnaalden
Google+ : https://plus.google.com/+FCaris_pickupnaalden

Service Manual

QUARTZ

Direct Drive Turntable

SP-25

(M), (MC)



- The model SP-25 (M) is available in U.S.A. only.
- The model SP-25 (MC) is available in Canada only.

Specifications Specifications are subject to change without notice.
Weight and dimension shown are approximate.

General

Power supply: 120 V, 50 or 60 Hz
Power consumption: 11 W
Dimensions: 34.9 x 9.3 x 37.2 cm
 (W x H x D) (13-3/4 x 3-21/32 x 14-41/64 inches)
Weight: 4.8 kg (10.6 lb)

Turntable section

Type: Quartz Direct drive
Drive method: Direct Drive
Motor: Brushless DC motor
Drive control method: Quartz-phase-locked control
Turntable platter: Aluminum die-cast, diameter 33.9 cm (13-11/32 inches) weight 1.85 kg (4 lb)
Moment of inertia: 250 kg·cm² (85 lb·in²)
Turntable speeds: 33-1/3 rpm and 45 rpm

Turntable speed

fine adjustment: ±6% adjustment range
Starting torque: 1.5 kg·cm (1.3 lb·in)
Build-up time: 0.7 s. from standstill
Braking system: Electrical braking
Speed fluctuation due to load torque: 0% within 1.0 kg·cm (at a stylus pressure of 200 g)
Speed drift: Within ±0.002% (33-1/3, 45 rpm)
Wow and flutter: 0.01% WRMS*
 0.025% WRMS (JIS C5521)
 ±0.035% peak (IEC 98A Weighted)

* This rating refers to turntable assembly alone, excluding effects of record, cartridge or tonearm, but including platter. Measured by obtaining signal from built-in frequency generator of motor assembly.

Rumble: -56 dB (IEC 98A Unweighted)
 -78 dB (IEC 98A Weighted)

Technics

Panasonic Company
 Division of Matsushita Electric
 Corporation of America
 One Panasonic Way, Secaucus,
 New Jersey 07094

Panasonic Hawaii, Inc.
 320 Waiakamilo Road, Honolulu,
 Hawaii 96817

Matsushita Electric of Canada Ltd.
 5770 Ambler Drive,
 Mississauga, Ontario
 L4W 2T3

■ CONTENTS

FEATURES	2
ASSEMBLY AND SET-UP	2
PARTS IDENTIFICATION	3
HOW TO OPERATE	4
BLOCK DIAGRAM	5, 6
PRINTED CIRCUIT BOARD	7, 8
ADJUSTMENT	9

■ FEATURES

Oversized turntable that cuts off and absorbs external vibrations

Based on analysis of the turntable vibration modes and vibrations in the sound range, a special viscoelastic material is applied to the reverse surface of the turntable platter for deadening.

The deadening material is applied to the undersurface and outer periphery of the turntable platter, with the rubber turntable mat on the surface settled into the turntable platter. This design is superior in acoustic characteristics even at high sound levels through elimination of turntable resonance and absorption of external vibration.

Moreover, the oversized aluminum die-cast turntable platter, 33.9 cm (13-11/32") in diameter, is heavy with a moment of inertia of 250 kg·cm² (85 lb·in²) for large heavy weight 1.85 kg (4 lb) class design.

Vibration damping structure by the precision aluminum die-cast cabinet and TNRC

The acoustical characteristics of the player system are inevitably affected by the turntable platter and cabinet employed. The SP-25 adopts an aluminum die-cast cabinet superior in strength, with high processing accuracy. Through cutting-off and absorption of external vibrations, the unit is designed for improved acoustic characteristics, with susceptibility to feedback minimized.

Quartz Controlled Rotation Accuracy

The SP-25 utilizes the oscillation of a quartz crystal as a reference signal or source. This oscillation is not affected by temperature change or power fluctuations. By synchronizing the rotation of the turntable platter accurately to the reference signal, speed drift of the unit is held within ±0.002% (33-1/3 rpm.).

Technics' unique motor construction in which the rotor of the motor is integrally formed with the turntable.

High torque motor of 1.5 kg·cm with starting time of 0.7 second is capable of instant speed change-over (at 33-1/3 rpm.).

Stable and positive mechanism that can stand frequent use for business use, etc. and a switch section with point contacts.

Electronic brake.

REFERENCE VOLTAGE AND WAVEFORM AT EACH IC PIN	9, 10
SCHEMATIC DIAGRAM	11, 12
DEPLACEMENT PARTS LIST (Electrical)	13
TROUBLE SHOOTING	14
EXPLODED VIEWS	15, 16
REPLACEMENT PARTS LIST (Mechanical)	17

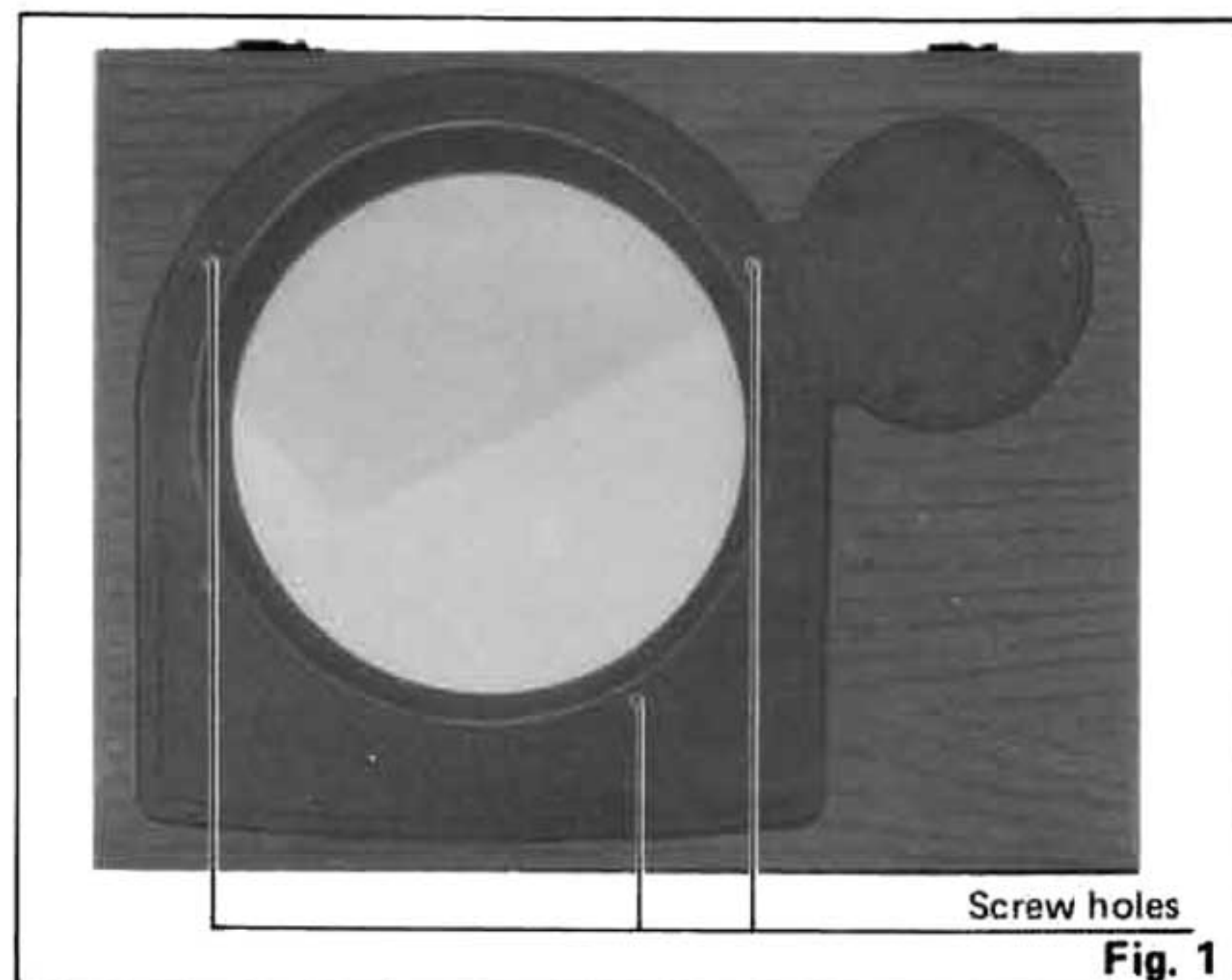
■ ASSEMBLY AND SET-UP

Caution: Use care not to damage the power supply cord and bushing when setting up or installing the turntable into a supporting enclosure.

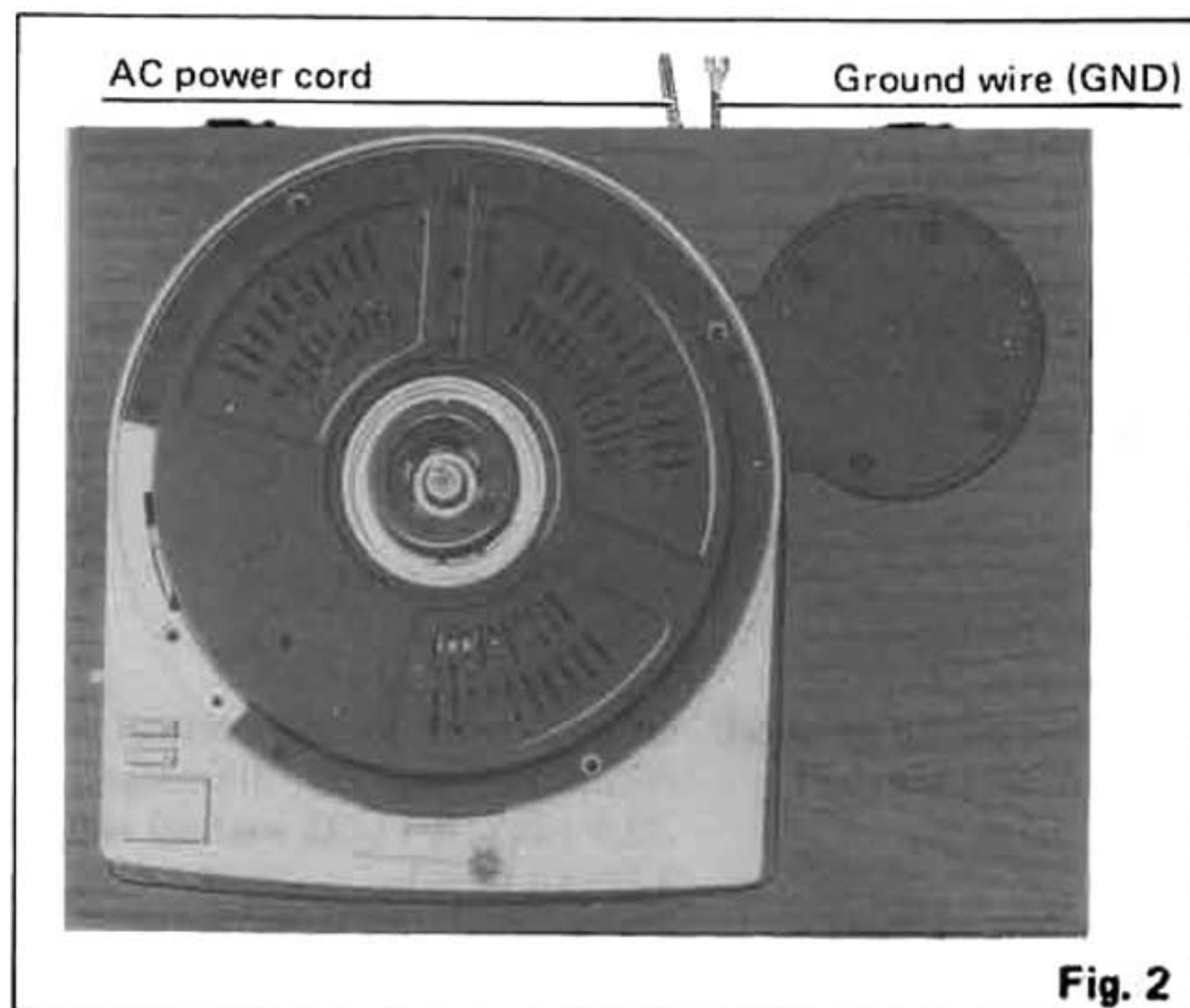
Assembling is explained based on the optional Technics turntable base SH-15B2 for reference in cases where the unit is installed in another cabinet.

SH-15B2 is provided with screw holes (4 places) for mounting SP-25.

1. Install SP-25, with the screw holes aligned.



2. Securely hold at 4 places by the screws supplied with SH-15B2. (See Fig. 2.)



3. Pull out the power cord and ground wire (GND) from under the turntable base.
4. After the above, install the turntable platter and turntable mat.

■ PARTS IDENTIFICATION

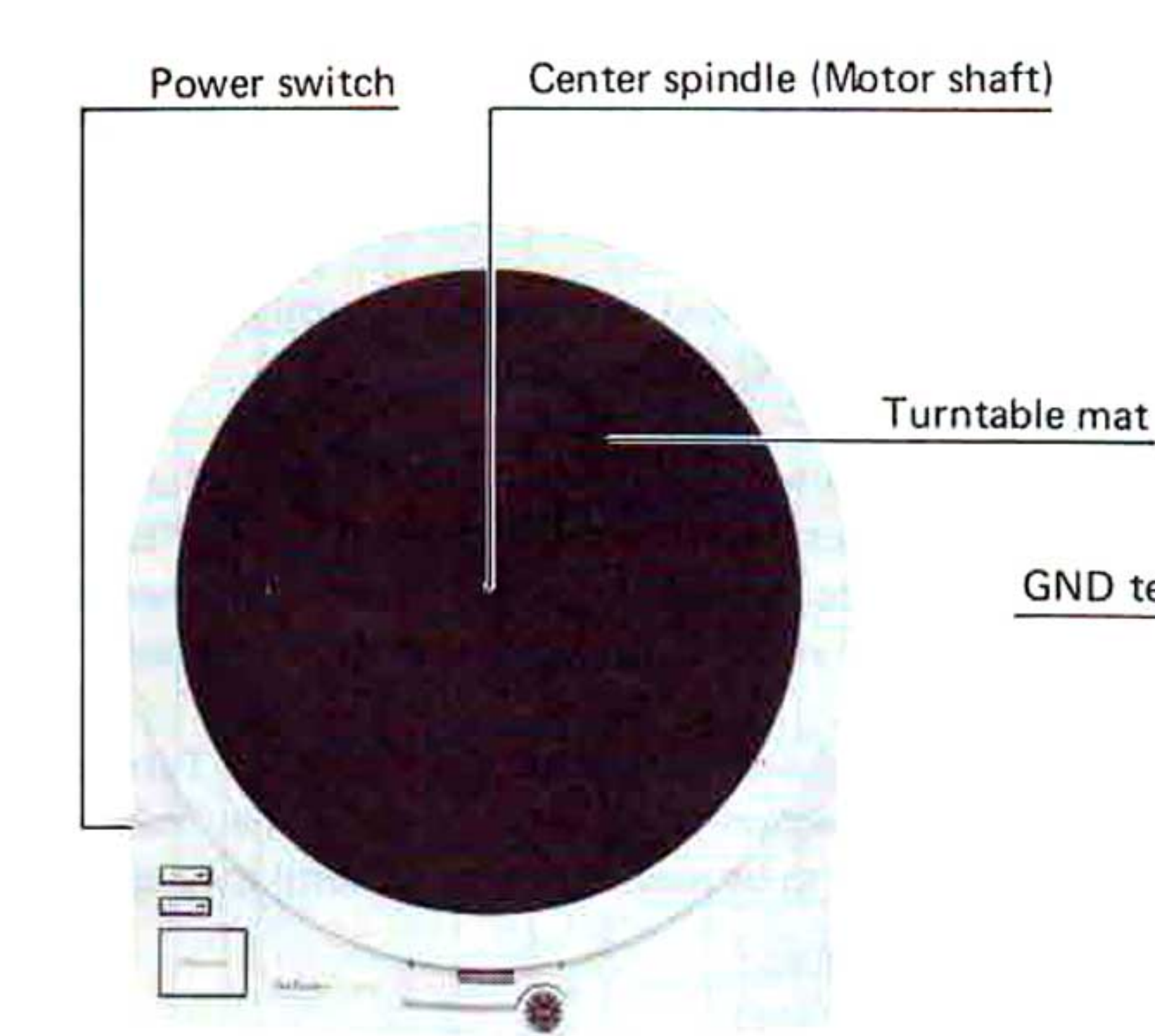


Fig. 3

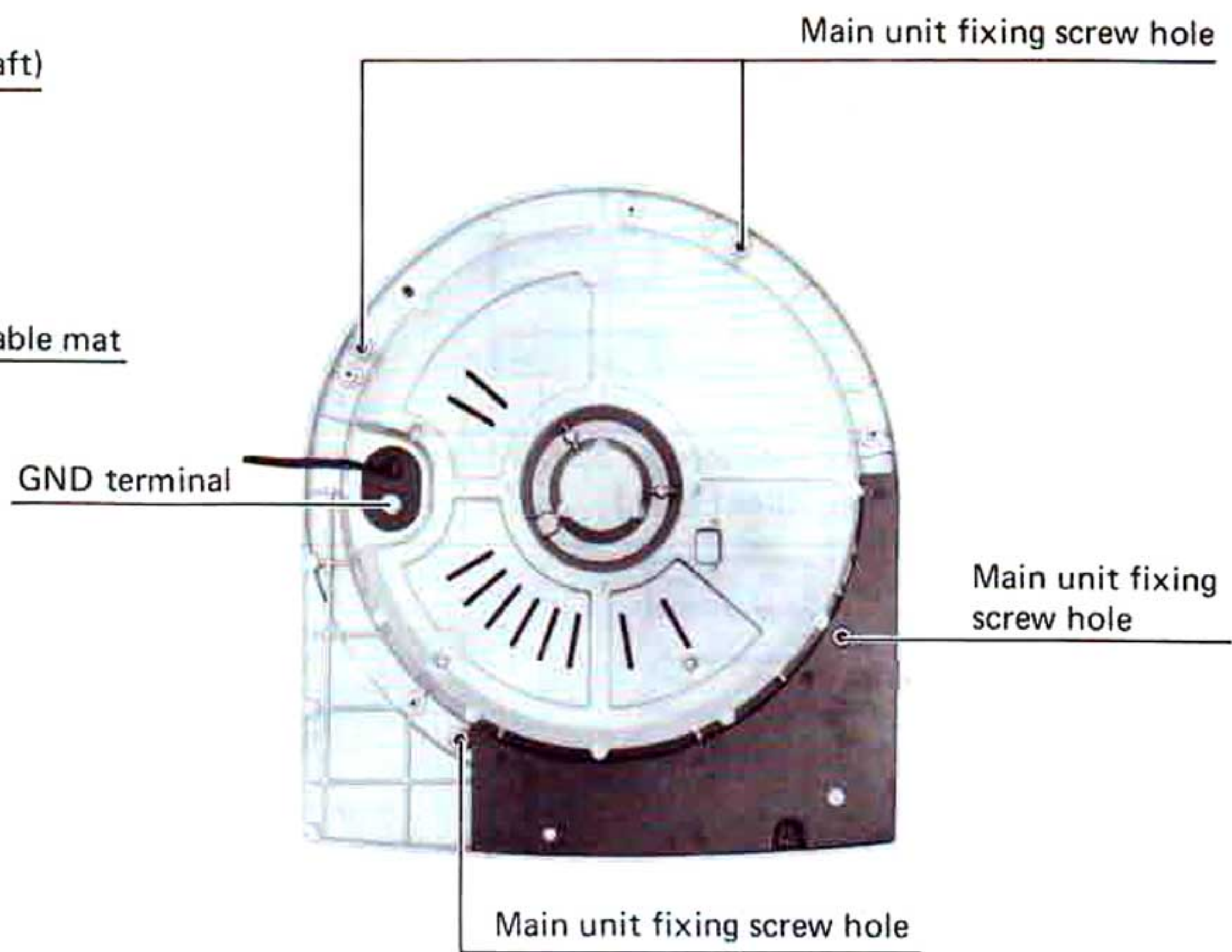


Fig. 4

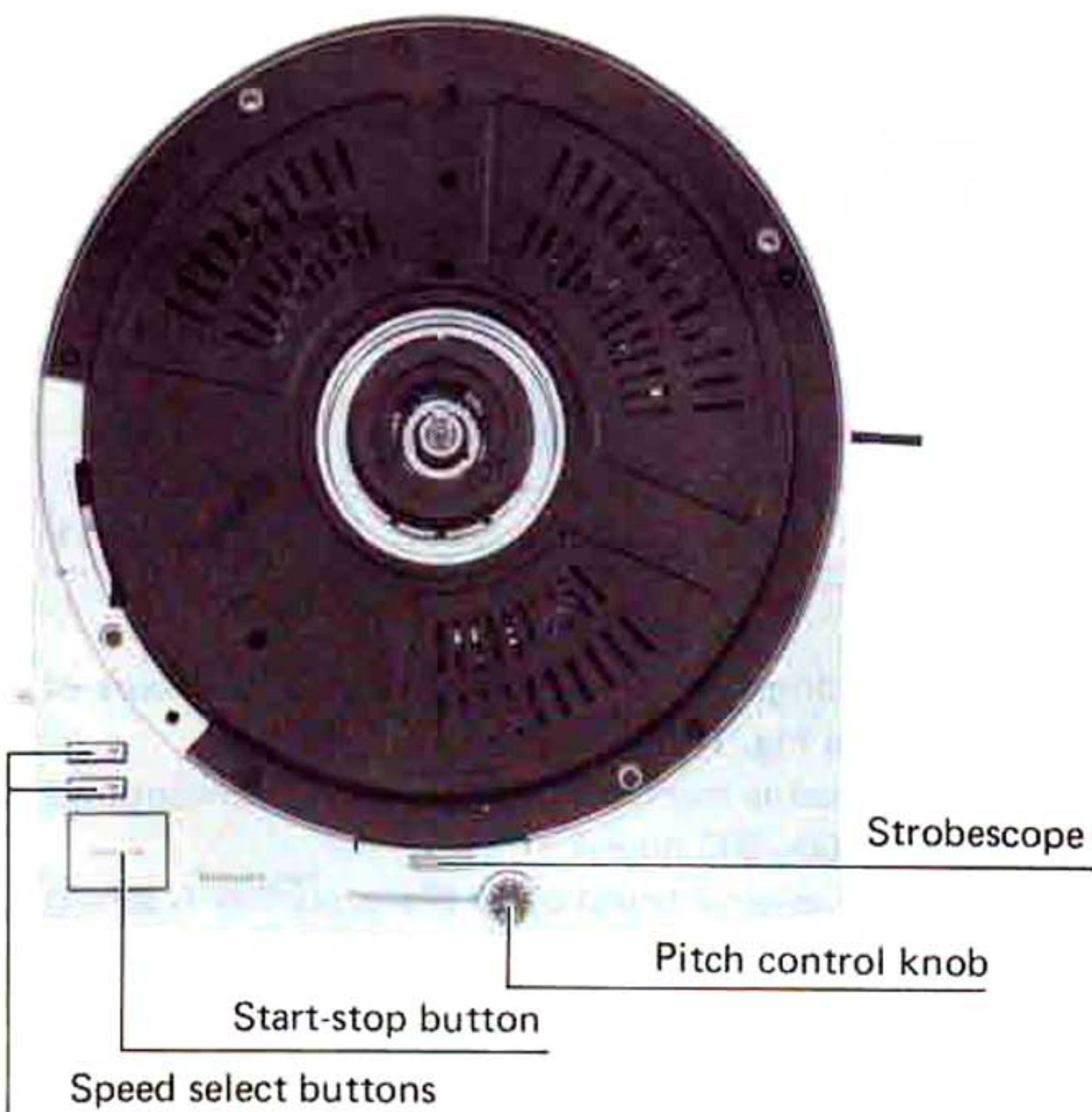


Fig. 5

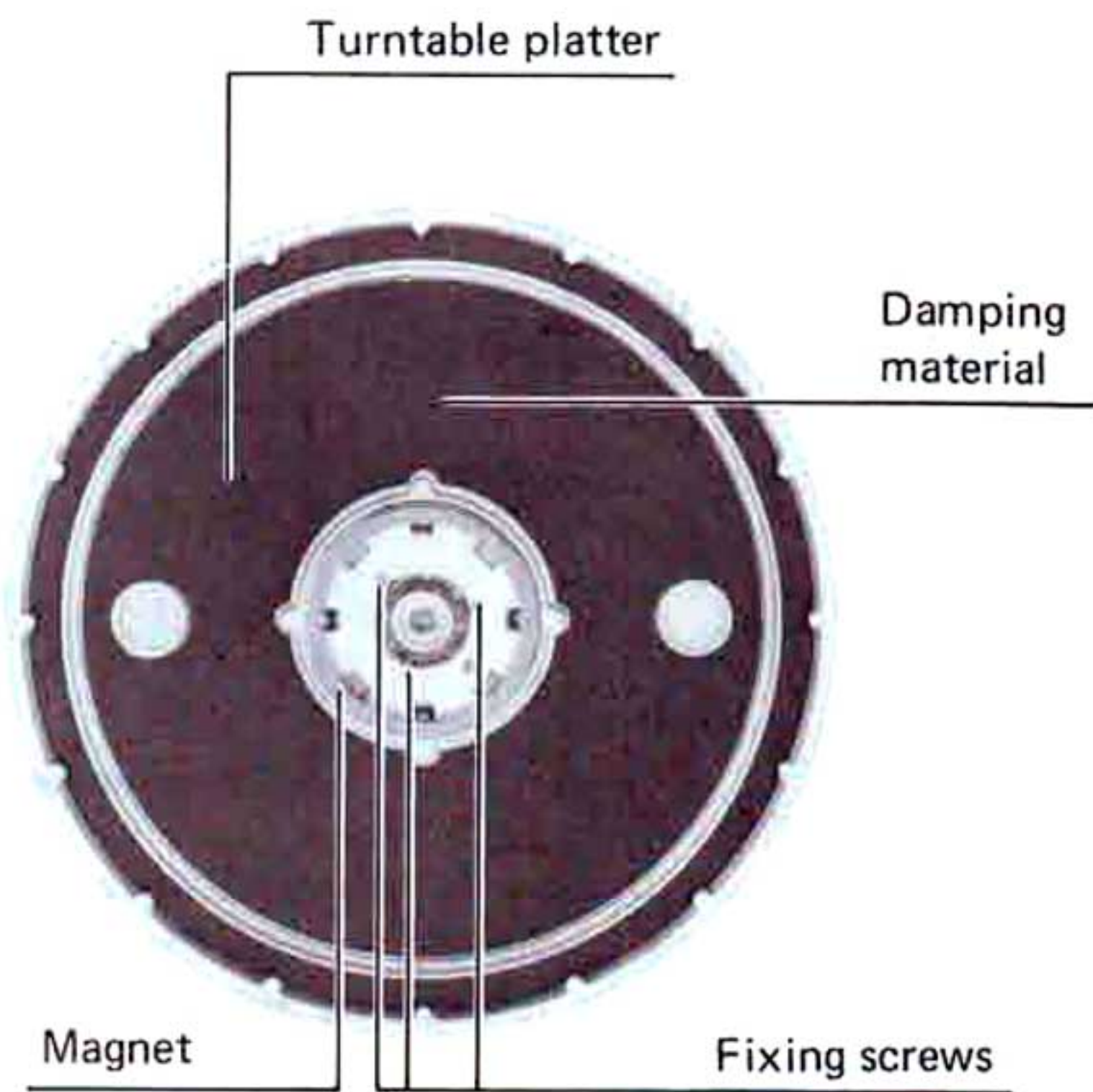
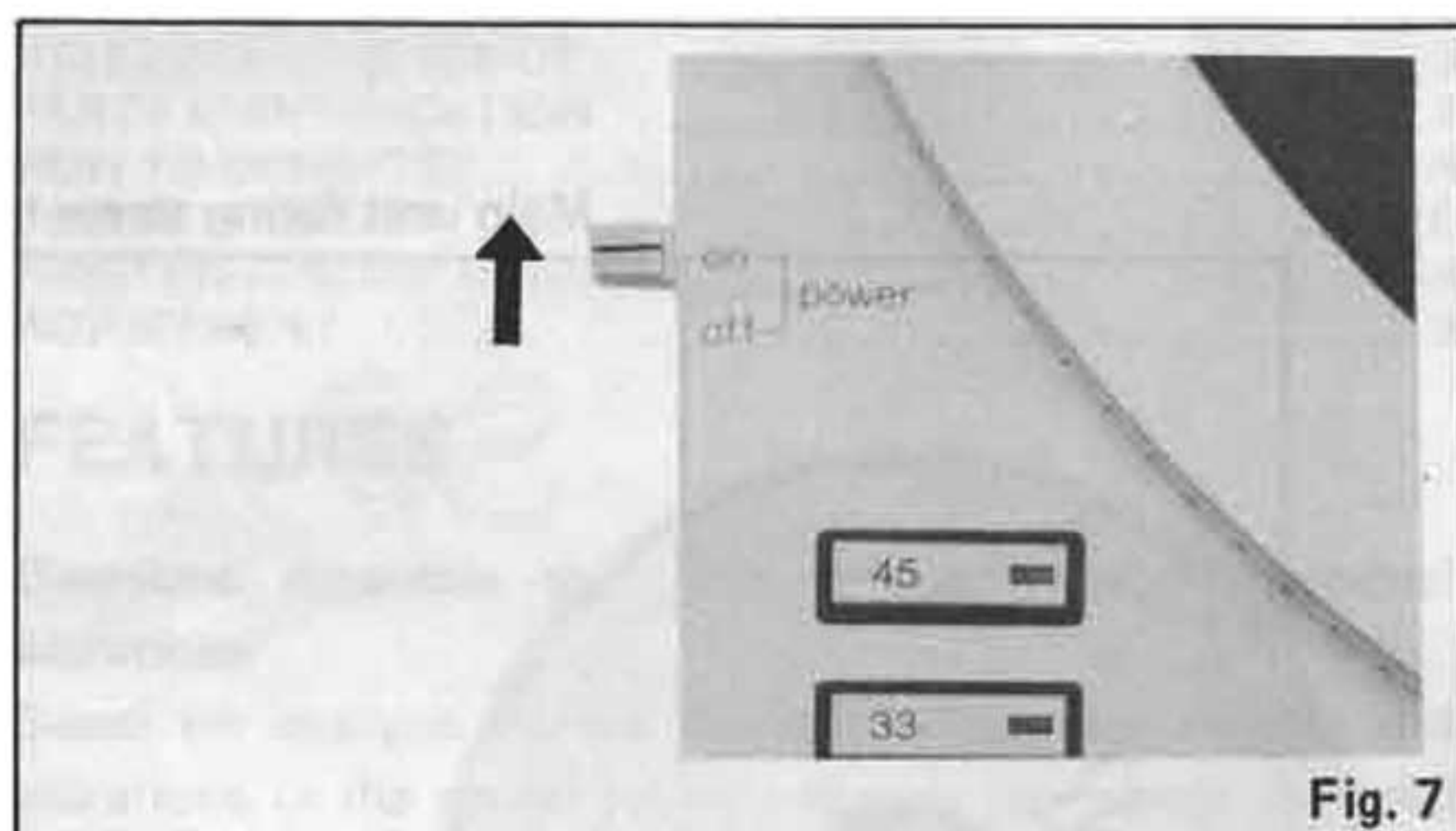


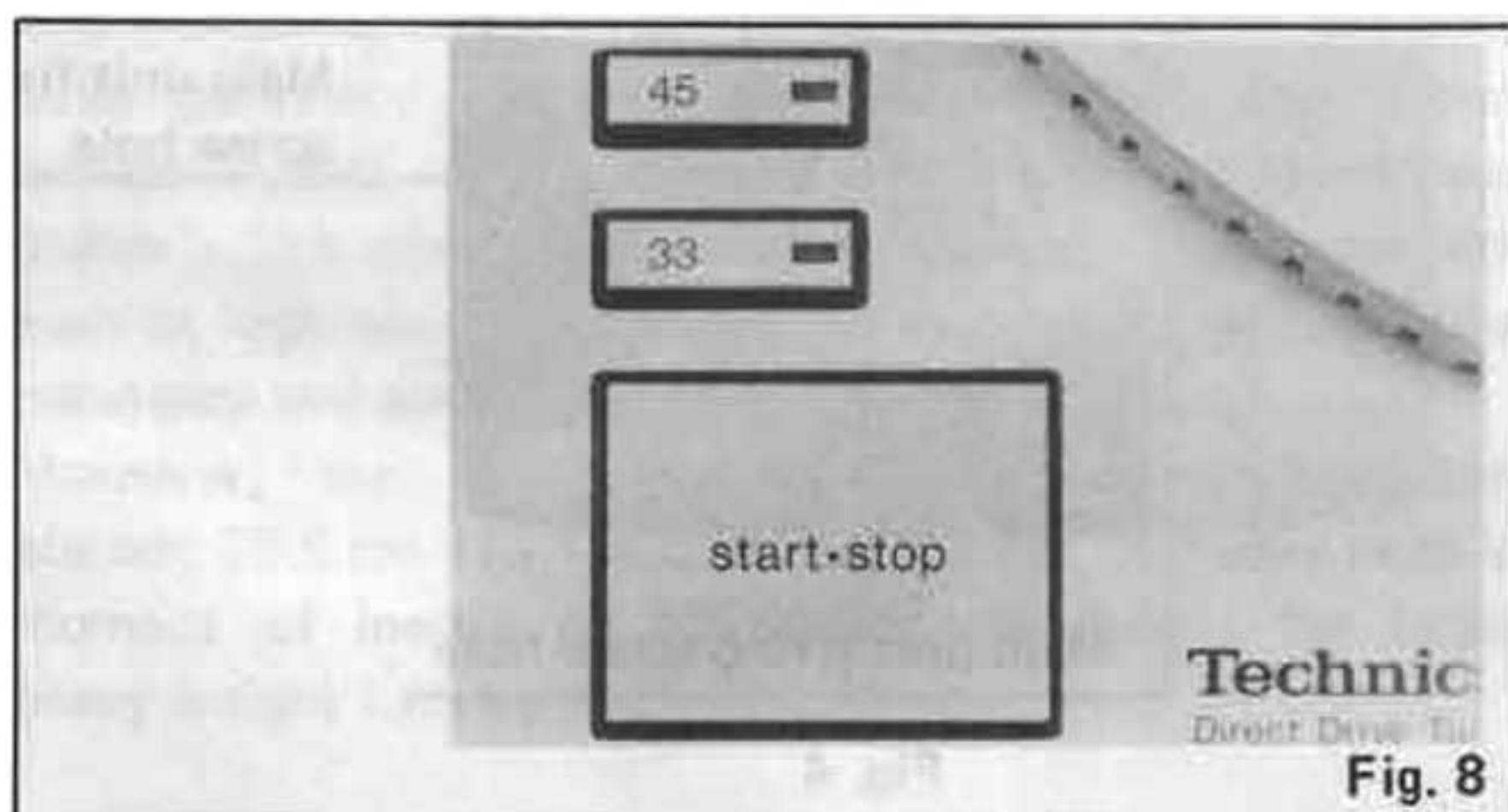
Fig. 6

■ HOW TO OPERATE

1. Set the power switch to the "on" position. (See Fig. 7.)



The revolutions are indicated at 33 (33-1/3 rpm.) of the speed select button. (See Fig. 8.)



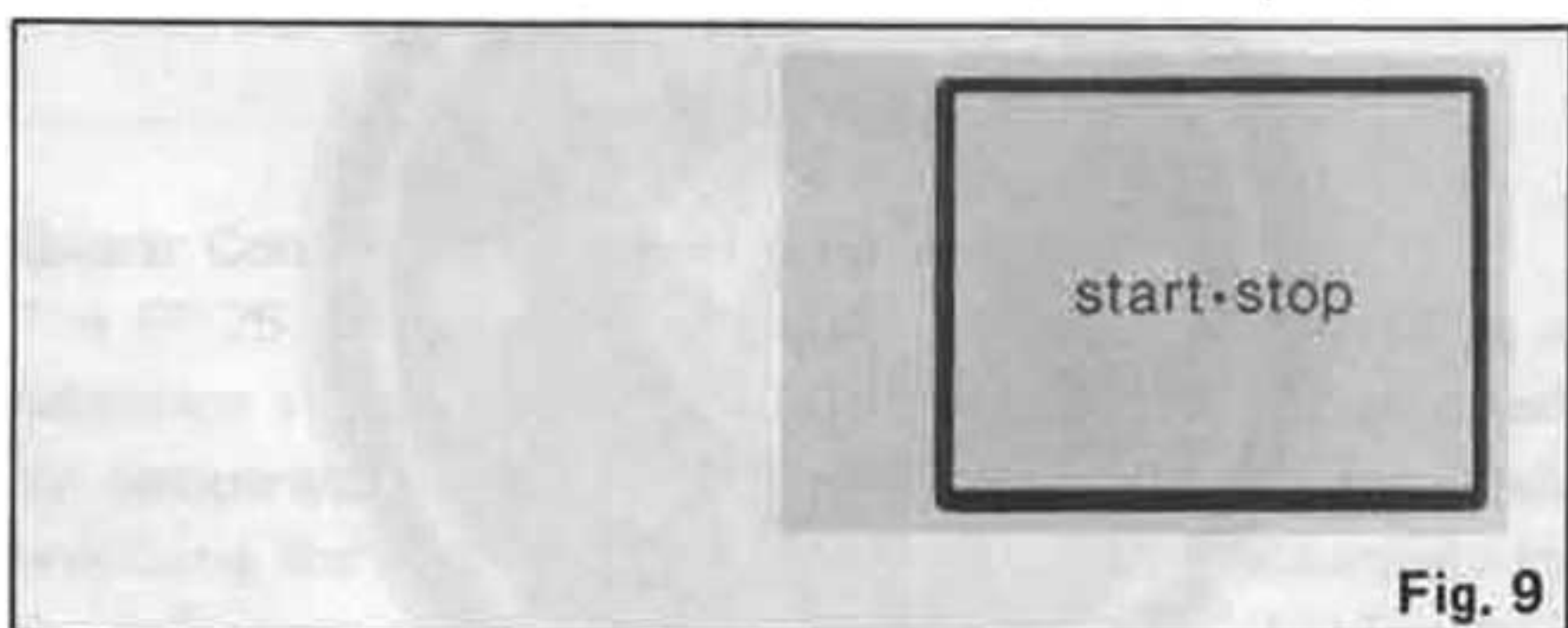
Upon setting the power switch to "on", the revolutions are changed over to 33-1/3 rpm. at all times.

If the record to be played is other than a 33-1/3 rpm., depress the speed select button to suit the phono disc to be played.

2. Place a record on the turntable mat.

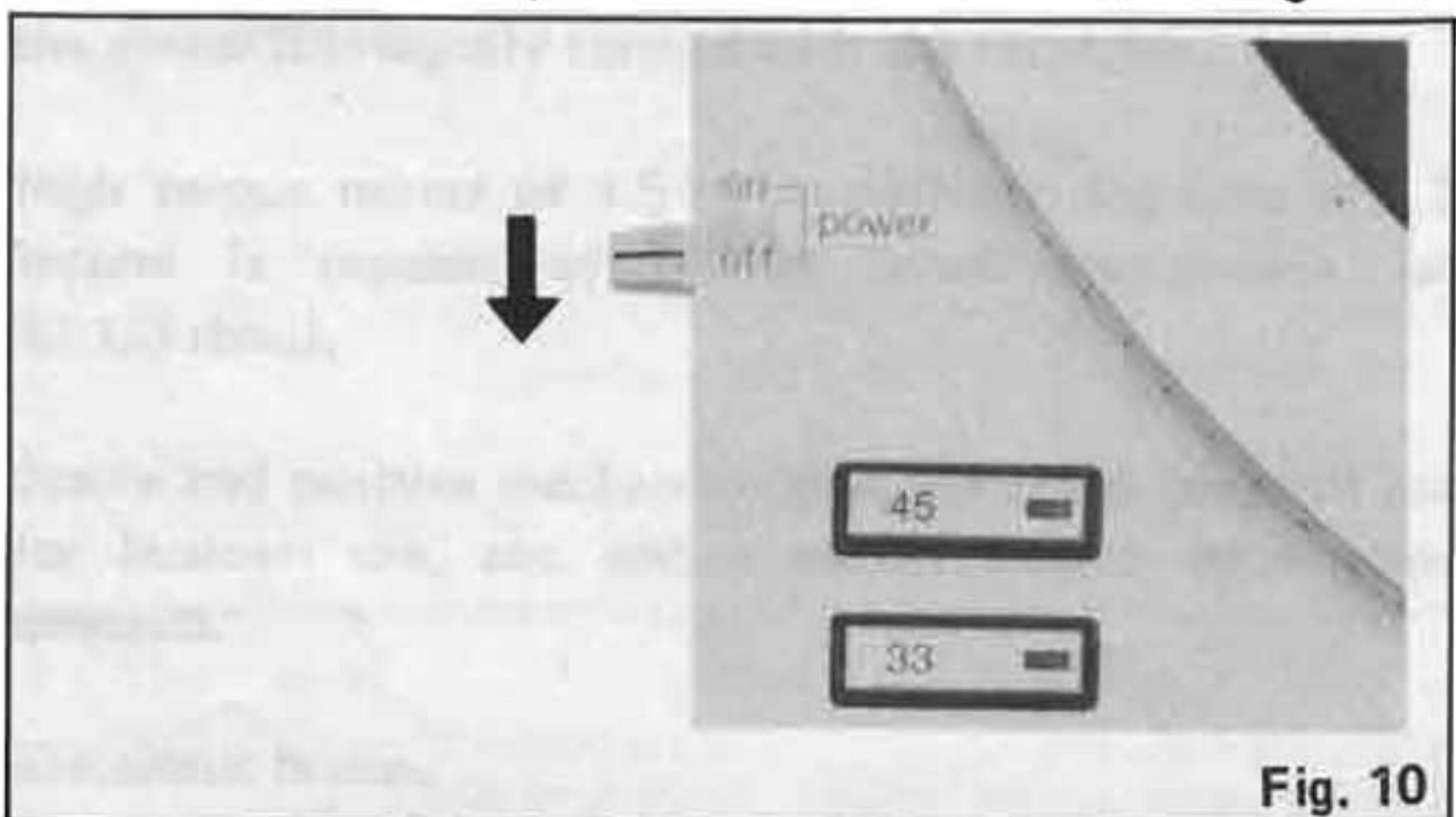
Push the start-stop button. (See Fig. 9.)

The turntable platter will start to rotate and reach its constant rotation speed 0.7 second. (33-1/3 rpm.).



3. Upon completion of playing, depress the start-stop button. The turntable is instantly stopped by electronic brake system.

After that, set the power switch to "off". (See Fig. 10.)



Pitch control

(turntable speed fine adjustment).

Fine adjustment of the turntable speed

The turntable speed of this unit can be fine-adjusted about $\pm 6\%$ range. With the pitch control knob at "0", it is set to normal speed (33-1/3 or 45 rpm.), and the strobe marks appear to be still.

Note:

The number (1–6) printed on the pitch control knob shows the speed variation (%) approximately.

"+" direction

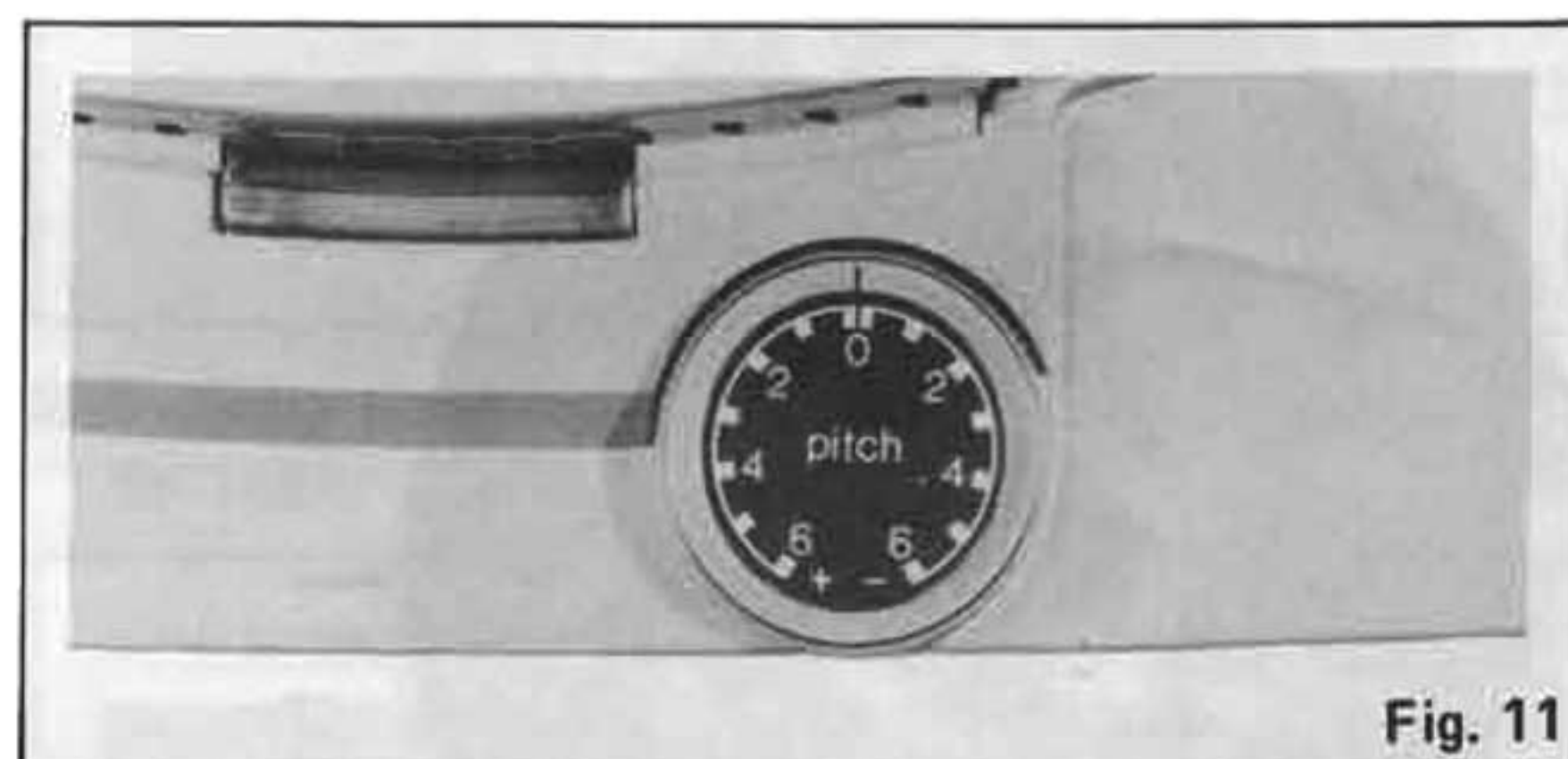
The speed of the turntable platter will increase. Turn the knob in this direction if the strobe dots seem to be "falling back" i.e. seem to be moving counterclockwise. When the dots appear to be stationary, turntable speed is accurate.

"-" direction

The speed of the turntable platter will decrease. Turn the knob in this direction if the dots seem to be "running ahead"; i.e. seem to be moving clockwise, until they appear stationary.

Note:

For the strobe-illumination of this unit, a quartz controlled precise strobe-illuminator with red LED illumination is employed. It is essential to carry out turntable speed fine adjustment under the illumination of this LED light emission. Since synchronization is not possible with fluorescent lamps, use of a fluorescent lamp makes the strobe markings look as though they are flowing. Likewise adjustment cannot be made with an incandescent lamp. (See Fig. 11)

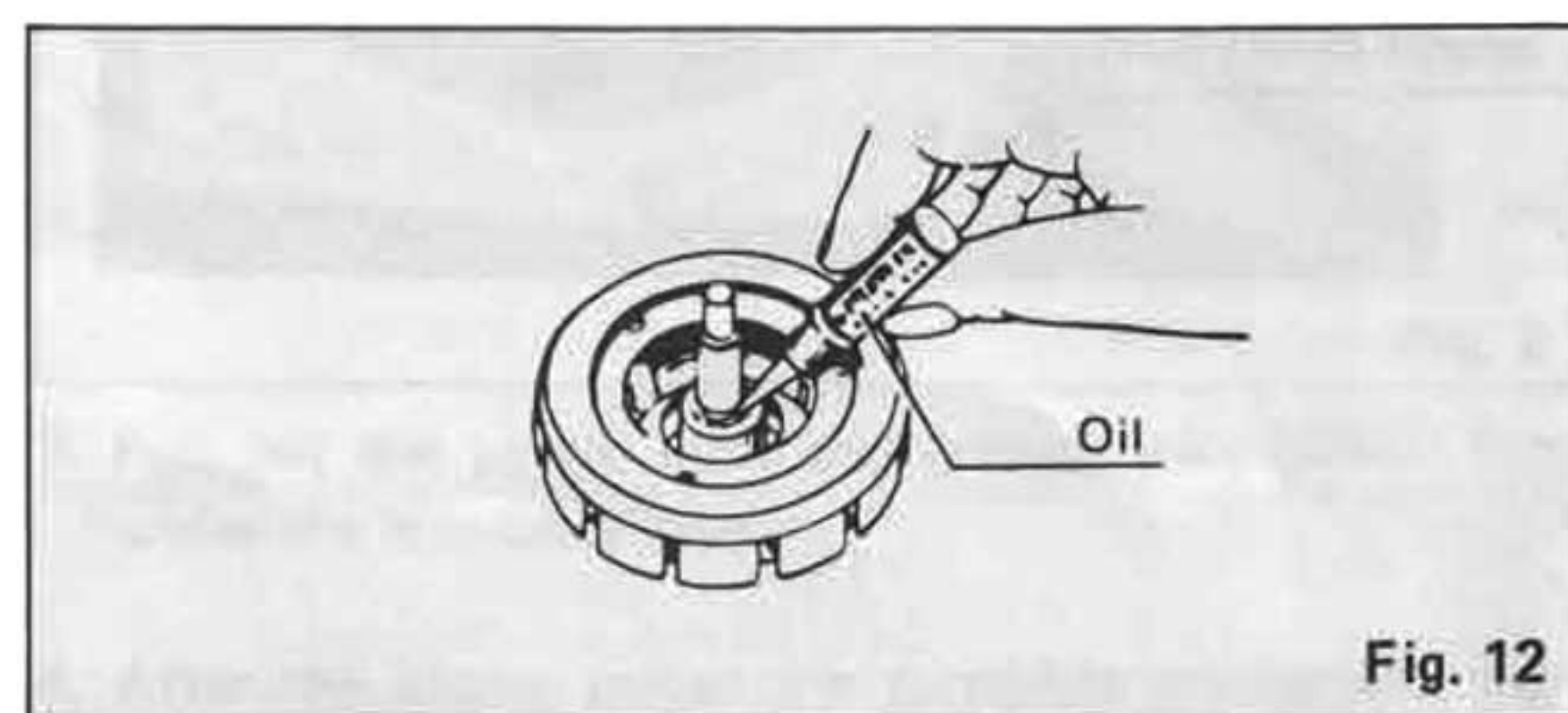


Lubrication

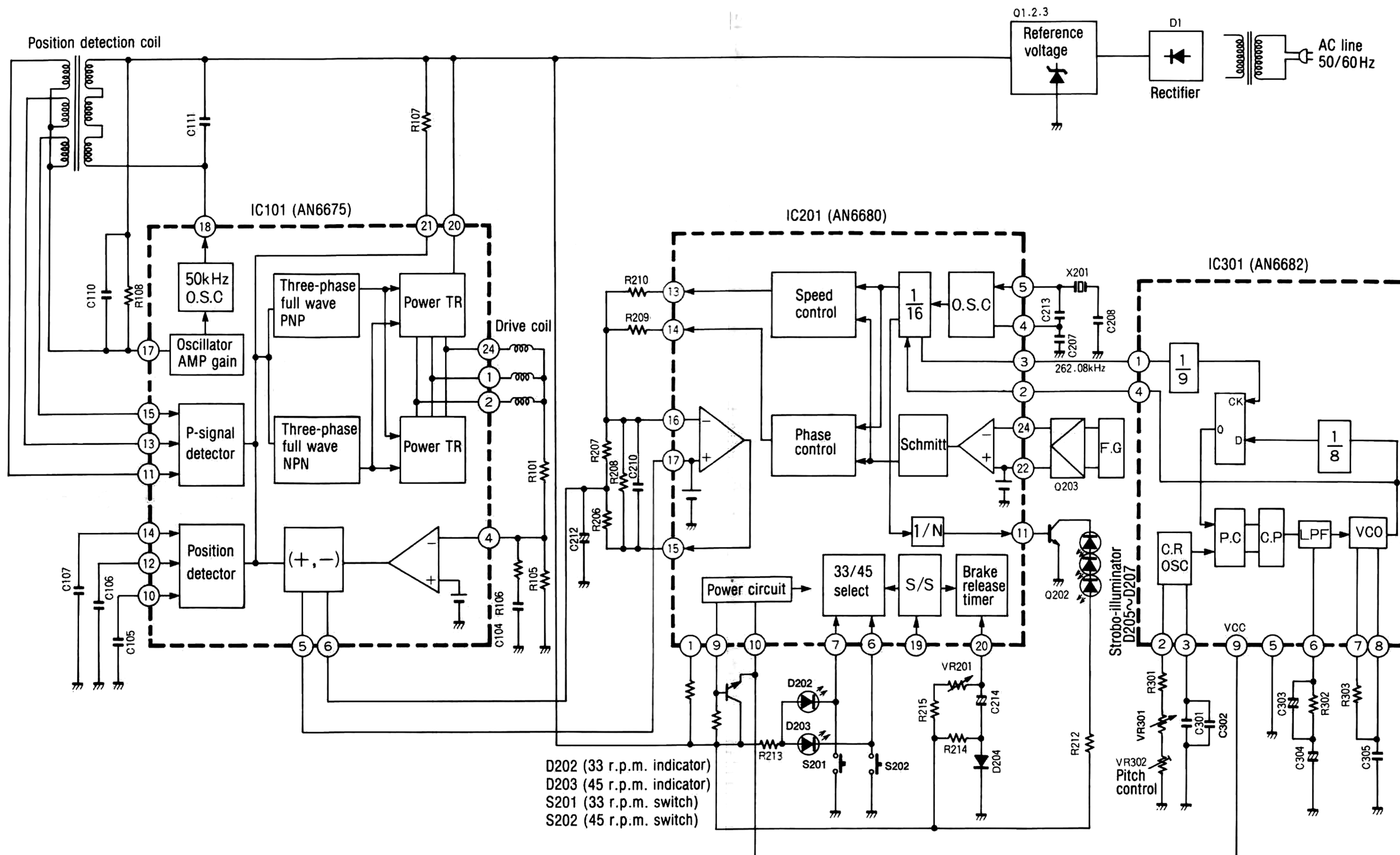
Apply 2 or 3 drops of oil once after every 2000 hours of operation. (See Fig. 12.)

This time interval is much longer than that of conventional type motors (200–500 hours).

Please purchase original brand of oil (Parts number is SFWO 010.)

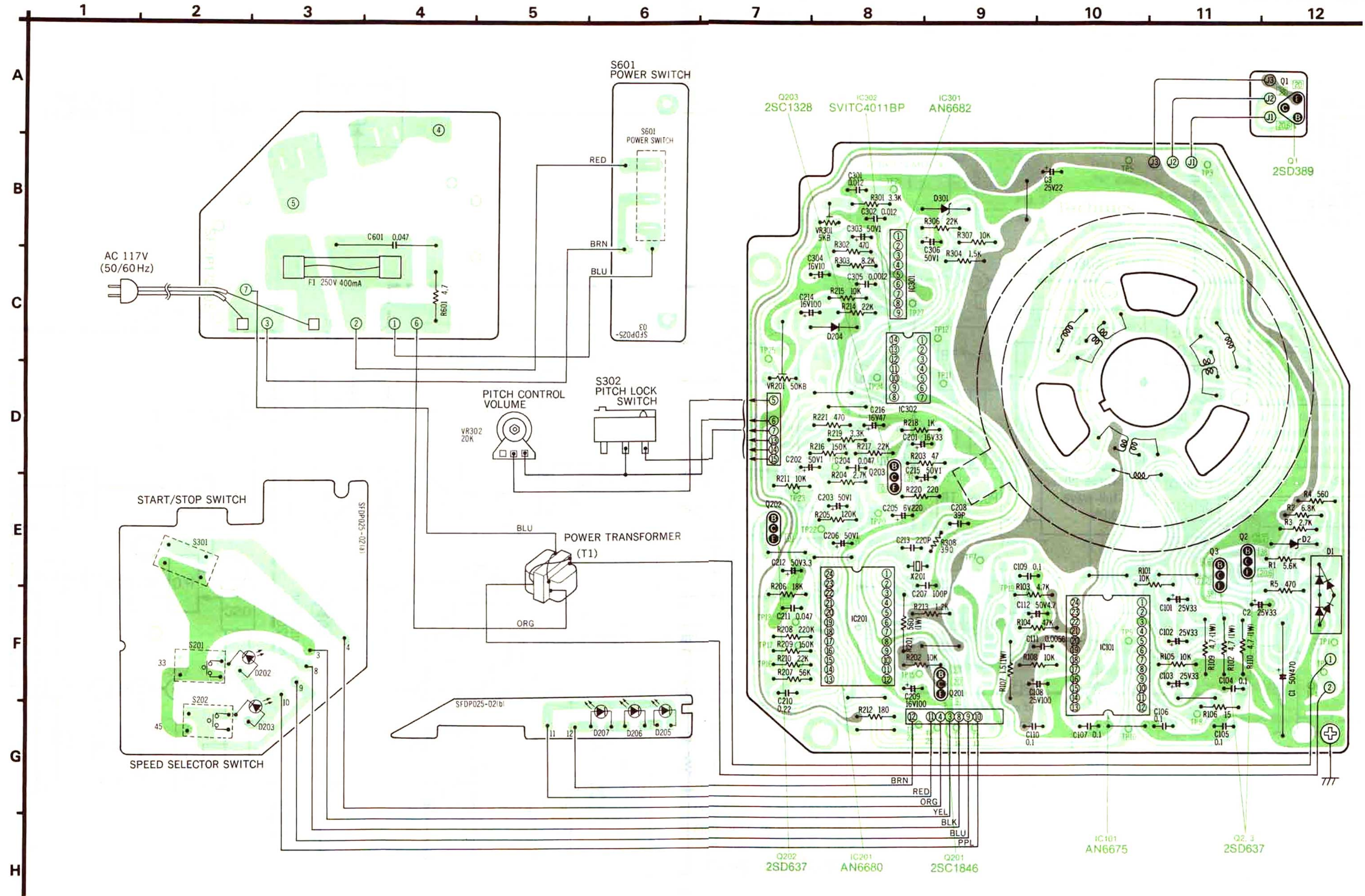


■ BLOCK DIAGRAM



Printed Circuit Board

+B Lines
Earth (Ground Lines)

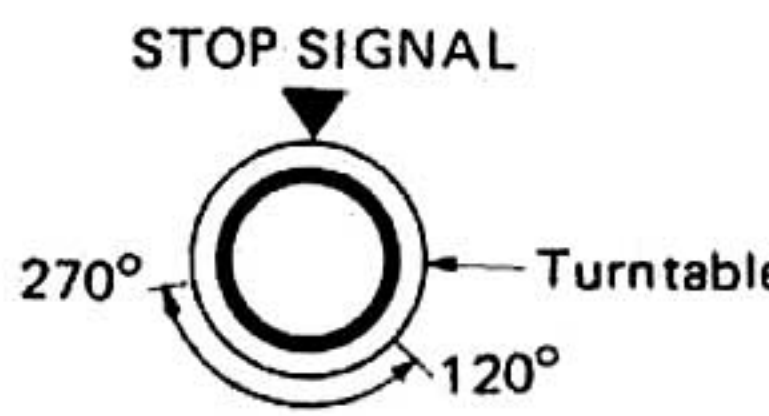


■ ADJUSTMENT

Adjustments (Electrical)

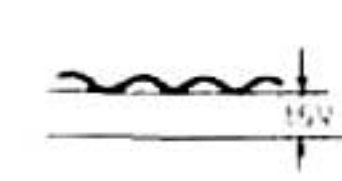
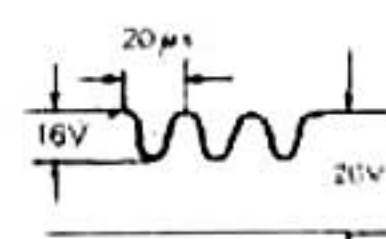
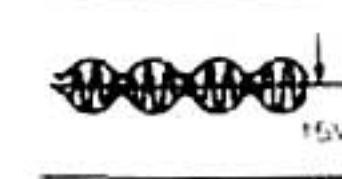
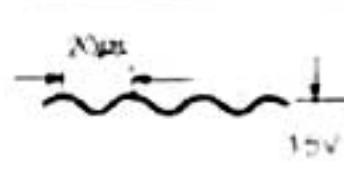
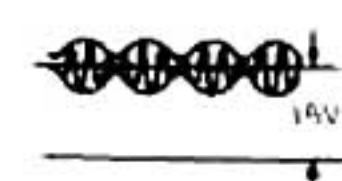
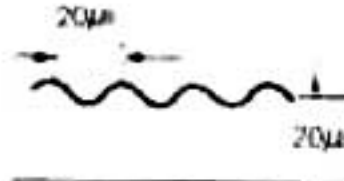
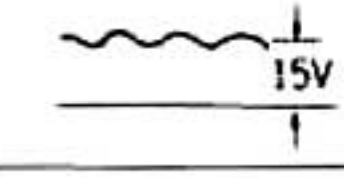
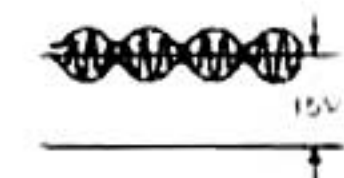
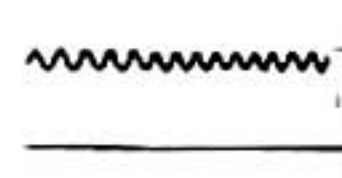
Notes: ● Make the following adjustments after replacing parts such as IC's, transistors, diodes, etc.

- Condition of the set.
 1. Power switchON
 2. Pitch controlCenter position
 3. Speed selector switch33-1/3 r.p.m.
- Instruments to be used
 1. Oscilloscope
 2. Frequency counter

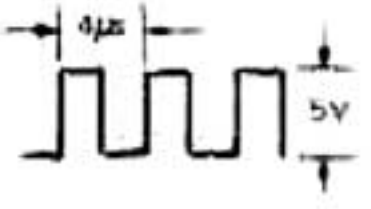
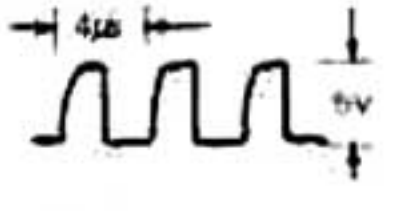
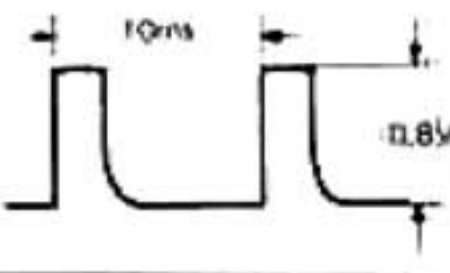
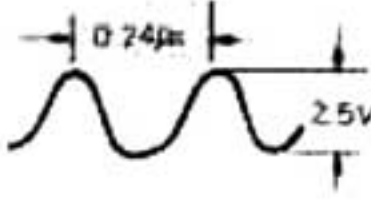
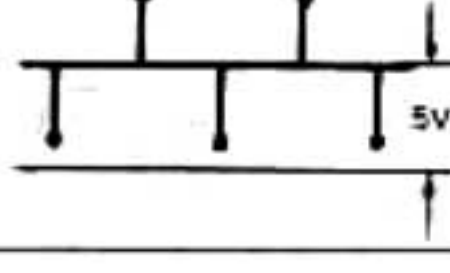
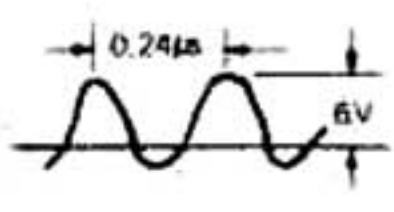
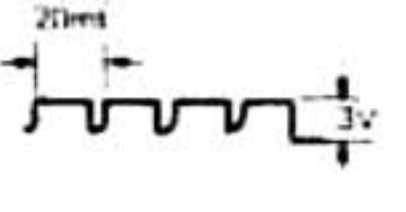
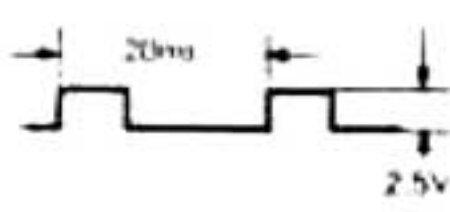
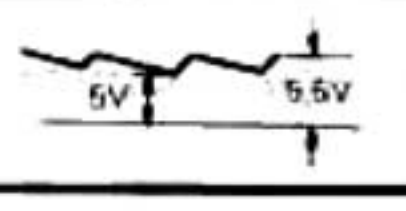
	Adjustment	Connection Points	Adjustment Point	Adjustment Method
A	Adjustment of pitch control $\pm 0\%$ (PITCH)	Frequency counter ⊕ — TP27 ⊖ — GROUND	VR301	1. Pitch control switch to center position. 2. Adjust VR301 for 262.08 kHz ± 0.05 kHz of frequency.
B	Braking adjustment (BRAKE)	—	VR201	Adjust VR201 for complete stop within $120^\circ \sim 270^\circ$ after stop signal initiated. (Turntable becomes free a few seconds after stop)  STOP SIGNAL 270° Turntable 120°

■ REFERENCE VOLTAGE AND WAVEFORM AT EACH IC PIN

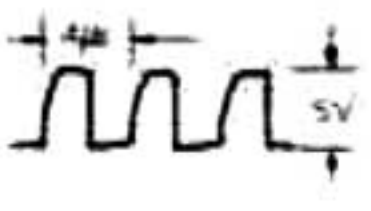
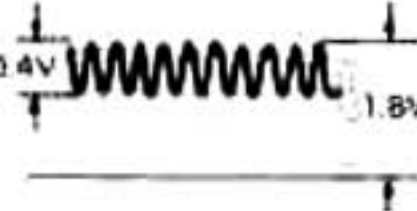
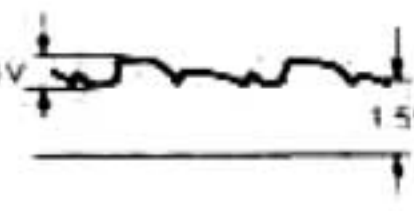
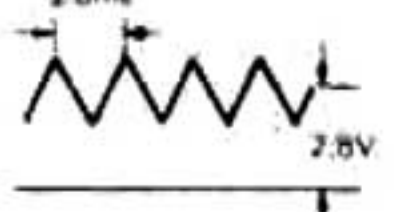
IC101 (AN6675)

	Start	Stop		Start	Stop		Start	Stop
①	2V	2V	⑫		15V	⑮	Same as at right	
②	2V	2V						
③	0V	0V						
④	5V	5V	⑬			⑲	20V	20V
⑤	5V	5V				⑳	20V	20V
⑥	5V	6.6V				㉑	20V	20V
⑦	0V	0V	⑭	15V	15V	㉒	0.2V	0.2V
⑧	5V	5V	⑮			㉓	20V	20V
⑨	0V	0V				㉔	1.7V	1.7V
⑩		15V						
⑪			⑯	0V	0V			
			⑰	15V	15V			

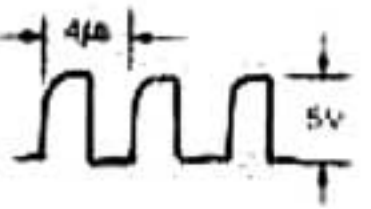
IC201 (AN6680)

	Start	Stop		Start	Stop		Start	Stop
①	2.5V	2.5V	⑧	0V	0V	⑩⑥	5V	2.5V
②	Same as at right		⑨	9.8V	9.8V	⑩⑦	5V	5V
			⑩	10V	10V	⑩⑧	0V	0V
③	Same as at right		⑪	Same as at right		⑩⑨	7.5V	0V
			⑫	0V	0V	⑩⑩	0V	5V
④	Same as at right		⑬		0.2V	⑩⑪	1.5V	0V
⑤	Same as at right		⑭			⑩⑫	3V	3V
⑥	3.4V	3.4V				⑩⑬	2.8V	2.8V
⑦	0V	0V	⑮		8V			

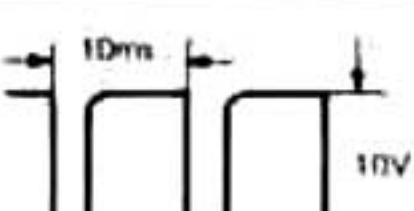
IC301 (AN6682)

	Start	Stop		Start	Stop		Start	Stop
①	Same as at right		④	Same as at right		⑧	Same as at right	
②	Same as at right		⑤	0V	0V	⑨	9V	9V
			⑥	3.9V	3.9V			
③	Same as at right		⑦	Same as at right				

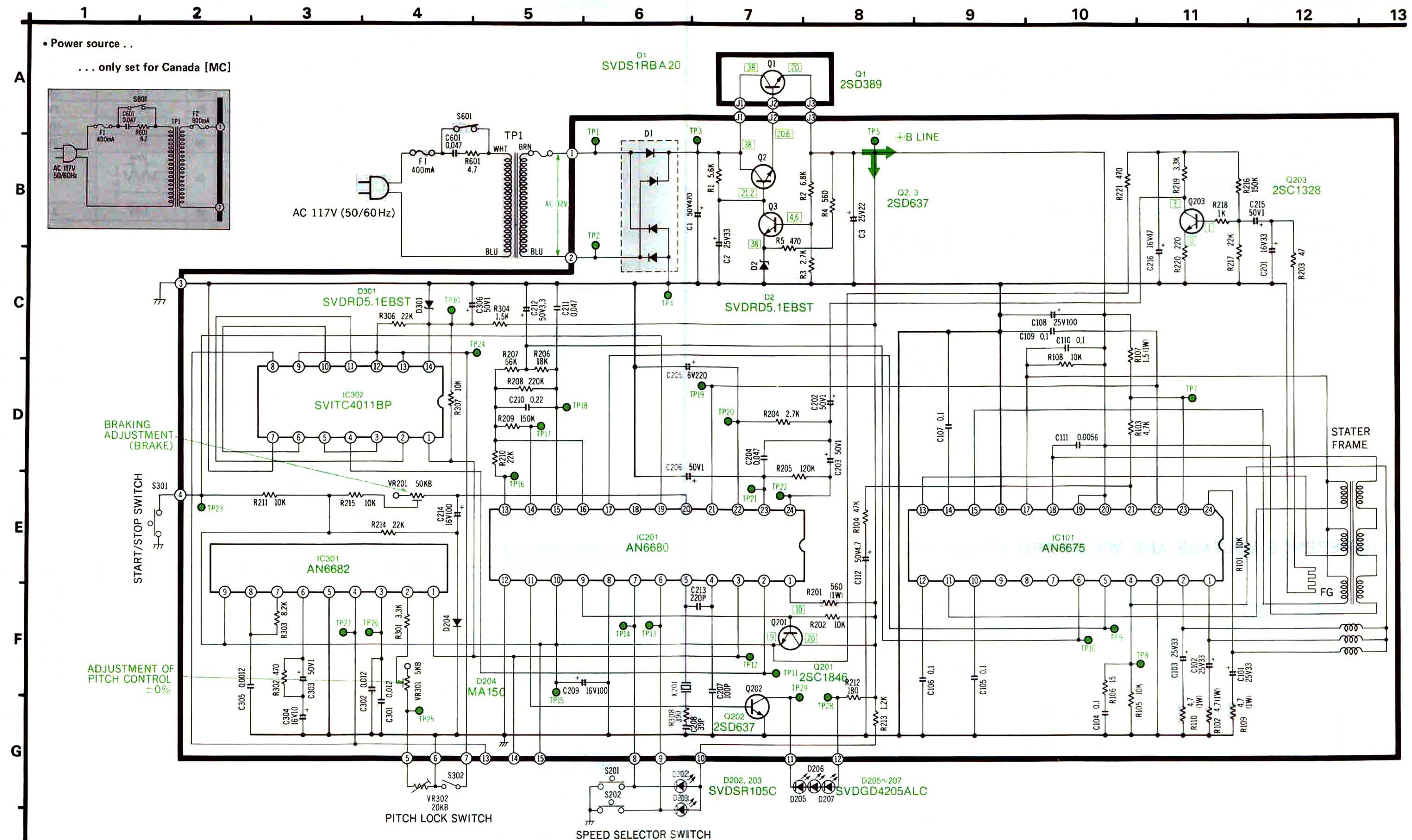
IC302 (SVITC4011BP)

	Start	Stop		Start	Stop		Start	Stop
①	Same as at right		⑤	Same as at right		⑨	5V	5V
②	5V	5V	⑥	5V	5V	⑩	5V	5V
③	Same as at right		⑦	0V	0V	⑪	5V	5V
④	5V	5V	⑧	Same as at right		⑫	0.6V	0.6V
						⑬	0.6V	0.6V
						⑭	5V	5V

Q202 (2SD637)

	Start	Stop
E	0V	0V
C	Same as at right	
B	Same as at right	

Schematic Diagram (This schematic diagram may be at any time the development of new technology.)



■ REPLACEMENT PARTS LIST (Electrical)

- Notes:** 1. Part numbers are indicated on most mechanical parts.
Please use this part number for parts orders.
2. Δ indicates that only parts specified by the manufacturer be used for safety.
3. SP-25 (M) $\rightarrow$ [M], SP-25 (MC) $\rightarrow$ [MC]

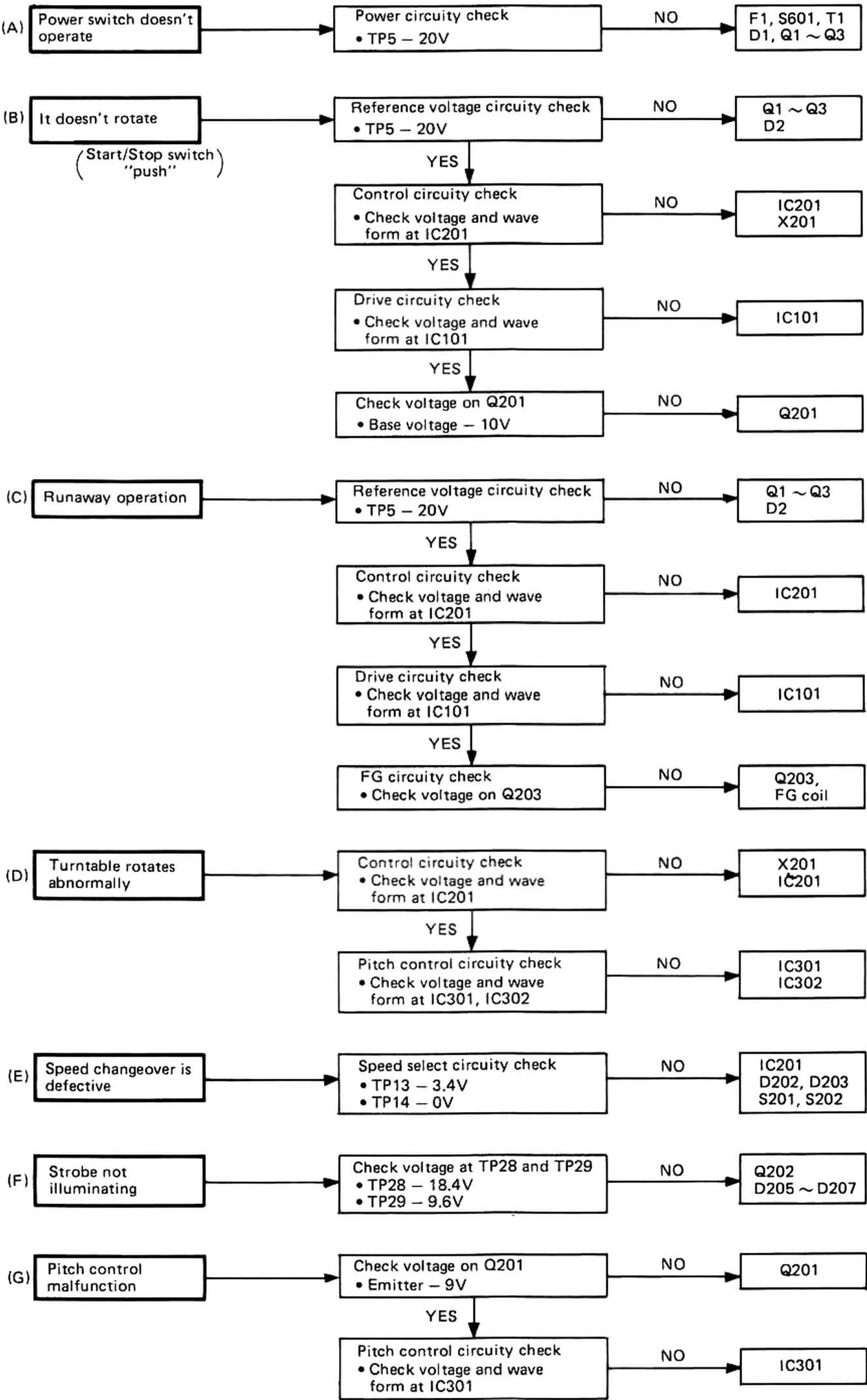
Ref. No.	Part No.	Part Name & Description
INTEGRATED CIRCUITS		
IC101	AN6675	Integrated Circuit
IC201	AN6680	Integrated Circuit
IC301	AN6682	Integrated Circuit
IC302	SVITC4011BP	Integrated Circuit
TRANSISTORS		
Q1	2SD389A-Q	Transistor
Q2, 3, 202	2SD637	Transistor
Q201	2SC1846-R	Transistor
Q203	2SC1328-T	Transistor
DIODES		
D1	Δ SVDS1RBA40	Rectifier
D2, 301	MA1051	Diode, Zener 5.1V
D204	MA161	Diode
D202, 203	SVDSR-105C	Light Emitting Diode
D205 ~ 207	SVDDG4205ALC	Light Emitting Diode
CRYSTAL		
X201	SVQU306115	Crystal, 4.19328MHz Oscillator
VARIABLE RESISTORS		
VR201	EVLS6AA00B54	Braking Adjustment (BRAKE), 50K Ω (B)
VR301	EVMH2GA00B53	Adjustment of Pitch Control $\pm 0\%$ (PITCH), 5K Ω (B)
VR302	EWJ30AF01A24	Pitch Control, 20K Ω
SWITCHES		
S201	EVQP1R04K	Switch, Speed Selector, (33-1/3 r.p.m.)
S202	EVQP1R04K	Switch, Speed Selector, (45 r.p.m.)
S301	EVQP1R04K	Switch, Start/Stop
S302	SFDSS5GL13C	Switch, Pitch Lock
S601	Δ SFDSS5GL13	Switch, Power Switch
TRANSFORMER		
T1	Δ SLT12SL1A	Power Transformer
FUSES		
F1 [M]	Δ XBA2F04NU100	Fuse, 400mA
F2 [MC]	Δ XBA2F08NU100	Fuse, 800mA
RESISTORS		
R1	ERD25FJ562	Carbon, 5.6k Ω , 1/4W, $\pm 5\%$
R2	ERD25FJ682	Carbon, 6.8k Ω , 1/4W, $\pm 5\%$
R3	ERD25FJ272	Carbon, 2.7k Ω , 1/4W, $\pm 5\%$
R4	ERD25FJ561	Carbon, 560 Ω , 1/4W, $\pm 5\%$
R5	ERD25FJ471	Carbon, 470 Ω , 1/4W, $\pm 5\%$
R101	ERD25FJ103	Carbon, 10k Ω , 1/4W, $\pm 5\%$
R102	Δ ERX1ANJ4R7	Metal Film, 4.7 Ω , 1W, $\pm 5\%$
R103	ERD25FJ472	Carbon, 4.7k Ω , 1/4W, $\pm 5\%$
R104	ERD25TJ473	Carbon, 47k Ω , 1/4W, $\pm 5\%$
R105	ERD25TJ103	Carbon, 10k Ω , 1/4W, $\pm 5\%$
R106	ERD25FJ150	Carbon, 15 Ω , 1/4W, $\pm 5\%$
R107	Δ ERX1ANJ1R5	Metal Film, 1.5 Ω , 1W, $\pm 5\%$
R108	ERD25FJ103	Carbon, 10k Ω , 1/4W, $\pm 5\%$
R109, 110	Δ ERX1ANJ4R7	Metal Film, 4.7 Ω , 1W, $\pm 5\%$
R201	Δ ERG1ANJ561	Metal Oxide, 560 Ω , 1W, $\pm 5\%$
R202	ERD25FJ103	Carbon, 10k Ω , 1/4W, $\pm 5\%$

Ref. No.	Part No.	Part Name & Description
R203	ERD25FJ470	Carbon, 47 Ω , 1/4W, $\pm 5\%$
R204	ERD25FJ272	Carbon, 2.7k Ω , 1/4W, $\pm 5\%$
R205	ERD25TJ124	Carbon, 120k Ω , 1/4W, $\pm 5\%$
R206	ERD25TJ183	Carbon, 18k Ω , 1/4W, $\pm 5\%$
R207	ERD25TJ563	Carbon, 56k Ω , 1/4W, $\pm 5\%$
R208	ERD25TJ224	Carbon, 220k Ω , 1/4W, $\pm 5\%$
R209	ERD25TJ154	Carbon, 150k Ω , 1/4W, $\pm 5\%$
R210	ERD25TJ223	Carbon, 22k Ω , 1/4W, $\pm 5\%$
R211	ERD25FJ103	Carbon, 10k Ω , 1/4W, $\pm 5\%$
R212	ERD25FJ181	Carbon, 180 Ω , 1/4W, $\pm 5\%$
R213	ERD25FJ122	Carbon, 1.2k Ω , 1/4W, $\pm 5\%$
R214	ERD25TJ223	Carbon, 22k Ω , 1/4W, $\pm 5\%$
R215	ERD25FJ103	Carbon, 10k Ω , 1/4W, $\pm 5\%$
R216	ERD25TJ154	Carbon, 150k Ω , 1/4W, $\pm 5\%$
R217	ERD25TJ223	Carbon, 22k Ω , 1/4W, $\pm 5\%$
R218	ERD25FJ102	Carbon, 1k Ω , 1/4W, $\pm 5\%$
R219	ERD25FJ332	Carbon, 3.3k Ω , 1/4W, $\pm 5\%$
R220	ERD25FJ221	Carbon, 220 Ω , 1/4W, $\pm 5\%$
R221	ERD25FJ471	Carbon, 470 Ω , 1/4W, $\pm 5\%$
R222	ERD25FJ391	Carbon, 390 Ω , 1/4W, $\pm 5\%$
R301	ERO25CKG3301	Metal Film, 3.3k Ω , 1/4W, $\pm 2\%$
R302	ERD25FJ471	Carbon, 470 Ω , 1/4W, $\pm 5\%$
R303	ERD25FJ822	Carbon, 8.2k Ω , 1/4W, $\pm 5\%$
R304	ERD25FJ152	Carbon, 1.5k Ω , 1/4W, $\pm 5\%$
R306	ERD25TJ223	Carbon, 22k Ω , 1/4W, $\pm 5\%$
R307	ERD25TJ103	Carbon, 10k Ω , 1/4W, $\pm 5\%$
R308	ERD25FJ391	Carbon, 390 Ω , 1/4W, $\pm 5\%$
R601	ERD25TJ4R7	Carbon, 4.7 Ω , 1/4W, $\pm 5\%$
CAPACITORS		
C1	ECEB1HS471	Electrolytic, 470 μ F, 50V
C2	ECEA1VS330	Electrolytic, 33 μ F, 35V
C3	ECEA1ES220	Electrolytic, 22 μ F, 25V
C101, 102	ECEA1VS330	Electrolytic, 33 μ F, 35V
C103	ECEA1VS330	Electrolytic, 33 μ F, 35V
C104, 105	ECQM1H104KS	Polyester, 0.1 μ F, 50V, $\pm 10\%$
C106, 107	ECQM1H104KS	Polyester, 0.1 μ F, 50V, $\pm 10\%$
C108	ECEA1ES101	Electrolytic, 100 μ F, 25V
C109, 110	ECQM1H104KS	Polyester, 0.1 μ F, 50V, $\pm 10\%$
C111	ECQM1H562KZ	Polyester, 0.0056 μ F, 50V, $\pm 10\%$
C112	ECEA1JS4R7	Electrolytic, 4.7 μ F, 63V
C201	ECEA1CS330	Electrolytic, 33 μ F, 16V
C202, 203	ECEA50Z1	Electrolytic, 1 μ F, 50V
C204	ECQM1H473KZ	Polyester, 0.047 μ F, 50V, $\pm 10\%$
C205	ECEA1AS221	Electrolytic, 220 μ F, 10V
C206	ECEA50Z1	Electrolytic, 1 μ F, 50V
C207	ECCD1H101K	Ceramic, 100pF, 50V, $\pm 10\%$
C208	ECCD1H390K	Ceramic, 39pF, 50V, $\pm 10\%$
C209	ECEA1ES101	Electrolytic, 100 μ F, 16V
C210	ECQM1H224KZ	Polyester, 0.22 μ F, 50V, $\pm 10\%$
C211	ECQM1H473KZ	Polyester, 0.047 μ F, 50V, $\pm 10\%$
C212	ECEA50Z3R3	Electrolytic, 3.3 μ F, 50V
C213	ECCD1H221K	Ceramic, 220pF, 50V, $\pm 10\%$
C214	ECEA1ES101	Electrolytic, 100 μ F, 25V
C215	ECEA50Z1	Electrolytic, 1 μ F, 50V
C216	ECEA1ES470	Electrolytic, 47 μ F, 25V
C301, 302	ECQK1123FZ	Polyester, 0.012 μ F, 125V, $\pm 1\%$
C303	ECEA50Z1	Electrolytic, 1 μ F, 50V
C304	ECEA1HS100	Electrolytic, 10 μ F, 50V
C305	ECQM1H122KZ	Polyester, 0.0012 μ F, 50V, $\pm 10\%$
C306	ECEA50Z1	Electrolytic, 1 μ F, 50V
C601 [M]	ECQF1A473MD	Polyester, 0.047 μ F, 400V, $\pm 20\%$
C601 [MC]	ECQU1A473ME	Polyester, 0.047 μ F, 400V, $\pm 20\%$

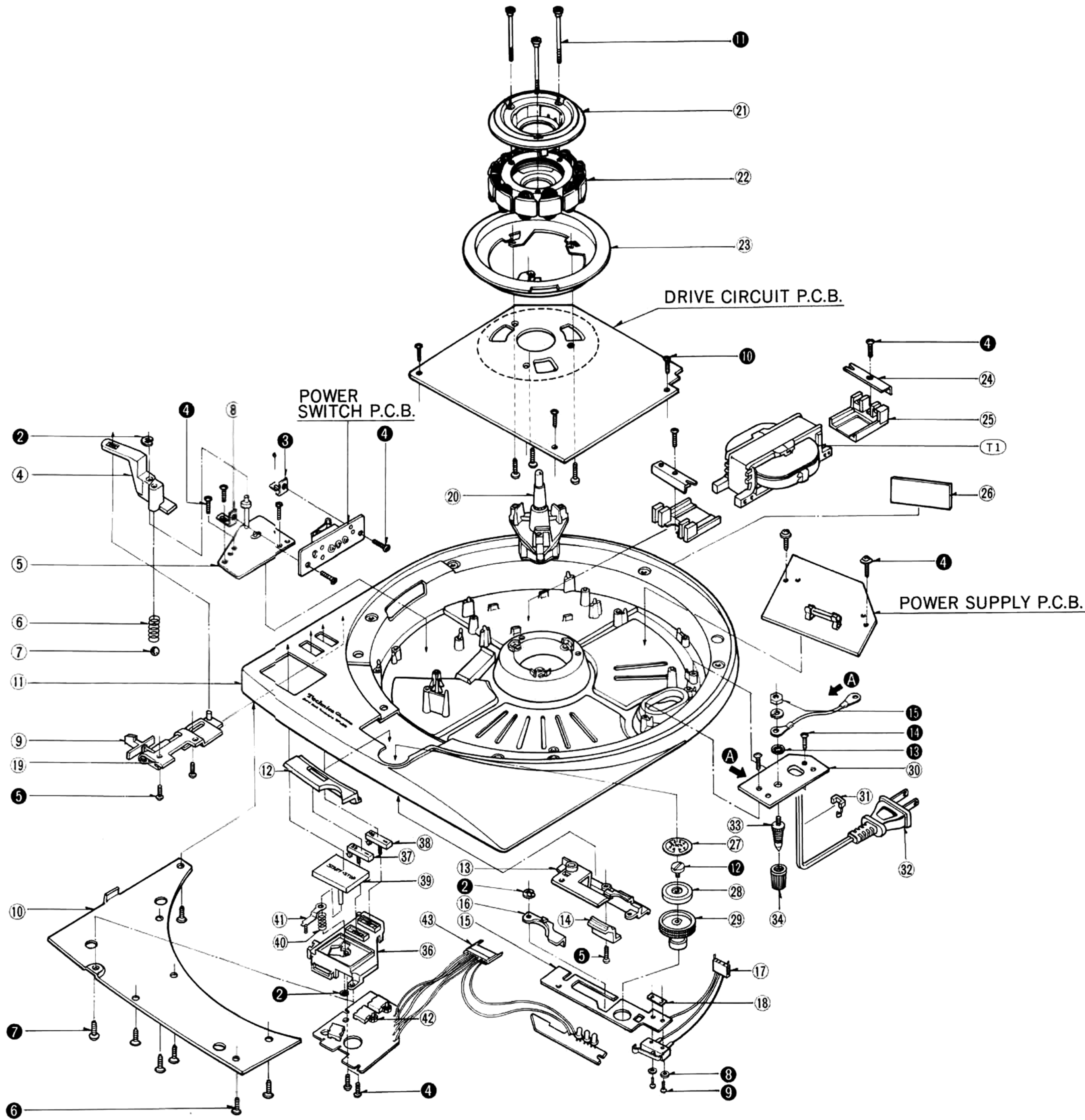
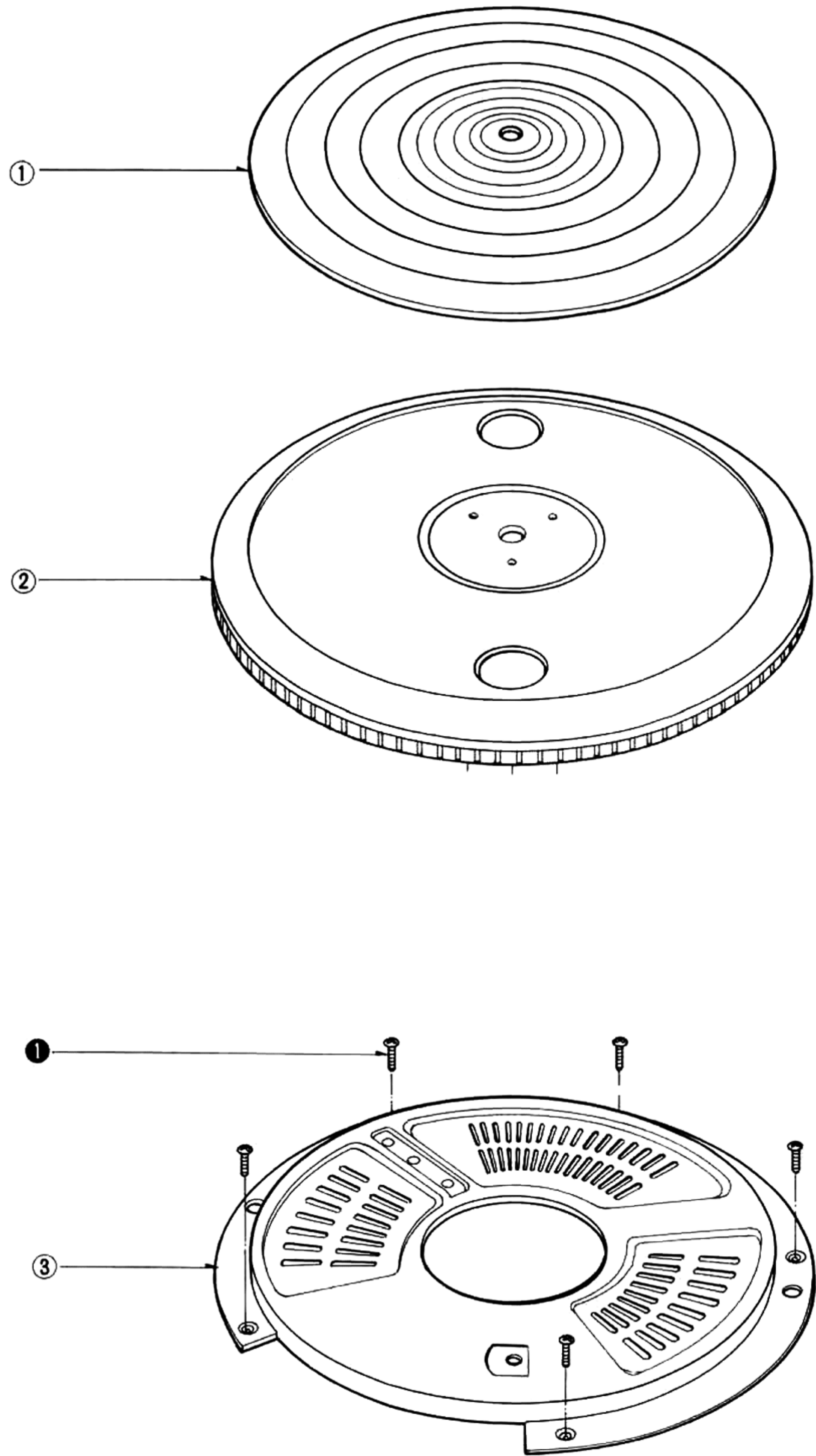
■ TERMINAL GUIDE OF TRANSISTOR AND IC

AN6675	AN6680	AN6682	SVITC4011BP	2SC1846	2SC1328	2SD637	2SD389

■ TROUBLE SHOOTING



EXPLODED VIEWS



■ REPLACEMENT PARTS LIST (Mechanical)

- Notes:** 1. Part numbers are indicated on most mechanical parts.
Please use this part number for parts orders.
2.  indicates that only parts specified by the manufacturer be used for safety.
3. SP-25 (M) → [M], SP-25 (MC) → [MC]

Ref. No.	Part No.	Part Name & Description
CABINET and CHASSIS PARTS		
1	SFTG015-01	Turntable Mat
2	SFTE025-01A	Turntable
3	SFUM172-05	Panel, Cover
4	SFUM025-02	Cam, Power Switch
5	SFUP025-03E	Plate, Power Switch
6	SFQA015-02	Spring, Power Switch Cam
7	SFYB-M30	Ball, Power Switch Cam
8	SFUP025-05	Bracket, Power Supply P.C.B.
9	SFKT015-07	Knob, Power Switch
10	SFUP025-02E	Plate, Bottom
11	SFAC025-01	Cabinet
12	SFUM025-06	Cover, (B) Operation
13	SFUM025-03	Cover, (A) Operation
14	SFUM025-04	Cover, Neon
15	SFUP025-04E	Plate, Operation
16	SFUM025-05	Cam, Pitch Lock Switch
17	SFDJ025-02E	Connector, 3-PIN
18	SFUP172-59	Spacer, Point Adjustment
19	SFUP015-08Z	Plate, Slider Ass'y
20	SFMZQ20-01A	Shaft, Stator Frame Ass'y
21	SFMGQ20-01	Cover, Stator Frame Ass'y
22	SFMG520-31A	Stator Frame
23	SFMZ172-01E	FG Detector Coil Ass'y
24	SFUP025-06	Bracket, Power Transformer
25	SFGZ025-02	Cushion, Power Transformer
26 [M]	SFNN025M01	Name Plate
26 [MC]	SFNN025C01	Name Plate
27	SFNP025-01	Ornament, Pitch Control Knob
28	SFXW025-01	Spacer, Pitch Control Knob
29	SFKT025-01	Knob, Pitch Control
30	SFUP025-01	Plate, AC Cord
31	SFHK040L	Bushing, AC Cord
32	RJA9YA	AC Cord
33	SNE271S	Screw, Ground Terminal
34	SNE273-1	Knob, Ground Terminal
36	SFUM025-01	Holder Ass'y, Operation
37	SFKT015-01E	Knob, Speed Selector (33 r.p.m.)
38	SFKT015-02E	Knob, Speed Selector (45 r.p.m.)
39	SFKT015-06	Knob, Start/Stop
40	SFQA015-01	Spring, Start/Stop Knob
41	SFUP015-07	Supporter, Start/Stop Switch

Ref. No.	Part No.	Part Name & Description
42	SFUM015-11	Spacer, LED
43	SFDJ172-02E	Connector, 7-PIN
SCREWS, WASHERS, CIRCLIP and NUT		
①	XTN3+8BFZ	Screw
②	XUC3FT	Circlip
③	XTV3+8BFN	Screw
④	XTN3+8B	Screw
⑤	XTN3+6B	Screw
⑥	XTS3+10BFZ	Screw
⑦	XTS3+12BFZ	Screw
⑧	XWA2B	Washer
⑨	XSN2+12	Screw
⑩	XTN3+8B	Screw
⑪	SFXGQ20-02	Screw
⑫	SFPEV50003	Screw
⑬	XWC4B	Washer
⑭	XWA4B	Washer
⑮	XNG4ES	Nut
⑯	SFRTN30115B	Screw
⑰	XWG3	Washer
ACCESSORIES		
A1 [M]	SFNU025M01	Instruction Book
A1 [MC]	SFNU025C01	Instruction Book
A2	SFWE010	Adaptor, 45 r.p.m
A3	SFEL028-01E	Ground Wire
A4	XMM41+32	Screw
A5	SFXW028-01	Washer
A6	SFNU025-03	Instruction, Dimension Drawing
PACKING PARTS		
P1 [M]	SFHP025M01	Carton
P1 [MC]	SFHP025C01	Carton
P2	SFHH015-01	Pad, Left Side
P3	SFHH015-02	Pad, Right Side
P4	SFHD015-01	Pad, Top
P5	SFHH015-03	Pad, Front Side
P6	SFYF60A60	Polyethylene Bag, Unit
P7	SFYH40X45	Polyethylene Bag, Turntable
P8	SFYF07A10	Polyethylene Bag, Accessories
P9	SFYF09A15	Polyethylene Bag, Accessories