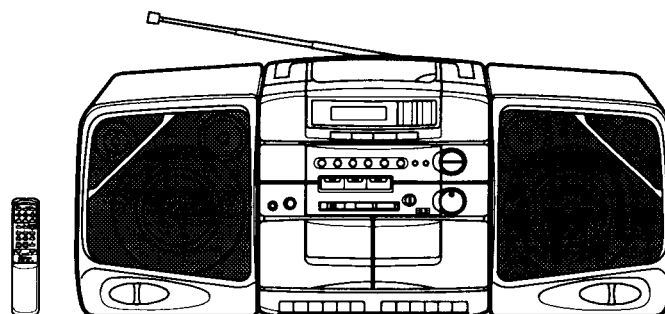




# PH-D580L

(XE)

## Portable Component System with CD Player



**PRODUCT CODE No.**  
**142 986 30**

### Specifications

#### (CASSETTE SECTION)

Recording System ..... AC bias, 4 track stereo  
Erasing System ..... AC erase  
Tape speed ..... 4.75 cm / sec.  
Fast forward and  
rewind time ..... 110 sec. (C-60 tape)

Frequency response ..... 63 - 14,000 Hz

#### (CD SECTION)

Channel ..... 2 channel  
S / N ratio ..... 73dB  
Wow & Flutter ..... Undetectable  
Sampling frequency ..... 44.1 kHz  
Quantization ..... 16 bits linear / ch  
Pickup light source ..... Semi-conductor laser  
Pickup wave length ..... 790 nm  
Laser output ..... Continuous wave max. 0.6 mW

Specifications subject to change without notice.

#### (RADIO SECTION)

Tuning range ..... FM : 87.5 - 108 MHz  
MW : 522 - 1,611 kHz  
LW : 144 - 288 kHz  
Antenna ..... FM : Telescopic rod  
AM : Built-in ferrite bar

#### (GENERAL)

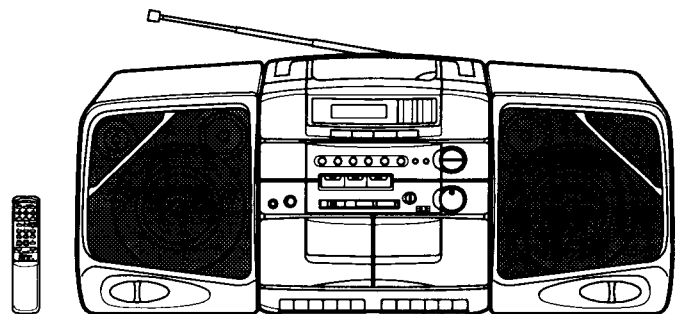
Power output ..... 7 W/ch (DIN music, 3 ohms.)  
Speaker ..... Woofer : 12 cm x 2, 3 ohms  
Mid range : 5 cm x 2, 3 ohms  
Tweeter : Piezo x 2  
Terminal impedance ..... SPEAKERS : 3 - 8 ohms  
PHONES : 32 ohms  
Power source ..... AC : 230V, 50 Hz  
Dimensions ..... 750 X 280 X 230 mm  
(WXHXD)  
Weight (approx.) ..... 8.9 kg (without batteries)



# PH-D580L

(XE)

## Portable Component System with CD Player



**PRODUCT CODE No.**  
**142 986 30**

### Specifications

#### (CASSETTE SECTION)

Recording System ..... AC bias, 4 track stereo  
Erasing System ..... AC erase  
Tape speed ..... 4.75 cm / sec.  
Fast forward and  
rewind time ..... 110 sec. (C-60 tape)  
Frequency response ..... 63 - 14,000 Hz

#### (CD SECTION)

Channel ..... 2 channel  
S / N ratio ..... 73dB  
Wow & Flutter ..... Undetectable  
Sampling frequency ..... 44.1 kHz  
Quantization ..... 16 bits linear / ch  
Pickup light source ..... Semi-conductor laser  
Pickup wave length ..... 790 nm  
Laser output ..... Continuous wave max. 0.6 mW

Specifications subject to change without notice.

#### (RADIO SECTION)

Tuning range ..... FM : 87.5 - 108 MHz  
MW : 522 - 1,611 kHz  
LW : 144 - 288 kHz  
Antenna ..... FM : Telescopic rod  
AM : Built-in ferrite bar

#### (GENERAL)

Power output ..... 7 W/ch (DIN music, 3 ohms.)  
Speaker ..... Woofer : 12 cm x 2, 3 ohms  
Mid range : 5 cm x 2, 3 ohms  
Tweeter : Piezo x 2  
Terminal impedance ..... SPEAKERS : 3 - 8 ohms  
PHONES : 32 ohms  
Power source ..... AC : 230V, 50 Hz  
Dimensions ..... 750 X 280 X 230 mm  
(WXHxD)  
Weight (approx.) ..... 8.9 kg (without batteries)

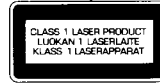
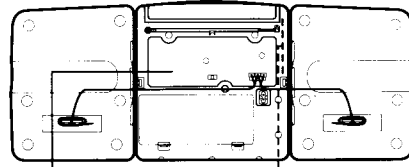
## LASER BEAM SAFETY PRECAUTIONS

- Pick-up that emits a laser beam is used in this CD player.

### CAUTION :

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE

LASER OUTPUT ..... 0.6 mW Max. (CW)  
WAVELENGTH ..... 790 nm



CAUTION - INVISIBLE LASER RADIATION  
WHEN OPEN AND INTERLOCKS DEFEATED  
AVOID EXPOSURE TO BEAM

ADVARSEL - USYNLIG LASER STRÅLING VED ÅBNING  
NÅR SIKKERHEDSÅFBRIVDERE ER UDE AF FUNKTION  
UNDGÅ UDSÆTTELSE FOR STRÅLING

VARNING - OSYNLIG LASER STRÅLING NÄR  
DENNA DEL ÄR ÖPPNAD OCH SPARR ÄR URKOPPLAD  
STRÅLEN ÄR FÄRLIG

VORSICHT - UNSICHTBARE LASERSTRAHLUNG TRITT AUS  
WENN DECKEL GEÖFFNET UND WENN SICHERHEITSVERRIEGELUNG  
ÜBERBRÜCKT IST NICHT DEM STRAHL AUSSETZEN

VARO! - Avattaessa ja suojapunktus ohitettaessa olet alttiina  
näkyttömälle lasersäteilylle. Älä katso säteeseen!

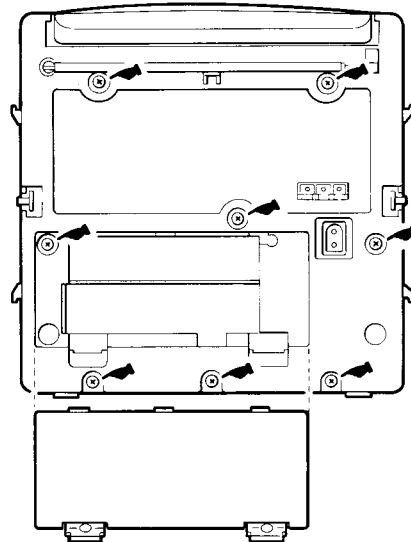
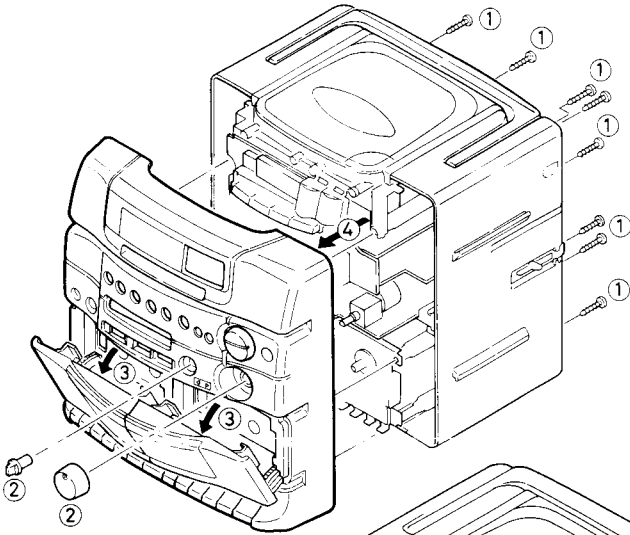


## REMOVAL AND INSTALLATION

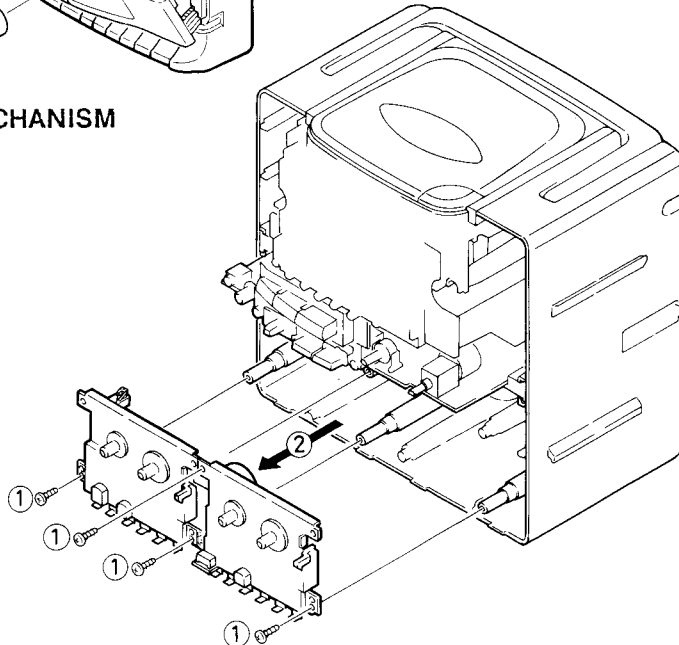
- Remove the compact disc and cassette tape if there should be one on the disc tray or in the cassette lid.
- Switch the power OFF, and unplug the AC power cord from an AC outlet.
- All wiring should be returned to the original position after work is completed.
- First have ready many the new FIXERS (614 129 4971) for replacement.
- Arrange the lead wires so that they are not near the heat sink.
- Repair the (+) screwdriver more than 17 cm.

### 1. FRONT CABINET AND REAR CABINET

- (1) Remove the battery lid.
- (2) Remove the 8 rear cabinet mounting screws. (▶)

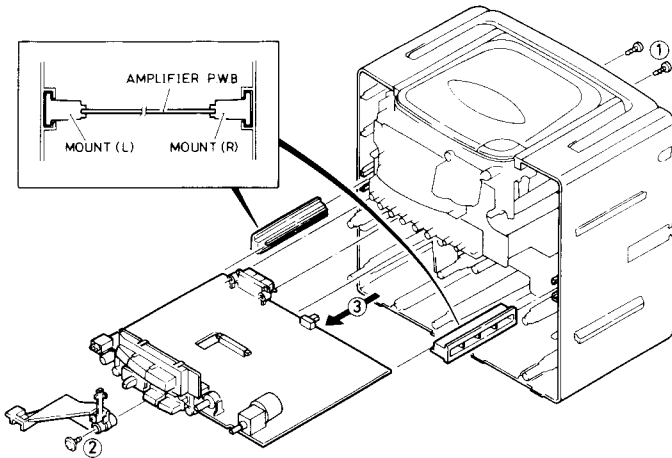


### 2. TAPE MECHANISM

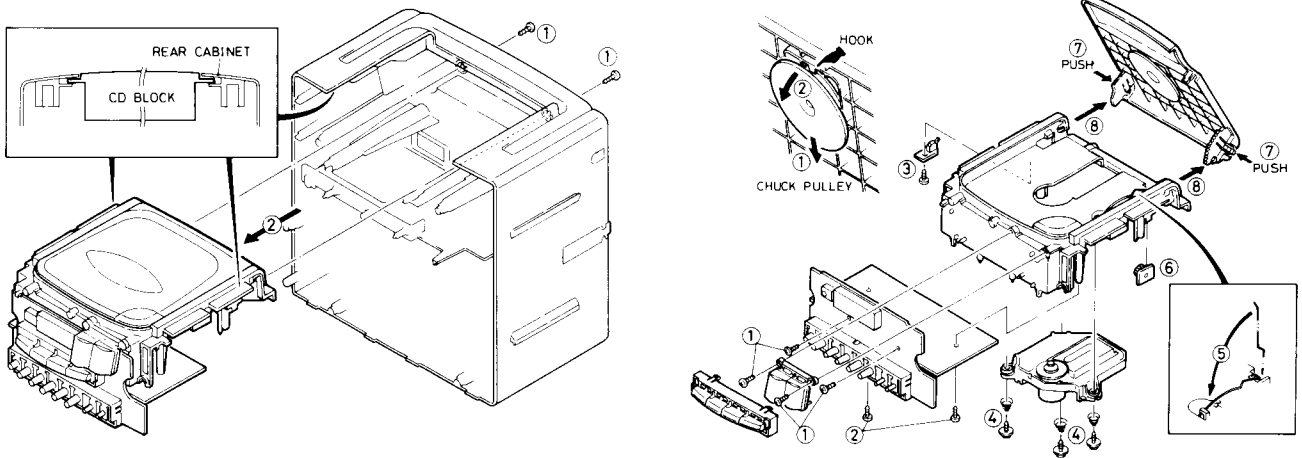


# REMOVAL AND INSTALLATION

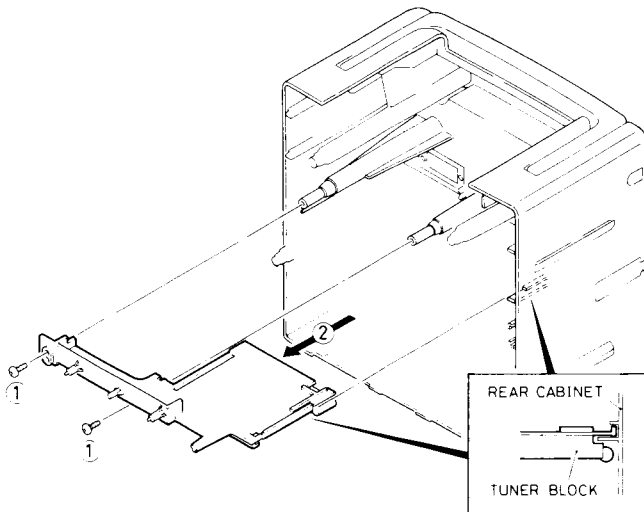
## 3. MAIN P. C. BOARD



## 4. CD BLOCK



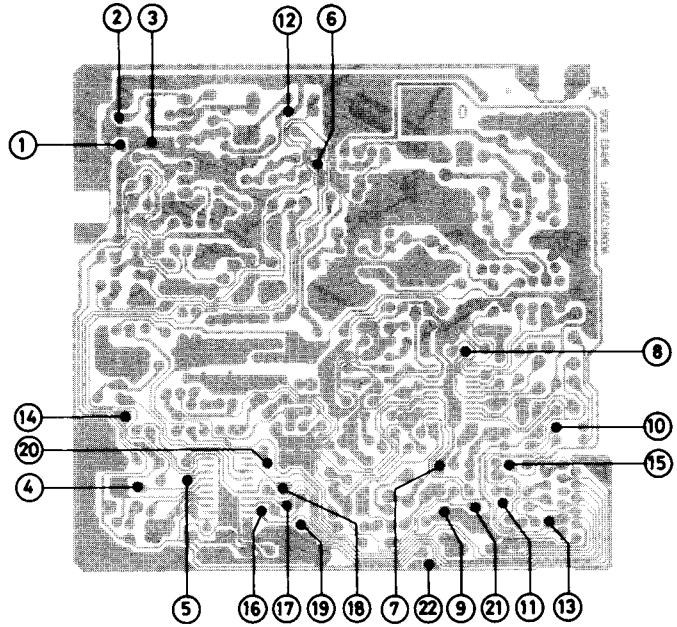
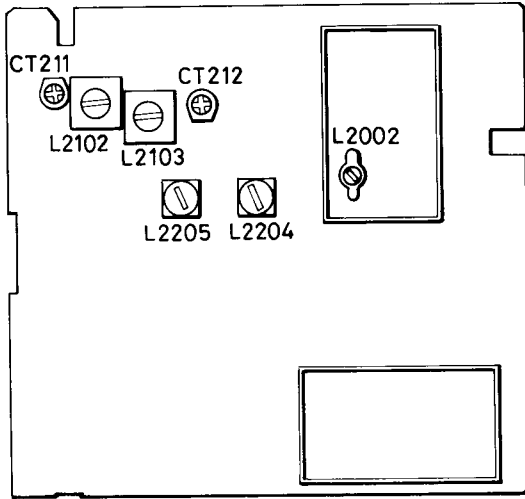
## 5. TUNER P. C. BOARD



# TUNER ADJUSTMENTS

- Use a plastic screw driver for adjustments.
  - Adjust the intermediate frequency of AM and FM to the frequency of ceramic filter.
- Supply voltage : DC 12.0 V Function switch : RADIO

## PARTS LOCATION



### 1. FM ADJUSTMENT BAND SELECT SWITCH : MW Modulation Frequency : 400Hz Modulation Frequency : 30%

Step	Adjusting Circuit	Connections		SG Frequency	Tuning Frequency	Adjustment	Remarks
		Input	Ooutput				
1	I F	Sweep Generator	Connect sweep generator to $\diamond$ (H) & $\diamond$ (G)	459 kHz	999 kHz	XF213	Maximum
2	Tuning coverage	-----	Connect digital volt-meter to $\diamond$ (H) & $\diamond$ (G)	522 kHz	522 kHz	L2204	$1.0 \pm 0.05V$
3				1611 kHz	1611 kHz	-----	Confirm $4.1 \pm 0.8V$
4	Tracking	Connect AM SG (75 dB) to $\diamond$ (H) & $\diamond$ (G)	Connect VTVM to $\diamond$ , $\diamond$ (H) & $\diamond$ (G)	603 kHz	603 kHz	L2102	Maximum
5				1404kHz	1404 kHz	CT211	

### 2. LW ADJUSTMENT BAND SELECT SWITCH : LW

Step	Adjusting Circuit	Connections		SG Frequency	Tuning Frequency	Adjustment	Remarks
		Input	Ooutput				
1	Tuning coverage	-----	Connect digital volt-meter to $\diamond$ (H) & $\diamond$ (G)	144 kHz	144 kHz	L2205	$1.0 \pm 0.05V$
2				288 kHz	288 kHz	-----	Confirm $3.6 \pm 0.8V$
3	Tracking	Connect FM SG (60 dB) to Loop Antenna	Connect VTVM to $\diamond$ , $\diamond$ (H) & $\diamond$ (G)	162 kHz	162 kHz	L2103	Maximum
4				279 kHz	279 kHz	CT212	

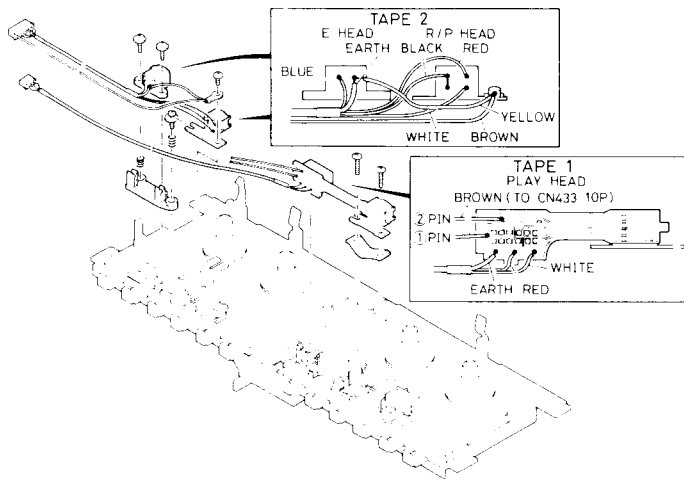
### 3. FM ADJUSTMENT BAND SELECT SWITCH : FM Modulation Frequency : 1kHz Deviaion : Mono $\pm 22.5$ kHz

Step	Adjusting Circuit	Connections		SG Frequency	Tuning Frequency	Adjustment	Remarks
		Input	Ooutput				
1	I F	Connect sweep generator to $\diamond$ (H) & $\diamond$ (G)	Connect sweep generator to $\diamond$ (H) & $\diamond$ (G)	10.65 MHz	98 MHz	-----	Maximum
2	Tuning coverage	-----	Connect digital volt-meter to $\diamond$ (H) & $\diamond$ (G)	87.5 MHz	87.5 MHz	-----	Confirm $1.5 \pm 0.5V$
3				108 MHz	108 MHz	L2002	$5.0 \pm 0.1V$
4	Tracking	Connect FM SG (60 dB) to $\diamond$ (H) & $\diamond$ (G)	Connect VTVM to $\diamond$ , $\diamond$ (H) & $\diamond$ (G)	90 MHz	90 MHz	-----	Confirm to near the effective sensitivity
5				106 MHz	106 MHz	-----	

# TAPE DECK ADJUSTMENTS

## 1. HEAD REPLACEMENT

- Be sure to clean the heads before attempting to make any adjustments.
- After replacement, demagnetize the heads by using a de-gausser.
- All wiring should be returned to the original position after work is completed.
- After completion of the adjustment, use thread lock (TB-1401B) to secure the azimuth adjustment screws.



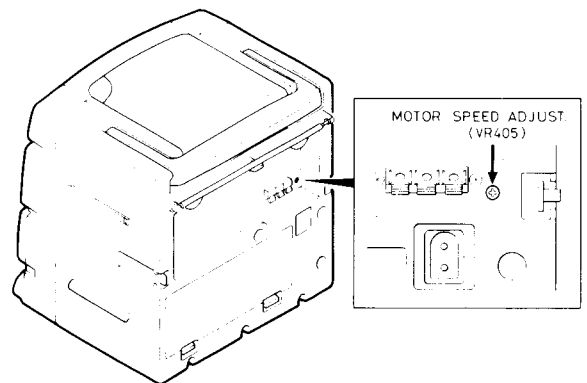
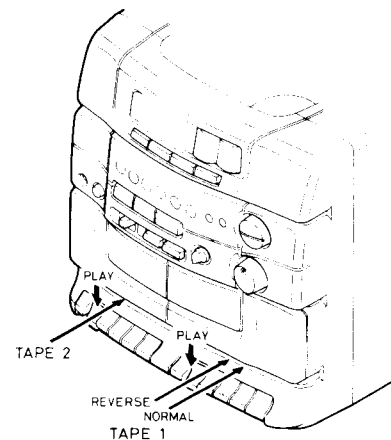
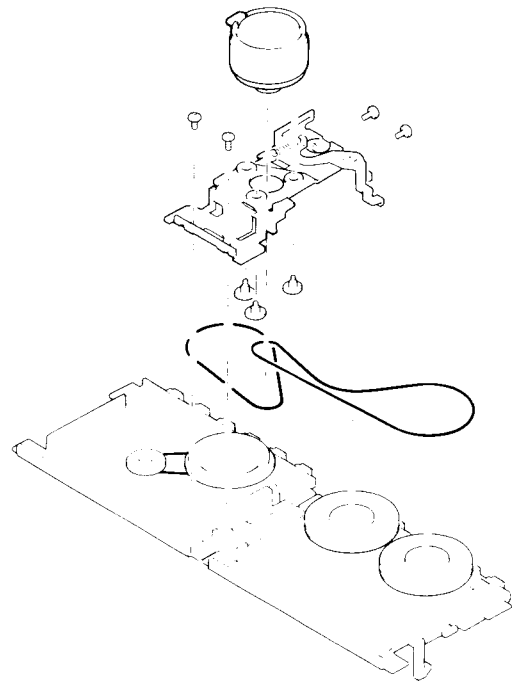
## 2. HEAD AZIMUTH ADJUSTMENT

- Be sure both channels (1 and 2) are the same level (Using a dual-channel oscilloscope).
  - After completion of the adjustment, use thread lock (TB-1401B) to secure the azimuth adjustment screws.
- (1) Insert the test tape (VTT-703, etc. : 10 kHz) for azimuth adjustment into tape DECK 1.
  - (2) Press tape DECK 1's PLAY button.
  - (3) Use a cross-tip screwdriver to turn the screw for adjustment of the tape DECK 1 azimuth so that the left and right outputs are maximized while tape DECK 1 is playing back.
  - (4) Press the tape DECK 1's STOP button.
  - (5) Repeat procedure for tape DECK 2.

## 3. MOTOR SPEED ADJUSTMENT

- (1) Insert the test tape (MTT-111N, etc., 3000 Hz).
- (2) Press the PLAY button.
- (3) Adjust the VR405 so that the frequency counter becomes 3,000 Hz.

## 4. MOTOR AND BELT REPLACEMENT



## 5. CHECKING THE MECHANISM TORQUES AND TENSION

- Clean the head, capstan and pinch roller before making any measurement.

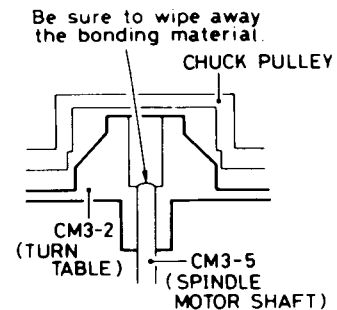
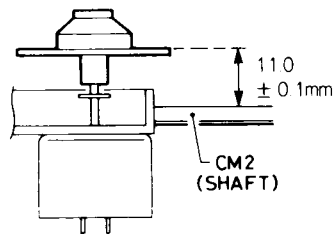
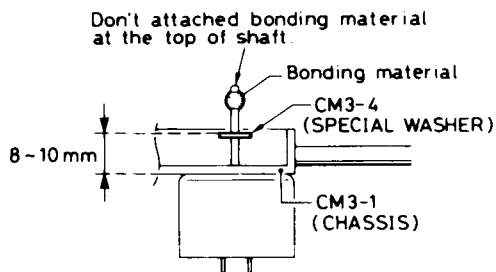
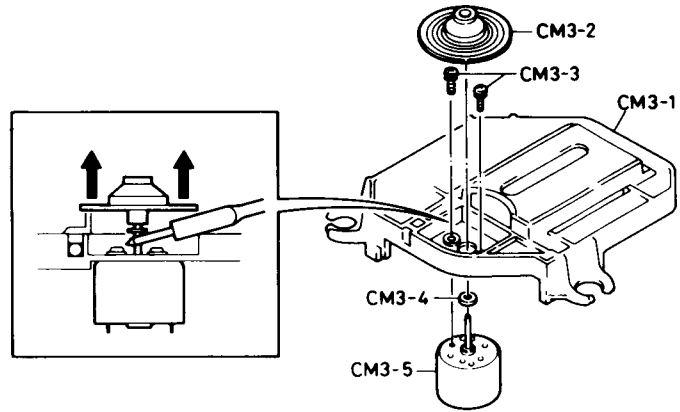
Measurement	Take-up torque	Back tension	Tape tension
Cassette for measurement	PLAY:TW-2111A F.FWD/REW:TW-2231	PLAY:TW-2111A	Drive-power cassette TW-2412
PLAY	30 ~ 60 gr.cm	2.0 ~ 4.5 gr.cm	60 gr or more
F.FWD	55 ~ 120 gr.cm	---	---
REW	55 ~ 120 gr.cm	---	---

## REPLACEMENT OF CD MECHANISM

- Note that the mechanism of the CD player is very delicate.
- It is very important that the spindle motor (which rotates the disc), and the sled motor (which cases the disc signals to be tracked), as well as the gear and other components, operate smoothly, without eccentricity.
- When handling the pickup, take care not to exert excessive force, and particular care should be taken not to touch the lens or the drive circuit's P. W. Board pattern.

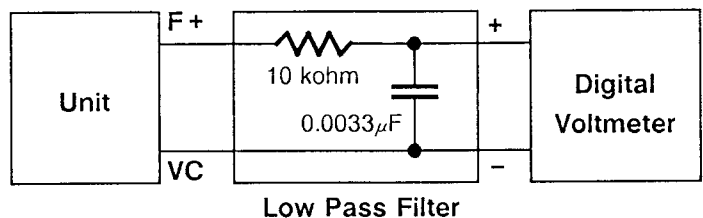
### 1. Replacement of the spindle motor

- First, prepare the new turntable (CM3-2) and new special washer (CM3-4) for replacement.
- The removed turntable will be deformed by the heat of the soldering iron, and cannot be reused.
- Prepare dial type calipers.
- (1) The attached bonding material can be dissolved by using a 60 W soldering iron to heat the shaft at the under part of the turntable (CM3-2) for about one minute.
  - (2) The turntable can then be removed from the shaft by very carefully applying force upward at the center of the lower surface of the turntable.
  - (3) Remove the two screws (CM3-3) and remove the spindle motor (CM3-5).
  - (4) Attach the special washer (CM3-4) to the spindle motor.
  - (5) Apply a small amount of a mixture of the "Three Bond 2001 and 2015F" bonding materials to the motor's shaft.
  - (6) Initial the turntable as shown in the figure. Secure the turntable by pressing gently. Be sure to wipe away (by using a piece of cloth, or similar material) any bonding material coming out of the hole.



### 2. Confirm of inclination for the turntable

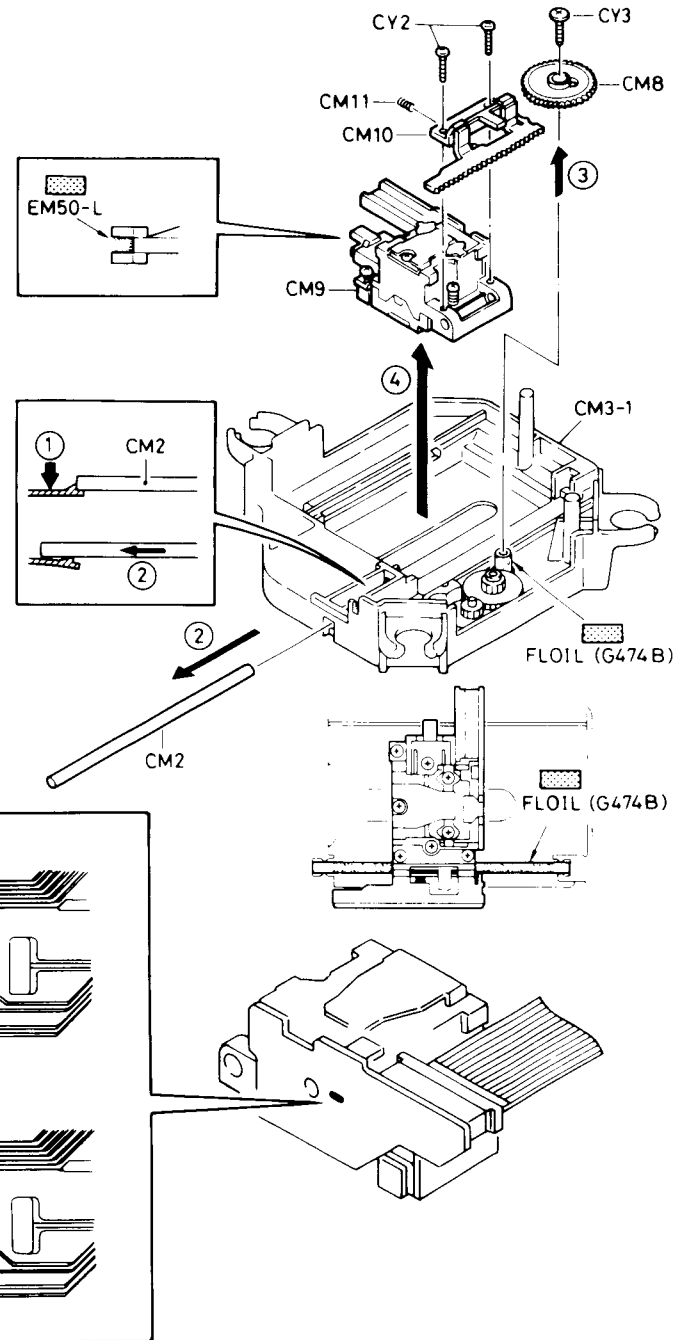
- (1) Connect the digital voltmeter as shown in the figure.
- (2) Set the test disc (YEDS 18 = SONY or etc.), press the PLAY button (Playback for the most inner music).
- (3) At this time, record voltage value to indicate at the digital voltmeter.
- (4) Access the most outer music, press the PLAY button (Playback for the most outer music).
- (5) Again at this time, record voltage value to indicate at the digital voltmeter.
- (6) For reference at the recorded voltage of the most inner music, Confirm at  $\pm 300$  mV less than for recorded voltage of the most outer music .



## REPLACEMENT OF CD MECHANISM

### 3. Replacement and lubrication of the pickup

- Before replacement of the pickup, be sure to carefully read the section regarding the pickup when the unit is moved or transported.
- (1) Remove the a pickup rail (CM2) with care fixing the latch with way driver from bottom part of chassis (CM3-1).
- (2) The pickup (CM9) can now be remove once the a pickup rail (CM2) have been taken out.
- When removing or inserting the a pickup rail from or into chassis, take care not to exert excessive force.
- If the pickup is reconditioned of replaced, be sure to wipe the rails clean and also apply a coating of FLOIL (G-474B) to there entire circumference and entire length. When applying the grease, do not allow any grease to adhere to any other parts.
- (3) Pass the a pickup rail (CM2) through the new pick up (CM9).
- The pickup P. W. Board pattern is "shorted", as shown in the figure, so that the new pickup will not be susceptible to the effects of static.
- Set the pattern to "open" after the pickup has been replaced.

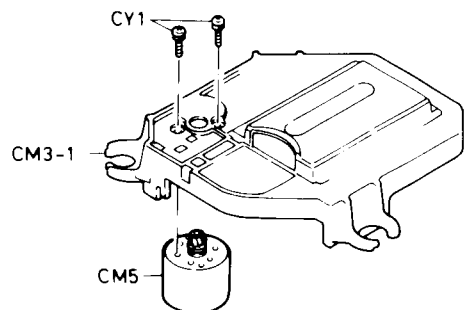


### 4. Checking the action of the CD mechanism

- (1) Disconnect the socket (for the sled motor power supply) from the P. W. Board.
- (2) Apply a voltage of DC 2.0 V to the sled motor's terminal.
- (3) Measure the current during sled motor operation.
- The direction of movement of the pickup (outer groove or inner groove) can be changed by changing the battery polarity.
- (4) The current during sled motor action varies according to the positional relationship of gears (CM7 and CM8).
- (5) If the current exceeds 40 mA, remove the gears (CM7 and CM8).
- (6) Apply a small amount of a FLOIL (G-474B) bonding materials to the chassis shafts.

### 5. Replacement of the sled motor

- (1) Remove the two screw (CY1) and remove the sled motor (CM5).

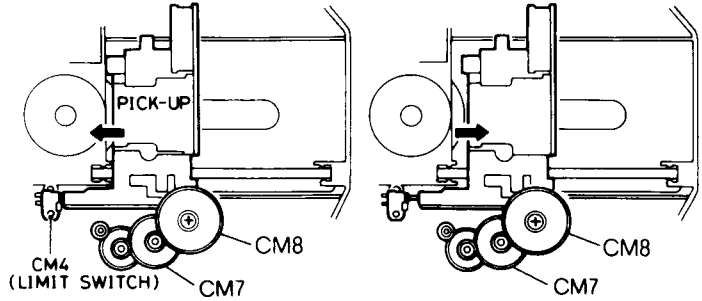




## REPLACEMENT OF CD MECHANISM

### 6. Resetting the pickup to the home position

- (1) The limit switch is switched ON by the projection of this rack gear secured to the returned pickup, after which the sled motor continues to operate (by the circuit ) for approximately 30 msec. : there is then again a reverse operation, and movement to the position at which the switch is switched OFF.
- (2) Rotation continues for about 30 msec. after the switch is switched OFF, and then the pickup stop at home position.



## ADJUSTMENT OF CD SECTION

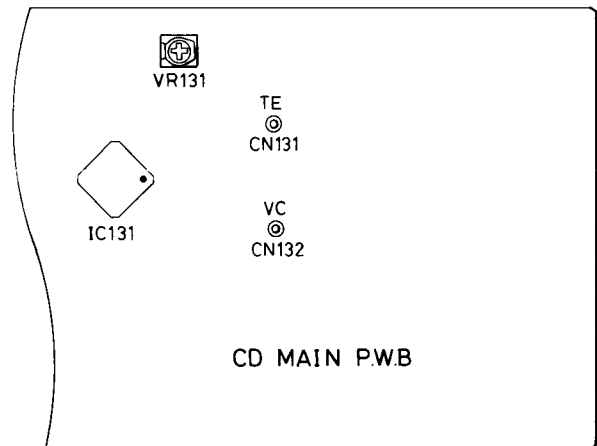
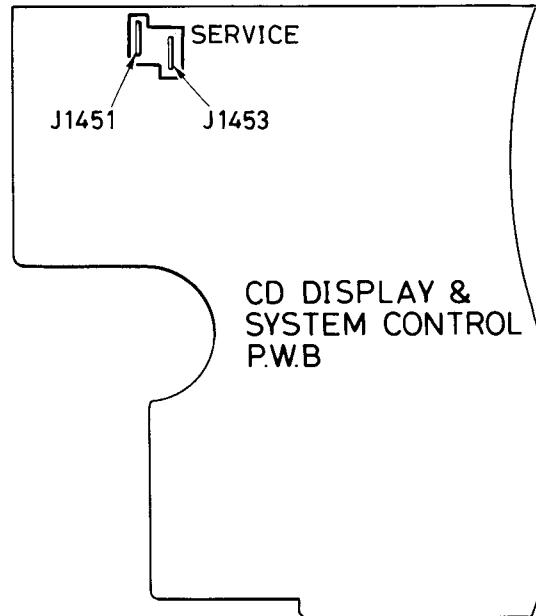
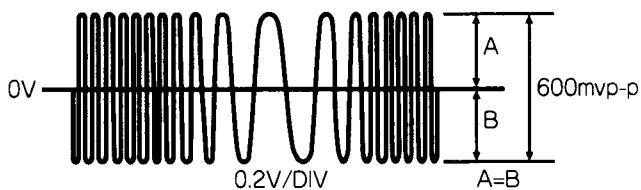
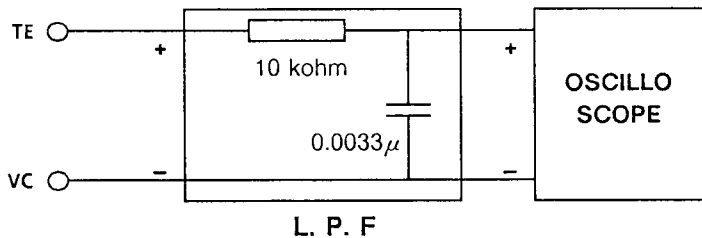
### 1. Preparation

- Measuring instruments and Test disc.

- (1) TEST DISC : YEDS 18 (SONY)
- (2) OSCILLOSCOPE : SS5711 (10 MHz and Dual Phenomenon)

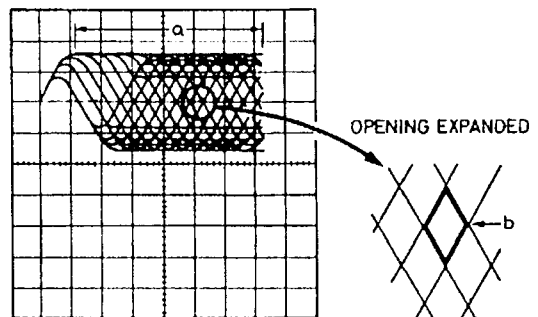
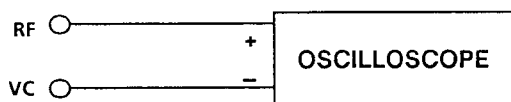
### 2. Tracking balance adjustment

- (1) Activate the service mode.  
Short-circuit between J1451 and J1453 on the printed wiring board.
- (2) Power on. And set the CD of function switch.
- (3) Connect an oscilloscope to TE (CN131=HOT) and VC (CN132=GND).
- (4) Set the test disc.
- (5) Press the PLAY button.
- (6) Adjust VR131 so that the oscilloscope's waveform is symmetrical, as shown in the illustration.
- (7) Press the STOP button.



### 3. Confirm of eye pattern

- (1) Connect an oscilloscope to RF (IC131 pin 31) and VC.
- (2) Set the test disc, press the PLAY button.
- (3) Check to be sure that the "eye" pattern is at center of waveform and that the diamond shape is clearly defined.
- (4) Press the STOP button.



## PARTS LIST

### PRODUCT SAFETY NOTICE

EACH PRECAUTION IN THIS MANUAL SHOULD BE FOLLOWED DURING SERVICING. COMPONENTS IDENTIFIED WITH THE IEC SYMBOL  $\triangle$  IN THE PARTS LIST AND THE SCHEMATIC DIAGRAM DESIGNATE COMPONENTS IN WHICH SAFETY CAN BE OF SPECIAL SIGNIFICANCE. WHEN REPLACING A COMPONENT IDENTIFIED  $\triangle$ , USE ONLY THE REPLACEMENT PARTS DESIGNATED, OR PARTS WITH THE SAME RATINGS OF RESISTANCE, WATTAGE OR VOLTAGE THAT ARE DESIGNATED IN THE PARTS LIST IN THIS MANUAL. LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS MUST BE MADE TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE PRODUCT TO THE CUSTOMER.

**CAUTION :** Regular type resistors and capacitors are not listed. To know those values, refer to the schematic diagram.

Regular type resistors are less than 1/4W carbon type and 0 ohm chip resistors.

Regular type capacitors are less than 50V and less than 1000 $\mu$ F type of Ceramic type and Electrical type.

**N.S.P :** Not available as service parts.

### PACKING & ACCESSORIES

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
	614 273 1512	CARTON CASE	44	614 270 8316	ASSY, GEAR, CD
	614 270 7357	CUSHION, TOP	45	614 269 1984	COVER, TOP, L
	614 270 7340	CUSHION, BOTTOM	46	614 269 1991	COVER, TOP, R
	614 256 5674	SHEET, SET	47	614 258 1544	SLIDE, CD OPEN
	614 246 0443	INNER POLYE COVER, INST MANUAL · REMOCON	48	614 270 2178	DAMPER, CD MECHA
	614 273 1642	INSTRUCTION MANUAL	49	614 270 2291	SPRING, COMP, CD MECHA
	614 231 6832	LABEL, SAFETY	50	412 032 6408	SCREW, SPECIAL, CD MECHA
	645 009 8956	REMOCON, PH-D580	51	614 269 7474	SPRING, WIRE, CASSETTE, DECK2
	$\triangle$ 614 023 1779	CORD, AC POWER	52	614 268 6188	SPRING, WIRE, CASSETTE, DECK1
	$\triangle$ 614 235 7859	CORD, AC POWER	53	614 270 8316	ASSY, GEAR, CASSETTE
			54	614 272 3395	BRACKET-M, MECHA-BUTTON
			55	614 108 2929	BRACKET, REC/PLAY
			56	614 272 6617	SPRING, PLATE, REC/PLAY
			57	614 269 2264	LEVER, REC/PLAY
			58	614 269 2288	MOUNTING, EQUALIZER
			59	614 269 2301	MOUNTING PWB, LEFT
			60	614 269 2295	MOUNTING PWB, RIGHT
			61	614 273 5329	MOUNTING, TUNER
			101	614 269 7269	ASSY, BOX, SPEAKER, FRONT, LEFT
			102	614 269 7245	ASSY, BOX, SPEAKER, REAR, LEFT
			103	614 269 7276	ASSY, BOX, SPEAKER, FRONT, RIGHT
			104	614 269 7252	ASSY, BOX, SPEAKER, REAR, RIGHT

### CABINET & CHASSIS

Ref. No.	Part No.	Description
1	614 273 5053	ASSY, CABINET, FRONT
2	614 269 7320	ASSY, LID, CASSETTE, DECK2
3	614 273 8542	ASSY, LID, CASSETTE, DECK1
4	614 273 5152	ASSY, CABINET, REAR
5	614 270 6374	ASSY, HANDLE
6	614 269 0871	LID, CD
7	614 273 7552	LID, BATTERY
8	614 269 1731	BUTTON, TUNING+-
9	614 273 5312	KNOB, ROTARY, VOLUME
10	614 269 2172	KNOB, ROTARY, SPECTRUM
11	614 269 1595	BUTTON, CD OPEN
12	614 269 0796	BUTTON, CD PLAY/STOP
13	614 275 2203	BUTTON, CD OPERATION
14	614 269 1748	BUTTON, PRESET
15	614 270 5568	ASSY, BUTTON, EQUALIZER
16	614 269 1588	BUTTON, POWER
17	614 269 7351	KNOB, SLIDE, FUNCTION
18	614 269 0819	BUTTON, SURROUND
19	614 269 0826	BUTTON, BASS
20	614 269 1618	BUTTON, DECK2, REC
21	614 269 1625	BUTTON, DECK2, PLAY
22	614 269 1632	BUTTON, DECK2, REW
23	614 269 1649	BUTTON, DECK2, FFW
24	614 269 1656	BUTTON, DECK2, STOP/EJECT
25	614 269 1663	BUTTON, DECK2, PAUSE
26	614 269 1755	BUTTON, DECK1, REVERSE MODE
27	614 269 1724	BUTTON, DECK1, PLAY
28	614 269 1687	BUTTON, DECK1, REW
29	614 269 1694	BUTTON, DECK1, FFW
30	614 269 1700	BUTTON, DECK1, STOP/EJECT
31	614 269 1717	BUTTON, DECK1, DIRECTION
41	614 274 7995	PANEL, TOP, CD
42	614 248 2551	ASSY, PULLEY, CD CHACKING
43	614 268 5716	SPRING, WIRE, CD

### FIXING PARTS

Ref. No.	Part No.	Description
Y01	411 021 4906	SCR S-TPG BIN 3X20, CABINET FRONT-REAR
Y02	411 021 4104	SCR S-TPG BIN 3X12, PANEL TOP
Y03	411 002 9104	SCR PAN 3X8, ROD ANT
Y04	411 021 4104	SCR S-TPG BIN 3X12, SPEAKER TERMINAL
Y05	411 021 4906	SCR S-TPG BIN 3X20, SPEAKER BOX(L)(R)
Y11	411 020 8905	SCR S-TPG BRZ+FLG 3X10, SPEAKER(L)(R)
Y12	411 021 3503	SCR S-TPG BIN 3X10, TAPE DECK BUTTON-BRACKET
Y13	411 021 4005	SCR S-TPG BIN 3X12, CD PWB
Y14	411 021 4005	SCR S-TPG BIN 3X12, TAPE-MECHANISM
Y15	411 025 2007	SCR S-TPG PAN 2X4, REC/PLAY
Y16	411 020 9100	SCR S-TPG BRZ+FLG 3X12, REC/PLAY LEVER
Y17	411 022 2802	SCR S-TPG FLT 3X10, REC/PLAY
Y18	411 021 6405	SCR S-TPG BIN 3X8, EQUALIZER
Y19	411 020 9100	SCR S-TPG BRZ+FLG 3X12, POWER TRANSFORMER.
Y20	411 021 4005	SCR S-TPG BIN 3X12, AC SOCKET

# PARTS LIST

Ref. No.	Part No.	Description
Y21	411 021 4005	SCR S-TPG BIN 3X12, MOUNTING TUNER
Y22	411 021 4005	SCR S-TPG BIN 3X12,TUNER PWB
Y23	411 021 4005	SCR S-TPG BIN 3X12, CD PLAY·STOP BUTTON

## ELECTRICAL PARTS

Ref. No.	Part No.	Description
71	△423 007 0505	FUSE 250V 4A,FU401
or	△423 016 8103	FUSE 250V 4A,FU401
72	△614 241 2435	ANTENNA,FM
73	645 011 0313	SPEAKER,3,WOOFER,130 MM, SP471·SP481
74	419 002 0206	PIEZO BUZZER 7MB-20-5R5, TWEETER,SP472·SP482
75	645 011 0320	SPEAKER,3,SQUAWKER, SP473·SP483
76	614 248 4456	WIRE,2P,EXT.SP
	614 270 4301	CORD,5P,CONNECTOR, R/P/E-HEAD,CN430
	614 270 4318	CORD,3P,CONNECTOR, P-HEAD,CN431
	614 270 4325	CORD,4P,CONNECTOR, AMP-MOTOR,CN432
	614 271 0371	CORD,10P,CONNECTOR, AMP-MECHA,CN433
	645 009 0769	FLEXIBLE FLAT CABLE, SYSCON-TU,CN434
	403 166 1605	NP-ELECT 4.7U M 25V, C4750·C4850

## TUNER P. W. BOARD ASSY

Ref. No.	Part No.	Description
81	614 273 6050	ASSY,PWB,TUNER
C2131	403 081 8000	POLYPRO 360P J 100V
C2133	403 082 0201	POLYPRO 470P J 100V
C2214	403 154 2102	NP-ELECT 1U M 50V
CN201	614 227 7706	SOCKET,13P,TO SYSCON
CN211	614 254 3597	TERMINAL,1P,EARTH
or	614 221 8273	TERMINAL,1P,EARTH
CT211	614 007 6356	TRIMMER,11PF,MW
CT212	645 004 2317	TRIMMER,30PF,LW
D2002	407 142 9401	VARIABLE DI KV1310N
D2003	407 142 9401	VARIABLE DI KV1310N
D2101	407 012 4406	DIODE 1SS133
D2102	407 154 7501	VARIABLE DI SVC344
D2201	407 012 4406	DIODE 1SS133
D2202	407 012 4406	DIODE 1SS133
IC201	409 016 0200	IC LA1186N-AUDIO
IC211	409 312 4803	IC LA1832M
IC221	409 344 1009	IC LC72131M
L2001	645 012 0664	INDUCTOR,AIR 0.1U,FM
L2002	614 035 0494	V.H.F COIL,FM
or	614 229 0231	V.H.F COIL,FM
L2003	645 002 1534	INDUCTOR,8.2U K,FM
L2101	645 004 0580	INDUCTOR,1M J
L2102	614 253 6827	TRANS,RF,MW
L2103	614 253 6834	TRANS,RF,LW
L2106	645 009 3234	COIL,BAR ANTENNA,AM
L2204	645 010 5449	COIL,FERRITE,MW
L2205	645 010 5456	COIL,FERRITE,LW
Q2001	405 016 0806	TR 2SC2839-E
Q2002	405 016 0806	TR 2SC2839-E

Ref. No.	Part No.	Description
Q2101	405 036 3702	TR 2SA1564
Q2102	405 037 0809	TR 2SC4048
Q2103	405 035 8609	TR 2SK544-F
Q2104	405 017 9709	TR 2SC3330-U
Q2105	405 021 0600	TR 2SD1012-G-SPA
Q2106	405 021 0600	TR 2SD1012-G-SPA
Q2107	405 021 0600	TR 2SD1012-G-SPA
Q2108	405 016 0806	TR 2SC2839-E
Q2109	405 021 0600	TR 2SD1012-G-SPA
Q2110	405 016 0806	TR 2SC2839-E
Q2201	405 036 3702	TR 2SA1564
Q2202	405 037 0809	TR 2SC4048
Q2205	405 036 3702	TR 2SA1564
Q2206	405 036 3702	TR 2SA1564
Q2207	405 082 4609	TR DTA123YS
R2210	△401 023 1003	CARBON 82 JA 1/4W
R2213	△401 013 4502	CARBON 120 JA 1/4W
SHILD	614 256 3052	SHIELD,FM
X2101	614 246 0870	RESONATOR,456KHZ,AM
or	645 010 0024	OSC,CERAMIC,456KHZ,AM
X2201	614 229 2457	CRYSTAL,7.2MHZ,FOR IC221
XF201	614 252 1045	FILTER,LC,B.P.F,76-108MHZ,FM
XF211	614 229 3805	FILTER,FM-IF,1ST
or	645 009 3609	CERAMIC FILTER 10.65MHZ
XF212	614 229 3805	FILTER,FM-IF,2ND
or	645 009 3609	CERAMIC FILTER 10.65MHZ
XF213	614 251 2579	FILTER,459KHZ,AM
XF214	645 006 7624	DISCR,CERAMIC,10.65MHZ,FM
or	645 008 5680	DISCR,CERAMIC,10.65MHZ,FM

## CD MAIN P. W. BOARD ASSY

Ref. No.	Part No.	Description
82	614 273 9464	ASSY,PWB,CD
CN131	614 254 3597	TERMINAL,1P,TEST POINT
or	614 221 8273	TERMINAL,1P,TEST POINT
CN132	614 254 3597	TERMINAL,1P,TEST POINT
or	614 221 8273	TERMINAL,1P,TEST POINT
CN141	645 012 2750	SOCKET,DIP 10P
CN142	645 010 1465	SOCKET,FPC 13P
CN143	645 012 2729	SOCKET,DIP 7P
CN144	614 035 5000	SOCKET,DIP 11P
CN145	645 005 8127	PLUG,6P
or	645 007 0099	PLUG,6P
CN146	614 035 4911	SOCKET,DIP 2P
or	614 237 9752	SOCKET,DIP 2P
IC131	409 327 3402	IC CXA1782BQ
IC141	△409 317 8509	IC BA6398FP
IC142	409 322 2707	IC CXD2518Q
IC143	409 192 7109	IC BA15218F
or	409 241 5506	IC XRA15218F
PR102	645 006 2322	PROTECTOR,IC,0.4A 50V
Q1301	405 006 1905	TR 2SA933S-S
or	405 006 1806	TR 2SA933S-R
or	405 002 1305	TR 2SA1048-Y
or	405 002 1107	TR 2SA1048-GR
or	405 057 7604	TR 2SA1175-FF
or	405 002 5402	TR 2SA1175-EF
Q1302	405 006 1905	TR 2SA933S-S
or	405 006 1806	TR 2SA933S-R
or	405 002 1305	TR 2SA1048-Y
or	405 002 1107	TR 2SA1048-GR
or	405 057 7604	TR 2SA1175-FF
or	405 002 5402	TR 2SA1175-EF
Q1401	△405 009 5207	TR 2SB927-S
or	△405 001 9302	TR 2SA1020-Y

**PARTS LIST**

Ref. No.	Part No.	Description
Q1451	405 007 6701	TR 2SB598-F-NP
or	405 006 4005	TR 2SA952-L
or	405 006 3909	TR 2SA952-K
Q1453	405 000 1208	TR DTA124ES
or	405 078 2206	TR BN1F4M
or	405 001 1207	TR RN2203
Q1503	405 000 3103	TR DTC114ES
or	405 078 2909	TR BA1A4M
or	405 001 0200	TR RN1202
Q1782	405 017 9600	TR 2SC3330-T
Q1882	405 017 9600	TR 2SC3330-T
VR131	645 001 9326	VR, SEMI, 100K N, T. BALANCE
X1451	614 254 6932	RESONATOR, CERAMIC, 33.86MHZ
or	614 259 2137	RESONATOR, CERAMIC, 33.86MHZ

Ref. No.	Part No.	Description
S1511	645 006 5958	SWITCH, PUSH 1P-1T, M2
or	614 220 5471	SWITCH, PUSH 1P-1T, M2
or	614 240 1002	SWITCH, PUSH 1P-1T, M2
S1512	645 006 5958	SWITCH, PUSH 1P-1T, M3
or	614 220 5471	SWITCH, PUSH 1P-1T, M3
or	614 240 1002	SWITCH, PUSH 1P-1T, M3
S1513	645 006 5958	SWITCH, PUSH 1P-1T, M4
or	614 220 5471	SWITCH, PUSH 1P-1T, M4
or	614 240 1002	SWITCH, PUSH 1P-1T, M4
S1514	645 006 5958	SWITCH, PUSH 1P-1T, TU UP
or	614 220 5471	SWITCH, PUSH 1P-1T, TU UP
or	614 240 1002	SWITCH, PUSH 1P-1T, TU UP
S1515	645 006 5958	SWITCH, PUSH 1P-1T, M5
or	614 220 5471	SWITCH, PUSH 1P-1T, M5
or	614 240 1002	SWITCH, PUSH 1P-1T, M5
S1516	645 006 5958	SWITCH, PUSH 1P-1T, M6
or	614 220 5471	SWITCH, PUSH 1P-1T, M6
or	614 240 1002	SWITCH, PUSH 1P-1T, M6
X1501	614 217 8942	RESONATOR, CERAMIC, 2MHZ

**CD DISPLAY P. W. BOARD ASSY**

Ref. No.	Part No.	Description
83	614 273 9471	ASSY, PWB, DISPLAY
A1501	645 011 6421	LCD(LIQUID CRYSTAL DISPLAY)
BR151	614 273 5336	MOUNTING, LCD
CN151	614 227 7935	SOCKET, 13P
CN152	645 012 2743	SOCKET, DIP 9P
CN153	645 012 2729	SOCKET, DIP 7P
CN154	614 035 5000	SOCKET, DIP 11P
CN155	614 254 3597	TERMINAL,
or	614 221 8273	TERMINAL,
CN156	614 274 5489	CORD, 9P CONNECTOR
D1510	407 169 9408	PHOTO DIODE SPS-421-1-A
IC151	410 224 4607	IC CXP5078H-547Q
Q1501	405 000 3400	TR DTC114TS
or	405 107 8704	TR BA1A4Z
or	405 035 1600	TR RN1211
Q1502	405 000 3400	TR DTC114TS
or	405 107 8704	TR BA1A4Z
or	405 035 1600	TR RN1211
S1501	645 006 5958	SWITCH, PUSH 1P-1T, STOP
or	614 220 5471	SWITCH, PUSH 1P-1T, STOP
or	614 240 1002	SWITCH, PUSH 1P-1T, STOP
S1502	645 006 5958	SWITCH, PUSH 1P-1T, REPEAT
or	614 220 5471	SWITCH, PUSH 1P-1T, REPEAT
or	614 240 1002	SWITCH, PUSH 1P-1T, REPEAT
S1503	645 006 5958	SWITCH, PUSH 1P-1T, PLAY
or	614 220 5471	SWITCH, PUSH 1P-1T, PLAY
or	614 240 1002	SWITCH, PUSH 1P-1T, PLAY
S1504	645 006 5958	SWITCH, PUSH 1P-1T, DOWN
or	614 220 5471	SWITCH, PUSH 1P-1T, DOWN
or	614 240 1002	SWITCH, PUSH 1P-1T, DOWN
S1505	645 006 5958	SWITCH, PUSH 1P-1T, MEMORY
or	614 220 5471	SWITCH, PUSH 1P-1T, MEMORY
or	614 240 1002	SWITCH, PUSH 1P-1T, MEMORY
S1506	645 006 5958	SWITCH, PUSH 1P-1T, P-SCAN
or	614 220 5471	SWITCH, PUSH 1P-1T, P-SCAN
or	614 240 1002	SWITCH, PUSH 1P-1T, P-SCAN
S1507	645 006 5958	SWITCH, PUSH 1P-1T, BAND
or	614 220 5471	SWITCH, PUSH 1P-1T, BAND
or	614 240 1002	SWITCH, PUSH 1P-1T, BAND
S1508	645 006 5958	SWITCH, PUSH 1P-1T, UP
or	614 220 5471	SWITCH, PUSH 1P-1T, UP
or	614 240 1002	SWITCH, PUSH 1P-1T, UP
S1509	645 006 5958	SWITCH, PUSH 1P-1T, TU DOWN
or	614 220 5471	SWITCH, PUSH 1P-1T, TU DOWN
or	614 240 1002	SWITCH, PUSH 1P-1T, TU DOWN
S1510	645 006 5958	SWITCH, PUSH 1P-1T, M1
or	614 220 5471	SWITCH, PUSH 1P-1T, M1
or	614 240 1002	SWITCH, PUSH 1P-1T, M1

**CD OPEN / CLOSE SWITCH P. W. BOARD ASSY**

Ref. No.	Part No.	Description
84	614 273 9488	ASSY, PWB, CD SWITCH
CN157	614 035 4911	SOCKET, DIP 2P
or	614 237 9752	SOCKET, DIP 2P
S1520	645 004 7787	SWITCH, LEVER 1P-2T, OPEN/CLOSE

**AMPLIFIER P. W. BOARD ASSY**

Ref. No.	Part No.	Description
85	614 273 8054	ASSY, PWB, MAIN AMP
C4741	403 058 5308	POLYESTER 0.15U K 50V
C4742	403 134 9305	ELECT 2200U M 16V
C4841	403 058 5308	POLYESTER 0.15U K 50V
C4842	403 134 9305	ELECT 2200U M 16V
C4916	403 058 9900	POLYESTER 0.018U K 50V
C4917	403 062 0306	POLYESTER 0.047U K 50V
C4925	403 135 4507	ELECT 1000U M 10V
C4948	403 135 5702	ELECT 4700U M 25V
CN401	614 206 0278	SOCKET, 10P, TO CD
CN402	645 004 2904	PLUG, 4P, TO MOTOR
CN403	645 005 8141	PLUG, 9P, TO TUNER
CN405	645 004 2898	PLUG, 3P, TO P HEAD
CN406	645 004 2928	PLUG, 6P, TO R/P/E HEAD
CN407	645 005 8158	PLUG, 10P, TO TAPE MECHA SW
CN408	614 229 3812	JACK, HEADPHONE
CN410	645 004 2898	PLUG, 3P, TO POWER SUPPLY
CN422	645 012 2729	SOCKET, 7P, TO EQUALIZER
or	614 249 6770	SOCKET, 7P, TO EQUALIZER
D4701	407 012 4406	DIODE 1SS133
or	407 007 9904	DIODE GMA01
D4801	407 012 4406	DIODE 1SS133
or	407 007 9904	DIODE GMA01
D4901	407 012 4406	DIODE 1SS133
or	407 007 9904	DIODE GMA01
D4902	407 012 4406	DIODE 1SS133
or	407 007 9904	DIODE GMA01
D4903	407 012 4406	DIODE 1SS133
or	407 007 9904	DIODE GMA01
D4904	407 012 4406	DIODE 1SS133
or	407 007 9904	DIODE GMA01
D4905	407 012 4406	DIODE 1SS133
or	407 007 9904	DIODE GMA01

**PARTS LIST**

Ref. No.	Part No.	Description
D4906	407 012 4406	DIODE 1SS133
or	407 007 9904	DIODE GMA01
D4907	407 012 4406	DIODE 1SS133
or	407 007 9904	DIODE GMA01
D4908	407 012 4406	DIODE 1SS133
or	407 007 9904	DIODE GMA01
D4912	408 017 5405	LED SLZ-981C-13-AB,DIRECTION
D4913	407 012 4406	DIODE 1SS133
or	407 007 9904	DIODE GMA01
D4914	408 017 5405	LED SLZ-981C-13-AB,DIRECTION
D4915	△407 053 8708	ZENER DIODE MTZ9.1A
D4916	407 012 4406	DIODE 1SS133
or	407 007 9904	DIODE GMA01
D4917	△407 053 8005	ZENER DIODE MTZ7.5B
D4922	△407 053 8302	ZENER DIODE MTZ8.2A
D4923	407 012 4406	DIODE 1SS133
or	407 007 9904	DIODE GMA01
D4924	△407 053 3109	ZENER DIODE MTZ12A
D4925	407 053 3406	ZENER DIODE MTZ13B
D4926	407 007 9904	DIODE GMA01
D4927	407 007 9904	DIODE GMA01
HS401	614 251 4115	HEAT SINK
IC401	409 251 1000	IC TA8189N
IC402	△409 313 0705	IC TA8223K
IC403	409 114 4803	IC LB1641
IC404	409 052 9809	IC TC9145P
IC405	409 254 9409	IC S-87050CF-VP
L4701	645 006 9864	INDUCTOR,80UH 1A
L4801	645 006 9864	INDUCTOR,80UH 1A
L4901	614 224 7983	TRANS,OSC
L4902	645 011 6414	INDUCTOR,1M J
L4903	645 011 6414	INDUCTOR,1M J
LUG01	614 217 7273	LUG,LEAD WIRE FIX
LUG02	614 217 7273	LUG,LEAD WIRE FIX
LUG03	614 217 7273	LUG,LEAD WIRE FIX
PR401	645 006 2353	PROTECTOR,IC,0.8A 50V
Q4702	405 037 0601	TR 2SC3899
Q4703	405 037 0601	TR 2SC3899
Q4704	405 010 9706	TR 2SC1571-G-NP
Q4705	405 010 9706	TR 2SC1571-G-NP
Q4706	405 017 9709	TR 2SC3330-U
or	405 017 9600	TR 2SC3330-T
Q4709	405 010 9706	TR 2SC1571-G-NP
Q4802	405 037 0601	TR 2SC3899
Q4803	405 037 0601	TR 2SC3899
Q4804	405 010 9706	TR 2SC1571-G-NP
Q4805	405 010 9706	TR 2SC1571-G-NP
Q4806	405 017 9709	TR 2SC3330-U
or	405 017 9600	TR 2SC3330-T
Q4809	405 010 9706	TR 2SC1571-G-NP
Q4905	405 037 0601	TR 2SC3899
Q4906	405 018 0200	TR 2SC3331-U
or	405 018 0101	TR 2SC3331-T
Q4908	△405 095 1602	TR 2SD2061-E
or	△405 095 1701	TR 2SD2061-F
or	△405 073 5202	TR 2SD2012
or	△405 035 7107	TR 2SD1913-R
or	△405 035 7206	TR 2SD1913-S
Q4909	405 017 9709	TR 2SC3330-U
or	405 017 9600	TR 2SC3330-T
Q4910	405 017 9709	TR 2SC3330-U
or	405 017 9600	TR 2SC3330-T
Q4911	405 004 4502	TR 2SA608-F-NP
Q4912	405 017 9709	TR 2SC3330-U
or	405 017 9600	TR 2SC3330-T
Q4913	△405 095 1602	TR 2SD2061-E
or	△405 095 1701	TR 2SD2061-F

Ref. No.	Part No.	Description
or	△405 073 5202	TR 2SD2012
or	△405 035 7107	TR 2SD1913-R
or	△405 035 7206	TR 2SD1913-S
Q4914	△405 095 1602	TR 2SD2061-E
or	△405 095 1701	TR 2SD2061-F
or	△405 073 5202	TR 2SD2012
or	△405 035 7107	TR 2SD1913-R
or	△405 035 7206	TR 2SD1913-S
Q4915	△405 012 7403	TR 2SC2001-K
Q4916	405 018 2808	TR 2SC3402
Q4917	405 018 2808	TR 2SC3402
Q4918	405 018 2808	TR 2SC3402
Q4919	405 018 2808	TR 2SC3402
Q4920	405 003 7900	TR 2SA1348
or	405 000 0508	TR DTA114ES
or	405 078 2305	TR BN1A4M
or	405 001 1108	TR RN2202
Q4921	405 018 2808	TR 2SC3402
R4760	△402 071 1304	FUSIBLE RES 2.2 JA 1/4W
R4860	△402 071 1304	FUSIBLE RES 2.2 JA 1/4W
R4952	△402 071 0307	FUSIBLE RES 10 JA 1/4W
R4973	402 071 0307	FUSIBLE RES 10 JA 1/4W
S4901	645 011 0368	SWITCH,SLIDE 4P-4T,REC/PLAY
S4902	614 247 8561	SWITCH,SLIDE,FUNCTION
S4903	614 235 4506	SWITCH,SLIDE,BEAT CANCEL
S4907	614 247 8585	SWITCH,PUSH,POWER
S4908	614 240 6571	SWITCH,PUSH,BASS
S4909	614 240 6571	SWITCH,PUSH,SURROUD
SA491	411 021 6405	SCR S-TPG BIN 3X8
SA492	411 021 6405	SCR S-TPG BIN 3X8
SA493	411 021 6405	SCR S-TPG BIN 3X8
TR491	614 247 7144	TERMINAL,EXT.SP
VR401	645 009 8710	VR,ROTARY,50KBX2,VOLUME
VR402	614 247 8554	VR,ROTARY,TONE
VR405	645 006 2537	VR,SEMI,2K N,TAPE SPEED
W4901	645 013 6153	CORD,SOCKET,TO SYSCON
W4902	645 013 6146	CORD,SOCKET,TO TUNER

**EQUALIZER SWITCH P. W. BOARD ASSY**

Ref. No.	Part No.	Description
86	614 272 8550	ASSY,PWB,EQUALIZER
CN423	645 012 2729	SOCKET,DIP 7P
or	614 249 6770	SOCKET,DIP 7P
D4909	408 019 4703	LED SLZ-981B-09-AB,ROCK
D4910	408 019 9401	LED SLZ-381B-09-AB,CLASSIC
D4911	408 021 1905	LED SLZ-481B-09-AB,JAZZ
S4904	614 240 1002	SWITCH,TACT,ROCK
S4905	614 240 1002	SWITCH,TACT,CLASSIC
S4906	614 240 1002	SWITCH,TACT,JAZZ

**POWER SUPPLY P. W. BOARD ASSY**

Ref. No.	Part No.	Description
87	614 273 8030	ASSY,PWB,POWER SUPPLY
CN413	614 020 1222	SOCKET,3P,TO AMP
CN414	614 020 6548	SOCKET,2P,TO BATT
or	614 223 9209	SOCKET,2P,TO BATT
CN416	614 272 1605	CORD,3P,CONNECTOR
CN423	614 020 6548	SOCKET,2P
or	614 223 9209	SOCKET,2P
FCL41	645 006 4760	HOLDER,FUSE
FCL42	△645 006 4760	HOLDER,FUSE
L4904	△614 213 5761	INDUCTOR,FERITE
T4901	△614 271 0357	POWER TRANSFORMER

## PARTS LIST

### AC SOCKET P. W. BOARD ASSY

Ref. No.	Part No.	Description
88	614 273 8023	ASSY,PWB, SOCKET
CN412	△645 005 7038	SOCKET,2P,AC IN
D4907	△407 141 2809	DIODE IN5402
D4908	△407 141 2809	DIODE IN5402
D4909	△407 141 2809	DIODE IN5402
D4910	△407 141 2809	DIODE IN5402

### BATTERY TERMINAL 1 P. W. BOARD ASSY

Ref. No.	Part No.	Description
89	614 272 0967	ASSY,PWB,BATT
	614 118 4036	TERMINAL BATTERY,(-)
CN415	614 020 6548	SOCKET,2P,TO POWER SUPPLY
or	614 223 9209	SOCKET,2P,TO POWER SUPPLY

### BATTERY TERMINAL 2 P. W. BOARD ASSY

Ref. No.	Part No.	Description
90	614 273 8009	ASSY,PWB,BATT
	614 274 2297	TERMINAL BATTERY,(-)
CN424	614 020 6548	SOCKET,2P,TO POWER SUPPLY
or	614 223 9209	SOCKET,2P,TO POWER SUPPLY

### BATTERY TERMINAL 3 P. W. BOARD ASSY

Ref. No.	Part No.	Description
91	614 273 8016	ASSY,PWB,BATT
	614 274 2297	TERMINAL BATTERY,(-)



**PARTS LIST**

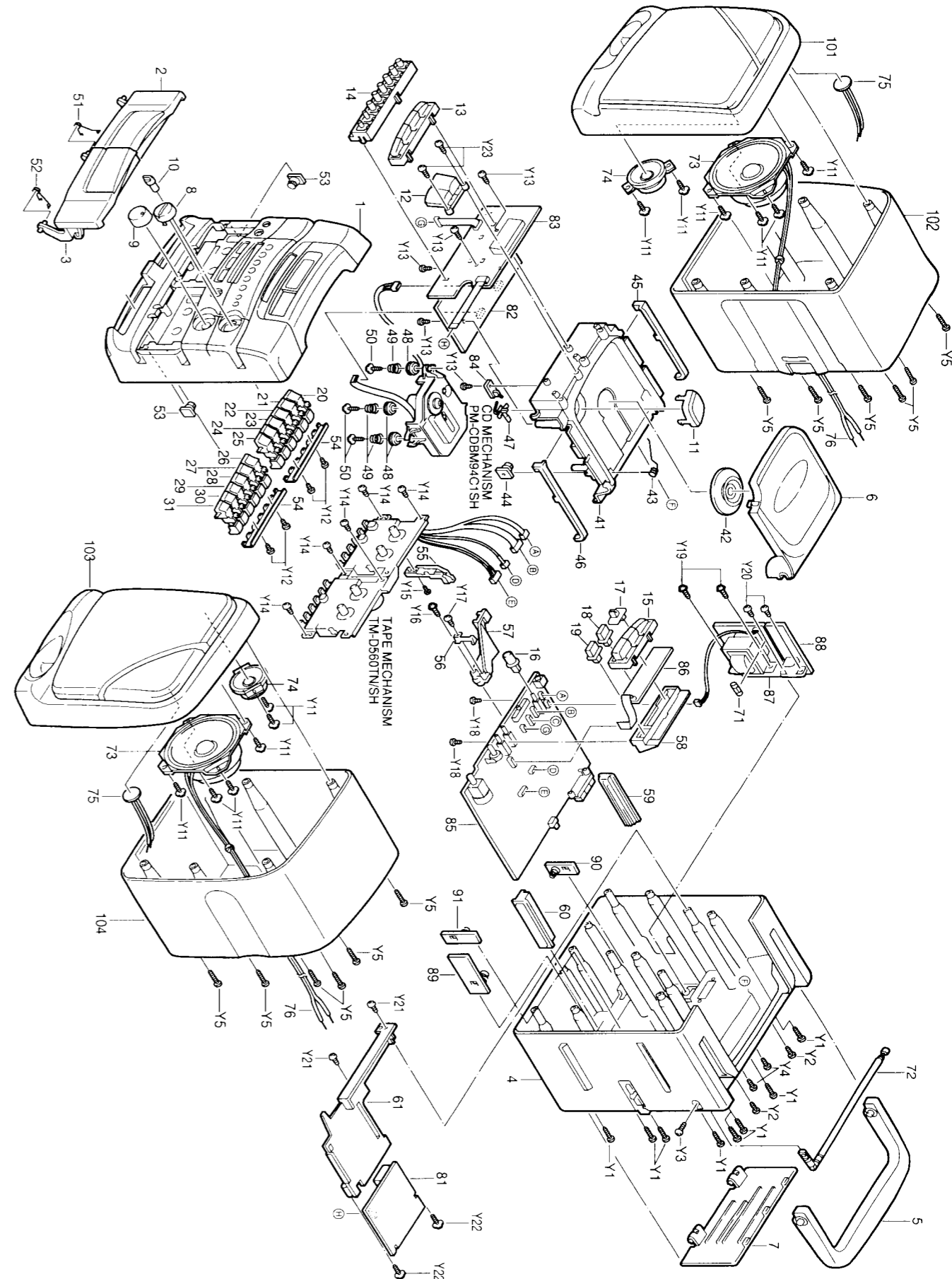
**TAPE MECHANISM (TM-D560TN/SP)**

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
TM001	645 010 9232	RUG PLATE	TM117	645 009 2169	M CONTROL ARM
TM002	614 268 5396	HEAD,MAGNETIC,REC/PLAY	TM118	645 009 1872	ASSY,PINCH ROLLER ARM(F)
TM003	645 009 1551	AZIMUTH SPRING	TM119	645 009 2039	ASSY,BASE
TM004	645 010 9409	HEAD BASE	TM120	645 009 1988	ROTARY ARM
TM005	645 009 1360	PANEL P SPRING	TM121	645 009 2022	ROTARY SPRING
TM006	645 010 9416	HEAD PANEL	TM122	645 009 2015	PR STOPPER
TM007	614 021 8251	HEAD,MAGNETIC,ERASE	TM123	645 009 1995	SLIDE PLATE
TM009	645 009 6891	E HEAD SPRING	TM124	645 010 9195	ASSY,ACTUATOR
TM010	645 009 1506	SENSING LEVER	TM125	645 010 9966	PLAY BUTTON LEVER(S)
TM011	645 009 1452	M CONTROL SPRING	TM126	645 010 9959	FF BUTTON LEVER(RS)
TM012	645 009 1513	GEAR PLATE SPRING	TM127	645 010 9942	FF BUTTON LEVER(FS)
TM013	645 009 1520	ASSY,GEAR PLATE	TM128	645 010 7887	STOP BUTTON LEVER(S)
TM014	645 009 1612	ASSY,PINCH ROLLER ARM	TM129	645 010 9188	ASSY,PROG BUTTON LEVER
TM015	645 009 1308	ASSY,BASE	TM131	645 009 1834	PANEL SPRING
TM016	645 009 1469	PR STOPPER	TM132	645 009 1759	ASSY,TAKE UP REEL
TM017	645 009 1285	SWITCH ACTUATOR	TM133	645 009 1896	SENSOR
TM018	645 009 1339	E KICK LEVER	TM134	645 009 1902	SENSOR SPRING
TM019	645 009 3760	PUSH BUTTON ACTUATOR	TM135	645 009 1810	ASSY,CHASSIS
TM020	645 011 0757	REC BUTTON LEVER	TM136	645 010 9928	E SLIDE LEVER(S)
TM021	645 011 0764	PLAY BUTTON LEVER	TM137	645 009 2008	E ACTUATOR SPRING
TM022	645 011 0771	REW BUTTON LEVER	TM138	645 009 2077	MUTING PLATE SPRING
TM023	645 011 0788	FF BUTTON LEVER	TM139	645 009 2060	MUTING PLATE
TM024	645 011 0795	STOP BUTTON LEVER	TM140	645 009 1797	MAIN PLATE
TM025	645 011 0801	PAUSE BUTTON LEVER	TM141	645 009 1803	MAIN PLATE SPRING
TM026	645 009 1407	P CONTROL SPRING	TM142	645 009 2084	CAM GEAR
TM027	645 009 1483	PAUSE LEVER	TM143	645 009 3128	ASSY,FLYWHEEL CAPSTAN(R)
TM028	645 009 1391	PAUSE LEVER SPRING	TM144	645 009 3111	ASSY,FLYWHEEL CAPSTAN(F)
TM029	645 009 1384	PAUSE STOPPER	TM145	645 009 2411	MAIN BELT
TM030	645 009 3210	PLAY BUTTON LEVER SPRING	TM146	645 010 9973	MODE BUTTON LEVER(S)
TM031	645 009 1414	BUTTON LEVER SPRING(A)	TM147	645 010 9997	PM BUTTON LEVER SP
TM032	645 009 1421	BUTTON LEVER SPRING(B)	TM148	645 012 3405	BT SPRING(F)
TM033	645 009 1674	RECORD SAFETY LEVER	TM149	645 012 3412	BT SPRING(R)
TM034	645 009 1742	ASSY,SUPPLY REEL	TM201	645 009 1599	MOTOR BRACKET
TM035	645 009 1575	BACK TENSION SPRING	TM202	645 009 3814	MOTOR COLLAR SCREW
TM036	645 009 1735	ASSY,TAKE UP REEL	TM203	645 009 1582	MOTOR RUBBER
TM037	645 009 1629	SENSOR	TM204	645 009 2404	ANTI VIBRATION FELT MAT
TM038	645 009 1568	FF GEAR	TM205	645 009 2398	ANTI VIBRATION FELT MAT
TM039	645 009 1698	PACK SPRING	TM206	645 009 2527	P KICK LEVER(B)
TM040	645 009 1476	REC BUTTON LEVER SPRING	TM207	645 009 2435	COLLAR(B)
TM041	645 009 1346	ASSY,CHASSIS	TM208	645 009 2459	P KICK LEVER
TM042	645 009 1445	PS LEVER SPRING	TM209	645 009 2442	P KICK LEVER SPRING
TM043	645 009 1544	LEAF SWITCH MSW-1541F	TM210	645 009 2428	PK COLLAR SCREW(A)
TM044	645 010 9423	E SLIDE LEVER	TM211	614 271 2863	ASSY,MOTOR
TM045	645 009 1438	E ACTUATOR SPRING		614 212 0514	MOTOR(N.S.P)
TM046	645 009 1490	CAM GEAR		645 009 2213	MOTOR PULLEY(N.S.P)

**FIXING PARTS (TAPE MECHANISM)**

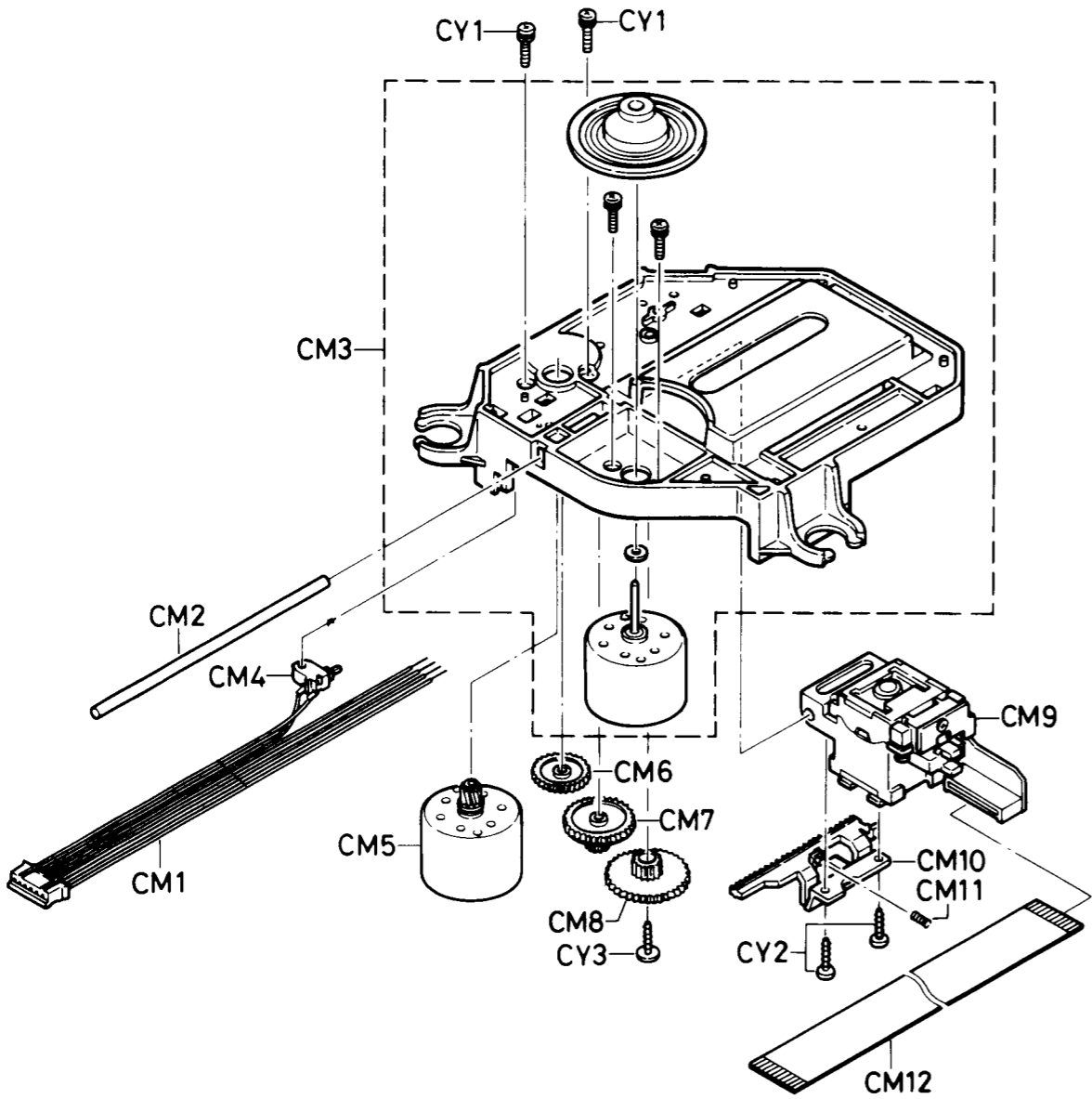
Ref. No.	Part No.	Description
TY01	645 009 2237	BIND SCREW M2X3
TY02	645 009 2282	AZIMUTH SCREW M2X7
TY03	645 010 9638	(+)(-)CUP SCREW 2X7.5
TY04	645 009 2381	HL WASHER CUT1.45X3.8X0.5
TY05	645 009 2305	C TAP SCREW M2X3
TY06	645 009 2244	P TAP BIND SCREW M2X5
TY07	645 009 2268	TAP CAMERA SCREW M2X4.5
TY08	645 009 2374	HL WASHER CUT 1.2X3.8X0.3
TY09	645 009 2350	HL WASHER 2.0X3.5X0.4
TY10	645 009 2336	SPECIAL SCREW M2X6 BLACK
TY11	645 009 2251	S TAP CAMERA SCREW M2X2.5
TY12	645 009 2275	E RING S1.5
TY13	645 009 2367	HL WASHER 2.1X3.5X0.4
TY14	645 009 2329	C TAP SCREW M2X6
TY15	645 009 2312	C TAP SCREW M2X4
TY16	645 009 2343	P WASHER CUT 2.1X4.0X0.13
TY17	412 012 7005	SPECIAL WASHER

**EXPLODED VIEW (CABINET & CHASSIS)**





EXPLODED VIEW (CD MECHANISM)



PARTS LIST

CD MECHANISM (PM-CDBM94C1SH)

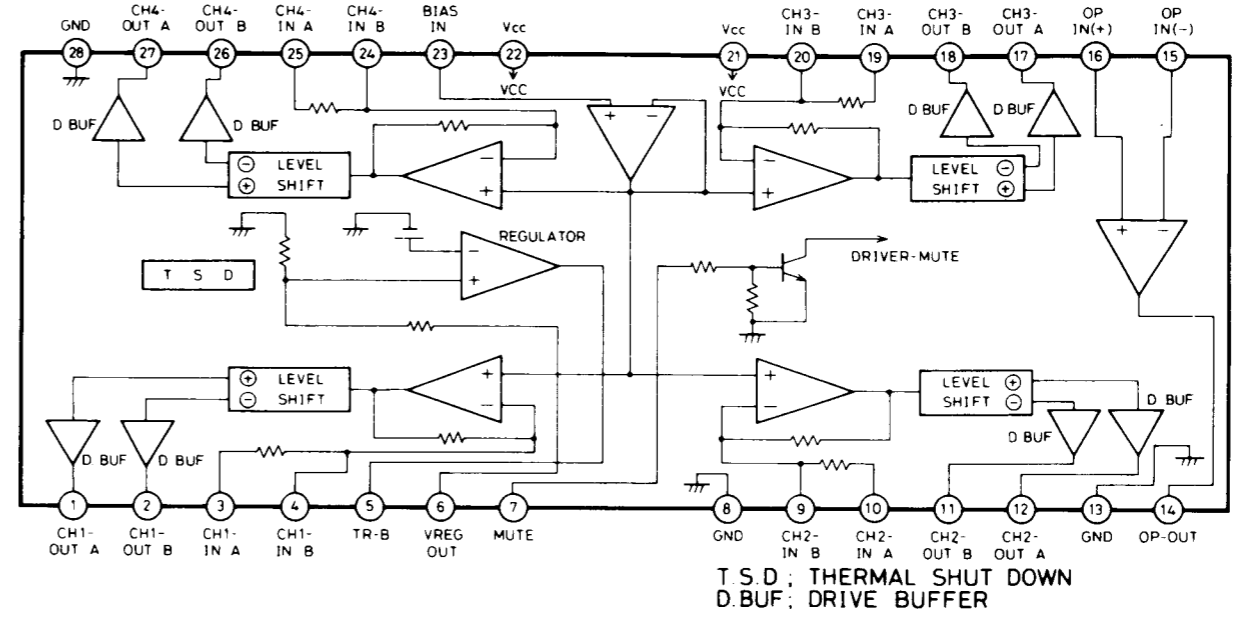
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
CM1	614 268 8069	ASSY,WIRE,MOTOR & SW	CM11	614 238 6934	SPRING,COMP,PICK RACK GEAR
CM2	614 237 7024	SHAFT,PICK UP RAIL	CM12	645 006 7976	FLEXIBLE FLAT CABLE, PICK UP(SUMI CARD)
CM3	614 265 7874	ASSY,CHASSIS,BASE MECHANISM	CY1	411 044 8004	SCREW,PAN+SW 2X8, SLED MOTOR FIX
	614 262 2575	CHASSIS,BASE MECHANISM	CY2	411 152 4301	SCREW,S-TPG PAN PCS 1.7X6, PICK RACK GEAR FIX
	645 007 7821	MOTOR,SPINDLE,DC,0.2W	CY3	412 047 3904	SCREW,SPECIAL, SLED GEAR FIX
	614 245 4268	TURNTABLE,SPINDLE	CY5	411 088 6509	WASHER,F 2X4.3X0.4, STOPPER OF RACK TOSS
	412 032 0208	WASHER,SPECIAL,ADHESIVE	CY4	411 018 6401	SCREW,PAN PCS 2X2, STOPPER OF RACK TOSS
	411 044 7502	SCR PAN+SW 2X5,SPINDLE MOTOR FIX			
CM4	614 024 1778	SWITCH,LIMIT			
CM5	645 007 7814	ASSY,MOTOR,SLED			
CM6	614 237 7093	GEAR,SLED RETARD 1			
CM7	614 237 7109	GEAR,SLED RETARD 2			
CM8	614 237 7116	GEAR,SLED			
CM9	645 006 7983	PICKUP,LASER,F-P100			
CM10	614 262 2599	GEAR,RACK,PICK RACK			

IC BLOCK DIAGRAM & DESCRIPTION

IC131 CXA1782BQ (Servo Signal Processor)

No.	Name	I/O	Function	No.	Name	I/O	Function
1	FEO	O	Focus error amplifier output. Connected internally to the comparator input.	25	FOK	O	Focus OK comparator output.
2	FEI	I	Focus error input.	26	CC2	O	Input pin for the DEFECT bottom hold output capacitance-coupled.
3	FDCT	I	Capacitor connection pin for detect time constant.	27	CC1	I	DEFECT bottom hold output.
4	FGD	I	Ground this pin through a capacitor when decreasing the focus servo high-frequency gain.	28	CB	I	Connection pin for DEFECT bottom hold capacitor.
5	FLB	I	External time constant setting pin for increasing the focus servo low frequency.	29	CP	I	Connection pin for MIRR hold capacitor. MIRR comparator non-inversed input.
6	FEO	O	Focus drive output.	30	RFI	I	Input pin for the RF summing amplifier output capacitance-coupled.
7	FEM	I	Focus amplifier negative input.	31	RFO	O	RF summing amplifier output. Eye pattern check point.
8	SRCH	I	External time constant setting pin for generating focus servo waveform.	32	RFM	I	RF summing amplifier inverted input. The RF amplifier gain is determined by the resistance connected between this pin and RFO pin.
9	TGU	I	External time constant setting pin for switching tracking high-frequency gain.	33	LD	O	APC (Auto Power Control) amplifier output.
10	TG2	I	External time constant setting pin for switching tracking high-frequency gain.	34	PHD	I	APC (Auto Power Control) amplifier input.
11	FSET	I	High cut off frequency setting pin for focus and tracking phase compensation amplifier.	35	PHD1	I	RF I-V amplifier inverted input. Connect these pins to the photo diodes A + C and B + D pins.
12	TAM	I	Tracking amplifier negative input.	36	PHD2	I	RF I-V amplifier inverted input. Connect these pins to the photo diodes F and E.
13	TAO	O	Tracking drive output.	37	FEBIAS	I	Bias adjustment of focus error amplifier.
14	SLP	I	Sled amplifier non-inverted input.	38	F	I	F I-V and E I-V amplifier inverted input. Connect these pins to the photo diodes F and E.
15	SLM	I	Sled amplifier negative input.	39	E	I	F I-V and E I-V amplifier inverted input. Connect these pins to the photo diodes F and E.
16	SLO	O	Sled drive output	40	EI	-	I-V amplifier E gain adjustment. (When not using automatic balance adjustment.)
17	ISSET	I	Setting pin for Focus search, Tracking jump, and Sled kick current.	41	VEE	-	GND
18	VCC	-	+5.0V	42	TEO	O	Tracking error amplifier output. E-F signal is output is input.
19	CLK	I	Serial data transfer clock input from CPU.	43	LPFI	I	Comparator input for balance adjustment. (Input from TEO through LPF.)
20	XLT	I	Latch input from CPU.	44	TEI	I	Tracking error input.
21	DATA	I	Serial data input from CPU.	45	ATSC	I	Window comparator input for ATSC detection.
22	XRST	I	Reset input; resets st Low.	46	TZC	I	Tracking zero-cross comparator input.
23	C.OUT	O	Track number count signal output.	48	VC	O	(VCC + VEE) / 2 DC voltage output.
24	SENS	O	Outputs FZC, DFCT, TZC, gain, balance, and others according to the command from CPU.				

IC141 BA6398FP (Pickup & Motor Driver)



T.S.D : THERMAL SHUT DOWN  
D.BUF : DRIVE BUFFER

### IC BLOCK (CD SECTION)

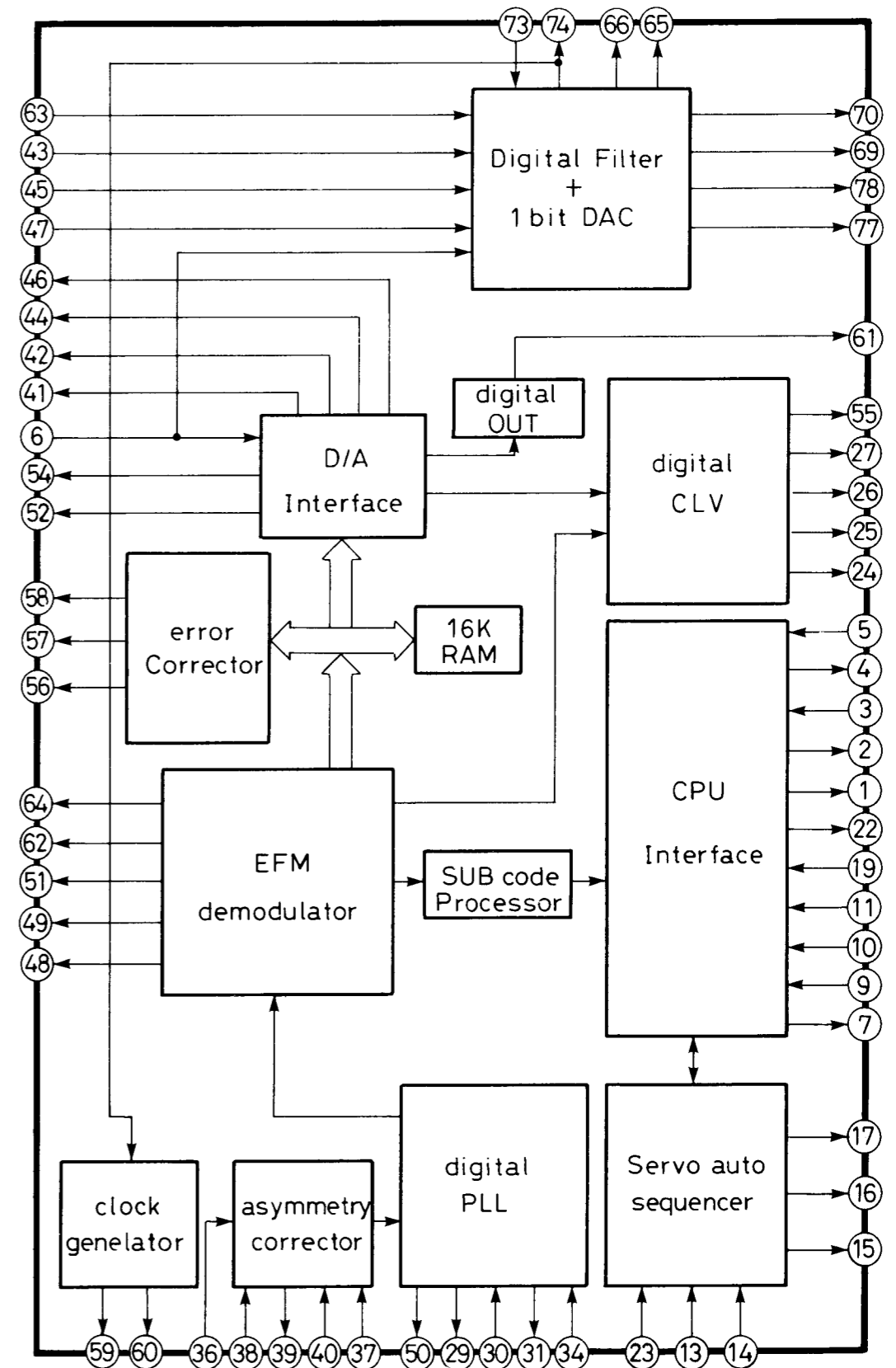
No.	PIN NAME	I / O	FUNCTION	No.	PIN NAME	I / O	FUNCTION
1	CH1-OUT A	O	Driver CH1 Negative Output	15	OP IN (-)	I	Negative Input of Operational Amplifier
2	CH1-OUT B	O	Driver CH1 Positive Output	16	OP IN (+)	I	Positive Input of Operational Amplifier
3	CH1-IN A	I	Driver CH1 Input	17	CH3-OUT A	O	Driver CH3 Negative Output
4	CH1-IN B	I	Driver CH1 Input for Gain Adjust	18	CH3-OUT B	O	Driver CH3 Positive Output
5	Tr-B	I	Connect for Base of External Transistor	19	CH3-IN A	I	Driver CH3 Input
6	Vref OUT	O	Output for Constant Voltage (Connect for Collector of External Transistor)	20	CH3-IN B	I	Driver CH3 Input for Gain Adjust
7	MUTE	I	Mute Control	21	VCC	-	Power source
8	GND	-	Ground (Earth)	22	VCC	-	Power source
9	CH2-IN B	I	Driver CH2 Input for Gain Adjust	23	BIAS IN	I	Input for Bias Amplifier
10	CH2-IN A	I	Driver CH2 Input	24	CH4-IN B	I	Driver CH4 Input for Gain Adjust
11	CH2-OUT B	O	Driver CH2 Positive Output	25	CH4-IN A	I	Driver CH4 Input
12	CH2-OUT A	O	Driver CH2 Negative Output	26	CH4-OUT B	O	Driver CH4 Positive Output
13	GND	-	Sub Straight Ground (Earth)	27	CH4-OUT A	O	Driver CH4 Negative Output
14	OP OUT	O	Output of Operational Amplifier	28	GND	-	Sub Straight Ground (Earth)

### IC142 CXD2518Q (Digital Signal Processor)

No.	Name	I / O	Description	No.	Name	I / O	Description
1	SCOR	O	Turns [H] when sync SO or SI is detected.	40	ASYE	I	[L]: OFF of asymmetry correction. [H]: ON of asymmetry correction.
2	SBSO	O	Serial output of sub-code P ~ W.	41	WDCK	O	D/A interface for 48-bit slot. Ward clock (f = 2FS)
3	EXCK	I	Clock input for reading SBSO.	42	LRCK	O	D/A interface for 48-bit slot. LR clock (f = FS)
4	SQSO	O	Serial output of SUBQ(80-Bit).	43	LRCKI	I	Inputs LR clock to DAC.(48-bit slot)
5	SQCK	I	Clock input for reading SQSO.	44	PCMD	O	D/A interface. Serial data(2'SCOMP,MBS first)
6	MUTE	I	[H] at muting, [L] at muting cancel.	45	PCMDI	I	Inputs audio data to DAC.(48-bit slot)
7	SENS	O	SENS signal output to CPU.	46	BCK	O	D/A interface. Bit clock.
8	XRST	I	System reset, [L] at resetting.	47	BCKI	I	Inputs bit clock to DAC.(48-bit slot)
9	DATA	I	Inputs serial data from CPU.	48	GTOP	O	GTOP signal output.
10	XLAT	I	Latches input from CPU. Serial data latches at falling edge.	49	XUGF	O	XUGF signal output.
11	CLOK	I	Inputs serial data transfer clock from CPU.	50	XPCK	O	XPCK signal output.
12	V <sub>SS</sub>	-	GND.(0V)	51	GFS	O	GFS signal output.
13	SEIN	I	Inputs SENS signal from SSP.	52	RFCK	O	RFCK signal output.
14	CNIN	I	Inputs track jump count signal	53	V <sub>SS</sub>	-	GND.(0V)
15	DATO	O	Outputs serial data to SSP	54	C2PO	O	C2PO signal output.
16	XLTO	O	Outputs latches to SSP. Serial data latches at falling edge.	55	XROF	O	XROF signal output.
17	CLKO	O	Outputs serial data transfer clock to SSP.	56	MNT3	O	MNT3 signal output.
18	TEST2	I	Pin for TEST. Normal used state: V <sub>DD</sub>	57	MNT1	O	MNT1 signal output.
19	SPOB	I	Interface for extension of M. processor(input B)	58	MNT0	O	MNT0 signal output.
20	SPOC	I	Interface for extension of M. processor(input C)	59	FSTT	O	2/3 divided output of pins 73 or 74.
21	SPOD	I	Interface for extension of M. processor(input D)	60	C4M	O	4.2336MHz output.
22	XLON	O	Interface for extension of M. processor(output )	61	DOUT	O	Digital out OUTPUT pin.
23	FOK	I	Focus OK signal input pin. Used servo auto sequencer with SENS output.	62	EMPH	O	Stays [H] for playback disc provided with emphasis or [L] for that without emphasis.
24	MON	O	ON/OFF control signal for spindle motor.	63	EMPHI	I	De-emphasis ON/OFF of DAC. [H] st ON, [L] at OFF.
25	MDP	O	Servo control signal for spindle motor.	64	WFCK	O	WFCK(Write Frame Clock) signal output.
26	MDS	O	Servo control signal for spindle motor.	65	ZEROL	O	Outputs detection for non-sound data. [H] at detection for non-sound data (L-ch)
27	LOCK	O	The output of this pin is [H] when the GFS signal sampled at 460Hz is [H]. It turns [L] when the GFS signal turns out [L] 8 or more times in succession.	66	ZEROR	O	Outputs detection for non-sound data. [H] at detection for non-sound data (R-ch)
28	TEST	I	Pin for TEST. Normal used state: GND.	67	DTS1	I	Test pin for DAC.Normal used state: [L].
29	FILO	O	Output of filter for master PLL.(Slave = Digital PLL)	68	V <sub>DD</sub>	-	Power supply for DAC.
30	FILI	I	Inputs to filter for master PLL.	69	LPWM	O	Outputs PWM for L-ch. (Positive Phase)
31	PCO	O	Outputs of charge pump for master PLL.	70	NLPWM	O	Outputs PWM for L-ch. (Negative Phase)
32	V <sub>DD</sub>	-	Power supply for digital. (+ 5V)	71	AV <sub>DD2</sub>	-	Power supply for L-ch PWM driver.
33	AV <sub>SS1</sub>	-	Power supply for analog.(0V)	72	AV <sub>DD3</sub>	-	Power supply for X'tal.
34	CLTV	I	VCO control voltage input for master PLL.	73	XTAI	I	Inputs X'tal oscillation circuit (33.8688MHz).
35	AV <sub>DD1</sub>	-	Power supply for analog. (+ 5V)	74	XTAO	I	Outputs X'tal oscillation circuit (33.8688MHz).
36	RF	I	EFM signal input.	75	AV <sub>SS3</sub>	-	Power supply for X'tal.(GND).
37	BIAS	I	Inputs constant current for asymmetry correction circuit.	76	AV <sub>SS2</sub>	-	Power supply for PWM driver.(GND).
38	ASYI	I	Inputs comparator voltage for asymmetry correction circuit.	77	NRPWM	O	Outputs PWM for R-ch. (Negative Phase)
39	ASYO	O	EFM fill swing output.([L] = V <sub>SS</sub> , [H] = V <sub>DD</sub> )	78	RPWM	O	Outputs PWM for R-ch. (Positive Phase)
				79	DTS2	I	Test pin for DAC.Normal used state: [L].
				80	DTS3	I	Test pin for DAC.Normal used state: [L].

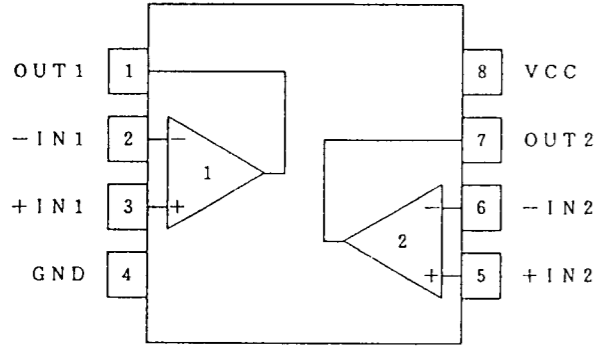
### IC BLOCK DIAGRAM & DESCRIPTION

CXD2518Q



**IC BLOCK DIAGRAM & DESCRIPTION**

**IC143 BA15218F (Operational Amplifier)**

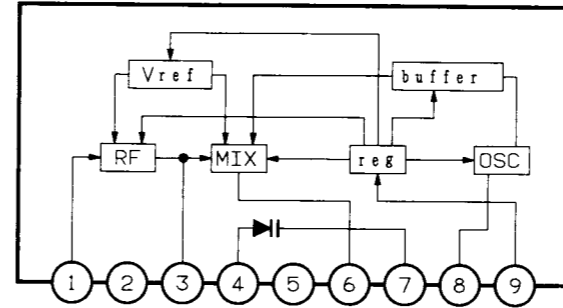


**IC151 CXP5078H-547Q (Micro Processor for System Control)**

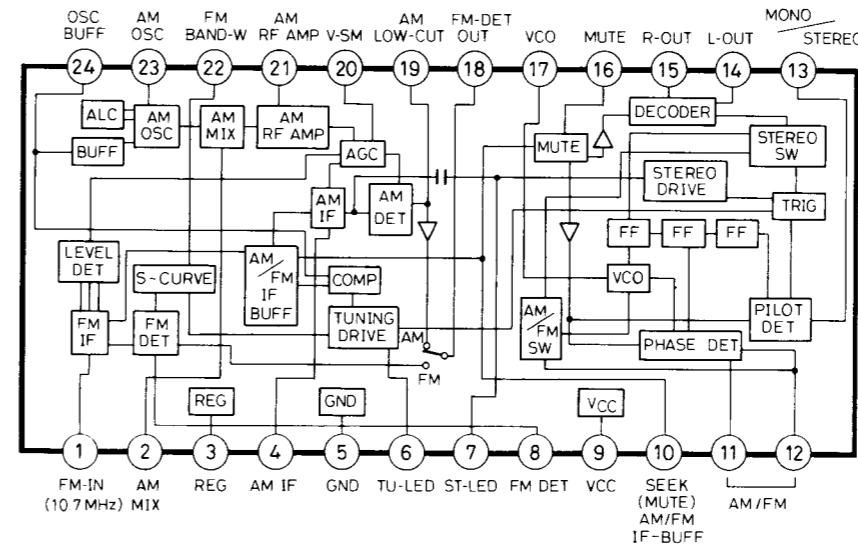
No.	Name	I/O	Function	No.	Name	I/O	Function
1	SEG18	-	Not used	41	SELECT	-	Not used (GND)
2	SEG17	-	Not used	42	SYNK-REC	I	Synchronous record start signal
3	SEG16	-	Not used	43	NC	-	Not connection
4	SEG15	O	LCD Segment Signal	44	SQCK	O	Read Clock for Sub code Q
5	SEG14	O	LCD Segment Signal	45	SENS	I	Inner state of SSP & DSP
6	SEG13	O	LCD Segment Signal	46	SQSO	I	Signal from DSP (Sub Q)
7	SEG12	O	LCD Segment Signal	47	CD-MUTE	O	Muting signal to SSP & DSP
8	SEG11	O	LCD Segment Signal	48	DRV-MUTE	O	Muting signal for Driver
9	SEG10	O	LCD Segment Signal	49	OPEN/CLOSE	I	Open/Close switch input
10	SEG9	O	LCD Segment Signal	50	LOCK	I	Signal from DSP (Clock)
11	SEG8	O	LCD Segment Signal	51	XLAT	O	Latch signal to SSP & DSP
12	SEG7	O	LCD Segment Signal	52	DATA	O	Serial data to SSP & DSP
13	SEG6	O	LCD Segment Signal	53	CLK	O	Send clock for Serial data
14	SEG5	O	LCD Segment Signal	54	AUD-MUTE	O	Muting signal to CD audio
15	SEG4	O	LCD Segment Signal	55	FOK	I	Focus OK
16	SEG3	O	LCD Segment Signal	56	LIMIT SW	I	Limit Switch input
17	SEG2	O	LCD Segment Signal	57	SD-IN	I	Station Detect (Receiving) OK
18	SEG1	O	LCD Segment Signal	58	ST-IN	I	Stereo Receiving OK
19	SEG0	O	LCD Segment Signal	59	D-MUTE	O	Muting signal for Display
20	COM3	O	LCD Common Signal	60		-	Not used
21	COM2	O	LCD Common Signal	61	POWER	I	Unit Power ON Signal
22	COM1	O	LCD Common Signal	62	DATA-OUT	O	Data input of Tuner PLL Synthesizer
23	COM0	O	LCD Common Signal	63		-	Not used
24	VLC1	O	LCD Bias	64		-	Not used
25	VLC2	O	LCD Bias	65	DATA-IN	I	Data output of Tuner PLL Synthesizer
26	VLC3	O	LCD Bias	66	CE	O	Chip Enable of Tuner PLL Synthesizer
27	CLK SHIFT	O	Main clock shift (Active : H)	67	CL	O	Clock for data send of Tuner PLL
28	IR	I	Remocon Signal	68	TU-MUTE	O	Muting signal to Tuner
29	SCOR	I	Sub code sync S0 + S1	69	TU-ON	O	Tuner ON Signal
30	XTAL	-	Connect oscillator for clock	70		-	Not used
31	EXTAL	-	Connect oscillator for clock	71	VSS	-	Ground (Earth)
32	RESET	I	Reset Signal	72	TX	-	Not used
33	NC	-	Not connection (VDD)	73	NC	-	Not connection (VDD)
34	VDD	-	+5V	74	TEX	-	Not used (VDD)
35	KEY1	I	Key Input	75	VREF	-	Not used (VDD)
36	KEY2	I	Key Input	76	PH0	-	Not used
37	KEY3	I	Key Input	77	DATA-IN2	O	Data output of Volume
38	KEY4	I	Service Mode Input	78	CLK-IN1	O	Clock for data send of Volume
39	FUNC	I	Function Switch Input	79	PH3	-	Not used
40	DIST	I	Model select	80	PGO	-	Not used

**IC BLOCK DIAGRAM**

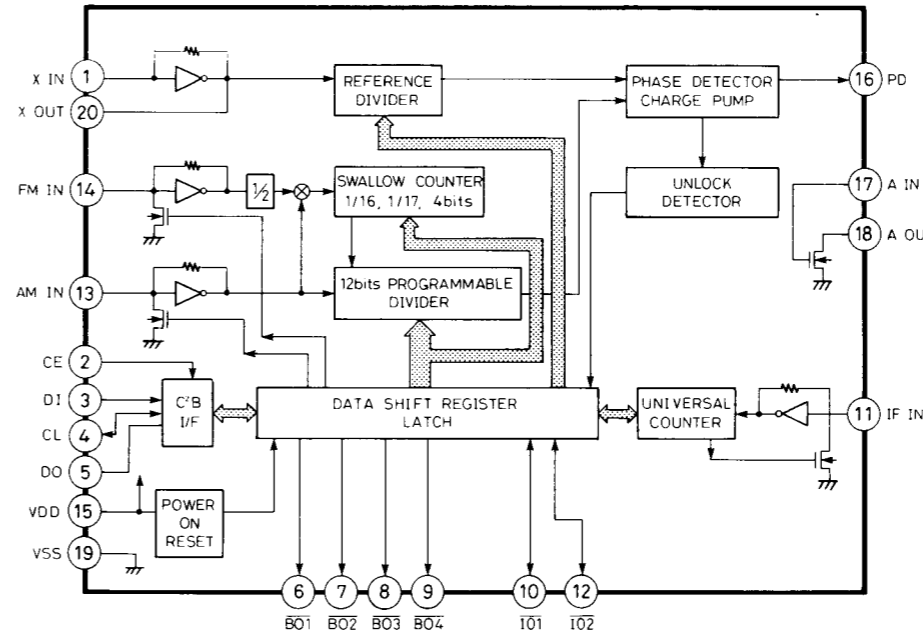
**IC201 LA1186N (FM Front End)**



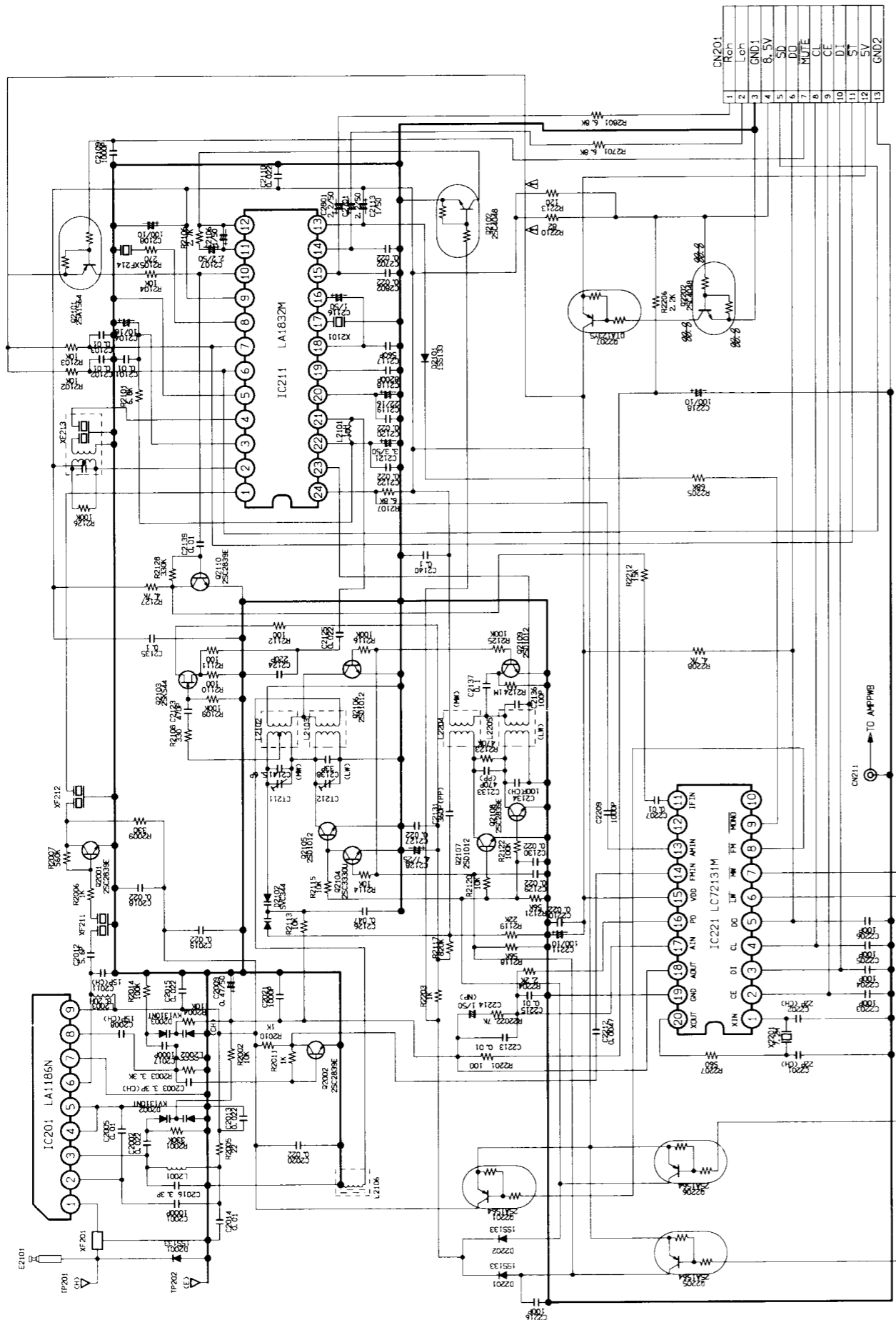
**IC211 LA1832 (Tuner System)**



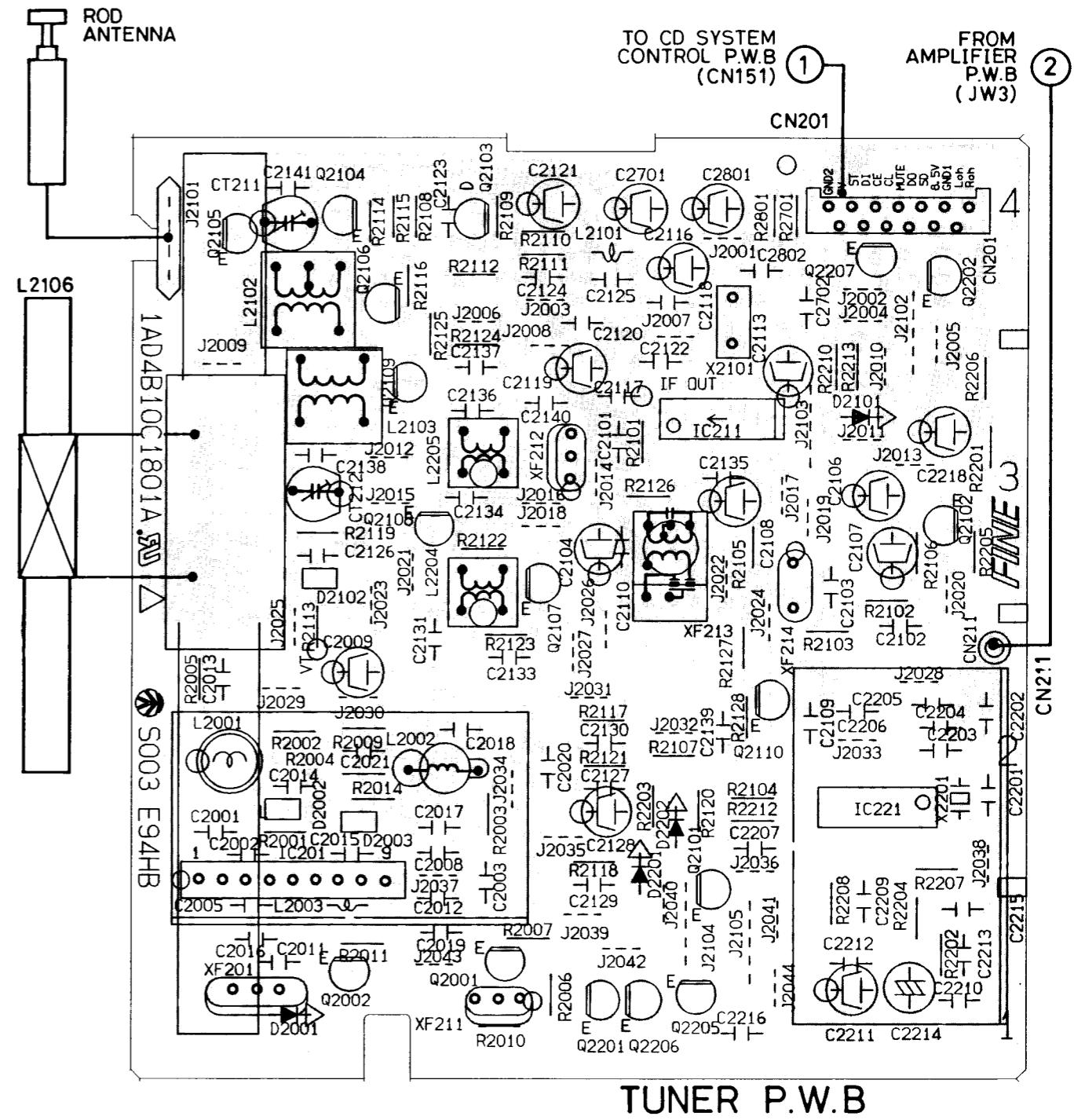
**IC221 LC72131M (PLL Frequency Synthesizer)**



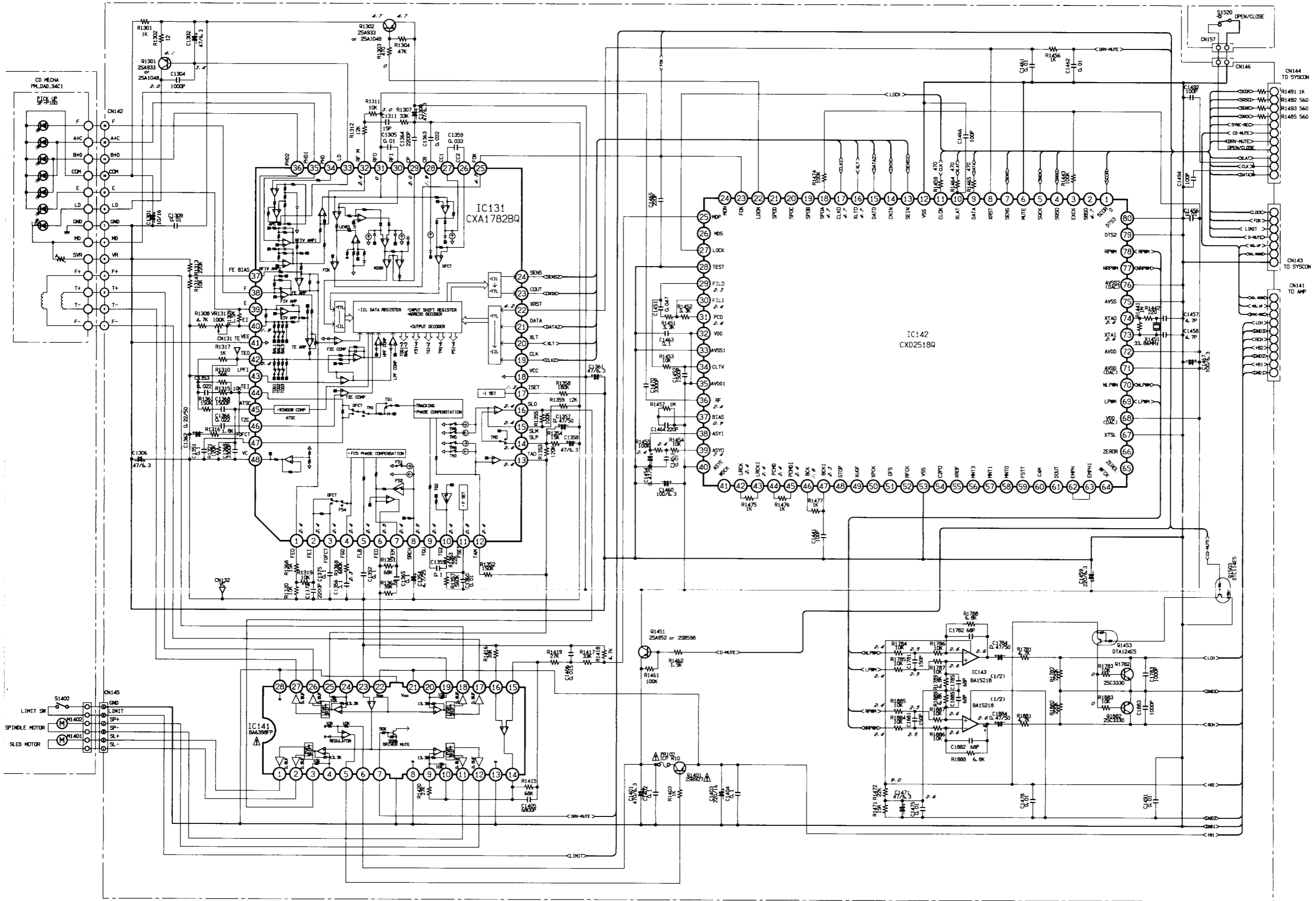
**SCHEMATIC DIAGRAM (TUNER)**



**WIRING DIAGRAM (TUNER)**



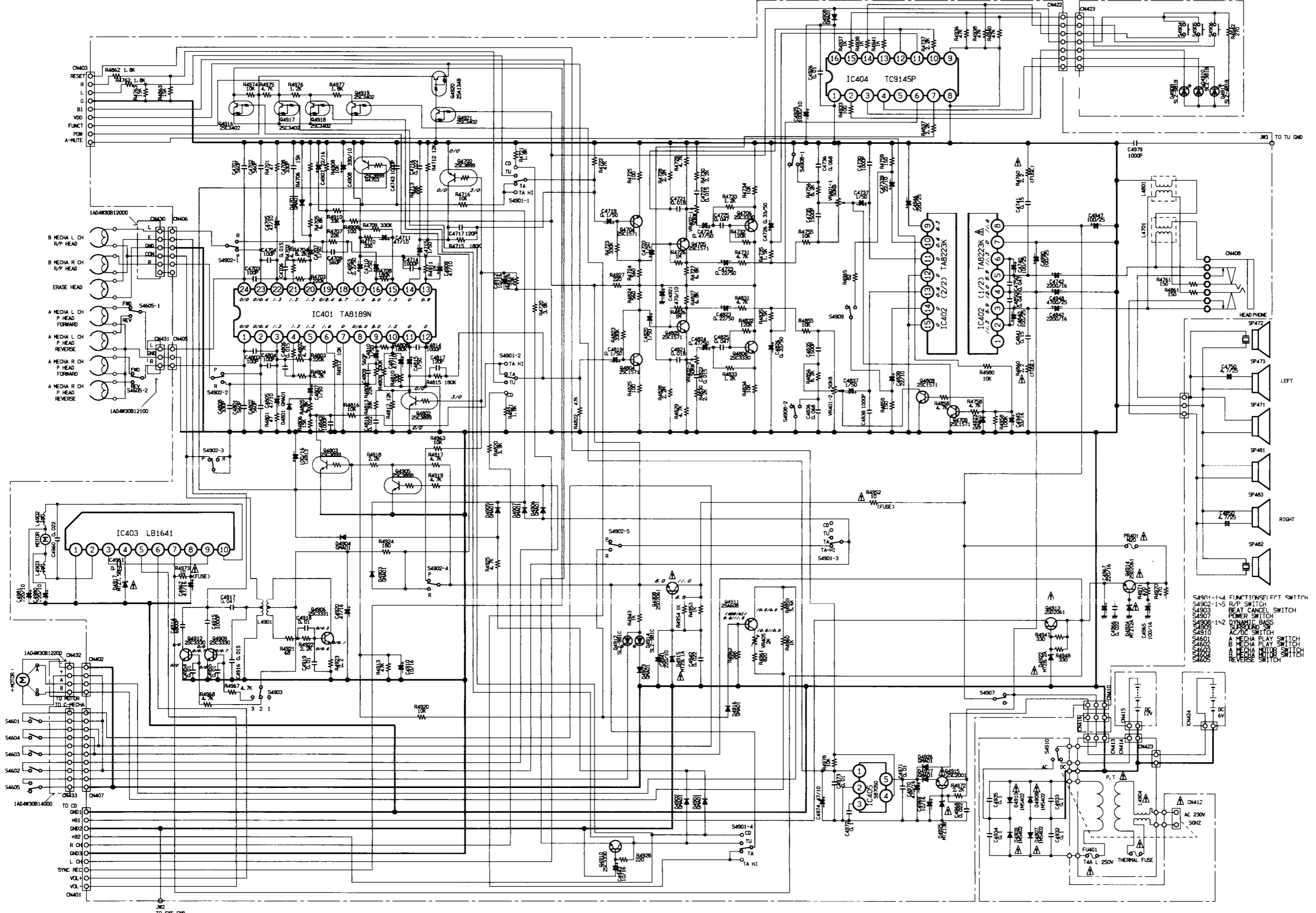
**SCHEMATIC DIAGRAM (CD)**



s is a basic schematic diagram.



SCHEMATIC DIAGRAM (AMPLIFIER)

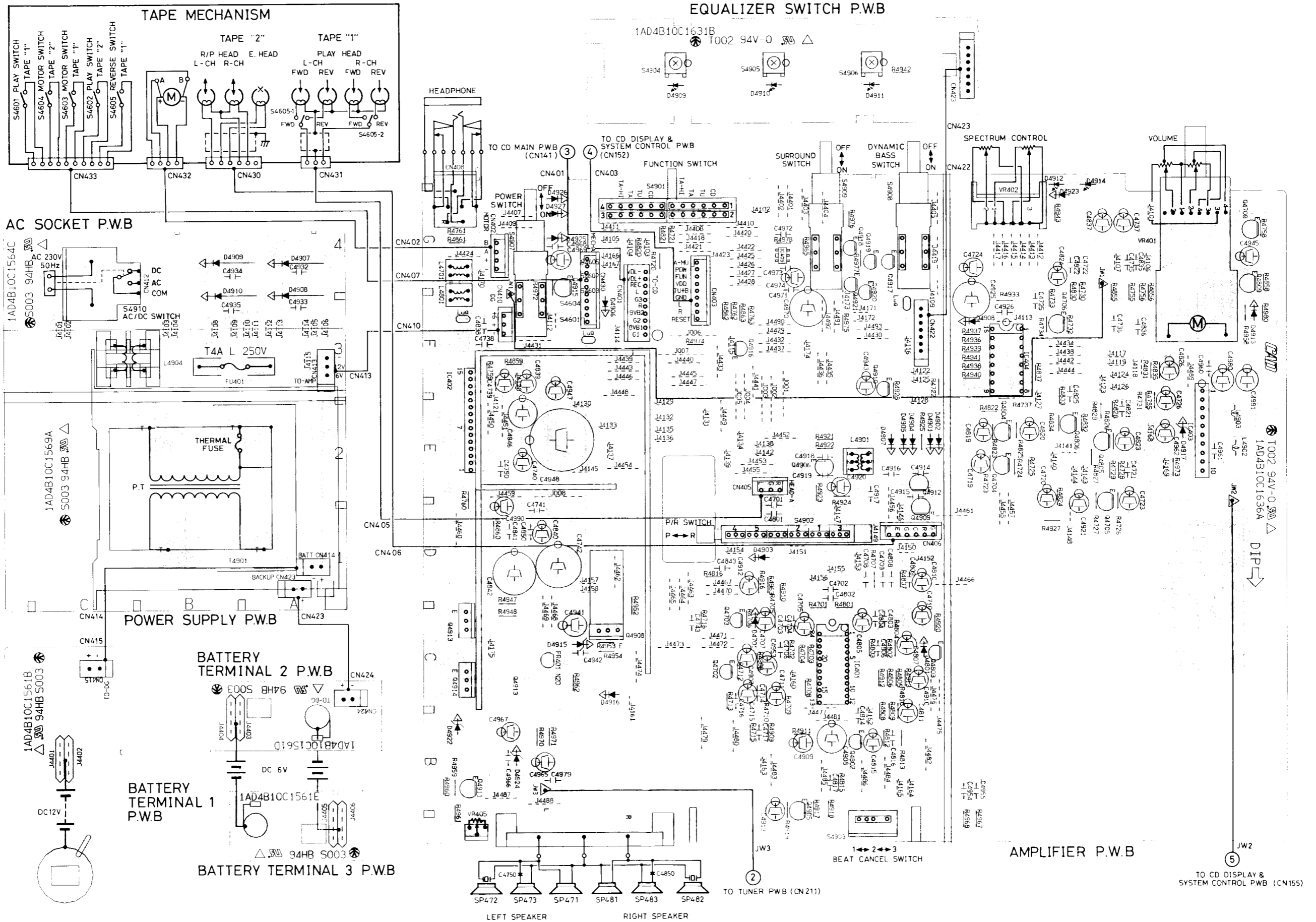


- S4901-1-4 FUNCTION SELECT SWITCH
- S4902-1-5 R/P SWITCH
- S4903 REAT CANCEL SWITCH
- S4907 POWER SWITCH
- S4908-1-2 CONTROL BASS SWITCH
- S4910 AC/DC SWITCH
- S4911-1-2 MEDIA PLAY SWITCH
- S4912-1-2 MEDIA PLAY SWITCH
- S4913-1-2 MEDIA REVERSE SWITCH
- S4914-1-2 MEDIA REVERSE SWITCH

This is a basic schematic diagram.

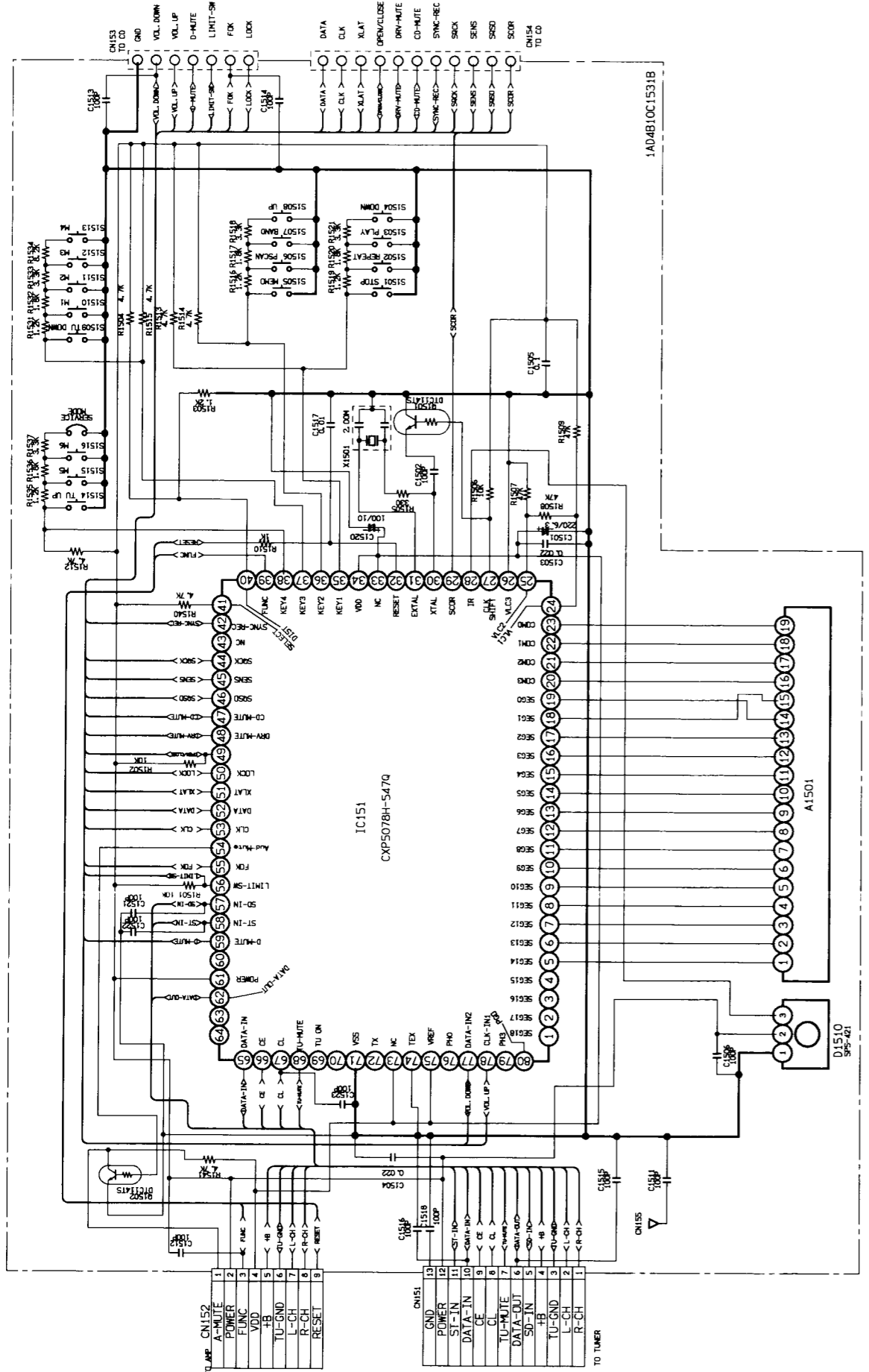


WIRING DIAGRAM (AMPLIFIER)

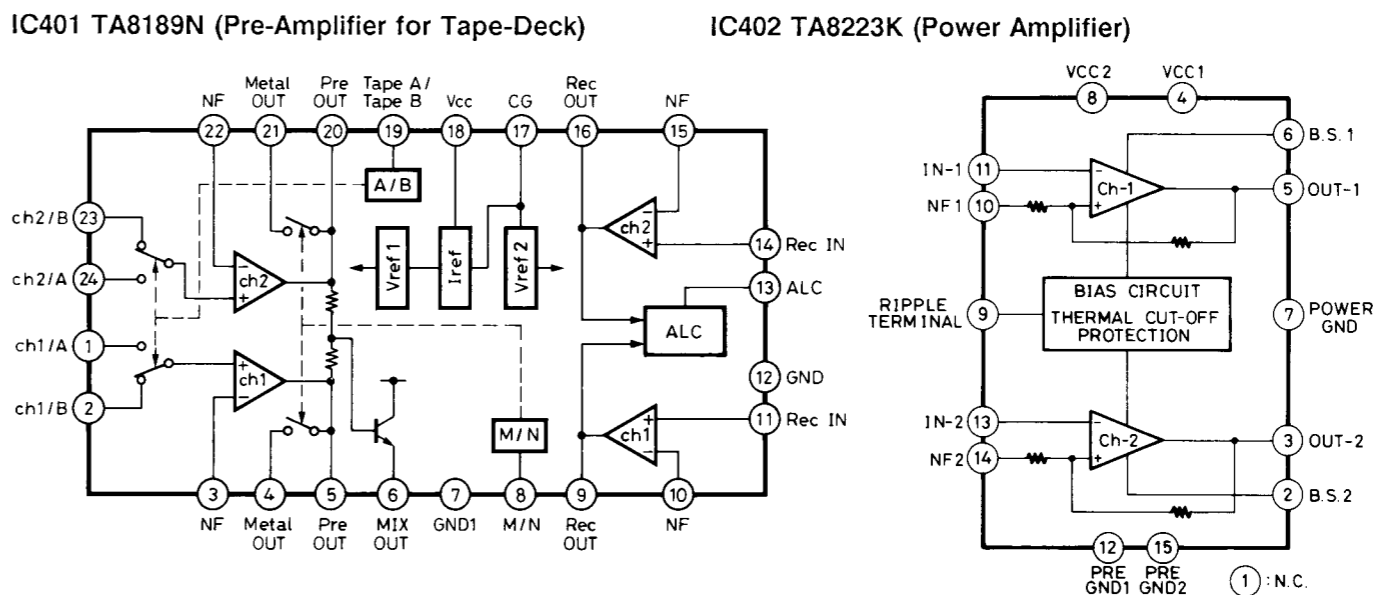




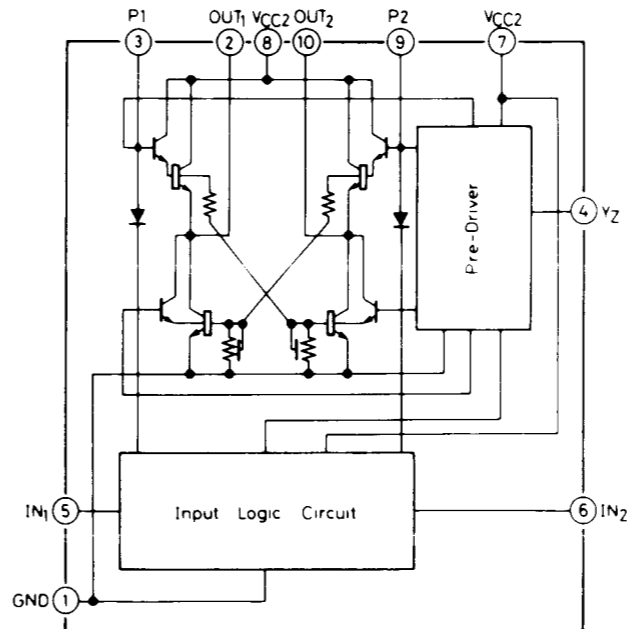
**SCHEMATIC DIAGRAM (SYSCON)**



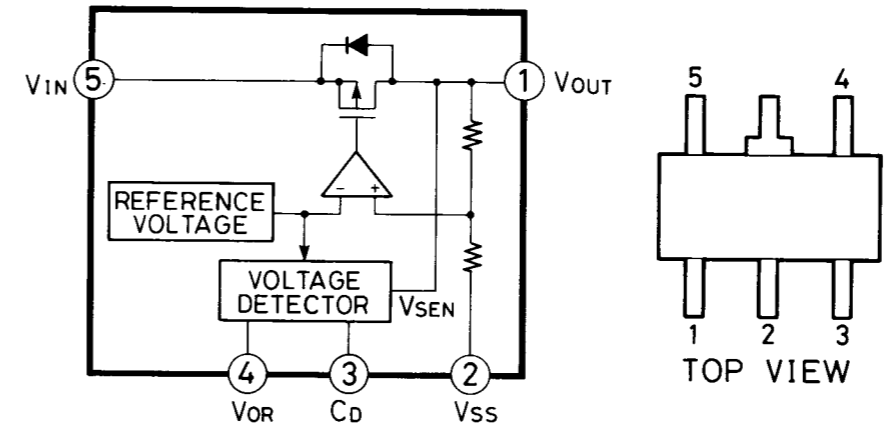
**IC BLOCK DIAGRAM**



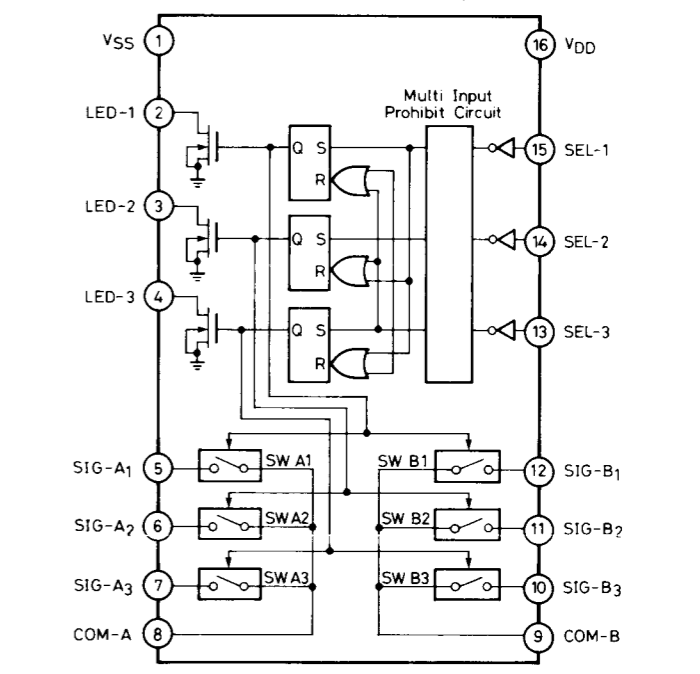
IC403 LB1641 (Motor Driver)



IC405 S-8705CF-VP (Voltage Regulator)



IC404 TC9145P (Electronic Switches)



This is a basic schematic diagram.

