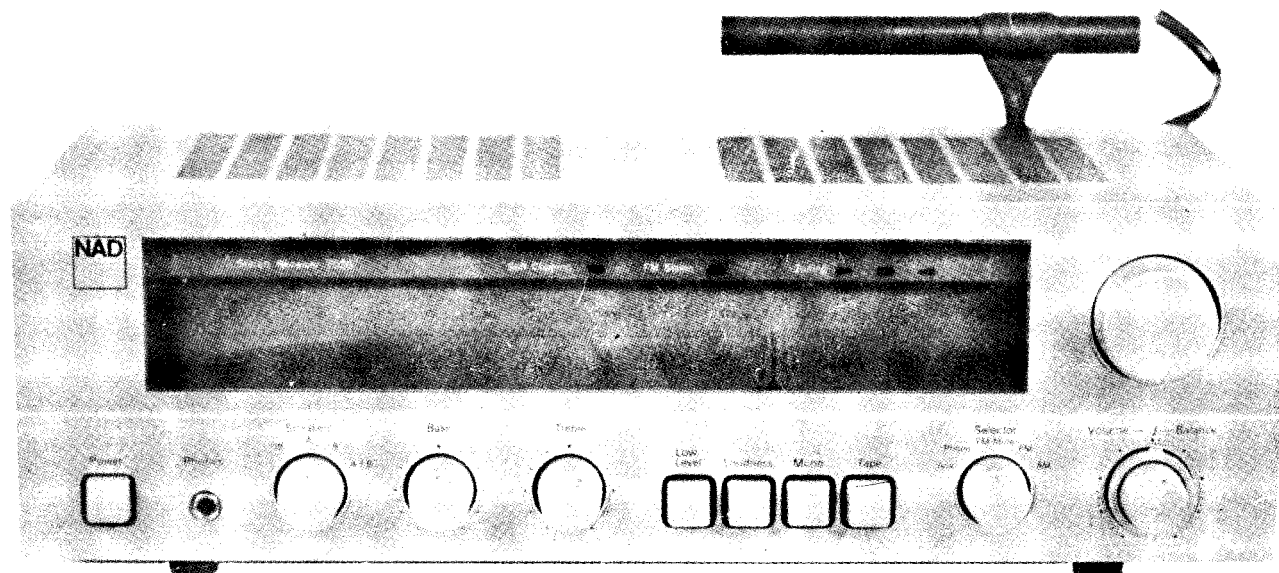


# SERVICE MANUAL

## NAD MODEL 7020

### AM/FM STEREO RECEIVER



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## SPECIFICATION

### FM Tuner Section

Input Sensitivity IHF, 30 dB quieting	1.8 $\mu$ V
IHF, 50 dB S/N Mono/Stereo	3.5 $\mu$ V/45 $\mu$ V
Signal to Noise Ratio(A weighted, at 65 dBf)Mono/Stereo	75dB/70dB
Frequency Response, 30—15K Hz	$\pm$ 0.5dB
De-emphasis Accuracy 75 $\mu$ Sec	$\pm$ 0.5dB
Channel Separation 1K Hz	42dB
30—15K Hz	32dB
Selectivity, Alternate Channel(400KHz)	62dB
Capture Ratio at 45 dBf and 65 dBf	1.5dB
AM Suppression at 45 dBf and 65 dBf	60dB
Image Rejection	50dB
I.F Rejection	75dB
SCA Rejection	70dB
Pilot Signal Suppression	55dB
THD at 100% Modulation 1.KHz Mono/Stereo	0.2%/0.3%
100 Hz Mono/Stereo	0.2%/0.3%
6KHz Mono/Stereo	0.3%/0.4%
THD Stereo 1KHz 50%/150%	0.3%/0.4%

### AM Tuner Section

Usable Sensitivity	350 $\mu$ V
Sensitivity	30dB
Image Rejection	45dB
IF Rejection	40dB

### Audio Section

\* measurements identified by an asterisk are taken in accordance with the new IHF A-202 amplifier measurement standard.

### Power Amplifier Section

* Continuous average power output at 8 ohm 20-20K Hz both channel driven	> 20W
Rated distortion.	< 0.02%
* Clipping headroom at 8 ohm	+ 1.5dB
Clipping power at 8 ohm/4 ohm/2 ohm	28W/37W/42W
Dynamic headroom at 8 ohm	+ 3dB
Dynamic power at 8 ohm /4ohm/2ohm	40W/58W/72W
* Reactive load rating	+ 1.7dB
* Transient Overload Recovery Time	< 1 $\mu$ Sec
* Slew Factor	> 50
Slew Rate	18V/ $\mu$ sec
Damping factor at .50 Hz (Ref. 8 ohm)	> 55
T.H.D 20-20K Hz From 250m V to 20W	< 0.02%
S.M.P.T.E I.M.D(60Hz+7KHz, 4:1)From 250mWto 20W	< 0.02%
I.H.F I.M.D(19K Hz+20K Hz) at 20W	< 0.02%
T.I.M (15K Hz Sine+3.18KHz Square Wave) at 20W	< 0.02%
Frequency Response, 20—20K Hz(From Lab. IN)	$\pm$ 0.5dB
Frequency Response Range $\pm$ 3dB	10—70K Hz

### Preamplifier Section

* Input Impedance Resistance/Capacitance	47K $\Omega$ /100pF
Input Sensitivity(1K Hz) * For 1 Watt out/20 Watt out	0.5mV/2.5mV
Input Overload at 20Hz/1K Hz/20K Hz	27mV/270mV/2V
T.H.D (20—20K Hz)and IMD at + 30dB input level	< 0.02%
RIAA Response Accuracy	$\pm$ 0.5dB
Signal to Noise Ratio A Weighted	
(a)With phono cartridge connected Ref 10mV/* Ref 5mV	80dB/75dB
(b)With short-circuit input Ref 10mV	84dB

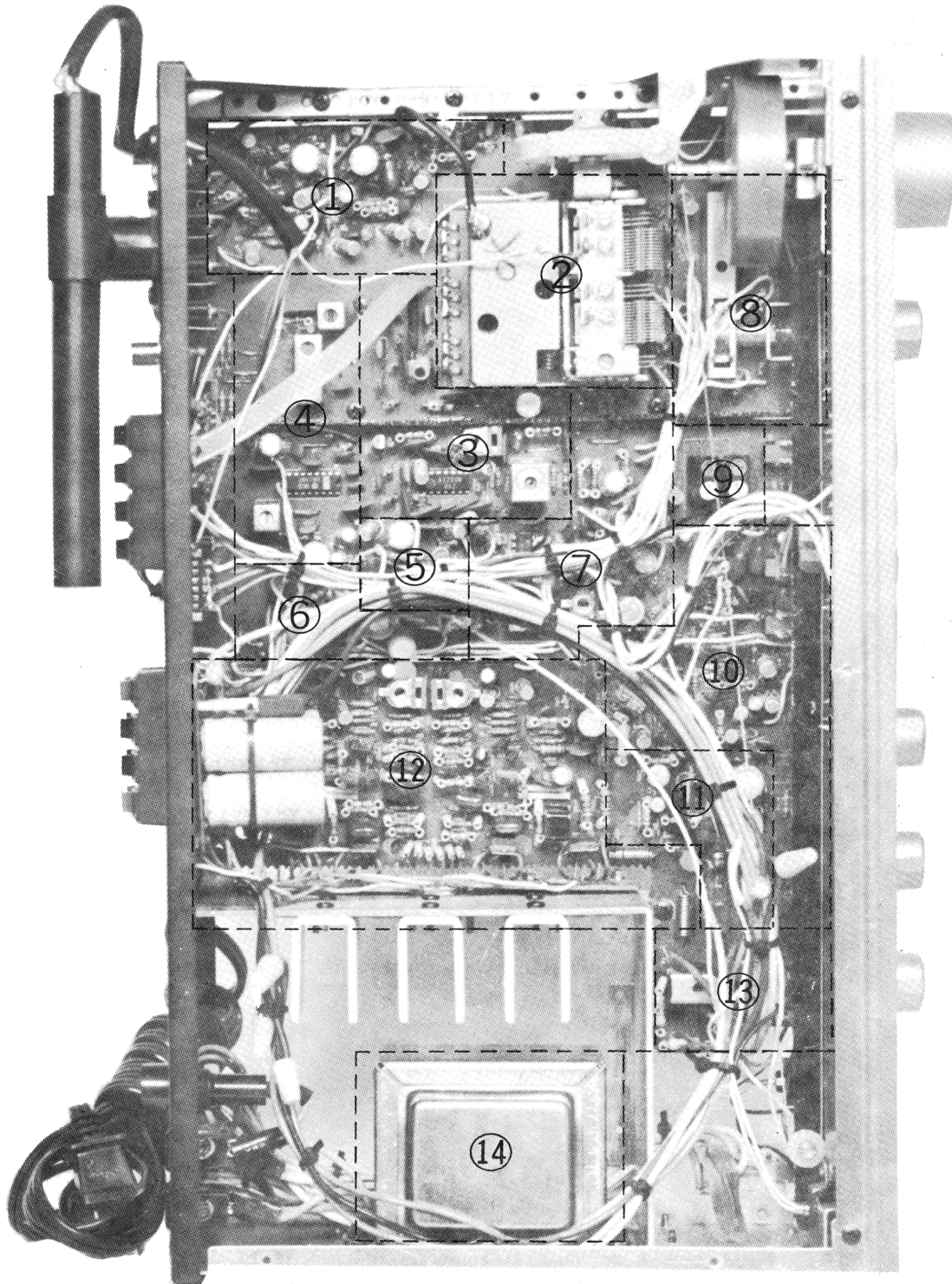
### High Level Input

* Input impedance Resistance/Capacitance	20K $\Omega$ /100pF
Input Sensitivity * For 1 Watt out/For 20 Watt out	30mV/150mV
Signal to Noise Ratio, A—Weighted * Ref 1Watt out	> 80dB
Ref 20 Watt out	> 110dB
* Maximum input signal	Infinite
Frequency Response, 20—20K Hz	$\pm$ 0.5dB

### Controls

Bass control range at 50 Hz	$\pm$ 10dB
Treble control range at 10K Hz	$\pm$ 7dB
Infrasonic filter Turn Over frequency(From Normal 1N)	15Hz
Slope (dB/octave)	12
Power Consumption	150VA
Weight	7.5K g
Dimension Height $\times$ Width $\times$ Depth(mm)	120 $\times$ 420 $\times$ 240

INSIDE VIEW OF UNIT



①Phono Amp

②FM RF Amp

③FM IF Amp

④AM System

⑤LED Driver

⑥Tuner Regulator

⑦MPX & Buffer

⑧Function Sw

⑨Low Pass Filter

⑩Tone Amp

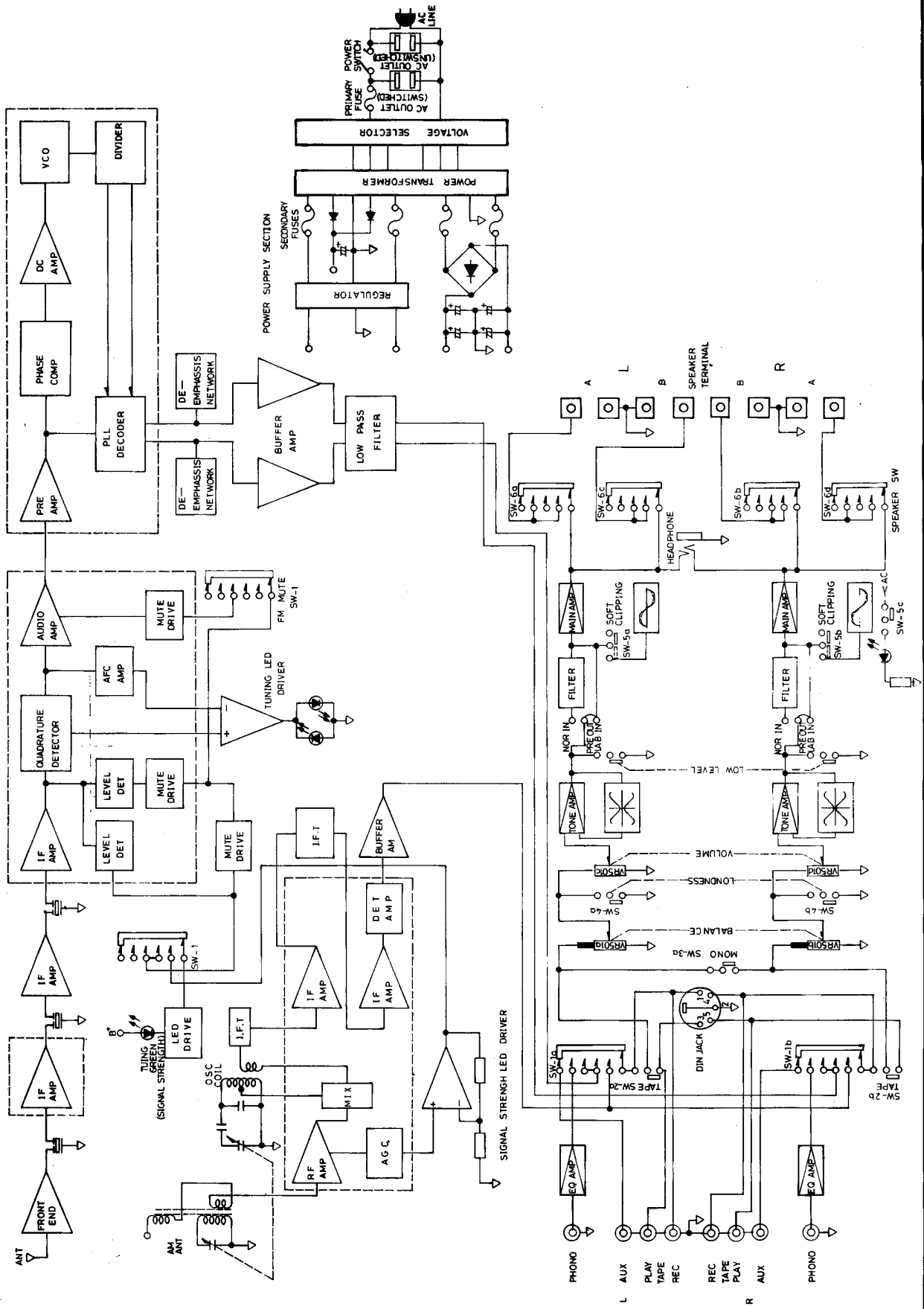
⑪Amp Regulator

⑫Power Amp

⑬Speakers Sw

⑭Power Transformer

# 7020 BLOCK DIAGRAM



## ALIGNMENT (TUNER)

1. AM ALIGNMENT: 1. Selector switch in AM position 2. AC line voltage at rated voltage 3. Monitor output at REC OUT							
Section	AM SG			Dial Setting	Indicator	Adjustment Point	Adjust for
	Connetion	Carrier Freq.	Modulation				
AM IF	Hot side of SG Output through 200 PF to AM antenna trimmer terminal (TPI)		455KHz	30% Mod 400Hz	Point of non-interference	T302 and T303	Maximum output
AM RF	1	Hot side of SG output through 200 PF to EXT AM antenna Terminal on near panel	600KHz	30% Mod. 400Hz	600KHz	VTVM or Oscilloscope	Maximum output
	2		1400KHz	30% Mod. 400Hz	1400KHz		
	3		Repeat Step 1 and Step 2				
2. FM ALIGNMENT: 1. Selector Switch in FM position 2. AC line voltage at rated voltage 3. Monitor output at REC OUT							
Section	FM SG			Dial Setting	Indicator	Adjustment	Adjust for
	Connetion	Carrier Freq.	Modulation				
AM IF	—			Point of non-interference	Tuning Meter of Set	T101 (Discr. IFI primary A)	Center Indication
FM RM	1	Connect to FM 300 ohm antenna Terminal on the rear panel through FM dummy antenna.	90MHz	100% Mod. 400Hz	90MHz	VTVM or Oscilloscope	Maximum output
	2		106MHz		106MHz		
	3		Repeat Step 1 and Step 2				
FM Mono Distortion	1	98MHz	100% Mod. 400Hz	98MHz	Distortion Meter*	T101 upper side	Minimum Distortion
	2	Repeat FM IF and FM MONO DISTORTION STEP 1					
FM Mute	1	Selector Switch in FM Muting Position Adjust*attnuator of FM SG for antenna input 15dB					
	2	98MHz	100% Mod 400Hz	98MHz	VTVM or Oscilloscope	VR101	Output just disappear
	3	Increase FM SG output 4dB more to get full audio output					
	4	If full audio output cannot be got repeat step 1. 2. 3.					

3. FM MPX ALIGNMENT 1. Same as FM ALIGNMENT 1. 2. 3. 2. FM SG is external modulated by stereo SG and connected to FM 300 $\Omega$ antenna terminal on the rear panel through FM dummy antenna.									
Section	Step	FM SG	Stereo SG	Dial Setting	Indicator	Adjustment	Adjust for		
MPX pilot	1	—	—	Point of no signal received	Connect frequency counter through 100K $\Omega$ to TP10	VR201	19KHz $\pm$ 30Hz		
	2	98MHz	10% 19KHz Pilot 90% L+R, L-R	98MHz	—	VR201	Stereo LED light		
Separation	1	98MHz	10% 19KHz pilot L only	98MHz	Connect VTVM or Oscilloscope to R REC OUT	VR202	Minimum output		
	2		10% 19KHz pilot R only	98MHz	Connect VTVM or Oscilloscope to L REC OUT	VR202	Minimum output		
	3		Repeat Step 1 and Step 2						
	4		If there is an excessive difference between leak-free effect of both channels slightly adjust VR202 so that the level of signal leakage of both channels are equal						

### ALIGNMENT (AUDIO)

#### **IDLE CURRENT ALIGNMENT**

1. 5 Minutes minimum pre-heating is necessary.
2. Set the volume control at minimum position.
3. Connect DC milli-voltmeter across R660 for right channel and across R659 for left channel. The meter sensitivity should be set for 30–100mV full scale deflection.
4. Insert 1 kohm carbon resistor to connect in parallel with R648(right channel) and R647(left channel).
5. After insert 1Kohm. if the reading of meter were between 30mV and 60mV then the alignment is completed.
6. If the reading were less than 30mV then the value of RX1 or RX2 should be reduced till the reading is between 30mV and 60mV.
7. If the reading were more than 60mV. then the value of RX1 or RX2 should be increase till the reading is between 30mV and 60mV.

#### **DC OFF-SET ALIGNMENT**

1. 5 minutes minimum pre-heating is necessary for DC offset adjustment.
2. Set the volume control at minimum position.
3. Speaker switch should be set to "A" position.
4. Connect a DC milli-voltmeter to the "A speaker" terminals of each channel. The meter sensitivity should be set for 100-300mV full scale deflection. The positive input of the meter should be connected to the red (+) speaker terminal.
5. If the readings are within +50mV, then no adjustment is necessary.
6. If the reading is more than +50mV then adjust VR601 (for left channel) and VR602 (for right channel) till the meter reading is zero.

SYMBOL NO	PARTS NO	DESCRIPTION	REF	
C306	17-5D473M	CER CAPA	0.047 $\mu$ F 50V $\pm$ 20%	5.00
C307	17-5D103M	CER CAPA	0.01 $\mu$ F 50V $\pm$ 20%	3.40
C308	17-5D103M	CER CAPA	0.01 $\mu$ F 50V $\pm$ 20%	3.40
C309	17-5D473M	CER CAPA	0.047 $\mu$ F 50V $\pm$ 20%	5.00
C310	17-1.6E107Y	ELEC CAPA	100 $\mu$ F 16V+50-10%	14.00
C311	17-5D102M	CER CAPA	1000PF 50V $\pm$ 20%	4.00
C312	17-2.5E475Y	ELEC CAPA	4.7 $\mu$ F 25V+50-10%	8.00
C313	17-5D103M	CER CAPA	0.01 $\mu$ F 50V $\pm$ 20%	3.40
C314	17-1.6E227Y	ELEC CAPA	220 $\mu$ F 16V+50-10%	33.50
C315	17-2.5E475Y	ELEC CAPA	4.7 $\mu$ F 25V+50-10%	8.00
C316	17-5F183J	MYLAR CAPA	0.018 $\mu$ F 50V $\pm$ 5%	8.90
C317	17-5F152J	MYLAR CAPA	0.0015 $\mu$ F 50V $\pm$ 5%	6.50
C318	17-5F183J	MYLAR CAPA	0.018 $\mu$ F 50V $\pm$ 5%	8.90
C319	17-2.5E475Y	ELEC CAPA	4.7 $\mu$ F 25V+50-10%	8.00
C320	17-2.5E225Y	ELEC CAPA	2.2 $\mu$ F 25V+50-10%	8.00
C321	17-5D102M	CER CAPA	1000PF 50V $\pm$ 20%	4.00
C401 C402	17-2.5E475Y	ELEC CAPA	4.7 $\mu$ F/25V+75-10%	8.00
C403 C404	17-5D101M	CER CAPA	100P+-20%	3.50
C405 C406	17-5F 102J	MYLAR CAPA	0.001 $\mu$ F/50V $\pm$ 5%	6.50
C407 C408	17-0.63E 108Y	ELEC C CAPA	1000 $\mu$ F/6.3V+50-10%	32.50
C409 C410	17-5D100D	CER CAPA	10P+-0.5P	3.50
C411 C412	17-5D221M	CER CAPA	220P+-20%	4.00
C413 C414	17-0.63E476Y	ELEC CAPA	47 $\mu$ F/6.3V+50-10%	9.00
C415 C416	17-0.63E476Y	ELEC CAPA	47 $\mu$ F/6.3V+50-10%	9.00
C417 C418	17-5F273J	MYLAR CAPA	0.027 $\mu$ F/50V $\pm$ 5%	8.90
C419 C420	17-5F104J	MYLAR CAPA	0.1 $\mu$ F/50V $\pm$ 5%	13.00
C421 C422	17-3.5E476Y	ELEC CAPA	47 $\mu$ F/35V+50-10%	14.00
C423	17-5D104M	CER CAPA	0.1 $\mu$ F/50V+-20%	10.00
C425 C426	17-2.5E106Y	ELEC CAPA	10 $\mu$ F/25V+50-10%	12.00
C427 C428	17-5D104M	CER CAPA	0.1 $\mu$ F/50V+-20%	10.00
C501 C502	17-5F122J	MYLAR CAPA	0.0012 $\mu$ F/50V+-5%	6.50
C503 C504	17-5F224J	MYLAR CAPA	0.22 $\mu$ F/50V+-5%	20.00
C505 C506	17-5F104J	MYLAR CAPA	0.1 $\mu$ F/50V+-5%	13.00
C507 C508	17-5F104J	MYLAR CAPA	0.1 $\mu$ F/50V+-5%	13.00
C509 C510	17-5D101M	CER CAPA	100P $\pm$ 20%	3.50
C511 C512	17-5D100D	CER CAPA	10P+-0.5P	3.50
C513 C514	17-0.63E476Y	ELEC CAPA	47 $\mu$ F/6.3V+50-10%	9.00
C515 C516	17-5D221M	CER CAPA	220P+-20%	4.00
C517 C518	17-0.63E476Y	ELEC CAPA	47 $\mu$ F/6.3V+-50-10%	9.00
C519 C520	17-5F183J	MYLAR CAPA	0.018 $\mu$ F/50V+-5%	8.90
C521 C522	17-5F104J	MYLAR CAPA	0.1 $\mu$ F/50V+-5%	13.00
C523 C524	17-0.63E476Y	ELEC CAPA	47 $\mu$ F/6.3V+50-10%	9.00
C525 C526	17-5D124J	MYLAR CAPA	0.12 $\mu$ F/50V+-5%	13.00
C527 C528	17-1.6R684K	AI CAPA	0.68 $\mu$ F/16V+-10%	38.00
C529 C530	17-5F102J	MYLAR CAPA	0.001 $\mu$ F/50V+-5%	6.50
C531 C532	17-2.5E476Y	ELEC CAPA	47 $\mu$ F/25V+50-10%	14.00
C533	17-5E107Y	ELEC CAPA	100 $\mu$ F/50V+50-10%	30.00
C534	17-3.5E107Y	ELEC CAPA	100 $\mu$ F/35V+50-10%	24.20
C601 C602	17-1.6R105K	AI CAPA	1 $\mu$ F/16V+-10%	25.00
C603 C604	17-1.6R105K	AI CAPA	1 $\mu$ F/16V+-10%	25.00
C605 C606	17-0.63E476Y	ELEC CAPA	47 $\mu$ F/6.3V+50-10%	9.00
C609 C610	17-5F272J	MYLAR CAPA	0.0027 $\mu$ F/50V+-5%	6.50
C611 C612	17-5F102J	MYLAR CAPA	0.001 $\mu$ F/50V+-5%	6.50
C613 C614	17-5F102J	MYLAR CAPA	0.001 $\mu$ F/50V+-5%	6.50
C615 C616	17-0.63E108Y	ELEC CAPA	1000 $\mu$ F/6.3V+50-10%	32.50
C617 C618	17-5D470M	CER CAPA	47P+-20%	3.50
C619 C620	17-5D220M	CER CAPA	22P+-20%	3.50
C621 C622	17-5D220M	CER CAPA	22P+-20%	3.50
C625 C626	17-2.5E476Y	ELEC CAPA	47 $\mu$ F/25V+50-10%	14.00
C627 C628	17-5F104J	MYLAR CAPA	0.1 $\mu$ F/50V+-5%	13.00
C629 C630	17-5D101M	CER CAPA	100P+-20%	3.50
C631 C632	17-5F102J	MYLAR CAPA	0.001 $\mu$ F/50V+-5%	6.50
C633 C634	17-5F104J	MYLAR CAPA	0.1 $\mu$ F/50V+-5%	13.00
C635 C636	17-5D104M	CER CAPA	0.1 $\mu$ F/50V+-20%	10.00
C637 C638	17-5D104M	CER CAPA	0.1 $\mu$ F/50V+-20%	10.00
C641 C642	17-5D104M	CER CAPA	0.1 $\mu$ F/50V+-20%	10.00
C643 C644	17-5D104M	CER CAPA	0.1 $\mu$ F/50V+-20%	10.00
C645 C646	17-5D220M	CER CAPA	22P+-20%	3.50
C647	17-5F102J	MYLAR CAPA	0.001 $\mu$ F/50V+-5%	6.50
C701 C702	17-0.63E476Y	ELEC CAPA	47 $\mu$ F/6.3V+50-10%	9.00
C703 C704	17-0.63E476Y	ELEC CAPA	47 $\mu$ F/6.3V+50-10%	9.00
C801 C802	17-35E228Y	ELEC CAPA	2200 $\mu$ F/35V+50-10%	106.00
C803 C804	17-3.5E228Y	ELEC CAPA	2200 $\mu$ F/35V+50-10%	106.00
C805 C806	17-3.5E337Y	ELEC CAPA	330 $\mu$ F/35V+50-10%	46.80
C808	17-5D220M	CER CAPA	22P+-20%	3.50
C809	17-1.0E476Y	ELEC CAPA	47 $\mu$ F/10V+50-10%	10.00
C807	17.2.5E106Y	ELEC CAPA	10 $\mu$ F/25V+50-10%	12.00
C810	17-1.6E106Y	ELEC CAPA	10 $\mu$ F/16V+50-10%	8.40
C811	17-3.5E476Y	ELEC CAPA	47 $\mu$ F/35V+50-10%	14.00
C901	17-3.5E108Y	ELEC CAPA	1000 $\mu$ /35V+50-10%	93.00

SYMBOL NO	PARTS NO	DESCRIPTION	REF
R701,R702	16-¼ CN224J	CARBON RES	220K OHM ¼W±5%
R703,R704	16-¼ CN682J	CARBON RES	6K8 OHM ¼W±5%
R705,R706	16-¼ CN331J	CARBON RES	330 OHM ¼W±5%
R707,R708	16-¼ CN561J	CARBON RES	560 OHM ¼W±5%
R709,R710	16-¼ CN561J	CARBON RES	560 OHM ¼W±5%
R711,R712	16-¼ CN331J	CARBON RES	330 OHM ¼W±5%
R713,R714	16-¼ CN682J	CARBON RES	6K8 OHM ¼W±5%
R715	16-¼ CN152J	CARBON RES	1K5 OHM ¼W±5%
R801	16-¼ CN222J	CARBON RES	2K2 OHM ¼W±5%
R802	16-¼ CN102J	CARBON RES	1K OHM ¼W±5%
R803	16-¼ CN152J	CARBON RES	1K5 OHM ¼W±5%
R804	16-¼ CN152J	CARBON RES	1K5 OHM ¼W±5%
R805	16-¼ CN102J	CARBON RES	1K OHM ¼W±5%
R806	16-¼ CN102J	CARBON RES	1K OHM ¼W±5%
R807	16-¼ CN273J	CARBON RES	27K OHM ¼W±5%
R808	16-¼ CN822J	CARBON RES	8K2 OHM ¼W±5%
R809	16-¼ CN393J	CARBON RES	39K OHM ¼W±5%
R810	16-¼ CN333J	CARBON RES	33K OHM ¼W±5%
R811	16-½ CN275J	CARBON RES	2M7 OHM ½W±5%
R901	16-½ CN100J	CARBON RES	10 OHM ½W±5%
R902	16-¼ CN122J	CARBON RES	1K2 OHM ¼W±5%
R903	16-¼ CN122J	CARBON RES	1K2 OHM ¼W±5%
C101	17-5D473M	CER CAPA	0.047 µF 50V±20%
C102	17-5D473M	CER CAPA	0.047 µF 50V±20%
C103	17-5D473M	CER CAPA	0.047 µF 50V±20%
C104	17-5D103M	CER CAPA	0.01 µF 50V±20%
C105	17-5D103M	CER CAPA	0.01 µF 50V±20%
C106	17-5D473M	CER CAPA	0.047 µF 50V±20%
C107	17-5D473M	CER CAPA	0.047 µF 50V±20%
C108	17-5D473M	CER CAPA	0.047 µF 50V±20%
C109	17-5D473M	CER CAPA	0.047 µF 50V±20%
C110	17-5D331M	CER CAPA	330PF 50V±20%
C111	17-205E105Y	ELEC CAPA	1 µF 25V+50%-10%
C112	17-5D473M	CER CAPA	0.047 µF 50V±20%
C113	17-2.5E105Y	ELEC CAPA	1 µF 25V+50%-10%
C114	17-5D473M	CER CAPA	0.047 µF 50V±20%
C115	17-5D473M	CER CAPA	0.047 µF 50V±20%
C116	17-1.6E227Y	ELEC CAPA	220 µF 16V±50%-10%
C117	17-5D473M	CER CAPA	0.047 µF 50V±20%
C118	17-2.5E105Y	ELEC CAPA	1 µF 25V+50%-10%
C119	17-5D473M	CER CAPA	0.047 µF 50V±20%
C120	17-5D473M	CER CAPA	0.047 µF 50V±20%
C121	17-5D473M	CER CAPA	0.047 µF 50V±20%
C122	17-2.5E475Y	ELEC CAPA	4.7 µF 25V+75%-10%
C123	17-5D102M	CER CAPA	1000PF 50V±20%
C124	17-1.6E107Y	ELEC CAPA	100 µF 16V+50%-10%
C125	17-5D473M	CER CAPA	0.047 µF 50V±20%
C126	17-5D473M	CER CAPA	0.047 µF 50V±20%
C201	17-1.6O224M	TA. CAPA	0.22 µF 16V±20%
C202	17-5F473J	MYLAR CAPA	0.047 µF 50V±5%
C203	17-2.5E475Y	ELEC CAPA	4.7 µF 25V+50-10%
C204	17-5U471J	STYROLENE CAPA	470PF 50V±5%
C205	17-1.6O224M	TA. CAPA	0.22 µF 16V±20%
C206	17-1.6O474M	TA. CAPA	0.47 µF 16V±20%
C207	17-1.6E107Y	ELEC CAPA	100 µF 16V+50-10%
C208	17-5U821J	STYROLENE CAPA	820PF 50V±5%
C209	17-5U821J	STYROLENE CAPA	820PF 50V±5%
C210	17-5F562J	MYLAR CAPA	0.0056 µF 50V±5%
C211	17-5F562J	MYLAR CAPA	0.0056 µF 50V±5%
C212	17-5F123J	MYLAR CAPA	0.012 µF 50V±5%
C213	17-5F123J	MYLAR CAPA	0.012 µF 50V±5%
C214	17-5U821J	STYROLENE CAPA	820PF 50V±5%
C215	17-5U821J	STYROLENE CAPA	820PF 50V±5%
C216	17-5F682J	MYLAR CAPA	0.0068 µF 50V±5%
C217	17-5F682J	MYLAR CAPA	0.0068 µF 50V±5%
C218	17-2.5E475Y	ELEC CAPA	4.7 µF 25V+50-10%
C219	17-2.5E475Y	ELEC CAPA	4.7 µF 25V+50-10%
C220	17-1.6E107Y	ELEC CAPA	100 µF 16V+50-10%
C221	17-1.6E107Y	ELEC CAPA	100 µF 16V+50-10%
C222	17-1.6E106Y	ELEC CAPA	10 µF 16V+50-10%
C223	17-1.6E106Y	ELEC CAPA	10 µF 16V+50-10%
C224	17-1.0S107Y	NON-POLAR CAPA	100 µF 10V+50-10%
C225	17-2.5E105Y	ELEC CAPA	1 µF 25V+50-10%
C226	17-2.5E475Y	ELEC CAPA	4.7 µF 25V+50-10%
C227	17-2.5E475Y	ELEC CAPA	4.7 µF 25V+50-10%
C301	17-5D150K	CER CAPA	15PF 50V±10%
C302	17-5U361J	STYROLENE CAPA	360PF 50V±5%
C303	17-5D103M	CER CAPA	0.01 µF 50V±20%
C304	17-5D103M	CER CAPA	0.01 µF 50V±20%
C305	17-5D102M	CER CAPA	1000PF 50V±20%



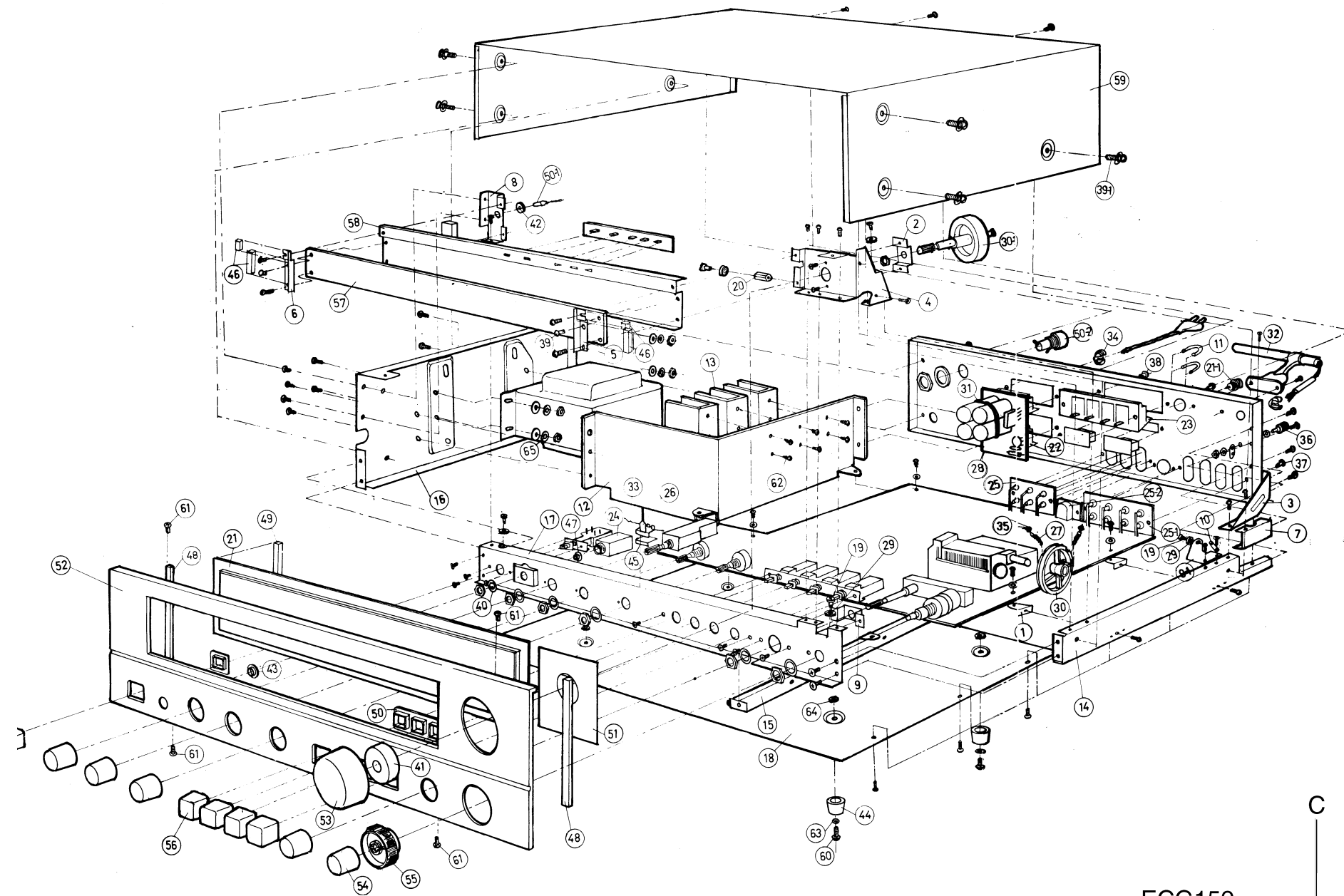
SYMBOL NO	PARTS NO	DESCRIPTION	REF
C902	17-3.5E337Y	ELEC CAPA 330 $\mu$ /35V+50-10%	46.80
C903	17-1.6E107Y	ELEC CAPA 100 $\mu$ /16V+50-10%	14.60
L101	29-1037	INDUCTOR 1MH $\pm$ 10%	16.00
L102	29-1034	INDUCTOR 22 $\mu$ H $\pm$ 10%	15.00
L103	29-1034	INDUCTOR 22 $\mu$ H $\pm$ 10%	15.00
L104	29-1039T	INDUCTOR 18 $\mu$ H $\pm$ 10%	11.00
L105	29-1038	INDUCTOR 40 $\mu$ H $\pm$ 10%	15.00
L106	29-1051	INDUCTOR 2.2 $\mu$ H $\pm$ 10%	10.00
L601,L602	29-1040	INDUCTOR 1 $\mu$ H $\pm$ 10%	3.50
T101	29-3008T	FM DETECTOR COIL 10.7MHZ	96.00
T301	29-3018	AM OSC COIL	25.00
T302	29-3032	AM IFT WITH CERAMIC FILTER	134.00
T303	29-3029	AM IFT	25.00
CF101	29-3027	CER FILTER SFE 10.7MA8	61.50
CF102	29-3027	CER FILTER SFE 10.7MA8	61.50
CF103	29-3027	CER FILTER SFE 10.7MA8	61.50
LPF201	29-3049	LOW PASS FILTER 19, 38K HZ	180.00
LPF202	29-3049	LOW PASS FILTER 19,38K HZ	180.00
VR101	29-4023	SEMIFIXED RES 20KB	18.00
VR201	29-4077	SEMIFIXED RES 10KB	18.00
VR202	29-4022	SEMIFIXED RES 5KB	18.00
VR601,VR602	29-4023	SEMIFIXED RES 20KB	18.00
VR501	29-4103A	VOLUME & BALANCE CONTROL	400.00
VR502,VR503	29-4075F	TONE CONTROL 10KC $\times$ 2	180.00
	29-5008	AM ANT BAR	290.00
D101	30-1044	ZENER DIODE 15V 500MW $\pm$ 5%	14.80
D102	30-1019	DIODE BAW62	11.00
D103	30-1019	DIODE BAW62	11.00
D104	30-1019	DIODE BAW62	11.00
D105	30-1019	DIODE BAW62	11.00
D106	30-1019	DIODE BAW62	11.00
D107	30-1019	DIODE BAW62	11.00
D501,D502	30-1019	DIODE BAW62	11.00
D503,D504	30-1019	DIODE BAW62	11.00
D601,D602	30-1019	DIODE BAW62	11.00
D603,D604	30-1019	DIODE BAW62	11.00
D701 D702	30-1019	DIODE BAW62	11.00
D703 D704	30-1019	DIODE BAW62	11.00
D801 D802	30-1002	DIODE 1N4002	14.00
D803 D804	30-1002	DIODE 1N4002	14.00
D806	30-1078	DIODE BAV19	12.80
BD801	30-1049	BRIDGE DIODE KBL02	76.00
ZD801	30-1041N	ZENER DIODE 22V 500MW	20.00
D901,D902	30-1078	DIODE BAV19	12.80
D903	30-1044	ZENER DIODE 15V	20.00
LD101	30-1071	LED ORANGE	15.00
LD102	30-1071	LED ORANGE	15.00
LD103	30-1073	LED GREEN	15.00
LD201	30-1073	LED GREEN	15.00
LD701	30-1073	LED GREEN	15.00
Q101	30-2019	TRANSISTOR 2SC930C	23.00
Q102	30-2156	TRANSISTOR 2SC1815GR	14.00
Q103	30-2156	TRANSISTOR 2SC1815GR	14.00
Q201	30-2084-3	TRANSISTOR BC549C	22.80
Q202	30-2084-3	TRANSISTOR BC549C	22.80
Q203	30-2156	TRANSISTOR 2SC1815GR	14.00
Q204	30-2156	TRANSISTOR 2SC1815GR	14.00
Q301	30-2084-3	TRANSISTOR BC549C	22.80
Q401,Q402	30-2084-3	TRANSISTOR BC549C	22.80
Q403,Q404	30-2085-2	TRANSISTOR BC559B	22.80
Q405,Q406	30-2085-2	TRANSISTOR BC559B	22.80
Q407,Q408	30-2096	TRANSISTOR BC556A	24.70
Q409,Q410	30-2156	TRANSISTOR 2SC1815GR	14.00
Q411,Q412	30-2096	TRANSISTOR BC556A	24.70
Q501,Q502	30-2085-2	TRANSISTOR BC559B	22.80
Q503,Q504	30-2084-3	TRANSISTOR BC549C	22.80
Q505,Q506	30-2156	TRANSISTOR 2SC1815GR	14.00
Q507,Q508	30-2096	TRANSISTOR BC556A	24.70
Q509,Q510	30-2232	FET E111	104.00
Q601,Q602	30-2084-3	TRANSISTOR BC549C	22.80
Q603,Q604	30-2096	TRANSISTOR BC556A	24.70
Q605,Q606	30-2096	TRANSISTOR BC556A	24.70
Q607,Q608	30-2083	TRANSISTOR BD139	53.20
Q609,Q610	30-2083	TRANSISTOR BD139	53.20
Q611,Q612	30-2169	TRANSISTOR 2N6553	80.00
Q613,Q614	30-2070	TRANSISTOR 2N6556	80.00
Q615,Q616	30-2104M	TRANSISTOR MJ3055	152.00
Q617,Q618	30-2114M	TRANSISTOR 2N2955	159.60
Q801	30-2082	TRANSISTOR BD140	58.90
Q802	30-2156	TRANSISTOR 2SC1815GR	14.00

SYMBOL NO	PARTS NO	DESCRIPTION	REF
R101	16-1/4CU330J	CARBON RES 33 OHM 1/4W ±5%	1.70
R102	16-1/4CU391J	CARBON RES 390 OHM 1/4W ±5%	1.70
R103	16-1/4CU331J	CARBON RES 330 OHM 1/4W ±5%	1.70
R104	16-1/4CU391J	CARBON RES 390 OHM 1/4W ±5%	1.70
R105	16-1/4CU153J	CARBON RES 15K OHM 1/4W ±5%	1.70
R106	16-1/4CU103J	CARBON RES 10K OHM 1/4W ±5%	1.70
R107	16-1/4CU222J	CARBON RES 2K2 OHM 1/4W ±5%	1.70
R108	16-1/4CU330J	CARBON RES 33 OHM 1/4W ±5%	1.70
R109	16-1/4CN331J	CARBON RES 330 OHM 1/4W ±5%	1.70
R110	16-1/4CU103J	CARBON RES 10K OHM 1/4W ±5%	1.70
R111	16-1/4CU331J	CARBON RES 330 OHM 1/4W ±5%	1.70
R112	16-1/4CU563J	CARBON RES 56K OH 1/4W ±5%	1.70
R113	16-1/4CU123J	CARBON RES 12K OHM 1/4W ±5%	1.70
R114	16-1/4CU222J	CARBON RES 2K2 OHM 1/4W ±5%	1.70
R115	16-1/4CN272J	CARBON RES 2K7 OHM 1/4W ±5%	1.70
R116	16-1/4CN562J	CARBON RES 5K6 OHM 1/4W ±5%	1.70
R117	16-1/4CN221J	CARBON RES 220 OHM 1/4W ±5%	1.70
R118	16-1/4CN223J	CARBON RES 22K OHM 1/4W ±5%	1.70
R119	16-1/4CU101J	CARBON RES 100 OHM 1/4W ±5%	1.70
R120	16-1/4CU224J	CARBON RES 220K OHM 1/4W ±5%	1.70
R121	16-1/4CN560J	CARBON RES 56 OHM 1/4W ±5%	1.70
R122	16-1/4CU104J	CARBON RES 100K OHM 1/4W ±5%	1.70
R123	16-1/4CN104J	CARBON RES 100K OHM 1/4W ±5%	1.70
R124	16-1/4CU684J	CARBON RES 680K OHM 1/4W ±5%	1.70
R125	16-1/4CU684J	CARBON RES 680K OHM 1/4W ±5%	1.70
R126	16-1/4CN102J	CARBON RES 1K OHM 1/4W ±5%	1.70
R127	16-1/2CN681J	CARBON RES 680 OHM 1/2W ±5%	2.40
R128	16-1/4CN103J	CARBON RES 10K OHM 1/4W ±5%	1.70
R129	16-1/4CU122J	CARBON RES 1K2 OHM 1/4W ±5%	1.70
R130	16-1/4CU563J	CARBON RES 56K OHM 1/4W ±5%	1.70
R131	16-1/4CU123J	CARBON RES 12K OHM 1/4W ±5%	1.70
R132	16-1/4CU331J	CARBON RES 330 OHM 1/4W ±5%	1.70
R133	16-1/4CU473J	CARBON RES 47K OHM 1/4W ±5%	1.70
R134	16-1/4CU473J	CARBON RES 47K OHM 1/4W ±5%	1.70
R135	16-1/4CU473J	CARBON RES 47K OHM 1/4W ±5%	1.70
R201	16-1/4CN181J	CARBON RES 180 OHM 1/4W ±5%	1.70
R202	16-1/4CU153J	CARBON RES 15K OHM 1/4W ±5%	1.70
R203	16-1/4CU223J	CARBON RES 22K OHM 1/4W ±5%	1.70
R204	16-1/4CU102J	CARBON RES 1K OHM 1/4W ±5%	1.70
R205	16-1/4CN102J	CARBON RES 1K OHM 1/4W ±5%	1.70
R206	16-1/4CU392J	CARBON RES 3K9 OHM 1/4W ±5%	1.70
R207	16-1/4CU392J	CARBON RES 3K9 OHM 1/4W ±5%	1.70
R208	16-1/4CU564J	CARBON RES 560K OHM 1/4W ±5%	1.70
R209	16-1/4CU564J	CARBON RES 560K OHM 1/4W ±5%	1.70
R210	16-1/4CN332J	CARBON RES 3K3 OHM 1/4W ±5%	1.70
R211	16-1/4CN332J	CARBON RES 3K3 OHM 1/4W ±5%	1.70
R212	16-1/4CU331J	CARBON RES 330 OHM 1/4W ±5%	1.70
R213	16-1/4CU331J	CARBON RES 330 OHM 1/4W ±5%	1.70
R214	16-1/4CN102J	CARBON RES 1K OHM 1/4W ±5%	1.70
R215	16-1/4CU102J	CARBON RES 1K OHM 1/4W ±5%	1.70
R216	16-1/4CU392J	CARBON RES 3K9 OHM 1/4W ±5%	1.70
R217	16-1/4CU392J	CARBON RES 3K9 OHM 1/4W ±5%	1.70
R218	16-1/4CN102J	CARBON RES 1K OHM 1/4W ±5%	1.70
R219	16-1/4CU102J	CARBON RES 1K OHM 1/4W ±5%	1.70
R220	16-1/4CU103J	CARBON RES 10K OHM 1/4W ±5%	1.70
R221	16-1/4CU223J	CARBON RES 22K OHM 1/4W ±5%	1.70
R222	16-1/4CU223J	CARBON RES 22K OHM 1/4W ±5%	1.70
R223	16-1/4CU473J	CARBON RES 47K OHM 1/4W ±5%	1.70
R224	16-1/4CU332J	CARBON RES 3K3 OHM 1/4W ±5%	1.70
R225	16-1/4CU332J	CARBON RES 3K3 OHM 1/4W ±5%	1.70
R226	16-1/4CU104J	CARBON RES 100K OHM 1/4W ±5%	1.70
R227	16-1/4CU104J	CARBON RES 100K OHM 1/4W ±5%	1.70
R301	16-1/4CU470J	CARBON RES 47 OHM 1/4W ±5%	1.70
R302	16-1/4CU151J	CARBON RES 150 OHM 1/4W ±5%	1.70
R303	16-1/4CU152J	CARBON RES 1K5 OHM 1/4W ±5%	1.70
R304	16-1/4CN331J	CARBON RES 330 OHM 1/4W ±5%	1.70
R305	16-1/4CU562J	CARBON RES 5K6 OHM 1/4W ±5%	1.70
R306	16-1/4CN151J	CARBON RES 150 OHM 1/4W ±5%	1.70
R307	16-1/4CU103J	CARBON RES 10K OHM 1/4W ±5%	1.70
R308	16-1/4CU103J	CARBON RES 10K OHM 1/4W ±5%	1.70
R309	16-1/4CU272J	CARBON RES 2K7 OHM 1/4W ±5%	1.70
R310	16-1/4CU181J	CARBON RES 180 OHM 1/4W ±5%	1.70
R311	16-1/4CU273J	CARBON RES 27K OHM 1/4W ±5%	1.70
R312	16-1/4CU273J	CARBON RES 27K OHM 1/4W ±5%	1.70
R313	16-1/4CU154J	CARBON RES 150K OHM 1/4W ±5%	1.70
R314	16-1/4CU331J	CARBON RES 330 OHM 1/4W ±5%	1.70
R315	16-1/4CN122J	CARBON RES 1K2 OHM 1/4W ±5%	1.70
R316	16-1/4CU104J	CARBON RES 100K OHM 1/4W ±5%	1.70
R317	16-1/4CU103J	CARBON RES 10K OHM 1/4W ±5%	1.70
R318	16-1/4CU103J	CARBON RES 10K OHM 1/4W ±5%	1.70

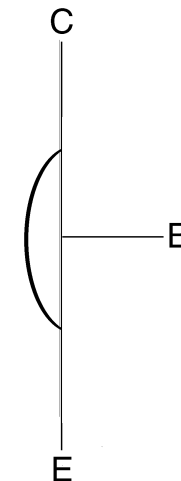
SYMBOL NO	PARTS NO	DESCRIPTION	REF
R319	16-¼ CU104J	CARBON RES 100K OHM ¼W ± 5%	1.70
R320	16-¼ CU104J	CARBON RES 100K OHM ¼W ± 5%	1.70
R401,R402	16-¼ CN334J	CARBON RES 330K OHM ¼W ± 5%	1.70
R403,R404	16-¼ CN563J	CARBON RES 56K OHM ¼W ± 5%	1.70
R405,R406	16-¼ CN222J	CARBON RES 2K2 OHM ¼W ± 5%	1.70
R407,R408	16-¼ CN222J	CARBON RES 2K2 OHM ¼W ± 5%	1.70
R409,R410	16-¼ CU392J	CARBON RES 3K9 OHM ¼W ± 5%	1.70
R411,R412	16-¼ CU560J	CARBON RES 56 OHM ¼W ± 5%	1.70
R413,R414	16-¼ CU684J	CARBON RES 680K OHM ¼W ± 5%	1.70
R415,R416	16-¼ CN331J	CARBON RES 330 OHM ¼W ± 5%	1.70
R417,R418	16-¼ CN151J	CARBON RES 150 OHM ¼W ± 5%	1.70
R419,R420	16-¼ CU221J	CARBON RES 220 OHM ¼W ± 5%	1.70
R421,R422	16-¼ CN681J	CARBON RES 680 OHM ¼W ± 5%	1.70
R423,R424	16-¼ CU562J	CARBON RES 5K6 OHM ¼W ± 5%	1.70
R425,R426	16-¼ CU472J	CARBON RES 4K7 OHM ¼W ± 5%	1.70
R427,R428	16-¼ CU272J	CARBON RES 2K7 OHM ¼W ± 5%	1.70
R429,R430	16-¼ CN333J	CARBON RES 33K OHM ¼W ± 5%	1.70
R431,R432	16-¼ CN153J	CARBON RES 15K OHM ¼W ± 5%	1.70
R433,R434	16-¼ CN821J	CARBON RES 820 OHM ¼W ± 5%	1.70
R435,R436	16-¼ CN680J	CARBON RES 68 OHM ¼W ± 5%	1.70
R437,R438	16-¼ CN680J	CARBON RES 68 OHM ¼W ± 5%	1.70
R439,R440	16-¼ CU681J	CARBON RES 680 OHM ¼W ± 5%	1.70
R441,R442	16-¼ CU224J	CARBON RES 220K OHM ¼W ± 5%	1.70
R501,R502	16-¼ CU181J	CARBON RES 180 OHM ¼W ± 5%	1.70
R503,R504	16-¼ CN562J	CARBON RES 5K6 OHM ¼W ± 5%	1.70
R505,R506	16-¼ CN224J	CARBON RES 220K OHM ¼W ± 5%	1.70
R507,R508	16-¼ CN104J	CARBON RES 100K OHM ¼W ± 5%	1.70
R509,R510	16-¼ CU272J	CARBON RES 2K7 OHM ¼W ± 5%	1.70
R511,R512	16-¼ CN224J	CARBON RES 220K OHM ¼W ± 5%	1.70
R513,R514	16-¼ CU104J	CARBON RES 100K OHM ¼W ± 5%	1.70
R515,R516	16-¼ CN391J	CARBON RES 390 OHM ¼W ± 5%	1.70
R517,R518	16-¼ CU822J	CARBON RES 8K2 OHM ¼W ± 5%	1.70
R519,R520	16-¼ CN392J	CARBON RES 3K9 OHM ¼W ± 5%	1.70
R521,R522	16-¼ CN682J	CARBON RES 6K8 OHM ¼W ± 5%	1.70
R525,R524	16-¼ CN682J	CARBON RES 6K8 OHM ¼W ± 5%	1.70
R525,R526	16-¼ CU562J	CARBON RES 5K6 OHM ¼W ± 5%	1.70
R527,R528	16-¼ CN680J	CARBON RES 68 OHM ¼W ± 5%	1.70
R529,R530	16-¼ CN680J	CARBON RES 68 OHM ¼W ± 5%	1.70
R531,R532	16-¼ CN102J	CARBON RES 1K OHM ¼W ± 5%	1.70
R533,R534	16-¼ CN181J	CARBON RES 180 OHM ¼W ± 5%	1.70
R535,R536	16-¼ CN473J	CARBON RES 47K OHM ¼W ± 5%	1.70
R537,R538	16-¼ CN332J	CARBON RES 3K3 OHM ¼W ± 5%	1.70
R539,R540	16-¼ CN561J	CARBON RES 560 OHM ¼W ± 5%	1.70
R543	16-¼ CN122J	CARBON RES 1K2 OHM ¼W ± 5%	1.70
R546	16-¼ CN273J	CARBON RES 27K OHM ¼W ± 5%	1.70
R547	16-¼ CN184J	CARBON RES 180K OHM ¼W ± 5%	1.70
R548	16-¼ CN391J	CARBON RES 390 OHM ¼W ± 5%	1.70
R549,R550	16-¼ CU682J	CARBON RES 6K8 OHM ¼W ± 5%	1.70
R551,R552	16-¼ CU680J	CARBON RES 680 OHM ¼W ± 5%	1.70
R553,R554	16-¼ CN106J	CARBON RES 10M OHM ¼W ± 5%	1.70
R601,R602	16-¼ CN681J	CARBON RES 680 OHM ¼W ± 5%	1.70
R603,R604	16-¼ CN562J	CARBON RES 5K6 OHM ¼W ± 5%	1.70
R605,R606	16-¼ CN223J	CARBON RES 22K OHM ¼W ± 5%	1.70
R607,R608	16-¼ CN391J	CARBON RES 390 OHM ¼W ± 5%	1.70
R609,R610	16-¼ CN223J	CARBON RES 22K OHM ¼W ± 5%	1.70
R611,R612	16-¼ CN122J	CARBON RES 1K2 OHM ¼W ± 5%	1.70
R613,R614	16-¼ CN561J	CARBON RES 560 OHM ¼W ± 5%	1.70
R617,R618	16-¼ CN222J	CARBON RES 2K2 OHM ¼W ± 5%	1.70
R619,R620	16-¼ CN222J	CARBON RES 2K2 OHM ¼W ± 5%	1.70
R621,R622	16-¼ CN183J	CARBON RES 18K OHM ¼W ± 5%	1.70
R623,R624	16-¼ CN391J	CARBON RES 390 OHM ¼W ± 5%	1.70
R625,R626	16-½ CN471J	CARBON RES 470 OHM ½W ± 5%	2.40
R627,R628	16-¼ MN330J	METAL FILM RES 33 OHM ¼W ± 5%	1.70
R629,R630	16-¼ CN391J	CARBON RES 390 OHM ¼W ± 5%	1.70
R631,R632	16-¼ CN270J	CARBON RES 27 OHM ¼W ± 5%	1.70
R633,R634	16-¼ CN470J	CARBON RES 47 OHM ¼W ± 5%	1.70
R635,R636	16-½ CN152J	CARBON RES 1K5 OHM ½W ± 5%	2.40
R637,R638	16-½ CN122J	CARBON RES 1K2 OHM ½W ± 5%	2.40
R639,R640	16-¼ CN391J	CARBON RES 390 OHM ¼W ± 5%	1.70
R641,R642		CARBON RES RX OHM ¼W ± 5%	1.70
R643,R644	16-¼ CN680J	CARBON RES 68 OHM ¼W ± 5%	1.70
R645,R646	16-¼ CN391J	CARBON RES 390 OHM ¼W ± 5%	1.70
R647,R648	16-¼ CN181J	CARBON RES 180 OHM ¼W ± 5%	1.70
R649,R650	16-½ CN122J	CARBON RES 1K2 OHM ½W ± 5%	2.40
R651,R652	16-¼ CN181J	CARBON RES 180 OHM ¼W ± 5%	1.70
R653,R654	16- IA100J	METAL OXIDE RES 10 OHM 1 W ± 5%	7.50
R655,R656	16- IA221J	METAL OXIDE RES 220 OHM 1 W ± 5%	7.50
R657,R658	16- IA101J	METAL OXIDE RES 100 OHM 1 W ± 5%	7.50
R659,R660	16-¼ CN1R0J	CARBON RES 1 OHM ¼W ± 5%	1.70
R661,R662	16- IA100J	METAL OXIDE RES 10 OHM 1 W ± 5%	7.50

<b>SYMBOL NO</b>	<b>PARTS NO</b>	<b>DESCRIPTION</b>	<b>REF</b>
Q803	30-2096	TRANSISTOR BC556A	24.7
Q804	30-2082	TRANSISTOR BD140	58.90
Q901	30-2178	TRANSISTOR 2SD330	76.00
IC101	30-3035	IC HA1211	115.00
IC102	30-3070	IC LA1231N	280.00
IC103	30-3032	IC CA1458	108.00
IC201	30-3015	IC HA1156	180.00
IC301	30-3036	IC HA1197	236.00
SW1	31-1135	FUNCTION SW SRZ-L5	265.00
SW2-SW4	31-1094F	PUSH SW 4KEY-2U	220.00
SW5	31-1139	SLIDE SW SSB42	75.00
SW6	31-1024	SPEAKER SW SRZ-44	220.00
TB1 TB2	35-3011	BREAKER A-22	88.00
SW7	31-1129A	POWER SW	300.00
SW8	31-1121	VOLTAGE SELECTOR SW	169.20
SW9	31-1079 * F	DE-EMPHASIS SW	53.00

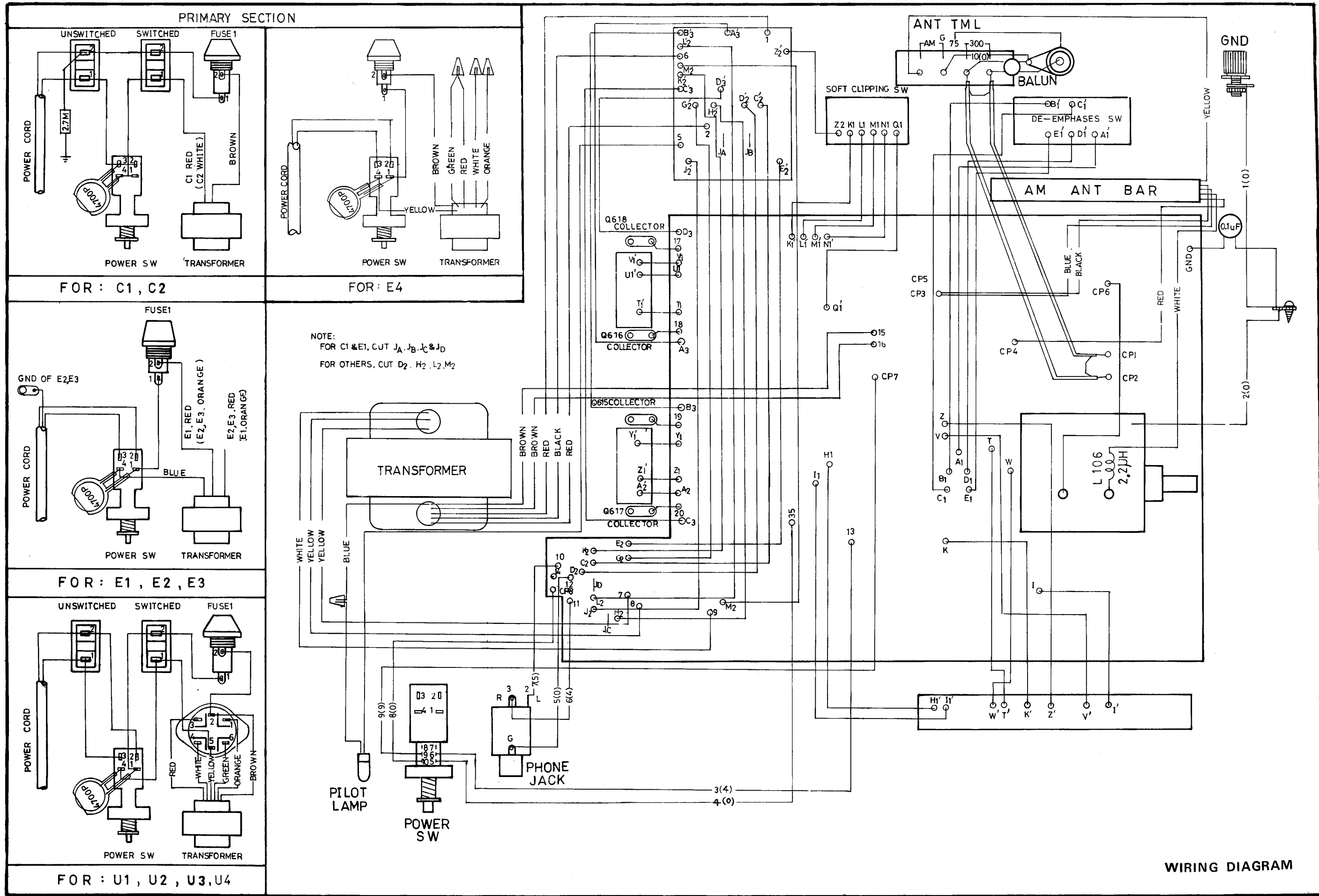
ASSEMBLY DIAGRAM



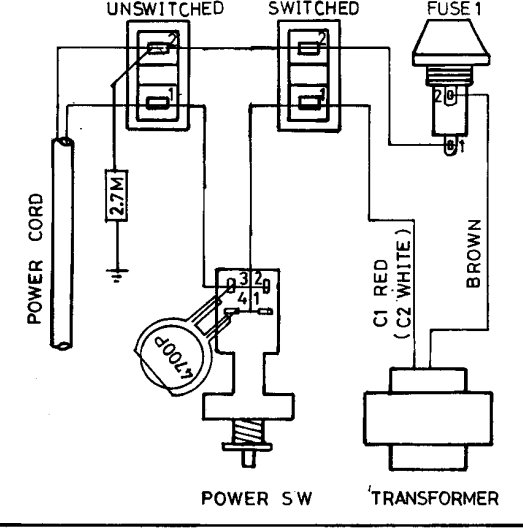
ECG159  
BC556A



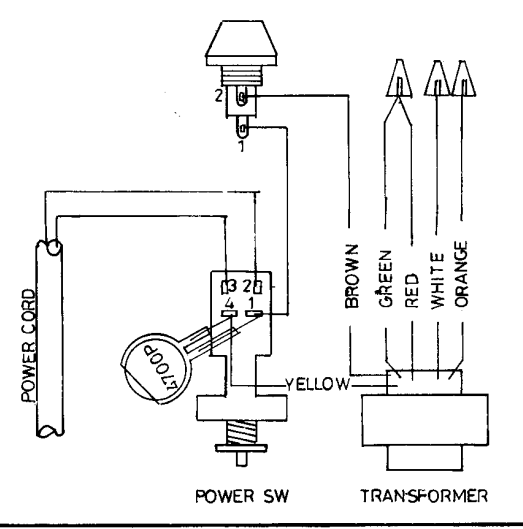
ITEM	PARTS NO	DESCRIPTION	Q'ty
1	11-2047	BRACKET FOR PCB	2
2	11-2086	BRACKET FOR TUNING SHAFT	1
3	11-2104	BRACKET	1
4	11-2141	BRACKET RIGHT	1
5	11-2142	RIGHT BRACKET FOR DIAL SCALE	1
6	11-2143	LEFT BRACKET FOR DIAL SCALE	1
7	11-2173	BRACKET FOR BACK PANEL	1
8	11-2182	BRACKET LEFT	1
9	11-2186	BRACKET FOR SELECTOR SWITCH	1
9-1	11-2205	BRACKET FOR PULLEY	1
10	11-3026	LUG	6
11	11-4007	I/C JUMPER	2
12	11-5029	HEAT SINK A	1
13	11-5048	HEAT SINK B	3
14	11-6039	AUX. CHASSIS RIGHT	1
15	11-6044	CENTER CHASSIS	1
16	11-6052	AUX. CHASSIS LEFT	1
17	11-6053	FRONT CHASSIS	1
18	11-6072	BOTTOM CHASSIS	1
19	11-7004	PULLEY SHAFT	5
20	11-7027	EXTENSIVE PULLEY SHAFT	1
21	11-8119	DIAL PERSPEX COVER	1
21-1	12-1029	CONNECTOR AND NUT	1
22	12-2007	SPEAK TERMINAL SOCKET	2
23	12-2012	ANTENNA TERMINAL SOCKET	1
24	12-2041	PHON JACK	1
25	12-2075	SOCKET ASS'Y(6P)	1
25-1	12-2052	SOCKET ASS'Y (8P)	1
25-2	12-2076	DIN JACK	1
26	12-4010	POINTER	1
27	12-5007	SPRING FOR TUNING THREAD	2
28	13-4041	INSULATION PLATE	1
29	13-5004	PULLEY	5
30	13-5006	DIAL DRUM	1
30-1	13-5020	TUNING WHEEL	1
31	13-7002	STOPPER FOR WIRE	10
32	29-5008	AM ANTENNA BAR	1
33	14-3001	TUNING THREAD	1
34	14-5003	CORD BUSH 4N-4	2
35	15-1008	EYELET	2
36	15-2037	GROUND SCREW	1
37	15-2047	PLASTIC RIVET 3x4.5	4
38	15-2048	PLASTIC RIVET 3x5.5	8
39	15-2049	PLASTIC RIVET 3x6.5	2
39-1	15-2051	SPECIAL SCREW	6
40	15-4010	FIBER WASHER	1
41	23-3004	DICAST FOR TUNING KNOB	1
42	28-1016	RUBBER BUSHING FOR LAMP	1
43	28-1017	PHONES, INSULATION BUSH	1
44	28-1029	RUBBER FOOT	4
45	28-2015	MYLAR FOR POINTER	1
46	28-2019	LAMP RETAINER	2
47	28-2020	COHSION FOR MIC	1
48	28-2023	CABINET RETAINER	2
49	28-2024	DIAL PERSPEX COVER RETAINER	1
50	28-2042	CUSHION	5
50-1	31-2021	LAMP	1
50-2	32-2005	FUSE HOLDER	1
51	28-2059	MASKER FOR PANEL(A)	1
52	11-8099	FRONT PANEL	1
53	12-3037	KNOB FOR TUNING	1
54	12-3038	KNOB FOR CONTROL	5
55	12-3071	KNOB FOR BALANCE	1
56	12-3039	KNOB FOR PUSH	5
57	11-8098	DIAL SCACE	1
58	11-8100	DIAL PLATE	1
59	50-1024	CABINET	1
60	S1B04+110SL-2	MACHINE SCREW	8
61	S5B03+108SL-2	TRIANGLE SCREW	34
62	S2B03+108SL-2	TAPPING SCREW	17
63	A04A07SL01	WASHER	8
64	N04B0713.2SZ	NUT	8
65	A04G07SL01	SPRING WASHER	4



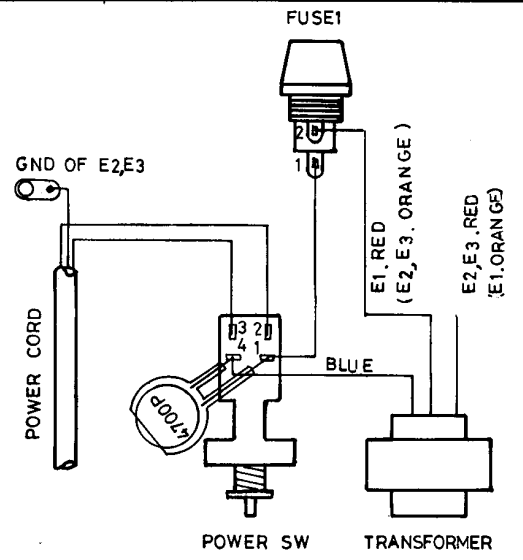
PRIMARY SECTION



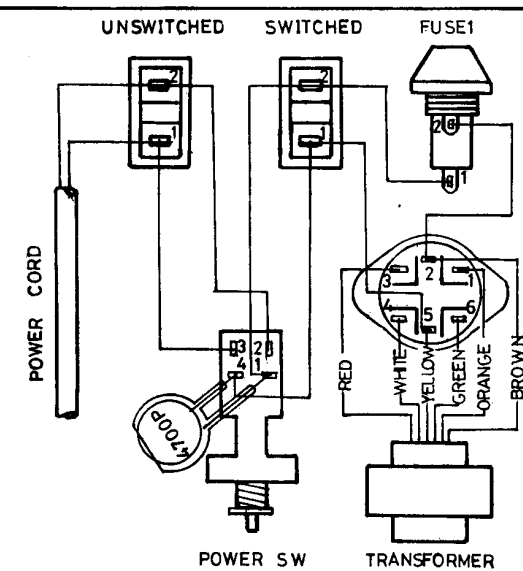
FOR : C1, C2



FOR : E4

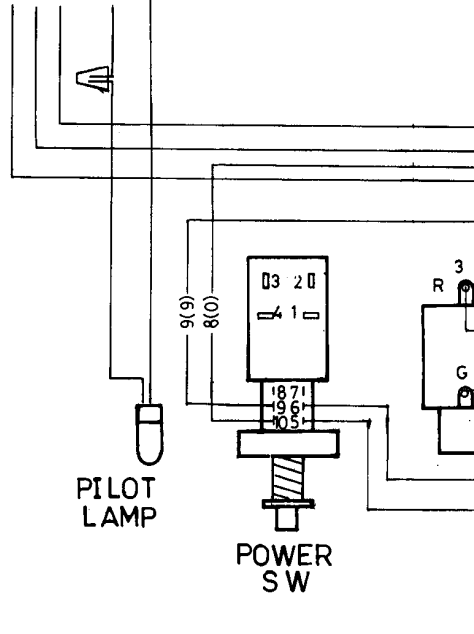
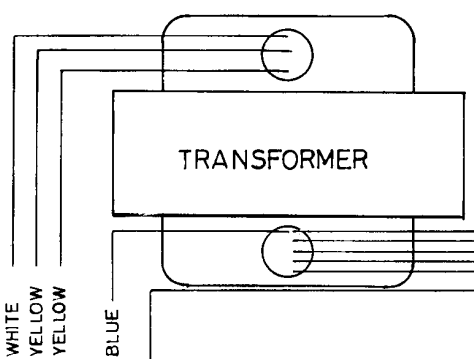


FOR : E1, E2, E3



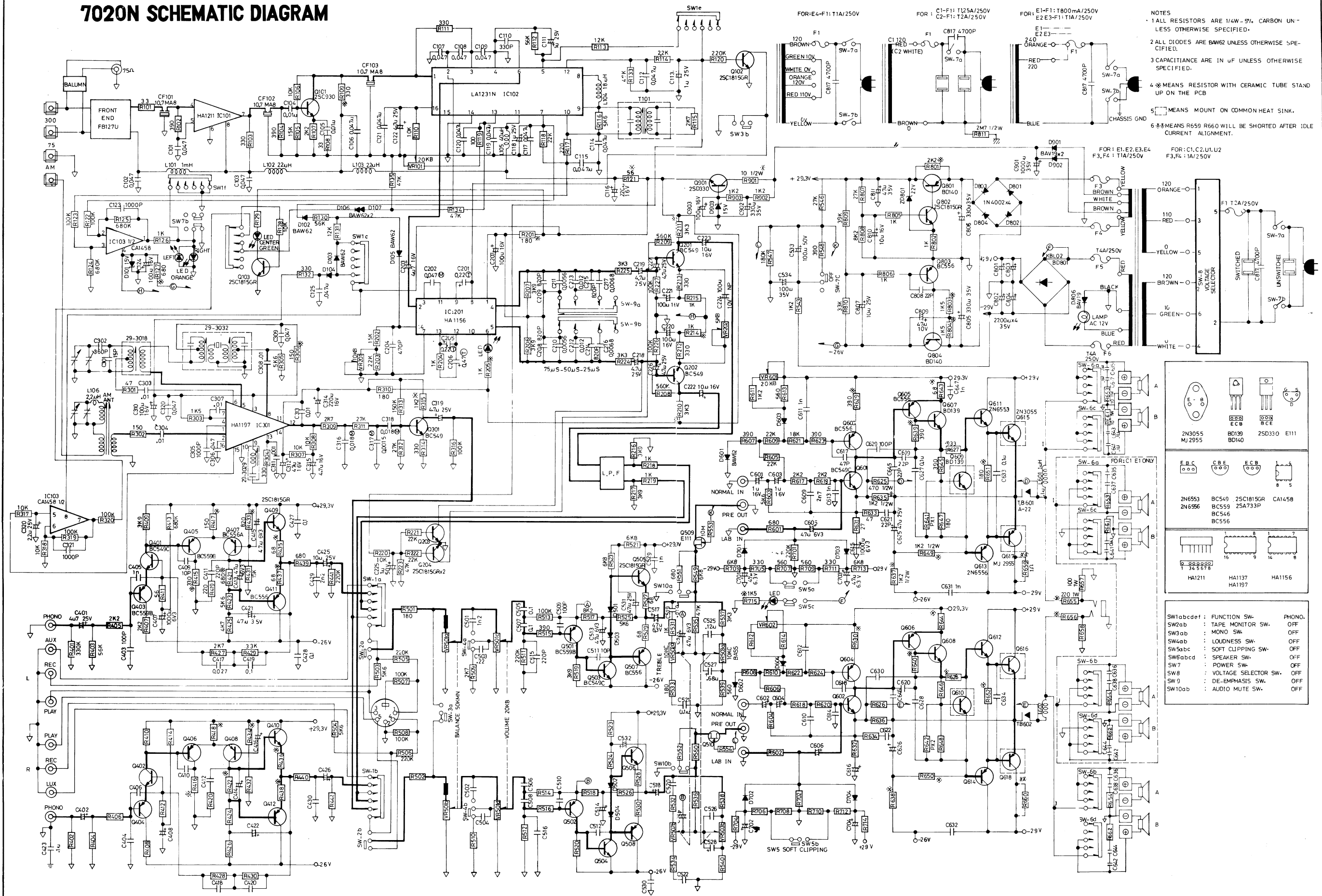
FOR : U1, U2, U3, U4

NOTE:  
FOR C1 & E1, CUT J<sub>A</sub>, J<sub>B</sub>, J<sub>C</sub> & J<sub>D</sub>  
FOR OTHERS, CUT D<sub>2</sub>, H<sub>2</sub>, L<sub>2</sub>, M<sub>2</sub>

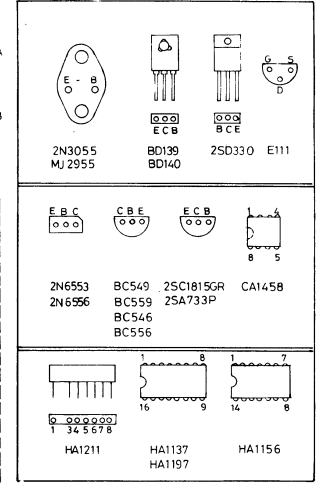


WIRING DIAGRAM

# 7020N SCHEMATIC DIAGRAM



- NOTES
- 1 ALL RESISTORS ARE 1/4W - 5% CARBON UNLESS OTHERWISE SPECIFIED.
  - 2 ALL DIODES ARE BAW62 UNLESS OTHERWISE SPECIFIED.
  - 3 CAPACITANCE ARE IN UF UNLESS OTHERWISE SPECIFIED.
  - 4 \* MEANS RESISTOR WITH CERAMIC TUBE STAND UP ON THE PCB
  - 5 □ MEANS MOUNT ON COMMON HEAT SINK.
  - 6 \* MEANS R559 R660 WILL BE SHORTED AFTER IDLE CURRENT ALIGNMENT.



- |           |                      |        |
|-----------|----------------------|--------|
| SW1abcd:  | FUNCTION SW.         | PHONO. |
| SW2ab :   | TAPE MONITOR SW.     | OFF    |
| SW3ab :   | MONO SW.             | OFF    |
| SW4ab :   | LOUDNESS SW.         | OFF    |
| SW5abc :  | SOFT CLIPPING SW.    | OFF    |
| SW6abcd : | SPEAKER SW.          | OFF    |
| SW7 :     | POWER SW.            | OFF    |
| SW8 :     | VOLTAGE SELECTOR SW. | OFF    |
| SW9 :     | DE-EMPHASIS SW.      | OFF    |
| SW10ab :  | AUDIO MUTE SW.       | OFF    |