

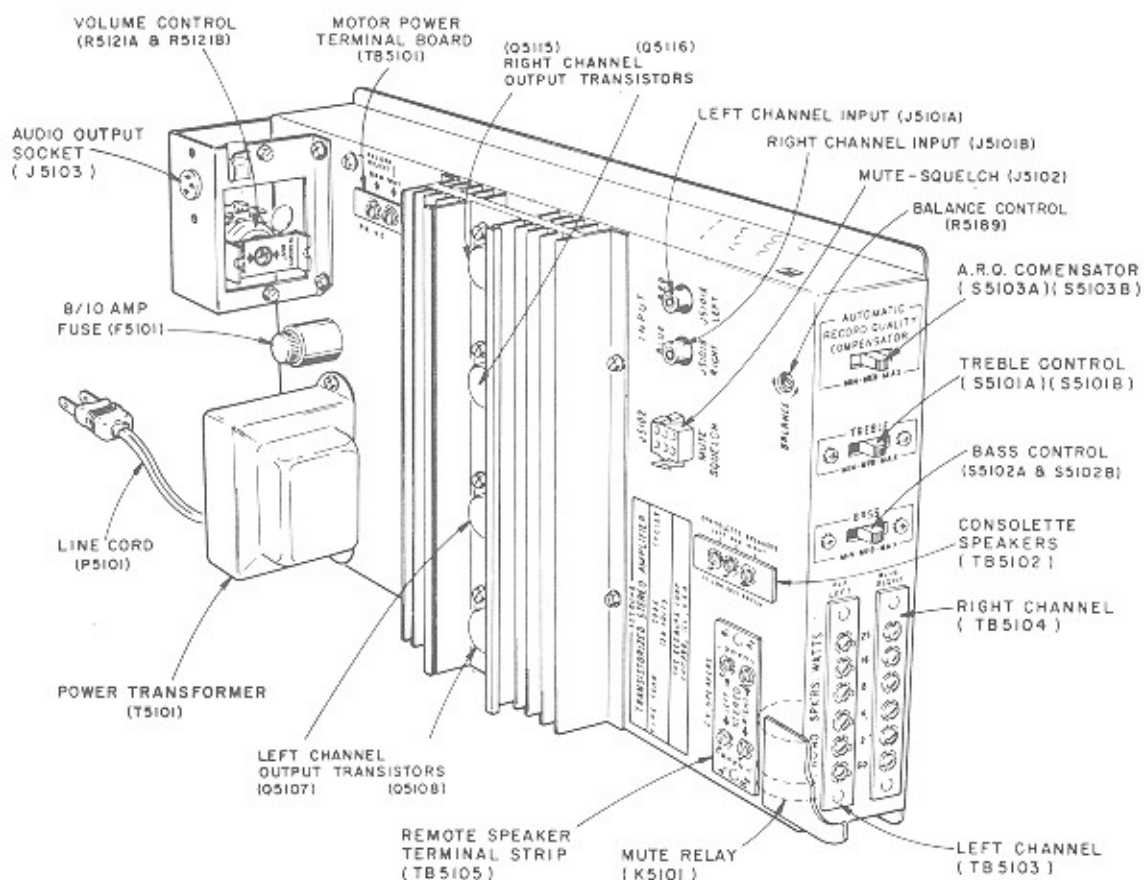
TRANSISTORIZED STEREO AMPLIFIER, Type TSA4

This is a fully transistorized dual channel stereo, low distortion, wide frequency range, constant voltage type amplifier. It is part of the Seeburg Stereophonic Sound System that includes the Seeburg stereo pickup, one or more pairs of Seeburg twin stereo speakers, as well as a speaker coupling network and speakers mounted in the cabinet.

The two output signals of the low impedance magnetic pickup of the Select-O-Matic mechanism are connected to the amplifier through the input sockets and have a nominal signal level for each channel of five millivolts. Both signals are independently amplified, one in the left channel, one in the right channel. Each channel is complete with the tone controls and the volume control mechanically linked to provide equal and simultaneous positioning.

The output transformers of each channel have low and high impedance terminals. Each low impedance winding drives the phonograph speakers whose connections are made through the speaker terminal boards, TB5103 and TB5104. Stereo Consolette 32-ohm speakers are connected to the low impedance winding through terminal board TB5102.

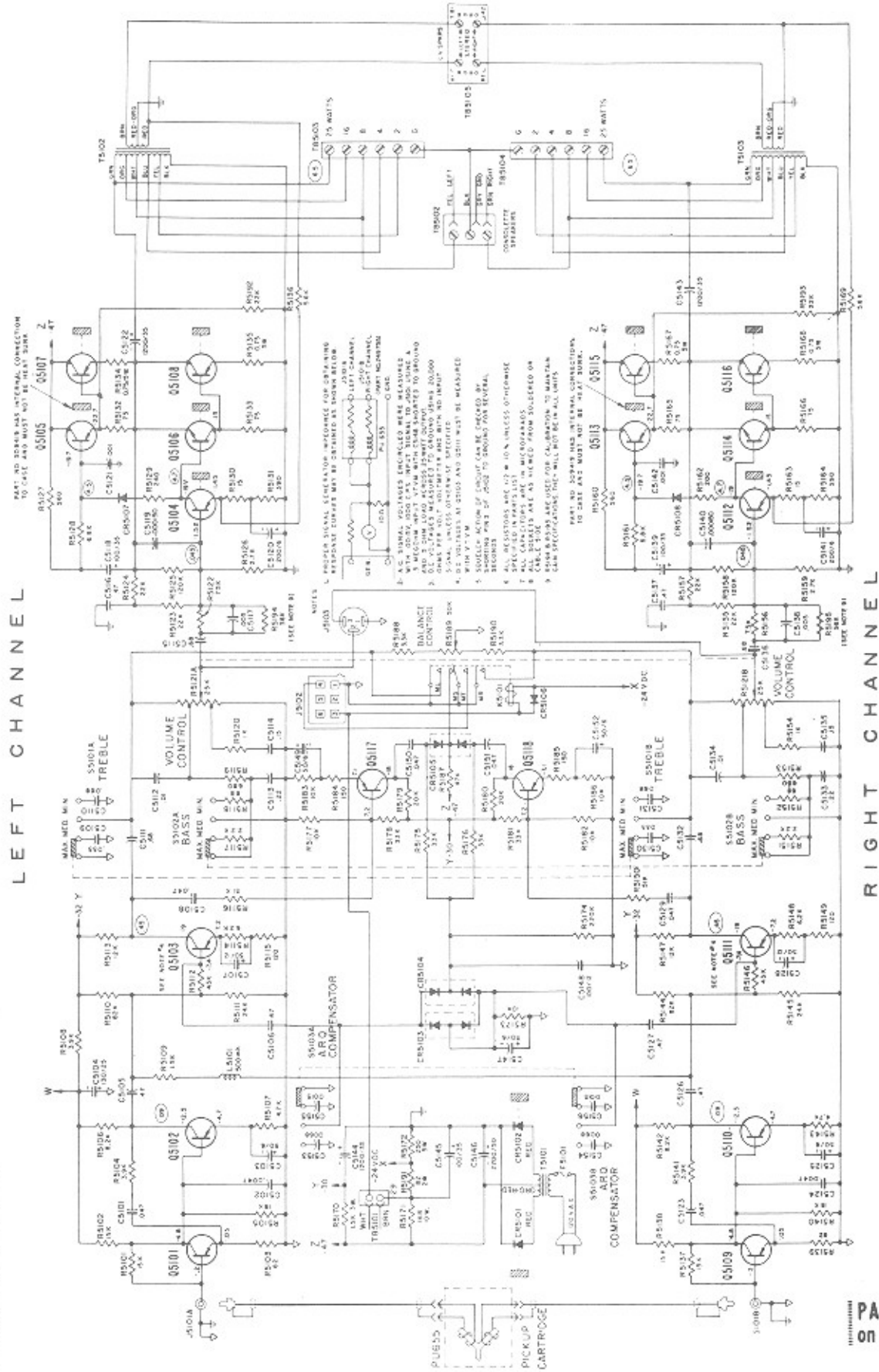
The high impedance secondaries of the output transformers are 70-volt C.V. outputs that terminate at A and B terminals of the remote speaker terminal strip, TB5105. These outputs drive the side channels of one or more external stereo speakers that have, in their enclosure, a highpass network. External speakers for monaural operation may be connected to the remote speaker terminal strip, terminals A1 and B2 or to A2 and B1.



NOTE: CONSOLETTA SPEAKERS, 32 OHMS; ALL OTHERS 5 OHMS; REFLECTED IMPEDANCE OF CABINET SPEAKERS AND COUPLING NETWORK, 5 OHMS EACH CHANNEL.

TRANSISTORIZED STEREO AMPLIFIER, Type TSA4

DRAWING No. 306752



- NOTES
1. PROPER SIGNAL GENERATOR REFERENCE FOR SPEAKING TERMINALS SHOWN BY ARROW IN THE J503A. J503A IS A BALANCE CONTROL.
 2. ALL SIGNAL CAPACITORS SHOULD BE MEASURED TO WITHIN 1% WITH CHARGE TO GROUND.
 3. ALL RESISTORS ARE 1/4W UNLESS OTHERWISE SPECIFIED IN PARTS LIST.
 4. ALL SIGNALS ARE AS MEAS. FROM SOLDERED ON CABLE SIDE. USE TEST FOR CAL. APPROX. TO MAINLINE CAL. SPECIFICATIONS THIS WILL NOT BE ALL UNITS.
 5. SIGNAL CAPACITORS SHOULD BE MEASURED WITH 5 V.V.M.
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 10. SIGNAL CAPACITORS SHOULD BE MEASURED WITH 5 V.V.M.
 11. SIGNAL CAPACITORS SHOULD BE MEASURED WITH 5 V.V.M.
 12. SIGNAL CAPACITORS SHOULD BE MEASURED WITH 5 V.V.M.

PARTS LIST on Reverse Side

TRANSISTORIZED STEREO AMPLIFIER, Type TSA4

Item	Part No.	Description	Item	Part No.	Description	Item	Part No.	Description	Item	Part No.	Description
C5101	86327	0.047 Mfd. 50 V. Mylar	CR5101	309387	Silicon Rectifier U-212	R5108	82626	3900 Ohm 1/2 W. 5%	R5159	82670	2700 Ohm 1/2 W. 5%
C5102	86330	0.0047 Mfd. 50 V. Mylar	CR5102	309387	Silicon Rectifier U-212	R5109	82426	1500 Ohm 1/2 W. 10%	R5160	82421	560 Ohm 1/2 W. 10%
C5103	87696	50 Mfd. 5 V. Lytic	CR5103	309398	Dual Selenium Diode	R5110	82447	82000 Ohm 1/2 W. 10%	R5161	82630	6800 Ohm 1/2 W. 5%
C5104	87717	130 Mfd. 25 V. Lytic	CR5104	309397	Dual Selenium Diode	R5111	82655	24000 Ohm 1/2 W. 5%	R5162	82686	240 Ohm 1/2 W. 5%
C5105	86329	0.47 Mfd. 50 V. Mylar	CR5105	309399	Dual Selenium Diode	R5112	82678	43000 Ohm 1/2 W. 5%	R5163	82402	15 Ohm 1/2 W. 10%
C5106	86329	0.47 Mfd. 50 V. Mylar	CR5106	309384	Semi-Conductor Rectifier (Silicon)	R5113	308962	12000 Ohm 1/2 W. 5%	R5164	82688	390 Ohm 1/2 W. 5%
C5107	87703	50 Mfd. 12 V. Lytic	CR5107	309384	Semi-Conductor Rectifier (Silicon)	R5114	82610	6200 Ohm 1/2 W. 5%	R5165	82406	33 Ohm 1/2 W. 10%
C5108	86327	0.047 Mfd. 50 V. Mylar	CR5108	309387	Silicon Rectifier U-212	R5115	82413	170 Ohm 1/2 W. 10%	R5166	82406	33 Ohm 1/2 W. 10%
C5109	86336	0.033 Mfd. 50 V. Mylar	CR5109	309398	Dual Selenium Diode	R5116	82795	51000 Ohm 1/2 W. 5%	R5167	81231	0.75 Ohm 5 W. 10%
C5110	86351	0.058 Mfd. 50 V. Mylar	CR5110	309397	Dual Selenium Diode	R5117	82428	2200 Ohm 1/2 W. 10%	R5168	81231	0.75 Ohm 5 W. 10%
C5111	86354	0.58 Mfd. 50 V. Mylar	CR5111	309399	Dual Selenium Diode	R5118	82410	FR Ohm 1/2 W. 10%	R5169	82433	5600 Ohm 1/2 W. 10%
C5112	86313	0.01 Mfd. Ceramic	CR5112	309384	Semi-Conductor Rectifier (Silicon)	R5119	82422	680 Ohm 1/2 W. 10%	R5170	81247	1500 Ohm 3 W. 10%
C5113	86331	0.22 Mfd. 50 V. Mylar	CR5113	309384	Semi-Conductor Rectifier (Silicon)	R5120	82424	1000 Ohm 1/2 W. 10%	R5171	81243	168 Ohm 10 W. 10%
C5114	86303	0.15 Mfd. 50 V. Mylar	CR5114	309384	Semi-Conductor Rectifier (Silicon)	R5121A	306318	Volume Control 25000 Ohm	R5172	81264	330 Ohm 5 W. 5%
C5115	86354	0.68 Mfd. 50 V. Mylar	F5101	306316	0.8 Amp. Six-Blo	R5121B	306318	Volume Control 25000 Ohm	R5173	82436	10000 Ohm 1/2 W. 10%
C5116	86329	0.47 Mfd. 50 V. Mylar	F5102	306359	0.5 Amp. Six-Blo	R5122	82631	7500 Ohm 1/2 W. 5%	R5174	82452	22000 Ohm 1/2 W. 10%
C5117	86254	0.005 Mfd. Ceramic	J5101A	306306	Input Socket	R5123	82639	22000 Ohm 1/2 W. 5%	R5175	82442	33000 Ohm 1/2 W. 10%
C5118	87700	100 Mfd. 35 V. Lytic	J5101B	306306	Input Socket	R5124	82639	22000 Ohm 1/2 W. 5%	R5176	82442	33000 Ohm 1/2 W. 10%
C5119	86243	0.000350 Mfd. Ceramic	J5103	309355	Male Jack	R5125	82699	12000 Ohm 1/2 W. 5%	R5177	82436	10000 Ohm 1/2 W. 10%
C5120	87702	200 Mfd. 5 V. Lytic	J5103	12034	Output Socket	R5126	82670	2700 Ohm 1/2 W. 5%	R5178	82442	33000 Ohm 1/2 W. 10%
C5121	86309	0.001 Mfd. Ceramic	K5101	306352	Male Trip Relay	R5127	82421	560 Ohm 1/2 W. 10%	R5179	82601	20000 Ohm 1/2 W. 5%
C5122	87718	1200 Mfd. 35 V. Lytic	L5101	306558	Pot Core Inductor Assem. 1500 mh	R5128	82630	6800 Ohm 1/2 W. 5%	R5180	82601	20000 Ohm 1/2 W. 5%
C5123	86329	0.047 Mfd. 50 V. Mylar	Q5101	309413	GC-112A PNP Low Noise Germ. Trans.	R5129	82686	240 Ohm 1/2 W. 5%	R5181	82442	33000 Ohm 1/2 W. 10%
C5124	86330	0.0047 Mfd. 50 V. Mylar	Q5102	309414	GC-112 PNP Germ. Transistor	R5130	82402	15 Ohm 1/2 W. 10%	R5182	82436	10000 Ohm 1/2 W. 10%
C5125	87696	50 Mfd. 5 V. Lytic	Q5103	309420	GC-380 PNP High Gain Germ. Trans.	R5131	82668	390 Ohm 1/2 W. 5%	R5183	82436	10000 Ohm 1/2 W. 10%
C5126	86329	0.47 Mfd. 50 V. Mylar	Q5104	309421	RCA 345/33 PNP Germ. Transistor	R5132	82406	33 Ohm 1/2 W. 10%	R5184	82414	150 Ohm 1/2 W. 10%
C5127	87718	1200 Mfd. 35 V. Lytic	Q5105	309419	SC-365 PNP Silicon Transistor	R5133	82406	33 Ohm 1/2 W. 10%	R5185	82414	150 Ohm 1/2 W. 10%
C5128	87703	50 Mfd. 12 V. Lytic	Q5106	309418	SC-350 NPN Silicon Transistor	R5134	82406	33 Ohm 1/2 W. 10%	R5186	82436	10000 Ohm 1/2 W. 10%
C5129	86327	0.047 Mfd. 50 V. Mylar	Q5107	309412	GC-114 PNP Germ. Power Transistor	R5135	81231	0.75 Ohm 5 W. 10%	R5187	82444	40000 Ohm 1/2 W. 10%
C5130	86336	0.033 Mfd. 50 V. Mylar	Q5108	309413	GC-112A PNP Low Noise Germ. Trans.	R5136	82433	5600 Ohm 1/2 W. 10%	R5188	82430	3300 Ohm 1/2 W. 10%
C5131	86351	0.058 Mfd. 50 V. Mylar	Q5109	309413	GC-112A PNP Low Noise Germ. Trans.	R5137	308967	12000 Ohm 1/2 W. 5%	R5189	306319	Balance Control 50000 Ohm
C5132	86354	0.58 Mfd. 50 V. Mylar	Q5110	309414	GC-112 PNP Germ. Transistor	R5138	308967	15000 Ohm 1/2 W. 10%	R5190	82430	3300 Ohm 1/2 W. 10%
C5133	86313	0.01 Mfd. Ceramic	Q5111	309420	GC-380 PNP High Gain Germ. Trans.	R5139	82411	82 Ohm 1/2 W. 10%	R5191	81230	82 Ohm 2 W. 10%
C5134	86303	0.15 Mfd. 50 V. Mylar	Q5112	309421	RCA 345/33 PNP Germ. Transistor	R5140	82439	18000 Ohm 1/2 W. 10%	R5192	82440	22000 Ohm 1/2 W. 10%
C5135	86354	0.68 Mfd. 50 V. Mylar	Q5113	309419	SC-365 PNP Silicon Transistor	R5141	82626	3900 Ohm 1/2 W. 5%	R5193	82440	22000 Ohm 1/2 W. 10%
C5136	86329	0.47 Mfd. 50 V. Mylar	Q5114	309418	SC-350 NPN Silicon Transistor	R5142	308968	8200 Ohm 1/2 W. 10%	R5194	82795	36200 Ohm 1/2 W. 5%
C5137	86329	0.47 Mfd. 50 V. Mylar	Q5115	309417	GC-114 PNP Germ. Power Trans.	R5143	82432	4700 Ohm 1/2 W. 10%	R5195	82795	36200 Ohm 1/2 W. 5%
C5138	86254	0.005 Mfd. Ceramic	Q5116	309412	GC-114 PNP Germ. Power Trans.	R5144	82447	82000 Ohm 1/2 W. 10%	S5101A	306329	Treble Switch
C5139	87700	100 Mfd. 35 V. Lytic	Q5117	309413	GC-112 PNP Low Noise Germ. Trans.	R5145	82605	24000 Ohm 1/2 W. 5%	S5101B	306329	Bass Switch
C5140	86243	0.000350 Mfd. Ceramic	Q5118	309414	GC-112 PNP Low Noise Germ. Trans.	R5146	82678	43000 Ohm 1/2 W. 5%	S5102A	306329	Auto Record Quality Compensator
C5141	87702	200 Mfd. 5 V. Lytic	Q5119	309414	GC-112 PNP Low Noise Germ. Trans.	R5147	308967	12000 Ohm 1/2 W. 5%	S5102B	306329	Bass Switch
C5142	86309	0.001 Mfd. Ceramic	Q5120	309414	GC-112 PNP Low Noise Germ. Trans.	R5148	82610	6200 Ohm 1/2 W. 5%	S5103A	306329	Auto Record Quality Compensator
C5143	87718	1200 Mfd. 35 V. Lytic	Q5121	309414	GC-112 PNP Low Noise Germ. Trans.	R5149	82413	170 Ohm 1/2 W. 10%	S5103B	306329	Auto Record Quality Compensator
C5144	87718	1200 Mfd. 35 V. Lytic	Q5122	309414	GC-112 PNP Low Noise Germ. Trans.	R5150	82796	51000 Ohm 1/2 W. 5%	T5101	306312	Power Transformer for 50 cycles
C5145	87700	100 Mfd. 35 V. Lytic	Q5123	309414	GC-112 PNP Low Noise Germ. Trans.	R5151	82428	2200 Ohm 1/2 W. 10%	T5102	306311	Power Transformer for 60 cycles
C5146	87721	2700 Mfd. 50 V. Lytic	R5101	308967	15000 Ohm 1/2 W. 10%	R5152	82410	68 Ohm 1/2 W. 10%	T5103	306317	Output Transformer
C5147	87696	50 Mfd. 5 V. Lytic	R5102	308967	15000 Ohm 1/2 W. 10%	R5153	82424	1900 Ohm 1/2 W. 10%	T5103	306317	Output Transformer
C5148	87724	100 Mfd. 12 V. Lytic	R5103	82411	82 Ohm 1/2 W. 10%	R5154	82639	22000 Ohm 1/2 W. 5%	T5103	306317	Output Transformer
C5149	87696	50 Mfd. 5 V. Lytic	R5104	82626	3900 Ohm 1/2 W. 5%	R5155	82639	22000 Ohm 1/2 W. 5%	T5104	306317	Output Transformer
C5150	86327	0.047 Mfd. 50 V. Mylar	R5105	82439	18000 Ohm 1/2 W. 10%	R5156	82631	2600 Ohm 1/2 W. 5%	T5104	306317	Output Transformer
C5151	86327	0.047 Mfd. 50 V. Mylar	R5106	308968	8200 Ohm 1/2 W. 10%	R5157	308968	8200 Ohm 1/2 W. 10%	T5105	306317	Output Transformer
C5152	86327	0.047 Mfd. 50 V. Mylar	R5107	82432	4700 Ohm 1/2 W. 10%	R5158	82899	12000 Ohm 1/2 W. 5%	T5105	306317	Output Transformer

TRANSISTORIZED STEREO AMPLIFIER, Type TSA4

Item	Part No.	Description	Item	Part No.	Description	Item	Part No.	Description
CS101	86327	.047 Mfd. 50 V. Mylar	CS152	87666	50 Mfd. 5 V. Lytic	RS108	82626	3900 Ohm 1/2 W. 10%
CS102	86330	.0047 Mfd. 50 V. Mylar	CS153	86322	0.0068 Mfd. 50 V. Mylar	RS109	82426	1500 Ohm 1/2 W. 5%
CS103	87696	50 Mfd. 6 V. Lytic	CS154	86332	0.0058 Mfd. 50 V. Mylar	RS110	82441	82000 Ohm 1/2 W. 10%
CS104	87117	130 Mfd. 25 V. Lytic	CS155	86240	0.0015 Mfd. 500 V. Ceramic	RS111	82656	24000 Ohm 1/2 W. 5%
CS105	86329	.47 Mfd. 50 V. Mylar	CS156	86240	0.0015 Mfd. 500 V. Ceramic	RS112	82656	43000 Ohm 1/2 W. 5%
CS106	86329	.47 Mfd. 50 V. Mylar	CRS100	309389	Silicon Rectifier	RS113	308962	12000 Ohm 1/2 W. 5%
CS107	87103	50 Mfd. 12 V. Lytic	CRS102	309389	Silicon Rectifier	RS114	82610	6200 Ohm 1/2 W. 5%
CS108	86327	.047 Mfd. 50 V. Mylar	CRS103	309388	Dual Selenium Diode	RS115	82413	120 Ohm 1/2 W. 10%
CS109	86336	.033 Mfd. 50 V. Mylar	CRS104	309397	Dual Selenium Diode	RS116	82413	0.75 Ohm 5 W. 10%
CS110	86351	.068 Mfd. 50 V. Mylar	CRS105	309399	Dual Selenium Diode	RS168	82433	5600 Ohm 1/2 W. 10%
CS111	86354	.68 Mfd. 50 V. Mylar	CRS106	309384	Semi-Conductor Rectifier (Silicon)	RS170	81242	15000 Ohm 3 W. 10%
CS112	86313	.01 Mfd. Ceramic	CRS107			RS171	81243	168 Ohm 10 W. 10%
CS113	86331	.22 Mfd. 50 V. Mylar	CRS108			RS172	81264	330 Ohm 5 W. 5%
CS114	86303	.15 Mfd. 50 V. Mylar	CRS109	309473	Silicon Stabilizer	RS173	82436	10000 Ohm 1/2 W. 10%
CS115	86354	.68 Mfd. 50 V. Mylar	CRS110			RS174	82452	220000 Ohm 1/2 W. 10%
CS116	86379	.47 Mfd. 50 V. Mylar	FS101	306316	0.8 Amp. Six-Bio	RS175	82442	33000 Ohm 1/2 W. 10%
CS118	87100	100 Mfd. 35 V. Lytic	FS102	306359	0.5 Amp. Six-Bio	RS176	82442	33000 Ohm 1/2 W. 10%
CS119	86243	.000150 Mfd. Ceramic	J5101(A)	306306	Input Socket	RS177	82436	10000 Ohm 1/2 W. 10%
CS120	87102	200 Mfd. 6 V. Lytic	J5101(B)	306306	Input Socket	RS178	82442	33000 Ohm 1/2 W. 10%
CS121	86309	.001 Mfd. Ceramic	J5102	309355	Mute Jack	RS179	82601	20000 Ohm 1/2 W. 5%
CS122	87276	1200 Mfd. 35 V. Lytic	J5103	12034	Output Socket	RS180	82601	20000 Ohm 1/2 W. 5%
CS123	86327	.047 Mfd. 50 V. Mylar	K5101	306352	Mute Trip Relay	RS181	82442	33000 Ohm 1/2 W. 10%
CS124	86330	.0047 Mfd. 50 V. Mylar	L5101	306358	Pot. Core Inductor Assem. (500 mh)	RS182	82436	10000 Ohm 1/2 W. 10%
CS125	87696	50 Mfd. 6 V. Lytic	Q5101	309413	GC-112A PNP Low Noise Germ. Transistor	RS183	82436	10000 Ohm 1/2 W. 10%
CS126	86329	.47 Mfd. 50 V. Mylar	Q5102	309414	GC-112 PNP Germ. Transistor	RS184	82414	150 Ohm 1/2 W. 10%
CS127	86329	.47 Mfd. 50 V. Mylar	Q5103	309420	GC-380 PNP High Gain Germ. Transistor	RS185	82414	150 Ohm 1/2 W. 10%
CS128	87103	50 Mfd. 12 V. Lytic	Q5104	309421	RCA 34523 PNP Germ. Transistor	RS186	82414	150 Ohm 1/2 W. 10%
CS129	86327	.047 Mfd. 50 V. Mylar	Q5105	309419	SC-365 PNP Silicon Transistor	RS187	82444	47000 Ohm 1/2 W. 10%
CS130	86336	.033 Mfd. 50 V. Mylar	Q5106	309420	SC-350 APN Silicon Transistor	RS188	82430	3300 Ohm 1/2 W. 10%
CS131	86351	.068 Mfd. 50 V. Mylar	Q5107	309412	GC-114 PNP Germ. Power Transistor	RS189	306319	Balance Control, 50000 Ohm
CS132	86354	.68 Mfd. 50 V. Mylar	Q5108	309412	GC-114 PNP Germ. Power Transistor	RS190	82430	3300 Ohm 1/2 W. 10%
CS133	86331	.22 Mfd. 50 V. Mylar	Q5109	309413	GC-112A PNP Low Noise Germ. Transistor	RS191	812317	82 Ohm 2 W. 10%
CS134	86313	.01 Mfd. Ceramic	Q5110	309414	GC-112 PNP Germ. Transistor	RS195	82795	36000 Ohm 1/2 W. 5%
CS135	86303	.15 Mfd. 50 V. Mylar	Q5111	309420	GC-380 PNP High Gain Germ. Transistor	S5101(A)	306329	Treble Switch
CS136	86354	.68 Mfd. 50 V. Mylar	Q5112	309421	RCA 34523 PNP Germ. Transistor	S5101(B)		
CS137	86329	.47 Mfd. 50 V. Mylar	Q5113	309419	SC-365 PNP Silicon Transistor	S5102(A)	306329	Bass Switch
CS139	87100	100 Mfd. 35 V. Lytic	Q5114	309418	SC-350 APN Silicon Transistor	S5102(B)		
CS140	86240	.000150 Mfd. Ceramic	Q5115	309412	GC-114 PNP Germ. Power Transistor	S5103(A)	306329	Auto Record Quality Compensator
CS141	87702	200 Mfd. 6 V. Lytic	Q5116	309412	GC-114 PNP Germ. Power Transistor	TS101	306312	Power Transformer for 50 cycles
CS142	86309	.001 Mfd. Ceramic	Q5117	309414	GC-112 PNP Germ. Transistor	TS101	306311	Power Transformer for 60 cycles
CS143	87718	1200 Mfd. 35 V. Lytic	Q5118	309414	GC-112 PNP Germ. Transistor	TS102	306512	Output Transformer
CS144	87700	100 Mfd. 35 V. Lytic	RS102	308967	15000 Ohm 1/2 W. 10%	TS103	306512	Output Transformer
CS145	87700	100 Mfd. 35 V. Lytic	RS103	82441	82 Ohm 1/2 W. 10%	TS104	306343	2-Lug Terminal Board
CS146	87121	2700 Mfd. 50 V. Lytic	RS104	82626	3900 Ohm 1/2 W. 5%	TS102	306304	3-Lug Terminal Board
CS147	87696	50 Mfd. 6 V. Lytic	RS105	82439	18000 Ohm 1/2 W. 10%	TS103	306304	6-Lug Terminal Board
CS148	87724	100 Mfd. 12 V. Lytic	RS106	308368	8200 Ohm 1/2 W. 10%	TS104	306304	6-Lug Terminal Board
CS149	87696	50 Mfd. 6 V. Lytic	RS107	82432	4700 Ohm 1/2 W. 10%	TS105	306338	4-Lug Terminal Board
CS150	86327	.047 Mfd. 50 V. Mylar				RS101	766368	Line Cord & Plug Assembly
CS151	86327	.047 Mfd. 50 V. Mylar						

NOTES: 1. When Texas Instrument Drivers are used (CS105, CS106, CS113 & CS114) RS129 & RS152 are Part No. 82157 56 Ohm 1/2 W. 5%.
 2. When Motorola Drivers are used (CS105, CS106, CS113 & CS114) RS129 & RS152 are Part No. 82158 68 Ohm 1/2 W. 5%.