

GULBRANSEN MODEL K RIALTO-1

Two-stage Pre-Amplifier
and
Line Amplifier

Adjustments and component identification

An arbitrary component-numbering system is applied to allow matching components on the drawings with the respective components on the layout photos.

Two-stage Pre-amp

There are eight potentiometers for setting the bias of each channel. Insert a sine-wave signal to a stage, and set the bias so that, as the applied signal level is increased, clipping occurs on both the positive peaks and the the negative peaks at the same time. This is, in effect, a "symmetry" setting.

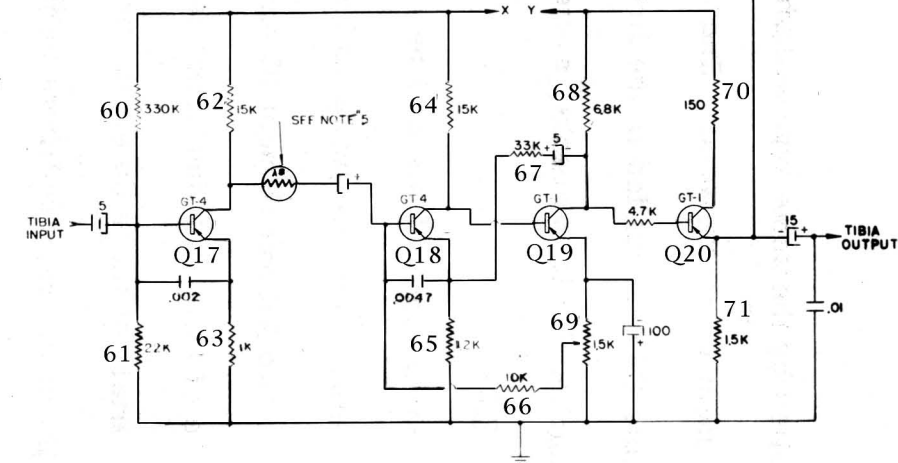
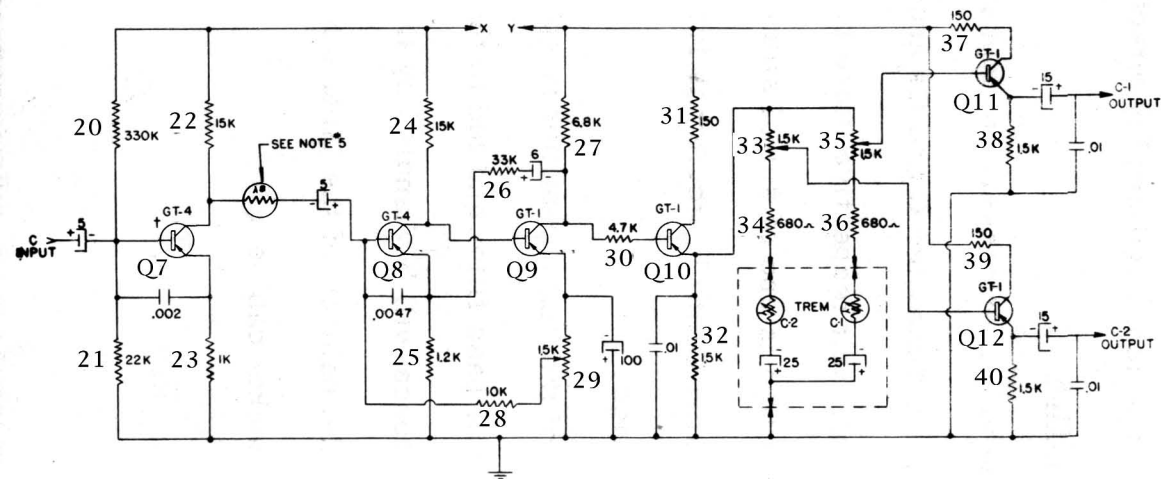
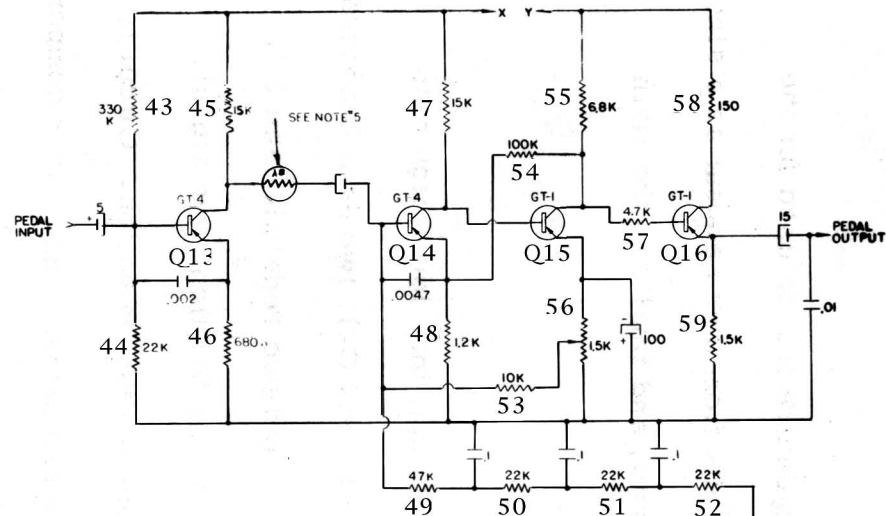
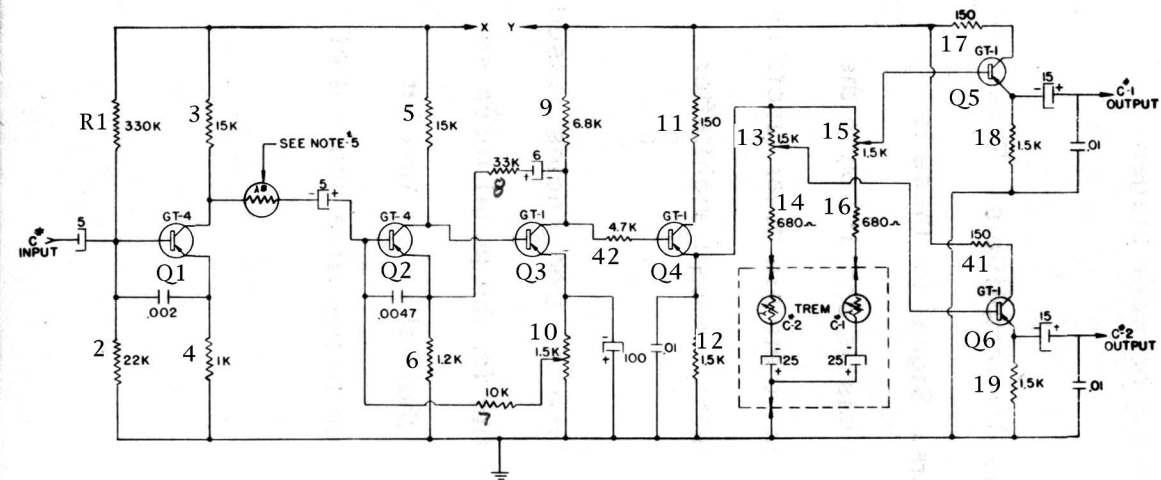
Line Amplifier

There are two kinds of adjustments here:

- The feedback potentiometers set the channel gains.

- The tremulo potentiometers set the modulation amplitudes.

GULBRANSEN MODEL K LINE AMPLIFIER

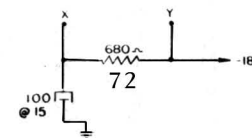


NOTES

- 1- CAPACITORS IN MICROFARADS; ELECTROLYTIC CAPACITORS 15W.V.D.C.; PAPER CAPACITORS 100W.V.D.C.; EXCEPTIONS ARE INDICATED.
- 2- RESISTORS ARE 1/2 WATT 10%, UNLESS OTHERWISE NOTED.
- 3- COMPONENTS INSIDE DOTTED LINES LOCATED ON TREMOLO CIRCUIT BOARD. LAMP VOLTAGE CONTROLLED BY MAIN TREMOLO SWITCH.
- 4- LIGHT DEPENDANT RESISTORS INDICATED BY .
- 5- LIGHT CONTROLLED RESISTORS INDICATED BY . RESISTANCE RANGE AS INDICATED AT X: LAMP CONTROLLED BY EXPRESSION SHOE.
- 6- DETAIL "A" SHOWS EDGE CONNECTIONS OF LINE AMPLIFIER CIRCUIT BOARD. EQUIVALENT CIRCUIT POINTS ON SCHEMATIC.
- 7- TRANSISTORS USED AS FOLLOWS:
A - GT-4; SELECTED LOW NOISE.
B - GT-1; PEDAL GRADE TRANSISTORS.
C - MATCHED LOW NOISE GT-4 INDICATED BY † (INPUT IMPEDANCE).



DETAIL "A"



Adjust feedback potentiometers to balance channel gains.

Adjust tremolo potentiometers to balance the four tremolo amplitudes.

Tib in

Ped in

C in

C# in

P

C

T

C#

gnd

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 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

17

13

8

18

14

2

C# 2
TREM

6

69 T

56 P

29 C

10 C#

C# 1
TREM

5

C 2
TREM

12

C 1
TREM

11

19

15

9

3

20

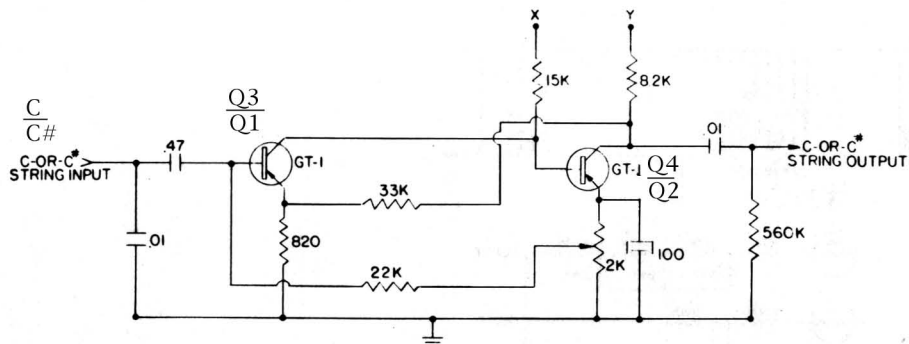
16

10

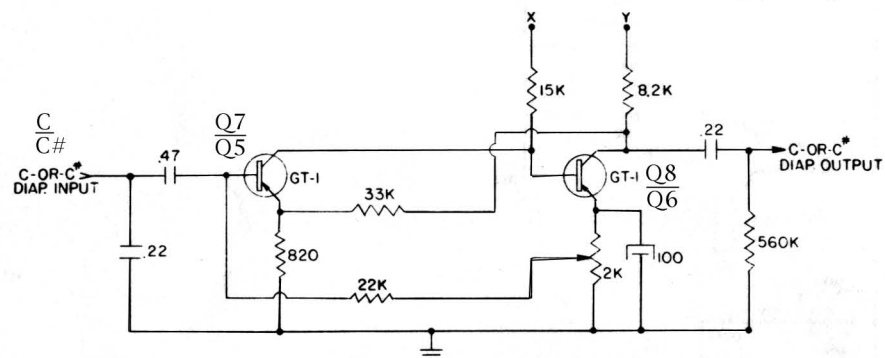
4

100k

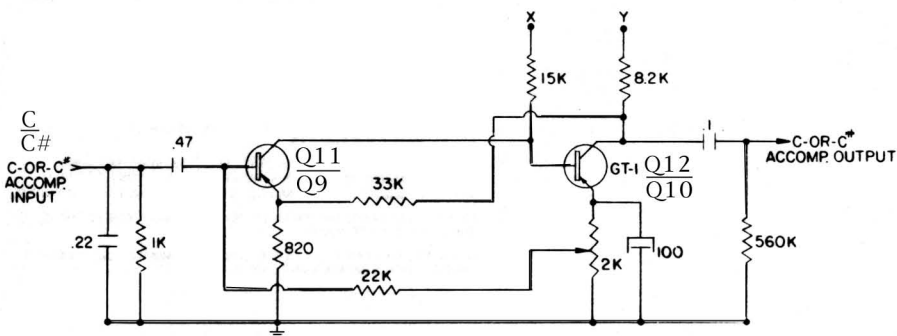
240k



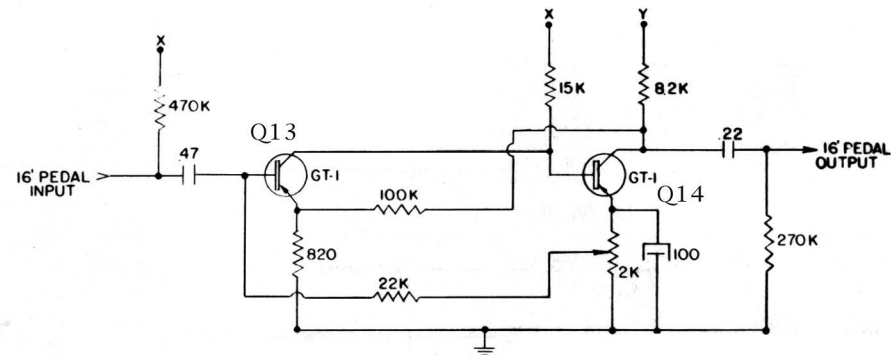
STRING CHANNELS
ONE CHANNEL SHOWN
SEE NOTE-4



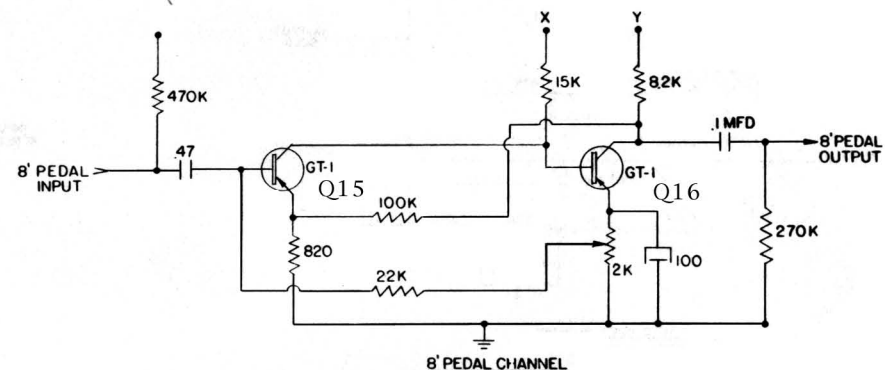
DIAPASON CHANNELS
ONE CHANNEL SHOWN
SEE NOTE-4



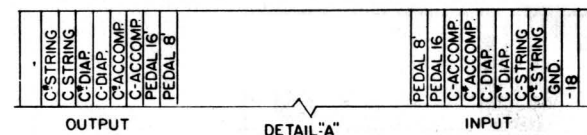
ACCOMPANIMENT CHANNELS
ONE CHANNEL SHOWN
SEE NOTE-4



16' PEDAL CHANNEL

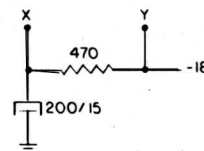


8' PEDAL CHANNEL



NOTES

- 1- CAPACITORS IN MICROFARDS; ELECTROLITIC CAPACITORS 15 W.V.D.C.;
- 2- RESISTORS ARE 1/2 WATT 10%.
- 3- DETAIL "A" SHOWS EDGE CONNECTIONS OF TWO STAGE PRE-AMP CIRCUIT BOARD EQUIVALENT CIRCUIT POINTS ON SCHEMATIC.
- 4- EACH CIRCUIT BOARD HAS TWO IDENTICAL CHANNELS, ONE IS THE C, THE OTHER THE C# CHANNEL.



Apply sine-wave signal to an input, and scope the respective output. Adjust potentiometer half way between clipping on the positive or the negative peaks of the signal.

FIG 3-3

OUTPUTS

P8

P16

C AC

C# AC

C DIA

C# DIA

C ST

C# ST

16

14

12

10

8

6

4

2

CAUTION
FACTORY
ADJUST

CAUTION
FACTORY
ADJUST

CAUTION
FACTORY
ADJUST

CAUTION
FACTORY
ADJUST

CAUTION
FACTORY
ADJUST

15

13

11

9

7

5

3

1

X

AGC
Y

GND

INPUTS

2-stage pre-amp

S/A MODEL
8 7 6 5 4 3 2 1