

**CHALLENGER MODEL CC30**

TRADE NAME	Challenger, Model CC30	
MANUFACTURER	Challenger Amplifier Co., 663 Broadway, New York 12, New York	
TYPE SET	AC Operated 3 Channel Audio Amplifier	
TUBES(SIX)	Types 6SC7 Mic. Pre.-Amp., 6SC7 1st AF Amp., 6SL7 2nd AF-Phase Inverter, (2) 6L6G Power Output, 5U4G Rectifier.	
POWER SUPPLY	110-120 Volts AC	RATING: .98 Amp. @ 117 Volts AC

**HOWARD W. SAMS & CO., INC. • Indianapolis Indiana**

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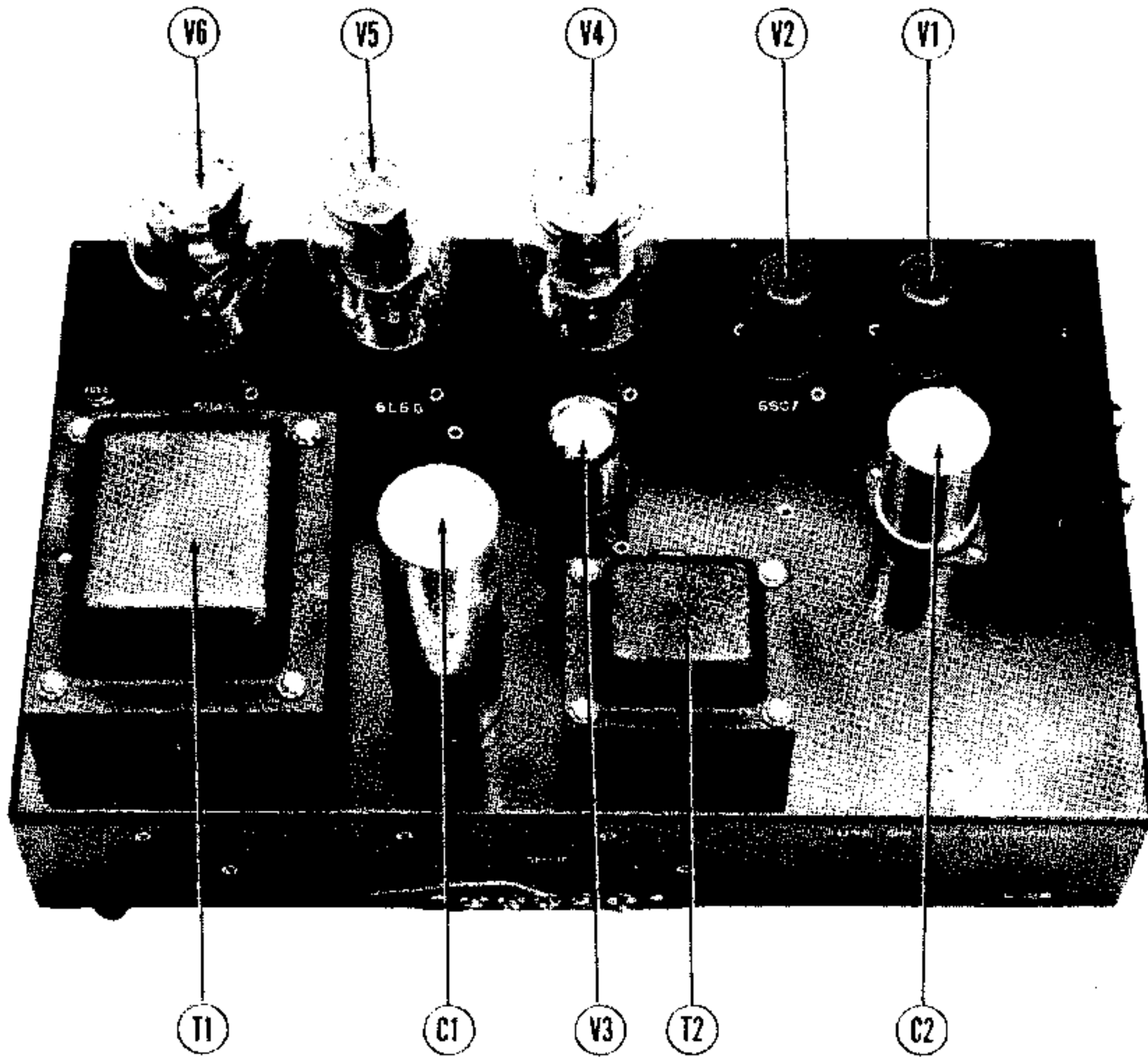
DATE 8/49 4916-6 SET #68 FOLDER 6

# PARTS LIST AND DESCRIPTIONS

## TUBES (SYLVANIA or Equivalent)

CHALLENGER  
MODEL CC350

# CHASSIS—TOP VIEW



ITEM No.	USE	REPLACEMENT DATA		RIMA BASE TYPE	INSTALLATION NOTES
		CHALLENGER PART No.	STANDARD REPLACEMENT		
V1	Mic. Pre.-Amp.	6SC7	6SC7	88	
V2	1st AF Amp.	6SC7	6SC7	88	
V3	2nd AF Phase Inv.	6SL7	6SL7	8BD	
V4	Power Output	6L6G	6L6G	7AC	
V5	Power Output	6L6G	6L6G	7AC	
V6	Rectifier	5U4G	5U4G	5T	

## CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP. VOLT	REPLACEMENT DATA				IDENTIFICATION CODES AND INSTALLATION NOTES
		CHALLENGER PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	
C1A	8	GL475/8-8		EB10018		Filter Red-Black
C2A	8					Filter Blue-Yellow
C2A	10	AF22J		UF1145		▲ Filter
C3	50		PRS50/50	BR-505		● Decoupling
C4	.02		P688-02	GT682		Output Cath. Bypass
C5	.02		P688-02	GT682		Audio Coupling
C6	.02		P688-02	GT682		"
C7	.02		P688-02	GT682		"
C8	.05		P488-05	GT485		"
C9	.003		P688-003	GT6D3	GP2M-003	Tone Compensation
C10	.003		P688-003	GT6D3	GP2M-003	"
C11	.006		P688-006	GT6D6		"
C12	.1		P488-1	GT4P1		Audio Coupling
C13	.1		P488-1	GT4P1		"
C14	.02		P688-02	GT6S2		AF Feedback
C15	25		1468-000025	5W5Q25	GPLK-25	"
C16	.1		P488-1	GT4P1		Line Filter

## CONTROLS

ITEM No.	RATING RESISTANCE	WATTS	REPLACEMENT DATA		INSTALLATION NOTES
			CHALLENGER PART No.	CLAIOSTAT PART No.	
R1	500KΩ	1/2	V202-A	K-60-Z	Phono Control
R2	500KΩ	1/2	V202-A	K-60-Z	Mike 1 Control
R3	500KΩ	1/2	V202-A	K-60-Z	Mike 2 Control

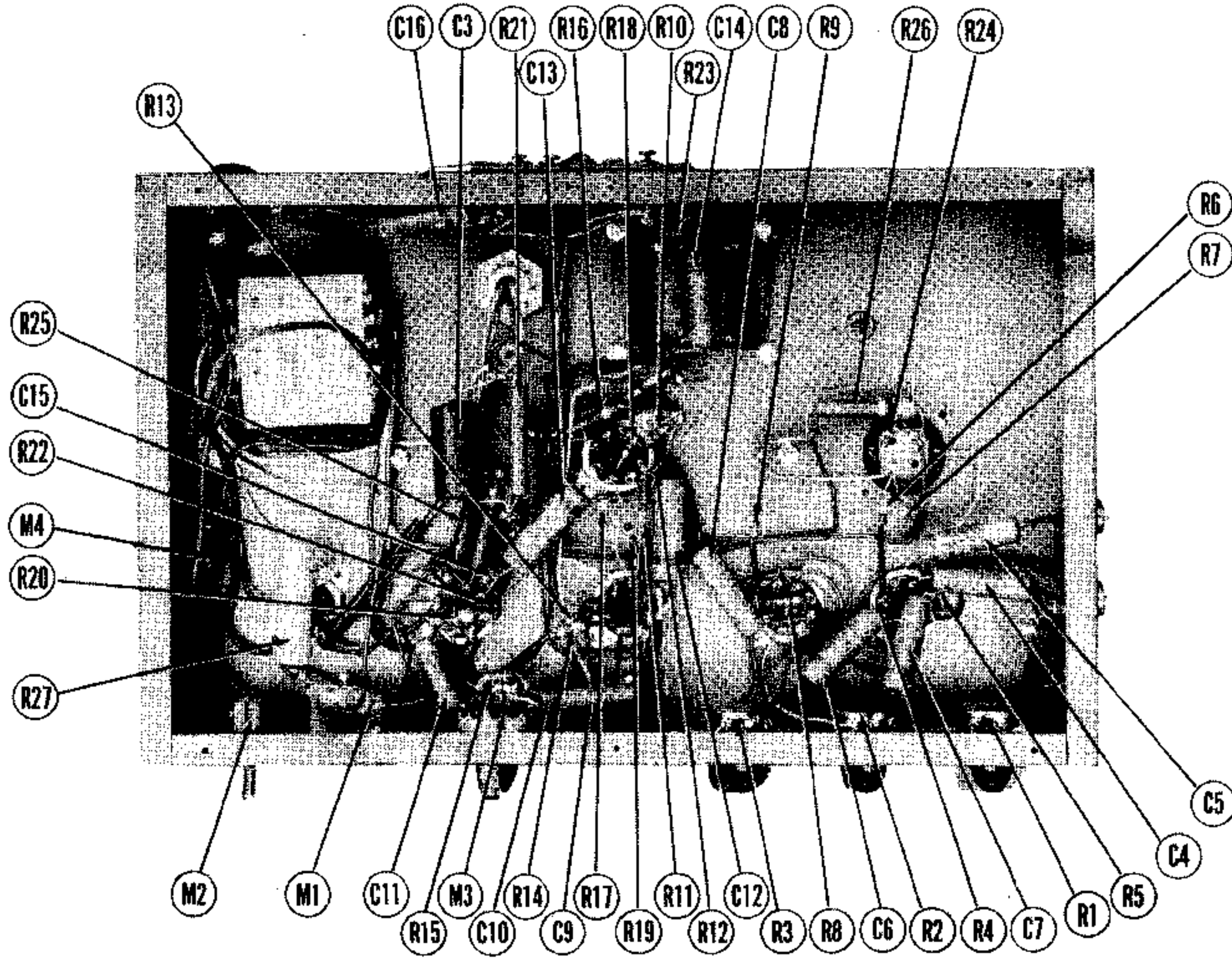
## RESISTORS

ITEM No.	RATING RESISTANCE	WATTS	REPLACEMENT DATA		IDENTIFICATION CODES
			CHALLENGER PART No.	IRC PART No.	
R4	4.7 Meg.	1/2		BTS-4.7 Meg.	Mike Pre. Amp. Grid
R5	4.7 Meg.	1/2		BTS-4.7 Meg.	"
R6	220KΩ	1/2		BTS-220K	Mike Pre. Amp. Plate
R7	220KΩ	1/2		BTS-220K	"
R8	1500Ω	1/2		BTS-1500	1st AF Cathode
R9	100KΩ	1/2		BTS-100K	1st AF Plate
R10	500KΩ	1/2		BTS-470K	2nd AF Grid

# PARTS LIST AND DESCRIPTIONS (Continued)

# CHASSIS—BOTTOM VIEW

CHALLENGER  
MODEL CC30



## RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	CHALLENGER PART No.	IRC PART No.	
R11	220KΩ	1/4	BTS-220K		2nd AF Plate
R12	2000Ω	1/4	BTS-2200		2nd AF Cathode
R13	68KΩ	1/4	BTS-68K		Tone Compensation
R14	68KΩ	1/4	BTS-68K		"
R15	22KΩ	1/4	BTS-22K		"
R16	2000Ω	1/4	BTS-2200		Phase Inv. Cathode
R17	220KΩ	1/4	BTS-220K		Phase Inv. Plate
R18	8200Ω	1/4	BTS-8200		Phase Inv. Grid
R19	100KΩ	1/4	BTS-100K		Output Grid
R20	100KΩ	1/4	BTS-100K		Output Cathode
R21	200Ω	1/4	AB-200		Feedback
R22	500KΩ	1/4	BTS-470K		"
R23	22KΩ	1/4	BTS-22K		Filter
R24	33KΩ	1/4	BTS-33K		Voltage Divider-Bleeder
R25	25KΩ	1/4	BT-2-47K†		See Note
R26	6800Ω	1/4	BT-2-6800		Filter
R27	100Ω	1/4	AB-100		Surge Limiter

Note. Some models use 2 47KΩ resistors in parallel.  
† Two required. Connect in parallel.

## TRANSFORMER (POWER)

ITEM No.	RATING	REPLACEMENT DATA		MERIT PART No.							
		CHALLENGER PART No.	STANCOR PART No.								
T1	<table border="1"> <tr> <th>SEC. 1</th> <th>SEC. 2</th> <th>SEC. 3</th> </tr> <tr> <td>117VAC 740VCT 5VAC ② 1.12A ③ 3A ④ 2.9A</td> <td>6.3VAC ② 2.9A</td> <td></td> </tr> </table>	SEC. 1	SEC. 2	SEC. 3	117VAC 740VCT 5VAC ② 1.12A ③ 3A ④ 2.9A	6.3VAC ② 2.9A		T-365	P-8165 †	PH-120B *	P-2955 †
SEC. 1	SEC. 2	SEC. 3									
117VAC 740VCT 5VAC ② 1.12A ③ 3A ④ 2.9A	6.3VAC ② 2.9A										

\* Drill new mounting holes.  
† Add series resistor to reduce plate voltage.

## TRANSFORMER (OUTPUT)

ITEM No.	RATING	REPLACEMENT DATA		INSTALLATION NOTES																			
		CHALLENGER PART No.	STANCOR PART No.																				
T2	<table border="1"> <tr> <th>IMPEDANCE</th> <th>DC RES.</th> </tr> <tr> <td> <table border="1"> <tr> <th>PRI.</th> <th>SEC.</th> </tr> <tr> <td>8300Ω</td> <td>4Ω</td> </tr> <tr> <td>8Ω</td> <td>280Ω</td> </tr> <tr> <td>CT</td> <td>5Ω</td> </tr> <tr> <td></td> <td>.7Ω</td> </tr> <tr> <td></td> <td>1Ω</td> </tr> <tr> <td></td> <td>7.5Ω</td> </tr> </table> </td> <td></td> </tr> </table>	IMPEDANCE	DC RES.	<table border="1"> <tr> <th>PRI.</th> <th>SEC.</th> </tr> <tr> <td>8300Ω</td> <td>4Ω</td> </tr> <tr> <td>8Ω</td> <td>280Ω</td> </tr> <tr> <td>CT</td> <td>5Ω</td> </tr> <tr> <td></td> <td>.7Ω</td> </tr> <tr> <td></td> <td>1Ω</td> </tr> <tr> <td></td> <td>7.5Ω</td> </tr> </table>	PRI.	SEC.	8300Ω	4Ω	8Ω	280Ω	CT	5Ω		.7Ω		1Ω		7.5Ω		A-3885 *	B0-4*	A-3128*	* Drill new mounting holes.
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## DIAL LIGHTS

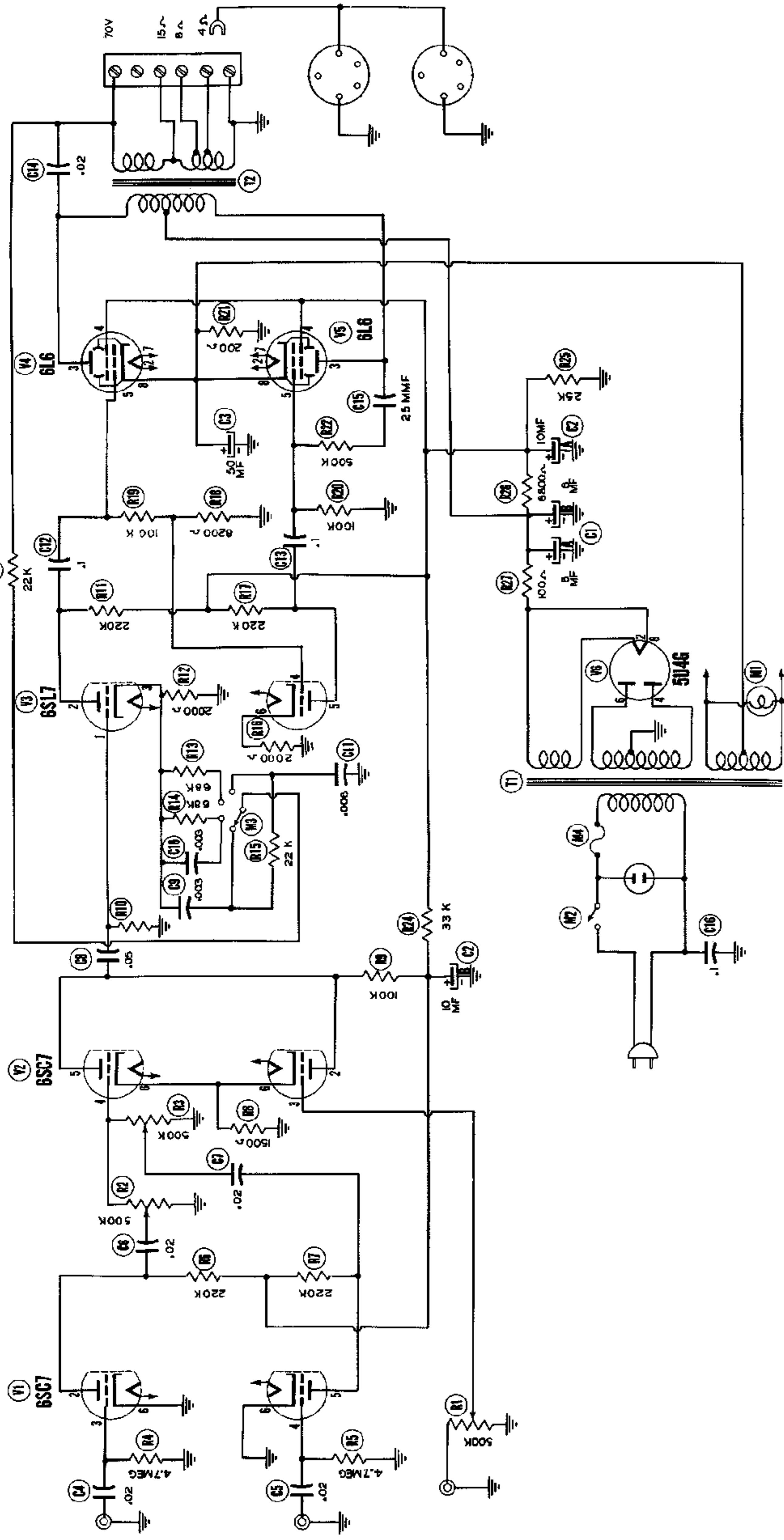
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					CHALLENGER PART No.	MERIT PART No.	
M1	Bayonet	6-8V	0.15A	Brown			Type #47

## MISCELLANEOUS

ITEM No.	PART NAME	CHALLENGER PART No.	NOTES
M2	Switch		
M3	Switch		
M4	Fuse		Power Tone 2 Amp.

CHALLENGER  
MODEL CC30





RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SC7	0Ω	*270KΩ	4.7 Meg	4.7 Meg	*270KΩ	0Ω	200Ω	200Ω
V 2	6SC7	0Ω	*130KΩ	500KΩ	230KΩ	*130KΩ	1500Ω	200Ω	200Ω
V 3	6SL7	47KΩ	*220KΩ	2KΩ	8.2KΩ	*220KΩ	2KΩ	200Ω	200Ω
V 4	6L6G	Inf.	200Ω	*235Ω	*8KΩ	110KΩ	2KΩ	200Ω	200Ω
V 5	6L6G	0Ω	200Ω	*225Ω	*8KΩ	100KΩ	650KΩ	200Ω	200Ω
V 6	5U4G	Inf.	30KΩ	30KΩ	35Ω	Inf.	39Ω	Inf.	30KΩ

\*Measured From Pin 8 Or V6.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SC7	0V	75VDC	-.5VDC	75VDC	0V	123.5VDC	123.5VDC	123.5VDC
V 2	6SC7	0V	120VDC	0V	120VDC	1.6VDC	123.5VDC	123.5VDC	123.5VDC
V 3	6SL7	0V	140VDC	1.4VDC	140VDC	1.4VDC	123.5VDC	123.5VDC	123.5VDC
V 4	6L6G	0V	123.5VDC	430VDC	285VDC	0V	123.5VDC	24VDC	24VDC
V 5	6L6G	0V	123.5VDC	430VDC	285VDC	0V	123.5VDC	24VDC	24VDC
V 6	5U4G	0V	445VDC	435VDC	390VDC	0V	390VAC	0V	445VDC

\*6.3VAC Measured Between Pins Of Each Socket.

A PHOTOFAC STANDARD NOTATION SCHEMATIC  
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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.