

NAD **SERVICE**
MANUAL

6325
CASSETTE DECK

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SPECIFICATION

Cassette mechanism: Full logic 2 motor 2 head system				Nominal	Limit	Unit			
Track system: 4-track, 2-channel stereo				Separation (with 1 kHz B.P.F) REC/PLAY					
				Dolby level input at 1 kHz	40	35	dB		
Mechanical Performance				Cross talk at 1 kHz (with 1 kHz B.P.F)					
				0 VU + 10 dB input	70	65	dB		
Tape speed	4.75		Unit	Output level at Dolby level					
Wow and flutter			cm/sec	MTT-150 PLAY					
PLAYBACK (JIS WRMS)	0.05		%	505	505 ± 1	dB	mV		
Tape drive force	100~250		g	Distortion (at Dolby level 1 kHz)					
Play torque	30~75		g/cm	TYPE I			1.0	2.0	%
F.F torque	70~160		g/cm	TYPE II			2.2	2.9	%
REW torque	70~160		g/cm	TYPE IV			2.2	2.9	%
F.F time (C-60)	85~120		sec	Compress effect (boost ratio) at Dolby level -40 dB					
REW time (C-60)	85~120		sec	30 Hz	+18	+16/+20	dB		
				1 kHz	+12	+10/+14	dB		
				15 kHz	+15	+13/+17	dB		
Electrical Performance									
	Nominal	Limit	Unit	General					
Input sens./impedance				Power supply					
(to Dolby level)	40±1 dB/10		mV/kΩ	120 V 60 Hz (for A,A1,A2)					
Frequency response				220~240 V 50 Hz (for B,B1,C,C1,C2)					
PLAYBACK	40~12.5k		Hz	Power consumption					
Frequency response REC/PLAY				22(0.2)					
(at Dolby level -25 dB, Dolby NR:OFF)				Dimensions(W/D/H)					
TYPE I	35~14k		Hz	(include knob and leg)					
TYPE II	35~15k		Hz	420/271/122					
TYPE IV	35~15k		Hz	Net weight					
				4.3					
				The specifications are subject to change without prior notice.					
Signal to noise ratio at Dolby level, Dolby NR:OFF									
(CCIR ARM weighted / 20~20k Hz B.P.F)									
TYPE I	No tape	59/52	56/49	dB	A : USA				
	Virgin tape	54/51	52/48	dB	A1 : CANADA				
	Biased tape	50/49	48/46	dB	A2 : TAIWAN				
TYPE II,IV	No tape	63/54	59/51	dB	B : U.K.				
	Virgin tape	58/53	54/50	dB	B1 : AUSTRALIA/N.Z.				
	Biased tape	52/50	50/48	dB	C : EUROPE & OTHERS				
Dolby NR effect				C1 : W.GERMANY					
(CCIR ARM at Dolby level)				C2 : G.P.M.					
Dolby NRB	9	8.5	dB						
Dolby NRC	18	17	dB						
Erase effect (with 1 kHz B.P.F)									
0 VU + 10 dB input	70	65	dB						

REAR PANEL

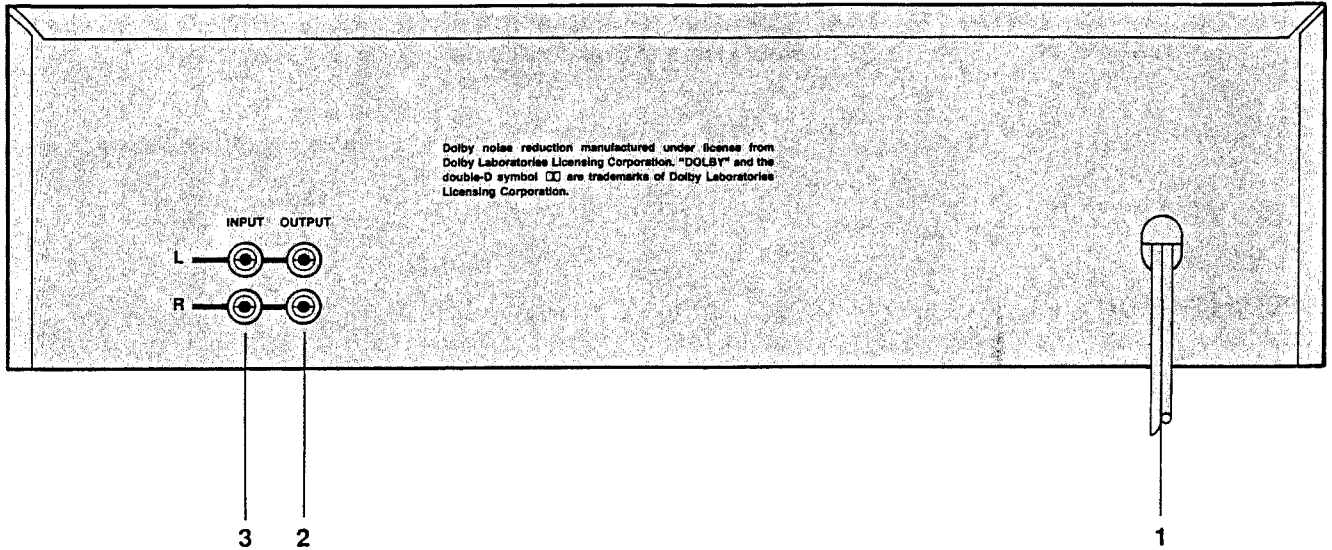
1. AC Power Cord.
2. Output.
3. Input.

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.

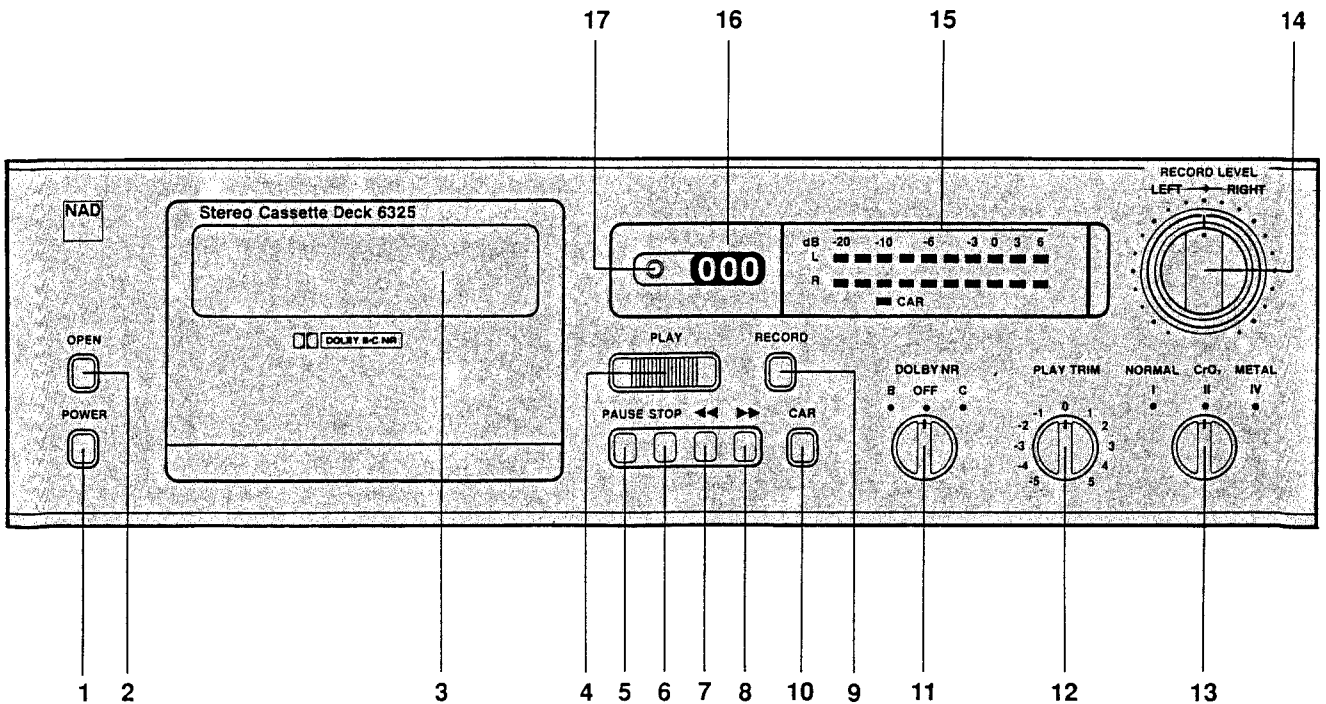
CAUTION

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 ₂ /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 [®] 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: ± 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: ± 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: ± 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 (CrO₂)

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

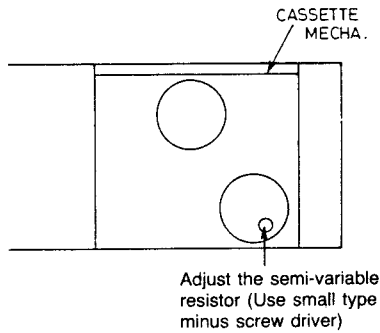


Fig. B FOR ADJUSTING AZIMUTH

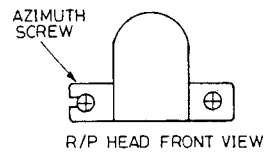
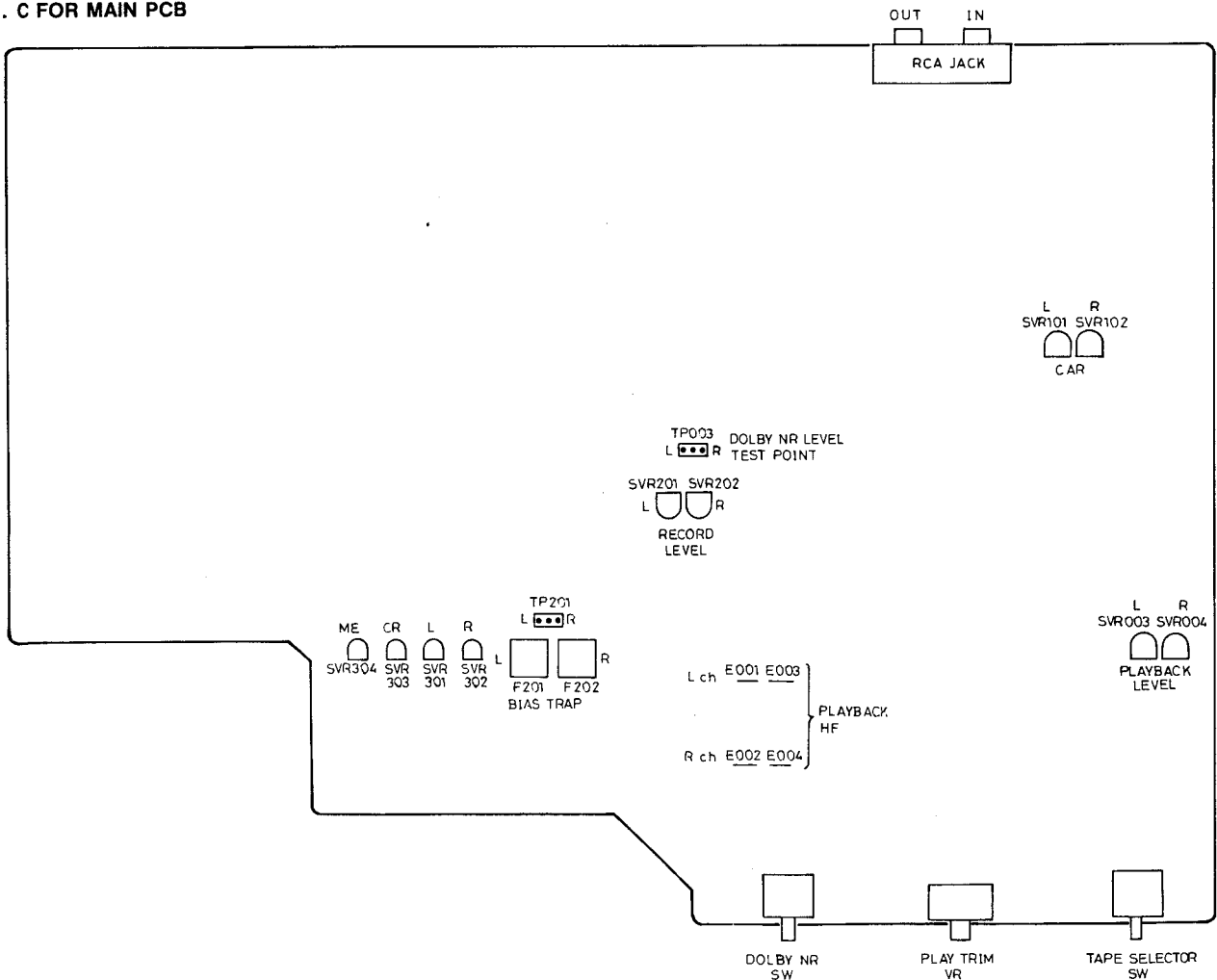
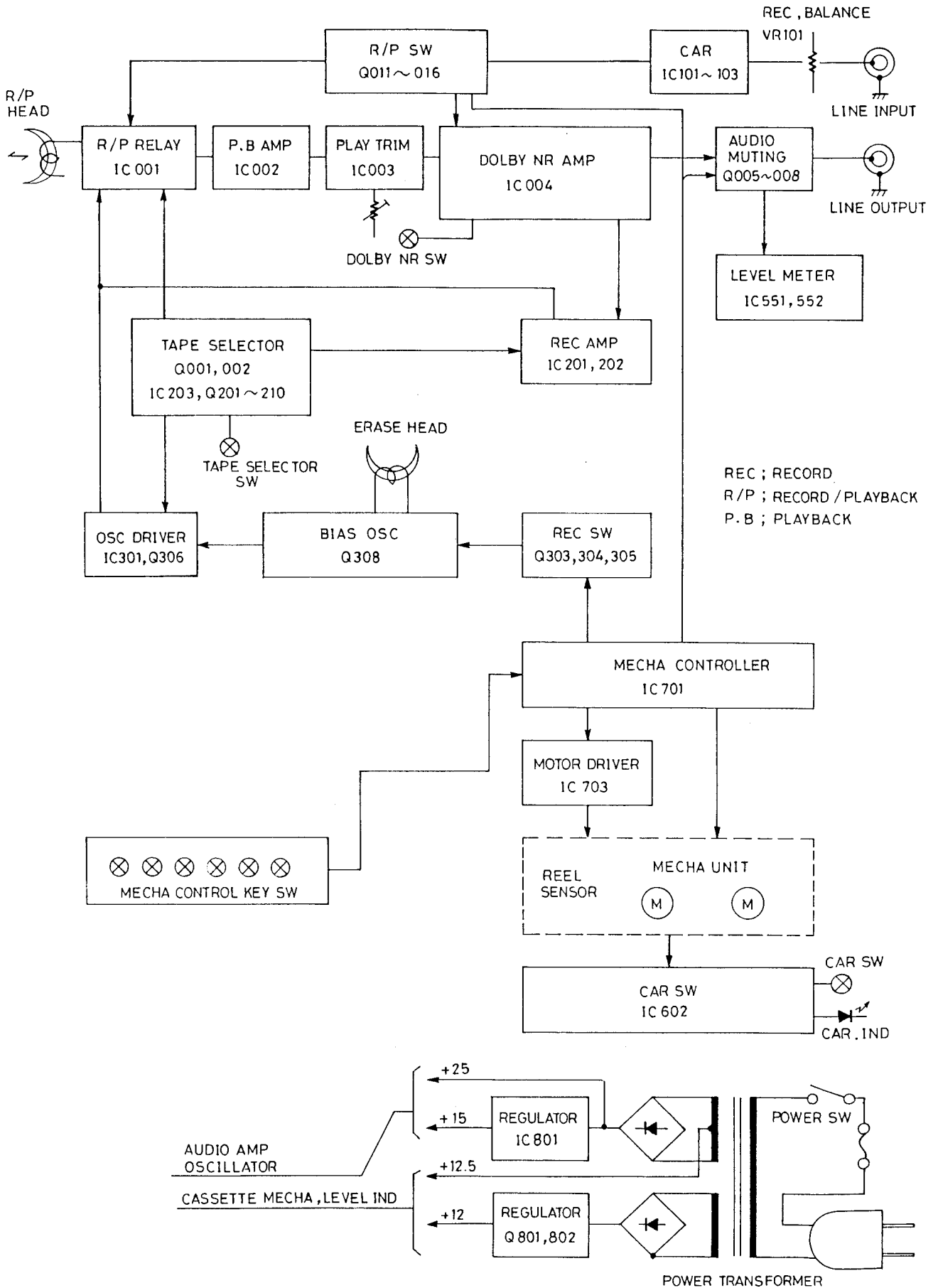


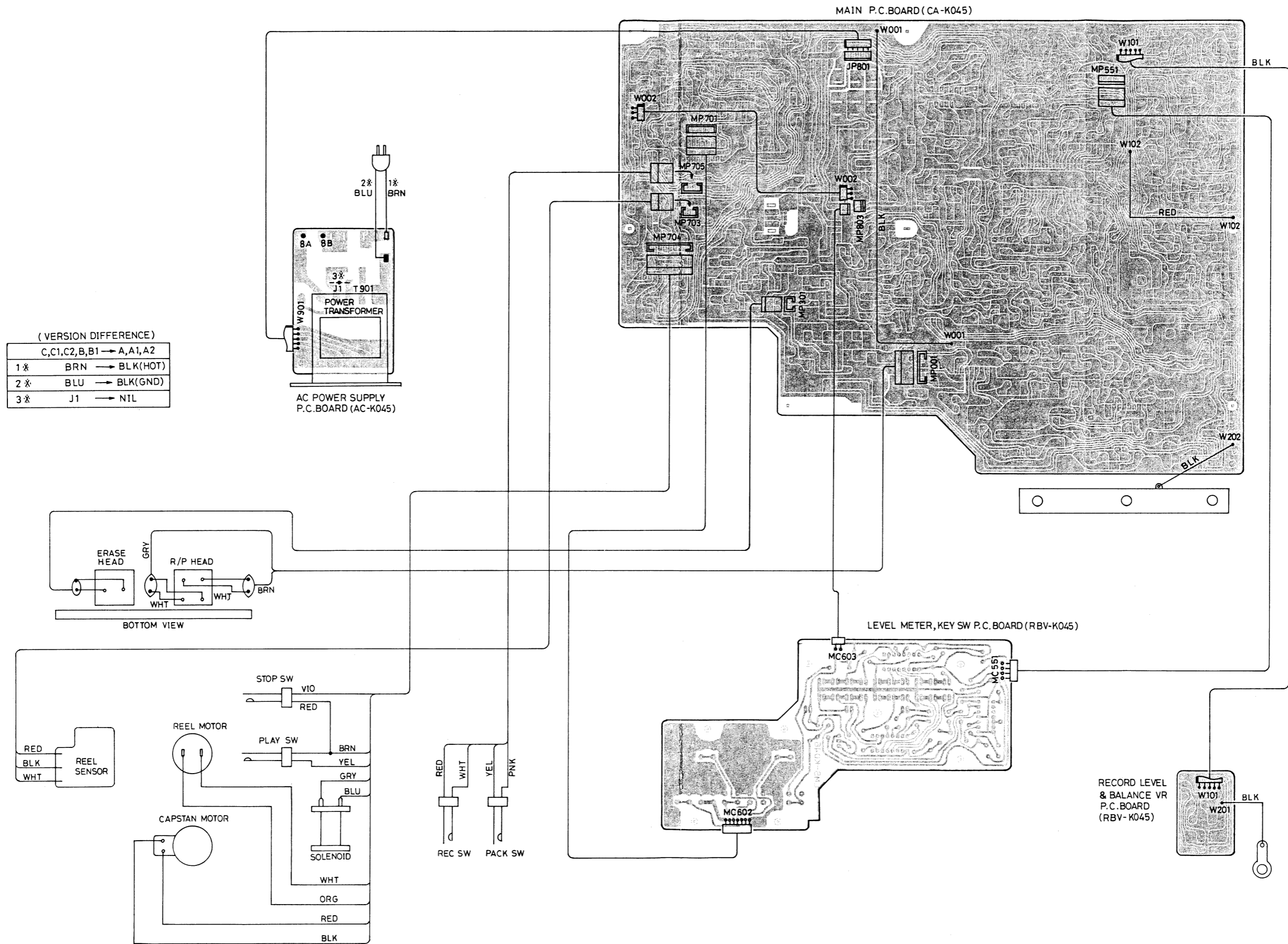
Fig. C FOR MAIN PCB



BLOCK DIAGRAM



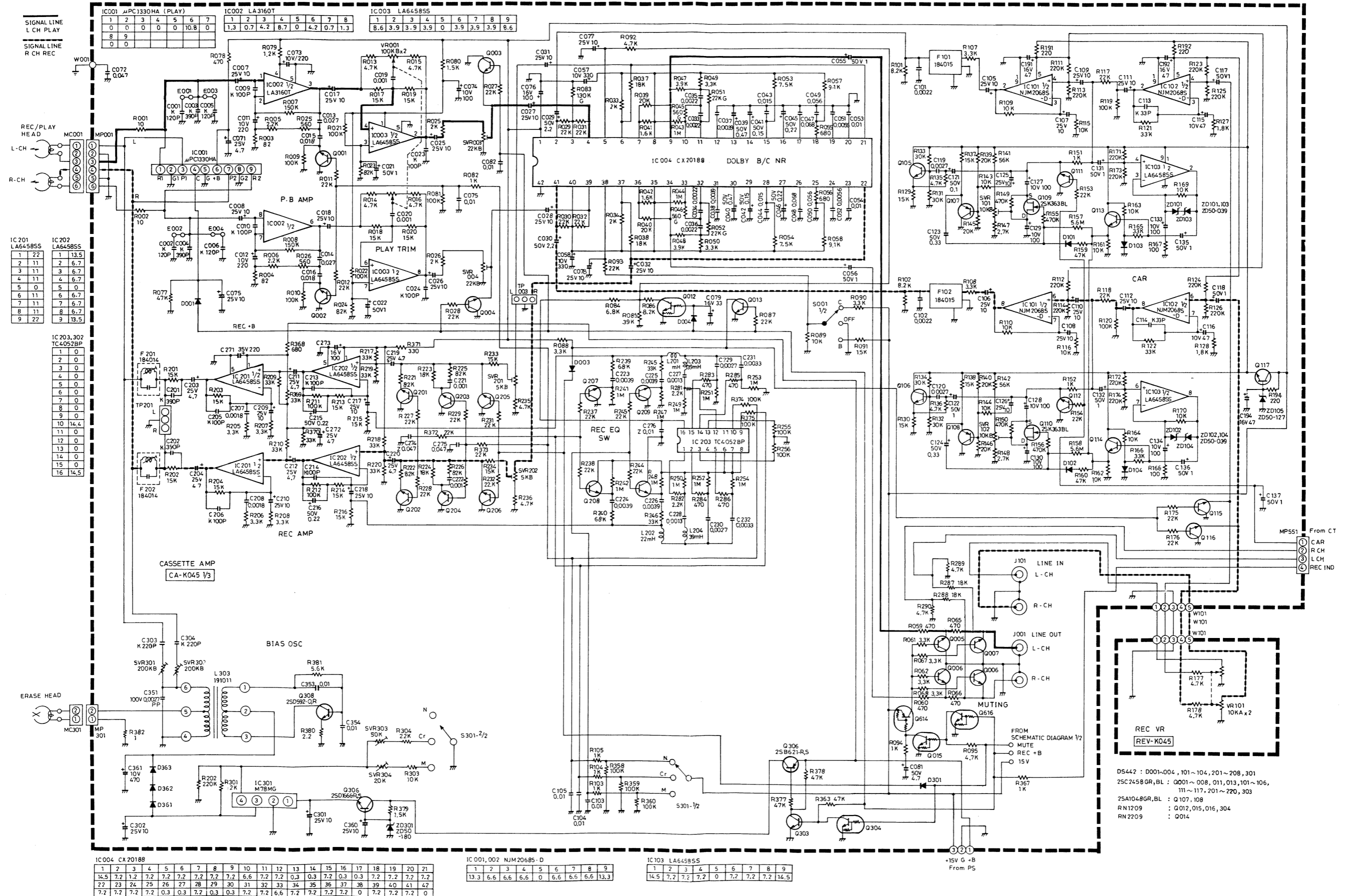
WIRING DIAGRAM (Component side)

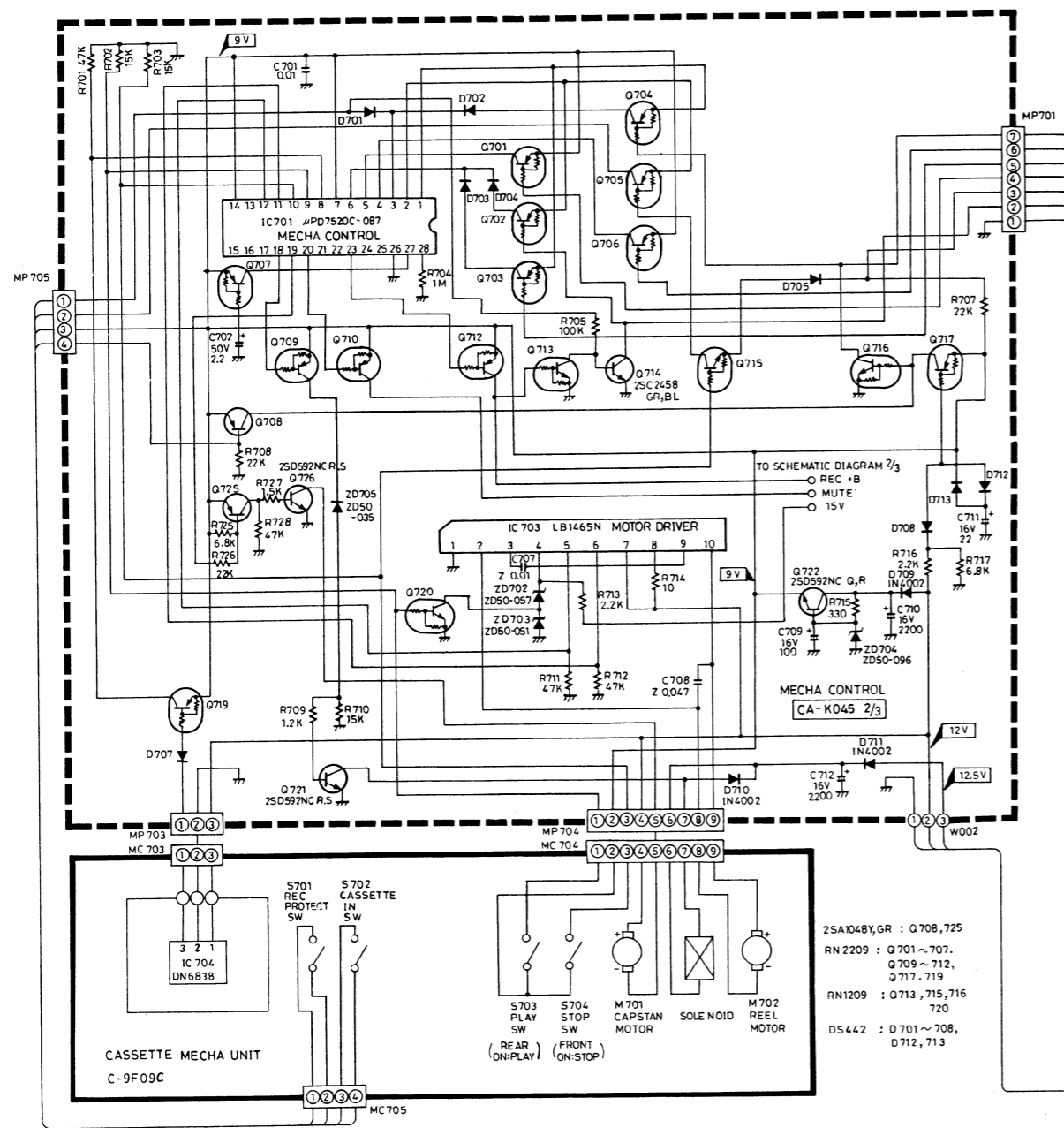


(VERSION DIFFERENCE)

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

SCHEMATIC DIAGRAM





IC701 μ 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 Δ 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 $\pm 20\%$ (μ F) > NOT Specify

$\pm 5\%$ (μ F)

K30% (μ F)

N30% (μ F)

Z+80% (μ F)

-20% (μ F)

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

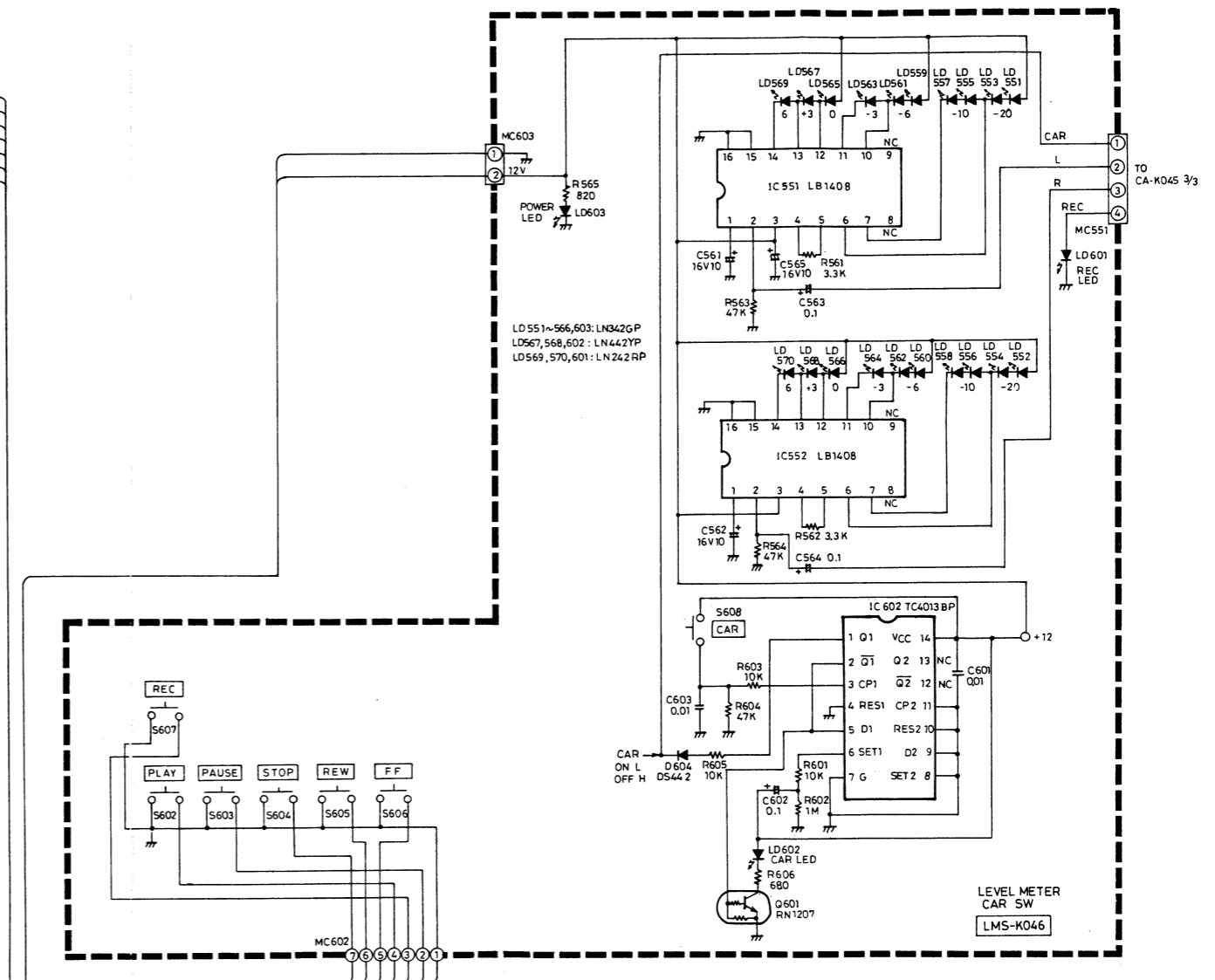
$\pm 2\%$ (Ω) 1/4W

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

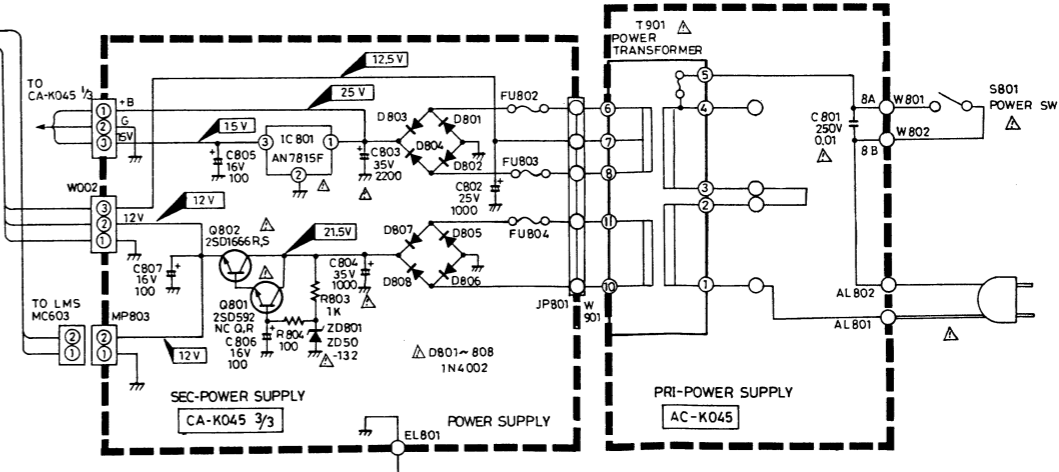
FU802 ~ 804: NIL

TP901

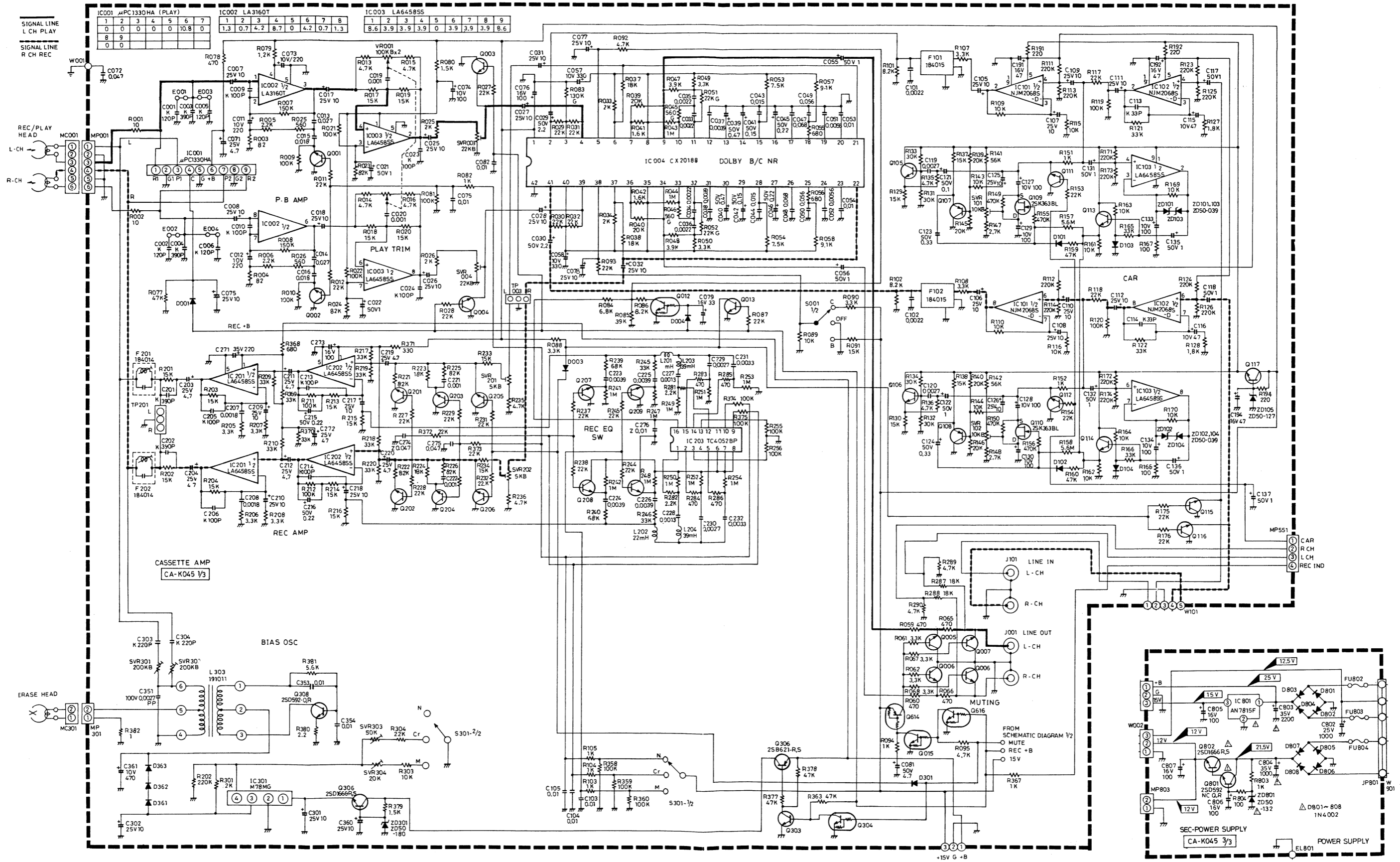
220V 240V AREA

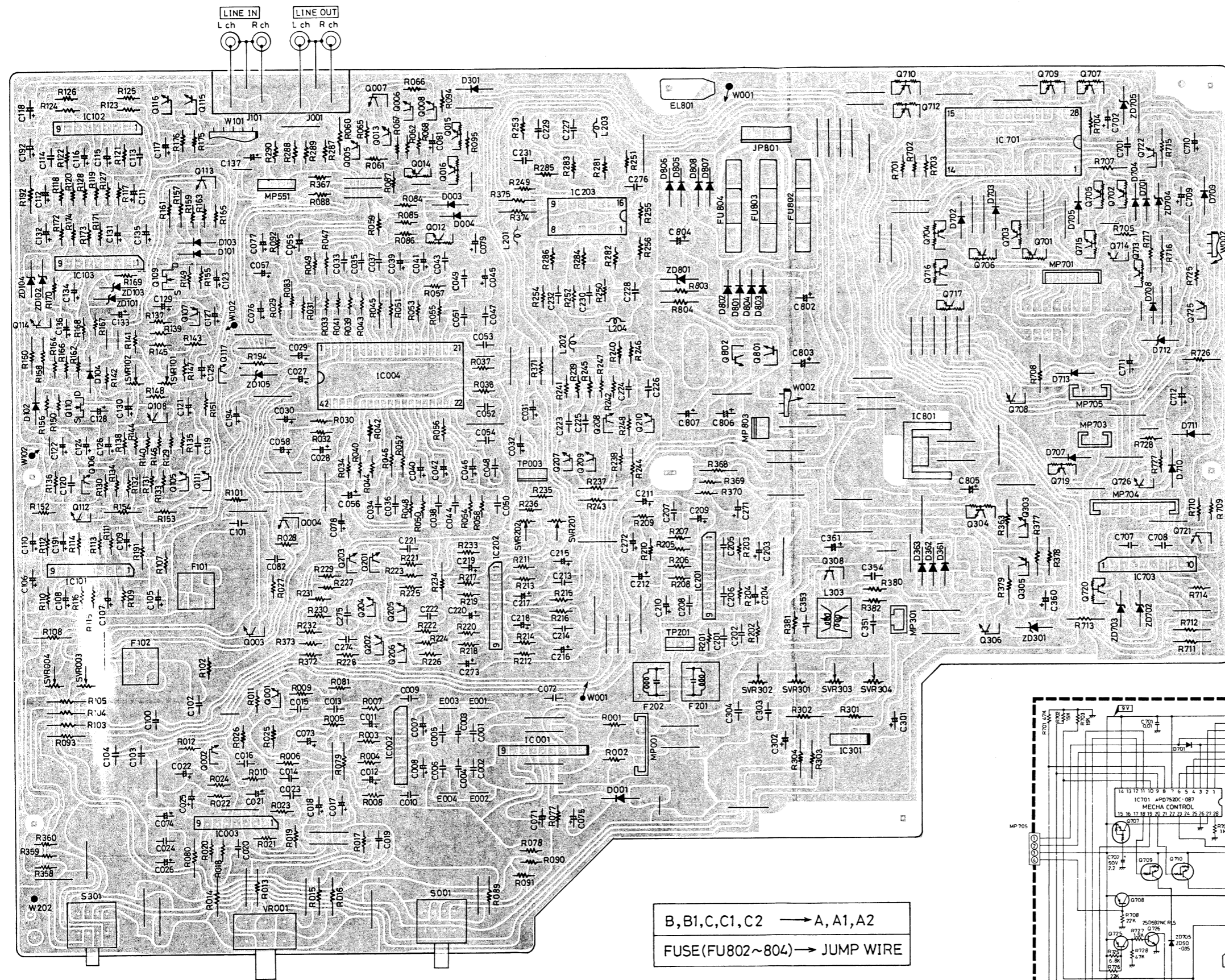
T901: NPT-K0155

FU802 ~ 804: T630mA

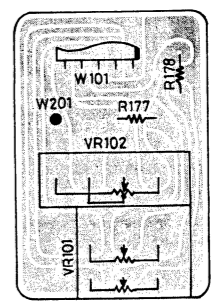
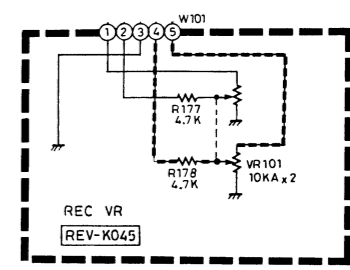


SCHEMATIC AND PCB LAYOUT (Foil side)
Main (CA-PCB)



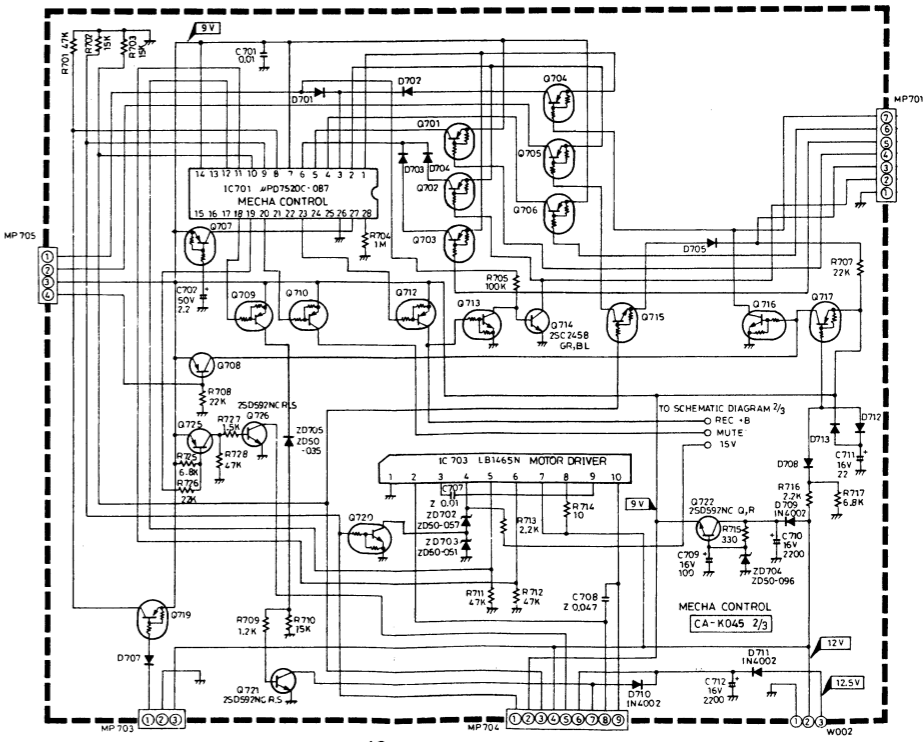


Rec. & Balance (RBV-PCB)



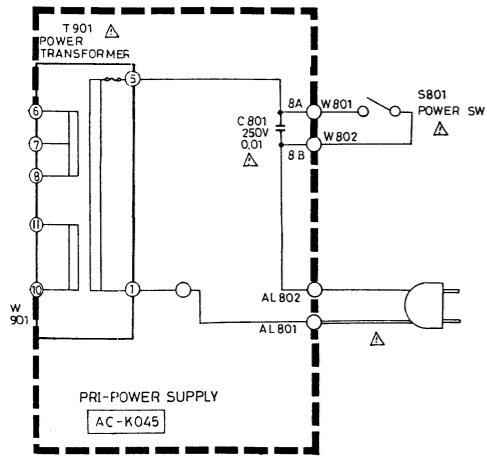
B, B1, C, C1, C2 → A, A1, A2
 FUSE (FU802~804) → JUMP WIRE

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

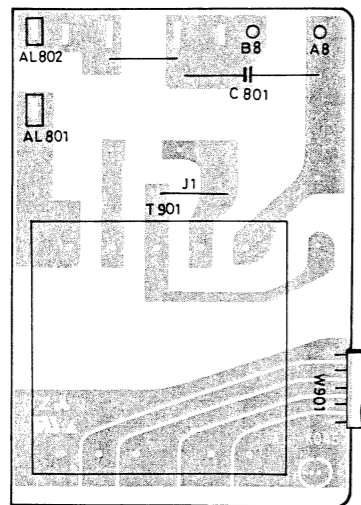
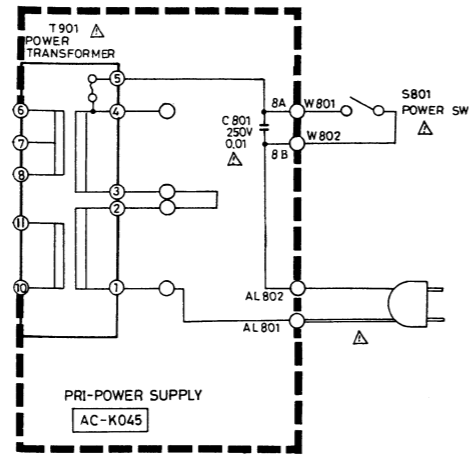


SCHEMATIC AND PCB LAYOUT (Foil side)
AC Power Supply (AC-PCB)

(For A, A1, A2 Version)

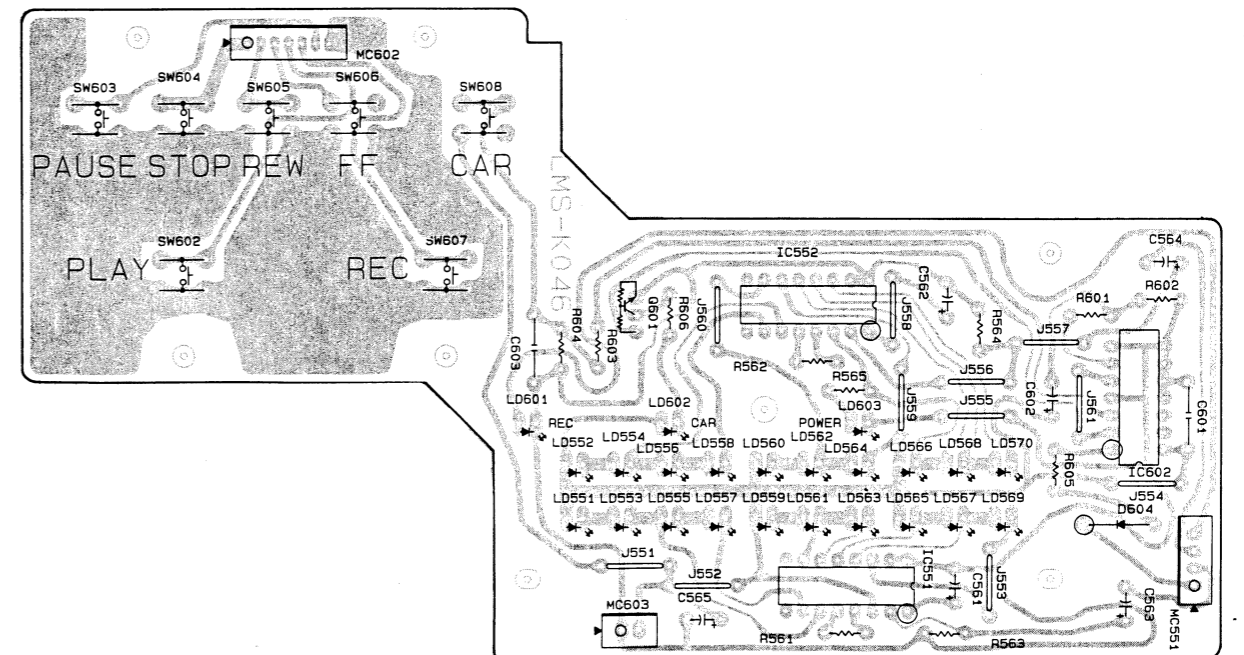
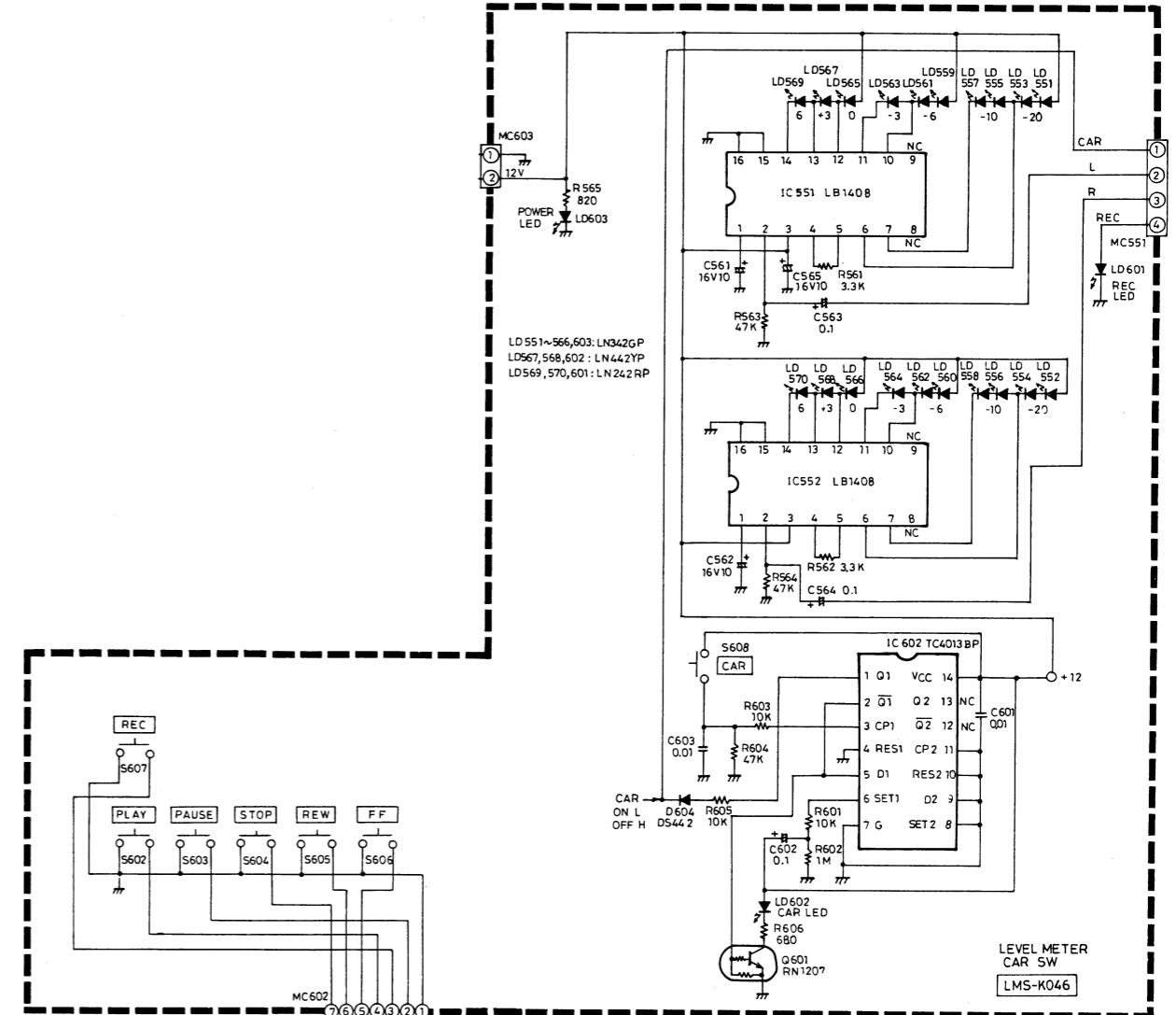


(For B, B1, C, C1, C2 Version)

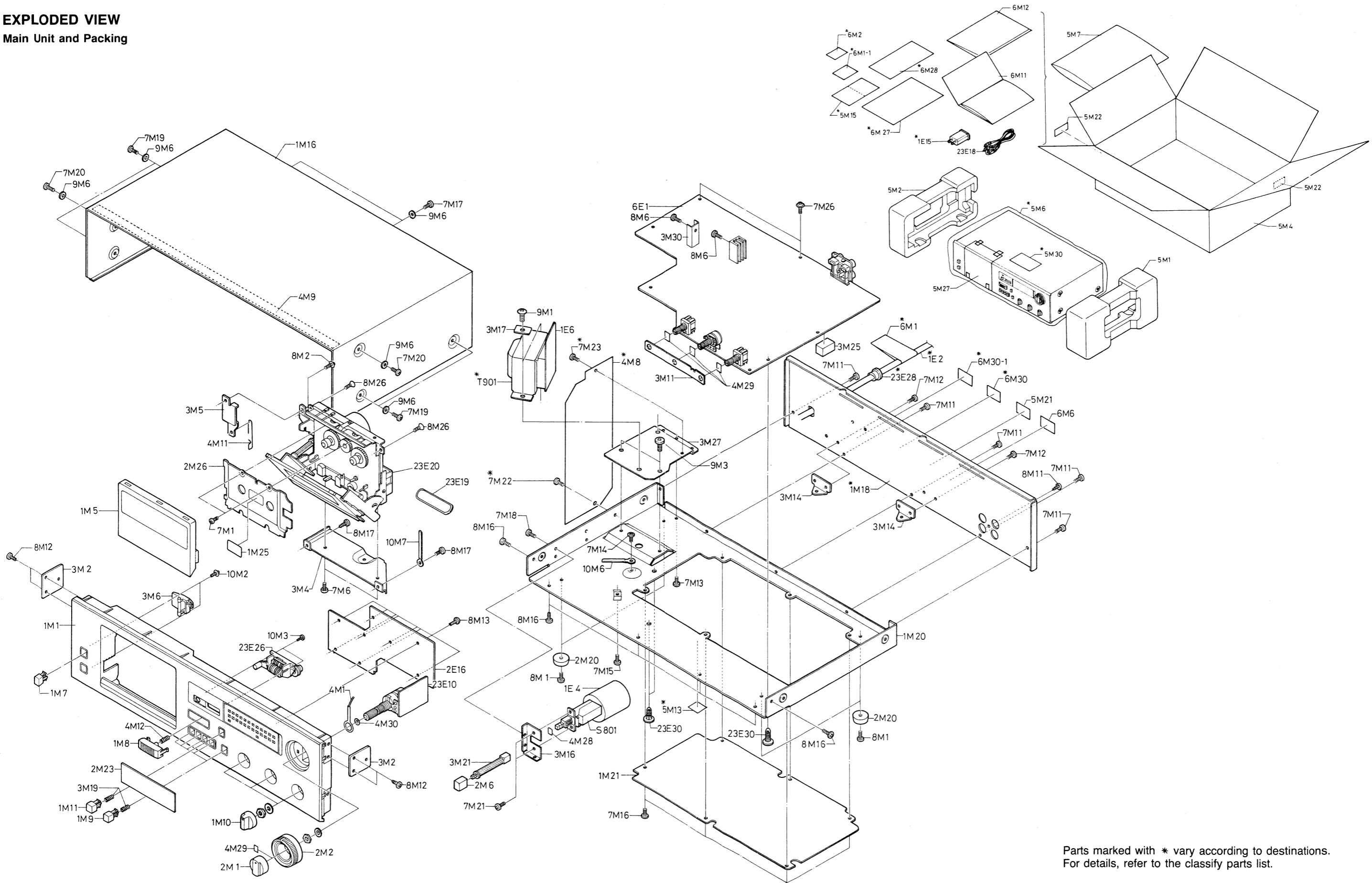


B, B1, C, C1, C2 → A, A1, A2
 JUMP WIRE (J1) → NIL

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



EXPLODED VIEW
Main Unit and Packing



PARTS LIST

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

MAIN UNIT AND PACKING

REF. NO.	Q'TY	PART NO.	DESCRIPTION
COILS			
* T901	1	NPT-K0154	POWER TRANSFORMER
SWITCHES			
S801	1	SW-1101222	POWER SWITCH
MISCELLANEOUS			
* 1E 2	1	ACC-033D3-4EC1	LINE CORD
1E 4	1	U9-7/8B04	UL TYPE TUBE
1M 1	1	N10509-1	FRONT PANEL
1M 5	1	N21669-2	CASSETTE LID
1M 7	1	N45392-BK	PUSH BUTTON
1M 8	1	N45391A-GY1	PUSH BUTTON
1M 9	5	N45390-BK	PUSH BUTTON
1M10	3	N45438-BK	KNOB 19
1M11	1	N45390-R01	PUSH BUTTON
1M16	1	N21668	CABINET
* 1M18	1	N21667-4	REAR PANEL
1M20	1	N21670A	BOTTOM CHASSIS
1M21	1	N31053	BOTTOM PLATE
1M25	1	N45349A	CASSETTE MIRROR
2M 1	1	12-3123	VOLUME KNOB
2M 2	1	12-3124	BALANCE KNOB
2M 6	1	12-3122	POWER KNOB
2M20	4	NO.7102	FOOT
2M23	1	N45439-2	DISPLAY GLASS
2M26	1	N31055	COVER,CASSETTE MECH.
3M 2	2	N45389	JOINT PLATE
3M 4	1	N45385	BRACKET,CASSETTE MECH.
3M 5	1	N45352	EJECT PLATE
3M 6	1	N31054	OPERATION PLATE,EJECT
3M11	1	N45495	EARTH PLATE
3M14	2	N44963-05	FITTINGS (P.C.B.)
3M16	1	N45386	BRACKET,SW
3M17	2	2A8-258-05	REINFORCEMENT (P.T.)
3M19	6	N44959-05	KNOB SPRING
3M21	1	N43268-05	KNOB SHAFT
3M25	1	N44844-05	CUSHION
3M27	1	N45503	BRACKET,P.T.
3M30	1	N45291	HEAT SINK
4M 1	1	N41622A	LUG (TUNING)
4M 9	1	N44967-35	CABINET MAT
4M11	1	N45354	COUPLER

REF. NO.	Q'TY	PART NO.	DESCRIPTION
4M12	1	N44960	KNOB SPRING
4M28,M29	4	N40848G	SHAFT TAPE
4M30	1	N45476GL	SPACER,SHAFT
5M 1	1	N21688A-R	PACKING PAD
5M 2	1	N21688-L	PACKING PAD
5M 4	1	N21711	INNER CARTON
* 5M 6	1	N41318-1-05	POLYETHYLENE BAG (UNIT)
5M 7	1	N40487-05	POLYETHYLENE BAG (ACCESSORIES)
* 5M13	1	N44043-05	LABEL, SA1965(LIGHTNING FLASH)
* 5M15	1	N45359	CARD,WARRANTY REGISTRATION
5M21,M22	3	N45330	SERIAL LABEL
5M27	1	N45481	PROTECTION SHEET
6M 6	1	N45447	LABEL,CHINA
6M11	1	UM-891	INSTRUCTION MANUAL (COVER)
6M12	1	TEXT-891-E	INSTRUCTION MANUAL (TEXT)
* 6M27	1	BK3035	SAFETY INSTRUCTION SHEET
* 6M28	1	N45475	SHEET,PORTABLE CART WARNING
7M 1	2	TSB*26X05-B	TAP SCREW S, BIND HEAD, B
7M 6	2	TSB*30X05-Y	TAP SCREW S, BIND HEAD, Y
7M11-M18	19	TSB*30X06-B	TAP SCREW S, BIND HEAD, B
7M19,M20	6	TSB*30X08-B	TAP SCREW S, BIND HEAD, B
7M21	2	TSB*30X06-B	TAP SCREW S, BIND HEAD, B
7M26	2	TSC*30X06-Y	TAP SCREW S, WASHER FACED, Y
9M 1,M 2	5	TSC*30X08-B	TAP SCREW S, WASHER FACED, B
8M 6	2	TSB*30X08-Y	TAP SCREW S, BIND HEAD, Y
8M11-M13, M16,M17	21	TPM*30X08-B	TAP SCREW P, ROUND HEAD, B
8M26	2	TPS*30X10-Y	TAP SCREW P, FLAT HEAD, Y
9M 1	2	TST*40X08-Y	TAP SCREW S, TRUSS, Y
9M 3	2	TSB*40X06-Y	TAP SCREW S, BIND HEAD, Y
9M 6	8	2AWX0830-05-B	PLAIN WASHER, B
10M 2	2	TPPW07*26X06-Y	TAP SCREW P,W ASSY,PAN HEAD,Y
10M 3	2	T8B*26X08-Y	TAP SCREW B, BIND HEAD, Y
10M 6,M 7	2	VJR-3	SNAKE LUG
23E18	2	PC-060	RCA PIN CORD ASS'Y
23E20	1	C-90F09C	CASSETTE MECHANISM
23E26	1	SG10-05081-859	COUNTER
* 23E28	1	SR-4N-4	CORD STOPPER
23E30	3	KGLS-10RT	SPACER

MAIN PCB ASS'Y

REF. NO.	Q'TY	PART NO.	DESCRIPTION
P.C. BOARD			
6E 1	1	CA-K045	PRINTED CIRCUIT BOARD
SEMICONDUCTORS			
D001,003, 004,101~ 104,301	8	1N4148-UA	DIODE
D361-363	3	1N4002-UA	DIODE
D701-705, 707,708	7	1N4148-UA	DIODE
D709-711	3	1N4002-UA	DIODE
D712,713	2	1N4149-UA	DIODE
D801-808	8	1N4002-UA	DIODE
0001-008	8	2SC2458-GRBL	TRANSISTOR
0012	1	RN-1209	TRANSISTOR
0013	1	2SC2458-GRBL	TRANSISTOR
0014	1	RN-2209	TRANSISTOR
0015,016	2	RN-1209	TRANSISTOR
Q105,106	2	2SC2458-GRBL	TRANSISTOR
Q107,108	2	2SA1048-GRBL	TRANSISTOR
Q109,110	2	2SK363-BL	TRANSISTOR
Q111-117, 201-210, 303	18	2SC2458-GRBL	TRANSISTOR
Q304	1	RN-1209	TRANSISTOR
Q305	1	2SB621NC-R,S	TRANSISTOR
Q306	1	2SD1666-R,S	TRANSISTOR
Q308	1	2SD592NC-Q,R	TRANSISTOR
Q701-707	7	RN-2209	TRANSISTOR
Q708	1	2SA1048-Y,GR	TRANSISTOR
Q709,710, 712	3	RN-2209	TRANSISTOR
Q713	1	RN-1209	TRANSISTOR
Q714	1	2SC2458-GRBL	TRANSISTOR
Q715,716	2	RN-1209	TRANSISTOR
Q717,719	2	RN-2209	TRANSISTOR
Q720	1	RN-1209	TRANSISTOR
Q721	1	2SD592NC-R,S	TRANSISTOR
Q722	1	2SD592NC-Q,R	TRANSISTOR
Q725	1	2SA1048-Y,GR	TRANSISTOR
Q726	1	2SD592NC-R,S	TRANSISTOR
Q801	1	2SD592NC-Q,R	TRANSISTOR
Q802	1	2SD1666-R,S	TRANSISTOR
IC001	1	UPC1330HA	IC
IC002	1	LA3160T	IC
IC003	1	LA6458SS	IC
IC004	1	CX20188	IC
IC101,102	2	NJM20685-D	IC
IC103,201, 202	3	LA6458SS	IC
IC203	1	TC4052BP	IC
IC301	1	L78MG	IC
IC701	1	UPD7520C-087	IC
IC703	1	LB1645N	IC
IC801	1	AN7815F	IC
ZD101-104	4	ZD50-039-UA	ZENER DIODE,1/2W,3.9V
ZD105	1	ZD50-127-UA	ZENER DIODE,1/2W,12.7V
ZD301	1	ZD50-180-UA	ZENER DIODE,1/2W,18.0V
ZD702	1	ZD50-057-UA	ZENER DIODE
ZD703	1	ZD50-051-UA	ZENER DIODE,1/2W,5.1V
ZD704	1	ZD50-096-UA	ZENER DIODE,1/2W,9.6V
ZD705	1	ZD50-035-UA	ZENER DIODE,1/2W,3.5V
ZD801	1	ZD50-132-UA	ZENER DIODE, 1/2W,13.7V
CAPACITORS			
C001,002	2	HE405JYB121K	CERAMIC CAPACITOR
C003,004	2	HE405JYB471K	CERAMIC CAPACITOR
C005,006	2	HE405JYB121K	CERAMIC CAPACITOR
C007,008	2	NS-25TW100M	ELECTROLYTIC CAPACITOR
C009,010	2	HE405JYB101K	CERAMIC CAPACITOR
C011,012	2	NS-10TW221M	ELECTROLYTIC CAPACITOR
C013,014	2	MY-50VS273J	MYLAR CAPACITOR
C015,016	2	MY-50VS183J	MYLAR CAPACITOR
C017,018	2	NS-25TW100M	ELECTROLYTIC CAPACITOR
C019,020	2	MY-50VS102J	MYLAR CAPACITOR
C021,022	2	NS-50TW1R0M	ELECTROLYTIC CAPACITOR
C023,024	2	HE405JYB101K	CERAMIC CAPACITOR
C025-028	4	NS-25TW100M	ELECTROLYTIC CAPACITOR
C029,030	2	NS-50TW2R2M	ELECTROLYTIC CAPACITOR
C031,032	2	NS-25TW100M	ELECTROLYTIC CAPACITOR
C033-036	4	MY-50VS222J	MYLAR CAPACITOR
C037,038	2	MY-50VS392J	MYLAR CAPACITOR
C039,040	2	NS-50TW4R7M	ELECTROLYTIC CAPACITOR
C041,042	2	NS-50TW1R5M	ELECTROLYTIC CAPACITOR
C043,044	2	MY-50VS153J	MYLAR CAPACITOR
C045,046	2	NS-50TW2R2M	ELECTROLYTIC CAPACITOR
C047,048	2	MY-50VS683J	MYLAR CAPACITOR
C049,050	2	MY-50VS563J	MYLAR CAPACITOR
C051,052	2	MY-50VS562J	MYLAR CAPACITOR
C053,054	2	MY-50VS103J	MYLAR CAPACITOR
C055,056	2	NS-50TW1R0M	ELECTROLYTIC CAPACITOR
C057,058	2	NS-10TW331M	ELECTROLYTIC CAPACITOR
C071	1	NS-25TW4R7M	ELECTROLYTIC CAPACITOR
C072	1	HC105JZF473Z	CERAMIC CAPACITOR
C073	1	NS-10TW221M	ELECTROLYTIC CAPACITOR
C074	1	NS-10TW101M	ELECTROLYTIC CAPACITOR

REF. NO.	Q'TY	PART NO.	DESCRIPTION
C075	1	NS-25TW100M	ELECTROLYTIC CAPACITOR
C076	1	NS-16TW101M	ELECTROLYTIC CAPACITOR
C077,C78	2	NS-25TW100M	ELECTROLYTIC CAPACITOR
C079	1	NS-16TW330M	ELECTROLYTIC CAPACITOR
C081	1	NS-50TW4R7M	ELECTROLYTIC CAPACITOR
C082	1	HE705JYF103Z	CERAMIC CAPACITOR
C100	1	HC105JZF473Z	CERAMIC CAPACITOR
C101,102	2	MY-50VS222J	MYLAR CAPACITOR
C103,104	2	HC105JZF473Z	CERAMIC CAPACITOR
C105-112	8	NS-25TW100M	ELECTROLYTIC CAPACITOR
C113,114	2	HE405JSL330K	CERAMIC CAPACITOR
C115,116	2	NS-10TW470M	ELECTROLYTIC CAPACITOR
C117,118	2	NS-50TW1R0M	ELECTROLYTIC CAPACITOR
C119,120	2	MY-50VS272J	MYLAR CAPACITOR
C121,122	2	NS-50TW1R0M	ELECTROLYTIC CAPACITOR
C123,124	2	NS-50TW33M	ELECTROLYTIC CAPACITOR
C125,126	2	NS-25TW100M	ELECTROLYTIC CAPACITOR
C127-130	4	NS-10TW101M	ELECTROLYTIC CAPACITOR
C131,132	2	NS-50TW1R0M	ELECTROLYTIC CAPACITOR
C133,134	2	NS-10TW101M	ELECTROLYTIC CAPACITOR
C135-137	3	NS-50TW1R0M	ELECTROLYTIC CAPACITOR
C191,192, 194	3	NS-16TW470M	ELECTROLYTIC CAPACITOR
C201,202	2	HE405JYB391K	CERAMIC CAPACITOR
C203,204	2	NS-25TW4R7M	ELECTROLYTIC CAPACITOR
C205,206	2	HE405JYB101K	CERAMIC CAPACITOR
C207,208	2	MY-50VS182J	MYLAR CAPACITOR
C209,210	2	NS-25TW100M	ELECTROLYTIC CAPACITOR
C211,212	2	NS-25TW4R7M	ELECTROLYTIC CAPACITOR
C213,214	2	HE405JYB101K	CERAMIC CAPACITOR
C215,216	2	NS-50TW2R2M	ELECTROLYTIC CAPACITOR
C217,218	2	NS-25TW100M	ELECTROLYTIC CAPACITOR
C219,220	2	NS-25TW4R7M	ELECTROLYTIC CAPACITOR
C221,222	2	MY-50VS102J	MYLAR CAPACITOR
C223-226	4	MY-50VS392J	MYLAR CAPACITOR
C227,228	2	MY-50VS132J	MYLAR CAPACITOR
C229,230	2	MY-50VS272J	MYLAR CAPACITOR
C231,232	2	MY-50VS352J	MYLAR CAPACITOR
C271	1	NS-35TW221M-KF	ELECTROLYTIC CAPACITOR
C272	1	NS-25TW470M	ELECTROLYTIC CAPACITOR
C273	1	NS-16TW101M	ELECTROLYTIC CAPACITOR
C274,275	2	HC105JZF473Z	CERAMIC CAPACITOR
C276	1	HE705JYF103Z	CERAMIC CAPACITOR
C301,302	2	NS-25TW100M	ELECTROLYTIC CAPACITOR
C303,304	2	HE405JYB221K	CERAMIC CAPACITOR
C351	1	PP100VS272J	POLYESTER FILM CAPACITOR
C353,354	2	MY-50VS103J	MYLAR CAPACITOR
C360	1	NS-25TW100M	ELECTROLYTIC CAPACITOR
C361	1	NS-10TW471M	ELECTROLYTIC CAPACITOR
C701	1	HE705JYF103Z	CERAMIC CAPACITOR
C702	1	NS-50TW2R2M	ELECTROLYTIC CAPACITOR
C707	1	HE705JYF103Z	CERAMIC CAPACITOR
C709	1	HC105JZF473Z	CERAMIC CAPACITOR
C709	1	NS-16TW101M	ELECTROLYTIC CAPACITOR
C710	1	NS-16TW222M-KF	ELECTROLYTIC CAPACITOR
C711	1	NS-16TW220M	ELECTROLYTIC CAPACITOR
C712	1	NS-16TW222M-KF	ELECTROLYTIC CAPACITOR
C802	1	NS-25TW102M-KF	ELECTROLYTIC CAPACITOR
C803	1	NS-35TW222M-KF	ELECTROLYTIC CAPACITOR
C804	1	NS-35TW102M-KF	ELECTROLYTIC CAPACITOR
C805-807	3	NS-16TW101M	ELECTROLYTIC CAPACITOR
RESISTORS			
R001,002	2	KA16ST100J-UA	CARBON RESISTOR
R003,004	2	KA16ST820J-UA	CARBON RESISTOR
R005,006	2	KA16ST222J-UA	CARBON RESISTOR
R007,008	2	KA16ST124J-UA	CARBON RESISTOR
R009,010	2	KA16ST104J-UA	CARBON RESISTOR
R011,012	2	KA16ST223J-UA	CARBON RESISTOR
R013-016	4	KA16ST472J-UA	CARBON RESISTOR
R017-0			

REF. NO.	Q'TY	PART NO.	DESCRIPTION
R086	1	KA16ST822J-UA	CARBON RESISTOR
R087	1	KA16ST223J-UA	CARBON RESISTOR
R088	1	KA16ST332J-UA	CARBON RESISTOR
R089	1	KA16ST103J-UA	CARBON RESISTOR
R090	1	KA16ST332J-UA	CARBON RESISTOR
R091	1	KA16ST153J-UA	CARBON RESISTOR
R092	1	KA16ST472J-UA	CARBON RESISTOR
R093	1	KA16ST223J-UA	CARBON RESISTOR
R094	1	KA16ST102J-UA	CARBON RESISTOR
R095	1	KA16ST472J-UA	CARBON RESISTOR
R101,102	2	KA16ST822J-UA	CARBON RESISTOR
R103-105	3	KA16ST102J-UA	CARBON RESISTOR
R107,108	2	KA16ST332J-UA	CARBON RESISTOR
R109,110	2	KA16ST103J-UA	CARBON RESISTOR
R111-114	4	KA16ST224J-UA	CARBON RESISTOR
R115,116	2	KA16ST103J-UA	CARBON RESISTOR
R117,118	2	KA16ST223J-UA	CARBON RESISTOR
R119,120	2	KA16ST104J-UA	CARBON RESISTOR
R121,122	2	KA16ST333J-UA	CARBON RESISTOR
R123-126	4	KA16ST224J-UA	CARBON RESISTOR
R127,128	2	KA16ST182J-UA	CARBON RESISTOR
R129,130	2	KA16ST153J-UA	CARBON RESISTOR
R131-134	4	KA16ST303J-UA	CARBON RESISTOR
R135,136	2	KA16ST472J-UA	CARBON RESISTOR
R137,138	2	KA16ST153J-UA	CARBON RESISTOR
R139,140	2	KA16ST203J-UA	CARBON RESISTOR
R141,142	2	KA16ST563J-UA	CARBON RESISTOR
R143,144	2	KA16ST103J-UA	CARBON RESISTOR
R145,146	2	KA16ST203J-UA	CARBON RESISTOR
R147,148	2	KA16ST272J-UA	CARBON RESISTOR
R149,150	2	KA16ST474J-UA	CARBON RESISTOR
R151,152	2	KA16ST102J-UA	CARBON RESISTOR
R153,154	2	KA16ST223J-UA	CARBON RESISTOR
R155,156	2	KA16ST474J-UA	CARBON RESISTOR
R157,158	2	KA16ST565J-UA	CARBON RESISTOR
R159,160	2	KA16ST473J-UA	CARBON RESISTOR
R161-164	4	KA16ST103J-UA	CARBON RESISTOR
R165,166	2	KA16ST333J-UA	CARBON RESISTOR
R167,168	2	KA16ST101J-UA	CARBON RESISTOR
R169,170	2	KA16ST103J-UA	CARBON RESISTOR
R171-174	4	KA16ST224J-UA	CARBON RESISTOR
R175,176	2	KA16ST223J-UA	CARBON RESISTOR
R191,192,194	3	KA16ST221J-UA	CARBON RESISTOR
R201-204	4	KA16ST153J-UA	CARBON RESISTOR
R205-208	4	KA16ST332J-UA	CARBON RESISTOR
R209,210	2	KA16ST333J-UA	CARBON RESISTOR
R211,212	2	KA16ST223J-UA	CARBON RESISTOR
R213-216	4	KA16ST153J-UA	CARBON RESISTOR
R217-220	4	KA16ST333J-UA	CARBON RESISTOR
R221,222	2	KA16ST823J-UA	CARBON RESISTOR
R223,224	2	KA16ST183J-UA	CARBON RESISTOR
R225,226	2	KA16ST823J-UA	CARBON RESISTOR
R227-232	6	KA16ST223J-UA	CARBON RESISTOR
R233,234	2	KA16ST153J-UA	CARBON RESISTOR
R235,236	2	KA16ST472J-UA	CARBON RESISTOR
R237,238	2	KA16ST223J-UA	CARBON RESISTOR
R239,240	2	KA16ST683J-UA	CARBON RESISTOR
R241,242	2	KA16ST105J-UA	CARBON RESISTOR
R243,244	2	KA16ST223J-UA	CARBON RESISTOR
R245,246	2	KA16ST333J-UA	CARBON RESISTOR
R247-254	8	KA16ST105J-UA	CARBON RESISTOR
R255,256	2	KA16ST101J-UA	CARBON RESISTOR
R281,282	2	KA16ST222J-UA	CARBON RESISTOR
R283-286	4	KA16ST471J-UA	CARBON RESISTOR
R287,288	2	KA16ST183J-UA	CARBON RESISTOR
R289,290	2	KA16ST472J-UA	CARBON RESISTOR
R301	1	KA16ST123J-UA	CARBON RESISTOR
R302	1	KA16ST224J-UA	CARBON RESISTOR
R303	1	KA16ST103J-UA	CARBON RESISTOR
R304	1	KA16ST223J-UA	CARBON RESISTOR
R358-360	3	KA16ST104J-UA	CARBON RESISTOR
R363	1	KA16ST473J-UA	CARBON RESISTOR
R367	1	KA16ST102J-UA	CARBON RESISTOR
R368	1	KA16ST681J-UA	CARBON RESISTOR
R369-370	2	KA16ST333J-UA	CARBON RESISTOR
R371	1	KA16ST331J-UA	CARBON RESISTOR
R372,373	2	KA16ST223J-UA	CARBON RESISTOR
R374,375	2	KA16ST104J-UA	CARBON RESISTOR
R377,378	2	KA16ST472J-UA	CARBON RESISTOR
R379	1	KA16ST152J-UA	CARBON RESISTOR
R380	1	KA16ST282J-UA	CARBON RESISTOR
R381	1	KA16ST562J-UA	CARBON RESISTOR
R382	1	KA16ST180J-UA	CARBON RESISTOR
R701	1	KA16ST473J-UA	CARBON RESISTOR
R702,703	2	KA16ST153J-UA	CARBON RESISTOR
R704	1	KA16ST105J-UA	CARBON RESISTOR
R705	1	KA16ST104J-UA	CARBON RESISTOR
R707,708	2	KA16ST223J-UA	CARBON RESISTOR
R709	1	KA16ST122J-UA	CARBON RESISTOR
R710	1	KA16ST153J-UA	CARBON RESISTOR
R711,712	2	KA16ST473J-UA	CARBON RESISTOR
R713	1	KA16ST222J-UA	CARBON RESISTOR
R714	1	KA16ST100J-UA	CARBON RESISTOR
R715	1	KA16ST331J-UA	CARBON RESISTOR
R716	1	KA16ST222J-UA	CARBON RESISTOR
R717,725	2	KA16ST682J-UA	CARBON RESISTOR
R726	1	KA16ST223J-UA	CARBON RESISTOR
R727	1	KA16ST152J-UA	CARBON RESISTOR

REF. NO.	Q'TY	PART NO.	DESCRIPTION
R728	1	KA16ST473J-UA	CARBON RESISTOR
R803	1	KA16ST102J-UA	CARBON RESISTOR
R804	1	KA16ST101J-UA	CARBON RESISTOR
VR001	1	EWG-G1A301B15	ROTARY POTENTIOMETER
SVR003,004	2	SVR-05T3B203	SEMI-VARIABLE RESISTOR
SVR101,102	2	SVR-06T3B103	SEMI-VARIABLE RESISTOR
SVR201,202	2	SVR-06T3B502	SEMI-VARIABLE RESISTOR
SVR301,302	2	SVR-06T3B204	SEMI-VARIABLE RESISTOR
SVR303	1	SVR-06T3B503	SEMI-VARIABLE RESISTOR
SVR304	1	SVR-05T3B203	SEMI-VARIABLE RESISTOR
<u>COILS</u>			
F101,102	2	184015	FILTER BLOCK
F201,202	2	184014	FILTER BLOCK
L201,202	2	RC875-223J	INDUCTOR
L203,204	2	RC875-393J	INDUCTOR
L303	1	191011	OSC COIL
<u>SWITCHES</u>			
S001,301	2	SW-2233236	ROTARY SWITCH
<u>MISCELLANEOUS</u>			
W001	1	0075240822-J-J	SOLDER-PLATED WIRE
W002	1	4685243818-J-J	3-LEAD, FLAT CABLE
W102	1	0075240810-J-J	SOLDER-PLATED WIRE
EL801	1	59851692	GND LUG
JP801	1	52011-0510	CONNECTOR
MP001	1	PI25C-06M	MICRO PLUG
MP301	1	PI25C-02M	MICRO PLUG
MP551	1	171825-4	MICRO PLUG
MP701	1	IL-S07PS2T2-EF	CONNECTOR
MP703	1	PI25C-03M	MICRO PLUG
MP704	1	PI25C-09M	MICRO PLUG
MP705	1	PI25C-04M	MICRO PLUG
MP803	1	B2P-SHF-1AA	MICRO PLUG
TP003,201	2	171825-3	MICRO PLUG
16E 1	1	YKC21-0018A	RCA JACK 4P
23E 7	101	E100-UA	JUMP WIRE
23E 8	19	E050-UA	JUMP WIRE
23E25	1	OSH-1625-MP	HEAT SINK

REC. & BALANCE PCB ASS'Y

REF. NO.	Q'TY	PART NO.	DESCRIPTION
<u>P.C. BOARD</u>			
23E10	1	R9V-K045	PRINTED CIRCUIT BOARD
<u>RESISTORS</u>			
R177,178	2	KA16ST472J-UA	CARBON RESISTOR
VR101	1	EWJ-S1AW24A14	ROTARY POTENTIOMETER
<u>MISCELLANEOUS</u>			
W101	1	4685245830-J-J	5-LEAD, FLAT CABLE
W201,202	2	0075240807-C-C	SOLDER-PLATED WIRE

AC POWER SUPPLY PCB ASS'Y

REF. NO.	Q'TY	PART NO.	DESCRIPTION
<u>P.C. BOARD</u>			
1E 6	1	AC-K045	PRINTED CIRCUIT BOARD
<u>CAPACITORS</u>			
*C801	1	ECQU2A103MN	METALLIZED FILM CAPACITOR
<u>MISCELLANEOUS</u>			
W901	1	4685245826-J-Z	5-LEAD, FLAT CABLE
1E 7	1	E100-UA	JUMP WIRE
AL801,802	2	59854795	GND LUG

LEVEL METER, KEY SW PCB ASS'Y

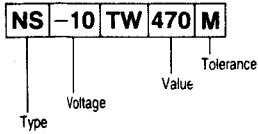
REF. NO.	Q'TY	PART NO.	DESCRIPTION
<u>P.C. BOARD</u>			
2E16	1	LMS-K046	PRINTED CIRCUIT BOARD
<u>SEMICONDUCTORS</u>			
D604	1	1N4148-UA	DIODE
Q601	1	RN1207	TRANSISTOR
IC551,552	2	L81408	IC
IC602	1	TC4013BP	IC
LD551-566	16	LN342GP	LED
LD567,568	2	LN442YP	LED
LD569,570,601	3	LN242RP	LED
LD602	1	LN442YP	LED
LD603	1	LN342GP	LED
<u>CAPACITORS</u>			
C561,562	2	S5-16TW100M-KF	ELECTROLYTIC CAPACITOR
C563,564	2	S5-50TWR10M-KF	ELECTROLYTIC CAPACITOR
C565	1	S5-16TW100M-KF	ELECTROLYTIC CAPACITOR
C601	1	TP125X103N-UA	CERAMIC CAPACITOR
C602	1	S5-50TWR10M-KF	ELECTROLYTIC CAPACITOR
C603	1	TP125X103N-UA	CERAMIC CAPACITOR
<u>RESISTORS</u>			
R561,562	2	KA16ST332J-UA	CARBON RESISTOR
R563,564	2	KA16ST473J-UA	CARBON RESISTOR
R565	1	KA16ST821J-UA	CARBON RESISTOR
R601	1	KA16ST103J-UA	CARBON RESISTOR
R602	1	KA16ST105J-UA	CARBON RESISTOR
R603	1	KA16ST103J-UA	CARBON RESISTOR
R604	1	KA16ST473J-UA	CARBON RESISTOR
R605	1	KA16ST103J-UA	CARBON RESISTOR
R606	1	KA16ST681J-UA	CARBON RESISTOR
<u>SWITCHES</u>			
S602-608	7	SKHHAK	TACT SWITCH
<u>MISCELLANEOUS</u>			
3E24	11	E100-UA	JUMP WIRE
MC551	1	MC04-K070	MICRO SOCKET ASS'Y
MC602	1	MK07-K084	MICRO SOCKET ASS'Y
MC603	1	MC02-K083	MICRO SOCKET ASS'Y

OTHER PARTS

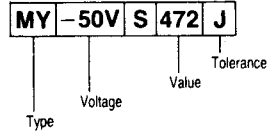
REF. NO.	Q'TY	PART NO.	DESCRIPTION
<u>MISCELLANEOUS</u>			
W801	1	672S220T20-C-D	SOLDER-PLATED WIRE
W802	1	672S220A20-C-D	SOLDER-PLATED WIRE
23E19	1	CV-6255	COUNTER BELT
23E23	4	BK-1	CORD CLAMP
23E24	5	NQ.5167	CORD CLAMP

Capacitors Description

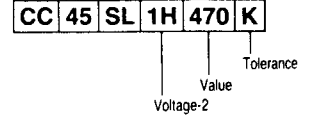
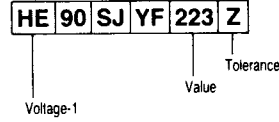
• Electrolytic



• Mylar - Styrol



• Ceramic

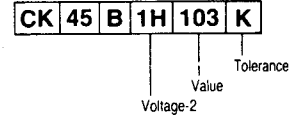


• Electrolytic

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

• Mylar - Styrol

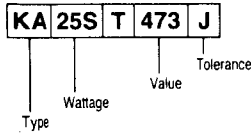
Type	Voltage	Value	Tolerance
MY: Mylar	-25V: 25V	4R7: 4.7pF	G: \pm 2%
ST: Styrol	125V: 125V	470: 47pF	J: \pm 5%
	-63T: 63V	471: 470pF	K: \pm 10%
		472: 4700pF	M: \pm 20%
		473: 0.047 μ F	
		474: 0.47 μ F	
		(1000pF=0.001 μ F)	



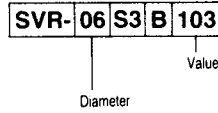
Voltage-1	Voltage-2	Value	Tolerance
HC: 25V	1E: 25V	4R7: 4.7pF	C: \pm 0.25pF
HE: 50V	1H: 50V	470: 47pF	D: \pm 0.5pF
H: 100V	2H: 500V	471: 470pF	F: \pm 1pF
HK: 250V		472: 4700pF	J: \pm 5%
HM: 500V		473: 0.047 μ F	K: \pm 10%
		474: 0.47 μ F	M: \pm 20%
		(1000pF=0.001 μ F)	Z: +80~-20%

Resistors Description

• Fixed



• Semi-Variable



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