JVC

SERVICE MANUAL

MODEL JL-B31(M)

DIRECT DRIVE TURNTABLE

No. 2359
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Index

	Page
Specifications	2
The Name of Parts	3
Adjustments	3
Replacement of Parts	5
Servicing Hints	6
Exploded View of Player	7
List of Parts for Replacement (Player)	8
Exploded View of Pick-Up	9
List of Parts for Replacement (Pick-Up)	9
Exploded View of Electric Parts	10
List of Parts for Replacement (Electric Parts)	11
Schematic Diagram	13

Specification

MOTOR AND TURNTABLE

Motor:	Cup-shaped AC Servo-controlled Motor
Drive System:	Direct Drive System
Speeds:	33-1/3 and 45 rpm, two speeds
Fine Pitch Control Range:	±2.5% (Independent for 33-1/3 and 45 rpm)
Wow & Flutter:	Less than 0.03% (WRMS)
Signal-to-Noise Ratio:	Better than 60dB
Platter:	31 cm-diameter die-cast aliminum alloy with strobo markings on the rim to be illuminated by the built-in neon lamp

TONEARM

Type:	Statically-balanced S-shaped tubular tonearm with JVC-developed TH balancing system
Effective Arm Length:	220mm
Tracking Error:	Within ±2.0°
Overhang:	15mm
Stylus Pressure Range:	0 to 3 grams (Direct-Read-Out by 0.1 gram steps)
Usable Cartridge Weight Range:	15 to 22 grams (Including Headshell)
Adjustable Arm Height Range:	41 to 51mm (Set at 45mm at the factory)
Accessory Functions:	Anti-Skating Device Arm Lifter Device Low-Capacitance Signal Cables Adjustable Headshell Angle

CABINET BASE

Type:	Particle-board cabinet with simulated walnut grain and metalic gray finish
Adjustable Isolator Height Range:	Max. 8mm from the min. height
Dust Cover:	Smoked Acryl plastic

GENERAL

Power Source:	ac 120V 50/60Hz
Power Consumption:	16.5 watt
Dimensions:	460mm(Width) x 380mm(Depth) x 170mm(Height)
Weight:	8.4kg net

The Name of Parts

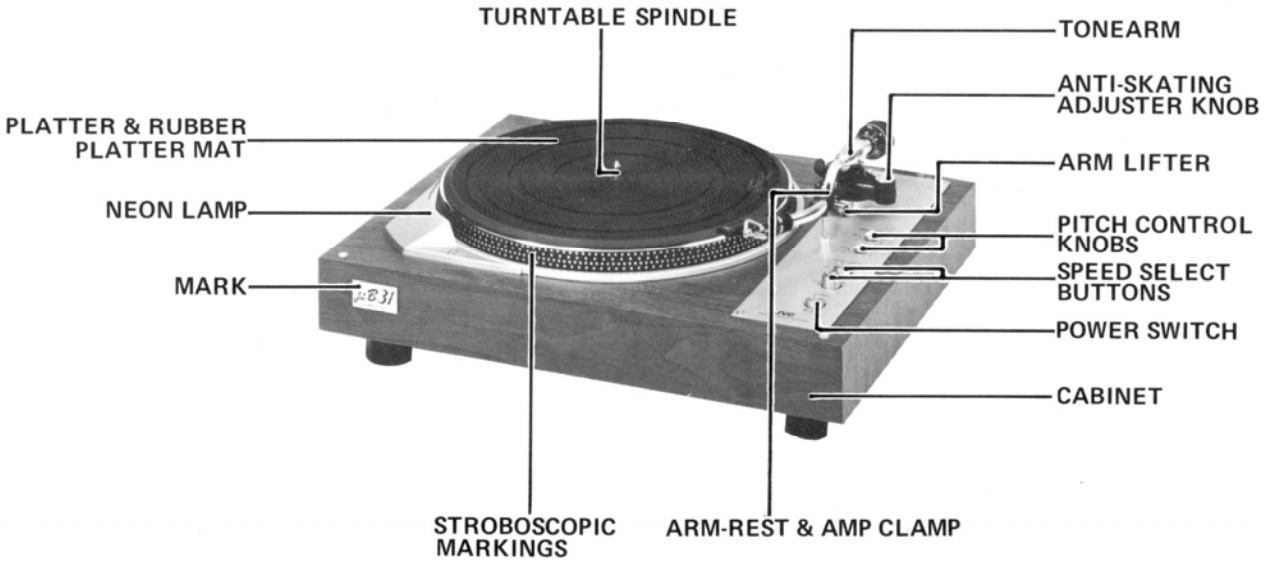


Fig. 1

Adjustment

TONEARM ADJUSTMENT

Stylus Pressure Adjustment (Fig. 2)

1. Remove the arm from its rest, taking care not to damage the stylus.
2. The anti-skating dial should be adjusted to "0".
3. Turning the main weight, balance the tonearm with the stylus tip at the level of the record surface.
4. Put the arm back on its rest and clamp it in place.
5. Holding the main weight not to move, turn stylus pressure dial cap so that its "0" mark is lined up with the index line on the weight shaft. If the main weight is allowed to move at this time the correct stylus pressure will not be obtained.
6. Turn the main weight clockwise (this moves it forward) being careful not to touch the dial cap. The stylus pressure dial cap turns with the main weight; adjust the stylus pressure required with the index line on the weight shaft.
   The figure on the dial indicates tracking force. For example, adjusted figure of "1.5" shows the setting for a stylus pressure required by the cartridge being used.

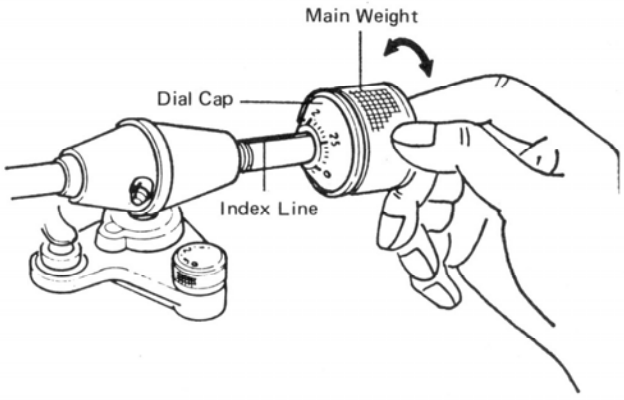


Fig. 2

Anti-Skating Adjustment (Fig. 3)
The anti-skating device must be adjusted according to the stylus pressure of the cartridge being used. The figure on the dial indicates tracking force. Set it to the same value to which the tracking force is adjusted. Adjustment knob has click-stop positions in every 0.5g.

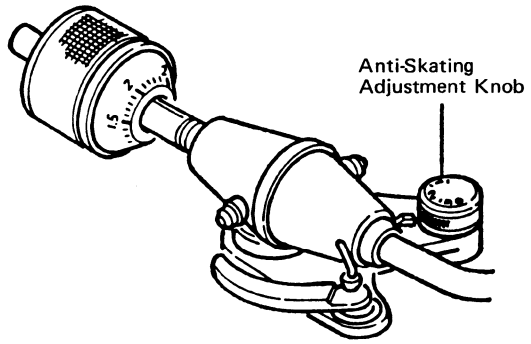


Fig. 3

Stylus Angle Adjustment (Fig. 4)
The stylus should be tangential to a record surface; if it is not, loosen the fixing screws with a screw-driver, rotate the headshell and tighten the screws. Eye-measurement is sufficient to adjust the stylus angle.

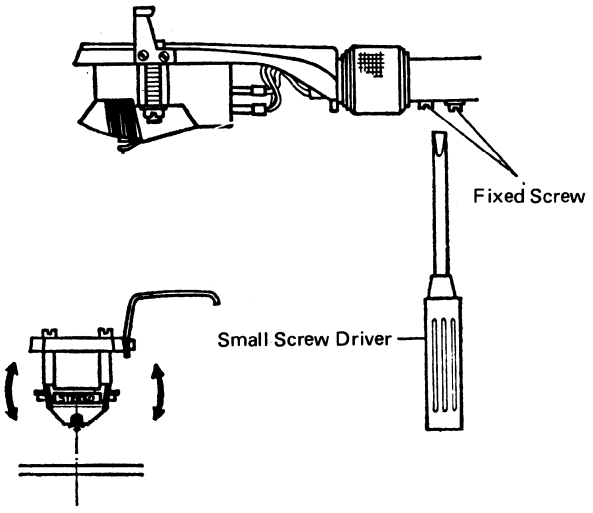


Fig. 4

SPEED ADJUSTMENT

Speed Selection
To play a 33-1/3 rpm record depress the 33 button; to play a 45 rpm record depress the 45 button. Start or stop of turntable rotation is done by pushing the power button.

Speed Adjustment
With either the 33 or 45 button depressed the speed can be fine adjusted with one of the two fine pitch control knobs. If they are turned in the F direction the speed will be faster and if they are turned in the S direction it will be slower.

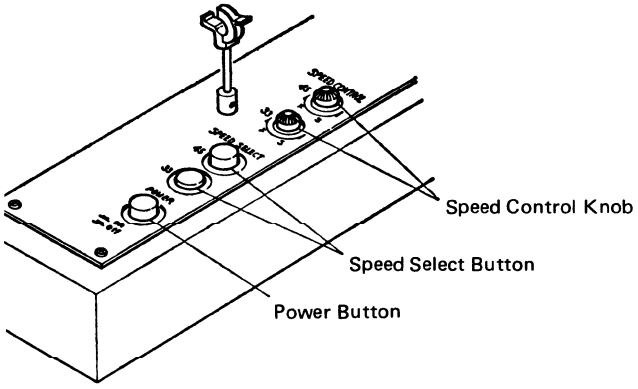


Fig. 5

Stroboscope (Fig. 6)
On the side of the turntable platter there are four sets of dots which produce patterns. The four patterns correspond to 33-1/3 and 45 rpm for each area where the power supply frequency is 50Hz or 60Hz.
With the power button depressed the neon lamp illuminates the stroboscope so that a pattern, corresponding to areas and the speed of a record being played, may be easily found.

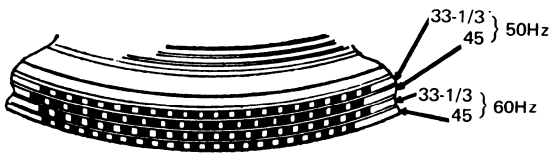


Fig. 6

ADJUSTMENT OF OTHERS

Tonearm Height Adjustment (Fig. 7)

When different cartridges are used the height between the stylus tip and the center of the tonearm will be different.
In this case the height of the tonearm should be adjusted. Loosen the tonearm height screws and adjust its height so that the stylus is perpendicular to the record surface and tonearm is horizontal or even a little slanted toward the headshell. Retighten the screw.

Arm Lifter Height Adjustment (Fig. 7)

When the cueing mechanism has lifted the arm there should be a clearance of around 8mm between the stylus tip and the record surface.
If this is far above or below this figure the arm may not be able to trace the record properly. With a screwdriver loosen the screws on the lifter bracket while the cueing lever is in its up position and move the lifter up or down till the correct clearance is obtained and then retighten the fixing screws.

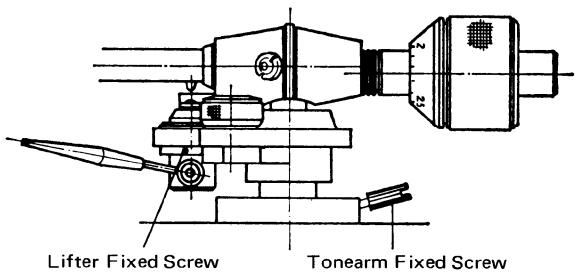


Fig. 7

Use of Heavier Caratridges and Headshells (Fig. 8)

If the cartridge/headshell used is too heavy for zero balancing with the main weight on its own, fit the sub-weight available at option which allows to use a cartridge (including headshell) weighing up to 30-33g.

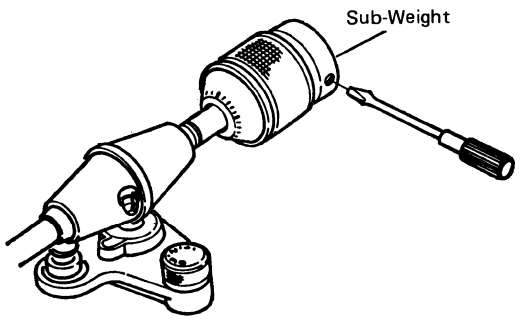


Fig. 8

Overhang Adjustment (Fig. 9)

The cartridge mounting bolts should be loosened and the cartridge slide backwards or forwards so that the distance between stylus tip and center spindle may be kept 15mm.
It does not matter if there is an error of 2-3mm in this positioning.

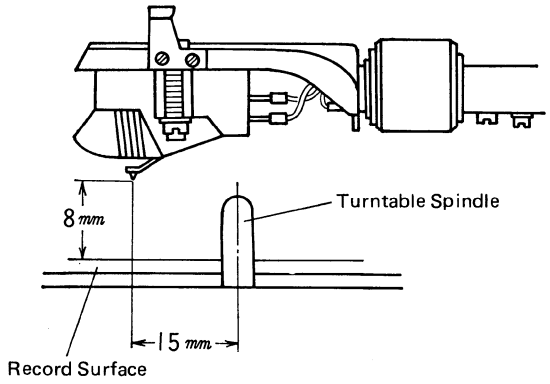


Fig. 9

Replacement of Parts

Cartridge Mounting (Fig. 10)

Since the Model JL-B31 does not come with cartridge, a cartridge should be mounted as shown in Fig. 11.
When mounting a cartridge loosen the mounting nuts and bolts, adjust the overhang (see Fig. 6) and then tighten securely.

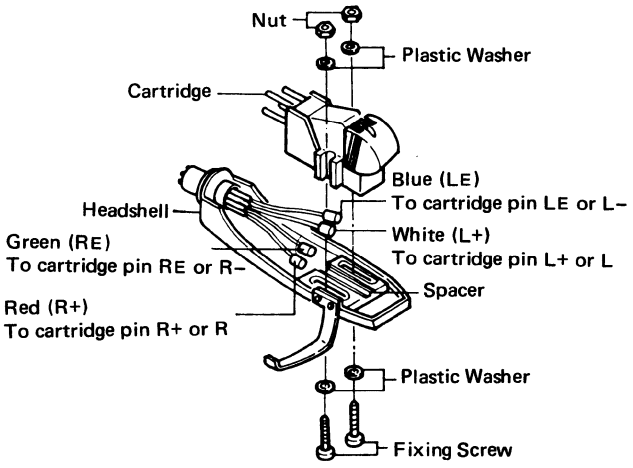


Fig. 10

Servicing Hints

Phenomena	Eventual Causes	Remedial Actions
1. Turntable platter does not move when power is switched on.	1. No current being fed to motor. 2. Motor is defective. 3. Speed control section is defective.	Fuse or switch, defective – replace. Power cord, connection incorrect or incorrectly soldered – reconnect or resolder. Motor lead wire incorrect or incorrectly soldered – reconnect or resolder. Is internal voltage 15V? Does C822 have capacity of 4μF? Connection of emitter and collecter of X814 2SD198 incorrect – reconnect. Check that the lead wire is correctly connected to the speed control variable resistor. Variable resistor defective – replace.
2. Slow turntable speed.	1. Speed adjustment internal variable resistor is defective.	See if normal speed is obtainable by adjusting variable resistor. Is voltage 15V ±0.8V?
3. Fast turntable speed.	1. Speed adjustment internal variable resistor is defective.	See if normal speed is obtainable by adjusting variable resistor. Is voltage at motor terminal 15V ±0.8V? Connection of emitter and collecter of X813 or X814 incorrect – reconnect. See if there are something abnormal on circuits between transistors X801 and X808, and if normal, about 5V is obtainable at base of X809. Speed will be doubled if one of the transistors between X801 and X808 does not work. Is voltage 0.6mV at ① ② points on circuit board (at 33 rpm) from motor F–G plate?
Record plays but no sound is heard or sound is only heard from left or right speaker.	1. Defective cartridge 2. Incorrect wiring 3. Damaged stylus 4. Amplifier malfunction	Replace. Check wiring. Check signal cord connections. Replace stylus. Check amplifier.
The stylus will not track the record groove correctly.	1. Stylus is clogged with dust. 2. Damaged stylus tip. 3. Lead wires in tonearm are too tight or sticking 4. Too low stylus pressure. 5. Too great friction in pick-up bearing.	Clean the stylus tip. Replace stylus. Check and slacken lead wires. Readjust stylus pressure. Replace pick-up.
6. Turntable platter does not stop when the power is turned off.	1. Defective switch.	Replace switch. Check wiring.
7. Noise is heard while record is playing.	1. Motor rumble. 2. Turntable platter in contact with motor board	Replace motor. Replace turntable platter. Replace motor board.

Exploded View of Player

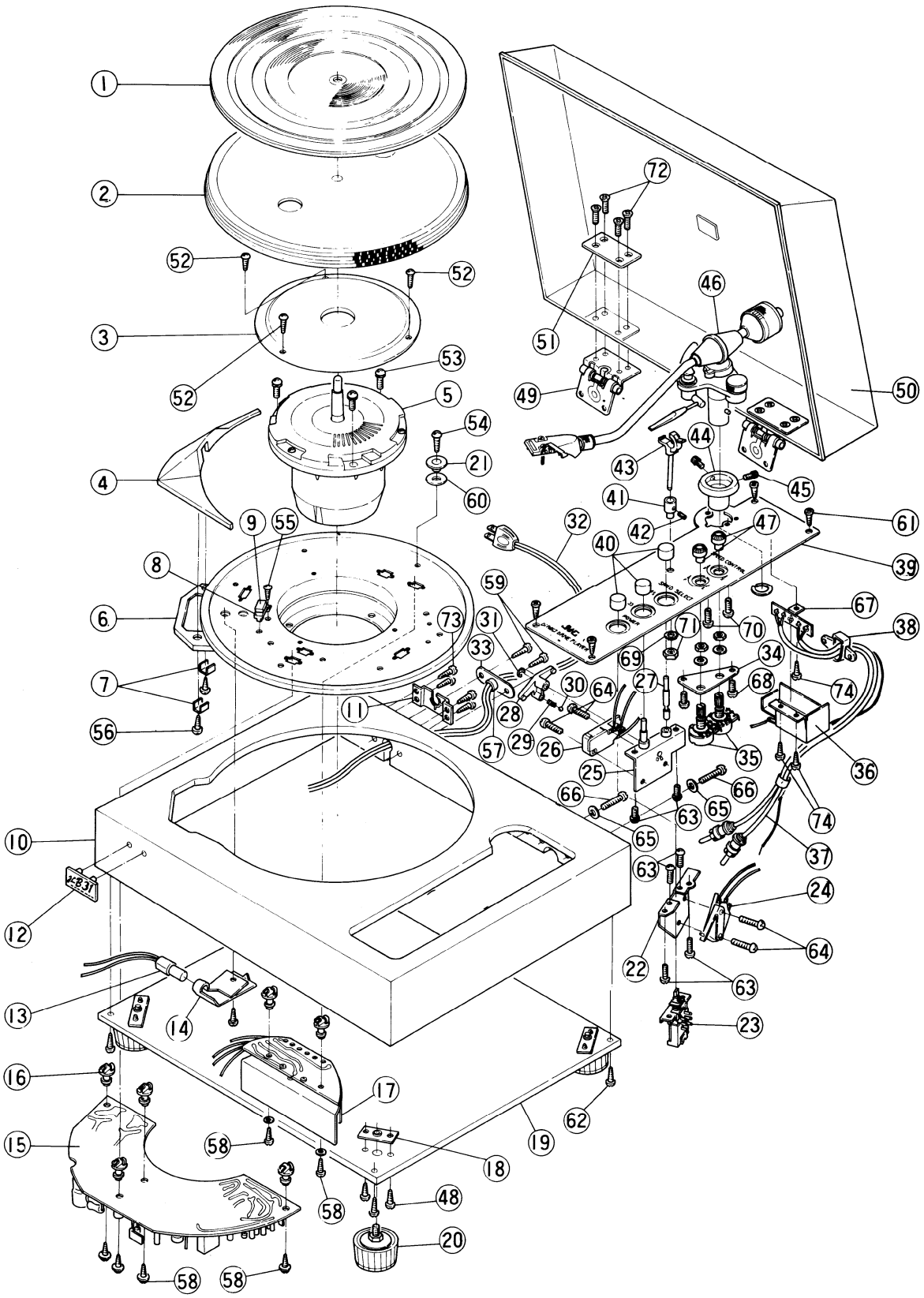


Fig. 11

List of Parts for Replacement (Player)

No.	Parts No.	Parts Name	Reference
1	E21607-001	Turntable Covering	
2	E21724-001	Turntable	
3	M30059	Shield Cover	
4	E21622-001	Lamp Cover	
5	*M918F	Direct Motor	
6	*E1880-004	Motor Board	
7	G4359-2	Washer	
8	E49843-001	Bracket	
9	E49844-001	Magnet	
10	*ED92608	Cabinet Ass'y	
11	ED42991-001	Lock Plate	
12	ED43375	Mark	
13	QLN7001-001	Neon Lamp	
14	E49794-001	Bracket	
15	TXX-10C	Circuit Board Ass'y	
16	*E49946-002	Circuit Board Holder	
17	*E49949-001	Heat Sink	
18	*E49947-001	Tapping Plate	
19	E34010-002	Bottom Board	
20	E49832-001	Foot Ass'y	
21	*E49934-001	Spacer	
22	E49407-001	Switch Base	
23	E03595-001	Switch	
24	QSM1V01-018	Micro SW	
25	*E49936-001	Switch Base Ass'y	
26	QSM1V01-003	Micro SW	
27	E49835-001	Shaft	
28	E34009-001	Change Lever	
29	E49842-001	Spring	
30		Steel Ball	
31	REE3000	"E" Ring	
32	QMP1200-244	Power Cord Ass'y	
33	E49762-001	Stop Plate	
34	E49850-001	Volume Plate	
35	QVF1A2B-053	Volume	
36	*E49937-001	Shield Cover	
37	G30062-005	Signal Cord	
38	E33944-001	Cord Stopper	
39	*E34057-003	PU Board Ass'y	
40	E49401-001	Switch Knob	
41	E48808-002	Rest Stand	
42	TFB30004NS	Set Screw	
43	E49405-001	Rest Ass'y	
44	E34015-001	PU Base	
45	E49522-001	Screw	
46	ARM508	Pick-up Arm	
47	E49830-001	Volume Knob	
48	SBSB3010Z	Tapping Screw	
49	ED35375-001S	Hinge	
50	E1603-010	Dust Cover	
51	ED42992-001	Plate	
52	SBSB3008M	Tapping Screw	
53	LPSP4016ZS	Ass'y Screw	
54	SBSA3012N	Tapping Screw	
55	SBSB3006Z	Tapping Screw	
56	SBSB3008Z	Tapping Screw	
57	QHS3876-162	Cord Stopper	
58	*GPSA3010Z	Tapping Screw	
59	SBSA3010M	Tapping Screw	
60	E49897-001	Rubber Washer	
61	SDSA3014R	Tapping Screw	
62	SBSA3016N	Tapping Screw	
73	LPSP3006MS	Ass'y Screw	
64	LPSP3014ZS	Ass'y Screw	
65	WNS3000N	Washer	
66	SPSP3025NS	Screw	
67	QML1010-051	Lug Strip	
68	LPSP4008ZS	Ass'y Screw	
69	WBS6000N	Lock Washer	
70	LPSP3008NS	Ass'y Screw	
71	NTS6000Z	Nut	

No.	Parts No.	Parts Name	Reference
72	SSSP3012N	Screw	
73	SBSA3012N	Tapping Screw	
74	SBSB3006N	Tapping Screw	

NOTE : * NEW PARTS

Exploded View of Pick-Up

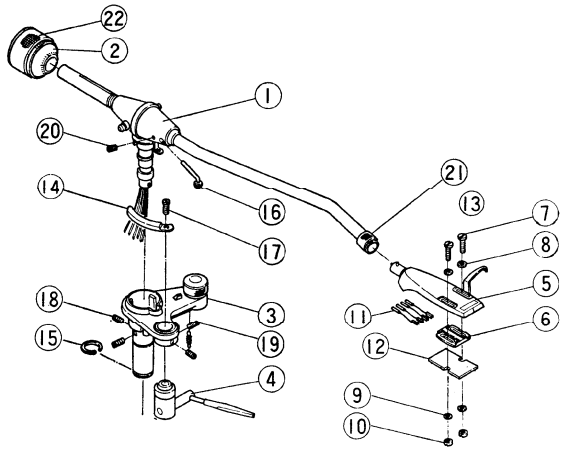


Fig. 12

List of Parts for Replacement (Pick-Up)

No.	Parts No.	Parts Name	Reference
1	EG81774	Tone Arm Body	
2	EG81775	Weight Ass'y	
3	EG81768	Base Ass'y	
4	EG81769	Lifter Ass'y	
5	EG81764-002	Head Shell Ass'y	
6	EG81760	Spacer	
7	EG83142	Screw	
8	EG82971	Washer	
9	EG83388	Washer	
10	EG83143B	Nut	
11	EG83217	Lead Wire	
12	EG83034B	Weight	
13	EG81763	Head Shell Ass'y	
14	EG81770	Lifter Arm	
15	EG83438	Stop Ring	
16	EG83437	Point Lever Ass'y	
17	EG83442	Screw	
18	TRS3004NS	Set Screw	
19	TRS8003NS	Set Screw	
20	TRS2003NS	Set Screw	
21	EG81766	Rubber Ring B	
22	EG81765	Rubber Ring A	

Exploded View of Electric Parts

(Txx-10C)

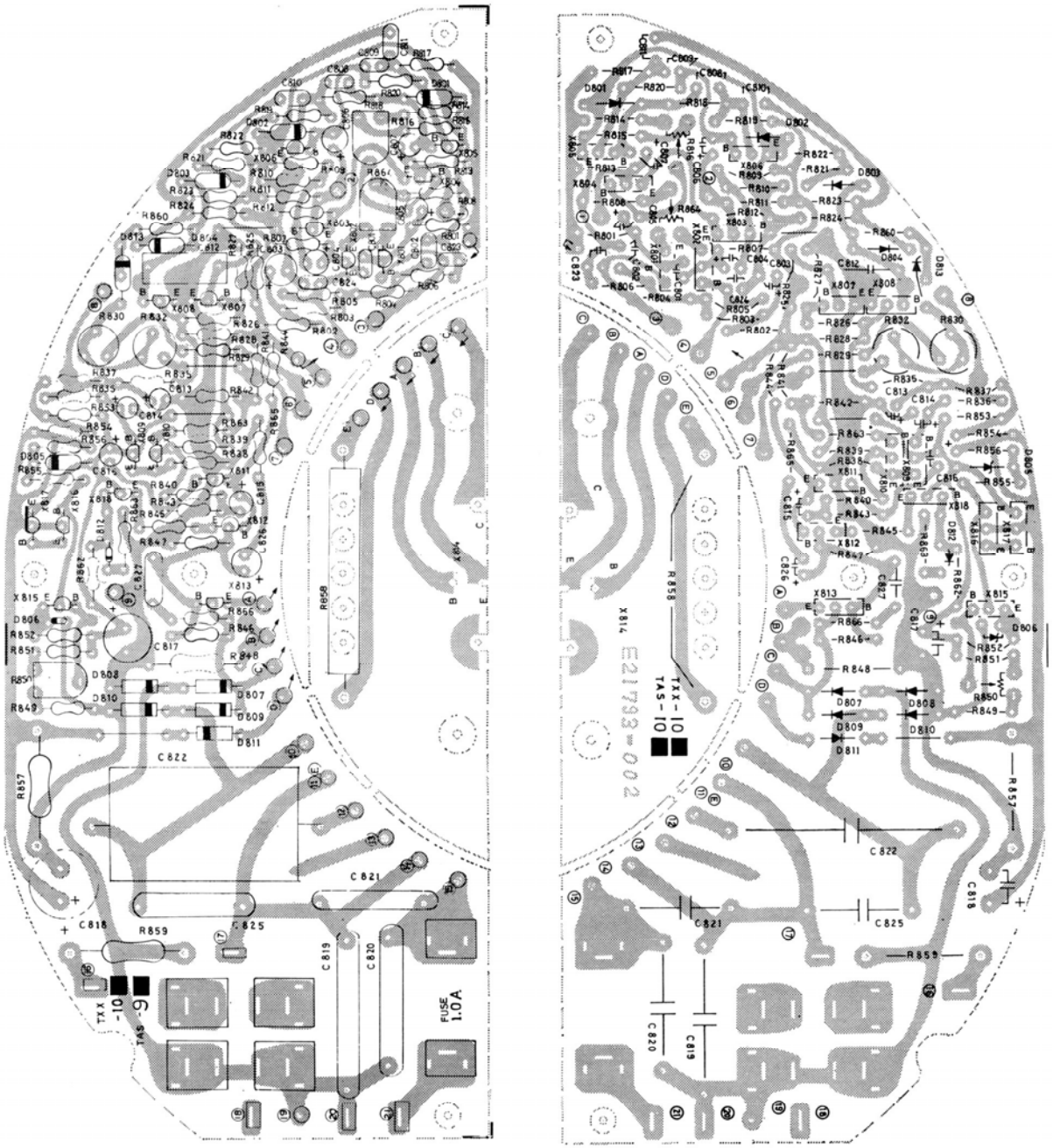


Fig. 13

Note: Subject to change for modification without pre-notice.

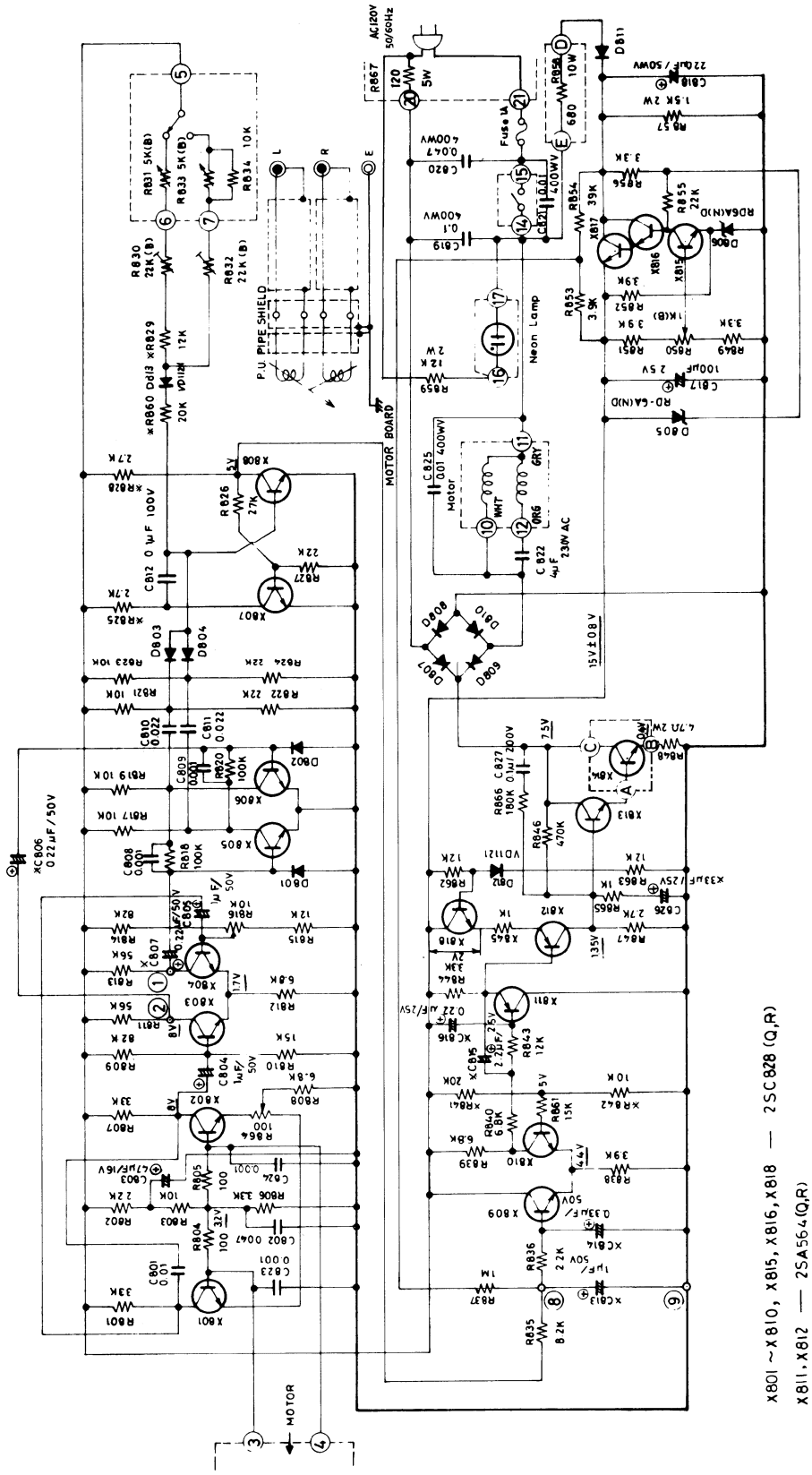
List of Parts for Replacement (Electric Parts)

No.	Parts No.	Parts Name	Reference
1	*E21793-003	Circuit Board	
2	E43727-002	Tab	
3	A41096	Tab	
4	QEB41HM-334E	Chemical Condenser	
5	QEB41HM-224E	〃	
6	QEB41EM-225E	〃	
7	QEB41HM-105E	〃	
8	QEB41EM-336E	〃	
9	QEW41HM-227	〃	
10	QEW41HA-105E	〃	
11	QEW41CA-476E	〃	
12	QEW41EA-107E	〃	
13	QFM42DM-104	M. Capacitor	
14	QFM41HK-103	〃	
15	QFM41HK-102	〃	
16	QFM41HK-473	〃	
17	QFM41HK-102	〃	
18	QFM41HK-223	〃	
19	QFZ0050-104	P.C. Film Capacitor	
20	2SC828(Q,R)	Transistor	
21	2SA564(Q,R)	〃	
22	2SC1573(Q,R)	〃	
23	2SC1346(Q,R)	〃	
24	QRD141J-333	Carbon Resistor	
25	QRD141J-332	〃	
26	QRD141J-103	〃	
27	QRD141J-682	〃	
28	QRD141J-222	〃	
29	QRD141J-153	〃	
30	QRD141J-823	〃	
31	QRD141J-563	〃	
32	QRD141J-104	〃	
33	QRD141J-223	〃	
34	QRD141J-101	〃	
35	QRD141J-273	〃	
36	QRD141J-102	〃	
37	QRD141J-822	〃	
38	QRD141J-302	〃	
39	QRD141J-123	〃	
40	QRD141J-184	〃	
41	QRD141J-474	〃	
42	QRD141J-272	〃	
43	QRD141J-122	〃	
44	QRD141J-393	〃	
45	QRD141J-105	〃	
46	QRX148F-1202	M.F. Resistor	
47	QRX148F-2002	〃	
48	QRX148F-2701	〃	
49	QRX148F-1002	〃	
50	QRG021J-562	M.O. Resistor	
51	QRG021J-152	〃	
52	QRX026J-4R7	M.F Resistor	
53	RD6A(N)D	Zener Diode	

No.	Parts No.	Parts Name	Reference
54	S1B01-02	Diode	
55	1S2473	〃	
56	QVZ3501-223	Volume	
57	QVP8A0B-013	〃	
58	QVP8A0B-014	〃	
59	QFZ0063-405	M.M. Capacitor	
60	QVP8A0B-012	Volume	
61	A49479-2	Tab	
62	VD1121	Diode	
63	QRD141J-0R0	Carbon Resistor	
64	QFH72EM-473	M.M. Capacitor	
65	QFH53AM-103	〃	
66	E45524-001	Contact Clip	

No.	Parts No.	Parts Name	Reference
1	A49479-2	G.T. Pin	
2	QRF101K-681	U.F. Resistor	
3	E49949-001	Heat Sink	
4	2SD198(Q,R)	Transistor	
5	LPSP3012NS	Ass'y Screw	
6	NNB3000NS	Nut	
7	QML1810-053	Lug Strip Ass'y	
8	QRF051K-121	V.F. Resistor	
9	SBSB3008N	Tapping Screw	

Schematic Diagram



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