


# TC-H201

## SERVICE MANUAL

West Germany Model  
E Model



TC-H201 is the cassette deck  
section in FH-E727CD, MHC-2300.

Dolby noise reduction manufactured under license from  
Dolby Laboratories Licensing Corporation.  
"DOLBY" and the double-D symbol  are trademarks of  
Dolby Laboratories Licensing Corporation.



Model Name Using Similar Mechanism	TC-717/717M
Tape Transport Mechanism Type	TCM-170RB16

### SPECIFICATIONS

Recording system	4-track 2-channel stereo
Frequency response (DOLBY NR OFF)	60 – 13,000 Hz ( $\pm 3$ dB), using TYPE I cassette (Sony HF-S) 60 – 14,000 Hz ( $\pm 3$ dB), using TYPE II cassette 40 – 15,000 Hz ( $\pm 3$ dB) using TYPE IV cassette
Wow and flutter	0.1% WRMS $\pm 0.3\%$ (DIN)
Dimensions	Approx. 225 x 118 x 235 mm (w/h/d) (9 x 4 $\frac{3}{4}$ x 9 $\frac{3}{8}$ inches)
Weight	Approx. 2.5 kg (5 lb 8 oz)

Design and specifications subject to change  
without notice.

### 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.

STEREO CASSETTE DECK  
**SONY**<sup>®</sup>

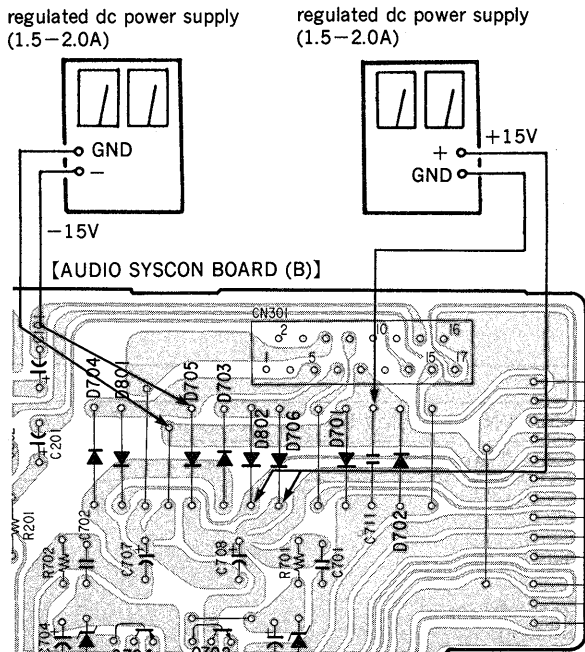
## SERVICING NOTES

## SECTION 1 GENERAL

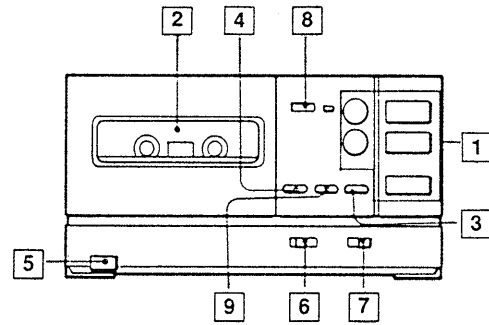
### REPAIRING PRECAUTION

#### [To apply B+ voltage]

The power of this unit is fed from amplifier. Because of this, connect the regulated power supply as illustrated below when this unit alone operates.



### PARTS IDENTIFICATION



- 1 Tape operation buttons
  - ◀ / ▶: Fast winding
  - : Stop
  - ◁: Reverse play
  - ▷: Forward play
- 2 Cassette holders
- 3 REC ● (recording) button
- 4 PAUSE button
- 5 EJECT buttons
- 6 DIRECTION MODE selector
- 7 DOLBY NR selector
- 8 TAPE COUNTER and RESET button
- 9 ○ Record muting button

## SECTION 2 MECHANICAL ADJUSTMENTS

### PRECAUTION

1. Clean the following parts with a denatured alcohol-moistened swab :
 

record/playback head	pinch roller
erase head	rubber belts
capstan	idler
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.
6. Switch position  
 DOLBY NR : OFF  
 DIRECTION MODE : ⇌

### Torque Measurement

Torque	Torque Meter	Meter Reading
FWD	CQ-102C	27 to 75g•cm (0.378 to 1.05 oz•inch)
FWD Back tension	CQ-102C	1 to 10g•cm (0.014 to 0.14 oz•inch)
REV	CQ-102RC	27 to 75g•cm (0.378 to 1.05 oz•inch)
REV Back Tension	CQ-102RC	1 to 10g•cm (0.014 to 0.14 oz•inch)
FF, REW	CQ-102B	95 to 165g•cm (1.33 to 2.31 oz•inch)

## SECTION 3 ELECTRICAL ADJUSTMENTS

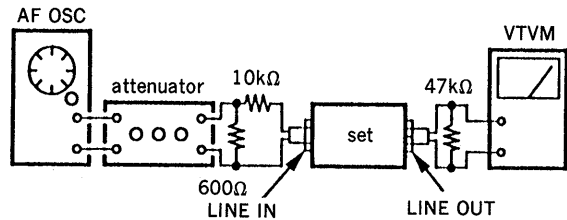
**Note:** The adjustment should be performed in the order given in the service manual.

The adjustment should be performed for both L-CH and R-CH.

- Switches and controls, should be set as follows unless otherwise specified.
 

DOLBY NR switch	: OFF
DIRECTION MODE switch	: ⇌
- Standard Record :  
 Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

—Record Mode—



### Standard Input Level

	LINE IN
source impedance	10kΩ
input level	0.25V (−10dB)

### Standard Output Level

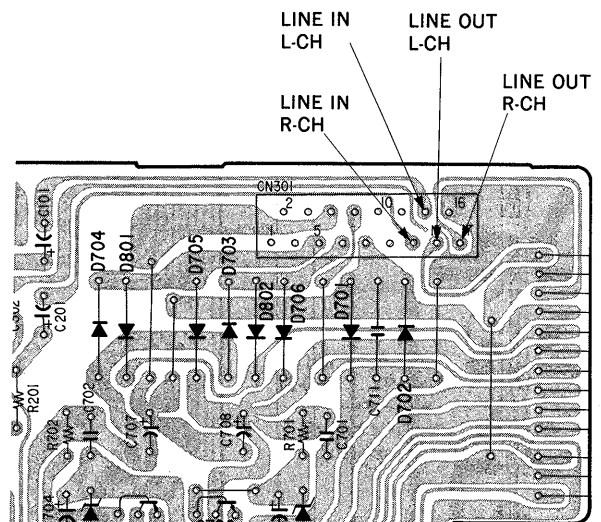
	LINE OUT
load impedance	47kΩ
output level	0.44V (−5dB)

### Test Tape

Tape	Signal	Used for
P-4-A100	10kHz, −10dB	Azimuth Adjustment
P-4-L300	315Hz, 0dB	PB LEVEL Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

### Location of LIEN IN/OUT

AUDIO SYSCON Board (B) CN301

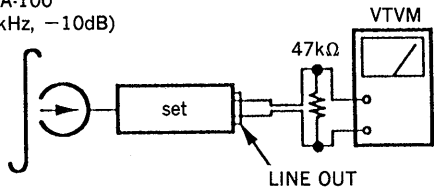


### Record/Playback Head Azimuth Adjustment

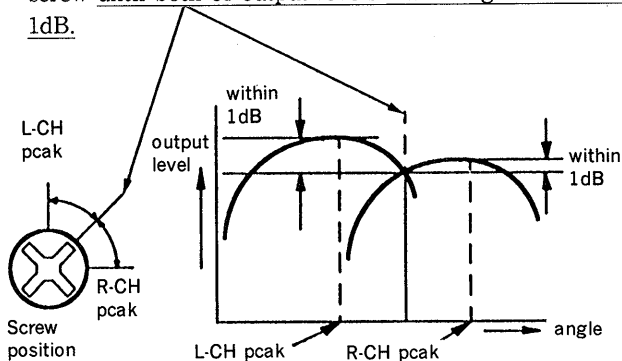
#### Procedure :

1. Mode : FWD playback

test tape  
P-4-A-100  
(10kHz, -10dB)

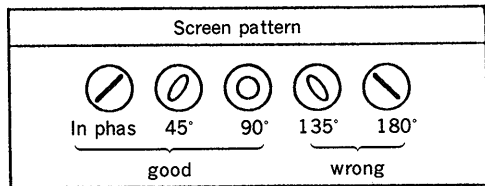
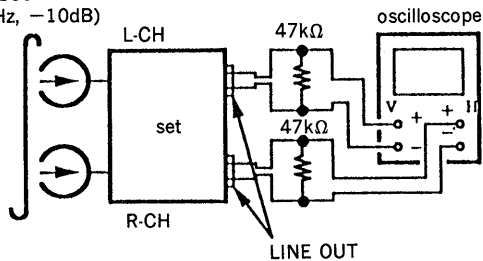


2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1dB.



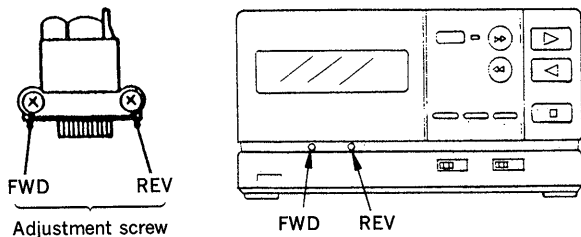
3. Phase Check  
Mode : playback

test tape  
P-4-A100  
(10kHz, -10dB)



4. Set in the REV mode and repeat the step 1-3.
5. After the adjustment, lock the screws with locking compound.

**Adjustment Location :** Record/Playback head  
(Adjustment without disassembly.)

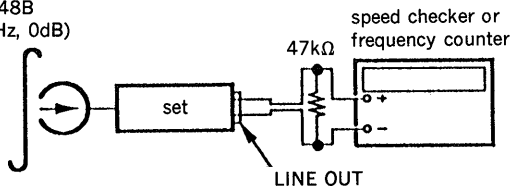


### Tape Speed Adjustment

#### Procedure :

Mode : FWD playback

test tape  
WS-48B  
(3kHz, 0dB)



#### Specifications :

SPEED CHECKER	FREQUENCY COUNTER
1 to 0.3%	2,970 to 2,990Hz

Adjustment with the switch fixed variable resistor built in the motor so that the frequency difference between the beginning and the end of the tape should be within 1.5% (45Hz). Frequency difference between the beginning and the end of the tape should be within.

#### Adjustment Location :

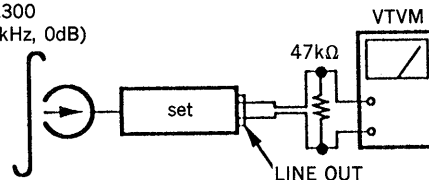
: motor (M901) rear side

### Playback Level Adjustment

#### Procedure :

Mode : playback

test tape  
P-4-L300  
(315kHz, 0dB)



Adjust RV41 (L-CH), RV61 (R-CH), so that the reading on VTVM meets the specification below.

#### Specification :

LINE OUT level :  $-10 \pm 0.5\text{dB}$  (0.23 to 0.26V)

Level difference between channels : less than 0.5dB

Check that the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

**Adjustment Location :** MD-B board

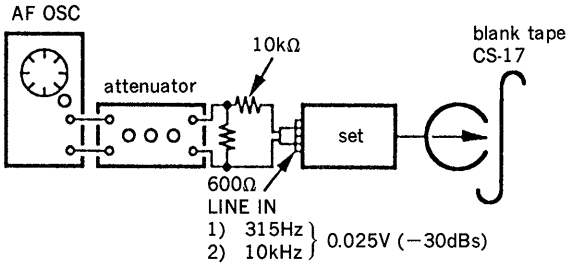
**Record Bias Adjustment**

**Setting :**

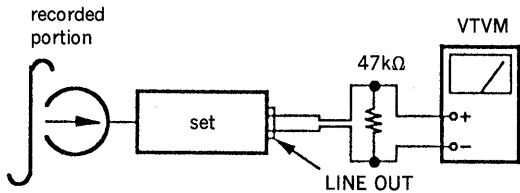
REC LEVEL control : standard record (See page 3.)

**Procedure :**

1. Mode : record



2. Mode : playback

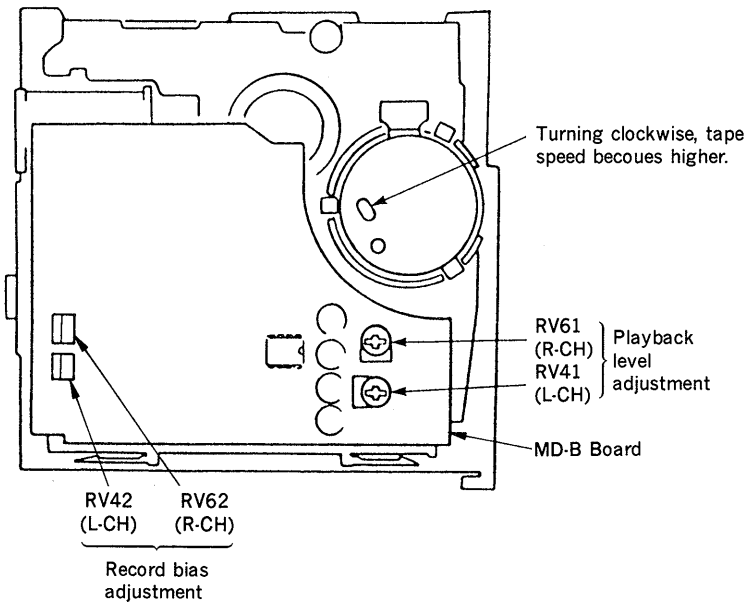


Confirm that the 10kHz playback output is  $0 \pm 0.5\text{dB}$  relative to the 315Hz output. If necessary, adjust RV42 (L-CH), RV62 (R-CH) and repeat the steps given above.

**Adjustment Location :** MD-B board

**ADJUSTING PARTS LOCATION DIAGRAM**

[MD-B Board] —Component Side—



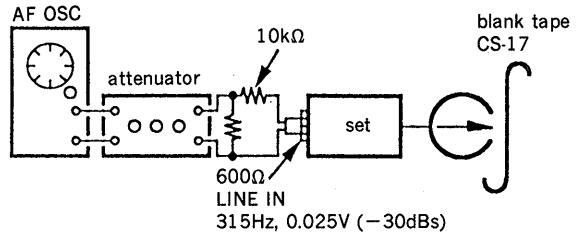
**Record Level Adjustment**

**Setting :**

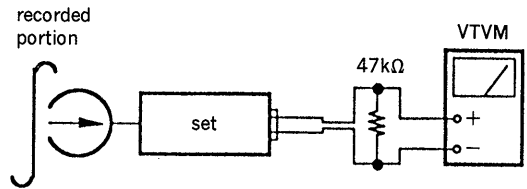
REC LEVEL control : standard record (See page 3.)

**Procedure :**

1. Mode : record



2. Mode : palyback

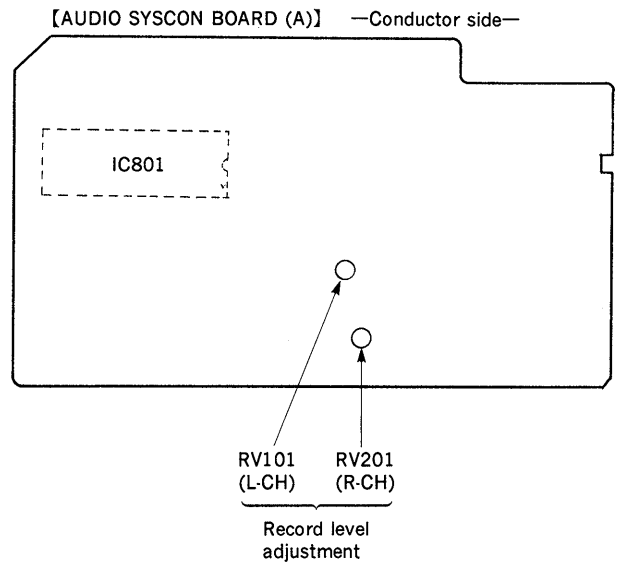


3. Playback the signal recorded in step 1.

Confirm that the signal level is within the specification below. If necessary, adjust RV101 (L-CH), RV201 (R-CH) and repeat the step 1 to 3.

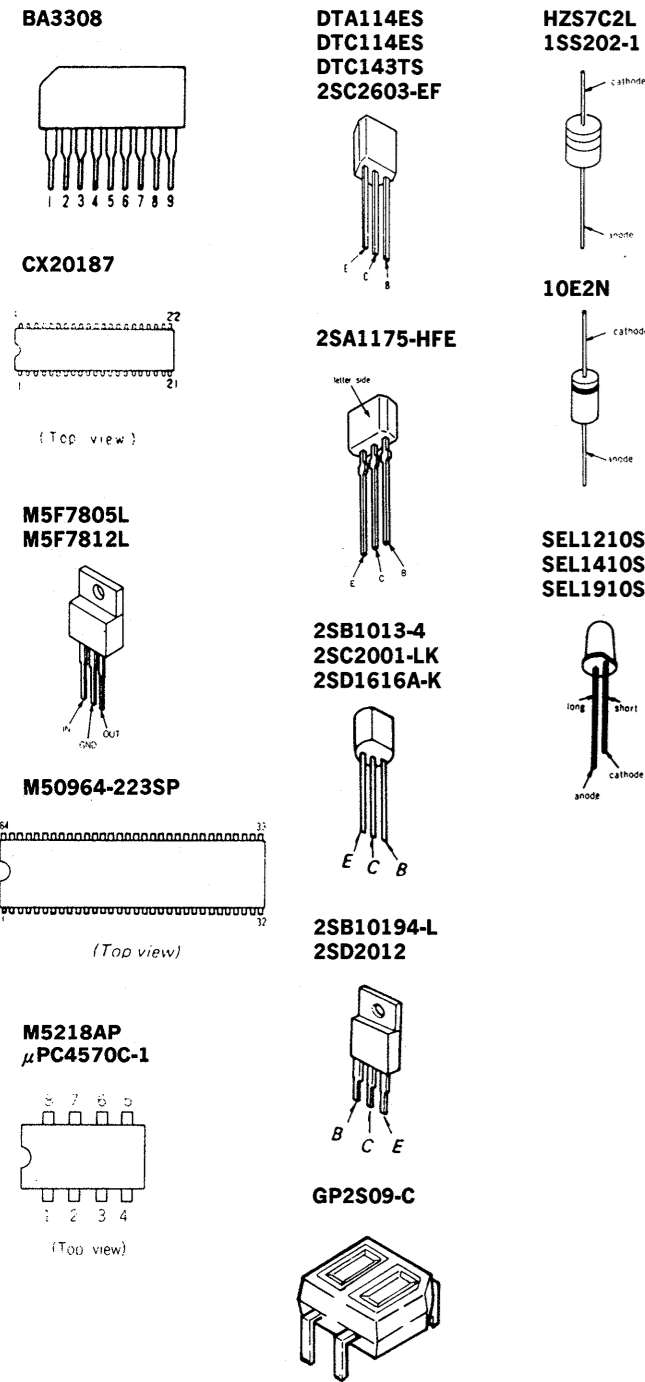
**Specification :** LINE OUT level :  $-30\text{dB} \pm 0.5\text{dBs}$  (0.023 to 0.026V)

**Adjustment Location :**



SECTION 3  
DIAGRAMS

3-1. SEMICONDUCTOR LEAD LAYOUTS

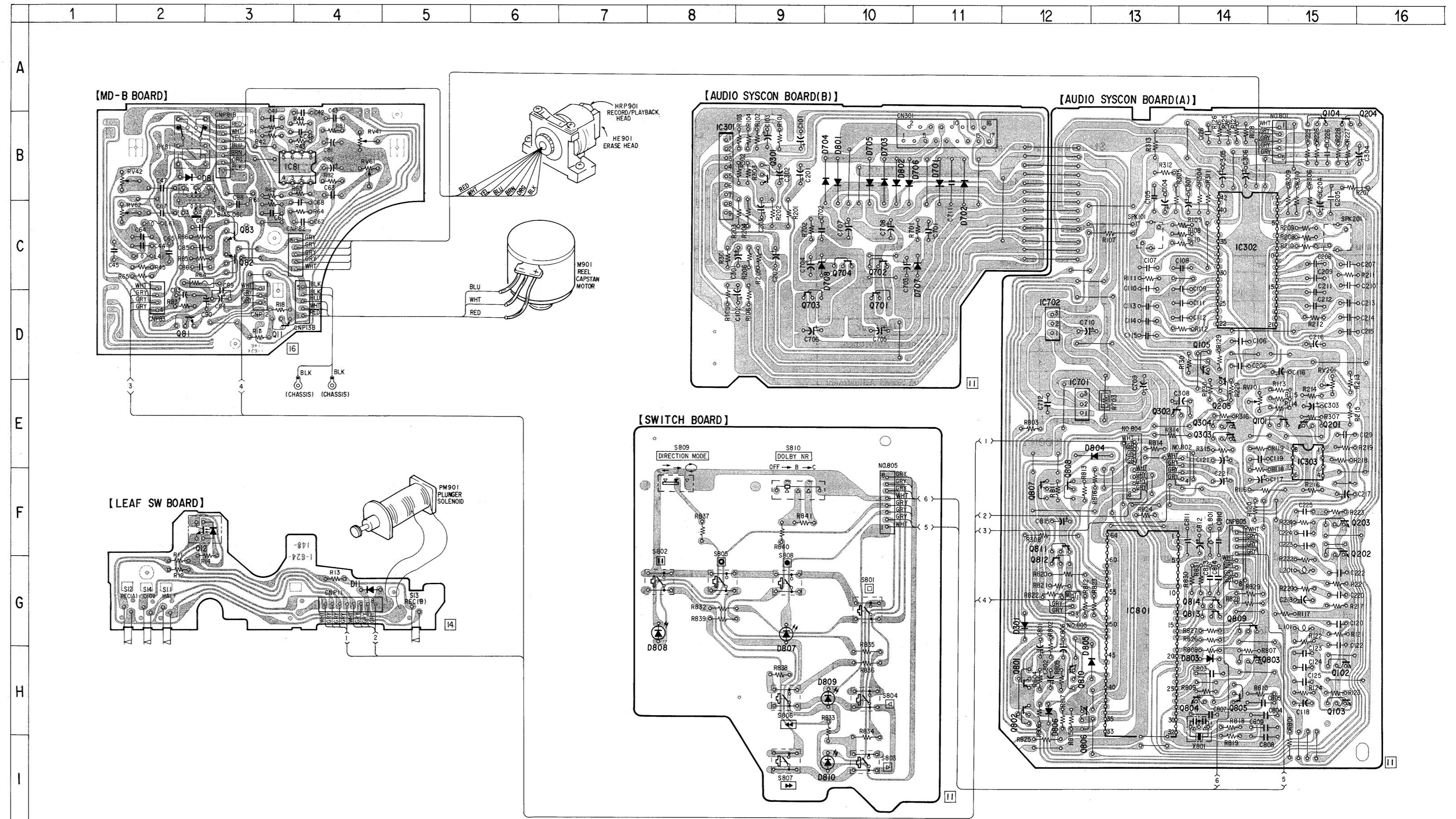


● Semiconductor Location

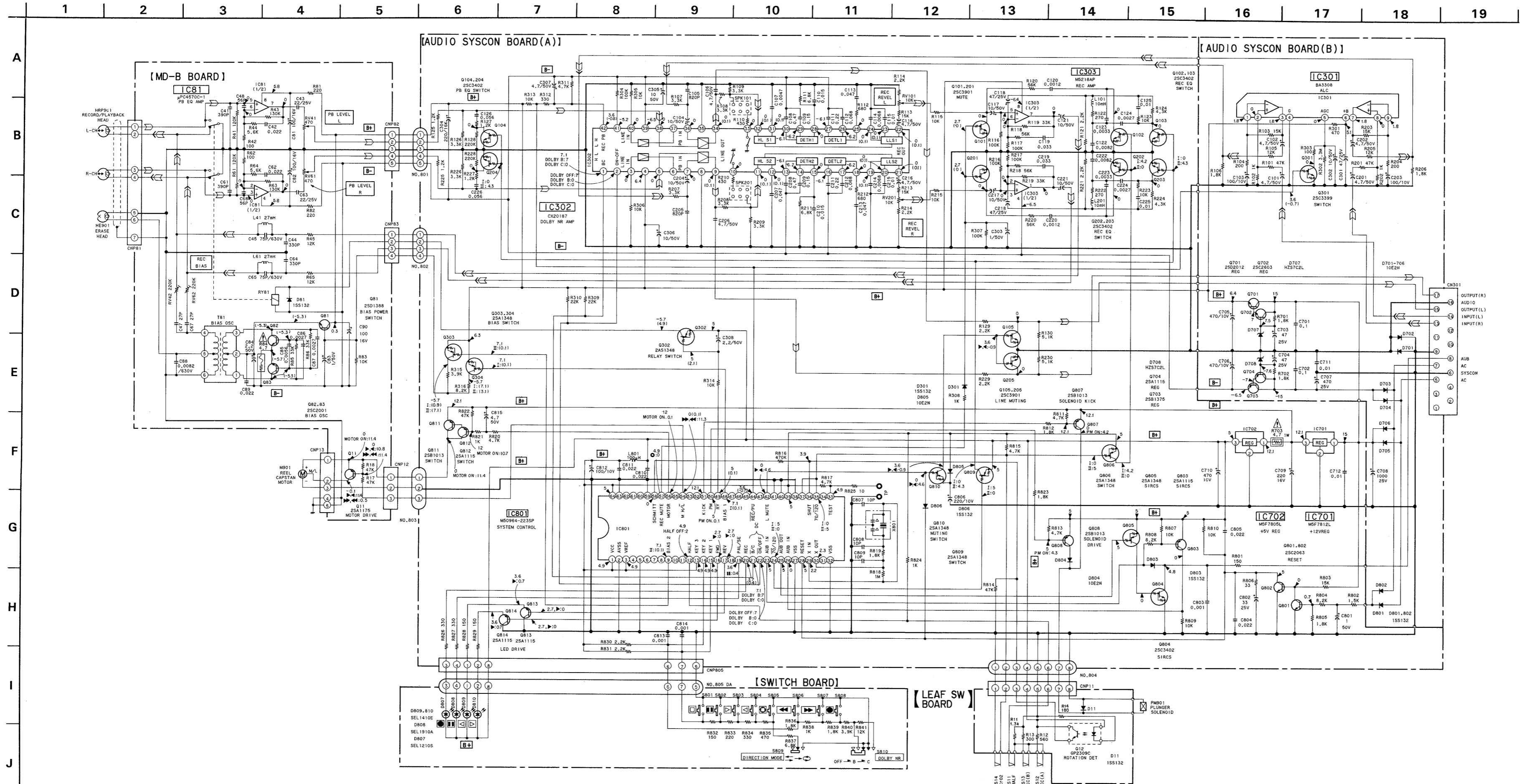
Ref. No.	Location
D11	G-4
D81	B-2
D301	G-12
D701	B-11
D702	B-11
D703	B-10
D704	B-10
D705	B-10
D706	B-11
D707	C-11
D708	C-10
D801	B-10
D802	B-10
D803	H-14
D804	E-13
D805	H-13
D806	H-12
D807	G-9
D808	G-8
D809	H-10
D810	I-10
IC81	B-4
IC301	B-8
IC302	C-14
IC303	I-15
IC701	E-12
IC702	D-12
IC801	G-13
Q11	D-3
Q12	F-2
Q81	D-2
Q82	C-3
Q83	C-3
Q101	E-15
Q102	H-15
Q103	H-15
Q104	B-15
Q105	D-15
Q201	E-15
Q202	F-15
Q203	F-15
Q204	B-16
Q205	E-15
Q301	B-9
Q302	E-13
Q303	E-14
Q304	E-14
Q701	D-10
Q702	C-10
Q703	D-9
Q704	C-10
Q801	H-12
Q802	H-12
Q803	H-14
Q804	H-14
Q805	H-14
Q806	H-12
Q807	F-12
Q808	F-12
Q809	G-14
Q810	H-12
Q811	F-12
Q812	G-12
Q813	G-14
Q814	G-14

Note:  
 ● ○ : parts extracted from the component side.  
 ○ ○ : parts extracted from the conductor side.

3-2. PRINTED WIRING BOARDS



3-3. SCHEMATIC DIAGRAM



**Note:**

- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\text{F}$  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $1/4\text{W}$  or less unless otherwise specified.
- : fusible resistor.

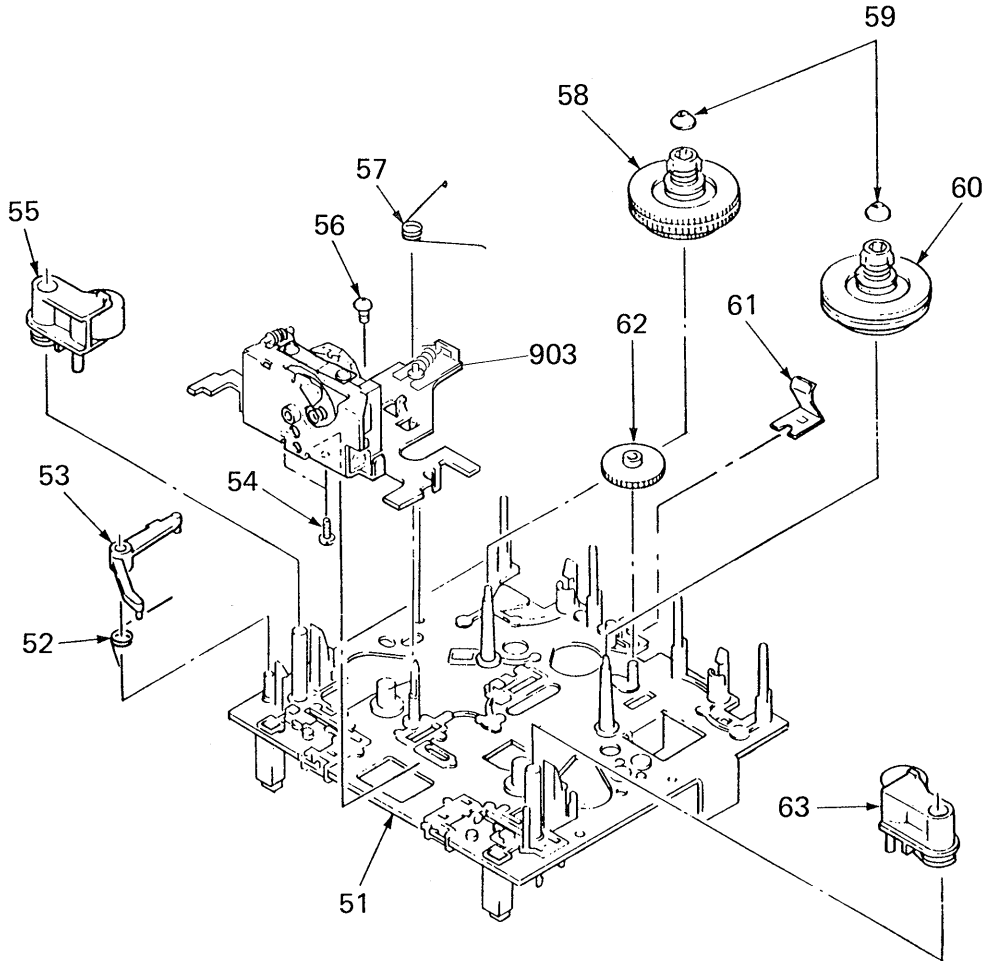
**Note:** The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.

- : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- no mark : STOP
- ( ) : REC
- I : TYPE
- II : TYPE
- : FWD    : REV    : PAUSE
- : FF    : REW    : REC MUTE
- Voltages are taken with a VOM (Input Impedance  $10\text{M}\Omega$ ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
- : PB
- : REC



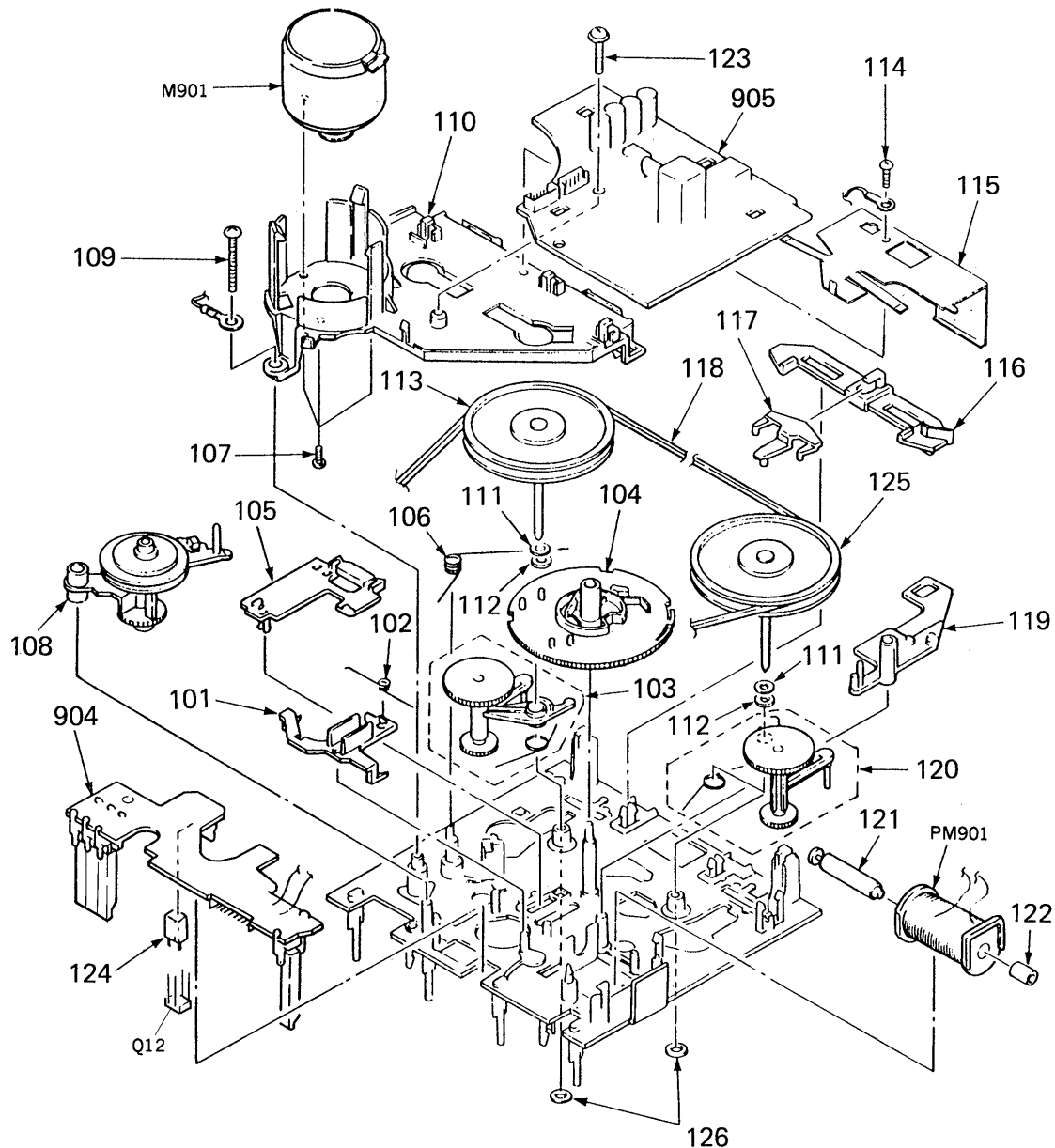


**4-2. TAPE TRANSPORT MECHANISM SECTION-1  
(TCM-170RB16)**



Ref.No	Part No.	Description	Remarks	Ref.No	Part No.	Description	Remarks
51	X-3343-439-1	CHASSIS ASSY, MECHANICAL		58	X-3343-415-1	TABEL (REV) ASSY, REEL	
52	3-343-477-01	SPRING, TORSION (EJECT SAFTY)		59	3-343-439-01	CAP (REEL TABLE)	
53	3-343-476-01	LEVER (EJECT SAFETY LEVER)		60	X-3343-401-1	TABEL ASSY, REEL	
54	7-685-102-19	SCREW +P 2X4 NON-SLIT TYPE 2		61	3-343-420-01	SPRING, LEAF	
55	X-3343-456-1	LEVER (PINCH R) ASSY		62	3-343-411-01	GEAR (FF GEAR)	
56	7-621-773-86	SCREW +BVTT 2.6X4 (S)		63	X-3343-455-1	LEVER (PINCH F) ASSY	
57	3-343-401-01	SPRING, TORSION		903	A-2108-130-C	CHASSIS ASSY, HEAD (HE901, HRP901)	

4-3. TAPE TRANSPORT MECHANISM SECTION-2  
(TCM-170RB16)



Ref.No	Part No.	Description	Remarks	Ref.No	Part No.	Description	Remarks
101	3-343-453-01	SLIDER (BRAKE PLATE)		117	3-343-462-01	LEVER	
102	3-343-429-01	SPRING, TORSION		118	3-313-816-00	BELT (CAPSTAN BELT SQUARE)	
103	X-3343-454-1	LEVER (TU-R) ASSY		119	3-343-493-01	LEVER (PM LEVER)	
104	3-343-470-01	GEAR (CAM GEAR)		120	X-3343-453-1	LEVER (TU-F) ASSY	
105	3-343-461-01	SLIDER		121	3-343-425-01	ARBOR(MOVABLE IRON ARBOR),IRON	
106	3-343-430-01	SPRING, TORSION		122	3-343-424-01	ARBOR (FIXED IRON ARBOR), IRON	
107	7-627-556-28	SCREW +P 2.6X3.5		123	3-343-404-01	SCREW (PTPWH 2X12)	
108	X-3343-414-1	LAVER (FR ARM) ASSY		124	3-343-419-01	HOLDER (S SENSER A)	
109	3-355-801-01	SCREW (BTP 2X18)		125	X-3343-416-7	FLYWHEEL (REV) COMPLETE ASSY	
110	*X-3343-407-1	BASE (THRUST RETAINER) ASSY		126	3-343-473-01	WASHER, NYLON	
111	4-605-835-11	WASHER (2.6), POLYSLIDER		904	*1-624-148-11	PC BOARD, LEAF SW	
112	3-307-482-00	WASHER, LUMILER		905	*1-625-912-14	PC BOARD, MD-B	
113	X-3343-411-6	FLYWHEEL COMPLETE ASSY		M901	X-3343-447-1	MOTOR ASSY	
114	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT		PM901	1-454-456-11	SOLENOID, PLUNGER	
115	3-343-480-01	PLATE, SHIELD		Q12	8-719-939-23	PHOTO TRANSISTOR GP2S09-C	
116	3-343-457-01	SLIDER (REVERSE SLIDER)					

## SECTION 5 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:  $\mu$ F, PF:  $\mu$ μF.

**RESISTORS**

- All resistors are in ohms.
- F: nonflammable

**COILS**

- MMH: mH, UH:  $\mu$ H

**SEMICONDUCTORS**

In each case, U:  $\mu$ , for example:  
 UA....:  $\mu$ A...., UPA....:  $\mu$ PA....,  
 UPC....:  $\mu$ PC, UPD....:  $\mu$ PD....

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

Ref.No	Part No.	Description				
901	A-2006-282-A	MOUNTED PCB, AUDIO SYSCON				
902	1-548-596-41	COUNTER, TAPE (MIDDLE TYPE)				
903	A-2108-130-C	CHASSIS ASSY, HEAD (HE901, HRP901)				
904	★ 1-624-148-11	PC BOARD, LEAF SW				
905	★ 1-625-912-14	PC BOARD, MD-B				
<b>CAPACITOR</b>						
C41	1-110-342-11	MYLAR	390PF	5%	50V	
C42	1-136-157-00	FILM	0.022MF	5%	50V	
C43	1-124-282-00	ELECT	22MF	20%	25V	
C44	1-162-288-31	CERAMIC	330PF	10%	50V	
C45	1-136-273-91	FILM	75PF	5%	630V	
C47	1-162-209-31	CERAMIC	27PF	5%	50V	
C48	1-162-217-31	CERAMIC	56PF	5%	50V	
C61	1-110-342-11	MYLAR	390PF	5%	50V	
C62	1-136-157-00	FILM	0.022MF	5%	50V	
C63	1-124-282-00	ELECT	22MF	20%	25V	
C64	1-162-288-31	CERAMIC	330PF	10%	50V	
C65	1-136-273-91	FILM	75PF	5%	630V	
C67	1-162-209-31	CERAMIC	27PF	5%	50V	
C68	1-162-217-31	CERAMIC	56PF	5%	50V	
C81	1-126-101-11	ELECT	100MF	20%	16V	
C82	1-126-101-11	ELECT	100MF	20%	16V	
C83	1-124-791-11	ELECT	1MF	20%	50V	
C84	1-124-925-11	ELECT	2.2MF	20%	50V	
C85	1-130-480-00	MYLAR	0.0056MF	5%	50V	
C86	1-130-476-00	MYLAR	0.0027MF	5%	50V	
C87	1-130-476-00	MYLAR	0.0027MF	5%	50V	
C88	1-136-562-11	FILM	0.0082MF	5%	630V	
C89	1-161-494-00	CERAMIC	0.022MF	5%	25V	
C90	1-126-101-11	ELECT	100MF	20%	16V	
C101	1-124-927-11	ELECT	4.7MF	20%	50V	
C102	1-124-927-11	ELECT	4.7MF	20%	50V	
C103	1-124-443-00	ELECT	100MF	20%	10V	
C104	1-123-875-11	ELECT	10MF	20%	50V	
C105	1-162-293-31	CERAMIC	820PF	10%	50V	
C106	1-124-768-11	ELECT	4.7MF	20%	50V	
C107	1-130-479-00	MYLAR	0.0047MF	5%	50V	
C108	1-136-173-00	FILM	0.47MF	5%	50V	
C109	1-136-167-00	FILM	0.15MF	5%	50V	
C110	1-136-155-00	FILM	0.015MF	5%	50V	
C111	1-136-169-00	FILM	0.22MF	5%	50V	
C112	1-136-163-00	FILM	0.068MF	5%	50V	
C113	1-136-161-00	FILM	0.047MF	5%	50V	
C114	1-130-481-00	MYLAR	0.0068MF	5%	50V	
C115	1-136-153-00	FILM	0.01MF	5%	50V	
C116	1-124-927-11	ELECT	4.7MF	20%	50V	
C117	1-123-875-11	ELECT	10MF	20%	50V	
C118	1-124-477-11	ELECT	47MF	20%	25V	
C119	1-136-159-00	FILM	0.033MF	5%	50V	
C120	1-130-472-00	MYLAR	0.0012MF	5%	50V	
C121	1-123-875-11	ELECT	10MF	20%	50V	
C122	1-130-482-00	MYLAR	0.0082MF	5%	50V	
C123	1-130-477-00	MYLAR	0.0033MF	5%	50V	
C124	1-130-476-00	MYLAR	0.0027MF	5%	50V	

Ref.No	Part No.	Description				
C125	1-136-153-00	FILM	0.01MF	5%	50V	
C126	1-136-162-00	FILM	0.056MF	5%	50V	
C201	1-124-927-11	ELECT	4.7MF	20%	50V	
C202	1-124-927-11	ELECT	4.7MF	20%	50V	
C203	1-124-443-00	ELECT	100MF	20%	10V	
C204	1-123-875-11	ELECT	10MF	20%	50V	
C205	1-162-293-31	CERAMIC	820PF	10%	50V	
C206	1-124-768-11	ELECT	4.7MF	20%	50V	
C207	1-130-479-00	MYLAR	0.0047MF	5%	50V	
C208	1-136-173-00	FILM	0.47MF	5%	50V	
C209	1-136-167-00	FILM	0.15MF	5%	50V	
C210	1-136-155-00	FILM	0.015MF	5%	50V	
C211	1-136-169-00	FILM	0.22MF	5%	50V	
C212	1-136-163-00	FILM	0.068MF	5%	50V	
C213	1-136-161-00	FILM	0.047MF	5%	50V	
C214	1-130-481-00	MYLAR	0.0068MF	5%	50V	
C215	1-136-153-00	FILM	0.01MF	5%	50V	
C216	1-124-927-11	ELECT	4.7MF	20%	50V	
C217	1-123-875-11	ELECT	10MF	20%	50V	
C218	1-124-477-11	ELECT	47MF	20%	25V	
C219	1-136-159-00	FILM	0.033MF	5%	50V	
C220	1-130-472-00	MYLAR	0.0012MF	5%	50V	
C221	1-123-875-11	ELECT	10MF	20%	50V	
C222	1-130-482-00	MYLAR	0.0082MF	5%	50V	
C223	1-130-477-00	MYLAR	0.0033MF	5%	50V	
C224	1-130-476-00	MYLAR	0.0027MF	5%	50V	
C225	1-136-153-00	FILM	0.01MF	5%	50V	
C226	1-136-162-00	FILM	0.056MF	5%	50V	
C301	1-124-477-11	ELECT	47MF	20%	25V	
C302	1-123-875-11	ELECT	10MF	20%	50V	
C303	1-124-791-11	ELECT	1MF	20%	50V	
C304	1-124-120-11	ELECT	220MF	20%	16V	
C305	1-123-875-11	ELECT	10MF	20%	50V	
C306	1-123-875-11	ELECT	10MF	20%	50V	
C307	1-124-927-11	ELECT	4.7MF	20%	50V	
C308	1-124-925-11	ELECT	2.2MF	20%	50V	
C701	1-136-165-00	FILM	0.1MF	5%	50V	
C702	1-136-165-00	FILM	0.1MF	5%	50V	
C703	1-124-477-11	ELECT	47MF	20%	25V	
C704	1-124-477-11	ELECT	47MF	20%	25V	
C705	1-124-472-11	ELECT	470MF	20%	10V	
C706	1-124-472-11	ELECT	470MF	20%	10V	
C707	1-124-480-11	ELECT	470MF	20%	25V	
C708	1-124-557-11	ELECT	1000MF	20%	25V	
C709	1-124-120-11	ELECT	220MF	20%	16V	
C710	1-124-472-11	ELECT	470MF	20%	10V	
C711	1-161-379-00	CERAMIC	0.01MF	30%	16V	
C712	1-136-153-00	FILM	0.01MF	5%	50V	
C801	1-124-791-11	ELECT	1MF	20%	50V	
C802	1-124-482-11	ELECT	33MF	20%	25V	
C803	1-162-294-31	CERAMIC	0.001MF	10%	50V	
C804	1-161-494-00	CERAMIC	0.022MF	5%	25V	
C805	1-161-494-00	CERAMIC	0.022MF	5%	25V	
C806	1-126-176-11	ELECT	220MF	20%	10V	
C807	1-162-199-31	CERAMIC	10PF	5%	50V	

Ref.No	Part No.	Description			
C808	1-162-199-31	CERAMIC	10PF	5%	50V
C809	1-162-199-31	CERAMIC	10PF	5%	50V
C810	1-161-494-00	CERAMIC	0.022MF		25V
C811	1-161-494-00	CERAMIC	0.022MF		25V
C812	1-124-443-00	ELECT	100MF	20%	10V
C813	1-162-294-31	CERAMIC	0.001MF	10%	50V
C814	1-162-294-31	CERAMIC	0.001MF	10%	50V
C815	1-124-927-11	ELECT	4.7MF	20%	50V
CN301	*1-569-624-11	SOCKET, CONNECTOR 17P			
CNP11	1-564-501-11	PIN, CONNECTOR 8P			
CNP12	*1-564-337-00	PIN, CONNECTOR 3P			
CNP13	*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P			
CNP81	*1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P			
CNP82	*1-564-339-00	PIN, CONNECTOR 5P			
CNP83	*1-564-338-00	PIN, CONNECTOR 4P			
CNP805	*1-564-342-11	PIN, CONNECTOR 8P			
D11	8-719-107-94	DIODE 1SS202-1			
D81	8-719-107-94	DIODE 1SS202-1			
D301	8-719-107-94	DIODE 1SS202-1			
D701	8-719-200-77	DIODE 10E2N			
D702	8-719-200-77	DIODE 10E2N			
D703	8-719-200-77	DIODE 10E2N			
D704	8-719-200-77	DIODE 10E2N			
D705	8-719-200-77	DIODE 10E2N			
D706	8-719-200-77	DIODE 10E2N			
D707	8-719-933-50	DIODE HZS7C2L			
D708	8-719-933-50	DIODE HZS7C2L			
D801	8-719-107-94	DIODE 1SS202-1			
D802	8-719-107-94	DIODE 1SS202-1			
D803	8-719-107-94	DIODE 1SS202-1			
D804	8-719-200-77	DIODE 10E2N			
D805	8-719-200-77	DIODE 10E2N			
D806	8-719-107-94	DIODE 1SS202-1			
D807	8-719-302-46	DIODE SEL1210S-C			
D808	8-719-302-79	DIODE SEL1910A-C			
D809	8-719-302-53	DIODE SEL1410E-C			
D810	8-719-302-53	DIODE SEL1410E-C			
IC81	8-759-111-44	IC UPC4570C-1			
IC301	8-759-939-73	IC BA3308			
IC302	8-752-018-70	IC CX20187			
IC303	8-759-634-51	IC M5218AP			
IC701	8-759-604-33	IC M5F7812L			
IC702	8-759-604-29	IC M5F7805L			
IC801	8-759-635-01	IC M50964-223SP			
L41	1-410-780-11	INDUCTOR 27MMH			
L61	1-410-780-11	INDUCTOR 27MMH			
L101	1-410-775-21	INDUCTOR 10MMH			
L201	1-410-775-21	INDUCTOR 10MMH			
L801	1-410-521-11	INDUCTOR 100UH			
M901	X-3343-447-1	MOTOR ASSY			
PM901	1-454-456-11	SOLENOID, PLUNGER			
Q11	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q12	8-719-939-23	PHOTO TRANSISTOR GP2S09-C			
Q81	8-729-111-29	TRANSISTOR 2SD1616A-K			
Q82	8-729-142-46	TRANSISTOR 2SC2001-LK			
Q83	8-729-142-46	TRANSISTOR 2SC2001-LK			
Q101	8-729-900-74	TRANSISTOR DTC143TS			
Q102	8-729-900-80	TRANSISTOR DTC114ES			
Q103	8-729-900-80	TRANSISTOR DTC114ES			
Q104	8-729-900-80	TRANSISTOR DTC114ES			
Q105	8-729-900-74	TRANSISTOR DTC143TS			

Ref.No	Part No.	Description			
Q201	8-729-900-74	TRANSISTOR DTC143TS			
Q202	8-729-900-80	TRANSISTOR DTC114ES			
Q203	8-729-900-80	TRANSISTOR DTC114ES			
Q204	8-729-900-80	TRANSISTOR DTC114ES			
Q205	8-729-900-74	TRANSISTOR DTC143TS			
Q301	8-729-900-89	TRANSISTOR DTC144ES			
Q302	8-729-900-61	TRANSISTOR DTA114ES			
Q303	8-729-900-61	TRANSISTOR DTA114ES			
Q304	8-729-900-61	TRANSISTOR DTA114ES			
Q701	8-729-209-15	TRANSISTOR 2SD2012			
Q702	8-729-620-05	TRANSISTOR 2SC2603-EF			
Q703	8-729-111-67	TRANSISTOR 2SB1094-L			
Q704	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q801	8-729-620-05	TRANSISTOR 2SC2603-EF			
Q802	8-729-620-05	TRANSISTOR 2SC2603-EF			
Q803	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q804	8-729-900-80	TRANSISTOR DTC114ES			
Q805	8-729-900-61	TRANSISTOR DTA114ES			
Q806	8-729-900-61	TRANSISTOR DTA114ES			
Q807	8-729-801-84	TRANSISTOR 2SB1013-4			
Q808	8-729-801-84	TRANSISTOR 2SB1013-4			
Q809	8-729-900-61	TRANSISTOR DTA114ES			
Q810	8-729-900-61	TRANSISTOR DTA114ES			
Q811	8-729-801-84	TRANSISTOR 2SB1013-4			
Q812	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q813	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q814	8-729-119-76	TRANSISTOR 2SA1175-HFE			
<u>RESISTOR</u>					
R11	1-247-834-11	CARBON	1.3K	5%	1/4W
R12	1-249-414-11	CARBON	560	5%	1/4W
R13	1-247-818-11	CARBON	300	5%	1/4W
R14	1-249-408-11	CARBON	180	5%	1/4W
R17	1-249-437-11	CARBON	47K	5%	1/4W
R18	1-249-437-11	CARBON	47K	5%	1/4W
R41	1-247-881-00	CARBON	120K	5%	1/4W
R42	1-249-405-11	CARBON	100	5%	1/4W
R43	1-247-882-11	CARBON	130K	5%	1/4W
R44	1-249-426-11	CARBON	5.6K	5%	1/4W
R45	1-249-430-11	CARBON	12K	5%	1/4W
R61	1-247-881-00	CARBON	120K	5%	1/4W
R62	1-249-405-11	CARBON	100	5%	1/4W
R63	1-247-882-11	CARBON	130K	5%	1/4W
R64	1-249-426-11	CARBON	5.6K	5%	1/4W
R65	1-249-430-11	CARBON	12K	5%	1/4W
R81	1-249-409-11	CARBON	220	5%	1/4W
R82	1-249-409-11	CARBON	220	5%	1/4W
R83	1-249-429-11	CARBON	10K	5%	1/4W
R84	△1-212-849-00	FUSIBLE	4.7	5%	1/4W
R85	1-249-435-11	CARBON	33K	5%	1/4W
R86	1-249-435-11	CARBON	33K	5%	1/4W
R101	1-249-437-11	CARBON	47K	5%	1/4W
R102	1-249-417-11	CARBON	1K	5%	1/4W
R103	1-249-431-11	CARBON	15K	5%	1/4W
R104	1-247-814-11	CARBON	200	5%	1/4W
R105	1-249-430-11	CARBON	12K	5%	1/4W
R106	1-249-420-11	CARBON	1.8K	5%	1/4W
R107	1-249-423-11	CARBON	3.3K	5%	1/4W
R108	1-249-423-11	CARBON	3.3K	5%	1/4W
R109	1-249-423-11	CARBON	3.3K	5%	1/4W
R110	1-247-822-11	CARBON	430	5%	1/4W
R111	1-249-427-11	CARBON	6.8K	5%	1/4W
R112	1-249-415-11	CARBON	680	5%	1/4W
R113	1-249-431-11	CARBON	15K	5%	1/4W
R114	1-249-421-11	CARBON	2.2K	5%	1/4W

Ref.No	Part No.	Description							
R115	1-249-429-11	CARBON	10K	5%	1/4W				
R116	1-249-441-11	CARBON	100K	5%	1/4W				
R117	1-249-441-11	CARBON	100K	5%	1/4W				
R118	1-249-438-11	CARBON	56K	5%	1/4W				
R119	1-249-435-11	CARBON	33K	5%	1/4W				
R120	1-249-438-11	CARBON	56K	5%	1/4W				
R121	1-249-421-11	CARBON	2.2K	5%	1/4W				
R122	1-249-410-11	CARBON	270	5%	1/4W				
R123	1-249-429-11	CARBON	10K	5%	1/4W				
R124	1-247-846-11	CARBON	4.3K	5%	1/4W				
R125	1-249-418-11	CARBON	1.2K	5%	1/4W				
R126	1-249-423-11	CARBON	3.3K	5%	1/4W				
R127	1-249-418-11	CARBON	1.2K	5%	1/4W				
R128	1-247-887-00	CARBON	220K	5%	1/4W				
R129	1-249-421-11	CARBON	2.2K	5%	1/4W				
R130	1-247-848-11	CARBON	5.1K	5%	1/4W				
R201	1-249-437-11	CARBON	47K	5%	1/4W				
R202	1-249-417-11	CARBON	1K	5%	1/4W				
R203	1-249-431-11	CARBON	15K	5%	1/4W				
R204	1-247-814-11	CARBON	200	5%	1/4W				
R205	1-249-430-11	CARBON	12K	5%	1/4W				
R206	1-249-420-11	CARBON	1.8K	5%	1/4W				
R207	1-249-423-11	CARBON	3.3K	5%	1/4W				
R208	1-249-423-11	CARBON	3.3K	5%	1/4W				
R209	1-249-423-11	CARBON	3.3K	5%	1/4W				
R210	1-247-822-11	CARBON	430	5%	1/4W				
R211	1-249-427-11	CARBON	6.8K	5%	1/4W				
R212	1-249-415-11	CARBON	680	5%	1/4W				
R213	1-249-431-11	CARBON	15K	5%	1/4W				
R214	1-249-421-11	CARBON	2.2K	5%	1/4W				
R215	1-249-429-11	CARBON	10K	5%	1/4W				
R216	1-249-441-11	CARBON	100K	5%	1/4W				
R217	1-249-441-11	CARBON	100K	5%	1/4W				
R218	1-249-438-11	CARBON	56K	5%	1/4W				
R219	1-249-435-11	CARBON	33K	5%	1/4W				
R220	1-249-438-11	CARBON	56K	5%	1/4W				
R221	1-249-421-11	CARBON	2.2K	5%	1/4W				
R222	1-249-410-11	CARBON	270	5%	1/4W				
R223	1-249-429-11	CARBON	10K	5%	1/4W				
R224	1-247-846-11	CARBON	4.3K	5%	1/4W				
R225	1-249-418-11	CARBON	1.2K	5%	1/4W				
R226	1-249-423-11	CARBON	3.3K	5%	1/4W				
R227	1-249-418-11	CARBON	1.2K	5%	1/4W				
R228	1-247-887-00	CARBON	220K	5%	1/4W				
R229	1-249-421-11	CARBON	2.2K	5%	1/4W				
R230	1-247-848-11	CARBON	5.1K	5%	1/4W				
R301	1-249-413-11	CARBON	470	5%	1/4W				
R302	1-259-882-11	CARBON	3.3M	5%	1/4W				
R303	1-249-405-11	CARBON	100	5%	1/4W				
R304	1-215-469-00	METAL	100K	1%	1/6W				
R305	1-249-429-11	CARBON	10K	5%	1/4W				
R306	1-249-429-11	CARBON	10K	5%	1/4W				
R307	1-249-441-11	CARBON	100K	5%	1/4W				
R308	1-249-417-11	CARBON	1K	5%	1/4W				
R309	1-249-433-11	CARBON	22K	5%	1/4W				
R310	1-249-433-11	CARBON	22K	5%	1/4W				
R311	1-249-437-11	CARBON	47K	5%	1/4W				
R312	1-249-411-11	CARBON	330	5%	1/4W				
R313	1-249-429-11	CARBON	10K	5%	1/4W				
R314	1-249-429-11	CARBON	10K	5%	1/4W				
R315	1-249-424-11	CARBON	3.9K	5%	1/4W				
R316	1-249-428-11	CARBON	8.2K	5%	1/4W				
R701	1-249-420-11	CARBON	1.8K	5%	1/4W				
R702	1-249-420-11	CARBON	1.8K	5%	1/4W				
R703	1-216-357-00	METAL OXIDE	4.7	5%	1W	F			
R801	1-249-407-11	CARBON	150	5%	1/4W				
R802	1-249-419-11	CARBON	1.5K	5%	1/4W				
R803	1-249-431-11	CARBON	15K	5%	1/4W				
R804	1-249-428-11	CARBON	8.2K	5%	1/4W				
R805	1-249-420-11	CARBON	1.8K	5%	1/4W				
R806	1-249-399-11	CARBON	33	5%	1/4W				
R807	1-249-429-11	CARBON	10K	5%	1/4W				
R808	1-249-428-11	CARBON	8.2K	5%	1/4W				
R809	1-249-429-11	CARBON	10K	5%	1/4W				
R810	1-249-429-11	CARBON	10K	5%	1/4W				
R811	1-249-425-11	CARBON	4.7K	5%	1/4W				
R812	1-249-420-11	CARBON	1.8K	5%	1/4W				
R813	1-249-425-11	CARBON	4.7K	5%	1/4W				
R814	1-249-437-11	CARBON	47K	5%	1/4W				
R815	1-249-425-11	CARBON	4.7K	5%	1/4W				
R816	1-247-895-00	CARBON	470K	5%	1/4W				
R817	1-249-425-11	CARBON	4.7K	5%	1/4W				
R818	1-247-903-00	CARBON	1M	5%	1/4W				
R819	1-249-420-11	CARBON	1.8K	5%	1/4W				
R820	1-249-425-11	CARBON	4.7K	5%	1/4W				
R821	1-249-417-11	CARBON	1K	5%	1/4W				
R822	1-249-437-11	CARBON	47K	5%	1/4W				
R823	1-249-420-11	CARBON	1.8K	5%	1/4W				
R824	1-249-417-11	CARBON	1K	5%	1/4W				
R825	1-249-393-11	CARBON	10	5%	1/4W				
R826	1-249-411-11	CARBON	330	5%	1/4W				
R827	1-249-411-11	CARBON	330	5%	1/4W				
R828	1-249-407-11	CARBON	150	5%	1/4W				
R829	1-249-407-11	CARBON	150	5%	1/4W				
R830	1-249-421-11	CARBON	2.2K	5%	1/4W				
R831	1-249-421-11	CARBON	2.2K	5%	1/4W				
R832	1-249-407-11	CARBON	150	5%	1/4W				
R833	1-249-409-11	CARBON	220	5%	1/4W				
R834	1-249-411-11	CARBON	330	5%	1/4W				
R835	1-249-413-11	CARBON	470	5%	1/4W				
R836	1-249-420-11	CARBON	1.8K	5%	1/4W				
R837	1-249-427-11	CARBON	6.8K	5%	1/4W				
R838	1-249-417-11	CARBON	1K	5%	1/4W				
R839	1-249-420-11	CARBON	1.8K	5%	1/4W				
R840	1-249-424-11	CARBON	3.9K	5%	1/4W				
R841	1-249-430-11	CARBON	12K	5%	1/4W				
RV41	1-228-989-00	RES, ADJ, CARBON 470							
RV42	1-230-500-11	RES, ADJ, CARBON 220K							
RV61	1-228-989-00	RES, ADJ, CARBON 470							
RV62	1-230-500-11	RES, ADJ, CARBON 220K							
RV101	1-238-016-11	RES, ADJ, CARBON 10K							
RV201	1-238-016-11	RES, ADJ, CARBON 10K							
RY81	1-515-614-11	RELAY							
S11	1-571-281-21	SWITCH, LEAF (HALF)							
S12	1-571-281-21	SWITCH, LEAF (REC (A))							
S13	1-571-281-21	SWITCH, LEAF (REC (B))							
S14	1-571-281-21	SWITCH, LEAF (CrO <sub>2</sub> )							
S801	1-554-303-21	SWITCH, KEY BOARD (□)							
S802	1-554-303-21	SWITCH, KEY BOARD (▨)							
S803	1-554-303-21	SWITCH, KEY BOARD (▷)							
S804	1-554-303-21	SWITCH, KEY BOARD (◁)							
S805	1-554-303-21	SWITCH, KEY BOARD (○)							
S806	1-554-303-21	SWITCH, KEY BOARD (◀)							
S807	1-554-303-21	SWITCH, KEY BOARD (▶▶)							
S808	1-554-303-21	SWITCH, KEY BOARD (●)							
S809	1-570-157-21	SWITCH, SLIDE (DIRECTION MODE)							
S810	1-571-908-11	SWITCH, SLIDE (DOLBY NR)							
SPK101	1-235-186-00	ENCAPSULATED COMPONENT							

<u>Ref.No</u>	<u>Part No.</u>	<u>Description</u>
SPK201	1-235-186-00	ENCAPSULATED COMPONENT
T81	1-433-337-11	TRANSFORMER, BIAS OSCILLATION
X801	1-577-358-21	VIBRATOR, CERAMIC