JVC

SERVICE MANUAL

MODEL QL-Y3F

QUARTZ FULLY AUTOMATIC TURNTABLE

No. 2521
June 1980

Contents

Warning:
When replacing the parts marked with ⚠, be sure to use the designated parts to ensure safety.

1. Specifications

MOTOR SECTION

Motor	: Coreless, DC type, FG servo-motor
Drive system	: Direct drive
Speeds	: 33-1/3, 45 rpm
Wow and flutter	: 0.025% (WRMS) 0.015% (by K & K measuring method)
Signal-to-noise ratio	: More than 78dB (DIN-B)
Speed detection	: Frequency generator
Starting torque	: 650 g·cm
Speed deviation	: Within 0.002%
Load characteristics	: 0% (with 130g total tracking force)
Drift	: 0.0001%/H
Power characteristics	: 0% (±10V)
Temperature characteristics	: 0.00005%/°C
Platter	: 31cm

TONEARM SECTION

Type	: Electronic servo controlled arm
Effective length	: 245mm
Overhang	: 15mm
Weight range	: 14 – 19.5 g (including headshell weight)
Variable tonearm height range	: 42 – 48mm (preset to 45mm)

CARTRIDGE SECTION
(Except for U.S.A., Candada and the U.K.)

Model	: Z-1EB
Type	: Moving Magnet (MM)
Frequency response	: 10Hz – 25,000Hz
Output	: 3mV (1,000Hz)
Channel separation	: 25dB (1,000Hz) (test record TRS-1)
Load resistance	: 47kΩ – 100kΩ
Compliance	: 10 x 10^{-6}cm/dyne (Dynamic) 30 x 10^{-6}cm/dyne (Static)
Stylus tip	: 0.3 x 0.7 mil diamond
Stylus	: DT-Z1EB
Optimum tracking force	: 1.75 ± 0.25 g

GENERAL

Power source	: Refer to Table at page 24
Power consumption	: Refer to Table at page 24
Dimensions	: 16.9(H) x 48(W) x 43(D)cm (6-5/8" x 1-15/16" x 1-3/4") (Since the dimensions show only the design measurements, consideration is required when installing the unit in a limited space such as a rack, etc.)
Weight	: 9.5kg (20.9 lbs) (without corrugated card board case)
Accessory	: EP adaptor 1

Design and specifications subject to change without notice.

CHECKING YOUR LINE VOLTAGE (For U.S. Military Market and Other Countries)
Before inserting the power plug, please check this setting to see that it corresponds with the line voltage in your area. If it doesn't, be sure to adjust the voltage selector switch to the proper setting before operating this equipment. The voltage selector switch is located either on the set's or the chassis. Simply insert a screw driver into the voltage selector switch and turn it in either direction while pressing slightly and in such a way that desired voltage marked on the switch is positioned at the arrow marked on the rear panel or the chassis. The voltage selector switch accommodates up to three turns in either direction.

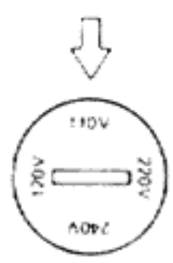


Fig. 1

2. Service Precautions

1. For repair of the tonearm, only the parts whose names and numbers are listed on page 17 are replaceable. So be careful not to remove any other part.
2. For repair of any component other than the tonearm, be sure to perform part replacement in accordance with the appropriate unit of the block shown in the disassembly diagram.
3. When remounting the motor base or tonearm ensure positive contact with the base of the tonearm (as shown in Fig. 23) and then secure.
4. Ensure that the turntable is level when servicing motor rotation or arm action.
5. If power is applied when the motor connector is disconnected the drive transistor will be damaged. Therefore, never disconnect the motor connector if the power is or will be applied.
6. Note that when repairing the printed board, if the heatsink is removed, transistor temperature will rise.
7. Upon completion of repair or replacement of the tonearm, motor or any other component, be sure to perform Lead-in and Lead-out adjustments.
8. Locating the tuner antenna and the turntable output lead closely may cause noise due to disturbance from the tuner; therefore, place them as far from one another as possible.

3. Names of Their Functions

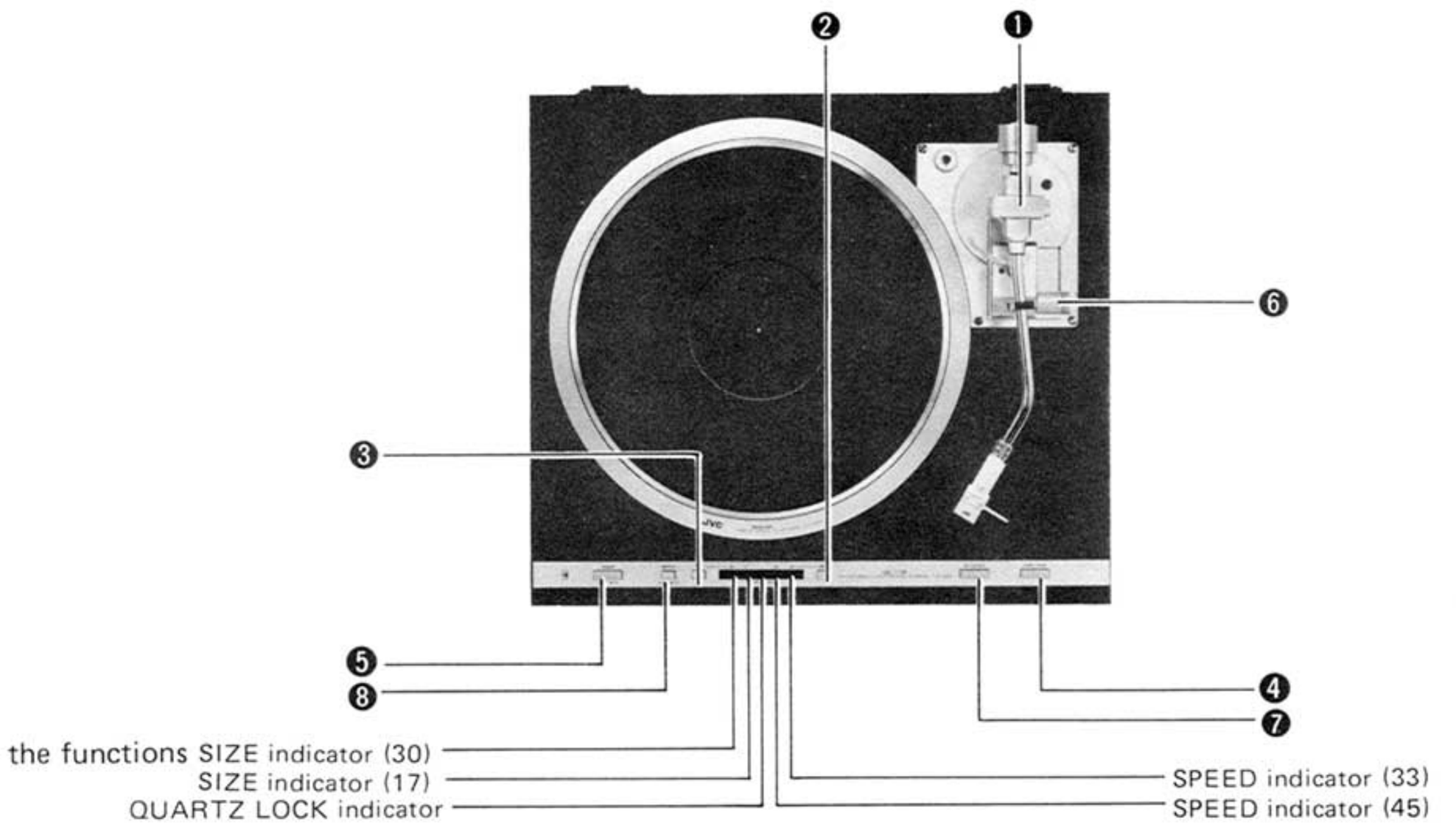


Fig. 2

1. **Tonearm**
   This tonearm is called an Electro Servo Tonearm. All the functions, anti-skating, etc. are done electrically.
2. **SPEED switch**
   Select the speed depending on record rpm. The platter rpm is indicated by the SPEED indicators.
3. **SIZE switch**
   Select the size depending on record size. Selected size is indicated by the SIZE indicators.
4. **START/STOP switch**
   Press this switch to rotate the platter. When the speed reaches normal, QUARTZ LOCK indicator (green) lights. Then the tonearm automatically lifts up and moves to lead-in.
5. **READY switch**
   ON: Depress this switch to power the turntable system on. SPEED and SIZE indicators light. Anti-skating is automatically applied, as already set.
   OFF: Re-depress the switch to cut the power off. The SPEED, SIZE and QUARTZ LOCK indicators go out, and anti-skating become "zero".

   Note: When you re-depress the READY switch, make sure the tonearm is clamped on the arm rest, otherwise you may damage a record or the stylus. Even when the READY switch is set to OFF, about 2-watt power is consumed. Accordingly, disconnect the power cord from wall outlet to cut the power completely off.
6. **ANTI-SKATING TRACKING FORCE knob**
   This knob is provided to cancel the centripetal force (sliding of the tonearm to the center of the record) and to prevent the stylus tip from sliding or exerting unwanted force to the inner side of the record groove. This is automatically and electrically set to the optimum value by selecting the designated stylus force.
7. **UP/DOWN switch**
   When this button is pressed the tonearm will lower to the record surface. To lift the tonearm up from the record, press this button again.
8. **REPEAT switch**
   Depress this button for repeated play.
   Press again to release the REPEAT function.

4. New Technology

4-(1) Electro-dynamic Servo Control Tonearm

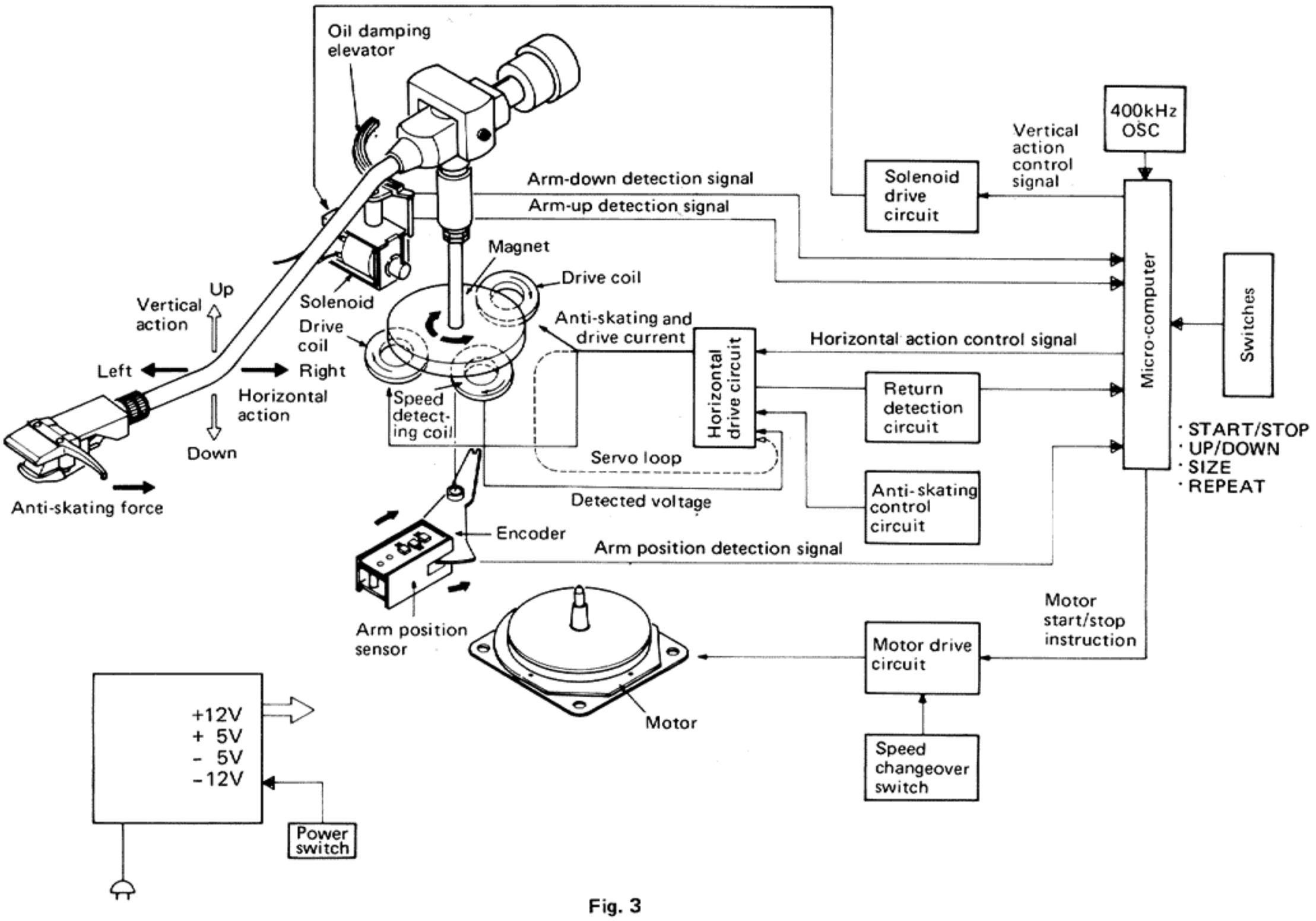


Fig. 3

4-(2) Detecting Record-end

In the Electro Servo Tonearm, since the tonearm speed is detected, the record feed pitch can also be electrically detected.
This tonearm is provided with a positional restriction device that detects the record end by using a LED and a phototransistor. Because this device is set, records falling within the standards range can be detected electrically.

4-(3) Lead-in Positioning

The lead-in positioning is performed by the microcomputer. The position (rotating angle) or the tonearm in motion is detected by reading the address (001, 010 . . . etc.) in the rotating encoder in unity with the tonearm by using the three LED/phototransistors.
The microcomputer always compares the position of the tonearm in motion and the designated lead-in position, stops the tonearm motion, and issues the command to lower the stylus on the record surface. In addition, this microcomputer determines the operating position of the tonearm rest switch and the starting position of lead-out as well. (Fig. 4)

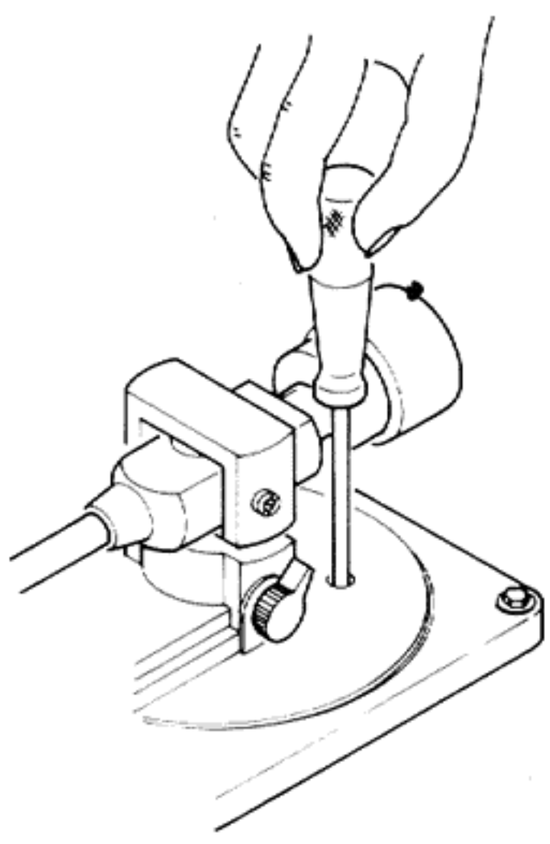


Fig. 4

5. Adjustment Procedures

5-(1) UP Switch Adjustment

1. Secure the tonearm on the rest with the clamp, and adjust the tonearm height to 5.5mm with the arm set screw. (Fig. 5, 6)
2. Undo the clamp, set the UP/DOWN switch to the UP position, and adjust the clearance between the record disk and the stylus tip to 5 ~ 7mm height.

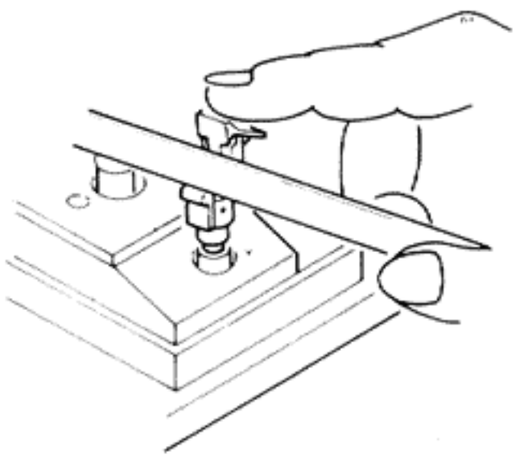


Fig. 5

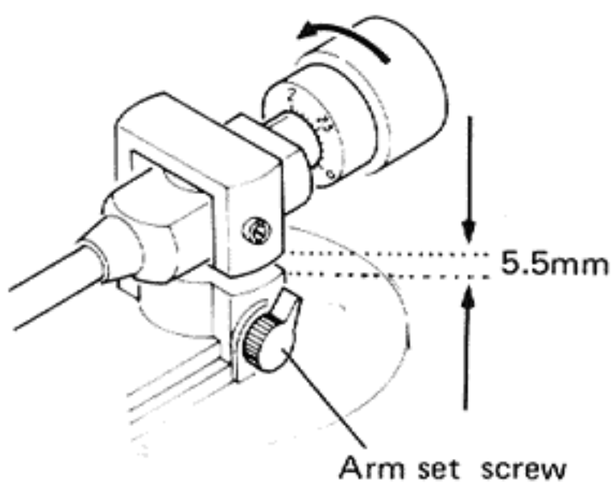


Fig. 6

3. Prepare to measure the resistance value between terminals 3 and 4 of the plug ass'y (P1) on the circuit board (TXX-278-1).
4. With the UP/DOWN switch set to the UP position, confirm that the measurement value is 10kΩ with the elevator raised to the uppermost limit. (When measuring, the rubber switch of the tonearm must be away from its point of contact with the elevator.)

Fig. 7

In addition, if the value of 10kΩ is unobtainable, remove the elevator and insert a spacer between the elevator and the elevator shaft. Thereupon, adjust the contact separation between the rubber switch and the elevator to around 1mm (0.8 ~ 1.2mm) in the playback mode.

5-(2) Tracking Force

1. Place a record on the platter.
2. Remove the stylus protector cover.
3. Release the tonearm clamp.
4. Turn the main weight so that the tonearm maintains a balance with the stylus tip is almost touching to the record. (Fig. 8, 9)

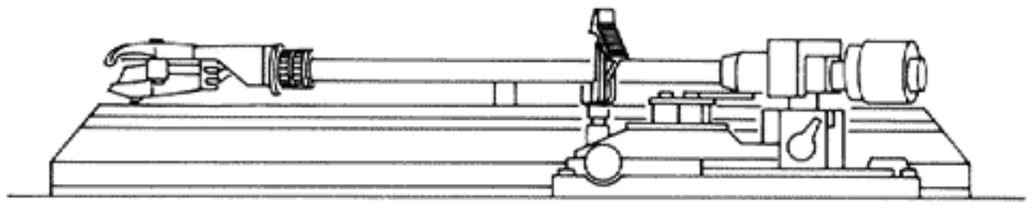


Fig. 8

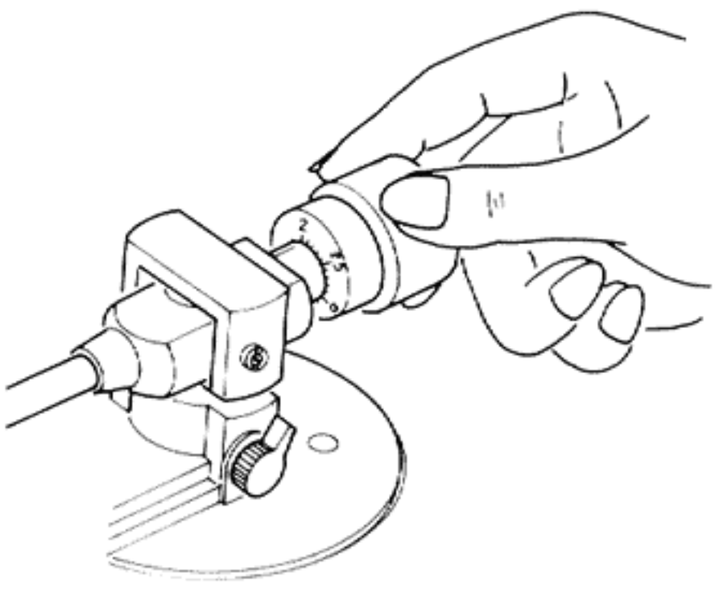


Fig. 9

5. Return the tonearm to its rest and clamp it.
6. Hold the counterweight at the adjusted position and aligned with the index line on the tonearm weight shaft. Turn the counterweight in the A direction until the "1.75" mark on the dial is aligned with the index line for the model preparing cartridge Z-1EB. (Except the model QL-Y3F for U.S.A., CANADA, and (U.K.)

5-(3) Lead-inAdjustment

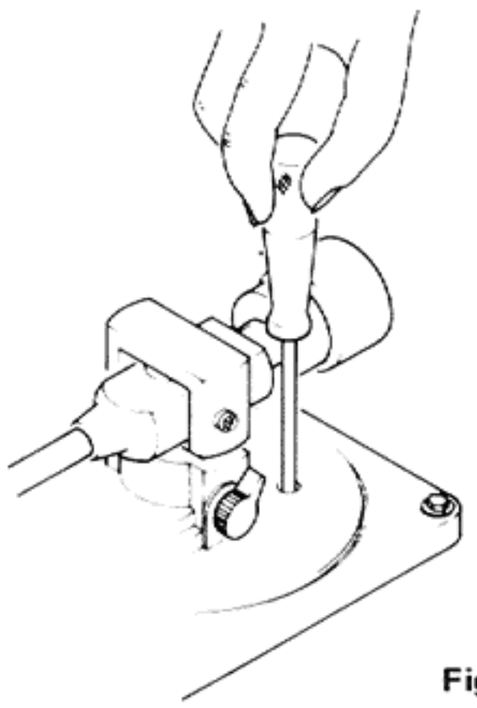


Fig. 10

Be sure to perform this adjustment prior to lead-out adjustment.

1. Set the SIZE switch to 17. Then, turn the lead-in adjusting screw so that the tonearm sets down on the test record when the lead-in count on the test record shows 16 ± 3.

   Note: For a larger lead-in count, turn the screw counterclockwise, whereas for a smaller lead-in count, turn it clockwise.
   However, the screw is provided with no stopper. Note therefore that excessive turning results in reversed directionality.

5-(4) Lead-outAdjustment

1. Adjust VR803 so that the tonearm returns at the 3mm pitch point of the test record (8602-44) and does not return at the 0.5mm pitch point of the test record (8602-45).
   When the tonearm does not return at the 3mm pitch point of the test record (8602-44), adjust the voltage between TP-2 (GND) and TP-3 so that it is closer to 0V by about 20% than the set voltage.
   When the tonearm returns at the 0.5mm pitch point of the test record (8602-45), adjust the said voltage so that it is closer to 0V by about 20% in absolute value than the set voltage.

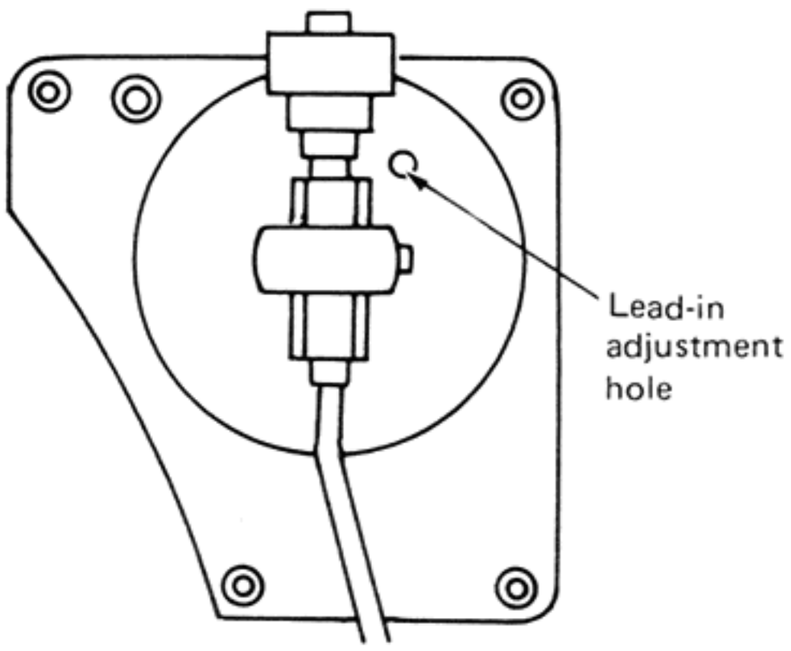


Fig. 11

5-(5) Motor's Rotation

Since this double servo quartz control turntable is designed to have a wider locking range than the conventional turntable, it is not required to adjust the RPM.

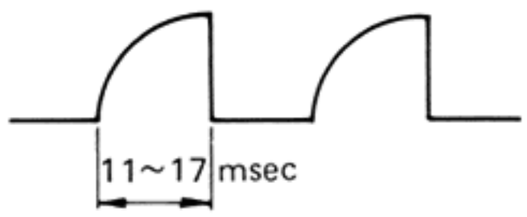
5-(6) Tonearm Off-set Position

Set the voltage between TP-1 and TP-2 to 0V by turning VR802 (with the tonearm secured to the arm rest in the "UP" position).
Note: Allowable range of "0V" is ±5mV.

5-(7) Quarts Oscillation Wave Phase Adjustment

1. Set RPM to 33-1/3.
2. Observe the wave duration (T) from leading to trailing edges, and adjust the duration to 11 ~ 17 msec with VR804.

Waveform on oscilloscope



Impedance conversion circuit

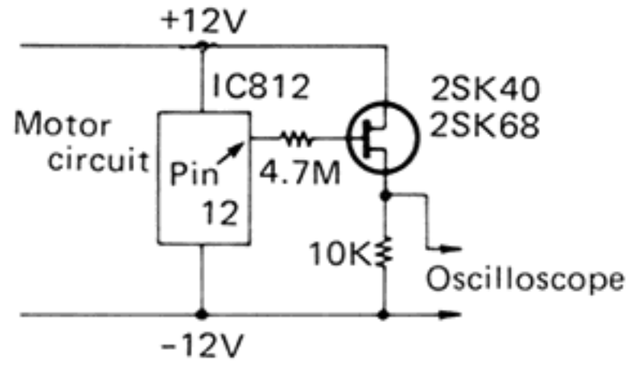


Fig. 12

5-(8) Anti-skating Adjustment

1. Set the anti-skating adjustment knob to 1.5g on the dial.
2. Adjust VR801 so that 185 ± 10mV appears between terminals 1 and 2 of VR805.

6. Disassembly

Procedure

1. Removal of Yoke B (Figs 13 and 14)
   As this yoke is a threaded type, turn it counterclockwise for removal.
   Put a name card between the circuit board and the slightly freed yoke to protect the coils against any damage dur to magnetic force.

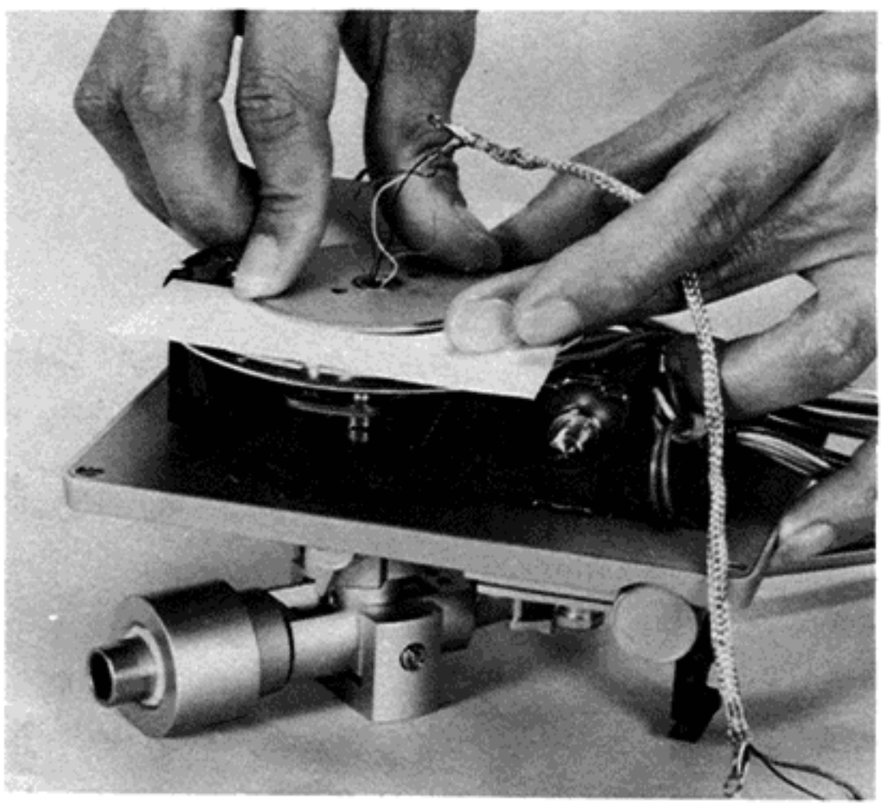


Fig. 13

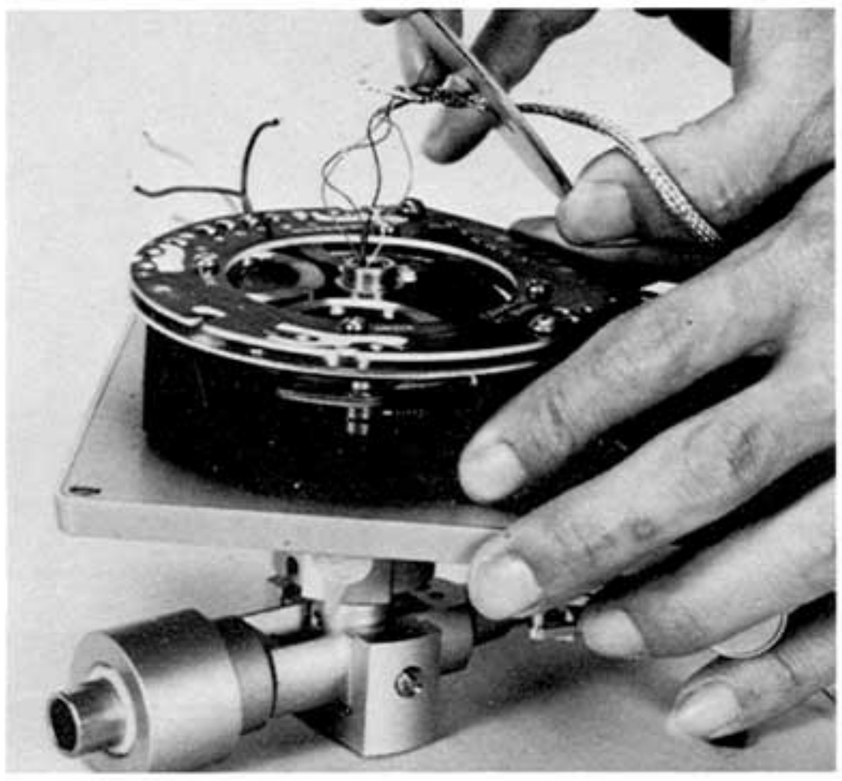


Fig. 14

2. Remove the coil circuit board. (Fig. 15)
3. Removal of Yoke A (Figs 15 and 16)
   Loosen the two yoke set screws with an allen wrench, and remove the yoke as shown below.

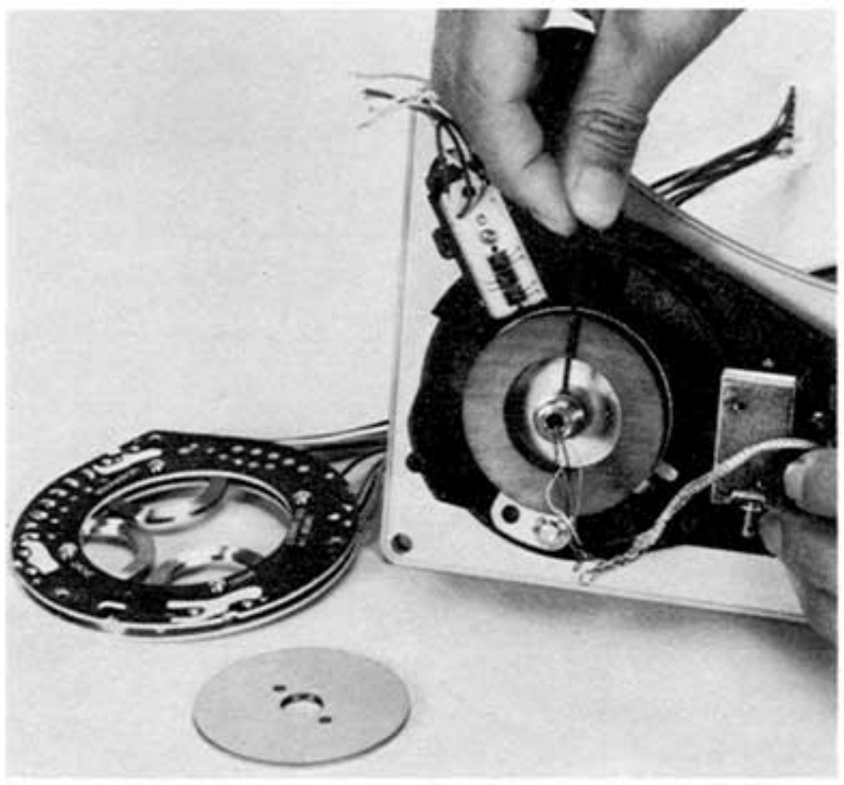


Fig. 15

Fig. 16

4. Removal of Tonearm (Fig. 17)
   Loosen the two set screws of the arm shaft with an Allen wrench, and remove the tonearm as shown below.

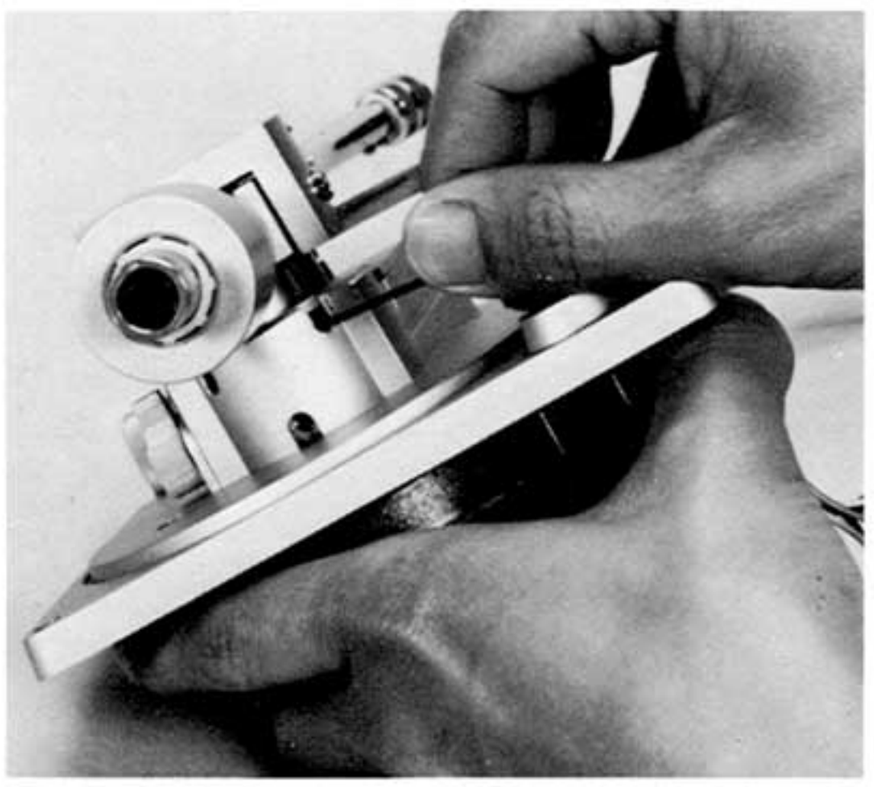


Fig. 17

5. Assembly (Fig. 18)
   Iron dust adhered to the yokes caused damage to the coils or degration of the tonearm sensitivity (horizontal action). So, thoroughly remove it with an adhesive agent such as a cellophane tape, etc.
   (1) Position yoke A. (Use a screwdriver for positioning.)
   (2) Adjust the height of yoke A so that the cord plate is located at the center of the lamp house.
   (3) Secure yoke A.
   (4) Position the coil circuit board, and mount yoke B. At this time, be sure to keep the two following points:
      a) Put a name card on the coil circuit board to protect it.
      b) Position the yoke surface (with the roundish edge) to the coil side to protect the coil from any damage. (See Fig. 18)

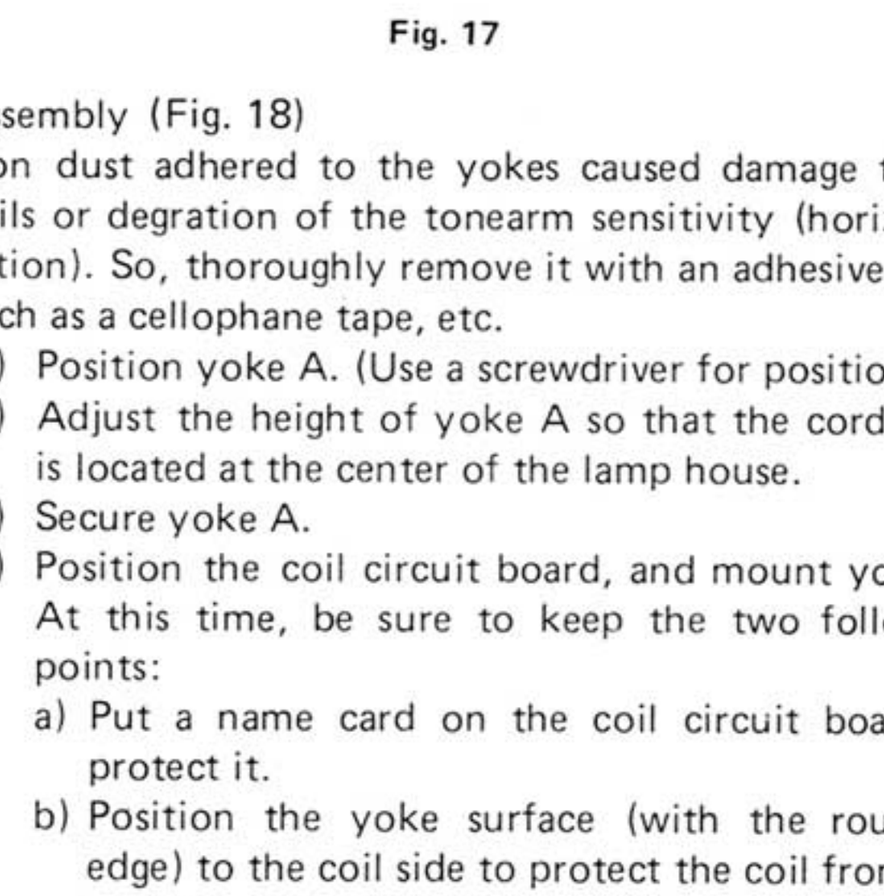
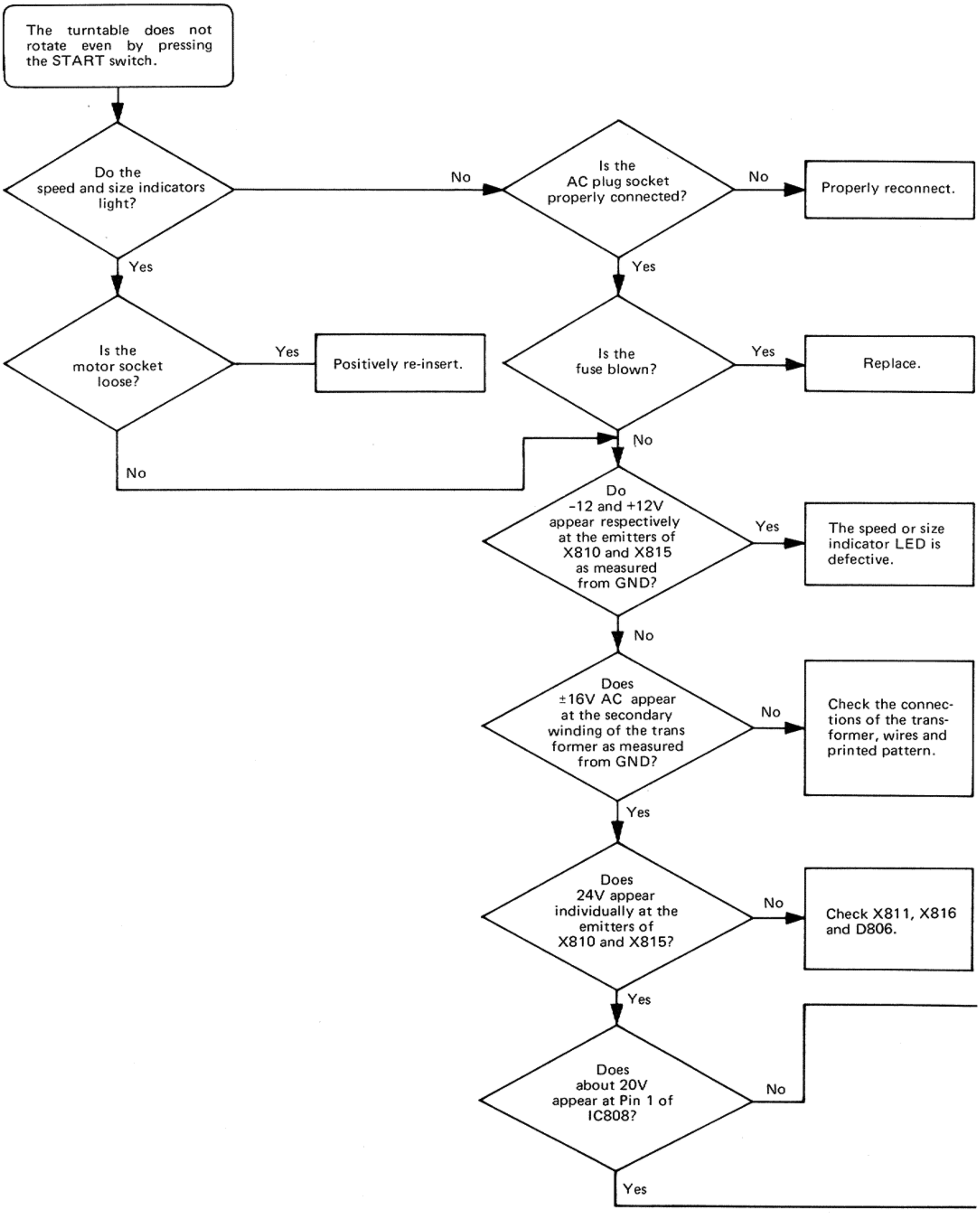


Fig. 18

7.Troubleshooting Charts

7-(1) The turntable does not rotate



Does the turntable rotate by hand?

Yes

Check the elements and circuitry associated with each drive coil.

No

Check IC807, HG1 and HG2.

NOTE: The rotor and FG of the motor use magnets. Therefore, when repairing, take care that iron dust particles or the like do not get into the rotor and/or FG of the motor.

Does 6 V DC appear at pin 3 of IC808?

Yes

IC808 is defective. Replace it.

No

Does 6.8 V DC appear at Pin 7 of IC808?

Yes

Check the connection of R899 or its soldered joint.

No

Does the waveform appear at Pin 5 of IC809 as shown in the diagram? A. See Fig. 19.

No

IC809 is Defective. Replace it.

Yes

Adjust the lock range, or check the phase.

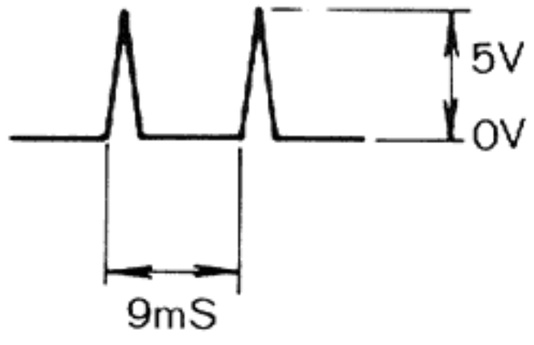


Fig. 19

7-(2) The turntable rotates at high speed

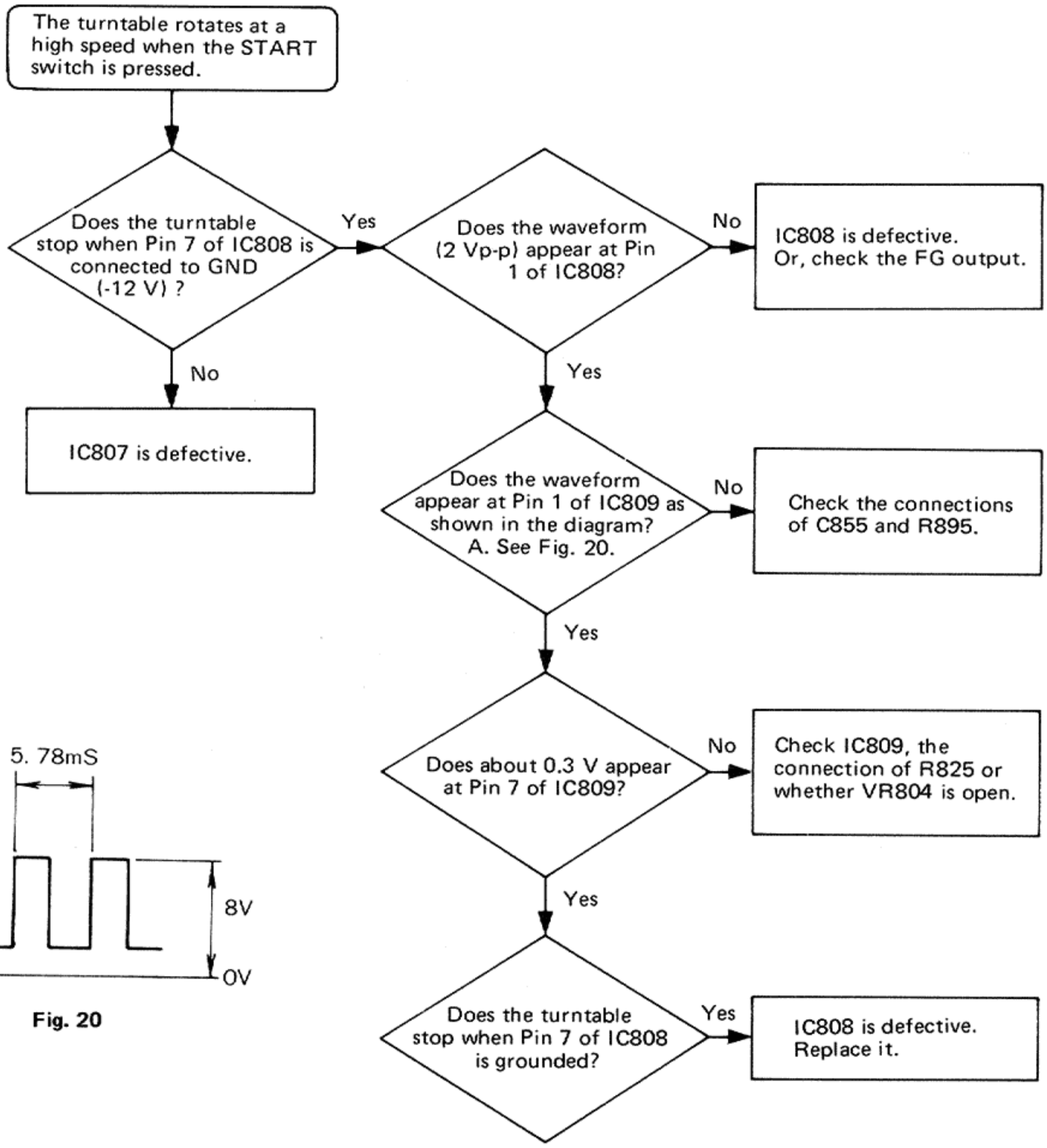


Fig. 20

7-(3) Q-damping is abnormal

Q-damping is ineffective.

↓

IC802 or IC803 is defective, or C809 is short-circuited. Replace them.

Q-damping is too effective.

↓

R817 is open, or IC803 is defective. Replace them.

7-(4) Repeat operation is abnormal

The repeat mode is not reached.

↓

Is Pin 4 of IC804 in the "H" level when the REPEAT switch (SW803) is pressed?

No → SW803 is defective, the connection wire between the switch and the control board is disconnected, or the printed pattern to Pin 4 of IC804 is defective.

Yes ↓

IC804 is defective. Replace it.

7-(5) Tonearm action is abnormal

The tonearm does not travel to the right or left.

NOTE: This means that when the START/STOP button is pressed, the tonearm ascends only, but next does not move sideways.

↓

Are TP-8 and TP-9 in the "L" and "H" levels respectively?

Yes → Refer to the following "The tonearm does not operate even by pressing the START button".

No ↓

Does around 0 to 1V appear at Pin 21 of IC804?

Yes → IC804 is defective. Replace it.

No ↓

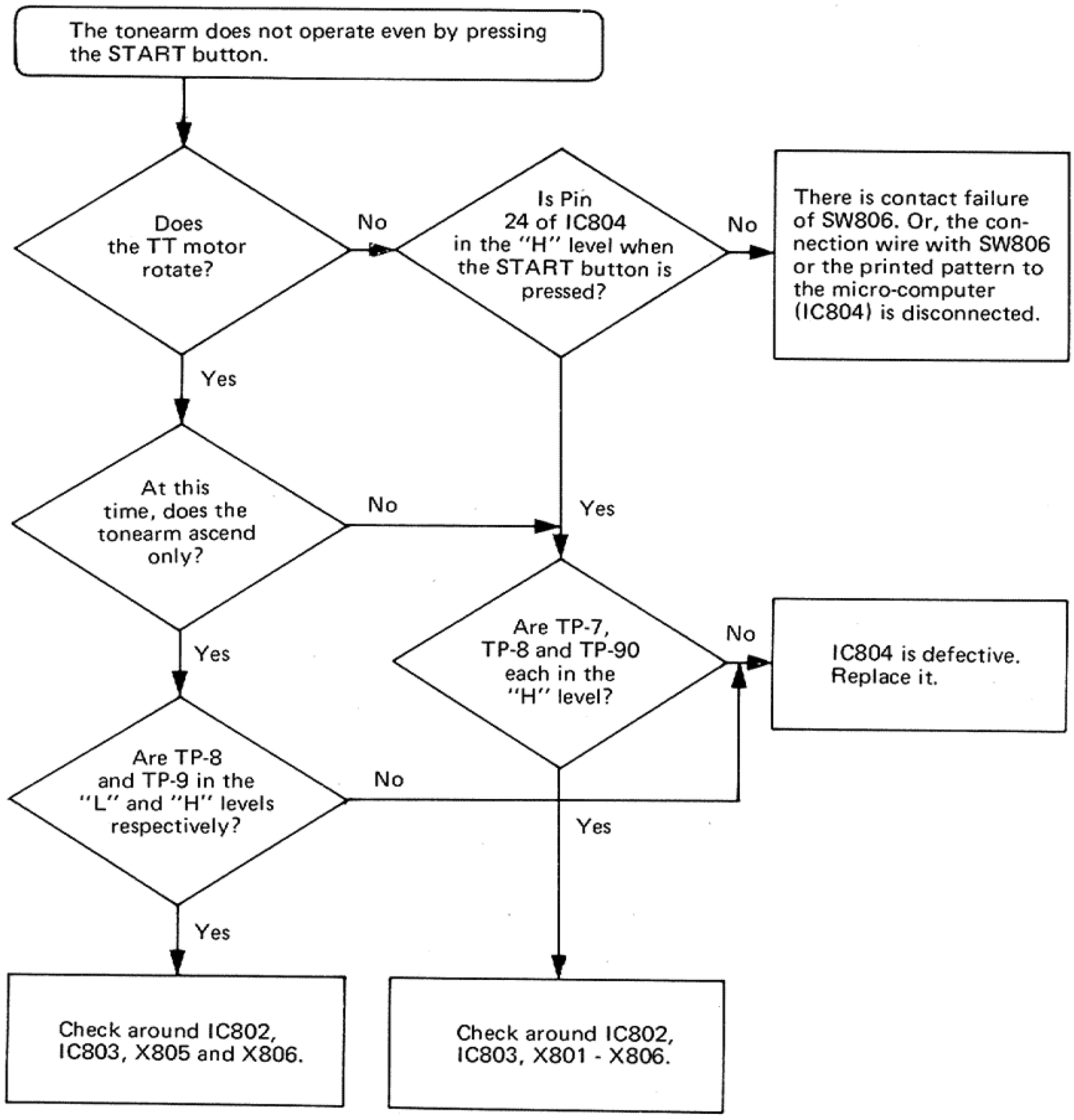
When the tonearm is in the UP position, are the resistances of the UP and DOWN switches less than 1MΩ

Yes → J1 or P1 for the tonearm connectors is defective, the printed pattern to IC804 is defective, or a tonearm drive coil is disconnected.

No ↓

Check which is greater, the contact resistance of the UP switch within the tonearm or the DOWN switch between the elevator and the arm pipe. Then, repair the greater one.

NOTE:
The resistance between each two wires of the 10-pin socket running out from the tonearm should be as follows.
Red and black wires: 71.25Ω ± 3.57Ω Brown and purple wires: 580Ω ± 29Ω


The tonearm does not operate even by pressing the START button.
Does the TT motor rotate?
No
Is Pin 24 of IC804 in the "H" level when the START button is pressed?
No
There is contact failure of SW806. Or, the connection wire with SW806 or the printed pattern to the micro-computer (IC804) is disconnected.
Yes
At this time, does the tonearm ascend only?
No
Yes
Yes
Are TP-7, TP-8 and TP-90 each in the "H" level?
No
IC804 is defective. Replace it.
Are TP-8 and TP-9 in the "L" and "H" levels respectively?
No
Yes
Yes
Check around IC802, IC803, X805 and X806.
Check around IC802, IC803, X801 - X806.

Anti-skating is ineffective.

Does the tonearm flow to the right when it is zero balanced in the playback mode?

Yes → The tonearm action is normal.

No

When the anti-skating VR (VR805) is set to maximum, does 25 to 40mV appear at Pins 6 and 7 of IC802?

No → IC805 is defective, or the 220kΩ resistor (R940) is disconnected.

Yes

Does 0.75 to 1.2V appear at Pin 6 of IC801?

No → IC806 is defective, VR802 is adjusted out of position, or the wiring is out of connection.

Yes

At the emitter of X805, does voltage appear at its positive side as viewed from GND.

Yes → The connector for the arm and printed board, the printed pattern or the tonearm coil is disconnected.

No

X805 is open or X806 is short-circuited. Replace it.

Cuing-up does not operate.

When the UP/DOWN switch (SW805) is pressed, is Pin 23 of IC804 in the "H" level?

No → SW805 is defective, or the printed pattern to IC804 is defective.

Yes

Is TP-7 also in the "H" level?

No → IC804 is defective. Replace it.

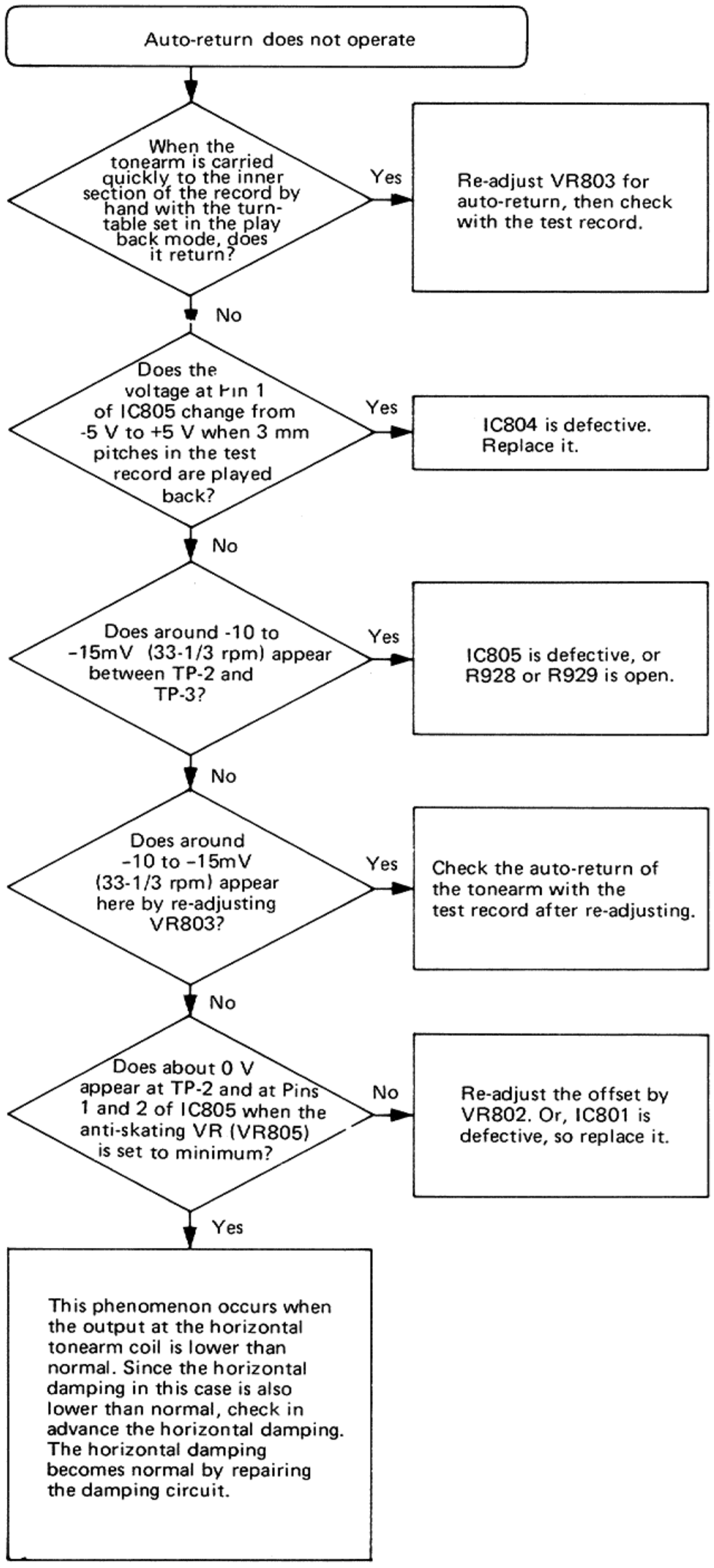
Yes

Does −12V appear at the collector of X803 while pressing SW805?

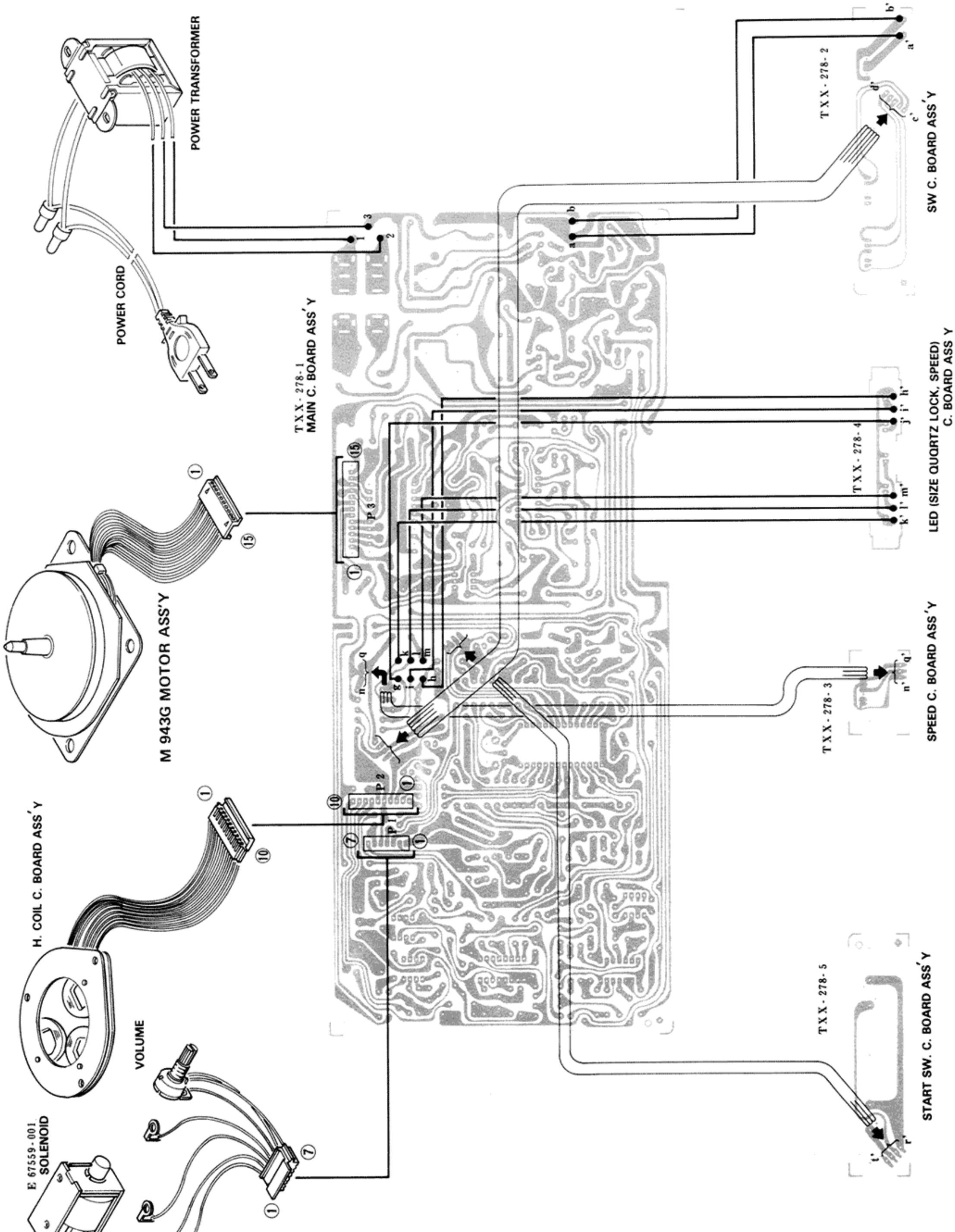
Yes → Since a current flows across the solenoid, check mechanical parts or the tonearm parts associated with the solenoid.

No

R807 is disconnected or X803 or X804 is defective, so replace them.


Auto-return does not operate
When the tonearm is carried quickly to the inner section of the record by hand with the turn-table set in the play back mode, does it return?
Yes
Re-adjust VR803 for auto-return, then check with the test record.
No
Does the voltage at Pin 1 of IC805 change from -5 V to +5 V when 3 mm pitches in the test record are played back?
Yes
IC804 is defective. Replace it.
No
Does around -10 to -15mV (33-1/3 rpm) appear between TP-2 and TP-3?
Yes
IC805 is defective, or R928 or R929 is open.
No
Does around -10 to -15mV (33-1/3 rpm) appear here by re-adjusting VR803?
Yes
Check the auto-return of the tonearm with the test record after re-adjusting.
No
Does about 0 V appear at TP-2 and at Pins 1 and 2 of IC805 when the anti-skating VR (VR805) is set to minimum?
No
Re-adjust the offset by VR802. Or, IC801 is defective, so replace it.
Yes
This phenomenon occurs when the output at the horizontal tonearm coil is lower than normal. Since the horizontal damping in this case is also lower than normal, check in advance the horizontal damping. The horizontal damping becomes normal by repairing the damping circuit.

8. Connections Diagram



9.Exploded Views and Parts List

9-(1) Platter and Cabinet

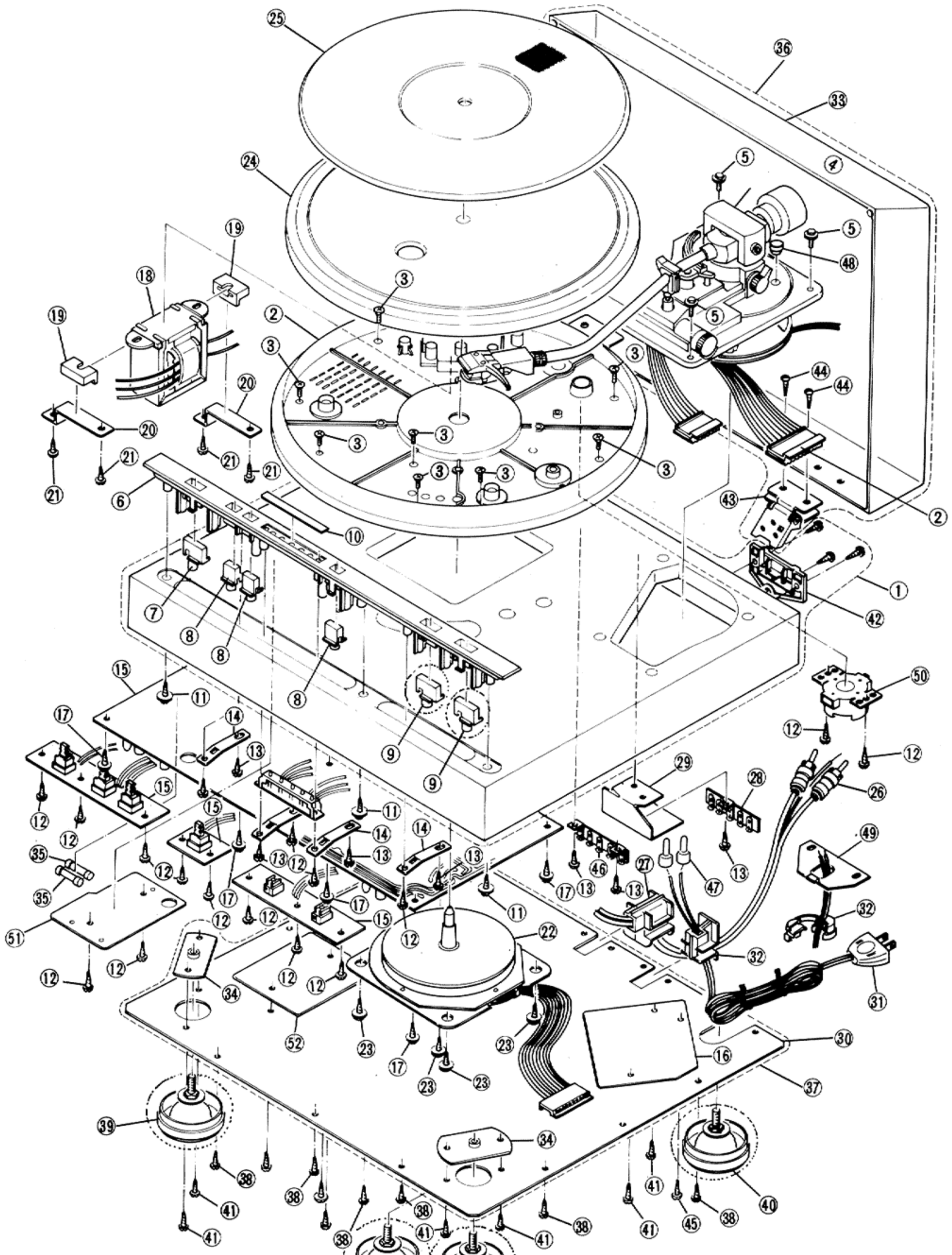


Fig. 22

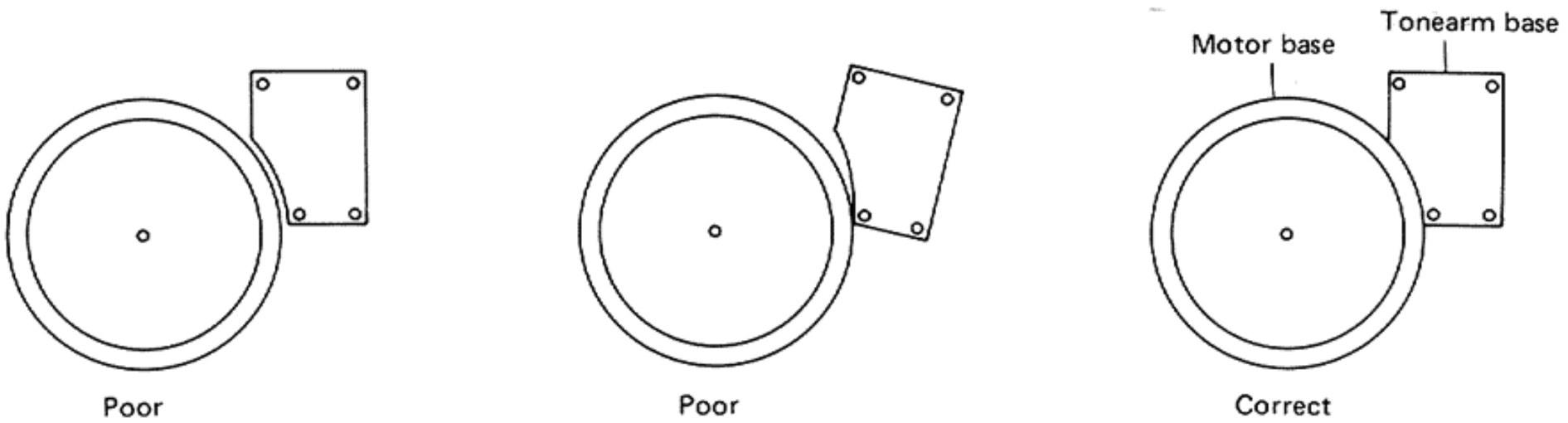


Fig. 23

Caution:
When removing the motor base or tonearm ensure positive contact with the tonearm base as shown in the right, Fig. 23, and then secure.

Item No.	Part Number	Rating	Description
1	DL-ED92955		Cabinet Ass'y
2	E10405-005		Base
3	SHSA3014M		Screw
4	See page 24, Sect. 14		P.U. Ass'y
5	E66892-002		Screw
6	E23516-002		Panel
7	E300582-003		Push Button
8	E300581-002		Push Button
9	E300649-005		Button Sub Ass'y
10	E67463-001		Window Sheet
11	E65923-001		T. Screw
12	E65921-002		T. Screw
13	SBSA3012Z		Screw
14	E67464-001		Plate
15	See page 24, Sect. 14		C.B. Ass'y
16	E67590-001		Shield Plate
17	GBSB3008Z		Screw
18	See page 24, Sect. 14		Power Trans
19	E61824-002		Cushion
20	E66885-001		Trans. Plate
21	E65921-003		T. Screw
22	M-943G		Motor Ass'y
23	E65922-005		T. Screw
24	E23112-002		T. Table
25	E23326-003		T. T. Covering

Item No.	Part Number	Rating	Description
26	E03724-002		Signal Cord
27	A27355		Cord Stopper
28	QML0002-051		Lug Strip Ass'y
29	E60090-004		Shield Cover
30	E10406-003		Bottom Cover
31	See page 24, Sect. 14		Power Cord
32	See page 24, Sect. 14		Cord Stopper
33	ED-20946-006		Cover Ass'y
34	E67471-001		Foot Plate
35	See page 24, Sect. 14		Fuse
36	E35263-001		D. Cover Ass'y
37	See page 24, Sect. 14		B. Cover Ass'y
38	MRSP2713M		Screw
39	See page 24, Sect. 14		Foot Ass'y
40	See page 24, Sect. 14		Foot Ass'y
41	SBSB3008Z		Tapping Screw
42	E65588-001		Lock Plate
43	E61992-001		Hinge Ass'y
44	SDSP3008M		Screw
45	E65119-003		Special Screw
46	See page 24, Sect. 14		Lug Strip Ass'y
47	See page 24, Sect. 14		Connector
48	See page 24, Sect. 14		Mask Cap
49	See page 24, Sect. 14		C.S. Bracket
50	See page 24, Sect. 14		V. Selector
51	See page 24, Sect. 14		Barrier Plate
52	See page 24, Sect. 14		Barrier Plate

9-(2) Tonearm Ass'y

The respective models for U.S.A., Canada and U.K. are not supplied with the cartridge (Z-1EB)

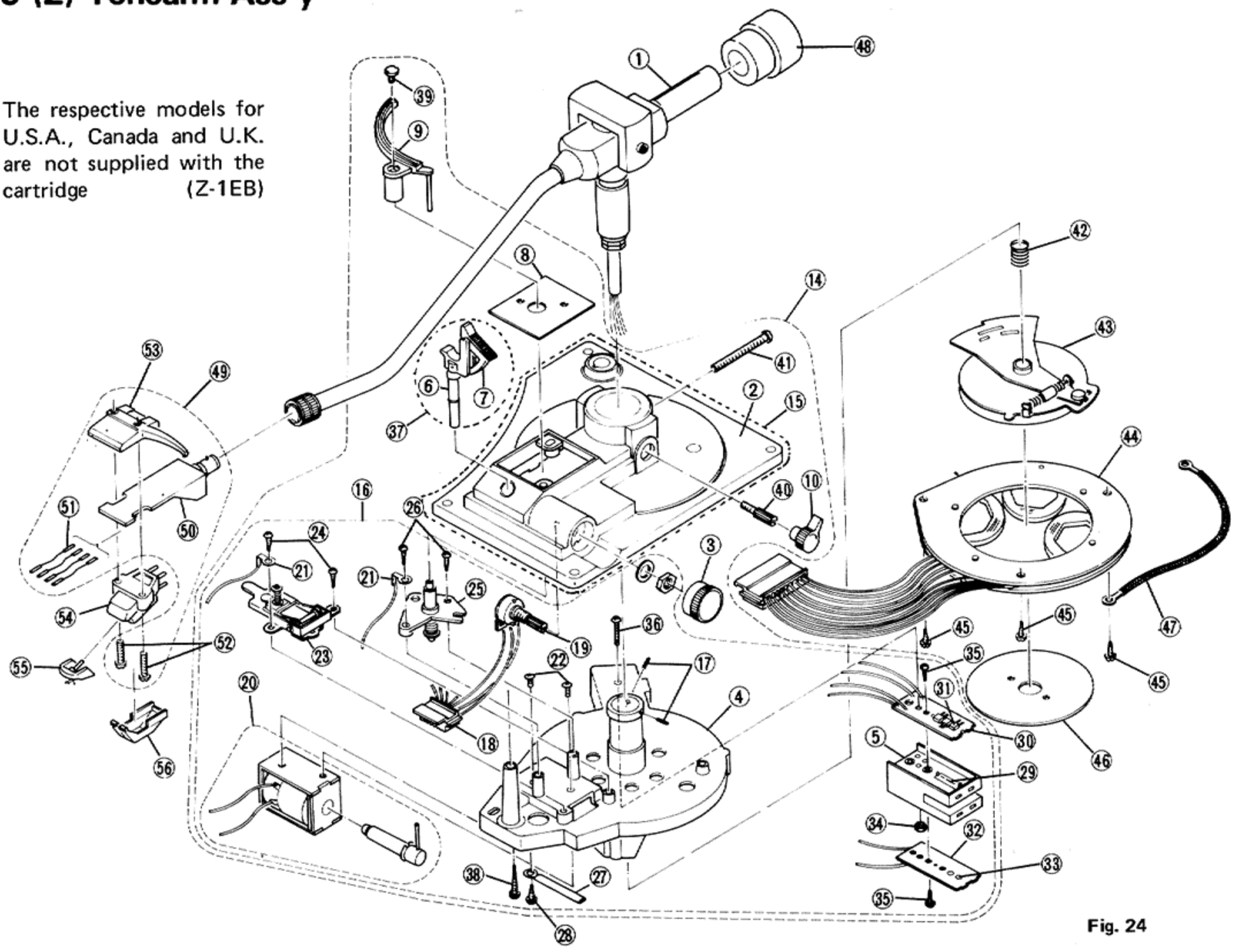


Fig. 24

Item No.	Part Number	Rating	Description
1	E23589-001		Arm Ass'y
2	E10529-001		P.U. Base
3	E301117-001		A.S. Knob
4	E23587-001		Coil Base Sub Ass'y
5	E300672-001		Lamp House
6	E35898-001		Rest
7	E35899-001		Rest Clumper
8	E67508-001		Plate
9	E301118-001		Elevator
10	E301124-001		Knob
11	E301121-001		Weight Pipe
12	E301120-001		Counter Cap
13	E23589-001		Arm Ass'y
14	E23590-001		P.U. Base Ass'y
15	E301186-001		P.U. Base Sub Ass'y
16	E23588-001		Coil Base Ass'y
17	YRS3003MS		Set Screw
18	EWS017-024		SKT. Wire Ass'y
19	QVK5A6B-014		V. RES.
20	E67559-001		Solenoid
21	E67560-001		Lug
22	SSBP3005NS		Screw
23	E67515-001		Lever Ass'y
24	SBSB2606Z		Tapping Screw
25	E67517-001		E. Bracket Ass'y
26	SBSB3008Z		Tapping Screw
27	E50670-005		Wire Clamp
28	SBSB3006Z		Tapping Screw

Item No.	Part Number	Rating	Description
29	E66931-001		Mask
30	E66944-001		S.C. Board (A)
31	PN150F		TR.
32	E66945-001		S.C. Board (B)
33	LN25RCPCLF		L.E.D.
34	NNB2600		Nut
35	SBSB2605Z		Tapping Screw
36	SPSP2616Z		Screw
37	E65824-001		Rest Ass'y
38	E66133-001		Tapping Screw
39	E66933-001		Screw
40	E67509-001		Screw
41	SPSP4050Z		Screw
42	E67539-001		Spring
43	E301123-001		Yoke (A) Ass'y
44	E301122-001		H.C. Board Ass'y
45	SBSB3012Z		Tapping Screw
46	E67513-001		Yoke (B)
47	E67558-001		Shield Tube Ass'y
48	E67518-001		Main Weight Ass'y
49	E35991-002		Head Shell Ass'y
50	E35990-002		Head Case Ass'y
51	E60501-005		Wire Ass'y
52	E60502-001		Screw
53	E35989-002		Finger
54	MD-1025EBZ		Cartridge
55	DT-Z1EB		Stylus Ass'y
56	E34268-001		Stylus Cover

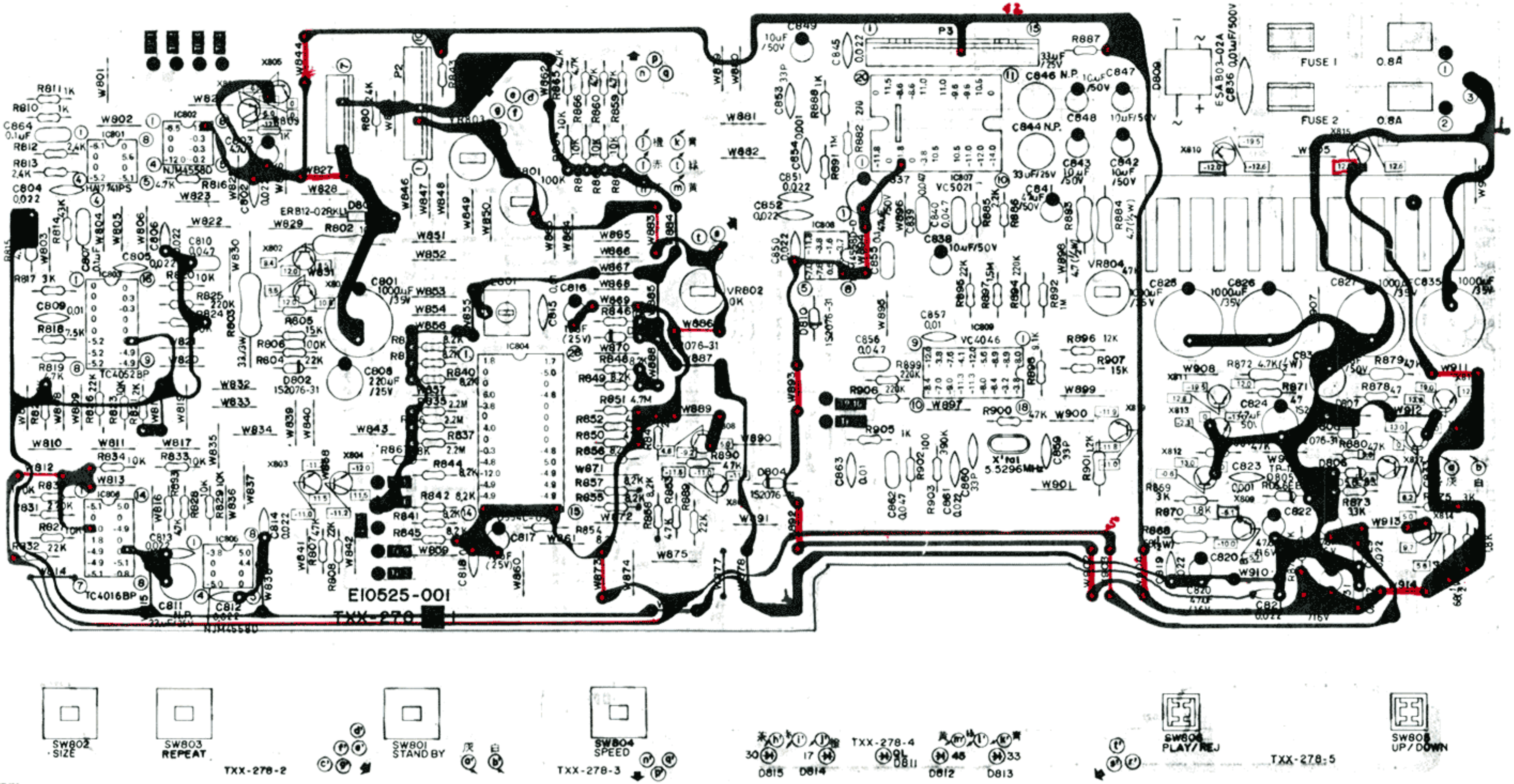


Fig. 25

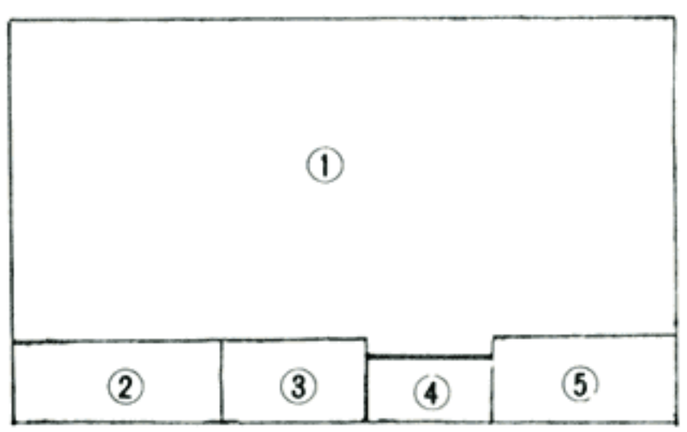


Fig. 26

① TXX-278□1 : Quartz Servo Motor Control & Arm Control & Power Supply P.C. Board Ass'y
② TXX278-2 : Size, Repeat, READY Switches P.C. Board Ass'y
③ TXX278-3 : Speed Switch P.C. Board Ass'y
④ TXX-278-4 : LED P.C. Board Ass'y
⑤ TXX278-5 : START/STOP, UP/DOWN Switches P.C. Board Ass'y

Note (1): In □ should be indicated an area code according to the table shown on page 24, section 14 when preparing an order form.

Note (2): The specific symbols (赤, 黒, 白, . . etc) on a surface of P.C. Board are actually unrelated to the repair service and are significant denotement in order to process the proper assembly of P.C. Board at the factory.

Transistor

Item No.	Part No.	Rating		Description	
		Pc	fT		Maker
X801	2SD325(E)	10W	8MHz	Silicon	Sanyo
2	2SC945A(P,Q)	0.25W	250MHz	"	NEC
3	2SC945A(P,Q)	"	"	"	"
4	2SD325(E)	10W	8MHz	"	Sanyo
5	2SD571(L,K)	0.8W	110MHz	"	NEC
6	2SB605(K,L)	0.8W	120MHz	"	"
7	2SC945A(P,Q)	0.25W	250MHz	"	"
8	2SA733A(P,Q)	0.25W	180MHz	"	"
9	2SB605(K,L)	0.8W	120MHz	"	"
10	2SB507V(E)	30W	8MHz	"	Sanyo
11	2SB560(E)	0.75W	100MHz	"	"
12	2SA733(P,Q)	0.25W	180MHz	"	NEC
13	2SC945A(P,Q)	0.25W	250MHz	"	"
14	2SD571(L,K)	0.8W	110MHz	"	"
15	2SD313V(E)	30W	8MHz	"	Sanyo
16	2SD438(E)	0.75W	100MHz	"	NEC
17	2SC945A(P,Q)	0.25W	250MHz	"	"
18	2SC945A(P,Q)	0.25W	250MHz	"	"
19	2SC945A(P,Q)	0.25W	250MHz	"	"

Integrated Circuits

Item No.	Part Number	Rating	Description	
		pc		Maker
IC801	HA17741PS		IC	Hitachi
IC802	NJM4558D	0.5 W	"	JRC
IC803	TC4052BP		"	Toshiba
IC804	UPD554C-033		"	NEC
IC805	NJM4558D	0.5 W	"	JRC
IC806	TC4016BP		"	Toshiba
IC807	VC5021		"	Oki-denki kogyo
IC808	NJM4558D-D		IC	JRC
IC809	VC4046		"	Oki-denki kogyo

Diodes

Item No.	Part Number	Rating	Description	
			Maker	
D801	ERB12-02RKL1		Silicon	Fuji
D802	1S2076-31		"	Hitachi
D803	1S2076-31		"	"
D804	1S2076-31		"	"
D805	RD5,6EB3		" (Zener)	NEC
D806	RD5,6EB3		" (Zener)	"
D807	1S2076-31		"	Hitachi
D808	1S2076-31		"	"
D809	ESAB03-02A		"	Fuji
D810	1S2076-31		"	NEC
D811	LN321GP		LED	Matsu-shita
D812	LN221RP		"	"
D813	LN221RP		"	"
D814	LN221RP		"	"
D815	LN221RP		"	"

Coil

Item No.	Part Number	Rating	Description
L801	E03062-44		OSC Coil (400 kHz ± 10%)

Capacitors

Item No.	Part Number	Rating		Description
C801	QET51VR-108H	1000 μF	35 V	Electrolytic
C802	QCC21EM-223	0.022 μF	25 V	Ceramic
C803	QET51HR-475H	4.7 μF	50 V	Electrolytic
C804	QCC21EM-223	0.022 μF	25 V	Ceramic
C805	QCC21EM-223	0.022 μF	25 V	Ceramic
C806	QCC21EM-223	0.022 μF	25 V	Ceramic
C807	QFM81HK-104	0.10 μF	50 V.	Myler
C808	QFT51HR-227H	22 μF	50 V	Electrolytic
C809	QCF21HP-104	0.10 μF	50 V	Ceramic
C810	QFM81HK-473	0.047 μF	"	Myler
C811	ECEA1EN330S	33 μF	25 V	Non Pole Electrolytic
C812	QCC21EM-223	0.022 μF	25 V	Ceramic
C813	QCC21EM-223	0.022 μF	25 V	"
C814	QCC21EM-223	0.022 μF	25 V	"
C815	QCF21HP-103	0.010 μF	50 V	"
C816	QET51ER-106H	10 μF	25 V	Electrolytic
C817	QET51ER-106H	10 μF	25 V	"
C818	QCF21HP-103	0.010 μF	50 V	Ceramic
C819	QCC21EM-223	0.022 μF	25V	"
C820	QET51CR-476H	47 μF	16 V	Electrolytic
C821	QCC21EM-223	0.022 μF	25 V	Ceramic
C822	QET51CR-476H	47 μF	16V	Electrolytic
C823	QCF21HP-102	1000 pF	50 V	Ceramic
C824	QET51HR-476H	47 μF	"	Electrolytic
C825	QET51VR-108H	1000 μF	35 V	"
C826	QET51VR-108H	"	"	"
C827	QFT51VR-108H	"	"	"
C829	QCC21EM-223	0.022 μF	25 V	Ceramic
C830	QET51CR-476H	47 μF	16 V	Electrolytic
C831	QCC21EM-223	0.022 μF	25 V	Ceramic
C832	QET51CR-476H	47 μF	16 V	Electrolytic
C833	QCF21HP-102H	1000 pF	50 V	Ceramic
C834	QET51HR-476H	47 μF	50 V	Electrolytic
C835	QET51VR-108H	1000 μF	35 V	"
C836	QCE22HP-103	0.010 μF	500 V	Ceramic
C837	QET51HR-476H	47 μF	50 V	Electrolytic
C838	QET51HR-106H	10 μF	50 V	"
C839	QFM81HK-473	0.047 μF	50 V	Myler
C840	QFM81HK-473	0.047 μF	50 V	"
C841	QET51HR-475H	4.7 μF	50 V	Electrolytic
C842	QET51HR-106H	10 μF	50 V	"
C843	QET51HR-106H	10 μF	50 V	"
C844	ECEA1EN330S	33 μF	25 V	Non Pole Electrolytic
C845	QCF21HP-223	0.022 μF	50 V	Ceramic
C846	ECEA1EN330S	33 μF	25V	Non Pole Electrolytic
C847	QET51HR-106H	10 μF	50 V	Electrolytic
C848	QET51HR-106H	10 μF	50 V	"
C849	QET51HR-106H	10 μF	50 V	"
C850	QCC21EM-223	0.022 μF	25 V	Ceramic
C851	QCC21EM-223	0.022 μF	25 V	"
C852	QCC21EM-223	0.022 μF	25 V	"
C853	QCT26UJ-330	33 pF	"	"
C854	QCF21HP-102	1000 pF	50 V	"
C855	QFM81HK-473	0.10 μF		
C856	QFM81HK-473	0.047 μF	50 V	Myler
C857	QCF21HP-103	0.010 μF	50 V	Ceramic
C859	QCT26UJ—330	33 pF	50 V	Ceramic
C860	QCT26UI-330	33 pF	"	"
C861	QCF21HP-223	0.022 μF	"	"
C862	QFM81HK-473	0.047 μF	"	Myler
C863	QCF21HP-103	0.010 μF	"	Ceramic
C864	QFM81HK-104	0.1 μF	"	Myler

Resistors

Item No.	Part Number	Rating		Description
R801	QRD141J-243SY	24 kΩ	1/4 W	Carbon
R802	QRG027J-101	100 Ω	2 W	Oxide Metal Film Resistor
R803	QRG037J-330	33 Ω	3 W	"
R804	QRD141J-222SY	22 kΩ	1/4 W	Carbon
R805	QRD141J-153SY	15 kΩ	1/4 W	"
R806	QRD141J-104SY	100 kΩ	"	"
R807	QRD141J-473SY	47 kΩ	"	"
R808	QRD141J-153SY	15 kΩ	"	"
R809	QRD141J-102SY	1 kΩ	"	"
R810	QRD141J-102SY	1 kΩ	"	"
R811	QRD141J-102SY	1 kΩ	"	"
R812	QRD141J-242SY	2.4 kΩ	"	"
R813	QRD141J-242SY	2.4 kΩ	"	"
R814	QRD141J-433SY	43 kΩ	"	"
R815	QRD129J-4R7		1/2 W	"
R816	QRD141J-472SY	4.7 kΩ	1/4 W	"
R817	QRD141J-302SY	3 kΩ	"	"
R818	QRD141J-752SY	7.5 kΩ	"	"
R819	QRD141J-472SY	4.7 kΩ	"	"
R820	QRD141J-103SY	10 kΩ	"	"
R821	QRD141J-2D2SY	2 kΩ	"	"
R822	QRD141J-202SY	2 kΩ	"	"
R823	QRD141J-103SY	10 kΩ	"	"
R824	QRD141J-223SY	22 kΩ	"	"
R825	QRD141J-224SY	220 kΩ	"	"
R826	QRD141J-224SY	220 kΩ	"	"
R827	QRD141J-103SY	10 kΩ	"	"
R828	QRD141J-103SY	"	"	"
R829	QRD141J-103SY	"	"	"
R830	QRD141J-104SY	100 kΩ	"	"
R831	QRD141J-274SY	270 kΩ	"	"
R832	QRD141J-224SY	220 kΩ	"	"
R833	QRD141J-103SY	10 kΩ	"	"
R834	QRD141J-103SY	10 kΩ	"	"
R835	QRD141J-225SY	2.2 MΩ	"	"
R836	QRD141J-225SY	2.2 MΩ	"	"
R837	QRD141J-225Y	2.2 MΩ	"	"
R838	QRD141J-822SY	8.2 kΩ	"	"
R839	QRD141J-822SY	8.2 kΩ	"	"
R840	QRD141J-822SY	8.2 kΩ	"	"
R841	QRD141J-822SY	8.2 kΩ	"	"
R842	QRD141J-822SY	8.2 kΩ	"	"
R843	QRD141J-331SY	330 Ω	"	"
R844	QRD141J-822SY	8.2 kΩ	"	"
R845	QRD141J-822SY	8.2 kΩ	"	"
R846	QRD141J-103SY	10 kΩ	"	"
R847	QRD141J-223SY	22 kΩ	"	"
R848	QRD141J-822SY	8.2 kΩ	"	"
R849	QRD141J-822SY	8.2 kΩ	"	"
R850	QRD141J-473SY	47 kΩ	"	"
R851	QRD141J-475SY	4.7 MΩ	"	"
R852	QRD141J-475SY	4.7 MΩ	"	"
R853	QRD141J-473SY	47 kΩ	"	"
R854	QRD141J-822SY	8.2 kΩ	"	"
R855	QRD141J-822SY	8.2 kΩ	"	"
R856	QRD141J-822SY	8.1 kΩ	"	"
R857	QRD141J-822SY	8.2 kΩ	"	"
R858	QRD141J-822SY	8.2 kΩ	"	"
R859	QRD141J-472SY	4.7 kΩ	"	"
R860	QRD141J-472SY	4.7 kΩ	"	"
R861	QRD141J-103SY	10 kΩ	"	"
R862	QRD141J-103SY	10 kΩ	"	"
R863	QRD141J-103SY	10 kΩ	"	"
R864	QRD141J-103SY	10 kΩ	"	"
R865	QRD141J-472SY	4.7 kΩ	"	"
R866	QRD141J-472SY	4.7 kΩ	"	"
R867	QRD141J-183SY	18 kΩ	"	"
R868	QRD129J-680	68 Ω	1/2 W	"
R869	QRV144F-3001	30 Ω	1/4 W	OMF
R870	QRD141J-182SY	1.8 kΩ	1/4 W	Carbon
R871	QRD-149J-470S	47 Ω	"	"
R872	QRD129J-472	4.7 Ω	"	"
R873	QRV144F-3301	3.3kΩ	1/4 W	OMF
R874	QRD129J-680	68 Ω	1/2 W	Carbon
R875	QRV144F-3001	30 Ω	2/4 W	OMF
R876	QRV144F-3301	33 Ω	1/4 W	OMF
R877	QRD141J-182SY	1.8 kΩ	1/4 W	Carbon
C878	QRD149J-470S	47 Ω	1/4 W	"
R879	QRD129J-472	4.7 kΩ	1/2 W	"
R880	QRD141J-473SY	47 kΩ	1/4 W	"
R881	QRD141J-473SY	47 kΩ	"	"
R882	QRD141J-271SY	270 Ω	"	"
R883	QRD129J-4R7	4.7 Ω	1/2 W	"
R884	QRD129J-4R7	4.7 Ω	"	"
R885	QRD141J-222SY	2.2 kΩ	1/4 W	"
R886	QRD141J-273SY	27 kΩ	"	"
R887	QRD141J-272SY	2.7 kΩ	"	"
R888	QRD141J-102SY	1 kΩ	"	"
R889	QRD141J-223SY	22 kΩ	"	"
R890	QRD141J-473SY	47 kΩ	"	"
R891	QRD141J-105SY	1 MΩ	"	"
R892	QRD141J-105SY	1 MΩ	"	"
R893	QRD141J-102SY	1 kΩ	"	"
R894	QRD141J-224SY	220 kΩ	"	"
R895	QRD141J-223SY	22 kΩ	"	"
R896	QRD141J-123SY	12 kΩ	"	"
R897	QRD141J-155SY	1.5 MΩ	"	"
R898	QRD141J-912SY	9.1 kΩ	"	"
R899	QRD141J-224SY	220 kΩ	"	"
R900	QRD141J-473SY	47 kΩ	"	"
R901	QRD141J-122S	1.2 kΩ	"	"
R902	QRD141J-101SY	100 Ω	"	"
R903	QRD141J-293SY	390 Ω	"	"
R904				
R905	QRD141J-102SY	1 kΩ	"	"
R906	QRD141J-224SY	220 kΩ	"	"
R907	QRD141J-153SY	15 kΩ	"	"

Resistors

Item No.	Part Numer	Rating	Description
VR801	QVP4A0B-104	100 k (B)	Carbon
VR802	QVZ3501-103	10 k (B)	Cermet
VR803	QVP4A0B-102	1 k (B)	Carbon
VR804	QVZ3501-473	47 k (B)	Cermet

Others

Item No.	Part Number	Rating	Description
SW801	QSP0410-001		Push SW (Size)
SW802	QSP0410-001		" (STAND BY)
SW803	QSP0410-001		" (REPEAT)
SM804	QSP0410-001		" (SPEED)
SM805	ESP0001-001		Switch (PLAY/REJ)
SM806	ESP0001-001		" (UP/DOWN)

11. Packing Materials and Part Numbers

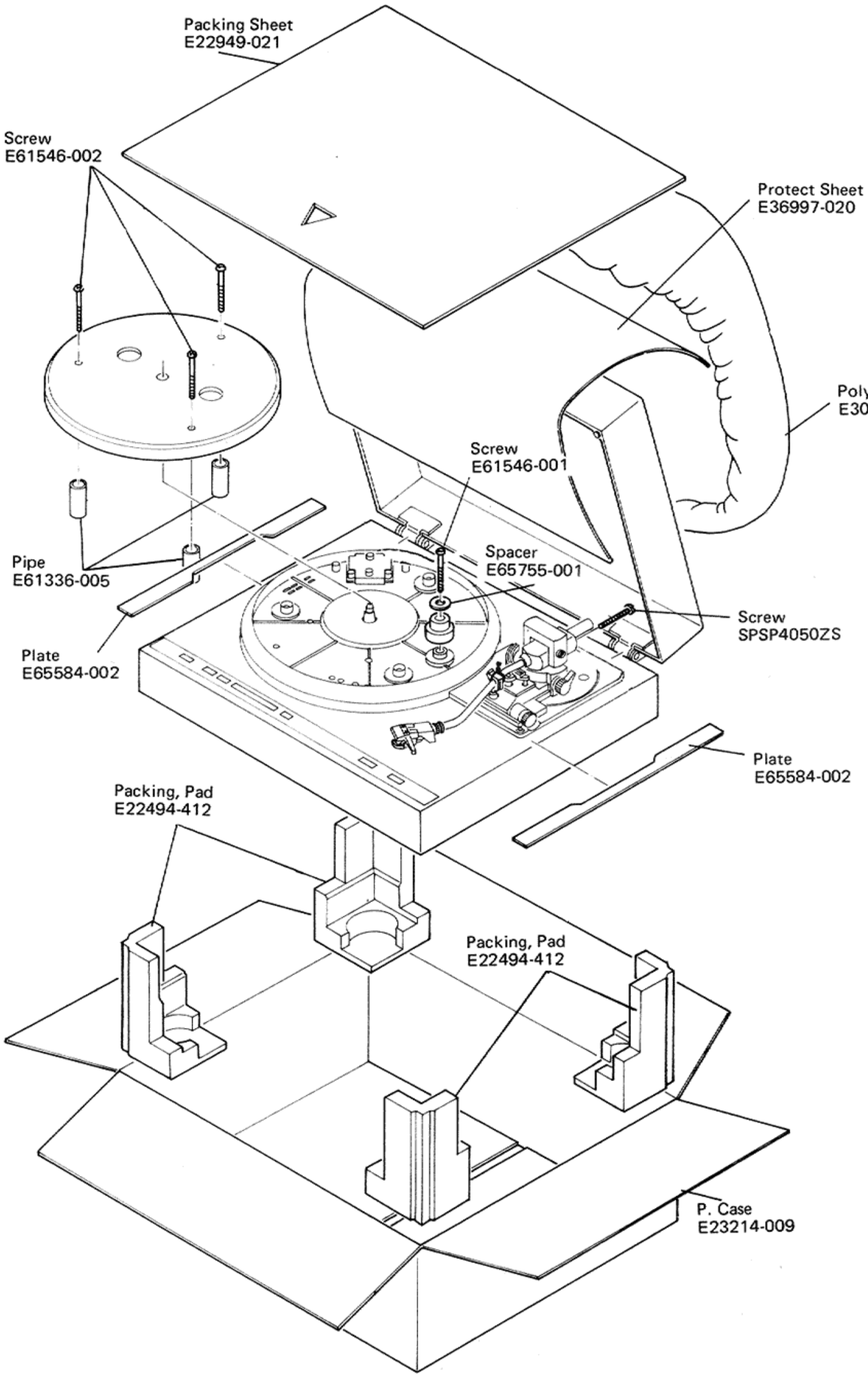


Fig. 27

13. Accessories List

No.	Part Number	Description	Q'ty
1	E30580-854A	Instruction Book	1
2	See below	Warranty Card	1
3	BT20042	"Does it better" (for U.S.A. & U.S. Military Market only)	1
4	E41202-2	Envelope	1
5	E66329-001	EP Adapter	1
6	E04056	Siemens Plug (for other areas only)	1

14. Parts List with Specified Numbers for Designated Areas

Page	Item No.	Description	U.S.A.	Canada	Europe	U.K.	Australia	U.S. Military Market and Other Countries
16	4	Tonearm Ass'y	ARM-536	ARM-536	MP-316S	ARM-536	MP-316S	MP-316S
16	15	P.C. Board Ass'y	TXX-278B	TXX-278B	TXX-278C	TXX-278C	TXX-278C	TXX-278A
16	18	Power Transformer ⚠	E03032-40F	E03032-40F	E03032-40H	E03032-40HBS	E03032-40H	E03032-40G
16	31	Power Cord ⚠	QMP1200-200	QMP1200-200	QMP3900-200	QMP9017-008BS	QMP2560-244	QMP7600-250
16	32	Cord Clamp	QHS3876-162	QHS3876-162	A37897	A37897BS	A37897	A37897
16	49	C.S. Bracket	E65431-002	E65431-002	—	—	—	—
16	50	Voltage Selector ⚠	—	—	—	—	—	QSR0085-001U
16	35	Fuse ⚠	QMF61U1-1R0	QMF61U1-1R0	QMF51A2-R80L	QMF51A2-R80LBS	QMF51A2-R80L	QMF61U1-1R0
16	51	Barrier Plate	E67308-001	—	—	—	—	—
16	39	Foot Ass'y	E300666-006	E300666-006	E300666-005	E300666-005	E300666-005	E300666-005
16	46	Lug Strip Ass'y ⚠	—	—	QML1810-054	QML1810-054BS	QML1810-054	QML1810-054
16	48	Mask Cap	E65395-002	E65395-002	—	—	—	—
21	—	Fuse Clip	E45524-002	E45524-002	E48965-002	E48965-002	E48965-002	E45524-002
24	—	Warranty Card	BT20032B	BT20025C	—	BT20013C	BT20029B	BT20032B (U.S. Military Market only
16	37	Bottom Cover Ass'y	E10547-005	E10547-004	E10547-004	E10547-004	E10547-004	E10547-004
16	47	Connector ⚠	E03830-001	E03830-001	—	—	—	—
	40	Foot Ass'y	E300666-004	E300666-004	E300666-003	E300666-003	E300666-003	E300666-003
	52	Barrier Plate	E67589-001	—	—	—	—	—

⚠ : Safety parts

Power Specifications

Countries	Line Voltage & Frequency	Power Consumption
U.S.A. & CANADA	AC 120 V∿, 60 Hz	16 Watts
CONTINENTAL EUROPE	AC 220 V∿, 50 Hz	"
U.K. & AUSTRALIA	AC 240 V∿, 50 Hz	"
U.S. MILITARY MARKET	AC 110/120/220/240 V∿ Selectable, 50/60 Hz	"
OTHER AREAS	AC 110/120/220/240 V∿ Selectable, 50/60 Hz	"

JVC

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