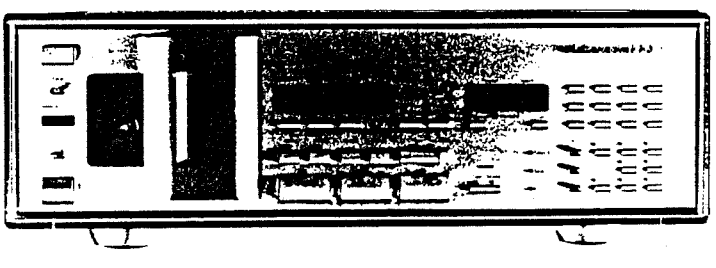
Nakamichi

Service Manual

Nakamichi 1000

Digital Audio Recorder



CONTENTS

1. GENERAL

1.1. Application

This service manual applies to the Models bearing serial Nos. A50101051 and greater.

1.2. CAUTIONS/WARNINGS

(1) Product Safety Notice

Parts marked with the symbol ⚠ in the schematic diagram have critical characteristics.

Use ONLY replacement parts recommended by the manufacturer.

It is recommended that the unit be operated from a suitable DC supply or batteries during initial check-out procedures.

(2) Leakage Current Check/Resistance Check

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 milliamp, or if the resistance from the chassis to either side of the power cord is less than 240 K ohms, the unit is defective.

WARNING - DO NOT return the unit to the customer until the problem is located and corrected.

1.3. Destinations

USA - U.S.A.	UK - United Kingdom
CAN - Canada	AUS - Australia
EP - Europe	OTR - Other
SWT - Switzerland	JPN - Japan

1.4. Consumer Version/Professional Version

In the consumer version and professional version, some parts differ. Parts for consumer version are indicated as [N-1000] in the parts list, and those for professional version are indicated as [N-1000 Pro.].

Ref. No.	Part No.	Description	Q'ty
	-	**Package Ass'y**	
01	-	Accessory Ass'y	1
02	0F04246A	Packing Top Left	1
03	0F04247A	Packing Top Right	1
04	0F04241B	Soft Sheet	1
05	0F04245B	Packing Bottom	1
06	0F04235A	Inner Carton	1
07	0F04229A	Top Sheet	1
08	0F04232A	Outer Carton	1

Ref. No.	Part No.	Description	Q'ty
	-	**Accessory Ass'y**	1
	0F04239B	Accessory Box	1
	0D03092B	Poly Bag (For Accessory)	1
	0D04212A	Poly Bag (For Knob)	1
	0F04238A	Poly Bag (For Drum Window)	1
	0D04939A	Owner's Manual (English/German/French)	1
	0D04940A	Owner's Manual (Japanese)	1
	0H05484B	Drum Window Aluminum	1
	0D04935A	Optical Cable (TOCP175ZL1.0)	2
	0D04937A	Coaxial Cable (QDX-101SL1.0)	2
	DA04259A	Tape Accessory Ass'y	1
	0E03535A	M4x12 + Countersunk [N-1000 Pro.]	6
	HA05720A	Handle Ass'y [N-1000 Pro.]	2

1.5. Package Ass'y and Accessory Ass'y

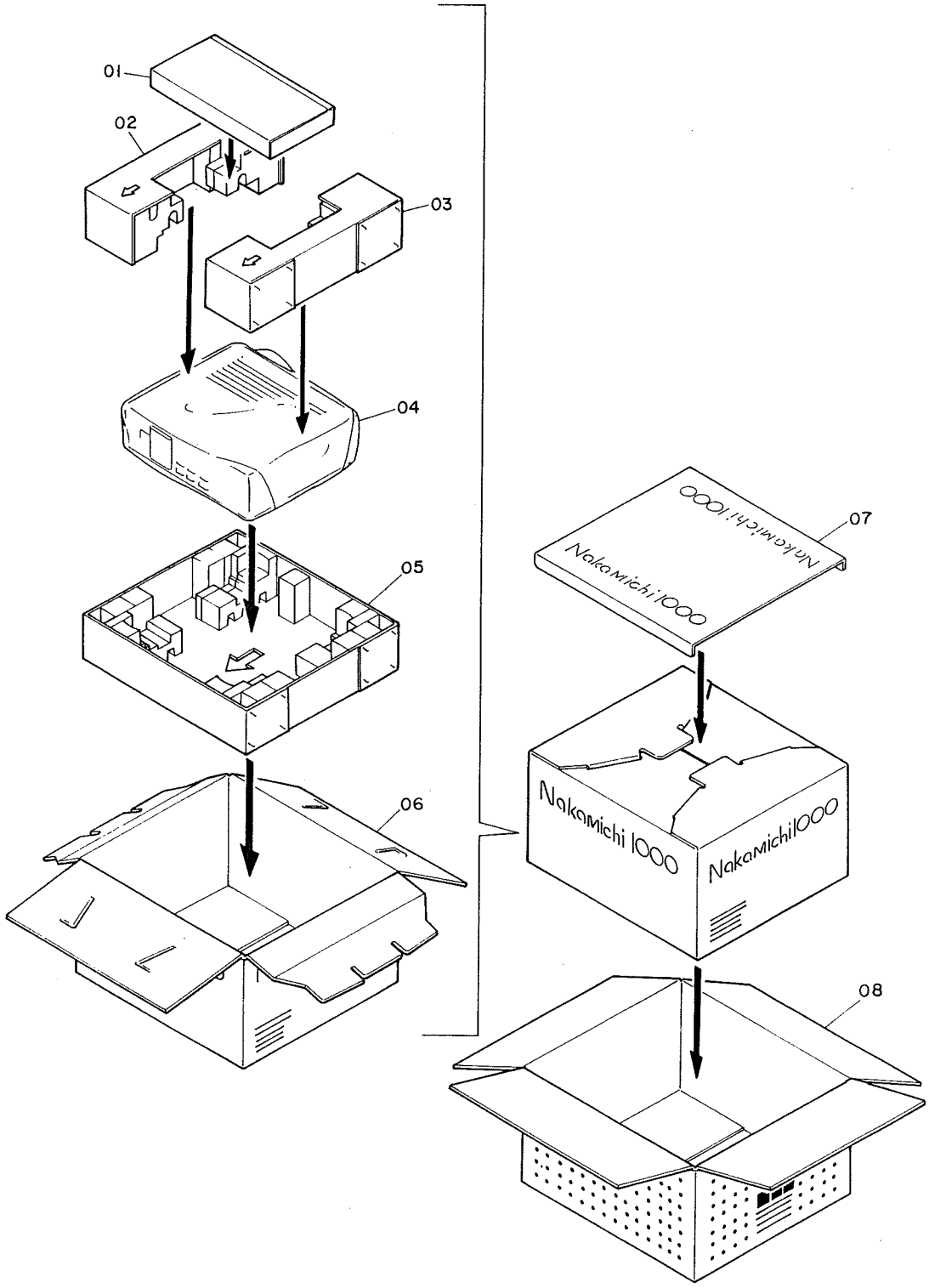


Fig. 1 Package Ass'y

2. REMOVAL PROCEDURES

2.1. Top Cover Front/Rear Ass'y

Refer to Fig. 2.1.

(1) Loosen screws F01 (3 pcs.) and remove F02 (Top Cover Rear Ass'y).
(2) Loosen screws F03 (2 pcs.), and slide F04 (Top Cover Front Ass'y) rearward to remove it.

2.2. Bottom Cover Front/Rear Ass'y

Refer to Fig. 2.2.

(1) Loosen screws F01 (4 pcs.) and F02 (1 pce.), and remove F03 (Bottom Cover Front Ass'y).
(2) Loosen screws F04 (4 pcs.) and F05 (1 pce.), and remove F06 (Bottom Cover Rear Ass'y).

2.3. Cassette Lid Ass'y and Drum Window

Refer to Figs. 2.3.1 and 2.3.2.

(1) Turn the power ON and press the EJECT button.
(2) Remove F01 (Cassette Lid Ass'y) in the direction of the arrow. See Fig. 2.3.1.
(3) Close the Cassette Compartment by hand and remove F03 (Drum Window) in the direction of the arrow. See Fig. 2.3.2.

2.4. Front Panel Ass'y

Refer to Fig. 2.4.

(1) Remove the Top Cover Front/Rear Ass'y referring to item 2.1.
(2) Remove the Bottom Cover Front Ass'y referring to item 2.2.
(3) Remove the Cassette Lid Ass'y referring to item 2.3.
(4) Loosen screws F01 (6 pcs.) and remove F02 (Front Panel Ass'y).
(5) Disconnect connectors of F02 (Front Panel Ass'y) from the main body.

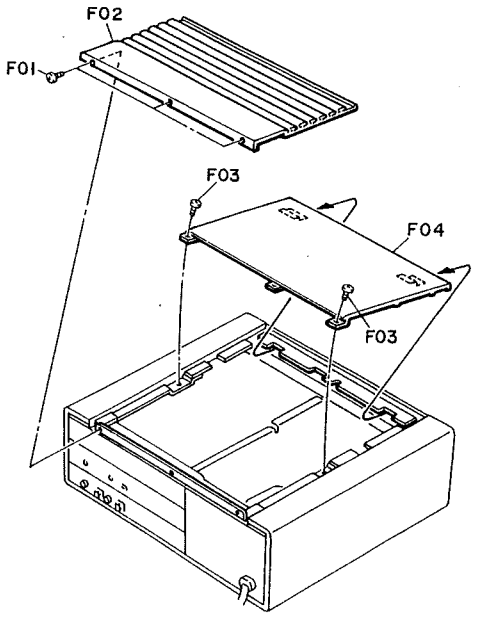


Fig. 2.1

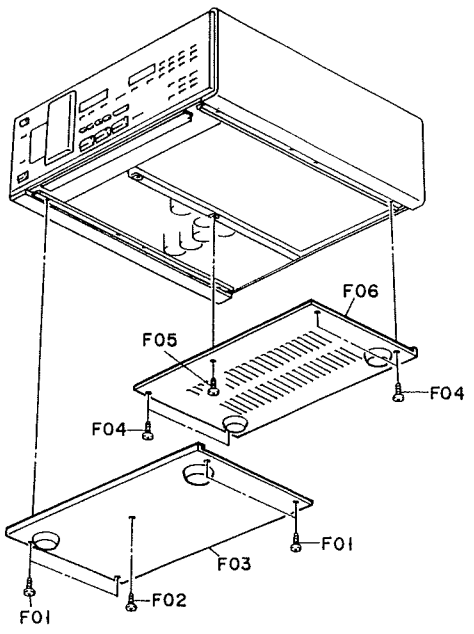


Fig. 2.2

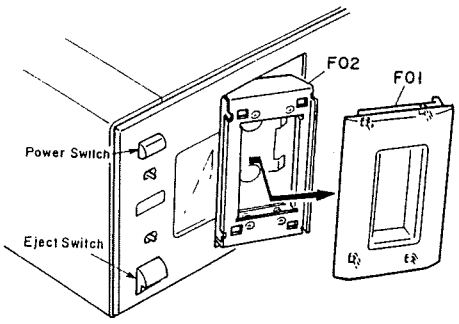


Fig. 2.3.1

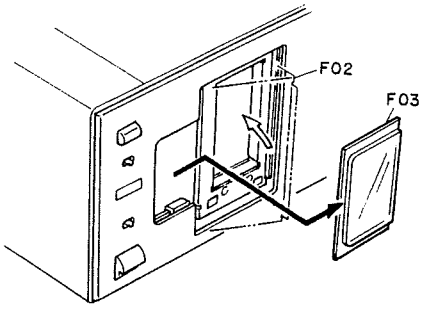


Fig. 2.3.2

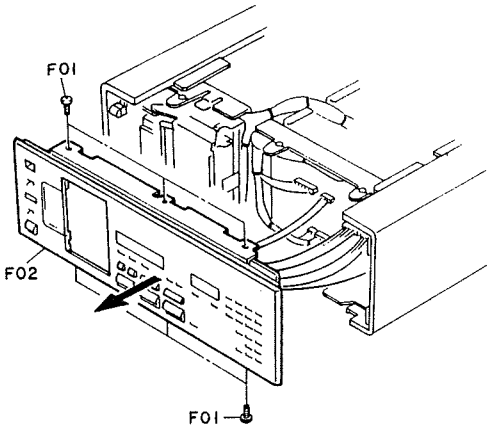


Fig. 2.4

2.5. Transport Mechanism Ass'y

Refer to Fig. 2.5.

(1) Remove the Front Panel Ass'y referring to item 2.4.
(2) Loosen screws F01 (3 pcs.) and remove F02 (Shield Cover).
(3) Loosen screws F03 (1 pce.) and F04 (2 pcs.).
(4) Disconnect connectors A and B, and other connectors of F05 (Transport Mechanism Ass'y) from the main body.

2.6. Side Panel Left/Right

Refer to Fig. 2.6.

(1) Remove the Top Cover Front/Rear Ass'y referring to item 2.1.
(2) Remove the Bottom Cover Front/Rear Ass'y referring to item 2.2.
(3) Loosen screws F01 (5 pcs.) and remove F02 (Side Panel Left).
(4) Loosen screws F03 (5 pcs.) and remove F04 (Side Panel Right).

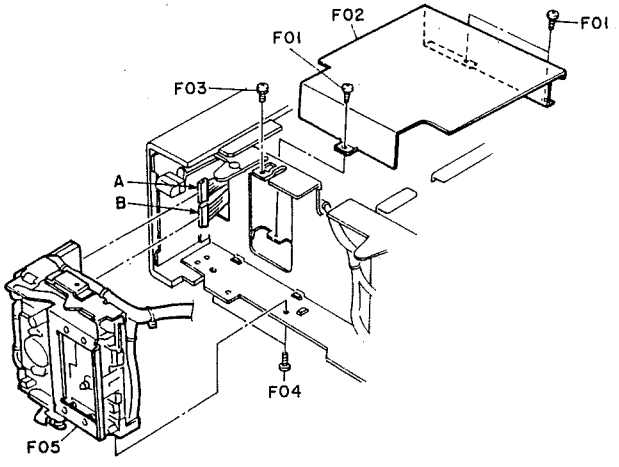


Fig. 2.5

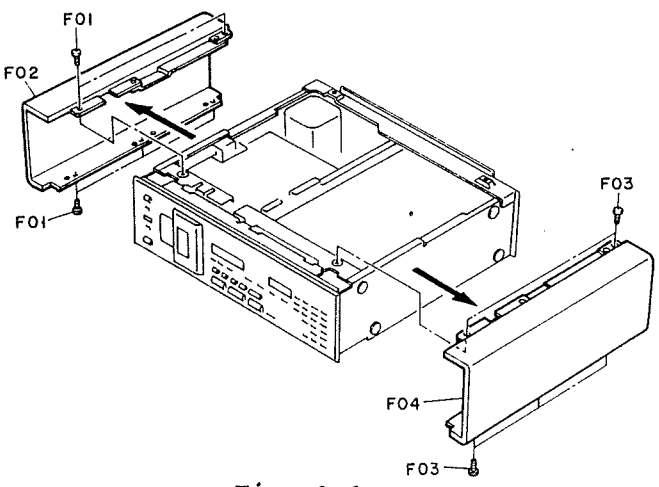


Fig. 2.6

2.7. u-COM P.C.B. Ass'y and DAIF-D P.C.B. Ass'y
Refer to Figs. 2.7.1 and 2.7.2.
(1) Loosen screws F01 (2 pcs.) and screw them into holes A. See Fig. 2.7.1.
(2) Hold the screw heads and pull out P.C.B. Ass'y along card rails. See Fig. 2.7.2.

2.8. Servo P.C.B. Ass'y
Refer to Fig. 2.8.
(1) Remove the Side Panel Right referring to item 2.6.
(2) Loosen screws F01 (1 pce.) and F02 (2 pcs.), disconnect connectors, and remove F03 (Servo P.C.B. Ass'y) along card rails.

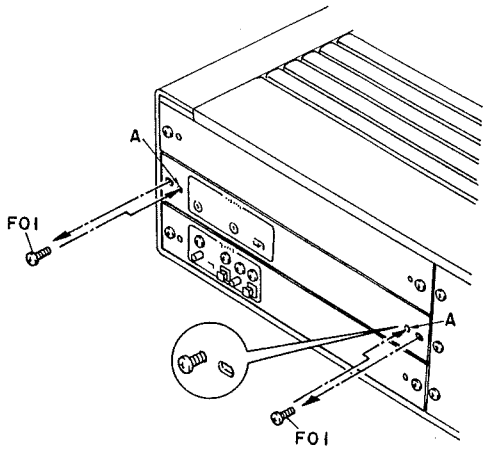


Fig. 2.7.1

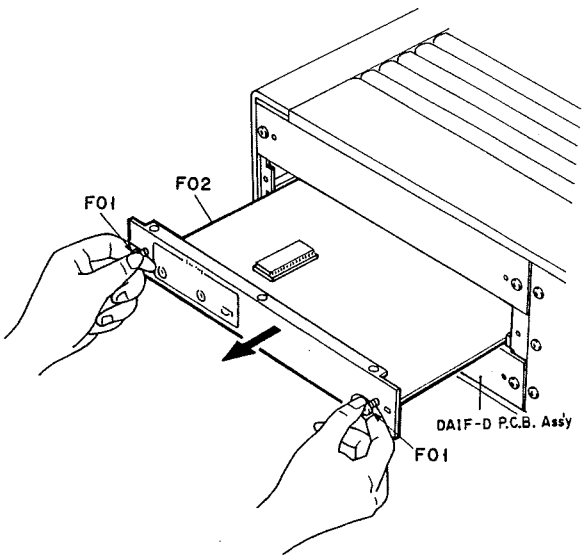


Fig. 2.7.2

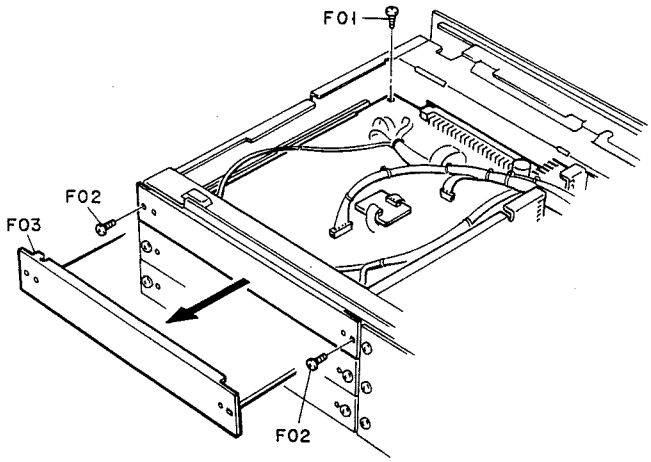


Fig. 2.8

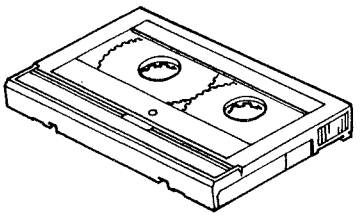
3. MEASUREMENT INSTRUMENTS

(1) Frequency Counter (8-Digit)
(2) Digital Voltmeter (DC Voltmeter)
(3) Oscilloscope with delay trigger function (100 MHz or more)
(4) Digital Signal Generator (Fs: 48 kHz/44.1 kHz/32 kHz)

4. TEST TAPES, JIGS AND GAUGES

4.1. Test Tapes

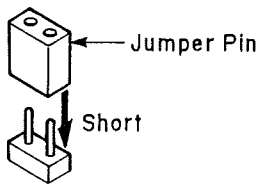
Part No.	Description
DA09140A	Sony TW-7131 (Torque Meter)
DA09141A	Sony TY-7111 (Level Check Tape)
DA09142A	Sony TY-7251 (Tracking Check Tape)
DA09145A	Fs48 kHz Tape
DA09146A	Fs44.1 kHz Tape
DA09143A	Fs32 kHz Tape
DA09144A	TS Link Cassette (Take-up reel and supply reel are directly engaged with gears. Rotational frequency ratio between both reels is 1:1.)
DA09147A	Reference Tape (120 min.)

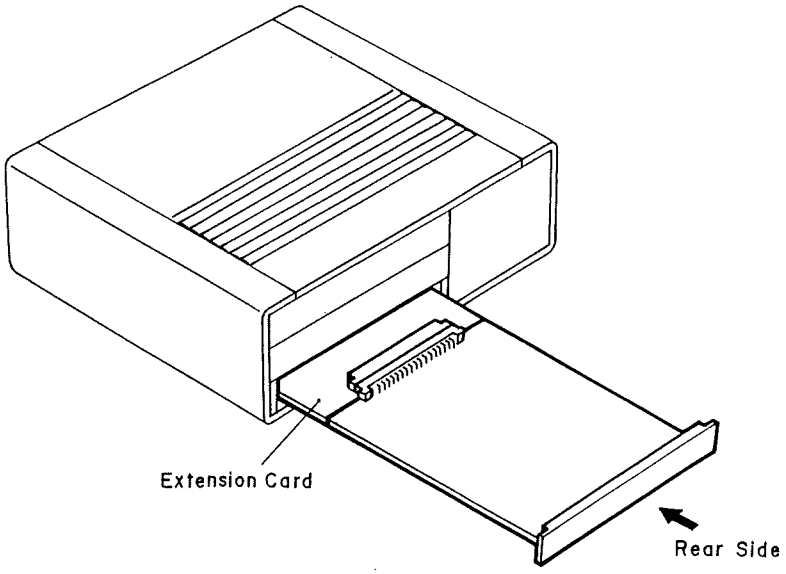


TS Link Cassette

4.2. Jigs for Electrical Adjustments

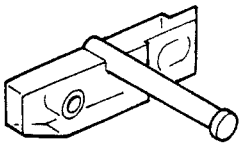
Part No.	Description
0B84118A	Jumper Pin (Used for shorting jumper connector on the P.C. Board.)
DA09139A	Extension Card (Can check μ-COM P.C.B. Ass'y or DAIF-D P.C.B. Ass'y as shown below. This Extension Card can be used for Nakamichi 1000P Digital Audio Processor.)





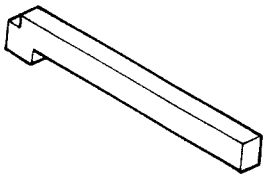
4.3. Jigs and Gauges for Mechanical Adjustments

Part No.	Description
DA09152A	Adjustment Kit
	Consists of the following items:
	(0D09050A Pilot Gauge)
	(0D09055A Guide Adjuster)
	(0D09056A Preset Bar)
	(0D09057A Preset Spacer 0.4)
	(0D09059A Sensor Adjuster Bit)
	(0D09060A Stroke Adjuster Bit)
	(0D09061A Adjuster Grip)
DA09149A	Stroke Check Gauge

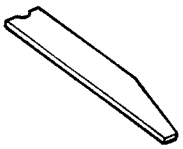


Pilot Gauge

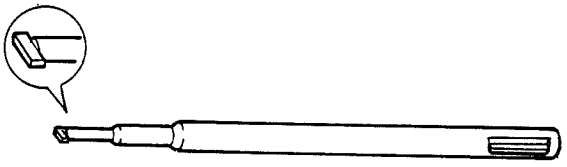
Guide Adjuster



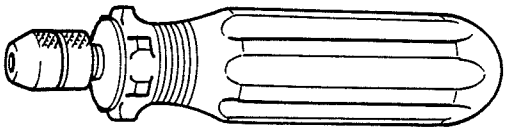
Preset Bar



Preset Spacer 0.4

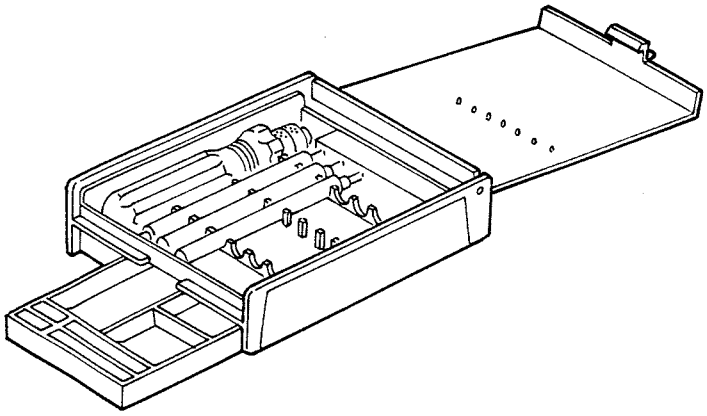


Stroke Adjuster Bit

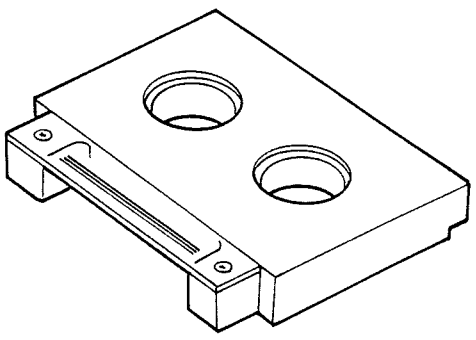


Adjuster Grip

Sensor Adjuster Bit



Adjuster Kit



Stroke Check Gauge

5. ELECTRICAL ADJUSTMENTS

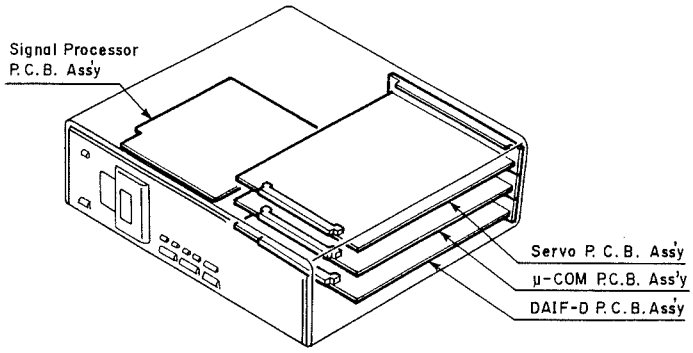
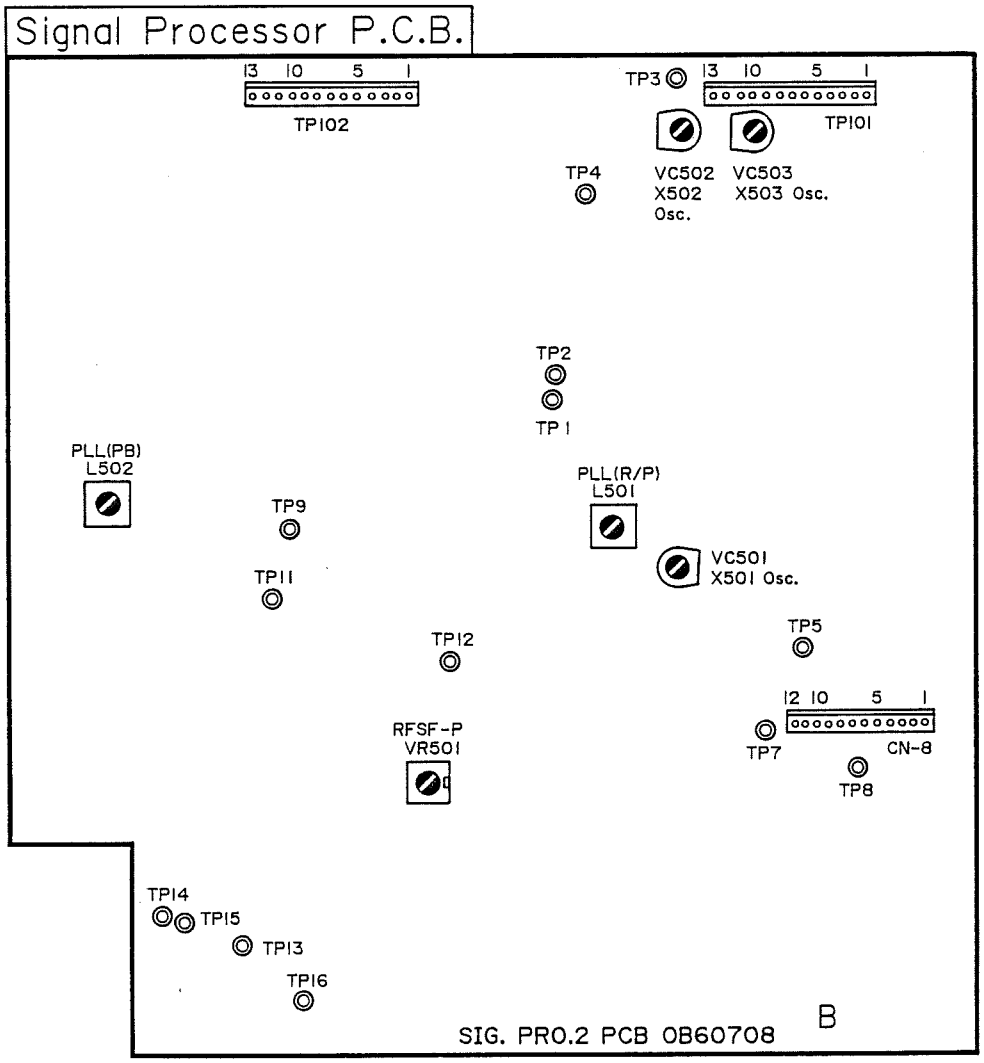


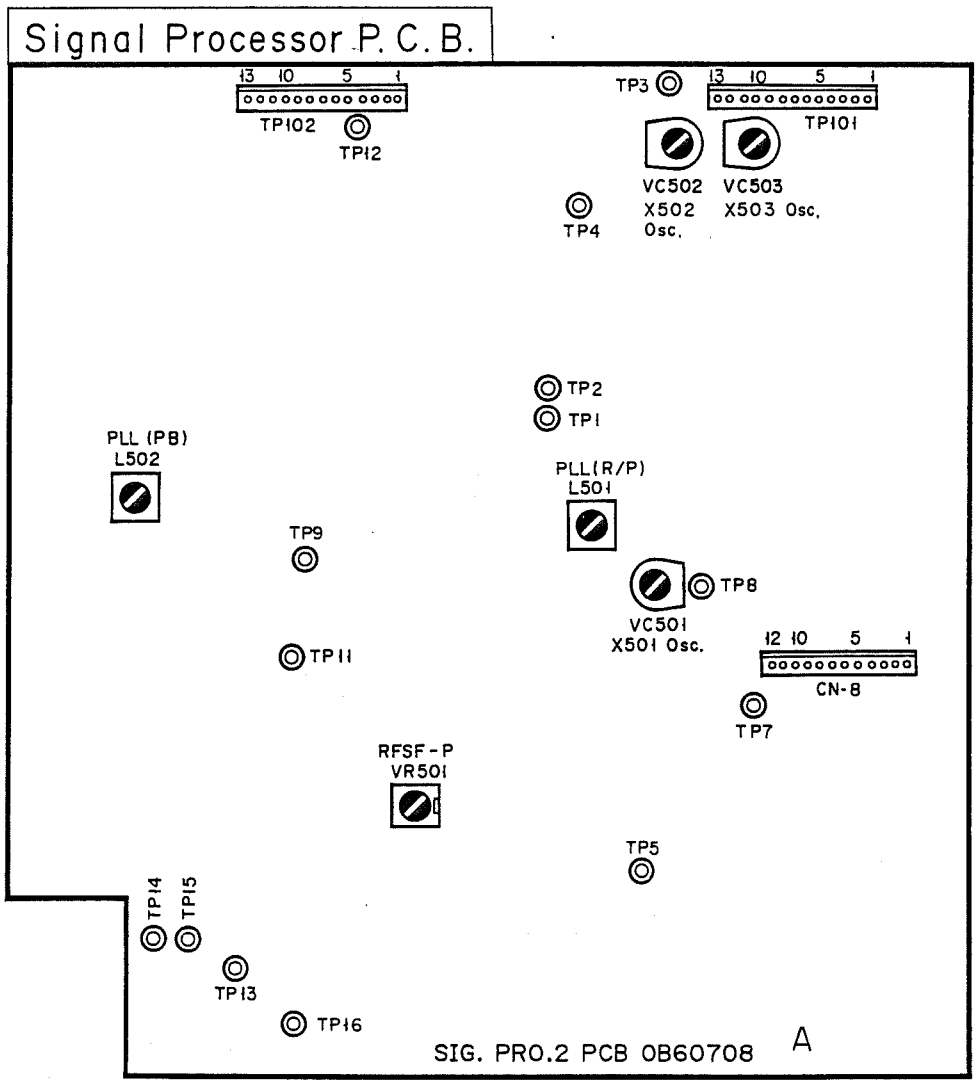
Fig. 5.1 Nakamichi 1000 (Front View)

5.1. Parts Location for Electrical Adjustment



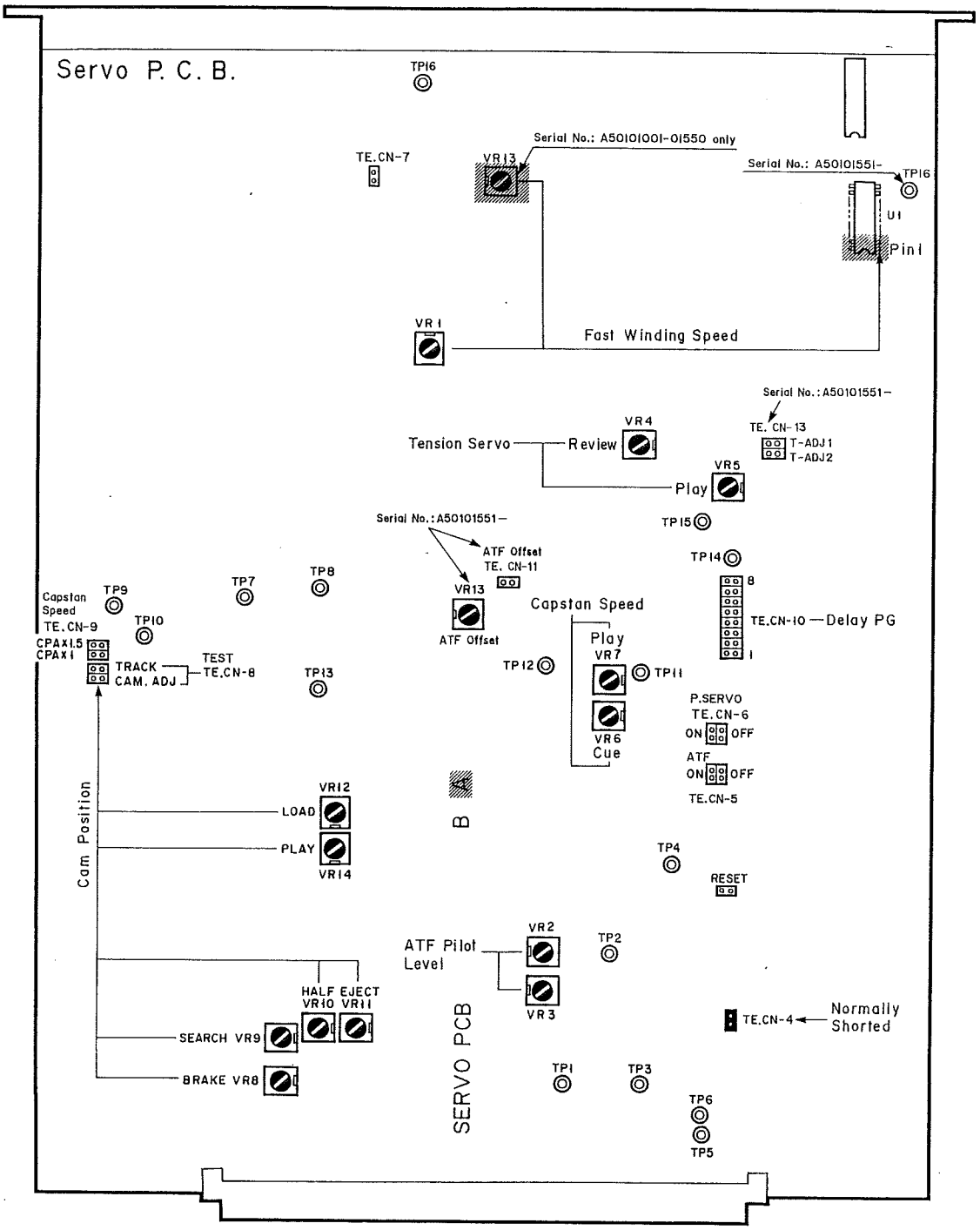
(Front Side)

Fig. 5.2.1 Signal Processor P.C.B. Ass'y (Pattern B)



(Front Side)

Fig. 5.2.2 Signal Processor P.C.B. Ass'y (Pattern A)

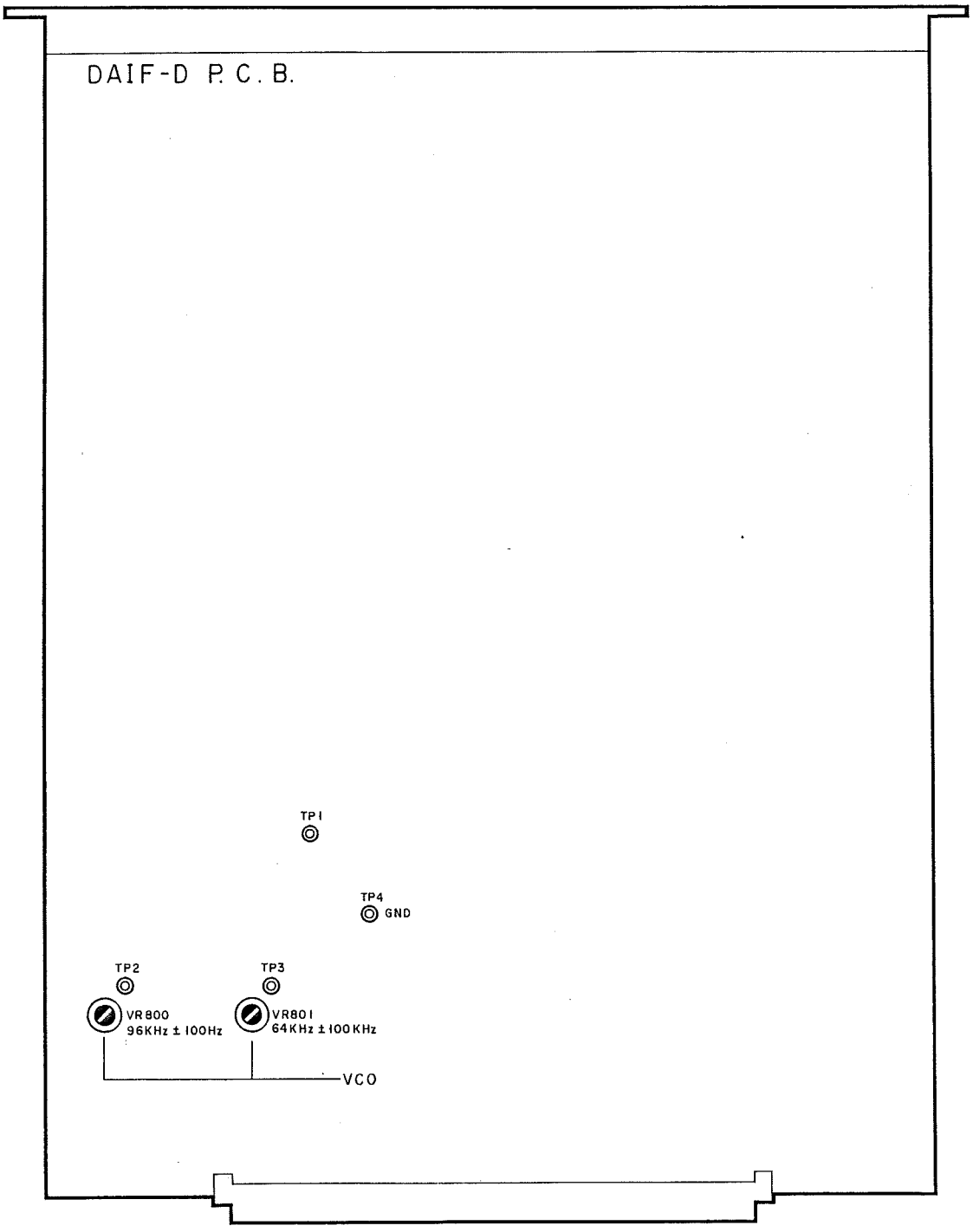


(Front Side)

For serial No. A50101051 - 01550 : Pattern No. 0B60710A
For serial No. A50101551 - : Pattern No. 0B60710B

- o TP16 (same as pin 1 of U1) is added.
- o Former VR13 is removed. New VR13 is added together with TE.CN-11 (ATF OFFSET) for ATF offset adjustment.
- o TE.CN-13 (T-ADJ1/2) is added.

Fig. 5.3 Servo P.C.B. Ass'y



(Front Side)

Fig. 5.4 DAIF-D P.C.B. Ass'y

5.2. Test Points, Jumper Connectors and LEDs

(1) Test Points

TP No.	Signal Name	Description
(Servo P.C.B. Ass'y)		
TP1	RF IN	PB (Playback) envelope signal
TP2	PILOT	ATF (Automatic Track Finding) Pilot level
TP3	GND	GND
TP4	SVRF	Servo Reference signal (100/3Hz)
TP5	SWP	Switching Pulse
TP6	DPG	DPG (Delay PG (Phase Generator)) signal
TP7	DRUM FG	Drum Frequency Generator signal
TP8	DRUM PG	Drum Phase Generator signal
TP9	CAPSTAN FG	Capstan Motor Frequency Generator signal
TP10	GND	GND
TP11	CAP SV ERR	Capstan phase servo error signal
TP12	ATF ERR	ATF (Auto Track Following) error signal
TP13	CAP MTRV	Capstan motor voltage
TP14	DRUM CONT	Drum control voltage
TP15	TENS SENSE	Tension Sensor output voltage
TP16	TREEL PULSE	Take-up side Reel Pulse (Serial No.:A50101551 -)
(Signal Processor P.C.B. Ass'y)		
TP1	SWP	Switching Pulse
TP2	SVRF	Servo Reference Signal (100/3 Hz)
TP3	CLKO	Pin for monitoring 18.816 MHz (X501)
TP4	DFCK	Pin for monitoring halved frequency (128Fs) of 24.576 MHz (X502)/22.5792 MHz (X503)
TP5	PCM.EQ OUT (R/P)	Envelope on R/P (Record/Playback) side
TP7	BIT PLL CONT (R/P)	PLL control voltage on R/P side
TP8	GND (R/P)	GND on R/P side
TP9	PCM EQ OUT (PB)	Envelope on PB (Playback) side
TP11	BIT PLL CONT (PB)	PLL control voltage on PB side
TP12	GND (PB)	GND on PB side
TP13	EXSY-P	EXSY signal on PB side
TP14	SWP-P	Switching Pulse on PB side
TP15	DPG-P	DPG (Delay PG) signal on PB side
TP16	RFSF-P	RFSF signal on PB side

(2) Jumper Connectors (Servo P.C.B. Ass'y)

When adjusting, jumper connectors should be shorted with jumper pins as required.

CN No.	Description
TE.CN-4	PLLK Note: This connector must be shorted normally.
TE.CN-5	ATF setting o ATF OFF: ATF turns OFF forcedly. o ATF ON : ATF turns ON forcedly. (But, turns OFF in Record mode.) o Open : Normal setting

CN No.	Description
TE.CN-6	Capstan phase servo setting o Phase serve OFF: Phase servo turns OFF forcedly. o Phase servo ON : Phase servo turns ON forcedly. (But, turns OFF in Cue/Rew. mode.) o Open : Normal setting
TE.CN-7 (SH TAPE TEST)	Shock protection at tape end in FF/REW mode o Open : Normal setting o Short: When fast-winding (FF/REW) a shorter tape (less than 30 min.) such as test tapes TY-7111 and TY-7251, this connector must be shorted to aviod damages on the Transport Mechanism Ass'y and the tape at the tape end.
TE.CN-8	Test mode select connector o CAM ADJ short: For cam position check o Open : Normal setting o TRACK short : For testing tracking using TY-7251 Note: Turn OFF the power and then ON when selecting this connetor.
TE.CN-9 (CAP SPEED)	Capstan speed setting o CAPx1 : Forcedly selects one time speed (Rec./Play/Cue/Review). o Open : AUTO (Normal setting) o CAPx1.5: Forcedly selects one and a half times speed (Rec./Play/Cue/Review).
TE.CN-10	Delay PG (Phase Generator) pulse width setting (8-pin connector) Jumper pin setting depends on the characteristics of the Transport Mechanism Ass'y. (One or more jumper pins are inserted.)
TE.CN-11 (ATF OFFSET)	ATF offset adjustment With the jumper inserted, ATF offset adjustment by VR13 becomes possible at ATF ON condition.
TE.CN-13 (T-ADJ)	Tension servo (tension sensor offset) adjustment Adjustable range of VR5 varies with the jumper pins T-ADJ1/T-ADJ2 setting.
RESET	Drum serve alarm reset o Open : Normal setting o Short: Resets alarm, but not used normally.

(3) LEDs (Servo P.C.B. Ass'y)

LEDs on the Servo P.C.B. Ass'y show condition of the Nakamichi 1000. So LEDs are useful for service work to see whether circuits including the Transport Mechanism Ass'y operate correctly or not.

LED	Meaning of LED ON
ED23 (Red)	Drum brake is working.
ED24 (Yellow)	PLLK (If OFF in Playback mode, signal process system will be defective.)

LED	Meaning of LED ON
ED26 (Red)	Alarm (Lights in Search mode when lock-failed though RF (Radio Frequency) exsists.) In this case, RESET connector on the Servo P.C.B. Ass'y must be shorted to release the alarm.
ED27 (Orange)	Drum Just Lock. Drum phase servo locked. (If OFF in Playback mode, the Transport Mechanism Ass'y or servo system will be defective.)
ED28 (Green)	Drum Just Speed. Drum speed servo locked. (If OFF in Playback mode, the Transport Mechanism Ass'y or servo system will be defective.) *: ED28 will turn ON when speed is established, and then ED27 will turn ON when phase lock is established in drum rotational frequency control system.
ED35 (Green)	ATF ON (During ON, sound is output in Playback mode.)
ED36 (Red)	Capstan Phase Servo ON (Lights when capstan phase servo is ON in Record/Playback mode.)
ED40 (Red)	Cam Position Change (from Play to Eject direction) (Pulsively lights when mode is changed and cam moves.)
ED41 (Green)	Cam Position Change (from Eject to Play direction) (Pulsively lights when mode is changed and cam moves.)

The following Table shows the relationship between modes and LEDs on the Servo P.C.B. Ass'y. (o: ON, -: OFF)

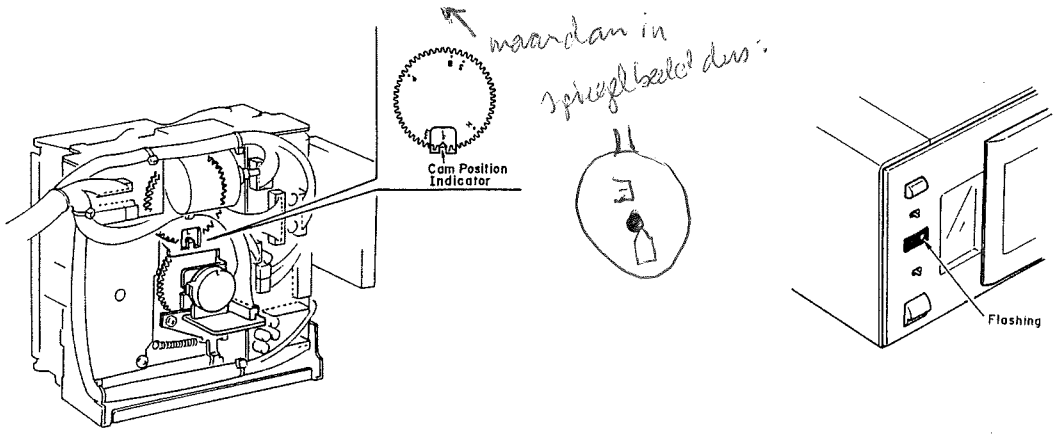
Mode	ED23 RED	ED24 YEL	ED26 RED	ED27 ORN	ED28 GRN	ED35 GRN	ED36 RED	ED40 RED	ED41 GRN
Stop	-	-	-	-	-	-	-	-	-
Play	-	o	-	o	o	o	-	-	-
F.Fwd.	-	o	-	-	-	-	-	-	-
Rew.	-	o	-	-	-	-	-	-	-
Search	-	o	-	-	-	-	-	-	-
Rec./Play	-	o	-	o	o	-	o	-	-
Pause	-	o*	-	o	o	-	-	-	-
Rec./Pause	-	o**	-	o	o	-	-	-	-

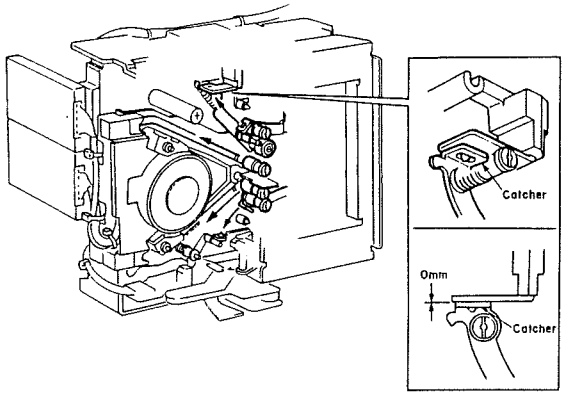
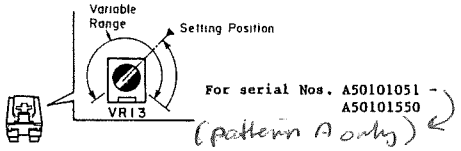
*: OFF in case a brand new tape is used.
**: ON or OFF (indefinite)

5.3. Adjustment Instructions

Notes:
1. Perform the adjustment in the order of Steps (1) through (14).
2. Connection of probes of measurement instruments and insertion of jumper pins must be done after turning OFF the power.
3. Note that jumper pins for testing must be removed after adjustment. (TE.CN-4: Normally short, TE.CN-10: DPG setting pin (do not remove.))
4. When replacing the Servo P.C.B. Ass'y with new one, pay attention to the followings:
   - o Jumper pin setting must be the same as for the current Ass'y.
   - o Semi-fixed volume setting angle must be the same as for the current Ass'y.
5. Revision History for the Provisional Service Manual
   - o Step 5 has been modified.

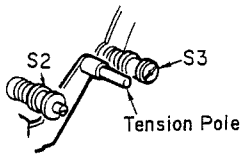
STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUST-MENT	REMARKS
1	Preparation for Adjustment					1. Remove the Top Cover. 2. Check that the jumper connector TE.CN-4 on the Servo P.C.B. Ass'y is shorted with a jumper pin. 3. Set the Nakamichi 1000 as follows: Timer Switch -- OFF Auto Play Switch -- OFF Auto Start ID Switch -- OFF Skip Switch -- OFF Auto Switch -- OFF Digital Input Selector (on Rear Panel) -- Coaxial
2	VCO Adjustment (DAIF-D P.C.B.)	Digital Signal Generator (Fs=48kHz/ 44.1 kHz/ 32 kHz) to Digital Input (Coaxial) Jack on Rear Panel	Frequency Counter: TP2, TP3 & TP4 (GND) (10:1 probe) Oscilloscope : TP1 & TP4 (GND) (DAIF-D P.C.B.)	Stop	DAIF-D P.C.B. VR800 (96 kHz) VR801 (64 kHz)	1. Connect the DAIF-D P.C.B. Ass'y through an Extension Card. 2. Remove a digital input signal. 3. Adjust VR800 to obtain 96 kHz ±100 Hz on the Frequency Counter at TP2. 4. Adjust VR801 to obtain 64 kHz ±100 Hz on the Frequency Counter at TP3. Operational Check: 1. Connect a digital input signal. 2. Feed in Fs 48 kHz/32 kHz/44.1 kHz and check that the voltage at TP1 is in a range of 2 to 7 V on the oscilloscope. Note: Voltage at TP1 will be 0 V, or more than 8.5 V if lock of PLL fails. 3. Remove the Extension Card and connect the DAIF-D P.C.B. Ass'y in place.
3	Cam Position Adjustment (Servo P.C.B.)	None	None	Stop/Play/ Eject/Pause/ F.Fwd./Rew.	Servo P.C.B. VR12 (Load) VR14 (PLAY) VR11 (EJECT) VR10 (HALF) VR9 (SEARCH) VR8 (BRAKE) Jumper Pin TE.CN-8 CAM ADJ short	1. Turn the power OFF and insert a jumper pin into TE.CN-8 (CAM ADJ side). 2. Turn the power ON and check that the LED of Remote Control Sensor on the Front Panel flashes as shown below. 3. Press the STOP button and adjust VR12 so that the Cam Position Indicator indicates "L (Load)" viewing from the rear side of the Transport Mechanism Ass'y. See the left. 4. Press the PLAY button and adjust VR14 so that the Cam Position Indicator indicates "P (Play)". 5. Repeat 3 and 4 two to three times. 6. Press the EJECT button and adjust VR11 so that the Cam Position Indicator indicates "E (Eject)". 7. Press the PLAY button and then PAUSE button, and adjust VR10 so that the Cam Position Indicator indicates "H (Half)". In this condition, check the followings: (to be continued.)



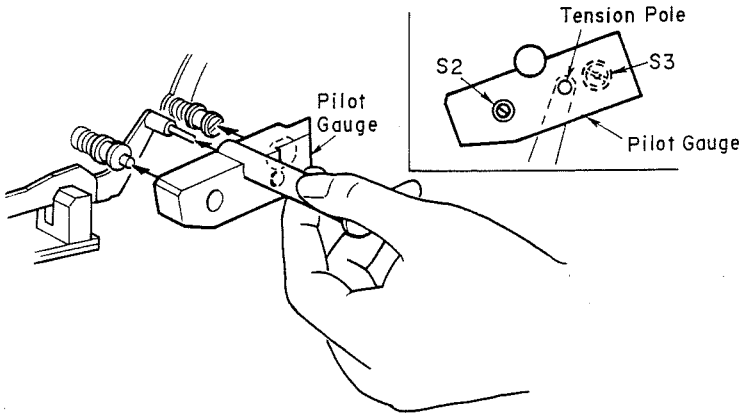
STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUST-MENT	REMARKS
						o The Catcher of Guide Roller engages with the other party and no gap exists as shown in the left. o Press the PLAY button and then PAUSE button, and make sure that guides T3 and S3 do not move at all. If they don't move, no gap condition is still maintained. (Guide T3 tends to move.) Note: If gap is found, re-adjust VR10. Re-adjustment causes the cam position "H (Half)" to shift. However, gap adjustment has priority over the cam position "H (Half)" adjustment. 8. Press the F.FWD button and adjust VR9 so that the Cam Position Indicator indicates "S (Search)". 9. Press the REW button and adjust VR8 so that the Cam Position Indicator indicates "B (Brake)". 10. Repeat 3 through 9 once and check for correct cam positions. 11. Press the STOP button, turn the power OFF, and remove the jumper pin of TE.CN-8.
4	Fast-winding Speed Adjustment (Servo P.C.B.)	TS Link Cassette (DA09144A)	Frequency Counter: Pin 1 of U1 (4069) (or TP16 for serial Nos. A50101551 and greater) (Time Base -- 0.1 sec) (Servo P.C.B.)	F.Fwd./Rew. (Normal Fast-winding Speed, 200 times)	Servo P.C.B. VR1	1. Load a TS Link Cassette and press the F.FWD button once. 2. Adjust VR1 to obtain 405 ±5 Hz on the Frequency Counter. 3. Press the REW button once and check whether the Frequency Counter reads 395 to 415 Hz. Note: Press the F.FWD/REW button once to set the Nakamichi 1000 in normal fast-winding speed (200 times) mode. If the button is pressed twice, the Nakamichi 1000 will enter high-speed (400 times) winding mode. **Caution :** For serial Nos. A50101051 to 01550 only, turn VR13 fully clockwise and then return it by one-third of variable range as shown below before adjustment. 
5	Tension Servo Adjustment (Servo P.C.B.)	TS Link Cassette (DA09144A) Sony TW-7131 (Torque Meter)	Digital (DC) Voltmeter: TP15 (Servo P.C.B.)	Playback/ Review	Servo P.C.B. VR5 (Play-back) VR4 (Review) Jumper Pin TE.CN-13 T-ADJ1 T-ADJ2	1. Load a TS Link Cassette and play it back. 2. Adjust VR5 to obtain 0.4 V ±0.05 V on the Digital Voltmeter. Note: If satisfactory result is not obtained, remove TE.CN-13 T-ADJ1 or T-ADJ2 to shift the variable range level of VR5. 3. Eject the TS Link Cassette, load a Torque Meter (TW-7131), play it back, and check the followings: o Torque on supply side is 5g ~~±2g~~. +1 -0 o Torque on take-up side is 8g ±2g. o Digital Voltmeter reads 1.6 V ±0.1 V. If the supply side torque is out of the range, perform "Tension Sensor Position Adjustment" shown below. 4. Press the REW button while in Play mode to enter the Review mode. 5. Adjust VR4 to obtain 17g ±2g on supply side of the Torque Meter. (Set mean value of indication to 17g as the indication fluctuates.)

Tension Sensor Position Adjustment

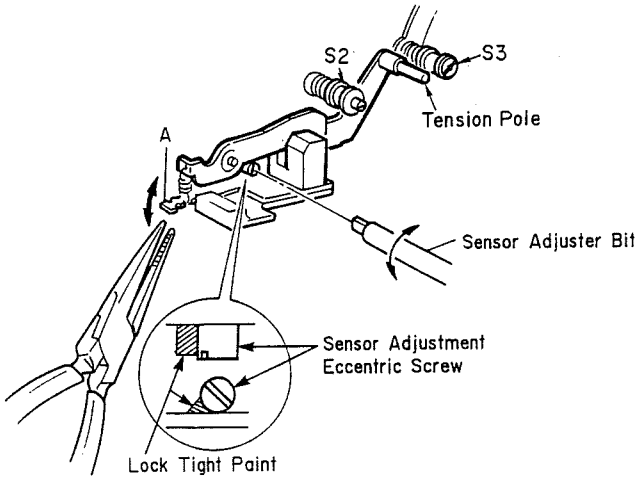
1. Remove the Front Panel Ass'y. Do not disconnect the cables as control switch operation is necessary.
2. Load a TS Link Cassette and press the STOP button.
3. Verticality Check of the Tension Pole
   Visually check the verticality of the Tension Pole referring to S3 and S2.
   If the Tension Pole is bent, correct it with holding the top with your finger tips.
   Caution: Do not use pliers or tweezers to avoid damages onto the Tension Pole.

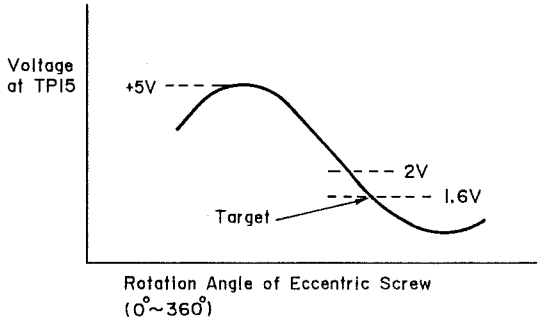


4. Press the PLAY button and gently insert a Pilot Gauge as shown below:
   Caution: Do not insert a Pilot Gauge other than Play mode.



5. Adjustment of Sensor Adjustment Eccentric Screw
   a. Slowly turn the Screw with a Sensor Adjuster Bit clockwise until the voltage at TP15 on the Servo P.C.B. Ass'y reaches a peak (approx. 5 V).





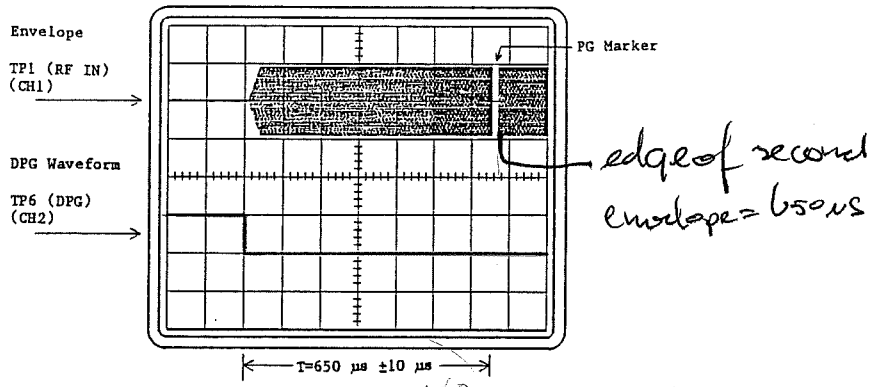
b. Further slowly turn the Screw clockwise. And, when the voltage reaches approx. 2 V, turn the Screw more slowly, and find the position where the voltage is 1.6 V ±0.2 V. If you turn the Screw excessively, turn it counterclockwise until the voltage reaches 2 to 3 V and try again.
c. Remove the Pilot Gauge gently in Play mode and re-check the verticality of the Tension Pole.

6. Press the EJECT button and remove the TS Link Cassette.
7. Load a Torque Meter (TW-7131) and play it back. Check the supply side torque for 5g ±1g.
   If out of the range, bend the plate A with pliers to adjust spring tension, i.e., supply side torque. See the figure in 5.
8. After adjustment, apply a quantity of lock tight paint to the Sensor Adjustment Eccentric Screw. See the figure in 5.
9. Mount the Front Panel Ass'y.

6	Capstan speed adj servo pcb	Ref. Tape DA 09147A o.a. blanke type	Scope TP11 (servo pcb). 500mV/div. 1mS/div.	rec	VR7 No add. jumpers	1. Rec a tape 2. Ref to ox. ground trace 3. adj. VR7 so TP11 stays on the ground reference trace.

STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUST-MENT	REMARKS
6	Capstan Speed Adjustment (Servo P.C.B.) zie boven	Fs48 kHz Tape (DA09145A)	Frequency Counter: TP9 (10:1 Probe) (Gate Time Range -- 0.1 sec) (Servo P.C.B.)	Playback/ Cue/Review Tape Counter Display Mode - Absolute Time	Servo P.C.B. VR7 (Play-back) VR6 (Cue) Jumper Pin TE.CN-5 ATF OFF short TE.CN-6 P.SERVO OFF short	1. Turn the power OFF and short ATF OFF side of TE.CN-5 and P.SERVO OFF side of TE.CN-6. 2. Turn the power ON and press the COUNTER MODE button to light the ABSOLUTE TIME Indicator. 3. Load an Fs48 kHz Tape (120 min). 4. Press the F.FWD (or REW) button to bring the Tape where the Tape Counter indicates 50_M (50 min.) to 1_H10_M (1 hr. 10 min.) (or approxi-mately center of tape), and press the PLAY button. 5. In Playback mode, adjust VR7 to obtain 673.68 Hz on the Frequency Counter. (Reads the mean value as the indication fluctuates by some Hz.) 6. Keep press the F.FWD button while in Playback mode to enter Cue mode, and adjust VR6 to obtain 1.684 kHz ±5 Hz on the Frequency Counter. 7. Keep press the REW button while in Playback mode to enter Review mode, and check whether the Frequency Counter reads 1.684 kHz ±10 Hz. 8. Eject the Fs48 kHz Tape, turn the power OFF, and remove the jumper pins of TE.CN-5 and TE.CN-6.
7	X501 Oscillation Frequency Adjustment (Signal Processor P.C.B.)	None	Frequency Counter: TP3 (CLKO) and TP8 (GND)(10:1 probe) (Signal Processor P.C.B.)	Stop	Signal Processor P.C.B. VC501	1. Adjust VC501 to obtain 18.816000 MHz ±400 Hz on the Frequency Counter. Schroevedraaier 2.6mm ceramic.
8	X502 Oscillation Frequency Adjustment (Signal Processor P.C.B.)	Fs48 kHz Tape (DA09145A)	Frequency Counter: TP4 (DFCK) and TP8 (GND) (10:1 probe) (Signal Processor P.C.B.)	Playback	Signal Processor P.C.B. VC502	1. Playback an Fs48 kHz Tape. 2. Adjust VC502 to obtain 12.288000 MHz ±300 Hz on the Frequency Counter.
9	X503 Oscillation Frequency Adjustment (Signal Processor P.C.B.)	Fs44.1 kHz Tape (DA09146A)	Frequency Counter: TP4 (DFCK) and TP8 (GND) (10:1 probe) (Signal Processor P.C.B.)	Playback	Signal Processor P.C.B. VC503	1. Playback an Fs44.1 kHz Tape. 2. Adjust VC503 to obtain 11.289600 MHz ±280 Hz on the Frequency Counter.

STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUST-MENT	REMARKS
10	Delay PG Check (Servo P.C.B.)	Sony TY-7251	Connect an Oscilloscope at power OFF CH1: TP1 (RFIN) and TP3 (GND) CH2: TP6 (DPG) and TP3 (END)	Playback	Servo P.C.B. TE.CN-10 (if adjustment is necessary) Jumper Pin TE.CN-5 ATF ON short TE.CN-8 TRACK short TE.CN-4 Open TE.CN-7 Short	1. Turn the power OFF, short ATF ON side of TE.CN-5 and TRACK side of TE.CN-8, and open TE.CN-4. 2. **Short TE.CN-7** (SH TAPE TEST). 3. Turn the power ON and play back a Test Tape TY-7251. 4. Check that the period of time between falling edge of DPG (Delay Phase Generator) waveform on CH2 and the falling edge of the RF IN signal on CH1, i.e., the period of time "T" shwon in below is 650 usec ±10 μsec. 5. If out of the range, proceed to "Re-adjustment". But, if in the range, eject the Test Tape, turn the power OFF, remove jumper pins of TE.CN-5, TE.CN-8, and TE.CN-7, and insert a jumper pin into TE.CN-4. Note: The envelop waveform may deviate according to the test tape TY-7251 to be used, since the pilot level on the tape differs depending on the tape. So, to make the adjustment easier, turn VR3 to raise the ATF level. **Caution:** If connector TE.CN-7 is not shorted, the Transport Mechanism Ass'y (and the tape) will be damaged because of mechanical shock when the tape reaches the tape end in F.Fwd. or Rew. mode. This phenomenon occurs only for a short tape (less than 30 min.)



Vertical:
- o CH1 Range: 10 mV/div (10:1 probe), AC
- o CH2 Range: 1 (or 0.5) V/div (10:1 probe), DC

Horizontal:
- o A Trigger (Main) — Range: 0.2 ms/div; Trigger Source: CH2 _┌, AC; Trigger Mode: Auto
- o B Trigger (Delay) — Range: 0.1 ms/div; Trigger Source: Run after Delay

Re-adjustment

If satisfactory result is not obtained in "Check", re-adjustment is necessory by changing jumper pin setting on TE.CN-10. TE.CN-10 has eight D.PG pins, D.PG1 to D.PG8.
The period of time "T" varies with shorting condition of pins D.PG1 to D.PG8. See Tables 1.1 and 1.2.

Table 1.1 For Serial No.: A50101551 - (Pattern B)

D.PG Pin No. :	D.PG1	2	3	4	5	6	7	D.PG8
Change of DPG Pulse Width (usec):	870.75	435.37	217.69	108.84	54.42	27.20	13.61	6.80

o Pulse-width change amount according to shorting of pins D.PG1 to D.PG8

Largest — Smallest
D.PG1 - 2 - 3 - 4 - 5 - 6 - 7 - D.PG8

o Shorting of D.PG pin shortens the DPG pulse width, i.e., the period of time "T" shown in STEP 10 becomes long.

Table 1.2 For Serial No.: A50101051 - 01550 (Pattern A)

D.PG Pin No. :	D.PG1	2	6	5	4	3	8	D.PG7
Change of DPG Pulse Width (usec):	870.75	435.37	217.69	108.84	54.42	27.20	13.61	6.80

o Pulse-width change amount according to shorting of pins D.PG1 to D.PG8

Largest — Smallest
D.PG1 - 2 - 6 - 5 - 4 - 3 - 8 - D.PG7

o Shorting of D.PG pin shortens the DPG pulse width, i.e., the priod of time "T" shown in STEP 10 becomes long.

Set jumper pins to TE.CN-10 referring to the flow chart shown in Fig. 5.5. Fig. 5.6 shows the relationship between D.PG pin shorting and change in "T".

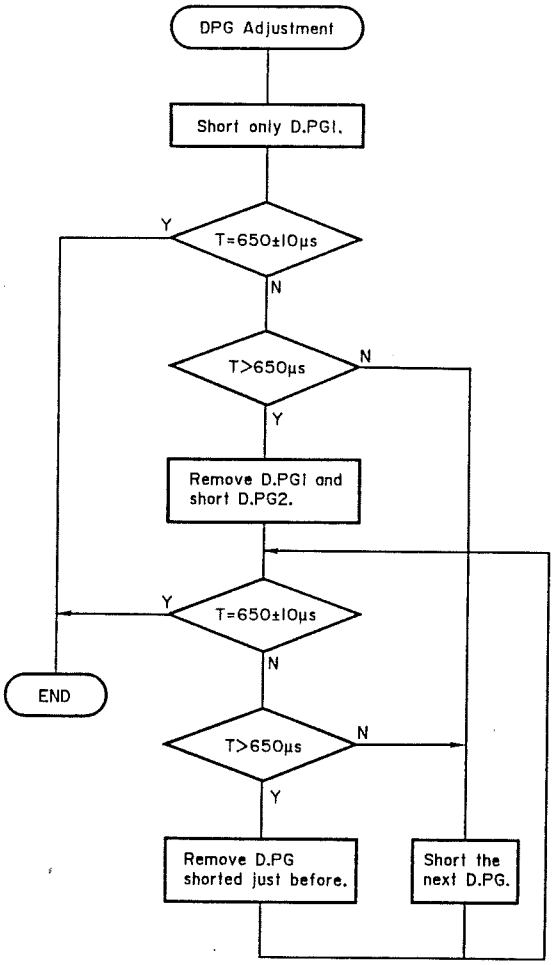


Fig. 5.5 DPG Adjustment Flow Chart

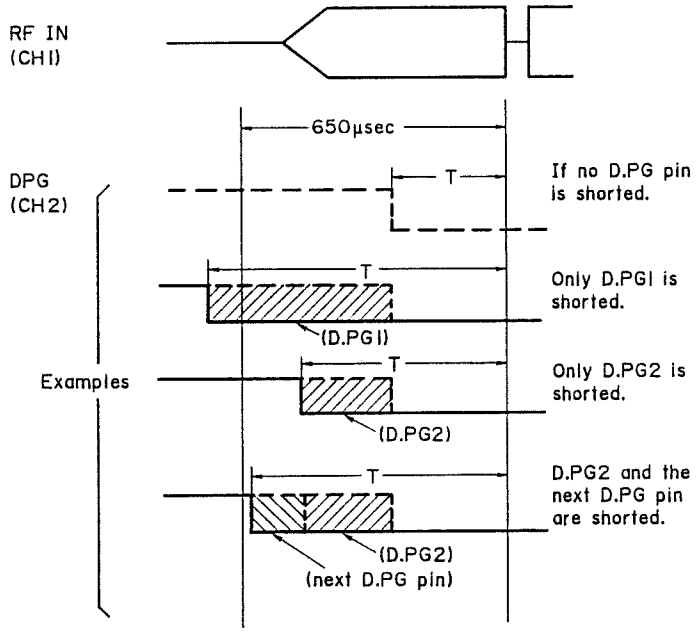


Fig. 5.6 Change in "T" according to Shorting of D.PG Pin (Example)

Example)
Conditions: o Only D.PG1 is shorted with a jumper pin.
o T > 650 μsec

1. Following the flow chart in Fig. 5.5, remove the jumper pin of D.PG1 and then insert a jumper pin into D.PG2.
2. If "T" is smaller than 640 μsec, insert a jumper pin into the next D.PG (D.PG6 (or D.PG3)).
3. If "T" is still smaller than 640 μsec, insert a jumper pin into the next D.PG (D.PG5 (or D.PG4)).
4. If "T" is greater than 660 μsec, remove the jumper pin which is inserted in 3 (D.PG5 (or D.PG4) and then insert a jumper pin into the next D.PG (D.PG4 (or D.PG5).
5. Repeat above steps in the same way until "T" is 650 ±10 μsec.

STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUST-MENT	REMARKS
11	PLL (R/P) Adjustment (Signal Processor P.C.B.)	Fs48 kHz Tape (DA09145A)	Connect an Oscilloscope at power OFF CH1: TP5 (PCM EQ (R/P)) and TP12 (GND) CH2: TP7 (BIT PLL CONT (R/P)) and TP12 (GND) CH3: TP1 (SWP) and TP8 (GND)	Playback	Signal Processor P.C.B. L501	1. Play back an Fs48 kHz Tape. 2. Adjust L501 so that the BIT PLL CONT (R/P) waveform on CH2 is as shown "GOOD" below. Note: Note that the good waveform differs according to P.C.B. pattern Nos.

Vertical:
- o CH1 Range: 10 mV/div (10:1 probe), AC
- o CH2 Range: 0.1 V/div (10:1 probe), DC
- o CH3 Range: 1 (or 0.5) V/div (10:1 probe), DC

Horizontal:
- o A Trigger (Main) Range : 2 ms/div (Uncal.) (See Note.)
  Trigger Source: CH3 ⌐, AC
  Trigger Mode : Auto

Note: Calibrate the range so that one whole cycle of SWP waveform on CH3 can be observed.

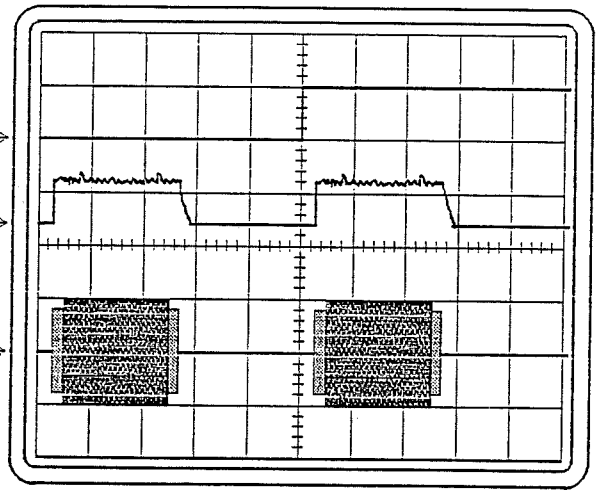
Turn L501 ccw totdat level instart.
Dan CW idem
dan uitmiddelen.

L501/502: 1,3 mm screwdriver (ceramic).

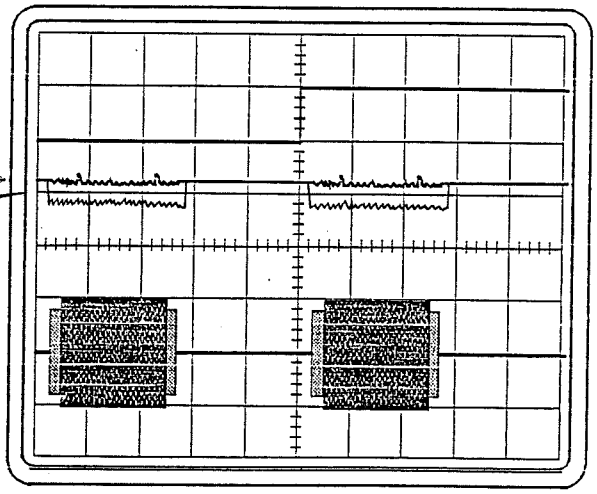
TP1 SWP (CH3)

TP7 BIT PLL CONT (R/P) (CH2)

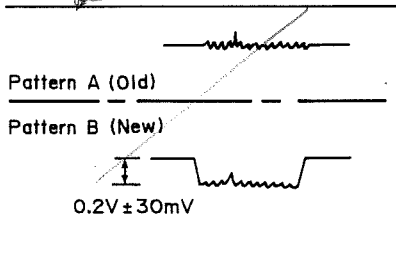
TP5 PCM EQ (R/P) (CH1)



GOOD



Good Waveform

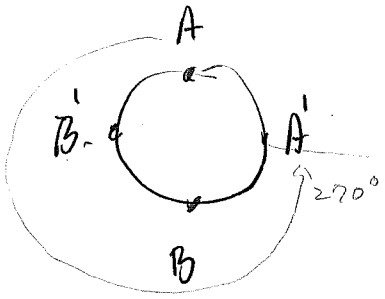


STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUST-MENT	REMARKS
12	PLL (PB) Adjustment (Signal Processor P.C.B.)	Music Source to Digital Input Coaxial Jack (Music Source: e.g. CD Player Output)	Connect an Oscilloscope at power OFF CH1: TP9 (PCM EQ (PB)) and TP12 (GND) CH2: TP11 (BIT PLL CONT (PB)) and TP12 (GND) CH3: TP1 (SWP) and TP8 (GND)	Record/ Playback	Signal Processor P.C.B. L502	1. With the power turned off, remove the Power Switch P.C.B. Ass'y to gain access to L502. 2. Load a Reference Tape (DA09147A), and record and play back an input signal. 3. Adjust L502 so that the BIT PLL CONT (PB) waveform on CH2 levels as shown "GOOD" below. 4. Mount the Power Switch P.C.B. Ass'y.

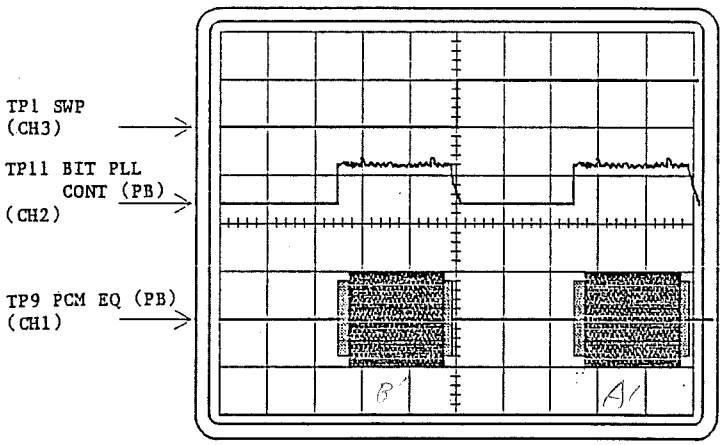
Vertical:
- o CH1 Range: 10 mV/div (10:1 probe), AC
- o CH2 Range: 0.1 V/div (10:1 probe), DC
- o CH3 Range: 1 (or 0.5) V/div (10:1 prove), DC

Horizontal:
- o A Trigger (Main) Range : 2 ms/div (Uncal.) (See Note.)
  Trigger Source: CH3 ⊓_, AC
  Trigger Mode : Auto

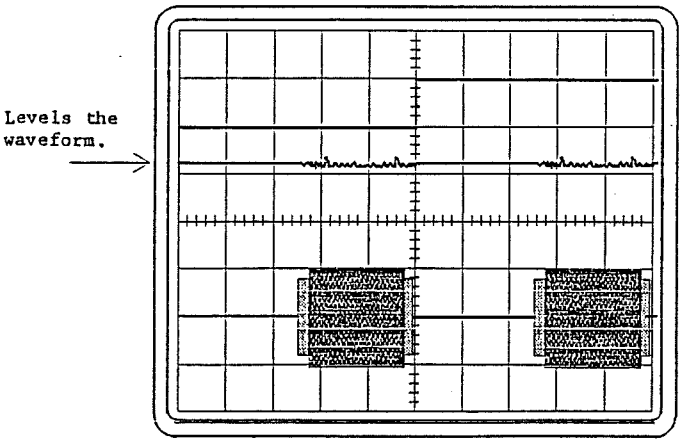
Note: Calibrate the range so that one whole cycle of SWP waveform on CH3 can be observed.



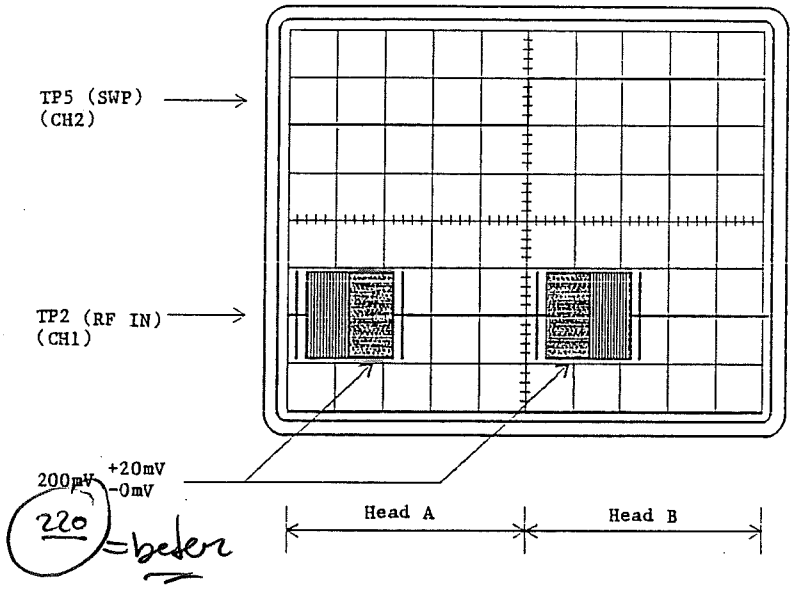
NO GOOD



GOOD



STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUST-MENT	REMARKS
13	ATF (Auto-matic Track Finding) Pilot Level Adjustment (Servo P.C.B.)	Sony TY-7111	Connect an Oscilloscope at power OFF CH1: TP2 (RF IN) and TP3 (GND) CH2: TP5 (SWP) and TP3 (GND)	Playback	Servo P.C.B. VR3 (A-Head Level) VR2 (B-Head Level) Jumper Pin TE.CN-5 ATF ON short TE.CN-4 Open TE.CN-7 Short	1. Turn the power OFF, short ATF ON side of TE.CN-5, and remove the jumper pin from TE.CN-4. 2. **Short TE.CN-7** (SH TAPE TEST). 3. Turn the power ON, load a Test Tape TY-7111, and play it back. 4. Adjust VR3 so that the peak-to-peak value of the **latter half** of Head-A's waveform (130 kHz) on CH1 is 200 mVp-p +20 mV -0 mV as shown below. 5. Adjust VR2 so that the peak-to-peak value of the **first half** of Head-B's waveform (130 kHz) on CH1 is 200 mVp-p +20 mV -0 mV. 6. Eject the Test Tape, turn the power OFF, remove the jumper pins of TE.CN-5 and TE.CN-7, and insert a jumper pin into TE.CN-4. **Caution:** If connector TE.CN-7 is not shorted, the Transport Mechanism Ass'y (and the tape) will be damaged because of mechanical shock when the tape reaches the tape end in F.Fwd. or Rew. mode. This phenomenon occurs only for a short tape (less than 30 min).



Vertical:
- o CH1 Range: 10 mV/div (10:1 probe), AC
- o CH2 Range: 1 (or 0.5) V/div (10:1 prove), DC

Horizontal:
- o A Trigger (Main) Range : 2 ms/div (Uncal.) (See Note.)
  Trigger Source: CH2 ⌐, AC
  Trigger Mode : Auto

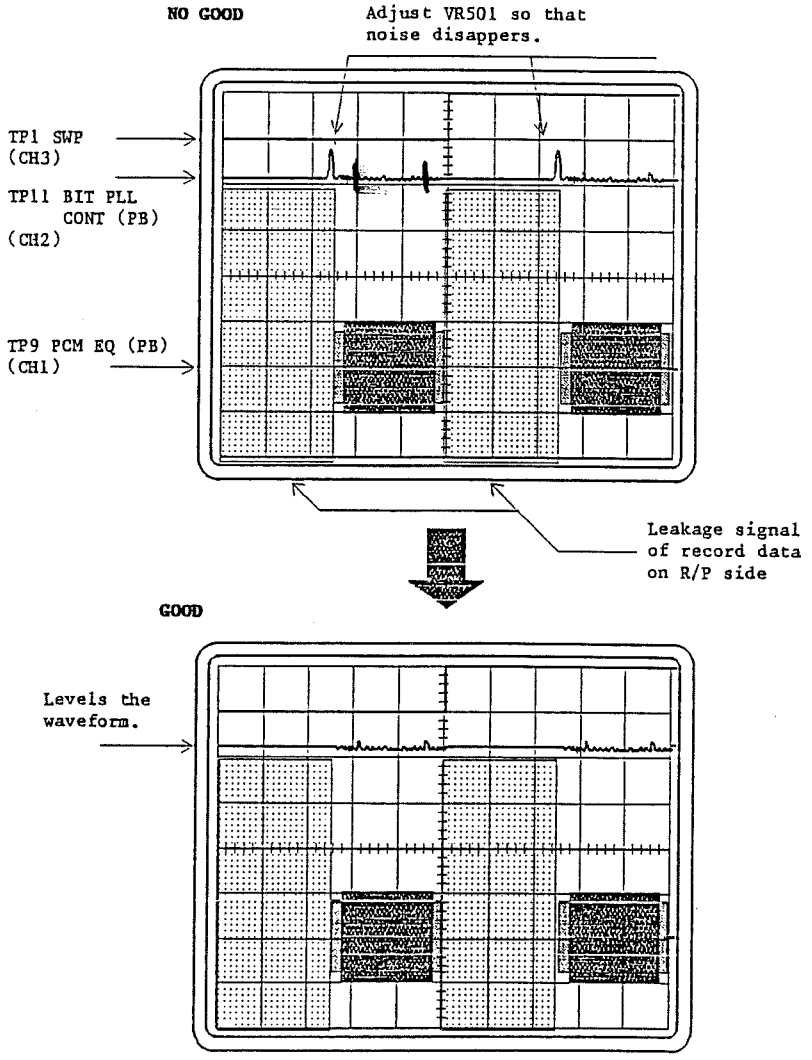
Notes: 1. Calibrate the range so that one whole cycle of SWP waveform on CH2 can be observed.
2. It is recommended to use delay trigger function for easier observation since the envelope waveform contains noise.

STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUST-MENT	REMARKS
14	RFSF-P Adjustment (Signal Processor P.C.B.)	Music Source to Digital Input Coaxial Jack (Music Source: e.g. CD Player Output)	Connect an Oscilloscope at power OFF CH1: TP9 (PCM EQ (PB)) and TP12 (GND) CH2: TP11 (BIT PLL CONT (PB)) and TP12 (GND) CH3: TP1 (SWP) and TP8 (GND)	Record	Signal Processor P.C.B. VR501	1. Load a Reference Tape (DA09147A), and record and playback an input signal. 2. Turn VR501 fully counterclockwise. 3. Observe the BIT PLL CONT (PB) waveform on CH2 and adjust VR501 so that unwanted pulse noise (whiskers) just disappers. The noise will appear at the rising of envelope on CH1 (PCM EQ (PB) signal). See below. Note: Do not turn VR501 excessively.

Vertical:
- o CH1 Range: 10 mV/div (10:1 probe), AC
- o CH2 Range: 0.1 V/div (10:1 probe), DC
- o CH3 Range: 1 (or 0.5) V/div (10:1 prove), DC

Horizontal:
- o A Trigger (Main) Range : 2 ms/div (Uncal.) (See Note.)
  Trigger Source: CH3 ⌐, AC
  Trigger Mode : Auto

Note: Calibrate the range so that one whole cycle of SWP waveform on CH3 can be observed.



6. MECHANICAL ADJUSTMENTS

Figs. 6.1 to 6.4 show parts locations, tape path in Play, flow chart for mechanical adjustments, and relationship between tape and guides.
Note: Before adjustment, electrical adjustments must be completed as it is necessory to observe the envelope waveform for adjusting guide height.

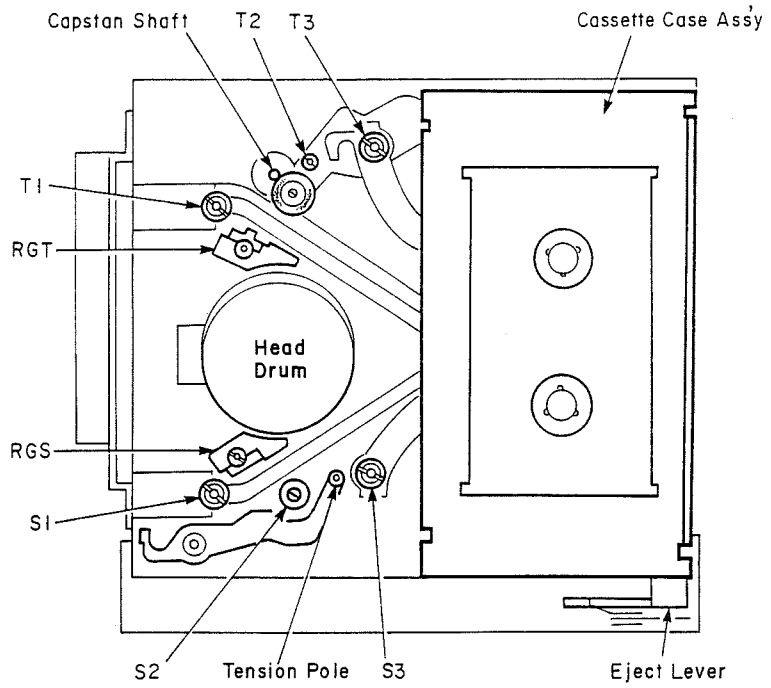


Fig. 6.1 Parts Location for Mechanical Adjustment (Transport Mechanism Ass'y)

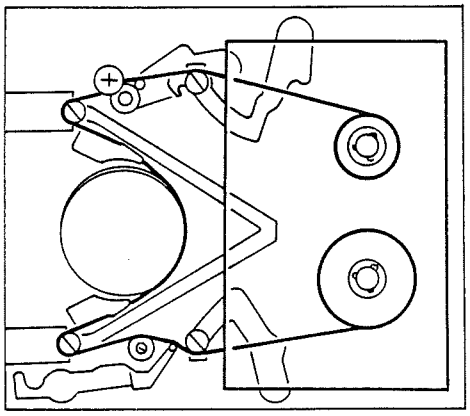


Fig. 6.2 Tape Path in Play

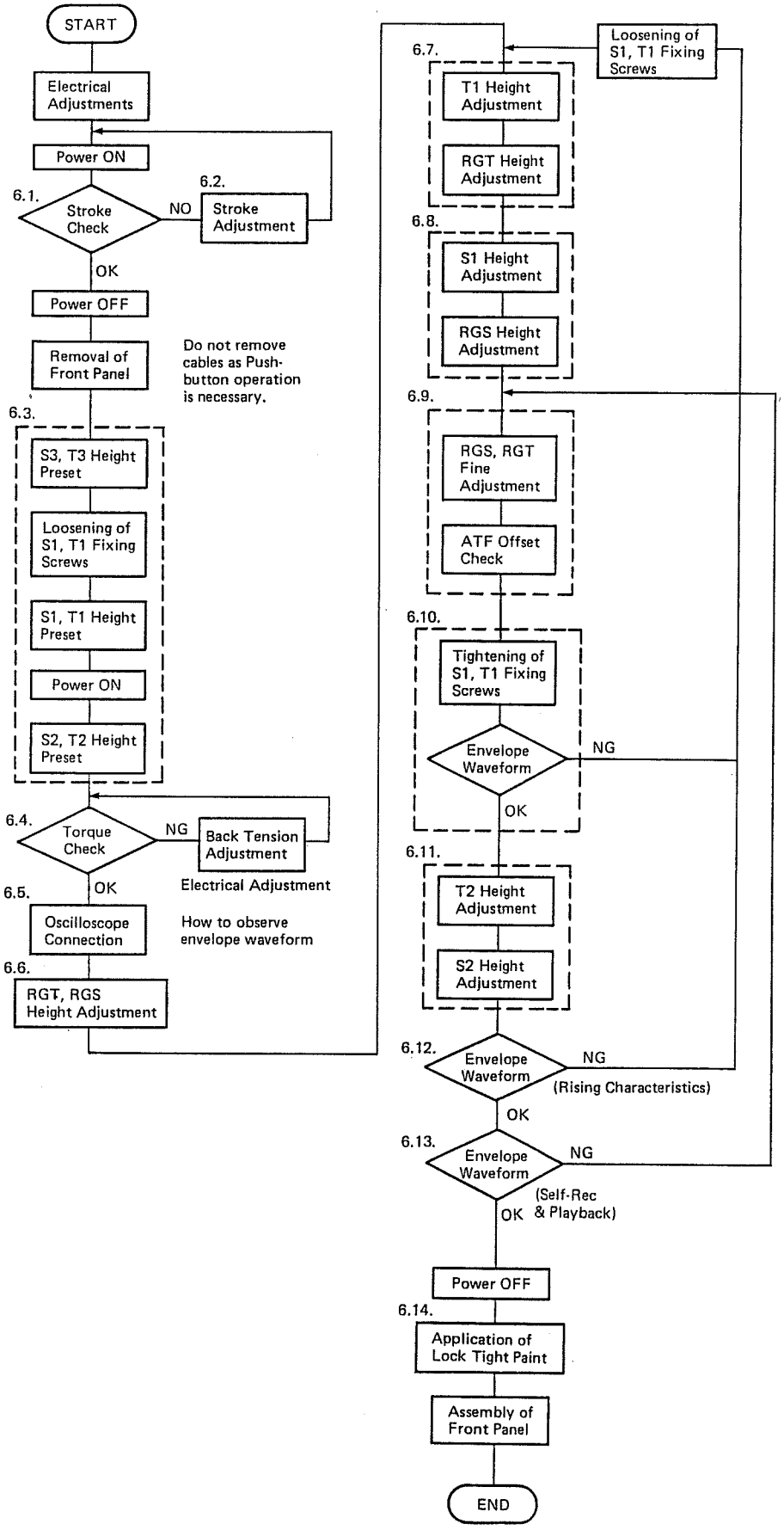


Fig. 6.3 Mechanical Adjustment Flow Chart

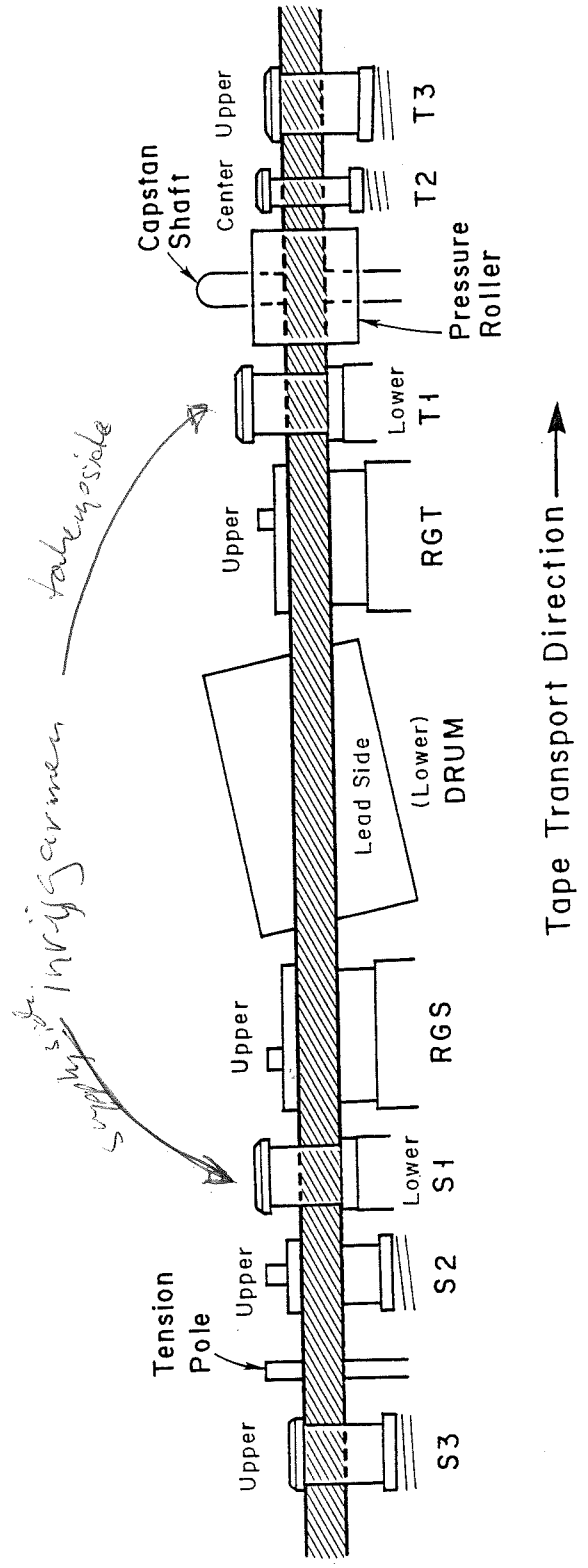
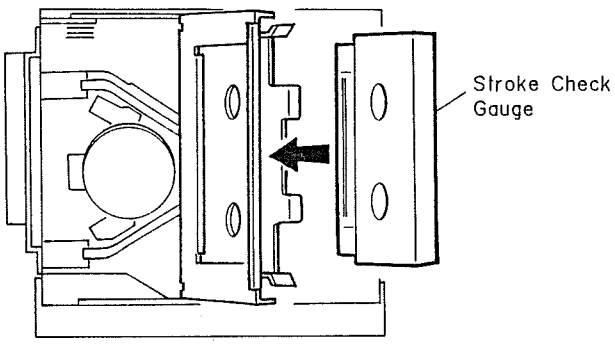


Fig. 6.4 Relationship between Tape and Guides

6.1. Stroke Check

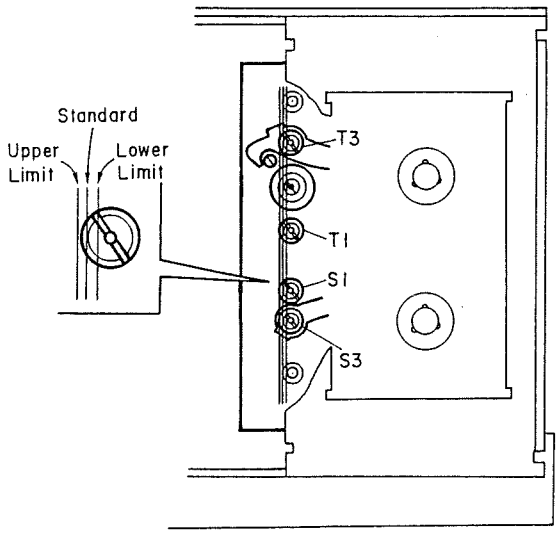
1. Turn ON the power and press the EJECT button to open the Cassette Case Ass'y.
2. Turn OFF the power. (The Transport Mechanism Ass'y stays at "L (LOAD)" position by this procedure.)
3. Load a Stroke Check Gauge and close the Cassette Case Ass'y by hand.



(Front View)

Fig. 6.5 Insertion of Stroke Check Gauge

4. Check whether each of the guide rollers (S3, S1, T1, T3) are within the upper and lower limit scribed lines on the Stroke Check Gauge. See Fig. 6.6.
   Note: If satisfactory results are not obtained, proceed to 6.2."Stroke Adjustment".



(Front View)

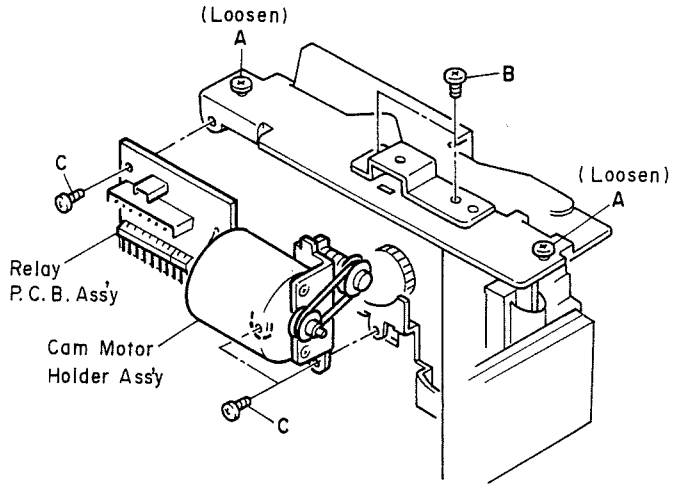
Fig. 6.6 Stroke Check of Guide Rollers

5. Turn ON the power, press the Eject button, and remove the Stroke Check Gauge.
6. Proceed to 6.3."Guide Height Preset".

6.2. Stroke Adjustment

Note: This adjustment is required only if satisfactory results are not obtained in 6.1."Stroke Check".

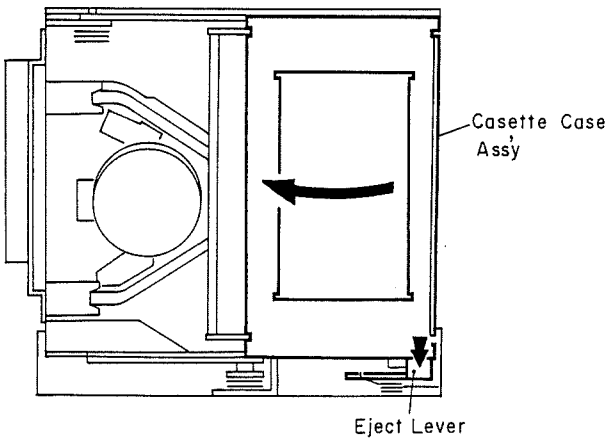
1. Turn OFF the power and remove the Front Panel Ass'y.
2. Remove the Transport Mechanism Ass'y.
3. Loosen two screws A by 1 to 2mm, remove two screws B, remove three screws C, and disassemble the Cam Motor Holder Ass'y together with the Relay P.C.B. Ass'y. See Fig. 6.7.



(Rear View)

Fig. 6.7 Removal of Cam Motor

4. Press the Eject Lever of the Transport Mechanism Ass'y to open the Cassette Case Ass'y manually. See Fig. 6.8.



(Front View)

Fig. 6.8 Push of Eject Lever

5. Load a Stroke Check Gauge and close the Cassette Case Ass'y by hand.

6. Turn the Cam Drive Gear B by hand to position the Cam Gear to "L".

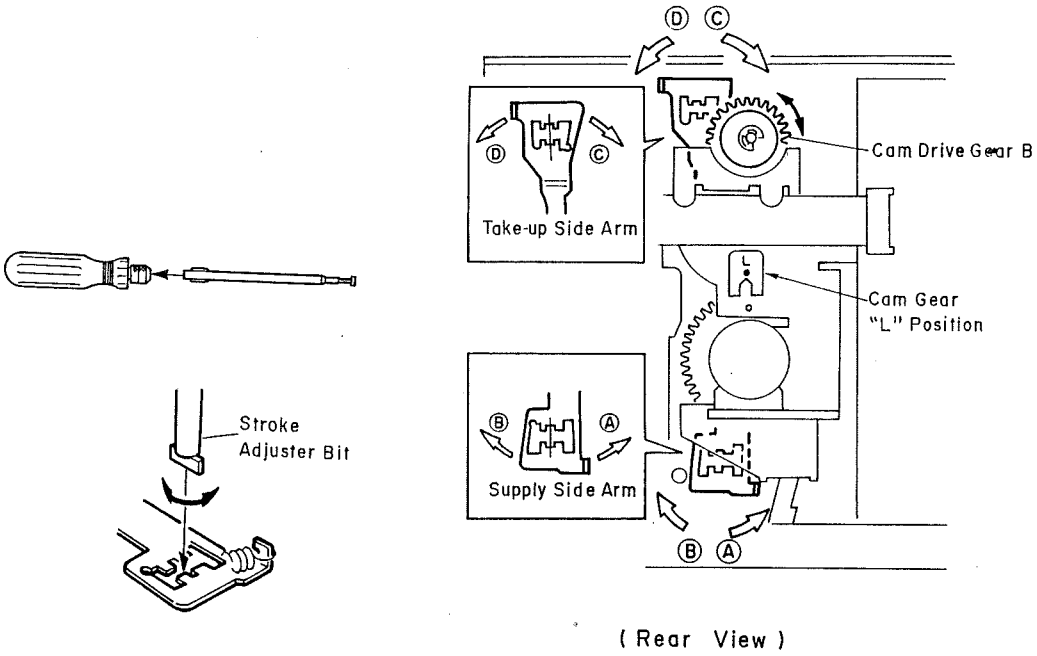


Fig. 6.9

7. Insert a Stroke Adjuster Bit (which is installed on the Adjuster Grip) into the Take-up Side Arm/Supply Side Arm as shown in Fig. 6.9, and slightly turn it so that the guide rollers S3, S1, T1 and T3 are within the upper and lower limit scribed lines on the Stroke Check Gauge. See Fig. 6.10. When you turn the Stroke Adjuster Bit in the direction of A or B in Fig. 6.9, the guide rollers move in the direction of A or B in Fig. 6.10. On the other hand, if you turn the Stroke Adjuster Bit in the direction of C or D in Fig. 6.9, the guide rollers move in the direction of C or D in Fig. 6.10.
Note: Do not turn the Bit excessively.

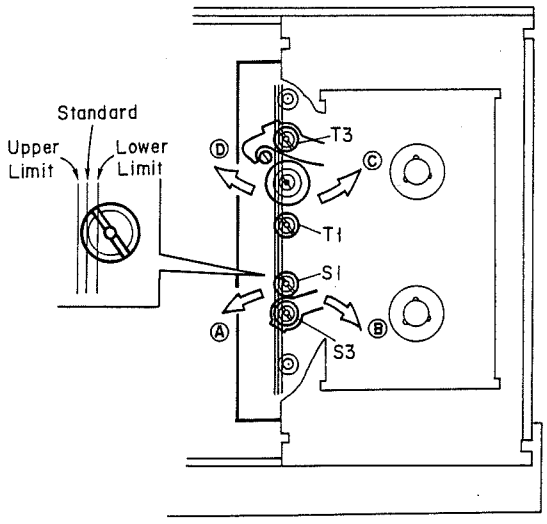


Fig. 6.10

8. Finely adjust the Take-up Side Arm in the direction of C or D so that the gap E between the flange metal of T2 and the Plate F is 0.05 to 0.2mm. After adjustment, check whether the guide rollers S3, S1, T1 and T3 are within the specified range.
   If not, repeat 7 and 8.

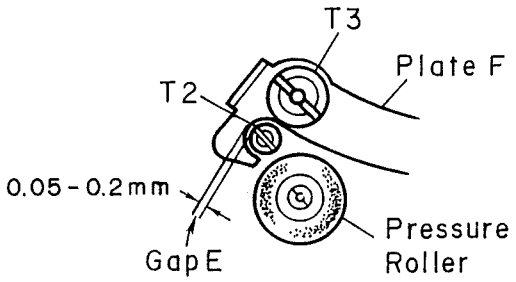
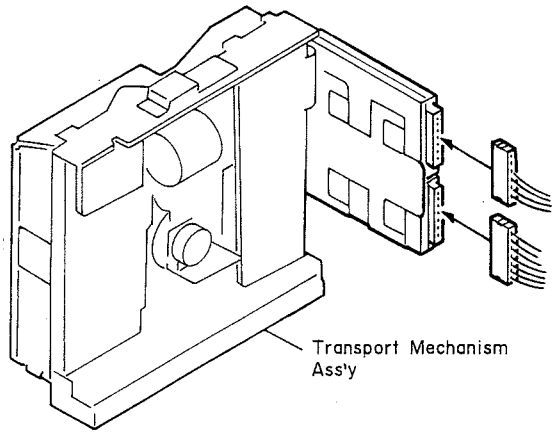


Fig. 6.11

9. Assemble the Cam Motor Holder Ass'y and Relay P.C.B. Ass'y by fastening screws. Turn the Cam Motor Pulley and check for correct rotation of the Cam Gear.
10. Press the Eject Lever and remove the Stroke Check Gauge.
11. Mount the Transport Mechanism Ass'y. In this case, do not make a mistake on connecting cables. The connector with less wire must be connected to the upper side.



(Rear View)

Fig. 6.12

12. Mount the Front Panel Ass'y.

6.3. Guide Height Preset

6.3.1. S3, T3 Height Preset

1. Turn OFF the power.
2. Remove the Front Panel Ass'y. But, do not disconnect cables to allow control switch operation.
3. Firmely place the N-1000 virtically. Use blocks to protect the power cord. See Fig. 6.13.

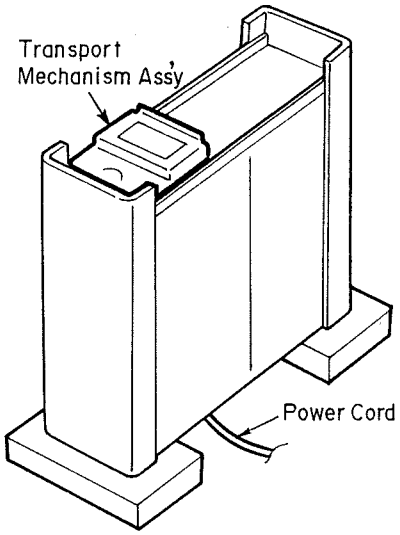


Fig. 6.13

4. Turn the Cam Motor Pulley by hand to position the Cam Gear to "H (Half Load)". See Fig. 6.14. (In the Half Load position, the guide rollers T3, T1, S1 and S3 are arranged in one line as shown in Fig. 6.16.)

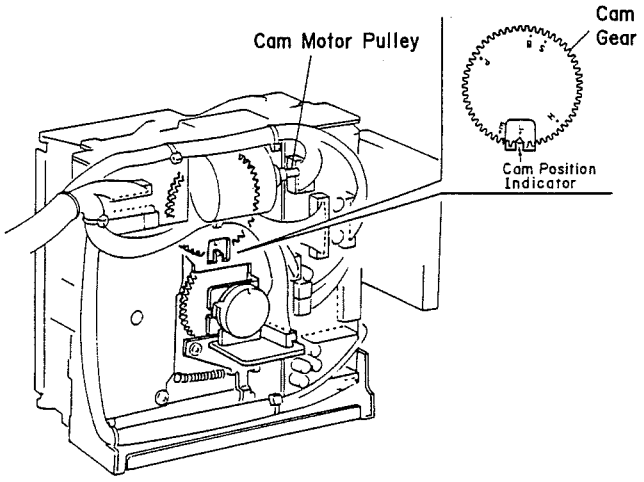


Fig. 6.14 Cam Gear Positioning by hand

5. Press the Eject Lever of the Transport Mechanism Ass'y to open the Cassette Case Ass'y manually. See Fig. 6.15.

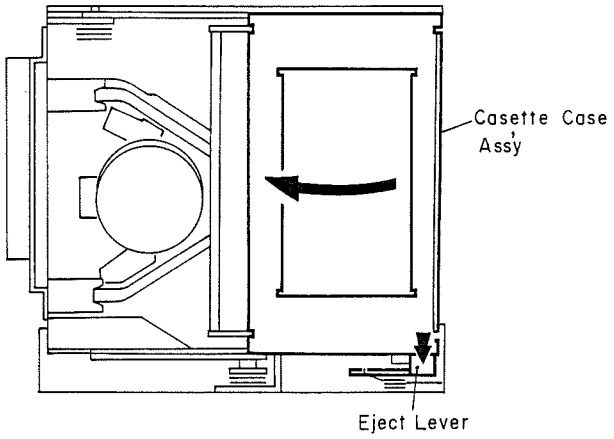


Fig. 6.15 Push of Eject Lever

6. Insert a Stroke Check Gauge. (Do not insert it into the Cassette Case Ass'y but place on the chassis.) See Fig. 6.16.
7. Place a Preset Bar on the Stroke Check Gauge. See Fig. 6.16.
8. With holding down both Stroke Check Gauge and the Preset Bar, adjust T3/S3 guide height with a Guide Adjuster so that the gaps between the Preset Bar and the top of T3/S3 and between the Preset Bar and the Stroke Check Gauge become zero. See Fig. 6.16.

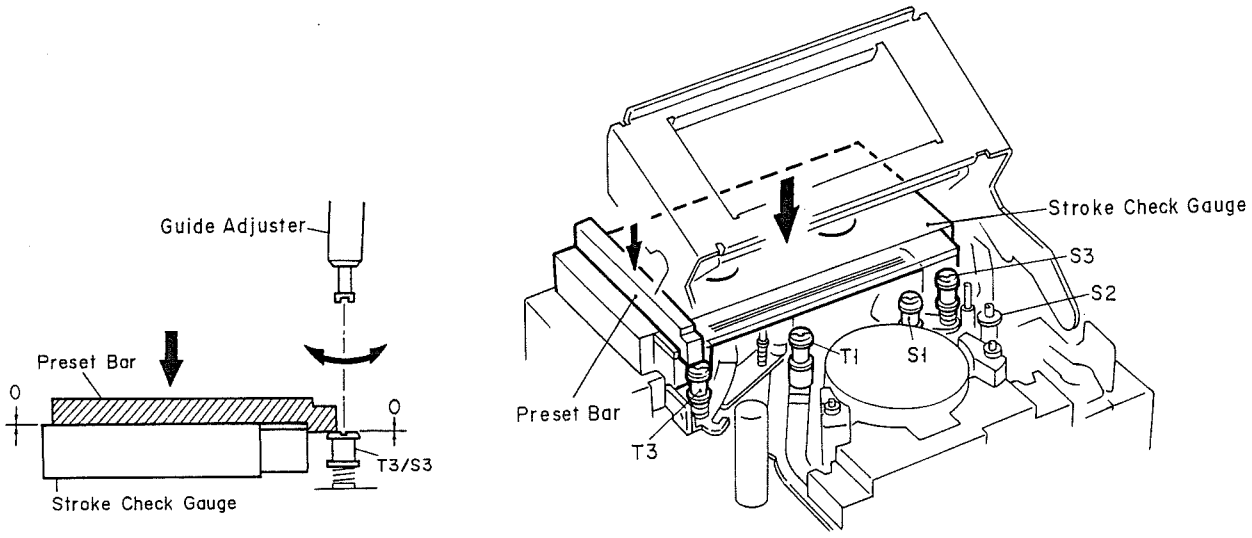


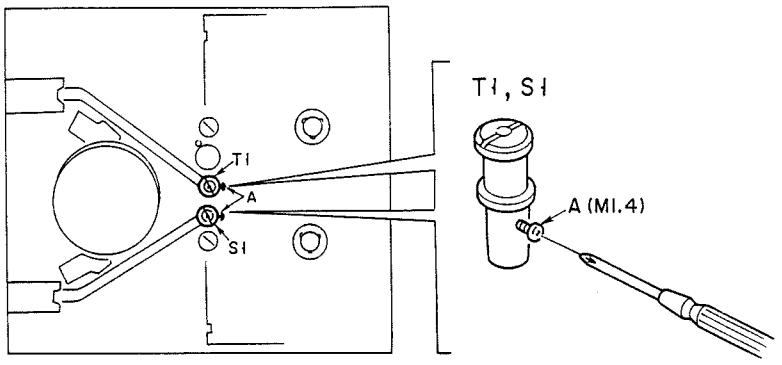
Fig. 6.16 S3/T3 Guide Height Preset

9. Remove the Gauges.

6.3.2. S1, T1 Height Preset

1. With the same condition as in 6.3.1 (power OFF, vertical placing of the N-1000), press the Eject Lever to open the Cassette Case Ass'y manually. (See Fig. 6.15.)
2. Turn the Cam Motor Pulley by hand to position the Cam Gear to "L (Load)". (See Fig. 6.14.)
3. Slightly loosen screws A (M1.4 philips Pan Head) with a clock screwdriver to allow turning of T1/S1. Then tighten screws A until T1/S1 can barely turn. See Fig. 6.17.

   Caution: Pay attention so as not to give damages onto the head drum or guide rollers with the screwdriver.



(Front View)

Fig. 6.17

4. Turn the Cam Motor Pulley by hand and position the Cam Gear to "B (Brake)".
5. Insert a Preset Spacer 0.4 between the lower flange of T1/S1 and the Guide Roller as shown in Fig. 6.18.
6. Turn T1/S1 clockwise with a Guide Adjuster until the Preset Spacer is tightened. Then return the Guide Adjuster counterclockwise by approx. 5 degrees.

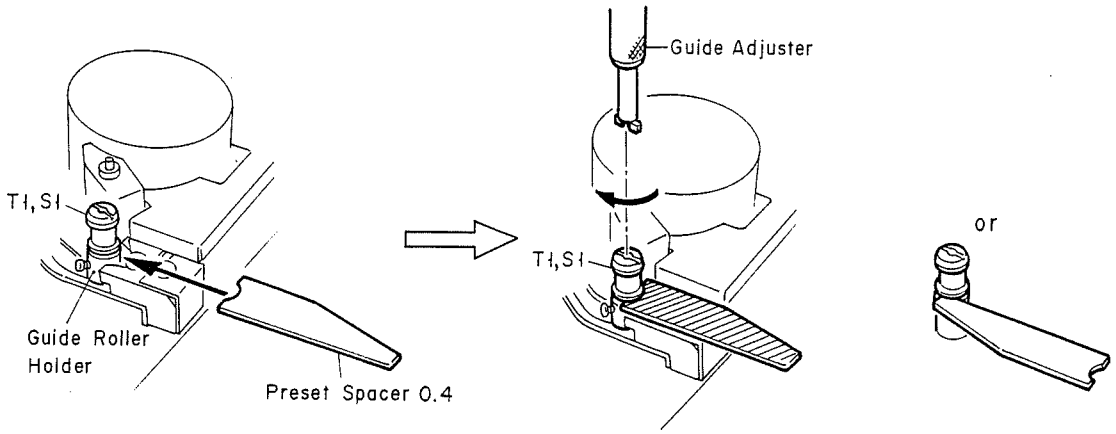


Fig. 6.18 S1, T1 Height Preset

7. Remove the Gauges.

6.3.3. S2, T2 Height Preset

1. Place the N-1000 horizontally.
2. With the Front Panel Ass'y still removed (but the cables are connected), turn ON the power.
3. Press the EJECT button on the Front Panel Ass'y.
4. Load a tape and play it back.
5. Visually check the tape travelling, and adjust S2/T2 guide height with a Guide Adjuster so that the tape travels in the middle of the guide as shown in Fig. 6.19.

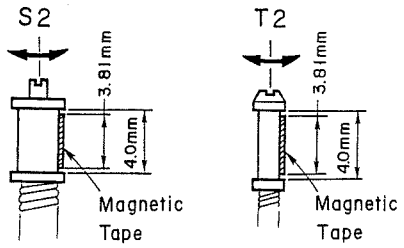


Fig. 6.19 S2, T2 Height Preset

6. Press the STOP button and remove the tape.

6.4. Torque Check

1. Turn ON the power.
2. Load a Torque Meter TW-7131, play it back, and check the following torque value.
   - o Back Tension Torque (Supply side) ..... 5 ± 1g-cm
   - o Take-up Torque (Take-up side) ..... 8 ± 2g-cm
3. Keep press the REW button while in Play mode to set the N-1000 in Review mode, and make sure that the supply side torque is 17 ±2g-cm.
   Note: If back tension is out of the range, re-adjust it referring to "Tension Servo Adjustment" in the Electrical Adjustments.

6.5. Connection of Oscilloscope

Connect an oscilloscope to the Servo P.C.B. Ass'y and Signal Processor P.C.B. Ass'y as follows:

Measuring Connection

CH1: 10:1 probe between TP1 (RF IN) and TP3 (GND)
[Servo P.C.B. Ass'y]
CH2: 10:1 probe between TP9 (PCM EQ OUT(PB)) and TP12 (GND)
[Signal Processor P.C.B. Ass'y]
CH3: 10:1 probe between TP5 (SWP) and TP3 (GND)
[Servo P.C.B. Ass'y]

Caution: Connection must be made with the power OFF.

Setting of Oscilloscope

Vertical:

- o CH1 Range: 10 mV/div (10:1 probe), AC
- o CH2 Range: 10 mV/div (10:1 probe), AC
- o CH3 Range: 1 (or 0.5) V/div (10:1 prove), DC

Horizontal:

- o A Trigger (Main) Range : 2 ms/div (Uncal.) (See Note.)
  Trigger Source: CH3 ⌐↓, (DC)
  Trigger Mode : Auto

Note: Calibrate the range so that one whole cycle on both CH2 and CH1 can be observed.

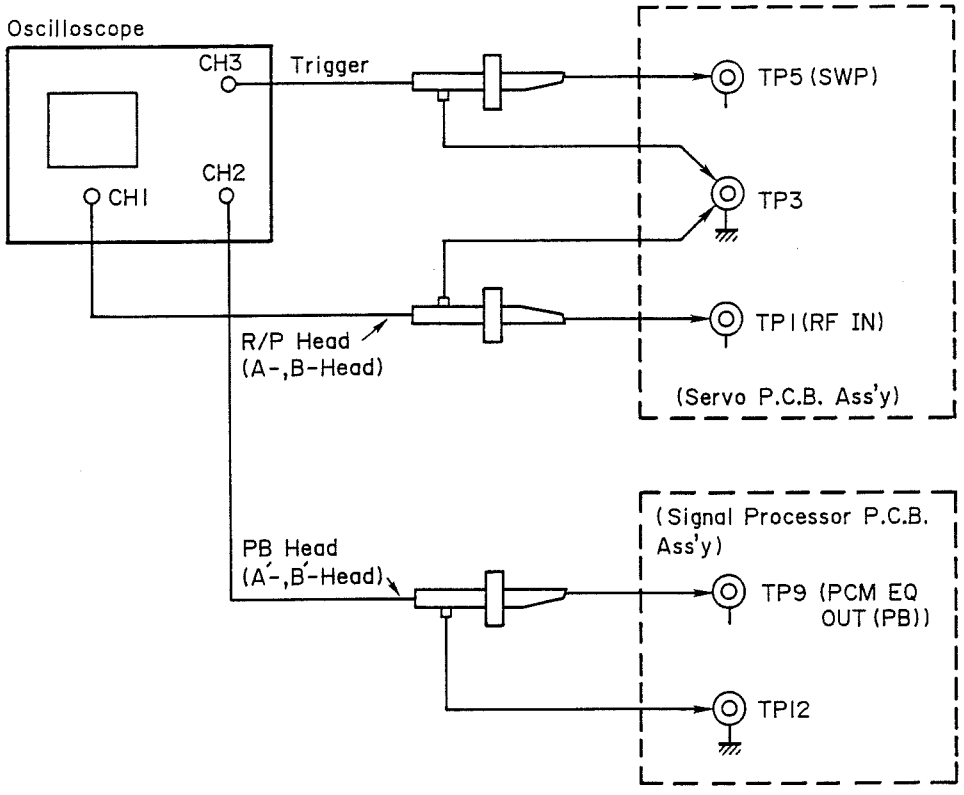


Fig. 6.20 Connection of Oscilloscope

Envelope Waveform Example when music tape is played back

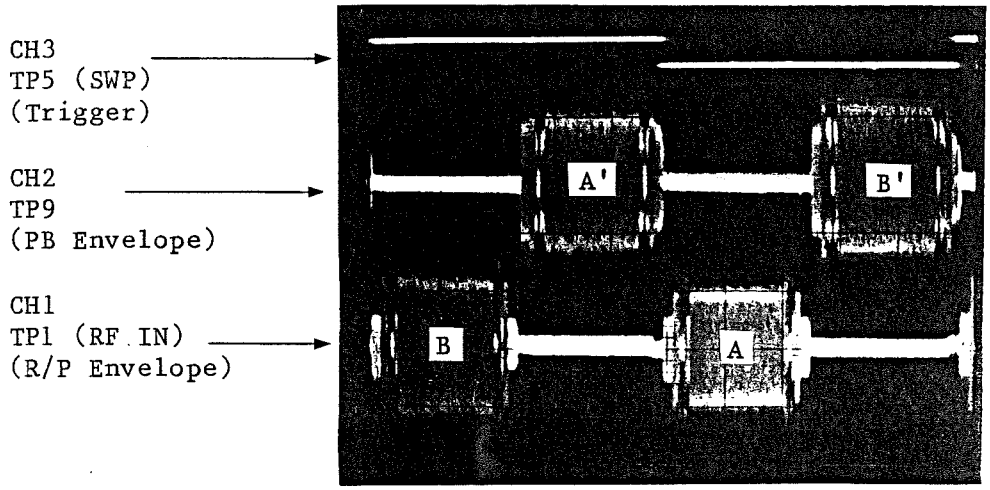


Fig. 6.21 Envelope Waveform (Music Tape Playback)

6.6. RGS, RGT Height Adjustment

Condition

Jumper Pin Setting (Set at Power OFF.):
- TE.CN-8 TRACK short
- TE.CN-5 ATF ON short
- TE.CN-4 Open (Open when TY-7251 is used.)

Power: ON

Front Panel Ass'y: Removed, but cables are connected to allow control switch operation.

1. Load a Tracking Check Tape TY-7251 and play it back.
2. Turn RGS/RGT counterclockwise with a Guide Adjuster to raise the Reference Guide. See Fig. 6.22.
3. While checking tape travelling visually, lower RGS/RGT until the Reference Guide comes in contact with the running tape.
4. Adjust RGT height with the Guide Adjuster to obtain the best envelope waveform in this stage.
5. Next, adjust RGS height with the Guide Adjuster to obtain the best envelope waveform in this stage.
6. Adjust finely both RGT and RGS height repeatedly to obtain the best envelope waveform.
   Note that, when TY-7251 is played back, only envelope waveforms A (R/P) and A'(PB) can be observed as shown in Fig. 6.23. Adjust so that both envelope waveforms A and A' become optimum. (The levels of A and A' may differ.)

Note: For optimum envelope waveform, see "Conditions for Optimum Envelope Waveform" on next page. "Basic Adjustment Procedures for Envelope Waveform" on later page shows the adjustment method applied in common.

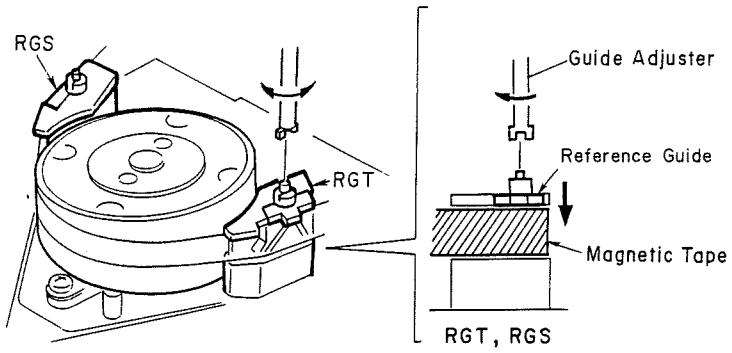


Fig. 6.22 RGS/RGT Height Adjustment

CH3
TP5 (SWP)
(Trigger)

CH2
TP9
(PB Envelope)

CH1
TP1 (RF IN)
(R/P Envelope)

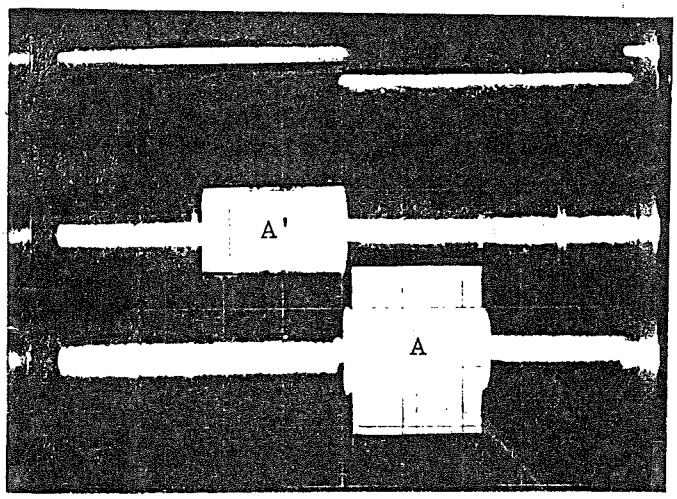
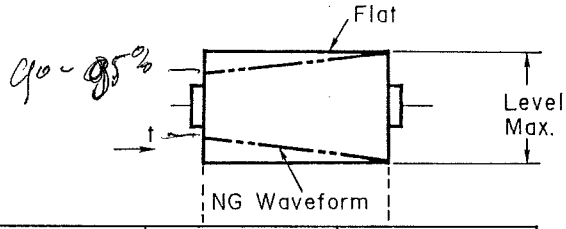


Fig. 6.23 Envelope Waveform during playing back TY-7251

Conditions for Optimum Envelope Waveform

Optimum envelope waveforms can be obtained if each head (A & B and A' & B') correctly traces track patterns on the tape.
The conditions for the optimum envelope waveform are as follows:

1) Level is max.
2) Waveform is flat. (Waveform shape from the rising edge (supply side) to the falling edge (take-up side) is flat so that waveform is rectangular.)



Tracking	IN (Supply Side)	OUT (Take-up Side)
Guides to be mainly adjusted.	RGS,SI	RGT,TI

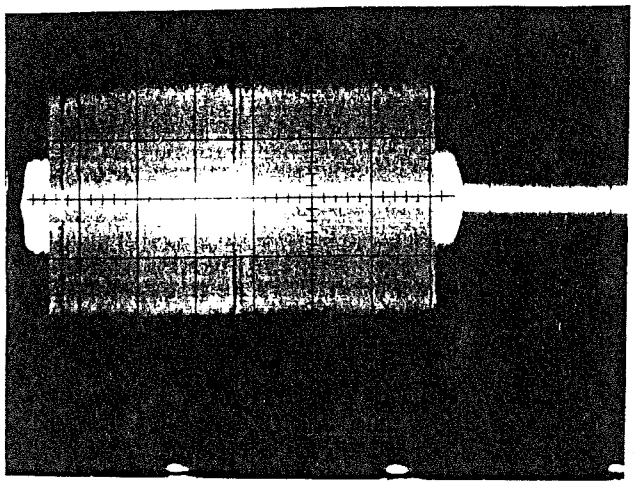


Fig. 6.24 Optimum Envelope Waveform

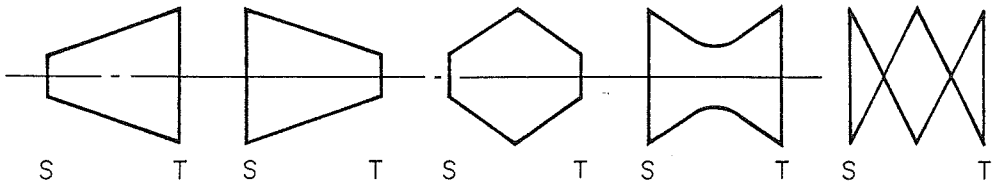


Fig. 6.25 No Good Waveforms

Basic Adjustment Procedures for Envelope Waveform
Use this procedures in common for adjusting envelope waveforms.

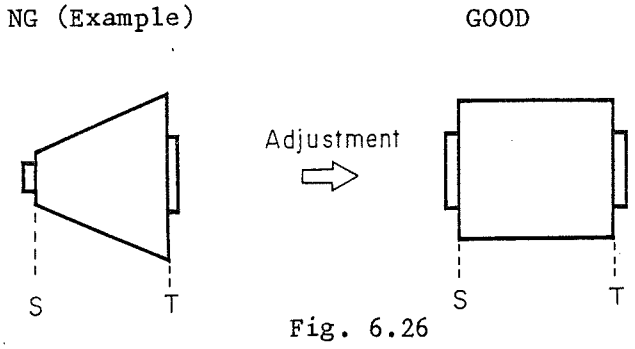


Fig. 6.26

1) First, make clear which side (S(Supply) or T(Take-up)) of level is small. (S side in case of Fig. 6.26.)
2) Remember the original angle of the guide to be turned.
3) Finely lower the guide whose level is smaller to obtain the best waveform. (e.g. Turn RGS CW.)
4) If satisfactory result is not obtained, finely raise the same guide to obtain the best waveform. (e.g. Turn RGS CCW.)
5) If no level changes or level decreases, return the guide to the original position (original angle).
6) Then, finely lower the guide whose level is higher to obtain the best waveform. (e.g. Turn RGT CW.)
7) If satisfactory result is not obtained, finely raise the same guide to obtain the best waveform. (e.g. Turn RGT CCW.)
8) Repeat 3) through 7) to obtain optimum waveform.

6.7. T1 Height Adjustment

Condition

Jumper Pin Setting (Set at power OFF.):
TE.CN-8 TRACK short
TE.CN-5 ATF ON short
TE.CN-4 Open
Power: ON
Front Panel Ass'y: Removed, but cables are connected to allow control switch operation.

1. Load a TY-7251 tape and play it back.
2. Turn RGT counterclockwise by 360 degrees with a Guide Adjuster to raise the Reference Guide.
3. Adjust T1 height with the Guide Adjuster so that the envelope waveform (I or II) becomes the waveform (III). Adjustment should be made so that peak-to-peak level A is 80% of the maximum peak-to-peak level of the waveform.

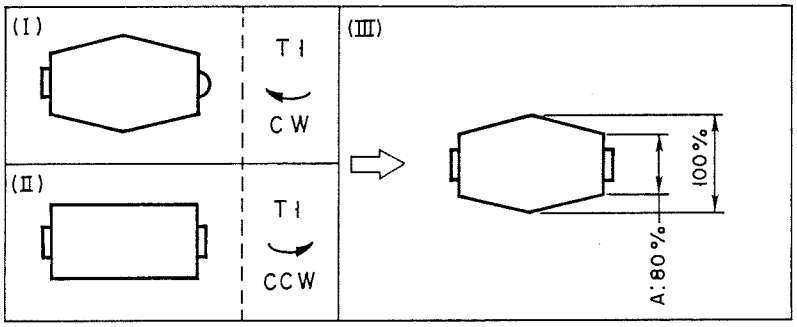


Fig. 6.27

Note: The waveform before adjustment is almost (I). In this case turn T1 clockwise. Excessive turning will cause the waveform to be (II). So, turn T1 counterclockwise to correct it.

4. Lower RGT and adjust it to obtain the best envelope waveform.

6.8. S1 Height Adjustment

Condition

Jumper Pin Setting (Set at power OFF.):
TE.CN-8 TRACK short
TE.CN-5 ATF ON short
TE.CN-4 Open

Power: ON

Front Panel Ass'y: Removed, but cables are connected to allow control switch operation.

1. Load a TY-7251 tape and play it back.
2. Turn RGS counterclockwise by 360 degrees with a Guide Adjuster to raise the Reference Guide.
3. Adjust S1 height with the Guide Adjuster so that the envelope waveform (I or II) becomes the waveform (III). Adjustment should be made so that peak-to-peak level A is 50% of the maximum peak-to-peak level of the waveform.

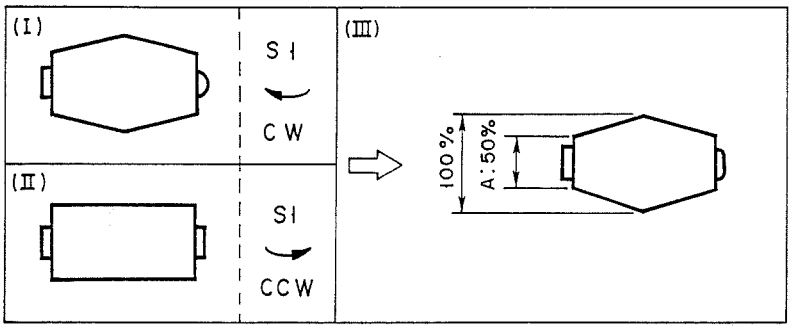


Fig. 6.28

Note: The waveform before adjustment is almost (I). In this case turn S1 clockwise. Excessive turning will cause the waveform to be (II). So, turn S1 counterclockwise to correct it.

4. Lower RGS and adjust it to obtain the best envelope waveform.

6.9. ATF Offset Check

Condition

Applicable Models: Models whose pattern revision No. of the Servo P.C.B. Ass'y is **B** (other than A).
(Consumer Version: A50101551-)
Note: The Servo P.C.B. Ass'y whose pattern revision No. A has also VR13. But this is not for ATF Adjustment.

Jumper Pin Setting (Set at power OFF.):
TE.CN-8 TRACK short
TE.CN-5 ATF ON short
TE.CN-4 Open

Power: ON

Front Panel Ass'y: Removed, but cables are connected to allow control switch operation.

Semi-fixed volume to be adjusted: VR13 on Servo P.C.B. Ass'y

6.9.1. RGS/RGT Fine Adjustment

1. Load a TY-7251 tape and play it back.
2. Finely adjust RGS and RGT to obtain optimum envelope waveform.
   If satisfactory result is not obtained, repeat items 6.7 and 6.8.

6.9.2. ATF Offset Check

1. Short TE.CN-11 ATF OFFSET with a jumper pin at power OFF.
2. Load a TY-7251 tape and play it back.
3. Turn VR13 clockwise and counterclockwise to reduce the envelope waveform peak-to-peak level by approx. 10%. (Excessive turning may cause failer of ATF function.) And, check whether still waveform is flat as shown below.
   Note: If satisfactory results are not obtained, adjust RGS, (S1), RGT, (T1) according to "Basic Adjustment Procedures for Envelope Waveform". At the same time, refer to "ATF Offset Patterns" on next page. It describes summary of how to adjust the guide.

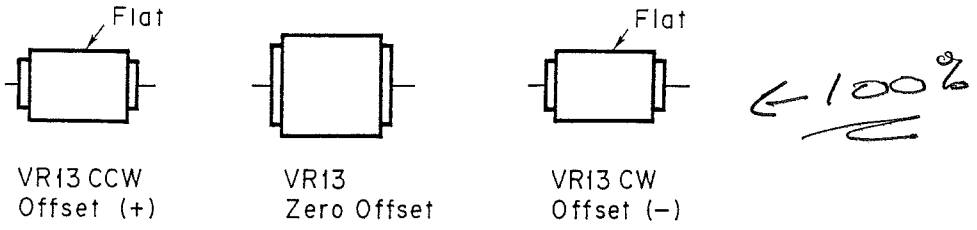
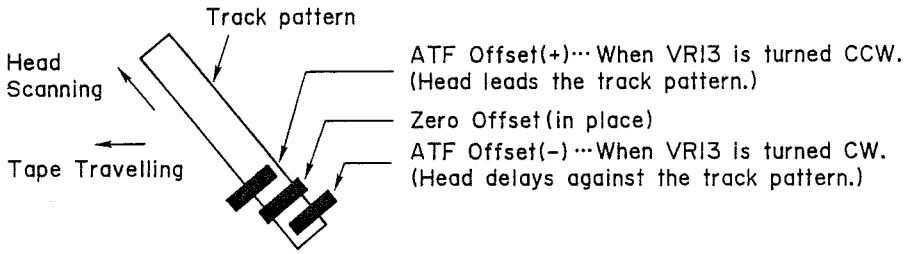


Fig. 6.29 ATF Offset Check

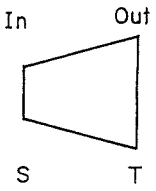
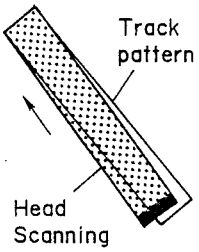
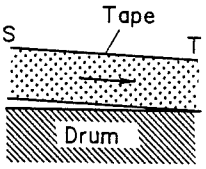
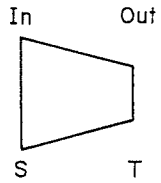
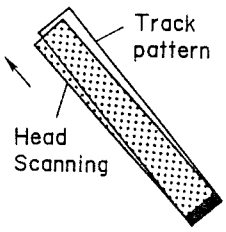
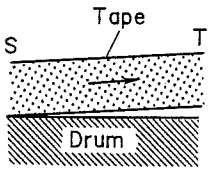
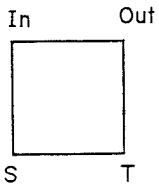
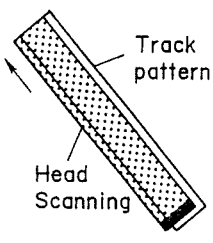
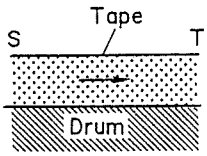
4. Adjust VR13 to obtain max. level.
5. After adjustment, unplug the jumper pin of TE.CN-11 ATF OFFSET.

ATF Offset Patterns

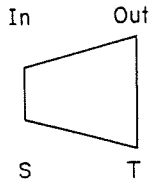
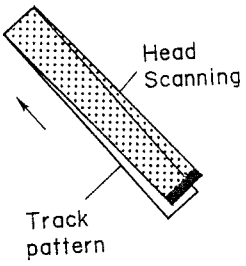
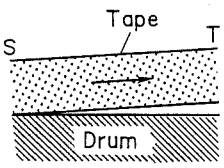
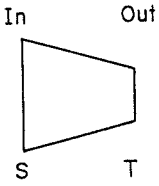
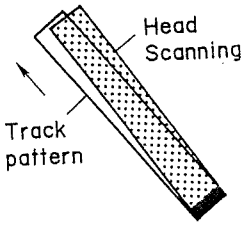
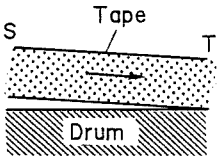
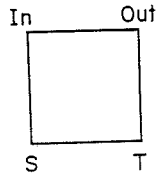
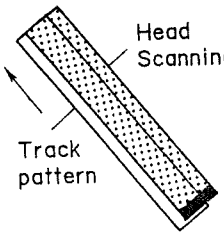
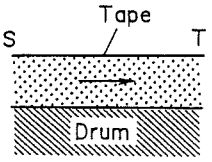
The following shows ATF offset patterns when VR13 is turned clockwise or counterclockwise. First, clarify which waveform is obtained when turning VR13. Then perform guide height adjustment (mainly for RGS, S1, RGT, T1). In case of III, no guide height adjustment is required.



1) When VR13 is turned counterclokwise, i.e., when head leads the track pattern

Case	Envelope Waveform Obtained	Track Pattern vs Head Scanning	Tape Tilt against Drum	How to Adjust
I				T: Raise. S: Lower. (RGS, S1, RGT, T1)
II				T: Lower and/or S: Raise (RGS, S1, RGT, T1)
III				Not necessory

2) When VR13 is turned clockwise, i.e., when head delays against track pattern

Case	Envelope Waveform Obtained	Track Pattern vs Head Scanning	Tape Tilt against Drum	How to Adjust
I				T: Lower. and/or S: Raise. (RGS, S1, RGT, T1)
II				T: Raise. S: Lower. (RGS, S1, RGT, T1)
III				Not necessory

6.10. Envelope Waveform Check

Condition

Jumper Pin Setting (Set at power OFF.):
TE.CN-8 TRACK short
TE.CN-5 ATF ON short
TE.CN-4 Open
Power: OFF/ON
Front Panel Ass'y: Removed, but cables are connected to allow control switch operation.

1. Turn OFF the power.
2. Tighten S1 and T1 fixing screws by the following procedure.
   a. Turn the Cam Motor Pulley by hand to position the Cam Gear to "L (LOAD)". (See Fig. 6.14)
   b. Tighten two screws (M1.4 Philips Pan Head) to fix S1 and T1. (See Fig. 6.17)
      Caution: Do not give damages onto the Head Drum and Guide Rollers with a screwdriver.
3. Turn ON the power.
4. Load a TY-7251 tape and play it back.
5. Check whether the envelope waveform is good.

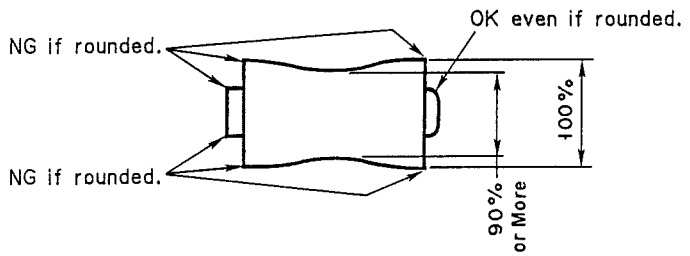


Fig. 6.30 Good Envelope Waveform

6. If satisfactory results are not obtained, loosen the screws (M1.4 Philips Pan Head) a little again following procedure shown below, and repeat 6.7 through 6.10.
   a. Turn OFF the power, and turn the Cam Motor Pulley by hand to position the Cam Gear to "L". (See Fig. 6.14)
   b. Slightly loosen the screws (M1.4 Philips Pan Head) to allow barely turning of S1 and T1.

6.11. T2, S2 Height Adjustment

Condition

Jumper Pin Setting (Set at power OFF.):
TE.CN-8 TRACK short
TE.CN-5 ATF ON short
TE.CN-4 Open
Power: ON
Front Panel Ass'y: Removed, but cables are connected to allow control switch operation.

6.11.1. T2 Height Adjustment

1. Load a TY-7251 tape and play it back.
2. While repeating Cue mode and Review mode alternately for approx. five seconds each, visually check the tape travelling on T2, and adjust T2 with a Guide Adjuster so that the tape slightly comes in contact with the lower flange of T2 as shown in Fig. 6.31.
   Cue mode : Play + F.Fwd
   Review mode: Play + Rew.

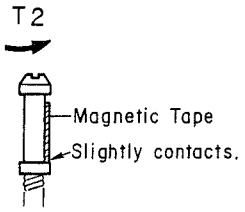


Fig. 6.31 T2 Height Adjustment

3. With repeating Eject and Playback, visually check the tape travelling on T2, and check that no curl occurs.

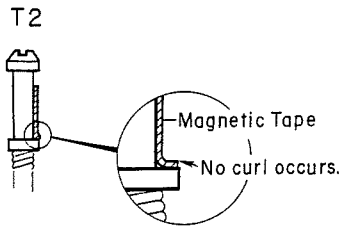


Fig. 6.32 Tape Curl on T2 (No good Condition)

6.11.2. S2 Height Adjustment

1. Load a TY-7251 tape and play it back.
2. While viewing the tape travelling visually, lower S2 with a Guide Adjuster until the tape curls slightly as shown in Fig. 6.33 (the left figure).
3. Next, raise S2 with the Guide Adjuster until the curl is released.

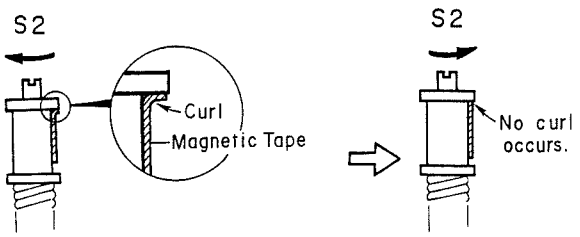


Fig. 6.33 S2 Height Adjustment

6.12. Envelope Waveform Check (Rising Characteristics)

Condition

Jumper Pin Setting (Set at power OFF.):
- TE.CN-8 TRACK short
- TE.CN-5 ATF ON short
- TE.CN-4 Open

Power: ON

Front Panel Ass'y: Removed, but cables are connected to allow control switch operation.

1. Load a TY-7251 tape and play it back.
2. Change the mode as follows, and check the rising characteristics of the envelope waveform.
   - o Cue (Play + F.Fwd) to Play
   - o Review (Play + Rew.) to Play
   - o Stop to Play

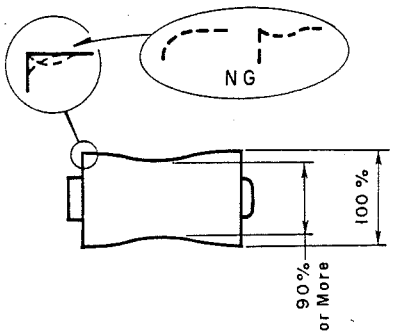


Fig. 6.34 Envelope Waveform Check (Rising Characteristics)

3. If the waveform waves as dotted line shown in Fig. 6.34, repeat 6.7 through 6.12 after slightly loosening S1, T1 fixing screws (M1.4 Philips Pan Head). For loosening the screws refer to 6.10-6.

6.13. Self Rec. & Playback Envelope Waveform Check

Note: This check assures exchangeability of tape with other DATs.

Condition

Jumper Pin Setting (Set at power OFF.):

TE.CN-8 TRACK short

TE.CN-5 ATF ON short

TE.CN-4 Short (Must be shorted as the TY-7251 tape is not used.)

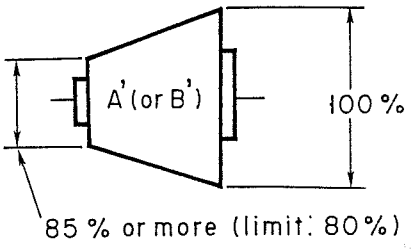
Power: ON

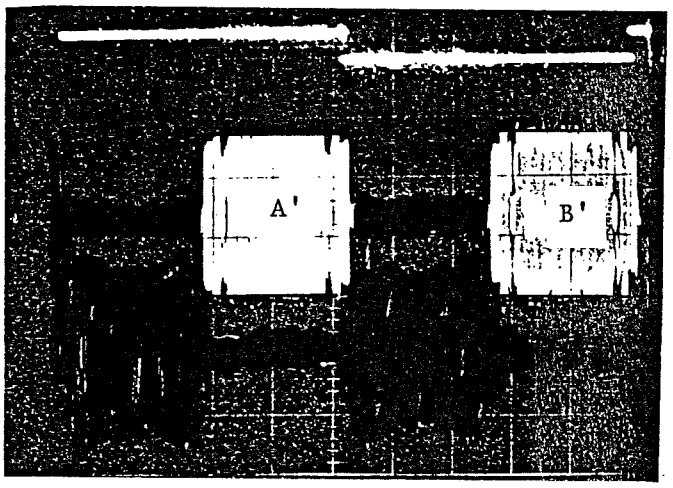
Front Panel Ass'y: Removed, but cables are connected to allow control switch operation.

Display Mode: Tape counter display mode. Select by pressing Counter button.

Input Signal: None

1. Load a reference tape.
2. Set the N-1000 to Rec.-Play mode and record the input signal (no signal is applied) for approx. 30 sec. While recording, check that envelope waveforms A' and B' are as shown in Fig. 6.35. (The min. level is 85% or more with respect to the max. level. Exchangeable limit is 80%.)

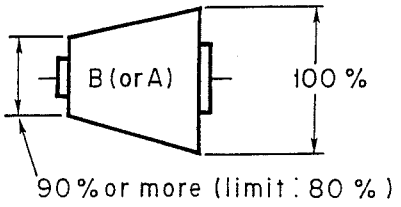


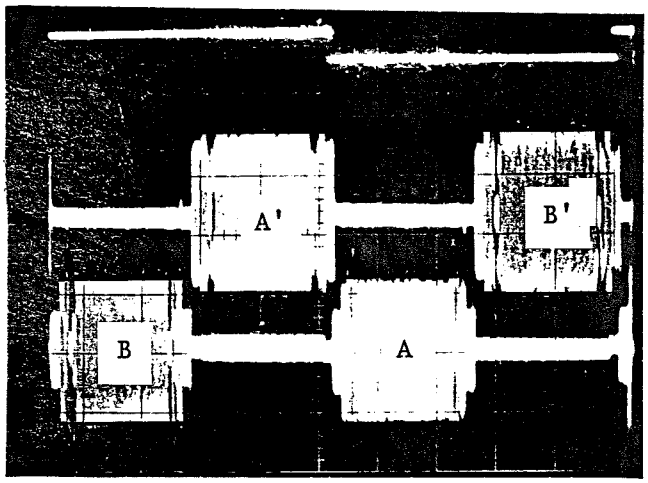


(Ideal Waveforms at TP9)

Fig. 6.35 Self Rec. & Playback (During Recording)

3. Press the Counter Search button of the N-1000. The tape is automatically rewound and stops at counter indication "00000".
4. Play back the tape, and check that envelope waveforms A and B are as shown in Fig. 6.36. (The min. level is 90% or more with respect to the max. level. Exchangeable limit is 80%.)





(Ideal Waveforms)

Fig. 6.36 Self Rec. & Playback (During Playback)

5. If satisfactory results are not obtained, repeat 6.9 through 6.13.
6. After adjustment, remove the jumper pins of TE.CN-8 TRACK and TE.CN-5 ATF ON. Make sure that TE.CN-4 is shorted.

6.14. Application of Lock Tight Paint

1. After completion of mechanical adjustments, apply a quantity of lock tight paint to the following screws:
   - o RGS and RGT Height Adjustment Screws
   - o S1 and T1 fixing screws (M1.4 Philips Pan Head)

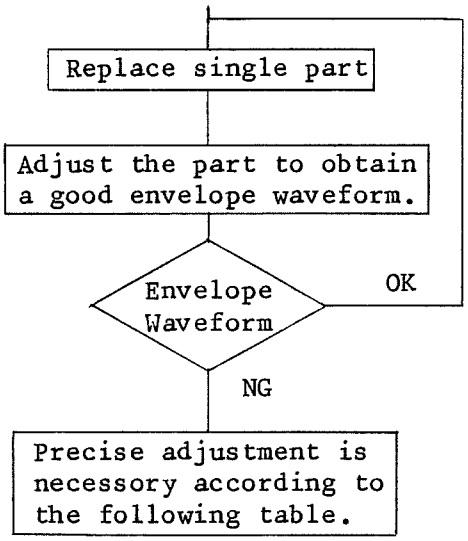
   Note: It is recommended to use clear lock tight paint rather than colored one since user can see the RGS/RGT Height Adjustment Screws through the acrylic panel.

2. Install the Front Panel Ass'y.

6.15. ADJUSTMENT ITEMS ACCORDING TO PARTS REPLACED

(1) Head Drum
  (a) Connect an oscilloscope to see envelope waveform referring to item 6.5.
  (b) Finely adjust both RGT and RGS height to obtain a good envelope waveform. See 6.6-6 "RGS, RGT Height Adjustment".
  (c) Perform items 6.7 through 6.14.

(2) Roller Guide(S3, S1, T1, T3)/S2 Guide/T2 Guide/Capstan
When replacing, do not replace all parts at the same time. Replace single part at one time and adjust the height of replaced part to obtain a good envelope waveform. After that, replace the next part.



Notes: 1. Connect an oscilloscope to see envelope waveform referring to item 6.5.
2. After adjustment, apply a quantity of lock tight paint to RGS, RGT, and Fixing Screws (M1.4) for S1, T1, as required.

Guide	Adjustment Items
T3	6.3.1. "T3 Height Preset"
T2	6.3.3. "T2 Height Preset", 6.10. "T2 Height Adjustment"
T1 RGT RGS S1	6.5 through 6.14
S2	6.3.3. "S2 Height Preset", 6.10. "S2 Height Adjustment"
S3	6.3.1. "S3 Height Preset"
Capstan	6.9.2. "ATF Offset Check" through 6.14.

7. MECHANISM ASS'Y AND PARTS LIST

7.1. Synthesis

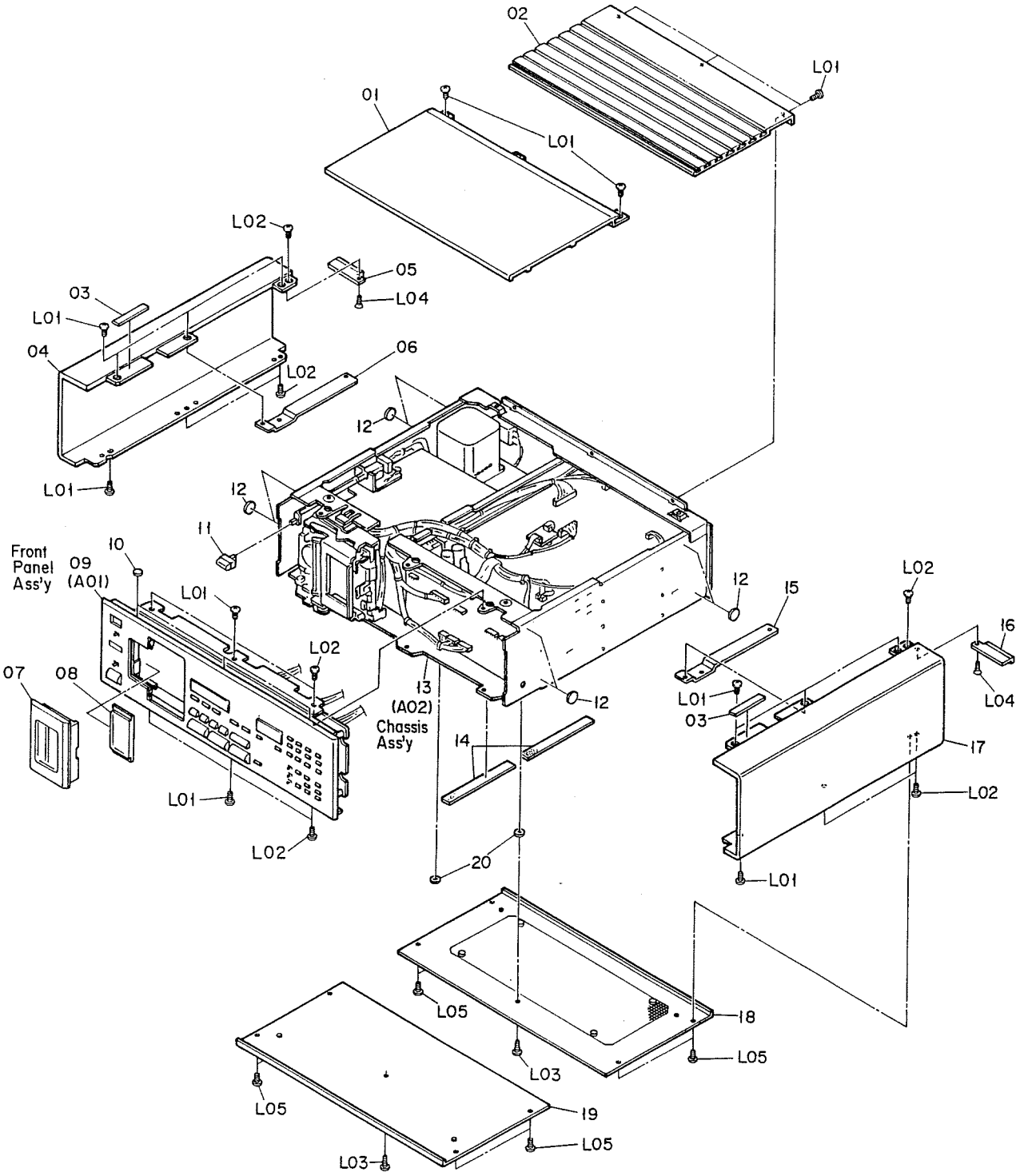


Fig. 7.1

Ref. No.	Part No.	Description	Q'ty
		Synthesis	
01	HA05594A	Top Cover Front Ass'y	1
02	HA05595A	Top Cover Rear Ass'y	1
03	0J05905A	Top Cover Cushion	2
04	0H05452B	Side Panel Left [N-1000]	1
	0H05567B	Side Panel Left [N-1000 Pro.]	1
05	0H05541B	Rear Plate Left	1
06	0J05773C	Top Cover Holder L	1
07	HA05591A	Cassette Lid Ass'y	1
08	0H05483B	Drum Window (Acrylic Resin)	1
09	HA05590A	Front Panel Ass'y	1
10	0J05938A	Top Spacer	3
11	HA05586A	Power Button Ass'y	1
12	0J05909A	Side Spacer	8
13	-	Chassis Ass'y	1
14	0J05907B	Bottom Cover Cushion	2
15	0J05772C	Top Cover Holder R	1
16	0H05478B	Rear Plate Right	1
17	0H05453B	Side Panel Right [N-1000]	1
	0H05566B	Side Panel Right [N-1000 Pro.]	1
18	HA05596A	Bottom Cover Rear Ass'y [N-1000]	1
	HA05700A	Bottom Cover Rear Ass'y [N-1000 Pro.]	1
19	HA05617A	Bottom Cover Front Ass'y [N-1000]	1
	HA05701A	Bottom Cover Front Ass'y [N-1000 Pro.]	1
20	0J05965A	Bottom Spacer	2
L01	0E03536A	M3x5 + Binding Projected	
L02	0E03522A	M3x5 + Binding	
L03	0E03526A	BT3x6 + Binding	
L04	0E00076A	M2.6x4 + Countersunk	
L05	0E03551A	M3x8 + Binding Projected	
-	0E03538A	M4x6 + Countersunk [N-1000 Pro.]	

7.2. Front Panel Ass'y (A01)

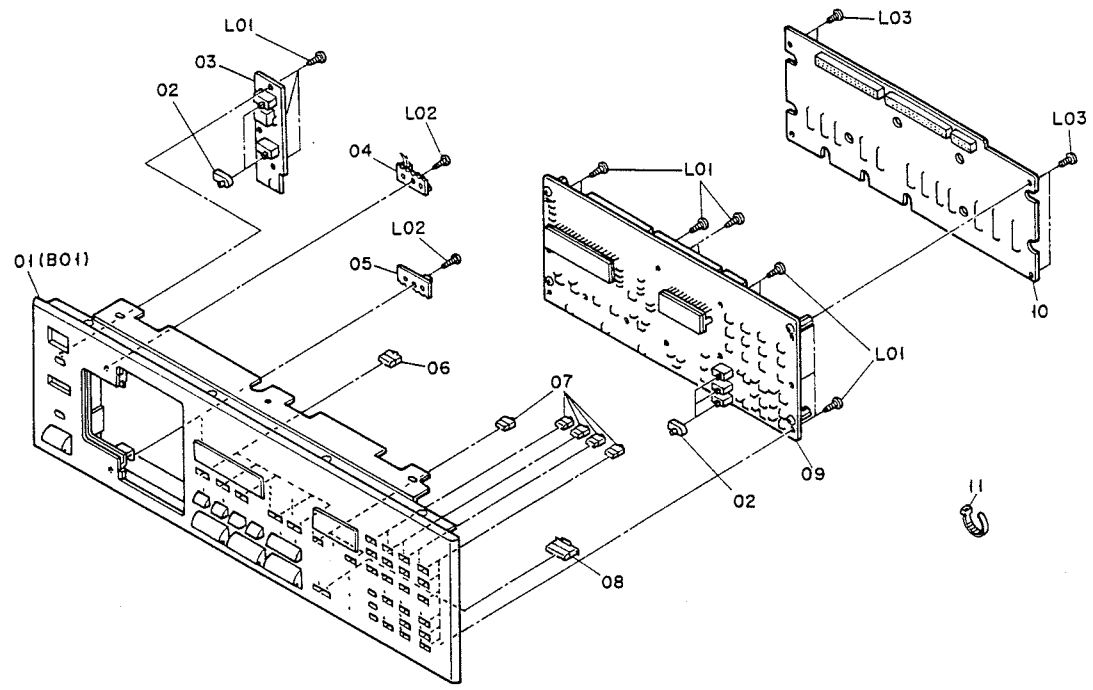


Fig. 7.2

Ref. No.	Part No.	Description	Q'ty
A01	HA05590A	Front Panel Ass'y	1
01	HA05619A	Front Panel Sub Ass'y	1
02	HA05597A	Slide Switch Knob Ass'y	5
03	BA07526A	Sense P.C.B. Ass'y	1
04	BA07527A	Lamp Upper P.C.B. Ass'y	1
05	BA07528A	Lamp Lower P.C.B. Ass'y	1
06	HA05603A	Sub Key 12 Ass'y	5
07	HA05602A	Sub Key 9 Ass'y	22
08	HA05604A	Sub Key 18 Ass'y	1
09	BA07524A	Switch P.C.B. Ass'y	1
10	BA07525A	Driver P.C.B. Ass'y	1
11	0B90019A	SK Binder	3
L01	0E00868A	BT3x8 + Binding	
L02	0E00853A	BT2x3 + Countersunk	
L03	0E00964A	M3x5 + Binding	

7.3. Chassis Ass'y (A02)

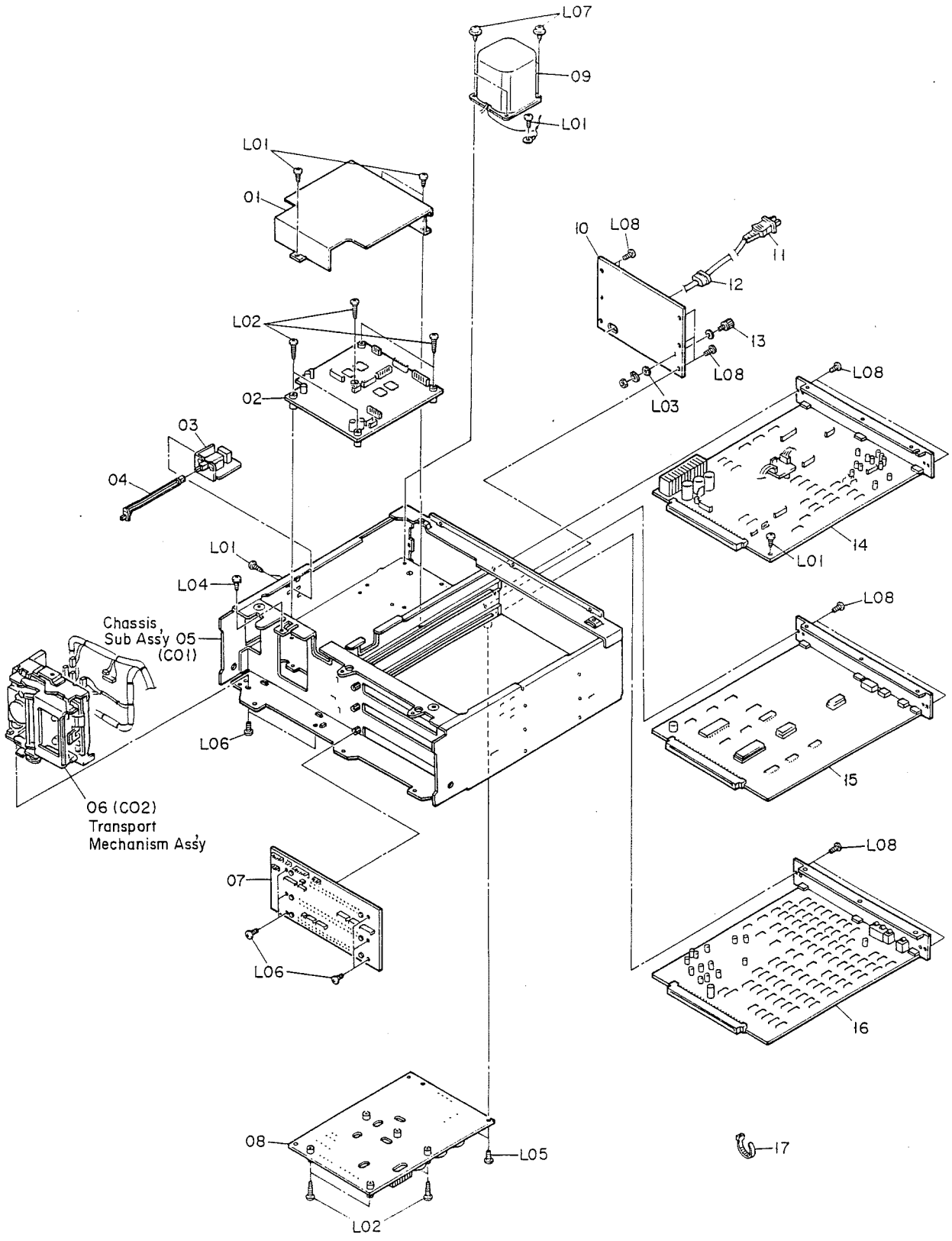
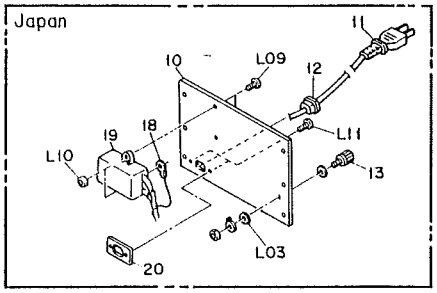
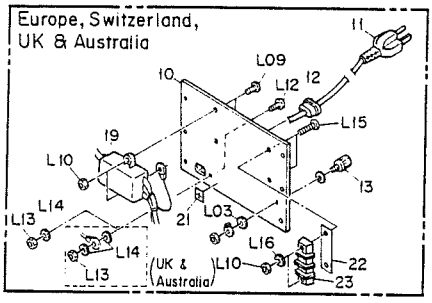
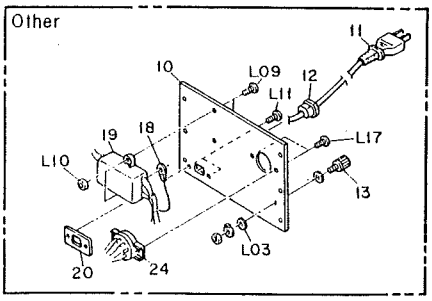


Fig. 7.3







Ref. No.	Part No.	Description	Q'ty
A02	-	Chassis Ass'y	1
01	0J05771B	Shield Cover	1
02	BA07637A	Signal Processor P.C.B. Ass'y	1
03	BA07515A	Power Switch P.C.B. Ass'y (USA, CAN)	1
	BA07569A	Power Switch P.C.B. Ass'y (JPN)	1
	BA07574A	Power Switch P.C.B. Ass'y (UK, OTR, AUS, EP, SWT)	1
04	0J05780A	Power Switch Joint	1
05	-	Chassis Sub Ass'y	1
06	CA81437A	Transport Mechanism A Ass'y Serial No.: A50101501- [N-1000] A50401301- [N-1000 Pro.]	1
	CA80957A	Transport Mechanism D Ass'y Serial Nos.: A50101001-01500 [N-1000] A50401001-01300 [N-1000 Pro.]	1
07	BA07523A	Mother P.C.B. Ass'y	1
08	BA07518A	Power Supply P.C.B. Ass'y (USA, CAN, JPN)	1
	BA07576A	Power Supply P.C.B. Ass'y (UK, OTR, AUS, EP, SWT)	1
09	0B50152B	Power Transformer (USA, CAN)	1
	0B50153A	Power Transformer (JPN)	1
	0B50154A	Power Transformer (UK, AUS, EP, SWT)	1
	0B50155A	Power Transformer (OTR)	1
10	0H05493D	Rear Panel (USA, CAN)	1
	0H05521D	Rear Panel (OTR)	1
	0H05543D	Rear Panel (JPN)	1
	0H05555D	Rear Panel (AUS, UK)	1
	0H05557D	Rear Panel (EP, SWT)	1
11	0B80085A	Power Cord (OFC) (JPN, OTR)	1
	0B80124A	Power Cord (EP)	1
	0B80131A	Power Cord (OFC) (USA, CAN)	1
	0B80132B	Power Cord (SWT)	1
	0B80133B	Power Cord (AUS)	1
	0B80134B	Power Cord (UK)	1
12	0B90157A	Cord Bushing (SR-6N-4) (UK, AUS, EP, SWT, USA, CAN)	1
	0B90186A	Cord Bushing (SR-33-1) (JPN, OTR)	1
13	0B81685A	Earth Terminal T5435	1
14	HA05719A	Servo P.C.B. Ass'y	1
15	HA05770A	u-COM 101 P.C.B. Ass'y [N-1000] Serial No.: A50101501-	1
	HA05582A	u-COM 101 P.C.B. Ass'y [N-1000] Serial Nos.: A50101001-01500	1
	HA05771A	u-COM 102 P.C.B. Ass'y [N-1000 Pro.] Serial No.: A50401301-	1
	HA05702A	u-COM 102 P.C.B. Ass'y [N-1000 Pro.] Serial Nos.: A50401001-01300	1
16	HA05583A	DAIF-D P.C.B. Ass'y	1
17	0B90019A	Insu-Lock	43

Ref. No.	Part No.	Description	
18	0B83607A	GND Ass'y (JPN, OTR)	1
19	BA07697A	Noise Filter P.C.B. Ass'y (UK, AUS, EP, SWT, JPN, OTR)	1
20	0J05939A	Bushing Plate (JPN, OTR)	1
21	0M03700A	Earth Mark Label (AUS, SWT)	1
22	0J05694A	Insulator A (UK, AUS, EP, SWT)	1
23	0B81937A	Terminal B208 B-12 2P (UK, AUS, EP, SWT)	1
24	0B70049A	Voltage Selector (ESE-37202) (OTR)	1
L01	0E00857A	BT3x6 + Binding	
L02	0E03136A	BT3x16 + Binding	
L03	0E03537A	Washer 6mm Toothed Lock	
L04	0E03345A	M3x6 + Binding with Toohed-Lock Washer	
L05	0E00992A	M3x4 + Binding	
L06	0E00896A	M3x6 + Binding	
L07	0E03032A	BT4x8 + Pan Washer Faced (Black Chromate)	
L08	0E03522A	M3x5 + Binding	
L09	0E03517A	M3x5 + Binding (UK, AUS, EP, SWT, JPN, OTR)	
L10	0E00718A	Nut Hex. 3mm (UK, AUS, EP, SWT, JPN, OTR)	
L11	0E03519A	M3x6 + Binding (JPN, OTR)	
L12	0E03547A	M4x6 + Binding (UK, AUS, EP, SWT)	
L13	0E00506A	Nut Hex. 4mm (UK, AUS, EP, SWT)	
L14	0E00078A	Washer 4mm Toothed Lock (UK, AUS, EP, SWT)	
L15	0E03546A	M3x14 + Binding (UK, AUS, EP, SWT)	
L16	0E00172A	Washer 3mm Toothed Lock (UK, AUS, EP, SWT)	
-	0B83612A	13P Connector Ass'y (CN1)	1
-	0B83626C	12P Connector Ass'y (CN11)	1
-	0B83627B	13P Connector Ass'y (CN13)	1
-	0B83628B	8P Connector Ass'y (CN14)	1
-	0B83629C	3P Connector Ass'y (CN15)	1
-	0B83631C	6P Connector Ass'y (CN17)	1
-	0B83640A	10P Connector Ass'y (CN101)	1
-	0B83641A	14P Connector Ass'y (CN102)	1
-	0B83643A	7P Connector Ass'y (CN104)	1
-	0J05940A	Insulator Sheet	1
-	0B83632B	9P Connector Ass'y (CN18)	1
-	0B83654B	8P Connector Ass'y (CN19)	1
-	0B83633B	6P Connector Ass'y (CN20)	1
-	0B83634B	10P Connector Ass'y (CN21)	1
-	0B83635B	4P Connector Ass'y (CN22)	1
-	0B83637A	6P Connector Ass'y (CN24)	1
-	0B83638B	2P Connector Ass'y (CN25)	1
-	0B83639B	4P Connector Ass'y (CN26)	1
-	0B83623C	13P Connector Ass'y (CN8/10)	1
-	0B83625B	13P Connector Ass'y (CN9)	1
-	0B83784A	7P Connector Ass'y (CN23)	1
		Serial No. : A50101501- [N-1000] A50401301- [N-1000 Pro.]	
-	0B83636B	10P Connector Ass'y (CN23)	1
		Serial Nos. : A50101001-01500 [N-1000] A50401001-01300 [N-1000 Pro.]	

7.4. Front Panel Sub Ass'y (B01)

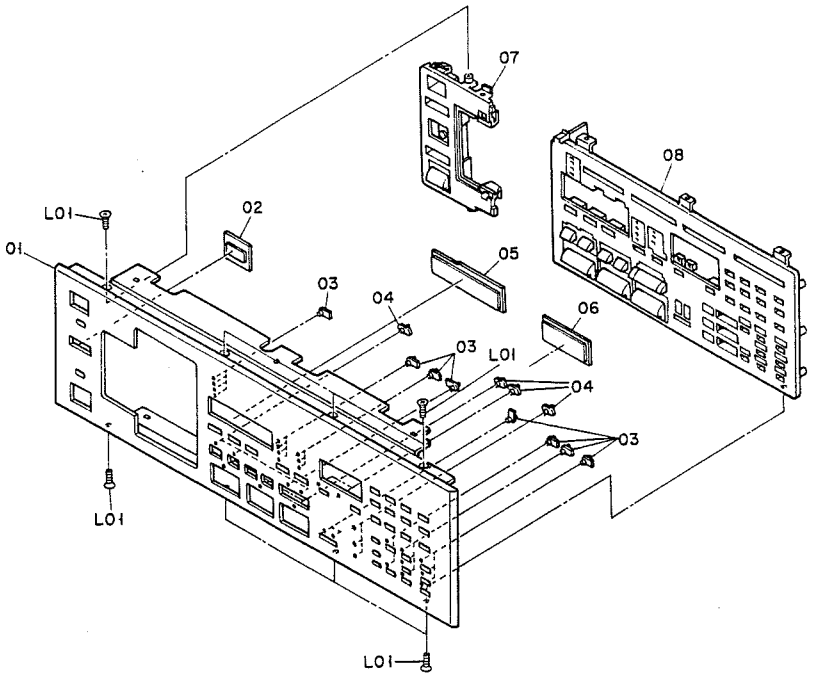


Fig. 7.4

Ref. No.	Part No.	Description	Q'ty
B01	**HA05619A**	**Front Panel Sub Ass'y**	1
01	0H05450C	Front Panel	1
02	0H05479A	Remote Lens	1
03	0H05488A	LED Lens B	22
04	0H05487A	LED Lens A	12
05	0H05480A	Counter Lens	1
06	0H05481A	Display Lens	1
07	HA05601A	Eject Escutcheon Ass'y	1
08	HA05600A	Front Chassis Ass'y	1
L01	0E03473A	BT2.6x6 + Countersunk	

7.5. Chassis Sub Ass'y (C01)

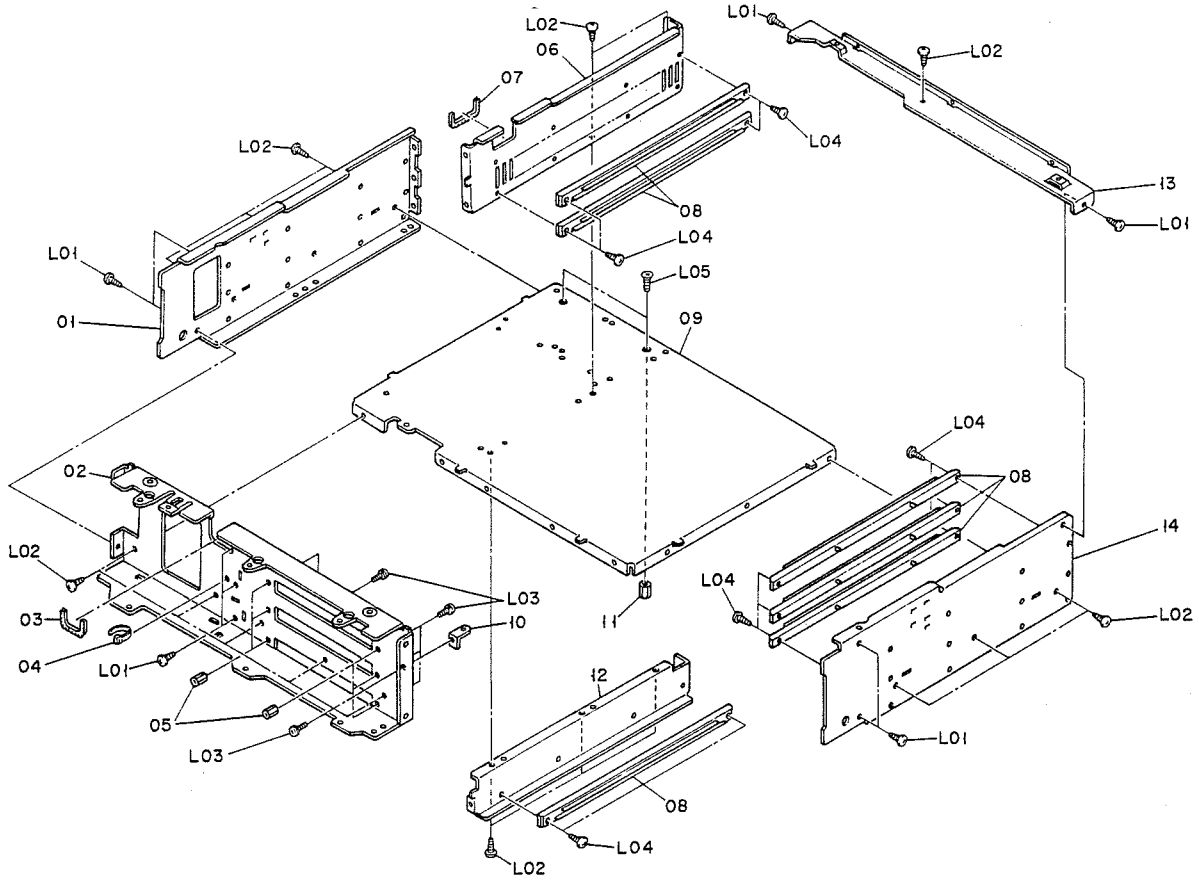


Fig. 7.5

Ref. No.	Part No.	Description	Q'ty
C01	-	Chassis Sub Ass'y	1
01	0J05766C	Side Chassis L	1
02	0J05763C	Front Chassis	1
03	0B90417A	Free Bushing 82mm (KG-016)	1
04	0B90398A	Insu-Lock (PLP-1.5I)	1
05	0J05793A	Stud 8.5mm	6
06	0J05768C	Center Chassis Upper	1
07	0B90416A	Free Bushing 72mm	1
08	0J05776A	Card Rail	6
09	0J05765B	Main Chassis	1
10	0J05822A	Servo P.C.B. Holder	1
11	0J05851A	Stud 7.5mm	2
12	0J05769D	Center Chassis Lower	1
13	0J05770A	Rear Angle	1
14	0J05767C	Side Chassis Rear	1
L01	0E03515A	BT3x8 + Binding (Copper)	
L02	0E03366A	BT3x8 + Binding	
L03	0E00612A	M3x6 + Pan (2A)	
L04	0E00857A	BT3x6 + Binding	
L05	0E00505A	M3x6 + Countersunk	

7.6. Transport Mechanism Ass'y (C02)

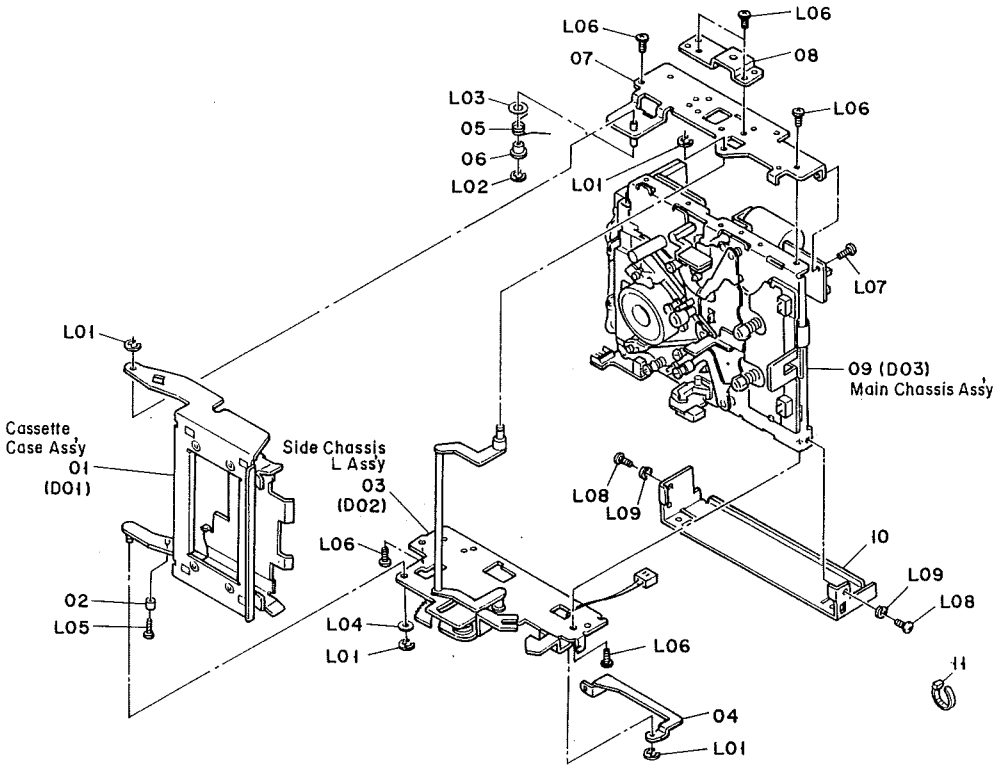


Fig. 7.6

Ref. No.	Part No.	Description	Q'ty
C02	CA81437A	Transport Mechanism A Ass'y Serial No: Consumer Version: A50101501 - Professional Version: A50401301 -	1
01	CA81413B	Cassette Case Ass'y	1
02	0C83995A	Lid Stopper Pin	1
03	CA81521A	Side Chassis L Ass'y	1
04	0C83536A	Eject Link Plate	1
05	0C83971A	Eject Spring R	1
06	0C83542A	Lid Spring Collar	1
07	CA81522A	Side Chassis R Sub Ass'y	1
08	0C83541A	Mechanism Holder U	1
09	CA81549A	Main Chassis A Ass'y	1
10	0C83540A	Mechanism Holder L	1
11	0C85049A	Insu-Lock	3
L01	0E00222A	E-Ring 2mm	
L02	0E00042A	E-Ring 1.5mm	
L03	0C83966A	Washer 5.1x9x0.188 (Plastics)	
L04	0E03207A	Washer 3.1x6x0.25 (Plastics)	
L05	0C85071A	M1.7x3.5 BZn	
L06	0C85058A	ST2.6x4 BZn	
L07	0E00821A	M2x3 + Binding	
L08	0E03422A	M3x18 + Binding (Black Chromate)	
L09	0E00026A	Washer 2.6mm Spring	

Ref. No.	Part No.	Description	Q'ty
C02	CA80957A	Transport Mechanism D Ass'y Serial Nos: Consumer Version: A50101226 - 01235 01238 - 01243 01245 - 01500 Professional Version: A50401086 - 01300	1
01	CA81413A	Cassette Case Ass'y	1
02	0C83995A	Lid Stopper Pin	1
03	CA81521A	Side Chassis L Ass'y	1
04	0C83536A	Eject Link Plate	1
05	0C83971A	Eject Spring R	1
06	0C83542A	Lid Spring Collar	1
07	CA81522A	Side Chassis R Sub Ass'y	1
08	0C83541A	Mechanism Holder U	1
09	CA80958A	Main Chassis D Ass'y	1
10	0C83540A	Mechanism Holder L	1
11	0C85049A	Insu-Lock	3
L01	0E00222A	E-Ring 2mm	
L02	0E00042A	E-Ring 1.5mm	
L03	0C83966A	Washer 5.1x9x0.188 (Plastics)	
L04	0E03207A	Washer 3.1x6x0.25 (Plastics)	
L05	0C85071A	M1.7x3.5 BZn	
L06	0C85058A	ST2.6x4 BZn	
L07	0E00821A	M2x3 + Binding	
L08	0E03422A	M3x18 + Binding (Black Chromate)	
L09	0E00026A	Washer 2.6mm Spring	

7.7. Cassette Case Ass'y (D01)

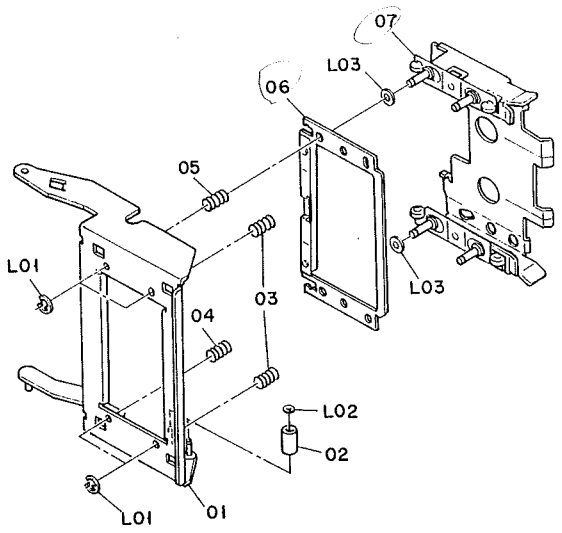


Fig. 7.7

Ref. No.	Part No.	Description	Q'ty
D01	CA81413B	Cassette Case Ass'y	1
01	CA81415A	Lid Plate Ass'y	1
02	0C83974A	Lock Loller	2
03	0C83967A	Cassette Hold Spring A	1
04	0C83969A	Cassette Hold Spring C	1
05	0C83968A	Cassette Hold Spring B	2
06	CA81419A	Cassette Hold Plate C Ass'y	1
07	CA81416B	Cassette Holder Ass'y	1
L01	0E00222A	E-Ring 2mm	
L02	0C85048A	Washer 1.2x3x0.25 (Polyslider, Cut)	
L03	0E03270A	Washer 3.1x6x0.25 (Plastics)	

7.8. Side Chassis L Ass'y (D02)

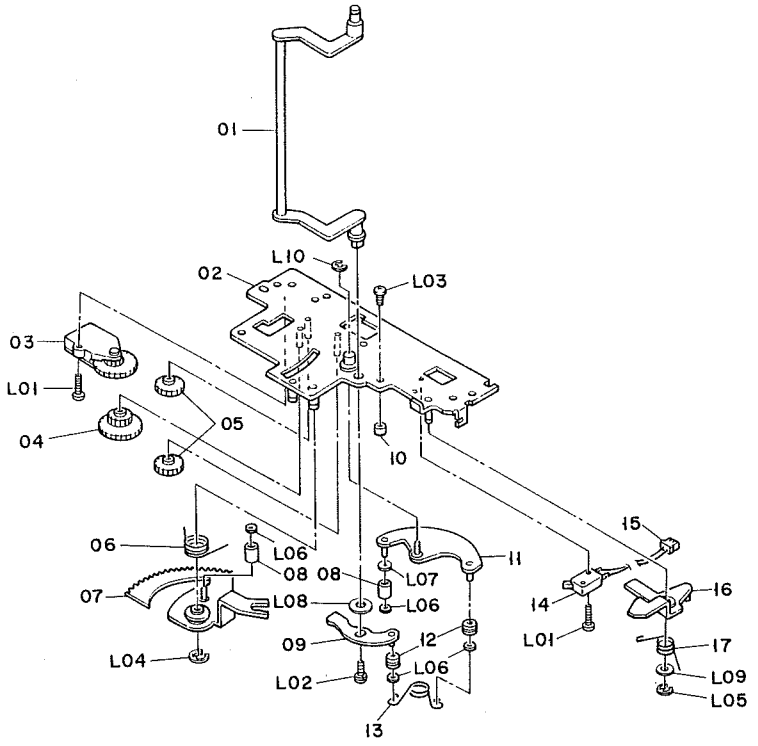


Fig. 7.8

Ref. No.	Part No.	Description	Q'ty
D02	CA81521A	Side Chassis L Ass'y	1
01	CA81524A	Eject Lever Ass'y	1
02	CA81517A	Side Chassis L Sub Ass'y	1
03	CA81516A	Damper Unit Ass'y	1
04	0C83538A	Damper Gear B	1
05	0C83537A	Damper Gear A	2
06	0C83972A	Eject Spring L	1
07	CA81525A	Swing Arm Ass'y	1
08	0C83974A	Lock Roller	2
09	CA81527A	Supporting Point Lever Ass'y	1
10	0C85107A	Stopper Pin	1
11	CA81529A	Reverse Lever Ass'y	1
12	0C83981A	Flip-Flop Spring Roller	1
	0C83980A	Flip-Flop Spring Roller	1
13	0C83973A	Flip-Flop Spring	1
14	0B70001A	Leaf Switch	1
15	CA81515A	2P Connector Ass'y	1
16	CA81531A	Lock Lever Ass'y	1
17	0C83970A	Lock Lever Spring	1
L01	0E03184A	M1.7x5.5 + Pan (Black Chromate)	
L02	0E03340A	M2.6x5 + Pan (2A)	
L03	0E00922A	M2x3 + Pan (Black Chromate)	
L04	0E00181A	E-Ring 3mm	
L05	0E00222A	E-Ring 2mm	
L06	0C85048A	Washer 1.2x3x0.25 (Polyslider, Cut)	
L07	0C85108A	Washer 1.7x3.2x0.5 (Plastics)	
L08	0E03357A	Washer 4.1x6x0.25 (Plastics)	
L09	0E03180A	Washer 2.6x6x0.25 (Plastics)	
L10	0E00165A	E-Ring 1.2mm	

7.9. Main Chassis Ass'y (D03)

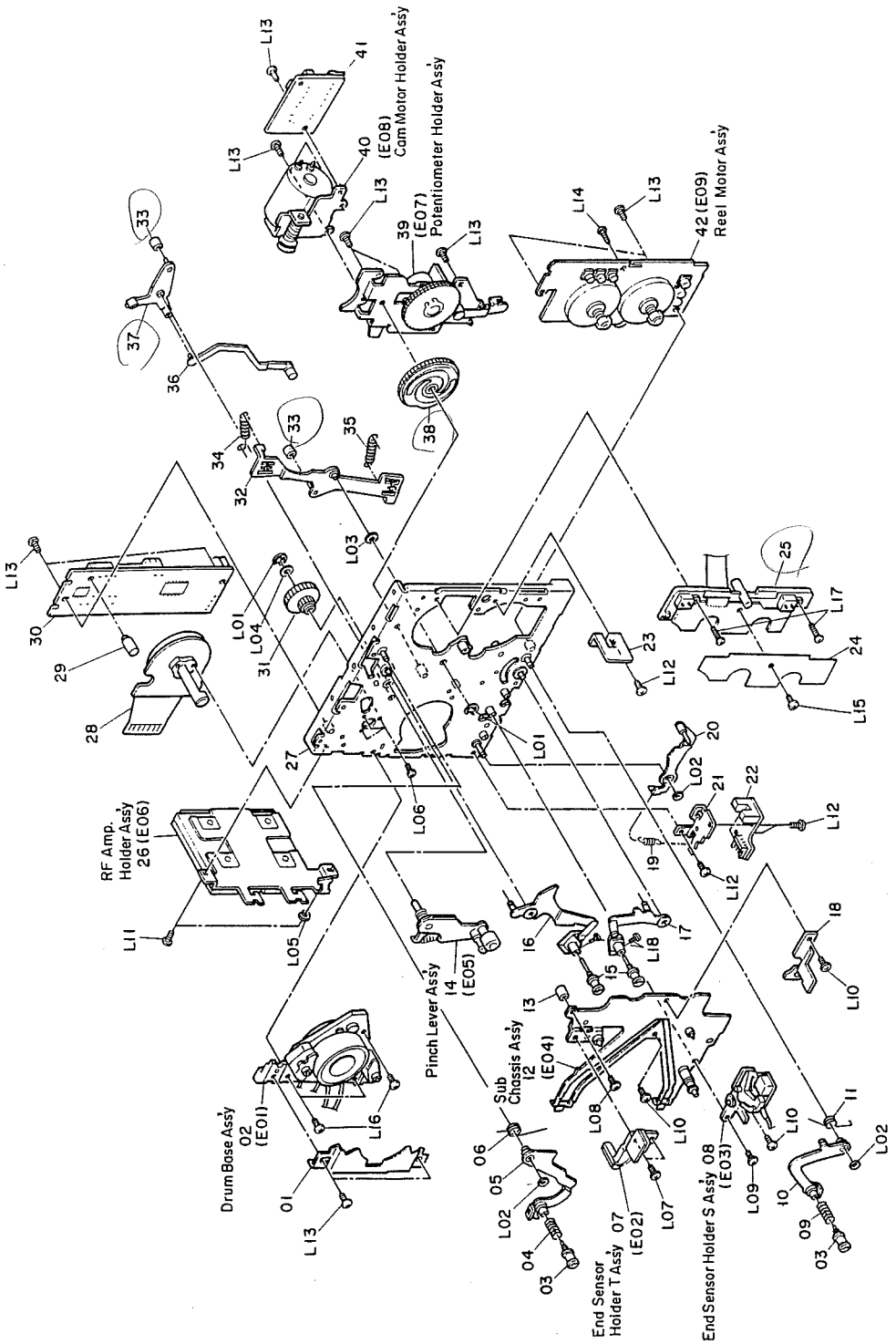


Fig. 7.9

Ref. No.	Part No.	Description	Q'ty
D03	CA81549B	Main Chassis A Ass'y Serial No: Consumer Version: A50101501 - Professional Version: A50401301 -	1
01	0C85063A	Shield Cover	1
02	CA81502A	Drum Base Ass'y	1
03	0C83879A	Guide Roller S3/T3	2
04	0C83889A	Guide Roller T3 Spring	1
05	CA81545A	Guide Roller T3 Arm Ass'y	1
06	0C83886A	Guide Roller Arm Spring T	1
07	CA81538A	End Sensor Holder T Ass'y	1
08	CA81532A	End Sensor Holder S Ass'y	1
09	0C83888A	Guide Roller S3 Spring	1
10	CA81544A	Guide Roller S3 Arm Ass'y	1
11	0C83887A	Guide Roller Arm Spring S	1
12	CA81511A	Sub Chassis Ass'y	1
13	0C83958A	Sub Chassis Collar	1
14	CA81533A	Pinch Lever Ass'y	1
15	0C83878A	Guide Roller S1/T1	2
16	CA81509A	Loading Lever T Ass'y	1
17	CA81513A	Loading Lever S Ass'y	1
18	0C83470A	Protect Plate B	1
19	0C83898A	Tension Arm Spring	1
20	CA81543A	Tension Arm Ass'y	1
21	0C83491A	Tesnion P.C.B. Holder	1
22	CA81535A	Tension Sensor P.C.B. Ass'y	1
23	0C83511A	Protect Plate A	1
24	0C83512A	Blind Plate	1
25	CA81507B	Switch Base Ass'y Ok	1
26	CA81539A	RF Amp. Holder Ass'y	1
27	CA81503A	Main Chassis Sub Ass'y	1
28	0C85040A	Capstan Motor	1
29	0C85041A	Drive P.C.B. Stud B	1
30	CA81484A	Drive P.C.B. Sub Ass'y	1
31	0C83474A	Cam Drive Gear B	1
32	CA81542A	Loading Arm Ass'y	1
33	0C85064A	Roller	2
34	0C83891A	Loading Spring T	1
35	0C83890A	Loading Spring S	1
36	CA81541A	TAD Link Ass'y	1
37	CA81510A	TAD Lever Ass'y ← new number Ok	1
38	0C85062A	Cam Gear (Aluminum)	1
39	CA81514A	Potentiometer Holder Ass'y	1
40	CA81504A	Cam Motor Holder Ass'y	1
41	CA81553A	Relay P.C.B. A Ass'y	1
42	CA81506A	Reel Motor A Ass'y	1
L01	0E00042A	E-Ring 1.5mm	
L02	0C85042A	Washer 1.8x3.8 (Polyslider, Cut)	
L03	0E03163A	Washer 3.1x5.4x0.13 (Polyslider)	
L04	0E03274A	Washer 2.1x4x0.125 (Plastics)	
L05	0E00026A	Washer 2.6mm Spring	
L06	0C85051A	M1.7x3 BZn	
L07	0C85052A	M2x1.5	
L08	0C85053A	M2x5.5	
L09	0C85055A	M2x2.2	
L10	0C85056A	M2x3.5	
L11	0C85058A	ST2.6x4 BZn	
L12	0E00692A	M2x2.5 + Pan (Black Chromate)	
L13	0E00821A	M2x3 + Binding	
L14	0E00841A	BT2x4 + Pan	

Ref. No.	Part No.	Description	Q'ty
L15	0E00909A	M2x6 + Pan (Black Chromate)	
L16	0E00976A	M2x5 + Binding	
L17	0E03185A	M1.7x6 + Pan (Black Chromate)	
L18	0C85050A	M1.4x2.5 M1	

Ref. No.	Part No.	Description	Q'ty
D03	CA80958A	Main Chassis D Ass'y Serial Nos: Consumer Version: A50101226 - 01235 01238 - 01243 01245 - 01500 Professional Version: A50401086 - 01300	1
01	0C85063A	Shield Cover	1
02	CA81502A	Drum Base Ass'y	1
03	0C83879A	Guide Roller S3/T3	2
04	0C83889A	Guide Roller T3 Spring	1
05	CA81545A	Guide Roller T3 Arm Ass'y	1
06	0C83886A	Guide Roller Arm Spring T	1
07	CA81538A	End Sensor Holder T Ass'y	1
08	CA81532A	End Sensor Holder S Ass'y	1
09	0C83888A	Guide Roller S3 Spring	1
10	CA81544A	Guide Roller S3 Arm Ass'y	1
11	0C83887A	Guide Roller Arm Spring S	1
12	CA81511A	Sub Chassis Ass'y	1
13	0C83958A	Sub Chassis Collar	1
14	CA81533A	Pinch Lever Ass'y	1
15	0C83878A	Guide Roller S1/T1	2
16	CA81509A	Loading Lever T Ass'y	1
17	CA81513A	Loading Lever S Ass'y	1
18	0C83470A	Protect Plate B	1
19	0C83898A	Tension Arm Spring	1
20	CA81543A	Tension Arm Ass'y	1
21	0C83491A	Tesnion P.C.B. Holder	1
22	CA81535A	Tension Sensor P.C.B. Ass'y	1
23	0C83511A	Protect Plate A	1
24	0C83512A	Blind Plate	1
25	CA81507B	Switch Base Ass'y	1
26	CA81539A	RF Amp. Holder Ass'y	1
27	CA81503A	Main Chassis Sub Ass'y	1
28	0C85040A	Capstan Motor	1
29	0C85041A	Drive P.C.B. Stud B	1
30	CA81484A	Drive P.C.B. Sub Ass'y	1
31	0C83474A	Cam Drive Gear B	1
32	CA81542A	Loading Arm Ass'y	1
33	0C85064A	Roller	2
34	0C83891A	Loading Spring T	1
35	0C83890A	Loading Spring S	1
36	CA81541A	TAD Link Ass'y	1
37	CA81510A	TAD Lever Ass'y	1
38	0C85062A	Cam Gear (Aluminum)	1
39	CA81514A	Potentiometer Holder Ass'y	1
40	CA81504A	Cam Motor Holder Ass'y	1
41	CA81536A	Relay P.C.B. D Ass'y	1
42	CA81485A	Reel Motor D Ass'y	1
L01	0E00042A	E-Ring 1.5mm	
L02	0C85042A	Washer 1.8x3.8 (Polyslider, Cut)	
L03	0E03163A	Washer 3.1x5.4x0.13 (Polyslider)	
L04	0E03274A	Washer 2.1x4x0.125 (Plastics)	
L05	0E00026A	Washer 2.6mm Spring	

Ref. No.	Part No.	Description	Q'ty
L06	0C85051A	M1.7x3 BZn	
L07	0C85052A	M2x1.5	
L08	0C85053A	M2x5.5	
L09	0C85055A	M2x2.2	
L10	0C85056A	M2x3.5	
L11	0C85058A	ST2.6x4 BZn	
L12	0E00692A	M2x2.5 + Pan (Black Chromate)	
L13	0E00821A	M2x3 + Binding	
L14	0E00841A	BT2x4 + Pan	
L15	0E00909A	M2x6 + Pan (Black Chromate)	
L16	0E00976A	M2x5 + Binding	
L17	0E03185A	M1.7x6 + Pan (Black Chromate)	
L18	0C85050A	M1.4x2.5 M1	

7.10. Drum Base Ass'y (E01)

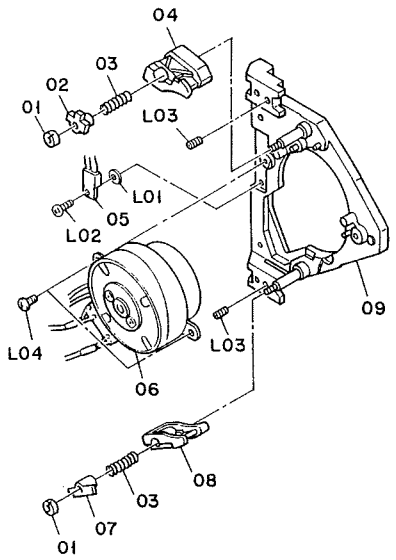


Fig. 7.10

Ref. No.	Part No.	Description	Q'ty
E01	CA81502A	Drum Base Ass'y	1
01	0C83883A	Adjust Nut M2	2
02	0C83960A	Reference Guide T	1
03	0C85065A	Block Guide Hold Spring	2
04	0C83875A	Block Guide T	1
05	CA81501A	Shift Sensor Ass'y	1
06	CA81512A	Drum Ass'y	1
07	0C83961A	Reference Guide S	1
08	0C83874A	Block Guide S	1
09	CA81496A	Drum Base Sub Ass'y	1
L01	0C83965A	Washer 2.1x6x0.188 (Plastics)	
L02	0C85057A	M2x3 + Pan (Polycarbonate)	
L03	0C85059A	M2.6x7 Hex. Socket Head	
L04	0E00821A	M2x3 + Binding	

7.11. End Sensor Holder T Ass'y (E02)

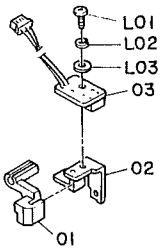


Fig. 7.11

Ref. No.	Part No.	Description	Q'ty
E02	CA81538A	End Sensor Holder T Ass'y	1
01	0C83521A	Protect Block	1
02	0C83492A	End Sensor Holder T	1
03	CA81489A	End Sensor P.C.B. T Ass'y	1
L01	0E00922A	M2x3 + Pan (Black Chromate)	
L02	0E00025A	Washer 2mm Spring	
L03	0C85109A	Plastic Washer 2.1x6x0.188	

7.12. End Sensor Holder S Ass'y (E03)

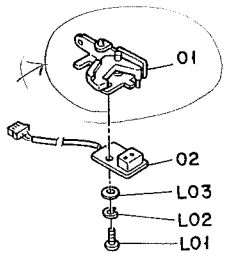


Fig. 7.12

Ref. No.	Part No.	Description	Q'ty
E03	CA81532A	End Sensor Holder S Ass'y	1
01	CA81491A	End Sensor Holder S Sub Ass'y	1
02	CA81488A	End Sensor P.C.B. S Ass'y	1
L01	0E00922A	M2x3 + Pan (Black Chromate)	
L02	0E00025A	Spring Washer 2mm	
L03	0C85109A	Plastic Washer 2.1x6x0.188	

7.13. Sub Chassis Ass'y (E04)

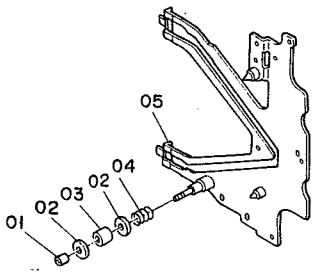


Fig. 7.13

Ref. No.	Part No.	Description	Q'ty
E04	CA81511A	Sub Chassis Ass'y	1
01	0C83905A	Adjust Nut M1.1	1
02	0C83929A	S2 Guide Flange	2
03	0C83931A	S2 Guide Collar	1
04	0C83892A	S2 Guide Spring	1
05	CA81495A	Sub Chassis Sub Ass'y	1

7.14. Pinch Lever Ass'y (E05)

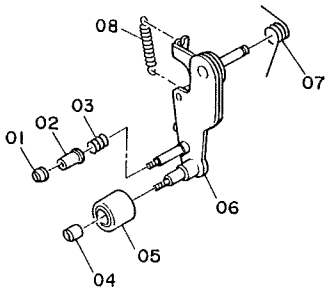


Fig. 7.14

Ref. No.	Part No.	Description	Q'ty
E05	CA81533A	Pinch Lever Ass'y	1
01	0C83905A	Adjust Nut M1.4	1
02	0C83899A	T2 Guide Collar	1
03	0C83885A	T2 Guide Spring	1
04	0C83906A	T2 Adjust Nut	1
05	0C83884A	Pressure Roller	1
06	CA81497A	Pinch Lever Sub Ass'y	1
07	0C83894A	Pressure Roller Arm Return Spring	1
08	0C83893A	Pressure Roller Arm Spring	1

7.15. RF Amp. Holder Ass'y (E06)

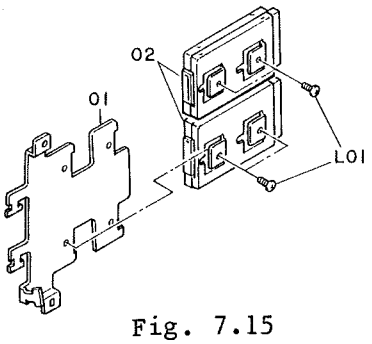


Fig. 7.15

Ref. No.	Part No.	Description	Q'ty
E06	CA81539A	RF Amp. Holder Ass'y	1
01	0C83469A	RF Amp. P.C.B. Holder	1
02	CA81033A	RF Amp. Unit	2
L01	0C85054A	ST2x2 YZn	

7.16. Potentiometer Holder Ass'y (E07)

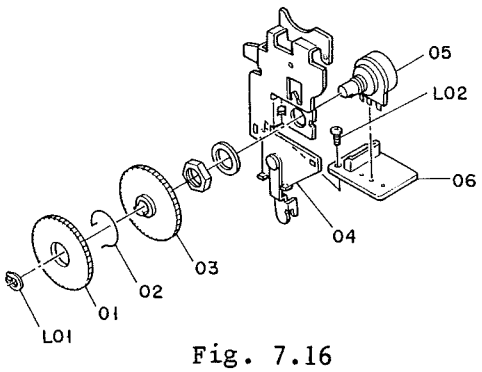


Fig. 7.16

Ref. No.	Part No.	Description	Q'ty
E07	CA81514A	Potentiometer Holder Ass'y	1
01	0C83472A	VR Gear B	1
02	0C83897A	VR Gear Spring	1
03	CA81534B	VR Gear A Ass'y	1
04	CA81493A	Potentiometer Holder Sub Ass'y	1
05	0C83963A	Potentiometer	1
06	CA81540A	Potentiometer P.C.B. Ass'y	1
L01	0C85077A	Clip 6mm	
L02	0E00821A	M2x3 + Binding	

7.17. Cam Motor Holder Ass'y (E08)

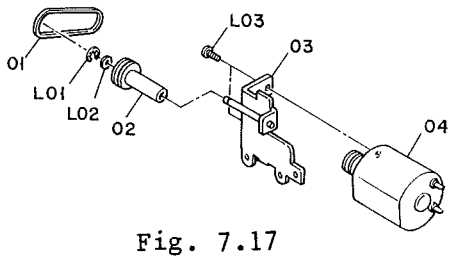


Fig. 7.17

Ref. No.	Part No.	Description	Q'ty
E08	CA81504A	Cam Motor Holder Ass'y	1
01	0C83524A	Loading Belt	1
02	0C83476A	Worm Gear B	1
03	CA81550A	Motor Holder Ass'y	1
04	CA81494A	Cam Motor Sub Ass'y	1
L01	0E00042A	E-Ring 1.5mm	
L02	0E03274A	Plastic Washer 2.1x4x0.125	
L03	0E03243A	M2x2.5 + Pan	

7.18. Reel Motor Ass'y (E09)

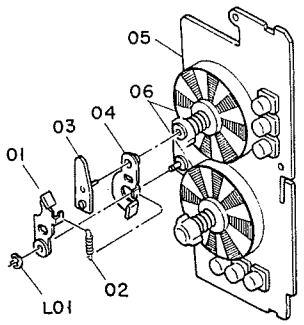


Fig. 7.18

Ref. No.	Part No.	Description	Q'ty
E09	**CA81506A**	**Reel Motor A Ass'y**	1
		Serial No:	
		Consumer Version: A50101501 -	
		Professional Version: A50401301 -	
01	CA81546A	Brake Lever T Ass'y	1
02	0C83895A	Brake Arm Spring	1
03	CA81547A	Brake Drive Lever Ass'y	1
04	CA81548A	Brake Lever S Ass'y	1
05	CA81499A	Reel Motor A Sub Ass'y	1
06	0C85083A	Strobo Seal	2
L01	0E03182A	E-Ring 0.8mm	

Ref. No.	Part No.	Description	Q'ty
E09	**CA81485A**	**Reel Motor D Ass'y**	1
		Serial Nos:	
		Consumer Version: A50101226 - 01235	
		01238 - 01243	
		01245 - 01500	
		Professional Version: A50401086 - 01300	
01	CA81546A	Brake Lever T Ass'y	1
02	0C83895A	Brake Arm Spring	1
03	CA81547A	Brake Drive Lever Ass'y	1
04	CA81548A	Brake Lever S Ass'y	1
05	CA81486A	Reel Motor D Sub Ass'y	1
06	0C85083A	Strobo Seal	2
L01	0E03182A	E-Ring 0.8mm	

8. MAIN IC BLOCK DIAGRAMS

(1) CXD1146Q DAIF (Digital Audio Interface)
U709 on DAIF-D P.C.B. Ass'y

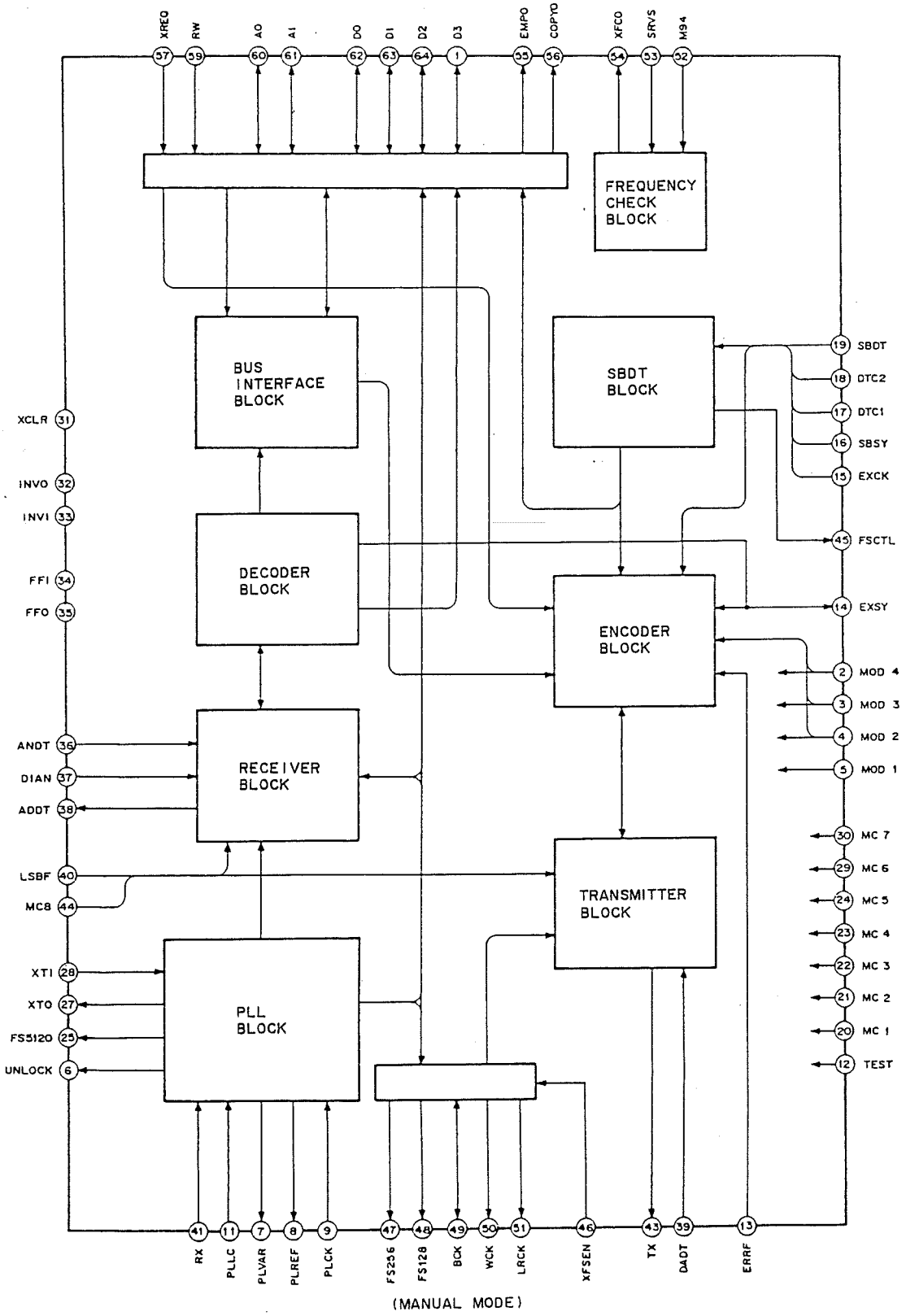


Fig. 8.1

(2) YM3615B Digital Volume Controller (Digital Fader)
U708 on DAIF-D P.C.B. Ass'y

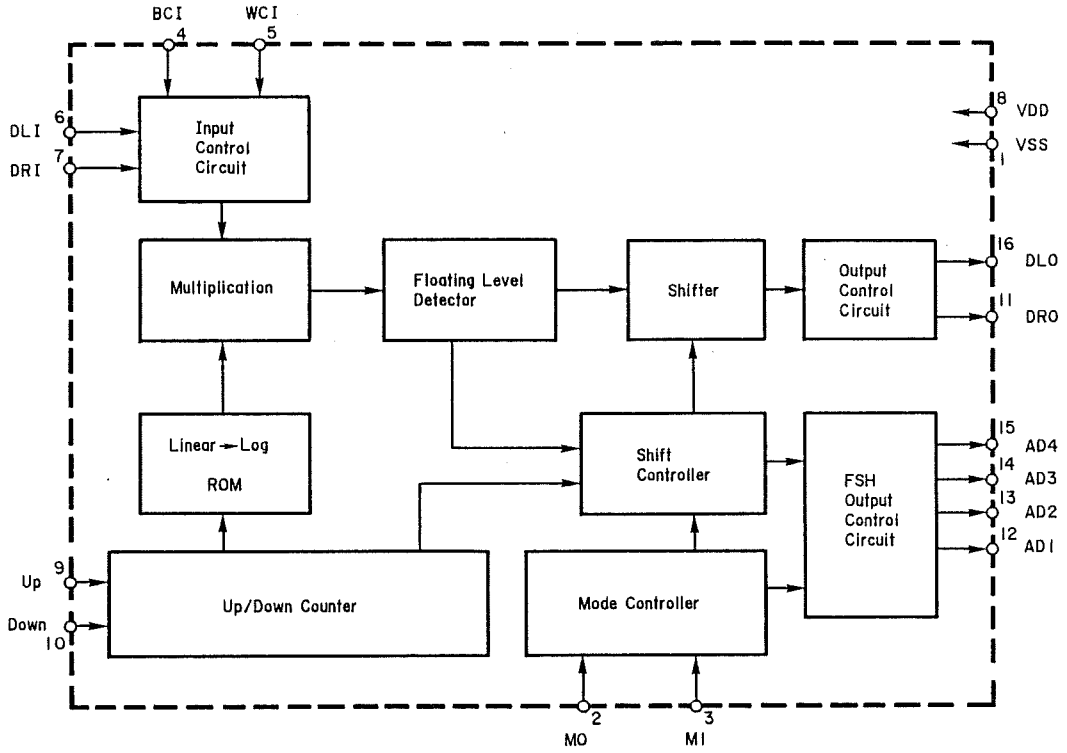


Fig. 8.2

(3) LA3373 MPX (Fs Detection)
U804, U805 on DAIF-D P.C.B. Ass'y

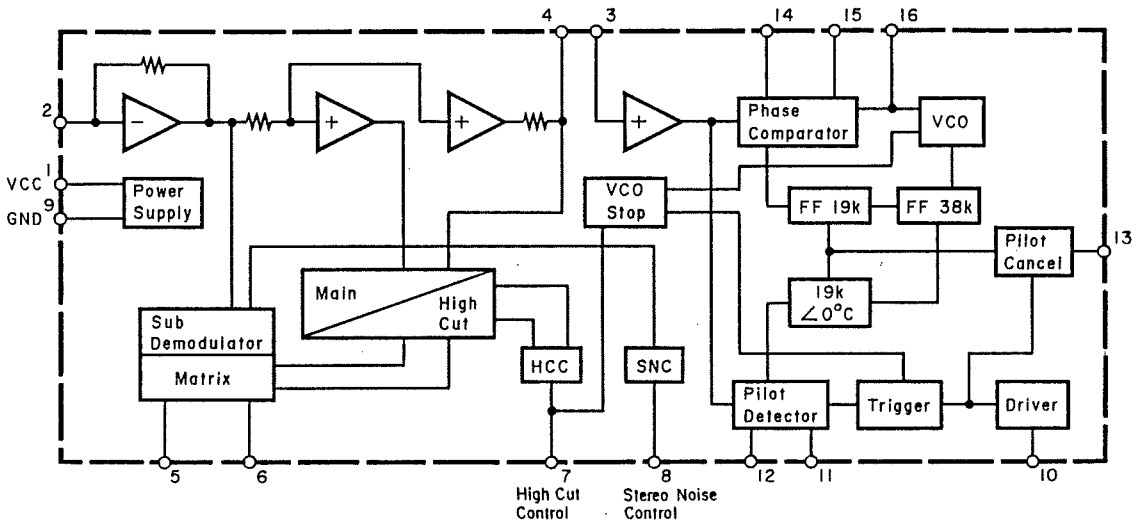


Fig. 8.3

(4) CX23065 Phase Compartor (PLL)
U806 on DAIF-D P.C.B. Ass'y

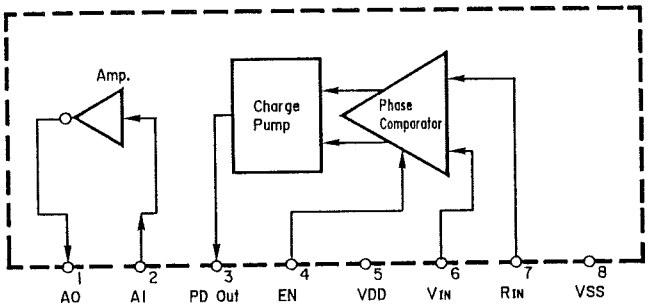


Fig. 8.4

(5) CXD1052Q Drum Servo Controller
U24 on Servo P.C.B. Ass'y

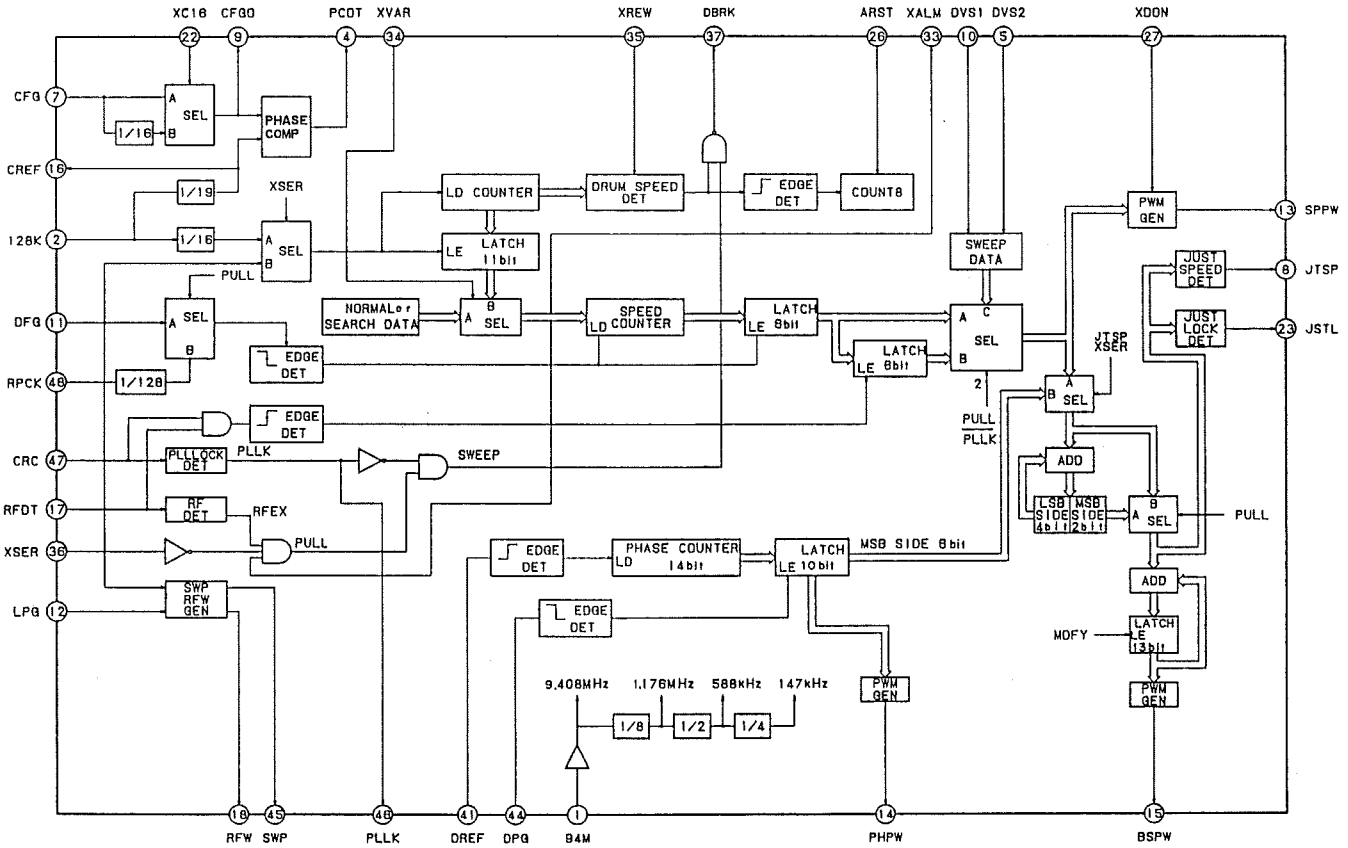


Fig. 8.5

(6) CX20084 Capstan Servo Control
U56 on Servo P.C.B. Ass'y

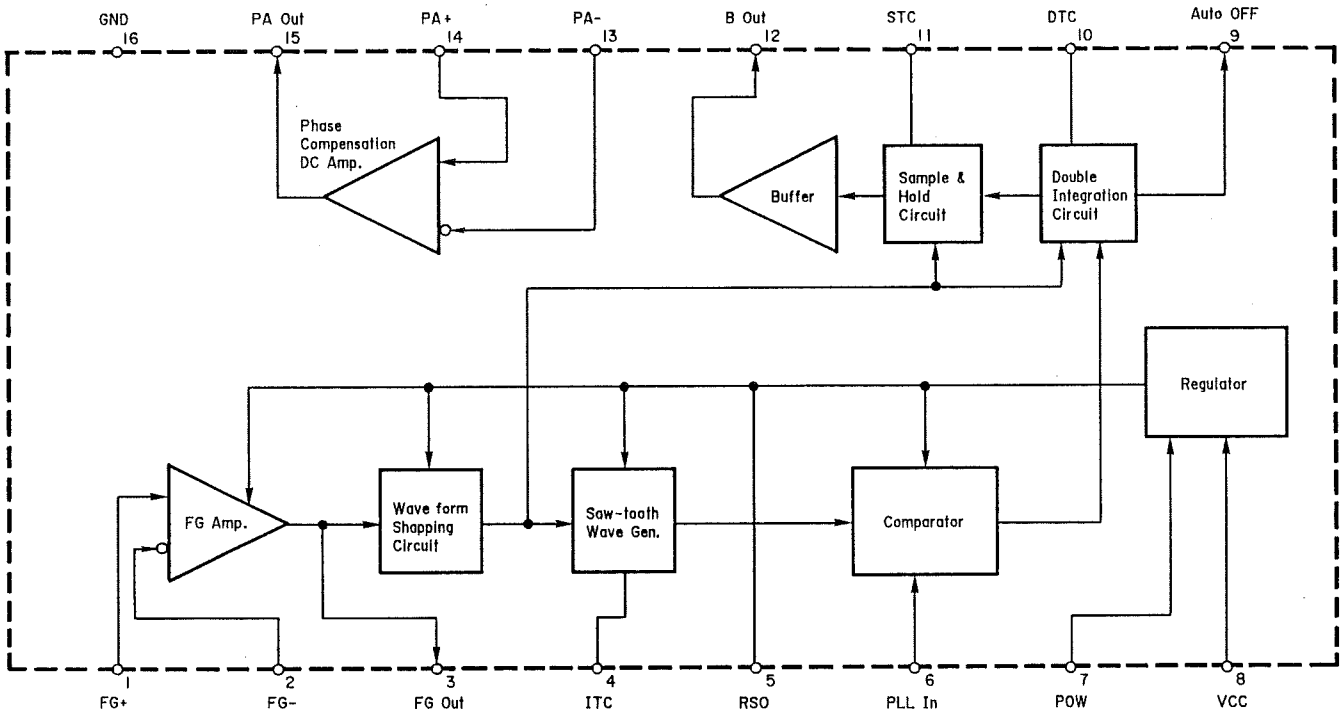


Fig. 8.6

(7) CXA1046M ATF (Auto Track Following) Controller
U23 on Servo P.C.B. Ass'y

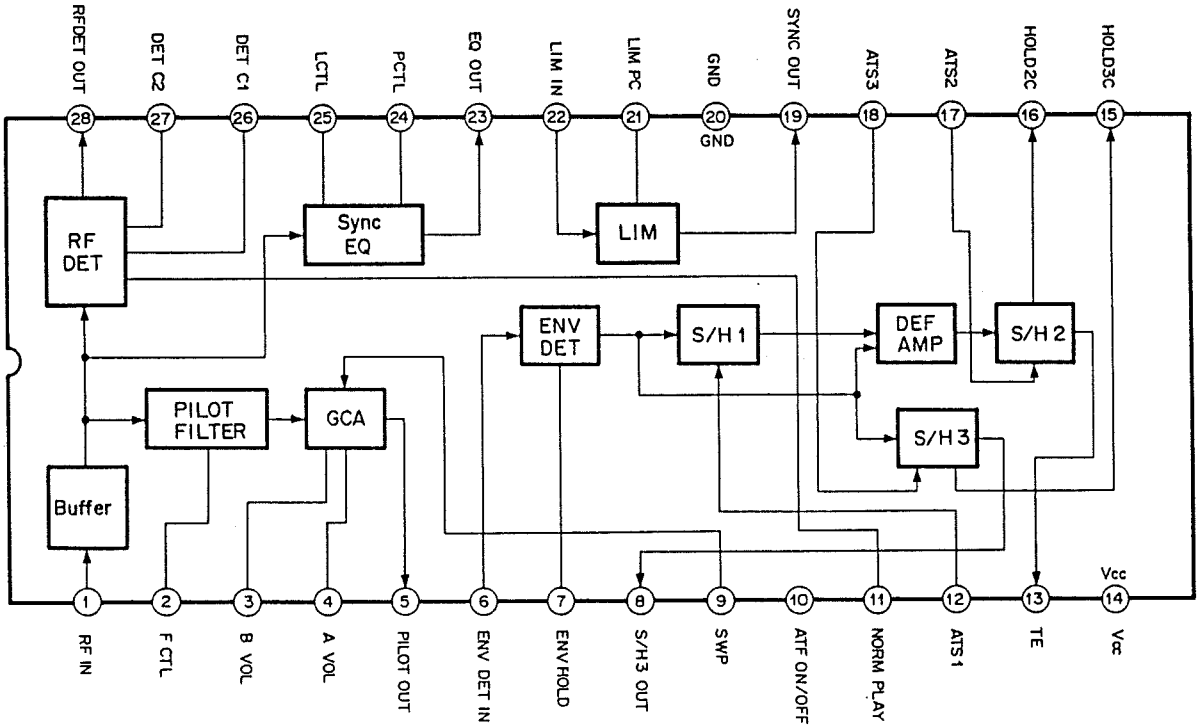


Fig. 8.7

(8) uPD6326C D/A (Digital-to-Analog) Converter
U16 on Servo P.C.B. Ass'y

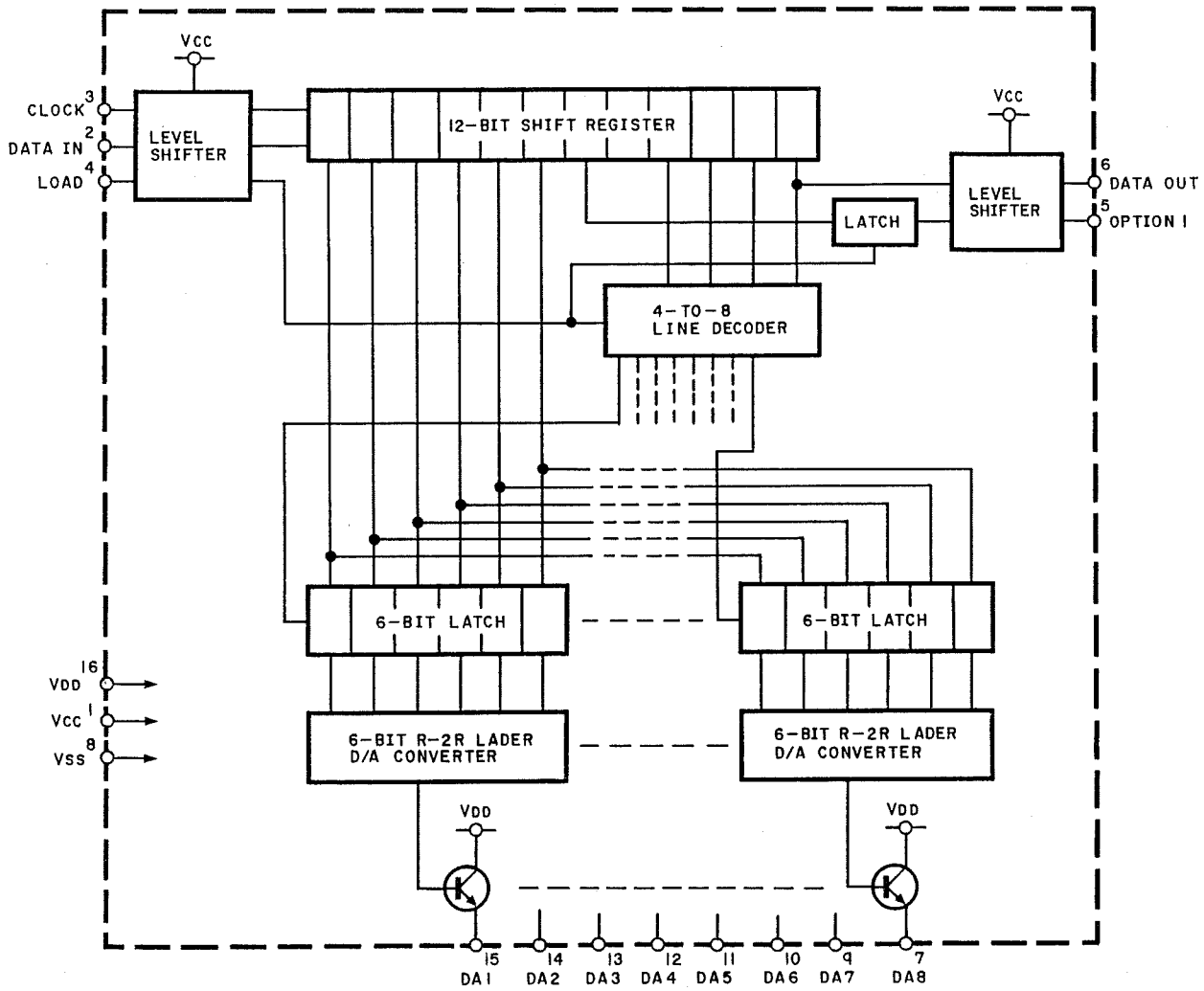


Fig. 8.8

(9) CXD1008Q Signal Processor (ECC (Error Correction Code))
U505 on Signal Processor P.C.B. Ass'y

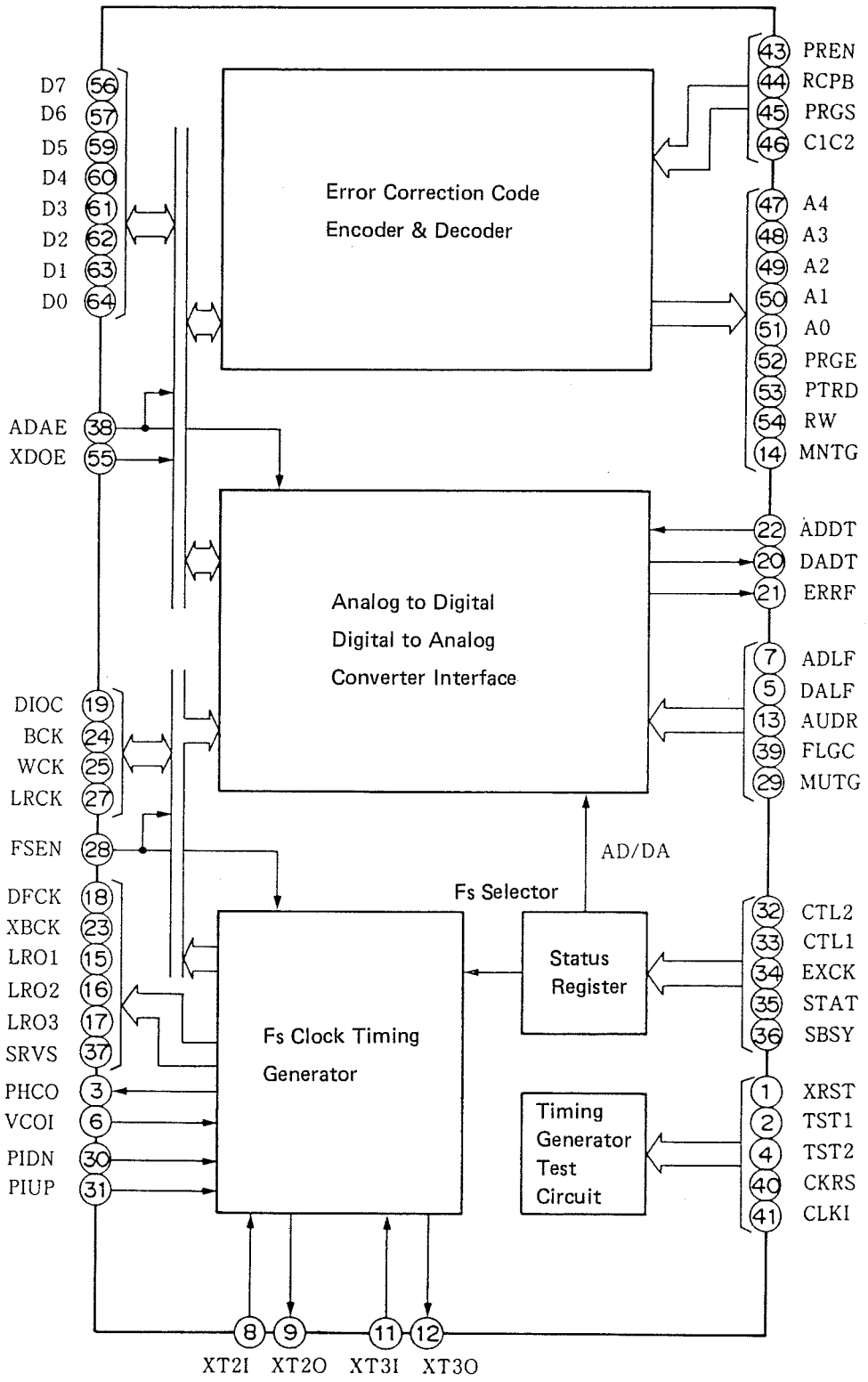


Fig. 8.9

(10) CXD1009Q Signal Processor (RAM Control, etc.)
U504 on Signal Processor P.C.B. Ass'y

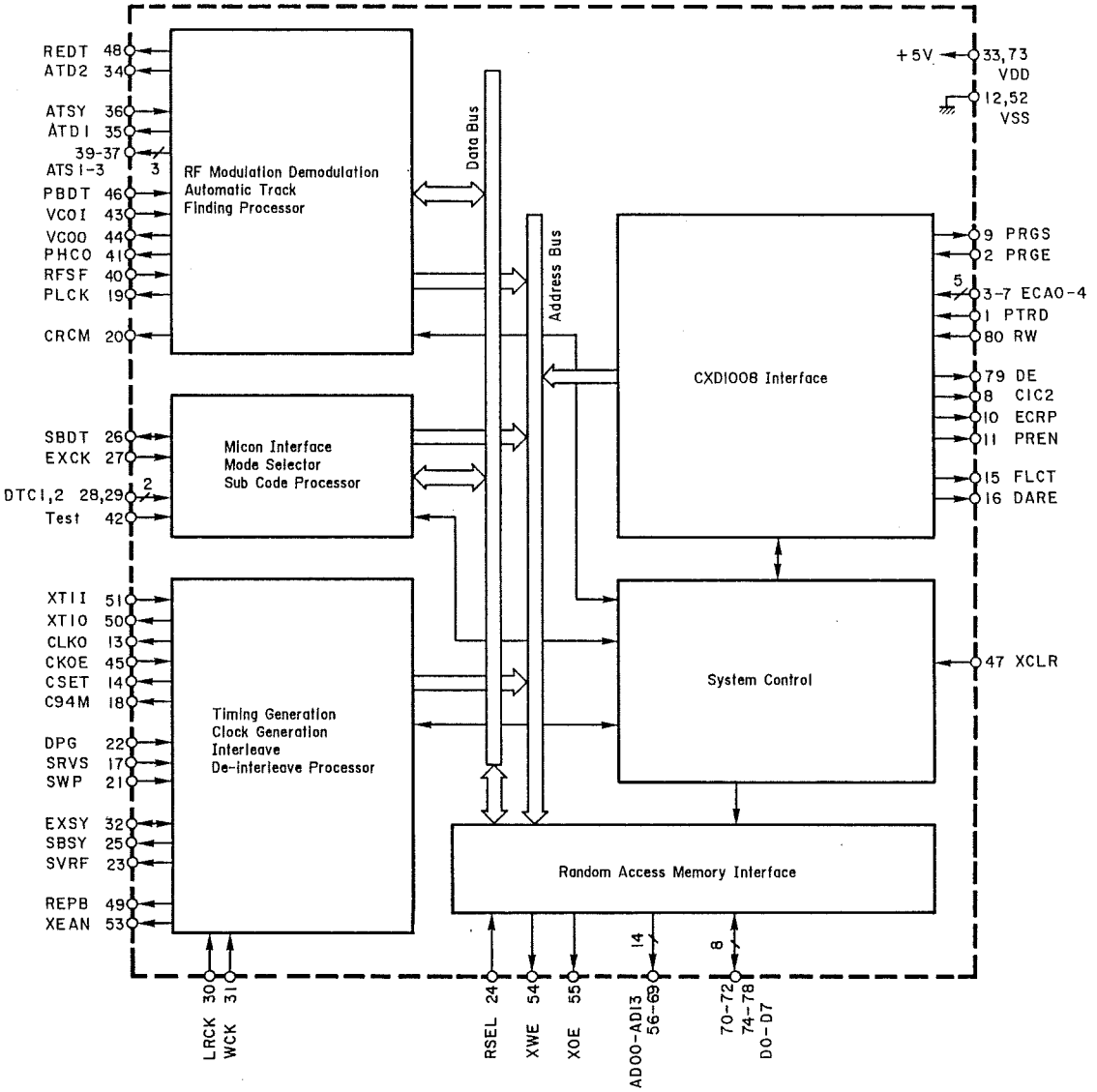


Fig. 8.10

(11) CXA1045Q RF Amp.
U01 (Transport Mechanism Ass'y)

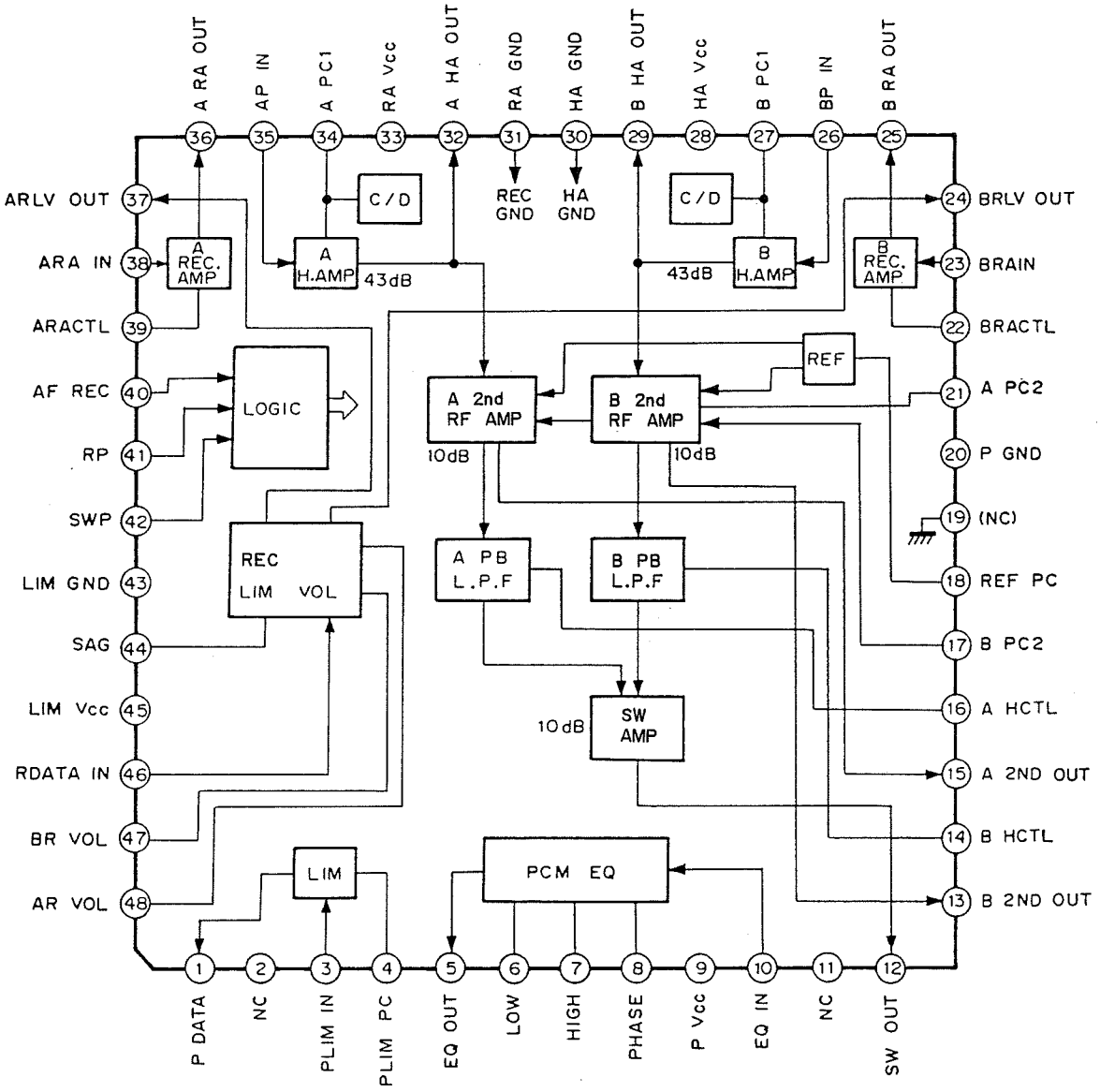
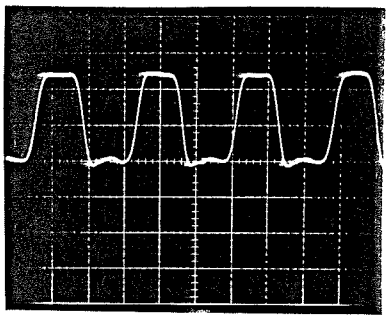


Fig. 8.11

9. WAVEFORMS

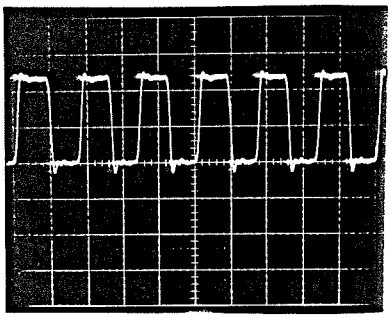
Notes: 1. Unless otherwise specified, horizontal center line is 0 V.
2. As to waveforms on TP1 and TP2 of Signal Processor P.C.B. Ass'y, refer to those on TP5 and TP4 of Servo P.C.B. Ass'y.

Signal Processor P.C.B. Ass'y



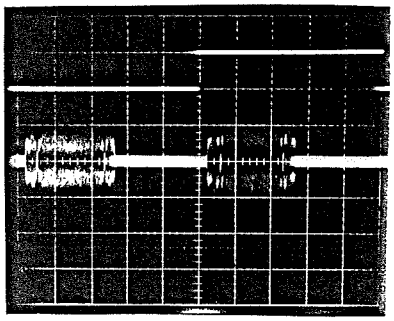
TP3, TP8 (GND)

X=20ns/div
Y=5V/div DC



TP4, TP8 (GND)

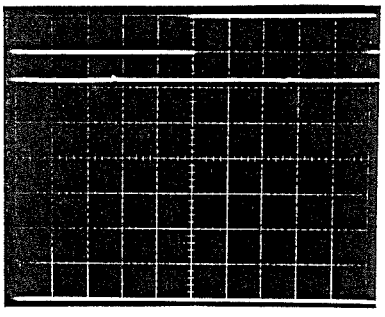
X=50ns/div
Y=5V/div DC
• Fs32kHz or Fs48kHz Tape Playback
(Frequency differs for Fs44.1kHz Tape.)



TP1, TP8 (GND)

TP5, TP8 (GND)

X=2ms/div UNCAL
TP5: Y=0.1V/div AC
TP1: Y=5V/div DC
• Fs48kHz Tape Playback



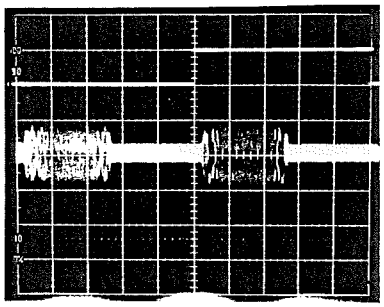
TP1, TP8 (GND)

TP7, TP8 (GND)

(0V)

X=2ms/div UNCAL
TP7: Y=1V/div DC
TP1: Y=5V/div DC
• Fs48kHz Tape Playback

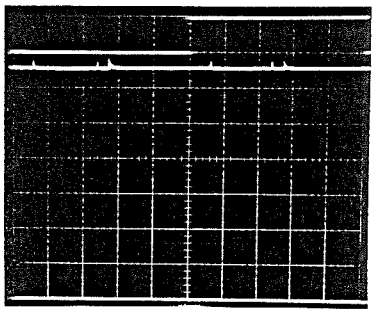
Signal Processor P.C.B. Ass'y



TP14, TP12 (GND)

TP9, TP12 (GND)

X=2ms/div UNCAL
TP9: Y=0.1V/div AC
TP14: Y=5V/div DC
• Fs48kHz Tape Playback

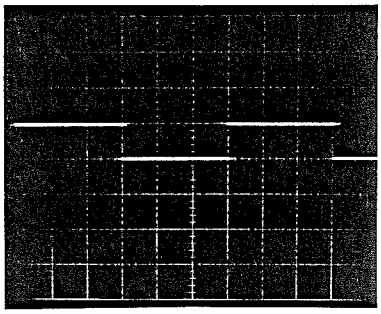


TP14, TP12 (GND)

TP11, TP12 (GND)

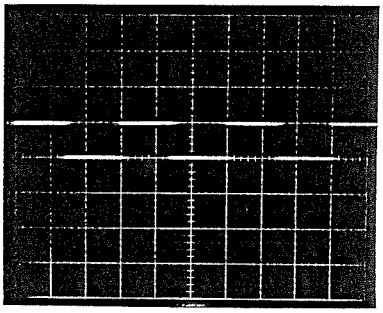
(0V)

X=2ms/div UNCAL
TP11: Y=1V/div DC
TP14: Y=5V/div DC
• Fs48kHz Tape Playback



TP13, TP12 (GND)

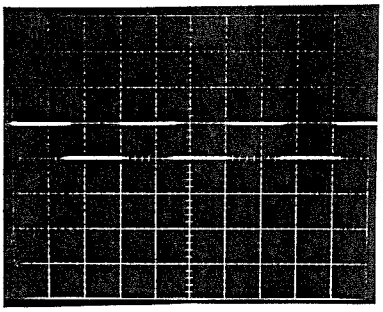
X=10ms/div
Y=5V/div DC



TP15, TP12 (GND)

X=10ms/div
Y=5V/div DC
• Fs48kHz Tape Playback

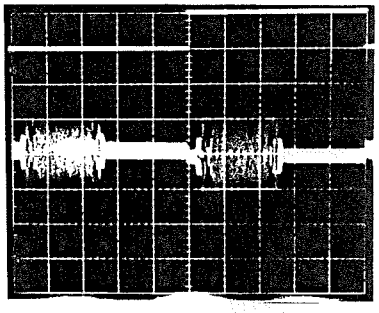
Signal Processor P.C.B. Ass'y



TP16, TP12 (GND)

X=5ms/div
Y=5V/div DC
• Fs48kHz Tape Playback

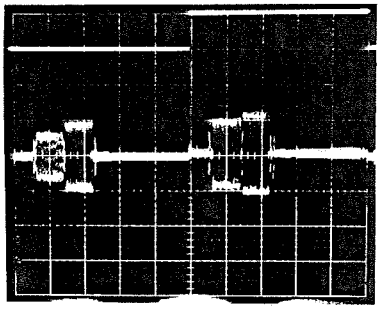
Servo P.C.B. Ass'y



TP5, TP3 (GND)

TP1, TP3 (GND)

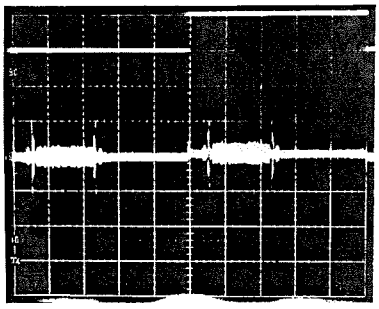
X=2ms/div UNCAL
TP1: Y=0.1V/div AC
TP5: Y=5V/div DC
• Fs48kHz Tape Playback



TP5, TP3 (GND)

TP2, TP3 (GND)

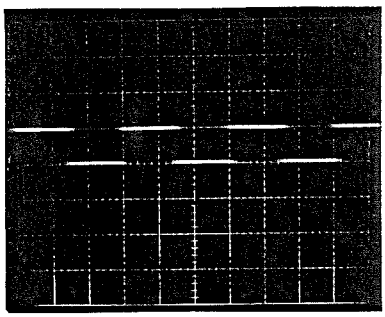
X=2ms/div UNCAL
TP2: Y=0.1V/div AC
TP5: Y=5V/div DC
• TY-7111 Playback
(ATF ON Pin shorted.)



TP5 TP3 (GND)

TP2, TP3 (GND)

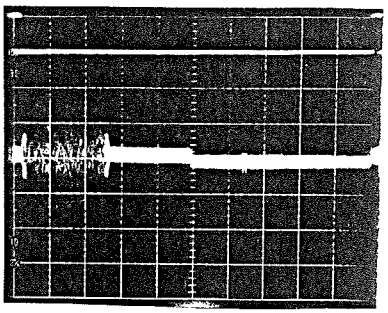
X=2ms/div UNCAL
TP2: Y=0.1V/div AC
TP5: Y=5V/div DC
• Fs48kHz Tape Playback



TP4, TP3 (GND)

X=10ms/div
Y=5V/div DC
• Fs48kHz Tape Playback

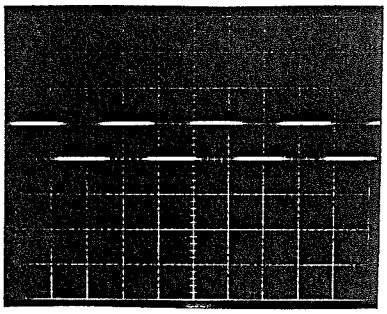
Servo P.C.B. Ass'y



TP6, TP3 (GND)

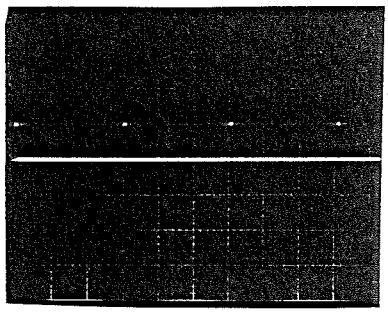
TP1, TP3 (GND)

X=2ms/div UNCAL
TP6: Y=5V/div DC
TP1: Y=0.1V/div AC
• TY-7251 Playback
(Test Mode, ATF ON Pin shorted.)



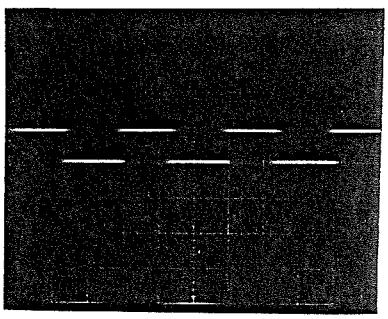
TP7, TP10 (GND)

X=0.5ms/div
Y=5V/div DC
• Fs48kHz Tape Playback



TP8, TP10 (GND)

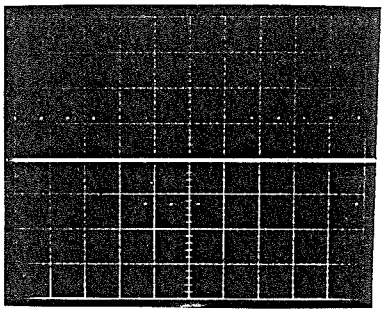
X=10ms/div
Y=5V/div DC
• Fs48kHz Tape Playback



TP9, TP10 (GND)

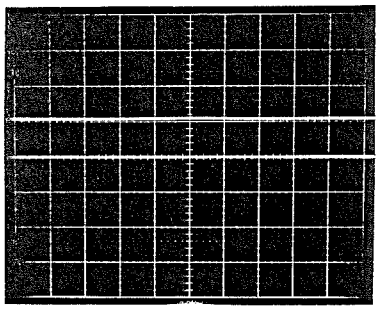
X=0.5ms/div
Y=5V/div
• Fs48kHz Tape Playback

Servo P.C.B. Ass'y



TP11, TP10 (GND)

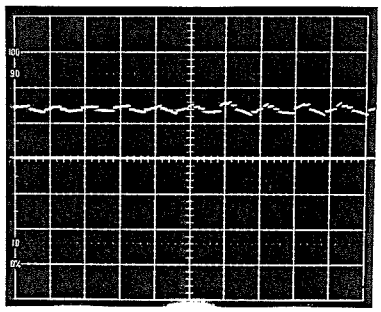
X=2ms/div
Y=2V/div AC
• Rec./Play



TP12, TP10 (GND)

(0V)

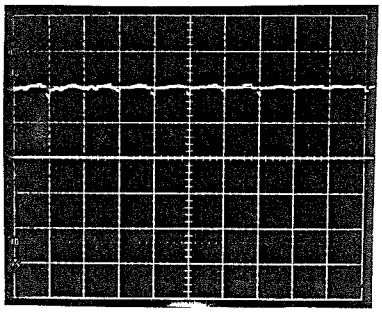
X=1ms/div
Y=1V/div DC
• Fs48kHz Tape Playback



TP13, TP10 (GND)

(0V)

X=10ms/div
Y=0.5V/div DC
• Fs48kHz Tape Playback

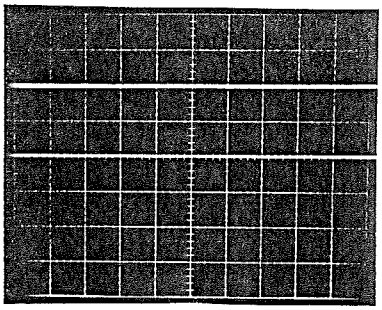


TP14, TP10 (GND)

(0V)

X=10ms/div
Y=1V/div DC
• Fs48kHz Tape Playback

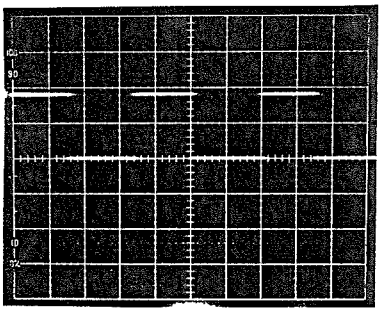
Servo P.C.B. Ass'y



TP15, TP10 (GND)

(0V)

X=2ms/div
Y=0.2V/div DC
- TS Link Cassette

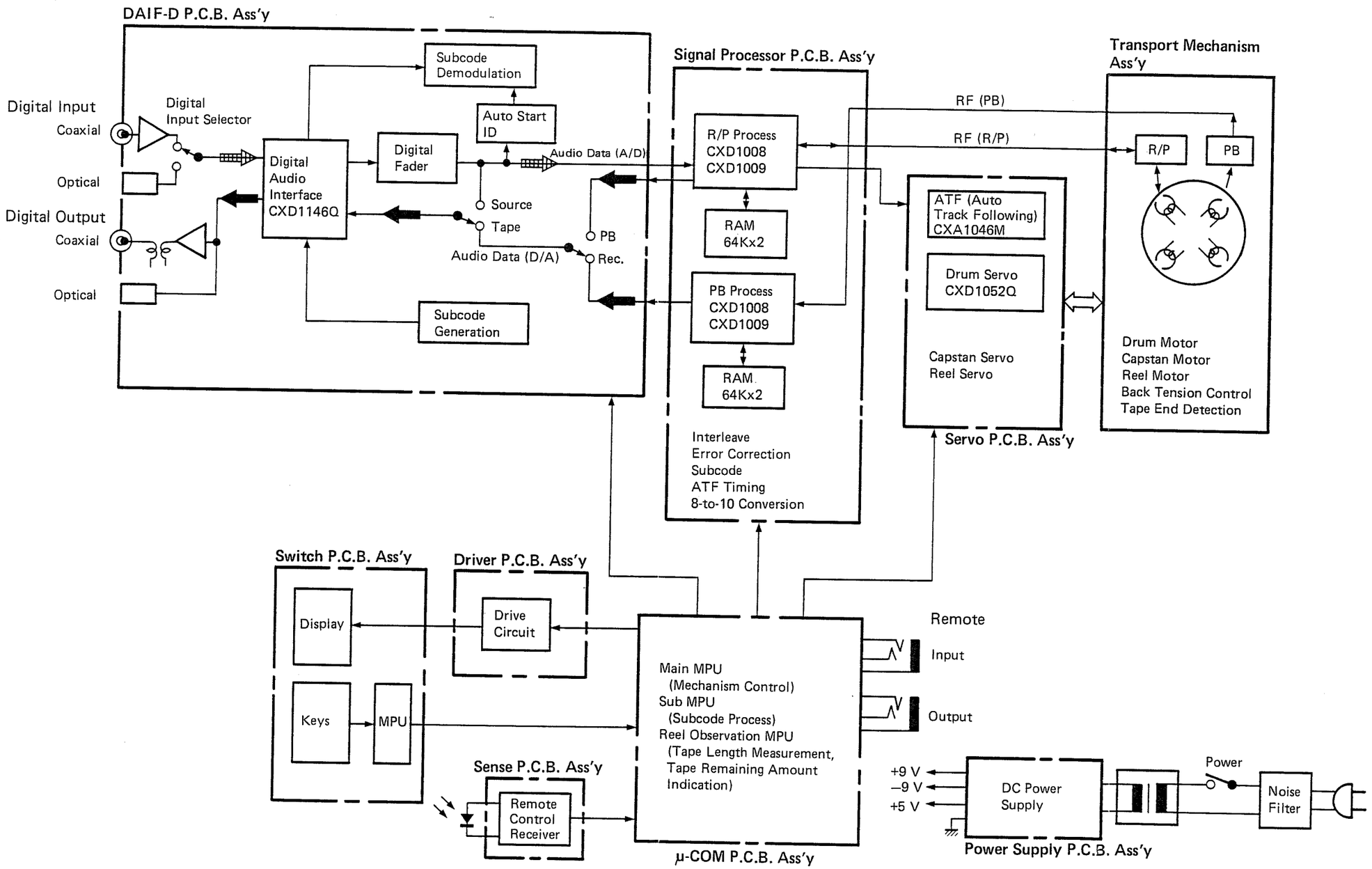


Pin 6 or 12 of U1
TP10 (GND)

X=0.1s/div
Y=5V/div DC
- Fs48kHz Tape Playback (Center of Tape)
  (Frequency varies with modes
  (F.Fwd, Rew., High-speed Winding)
  and tape position.)

10. BLOCK DIAGRAM

Nakamichi 1000



11. ELECTRICAL PARTS LIST

Abbreviation for part name:
TR — Transistor, SiD — Silicon Diode, ZD — Zener Diode , Varicap — Variable Capacitance Diode
RK — Carbon Resistor, RM — Metal Film Resistor, RF — Fail Safe Type Resistor , RC — Cement Resistor
CE — Electrolytic Capacitor, CML — Mylar Capacitor, CC — Ceramic Capacitor, CPP — PP Capacitor,
CMM — Metalized Mylar Capacitor, CSP — Polystyrene Capacitor, C — Mica Capacitor
CT — Tantalum Capacitor

11.1. Power Switch P.C.B. Ass'y

Ref. No.	Part No.	Description
	BA07515A	Power Switch P. C. B. Ass'y (USA, CAN)
	BA07574A	Power Switch P. C. B. Ass'y (UK, OTR, AUS, EP, SWT)
	BA07569A	Power Switch P. C. B. Ass'y (JPN)
	0B60675A	Power Switch P. C. B.
M401	0B08342A	Spark Killer (ECQ-JC187C) (USA, CAN)
M401	0B08363A	Spark Killer (AU120033) (JPN)
M401	0B90232A	Spark Killer (XE-473) (UK, OTR, AUS, EP, SWT)
S401	0B71006A	Power Switch (SDL1P)
	0E00868A	BT3x8 + Binding (1)
	0E00896A	M3x6 + Binding (2)
	0J05778A	Power Switch Holder (1)

11.2. Lamp Upper P.C.B. Ass'y

Ref. No.	Part No.	Description
	BA07527A	Lamp Upper P. C. B. Ass'y
	0B60685A	Lamp Upper P. C. B.
PL1U	0B90363A	Lamp 50mA/8V
CN27A	0B84099A	2P S-Post Black

11.3. Lamp Lower P.C.B. Ass'y

Ref. No.	Part No.	Description
	BA07528A	Lamp Lower P. C. B. Ass'y
	0B60686A	Lamp Lower P. C. B.
PL1L	0B90363A	Lamp 50mA/8V
CN27B	0B84099A	2P S-Post Black

11.4. Sense P.C.B. Ass'y

Ref. No.	Part No.	Description
	BA07526A	Sense P. C. B. Ass'y
	0B60684A	Sense P. C. B.
RU691	0B19016A	IC (SBX1610-02) (Remote Receiver Unit)
ED691	0B12641A	LED Umber
R691, 692	0B09177A	RF 47 1/4W J
C691	0B40049A	CE 100u 6.3V
S691	0B07437A	Slide Switch 2-3
S692	0B70010A	Slide Switch 2-2
S693	0B70043A	Tact Switch
CN5	0B83616A	11P Connector Ass'y 230mm
CN27A, 27B	0B83651A	2P Connector Ass'y 60mm

11.5. Power Supply P.C.B. Ass'y

Ref. No.	Part No.	Description			
	BA07518A	Power Supply P. C. B. Ass'y (JPN, USA, CAN)			
	BA07576A	Power Supply P. C. B. Ass'y (UK, OTR, AUS, EP, SWT)			
	0B60676D	Power Supply P. C. B.			
U401	0B11610A	IC NJM7909A			
U402, 403	0B11105A	IC NJM7805A			
U404	0B11609A	IC NJM78M05FA			
U405	0B11611A	IC TC4584BP			
U406	0B11105A	IC NJM7805A			
Q401	0B10022A	FET 2SK246			
Q402	0B10270A	TR 2SA770			
Q403	0B06316A	TR 2SD882 (P, Q)			
Q404	0B06142A	TR 2SC2240 (BL)			
Q408, 409	0B06322A	TR 2SC2002 (K, L)			
Q410	0B06322A	TR 2SC2002 (K, L)			
Q411	0B06452A	TR 2SD1406 (Y)			
ZD401	0B12150A	ZD 5.6V RD5.6JSB2			
D401, 402	0B12387A	Diode Bridge (RBV402)			
D403	0B12387A	Diode Bridge (RBV402)			
D404, 405	0B12362A	SiD S5566B			
D406	0B12362A	SiD S5566B			
D407, 408	0B06398A	SiD 1SS176			
D409, 410	0B06398A	SiD 1SS176			
D411	0B06398A	SiD 1SS176			
D412	0B012362	SiD S5566B			
R401	0B24216A	RF 0.22	1/2W	J	
R402	0B09632A	RK 13	1/6W	J	
R403	0B09673A	RK 680	1/6W	J	
R404	0B22264A	RM 2.15K	1/4W	F	
R405	0B22306A	RM 4.75K	1/4W	F	
R408, 409	0B09701A	RK 10K	1/6W	J	
R410	0B09749A	RK 1.0M	1/6W	J	
R411	0B09701A	RK 10K	1/6W	J	
R412, 413	0B09693A	RK 4.7K	1/6W	J	
R414	0B09749A	RK 1.0M	1/6W	J	
R415	0B09701A	RK 10K	1/6W	J	
R416	0B09749A	RK 1.0M	1/6W	J	
R417	0B09701A	RK 10K	1/6W	J	
R418, 419	0B09693A	RK 4.7K	1/6W	J	
R420	0B09749A	RK 1.0M	1/6W	J	
R421, 422	0B09701A	RK 10K	1/6W	J	
R423	0B09701A	RK 10K	1/6W	J	
R424	0B09693A	RK 4.7K	1/6W	J	
R425	0B09659A	RK 180	1/6W	J	
R426	0B09677A	RK 1.0K	1/6W	J	
C401, 402	0B41971A	CC 0.10u	50V	Z	
C403, 404	0B41971A	CC 0.10u	50V	Z	
C405, 406	0B41971A	CC 0.10u	50V	Z	
C407, 408	0B41971A	CC 0.10u	50V	Z	
C409, 410	0B41971A	CC 0.10u	50V	Z	
C411, 412	0B41971A	CC 0.10u	50V	Z	
C413, 414	0B40576A	CE 8200u	25V		
C415	0B40576A	CE 8200u	25V		
C416	0B40575A	CE 6800u	25V		
C417, 418	0B40578A	CE 15000u	16V		
C420	0B40558A	CE 2.2u	50V		
C421	0B09280A	CC 47P	50V	J	
C422	0B40584A	CE 22u	16V		
C423	0B40559A	CE 47u	16V		
C424	0B41304A	CML 0.33u	50V	J	
C425	0B40280A	CT 4.7u	16V	M	
C426	0B41304A	CML 0.33u	50V	J	
C427	0B41971A	CC 0.10u	50V	Z	
C428	0B41304A	CML 0.33u	50V	J	
C429	0B41971A	CC 0.10u	50V	Z	
C430	0B41304A	CML 0.33u	50V	J	
C431	0B41971A	CC 0.10u	50V	Z	
C432	0B41304A	CML 0.33u	50V	J	
C434	0B41971A	CC 0.10u	50V	Z	
C435	0B40360A	CE 1000u	16V		

Ref. No.	Part No.	Description			
C436	0B41094A	CML	0.01u	50V	J
C437	0B41300A	CML	0.15u	50V	J
C438	0B41297A	CML	0.082u	50V	J
C439	0B40583A	CE	3300u	25V	
F401,402	0B90379A	Fuse 4A/125V (GGS4) (JPN, USA)			
F401,402	0B90387A	Fuse 4A/250V (ES3-4000) (UK, OTR, AUS, EP, SWT)			
F403	0B90376A	Fuse 2A/125V (GGS2) (JPN, USA)			
F403	0B90384A	Fuse 2A/250V (ES3-2000) (UK, OTR, AUS, EP, SWT)			
F404	0B90377A	Fuse 2.5A/125V (GGS2.5) (JPN, USA)			
F404	0B90385A	Fuse 2.5A/250V (ES3-2500) (UK, OTR, AUS, EP, SWT)			
CN101	0B81255A	10P T-Post White			
CN102	0B84018A	14P T-Post White			
CN401	0B81574A	7P Post (B7PVH)			
	0B90366A	Fuse Clip (FP-217)			(8)
	0E03319A	M3x8 + Binding			(6)
	0J05019A	P.C.B. Bushing N (NB-300)			(5)
	0J05812A	Heat Sink (MT-25-BS-AN-0)			(3)
	0J05813A	Heat Sink (DS-25-BS-AN-0)			(2)
	0J05816A	P.C.B. Collar N (NA-307)			(5)
	0J05927A	Heat Sink			(1)

11.6. Switch P.C.B. Ass'y

Ref. No.	Part No.	Description			
	BA07524A	Switch P.C.B. Ass'y			
	0B60682A	Switch P.C.B.			
U601	0B11490A	IC	LC6522H-3711		
U602,603	0B11620A	IC	TC74HC4094F		
U604	0B11620A	IC	TC74HC4094F		
Q601	0B10058A	TR	DTA114ES		
D601,602	0B06398A	SiD	1SS176		
D603,604	0B06398A	SiD	1SS176		
D605,606	0B06398A	SiD	1SS176		
D607,608	0B06398A	SiD	1SS176		
ED601	0B12642A	LED	Display (SL-6674)		
ED602	0B12643A	LED	Display (SL-6954)		
ED603,604	0B12641A	LED	Umber		
ED605,606	0B12641A	LED	Umber		
ED607,608	0B12641A	LED	Umber		
ED609,610	0B12641A	LED	Umber		
ED611,612	0B12641A	LED	Umber		
ED613,614	0B12641A	LED	Umber		
ED615,616	0B12641A	LED	Umber		
ED617,618	0B12641A	LED	Umber		
ED619,620	0B12641A	LED	Umber		
ED621,622	0B12641A	LED	Umber		
ED623,624	0B12641A	LED	Umber		
ED625,626	0B12641A	LED	Umber		
ED627,628	0B12641A	LED	Umber		
ED629,630	0B12641A	LED	Umber		
ED631,632	0B12641A	LED	Umber		
ED633,634	0B12641A	LED	Umber		
ED635,636	0B12641A	LED	Umber		
X601	0B92026A	X'Tal 4.0000MHz			
R601	0B09749A	RK	1.0M	1/6W	J
R602,603	0B09717A	RK	47K	1/6W	J
R604,605	0B09717A	RK	47K	1/6W	J
R606	0B09701A	RK	10K	1/6W	J
R607,608	0B09693A	RK	4.7K	1/6W	J
R609,610	0B09693A	RK	4.7K	1/6W	J
R611,612	0B09693A	RK	4.7K	1/6W	J
R613,614	0B09693A	RK	4.7K	1/6W	J
R615,616	0B09663A	RK	270	1/6W	J
R617,618	0B09663A	RK	270	1/6W	J
R619,620	0B09663A	RK	270	1/6W	J
R621,622	0B09663A	RK	270	1/6W	J
R623,624	0B09663A	RK	270	1/6W	J
R625,626	0B09663A	RK	270	1/6W	J
R627,628	0B09663A	RK	270	1/6W	J
R629,630	0B09663A	RK	270	1/6W	J
R631,632	0B09663A	RK	270	1/6W	J
R633,634	0B09663A	RK	270	1/6W	J
R635	0B09663A	RK	270	1/6W	J
R636	0B09701A	RK	10K	1/6W	J
C601	0B40052A	CE	470u	6.3V	
C602	0B41971A	CC	0.10u	50V	Z
S601,602	0B70043A	Tact Switch			
S603,604	0B70043A	Tact Switch			
S605,606	0B70043A	Tact Switch			
S607,608	0B70043A	Tact Switch			
S609,610	0B70043A	Tact Switch			
S611,612	0B70043A	Tact Switch			
S613,614	0B70043A	Tact Switch			
S615,616	0B70043A	Tact Switch			
S617,618	0B70043A	Tact Switch			
S619,620	0B70043A	Tact Switch			
S621,622	0B70043A	Tact Switch			
S623,624	0B70043A	Tact Switch			
S625,626	0B70043A	Tact Switch			
S627,628	0B70043A	Tact Switch			
S629,630	0B70043A	Tact Switch			
S631,632	0B70043A	Tact Switch			
S633,634	0B70043A	Tact Switch			
S635,636	0B70043A	Tact Switch			
S637,638	0B70010A	Slide Switch 2-2			
S639	0B07437A	Slide Switch 2-3			
CN2	0B83613A	6P Connector Ass'y 170mm			
CN5	0B81034A	11P T-Post White			
CN12	0B83652A	2P Connector Ass'y 150mm			
CN16	0B83630A	12P Connector Ass'y 170mm			
CN51A,52A	0B84002A	FC-Connector 40P			
CN53A	0B84004A	FC-Connector 16P			
CN103	0B83642A	4P Connector Ass'y 160mm			
	0E00859A	BT2.6x6 + Pan			(4)
	0E00964A	M3x5 + Binding			(4)
	0J05048A	P.C.B. Spacer			(4)

11.7. Driver P.C.B. Ass'y

Ref. No.	Part No.	Description			
	BA07525A	Driver P.C.B. Ass'y			
	0B60683A	Driver P.C.B.			
U651,652	0B11623A	IC	TC74HC574P		
U653	0B11623A	IC	TC74HC574P		
U654,655	0B11622A	IC	UPD4511BAC		
U656,657	0B11622A	IC	UPD4511BAC		
U658,659	0B11622A	IC	UPD4511BAC		
U660,661	0B11622A	IC	UPD4511BAC		
U662	0B11622A	IC	UPD4511BAC		
Q651,652	0B10030A	TR	2SC1740S		
RA651,652	0B21058A	R-Network 330x8			
RA653,654	0B21058A	R-Network 330x8			
RA655,656	0B21058A	R-Network 330x8			
RA657,658	0B21058A	R-Network 330x8			
RA659	0B21058A	R-Network 330x8			
R651	0B09661A	RK	220	1/6W	J
R652	0B09663A	RK	270	1/6W	J
R653,654	0B09661A	RK	220	1/6W	J
R655,656	0B09661A	RK	220	1/6W	J
R657	0B09663A	RK	270	1/6W	J
R658,659	0B09661A	RK	220	1/6W	J
R660	0B09661A	RK	220	1/6W	J
R661,662	0B09663A	RK	270	1/6W	J
R663,664	0B09663A	RK	270	1/6W	J
R665,666	0B09663A	RK	270	1/6W	J
R667,668	0B09663A	RK	270	1/6W	J
R669,670	0B09663A	RK	270	1/6W	J
R671,672	0B09663A	RK	270	1/6W	J
R673,674	0B09663A	RK	270	1/6W	J
R675	0B09725A	RK	100K	1/6W	J
C651	0B40052A	CE	470u	6.3V	
C652,653	0B41971A	CC	0.10u	50V	Z
C654,655	0B41971A	CC	0.10u	50V	Z
C656,657	0B41971A	CC	0.10u	50V	Z
C658,659	0B41971A	CC	0.10u	50V	Z
C660,661	0B41971A	CC	0.10u	50V	Z
C662,663	0B41971A	CC	0.10u	50V	Z
C664	0B41971A	CC	0.10u	50V	Z
CN3	0B83614A	8P Connector Ass'y 130mm			
CN4	0B83615A	9P Connector Ass'y 130mm			
CN51B,52B	0B84001A	B-B Connector 40P			
CN53B	0B84003A	B-B Connector 16P			
CN105	0B83644A	6P Connector Ass'y 150mm			

11.8. Mother P.C.B. Ass'y

Ref. No.	Part No.	Description
	BA07523A	Mother P.C.B. Ass'y
	0B60681B	Mother P.C.B.
IP901	0B11248A	IC ICP-N5
CN1	0B84013A	13P T-Post White
CN2	0B81029A	6P T-Post White
CN3	0B81031A	8P T-Post White
CN4	0B81032A	9P T-Post White
CN12	0B81025A	2P T-Post White
CN13	0B81033A	10P T-Post White
CN14	0B81031A	8P T-Post White
CN15	0B81026A	3P T-Post White
CN16	0B81035A	12P T-Post White
CN101	0B81255A	10P T-Post White
CN102	0B84018A	14P T-Post White
CN103	0B81231A	4P T-Post White
CN104	0B81243A	7P T-Post White
CN105	0B81239A	6P T-Post White
CN200, 201	0B84006A	DIN Connector J100P (XC5B-0121)
CN202	0B84006A	DIN Connector J100P (XC5B-0121)
	0E03502A	Spring Washer 2.6mm (6)
	0E03503A	Nut Hex. M2.6 (6)
	0E03504A	M2.6x8 + Pan (6)

11.9. Signal Processor P.C.B. Ass'y

Ref. No.	Part No.	Description
	BA07637A	Signal Processor P.C.B. Ass'y
	0B60708B	Signal Processor P.C.B.
U501	0B11603A	IC TC74HCU04AF
U502	0B11613A	IC TC74HC00AF
U503	0B11001A	IC NJM4558M
U504	0B11596A	IC CXD1009Q
U505	0B11597A	IC CXD1008Q
U506, 507	0B11598A	IC LC3664NM-10
U508	0B11603A	IC TC74HCU04AF
U509	0B11001A	IC NJM4558M
U510	0B11596A	IC CXD1009Q
U511	0B11597A	IC CXD1008Q
U512	0B11606A	IC TC74HC123F
U513, 514	0B11604A	IC TC74HC74AF
U515	0B11605A	IC TC74HC86F
U516	0B11602A	IC TC74HC02AF
U517, 518	0B11607A	IC TC74HC161AF
U519	0B11608A	IC TC74HC164AF
U520, 521	0B11598A	IC LC3664NM-10
U522	0B11721A	IC TC74HC04AF
U523	0B11604A	IC TC74HC74AF
U524	0B11606A	IC TC74HC123F
U525	0B11608A	IC TC74HC164AF
U527	0B11602A	IC TC74HC02AF
U528	0B11604A	IC TC74HC74AF
Q501	0B10030A	TR 2SC1740S
Q502	0B10026A	TR 2SA933S
Q503	0B10030A	TR 2SC1740S
Q504	0B10026A	TR 2SA933S
Q505	0B10030A	TR 2SC1740S
Q506	0B10026A	TR 2SA933S
Q507	0B10030A	TR 2SC1740S
Q508	0B10026A	TR 2SA933S
IP501, 502	0B11335A	IC ICP-N15
IP503, 504	0B11725A	IC ICP-N10
D501	0B12639A	SiD SVC321
D502	0B06398A	SiD 1SS176
D503	0B12639A	SiD SVC321
D504	0B06398A	SiD 1SS176
D509, 510	0B06398A	SiD 1SS176
X501	0B92023A	X'Tal 18.816MHz
X502	0B92025A	X'Tal 24.576MHz
X503	0B92024A	X'Tal 22.5792MHz
L501, 502	0B51331A	Coil 2.6uH
L503	0B51343A	Micro Coil 22uH
L504, 505	0B51344A	Micro Coil 47uH
L506	0B51346A	Micro Coil 8.2uH
L507	0B51344A	Micro Coil 47uH
L508	0B51343A	Micro Coil 22uH
L509	0B51344A	Micro Coil 47uH
L510, 511	0B51344A	Micro Coil 47uH
L512	0B51344A	Micro Coil 47uH

Ref. No.	Part No.	Description
L513	0B51346A	Micro Coil 8.2uH
L514, 515	0B51344A	Micro Coil 47uH
L516, 517	0B51344A	Micro Coil 47uH
L518	0B51343A	Micro Coil 22uH
L523, 524	0B51344A	Micro Coil 47uH
L525	0B51343A	Micro Coil 22uH
VR501	0B32148A	Semi-VR B50K
R501	0B09660A	RK 200 1/6W J
R502	0B09684A	RK 2.0K 1/6W J
R503	0B09660A	RK 200 1/6W J
R504	0B09684A	RK 2.0K 1/6W J
R505	0B09660A	RK 200 1/6W J
R506	0B09684A	RK 2.0K 1/6W J
R507	0B09660A	RK 200 1/6W J
R508	0B09690A	RK 3.6K 1/6W J
R509, 510	0B09693A	RK 4.7K 1/6W J
R511	0B09693A	RK 4.7K 1/6W J
R512	0B09680A	RK 1.3K 1/6W J
R513	0B09687A	RK 2.7K 1/6W J
R514	0B09661A	RK 220 1/6W J
R515	0B09677A	RK 1.0K 1/6W J
R516	0B22248A	RM 1.54K 1/4W F
R517	0B09658A	RK 160 1/6W J
R518	0B09685A	RK 2.2K 1/6W J
R519	0B22343A	RM 10K 1/4W F
R520	0B09677A	RK 1.0K 1/6W J
R521	0B09685A	RK 2.2K 1/6W J
R522	0B22343A	RM 10K 1/4W F
R523	0B09689A	RK 3.3K 1/6W J
R524, 525	0B09698A	RK 7.5K 1/6W J
R526, 527	0B09701A	RK 10K 1/6W J
R528	0B09705A	RK 15K 1/6W J
R529	0B09701A	RK 10K 1/6W J
R530	0B09725A	RK 100K 1/6W J
R531	0B09701A	RK 10K 1/6W J
R532, 533	0B09725A	RK 100K 1/6W J
R534	0B22248A	RM 1.54K 1/4W F
R535	0B09660A	RK 200 1/6W J
R536	0B09684A	RK 2.0K 1/6W J
R537	0B09660A	RK 200 1/6W J
R538	0B09684A	RK 2.0K 1/6W J
R539	0B09660A	RK 200 1/6W J
R540	0B09684A	RK 2.0K 1/6W J
R541	0B09660A	RK 200 1/6W J
R542	0B09690A	RK 3.6K 1/6W J
R543	0B09701A	RK 10K 1/6W J
R544	0B09687A	RK 2.7K 1/6W J
R545	0B09661A	RK 220 1/6W J
R546	0B09680A	RK 1.3K 1/6W J
R547, 548	0B09681A	RK 1.5K 1/6W J
R549	0B09667A	RK 1.0K 1/6W J
R550	0B09658A	RK 160 1/6W J
R551	0B09685A	RK 2.2K 1/6W J
R552	0B09701A	RK 10K 1/6W J
R553	0B09677A	RK 1.0K 1/6W J
R554	0B09685A	RK 2.2K 1/6W J
R555	0B09701A	RK 10K 1/6W J
R556	0B09689A	RK 3.3K 1/6W J
R557, 558	0B09698A	RK 7.5K 1/6W J
R559, 560	0B09701A	RK 10K 1/6W J
R561	0B09705A	RK 15K 1/6W J
R562	0B09701A	RK 10K 1/6W J
R563	0B09693A	RK 4.7K 1/6W J
R564, 565	0B09701A	RK 10K 1/6W J
R566	0B09713A	RK 33K 1/6W J
R567	0B09701A	RK 10K 1/6W J
R570	0B09725A	RK 100K 1/6W J
R571	0B09705A	RK 15K 1/6W J
R572	0B09725A	RK 100K 1/6W J
R574	0B09741A	RK 470K 1/6W J
R575, 576	0B09701A	RK 10K 1/6W J
VC501, 502	0B42018A	Trimmer Capacitor 20P
VC503	0B42018A	Trimmer Capacitor 20P
C501, 502	0B40556A	CE 470u 10V (LN)
C503	0B40556A	CE 470u 10V (LN)
C504, 505	0B41617A	CC 0.1u 25V Z
C506, 507	0B41617A	CC 0.1u 25V Z
C508, 509	0B41094A	CML 0.01u 50V J
C510	0B41094A	CML 0.01u 50V J
C511	0B40555A	CE 100u 10V (LN)
C512	0B41617A	CC 0.1u 25V Z
C513, 514	0B41944A	CC 1000P 50V K
C515	0B41944A	CC 1000P 50V K

Ref. No.	Part No.	Description			
C516	0B09077A	CC	10P	50V	F
C517	0B05905A	CC	5P	50V	C
C518	0B01802A	CML	2200P	50V	J
C519, 520	0B05892A	CC	100P	50V	K
C521	0B05550A	CML	1000P	50V	J
C522	0B09281A	CC	150P	50V	K
C523	0B40544A	CE	47u	16V	
C524	0B41617A	CC	0.1u	25V	Z
C525, 526	0B01802A	CML	2200P	50V	J
C527	0B40544A	CE	47u	16V	
C528	0B41617A	CC	0.1u	25V	Z
C529	0B05582A	CML	0.022u	50V	J
C530	0B41617A	CC	0.1u	25V	Z
C531	0B40555A	CE	100u	10V	(LN)
C532	0B05905A	CC	5P	50V	C
C533	0B09077A	CC	10P	50V	F
C534	0B05905A	CC	5P	50V	C
C535	0B09077A	CC	10P	50V	F
C536, 537	0B41094A	CML	0.01u	50V	J
C538	0B41094A	CML	0.01u	50V	J
C539	0B01802A	CML	2200P	50V	J
C540, 541	0B05892A	CC	100P	50V	K
C542	0B05550A	CML	1000P	50V	J
C543	0B09281A	CC	150P	50V	K
C544	0B40544A	CE	47u	16V	
C545	0B41617A	CC	0.1u	25V	Z
C546, 547	0B01802A	CML	2200P	50V	J
C548	0B40544A	CE	47u	16V	
C549	0B41617A	CC	0.1u	25V	Z
C550	0B05582A	CML	0.022u	50V	J
C551	0B41944A	CC	1000P	50V	K
C552	0B41617A	CC	0.1u	25V	Z
C553	0B40555A	CE	100u	10V	(LN)
C554	0B41617A	CC	0.1u	25V	Z
C556	0B40544A	CE	47u	16V	
C557, 558	0B41617A	CC	0.1u	25V	Z
C559	0B05892A	CC	100P	50V	K
C560	0B41296A	CML	0.068u	50V	J
C561, 562	0B41617A	CC	0.1u	25V	Z
C563, 564	0B41617A	CC	0.1u	25V	Z
C565	0B41617A	CC	0.1u	25V	Z
C566	0B40555A	CE	100u	10V	(LN)
C567, 568	0B41617A	CC	0.1u	25V	Z
C569, 570	0B41617A	CC	0.1u	25V	Z
C571, 572	0B41617A	CC	0.1u	25V	Z
C573	0B40555A	CE	100u	10V	(LN)
C575	0B41617A	CC	0.1u	25V	Z
C576	0B40544A	CE	47u	16V	
C577, 578	0B41617A	CC	0.1u	25V	Z
C579	0B40544A	CE	47u	16V	
C580	0B41094A	CML	0.01u	50V	J
C581	0B05892A	CC	100P	50V	K
C582	0B40556A	CE	470u	10V	(LN)
C583	0B09933A	CE	2.2u	50V	(LN)
C584	0B41071A	CC	100P	50V	J
TP1, 2	0B81734A	Check-Pin			
TP3, 4	0B81734A	Check-Pin			
TP5	0B81734A	Check-Pin			
TP7, 8	0B81734A	Check-Pin			
TP9	0B81734A	Check-Pin			
TP11, 12	0B81734A	Check-Pin			
TP13, 14	0B81734A	Check-Pin			
TP15, 16	0B81734A	Check-Pin			
TP101, 102	0B84013A	13P T-Post White			
CN1	0B84013A	13P T-Post White			
CN8	0B81034A	11P T-Post White			
CN9	0B81029A	6P T-Post White			
CN11	0B81035A	12P T-Post White			
CN13	0B81033A	10P T-Post White			
CN14	0B81031A	8P T-Post White			
CN15	0B81026A	3P T-Post White			
CN17	0B81029A	6P T-Post White			
CN104	0B81030A	7P T-Post White			
	0J05019A	P.C.B. Bushing T (TB-300) (4)			
	0J05816A	P.C.B. Coller (4)			

11.10. DAIF-D P.C.B. Ass'y

Ref. No.	Part No.	Description	
	HA05583A	DAIF-D P.C.B. Ass'y	
	0B60680D	DAIF-D P.C.B.	
U701	0B11554A	IC	CX23065
U702	0B11644A	IC	TC74HC244AP
U703	0B11558A	IC	TC74HC08AP
U704	0B11560A	IC	TC74HC32AP
U705	0B11557A	IC	TC74HC04AP
U706	0B11558A	IC	TC74HC08AP
U707	0B11643A	IC	TC74HC157P
U708	0B11652A	IC	YM3615B
U709	0B11555A	IC	CXD1146Q
U710	0B11645A	IC	TC74HC595AP
U711, 712	0B11561A	IC	TC74HC74AP
U713	0B11559A	IC	TC74HC161AP
U714	0B11647A	IC	TC74HC123P
U715	0B11557A	IC	TC74HC04AP
U716	0B11558A	IC	TC74HC08AP
U717	0B11560A	IC	TC74HC32AP
U718	0B11651A	IC	TC74HC86P
U719	0B11558A	IC	TC74HC08AP
U720, 721	0B11561A	IC	TC74HC74AP
U722, 723	0B11559A	IC	TC74HC161AP
U724, 725	0B11645A	IC	TC74HC595AP
U726, 727	0B11645A	IC	TC74HC595AP
U728	0B11558A	IC	TC74HC08AP
U729	0B11557A	IC	TC74HC04AP
U730	0B11560A	IC	TC74HC32AP
U731	0B11558A	IC	TC74HC08AP
U732, 733	0B11643A	IC	TC74HC157P
U734	0B11623A	IC	TC74HC574P
U735	0B11648A	IC	TC74HC125P
U736	0B11557A	IC	TC74HC04AP
U737	0B11558A	IC	TC74HC08AP
U738	0B11557A	IC	TC74HC04AP
U739	0B11650A	IC	TC74HC73AP
U740, 741	0B11559A	IC	TC74HC161AP
U742, 743	0B11561A	IC	TC74HC74AP
U744	0B11561A	IC	TC74HC74AP
U745, 746	0B11646A	IC	TC74HC597AP
U747, 748	0B11646A	IC	TC74HC597AP
U749	0B11646A	IC	TC74HC597AP
U750	0B11651A	IC	TC74HC86P
U751	0B11558A	IC	TC74HC08AP
U752	0B11557A	IC	TC74HC04AP
U753	0B11645A	IC	TC74HC595AP
U754, 755	0B11559A	IC	TC74HC161AP
U756, 757	0B11645A	IC	TC74HC595AP
U758	0B11561A	IC	TC74HC74AP
U759, 760	0B11558A	IC	TC74HC08AP
U761, 762	0B11557A	IC	TC74HC04AP
U763	0B11649A	IC	TC74HC30P
U764	0B11559A	IC	TC74HC161AP
U765	0B11623A	IC	TC74HC574P
U766	0B11646A	IC	TC74HC597AP
U767, 768	0B11561A	IC	TC74HC74AP
U769, 770	0B11561A	IC	TC74HC74AP
U771	0B11568A	IC	TC74HCU04AP
U772	0B11558A	IC	TC74HC08AP
U773	0B11651A	IC	TC74HC86P
U774	0B11560A	IC	TC74HC32AP
U775, 776	0B11651A	IC	TC74HC86P
U777	0B11557A	IC	TC74HC04AP
U778	0B11558A	IC	TC74HC08AP
U779, 780	0B11568A	IC	TC74HCU04AP
U781	0B11558A	IC	TC74HC08AP
U782	0B11560A	IC	TC74HC32AP
U783	0B10274A	Tos Link 174 (TOTX174)	
U784	0B10273A	Tos Link 174 (TORX174)	
U785	0B11561A	IC	TC74HC74AP
U787, 788	0B11623A	IC	TC74HC574P
U789, 790	0B11651A	IC	TC74HC86P
U791	0B11651A	IC	TC74HC86P
U792, 793	0B11560A	IC	TC74HC32AP
U794	0B11557A	IC	TC74HC04AP
U795	0B11558A	IC	TC74HC08AP
U796, 797	0B11561A	IC	TC74HC74AP
U798	0B11651A	IC	TC74HC86P
U799	0B11647A	IC	TC74HC123P
U800	0B11564A	IC	TC74HC00AP
U801	0B11557A	IC	TC74HC04AP

Ref. No.	Part No.	Description
U802	0B11564A	IC TC74HC00AP
U803	0B11561A	IC TC74HC74AP
U804, 805	0B11563A	IC LA3373
Q701	0B10060A	TR DTA143ES
Q801, 802	0B10030A	TR 2SC1740S
Q803	0B10026A	TR 2SA933S
Q804, 805	0B10030A	TR 2SC1740S
Q806	0B10236A	TR 2SC1923 (Y)
Q807	0B10026A	TR 2SA933S
Q808	0B10127A	FET 2SK241 (GR)
Q809	0B01600A	FET 2SK30 (Y)
Q810	0B10030A	TR 2SC1740S
D703, 704	0B06398A	SiD 1SS176
D800, 801	0B06398A	SiD 1SS176
D802, 803	0B06398A	SiD 1SS176
D804, 805	0B06398A	SiD 1SS176
D806, 807	0B12645A	SiD HSM2694
D809	0B12644A	Varicap FC54-5
X800	0B92030A	X'Tal 24.576MHz
X801	0B92028A	X'Tal 16.384MHz
X802	0B92029A	X'Tal 22.579MHz
T701	0B51303A	Mini Transformer
L701	0B51187A	Micro Coil 220uH
L703	0B51040A	Micro Coil 1.0uH
L704	0B51122A	Micro Coil 47uH
L800	0B51108A	Micro Coil 3.3uH
L801, 802	0B51108A	Micro Coil 3.3uH
L803, 804	0B51108A	Micro Coil 3.3uH
VR800, 801	0B32021A	Semi-VR 4.7k
R710	0B09725A	RK 100K 1/6W J
R711	0B09745A	RK 680K 1/6W J
R712	0B09677A	RK 1.0K 1/6W J
R713	0B09741A	RK 470K 1/6W J
R716, 717	0B09677A	RK 1.0K 1/6W J
R718	0B09650A	RK 75 1/6W J
R719	0B09699A	RK 8.2K 1/6W J
R720	0B09685A	RK 2.2K 1/6W J
R721	0B09650A	RK 75 1/6W J
R722	0B09677A	RK 1.0K 1/6W J
R723	0B09701A	RK 10K 1/6W J
R724	0B09717A	RK 47K 1/6W J
R725	0B09677A	RK 1.0K 1/6W J
R726	0B09717A	RK 47K 1/6W J
R730	0B09725A	RK 100K 1/6W J
R800	0B09699A	RK 8.2K 1/6W J
R801	0B09703A	RK 12K 1/6W J
R802	0B09709A	RK 22K 1/6W J
R803	0B09737A	RK 330K 1/6W J
R804	0B09709A	RK 22K 1/6W J
R805	0B09737A	RK 330K 1/6W J
R806	0B09747A	RK 820K 1/6W J
R807, 808	0B09737A	RK 330K 1/6W J
R809, 810	0B09693A	RK 4.7K 1/6W J
R811	0B09689A	RK 3.3K 1/6W J
R812	0B09707A	RK 18K 1/6W J
R813	0B09695A	RK 5.6K 1/6W J
R814	0B09689A	RK 3.3K 1/6W J
R815, 816	0B09677A	RK 1.0K 1/6W J
R817	0B09677A	RK 1.0K 1/6W J
R818	0B09661A	RK 220 1/6W J
R819	0B09693A	RK 4.7K 1/6W J
R820	0B09719A	RK 56K 1/6W J
R821	0B09696A	RK 6.2K 1/6W J
R822	0B09689A	RK 3.3K 1/6W J
R823, 824	0B09695A	RK 5.6K 1/6W J
R825	0B09685A	RK 2.2K 1/6W J
R826	0B24002A	RF 47 1W J
R827	0B09719A	RK 56K 1/6W J
R828	0B09702A	RK 11K 1/6W J
R829	0B09689A	RK 3.3K 1/6W J
R830	0B09697A	RK 6.8K 1/6W J
R831	0B09703A	RK 12K 1/6W J
R832, 833	0B09695A	RK 5.6K 1/6W J
R834	0B09685A	RK 2.2K 1/6W J
R835	0B24002A	RK 47 1W J
R836	0B09693A	RK 4.7K 1/6W J
R837	0B09679A	RK 1.2K 1/6W J
R838	0B09695A	RK 5.6K 1/6W J
R839	0B09693A	RK 4.7K 1/6W J
R840, 841	0B09701A	RK 10K 1/6W J
R842	0B09695A	RK 5.6K 1/6W J
R843, 844	0B09701A	RK 10K 1/6W J
R845	0B09695A	RK 5.6K 1/6W J

Ref. No.	Part No.	Description
R846	0B09701A	RK 10K 1/6W J
R847	0B09725A	RK 100K 1/6W J
R848	0B09677A	RK 1.0K 1/6W J
R849	0B09629A	RK 10 1/6W J
R850	0B09685A	RK 2.2K 1/6W J
R851	0B09701A	RK 10K 1/6W J
R852	0B09685A	RK 2.2K 1/6W J
R853	0B09681A	RK 1.5K 1/6W J
R854	0B09695A	RK 5.6K 1/6W J
R855	0B09677A	RK 1.0K 1/6W J
R856	0B09747A	RK 820K 1/6W J
R857	0B01679A	RK 100 1/4W J
R858	0B09701A	RK 10K 1/6W J
C701	0B40052A	CE 470u 6.3V
C702, 703	0B41971A	CC 0.10u 50V Z
C704, 705	0B41971A	CC 0.10u 50V Z
C706, 707	0B41971A	CC 0.10u 50V Z
C708, 709	0B41971A	CC 0.10u 50V Z
C710	0B41971A	CC 0.10u 50V Z
C711	0B09223A	CE 1.0u 50V (LN)
C713, 714	0B01862A	CE 22u 16V
C715	0B40564A	CE 100u 25V (LN)
C716	0B09292A	CC 0.10u 50V Z
C717	0B40566A	CE 10u 25V (LN)
C718	0B09292A	CC 0.10u 50V Z
C719, 720	0B41971A	CC 0.10u 50V Z
C721	0B05550A	CML 1000P 50V J
C722	0B05681A	CML 0.01u 50V J
C723, 724	0B41971A	CC 0.10u 50V Z
C725, 726	0B41971A	CC 0.10u 50V Z
C727, 728	0B41971A	CC 0.10u 50V Z
C729, 730	0B41971A	CC 0.10u 50V Z
C731, 732	0B41971A	CC 0.10u 50V Z
C733, 734	0B41971A	CC 0.10u 50V Z
C735, 736	0B41971A	CC 0.10u 50V Z
C737, 738	0B41971A	CC 0.10u 50V Z
C739, 740	0B41971A	CC 0.10u 50V Z
C741, 742	0B41971A	CC 0.10u 50V Z
C743, 744	0B41971A	CC 0.10u 50V Z
C745, 746	0B41971A	CC 0.10u 50V Z
C747, 748	0B41971A	CC 0.10u 50V Z
C749, 750	0B41971A	CC 0.10u 50V Z
C751, 752	0B41971A	CC 0.10u 50V Z
C753, 754	0B41971A	CC 0.10u 50V Z
C755, 756	0B41971A	CC 0.10u 50V Z
C757, 758	0B41971A	CC 0.10u 50V Z
C759, 760	0B41971A	CC 0.10u 50V Z
C761, 762	0B41971A	CC 0.10u 50V Z
C763, 764	0B41971A	CC 0.10u 50V Z
C765, 766	0B41971A	CC 0.10u 50V Z
C767, 768	0B41971A	CC 0.10u 50V Z
C769	0B41971A	CC 0.10u 50V Z
C770	0B40025A	CE 0.47u 50V
C780	0B41971A	CC 0.10u 50V Z
C800	0B41976A	CC 33P 50V J
C801	0B09993A	CML 820P 50V J
C802	0B41976A	CC 33P 50V J
C803	0B41977A	CC 39P 50V J
C804, 805	0B41071A	CC 100P 50V J
C806	0B41071A	CC 100P 50V J
C807	0B41299A	CML 0.12u 50V J
C808	0B41959A	CC 0.01u 50V Z
C809, 810	0B09394A	CE 0.15u 50V (LN)
C811	0B01802A	CML 2200P 50V J
C812	0B01405A	CE 1.0u 50V
C813	0B01804A	CML 3900P 50V J
C814	0B01802A	CML 2200P 50V J
C815	0B41980A	CML 1500P 50V J
C816	0B09332A	CE 2.2u 50V (LN)
C817, 818	0B09327A	CE 0.33u 50V (LN)
C819	0B01400A	CE 100u 16V
C820	0B40025A	CE 0.47u 50V
C821	0B01403A	CE 47u 16V
C822	0B01405A	CE 1.0u 50V
C823	0B01804A	CML 3900P 50V J
C824	0B01802A	CML 2200P 50V J
C825	0B41980A	CML 1500P 50V J
C826	0B09332A	CE 2.2u 50V (LN)
C827, 828	0B09327A	CE 0.33u 50V (LN)
C829	0B01400A	CE 100u 16V
C830	0B40025A	CE 0.47u 50V
C831	0B01403A	CE 47u 16V
C832	0B41963A	CC 0.022u 50V Z

Ref. No.	Part No.	Description			
C833	0B41979A	CC	82P	50V	J
C834	0B41978A	CC	68P	50V	J
C835	0B41976A	CC	33P	50V	J
C836, 837	0B41977A	CC	39P	50V	J
C838	0B41975A	CC	10P	50V	D
C839	0B01403A	CE	47u	16V	
C840	0B41299A	CML	0.12u	50V	J
C841	0B01405A	CE	1.0u	50V	
C842	0B41963A	CC	0.022u	50V	Z
C843	0B01412A	CE	10u	16V	
C844, 845	0B41963A	CC	0.022u	50V	Z
C846	0B01403A	CE	47u	16V	
C847, 848	0B41963A	CC	0.022u	50V	Z
C850	0B05681A	CML	0.01u	50V	J
C851	0B01402A	CE	4.7u	25V	
C852, 853	0B40052A	CE	470u	6.3V	
C854	0B09292A	CC	0.10u	50V	Z
C855	0B40052A	CE	470u	6.3V	
C856	0B09292A	CC	0.10u	50V	Z
S701	0B70146A	Slide Switch 2-2			
TP1, 2	0B81734A	Check-Pin			
TP3, 4	0B81734A	Check-Pin			
PJ701, 702	0B81998A	1P Pin Jack			
CN200	0B84005A	DIN Connector P100P (XC5A-0122)			
	0E03502A	Washer 2.6mm (Spring)			(2)
	0E03503A	Nut Hex. 2.6mm			(2)
	0E03523A	M2.6x10 + Pan			(2)
	0H05458C	DAIF Panel 101			(1)
	0J05953A	Pin Jack Ground Plate			(2)
	0E03526A	BT3x6 + Binding			(4)
	0E03030A	M3x6 + Binding (Nickel)			(3)

11.11. Servo P.C.B. Ass'y

Ref. No.	Part No.	Description
	HA05719A	Servo P.C.B. Ass'y
	0B60710C	Servo P.C.B.
U1	0B06270A	IC TC4069UBP
U2	0B06317A	IC UPD4030BC
U3	0B11493A	IC TC4538BP
U4	0B06124B	IC NJM4558D
U5	0B06169A	IC TC4066BP
U6	0B06124B	IC NJM4558D
U7	0B06270A	IC TC4069UBP
U8	0B06302A	IC TC4001
U9	0B11585A	IC TC4073BP
U10	0B11149A	IC TC4081 BP
U11	0B06302A	IC TC4001
U12	0B06169A	IC TC4066BP
U13	0B06308A	IC TC4011BP
U15	0B11584A	IC TC4052BP
U16	0B11191A	IC UPD6326C
U17, 18	0B06124B	IC NJM4558D
U19, 20	0B06124B	IC NJM4558D
U23	0B11580A	IC CX1046M
U24	0B11581A	IC CXD1052Q
U25, 26	0B06124B	IC NJM4558D
U27	0B11255A	IC MJM2903D
U28	0B11651A	IC TC74HC86P
U29	0B11561A	IC TC74HC74AP
U30	0B11582A	IC TC4024BP
U31	0B11146A	IC TC4053BP
U32	0B06169A	IC TC4066BP
U33	0B11583A	IC TC4028BP
U34	0B11584A	IC TC4052BP
U35	0B11240A	IC NJM78L05A
U36, 37	0B06124B	IC NJM4558D
U38	0B06124B	IC NJM4558D
U39	0B11255A	IC NJM2903D
U40, 41	0B11559A	IC TC74HC161AP
U42, 43	0B11559A	IC TC74HC161AP
U44	0B11564A	IC TC74HC00AP
U45	0B06215A	IC TC4049BP
U46	0B06169A	IC TC4066BP
U47	0B11557A	IC TC74HC04AP
U48	0B11726A	IC TC74HC02AP
U49	0B11558A	IC TC74HC08AP
U50	0B11255A	IC NJM2903D
U51	0B11240A	IC NJM78L05A
U52	0B11493A	IC TC4538BP
U53	0B11146A	IC TC4053BP

Ref. No.	Part No.	Description
U54, 55	0B11582A	IC TC4024BP
U56	0B11579A	IC CXD20084
U57	0B11255A	IC NJM2903D
Q1, 2	0B10039A	TR 2SC1740S (SE)
Q3, 4	0B10068A	TR DTC114ES
Q5	0B10068A	TR DTA114ES
Q6, 7	0B10068A	TR DTC114ES
Q8	0B10039A	TR 2SC1740S (SE)
Q9, 10	0B06316A	TR 2SD882 (P, Q)
Q11	0B06451A	TR 2SB1015 (Y)
Q12	0B10068A	TR DTC114ES
Q14, 15	0B10062A	TR DTC144ES
Q16, 17	0B10062A	TR DTC144ES
Q18	0B10039A	TR 2SC1740S (SE)
Q19	0B10029A	TR 2SA933S (S)
Q20	0B10039A	TR 2SC1740S (SE)
Q21	0B10062A	TR DTC144ES
Q22	0B10058A	TR DTA114ES
Q23	0B10039A	TR 2SC1740S (SE)
Q24	0B06051A	TR 2SA683
Q25, 26	0B10039A	TR 2SC1740S (SE)
Q27	0B10039A	TR 2SC1740S (SE)
Q28	0B10053A	TR DTA144ES
Q29	0B10062A	TR DTC144ES
Q30	0B06303A	TR 2SB772 (P, Q)
Q31, 32	0B06451A	TR 2SB1015 (Y)
Q33, 34	0B10062A	TR DTC144ES
Q35	0B10062A	TR DTC144ES
Q36	0B10058A	TR DTA114ES
Q37, 38	0B10068A	TR DTC114ES
Q39	0B10058A	TR DTA114ES
Q40, 41	0B10068A	TR DTC114ES
Q42	0B10125A	TR 2SC2259 (F, G, H)
Q43	0B10062A	TR DTC144ES
Q44, 45	0B10068A	TR DTC114ES
Q46	0B10068A	TR DTC114ES
Q47	0B06316A	TR 2SD882 (P, Q)
Q48	0B06303A	TR 2SB772 (P, Q)
Q49	0B10068A	TR DTC114ES
Q50	0B10058A	TR DTA114ES
Q51	0B06316A	TR 2SD882 (P, Q)
Q52	0B10039A	TR 2SC1740S (SE)
Q53	0B10029A	TR 2SA933S (S)
Q54	0B10068A	TR DTC114ES
Q55	0B10055A	TR DTA124ES
IP1	0B11640A	IC ICP-N38 1.5A
IP2	0B11639A	IC ICP-N25 1.0A
IP3	0B11638A	IC ICP-N20 0.8A
IP4, 5	0B11248A	IC ICP-N5
IP6, 7	0B11638A	IC ICP-N20
SCR1	0B12667A	SCR SF3D41
ZD1	0B12154A	ZD 6.2V B3
ED23	0B12275A	LED SLR-34VR3
ED24	0B12637A	LED SLR-34YY3F (YEL)
ED26	0B12275A	LED SLR-34VR3
ED27	0B12638A	LED SLR-34DU3F (ORN)
ED28	0B12636A	LED SLR-34MG3F (GRN)
ED35	0B12636A	SID SLR-34MG3F (GRN)
ED36	0B12275A	LED SLR-34VR3
ED40	0B12275A	LED SLR-34VR3
ED41	0B12636A	LED SLR-34MG3F (GRN)
D1, 2	0B06398A	SID 1SS176
D3, 4	0B06398A	SID 1SS176
D5	0B06398A	SID 1SS176
D6, 7	0B12362A	SID S5566B
D8	0B06398A	SID 1SS176
D9, 10	0B06398A	SID 1SS176
D11, 12	0B06398A	SID 1SS176
D13, 14	0B06398A	SID 1SS176
D15, 16	0B06398A	SID 1SS176
D17, 18	0B06398A	SID 1SS176
D19, 20	0B06398A	SID 1SS176
D21, 22	0B06398A	SID 1SS176
D25	0B06398A	SID 1SS176
D29, 30	0B06398A	SID 1SS176
D33, 34	0B06398A	SID 1SS176
D37	0B06398A	SID 1SS176
D42	0B06398A	SID 1SS176
D43, 44	0B06398A	SID 1SS176
D45, 46	0B06398A	SID 1SS176
D47, 48	0B06398A	SID 1SS176
D49, 50	0B06398A	SID 1SS176
D51	0B06398A	SID 1SS176

Ref. No.	Part No.	Description			
D52	0B06398A	SiD	1SS176		
D54, 55	0B06398A	SiD	1SS176		
L2, 3	0B51183A	Coil	100uH		
L4, 5	0B51183A	Coil	100uH		
L6, 7	0B51183A	Coil	100uH		
L8, 9	0B51183A	Coil	100uH		
VR1, 2	0B32146A	Semi-VR	20K		
VR3	0B32146A	Semi-VR	20K		
VR4	0B32151A	Semi-VR	500K		
VR5	0B32145A	Semi-VR	10K		
VR6, 7	0B32149A	Semi-VR	100K		
VR8, 9	0B32144A	Semi-VR	2K		
VR10	0B32143A	Semi-VR	1K		
VR11	0B32142A	Semi-VR	500		
VR12, 13	0B32145A	Semi-VR	10K		
VR14	0B32149A	Semi-VR	100K		
R1	0B09659A	RK	180	1/6W	J
R2	0B09719A	RK	56K	1/6W	J
R3	0B09701A	RK	10K	1/6W	J
R4	0B09719A	RK	56K	1/6W	J
R5	0B09701A	RK	10K	1/6W	J
R6, 7	0B09725A	RK	100K	1/6W	J
R8, 9	0B09743A	RK	560K	1/6W	J
R10, 11	0B09725A	RK	100K	1/6W	J
R12, 13	0B09749A	RK	1.0M	1/6W	J
R14	0B09701A	RK	10K	1/6W	J
R15	0B09701A	RK	10K	1/6W	J
R16, 17	0B09691A	RK	3.9K	1/6W	J
R18, 19	0B22439A	RM	68.1K	1/4W	F
R20	0B22319A	RM	6.19K	1/4W	F
R21	0B09733A	RK	220K	1/6W	J
R22	0B22319A	RM	6.19K	1/4W	F
R23, 24	0B22304A	RM	4.64K	1/4W	F
R25, 26	0B09733A	RK	220K	1/6W	J
R27	0B09733A	RK	220K	1/6W	J
R28, 29	0B09709A	RK	22K	1/6W	J
R30	0B09725A	RK	100K	1/6W	J
R31, 32	0B09701A	RK	10K	1/6W	J
R33	0B09661A	RK	220	1/6W	J
R34	0B09719A	RK	56K	1/6W	J
R35	0B09713A	RK	33K	1/6W	J
R36	0B09711A	RK	27K	1/6W	J
R37	0B09707A	RK	18K	1/6W	J
R38	0B09719A	RK	56K	1/6W	J
R39, 40	0B09725A	RK	100K	1/6W	J
R41	0B09725A	RK	100K	1/6W	J
R42, 43	0B09701A	RK	10K	1/6W	J
R44	0B09701A	RK	10K	1/6W	J
R45	0B09693A	RK	4.7K	1/6W	J
R46	0B09689A	RK	3.3K	1/6W	J
R47	0B09681A	RK	1.5K	1/6W	J
R48	0B09705A	RK	15K	1/6W	J
R49, 50	0B09737A	RK	330K	1/6W	J
R51	0B09661A	RK	220	1/6W	J
R52	0B09673A	RK	680	1/6W	J
R53	0B09661A	RK	220	1/6W	J
R54	0B09673A	RK	680	1/6W	J
R55	0B24217A	RF	2.2	2W	
R56	0B09693A	RK	4.7K	1/6W	J
R57	0B09677A	RK	1.0K	1/6W	J
R58, 59	0B09660A	RK	200	1/6W	J
R60, 61	0B09677A	RK	1.0K	1/6W	J
R62	0B09685A	RK	2.2K	1/6W	J
R63	0B09713A	RK	33K	1/6W	J
R64	0B09747A	RK	820K	1/6W	J
R65	0B09713A	RK	33K	1/6W	J
R66	0B09747A	RK	820K	1/6W	J
R67	0B09693A	RK	4.7K	1/6W	J
R68, 69	0B09677A	RK	1.0K	1/6W	J
R70, 71	0B09693A	RK	4.7K	1/6W	J
R72, 73	0B09747A	RK	820K	1/6W	J
R74	0B09691A	RK	3.9K	1/6W	J
R75	0B09693A	RK	4.7K	1/6W	J
R76, 77	0B09725A	RK	100K	1/6W	J
R78, 79	0B09725A	RK	100K	1/6W	J
R80, 81	0B09685A	RK	2.2K	1/6W	J
R82, 83	0B09693A	RK	4.7K	1/6W	J
R84	0B09677A	RK	1.0K	1/6W	J
R85	0B09693A	RK	4.7K	1/6W	J
R86, 87	0B09701A	RK	10K	1/6W	J
R88	0B09693A	RK	4.7K	1/6W	J
R89	0B09677A	RK	1.0K	1/6W	J
R90	0B09697A	RK	6.8K	1/6W	J

Ref. No.	Part No.	Description			
R91, 92	0B09721A	RK	68K	1/6W	J
R93	0B09696A	RK	6.2K	1/6W	J
R94	0B09698A	RK	7.5K	1/6W	J
R95	0B09725A	RK	100K	1/6W	J
R96	0B09697A	RK	6.8K	1/6W	J
R97	0B09729A	RK	150K	1/6W	J
R98	0B09743A	RK	560K	1/6W	J
R99, 100	0B09733A	RK	220K	1/6W	J
R101	0B09687A	RK	2.7K	1/6W	J
R103	0B09671A	RK	560	1/6W	J
R104	0B09749A	RK	1.0M	1/6W	J
R105, 106	0B09725A	RK	100K	1/6W	J
R107	0B09693A	RK	4.7K	1/6W	J
R108	0B09749A	RK	1.0M	1/6W	J
R109	0B09725A	RK	100K	1/6W	J
R110, 111	0B09725A	RK	100K	1/6W	J
R112	0B09693A	RK	4.7K	1/6W	J
R113	0B09705A	RK	15K	1/6W	J
R114	0B09701A	RK	10K	1/6W	J
R115	0B09677A	RK	1.0K	1/6W	J
R116	0B09685A	RK	2.2K	1/6W	J
R117	0B09689A	RK	3.3K	1/6W	J
R118	0B09677A	RK	1.0K	1/6W	J
R119	0B09689A	RK	3.3K	1/6W	J
R120	0B09677A	RK	1.0K	1/6W	J
R121	0B09713A	RK	33K	1/6W	J
R122, 123	0B09749A	RK	1.0M	1/6W	J
R124, 125	0B09713A	RK	33K	1/6W	J
R126, 127	0B09693A	RK	4.7K	1/6W	J
R128, 129	0B09725A	RK	100K	1/6W	J
R130, 131	0B09725A	RK	100K	1/6W	J
R132	0B09677A	RK	1.0K	1/6W	J
R133	0B09725A	RK	100K	1/6W	J
R134, 135	0B09683A	RK	1.8K	1/6W	J
R136	0B09678A	RK	1.1K	1/6W	J
R137	0B09701A	RK	10K	1/6W	J
R138	0B09732A	RK	200K	1/6W	J
R139	0B09725A	RK	100K	1/6W	J
R140	0B09709A	RK	22K	1/6W	J
R141	0B09725A	RK	100K	1/6W	J
R142	0B09700A	RK	9.1K	1/6W	J
R143	0B09676A	RK	910K	1/6W	J
R144	0B09629A	RK	10	1/6W	J
R145	0B09685A	RK	2.2K	1/6W	J
R146	0B09725A	RK	100K	1/6W	J
R147	0B09693A	RK	4.7K	1/6W	J
R148	0B09665A	RK	330	1/6W	J
R149	0B09693A	RK	4.7K	1/6W	J
R150	0B09701A	RK	10K	1/6W	J
R151, 152	0B09665A	RK	330	1/6W	J
R153	0B09717A	RK	47K	1/6W	J
R154	0B09693A	RK	4.7K	1/6W	J
R155	0B09665A	RK	330	1/6W	J
R156	0B09693A	RK	4.7K	1/6W	J
R157	0B09665A	RK	330	1/6W	J
R158, 159	0B09701A	RK	10K	1/6W	J
R160, 161	0B09701A	RK	10K	1/6W	J
R162	0B09701A	RK	10K	1/6W	J
R163, 164	0B09673A	RK	680	1/6W	J
R165	0B09677A	RK	1.0K	1/6W	J
R166	0B09693A	RK	4.7K	1/6W	J
R168	0B09693A	RK	4.7K	1/6W	J
R169	0B09689A	RK	3.3K	1/6W	J
R170	0B24047A	RF	560	1W	
R171	0B09639A	RK	27	1/6W	J
R172, 173	0B24165A	RF	0.47	2W	J
R174	0B09725A	RK	100K	1/6W	J
R175, 176	0B09718A	RK	51K	1/6W	J
R177	0B09725A	RK	100K	1/6W	J
R178, 179	0B09718A	RK	51K	1/6W	J
R180	0B01706A	RK	47	1/4W	J
R181, 182	0B09689A	RK	3.3K	1/6W	J
R183	0B09725A	RK	100K	1/6W	J
R184	0B09677A	RK	1.0K	1/6W	J
R185	0B09693A	RK	4.7K	1/6W	J
R186	0B09729A	RK	150K	1/6W	J
R187	0B09701A	RK	10K	1/6W	J
R188	0B09650A	RK	75	1/6W	J
R189	0B09701A	RK	10K	1/6W	J
R190, 191	0B09701A	RK	10K	1/6W	J
R192, 193	0B09701A	RK	10K	1/6W	J
R194, 195	0B09701A	RK	10K	1/6W	J
R196, 197	0B09713A	RK	33K	1/6W	J

Ref. No.	Part No.		Description		
R198	0B09713A	RK	33K	1/6W	J
R199	0B09749A	RK	1.0M	1/6W	J
R200	0B09687A	RK	2.7K	1/6W	J
R201	0B09713A	RK	33K	1/6W	J
R202	0B09677A	RK	1.0K	1/6W	J
R203	0B09687A	RK	2.7K	1/6W	J
R204	0B09725A	RK	100K	1/6W	J
R205	0B09677A	RK	1.0K	1/6W	J
R206, 207	0B09735A	RK	270K	1/6W	J
R208	0B09677A	RK	1.0K	1/6W	J
R209	0B09725A	RK	100K	1/6W	J
R210	0B09749A	RK	1.0M	1/6W	J
R211	0B09653A	RK	100	1/6W	J
R212	0B09715A	RK	39K	1/6W	J
R213, 214	0B09701A	RK	10K	1/6W	J
R215	0B09701A	RK	10K	1/6W	J
R216	0B09677A	RK	1.0K	1/6W	J
R217, 218	0B09701A	RK	10K	1/6W	J
R219	0B09749A	RK	1.0M	1/6W	J
R220	0B09725A	RK	100K	1/6W	J
R221, 222	0B09693A	RK	4.7K	1/6W	J
R223	0B09693A	RK	4.7K	1/6W	J
R224	0B09749A	RK	1.0M	1/6W	J
R225, 226	0B09701A	RK	10K	1/6W	J
R227, 228	0B09701A	RK	10K	1/6W	J
R229, 230	0B09701A	RK	10K	1/6W	J
R231	0B09701A	RK	10K	1/6W	J
R232	0B09693A	RK	4.7K	1/6W	J
R233	0B09701A	RK	10K	1/6W	J
R234	0B09689A	RK	3.3K	1/6W	J
R235	0B09693A	RK	4.7K	1/6W	J
R236	0B22248A	RM	1.54K	1/4W	F
R237	0B09667A	RK	390K	1/6W	J
R238	0B22248A	RM	1.54K	1/4W	F
R239	0B09701A	RK	10K	1/6W	J
R240	0B09697A	RK	6.8K	1/6W	J
R241	0B09701A	RK	10K	1/6W	J
R242	0B09697A	RK	6.8K	1/6W	J
R243, 244	0B09749A	RK	1.0M	1/6W	J
R245, 246	0B09673A	RK	680	1/6W	J
R247	0B09691A	RK	3.9K	1/6W	J
R248	0B09665A	RK	330	1/6W	J
R249	0B09684A	RK	2.0K	1/6W	J
R250	0B09679A	RK	1.2K	1/6W	J
R251	0B09675A	RK	820	1/6W	J
R252	0B09679A	RK	1.2K	1/6W	J
R253	0B09741A	RK	470K	1/6W	J
R254	0B09737A	RK	330K	1/6W	J
R255	0B09725A	RK	100K	1/6W	J
R256	0B09741A	RK	470K	1/6W	J
R257, 258	0B09713A	RK	33K	1/6W	J
R259	0B09701A	RK	10K	1/6W	J
R260, 261	0B09687A	RK	2.7K	1/6W	J
R262	0B09701A	RK	10K	1/6W	J
R263, 264	0B09725A	RK	100K	1/6W	J
R265	0B09687A	RK	2.7K	1/6W	J
R266	0B22457A	RM	100K	1/4W	F
R267	0B09717A	RK	47K	1/6W	J
R268	0B09725A	RK	100K	1/6W	J
R269, 270	0B09717A	RK	47K	1/6W	J
R271	0B09645A	RK	47	1/6W	J
R272	0B09673A	RK	680	1/6W	J
R273	0B09725A	RK	100K	1/6W	J
R274	0B09693A	RK	4.7K	1/6W	J
R275	0B09685A	RK	2.2K	1/6W	J
R276, 277	0B09693A	RK	4.7K	1/6W	J
R278	0B09727A	RK	120K	1/6W	J
R279	0B09707A	RK	18K	1/6W	J
R280	0B09721A	RK	68K	1/6W	J
R281	0B09684A	RK	2.0K	1/6W	J
R282	0B09723A	RK	82K	1/6W	J
R283	0B09716A	RK	43K	1/6W	J
R284	0B09731A	RK	180K	1/6W	J
R285	0B09719A	RK	56K	1/6W	J
R286	0B09713A	RK	33K	1/6W	J
R287	0B09707A	RK	18K	1/6W	J
R288	0B09694A	RK	5.1K	1/6W	J
R289	0B09665A	RK	330	1/6W	J
R290	0B09732A	RK	200K	1/6W	J
R291	0B09725A	RK	100K	1/6W	J
R292, 293	0B24016A	RF	47	1W	J
R294, 295	0B09701A	RK	10K	1/6W	J
R296, 297	0B09701A	RK	10K	1/6W	J

Ref. No.	Part No.		Description		
R298	0B09701A	RK	10K	1/6W	J
R300, 301	0B09685A	RK	2.2K	1/6W	J
R302	0B09685A	RK	2.2K	1/6W	J
R303, 304	0B09685A	RK	2.2K	1/6W	J
R305, 306	0B09685A	RK	2.2K	1/6W	J
R307	0B09701A	RK	10K	1/6W	J
R308	0B09685A	RK	2.2K	1/6W	J
R309, 310	0B09725A	RK	100K	1/6W	J
R311	0B09647A	RK	56	1/6W	J
R312	0B09653A	RK	100	1/6W	J
R313	0B09669A	RK	470	1/6W	J
R314	0B09723A	RK	82K	1/6W	J
R316, 317	0B09725A	RK	100K	1/6W	J
R318	0B09669A	RK	470	1/6W	J
R319	0B24242A	RF	0.47	1/2W	J
R320, 321	0B09701A	RK	10K	1/6W	J
R322	0B09687A	RK	2.7K	1/6W	J
R323, 324	0B09701A	RK	10K	1/6W	J
R325	0B09719A	RK	56K	1/6W	J
R326	0B09687A	RK	2.7K	1/6W	J
R327	0B09669A	RK	470	1/6W	J
C1	0B41971A	CC	0.10u	50V	Z
C2, 3	0B09187A	CE	1.0u	50V	(BP)
C4	0B41971A	CC	0.10u	50V	Z
C5, 6	0B09077A	CC	10P	50	F
C7, 8	0B41090A	CML	4700P	50V	
C9	0B41971A	CC	0.10u	50V	Z
C10, 11	0B09191A	CPP	4700P	100V	G
C12	0B41298A	CML	0.1u	50V	J
C13	0B41294A	CML	0.047u	50V	J
C14	0B41298A	CML	0.1u	50V	J
C15	0B41294A	CML	0.047u	50V	J
C16	0B09077A	CC	10P	50V	F
C17	0B41971A	CC	0.10u	50V	Z
C18, 19	0B09218A	CE	47u	16V	(LN)
C20	0B01403A	CE	47u	16V	
C21	0B01674A	CE	10u	25V	
C22	0B01402A	CE	4.7u	25V	
C23	0B01403A	CE	47u	16V	
C24, 25	0B01400A	CE	100u	16V	
C26, 27	0B09223A	CE	1u	50V	(LN)
C28, 29	0B41971A	CC	0.10u	50V	Z
C30	0B09372A	CE	2.2u	50V	
C31	0B41301A	CML	0.18u	50V	J
C33	0B41084A	CML	1500P	50V	
C34	0B41971A	CC	0.10u	50V	Z
C35	0B41088A	CML	3300P	50V	
C36, 37	0B41971A	CC	0.10u	50V	Z
C38	0B41944A	CC	1000P	50V	K
C39	0B41094A	CML	0.01u	50V	J
C40	0B01674A	CE	10u	25V	
C41	0B41944A	CC	1000P	50V	K
C42	0B01674A	CE	10u	25V	
C43	0B41971A	CC	0.10u	50V	Z
C44	0B01403A	CE	47u	16V	
C45	0B41090A	CML	4700P	50V	
C46, 47	0B41094A	CML	0.01u	50V	
C48	0B41094A	CML	0.01u	50V	
C49, C50	0B41098A	CML	0.022u	50V	
C51, 52	0B41094A	CML	0.01u	50V	
C53	0B09219A	CE	6.8u	25V	(LN)
C54	0B41090A	CML	4700P	50V	
C55	0B41098A	CML	0.022u	50V	
C56	0B41094A	CML	0.01u	50V	
C57	0B41304A	CML	0.33u	50V	
C58	0B41296A	CML	0.068u	50V	
C59	0B09144A	CE	0.22u	50V	(LN)
C60, 61	0B01403A	CE	47u	16V	
C62	0B41090A	CML	4700P	50V	
C63	0B01674A	CE	10u	25V	
C64	0B01400A	CE	100u	16V	
C65	0B41302A	CML	0.22u	50V	
C66	0B41094A	CML	0.01u	50V	
C67	0B09221A	CE	1.5u	50V	(LN)
C68	0B41096A	CML	0.015u	50V	
C69	0B41298A	CML	0.1u	50V	J
C70, 71	0B01400A	CE	100u	16V	
C72	0B01400A	CE	100u	16V	
C73	0B40569A	CE	3300u	16V	
C74	0B41971A	CC	0.10u	50V	Z
C75, 76	0B40569A	CE	3300u	16V	
C77, 78	0B41971A	CC	0.10u	50V	Z
C79	0B01400A	CE	100u	16V	

Ref. No.	Part No.	Description			
C80	0B41298A	CML	0.1u	50V	J
C81	0B41090A	CML	4700P	50V	
C82	0B41302A	CML	0.22u	50V	J
C83	0B41308A	CML	0.68u	50V	J
C85	0B01400A	CE	100u	16V	
C86	0B01674A	CE	10u	25V	
C87, 88	0B41971A	CC	0.10u	50V	Z
C89, 90	0B41971A	CC	0.10u	50V	Z
C91, 92	0B01402A	CE	4.7u	25V	
C93	0B41094A	CML	0.01u	50V	
C94	0B41098A	CML	0.022u	50V	
C95	0B01400A	CE	100u	16V	
C96, 97	0B01674A	CE	10u	25V	
C98, 99	0B01400A	CE	100u	16V	
C100	0B01400A	CE	100u	16V	
C101, 102	0B41971A	CC	0.10u	50V	Z
C103, 104	0B41971A	CC	0.10u	50V	Z
C105	0B01674A	CE	10u	25V	
C106	0B09792A	CC	33P	50V	J
C107	0B41971A	CC	0.10u	50V	Z
C108	0B01674A	CE	10u	25V	
C109	0B41971A	CC	0.10u	50V	Z
C110	0B09989A	CC	120P	50V	J
C111, 112	0B01400A	CE	100u	16V	
C113	0B01403A	CE	47u	16V	
C114, 115	0B41971A	CC	0.10u	50V	Z
C116	0B01403A	CE	47u	16V	
C117	0B09372A	CE	2.2u	50V	
C118	0B41971A	CC	0.10u	50V	Z
C119	0B09137A	CE	22u	25V	(LN)
C120, 121	0B41971A	CC	0.10u	50V	Z
C122, 123	0B41971A	CC	0.10u	50V	Z
C124, 125	0B41971A	CC	0.10u	50V	Z
C126, 127	0B41971A	CC	0.10u	50V	Z
C128, 129	0B41971A	CC	0.10u	50V	Z
C130, 131	0B41971A	CC	0.10u	50V	Z
C132	0B01402A	CE	4.7u	25V	
C133	0B40209A	CE	0.33u	50V	
TE. CN1, 2	0B81026A	3P T-Post White			
TE. CN3	0B81030A	7P T-Post White			
TE. CN4	0B84127A	Header 9067 2x1			
TE. CN5, 6	0B84128A	Header 9067 2x2			
TE. CN7	0B84127A	Header 9067 2x1			
TE. CN8, 9	0B84128A	Header 9067 2x2			
TE. CN10	0B84134A	Header 2x8			
TE. CN11	0B84127A	Header 9067 2x1			
TE. CN13	0B84128A	Header 9067 2x2			
RESET	0B84127A	Header 9067 2x1			
TP1, 2	0B81734A	Check-Pin			
TP3, 4	0B81734A	Check-Pin			
TP5, 6	0B81734A	Check-Pin			
TP7, 8	0B81734A	Check-Pin			
TP9, 10	0B81734A	Check-Pin			
TP11, 12	0B81734A	Check-Pin			
TP13, 14	0B81734A	Check-Pin			
TP15, 16	0B81734A	Check-Pin			
CN10	0B81025A	2P T-Post White			
CN11	0B81035A	12P T-Post White			
CN17	0B81029A	6P T-Post White			
CN18	0B81032A	9P T-Post White			
CN19	0B81031A	8P T-Post White			
CN20	0B81029A	6P T-Post White			
CN21	0B81033A	10P T-Post White			
CN22	0B84050A	4P T-Post Black			
CN23	0B84052A	10P T-Post Black			
CN24	0B84051A	6P T-Post Black			
CN25	0B81025A	2P T-Post White			
CN26	0B81027A	4P T-Post White			
CN202	0B84005A	DIN Connector P100P (XC5A-0122)			
JP-A	0B02365B	PD Connector Ass'y V150			
	0B84118A	Receptacle 9067			(20)
	0E00966A	M3x5 + Binding			(2)
	0E03502A	Washer 2.6mm (Spring)			(2)
	0E03503A	Nut Hex. 2.6mm			(2)
	0E03523A	M2.6x10 + Pan			(2)
	0J05813A	Heat Sink (DS-25-B5-AN-0)			(2)
	0H05460C	Servo Panel			(1)
	0E03030A	M3x6 + Binding (Nickel)			(3)

11.12. u-Com P.C.B. Ass'y

Ref. No.	Part No.	Description			
	HA05770A	u-COM P.C.B. 101 Ass'y [N1000] (Serial No. : A50101501-)			
	HA05582A	u-COM P.C.B. 101 Ass'y [N1000] (Serial Nos. : A50101001-01500)			
	HA05771A	u-COM P.C.B. 102 Ass'y [N-1000 Pro.] (Serial No. : A50401301)			
	HA05702A	u-COM P.C.B. 102 Ass'y [N-1000 Pro.] (Serial Nos. : A50401001-01300)			
	0B60679B	u-COM P.C.B.			
U901	BA07740A	IC uPD75P108CW (BLU) [N-1000] (Serial No. : A50101501-)			
	BA07715B	IC uPD75P108CW (GRN) [N-1000] (Serial Nos. : A50101001-01500)			
	BA07741A	IC uPD75P108CW (BLU) [N-1000 Pro.] (Serial No. : A50401301-)			
	BA07716B	IC uPD75P108CW (GRN) [N-1000 Pro.] (Serial Nos. : A50401001-01300)			
U902	0B11624A	IC	M50743SP		
U903	0B11612A	IC	LC6520H		
U904	0B06396A	IC	LC7800		
U905	0B11636A	IC	UPD4556BC		
U906	0B11568A	IC	TC74HCU04AP		
U907	0B11623A	IC	TC74HC574P		
U908	BA07757A	IC MBM27C128P (BLU) (Serial No. : A50101501-) (Serial No. : A50401301-)			
	BA07717B	IC MBM27C128P (GRN) (Serial Nos. : A50101001-01500) (Serial Nos. : A50401001-01300)			
U909	0B11627A	IC	TC5565APL-15		
U910	0B11631A	IC	TC74HC154P		
U911	0B11561A	IC	TC74HC74AP		
U912	0B11629A	IC	TC74HC139P		
U913	0B11632A	IC	TC74HC4078P		
U914	0B11630A	IC	TC74HC27P		
Q901	0B10058A	TR	DTA114ES		
Q902	0B10068A	TR	DTC114ES		
D901, 902	0B06398A	SiD	1SS176		
D904	0B06398A	SiD	1SS176		
X901	0B92027A	X'Tal 8.0000MHz			
R901, 902	0B09701A	RK	10K	1/6W	J
R903, 904	0B09693A	RK	4.7K	1/6W	J
R905, 906	0B09693A	RK	4.7K	1/6W	J
R907, 908	0B09701A	RK	10K	1/6W	J
R909	0B09717A	RK	47K	1/6W	J
R910	0B09701A	RK	10K	1/6W	J
R911, 912	0B09669A	RK	470	1/6W	J
R913, 914	0B09669A	RK	470	1/6W	J
R915	0B09717A	RK	47K	1/6W	J
R916	0B09701A	RK	10K	1/6W	J
R917	0B09749A	RK	1.0M	1/6W	J
R918	0B09717A	RK	47K	1/6W	J
R919	0B09701A	RK	10K	1/6W	J
R920	0B09717A	RK	47K	1/6W	J
R921	0B09687A	RK	2.7K	1/6W	J
R922, 923	0B09717A	RK	47K	1/6W	J
R924, 925	0B09717A	RK	47K	1/6W	J
R926, 927	0B09717A	RK	47K	1/6W	J
R928	0B09717A	RK	47K	1/6W	J
R929, 930	0B09693A	RK	4.7K	1/6W	J
R931, 932	0B09693A	RK	4.7K	1/6W	J
R933	0B09693A	RK	4.7K	1/6W	J
R934	0B09685A	RK	2.2K	1/6W	J
R935	0B09629A	RK	10	1/6W	J
C901	0B41971A	CC	0.10u	50V	Z
C902	0B40574A	CE	1000u	10V	
C903, 904	0B41971A	CC	0.10u	50V	Z
C905, 906	0B41971A	CC	0.10u	50V	Z
C907, 908	0B41971A	CC	0.10u	50V	Z
C909, 910	0B41971A	CC	0.10u	50V	Z
C911, 912	0B41971A	CC	0.10u	50V	Z
C913, 914	0B41971A	CC	0.10u	50V	Z
C915, 916	0B41971A	CC	0.10u	50V	Z
S901	0B70078A	Slide Switch 4-2			
PJ901, 902	0B84028A	Stereo Mini Jack			
CN201	0B84005A	DIN Connector P100P (XC5A-0122)			
IS901	0B84027A	64P IC-Socket			
IS908	0B84010A	28P IC-Socket			

Ref. No.	Part No.	Description	
	0E03502A	Washer 2.6mm (Spring)	(2)
	0E03503A	Nut Hex. 2.6mm	(2)
	0E03523A	M2.6x10 + Pan	(2)
	0H05459C	CPU Panel [N-1000]	(1)
	0H05558B	CPU Panel [N-1000 Pro.]	(1)
	0E03030A	M3x6 + Binding (Nickel)	(3)

12. MOUNTING DIAGRAMS

Notes: 1. Mounting diagram shows a dip side view of the printed circuit board.
2. Parts list is shown in Section 11.

12.1. Power Switch P.C.B. Ass'y

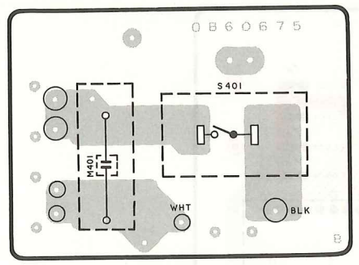


Fig. 12.1

12.2. Lamp Upper P.C.B. Ass'y

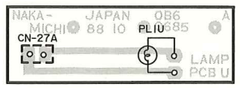


Fig. 12.2

12.3. Lamp Lower P.C.B. Ass'y

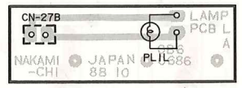


Fig. 12.3

12.4. Sense P.C.B. Ass'y

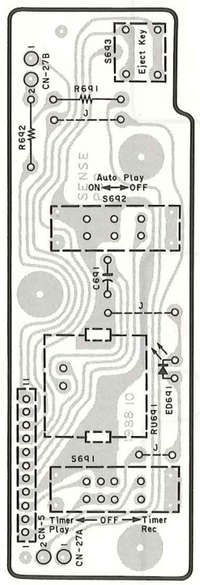


Fig. 12.4

12.5. Power Supply P.C.B. Ass'y

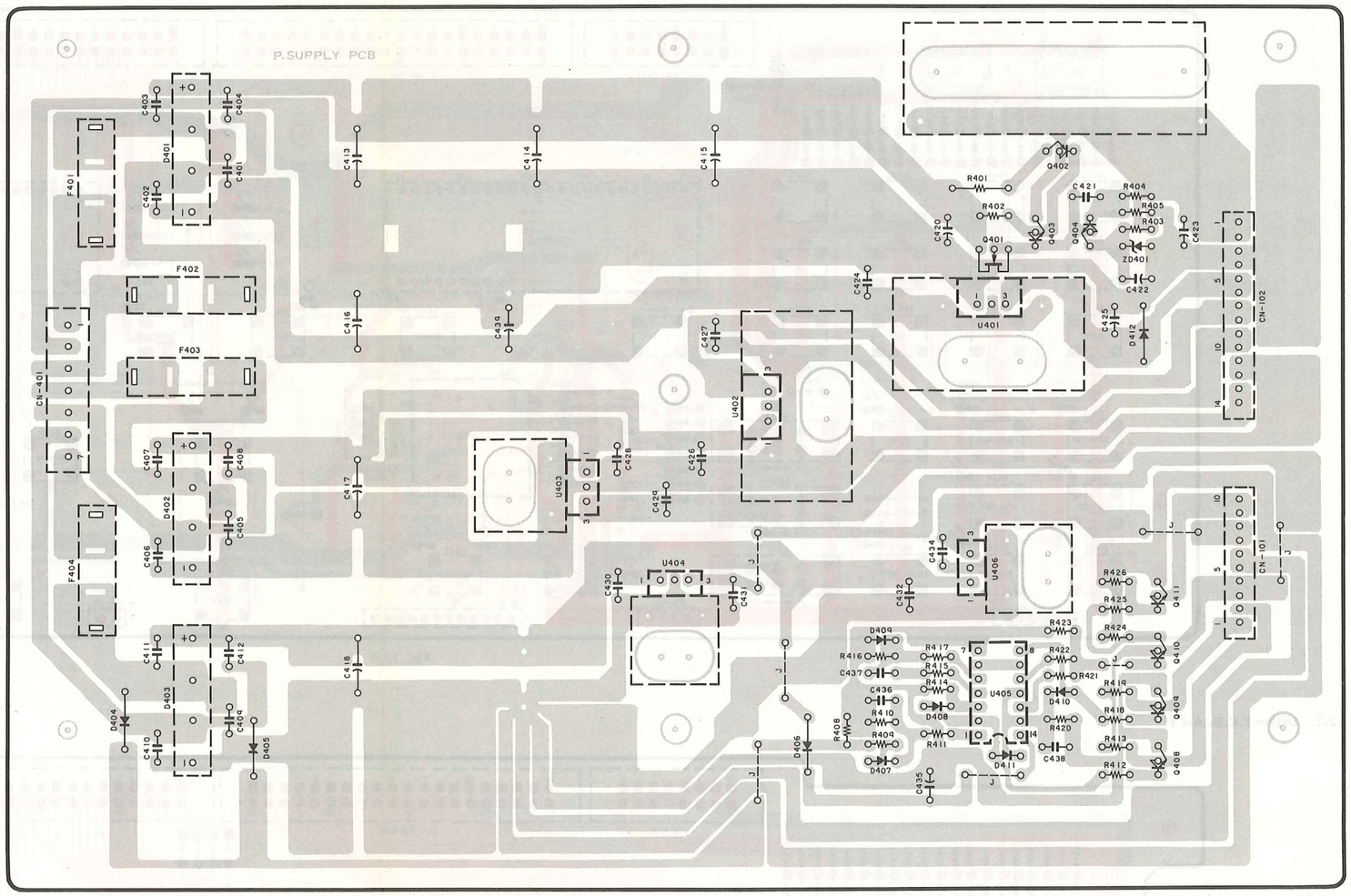


Fig. 12.5

12.6. Switch P.C.B. Ass'y

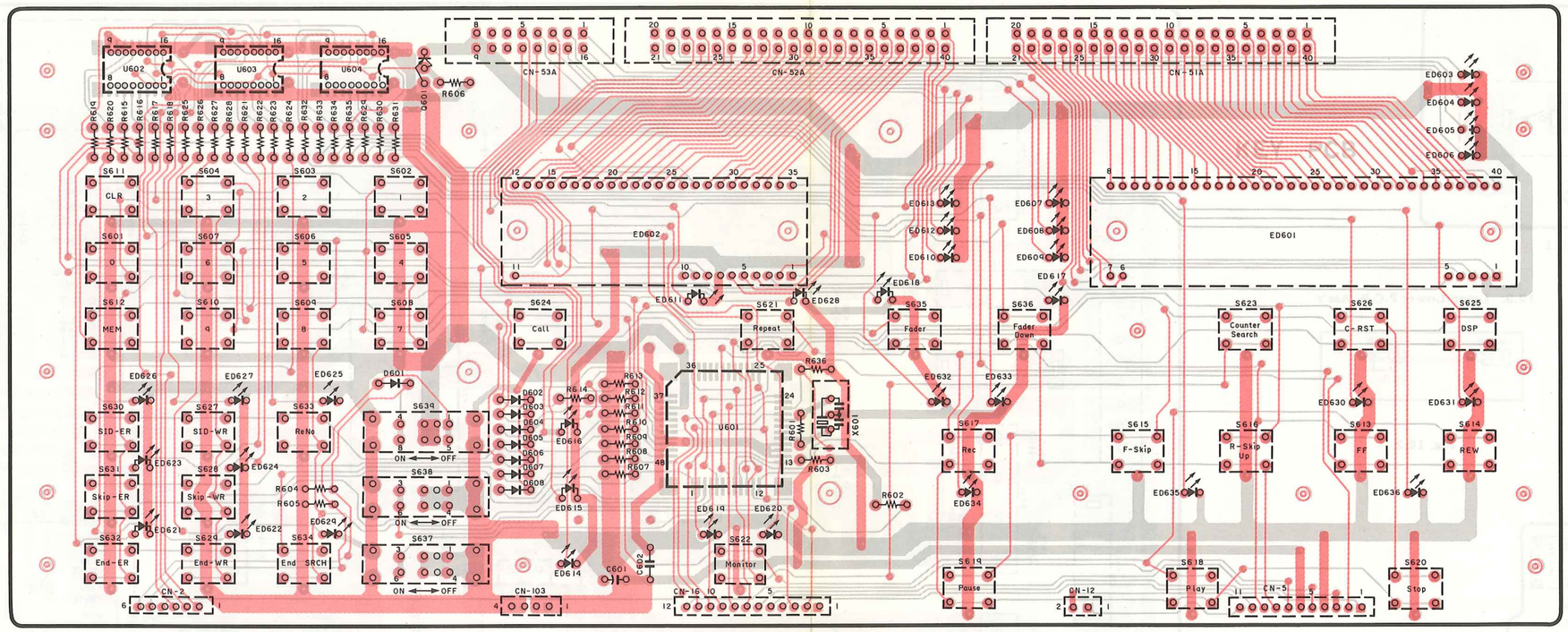


Fig. 12.6

12.7. Driver P.C.B. Ass'y

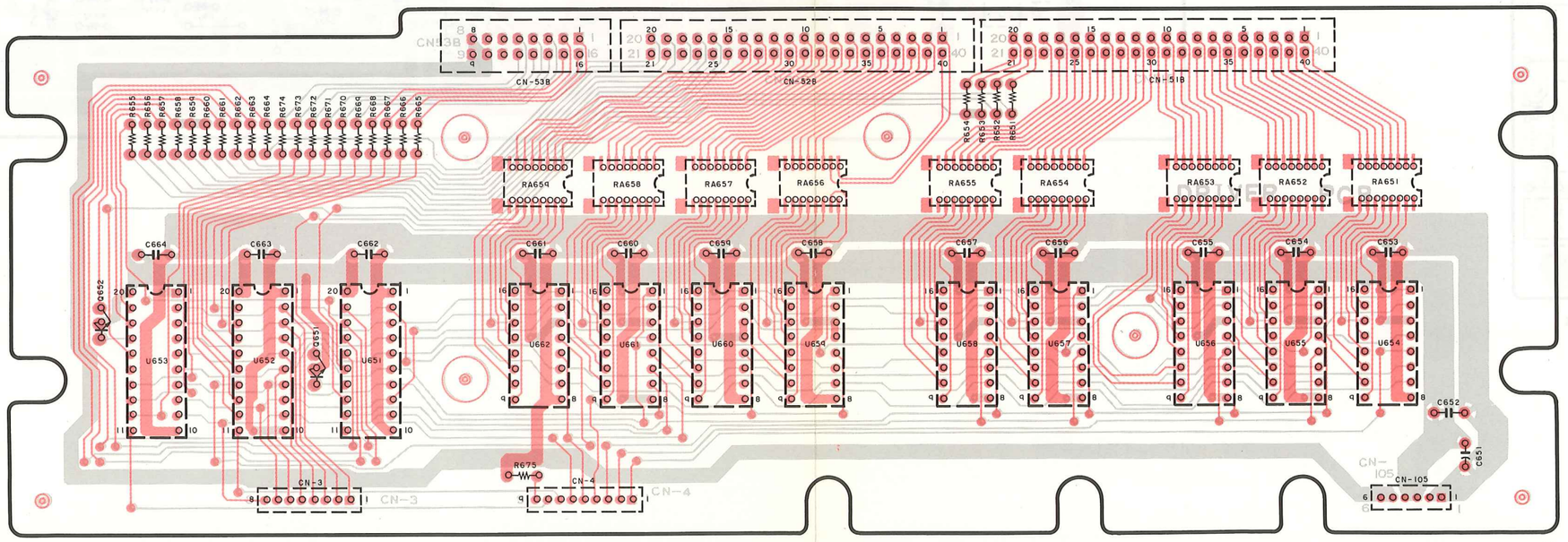


Fig. 12.7

12.8. Mother P.C.B. Ass'y

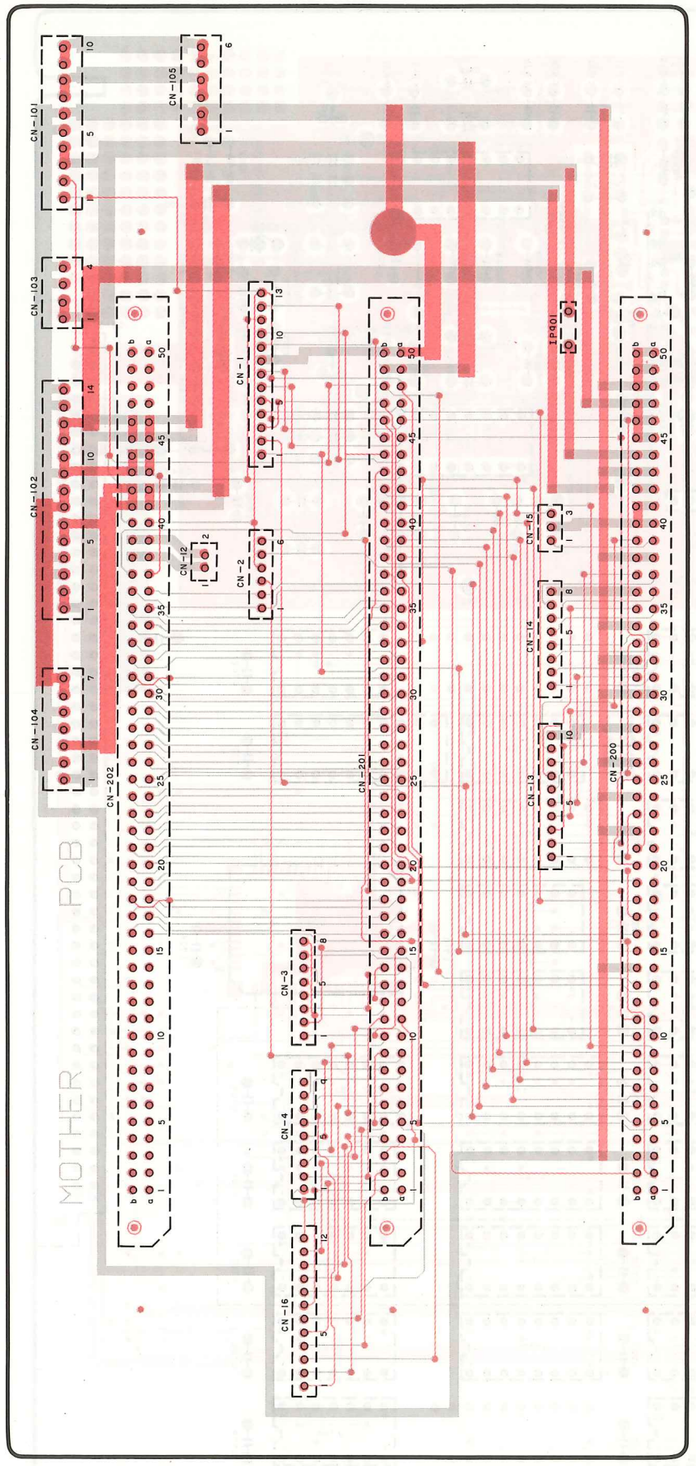


Fig. 12.8

12.9. Signal Processor P.C.B. Ass'y

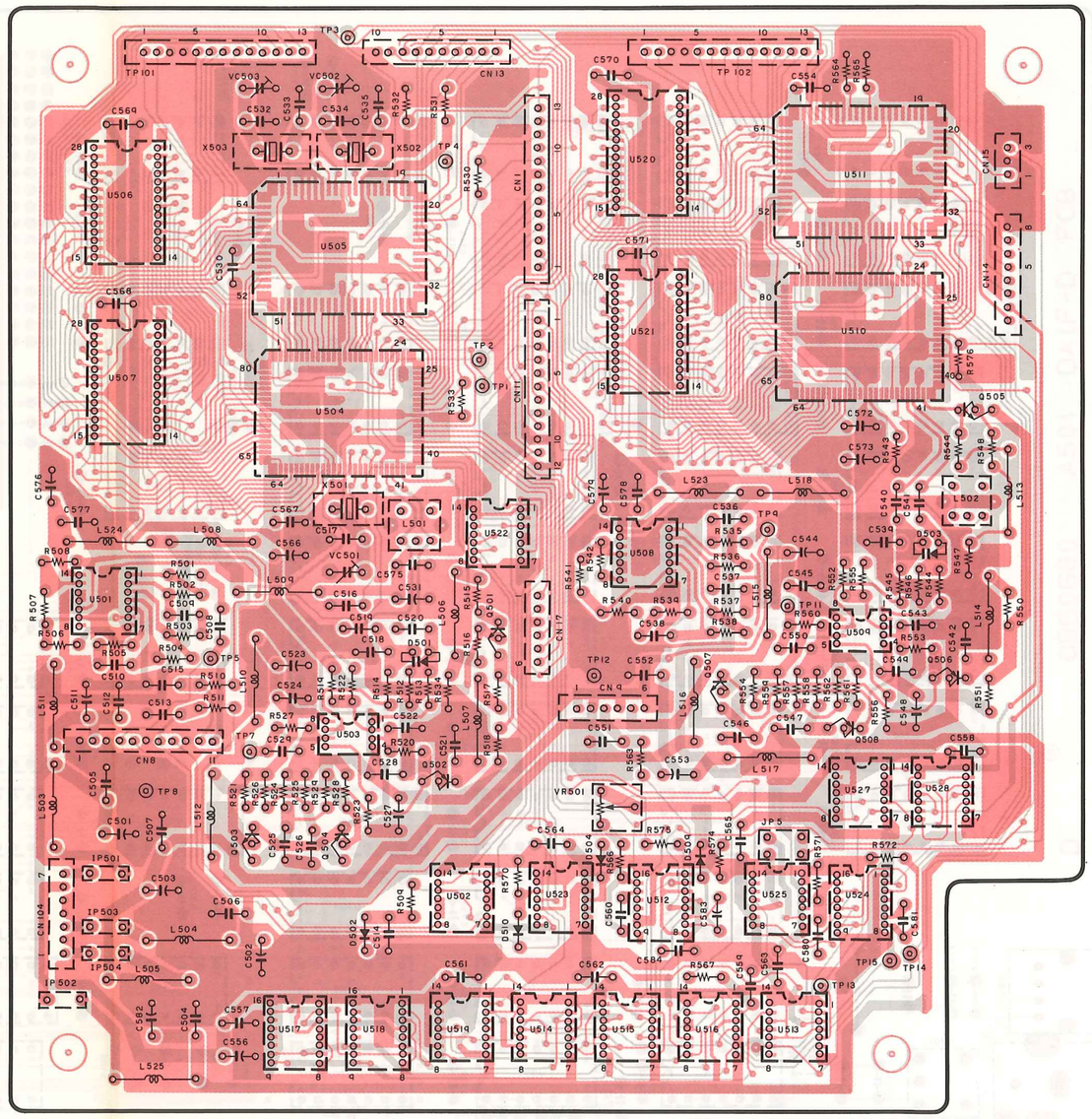


Fig. 12.9

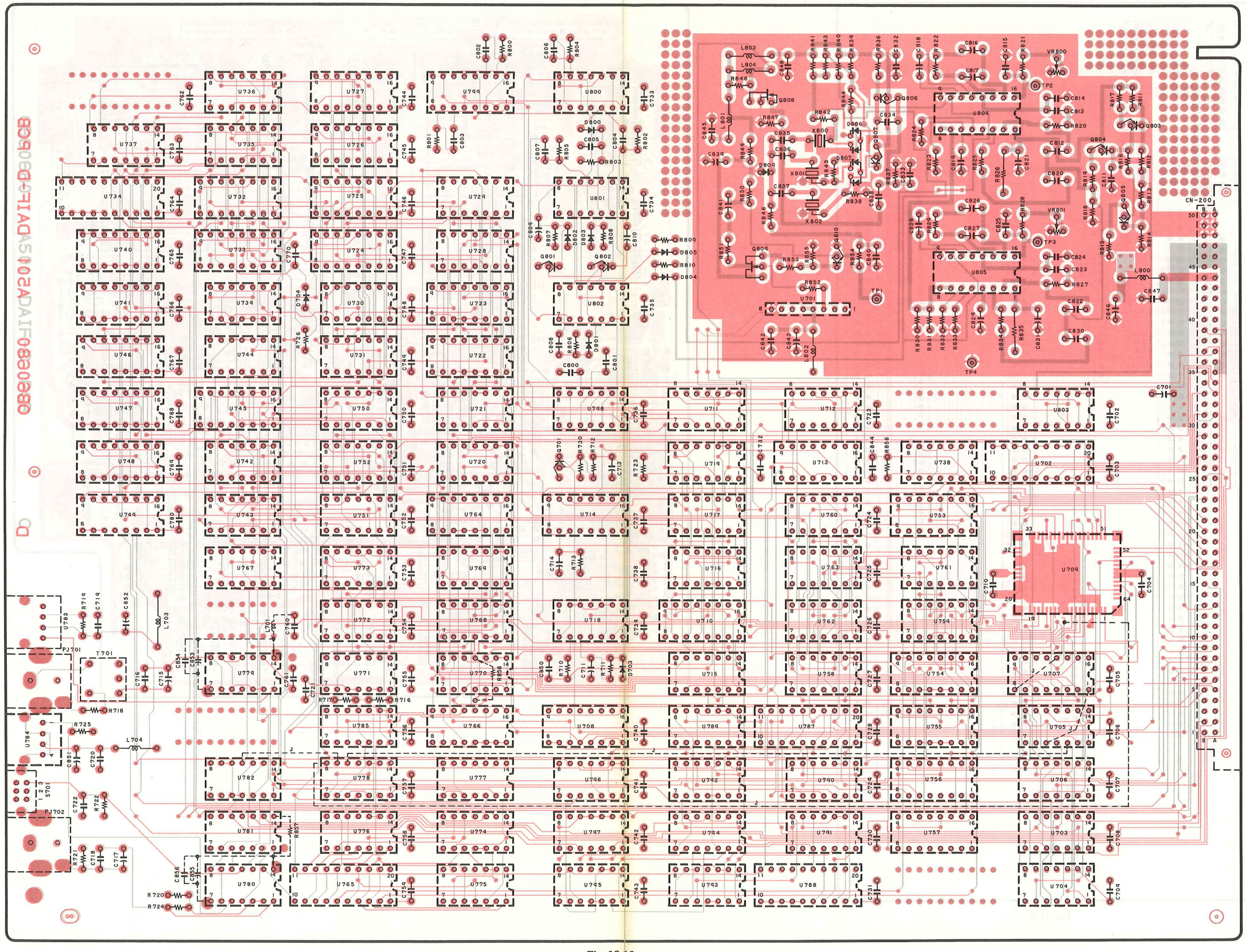

DAIF-D P.C.B. ASS'Y
CN-200
TP1
TP2
TP3
TP4
VR800
VR801
X800
X801
X802
PJ701
PJ702
T701
S701
U701
U702
U703
U704
U705
U706
U707
U709

Fig. 12.10

12.11. Servo P.C.B. Ass'y

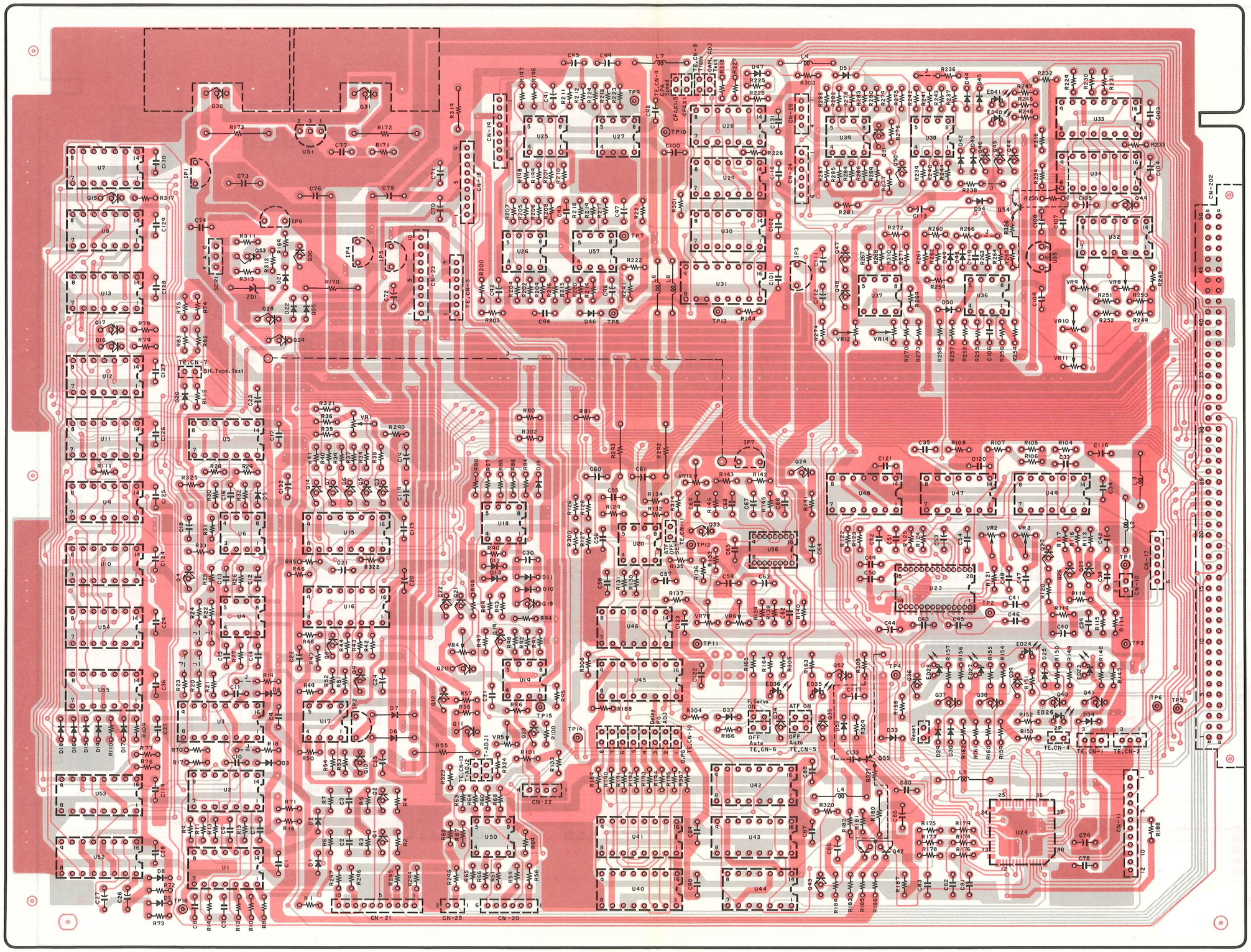


Fig. 12.11

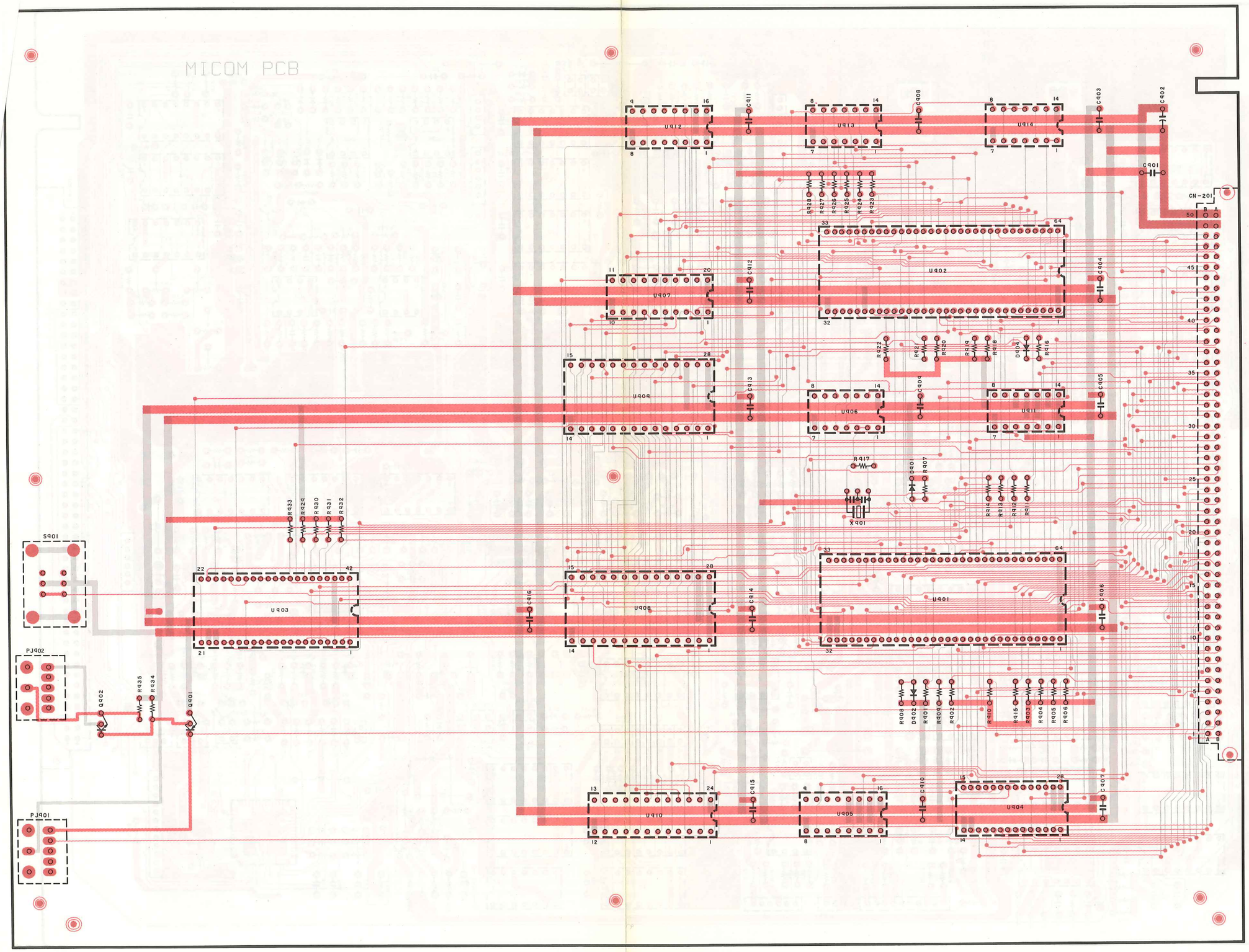

MICOM PCB
U901
U902
U903
U904
U905
U906
U907
U908
U909
U910
U911
U912
U913
U914
CN-201
X101
PJ901
PJ902
Q901
Q902
D901
D902

Fig. 12.12

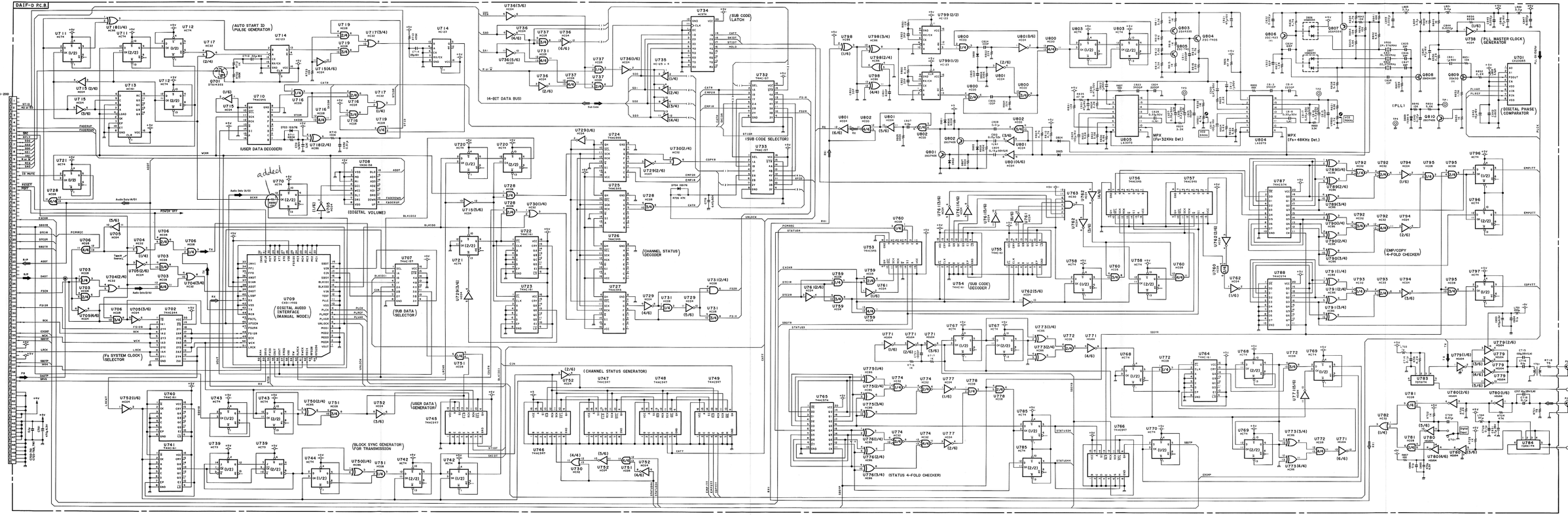


Fig. 13.1 DAIF-D Section

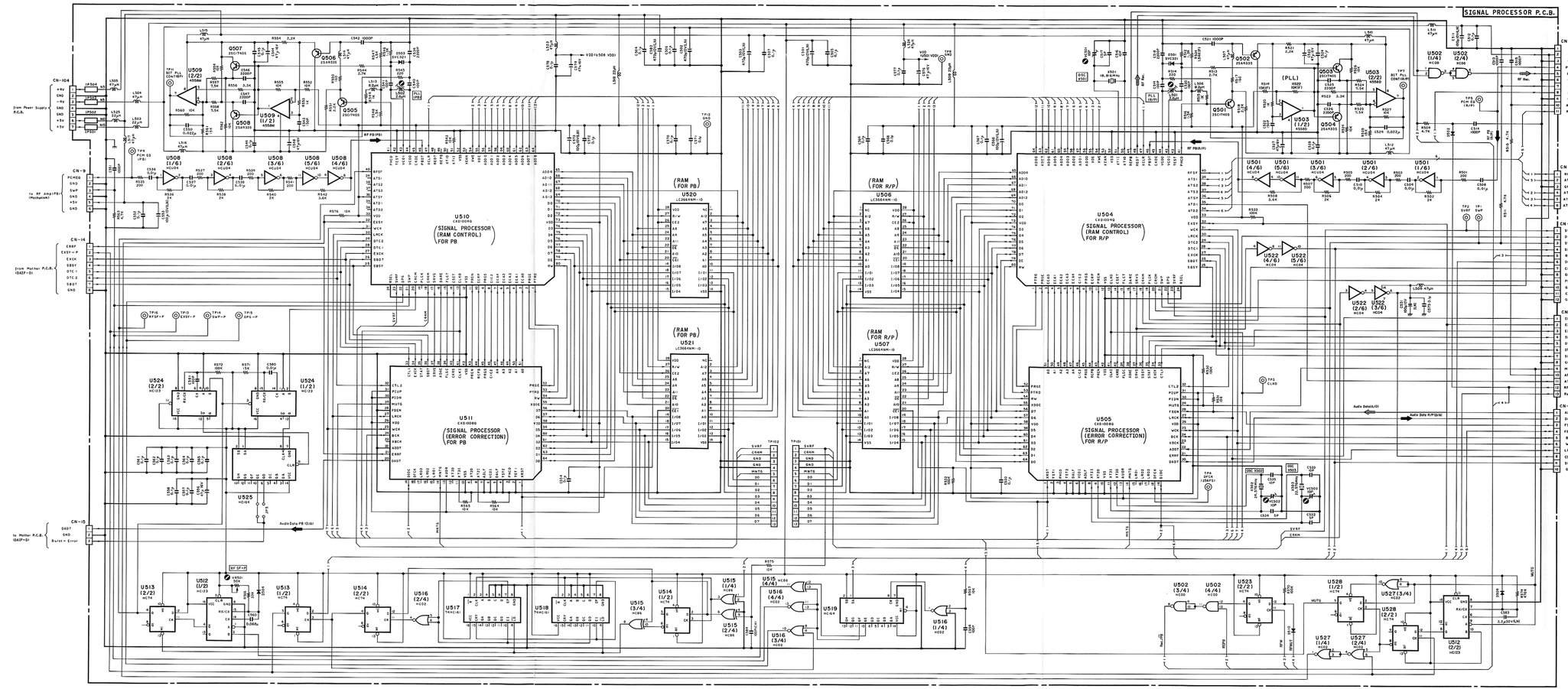


Fig. 13.2 Signal Processor Section

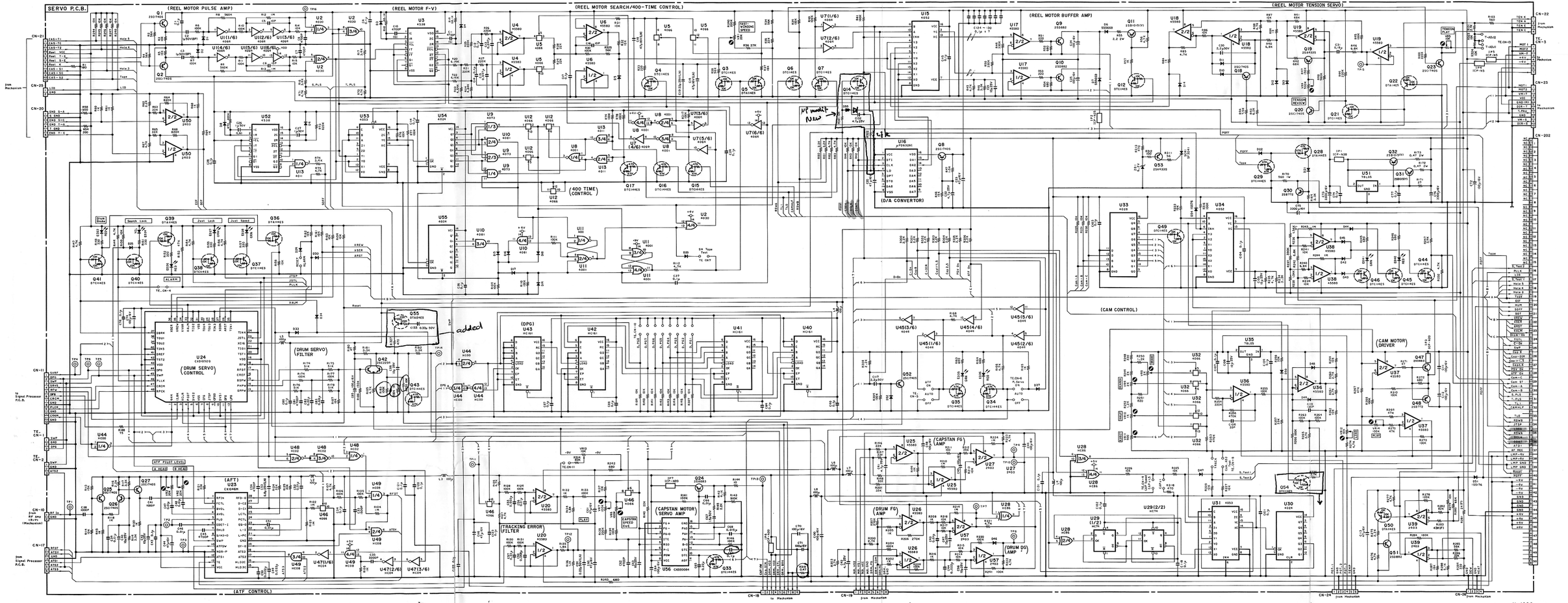
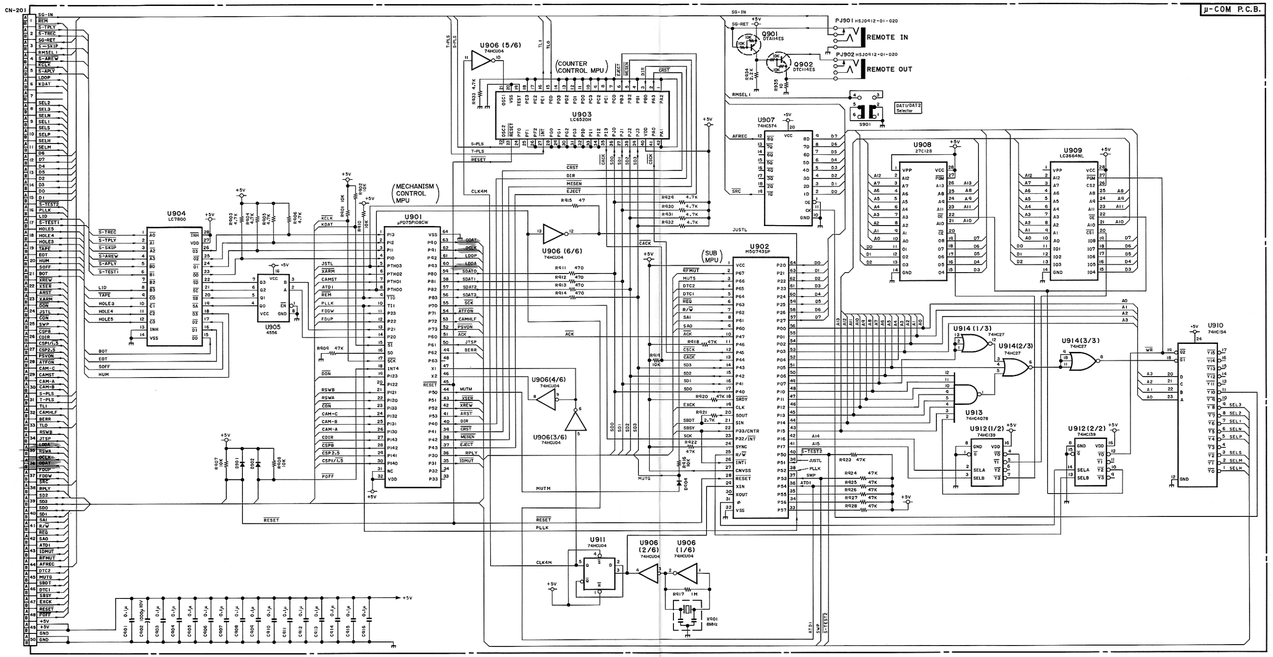
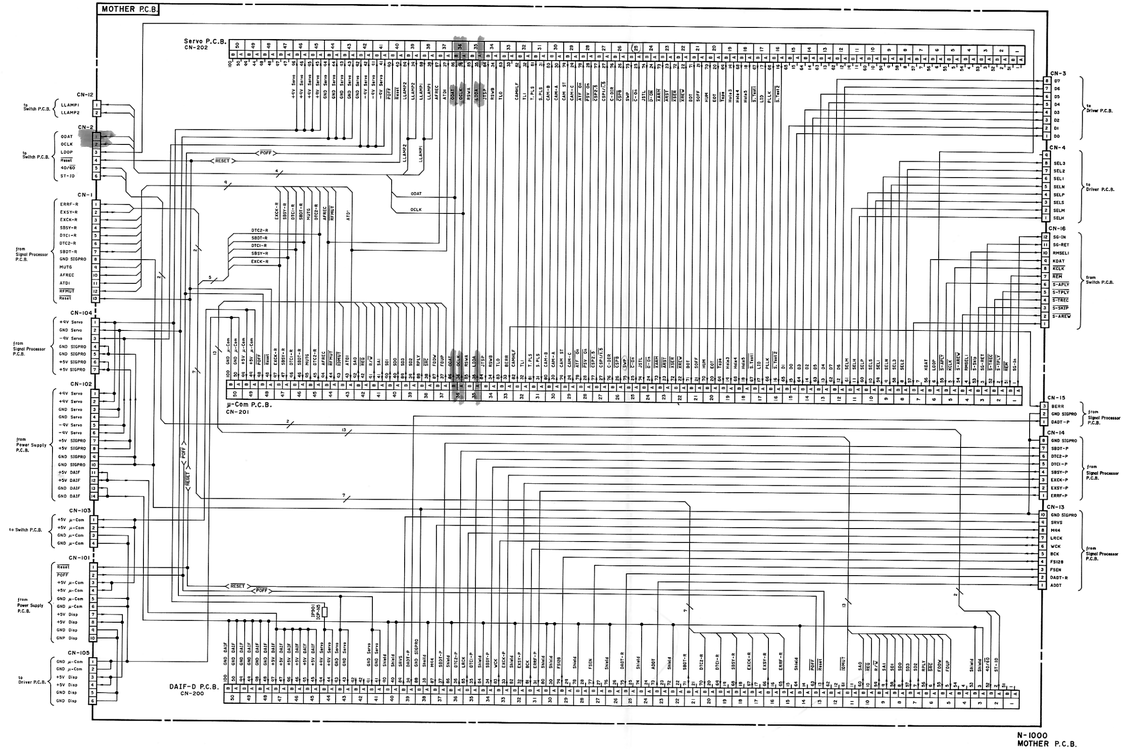


Fig. 13.3 Servo Section



N-1000
μ-COM P.C.B.

Fig. 13.4 μ-Com/Mother Board Section



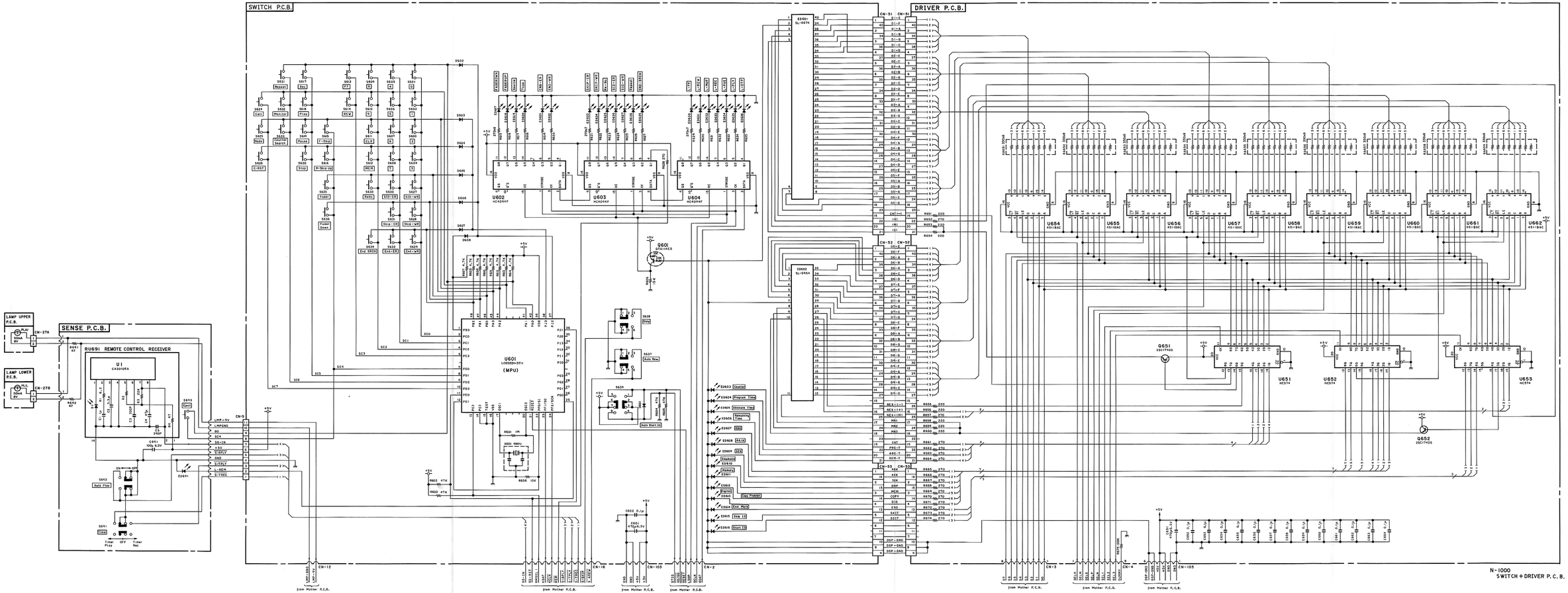


Fig. 13.5 Switch/Driver Section

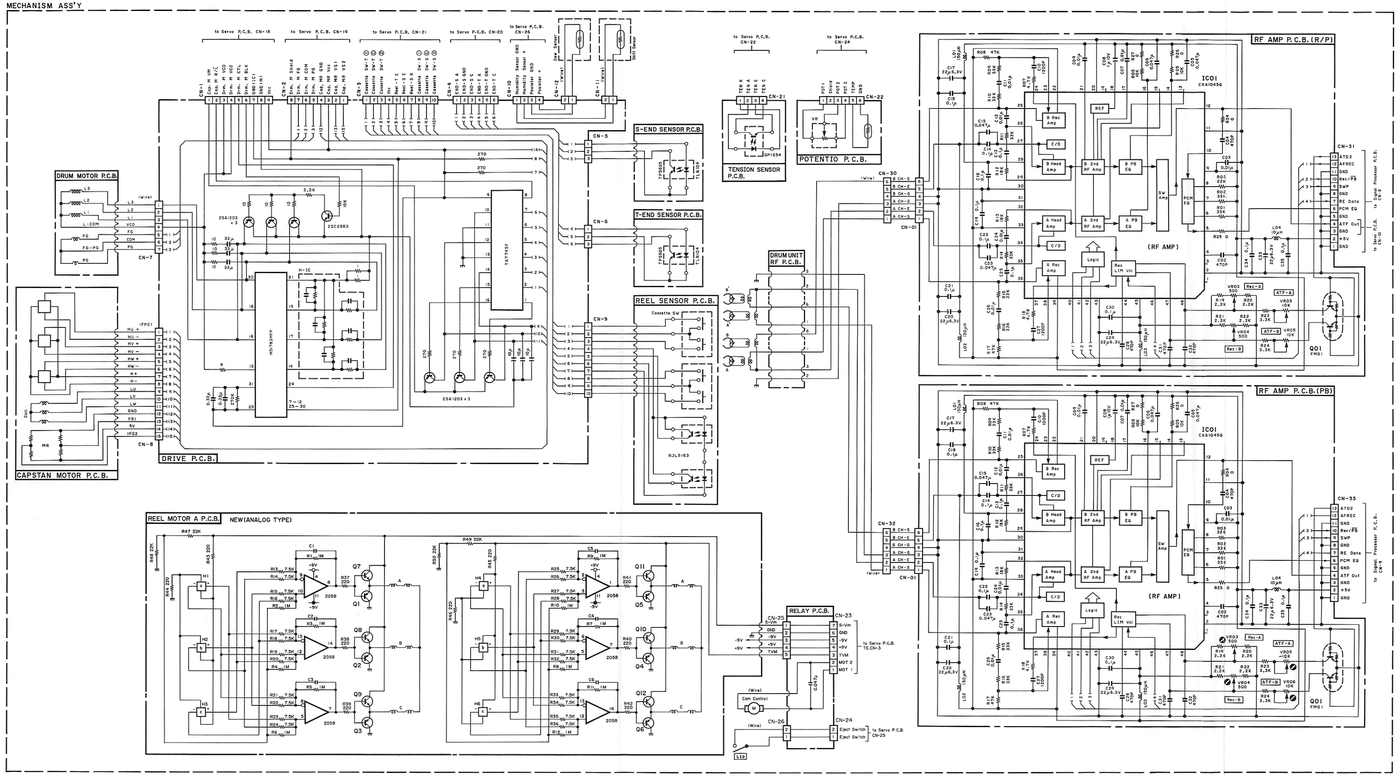
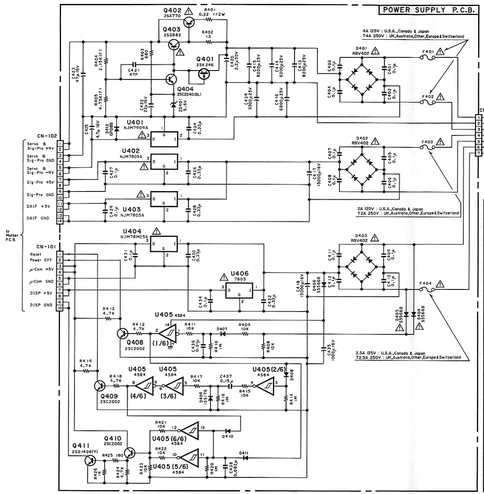
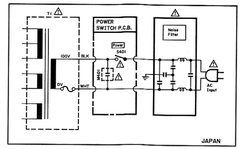


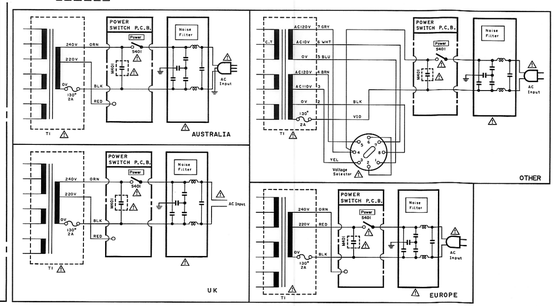
Fig. 13.6 Mechanism/Power Supply Section

N-1000

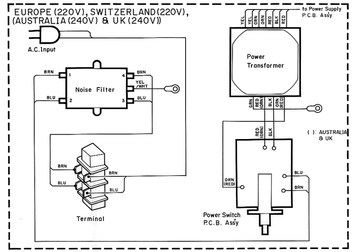


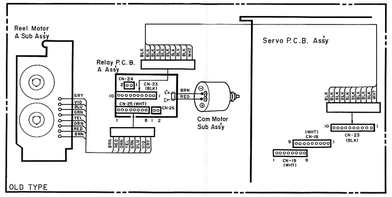


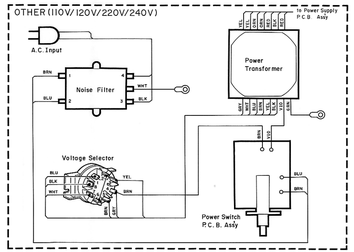
WARNING:
Parts marked with the symbol ⚠ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.
It is recommended that the unit be operated from a suitable DC supply or batteries during initial check-out procedures.

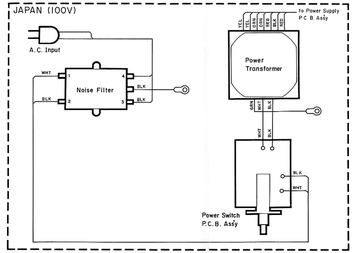


N-1000
POWER SUPPLY P.C.B.









Notes: 1. Table of wire colors

BRN — Brown	BLU — Blue
RED — Red	VIO — Violet
ORN — Orange	GRY — Gray
YEL — Yellow	WHT — White
BRN — Green	BLK — Black

2. Component side view of the P.C.B. is illustrated unless otherwise specified.

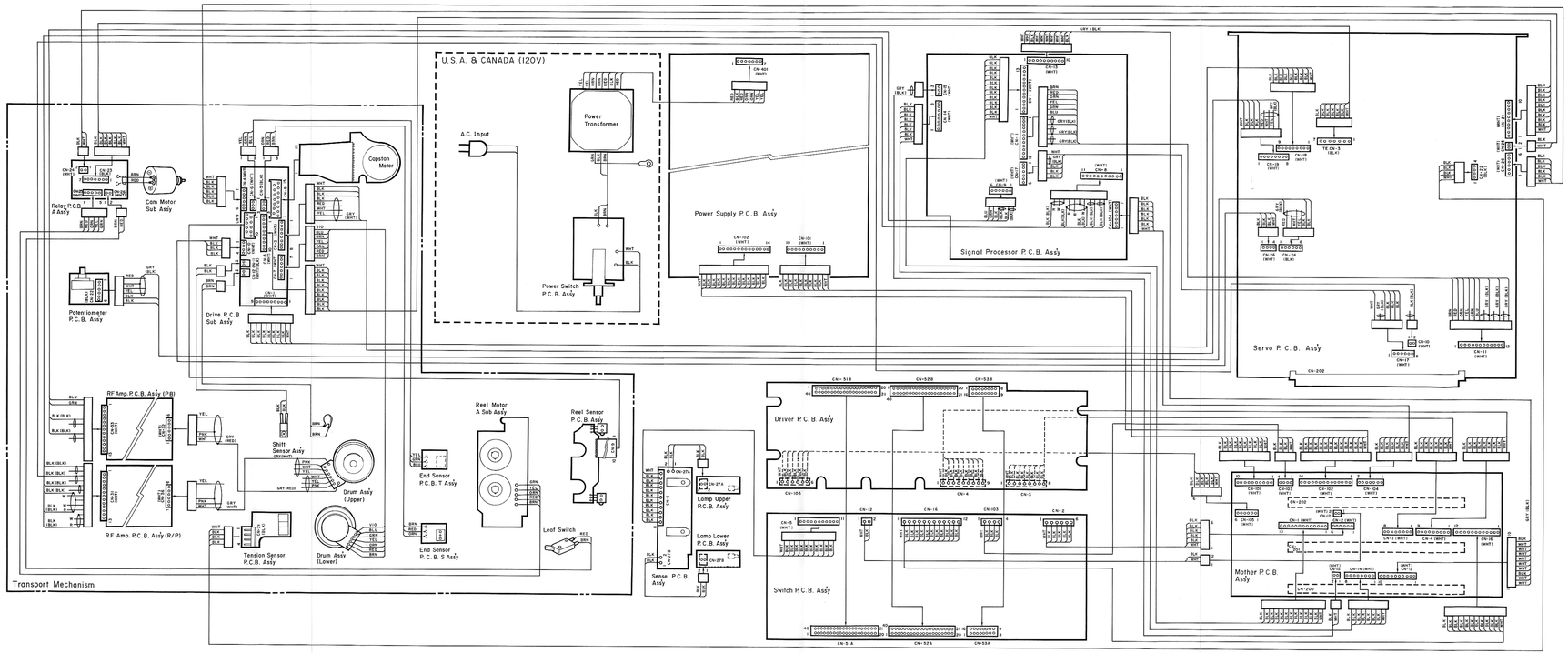


Fig. 14

15. REMOTE CONTROLLER 1000R

15.1. Package Ass'y

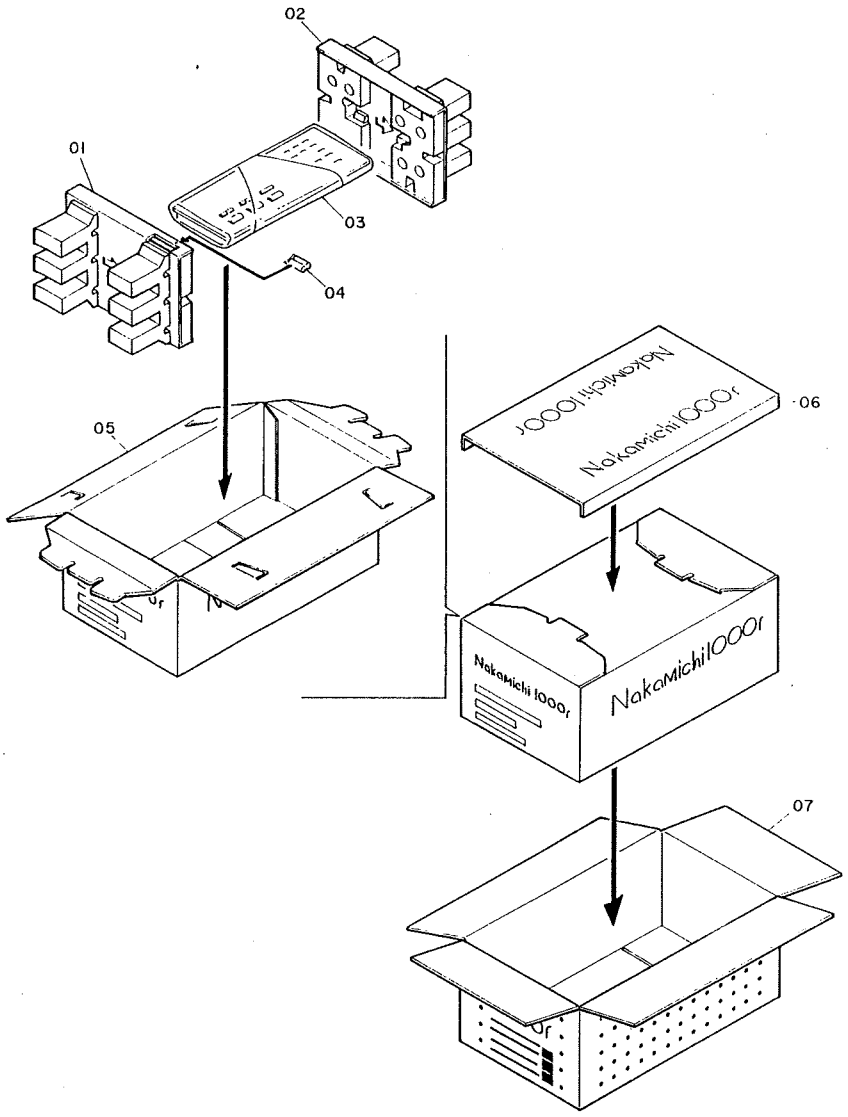


Fig. 15.1

Ref. No.	Part No.	Description	Q'ty
	-	Package Ass'y	
01	0F04242B	Side Packing L	1
02	0F04243B	Side Packing R	1
03	0F04240A	Soft Sheet	1
04	0B90242A	Battery (UM3x2)	1
05	0F04237A	Inner Carton	1
06	0F04231A	Top Sheet	1
07	0F04234B	Outer Carton	1

15.2. Mechanism Ass'y and Parts List

(1) Synthesis

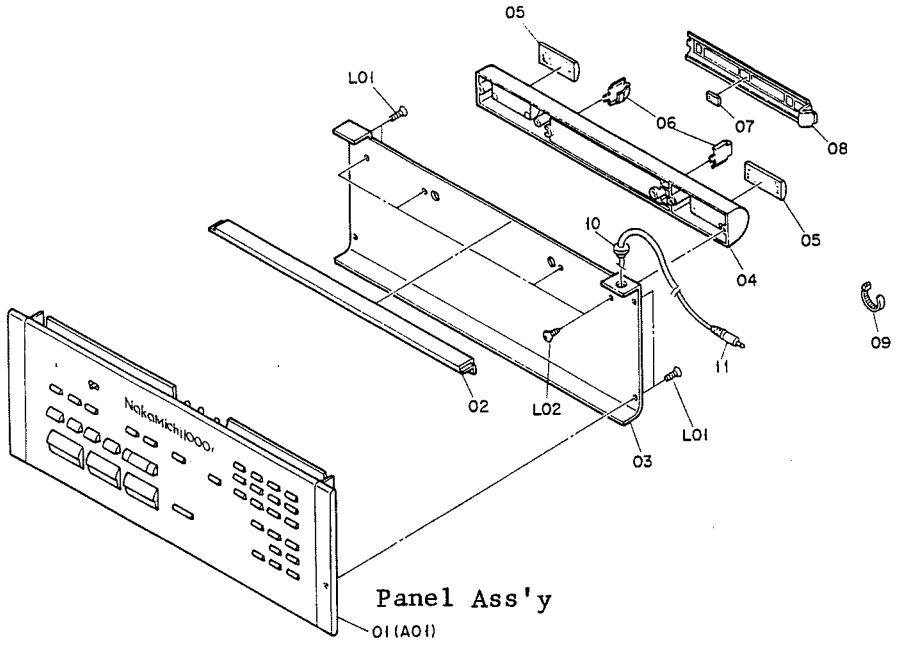


Fig. 15.2

Ref. No.	Part No.	Description	Q'ty
	-	Synthesis	
01	HA05611A	Panel Ass'y (Wireless)	1
	HA05668A	Panel Ass'y (Wired)	1
02	0H05530A	Window	1
03	0H05527A	Bottom Cover (Wireless)	1
	0H05548A	Bottom Cover (Wired)	1
04	0H05536A	Battery Holder	1
05	0J05861A	Leg Rubber	2
06	0J05828B	Battery Spring +	2
07	0J05862B	Battery Cushion	1
08	0H05537A	Battery Cap	1
09	0B08515A	Insu-Lock (Wired)	1
10	0J05863A	Hole Guard (Wired)	1
11	0B83708A	Remote Cord 10m (Wired)	1
L01	0E03086A	M2.6x6 Countersunk (Black Chromate)	
L02	0E00828A	BT2.6x8 + Binding	

(2) Panel Ass'y (A01)

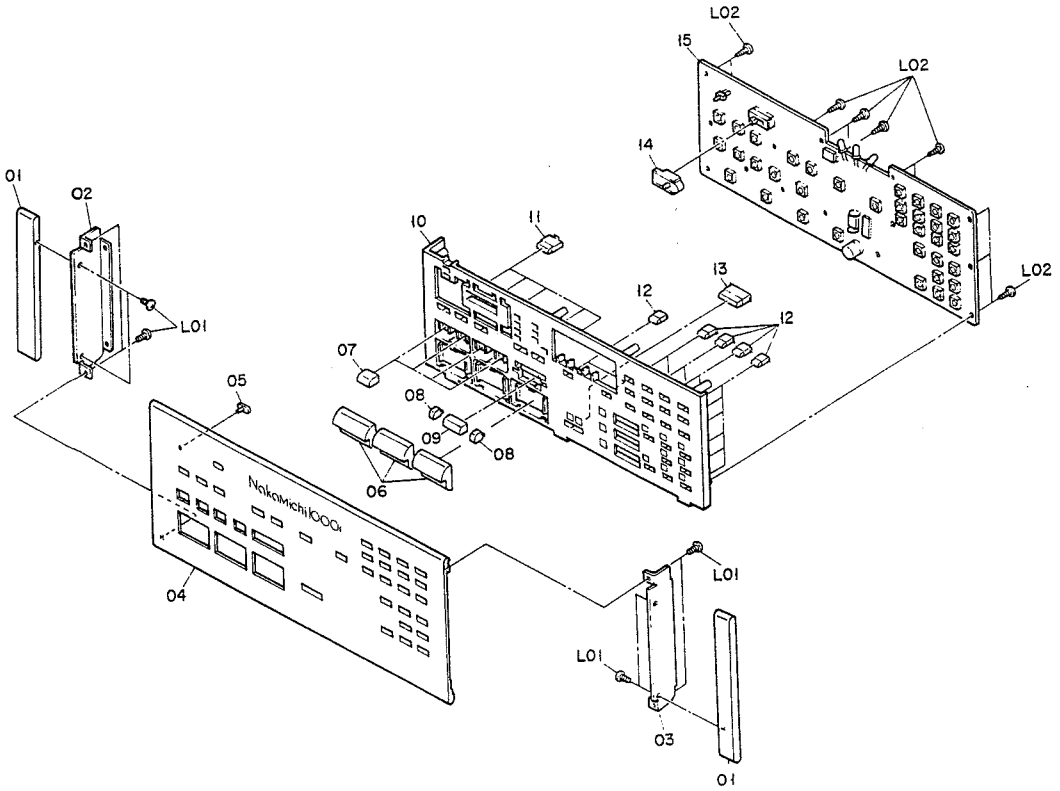


Fig. 15.3

Ref. No.	Part No.	Description	Q'ty
A01	HA05611A	Panel Ass'y (Wireless)	1
	HA05668A	Panel Ass'y (Wired)	1
01	0H05526A	Side Piece	2
02	0H05528B	Left Side Cover	1
03	0H05529B	Right Side Cover	1
04	0H05525A	Panel	1
05	0H05487A	LED Lens A	1
06	0H05531A	Transport Knob R	3
07	0H05532A	Sub Transport Knob R	4
08	0H05534A	Protect Knob R	2
09	0H05533A	Rec. Mute Knob R	1
10	0H05538A	Front Chassis	1
11	HA05603A	Sub Key 12 Knob Ass'y	5
12	HA05602A	Sub Key 9 Knob Ass'y	22
13	HA05604A	Sub Key 18 Knob Ass'y	1
14	HA05616A	Slide Switch Knob Ass'y	1
15	BA07539A	Remote P.C.B. Ass'y (Wireless)	1
	BA07592A	Remote P.C.B. Ass'y (Wired)	1
L01	0E03045A	M2.6x3 + Binding	
L02	0E00868A	BT3x8 + Binding	

15.3 Electrical Parts List

(1) 1000R (Wireless)

Ref. No.	Part No.	Description
	BA07539A	Remote P.C.B. Ass'y (Wireless)
	0B60687C	Remote P.C.B.
U1	0B11653A	IC uPD6122G-001
Q1	0B06316A	TR 2SD882
Q2	0B01872A	TR 2SC945L
Q3	0B06013A	TR 2SA733
D1, 2	0B06398A	SiD 1SS176
D3, 4	0B06398A	SiD 1SS176
ED1, 2	0B12649A	LED SE1003
ED3	0B12649A	LED SE1003
ED4	0B12641A	LED Umber (SLP-667B-51)
X1	0B92001A	X'Tal 455kHz
R1, 2	0B09605A	RK 1 1/6W
R3	0B09605A	RK 1 1/6W
R4	0B09693A	RK 4.7K 1/6W
R5	0B09643A	RK 39 1/6W
R6	0B09685A	RK 2.2K 1/6W
R7	0B09725A	RK 100K 1/6W
R8	0B09645A	RK 47 1/6W
R9	0B09733A	RK 220K 1/6W
R12	0B09669A	RK 470 1/6W
C1	0B40207A	CE 470u 6.3V
C2, 3	0B41071A	CC 100P 50V J
S1, 2	0B70043A	Tact Switch
S3, 4	0B70043A	Tact Switch
S5, 6	0B70043A	Tact Switch
S7, 8	0B70043A	Tact Switch
S9, 10	0B70043A	Tact Switch
S11, 12	0B70043A	Tact Switch
S13, 14	0B70043A	Tact Switch
S19, 20	0B70043A	Tact Switch
S21, 22	0B70043A	Tact Switch
S23, 24	0B70043A	Tact Switch
S25, 26	0B70043A	Tact Switch
S27	0B70043A	Tact Switch
S30, 31	0B70043A	Tact Switch
S32, 33	0B70043A	Tact Switch
S34, 35	0B70043A	Tact Switch
S37, 38	0B70043A	Tact Switch
S39	0B70043A	Tact Switch
S41	0B70043A	Tact Switch
S43	0B70043A	Tact Switch
S49	0B70043A	Tact Switch
S50	0B70043A	Tact Switch
S65	0B70010A	Switch (ESD-14159)

(2) 1000R (Wired)

No.	Part No.	Description
	BA07592A	Remote P.C.B. Ass'y (Wired)
	0B60687C	Remote P.C.B.
U1	0B11653A	IC uPD6122G-001
U2	0B11493A	IC TC4538BP
D1, 2	0B06398A	SiD 1SS176
D3, 4	0B06398A	SiD 1SS176
ED4	0B12641A	LED Umber (SLP-667B-51)
X1	0B92001A	X'Tal 455kHz
Q3	0B06013A	TR 2SA733
Q4	0B01872A	TR 2SC945L
R7	0B09725A	RK 100K 1/6W
R8	0B09645A	RK 47 1/6W
R9	0B09733A	RK 220K 1/6W
R10	0B09725A	RK 100K 1/6W
R11	0B09693A	RK 4.7K 1/6W
R12	0B09669A	RK 470 1/6W
C1	0B40207A	CE 470u 6.3V
C2, 3	0B41071A	CC 100P 50V J
C4	0B41398A	CPP 330P 50V J
S1, 2	0B70043A	Tact Switch
S3, 4	0B70043A	Tact Switch
S5, 6	0B70043A	Tact Switch
S7, 8	0B70043A	Tact Switch
S9, 10	0B70043A	Tact Switch
S11, 12	0B70043A	Tact Switch
S13, 14	0B70043A	Tact Switch
S19, 20	0B70043A	Tact Switch
S21, 22	0B70043A	Tact Switch
S23, 24	0B70043A	Tact Switch
S25, 26	0B70043A	Tact Switch
S27	0B70043A	Tact Switch
S30, 31	0B70043A	Tact Switch
S32, 33	0B70043A	Tact Switch
S34, 35	0B70043A	Tact Switch
S37, 38	0B70043A	Tact Switch
S39	0B70043A	Tact Switch
S41	0B70043A	Tact Switch
S43	0B70043A	Tact Switch
S49	0B70043A	Tact Switch
S50	0B70043A	Tact Switch
S65	0B70010A	Switch (ESD-14159)
	0B83810A	GND Ass'y (1)

15.4. Mounting Diagram and Schematic Diagrams

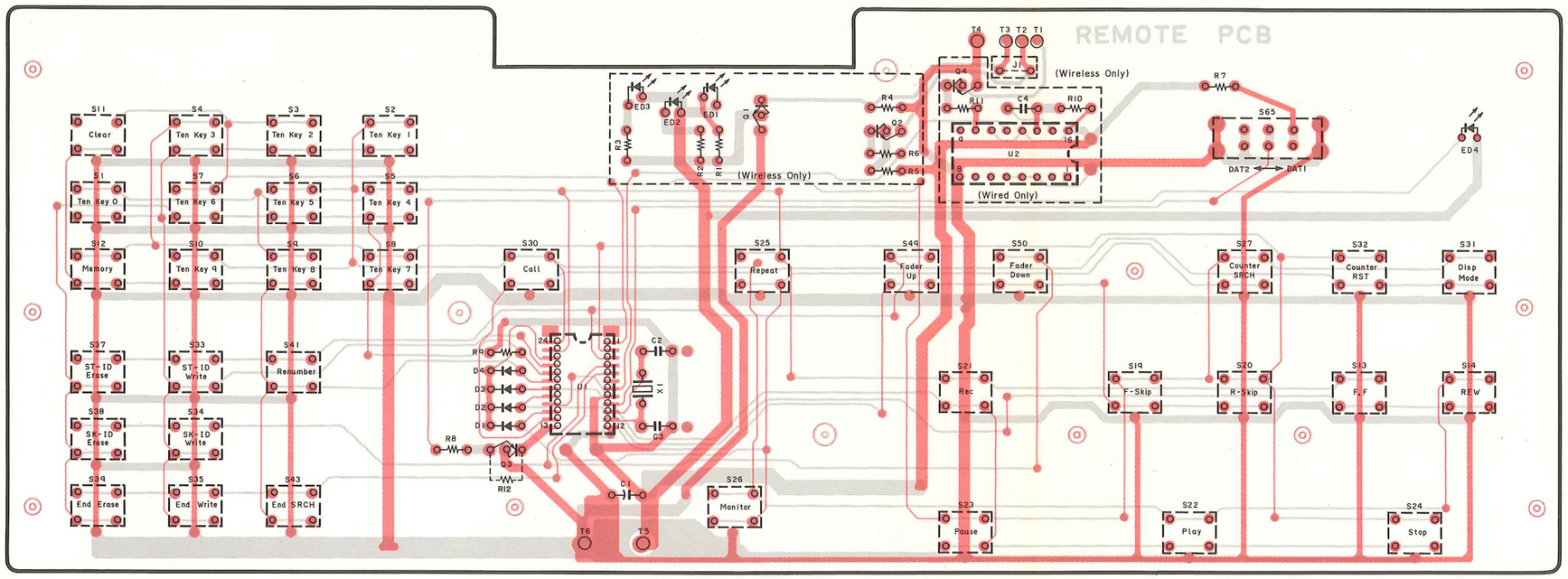


Fig. 15.4 Remote P.C.B. Ass'y (N-1000R)

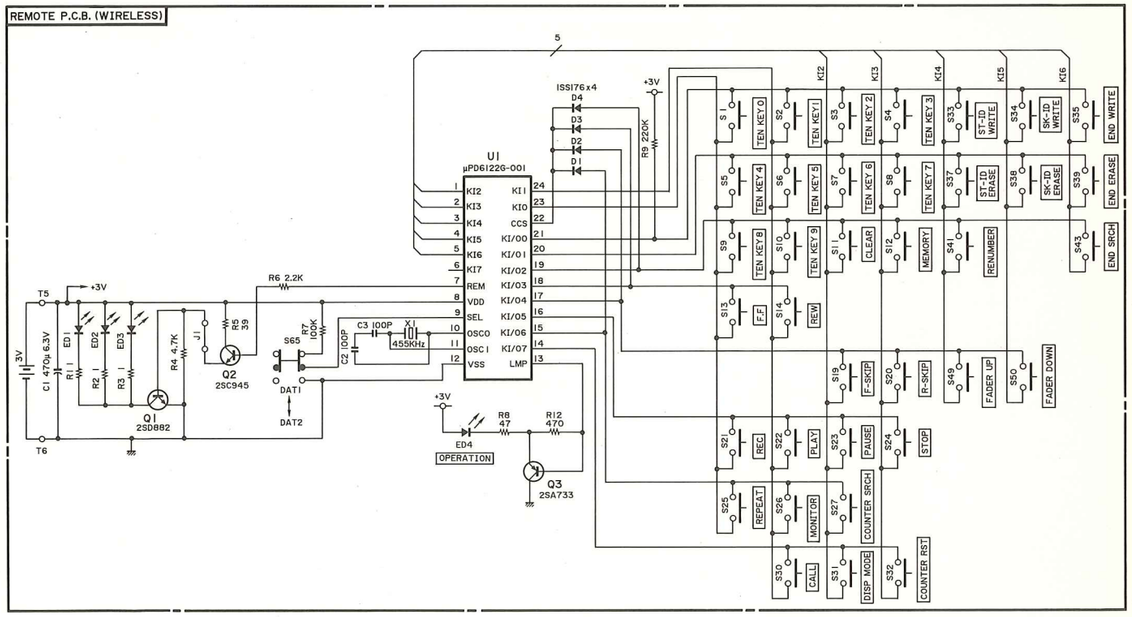


Fig. 15.5 N-1000R Wireless Type

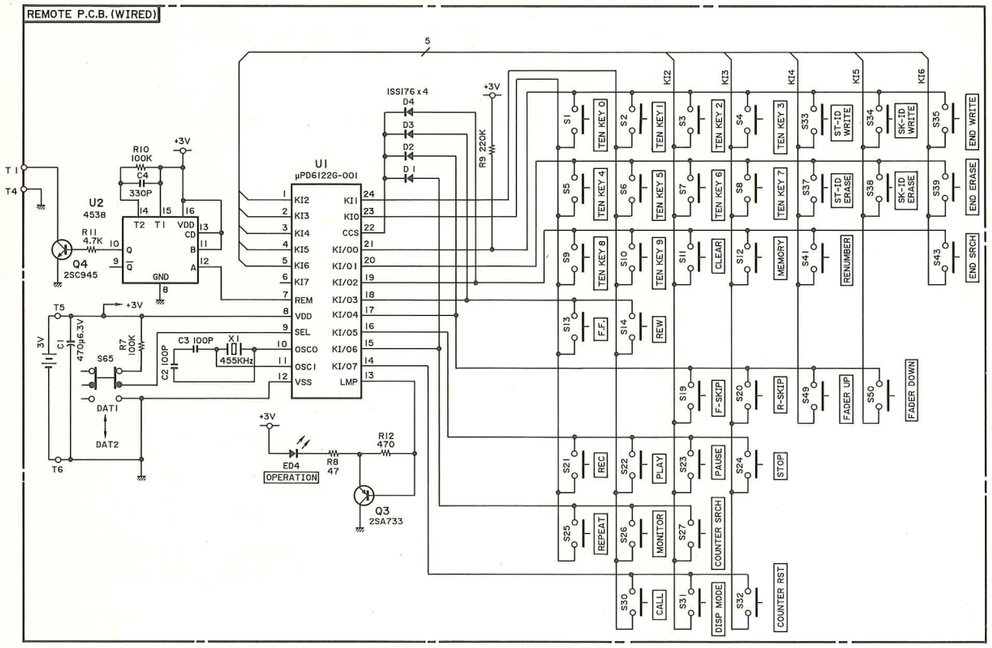


Fig. 15.6 N-1000R Wired Type

16. LUBRICATION

The Transport Mechanism Ass'y is of lubrication-free type. However, when the following parts are replaced, apply the specified lubricant for each replaced part.

(1) FLOIL 946P

No.	Part Name	Places
A	Pinch Lever Shaft	1
B	Loading Lever T Ass'y Shaft	1
C	Loading Lever S Ass'y Shaft	1
D	Shaft for Tension Arm Ass'y	1
E	Shaft for Guide Roller T3 Arm Ass'y	1
F	Shaft for Guide Roller S3 Arm Ass'y	1

(2) FLOIL G902M

No.	Part Name	Places
G	Cam Drive Gear B (Inside)	1
H	Loading Arm Ass'y Shafts/Slits	4
I	Rollers	3
J	Cam Gear Grooves	3
K	Brake Drive Lever Ass'y	1
L	VR Gear B/VR Gear A Ass'y	2
O	Lid Plate Ass'y Shaft	1
P	Side Chassis R Sub Ass'y Shaft	1
Q	Eject Lever Ass'y Shafts	2

(3) FLOIL G902

No.	Part Name	Places
M	Cam Drive Gear B (Small Gear Teeth)	1
N	Worm Gear B	1

Note: FLOIL 946P, G902M and G902 are made by Kanto Chemicals Co., Ltd. in Japan.
We suggest that you use the above or equivalent type. If unavailable please contact Kanto Chemicals Co., Ltd., 2-7, Kanda Sakuma-cho, Chiyoda-ku, Tokyo 101, Japan.

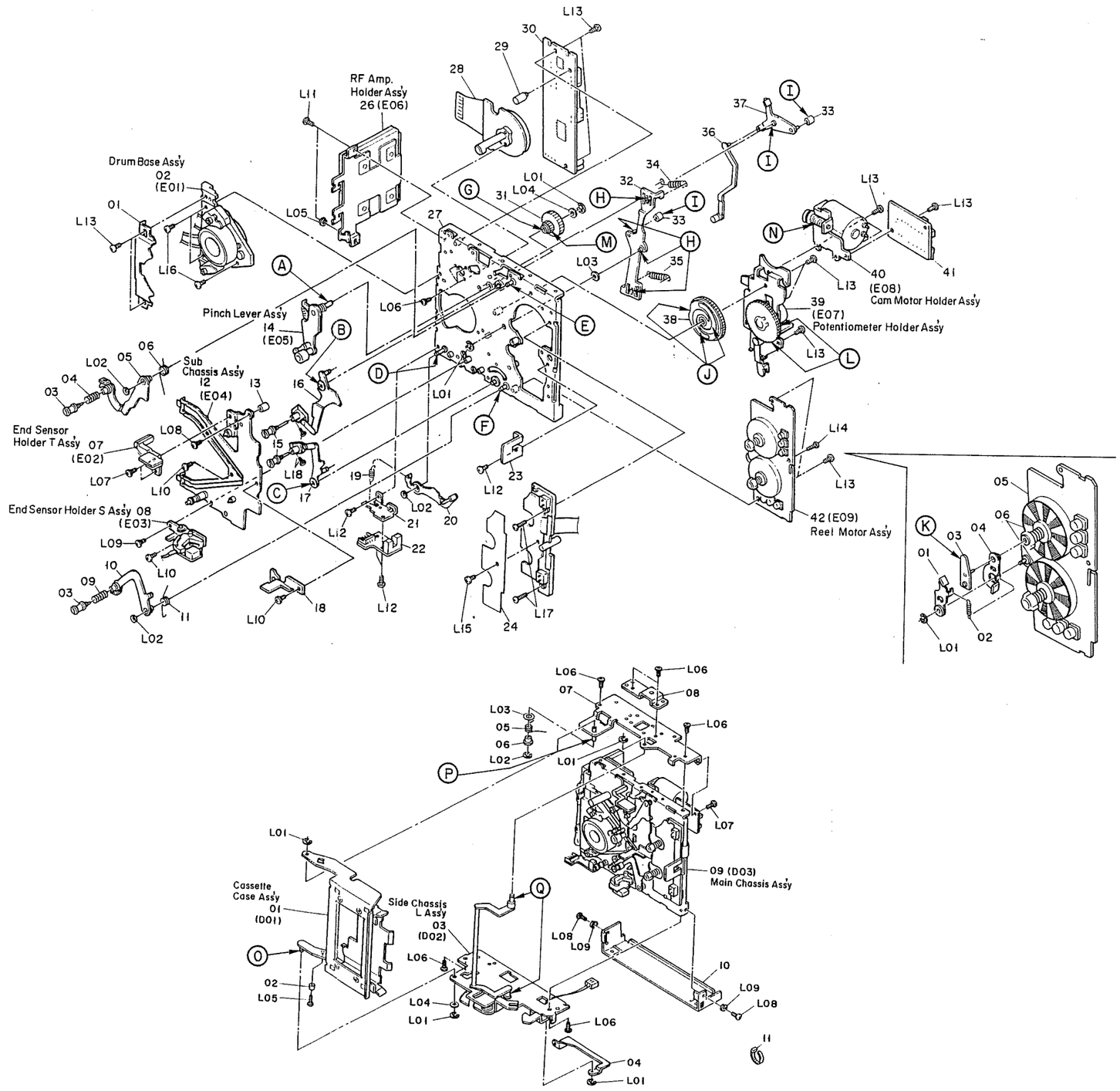


Fig. 16

Nakamichi 1000 Digital Audio Recorder

System	Digital recorder with rotary head (using DAT cassettes)
Sampling Frequencies	48 kHz for recording/playback 44.1 kHz for playback 32 kHz for recording/playback
Drum Revolution Speed	2000 rpm
Tape Speed	8.15 mm/s
Wow-and-Flutter	Below measurement limit
Digital Input	75-ohm coaxial/optical (switchable)
Digital Output	75-ohm coaxial/optical (parallel)
Power Requirements	120, 220, 240 or 110/120/220/240 V AC, 50/60 Hz (According to country of sale)
Power Consumption	40W max.
Dimensions (excluding protruding parts and feet)	435 (W) × 133 (H) × 370 (D) mm 17-1/8 (W) × 5-1/4 (H) × 14-9/16 (D) inches
Approximate Weight	16 kg, 35 lbs. 4 oz.

Nakamichi 1000r Remote Controller

Power Supply	3 V DC (1.5 V × 2)
Dimensions (excluding protruding parts)	337 (W) × 50 (H) × 122 (D) mm 13-1/4 (W) × 1-15/16 (H) × 4-13/16 (D) inches
Approximate Weight	920 g, 2 lbs. (including batteries)
Supplied Accessories	Aluminum mechanism panel × 1 Digital coaxial cable × 2 Digital optical cable × 2 Blank DAT cassette (120 min.) × 1 Prerecorded DAT cassette × 1 Cleaning tape × 1 Polishing cloth × 1 IEC R6 batteries (size AA) × 2 for Nakamichi 1000r

• Specifications and design are subject to change for further improvement without notice.

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G-900201A Printed in Japan