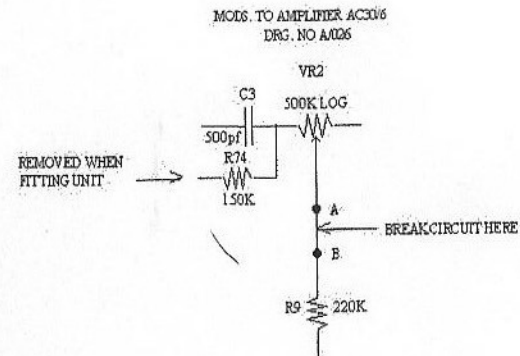
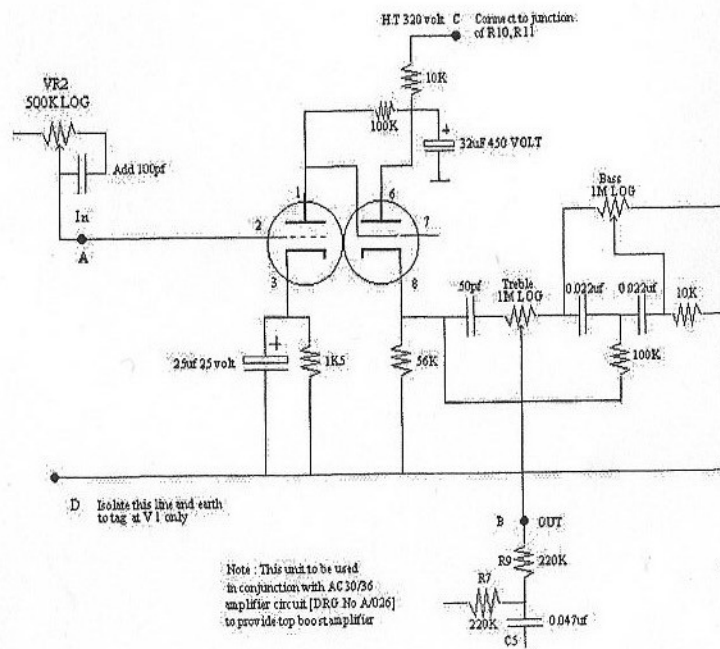
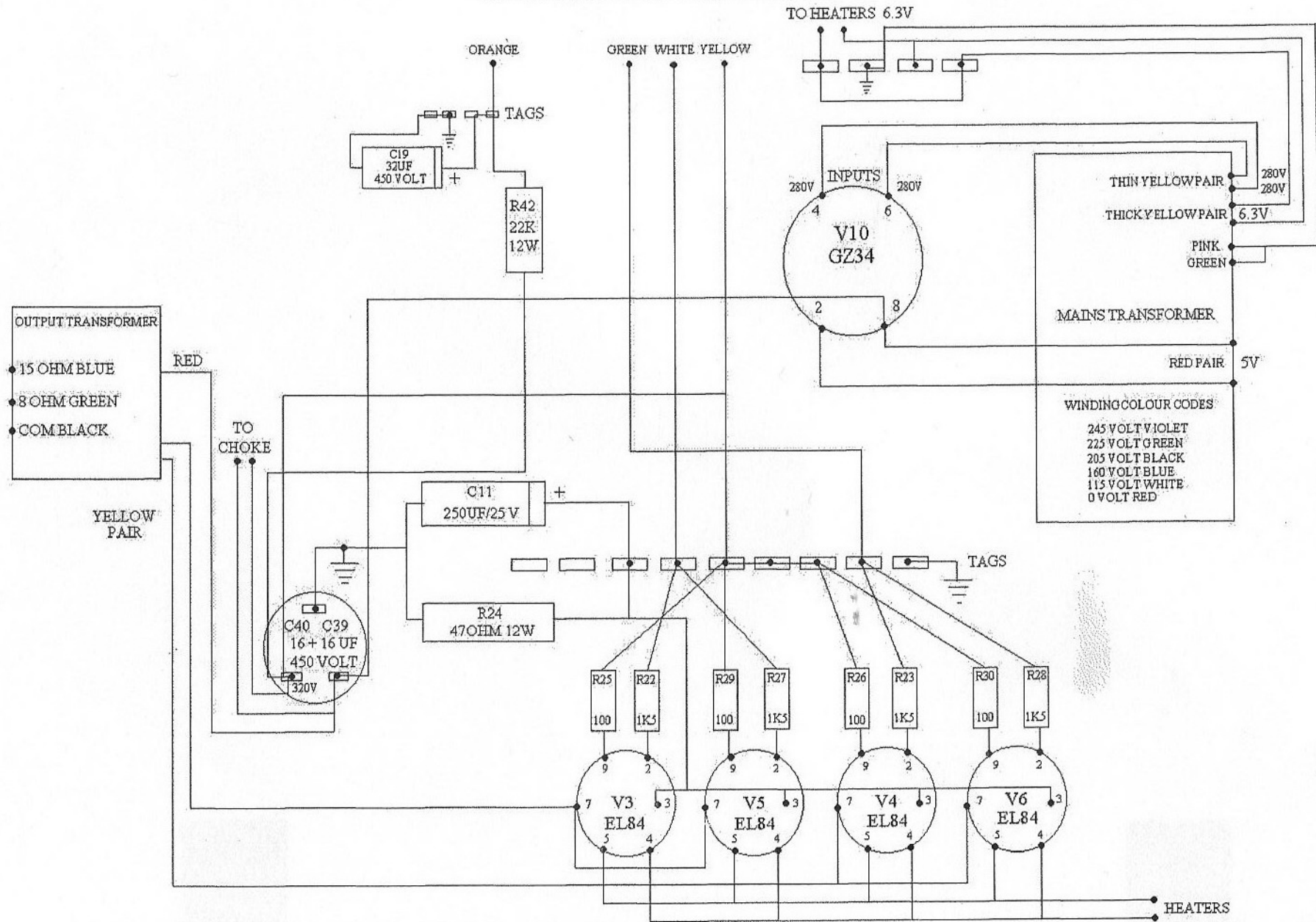


VOX TOP BOOST MOD



CONNECT HEATERS TO V2

VOX AC30 COMPONENT LAYOUT POWER SUPPLY AND OUTPUT STAGE



Vox AC30/6 Parts List

Resistors

R1	68K	R13	68K	R25	100R	R37	1M	R49	470K	R61	220K
R2	68K	R14	1M	R26	100R	R38	47K	R50	1M	R62	22K
R3	1M	R15	47K	R27	1K5	R39	100K	R51	1K5	R63	330K
R4	1K5	R16	1K2	R28	1K5	R40	15K	R52	470K	R64	560K
R5	220K	R17	1M	R29	100R	R41	47K	R53	1M	R65	1M
R6	220K	R18	100K	R30	100R	R42	22K	R54	180K	R66	1M
R7	220K	R19	100K	R31	68K	R43	10K	R55	330K	R67	1M
R8	1M	R20	220K	R32	68K	R44	10K	R56	180K	R68	3K9
R9	220K	R21	220K	R33	1M	R45	1M	R57	330K	R69	750K
R10	22K	R22	1K5	R34	2K2	R46	22K	R58	68K	R70	1K5
R11	22K	R23	1K5	R35	1M	R47	2K2	R59	68K	R71	560K
R12	68K	R24	50R	R36	1M	R48	22K	R60	270K	R72	22K
										R73	150K
VR1	500K LOG			VR2	500K LOG			VR3	250K LOG		
VR4	500K LOG			VR5	500K LOG preset						

Capacitors

C1	25uf/25	C9	0.15*	C17	25uf/25	C25	500pf	C33	0.1
C2	500pf*	C10	0.0047*	C18	0.01	C26	500pf	C34	0.1
C3	0.047*	C11	250uf/25	C19	32uf/450	C27	0.0022	C35	0.1
C4	8uf/450	C12	0.0047	C20	0.1	C28	0.01	C36	0.022
C5	0.047*	C13	0.0047	C21	0.1	C29	0.01	C37	0.1
C6	0.15*	C14	0.0047	C22	200pf	C30	0.01	C38	0.1
C7	0.047*	C15	0.0047	C23	100pf	C31	25uf/25	C39	16uf/450
C8	8uf/450	C16	(Not Present)	C24	750pf	C32	0.1	C40	16uf/450
								C41	0.005

(Components marked with an asterisk have different values dependant upon the AC30 model, see page 38)

Wound Components

T1	OUTPUT TRANSFORMER	T2	MAINS TRANSFORMER	CH1	CHOKE
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Valves

V1	ECC83	V2	ECC83	V3	EL84	V4	EL84
V5	EL84	V6	EL84	V7	ECC83	V8	ECC82
V9	ECC83	V10	GZ34				

(For additional unlisted components in the AC30/6 Treble model see page 38).

Component Differences AC30/6 Normal, Treble, Bass

Component differences between the three AC30/6 models (Normal, Treble and Bass), are limited mostly to capacitor values in the preamplifier section, and at the Cut control.

Here is a list of the affected components, and the values.

	AC30 Normal	AC30 Treble	AC30 Bass
C2	0.047	0.047	0.1
C3	500pf	500pF	1000pF
C5	0.047	0.01	0.047
C6	0.15	0.047	0.15
C7	0.047	0.01	0.047
C9	0.15	0.047	0.15
C10	0.0047	0.0022	0.01

In addition to the above differences, the AC30/6 Treble model has a different arrangement for the cathode biasing on V1, where it has separate cathode components for each triode section (rather than the shared cathode components in the Normal and Bass versions).

The cathode resistor for the triode of the brilliant channel is 1.5k (as in the second section), but the cathode capacitor differs in value and is 0.1uf (as opposed to 25uf). This is to provide the extended high frequency response of the brilliant channel.

There are also additional components at each of the channel volume controls in the Treble models. These are a 330k resistor and a 220pf capacitor, which are joined and connect to the coupling capacitors from the first preamplifier stages. The resistor then connects to one side of the volume control, and the capacitor to the wiper of the volume control. These components provide a treble emphasis. (See the schematic on page 13).

Component Revisions by date.

Component	Original Value	New Value	Date of revision
C42	None, new addition		7.2.61
C41	None, new addition		7.2.61
R4	2k2	1k5	7.2.61
R5	100k	220k	7.2.61
R6	100k	220k	7.2.61
R7	270k	220k	7.2.61
R9	270k	220k	7.2.61
R38	1M	47k	7.2.61
R39	150k	100k	7.2.61
R40	12k	15k	7.2.61
R68	1M5	3k9	7.2.61
R69	1M	750k	7.2.61
R74	None, new addition		7.2.61
C2	0.01	0.047	7.2.61
C5	0.01	0.047	7.2.61
C6	0.01	0.15	7.2.61
C7	0.01	0.047	7.2.61
C9	0.01	0.15	7.2.61
C16	Deleted		7.2.61
C41	0.003	0.005	8.5.61
R74	Deleted		14.6.63
R24	80R	50R	14.6.63

Fuse modification, location changed to Live supply line.
Previously in Neutral supply line. 14.6.63

Input voltage to GZ34 was 285V, now 290V 14.6.63

Vox AC30 Transformer wiring colour codes

Mains Transformer Inputs

245 volt winding	VIOLET	6.7 ohms appx.
225 volt winding	GREEN	5.9 ohms appx.
205 volt winding	BLACK	5.2 ohms appx.
160 volt winding	BLUE	3.5 ohms appx.
115 volt winding	WHITE	2 ohms appx.
0 volt winding	RED	

Mains Transformer Outputs

To rectifier	YELLOW (thin wires)
To 6.3 volt heaters	YELLOW (thick wires)
To 5 volt heaters	RED

Output Transformer Inputs

Primary	YELLOW
Centre Tap	RED

Output Transformer Outputs

15 ohm Tap	BLUE
8 ohm Tap	GREEN
Common Tap	BLACK

Vox AC30 Operating Voltages

Location	Voltage	
GZ34 inputs	280 volts AC each input	
GZ34 heater	5 volts AC	
Main heaters	6.3 volts AC	
R10-R11 junction	320 volts	
C8	290 volts	
C11	10 volts quiescent. 12.5 volts at 30 watts output.	
V1 anode pin 1	170 volts	
V1 anode pin 6	170 volts	
V1 cathode pin 3	1.8 volts	
V1 cathode pin 8	1.8 volts	
V2 anode pin 1	230 volts	
V2 anode pin 6	230 volts	
V2 cathode pin 3	56.5 volts	
V2 cathode pin 8	56.5 volts	
V7 anode pin 1	140 volts	
V7 anode pin 6	200 volts	
V7 cathode pin 3	1.2 volts	
V7 cathode pin 8	18 volts	
V8 anode pin 1	75 volts	
V8 anode pin 6	75 volts	
V8 cathode pin 3	3 volts	
V8 cathode pin 8	3 volts	
Top Boost Valve		
V9 anode pin 1	120 volts	Anode pin 1 180 volts
V9 anode pin 6	195 volts	Anode pin 6 290 volts
V9 cathode pin 3	1.7 volts	Cathode pin 3 1.65 volts
V9 cathode pin 8	25 volts	Cathode pin 8 180 volts

These operating voltages were recorded originally with an AVO multimeter which measures at 20k ohms per volt.

Modern multimeters typically measure at a higher ohms per volt ratio which loads the circuit less and thus indicates operating voltages higher than those originally recorded using the AVO multimeter.

(Approximately 5% higher).

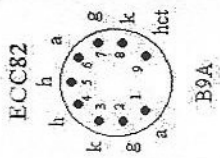
Valve Data

DOUBLE TRIODE (separate cathodes)

	Series	Parallel
Va	12.6	6.3
Ih	150	300

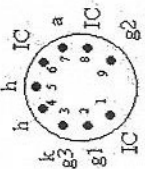
Characteristics (each section)

Va	100	250
Vg	0	-8.5
Ia	11.8	10.5
gm	3.1	2.2
u	19.5	17



OUTPUT PENTODE (pa max.=12W)

Vh	6.3	V
Ih	760	mA
Va	250	V
Vg2	250	V
Rk	135	ohm
Ia	49.2	mA
Ig2	11.6	mA
gm	11.3	mA/V
Ra	5.2	Kohm
Pout	6.0	Watt

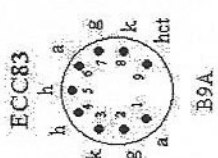


DOUBLE TRIODE (separate cathodes)

	Series	Parallel
Va	12.6	6.3
Ih	150	300

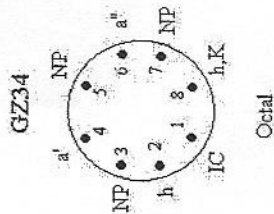
Characteristics (each section)

Va	100	250
Vg	-1.0	-2.0
Ia	0.5	1.2
gm	1.25	1.6
u	100	100



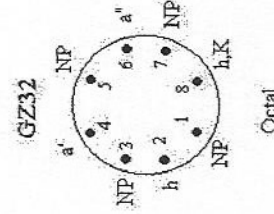
FULL WAVE RECTIFIER

Vh	5.0	V
Ih	1.9	A
Vin (r.m.s.)	2 x 450	V
Iout max	250	mA
C max	60	uF
Rlim min (per anode)	150	ohm



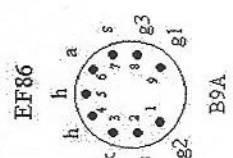
FULL WAVE RECTIFIER

Vh	5.0	V
Ih	2.3	A
Vin (r.m.s.)	2 x 500	V
Iout max	300	mA
C max	60	uF
Rlim min (per anode)	150	ohm



LOW NOISE A.F. VOLTAGE AMPLIFYING PENTODE

Vh	6.3	V
Ih	200	mA
Va	250	V
Vg3	0	V
Vg2	140	V
Vg1	-2.0	V
Ig2	600	uA
Ia	3.0	mA
gm	2.0	mA/volt
ug1-g2	38	



OUTPUT PENTODE (pa max.=25W)

Vh	6.3	V
Ih	1.5	A
Va	250	V
Vg2	250	V
Vg3	0	V
Rk	106	ohm
Ia	100	mA
Ig2	14.9	mA
gm	12.5	mA/V
Ra	2.0	Kohm
Pout	11	Watt

