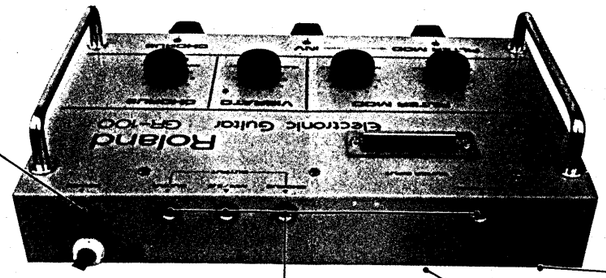
GR-100 SERVICE NOTES

First Edition

SPECIFICATIONS

Vibrato Rate	0.7 – 8 Hz
Power Consumption	9W
Dimensions	300 (W) x 250 (D) x 93 (H) mm
Weight	3.1 kg

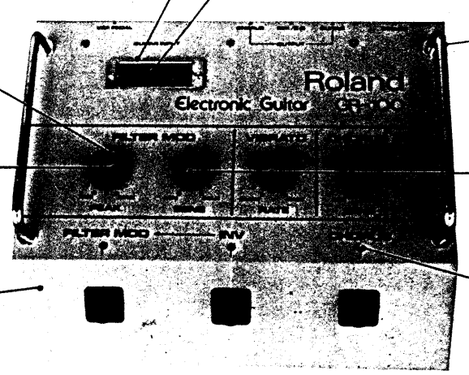


Power switch
ESB-70294 (13129110)
common to all voltages
Button
N-510 (2247051000)

Rubber foot N-331
(2235333100)

Jack
HLJ-1307-01-030
(13449216)

Chassis (bottom)
N-265
(22813265)



Lock shell
SLC-1204-24L2 (12139302)

Connector (w/Lock shell)
SLC-1204-2324F (13429405)

Pot
EVHRRA360A15
(13219101)

Knob
N-112 (2247011200)

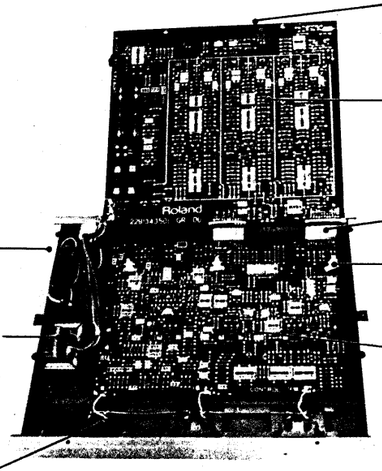
Panel
~~N-235 (2221323500)~~
N-253 (2221325301)

Handle (R.L same)
N-204 (2231020400)

Washer
N-701 (2213370101)

Pot
EVHRRA360B54
(13219104)

LED
TLR-105 (15029109)



Heat sink
N-424
(22463424)

VOICING Board
OP9223-030 VOICE
(79223030V)

Flat cable N-970
(2343397000)

PCB Post
LCBS-6N
(22199502)

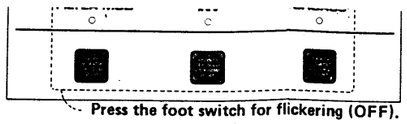
CONTROL Board
OP9223-030 CONTROL
(79223030C)

Holder (fuse)
N-267 (2219326700)

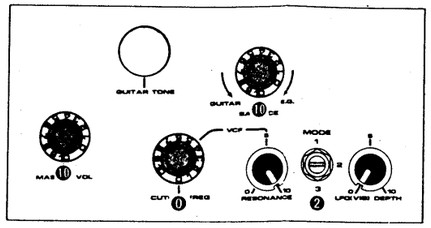
Power transformer
PT-N-236NA (22453236N1) 100V
PT-N-237CA (22453237C1) 117V
PT-N-238DA (22453238D1) 220/240V

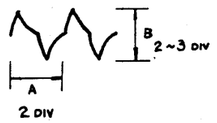
Foot switch w/matt
N-903 (2312390300)

ADJUSTMENTS VOICE BOARD



Panel illustration-common to para. 1 and 2





1. RESONANCE

1-1. Turn VR2 FCW (viewed from component side), VCFs will oscillate. Reverse VR2 until VCFs cease oscillation, further rotate CCW 5 degrees.

2. VCF CUTOFF

2-1. Connect scope to TP-8 of VOICE board with timebase set to 1ms/div and vertical to 50mV/div.

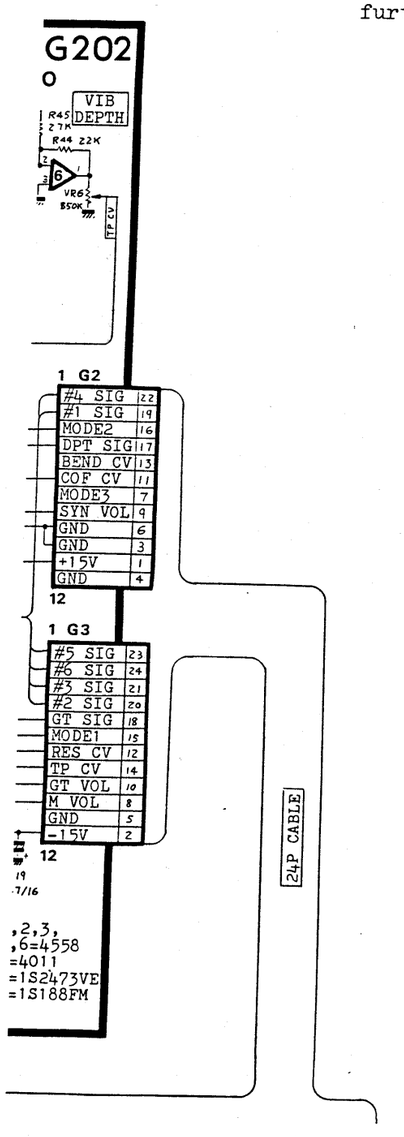
2-2. Pluck 1st string on 7th fret. Set VR1 of CH-1/2 for maximum amplitude on the screen - 100-150mV p-p.

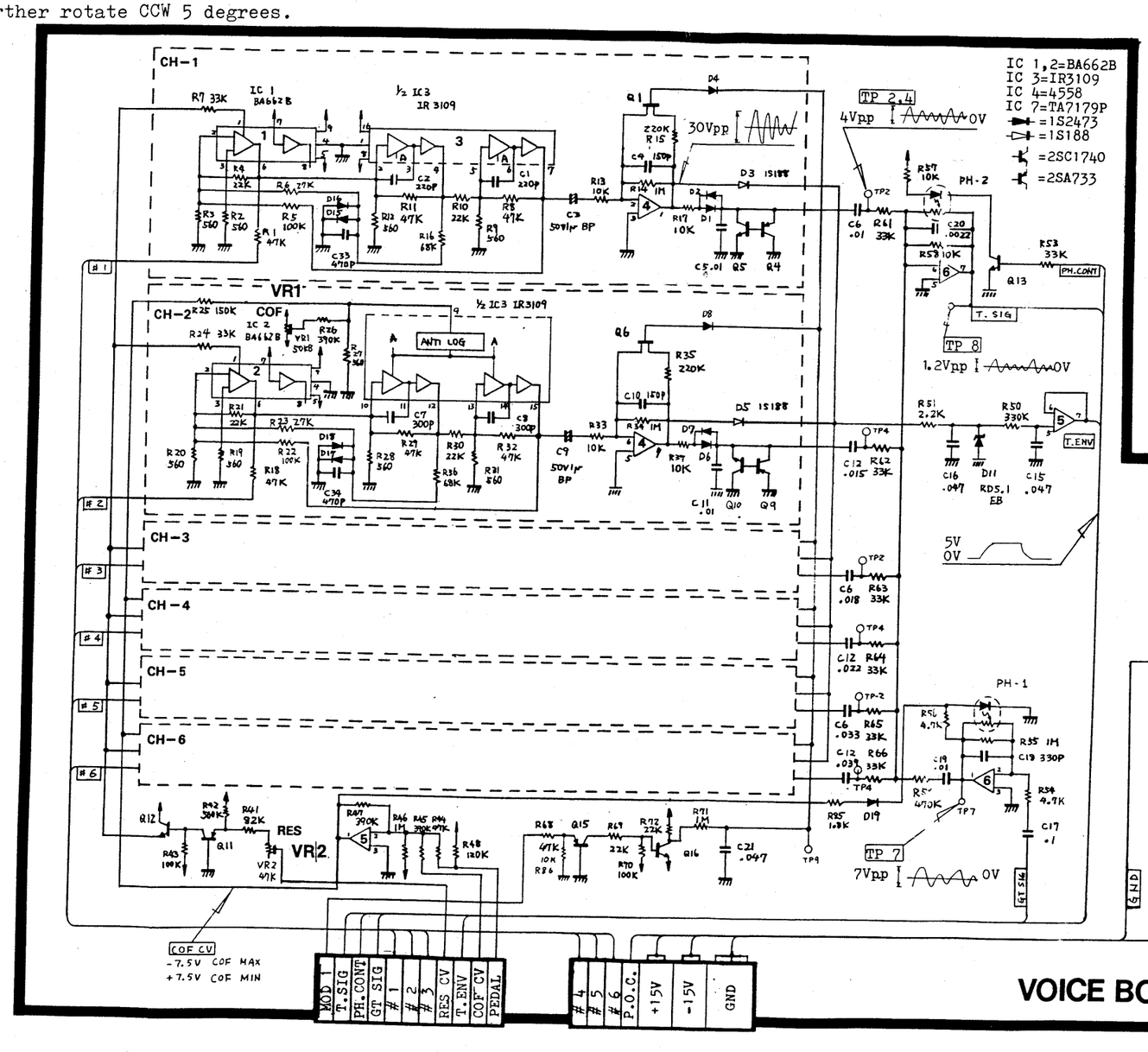
2-3. Pluck 2nd string on 7th fret. The waveform should be approx. 140mV p-p. Since the same control voltage determined by that VR1 is also applied to the rest half of IC3 for CH-2, not all gain difference between two VCFs is a resultant of VR1 misadjustment.

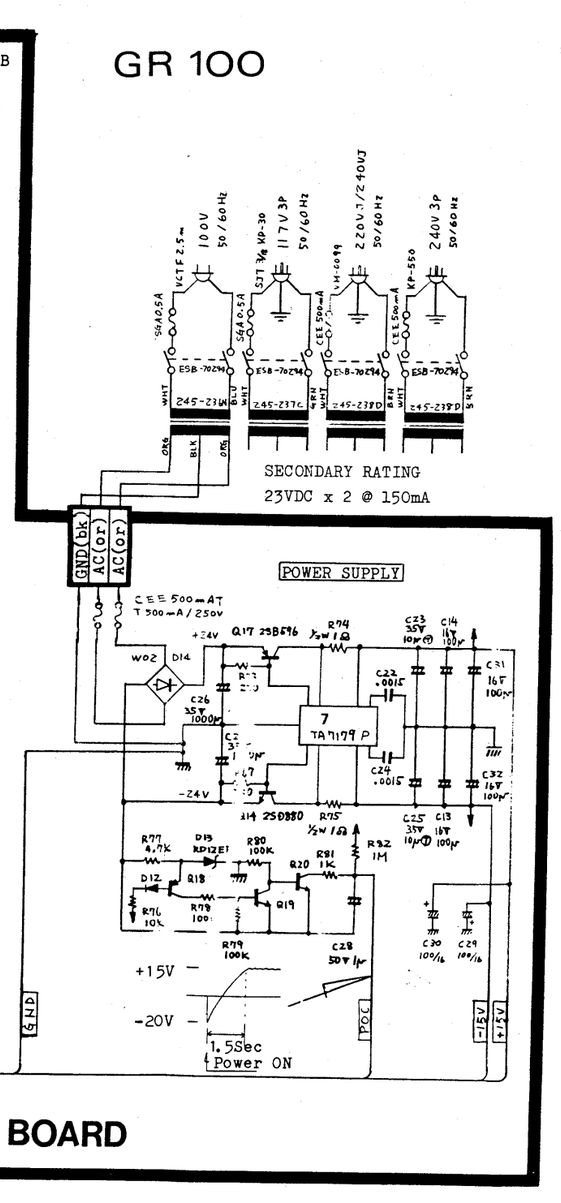
2-4. Similarly, set VR1's of CH- 3/4 and 5/6.

CAUTION
Avoid adjusting on the 2nd harmonics, referring to the table right.

CH	PERIOD(msec)	FREQ(Hz)
1	2	494
2	2.8	370
3	3.5	294
4	4.6	220
5	6	164
6	8	123





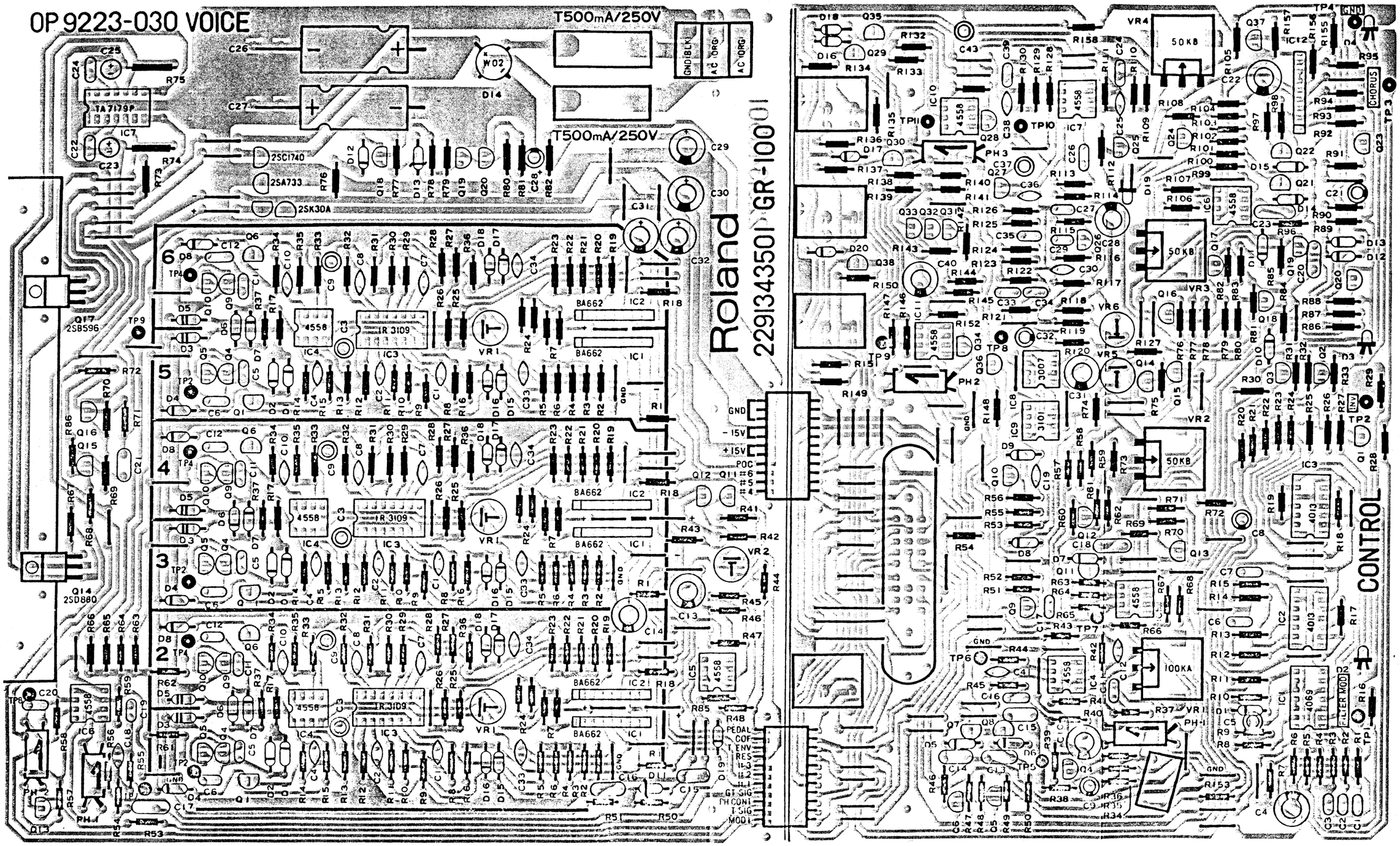


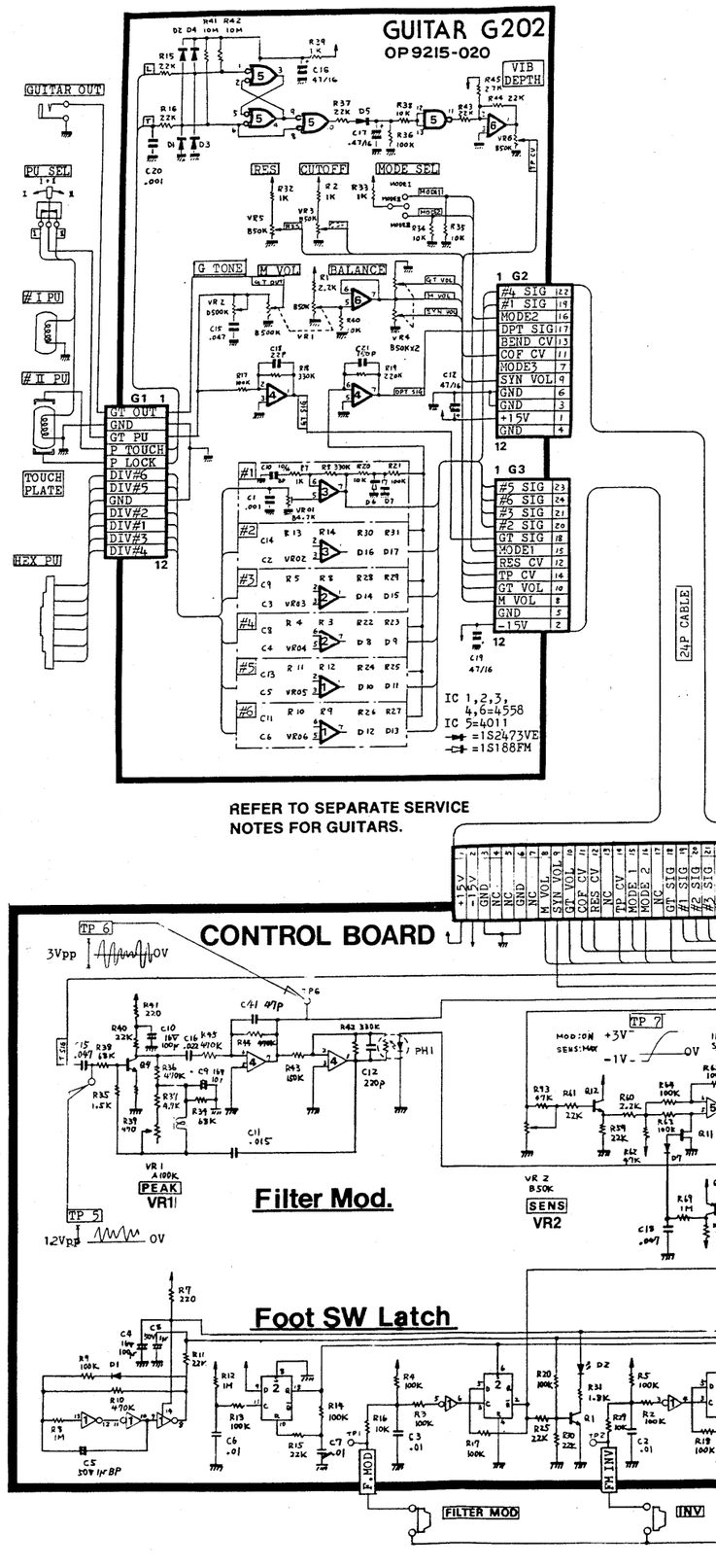
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41

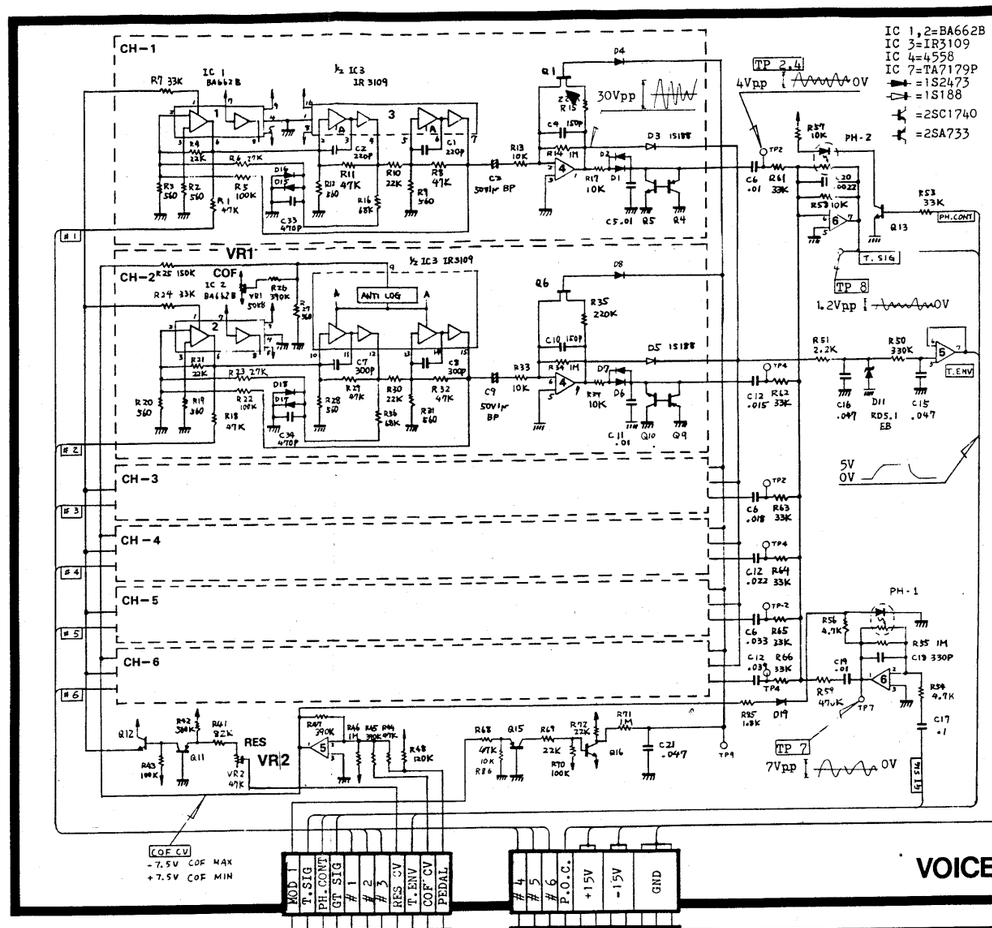
A B C D E F G H I J K L M N O P Q R S T U V

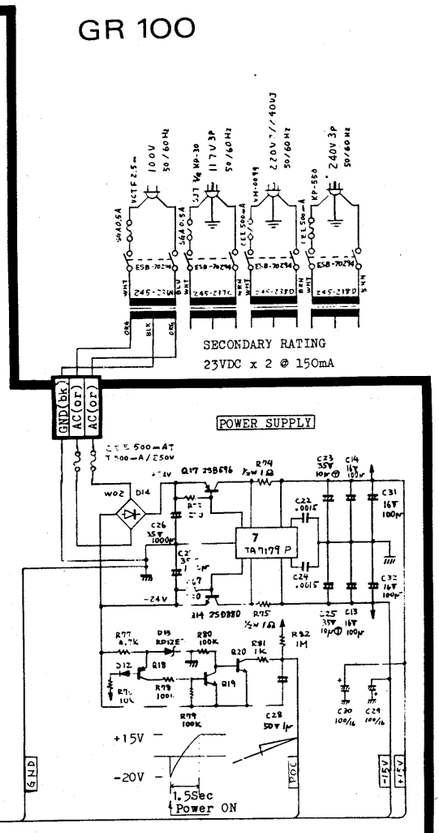
OP9223-030 VOICE (P/N 7922303001V)

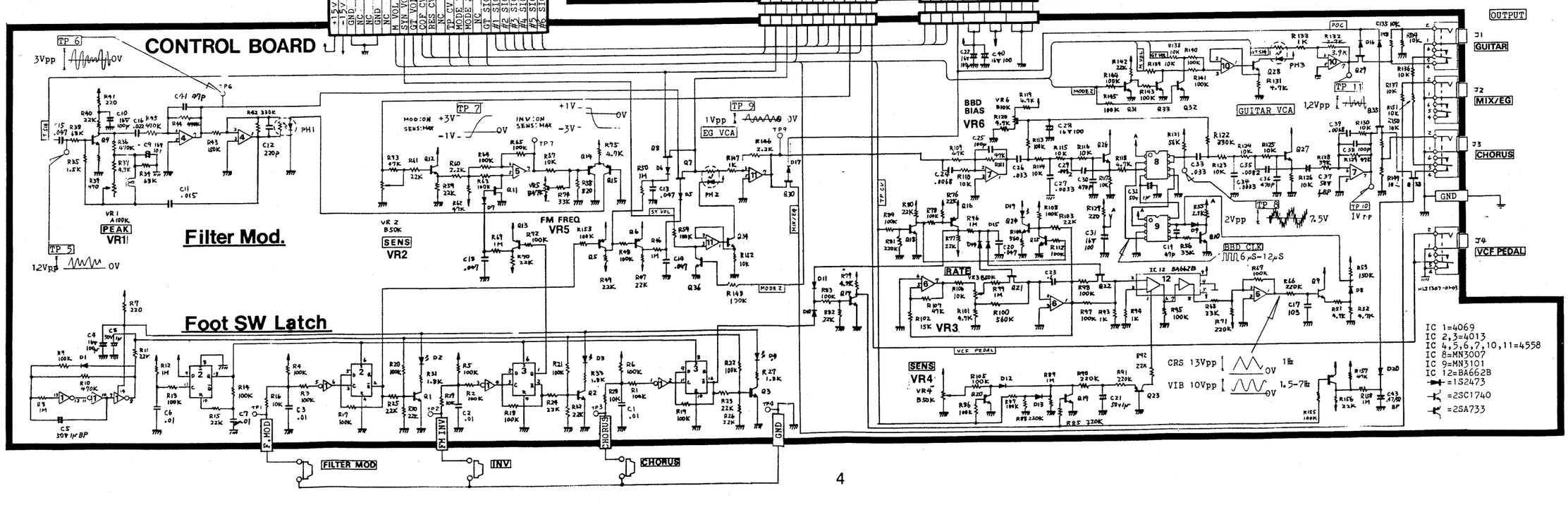
OP9223-030 CONTROL (P/N 7922303001C)




GUITAR G202
OP9215-020
VIB DEPTH
GUITAR OUT
PU SEL
#I PU
#II PU
TOUCH PLATE
HEX PU
RES
CUTOFF
MODE SEL
G TONE
M VOL
BALANCE
1 G2
1 G3
G1 1
GT OUT
GND
GT PU
P TOUCH
P LOCK
DIV#6
DIV#5
GND
DIV#2
DIV#1
DIV#3
DIV#4
12
#4 SIG 22
#1 SIG 19
MODE2 16
DPT SIG 17
BEND CV 13
COF CV 11
MODE3 7
SYN VOL 9
GND 6
GND 3
+15V 1
GND 4
#5 SIG 23
#6 SIG 24
#3 SIG 21
#2 SIG 20
GT SIG 18
MODE1 15
RES CV 12
TP CV 16
GT VOL 10
M VOL 8
GND 5
-15V 2
IC 1,2,3,
4,6=4558
IC 5=4011
=1S2473VE
=1S188FM
24P CABLE
REFER TO SEPARATE SERVICE
NOTES FOR GUITARS.


CH-1
CH-2
CH-3
CH-4
CH-5
CH-6
VR1
IC 1 BA662B
½ IC3 IR3109
IC 2 BA662B
COF
ANTI LOG
RES
VR2
COF CV
-7.5V COF MAX
+7.5V COF MIN
30Vpp
4Vpp
1.2Vpp
5V
0V
7Vpp
TP 2,4
TP 8
TP 7
PH-1
PH-2
PH.CONT
T. SIG
T. ENV
IC 1,2=BA662B
IC 3=IR3109
IC 4=4558
IC 7=TA7179P
=1S2473
=1S188
=2SC1740
=2SA733
MOD 1
T. SIG
PH. CONT
GT SIG
#1
#2
#3
RES CV
T. ENV
COF CV
PEDAL
#4
#5
#6
P.O.C.
+15V
-15V
GND


GR 100
SECONDARY RATING
23VDC x 2 @ 150mA
GND (bk)
AC (or)
AC (or)
POWER SUPPLY
+15V
-20V
1.5Sec
Power ON
VOICE BOARD


CONTROL BOARD
Filter Mod.
Foot SW Latch
PEAK
VR1
SENS
VR2
FM FREQ
VR5
RATE
VR3
SENS
VR4
BBD BIAS
VR6
GUITAR VCA
EG VCA
BBD CLK
OUTPUT
J1 GUITAR
J2 MIX/EG
J3 CHORUS
GND
J4 VCF PEDAL
FILTER MOD
INV
CHORUS
IC 1=4069
IC 2,3=4013
IC 4,5,6,7,10,11=4558
IC 8=MN3007
IC 9=MN3101
IC 12=BA662B
=1S2473
=2SC1740
=2SA733

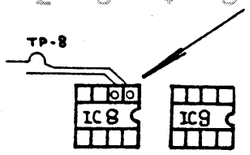


Fig. A

ADJUSTMENTS CONTROL BOARD

1. BBD BIAS

Controls setting: unconditional Input: no signal

Fig. B

1-1. Connect scope to TP-8 (pin 7 or 8 of IC8) of CONTROL BOARD.
1-2. Set scope vertical to 50mV/div, AC coupling and adjust timebase to display waveforms as shown in figure B.
1-3. Adjust VR6 to align DC levels of BBD outputs: narrow and center the brighter portion (thicker in Fig. B) of traces.
This is successfully done, if microsec range is provided for timebase, by displaying two cycles and adjusting VR6 to overlap two traces. See Fig. C.

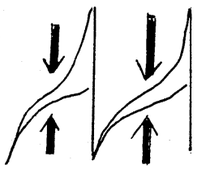
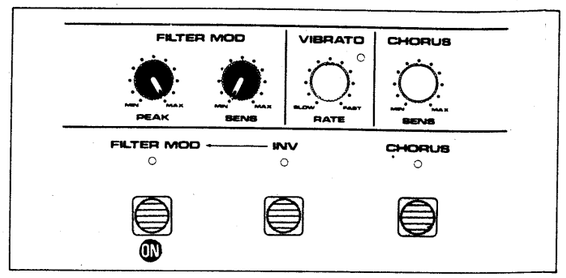
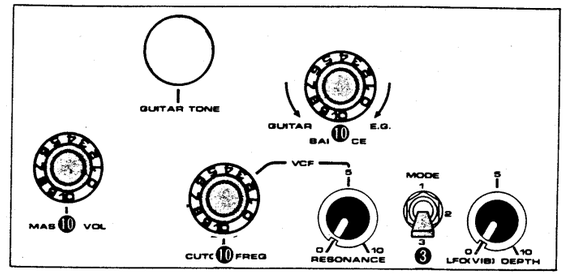


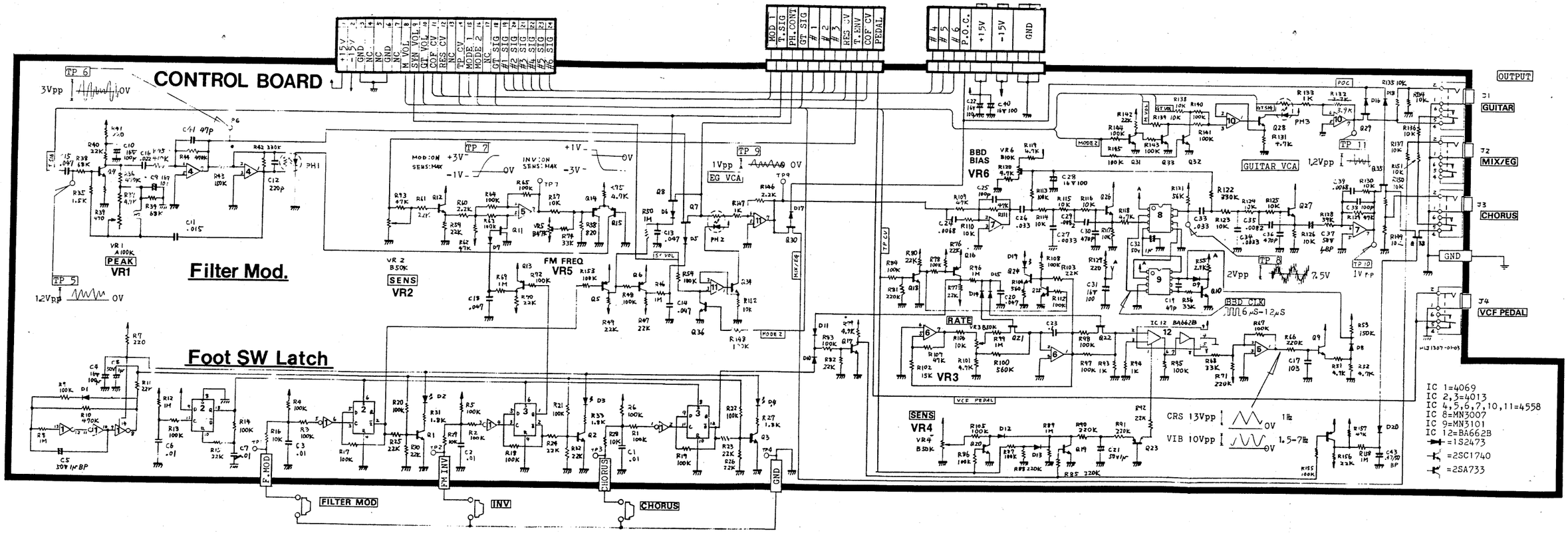
Fig. C

2. FILTER MODULATION (FREQUENCY)

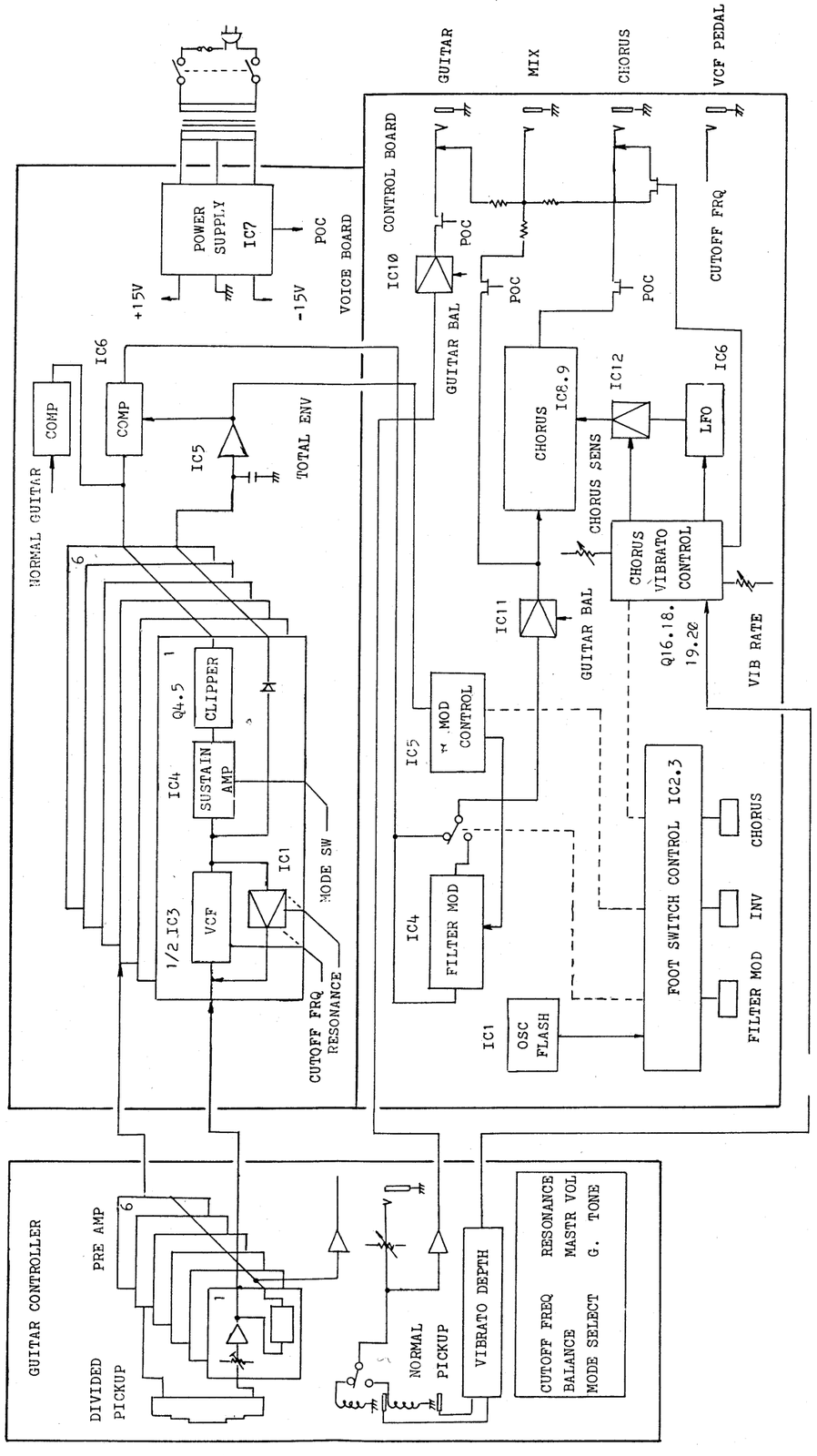




Prepare an amplifier for monitoring.
2-1. Turn VR5 FCCW when facing the foil side.
2-2. Stroke 6 strings forte, advance VR5 until the tone colors change, then reverse VR5 as little enough as tones are restored. MODULATION CONTROL should now be set at a critical point.



BLOCK DIAGRAM



PARTS LIST

Mark * indicates new parts

*2281326500	Chassis N-265 bottom	
*2281326601	Chassis N-266A jack	
2235333100	Base (foot) N-331	
*2221323501	Panel ~~N-235A~~ N-253A front	
2231020400 (108-025A)	Handle (R.L same) N-204	
2213370101	Washer (021-038) handle	
2312390300	Foot switch w/matt N-903	
13129110	Power switch ESB-70294	
2247051000	Button N-510 red P.SW	
2247011200	(016-043) Knob N-112	
*13449216	Jack w/pcb HLJ1307-01-030	
13429405	24-p Connector socket SLC1204-2324F w/Lock shell	
12139302	Lock shell SLC-1204-24L2	
22453236N1	Power transformer PT-N-236N (100V)	
22453237C1	PT-N-237C	117V
22453238D1	PT-N-238D	220/240V
12559104	Fuse SGA 0.5A	100/117V
12559511	Fuse CEE T500mA	220/240V
13219104	Pot EVHRRA360B54	
*13219101	Pot EVHRRA360A15	
13299116	SR19R 47KB trimmer	
13299114	SR19R 10KB	
2244020500	Coil 3R 700mH	
2246342400	Heat sink N-424	
12199519	Fuse holder TF-758 clip	
12199509	Fuse holder XN-1153	
2215352600	Boss nut 3 x 12mm	
13619713NO	Tantalum cap 35V 10μF	
13639146MO	Electro. radial lead 35V 1000μF	
13639942MO	ECEA50N1 50V 1μF N.P.	
13639941	ECEA50NR47 50V 0.47μF N.P.	

7922303001V	VOICE PCB Assy OP9223-030 VOICE
7922303001C	CONTROL PCB Assy OP9223-030 CONTROL
2291343501	PCB VICE/CONT less parts
22199502	Spacer LCBS-6N pcb
2215051800	Long nut 3 x 15mm
15229803	BA662 A or B
15199110TO	IC TA7179P
15229801	IC IR3109
*15219205	BBD MN3007
15169504	MN3101 BBD driver
15159105HO	HD14013BCP
15159116TO	TC4069UBP
15189103	NJM4558D
15119106	2SA733 P or Q transistor
15119806	2SB596 Y or O
15129113	2SC1740-R
15129815	2SD880 O or Y
15139103	2SK30A-GR FET
15019122	1S188FM diode
15019103	1S2473 diode
15019236	W-02 bridge rec.
15019521	RD5.1EB zener
15019548	RD12EB zener
15029102	TLR105 LED F. SW
15029109	GL3AR2 LED LFO
15229702	P873 (red) photo coupler
13439604	Connector SLC-1204-1324M C-24D
13439404	Connector SLC-1204-1324F C-24D