DTC-300ES

SERVICE MANUAL

AEP Model

Model Name Using Similar Mechanism	DTC-M100
Tape Transport Mechanism Type	DATM-12

SPECIFICATIONS

Tape	Digital audio tape
Recording head	Rotary head
Recording time	120 minutes (with DT-120)
Tape speed	8.15 mm/s
Drum rotation	Approx. 2,000 rpm
Error correction	Double Read Solomon code

Tape

Track pitch	13.6 µm (20.4 µm)
Sampling frequency	48 kHz, 44.1 kHz, 32 kHz
Modulation system	8 - 10 Modulation
Transfer rate	2.46 Mbit/sec.
Number of channel	2 channels, stereo
D/A conversion	18-bit linear
Frequency response	2-22,000 Hz ±0.5 dB
Signal to noise ratio	More than 90 dB
Dynamic range	More than 90 dB
Total harmonic distortion	Less than 0.0085% (1 kHz)
Wow and flutter	Below measurable limit (±0.001% W.PEAK)

Input

	Jack type	Impedance	Rated input level
LINE IN	phono jack	47 kohms	−10 dBs
DIGITAL IN	phono jack	75 ohms	0.5 Vp-p, ±20%
DIGITAL IN	optical jack	—	—

Output

	Jack type	Impedance	Rated output	Load impedance
LINE OUT	phono jack	470 ohms	−10 dBs	More than 10 kohms
HEAD-PHONES	stereo phone jack	220 ohms	10 mW	32 ohms
DIGITAL OUT	optical jack	—	—	λ660 nm
DIGITAL OUT	phono jack	75 ohms	0.5 Vp-p ±20%	—

General

Power requirements	220 V AC, 50/60 Hz
Power consumption	35 W
Dimensions	Approx. 470 x 115 x 330 mm (w/h/d) (18⅝ x 4⅝ x 12⅞ inches) incl. side wood, projecting parts and controls
Weight	Approx. 9.0 kg (19 lb 14 oz) incl. side wood

Remote commander (supplied)

Remote control system	Infrared control
Power requirements	3 V DC, with two R6 (size AA) batteries
Dimensions	Approx. 67 x 20 x 175 mm(w/h/d) (2⅝ x 13/16 x 6⅞ inches)
Weight	Approx. 140 g (5 oz) incl. batteries

Supplied accessories

Sony batteries SUM-3(NS) (2)
Audio connecting cords (2 phono plugs - 2 phono plugs, stereo, for line inputs and outputs) (2)
Cleaning cassette (1)

* The side wood panels on both sides of the deck are detachable. For safety, when removing them, be sure to disconnect the AC power cord from the AC outlet.

Design and specifications subject to change without notice.

MICROFILM

DIGITAL AUDIO TAPE DECK

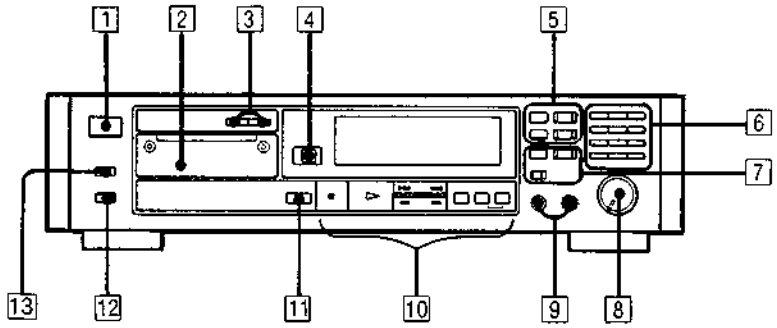
SONY

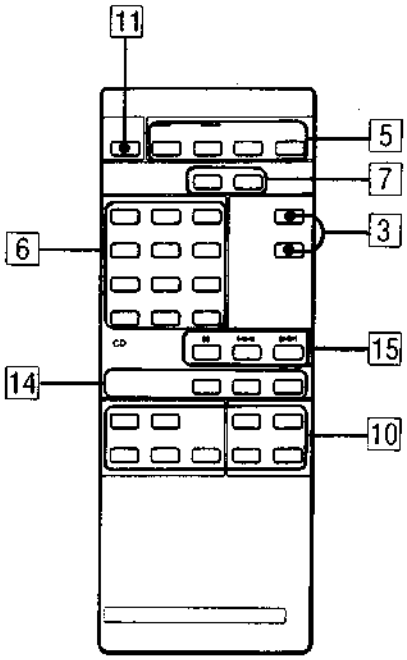
TABLE OF CONTENTS

SECTION 1
GENERAL

Location and Function of Controls

Main Unit/Remote Commander





SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

1 POWER switch
Turns the power on and off.

2 Cassette compartment
Insert a cassette with the window side up and the safety tab facing you.

3 COUNTER buttons
MODE: Selects the counter indication in the display window among the linear counter (tape running time), absolute time, elapsed time of the selection, and total remaining time of the tape. Each time you press the button, the indication changes sequentially.
RESET: Resets the linear counter to "0M 00S".

4 Remote sensor
Receives the signal from the remote commander.

5 START ID buttons
AUTO: Press to turn on the AUTO indicator. When the AUTO indicator is lit, the start ID will automatically be written during recording. When the recording level has been below the fixed level for more than 3 seconds and then returns to the fixed level, the start ID is written on the tape for 9 seconds.
WRITE (MANUAL on the remote commander): Press to write the start ID at the desired point during recording or playback. The WRITE indicator lights. The start ID is written on the tape for 9 seconds from the point when the button is pressed.
ERASE: Press to erase a start ID. When a start ID and a program number are written on the tape, both codes are simultaneously erased by pressing this button.
RENUMBER: Press to renumber the program numbers. When only the start IDs are written, pressing this button will insert program numbers. When this button is pressed, the tape is rewound to the beginning automatically and program numbers are assigned from "1" in numerical order.

6 Music select buttons
Numeric buttons (0-9): In the record-pause mode, press the desired button to designate the program number you want to write first. Also designate the desired program number to be played back before starting playback by pressing START.
CLEAR: Used to cancel the program number which has been entered mistakenly.
END: Press to write the end ID on the tape.
START/MUSIC SCAN: Press to start playback of the selection designated by the numeric button. In the stop or playback mode, press to listen to the beginning of each selection successively (music scan).

7 SKIP ID buttons
WRITE: During recording or playback, press at the beginning of the portion you want to skip later. The SKIP ID and WRITE indicators light up for a moment and the skip ID is written for 1 second.
ERASE: Press to erase a skip ID which is written at the point just before the current position. The ERASE indicator blinks while the tape is rewound, and lights up while the skip ID is being erased.
ON/OFF: Set this button to ON to skip during playback the portion coded with a skip ID code. Set it to OFF to play back the whole tape as it is.

8 REC LEVEL (recording level) controls
Adjust the recording level for the analog input signals. The outer knob controls the L (left) channel level and the inner knob the R (right) channel level. The knobs can be turned together.
When recording digital signals, the recording level cannot be adjusted.

9 HEADPHONES jack and LEVEL controls
The LEVEL controls adjust the headphones volume level.

10 Tape operation buttons
■ **(stop)**: Press to stop recording or playback.
► **(play)**: Press to play back the tape.
⏮ ⏭ **AMS**: Press to locate the beginning of the selection during playback.
◄◄ ►► **(rewind/review, fast-forward/cue)**: In the stop mode, press to rewind/fast-forward the tape. During playback, press to rewind or fast-forward the tape while listening to the sound.
● **REC**: Press ► while pressing this button to record.
II **PAUSE**: Press to stop for a moment during playback. To restart playback, press this button again. If the pause mode continues for about 10 minutes, it will be released automatically and the deck will enter the stop mode.
O **REC MUTE (record muting)**: Inserts a sound-muted portion (space).

11 ▲ OPEN/CLOSE button
Press when inserting or removing the cassette.

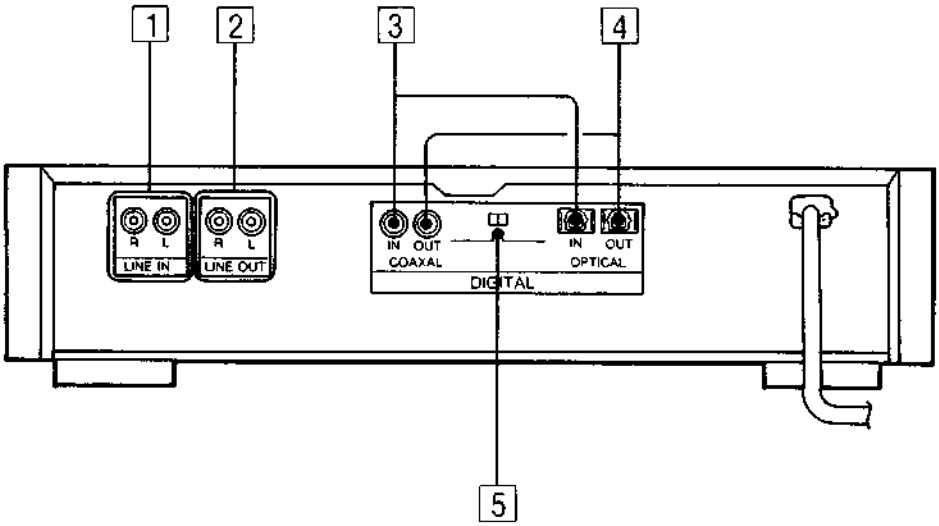
12 INPUT selector
Set in accordance with the signal to be recorded.
ANALOG: For recording from the equipment connected to the LINE IN jacks
DIGITAL: For recording from the equipment connected to the DIGITAL IN jacks

13 TIMER switch
Normally set to OFF. Used to start recording or playback at the desired time using a commercially available audo timer.

14 CD SYNCHRO (CD synchronized recording) buttons
STANDBY: Press to set the unit in the record-standby mode.
START: Press to start recording of the DAT deck and then playback of the CD player.
STOP: Press to stop the DAT deck recording and the CD player playback.

15 CD operation buttons
Operative only for the Sony CD player equipped with a remote commander.
II **(pause)**: Sets the CD player in the pause mode during playback. Press again to release pause. If pressed twice when the player is in the stop mode, playback starts.
⏮ ⏭ **(AMS)**: Press to locate the desired selection in the Compact Disc during playback or in the stop mode.

Rear Panel Jacks



1 LINE IN (line input) jacks (phono jack)
Connect to the recording outputs of an amplifier. The signal from the source equipment connected to the amplifier is supplied to this deck, and can be recorded with the sampling frequency of 48kHz.

2 LINE OUT (line output) jacks (phono jack)
Connect to the DAT or tape inputs of an amplifier. The playback signal of this deck will be output.

3 COAXIAL/OPTICAL DIGITAL IN (digital input) jacks (phono jack/optical jack)
The digital signal from another DAT deck or other digital source, such as a BS tuner having digital outputs, is input for digital recording. If PROH (copy prohibition) is displayed, however, digital recording of the source signal is not possible.
If the sampling frequency of the source signal is 44.1kHz, digital recording is not possible.

4 COAXIAL/OPTICAL DIGITAL OUT (digital output) jacks (phono jack/optical jack)
The digital signal reproduced by this deck is output without passing by the D/A converter of the deck. Connect to the digital input of another DAT deck to perform digital-to-digital dubbing.

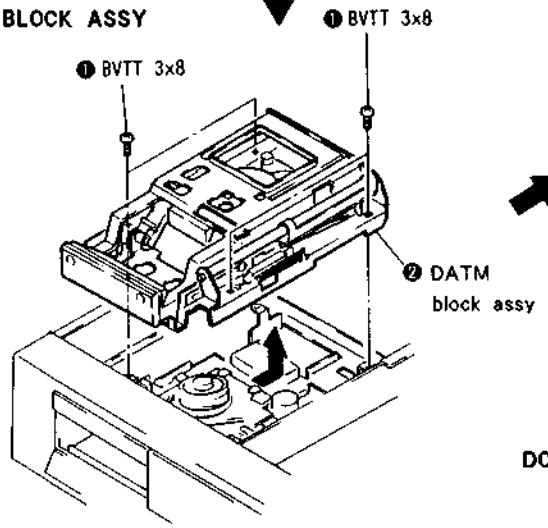
5 DIGITAL INPUT SELECTOR
Selects digital input signal.
COAXIAL: Selects the equipment connected to the COAXIAL IN jack.
OPTICAL: Selects the equipment connected to the OPTICAL IN jack.

SECTION 2
DISASSEMBLY

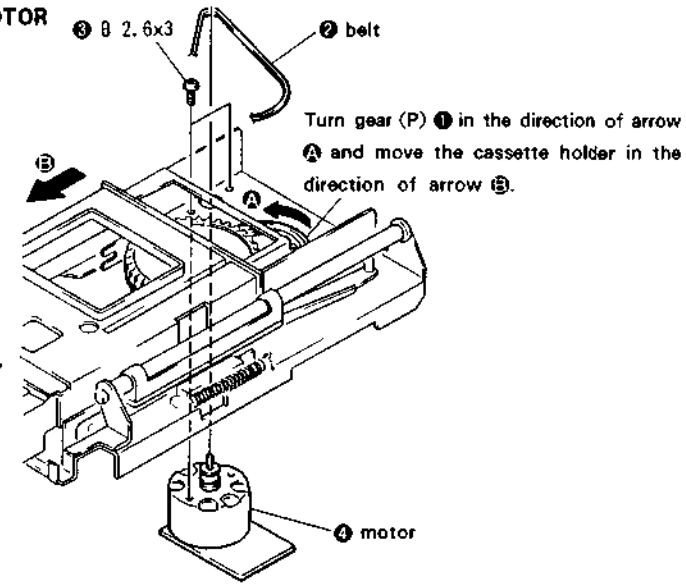
NOTE : Follow the disassembly procedure in the numerical order given.

❶ Remove the four M4S tight screws (with ring).
❷ Remove an M3 × 8 screw (case).
❸ Remove the case.

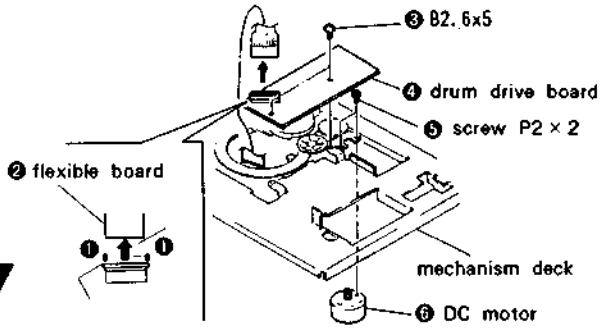
DATM BLOCK ASSY



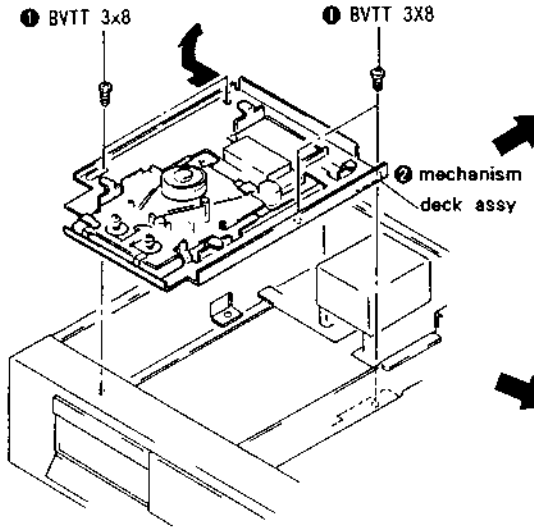
MOTOR



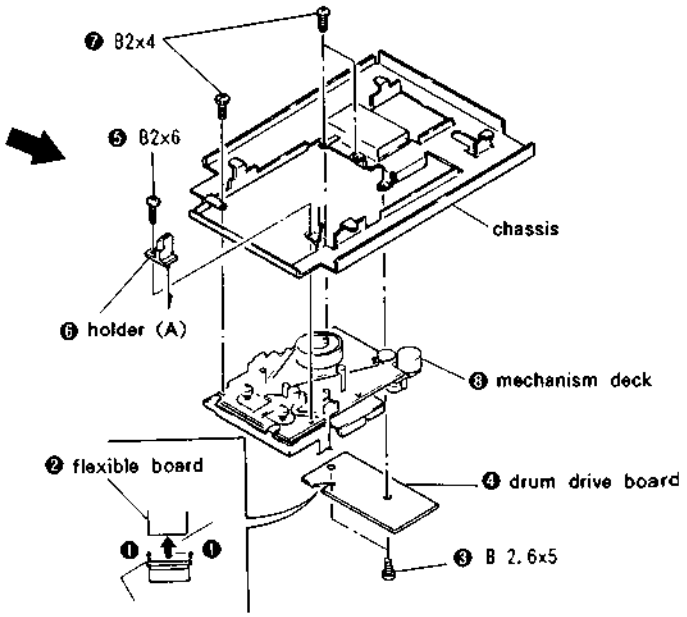
DC MOTOR



MECHANISM DECK ASSY

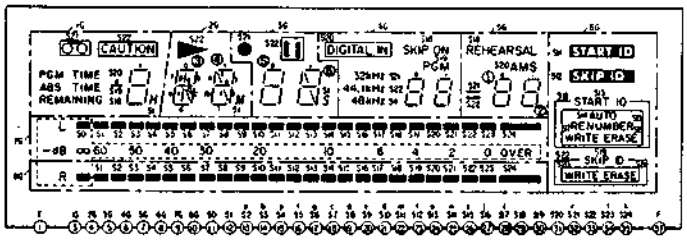


MECHANISM DECK



DTC-300ES Test Mode

For DTC-300ES, the internal CPU modes can be displayed for servicing on the counter's six-segment display.



(a) The following modes can be displayed:

- Mechanical operation
  (Mechanical microcomputer operation)
- Mechanical instruction
  (Main microcomputer instruction)
- Operation/operation completion
- End sensor normal/abnormal
- Cassette half existence
- OPEN/CLOSE
- Tape end (take-up)/normal
- Tape end (supply)/normal
- A/B head RF existence
- WIDTH 1.5 times normal speed/NOT 1.5 times normal speed
- Soft tape/normal tape
- REC inhibit/OK
- Drum normal/abnormal
- Tray in/out
- TEST mode/NOT TEST mode
- Take-up end hold/NOT hold
- Tray loading normal/abnormal
- Position EJECT/NOT EJECT

Display position		Description
①		Mechanical operation
②		Mechanical instruction (main microcomputer to mechanical microcomputer)
③	0	Operation mode (OPERATION/$\overline{\text{COMPLETION}}$)
	1	End sensor (NORMAL/$\overline{\text{ABNORMAL}}$)
	2	Cassette half (YES/$\overline{\text{NO}}$)
	3	OPEN (OPEN/$\overline{\text{CLOSE}}$)
④	0	Tape end take-up reel (TOP/$\overline{\text{NOR}}$)
	1	Tape end supply reel (END/$\overline{\text{NOR}}$)
	2	RF (NO RF/$\overline{\text{RF}}$)
	3	WIDTH (1.5 TIMES NORMAL SPEED/$\overline{\text{NOT 1.5 TIMES NORMAL SPEED}}$)
⑤	0	Tape (SOFT/$\overline{\text{NORMAL}}$)
	1	REC (INHIBIT/$\overline{\text{OK}}$)
	2	DRMERR (DRUM NORMAL/$\overline{\text{ABNORMAL}}$)
	3	T OUT (TRAY IN/$\overline{\text{OUT}}$)
⑥	0	FTEST (TEST MODE/$\overline{\text{NOT TEST MODE}}$)
	1	TEUDH (TAKE-UP END HOLD/$\overline{\text{NOT HOLD}}$)
	2	TLABF (TRAY LOADING NORMAL/$\overline{\text{ABNORMAL}}$)
	3	PEJCT (EJECT POSITION/$\overline{\text{NOT EJECT POSITION}}$)

(b) To display the test modes, set the TIMER switch to TIME PLAY and turn on the power switch while pressing the START ID WRITE and SKIP ID WRITE buttons. The mechanical microcomputer then enters the test mode. When the MODE switch is pressed, the modes are changed as follows :

ABS TIME ⟶ PGM TIME ⟶ REMAINING ⟶ REMAINING (Mechanical operation display model) ⟶ Linear counter ⟶ ABS TIME

(c) The indicator display is described below.
Using indicators ① through ⑥, data in the main microcomputer is displayed by four bits (hexadecimal).
(Items ①, ③, ④, ⑤, and ⑥ are mechanical microcomputer data and ② is main microcomputer data.)

(d) Display positions ① and ② are shown below. (The same data as in ② is displayed in ① at all times with a slight delay.)

Code	Display	Description
0	0	FWD x 1
1	1	FWD x 2.5
2	2	FWD x 16
3	3	REC FWD
4	4	FF
5	5	FF SEARCH
6	6	FWD x 16 (measure)
7	7	OPEN/CLOSE
8	8	STOP
9	9	PAUSE
A	-	REV x 16 (measure)
B	b	REW
C	c	REW SEARCH
D	d	REV x 1
E	E	REV x 2.5
F	Blank	REV x 16

(e) Operations in the TEST mode are described below (as compared with those in the normal mode).

1) Cassette is not detected.
2) CAUTION indication does not appear.

1. Make adjustments in the order of the steps described.
2. Use the alignment tapes described below.
   TY-7111 (8-909-812-00)
   TY-7252 (8-909-822-00)
   TY-7551 (8-909-814-00)
   TY-30B (8-892-358-00)

   Use the torque meters described below.
   TW-7131 (8-909-708-71)
   TW-7231 (8-909-708-72)

3. Initial settings are as follows :

TIMER	OFF
SKIP	OFF
INPUT selection	DIGITAL
REC level	MIN
HEADPHONE level	MIN
COUNTER mode	AUTO

4. Set the tape path adjustment mode as described below. The DTC-300ES cannot enter the tape path adjustment mode from PLAY mode. When the AMS button (▶▶|) is pressed using a 1.5 times normal speed tape, the FS (sampling frequency) indication changes to 32kHz and the set enters the FWD mode. When the AMS button (|◀◀) is pressed, it enters the REV mode. When the former button is pressed using a normal speed tape, the set enters the FWD × 16 mode. When the latter button is pressed, it enters the REV × 16 mode.

SECTION 3
ADJUSTMENTS

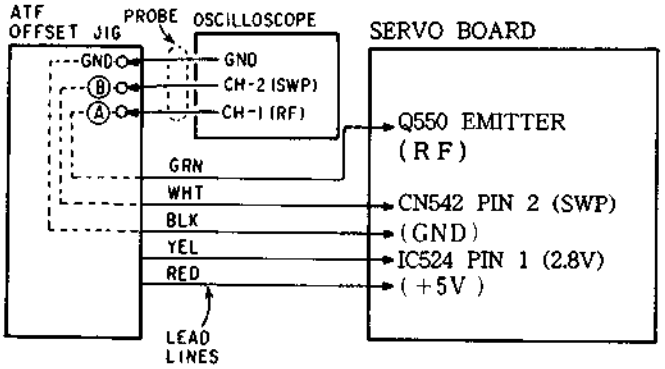
3-1. MECHANICAL ADJUSTMENT

When replacing the drum, finely adjust the tape path (in 1.5 times normal speed FWD mode).

3-1-1. Tape Path Fine-Adjustment (×1.5 FWD Mode)

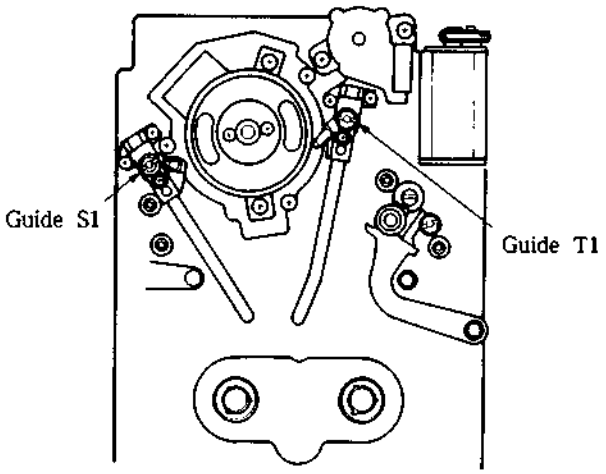
Adjustment

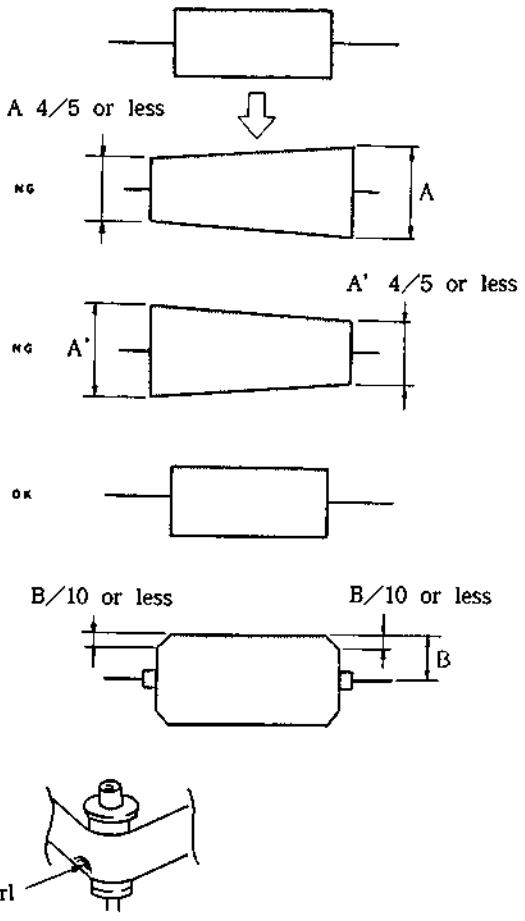
1. Connect CH-1 of an oscilloscope to pin Ⓐ of an offset jig and CH-2 to pin Ⓑ of the offset jig.
2. Connect a 3.3k-ohm resistor between pins 7 (GAIN 2) and 6 (GAIN 1) of IC525.
3. Connect the offset jig as shown below.



4. Turn on the power switch, insert alignment tape TY-7251, and put the set into the TEST mode.
5. Press the AMS (▶▶I) button.
6. Remove the YEL and RED leads of the offset jig and adjust guides S1 and T1 so that the shape of the RF signal waveform on the oscilloscope is close to a square.
7. Connect the YEL and RED leads of the offset jig, turn the offset jig's volume control, and fix the RF signal waveform to a half level. At that time, finely adjust guides S1 and T1 again so that the shape of the waveform is close to a square.
8. Turn the offset jig's volume control, slowly change the RF signal waveform in the vertical direction, and check that the waveform uniformly changes in the horizontal direction.
9. Remove the two leads (YEL and RED) of the jig from CNT51.
   (1) Check that peak value (B) of the RF signal waveform is 60mV or more.
   (2) Check that the undershoot level of the RF signal waveform's flat portion is within 10%.
10. If the specification is not satisfied, repeat Steps 3 through 9.
11. Check that there is no gap between the tape and lower flange in guides S2, T2, T3, and F. Check that no curl occurs when the tape touches the lower flange. If there is a gap or a curl occurs, adjust each guide according to the adjustment on the next page.

Adjustment Location :
Mechanical guides S1 and T1



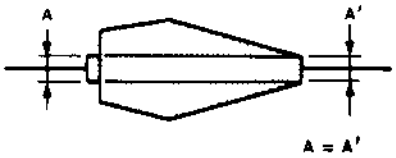


* The curl indicates the distortion which occurs on the tape in the FWD mode. When light is shone on the tape, the curl can be viewed more visually.

3-1-2. T2 Guide Adjustment

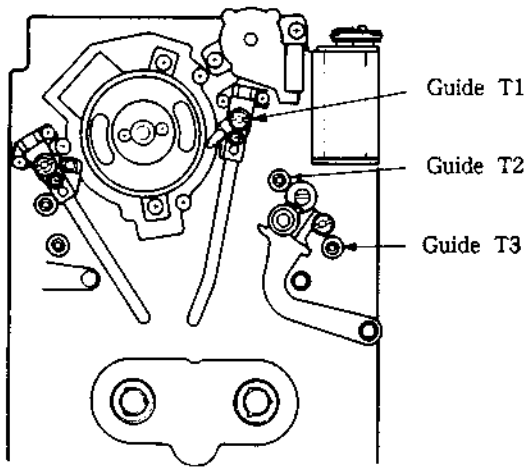
Adjustment

1. Connect CH-1 of an oscilloscope to pin 5 (RF) of CN542 on the servo board and CH-2 to pin 2 (SWP) of CN542.
2. Turn on the power switch, insert alignment tape TY-7252 (8-909-822-00), and put the set into the TEST mode. Press the AMS button, then press the PLAY (▶) button.
3. Raise guide T1 so that the RF signal waveform is as shown below.



4. Raise guide T2 and align it with the lower edge of the tape.
5. Lower guide T1 so that the RF signal waveform is normal.
6. Replace the alignment tape by DT-120R and check that the tape is aligned with the lower edge of guide T3 at the beginning of it. If it is not, repeat Step 4.

Adjustment Location :
Mechanism assembly



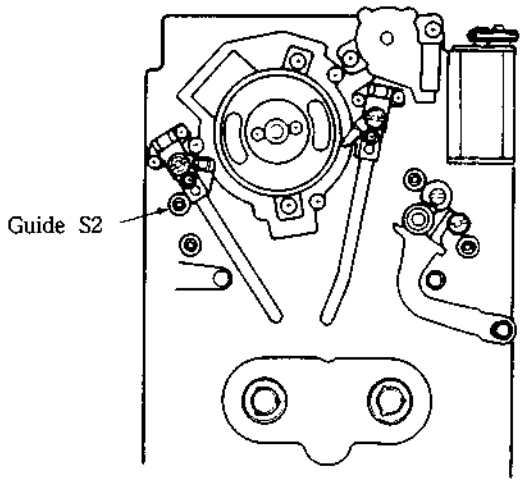
3-1-3. S2 Guide Adjustment

Adjustment :

1. Turn on the power switch, insert blank tape TY-30B (8-892-358-00), and put the set into the PLAY (▶) mode.
2. Raise guide S2 and align it with the lower edge of the tape.

Note : Check that no tape curl occurs at guide S2 in the REW (▶▶) mode.

Adjustment Location :
Mechanism assembly



3-1-4. F Guide Adjustment

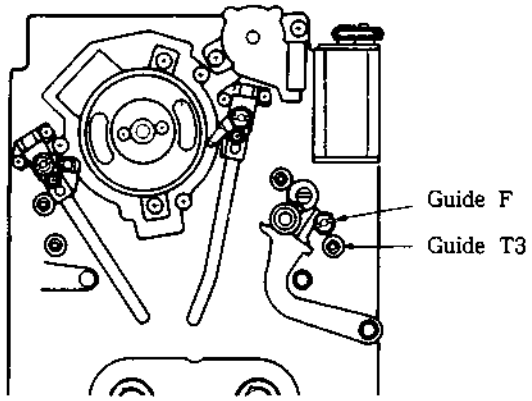
Adjustment :

1. Turn on the power switch, insert blank tape TY-30B (8-892-358-00), and put the set into the PLAY (▶) mode.
2. Align guide F with the lower edge of the tape.

Note : Check that the tape is aligned with the lower edge of guide T3 without curl.

Adjustment Location :

Mechanism assembly



3-1-5. S3 Guide Adjustment

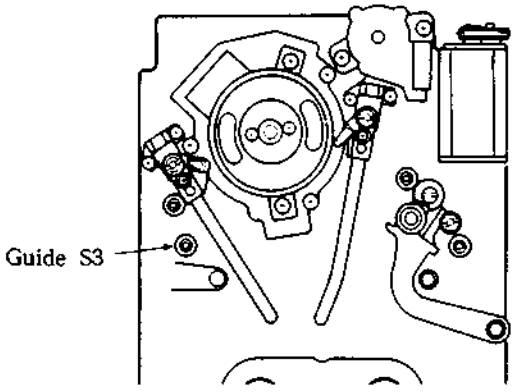
Adjustment :

1. Turn on the power switch, insert blank tape TY-30B (8-892-358-00), and put the set into the PLAY (▶) mode.
2. Align guide S3 with the lower edge of the tape.

Note : Check that the tape is aligned with the lower edge of guide S3 without curl.

Adjustment Location :

Mechanism assembly



3-1-6. T3 Guide Adjustment

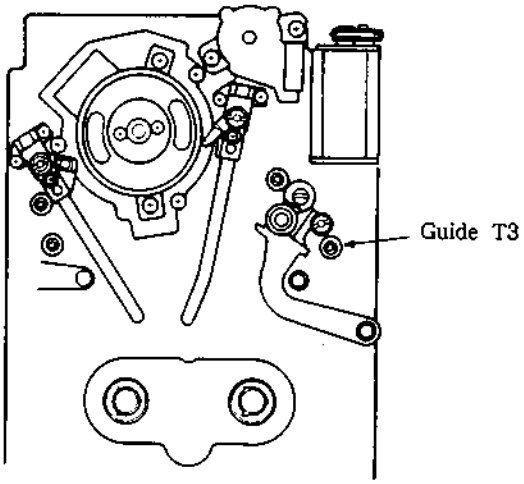
Adjustment :

1. Turn on the power switch, insert blank tape TY-30B (8-892-358-00), and put the set into the PLAY (▶) mode.
2. Align guide T3 with the lower edge of the tape.

Note : Check that the tape is aligned with the lower edge of guide T3 without curl.

Adjustment Location :

Mechanism assembly



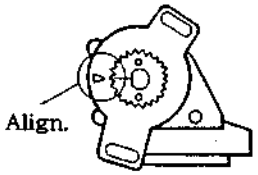
3-1-7. Rotary Encoder Adjustment

Adjustment :

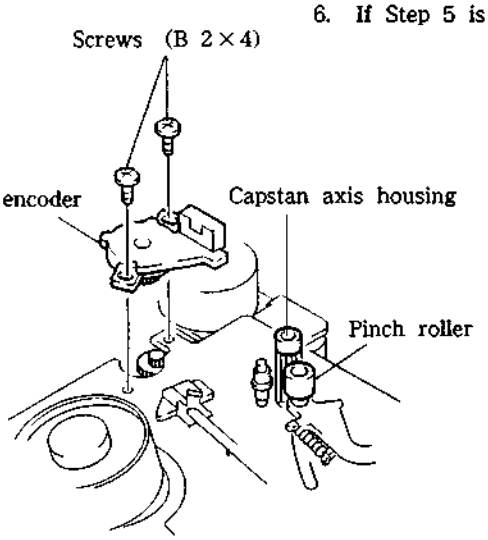
1. Remove the rotary encoder.
2. Turn the gear at the back of the chassis shown in Fig. A in the direction indicated by the arrow until the capstan axis housing touches the pinch roller as shown in Fig. B.
3. At that time, align the line in the rotary encoder's gear with mark and tentatively fasten the rotary encoder (see Fig. C).
4. Put the set into the TEST mode.
5. Alternately repeat the PLAY (▶) and STOP (■) modes and check that the pinch roller is pressed against the capstan axis in the PLAY (▶) mode and that the capstan axis housing touches the pinch roller as shown in Fig. B in the STOP (■) mode.
   Then, tighten the screws.
6. If Step 5 is not satisfied, repeat Steps 1 through 5.

Adjustment Location :
Mechanism assembly

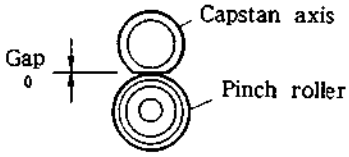
<Fig. C>



Back of Rotary Encoder

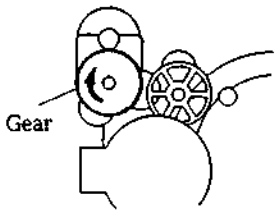


<Fig. B>



Top View

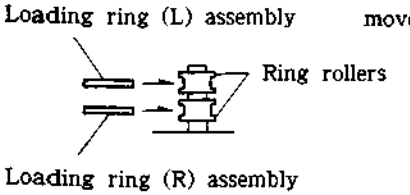
<Fig. A>

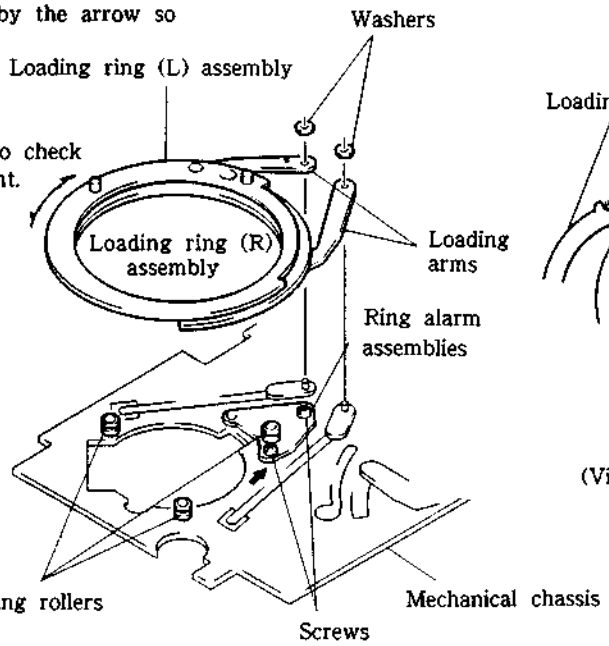


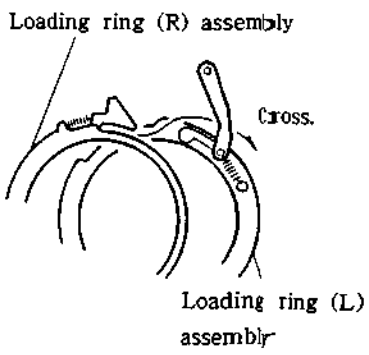
Back of chassis

3-1-8. Loading Ring Installation

1. Combine the loading ring (R) assembly and loading ring (L) assembly with the portion crossed as shown in the figure.
2. Insert into two ring rollers A.
3. Tighten the two screws while pushing the ring roller assembly in the direction indicated by the arrow so that ring roller B is aligned with the loading ring.
4. Slowly turn the loading ring and check that there is no play.
5. Insert the two loading arms into the axes and fix them using washers.



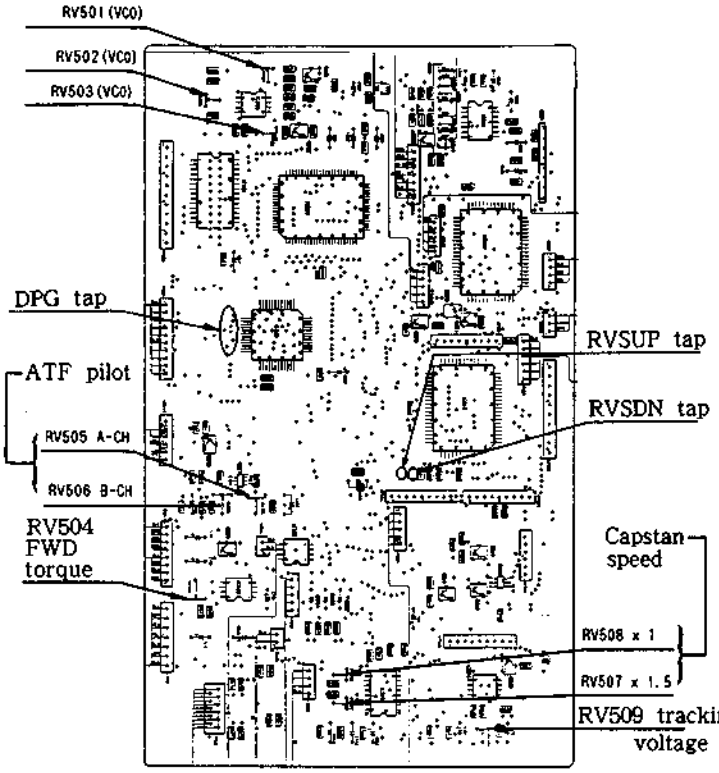




(Viewed from the back)

3-2. ELECTRICAL ADJUSTMENT

Adjustment Location :
Servo board (soldering side)



3-2-1. FWD Torque Adjustment

Adjustment :

1. Turn on the power switch and insert FWD torque meter TW-7131.
2. Put the set into the PLAY (▶) mode.
3. Adjust RV504 so that the FWD torque value (take-up rewinding torque) is 10 to 13g cm.
4. Check the torque meter reading while it makes one cycle.

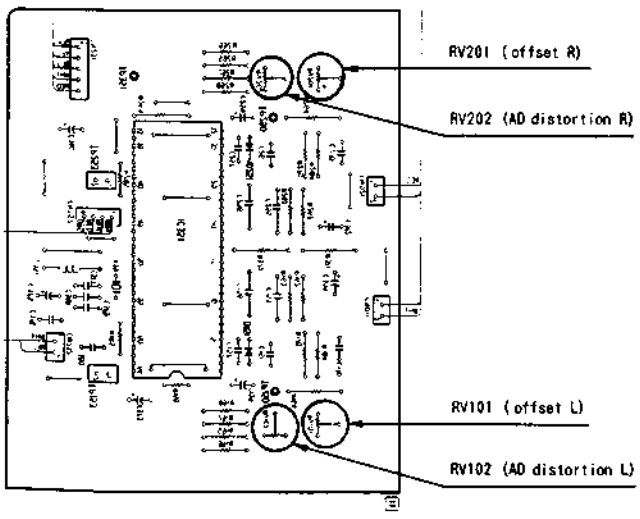
Adjustment Location :
Servo board (soldering side)

3-2-2. FWD Back Tension Adjustment

Procedure :

1. Turn on the power switch and insert FWD torque meter TW-7131.
2. Put the set into the FWD (▶) mode.
3. Check that the back tension (at supply side) is 4.5 to 6.5g cm.
4. Check the torque meter reading while it makes a half cycle.

AD board (component side)



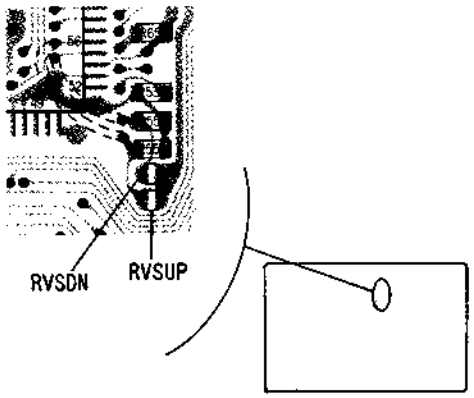
3-2-3. REVIEW Torque Check

Procedure :

1. Turn on the power switch and insert FWD torque meter TW-7131.
2. Put the set into the TEST mode.
3. Put the set into the REVIEW (▶ + ◀◀) mode. (Press the REW (◀◀) button continuously in the FWD mode.)
4. Check that the rewinding torque at the supply side is 15 to 18g cm.
5. If the torque value does not satisfy the specification, short the tap of RVSUP or RVSDN and recheck.
6. After check, cancel the TEST mode.

Check Point :

Servo board (soldering side)



3-2-4. FF/REW Torque Check

Procedure :

1. Turn on the power switch and insert FF/REW torque meter TW-7231.
2. Put the set into the TEST mode.
3. Put the set into the FF (▶▶) and REW (◀◀) modes and check that the torque value is 30 to 45g cm or more.
4. After check, cancel the TEST mode.

3-2-5. Tracking Voltage Adjustment

Adjustment :

1. Connect a digital tester between pin 6 of IC525 and GND.
2. Turn on the power switch, insert blank tape TY-30B, and put the set into the STOP (■) mode.
3. Adjust RV509 so that the tester reading is 2.9V + 5mV.

Note : When performing the tracking voltage adjustment, be sure to adjust the capstan speed at ×1 and ×1.5.

Adjustment Location :

Servo board (soldering side)

3-2-6. Capstan Speed Adjustment (× 1)

Adjustment :

1. Connect a frequency counter to pin 7 (CFG) of IC516.
2. Turn on the power switch, insert blank tape TY-30B, and put the set into the PLAY (▶) mode.
3. Adjust RV508 so that the frequency counter reading is 674 ± 1Hz.

Note : When performing the capstan speed adjustment (×1), be sure to adjust the capstan speed at (×1.5).

Adjustment Location :

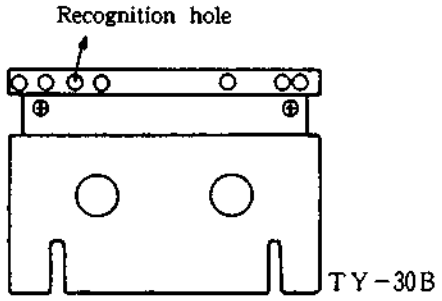
Servo board (soldering side)

3-2-7. Capstan Speed Adjustment (×1.5)

Adjustment :

1. Connect a frequency counter to pin 7 (CFG) of IC516.
2. Turn on the power switch, insert blank tape TY-30B (for 1.5 times normal speed), and put the set into the PLAY (▶) mode.
3. Adjust RV507 so that the frequency counter reading is 1011 ± 2Hz.

Note : When the recognition hole of blank tape TY-30B is opened, the set is put into the 1.5 times normal speed mode. When the hole is blocked using an adhesive tape, the mode is changed from 1.5 times normal speed to normal speed.



Adjustment Location :
Servo board (soldering side)

3-2-8. Capstan Speed Check (×2.5)

Procedure :

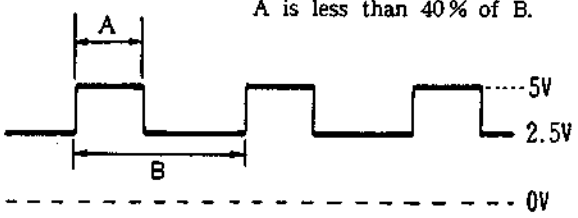
1. Connect a frequency counter to pin 7 (CFG) of IC516.
2. Turn on the power switch, insert blank tape TY-30B, and put the set into the CUE (▶ + ▶▶) mode. (Press the FF (▶▶) button continuously in the PLAY mode.)
3. Check that the frequency counter reading is 1685 ± 150Hz.

3-2-9. Capstan Speed Check (×16)

Procedure :

1. Connect an oscilloscope to pin 3 (PCOT) of IC518.
2. Put the set into the TEST mode.
3. Turn on the power switch, insert blank tape TY-30B, and put the set into the PLAY PAUSE (▶ + ⏸) mode. Then, continuously press the FF (▶▶) or REW (◀◀) button.
4. Check that the signal waveform on the oscilloscope is as shown below.

(ア)



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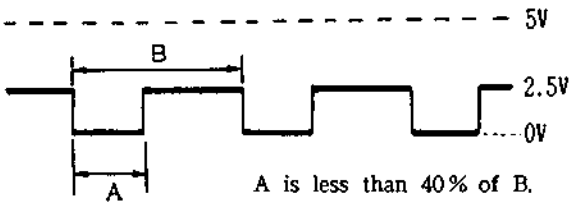


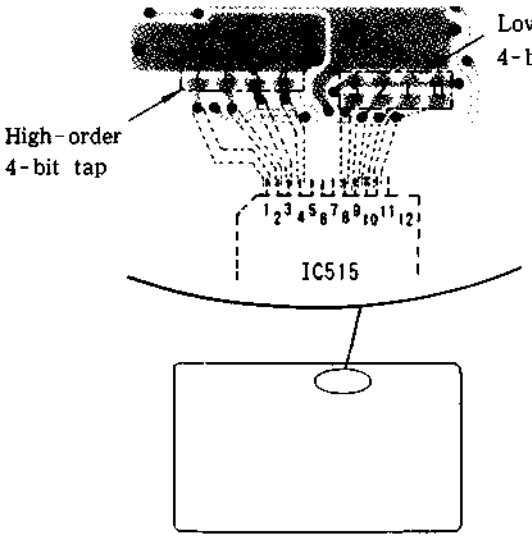
3-2-9. DPG Adjustment

Adjustment :

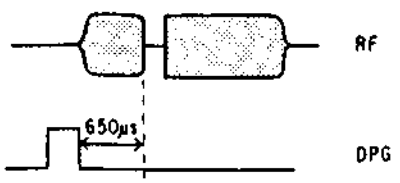
1. Connect CH-1 of an oscilloscope to the emitter pin (RF) of Q550 and CH-2 to pin 20 (DPG) of IC515.
2. Select tap pattern 8 and make a solder bridge to check the original delay value of a PG pulse. (The delay time of one DPG SW code is approximately 100 μ sec.)
3. Turn on the power switch, insert alignment tape TY-7251, and put the set into the TEST mode.
4. Press the AMS button, then press the PLAY (▶) button.
5. Select the tap pattern so that the trailing edges of a DPG pulse and RF signal's non-signal are approximately 650 μ sec.
   (Coarse adjustment)
   High-order 4 bits (taps 4, 5, 6, and 7)
6. Put the set into the PLAY (▶) mode and select the tap pattern so that the DPG and RF signals on the oscilloscope are 650 ± 15 μ sec. Then, finely adjust the DPG pulse width.
   Low-order bits (taps 0, 1, 2, and 3)

Note : When replacing the drum related block, be sure to perform the DPG adjustment.

Servo board (soldering side)



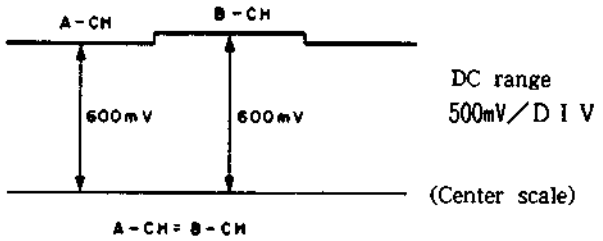
(Reference)



3-2-10. ATF Pilot Adjustment

Adjustment :

1. Connect CH-1 of an oscilloscope to pin 8 (S/H3) of IC523.
   Connect CH-2 of an oscilloscope to pin 2 (SWP) of CN542.
   (TRIGGER)
2. Turn on the power switch, insert alignment tape TY-7111, and put the set into the STOP (■) mode. Then, put the set into the TEST mode.
3. Align the luminescent spot on the oscilloscope with the scale center position. (Never align the spot with the center position when the input is set to GND.)
4. Put the set into the PLAY (▶) mode and adjust RV505 (A-CH) and RV506 (B-CH) so that the signal waveform is 600mV after two or three seconds.



Note : If the signal waveform deflects vertically, adjust it in the deflection center.

Adjustment Location :
Servo board (soldering side)

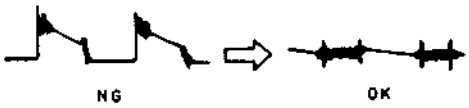
Adjustment Point
Servo board (soldering side)

DPG SW code (high-/low-order)	Tap pattern 0/4	1/5	2/6	3/7
1	○			
2		○		
3	○	○		
4			○	
5	○		○	
6		○	○	
7	○	○	○	
8				○
9	○			○
A		○		○
B	○	○		○
C			○	○
D	○		○	○
E		○	○	○
F	○	○	○	○

3-2-11. VCO Adjustment

Adjustment :

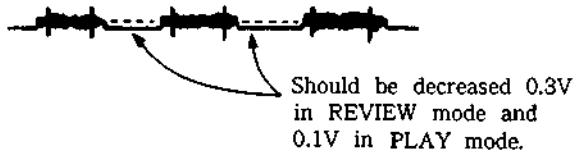
1. Unsolder tap pattern Ⓐ on the main board and open it.
2. Connect CH-1 of an oscilloscope to TP501 and CH-2 to TP502.
   (Connect the trigger of the oscilloscope to SWP (pin 2 of CN542).)
3. Turn on the power switch, insert a music tape, put the set into the TEST mode, and put it into the PLAY mode. (Any music tape can be used.)
4. Adjust RV503 so that the DC potential difference at TP502 is approximately − 2.0V.
5. Adjust RV502 so that the signal waveform at TP501 satisfies the specification.



6. Adjust RV501 so that the signal waveform at TP501 satisfies the specification.

7. Put the set into the CUE mode and finely adjust RV502 so that the signal waveform at TP501 satisfies the specification. (The specified waveform is the same as in Step 6.)
8. Put the set into the REVIEW mode and finely adjust RV501 so that the signal waveform at TP501 satisfies the specification.
   (The specified waveform is the same as in Step 6.)
9. Alternate putting the set into the CUE and REVIEW modes two or three times and check that the signal waveform at TP501 satisfies the specification. (The specified waveform is the same as in Step 6.)
10. Turn off the power switch and solder-bridge the tap pattern.
11. Turn on the power switch and put the set into the PLAY (▶) mode again.
12. Readjust RV503 so that the signal waveform at TP501 satisfies the specification. (The specified waveform is the same as in Step 6.)
13. Put the set into the CUE mode and finely adjust RV503 so that the signal waveform at TP501 satisfies the specification.

14. Put the set into the REVIEW mode and check that the signal waveform at TP501 satisfies the specification.

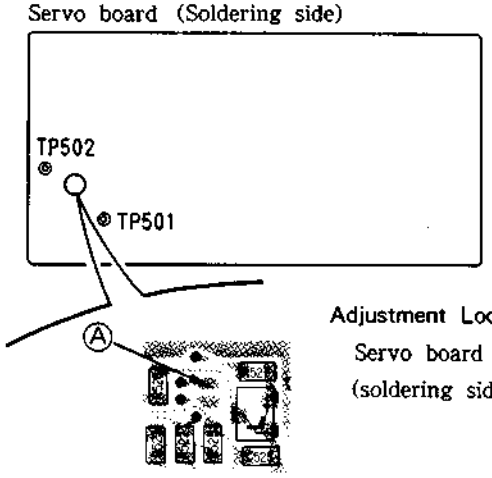


15. Put the set into the PLAY mode and check the signal waveform at TP501. (The specified waveform is the same as in Step 6.)
16. Put the set into the FF AMS and REW AMS modes and check the signal waveforms at TP501 and TP502 (in the 16 times normal speed mode).

17. Set the TEST mode to OFF, put the set into the FF AMS and REW AMS modes, and check the signal waveforms at TP501 and TP502 (in the AMS mode).

Voltages deflect significantly in the positive (+) direction.

Servo board (Soldering side)



Adjustment Location :
Servo board
(soldering side)

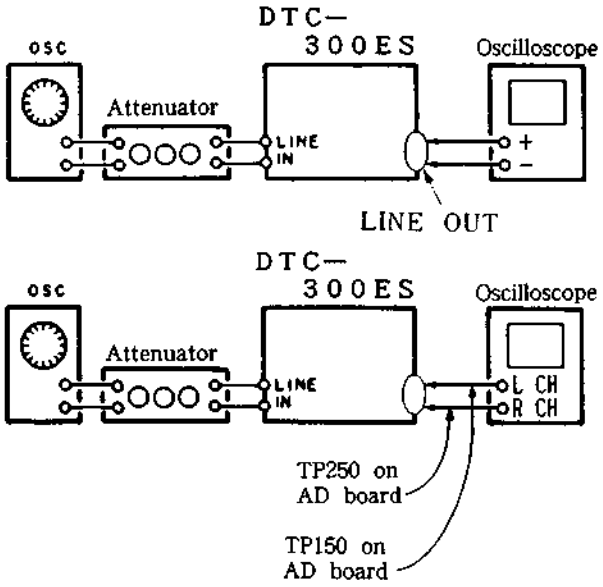
3-2-12. AD DC Offset Distortion Factor Adjustment

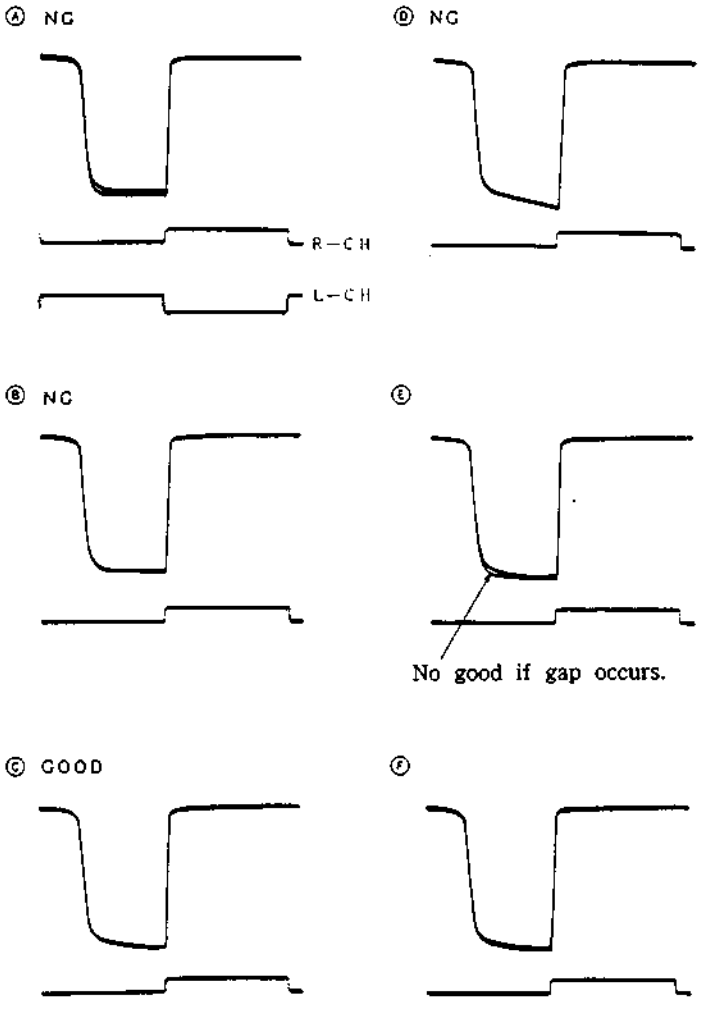
Adjustment :

1. Set the INPUT select switch to ANALOG and input a 1kHz (0dB) signal.
2. Connect an oscilloscope to the LINE OUT terminal, TP150 (L-CH), and TP250 (R-CH).
3. Turn on the power switch and insert blank tape TY-30B.
4. Put the set into the REC mode.
5. Turn the REC volume control until the OVER indicator blinks and adjust RV101 (L-CH) and RV201 (R-CH) so that the LINE OUT signal waveform is uniformly clipped in the vertical direction.
6. Attenuate the input signal and fully turn RV102 (L-CH) and RV202 (R-CH) counterclockwise so that the signal waveforms (integrated waveforms) at TP150 (L-CH) and TP250 (R-CH) are as shown in Fig. Ⓒ. After that, gradually turn them clockwise until the signal waveforms shown in Fig. Ⓒ are obtained.
7. Repeat Step 5.
8. Turn the REC volume control so that the signal waveform is as shown in Fig. Ⓔ when the level meter reading is approximately −55. Then, slightly turn RV102 and RV202 clockwise so that the signal waveform is as shown in Fig. Ⓕ.
   Distortion factor (reference) : −80.5dB or less (1kHz full-scale, 20kHz LPF ON)

Adjustment Location :

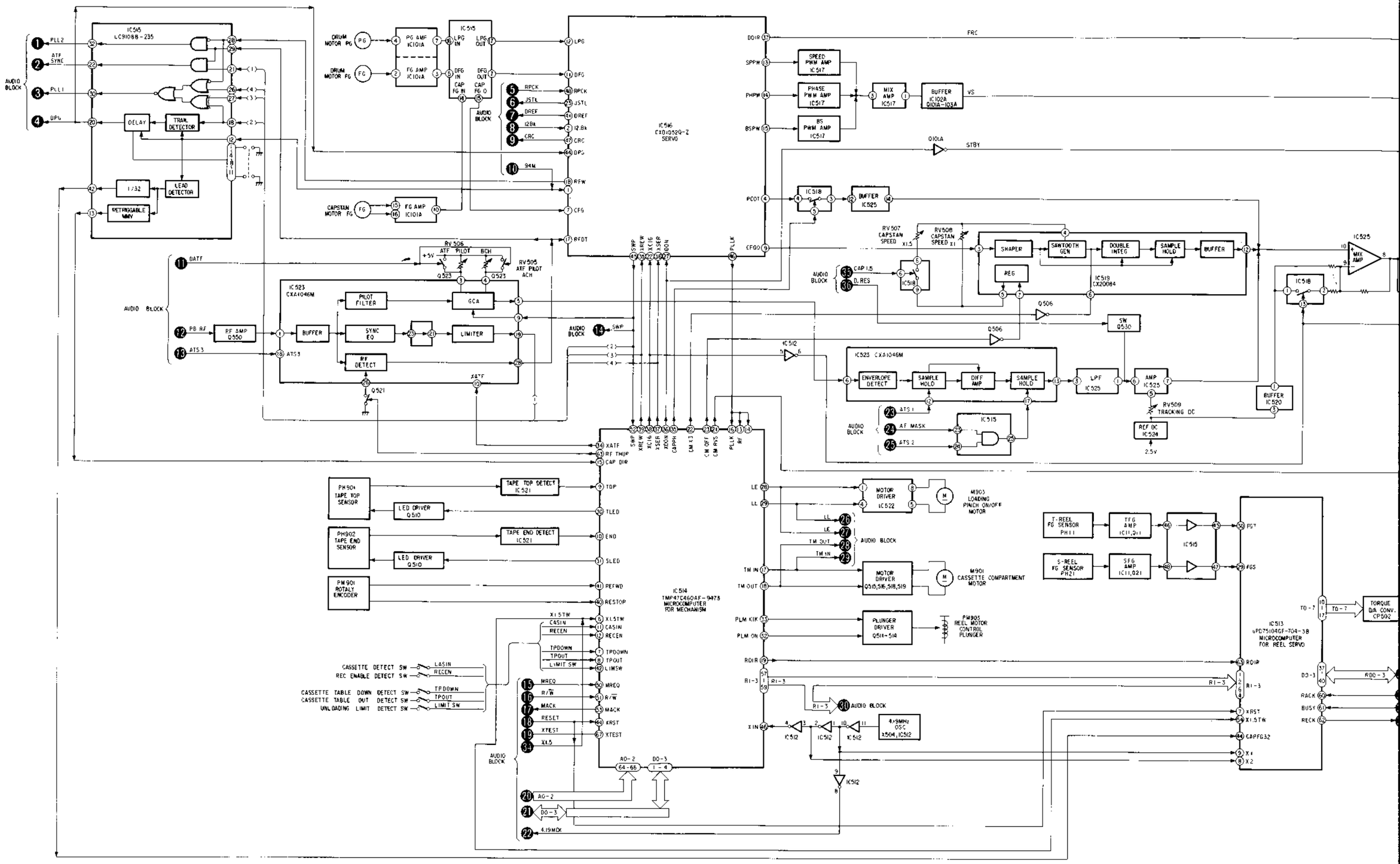
AD board (component side).

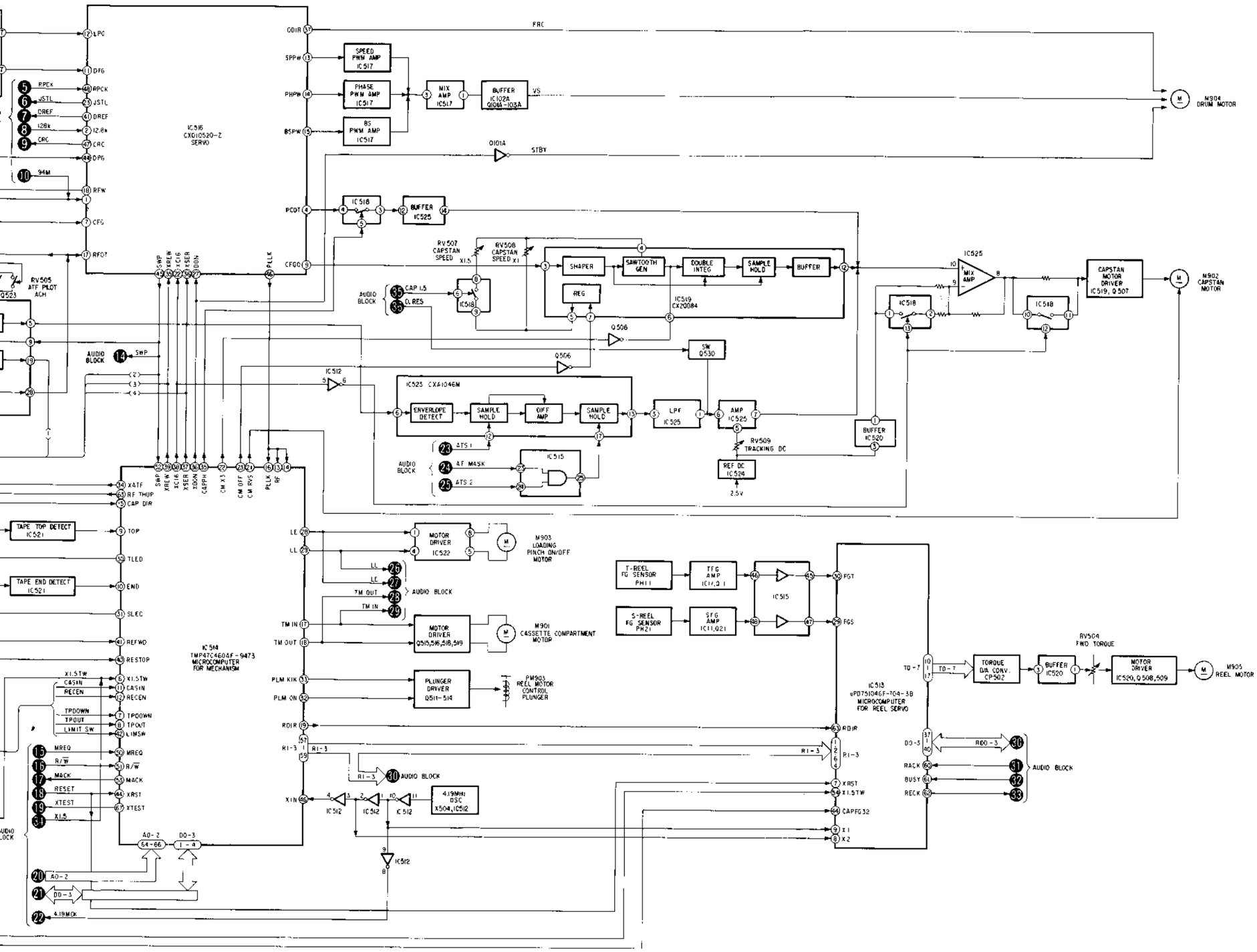




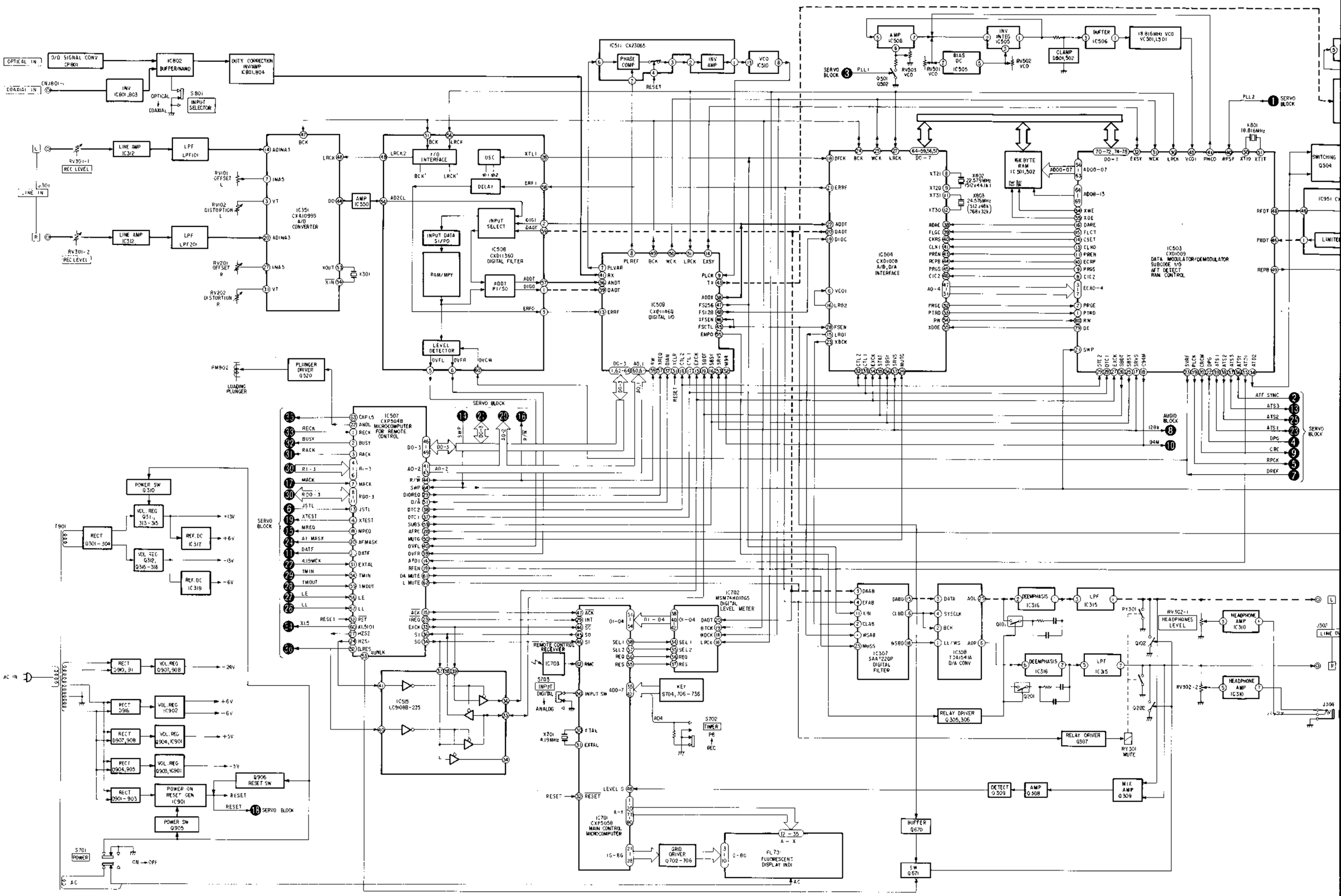
SECTION 4 DIAGRAMS

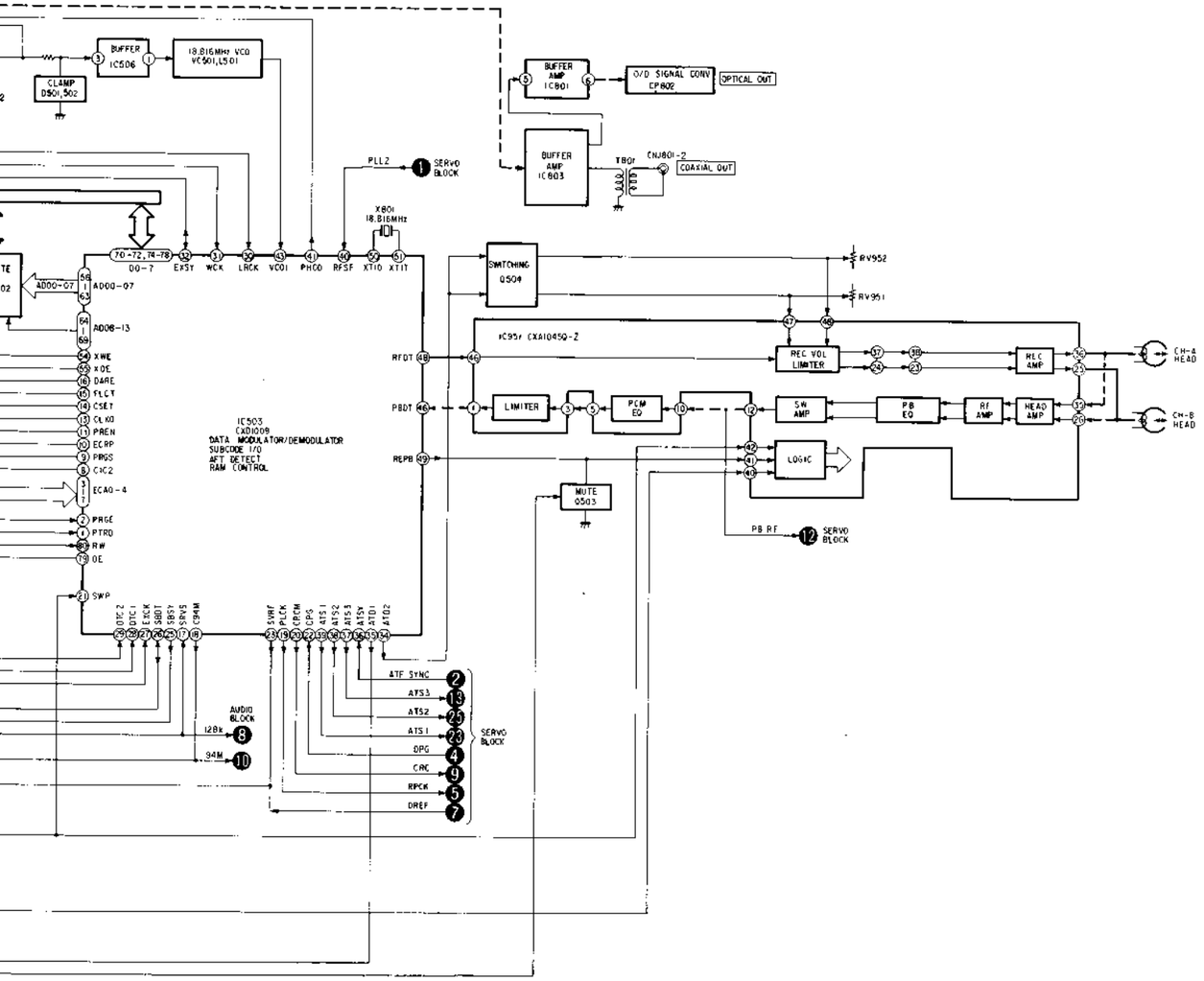
4-1. BLOCK DIAGRAM — SERVO SECTION —

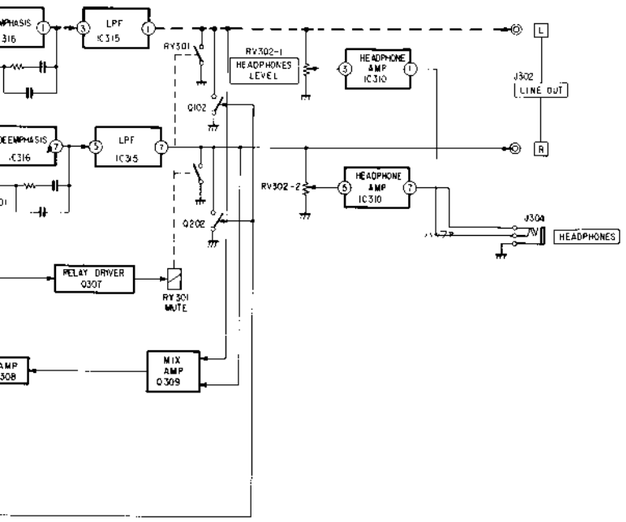



IC516
CXG1052Q-Z
SERVO
IC514
TMP47C460AF-9473
MICROCOMPUTER
FOR MECHANISM
IC513
μPD75104GF-704-3B
MICROCOMPUTER
FOR REEL SERVO
FRC
SPEED PWM AMP IC517
PHASE PWM AMP IC517
BS PWM AMP IC517
MIX AMP IC517
BUFFER IC102A Q101A-103A
VS
M904 DRUM MOTOR
Q101A
STBY
IC518
BUFFER IC525
RV507 CAPSTAN SPEED X1.5
RV508 CAPSTAN SPEED X1
SHAPER
SAWTOOTH GEN
DOUBLE INTEG
SAMPLE HOLD
BUFFER
REG
IC519 CX20084
IC525
MIX AMP
CAPSTAN MOTOR DRIVER IC519, Q507
M902 CAPSTAN MOTOR
RV505 ATF PILOT ACH
Q523
AUDIO BLOCK
CAP I.S
D. RES
Q506
SW Q530
IC512
IC525 CXA1046M
ENVERLOPE DETECT
SAMPLE HOLD
DIFF AMP
SAMPLE HOLD
LPF IC525
AMP IC525
RV509 TRACKING DC
BUFFER IC520
REF DC IC524
2.5V
ATS 1
A.F MASK
ATS 2
IC515
TAPE TOP DETECT IC521
TAPE END DETECT IC521
MOTOR DRIVER IC522
M903 LOADING PINCH ON/OFF MOTOR
MOTOR DRIVER Q515,516,518,519
M901 CASSETTE COMPARTMENT MOTOR
PLUNGER DRIVER Q511-514
PM903 REEL MOTOR CONTROL PLUNGER
T-REEL FG SENSOR PH11
S-REEL FG SENSOR PH21
TFG AMP IC11,Q11
SFG AMP IC11,Q21
IC515
FGT
FGS
RV504 FWD TORQUE
TORQUE D/A CONV. CP502
BUFFER IC520
MOTOR DRIVER IC520, Q508, 509
M905 REEL MOTOR
4.19MHz OSC X504, IC512
IC512
LPG
DFG
RPCK
JSTL
DREF
12.8k
CRC
DPG
94M
RFW
CFG
RFDT
PCDT
CFGO
PLLK
SWP
XREW
XCIG
XSER
XDON
CAPPH
CM X1
CM OFF
CM RVS
RF
XATF
RF THUP
CAP DIR
TOP
TLED
END
SLEC
REFWD
RESTOP
X1.5TW
CASIN
RECEN
TPDOWN
TPOUT
LIMSW
MREQ
R/W
MACK
RESET
XTEST
X1.5
A0-2
D0-3
4.19MCK
LE
LL
TM OUT
TM IN
PLM KIK
PLM ON
RDIR
RI-3
XIN
XRST
X1.5TW
CAPFG32
X1
X2
RACK
BUSY
RECK
RD0-3
TD-7

4-2. BLOCK DIAGRAM — AUDIO SECTION —



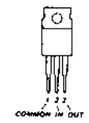




• Semiconductor Location

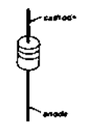
A1QH3020S

M5F79M05
M5F79M06



2SA1138
2SC2676

HZS6A1L
1SS202-1
11ES2



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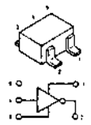
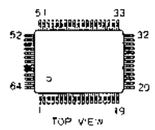
2SC3623A-L

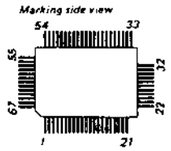
SC7S04F



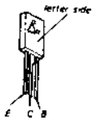
CXD1008Q
CXD1146Q
μPD75104GF-704-3B



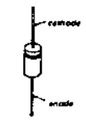
TMP47C460AF-9473



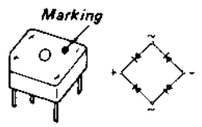
2SB731-F



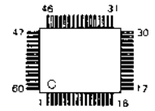
HZ7B2L
10E2N



S4V860

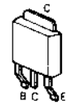


CXD1136Q

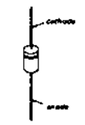


DTA114ES

2SB1181F5

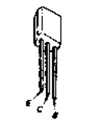


30DF2

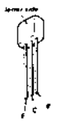


CX23065A
M5218L

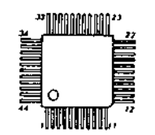
2SC2785-HFE



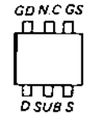
XN4112
XN4116
XN4212



MSM74H010GS-K

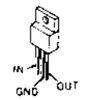


GDN.C GS
DSUBS

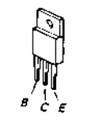


2SK30A-0

M5F78M06



2SA985A-P
2SB1274SA-Q
2SC2275-P
2SD1913SA



4-3. PRINTED WIRING BOARDS
—SERVO SECTION—

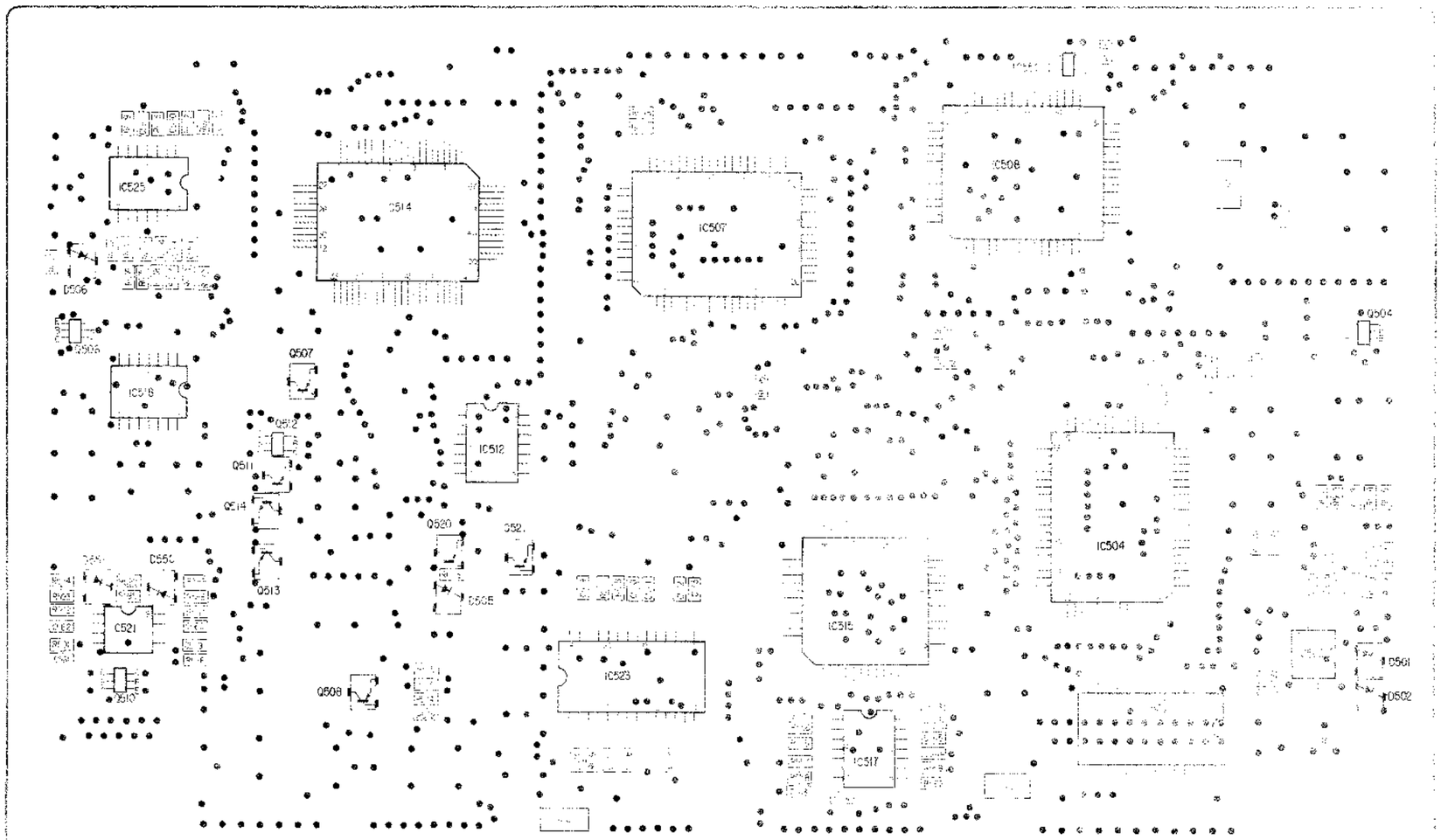
• See page 24 for Semiconductor Lead Layouts.

• Semiconductor Location

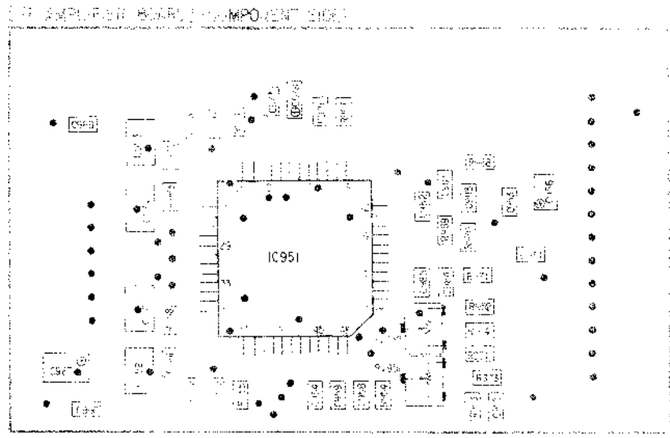
Ref. No.	Location	Ref. No.	Location
D501	F-12	IC523	F-6
D502	G-12	IC524	C-23
D503	E-22	IC525	B-2
D504	E-22	IC550	B-9
D505	F-4	IC951	C-10
D506	C-1		
D507	E-22	Q11	F-23
D550	F-2	Q21	C-22
D551	F-2	Q101A	B-26
D670	C-17	Q102A	H-26
		Q103A	B-26
IC11	J-23	Q501	E-14
IC101A	H-26	Q502	E-14
IC102A	I-26	Q503	D-15
IC501	G-15	Q504	D-12
IC502	G-10	Q506	D-1
IC503	E-16	Q507	B-3
IC504	B-3	Q508	B-4
IC505	F-1	Q509	B-21
IC506	F-14	Q510	F-2
IC507	C-6	Q511	E-3
IC508	B-9	Q512	E-3
IC509	B-16	Q513	E-3
IC510	C-14	Q514	E-5
IC511	B-15	Q515	B-22
IC512	E-4	Q516	C-22
IC513	C-19	Q518	C-22
IC514	C-4	Q519	C-21
IC515	F-8	Q520	E-4
IC516	F-18	Q521	E-5
IC517	B-8	Q523	F-20
IC518	D-2	Q530	B-23
IC519	D-23	Q550	C-19
IC520	F-22	Q670	D-17
IC521	F-2	Q671	C-17
IC522	F-21		

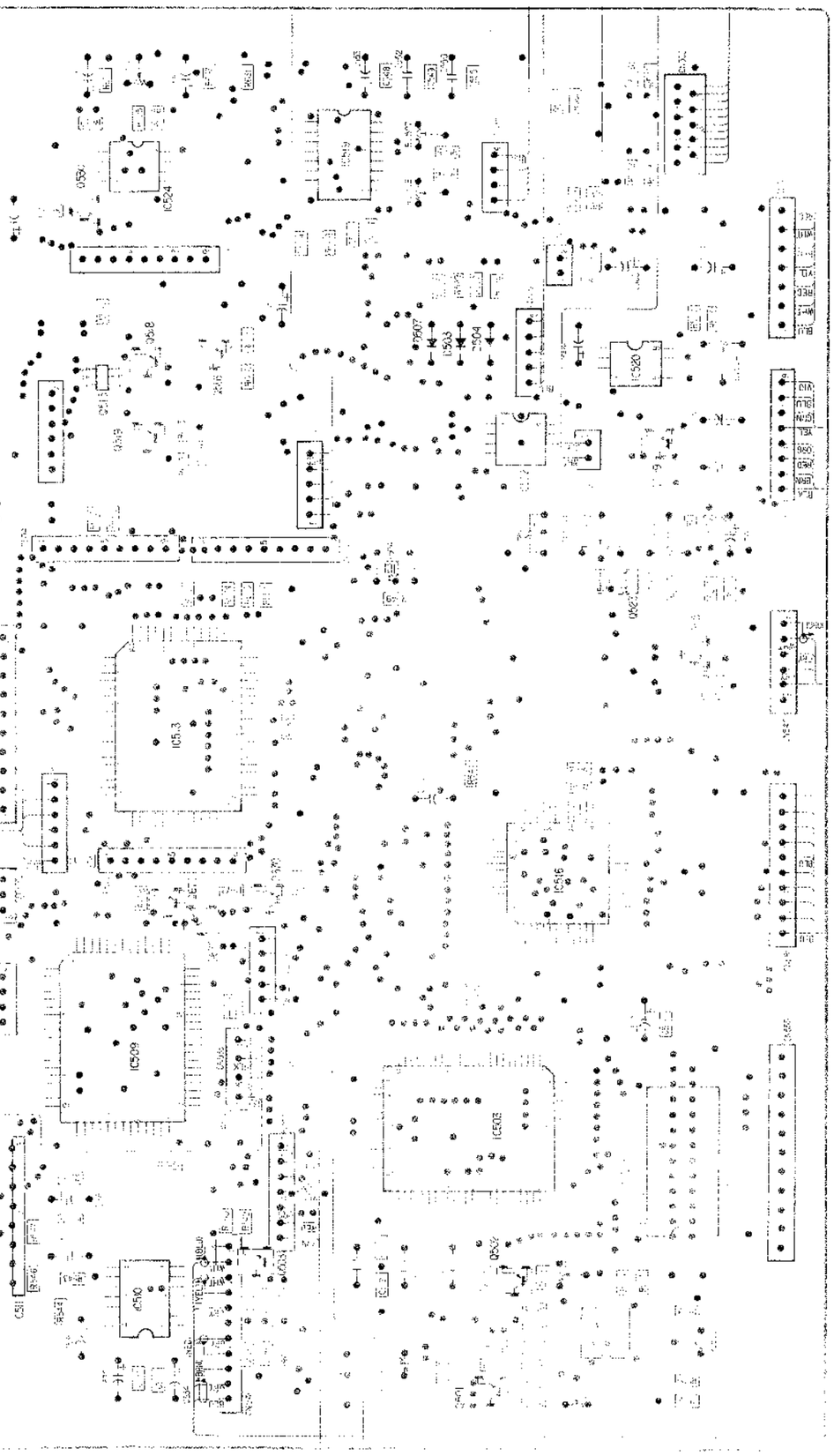
Note:
- ○—— : parts extracted from the component side.
- ● : Through hole.
- . . : Pattern on the side which is seen.

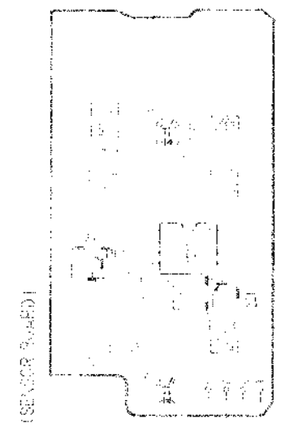
[SERVO BOARD] (COMPONENT SIDE)

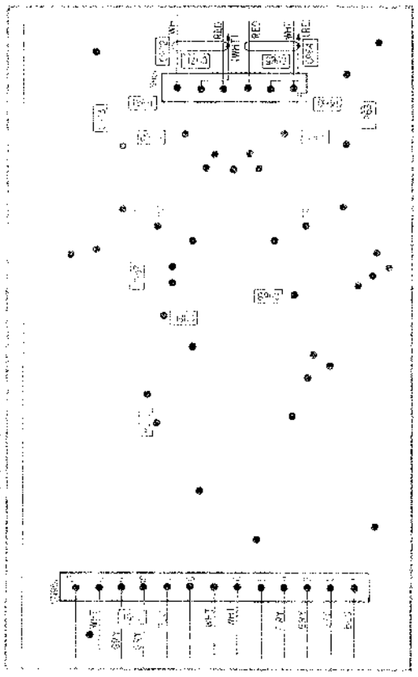


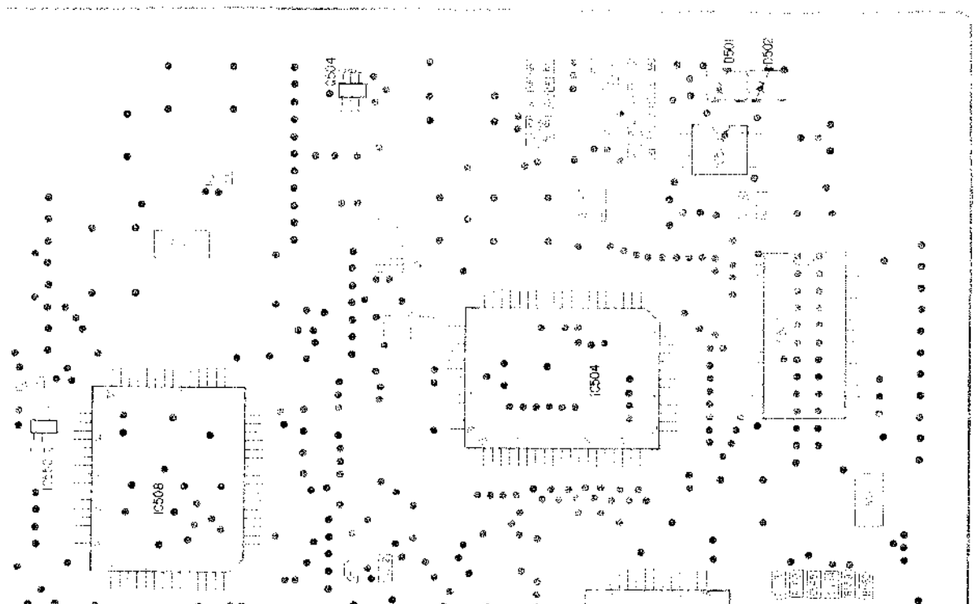
[AMPLIFIER BOARD] (COMPONENT SIDE)

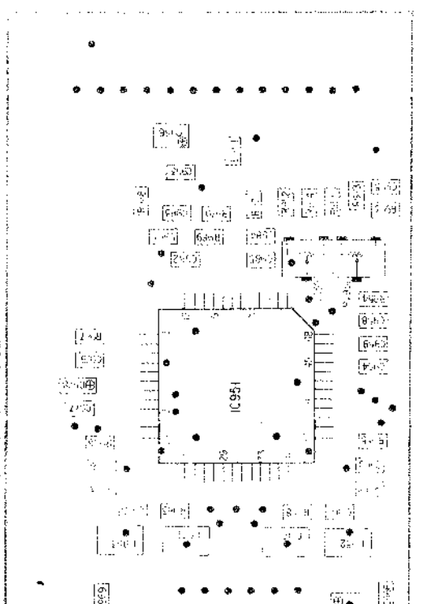


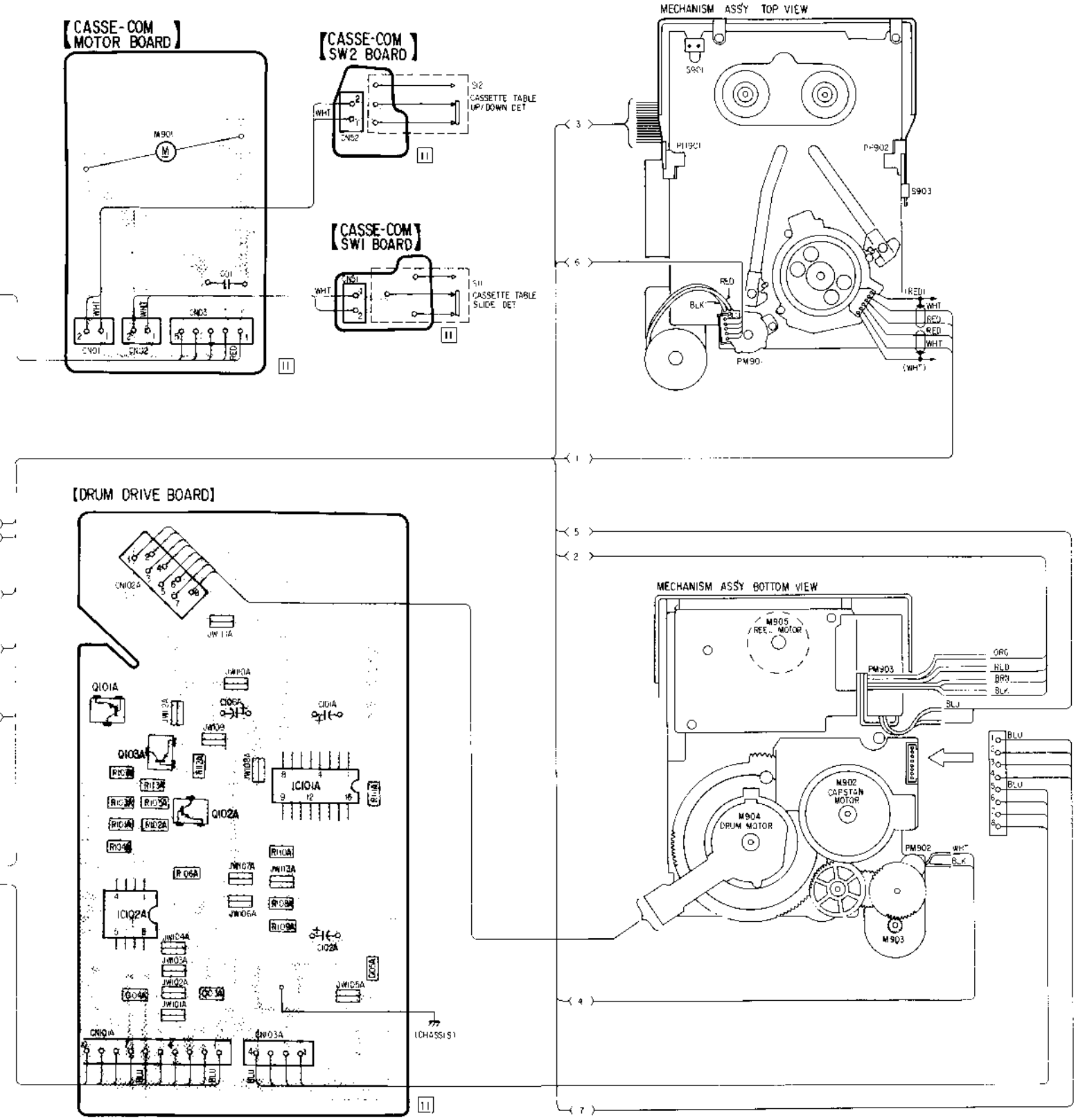




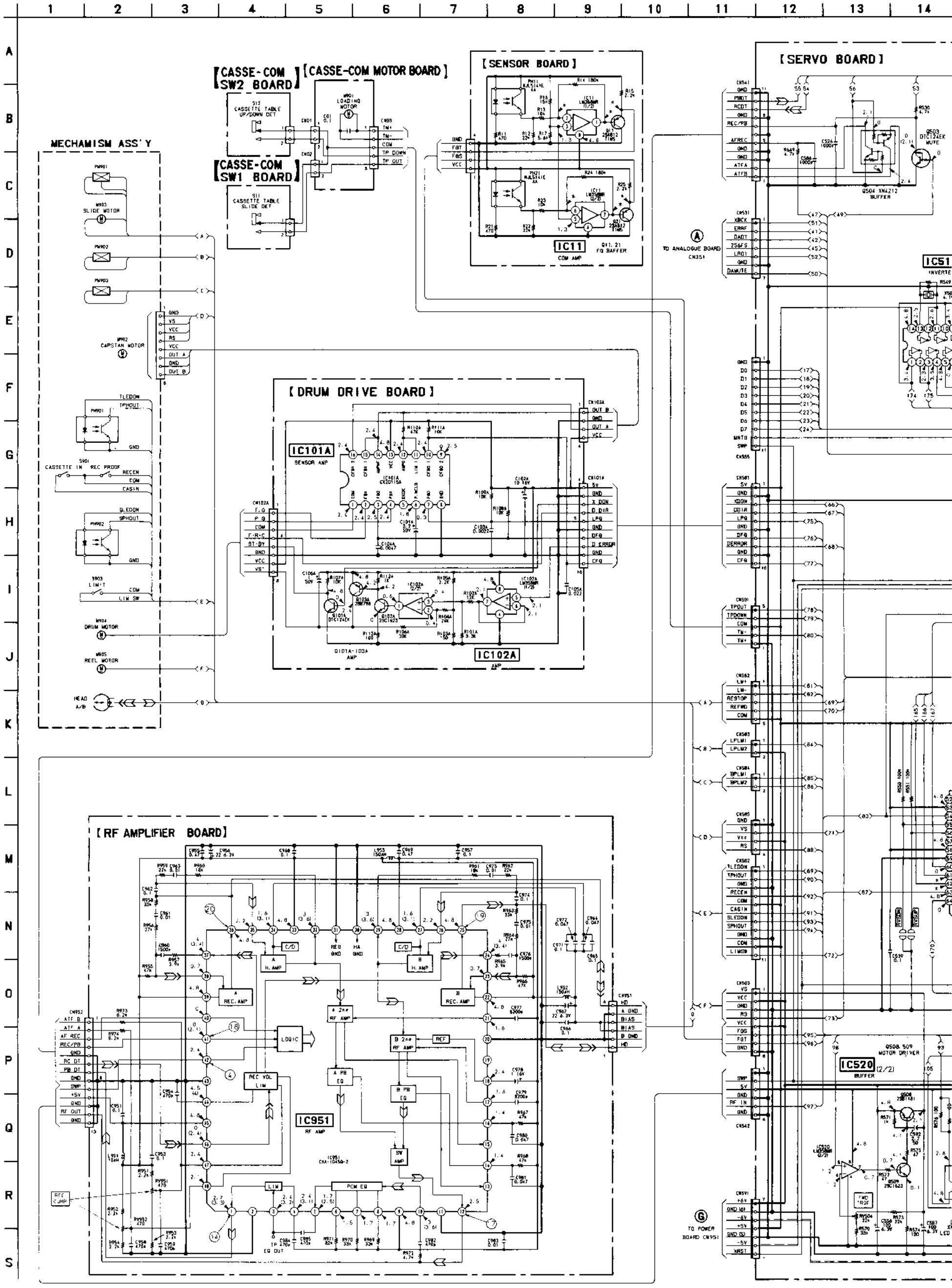







【CASSE-COM MOTOR BOARD】
【CASSE-COM SW2 BOARD】
【CASSE-COM SW1 BOARD】
CASSETTE TABLE UP/DOWN DET
CASSETTE TABLE SLIDE DET
MECHANISM ASSY TOP VIEW
MECHANISM ASSY BOTTOM VIEW
【DRUM DRIVE BOARD】
M901
M902 CAPSTAN MOTOR
M903
M904 DRUM MOTOR
M905 REEL MOTOR
PM901
PM902
PM903
S903
IC101A
IC102A
Q101A
Q102A
Q103A
(CHASSIS)

4-4. SCHEMATIC DIAGRAM — SERVO SECTION —



IC501
DYNAMIC RAM
IC501 CXK5864BM-12L

IC502
DINAMIC RAM
IC502 CXK5864BM-12L

IC503
DATA MOD. DE-MOD. SUB CODE CTL
ATF DET. RAM CONTROL
IC503 CXD1009Q

IC504
INTERFACE
IC504 CXD1008Q

IC505
LPF AMP

IC506
LPF AMP

Q501, 502
MODE SW

IC507
MAIN MICRO COMPUTER
IC507 CXP50048H-1910

IC512
INVERTER

IC513
REEL. MICON

IC514
MECH. MICON

IC515
DLY PG
GATE ARRAY

IC521
TAPE TOP DET

IC522
MOTOR DRIVER

IC523
ATF

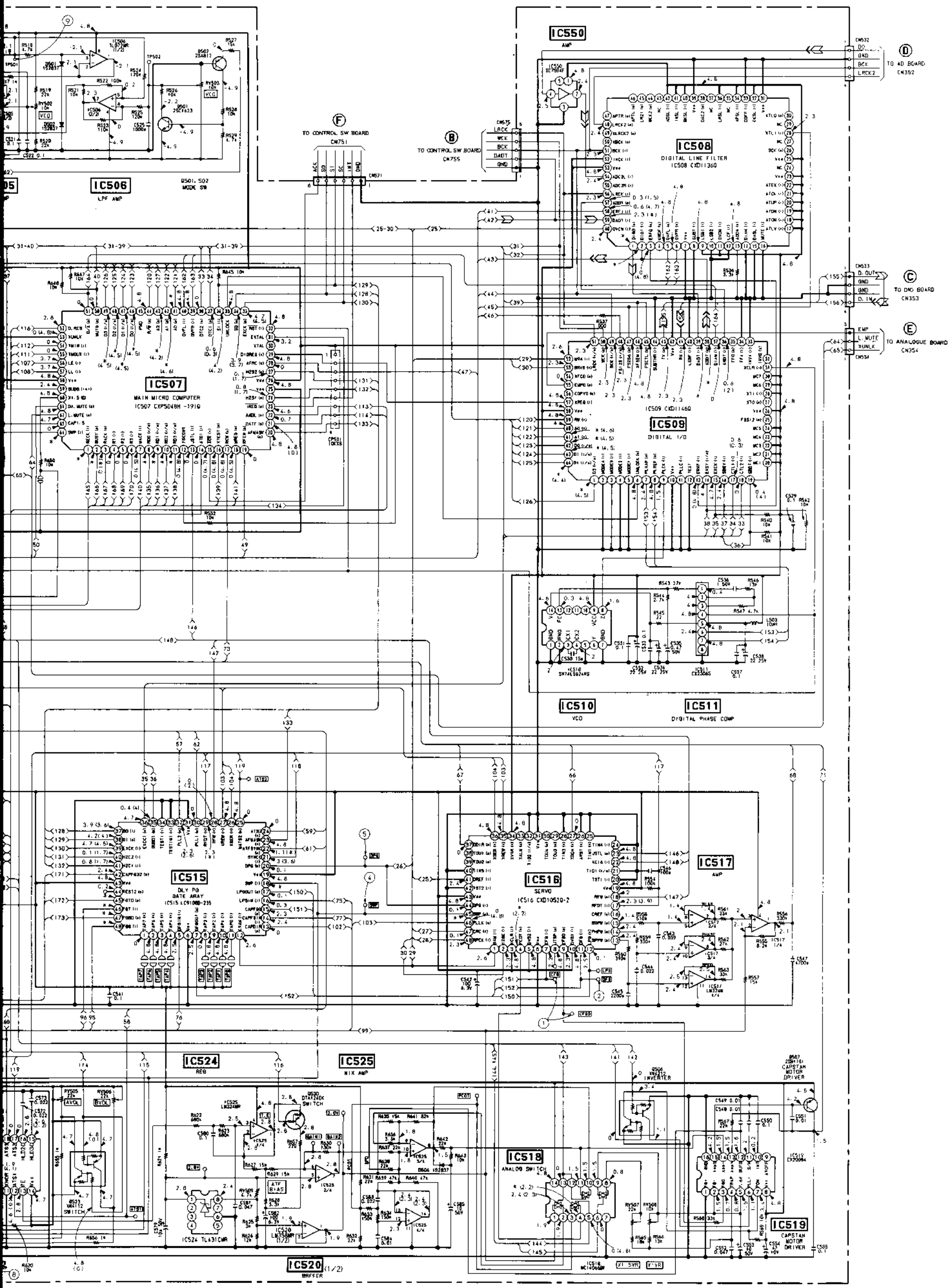
IC524
REG

Q508, 509
MOTOR DRIVER

Q510
LED DRIVER

Q511-514
PM DRIVER

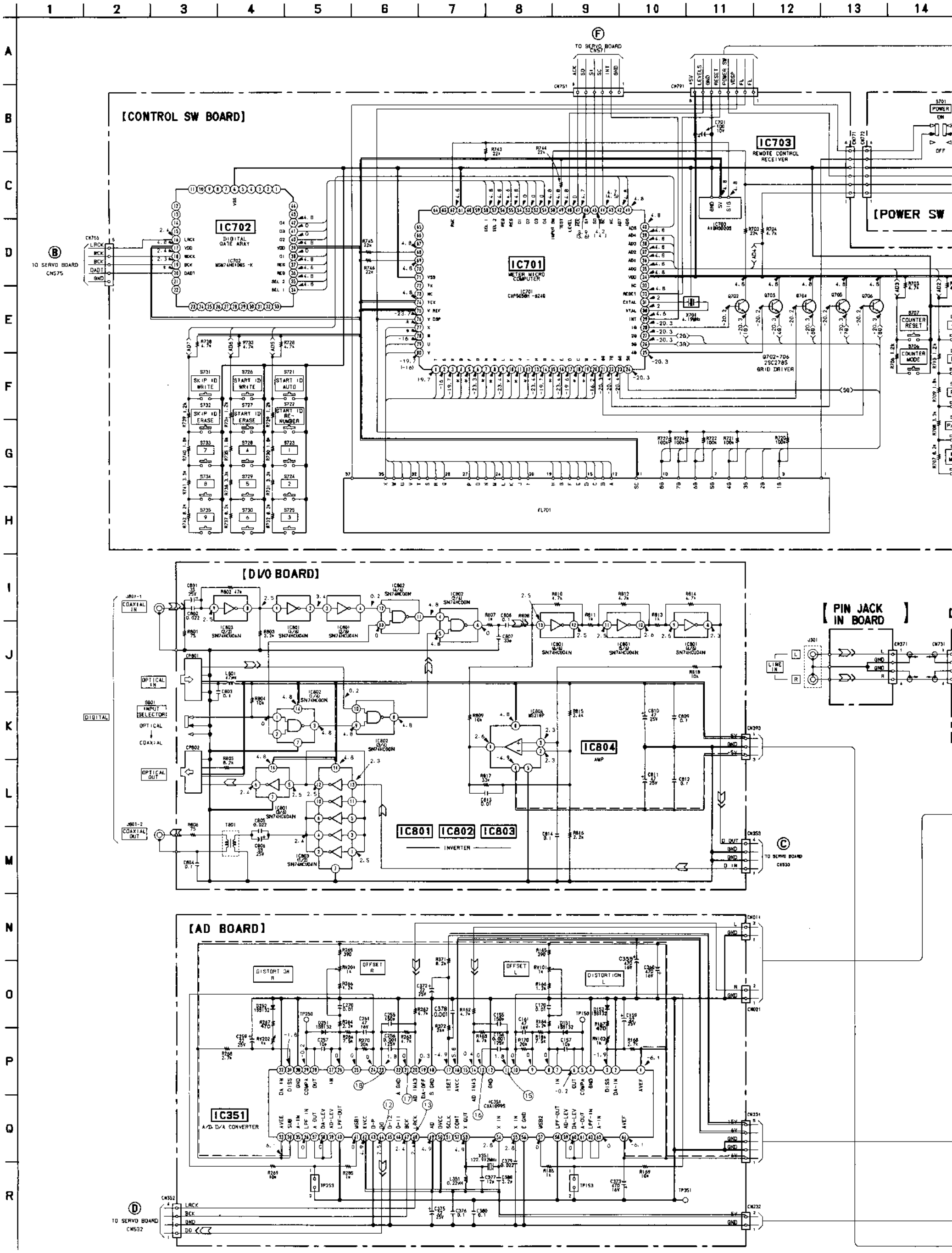
Q515, 516, 518, 519
MOTOR DRIVE

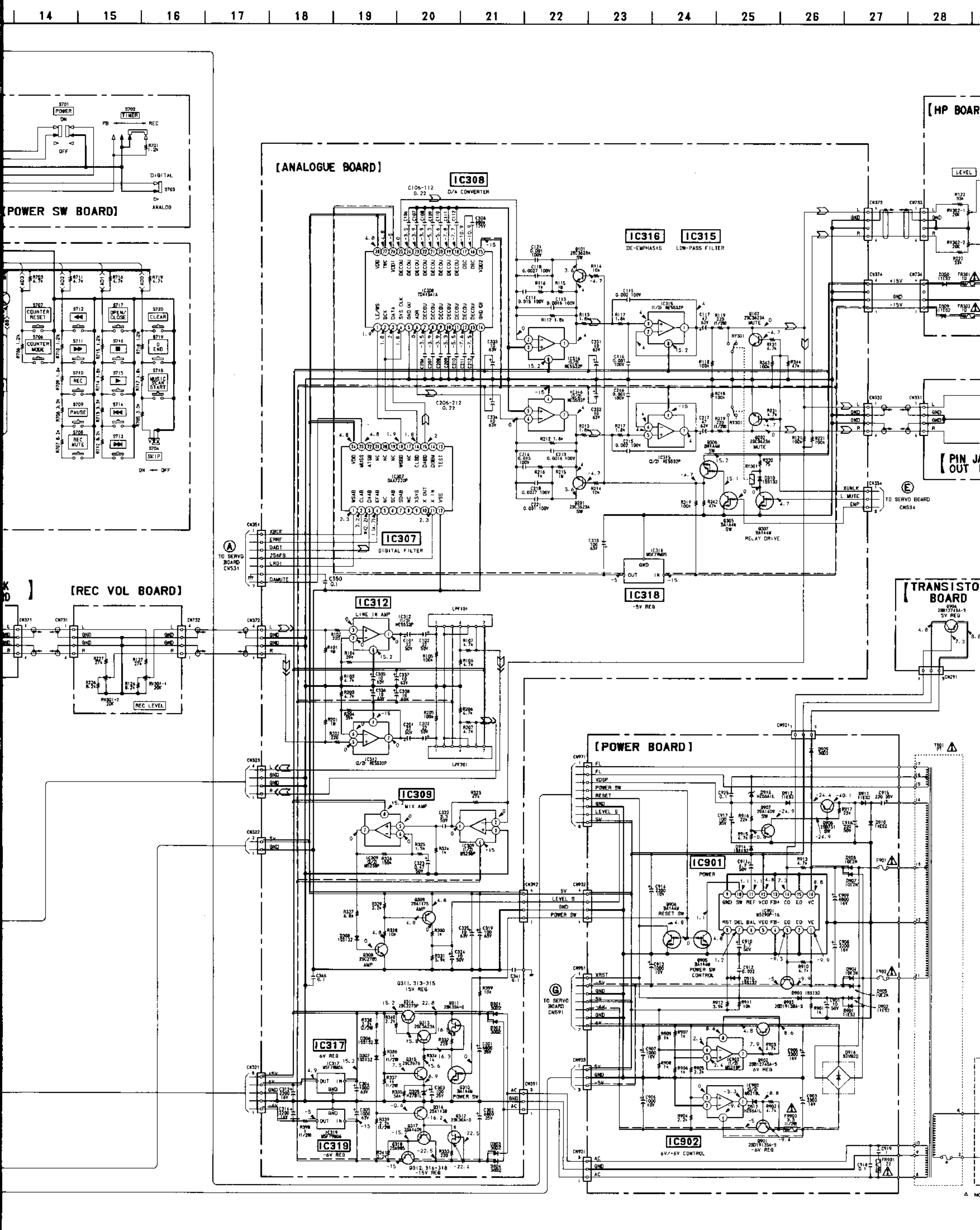


Note:

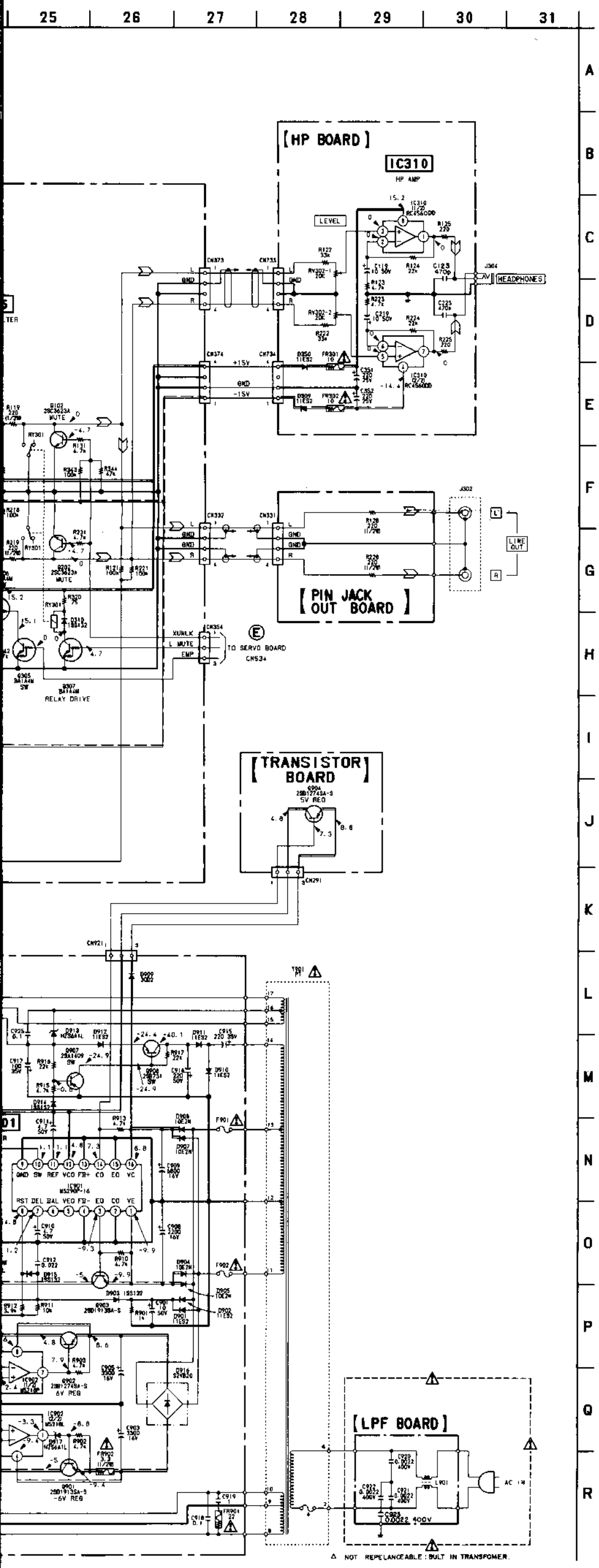
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- : fusible resistor.
- : B+ Line
- : B– Line
- : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : PLAY
  ( ) : REC
- Voltages are taken with a VOM (input impedance 10M Ω)
  Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms. (See page 43)
- Signal path.
  : PB
  : REC

4-5. SCHEMATIC DIAGRAM — AUDIO SECTION —





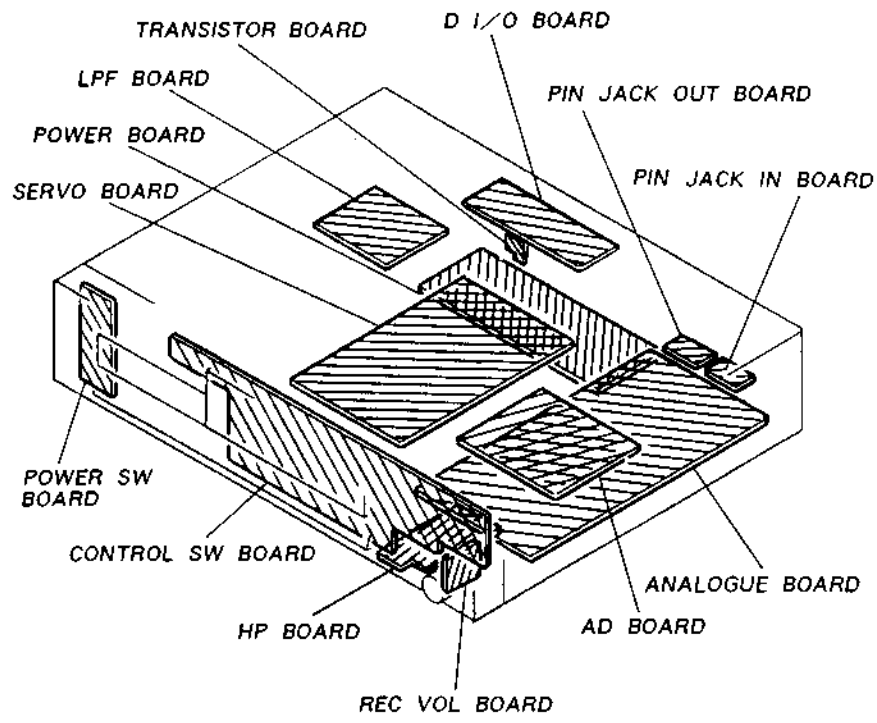
14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
[POWER SW BOARD]
S701 POWER
S702 TIMER
PB REC
DIGITAL
ANALOG
COUNTER RESET
COUNTER MODE
OPEN/CLOSE
CLEAR
END
REC
MUSIC SCAN START
PAUSE
REC MUTE
SKIP
ON OFF
[ANALOGUE BOARD]
IC308
D/A CONVERTER
IC308 TDA1541A
IC307
DIGITAL FILTER
IC307 SAA7220P
IC316
DE-EMPHASIS
IC315
LOW-PASS FILTER
Q102 2SC3623A MUTE
Q202 2SC3623A MUTE
Q201 2SC3623A SW
Q101 2SC3623A SW
Q305 BA1A4M SW
Q307 BA1A4M RELAY DRIVE
IC318
-5V REG
TO SERVO BOARD CN531
TO SERVO BOARD CN534
[REC VOL BOARD]
REC LEVEL
IC312
LINE IN AMP
LPF101
LPF201
IC309
MIX AMP
Q309 2SA1175 AMP
Q308 2SC2785 AMP
Q311, 313-315 15V REG
IC317
6V REG
IC319
-6V REG
Q310 BA1A4M POWER SW
Q312, 316-318 -15V REG
[HP BOARD]
LEVEL
[PIN JACK OUT]
[TRANSISTOR BOARD]
Q904 2SB1274SA-S 5V REG
[POWER BOARD]
IC901
POWER
IC901 M52900P-16
Q906 BA1A4M RESET SW
Q905 BA1A4M POWER SW CONTROL
TO SERVO BOARD CN591
IC902
6V/-6V CONTROL
Q902 2SB1274SA-S 6V REG
Q901 2SD1913SA-S -6V REG

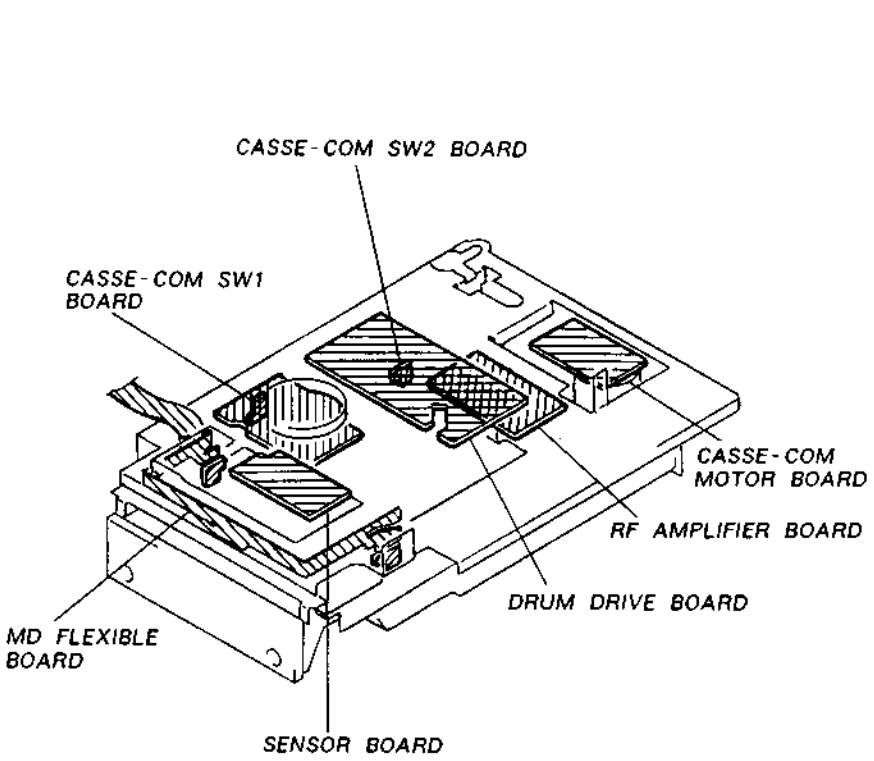


Note:

- All capacitors are in μF unless otherwise noted. pF: μμF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- : fusible resistor.
- : B+ Line
- : B− Line
- : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : PLAY
  ( ) : REC
- Voltages are taken with a VOM (Input impedance 10M Ω)
  Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms. (See page 43)
- Signal path.
  : PB
  : REC

• CIRCUIT BOARDS LOCATION





4-6. PRINTED WIRING BOARDS — AUDIO SECTION —

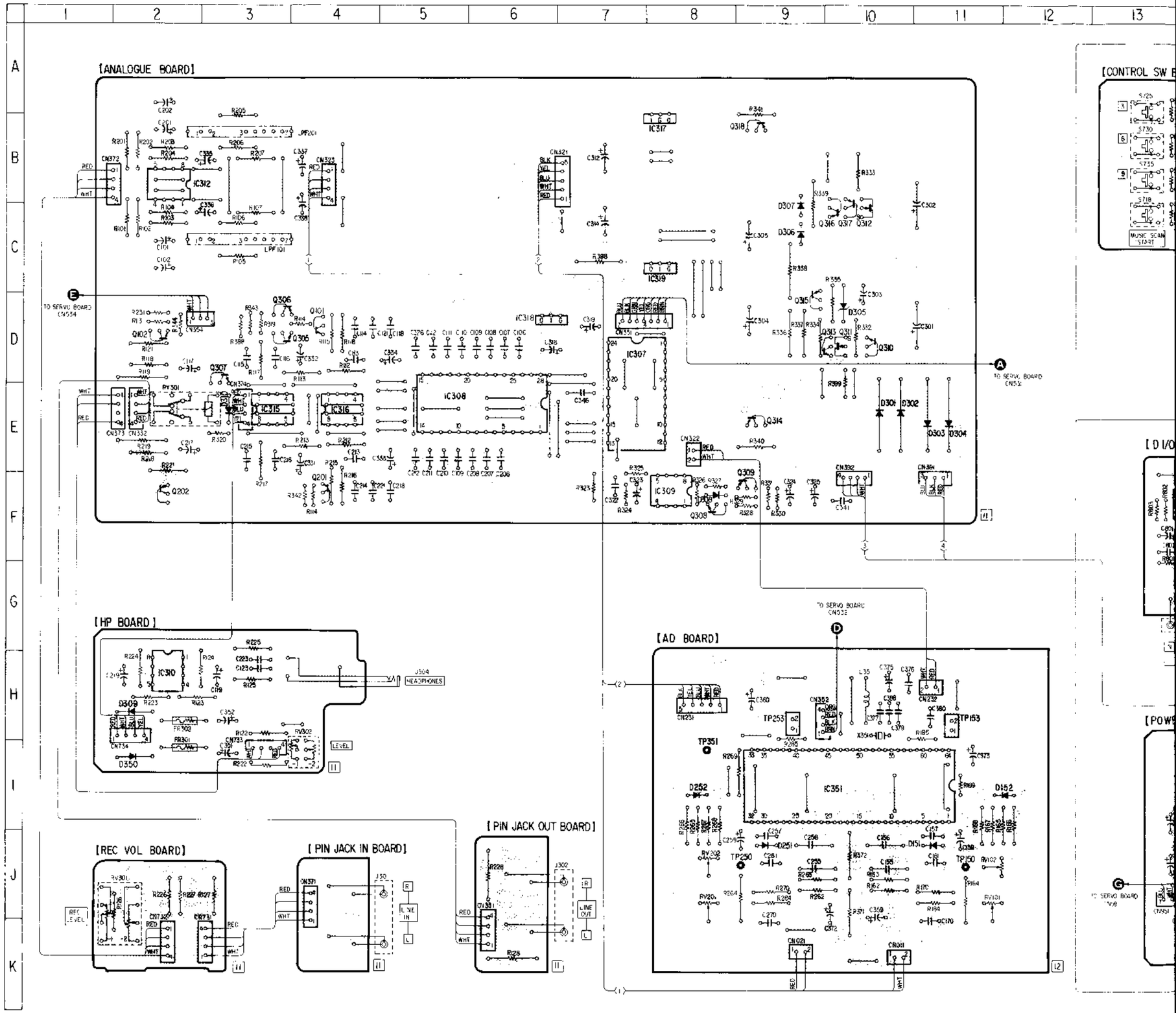
• See page 24 for Semiconductor Lead Layouts.

• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D151	J-11	IC701	B-20
D152	I-12	IC702	B-18
D251	J-9	IC703	C-23
D252	I-8	IC801	G-15
D301	E-10	IC802	F-17
D302	E-10	IC803	F-14
D303	E-11	IC804	F-15
D304	E-11	IC901	J-16
D305	D-10	IC902	J-14
D306	C-9		
D307	C-9	Q101	D-4
D308	F-8	Q102	D-2
D309	H-2	Q201	F-4
D310	E-3	Q202	F-2
D350	H-2	Q305	D-3
D901	I-17	Q306	D-3
D902	I-18	Q307	D-3
D903	J-17	Q308	F-8
D904	J-19	Q309	F-9
D905	J-19	Q310	D-10
D907	I-19	Q311	D-10
D908	I-19	Q312	C-10
D909	J-17	Q313	D-10
D910	J-19	Q314	E-9
D911	J-19	Q315	D-9
D912	J-18	Q316	C-10
D913	J-18	Q317	C-10
D914	J-17	Q318	B-9
D915	J-15	Q702	D-22
D916	I-17	Q703	D-22
D917	J-15	Q704	D-22
		Q705	D-22
IC307	D-7	Q706	D-22
IC308	E-5	Q901	I-15
IC309	F-8	Q902	I-14
IC310	H-2	Q903	K-17
IC312	B-2	Q904	F-20
IC315	E-3	Q905	J-15
IC316	E-4	Q906	J-15
IC317	B-8	Q907	J-17
IC318	D-6	Q908	J-18
IC319	C-8		
IC351	I-10		

Note:

- ○—— : parts extracted from the component side.
- ● : Through hole.
- ▨ : Pattern on the side which is seen.



【CONTROL SW BOARD】

【POWER SW BOARD】

【D I/O BOARD】

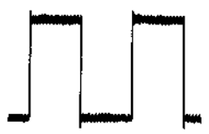
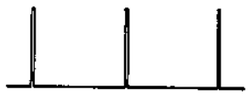
【TRANSISTOR BOARD】

FL701 FLUORESCENT INDICATOR TUBE

【POWER BOARD】

【LPF BOARD】

• Waveform List

① IC516 ⑦, ⑨ (CFG 1, CFG 0)  PLAY/REC mode 5Vp-p T = 1.5mS	⑥ IC514 ㊼ (4.19MHz)  3.6Vp-p T = 0.24µS	⑪ IC523 ⑫ (ATS 1)  PLAY mode 4.8Vp-p T = 15mS	⑯ IC351 ⑬, ㉑  0.32Vp-p T = 52µS
② IC516 ⑪ (DFG)  PLAY/REC mode 5Vp-p T = 1.2mS	⑦ Q550 Ⓒ (RF)  PLAY mode 0.9Vp-p T = 22mS	⑫ IC351 ㊹  5.6Vp-p T = 5µS	⑰ IC951 ⑫  PLAY mode 0.36Vp-p T = 29mS
③ IC351 ㊼ (BCK)  5.8Vp-p T = 0.325µS	⑧ IC523 ㉘ (RFDT)  PLAY mode 4.8Vp-p T = 9.5mS	⑬ IC351 ㊽  6Vp-p T = 10.1µS	⑱ IC951 ㊶  REC mode 4.4Vp-p T = 15mS
④ IC516 ㊺ IC951 ㊷ (SWP)  PLAY/REC mode 5Vp-p T = 29mS	⑨ IC505 ①  PLAY mode 1.3Vp-p T = 15mS	⑭ IC951 ①  PLAY mode 1.8Vp-p T = 15mS	⑲ IC951 ㉕  REC mode 5.7Vp-p T = 30mS
⑤ IC515 ⑳ IC516 ㊹ (DPG)  PLAY/REC mode 5Vp-p T = 30mS	⑩ IC503 ㊿  2Vp-p T = 0.053µS	⑮ IC351 ⑪, ㉓  3.9Vp-p T = 52µS	⑳ IC951 ㊱  REC mode 3.9Vp-p T = 30mS

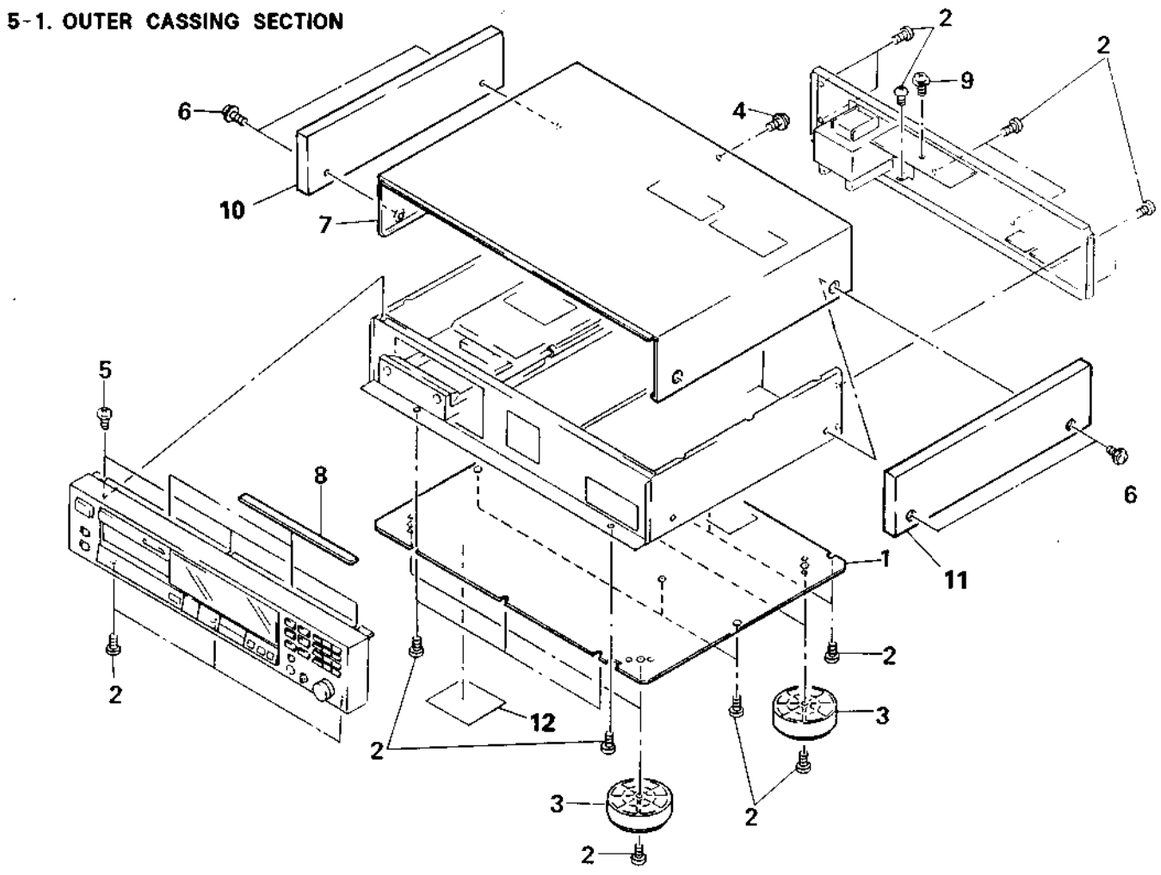
SECTION 5
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts Example:
  (RED) . . . KNOB, BALANCE (WHITE)
  ↑ Cabinet's Color; ↑ Parts Color

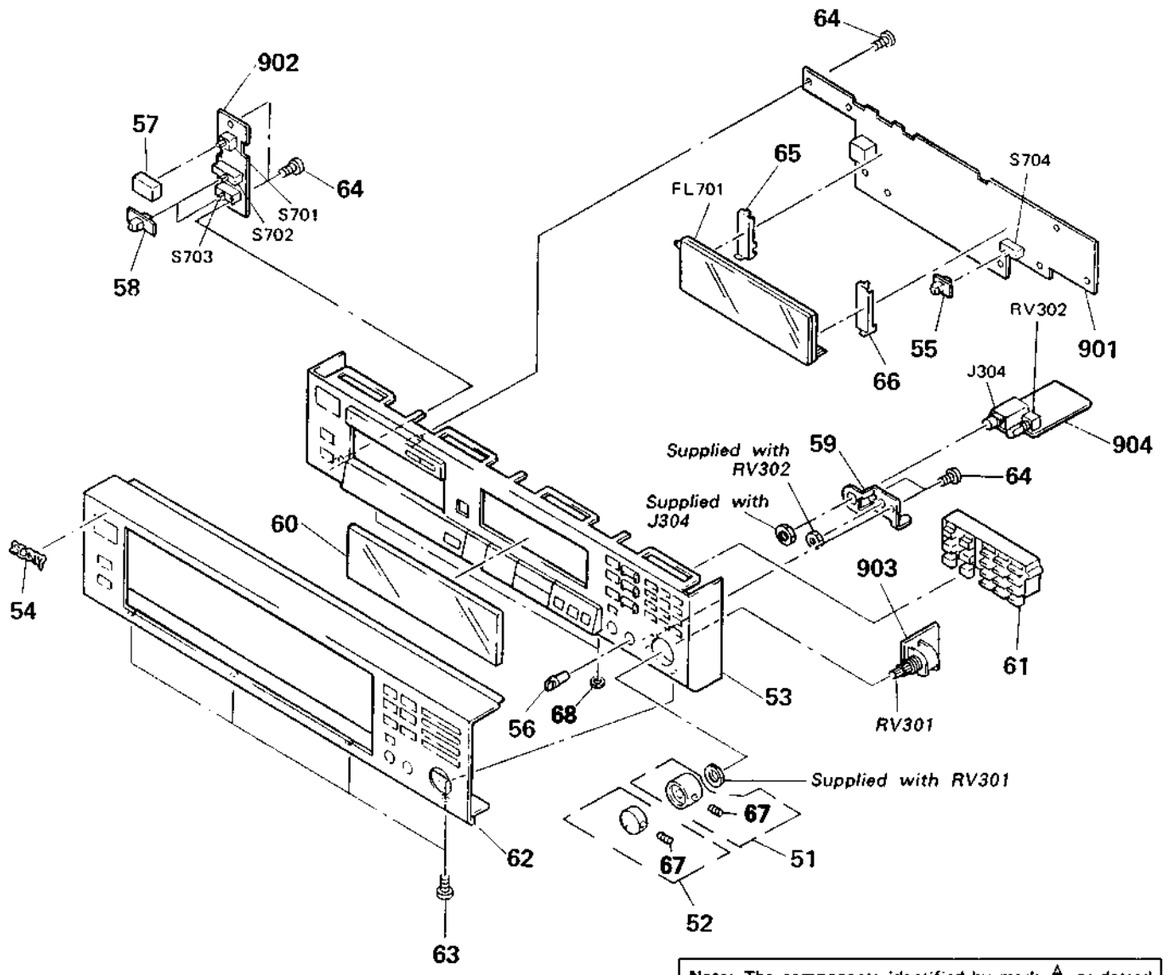
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

5-1. OUTER CASSING SECTION



No.	Part No.	Description	Remarks
1	*4-931-433-11	PLATE, BOTTOM	
2	7-685-872-09	SCREW +BVTT 3X8 (S)	
3	X-3304-938-2	FOOT ASSY	
4	3-704-366-01	SCREW (CASE) (M3X8)	
5	7-682-547-09	SCREW +B 3X6	
6	4-919-060-01	SCREW (M4X20), RING (+)	
7	4-925-721-21	CASE	
8	*4-925-690-01	CUSHION (F)	
9	4-886-821-11	SCREW, S TIGHT, +PTTWH 3X6	
10	X-4919-018-1	BOARD (LEFT) ASSY, SIDE	
11	X-4919-017-1	BOARD (RIGHT) ASSY, SIDE	
12	*4-931-441-01	SHEET, VIBRATION PROOF	

5-2. FRONT PANEL SECTION

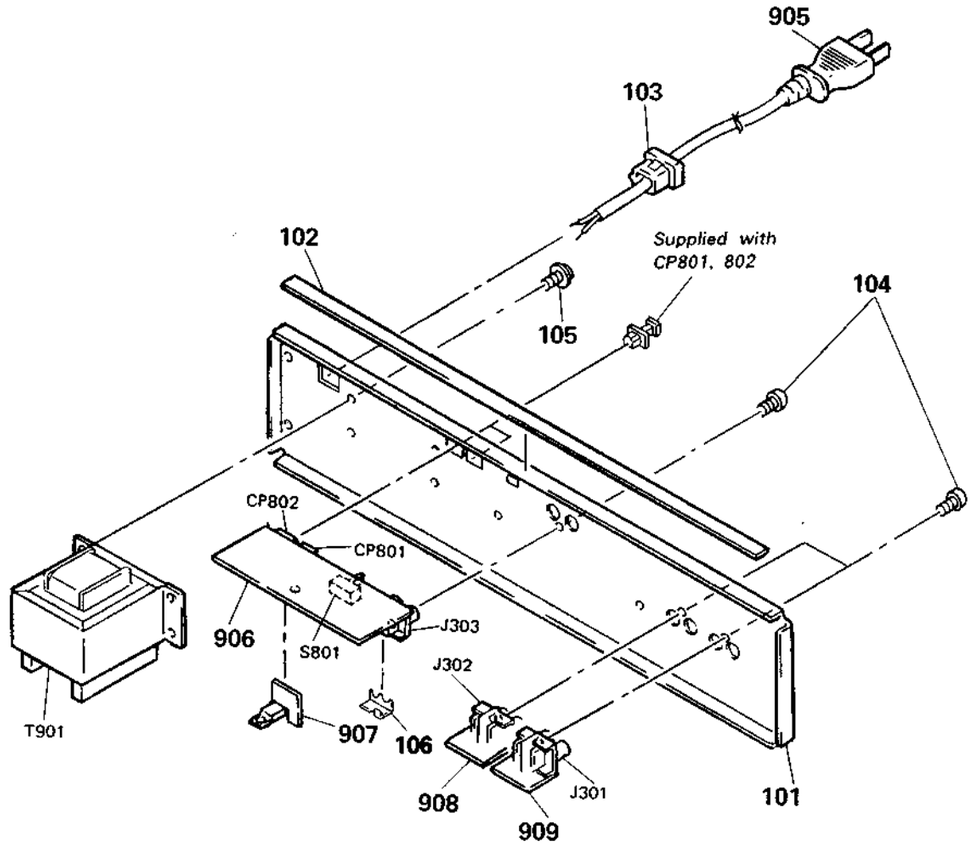


Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remarks
51	X-4919-006-1	KNOB (REC-LEFT) ASSY	
52	X-4919-007-1	KNOB (REC-RIGHT) ASSY	
53	X-4919-013-1	ESCUTCHEON ASSY	
54	4-908-848-01	EMBLEM, SONY	
55	4-918-972-01	KNOB, SLIDE SW	
56	4-922-531-01	KNOB (A TYPE), LOV	
57	4-922-921-01	BUTTON (POWER)	
58	4-931-421-01	KNOB (T & S)	
59	*4-931-422-01	BRACKET (P & V)	
60	4-931-423-01	WINDOW (FL TUBE)	
61	4-931-437-01	BUTTON (10 KEY)	
62	4-931-438-11	PANEL, FRONT	
63	7-685-133-19	SCREW +BTP 2.6X6 TYPE2 N-S	
64	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	
65	*4-922-524-01	HOLDER (LEFT)	
66	*4-922-523-01	HOLDER (RIGHT)	

No.	Part No.	Description	Remarks
67	3-701-506-01	SET SCREW, DOUBLE POINT 3X4	
68	3-344-781-01	WASHER, POLYETHYLENE	
901	*A-2006-080-A	MOUNTED PCB, CONTROL SW	
902	*1-630-193-11	PC BOARD, POWER SW	
903	*1-630-192-11	PC BOARD, REC VOL	
904	*1-630-191-11	PC BOARD, HP	
FL701	1-519-472-11	INDICATOR TUBE, FLUORESCENT	
J304	1-565-327-11	JACK, LARGE TYPE 1P (HEADPHONES)	
RV301	1-238-520-11	RES, VAR, CARBON 20K/20K (REC LEVEL)	
RV302	1-238-359-11	RES, VAR, CARBON 20K/20K (HEADPHONES LEVEL)	
S701	⚠1-571-305-11	SWITCH, PUSH (1 KEY)(POWER)	
S702	1-571-520-11	SWITCH, SLIDE (TIMER)	
S703	1-570-974-11	SWITCH, SLIDE (INPUT)	
S704	1-570-974-11	SWITCH, SLIDE (SKIP)	

5-3. REAR PANEL SECTION

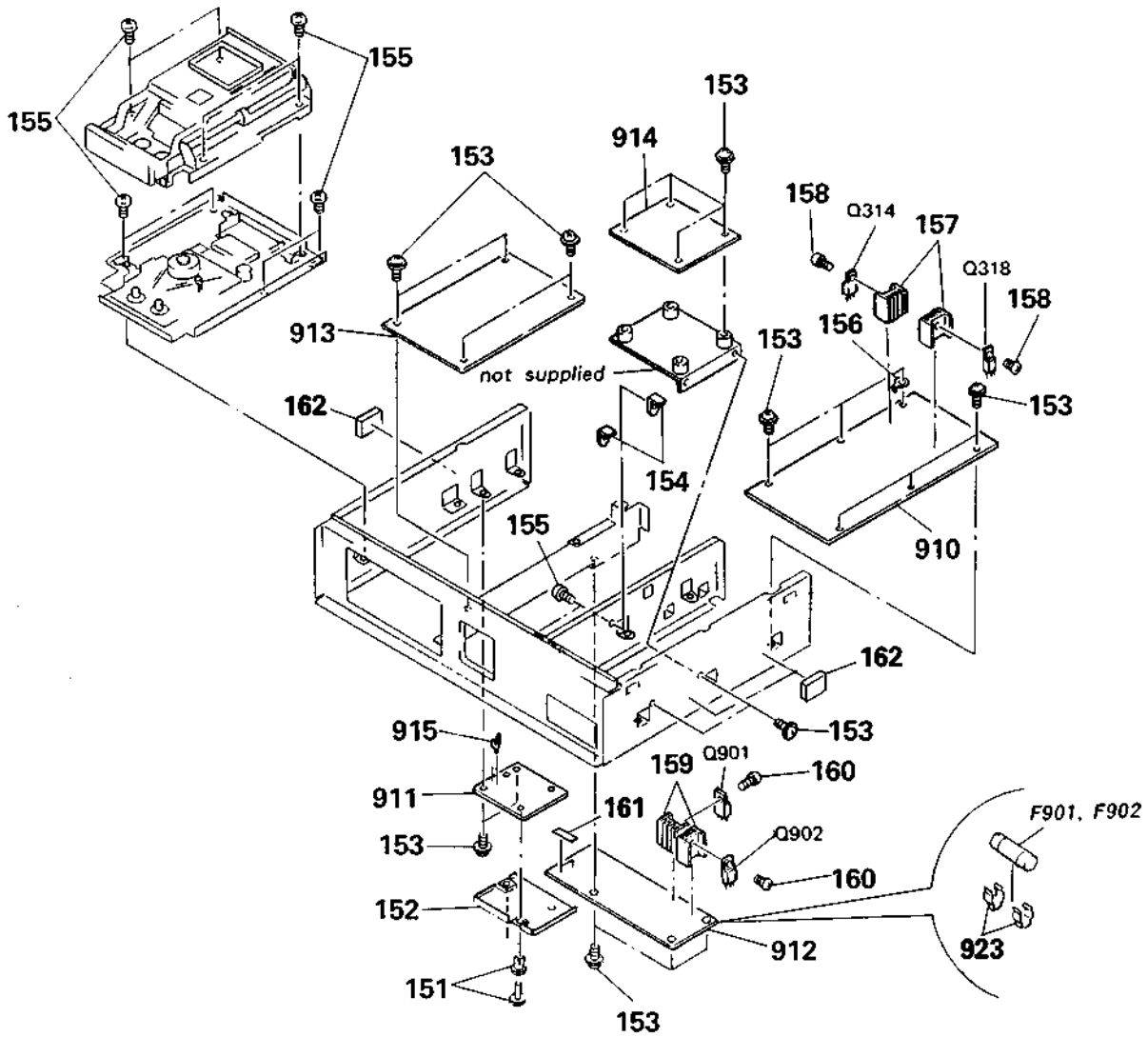


Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remarks
101	*4-925-785-21	PANEL, BACK	
102	*4-925-691-01	CUSHION (B)	
103	*3-703-244-00	BUSHING (2104), CORD	
104	7-621-849-00	SCREW, TAPPING	
105	3-704-366-01	SCREW (CASE) (M3X8)	
106	*4-928-177-01	PLATE, GROUND	
905	⚠1-555-795-00	CORD, POWER	
906	*1-630-188-11	PC BOARD, D I/O	
907	*1-630-568-11	PC BORAD, TRANSISTOR	

No.	Part No.	Description	Remarks
908	*1-630-567-11	PC BORAD, PIN JACK OUT	
909	*1-630-566-11	PC BORAD, PIN JACK IN	
CP801	1-464-931-11	RECEIVE UNIT, RAY	
CP802	1-464-878-11	TRANSMITTER UNIT, RAY	
J301	1-565-319-71	JACK, PIN 2P (LINE IN)	
J302	1-565-319-71	JACK, PIN 2P (LINE OUT)	
J801	1-565-319-61	JACK, PIN 2P (OAX TAL)	
T901	⚠1-449-779-11	TRANSFORMER, POWER	

5-4. MAIN BOARD SECTION

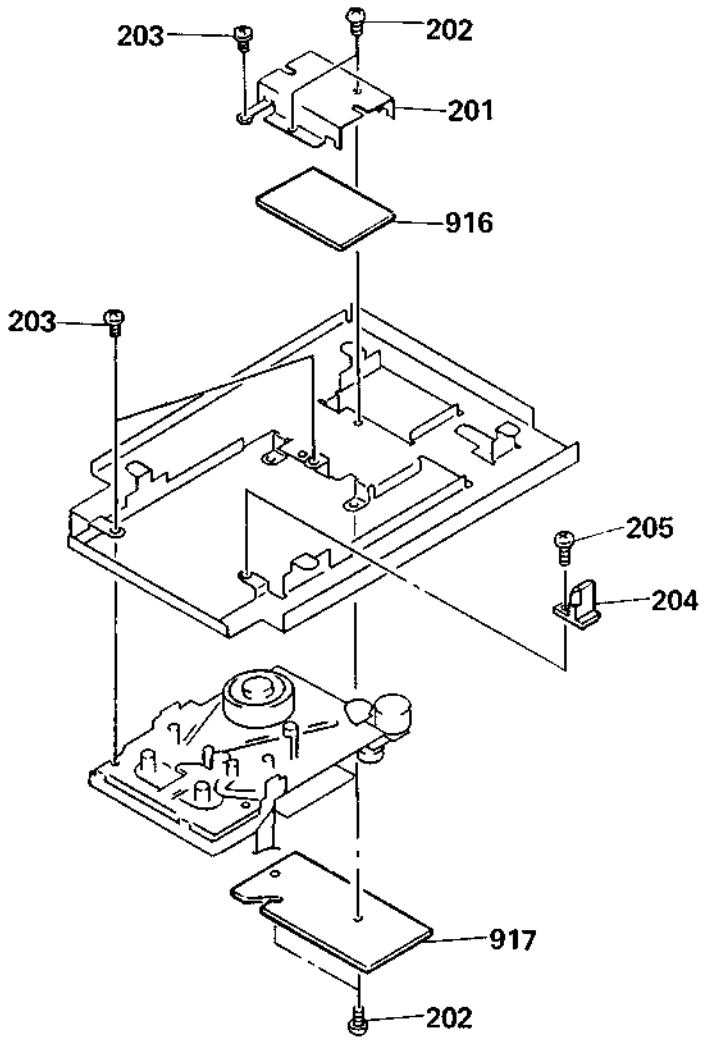


Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remarks
151	3-531-576-01	RIVET, NYLON	
152	*4-925-790-01	COVER (POWER)	
153	3-531-576-01	RIVET	
153	4-886-821-11	SCREW, S TIGHT, +PTTWH 3X6	
154	*4-923-506-11	BRACKET (PC BOARD)	
155	7-682-547-09	SCREW +BVTT 3X6 (S)	
156	4-870-539-00	PLATE, GROUND	
157	*4-363-146-71	HEAT SINK, V.OUT	
158	7-682-147-15	SCREW, TR	
159	*4-931-401-01	HEAT SINK, V.OUT	
160	7-682-547-09	SCREW +BVTT 3X6 (S)	
161	3-701-947-15	LABEL (T2.5A), FUSE	
162	9-911-840-XX	CUSHION	

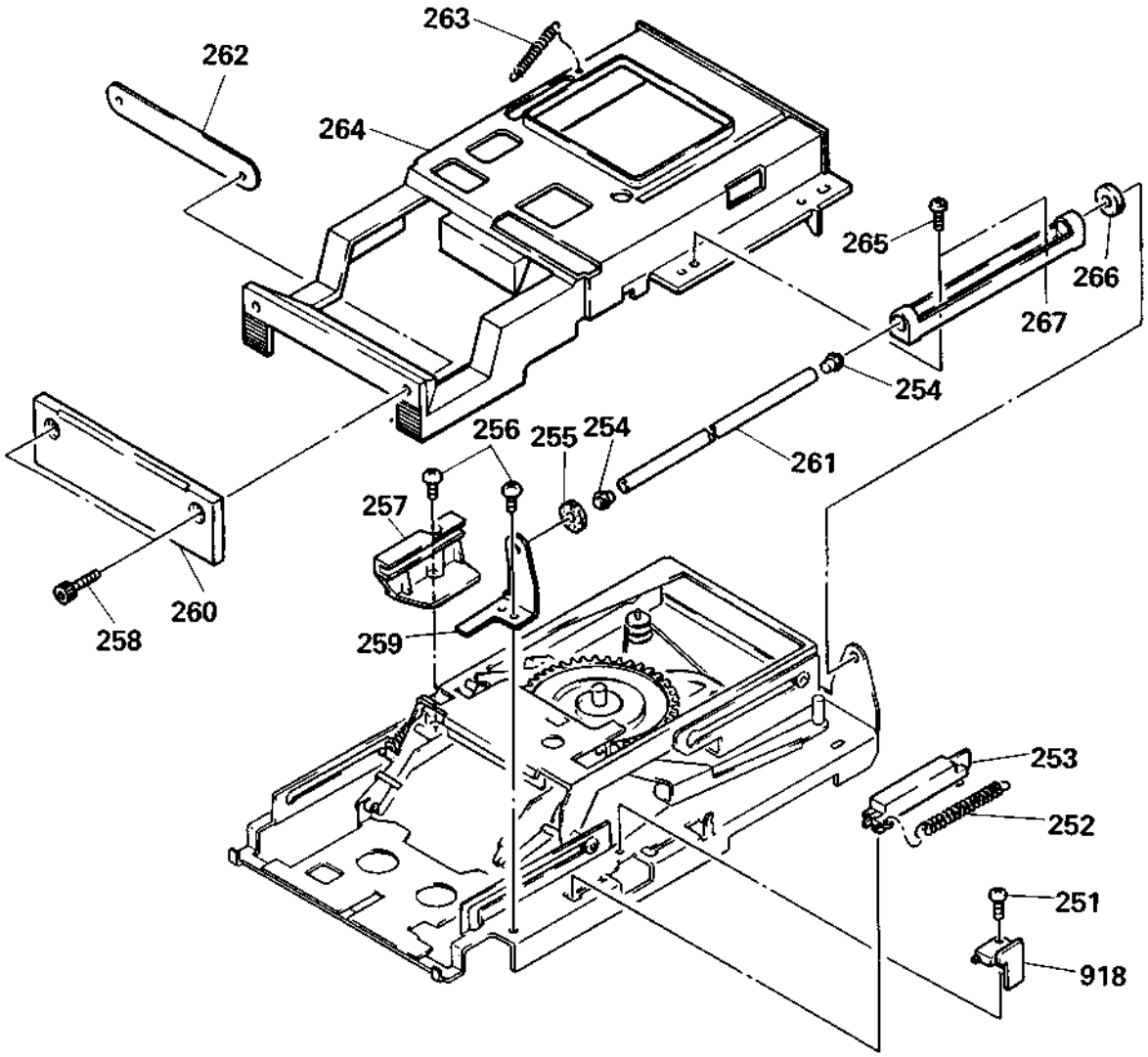
No.	Part No.	Description	Remarks
910	*A-2006-180-A	MOUNTED PCB, ANALOGUE	
911	*1-630-190-11	PC BOARD, LPF	
912	*A-2006-078-A	MOUNTED PCB, POWER	
913	*A-2006-079-A	MOUNTED PCB, SERVO	
914	*A-2006-183-A	MOUNTED PCB, AD	
915	*1-535-771-11	TERMINAL	
923	1-533-162-00	HOLDER, FUSE	
F901	⚠1-532-286-00	FUSE, TIME-LAG (2.5A)	
F902	⚠1-532-286-00	FUSE, TIME-LAG (2.5A)	

5-5. MECHANISM ASSEMBLY



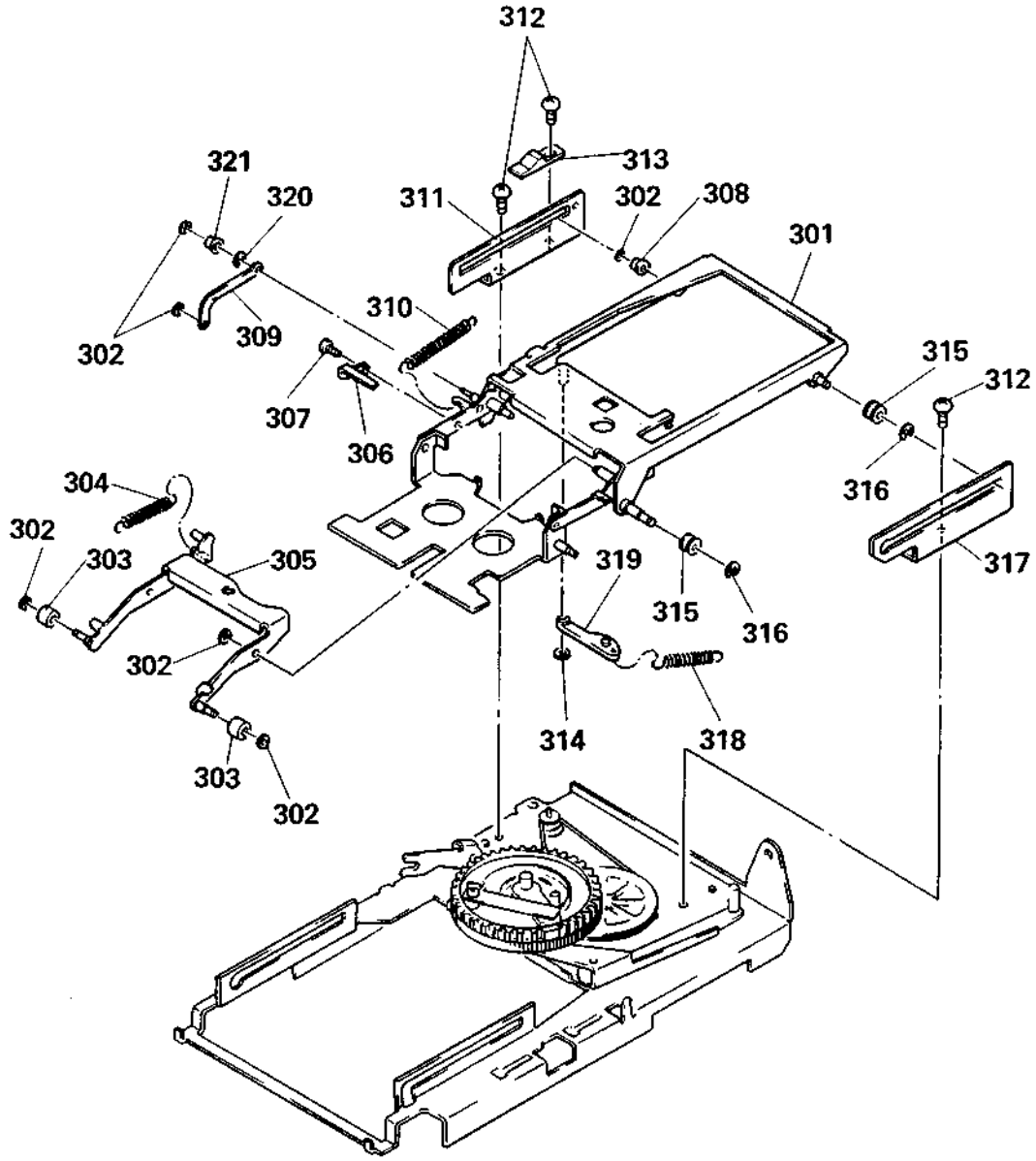
No.	Part No.	Description	Remarks
201	*3-345-196-01	CASE, SHIELD	
202	7-621-770-87	SCREW +B 2.6X5	
203	7-621-772-18	SCREW +B 2X4	
204	*4-923-751-01	HOLDER (A)	
205	7-621-772-38	SCREW +B 2X6	
916	*A-2006-059-A	MOUNTED PCB, RF AMPLIFIER	
917	*1-630-186-11	PC BOARD, DRUM DRIVE	

5-6. DATM BLOCK ASSEMBLY-1



No.	Part No.	Description	Remarks
251	7-621-255-40	SCREW +P 2X6	
252	4-925-725-01	SPRING, TENSION	
253	*4-923-773-01	SLIDER (OP)	
254	4-931-418-01	SHAFT (JOINT)	
255	*4-912-587-11	CUSHION	
256	7-682-647-04	SCREW +BVTT 3X6 (S)	
257	*4-923-772-01	SLIDER (T)	
258	7-683-413-05	BOLT, HEXAGON SOCKET 2.6X8	
259	*4-923-739-01	BRACKET (SS)	
260	4-931-424-01	PANEL (CASSETTE COMPARTMENT)	
261	4-931-405-01	SHAFT (PP)	
262	*4-923-737-01	BRACKET (LP)	
263	4-925-735-01	SPRING, TENSION	
264	*4-923-789-01	HOLDER (TRAY), CASSETTE	
265	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	
266	*4-912-587-01	CUSHION	
267	*4-923-771-01	BEARING	
918	*1-630-195-11	PC BOARD, CASSE-COM SW1	

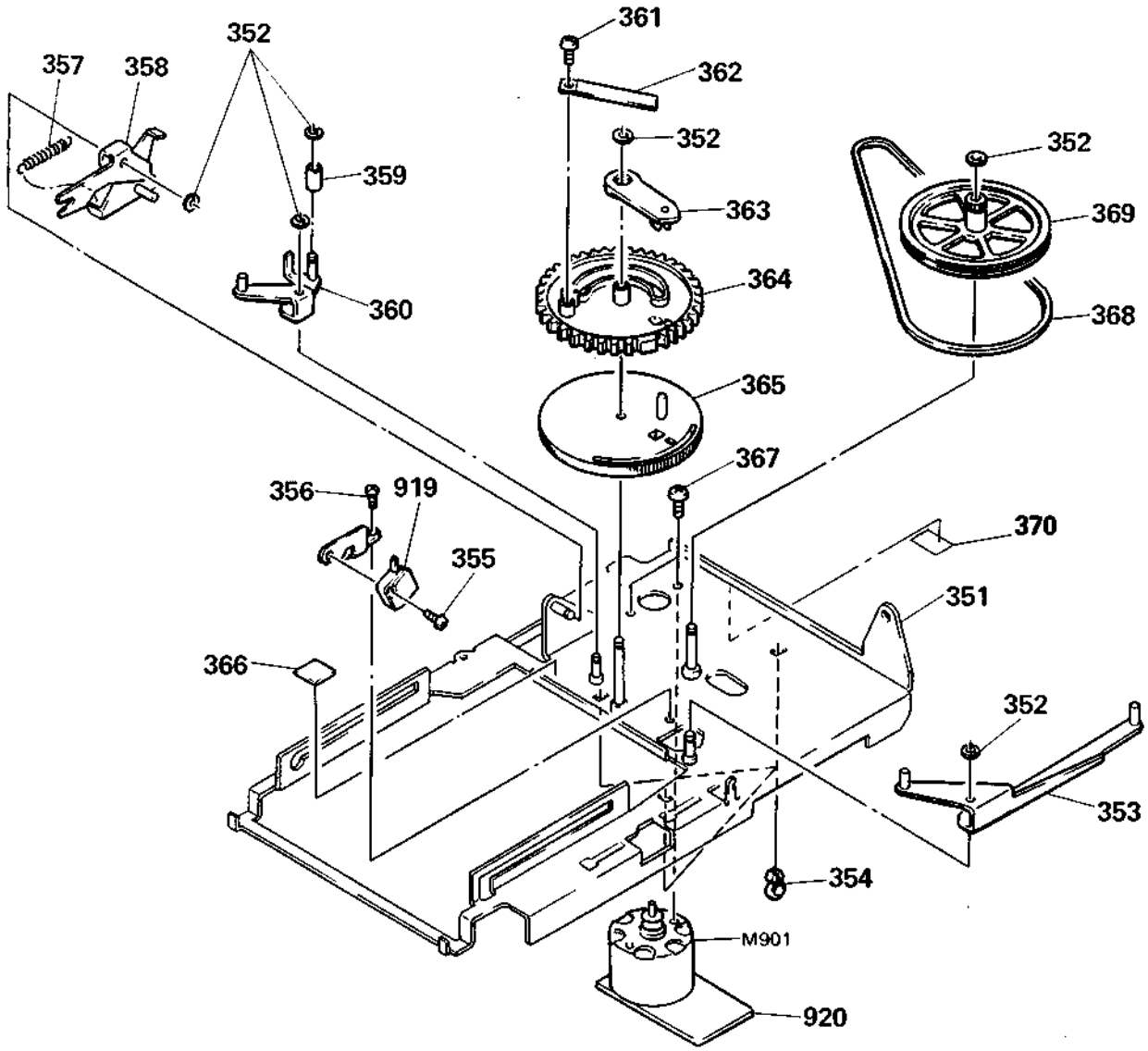
5-7. DATM BLOCK ASSEMBLY-2



No.	Part No.	Description	Remarks
301	X-4919-012-1	SLIDER ASSY	
302	3-321-813-01	WASHER, COTTER POLYETHYLENE	
303	4-918-946-01	ROLLER, PRESS	
304	3-549-810-00	SPRING, TENSION	
305	X-4919-009-1	LEVER (DW) ASSY	
306	*4-923-740-01	BRACKET (UP)	
307	7-627-553-37	SCREW, PRECISION +P 2X3	
308	4-923-753-01	ROLLER (S)	
309	*4-923-746-01	LEVER (LL)	
310	4-925-765-01	SPRING, TENSION	

No.	Part No.	Description	Remarks
311	*4-923-755-01	SLIDER (S)	
312	7-682-547-04	SCREW +BVTT 3X6 (S)	
313	*4-923-752-11	HOLDER (B)	
314	3-325-290-21	WASHER, STOPPER	
315	4-923-754-01	ROLLER (M)	
316	7-624-102-04	STOP RING 1.5, TYPE -E	
317	*4-923-756-01	SLIDER (M)	
318	3-465-159-XX	SPRING, TENSION	
319	*4-923-743-01	LEVER (KC)	
320	7-624-104-04	STOP RING 2.0, TYPE -E	
321	4-931-442-01	ROLLER (S2)	

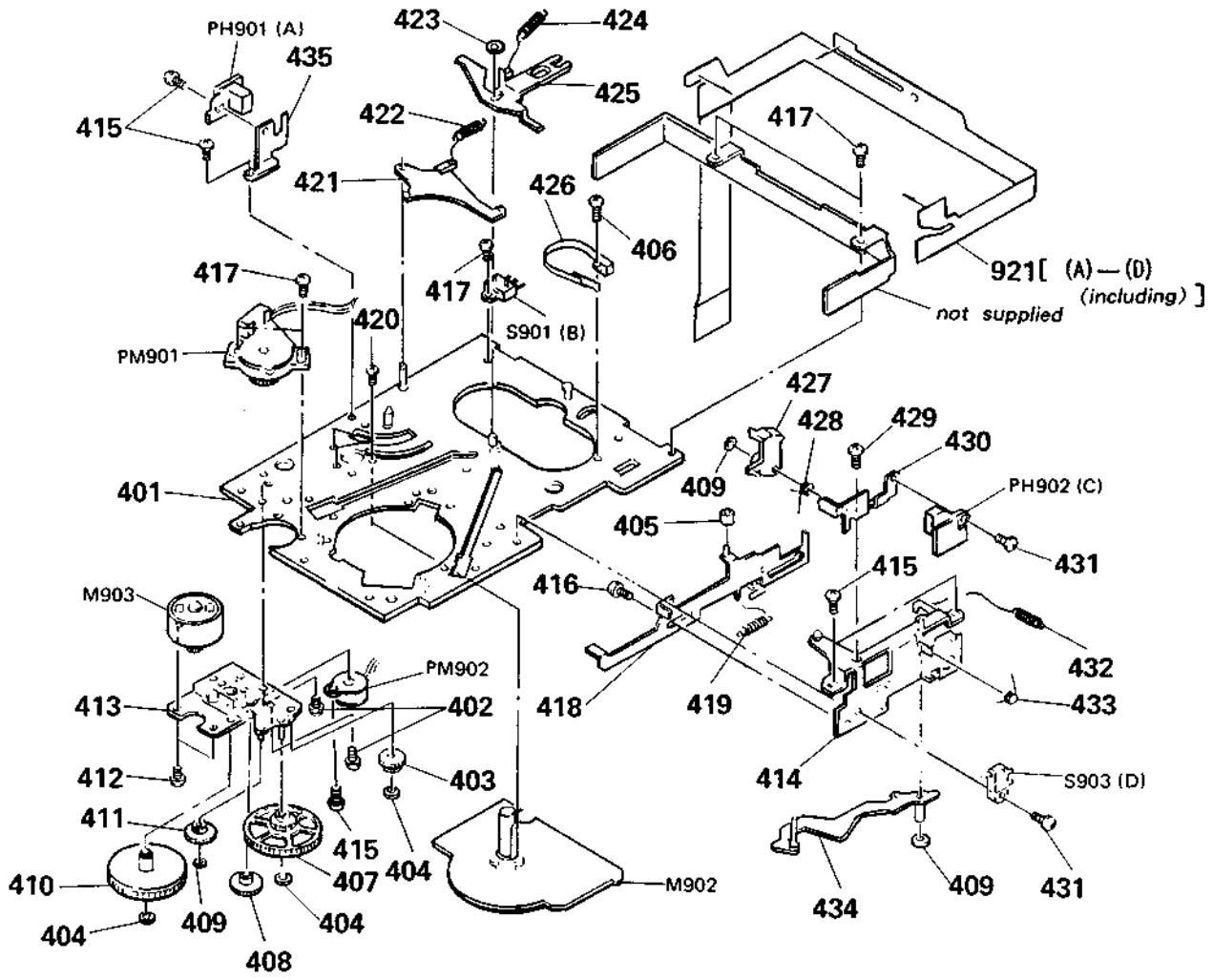
5-8. DATM BLOCK ASSEMBLY-3



No.	Part No.	Description	Remarks
351	*X-4919-011-1	CHASSIS ASSY	
352	3-325-290-21	WASHER, STOPPER	
353	X-4919-010-1	LEVER (LC) ASSY	
354	3-660-815-00	CLIP, CABLE	
355	7-621-255-40	SCREW +P 2X6	
356	7-621-772-00	SCREW +B 2X3	
357	4-925-723-01	SPRING, TENSION	
358	X-4919-005-1	LEVER (LV) ASSY	
359	*4-923-758-01	COLLAR (LD)	
360	X-4919-004-1	LEVER (LD) ASSY	
361	7-685-531-14	SCREW +BTP 2.6X4 TYPE2 N-S	
362	4-923-759-01	SPRING (G)	

No.	Part No.	Description	Remarks
363	4-923-769-01	LEVER (G)	
364	4-923-767-02	GEAR (U)	
365	4-923-783-01	GEAR (L)	
366	3-713-907-01	SPACER, CAM	
367	7-621-775-00	SCREW +B 2.6X3	
368	4-925-724-01	BELT	
369	4-923-768-01	GEAR (P)	
370	3-831-441-XX	CUSHION (B), CABINET	
919	*1-630-196-11	PC BOARD, CASSE-COM SW2	
920	*1-630-194-11	PC BOARD, CASSE-COM MOTOR	
M901	A-2003-377-A	MOTOR (L) ASSY (LOADING)	

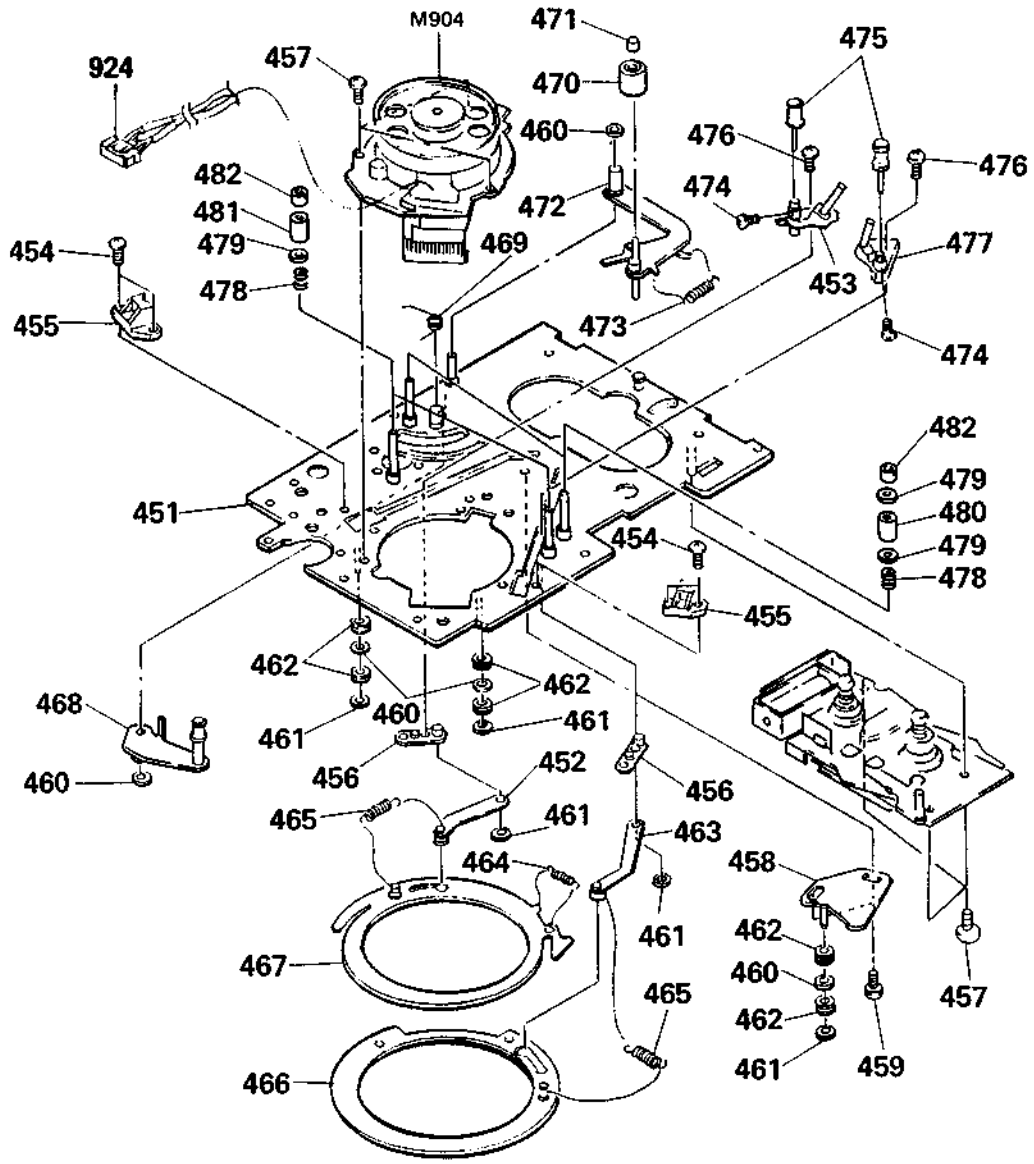
5-9. MECANISM SECTTION-1 (DATM-12)



No.	Part No.	Description	Remarks
401	*X-3337-653-1	CHASSIS (MECHANICAL) ASSY	
402	7-628-253-00	SCREW +PS 2X4	
403	3-345-182-01	GEAR (LOADING B)	
404	3-701-436-11	WASHER, 1.6 POLYETHYLENE	
405	3-337-664-01	ROLLER	
406	7-627-852-27	+P 1.7X3	
407	3-345-181-01	GEAR (LOADING A)	
408	3-345-129-01	GEAR (A)	
409	3-559-408-11	WASHER, POLYETHYLENE, DIA.1.2	
410	X-3337-630-3	GEAR (B) ASSY	
411	3-337-669-01	GEAR, MIDWAY	
412	7-627-553-17	SCREW, PRECISION +P 2X2	
413	*X-3337-639-3	CHASSIS (CONTROL MOTOR) ASSY	
414	*X-3337-619-1	CHASSIS ASSY, TENSION REGULATOR	
415	7-621-772-08	SCREW +B 2X3	
416	3-703-502-11	SCREW	
417	7-621-772-18	SCREW +B 2X4	
418	X-3337-618-1	SLIDER ASSY, MODE	
419	3-570-892-00	SPRING, TENSION	
420	7-627-552-47	SCREW, PRECISION +P 1.7X4	
421	3-345-145-01	LEVER (T LOCK)	

No.	Part No.	Description	Remarks
422	3-547-661-00	SPRING, TENSION	
423	3-321-813-01	WASHER, COTTER POLYETHYLENE	
424	3-570-898-00	SPRING, TENSION	
425	X-3337-638-1	LEVER (SLIDER) ASSY	
426	X-3337-632-1	BAND (TENSION REGULATOR) ASSY	
427	3-337-608-01	OPENER, LID	
428	3-337-607-01	SPRING	
429	7-627-552-18	SCREW, PRECISION +P 1.7X1.6	
430	*X-3337-631-1	HOLDER (E SENSOR L) ASSY	
431	7-621-772-20	SCREW +B 2X5	
432	3-345-183-01	SPRING, TENSION	
433	3-337-673-01	SPRING	
434	*X-3337-629-1	LEVER (TENSION LEGULATOR) ASSY	
435	*3-345-119-03	HOLDER (E SENSOR RIGHT)	
921	*1-630-197-11	PC BOARD, MD FLEXIBLE	
M902	8-835-306-01	MOTOR, DC U-17A	
PH901	1-807-698-11	PHOTO SENSOR	
PH902	1-807-698-11	PHOTO SENSOR	
PM901	1-464-724-21	ENCODER, ROTARY	
PM902	1-454-462-11	SOLENOID, PLUNGER	
S901	1-571-878-11	SWITCH, PUSH (2 KEY)	
S903	1-570-771-11	SWITCH (LIMIT)	

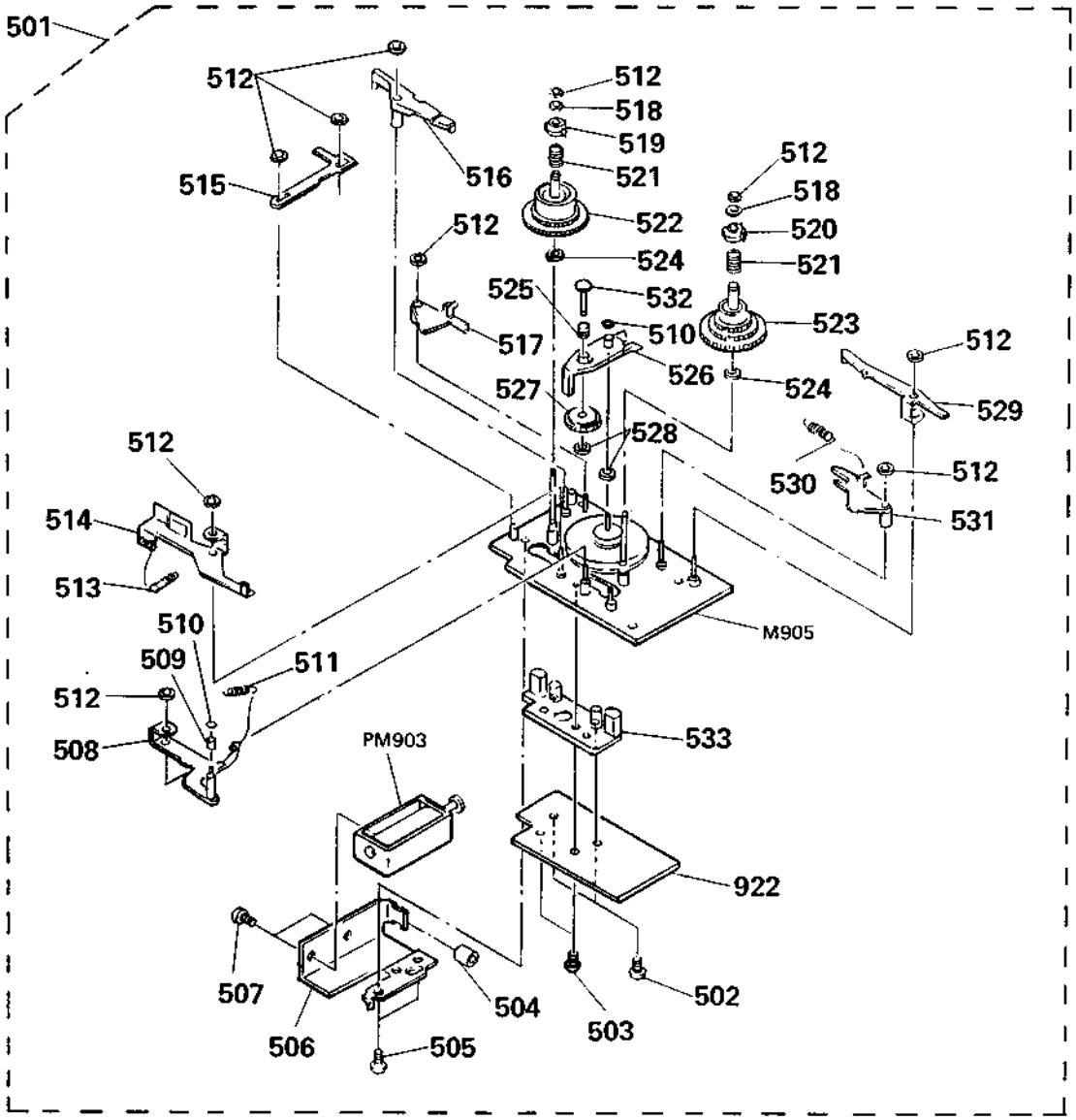
5-10. MECANISM SECTTION-2 (DATM-12)



No.	Part No.	Description	Remarks
451	*X-3337-653-1	CHASSIS (MECHANICAL) ASSY	
452	*X-3337-603-1	ARM (RIGHT) ASSY, LOADING	
453	X-3337-652-1	SLANT BLOCK (RIGHT) ASSY	
454	7-627-852-17	+P 1.7X4	
455	*3-345-195-01	CATCHER	
456	X-3337-604-1	PLATE ASSY, LOADING	
457	7-621-772-18	SCREW +B 2X4	
458	*X-3337-605-1	ARM ASSY, RING ROLLER	
459	7-621-772-08	SCREW +B 2X3	
460	3-701-436-11	WASHER, 1.6 POLYETHYLENE	
461	3-559-408-11	WASHER, POLYETHYLENE, DIA.1.2	
462	3-337-622-01	ROLLER, RING	
463	*X-3337-607-1	ARM (LEFT) ASSY, LOADING	
464	3-352-503-01	SPRING, TENSION	
465	3-337-653-01	SPRING, TENSION	
466	X-3337-602-1	RING (LEFT) ASSY, LOADING	
467	X-3337-601-1	RING (RIGHT) ASSY, LOADING	

No.	Part No.	Description	Remarks
468	A-2003-408-A	LEVER (F ARM) ASSY	
469	3-337-654-01	SPRING	
470	X-3337-610-1	PINCH ROLLER ASSY	
471	3-337-626-01	CAP, PINCH ROLLER	
472	X-3337-608-1	ARM ASSY, PINCH ROLLER	
473	3-547-659-00	SPRING, TENSION	
474	7-627-551-17	SCREW, PRECISION +P 1.4X2	
475	X-3337-622-1	GUIDE (POM) ASSY, ROLLER	
476	3-703-502-81	SCREW	
477	X-3337-651-1	SLANT BLOCK (LEFT) ASSY	
478	3-573-470-00	SPRING, COMPRESSION	
479	3-337-677-01	FLANGE	
480	3-337-676-01	GUIDE, FIXED	
481	3-337-676-11	GUIDE, FIXED	
482	3-337-605-01	NUT, ADJUSTMENT	
924	9-831-257-50	WIRE KIT	
M904	8-848-513-11	DRUM ASSY DOU-020	

5-11. MECANISM SECTTION-3 (DATM-12)



No.	Part No.	Description	Remarks
501	A-2001-355-A	CHASSIS COMPLETE ASSY, DRIVING	
502	7-685-102-19	SCREW +P 2X4 TYPE2 SLIT	
503	7-621-772-18	SCREW +B 2X4	
504	*3-576-990-01	CUSHION	
505	7-621-772-08	SCREW +B 2X3	
506	*3-345-118-01	BRACKET (SOLENOID)	
507	7-621-775-00	SCREW +B 2.6X3	
508	*X-3337-628-1	LEVER ASSY	
509	3-345-104-01	COLLAR	
510	3-315-384-11	WASHER, STOPPER	
511	3-345-169-01	SPRING, TORSION	
512	3-559-408-11	WASHER, POLYETHYLENE, DIA.1.2	
513	3-345-168-01	SPRING, TENSION	
514	*X-3337-640-1	LEVER (REVERSE SB) ASSY	
515	*3-345-166-01	LEVER (SOLENOID)	
516	3-345-110-01	LEVER (BRAKE ARM)	
517	*X-3337-635-1	LEVER (BRAKE T) ASSY	
518	3-345-112-01	RING, RETAINING	
519	*2-623-736-01	CLAW (C) (LEFT), REEL	

No.	Part No.	Description	Remarks
520	*2-623-752-01	CLAW (C) (RIGHT), REEL	
521	2-623-754-01	SPRING, COMPRESSION	
522	X-3337-634-1	TABLE (S) ASSY, REEL	
523	X-3337-642-1	TABLE (T) ASSY, REEL	
524	3-701-438-11	WASHER, 2.5	
525	3-345-115-01	SPRING, COMPRESSION	
526	*3-345-113-01	LEVER (FR)	
527	X-3337-633-1	GEAR (MIDWAY) ASSY	
528	3-701-436-11	WASHER, 1.6 POLYETHYLENE	
529	*X-3337-637-1	LEVER (BRAKE RELEASE) ASSY	
530	3-527-190-00	SPRING, TENSION	
531	*X-3337-636-1	LEVER (BRAKE S) ASSY	
532	*3-345-114-01	SHAFT (MIDWAY GEAR)	
533	*3-345-142-01	HOLDER (FG SENSOR)	
922	*1-630-185-11	PC BOARD, SENSOR	
M905	A-2001-355-A	CHASSIS COMPLETE ASSY, DRIVING	
PM903	1-454-482-11	SOLENOID, PLUNGER	

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description			
901	*A-2006-080-A	MOUNTED PCB, CONTROL SW			
902	*1-630-193-11	PC BOARD, POWER SW			
903	*1-630-192-11	PC BOARD, REC VOL			
904	*1-630-191-11	PC BOARD, HP			
905	⚠1-555-795-00	CORD, POWER			
906	*1-630-188-11	PC BOARD, D I/O			
907	*1-630-568-11	PC BORAD, TRANSISTOR			
908	*1-630-567-11	PC BORAD, PIN JACK OUT			
909	*1-630-566-11	PC BORAD, PIN JACK IN			
910	*A-2006-180-A	MOUNTED PCB, ANALOGUE			
911	*1-630-190-11	PC BOARD, LPF			
912	*A-2006-078-A	MOUNTED PCB, POWER			
913	*A-2006-079-A	MOUNTED PCB, SERVO			
914	*A-2006-183-A	MOUNTED PCB, AD			
915	*1-535-771-11	TERMINAL			
916	*A-2006-059-A	MOUNTED PCB, RF AMPLIFIER			
917	*1-630-186-11	PC BOARD, DRUM DRIVE			
918	*1-630-195-11	PC BOARD, CASSE-COM SW1			
919	*1-630-196-11	PC BOARD, CASSE-COM SW2			
920	*1-630-194-11	PC BOARD, CASSE-COM MOTOR			
921	*1-630-197-11	PC BOARD, MD FLEXIBLE			
922	*1-630-185-11	PC BOARD, SENSOR			
923	1-533-162-00	HOLDER, FUSE			
924	9-831-257-50	WIRE KIT			
C01	1-162-851-11	CERAMIC	0.1MF		16V
C101A	1-124-257-00	ELECT	2.2MF	20%	50V
C101	1-126-101-11	ELECT	100MF	20%	10V
C102A	1-126-157-11	ELECT	10MF	20%	16V
C102	1-126-101-11	ELECT	100MF	20%	10V
C103A	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C104A	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C105A	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C106A	1-124-438-00	ELECT	1MF	20%	50V
C106	1-136-169-00	FILM	0.22MF	5%	50V
C107	1-136-169-00	FILM	0.22MF	5%	50V
C108	1-136-169-00	FILM	0.22MF	5%	50V
C109	1-136-169-00	FILM	0.22MF	5%	50V
C110	1-136-169-00	FILM	0.22MF	5%	50V
C111	1-136-169-00	FILM	0.22MF	5%	50V
C112	1-136-169-00	FILM	0.22MF	5%	50V
C113	1-136-229-11	FILM	0.0016MF	3%	100V
C114	1-130-892-00	FILM	0.015MF	3%	100V
C115	1-136-254-11	FILM	0.002MF	3%	100V

Ref.No.	Part No.	Description			
C116	1-136-250-11	FILM	0.001MF	3%	100V
C117	1-124-918-11	ELECT	47MF	20%	63V
C118	1-130-967-00	FILM	0.0027MF	3%	100V
C119	1-126-059-11	ELECT	10MF	20%	50V
C121	1-136-250-11	FILM	0.001MF	3%	100V
C123	1-162-290-31	CERAMIC	470PF	10%	50V
C155	1-162-284-31	CERAMIC	150PF	10%	50V
C156	1-104-240-00	POLYSTYRENE	0.001MF	5%	125V
C157	1-162-199-31	CERAMIC	10PF	5%	50V
C159	1-123-330-00	ELECT	22MF	20%	25V
C161	1-124-188-00	ELECT	33MF	20%	50V
C170	1-136-153-00	FILM	0.01MF	5%	50V
C201	1-126-101-11	ELECT	100MF	20%	10V
C202	1-126-101-11	ELECT	100MF	20%	10V
C206	1-136-169-00	FILM	0.22MF	5%	50V
C207	1-136-169-00	FILM	0.22MF	5%	50V
C208	1-136-169-00	FILM	0.22MF	5%	50V
C209	1-136-169-00	FILM	0.22MF	5%	50V
C210	1-136-169-00	FILM	0.22MF	5%	50V
C211	1-136-169-00	FILM	0.22MF	5%	50V
C212	1-136-169-00	FILM	0.22MF	5%	50V
C213	1-136-229-11	FILM	0.0016MF	3%	100V
C214	1-130-892-00	FILM	0.015MF	3%	100V
C215	1-136-254-11	FILM	0.002MF	3%	100V
C216	1-136-250-11	FILM	0.001MF	3%	100V
C217	1-124-918-11	ELECT	47MF	20%	63V
C218	1-130-967-00	FILM	0.0027MF	3%	100V
C219	1-126-059-11	ELECT	10MF	20%	50V
C221	1-136-250-11	FILM	0.001MF	3%	100V
C223	1-162-290-31	CERAMIC	470PF	10%	50V
C255	1-162-284-31	CERAMIC	150PF	10%	50V
C256	1-104-240-00	POLYSTYRENE	0.001MF	5%	125V
C257	1-162-199-31	CERAMIC	10PF	5%	50V
C259	1-123-330-00	ELECT	22MF	20%	25V
C261	1-124-188-00	ELECT	33MF	20%	50V
C270	1-136-153-00	FILM	0.01MF	5%	50V
C301	1-126-129-11	ELECT	6800MF	20%	35V
C302	1-126-129-11	ELECT	6800MF	20%	35V
C303	1-123-333-00	ELECT	100MF	20%	25V
C304	1-123-378-00	ELECT	1000MF	20%	63V
C305	1-123-378-00	ELECT	1000MF	20%	63V
C312	1-126-234-11	ELECT	2200MF	20%	16V
C314	1-126-234-11	ELECT	2200MF	20%	16V
C318	1-124-130-00	ELECT	100MF	20%	63V
C319	1-124-130-00	ELECT	100MF	20%	63V

Ref.No.	Part No.	Description			
C322	1-124-273-00	ELECT	3.3MF	20%	50V
C323	1-124-902-00	ELECT	0.47MF	20%	50V
C324	1-123-875-11	ELECT	1MF	20%	50V
C325	1-124-915-11	ELECT	10MF	20%	63V
C326	1-104-150-00	POLYSTYRENE	680PF	5%	125V
C331	1-124-915-11	ELECT	10MF	20%	63V
C332	1-124-915-11	ELECT	10MF	20%	63V
C333	1-124-915-11	ELECT	10MF	20%	63V
C334	1-124-915-11	ELECT	10MF	20%	63V
C335	1-124-915-11	ELECT	10MF	20%	63V
C336	1-124-915-11	ELECT	10MF	20%	63V
C337	1-124-915-11	ELECT	10MF	20%	63V
C338	1-124-915-11	ELECT	10MF	20%	63V
C341	1-162-851-11	CERAMIC	0.1MF		16V
C346	1-164-159-11	CERAMIC	0.1MF		50V
C350	1-162-179-11	CERAMIC	0.1MF		50V
C351	1-124-120-11	ELECT	220MF	20%	25V
C352	1-124-120-11	ELECT	220MF	20%	25V
C359	1-126-103-11	ELECT	470MF	20%	16V
C360	1-126-103-11	ELECT	470MF	20%	16V
C372	1-123-330-00	ELECT	22MF	20%	25V
C373	1-126-103-11	ELECT	470MF	20%	16V
C375	1-123-330-00	ELECT	22MF	20%	25V
C376	1-162-851-11	CERAMIC	0.1MF		16V
C377	1-162-201-31	CERAMIC	12PF	5%	50V
C378	1-162-294-31	CERAMIC	0.001MF	10%	50V
C379	1-161-494-00	CERAMIC	0.022MF		25V
C380	1-162-851-11	CERAMIC	0.1MF		16V
C388	1-162-191-31	CERAMIC	2.2PF	10%	50V
C503	1-124-472-11	ELECT	470MF	20%	6.3V
C504	1-124-472-11	ELECT	470MF	20%	6.3V
C505	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C506	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C507	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C508	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C509	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C510	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C511	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C512	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C513	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C514	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C515	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C516	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C517	1-124-443-00	ELECT	100MF	20%	6.3V
C518	1-163-019-00	CERAMIC CHIP	0.0068MF	10%	50V
C519	1-163-023-00	CERAMIC CHIP	0.015MF	10%	50V
C520	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C521	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C522	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C525	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C526	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C529	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C530	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C531	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C532	1-126-233-11	ELECT	22MF	20%	25V
C533	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C534	1-126-233-11	ELECT	22MF	20%	25V
C535	1-124-902-00	ELECT	0.47MF	20%	50V
C536	1-124-611-00	ELECT	1MF	20%	50V

Ref.No.	Part No.	Description			
C537	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C538	1-126-233-11	ELECT	22MF	20%	25V
C539	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C540	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C541	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C542	1-124-443-00	ELECT	100MF	20%	6.3V
C543	1-162-587-91	CERAMIC CHIP	0.039MF	10%	25V
C544	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C545	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C546	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C547	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C548	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C549	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C550	1-136-621-11	FILM	0.1MF	5%	50V
C551	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C552	1-136-620-11	FILM	0.047MF	5%	50V
C553	1-123-875-11	ELECT	10MF	20%	50V
C554	1-124-446-11	ELECT	47MF	20%	10V
C555	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C556	1-124-443-00	ELECT	100MF	20%	6.3V
C557	1-124-443-00	ELECT	100MF	20%	6.3V
C559	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C560	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C561	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C562	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C564	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C565	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C566	1-124-443-00	ELECT	100MF	20%	6.3V
C567	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C569	1-163-019-00	CERAMIC CHIP	0.0068MF	10%	50V
C570	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C571	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C572	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C573	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C574	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C575	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C576	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C577	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C578	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C579	1-123-875-11	ELECT	10MF	20%	50V
C580	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C581	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C582	1-124-443-00	ELECT	100MF	20%	6.3V
C583	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C584	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C585	1-123-875-11	ELECT	10MF	20%	50V
C586	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C587	1-123-875-11	ELECT	10MF	20%	50V
C592	1-124-925-11	ELECT	2.2MF	20%	50V
C670	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C701	1-124-443-00	ELECT	100MF	20%	10V
C801	1-124-482-11	ELECT	33MF	20%	25V
C802	1-130-487-00	MYLAR	0.022MF	5%	50V
C803	1-162-179-11	CERAMIC	0.1MF		50V
C804	1-162-179-11	CERAMIC	0.1MF		50V
C805	1-130-487-00	MYLAR	0.022MF	5%	50V
C806	1-124-482-11	ELECT	33MF	20%	25V

Ref.No.	Part No.	Description			
C807	1-162-211-31	CERAMIC	33PF	5%	50V
C808	1-162-179-11	CERAMIC	0.1MF		50V
C809	1-162-179-11	CERAMIC	0.1MF		50V
C810	1-124-477-11	ELECT	47MF	20%	25V
C811	1-124-477-11	ELECT	47MF	20%	25V
C812	1-162-179-11	CERAMIC	0.1MF		50V
C813	1-136-153-00	FILM	0.01MF	5%	50V
C814	1-136-165-00	FILM	0.1MF	5%	50V
C901	1-123-875-11	ELECT	10MF	20%	50V
C903	1-124-887-00	ELECT	3300MF	20%	16V
C905	1-124-887-00	ELECT	3300MF	20%	16V
C906	1-124-473-11	ELECT	1000MF	20%	10V
C907	1-124-473-11	ELECT	1000MF	20%	10V
C908	1-124-556-11	ELECT	2200MF	20%	16V
C909	1-126-017-11	ELECT	6800MF	20%	16V
C910	1-124-927-11	ELECT	4.7MF	20%	50V
C911	1-124-927-11	ELECT	4.7MF	20%	50V
C912	1-161-494-00	CERAMIC	0.022MF		25V
C913	1-124-559-51	ELECT	1000MF	20%	10V
C914	1-126-234-11	ELECT	2200MF	20%	10V
C915	1-124-484-11	ELECT	220MF	20%	35V
C916	1-124-911-11	ELECT	220MF	20%	50V
C917	1-124-122-11	ELECT	100MF	20%	35V
C918	1-136-165-00	FILM	0.1MF	5%	50V
C919	1-136-177-00	FILM	1MF	5%	50V
C920	⚠1-161-742-00	CERAMIC	0.0022MF	20%	400V
C921	⚠1-161-742-00	CERAMIC	0.0022MF	20%	400V
C922	⚠1-161-742-00	CERAMIC	0.0022MF	20%	400V
C923	1-161-742-00	CERAMIC	0.0022MF	20%	400V
C925	1-136-165-00	FILM	0.1MF	5%	50V
C951	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C953	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C954	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C955	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C956	1-124-778-00	ELECT CHIP	22MF	20%	6.3V
C957	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C958	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C959	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C960	1-163-011-11	CERAMIC CHIP	0.0015MF	10%	50V
C961	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C962	1-163-818-00	CERAMIC CHIP	0.1MF	10%	50V
C963	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C964	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C965	1-163-077-00	CERAMIC CHIP	0.1MF	10%	25V
C966	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C967	1-124-778-00	ELECT CHIP	22MF	20%	6.3V
C968	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C969	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C971	1-163-077-00	CERAMIC CHIP	0.1MF	10%	25V
C972	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C973	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C974	1-163-818-00	CERAMIC CHIP	0.1MF	10%	50V
C975	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C976	1-163-011-11	CERAMIC CHIP	0.0015MF	10%	50V
C977	1-163-020-00	CERAMIC CHIP	0.0082MF	10%	50V
C978	1-135-091-00	TANTAL. CHIP	1MF	10%	16V
C979	1-163-020-00	CERAMIC CHIP	0.0082MF	10%	50V

Ref.No.	Part No.	Description
C980	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V
C981	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V
C982	1-163-005-11	CERAMIC CHIP 470PF 10% 50V
C983	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V
C984	1-163-005-11	CERAMIC CHIP 470PF 10% 50V
C985	1-163-005-11	CERAMIC CHIP 470PF 10% 50V
CN01	*1-564-336-00	PIN, CONNECTOR 2P
CN02	*1-564-336-61	PIN, CONNECTOR 2P
CN03	*1-564-498-11	PIN, CONNECTOR 5P
CN011	*1-564-505-11	PLUG, CONNECTOR 2P
CN021	*1-564-505-11	PLUG, CONNECTOR 2P
CN101A	*1-564-726-11	PIN, CONNECTOR (SMALL TYPE)10P
CN102A	1-568-369-11	HOUSING,CONNECTOR(PC BOARD) 8P
CN103A	*1-564-720-11	PIN, CONNECTOR (SMALL TYPE) 4P
CN231	*1-564-508-11	PLUG, CONNECTOR 5P
CN232	*1-564-505-11	PLUG, CONNECTOR 2P
CN332	*1-564-507-11	PLUG, CONNECTOR 4P
CN351	*1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P
CN352	*1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P
CN371	*1-564-507-11	PLUG, CONNECTOR 4P
CN372	*1-564-507-11	PLUG, CONNECTOR 4P
CN373	*1-564-507-11	PLUG, CONNECTOR 4P
CN374	*1-564-507-11	PLUG, CONNECTOR 4P
CN391	*1-564-506-11	PLUG, CONNECTOR 3P
CN392	*1-564-338-00	PIN, CONNECTOR 4P
CN393	*1-564-518-11	PLUG, CONNECTOR 3P
CN501	*1-564-339-61	PIN, CONNECTOR 5P
CN502	1-565-849-11	SOCKET, CONNECTOR 11P
CN503	*1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P
CN531	*1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P
CN532	*1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P
CN533	*1-564-507-11	PLUG, CONNECTOR 4P
CN534	*1-564-337-00	PIN, CONNECTOR 3P
CN541	*1-564-713-11	PIN, CONNECTOR (SMALL TYPE)11P
CN542	*1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P
CN555	*1-564-514-11	PLUG, CONNECTOR 11P
CN571	*1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P
CN575	*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P
CN581	*1-564-712-11	PIN, CONNECTOR (SMALL TYPE)10P
CN582	*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P
CN583	*1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P
CN584	*1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P
CN585	*1-564-706-31	PIN, CONNECTOR (SMALL TYPE) 4P
CN591	*1-564-510-11	PLUG, CONNECTOR 7P
CN751	*1-564-722-11	PIN, CONNECTOR (SMALL TYPE) 6P
CN755	*1-564-721-11	PIN, CONNECTOR (SMALL TYPE) 5P
CN951	*1-564-722-11	PIN, CONNECTOR (SMALL TYPE) 6P
CN952	1-564-729-11	PIN, CONNECTOR (SMALL TYPE)13P
CN971	*1-564-342-11	PIN, CONNECTOR 8P
CP501	1-233-136-11	COMPOSITION CIRCUIT BLOCK
CP502	1-236-114-11	RES, NETWORK
CP503	1-233-134-11	COMPOSITION CIRCUIT BLOCK
CP504	1-233-136-11	COMPOSITION CIRCUIT BLOCK
CP505	1-233-133-11	COMPOSITION CIRCUIT BLOCK
CP506	1-233-135-11	COMPOSITION CIRCUIT BLOCK
CP801	1-464-931-11	RECEIVE UNIT, RAY
CP802	1-464-878-11	TRANSMITTER UNIT, RAY

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description
D151	8-719-107-94	DIODE 1SS202-1
D152	8-719-107-94	DIODE 1SS202-1
D251	8-719-107-94	DIODE 1SS202-1
D252	8-719-107-94	DIODE 1SS202-1
D301	8-719-230-02	DIODE 30D2-FC
D302	8-719-230-02	DIODE 30D2-FC
D303	8-719-230-02	DIODE 30D2-FC
D304	8-719-230-02	DIODE 30D2-FC
D305	8-719-910-75	DIODE HZ7B2L
D306	8-719-107-94	DIODE 1SS202-1
D307	8-719-107-94	DIODE 1SS202-1
D308	8-719-107-94	DIODE 1SS202-1
D309	8-719-200-82	DIODE 11ES2
D310	8-719-107-94	DIODE 1SS202-1
D350	8-719-200-82	DIODE 11ES2
D501	8-719-100-05	DIODE 1S2837
D502	8-719-100-05	DIODE 1S2837
D503	8-719-200-82	DIODE 11ES2
D504	8-719-200-82	DIODE 11ES2
D505	8-719-100-05	DIODE 1S2837
D506	8-719-100-05	DIODE 1S2837
D507	8-719-200-82	DIODE 11ES2
D550	8-719-100-05	DIODE 1S2837
D551	8-719-100-05	DIODE 1S2837
D670	8-719-100-05	DIODE 1S2837
D901	8-719-200-82	DIODE 11ES2
D902	8-719-200-82	DIODE 11ES2
D903	8-719-107-94	DIODE 1SS202-1
D904	8-719-200-77	DIODE 10E2N
D905	8-719-200-77	DIODE 10E2N
D907	8-719-200-77	DIODE 10E2N
D908	8-719-200-77	DIODE 10E2N
D909	8-719-230-02	DIODE 30DF2
D910	8-719-200-82	DIODE 11ES2
D911	8-719-200-82	DIODE 11ES2
D912	8-719-200-82	DIODE 11ES2
D913	8-719-933-33	DIODE HZS6A1L
D914	8-719-107-94	DIODE 1SS202-1
D915	8-719-107-94	DIODE 1SS202-1
D916	8-719-504-60	DIODE S4VB60
D917	8-719-933-33	DIODE HZS6A1L
F901 ⚠	1-532-286-00	FUSE, TIME-LAG (2.5A)
F902 ⚠	1-532-286-00	FUSE, TIME-LAG (2.5A)
FL701	1-519-472-11	INDICATOR TUBE, FLUORESCENT
FR301 ⚠	1-212-857-00	FUSIBLE 10 5% 1/4W F
FR302 ⚠	1-212-857-00	FUSIBLE 10 5% 1/4W F
FR901 ⚠	1-212-865-00	FUSIBLE 22 5% 1/4W F
FR902 ⚠	1-212-946-00	FUSIBLE 3.3 5% 1/2W F
IC11	8-759-013-22	IC LM358M
IC101	8-759-107-68	IC CX20115A
IC102	8-759-013-22	IC LM358M
IC307	8-759-933-62	IC SAA7220P
IC308	8-759-973-09	IC TDA1541A
IC309	8-759-602-83	IC M5238P
IC310	8-759-981-98	IC RC4560DD
IC312	8-759-900-72	IC NE5532P
IC315	8-759-900-72	IC NE5532P

Ref.No.	Part No.	Description
IC316	8-759-900-72	IC NE5532P
IC317	8-759-604-99	IC M5F78M06
IC318	8-759-604-41	IC M5F79M05
IC319	8-759-604-94	IC M5F79M06
IC351	8-759-209-85	IC CXA1099S
IC501	8-752-331-00	IC CXK5864BM-12L
IC502	8-752-331-00	IC CXK5864BM-12L
IC503	8-759-933-85	IC CXD1009Q
IC504	8-759-933-84	IC CXD1008Q
IC505	8-759-030-18	IC TL072CM
IC506	8-759-030-18	IC TL072CM
IC507	8-752-810-67	IC CXP5048H-191Q
IC508	8-759-947-57	IC CXD1136Q
IC509	8-759-945-98	IC CXD1146Q
IC510	8-759-931-43	IC SN74LS624NS
IC511	8-752-306-51	IC CX23065A
IC512	8-759-009-10	IC MC14069UBF
IC513	8-759-141-69	IC UPD75104GF-704-3B
IC514	8-759-230-34	IC TMP47C460AF-9473
IC515	8-759-821-15	IC LC9108B-235
IC516	8-759-946-81	IC CXD1052Q-Z
IC517	8-759-030-06	IC LM324M
IC518	8-759-932-54	IC BV4066BF
IC519	8-759-909-45	IC CX20084
IC520	8-759-013-22	IC LM358M
IC521	8-759-030-03	IC LM393M
IC522	8-759-908-81	IC MB3763PF
IC523	8-752-030-63	IC CXA1046M
IC524	8-759-030-61	IC TL431CM
IC525	8-759-030-06	IC LM324M
IC550	8-759-031-84	IC SC7S04F
IC701	8-752-807-08	IC CXP5058H-624Q
IC702	8-759-971-44	IC MSM74H010GS-K
IC703	8-749-920-59	IC A1QH3020S
IC801	8-759-202-13	IC TC74HCV04P
IC802	8-759-202-11	IC TC74HC00P
IC803	8-759-202-13	IC TC74HCV04P
IC804	8-759-601-02	IC M5218P
IC901	8-759-630-21	IC M5290P-16
IC902	8-759-600-02	IC M5218L
IC951	8-752-032-26	IC CXA1045Q-Z
J301	1-565-319-71	JACK, PIN 2P (LINE IN)
J302	1-565-319-71	JACK, PIN 2P (LINE OUT)
J304	1-565-327-11	JACK, LARGE TYPE 1P (HEADPHONES)
J801	1-565-319-61	JACK, PIN 2P (COAXIAL)
JW11	1-216-295-00	METAL GLAZE 0 5% 1/10W
JW12	1-216-295-00	METAL GLAZE 0 5% 1/10W
JW101	1-216-296-00	METAL GLAZE 0 5% 1/8W
JW102	1-216-296-00	METAL GLAZE 0 5% 1/8W
JW103	1-216-296-00	METAL GLAZE 0 5% 1/8W
JW104	1-216-296-00	METAL GLAZE 0 5% 1/8W
JW105	1-216-296-00	METAL GLAZE 0 5% 1/8W
JW106	1-216-296-00	METAL GLAZE 0 5% 1/8W
JW107	1-216-296-00	METAL GLAZE 0 5% 1/8W
JW108	1-216-296-00	METAL GLAZE 0 5% 1/8W
JW109	1-216-296-00	METAL GLAZE 0 5% 1/8W
JW110	1-216-296-00	METAL GLAZE 0 5% 1/8W

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description
JW111	1-216-296-00	METAL GLAZE 0 5% 1/8W
JW112	1-216-295-00	METAL GLAZE 0 5% 1/10W
JW113	1-216-295-00	METAL GLAZE 0 5% 1/10W
L351	1-408-024-00	INDUCTOR 0.22UH
L501	1-407-182-XX	INDUCTOR 2.2UH
L502	1-408-777-00	INDUCTOR CHIP 10UH
L503	1-408-777-00	INDUCTOR CHIP 10UH
L504	1-408-793-21	INDUCTOR CHIP 220UH
L801	1-408-072-00	INDUCTOR 47UH
L901	⚠ 1-424-051-11	COIL, LINE FILTER
L951	1-408-777-00	INDUCTOR CHIP 10UH
L952	1-408-791-00	INDUCTOR CHIP 150UH
L953	1-408-791-00	INDUCTOR CHIP 150UH
LPF101	1-236-152-11	FILTER UNIT, LOW PASS
LPF201	1-236-152-11	FILTER UNIT, LOW PASS
M501	A-2001-356-A	CHASSIS COMPLETE ASSY, DRIVING
M901	A-2003-377-A	MOTOR (L) ASSY (LOADING)
M902	8-835-306-01	MOTOR, DC U-17A
M904	8-848-513-11	DRUM ASSY DOU-02D
M905	A-2001-355-A	CHASSIS COMPLETE ASSY, DRIVING
PH11	8-719-751-42	DIODE NJL5141E-AA
PH21	8-719-751-42	DIODE NJL5141E-AA
PH901	1-807-698-11	PHOTO SENSOR
PH902	1-807-698-11	PHOTO SENSOR
PM901	1-464-724-21	ENCODER, ROTARY
PM902	1-454-462-11	SOLENOID, PLUNGER
PM903	1-454-482-11	SOLENOID, PLUNGER
Q11	8-729-216-22	TRANSISTOR 2SA1162
Q21	8-729-216-22	TRANSISTOR 2SA1162
Q101A	8-729-901-00	TRANSISTOR DTC124EK
Q101	8-729-107-84	TRANSISTOR 2SC3623AL
Q102A	8-729-100-66	TRANSISTOR 2SC1623
Q102	8-729-107-84	TRANSISTOR 2SC3623AL
Q103A	8-729-101-07	TRANSISTOR 2SB798
Q201	8-729-107-84	TRANSISTOR 2SC3623AL
Q202	8-729-107-84	TRANSISTOR 2SC3623AL
Q305	8-729-900-61	TRANSISTOR DTA114ES
Q306	8-729-900-61	TRANSISTOR DTA114ES
Q307	8-729-900-61	TRANSISTOR DTA114ES
Q308	8-729-119-78	TRANSISTOR 2SC2785HFE
Q309	8-729-119-76	TRANSISTOR 2SA1175HFE
Q310	8-729-911-61	TRANSISTOR DTA114ES
Q311	8-729-203-02	TRANSISTOR 2SK30A-O
Q312	8-729-203-02	TRANSISTOR 2SK30A-O
Q313	8-729-107-84	TRANSISTOR 2SC3623AL
Q314	8-729-127-53	TRANSISTOR 2SC2275-P
Q315	8-729-167-62	TRANSISTOR 2SC2676
Q316	8-729-113-82	TRANSISTOR 2SA1138
Q317	8-729-110-68	TRANSISTOR 2SA1409L
Q318	8-729-190-53	TRANSISTOR 2SA985A-P
Q501	8-729-100-66	TRANSISTOR 2SC1623
Q502	8-729-162-22	TRANSISTOR 2SA1162
Q503	8-729-901-00	TRANSISTOR DTC124EK
Q504	8-729-403-02	TRANSISTOR XN4212
Q506	8-729-403-02	TRANSISTOR XN4212
Q507	8-729-906-83	TRANSISTOR 2SB1181F5
Q508	8-729-906-83	TRANSISTOR 2SB1181F5

Ref.No.	Part No.	Description
Q509	8-729-100-66	TRANSISTOR 2SC1623
Q510	8-729-403-38	TRANSISTOR XN4116
Q511	8-729-901-05	TRANSISTOR DTA124EK
Q512	8-729-403-02	TRANSISTOR XN4212
Q513	8-729-805-25	TRANSISTOR 2SB1121
Q514	8-729-807-16	TRANSISTOR 2SD1621
Q515	8-729-403-02	TRANSISTOR XN4212
Q516	8-729-101-07	TRANSISTOR 2SB798
Q518	8-729-901-05	TRANSISTOR DTA124EK
Q519	8-729-140-75	TRANSISTOR 2SD999
Q520	8-729-100-66	TRANSISTOR 2SC1623
Q521	8-729-901-00	TRANSISTOR DTC124EK
Q523	8-729-402-99	TRANSISTOR XN4112
Q530	8-729-901-05	TRANSISTOR DTA124EK
Q550	8-729-100-66	TRANSISTOR 2SC1623
Q670	8-729-107-42	TRANSISTOR 2SC3624L17
Q671	8-729-901-05	TRANSISTOR DTA124EK
Q702	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q703	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q704	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q705	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q706	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q901	8-729-808-76	TRANSISTOR 2SD1913SA
Q902	8-729-808-72	TRANSISTOR 2SB1274SA-Q
Q903	8-729-808-76	TRANSISTOR 2SD1913SA
Q904	8-729-808-72	TRANSISTOR 2SB1274SA-Q
Q905	8-729-900-61	TRANSISTOR DTA114ES
Q906	8-729-900-61	TRANSISTOR DTA114ES
Q907	8-729-110-68	TRANSISTOR 2SA1409L
Q908	8-729-173-13	TRANSISTOR 2SB731-F
R11	1-216-041-00	METAL GLAZE 470 5% 1/10W
R12	1-216-081-00	METAL GLAZE 22K 5% 1/10W
R13	1-216-073-00	METAL GLAZE 10K 5% 1/10W
R14	1-216-103-00	METAL GLAZE 180K 5% 1/10W
R15	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W
R16	1-216-077-00	METAL GLAZE 15K 5% 1/10W
R17	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W
R21	1-216-041-00	METAL GLAZE 470 5% 1/10W
R22	1-216-081-00	METAL GLAZE 22K 5% 1/10W
R23	1-216-073-00	METAL GLAZE 10K 5% 1/10W
R24	1-216-103-00	METAL GLAZE 180K 5% 1/10W
R25	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W
R101A	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W
R101	1-246-545-00	CARBON 1M 5% 1/4W
R102A	1-216-075-00	METAL GLAZE 12K 5% 1/10W
R102	1-247-704-11	CARBON 220 5% 1/4W
R103A	1-216-029-00	METAL GLAZE 150 5% 1/10W
R103	1-247-721-11	CARBON 4.7K 5% 1/4W
R104A	1-216-058-00	METAL GLAZE 2.4K 5% 1/10W
R104	1-249-590-11	CARBON 39K 5% 1/4W
R105A	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W
R106A	1-216-084-00	METAL GLAZE 30K 5% 1/10W
R106	1-247-721-11	CARBON 4.7K 5% 1/4W
R107A	1-216-073-00	METAL GLAZE 10K 5% 1/10W
R107	1-247-721-11	CARBON 4.7K 5% 1/4W

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description			
R108A	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R109A	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R110A	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R111A	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R112A	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R112	1-247-716-11	CARBON	1.8K	5%	1/4W
R113A	1-216-025-00	METAL GLAZE	100	5%	1/10W
R113	1-247-716-11	CARBON	1.8K	5%	1/4W
R114	1-249-429-11	CARBON	10K	5%	1/4W
R115	1-246-545-00	CARBON	1M	5%	1/4W
R116	1-247-713-11	CARBON	1K	5%	1/4W
R117	1-247-716-11	CARBON	1.8K	5%	1/4W
R118	1-249-469-11	CARBON	100K	5%	1/4W
R119	1-249-657-11	CARBON	220	5%	1/2W
R121	1-249-469-11	CARBON	100K	5%	1/4W
R122	1-249-497-11	CARBON	33K	5%	1/4W
R123	1-247-721-11	CARBON	4.7K	5%	1/4W
R124	1-249-462-11	CARBON	22K	5%	1/4W
R125	1-247-704-11	CARBON	220	5%	1/4W
R126	1-247-152-00	CARBON	8.2K	5%	1/4W
R127	1-249-586-11	CARBON	27K	5%	1/4W
R128	1-249-657-11	CARBON	220	5%	1/2W
R131	1-249-425-11	CARBON	4.7K	5%	1/4W
R162	1-247-721-11	CARBON	4.7K	5%	1/4W
R163	1-247-721-11	CARBON	4.7K	5%	1/4W
R164	1-247-717-11	CARBON	2.2K	5%	1/4W
R165	1-249-542-11	CARBON	390	5%	1/4W
R166	1-247-714-11	CARBON	1.2K	5%	1/4W
R167	1-247-708-11	CARBON	470	5%	1/4W
R168	1-247-718-11	CARBON	2.7K	5%	1/4W
R169	1-249-438-11	CARBON	56K	5%	1/4W
R170	1-249-469-11	CARBON	100K	5%	1/4W
R184	1-247-152-00	CARBON	7.5K	5%	1/4W
R185	1-249-417-11	CARBON	1K	5%	1/4W
R201	1-246-545-00	CARBON	1M	5%	1/4W
R202	1-247-704-11	CARBON	220	5%	1/4W
R203	1-247-721-11	CARBON	4.7K	5%	1/4W
R204	1-249-590-11	CARBON	39K	5%	1/4W
R206	1-247-721-11	CARBON	4.7K	5%	1/4W
R207	1-247-721-11	CARBON	4.7K	5%	1/4W
R212	1-247-716-11	CARBON	1.8K	5%	1/4W
R213	1-247-716-11	CARBON	1.8K	5%	1/4W
R214	1-249-429-11	CARBON	10K	5%	1/4W
R215	1-246-545-00	CARBON	1M	5%	1/4W
R216	1-247-713-11	CARBON	1K	5%	1/4W
R217	1-247-716-11	CARBON	1.8K	5%	1/4W
R218	1-249-469-11	CARBON	100K	5%	1/4W
R219	1-249-657-11	CARBON	220	5%	1/2W
R221	1-249-469-11	CARBON	100K	5%	1/4W
R222	1-249-497-11	CARBON	33K	5%	1/4W
R223	1-247-721-11	CARBON	4.7K	5%	1/4W
R224	1-249-462-11	CARBON	22K	5%	1/4W
R225	1-247-704-11	CARBON	220	5%	1/4W
R226	1-247-152-00	CARBON	8.2K	5%	1/4W
R227	1-249-586-11	CARBON	27K	5%	1/4W
R228	1-249-657-11	CARBON	220	5%	1/2W

Ref.No.	Part No.	Description			
R231	1-249-425-11	CARBON	4.7K	5%	1/4W
R262	1-247-721-11	CARBON	4.7K	5%	1/4W
R263	1-247-721-11	CARBON	4.7K	5%	1/4W
R264	1-247-717-11	CARBON	2.2K	5%	1/4W
R265	1-249-542-11	CARBON	390	5%	1/4W
R266	1-247-714-11	CARBON	1.2K	5%	1/4W
R267	1-247-708-11	CARBON	470	5%	1/4W
R268	1-247-718-11	CARBON	2.7K	5%	1/4W
R269	1-249-438-11	CARBON	56K	5%	1/4W
R270	1-249-469-11	CARBON	100K	5%	1/4W
R284	1-247-152-00	CARBON	7.5K	5%	1/4W
R285	1-249-417-11	CARBON	1K	5%	1/4W
R319	1-249-441-11	CARBON	100K	5%	1/4W
R320	1-247-804-11	CARBON	75	5%	1/4W
R323	1-249-437-11	CARBON	47K	5%	1/4W
R324	1-249-417-11	CARBON	1K	5%	1/4W
R325	1-249-419-11	CARBON	1.5K	5%	1/4W
R326	1-247-883-00	CARBON	150K	5%	1/4W
R327	1-249-427-11	CARBON	6.8K	5%	1/4W
R328	1-249-429-11	CARBON	10K	5%	1/4W
R329	1-249-421-11	CARBON	2.2K	5%	1/4W
R330	1-249-417-11	CARBON	1K	5%	1/4W
R331	1-249-424-11	CARBON	3.9K	5%	1/4W
R332	1-247-704-11	CARBON	220	5%	1/4W
R333	1-247-704-11	CARBON	220	5%	1/4W
R334	1-247-713-11	CARBON	1K	5%	1/4W
R335	1-249-466-11	CARBON	56K	5%	1/4W
R336	1-249-802-11	CARBON	1K	1%	1/2W
R337	1-249-802-11	CARBON	1K	1%	1/2W
R338	1-249-810-11	CARBON	2.2K	1%	1/2W
R339	1-249-810-11	CARBON	2.2K	1%	1/2W
R340	1-247-717-11	CARBON	2.2K	5%	1/4W
R341	1-247-717-11	CARBON	2.2K	5%	1/4W
R342	1-249-437-11	CARBON	47K	5%	1/4W
R343	1-249-441-11	CARBON	100K	5%	1/4W
R344	1-249-437-11	CARBON	47K	5%	1/4W
R371	1-247-152-00	CARBON	7.5K	5%	1/4W
R372	1-249-462-11	CARBON	22K	5%	1/4W
R398	1-216-349-00	CARBON	1	5%	1/2W
R399	1-249-429-11	CARBON	10K	5%	1/4W
R501	1-216-683-11	METAL CHIP	22K	0.50%	1/10W
R502	1-216-683-11	METAL CHIP	22K	0.50%	1/10W
R503	1-216-295-00	METAL GLAZE	0	5%	1/10W
R504	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R505	1-216-053-00	METAL GLAZE	1.2K	5%	1/10W
R506	1-216-295-00	METAL GLAZE	0	5%	1/10W
R507	1-216-295-00	METAL GLAZE	0	5%	1/10W
R508	1-216-295-00	METAL GLAZE	0	5%	1/10W
R509	1-216-295-00	METAL GLAZE	0	5%	1/10W
R510	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R511	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R512	1-216-083-00	METAL GLAZE	27K	5%	1/10W
R513	1-216-025-00	METAL GLAZE	100	5%	1/10W
R514	1-216-070-00	METAL GLAZE	7.5K	5%	1/10W
R515	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R516	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W
R517	1-216-049-00	METAL GLAZE	1K	5%	1/10W

Ref.No.	Part No.	Description			
R518	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R519	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R520	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R521	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R522	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R523	1-216-098-00	METAL GLAZE	110K	5%	1/10W
R524	1-216-099-00	METAL GLAZE	120K	5%	1/10W
R525	1-216-099-00	METAL GLAZE	120K	5%	1/10W
R526	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R527	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R528	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R529	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R530	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R532	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R534	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R536	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R537	1-216-295-00	METAL GLAZE	0	5%	1/10W
R540	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R541	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R542	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R543	1-216-083-00	METAL GLAZE	27K	5%	1/10W
R544	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W
R545	1-216-009-00	METAL GLAZE	22	5%	1/10W
R546	1-216-076-00	METAL GLAZE	13K	5%	1/10W
R547	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R549	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R550	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R551	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R552	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R553	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R554	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R555	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W
R556	1-216-109-00	METAL GLAZE	330K	5%	1/10W
R557	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R558	1-216-114-00	METAL GLAZE	510K	5%	1/10W
R559	1-216-109-00	METAL GLAZE	330K	5%	1/10W
R560	1-216-111-00	METAL GLAZE	390K	5%	1/10W
R561	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R562	1-216-083-00	METAL GLAZE	27K	5%	1/10W
R563	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R565	1-216-681-11	METAL CHIP	18K	0.50%	1/10W
R566	1-216-678-11	METAL CHIP	13K	0.50%	1/10W
R567	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R568	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R569	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R570	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R571	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R572	1-216-017-00	METAL GLAZE	47	5%	1/10W
R573	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R574	1-216-025-00	METAL GLAZE	100	5%	1/10W
R575	1-216-017-00	METAL GLAZE	47	5%	1/10W
R576	1-216-025-00	METAL GLAZE	100	5%	1/10W
R577	1-216-031-00	METAL GLAZE	180	5%	1/10W
R578	1-216-031-00	METAL GLAZE	180	5%	1/10W
R579	1-216-025-00	METAL GLAZE	100	5%	1/10W
R580	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R581	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W

Ref.No.	Part No.	Description			
R584	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R585	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W
R586	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R587	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R588	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R589	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R590	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R591	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R592	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R593	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R594	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R595	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R596	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R597	1-216-033-00	METAL GLAZE	220	5%	1/10W
R598	1-216-045-00	METAL GLAZE	680	5%	1/10W
R599	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R600	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R601	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R602	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R603	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R608	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R609	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R610	1-216-048-00	METAL GLAZE	910	5%	1/10W
R611	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R612	1-216-037-00	METAL GLAZE	330	5%	1/10W
R617	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R618	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R619	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R620	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R621	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R622	1-216-117-00	METAL GLAZE	680K	5%	1/10W
R623	1-216-117-00	METAL GLAZE	680K	5%	1/10W
R625	1-216-662-11	METAL CHIP	3K	0.50%	1/10W
R626	1-216-677-11	METAL CHIP	12K	0.50%	1/10W
R627	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R628	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R629	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R630	1-216-100-00	METAL GLAZE	130K	5%	1/10W
R631	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R632	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R633	1-216-101-00	METAL GLAZE	150K	5%	1/10W
R634	1-216-101-00	METAL GLAZE	150K	5%	1/10W
R635	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R636	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R637	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R638	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R639	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R640	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R641	1-216-095-00	METAL GLAZE	82K	5%	1/10W
R642	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R643	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R645	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R646	1-216-295-00	METAL GLAZE	0	5%	1/10W
R647	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R648	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R649	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R650	1-216-073-00	METAL GLAZE	10K	5%	1/10W

Ref.No.	Part No.	Description			
R655	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R656	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R657	1-216-033-00	METAL GLAZE	220	5%	1/10W
R671	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R672	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R673	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R675	1-216-025-00	METAL GLAZE	100	5%	1/10W
R701	1-249-418-11	CARBON	1.2K	5%	1/4W
R702	1-249-433-11	CARBON	22K	5%	1/4W
R703	1-249-425-11	CARBON	4.7K	5%	1/4W
R704	1-249-425-11	CARBON	4.7K	5%	1/4W
R705	1-249-423-11	CARBON	3.3K	5%	1/4W
R706	1-249-418-11	CARBON	1.2K	5%	1/4W
R707	1-249-428-11	CARBON	8.2K	5%	1/4W
R708	1-249-423-11	CARBON	3.3K	5%	1/4W
R709	1-249-420-11	CARBON	1.8K	5%	1/4W
R710	1-249-418-11	CARBON	1.2K	5%	1/4W
R711	1-249-425-11	CARBON	4.7K	5%	1/4W
R712	1-249-428-11	CARBON	8.2K	5%	1/4W
R713	1-249-423-11	CARBON	3.3K	5%	1/4W
R714	1-249-420-11	CARBON	1.8K	5%	1/4W
R715	1-249-418-11	CARBON	1.2K	5%	1/4W
R716	1-249-425-11	CARBON	4.7K	5%	1/4W
R717	1-249-420-11	CARBON	1.8K	5%	1/4W
R718	1-249-418-11	CARBON	1.2K	5%	1/4W
R719	1-249-425-11	CARBON	4.7K	5%	1/4W
R720	1-249-441-11	CARBON	100K	5%	1/4W
R721	1-249-441-11	CARBON	100K	5%	1/4W
R722	1-249-441-11	CARBON	100K	5%	1/4W
R724	1-249-441-11	CARBON	100K	5%	1/4W
R727	1-249-441-11	CARBON	100K	5%	1/4W
R728	1-249-425-11	CARBON	4.7K	5%	1/4W
R729	1-249-418-11	CARBON	1.2K	5%	1/4W
R730	1-249-420-11	CARBON	1.8K	5%	1/4W
R731	1-249-423-11	CARBON	3.3K	5%	1/4W
R732	1-249-428-11	CARBON	8.2K	5%	1/4W
R733	1-249-425-11	CARBON	4.7K	5%	1/4W
R734	1-249-418-11	CARBON	1.2K	5%	1/4W
R735	1-249-420-11	CARBON	1.8K	5%	1/4W
R736	1-249-423-11	CARBON	3.3K	5%	1/4W
R737	1-249-428-11	CARBON	8.2K	5%	1/4W
R738	1-249-425-11	CARBON	4.7K	5%	1/4W
R739	1-249-418-11	CARBON	1.2K	5%	1/4W
R740	1-249-420-11	CARBON	1.8K	5%	1/4W
R741	1-249-423-11	CARBON	3.3K	5%	1/4W
R742	1-249-428-11	CARBON	8.2K	5%	1/4W
R743	1-249-433-11	CARBON	22K	5%	1/4W
R744	1-249-433-11	CARBON	22K	5%	1/4W
R745	1-249-433-11	CARBON	22K	5%	1/4W
R746	1-249-433-11	CARBON	22K	5%	1/4W
R777	1-216-349-00	CARBON	1	5%	1/2W
R801	1-247-804-11	CARBON	75	5%	1/4W
R802	1-249-437-11	CARBON	47K	5%	1/4W
R803	1-249-421-11	CARBON	2.2K	5%	1/4W
R804	1-249-429-11	CARBON	10K	5%	1/4W
R805	1-249-428-11	CARBON	8.2K	5%	1/4W
R806	1-247-804-11	CARBON	75	5%	1/4W

Ref.No.	Part No.	Description			
R807	1-249-417-11	CARBON	1K	5%	1/4W
R808	1-249-417-11	CARBON	1K	5%	1/4W
R809	1-249-429-11	CARBON	10K	5%	1/4W
R810	1-249-425-11	CARBON	4.7K	5%	1/4W
R811	1-249-417-11	CARBON	1K	5%	1/4W
R812	1-249-425-11	CARBON	4.7K	5%	1/4W
R813	1-249-417-11	CARBON	1K	5%	1/4W
R814	1-249-425-11	CARBON	4.7K	5%	1/4W
R815	1-247-840-00	CARBON	2.4K	5%	1/4W
R816	1-249-421-11	CARBON	2.2K	5%	1/4W
R817	1-249-435-11	CARBON	33K	5%	1/4W
R818	1-249-429-11	CARBON	10K	5%	1/4W
R901	1-249-417-11	CARBON	1K	5%	1/4W
R902	1-249-425-11	CARBON	4.7K	5%	1/4W
R903	1-249-425-11	CARBON	4.7K	5%	1/4W
R904	1-249-421-11	CARBON	2.2K	5%	1/4W
R905	1-249-421-11	CARBON	2.2K	5%	1/4W
R906	1-249-417-11	CARBON	1K	5%	1/4W
R907	1-249-417-11	CARBON	1K	5%	1/4W
R908	1-249-417-11	CARBON	1K	5%	1/4W
R909	1-249-417-11	CARBON	1K	5%	1/4W
R910	1-249-425-11	CARBON	4.7K	5%	1/4W
R911	1-249-429-11	CARBON	10K	5%	1/4W
R912	1-249-424-11	CARBON	3.9K	5%	1/4W
R913	1-249-425-11	CARBON	4.7K	5%	1/4W
R915	1-249-425-11	CARBON	4.7K	5%	1/4W
R916	1-249-433-11	CARBON	22K	5%	1/4W
R917	1-249-433-11	CARBON	22K	5%	1/4W
R951	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R952	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R953	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R954	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R955	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R956	1-216-083-00	METAL GLAZE	27K	5%	1/10W
R957	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W
R958	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R959	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R960	1-216-079-00	METAL GLAZE	18K	5%	1/10W
R961	1-216-079-00	METAL GLAZE	18K	5%	1/10W
R962	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R963	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R964	1-216-083-00	METAL GLAZE	27K	5%	1/10W
R965	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W
R966	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R967	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R968	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R969	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R970	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R971	1-216-095-00	METAL GLAZE	82K	5%	1/10W
R972	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R973	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W
R974	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W
RV101	1-224-249-XX	RES, ADJ, METAL GLAZE 1K			
RV102	1-224-249-XX	RES, ADJ, METAL GLAZE 1K			
RV201	1-224-249-XX	RES, ADJ, METAL GLAZE 1K			

Ref.No.	Part No.	Description
RV202	1-224-249-XX	RES, ADJ, METAL GLAZE 1K
RV301	1-238-520-11	RES, VAR, CARBON 20K/20K (REC LEVEL)
RV302	1-238-359-11	RES, VAR, CARBON 20K/20K (HEADPHONES LEVEL)
RV501	1-226-774-00	RES, ADJ, METAL GLAZE 47K
RV502	1-226-703-11	RES, ADJ, METAL GLAZE 10K
RV503	1-226-703-11	RES, ADJ, METAL GLAZE 10K
RV504	1-228-995-00	RES, ADJ, CARBON 22K
RV505	1-228-995-00	RES, ADJ, CARBON 22K
RV506	1-228-995-00	RES, ADJ, CARBON 22K
RV507	1-226-773-11	RES, ADJ, METAL GLAZE 22K
RV508	1-226-703-11	RES, ADJ, METAL GLAZE 10K
RV509	1-226-772-11	RES, ADJ, METAL GLAZE 4.7K
RV951	1-238-237-11	RES, ADJ, CERMET 470
RV952	1-238-237-11	RES, ADJ, CERMET 470
RY301	1-515-726-11	RELAY
S11	1-571-471-11	SWITCH, PUSH (1 KEY) (CASSETTE TABLE SLIDE DET)
S12	1-571-489-11	SWITCH, SLIDE (CASSETTE TABLE UP/DOWN DET)
S701	⚠1-571-305-11	SWITCH, PUSH (1 KEY)(POWER)
S702	1-571-520-11	SWITCH, SLIDE (TIMER)
S703	1-570-974-11	SWITCH, SLIDE (INPUT)
S704	1-570-974-11	SWITCH, SLIDE (SKIP)
S706	1-554-303-21	SWITCH, KEY BOARD (COUNTER MODE)
S707	1-554-303-21	SWITCH, KEY BOARD (COUNTER RESET)
S708	1-554-303-21	SWITCH, KEY BOARD (REC MUTE)
S709	1-554-303-21	SWITCH, KEY BOARD (PAUSE)
S710	1-554-303-21	SWITCH, KEY BOARD (REC)
S711	1-554-303-21	SWITCH, KEY BOARD (FF/CUE)
S712	1-554-303-21	SWITCH, KEY BOARD (REC/CUE)
S713	1-554-303-21	SWITCH, KEY BOARD (AMS/FF)
S714	1-554-303-21	SWITCH, KEY BOARD (AMS/RWD)
S715	1-554-303-21	SWITCH, KEY BOARD (PLAY)
S716	1-554-303-21	SWITCH, KEY BOARD (STOP)
S717	1-554-303-21	SWITCH, KEY BOARD (OPEN/CLOSE)
S718	1-554-303-21	SWITCH, KEY BOARD (MUSIC SCAN/START)
S719	1-554-303-21	SWITCH, KEY BOARD (0/END)
S720	1-554-303-21	SWITCH, KEY BOARD (CLEAR)
S721	1-554-303-21	SWITCH, KEY BOARD (START ID AUTO)
S722	1-554-303-21	SWITCH, KEY BOARD (START ID RE-NUMBER)
S723	1-554-303-21	SWITCH, KEY BOARD (1)
S724	1-554-303-21	SWITCH, KEY BOARD (2)
S725	1-554-303-21	SWITCH, KEY BOARD (3)

Ref.No.	Part No.	Description
S726	1-554-303-21	SWITCH, KEY BOARD (START ID WRITE)
S727	1-554-303-21	SWITCH, KEY BOARD (START ID ERASE)
S728	1-554-303-21	SWITCH, KEY BOARD (4)
S729	1-554-303-21	SWITCH, KEY BOARD (5)
S730	1-554-303-21	SWITCH, KEY BOARD (6)
S731	1-554-303-21	SWITCH, KEY BOARD (SKIP ID WRITE)
S732	1-554-303-21	SWITCH, KEY BOARD (SKIP ID ERASE)
S733	1-554-303-21	SWITCH, KEY BOARD (7)
S734	1-554-303-21	SWITCH, KEY BOARD (8)
S735	1-554-303-21	SWITCH, KEY BOARD (9)
S801	1-554-883-11	SWITCH, SLIDE (INPUT SELECTOR)
S901	1-571-878-11	SWITCH, PUSH (2 KEY)
S903	1-570-771-11	SWITCH (LIMIT)
T801	1-459-587-11	COIL (WITH CORE)
T901	⚠1-449-779-11	TRANSFORMER, POWER
TP153	*1-560-060-00	PIN, CONNECTOR 2P
TP253	*1-560-060-00	PIN, CONNECTOR 2P
VC501	8-719-915-30	DIODE FC53M
X351	1-577-074-11	VIBRATOR, CRYSTAL 122.912MHz
X501	1-567-816-11	VIBRATOR, CRYSTAL 18.816MHz
X502	1-567-815-11	VIBRATOR, CRYSTAL 22.579MHz
X503	1-567-814-11	VIBRATOR, CRYSTAL 24.576MHz
X504	1-577-359-21	VIBRATOR, CERAMIC 4.19MHz
X701	1-577-359-21	VIBRATOR, CERAMIC 4.19MHz

ACCESSORY & PACKING MATERIAL

1-465-138-11	REMOTE COMMANDER
1-551-734-11	CORD, CONNECTION (RK-74A)
3-750-189-11	MANUAL, INSTRUCTION
4-925-788-01	COVER, BATTERY
*4-931-443-01	CUSHION
*4-931-444-01	INDIVIDUAL CARTON

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.