

The Citation Twelve/Citation Twelve Deluxe

Professional 120 Watt Stereophonic Basic Power Amplifier

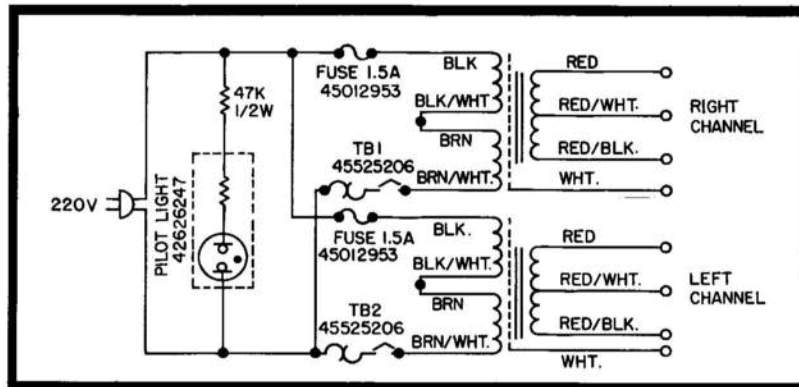
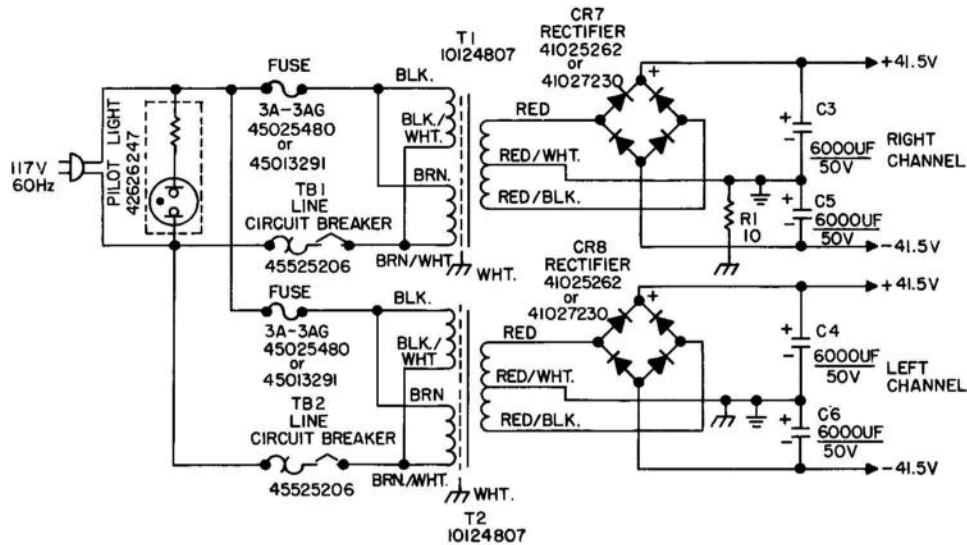
Technical Manual

harman/kardon

REPLACEMENT PARTS

CIRCUIT REF.	DESCRIPTION	HK PART NO.	CIRCUIT REF.	DESCRIPTION	HK PART NO.
CAPACITORS					
C1, C2	Cap, Lytic, 250 UF/15V	31518874	R719, R720	Carbon Comp, 3.9K $\pm 10\%$, 1/2W	33315621
C3, C4	Cap, Lytic, 6000 UF/50V	31524564	R721, R722	Carbon Comp, 3.3 Ω $\pm 10\%$, 1/2W	33313371
C5, C6	Cap, Lytic, 6000 UF/50V	31524564	R723, R724	Carbon Comp, 100 Ω $\pm 10\%$, 1/2W	33311011
C7, C8	Cap, Disc, .001 UF $\pm 10\%$ 500V	30418317	R725, R726	Carbon Comp, 10 Ω $\pm 10\%$, 1W	33411001
C9, C10	Cap, Disc, .01 UF +80% -20% 100V	30418491	R727, R728	Carbon Comp, 100 Ω $\pm 10\%$, 1/2W	33311011
C11-C700	Not Used		R729, R730	Carbon Comp, 180 Ω $\pm 10\%$, 1/2W	33311811
C701, C702	Cap, Disc, 68 PF $\pm 10\%$	31722086	R731, R732	Wire Wound, 0.27 Ω $\pm 10\%$, 5W	36712781
C703, C704	Cap, Lytic, 50 UF/50V	31818875	R733, R734	Carbon Comp, 10 Ω $\pm 10\%$, 1W	33411001
C705, C706	Cap, Lytic, 50 UF/50V	31818875	R735, R736	Wire Wound, 0.27 Ω $\pm 10\%$, 5W	36712781
C707, C708	Cap, Lytic, 250 UF/6V	31818876	R737, R738	Carbon Comp, 27 Ω $\pm 10\%$, 2W	33512701
C709, C710	Cap, Disc, 150 PF $\pm 10\%$	31818873	TRANSFORMERS		
C711, C712	Cap, Lytic, 50 UF/50V	31818875	T1, T2	Power	10124807
C713, C714	Cap, Mylar, 0.1 UF/100V	31918784	FUSES AND CIRCUIT BREAKERS		
DIODES					
CR1, CR2	Diode, 2A/100V	41020618	Fuse, Line, 3A-3AG		45025480
CR3, CR4	Diode, 2A/100V	41020618	Circuit Breaker, Line		45525206
CR5, CR6	Diode, Bias (double)	41624214	Circuit Breaker, Output		45524399
CR7, CR8	Rectifier, Full Wave Bridge	41025262	MISCELLANEOUS		
CR9-CR700	Not Used		P. C. Board Ass'y - Type 1*		00124368
CR701	Diode, 2A/100V	41020618	P. C. Board Ass'y - Type 2*		00126203
CR702	Diode, 2A/100V	41020618	P. C. Board (Without Components) Type 1*		28024369
COILS					
L1-L700	Not Used		P. C. Board (Without Components) Type 2*		28026204
L701, L702	Choke, 3UH, 0.1 Ω , 5A	12025263	Pilot Light Ass'y		47626247
TRANSISTORS					
Q1, Q2	Output	43024216	Front Escutcheon		63026236
Q3, Q4	Output	43024216	Input Jack		65422585
Q5-Q700	Not Used		Insulator, Input Jack		65422586
Q701, Q702	Differential Amplifier	43024217	Fuse Holder W/Hardware		65413750
Q703, Q704	Pre-Driver	43024306	Binding Post, Speaker		65418195
Q705, Q706	Driver	43024219	Line Cord, 18 A.W.G., 7'		53021115
Q707, Q708	Bias	43023221	Heat Sink		60225138
Q709, Q710	Driver	43024218	Top Cover, Painted		60124811
RESISTORS					
R1	Carbon Comp, 10 Ω $\pm 10\%$, 1/2W	33311001	Rubber Foot		62025398
R2-R700	Not Used		Decorative Strip, Black, Self Adhesive		62425399
R701, R702	Carbon Comp, 2.7K $\pm 10\%$, 1/2W	33312721	Socket, Output Transistor		66024275
R703, R704	Carbon Comp, 33K $\pm 10\%$, 1/2W	33313331	Terminal, Turret		64025260
R705, R706	Carbon Comp, 8.2K $\pm 10\%$, 1/2W	33318221	Washer, Mica (For Turret Terminal)		85525205
R707, R708	Carbon Comp, 180 Ω $\pm 10\%$, 1/2W	33311811	Washer, Nylon (For Turret Terminal)		61624713
R709, R710	Carbon Comp, 390 Ω $\pm 10\%$, 1/2W	33313911	Washer, Mica (For Output Transistor)		85520110
R711, R712	Carbon Comp, 1.8K $\pm 10\%$, 1/2W	33311821	Installation and Operation Manual		90727985
R713, R714	Carbon Comp, 33K $\pm 10\%$, 1/2W	33313331	Technical Manual		90728912
R715, R716	Variable, 4.7K/5K Bias Adj.	23523280	*See Page 5		
R717, R718	Carbon Comp, 5.6K $\pm 10\%$, 1/2W	33315621			

POWER SUPPLY SCHEMATIC-CITATION® TWELVE



NOTES:

1. UNLESS OTHERWISE INDICATED:

- A. RESISTOR VALUES ARE IN OHMS $\pm 10\%$, 1/2W
- B. CAPACITOR VALUES ARE IN MICROFARADS
- C. D.C. VOLTAGES MEASURED AT "O" SIGNAL, NO LOAD, 117V LINE

2. SET BIAS ADJUST POTS FOR 40MA ± 10 MA IDLING CURRENT IN OUTPUT TRANSISTORS (.008V-.013V BETWEEN TP-1 AND TP-2 AND TP-3 AND TP-4).

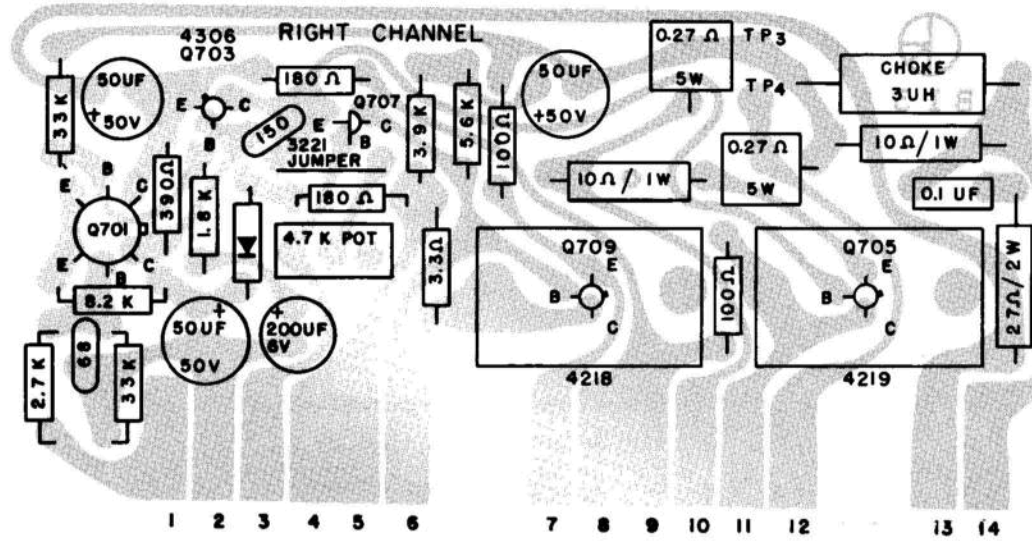
3. FOR USE IN AREAS WHICH REQUIRE 50 HERTZ, 220 VOLT CURRENT, THE AMPLIFIER MUST BE MODIFIED IN THE FOLLOWING MANNER. IT IS ADVISABLE TO HAVE THIS MODIFICATION MADE BY A COMPETENT SERVICE TECHNICIAN.

- A. 220 VOLT, 50 HERTZ CONVERSION INVOLVES THE REWIRING OF TWO WIRES PER CHANNEL.
- B. REMOVE BOTTOM PLATE OF AMPLIFIER.
- C. LOCATE BLACK AND BROWN WIRES ATTACHED TO FUSE POST. UNSOLDER BROWN WIRE ONLY. BLACK WIRE REMAINS ON FUSE POST.
- D. LOCATE BLACK/WHITE WIRE ON THE LUG STRIP DIRECTLY BEHIND THE FUSE POST AND UNSOLDER FROM LUG STRIP.
- E. JOIN THE BLACK/WHITE WIRE YOU HAVE JUST REMOVED WITH THE BROWN WIRE PREVIOUSLY REMOVED FROM THE FUSE POST AND SOLDER TOGETHER TO THE VACANT LUG PROVIDED ON THE LUG STRIP.
- F. REPEAT EXACT PROCEDURE FOR OTHER CHANNEL.
- G. REPLACE 3A-3AG FUSE SUPPLIED WITH CITATION TWELVE FOR 117 VOLT, 50-60 HERTZ OPERATION WITH 1.5A-3AG FUSE FOR 220 VOLT, 50-60 HERTZ OPERATION.
- H. REPLACE BOTTOM PLATE.

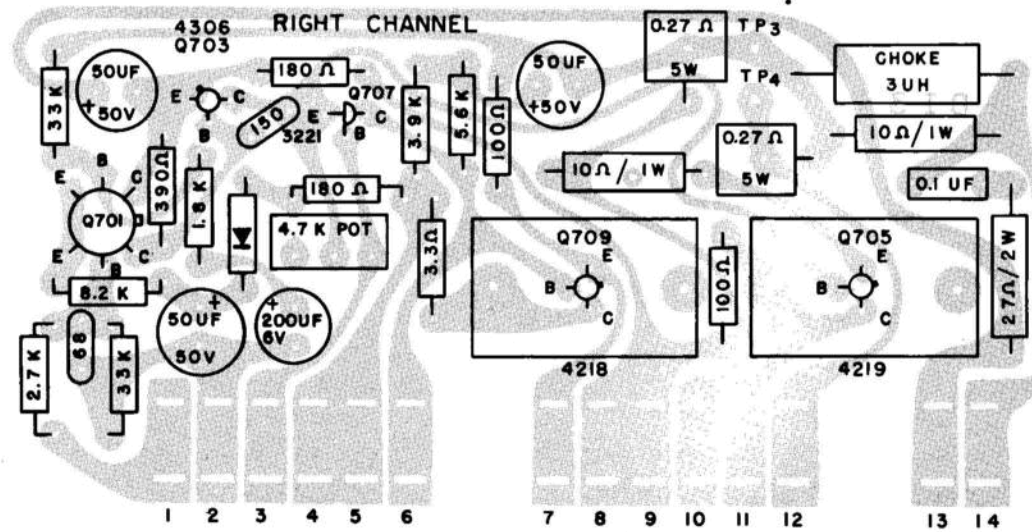
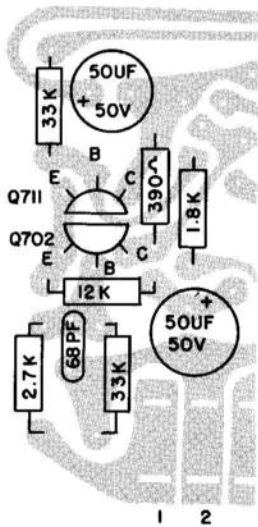
P. C. BOARDS

NOTE:

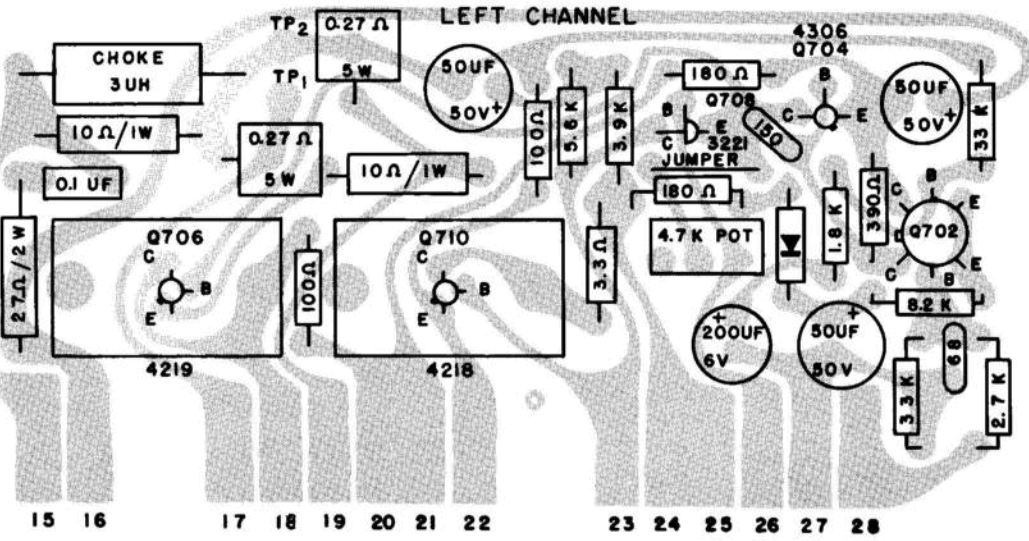
EITHER A TYPE 1 OR TYPE 2 P. C. BOARD MAY HAVE BEEN USED IN YOUR CITATION TWELVE. THEY ARE ELECTRICALLY IDENTICAL THOUGH THEY HAVE DIFFERENT COPPER LAYOUTS. THEY MAY BE USED INTERCHANGEABLY. PARTS ORDERS REQUESTING ONE TYPE MAY BE FILLED WITH THE OTHER WITHOUT NOTICE.



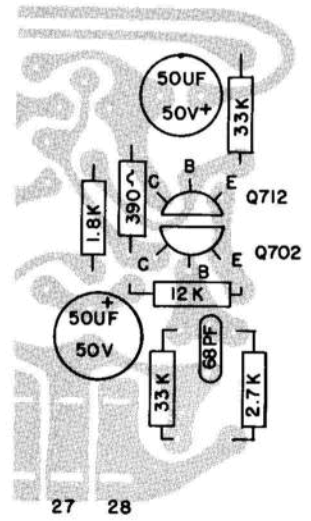
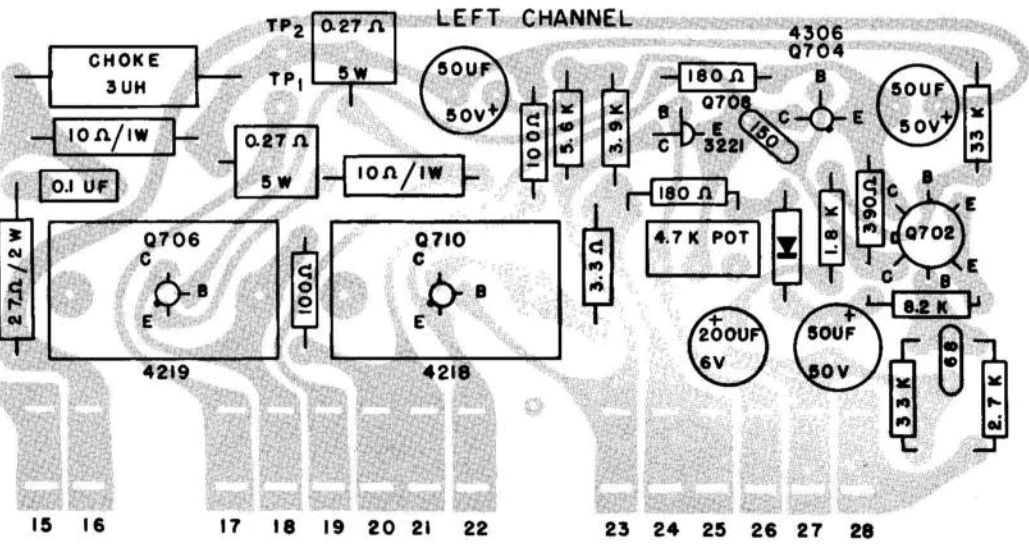
REVISED SECTION



TYPE 1



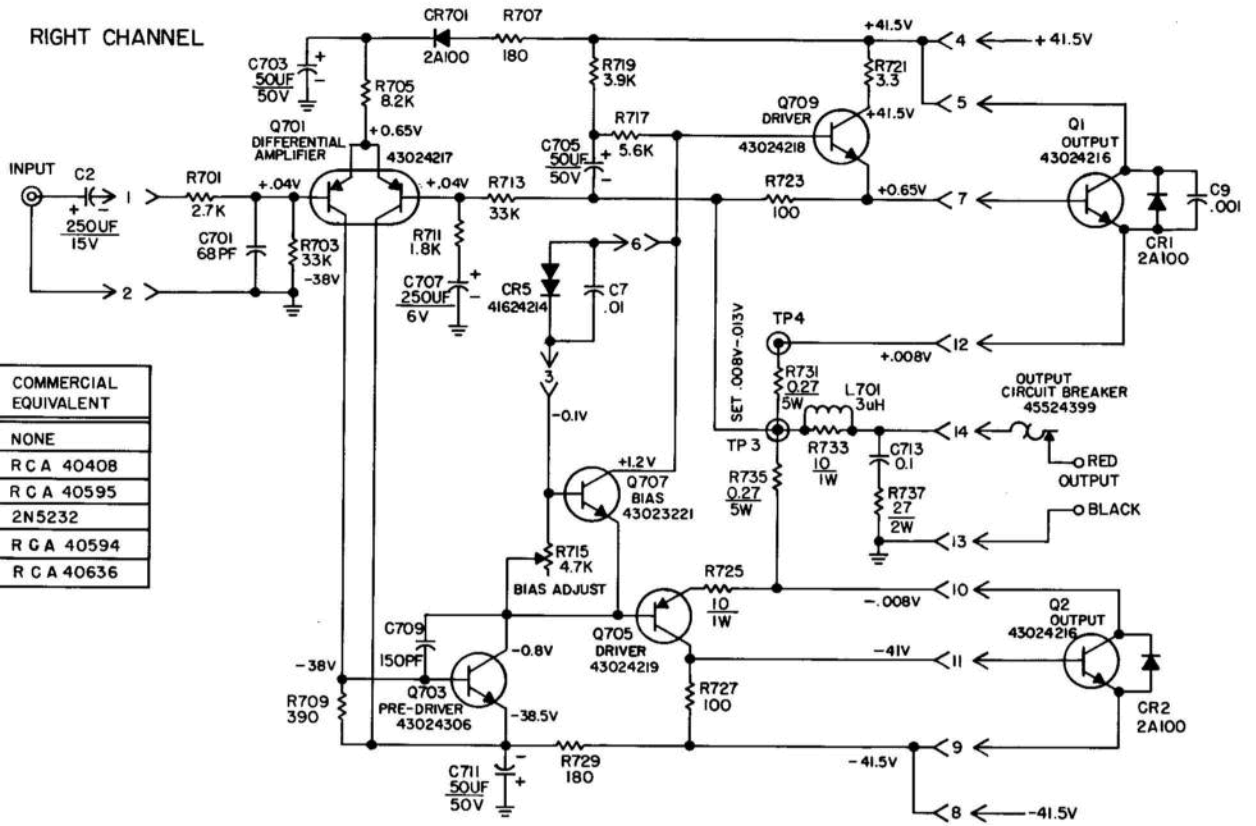
REVISED SECTION



TYPE 2

SCHEMATIC-CITATION® TWELVE

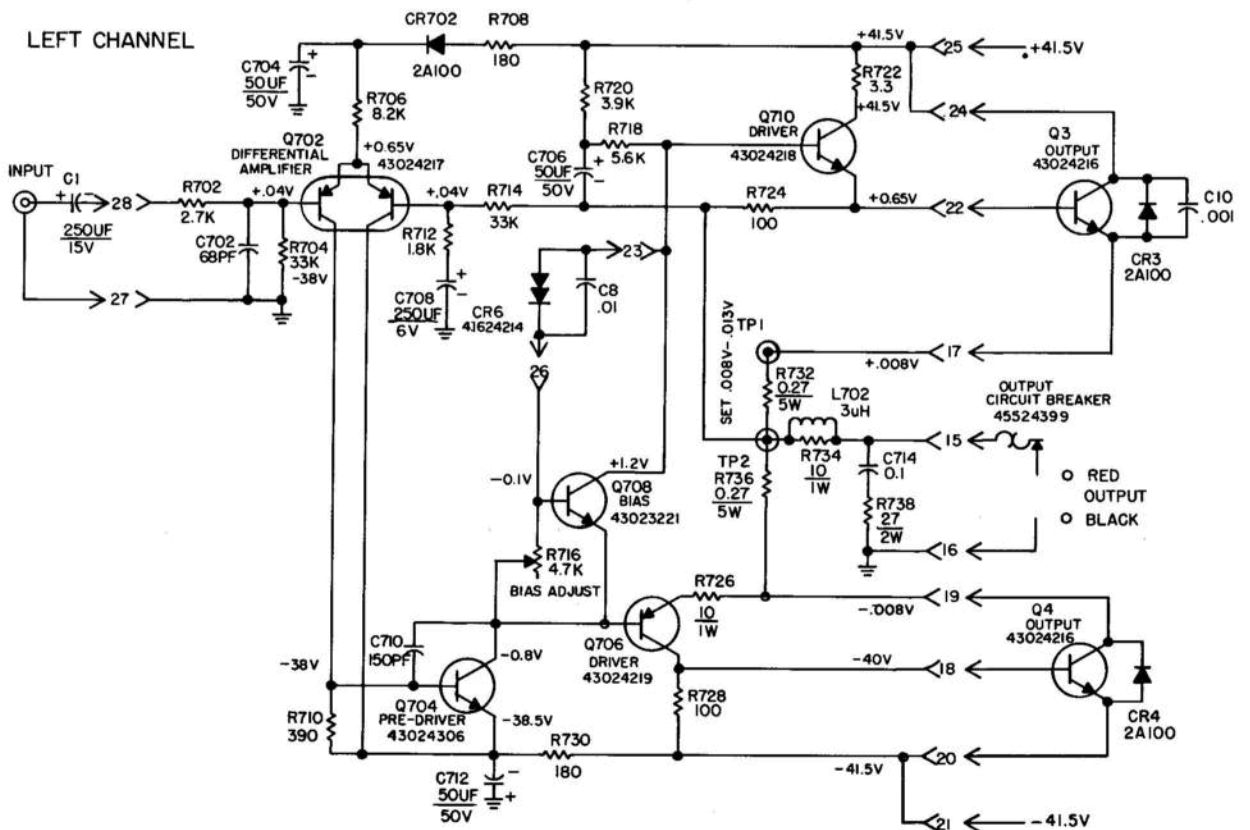
RIGHT CHANNEL



Q NUMBER	H. K. PART NUMBER	COMMERCIAL EQUIVALENT
701, 702	43024217	NONE
703, 704	43024306	R C A 40408
705, 706	43024219	R C A 40595
707, 708	43023221	2N5232
709, 710	43024218	R C A 40594
1, 2, 3, 4	43024216	R C A 40636

PRINTED CIRCUIT BOARD RECEPTACLE NUMBERS

LEFT CHANNEL



ADDENDUM TO CITATION TWELVE TECHNICAL MANUAL

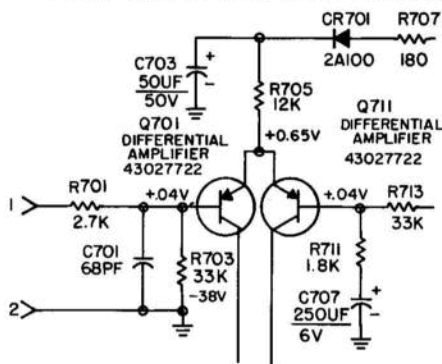
WHEN ORDERING REPLACEMENT PARTS, THESE NUMBERS SUPERSEDE ALL OTHER NUMBERS.

REPLACEMENT PARTS

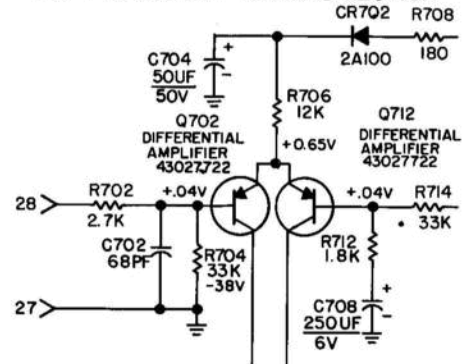
CIRCUIT REF.	DESCRIPTION	HK PART NO.	DESCRIPTION	HK PART NO.
DIODES				
CR7, CR8	Rectifier, Full Wave Bridge	41027230	FUSES AND CIRCUIT BREAKER	
			Fuse, Line 3A-3AG	45013291
TRANSISTORS				
Q701, Q702	Differential Amplifier	43027722	MISCELLANEOUS	
Q711, Q712	Differential Amplifier	43027722	Fuse Holder w/Hardware	65427001
			Line Cord	53026355
			Rubber Foot	62011692
RESISTORS				
R705, R706	Carbon Comp. 12K \pm 10% $\frac{1}{2}$ W	33311231		

REVISED SCHEMATIC SECTIONS

RIGHT CHANNEL REVISED SECTION



LEFT CHANNEL REVISED SECTION



REVISED TRANSISTOR CHART

Q NUMBER	H. K. PART NUMBER	COMMERCIAL EQUIVALENT
701, 702	43027722	2N5807
703, 704	43024306	R C A 40408
705, 706	43024219	R C A 40595
707, 708	43023221	2N5232
709, 710	43024218	R C A 40594
711, 712	43027722	2N5807
1, 2, 3, 4	43024216	R C A 40636

NOTE: ALSO SEE REVISED SECTION ON
P.C. BOARD (PAGE 4 & 5)

CITATION TWELVE DELUXE

THE FOLLOWING MODIFICATIONS ARE TO BE MADE FOR THE CITATION TWELVE DELUXE ONLY.

1. Make the following changes in the "Replacement Parts" List

a) Under "Resistors"

Line 2 add R2 1.65K 10W 10% 36928630

Line 3 change to R3-R700 not used

b) Under "Miscellaneous"

Line 5 Remove Pilot Light Assy 47626247

Line 6 Change Front Escutcheon part no. to 63028345

Add:

Pilot Lamp 46528365

Pilot Light Jewel 61626346

Light Shield 61228359

Rear Dress Plate 63028348

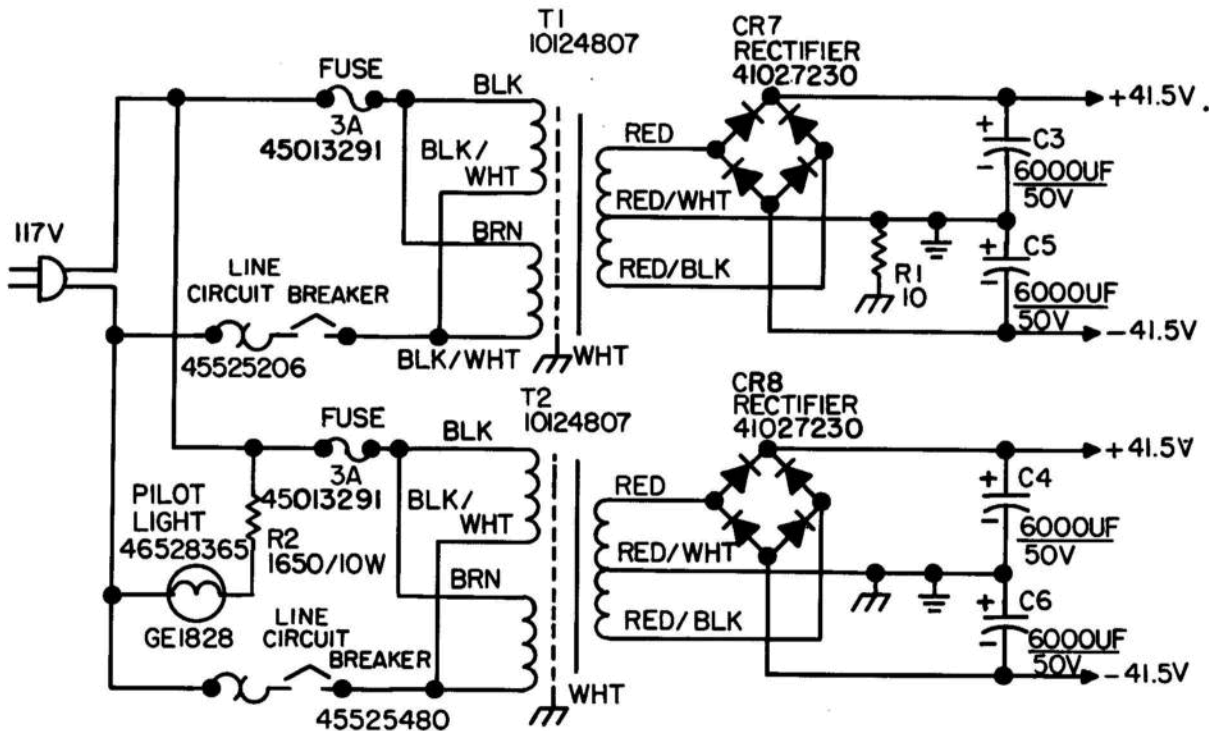
Walnut Cabinet 63628339

Vent Panel Top 60128346

Vent Panel Bottom 60128347

Rubber Feet 62018261

2. The schematic on page 3 is modified as shown below.



3. Check with factory for conversion rewiring for 220 volt, 50 Hz.