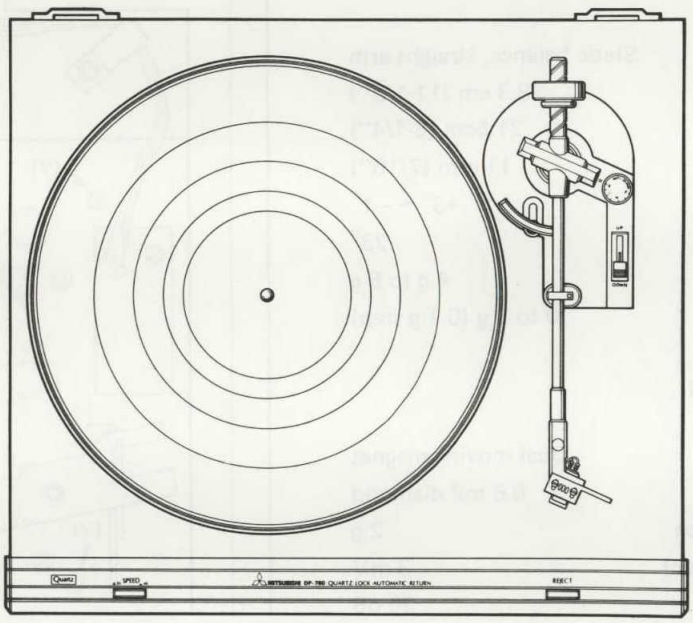
MITSUBISHI
AUDIO SYSTEMS

SERVICE MANUAL

TURNTABLE

MODEL DP-780



CONTENTS

MITSUBISHI ELECTRIC CORPORATION

SPECIFICATIONS

1. PHONO MOTOR SECTION

Drive mechanism	Direct drive
Motor	Quartz PLL DC servo
Platter Diameter	30.3 cm (12")
Material	Aluminum diecast
Platter speed	33-1/3, 45 r.p.m.
Wow and flutter	±0.05% (DIN Wp-p)
	0.03% (Wrms)
Signal to noise ratio	55 dB (IEC-B)
	70 dB (DIN-B)

2. TONEARM SECTION

Type	Static balance, straight arm
Overall length	28.3 cm (11-1/8")
Effective length	21.5cm (8-1/4")
Overhang	11 mm (7/16")
Tracking error (30 cm LP)	+3° ~ −1°
Offset angle	23°
Possible cartridge weight	4 g to 8 g
Tracking force adjustment	0 to 3 g (0.1 g step)

3. CARTRIDGE SECTION

Type	Dual moving magnet
Stylus	0.6 mil diamond
Recommended tracking force	2 g
Output level (1 kHz, 5 cm/sec)	3 mV
Channel separation (1 kHz)	20 dB

4. GENERAL

Power consumption	5 W
Dimensions (W x D x H)	424 x 378 x 130
	(16-11/16 x 14-7/8 x 5-1/8")
Weight	6,9 kg (15-3/16 lb)

Design and specifications are subject to change without notice for improvement.

DISASSEMBLY

1. Removal of the Tonearm

1. Remove the bottom cover.
2. Disconnect the soldering for the 6 output lead wires from the tonearm.
3. Loosen the screw securing the return lever to the tonearm pivot. The return lever may thus be removed from the tonearm pivot.
4. Remove the 5 tonearm mounting screws [see Fig.1 (Y)].
5. Remove the arm lifter catch.
6. The tonearm may now be lifted out from the main cabinet.

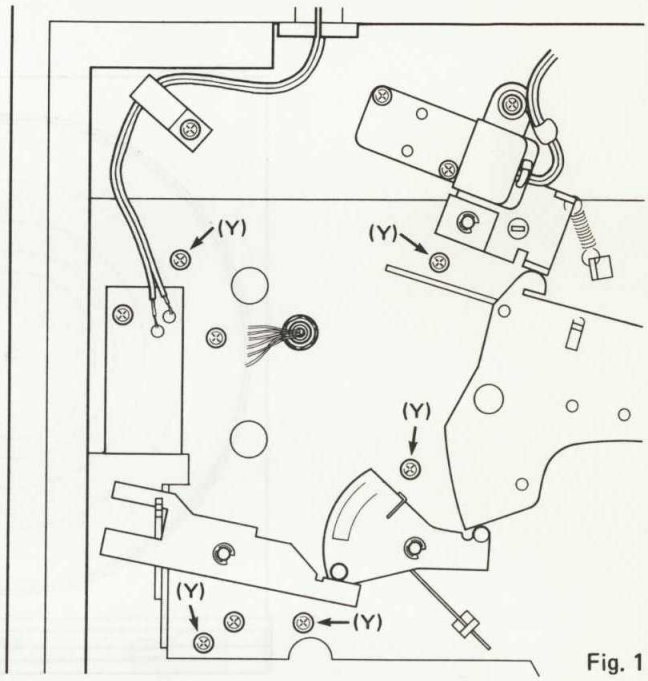


Fig. 1

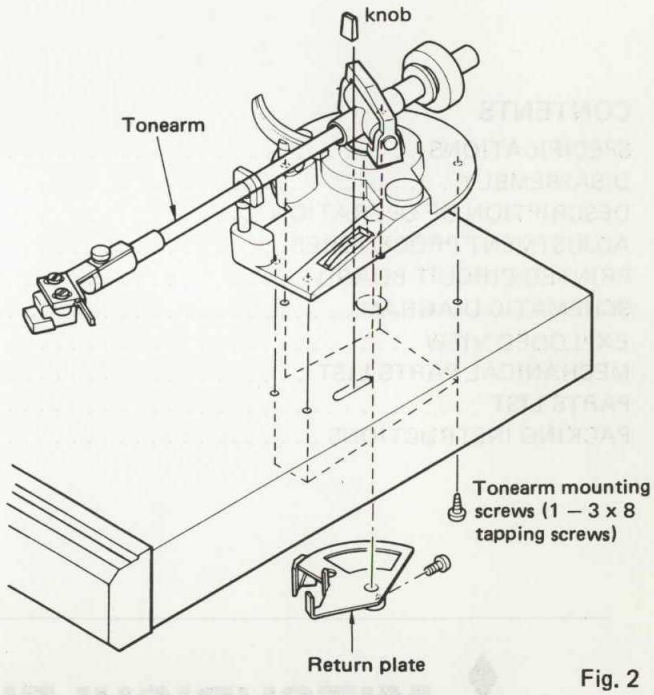


Fig. 2

DESCRIPTION OF OPERATION

1. Set the arm lifter lever to the UP position, and move the tonearm by hand over to the record lead-in position.
2. Return plate (A) connected to the tonearm pivot shaft will move together with the tonearm and thereby turn the microswitch (POWER) on to start the motor. (Fig. 3)
3. When the arm lifter lever is then set to the DOWN position, the tonearm will lower onto the record and the stylus commence to trace the record grooves.
4. When the tonearm approaches the record lead-out groove near the end of play, return plate (A) will start to push against the end of return detector lever (B). (Fig. 4)
5. Since return detector lever (B) rotating movement is centered at fulcrum (C), the other end of the lever will push trip (F) mounted on top of return gear (E) out towards the center shaft. (Fig. 4)
6. When the end of the record is reached and the stylus enters the lead-out groove, the claw of latch (G) above trip (F) being pushed by the return detector lever makes contact with the center shaft gear claw. (Fig. 4)
7. Guided by the latch, the return gear commences to rotate and intermesh with the center shaft gear. Return gear (E) thus rotates counter clockwise. (Fig. 4)
8. The under side of return gear (E) includes a specially shaped cam groove, and as the gear rotates arm return plate (H) centered at fulcrum (J) moves back and forth. This arm return plate first pushes against lifter cam (K) which is coupled to the arm lifter, thereby resulting in the tonearm being lifted away from the record.
9. Then the rod at the other end of the arm return plate pushes against return plate (A), thereby returning the tonearm to the arm rest. (Fig. 5)
10. The tonearm is thus returned right back to the arm rest when the return gear has completed half a revolution. When the gear proceeds to rotate further, the arm return plate moves in the opposite direction. And since the microswitch is attached to the arm return plate, it is switched off when it is pressed against return plate (A).
11. While the return gear is rotating, latch (G) returns to its former position. The return gear then stops rotating when the section without gear teeth is reached. The mechanism is thus back in the same state as prior to start of play.

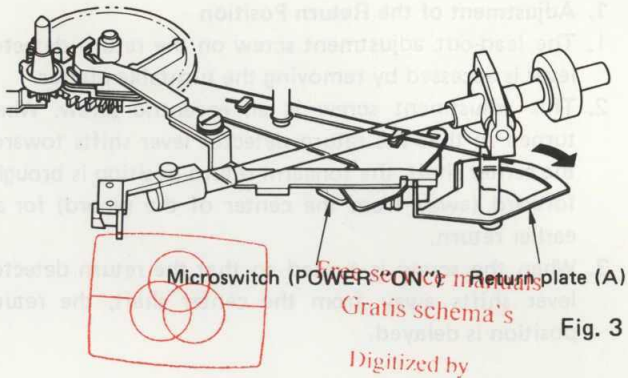


Fig. 3

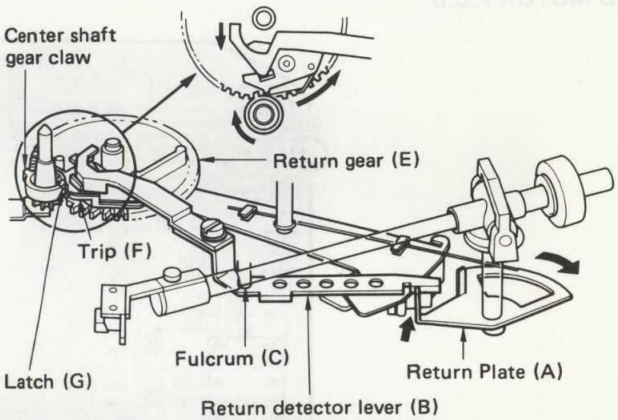


Fig. 4

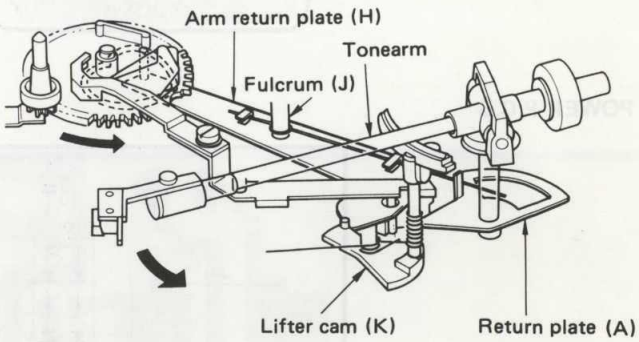


Fig. 5

ADJUSTMENT PROCEDURES

1. **Adjustment of the Return Position**
1. The lead-out adjustment screw on the return detector lever is accessed by removing the turntable platter.
2. This adjustment screw is an eccentric screw. When turned so that the return detector lever shifts towards the center shaft, the tonearm return position is brought forward (away from the center of the record) for an earlier return.
3. When the screw is turned so that the return detector lever shifts away from the center shaft, the return position is delayed.

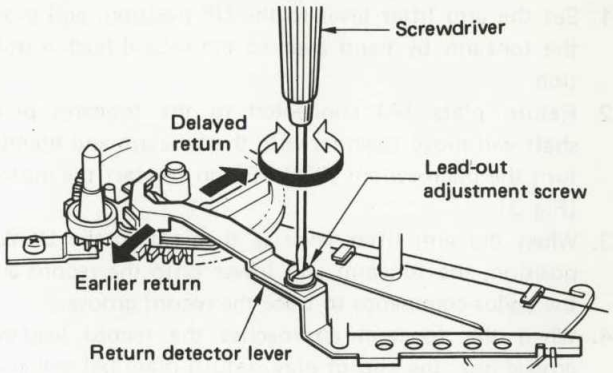
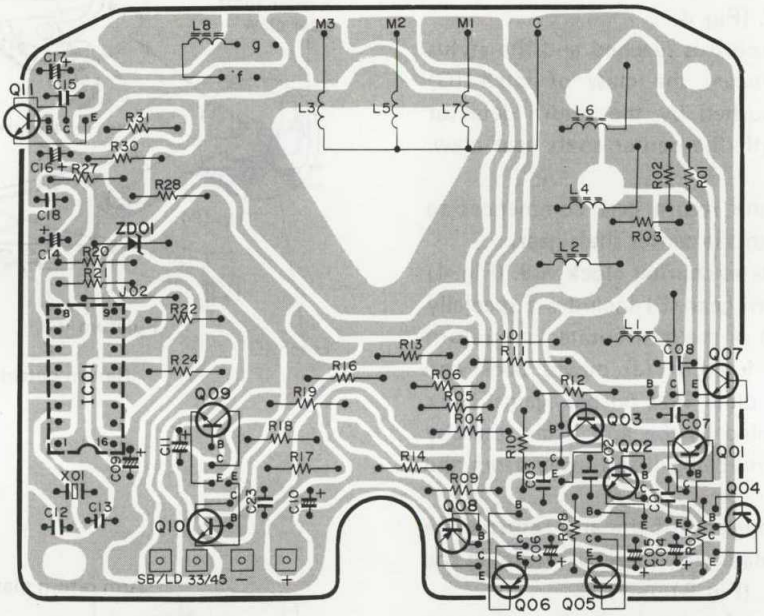


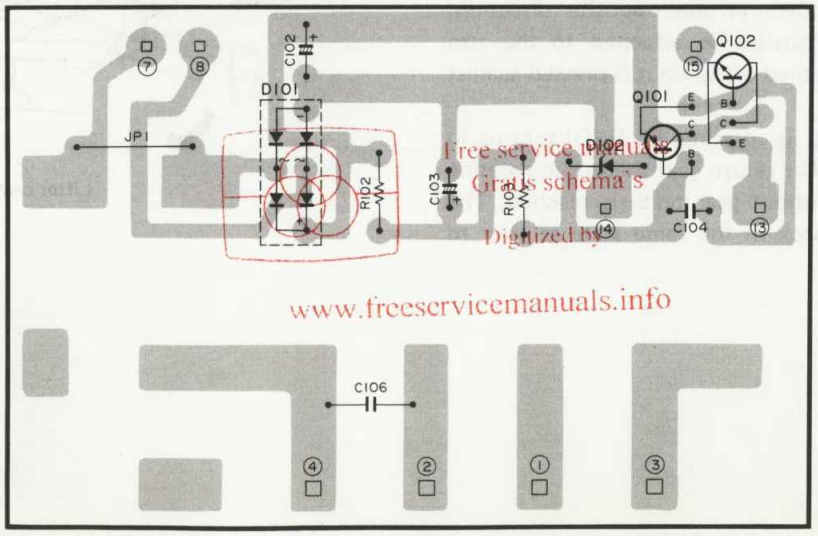
Fig. 6

PRINTED CIRCUIT BOARD

DD MOTOR P.C.B

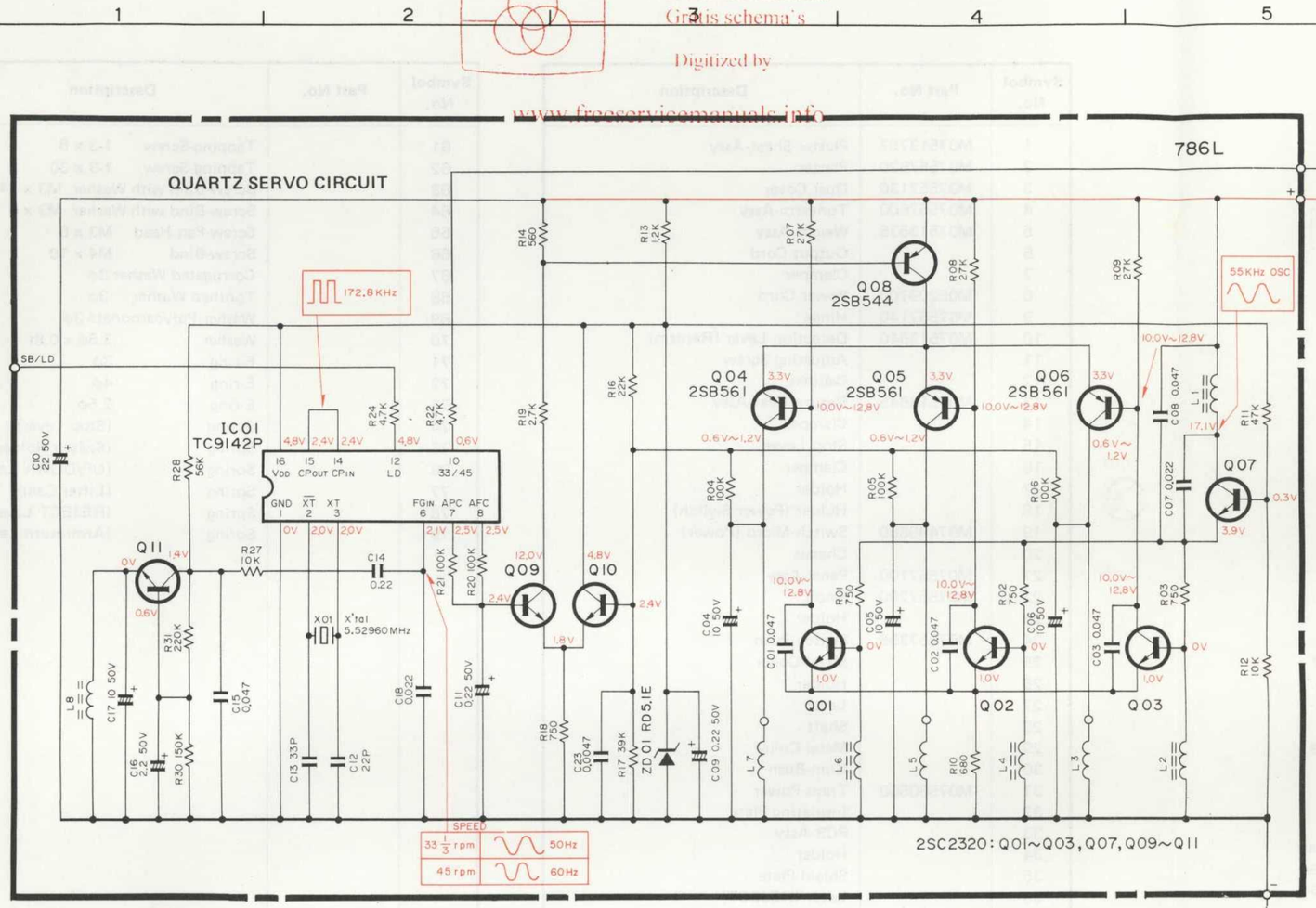


POWER P.C.B



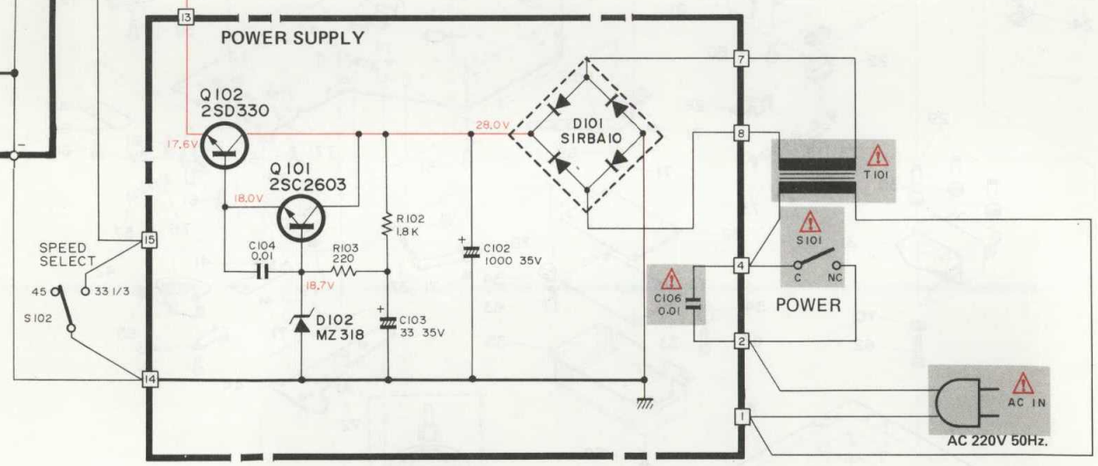
DP-780	DP-780

SCHEMATIC DIAGRAM

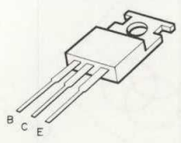


NOTES:

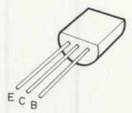
1. Units of capacitors and resistors
   - C.....No symbol : μF
   - P-symbol : pF
   - R.....No symbol : Ω
   - K-symbol : kΩ
   - M-symbol : MΩ
2. As for voltages, those for the phono motor section are those measured during 33-1/3 r.p.m. rotation, while others have been measured with the tonearm at the rest position. All measurements were taken with a digital voltmeter having an input impedance of 1 MΩ.
3. ⚠ and ▭ marked components are those that are critical for the continued safety and performance of this unit. Replace only with components of the exact type as specified.
4. Component values and design subject to change without notice for improvement.



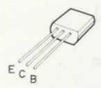
Pin connection of Transistor and IC's



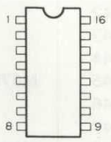
2SD330



2SB544
2SB561
2SC2320

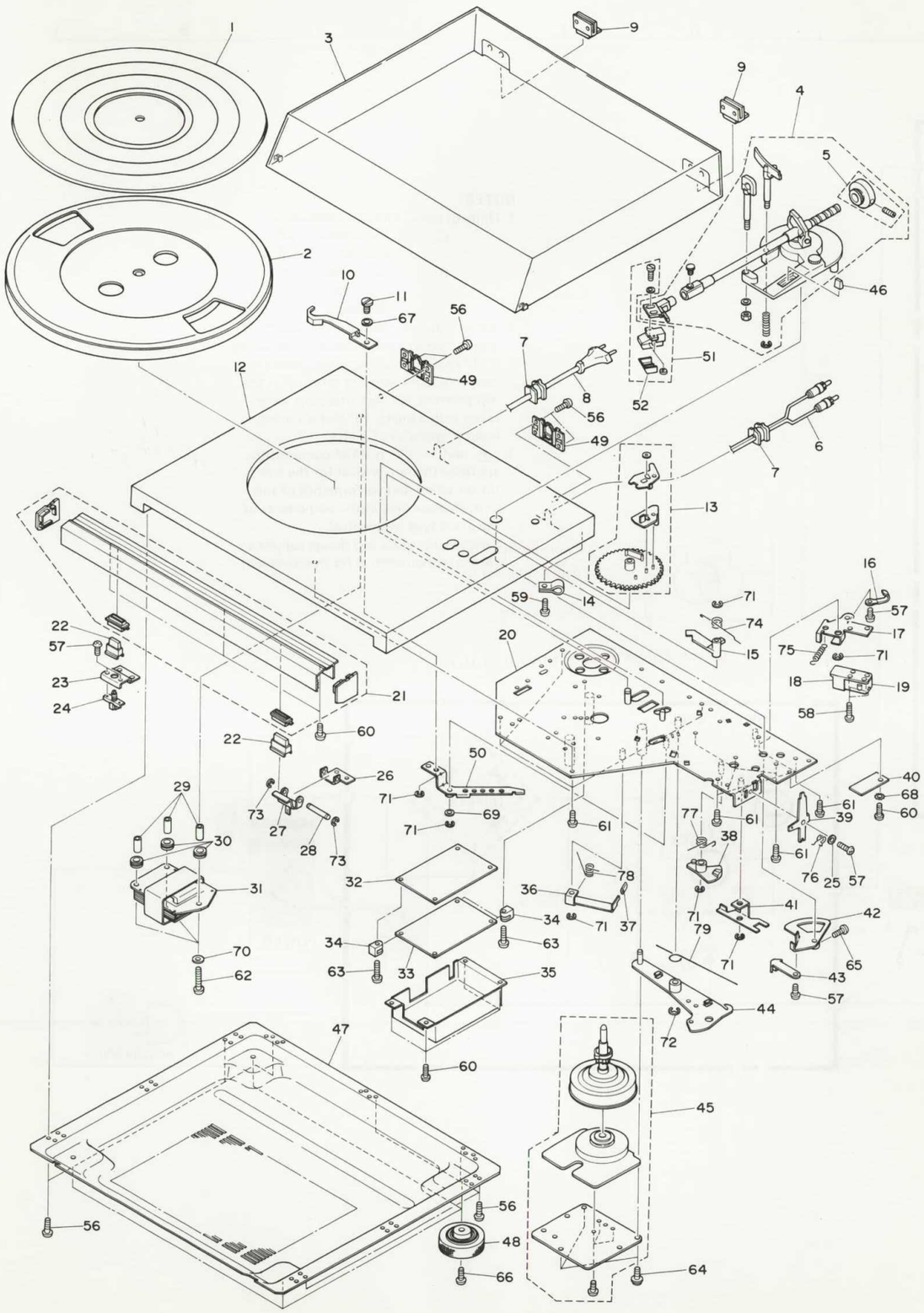


2SC2603



TC9142P

EXPLODED VIEW



MECHANICAL PARTS LIST

Symbol No.	Part No.	Description
1	M07513757	Platter Sheet-Assy
2	M07557620	Platter
3	M07557130	Dust Cover
4	M07557600	Tonearm-Assy
5	M07513635	Weight-Assy
6		Output Cord
7		Clamper
8	M05209700	Power Cord
9	M07557140	Hinge
10	M07513640	Detection Lever (Returm)
11		Adjusting Screw
12		Cabinet
13	M07513645	Return Gear-Assy
14		Clamper
15		Stop Lever
16		Clamper
17		Holder
18		Holder (Power Switch)
19	M07499660	Switch-Micro (Power)
20		Chassis
21	M07557100	Panel-Assy
22	M07557200	Knob
23		Holder
24	M07557355	Switch-Push
25		Metal Coller
26		Holder
27		Lever
28		Shaft
29		Metal Coller
30		Gum-Bush
31	M07560500	Trans-Power
32		Insulating Plate
33		PCB-Assy
34		Holder
35		Shield-Plate
36		Lever (REJECT)
37		Gum-Bush
38		Lifter Cam
39		Lever
40		PCB-Assy
41		Lever
42		Return Plate
43		Lever
44		Returm Plate (Arm)
45	M07557550	Motor (786L)
46		Knob
47		Cover-Bottom
48	M07565190	Leg
49		Hinge-Holder
50		Returm Lever
51	M04168610	Cartridge MAG-47
52	M04168612	Stylus 3D-47M
53		—
54		—
55		—
56		Tapping-Screw 1-3 x 14
57		Screw-Bind M3 x 6
58		Screw-Bind M3 x 16
59		Tapping-Screw 1-3 x 16
60		Screw Metal (tap tight B) 3 x 6

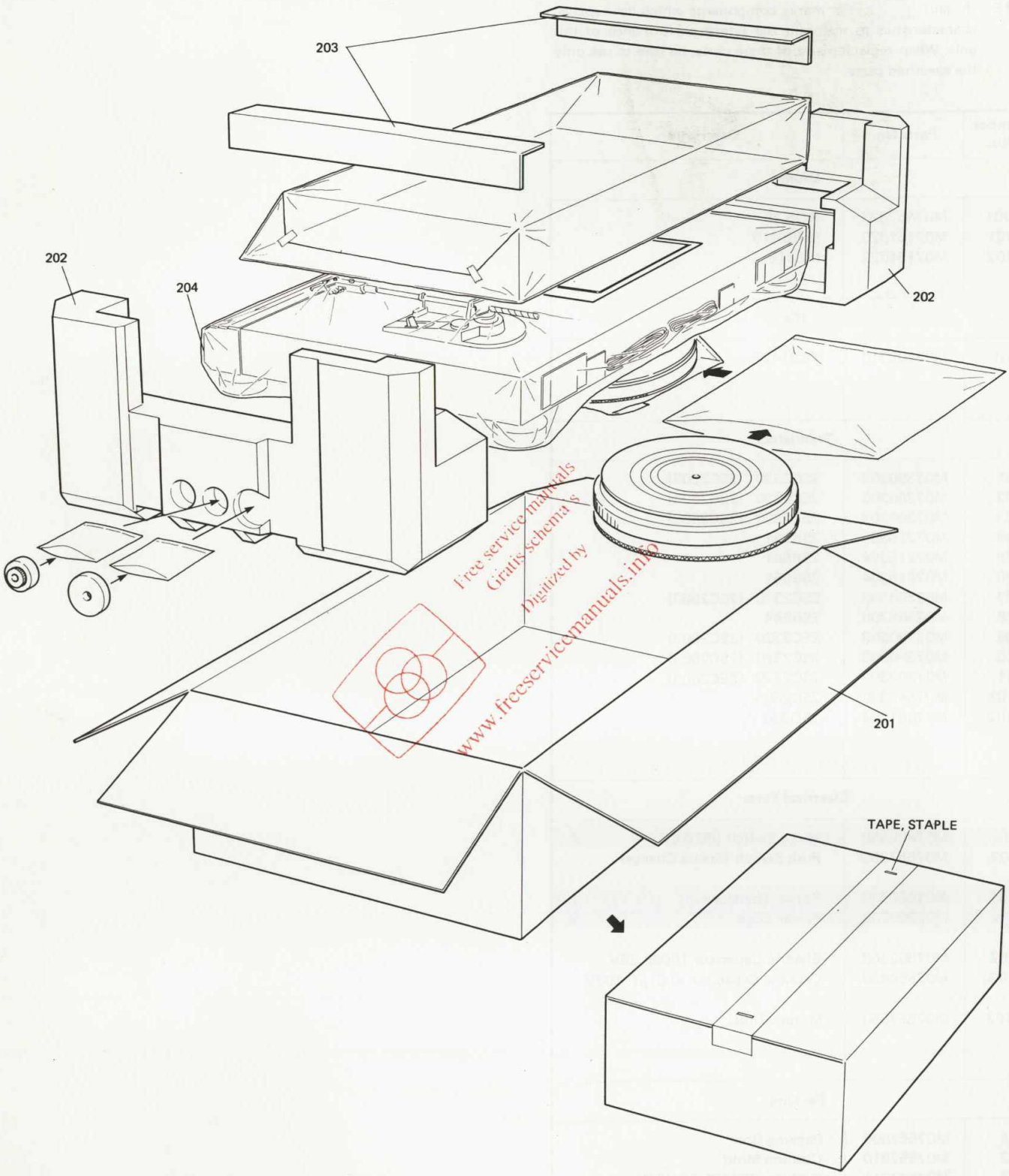
Symbol No.	Part No.	Description
61		Tapping-Screw 1-3 x 8
62		Tapping-Screw 1-3 x 30
63		Screw-Bind with Washer M3 x 14
64		Screw-Bind with Washer M3 x 6
65		Screw-Pan Head M3 x 6
66		Screw-Bind M4 x 10
67		Corrugated Washer 3ϕ
68		Toothed Washer 3ϕ
69		Washer Polycarbonate 3ϕ
70		Washer 3.5ϕ x 0.8t
71		E-ring 3ϕ
72		E-ring 4ϕ
73		E-ring 2.5ϕ
74		Spring (Stop Lever)
75		Spring (Switch Holder)
76		Spring (UP/DOWN Lever)
77		Spring (Lifter Cam)
78		Spring (REJECT Lever)
79		Spring (Armreturn Lever)

PARTS LIST

NOTE: ⚠ and [redacted] marks components which have special characteristics to maintain the safety performance of this unit. When replacing any of these parts, be sure to use only the specified parts.

Symbol No.	Parts No.	Description
		Diodes
ZD01	M07452323	RD5.1E
D101	M07151320	SIRBA10
D102	M07151322	MZ318
		ICs
IC01	M07508310	TC9142P
		Transistors
Q01	M07390303	2SC2320 (2SC2603)
Q02	M07390303	2SC2320 (2SC2603)
Q03	M07390303	2SC2320 (2SC2603)
Q04	M07215304	2SB561
Q05	M07215304	2SB561
Q06	M07215304	2SB561
Q07	M07390303	2SC2320 (2SC2603)
Q08	M07508308	2SB544
Q09	M07390303	2SC2320 (2SC2603)
Q10	M07390303	2SC2320 (2SC2603)
Q11	M07390303	2SC2320 (2SC2603)
Q101	M07543300	2SC2603
Q102	M07061304	2SD330
		Electrical Parts
S101	M07499660	Micro Switch (POWER) ⚠
S102	M07557355	Push Switch (Speed Change)
T101	M07560500	Power Transformer ⚠
	M05209700	Power Cord ⚠
C102	M07502360	Electric Capacitor 1000μ 35V
C106	M07554430	Ceramic Capacitor 0.01μF 400V
M103	M07557550	Motor—786L
		Packing
201	M07557900	Packing Box
202	M07557910	Cushion Mold
203	M07557911	Cushion (DUST COVER)
204	M07557920	Packing Bag
	M07560940	Warranty Card
	M07191603	Adaptor 45 rpm

PACKING INSTRUCTIONS



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DP-780-WG (E)
SM-1029
PRINTED IN JAPAN