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ORDER NO. SD7608-1120

Service Manual

Direct Drive Automatic Player System

SL-1400-(ES), (XFE)/SL-1410-(FEE)

For additional information, Please refer to the service manual for Model No. **SL-1400-(X/XAL)**

Notes: * This service manual includes only the changes of the **SL-1400-(X/XAL)** service manual (ORDER NO. SD7607-1116)

* When servicing model **SL-1400-(ES/XFE)** or SL-1410-(FEE), this service manual and **SL-1400-(X/XAL)** (ORDER NO. SD7606-1116) service manual should be used together.

CHANGES

■ REPLACEMENT PARTS LIST

Important Safety Notice
Components identified by shaded area have special characteristics important for safety.
When replacing any of these components use only manufacturer's specified parts.

● **Additional**
○ **Deletion**

Ref. No.	Change of Parts No.		Description	Per Set (Pcs)	Remarks
	SL-1400-(X, XAL)	**SL-1400-(ES, XFE) SL-1410-(FEE)**			
F2	XBA2C10TRO	XBA2C10NS5	1A (FUSE)	1	
7	SJAA3	**SJA89**	Power cord	1	
16	SFAC140X01	**SFAC140M01**	Player case (SL-1400-ES/XFE)	1	○
		SFAC141F01	Player case (SL-1410-FEE)	1	○
16-1	SFNN140X01	**SFNN140E01**	Name Plate (SL-1400-XFE)	1	○
		SFNN140F01	Name plate (SL-1400-ES/SL-1410-FEE)	1	○
24	SFTG140-01	SFTG110	Turntable mat (SL-1410FEE)	1	
25	SFAD150X01A	**SFAD150M01A**	Dust Cover	1	
28	V1A445	SFDSAH76503	Micro Switch	1	
55	●	EPC78SMED	Cartridge	1	
55-1	●	EPS35SMED	Stylus	1	
A1	SFNU140X01	**SFNU140F01**	Printed Matter (SL-1400ES/XFE)	1	○
		SFNU141F01	Printed Matter (SL-1410-FEE)	1	○
A3	SQX7029	**PTM5061**	Warranty Card	1	
	SQX7007				
A4	SQX9049	SQX9057	Servicenters List	1	
A7	SFPEV7800	SFCZV8801	Screw, cartridge	2	
A8	SFCZV8800	○	Screw, cartridge	2	
A9	SFKO135X01E	SFKO135M01E	Overhang gauge	1	
A11	SFDK119118	○	2-PIN Plug	1	
A12	RJP17AS	○	Adaptor	1	
P1	SFHP140X01	SFHP140M01	Packing case (SL-1400ES/XFE)	1	
P1		SFHP141F01	Packing Case (SL-1410FEE)	1	
P9	SFHP140X02	○	Outside Packing Case	1	

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ORDER NO. SD7607-1116

Service Manual

Direct Drive Automatic Player System

SL-1400

(X), (XAL)

TECHNICAL SPECIFICATIONS (Specifications are subject to change without notice for further improvement.)

Turntable section

Type ..... Direct Drive Automatic Player system
Automatic return
Automatic cut
Automatic shut-off

Drive method ..... Direct Drive

Motor ..... Back Electromotive Force Frequency Generator servo DC motor employing one chip IC

Turntable platter ... Aluminum die-cast, 33 cm (13")

Turntable speeds ... 33-1/3 and 45 r.p.m.

Pitch controls ..... Individual adjustment controls, 10% adjustment range

Wow and flutter ... 0.03% W.R.M.S. (JIS C5521)
±0.042% Weighted zero to peak (DIN 45507)

Rumble ..... −50 dB (DIN 45539A)
−70 dB (DIN 45539B)

Tonearm section

Type ..... Universal tubular arm, static-balanced type

Effective length ..... 230 mm (9-1/16")

Overhang ..... 15 mm (19/32")

Friction ..... 7 mg (horizontally and vertically)

Effective mass ..... 23 g (6.5 g cartridge weight 1.5 g stylus pressure)

Arm resonance ..... 9.6 Hz (15×10^{-6} cm/dyne cartridge compliance)

Tracking error angle ... Within +3° at the point of 145 mm (5-45/64") from the center
Within +1° at the point of 55 mm (2-3/16") from the center

Adjustable stylus pressure range ..... 0 to 4 g (stylus pressure direct reading type)

Cartridge weight range 5 to 11 g

Head shell weight ..... 9.5 g

General

Power supply ..... AC ~ 110/120/220/240V , 50/60 Hz

Power consumption ..... 8 W

Dimensions (H × W × D) ..... 13.9 × 45.3 × 36.6 cm (5-1/2 × 17-3/4 × 14-3/8 inches)

Weight ..... 8.1 kg (17.8 lbs.)

National **Technics**

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

■ ASSEMBLY AND SET-UP

❶ REMOVE THE SHIPPING SCREWS.

Remove the two shipping screws and place them in the retaining holes for future use, when the player must again be transported. (See Figs. 2 and 3)

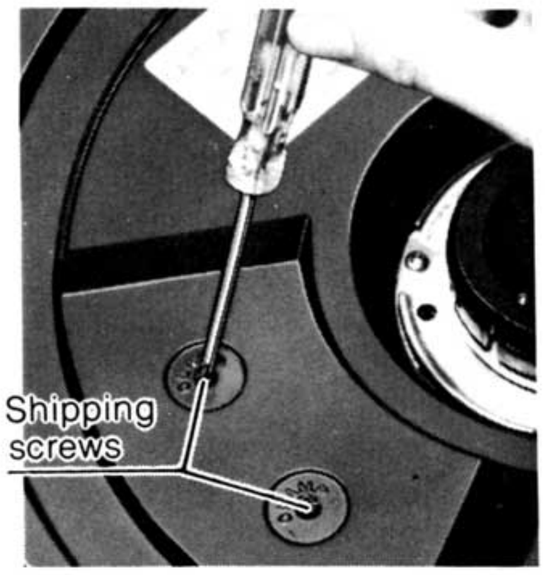


Figure 2

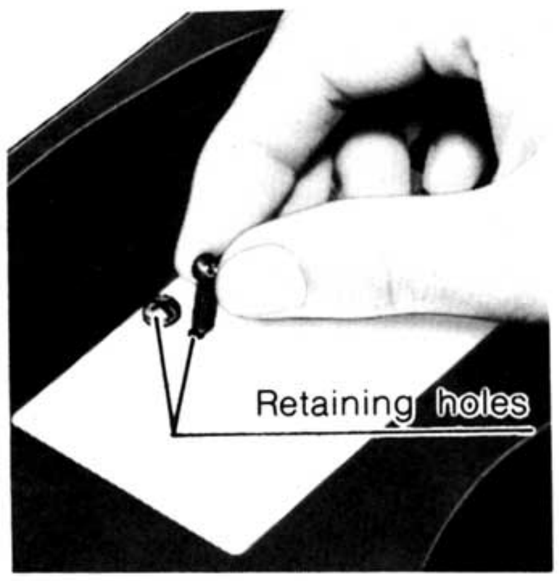


Figure 3

❷ APPLY TWO OR THREE DROPS OF OIL TO THE MOTOR SHAFT USING THE FURNISHED OIL CONTAINER. (See Fig.4)

Although the unit has been lubricated before shipping from the factory, apply a few drops of oil to the motor shaft for assurance. After that, application of two or three drops of oil once every 2000 hours' operation or so is sufficient. The time interval is much longer than that of the former type motors (200–500 hours), so do not apply too much oil, nor more frequent than necessary. Never use any other type of oil.

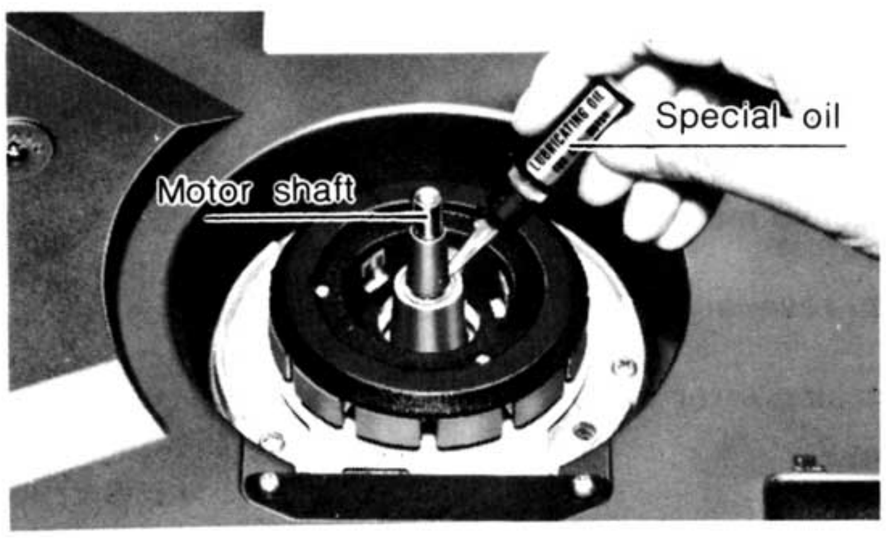


Figure 4

❸ REMOVE THE PROTECTIVE COVER FROM THE ROTOR OF THE TURNTABLE PLATTER. (See Fig.5)

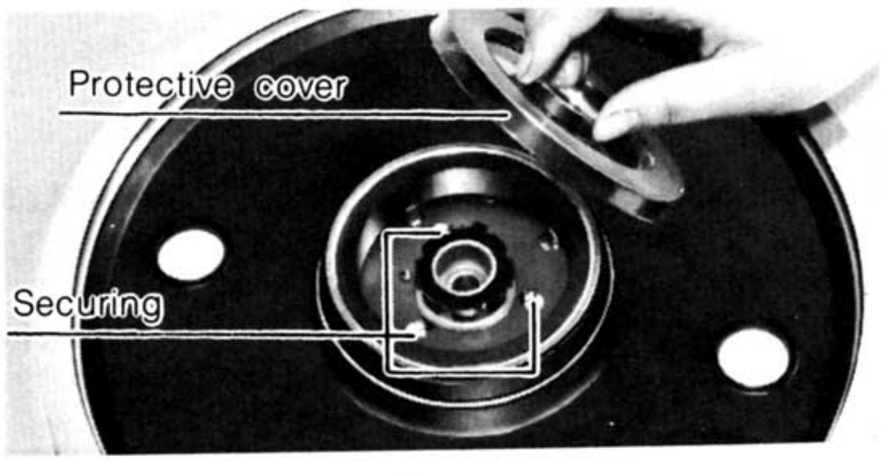


Figure 5

❹ INSTALLATION OF THE TURNTABLE PLATTER.

1. Place the turntable platter on the motor shaft (center spindle)
2. Place the turntable mat on the platter.

Note:

1) After having placed the turntable mat, manually rotate the turntable platter clockwise (in the direction shown by the arrow) about 10 times, with the tonearm moved towards the center spindle to allow it to automatically return one time. (See Fig. 6) This operation is to ensure that there is no engagement or displacement between the tonearm driving section and the automatic returning mechanism, which may have taken place during transit.

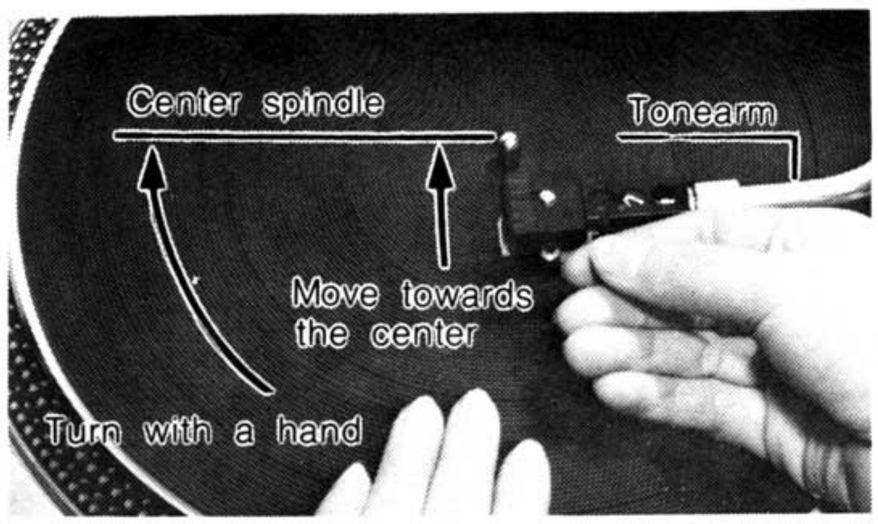


Figure 6

2) The rotor is connected to the reverse surface of the turntable platter. (The magnet of the motor is attached to the turntable platter.) To maintain optimum performance as specified, extra care should be taken to prevent adhesion of dust or iron filings to the magnet and not to damage the magnet by dropping it from high positions.

3) Do not remove the three screws for securing the magnet. (See Fig. 5)
Should the position of the fixed magnet be altered by loosening the securing screws, the rated performance of the unit can not be guaranteed.

❺ ADJUSTMENTS OF THE HORIZONTAL "0" BALANCE AND THE STYLUS PRESSURE.

1. Insert the balance weight onto the rear shaft of the tonearm (See Fig.8)
2. Remove the stylus cover, if your cartridge has.
3. Release the arm clamp (Fig.7) and detach the tonearm from the arm rest to free the tonearm.

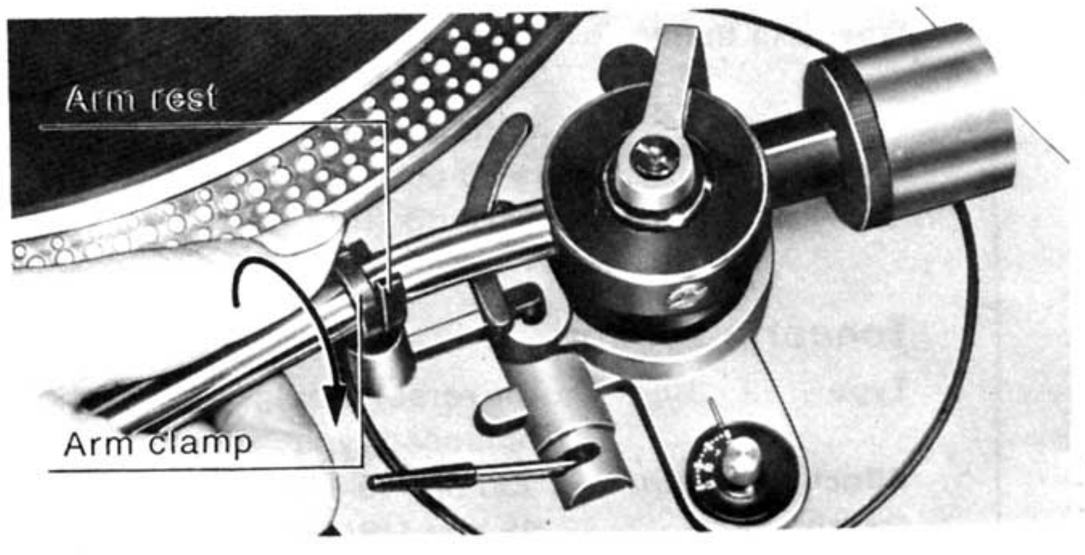


Figure 7

4. Turn the entire balance weight clockwise (indicated by the arrow "A") or countrerclockwise (indicated by the arrow "B") until the tonearm is approximately balanced horizontally. (See Fig. 8)

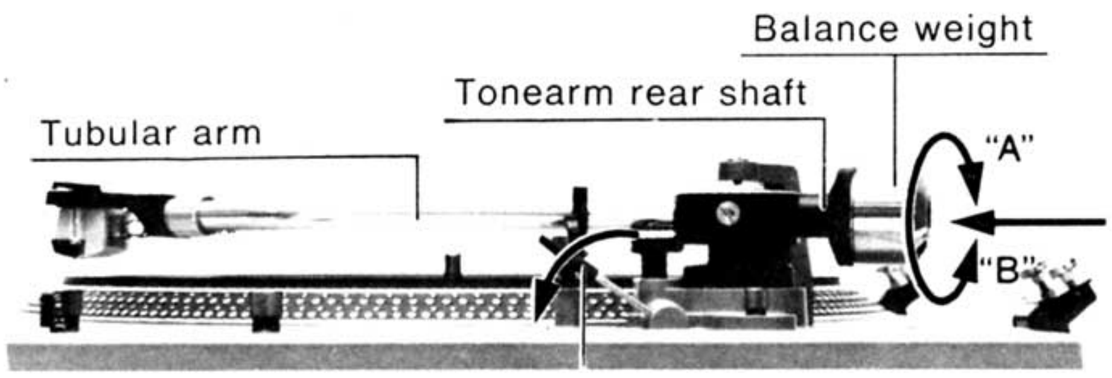


Figure 8

5. After the tonearm is horizontally balanced, temporarily fix the tonearm by the arm clamp. (Refer Fig.9)
   Hold the balance weight stationary with fingers as shown in Fig. 9 and rotate only the stylus pressure ring to bring the numeral 0" of the ring into alignment with the center line on the tonearm rear shaft. (The adjustment of the horizontal balance is now completed.)

Note:

1) During the adjustment of the horizontal balance, be sure that the stylus tip of the cartridge does not contact the turntable mat or player case.
2) Ensure that the anti-skating knob is at "0" position. (See Fig. 9
   There are cases where the tonearm may sway or flow slightly at the position of "0" due to the highly sensitive rotational part of the tonearm, but this side force is trivial and presents no inconvenience.
3) Ensure that the cueing lever is in the lowered position as shown in Fig. 8.
4) Make certain that the speed selector is in "•" position. In the "•" position, the balance adjustment is easily made as the turntable platter remains stationary.

6. After adjusting the horizontal balance, turn the balance weight clockwise in the direction of the arrow and align the correct stylus pressure. (Follow the Cartridge Manufacturer's recommendation.) (See Fig.10)

Note:

1) As the stylus pressure ring rotates together with the balance weight, proper stylus pressure can be selected by directly reading the graduated ring.
2) Set the stylus pressure to the maximum value of your cartridge in cases where the record has an extremely high recording level, or where the unit is operated in a room at low temperature or in places in which the record player is liable to be subjected to vibrations.

Set the anti-skating force control to the same value as that set for stylus pressure. (See Fig.11)

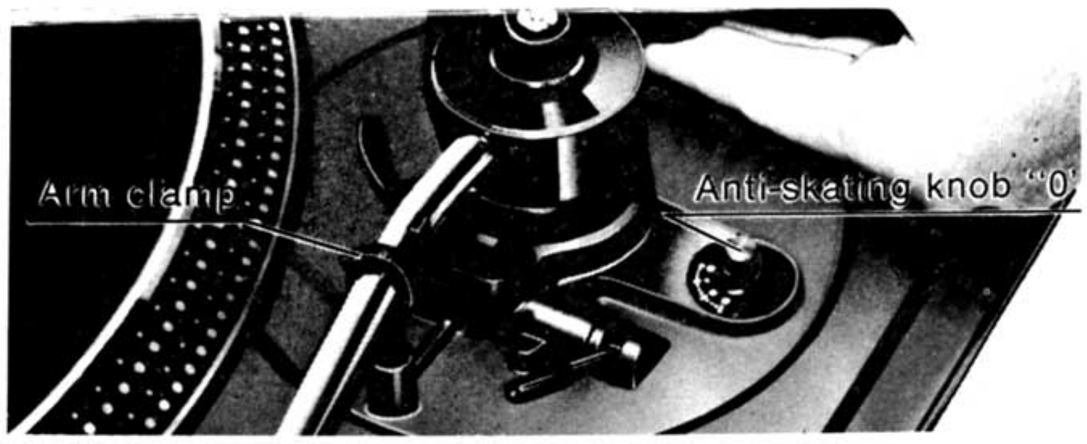


Figure 11

Loosen the securing screws, and place the dust cover into position from directly above, holding both sides, after which retighten the screws securely.

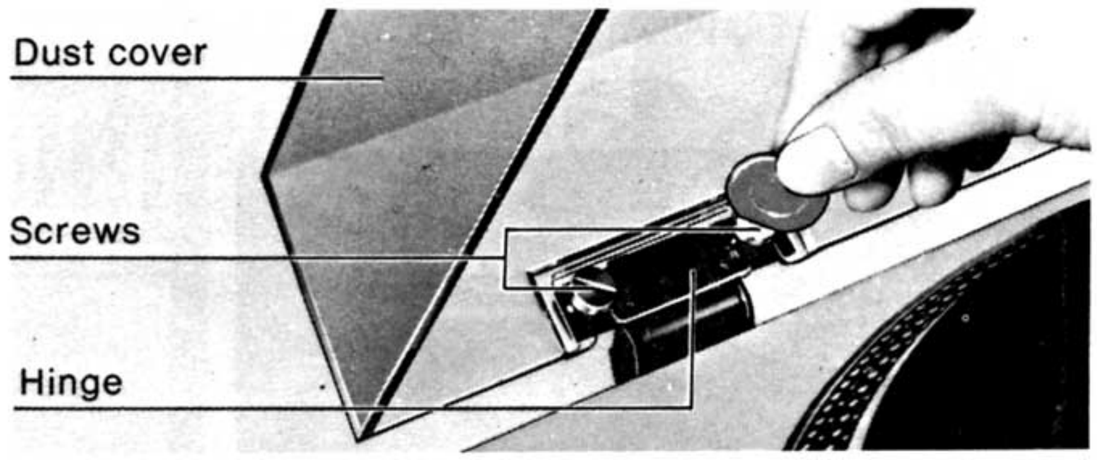


Figure 12

Note:

In rare cases the dust cover may become the cause of "HOWLING" from vibrations or sound pressure from the speakers. In such cases we recommend that you close the dust cover or remove it during playing.
Opening or closing of the dust cover during playing should be made as gently as possible, since this may not only cause harmful player vibrations, but also result in skipping of the stylus.

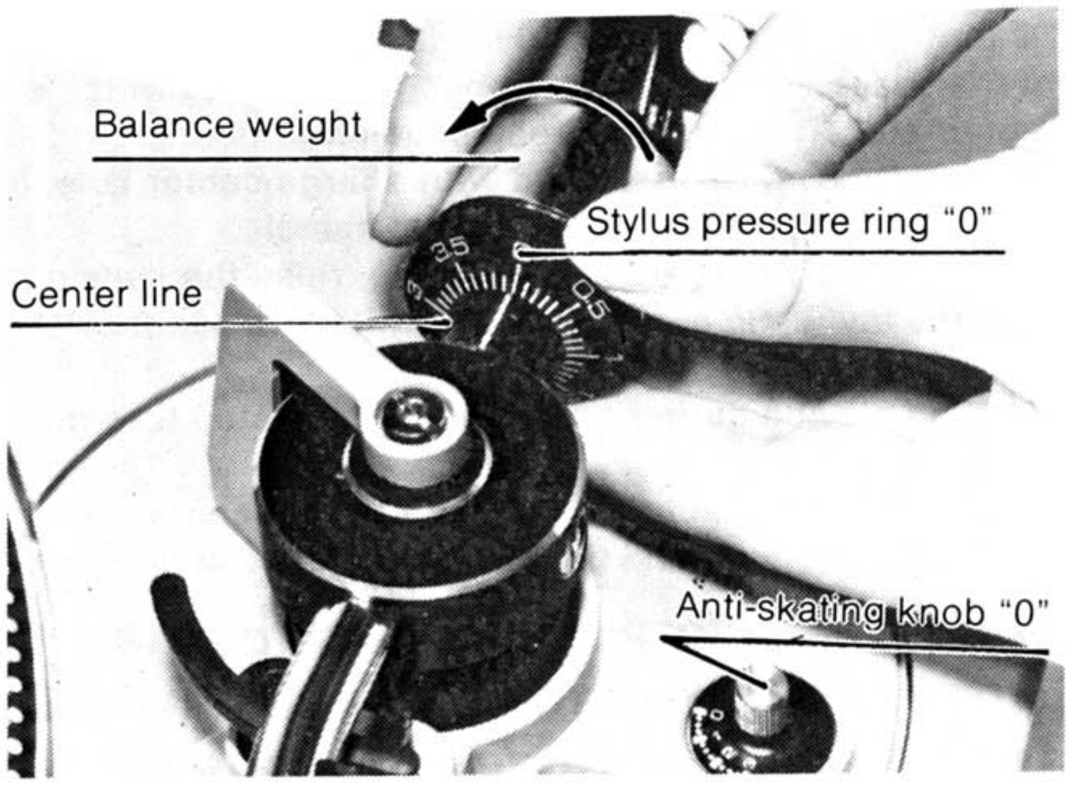


Figure 9 . 10

■ HOW TO PLAY

❶ SET THE SPEED SELECTOR TO THE DESIRED RECORD SPEED. (See Fig.13)

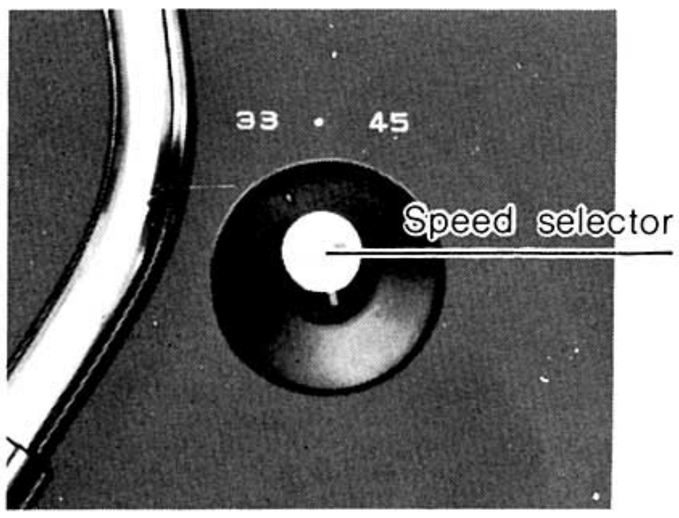


Figure 13

❷ RELEASE THE ARM CLAMP. (Refer to Fig.7)

❸ LIFT THE CUEING LEVER AS INDICATED BY THE ARROW. (See Fig.14)

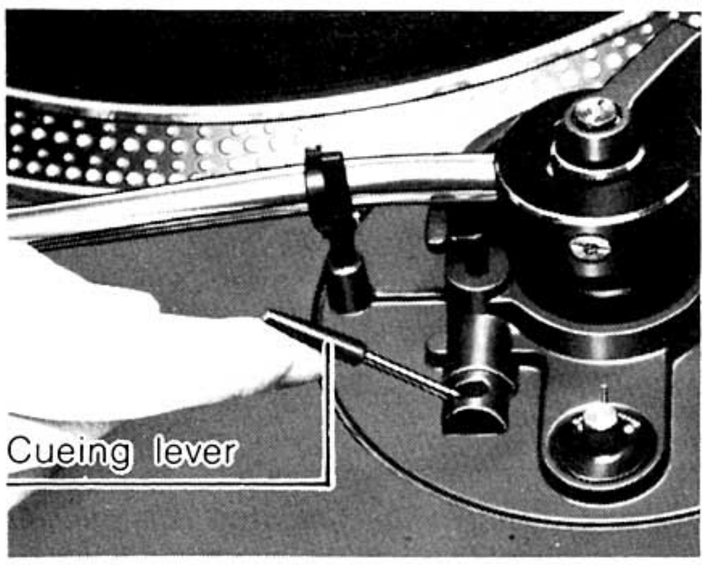


Figure 14

❹ MOVE THE TONEARM OVER THE RECORD AND THEN LOWER THE CUEING LEVER. THE TONEARM WILL DESCEND SLOWLY ONTO THE RECORD AND PLAY WILL BEGIN.

Note:

1) When the tonearm is moved towards the record, the power is turned on and the turntable will start rotating.
   If the speed selector is positioned at "*" , the turntable will not rotate, although the strobe illuminator is lit.
2) If you play a 45 r.p.m. record with a large center hole, use the furnished adaptor on the center spindle.
3) For temporary suspension of playing, raise the cueing lever, and the stylus tip of the cartridge will be raised from the record.
4) To stop playing during cperation, pull the stop lever toward you.
   The tonearm will automatically return to the arm rest with the power shut off, and the turntable platter stops rotating.

❺ WHEN FINISHED PLAYING, THE TONEARM WILL AUTOMATICALLY RETURN TO THE ARM REST (AUTO-RETURN) WITH THE POWER SHUT OFF, AND THE TURNTABLE PLATTER WILL STOP ROTATION.

■ ADJUSTMENTS

❶ ADJUSTMENT OF THE ARM LIFT HEIGHT.

(See Figs.15 and 16)

The arm lift height (distance between the stylus tip and record surface when cueing lever is raised) has been adjusted at the factory before shipping to approximately 5 to 10 mm (3/16" to 25/64").
If the clearance becomes too narrow or too wide because of the physical size of the different cartridges on the market turn the adjustment screw clockwise or counterclockwise, at the same time pushing the arm lift down.

Clockwise rotation
—distance between the record and stylus tip is reduced.

Counterclockwise rotation
—distance between the record and stylus tip increases.

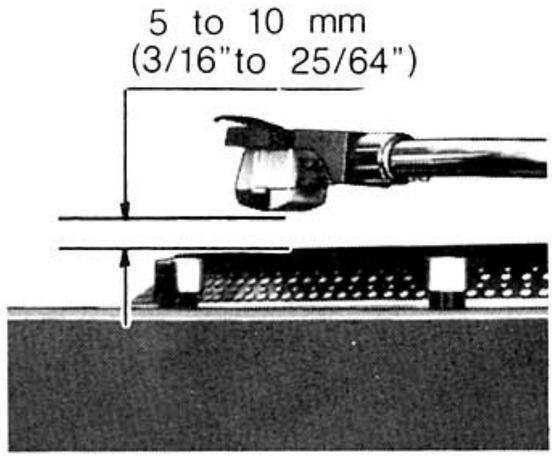


Figure 15

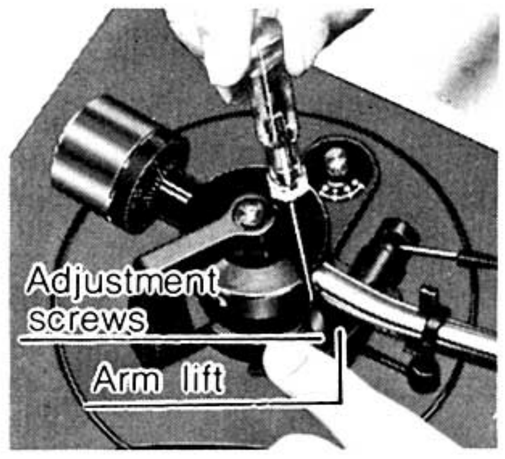


Figure 16

Note:
As the adjusting screw has a hexagon head, be sure to make the adjustment while depressing the arm lift.

❷ ADJUSTMENT OF TONEARM AUTOMATIC RETURN POINT. (See Fig.17)

In some cases, the tonearm will tend to return to its rest position before the record has finished playing. In other cases, it will not return to the rest position even after the record has finished. Rotation of this screw in the proper direction will correct either condition.

Clockwise rotation
The tonearm will return to its rest later.

Counterclockwise rotation
The tonearm will return to its rest earlier.

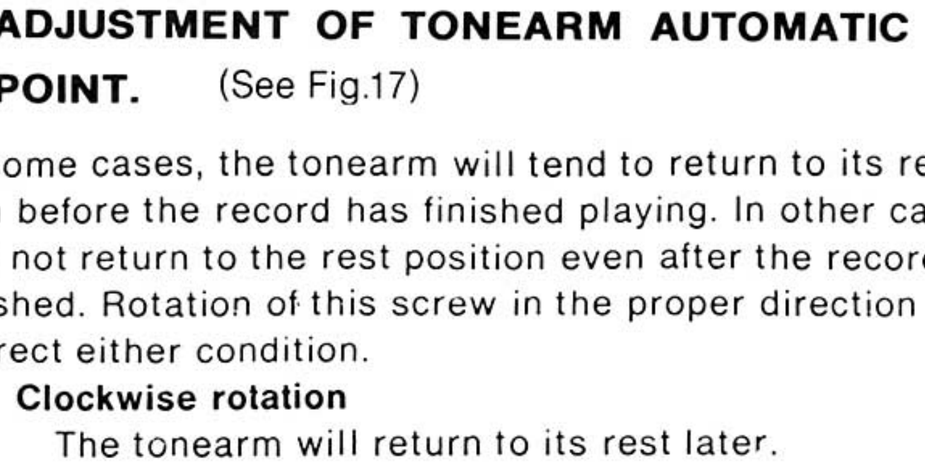


Figure 17

❸ SPEED ADJUSTMENT (WITH PITCH CONTROL KNOBS)

Strobe dots are set on the tapered rim of the turntable platter according to the power frequency and the number of revolutions of the records. Make adjustment, refering to strobe dot indication.

1. Set the speed selector to the number of revolution to be adjusted.
2. Release the arm clamp and raise the cueing lever.
3. Move the tonearm to a slight extent towards the turntable platter.
   The strobe illuminator/pilot lamp will be lit for illuminating the strobe dots.
4. While turning the pitch control knobs either to " + " side or " − " side, adjust to such an extent that the strobe dots of the turntable look as if they are stationary.

The state under which the strobe dots seem to be stationary represents the correct number of revolutions.

" + " direction

This increases the speed of the turntable rotation, and the strobe dot pattern seems to flow in the same direction as the rotational direction of the turntable platter.

" − " direction

This decreases the speed of the turntable rotation, resulting in a state opposite to that in the " + " direction.

Note:

Strobe dot pattern.

The strobe illuminator/pilot lamp of this unit employs the commercially available power source. The frequency of such power source, when actually measured, has a fluctuation of about 0.2%. As such a fluctuation of the power source affects the strobe illuminator, the strobe dot pattern also seems to fluctuate to a certain extent. But the unit is not affected by the fluctuations of the power source, since a D.C. motor is employed.

5. If the desired speed can not be obtained by the variable pitch controls, turn the speed adjusting screws with a screw driver for further adjustments. (See Fig.18)

Clockwise

—The rotational speed is decreased.

Counterclockwise

—The rotational speed is increased.

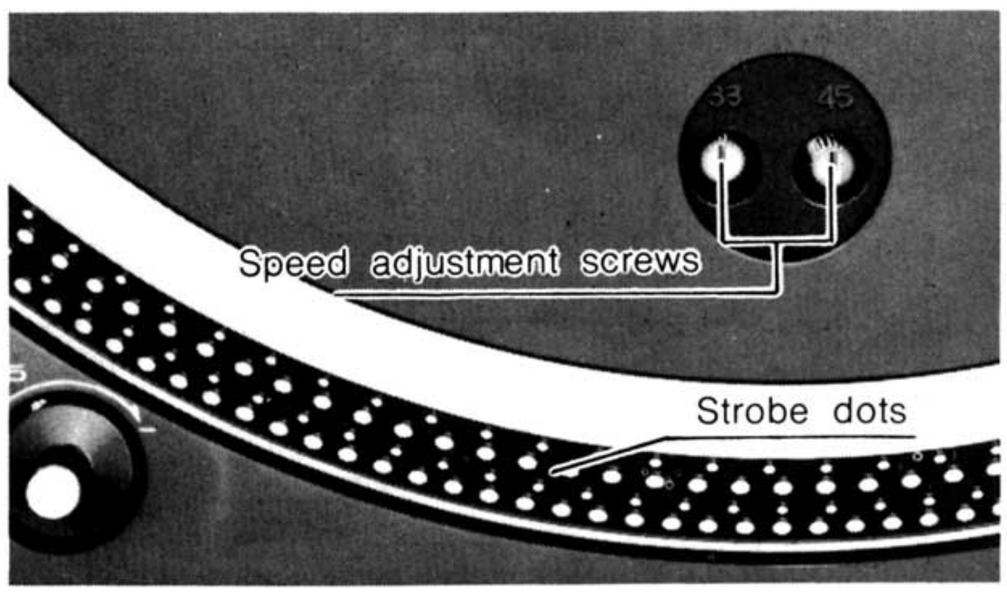
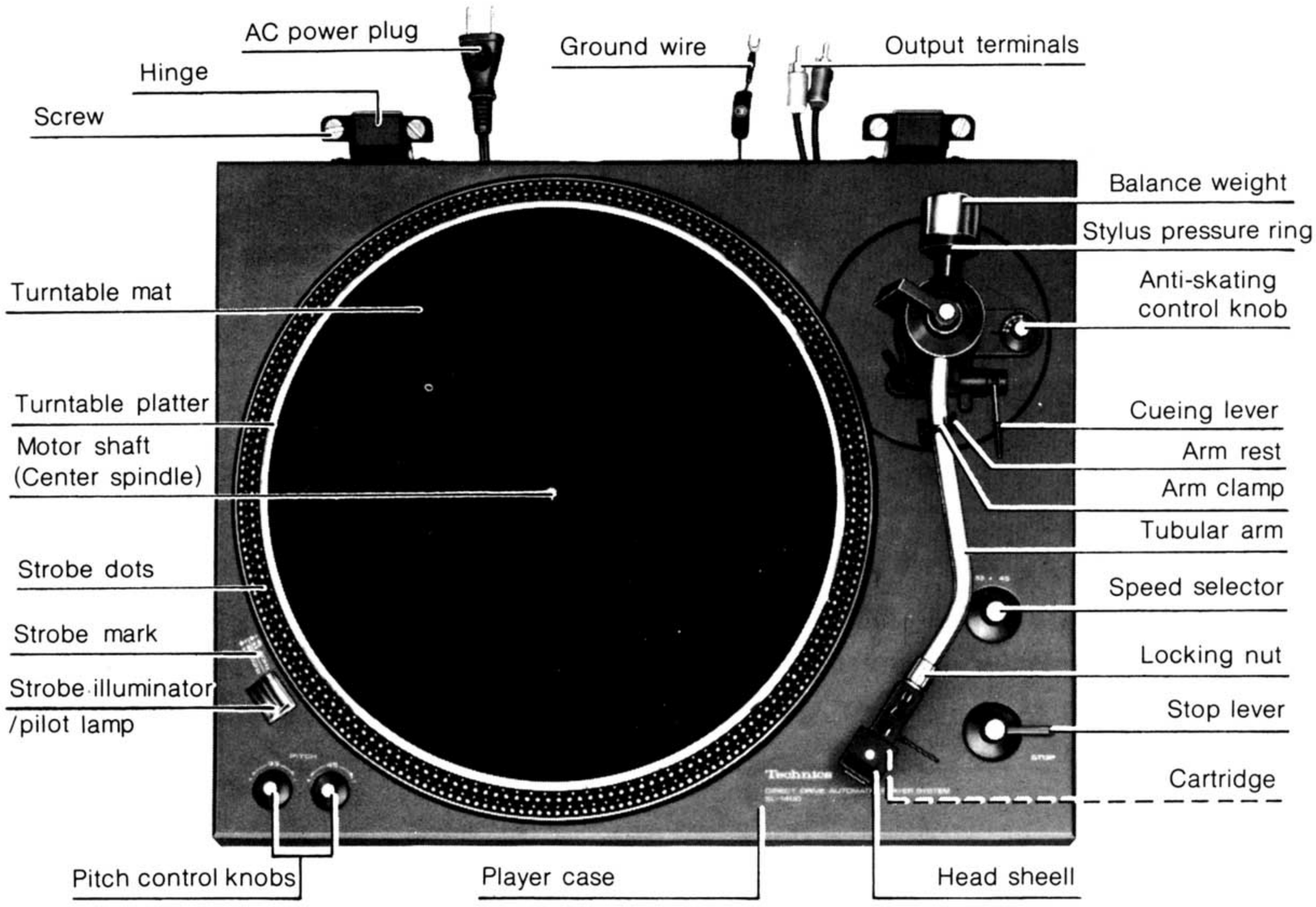
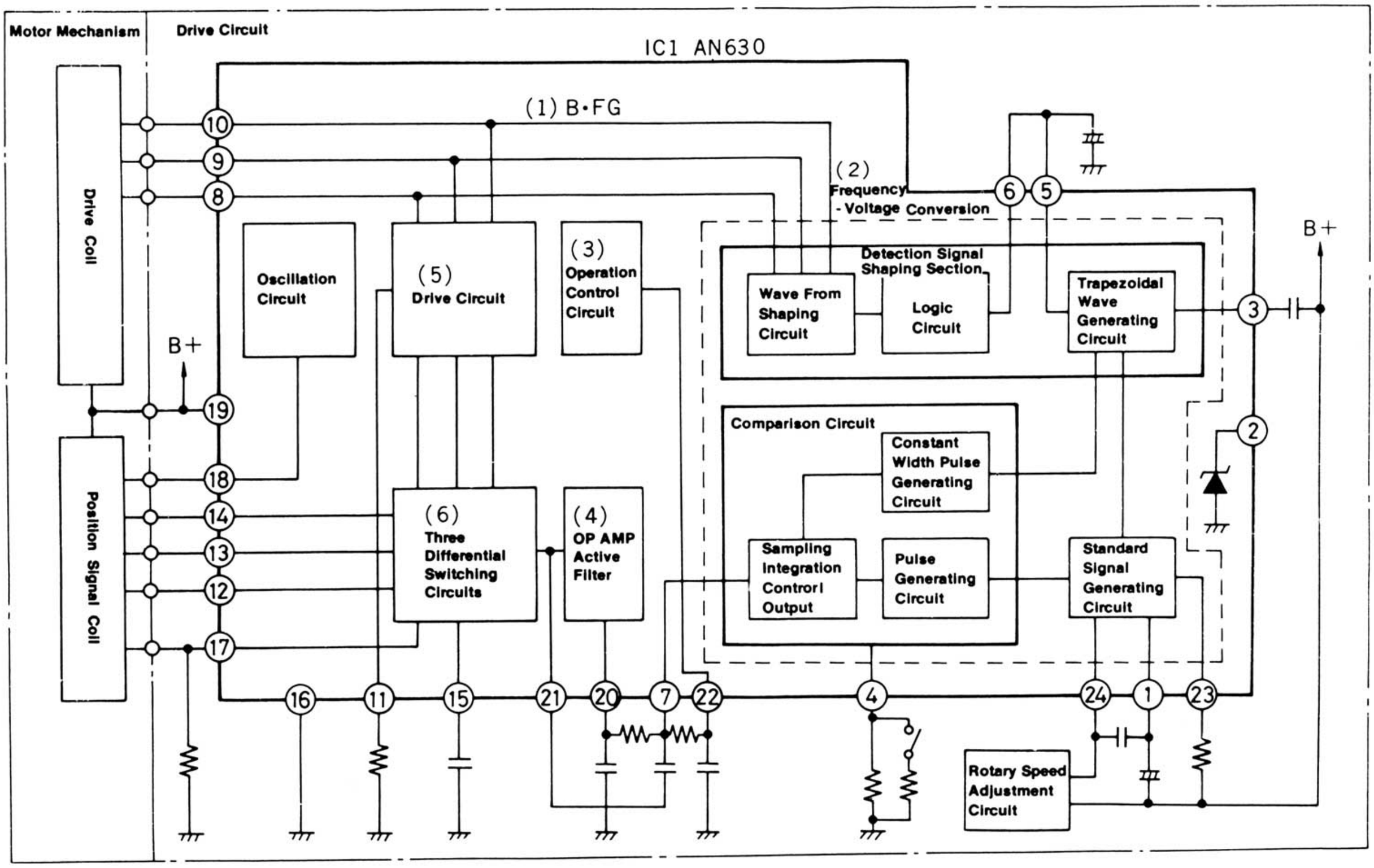


Figure 18

■ PARTS IDENTIFICATION



■ BLOCK DIAGRAM



■ OPERATION PRINCIPLES OF THE SL-1400

This unit, like the SL 1300 has a rational motor structure, and its drive control circuit is the B.F.G. type (Back TECHNICAL EXPLANATION electromotive force frequency generator) which is constructed on a single integrated circuit (IC) chip (AN630). The following is a block diagram of the IC (AN630) for which the operating principle will be briefly explained.

■ OPERATING PRINCIPLE

The back electromotive force, which is generated by the drive coil winding according to the rotation of the motor, is detected and converted to a frequency signal that is proportional to the numder of revolutions.
Conversion is performed by a wave-shaping circuit and a logic circuit (This is referred to as the B.F.G. method).
This frequency signal is compared with a standard signal by means of a frequency-voltage conversion circuit which converts it to a voltage signal in order maintain a constant number of revolutions. After removing unnecessary frequency components, with the operational-amplifier active filter, from this voltage signal, it controls the current flow in three differential switching circuits. As a result, the flow of current in the drive coil winding is always constant maintaining the correct rotational speed. Control of the rotational speed can be performed by means of adjusting the standard signal generator circuit according to the rotational speed adjustment cricuit.

■ EXPLANATION OF EACH PART

1. B.F.G. METHOD (BACK ELECTROMOTIVE FORCE FREQUENCY GENERATOR)

Making use of the back electromotive force that is generated in the ddrive coil winding of the motor as a frequency generator, the frequency of the frequency generator is converted to the number of revolutions for the turntable.
After shaping the wave form of this back electromotive force, it is composed logically, and a frequency is generated that is proportional to the number of revolutions. This is the use of the B.F.G. Making use of the drive coil winding, frequency generator coil windings and magnets are not necessary, yielding a motor structure that is very compact.

2. FREOUENCY-VOLTAGE CONVERSION CIRCUIT

Being composed of a trapezoidal wave generating circuit, a pulse generating circuit and a sampling integration circuit, the B.F.G. output frequency is converted to a voltage, and control output voltage is generated in order to maintain the rotational speed of the turntable at a constant level.

3. OPERATION CONTROL CIRCUIT

The operation control circuit functions as a control output voltage control keeping the rotational speed of the turntable constant with regard to the start of turntable operation and the operation of the mechanism. With this circuit, transient response characteristics and starting characteristics are very good.

4. OPERATIONAL AMPLIFIER (OP AMP) ACTIVE FILTER

Because of using an operational amplifier in the active filter, an ideal filter operation is possible.
As a result, such high performance as a signal-to-noise (SN) ratio of 60 dB (IEC-B) and a wow-and-flutter level of 0.03% (WRMS) have been achieved.

5. DRIVE CIRCUIT

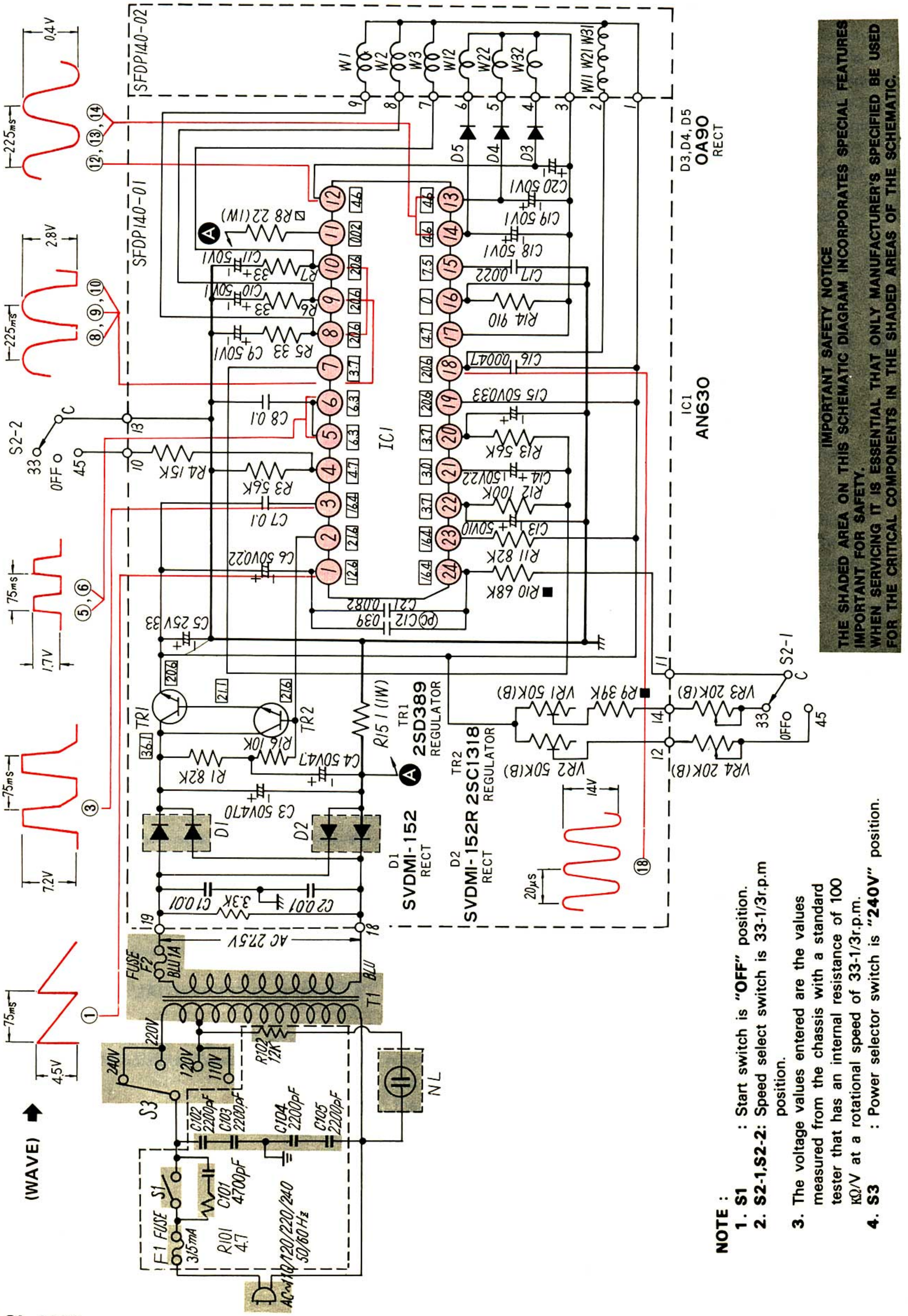
By incorporating a large copacity power transistor in the integrated circuit, a starting torque of 1 kg-cm can be obtained. By means of this large starting torgue, prompt starts have been realized.

6. THREE DIFFERENTIAL SWITCHING CIRCUITS

By means of the signal from the position signal coil, the starting circuit power transistor selector operates, obtaining smooth rotation.

■ SCHEMATIC DIAGRAM--- MODEL SL-1400

This schematic diagram may be modified at any time with the development of new technology



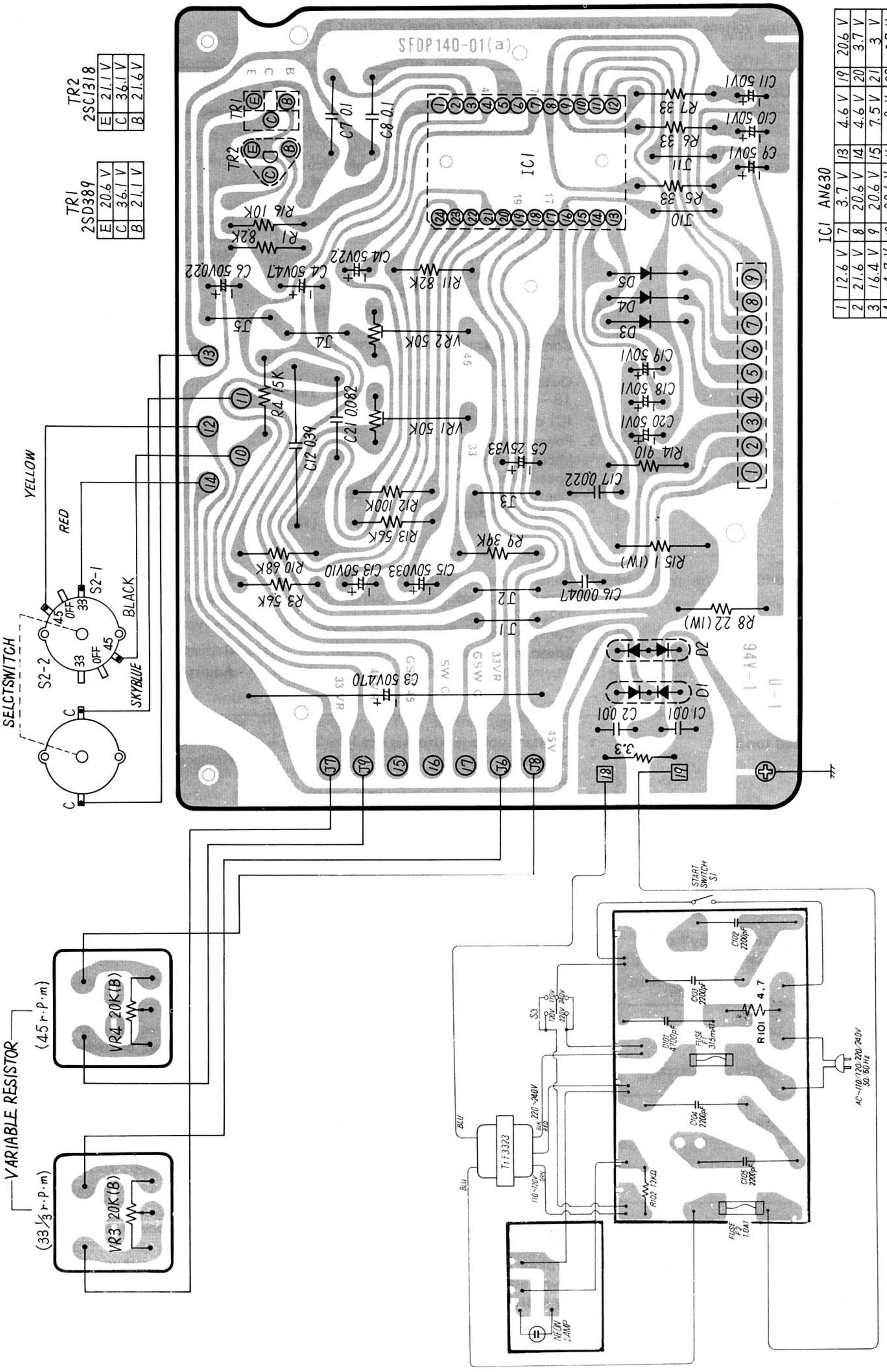
IMPORTANT SAFETY NOTICE

THE SHADED AREA ON THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR SAFETY. WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURER'S SPECIFIED BE USED FOR THE CRITICAL COMPONENTS IN THE SHADED AREAS OF THE SCHEMATIC.

NOTE :

1. **S1** : Start switch is **"OFF"** position.
2. **S2-1,S2-2:** Speed select switch is **33-1/3r.p.m** position.
3. The voltage values entered are the values measured from the chassis with a standard tester that has an internal resistance of 100 KΩ/V at a rotational speed of 33-1/3r.p.m.
4. **S3** : Power selector switch is **"240V"** position.

■ CIRCUIT BOARD WIRING VIEW ·····MODEL SL-1400

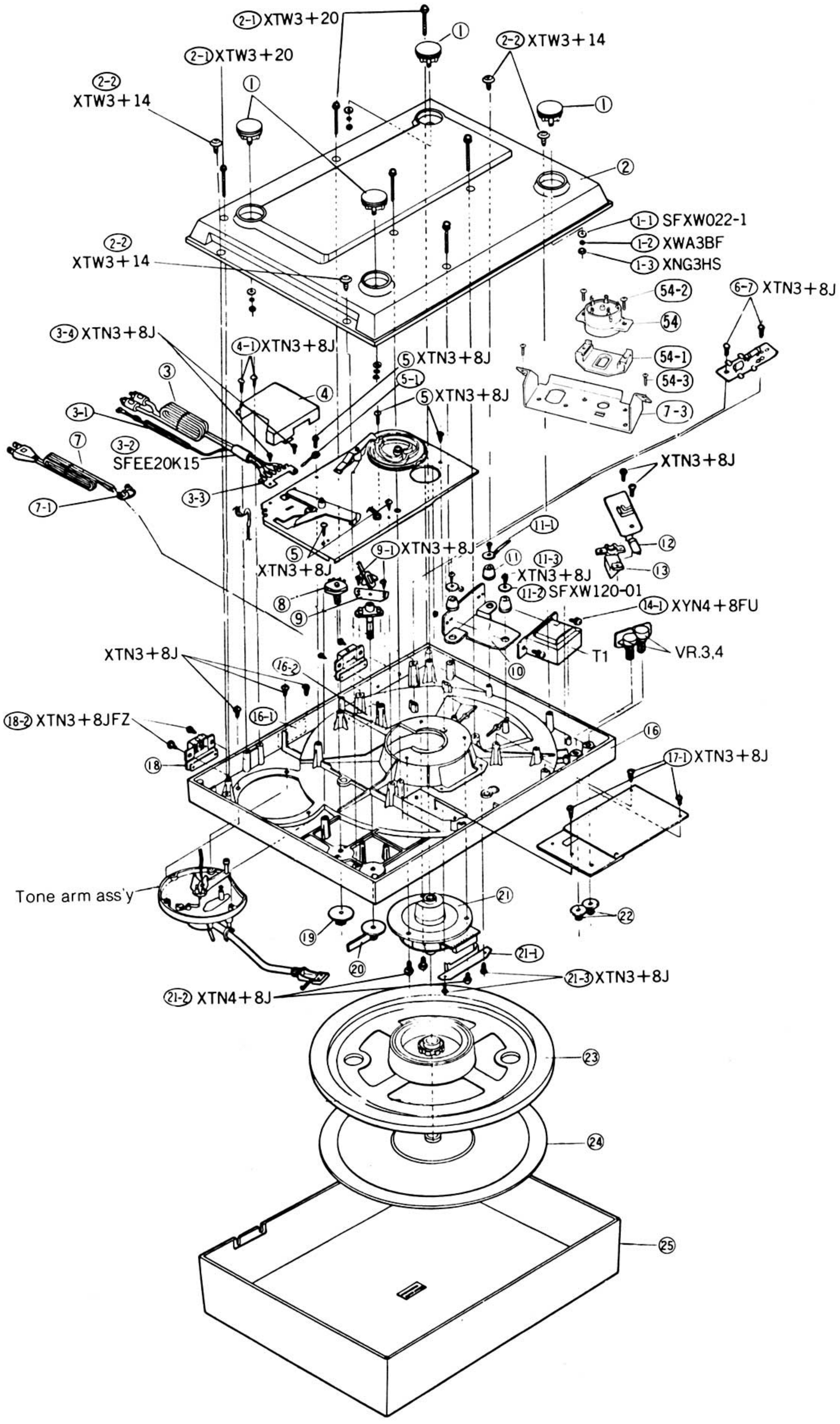


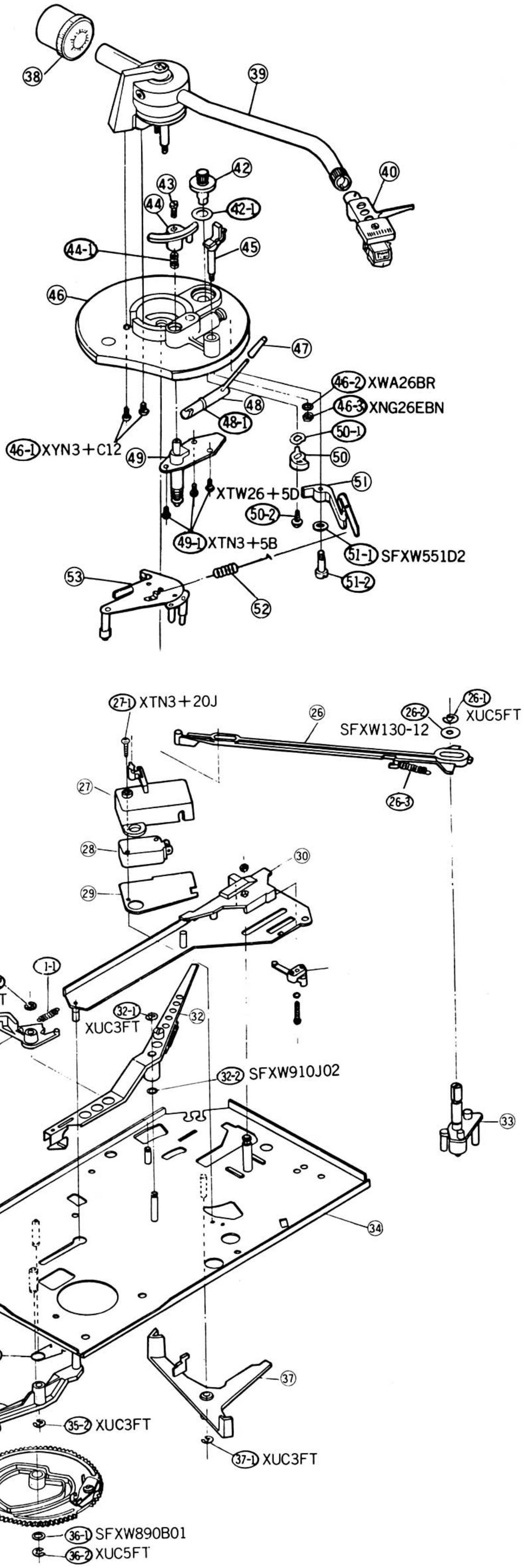
■ TROUBLE SHOOTING GUIDE

* Except when checking voltage, disconnect the power cord before repair without fail.

TROUBLE	CAUSE	REMEDY
Turntable Speed A. Switching on does not cause turntable to rotate.	Remove back cover and, using DC voltmeter, check printed base voltage: 1. No output of constant-voltage circuit (between Tr1 emitter and terminal 1) is found. (1) No output on secondary of transformer. * Cord disconnected. * Soldered improperly. Fuse disconnected. * Power transformer defective. (2) Output found on secondary of transformer. * Constant-voltage circuit parts (IC1. Tr1, Tr2) defective. 2. Output of constant-voltage circuit is 18～23V. * IC1 defective. 3. Power Switch is not ON. * Micro switch defective. 4. Speed selector switch defective. * Contact faulty * Soldered improperly.	* Replace cord. * Solder securely. * Replace fuse. * Replace power transformer. * Replace IC1,or TR1,or TR2. * Replace IC1. * Replace micro switch. * Replace speed selector switch. * Solder securely.
B. Turntable speed too fast.	1. Constant-voltage output is not 18～23V. * Constant-voltage circuit parts (IC1, Tr1, Tr2) defective. 2. Constant-voltage output is 18～23V. * Speed maladjusted.	* Replace IC1 or TR1 or TR2. * Replace IC1. * Adjust semi-fixed resistor VR1 & VR2.
C. Turntable speed too slow.	1. Constant-voltage output is not 18～23V. * Constant-voltage parts (IC1 , Tr1, Tr2, defective.) 2. Constant-voltage output is 18～23V. * IC1 defective. * Speed unadjusted.	* Replace IC1 or TR1 or TR2. * Replace IC1. * Adjust semi-fixed resistor VR1 & VR2.
D. Turntable speed varies too much.	* IC1 defective.	* Replace IC1.
E. Turntable, after stopped by hand, will not turn or starts turning but will stop soon.	* IC1 defective.	* Replace IC1.
F. Operative at only one of two speeds. (33-1/3 rpm, 45 rom)	* Selector switch defective. * Lead disconnected or unsoldered. * Contact of Vr1, Vr2 insufficient.	* Replace selector switch. * Replace lead, or solder securely. * Replace VR1 or VR2.
G. When actuating, turntable speed is unsteadly for along time.	* IC1 defective.	* Replace IC1.
Noise Offensive noise is hears.	* Power transformer makes loud noise of vibration. * Broken part of rotor magnet of iron chips attracted by magnet and rubbed by motor case.	* Replace power transformer. * Remove iron chips.

■ EXPLOBED VIEW OF PLAYER

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42-1
44-1
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46-2 XWA26BR
46-3 XNG26EBN
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48-1
50-1
50
46-1 XYN3+C12
49
51
XTW26+5D
50-2
49-1 XTN3+5B
51-1 SFXW551D2
53
51-2
52
27-1 XTN3+20J
26
26-2
26-1
XUC5FT
SFXW130-12
27
26-3
28
30
29
1-1
31-2
XUC3FT
32-1
32
XUC3FT
31
32-2 SFXW910J02
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34
35-1
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35-2 XUC3FT
37
37-1 XUC3FT
36
36-1 SFXW890B01
36-2 XUC5FT

■ REPLACEMENT PARTS LIST

Important Safety Notice
Components identified by shaded area have special characteristics important for safety.
When replacing any of these components use only manufacturer's specified parts.

NOTE : 1. Part numbers are indicated on most mechanical parts.
Please use this part number for parts orders.

Ref. No.	Part No.	Part Name & Description	Per Set		Remarks
INTERGRATED CIRCUIT					
IC1	AN630	Intergrated Circuit	1		
TRANSISTORS					
TR1	2SD389-P	Transistor	1		
TR2	2SC1318-R	Transistor	1		
DIODES					
D1	SVDMI152	Diode	1		○
D2	SVDMI152R	Diode	1		○
D3, 4, 5	OA90	Diodes	3		
TRANSFORMER					
T1	F3323	Power Transformer	1		
FUSE					
F1	XBA2C03TR0	0.3A (Fuse)	1		
F2	XBA2C10TR0	1A (Fuse)	1		
VARIABLE RESISTORS					
VR1, 2	EVLV3AS15B54	50kΩ, Pitch controls	2		
VR3, 4	EVHGGAF15B24	20kΩ, Speed Adjustment	2		
RESISTORS					
R1	ERD25TJ822	8.2kΩ, 1/4W, ±5%, Carbon	1		
R3	ERD25TJ562	5.6kΩ, 1/4W, ±5%, Carbon	1		
R4	ERD25TJ153	15kΩ, 1/4W, ±5%, Carbon	1		
R5, 6, 7	ERD25TJ330	33Ω, 1/4W, ±5%, Carbon	3		
R8	ERX1ANJ2R2	2.2Ω, 1W, ±5%, Metallic	1		
R9	ERO25CKF3902	39kΩ, 1/4W, ±1%, Metallic	1		
R10	ERO25CKF6802	68kΩ, 1/4W, ±1%, Metallic	1		
R11	ERD25TJ823	82kΩ, 1/4W, ±5%, Carbon	1		
R12	ERD25TJ104	100kΩ, 1/4W, ±5%, Carbon	1		
R13	ERD25TJ563	56kΩ, 1/4W, ±5%, Carbon	1		
R14	ERD25TJ911	910Ω, 1/4W, ±5%, Carbon	1		
R15	ERX1ANK1R0	1Ω, 1W, ±5% Metallic	1		
R16	ERD25TJ103	10kΩ, 1/4W, ±5%, Carbon	1		
R101	ERD50TJ4R7	4.7Ω, 1/2W, ±5%, Carbon	1		
R102	ERG1ANJ123	12kΩ, 1W, ±5%, Metallic	1		
CAPASITORS					
C1, 2	ECQM1H103KZ	0.01μF, 50WV, ±10%, Polyester	1		
C3	ECEB50V470	470μF, 50WV, ±10%, Electrolytic	1		
C4	ECEA50V4R7	4.7μF, 50WV, ±10%, Electrolytic	1		
C5	ECEA25V33	33μF, 25WV, ±10%, Electrolytic	1		
C6	ECEA50MR22R	0.22μF, 50WV, ±10%, Electrolytic	1		
C7, 8	ECQM1H104KZ	0.1μF, 50WV, ±10%, Polyester	2		
C9, 10, 11	ECEA50V1	1μF, 50WV, ±10%, Electrolytic	3		
C12	ECQC2394KN	0.39μF, 200V, ±10%, Polyester	1		
C13	ECEA50M10R	10μF, 50WV, ±10%, Electronic	1		
C14	ECEA50M2R2	2.2μF 50WV, ±10%, Electronic	1		
C15	ECEA50MR33R	33μF, 50WV, ±10%, Electronic	1		
C16	ECQM1H472KZ	0.47μF, 50WV, ±10%, Polyester	1		
C17	ECQM1H223KZ	0.022μF, 50WV, ±10%, Polyester	1		
C18, 19, 20	ECEA50V1	1μF, 50WV, ±10%, Electrolytic	3		
C21	ECQM1H823KZ	0.082μF, 50WV, ±10%, Polyester	1		
C101	ECQE10333KZ	0.033μF, 1000V, ±10%, Polyester	1		
C102, 103 104, 105	ECQW8A222M	0.0022μF, 800V, ±20%, Polyester	4		
CABINET AND CHASSIS PARTS					
1	SFGC130-01E	Audio insulators	4		
1-1	SFXW022-1	Washer	4		
1-2	XWA3BFM	Washer	4		
1-3	XNG3HS	Nut	4		
2	SFAU130-02	Bottom case	1		
2-1	XTW3+20	Screw	7		
2-2	XTW3+14	Screw	3		
3	SFDH028-01	Phono cord	1		
3-1	SFEL028-01E	Earth cord ass'y	1		
3-2	SFEE20K	Tube	2		
3-3	SFER130-01	Terminal strip, Phono cord	1		
3-4	XTN3+8J	Screw	2		
4	SFUP140-04	Shield cover	1		○
4-1	XTN3+8J	Screw	2		
5	XTN3+8J	Screw	5		
5-1	SHE36-2	Holder, cord	1		
6-1	SFDZ023X01	Holder, Fuse	4		
6-7	XTN3+8J	Screw	4		
7	SJAA3	Power cord	1		
7-1	SFHK040L	Bushing, Power cord (SL-1400-X)	1		
7-1	SFSR5N4	Bushing, Power cord (SL-1400-XAL)	1		
7-3	SFUP130G01	Fining Plate, Power cord (SL-1400-XAL)	1		
7-3	SFUP140X01	Fixing Plate, Power cord (SL-1400-X)	1		○
8	ESRE123K20C	Selector switch	1		
9	SFUP140-01	Bracket, Cut lever	1		○
9-1	XTN3+8J	Screw	2		
10	SFUP130-03	Bracket, Power Transformer	1		
11	SFGC827M01	Cushion rubber, Power Transformer	3		
11-1	SHE36-2	Holder , cord	1		
11-2	SFXW120-01	Washer	2		
11-3	XTN3+8J	Screw	3		
12	SFDNE2HU	Neon Lamp	1		
13	SFUM130-01	Neon Lamp base	1		
14-1	XSN4+8	Screw	2		
14-2	XNG4HS	Nut	2		
14-3	XNG4HS	Nut	2		
14-4	XWA4BF	Washer	2		
14-5	XSN3+8S	Screw	2		
16	SFAC140X01	Player case	1		○
16-1	SFNN140X01	Name Plate (SL-1400-(X))	1		○
16-1	SFNN140L01	Name Plate (SL-1400-(XAL))	1		○
17-1	XTN3+8J	Screw	3		
18	SFAT150-01A	Hinge ass'y	2		
18-1	SFXG020L01	Screw, Hinge	4		

Ref. No.	Part No.	Part Name & Description	Per Set		Remarks
18-2	XTN3+8JFZ	Screw	4		
19	SFKT140-03A	Operation Knob ass'y	1		○
20	SFKT140-02A	Start switch Knob ass'y	1		○
21	SFMZ140-01Z	Stater frame ass'y	1		○
21-1	SFUP130-06	Print base cover	1		
21-2	XTN4+8J	Screw	3		
21-3	XTN4+8J	Screw	2		
22	SFKT140-01A	Vaiable pitch control knob ass'y	1		○
23	SFTE150-01A	Turntable	1		
24	SFTG140-01	Turntable mat	1		○
25	SFAD150X01A	Dust cover	1		
26	SFUM130-26	Cut Plate	1		
26-1	XUC5FT	E-Shaped	1		
26-2	SFXW130-12	Washer	1		
26-3	SFQH130-13	Spring, Cut Plate	1		
27	SFUM130-15	Switch cover	1		
27-1	XTN3+20J	Screw	1		
28	SFDSAH76503	Micro switch	1		
29	SFUP140S01	Insulating Plate	1		○
30	SFUB140-01A	Operating Plate ass'y	1		○
31	SFUM130-16	Supporting Plate, switch	1		
31-1	SFQH910-05	Spring	1		
31-2	XUC3FT	E-Shaped	1		
32	SFUC130-11E	Actuating plate ass'y	1		
32-1	XUC3FT	E-Shaped	1		
32-2	SFXW910J02	Washer	1		
33	SFUM130-02	Cam, start	1		
34	SFUK140-01E	Automatic mechanism ass'y	1		○
35	SFUM130-23	Gear setting plate	1		
35-1	SFQS130-11	Gear setting spring	1		
35-2	XUC3FT	E-Shaped	1		
36	SFUG130-12A	Main Gear	1		
36-1	SFXW890B01	Washer	1		
36-2	XUC5FT	E-Shaped	1		
37	SFUM130-24	Lever, switch	1		
37-1	XUC5FT	E-Shaped	1		
38	SFPWG15001K	Balance Weight ass'y	1		○
39	SFPAM14004K	Tone arm	1		
40	SFPCC13001K	Head Shell	1		○
42	SFPJK14003K	Anti-Skating force control Knob	1		
42-1	SFPEW1100	Washer	1		
43	SFXG829-1	Screw, Adjustment of arm lift base	1		
44	SFPRT13003K	Arm lift	1		
44-1	SFQA829-03	Spring, arm lift	1		
45	SFPRT22004K	Arm rest	1		
46	SFPKD15005	Arm base	1		○
46-1	XYN3+C12	Screw	2		
46-2	XWA26BR	Washer	1		
46-3	XNG26EBN	Nut	1		
47	SFPAB12002	Knob, cueing lever	1		
48	SFPJL13007K	Cueing lever ass'y	1		
48-1	SFPGM13001	Cueing rubber	1		
49	SFPAB13008K	Arm life base ass'y	1		
49-1	XTN3+5B	Screw	3		
50	SFPJK13002	Canceler cam A	1		
50-1	SFPEW13005	Washer	1		
50-2	XTW26+5D	Screw	1		
51	SFPJK14001	Canceler cam B	1		○
51-1	SFXW551D2	Washer	1		
51-2	SFPJK15002	Cam shaft	1		
51-3	SFPSH14002	Adjustment Plate, Canceler	1		○
51-4	XTN3+10F	Screw	1		
52	SFPSP14001	Spring, Canceler	1		
53	SFPAB14005K	Tonearm fixing plate ass'y	1		○
54	SFDSHXWO103	Power Selector Switch	1		
54-1	SFUM018E01	Bracket, Selector Switch	1		
54-2	XSN3+12FZS	Screw	2		

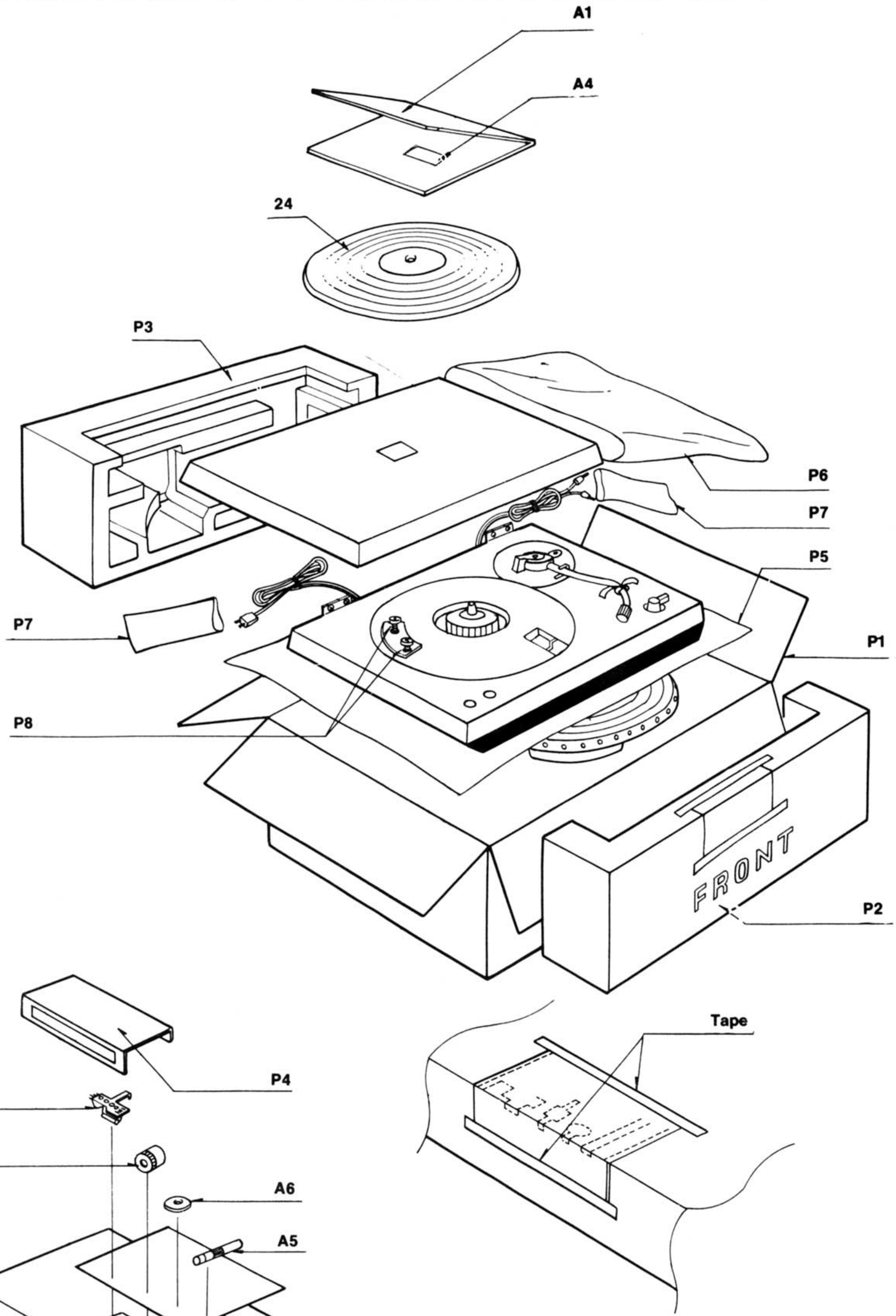
ACCESSORY PARTS

A1	SFNU140X01	Printed Matter	1		○
A4	SQX9049	Servicenters List	1		
A5	SFWO010	Oil	1		
A6	SFWE154A1	45 r.p.m Adaptor	1		
A7	SFPEV7800	Screw, cartridge	2		
A8	SFCZV8800	Screw, cartridge	2		
A9	SFKO135X01E	Overhang gauge	1		
A10	SFDK100G	DIN-PIN Adaptor	1		
A11	SFDKI19118	2-PIN Plug (SL-1400-(X) only)	1		
A12	RJP17AS	Adaptor (SL-1400-(X) only)	1		

PACKING MATERIALS

P1	SFHP140X01	Packing Case	1		○
P2	SFHH130-04	Side Pad (Front)	1		
P3	SFHH130-05	Side Pad (Rear)	1		
P4	SFHH130-03	Cover, Parts Box	1		
P5	SFYC100A130	Polyethylene sheet	1		
P6	SFYF50A60	Polyethylene Pack	1		
P7	SFYF08A30	Polyethylene Pack	2		
P8	XSN4+12BS	Clamp Screw	2		
P9	SFHP140X02	Outside Packing Case	1		○

■ PACKING PARTS



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