

SERVICE

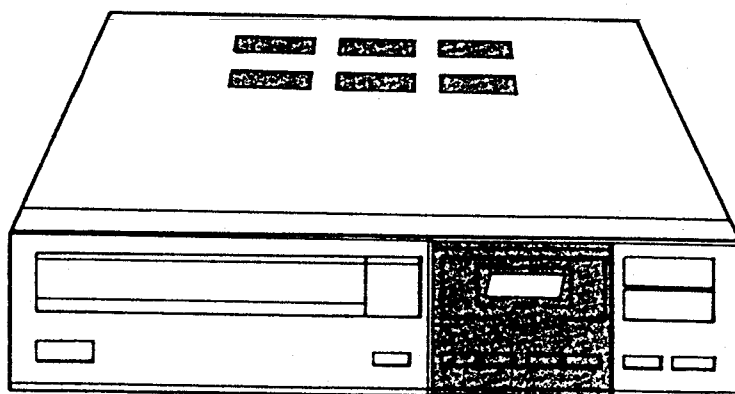
YOKO

M O D E L L - F 92

ACHTUNG!!!!!!!!!!

Für dieses Modell F -92 existieren 3 verschiedene Chassiseinheiten. Dieses Manual zeigt nur eine Version. Die beiden anderen sind uns zur Zeit nicht vorrätig. Versand erfolgt sobald die Manuals bei uns eintreffen.

ZVKD Hemmersbach



COMPACT DISC PLAYER

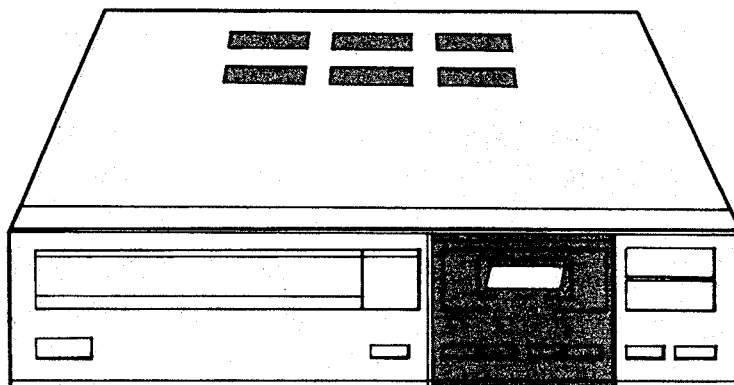
MANUAL

COMPACT
disc
DIGITAL AUDIO

SERVICE MANUAL

COMPACT DISC DIGITAL AUDIO PLAYER

COMPACT
disc
DIGITAL AUDIO





WARNING

FOR CONTINUED SAFETY THE FOLLOWING PRECAUTIONS TO BE FOLLOWED DURING SERVICING

1. MAKE SURE POWER CORD IS DISCONNECTED BEFORE REPLACING ANY PARTS.
2. REPLACE WITH SAME TYPE, CRITICAL PARTS WITH  MARK ON THIS DIAGRAM.
3. THE FOLLOWING TEST MUST BE IMPLEMENTED AFTER EACH REPAIR BEFORE RETURNING IT TO CUSTOMER.

USE AN OHM-METER TO MEASURE THE D.C. RESISTANCE FROM BOTH A.C. CONDUCTORS TO ANY EXPOSED METALLIC PARTS SUCH AS A SCREW HEAD, METAL INLAYS FTC, THE RESISTANCE MEASURED TO BE 10 MEGAOHMS MINIMUM.

CONTENTS

SPECIFICATION	1
DISASSEMBLY	2
EXPLODED VIEW-CABINET	5
EXPLODED VIEW-MECHANISM	6
EXPLODED VIEW PARTS LIST	7
ALIGNMENT AND ADJUSTMENT	8
DESCRIPTION OF INTERFACE	11
TROUBLESHOOTING	14
BLOCK DIAGRAM	18
WIRING DIAGRAM	19
P.C BOARD	20
SCHEMATIC DIAGRAM	21
ELECTRICAL PARTS LIST	22

SPECIFICATIONS

AUDIO SPECIFICATIONS

Number of channels	2
Signal/Noise Ratio	95dB
Harmonic Distortion	0.03% (at 1 KHz)
Frequency Response	5-20000Hz (± 1 dB)
Channel Separation	85dB
Wow/Flutter	Not measurable
Output Voltage	2.0V (TYP)

SIGNAL FORMAT

Sampling Frequency	44.1 KHz
Error Correction System	CIRC double error correction system
D/A Conversion	16 bit linear

GENERAL SPECIFICATION

Power Requirements	100/120/220/240V 50/60Hz
Power Consumption	10W
Dimensions (W x H x D)	320 x 73 x 282mm
Weight	2.9 Kg

PERFORMANCE SPECIFICATIONS

	NOMINAL	LIMIT
Output Level	2.0V $\pm$ 0.2V	2.0V $\pm$ 0.4V
Channel Unbalance	± 0.2 dB	± 1 dB
Frequency Response		
20Hz	± 0.5 dB	± 1 dB
10KHz	± 1 dB	± 1.5 dB
20KHz	± 1 dB	± 2 dB
Signal to Noise Ratio	95dB	90dB
Channel Separation		
1KHz	85dB	80dB
10KHz	85dB	70dB
Total Harmonic Distortion		
1KHz	0.03%	0.1%
10KHz	0.1%	0.3%
20KHz	3%	5%
Dynamic Range	90dB	80dB

PICK UP

Type	Astigma 3 beam
Light Source	Semiconductor laser
Wave Length	780nm

ACCESSORIES

Phone Cord

• • • **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 that still might be considered acceptable; in no case should a unit perform to less than within any limit spec.

DISASSEMBLY

1. To Remove the upper cover (Figure 1),
Remove 3 screws ①

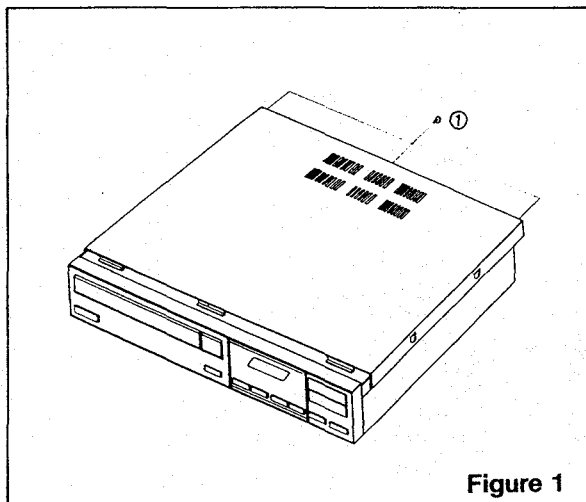


Figure 1

2. To Remove the Front Panel (Figure 2).
After taking off the upper cover, Remove
6 screws ②

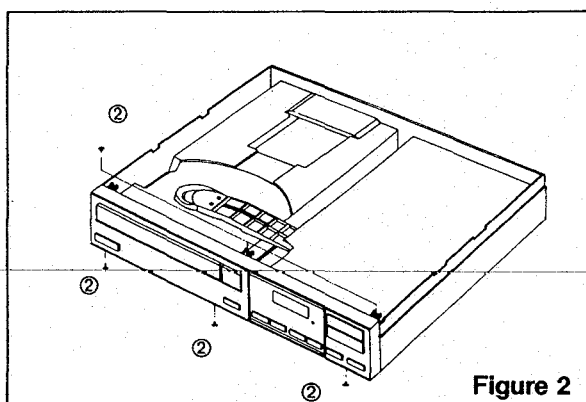


Figure 2

3. To Remove the TRAY Mechanism Ass'y (Figure 3) After taking off the front panel, rotate the pulley (A) right and extract tray to (A) direction till reach to tray stopper (b), and extract the tray to (A) direction after pushing the tray stopper.

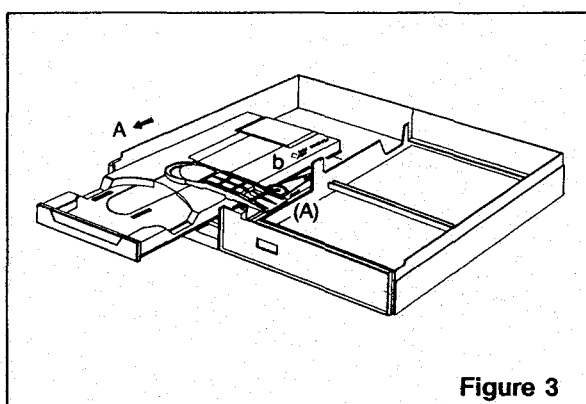
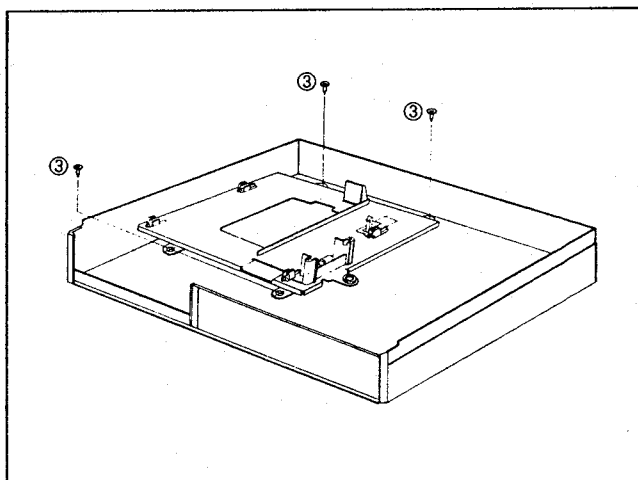


Figure 3

4. To Remove the Mechanism, After taking off the Tray, Remove 4 screws ③



5. To Remove the P.C. Board (Figure 5)
A: After taking off the Front Panel (refer to 2) Remove 6 screws ④
B: After taking off the upper cover (refer to 1) Remove 6 screws ⑤,

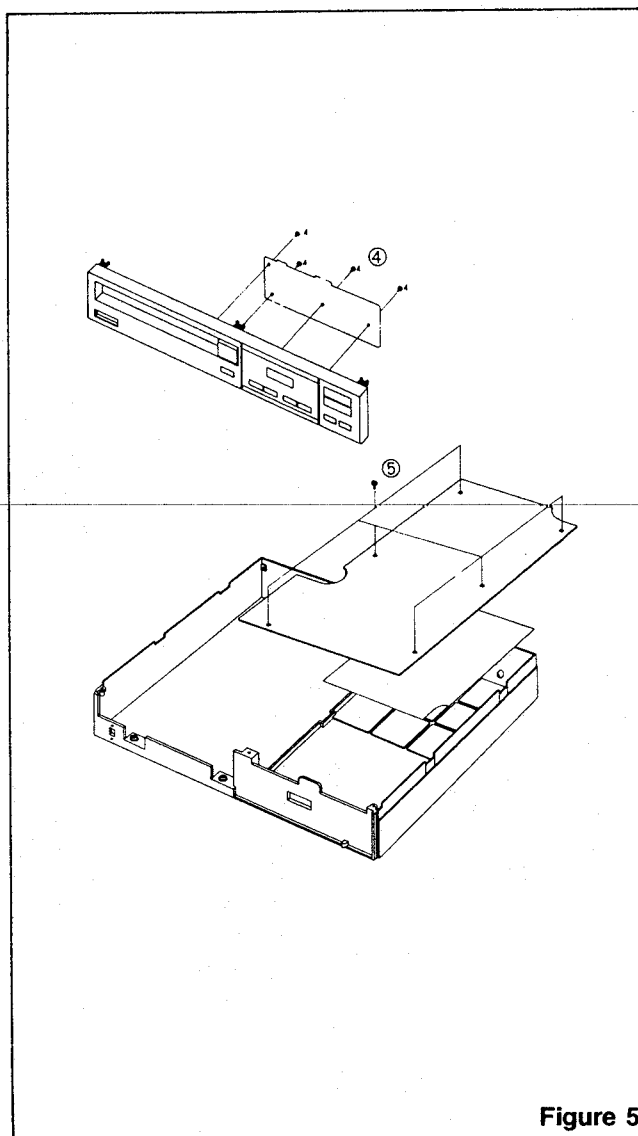


Figure 5

6. To Remove the Power Transformer (Figure 6)
After taking off the Mechanism (refer to 4), remove 2 screws ⑦

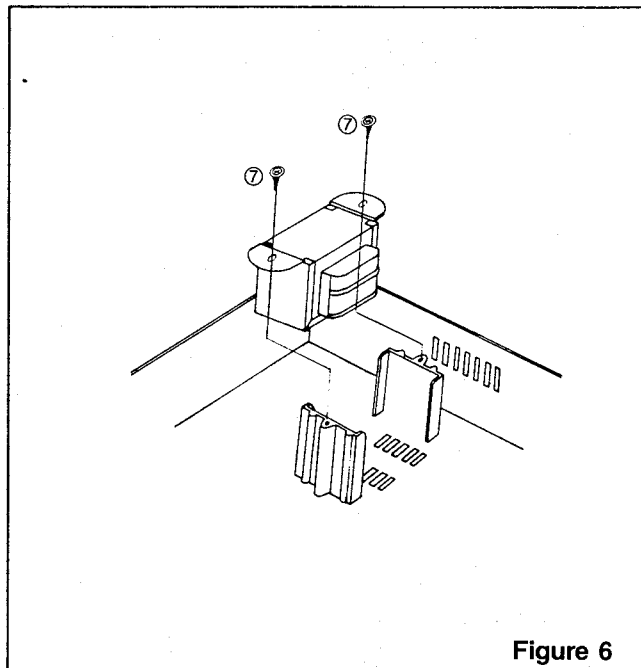


Figure 6

7. To Remove the pick up (Figure 7). After taking off the Mechanism (refer to 4)
A: To remove the guide shaft, remove the 4 screws ⑧
B: To Remove the rack remove the 1 screws ⑨

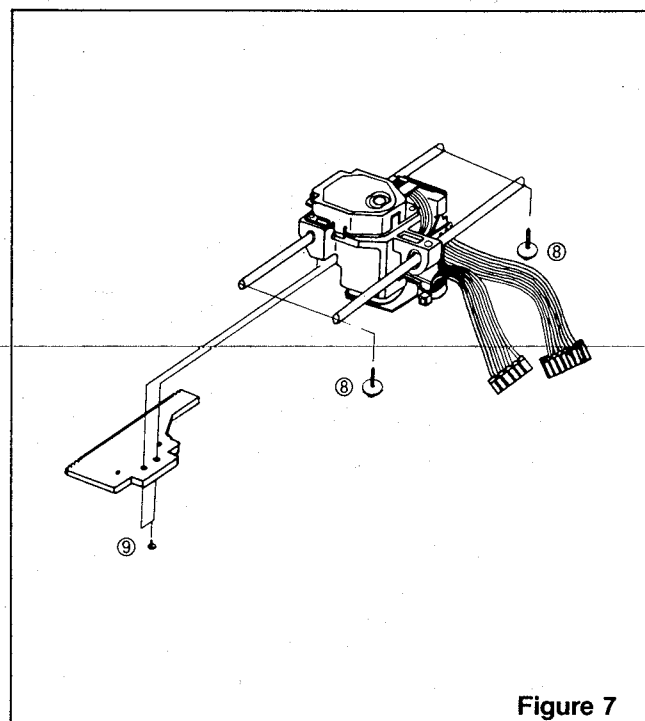
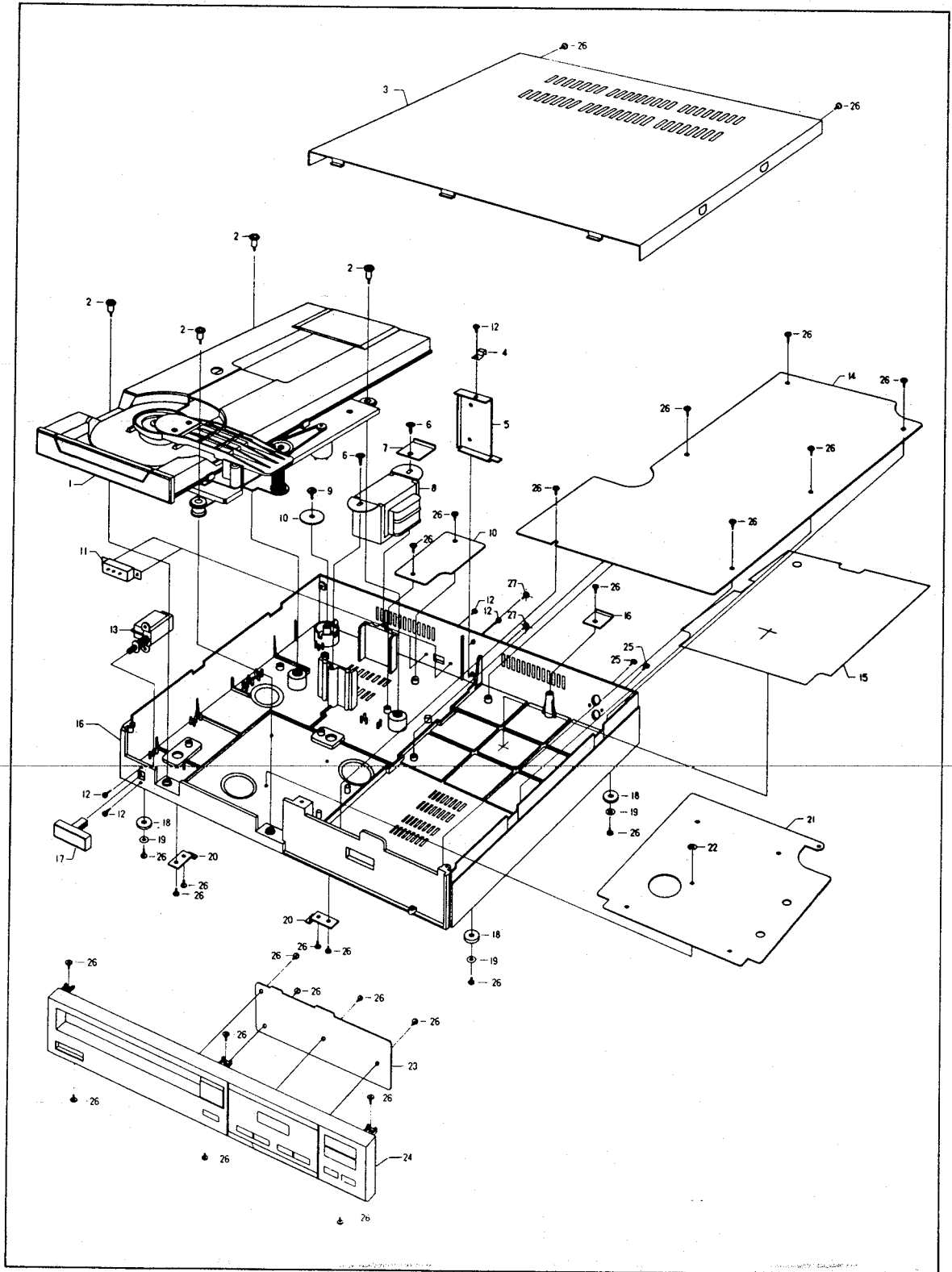
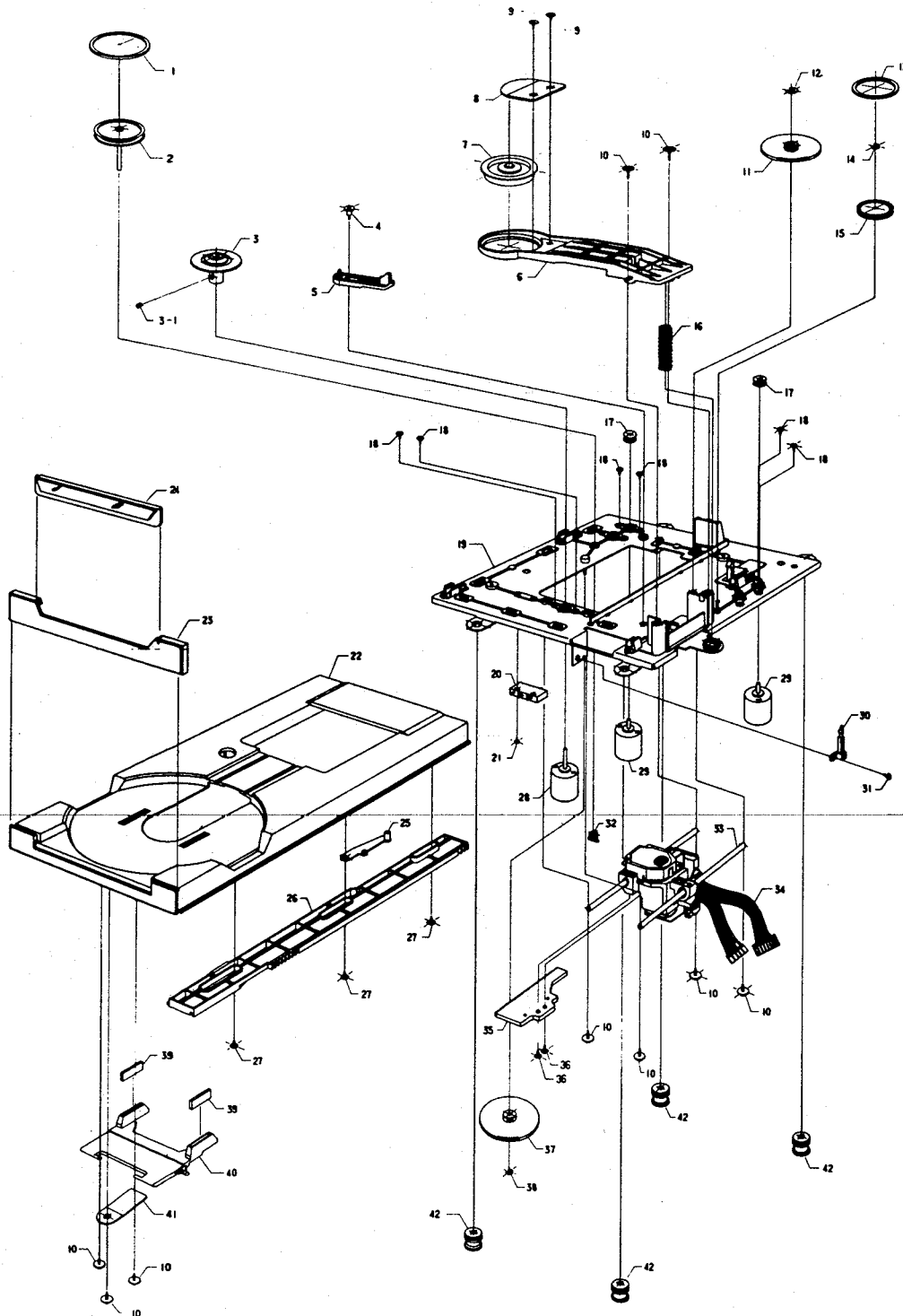


Figure 7

EXPLODED VIEW—CABINET



EXPLODED VIEW—MECHANISM



EXPLODED VIEW PARTS LIST

CABINET

REF NO	DESCRIPTION	DRW NO.
1	MECH A. ASS'Y	M 1024
2	SETTING SCREW $\phi 3 \times 13$, MECHA $\times 4$	
3	UPPER-COVER	H 22003
4	EARTH-PLATE "B"	H 22028
5	EARTH-PLATE	H 22027
6	SCREW-TAPPING WPH $\phi 3.5 \times 10L$	
7	TRANSFORMER $\times 2$	
8	BRACKET "B"	SF 1047
9	TRANS FORMER	
10	SCREW-TAPPING WPH $\phi 3 \times 8L$	
11	UPPER-COVER $\times 2$	
12	STOPPER POWER CORD $\times 2$	
13	PCB-FUSE	CD 4198
14	VOLTAGE SW	
15	SCREW-MACHINE PHM 3×6	
16	POWER SW $\times 2$	
17	VOLTAGE SW $\times 2$	
18	EARTH-PLATE $\times 3$	
19	POWER SW	
20	PCB-MAIN	CD 3028
21	FOIL-PLATE "B"	H 22019
22	FRAME	CD 1014
23	BUTTON-POWER	H 22008
24	RUBBER-FOOT $\times 4$	SF 1024
25	WASHER $\times 4$	SF 1040
26	BRACKET-MECHA $\times 2$	SF 1012
27	BOTTOM-EARTH	H 22030
28	C,S-WASHER $\phi 2 \times \phi 6$	HT 7105
29	PCB-PANEL	H 22015
30	FRONT-PANEL	H 22002
31	SCREW-TAPPING PH $\phi 3 \times 10L$	
32	RCA-JACK $\times 2$	
33	SCREW-TAPPING PH $\phi 3 \times 8L$	
34	FRONT-PANEL $\times 6$	
35	PCB-PANEL $\times 7$	
36	BRACKET-MECHA $\times 4$	
37	RUBBER-FOOT $\times 4$	
38	PCB-MAIN $\times 6$	

MECHANISM PART LIST

REF NO	DESCRIPTION	DRW NO
1	BELT "B"	M 1029
2	PULLEY 1st (TRACK SERVO)	M 1003
3	TURN TABLE	M 1013
3-1	SETTING BOLT	AT 0204
4	SLIDER SCREW	M 1022
5	SLIDER	M 1011
6	FLAPPER	M 1015
7	DISC CLAMPER	M 1014
8	CLAMPING PLATE	M 1012
9	SCREW-TAP (BH) T3 $\times 7L$	
10	SCREW-TAP (WPH) T3 $\times 8L$	
11	WHEEL-2nd (TRAY SERVO)	M 1008
12	E-RING $\phi 2.0$	
13	BELT "A"	M 1025
14	E-RING $\phi 1.5$	
15	WHEEL-1st (TRAY SERVO)	M 1007
16	SPRING-FLAPPER	M 1032
17	PULLEY-MOTOR	M 1002
18	SCREW-BH M $\times 4.5L$	
19	BASE ASS'Y	M 1001
20	MICRO SWITCH (AH 2502)	SANKYO
21	SCREW-TAP (PH) T2.2 $\times 12L$	
22	TRAY	M1017
23	COVER-TRAY	H 22004
24	SCREW-PH M3 $\times 6$	
25	LEVER-CLUTCH	M 1010
26	ACTUATING RACK	M 1009
27	SCREW-TAP (BH) T2.2 $\times 6L$	
28	MOTOR-SERVO (NBS6B-K)	SANKYO
29	MOTOR-SPINDLE (NBS4R-K)	SANKYO
30	LEAF SWITCH (MSW 1585)	MIC ELEC
31	SCREW-PH M2.6 $\times 0.45 \times 6L$	
32	WHEEL-2nd	M 1006
33	GUIDE SHAFT	M 1030
34	PICK UP (KSS-152A)	SONY
35	RACK (TRACK)	CD 4200
36	SCREW-TAPPING PH $\phi 2 \times 6L$	
37	WHEEL-3rd (TRACK SERVO)	M 1004
38	E-RING $\phi 2.0$	
39	PROTECTOR DISC	M 1018
40	DISC LIFTER	M 1016
41	SPRING PLATE	M 1020
42	INSULATOR	M 1021

ALIGNMENT AND ADJUSTMENT

When you happen to do either (1), or (2) be sure to perform the adjustments 1-6.

- 1) Disassembly of the unit mechanism and replacement of parts.
- 2) Replacement of parts of the pick up assembly.

••PRESETTING

Adjustment	Circuit No.	Preset Position
RF GAIN	VR 101	Center
FE OFFSET	VR 202	Center
TE OFFSET	VR 201	Center
FE GAIN	VR 204	Center
TE GAIN	VR 203	Center
PLL	VR 301	Center

- Adjustment should be made in the following sequence.

1. RF GAIN Adjustment.

Don't perform this adjustment except when the parts of R101, R201, C101, C102, C201, PICK UP, IC1 have been changed.

1) Instrument to be used

- Oscilloscope

2) Adjusting procedure (Figure 1)

- Connect the oscilloscope to TP1 (RF) and TP4 (GND)
- Load a disc in the player and set the player to play mode.
- Adjust VR101 so that oscilloscope indicate the figure shown in Figure 1.

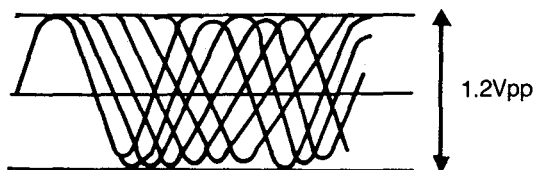


Figure 1

2. FE OFFSET Adjustment.

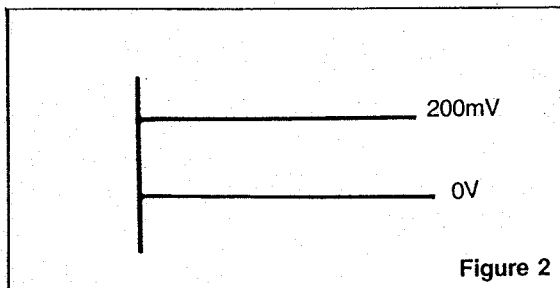
Don't perform this adjustment except when the parts of VR202, IC1, PICK UP have changed.

1) Instrument to be used.

- Oscilloscope

2) Adjusting Procedure (Figure 2)

- Connect the Oscilloscope to TP2 (FE) and TP4 (GND).
- Load a disc in the player, and set the player to STOP mode.
- Adjust VR202 so that oscilloscope indicate the figure shown in Figure 2.



3. TE OFFSET Adjustment.

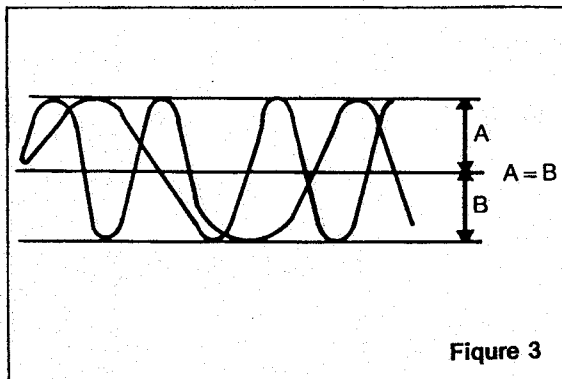
Don't perform this adjustment except when the parts of VR201, IC1, PICK UP.

1) Instrument to be used.

- Oscilloscope

2) Adjusting Procedure.

- Connect the oscilloscope to TP3 (TE) and TP4 (GND).
- Return to Counterclockwise VR203.
- Load a disc in the player, and set the player to play mode.
- Adjust VR201 so that oscilloscope indicate the figure shown in Figure 3.



- presetting to VR203, after adjusted.

4. FE GAIN Adjustment.

Don't perform this adjustment except when the parts of VR204, IC1, PICK UP have been changed.

1) Instrument to be used.

- Oscilloscope

2) Adjusting Procedure

- Connect the oscilloscope to TP2 (FE) and TP4 (GND).
- Load a disc in the player, and set the player to play mode.
- Adjust VR204 so that oscilloscope indicate the figure shown in Figure 4.

5. TE GAIN Adjustment.

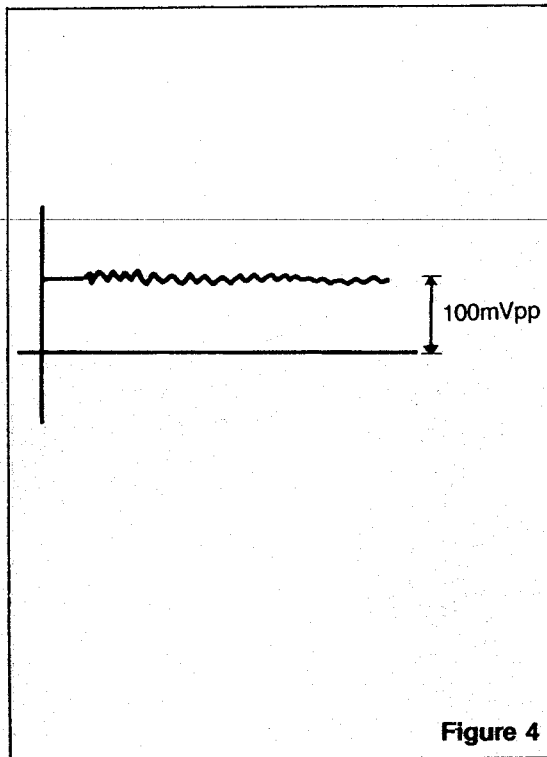
Don't perform this adjustment except when the parts of VR203, IC1, PICK UP have been change.

1) Instrument to be used.

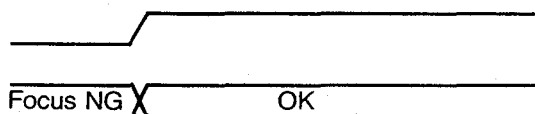
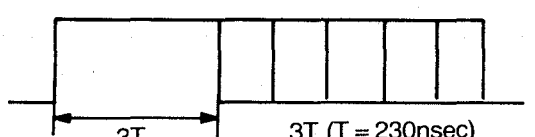
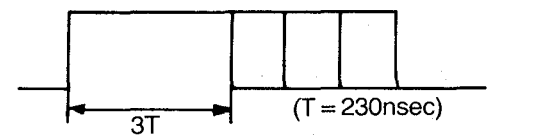
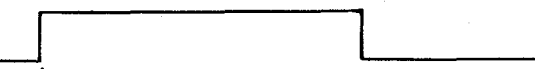
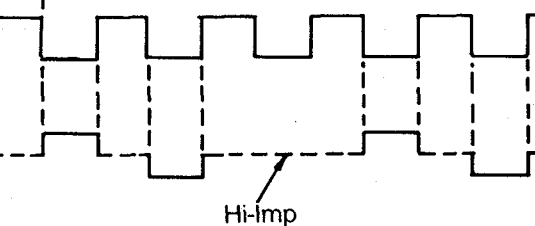
- Oscilloscope

2) Adjusting Procedure

- Connect the oscilloscope to TP3 (TE) and TP4 (GND).
- Load a disc in the player, and set the player to play mode.
- Adjust VR203 so that oscilloscope indicate the figure shown in Figure 5.



DESCRIPTION OF INTERFACE

Signal	Timing and level	Contents
OPEN SW CLOSE SW SLED SW		TRAY OPEN TRAY CLOSE Inner SLED
FOK		FOK sign
EFM		EFM comparator signal
ASY		EFM buffe sign
EFM		EFM: EFM signal
PLCK PDO		PLCK: PLL clock about 4.3 MHz PDO: PLL servo phase differentiation detction output

6. Adjustment PLL.

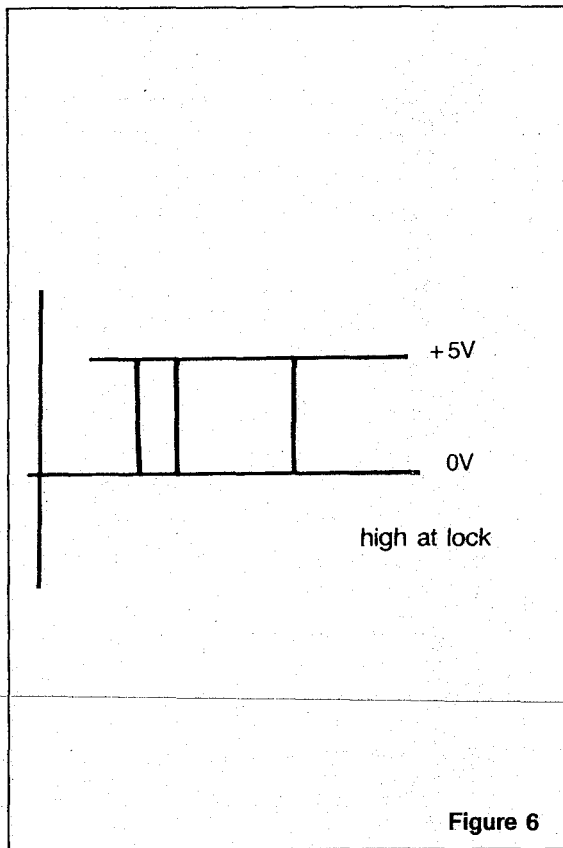
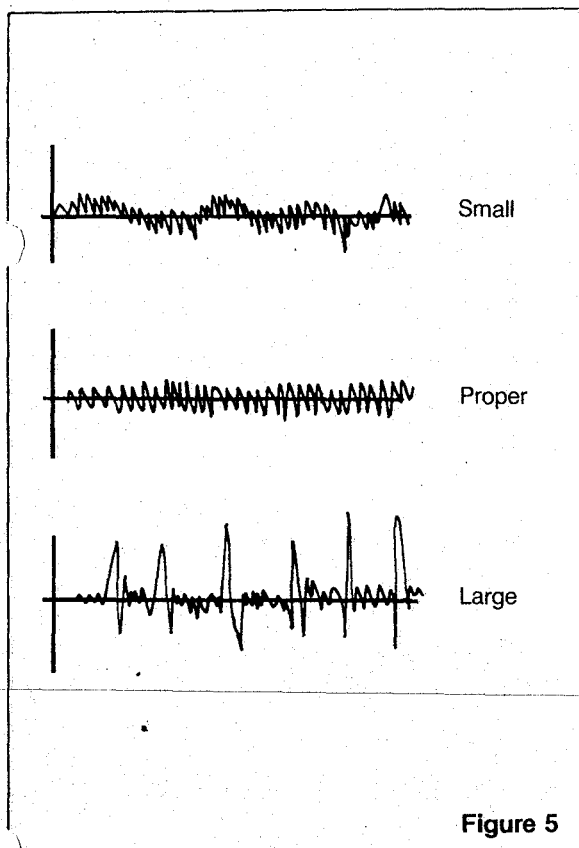
Only perform this adjustment when IC2, IC3, VR301, C316, R316 are replaced.

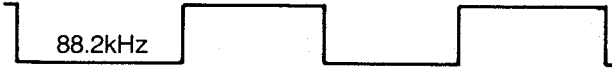
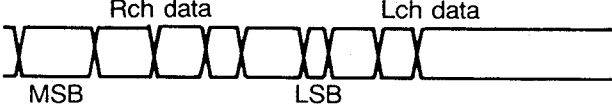
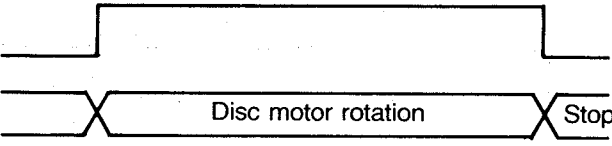
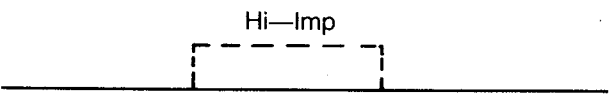
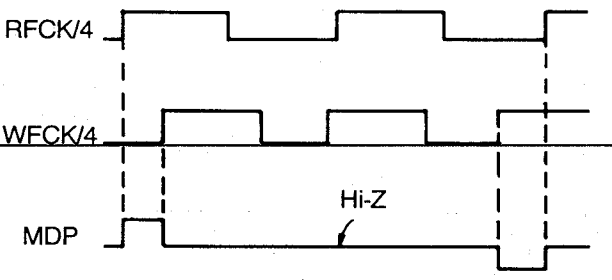
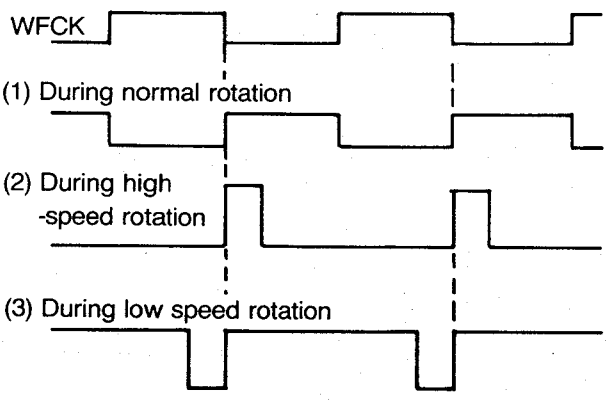
1) Instrument to be used.

- Oscilloscope

2) Adjusting Procedure

- Connect the oscilloscope to TP5 (GFS) and TP4 (GND)
- Load a disc in the player, and set the player to play mode.
- Adjust VR301 so that oscilloscope indicate the figure shown in Figure 6.

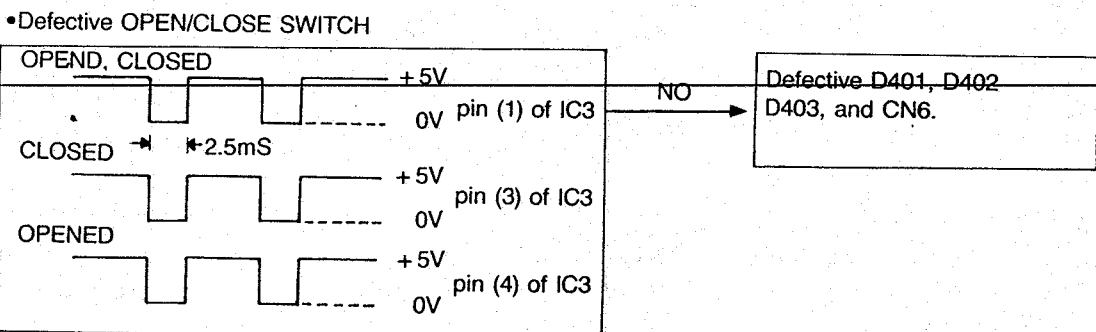
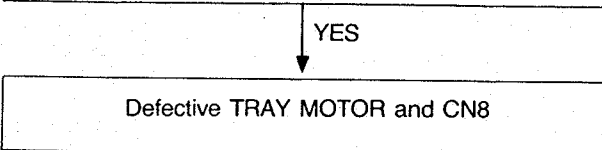
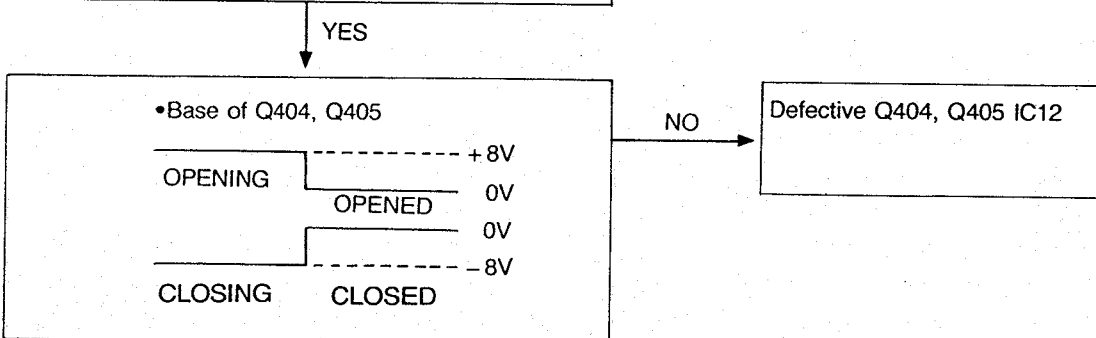
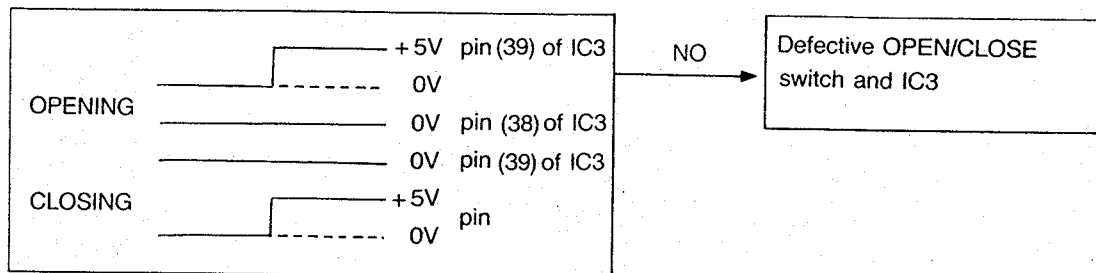


Signal	Timing and level	Contents
LRCK		LRCK: L, R select signal
WDCK		WDCK: Clock for timing generation
DA01 DA16		DATA: 16 bit Parallel audio output (2'S complement) C210: Clock for timing generation
MON		MON: MOTOR ON
FSW		FSW: FREQUENCY SW for Disc Motor servo
MDP		MDP: Rough control in CLV-S mode and phase control signal in CLV-P mode
MDS		MDS: Speed control signal in CLV-P mode

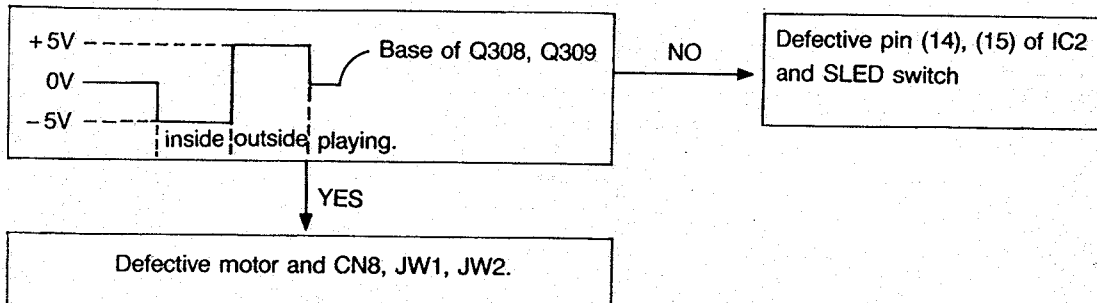
Signal	Timing and level	Contents
MIRR		Mirror output
DATA		Data transmission
CLK		Data transmission clock
XLT		Data transmission latch
DIRC		Servo control signal used in 1-track JUMP (Refer to servo command code lists)
GFS		GFS: When the data is correctly read with the disc motor rotating normally, becomes high in lock mode.
EMP		Audio emphasis control signal
MUTG		Mute correct signal for audio signal of signal processing LSI
SCOR		SCOR: Sub-code synchro signal
SUBQ		SUBQ: Sub-code Qch signal
WFCK		WFCK: Write Frame clock in signal processing LSI

TROUBLE SHOOTING

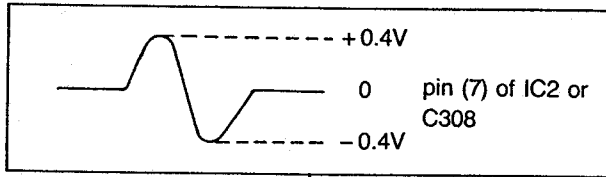
(1) Does the TRAY Operated?



(2) Does the PICK UP return to Inside when closed?



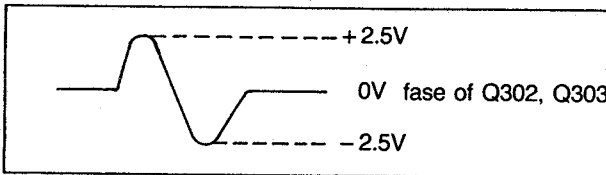
(3) Does focus work?



NO

Defective pin (7) and (1) of IC2 or C308

YES



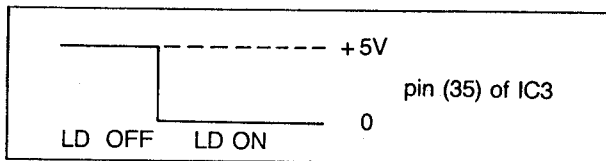
NO

Defective pin (5), (6) IC2, or Q302, Q303

YES

Defective CN2, PICK-UP

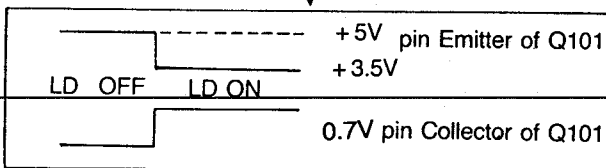
(4) Is laser diode lighted?



NO

Defective OPEN/CLOSE and SLED switch.

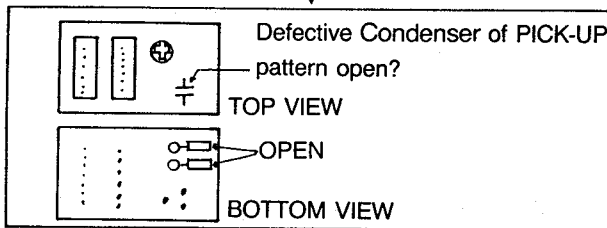
YES



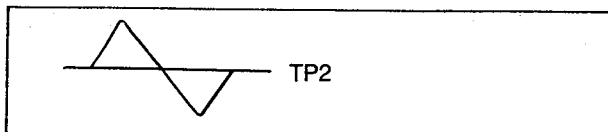
NO

Defective pin (5), (6) of IC1 periphery Q101.

YES



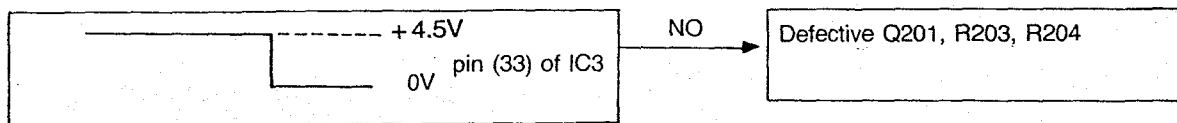
(5) Output Focus error (FE)?



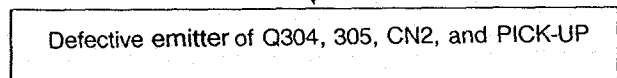
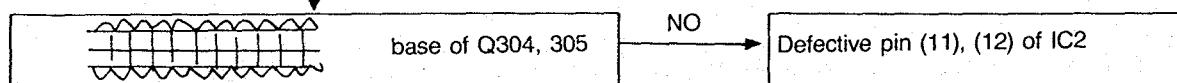
NO

Defective CN1 or pin (7), (8) of IC1

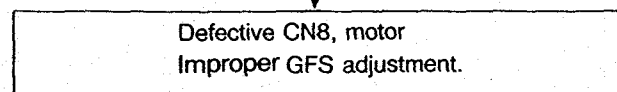
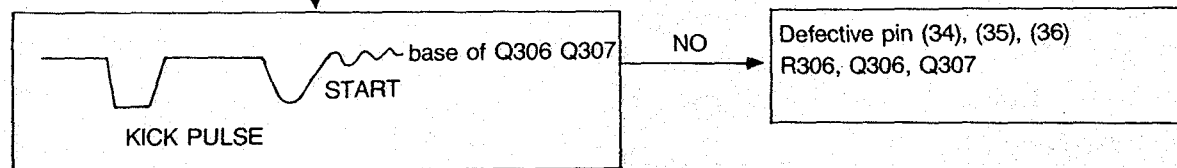
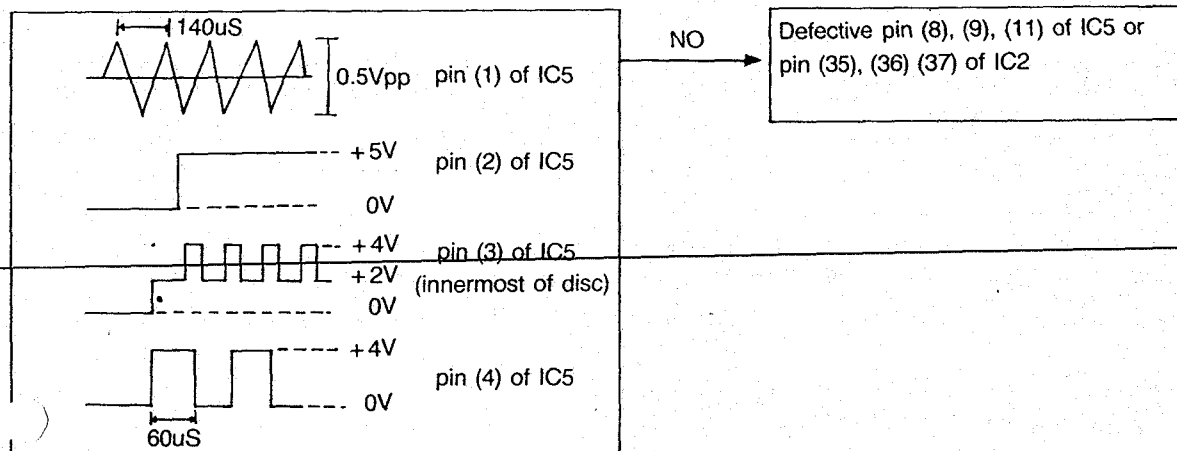
YES



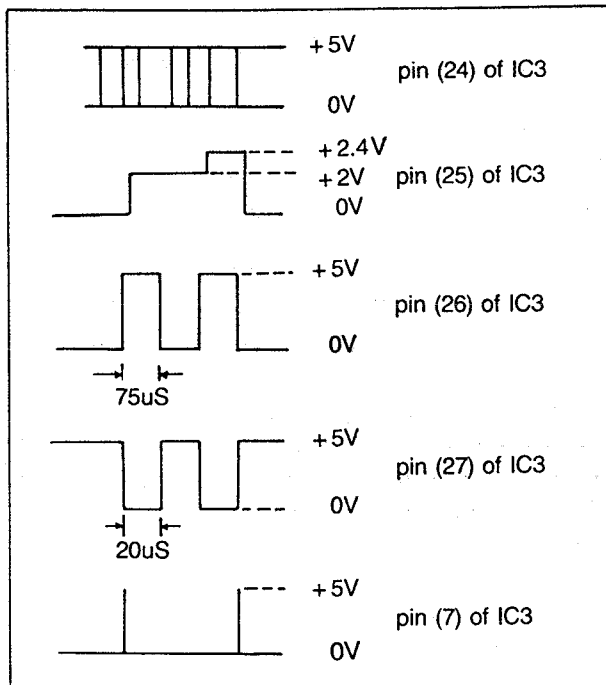
(6) Does tracking servo working?



(7) Does spindle motor rotate?



(8) Does the LEAD IN? (total track display)



NO

Defective pin (24), (25), (26), (27) of IC3, pin (23), (24), (25) of IC5
Defective R413, R414, R415, R416, 7404, 7405, Q402, Q403

YES

Defective C317, C318, C319, R311, R312, R313, R319, R320, Q301 • Improper PLL adjustment •

Defective pin (60), (61), (80) of IC5

(9) Output audio?

pin (9), (10), (11), of IC15 applied 88.2kHz

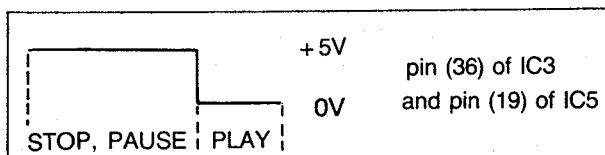
NO

Defective IC15, MUTE circuit.

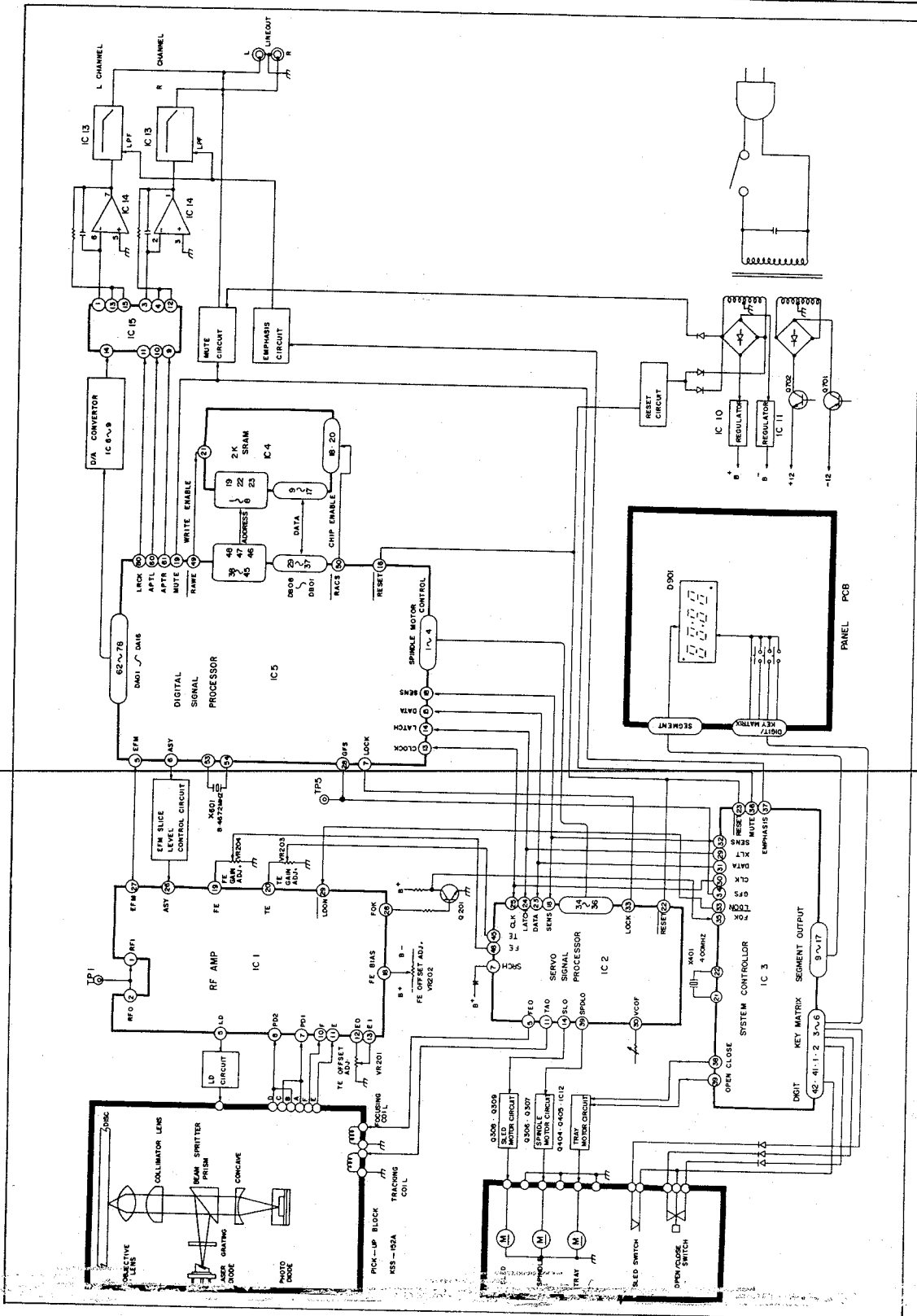
YES

pin (1), (7) of IC14 applied signal

•MUTE

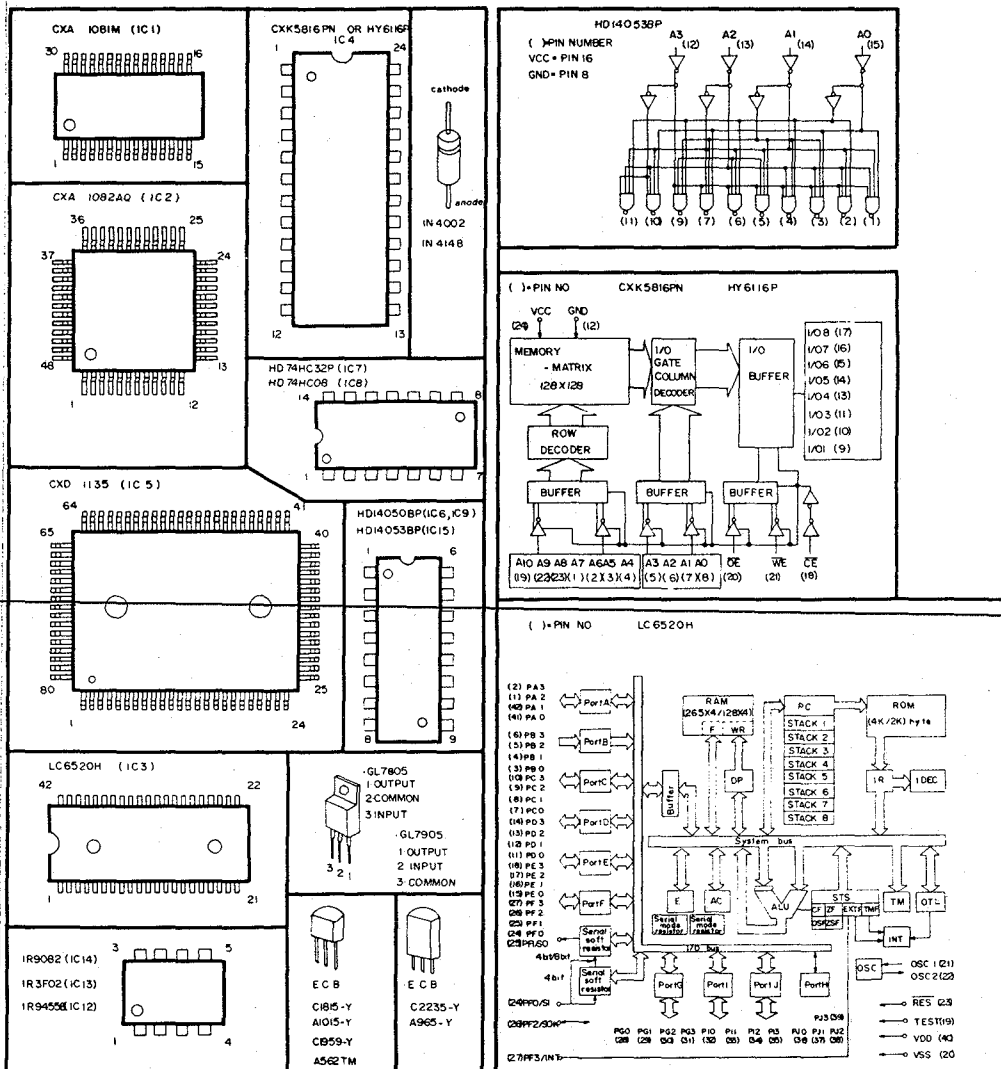


BLOCK DIAGRAM



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- SEMI CONDUCTOR PACKAGE



ELECTRICAL PARTS LIST

MAIN PCB

REF NO	RESISTORS	%	REF NO	RESISTORS	%
R101	CARBON 22 1/4W	5%	R419	CARBON 150K 1/6W	5%
R102	CARBON 220 1/6W	5%	R420	CARBON 150K 1/6W	5%
R201	CARBON 22K 1/6W	5%	R421	CARBON 3.3K 1/6W	5%
R202	CARBON 22K 1/6W	5%	R601	CARBON 680 1/6W	5%
R203	CARBON 3.3K 1/6W	5%	R602	CARBON 1K 1/6W	5%
R204	CARBON 10K 1/6W	5%	R603	CARBON 22K 1/6W	5%
R205	CARBON 100K 1/6W	5%	R604	CARBON 100K 1/6W	5%
R206	CARBON 10K 1/6W	5%	R605	CARBON 10K 1/6W	5%
R207	CARBON 1K 1/6W	5%	R606	CARBON 33K 1/6W	5%
R208	CARBON 1K 1/6W	5%	R607	CARBON 27K 1/6W	5%
R301	CARBON 470K 1/6W	5%	R608	CARBON 1K 1/6W	5%
R302	CARBON 10K 1/6W	5%	R609	CARBON 12K 1/6W	5%
R303	CARBON 100K 1/6W	5%	R610	CARBON 100K 1/6W	5%
R304	CARBON 100K 1/6W	5%	R611	CARBON 100K 1/6W	5%
R305	CARBON 82K 1/6W	5%	R612	CARBON 8.2K 1/6W	5%
R306	CARBON 82K 1/6W	5%	R613	CARBON 8.2K 1/6W	5%
R307	CARBON 18K 1/6W	5%	R614	CARBON 220K 1/6W	5%
R308	CARBON 6.8K 1/6W	5%	R615	CARBON 220K 1/6W	5%
R309	CARBON 180K 1/6W	5%	R616	CARBON 180 1/6W	5%
R310	CARBON 560K 1/6W	5%	R617	CARBON 180 1/6W	5%
R311	CARBON 10K 1/6W	5%	R618	CARBON 8.2K 1/6W	5%
R312	CARBON 100K 1/6W	5%	R619	CARBON 8.2K 1/6W	5%
R313	CARBON 100K 1/6W	5%	R620	CARBON 470 1/6W	5%
R314	CARBON 120K 1/6W	5%	R621	CARBON 680 1/6W	5%
R315	CARBON 3.3K 1/6W	5%	R622	CARBON 820 1/6W	5%
R316	CARBON 100K 1/6W	5%	R623	CARBON 1K 1/6W	5%
R317	CARBON 10K 1/6W	5%	R624	CARBON 100K 1/6W	5%
R318	CARBON 1M 1/6W	5%	R625	CARBON 4.7K 1/6W	5%
R319	CARBON 22K 1/6W	5%	R626	CARBON 470 1/6W	5%
R320	CARBON 10K 1/6W	5%	R627	CARBON 680 1/6W	5%
R401	CARBON 1K 1/6W	5%	R628	CARBON 820 1/6W	5%
R402	CARBON 5.6K 1/6W	5%	R629	CARBON 100K 1/6W	5%
R403	CARBON 47K 1/6W	5%	R630	CARBON 1K 1/6W	5%
R404	CARBON 82 1/6W	5%	R631	CARBON 4.7K 1/6W	5%
R405	CARBON 82 1/6W	5%	R632	CARBON 100K 1/6W	5%
R406	CARBON 82 1/6W	5%	R701	CARBON 1K 1/6W	5%
R407	CARBON 82 1/6W	5%	R702	CARBON 470 1/4W	5%
R408	CARBON 82 1/6W	5%	R703	CARBON 470 1/4W	5%
R409	CARBON 82 1/6W	5%	R704	CARBON 470 1/4W	5%
R410	CARBON 82 1/6W	5%	R705	CARBON 470 1/4W	5%
R411	CARBON 82 1/6W	5%	R706	CARBON 1K 1/6W	5%
R412	CARBON 82 1/6W	5%	R707	CARBON 1K 1/6W	5%
R413	CARBON 4.7K 1/6W	5%	R708	CARBON 1K 1/6W	5%
R414	CARBON 4.7K 1/6W	5%			
R415	CARBON 4.7K 1/6W	5%		CAPACITORS	
R416	CARBON 10K 1/6W	5%	C101	CERAMIC 100pF 50V	5%
R417	CARBON 82K 1/6W	5%	C102	ELECTROLYTIC 100μF 10V	10%
R418	CARBON 82K 1/6W	5%	C201	POLYESTER 0.01μF 50V	5%
			C202	ELECTROLYTIC 0.47μF 50V	10%

23

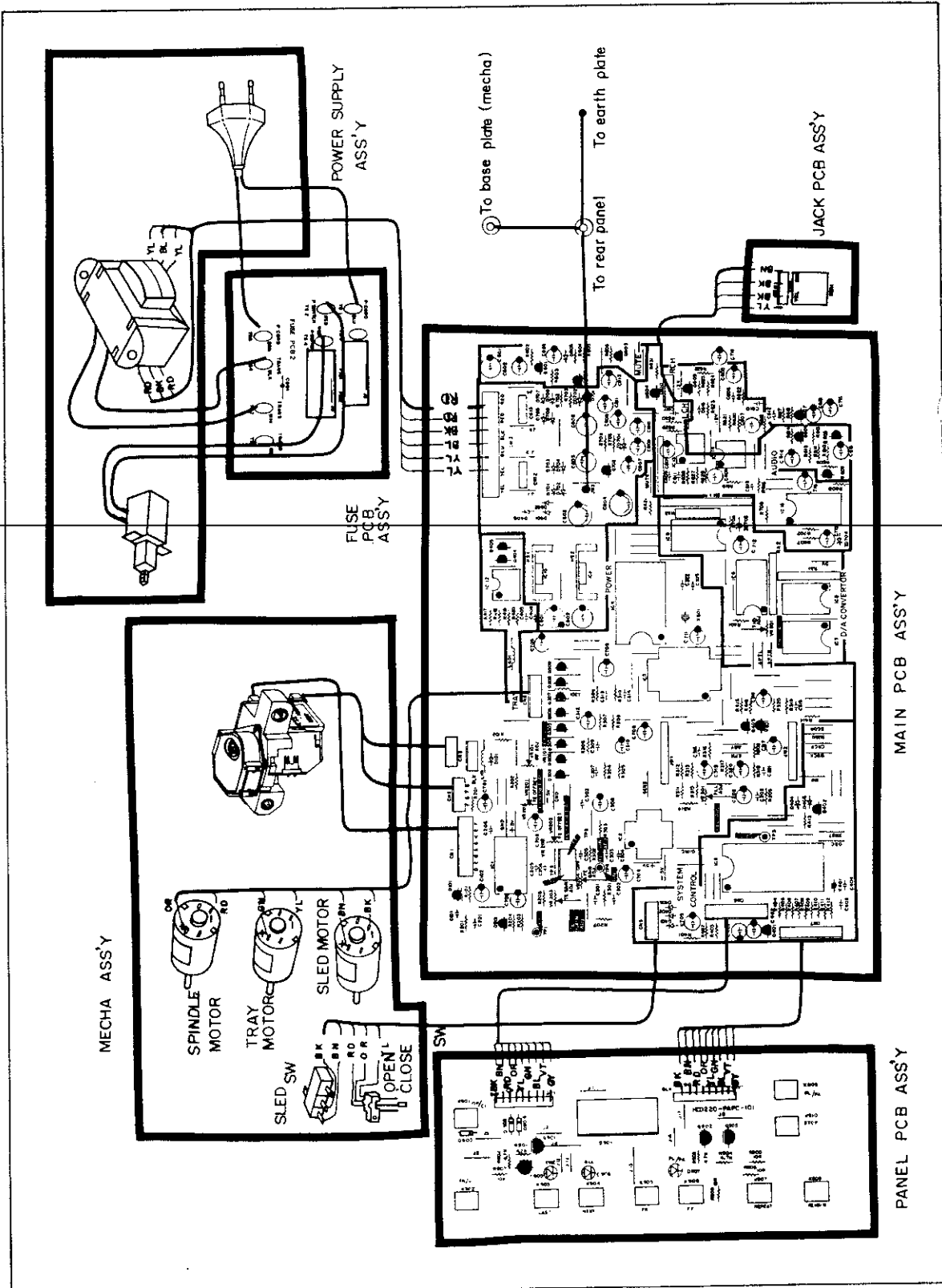
PANEL PCB

REF NO	TACT SWITCH	%
K901	OPEN/CLOSE KEY	
K902	TRACK/TIME KEY	
K903	LAST KEY	
K904	NEXT KEY	
K905	FR KEY	
K906	FF KEY	
K907	REPEAT KEY	
K908	REMAIN KEY	
K909	PLAY/PAUSE	
K910	STOP KEY	
DIODES		
D901	DIGIT DISPLAY	
D902	IN4148	
D903	IN4148	
D904	IN4148	
D905	ONE INDICATOR (RED)	
D906	ALL INDICATOR (RED)	
D907	PLAY/PAUSE INDICATOR (GREEN)	
RESISTORS		
R901	CARBON 4.7K 1/6W	5%
R902	CARBON 4.7K 1/6W	5%
R903	CARBON 4.7K 1/6W	5%
R904	CARBON 4.7K 1/6W	5%
R905	CARBON 10K 1/6W	5%
R906	CARBON 10K 1/6W	5%
R907	CARBON 10K 1/6W	5%
R908	CARBON 10K 1/6W	5%
HCD220 PAPC100	PANEL PCB ASS'Y	

FUSE PCB

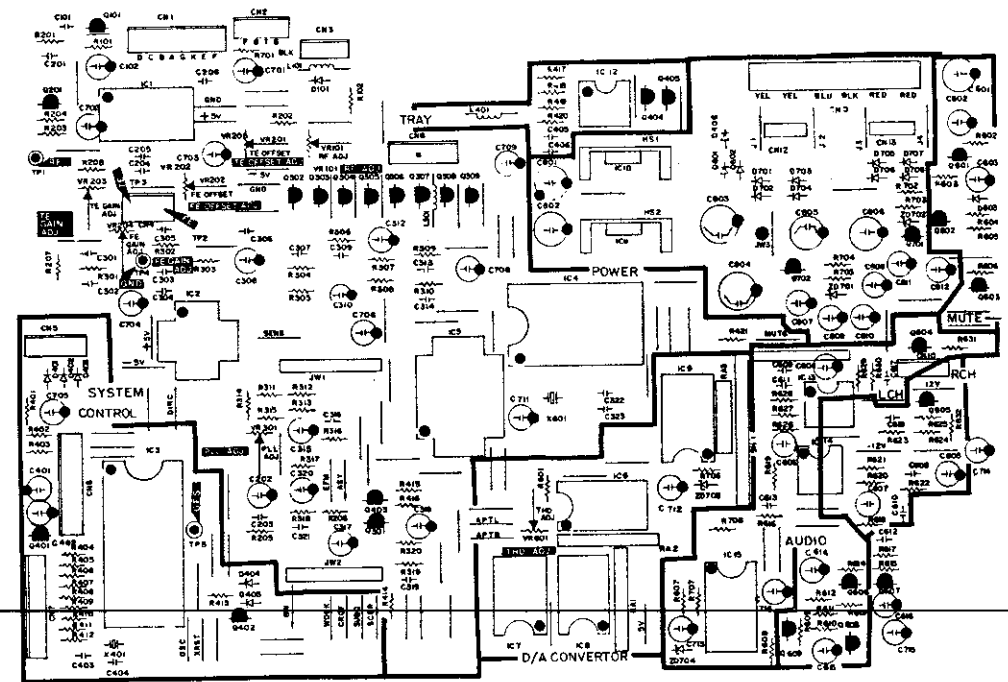
REF NO	FUSE PCB	
TS1	TAP STUD	
TS2	TAP STUD	
TS3	TAP STUD	
TS4	TAP STUD	
TS5	TAP STUD	
TS6	TAP STUD	
TS7	TAP STUD	
TS8	TAP STUD	
C901	LINE CROSS CAPACITOR 4700p 250V	
HCD220 FUPC100	FUSE PCB ASS'Y	

WIRING DIAGRAM

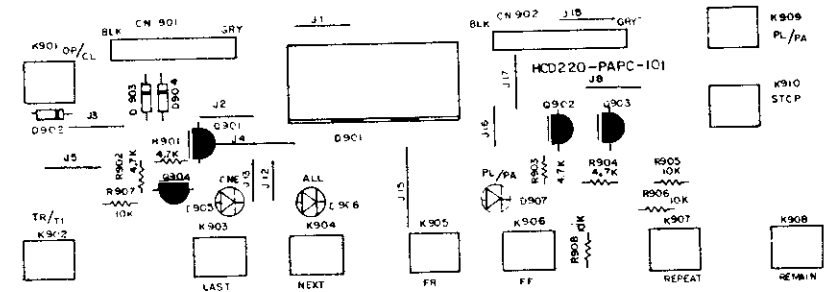


P.C BOARD

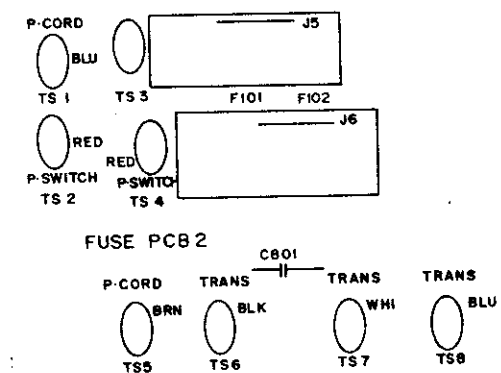
- MAIN PCB



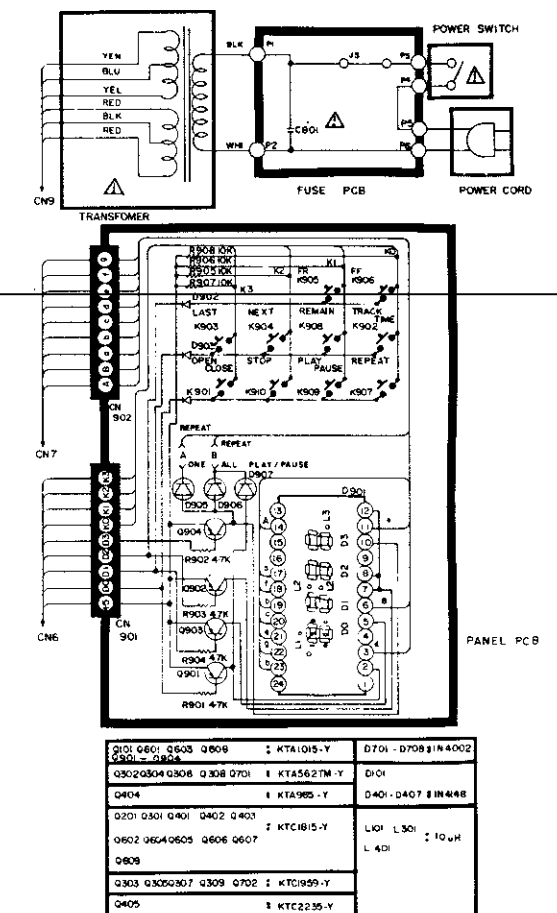
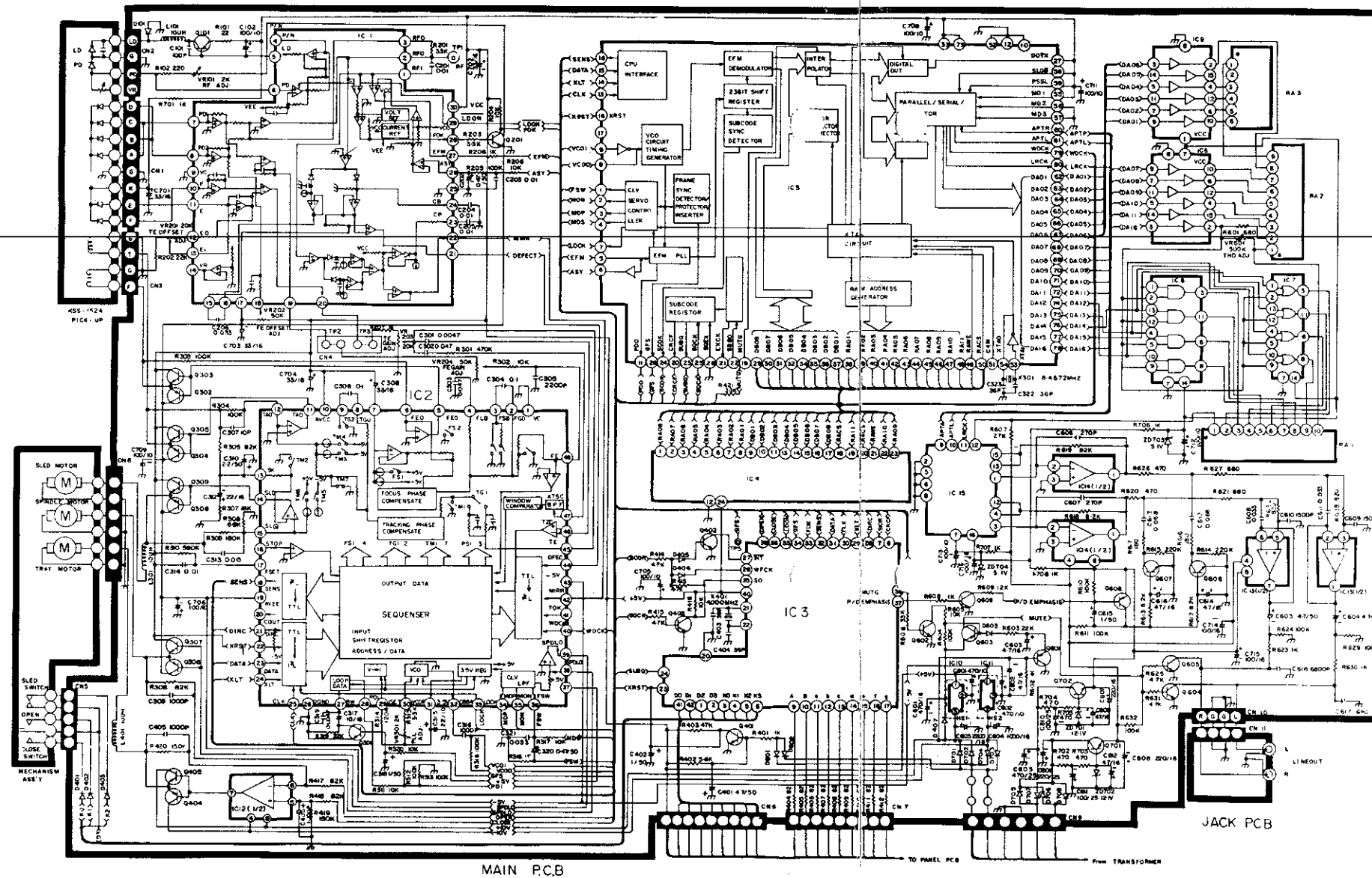
- PCB PANEL



- FUSE PCB



	SCHEMATIC DIAGRAM
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1 4DIGIT DISPLAY(D901) PIN DATA

PIN NO.	ADDRESS	PIN NO.	ADDRESS	PIN NO.	ADDRESS	PIN NO.	ADDRESS
1	X	7	U2 ANODE	13	X	19	X CATHODE
2	D0 ANODE	8	D2 ANODE	14	L3 CATHODE	20	X CATHODE
3	X CATHODE	9	X	15	X	21	X CATHODE
4	X	10	O5 ANODE	16	X	22	X CATHODE
5	D1 ANODE	11	X CATHODE	17	X CATHODE	23	L1 ANODE
6	L2 ANODE	12	L3 ANODE	18	F CATHODE	24	L1 CATHODE