

**NAD** **SERVICE**  
**MANUAL**

**6325**  
**CASSETTE DECK**

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## SPECIFICATION

Cassette mechanism: Full logic 2 motor 2 head system  
Track system: 4-track, 2-channel stereo

### Mechanical Performance

		Unit
Tape speed	4.75	cm/sec
Wow and flutter		
PLAYBACK (JIS WRMS)	0.05	%
Tape drive force	100~250	g
Play torque	30~75	g/cm
F.F torque	70~160	g/cm
REW torque	70~160	g/cm
F.F time (C-60)	85~120	sec
REW time (C-60)	85~120	sec

### Electrical Performance

	Nominal	Limit	Unit
Input sens./impedance (to Dolby level)	40±1 dB/10		mV/kΩ
Frequency response PLAYBACK	40~12.5k		Hz
Frequency response REC/PLAY (at Dolby level -25 dB, Dolby NR:OFF)			
TYPE I	35~14k		Hz
TYPE II	35~15k		Hz
TYPE IV	35~15k		Hz

Signal to noise ratio at Dolby level, Dolby NR:OFF  
(CCIR ARM weighted / 20~20k Hz B.P.F)

	No tape	Virgin tape	Biased tape	Unit
TYPE I	59/52	54/51	50/49	dB
TYPE II,IV	63/54	58/53	52/50	dB

### Dolby NR effect

			Unit
(CCIR ARM at Dolby level)			
Dolby NRB	9	8.5	dB
Dolby NRC	18	17	dB

### Erase effect (with 1 kHz B.P.F)

			Unit
0 VU + 10 dB input	70	65	dB

	Nominal	Limit	Unit
Separation (with 1 kHz B.P.F) REC/PLAY			
Dolby level input at 1 kHz	40	35	dB
Cross talk at 1 kHz (with 1 kHz B.P.F)			
0 VU + 10 dB input	70	65	dB
Output level at Dolby level			
MTT-150 PLAY	505	505 ± 1	dB
Distortion (at Dolby level 1 kHz)			
TYPE I	1.0	2.0	%
TYPE II	2.2	2.9	%
TYPE IV	2.2	2.9	%
Compress effect (boost ratio) at Dolby level -40 dB			
30 Hz	+18	+16/+20	dB
1 kHz	+12	+10/+14	dB
15 kHz	+15	+13/+17	dB

### General

		Unit
Power supply	120 V 60 Hz (for A,A1,A2) 220~240 V 50 Hz (for B,B1,C,C1,C2)	
Power consumption	22(0.2)	W(A)
Dimensions(W/D/H) (include knob and leg)	420/271/122	mm
Net weight	4.3	kg

The specifications are subject to change without prior notice.

A : USA
A1 : CANADA
A2 : TAIWAN
B : U.K.
B1 : AUSTRALIA/N.Z.
C : EUROPE & OTHERS
C1 : W.GERMANY
C2 : G.P.M.

**REAR PANEL**

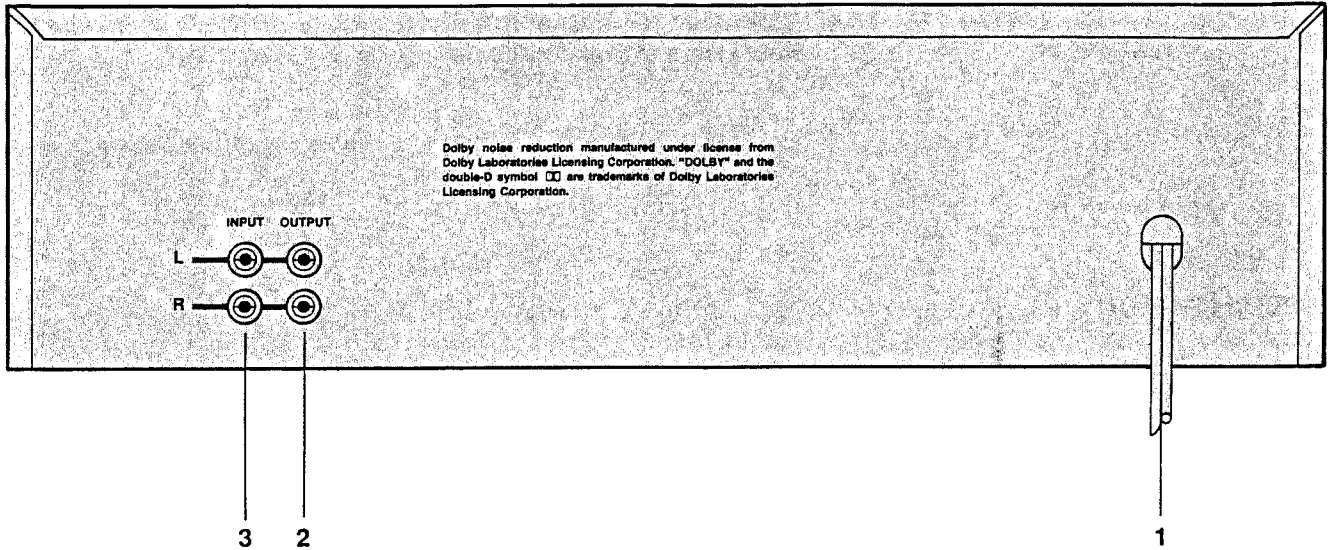
1. AC Power Cord.
2. Output.
3. Input.

**ATTENTION:**

ATTENTION: RISK OF ELECTRIC SHOCK TO THE USER.  
 ET LES CONSÉQUENCES GRAVES QUI POURRAIENT EN RÉSULTER. NE TENTEZ PAS D'OUVRIR L'APPAREIL ET DE TOUCHER AUX COMPOSANTS INTERNES SANS LA PRÉSENCE D'UNE PERSONNE QUALIFIÉE.

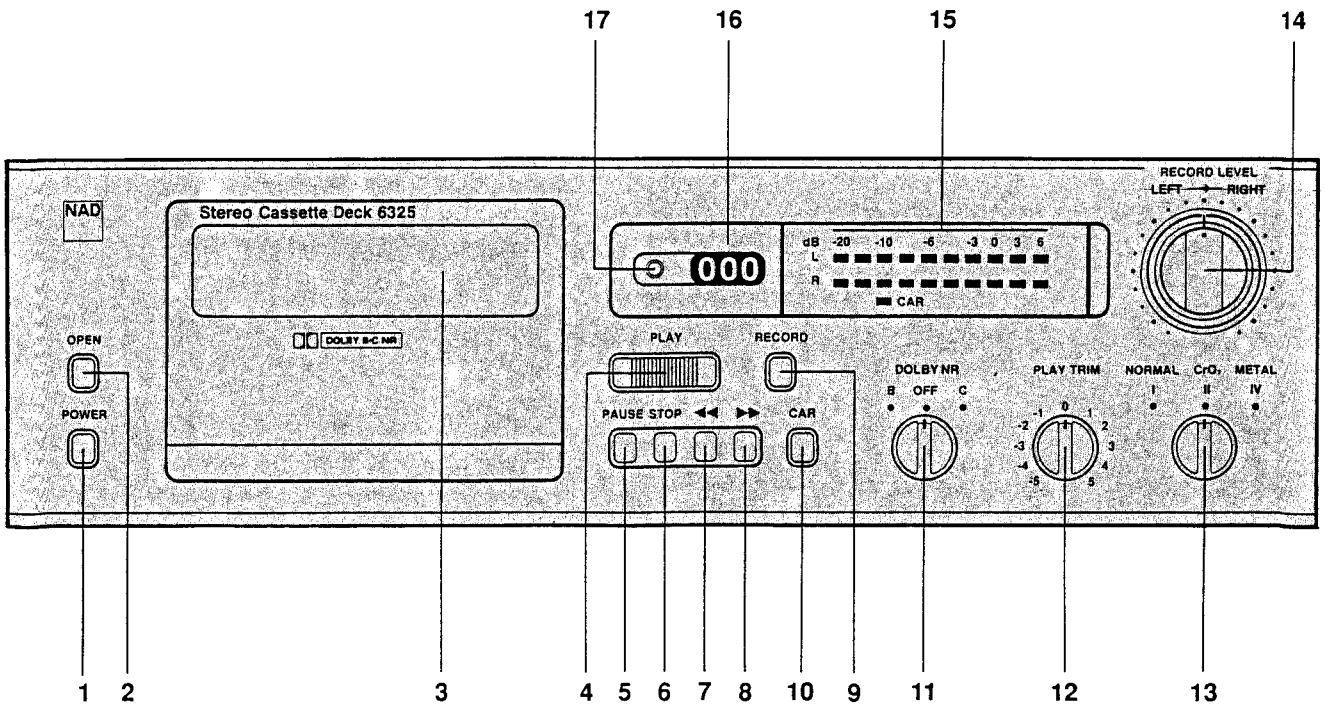
**CAUTION**

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



**FRONT PANEL**

- |                          |                            |   |
|--------------------------|----------------------------|---|
| 1. Power.                | 7. Rewind ( ◀◀ ).          | 13. Tape Selector. (Normal/CrO <sub>2</sub> /Metal) |
| 2. Open.                 | 8. Fast Forward ( ▶▶ ).    | 14. Recording Level.                                |
| 3. Cassette Compartment. | 9. Record.                 | 15. Recording Level Display.                        |
| 4. Play.                 | 10. CAR Processor.         | 16. Tape Counter.                                   |
| 5. Pause.                | 11. Dolby <sup>®</sup> NR. | 17. Re-set.   |
| 6. Stop.                 | 12. Play Trim.             |   |



# ALIGNMENT METHOD

## IMPORTANT

The tape path (heads, tape guides, capstan, pinch roller) should be cleaned and degaussed before alignment.

This tape recorder is designed to work well with a variety of tapes, however, maximum performance will be obtained with recommended tapes or similar tape formulations.

Recommended tapes	For North America	For Europe-DIN
Type I	Maxell UDS-I	Maxell UD-I, BASF TP18 no, R723DG
Type II	Maxell XL-II	Maxell XL-II, Teac MTT-5561, BASF, U564W
Type IV	Maxell MX	Maxell MX, Maxell MX 422

Before adjusting, switch DOLBY NR, CAR off; and PLAY TRIM, to center position.

DOLBY NR level 200 nWb/m = 245 mV RMS on testpoints TP003 (PLAYBACK and RECORDING) on Main PCB; approximately 505 mV at line outputs.

### 1. TAPE SPEED

Connect one output to Wow and Flutter Meter or Frequency Counter, Play speed test tape TEAC MTT-111 = 3 kHz or TEAC MTT-211 = 3.15 kHz and adjust the semi-variable resistor, for correct reading on Wow and Flutter Meter or Frequency Counter. (See Fig. A)

Tolerance:  $\pm 1\%$

### 2. AZIMUTH

Connect VTVM's and/or Oscilloscope to outputs. Set tape selector to normal and start playing Azimuth tape TEAC MTT-113 or MTT-114. Rotate azimuth screw for maximum output and/or maximum and in phase on Oscilloscope. Reseal adjustment screw with nail polish or similar (do not use glue). (See Fig. B)

### 3. PLAYBACK HIGH FREQUENCY EQ

THIS ADJUSTMENT SHOULD BE DONE ONLY WHEN HEAD HAS BEEN REPLACED.

Play frequency response tape TEAC MTT-256 or MTT-256U and check playback level at 14 kHz.

Before adjust, cut the center of jumper leads E001(L) and E002(R). Adjust by disconnecting E003(L) and E004(R) if 14 kHz is too high and connecting E001(L) and E002(R) if 14 kHz is too low. Leave same component values in both channels.

Tolerance:  $+1.5$  dB  
 $-0.5$

### 4. PLAYBACK LEVEL

Connect VTVM to testpoints. Play Dolby NR level tape TEAC MTT-150 and adjust SVR003(L) and SVR004(R) for 245 mV RMS at testpoint TP003 on Main PCB.

Tolerance:  $\pm 2.5$  mV RMS

Output should be approximately 505 mV RMS.

### 5. BIAS TRAP

Insert a blank type I tape and start recording. Turn record level all the way down and set tape selector to type IV position. Connect VTVM's and/or oscilloscope probe to testpoint TP201 and adjust F201(L) and F202(R) for minimum.

Tolerance: Less than 300 mV RMS.

### 6. RECORD LEVEL

Set tape selector to type I tape. Connect audio oscillator to line inputs, turn record levels to maximum (clockwise). Adjust audio oscillator frequency to 400 Hz and output so that VTVM's read 30 - 40 mV. (Use a convenient reference point on the VTVM's).

Reset tape counter to 0 and release pause to start recording. Record for approximately 5 seconds, rewind to 0 on tape counter and play back while observing the VTVM's. The VTVM's should indicate the same level as when the tape was recorded. Adjust SVR201(L) and SVR202(R) if necessary and repeat the record / play procedure until the readings are the same.

Tolerance:  $\pm 0.5$  dB from record level. Less than 0.5 dB difference between channels.

### 7. BIAS ADJUST TYPE I TAPE (NORMAL)

Set audio generator to 1.2 kHz without changing output level. Reset tape counter to 0 and start recording. After 5 seconds change audio generator frequency to 12 kHz (do not stop the machine or change levels) and continue recording for another 5 seconds. Stop and rewind to 0 on tape counter. Play back while observing VTVM's. There should be no level difference between the 1.2 kHz and the 12 kHz tone when played back. If 12 kHz is different in level for 1.2 kHz, adjust SVR301(L) and SVR302(R) and repeat the record / play procedure until both frequencies play back at same level.

Tolerance:  $\pm 0.5$  dB

**WARNING:** Greater tolerance will grossly affect the Dolby NR tracking and especially the Dolby C tracking.

Record level (step 6) should be checked and if necessary adjusted.

**8. FREQUENCY RESPONSE TYPE II TAPE (CrO<sub>2</sub>)**

Insert a type II tape and set selector to type II position. Adjust audio generator to 1.2 kHz and 12 kHz and repeat process described in step 7 using SVR303 to adjust both channels simultaneously.

**9. FREQUENCY RESPONSE TYPE IV TAPE (METAL)**

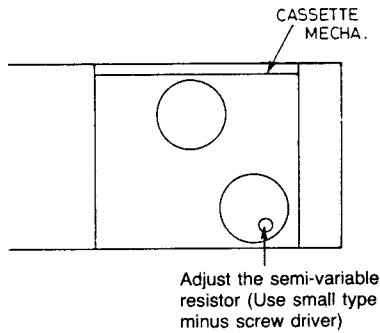
Insert a type IV tape and set selector to type IV position. Repeat procedure as in step 8 while adjusting SVR304.

**10. CAR**

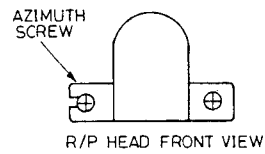
Engage record and pause mode. Adjust audio generator to 1 kHz and output so that voltage at TP003 is 24 mV. Switch CAR on, adjust SVR101(L) and SVR102(R) to increase 5 dB at TP003.

**ALIGNMENT COMPONENTS LAYOUT**

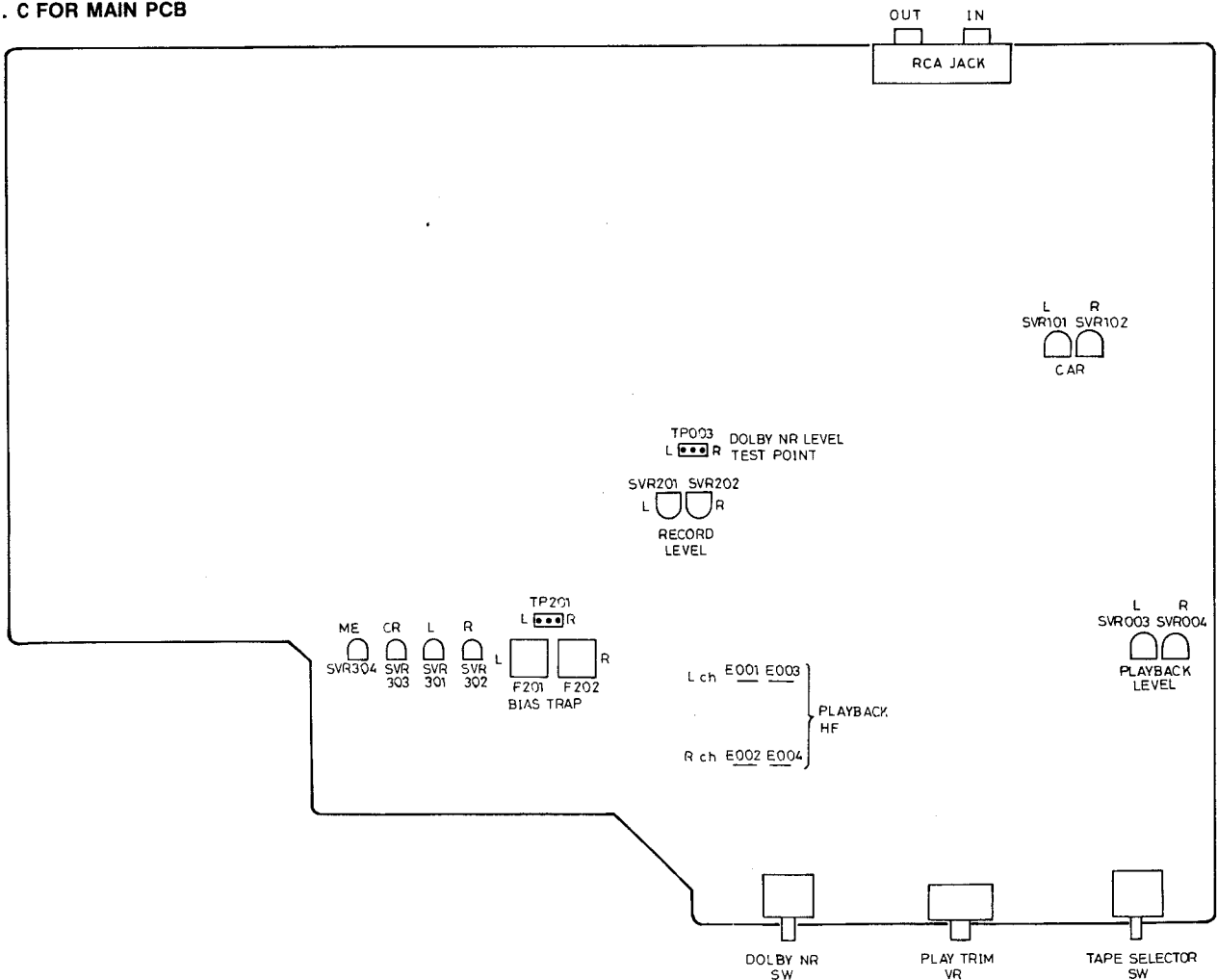
**Fig. A FOR ADJUSTING TAPE SPEED**



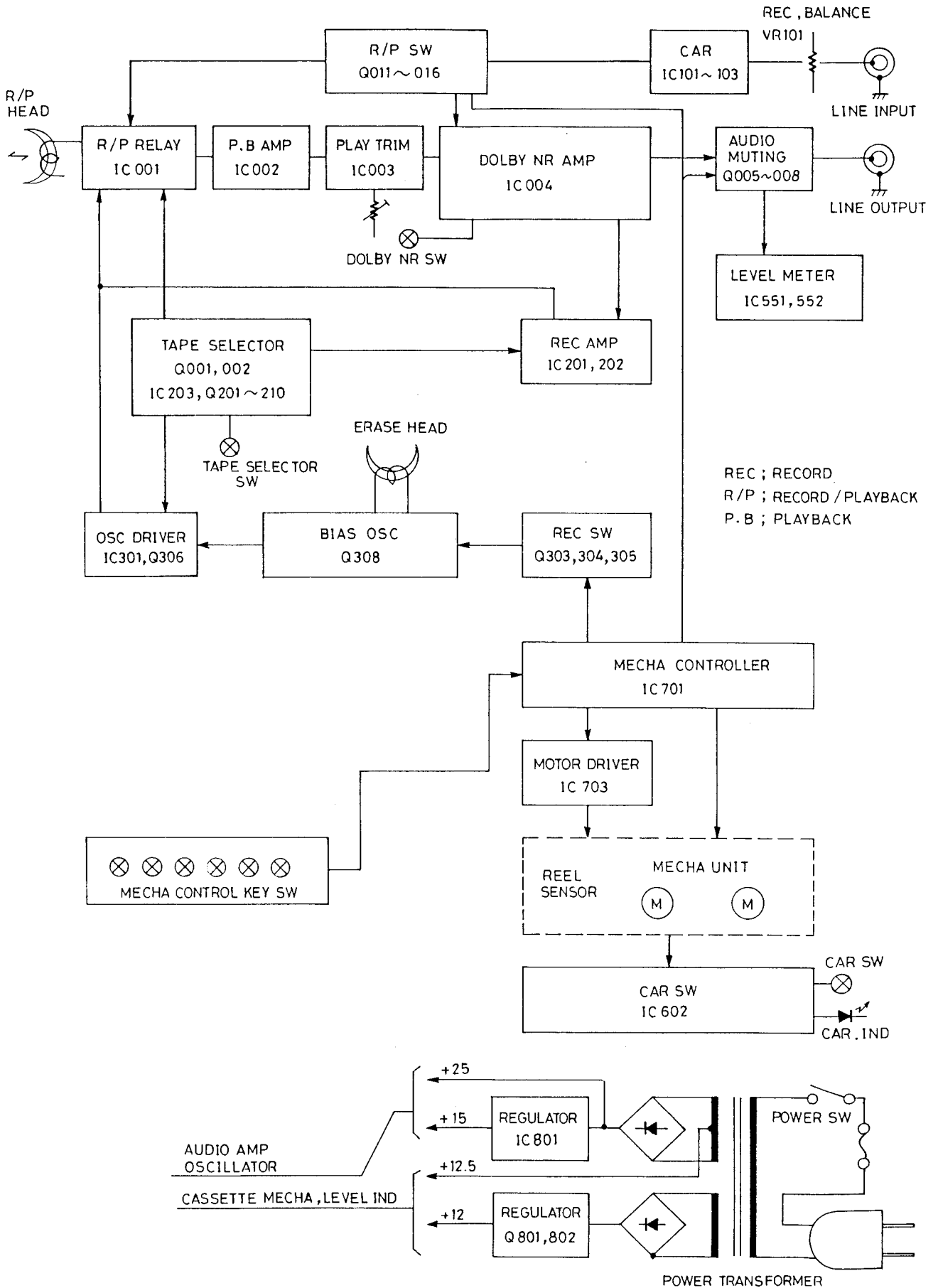
**Fig. B FOR ADJUSTING AZIMUTH**



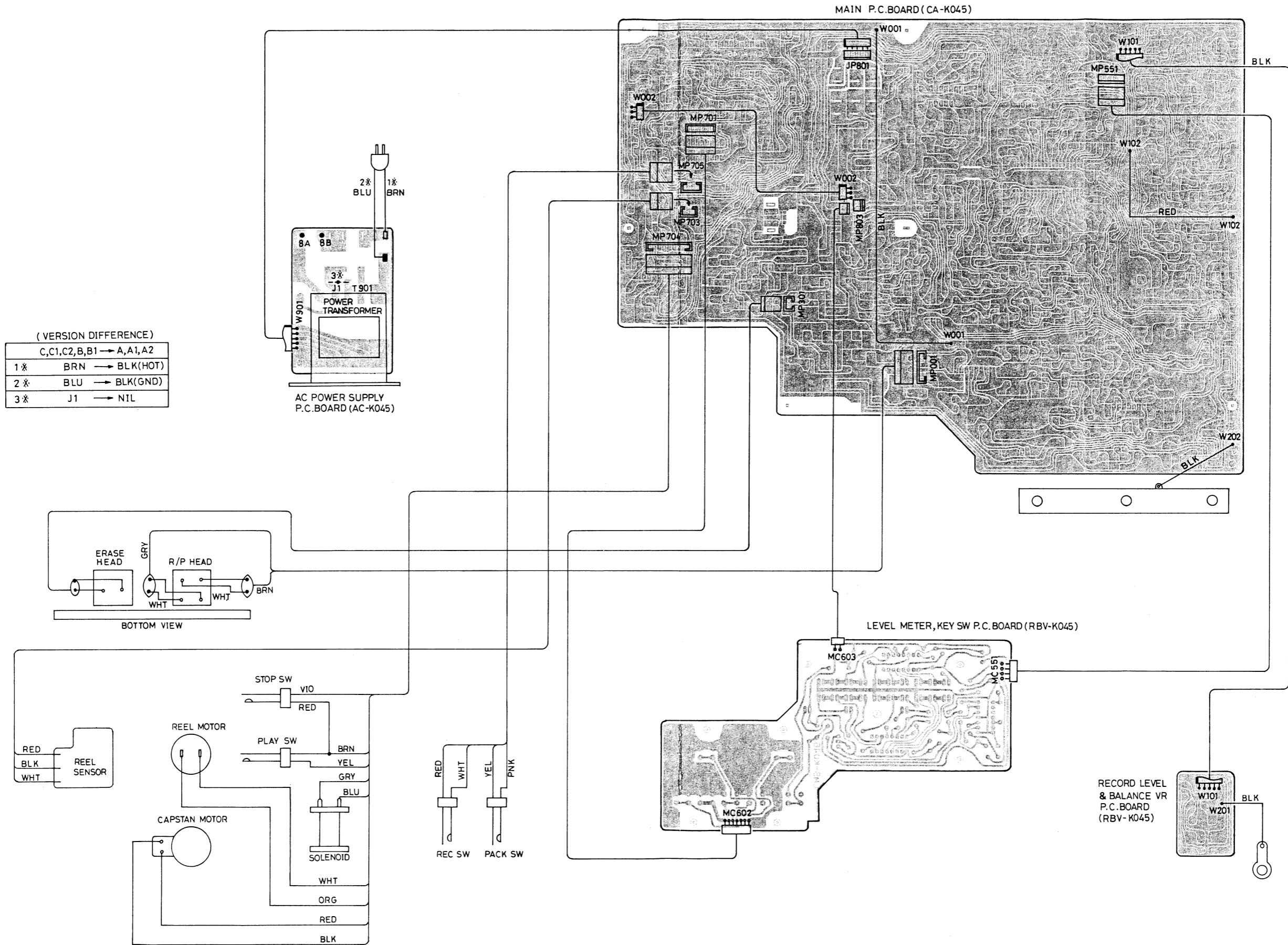
**Fig. C FOR MAIN PCB**



# BLOCK DIAGRAM



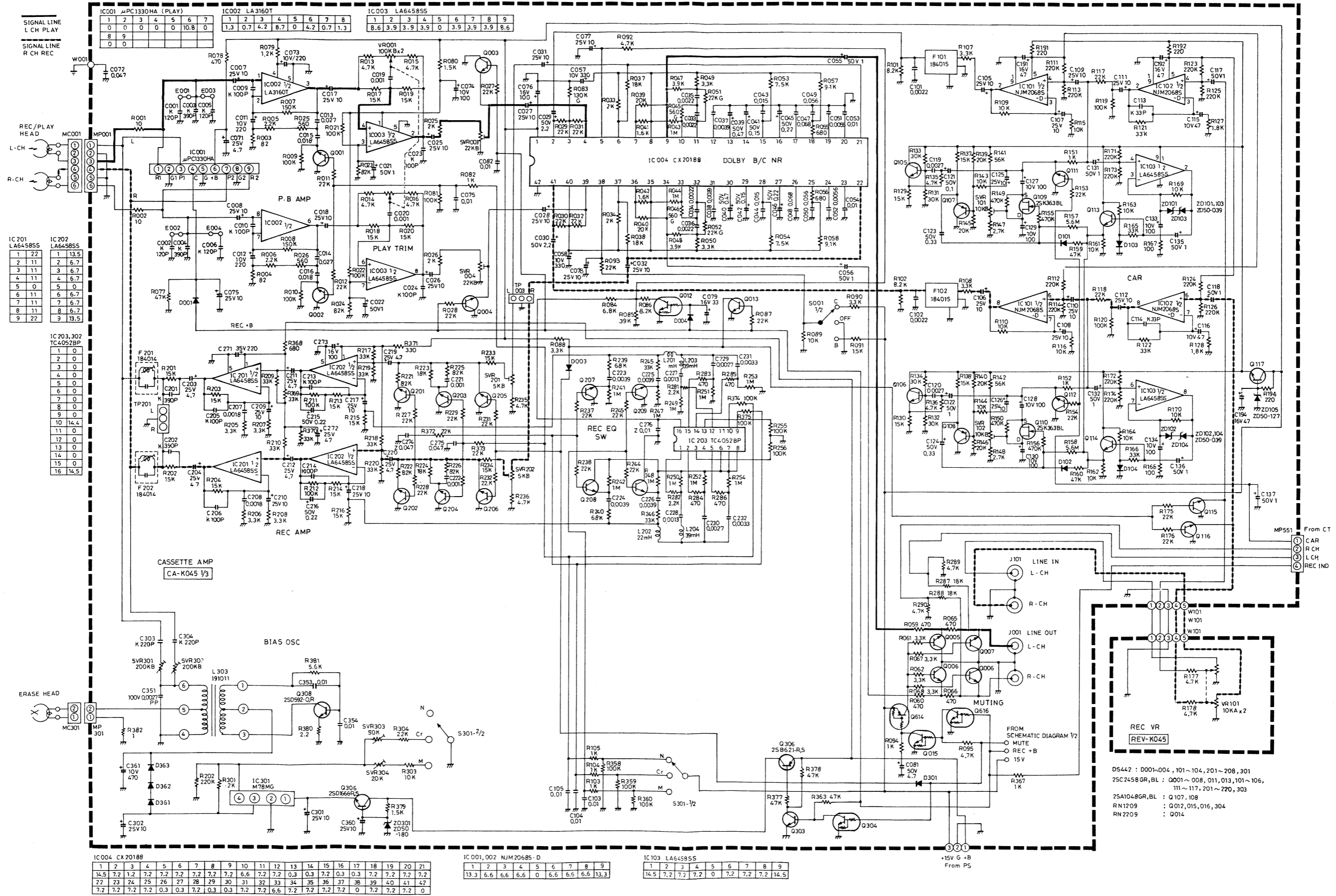
WIRING DIAGRAM (Component side)



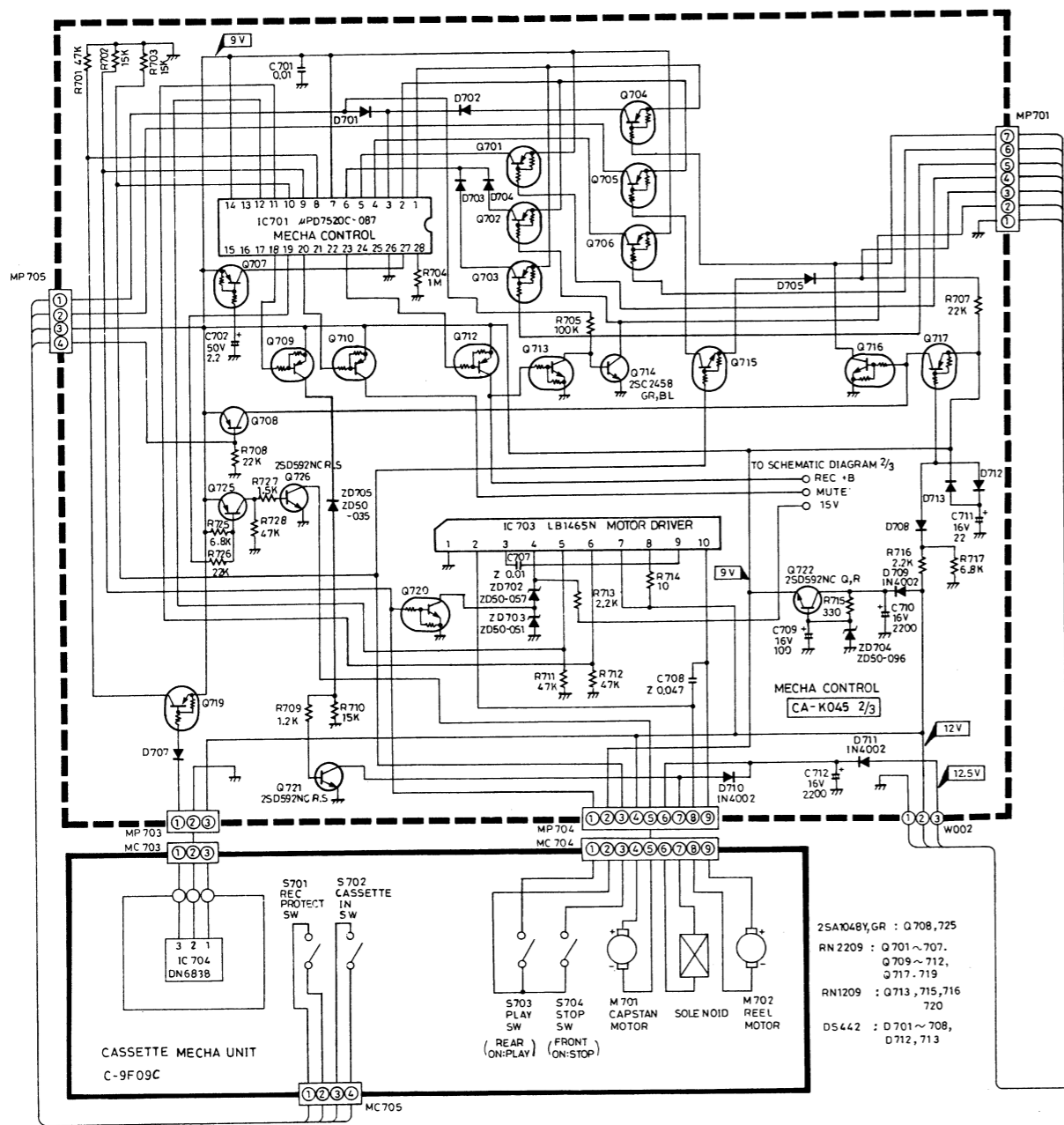
(VERSION DIFFERENCE)

	C, C1, C2, B, B1	→	A, A1, A2
1 *	BRN	→	BLK(HOT)
2 *	BLU	→	BLK(GND)
3 *	J1	→	NIL

# SCHEMATIC DIAGRAM







IC701  $\mu$ PD7520C-087

1	2	3	4	5	6	7	8	9	10	11	12	13	14
B.6	0.6	0	0	0	0	9.2	0	0	9.2	0	0	0	9.2
15	16	17	18	19	20	21	22	23	24	25	26	27	28
0	0	0	9.2	9.2	2.1	9.2	9.2	9.2	9.2	0	0	0	7.0

IC703 LB1465N

1	2	3	4	5	6	7	8	9	10
0	0	0.6	0	9	0	0	12	7.5	0.6

NOTE: VOLTAGE MEASUREMENT TAKEN WITH A HIGH IMPEDANCE VOLTMETER

**WARNING:**  
Parts marked with the symbol  $\Delta$  have critical characteristics.  
Use ONLY replacement parts recommended by the manufacturer.

**CAUTION:**  
Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamp, or if the resistance from chassis to either side of the power cord is less than 500K ohms, the unit is defective.

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

**TOLERANCE AND UNIT:**

CAPACITOR  $\pm 20\%$  ( $\mu$ F) NOT Specify  
 $\pm 5\%$  ( $\mu$ F)  
 $\pm 10\%$  ( $\mu$ F)  
 $\pm 30\%$  ( $\mu$ F)  
 $\pm 80\%$  ( $\mu$ F)  
 $-20\%$  ( $\mu$ F)

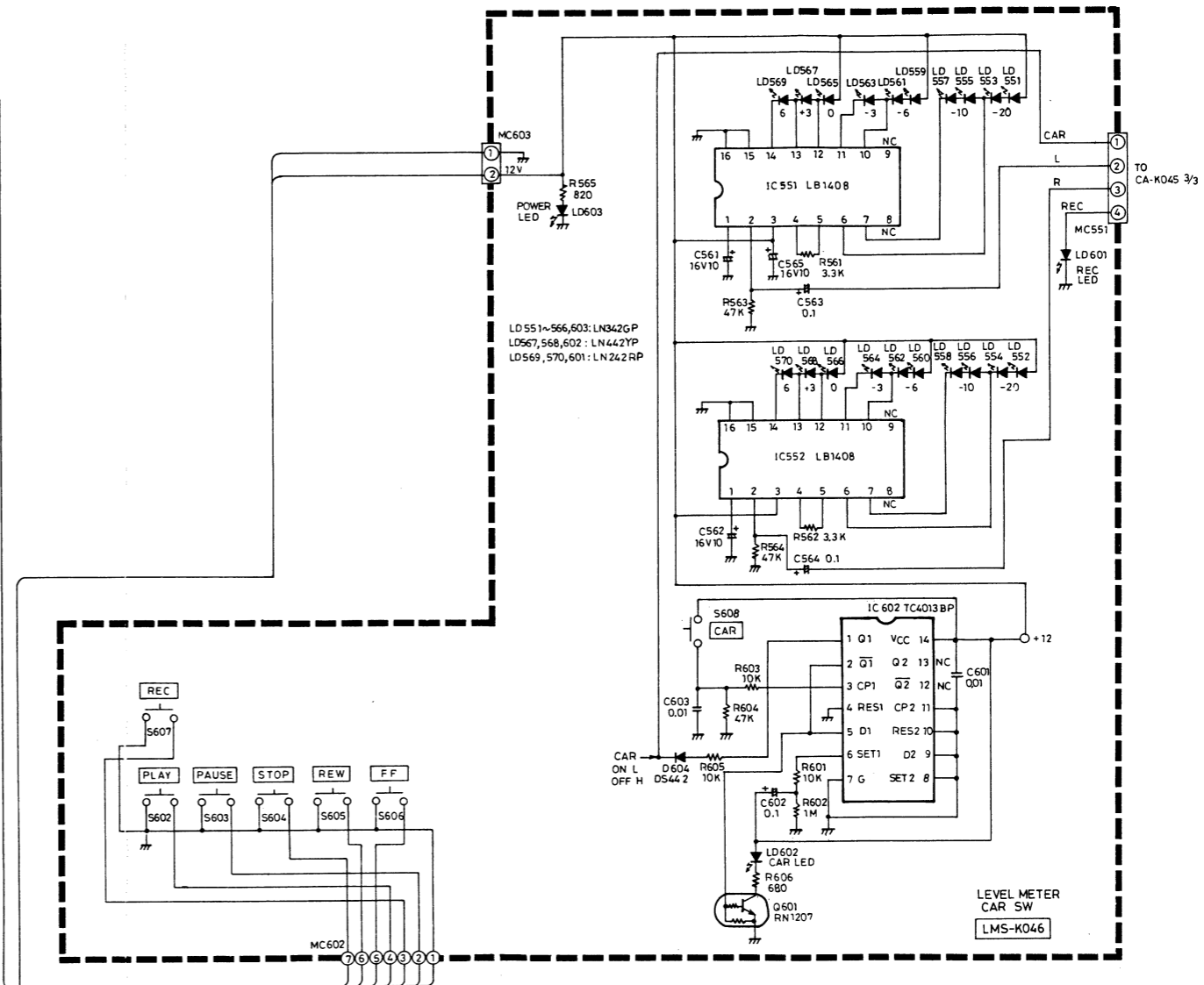
RESISTOR  $\pm 5\%$  ( $\Omega$ ) 1/4W AND 1/8W - NOT Specify  
 $\pm 2\%$  ( $\Omega$ ) 1/4W

IC 602 TC4013BP (CAR: OFF)

1	2	3	4	5	6	7	8
12	0	0	0	0	0	0	0
9	10	11	12	13	14		
0	0	0	0	12	12		

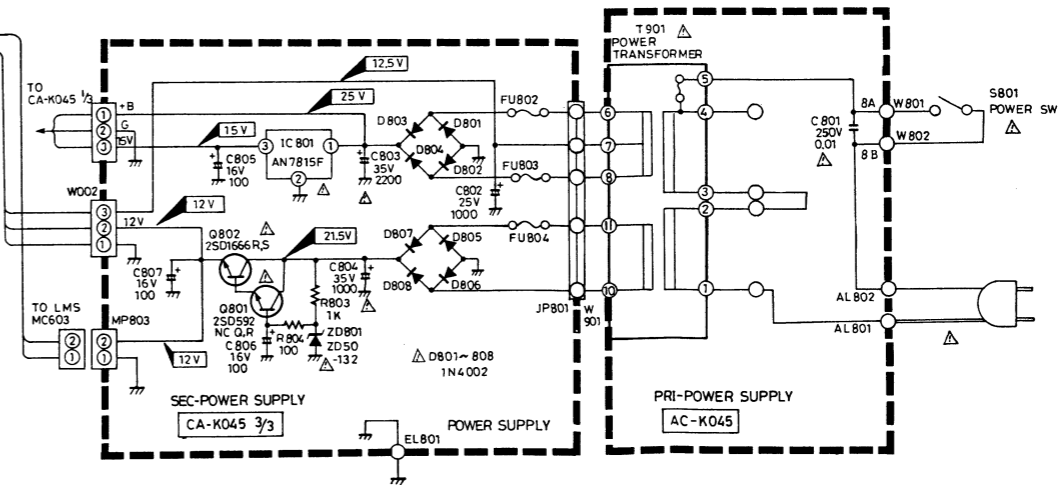
IC 551, 552 LB1408

1	2	3	4	5	6	7	8	9	10	11
0	0	12	5	1	11	11	—	0.5	11	11
12	13	14	15	16						
11	11	11	0	0						

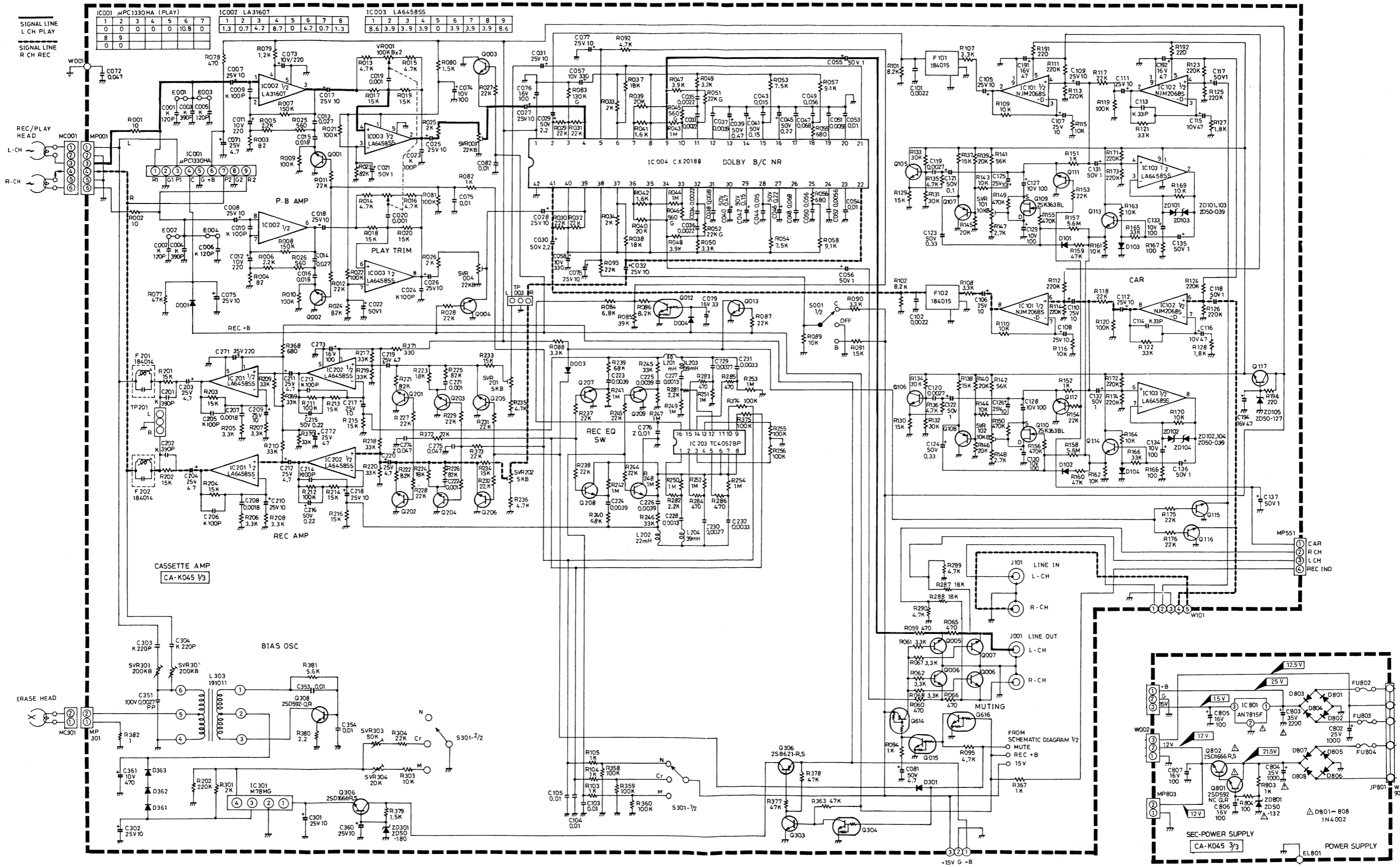


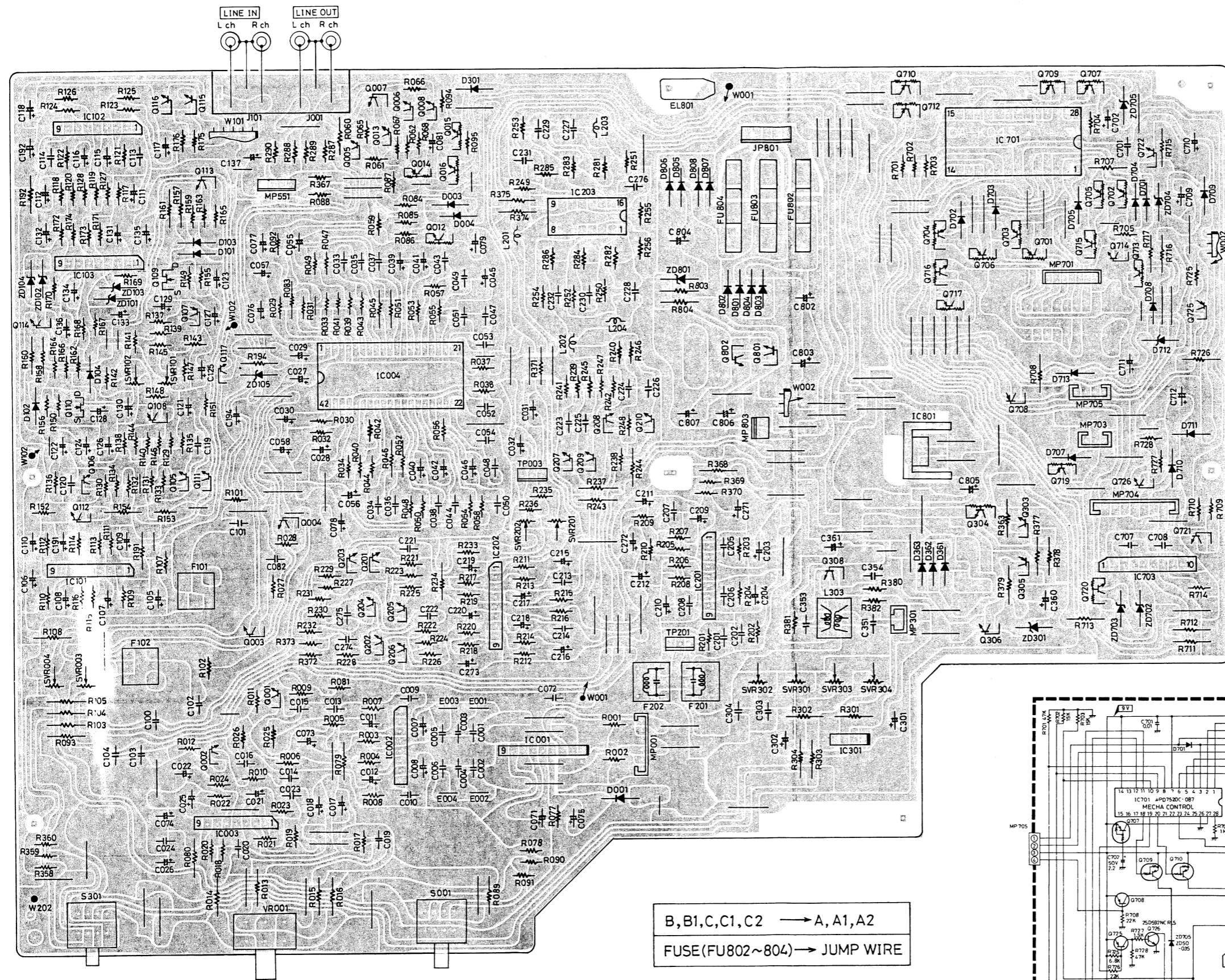
120V AREA  
T901: NPT-K0154  
FU802 ~ 804: NIL

TP901  
220V 240V AREA  
T901: NPT-K0155  
FU802 ~ 804: T630mA

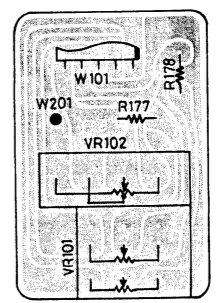
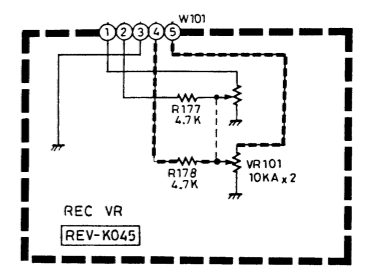


**SCHEMATIC AND PCB LAYOUT (Foil side)**  
**Main (CA-PCB)**



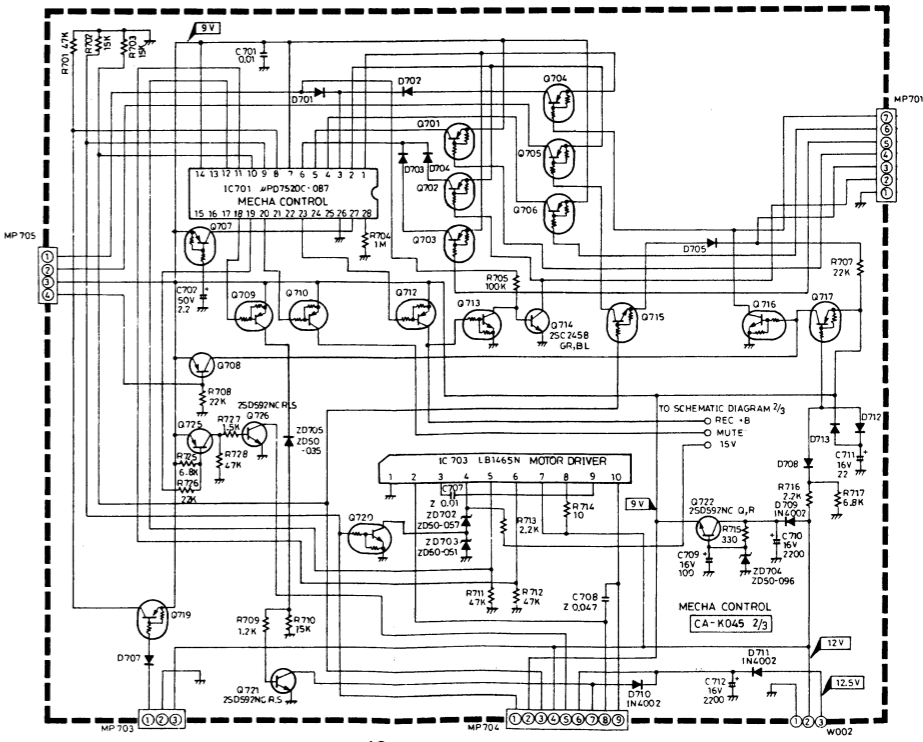


Rec. & Balance (RBV-PCB)



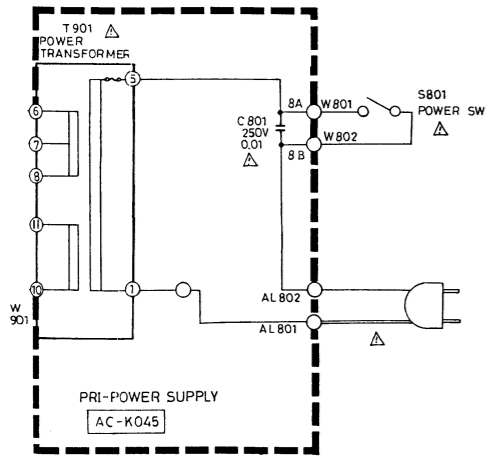
B, B1, C, C1, C2 → A, A1, A2  
 FUSE (FU802~804) → JUMP WIRE

- |             |                     |
|-------------|---------------------|
| A : USA     | B1 : AUSTRALIA/N.Z. |
| A1 : CANADA | C : EUROPE & OTHERS |
| A2 : TAIWAN | C1 : W.GERMANY      |
| B : U.K.    | C2 : G.P.M.         |

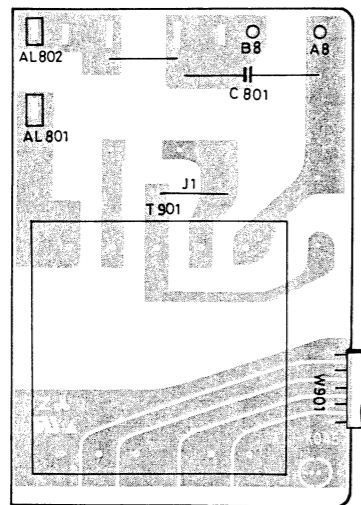
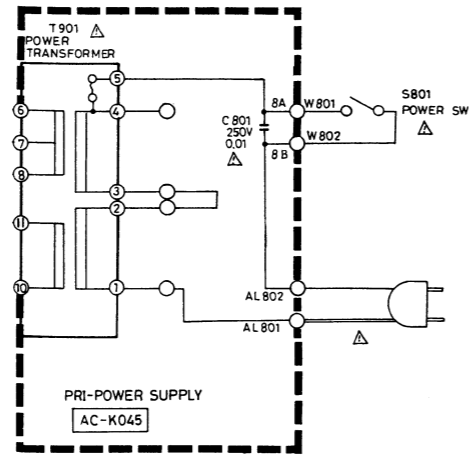


**SCHEMATIC AND PCB LAYOUT (Foil side)**  
**AC Power Supply (AC-PCB)**

(For A, A1, A2 Version)

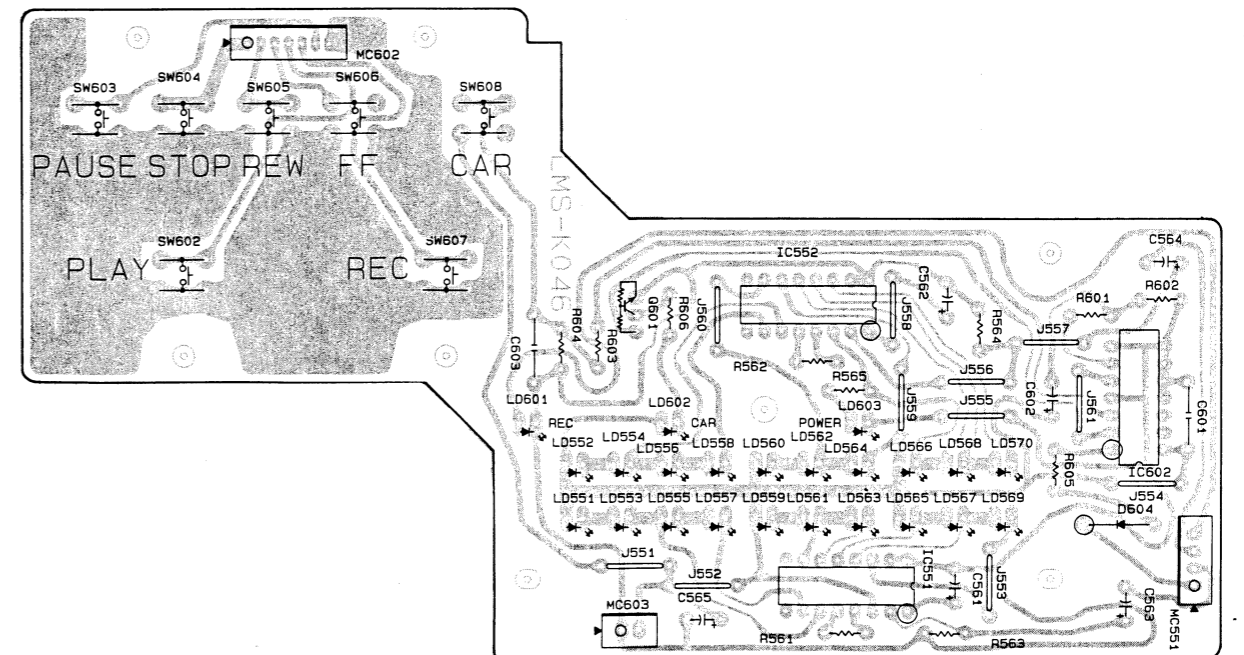
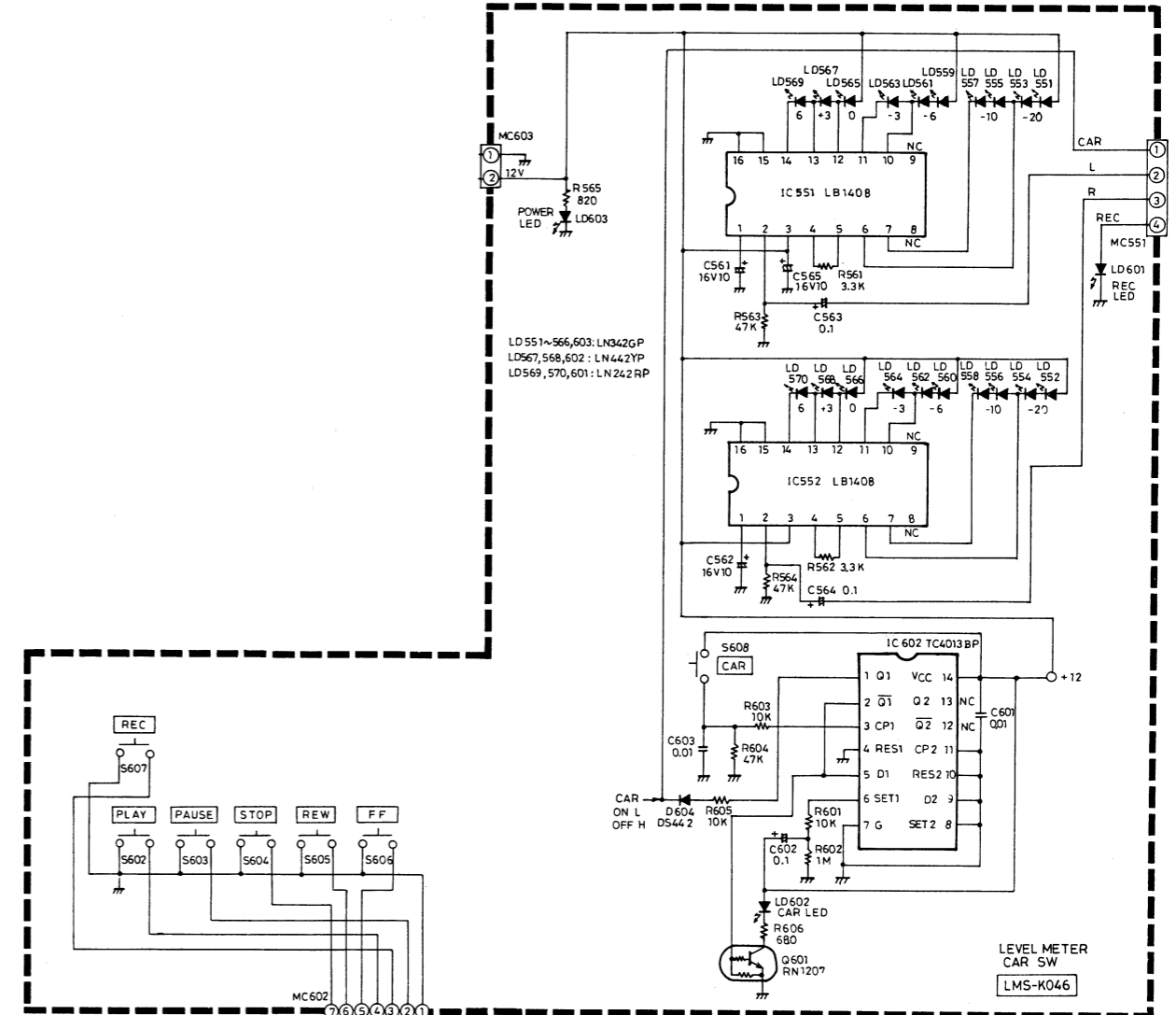


(For B, B1, C, C1, C2 Version)

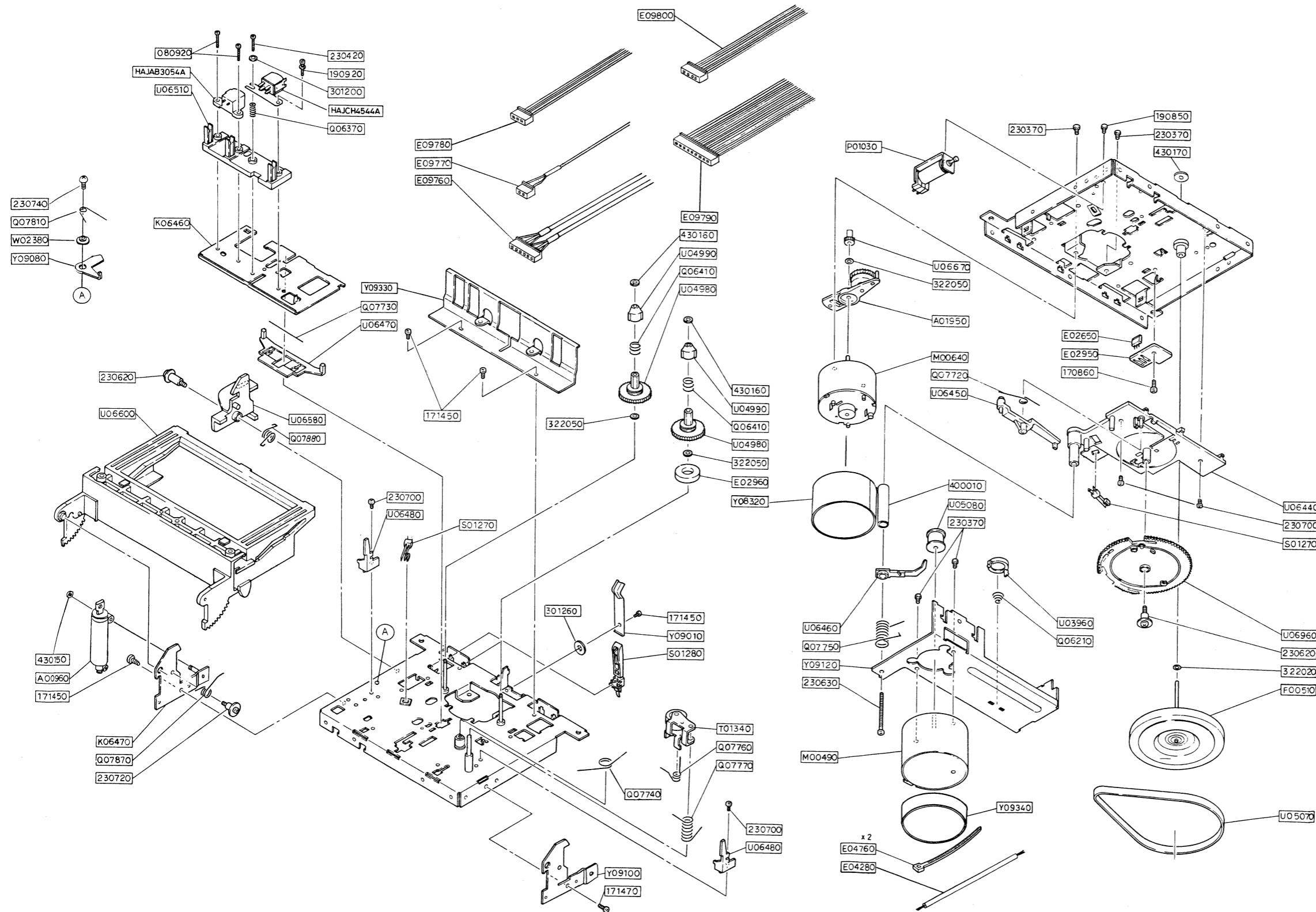


B, B1, C, C1, C2 → A, A1, A2  
 JUMP WIRE (J1) → NIL

**SCHEMATIC AND PCB LAYOUT (Foil side)**  
**Level Meter, Key SW (LMS-PCB)**

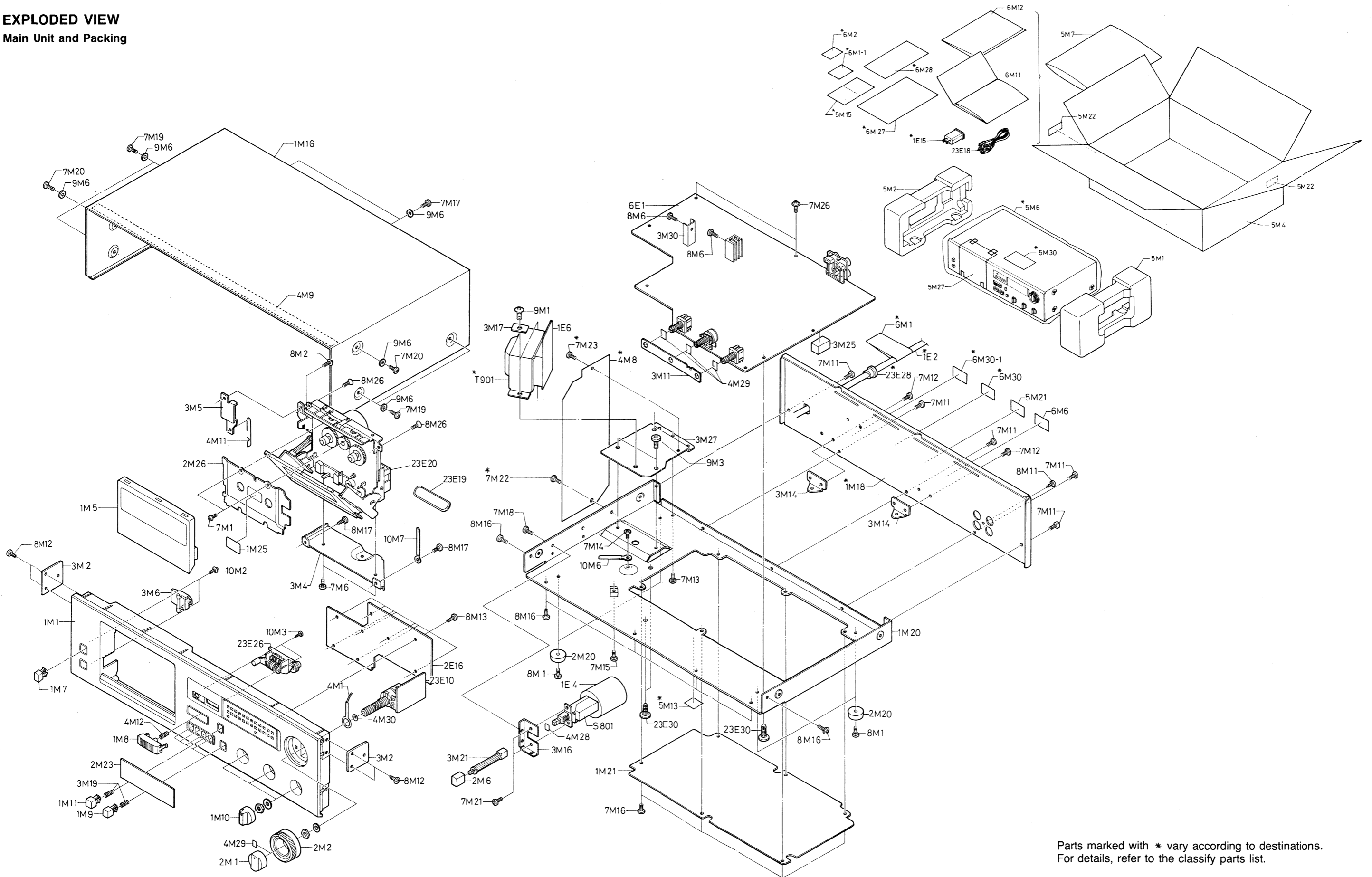


**EXPLODED VIEW AND PARTS LIST**  
Cassette Mechanism



Q'TY	PART NO.	DESCRIPTION
1	A00960	SOFT DAMP ASSY 3B
1	A01950	RF ASSY 90A
1	E02650	HALL IC DN683B-A
1	E02950	PCB, IC-20
1	E02960	MAGNET 15X7.2X3-12
1	E04280	WIRE,1571(RE) 35X3X3#28
2	E04760	HARNNESS BAND PL-100
1	E09760	CONNECTOR ASSY 25C-06F-05
1	E09770	CONNECTOR ASSY 25C-02F-04
1	E09780	CONNECTOR ASSY 25C-03F-04
1	E09790	CONNECTOR ASSY 25C-09F-05
1	E09800	CONNECTOR ASSY 25C-04F-05
1	F00510	FLYWHEEL 90B
1	HAJCH4544A	REC/PLAY HEAD
1	HAJAB3054A	ERASE HEAD
1	T01340	PINCH ROLLER ASSY 90A
1	K06460	HEAD PLATE 90A
1	K06470	CASE HOLDER 90A-L
1	M00490	MOTOR EG500AD-2B
1	M00640	MOTOR RF-510T-081200-N
1	P01030	SOLENOID NS0-4-00102-12V19
1	Q06210	SP, CAPSTAN SUPPORT BRA
1	Q06370	SP, HEAD 9FA
2	Q06410	SP, REEL SUPPORT 9FA
1	Q07720	SP, LEVER TRIGGER 90A
1	Q07730	SP, ARM BRAKE 90A
1	Q07740	SP, HEAD PANEL 90A
1	Q07750	SP, ARM GEAR 90A
1	Q07760	SP, PINCH ROLLER 90A
1	Q07770	SP, PINCH RET 90A
1	Q07810	SP, ARM SAFETY 90A
1	Q07870	SP, CASSETTE CASE 90B
1	Q07880	SP, CASE LOCK 90B
2	S01270	LEAF SW LSA-1119R-1
2	S01280	LEAF SW LSA-1132FAU
1	U03960	CAPSTAN SUPPORT 9B
2	U04980	GEAR,REEL PLATE 9FA
2	U04990	REEL DRIVE 9FA
1	U05070	FLAT BELT 58.5X3.5X0.4
1	U05080	MOTOR PULLEY 2X9.2R-U
1	U06440	GEAR,BASE 90A
1	U06450	LEVER,TRIGGER 90A
1	U06460	ARM,GEAR 90A
1	U06470	ARM,BRAKE 90A
2	U06480	CASSETTE GUIDE 90A
1	U06510	HEAD BASE 90B
1	U06580	LEVER, CASE LOCK 90A
1	U06600	CASSETTE CASE 90A
1	U06670	GEAR,RF PULLEY 90A
1	U06960	GEAR,DRIVE 90A
1	W02380	COLLAR,ARM SAFETY 90A
1	Y08320	SHIELD PLATE T-2.0 30X17
1	Y09010	SP PLATE,PACK 90A
1	Y09080	ARM,SAFETY 90A
1	Y09100	CASE HOLDER 90A-R
1	Y09120	BRACKET,FLYWHEEL 90A
1	Y09340	COVER,SW 90B
1	Y09340	SHIELD PLATE T-2.0 34X17
2	090920	SCREW,BIND 2.0X11
1	170860	SCREW,TAP TITE 2.0X5
4	171450	SCREW,TAP TITE 2.6X4
1	171470	SCREW,TAP TITE 2.6X6
1	190850	SCREW,2.0X4W/SPRING WASHER
1	190920	SCREW,2.0X11W/SPRING WASHER
4	230370	SCREW,2.6X2.5
1	230420	SCREW,BIND 2.0X10
2	230620	SCREW,SHOULDECK 2.6X9
1	230630	SCREW,TAP TITE 2.6X23.5
4	230700	SCREW,BIND TAP TITE 2.0X4
1	230720	SCREW,SHOULDECK 2.6X5
1	230740	SCREW,TRUSS TAP TITE 2.6X6
1	301200	FW 2.2X6.0X0.4
1	301260	FW 2.8X7.5X0.5
1	322020	PSW 2.1X4.0X0.25
3	322050	PSW 2.1X4.0X0.5
1	400010	SPACER M2.6X20 ZMC
1	430150	PSW 2.1X4.0X0.4C
2	430160	PSW 1.6X3.2X0.40C
1	430170	NLW 1.9X7.0X0.5

**EXPLODED VIEW**  
**Main Unit and Packing**



Parts marked with \* vary according to destinations.  
For details, refer to the classify parts list.

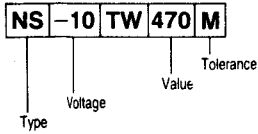




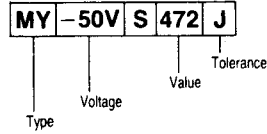


## Capacitors Description

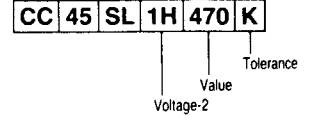
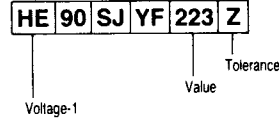
### • Electrolytic



### • Mylar - Styrol



### • Ceramic

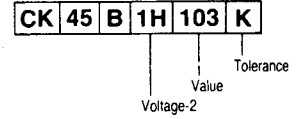


### • Electrolytic

Type	Voltage	Value	Tolerance
LL: Low Leak	-10: 10V	R47: 0.47 $\mu$ F	K: $\pm$ 10%
NP: Non-Pole	-50: 50V	4R7: 4.7 $\mu$ F	M: $\pm$ 20%
NS: Standard	6R3: 6.3V	470: 47 $\mu$ F	
		471: 470 $\mu$ F	
		472: 4700 $\mu$ F	

### • Mylar - Styrol

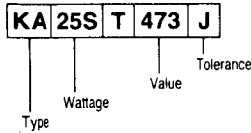
Type	Voltage	Value	Tolerance
MY: Mylar	-25V: 25V	4R7: 4.7pF	G: $\pm$ 2%
ST: Styrol	125V: 125V	470: 47pF	J: $\pm$ 5%
	-63T: 63V	471: 470pF	K: $\pm$ 10%
		472: 4700pF	M: $\pm$ 20%
		473: 0.047 $\mu$ F	
		474: 0.47 $\mu$ F	
		(1000pF=0.001 $\mu$ F)	



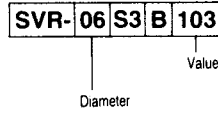
Voltage-1	Voltage-2	Value	Tolerance
HC: 25V	1E: 25V	4R7: 4.7pF	C: $\pm$ 0.25pF
HE: 50V	1H: 50V	470: 47pF	D: $\pm$ 0.5pF
H: 100V	2H: 500V	471: 470pF	F: $\pm$ 1pF
HK: 250V		472: 4700pF	J: $\pm$ 5%
HM: 500V		473: 0.047 $\mu$ F	K: $\pm$ 10%
		474: 0.47 $\mu$ F	M: $\pm$ 20%
		(1000pF=0.001 $\mu$ F)	Z: +80~-20%

## Resistors Description

### • Fixed



### • Semi-Variable



Type	Wattage	Value	Tolerance	Diameter
CE: Cement Case	-2W: 2W	R47: 0.47 $\Omega$	M: $\pm$ 20%	08: 8 $\phi$
FR: Flame Proof	10W: 10W	4R7: 4.7 $\Omega$	K: $\pm$ 10%	10: 10 $\phi$
KA: Carbon	16S: 1/6W	470: 47 $\Omega$	J: $\pm$ 5%	06: 6 $\phi$
MF: Metal Film	20S: 1/5W	471: 470 $\Omega$	G: $\pm$ 2%	
RF: Fusible	25S: 1/4W	472: 4.7k $\Omega$	F: $\pm$ 1%	
SA: Metal Oxide	50S: 1/2W	473: 47k $\Omega$	D: $\pm$ 0.5%	
	50X: 1/2W	474: 470k $\Omega$		
	S3W: 3W	475: 4.7M $\Omega$		