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SERVICE MANUAL TT165

marantz®

model TT165

Turntable

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, MARANTZ company has created the ultimate in stereo sound. Only **original MARANTZ parts** can insure that your MARANTZ product will continue to perform to the specifications for which it is famous.

Parts for your MARANTZ equipment are generally available to our National Marantz Subsidiary or Agent.

ORDERING PARTS:

Parts can be ordered either by mail or by telex. In both cases, MARANTZ part number has to be specified. If you order by mail, fulfil MARANTZ order forms.

MARANTZ TRADING S.A.

326 Avenue Louise Bte 32
1050 Brussels
Belgium

The following information must be supplied to eliminate delays in processing your order:

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature: any order form or telex must be signed otherwise such part order will be considered as null and void.

PARTS ORDERING:

Parts may be ordered from the following addresses:

EUROPE

MARANTZ EUROPE

326 Avenue Louise Bte 32
1050 Brussels
Belgium

MARANTZ TRADING S.A.

326 Avenue Louise Bte 32
1050 Brussels
Belgium

AUSTRIA

HORNYPHON
Vertriebsgesellschaft GmbH
Wienerbergstrasse 1
A 1101 Wien
Austria

BELGIUM

SVD DIVISION MARANTZ
Industrialaan 1
B 1720 Groot-Bijgaarden
Belgium

DENMARK

MARANTZ
Division of Philips Service A/S
Prags Boulevard 80
Postbox 1919
DK 2300 København S
Denmark

FINLAND

MARANTZ
Division of Oy Philips Ab
Kaivokatu 8
00100 Helsinki
Finland

FRANCE

MARANTZ FRANCE
4 Rue Bernard Palissy
F 92600 Asnières
France

SWITZERLAND

DYNAVON ELECTRONICS
Route de Villars 105
CH 1701 Fribourg
Switzerland

SPAIN

PHONO S.A.
Ignacio Iglesias 10
Barcelona (Badalona)
Spain

THE NETHERLANDS

MARANTZ
De Imitet 3
NL 4131 NR Vianen
The Netherlands

GERMANY

MARANTZ GERMANY GmbH
Max-Planck-Strasse 22
D 6072 Dreieich 1
Germany

GREAT BRITAIN

MARANTZ AUDIO U.K. Ltd
Unit 15/16
Saxon Way Industrial Estate
Moor Lane
Harmondsworth UB7 OLW
Great Britain

TURKEY

DOGRUOL LTD
I.M.C
6 Blok N° 6310
Unkapani
Istanbul
Turkey

NORWAY

MARANTZ
Division of Philips A/S
Sandstuveien 40
Oslo 6
Norway

ITALY

MARANTZ ITALIANA S.P.A.
Via Chiese, 74
20126 Milano
Italy

SWEDEN

MARANTZ
Division of Philips Försäljning AB
Tegeluddsvägen 1
S115 84 Stockholm
Sweden

YUGOSLAVIA

VELEBIT OOUR
Inoz Zastupstva
Babukiceva 3A
P.O. Box 1044
41000 Zagreb
Yugoslavia

GREECE

ADAMCO S.A.
P.O. Box 21025
Ippocratus Street 188
Athens 11410
Greece

AUSTRALIA

MARANTZ AUSTRALIA PTY., LTD.
19 Chard Road
Brookvale, NSW 2100
Australia
Telex: 24121

All of the above locations are fully equipped to take care of your total service needs. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please, contact the nearest facility for the necessary assistance.

In case of difficulties, do not hesitate to contact the Technical Department at abovementioned address.

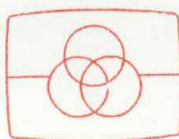
marantz®

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FEATURES

Automatic-return Belt Drive Turntable



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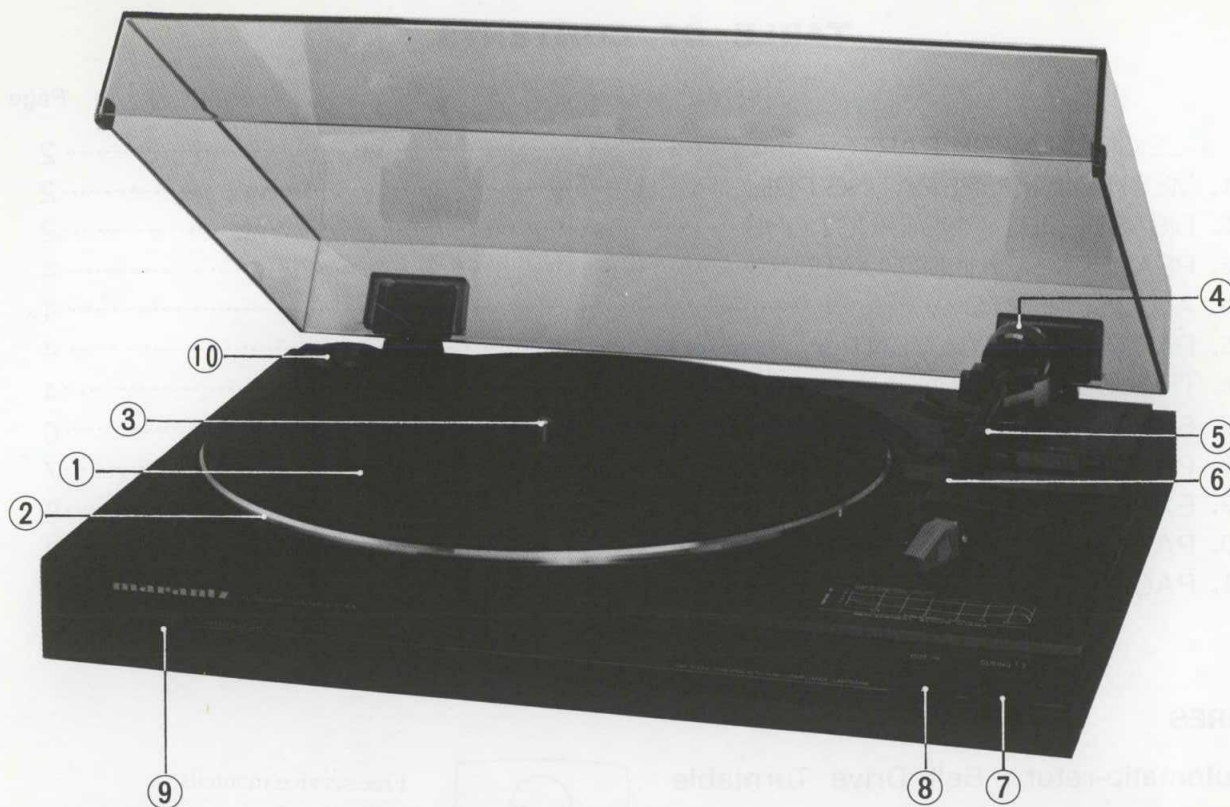
SPECIFICATIONS (Limit)

TURNTABLE			
Motor	DC Servo motor	Output voltage	2.5mV±3.5dB at 1kHz 3.54cm/sec.
Speed	33-1/3 and 45 r.p.m.	Channel balance	Within 2.5dB at 1KHz
Wow & Flutter	±0.2% (DIN45507)	Channel separation	More than 18dB at 1KHz
Rumble	55dB DIN45539B (weighted)	Load resistance	47KΩ
Turntable platter	296mm aluminum alloy die-cast	Weight	6g
ONEARM		OPERATION	
Effective length	222mm	Automatic return, automatic shaft off, stop	
Usable cartridge	Universal, P-mount type	Cueing Oil-damped	
CARTRIDGE		GENERAL	
Type	P-mount system, with 0.6 mil stylus Dual Magnet type	Power consumption	4 watts
Frequency response	20—20,000Hz	Dimensions	420(w) x 99(h) x 336(d) mm
		Weight	2.8kg (net)

NOTE: Nominal Specs represent the design specs; all units should be able to approximate these-some will exceed and some may drop slightly below these specs. Limit Specs represent the absolute worst condition which still might be considered acceptable; in no case should a unit perform to less than within any Limit Spec.

Lubrication of the mechanism is not required. However, whenever a unit is brought in for adjustment or repair, always use good common sense ... clean any dust or dirt from mechanical parts and if moving parts do seem to bind, check for dirt. If necessary, add a very fine film of light-weight specially formulated lubricant.

Specifications and appearance are subject to change for modification without notice.



1. Turntable platter mat
2. Turntable platter
3. Turntable shaft
4. Counterweight
5. Tonearm rest

6. Tonearm
7. Cue button
8. Cut button
9. Speed selector button
10. 45 rpm adapter

1. MECHANISM OPERATING PRINCIPLES

AUTOMATIC RETURN (Refer to Fig. 1)

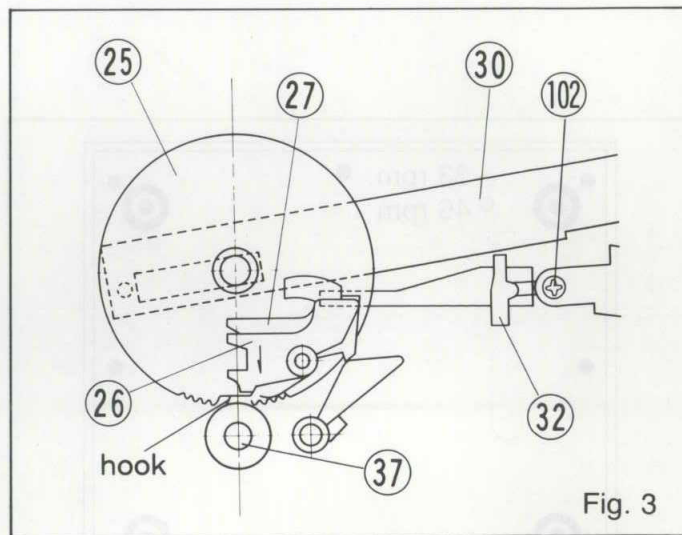
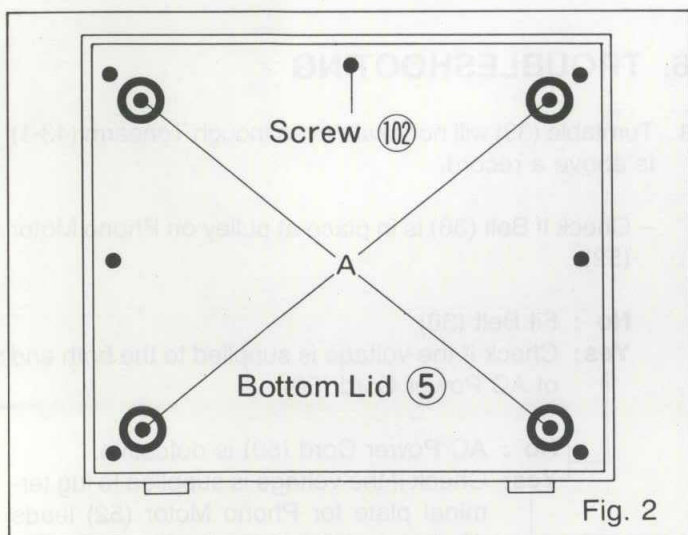
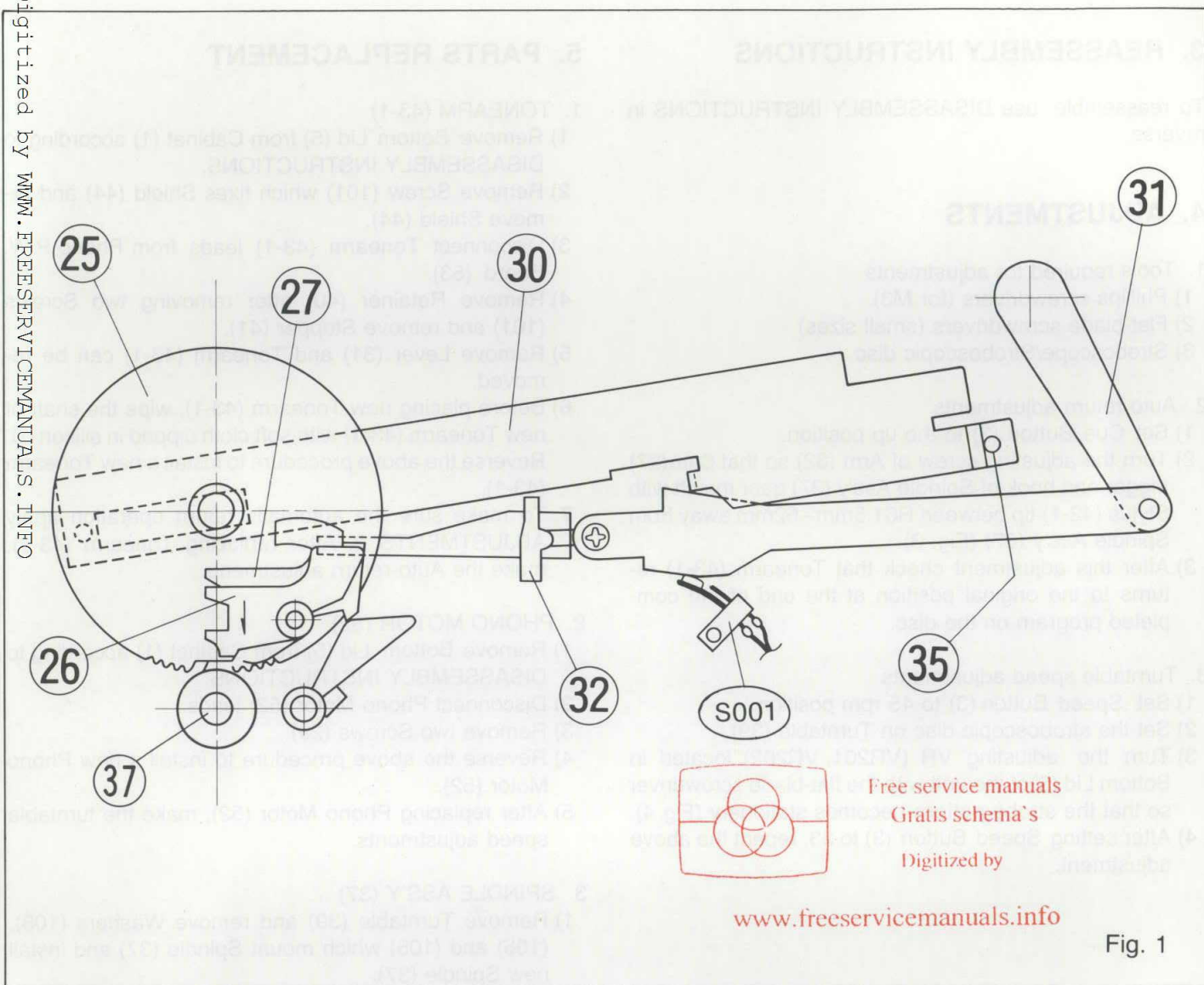
While Stylus (42-1) tip approaches the final groove of the record, Arm (32), linked to Tonearm (43-1) by Lever (31), pushes Cam (27) in the direction of the arrow, and Cam (26) moves together with Cam (27) in that direction. When Stylus (42-1) tip enters the final rough-pitch groove of the record, Cam (26) engages the pawl of Spindle Ass'y (37) and Gear (25) starts turning. Lever Ass'y (30) is moved by turning of Gear (25) and slope on Lever Ass'y (30) pushes Arm (35) up, and Tonearm (43-1) is lifted from record surface.

Then, Lever Ass'y (30) also pushes Lever (31), and Tonearm (43-1) returns to its rest. On the other hand, Arm (32) is pulled by Lever (31) and Mini Switch (S001) is turned off, and Phono Motor (52) stops rotation.

2. DISASSEMBLY INSTRUCTIONS

Before disassembly, disconnect AC Power Cord (50) and Connective Cord (51). Remove Bottom Lid (5) from Cabinet (1) as follows:

1. Remove Dust Cover (11).
2. Fasten Tonearm (43-1) to Retainer Ass'y (16).
3. Remove Turntable Sheet (24) and remove Belt (36) from Phono Motor (52) pulley.
4. Remove turntable (39).
5. Position the unit upside down and remove seven Screws (102) which mount Bottom Lid (5) to Cabinet (1) and four Screws (28) (A in Fig. 2) which mount Leg (19) to Cabinet (1).



3. REASSEMBLY INSTRUCTIONS

To reassemble, use DISASSEMBLY INSTRUCTIONS in reverse.

4. ADJUSTMENTS

1. Tools required for adjustments

- 1) Phillips screwdrivers (for M3)
- 2) Flat-blade screwdrivers (small sizes)
- 3) Stroboscope/Stroboscopic disc

2. Auto-return adjustments

- 1) Set Cue Button (3) to the up position.
- 2) Turn the adjusting screw of Arm (32) so that Cam (27) trigger and hook of Spindle Ass'y (37) gear match with Stylus (42-1) tip between R61.5mm-62mm away from Spindle Ass'y (37) (Fig. 3).
- 3) After this adjustment check that Tonearm (43-1) returns to the original position at the end of the completed program on the disc.

3. Turntable speed adjustments

- 1) Set Speed Button (3) to 45 rpm position.
- 2) Set the stroboscopic disc on Turntable (39).
- 3) Turn the adjusting VR (VR201, VR202) located in Bottom Lid (5) of the unit with the flat-blade screwdriver so that the strobo pattern becomes stationary (Fig. 4).
- 4) After setting Speed Button (3) to 33, repeat the above adjustment.

5. PARTS REPLACEMENT

1. TONEARM (43-1)

- 1) Remove Bottom Lid (5) from Cabinet (1) according to DISASSEMBLY INSTRUCTIONS.
- 2) Remove Screw (101) which fixes Shield (44) and remove Shield (44).
- 3) Disconnect Tonearm (43-1) leads from Phono P.W. Board (53).
- 4) Remove Retainer (40) after removing two Screws (101) and remove Stopper (41).
- 5) Remove Lever (31) and Tonearm (43-1) can be removed.
- 6) Before placing new Tonearm (43-1), wipe the shaft of new Tonearm (43-1) with soft cloth dipped in silicon oil. Reverse the above procedure to install a new Tonearm (43-1).
- 7) To make sure the automatic return operation apply ADJUSTMENTS 2. After replacing Tonearm (43-1), make the Auto-return adjustments.

2. PHONO MOTOR (52)

- 1) Remove Bottom Lid (5) from Cabinet (1) according to DISASSEMBLY INSTRUCTIONS.
- 2) Disconnect Phono Motor (52) leads.
- 3) Remove two Screws (29).
- 4) Reverse the above procedure to install a new Phono Motor (52).
- 5) After replacing Phono Motor (52), make the turntable speed adjustments.

3. SPINDLE ASS'Y (37)

- 1) Remove Turntable (39) and remove Washers (108), (106) and (105) which mount Spindle (37) and install new Spindle (37).
- 2) After replacing Spindle (37), make Auto-return adjustments.

6. TROUBLESHOOTING

1. Turntable (39) will not rotate even though Tonearm (43-1) is above a record.

- Check if Belt (36) is in place at pulley on Phono Motor (52).

No : Fit Belt (36).

Yes: Check if the voltage is supplied to the both end of AC Power Cord (50).

No : AC Power Cord (50) is defective.

Yes: Check if the voltage is supplied to lug terminal plate for Phono Motor (52) leads wires.

No : Phono Motor (52) is defective.

Yes: Mini Switch (S001) is defective.

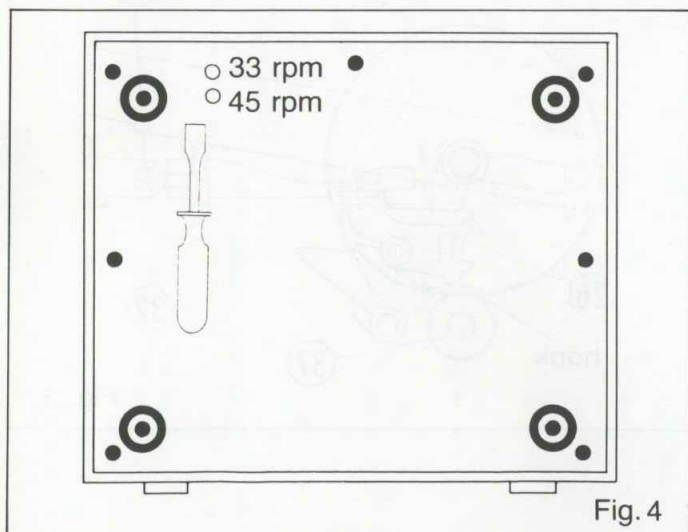


Fig. 4

2. Tonearm (43-1) will not return to the correct point.

– Check if the gap between Spindle Ass'y (37) gear and Cam (27) is adequate referring to ADJUSTMENTS 2.

No : Adjust the gap.

Yes: Check if Lever Ass'y (30) moves to the original position when Tonearm (43-1) is moved from the center of Turntable (39) to Retainer Ass'y (16) by hand.

No : Lever Ass'y (30) is not correctly mounted.

Yes: Lever (31) is not correctly mounted or Gear (25) is not laterally mounted.

3. Tonearm (43-1) will not automatically return.

– Check if the gap between Spindle Ass'y (37) gear and Cam (27) is adequate referring to ADJUSTMENTS 2.

No : Adjust the gap.

Yes: Check if Tonearm (43-1) returns when Tonearm (43-1) is moved to the center of a record.

No : Lever (31) is not correctly mounted.

Yes: Adjust return position referring ADJUSTMENT 2.

4. Turntable (39) will not stop rotation.

– Check if the knob of Mini Switch (S001) is sufficiently pushed by Arm (32) when Tonearm (43-1) returns to Retainer Ass'y (16).

No : Mini Switch (S001) is not correctly mounted.

Yes: Check to see that the gap between Arm (32) and Mini Switch (S001) is adequate referring to ADJUSTMENTS 5.

No : Adjust the gap.

Yes: Mini Switch (S001) is defective.

5. No sound from the speaker

– Removing Cartridge (42), touch the upper two terminals (L \ominus and R \oplus) at the end of tonearm (43-1) with a metallic screwdriver and listen for the speaker to produce a humming noise (Fig. 5).

Yes: Cartridge (42) or Tonearm (43-1) lead-wires is defective

No : Perform continuity test between Tonearm (43-1) end and Connective Cord (51) on dead channel (Fig. 6).

Yes: \oplus and \ominus cables are not isolated.

No : Plug of connective Cord (51) or terminal is connected incorrectly. Perform continuity test of input terminal of amplifier or receiver.

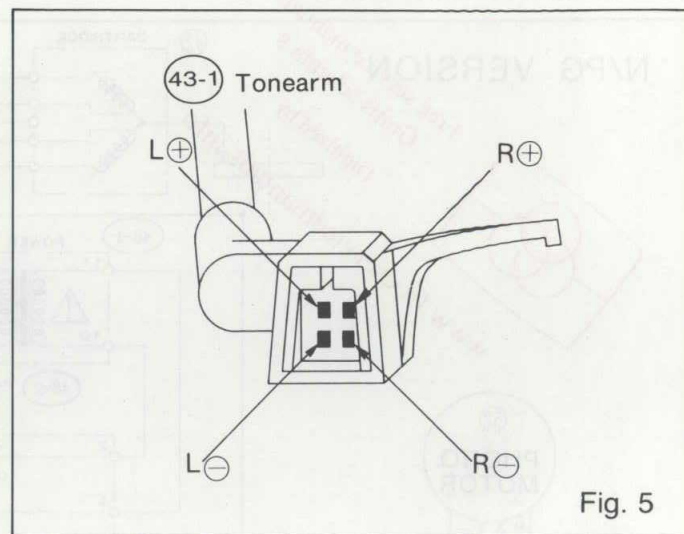


Fig. 5

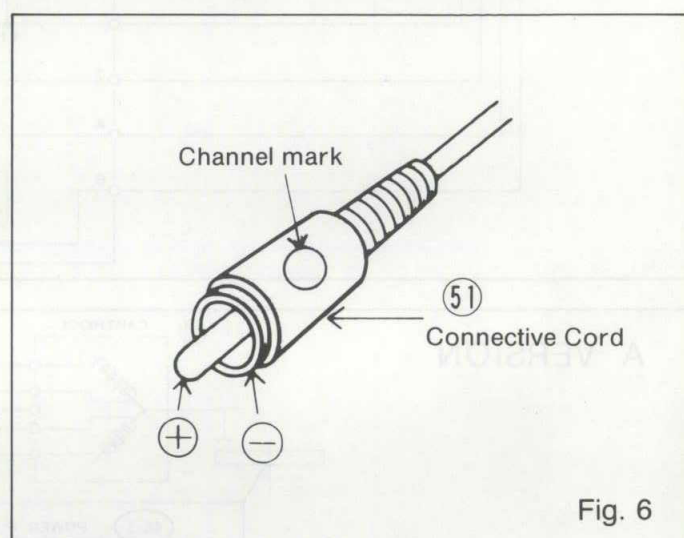


Fig. 6

6. Turntable (39) turns at incorrect speed.

– Check if the supply voltage is correct for this unit.

No : Connect the unit to the correct voltage.

Yes: Adjust speed of Turntable (39) turns in accordance with ADJUSTMENTS 3.

7. Noise from unit

– Check for noise with Turntable (39) removed.

Yes: Check Phono Motor

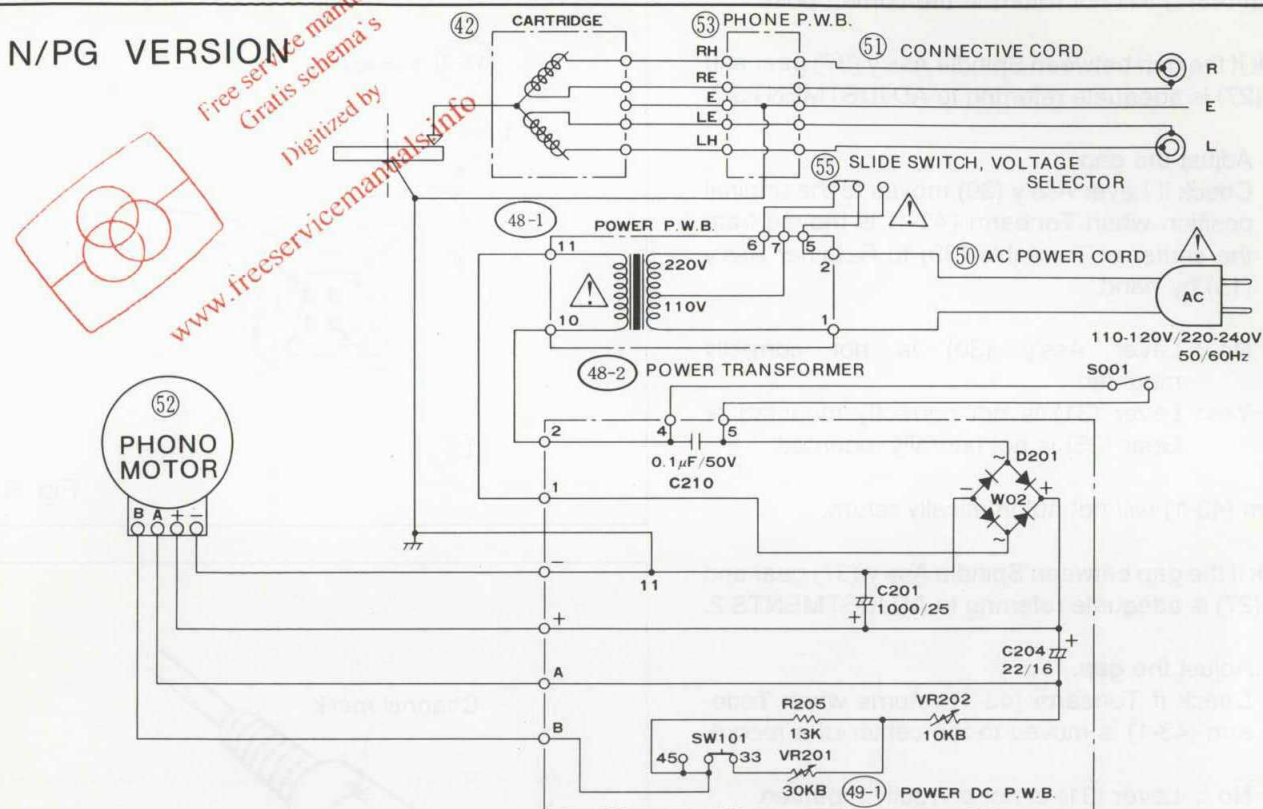
No : Check for noise when turntable (39) is moved by hand after Belt (36) is removed.

No : Check the position of Belt (36) and pulley on Phono Motor (52). (See ADJUSTMENTS 6)

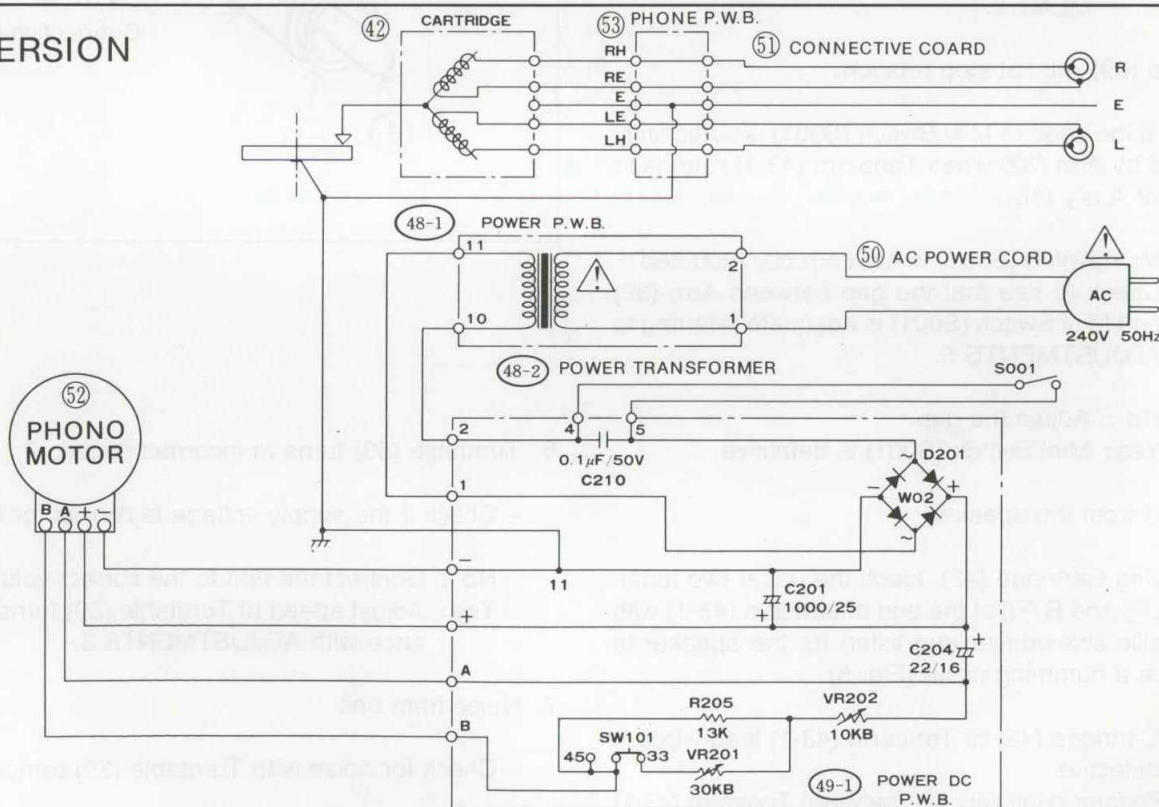
Yes: Spindle Ass'y (37) is defective.

7. SCHEMATIC DIAGRAMS

N/PG VERSION



A VERSION



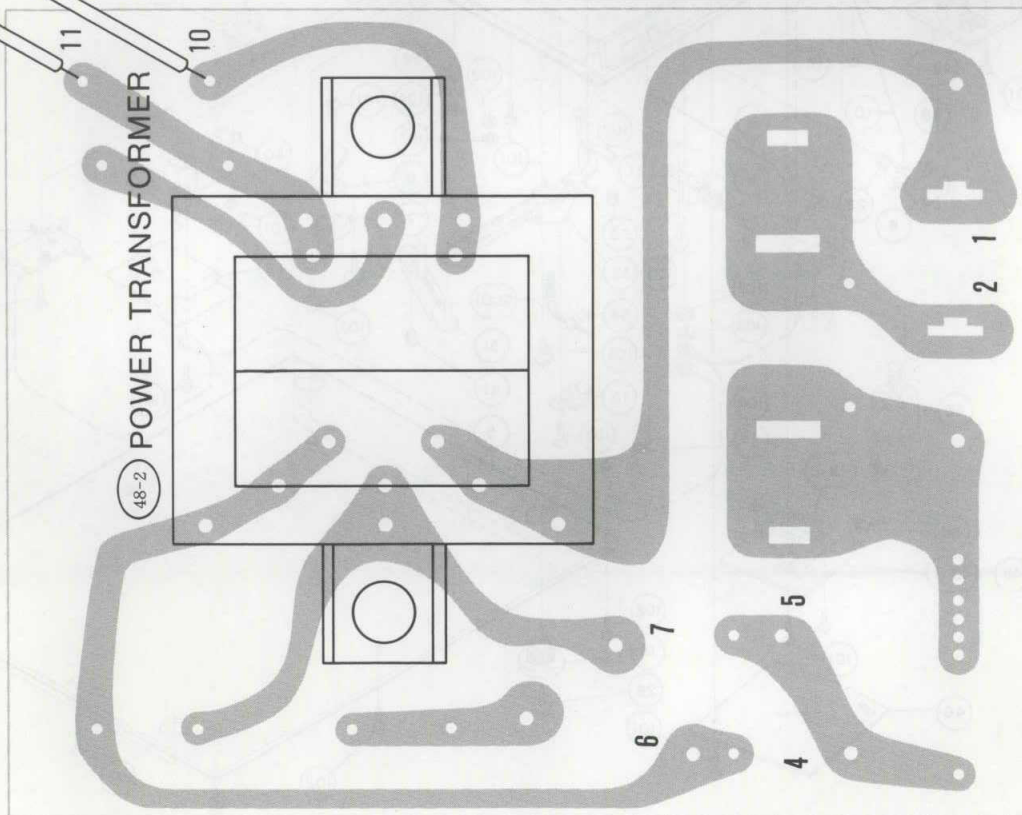
Components and wiring are subject to change for modification without notice.

To service personnel

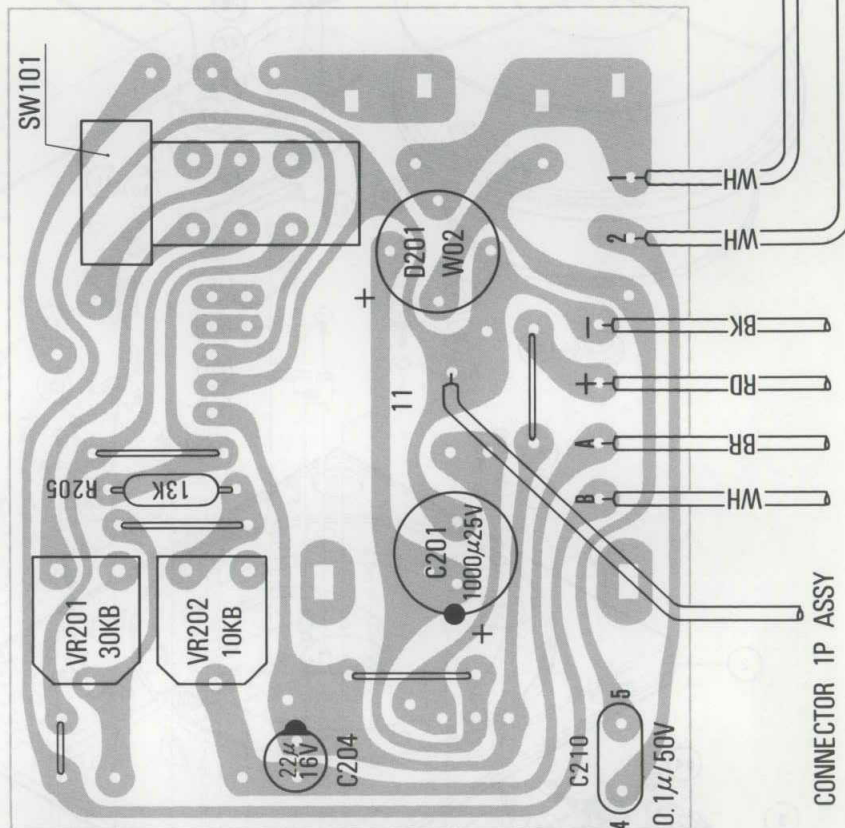
Make sure that only replacement parts recommended by the manufacturer should be used when the parts marked "!" in schematic diagram are exchanged.

Never fail to make leakage-current or resistance measurements before returning the appliance to the customer so as to make sure that exposed parts are acceptably insulated from the supply circuit.

Power P.W. Bord
Board Assembly (48)



Power DC P.W. Board
Assembly (49)



10. PARTS LIST

REF. DESIG.	PART NO.	DESCRIPTION
1	456Z072010	Cabinet
2	456Z158010	Window, Front
3	456Z270010	Button, Cue/Speed
4	456Z270020	Button, Cut
5	456Z257010	Lid, Bottom
6	432Z118010	Spacer
7	432Z002030	Arm
8	432Z354010	Lever
9	456Z357010	Rod, Cueing
0	456Z357020	Rod, Cut
1	432Z053010	Cover, Dust Cover
2	427Z252010	Pad, Dust Cover
3	456Z153010	Hinge
4	456Z056010	Buffer
5	456Z104500	Retainer Ass'y
6	434Z809020	Cushion
7	456Z160010	Bracket
8	456Z057010	Leg
9	456Z002010	Arm
0	SP000102AR	Push Switch
1	432Z115010	Spring
2	427Z362010	Adaptor, 45 Adaptor
3	414Z107010	Sheet, Turntable
4	456Z058010	Gear
5	456Z054010	Cam
6	456Z054020	Cam
7	456Z010010	Screw
8	434Z010030	Screw
9	456Z354500	Lever Ass'y
0	456Z354010	Lever
1	456Z002020	Arm
2	456Z115010	Spring
3	456Z115020	Spring
4	456Z002030	Arm
5	456Z264010	Belt
6	456Z117500	Spindle Ass'y
7	456Z115030	Spring
8	456Z165010	Turntable
9	456Z104010	Retainer
0	456Z114010	Stopper
1	PC22106080	Cartridge, CT165
2	PS22106070	Stylus, CTS165
3	PA110010AR	Tonearm
4	456Z008010	Weight
5	456Z109010	Shield
6	456Z118010	Spacer
7	456Z120010	Insulator
8	456Z012010	Washer
POWER CIRCUIT BOARD		
48	ZZ456Z1210	P.W.B Ass'y, Power N, PG
48	ZZ456Z2210	P.W.B Ass'y, Power A
48-1	YH456Z1210	P.W.Board, Power
Δ48-2	TS100054AR	Power Transformer N, PG
Δ48-2	TS100055AR	Power Transformer A
POWER DC CIRCUIT BOARD		
49	ZZ456Z1220	P.W.B Ass'y, Power DC
49-1	YH456Z1220	P.W.Board, Power DC
C201	EA10802510	Elect. Cap. 1000μF 25V
C204	EA22601610	Elect. Cap. 22μF 16V
C210	DF16104310	Film Cap. 0.1μF 50V
R205	GD05133140	13KΩ 1/4W ±5%
VR201	RA03030800	30KΩ Trimming
VR202	RA01030800	10KΩ Trimming
D201	HE200003AR	Diode, W02
SW101	SP020108AR	Push Switch

REF. DESIG.	PART NO.	DESCRIPTION
Δ50	YC022001AR	AC Power Cord N
Δ50	YC024003AR	AC Power Cord A
Δ50	YC024001AR	AC Power Cord PG
51	YB012005AR	Connective Cord
52	PM223005AR	Phono Motor
53	WH432Z0420	P.W.Board, Phono
Δ55	SS010202AR	Slide Switch, Volt. Selector N, PG
56	431Z118010	Spacer N, PG
57	456Z157010	Tape
S001	SM0101127R	Mini Switch
101	427Z010080	Screw, ø3×10
102	427Z010090	Screw, ø3×12
103	427Z010140	Screw, ø3×10
104	54020301A0	Flat Washer, P, ø3.2
105	456Z012020	Washer, ø4.2
106	54050400R0	T.L. Washer, ø4
107	64020300Q0	RG Ring, E, ø2
108	53110403A9	Hexagon Nut, M4
109	456Z012030	Flat Washer, P, ø3.2

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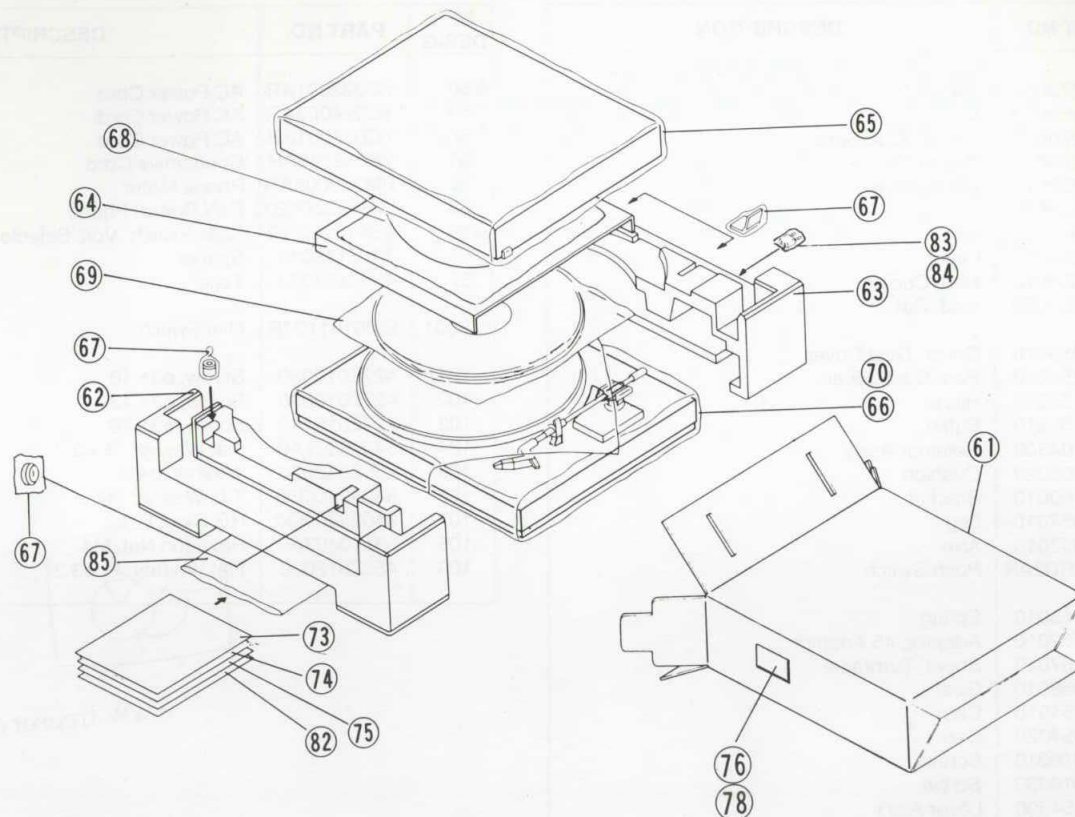
(W01-99)	Assembly and Wiring
(T01-99)	Adjustment
(X01-00)	Correction

To service personnel

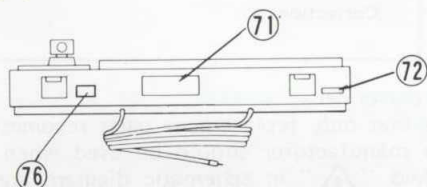
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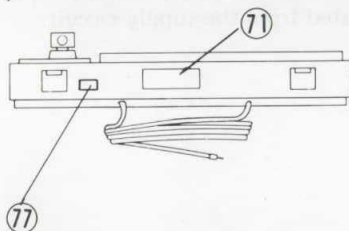
11. (HO1-99) PACKING MATERIALS



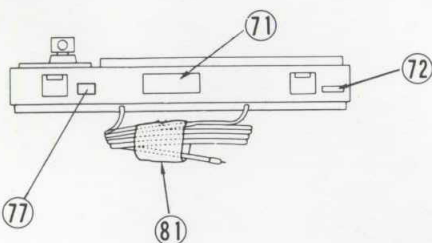
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(A)

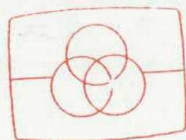


(PG)



N : for Europe
A : for Australia
PG : for PX

REF. DESIG.	PART NO.	DESCRIPTION	
61	456Z801010	Packing Case	
62	456Z809010	Cushion, Front	
63	456Z809020	Cushion, Rear	
64	456Z807010	Reinforcement	
65	452Z269010	Protector, Dust Cover	
66	432Z811010	Polyethy. Bag, Unit	
67	432Z811020	Polyethy. Bag, Accessories	
68	456Z811010	Polyethy. Bag, TT Sheet	
69	456Z811020	Polyethy. Bag, TT Platter	
70	432Z269020	Protector, Unit	
71	456Z203010	Name Plate	N
71	456Z203020	Name Plate	A
71	456Z203030	Name Plate	PG
72	427Z861050	Label	N, PG
73	456Z851310	User Manual	
74	456Z851010	Spec/Circuit DGM	
75	9631000090	Warranty Card	A
75	416H854010	Warranty Card	PG
76	9510901110	Label, Serial No. Label	N
77	2112265110	Indicator	A, PG
78	9526019030	Serial No. Label	A
78	9526019060	Serial No. Label	PG
81	432Z861020	Label	PG
82	3435851210	User Manual, Caution Card	PG
83	YJ040012AR	Jack, AC Adaptor	PG
84	435Z811020	Polyethy. Bag	PG
85	452Z811020	Polyethy. Bag	



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