

NAD SERVICE MANUAL



V06319

MONITOR SERIES

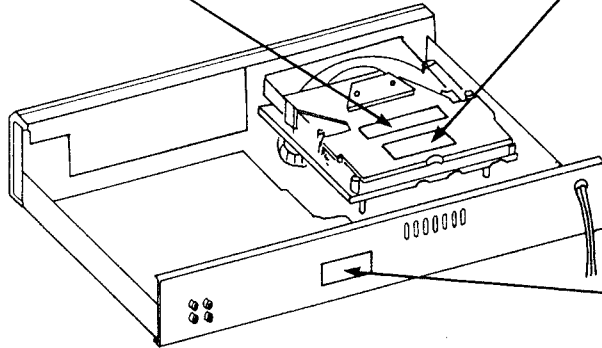
5100

COMPACT DISC PLAYER

SAFETY INFORMATION

DANGER—Invisible laser radiation when open and interlock failed or defeated. AVOID DIRECT EXPOSURE TO BEAM.

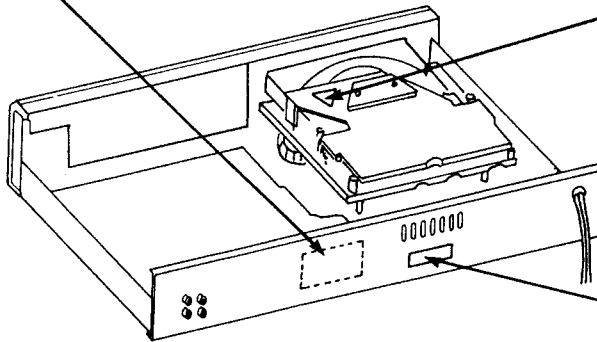
CAUTION - HAZARDOUS LASER AND ELECTROMAGNETIC RADIATION WHEN OPEN AND INTERLOCK DEFEATED
ATTENTION - RAYONNEMENT LASER ET ELECTROMAGNETIQUE DANGEREUX SI OUVERT AVEC L'ENCLICHEMENT DE SECURITE ANNULE




THIS PRODUCT COMPLIES WITH DHHS RULES 21 CFR SUBCHAPTER J PART 1040.10 AND 1040.11 AT DATE OF MANUFACTURE.
MANUFACTURED: BEY


CAUTION

CAUTION - INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.
VORSICHT! UNSICHTBARE LASERSTRAHLUNG TRITTS AUS. WENN DECKEL GEÖFFNET UND WENN SICHERHEITSVERRIEGELUNG ÜBERBRÜCKT IST. NICHT DEM STRAHL AUSSETZEN!
VARNING - OSYNLIG LASERSTRÄLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRR ÄR URKOPPLAD. STRÄLEN ÄR FARLIG.
ADVARSEL - OSYNLIG LASERSTRÄLING VED ÅBNING NÄR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÄLING.



CLASS 1 LASER PRODUCT

 The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure; that may be of sufficient magnitude to constitute a risk of electric shock to persons.

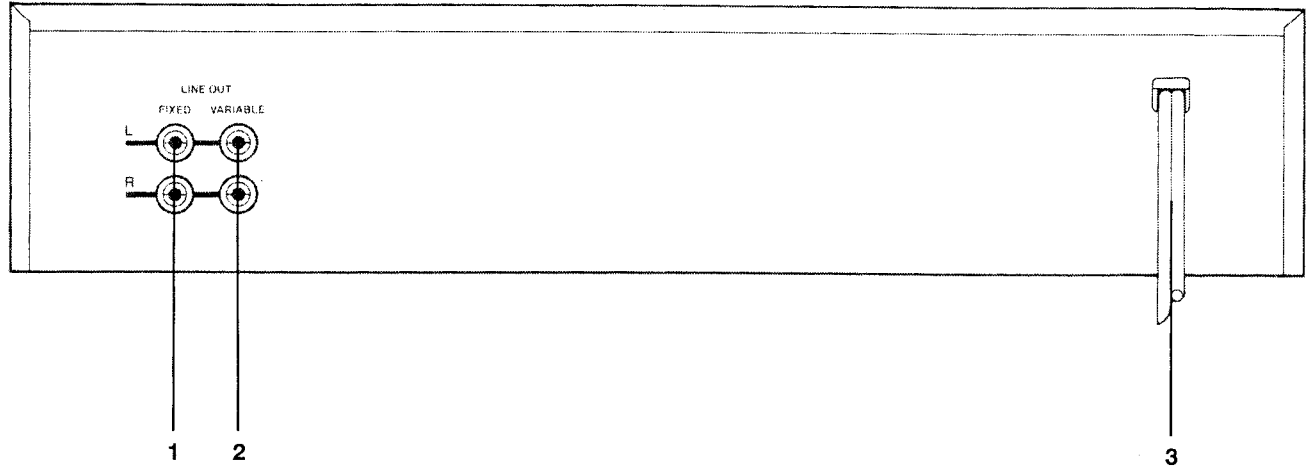
 The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

REAR PANEL

1. Fixed-level output jacks.
2. Variable-level output jacks.
3. AC line cord.

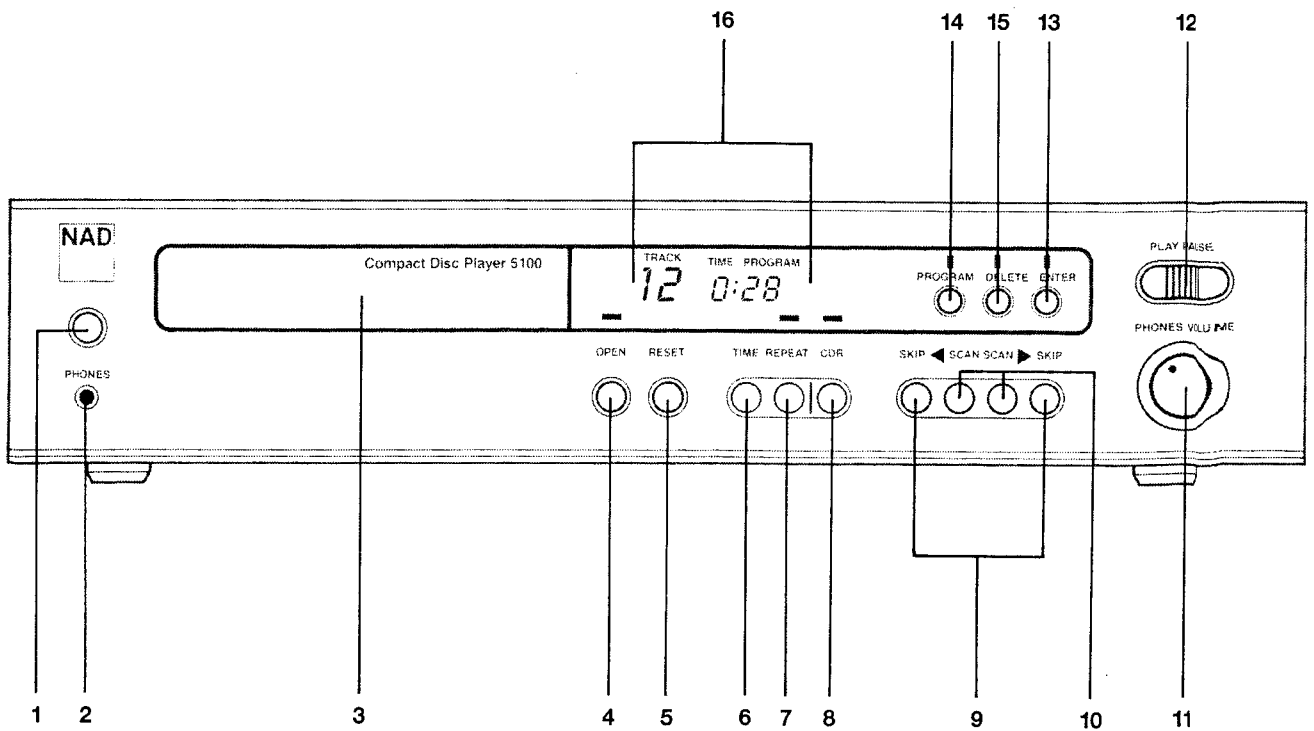
CAUTION
 RISK OF ELECTRIC SHOCK
 DO NOT OPEN

CAUTION TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



FRONT PANEL

- | | |
|------------------------------------|------------------------|
| 1. Power on/off. | 9. Skip forward/back. |
| 2. Headphones. | 10. Scan forward/back. |
| 3. Disc drawer. | 11. Headphone volume. |
| 4. Open/Close. | 12. Play/Pause. |
| 5. Reset. | 13. Memory enter. |
| 6. Time display selector. | 14. Program mode. |
| 7. Repeat. | 15. Delete mode. |
| 8. CDR (controlled dynamic range). | 16. Display. |



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Cautions on Replacement of Pick-up

1. Do not touch the terminals on the pick-up with your hand when removing the laser pick-up.
2. Cover the working bench with a conductive mat which is also grounded.
3. Before proceeding job, always touch the conductive mat or ground lead with your both hands to discharge electric charges developed on your body.
4. To protect your vision do not expose your eyes to the direct laser light. The beam is focused at a distance of 2 mm from the lens.

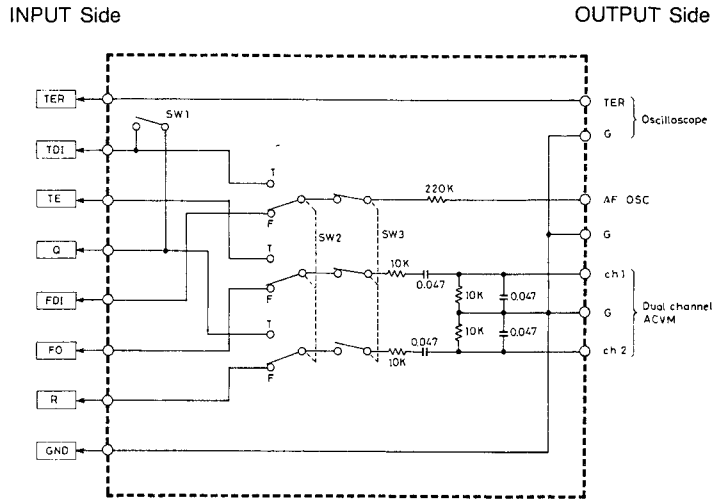
SPECIFICATIONS (at Fixed Output)

	Nominal	Limit	Unit		
Decoding	: 16-bit linear,two channels			Power consumption	: 0.23A (for A,A1)
Frequency response	: +0.2	+1.0	dB	Dimensions	: 25 W (for B,B1,C,C1,C2)
20 Hz-20 kHz	: -0.5	-1.0			: Width 435 mm (17.13 in.)
De-emphasis error	: +0.5	+1.0	dB		: Height 75 mm (2.95 in.)
	: -1	-2.0		: Depth 285 mm (11.22 in.)	
Output level at 0 dB	: 2 volts±0.7	±1.0	dB	Net weight	: 5.1 kg (11.2 lb)
Harmonic Distortion	: 0.004	0.01		%	
W/20 kHz L.P.F at 1 kHz				A : USA	
0 dB				A1: CANADA	
Signal-to-Noise Ratio	: 99	90	dB	B : U.K.	
W/20 kHz L.P.F				B1: AUSTRALIA/N.Z.	
Channel Separation	: 88	80	dB	C : EUROPE & OTHERS	
W/20 kHz L.P.F at 1 kHz				C1: W.GERMANY	
Channel Balance	: 0.5	1.0	dB	C2: G.P.M.	
at 1 kHz 0 dB					
Wow and Flutter	: Unmeasurable				
	(quartz crystal accuracy)				

ALIGNMENT PROCEDURES

Measuring instruments

- Oscilloscope (Which has a bandwidth of 50 MHz or greater)
- Audio frequency oscillator (AF-OSC)
- Laser power meter (LEADER LPM-8000 or equivalent)
- AC voltmeter (ACVM) – dual channel meters
- Frequency counter (FC)
- Jitter meter
- Test Disc A: YEDS 7 (SONY)
- Test Disc B: YEDS 18 (SONY)
- Jigs: Filter (See Fig. A)
- Special tool (See Fig. F)

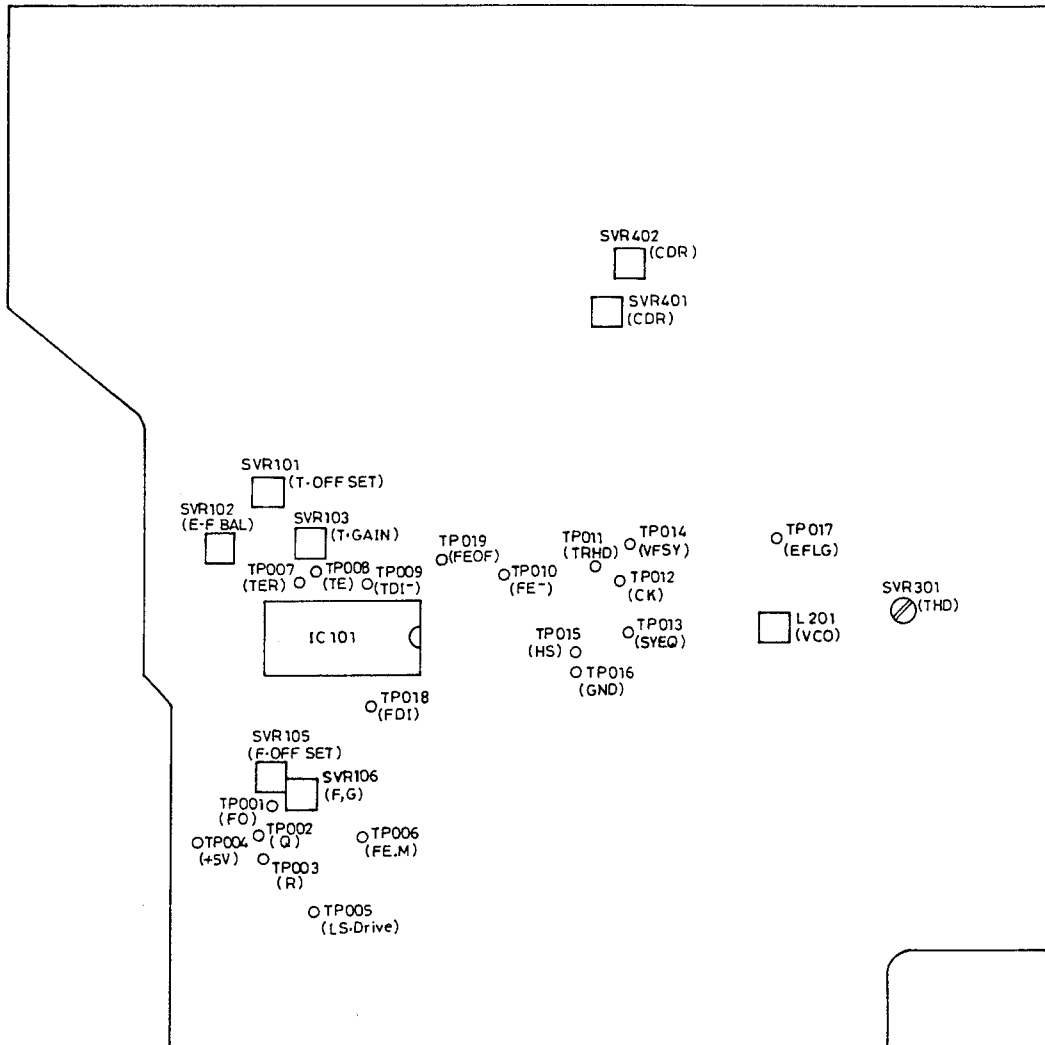


SW1: For diffraction grating and EF balance adjustments
 SW2: Focus gain and TRACKING gain switch
 SW3: BPF ON/OFF switch

[Fig. A]

Main P.C.B. test points

Adjustment Jig (with internal filter) connect the filter in Jig before measurement.

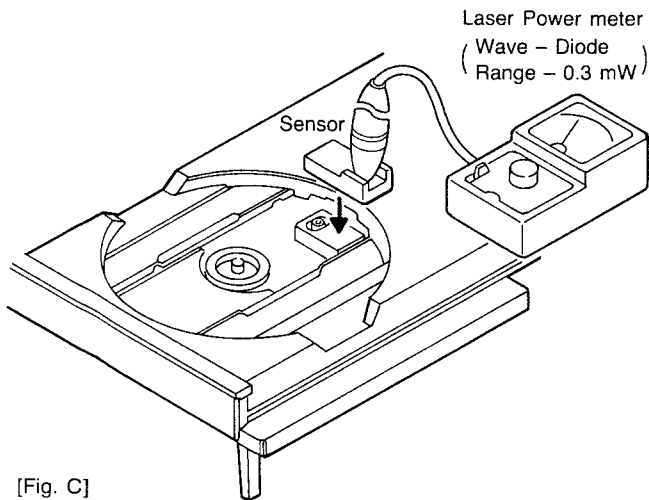


[Fig. B]

Step 1 Confirmation of Laser Output

- 1) Do not load the disc.
- 2) Apply the laser power meter sensor to the pick-up head as shown in Fig. C.
- 3) Operate from OPEN to CLOSE.
- 4) Measure the laser output during the 6 seconds of FOCUS search mode.

Rating laser output: 0.12 mW to 0.36 mW

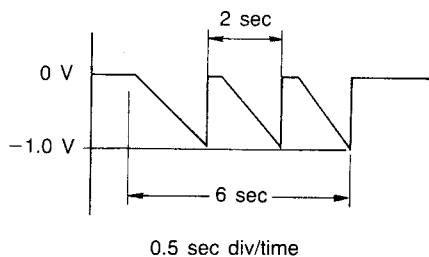


[Fig. C]

Step 2 Confirmation of Focus Actuator Operation

Oscilloscope Setting
DC coupling
0.1 V/div when 10:1 probe is used
0.5 sec/div or 1 msec/div time

- 1) Do not load the disc.
- 2) Connect the oscilloscope to TP003 [R] and TP016 [GND] points (See Fig. B).
- 3) Press the CLOSE key.
- 4) During 6 seconds of FOCUS search, confirm that the wave-form is as shown in Fig. D.
- 5) Confirm that the pick-up head's objective lens moves smoothly between the lowest and highest points.



[Fig. D]

Step 3 Adjustment of Diffraction Grating

Caution:

The oscillogram produced during this adjustment procedure can only be displayed for approx 10 sec. After which time the TER signal will automatically go out. Wave-form observation and adjustments should be carried out as quickly as possible. In order to display the wave-form use the following procedure.

Oscilloscope Setting
DC coupling
10 mV/div when a 10:1 probe is used
5 to 20 msec/div time

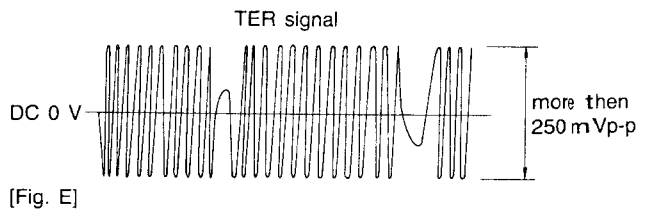
- 1) Connect the oscilloscope to TP007 [TER] and TP016 [GND] test points.
- 2) Load the test disc. (Test Disc: B)
- 3) Press the CLOSE key (Allow the lead in data on the disc to be read).
- 4) Press the PLAY/PAUSE key twice then in PAUSE mode.
- 5) Put SW1 on the test jig to the ON position (In this position test points TP009 [TDI] and TP002 [Q] will be shorted together) and the wave-form as shown in Fig. E should be displayed on the oscilloscope. In order to prevent the display from going out, put the SW1 OFF and put the SW1 ON again.
- 6) Appear the wave-form like Fig. E on the oscilloscope.
- 7) Using the special tool (See Fig. F) carry out the adjustment (See Fig. G) for maximum amplitude of the displayed signal (See Fig. E).

Rating Signal TER ≥ 250 mVp-p

* If the disc stops rotating and "d!" is displayed on the LED display eject the disc and go back to step 5 - 2).

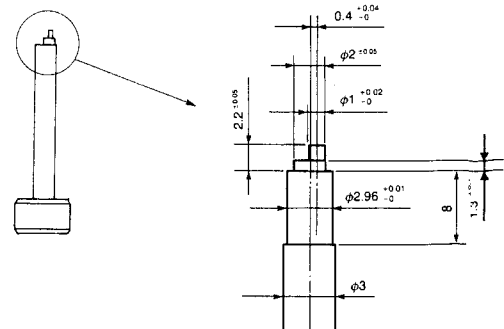
Oscilloscope Setting Conditions
AC coupling
50 mV/div when 10:1 probe is used
0.2~0.5 μ sec/div time

- 8) Put SW1 to the OFF position (TP009 [TDI] and TP002 [Q] points open)
- 9) Connect the oscilloscope to test point TP015 [HS] and TP016 [GND].
- 10) Confirm that [HS] (eye-pattern) signal is displayed on the oscilloscope (See Fig. H).



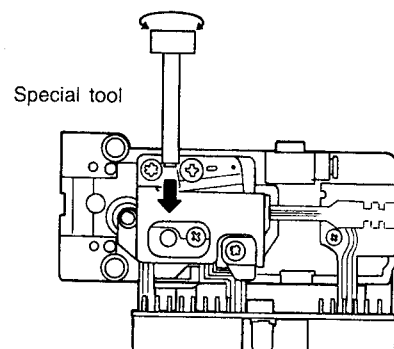
[Fig. E]

Special tool for MLP-10F2

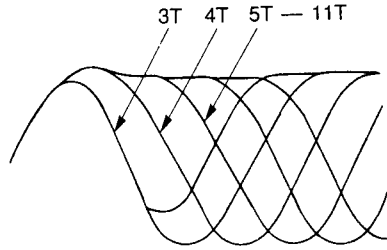


[Fig. F]

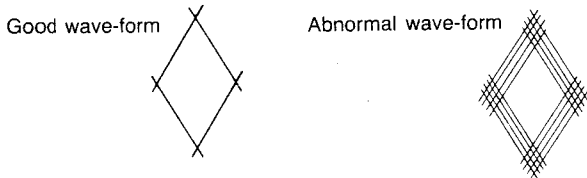
Less than $\pm 5^\circ$



[Fig. G]



This portion is referred to as the eye pattern.



The abnormal eye pattern has less distinct lines and smaller amplitude than that of the good wave-form.

[Fig. H]

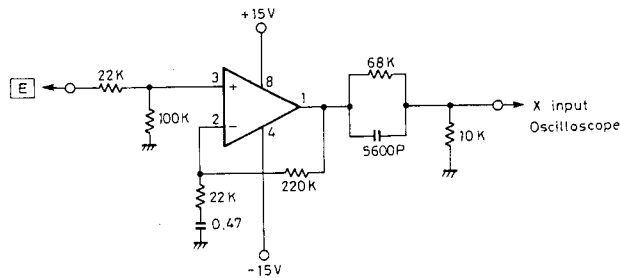
Way of lissajous's figure

Oscilloscope Setting

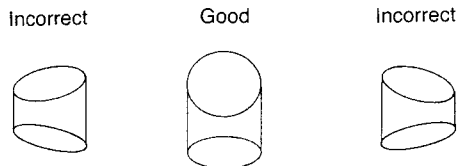
X input → [E] signal: 5 mV/div when 10:1 probe is used
 Y input → [HS] signal: 50 mV/div when 10:1 probe is used
 MODE → X - Y

- 1) Connect the buffer amplifier, as shown in Fig. I between the point [E] and the X input oscilloscope.
- 2) Connect the Y input of point TP015 [HS] and oscilloscope.
- 3) Set the disc in play mode. (Test Disc: B)
- 4) Turn ON the Put SW1. (Short-circuit TP002 [Q] and TP009 [TDI])
- 5) Adjust the special tool until the wave-form is like Fig. J.

Buffer Amplifier



[Fig. I]



[Fig. J]

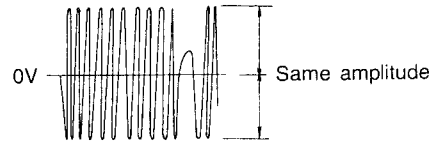
Step 4 Adjustment of EF Balance

Oscilloscope Setting

DC coupling
 10 mV/div when 10:1 probe is used
 5 to 20 msec/div time

- 1) Same as from 1) to 6) of step 3.
- 2) Adjust SVR 102 and do like Fig. K.

Rating DC offset — Less than ±15 mV



[Fig. K]

Step 5 Adjustment of Focus Gain

- 1) Connect the filter and measuring instruments, as shown in Fig. A. Apply 800 Hz, 4.5 Volts RMS signal from the AF oscillator to AF-OSC terminal on Jig.
- 2) Set the SW3 to OFF.
- 3) Set the SW2 to F (FOCUS).
- 4) Load the disc. (Test Disc: B)
- 5) Press the PLAY key.
- 6) Set the SW3 to ON.
- 7) Read the AC voltmeter (CH1: EFO, CH2: ER), adjust SVR106 (FOCUS GAIN) so that they satisfy the rating.

Rating: ER = (EFO + 14 dB) ± 2 dB

Step 6 Adjustment of Tracking Gain

- 1) Connect the filter and measuring instruments, as shown in Fig. A. Apply 800 Hz, 100 mVrms signal from the AF oscillator to AF-OSC terminal on Jig.
- 2) Set the SW3 to OFF.
- 3) Set the SW2 to T (TRACKING).
- 4) Load the disc. (Test Disc: B)
- 5) Press the PLAY key.
- 6) Set the SW3 to ON.
- 7) Read the AC voltmeter (CH1: ETE, CH2: EQ) adjust SVR103 (TRACKING) so that they satisfy the rating.

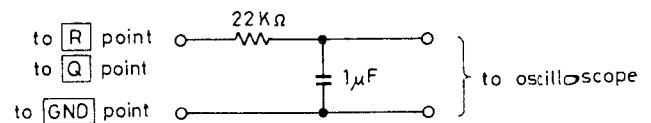
Rating: ETF = (EQ + 11 dB) ± 3 dB

Step 7 Adjustment of Focus Offset

Oscilloscope Setting

DC coupling
 10 mV/div range

- 1) Do not load the disc.
- 2) Connect the oscilloscope through the filter shown in Fig. L to TP003 [R] and TP016 [GND] points.
- 3) Do not press the PLAY key.
- 4) Adjust SVR 105 until the level is within 0 V ± 10 mV DC.



[Fig. L]

Step 8 Adjustment of Tracking Offset

Oscilloscope Setting

DC coupling

10 mV/div range

- 1) Do not load the disc.
- 2) Connect the oscilloscope through the filter shown in Fig. L to TP002 [Q] and TP016 [GND] points.
- 3) Do not press the PLAY key.
- 4) Adjust SVR 101 until the level is within $0\text{ V} \pm 10\text{ mV DC}$.

Step 9 Confirmation of Kick Gain

Oscilloscope Setting

DC Coupling

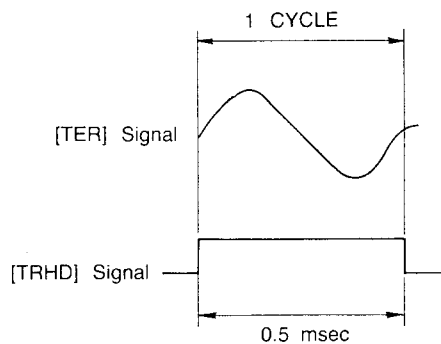
CH1 → TP007 [TER] terminal, 0.1 V/div

CH2 → TP011 [TRHD] point, 5 V/div

TRIGGER MODE: CH2

0.2 msec/div time

- 1) Connect the oscilloscope of CH1 to TP007 [TER] terminal on Jig.
- 2) Connect the oscilloscope of CH2 to TP011 [TRHD] point.
- 3) Load the disc. (Test Disc: B)
- 4) Press the PLAY key.
- 5) Press the Fast Forward key.
- 6) Confirm the wave-form, as shown in Fig. M.
- 7) Press the Reverse key.
- 8) Confirm the wave-form, as shown in Fig. M.



[Fig. M]

Step 10 Adjustment of VCO

- 1) Connect the Frequency Counter to TP016 [GND] and TP012 [CK]. (See Fig. B)
- 2) Short the TP015 [HS] and TP016 [GND].
- 3) Adjust L201 until the VCO is $4.3218\text{ MHz} \pm 10\text{ kHz}$.

Step 11 Adjustment of THD

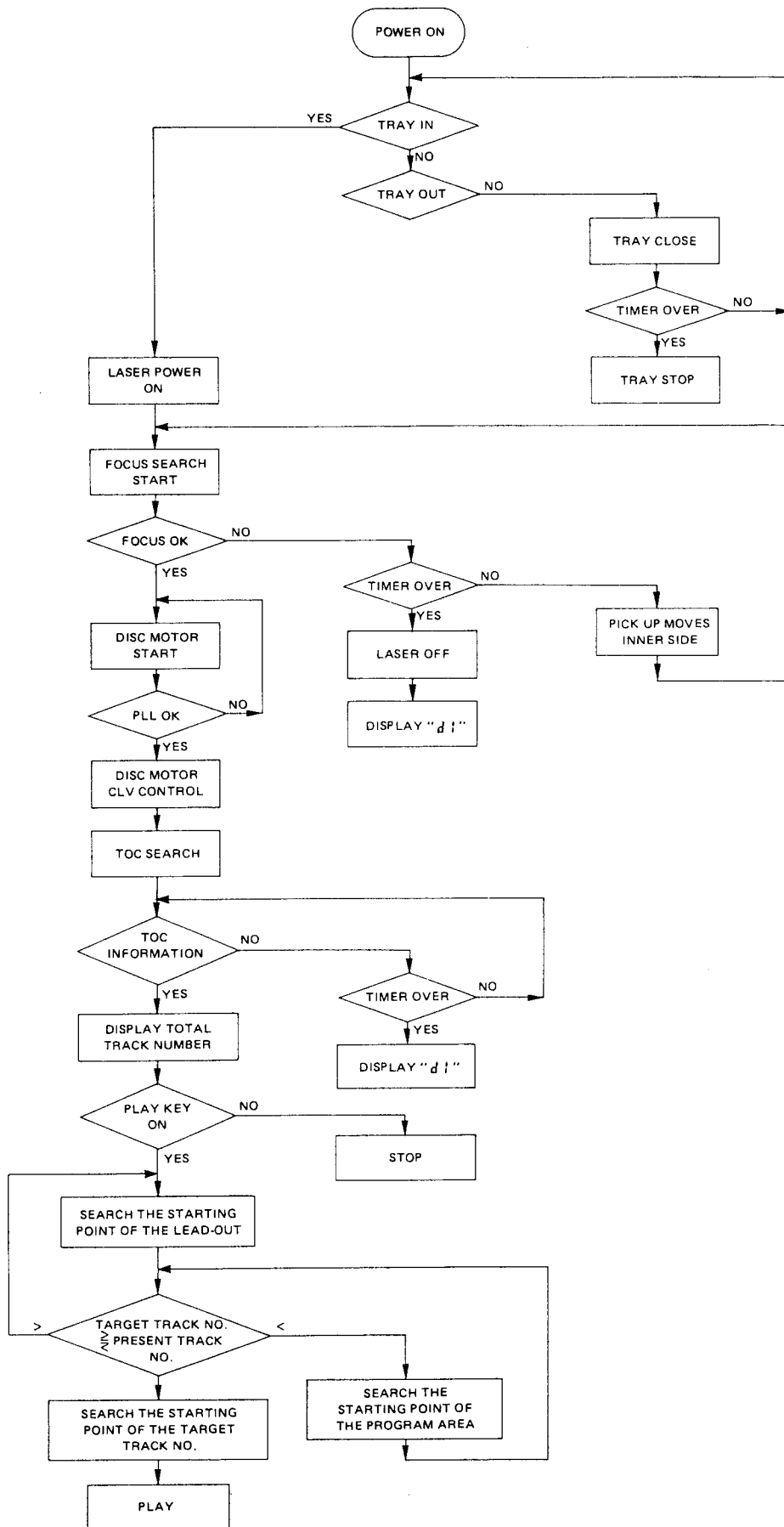
- 1) Connect the distortion meter to the output.
- 2) Load the disc. (Test Disc: A)
- 3) Press the play key.
- 4) Press the skip key and keep it pressed until the display shows Track No. 20.
- 5) Adjust the SVR 301 so that the output distortion will be minimum.

NOTE: If the input to the distortion meter is not large enough for measurements, use an amplifier of about 30 to 40 dB gain between the CD output and the meter input.

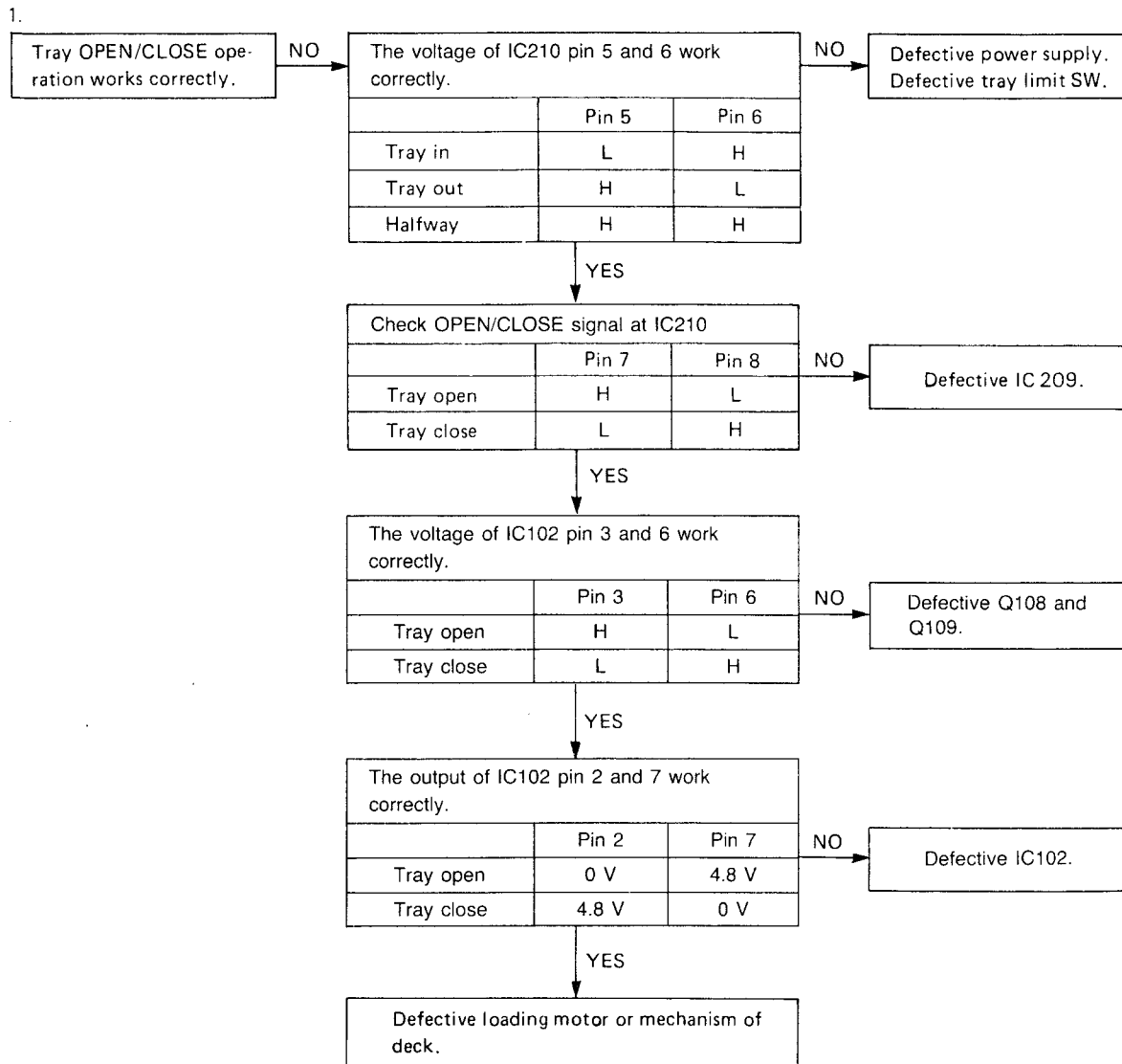
Step 12 Adjustment of CDR

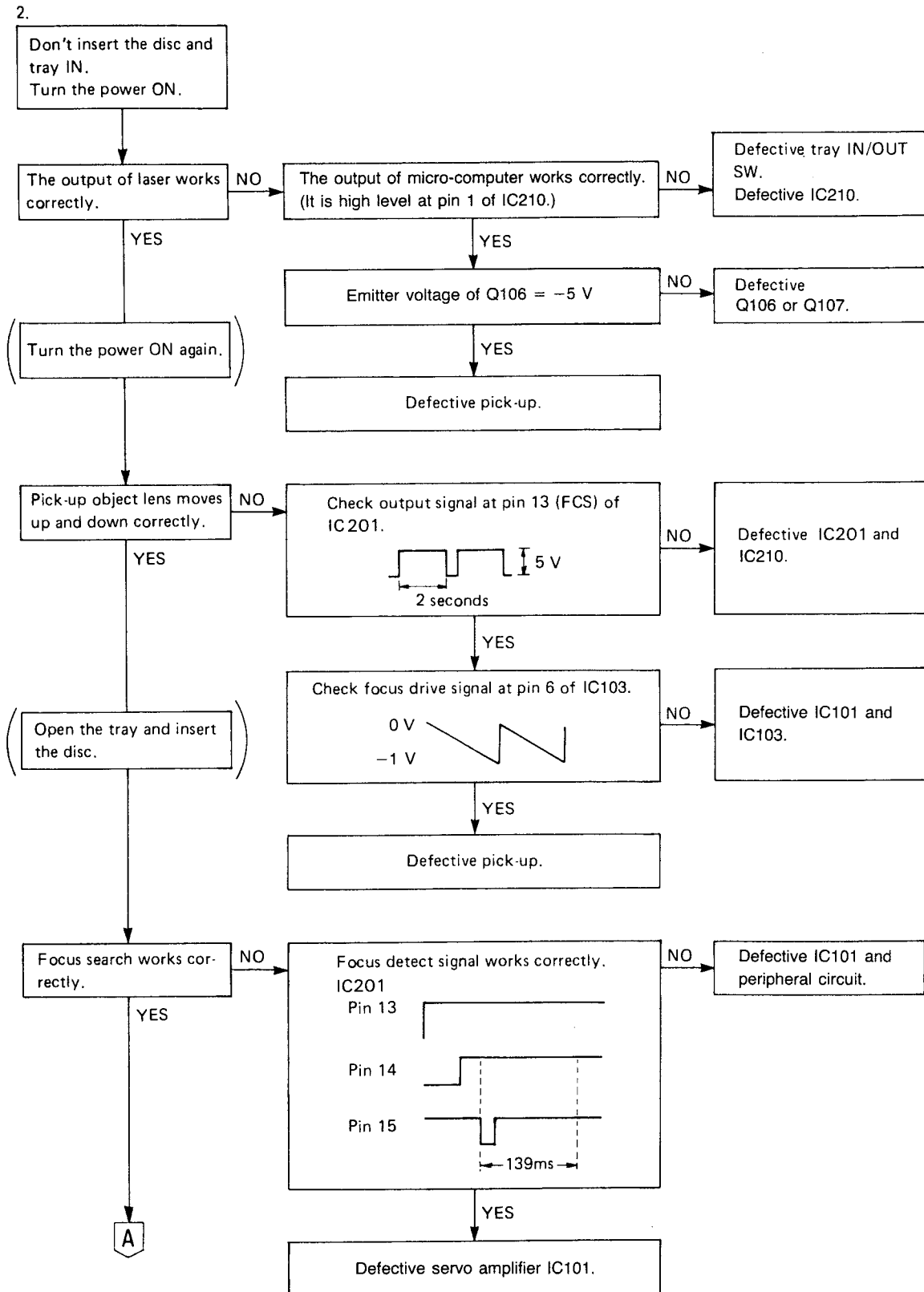
- 1) Connect the AC voltmeter to the output.
- 2) Load the disc. (Test Disc: A)
- 3) Press the play key.
- 4) Press the skip key and keep it pressed until the display shows Track No. 19.
- 5) Adjust the SVR 401 (left channel) and SVR 402 (right channel) so that the output level with the CDR switch set to ON is 3 dB higher than when the CDR switch is OFF.

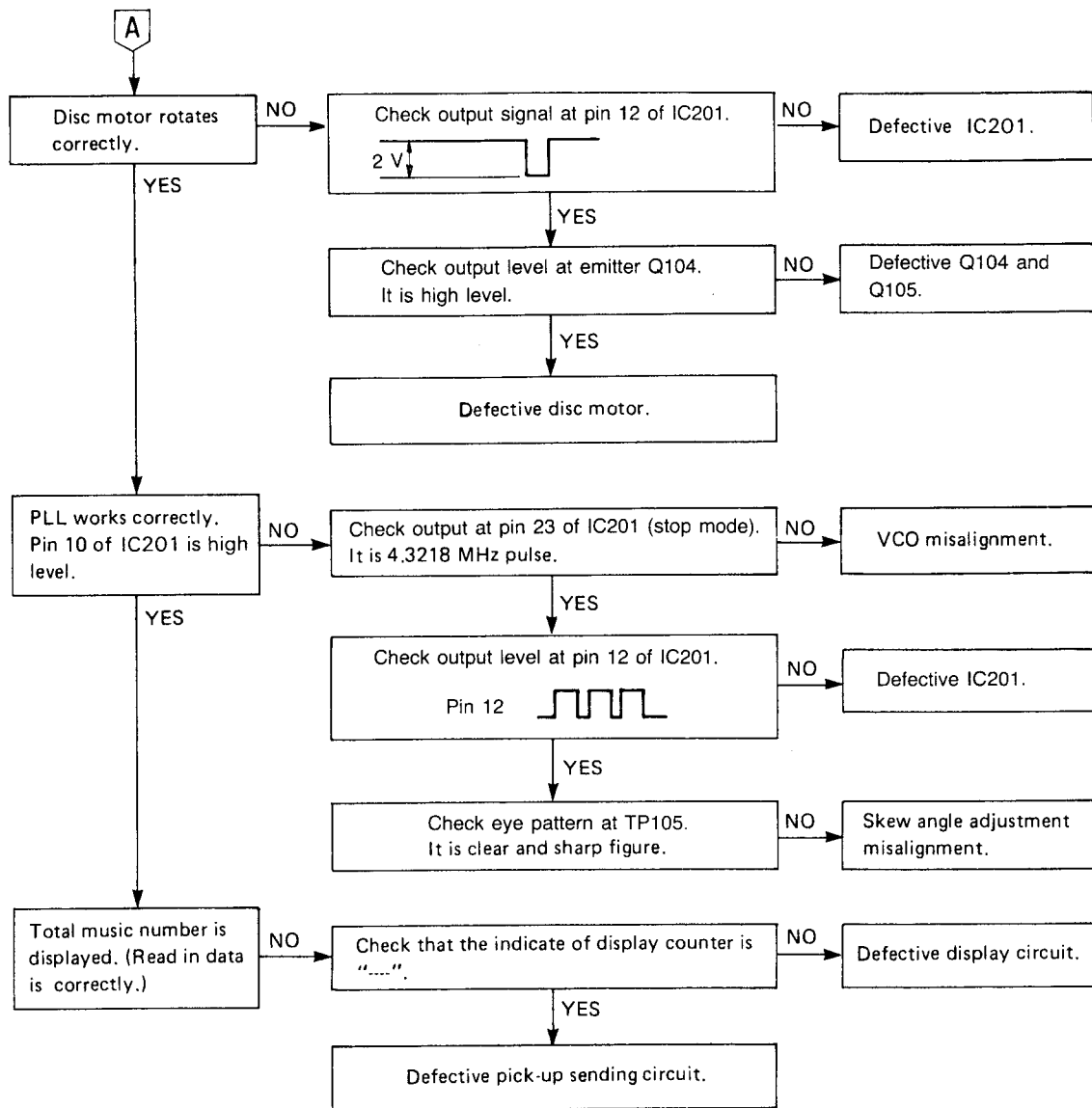
ACTION FLOW CHART



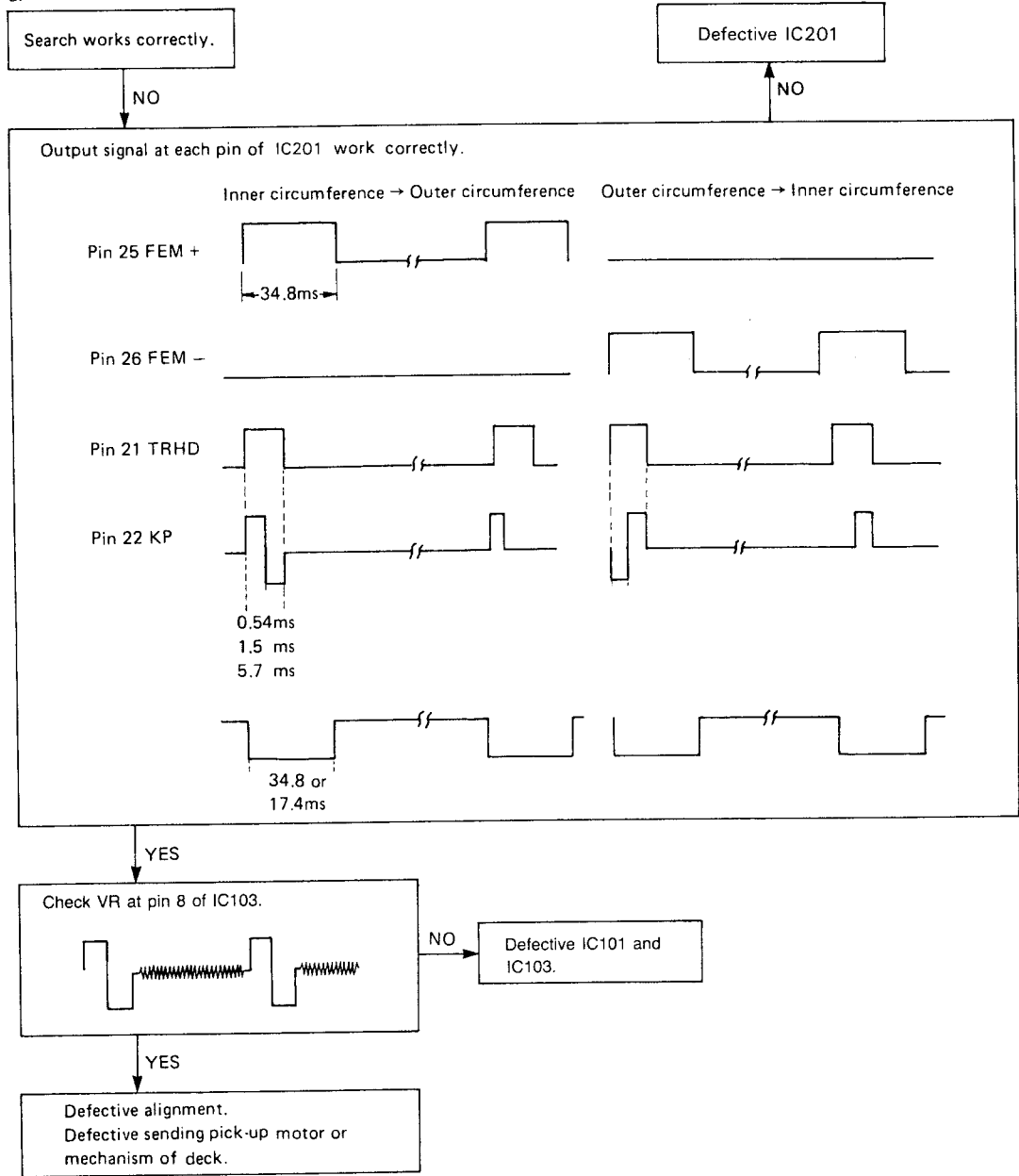
TROUBLESHOOTING GUIDE

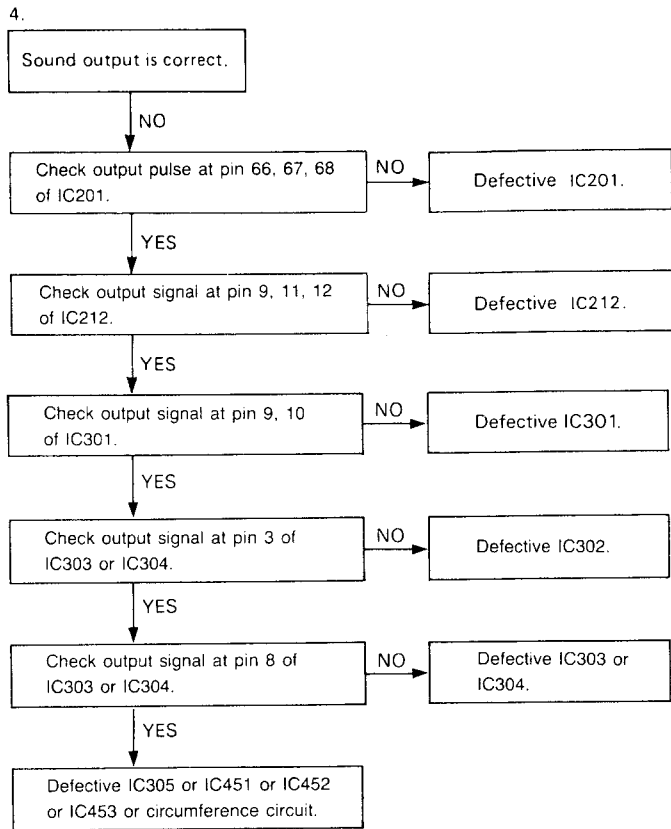




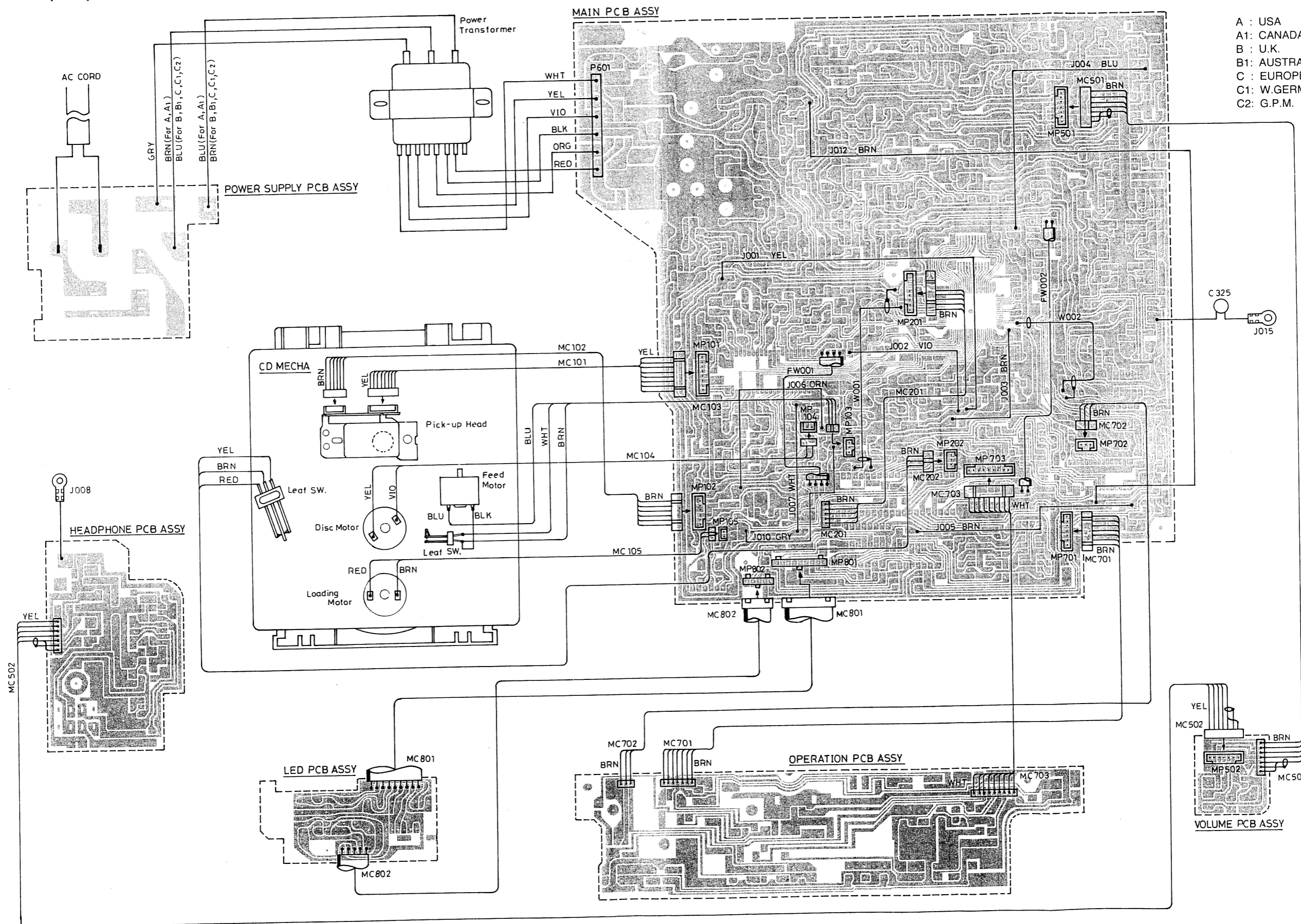


3.



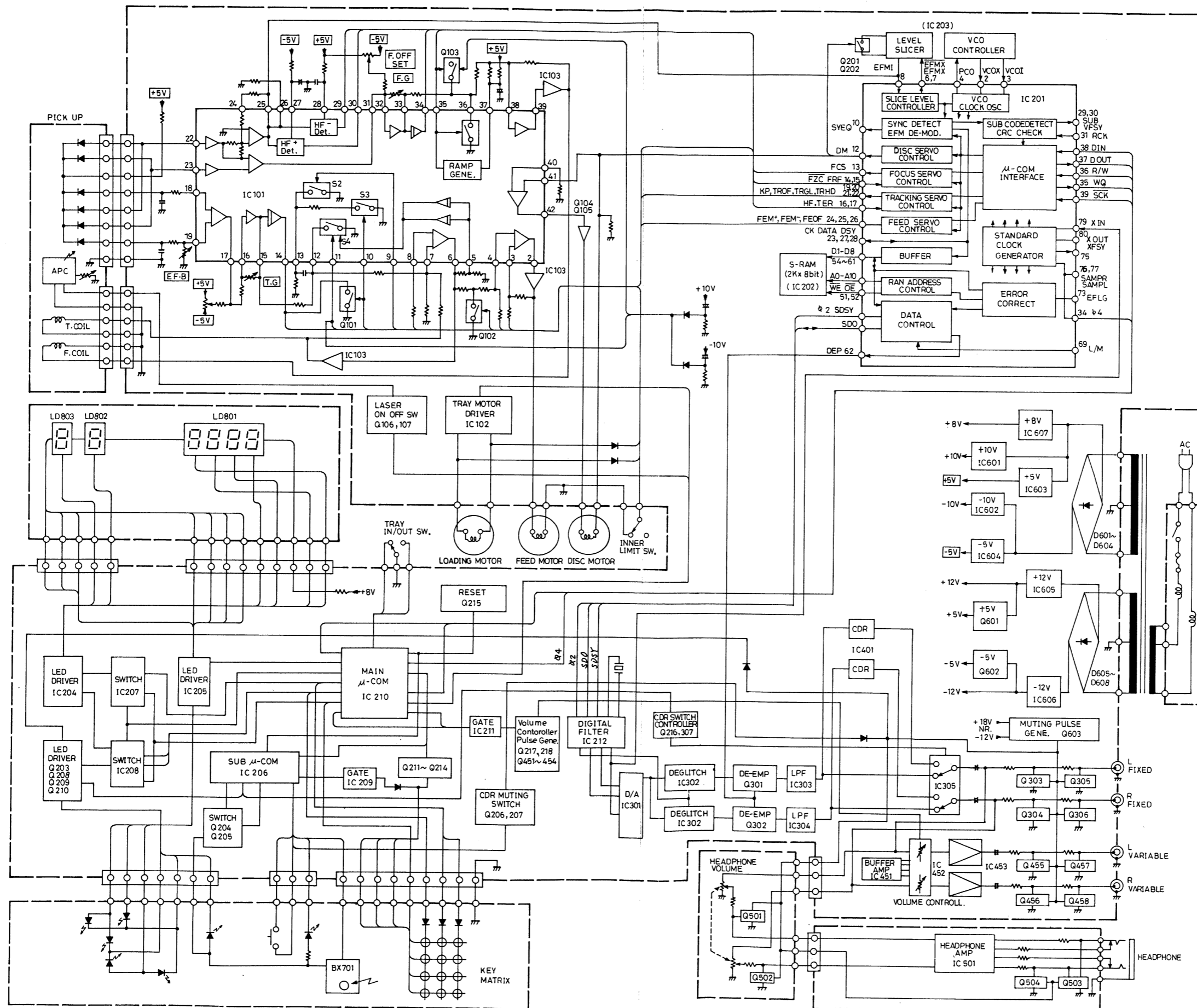


WIRING DIAGRAM(Component side)

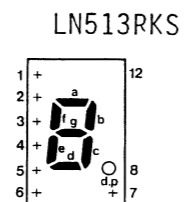
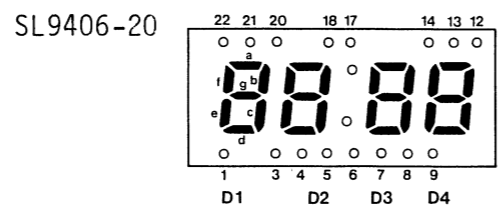
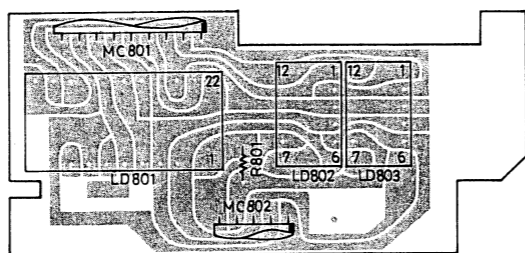
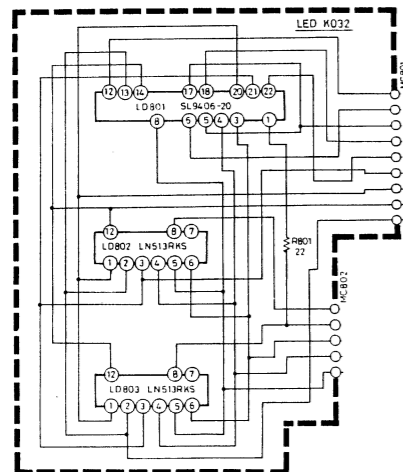


- A : USA
- A1: CANADA
- B : U.K.
- B1: AUSTRALIA/N.Z.
- C : EUROPE & OTHERS
- C1: W.GERMANY
- C2: G.P.M.

BLOCK DIAGRAM



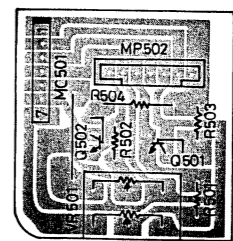
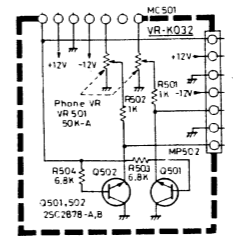
SCHEMATIC AND PCB LAYOUT(Foil side)
LED PCB ASSY



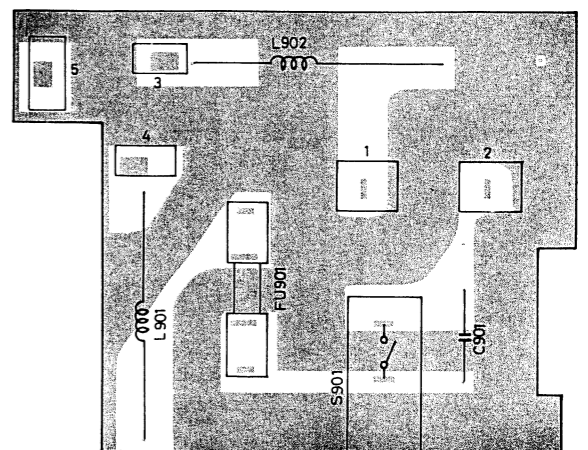
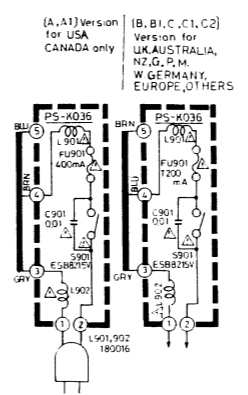
Pin Connection

Pin No.	Address	Pin No.	Address
1	Colon Common (No Pin)	12	D ₄ Common
2	(No Pin)	13	a
3	c	14	g
4	e	15	(No Pin)
5	Lower Colon	16	(No Pin)
6	D ₃ Common	17	Upper Colon
7	dp Common	18	D ₂ Common
8	d (No Pin)	19	(No Pin)
9	dp (No Pin)	20	b
10	(No Pin)	21	f
11	(No Pin)	22	D ₁ Common

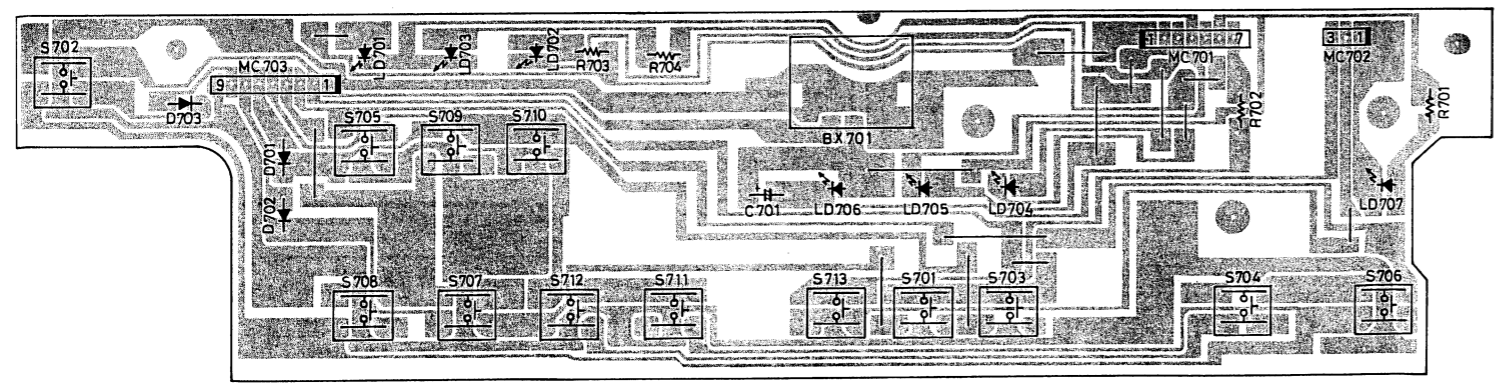
VOLUME PCB ASSY



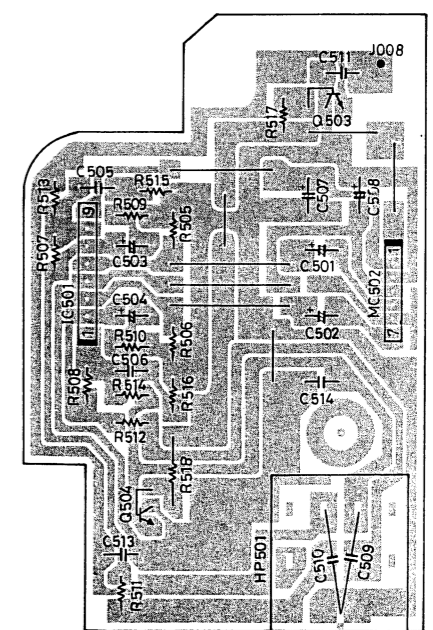
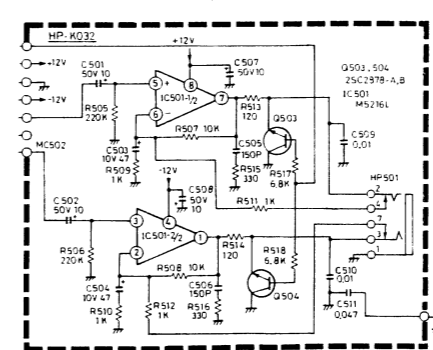
POWER SUPPLY PCB ASSY



OPERATION PCB ASSY



HEADPHONE PCB ASSY

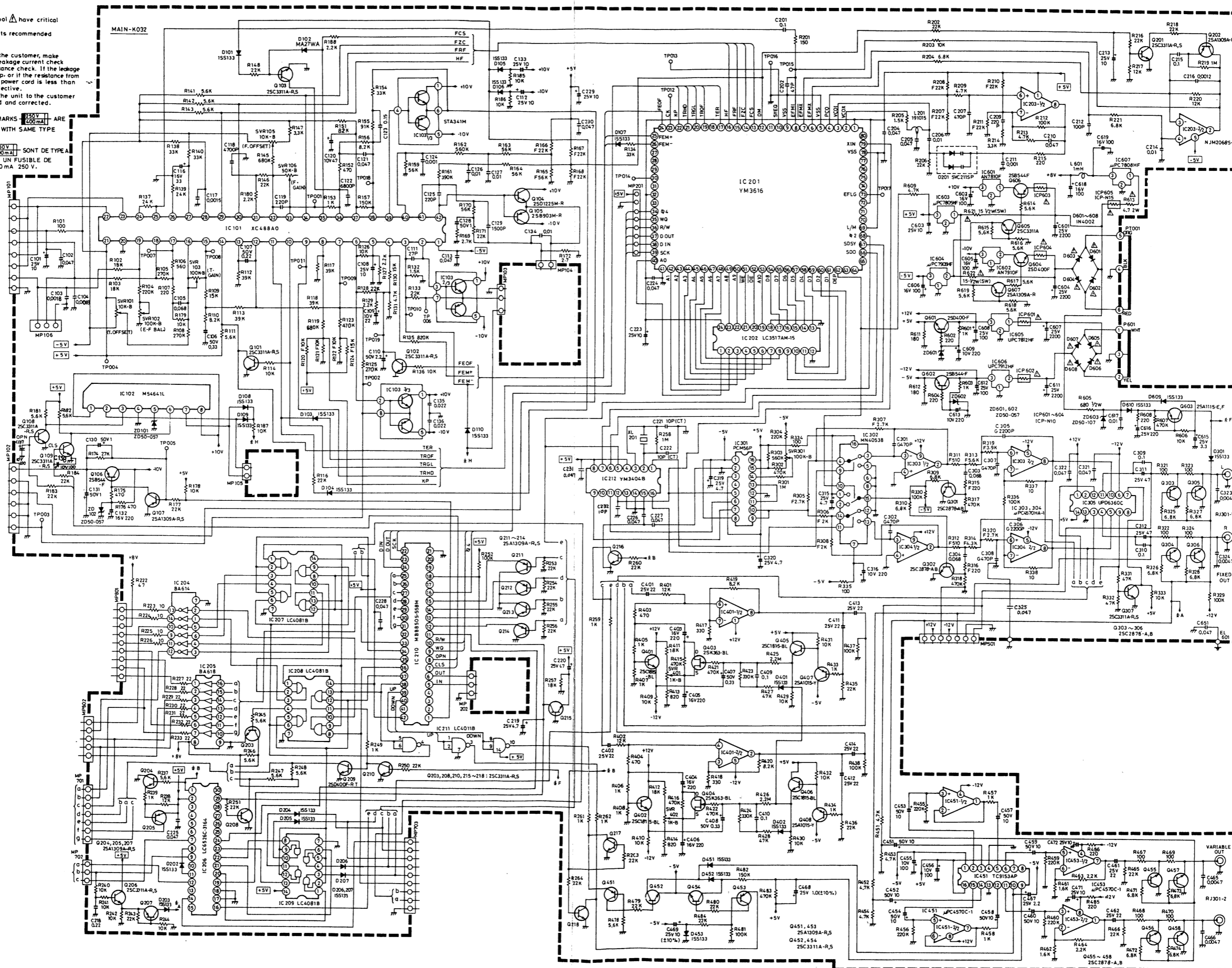


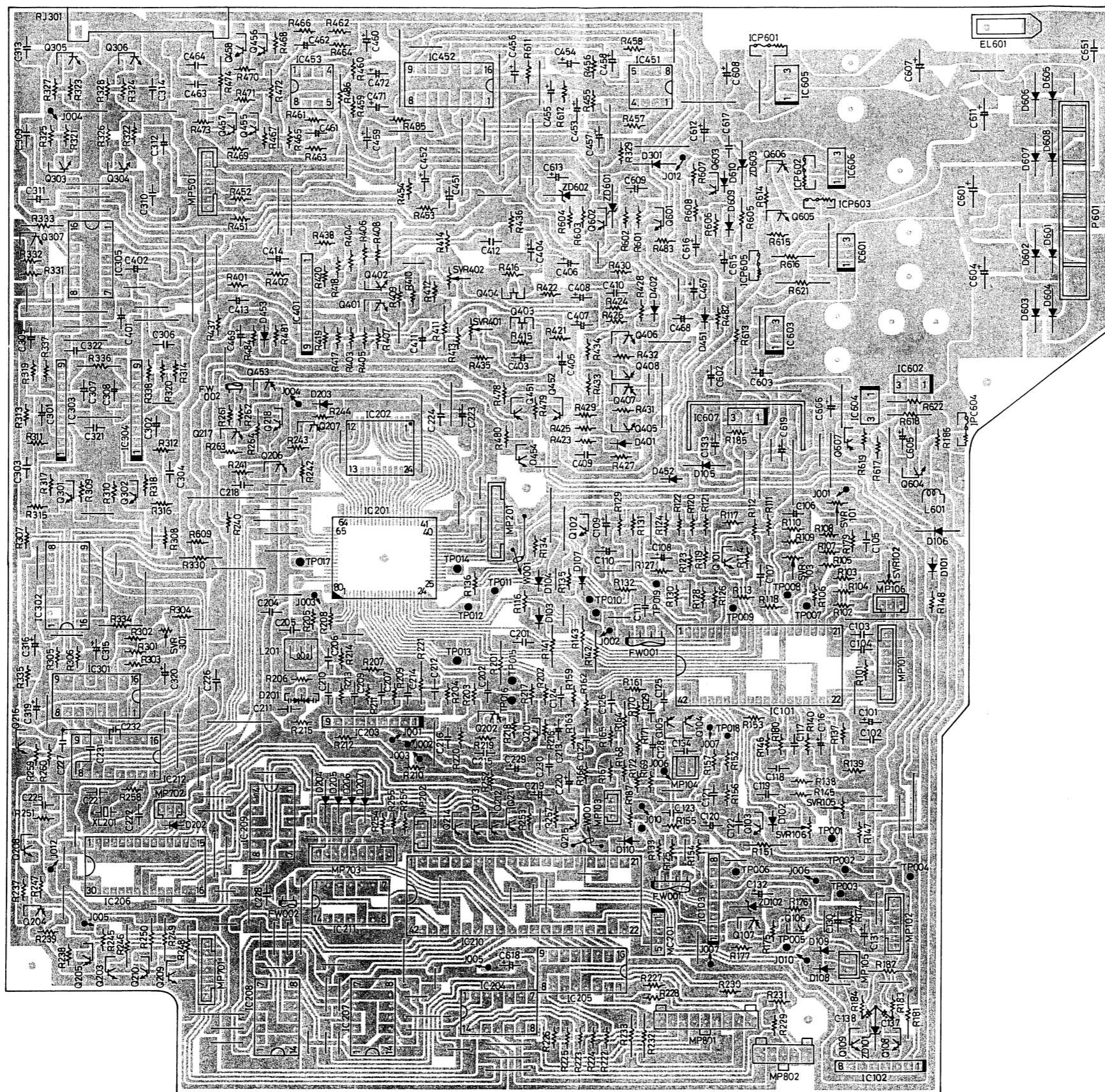
MAIN PCB ASSY

WARNING:
Parts marked with the symbol Δ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

CAUTION:
Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 millamp, or if the resistance from chassis to either side of the power cord is less than 500 k ohms the unit is defective.
WARNING - DO NOT return the unit to the customer until the problem is located and corrected.

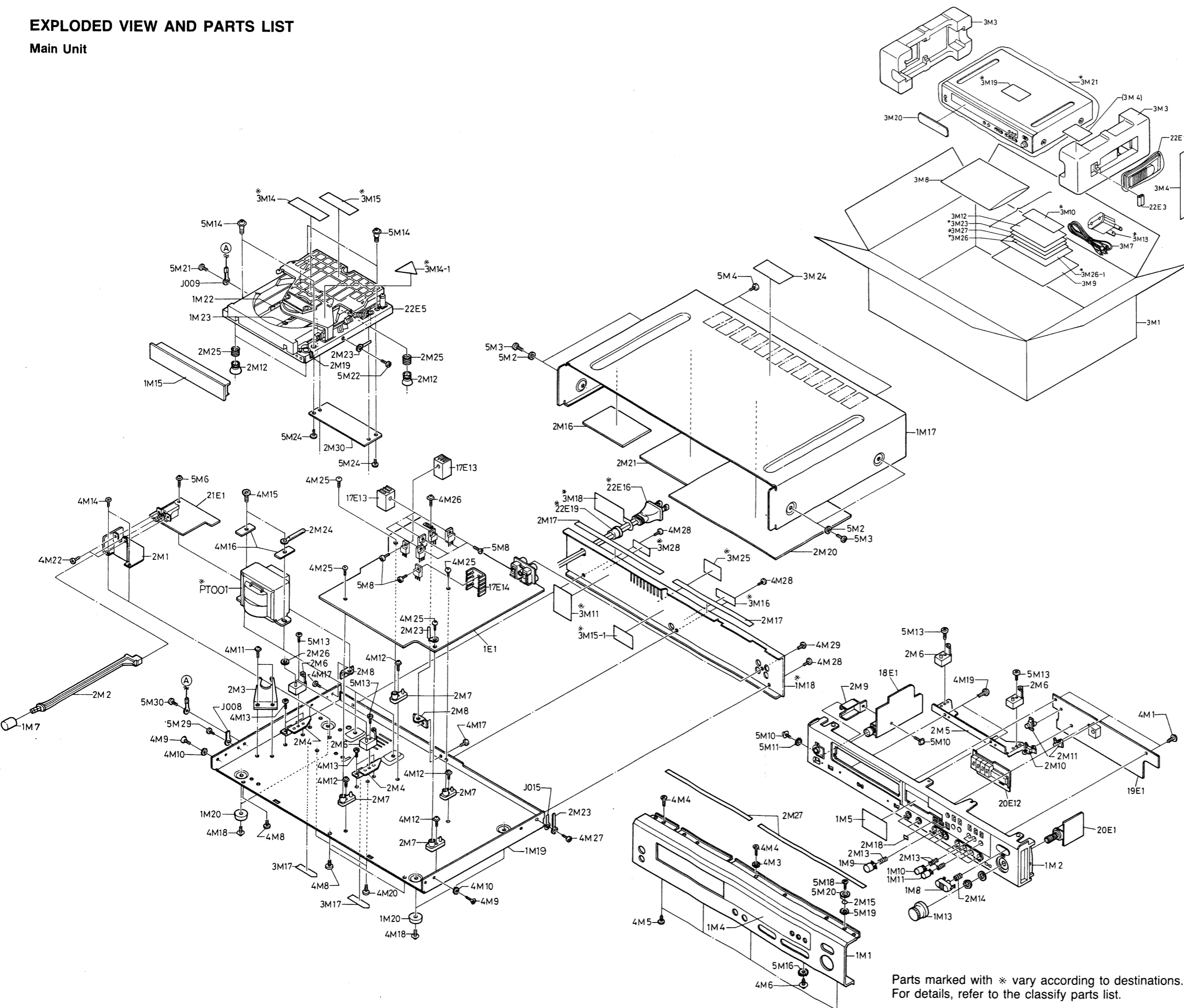
CAUTION:
THOSE FUSES WITH SYMBOL MARKS Δ ARE FAST BLOW TYPE. REPLACE WITH SAME TYPE 400 mA 250 V FUSE.
ATTENTION: LES FUSIBLES MARQUÉS Δ SONT DE TYPE A FUSION RAPIDE. UTILISER UN FUSIBLE DE RECHANGE DE TYPE DE 400 mA 250 V.





EXPLODED VIEW AND PARTS LIST

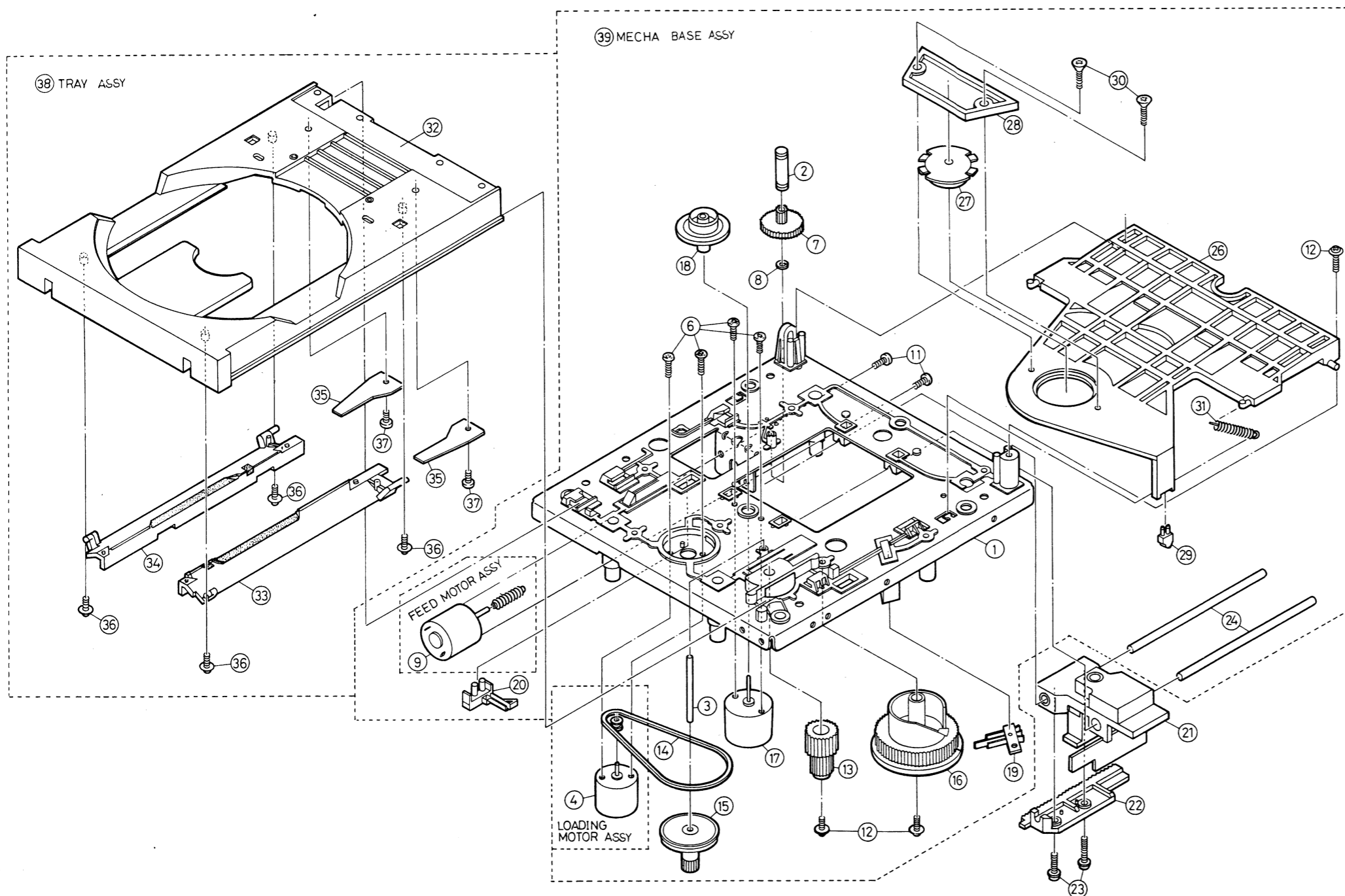
Main Unit



REF. NO.	Q'TY	PART NO.	DESCRIPTION
COILS			
PT001	1	HPT-K0104	POWER TRANSFORMER
MISCELLANEOUS			
J008	1	R-020-15	CABLE ASS'Y
J009	1	R-027-15	TERMINAL WITH WIRE
J015	1	R-030-15	CABLE ASS'Y
1M 1	1	BK2033-1	FRONT PANEL
1M 2	1	BK1022B	DISPLAY FRAME
1M 4	1	BK3032	FRONT GLASS
1M 5	1	BK4158	FILTER
1M 7	1	42-1111-1-0	PUSH BUTTON
1M 8	1	N44958-GY	PUSH BUTTON
1M 9	9	N44957-BK	PUSH BUTTON
1M10	2	N44956-BK	PUSH BUTTON
1M11	1	N44988-RD	PUSH BUTTON
1M13	1	BK3025	KNOB (POTENTIOMETER)
1M15	1	BK3023-1	TRAY PANEL
1M17	1	BK2031	CABINET
1M18	1	BK2037	REAR PANEL
1M19	1	BK1021B	BOTTOM CHASSIS
1M20	4	NO-7102A	FOOT
1M22	2	N4534A	DISC CUSHION
1M23	2	BK4176	DISC CUSHION
2M 1	1	BK4068	FITTINGS (SWITCH)
2M 2	1	N42281A	SHAFT (SM)
2M 3	1	NO-2015	FITTINGS R (CD)
2M 4	2	BK4148	FITTINGS R (CD)
2M 5	1	BK4147	FITTINGS F (CD)
2M 6	4	BK4157	HOLDER
2M 7	4	BK4078	HOLDER
2M 8	2	N42635	FITTINGS (P.C.B.)
2M 9	1	BK4149	JACK HOLDER
2M10	1	KGLS-3S	SPACER
2M11	2	KGPS-3+55	INSULATION RUBBER B
2M12	4	7900199	SPACER
2M13	12	N44959	KNOB SPRING
2M14	1	N44960	KNOB SPRING
2M15	1	BK4141	EARTH SPRING
2M16	1	BK4196	CUSHION
2M17	2	BK4198	CUSHION
2M18	1	BK4175	SPACER
2M19	2	BK4180	CUSHION TAPE
2M20	1	BK4181A	SHEET A
2M21	1	BK4182A	SHEET B
2M23	3	VJR-3	SNAKE LUG
2M24	1	CS-5	CLIP
2M25	4	BK4145	SPRING
2M26	2	BK4177	WASHER
2M27	2	BK4198	CUSHION
2M30	1	BK4160	PVC PLATE
3M 1	1	BK4150	INNER CARTON
3M 3	2	BK1023	PACKING PAD
3M 4	1	N44894	TAPE/PACKING MATERIAL
3M 7	1	PC-046	RCA PIN CORD ASS'Y
3M 8	1	N40487	POLYETHYLENE BAG (ACCESSORIES)
3M 9	1	OM-K040	INSTRUCTION MANUAL
3M10	1	N44687	CAUTION SHEET, POLARIZED PLUG
3M11	1	N44525	LABEL, FUSE
3M12	1	BK4072	SHEET SHIPPING SCREW
3M14	1	BK4082A	FDA LABEL LASER CAUTION
3M15	1	BK4081A	CSA LABEL LASER CAUTION
3M17	2	N44521	LABEL, CAUTION
3M20	1	BK4159	PROTECTION SHEET
3M21	1	N41886-2	POLYETHYLENE BAG (UNIT)
3M23	1	NAD-WC2A	CARD/WARRANTY REGISTRATION
3M24	1	BK4138	LABEL, WARNING
3M25	1	N44934A	LABEL, UL
3M26	1	BK3035	SAFETY INSTRUCTION SHEET
4M 1	3	TPH+30X08-B	TAP SCREW P, ROUND HEAD, B
4M 3	1	2TWX30	TOOTHED WASHER (B)
4M 4	2	TPS+30X08-Y	TAP SCREW P, FLAT HEAD, Y
4M 5	4	TPH+30X08-B	TAP SCREW P, ROUND HEAD, B
4M 6	1	ZC-10X30X10-2B	TAP SCREW, WASHER FACED, B
4M 8	3	TPH+30X08-B	TAP SCREW P, ROUND HEAD, B
4M 9	2	TPS+30X10-Y	TAP SCREW P; FLAT HEAD, Y
4M10	2	2TWX40-U	WASHER
4M11,M12	6	TSC+30X06-Y	TAP SCREW S; BIND HEAD, Y
4M13	4	TSB+30X04-Y	TAP SCREW S; BIND HEAD, Y
4M14	2	TSB+30X05-Y	TAP SCREW S; BIND HEAD, Y
4M15	2	TSB+40X08-Y	TAP SCREW S; BIND HEAD, Y
4M16	2	2AB-25B	REINFORCEMENT (P.T.)
4M17	2	TSB+30X06-B	TAP SCREW S; BIND HEAD, B
4M18	4	TSC+30X06-Y	TAP SCREW S; WASHER FACED, Y
4M19	2	TPH+30X10-Y	TAP SCREW P; ROUND HEAD, Y
4M20	2	SSP+30X04-Y	TAP SCREW P; ROUND HEAD, Y
4M22	2	TPH+30X10-R	TAP SCREW P; ROUND HEAD, R
4M25	4	TPH+30X08-B	TAP SCREW P; ROUND HEAD, B
4M26	1	TSC+30X06-Y	TAP SCREW S; WASHER FACED, Y
4M27	1	TSS+30X06-Y	TAP SCREW S; FLAT HEAD, Y
4M28	3	TSB+30X06-B	TAP SCREW S; BIND HEAD, B
4M29	1	TPH+30X08-B	TAP SCREW P; ROUND HEAD, B
5M 2	4	2AWX0840-05-B	PLAIN WASHER, B
5M 3	4	TSB+40X06-B	TAP SCREW S; BIND HEAD, B
5M 4	2	TSB+30X08-B	TAP SCREW S; BIND HEAD, B
5M 6	1	TSC+30X04-Y	TAP SCREW S; BIND HEAD, Y
5M 8	6	TSB+30X08-B	TAP SCREW S; WASHER FACED, Y
5M10	2	TSC+30X06-Y	TAP SCREW S; WASHER FACED, Y
5M11	1	2TWX40-U	WASHER
5M13	4	TSB+30X10-Y	TAP SCREW S; BIND HEAD, Y
5M14	4	BK4093	SPECIAL SCREW
5M16	1	3TWX30-U	WASHER
5M18	1	TPS+30X12-N	TAP SCREW P; FLAT HEAD, N
5M19	1	2TWX50-U	WASHER
5M20	1	2AWX0840-05-N	WASHER
5M21,M22	2	TSB+30X05-Y	TAP SCREW S; BIND HEAD, Y
5M24	2	TPH+30X08-B	TAP SCREW P; ROUND HEAD, B
5M29,M30	2	TSB+30X05-Y	TAP SCREW S; BIND HEAD, Y
17E13	5	OSH-1625-MP	HEAT SINK
17E14	1	SH-1230	HEAT SINK
22E 1	1	RC-1001-C1	REMOTE CONTROL TRANSMITTER
22E 3	1	UH-3-2	BATTERY
22E 5	1	DM1532280	CD MECHANISM
22E16	1	ACC-033E3+4EC1	LINE CORD
22E19	1	SR-4N-4	CORD STOPPER
22E20	2	NO-5167	CORD CLAMP
22E21,E23	5	BK-1	CORD CLAMP

Parts marked with * vary according to destinations. For details, refer to the classify parts list.

CD Player Mechanism



REF. NO.	Q'TY	PART NO.	DESCRIPTION
1	1	7910635	BASE MECHANISM
2	1	7910637	PIN HEAD FEED
3	1	7910638	PIN LOADING
4	1	7900181	LOADING MOTOR ASSY
6	4	7910659	SCREW M2L=4W/SPRING WASHER
7	1	7910642	WORM GEAR W/PINION
8	1	7910643	WASHER
9	1	7900182	FEED MOTOR ASSY
11	2	7910660	SCREW M2L=4W/SPRING WASHER
12	3	7910657	TAPPING SCREW WHI=8
13	1	7910650	FINAL GEAR
14	1	7910651	BELT RUBBER
15	1	7910648	PULLEY B
16	1	7910649	GEAR MAIN
17	1	7900074	MOTOR DISC
18	1	7910639	TURN TABLE
19	1	7910661	LEAF SWITCH 2 POLES
20	1	7900179	LEAF SWITCH MONO POLE
21	1	MLP-10F2	PICK UP HEAD
22	1	7910646	RACK B
23	2	SSPS2+26x08-Y	SCREW M26L=8W/SPRING WASHER
24	2	7910644	FEEDING SHAFT
26	1	7910627	CLAMPER ARM
27	1	7910628	CLAMPER DISC
28	1	7900127	FIXING PLATE
29	1	7900093	BUSHING CLAMP ARM
30	2	7900130	SCREW TAPPING
31	1	7910630	SPRING TENSION
32	1	7910631	TRAY DISC
33	1	7900166	TRAY SUB LEFT
34	1	7900167	TRAY SUB RIGHT
35	2	7900168	TRAY SUB TRAY
36	4	7910658	TAPPING SCREW 1=4
37	2	7900005	TAPPING SCREW
38	1	7900175	TRAY ASSY
39	1	7910647	MECHA BASE ASSY

MAIN PCB ASSY

Table with columns: REF. NO., Q'TY, PART NO., DESCRIPTION. Includes sections for P.C. BOARD, SEMICONDUCTORS, and CAPACITORS.

Table with columns: REF. NO., Q'TY, PART NO., DESCRIPTION. Continuation of component list.

Table with columns: REF. NO., Q'TY, PART NO., DESCRIPTION. Continuation of component list.

Table with columns: REF. NO., Q'TY, PART NO., DESCRIPTION. Continuation of component list, including COILS, MISCELLANEOUS, and various resistors.

HEADPHONE PCB ASSY

REF. NO.	Q'TY	PART NO.	DESCRIPTION
P.C. BOARD			
18E1	1	HP-K032A	PRINTED CIRCUIT BOARD
SEMICONDUCTORS			
Q503,504	2	25C2878-A,B	TRANSISTOR
IC501	1	M5216L	IC
CAPACITORS			
C501,502	2	NS-50TW100M	ELECTROLYTIC CAPACITOR
C503,504	2	NS-10TW470M	ELECTROLYTIC CAPACITOR
C505,506	2	HE60SJS151J	CERAMIC CAPACITOR
C507,508	2	NS-50TW100M	ELECTROLYTIC CAPACITOR
C509,510	2	HE70SJV103Z	CERAMIC CAPACITOR
C511	1	HC10SJV473Z	CERAMIC CAPACITOR
RESISTORS			
R505,506	2	KA16ST224J	CARBON RESISTOR
R507,508	2	KA16ST103J	CARBON RESISTOR
R509,512	4	KA16ST102J	CARBON RESISTOR
R513,514	2	KA16ST121J	CARBON RESISTOR
R515,516	2	KA16ST331J	CARBON RESISTOR
R517,518	2	KA16ST682J	CARBON RESISTOR
MISCELLANEOUS			
HP501	1	HLJ4308-01-308	H.P. JACK
MC502	1	MT-22A07F-K063	MICRO SOCKET ASS'Y
TU001-004	4	U9-#188005	UL TYPE TUBE
18E26	2	E075	JAMP WIRE
18E27	2	E100	JAMP WIRE
18E28	1	E150	JAMP WIRE
18E29	3	E175	JAMP WIRE

LED PCB ASSY

REF. NO.	Q'TY	PART NO.	DESCRIPTION
P.C. BOARD			
20E12	1	LED-K032A	PRINTED CIRCUIT BOARD
SEMICONDUCTORS			
L0801	1	SL9406-20	LED
L0802,803	2	LN513RK5	LED
RESISTORS			
R801	1	KA16ST220J	CARBON RESISTOR
MISCELLANEOUS			
MC601	1	MC-172677-K039	MICRO SOCKET ASS'Y
MC802	1	MC-172677-K053	MICRO SOCKET ASS'Y

POWER SUPPLY PCB ASSY

REF. NO.	Q'TY	PART NO.	DESCRIPTION
P.C. BOARD			
21E1	1	PS-K036	PRINTED CIRCUIT BOARD
CAPACITORS			
△ C901	1	ECQU2A103MN	METALLIZED FILM CAPACITOR
COILS			
△ L901,902	2	180016	CHOKE
SWITCHES			
△ S901	1	ES88215V	POWER SWITCH
MISCELLANEOUS			
EL901,902	2	59854795	GND LUG
EL903-905	3	S-001P	GND LUG
△ FU901	1	FU-524014ST	FUSE
△ 21E14	2	23165102-BB-C	FUSE HOLDER
△ 21E17	1	820633	CAPACITOR BOOT
△ 21E23	1	BK4123-461	LABEL FUSE

OTHER PARTS

REF. NO.	Q'TY	PART NO.	DESCRIPTION
MISCELLANEOUS			
J013	1	0075260806-C-C	SOLDER-PLATED WIRE
2M28	2	VJR-3	SHAKE LUG
3M 2	6	BK4151	MASTER CARTON
3M 3, M29, M30	6	N45335	LABEL, SERIAL NO.
5M23	2	TPH-30X08-B	TAP SCREW P, ROUND HEAD, B
MC101	1	MZ-PHR09-K058	MICRO SOCKET ASS'Y
MC102	1	MZ-PHR06-K057	MICRO SOCKET ASS'Y
MC103	1	MK-ILS035-K075	MICRO SOCKET ASS'Y
MC104	1	MT-22A02F-K065	MICRO SOCKET ASS'Y
MC105	1	M84-02-300SA	MICRO SOCKET ASS'Y
MC202	1	MT-22A03F-K066	MICRO SOCKET ASS'Y

OPERATION PCB ASSY

REF. NO.	Q'TY	PART NO.	DESCRIPTION
P.C. BOARD			
19E1	1	OPE-K032A	PRINTED CIRCUIT BOARD
SEMICONDUCTORS			
Q701-703	3	1SS133	DIODE
L0701	1	LN342GP	LED
L0702,703	2	LN842RP(V)	LED
L0704-706	3	LN442YP	LED
L0707	1	LN342GP	LED
CAPACITORS			
C701	1	S5-6R3TW101M	ELECTROLYTIC CAPACITOR
RESISTORS			
R701	1	KA16ST221J	CARBON RESISTOR
R702-704	3	KA16ST151J	CARBON RESISTOR
SWITCHES			
S701	1	SKHHQV	TACT SWITCH
S702	1	SKHHPK	TACT SWITCH
S703,704	2	SKHHQV	TACT SWITCH
S705	1	SKHHPK	TACT SWITCH
S706-708	3	SKHHPK	TACT SWITCH
S709,710	2	SKHHPK	TACT SWITCH
S711-713	3	SKHHQV	TACT SWITCH
MISCELLANEOUS			
BX701	1	BX1387	REMOTE SIGNAL RECEIVING UNIT
MC701	1	MK-ILS075-K054	MICRO SOCKET ASS'Y
MC702	1	MK-ILS035-K055	MICRO SOCKET ASS'Y
MC703	1	MK-ILS095-K035	MICRO SOCKET ASS'Y
19E23	6	E050	JAMP WIRE
19E29	6	E100	JAMP WIRE
19E30	2	E150	JAMP WIRE

VOLUME PCB ASSY

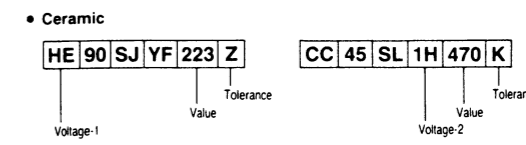
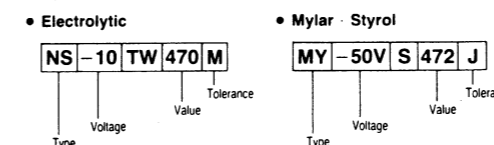
REF. NO.	Q'TY	PART NO.	DESCRIPTION
P.C. BOARD			
20E1	1	VR-K032A	PRINTED CIRCUIT BOARD
SEMICONDUCTORS			
Q501,502	2	25C2878-A,B	TRANSISTOR
RESISTORS			
R501,502	2	KA16ST102J	CARBON RESISTOR
R503,504	2	KA16ST682J	CARBON RESISTOR
VR501	1	V8V16-503A20K4	ROTARY POTENTIOMETER
MISCELLANEOUS			
MC501	1	MT-22A07F-K067	MICRO SOCKET ASS'Y
20E10	1	E125	JAMP WIRE

Classify Parts List

A : USA B : U.K. C : EUROPE & OTHERS C2 : G.P.M.
 A1 : CANADA B1 : AUSTRALIA/N.Z. C1 : W.GERMANY

Ref.No.	Description	A	A1	B	B1	C/C1	C2
MAIN UNIT Section							
1M18	REAR PANEL	BK2037	BK2037	BK2037-1	BK2037-1	BK2037-2	BK2037-2
3M10	CAUTION SHEET, POLARIZED PLUG	N44687	N44687	Nil	Nil	Nil	Nil
3M11	LABEL, FUSE	N44525	N44525	Nil	Nil	Nil	Nil
3M13	CONVERSION PLUG	Nil	Nil	Nil	Nil	Nil	S-16115#01
3M14	FDA LABEL LASER CAUTION	BK4082A	BK4082A	Nil	Nil	Nil	Nil
3M14-1	LABEL (LASER MARK)	Nil	Nil	N44838	N44838	N44838	N44838
3M15	CSA LABEL LASER CAUTION	BK4081A	BK4081A	Nil	Nil	Nil	Nil
3M15-1	LABEL (LASER CAUTION)	Nil	Nil	N44839	N44839	N44839	N44839
3M16	LABEL (CLASS 1 LASER PRODUCT)	Nil	Nil	N44837	N44837	N44837	N44837
3M18	TAG (AC CORD)	Nil	Nil	N41117	Nil	Nil	Nil
3M19	STICKER WARNING	Nil	Nil	N41994	Nil	Nil	Nil
3M21	POLYETHYLENE BAG (UNIT)	N41886-2	N41886-2	N41886-H-2	N41886-2	N41886-2	N41886-2
3M23	CARD, WARRANTY REGISTRATION	NAD-WC2A	Nil	Nil	Nil	Nil	Nil
3M25	LABEL, UL	N44934A	Nil	Nil	Nil	Nil	Nil
3M26	NON-WARRANTY CARD	Nil	LEN-200	Nil	Nil	Nil	Nil
3M26-1	SAFETY INSTRUCTION SHEET	BK3035	Nil	Nil	Nil	Nil	Nil
3M27	CARD, WARRANTY	Nil	LEN-201	Nil	Nil	Nil	Nil
3M28	LABEL, CSA COMPACT DISC	Nil	BK4142	Nil	Nil	Nil	Nil
△ 22E16	LINE CORD	ACC-033E3-4EC1	ACC-033E3-4EC1	ACC-013D3-4EC4	ACC-030D3-4EC1	ACC-005D3-4EC1	ACC-005D3-4EC1
22E19	CORD STOPPER	SR-4N-4	SR-4N-4	SR-5N-4	SR-4N-4	SR-4N-4	SR-4N-4
△ PT001	POWER TRANSFORMER	NPT-K0104	NPT-K0104	NPT-K0105	NPT-K0105	NPT-K0105	NPT-K0105
POWER SUPPLY PCB Section							
△ C901	METALLIZED FILM CAPACITOR	ECQU2A103MN	ECQU2A103MN	ECQU2A103MF	ECQU2A103MF	ECQU2A103MF	ECQU2A103MF
△ FU901	FUSE	FU-524014ST	FU-524014ST	FU-522017T	FU-522017T	FU-522017T	FU-522017T
TU013,014	UL TYPE TUBE	Nil	Nil	U9-#01B02	U9-#01B02	U9-#01B02	U9-#01B02
△ 21E17	CAPACITOR BOOT	820633	820633	821033	821033	821033	821033
△ 21E23	LABEL FUSE	BK4123-401	BK4123-401	Nil	Nil	Nil	Nil

Capacitors Description



• Electrolytic

Type	Voltage	Value	Tolerance
LL: Low Leak	-10: 10V	R47: 0.47μF	K: ±10%
NP: Non-Pole	-50: 50V	4R7: 4.7μF	M: ±20%
NS: Standard	6R3: 6.3V	470: 470μF	
		471: 470μF	
		472: 4700μF	

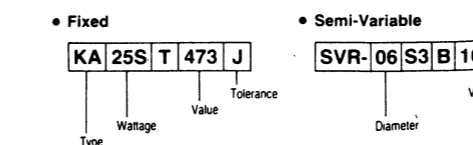
• Mylar - Styrol

Type	Voltage	Value	Tolerance
MY: Mylar	-25V: 25V	4R7: 4.7pF	G: ±2%
ST: Styrol	125V: 125V	470: 47pF	J: ±5%
	-63T: 63V	471: 470pF	K: ±10%
		472: 4700pF	M: ±20%
		473: 0.047μF	
		474: 0.47μF	
		(1000pF=0.001μF)	

• Ceramic

Voltage-1	Voltage-2	Value	Tolerance
HC: 25V	1E: 25V	4R7: 4.7pF	C: ±0.25pF
HE: 50V	1H: 50V	470: 47pF	D: ±0.5pF
H: 100V	2H: 500V	471: 470pF	F: ±1pF
HK: 250V		472: 4700pF	J: ±5%
HM: 500V		473: 0.047μF	K: ±10%
		474: 0.47μF	M: ±20%
		(1000pF=0.001μF)	Z: +80~-20%

Resistors Description



Type	Wattage	Value	Tolerance	Diameter
CE: Cement Case	-2W: 2W	R47: 0.47Ω	M: ±20%	08: 8φ
FR: Flame Proof	10W: 10W	4R7: 4.7Ω	K: ±10%	10: 10φ
KA: Carbon	16S: 1/6W	470: 47Ω	J: ±5%	06: 6φ
MF: Metal Film	20S: 1/5W	471: 470Ω	G: ±2%	
RF: Fusible	25S: 1/4W	472: 4.7kΩ	F: ±1%	
SA: Metal Oxide	50S: 1/2W	473: 47kΩ	D: ±0.5%	
	50X: 1/2W	474: 470kΩ		
	S3W: 3W	475: 4.7MΩ		

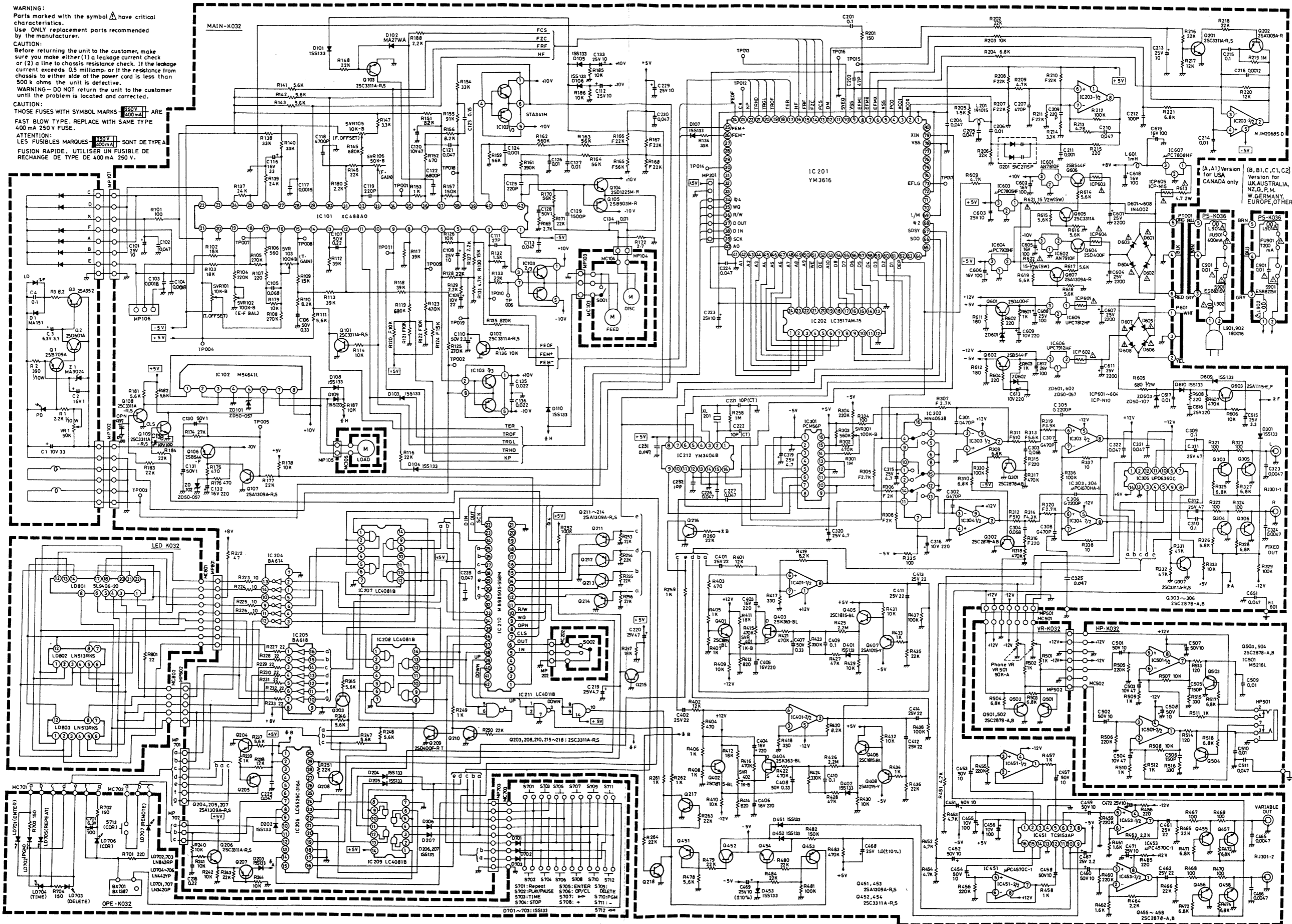
SCHEMATIC DIAGRAM

5100 SCHEMATIC DIAGRAM

WARNING:
Parts marked with the symbol Δ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

CAUTION:
Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 millamp, or if the resistance from chassis to either side of the power cord is less than 500 k ohms the unit is defective.
WARNING - DO NOT return the unit to the customer until the problem is located and corrected.

CAUTION:
THOSE FUSES WITH SYMBOL MARKS Δ ARE FAST BLOW TYPE. REPLACE WITH SAME TYPE 400 mA 250 V FUSE.
ATTENTION:
LES FUSIBLES MARQUÉS Δ SONT DE TYPE A FUSION RAPIDE. UTILISER UN FUSIBLE DE RECHANGE DE TYPE DE 400 mA 250 V.



THE DIFFERENCE OF PICK-UP HEAD

This model is in use the pick-up head of either Part No. is MLP-10 or MLP-10F2. In the case that you exchange the pick-up head with new one for the replacement, please use MLP-10F2 instead of MLP-10. With this modification, the values of some electrical parts and etc. shall be required to be changed.

After read **Cautions on Replacement of Pick-up** on page 4, you shall be exchanged the pick-up head.

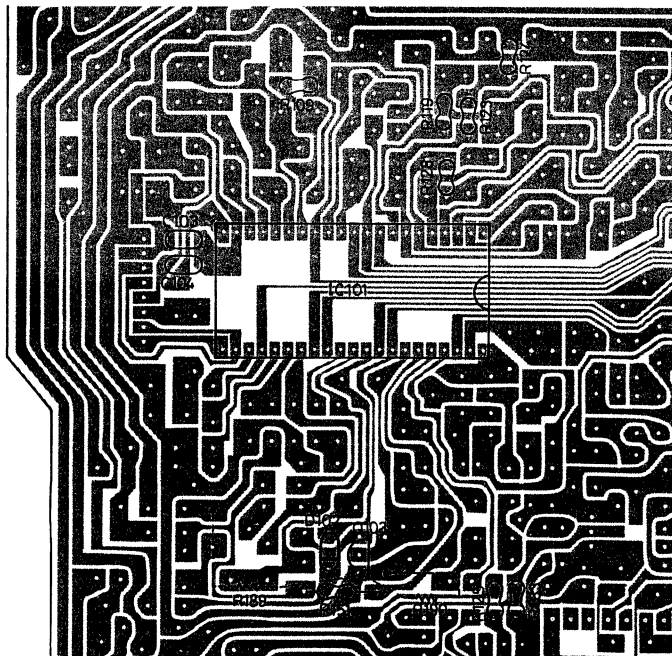
1. Please exchange of parts refer to the below table and figure.

- Delete resistor R189.
- Exchange resistor R190 for the jump wire and short-circuit.
- The other parts exchange Part No. column A for B according as the below table.

A: Serial No.80400038~ 80400512 (Except Serial No.80400139 and 80400472)
 B: Serial No.80400513~ (Include Serial No.80400139 and 80400472)

Ref. No.	Description	Part No.	
		A	B
—	PICK UP HEAD	MLP-10	MLP-10F2
D102	DIODE	1SS133	MA27WA
C103,104	MYLAR CAPACITOR	MY-50VS222J	MY-50VS182J
R109	CARBON RESISTOR	KA16ST103J	KA16ST153J
R119	CARBON RESISTOR	KA16ST394J	KA16ST684J
R123	CARBON RESISTOR	KA16ST184J	KA16ST474J
R124	METAL FILM RESISTOR	MF16ST203F	MF16ST153F
R125	CARBON RESISTOR	KA16ST124J	KA16ST274J
R128	CARBON RESISTOR	KA16ST103J	KA16ST223J
R133	CARBON RESISTOR	KA16ST103J	KA16ST223J
R151	CARBON RESISTOR	KA16ST104J	KA16ST823J
R189	CARBON RESISTOR	KA16ST181J	Nil
R190	CARBON RESISTOR	KA16ST1R0J	Short

MAIN PCB ASSY



2. The difference of Adjustment value (Tracking Gain) refers to the following.

Pick-up head : MLP-10

Rating : ETE = (EQ +15 dB) \pm 3 dB

Pick-up head : MLP-10F2

Rating : ETE = (EQ +11 dB) \pm 3 dB

SERVICE MANUAL

SM-K040 8808
© 1987 BY NAD PRINTED IN JAPAN

5100
COMPACT DISC PLAYER

NAD ELECTRONICS
BOSTON/LONDON