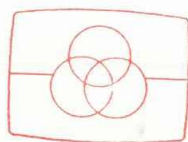


Midi System AS9510/01/21/40/45/48

TS5901/17

Service
Service
Service



Free service manuals
Gratis schema's

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Service Manual

For repair information of the Record player
see Service Manual of Record player HP7D277-1

For repair information of the cassette mechanism
see Service Manual of Tape Transport RN/RR General
documentation and Tape Transport RN-4 or RR-3

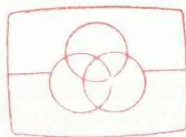
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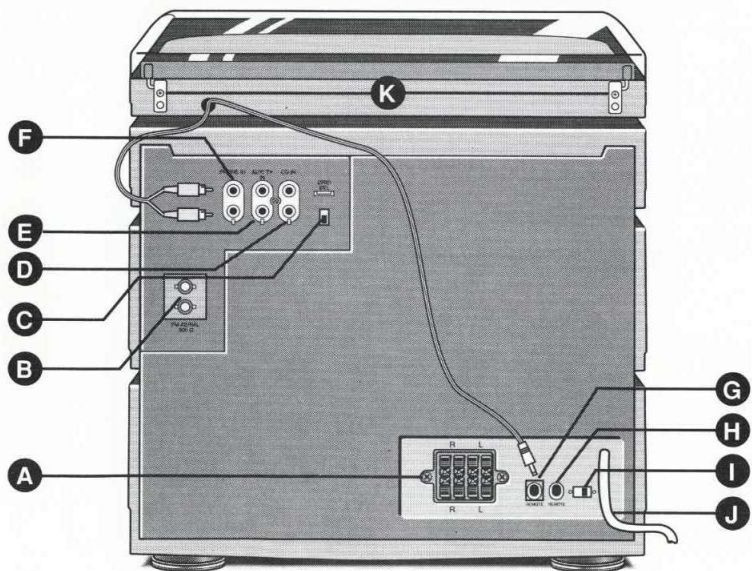
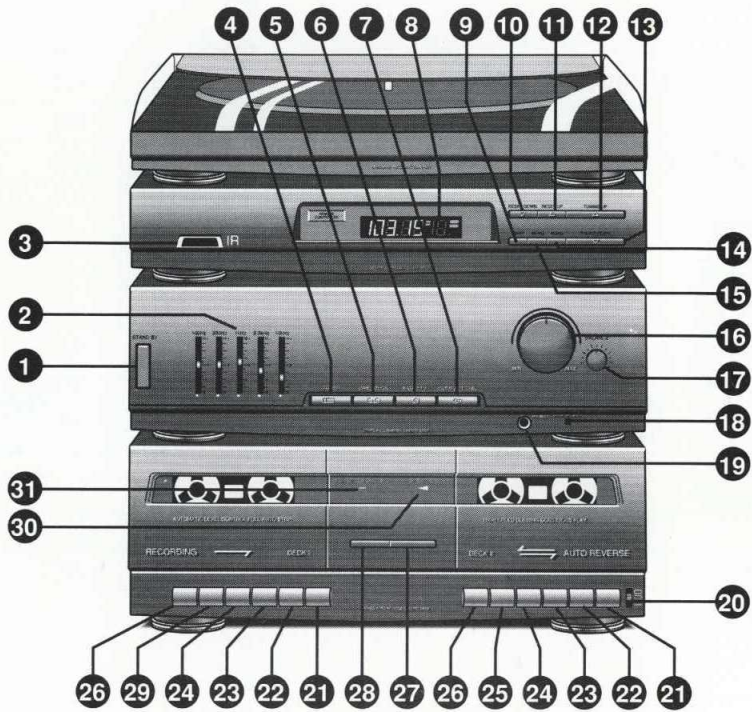


CONNECTIONS AND CONTROLS



Free service manuals
Gratis schema's
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- 1

Power Switch

1259
- 2

Graphic Equalizer

3505,3507
3509,3511
3513
- 3

Infra Red Sensor

6420
- 4

Tuner

1404
- 5

Tape

1402
- 6

Phone/TV

1401
- 7

CD

1403
- 8

Display

1400
- 9

Band Selector

1406
- 10

Preset Down

1412
- 11

Preset Up

1411
- 12

Tuning Up

1410
- 13

Tuning Down

1407
- 14

Mono/Stereo

1408
- 15

Program Memo

1409
- 16

Volume Control

3500
- 17

Balance

3545
- 18

DBB Switch

1405
- 19

Headphone

1256
- 20

Auto Reverse Mode
- 21

Pause
- 22

F.Forward
- 23

F.Rewind
- 24

Play
- 25

Direction II
- 26

Stop-Eject
- 27

Fe/Cr

1801
- 28

Dolby NR

1802
- 29

Record I
- 30

Reverse Direction Indicator

6801
- 31

Dolby NR Indicator

6802
- A

Speaker Connection

1254
- B

FM Aerial Socket

1100
- * FM Aerial Socket

1104
- C #

Grid Selector

1105
- D

CD Input

1554
- E

Aux/TV

1554
- F

Not Applicable
- G

Not Applicable
- H

Remote Out Socket

1255
- I #

Voltage Selector

1262
- J

AC Mains Cord

* For TS5901/17 only
For -/01/21 only

ADJUSTMENT	CASSETTE	SK...	Recorder position		MEASURE ON	READ ON	ADJUST WITH	ADJUST TO
			DECK I	DECK II				
Azimuth	10KHz SBC 420*	Tape	Play	-	1256	mV-meter	Left hand Screw Play head	Max. L = R
		Tape	-	Play fwd	1256	mV-meter	Left hand Screw R/P Head	
		Tape	-	Play rev	1256	mV-meter	Right hand Screw R/P Head	
Motor speed (Normal)	3150Hz SBC420*	Tape	Play	-	1256	Wow and Flutter meter	3774	** a
		Tape	-	Play	1256	Wow and Flutter meter	3776	

* SBC 420 : 4822 397 30071
** a The maximum permissible speed deviation is 2%.
Moreover, the wow and flutter value can be read.
This value should not exceed 0.35%.

SPECIFICATIONS

GENERAL

Mains voltage	: 120V - 220V - 240V 115V - 230V for -/21 only
Mains selection/setting	: Serviceable Set at 120V for -/17 only Set at 220V except /17/30/45 Set at 240V for -/30/45 only
	: Switchable Set at 220V for -/21 only
Mains frequency	: 50Hz - 60Hz
Power consumption	: 120W max.
Dimension centre unit	: 360 x 382 x 380 mm

TUNER : FM SECTION

Tuning range	: 87.5MHz - 108MHz
IF frequency	: 10.7MHz
Aerial input	: 75Ω coaxial 300Ω screw type for -/17 only
Sensitivity at 26dB S/N	: <5μV <10μV for -/17 only
Selectivity at 600kHz bandwidth	: >30dB
IF rejection	: >60dB
Image rejection	: >25dB

TUNER : AM SECTION

Tuning range	MW : 522kHz - 1611kHz MW : 530kHz - 1700kHz for -/17 only LW : 148kHz - 284kHz for 3 band versions only
IF frequency	: 450kHz
Grid selector	: 9kHz - 10kHz for -/21 only
Sensitivity at 26dB S/N	MW : <3.0mV/M LW : <4.0mV/M
Selectivity at 18kHz bandwidth	: >20dB
IF rejection	: >26dB
Image rejection	MW : >28dB LW : >30dB

AMPLIFIER

Output power at 10% distortion	: 2 x 15W -1dB
Speaker impedance	: 2 x 8Ω
Frequency response within -3dB	: 60Hz - 14kHz
Equalizer control	: -7dB to +7dB
Dynamic bass boost	: +8dB at 100Hz
Headphone output at 8Ω	: 350mV
Remote control output	: 5V non-inverted RC5
Input sensitivity	Aux/TV : 200mV at 47kΩ CD : 400mV at 47kΩ

CASSETTE RECORDER

Number of track	: 2 x 2 stereo
Tape speed	: 4.76 cm/sec ± 2% 1.8 x 4.76 cm/sec
Wow and flutter	: <0.4%
Fast-wind time C60	: 130 sec
Bias system	: 74kHz ± 6kHz
Recording playback frequency response within -7dB	: 125Hz - 12.5kHz
Noise Reduction Factor	: 8.5dB

RECORD PLAYER

Type of drive system	: Belt drive
Type of PU Head	: Sapphire
Stylus force	: 5.0gmf +1.5gmf/-1gmf
Speed	: 33 1/3 ; 45 rpm ± 2%
Wow and flutter	: <0.3%
Rumble	: -30dB DIN A -50dB DIN B

SELF-TEST PROCEDURE

When holding the program-key and preset-up key down during power up the EEROM is loaded after which the display lights completely until both keys are released.

The loaded information are as follows:

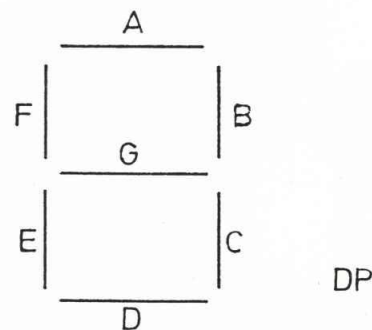
Preset	Frequency			Band
		POL	USA	FM
0	87.50	65.00	87.5	
1	97.00	65.00	106.5	
2	98.00	65.00	87.5	
3	99.00	65.00	87.5	
4	108.00	65.00	87.5	MW
			USA	
5	522		530	
6	567		580	
7	603		620	
8	1278		1370	LW
9	1494		1610	
10	1611			
11	148			
12	155			
13	200			SW
14	275			
15	284			
		EUR		
16	3820	5820		
17	3900	5900		
18	11900	13900		
19	12100	14100		

LCD Display

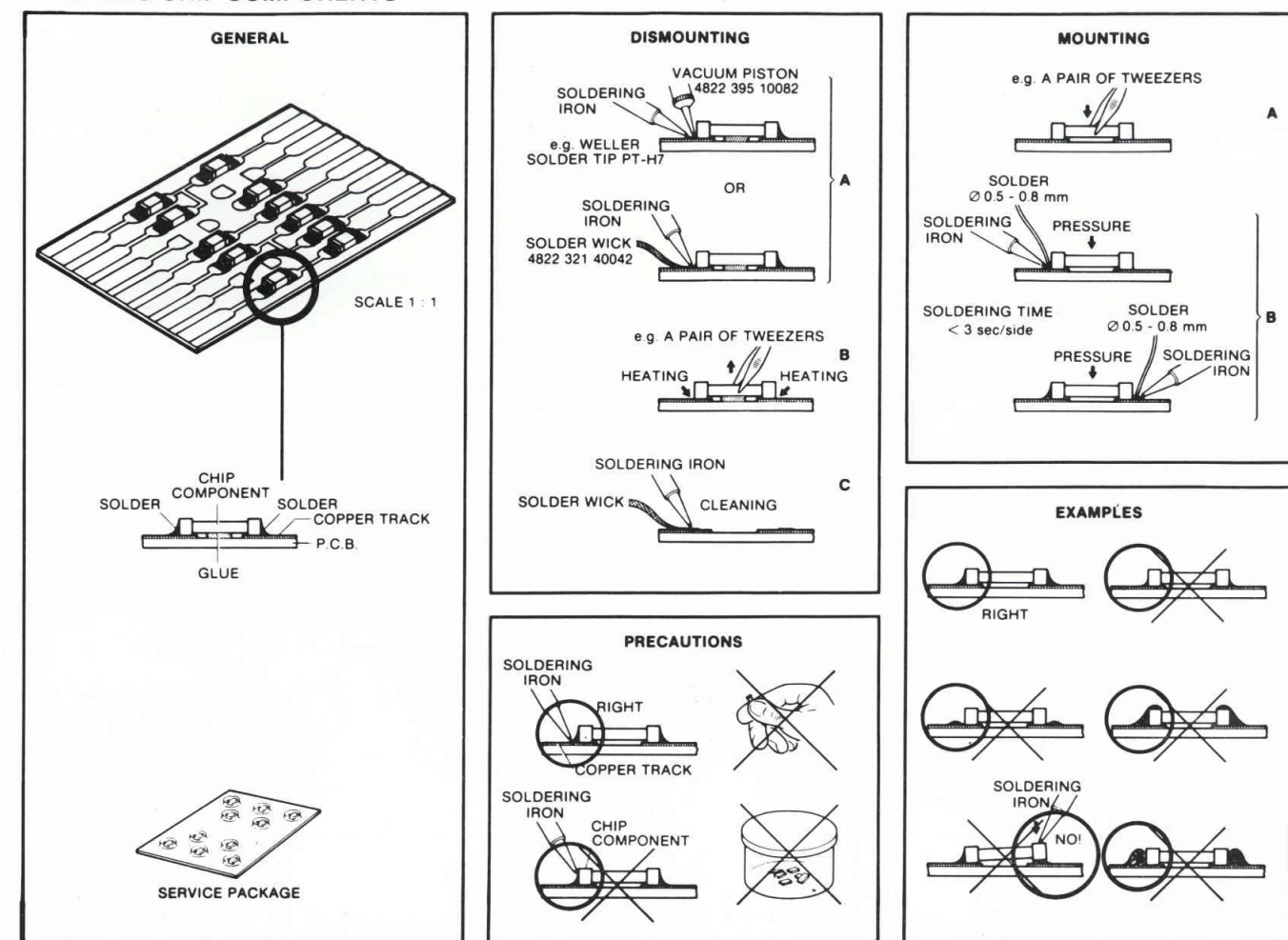
SWLW							
MW							
AM							
FM							
digit	1	2	3	4	5	6	7

LCD Display / uProcessor interconnection

COM2	COM1	LCD Pin	uProc Pin
7C	7D	26	43
7G	7E	25	44
7B	7F	24	45
6B	7A	23	46
5C	5D	22	47
5G	5E	21	48
5B	5F	20	49
KHZ	5A	19	50
4C	4D	18	51
4G	4E	17	52
4B	4F	16	53
LW	4A	15	54
3C	3D	14	55
3G	3E	13	56
3B	3F	12	57
SW	3A	11	59
2C	2D	10	60
2G	2E	9	61
2B	2F	8	62
1BC	2A	7	63
MW	MHZ,FM,DP	6	64
PROGR	AM	5	1
STEREO	6ADG	4	2
6E	6C	3	3
COM2	-	2	5
-	COM1	1	4



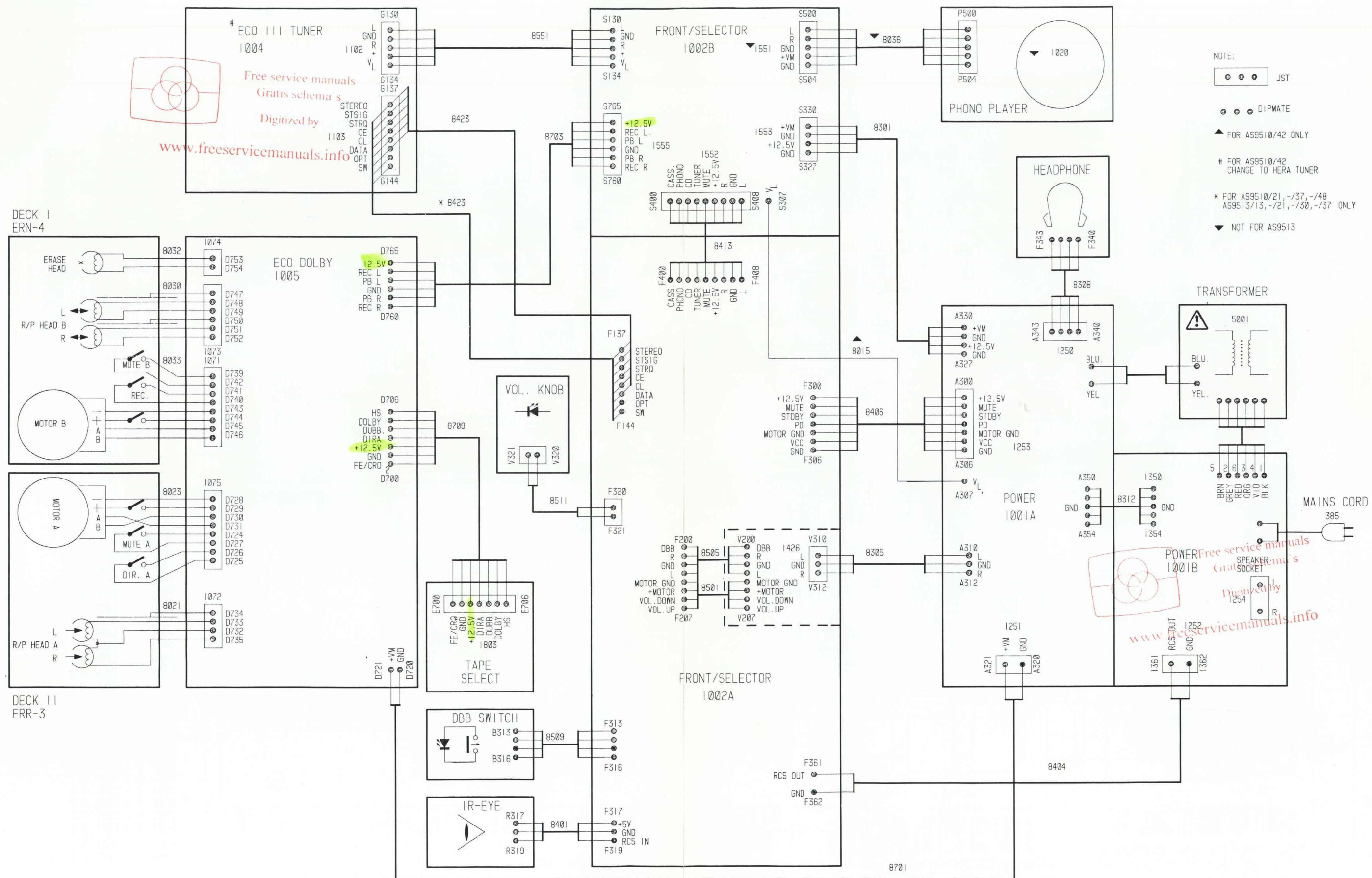
HANDLING CHIP COMPONENTS



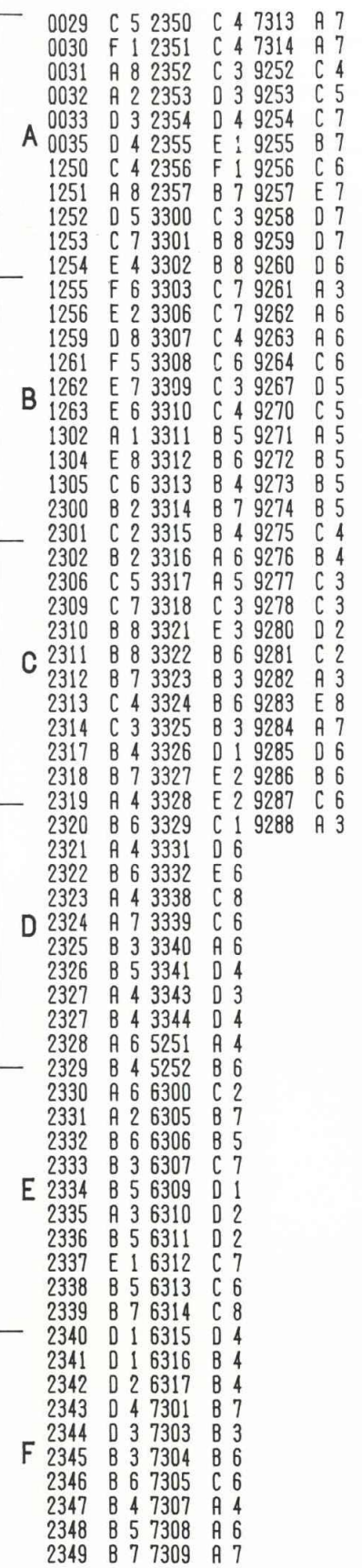
27 012C12

Carbon film 0.2 W CR16 70°C 5%	Plate ceramic Tuning < 120 pF 2% Others -20/+80%	* a = 2.5 V b = 4 V c = 6.3 V d = 10 V e = 16 V f = 25 V g = 40 V h = 63 V j = 100 V l = 125 V m = 150 V n = 160 V q = 200 V r = 250 V s = 300 V t = 350 V u = 400 V v = 500 V w = 630 V x = 1000 V A = 1.6 V B = 6 V C = 12 V D = 15 V E = 20 V F = 35 V G = 50 V H = 75 V I = 80 V
Carbon film 0.33 W CR25 70°C 5%	Tubular ceramic	
Carbon film 0.5 W CR37 70°C 5%	Polystyrene film / foil 1%	
Standard film 0.5 W SFR16T 70°C 5%	Polyester Film / foil 10%	
Standard film 0.4 W SFR25 70°C 5%	Mylar 10%	
Metal film 0.6 W MRS25 70°C 5%		
Safety resistor	Electrolytic	
Chip component		

26338

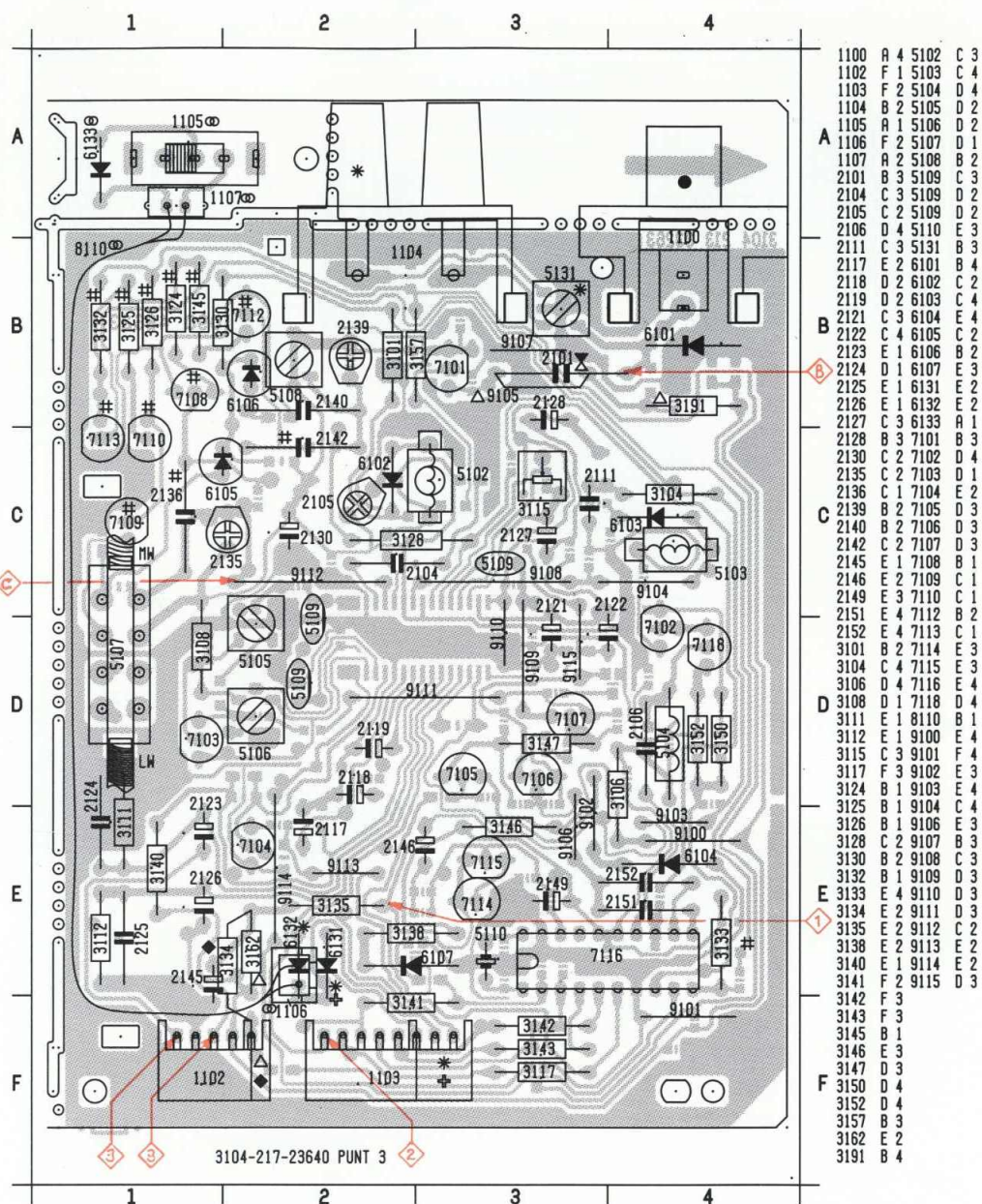


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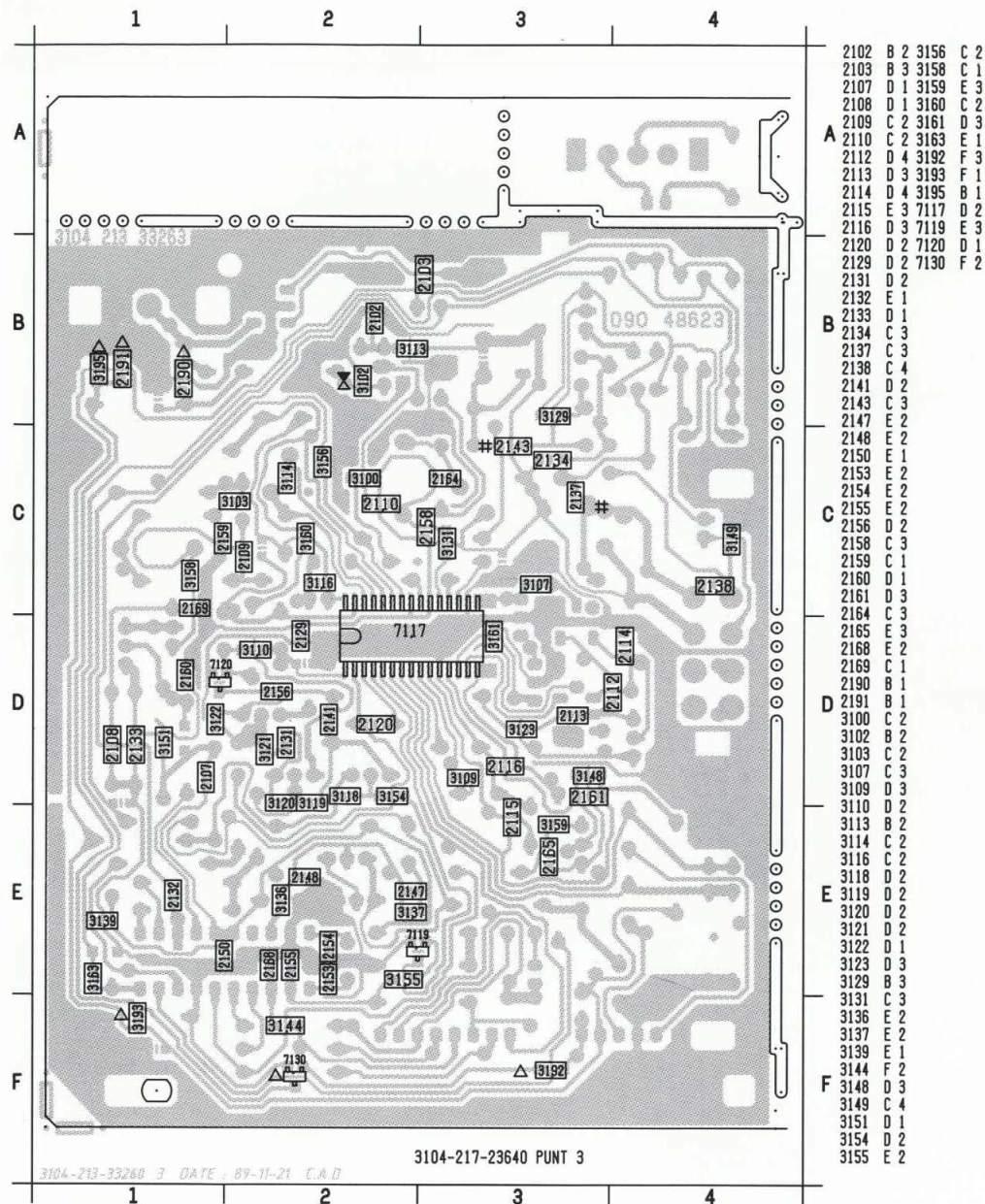


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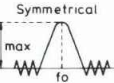

TUNER BOARD



△: ONLY FOR AUTOSTORE SETS (AS9600)
⊗: NOT FOR AUTOSTORE SETS
*: ONLY FOR /17 UNITS
●: NOT FOR /17
#: NOT FOR /01 /10 AND /17 UNITS
+: ONLY FOR /10 UNITS
◆: FOR EXTERNAL LOOPSUPPLY (AS9400) (AS9500)
⊙: ONLY FOR /01 UNITS



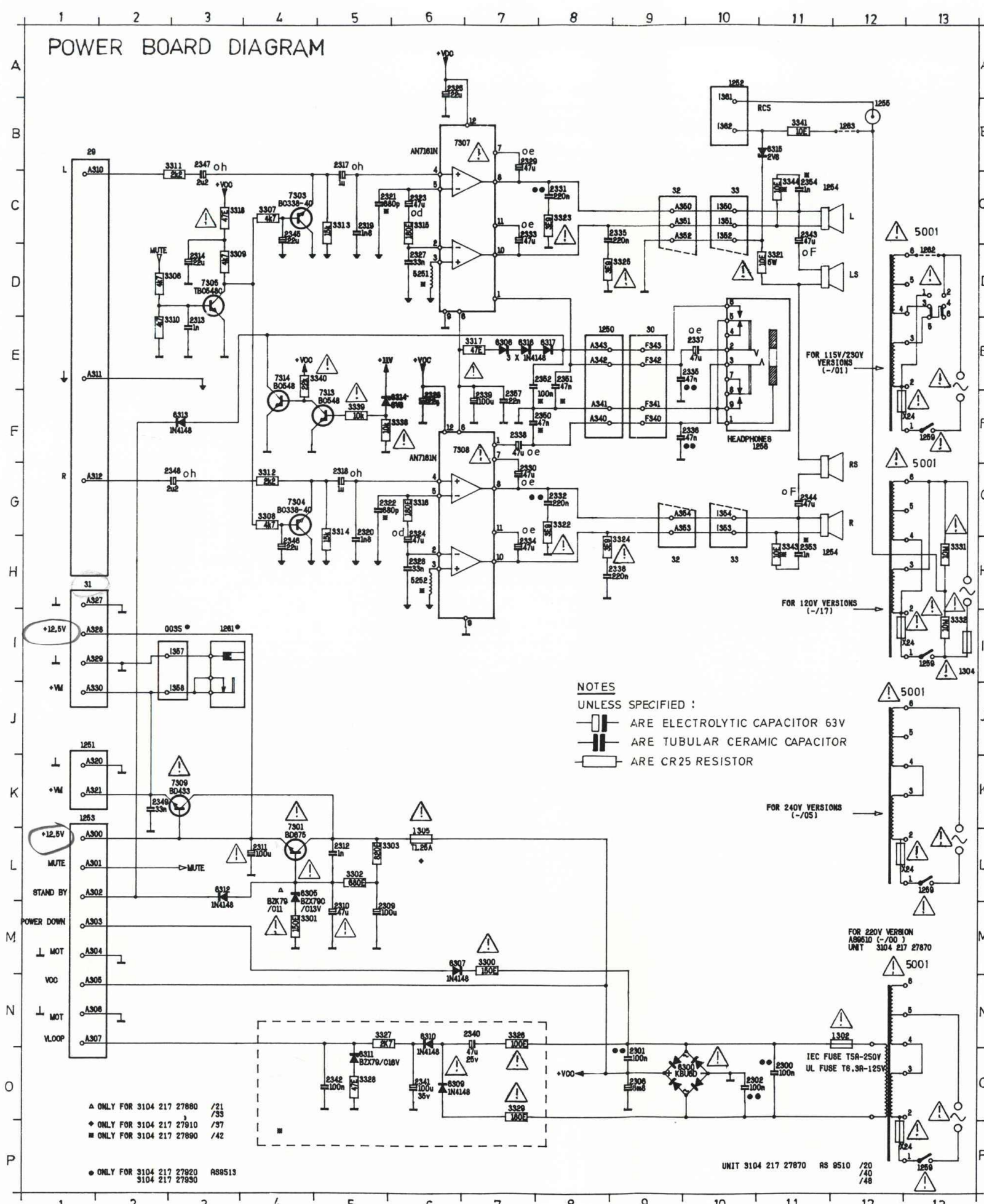
△: ONLY FOR AUTOSTORE SETS (AS9600)
⊗: NOT FOR AUTOSTORE SETS
*: ONLY FOR /17 UNITS
#: NOT FOR /10 AND /17 UNITS
+: ONLY FOR /10 UNITS

SK...	FREQUENCY	I/P	DISPLAY	ADJUST	O/P	SCOPE/METER
Varicap alignment						
FM 87.5-108MHz			108MHz 87.5MHz	5103 check	1	8V 2.9V ± 0.3V
LW 148-284kHz			284kHz	5108		8.5V
MW 522-1611kHz (530-1700kHz)			1611kHz (1700kHz)	2139		7.8V # 8.5V + (8.0V)
			522kHz (530kHz)	5108		1.2V # (1.0V)
FM-RF						
FM	87.5MHz mod = 1kHz Δf = 22.5kHz	B	87.5MHz	5102	3	max. 
	108MHz mod = 1kHz Δf = 22.5kHz		108MHz	2105		
Stereo decoder						
FM	98MHz carrier 1mV	B	98MHz	3115	2	76 ± 0.2kHz
AM-IF						
MW	450kHz \$ Δf = 10kHz 50Hz	C	522kHz (530kHz)	5106 5105	3	
AM-RF						
LW *	200kHz	A	200kHz	5107	3	max. 
MW *	558kHz (560kHz)		558kHz (560kHz)	5107		
	1494kHz (1600kHz)		1494kHz (1600kHz)	2135		

* Mod 1kHz 30% AM
\$ via 100nF
(..) Grid 10kHz for -/01/21 only
+ For LW version only
Not for LW version

Repeat

0030	E9	2352	E7
0031	M1	2353	H11
0032	C9	2354	C11
0032	M9	2357	F7
0033	C10	3300	M7
0033	H10	3301	M46
1250	E8	3302	L5
1251	J1	3303	L5
1252	A10	3306	D2
1253	K1	3307	C4
1254	M11	3308	G4
1254	C11	3309	D3
1255	B12	3310	E2
1256	F11	3311	B3
1261	I3	3312	G4
1262	D13	3313	C5
1263	B12	3314	G5
1302	M12	3315	C6
1304	I13	3316	G6
1305	L6	3317	E7
2300	O11	3318	C3
2301	O9	3321	D11
2302	O10	3322	G8
2306	O9	3323	C8
2309	M5	3324	M8
2310	M5	3325	D8
2311	L4	3326	M7
2312	L5	3327	M5
2313	E3	3328	O5
2314	D3	3329	O7
2317	B5	3331	H13
2318	G5	3332	I13
2319	C5	3338	F5
2320	G5	3339	F5
2321	C5	3340	E4
2322	G5	3341	B11
2323	C6	3343	H11
2324	G6	3344	C11
2325	A6	5001	J12
2326	F6	5001	G12
2327	D6	5001	D12
2328	H6	5001	M12
2329	B7	5251	D6
2330	G7	5252	H6
2331	C8	6300	O10
2332	G8	6305	L4
2333	C7	6306	E7
2334	H7	6307	M6
2335	E9	6309	O6
2335	C8	6310	M6
2336	H8	6311	O5
2336	F9	6312	L3
2337	E10	6313	F3
2338	F7	6314	F5
2339	F7	6315	B11
2340	M7	6316	E7
2341	O6	6317	E8
2342	O5	7301	K4
2343	C11	7303	C4
2344	G11	7304	G4
2345	C4	7305	D3
2346	H4	7307	B6
2347	B3	7308	F6
2348	G3	7309	K3
2349	K2	7313	F5
2350	F7	7314	E4
2351	E8		



FOR POWER BOARD

+Vcc : 22.4V

7307/7308

- 1 : 4.0V
- 2 : 1.2V
- 3 : 0V
- 4 : 0.1V
- 5 : 1.2V
- 6 : 22.4V
- 7 : 21.5V
- 8 : 12.2V
- 9 : 0V
- 10 : 12.2V
- 11 : 22.0V
- 12 : 22.4V

7301	7303/7304	7309
e : 13.1V	e : 0V	e : 12.7V
b : 14.6V	b : 0V	b : 13.1V
c : 22.4V	c : 0V	c : 22.4V

7313	7314
e : 0V	e : 21.4V
b : 0.7V	b : 0V
c : 0V	c : 0V

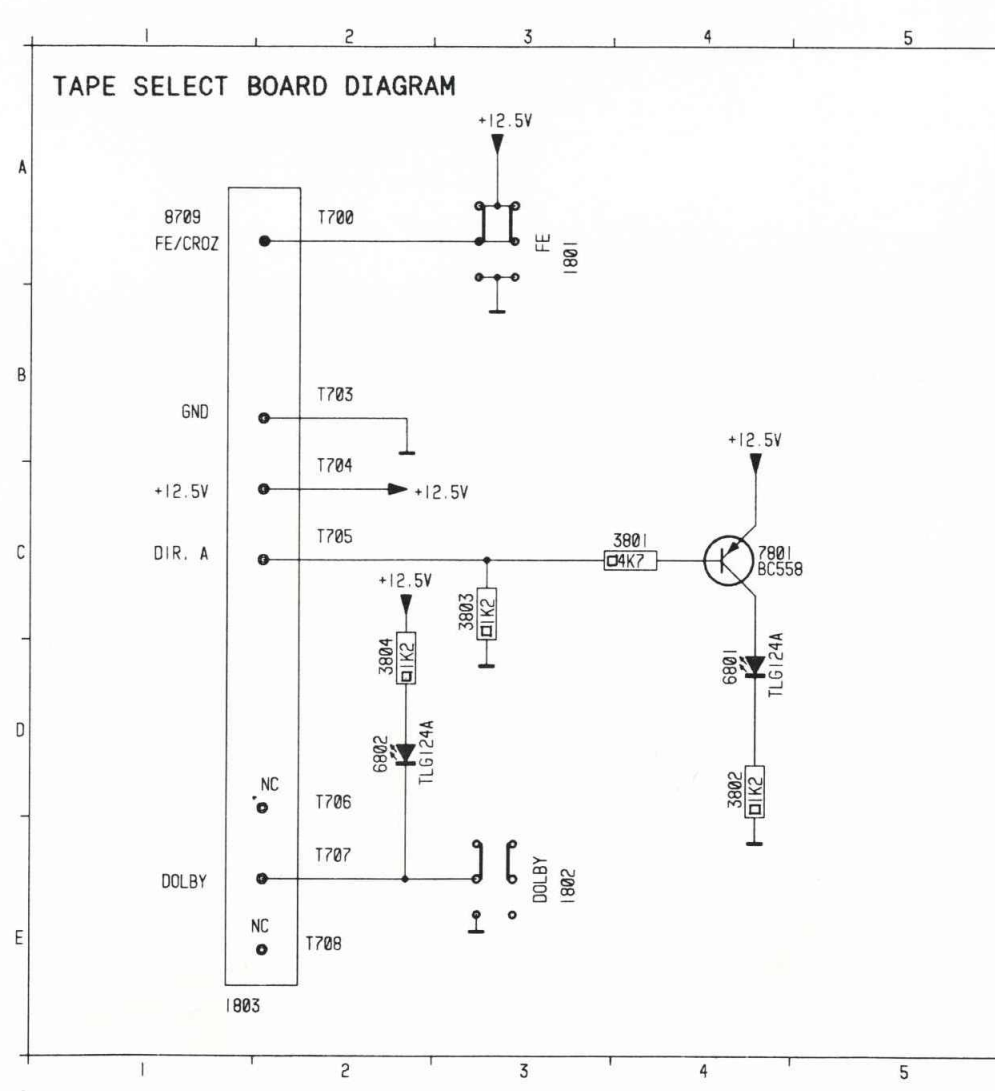
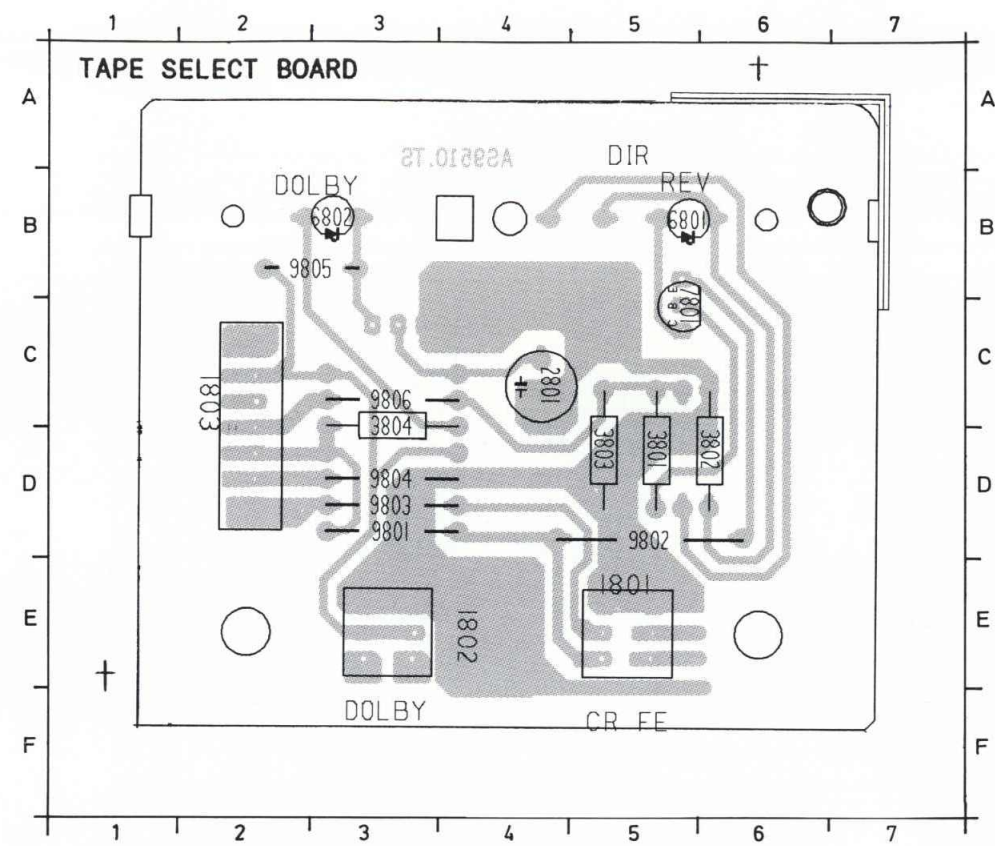
....V measured in power on position

FOR TAPE SELECT BOARD

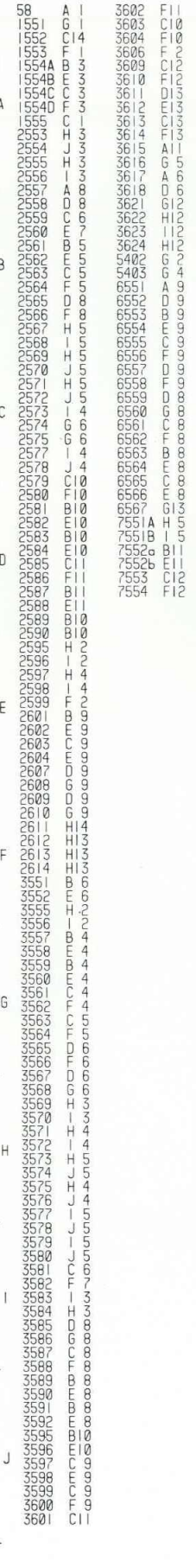
7801

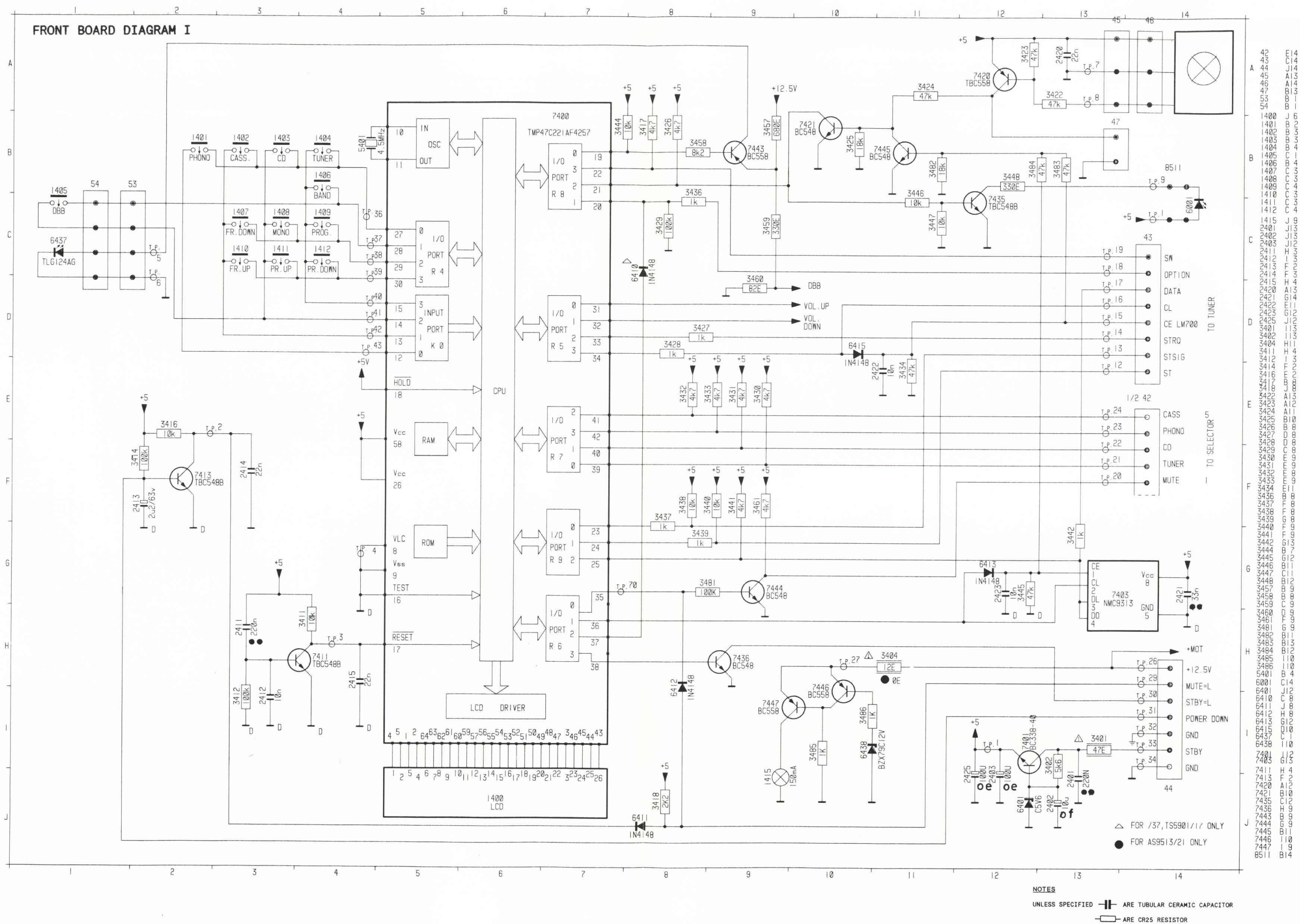
- e : 12.5V
- b : 12.5Vfw
- 11.7Vrew
- c : 0Vfw
- 12.5Vrw

....V measured in power on position
....Vfw measured in tape forward positon
....Vrew measured in tape rewind position



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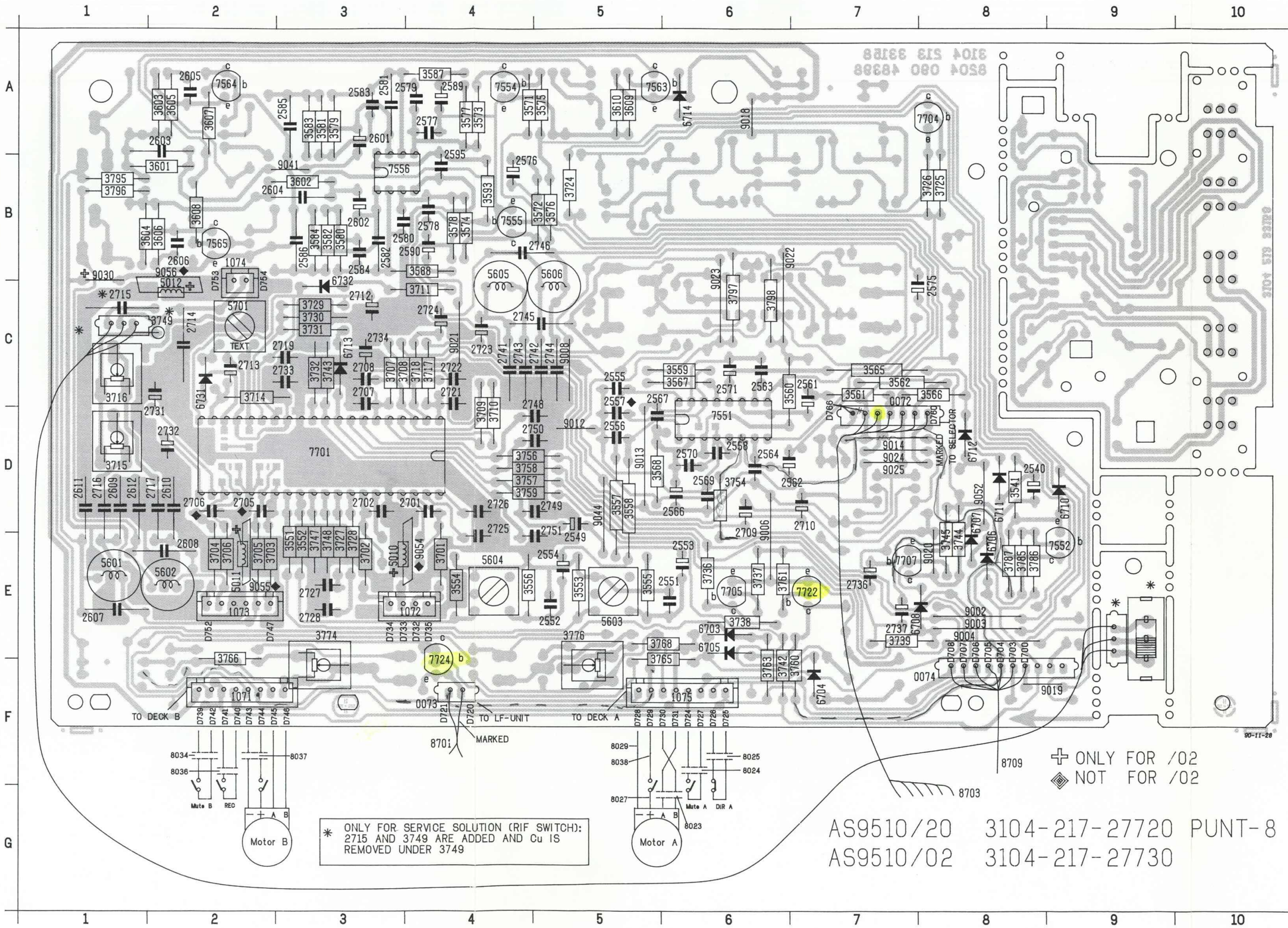




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RECORDER BOARD

00072 C 7 2727 E 3 3716 C 1 7704 A 8
00073 F 4 2728 E 3 3717 C 4 7705 E 6
00074 F 8 2731 D 2 3718 C 4 7707 E 7
00075 F 2 2732 D 2 3724 B 5 7722 E 7
00076 E 4 2733 C 3 3725 B 8 7724 F 4
00077 E 2 2734 C 3 3726 B 8 8701 F 4
00078 B 2 2736 E 7 3727 C 3 8703 G 8
00079 F 7 2737 E 7 3728 E 3 8709 F 8
00080 D 8 2741 C 4 3729 C 3 9002 E 8
00081 E 5 2742 C 5 3730 C 3 9003 E 8
00082 E 6 2743 C 4 3731 C 3 9004 E 8
00083 E 5 2744 C 5 3732 C 3 9006 D 6
00084 E 6 2745 C 4 3736 E 6 9008 C 5
00085 E 5 2746 B 5 3737 E 6 9012 D 5
00086 C 5 2748 D 5 3738 E 6 9013 D 5
00087 D 5 2749 D 5 3739 E 7 9014 D 7
00088 C 5 2750 D 5 3742 F 6 9018 A 6
00089 D 6 2751 E 5 3743 C 3 9019 F 9
00090 C 7 3541 D 8 3744 E 8 9020 E 8
00091 E 3 3745 E 8 9021 C 4
00092 C 6 3552 E 3 3747 E 3 9022 B 7
00093 D 6 3553 E 5 3748 E 3 9023 B 6
00094 E 4 3749 C 2 9024 D 7
00095 E 5 3754 D 6 9025 D 7
00096 D 6 3556 E 4 3756 D 4 9030 B 1
00097 D 5 3757 D 4 9041 B 3
00098 C 6 3558 D 5 3758 D 4 9044 D 5
00099 C 6 3559 D 6 3759 D 4 9052 D 8
00100 B 4 3560 C 7 3760 F 7 9054 E 4
00101 A 4 3561 C 7 3761 E 6 9055 E 2
00102 A 4 3562 C 7 3763 F 6 9056 B 2
00103 A 4 3565 C 7 3765 F 6
00104 A 4 3566 C 8 3766 F 2
00105 A 3 3567 C 6 3768 E 6
00106 B 3 3568 D 5 3774 E 3
00107 A 4 3571 A 4 3776 E 5
00108 A 3 3572 E 5 3785 E 8
00109 A 3 3573 A 4 3786 E 8
00110 B 3 3574 B 4 3787 E 8
00111 A 4 3575 A 5 3795 B 1
00112 A 4 3576 E 5 3796 B 1
00113 B 4 3577 A 4 3797 C 6
00114 A 3 3578 B 4 3798 C 6
00115 A 3 3579 A 3 5010 E 3
00116 A 2 3580 B 3 5011 E 2
00117 B 2 3581 A 3 5012 C 2
00118 A 2 3582 B 3 5601 E 1
00119 E 2 3583 A 3 5602 E 2
00120 E 1 3584 B 3 5603 E 5
00121 E 2 3587 A 4 5604 E 4
00122 D 1 3588 B 4 5605 B 4
00123 D 2 3593 B 4 5606 B 5
00124 D 1 3601 B 2 5701 C 2
00125 D 1 3602 B 3 6703 E 6
00126 D 4 3603 A 2 6704 F 7
00127 D 3 3604 A 2 6705 E 6
00128 D 2 3605 A 2 6706 E 8
00129 D 2 3606 B 2 6707 D 8
00130 C 3 3607 A 2 6708 E 8
00131 C 3 3608 B 2 6710 D 9
00132 E 6 3609 A 5 6711 D 8
00133 D 7 3610 A 5 6712 D 8
00134 C 3 3701 E 4 6713 C 3
00135 C 2 3702 E 3 6714 A 6
00136 C 2 3703 E 2 6731 C 2
00137 C 1 3704 E 2 6732 C 3
00138 D 1 3705 E 2 7551 D 6
00139 D 2 3706 F 2 7552 F 9
00140 C 3 3707 C 3 7554 A 4
00141 C 4 3708 C 4 7555 B 4
00142 C 4 3709 D 4 7556 B 3
00143 C 4 3710 D 4 7563 A 5
00144 C 4 3711 C 4 7564 A 2
00145 D 4 3714 C 2 7565 B 2
00146 D 4 3715 D 1 7701 D 3



Bias Oscillator Adjustment

Adjust	Voltages across the 3703 or 3704
3715	13mV in Cr mode
3716	13mV in Cr mode

7564	7565	7704	7705	7707
e : 5.9V b : 7.1VFe 0VCr c : 6.3VFe 6.0VCr	e : 5.9V b : 7.1VFe 0VCr c : 6.3VFe 6.0VCr	e : 0V b : 0V 0.7V c : 12.4V 0.1V	e : 0V b : 0V 0.7V c : 10.2V 0.1V	e : 12.2rec 11.5V 0V b : 11.9V 10.9V 0V c : 0V 11.4V

7552	7554	7555	7563
e : 0V b : 0V 0.8rec c : 11.6V 0.1Vrec	e : 5.9V b : 6.6V 0.3Vrec c : 5.9V	e : 5.9V b : 6.6V 0.3Vrec c : 5.9V	e : 12.4VFe 6.0VCr b : 11.7VFe 6.0VCr c : 12.4VFe 0VCr

7701	7551	7556
1 : 5.9V 2 : 5.9V 3 : 5.9V 4 : 5.9V 5 : 5.9V 6 : 5.9V 7 : 9.6V 0.1V 8 : 10.3V 0.1V 9 : 10.2V 10 : 0V 5.5Vrec 11 : 0.3V 12 : 5.9V 13 : 0V 14 : 11.7V 15 : 5.1V 16 : 11.7V 17 : 0V 18 : 11.0V 19 : 0.7V	20 : 11.7V 21 : 5.9V 22 : 5.9V 23 : 5.9V 24 : 5.9V 25 : 5.9V 26 : 5.9V 27 : 5.9V 28 : 5.9V 29 : 5.9V 30 : 5.9V 31 : 5.9V 32 : 6.0V 33 : 6.0V 34 : 5.9V 35 : 5.7V 36 : 5.9V 37 : 5.8V 38 : 5.9V 39 : 6.2V 40 : 6.2V	1 : 5.9V 2 : 5.9V 3 : 5.9V 4 : 0V 5 : 5.9V 6 : 5.9V 7 : 5.9V 8 : 12.6V 9 : 5.9V 10 : 0.4V 11 : 5.9V 12 : 0V 13 : 12.0V 14 : 5.9V 15 : 0V 16 : 5.9V 17 : 5.9V 18 : 5.9V 19 : 0.7V

....V measured in tape on position
V measured in tape A play position
V measured in tape dubbing on position
....Vrec measured in tape recording position
....Vdn measured in dolby on position
....Vdf measured in dolby off position
....VFe measured in tape Fe on position
....VCr measured in tape Cr on position

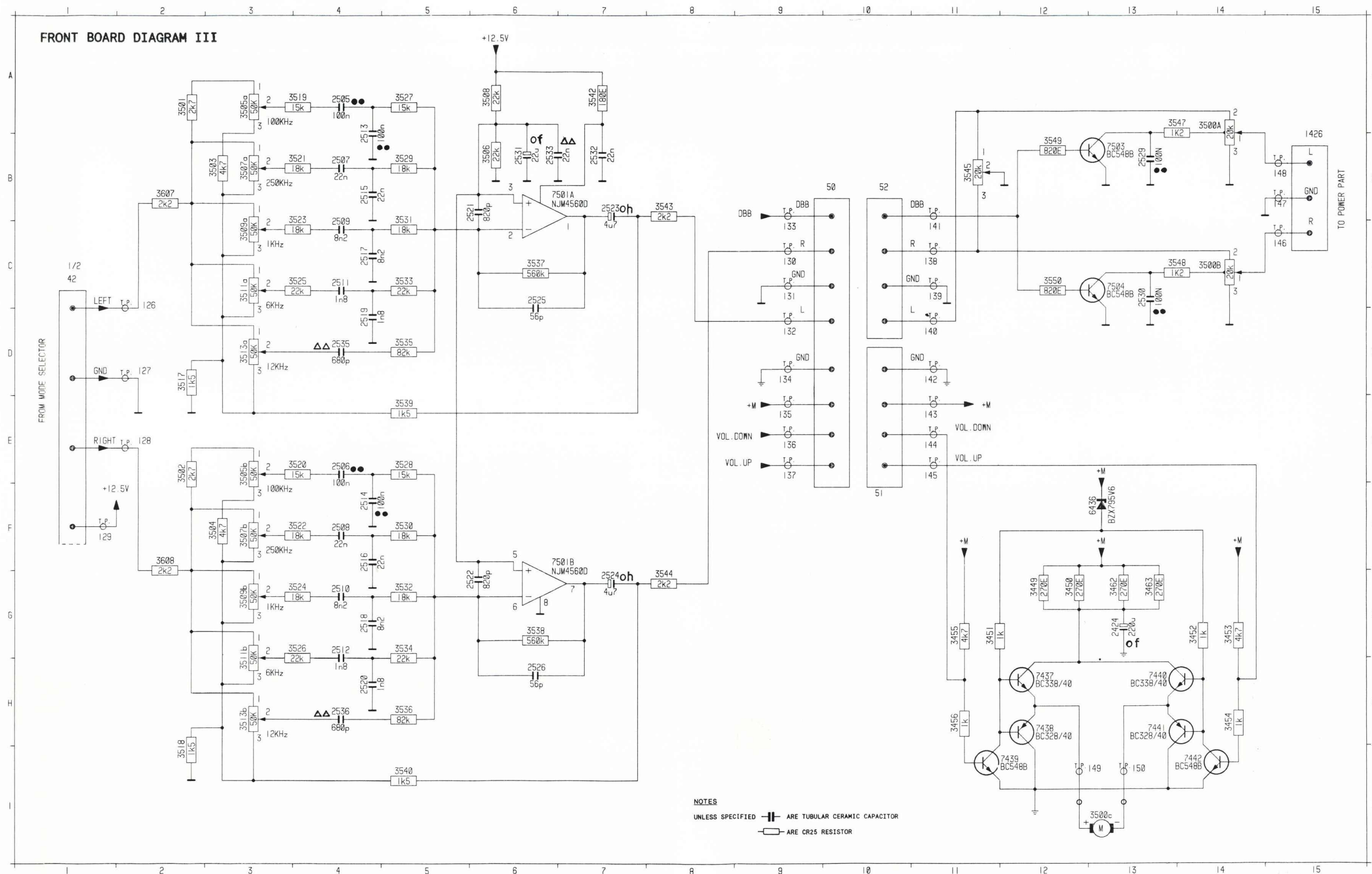
42	C I	2424	G13	2509	C 4	2514	F 4	2519	D 4	2524	G 7	2531	B 6	3449	G12	3454	H14	3500A	A14	3503	B 3	3507 _a	B 3	3511 _a	C 3	3518	I 2	3523	C 4	3528	E 5	3533	C 5	3538	G 6	3544	G 8	3550	C12	7438	H12	7501A	B 6
50	F10	2505	A 4	2510	G 4	2515	B 4	2520	C 6	2525	C 6	2532	B 7	3450	G12	3455	H11	3500B	C14	3504	A 3	3507 _b	F 3	3511 _b	C 3	3519	A 4	3524	G 4	3529	B 5	3534	G 5	3539	E 5	3545	B11	3607	B 2	7439	I12	7501B	F 6
51	F10	2506	A 4	2511	C 4	2516	F 4	2521	B 6	2526	H 6	2533	B 7	3451	G11	3456	H11	3500c	I13	3505 _c	A 3	3508	A 6	3513 _d	D 3	3520	A 4	3525	C 4	3530	B 5	3535	D 5	3540	F 5	3545	A11	3608	F 2	7440	H13	7503	B13
52	F10	2507	A 4	2512	G 4	2517	C 4	2522	B 6	2529	B13	2536	D 4	3452	G14	3462	G13	3501	A 2	3505 _e	B 3	3509 _f	C 3	3513 _e	H 3	3521	A 4	3526	G 4	3531	C 5	3536	H 5	3542	A 7	3548	C14	6436	F13	7441	H13	7504	C13
1426	B15	2508	F 4	2513	A 4	2518	G 4	2523	B 6	2530	C13	2536	H 4	3453	G14	3463	G13	3502	F 2	3506	B 6	3509 _g	C 3	3512	I 2	3522	F 4	3527	A 5	3532	C 5	3537	G 5	3543	P 7	3549	B12	7437	H12	7442	I14		

MOT : 12.5V


	7443	7445	7446
e :	5.1V	5.0V	10.7V
b :	5.7V	5.0V	10.1V
c :	16.5V	0V	10.0V

7501	7552
1 : 6.2V	1 : 4.8V
2 : 6.2V	2 : 4.8V
3 : 6.2V	3 : 4.8V
4 : 0V	4 : 0V
5 : 6.2V	5 : 4.8V
6 : 6.2V	6 : 4.8V
7 : 6.2V	7 : 4.8V
8 : 11.7V	8 : 9.6V

ITEM	NORMAL	VOLUME DOWN	VOLUME UP
7437			
e :	10.2V	0.7V	6.1V
b :	9.3V	0V	6.8V
c :	12.5V	9.0V	9.0V
7438			
e :	10.2V	0.7V	6.1V
b :	9.3V	0V	6.8V
c :	0V	0V	0V
7439			
e :	0V	0V	0V
b :	0.5V	0.7V	0.2V
c :	9.3V	0V	6.8V
7440			
e :	10.2V	6.1V	0.7V
b :	9.3V	6.8V	0V
c :	12.5V	9.0V	9.0V
7441			
e :	10.2V	6.1V	0.7V
b :	9.3V	6.8V	0V
c :	0V	0V	0V
7442			
e :	0V	0V	0V
b :	0.2V	0.2V	0.7V
c :	9.3V	6.8V	0V

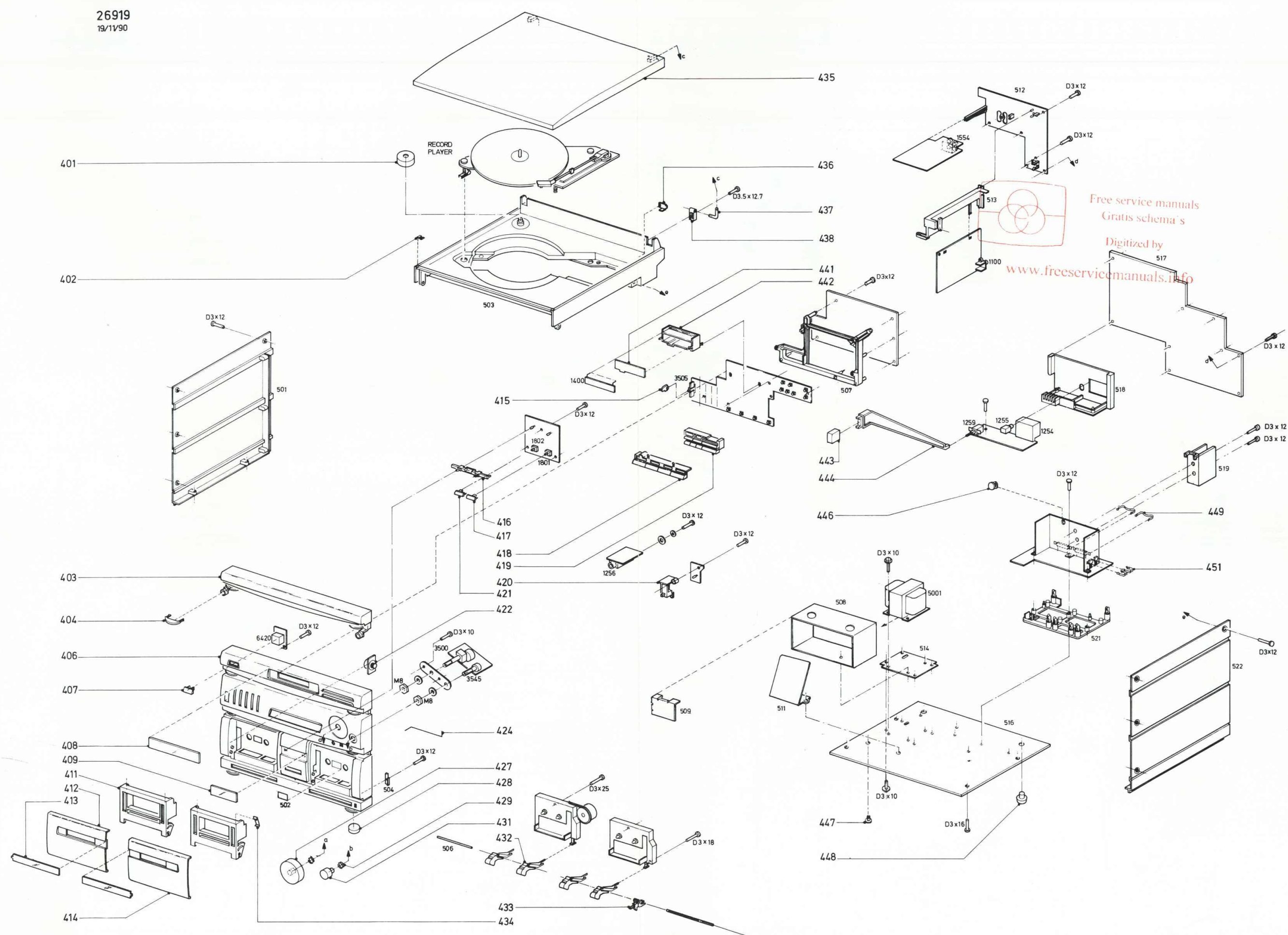


NOTES

UNLESS SPECIFIED ARE TUBULAR CERAMIC CAPACITOR
 ARE CR25 RESISTOR

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26919
19/11/90



401	4822	466	92642	414	&	4822	443	63264	434	4822	492	52197
402	4822	466	92643	415		4822	411	61667	435	4822	462	71645
403	4822	426	40431	417		4822	410	60588	436	4822	460	10589
403	&	4822	426	40433	418	4822	410	60585	437	4822	417	10631
404	4822	426	60577	419	4822	410	60584	438	4822	417	10631	

406	4822 426 51467	420	4822 410 60586	441	4822 466 70666
406 &	4822 426 51469	421	4822 410 61101	442	4822 256 91477
407	4822 450 61524	422	4822 529 10257	443	4822 413 70269
408	4822 333 40404	424	4822 492 70732	444	4822 535 93055
409	4822 450 61683	427	4822 413 41561	446	4822 401 11336

411	4822 443 63037	428	4822 462 40683	447	4822 532 52321
412	4822 443 63251	429	4822 492 51374	448	4822 462 41535
412 &	4822 443 63265	431	4822 413 41562	449	4822 255 40128
413	4822 450 61525	432	4822 410 60587	451	5322 255 40397
414	4822 443 63249	433	4822 410 60589		

IFU 4822 736 21036

& For TS5901/17 only

GB WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

F ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD). Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation. Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfilier le bracelet serti d'une résistance de sécurité. Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

GB

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used.

NL

Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

I

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

ESD



NL WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD). Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat. Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

I AVVERTIMENTO

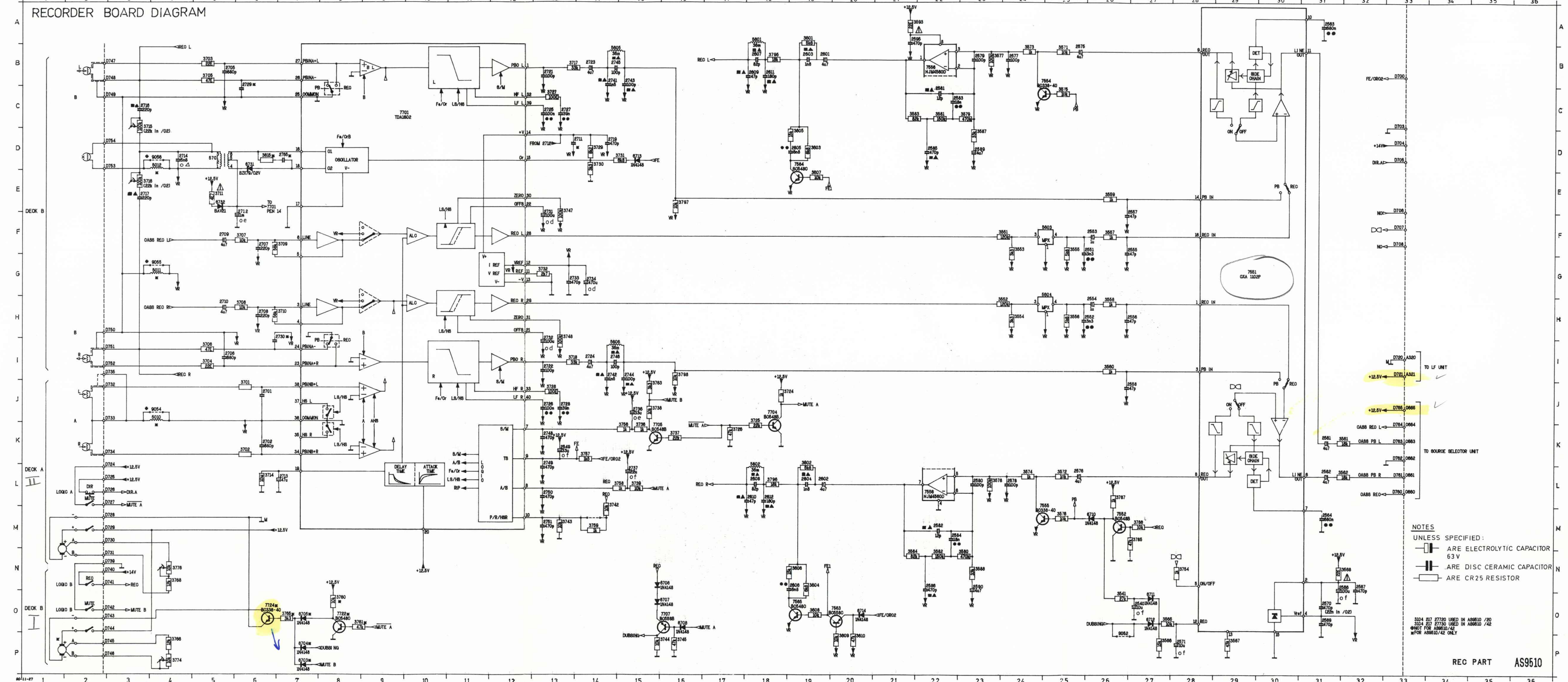
Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD). La loro longevità potrebbe essere fortemente ridotta in caso di non osservazione della più grande cauzione alla loro manipolazione. Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialeto a resistenza. Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

F

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

D

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.



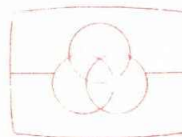
33
Rec. motor LOOPT NIET
FOR DEF

SEMICONDUCTORS

6712	1N4148	4822 130 30621
6713	1N4148	4822 130 30621
6714	1N4148	4822 130 30621
6731	BZX79-C2V4	4822 130 31253
6732	BAV21	4822 130 30842
6801	TLG124A GN	4822 130 32472
6802	TLG124A GN	4822 130 32472
7101	2SC1047	4822 130 60163
7102	2SC1047	4822 130 60163
7103	BC548C	4822 130 44196
7104	BC548C	4822 130 44196
7105	BC558C	5322 130 60068
7106	2SC1047	4822 130 60163
7107	2SC1047	4822 130 60163
7108 *	2SC1047	4822 130 60163
7109 *	BC338-40	5322 130 44779
7110 *	BC548C	4822 130 44196
7112 *	2SC1047	4822 130 60163
7113 *	BC548C	4822 130 44196
7114	BC548C	4822 130 44196
7115	BC548C	4822 130 44196
7116	LM7000	4822 209 71331
7117	CXA1238M	4822 209 73851
7118	2SC1047	4822 130 60163
7119	BC848B	5322 130 41982
7120	BC848B	5322 130 41982
7301 Δ	BD675	5322 130 44786
7303	BC338-40	5322 130 44779
7304	BC338-40	5322 130 44779
7305	BC548C	4822 130 44196
7307 Δ	AN7161N	4822 209 73356
7308 Δ	AN7161N	4822 209 73356
7309 Δ	BD433	4822 130 42054
7313	BC548	4822 130 40938
7314	BC548	4822 130 40938
7400	TMP47C221-902-B	4822 209 62996
7401	BC338-40	5322 130 44779
7403	NMC9313BN	4822 209 60502

7411	TBC548	4822 130 40938
7413	TBC548	4822 130 40938
7420	TBC558	4822 130 40941
7421	TBC548	4822 130 40938
7435	TBC548	4822 130 40938
7436	TBC548	4822 130 40938
7437	BC338-40	5322 130 44779
7438	BC328-40	4822 130 41715
7439	TBC548	4822 130 40938
7440	BC338-40	5322 130 44779
7441	BC328-40	4822 130 41715
7442	TBC548	4822 130 40938
7443	TBC558B	4822 130 44197
7444	TBC548	4822 130 40938
7445	TBC548	4822 130 40938
7446	TBC558	4822 130 40941
7447	BC328-40	4822 130 41715
7501	NJM4560D	4822 209 83274
7503	TBC548B	4822 130 40937
7504	TBC548B	4822 130 40937
7551	NJM4560D	4822 209 83274
7551	CXA1102P	4822 209 63558
7552	BC548B	4822 130 40937
7552	NJM4560D	4822 209 83274
7553	TBC548C	4822 130 44196
7554	TBC548C	4822 130 44196
7554	BC338-40	5322 130 44779
7555	BC338-40	5322 130 44779
7556	NJM4560D	4822 209 83274
7563	BC558C	5322 130 60068
7564	BC548C	4822 130 44196
7565	BC548C	4822 130 44196
7701	TDA1602A/N3	4822 209 62372
7704	BC548B	4822 130 40937
7705	BC548B	4822 130 40937
7707	BC558B	4822 130 44197
7722	BC548C	4822 130 44196
7724	BC338-40	5322 130 44779
7801	TBC558C	5322 130 60068

- ◆ For -/01/21 and TS5901/17 only
- & For TS5901/17 only
- @ For -/01/21 only
- * For -/40/45 only
- æ For -/48 only
- ¥ For -/21 only
- ♀ Not for -/40/45 only
- # Not for -/01/21 only
- \$ Not for TS5901/17 only



Free service manuals

Gratis schema's

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"After servicing and before returning set to customer perform a leakage current or resistive measurement test from all exposed metal parts to earth ground to assure no shock hazard exist. The leakage current must not exceed 0.5 mA".

MISCELLANEOUS				
1100	\$	AERIAL SOCKET	4822	267 31128
1104	&	AERIAL CONNECTOR	4822	267 40668
1105		SLIDE SWITCH	4822	277 30862
1254		SPEAKER SOCKET	4822	267 31107
1255		REMOTE SOCKET	4822	267 31051
1256		SOCKET HEADPHONE	4822	267 30968
1259	Δ	POWER SWITCH	4822	276 11567
1262	Δ	VOLTAGE SELECTOR	4822	272 10269
1302	Δ	FUSE T5A	4822	253 10065
1302	& Δ	FUSE T6.3A	4822	252 51123
1304	& Δ	FUSE T1.25A	4822	253 30334
1305	\$ Δ	FUSE T1.25A	4822	071 51252
1400		LCD DISPLAY	4822	130 90954
1401		SWITCH KEY	4822	276 12465
1402		SWITCH KEY	4822	276 12465
1403		SWITCH KEY	4822	276 12465
1404		SWITCH KEY	4822	276 12465
1405		SWITCH KEY	4822	276 12465
1406		SWITCH KEY	4822	276 12465
1407		SWITCH KEY	4822	276 12465
1408		SWITCH KEY	4822	276 12465
1409		SWITCH KEY	4822	276 12465
1410		SWITCH KEY	4822	276 12465
1411		SWITCH KEY	4822	276 12465
1412		SWITCH KEY	4822	276 12465
1415		LAMP 12V 150mA	4822	134 40965
1554		SOCKET CINCH	4822	266 30293
1801		SWITCH PUSH 2P2T	4822	276 12639
1802		SWITCH PUSH 2P2T	4822	276 12639
5109		CERAM FILTER	4822	242 73546
5110		X'TAL 7.2MHZ	4822	303 50034
5401		RESONATOR 4.5MHZ	4822	242 73577
5603		FILTER	4822	242 73768
5604		FILTER	4822	242 73768
	¥	AK271/20	4822	445 10274
	@	REMOTE CONTROL	4822	218 10323
	&	REMOTE CONTROL	4822	218 10356
CAPACITORS				
2102		CHIP 100pF 5%	5322	122 32531
2103		CHIP 470pF	4822	122 31727
2105		TRIMMER 3-11pF	4822	125 60101
2107		CHIP 470pF	5322	122 32268
2108		CHIP 470pF	4822	122 31727
2109		CHIP 6.8pF	5322	122 32269
2110		CHIP 470pF	4822	122 31727
2112		CHIP 150pF	4822	122 31808
2113		CHIP 1nF	5322	122 34123
2114		CHIP 220nF	4822	122 32927
2115		CHIP 220nF	4822	122 32927
2116		CHIP 22nF	4822	122 31797
2120		CHIP 100nF	4822	122 33496
2129		CHIP 470pF	5322	122 34099
2131		CHIP 1nF	5322	122 34123
2132		CHIP 22nF	5322	122 32654
2133		CHIP 470pF	4822	122 31727
2134		CHIP 220nF	4822	122 32927

2135	*	TRIMMER 3-11pF	4822	125 60101
2135	♀	TRIMMER 5,2-30pF	4822	125 60102
2136	*	PP 100pF 630V	4822	121 51288
2137	*	CHIP 22pF	5322	122 32658
2138		CHIP 220nF	4822	122 32927
2139	*	TRIMMER 3-11pF	4822	125 60101
2139	♀	TRIMMER 5,2-30pF	4822	125 60102
2140	*	PP 470pF 400V	5322	121 50999
2140	♦	PP 560pF 400V	4822	121 51381
2140	æ	PP 510pF 400V	4822	121 51263
2141		CHIP 22nF	5322	122 32654
2142	*	PP 360pF 400V	4822	121 43253
2143	*	CHIP 22pF	4822	122 32482
2147		CHIP 4.7nF	4822	122 33339
2148		CHIP 4.7nF	4822	122 33339
2150		CHIP 22nF	5322	122 32654
2153		CHIP 18pF	5322	122 32965
2154		CHIP 15pF	5322	122 32481
2155		CHIP 820pF	4822	122 33806
2156		CHIP 22nF	5322	122 32654
2158		CHIP 470pF	4822	122 31727
2159		CHIP 470pF	5322	122 32268
2160		CHIP 470pF	5322	122 32268
2161		CHIP 220nF	4822	122 32927
2164		CHIP 5.6pF	5322	122 32967
2165		CHIP 220nF	4822	122 32927
2168		CHIP 3.3nF	4822	122 33891
2169		CHIP 22nF	5322	122 32654
2310	Δ	ELCAP 25V 47μF	4822	124 40433
2311	Δ	ELCAP 25V 100μF	4822	124 41525
2714		PS 63V 5.6nF	4822	121 50543

RESISTORS

3100		CHIP 22Ω	4822	051 20229
3102	#	CHIP 560Ω	4822	051 20561
3102	♦	CHIP 330Ω	4822	051 20331
3103		CHIP 5.6kΩ	4822	051 20562
3107		CHIP 330Ω	4822	051 20331
3109		CHIP 4.7kΩ	4822	051 20472
3110		CHIP 2.2kΩ	4822	051 20222
3113		CHIP 270Ω	4822	051 20271
3114		CHIP 10kΩ	4822	051 20103
3115		TRIMMER 22kΩ	4822	100 11213
3116		CHIP 100Ω	4822	051 20101
3118		CHIP 10kΩ	4822	051 20103
3119		CHIP 10kΩ	4822	051 20103
3120		CHIP 1MΩ	4822	051 20135
3121		CHIP 1kΩ	4822	051 10102
3122		CHIP 1MΩ	4822	051 20135
3123		CHIP 1kΩ	4822	051 10102
3129		CHIP 100kΩ	4822	051 20104
3131		CHIP 0Ω	4822	051 20008
3136		CHIP 4.7kΩ	4822	051 20472
3137		CHIP 4.7kΩ	4822	051 20472
3139		CHIP 100kΩ	4822	051 20104
3140		1/8W 330Ω	4822	050 23301
3144		CHIP 1kΩ	4822	051 10102
3146	Δ	PRO1 150Ω	4822	053 10151
3148		CHIP 5.6kΩ	4822	051 20562

3149		CHIP 470kΩ	4822	051 20474
3151		CHIP 22kΩ	4822	051 20223
3154		CHIP 33kΩ	4822	051 20333
3155		CHIP 22kΩ	4822	051 20223
3156		CHIP 5.6kΩ	4822	051 20562
3158		CHIP 330Ω	4822	051 20331
3159		CHIP 470Ω	4822	051 20471
3160		CHIP 27kΩ	4822	051 20273
3161		CHIP 0Ω	4822	051 20008
3163		CHIP 680Ω	4822	051 20681
3300	Δ	1/8W 150Ω	4822	050 21501
3301	Δ	1/8W 150Ω	4822	050 21501
3317	Δ	NFR25 47Ω	4822	116 80335
3318	Δ	NFR25 47Ω	4822	116 80335
3321	Δ	WWRST 5W 10Ω	4822	113 80504
3322	Δ	NFR25 3.9Ω	4822	052 10398
3323	Δ	NFR25 3.9Ω	4822	052 10398
3324	Δ	NFR25 3.9Ω	4822	052 10398
3325	Δ	NFR25 3.9Ω	4822	052 10398
3331	& Δ	VR37 10MΩ	4822	053 21106
3332	& Δ	VR37 10MΩ	4822	053 21106
3338	Δ	1/8W 10kΩ	4822	051 10103
3339	Δ	1/8W 10kΩ	4822	051 10103
3340	Δ	1/8W 22kΩ	4822	051 10223
3401	Δ	NFR25 47Ω	4822	052 10479
3404	Δ	NFR25 12Ω	4822	052 10129
3500		POTM 20K X 2	4822	102 10414
3505		POTM 50KB X 2	4822	101 21102
3507		POTM 50KB X 2	4822	101 21102
3509		POTM 50KB X 2	4822	101 21102
3511		POTM 50KB X 2	4822	101 21102
3513		POTM 50KB X 2	4822	101 21102
3545		POTM 20KB	4822	101 21103
3568	Δ	NFR25 22Ω	4822	052 10229
3593	Δ	NFR25 22Ω	4822	052 10229
3606	Δ	NFR25 22Ω	4822	052 10229
3711	Δ	NFR25 4.7Ω	4822	116 80311
3715		TRIMMER 100kΩ	4822	100 11163
3716		TRIMMER 100kΩ	4822	100 11163
3774		TRIMMER 10kΩ	4822	100 20166
3776		TRIMMER 10kΩ	4822	100 20166

COILS

5001	# Δ	TRANSFO MAINS	4822	146 30963
5001	@ Δ	TRANSFO MAINS	4822	146 30965
5102		FM RF COIL	4822	156 30947
5103		FM RF COIL	4822	156 30947
5104		COIL 0.22μH	4822	157 53192
5105		AM IF COIL	4822	156 20816
5106		AM IF COIL	4822	158 60511
5107	*	FERROCEPTOR	4822	526 10466
5107	♀	FERROCEPTOR	4822	158 60602
5108	*	AM OSC COIL	4822	156 10459
5108	♀	AM OSC COIL	4822	157 51844
5131	&	BALUN COIL	4822	157 60365
5601		COIL 36mH	4822	156 20811
5602		COIL 36mH	4822	156 20811
5605		COIL 36mH	4822	156 20811
5606		COIL 36mH	4822	156 20811

5701	OSC COIL 100KHZ	4822	156	20946
SEMICONDUCTOR				
6001	TLR220 RD	4822	130	82027
6101	IN4148	4822	130	30621
6102	BB809	5322	130	31684
6103	BB809	5322	130	31684
6104	IN4148	4822	130	30621
6105	1SV149	4822	130	81673
6106	1SV149	4822	130	81673
6107	BZX79-B4V7	4822	130	34174
6131 ♀	1N4148	4822	130	30621
6132 &	1N4148	4822	130	30621
6133 @	1N4148	4822	130	30621
6300 Δ	KBU6DL-7002	4822	130	82289
6305 Δ	BZX79-C13	4822	130	34195
6306	1N4148	4822	130	30621
6307	1N4148	4822	130	30621
6312	1N4148	4822	130	30621
6313	1N4148	4822	130	30621
6314	BZX79-C6V8	4822	130	34278
6315	BZX79-C2V7	5322	130	34563
6316	1N4148	4822	130	30621
6317	1N4148	4822	130	30621
6401	BZX79C5V6	4822	130	34173
6410 &	1N4148	4822	130	30621
6411	1N4148	4822	130	30621
6412	1N4148	4822	130	30621
6413	1N4148	4822	130	30621
6415	1N4148	4822	130	30621
6420	RCR GP1U520X	4822	130	81254
6436	BZX79C5V6	4822	130	34173
6437	TLR124 RD	4822	130	31274
6438	BZX79C12V	4822	130	34197
6551	1N4148	4822	130	30621
6552	1N4148	4822	130	30621
6553	1N4148	4822	130	30621
6554	1N4148	4822	130	30621
6555	1N4148	4822	130	30621
6556	1N4148	4822	130	30621
6557	1N4148	4822	130	30621
6558	1N4148	4822	130	30621
6559	1N4148	4822	130	30621
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6706	1N4148	4822	130	30621
6707	1N4148	4822	130	30621
6708	1N4148	4822	130	30621
6710	1N4148	4822	130	30621
6711	1N4148	4822	130	30621