JVC

SERVICE MANUAL

MODEL QL-5

QUARTZ-LOCKED DIRECT DRIVE TURNTABLE

No. 2428
NOV. 1977

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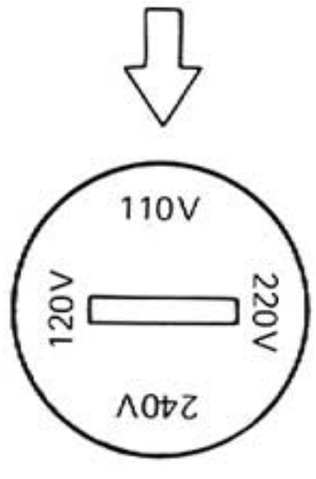
CHECKING YOUR LINE VOLTAGE (For U.S. Military Market and Other Countries)
Before inserting the power plug, please check this setting to see that it corresponds with the line voltage in your area. If it doesn't, be sure to adjust the voltage selector switch to the proper setting before operating this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



1. Specifications

Motor section

Motor	: 12-pole, 24-slot, DC type FG servomotor
Drive system	: Direct drive
Speeds	: 33-1/3 and 45 rpm
Wow and flutter	: Less than 0.025 % (WRMS)
Rumble	: More than 63 dB (IEC-B) More than 73 dB (DIN-B)
Speed detection	: Integrated frequency generator
Starting torque	: More than 0.8 kg·cm
Speed deviation	: Within 0.004 %
Load characteristics	: 0 % (with 100 g total tracking force)
Drift per hour	: 0.0001 %/H
Power characteristics	: 0 % (± 10 %)
Temperature characteristics	: 0.00005 %/°C
Platter	: 31.2 cm diameter
Quick stop time	: Within 1.6 seconds

Tonearm section

Type	: T.H. (Tracing-Hold system, static balance), New Gimbal Support
Effective length	: 245 mm
Tracking error	: +1°48′ −1°31′
Overhang	: 15 mm
Tracking force range	: 0 — 3 g (0.25 grams division, direct reading)
Weight range (including headshell)	: 14.5 — 22 g (Headshell 10 g)
Height range	: 39 — 51 mm (present to 43 mm)
Mechanisms equipped	: Oil-damped arm elevator Anti-skating system Headshell mounting angle fine adjustment possible

Cartridge section (not provided on units for U.S.A., Canada and the U.K.)

Type	: Moving Magnet (Cartridge body: MD-1025)
Stylus	: 0.3 x 0.7 mil. diamond (DT-Z1TE)
Optimum tracking force	: 2 grams
Output	: 3 mV (1 kHz)
Frequency response	: 10 to 25 000 Hz
Separation	: More than 25 dB (1 kHz) (with test record TRS-1)
Load Resistance	: 47 k ohms
Compliance	: 10×10^{-6} cm/dyne (Dynamic) 30×10^{-6} cm/dyne (Static)

General

Dimensions	: 16.5 (H) x 48.1 (W) x 40.3 (D) cm (with cover closed) (6-1/2″ x 18-15/16″ x 15-7/8″) (Since the dimensions show only the design measurements, consideration is required when installing the unit in a limited space such as a rack.)
Weight	: 10.5 kg (23.1 lbs) (without corrugated cardboard case)

Power Specifications

Countries	Line Voltage & Frequency	Power Consumption
U.S.A. & CANADA	AC 120 V, 60 Hz	12 watts
CONTINENTAL EUROPE	AC 220 V, 50 Hz	12 watts
U.K. & AUSTRALIA	AC 240 V, 50 Hz	12 watts
U.S. MILITARY MARKET	AC 110, 120, 220, 240 V Selectable, 50/60 Hz	12 watts
OTHER AREAS	AC 110, 120, 220, 240 V Selectable, 50/60 Hz	12 watts

2. Service Precautions

1. Be sure to place the unit on a level surface when adjusting motor rotation.
2. In servicing, do not use parts other than those specified.
3. Be careful not to damage the motor shaft when repairing the motor unit.
4. When the heatsink (including X820) is removed from the motor board to permit repair of the citcuit board, the transistor temperature may increase due to the lack of heat radiation. Attach an aluminum plate (approx. 100 (W) x 100 (D) x 1 (H) mm to the motor board).
5. If noise is produced when the knobs are turned or replaced, apply white grease or a small amount of silicon (50 000 unit, a quarter of a drop) on the knob shafts and the moving parts of the spring.
   Note: Resin of the knob may be damaged if lubricating oils other than those specified are used.

3. Features

- Quartz-locked speed control system
- FG servomotor assures optimal torque (starting torque 0.8 kg·cm).
- Heavy aluminum die-cast platter of 2 kg cover included Inertia mass 280 kg·cm^2 .
- Cartridge it elliptical stylus employed. (Z-1TE)
- Quick stop mecanism equipped.
- Highly sensitive, New Gimbal Suppot Tonearm with an effective length of 245 mm employed.

4. "How to Operate" (Names and Functions)

POWER switch
Turn the power switch ON. Stroboscope lamp lights.

Anti-skating knob
The anti-skating mechanism counteracts the centripetal force which pulls the stylus towards the center of the record while the record is playing; thereby reducing the pressure on the inner walls of the record groove.

Fig. 1

Arm lifter lever
Raise the lever to lift the tonearm, and lower it for the tonearm to descend gently.

Speed select/STOP knob
Turn the knob to align the index line on the knob with "33" or "45", depending on the rpm of the record you wish to play.

33-1/3 rpm record (LP) . . . . . "33"
45 rpm record (EP) . . . . . "45"

The platter stops within one revolution when the index line is aligned with the "STOP" position centered between the "33" and "45" positions.

Stroboscope pattern
A single stroboscope pattern is equipped on the rim of the platter. When the turntable rotates at either 33-1/3 or 45 rpm, the pattern will appear stationary to indicate that the turntable speed is correct.

5. Block Diagrams

5-(1) Servomotor Control System

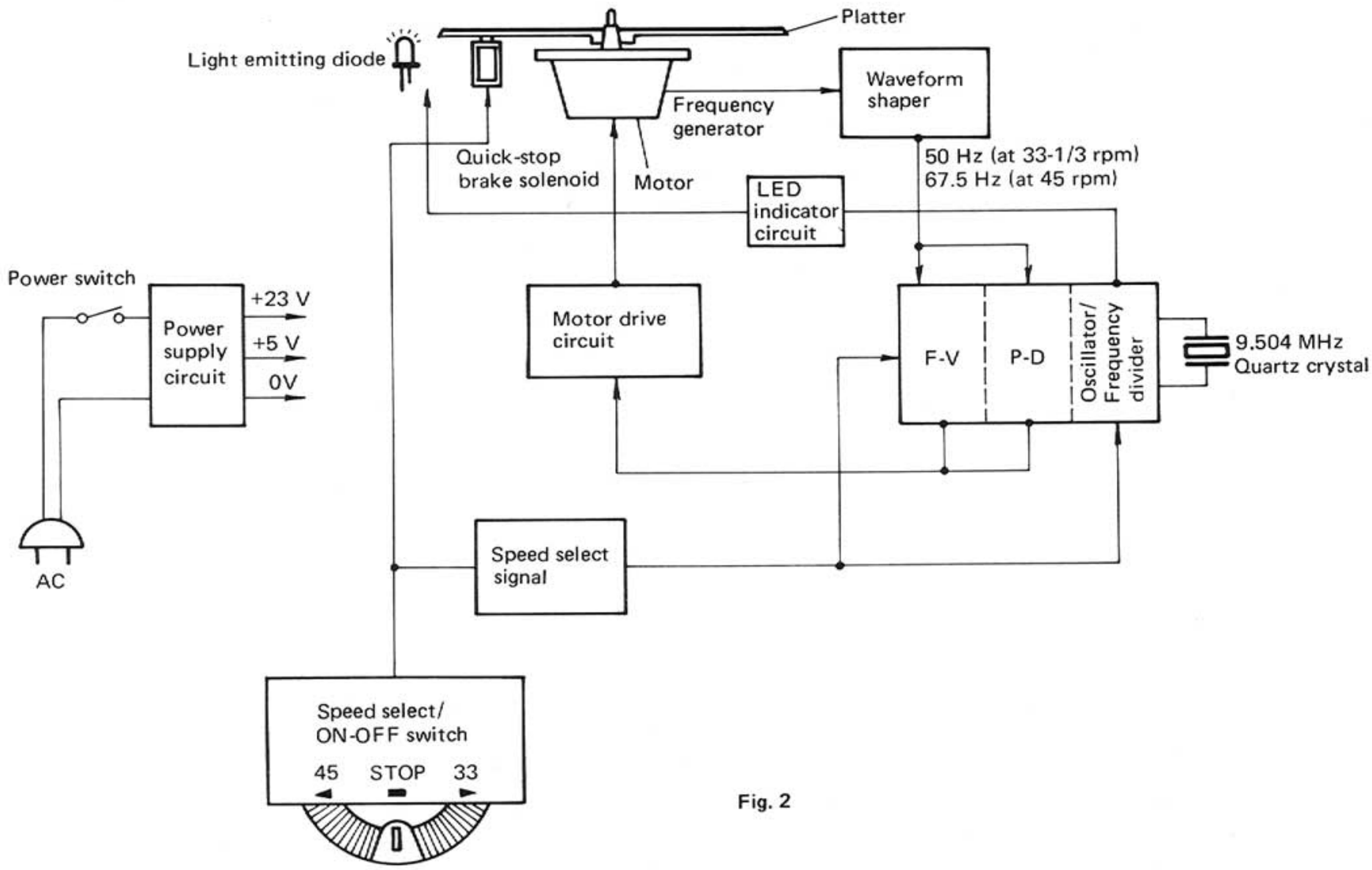


Fig. 2

5-(2) IC802 Integrated Circuits and Waveforms

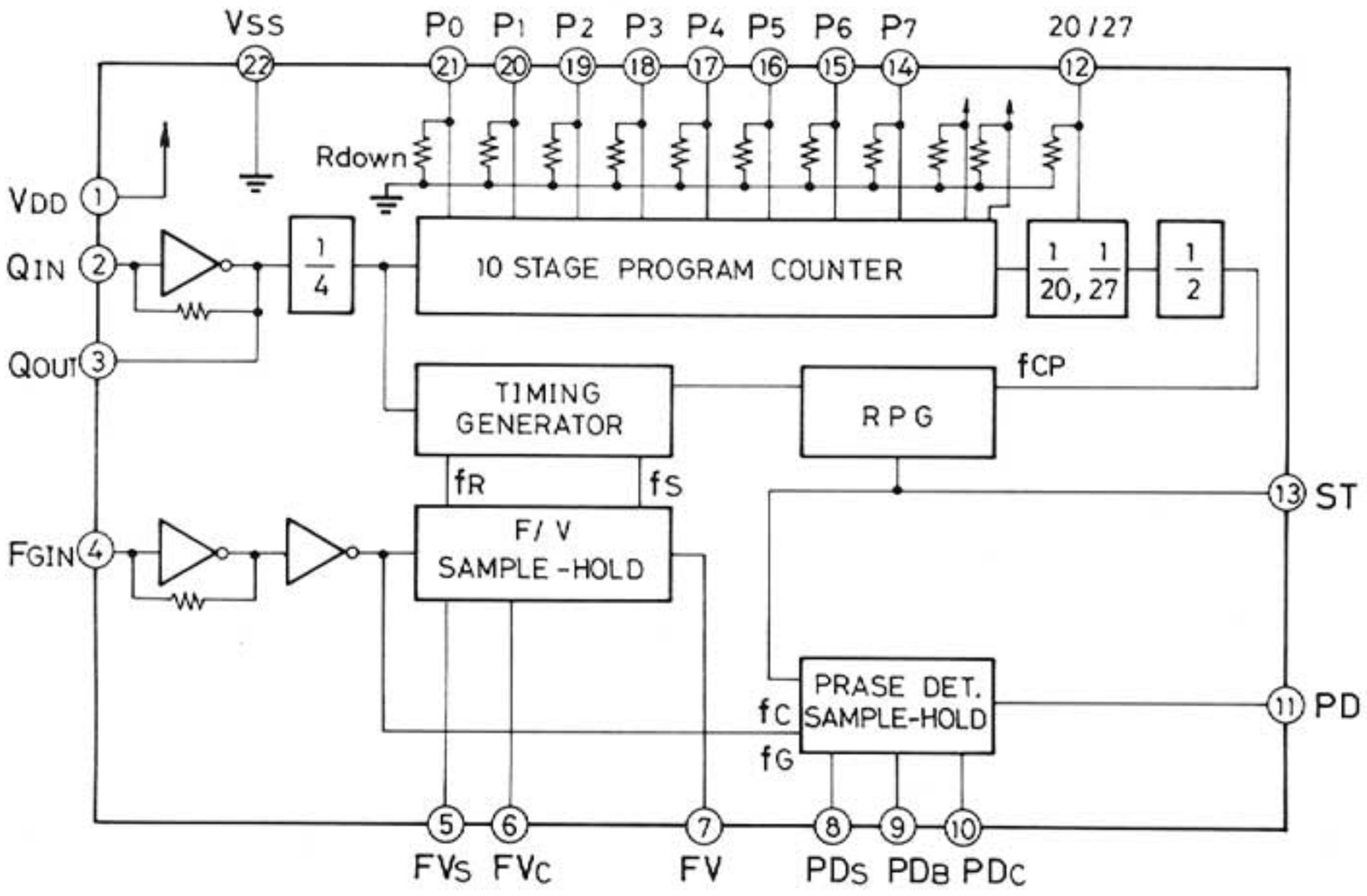


Fig. 3 Block Diagram

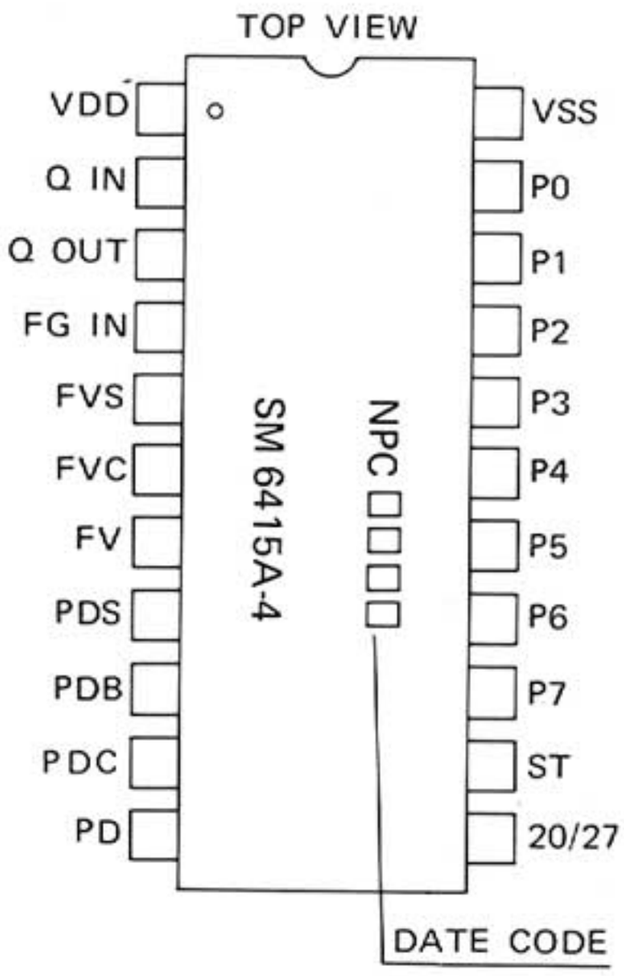


Fig. 4 Pins Location

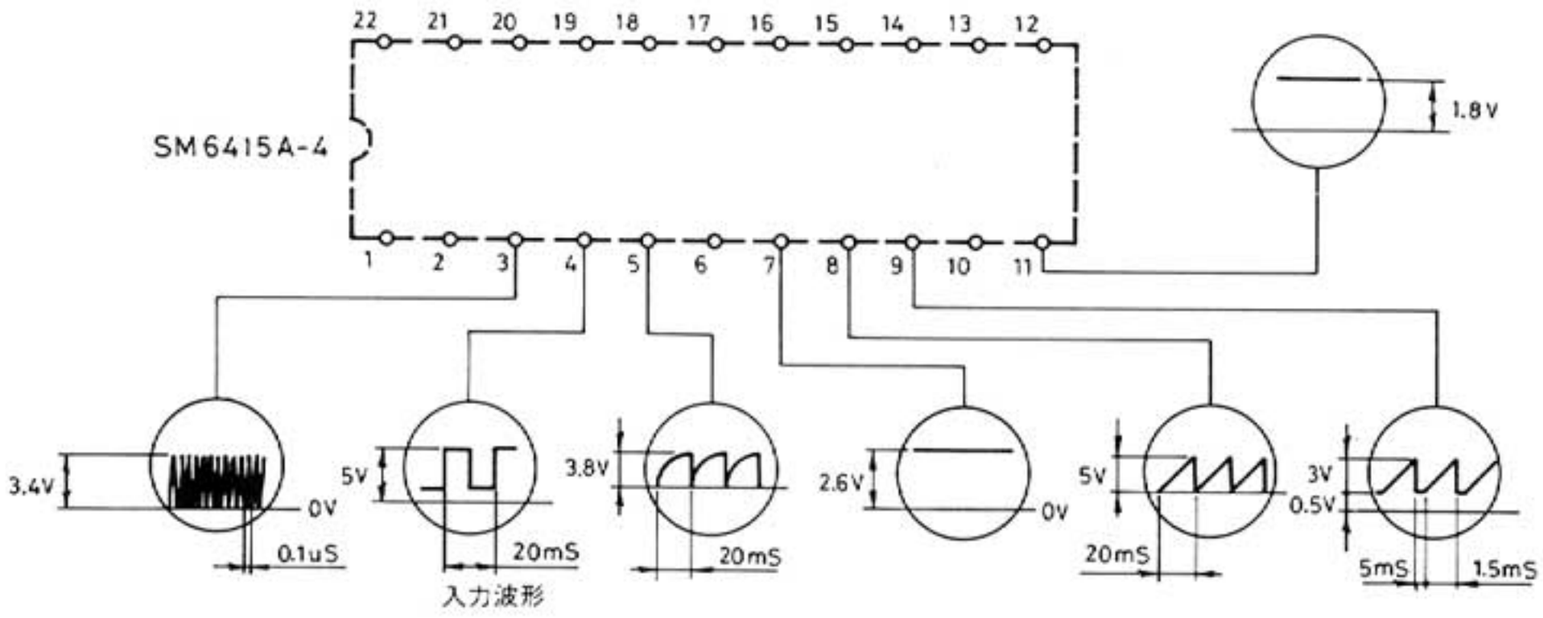
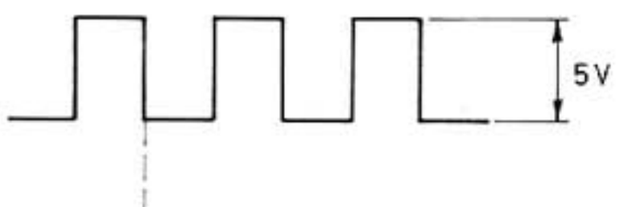


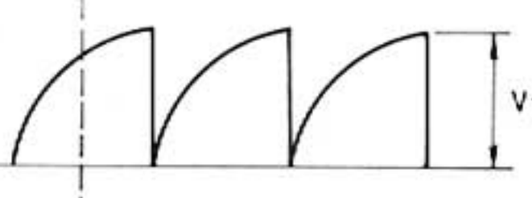
Fig. 5 Waveforms (Pin 1 through Pin 11)

F/V section

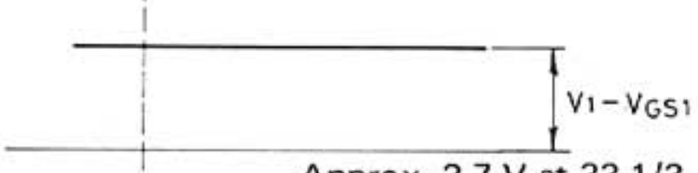
Waveform at pin 4.



Waveform at pin 5.



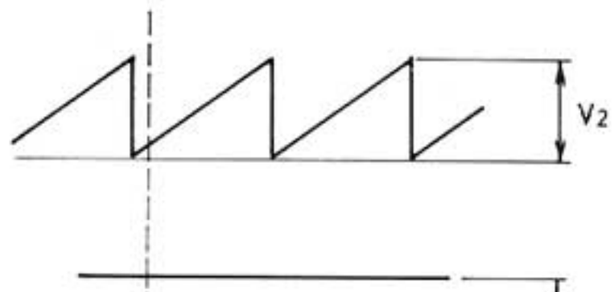
Waveform at pin 7.



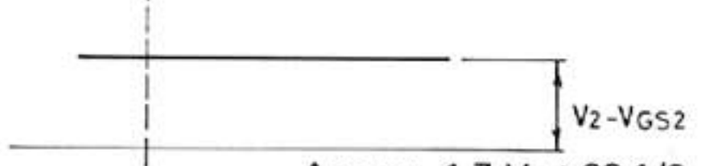
Approx. 2.7 V at 33-1/3.

P/D section

Waveform at pin 8.

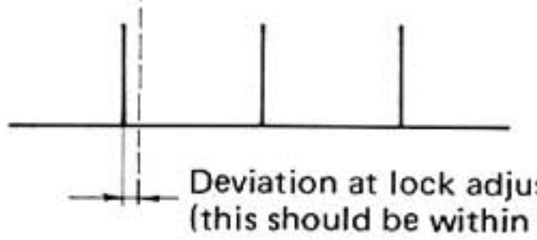


Waveform at pin 11.



Approx. 1.7 V at 33-1/3.

Be sure to obtain the waveform at pin 13 through R845, otherwise the IC may be damaged.

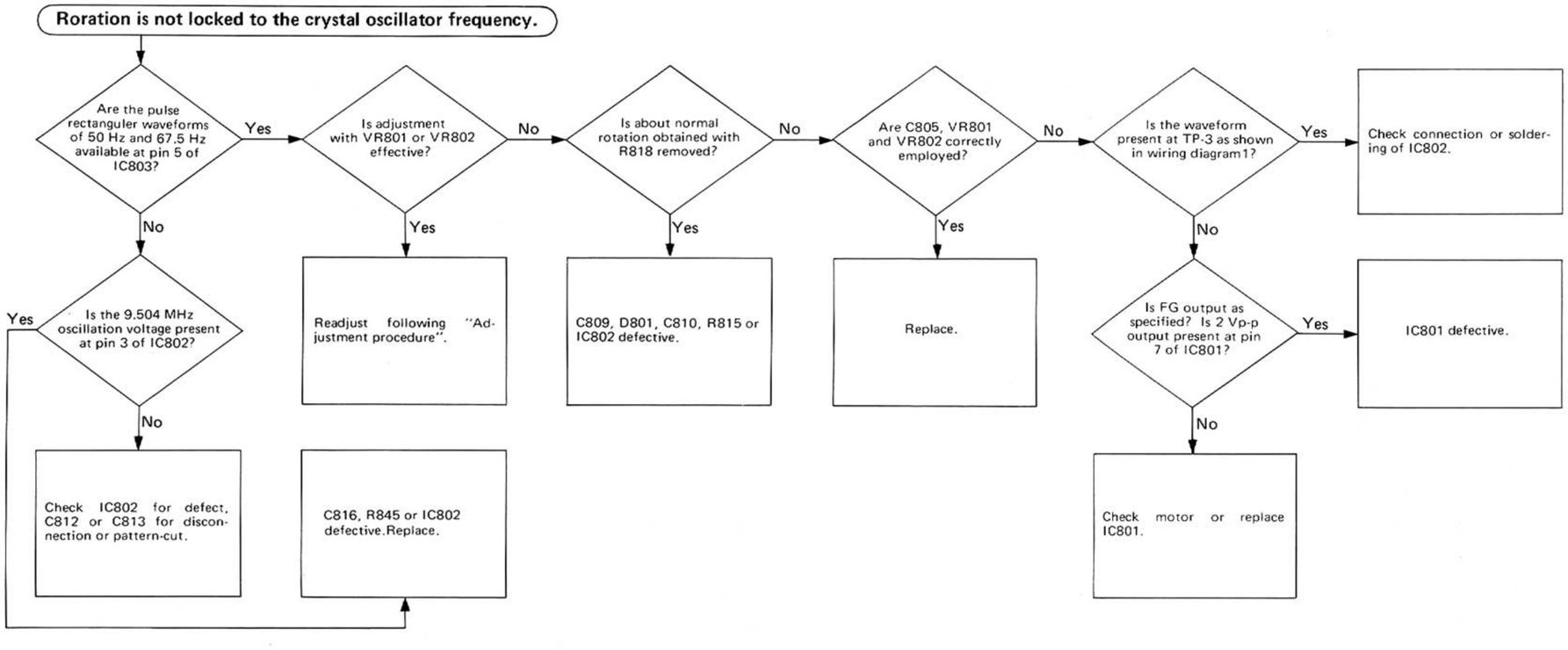


Deviation at lock adjustment (this should be within ± 1 msec.)

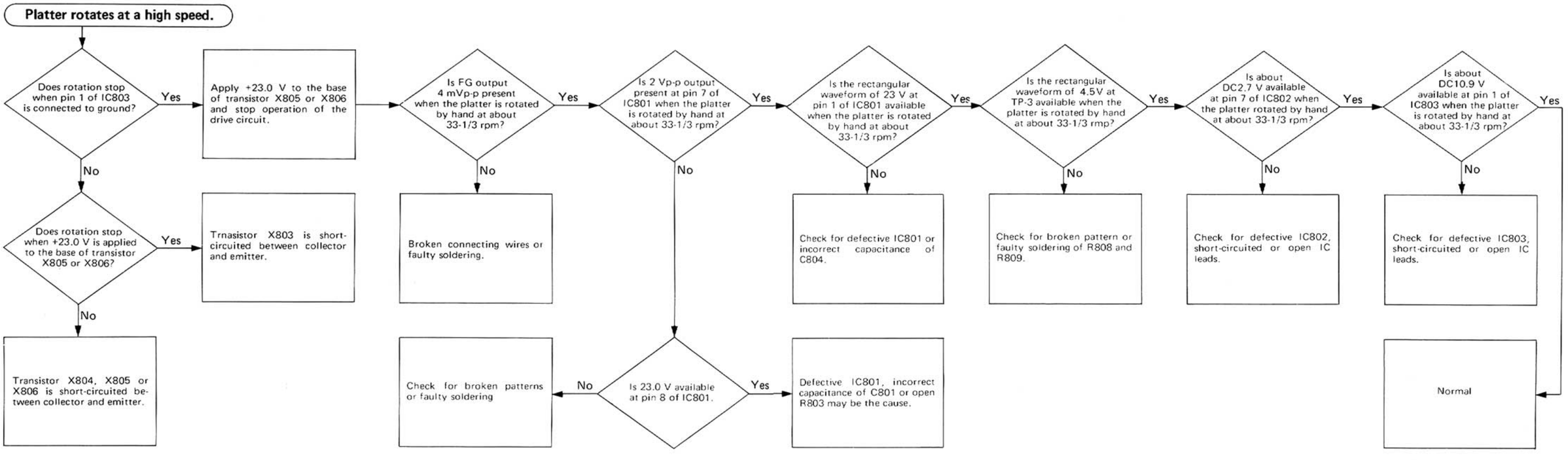
Fig. 6 Waveforms (F/V and P/D)

6. Troubleshooting

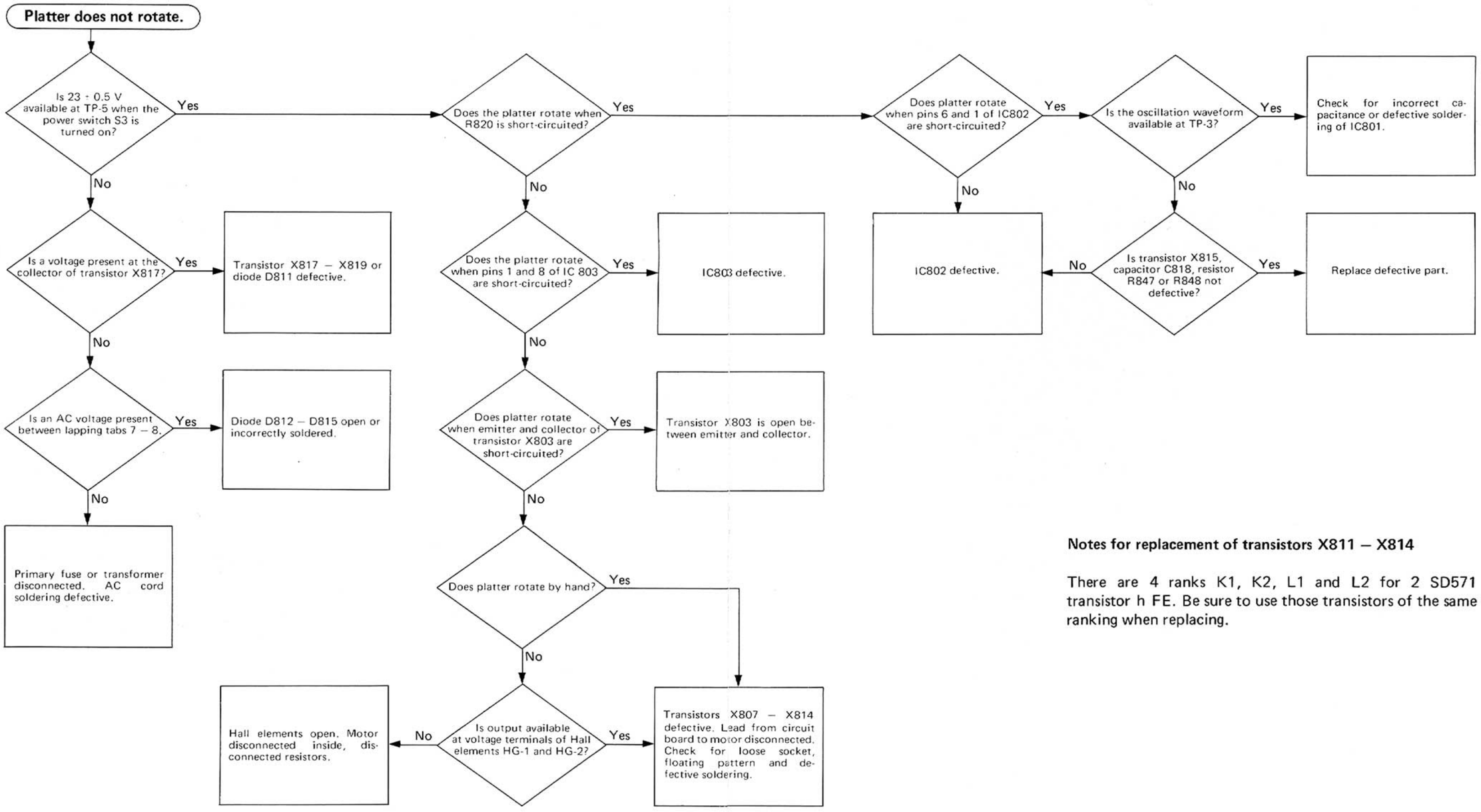
6-(1) Platter does rotate



6-(2) Platter rotates at a high speed



6-(3) Rotation is not locked to the crystal oscillator frequency



Notes for replacement of transistors X811 – X814

There are 4 ranks K1, K2, L1 and L2 for 2 SD571 transistor h FE. Be sure to use those transistors of the same ranking when replacing.

7. Parts Replacement

7-(1) Stylus Replacement

Replacement of the stylus can be easily made by simply inserting the stylus plug (A) into the jack (B) of the cartridge.

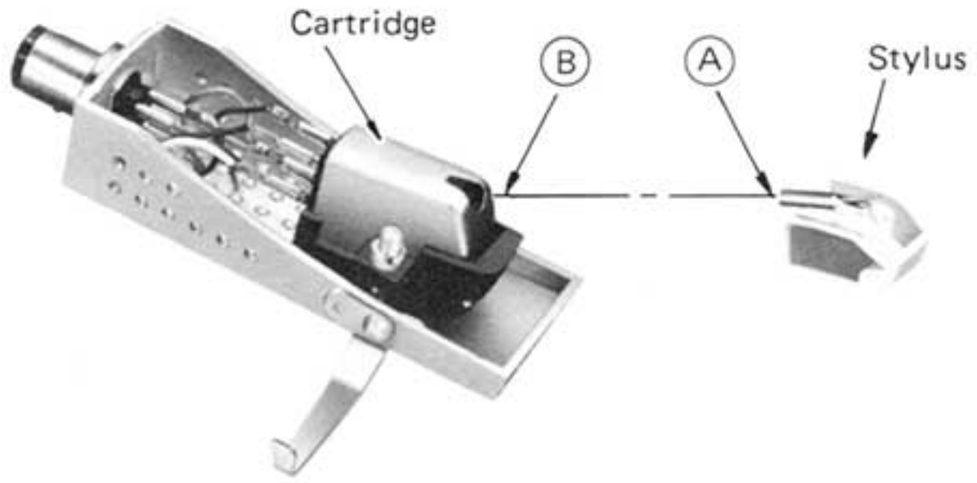


Fig. 7

Service life of the stylus employed for this unit is generally as follows, varying, depending on the record conditions: (dirty record groove etc.).

Stereo LP record (30 cm)
Approx. 300 – 500 hours

Styli are disposable items.
Therefore, it is recommended to buy a supply of styli when you buying the unit. When purchasing them, specify the DT-Z1TE (JVC, standard). Styli approximating DT-Z1TE are available on the market. Usage of such styli may result in a noisy and distorted sound reproduction. Be careful to avoid their usage.

Note: Cartridge is not provided on units for the U.S.A., Canada and the United Kingdom.

7-(2) Cartridge Replacement

Removal and mounting of the headshell (Fig. 8)
Turn the connector nut in the direction of "A" to remove the headshell from the tonearm. Turn it in the direction of "B" for mounting the headshell.

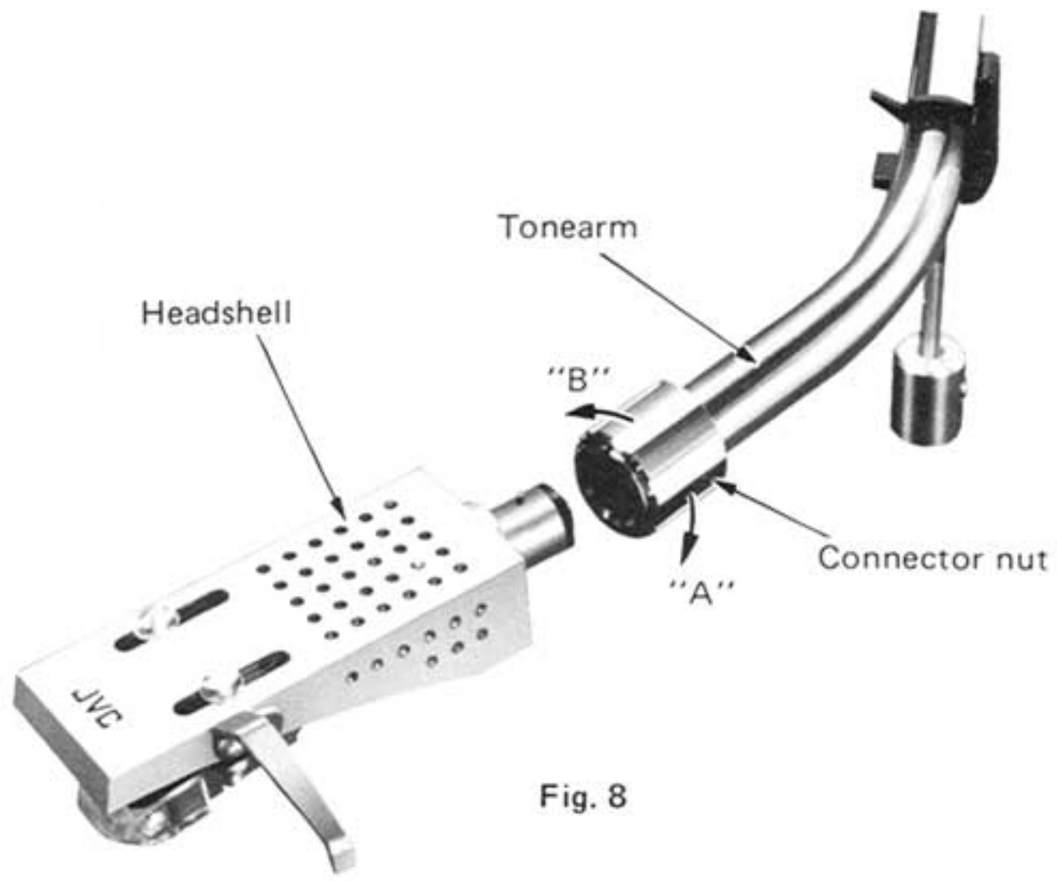


Fig. 8

Cartridge replacement (Fig. 9)

1. Remove the 2 screws securing the cartridge on the headshell.
2. Reinstall a cartridge onto the headshell.
3. The four cartridge lead wires are colour-coded as follows: Connect them correctly.

White (+) L
Blue (–) . . . . . LE
Red (+) . . . . . R
Green (–) . . . . . RE

4. Mount the cartridge properly onto the headshell and leave the set screws slightly loosened, then, after completing the "Overhang adjustment", tighten them firmly.
5. After each cartridge replacement, be sure to perform tracking force and overhang adjustments.

Note: If a heavy cartridge or headshell is employed, "Zero balance" may not be obtained with the specified counterweight.
In this case, use an optional counterweight.
(SW-71, for cartridge of 14.5 ~ 22 g including headshell)
(SW-37, for cartridge of 24 ~ 37 g including headshell)

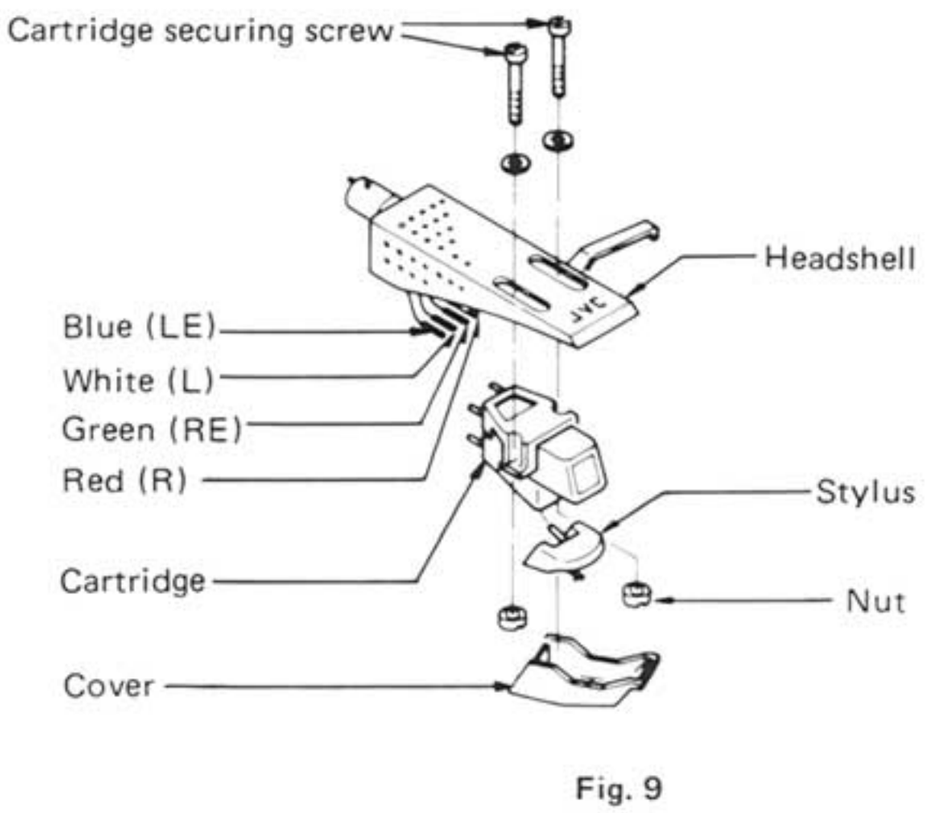


Fig. 9

8. Adjustment Procedures

Servomotor Control Section

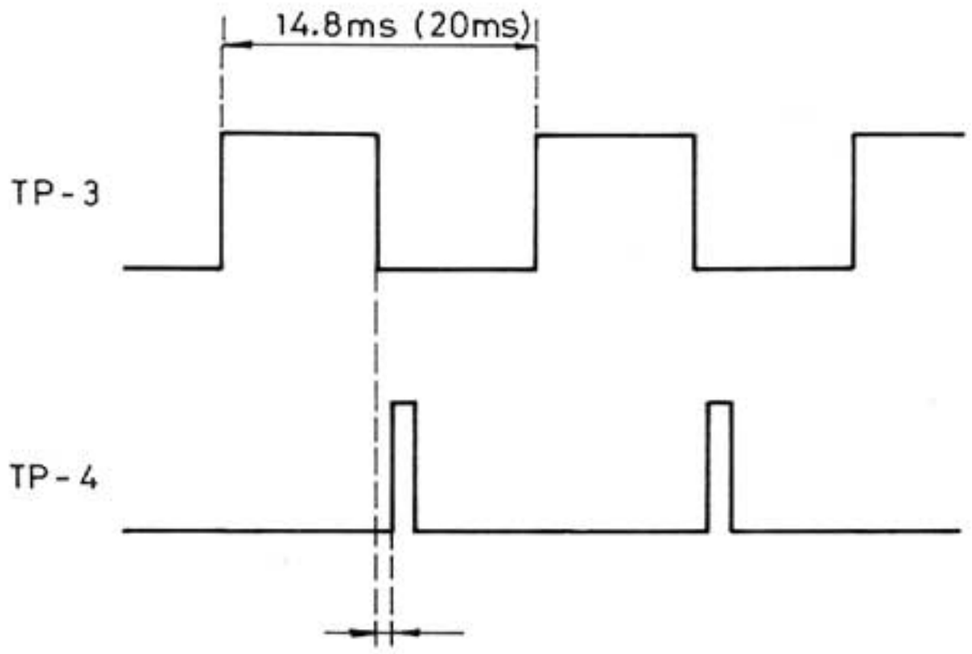
8-(1) Power Supply Voltage Check

1. Disconnect the motor socket from the circuit board. Turn the power switch on. (Confirm that the rated voltage is applied to the unit.) Set the speed select switch to 33-1/3. Confirm that 23 ± 0.5 V DC is present at TP-5. If the voltage is deviate from that range, adjust with the semi-fixed resistor VR803 (1 kΩ).
2. Confirm that the voltage difference at TP-5 is less than −1 V when the speed select/on-off switch is set at STOP.

8-(2) Lock Adjustment

1) With dual beam oscilloscope

1. Connect the motor socket to the circuit board. Connect the dual beam oscilloscope to TP-3, TP-4. Obtain a turntable speed of 45 rpm by setting the speed select switch to 45, then adjust the semi-fixed resistor VR801 (100 kΩ) until the following waveforms are obtained.



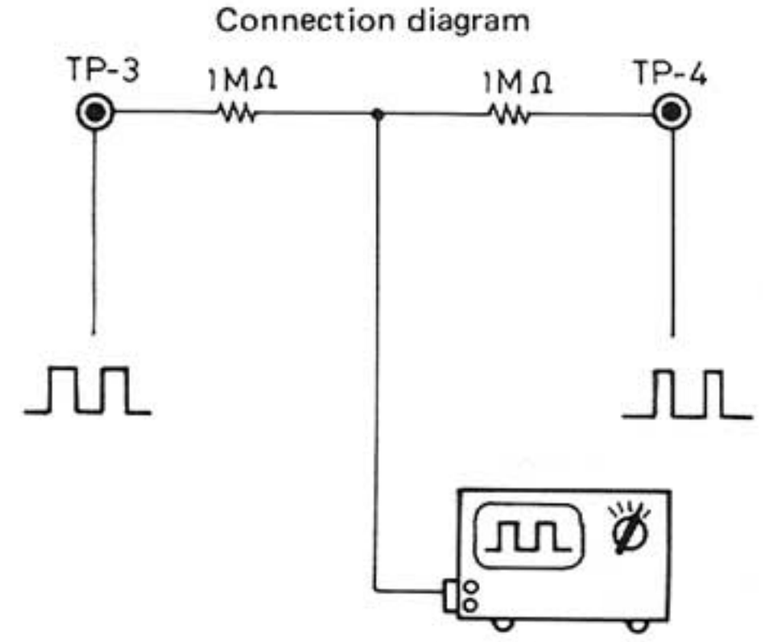
Adjust to get a difference of within ± 1 msec from TP-4.

Fig. 10

2. Obtain a turntable speed fo 33-1/3 rpm by setting the speed select switch to 33-1/3, then adjust the semi-fixed resistor VR802 (47 kΩ) until the difference between TP-3 and TP-4 is within ± 1 msec.

2) With single beam oscilloscope

Connect the single beam oscilloscope to TP-3, TP-4 as shown in Fig. 11 below. Adjust until the waveforms shown in Fig. 12 are obtained.



Single beam oscilloscope

Fig. 11

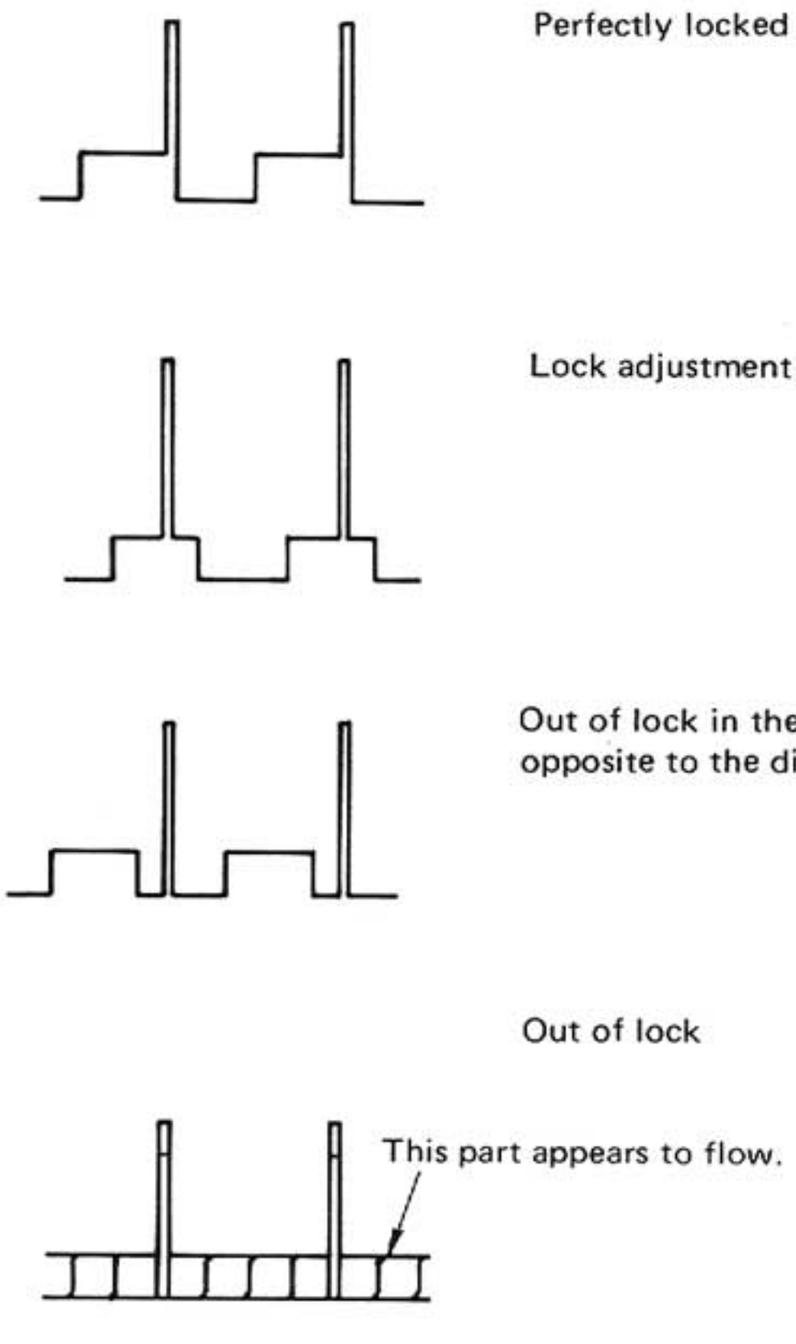


Fig. 12

8-(3) Brake Mechanism Adjustment

A brake lining is employed to stop the platter. A worn brake lining will result in the platter not stopping quickly or stopping with abnormal noise. If these troubles occur, adjust as described below.

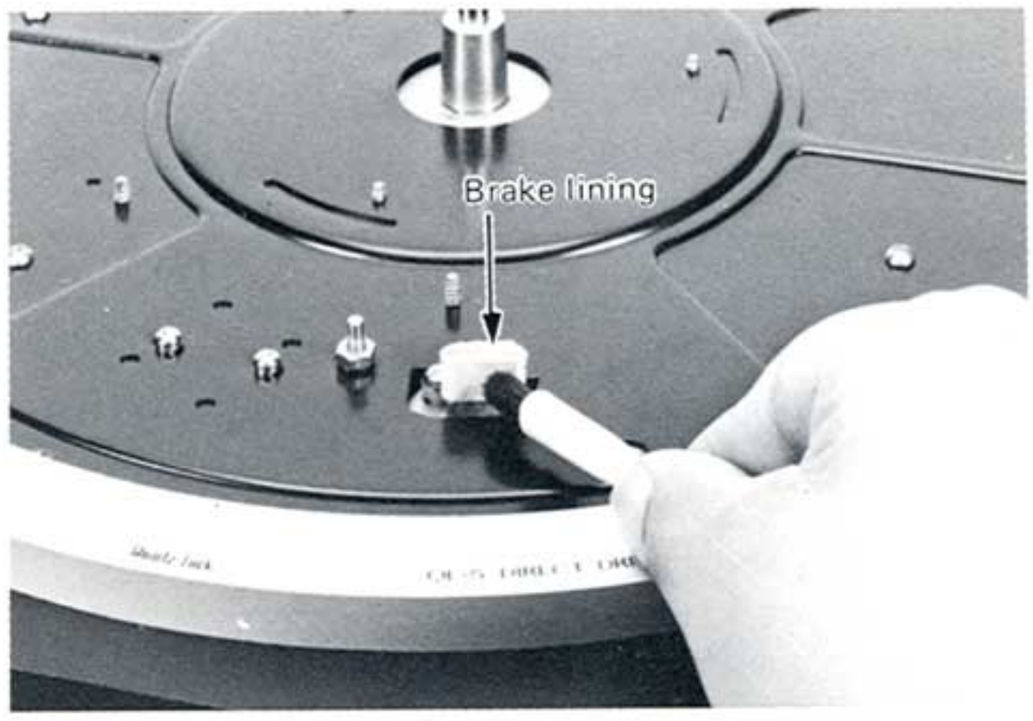


Fig. 13

- **The platter makes a noisy stop.**

1. Brush the friction surface of the brake lining, which contacts the platter, with a brush several times. Refer to Fig. 13.
2. Carefully wipe the inner platter surface, which contacts the brake lining, with a soft cloth (such as gauze) dipped in alcohol.

- **The platter does not stop correctly due to a defective brake. (The platter does not stop within one rotation.)**

When the brake lining is worn out.

1. Completely remove the brake lining using thinner, then attach a new lining.
2. Remove the paper covering from the adhesive rear side of the new brake lining, then attach the brake lining in the previously attached position.
3. Glue the brake rod to the brake lining at the double lining position (as shown by arrow A in Fig. 15) with rubber cement.

When the solenoid coil is improperly positioned.

1. Fit the brake lining inside the platter (The function is the same as a normal brake). Slightly loosen the 2 solenoid mounting screws, then adjust the solenoid coil position until the clearance between the solenoid coil end and the plunger head is 9 mm. (Refer to Fig. 14.) After the adjustment, be sure to re-tighten the screws firmly (Refer to Fig. 15).

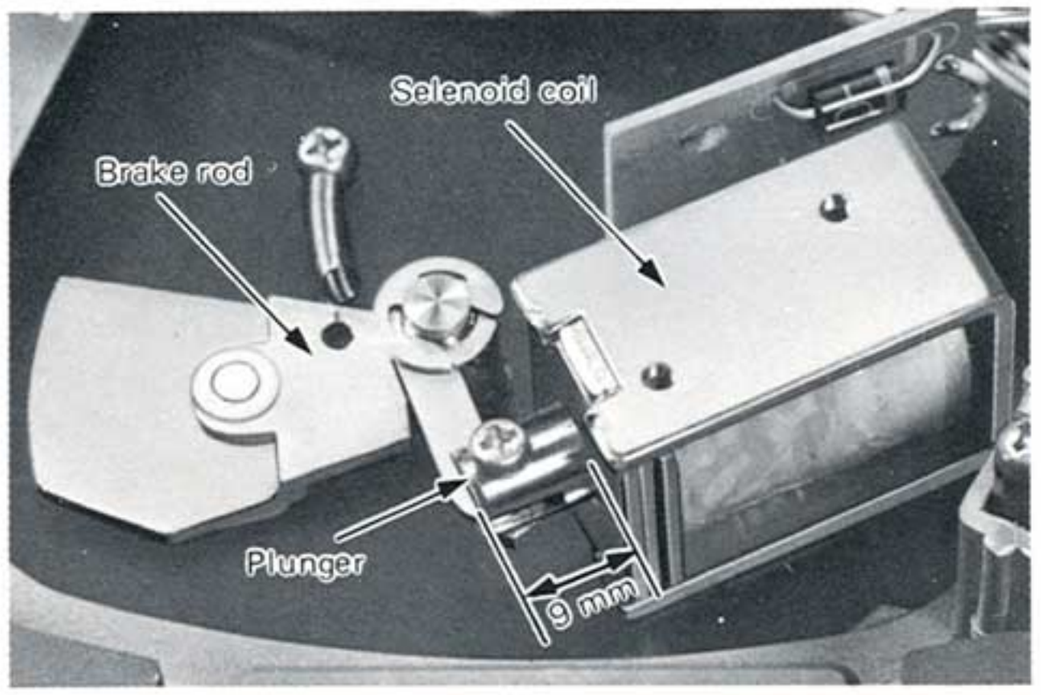


Fig. 14

- **How to use the brake clearance adjusting boss B. (Refer to Fig. 15)**

When replacing the brake rod with a new one, turn the boss fully counterclockwise, then mount new brake rod.

After mounting the brake rod, gradually turn the boss clockwise (This narrows the clearance between the platter and the brake lining) until the contact sound of the brake lining and platter is eliminated when the platter is stopped by touching the stop switch.

Finally, confirm that the brake lining does not contact the platter, while the platter is rotating at the speed 33-1/3 or 45 rpm, by noting the sound and observing the stroboscope.

If the platter contacts the brake lining during rotation, turn the boss counterclockwise to increase the clearance between the brake lining and platter. After replacing the brake rod, be sure to apply a drop of silicone (in the order of million unit) to the part of the motor board stud which contacts the brake rod.

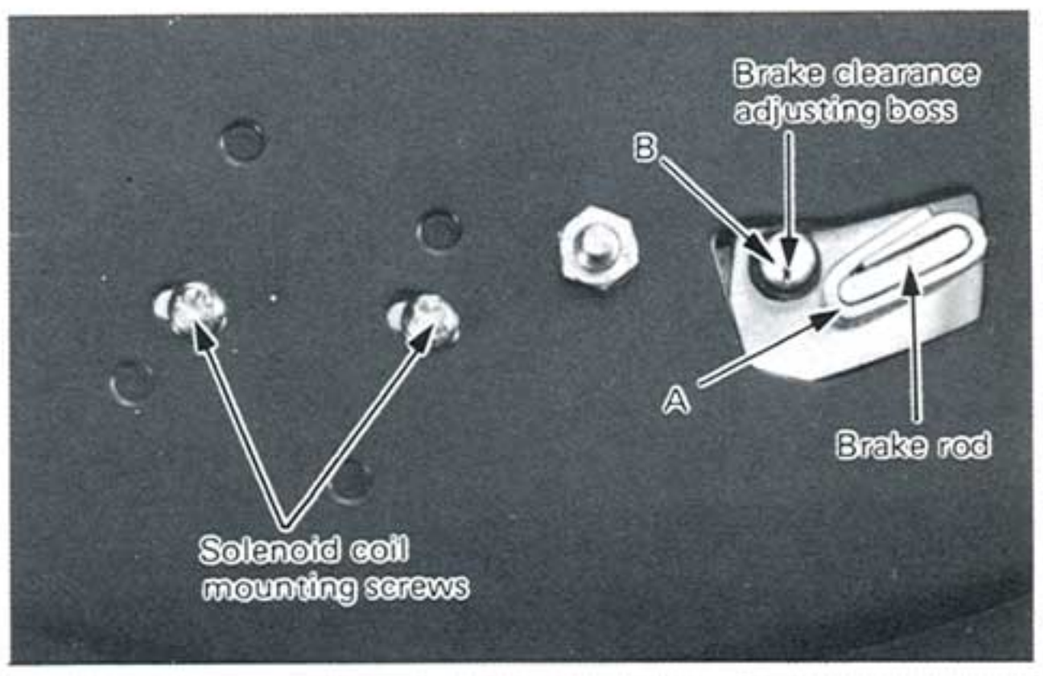


Fig. 15

Tonearm Section

Adjustment
The following adjustments should be performed only when replacing a cartridge or a headshell.
Otherwise, no adjustment is required.
Note: If necessary to replace a cartridge, usage of that headshell exclusive to this unit is recommended.

8-(4) Tonearm Height Adjustment

Mount the cartridge on the headshell. Loosen the 2 tonearm securing screws with a screwdriver, then adjust the tonearm height until the tonearm is horizontal, with the stylus tip at approximately the same level as the disc surface. Be sure to re-tighten the 2 tonearm securing screws after the adjustment. (No adjustment is necessary for European models which are equipped with the Z-1 S tonearm.

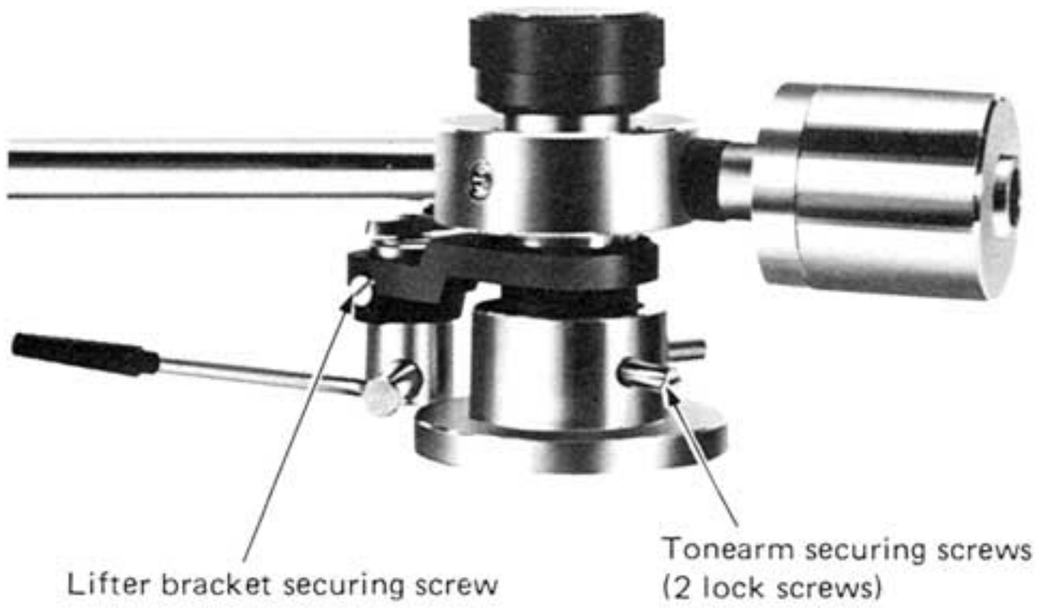


Fig. 16

8-(5) Arm Lifter Height Adjustment

When the tonearm is raised with the arm lifter lever, optimum clearance between the stylus and the disc surface is 8 mm. If no clearance exists between the tonearm and arm lifter during play, proper disc play will not be obtained. With the arm lifter raised, loosen the lifter bracket securing screw with a screwdriver. Adjsut the arm lifter height until the clearance between the stylus tip and the disc surface is 8 mm.

8-(6) Overhang Adjustment

An overhang indicator convenient for overhang adjustment is provided for the model QL-5.
Fit the overhang indicator onto the turntable spindle with the arrow-shaped end pointing toward the tonearm pivot. Move the tonearm and place the stylus over the overhang indicator. (Be sure, the tonearm is in the up position.) One digit on the overhang indicator represents 1 mm overhang. Slide the cartridge adjusting the overhang until the stylus points to 15 mm (marked by "▲" between 10 and 20 mm). Be sure to secure the cartridge to the headshell after the adjustment. Errors within 2 — 3 mm are negligible from the practical point of view.

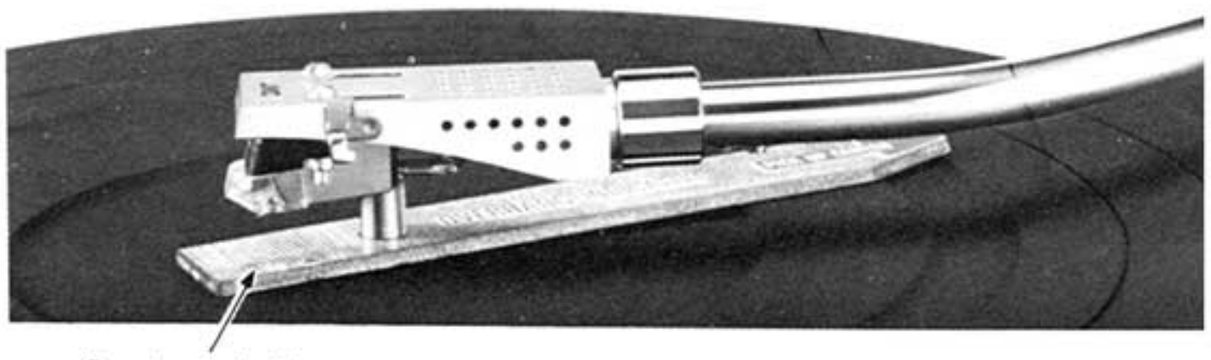


Fig. 17

8-(7) Headshell Angle Adjustment

If the stylus tip is not perpendicular to the surface of the disc, loosen the lock screws on the lower side of the tonearm, with a small screwdriver, then adjust the headshell until it is parallel with the platter. Be sure to re-tighten the screws after the adjustment is completed. For reference purposes, measurement by eye is sufficient.

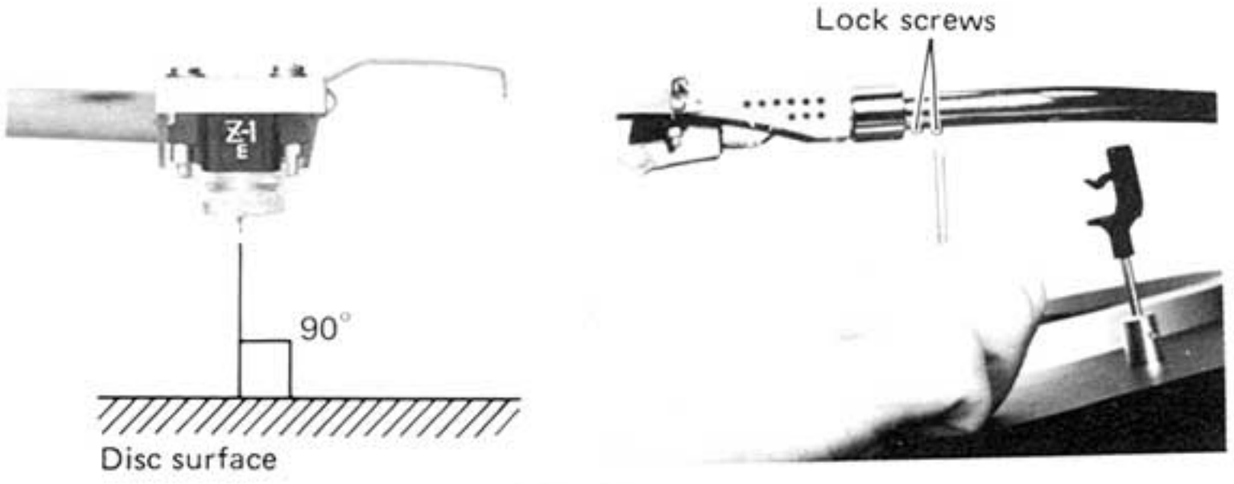
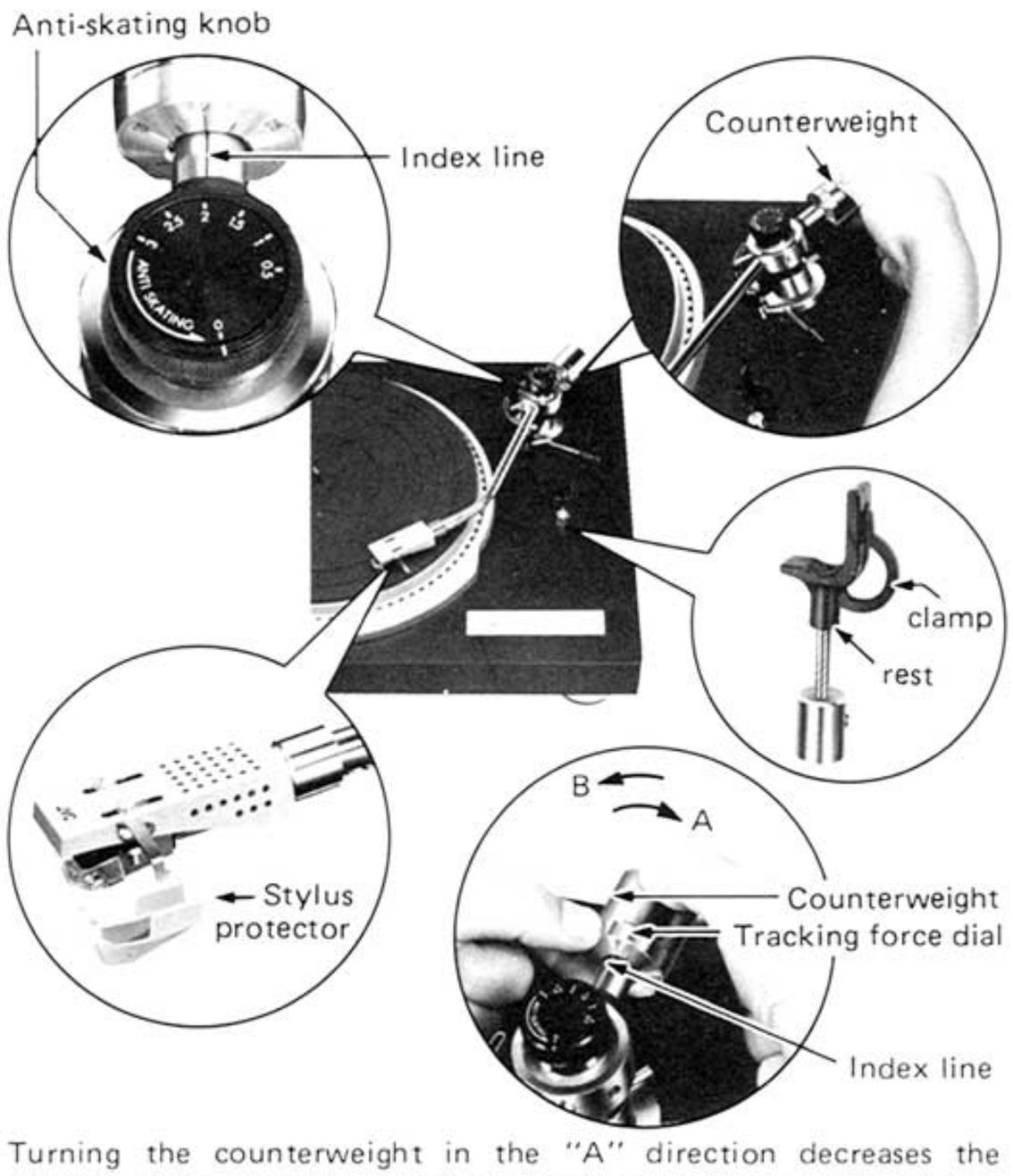


Fig. 18

8-(8) Tracking Force Adjustment

1. Turn the anti-skating knob until the "0" mark on the anti-skating dial is aligned with the index line.
2. Place a record on the platter.
3. Remove the stylus protector.
4. Release the tonearm clamp.
5. Turn the counterweight until the tonearm maintains a balance with the stylus tip on the same level as the record surface. (Zero balance)
6. Return the tonearm to the rest and clamp it.
7. Holding the counterweight at the adjusted position, turn the tracking force dial until the "0" mark is aligned with the index line.
8. Now, turn the counterweight until "2" on the dial is aligned wiht the index line since the optimum tracking force with this turntable is 2 grams.



Turning the counterweight in the "A" direction decreases the tracking force, whereas in the "B" direction increases the tracking force. Turning the tracking force dial only has no effect on the tracking force.

Fig. 19

8-(9) Anti-skating adjustment

Turn the anti-skating adjustment knob until the same value as the optimum tracking force ("2") is aligned with the index line.

8-(10) Arm-rest Height Adjustment

Adjust the arm-rest height until the tonearm is horizontal when the tonearm clamped on the rest. Be sure to retighten the arm-rest securing screw after the adjustment.

Note: Confirm that the arm lift point does not touch the arm lifter when the tonearm is clamped on the rest and the arm lifter lever is raised.

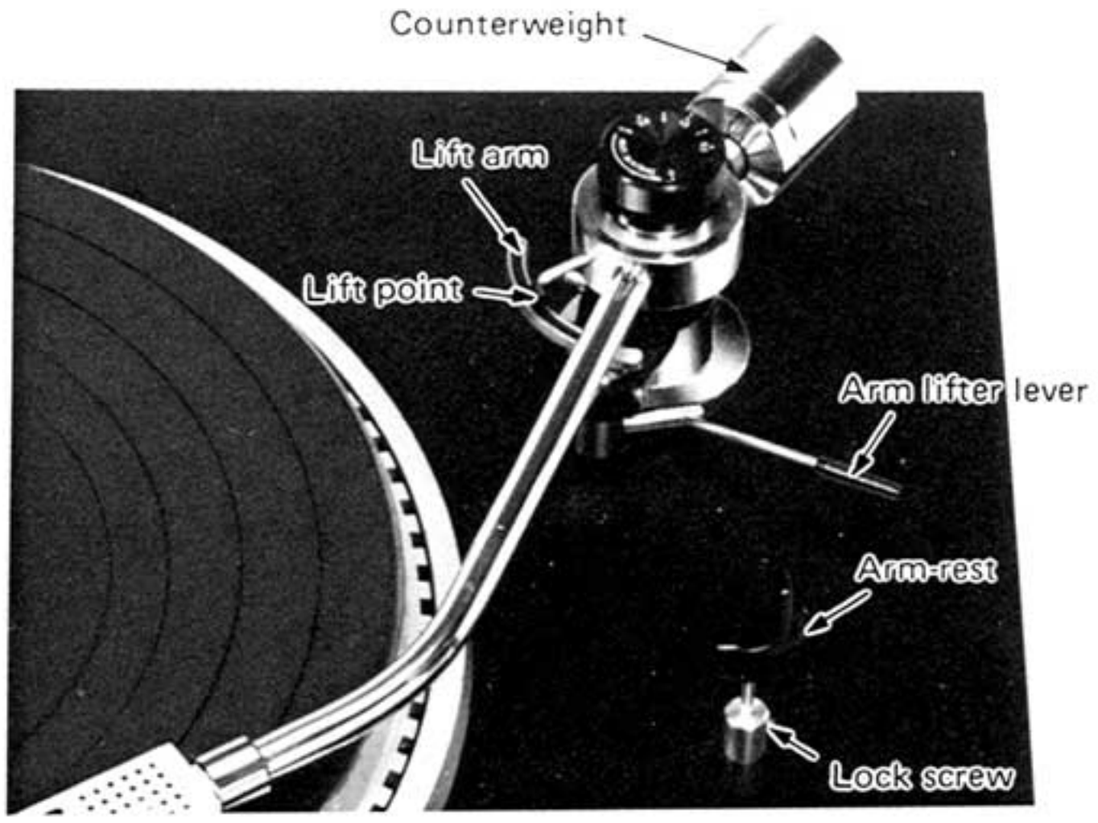


Fig. 20

9. Lubrication

The direct drive motor employd in this unit does not require the lubrication.

10. Exploded Views and Parts List

10-(1) Servomotor Control and Cabinet Ass'y

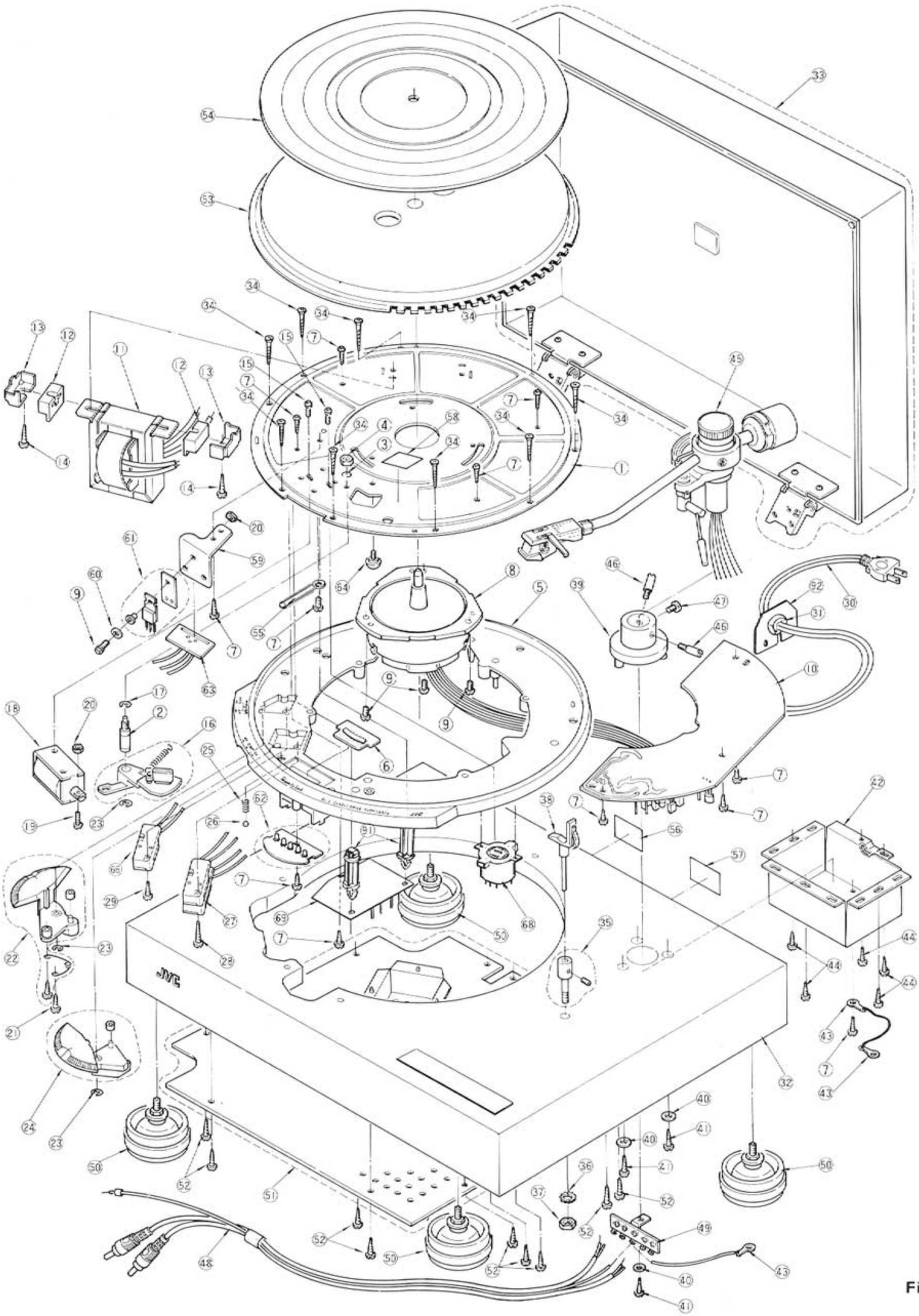


Fig. 21

Parts List

Item No.	Part Number	Description
1	See page 15.	Motor Board
2	E65005-001	Shaft
3	WLS4000M	Washer
4	NTB4000S	Nut
5	E10203-002	Base Ass'y
6	E61983-002	Color Screen
7	SBSB3008Z	Tapping Screw
8	M935A	Motor Ass'y
9	SPST3008ZS	Screw
10	See page 15.	Servomotor Control
		P.C. Board Ass'y
11	See page 15.	Power Transformer ⚠
12	E61132-001	Cusion
13	E61133-001	Holder
14	SBSB4016N	Tapping Screw
15	LPSP3005NS	Screw
16	E61407-001	Brake Lever Ass'y
17	REE5000	"E" Typed Washer
18	E61409-001	DC Solenoid
19	LPSP3012ZS	Ass'y Screw
20	NNZ3000S	Nut
21	E61980-001	Screw
22	E35281-001	Knob (Power Switch) Ass'y
23	REE3000	"E" Typed Washer
24	E65011-001	Knob Ass'y
25	E60488-001	Spring
26	G41505-5	Steel Ball
27	QSM1V01-003	Micro Switch
28	SBSB3030Z	Tapping Screw
29	SBSB3016Z	"
30	See page 15.	Power Cord with Plug ⚠
31	See page 15.	Cord Clamp
32	See page 15.	Cabinet Ass'y
33	E35263-002	Dust Cover Ass'y
	ED20946-005	Dust Cover
	E61992-001	Hinge Ass'y
	SDSP3008M	Screw
34	MSSP3102M	"
35	E61339-002	Rest Stand Ass'y

Item No.	Part Number	Description
36	WBS6000N	Washer
37	NTS6000Z	Nut
38	E60741-001	Arm Rest Ass'y
39	E34600-001	Tonearm Base
40	Q03091-111	Washer
41	SBSB3010Z	Tapping Screw
42	E34772-002	Shield Cover
43	52868-3	Terminal Lug
44	SBSA3012Z	Tapping Screw
45	See page 15.	Tonearm Ass'y
46	E6144-001	Screw
47	SPSP2606N	"
48	E03724-001	Signal Cord Ass'y
49	QML1010-051	Lug Strip Ass'y
50	See page 15.	Foot Ass'y
51	E22517-001	Bottom Board Ass'y
	E22516-001	Bottom Board
	E65007-001	Protector
	SBSB3008Z	Tapping Screw
52	SBSA3016Z	"
53	E22512-001	Platter
54	See page 15.	Platter Covering
55	E50670-005	Wire Clamp
56	See page 15.	Rating Plate
57	E61998-001	Seal Paper
58	E61651-001	Caution Label
59	E61466-001	Heatsink (2SD325)
60	WSS3000N	Washer
61	2SD325 (D, E)	Power Transistor
62	See page 15.	P.C. Board Ass'y
63	See page 15.	"
64	E49447-002	Shaft
65	See page 15.	P.C. Board Ass'y
66	See page 15.	Micro Switch ⚠
67	See page 15.	Fuse Label
68	See page 15.	Voltage Selector ⚠
69	See page 15.	Power Supply P.C. Board Ass'y ⚠
70	See page 15.	Fastener

NOTE ⚠ : SAFETY PARTS

10-(2) Parts List with Specified Numbers for Designated Areas

Item No.	Description	For U.S.A. and Canada	For Europe	For U.K.	For Australia	For U.S. Military Market and Other Countries
1	Motor Board	E22511-001	E22511-003	E22511-003	E22511-003	E22511-002
10,62, 63,65	Servomotor Control P.C. Board Ass'y	TXX-101B (U.S.A.) TXX-101C (Canada)	TXX-101E	TXX-101E	TXX-101E	TXX-101D
11	Power Transformer ⚠	E03032-24C	E03032-24E	E03032-24EBS	E03032-24E	E03032-24D
30	Power Cord with Plug ⚠	QMP1200-244	QMP3910-244	QMP9017-007BS	QMP2500-200	QMP1200-244
31	Cord Clamp	QHS3876-162	A37897	A37897	A37897	A37897
32	Cabinet Ass'y	DL-ED92769	DL-ED92769	DL-ED92770	DL-ED92769	DL-ED92769
45	Tonearm Ass'y	ARM-524	MP-186S	ARM-524	ARM-524	MP-186S
50	Foot Ass'y	E35280-002	E35280-001	E35280-001	E35280-001	E35280-001
54	Platter Covering	E22719-002	E22719-001	E22719-001	E22719-001	E22719-001
56	Rating Plate & Label	E35064-011 (U.S.A.) E49273-012 (Canada)	E35339-004E	E35339-006BS	E35339-005A	E35339-003P (U.S. Military) E35339-002U (Other Countries)
66	Micro Switch ⚠	QSM1V01-023	QSM1V12-101	QSM1V12-101BS	QSM1V12-101	QSM1V01-023
67	Fuse Label	E61378-008 (U.S.A.) E61801-008 (Canada)	—	—	—	—
68	Voltage Selector ⚠	—	—	—	—	QSR0085-001
69	Power Supply P.C. Board Ass'y ⚠	—	TSC-80F	TSC-80GBS	TSC-80F	—
70	Fastener	—	E35422-001	E35422-001	E35422-001	—
91	Fastener	—	E35422-001	E35422-001	E35422-001	—
92	Stopper Bracket	E65431-001	—	—	—	—

NOTE ⚠ : SAFETY PARTS

10-(3) Tonearm Ass'y

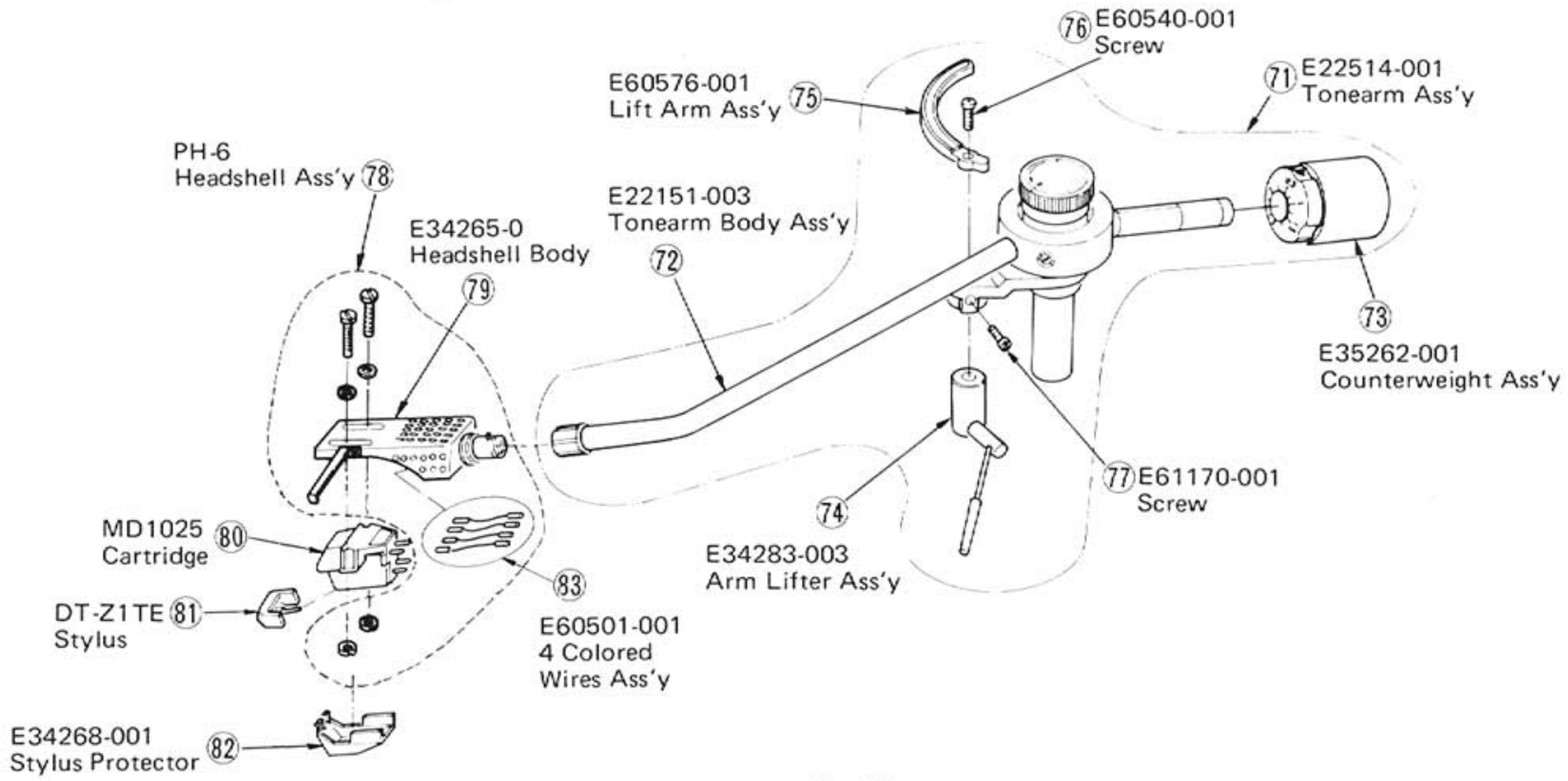


Fig. 22

11. Printed Circuit Board Ass'y and Parts List

11-(1) TXX-101 Servomotor Control P. C. Board Ass'y

Notes:

1. Voltage values in ☐ are measured with a tester (impedance 20 kΩ/V) without a signal applied to the unit.
2. ■ indicates positive B power supply.
   ■ indicates ground.
   ■ indicates the others.

The assembly varies according to the area where the units is sold. Refer to the table shown on page 20.

Transistors

Item No.	Part Number	Rating		Description	Maker
		Pc	fT		
X801	2SA733 (P, Q)	250 mW	180 MHz	Silicon	Mitsubishi
X802	2SD571 (L, K)	800 mW	110 MHz	"	N.E.C.
X803	2SC945 (P, Q)	250 mW	250 MHz	"	Mitsubishi
X804	2SA733 (P, Q)	"	180 MHz	"	"
X805	2SA733 (P, Q)	"	"	"	"
X806	2SA733 (P, Q)	"	"	"	"
X807	2SA733 (P, Q)	"	"	"	"
X808	2SA733 (P, Q)	"	"	"	"
X809	2SA733 (P, Q)	"	"	"	"
X810	2SA733 (P, Q)	"	"	"	"
X811	2SD571 (L, K)	800 mW	110 MHz	"	N.E.C.
X812	2SD571 (L, K)	"	"	"	"
X813	2SD571 (L, K)	"	"	"	"
X814	2SD571 (L, K)	"	"	"	"
X817	2SD325 (D, E)	10 W	8 MHz	"	Sanyo
X818	2SC945 (P, Q)	250 mW	250 MHz	"	Mitsubishi
X819	2SC945 (P, Q)	"	"	"	"

Integrated Circuits

Item No.	Part Number	Rating	Description	Maker
IC801	NJM4558D-D		I.C.	Shin Nihon Musen
IC802	SM6415A-4S		"	Nihon Precision Circuits
IC803	NJM4558D		"	Shin Nihon Musen

Diodes

Item No.	Part Number	Rating	Description	M Maker
D801	1S2473		Silicon	Toyo Dengu
D802	1S2473		"	"
D803	1S2473		"	"
D804	SR103C		L.E.D.	N.E.C.
D805	SR103C		"	"
D806	SR103C		"	"
D807	VD1121		Varistor	"
D808	SR103C		L.E.D.	"
D809	SIB01-02		Silicon	Fuji Denki
D811	RD5, 6EC		Zener	N.E.C.
D812	SIB01-02		Silicon	Fuji Denki
D813	SIB01-02		"	"
D814	SIB01-02		"	"
D815	SIB01-02		"	"
D816	SR103C		L.E.D.	N.E.C.
D817	1S2473		Silicon	Toyo Dengu

Capacitors

Item No.	Part Number	Rating		Description
C801	QEW61CA-106Z	1 μF	16 V	Electrolytic
C802	QEW61CA-106Z	"	"	"
C803	QCF31HP-102Z	1000 pF	50 V	Ceramic
C804	QEW61EA-475Z	4.7 μF	25 V	Electrolytic
C805	QFM31HJ-823Z	0.082 μF	50 V	Mylar
C806	QEW51VA-107Z	100 μF	35 V	Electrolytic
C807	QCM31HK-223Z	0.022 μF	50 V	Mylar
C808	QCF31HP-223Z	"	"	Ceramic
C809	QFM31HK-104Z	0.1 μF	"	Mylar
C810	QEW61CA-106Z	10 μF	16 V	Electrolytic
C811	QCF31HP-223Z	0.022 μF	50 V	Ceramic
C812	QCT25UJ-100Z	10 pF		"
C813	QCT25UJ-100Z	"		"
C814	QEB51EM-335	3.3 μF	25 V	L.L.C. Electrolytic
C815	QCF31HP-223Z	0.022 μF	50 V	Ceramic
C816	QCF31HP-102Z	1000 pF	"	"
C817	QCF31HP-223Z	0.022 μF	"	"
C819	QEW51HA-476Z	47 μF	50 V	Electrolytic
C820	QCF31HP-102Z	1000 pF	"	Ceramic
C821	QEW51HA-476Z	47 μF	"	Electrolytic
C822	QEW51HA-227	220 μF	"	"
C823	QEW51HA-227	"	"	"
C824	QCF12HP-103	0.01 μF	500 V	Ceramic
C825	QFH72BM-473M	0.047 μF	AC 125 V	M. Mylar

Resistors

Item No.	Part Number	Rating		Description
R801	QRD141J-103SY	10 kΩ	1/4 W	Carbon
R802	QRD141J-103SY	"	"	"
R803	QRD141J-102SY	1 kΩ	"	"
R804	QRD141J-105SY	1 MΩ	"	"
R805	QRD141J-222SY	2.2 kΩ	"	"
R806	QRD141J-102SY	1 kΩ	"	"
R807	QRD141J-104SY	100 kΩ	"	"
R808	QRD141J-103SY	10 kΩ	"	"
R809	QRD141J-272SY	2.7 kΩ	"	"
R810	QRD141J-473SY	47 kΩ	"	"
R811	QRD141J-114SY	110 kΩ	"	"
R812	QRD141J-363SY	36 kΩ	"	"
R813	QRD141J-103SY	10 kΩ	"	"
R814	QRD141J-472SY	4.7 kΩ	"	"
R815	QRD141J-134SY	130 kΩ	"	"
R816	QRD141J-682SY	6.8 kΩ	"	"
R817	QRD141J-472SY	4.7 kΩ	"	"
R818	QRD141J-334SY	330 kΩ	"	"
R819	QRD141J-162SY	1.6 kΩ	"	"
R820	QRD141J-202SY	2.0 kΩ	"	"
R821	QRD141J-124SY	120 kΩ	"	"
R822	QRD141J-182SY	1.8 kΩ	"	"
R823	QRD141J-102SY	1 kΩ	"	"
R824	QRD141J-223SY	22 kΩ	"	"

Resistors

Item No.	Part Number	Rating		Description
R825	QRD141J-332SY	3.3 kΩ	1/4 W	Carbon
R826	QRD141J-332SY	〃	〃	〃
R827	QRD141J-822SY	8.2 kΩ	〃	〃
R828	QRD141J-272SY	2.7 kΩ	〃	〃
R829	QRD141J-563SY	56 kΩ	〃	〃
R830	QRD141J-104SY	100 kΩ	〃	〃
R831	QRD141J-104SY	〃	〃	〃
R832	QRG129J-470	47 Ω	1/2 W	Uninflammable O.M.F.
R833	QRD141J-222SY	2.2 kΩ	1/4 W	Carbon
R834	QRD141J-682SY	6.8 kΩ	〃	〃
R835	QRD141J-102SY	1 kΩ	〃	〃
R836	QRD141J-333SY	33 kΩ	〃	〃
R837	QRD141J-682SY	6.8 kΩ	〃	〃
R838	QRD141J-102SY	1 kΩ	〃	〃
R839	QRD141J-392SY	3.9 kΩ	〃	〃
R840	QRD141J-332SY	3.3 kΩ	〃	〃
R841	QRD141J-332SY	〃	〃	〃
R842	QRD141J-181SY	180 Ω	〃	〃
R843	QRG129J-470	47 Ω	1/2 W	Uninflammable O.M.F.
R844	QRX017J-2R7S	2.7 Ω	1 W	Uninflammable M.F.
R845	QRD141J-103SY	10 kΩ	1/4 W	Carbon
R846	QRD141J-102SY	1 kΩ	〃	〃
R849	QRD141J-822SY	8.2 kΩ	〃	〃
R850	QRD141J-272SY	2.7 kΩ	〃	〃
R851	QRD141J-392SY	3.9 kΩ	〃	〃
R852	QRD141J-102SY	1 kΩ	〃	〃
R853	QRD141J-103SY	10 kΩ	〃	〃
VR801	QVZ3501-104	100 kΩ		Variable
VR802	QVZ3501-473	47 kΩ		〃
VR803	QVP4A0B-102	1 kΩ		〃

Others

Item No.	Part Number	Rating	Description
	E03732-012A		Plug
	E04300-003		Quartz Crystal
	E41541-021		Bushing
	E45524-001		Contact Clip
	E61466-003		Heatsink
	E65125-001		Solenoid Coil

TXX-101 with specified numbers for designated areas

Item No.	Description	TXX-101B for U.S.A.	TXX-101C for Canada	TXX-101D for U.S. Military Market and Other Countries	TXX-101E for Australia, U.K. and European Countries
C825	M. Mylar Capacitor	QFH72BM-473M (0.047 μF/AC 125 V)	QFA72BM-473M (0.047 μF/AC 125 V)	QFH53AM-473M (0.047 μF/AC 1 kV)	—
	P.C. Board (Plain)	E22518-002	E22518-002	E22518-005	E22518-003
	Fuse (Secondary) ⚠	—	—	—	QMF51A2-R50(BS) (0.5 AT)
	Fuse Clip	—	—	—	E48965-002
	Fuse Label	—	—	—	E61381-004

NOTE ⚠ : SAFETY PARTS

11-(2) TSC-80F(GBS) Power Supply P. C. Board Ass'y

Note: The assembly varies according to the area where the unit is sold. Refer to the table shown below.

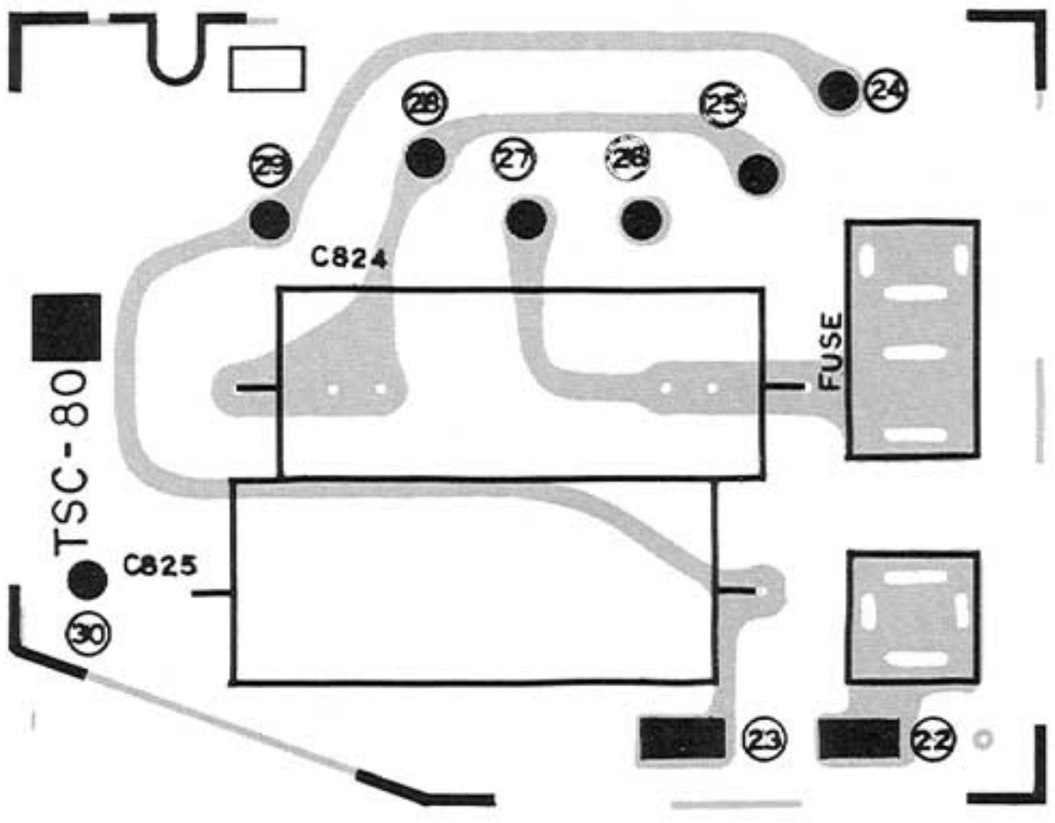


Fig. 24 TSC-80F

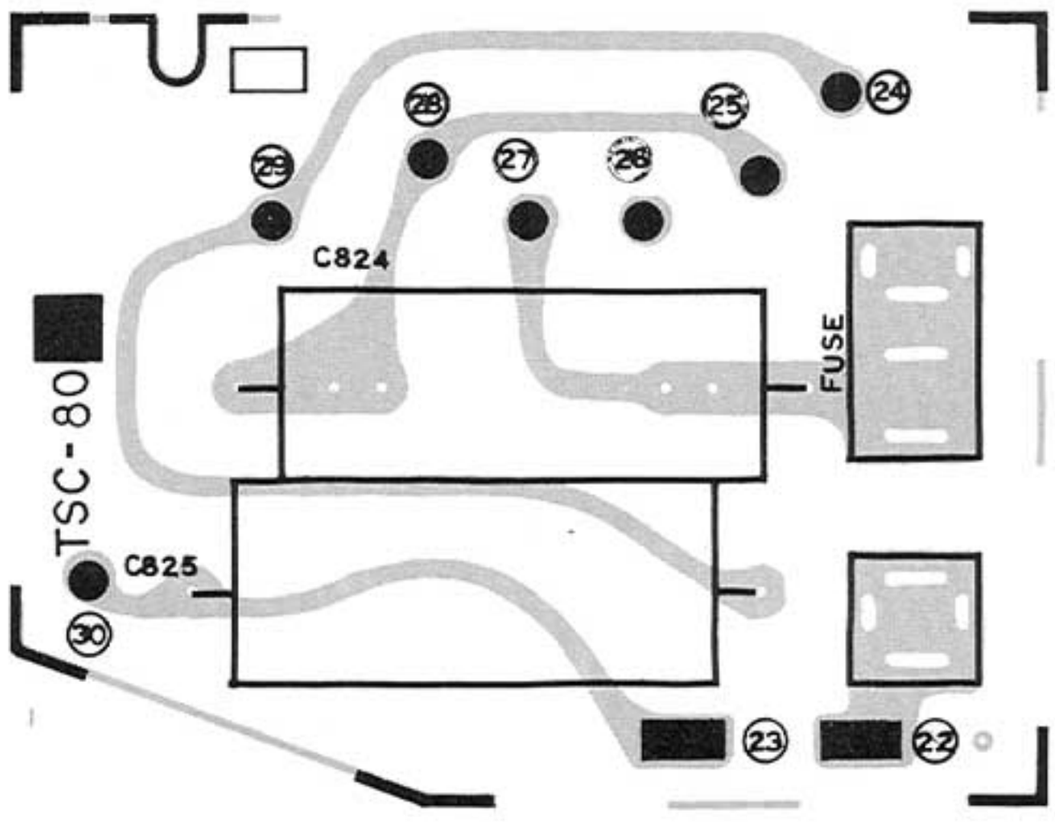


Fig. 25 TSC-80GBS

Item No.	Description	TSC-80F for Australia and Europe	TSC-80GBS for U.K.
C824	O.F.T. Capacitor (0.047 μF/450 V)	QFZ9007-473	QFZ9007-473BS
C825	" (")	—	QFZ9007-473BS
	Fuse (Primary) ⚠	QMF51A2-R125 (0.125 AT)	QMF51A2-R125BS (0.125 AT)
	Fuse Clip	E48965-002	E48965-002
	Fuse Label	E61381-002	E61381-002
	P.C. Board (Plain)	E34924-001	E34924-003

NOTE ⚠ : SAFETY PARTS

QL-5 Schematic Diagram

EJ & EC (USA & CANADA)

NJM4558D-D	IC801
SM6415A-4S	IC802
NJM4558D	IC803
2SC945 (P,Q)	X803, X815, X816, X818, X819
2SA733 (P,Q)	X801, X804, X805, X806, X807, X808, X809, X810
2SD571 (L,K)	X802, X811, X812, X813, X814
2SD325 (D,E)	X817
SIB01-02	D809, D812, D813, D814, D815
SR103C	D804, D805, D806, D808, D816
VD1121	D807
1S2473	D817

TXX-101B
TXX-101C

SPEED SELECT SW. S1
NO. 33 1/3 rpm
NC. 45 rpm

IC801 FG アンプ

IC802 SM6415A-4S

IC803

TXX-101E

EE & EA (for Europe & Australia)

EBS (for England)

TXX-101D

EP & EU (for Pacex & Other areas)

VOLTAGE SELECTOR (1 ROTALY, 3 STEP)

VOLT.	110V	120V	240V	220V
CONNECTION	1-5, 2-6	3-6, 4-1	3-4	2-5

m-935A

From Cartridge

TONE-ARM SHIELD COVER EARTH WIRE

TXX-101-2

TXX-101-3

TXX-101-4

SOLENOID

P.TRANS E03032-24C

P.TRANS E03032-24E

P.TRANS E03032-24EBS

P.TRANS E03032-24D

POWER SW. S3

POWER SW. S4

AC 120V 60Hz

AC 240V 50Hz

AC 110,120,220,240V 50/60Hz

Printed Circuit Board Ass'y Locations

P.C. Board Ass'y	Description	Page
TXX-101	Servomotor Control P.C. Board Ass'y	16
TSC-80F (GBS)	Power Supply P.C. Board Ass'y	21

Notes:

1. The constants of some resistors are changed as follows.
   R818 – 330 kΩ, R819 – 1.6 kΩ, R820 – 2 kΩ, R821 – 120 kΩ
2. The varistor diode D807 is connected to R819 in series as an addition.
3. The position to insert C826 10 μ/50 V N.P.C. is changed from the area between (f)-(11) to the area between (e)-(11).
4. Voltage values in ▭ are measured with a tester (impedance 20 kΩ/V) without a signal applied to the unit.
5. —— indicates positive B power supply.
6. indicates the signal path.
7. When replacing the parts in the darkened area ( ), be sure to use the designated parts to ensure safety.
8. This is the standard circuit diagram.
   The design and constants are subject to change without notice.

Transistor, IC and Diode Lead Identification

NJM4558D
NJM4558D-D
IC801, IC803

SM6415A-4
IC802

2SA733 2SC945
X801, X803, X804
X805, X806, X807
X808, X809, X810
X815, X816, X818
X819

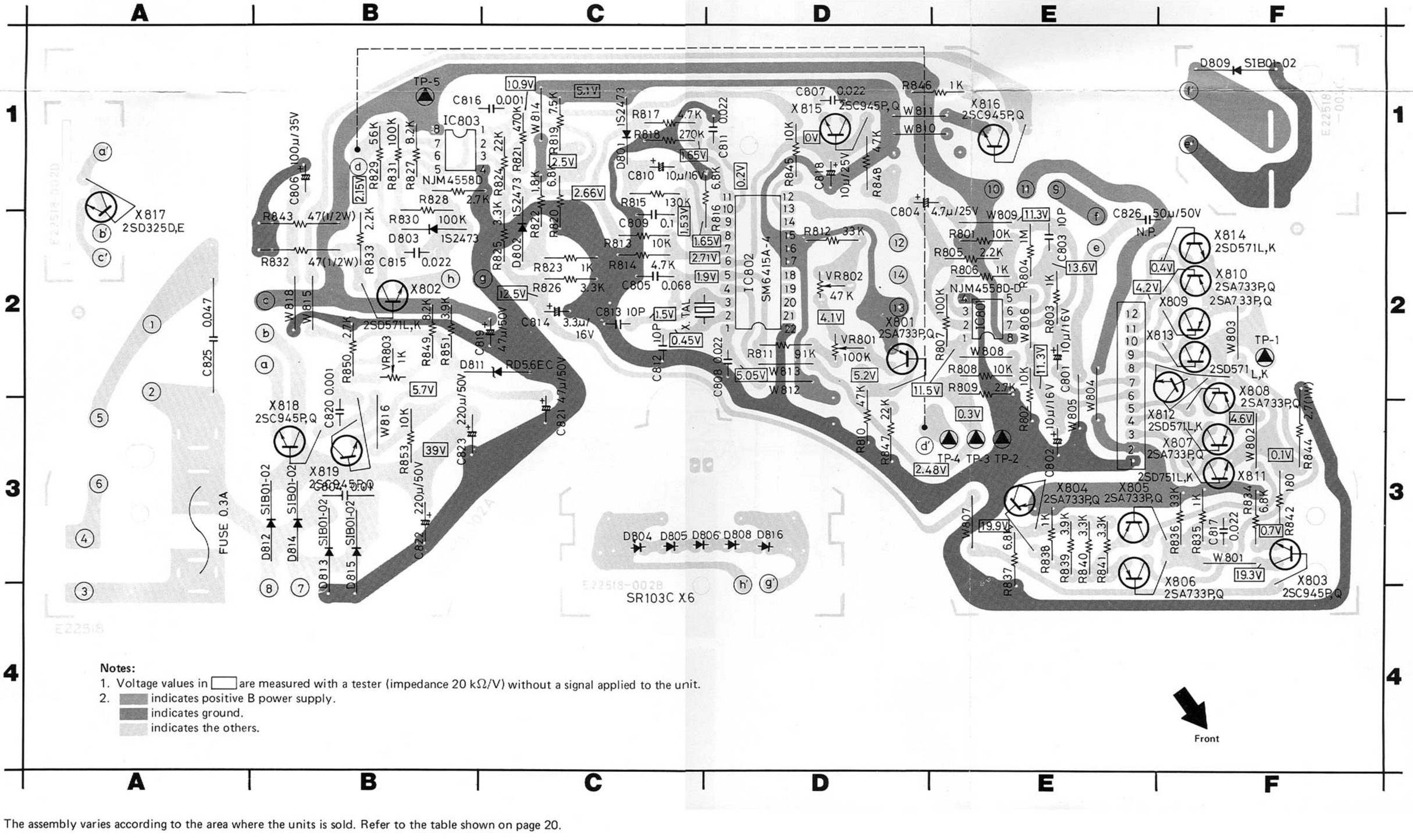
2SD571
X802, X811, X812
X813, X814

2SD325
X817

SIB01-02
D809, D812, D813
D814, D815

SR103C
D804, D805, D806
D807, D808, D816

TXX-101 Servomotor Control P. C. Board Ass'y



Notes:

1. Voltage values in ☐ are measured with a tester (impedance 20 kΩ/V) without a signal applied to the unit.
2. ▬ indicates positive B power supply.
   ▬ indicates ground.
   ▬ indicates the others.

The assembly varies according to the area where the units is sold. Refer to the table shown on page 20.

13. Packing Materials and Part Numbers

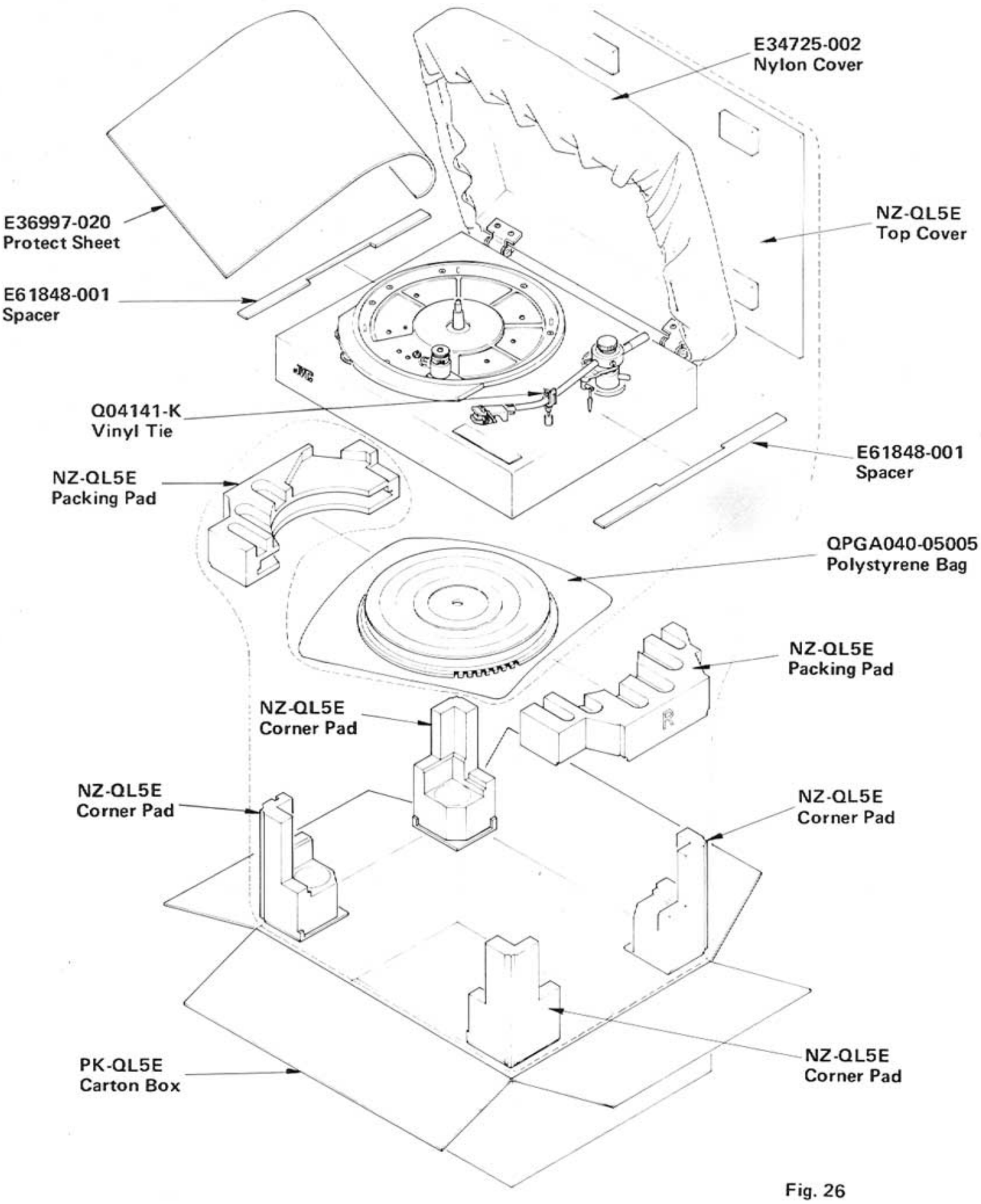


Fig. 26

14. Accessories List

Item No.	Part Number	Description	Q'ty
1	E30580-642A	Instruction Book	1
2	See below	Warranty Card	1
3	E48820-001	EP Adaptor	1
4	E64207-001	Envelope for Instruction Book and Others	1
5	E60259-002	Overhang Indicator	1
6	E04056	Simens Plug (for Other Countries)	1
7	BT20023	Service Procedures (for U.S.A. only)	1
8	BT20024B	Special Reply Card (for U.S.A. only)	1

Warranty Card

Item No.	Description	U.S.A.	Canada	Europe	U.K.	Australia	U.S. Military Market
2	Warranty Card	BT20032	BT20025B	Not enclosed	BT20013B	BT20029	BT20014B

JVC

VICTOR COMPANY OF JAPAN, LIMITED, TOKYO, JAPAN

Printed in Japan
7011-V