

TRANSISTOR VOLTAGE CHART

Q NBR	DESCRIPTION	TR-NAME	TYPE	VOLTAGE		
				E	B	C
4	FM IF AMP	2SC710 C	NPN	1.2	1.8	9.9
11	FM/MPX 19 kHz AMP	2SC710 D	NPN	1.5	2.3	6.5
12	FM/MPX 38 kHz AMP	2SC710 C	NPN	0	0	11.1
13	FM/ST INDI AMP	2SC712 D	NPN	0	0	19.5
14	1st FM MUTING AMP	2SC710 C	NPN	1.7	2.2	9.7
15	2nd FM MUTING AMP	2SC712 D	NPN	0	0.7	0
21	AM/OSC AMP	2SC710 C	NPN	2.6	3.1	7.8
22	AM/MIX AMP	2SC710 D	NPN	1.9	2.0	11.0
23	AM/FM IF AMP	2SC710 C	NPN	0.9	1.6	9.6
24	AM/FM IF AMP	2SC710 D	NPN	1.9	2.6	9.7
301,401	EQUALIZER AMP	2SC1000 GR	NPN	0.06	0.6	3.0
302,402	EQUALIZER AMP	2SC1000 GR	NPN	2.5	3.0	11.3
303,403	TONE CONTROL AMP	2SC1000 GR	NPN	0.06	0.6	2.7
304,404	TONE CONTROL AMP	2SC1000 GR	NPN	2.2	2.8	13.3
701,801	MAIN AMP 1st STAGE	2SC871 E,F	NPN	0.8	1.5	11.4
702,802	PREDRIVER AMP	2SC853 L,M	NPN	1.5	2.1	26.7
703,803	DRIVER AMP	2SC959 M,N	NPN	28.0	28.4	53.6
704,804	DRIVER AMP	2SA606 M,N	PNP	27.5	26.7	0.6
705,805	POWER AMP	2SD180 M,N	NPN	27.6	28.0	53.6
706,806	POWER AMP	2SD180 M,N	NPN	0	0.6	27.6
911	RIPPLE FILTER	2SC875	NPN	11.2	11.8	14.0
912	RIPPLE FILTER	2SC871	NPN	38.0	38.8	39.3

DIAL STRING DIAGRAM

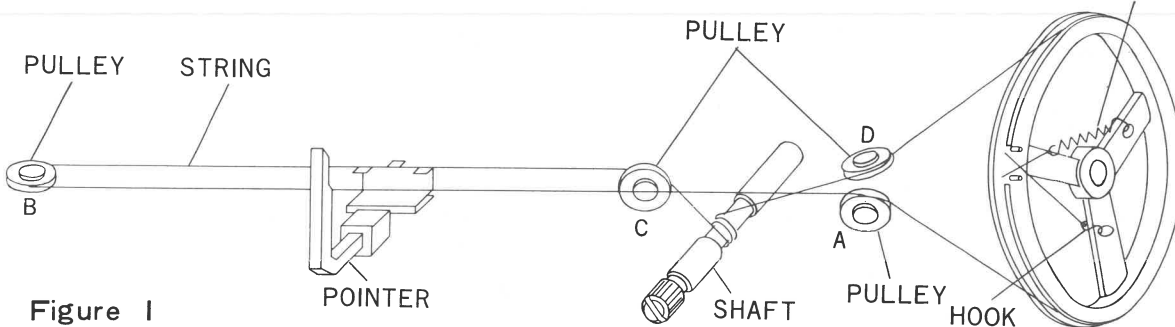


Figure 1

(2) FM IF ALIGNMENT

Set SELECTOR switch to FM. Turn VOLUME control to minimum.

1. Connect oscilloscope input to IF output (Test Point 2) using detector circuit as shown in Figure 2.

Set oscilloscope sensitivity to about 1.0 V full scale.

Following procedure should be followed.

- 1) Connect 10.7 MHz sweep generator output to Test Point 1. (TP 1)
  - 2) Adjust each core of transformers (T 2, T 3) alternately to obtain symmetrical U curve and maximum gain on scope. See Figure 2.
  - 3) Connect oscilloscope input to Test Point 5 (TP 5) without using detector circuit as shown in Figure 2.
  - 4) Adjust the core of IF transformer (T 13) to obtain symmetrical U curve and maximum gain on scope.
2. Connect oscilloscope input to output of FM detector (Test point 3). Set oscilloscope sensitivity to about 1.0 V full scale. Following procedure should be followed.
    - 1) Connect 10.7 MHz sweep generator output to Test Point 1. (TP 1) See Figure 4.
    - 2) Adjust both cores of discriminator trans-

former T 4 to obtain symmetrical Z curve and maximum gain on scope. See Figure 4.

- NOTE :
1. Use a non-metallic screwdriver for adjustment.
  2. Tuning dial should be in clockwise position during alignment.
  3. Keep 10.7 MHz sweep generator output as low as possible during all adjustments.
  4. Adjust to obtain symmetrical U curve and straight and sharp Z curve. (See Figure 2 and 4)  
Adjustment of center frequency 10.7 MHz may be slightly decentered to obtain correct U and Z curves.

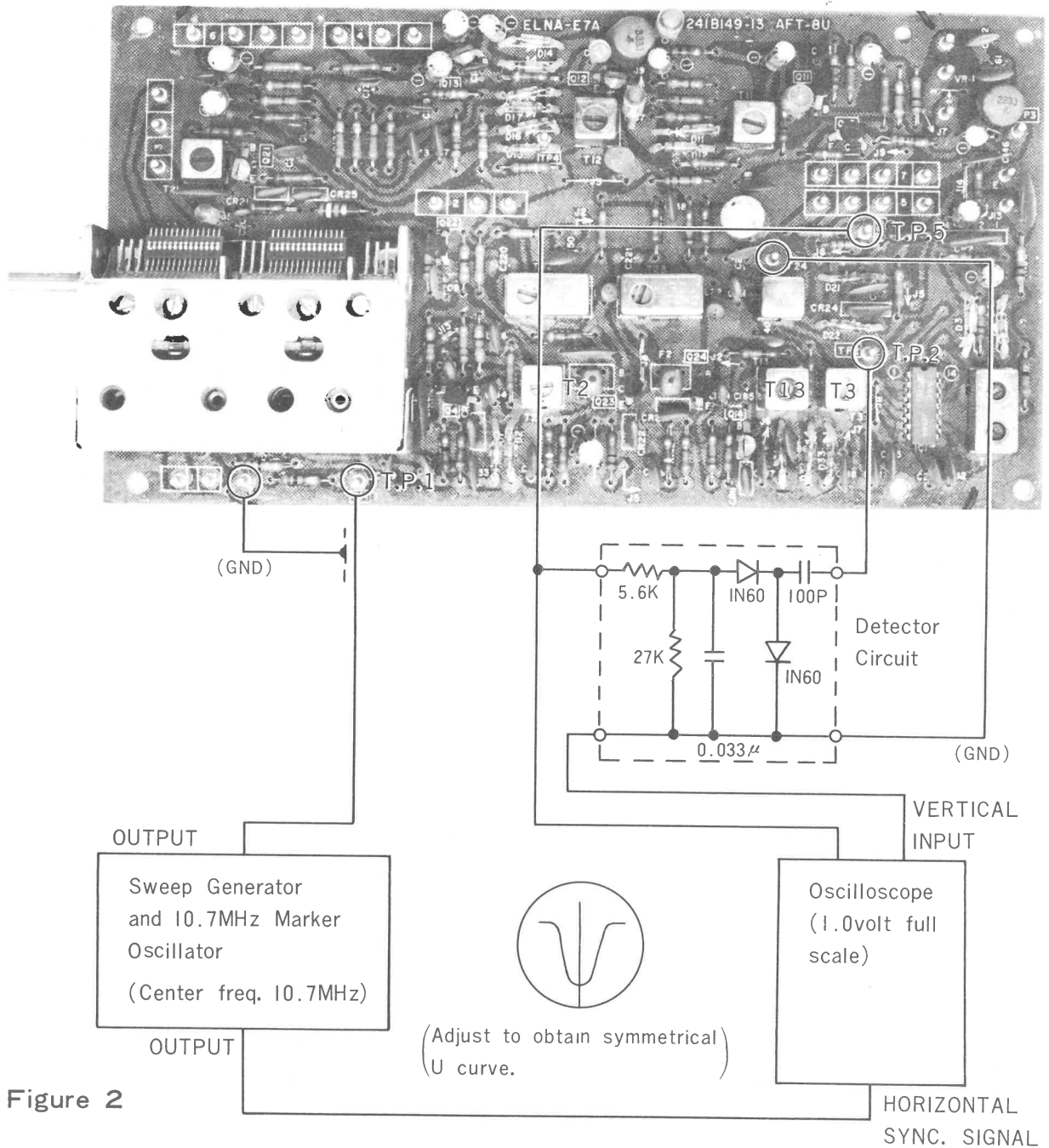


Figure 2

**(3) FM FRONT END ALIGNMENT**

Set SELECTOR switch to FM. Set VOLUME control to proper position. Connect FM standard signal generator (400 Hz, ±22.5 kHz deviation) to antenna terminal shown in Figure 3. Connect AC VTVM (10 volts range) and oscilloscope

(Set 15 volts full scale) through 8 ohms 20 watts dummy load shown in Figure 3.

- NOTE :** 1. FM IF alignment must be performed before starting this procedure.  
2. Keep FM SSG output as low as possible during all adjustments.

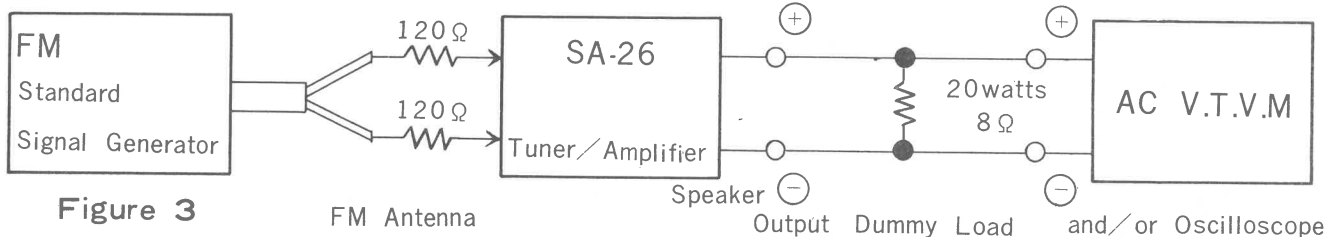


Figure 3

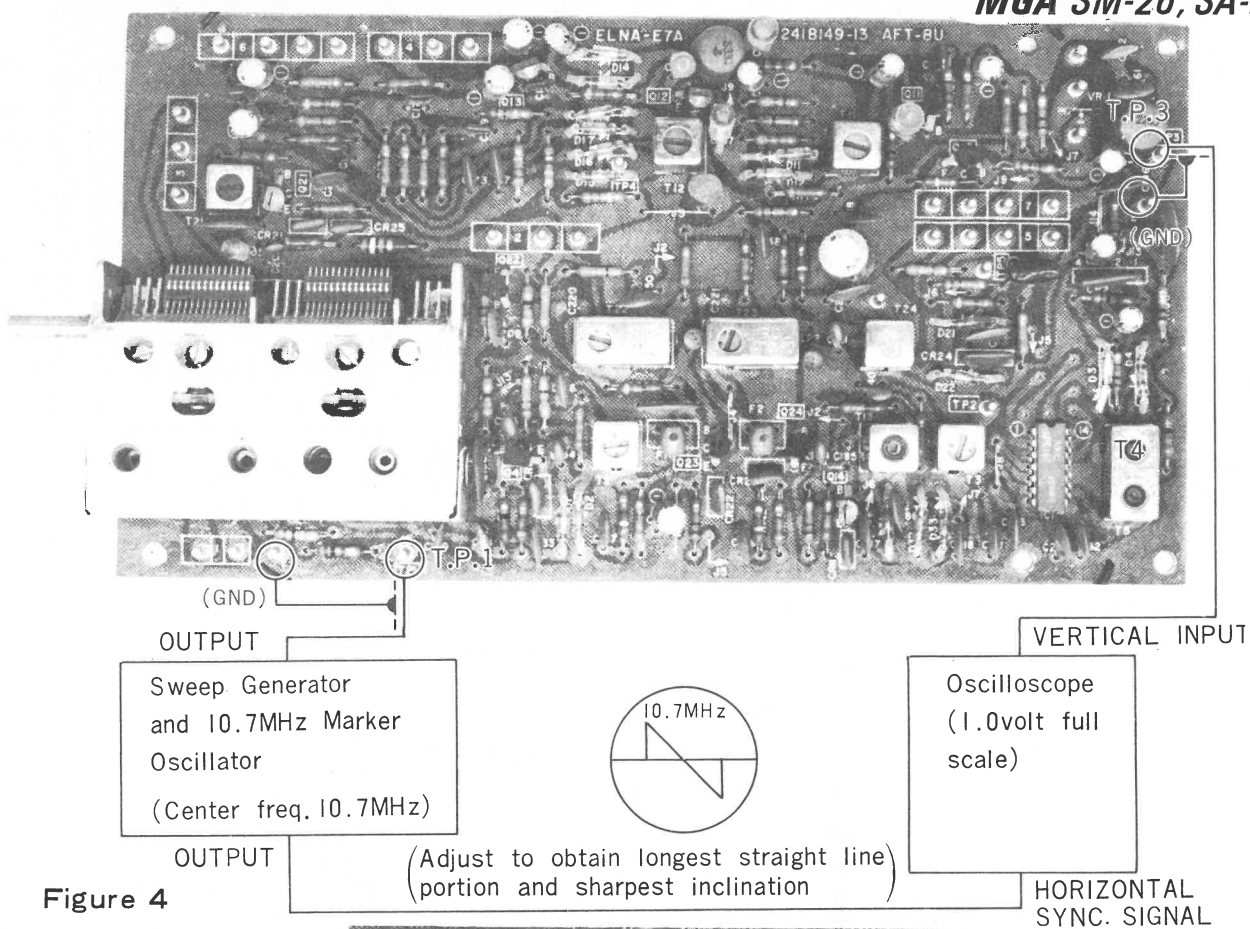


Figure 4

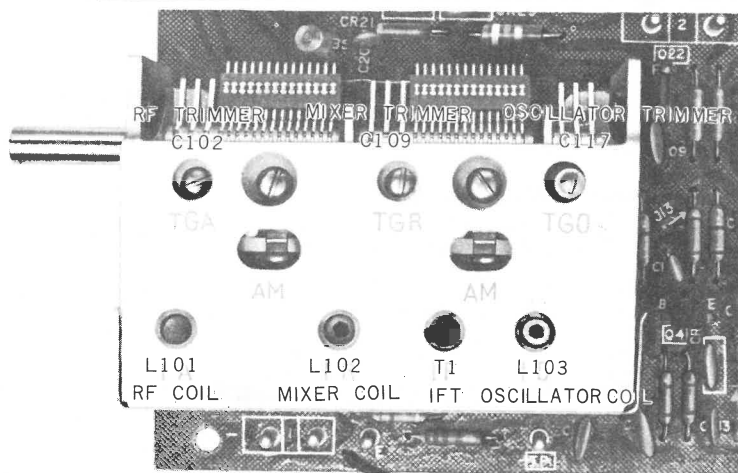


Figure 5

ALIGNMENT PROCEDURE (See Figure 5)

STEP	FM SSG	DIAL POINTER	ADJUST	REMARKS	
1	Adjust oscillator coil for accurate dial calibration.	88 MHz	88 MHz	L103	Adjust for maximum reading on AC VTVM
2	Adjust oscillator trimmer for accurate dial calibration.	108 MHz	108 MHz	C117	"
Repeat steps 1 and 2 several times until accurate dial calibration is obtained.					
3	Adjust mixer coil and R.F. Coil at low frequency (sensitivity adjustment)	88 MHz	88 MHz	L101 L102	Adjust for maximum reading on AC VTVM
4	Adjust mixer trimmer and R.F. trimmer at high frequency (sensitivity adjustment)	108 MHz	108 MHz	C102 C109	"
Repeat steps 3 and 4 several times until maximum gain is obtained.					

Table 2

**(4) FM MULTIPLEX ALIGNMENT.**

Set SELECTOR switch to FM STEREO. Turn VOLUME control to minimum. Connect an FM SSG through a MPX generator to FM antenna terminals. Connect an AC VTVM and an oscilloscope to a Test Point (TP 4) of a P.C. Board. Connect ground lead of an AC VTVM and an oscilloscope to nearest P.C. Board ground. A step 1 of Table 3 will be taken. Next, connect an AC VTVM and an oscilloscope to the output terminals of a receiver. (See Figure 7) A step 2 of table 3 will be taken.

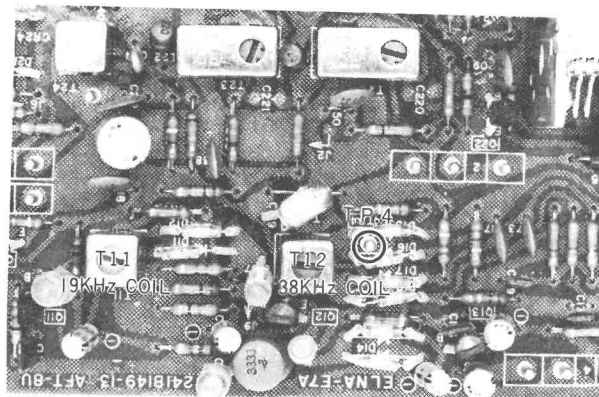
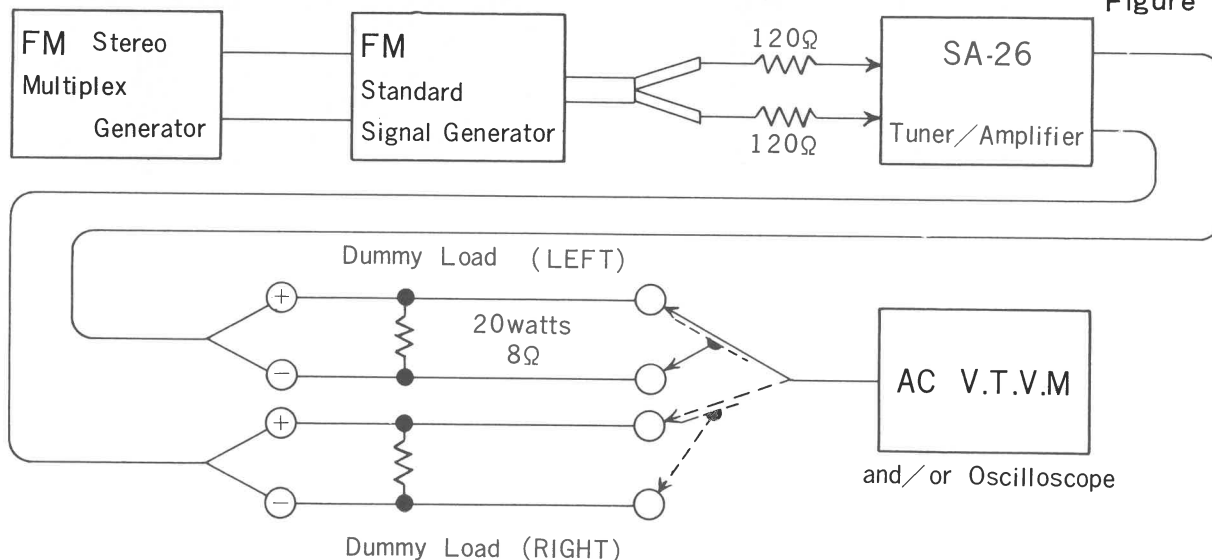


Figure 6



**NOTE :** Do not connect a lead wire of an AC VTVM to each minus terminal of dummy load at the same time in checking output of Left and Right speakers.

Figure 7

**ALIGNMENT PROCEDURE (See Figure 6 and Figure 7)**

STEP	FM SSG	MULTIPLEX GENERATOR	REMARKS
1	Adjust 19 kHz coil and 38 kHz coil 98 MHz 60 dB	19 kHz pilot carrier $\pm 7.5$ kHz deviation (10% pilot, no audio)	T 11 Adjust for maximum reading on T 12 AC VTVM
Repeat adjustment of T11 and T12 several times until maximum gain is obtained			
2	Adjust separation 98 MHz 60 dB	Composite signal $\pm 22.5$ kHz (10% pilot, 20% 1 kHz audio signal) Modulate right channel only	T 12 Record reading of right channel on AC VTVM. Set MPX generator to modulate left channel only
Adjust for minimum reading on AC VTVM, at least 30 dB below recorded reading at step 2. Check left channel similarly.			

Table 3

**1-10 AM ALIGNMENT PROCEDURE**

**(1) AM IF ALIGNMENT**

Set SELECTOR switch to AM, and turn VOLUME control to minimum. Connect as shown in Figure 8 with the capacity of the variable capacitor maintained at minimum.

Achieve the adjustment using following procedure.

- (1) Disconnect the two connector (NBR 3,5)
- (2) Connect 455 kHz sweep generator output to AM input (NBR 3) and oscilloscope input to AM output (NBR 5) as shown in Figure 8.
- (3) Adjust each core of the IF transformers T 22 and T 23 alternately to obtain symmetrical U curve and maximum gain.

**NOTE :** 1. Use a non-metallic screwdriver for adjustments.

2. Keep 455 kHz sweep generator output as low as possible during all adjustments.

**(2) AM RF ALIGNMENT**

Set SELECTOR switch to AM. Set VOLUME control to proper position. Connect AM standard signal generator (400 Hz, 30% modulation) and other equipment as shown in Figure 9.

**NOTE :** 1. AM IF alignment must be performed before starting this procedure.

2. Keep AM SSG output as low as possible during all adjustment

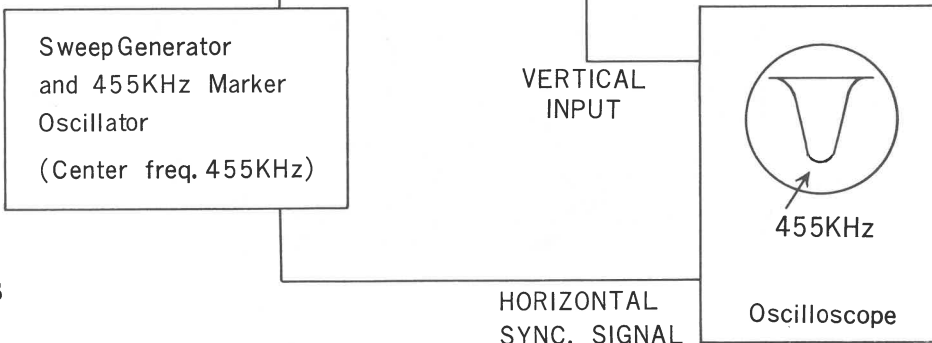
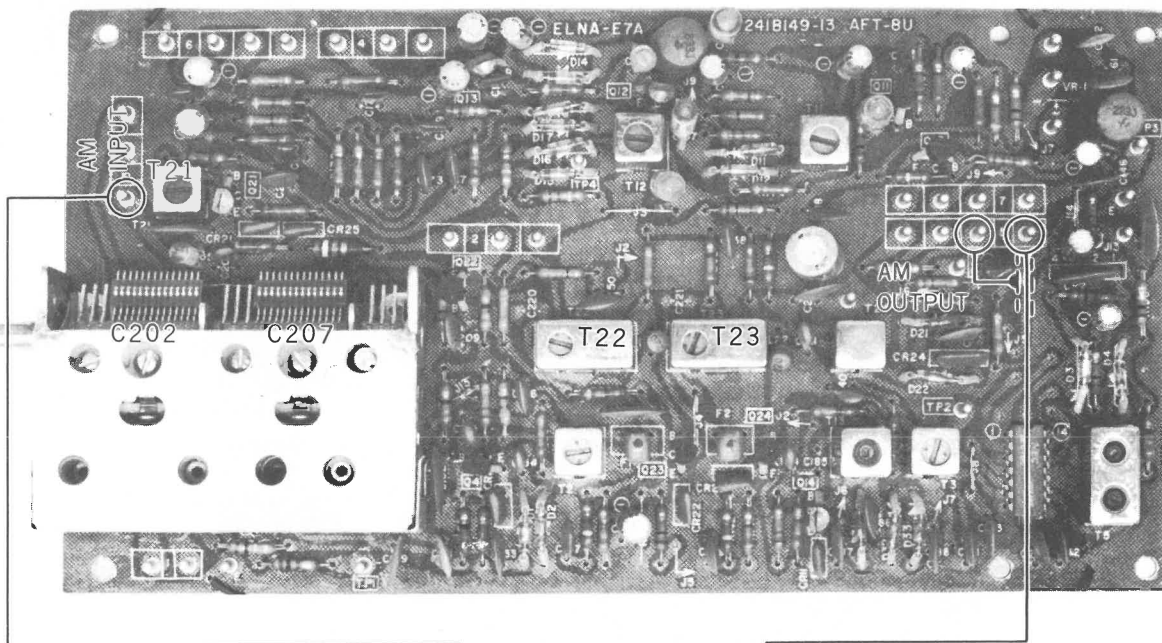


Figure 8

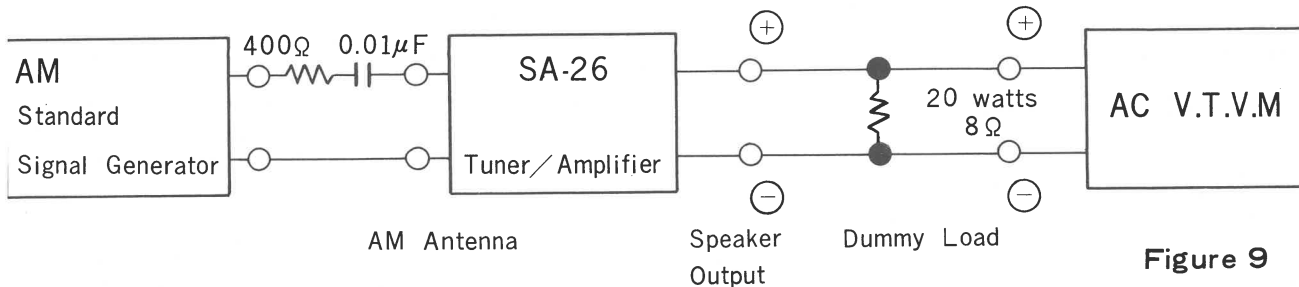


Figure 9

**ALIGNMENT PROCEDURE (See Figure 8 and Figure 9)**

STEP	AM SSG	DIAL POINTER	ADJUST	REMARKS	
1	Adjust oscillator coil for accurate dial calibration	600 kHz	600 kHz	T 21	Adjust for maximum reading on AC VTVM and maximum waveform amplitude and symmetry
2	Adjust oscillator trimmer for accurate dial calibration	1400 kHz	1400 kHz	C 207	"
Repeat steps 1 and 2 several times until accurate dial calibration is obtained					
3	Adjust antenna coil (bar antenna) (sensitivity adjustment)	600 kHz	600 kHz	L 201	Adjust for maximum reading on AC VTVM
4	Adjust antenna trimmer (sensitivity adjustment)	1400 kHz	1400 kHz	C 202	"
Repeat steps 3 and 4 several times until maximum gain is obtained					

Table 4

## 1-11 MAIN AMPLIFIER ALIGNMENT

- (1) Disconnect AC power cord and turn VOLUME control to minimum.
- (2) Put off both MAIN and REMOTE speakers switch.
- (3) Disconnect two connectors (NBR 44 on the MA-6 P.C. Board and NBR 54 on the PS-4 P.C. Board)
- (4) Connect two DC ammeters (100 mA or 300 mA full scale) as shown in Figure 10.
- (5) Connect one of the NBR 54 GT pins to the chassis as shown in Figure 10.
- (6) Connect AC power cord and keep the switch on for about 20 minutes.
- (7) Turn the shaft of semi-fixed resistor R711 and R811 respectively and adjust the zero-signal current at proper value shown in Figure 10. (at 20°C, adjust it at  $25 \pm 5$  mA.)



Figure 10

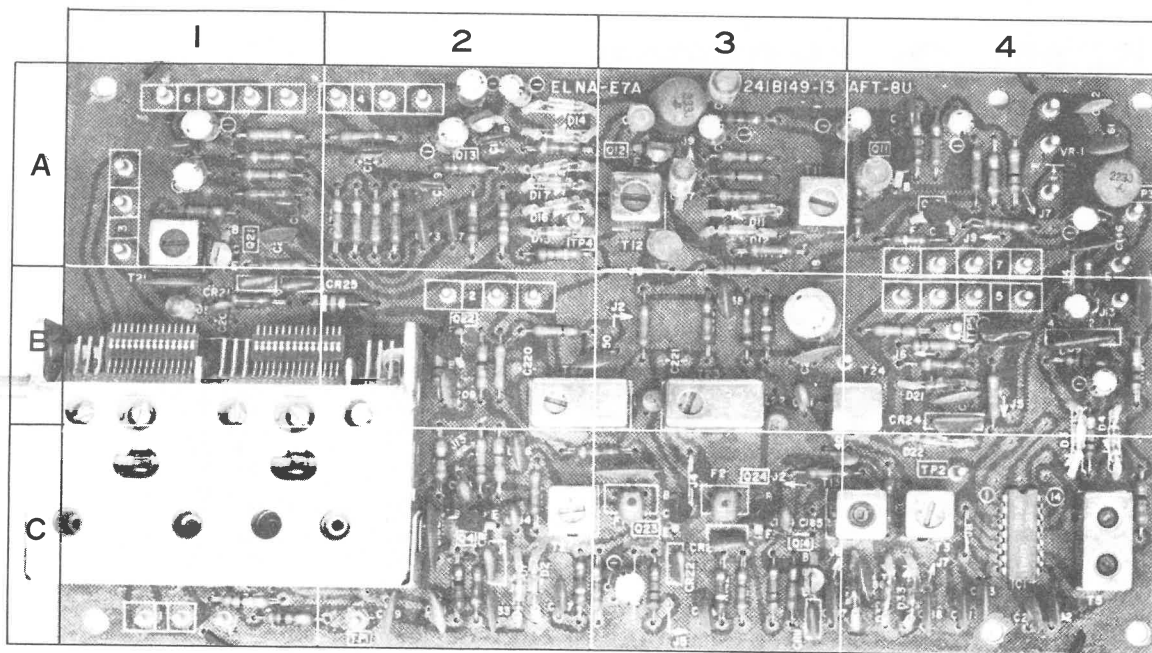


Figure 11

Symbol	Address	Symbol	Address	Symbol	Address	Symbol	Address	Symbol	Address
C131	C-2	C183	A-1	R152	C-1	R208	B-1,2	D31	C-4
C132	C-2	C184	C-3	R153	C-2	R209	B-3	D32	C-4
C133	C-2	C186	C-4	R154	B-2	R210	B-3	D33	C-4
C134	C-2	C187	C-3	R155	A,B-4	R211	C-3		
C135	C-2	C188	C-4	R156	B-4	R212	B-4	F1	C-3
C136	C-2	C189	A-4	R161	A-4	R214	B-4	F2	C-3
C137	C-2	C203	A-1	R162	A-4	R215	B-4		
C138	B-3	C204	B-1	R163	A-4			IC1	C-4
C139	C-3	C205	B-1	R164	A-4	CR1	C-2		
C140	C-3,4	C208	B-1	R165	A-4	CR2	B-4	L11	A-4
C141	C-4	C209	B-2	R166	A-4	CR11	C-3	L12	A-3
C142	C-4	C211	B-3	R167	A-3	CR21	B-1	L21	B-3
C143	C-4	C212	B-3	R168	A-3	CR22	C-3	L22	B-3
C144	B-4	C213	B-4	R169	A-3	CR23	C-3	L901	A-1
C145	B-4	C214	C-3	R170	A-3	CR24	B-4	T2	C-2
C146	A-4	C215	C-3	R171	A-3	CR25	B-1	T3	C-4
C149	C-2	C216	B-4	R172	A-2			T5	C-4
C150	B-2,3	C217	B-3	R173	A-2	Q4	C-2	T11	A-3
C151	A,B-4	C218	A-3	R174	A-2	Q11	A-4	T12	A-3
C152	C-2(rear)	C219	C-4	R175	A-2	Q12	A-3	T13	C-3,4
C161	A-4	C230	A,B-4(rear)	R176	A-2	Q13	A-2	T21	A-1
C162	A-4	C231	A-4(rear)	R177	A-2	Q14	C-3	T22	B-2,3
C163	A-4	R131	C-1	R179	A-2	Q15	A-4	T23	B-3
C164	A-4	R132	C-2	R180	A-2	Q21	A-1	T24	B-3,4
C165	A-4	R133	C-2	R181	A-2	Q22	B-3		
C166	A-3,4	R134	C-2	R182	A-2	Q23	C-3		
C167	A-3	R135	C-2	R183	A-1	Q24	C-3		
C168	A-3	R136	C-2	R184	A-1				
C169	A-3	R137	B-2	R185	A-1	D-1	C-2		
C170	A-3	R138	C-2	R186	A-1	D-2	C-2		
C171	A-2	R139	C-3	R187	C-3	D-3	B,C-4		
C172	A-2	R140	B-3	R188	C-3	D-4	B,C-4		
C173	A-2	R141	A-3	R189	B-4	D 11	A-3		
C174	A-2	R142	C-3	R190	A-4	D-12	A-3		
C175	A-3	R143	B-3	R191	A-4	D-13	A-2		
C176	A-2	R144	C-3	R192	A-4(rear)	D-14	A-2		
C177	A-2	R145	C-4	R201	A-1	D-15	A-2		
C178	A-2	R146	C-3,4	R203	B-1	D-16	A-2		
C179	A-2	R147	C-4(rear)	R204	A-1	D-17	A-2		
C180	A-1	R148	B-4	R205	B-2	D-18	A-2		
C181	A-1	R149	B,C-4	R206	C-2,3	D21	B-4		
C182	A-1	R150	C-4	R207	B-2	D22	B,C-4		

## MA-6 Parts Location

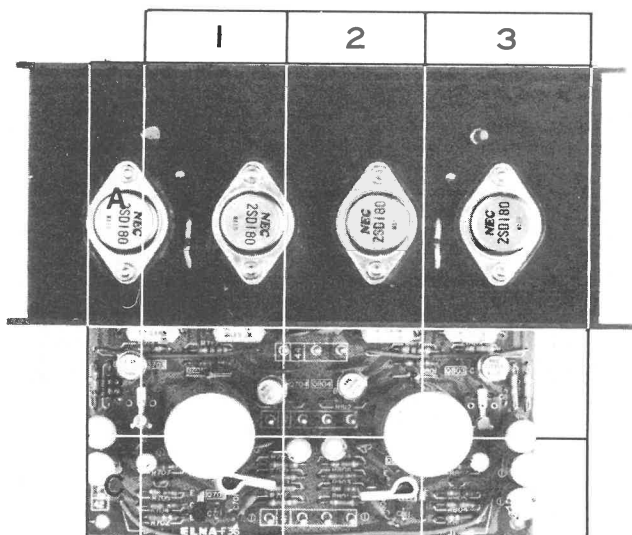


Figure 12

## PA-7 Parts Location

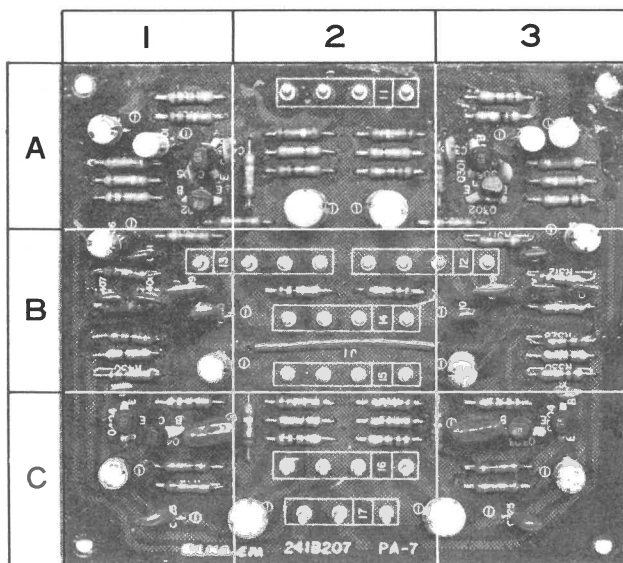


Figure 13

Symbol	Address	Symbol	Address
R701	C-2	C705	B,C-1
R702	C-1	C706	C-2
R703	C-2	C707	C-2
R704	C-1	C708	B-2
R705	C-1	C709	B,C-1,2
R706	C-2		
R707	C-1	C712	B-2
R708	B-1		
R709	C-2	C801	C-2,3
R710	B-1	C802	C-3
R711	B-1	C803	C-3
R712	B-2	C804	C-3
R713	B-1	C805	B,C-3
R714	B-1	C806	C-2
R715	B-1,2	C807	C-2
R716	B-1	C808	B-2
R717	B-1	C809	B,C-3
R718	C-1		
		C812	B-2
R801	C-2		
R802	C-3	C820	C-3
R803	C-2		
R804	C-3	D701	B-1
R805	C-3	D702	A-1
R806	C-2		
R807	C-3	Q701	C-1
R808	B-3	Q702	C-1,2
R809	C-2	Q703	B-1
R810	B-3	Q704	B-2
R811	B-3	Q705	A-1
R812	B-2	Q706	A-1,2
R813	B-3		
R814	B-3	D801	B-3
R815	B-2,3	D802	A-3
R816	B-3		
R817	B-3	Q801	C-3
R818	C-3	Q802	C-3
		Q803	B-3
C701	C-1,2	Q804	B-2
C702	C-1	Q805	A-3
C703	C-1	Q806	A-2,3
C704	C-1		

Symbol	Address	Symbol	Address	Symbol	Address	Symbol	Address	Symbol	Address
R301	A-3	R326	C-3	R422	C-2	C321	C-3	C409	B-1
R302	A-3	R327	C-3	R423	C-2	C322	B-3	C410	B-1
R303	A-2	R328	B-3	R424	C-2	C323	B-3	C411	B-1
R304	A-2	R329	B-3	R425	C-2	C324	C-3		
R305	A-2	R330	B-3	R426	C-1	C325	C-3	C421	C-1
R305	A-2	R401	A-1	R427	C-1	C326	C-2,3	C422	B-1
R306	A-2,3	R402	A-1	R428	B-1	C327	B-3	C423	B-1
R307	A-2,3	R403	A-2	R429	B-1			C424	C-1
R308	A-3	R404	A-2	R430	B-1	Q301	A-3	C425	C-1
R309	A-3	R405	A-2			Q302	A-3	C426	C-1,2
R310	A-3	R406	A-2	C301	A-3	Q303	C-3	C427	B-1
R311	B-3	R407	A-1,2	C302	A-3	Q304	C-3		
R312	B-3	R408	A-1	C303	A-3			Q401	A-1
R313	B-3	R409	A-1	C304	A-2	C401	A-1	Q402	A-1
R314	B-2	R410	A-1	C305	A-3	C402	A-1	Q403	C-1
		R411	B-1	C306	A,B-3	C403	A-1	Q404	C-1
R321	C-3	R412	B-1	C307	B-3	C404	A-2		
R322	C-2	R413	B-1	C308	B-3	C405	A-1		
R323	C-2	R414	B-2	C309	B-3'	C406	B-1		
R324	C-2			C310	B-3	C407	B-1		
R325	C-2,3	R421	C-1	C311	B-3	C408	B-1		

# CTL-8 Parts Location

MGA SM-26, SA-26

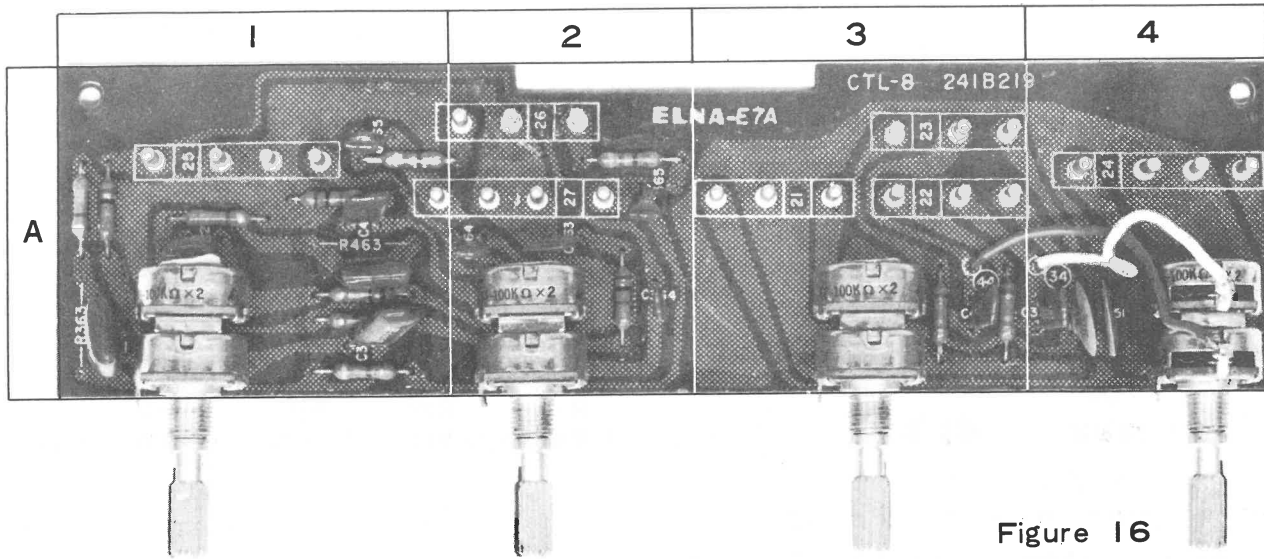


Figure 16

Symbol	Address	Symbol	Address	Symbol	Address	Symbol	Address	Symbol	Address
R351	A-3	R366	A-2	C362	A-1	R461	A-1	C451	A-4
R352	A-3	R367	A-2	C363	A-2	R462	A-1	C452	A-3
R353	A-4	R368	A-2	C364	A-2	R464	A-1	C461	A-1
R361	A-1			C365	A-2	R465	A-1	C462	A-1
R362	A-1	C351	A-4	R451	A-3	R466	A-2	C463	A-1
R364	A-1	C352	A-4	R452	A-3	R467	A-1	C464	A-2
R365	A-1	C361	A-1	R453	A-4	R468	A-1	C465	A-1

# PS-4 Parts Location

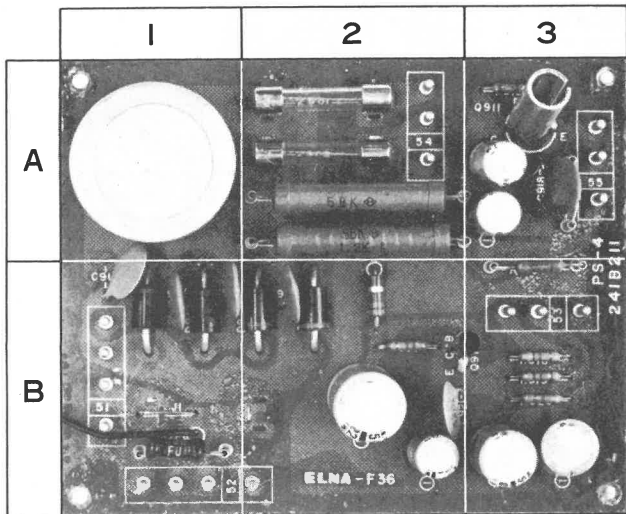


Figure 14

Symbol	Address	Symbol	Address
R911	B-1	C919	B-2
R912	A-2	C920	B-2
R913	A-3	C921	B-2
R914	A-2	C922	B-3
R915	A,B-3	C923	B-3
R916	B-2		
R917	B-2	D911	B-1
R918	B-3	D912	B-1
R919	B-3	D913	B-2
R920	B-3	D914	B-2
		D915	A-3
C911	B-1		
C912	B-1	Q911	A-3
C913	B-1	Q912	B-2,3
C914	B-2		
C915	A-1	Z911	A-2
C916	A-3	Z912	A-2
C917	A-3		
C918	A-3		

# CTL-9 Parts Location

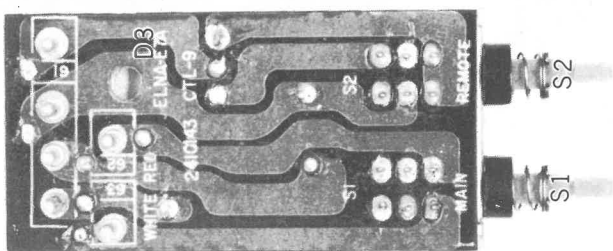


Figure 17

# CTL-7 Parts Location

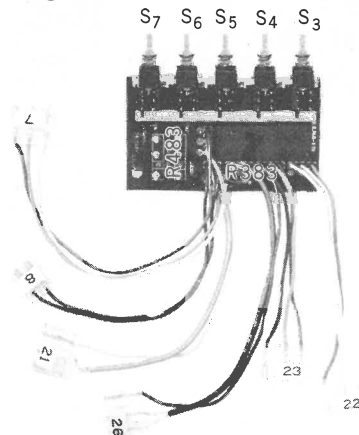
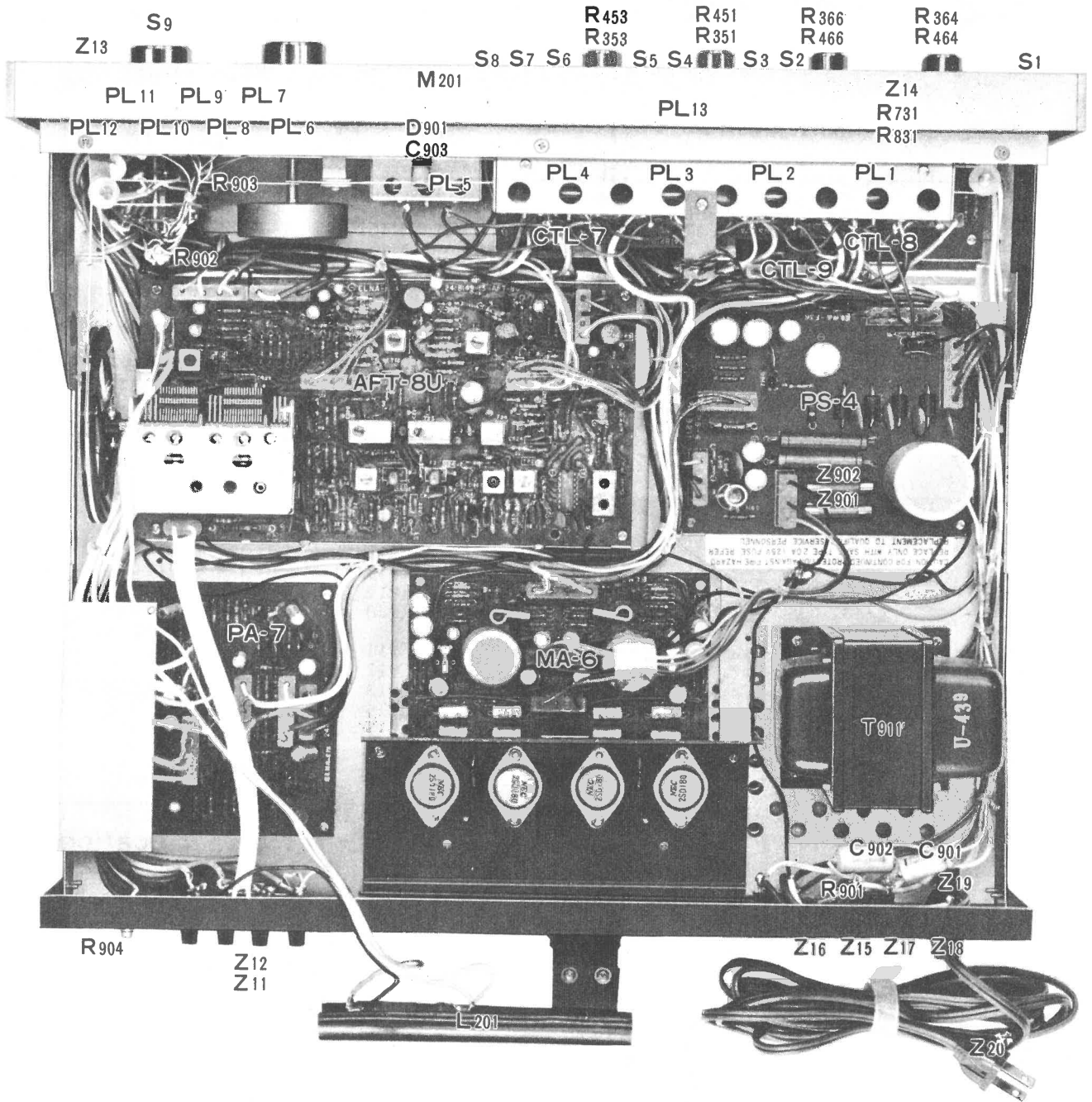
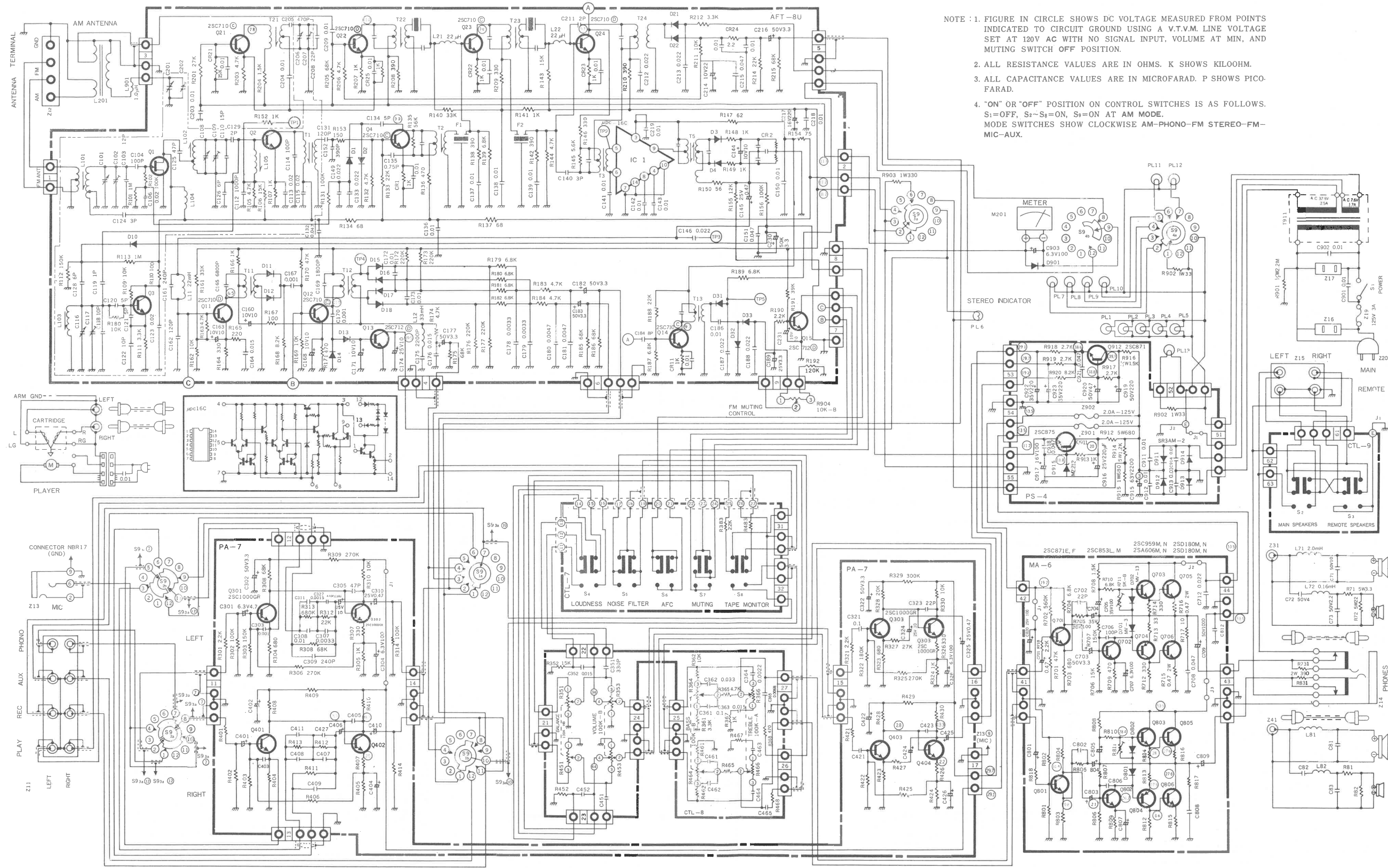


Figure 15





NOTE : 1. FIGURE IN CIRCLE SHOWS DC VOLTAGE MEASURED FROM POINTS INDICATED TO CIRCUIT GROUND USING A V.T.V.M. LINE VOLTAGE SET AT 120V AC WITH NO SIGNAL INPUT, VOLUME AT MIN, AND MUTING SWITCH OFF POSITION.

2. ALL RESISTANCE VALUES ARE IN OHMS. K SHOWS KILOOHM.

3. ALL CAPACITANCE VALUES ARE IN MICROFARAD. P SHOWS PICO-FARAD.

4. "ON" OR "OFF" POSITION ON CONTROL SWITCHES IS AS FOLLOWS. S<sub>1</sub>=OFF, S<sub>2</sub>-S<sub>8</sub>=ON, S<sub>9</sub>=ON AT AM MODE. MODE SWITCHES SHOW CLOCKWISE AM-PHONO-FM STEREO-FM-MIC-AUX.

MGA SM-26, SA-26

Symbol No.	Part No.	Description	
<b>TRANSISTORS</b>			
Q4	260D08013	Silicon NPN	2SC710
Q11	"	"	"
Q12	"	"	"
Q13	260D09314	"	2SC712
Q14	260D08013	"	2SC710
Q15	260D09314	"	2SC712
Q21	260D08013	"	2SC710
Q22	"	"	"
Q23	"	"	"
Q24	"	"	"
Q301	260P04112	"	2SC1000
Q302	"	"	"
Q303	"	"	"
Q304	"	"	"
Q401	"	"	"
Q402	"	"	"
Q403	"	"	"
Q404	"	"	"
Q701	260D07412	"	2SC871
Q702	260P04312	"	2SC853
Q703	260P04412	"	2SC959
Q704	260P04512	Silicon PNP	2SA606
Q705	260D04612	Silicon NPN	2SD180
Q706	"	"	"
Q801	260D07412	"	2SC871
Q802	260P04312	"	2SC853
Q803	260P04412	"	2SC959
Q804	260P04512	Silicon PNP	2SA606
Q805	260D04612	Silicon NPN	2SD180
Q806	"	"	"
Q911	260P04011	"	2SC875
Q912	260D07412	"	2SC871
<b>DIODES</b>			
D1	264D00612	Germanium	1N60
D2	"	"	"
D3	"	"	"
D4	"	"	"
D11	"	"	"
D12	"	"	"
D13	"	"	"
D14	"	"	"
D15	"	"	"
D16	"	"	"
D17	"	"	"
D18	"	"	"
D21	"	"	"
D22	"	"	"
D31	"	"	"
D32	"	"	"
D33	"	"	"
D901	"	"	"
D911	264C00419	Silicon	SR3RAM-2
D912	"	"	"

PRINTED CIRCUITS		
923T31003	AFT-8U	
923T53201	PA-7	
923T53401	CTL-7	
923T53701	CTL-9	
923T53501	CTL-8	
923T53601	MA-6	
923T80401	PS-4	

\* Part available in local areas.

Symbol No.	Part No.	Description	
D913	264C00419	Silicon	SR3RAM-2
D914	"	"	"
D915	264C00314	"	MZ212
<b>VARISTORS</b>			
D701	265P00301	Silicon	MV-3
D702	265P00302	"	MV-13
D801	265P00301	"	MV-3
D802	265P00302	"	MV-13
<b>IC</b>			
IC 1	262P00201		IC-MPC16C
<b>TRANSFORMERS</b>			
T2	364C00111	IF	FM
T3	"	"	"
T5	364C00912	"	"
T11	368C00113	MPX	19kHz
T12	368C00114	"	38kHz
T13	364C00711	MUTING	"
T21	373C00111	OSC	AM
T22	374C00311	IF	"
T23	"	"	"
T24	364C00811	"	"
T911	350P03301	Power	"
<b>COILS</b>			
L11	351C00811		22mH ±10%
L12	361S01187		33mH ±5%
L21	361S01121		22μH ±5%
L22	"		"
L201	370C00312	Coil ANT	"
L901	361C00111		1.0μH
<b>MULTIPLES</b>			
CR1	149B00111	CR-Multiple	
CR2	149B00211	"	
CR11	149B00111	"	
CR21	149B00114	"	
CR22	149B00111	"	
CR23	"	"	
CR24	149B00411	"	
CR25	149B00111	"	
<b>CERAMIC FILTERS</b>			
F1	365P00101		
F2	"		
<b>VARIABLE RESISTORS</b>			
R351	123S10541	100KΩ Taper HB Double	BALANCE
R451	"	"	"

Symbol No.	Part No.	Description	
R353	124S12041	100KΩ Taper B Tapped	VOLUME
R453	"	"	"
R364	123S10141	100KΩ Taper B Double	BASS
R464	"	"	"
R366	123S10041	100KΩ Taper A Double	TREBLE
R466	"	"	"
R711	127D00713	5 KΩ Taper B Semifixed	"
R811	"	"	"
R904	120S02202	10KΩ Taper B	FM MUTING

MISCELLANEOUS

S1	432P00401	Sw-Push	POWER
S2, 3	432P00511	"	SP CHANGE
S4,5,6,7,8	"	"	CONTROL
S9	430P02201	SW-Rotary	SELECTOR
Z11	451P00511	Jack	8P US PIN JACK
Z12	440D08511	Terminal Board	ANTENNA TERMINAL
Z13	451Y00201	Jack	MIC JACK
Z14	451C01802	"	PHONE'S
Z15	451P00901	"	4P. US. PIN JACK
Z16,17	449D01311	Socket	AC RECEPTACLE
Z18	457D01411	Fuse Holder	"
Z19	283D01016	Fuse	125 V 3 A
Z20	242C03111	Power Cord	"
PL1	253P00301	Lamp	8 V 0.3 A
PL2	"	"	"
PL3	"	"	"
PL4	"	"	"
PL5	"	"	"
PL6	253C00115	"	6V 30mA
PL7	253C00211	"	5V 115mA
PL8	"	"	"
PL9	"	"	"
PL10	"	"	"
PL11	"	"	"
PL13	253D01813	"	"
PL13	253D01813	"	5V 115 mA
	457P00101	Lamp Holder	"
	929Y00701	PF Pack	"
	224D00611	Housing Molded 2P	"
	224D00711	" 3P	"
	224D00811	" 4P	"
	224D01011	" 1P	"
	442P00211	Terminal	"
	281P00101	Antenna	FM
	242C02912	Lead	SPEAKER LEAD
	800B03113	Master Carton	"

CAPACITORS

C131	*	C131	*
C132	*	C132	*
C133	*	C133	*
C134	*	C134	*
C135	*	C135	*
C136	*	C136	*
C137	*	C137	*
C138	*	C138	*
C139	*	C139	*
C140	*	C140	*
C141	*	C141	*
C142	*	C142	*
C143	*	C143	*
C144	182S02111	C144	182S02111
C145	183S00117	C145	183S00117
C146	*	C146	*
C149	*	C149	*
C150	*	C150	*
C151	*	C151	*
C152	*	C152	*
C161	*	C161	*
C162	*	C162	*
C163	182S02111	C163	182S02111
C164	172S00228	C164	172S00228
C165	173S00444	C165	173S00444
C166	182S02111	C166	182S02111
C167	173S00434	C167	173S00434
C168	182S02111	C168	182S02111
C171	173S00434	C171	173S00434
C172	*	C172	*
C173	140S00327	C173	140S00327
C174	182S02135	C174	182S02135
C175	173S00437	C175	173S00437
C176	172S00228	C176	172S00228
C177	182S02164	C177	182S02164
C178	*	C178	*
C179	*	C179	*
C180	*	C180	*
C181	*	C181	*
C182	182S02164	C182	182S02164
C183	*	C183	*
C184	*	C184	*
C186	*	C186	*
C187	*	C187	*
C188	*	C188	*
C189	182S01112	C189	182S01112
C203	*	C203	*
C204	140S00309	C204	140S00309
C205	*	C205	*
C208	*	C208	*
C209	*	C209	*
C211	*	C211	*
C212	*	C212	*
C213	*	C213	*
C214	182S02112	C214	182S02112
C215	*	C215	*
C216	*	C216	*
C217	172S00128	C217	172S00128
C218	182S02126	C218	182S02126
C219	*	C219	*
C230	182S02164	C230	182S02164
C231	182S02111	C231	182S02111
C301	184S00105	C301	184S00105
C302	182S02164	C302	182S02164
C303	*	C303	*
C304	182S02105	C304	182S02105
C305	*	C305	*
C306	182S02135	C306	182S02135
C307	*	C307	*
C308	*	C308	*
C309	*	C309	*
C310	183S00117	C310	183S00117
C311	*	C311	*
C321	*	C321	*
C322	182S02164	C322	182S02164
C323	*	C323	*
C324	182S02135	C324	182S02135
C325	183S00117	C325	183S00117
C326	182S02105	C326	182S02105
C327	*	C327	*
C351	*	C351	*
C352	*	C352	*
C361	*	C361	*
C362	*	C362	*
C363	*	C363	*
C364	*	C364	*
C365	*	C365	*
C401	184S00105	C401	184S00105
C402	182S02164	C402	182S02164
C403	*	C403	*
C404	182S02105	C404	182S02105
C405	*	C405	*
C406	182S02135	C406	182S02135
C407	*	C407	*
C408	*	C408	*
C409	*	C409	*
C410	183S00117	C410	183S00117
C411	*	C411	*
C421	*	C421	*
C422	182S02164	C422	182S02164
C423	*	C423	*
C424	182S02135	C424	182S02135
C425	183S00117	C425	183S00117
C426	182S02105	C426	182S02105
C427	*	C427	*
C451	*	C451	*
C452	*	C452	*
C461	*	C461	*
C462	*	C462	*
C463	*	C463	*
C464	*	C464	*
C465	*	C465	*
C466	*	C466	*
C467	*	C467	*
C468	*	C468	*
C469	*	C469	*
C470	182S02164	C470	182S02164
C471	*	C471	*
C472	*	C472	*
C473	*	C473	*
C474	*	C474	*
C475	*	C475	*
C476	*	C476	*
C477	182S02105	C477	182S02105
C478	*	C478	*
C479	*	C479	*
C480	*	C480	*
C481	*	C481	*
C482	*	C482	*
C483	182S02164	C483	182S02164
C484	182S02153	C484	182S02153
C485	*	C485	*
C486	*	C486	*
C487	182S02105	C487	182S02105
C488	*	C488	*
C489	*	C489	*
C490	180S01		