

Gibson

AMPLIFIER

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MASTER SERVICE BOOK

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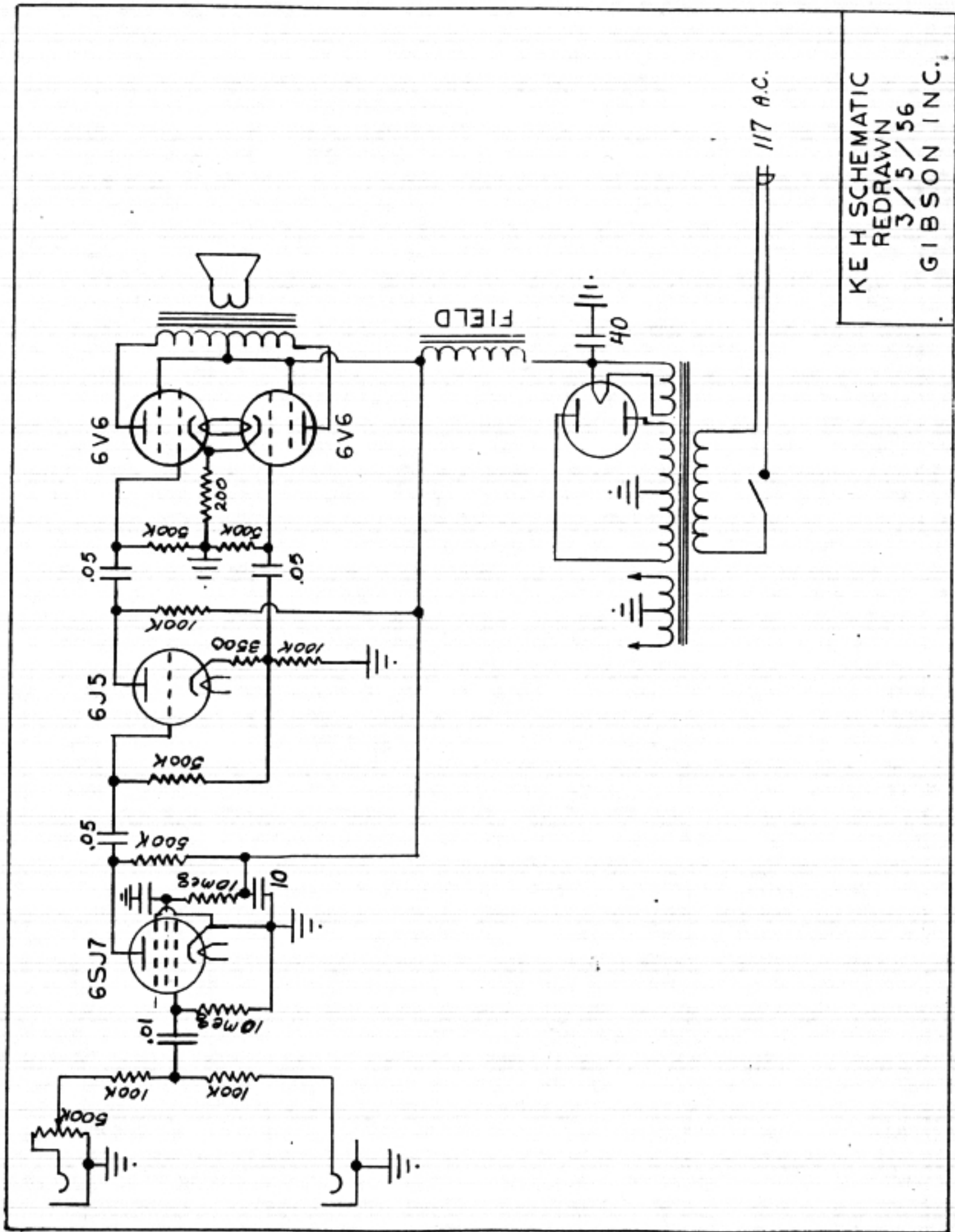
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KALAMAZOO
MODEL K E A AMPLIFIER

INSTRUCTIONS



GIBSON INC., KALAMAZOO, MICH.



KE H SCHEMATIC
 REDRAWN
 3/5/56
 GIBSON INC.

Separate the amplifier and microphone as far as possible to prevent noise interference or howl known as "feedback". Reduce the volume control setting to just below the point where this feedback occurs. The setting of the volume control will vary according to the size of the room, its acoustical properties and also with the distance between the loud speaker and the microphone.

Turn the volume control all the way down when the MICROPHONE receptacle is not in use as hum may otherwise be caused.

GIBSON

MODEL KEH-R AMPLIFIER

INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICH.

GIBSON

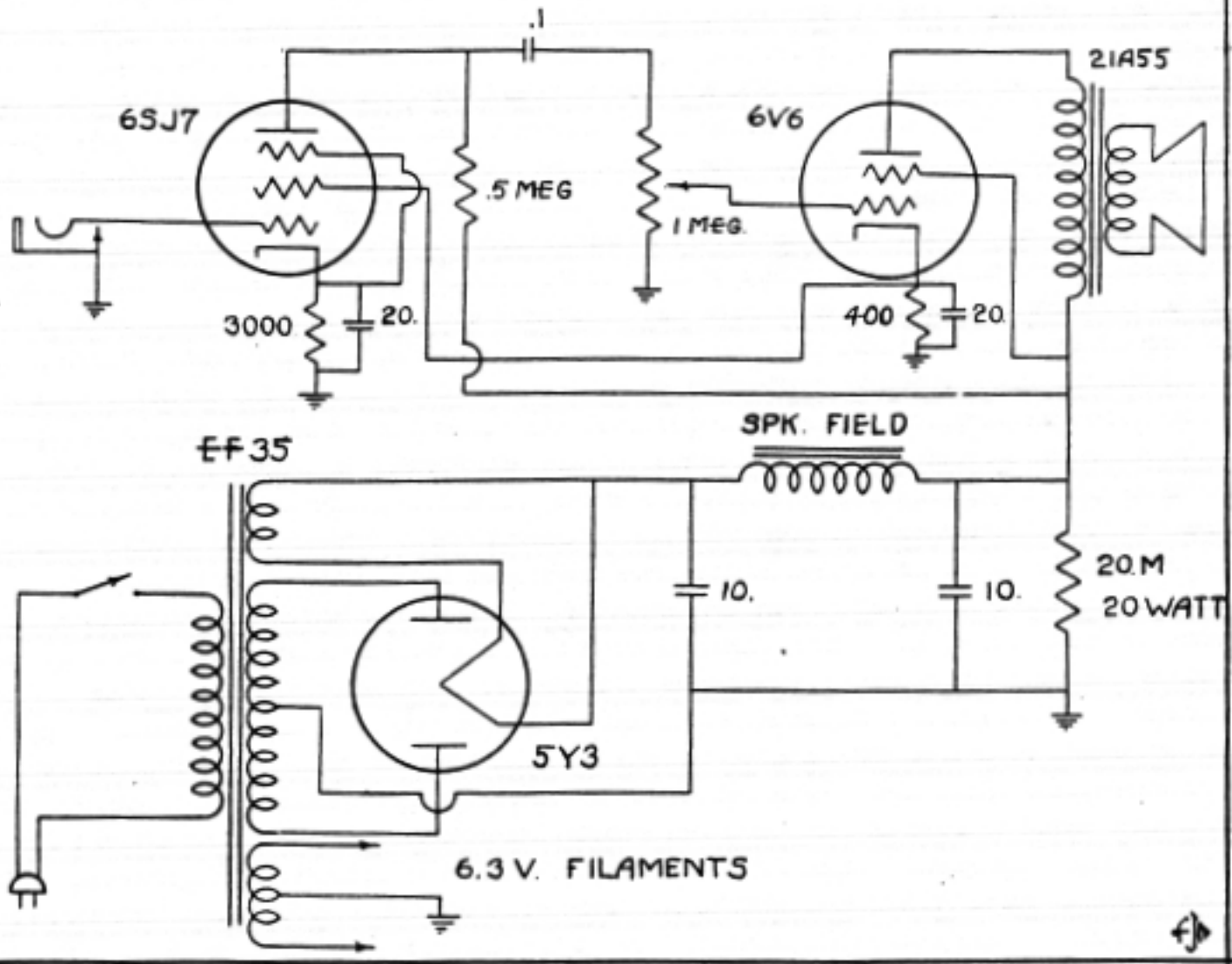
**MASTERTONE
SPECIAL**

INSTRUCTIONS



GIBSON INC., KALAMAZOO, MICH.

GIBSON MASTER TONE



On the panel of your amplifier is a knob which is a combination "on and off" switch and volume control. To put in operation, plug supply cord into any 110 volt, 50 to 60 cycle, current.

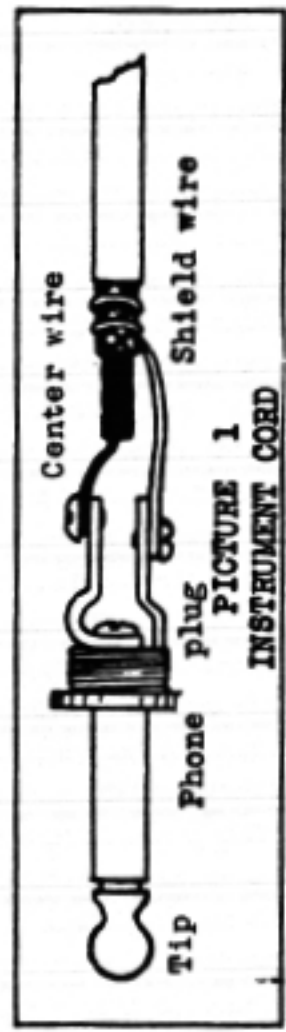
Turn knob on amplifier as far toward right as it will go and allow tubes to warm up for approximately one minute.

Then plug one end of instrument cord into jack at extreme left of amplifier panel and other end of cord into jack located on instrument.

Adjust tone and volume controls on instrument to desired position and you are now ready to play.

For best results, play with instrument in back or to one side of amplifier and as far away from amplifier as cord permits.

Occasionally, reversing position of supply cord prongs will reduce hum and eliminate other objectionable noises.



Make sure that all connections are firmly in place and that electric current is turned on. The tips on both ends of phone plugs in instrument cord should be checked frequently -- if they have worked loose, tighten securely.

Separate the amplifier and microphone as far as possible to prevent noise interference or howl known as "feedback". Reduce the volume control setting to just below the point where this feedback occurs. The setting of the volume control will vary according to the size of the room, its acoustical properties and also with the distance between the loud speaker and the microphone.

Turn the volume control all the way down when the MICROPHONE receptacle is not in use as hum may otherwise be caused.

The fuse in EH-100 amplifier is a type AG of three ampere rating. Do not use fuses of higher rating.

GIBSON

MODEL EH-100 AMPLIFIER

INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICH.

OPERATION OF INSTRUMENTS

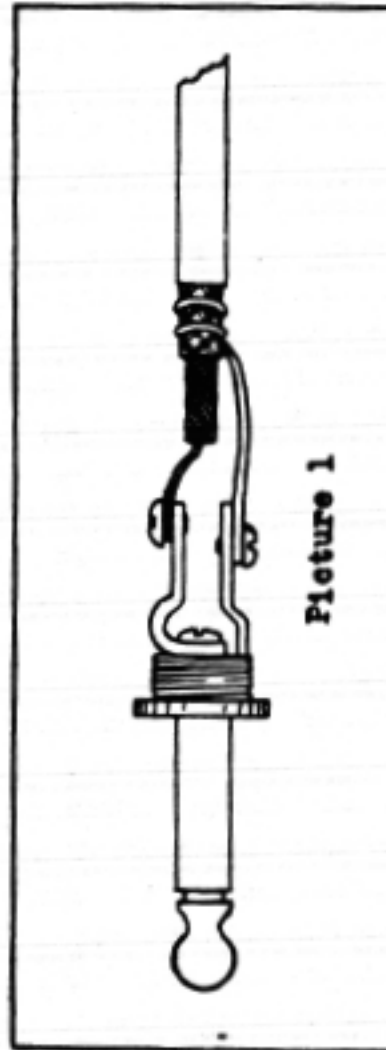
On the panel of your amplifier will be found a knob and two receptacles marked respectively MICROPHONE and INSTRUMENT.

First plug into the INSTRUMENT receptacle the standard telephone plug you will find on the cord attached to your guitar.

Then turn the knob until a click is heard and the tubes light up. The volume of your guitar should be controlled with the volume control on the instrument. The gain of the amplifier is so regulated that the maximum output of your instrument will not overload it when plugged into the INSTRUMENT receptacle.

It is possible to plug in two instruments by using the MICROPHONE receptacle for the second instrument. In this case the knob on the amplifier panel which controls the gain of the microphone receptacle should be adjusted as follows: Turn the guitar volume control all the way on, with the guitar plugged in the MICROPHONE receptacle. Then adjust the volume control on the panel to the point where the amplifier does not overload or distort when the maximum output of the guitar is produced.

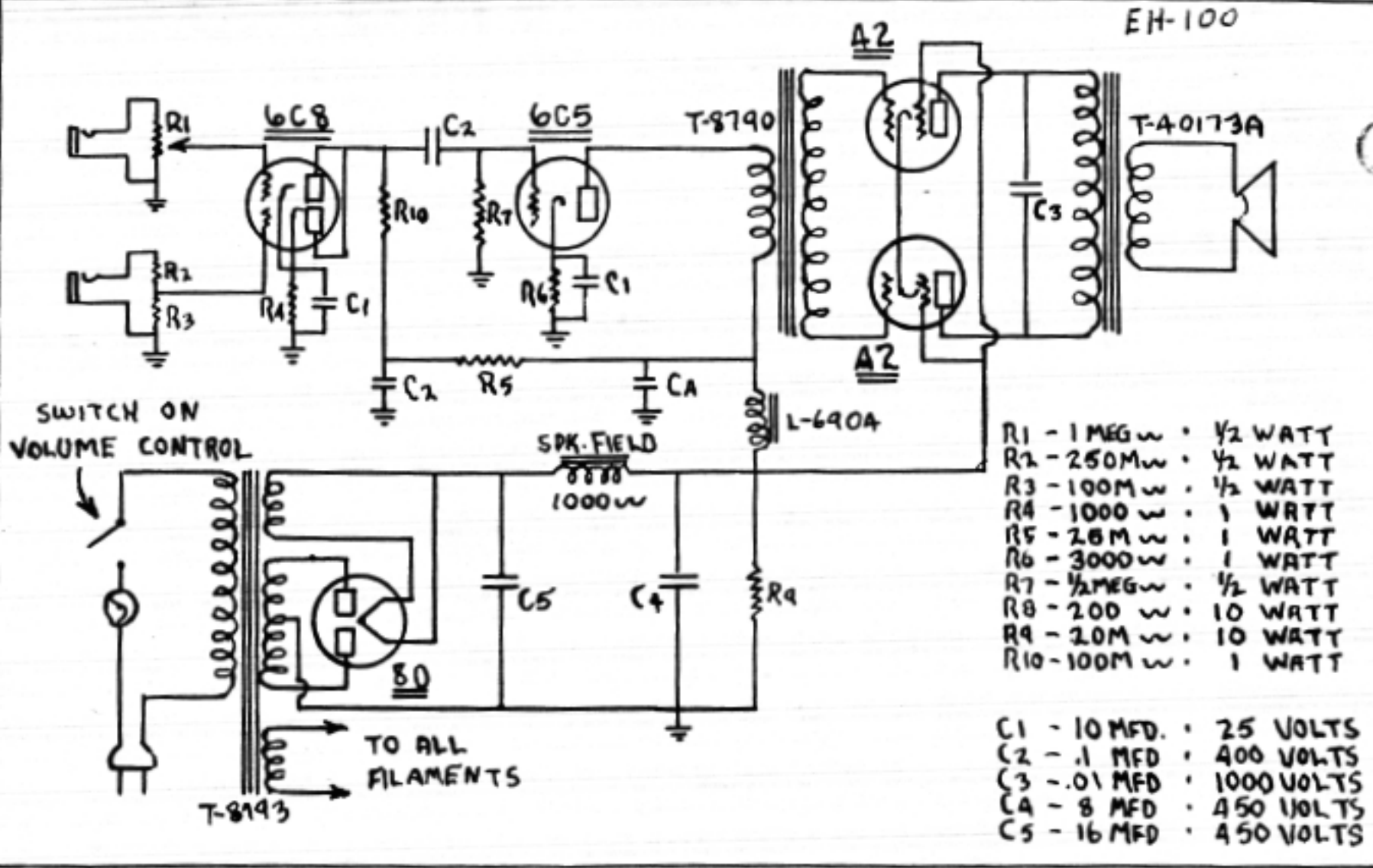
How to use a Microphone with the Amplifier



Picture 1

This amplifier may also serve as a public address system by using with it any of the standard diaphragm type crystal microphones. A crystal microphone of the diaphragm type should be used because of its higher output level. These can be purchased through your Gibson Dealer.

Fit the end of your microphone cable with a good grade standard telephone plug with a metal housing. The correct method of connection is shown in Picture 1.



Separate the amplifier and microphone as far as possible to prevent noise interference or howl known as "feedback". Reduce the volume control setting to just below the point where this feedback occurs. The setting of the volume control will vary according to the size of the room, its acoustical properties and also with the distance between the loud speaker and the microphone.

Turn the volume control all the way down when the MICROPHONE receptacle is not in use as hum may otherwise be caused.

The fuse in EH-100 amplifier is a type AG of three ampere rating. Do not use fuses of higher rating.

GIBSON

MODEL EH-100 AMPLIFIER

INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICH.

Separate the amplifier and microphone as far as possible to prevent noise interference or howl known as "feedback". Reduce the volume control setting to just below the point where this feedback occurs. The setting of the volume control will vary according to the size of the room, its acoustical properties and also with the distance between the loud speaker and the microphone.

Turn the volume control all the way down when the MICROPHONE receptacle is not in use as hum may otherwise be caused.

The fuse in EH-125 amplifier is a type AG of three ampere rating. Do not use fuses of higher rating.

GIBSON

MODEL EH-125 AMPLIFIER

INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICH.

Separate the amplifier and microphone as far as possible to prevent noise interference or howl known as "feedback". Reduce the volume control setting to just below the point where this feedback occurs. The setting of the volume control will vary according to the size of the room, its acoustical properties and also with the distance between the loud speaker and the microphone.

Turn the volume control all the way down when the MICROPHONE receptacle is not in use as hum may otherwise be caused.

The fuse in EH-125 amplifier is a type AG of three ampere rating. Do not use fuses of higher rating.

GIBSON

MODEL EH-125 AMPLIFIER

INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICH.

GIBSON

MODEL EH-150 AMPLIFIER

INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICH.

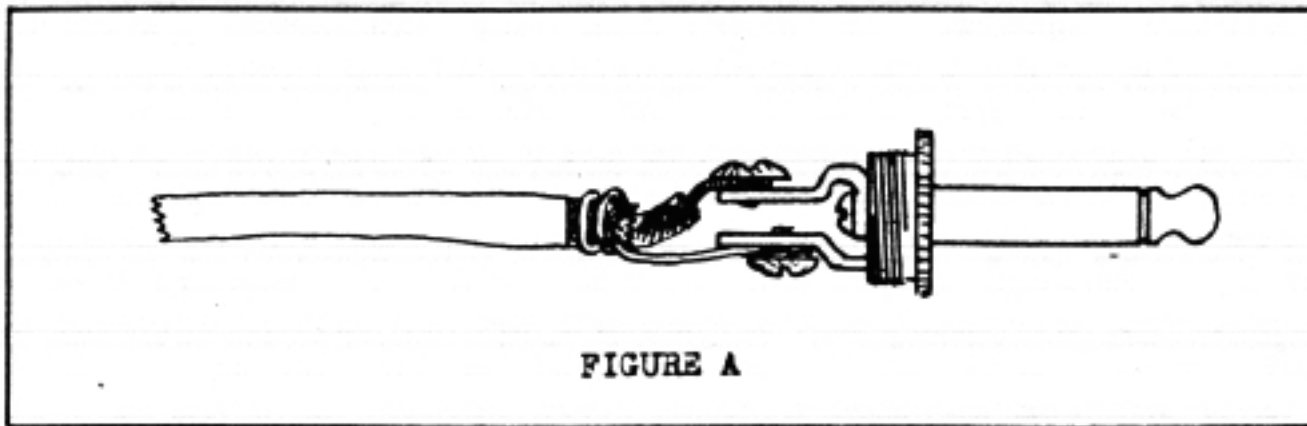


FIGURE A

OPERATION OF INSTRUMENTS

When either one or two instruments are plugged into the sockets marked INSTRUMENTS, three stages of amplification are used, the total gain being controlled by the volume control marked INSTRUMENTS. The total gain (with the volume control all the way on) has been adjusted so that the amplifier will deliver full output without distortion when used with any of the GIBSON electrical instruments.

The socket marked MICROPHONE may also be used with any of the GIBSON electrical instruments in which case four stages of amplification are called into use. When used this way a careful setting of the volume control marked MICROPHONE must be made to avoid overload and consequent distortion. This adjustment can be easily made by turning the volume control on the guitar or other instrument all the way on and setting the MICROPHONE control at the point where no distortion occurs when the strings are struck with maximum force. By utilizing the MICROPHONE socket in this way a third instrument can be plugged in, making a total of three electrical instruments which may be used and blended.

OPERATION OF THE MICROPHONE

Because of the high power output, high gain and high fidelity characteristics of the GIBSON EH-150 amplifier it makes an exceptionally fine public address system when used with either the crystal, dynamic or velocity types of microphones.

While the amplifier will operate very well with any of the crystal, medium or high impedance dynamic or velocity (ribbon) microphones, it is recommended that, before investing in a microphone, you consult your GIBSON dealer. Authorized GIBSON dealers can supply you with a microphone which has been selected and matched to the amplifier, thus insuring the most faithful reproduction of voice and music. These microphones are equipped with 25 foot rubber covered, shielded cords and are fitted with the same high grade shielded plug that is supplied with all GIBSON instruments.

If it is desired to use microphones of other make it is important that the GIBSON 75A or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable.

To use the microphone, insert the plug in the MICROPHONE socket and advance the MICROPHONE volume control until a feedback squeal or howl is produced in the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.

The volume controls INSTRUMENTS and MICROPHONE, being completely independent of each other, allow the inputs from the various sources to be "mixed" or blended. Because of this flexibility many unusual effects can be easily worked out.

If the MICROPHONE socket is not in use turn the MICROPHONE volume control all the way off.

USE OF THE TREBLE TONE * BASS TONE CONTROL

In the TREBLE TONE position the low pitched strings of the instrument are automatically reduced in volume and the high pitched strings are therefore given greater prominence so that the overall tone quality is more brilliant. In the BASS TONE position the low pitched strings are given greater prominence therefore producing a vibrant, mellow tone of entirely new and extremely pleasing quality that opens numerous possibilities for new tonal effects, among them a very effective bass accompaniment for other instruments.

* * * * *

The fuse used in the EH-150 amplifier is a type AG of three ampere rating. DO NOT USE FUSES OF HIGHER RATING.

GIBSON

MODEL EH-160 AMPLIFIER

INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICH.

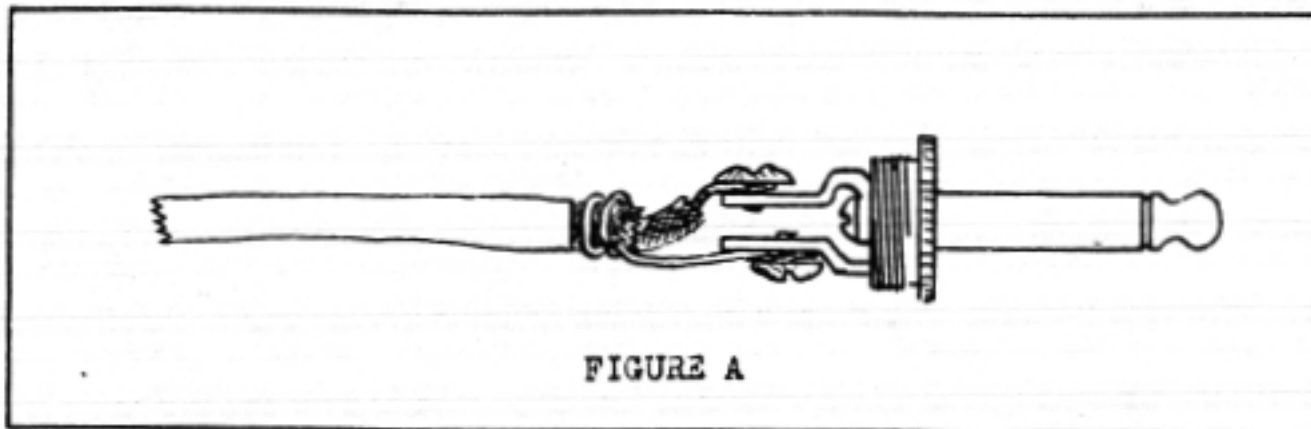


FIGURE A

OPERATION OF INSTRUMENTS

When either one or two instruments are plugged into the sockets marked INSTRUMENTS, three stages of amplification are used, the total gain being controlled by the volume control marked INSTRUMENTS. The total gain (with the volume control all the way on) has been adjusted so that the amplifier will deliver full output without distortion when used with any of the GIBSON electrical instruments.

The socket marked MICROPHONE may also be used with any of the GIBSON electrical instruments. By utilizing the MICROPHONE socket in this way a third instrument can be plugged in, making a total of three electrical instruments which may be used and blended.

OPERATION OF THE MICROPHONE

Because of the high power output, and high fidelity characteristics of the GIBSON EH-160 amplifier it makes an exceptionally fine public address system when used with the special microphone which may be obtained from any GIBSON dealer. Because of the natural characteristics of an AC-DC amplifier the user of most types of microphones on these instruments may receive an electric shock when he touches the microphone. You can however obtain from your GIBSON dealer an insulated microphone specially designed for this instrument and which prevents any possibility of shock to the user. These microphones are provided with 25 feet of rubber covered shielded cord and are fitted with the same high grade shielded plug supplied with all GIBSON instruments. The use of this plug, shown in Figure A, is necessary to the proper operation of a microphone. The proper method of connecting to this plug is also shown in this illustration.

To use the microphone, insert the plug in the MICROPHONE socket and advance the MICROPHONE volume control until a feedback squeal or howl is produced in the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.

The volume controls INSTRUMENTS and MICROPHONE, being completely independent of each other, allow the inputs from the various sources to be "mixed" or blended. Because of this flexibility many unusual effects can be easily worked out.

If the MICROPHONE socket is not in use turn the MICROPHONE volume control all the way off.

USE OF THE ECHO SPEAKER

The GIBSON Echo Speaker comes mounted in an exact duplicate of the EH-160 case and is fitted with a 35 foot rubber covered cord and #75A shielded plug. To place it in operation it is merely necessary to plug it in the ECHO SPEAKER socket on the control board of the amplifier. Its use presents many new possibilities. The true "Echo" effect is obtained by placing the EH-160 speaker and amplifier near the player and the Echo Speaker at an approximate 35 foot distance, preferably further from the audience and to either side. The slight sound wave time lag thus introduced creates a new and beautiful effect.

When using a microphone the additional loudspeaker is also desirable permitting better and more complete coverage of the audience.

USE OF THE NORMAL TONE * BASS TONE CONTROL

In the NORMAL TONE position the low pitched strings of the instrument are automatically reduced in volume and the high pitched strings are therefore given greater prominence so that the overall tone quality is more brilliant. In the BASS TONE position the low pitched strings are given greater prominence therefore producing a vibrant, mellow tone of entirely new and extremely pleasing quality that opens numerous possibilities for new tonal effects, among them a very effective bass accompaniment for other instruments.

* * * * *

The fuse used in the EH-160 amplifier is a type AG of three ampere rating. DO NOT USE FUSES OF HIGHER RATING.

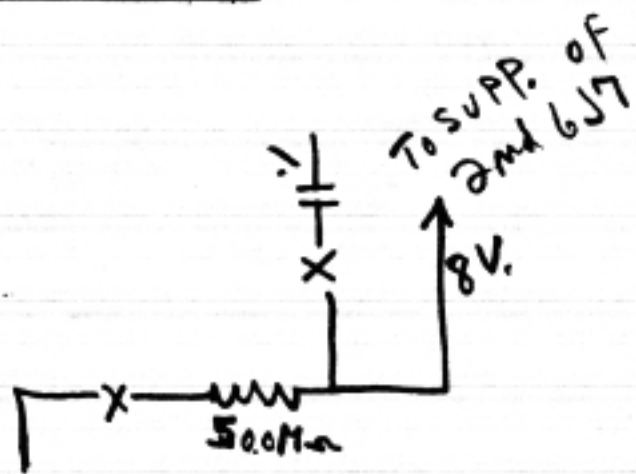
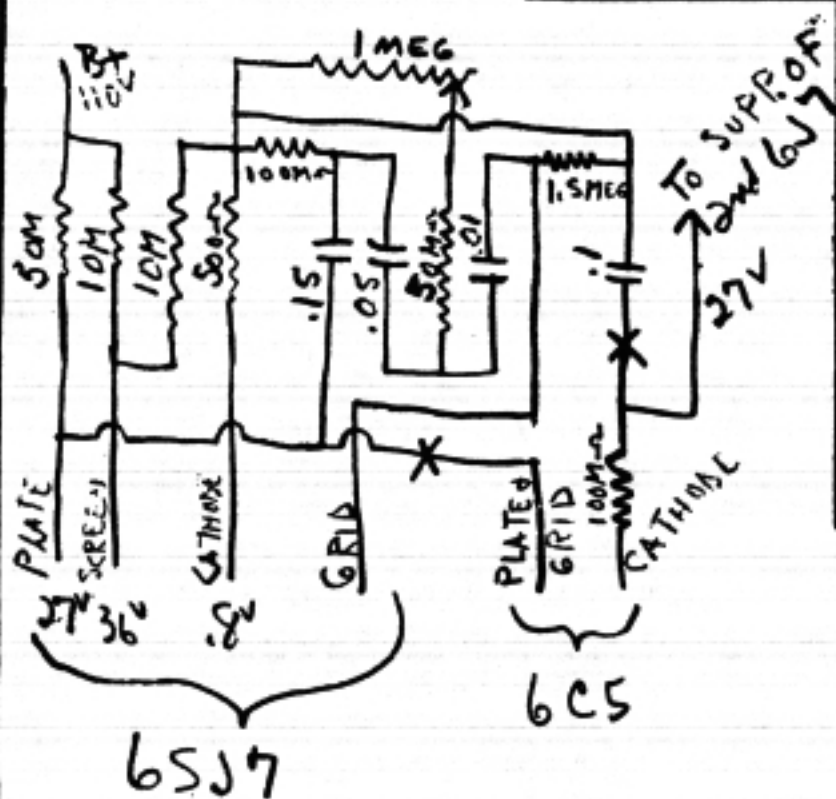
This amplifier will operate on any 110 volt line either AC or DC. An adapter can be secured from your GIBSON dealer for 220 volt operation.

GIBSON

A.C. - D.C. AMPLIFIER

EH 195

INSTRUCTIONS



CHANGES MADE
WHEN USING ONE
TUBE IN VIBRATO

GIBSON INC., KALAMAZOO, MICH.

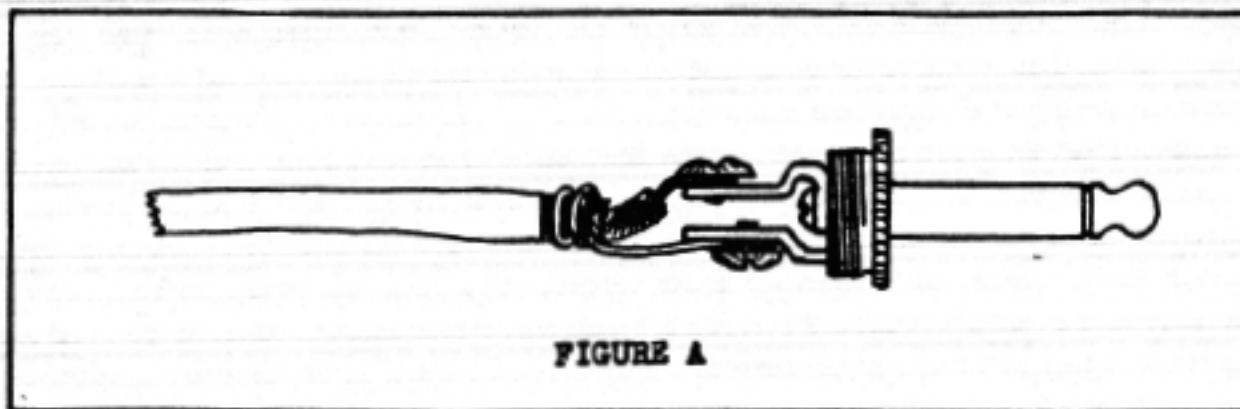


FIGURE A

OPERATION OF INSTRUMENTS

When either one or two instruments are plugged into the sockets marked INSTRUMENTS, three stages of amplification are used, the total gain being controlled by the volume control marked INSTRUMENTS. The total gain (with the volume control all the way on) has been adjusted so that the amplifier will deliver full output without distortion when used with any of the GIBSON electrical instruments.

The socket marked MICROPHONE may also be used with any of the GIBSON electrical instruments in which case four stages of amplification are called into use. When used this way a careful setting of the volume control marked MICROPHONE must be made to avoid overload and consequent distortion. This adjustment can be easily made by turning the volume control on the guitar or other instrument all the way on and setting the MICROPHONE control at the point where no distortion occurs when the strings are struck with maximum force. By utilizing the MICROPHONE socket in this way a third instrument can be plugged in, making a total of three electrical instruments which may be used and blended.

REMOVAL OF AMPLIFIER FROM CASE.

Remove amplifier by grasping the two handles on top and then lifting directly upward and out of case. After the amplifier is removed the lid of case should be placed back on and clamped down allowing the speaker cord to come out of small opening in the lid. When operated this way the case acts as a reflex baffle which reproduces bass tones with greater resonance.

Another advantage in separating these two units is to eliminate tube rattle which has caused synthetic tones to be reproduced previously.

When playing with the amplifier in the case be sure to remove top or catches will vibrate causing a rattle.

USE OF BASS AND TREBLE CONTROL.

With both "BASS" and "TREBLE" controls set in "NORMAL" position all tones from instrument will be reproduced with equal intensity. Setting the "BASS" control at its extreme point on the increase side gives prominence to the bass tones over the others, thus producing a deeper and fuller tone.

The treble tones can be made to predominate by setting the "TREBLE" control on the increase side. This will reproduce a chime like tone rich in higher harmonics and will also enable the artist to pick harmonics with greater ease.

When either the BASS or TREBLE controls are turned to the extreme position on the decrease side the bass or treble tones are reduced in volume leaving the middle register predominating.

Any numerous combinations of tone effect can be produced with the various settings of BASS and TREBLE controls making the electric guitar more versatile than ever.

OPERATION OF THE MICROPHONE

Because of the high power output, high gain and high fidelity characteristics of the GIBSON amplifier it makes an exceptionally fine public address system when used with either the crystal, dynamic or velocity types of microphones.

While the amplifier will operate very well with any of the crystal, medium or high impedance dynamic or velocity (ribbon) microphones, it is recommended that, before investing in a microphone, you consult your GIBSON dealer. Authorized GIBSON dealers can supply you with a microphone which has been selected and matched to the amplifier, thus insuring the most faithful reproduction of voice and music. These microphones are equipped with 25 foot rubber covered, shielded cords and are fitted with the same high grade shielded plug that is supplied with all GIBSON instruments.

If it is desired to use microphones of other make it is important that the GIBSON 75A or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable.

To use the microphone, insert the plug in the MICROPHONE socket and advance the MICROPHONE volume control until a feedback squeal or howl is produced in the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.

The volume controls INSTRUMENTS and MICROPHONE, being completely independent of each other, allow the inputs from the various sources to be "mixed" or blended. Because of this flexibility many unusual effects can be easily worked out.

If the MICROPHONE socket is not in use turn the MICROPHONE volume control all the way off.

USE OF THE ECHO SPEAKER

The GIBSON Echo Speaker comes mounted in an exact duplicate of this case and is fitted with a 35 foot rubber covered cord and #75A shielded plug. To place it in operation it is merely necessary to plug it in the ECHO SPEAKER socket on the control board of the amplifier. Its use presents many new possibilities. The true "Echo" effect is obtained by placing the speaker and amplifier near the player and the Echo Speaker at an approximate 35 foot distance, preferably further from the audience and to either side. The slight sound wave time lag thus introduced creates a new and beautiful effect.

When using a microphone the additional loudspeaker is also desirable permitting better and more complete coverage of the audience. The fuse used in the amplifier is a type AG of three ampere rating. DO NOT USE FUSES OF HIGHER RATING.

This amplifier will operate on any 110 volt line either AC or DC. An adapter can be secured from your GIBSON dealer for 220 volt operation.

GIBSON

MODEL BR-1 AMPLIFIER

INSTRUCTIONS



GIBSON INC., KALAMAZOO, MICH.

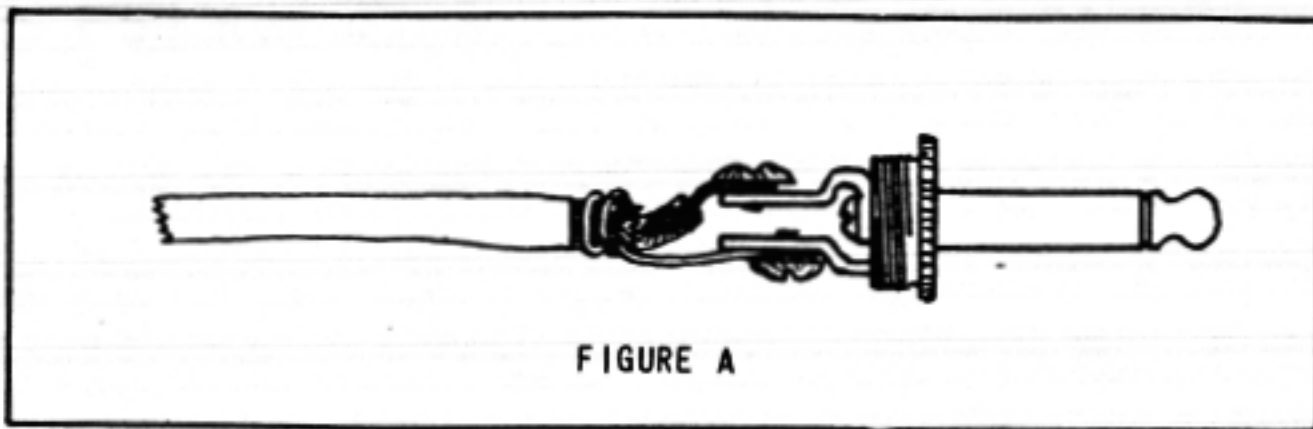


FIGURE A

OPERATION OF INSTRUMENTS

When either one or two instruments are plugged into the sockets marked INSTRUMENTS, three stages of amplification are used, the total gain being controlled by the volume control marked INSTRUMENTS.

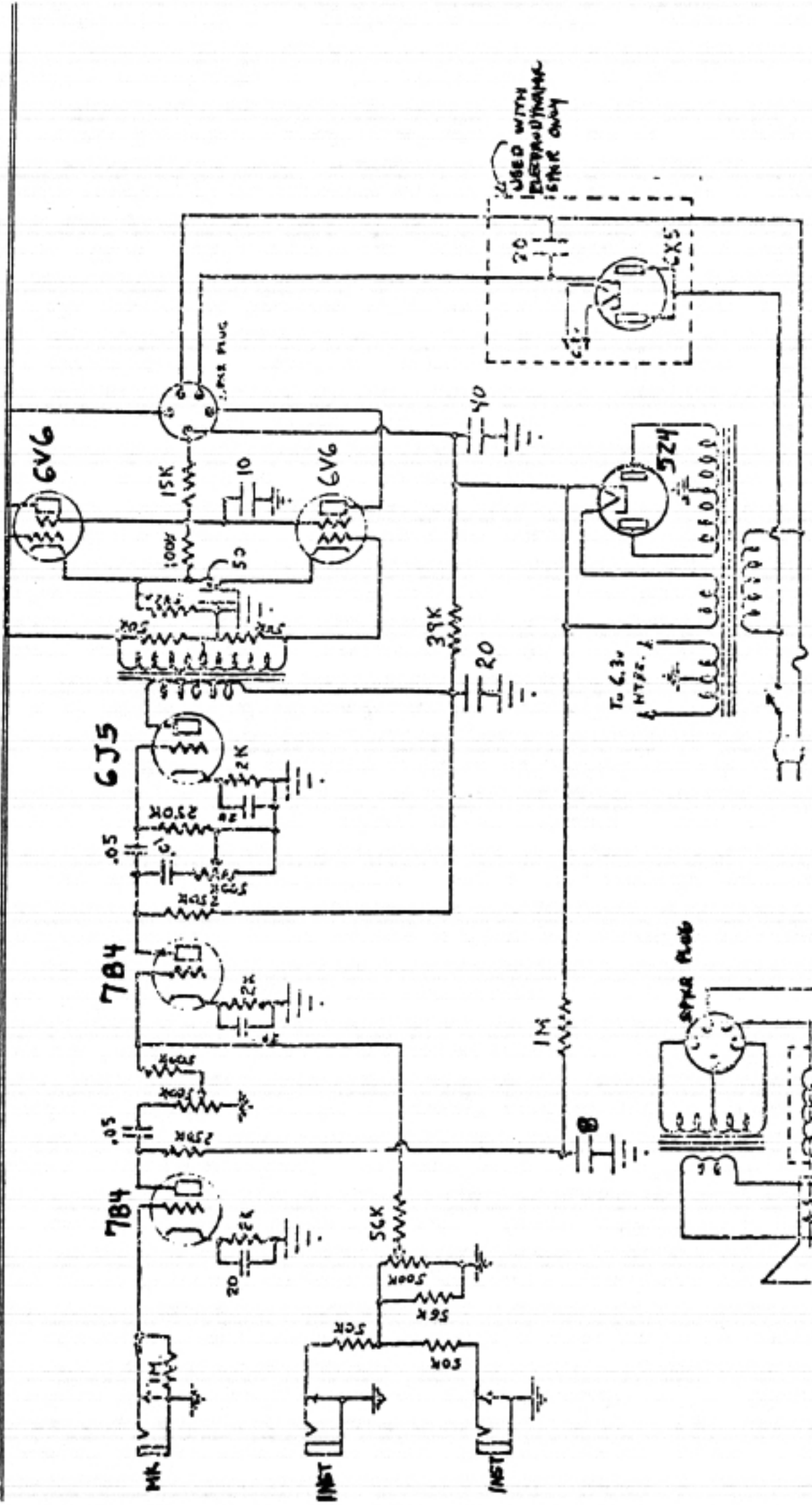
The socket marked MICROPHONE may also be used with any of the GIBSON electrical instruments. When used this way a careful setting of the volume control, marked MICROPHONE must be made to avoid overload and consequent distortion. This adjustment can be easily made by turning the volume control on the guitar or other instrument all the way on and setting the MICROPHONE control at the point where no distortion occurs when the strings are struck with maximum force. By utilizing the MICROPHONE socket in this way a third instrument can be plugged in, making a total of three electrical instruments which may be used and blended.

OPERATION OF THE MICROPHONE

Because of the high power output, high gain and high fidelity characteristics of the GIBSON BR-1 amplifier it makes an exceptionally fine public address system when used with either the crystal, dynamic or velocity types of microphones.

While the amplifier will operate very well with any of the crystal, medium or high impedance dynamic or velocity (ribbon) microphones, it is recommended that, before investing in a microphone, you consult your GIBSON dealer. Authorized GIBSON dealers can supply you with a microphone which has been selected and matched to the amplifier, thus insuring the most faithful reproduction of voice and music. These microphones are equipped with 25 foot shielded cords and are fitted with the same high grade shielded plug that is supplied with all GIBSON instruments.

If it is desired to use microphones of other make it is important that the GIBSON 75A or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable.



USED WITH
ELECTRO-DYNAMIC
SPKR ONLY

Gibson Inc.
Kalamazoo Mich.
Schematic
30 Jan 61 MCP

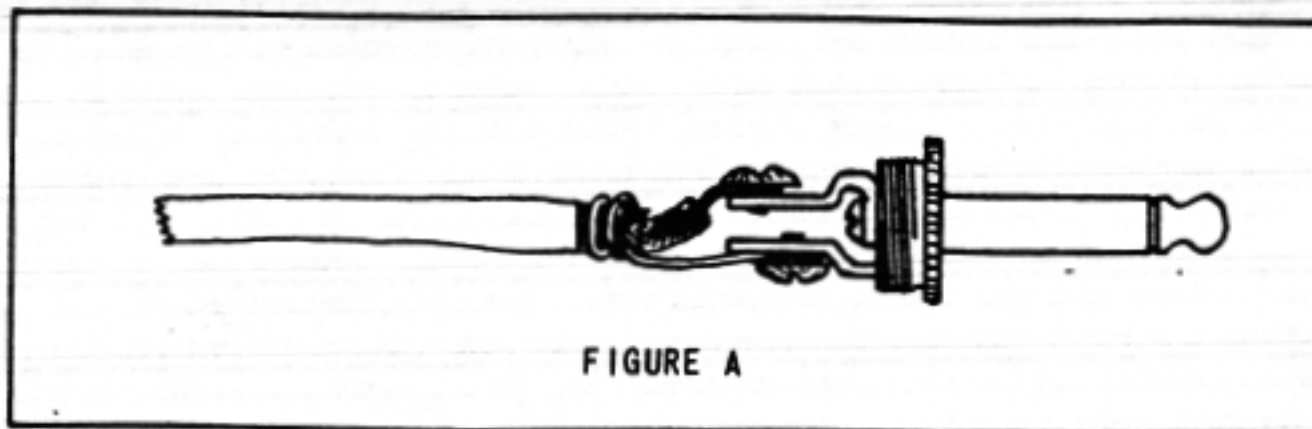
USED WITH
ELECTRO-DYNAMIC
SPKR ONLY

GIBSON

MODEL BR-4 AMPLIFIER

INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICH.



OPERATION OF INSTRUMENTS

When either one or two instruments are plugged into the sockets marked INSTRUMENTS, three stages of amplification are used, the total gain being controlled by the volume control marked INSTRUMENTS.

The socket marked MICROPHONE may also be used with any of the GIBSON electrical instruments. When used this way a careful setting of the volume control marked MICROPHONE must be made to avoid overload and consequent distortion. This adjustment can be easily made by turning the volume control on the guitar or other instrument all the way on and setting the MICROPHONE control at the point where no distortion occurs when the strings are struck with maximum force. By utilizing the MICROPHONE socket in this way a third instrument can be plugged in, making a total of three electrical instruments which may be used and blended.

OPERATION OF THE MICROPHONE

Because of the high power output, high gain and high fidelity characteristics of the GIBSON BR-4 amplifier it makes an exceptionally fine public address system when used with either the crystal, dynamic or velocity types of microphones.

While the amplifier will operate very well with any of the crystal, medium or high impedance dynamic or velocity (ribbon) microphones, it is recommended that, before investing in a microphone, you consult your GIBSON dealer. Authorized GIBSON dealers can supply you with a microphone which has been selected and matched to the amplifier, thus insuring the most faithful reproduction of voice and music. These microphones are equipped with 25 foot shielded cords and are fitted with the same high grade shielded plug that is supplied with all GIBSON instruments.

If it is desired to use microphones of other make it is important that the GIBSON 75A or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable.

To use the microphone, insert the plug in the MICROPHONE socket and advance the MICROPHONE volume control until a feedback squeal or howl is produced in the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.

The volume controls INSTRUMENTS and MICROPHONE, being completely independent of each other, allow the inputs from the various sources to be "mixed" or blended. Because of this flexibility many unusual effects can be easily worked out.

If the MICROPHONE socket is not in use turn the MICROPHONE volume control all the way off.

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, look it over carefully to make sure there has been no breakage of tubes or parts. If you find that damage has occurred during shipment, we suggest the Transportation Company be called immediately, and a claim placed.

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. Make sure the voltage from the power lines is not over 125, and that the frequency of the current is either 50 or 60 cycles. When ready to turn on power, plug the power cord into the electric outlet and turn on the switch. Wait approximately one minute for the tubes to heat, and the amplifier is ready for use.

TUBES

Be sure tubes are in their proper positions before placing the amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

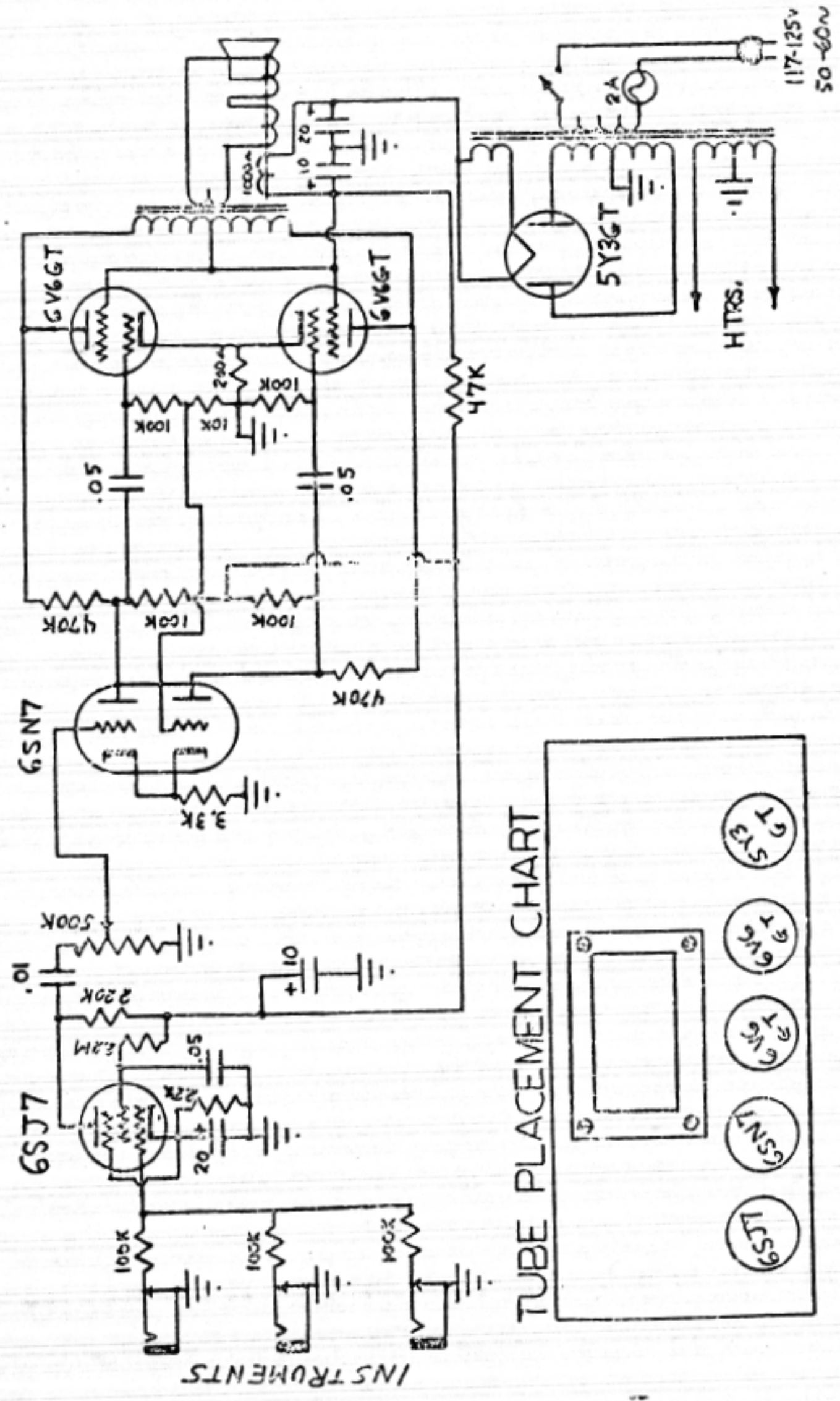
SERVICE

If the amplifier is in need of servicing, we suggest it be taken to a reliable radio man. The electrical diagram attached should be shown the repairman to assist him in servicing the amplifier.

* * *

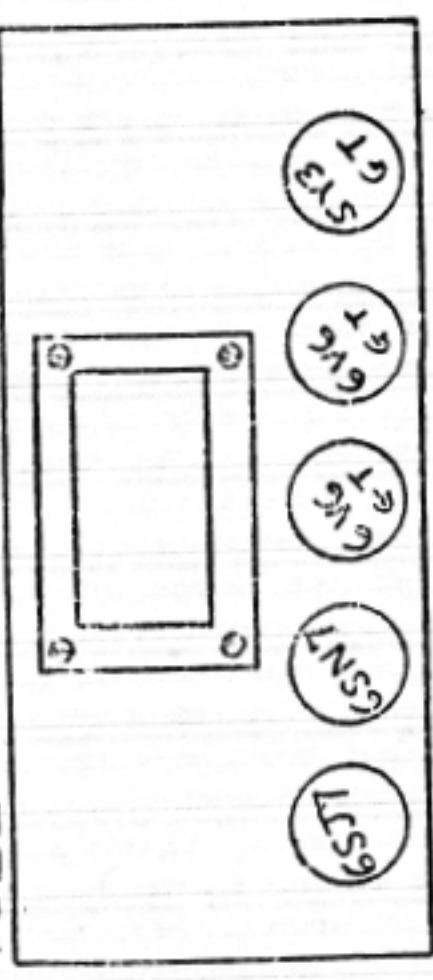
The fuse used in the BR-4 amplifier is a type AG of three ampere rating. DO NOT USE FUSES OF HIGHER RATING.

BR-6F



INSTRUMENTS

TUBE PLACEMENT CHART



GIBSON INC. | KALAMAZOO MICH. | DATE: 11 OCT 1960 | DRAWN BY: MCP | CHECKED BY:

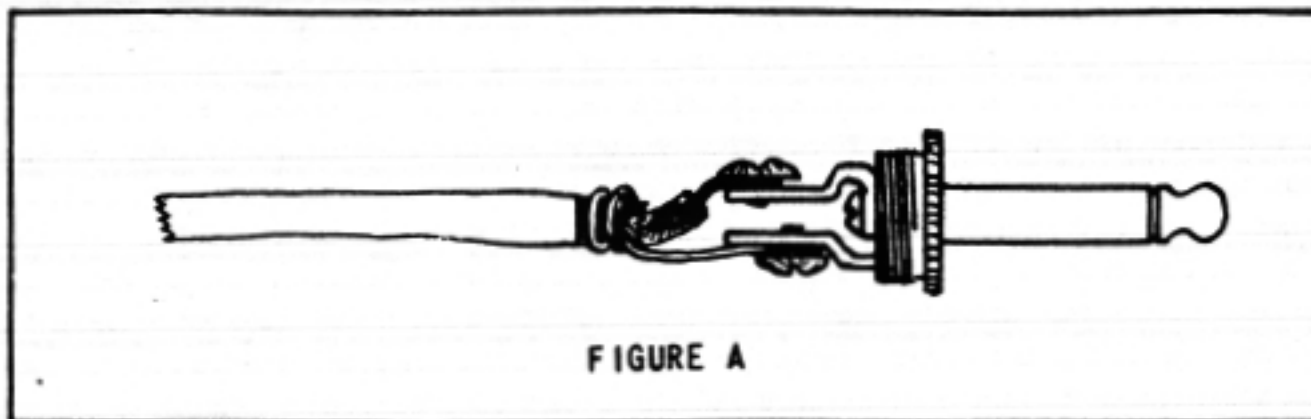
GIBSON

MODEL BR-9 AMPLIFIER

INSTRUCTIONS



GIBSON INC., KALAMAZOO, MICH.



OPERATION OF INSTRUMENTS

When either one or two instruments are plugged into the sockets marked INSTRUMENTS, three stages of amplification are used, the total gain being controlled by the volume control marked INSTRUMENTS.

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, look it over carefully to make sure there has been no breakage of tubes or parts. If you find that damage has occurred during shipment, we suggest the Transportation Company be called immediately, and a claim placed.

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. Make sure the voltage from the power lines is not over 125, and that the frequency of the current is either 50 or 60 cycles. When ready to turn on power, plug the power cord into the electric outlet and turn on the switch. Wait approximately one minute for the tubes to heat, and the amplifier is ready for use.

TUBES

Be sure tubes are in their proper positions before placing the amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

SERVICE

If the amplifier is in need of servicing, we suggest it be taken to a reliable radio man. The electrical diagram attached should be shown the repairman to assist him in servicing the amplifier.

* * *

The fuse used in the BR-9 amplifier is a type AG of two ampere rating. DO NOT USE FUSES OF HIGHER RATING.

The logo for Clavioline features the word "Clavioline" in a stylized, outlined, cursive font. Above the text is a decorative graphic consisting of a grid of small squares, with lines extending from the top corners, suggesting a perspective or a musical instrument's body.

Clavioline

Service Information

|

GIBSON INC., KALAMAZOO, MICH.

C L A V I O L I N E

SERVICE INFORMATION

THE CONSOLE:

The Clavioline Console contains four tubes and associated circuits, the functions of which are controlled by the keys and stops.

In the block diagram, Figure I, V₁ is the Vibrato generator; V₂ the Buffer, V₃ the Tone generator and V₄ the Output Amplifier and Percussion injector.

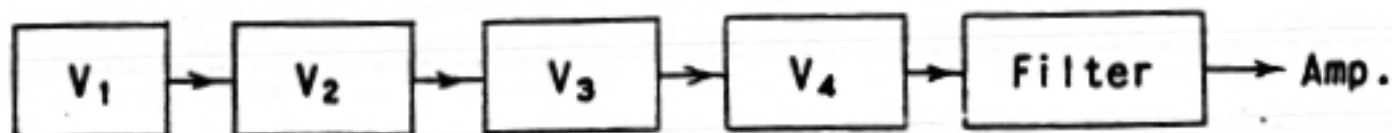


FIGURE 1

TONE GENERATOR:

V₃, a double-triode, is connected in an RC oscillator circuit, the frequency of which is modified by the alteration in value of one of the resistance circuits. The resistance value is selected by the key depressed. A blocking bias of approximately -3⁵ is applied to the grid 2 of V₃ via the keyboard resistors. Depression of any key removes the bias and V₃ oscillates. The 36 frequency control resistors are made to close tolerance and factory selected. They should not, therefore, be disturbed.

OCTAVE SWITCH:

With the "Octave Switch" set to the Bass (low) position, maximum capacity is connected into the tone generator circuit V₃. Operation of the switch to the Alto (mid) and Treble (high) positions results in a progressive decrease of capacity.

OUTPUT AND PERCUSSION:

The signal from the Tone generator V₃ is applied to the grid of the Output V₄ a 6J7 tube. The cathode circuit is composed of an R. C. network which imposes a time delay in its operation. A positive potential, derived through a high resistance from the high voltage supply, is applied to the cathode and prevents the tube operating. Depression of any key completes the cathode circuit; the blocking bias becomes ineffective, and the tube operates.

The key contacts are so arranged that the Tone generator V3 comes into operation slightly before V4. A switch, controlled by the Stop marked P shorts out part of the cathode delay network, thus enabling a Percussion effect to be obtained.

The output from V4 is applied to the output socket via a filter network composed of inductance, resistance and capacity. The waveform generated is modified by switching in various combinations of these values, this switching forming the stops which are marked "1 to 9, 0, A, B and V". Across the output is also connected VC3 which operates as the "knee swell".

MASTER VOLUME CONTROL:

The master volume control VC7 is located on the right side and near the rear of the clavoline console. (The small red knob.) It is used to set the volume as desired for use in small rooms or for practicing. This allows the full use of the expression lever while restricting the overall volume.

VIBRATO:

V1, a 6SN7 tube operates as a very low frequency R.C. oscillator. The frequency is controlled in three steps by alteration in value of the resistance arms. This action is controlled by the three stops marked "VIBRATO I, II, III".

BUFFER:

The vibrato oscillator output is applied to the grid of a 6J5 tube V2, the cathode circuit of which is common to the cathode circuit of V3, the Tone generator. Thus, the frequency generated by V1 is caused to vary the frequency generated by V3 about its mean value. Closure of the "Amplitude" contacts shorts part of the potential divider R10 and R11 in the grid circuit of the V2 which results in an increased vibrato effect.

VIBRATO ADJUSTMENT:

The amplitude of the vibrato effect may be varied by adjusting the potentiometer VC4, (This is the small black knob located on the left side and near the rear of the console). After making a change in vibrato adjustment, recheck the tuning of VC5 and VC6 as the vibrato adjustment may affect the frequency of the oscillator V3 slightly.

SPECIAL TUNING:

Should it be found that the normal tuning knob adjustments for the three octaves of the keyboard do not coincide or that it is impossible to hold the instrument in tune with the piano over the complete range in this manner, it will be necessary to resort to the following special tuning adjustments:

SPECIAL TUNING INSTRUCTIONS:

The following tuning instructions should be disregarded unless the "CLAVIOLINE" has been serviced, changing the tuning, or the piano with which it is being played is badly out of tune, or can't be held in tune at normal pitch.

STEP 1.

Remove the end cheeks of the "CLAVIOLINE" keyboard to expose the screw driver slot shaft ends of the tuning potentiometers VC 1 and VC 2, (refer to Diagram on page 4). Remove the bottom cover to expose the pre-set condensers C 13, C 16, C 18, and C 19. Set the Octave switch at the extreme right, i.e. highest range.

STEP 2.

Set the tuning potentiometer VC 5 and VC 6 to the midway or center position. Play "A" 440 on the Piano and with the lowest "A" on the "CLAVIOLINE" depressed, bring the instrument into tune with the Piano by the adjustment of the left hand potentiometer VC 1. Depress the highest "A" on the "CLAVIOLINE" keyboard and at the same time adjust the right hand potentiometer VC 2 to the corresponding "A" of the Piano. Recheck the setting of VC 1, recheck the setting of VC 2 as the setting of one affects the setting of the other.

STEP 3.

Set Octave switch to the middle position. Depress the lowest "A" on the "CLAVIOLINE" keyboard and adjust the pre-set condenser C 16 so that the lower "A" is in tune with the corresponding "A" of the piano. Next depress the highest "A" of the "CLAVIOLINE" keyboard and adjust pre-set condenser C 19 so that the highest "A" is in tune with the corresponding "A" of the piano. Re-check the setting of C 16. Re-check the setting of C 19.

STEP 4.

Set Octave switch in the left hand or low position, depress the lowest "A" on the "CLAVIOLINE" keyboard and adjust the pre-set condenser C 13 so that the low "A" is in tune with the corresponding "A" of the piano. Next depress the highest "A" on the "CLAVIOLINE" keyboard and adjust the pre-set condenser C 18 until the high "A" is in tune with the corresponding "A" of the piano. Re-check the setting of C 13, re-check C 18.

This completes the special tuning of the "CLAVIOLINE".

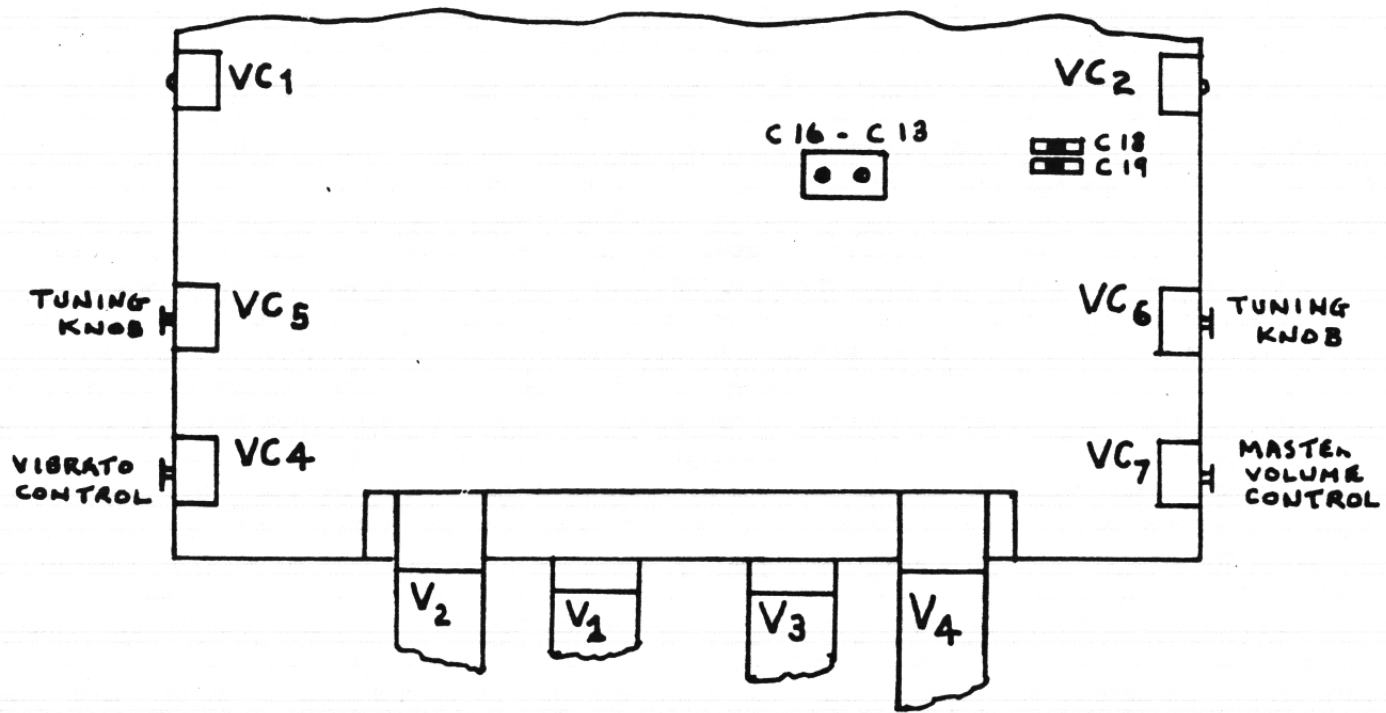


DIAGRAM FOR SPECIAL TUNING INSTRUCTIONS

GENERAL CLAVIOLINE SERVICE SUGGESTIONS

The materials and parts used in the Gibson "CLAVIOLINE" are of the finest quality obtainable. Many checks and inspections are made to assure the quality of these components. However under certain conditions minor servicing may be necessary. Information listed below will be of help in this servicing.

NOISY KEY CONTACT - NO SOUND FROM SINGLE KEY - SINGLE KEY FAILS TO PLAY.

This is probably caused by foreign material between key contacts, and can normally be dislodged by rapidly pressing the key several times. If this fails to correct the fault, remove the retaining strip which holds the key that is giving trouble. (Remove only the strip holding defective key, there are three of these strips.) This is done by removing the three nickel plated screws holding the retaining strip to the back of the keyboard.

Lift off the keys and examine the key contacts. Clean with a good grade liquid Electrical Contact Cleaner. Apply a very fine film of Electrical Contact Lubricant, then re-assemble.

HUM:

Due to the use of inductances in the tone shaping circuit of the "CLAVIOLINE" a small amount of hum may be present when using certain stops if the Amplifier is in close proximity to the keyboard. This can be eliminated by placing the Amplifier to one side and then lifting the Amplifier by the case handle and slowly rotating it until the hum disappears. This will be at approximately a 45 degree angle with respect to the keyboard.

SUDDEN SHIFT IN TUNING:

Probable cause, defective 6SN7 tube in the V3 position. Remove bottom cover and lightly tap this 6SN7 tube while depressing one of the keys. If frequency changes under these conditions, replace the 6SN7 with a tested and approved tube that may be purchased from your local Gibson dealer.

NOISY EXPRESSION CONTROL:

For servicing this control remove the bottom panel from the Console. The expression placquet is attached to a small rectangular wood block in the lower left hand corner of the chassis. Remove the tension on the four small contact springs by turning the tension nut in an anti-clockwise direction. Wipe the carbon deposited strip free of all foreign matter, wash with good grade of Electrical Contact Cleaner. Wipe dry with soft cloth. Be careful not to scratch the surface as this will permanently damage the control. A very fine film of electrical contact lubricant may be applied to the surface of the carbon strip. Adjust the tension as lightly as possible to keep from wearing through the surface of the strip. Make sure the plaquette is lined up so that the contacts of the expression lever do not leave the carbon deposit until the volume is all the way on.

CLAVIOLINE CONSOLE VOLTAGE ANALYSIS

All measurements taken with conventional Vacuum Tube Volt Meter.

A. C. Line Voltage, 117 volts, 60 cycles.

	V 1	V 2	V 3	V 4
Cathode #1	7 to 9	9	80	80/28*
Cathode #2	7 to 9		0	
Plate #1	150	150	110	150/130*
Plate #2	145		80	
Screen				140/85*

Above measurements taken under static conditions.

Those measurements marked * are taken with highest key depressed.

TUBE REPLACEMENT:

The V-3 tube (6SN7) is the Tone generator tube and is pretested and selected very carefully. To insure proper operation of the Clavioline, a replacement of this tube should be obtained through your Clavioline dealer, who can procure tested tubes from Gibson, Inc.

AMPLIFIER:

The amplifier consists of five tubes, V5 a 6J5 triode, followed by V6 and V7, two 6V6's in parallel. V8 a 5Y3 rectifier and an OA2 voltage regulator. The amplifier follows common practice and only differs by virtue of the fact that it introduces distortion deliberately, and should not be altered. All the power for the keyboard is derived from the amplifier power supply and the 35 to 40 volts of blocking bias is obtained from the voltage drop across the smoothing choke which is in the negative lead of the high voltage supply circuit.

CLAVIOLINE AMPLIFIER VOLTAGE ANALYSIS

	V 5	V 6	V 7	V 8
Cathode	5.5	22	22	
Plate	120	280	280	330/330AC
Screen		300	300	

Bias voltage (Across smoothing choke) -35 to -40 volts.

All measurements are taken between check point and chassis and are average figures only. Variations will occur.

FOR ALL CLAVIOLINE SERVICE NEEDS,
CONSULT YOUR LOCAL DEALER

CLAVIOLINE*

*Trade Mark of Gibson, Inc., Kalamazoo, Michigan

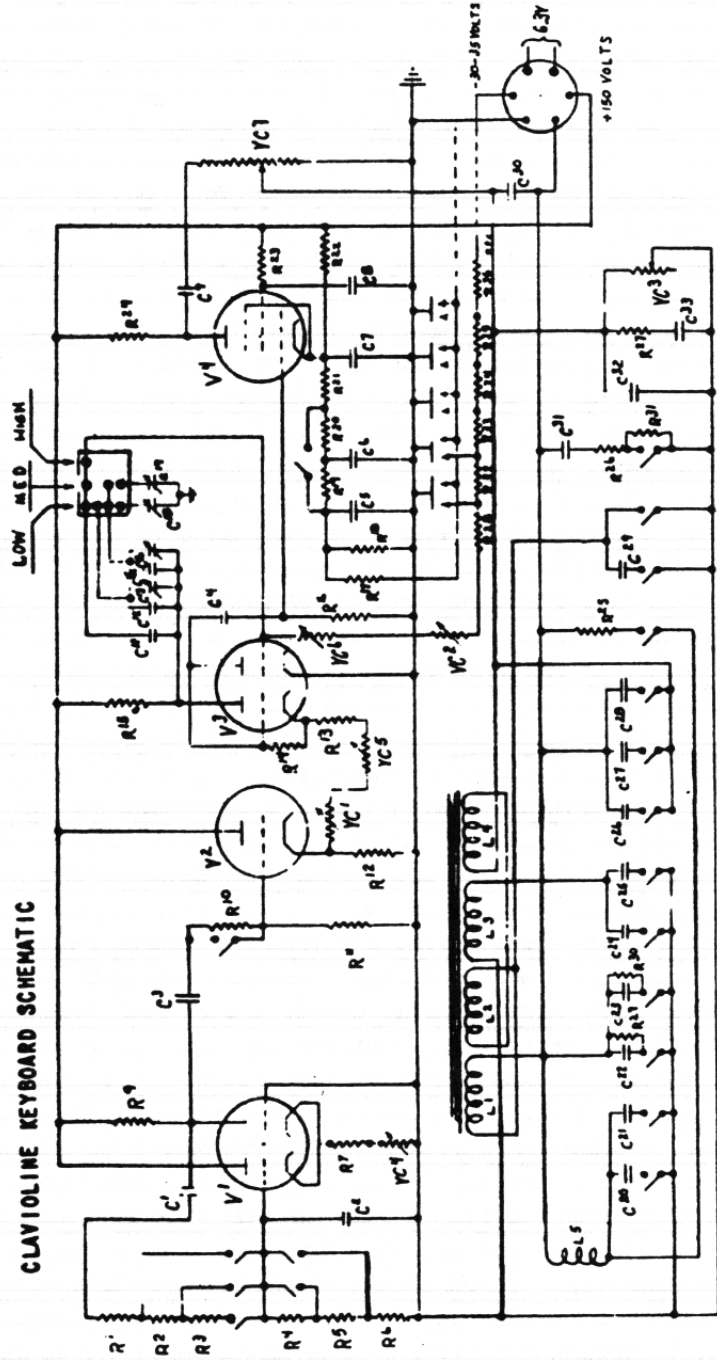
Clavioline Licensed Under Constant Martin Patent No. 2,563,477.

KEYBOARD RESISTORS .5% TOLERANCE

R32	6.300	R39	9.430	R46	14.148	R53	21.200	R60	31.720
R33	6.670	R40	10.000	R47	14.980	R54	22.456	R61	33.316
R34	7.074	R41	10.600	R48	15.980	R55	23.776	R62	35.600
R35	7.490	R42	11.228	R49	16.808	R56	25.200	R63	37.720
R36	7.930	R43	11.888	R50	17.800	R57	26.680	R64	40.000
R37	8.404	R44	12.600	R51	18.860	R58	28.296	R65	42.400
R38	8.900	R45	13.340	R52	20.000	R59	29.960	R66	44.912

VALUES ARE IN OHMS.

CLAVIOLINE KEYBOARD SCHEMATIC



0	.03 MFD.
1	.03 MFD.
2	.25 MFD.
3	.75 MFD.
4	.1 MFD.
5	.1 MFD.
6	.25 MFD.
7	.05 MFD.
8	.02 MFD.
9	.2300 MFD.
10	.4000 MFD.
11	.300 MFD.
12	.2100 MFD.
13	.300 MFD.
14	.750 MFD.
15	.250 MFD.
16	.02 MFD.
17	.005 MFD.
18	.005 MFD.
19	.015 MFD.
20	.01 MFD.
21	.05 MFD.
22	.200 MFD.
23	.005 MFD.
24	.015 MFD.
25	.02 MFD.
26	.100 MFD.
27	1 MFD.
28	.001 MFD.
29	.05 MFD.
30	6SN7GT
31	6J5
32	6SN7CT
33	6J7
V1	
V2	
V3	
V4	

R1	750K
R2	120K
R3	200K
R4	200K
R5	120K
R6	750K
R7	5.1K
R8	
R9	
R10	22K
R11	1.5 Megohm
R12	510K
R13	3.9K
R14	25K
R15	8.5K
R16	20K
R17	2.2 Megohm
R18	1K
R19	510K
R20	51K
R21	2.4K
R22	5.1K
R23	510K
R24	1. Megohm
R25	56K
R26	10K
R27	5.1K
R28	20K
R29	60-62K
R30	240K
R31	120K
R	3 Megohm
L1-4	Tone Choke
L5	10K Pot. W.W.
VC1	10K
VC2	10K
VC3	Special
VC4	5K Pot.
VC5	5K Pot. W.W.
VC6	10K
VC7	250K Pot.

Clavioline Licensed under Constant Martin Patent No. 2,563,477

Maestro

STEREO-AMP.

INSTRUCTIONS

PRODUCT OF ELECTRONICS DIVISION, GIBSON INC., KALAMAZOO, MICH.

MAESTRO STEREO-AMP.

The Maestro "Stereo-Amp." is an amplifier with the newest electronic advances in true Stereo amplification and reproduction.

POWER OUTPUT

The Maestro Stereo-Amp. is a high fidelity amplifier capable of a normal output of 18 watts in each stereo channel, or 36 watts total.

OPERATING INSTRUCTIONS

To remove the inner speaker enclosure, push in the lower tab of the two case catches that are located along the side and near the top edge of the speaker grill. Place one hand near the center top of the outer enclosure, with the other hand gently lift the top edge of the inner enclosure and pull out of the larger enclosure.

Place the two speaker enclosures in their desired locations, try to keep as much separation as possible between speakers for best stereo effects. Remove the amplifier from the inner enclosure by turning the retaining brackets sideways and sliding the amplifier out. Place it near the playing position for convenience in changing control settings.

Uncoil the speaker cables from their respective holders and plug them into the speaker jacks located in the small well, located along the back and bottom edge of the metal amplifier cabinet. The A.C. line cord also enters the metal cabinet at this point.

FOR STEREO OPERATION

Place the function switch in stereo position. This switch also controls the off, on, standby function.

Maestro stereo guitars are furnished with a special two-conductor shielded cable with a "Y" junction. Place a plug from the "Y" connector in Channel 1, Jack 1; place the second plug from the "Y" connector in Channel 2, Jack 1; place the special two-conductor plug at opposite end of "Y" instrument cord in the instrument jack. Set all controls as desired. The volume from each speaker should be adjusted until the sound from each speaker appears equal to the player's ear. Tone control settings will affect the volume settings somewhat; therefore, the settings of Channel 1 and Channel 2 volume controls will not necessarily be numerically identical.

FOR MONAURAL OPERATION

Place the function switch in Monaural position. This places Channel 1 and Channel 2 output amplifiers in parallel. Plug in regular instrument with conventional manner and adjust only those controls that are associated with the channel in which the instrument is being used.

POLARITY SWITCH

This added convenience enables the player to quickly find the polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum.

ASSEMBLING CASE FOR CARRYING

Unplug speaker cables and coil up in their respective holders. Set amplifier in inner speaker enclosure, lock amplifier in place by moving retaining brackets to the front of the amplifier chassis. Coil up the A.C. line cord and place it in the receptacle at the right end of the case. Slide the inner enclosure into the outer enclosure. It will be necessary to lower the carrying handle of the inner enclosure. Line up the edges of the inner and outer cases and lock in position by pressing upper tab of the two case catches. The combined case can now be safely carried.

MICROPHONE OPERATION

The Maestro "Stereo-Amp." can be used as an excellent public address system. To use the microphone, place the function switch in the monaural position, insert the microphone plug in any of the four input jacks and advance the associated volume control until a feedback squeal or howl is produced by the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably depending upon the size of the room, its acoustical properties and the distance between the microphone and the loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeaker is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.

It is important that a shielded plug be attached to the microphone cable. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Objectional hum will result otherwise. Figure A illustrates the proper way to connect the plug to the microphone cable.



FIGURE A

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the Amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, the Transportation Company should be notified immediately, and a claim placed.

CAUTION

Damage to the Amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105 - 125 volt, 50 - 60 cycle alternating current ONLY. Check the voltage from the power lines to determine that it is not over 125 volts, and the frequency of the current is either 50 or 60 cycles.

When ready to use power, plug the power cord into the electric outlet and move the switch to the Stereo or Monaural position. Approximately one minute is required for the tubes to heat before the Amplifier is ready to use.

TUBES

Check tubes for proper positioning before placing the Amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

GROUND CLIP

The AC Line Cord is equipped with an external Ground Clip that can be attached to any grounded object such as a water pipe, steam radiator, or to a grounded circuit such as is used in recording and broadcasting studios. This reduces extraneous noises and hum — a feature very essential for top notch performance.

SERVICE

If the Amplifier is in need of servicing, consult a reliable radio man. The electrical diagram attached to the amplifier will assist the repair man in servicing.

FUSE

The fuse in the MAESTRO-STEREO Amplifier is a type 3AG Slo-Blo of three ampere rating. DO NOT USE A FUSE OF HIGHER RATING.

Maestro

REVERB. TREMOLO

INSTRUCTIONS

PRODUCT OF ELECTRONICS DIVISION, GIBSON INC., KALAMAZOO, MICH.

GIBSON

MODEL GAV-1 ELECTRONIC VIBRATO

INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICHIGAN

GIBSON ELECTRONIC VIBRATO — MODEL GAV-1

DESIGN

Engineered as a separate compact unit for use with the majority of amplifiers to produce, as needed, a true "Frequency Vibrato." With this Unit, new tonal effects can be added to any performance.

Acclaimed by users as the finest Vibrato ever designed. Vibrato can be switched on or off, and adjusted for frequency and intensity by the Remote Control Box which plugs into the instrument jack.

CONSTRUCTION

Compact Vibrato Box, 6" x 6" x 3" with rich Brown Crystalite finish. Complete with 10 feet of A.C. Line Cord and 15 feet of Cord with Remote Control Unit attached. Both Cords may be wound around the combination Carrying Handle and Cord Hanger when not in use.

OPERATION

1. Plug 10 ft. A.C. line Cord from box to any outlet of 105 - 125 volt, 50 - 60 cycle alternating current ONLY. Move toggle switch of Vibrato Box to "ON" position.
2. Plug Royalite Remote Control Box into instrument jack, adjusting the lip of Control Unit firmly against the top of the instrument. Set the Volume and Tone Controls of the instrument to the same settings that are normally used.
3. Plug one end of the regular instrument cord into Vibrato Box jack, and the other end of cord into instrument jack on amplifier. Set amplifier volume control to desired volume.
4. Set "Frequency" and "Intensity" Controls as desired. Vibrato effect may be switched on or off as desired with Push Button Switch included in Remote Control Unit. This Unit has adjustable instrument plug and will fit any GIBSON ELECTRIC and most other Electrics with a distance of 2-7/16" or less from center of instrument jack to top of instrument.

GENERAL

This Unit has been carefully inspected and securely packed to prevent damage in shipment. However, upon receipt, examine carefully to determine if breakage or hidden damage has occurred during shipment. If damage has occurred, the transportation company should be notified and a claim placed immediately.

CAUTION

Damage to this Unit will result if connected to an improper power source. This Unit is designed to operate on 105 - 125 volt, 50 - 60 cycle alternating current ONLY.

SERVICE

Please save these Instructions in case of service or repairs. It will help the Service Man in locating the trouble, and in replacing defective parts with correct values.

FUSES

This Unit is designed to use a Type 3AG, 1/2 ampere fuse. DO NOT USE FUSES OF HIGHER RATING.

Maestro

REVERB. TREMOLO
MODEL GA-1 RVT

INSTRUCTIONS

PRODUCT OF ELECTRONICS DIVISION, GIBSON INC., KALAMAZOO, MICH.

REVERB UNIT UNPACKING INSTRUCTIONS

IMPORTANT — READ CAREFULLY BEFORE USE

CAUTION

The Reverb Unit has been carefully constructed. It is, however, a delicate electronic device. Treat it with the same care and respect given a TV set.

Avoid dropping, sudden jolts, or rough handling and it will give excellent service. This beautifully musical Reverberation effect is not to be confused with the repeating signal produced by the mechanical tape recorder style of echo units.

UNPACKING

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

TUBES

Make certain all tubes are seated firmly into their respective sockets. Each tube is labeled for proper replacement should any tube be out of its socket. Be especially careful when inserting tubes to see that the pins on the tube are correctly aligned with the holes in the socket before pushing into place. Do not twist tube — push tube straight into socket. It is advisable to check tubes from time to time depending on amount of use and excellence of performance. *Be sure tubes are always returned to proper sockets and seated firmly.*

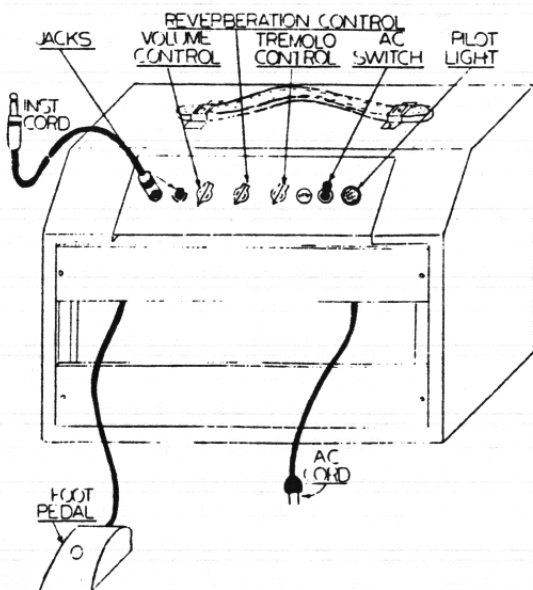
REVERB POWER UNIT SET UP INSTRUCTIONS

CAUTION

Check the current rating of the power outlet to be used. *Be positive it is 110-120 volt, 50-60 cycle A. C. (alternating current) ONLY.* Never connect the Reverb Unit to a D. C. (direct current) outlet. Improper current type or rating can do serious damage.

SET UP

Set up the guitar and amplifier in the usual manner — see diagram below.



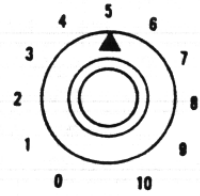
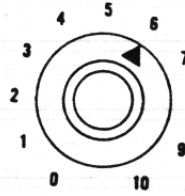
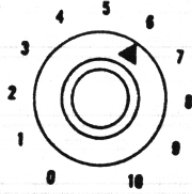
1. If only one instrument is used it should be plugged into the Number 1 Jack for maximum gain.
2. Place the foot control switch of the Reverberation Unit in a convenient position and the system is ready to operate. This foot switch turns the reverberation effect ON and OFF.
3. If tremolo is to be used with the music being played, it can be accomplished by turning Tremolo control clockwise from the OFF position. The frequency of the tremolo can be varied over a wide range of speeds by turning this control.
4. REVERBERATION:—Due to the unusual flexibility of the Reverberation circuit, it is important that the operator understands the various control settings to obtain the total range of Reverberation effects of which this amplifier is capable. Illustrated herein are several examples of control settings which will reproduce different Reverberation effects.

Volume

Reverberation

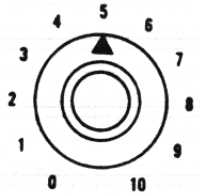
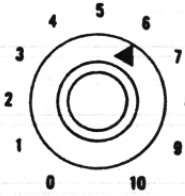
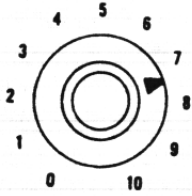
Tremolo

Example No. 1. 50% Main Signal - 50% Reverb.



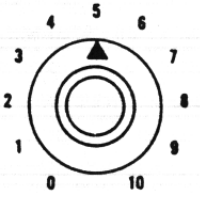
INSTRUMENT SETTINGS — Tone control and/or toggle switch in maximum treble position. Volume control setting $2\frac{1}{2}$ to 3.

Example No. 2. 75% Main Signal - 25% Reverb.



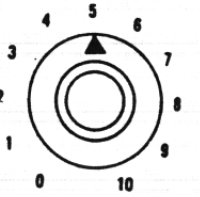
INSTRUMENT SETTINGS — Same as above

Example No. 3. 25% Main Signal - 75% Reverb.



INSTRUMENT SETTINGS — Same as Example No. 2.

Example No. 4. 100% Reverb.



INSTRUMENT SETTINGS — Same as Example No. 2.

FOOT SWITCH MUST BE IN THE "ON" POSITION FOR REVERBERATION.

Maestro Deluxe

REVERB. TREMOLO
GA2-RVT

INSTRUCTIONS

PRODUCT OF ELECTRONICS DIVISION, GIBSON INC., KALAMAZOO, MICH.

MODEL GA-2RT MAESTRO DELUXE

REVERB UNIT UNPACKING INSTRUCTIONS

IMPORTANT — READ CAREFULLY BEFORE USE

CAUTION

The Reverb Unit has been carefully constructed. It is, however, a delicate electronic device. Treat it with the same care and respect given a TV set.

Avoid dropping, sudden jolts, or rough handling and it will give excellent service. This beautifully musical Reverberation effect is not to be confused with the repeating signal produced by the mechanical tape recorder style of echo units.

UNPACKING

After careful removal from carton, be sure all packing material around the tube and accessory parts is carefully removed. Take special care not to damage the speaker cone.

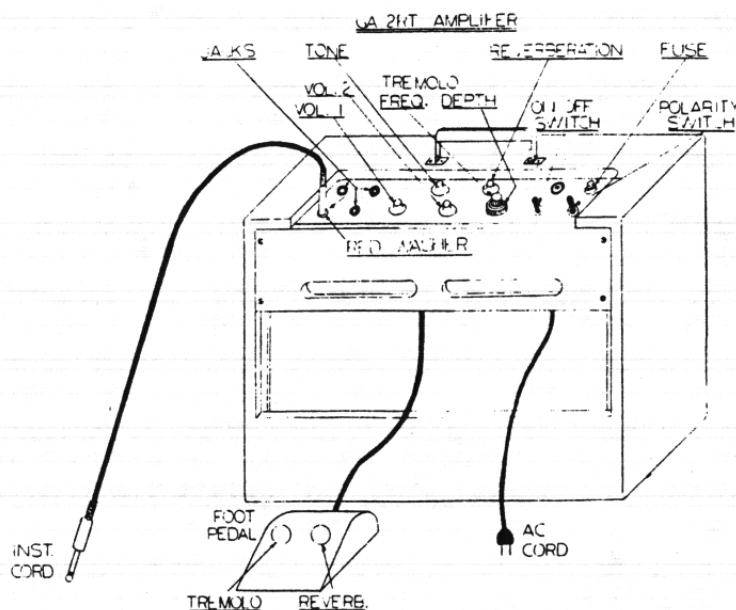
TUBES

Make certain all tubes are seated firmly into their respective sockets. Each tube is labeled for proper replacement should any tube be out of its socket. Be especially careful when inserting tubes to see that the pins on the tube are correctly aligned with the holes in the socket before pushing into place. Do not twist tube — push tube straight into socket. It is advisable to check tubes from time to time depending on amount of use and excellence of performance. *Be sure tubes are always returned to proper sockets and seated firmly.*

REVERB POWER UNIT SET UP INSTRUCTIONS

CAUTION

Check the current rating of the power outlet intended for use. Be positive it is 110-120 volt, 50-60 cycle A.C. (alternating current) **ONLY**. Never plug the Reverb Unit into a D.C. (direct current) outlet. Improper current type or rating can do serious damage.



REVERBERATION — EFFECTIVE IN CHANNEL 2 ONLY

Due to the unusual flexibility of the GA-2RT Reverberation circuit, it is important that the Operator understands the various control settings to obtain the total range of Reverberation effects of which this Amplifier is capable. Illustrated below are several examples of control settings which will reproduce different Reverberation effects.

Volume 1

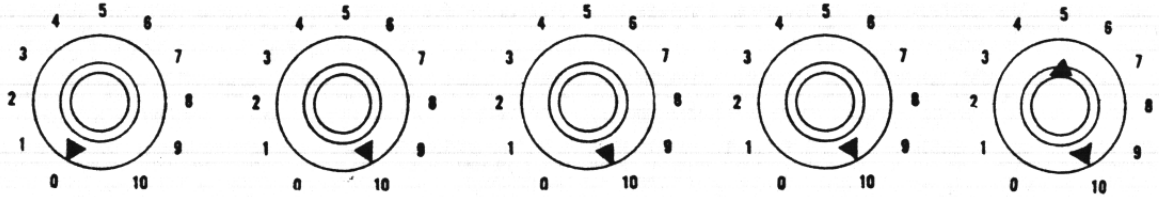
Tone

Volume 2

Reverberation

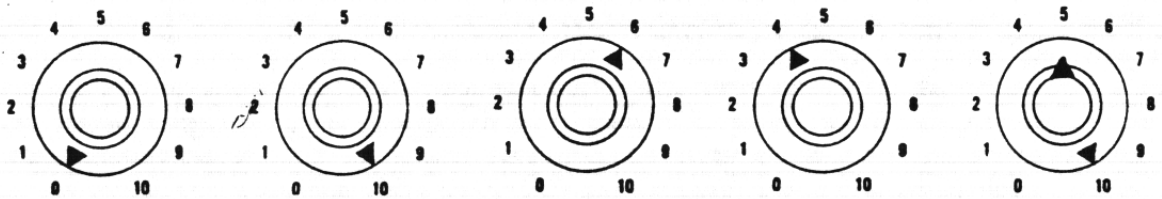
● Speed
○ Depth

Example No. 1. 50% Main Signal - 50% Reverb.



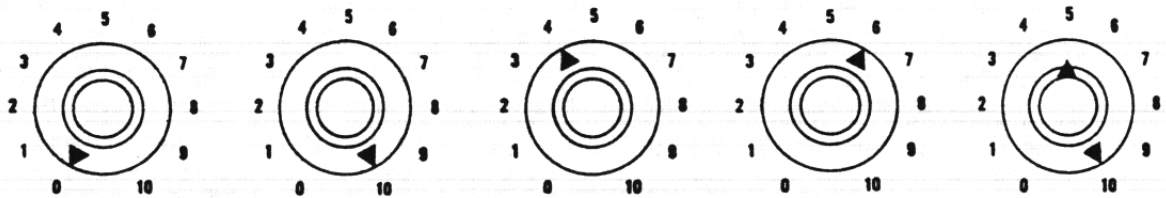
INSTRUMENT SETTINGS — Tone control and/or toggle switch in maximum treble position. Volume control setting $2\frac{1}{2}$ to 3.

Example No. 2. 75% Main Signal - 25% Reverb.



INSTRUMENT SETTINGS — Tone control same as above, Volume control setting 5 to 6.

Example No. 3. 25% Main Signal - 75% Reverb.



INSTRUMENT SETTINGS — Same as Example No. 2.

Example No. 4. 100% Reverb.



INSTRUMENT SETTINGS — Same as Example No. 2.

FOOT SWITCH MUST BE IN THE "ON" POSITION FOR REVERBERATION.

TREMOLO

The Tremolo effect adds another dimension to the Reverberation effect. It can be used either with or without reverberation at the players discretion. The Tremolo is turned on or off by the use of the foot switch. The speeds have been carefully set to cover a wide range of Tremolo effects. The Depth of the Tremolo is also variable being controlled by the Depth control.

STEREO AMPLIFIERS

When using the GA-2RT Reverb-Echo unit with Stereo Guitar and Stereo Amplifier, follow these directions —

Set up Stereo Amplifier as it would normally be used. Plug in Stereo Guitar using "Y" instrument cord (Red plug in Channel one, Jack No. 1, and Gray plug in Channel two). Now plug one end of the 15' shielded jumper cable into the No. 2 Jack of Channel one (same channel as Red plug), and plug the other end of jumper cable into No. 1 Jack (red washer), Channel 2 of the GA-2RT. Reverb is now available when guitar toggle switch is in center or upper position.

POLARITY SWITCH

This added convenience enables the player to quickly find the polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum.

OPERATION OF MICROPHONE

Because of the high power output, high gain and high fidelity characteristics of the MAESTRO GA-2RT AMPLIFIER it makes an exceptionally fine public address system when used with either the crystal, dynamic or velocity types of microphones.

While the amplifier will operate very well with any of the crystal, medium or high impedance dynamic or velocity (ribbon) microphones, it is recommended that a GIBSON Dealer be consulted before investing in a microphone. Authorized Gibson Dealers can supply a microphone which has been selected and matched to the amplifier, thus insuring the most faithful reproduction of voice and music.

When using a microphone it is important that the GIBSON 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the "Microphone" jack and advance the Microphone volume control until a feedback squeal or howl is produced on the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.

If the Microphone jacks are not in use, turn the Channel one volume control completely off.



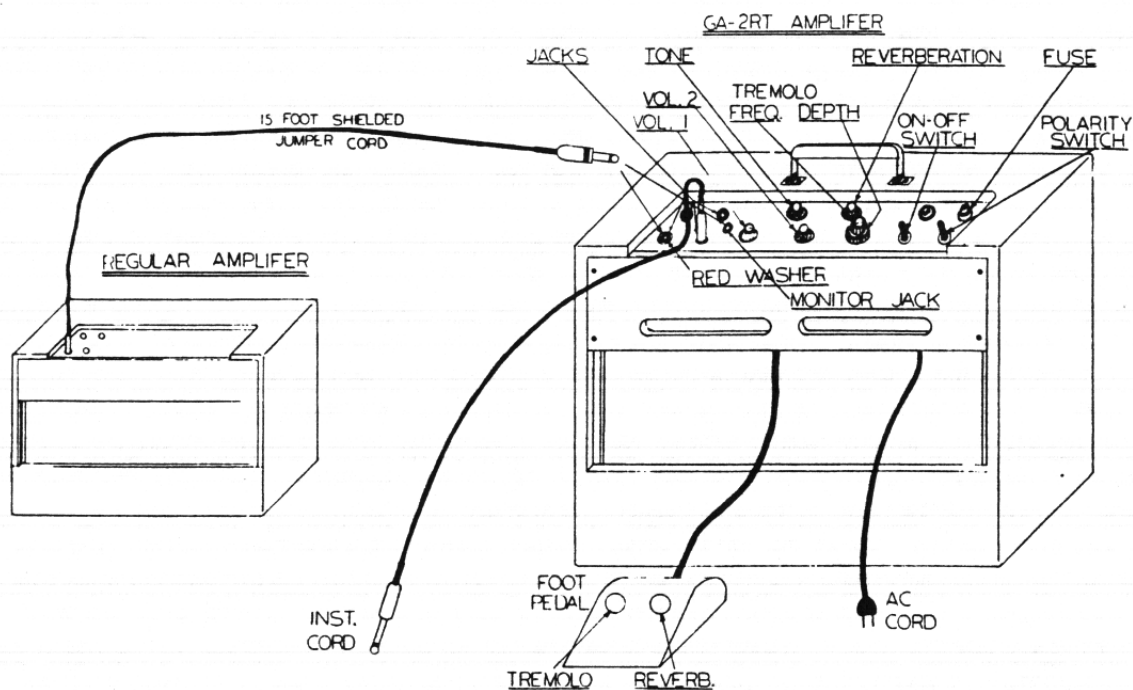
Figure A

OPERATIONAL INSTRUCTIONS FOR USE OF GA-2RT IN CONJUNCTION WITH A REGULAR AMPLIFIER

The use of the GA-2RT with a regular amplifier will add a spacious liveliness to instrument reproduction that is far beyond the possibilities of single amplifier Reverberation. Listed below are the simple instructions for this type operation.

1. Plug the A.C. cord of the GA-2RT Amplifier into convenient outlet.
2. Now plug one end of the 15' shielded jumper cable into the No. 1 Jack of Channel 2 (the one with the Red Washer). Plug the other end of the jumper cable into the input jack normally used in a regular amplifier. Set regular amplifier volume control for normal volume.
3. The Guitar instrument cord should be plugged into the No. 2 Jack of Channel 2 of the GA-2RT. Plug the A.C. line cord of the regular amplifier into a convenient outlet.
4. Turn on the A.C. switches for both amplifiers and the volume and tone controls may be set as illustrated on page 3.
5. If both Reverb. and Normal Signals are to be heard at the regular Amplifier, plug the 15 foot Shielded Jumper Cord into the Monitor Jack of the GA-2RT instead of the Jack with the Red Washer.

Illustrated below is a pictorial diagram showing the correct hook-up.



6. Place the combination reverberation, tremolo foot control switch in a convenient position and the system is ready to operate. Either, or both, reverberation and tremolo effect is available by switching the indicated switch ON or OFF.
7. The percentage of Reverberation can be controlled by the Reverberation Control, Channel 2 Volume Control and the Volume Control of the regular amplifier.
8. The instrument is ready to be played. If reverb signal is not coming through, step on the foot switch as it may be in the OFF position. Thereafter, the reverb effect can be conveniently cut in or out at a snap of the foot switch.
9. When the Reverberation Foot Switch is OFF, the reverb unit operates as a regular amplifier adding an extra self-powered speaker that expands the regular amplifier sound without reverberation. If a cord length space separates the regular amplifier and the reverberation unit, an excellent impression of the "Stereo" and echo effect is obtained. When Reverberation Foot Switch is ON, the reverb signal is super-imposed on the above "Stereo" sound with a minimum contrast of volume change.

CAUTION

The Reverberation Unit must always be placed on a solid non-vibrating surface or footing when in operation.

Any sudden shock, jolt, or wiggle, when in use, will cause undesirable noise. The resultant clatter of an inadvertant shake or bump is annoying but not necessarily harmful. This delicate sensitivity to shock and vibration is a normal characteristic of the device.

No problem will be encountered while the unit is connected if supporting surface is solid and unit is not moved about. To avoid the unwanted noise, turn the reverberation unit off by pressing the foot switch.

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use power, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

TUBES

Inspect tubes to determine if they are in their proper positions before placing the amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

SERVICE

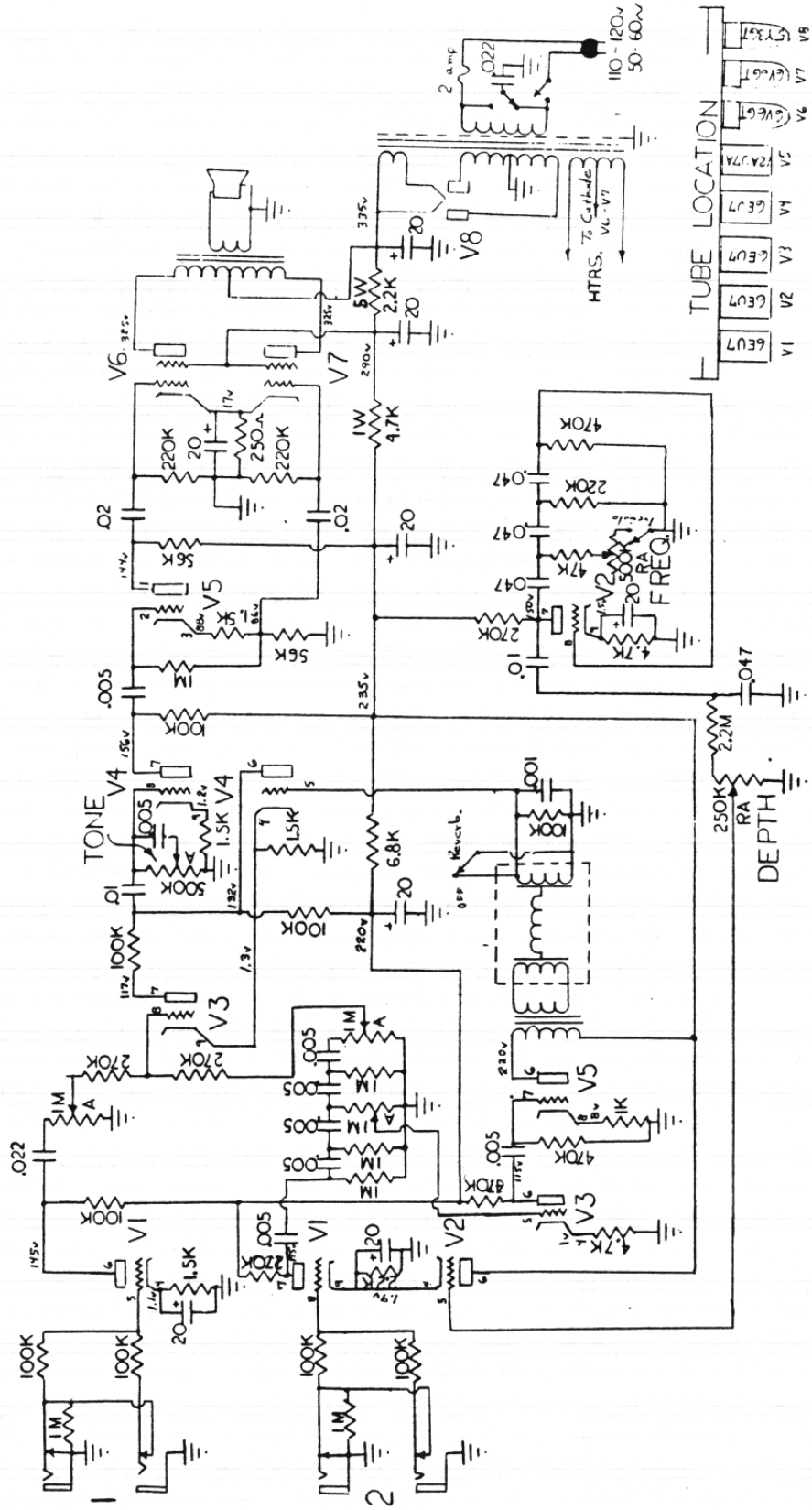
If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.

* * * *

FUSE

The fuse used in the GA-2RT Amplifier is a type 3AG of two ampere rating. **DO NOT USE FUSES OF HIGHER RATING.**

GA2-RVT



Gibson

REVERB III
MODEL GA-3RV

INSTRUCTIONS

PRODUCT OF



Gibson Electronics

KALAMAZOO, MICHIGAN

CAUTION

The Reverb Unit has been carefully constructed. It is, however, a delicate electronic device. Treat it with the same care and respect given a TV set.

Avoid dropping, sudden jolts, or rough handling and it will give excellent service. This beautifully musical Reverberation effect is not to be confused with the repeating signal produced by the mechanical tape recorder style of echo units.

UNPACKING

This Reverb Accessory was carefully packed to prevent damage in shipment. However, upon receipt of the unit, examine carefully to determine if there has been breakage or damage of parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

REVERB POWER UNIT SET UP INSTRUCTIONS

CAUTION

Damage to the Reverb Unit will result if it is connected to an improper power source. This Reverb Unit is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use, insert the plug on the power cord into the electric outlet and move switch to "on." The unit is ready for immediate use.

The Reverberation Unit must always be placed on a solid non-vibrating surface or footing when in operation.

Any sudden shock, jolt, or wiggle, when in use, will cause undesirable noise. The resultant clatter of an inadvertant shake or bump is annoying but not necessarily harmful. This delicate sensitivity to shock and vibration is a normal characteristic of the device.

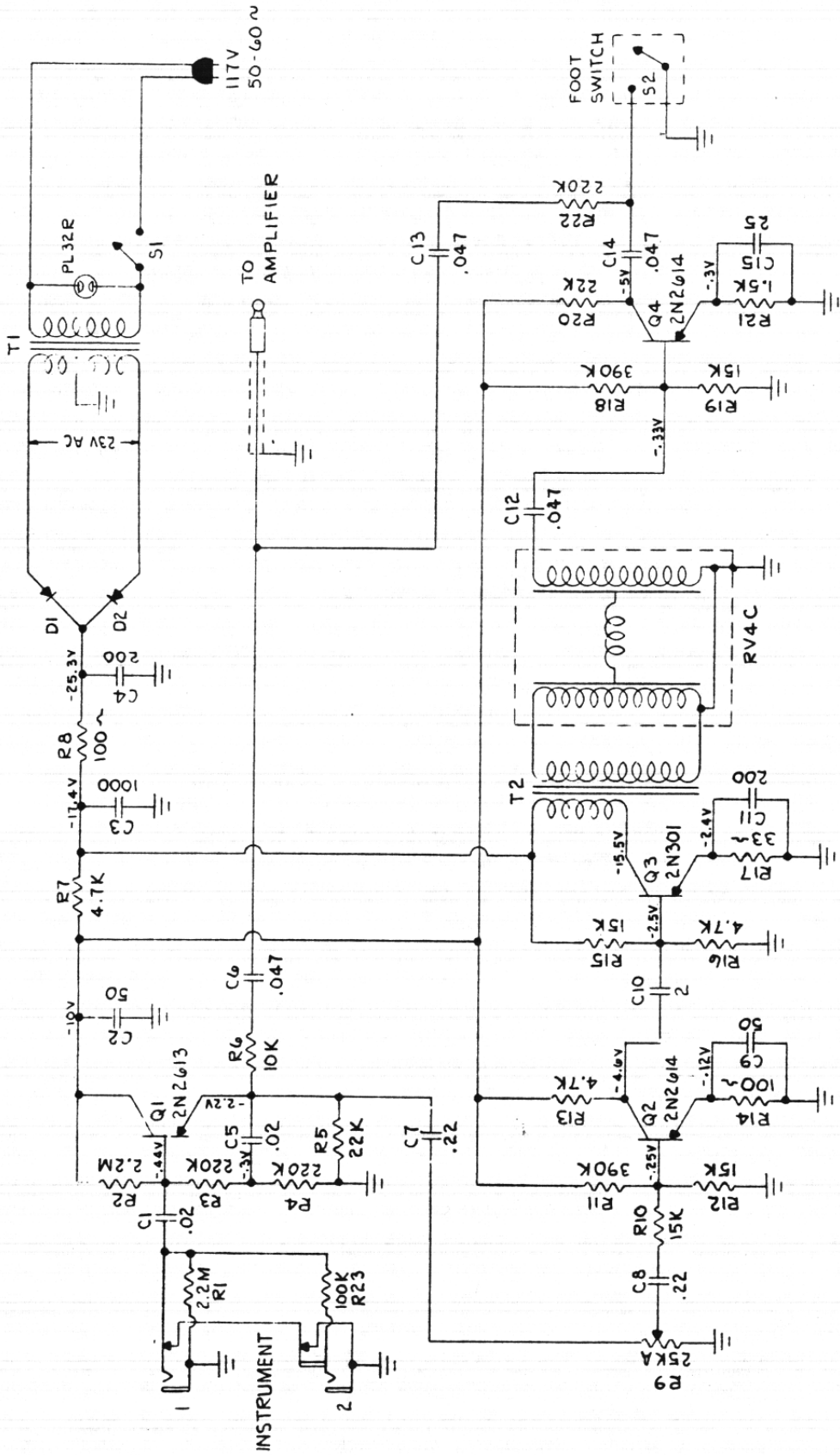
No problem will be encountered while the unit is connected if supporting surface is solid and unit is not moved about. To avoid the unwanted noise, turn the reverberation unit off by pressing the foot switch.

- Operation:**
- (a) Plug the instrument cord into the jack marked "instrument" on the reverberation control panel.
 - (b) Connect the 10 foot shielded cord with plug to an amplifier input jack.
 - (c) Plug the AC line cord of this unit into a 117 volt 60 cycle outlet.
 - (d) Remove the foot pedal from its carrying hanger and place in a convenient location.
 - (e) Turn on AC power. No warm up time is required.
 - (f) Turn up Reverberation control about half way and strike a note or chord and damp the strings quickly.
 - (g) If no reverberation is heard push the switch on the foot pedal and repeat, adjusting level of reverberation as desired by means of reverberation control.
 - (h) In the maximum clockwise position it may be possible to have feedback or howl due to regeneration build up. Do not try to use at this level, reduce reverberation control slightly until this disappears. This is then the maximum usable reverberation.

(i) For maximum signal to noise ratio the volume control on the instrument should normally be carried near its maximum and the volume control on the amplifier as low as possible and still obtain the desired sound level.

(j) If desired this unit may be operated with the case placed on end but sudden jars will cause a loud crash to be heard from the speaker of the amplifier. This can be used as an "attention" signal if desired and may be readily turned off and on by means of the foot pedal switch.

GA-3RV



- T1 Power Transformer TF-101P
- T2 Reverb. Transformer TF-1000R
- D1, D2 Diodes, 200 PIV, 150 Ma DI-69A
- R9 25K, Audio taper ± 30K CBA-811-3712
- S1 Switch, SPST Rotary SW-898-1

Gibson

REVERB-ECHO

MODEL GA-4RE

INSTRUCTIONS

PRODUCT OF



Gibson Electronics

KALAMAZOO, MICHIGAN

GA-4RE (Reverb Echo)

The GA-4RE records music with an electronic pen. The record is made on a film of oil which also serves to lubricate the revolving disc which is the platter for the film. The film is constantly replaced and can never wear out like a magnetic tape. Following the electronic pen are two sensors which reproduce the pattern of electrons for the amplifier. The effect is a multiple choice of echo and reverberant sound with a quality never before achieved.

The GA-4RE has a wide range of facility as follows:

1. Two inputs
 - (a) Input #1 has enough sensitivity for any electric guitar.
 - (b) Input #2 is provided for tape dubbing so that reverb or echo can be added to a final recording from an original tape.
2. The loudness control is for input #2 only, to accommodate the wide range of output levels of various tape playbacks.
3. The control marked "direct" controls the amplification separately from the reverb-echo. It is recommended that for average playing some direct sound always be used. This will enhance the effect of the reverb-echo.
4. "Reverb" control varies the amount of reverb-echo. A mixture of direct and reverb to suit your taste can be achieved by the proper settings of the two controls "direct" and "reverb."
5. The mode control has three positions. Position #1 simulates room reverberation with a soft echo. Position #2 provides reverberation with a bold echo with a given repetition rate. Position #3 is similar to position #2 except that the echo rate is quicker. To quickly identify the different sounds possible, mute the strings near the nut or bridge and then listen to the string plucked with the three different positions of the switch.
6. The "output" jack is provided to connect the Reverb-Echo to a guitar amplifier. A regular shielded guitar cord is recommended.
7. A power switch is provided in a convenient location on the front panel. If hum from local interference is encountered a ground clip on the power cord clipped on a suitable ground should reduce the hum.
8. A fuse on the front panel should never be replaced with one rated larger than one ampere.
9. A foot switch is provided to turn the reverb system on and off.

Three tubes

2 diodes

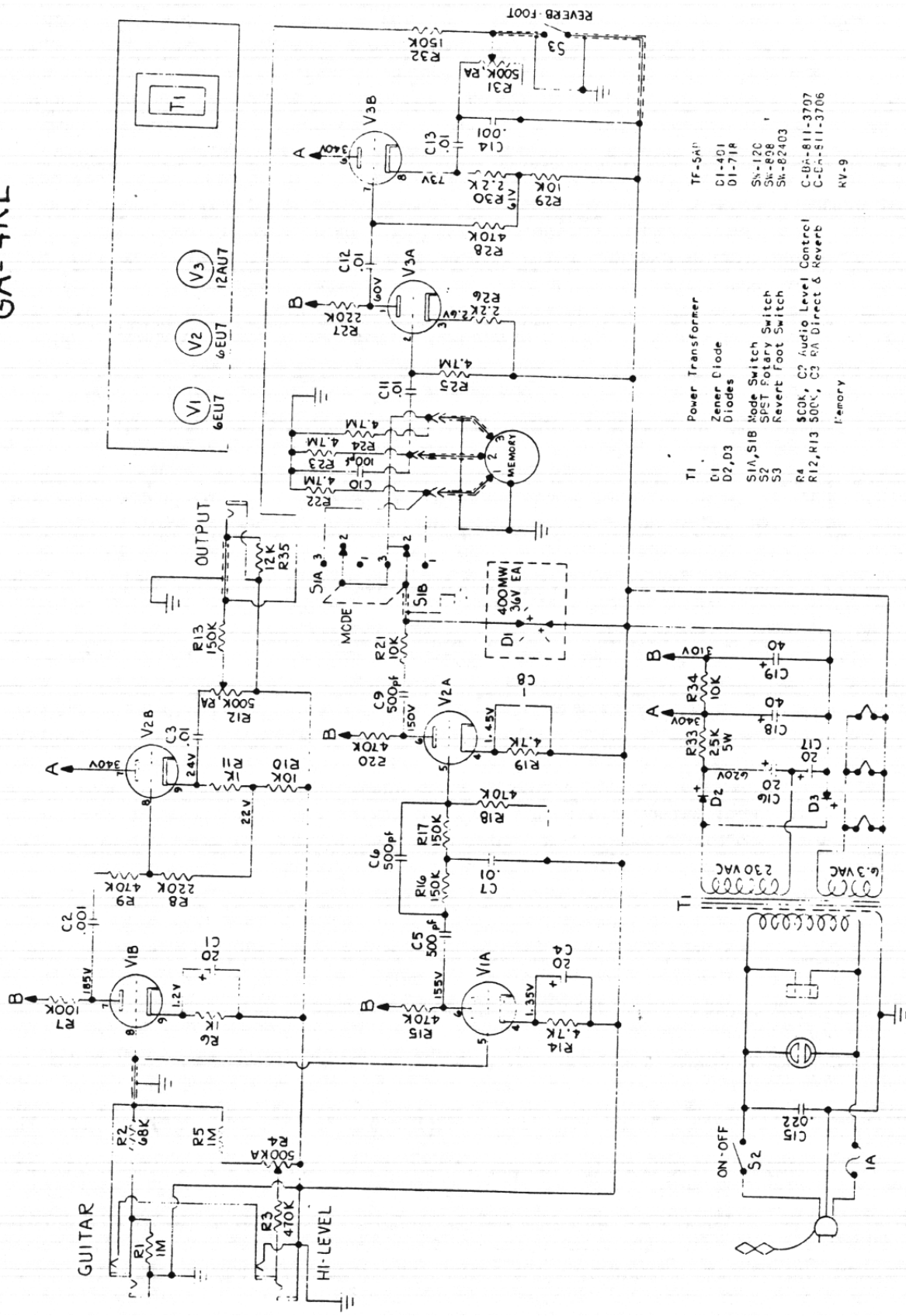
2 Zener Diodes

1 Foot switch (single)

1 Electrostatic record and playback

IMPORTANT NOTE:—This unit should be operated *only* in the horizontal position. The exact angle is not critical but do not operate upside down, on end or on its back. The recording medium is on oil. The correct amount is placed in the unit at the factory. The unit is sealed at the factory and if not tampered with no problem will be experienced. *Do not open the metal container which surrounds the recording element.*

GA-4RE



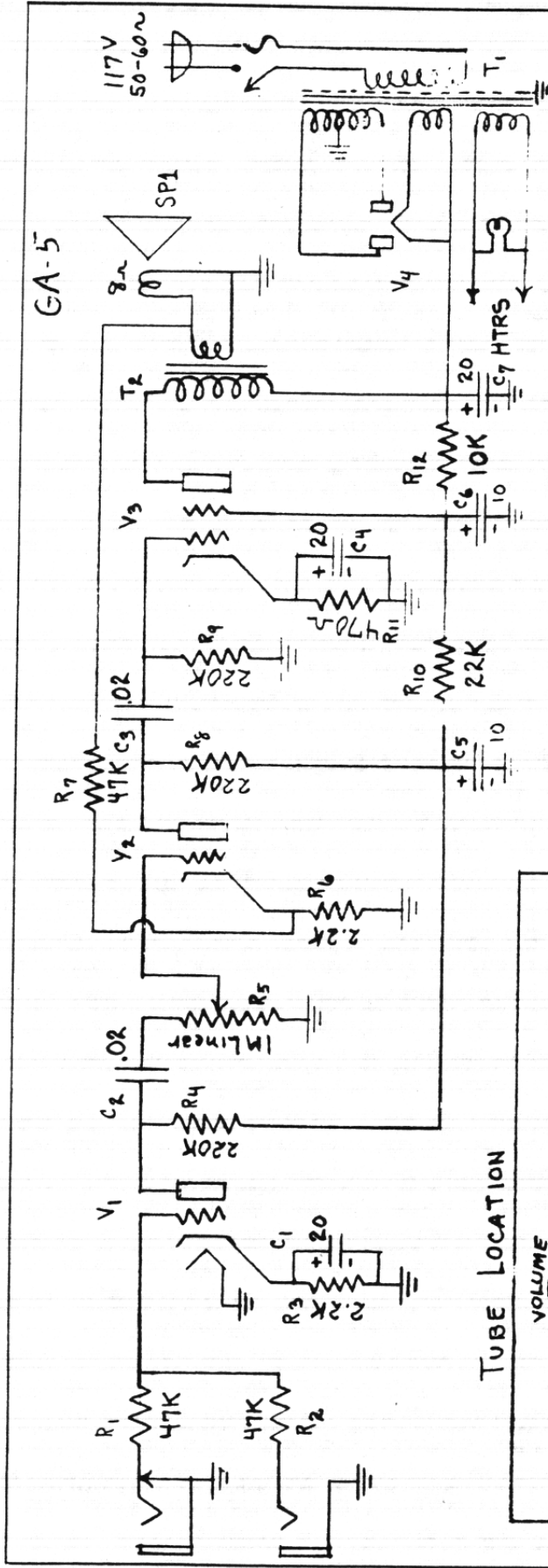
- T1 Power Transformer
- D1 Zener Diode
- D2, D3 Diodes
- S1A, S1B Mode Switch
- S2 SPST Polarity Switch
- S3 Revert Foot Switch
- R4 50K
- R12, R13 500K
- R2 4.7M
- R3 4.7M
- R4 4.7M
- R5 4.7M
- R6 4.7M
- R7 4.7M
- R8 4.7M
- R9 4.7M
- R10 4.7M
- R11 4.7M
- R12 4.7M
- R13 4.7M
- R14 4.7K
- R15 4.7K
- R16 4.7K
- R17 4.7K
- R18 4.7K
- R19 4.7K
- R20 4.7K
- R21 4.7K
- R22 4.7K
- R23 4.7K
- R24 4.7K
- R25 4.7K
- R26 4.7K
- R27 4.7K
- R28 4.7K
- R29 4.7K
- R30 4.7K
- R31 4.7K
- R32 4.7K
- R33 4.7K
- R34 4.7K
- R35 4.7K
- R36 4.7K
- R37 4.7K
- R38 4.7K
- R39 4.7K
- R40 4.7K
- R41 4.7K
- R42 4.7K
- R43 4.7K
- R44 4.7K
- R45 4.7K
- R46 4.7K
- R47 4.7K
- R48 4.7K
- R49 4.7K
- R50 4.7K
- C1 0.01
- C2 0.001
- C3 0.01
- C4 0.01
- C5 500pF
- C6 500pF
- C7 0.01
- C8 0.01
- C9 500pF
- C10 0.01
- C11 0.01
- C12 0.01
- C13 0.01
- C14 0.01
- C15 0.02
- C16 0.02
- C17 0.02
- C18 0.02
- C19 0.02
- C20 0.02
- C21 0.02
- C22 0.02
- C23 0.02
- C24 0.02
- C25 0.02
- C26 0.02
- C27 0.02
- C28 0.02
- C29 0.02
- C30 0.02
- C31 0.02
- C32 0.02
- C33 0.02
- C34 0.02
- C35 0.02
- C36 0.02
- C37 0.02
- C38 0.02
- C39 0.02
- C40 0.02
- C41 0.02
- C42 0.02
- C43 0.02
- C44 0.02
- C45 0.02
- C46 0.02
- C47 0.02
- C48 0.02
- C49 0.02
- C50 0.02

GIBSON
MODEL GA-5 AMPLIFIER

INSTRUCTIONS

|

GIBSON INC., KALAMAZOO, MICH.



DC VOLTAGES TO CHASSIS USING VTVM (11 MEG INPUT)

TUBE	USE	PLATE	SCREEN	CATHODE
V1	12AX7	VOLTAGE AMPLIFIER	165	1.5
V2	"	"	165	1.5
V3	6V3	POWER	375	20
V4	5Y3	RECTIFIER	300V AC	380

PARTS LIST

R1 R2 R7 47K Yaw, R3 R6 2.2K 1/2w, R4 R8 R9 220K 1/2w, R10 22K 1w, R11 470Ω 1w, R12 10K 1w, R5 1MEG LINEAR TAPER
 C1 C4 20MFD 25 VOLT, C2 C3 .02 MFD 400VOLT, C5 C6 10MFD 450VOLT, C7 20MFD 450VOLT
 T1 POWER TRANSFORMER # GAS5 T2 OUTPUT TRANSFORMER # GAS-0 SP1 SPEAKER, 8" dia, 8Ω VC, TYPE 8J11.

When only one instrument is used plug into #1 input jack.

This amplifier designed for 105-125 volt, 50-60 cycle current. Damage will result if connected to improper power source.

Use the above schematic to facilitate service by a reliable radio man.

Do not use higher rating fuse than one ampere, type 3 A.G.

This amplifier was carefully checked and in good playing condition when shipped. If damaged when received call transportation company immediately and place claim.

GIBSON

"Skylark"

TREMOLO

MODEL GA-5T AMPLIFIER

INSTRUCTIONS

PRODUCT OF



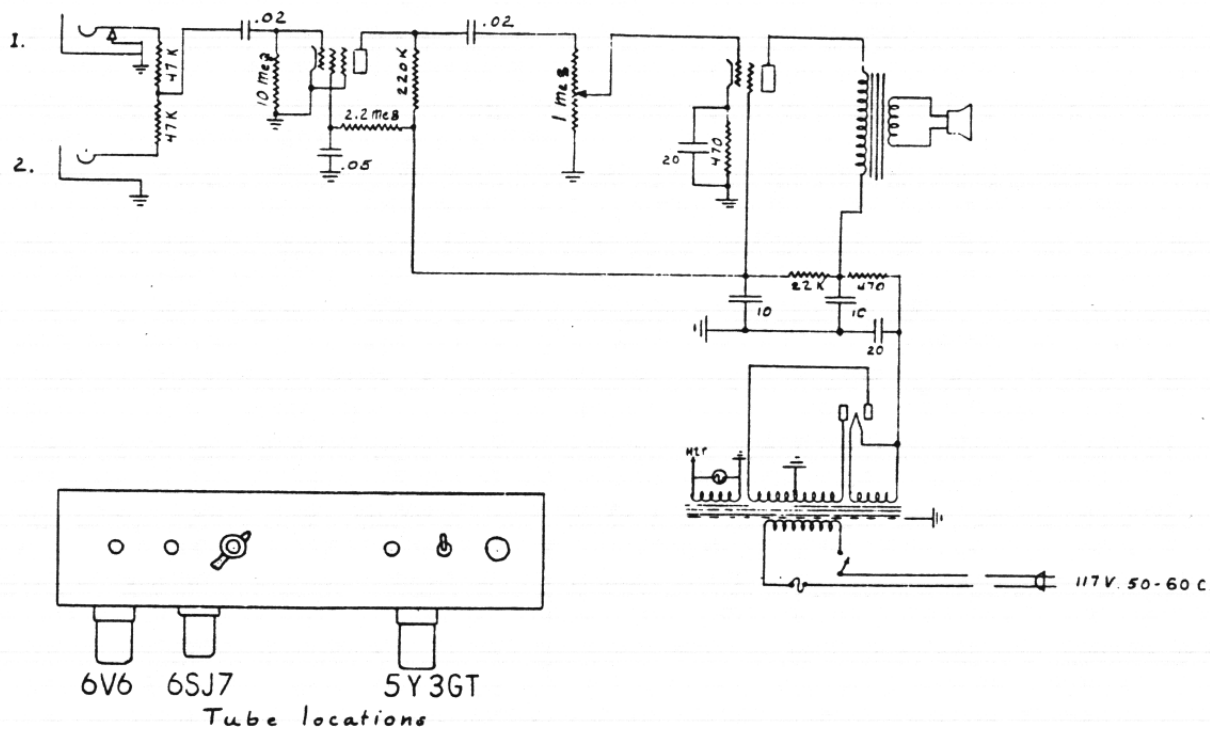
Gibson Electronics

KALAMAZOO, MICHIGAN

GIBSON
Les Paul TV
MODEL AMPLIFIER

INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICH.



Les Paul

When only one instrument is used plug into #1 input jack.

This amplifier designed for 105-125 volt, 50-60 cycle current.
Damage will result if connected to improper power source.

Use the above schematic to facilitate service by a reliable
radio man.

Do not use higher rating fuse than one ampere, type 3 A.G.

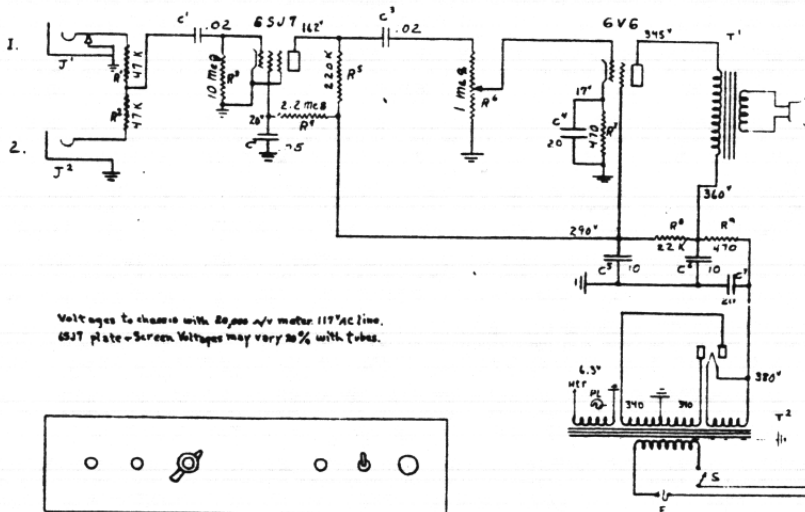
This amplifier was carefully checked and in good playing condi-
tion when shipped. If damaged when received call transportation
company immediately and place claim.

GIBSON
Les Paul Junior
MODEL AMPLIFIER

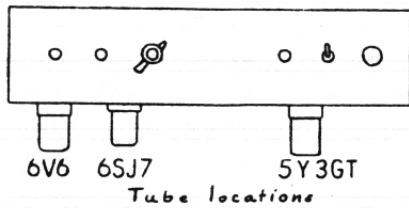
INSTRUCTIONS

A vertical line descends from the center of the horizontal line below the word "INSTRUCTIONS".

GIBSON INC., KALAMAZOO, MICH.



Voltages to check with 20,000 Ω /v meter 117 AC line.
 6SJ7 plate-screen Voltages may vary 20% with tubes.



PARTS-LIST

- R₁, R₁' 47000 Ω 1/2 watt
- R₂ 10 megohm 1/2 watt
- R₃ 2.2 megohm 1/2 watt
- R₄ 22000 Ω 1/2 watt
- R₅ 1 megohm pot. (Volume)
- R₆, R₇ 470 Ω 2 watt
- R₈ 22000 Ω 2 watt
- C₁, C₂ .02 -fd 400 volt
- C₃ .05 -fd 400 volt
- C₄ 20 -fd 25 WV
- C₅, C₆ 10 -fd 450 WV } in single
- C₇ 20 -fd 450 WV } cap
- T₁ Output Trans. (550V)
- T₂ Power Trans. (G.A.-58)
- S 5P01 Toggle Sw (on-off)
- F 1 amp (1A) Fuse
- PL No. 47 Plug LV
- T₁ Phos Jack (nominally shorted)
- J₂ Phone Jack

When only one instrument is used plug into #1 input jack.

This amplifier designed for 105-125 volt, 50-60 cycle current.
 Damage will result if connected to improper power source.

Use the above schematic to facilitate service by a reliable radio man.

Do not use higher rating fuse than one ampere, type 3 A.G.

This amplifier was carefully checked and in good playing condition when shipped. If damaged when received call transportation company immediately and place claim.

GIBSON

MODEL GA-6 AMPLIFIER

INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICH.

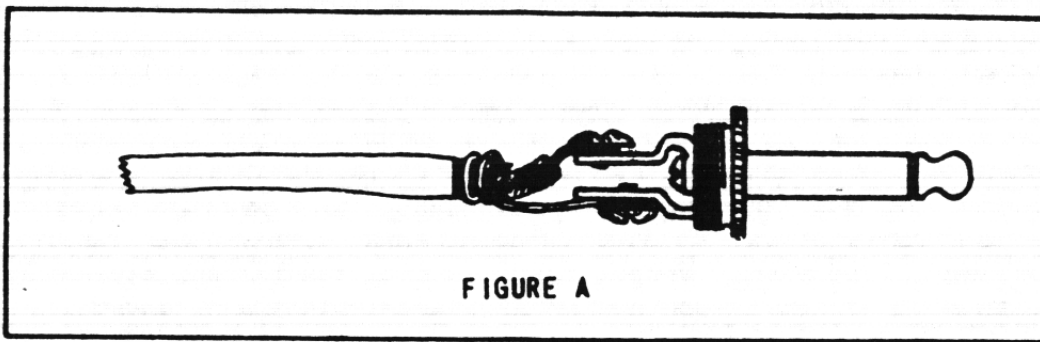


FIGURE A

OPERATION OF INSTRUMENT

Four input Circuits: Three for instruments--one for microphone which can be used by an additional instrument.

When one, two, or three instruments are plugged into the jacks marked "Instruments," three stages of amplification are used.

The socket marked MICROPHONE may also be used with any of the GIBSON electrical instruments. When used this way a careful setting of the volume control marked MICROPHONE must be made to avoid overload and consequent distortion. This adjustment can be easily made by turning the volume control on the guitar or other instrument all the way on and setting the MICROPHONE control at the point where no distortion occurs when the strings are struck with maximum force. By utilizing the MICROPHONE socket in this way a fourth instrument can be plugged in, making a total of four electrical instruments which may be used and blended.

The tone control circuit for this amplifier has been designed to give the player an extremely wide range of tonal coloring. With the tone control set to the extreme bass a very pleasing tone is produced by instruments having their pick-ups placed close to the finger board. With the tone control set to the extreme treble, unusual brilliance may be obtained from instruments that have the pick-up placed close to the bridge.

Separate volume controls for instrument and mike circuits.
Combination tone and volume control.

OPERATION OF THE MICROPHONE

Because of the high power output, high gain and high fidelity characteristics of the GIBSON GA-6 amplifier it makes an exceptionally fine public address system when used with either the crystal, dynamic or velocity types of microphones.

While the amplifier will operate very well with any of the crystal, medium or high impedance dynamic or velocity (ribbon) microphones, it is recommended that, before investing in a microphone, you consult your GIBSON dealer. Authorized GIBSON dealers can supply you with a microphone which has been selected and matched to the amplifier, thus insuring the most faithful reproduction of voice and music.

When using a microphone it is important that the GIBSON 75A or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable.

To use the microphone, insert the plug in the MICROPHONE socket and advance the MICROPHONE volume control until a feedback squeal or howl is produced in the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably

OPERATION OF THE MICROPHONE (Cont'd)

depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.

The volume controls INSTRUMENTS and MICROPHONE, being completely independent of each other, allow the inputs from the various sources to be "mixed" or blended. Because of this flexibility many unusual effects can be easily worked out.

If the MICROPHONE socket is not in use turn the MICROPHONE volume control all the way off.

TOP MOUNTED CHASSIS

Easily accessible control panel; five tubes, including one special input tube designed to reduce microphonic noises, hum and distortion in both the instrument and microphone circuits.

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, look it over carefully to make sure there has been no breakage of tubes or parts. If you find that damage has occurred during shipment, we suggest the Transportation Company be called immediately, and a claim placed.

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. Make sure the voltage from the power lines is not over 125, and that the frequency of the current is either 50 or 60 cycles. When ready to turn on power, plug the power cord into the electric outlet and turn on the switch. Wait approximately one minute for the tubes to heat, and the amplifier is ready for use.

TUBES

Be sure tubes are in their proper positions before placing the amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

SERVICE

If the amplifier is in need of servicing, we suggest it be taken to a reliable radio man. The electrical diagram attached should be shown the repairman to assist him in servicing the amplifier.

* * *

The fuse used in the GA-6 amplifier is a type AG of two ampere rating. DO NOT USE FUSES OF HIGHER RATING.

GIBSON

"LANCER"

MODEL GA-6 AMPLIFIER

INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICHIGAN

GIBSON "LANCER"

MODEL GA-6 AMPLIFIER

OPERATION OF INSTRUMENT

When one or two instruments are plugged into the jacks marked "Instruments," three stages of amplification are used. The total gain of both being set with the control marked "Channel 2."

The jacks marked "Instruments" or "Microphone" may also be used with any of the GIBSON Electrical Instruments. When used this way, a careful setting of the volume control marked "Microphone" must be made to avoid overload and consequent distortion. This adjustment can easily be made by turning the Volume Control on the guitar or other instrument completely on, and setting the Channel 1 Control at a point where no distortion occurs when the strings are struck with maximum force. By utilizing the Microphone jacks in this way, two or more instruments can be plugged in, making a total of four electrical instruments which may be used and blended

Jacks in either channel marked Number 1 should be used first. The second Instrument or Microphone should be used in the Jacks marked Number 2.

The tone control circuit for this Amplifier has been designed to give the player an extremely wide range of tonal coloring.



FIGURE A

OPERATION OF MICROPHONE

Because of the high power output, high gain and high fidelity characteristics of the GIBSON GA-6 AMPLIFIER it makes an exceptionally fine public address system when used with either the crystal, dynamic or velocity types of microphones.

While the amplifier will operate very well with any of the crystal, medium or high impedance dynamic or velocity (ribbon) microphones, it is recommended that a GIBSON Dealer be consulted before investing in a microphone. Authorized Gibson Dealers can supply a microphone which has been selected and matched to the amplifier, thus insuring the most faithful reproduction of voice and music.

When using a microphone it is important that the GIBSON 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the "Microphone" jack and advance the Microphone volume control until a feedback squeal or howl is produced on the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.

If the Microphone jacks are not in use, turn the Microphone volume control completely off.

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the Amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, the Transportation Company should be notified immediately, and a claim placed.

CAUTION

Damage to the Amplifier will result if it is connected to an improper power source. This Amplifier is designed to be operated on 105 - 125 volt, 50 - 60 cycle alternating current **ONLY**. Check the voltage from the power lines to determine that it is not over 125 volts, and that the frequency of the current is either 50 or 60 cycles.

When ready to use power, plug the power cord into the electric outlet and move the switch to the ON position. Approximately one minute is required for the tubes to heat before the Amplifier is ready for use.

TUBES

Check tubes for proper positioning before placing the Amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

SERVICE

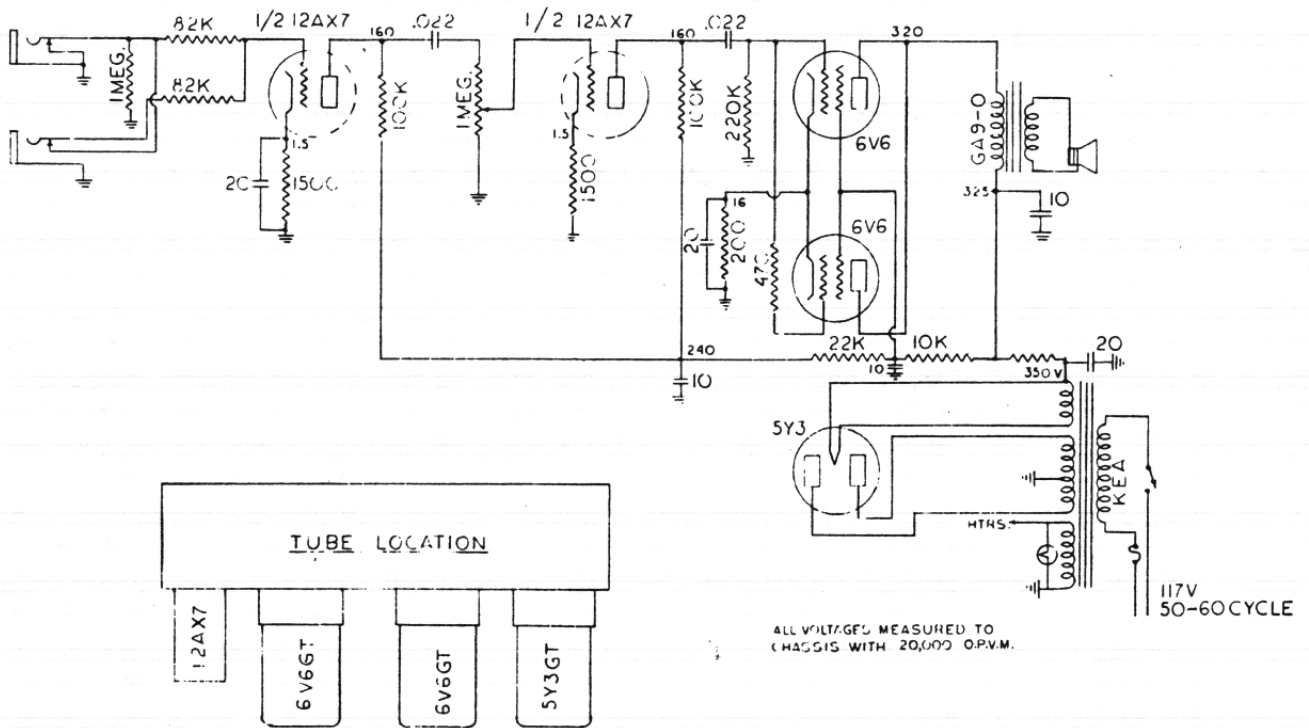
If the Amplifier is in need of servicing, consult a reliable radio man. The electrical diagram herein should be shown to the repairman to assist him in servicing the Amplifier.

FUSE

The fuse used in the GIBSON GA-6 AMPLIFIER is a type 3 AG of one ampere rating. **DO NOT USE A FUSE OF HIGHER RATING.**

GIBSONETTE

MODEL AMPLIFIER



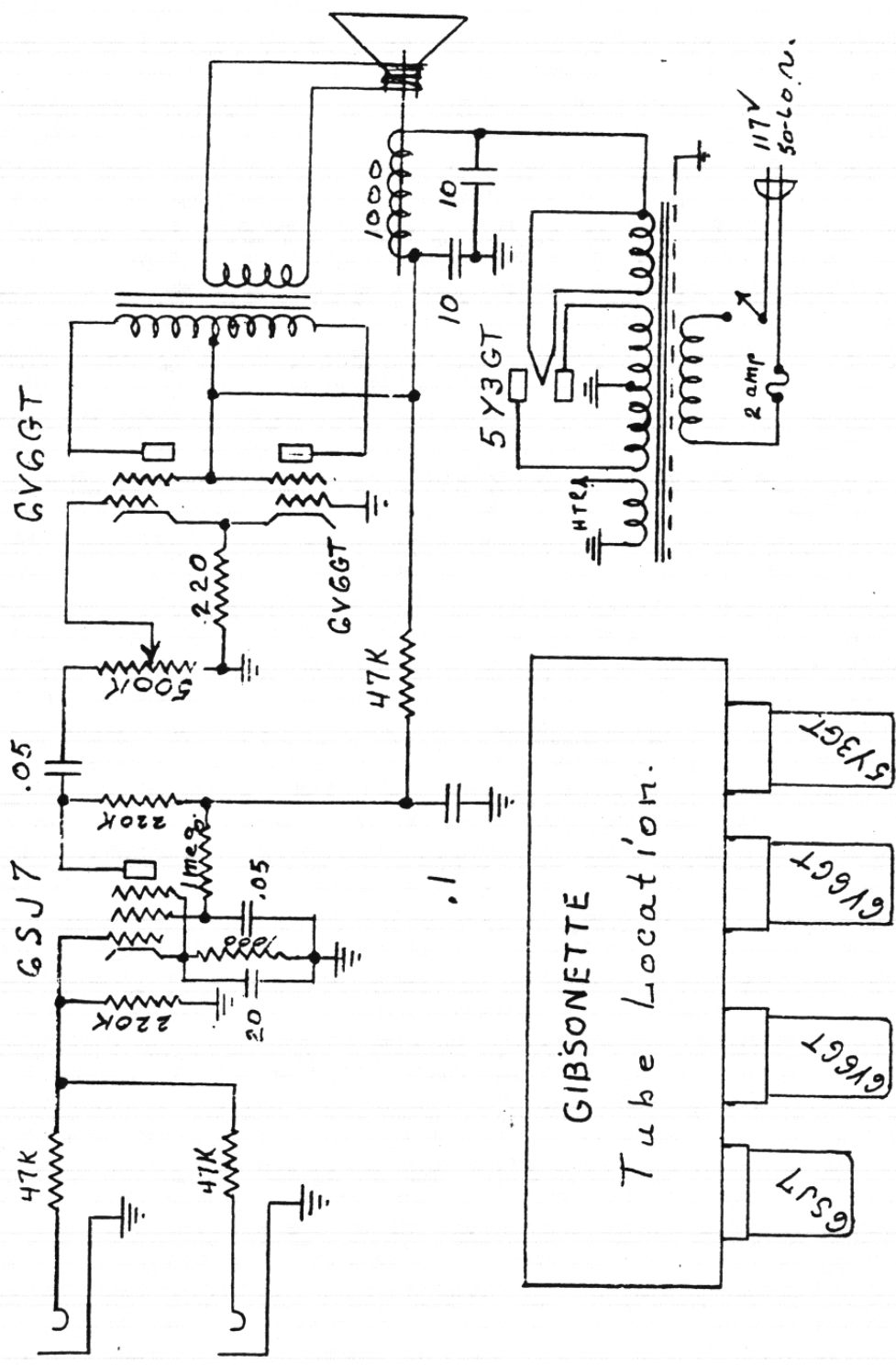
GIBSON INC., KALAMAZOO, MICH.

**GIBSONETTE
MODEL AMPLIFIER**

INSTRUCTIONS



GIBSON INC., KALAMAZOO, MICH.



GIBSONETTE
Tube Location.

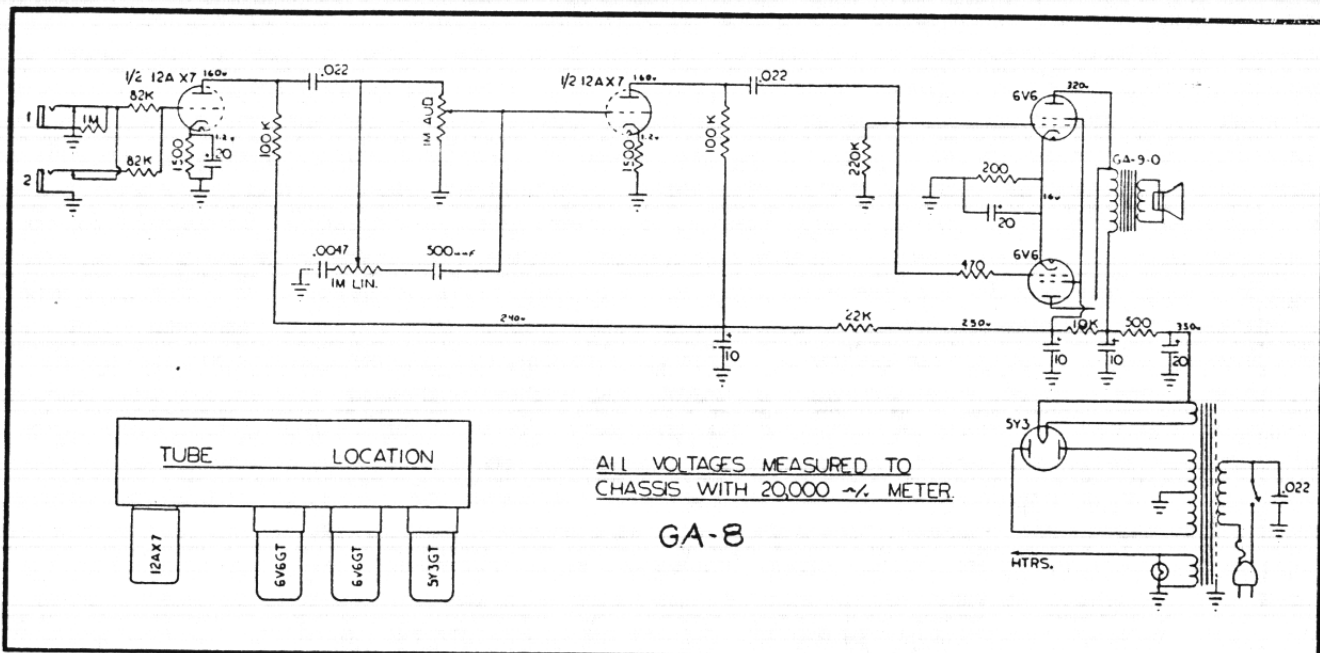
6SJ7
6V6GT
6V6GT
5Y3GT

GIBSON

**DISCOVERER
MODEL GA-8 AMPLIFIER**

INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICH.



OPERATION OF INSTRUMENTS

When either one or two instruments are plugged into the sockets marked INSTRUMENTS, three stages of amplification are used, the total gain being controlled by the volume control marked INSTRUMENTS.

Newly engineered, the GA-8 Discoverer is a large professional size amplifier of durable, compact, attractive design with a clear powerful tone. Lightweight, and easy to handle, it is of solid wood lock-joint construction with gold patterned fabric covering accented by a rich, dark grille.

Its unbelievable value includes top mounted, four tube chrome plated chassis; top mounted control panel; 9 watts output, two instrument inputs; Jensen 12" speaker, volume control, tone control on-off switch, jeweled pilot light, protective fuse. Large professional size 20" wide, 16" high, 9" deep; weight 20 lbs.

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the Amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, the Transportation Company should be notified immediately, and a claim placed.

CAUTION

Damage to the Amplifier will result if it is connected to an improper power source. This Amplifier is designed to be operated on 105 - 125 volt, 50 - 60 cycle alternating current ONLY. Check the voltage from the power lines to determine that it is not over 125 volts, and that the frequency of the current is either 50 or 60 cycles.

TUBES

Check tubes for proper positioning before placing the Amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

SERVICE

If the Amplifier is in need of servicing, consult a reliable radio man. The electrical diagram herein should be shown to the repairman to assist him in servicing the Amplifier.

FUSE

The fuse used in the GA-8 GIBSON AMPLIFIER is a type 3AG of one ampere rating. DO NOT USE A FUSE OF HIGHER RATING.

GIBSON

DISCOVERER
MODEL GA-8 AMPLIFIER

INSTRUCTIONS

PRODUCT OF



Gibson Electronics

KALAMAZOO, MICHIGAN

INSTRUCTIONS

CAUTION

Damage to the Amplifier will result if it is connected to an improper power source. This Amplifier is designed to be operated on 105 - 125 volt, 50 - 60 cycle alternating current ONLY. Check the voltage from the power lines to determine that it is not over 125 volts, and that the frequency of the current is either 50 or 60 cycles.

When ready to use power, plug the power cord into the electric outlet and move the switch to the ON position. Approximately one minute is required for the tubes to heat before the Amplifier is ready for use.

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the Amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, the Transportation Company should be notified immediately, and a claim placed.

TUBES

Check tubes for proper positioning before placing the Amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

OPERATION OF MICROPHONE

The high gain and high fidelity characteristics of this Amplifier, permit the use of most of the popular high impedance microphones for public address work. The microphone should be plugged into the Number One jack and it is not recommended that other instruments be used in conjunction with the microphone.

When using a microphone it is important that the Number 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the Number One jack and advance the Volume control until a feedback squeal or howl is produced on the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.



Figure A

OPERATION OF INSTRUMENTS

This Amplifier is equipped with two input jacks for use with various types and styles of instruments and microphones. The input jacks are numbered 1. and 2. and when plugging in the instrument cords, they should be inserted in their respective jacks — that is, first instrument in the No. 1 jack, and second instrument in the No. 2 jack.

The gain for both jacks is adjusted by the control marked "Loudness". The tonal coloring can be varied over a wide range by use of the "Bass" and "Treble" tone controls.

MONITOR JACK

This convenient jack is provided for extending the usefulness of the amplifier. Some of its many uses include: — Use in tape recording; Use in driving additional amplifiers, feeding into Public Address systems; Use with Hi-Fi amplifiers. For best results the Monitor Jack should be fed into a High-impedance circuit.

EXT. SPEAKER JACK

Provided for adding a wide dispersion of sound to the amplifier. An additional speaker may be plugged into this jack and, when the additional speaker is separated from this amplifier by several feet, a richer and fuller sound will result.

SERVICE

If the Amplifier is in need of servicing, consult a reliable radio man. The electrical diagram herein should be shown to the repairman to assist him in servicing the Amplifier.

FUSE

The fuse used in this Amplifier is a type 3AG Slo-Blo of one ampere rating.
DO NOT USE A FUSE OF HIGHER RATING.

GIBSON

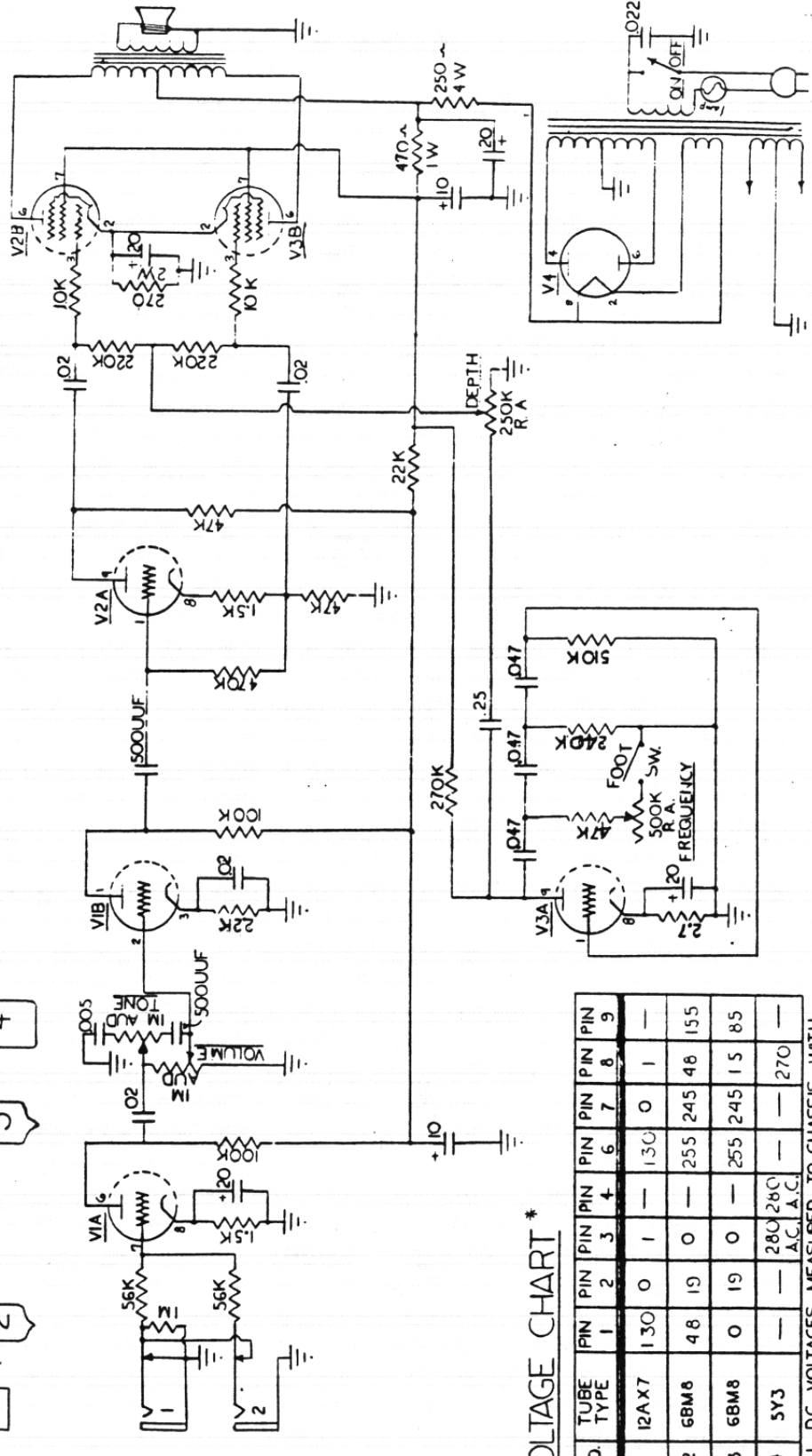
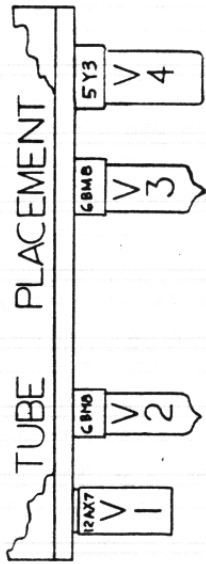
DISCOVERER TREMOLO

MODEL GA-8T AMPLIFIER

INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICHIGAN

GA-8T



VOLTAGE CHART *

NO.	TUBE TYPE	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8	PIN 9
V1	12AX7	130	0	1	—	130	0	1	—	—
V2	6BM8	48	19	0	—	255	245	48	155	—
V3	6BM8	0	19	0	—	255	245	15	85	—
V4	5Y3	—	—	280	260	—	—	—	270	—

* ALL DC. VOLTAGES MEASURED TO CHASSIS WITH 20,000 OHM/VOLT METER.

GIBSON AMPLIFIER

MODEL GA-8T

OPERATION OF INSTRUMENTS

The GA-8T GIBSON Amplifier is equipped with two input jacks for use with various types and styles of instruments and microphones. The input jacks are numbered 1 and 2 and when plugging in the instrument cords, they should be inserted in their respective jacks; i.e.: 1st instrument in No. 1 jack, and 2nd instrument in No. 2 jack.

The gain for both jacks is adjusted by the control marked "Volume." The tonal coloring can be varied over a wide range by use of the combination bass and treble tone control.

OPERATION OF MICROPHONE

The high gain and high fidelity characteristics of the GA-8T GIBSON Amplifier permit the use of most of the popular high impedance microphones for public address work. The microphone should be plugged into the Number One jack and it is not recommended that other instruments be used in conjunction with the microphone.

When using a microphone it is important that the GIBSON 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the Number One jack and advance the Volume control until a feedback squeal or howl is produced on the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.



Figure A

TREMOLO

The Tremolo effect is turned on and off by means of a Push Type Foot Switch. The Tremolo frequency of the Amplifier is controlled by the Variable Control marked "Frequency." The speeds have been carefully set to cover a wide range of Tremolo effects. The depth of the Tremolo is also variable being controlled by the "Depth" Control.

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the Amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, the Transportation Company should be notified immediately, and a claim placed.

CAUTION

Damage to the Amplifier will result if it is connected to an improper power source. This Amplifier is designed to be operated on 105 - 125 volt, 50 - 60 cycle alternating current ONLY. Check the voltage from the power lines to determine that it is not over 125 volts, and that the frequency of the current is either 50 or 60 cycles.

When ready to use power, plug the power cord into the electric outlet and move the switch to the ON position. Approximately one minute is required for the tubes to heat before the Amplifier is ready for use.

TUBES

Check tubes for proper positioning before placing the Amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

SERVICE

If the Amplifier is in need of servicing, consult a reliable radio man. The electrical diagram herein should be shown to the repairman to assist him in servicing the Amplifier.

FUSE

The fuse used in the GA-8T GIBSON Amplifier is a type 3AG of one ampere rating. DO NOT USE A FUSE OF HIGHER RATING.

GIBSON

MODEL GA-9 AMPLIFIER

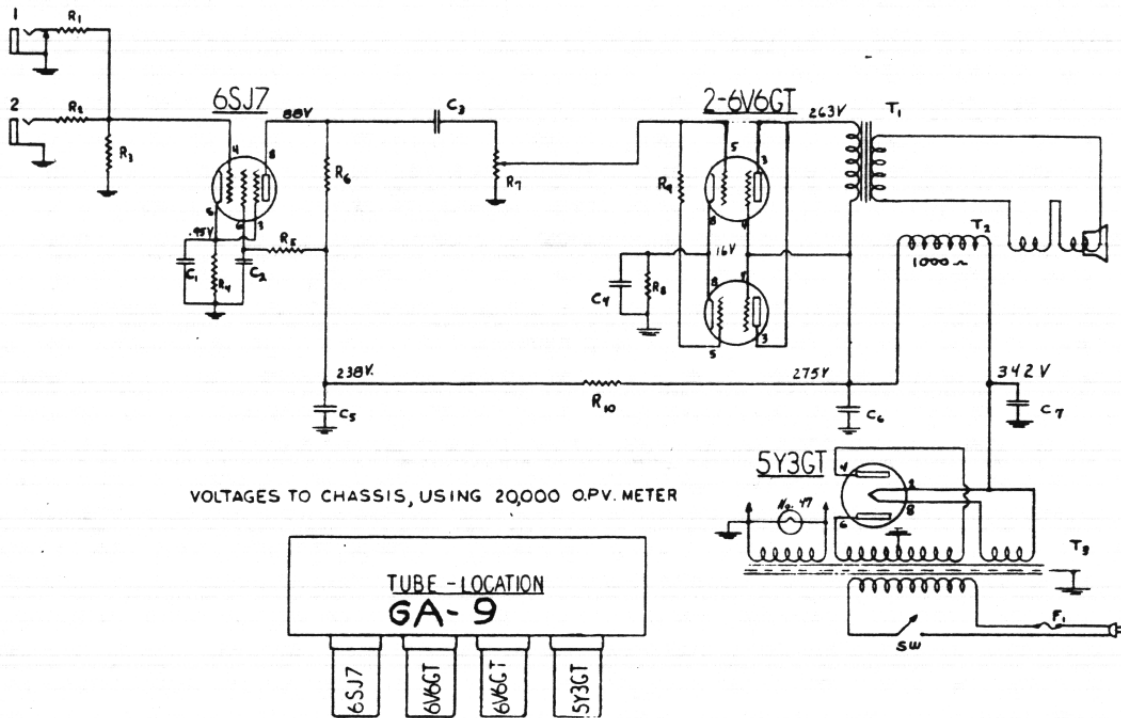
INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICH.

R¹ 47K 1/2 WATT
 R² 47K 1/2 WATT
 R³ 220K 1/2 WATT
 R⁴ 1000OHMS 1/2 WATT
 R⁵ 1 MEGOHM 1/2 WATT
 R⁶ 220K 1/2 WATT
 R⁷ 500K VOLUME CONTROL

R⁸ 200 OHM 7 WATT
 R⁹ 470 OHM 1/2 WATT
 R¹⁰ 47K 1 WATT
 C¹ 20MFD 25 W.V.
 C² .05MFD 600 W.V.
 C³ .05MFD 600 W.V.
 C⁴ 20MFD 25 W.V.

C⁵ 10MFD 450 W.V.
 C⁶ 10MFD 450 W.V.
 C⁷ 20MFD 450 W.V.
 T¹ OUTPUT TRANSFORMER
 T² SPEAKER FIELD
 T³ POWER TRANSFORMER
 F¹ FUSE 2AMP TYPE JAG



VOLTAGES TO CHASSIS, USING 20,000 O.P.V. METER

TUBE - LOCATION	
GA-9	
6SJ7	6V6GT
6V6GT	5Y3GT

OPERATION OF INSTRUMENTS

When either one or two instruments are plugged into the sockets marked INSTRUMENTS, two stages of amplification are used, the total gain being controlled by the volume control marked INSTRUMENTS.

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, look it over carefully to make sure there has been no breakage of tubes or parts. If you find that damage has occurred during shipment, we suggest the Transportation Company be called immediately, and a claim placed.

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. Make sure the voltage from the power lines is not over 125, and that the frequency of the current is either 50 or 60 cycles. When ready to turn on power, plug the power cord into the electric outlet and turn on the switch. Wait approximately one minute for the tubes to heat, and the amplifier is ready for use.

TUBES

Be sure tubes are in their proper positions before placing the amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

SERVICE

If the amplifier is in need of servicing, we suggest it be taken to a reliable radio man. The electrical diagram attached should be shown the repairman to assist him in servicing the amplifier.

The fuse used in the GA-9 amplifier is a type AG of two ampere rating. DO NOT USE FUSES OF HIGHER RATING.

GIBSON

**"TITAN"
MODEL GA-14 AMPLIFIER**

INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICHIGAN

GIBSON "TITAN" MODEL GA-14 AMPLIFIER

OPERATION OF INSTRUMENT

The jacks marked No. 1 and 2 may be used with any of the many Gibson Electrical Instruments, or High Impedance Microphones, (see Operation of Microphones below.). For best results when operating a microphone and instrument at the same time, always place the microphone in the opposite channel from the instrument. Two microphones may be used in the same channel if they are of the same type or have the same characteristics.

The correct procedure for setting the Amplifier Volume Control is as follows: Turn the Instrument Volume Control completely on. Pick the strings forcefully and then set the Amplifier Volume Control at a point where no distortion occurs. When using instruments in the opposite channel, the Volume Controls should be adjusted in this same manner.

The tone control circuit for this Amplifier has been designed to give the player an extremely wide range of tonal coloring.



FIGURE A

OPERATION OF MICROPHONE

Because of the high power output, high gain and high fidelity characteristics of the GIBSON GA-14 AMPLIFIER it makes an exceptionally fine public address system when used with either the crystal, dynamic or velocity types of microphones.

While the amplifier will operate very well with any of the crystal, medium or high impedance dynamic or velocity (ribbon) microphones, it is recommended that a GIBSON Dealer be consulted before investing in a microphone. Authorized Gibson Dealers can supply a microphone which has been selected and matched to the amplifier, thus insuring the most faithful reproduction of voice and music.

When using a microphone it is important that the GIBSON 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the "Microphone" jack and advance the Microphone volume control until a feedback squeal or howl is produced on the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the Amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, the Transportation Company should be notified immediately, and a claim placed.

CAUTION

Damage to the Amplifier will result if it is connected to an improper power source. This Amplifier is designed to be operated on 105 - 125 volt, 50 - 60 cycle alternating current ONLY. Check the voltage from the power lines to determine that it is not over 125 volts, and that the frequency of the current is either 50 or 60 cycles.

When ready to use power, plug the power cord into the electric outlet and move the switch to the ON position. Approximately one minute is required for the tubes to heat before the Amplifier is ready for use.

TUBES

Check tubes for proper positioning before placing the Amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

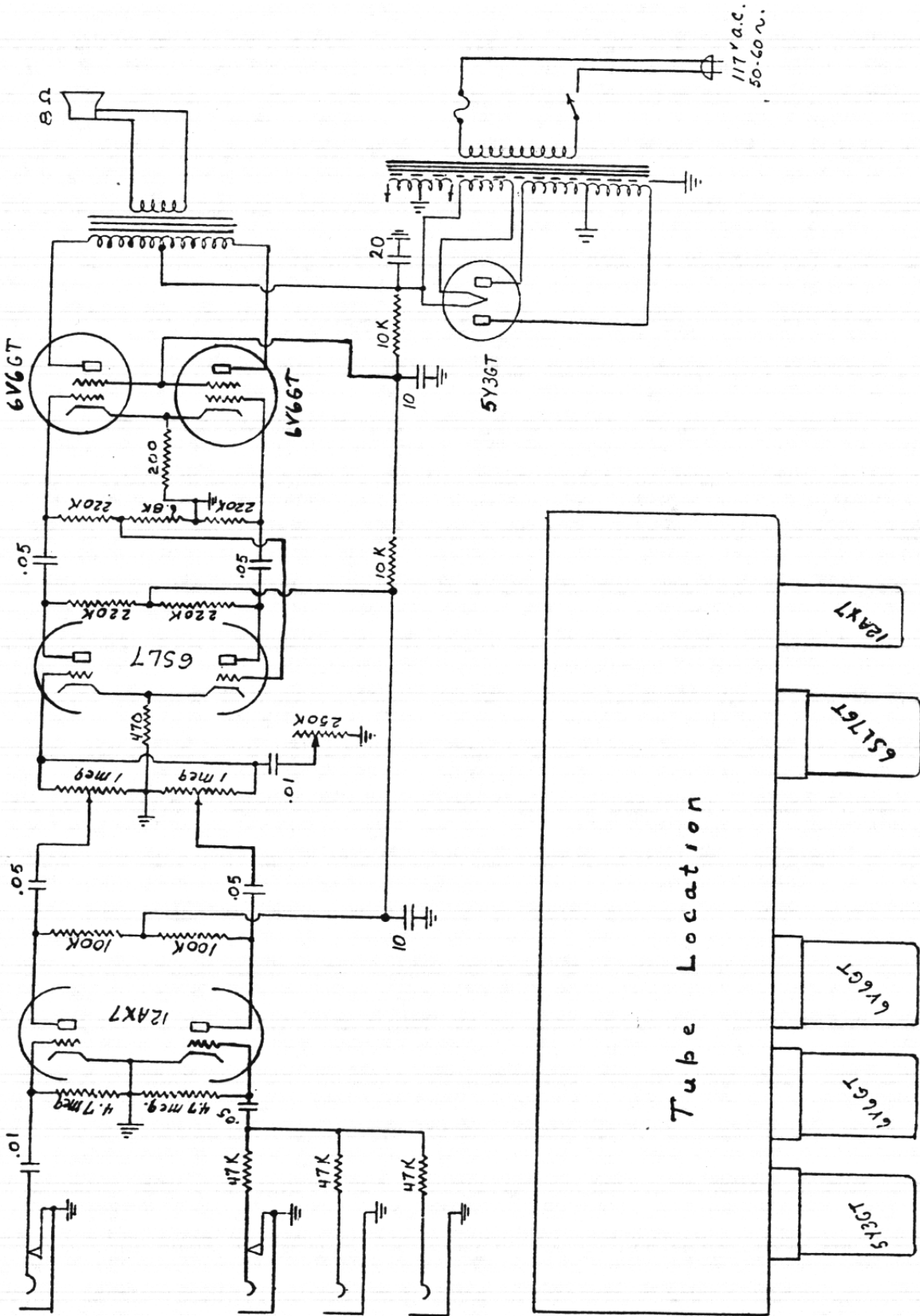
SERVICE

If the Amplifier is in need of servicing, consult a reliable radio man. The electrical diagram herein should be shown to the repairman to assist him in servicing the Amplifier.

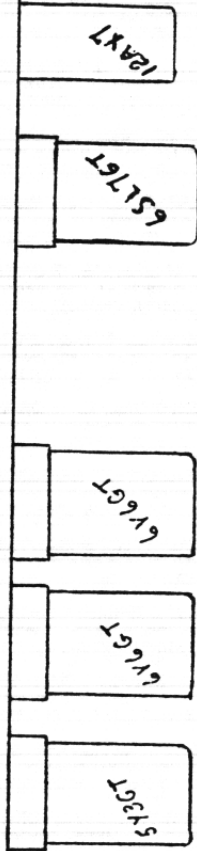
FUSE

The fuse used in the GIBSON GA-14 AMPLIFIER is a type 3 AG of one ampere rating. DO NOT USE A FUSE OF HIGHER RATING.

GA-15



Tube Location



Bell 15RV reverb

MODEL BA-15RV AMPLIFIER

INSTRUCTIONS

PRODUCT OF ELECTRONICS DIVISION, GIBSON INC., KALAMAZOO, MICH.

MODEL BA-15RV AMPLIFIER

REVERBERATION

An exciting new dimension of sound providing Concert Hall effects in any size room.

The Reverberation unit is mounted vertically inside the left end of the amplifier case. The Reverberation mechanism is provided with a locking device which provides protection for the mechanism during transportation. Before playing the Amplifier, unlock the Reverberation unit by pressing the red lever down until it is in a vertical position. An Off-On foot switch with 15 feet of cable is provided for remote control of the Reverberation effect. A variable control on the Amplifier panel allows the reverberation intensity to be controlled from zero or off, to louder than the original signal.

IMPORTANT:—Always lock the Reverberation mechanism by raising the red lever until it stops, (horizontal position) before transporting the amplifier. Failure to do so may cause severe damage to the Reverberation mechanism.

OPERATION OF INSTRUMENT OR MICROPHONE

Always use jack marked "1" first.

When one or two instruments are plugged into the jacks marked "Instruments," five stages of amplification are used. The total gain of both being set with the control marked "Instruments."

The jacks marked "Microphone" may also be used with any Electrical Instruments. When used this way, a careful setting of the volume control marked "Microphone" must be made to avoid overload and consequent distortion. This adjustment can easily be made by turning the Volume Control on the guitar or other instrument completely on, and setting the Microphone Control at a point where no distortion occurs when the strings are struck with maximum force. By utilizing the Microphone jacks in this way, two or more instruments can be plugged in, making a total of four electrical instruments which may be used and blended.

The tone control circuit for this Amplifier has been designed to give the player an extremely wide range of tonal coloring.



Figure A

OPERATION OF MICROPHONE

Because of the high power output, high gain and high fidelity characteristics of the BELL BA-15RV AMPLIFIER it makes an exceptionally fine public address system when used with either the

While the amplifier will operate very well with any of the crystal, medium or high impedance dynamic or velocity (ribbon) microphones, it is recommended that a BELL Dealer be consulted before investing in a microphone. Authorized Bell Dealers can supply a microphone which has been selected and matched to the amplifier, thus insuring the most faithful reproduction of voice and music.

When using a microphone it is important that a number 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the "Microphone" jack and advance the Microphone volume control until a feedback squeal or howl is produced on the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.

If the Microphone jacks are not in use, turn the Microphone volume control completely off.

Gibson

EXPLORER

MODEL GA-15RVT AMPLIFIER

INSTRUCTIONS

PRODUCT OF



Gibson Electronics

KALAMAZOO, MICHIGAN

IMPORTANT — READ CAREFULLY BEFORE USE

CAUTION

The Reverb Unit has been carefully constructed. It is, however, a delicate electronic device. Treat it with the same care and respect given a TV set.

Avoid dropping, sudden jolts, or rough handling and it will give excellent service. This beautifully musical Reverberation effect is not to be confused with the repeating signal produced by the mechanical tape recorder style of echo units.

UNPACKING

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

TUBES

Make certain all tubes are seated firmly into their respective sockets. Each tube is labeled for proper replacement should any tube be out of its socket. Be especially careful when inserting tubes to see that the pins on the tube are correctly aligned with the holes in the socket before pushing into place. Do not twist tube — push tube straight into socket. It is advisable to check tubes from time to time depending on amount of use and excellence of performance. *Be sure tubes are always returned to proper sockets and seated firmly.*

REVERB POWER UNIT SET UP INSTRUCTIONS

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use amplifier, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

The Reverberation Unit must always be placed on a solid non-vibrating surface or footing when in operation.

Any sudden shock, jolt, or wiggle, when in use, will cause undesirable noise. The resultant clatter of an inadvertant shake or bump is annoying but not necessarily harmful. This delicate sensitivity to shock and vibration is a normal characteristic of the device.

No problem will be encountered while the unit is connected if supporting surface is solid and unit is not moved about. To avoid the unwanted noise, turn the reverberation unit off by pressing the foot switch.

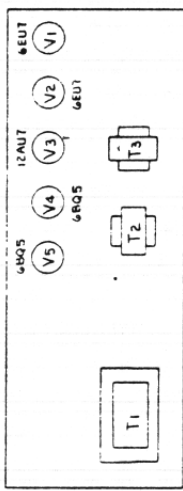
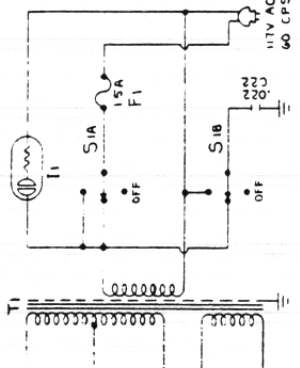
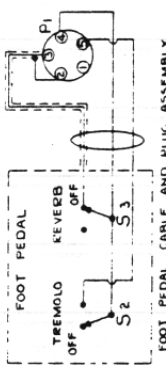
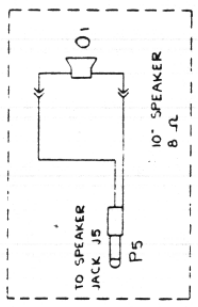
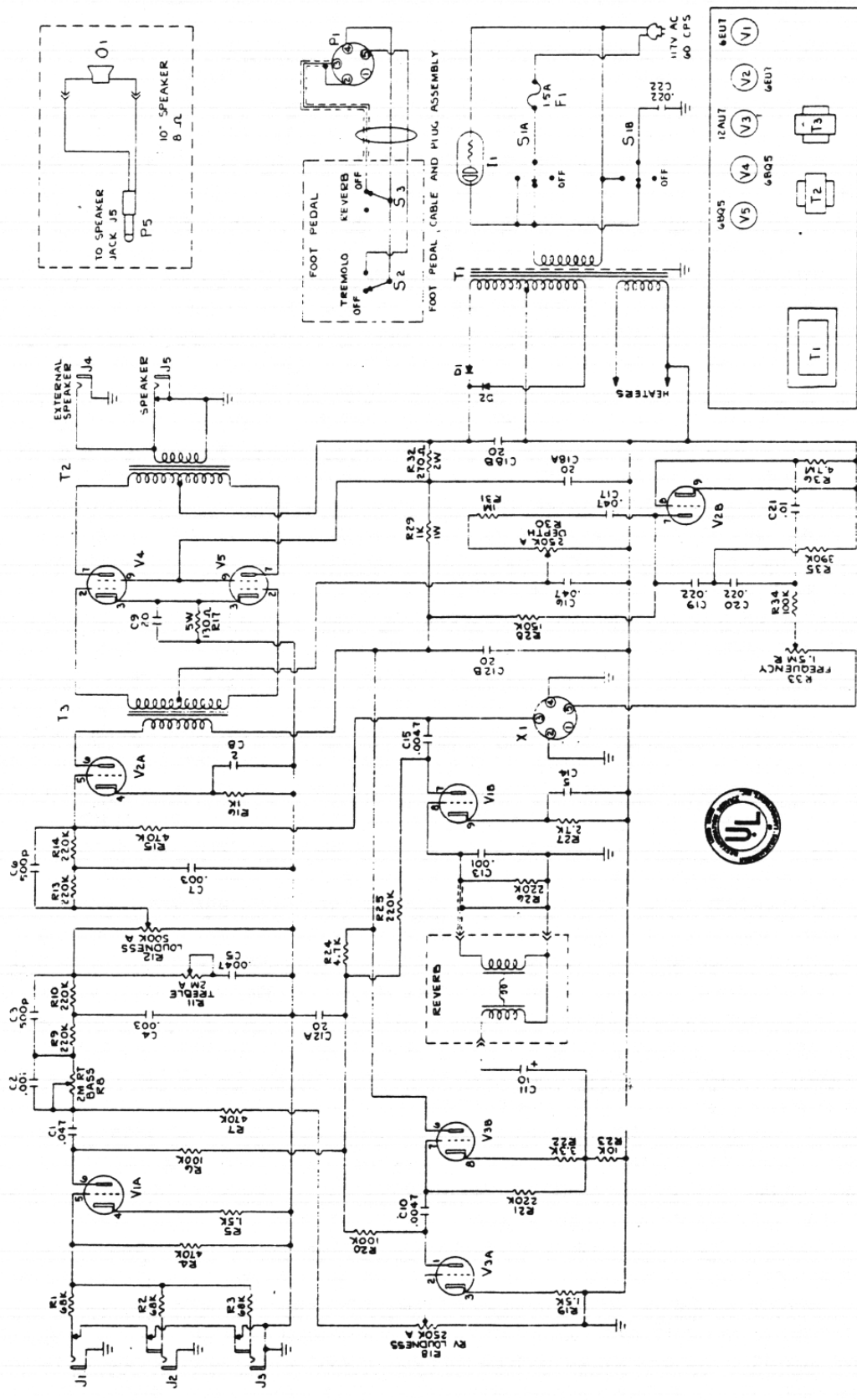
FUSE

The fuse used in this Amplifier is a type 3AG of 1½ ampere rating.
DO NOT USE A FUSE OF HIGHER RATING.

TREMOLO

The Tremolo effect adds another dimension to the Reverberation effect. It can be used either with or without reverberation at the players discretion. The Tremolo is turned on or off by the use of the foot switch. The Tremolo Frequency Range has been carefully set to cover a wide range of Tremolo effects.

6A-15RVT



Maestro

VISCOUNT AMPLIFIER

GA-16T

INSTRUCTIONS

PRODUCT OF ELECTRONICS DIVISION, GIBSON INC., KALAMAZOO, MICH.

MAESTRO VISCOUNT AMPLIFIER

OPERATION OF INSTRUMENTS

The Maestro Viscount Amplifier is equipped with three input jacks for use with various types and styles of instruments and microphones. The input jacks are numbered 1, 2, and 3, and when plugging in the instrument cords, they should be inserted in their respective jacks; i.e.: 1st instrument in No. 1 jack, 2nd instrument in No. 2 jack, and 3rd instrument in the No. 3 jack.

The gain for all three jacks is adjusted by the control marked "Volume." The tonal coloring can be varied over a wide range by use of the combination bass and treble tone control.

OPERATION OF MICROPHONE

The high gain and high fidelity characteristics of the Maestro Viscount Amplifier permit the use of most of the popular high impedance microphones for public address work. The microphone should be plugged into the Number One jack and it is not recommended that other instruments be used in conjunction with the microphone.

When using a microphone it is important that the Maestro 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the Number One jack and advance the Volume control until a feedback squeal or howl is produced on the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.



Figure A

TREMOLO

The Tremolo effect is turned on and off by means of a Push Type Foot Switch. The Tremolo frequency of the Amplifier is controlled by the Variable Control marked "Frequency." The speeds have been carefully set to cover a wide range of Tremolo effects. The depth of the Tremolo is also variable being controlled by the "Depth" Control.

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the Amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, the Transportation Company should be notified immediately, and a claim placed.

CAUTION

Damage to the Amplifier will result if it is connected to an improper power source. This Amplifier is designed to be operated on 105 - 125 volt, 50 - 60 cycle alternating current ONLY. Check the voltage from the power lines to determine that it is not over 125 volts, and that the frequency of the current is either 50 or 60 cycles.

When ready to use power, plug the power cord into the electric outlet and move the switch to the ON position. Approximately one minute is required for the tubes to heat before the Amplifier is ready for use.

TUBES

Check tubes for proper positioning before placing the Amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

SERVICE

If the Amplifier is in need of servicing, consult a reliable radio man. The electrical diagram herein should be shown to the repairman to assist him in servicing the Amplifier.

FUSE

The fuse used in the Maestro Viscount Amplifier is a type 3AG of one ampere rating. DO NOT USE A FUSE OF HIGHER RATING.

Gibson

**SCOUT
MODEL GA-17RVT AMPLIFIER**

INSTRUCTIONS

PRODUCT OF



Gibson Electronics

KALAMAZOO, MICHIGAN

IMPORTANT — READ CAREFULLY BEFORE USE

CAUTION

The Reverb Unit has been carefully constructed. It is, however, a delicate electronic device. Treat it with the same care and respect given a TV set.

Avoid dropping, sudden jolts, or rough handling and it will give excellent service. This beautifully musical Reverberation effect is not to be confused with the repeating signal produced by the mechanical tape recorder style of echo units.

UNPACKING

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

TUBES

Make certain all tubes are seated firmly into their respective sockets. Each tube is labeled for proper replacement should any tube be out of its socket. Be especially careful when inserting tubes to see that the pins on the tube are correctly aligned with the holes in the socket before pushing into place. Do not twist tube — push tube straight into socket. It is advisable to check tubes from time to time depending on amount of use and excellence of performance. *Be sure tubes are always returned to proper sockets and seated firmly.*

REVERB POWER UNIT SET UP INSTRUCTIONS

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use amplifier, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

The Reverberation Unit must always be placed on a solid non-vibrating surface or footing when in operation.

Any sudden shock, jolt, or wiggle, when in use, will cause undesirable noise. The resultant clatter of an inadvertant shake or bump is annoying but not necessarily harmful. This delicate sensitivity to shock and vibration is a normal characteristic of the device.

No problem will be encountered while the unit is connected if supporting surface is solid and unit is not moved about. To avoid the unwanted noise, turn the reverberation unit off by pressing the foot switch.

FUSE

The fuse used in this Amplifier is a type 3AG Slo-Blo of one ampere rating.
DO NOT USE A FUSE OF HIGHER RATING.

TREMOLO

The Tremolo effect adds another dimension to the Reverberation effect. It can be used either with or without reverberation at the players discretion. The Tremolo is turned on or off by the use of the foot switch. The Tremolo Frequency Range has been carefully set to cover a wide range of Tremolo effects.

OPERATION OF MICROPHONE

The high gain and high fidelity characteristics of this Amplifier, permit the use of most of the popular high impedance microphones for public address work. The microphone should be plugged into the Number One jack and it is not recommended that other instruments be used in conjunction with the microphone.

When using a microphone it is important that the Number 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the Number One jack and advance the Loudness control until a feedback squeal or howl is produced on the loudspeaker. Reduce the Loudness control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.

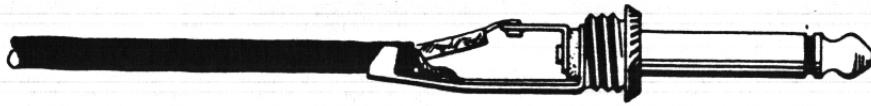
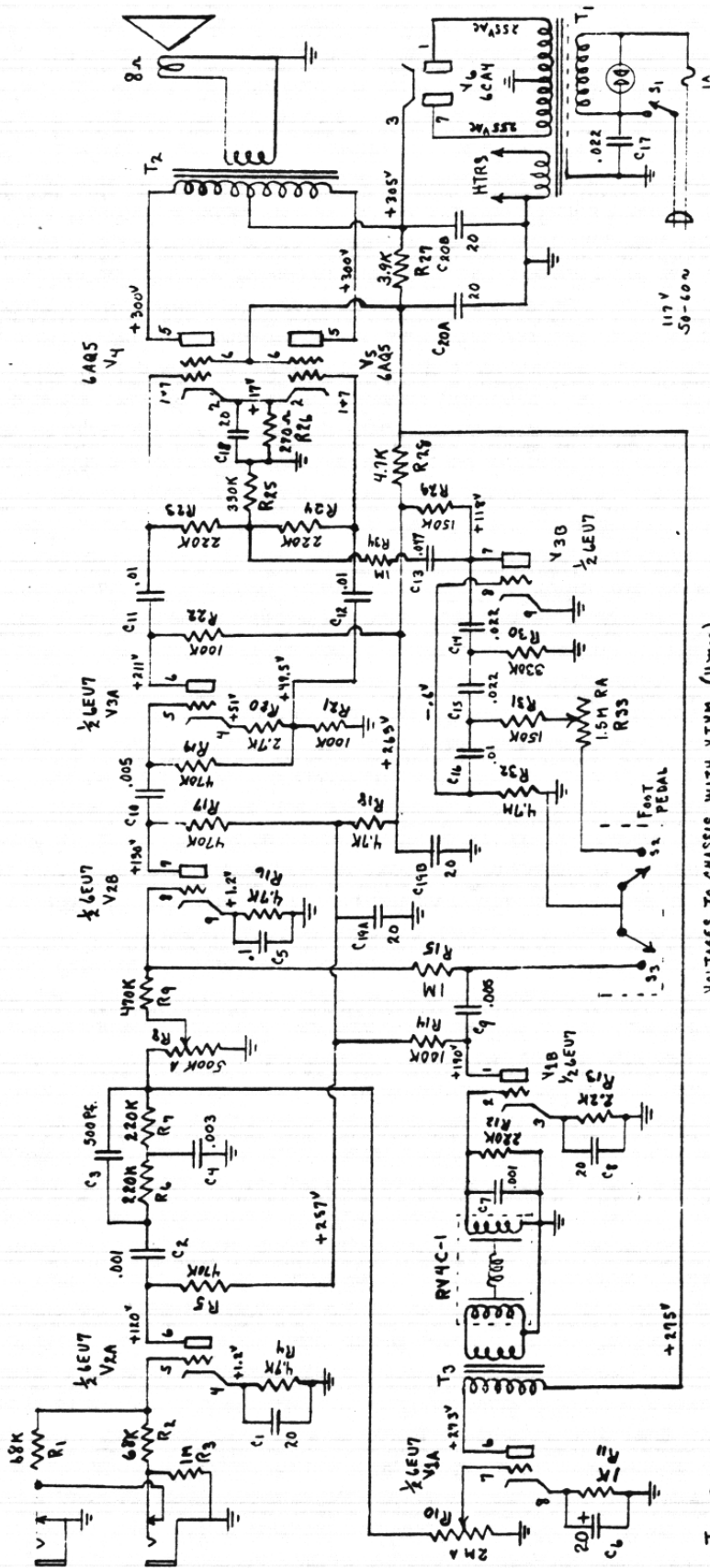


Figure A

SERVICE

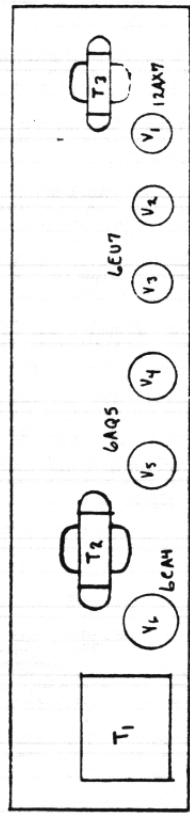
If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.

GAITRV SCOUT



VOLTAGES TO CHASSIS WITH VTVM (11meg)

- T1 POWER TRANSFORMER TF 8A-P
- T2 OUTPUT " TF 18-01
- T3 DRIVER " TF E6400
- SPEAKER 8" x 2" x 10" S20003
- RV1 VOLUME CONTROL 500K AUDIO TAPER
- RV2 REVERB VOLUME 2MEG "
- RV3 TREBLE FREQUENCY 1.5M REV. AUDIO
- S1, S2 SPST PUSH PUSH SW.
- REVERBERATION UNIT RV4C-1



GIBSON

Explorer

MODEL GA-18T AMPLIFIER

INSTRUCTIONS

PRODUCT OF



Gibson Electronics

KALAMAZOO, MICHIGAN

INSTRUCTIONS

CAUTION

Damage to the Amplifier will result if it is connected to an improper power source. This Amplifier is designed to be operated on 105 - 125 volt, 50 - 60 cycle alternating current- ONLY. Check the voltage from the power lines to determine that it is not over 125 volts, and that the frequency of the current is either 50 or 60 cycles.

When ready to use power, plug the power cord into the electric outlet and move the switch to the ON position. Approximately one minute is required for the tubes to heat before the Amplifier is ready for use.

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the Amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, the Transportation Company should be notified immediately, and a claim placed.

TUBES

Check tubes for proper positioning before placing the Amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

OPERATION OF MICROPHONE

The high gain and high fidelity characteristics of this Amplifier permit the use of most of the popular high impedance microphones for public address work. The microphone should be plugged into the Number One jack and it is not recommended that other instruments be used in conjunction with the microphone.

When using a microphone it is important that the Number 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the Number One jack and advance the Volume control until a feedback squeal or howl is produced on the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.



Figure A

OPERATION OF INSTRUMENTS

This Amplifier is equipped with three input jacks for use with various types and styles of instruments and microphones. The input jacks are numbered 1., 2. and 3. and when plugging in the instrument cords, they should be inserted in their respective jacks — that is, first instrument in the No. 1 jack, second instrument in the No. 2 jack and the third instrument in the No. 3 jack.

The gain for all three jacks is adjusted by the control marked "Loudness". The tonal coloring can be varied over a wide range by use of the "Bass" and "Treble" tone controls.

MONITOR JACK

This convenient jack is provided for extending the usefulness of the amplifier. Some of its many uses include: — Use in tape recording; Use in driving additional amplifiers, feeding into Public Address systems; Use with Hi-Fi amplifiers. For best results the Monitor Jack should be fed into a High-impedance circuit.

ECHO SPEAKER JACK

Provided for adding a wide dispersion of sound to the amplifier. An additional speaker may be plugged into this jack and, when the additional speaker is separated from this amplifier by several feet, a richer and fuller sound will result.

TREMOLO

The Tremolo effect is turned on and off by means of a Push Type Foot Switch. The Tremolo frequency of the Amplifier is controlled by the Variable Control marked "Frequency." The speeds have been carefully set to cover a wide range of Tremolo effects. The depth of the Tremolo is also variable being controlled by the "Depth" Control.

SERVICE

If the Amplifier is in need of servicing, consult a reliable radio man. The electrical diagram herein should be shown to the repairman to assist him in servicing the Amplifier.

FUSE

The fuse used in this Amplifier is a type 3 AG Slo-Blo of one ampere rating.
DO NOT USE A FUSE OF HIGHER RATING.

GIBSON

Falcon

MODEL GA-19RVT AMPLIFIER

INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICHIGAN

MODEL GA-19RVT FALCON

REVERB UNIT UNPACKING INSTRUCTIONS

IMPORTANT — READ CAREFULLY BEFORE USE

CAUTION

The Reverb Unit has been carefully constructed. It is, however, a delicate electronic device. Treat it with the same care and respect given a TV set.

Avoid dropping, sudden jolts, or rough handling and it will give excellent service. This beautifully musical Reverberation effect is not to be confused with the repeating signal produced by the mechanical tape recorder style of echo units.

UNPACKING

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

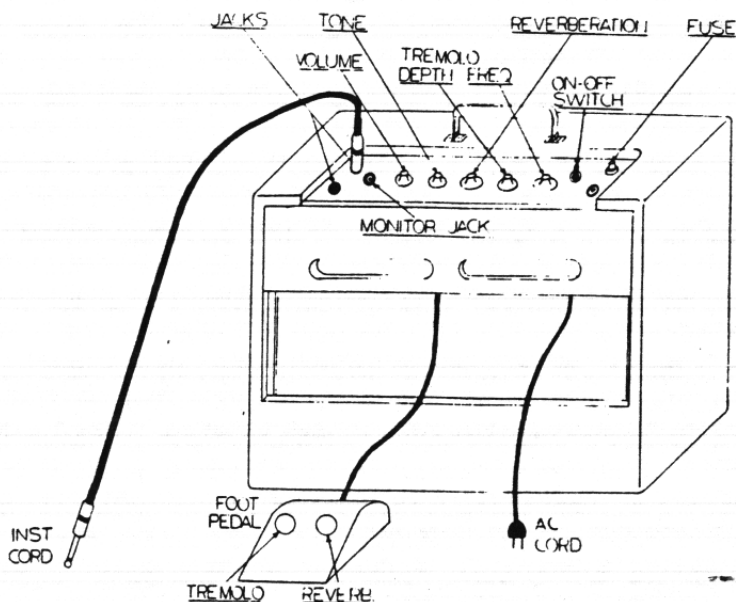
TUBES

Make certain all tubes are seated firmly into their respective sockets. Each tube is labeled for proper replacement should any tube be out of its socket. Be especially careful when inserting tubes to see that the pins on the tube are correctly aligned with the holes in the socket before pushing into place. Do not twist tube — push tube straight into socket. It is advisable to check tubes from time to time depending on amount of use and excellence of performance. *Be sure tubes are always returned to proper sockets and seated firmly.*

REVERB POWER UNIT SET UP INSTRUCTIONS

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use power, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

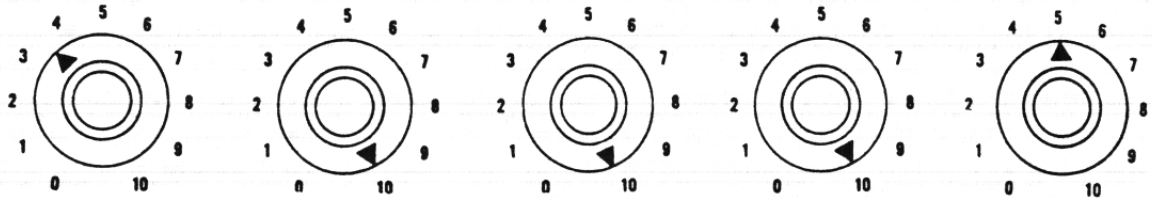


REVERBERATION —

Due to the unusual flexibility of the Reverberation circuit, it is important that the Operator understands the various control settings to obtain the total range of Reverberation effects of which this Amplifier is capable. Illustrated below are several examples of control settings which will reproduce different Reverberation effects.

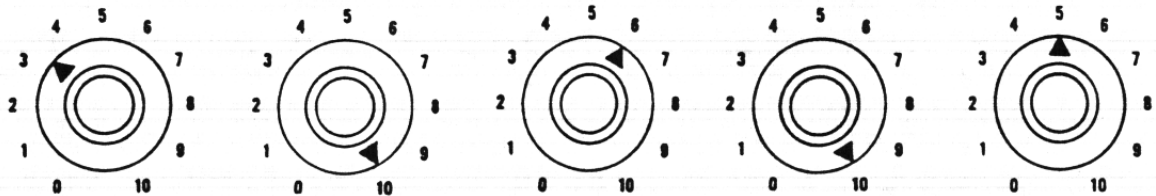
Volume Tone Reverberation Depth Frequency

Example No. 1. 50% Main Signal - 50% Reverb.



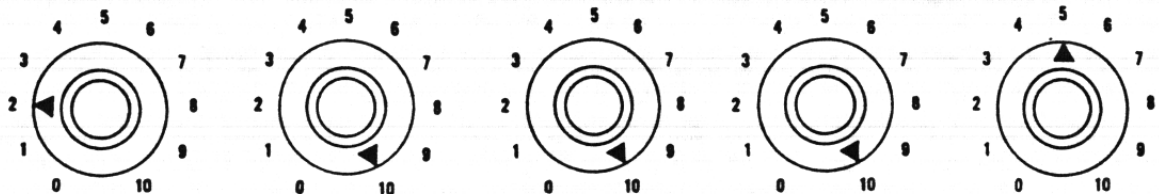
INSTRUMENT SETTINGS — Tone control and/or toggle switch in maximum treble position. Volume control setting $2\frac{1}{2}$ to 3.

Example No. 2. 75% Main Signal - 25% Reverb.



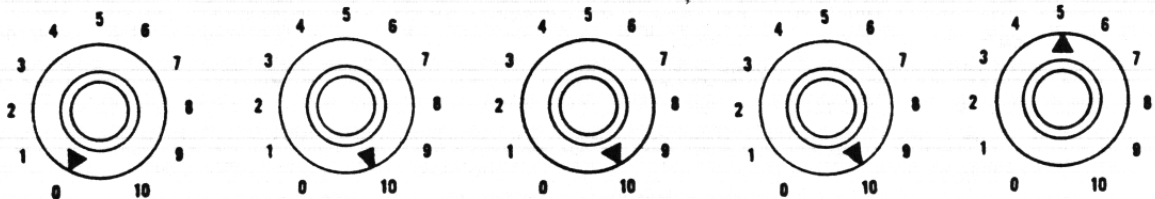
INSTRUMENT SETTINGS — Same as Example No. 1.

Example No. 3. 25% Main Signal - 75% Reverb.



INSTRUMENT SETTINGS — Same as Example No. 1.

Example No. 4. 100% Reverb.



INSTRUMENT SETTINGS — Same as Example No. 1.

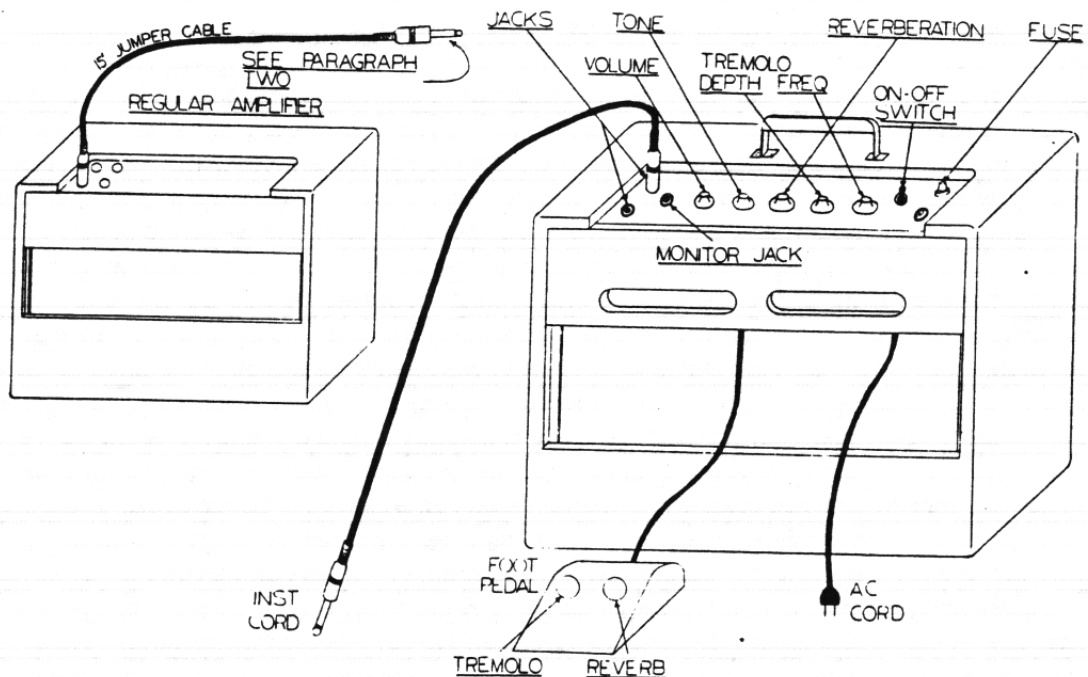
FOOT SWITCH MUST BE IN THE "ON" POSITION FOR REVERBERATION.

OPERATIONAL INSTRUCTIONS FOR USE OF THIS REVERBERATION AMPLIFIER IN CONJUNCTION WITH A REGULAR AMPLIFIER

The use of this Reverberation Amplifier with a Regular Amplifier will add a spacious liveliness to instrument reproduction that is far beyond the possibilities of single amplifier Reverberation. Listed below are the simple instructions for this type of operation.

1. Plug the A.C. cord of this Reverberation Amplifier into a convenient outlet.
2. For normal signal amplification in Regular Amplifier insert one plug of the 15' Shielded Jumper Cable, supplied with this Amplifier, into Jack No. 2 of the Reverberation Amplifier. Plug other end of this jumper into the input jack normally used in the Regular Amplifier. For Reverberation, and or, normal signal, with or without Tremolo, amplification in the Regular Amplifier move the plug from jack No. 2 to the Monitor Jack on the Reverberation Amplifier. Set Regular Amplifier Volume control for normal volume.
3. The Instrument Cord should be plugged into the No. 1 jack of the Reverberation Amplifier. Plug the A.C. line cord of the Regular Amplifier into a convenient outlet.
4. Turn ON the A.C. switches for both amplifiers, the Volume and Tone controls may be set as illustrated on page 2.

Illustrated below is a pictorial diagram showing the correct hook-up.



5. Place the combination Reverb. Tremolo Foot Switch in a convenient position and the system is ready to operate. Either, or both, Reverberation and Tremolo effect is available by switching the indicated switch ON or OFF.
6. The percentage of Reverberation can be controlled by the Reverberation control, Volume control and the Volume control of the Regular Amplifier.
7. The instrument is ready to be played. If Reverb. signal is not coming through, step on the Foot Switch as it may be in the OFF position. Thereafter the Reverberation effect can be conveniently cut in or out with a snap of the Foot Switch.
8. When the Reverberation Foot Switch is OFF, the Reverberation Amplifier is operated as a Regular Amplifier sound without Reverberation. If a cord length space separates the Regular and the Reverberation Amplifiers, an excellent impression of the "STEREO" and ECHO effect is obtained. When the Reverberation Foot Switch is ON, the Reverb. signal is super-imposed on the above "STEREO" sound with a minimum contrast of volume change.

OPERATION OF MICROPHONE

The high gain and high fidelity characteristics of this Amplifier permit the use of most of the popular high impedance microphones for public address work. The microphone should be plugged into the Number One jack and it is not recommended that other instruments be used in conjunction with the microphone.

When using a microphone it is important that the Number 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the Number One jack and advance the Volume control until a feedback squeal or howl is produced on the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.

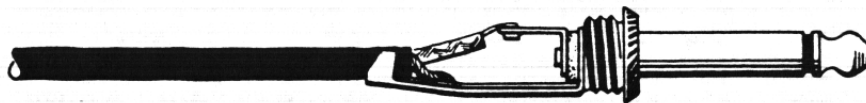


Figure A

TREMOLO

The Tremolo effect adds another dimension to the Reverberation effect. It can be used either with or without reverberation at the players discretion. The Tremolo is turned on or off by the use of the foot switch. The Tremolo Frequency Range has been carefully set to cover a wide range of Tremolo effects. The Depth of the Tremolo is also variable being controlled by the Depth control.

SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.

CAUTION

The Reverberation Unit must always be placed on a solid non-vibrating surface or footing when in operation.

Any sudden shock, jolt, or wiggle, when in use, will cause undesirable noise. The resultant clatter of an inadvertant shake or bump is annoying but not necessarily harmful. This delicate sensitivity to shock and vibration is a normal characteristic of the device.

No problem will be encountered while the unit is connected if supporting surface is solid and unit is not moved about. To avoid the unwanted noise, turn the reverberation unit off by pressing the foot switch.

FUSE

The fuse used in this Amplifier is a type 3AG of one ampere rating. **DO NOT USE FUSES OF HIGHER RATING**

GIBSON

MODEL GA-20 AMPLIFIER

INSTRUCTIONS



GIBSON INC., KALAMAZOO, MICH.

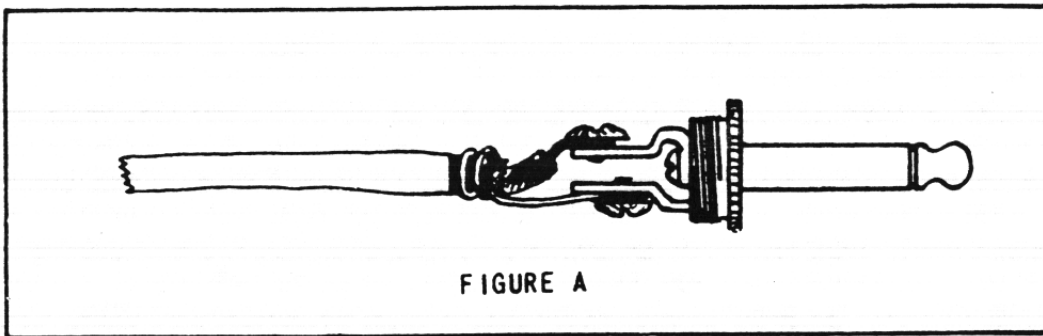


FIGURE A

OPERATION OF INSTRUMENT

When one, two, or three instruments are plugged into the jacks marked "Instruments", three stages of amplification are used.

The socket marked MICROPHONE may also be used with any of the GIBSON electrical instruments. When used this way a careful setting of the volume control marked MICROPHONE must be made to avoid overload and consequent distortion. This adjustment can be easily made by turning the volume control on the guitar or other instrument all the way on and setting the MICROPHONE control at the point where no distortion occurs when the strings are struck with maximum force. By utilizing the MICROPHONE socket in this way a fourth instrument can be plugged in, making a total of four electrical instruments which may be used and blended.

The tone control circuit for this amplifier has been designed to give the player an extremely wide range of tonal coloring. With the tone control set to the extreme bass a very pleasing tone is produced by instruments having their pick-ups placed close to the finger board. With the tone control set to the extreme treble, unusual brilliance may be obtained from instruments that have the pick-up placed close to the bridge.

OPERATION OF THE MICROPHONE

Because of the high power output, high gain and high fidelity characteristics of the GIBSON GA-20 amplifier it makes an exceptionally fine public address system when used with either the crystal, dynamic or velocity types of microphones.

While the amplifier will operate very well with any of the crystal, medium or high impedance dynamic or velocity (ribbon) microphones, it is recommended that, before investing in a microphone, you consult your GIBSON dealer. Authorized GIBSON dealers can supply you with a microphone which has been selected and matched to the amplifier, thus insuring the most faithful reproduction of voice and music.

When using a microphone it is important that the GIBSON 75A or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable.

To use the microphone, insert the plug in the MICROPHONE socket and advance the MICROPHONE volume control until a feedback squeal or howl is produced in the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably

OPERATION OF THE MICROPHONE (Cont'd)

depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.

The volume controls INSTRUMENTS and MICROPHONE, being completely independent of each other, allow the inputs from the various sources to be "mixed" or blended. Because of this flexibility many unusual effects can be easily worked out.

If the MICROPHONE socket is not in use turn the MICROPHONE volume control all the way off.

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, look it over carefully to make sure there has been no breakage of tubes or parts. If you find that damage has occurred during shipment, we suggest the Transportation Company be called immediately, and a claim placed.

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. Make sure the voltage from the power lines is not over 125, and that the frequency of the current is either 50 or 60 cycles. When ready to turn on power, plug the power cord into the electric outlet and turn on the switch. Wait approximately one minute for the tubes to heat, and the amplifier is ready for use.

TUBES

Be sure tubes are in their proper positions before placing the amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

SERVICE

If the amplifier is in need of servicing, we suggest it be taken to a reliable radio man. The electrical diagram attached should be shown the repairman to assist him in servicing the amplifier.

* * * *

The fuse used in the GA-20 amplifier is a type AG of two ampere rating.
DO NOT USE FUSES OF HIGHER RATING.

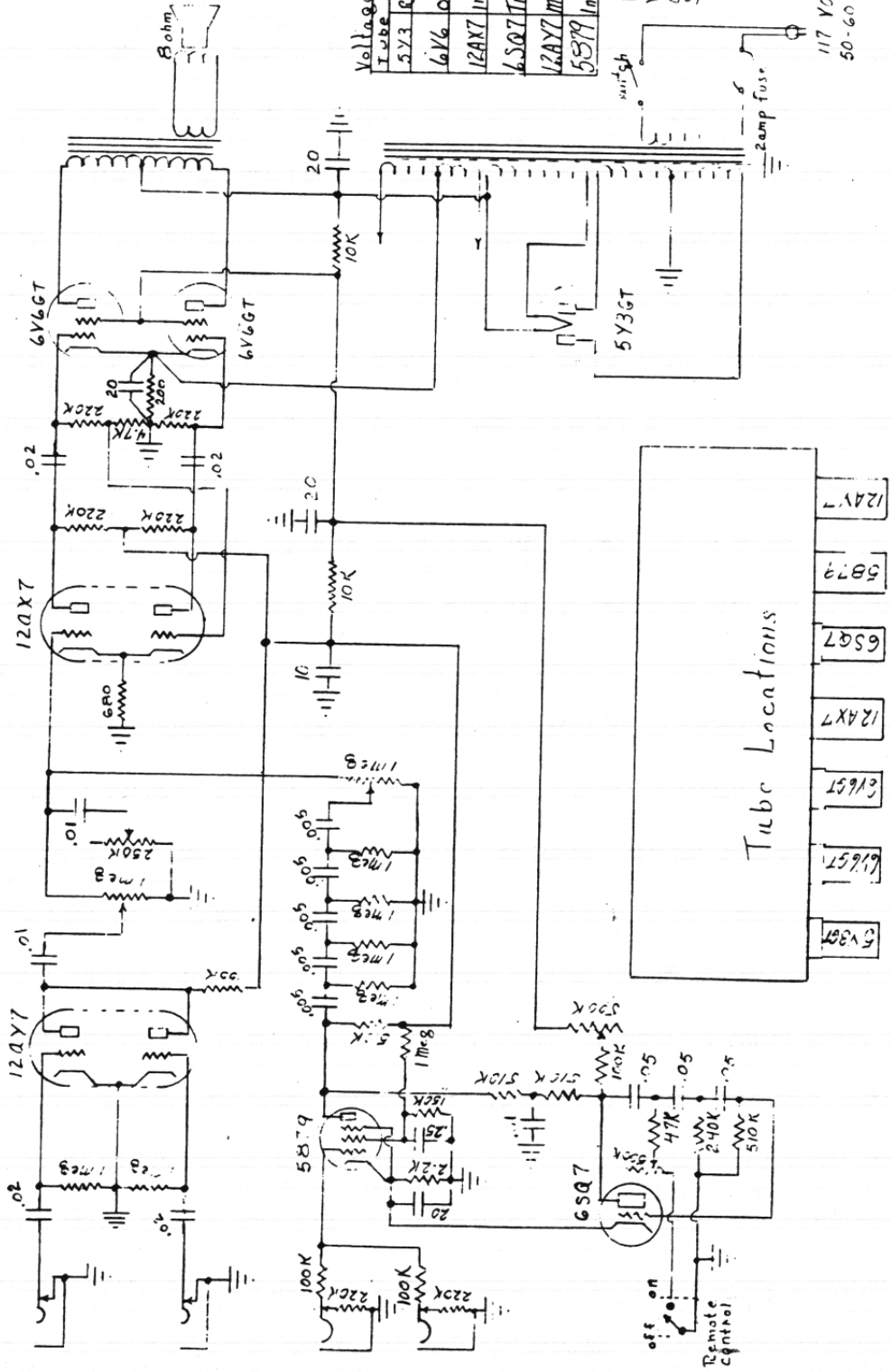
GIBSON

MODEL GA-20T AMPLIFIER

INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICHIGAN

GA-20T



MODEL GA-20T AMPLIFIER

OPERATION OF INSTRUMENT

When one or two instruments are plugged into the jacks marked "Instruments," three stages of amplification are used. The total gain of both being set with the control marked "Channel 2."

The jacks marked "Instruments" or "Microphone" may also be used with any of the GIBSON Electrical Instruments. When used this way, a careful setting of the volume control marked "Microphone" must be made to avoid overload and consequent distortion. This adjustment can easily be made by turning the Volume Control on the guitar or other instrument completely on, and setting the Channel 1 Control at a point where no distortion occurs when the strings are struck with maximum force. By utilizing the Microphone jacks in this way, two or more instruments can be plugged in, making a total of four electrical instruments which may be used and blended.

The tone control circuit for this Amplifier has been designed to give the player an extremely wide range of tonal coloring.



Figure A

OPERATION OF MICROPHONE

Because of the high power output, high gain and high fidelity characteristics of the GIBSON GA-20T AMPLIFIER it makes an exceptionally fine public address system when used with either the crystal, dynamic or velocity types of microphones.

While the amplifier will operate very well with any of the crystal, medium or high impedance dynamic or velocity (ribbon) microphones, it is recommended that a GIBSON Dealer be consulted before investing in a microphone. Authorized Gibson Dealers can supply a microphone which has been selected and matched to the amplifier, thus insuring the most faithful reproduction of voice and music.

When using a microphone it is important that the GIBSON 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the "Microphone" jack and advance the microphone volume control until a feedback squeal or howl is produced on the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.

If the Microphone jacks are not in use, turn the Channel 1 volume control completely off.

TREMOLO

The Tremolo effect is turned on and off by means of a Push Type Foot Switch. The Tremolo frequency of the Amplifier is controlled by the Variable Control marked "Frequency." The speeds have been carefully set to cover a wide range of Tremolo effects. The depth of the Tremolo is also variable being controlled by the "Depth" Control.

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the Amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, the Transportation Company should be notified immediately, and a claim placed.

CAUTION

Damage to the Amplifier will result if it is connected to an improper power source. This Amplifier is designed to be operated on 105 - 125 volt, 50 - 60 cycle alternating current ONLY. Check the voltage from the power lines to determine that it is not over 125 volts, and that the frequency of the current is either 50 or 60 cycles.

When ready to use power, plug the power cord into the electric outlet and move the switch to the ON position. Approximately one minute is required for the tubes to heat before the Amplifier is ready for use.

TUBES

Check tubes for proper positioning before placing the Amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

SERVICE

If the Amplifier is in need of servicing, consult a reliable radio man. The electrical diagram herein should be shown to the repairman to assist him in servicing the Amplifier.

FUSE

The fuse used in the GIBSON GA-20T AMPLIFIER is a type 3AG of two ampere rating. DO NOT USE A FUSE OF HIGHER RATING.

Gibson

**MINUTEMAN
MODEL GA-20 RVT AMPLIFIER**

INSTRUCTIONS

PRODUCT OF



Gibson Electronics

KALAMAZOO, MICHIGAN

IMPORTANT — READ CAREFULLY BEFORE USE

CAUTION

The Reverb Unit has been carefully constructed. It is, however, a delicate electronic device. Treat it with the same care and respect given a TV set.

Avoid dropping, sudden jolts, or rough handling and it will give excellent service. This beautifully musical Reverberation effect is not to be confused with the repeating signal produced by the mechanical tape recorder style of echo units.

UNPACKING

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

TUBES

Make certain all tubes are seated firmly into their respective sockets. Each tube is labeled for proper replacement should any tube be out of its socket. Be especially careful when inserting tubes to see that the pins on the tube are correctly aligned with the holes in the socket before pushing into place. Do not twist tube — push tube straight into socket. It is advisable to check tubes from time to time depending on amount of use and excellence of performance. *Be sure tubes are always returned to proper sockets and seated firmly.*

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use amplifier, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

A.C. POWER-POLARITY SWITCH

A convenient switch has been provided for performing a total of three functions, turning the amplifier on and off, and selecting the proper polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum. Two "On" positions have been provided. The hum and hiss level on one of the "On" positions will be noticeably lower - this is the correct "Polarity" for using the amplifier.

FUSE

The fuse used in this Amplifier is a type 3AG of 1½ amperes rating. DO NOT USE FUSES OF HIGHER RATING

SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.

REVERBERATION — EFFECTIVE IN CHANNEL 2 ONLY

The Reverberation Unit must always be placed on a solid non-vibrating surface or footing when in operation.

Any sudden shock, jolt, or wiggle, when in use, will cause undesirable noise. The resultant clatter of an inadvertant shake or bump is annoying but not necessarily harmful. This delicate sensitivity to shock and vibration is a normal characteristic of the device.

No problem will be encountered while the unit is connected if supporting surface is solid and unit is not moved about. To avoid the unwanted noise, turn the reverberation unit off by pressing the foot switch.

BASS AND TREBLE TONE CONTROLS

A separate control has been provided for control of the bass or low frequencies and for the treble or high frequencies. The use of these two controls allows the player to obtain the maximum combinations of tone from a beautiful clear treble to a deep resonant bass. Setting the "BASS" control at maximum and the "TREBLE" at minimum, produces the deepest, fullest bass tone. Setting the "TREBLE" control at maximum and the "BASS" at minimum produces a chime-like tone rich in higher harmonics and will enable the artist to pick harmonics with greater ease. When both "BASS" and "TREBLE" controls are set at minimum the middle register predominates.

TREMOLO — EFFECTIVE IN CHANNEL 2 ONLY

The Tremolo effect adds another dimension to the Reverberation effect. It can be used either with or without reverberation at the players discretion. The Tremolo is turned on or off by the use of the foot switch. The Tremolo Frequency Range has been carefully set to cover a wide range of Tremolo effects. The Depth of the Tremolo is also variable being controlled by the Depth control.

OPERATION OF MICROPHONE

The high gain and high fidelity characteristics of this Amplifier, permit the use of most of the popular high impedance microphones for public address work. The microphone should be plugged into the Number One jack and it is not recommended that other instruments be used in conjunction with the microphone.

When using a microphone it is important that the Number 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable.

To use the microphone, insert the plug in the Number One jack and advance the Loudness control until a feedback squeal or howl is produced on the loudspeaker. Reduce the Loudness control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.

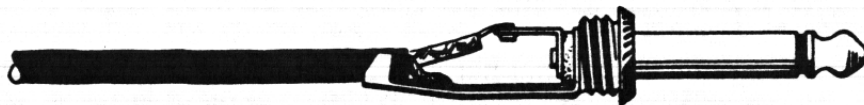
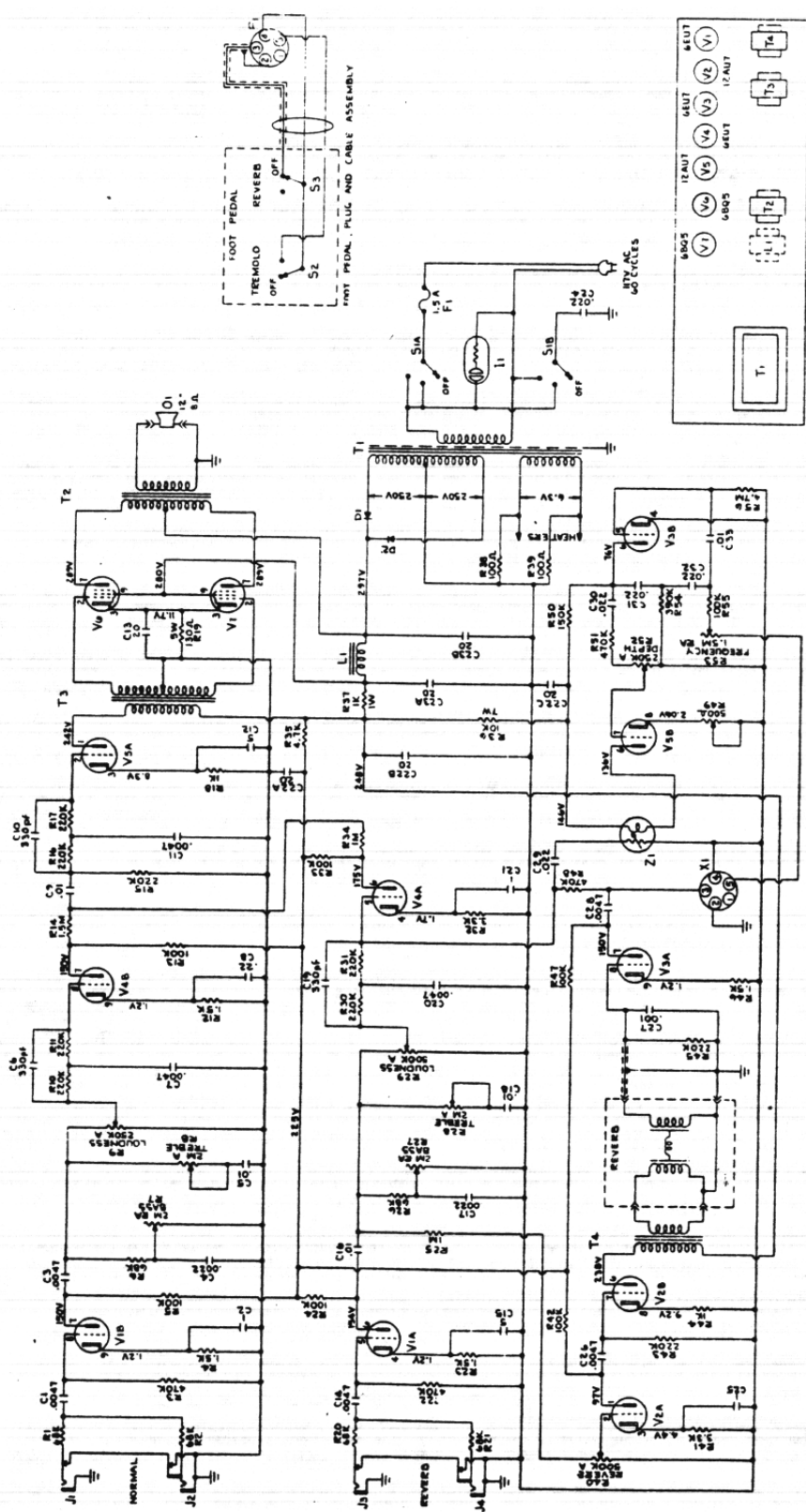


Figure A

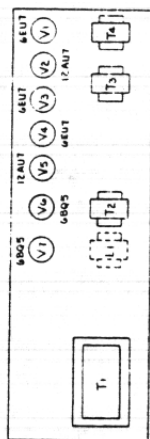
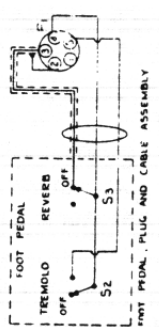
GA-20RVT



- T1 CBM-4008 Control - 750V, Audio (Loudness & Depth)
- T2 CBM-411-3712-1 Control - 2 meg, Audio (Treble)
- T3 CBM-4007 Control - 500K, Audio (Loudness & Reverb)
- T4 2M-111-3711-1 Control - 1.5 meg, IA (Frequency)
- L1 CE-413-22-1 Control - 2 meg, IA (Bass)
- Ch-71391 Control - 500 ohm, Wt

- R9, R52 Power Transformer
- R2, R28 Output Transformer
- R29, R10 PP Driver Transformer
- R1, R27 Reverb Transformer
- R1, R27 Filter Choke
- Switch - SPST Rotary
- Switches - SPST

- TF-1058-1 Pilot Light (Norr.) w/clip
- TF-1000-1 Foot Pedal Socket
- TF-850-0 Foot Pedal Plug
- TF-1003-C Foot Pedal Plug
- SM-899-1 Diode - 800 PIV
- SM-2103 Diode - 800 PIV
- FL-35R Diode - 800 PIV
- C-7700-5 Diode - 800 PIV
- C-914PF-5L Diode - 800 PIV
- DI-1-24 Diode - 800 PIV



GIBSON

MODEL GA-30 AMPLIFIER

INSTRUCTIONS



GIBSON INC., KALAMAZOO, MICH.

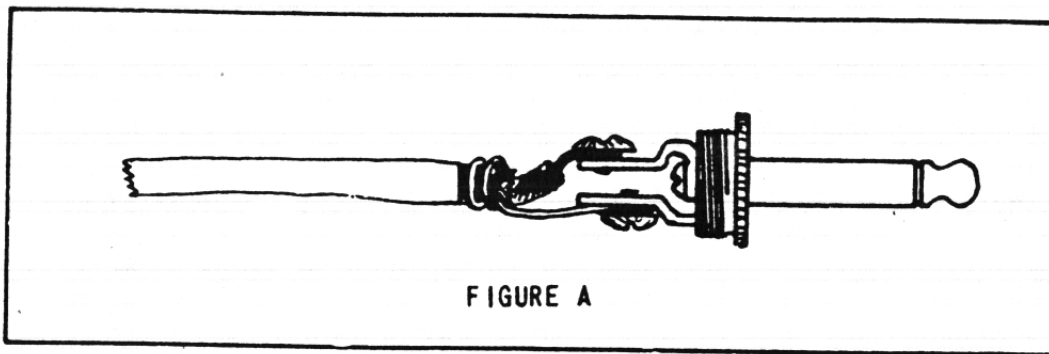


FIGURE A

OPERATION OF INSTRUMENT

When one, two, or three instruments are plugged into the jacks marked "Instruments", three stages of amplification are used.

The socket marked MICROPHONE may also be used with any of the GIBSON electrical instruments. When used this way a careful setting of the volume control marked MICROPHONE must be made to avoid overload and consequent distortion. This adjustment can be easily made by turning the volume control on the guitar or other instrument all the way on and setting the MICROPHONE control at the point where no distortion occurs when the strings are struck with maximum force. By utilizing the MICROPHONE socket in this way a fourth instrument can be plugged in, making a total of four electrical instruments which may be used and blended.

The tone control circuit for this amplifier has been designed to give the player an extremely wide range of tonal coloring. With the tone control set to the extreme bass a very pleasing tone is produced by instruments having their pick-ups placed close to the finger board. With the tone control set to the extreme treble, unusual brilliance may be obtained from instruments that have the pick-up placed close to the bridge.

OPERATION OF THE MICROPHONE

Because of the high power output, high gain and high fidelity characteristics of the GIBSON GA-30 amplifier it makes an exceptionally fine public address system when used with either the crystal, dynamic or velocity types of microphones.

While the amplifier will operate very well with any of the crystal, medium or high impedance dynamic or velocity (ribbon) microphones, it is recommended that, before investing in a microphone, you consult your GIBSON dealer. Authorized GIBSON dealers can supply you with a microphone which has been selected and matched to the amplifier, thus insuring the most faithful reproduction of voice and music.

When using a microphone it is important that the GIBSON 75A or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable.

To use the microphone, insert the plug in the MICROPHONE socket and advance the MICROPHONE volume control until a feedback squeal or howl is produced in the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably

(over)

OPERATION OF THE MICROPHONE (Cont'd)

depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.

The volume controls INSTRUMENTS and MICROPHONE, being completely independent of each other, allow the inputs from the various sources to be "mixed" or blended. Because of this flexibility many unusual effects can be easily worked out.

If the MICROPHONE socket is not in use turn the MICROPHONE volume control all the way off.

TONE EXPANDER

This innovation in Musical Instrument Amplifiers greatly increases the total TONE RANGE. When the switch is moved to the side marked "high", the entire tone range of the amplifier is thrown to the higher frequencies, producing a beautiful liquid treble tone which is further controlled by means of the tone control. When the switch is moved to the side marked "low", the tone range is shifted to the lower frequencies and produces a deep resonant bass tone which is also further controlled by use of the tone control.

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, look it over carefully to make sure there has been no breakage of tubes or parts. If you find that damage has occurred during shipment, we suggest the Transportation Company be called immediately, and a claim placed.

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. Make sure the voltage from the power lines is not over 125, and that the frequency of the current is either 50 or 60 cycles. When ready to turn on power, plug the power cord into the electric outlet and turn on the switch. Wait approximately one minute for the tubes to heat, and the amplifier is ready for use.

TUBES

Be sure tubes are in their proper positions before placing the amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

SERVICE

If the amplifier is in need of servicing, we suggest it be taken to a reliable radio man. The electrical diagram attached should be shown the repairman to assist him in servicing the amplifier.

* * * *

The fuse used in the GA-30 amplifier is a type AG of two ampere rating. DO NOT USE FUSES OF HIGHER RATING.

GIBSON

MODEL GA-30 AMPLIFIER



INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICHIGAN

MODEL GA-30 AMPLIFIER

OPERATION OF INSTRUMENT OR MICROPHONE

Always use jack marked "1" first.

When one or two instruments are plugged into the jacks marked "Instruments," five stages of amplification are used. The total gain of both being set with the control marked "Instruments."

The jacks marked "Microphone" may also be used with any of the GIBSON Electrical Instruments. When used this way, a careful setting of the volume control marked "Microphone" must be made to avoid overload and consequent distortion. This adjustment can easily be made by turning the Volume Control on the guitar or other instrument completely on, and setting the Microphone Control at a point where no distortion occurs when the strings are struck with maximum force. By utilizing the Microphone jacks in this way, two or more instruments can be plugged in, making a total of four electrical instruments which may be used and blended.

The tone control circuit for this Amplifier has been designed to give the player an extremely wide range of tonal coloring.



Figure A

OPERATION OF MICROPHONE

Because of the high power output, high gain and high fidelity characteristics of the GIBSON GA-30 AMPLIFIER it makes an exceptionally fine public address system when used with either the crystal, dynamic or velocity types of microphones.

While the amplifier will operate very well with any of the crystal, medium or high impedance dynamic or velocity (ribbon) microphones, it is recommended that a GIBSON Dealer be consulted before investing in a microphone. Authorized Gibson Dealers can supply a microphone which has been selected and matched to the amplifier, thus insuring the most faithful reproduction of voice and music.

When using a microphone it is important that the GIBSON 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the "Microphone" jack and advance the Microphone volume control until a feedback squeal or howl is produced on the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.

If the Microphone jacks are not in use, turn the Microphone volume control completely off.

STONE EXPANDER

This innovation in Musical Instrument Amplifiers greatly increases the total TONE RANGE. When the switch is moved to the side marked "high," the entire tone range of the amplifier is in the higher frequencies, producing a beautiful liquid treble tone which is further controlled by means of the tone control. When the switch is moved to the side marked "low," the tone range is shifted to the lower frequencies and produces a deep resonant bass tone which is also further controlled by use of the tone control.

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use power, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

TUBES

Inspect tubes to determine if they are in their proper positions before placing the amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.

* * * *

The fuse used in the GA-30 amplifier is a type AG of two ampere rating. DO NOT USE FUSES OF HIGHER RATING.

GIBSON

MODEL GA-30RV AMPLIFIER



INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICHIGAN

MODEL GA-30RV AMPLIFIER

REVERBERATION — EFFECTIVE IN CHANNEL 2 ONLY

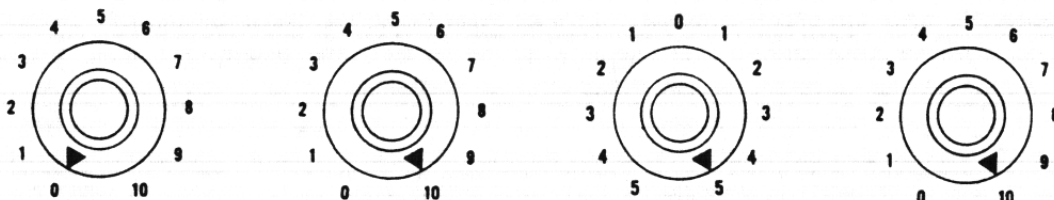
An exciting new dimension of sound providing Concert Hall effects in any size room.

The Reverberation unit is mounted vertically inside the left end of the Amplifier Case. The Reverberation mechanism is equipped with a locking device which provides protection for the mechanism during transportation. Before operating the Amplifier, unlock the Reverberation unit by pressing the Red Lever down until it is in a vertical position. Remote control of the Reverberation effect is accomplished by an Off-On foot switch with fifteen feet of cable.

Due to the unusual flexibility of the GA-30RV Reverberation circuit, it is important that the Operator understands the various control settings to obtain the total range of Reverberation effects of which this Amplifier is capable. Illustrated below are several examples of control settings which will reproduce different Reverberation effects.

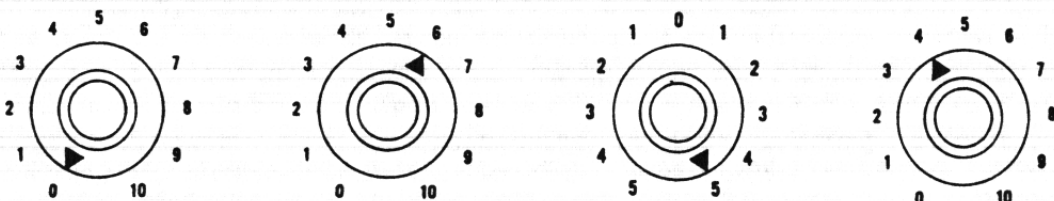
Volume 1 Volume 2 Tone Reverberation

Example No. 1. 50% Main Signal - 50% Reverb. ---



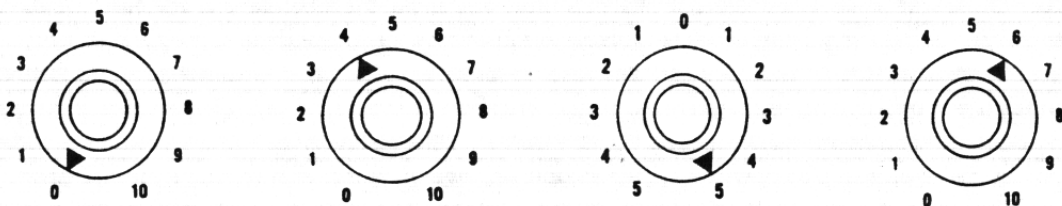
INSTRUMENT SETTINGS — Tone control and/or toggle switch in maximum treble position. Volume control setting $2\frac{1}{2}$ to 3.

Example No. 2. 75% Main Signal - 25% Reverb.



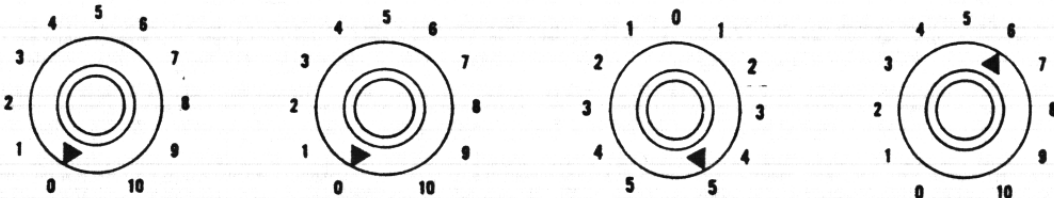
INSTRUMENT SETTINGS — Tone control same as above, Volume control setting 5 to 6.

Example No. 3. 25% Main Signal - 75% Reverb.



INSTRUMENT SETTINGS — Same as Example No. 2.

Example No. 4. 100% Reverb.



INSTRUMENT SETTINGS — Same as Example No. 2.

FOOT SWITCH MUST BE IN THE "ON" POSITION FOR REVERBERATION.

IMPORTANT — Always lock the Reverberation mechanism by raising the Red Lever until it stops (horizontal position) before transporting the Amplifier. Failure to do so may cause severe damage to the Reverberation unit.

TONE EXPANDER

This innovation in Musical Instrument Amplifiers greatly increases the total TONE RANGE. When the switch is moved to the side marked "high," the entire tone range of the amplifier is in the higher frequencies, producing a beautiful liquid treble tone which is further controlled by means of the tone control. When the switch is moved to the side marked "low," the tone range is shifted to the lower frequencies and produces a deep resonant bass tone which is also further controlled by use of the tone control.

POLARITY SWITCH

This added convenience enables the player to quickly find the polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum.

STANDBY SWITCH

The 110 Volt power switch has three positions: OFF, STANDBY, and ON. In the Standby position, the tubes are lighted and heating, but the speaker is disconnected, eliminating any possible accidental sounds. Movement of the switch from Standby to ON gives instant response without waiting to warm up.

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use power, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

TUBES

Inspect tubes to determine if they are in their proper positions before placing the amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.

* * * *

FUSE

The fuse used in the GA-30RV Amplifier is a type 3AG of two ampere rating. DO NOT USE FUSES OF HIGHER RATING.

Gibson

**INVADER
MODEL GA-30RVT AMPLIFIER
"WITH SPECTRUM CONTROL"**

INSTRUCTIONS

PRODUCT OF



Gibson Electronics

KALAMAZOO, MICHIGAN

CAUTION

The Reverb Unit has been carefully constructed. It is, however, a delicate electronic device. Treat it with the same care and respect given a TV set.

Avoid dropping, sudden jolts, or rough handling and it will give excellent service. This beautifully musical Reverberation effect is not to be confused with the repeating signal produced by the mechanical tape recorder style of echo units.

UNPACKING

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

TUBES

Make certain all tubes are seated firmly into their respective sockets. Each tube is labeled for proper replacement should any tube be out of its socket. Be especially careful when inserting tubes to see that the pins on the tube are correctly aligned with the holes in the socket before pushing into place. Do not twist tube — push tube straight into socket. It is advisable to check tubes from time to time depending on amount of use and excellence of performance. *Be sure tubes are always returned to proper sockets and seated firmly.*

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use amplifier, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

A.C. POWER-POLARITY SWITCH

A convenient switch has been provided for performing a total of three functions, turning the amplifier on and off, putting the amplifier in "Standby" and selecting the proper polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum. In the "Standby" position the amplifier is kept "warmed up" and ready to play at the instant the switch is advanced to the "On" positions. Two "On" positions have been provided. The hum and hiss level on one of the "On" positions will be noticeably lower — this is the correct "Polarity" for using the amplifier.

In locations of extremely high noise levels, clipping the "Ground Clip" to a grounded object will greatly reduce objectionable noise and hum.

As an added convenience to the artist this amplifier is equipped with a "Standby pilot light" as well as the "Regular pilot light". When the "Green" light is on the amplifier is in "Standby"; when the "Red" light is on the amplifier is "On" and ready to play.

FUSE

The fuse used in this Amplifier is a type 3AG of two ampere rating. **DO NOT USE A FUSE OF HIGHER RATING.**

SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.

REVERBERATION — EFFECTIVE IN CHANNEL 2 ONLY

The Reverberation Unit must always be placed on a solid non-vibrating surface or footing when in operation.

Any sudden shock, jolt, or wiggle, when in use, will cause undesirable noise. The resultant clatter of an inadvertant shake or bump is annoying but not necessarily harmful. This delicate sensitivity to shock and vibration is a normal characteristic of the device.

No problem will be encountered while the unit is connected if supporting surface is solid and unit is not moved about. To avoid the unwanted noise, turn the reverberation unit off by pressing the foot switch.

TREMOLO — EFFECTIVE IN CHANNEL 2 ONLY

The Tremolo effect adds another dimension to the Reverberation effect. It can be used either with or without reverberation at the players discretion. The Tremolo is turned on or off by the use of the foot switch. The Tremolo Frequency Range has been carefully set to cover a wide range of Tremolo effects. The Depth of the Tremolo is also variable being controlled by the Depth control.

OPERATION OF MICROPHONE

The high gain and high fidelity characteristics of this Amplifier, permit the use of most of the popular high impedance microphones for public address work. The microphone should be plugged into the Number One Jack of Channel 1.

SPECTRUM CONTROLS

The wide range of tonal extremes required by different artists can all be accommodated with Gibson Spectrum Control. For maximum loudness with a given power, the "treble" control should be Maximum, the "mid range" minimum, and the bass near 5. With this adjustment the tone controls on the guitar will have their maximum effectiveness.

"Jazz" sound to the artist taste can be had by reducing the "treble", adding some "mid range", and adjusting the "bass" to the artist requirement.

Spectrum Controls plus the tone controls on the artist's instrument offer an endless variety of tonal color.

MONITOR JACK

This convenient jack is provided for extending the usefulness of the amplifier. Some of it's many uses include: — Use in tape recording; Use in driving additional amplifiers, feeding into Public Address systems; Use with Hi-Fi amplifiers. For best results the Monitor Jack should be fed into a High-impedance circuit.

Gibson

LANCER

MODEL GA-35RVT AMPLIFIER

INSTRUCTIONS

PRODUCT OF



Gibson Electronics

KALAMAZOO, MICHIGAN

IMPORTANT — READ CAREFULLY BEFORE USE

CAUTION

The Reverb Unit has been carefully constructed. It is, however, a delicate electronic device. Treat it with the same care and respect given a TV set.

Avoid dropping, sudden jolts, or rough handling and it will give excellent service. This beautifully musical Reverberation effect is not to be confused with the repeating signal produced by the mechanical tape recorder style of echo units.

UNPACKING

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

TUBES

Make certain all tubes are seated firmly into their respective sockets. Each tube is labeled for proper replacement should any tube be out of its socket. Be especially careful when inserting tubes to see that the pins on the tube are correctly aligned with the holes in the socket before pushing into place. Do not twist tube — push tube straight into socket. It is advisable to check tubes from time to time depending on amount of use and excellence of performance. *Be sure tubes are always returned to proper sockets and seated firmly.*

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use amplifier, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

A.C. POWER-POLARITY SWITCH

A convenient switch has been provided for performing a total of three functions, turning the amplifier on and off, and selecting the proper polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum. Two "On" positions have been provided. The hum and hiss level on one of the "On" positions will be noticeably lower - this is the correct "Polarity" for using the amplifier.

FUSE

The fuse used in this Amplifier is a type 3AG of two amperes rating. **DO NOT USE FUSES OF HIGHER RATING**

SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.

REVERBERATION — EFFECTIVE IN CHANNEL 2 ONLY

The Reverberation Unit must always be placed on a solid non-vibrating surface or footing when in operation.

Any sudden shock, jolt, or wiggle, when in use, will cause undesirable noise. The resultant clatter of an inadvertant shake or bump is annoying but not necessarily harmful. This delicate sensitivity to shock and vibration is a normal characteristic of the device.

No problem will be encountered while the unit is connected if supporting surface is solid and unit is not moved about. To avoid the unwanted noise, turn the reverberation unit off by pressing the foot switch.

BASS AND TREBLE TONE CONTROLS

A separate control has been provided for control of the bass or low frequencies and for the treble or high frequencies. The use of these two controls allows the player to obtain the maximum combinations of tone from a beautiful clear treble to a deep resonant bass. Setting the "BASS" control at maximum and the "TREBLE" at minimum, produces the deepest, fullest bass tone. Setting the "TREBLE" control at maximum and the "BASS" at minimum produces a chime-like tone rich in higher harmonics and will enable the artist to pick harmonics with greater ease. When both "BASS" and "TREBLE" controls are set at minimum the middle register predominates.

TREMOLO — EFFECTIVE IN CHANNEL 2 ONLY

The Tremolo effect adds another dimension to the Reverberation effect. It can be used either with or without reverberation at the players discretion. The Tremolo is turned on or off by the use of the foot switch. The Tremolo Frequency Range has been carefully set to cover a wide range of Tremolo effects. The Depth of the Tremolo is also variable being controlled by the Depth control.

OPERATION OF MICROPHONE

The high gain and high fidelity characteristics of this Amplifier, permit the use of most of the popular high impedance microphones for public address work. The microphone should be plugged into the Number One jack and it is not recommended that other instruments be used in conjunction with the microphone.

When using a microphone it is important that the Number 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the Number One jack and advance the Loudness control until a feedback squeal or howl is produced on the loudspeaker. Reduce the Loudness control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.



Figure A

GIBSON

MODEL GA-40 AMPLIFIER

INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICHIGAN

GIBSON AMPLIFIER — MODEL GA-40

OPERATION OF INSTRUMENT

When one or two instruments are plugged into the jacks marked "Instruments," three stages of amplification are used. The total gain of both being set with the control marked "Instruments."

The jacks marked "Instruments" or "Microphone" may also be used with any of the GIBSON Electrical Instruments. When used this way, a careful setting of the volume control marked "Microphone" must be made to avoid overload and consequent distortion. This adjustment can easily be made by turning the Volume Control on the guitar or other instrument completely on, and setting the Microphone Control at a point where no distortion occurs when the strings are struck with maximum force. By utilizing the Microphone jacks in this way, two or more instruments can be plugged in, making a total of four electrical instruments which may be used and blended.

The tone control circuit for this Amplifier has been designed to give the player an extremely wide range of tonal coloring.



Figure A

OPERATION OF MICROPHONE

Because of the high power output, high gain and high fidelity characteristics of the GIBSON GA-40 AMPLIFIER it makes an exceptionally fine public address system when used with either the crystal, dynamic or velocity types of microphones.

While the amplifier will operate very well with any of the crystal, medium or high impedance or velocity (ribbon) microphones, it is recommended that a GIBSON Dealer be consulted before investing in a microphone. Authorized Gibson Dealers can supply a microphone which has been selected and matched to the amplifier, thus insuring the most faithful reproduction of voice and music.

When using a microphone it is important that the GIBSON 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the "Microphone" jack and advance the Microphone volume control until a feedback squeal or howl is produced in the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.

The volume controls Instruments and Microphone, being completely independent of each other, allow the inputs from the various sources to be "mixed" or blended. Because of this flexibility many unusual effects can easily be worked out.

If the Microphone jacks are not in use, turn the Microphone volume control completely off.

TREMOLO

The Tremolo effect is turned on and off by means of a Push Type Foot Switch. The Tremolo frequency of the Amplifier is controlled by the Variable Control marked "Frequency." The speeds have been carefully set to cover a wide range of Tremolo effects. The depth of the Tremolo is also variable being controlled by the "Depth" Control.

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the Amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, the Transportation Company should be notified immediately, and a claim placed.

CAUTION

Damage to the Amplifier will result if it is connected to an improper power source. This Amplifier is designed to be operated on 105 - 125 volt, 50 - 60 cycle alternating current **ONLY**. Check the voltage from the power lines to determine that it is not over 125 volts, and that the frequency of the current is either 50 or 60 cycles.

When ready to use power, plug the power cord into the electric outlet and move the switch to the **ON** position. Approximately one minute is required for the tubes to heat before the Amplifier is ready for use.

TUBES

Check tubes for proper positioning before placing the Amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

SERVICE

If the Amplifier is in need of servicing, consult a reliable radio man. The electrical diagram herein should be shown to the repairman to assist him in servicing the Amplifier.

FUSE

The fuse used in the GIBSON GA-40 AMPLIFIER is a type 3AG of three ampere rating. **DO NOT USE A FUSE OF HIGHER RATING.**

Gibson

MODEL GA-40T AMPLIFIER

INSTRUCTIONS

PRODUCT OF



Gibson Electronics

KALAMAZOO, MICHIGAN

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the Amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, the Transportation Company should be notified immediately, and a claim placed.

CAUTION

Damage to the Amplifier will result if it is connected to an improper power source. This Amplifier is designed to be operated on 105 - 125 volt, 50 - 60 cycle alternating current ONLY. Check the voltage from the power lines to determine that it is not over 125 volts, and that the frequency of the current is either 50 or 60 cycles.

TUBES

Check tubes for proper positioning before placing the Amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

A.C. POWER-POLARITY SWITCH

A convenient switch has been provided for performing a total of three functions, turning the amplifier on and off, putting the amplifier in "Standby" and selecting the proper polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum. In the "Standby" position the amplifier is kept "warmed up" and ready to play at the instant the switch is advanced to the "On" positions. Two "On" positions have been provided. The hum and hiss level on one of the "On" positions will be noticeably lower — this is the correct "Polarity" for using the amplifier.

In locations of extremely high noise levels, clipping the "Ground Clip" to a grounded object will greatly reduce objectionable noise and hum.

TREMOLO — EFFECTIVE IN CHANNEL 2 ONLY

The Tremolo effect is turned on and off by means of a Push Type Foot Switch. The Tremolo frequency of the Amplifier is controlled by the Variable Control marked "Frequency." The speeds have been carefully set to cover a wide range of Tremolo effects. The depth of the Tremolo is also variable being controlled by the "Depth" Control.

OPERATION OF MICROPHONE

The high gain and high fidelity characteristics of this Amplifier, permit the use of most of the popular high impedance microphones for public address work. The microphone should be plugged into the Number One Jack of Channel 1.

If the Microphone jacks are not in use, turn the Channel one Loudness control completely off.



Figure A

When using a microphone it is important that a number 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the "Microphone" jack and advance the Microphone volume control until a feedback squeal or howl is produced on the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.

OPERATION OF INSTRUMENTS

This amplifier is equipped with a total of four input jacks, two in each channel. In normal operation the instrument would be plugged into channel two. The input jacks of channel two are numbered 1. and 2. and when plugging in the instrument cords, they should be inserted in their respective jacks — that is, first instrument into the No. 1 jack and the second instrument into the No. 2 jack.

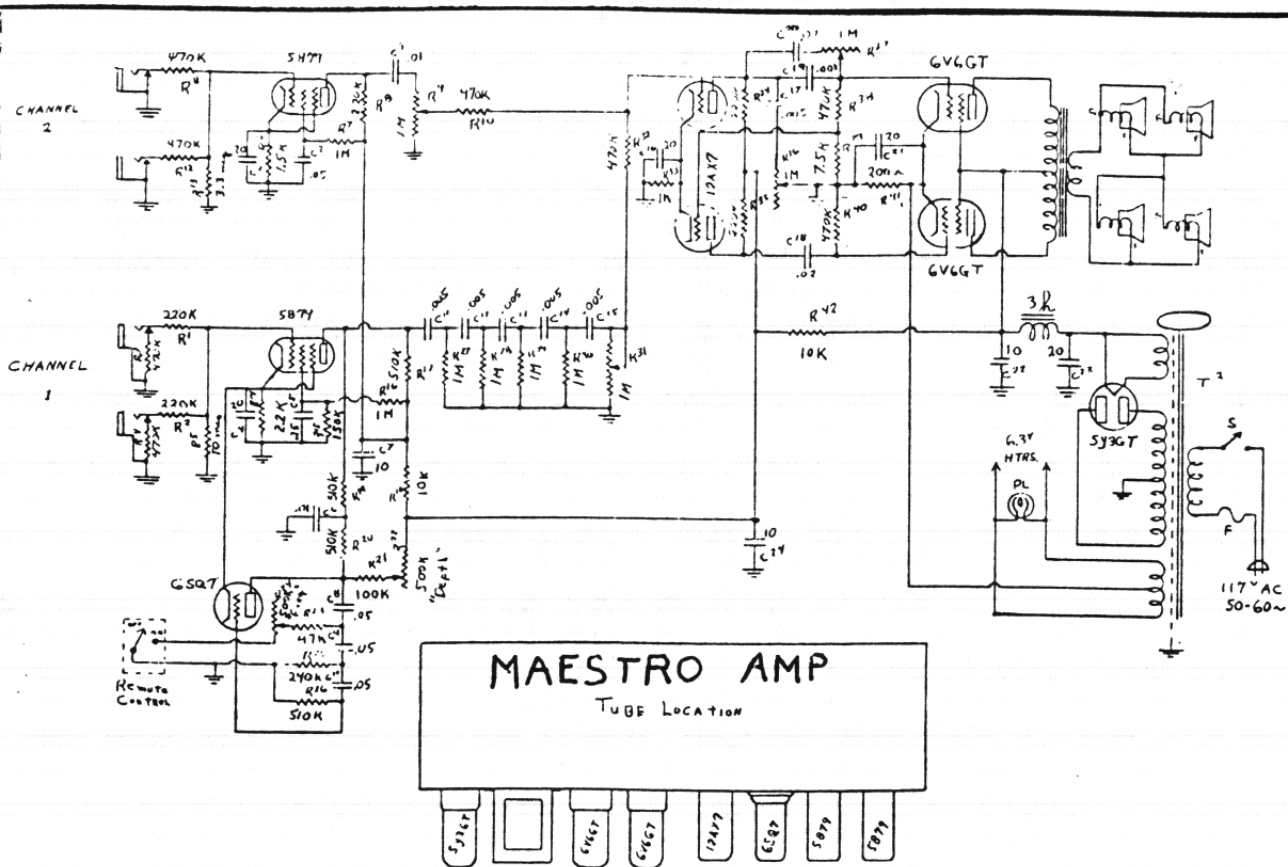
The gain for each channel is adjusted by the control marked "Loudness" located adjacent to the input jacks. The tonal coloring can be controlled by use of the "Tone" control.

FUSE

The fuse used in this Amplifier is a type 3AG of three amperes rating. **DO NOT USE FUSES OF HIGHER RATING**

SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.



Voltages to Chassis with 20,000 Ohms per Volt, Meter

Tube	Use	E _{p1}	E _{scr}	F _k	E _{p2}	E _B
5Y3	Rectifier	300V AC	.....	+315	300V AC	.....
6V6	Output	+305	+310	+18.5	.....	+310
12AX7	Phase Inverter	+135	.....	+1.25	+135	+275
5879	Channel 2	+88	+50	+1.53	.....	+262
5879	Channel 1	+73	+31	+1.2	.....	+262
6SQ7	Tremolo	+97*	.....	+1.2	.....	+275

*Tremolo "Off" and Depth Control at "Min."

PARTS LIST

R1,2,8,34,35	220 K	1 Watt	10%	R39	7.5 K	1 Watt	5%
R3,4,10,11,32	470 K	1 Watt	20%	R41	200 ohm	7 Watts	10%
R5	10 meg.	1/2 Watt	20%	R38,40	470 K	1 Watt	5%
R6	1.5 K	1 Watt	10%	C1,4,16,21	20 mfd.	25 WV	
R7,16,27,28,29,30	1 meg.	1 Watt	10%	C2,8,9,10	.05 mfd.	600 V	
R9,31,36	1 meg.	Volume Control		C3,6	.01 mfd.	600 V	
R13	3.3 meg.	1 Watt	20%	C9	.25 mfd.	200 V	
R14	2.2 K	1 Watt	5%	C7,24	10 mfd.	450 V	
R15	150 K	1/2 Watt	5%	C11,12,13,14,15,17	.005 mfd.	600 V	
R17,26	510 K	1 Watt	5%	C18,20	.02 mfd.	600 V	
R18,42	10 K	1 Watt	20%	C19	.001 mfd.	600 V	
R19,40	510 K	1 Watt	10%	C24	10 mfd.	450 V	
R21	100 K	1 Watt	10%	C35	20 mfd.	450 V	
R22,24	500 K	Volume Control		T1	Output Trans.	(GA-10-02)	
R23	*47 K	1 Watt		T2	Power Trans.	(GA-10-P)	
R25	240 K	1 Watt	5%	S	Toggle Switch	SPST	
R33	1 K	1 Watt	20%	F	Fuse	3 Amp. (3 AG)	
R37	1 meg.	Volume Control		PL	Type 47		

*This Value Picked at Factory

Gibson

**SATURN
MODEL GA-45 RVT AMPLIFIER**

INSTRUCTIONS

PRODUCT OF



Gibson Electronics

KALAMAZOO, MICHIGAN

CAUTION

The Reverb Unit has been carefully constructed. It is, however, a delicate electronic device. Treat it with the same care and respect given a TV set.

Avoid dropping, sudden jolts, or rough handling and it will give excellent service. This beautifully musical Reverberation effect is not to be confused with the repeating signal produced by the mechanical tape recorder style of echo units.

UNPACKING

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

TUBES

Make certain all tubes are seated firmly into their respective sockets. Each tube is labeled for proper replacement should any tube be out of its socket. Be especially careful when inserting tubes to see that the pins on the tube are correctly aligned with the holes in the socket before pushing into place. Do not twist tube — push tube straight into socket. It is advisable to check tubes from time to time depending on amount of use and excellence of performance. *Be sure tubes are always returned to proper sockets and seated firmly.*

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use amplifier, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

A.C. POWER-POLARITY SWITCH

A convenient switch has been provided for performing a total of three functions, turning the amplifier on and off, and selecting the proper polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum. Two "On" positions have been provided. The hum and hiss level on one of the "On" positions will be noticeably lower - this is the correct "Polarity" for using the amplifier.

FUSE

The fuse used in this Amplifier is a type 3AG of 2 amperes Slo-Blo rating. **DO NOT USE FUSES OF HIGHER RATING.**

SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.

REVERBERATION — EFFECTIVE IN CHANNEL 2 ONLY

The Reverberation Unit must always be placed on a solid non-vibrating surface or footing when in operation.

Any sudden shock, jolt, or wiggle, when in use, will cause undesirable noise. The resultant clatter of an inadvertant shake or bump is annoying but not necessarily harmful. This delicate sensitivity to shock and vibration is a normal characteristic of the device.

No problem will be encountered while the unit is connected if supporting surface is solid and unit is not moved about. To avoid the unwanted noise, turn the reverberation unit off by pressing the foot switch.

BASS AND TREBLE TONE CONTROLS

A separate control has been provided for control of the bass or low frequencies and for the treble or high frequencies. The use of these two controls allows the player to obtain the maximum combinations of tone from a beautiful clear treble to a deep resonant bass. Setting the "BASS" control at maximum and the "TREBLE" at minimum, produces the deepest, fullest bass tone. Setting the "TREBLE" control at maximum and the "BASS" at minimum produces a chime-like tone rich in higher harmonics and will enable the artist to pick harmonics with greater ease. When both "BASS" and "TREBLE" controls are set at minimum the middle register predominates.

TREMOLO — EFFECTIVE IN CHANNEL 2 ONLY

The Tremolo effect adds another dimension to the Reverberation effect. It can be used either with or without reverberation at the player's discretion. The Tremolo is turned on or off by the use of the foot switch. The Tremolo Frequency Range has been carefully set to cover a wide range of Tremolo effects. The Depth of the Tremolo is also variable being controlled by the Depth control.

OPERATION OF MICROPHONE

The high gain and high fidelity characteristics of this Amplifier, permit the use of most of the popular high impedance microphones for public address work. The microphone should be plugged into the Number One jack and it is not recommended that other instruments be used in conjunction with the microphone.

When using a microphone it is important that the Number 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the Number One jack and advance the Loudness control until a feedback squeal or howl is produced on the loudspeaker. Reduce the Loudness control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.



Figure A

Super Maestro

ACCORDION AMPLIFIER

GA-46

INSTRUCTIONS

PRODUCT OF ELECTRONICS DIVISION, GIBSON INC., KALAMAZOO, MICH.

SUPER MAESTRO AMPLIFIER — GA-46

The Gibson GA-46 Super Maestro is a new high gain, high fidelity twin 12" speaker amplifier with built-in tremolo especially designed for amplified accordions. Engineered to produce the full powerful tones of the lower and middle frequency ranges. Amazingly free from distortion with plenty of reserve volume for any use. Features a clear, powerful, undistorted performance; sturdy, compact, portable construction; and a rich attractive performance. The use of especially designed speakers, premium tubes, deluxe transformers, and other top quality components insure great reserve power, top performance and trouble free service.

This deluxe, premium quality, amplifier will produce the results and dependability you need — study and try its many features — read carefully what it can do and how you can insure its top quality performance through proper care.

FIDELITY

The GA-46, Super Maestro, is a High Fidelity Amplifier with 60 watts output with less than 3% distortion at a full 60 watts.

WIDE RANGE SPEAKERS

Equipped with two very heavy-duty 12" twin cone speakers developed for this amplifier by a famous research laboratory, the full resonance speakers give a realistic "Living Sound" reproduction unmatched by other speakers.

PRE-AMPLIFIER

The amplifier is designed and constructed in two units. The pre-amplifier with the controls is mounted in the top of the case, while the main amplifier and power supply is mounted in the bottom of the case. This construction brings the controls to a position of maximum convenience and more evenly distributes the weight. This allows for excellent heat dissipation.

TWO CHANNELS

The pre-amplifier is divided into two separate channels with two input jacks in each channel. The exclusive Terrace design indicates the channel separation at a glance. Each channel has an independent set of volume, treble and bass voicing controls.

Channel 1 — Reproduces mid-range and low frequencies with excellent definition — also suitable for lead instruments that require good high frequency response for best results. The tremolo is operative in this channel.

Channel 2 — Reproduces mid-range and low frequency notes — as low as 40 cycles with a depth and clarity that is seldom equalled with portable equipment. This channel recommended if microphone is used.

Complete isolation is provided between the two channels so that entirely different settings of tone and volume controls can be used without interaction. Thus a combination of accordions, accordions with instruments such as electric bass, guitars, mandolins, etc. or accordions and microphones may be used successfully together. This permits two different styles in any combination — with individual tone and volume settings for each channel. The surplus power of the amplifier insures ample volume level for each instrument, but care should be used to avoid rattling the lights or other loose items in the room.

TREMOLO

Channel 1 of the GA-46 Super Maestro Amplifier has a very effective new high level tremolo, which is controlled by a remote on-off push type foot switch. The tremolo frequency of the amplifier is controlled by the variable control marked "Frequency." The speeds have been carefully set to cover a wide range of tremolo effects. The depth of the tremolo is also variable, being controlled by the "Depth" control.

VOICING CONTROLS

Each channel has its own set of Bass and Treble Voicing controls. With the Treble and Bass controls at the middle or upright setting, each channel will reproduce a medium voicing within its particular range. This can be varied to produce more treble or more bass within the range of each channel by setting the voicing controls to the desired tone quality.

EXTENSION SPEAKER JACKS

Equipped with switching jacks for extension speakers. The extension speaker can be plugged into the jack away from the baffle, and both the regular speaker and the extension speaker will disperse the sound; or, the extension speaker can be plugged into the other jack closest to baffle after removing the plug from the regular speaker and only the extension speaker will disperse the sound. Replace regular speaker plug into jack nearest baffle when amplifier only is used.

STANDBY SWITCH

The 110 Volt power switch has three positions: OFF, STANDBY, and ON. In the Standby position, the tubes are lighted and heating, but the speaker is disconnected, eliminating any possible accidental sounds. Movement of the switch from Standby to ON gives instant response without waiting to warm up.

OPERATION OF THE MICROPHONE

Because of the high power output, high gain and high fidelity characteristics of the GIBSON GA-46 Super Maestro Amplifier, it makes an exceptionally fine public address system when used with either the crystal, dynamic, or velocity types of microphones. Channel two is recommended for microphone use.

While the Amplifier will operate very well with any of the crystal, medium or high impedance dynamic or velocity (ribbon) microphones, it is recommended that a GIBSON Dealer be consulted before investing in a microphone. Authorized Gibson Dealers can supply a microphone which has been selected and matched to the amplifier, thus insuring the most faithful reproduction of voice and music.

When using a microphone it is important that a shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise objectional hum will result. Figure B illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the MICROPHONE socket and advance the Microphone Volume Control until a feedback squeal or howl is produced by the loudspeakers. Reduce the Volume Control to just below the feedback point. This setting will vary considerably depending upon the size of the room, its acoustical properties and the distance between the microphone and the loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.



Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the Amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, the Transportation Company should be notified immediately, and a claim placed.

CAUTION

Damage to the Amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105 - 125 volt, 50 - 60 cycle alternating current ONLY. Check the voltage from the power lines to determine that it is not over 125 volts, and the frequency of the current is either 50 or 60 cycles.

When ready to use power, plug the power cord into the electric outlet and move the switch to the ON position. Approximately one minute is required for the tubes to heat before the Amplifier is ready to use.

TUBES

Check tubes for proper positioning before placing the Amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

GROUND CLIP

The AC Line Cord is equipped with an external Ground Clip that can be attached to any grounded object such as a water pipe, steam radiator, or to a grounded circuit such as is used in recording and broadcasting studios. This reduces extraneous noises and hum — a feature very essential for top notch performance.

SERVICE

If the Amplifier is in need of servicing, consult a reliable radio man. The electrical diagram herein should be shown to the repairman to assist him in servicing the Amplifier.

FUSE

The fuse in the GA-46 Super Maestro Amplifier is a type AG Slo-Blo of three amperes rating. DO NOT USE A FUSE OF HIGHER RATING.

GIBSON

MODEL GA-50 AMPLIFIER

INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICH.

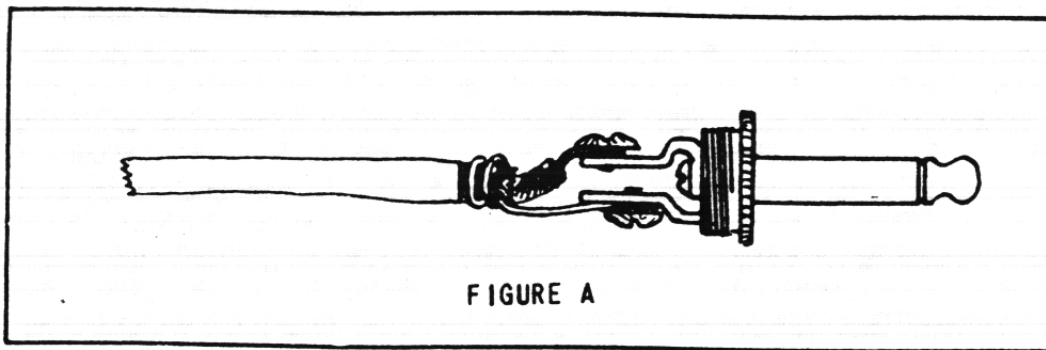


FIGURE A

OPERATION OF INSTRUMENT

When one, two, or three instruments are plugged into the jacks marked "Instruments", three stages of amplification are used. The total gain of all three circuits being set with the control marked "Instruments".

The socket marked MICROPHONE may also be used with any of the GIBSON electrical instruments. When used this way a careful setting of the volume control marked MICROPHONE must be made to avoid overload and consequent distortion. This adjustment can be easily made by turning the volume control on the guitar or other instrument all the way on and setting the MICROPHONE control at the point where no distortion occurs when the strings are struck with maximum force. By utilizing the MICROPHONE socket in this way a fourth instrument can be plugged in, making a total of four electrical instruments which may be used and blended.

The tone control circuits for this amplifier have been designed to give the player an extremely wide range of tonal coloring.

BASS AND TREBLE TONE CONTROLS

A separate control has been provided for control of the bass or low frequencies and for the treble or high frequencies. The use of these two controls allows the player to obtain the maximum combinations of tone from a beautiful clear treble to a deep resonant bass. Setting the "BASS" control at maximum and the "TREBLE" at minimum, produces the deepest, fullest bass tone. Setting the "TREBLE" control at maximum and the "BASS" at minimum produces a chime-like tone rich in higher harmonics and will enable the artist to pick harmonics with greater ease. When both "BASS" and "TREBLE" controls are set at minimum the middle register predominates.

OPERATION OF THE MICROPHONE

Because of the high power output, high gain and high fidelity characteristics of the GIBSON GA-50 Amplifier it makes an exceptionally fine public address system when used with either the crystal, dynamic or velocity types of microphones.

While the amplifier will operate very well with any of the crystal, medium or high impedance dynamic or velocity (ribbon) microphones, it is recommended that, before investing in a microphone, you consult your GIBSON dealer. Authorized GIBSON dealers can supply you with a microphone which has been selected and matched to the amplifier, thus insuring the most faithful reproduction of voice and music.

When using a microphone it is important that the GIBSON 75A or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the MICROPHONE socket and advance the MICROPHONE volume control until a feedback squeal or howl is produced in the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.

(over)

OPERATION OF THE MICROPHONE (Cont'd)

The volume controls INSTRUMENTS and MICROPHONE, being completely independent of each other, allow the inputs from the various sources to be "mixed" or blended. Because of this flexibility many unusual effects can be easily worked out.

If the MICROPHONE socket is not in use turn the MICROPHONE volume control all the way off.

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, look it over carefully to make sure there has been no breakage of tubes or parts. If you find that damage has occurred during shipment, we suggest the Transportation Company be called immediately, and a claim placed.

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. Make sure the voltage from the power lines is not over 125, and that the frequency of the current is either 50 or 60 cycles. When ready to turn on power, plug the power cord into the electric outlet and turn on the switch. Wait approximately one minute for the tubes to heat, and the amplifier is ready for use.

TUBES

Be sure tubes are in their proper positions before placing the amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

GROUND CLIP

The AC line cord is equipped with an external Ground Clip that can be attached to any grounded object such as a water pipe, steam radiator, or to a grounded circuit such as used in recording and broadcasting studios. This reduces extraneous noises and hum -- a feature very essential for top notch performance.

SERVICE

If the amplifier is in need of servicing, we suggest it be taken to a reliable radio man. The electrical diagram attached should be shown the repairman to assist him in servicing the amplifier.

* * * *

The fuse in the GA-50 Amplifier is a type AG of three ampere rating. DO NOT USE FUSES OF HIGHER RATING.

GIBSON

MODEL GA-55 AMPLIFIER

INSTRUCTIONS



GIBSON INC., KALAMAZOO, MICH.

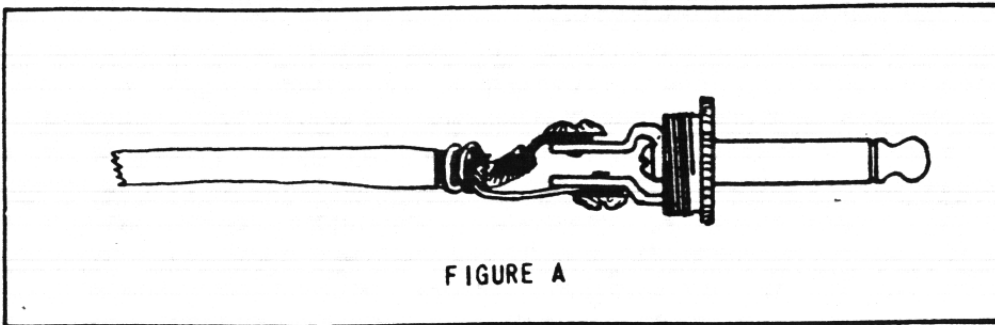


FIGURE A

OPERATION OF INSTRUMENT

When one, or two, instruments are plugged into the jacks marked "Instruments," three stages of amplification are used. The total gain of both being set with the control marked "Instruments."

The jacks marked INSTRUMENTS or MICROPHONE may also be used with any of the GIBSON electrical instruments. When used this way a careful setting of the volume control marked MICROPHONE must be made to avoid overload and consequent distortion. This adjustment can be easily made by turning the volume control on the guitar or other instrument all the way on and setting the MICROPHONE control at the point where no distortion occurs when the strings are struck with maximum force. By utilizing the MICROPHONE jacks in this way two more instruments can be plugged in, making a total of four electrical instruments which may be used and blended.

The tone control circuits for this amplifier have been designed to give the player an extremely wide range of tonal coloring.

BASS AND TREBLE TONE CONTROLS

A separate control has been provided for control of the bass or low frequencies and for the treble or high frequencies. The use of these two controls allows the player to obtain the maximum combinations of tone from a beautiful clear treble to a deep resonant bass. Setting the "BASS" control at maximum and the "TREBLE" at minimum, produces the deepest, fullest bass tone. Setting the "TREBLE" control at maximum and the "BASS" at minimum produces a chime-like tone rich in higher harmonics and will enable the artist to pick harmonics with greater ease. When both "BASS" and "TREBLE" controls are set at minimum the middle register predominates.

OPERATION OF THE MICROPHONE

Because of the high power output, high gain and high fidelity characteristics of the GIBSON GA-55 Amplifier it makes an exceptionally fine public address system when used with either the crystal, dynamic or velocity types of microphones.

While the amplifier will operate very well with any of the crystal, medium or high impedance dynamic or velocity (ribbon) microphones, it is recommended that, before investing in a microphone, you consult your GIBSON dealer. Authorized GIBSON dealers can supply you with a microphone which has been selected and matched to the amplifier, thus insuring the most faithful reproduction of voice and music.

When using a microphone it is important that the GIBSON 75A or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A

(over)

OPERATION OF THE MICROPHONE (Cont'd)

illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the MICROPHONE jack and advance the MICROPHONE volume control until a feedback squeal or howl is produced in the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.

The volume controls INSTRUMENTS and MICROPHONE, being completely independent of each other, allow the inputs from the various sources to be "mixed" or blended. Because of this flexibility many unusual effects can be easily worked out.

If the MICROPHONE jacks are not in use turn the MICROPHONE volume control all the way off.

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, look it over carefully to make sure there has been no breakage of tubes or parts. If you find that damage has occurred during shipment, we suggest the Transportation Company be called immediately, and a claim placed.

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. Make sure the voltage from the power lines is not over 125, and that the frequency of the current is either 50 or 60 cycles. When ready to turn on power, plug the power cord into the electric outlet and turn on the switch. Wait approximately one minute for the tubes to heat, and the amplifier is ready for use.

TUBES

Be sure tubes are in their proper positions before placing the amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

GROUND CLIP

The AC line cord is equipped with an external Ground Clip that can be attached to any grounded object such as a water pipe, steam radiator, or to a grounded circuit such as used in recording and broadcasting studios. This reduces extraneous noises and hum -- a feature very essential for top notch performance.

SERVICE

If the amplifier is in need of servicing, we suggest it be taken to a reliable radio man. The electrical diagram attached should be shown the repairman to assist him in servicing the amplifier.

* * * *

The fuse in the GA-55 Amplifier is a type AG of three ampere rating. DO NOT USE FUSES OF HIGHER RATING.

Gibson

RANGER

MODEL GA-55 RVT AMPLIFIER

"WITH SPECTRUM CONTROL"

INSTRUCTIONS

PRODUCT OF



Gibson Electronics

KALAMAZOO, MICHIGAN

IMPORTANT — READ CAREFULLY BEFORE USE

CAUTION

The Reverb Unit has been carefully constructed. It is, however, a delicate electronic device. Treat it with the same care and respect given a TV set.

Avoid dropping, sudden jolts, or rough handling and it will give excellent service. This beautifully musical Reverberation effect is not to be confused with the repeating signal produced by the mechanical tape recorder style of echo units.

UNPACKING

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

TUBES

Make certain all tubes are seated firmly into their respective sockets. Each tube is labeled for proper replacement should any tube be out of its socket. Be especially carefully when inserting tubes to see that the pins on the tube are correctly aligned with the holes in the socket before pushing into place. Do not twist tube — push tube straight into socket. It is advisable to check tubes from time to time depending on amount of use and excellence of performance. *Be sure tubes are always returned to proper sockets and seated firmly.*

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use amplifier, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

A. C. POWER-POLARITY SWITCH

A convenient switch has been provided for performing a total of three functions, turning the amplifier on and off, putting the amplifier in "Standby" and selecting the proper polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum. In the "Standby" position the amplifier is kept "warmed up" and ready to play at the instant the switch is advanced to the "On" positions. Two "On" positions have been provided. The hum and hiss level on one of the "On" positions will be noticeably lower — this is the correct "Polarity" for using the amplifier.

As an added convenience to the artist this amplifier is equipped with a "Standby pilot light" as well as the "Regular pilot light". When the "Amber" light is on, the amplifier is in "Standby"; when the "Red" light is on the amplifier is "On" and ready to play.

FUSE

The fuse used in this Amplifier is a type 3AG of 2 ampere Slo-Blo rating. **DO NOT USE A FUSE OF HIGHER RATING.**

SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.

REVERBERATION — EFFECTIVE IN CHANNEL 2 ONLY

The Reverberation Unit must always be placed on a solid non-vibrating surface or footing when in operation.

Any sudden shock, jolt, or wiggle, when in use, will cause undesirable noise. The resultant clatter of an inadvertant shake or bump is annoying but not necessarily harmful. This delicate sensitivity to shock and vibration is a normal characteristic of the device.

No problem will be encountered while the unit is connected if supporting surface is solid and unit is not moved about. To avoid the unwanted noise, turn the reverberation unit off by pressing the foot switch.

TREMOLO — EFFECTIVE IN CHANNEL 2 ONLY

The Tremolo effect adds another dimension to the Reverberation effect. It can be used either with or without reverberation at the players discretion. The Tremolo is turned on or off by the use of the foot switch. The Tremolo Frequency Range has been carefully set to cover a wide range of Tremolo effects. The Depth of the Tremolo is also variable being controlled by the Depth control.

OPERATION OF MICROPHONE

The high gain and high fidelity characteristics of this Amplifier, permit the use of most of the popular high impedance microphones for public address work. The microphone should be plugged into the Number One Jack of Channel 1.

SPECTRUM CONTROLS

The wide range of tonal extremes required by different artists can all be accommodated with Gibson Spectrum Control. For maximum loudness with a given power, the "treble" control should be Maximum, the "mid range" minimum, and the bass near 5. With this adjustment the tone controls on the guitar will have their maximum effectiveness.

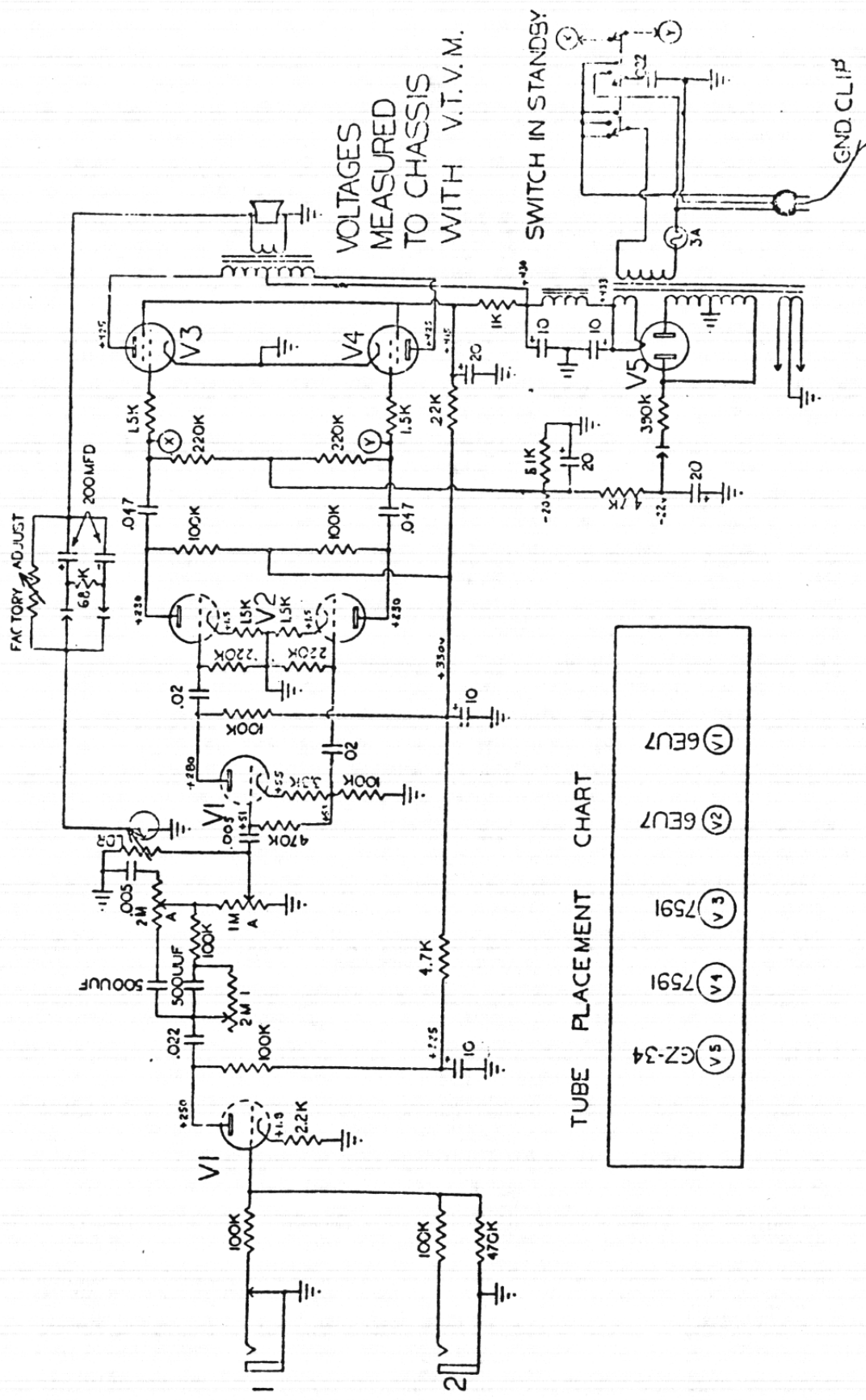
"Jazz" sound to the artist taste can be had by reducing the "treble", adding some "mid range", and adjusting the "bass" to the artist requirement.

Spectrum Controls plus the tone controls on the artist's instrument offer an endless variety of tonal color.

PRESENCE SWITCH

Presence switch in upper position will add a Chime or Bell like tone to the upper harmonics. In the lower position, the treble tones will have a mello characteristic.

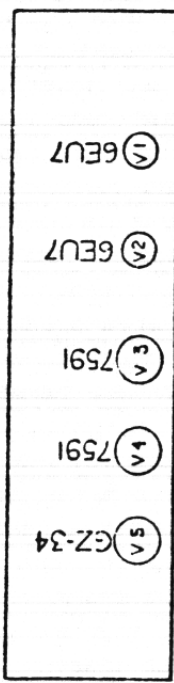
GA-60



VOLTAGES MEASURED TO CHASSIS WITH V.T.V.M.

SWITCH IN STANDS

TUBE PLACEMENT CHART



GIBSON

MODEL COUNTRY-WESTERN
GA-70 AMPLIFIER

INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICHIGAN

GIBSON AMPLIFIER — MODEL COUNTRY-WESTERN (GA-70)

PURPOSE

Engineered for the Professional to meet today's needs in tonal quality, performance, and power. Unusually clear, bell-like treble with amazing reserve volume and sustaining qualities. Instantaneous response with a tone that bites through, yet is pleasing to the ear and free of distortion.

POWER OUTPUT

The COUNTRY-WESTERN Model is a High Fidelity Amplifier capable of a normal output of twenty-five watts and peak output in excess of 35 watts.

FOUR INPUT CIRCUITS

Four High Gain input jacks for various combinations of electronic instruments and microphone adjustable to a wide variety of volume and tone coloring.

BASS AND TREBLE TONE CONTROLS

A separate control has been provided for control of the bass or low frequencies and for the treble or high frequencies. The use of these two controls allows the player to obtain the maximum combinations of tone from a beautiful clear treble to a deep resonant bass. Setting the "BASS" control at maximum and the "TREBLE" at minimum, produces the deepest, fullest bass tone. Setting the "TREBLE" control at maximum and the "BASS" at minimum produces a chime-like tone rich in higher harmonics and will enable the artist to pick harmonics with greater ease. When both "BASS" and "TREBLE" controls are set at minimum the middle register predominates.

15" HEAVY DUTY SPEAKER

The 15" Heavy Duty Speaker used in the COUNTRY-WESTERN Amplifier has been designed especially for instrument reproduction. The sturdy felted cone and the heavy duty new type Alnico V magnet assures a stable frequency response over a much longer period of time than was possible with older types of cones and magnets.

EXTENSION SPEAKER JACKS

Equipped with switching jacks for extension speakers. The extension speaker can be plugged into one jack, and both the regular speaker and the extension speaker will disperse the sound; or the extension speaker can be plugged into the other jack and only the extension speaker will disperse the sound.

STANDBY SWITCH

The 110 Volt power switch has three positions: — OFF, STANDBY, and ON. In the Standby position, the tubes are lighted and heating, but the speaker is disconnected, eliminating any possible accidental sounds. Movement of the switch from Standby to On gives instant response without waiting to warm up.

OPERATION OF THE MICROPHONE

Because of the high power output, high gain and high fidelity characteristics of the GIBSON COUNTRY-WESTERN Amplifier it makes an exceptionally fine public address system when used with either the crystal, dynamic or velocity types of microphones.

While the Amplifier will operate very well with any of the crystal, medium or high impedance dynamic or velocity (ribbon) microphones, it is recommended that a GIBSON Dealer be consulted before investing in a microphone. Authorized Gibson Dealers can supply a microphone which has been selected and matched to the amplifier, thus insuring the most faithful reproduction of voice and music.

When using a microphone it is important that a shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise objectional hum will result. Figure B illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the MICROPHONE socket and advance the Microphone Volume Control until a feedback squeal or howl is produced by the loudspeakers. Reduce the Volume Control to just below the feedback point. This setting will vary considerably depending upon the size of the room, its acoustical properties and the distance between the microphone and the loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.



FIGURE B

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the Amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, the Transportation Company should be notified immediately, and a claim placed.

CAUTION

Damage to the Amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105 - 125 volt, 50 - 60 cycle alternating current ONLY. Check the voltage from the power lines to determine that it is not over 125 volts, and the frequency of the current is either 50 or 60 cycles.

When ready to use power, plug the power cord into the electric outlet and move the switch to the ON position. Approximately one minute is required for the tubes to heat before the Amplifier is ready to use.

TUBES

Check tubes for proper positioning before placing the Amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

GROUND CLIP

The AC Line Cord is equipped with an external Ground Clip that can be attached to any grounded object such as a water pipe, steam radiator, or to a grounded circuit such as used in recording and broadcasting studios. This reduces extraneous noises and hum — a feature very essential for top notch performance.

SERVICE

If the Amplifier is in need of servicing, consult a reliable radio man. The electrical diagram herein should be shown to the repairman to assist him in servicing the Amplifier.

FUSE

The fuse in the COUNTRY-WESTERN Amplifier is a type AG Sto-Blo of three ampere rating. DO NOT USE A FUSE OF HIGHER RATING.

Gibson

**RECORDING
MODEL GA-75 AMPLIFIER**

INSTRUCTIONS

PRODUCT OF



Gibson Electronics

KALAMAZOO, MICHIGAN

IMPORTANT — READ CAREFULLY BEFORE USE

UNPACKING

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

TUBES

Make certain all tubes are seated firmly into their respective sockets. Each tube is labeled for proper replacement should any tube be out of its socket. Be especially careful when inserting tubes to see that the pins on the tube are correctly aligned with the holes in the socket before pushing into place. Do not twist tube — push tube straight into socket. It is advisable to check tubes from time to time depending on amount of use and excellence of performance. *Be sure tubes are always returned to proper sockets and seated firmly.*

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use amplifier, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

A.C. POWER-POLARITY SWITCH

A convenient switch has been provided for performing a total of three functions, turning the amplifier on and off, putting the amplifier in "Standby" and selecting the proper polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum. In the "Standby" position the amplifier is kept "warmed up" and ready to play at the instant the switch is advanced to the "On" positions. Two "On" positions have been provided. The hum and hiss level on one of the "On" positions will be noticeably lower — this is the correct "Polarity" for using the amplifier.

As an added convenience to the artist this amplifier is equipped with a "Standby pilot light" as well as the "Regular pilot light". When the "Green" light is on the amplifier is in "Standby"; when the "Red" light is on the amplifier is "On" and ready to play.

FUSE

The fuse used in this Amplifier is a type 3 AG Slo-Blo of two amperes rating. **DO NOT USE FUSES OF HIGHER RATING.**

SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.

OPERATION OF INSTRUMENTS

This amplifier is equipped with a total of four input jacks, two in each channel. In normal operation the instrument would be plugged into channel two. The input jacks of channel two are numbered 1. and 2. and when plugging in the instrument cords, they should be inserted in their respective jacks — that is, first instrument into the No. 1 jack and the second instrument into the No. 2 jack.

BASS AND TREBLE TONE CONTROLS

A separate control has been provided for control of the bass or low frequencies and for the treble or high frequencies. The use of these two controls allows the player to obtain the maximum combinations of tone from a beautiful clear treble to a deep resonant bass. Setting the "BASS" control at maximum and the "TREBLE" at minimum, produces the deepest, fullest bass tone. Setting the "TREBLE" control at maximum and the "BASS" at minimum produces a chime-like tone rich in higher harmonics and will enable the artist to pick harmonics with greater ease. When both "BASS" and "TREBLE" controls are set at minimum the middle register predominates.

MONITOR JACK

This convenient jack is provided for extending the usefulness of the amplifier. Some of its many uses include: — Use in tape recording; Use in driving additional amplifiers, feeding into Public Address systems; Use with Hi-Fi amplifiers. For best results the Monitor Jack should be fed into a High-impedance circuit.

OPERATION OF MICROPHONE

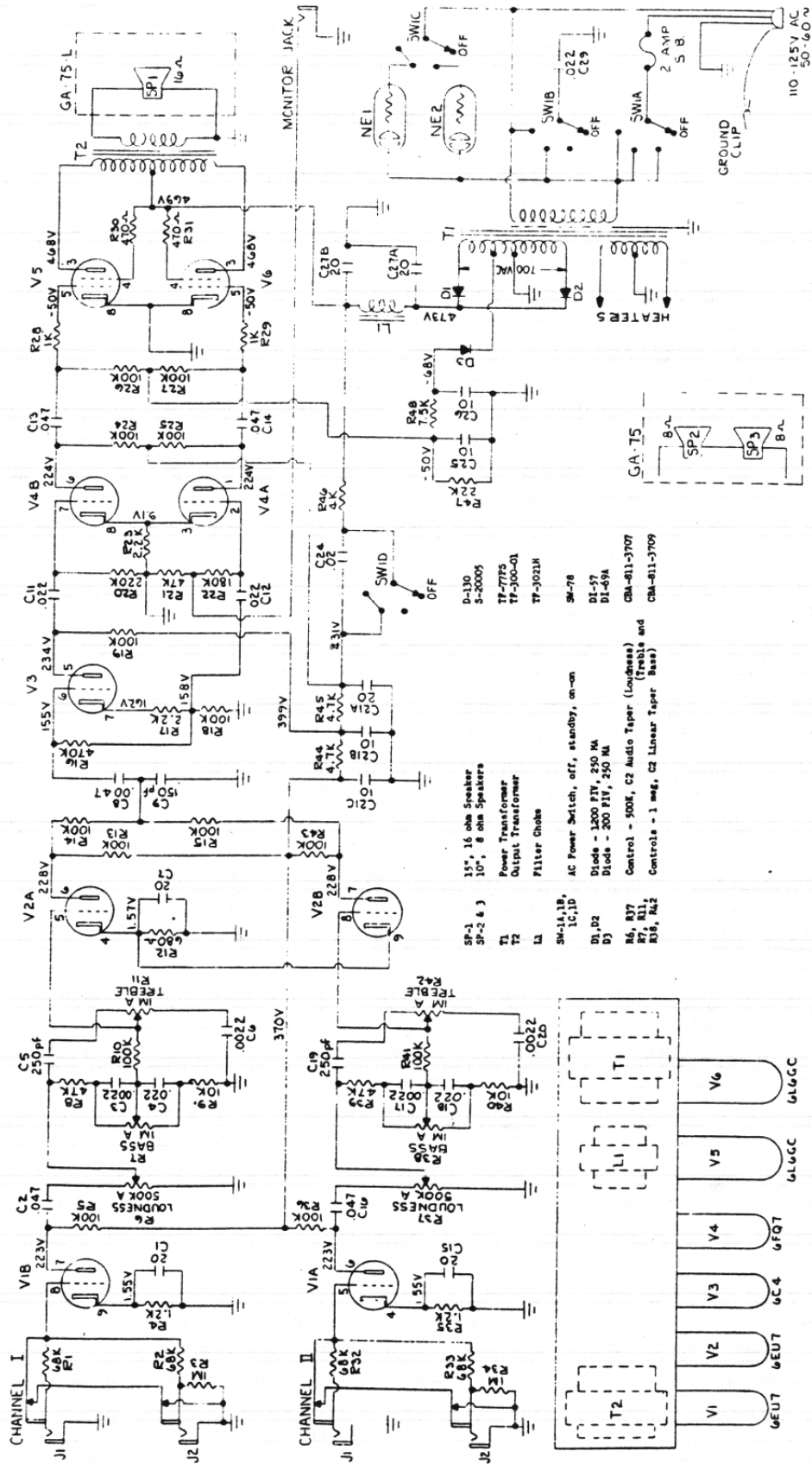
The high gain and high fidelity characteristics of this Amplifier, permit the use of most of the popular high impedance microphones for public address work. The microphone should be plugged into the Number One Jack of Channel 1.

When using a microphone it is important that a number 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the "Microphone" jack and advance the Microphone volume control until a feedback squeal or howl is produced on the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.

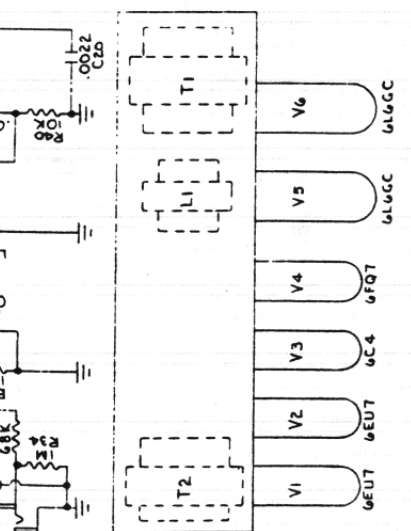


Figure A

GA-75



- SP-1 15" 16 ohm Speaker
- SP-2 & 3 10" 8 ohm Speakers
- T1 Power Transformer
- T2 Output Transformer
- L1 Filter Choke
- SW-1A, 1B, 1C, 1D AC Power Switch, off, standby, on-on
- D1, D2 Diode - 200 RTV, 250 MA
- D3 Diode - 200 RTV, 250 MA
- M6, R37 Control - 500K, C2 Audio Taper (Loudness)
- R7, R11, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29 Controls - 1 meg, C2 Linear Taper (Bass)



GIBSON

MODEL GA-77 AMPLIFIER

INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICHIGAN

GIBSON AMPLIFIER — MODEL GA-77

PURPOSE

Engineered for the Professional to meet today's needs in tonal quality, performance, and power. Unusually clear, bell-like treble with amazing reserve volume and sustaining qualities. Instantaneous response with a tone that bites through, yet is pleasing to the ear and free of distortion.

POWER OUTPUT

The GA-77 Model is a High Fidelity Amplifier capable of a normal output of twenty-five watts and peak output in excess of 35 watts.

FOUR INPUT CIRCUITS

Four High Gain input jacks for various combinations of electronic instruments and microphone adjustable to a wide variety of volume and tone coloring.

BASS AND TREBLE TONE CONTROLS

A separate control has been provided for control of the bass or low frequencies and for the treble or high frequencies. The use of these two controls allows the player to obtain the maximum combinations of tone from a beautiful clear treble to a deep resonant bass. Setting the "BASS" control at maximum and the "TREBLE" at minimum, produces the deepest, fullest bass tone. Setting the "TREBLE" control at maximum and the "BASS" at minimum produces a chime-like tone rich in higher harmonics and will enable the artist to pick harmonics with greater ease. When both "BASS" and "TREBLE" controls are set at minimum the middle register predominates.

15" HEAVY DUTY SPEAKER

The 15" Heavy Duty Speaker used in the GA-77 Amplifier has been designed especially for instrument reproduction. The sturdy felted cone and the heavy duty new type Alnico V magnet assures a stable frequency response over a much longer period of time than was possible with older types of cones and magnets.

EXTENSION SPEAKER JACKS

Equipped with switching jacks for extension speakers. The extension speaker can be plugged into one jack, and both the regular speaker and the extension speaker will disperse the sound; or the extension speaker can be plugged into the other jack and only the extension speaker will disperse the sound.

STANDBY SWITCH

The 110 Volt power switch has three positions: — OFF, STANDBY, and ON. In the Standby position, the tubes are lighted and heating, but the speaker is disconnected, eliminating any possible accidental sounds. Movement of the switch from Standby to On gives instant response without waiting to warm up.

OPERATION OF THE MICROPHONE

Because of the high power output, high gain and high fidelity characteristics of the GIBSON GA-77 Amplifier it makes an exceptionally fine public address system when used with either the crystal, dynamic or velocity types of microphones.

While the Amplifier will operate very well with any of the crystal, medium or high impedance dynamic or velocity (ribbon) microphones, it is recommended that a GIBSON Dealer be consulted before investing in a microphone. Authorized Gibson Dealers can supply a microphone which has been selected and matched to the amplifier, thus insuring the most faithful reproduction of voice and music.

When using a microphone it is important that a shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise objectional hum will result. Figure B illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the MICROPHONE socket and advance the Microphone Volume Control until a feedback squeal or howl is produced by the loudspeakers. Reduce the Volume Control to just below the feedback point. This setting will vary considerably depending upon the size of the room, its acoustical properties and the distance between the microphone and the loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.



FIGURE B

GENERAL

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CAUTION

Damage to the Amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105 - 125 volt, 50 - 60 cycle alternating current **ONLY**. Check the voltage from the power lines to determine that it is not over 125 volts, and the frequency of the current is either 50 or 60 cycles.

When ready to use power, plug the power cord into the electric outlet and move the switch to the **ON** position. Approximately one minute is required for the tubes to heat before the Amplifier is ready to use.

TUBES

Check tubes for proper positioning before placing the Amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

GROUND CLIP

The AC Line Cord is equipped with an external Ground Clip that can be attached to any grounded object such as a water pipe, steam radiator, or to a grounded circuit such as used in recording and broadcasting studios. This reduces extraneous noises and hum — a feature very essential for top notch performance.

SERVICE

If the Amplifier is in need of servicing, consult a reliable radio man. The electrical diagram herein should be shown to the repairman to assist him in servicing the Amplifier.

FUSE

The fuse in the GA-77 Amplifier is a type AG Slo-Blo of three ampere rating. **DO NOT USE A FUSE OF HIGHER RATING.**

Gibson

VANGUARD
MODEL GA-77RET AMPLIFIER
"WITH SPECTRUM CONTROL"

INSTRUCTIONS

PRODUCT OF



Gibson Electronics

KALAMAZOO, MICHIGAN

CAUTION

The Reverb Unit has been carefully constructed. It is, however, a delicate electronic device. Treat it with the same care and respect given a TV set.

Avoid dropping, sudden jolts, or rough handling and it will give excellent service.

UNPACKING

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TUBES

Make certain all tubes are seated firmly into their respective sockets. Each tube is labeled for proper replacement should any tube be out of its socket. Be especially careful when inserting tubes to see that the pins on the tube are correctly aligned with the holes in the socket before pushing into place. Do not twist tube — push tube straight into socket. It is advisable to check tubes from time to time depending on amount of use and excellence of performance. *Be sure tubes are always returned to proper sockets and seated firmly.*

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A.C. POWER-POLARITY SWITCH

A convenient switch has been provided for performing a total of three functions, turning the amplifier on and off, putting the amplifier in "Standby" and selecting the proper polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum. In the "Standby" position the amplifier is kept "warmed up" and ready to play at the instant the switch is advanced to the "On" positions. Two "On" positions have been provided. The hum and hiss level on one of the "On" positions will be noticeably lower — this is the correct "Polarity" for using the amplifier.

In locations of extremely high noise levels, clipping the "Ground Clip" to a grounded object will greatly reduce objectionable noise and hum.

As an added convenience to the artist this amplifier is equipped with a "Standby pilot light" as well as the "Regular pilot light". When the "Amber" light is on, the amplifier is in "Standby"; when the "Red" light is on, the amplifier is "On" and ready to play.

FUSE

The fuse used in this Amplifier is a type 3 AG Slo-Blo of two amperes rating. **DO NOT USE FUSES OF HIGHER RATING.**

SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.

REVERBERATION-ECHO — EFFECTIVE IN CHANNEL 2 ONLY

This unit records music with an electronic pen. The record is made on a film of oil which also serves to lubricate the revolving disc which is the platter for the film. The film is constantly replaced and can never wear out like a magnetic tape. Following the electronic pen are two sensors which reproduce the pattern of electrons for the amplifier. The effect is a multiple choice of echo and reverberant sound with a quality never before achieved.

The control marked "Loudness" controls the amplification separately from the reverb-echo. It is recommended that for average playing some direct sound always be used. This will enhance the effect of the reverb-echo.

"Reverb-Echo" control varies the amount of reverb-echo. A mixture of direct and reverb to suit your taste can be achieved by the proper settings of the two controls "Loudness" and "Reverb-Echo".

The mode control has three positions. Position #1 simulates room reverberation with a soft echo. Position #2 provides reverberation with a bold echo with a given repetition rate. Position #3 is similar to position #2 except that the echo rate is quicker. To quickly identify the different sounds possible, mute the strings near the nut or bridge and then listen to the string plucked with the three different positions of the switch.

IMPORTANT NOTE:—This unit should be operated *only* in the horizontal position. The exact angle is not critical but do not operate upside down, on end or on its back. The recording medium is on oil. The correct amount is placed in the unit at the factory. The unit is sealed at the factory and if not tampered with no problem will be experienced. *Do not open the metal container which surrounds the recording element.*

TREMOLO — EFFECTIVE IN CHANNEL 2 ONLY

The Tremolo effect adds another dimension to the Reverberation effect. It can be used either with or without reverberation at the players discretion. The Tremolo is turned on or off by the use of the foot switch. The Tremolo Frequency Range has been carefully set to cover a wide range of Tremolo effects. The Depth of the Tremolo is also variable being controlled by the Depth control.

OPERATION OF MICROPHONE

The high gain and high fidelity characteristics of this Amplifier, permit the use of most of the popular high impedance microphones for public address work. The microphone should be plugged into the Number One Jack of Channel 1.

SPECTRUM CONTROLS

The wide range of tonal extremes required by different artists can all be accommodated with Gibson Spectrum Control. For maximum loudness with a given power, the "treble" control should be Maximum, the "mid range" minimum, and the bass near 5. With this adjustment the tone controls on the guitar will have their maximum effectiveness.

"Jazz" sound to the artist taste can be had by reducing the "treble", adding some "mid range", and adjusting the "bass" to the artist requirement.

Spectrum Controls plus the tone controls on the artist's instrument offer an endless variety of tonal color.

Gibson

VANGUARD
MODEL GA-77RET AMPLIFIER
"WITH SPECTRUM CONTROL"

INSTRUCTIONS

PRODUCT OF



Gibson Electronics

KALAMAZOO, MICHIGAN

IMPORTANT — READ CAREFULLY BEFORE USE

CAUTION

The Reverb Unit has been carefully constructed. It is, however, a delicate electronic device. Treat it with the same care and respect given a TV set.

Avoid dropping, sudden jolts, or rough handling and it will give excellent service.

UNPACKING

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

TUBES

Make certain all tubes are seated firmly into their respective sockets. Each tube is labeled for proper replacement should any tube be out of its socket. Be especially careful when inserting tubes to see that the pins on the tube are correctly aligned with the holes in the socket before pushing into place. Do not twist tube — push tube straight into socket. It is advisable to check tubes from time to time depending on amount of use and excellence of performance. *Be sure tubes are always returned to proper sockets and seated firmly.*

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use amplifier, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

A.C. POWER-POLARITY SWITCH

A convenient switch has been provided for performing a total of three functions, turning the amplifier on and off, putting the amplifier in "Standby" and selecting the proper polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum. In the "Standby" position the amplifier is kept "warmed up" and ready to play at the instant the switch is advanced to the "On" positions. Two "On" positions have been provided. The hum and hiss level on one of the "On" positions will be noticeably lower — this is the correct "Polarity" for using the amplifier.

In locations of extremely high noise levels, clipping the "Ground Clip" to a grounded object will greatly reduce objectionable noise and hum.

As an added convenience to the artist this amplifier is equipped with a "Standby pilot light" as well as the "Regular pilot light". When the "Amber" light is on, the amplifier is in "Standby"; when the "Red" light is on, the amplifier is "On" and ready to play.

FUSE

The fuse used in this Amplifier is a type 3 AG Slo-Blo of two amperes rating. **DO NOT USE FUSES OF HIGHER RATING.**

SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.

REVERBERATION-ECHO — EFFECTIVE IN CHANNEL 2 ONLY

This unit records music with an electronic pen. The record is made on a film of oil which also serves to lubricate the revolving disc which is the platter for the film. The film is constantly replaced and can never wear out like a magnetic tape. Following the electronic pen are two sensors which reproduce the pattern of electrons for the amplifier. The effect is a multiple choice of echo and reverberant sound with a quality never before achieved.

The control marked "Loudness" controls the amplification separately from the reverb-echo. It is recommended that for average playing some direct sound always be used. This will enhance the effect of the reverb-echo.

"Reverb-Echo" control varies the amount of reverb-echo. A mixture of direct and reverb to suit your taste can be achieved by the proper settings of the two controls "Loudness" and "Reverb-Echo".

The mode control has three positions. Position #1 simulates room reverberation with a soft echo. Position #2 provides reverberation with a bold echo with a given repetition rate. Position #3 is similar to position #2 except that the echo rate is quicker. To quickly identify the different sounds possible, mute the strings near the nut or bridge and then listen to the string plucked with the three different positions of the switch.

IMPORTANT NOTE:—This unit should be operated *only* in the horizontal position. The exact angle is not critical but do not operate upside down, on end or on its back. The recording medium is on oil. The correct amount is placed in the unit at the factory. The unit is sealed at the factory and if not tampered with no problem will be experienced. *Do not open the metal container which surrounds the recording element.*

TREMOLO — EFFECTIVE IN CHANNEL 2 ONLY

The Tremolo effect adds another dimension to the Reverberation effect. It can be used either with or without reverberation at the players discretion. The Tremolo is turned on or off by the use of the foot switch. The Tremolo Frequency Range has been carefully set to cover a wide range of Tremolo effects. The Depth of the Tremolo is also variable being controlled by the Depth control.

OPERATION OF MICROPHONE

The high gain and high fidelity characteristics of this Amplifier, permit the use of most of the popular high impedance microphones for public address work. The microphone should be plugged into the Number One Jack of Channel 1.

SPECTRUM CONTROLS

The wide range of tonal extremes required by different artists can all be accommodated with Gibson Spectrum Control. For maximum loudness with a given power, the "treble" control should be Maximum, the "mid range" minimum, and the bass near 5. With this adjustment the tone controls on the guitar will have their maximum effectiveness.

"Jazz" sound to the artist taste can be had by reducing the "treble", adding some "mid range", and adjusting the "bass" to the artist requirement.

Spectrum Controls plus the tone controls on the artist's instrument offer an endless variety of tonal color.

Gibson
Crestline  *Amplifier*

**MODEL GA-77RVT AMPLIFIER
VANGUARD**

INSTRUCTIONS

PRODUCT OF



Gibson Electronics

KALAMAZOO, MICHIGAN

REVERB UNIT UNPACKING INSTRUCTIONS

IMPORTANT — READ CAREFULLY BEFORE USE

CAUTION

The Reverb Unit has been carefully constructed. It is, however, a delicate electronic device. Treat it with the same care and respect given a TV set.

Avoid dropping, sudden jolts, or rough handling and it will give excellent service. This beautifully musical Reverberation effect is not to be confused with the repeating signal produced by the mechanical tape recorder style of echo units.

UNPACKING

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

TUBES

Make certain all tubes are seated firmly into their respective sockets. Each tube is labeled for proper replacement should any tube be out of its socket. Be especially careful when inserting tubes to see that the pins on the tube are correctly aligned with the holes in the socket before pushing into place. Do not twist tube — push tube straight into socket. It is advisable to check tubes from time to time depending on amount of use and excellence of performance. *Be sure tubes are always returned to proper sockets and seated firmly.*

REVERB POWER UNIT SET UP INSTRUCTIONS

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use power, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

The Reverberation Unit must always be placed on a solid non-vibrating surface or footing when in operation.

Any sudden shock, jolt, or wiggle, when in use, will cause undesirable noise. The resultant clatter of an inadvertant shake or bump is annoying but not necessarily harmful. This delicate sensitivity to shock and vibration is a normal characteristic of the device.

No problem will be encountered while the unit is connected if supporting surface is solid and unit is not moved about. To avoid the unwanted noise, turn the reverberation unit off by pressing the foot switch.

OPERATION OF MICROPHONE

The high gain and high fidelity characteristics of this Amplifier, permit the use of most of the popular high impedance microphones for public address work. The microphone should be plugged into the Number One Jack of Channel 1.

If the Microphone jacks are not in use, turn the Channel one Loudness control completely off.

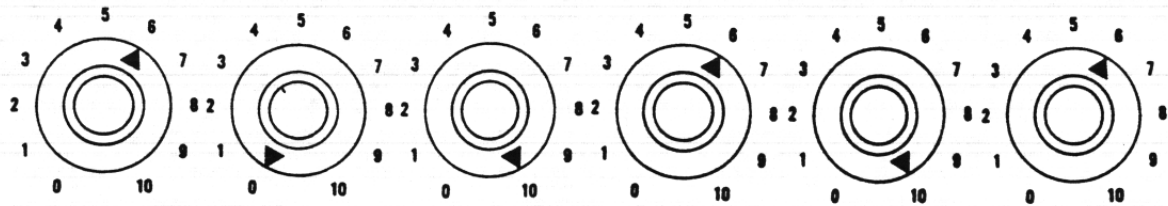
MODEL GA-77RVT AMPLIFIER

REVERBERATION — EFFECTIVE IN CHANNEL 2 ONLY

Due to the unusual flexibility of the Reverberation circuit, it is important that the Operator understands the various control settings to obtain the total range of Reverberation effects of which this Amplifier is capable. Illustrated below are several examples of control settings which will reproduce different Reverberation effects.

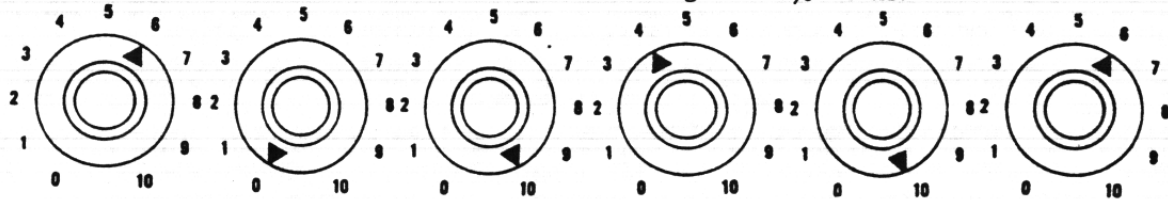
Loudness 2 Bass Treble Reverberation Depth Frequency

Example No. 1. 50% Main Signal - 50% Reverb.



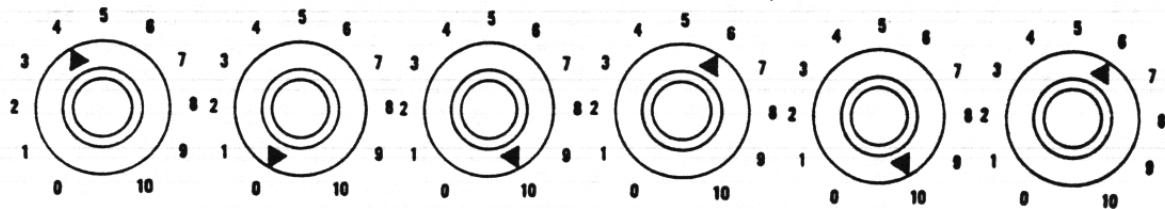
INSTRUMENT SETTINGS — Tone control and/or toggle switch in maximum treble position. Volume control setting $2\frac{1}{2}$ to 3.

Example No. 2. 75% Main Signal - 25% Reverb.



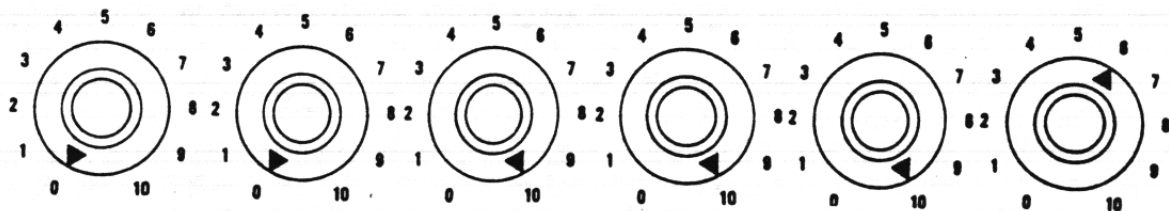
INSTRUMENT SETTINGS — Tone control same as above, Volume control setting 5 to 6.

Example No. 3. 25% Main Signal - 75% Reverb.



INSTRUMENT SETTINGS — Same as Example No. 2.

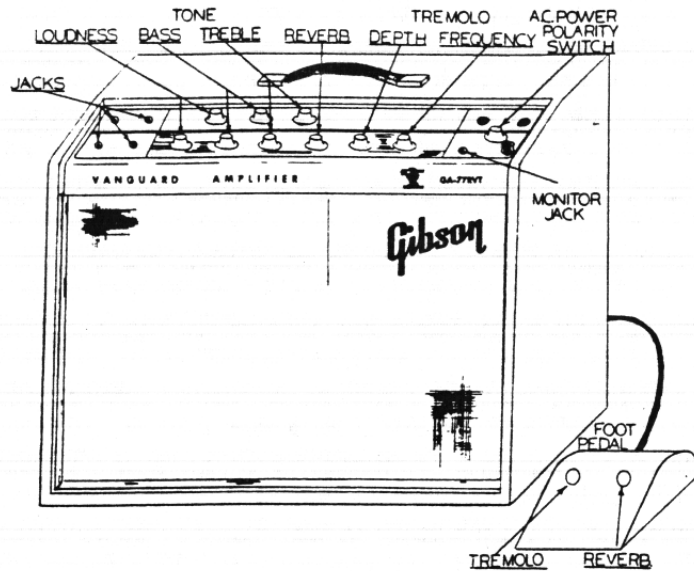
Example No. 4. 100% Reverb.



INSTRUMENT SETTINGS — Same as Example No. 2.

FOOT SWITCH MUST BE IN THE "ON" POSITION FOR REVERBERATION.

CONTROL LOCATIONS

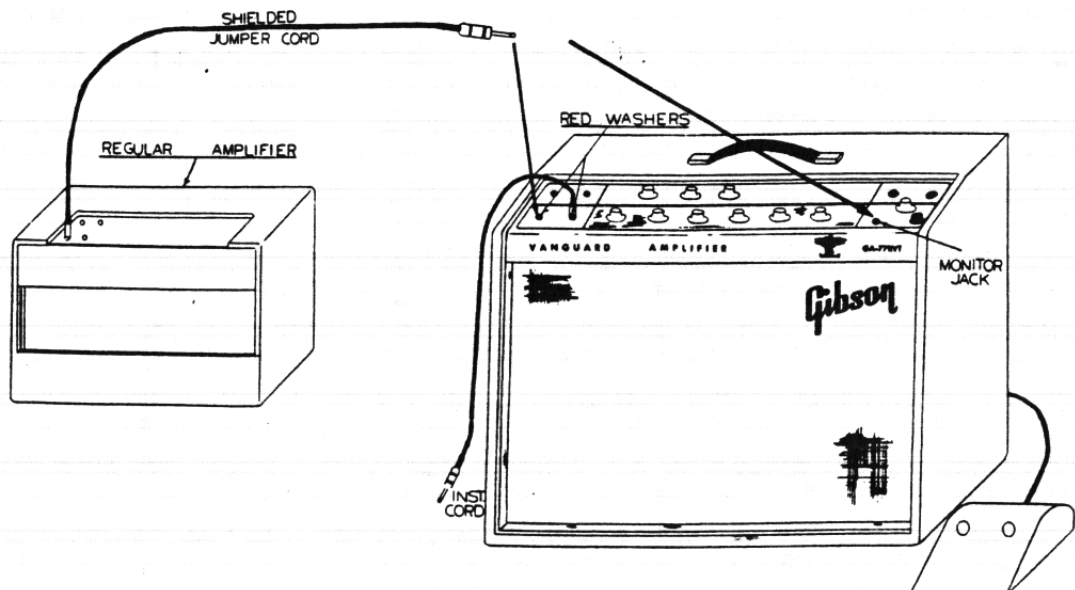


OPERATIONAL INSTRUCTIONS FOR USE OF THIS REVERBERATION AMPLIFIER IN CONJUNCTION WITH A REGULAR AMPLIFIER

The use of this Reverberation Amplifier with a Regular Amplifier will add a spacious liveliness to instrument reproduction that is far beyond the possibilities of single amplifier Reverberation. Listed below are the simple instructions for this type of operation.

1. Plug the A.C. cord of this Reverberation Amplifier into a convenient outlet.
2. Now plug one end of a shielded jumper cord into the No. 1 Jack of Channel 2 (the one with the Red Washer) Plug the other end of the jumper cord into the input jack normally used in a regular amplifier. Set regular amplifier for normal volume.
3. The Guitar instrument cord should be plugged into the No. 2 Jack of Channel 2 of this Reverberation Amplifier. Plug the A.C. line cord of the Regular Amplifier into a convenient outlet.
4. Turn on the A.C. switches for both amplifiers and the tone controls may be set as illustrated on page 2.
5. If both Reverb. and Normal Signals are to be heard at the regular Amplifier, plug the Shielded Jumper Cord into the Monitor Jack of this Reverberation Amplifier instead of the Jack with the Red Washer.

Illustrated below is a pictorial diagram showing the correct hook-up.



6. Place the combination reverberation, tremolo foot control switch in a convenient position and the system is ready to operate. Either, or both, reverberation and tremolo effect is available by switching the indicated switch ON or OFF.
7. The percentage of Reverberation can be controlled by the Reverberation Control, Channel 2 Loudness Control and the Volume Control of the Regular Amplifier.
8. The instrument is ready to be played. If reverb signal is not coming through, step on the foot switch as it may be in the OFF position. Thereafter, the reverb effect can be conveniently cut in or out at a snap of the foot switch.
9. When the Reverberation Foot Switch is OFF, the reverb unit operates as a regular amplifier adding an extra self-powered speaker that expands the regular amplifier sound without reverberation. If a cord length space separates the regular amplifier and the reverberation unit, an excellent impression of the "Stereo" and echo effect is obtained.
When Reverberation Foot Switch is ON, the reverb signal is super-imposed on the above "Stereo" sound with a minimum contrast of volume change.

TREMOLO — EFFECTIVE IN CHANNEL 2 ONLY

The Tremolo effect adds another dimension to the Reverberation effect. It can be used either with or without reverberation at the players discretion. The Tremolo is turned on or off by the use of the foot switch. The Tremolo Frequency Range has been carefully set to cover a wide range of Tremolo effects. The Depth of the Tremolo is also variable being controlled by the Depth control.

A.C. POWER-POLARITY SWITCH

A convenient switch has been provided for performing a total of three functions, turning the amplifier on and off, putting the amplifier in "Standby" and selecting the proper polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum. In the "Standby" position the amplifier is kept "warmed up" and ready to play at the instant the switch is advanced to the "On" positions. Two "On" positions have been provided. The hum and hiss level on one of the "On" positions will be noticeably lower — this is the correct "Polarity" for using the amplifier.

In locations of extremely high noise levels, clipping the "Ground Clip" to a grounded object will greatly reduce objectionable noise and hum.

As an added convenience to the artist this amplifier is equipped with a "Standby pilot light" as well as the "Regular pilot light". When the "Green" light is on the amplifier is in "Standby"; when the "Red" light is on the amplifier is "On" and ready to play.

FUSE

The fuse used in this Amplifier is a type 3AG of three amperes rating. DO NOT USE FUSES OF HIGHER RATING

SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.

Bell 30 Stereo

MODEL GA-78 AMPLIFIER

INSTRUCTIONS

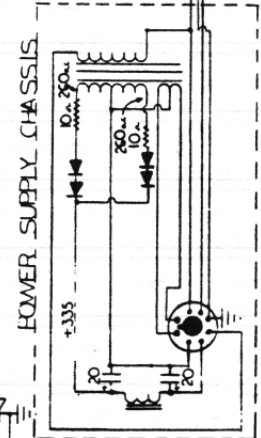
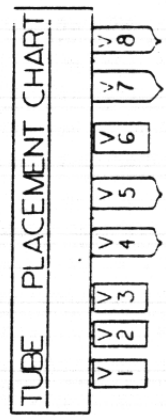
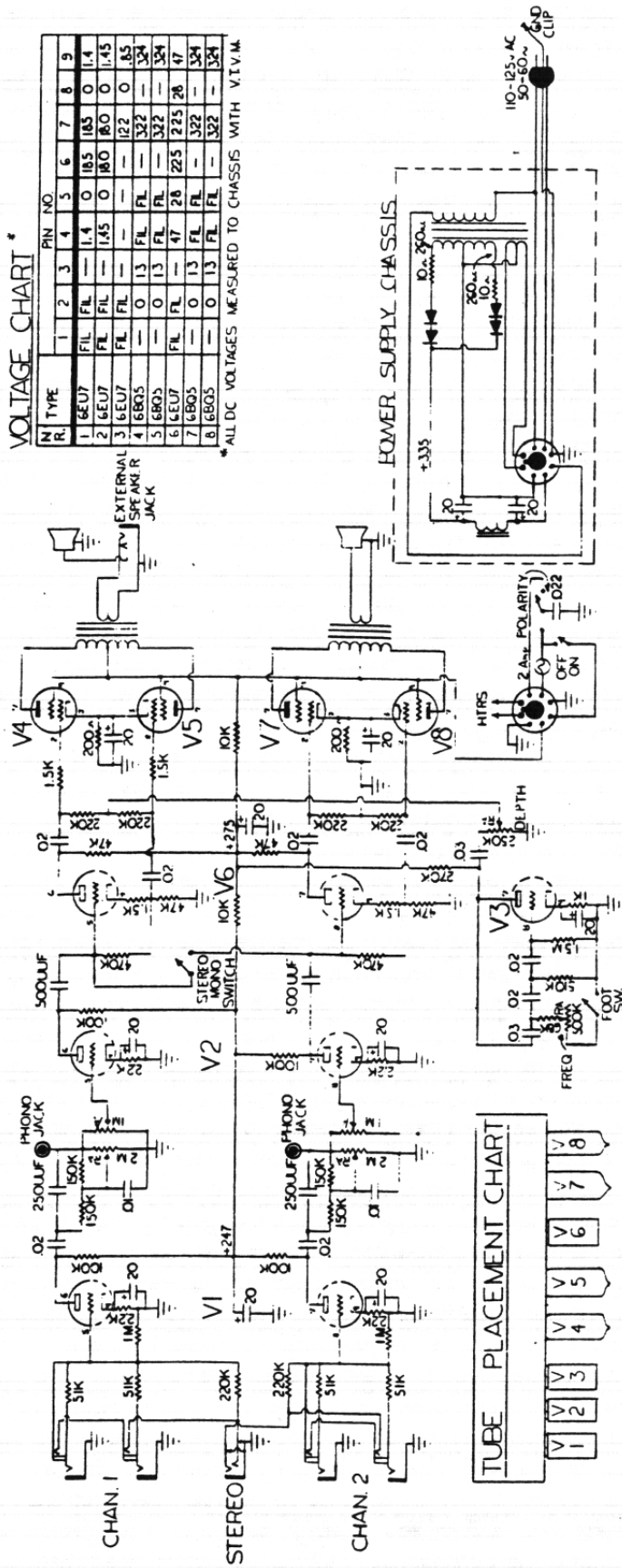
PRODUCT OF ELECTRONICS DIVISION, GIBSON INC., KALAMAZOO, MICH.

GA-78

VOLTAGE CHART *

TUBE	TYPE	1	2	3	4	5	6	7	8	9
1	6EU7	FL	FL	—	1.4	0	185	185	0	1.4
2	6EU7	FL	FL	—	1.45	0	180	180	0	1.45
3	6EU7	FL	FL	—	—	—	—	122	0	1.65
4	6BQ5	—	0	13	FL	FL	—	322	—	324
5	6BQ5	—	0	13	FL	FL	—	322	—	324
6	6EU7	FL	FL	—	47	28	225	225	28	47
7	6BQ5	—	0	13	FL	FL	—	322	—	324
8	6BQ5	—	0	13	FL	FL	—	322	—	324

* ALL DC VOLTAGES MEASURED TO CHASSIS WITH V.T.M.



BELL 30 STEREO MODEL GA-78 AMPLIFIER

The Bell 30 Stereo is a true Sterec Amplifier having two completely independent channels with respective 15 watt power amplifiers. Each amplifier channel can be used independently by using the Stereo input jacks or they can be combined for 30 watt Monaural reproduction by moving the slide switch marked Stereo-Monaural to the Monaural position.

STEREO OPERATION

Place the slide switch marked Stereo-Monaural in the Stereo position.

If the Stereo instrument uses a special two conductor shield cable with a "Y" junction, place the plug associated with the Treble pick-up into either jack of channel No. 1 and the plug associated with the Bass pick-up into either jack of channel No. 2.

For instruments using two conductor shielded cable with single three circuit plugs on each end, place plug in center jack.

Set all controls as desired. The volume for each channel should be adjusted until the sound appears equal to the players ear. Tone control settings will affect the volume setting somewhat; therefore, the settings of the two volume controls will not necessarily be numerically identical.

MONAURAL OPERATION

Place the slide switch marked Stereo-Monaural in the Monaural position. This places the two channels in parallel and combines the output of both channels. Monaural instruments can now be used in either channel.

TREMOLO

The Tremolo action is effective on the treble or upper channel and is turned on and off by means of a push type switch. The Tremolo frequency is controlled by the variable control marked "Frequency." The speeds have been carefully set to cover a wide range of tremolo effects. The Depth of the Tremolo is also variable, being controlled by the Depth control.

POLARITY SWITCH

This added convenience enables the player to quickly find the polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum.

OPERATION OF MICROPHONE

The high gain and high fidelity characteristics of the Bell 30 Stereo Amplifier permit the use of most of the popular high impedance microphones for public address work. The microphone should be plugged into the Number 2 channel and it is not recommended that other instruments be used in conjunction with the microphone.

When using a microphone it is important that the Gibson 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the "Microphone" jack and advance the Microphone volume control until a feedback squeal or howl is produced on the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.



FIGURE A

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the Amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, the Transportation Company should be notified immediately, and a claim placed.

CAUTION

Damage to the Amplifier will result if it is connected to an improper power source. This Amplifier is designed to be operated on 105 - 125 volt, 50 - 60 cycle alternating current ONLY. Check the voltage from the power lines to determine that it is not over 125 volts, and that the frequency of the current is either 50 or 60 cycles.

When ready to use power, plug the power cord into the electric outlet and move the switch to the ON position. Approximately one minute is required for the tubes to heat before the Amplifier is ready for use.

TUBES

Check tubes for proper positioning before placing the Amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

SERVICE

If the Amplifier is in need of servicing, consult a reliable radio man. The electrical diagram herein should be shown to the repairman to assist him in servicing the Amplifier.

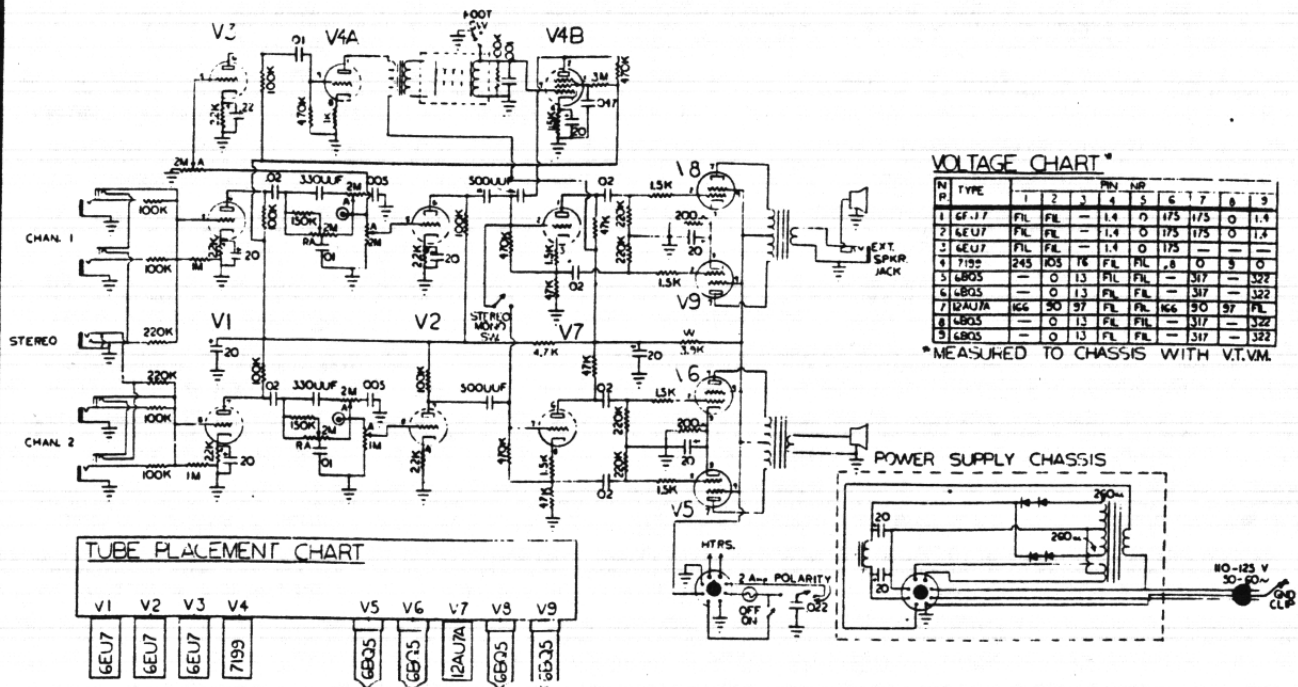
FUSE

The fuse used in the Bell 30 Stereo Amplifier is a type 3AG of two ampere rating.
DO NOT USE A FUSE OF HIGHER RATING.

Maestro

MAESTRO STEREO 30

MODEL GA-78RV



PRODUCT OF ELECTRONICS DIVISION, GIBSON INC., KALAMAZOO, MICH.

REVERBERATION — EFFECTIVE IN CHANNEL 1 ONLY

An exciting new dimension of sound providing Concert Hall effects in any size room.

The Reverberation unit is mounted vertically inside the center front of the Amplifier Case. The Reverberation mechanism is equipped with a locking device which provides protection for the mechanism during transportation. Before operating the Amplifier, unlock the Reverberation unit by pressing the Red Lever up until it is in a vertical position. Remote control of the Reverberation effect is accomplished by an Off-On foot switch with fifteen feet of cable.

Due to the unusual flexibility of the GA-78RV Reverberation circuit, it is important that the Operator understands the various control settings to obtain the total range of Reverberation effects of which this Amplifier is capable. Illustrated below are several examples of control settings which will reproduce different Reverberation effects.

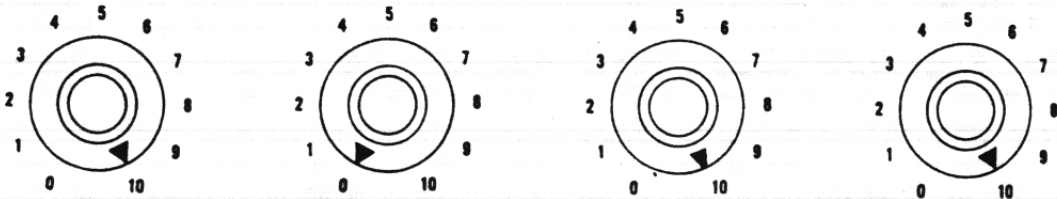
Volume 1

Bass

Treble

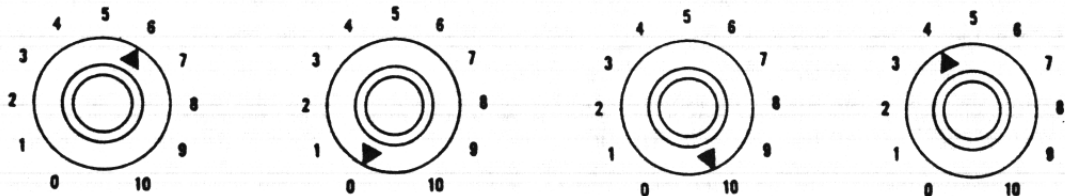
Reverberation

Example No. 1. 50% Main Signal - 50% Reverb.



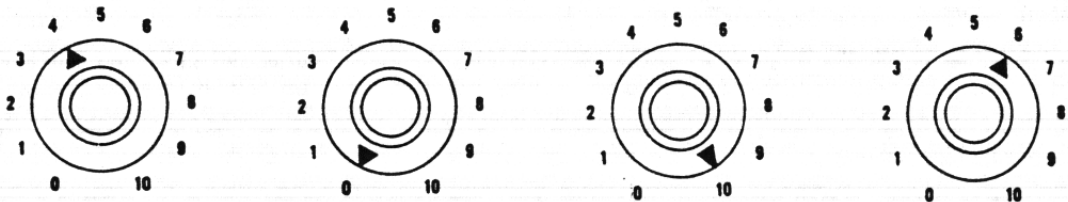
INSTRUMENT SETTINGS — Tone control and/or toggle switch in maximum treble position. Volume control setting $2\frac{1}{2}$ to 3.

Example No. 2. 75% Main Signal - 25% Reverb.



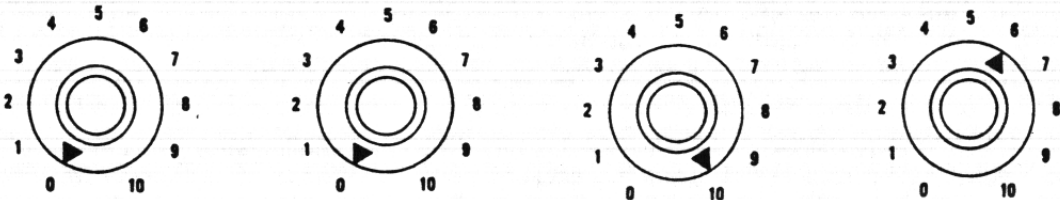
INSTRUMENT SETTINGS — Tone control same as above, Volume control setting 5 to 6.

Example No. 3. 25% Main Signal - 75% Reverb.



INSTRUMENT SETTINGS — Same as Example No. 2.

Example No. 4. 100% Reverb.



INSTRUMENT SETTINGS — Same as Example No. 2.

FOOT SWITCH MUST BE IN THE "ON" POSITION FOR REVERBERATION.

IMPORTANT — Always lock the Reverberation mechanism by lowering the Red Lever until it stops (horizontal position) before transporting the Amplifier. Failure to do so may cause severe damage to the Reverberation unit.

POLARITY SWITCH

This added convenience enables the player to quickly find the polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum.

OPERATION OF MICROPHONE

The high gain and high fidelity characteristics of the GA-78RV Amplifier permit the use of most of the popular high impedance microphones for public address work. The microphone should be plugged into the Number 2 channel and it is not recommended that other instruments be used in conjunction with the microphone.

When using a microphone it is important that the Gibson 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the "Microphone" jack and advance the Microphone volume control until a feedback squeal or howl is produced on the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.



FIGURE A

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the Amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, the Transportation Company should be notified immediately, and a claim placed.

CAUTION

Damage to the Amplifier will result if it is connected to an improper power source. This Amplifier is designed to be operated on 105 - 125 volt, 50 - 60 cycle alternating current ONLY. Check the voltage from the power lines to determine that it is not over 125 volts, and that the frequency of the current is either 50 or 60 cycles.

When ready to use power, plug the power cord into the electric outlet and move the switch to the ON position. Approximately one minute is required for the tubes to heat before the Amplifier is ready for use.

TUBES

Check tubes for proper positioning before placing the Amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

SERVICE

If the Amplifier is in need of servicing, consult a reliable radio man. The electrical diagram herein should be shown to the repairman to assist him in servicing the Amplifier.

FUSE

The fuse used in the GA-78RV Amplifier is a type 3AG of two ampere rating.
DO NOT USE A FUSE OF HIGHER RATING.

GIBSON

**MULTI-PURPOSE
MODEL GA-79 AMPLIFIER**

INSTRUCTIONS

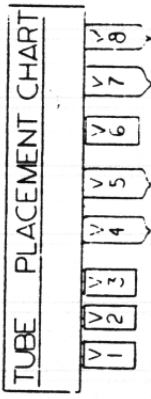
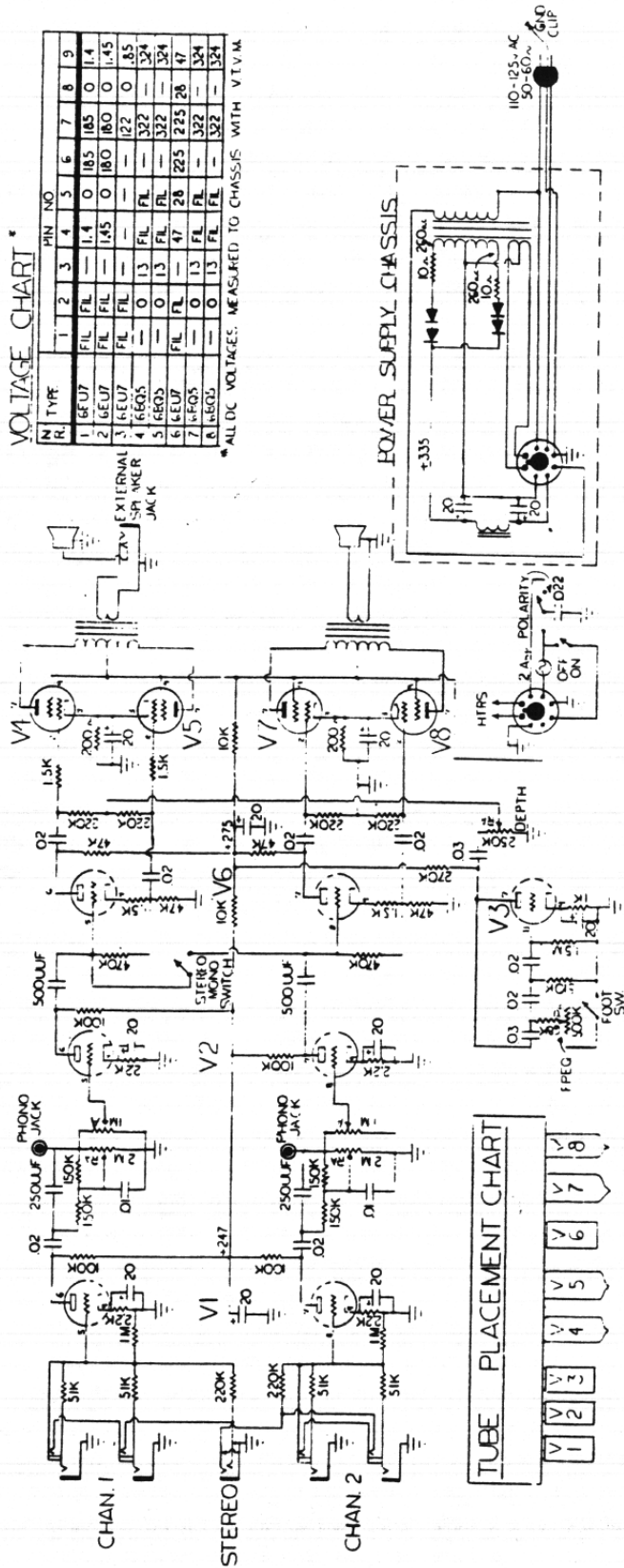
GIBSON INC., KALAMAZOO, MICHIGAN

GA-79

VOLTAGE CHART *

PLATE	TYPE	1	2	3	4	5	6	7	8	9
1	6EU7	FIL	FIL	1.4	0	185	185	0	1.4	
2	6EU7	FIL	FIL	1.45	0	180	180	0	1.45	
3	6EU7	FIL	FIL	0	13	FIL	0	22	0	1.85
4	6EQ5	FIL	FIL	0	13	FIL	0	22	0	1.85
5	6EQ5	FIL	FIL	0	13	FIL	0	22	0	1.85
6	6EU7	FIL	FIL	0	13	FIL	0	22	0	1.85
7	6EQ5	FIL	FIL	0	13	FIL	0	22	0	1.85
8	6EQ5	FIL	FIL	0	13	FIL	0	22	0	1.85

* ALL DC VOLTAGES MEASURED TO CHASSIS WITH VTVM.



GIBSON MULTI-PURPOSE GA-79 AMPLIFIER

The Multi-Purpose is a true Stereo Amplifier having two completely independent channels with respective 15 watt power amplifiers. Each amplifier channel can be used independently by using the Stereo input jacks or they can be combined for 30 watt Monaural reproduction by moving the slide switch marked Stereo-Monaural to the Monaural position.

STEREO OPERATION

Place the slide switch marked Stereo-Monaural in the Stereo position.

If the Stereo instrument uses a special two conductor shield cable with a "Y" junction, place the plug associated with the Treble pick-up into either jack of channel No. 1 and the plug associated with the Bass pick-up into either jack of channel No. 2.

For instruments using two conductor shielded cable with single three circuit plugs on each end, place plug in center jack.

Set all controls as desired. The volume for each channel should be adjusted until the sound appears equal to the player's ear. Tone control settings will affect the volume setting somewhat; therefore, the settings of the two volume controls will not necessarily be numerically identical.

MONAURAL OPERATION

Place the slide switch marked Stereo-Monaural in the Monaural position. This places the two channels in parallel and combines the output of both channels. Monaural instruments can now be used in either channel.

TREMOLO

The Tremolo action is effective on the treble or upper channel and is turned on and off by means of a push type switch. The Tremolo frequency is controlled by the variable control marked "Frequency." The speeds have been carefully set to cover a wide range of tremolo effects. The Depth of the Tremolo is also variable, being controlled by the Depth control.

POLARITY SWITCH

This added convenience enables the player to quickly find the polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum.

OPERATION OF MICROPHONE

The high gain and high fidelity characteristics of the Multi-Purpose Amplifier permit the use of most of the popular high impedance microphones for public address work. The microphone should be plugged into the Number 2 channel and it is not recommended that other instruments be used in conjunction with the microphone.

When using a microphone it is important that the Gibson 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the "Microphone" jack and advance the Microphone volume control until a feedback squeal or howl is produced on the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.



FIGURE A

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the Amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, the Transportation Company should be notified immediately, and a claim placed.

CAUTION

Damage to the Amplifier will result if it is connected to an improper power source. This Amplifier is designed to be operated on 105 - 125 volt, 50 - 60 cycle alternating current **ONLY**. Check the voltage from the power lines to determine that it is not over 125 volts, and that the frequency of the current is either 50 or 60 cycles.

When ready to use power, plug the power cord into the electric outlet and move the switch to the **ON** position. Approximately one minute is required for the tubes to heat before the Amplifier is ready for use.

TUBES

Check tubes for proper positioning before placing the Amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

SERVICE

If the Amplifier is in need of servicing, consult a reliable radio man. The electrical diagram herein should be shown to the repairman to assist him in servicing the Amplifier.

FUSE

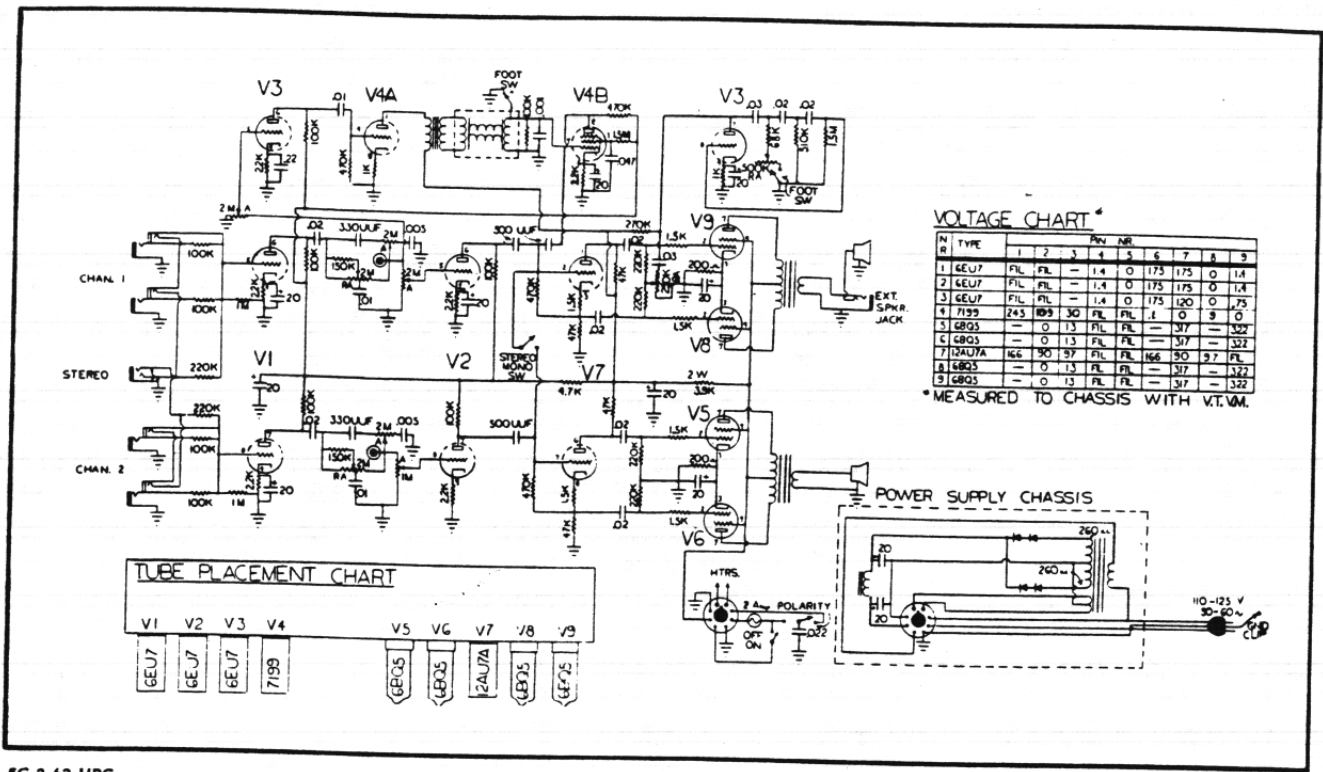
The fuse used in the Multi-Purpose Amplifier is a type 3AG of two ampere rating.
DO NOT USE A FUSE OF HIGHER RATING.

GIBSON

STEREO-REVERB.-TREMOLO
MODEL GA-79RVT AMPLIFIER

INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICH.



3C 2-62 HPC.

GIBSON STEREO-REVERB.-TREMOLO GA-79RVT AMPLIFIER

The GA-79RVT is a true Stereo Amplifier having two completely independent channels with respective 15 watt power amplifiers. Each amplifier channel can be used independently by using the Stereo input jacks or they can be combined for 30 watt Monaural reproduction by moving the slide switch marked Stereo-Monaural to the Monaural position.

STEREO OPERATION

Place the slide switch marked Stereo-Monaural in the Stereo position.

If the Stereo instrument uses a special two conductor shield cable with a "Y" junction, place the plug associated with the Treble pick-up into either jack of channel No. 1 and the plug associated with the Bass pick-up into either jack of channel No. 2.

For instruments using two conductor shielded cable with single three circuit plugs on each end, place plug in center jack.

Set all controls as desired. The volume for each channel should be adjusted until the sound appears equal to the players ear. Tone control settings will affect the volume setting somewhat; therefore, the settings of the two volume controls will not necessarily be numerically identical.

MONAURAL OPERATION

Place the slide switch marked Stereo-Monaural in the Monaural position. This places the two channels in parallel and combines the output of both channels. Monaural instruments can now be used in either channel.

REVERBERATION — EFFECTIVE IN CHANNEL 1 ONLY

An exciting new dimension of sound providing Concert Hall effects in any size room.

The Reverberation unit is mounted vertically inside the center front of the Amplifier Case. The Reverberation mechanism is equipped with a locking device which provides protection for the mechanism during transportation. Before operating the Amplifier, unlock the Reverberation unit by pressing the Red Lever up until it is in a vertical position. Remote control of the Reverberation effect is accomplished by an Off-On foot switch with fifteen feet of cable.

Due to the unusual flexibility of the GA-79RVT Reverberation circuit, it is important that the Operator understands the various control settings to obtain the total range of Reverberation effects of which this Amplifier is capable. Illustrated below are several examples of control settings which will reproduce different Reverberation effects.

Volume 1

● Treble

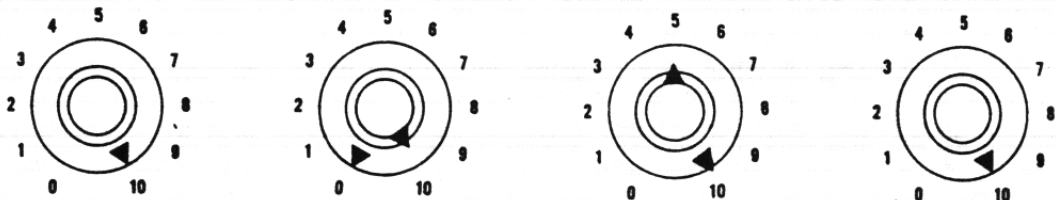
○ Bass

● Frequency

○ Depth

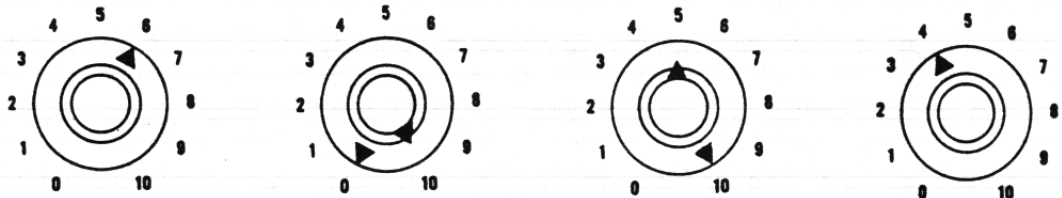
Reverberation

Example No. 1. 50% Main Signal - 50% Reverb.



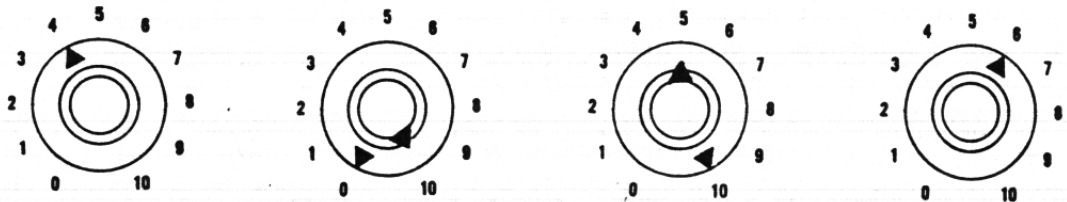
INSTRUMENT SETTINGS — Tone control and/or toggle switch in maximum treble position. Volume control setting 2½ to 3.

Example No. 2. 75% Main Signal - 25% Reverb.



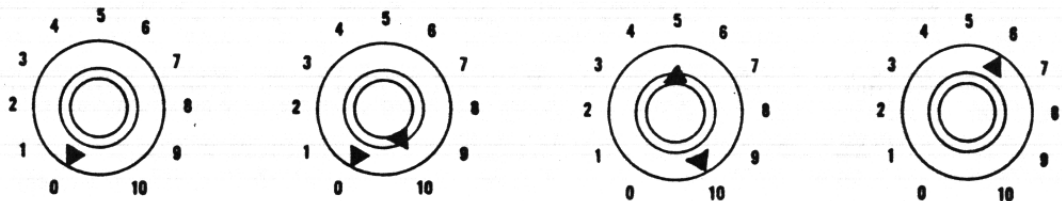
INSTRUMENT SETTINGS — Tone control same as above, Volume control setting 5 to 6.

Example No. 3. 25% Main Signal - 75% Reverb.



INSTRUMENT SETTINGS — Same as Example No. 2.

Example No. 4. 100% Reverb.



INSTRUMENT SETTINGS — Same as Example No. 2.

FOOT SWITCH MUST BE IN THE "ON" POSITION FOR REVERBERATION.

IMPORTANT — Always lock the Reverberation mechanism by lowering the Red Lever until it stops (horizontal position) before transporting the Amplifier. Failure to do so may cause severe damage to the Reverberation unit.

TREMOLO

The Tremolo action is effective on the treble or upper channel and is turned on and off by means of a push type switch. The Tremolo frequency is controlled by the variable control marked "Frequency." The speeds have been carefully set to cover a wide range of tremolo effects. The Depth of the Tremolo is also variable, being controlled by the Depth control.

POLARITY SWITCH

This added convenience enables the player to quickly find the polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum.

OPERATION OF MICROPHONE

The high gain and high fidelity characteristics of the GA-79RVT Amplifier permit the use of most of the popular high impedance microphones for public address work. The microphone should be plugged into the Number 2 channel and it is not recommended that other instruments be used in conjunction with the microphone.

When using a microphone it is important that the Gibson 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the "Microphone" jack and advance the Microphone volume control until a feedback squeal or howl is produced on the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.



FIGURE A

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the Amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, the Transportation Company should be notified immediately, and a claim placed.

CAUTION

Damage to the Amplifier will result if it is connected to an improper power source. This Amplifier is designed to be operated on 105 - 125 volt, 50 - 60 cycle alternating current ONLY. Check the voltage from the power lines to determine that it is not over 125 volts, and that the frequency of the current is either 50 or 60 cycles.

When ready to use power, plug the power cord into the electric outlet and move the switch to the ON position. Approximately one minute is required for the tubes to heat before the Amplifier is ready for use.

TUBES

Check tubes for proper positioning before placing the Amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

SERVICE

If the Amplifier is in need of servicing, consult a reliable radio man. The electrical diagram herein should be shown to the repairman to assist him in servicing the Amplifier.

FUSE

The fuse used in the GA-79RVT Amplifier is a type 3AG of two ampere rating. DO NOT USE A FUSE OF HIGHER RATING.

GIBSON

VARI-TONE AMPLIFIER
GA-80

INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICHIGAN

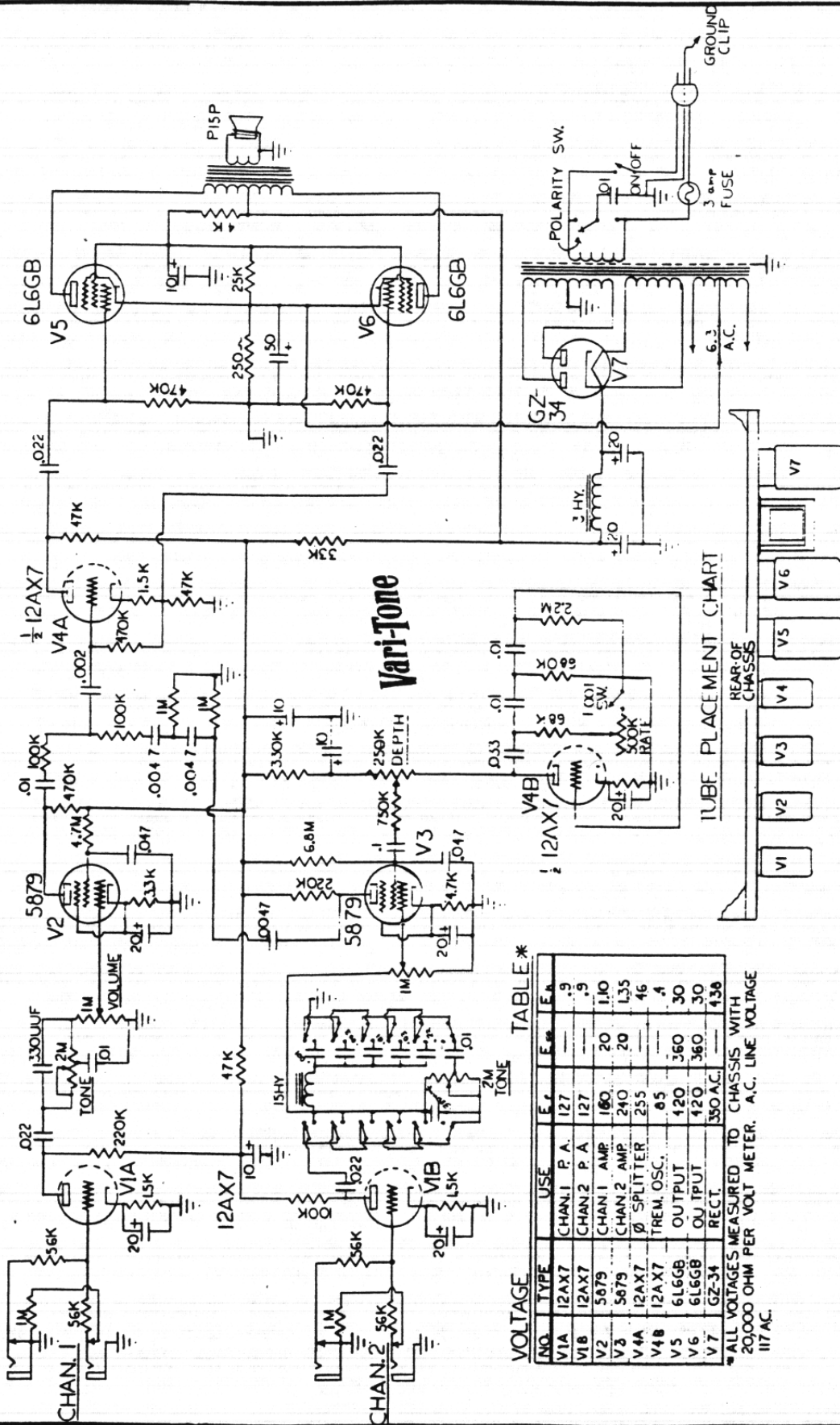
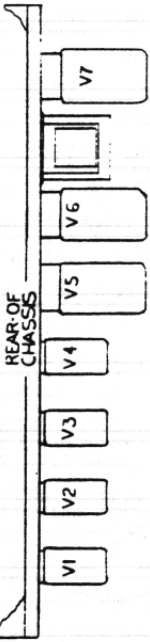


TABLE *

NO.	TUBE TYPE	USE	E _c	E _b	E _a
V1A	12AX7	CHAN. 1 P. A.	127	—	.9
V1B	12AX7	CHAN. 2 P. A.	127	—	.9
V2	5879	CHAN. 1 AMP.	160	20	1.10
V3	5879	CHAN. 2 AMP.	240	20	1.35
V4A	12AX7	Ø SPLITTER	255	—	.46
V4B	12AX7	TREMOLO OSC.	65	—	.4
V5	6L6GB	OUTPUT	120	360	.30
V6	6L6GB	OUTPUT	120	360	.30
V7	GZ-34	RECT.	330 A.C.	—	1.36

* ALL VOLTAGES MEASURED TO CHASSIS WITH 20,000 OHM PER VOLT METER. A.C. LINE VOLTAGE 117 AC.

TUBE PLACEMENT CHART



GIBSON VARI-TONE AMPLIFIER — MODEL GA-80

The Gibson Vari-Tone amplifier is the latest and finest development in instrument amplifiers aimed at providing the guitar player with the widest possible selection of tone colorings.

POWER OUTPUT:

The Gibson Vari-Tone amplifier is a high fidelity amplifier capable of a normal output of 25 watts and peak output in excess of 35 watts.

FOUR INPUT CIRCUITS:

Four high gain input jacks for various combinations of electronic instruments and microphone adjustable to a wide variety of volume and tone coloring.

VARI-TONE SELECTOR, CHANNEL 2:

The six pre-set push button switches place a wide choice of tone colorings at the player's command. This extremely versatile Vari-Tone Selector has six fundamental positions. Pushing the first or Number I push button switches the amplifier to conventional operation, the regular tone control providing a wide range of tonal variations. Push buttons II through VI provides five pre-set tonal colorations, that are entirely new. These colorations add new dimensions to the amplified guitar sound.

15" HEAVY DUTY SPEAKER:

The 15" heavy duty speaker used in the Gibson Vari-Tone amplifier has been designed especially for instrument reproduction. The sturdy felted cone and the heavy duty new type Alnico V magnet assures a stable frequency response over a much longer period of time than was possible with older types of cones and magnets.

POLARITY SWITCH:

This added convenience enables the player to quickly find the polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum.

TREMOLO:

This improved tremolo has been carefully designed to operate only in the No. 2 Channel, thereby making it possible to use a microphone or a second and third instrument in Channel No. 1 without interaction from the tremolo.

MICROPHONE OPERATION:

Because of the high power output, high gain, and high fidelity characteristics of the Gibson Vari-Tone amplifier, it makes an exceptionally fine public address system when used with either the crystal, dynamic or velocity types of microphones.

While the amplifier will operate very well with any of the above mentioned microphones, it is recommended that a Gibson dealer be consulted before investing in a new microphone. Authorized Gibson dealers can supply a microphone which has been selected and matched to this amplifier, thus insuring the most faithful reproduction of voice and music.

When using a microphone it is important that a shielded plug be attached to the cable. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise objectional hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the MICROPHONE socket and advance the Microphone Volume Control until a feedback squeal or howl is produced by the loudspeakers. Reduce the Volume Control to just below the feedback point. This setting will vary considerably depending upon the size of the room, its acoustical properties and the distance between the microphone and the loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.



FIGURE A

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the Amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, the Transportation Company should be notified immediately, and a claim placed.

CAUTION

Damage to the Amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105 - 125 volt, 50 - 60 cycle alternating current **ONLY**. Check the voltage from the power lines to determine that it is not over 125 volts, and the frequency of the current is either 50 or 60 cycles.

When ready to use power, plug the power cord into the electric outlet and move the switch to the ON position. Approximately one minute is required for the tubes to heat before the Amplifier is ready to use.

TUBES

Check tubes for proper positioning before placing the Amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

GROUND CLIP

The AC Line Cord is equipped with an external Ground Clip that can be attached to any grounded object such as a water pipe, steam radiator, or to a grounded circuit such as is used in recording and broadcasting studios. This reduces extraneous noises and hum — a feature very essential for top notch performance.

SERVICE

If the Amplifier is in need of servicing, consult a reliable radio man. The electrical diagram attached to the amplifier will assist the repair man in servicing.

FUSE

The fuse in the GA-80 Vari-Tone Amplifier is a type 3AG Slo-Blo of three ampere rating. **DO NOT USE A FUSE OF HIGHER RATING.**

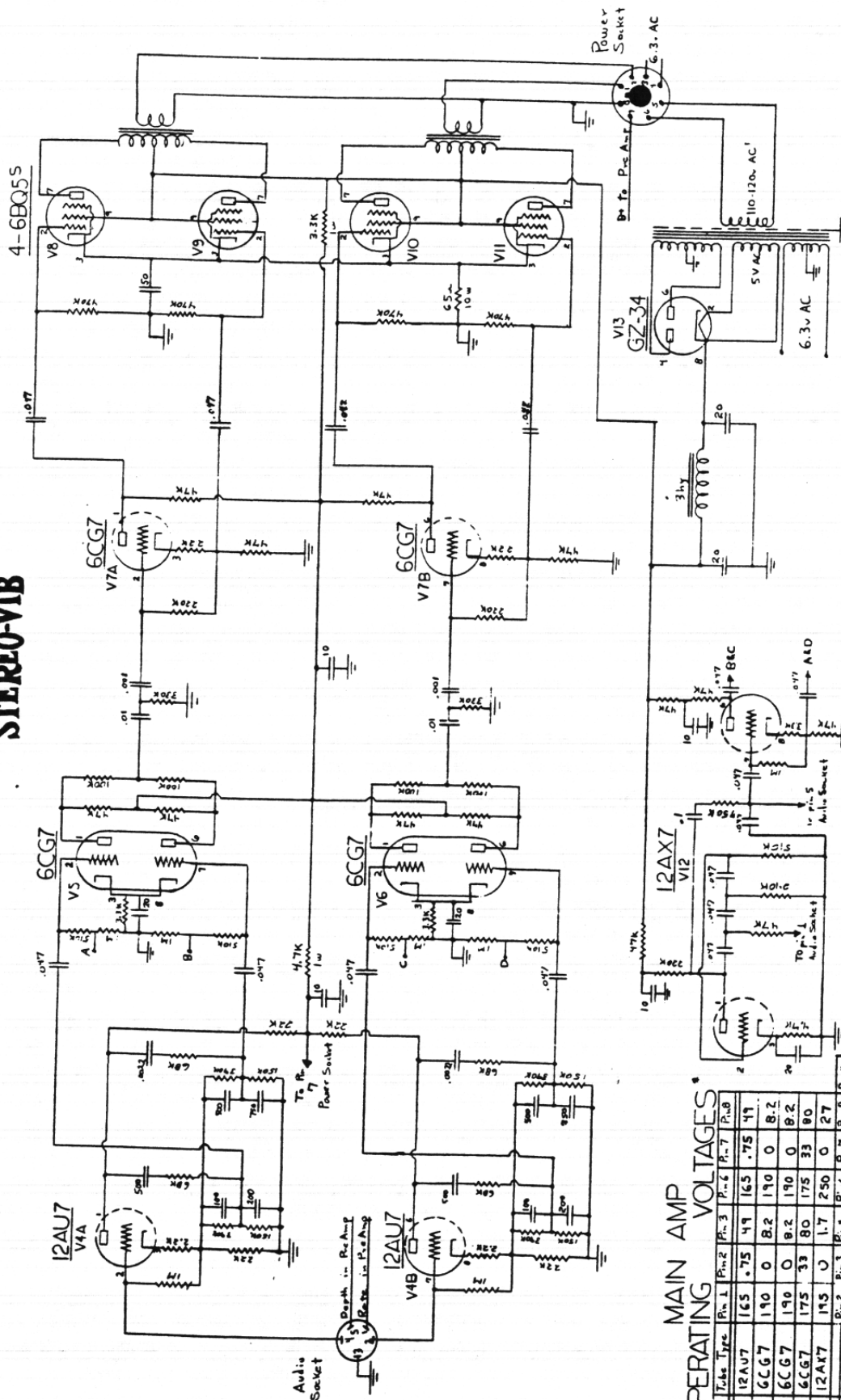
GIBSON

MODEL GA-83S STEREO-VIB AMPLIFIER

INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICH.

GA-835 STEREO-VIB



MAIN AMP OPERATING VOLTAGES

Tube Type	Pn-1	Pn-2	Pn-3	Pn-4	Pn-5	Pn-6	Pn-7	Pn-8	Pn-9
V4 12AU7	165	.75	44	165	.75	44			
V5 6CG7	190	0	8.2	190	0	8.2			
V6 6CG7	190	0	8.2	190	0	8.2			
V7 6CG7	175	33	80	175	33	80			
V12 12AX7	195	0	1.7	250	0	27			
V8 6BQ5									
V9 6BQ5	0	10.8							
V10 6BQ5	0	10.8							
V11 6BQ5	0	10.8							
V13 6Z-34	5	AC							

*ALL DC VOLTAGES MEASURED TO CHASSIS WITH 20000 OHM PER VOLT METER.

GIBSON GA-83S STEREO-VIB AMPLIFIER

The Gibson GA-83S Stereo-Vib amplifier is a true Stereo amplifier having two completely independent channels with respective 18 watt power amplifiers. Each amplifier channel can be used independently by using the Stereo input jacks or for monaural operation, using monaural input jacks, the two amplifiers combine their output to a full 36 watts.

STEREO OPERATION

Place the rotary switch marked Stereo-Monaural in the Stereo position.

Gibson Stereo Guitars are furnished with a special two conductor shielded cable with a "Y" junction. Place the red plug from the "Y" connector in the red Stereo jack. Place the gray plug from the "Y" connector in the other Stereo jack. Place the special two conductor plug at the opposite end of the "Y" instrument cord in the instrument jack. This arrangement connects the bridge or treble pick-up to the two right side speakers and the fingerboard or bass pick-up to the two left side speakers.

Concentric controls on the amplifier control panel provide a convenient means for adjusting volume, bass and treble tone. The small upper knob of the three concentric controls provides adjustment for the red or treble circuits of the Stereo guitar. The lower knob of the three concentric controls provides adjustment for the bass pick-up circuit of the Stereo guitar.

Set all controls as desired. The volume from each channel should be adjusted until the sound appears equal to the player's ear. Switching the instrument toggle switch back and forth from treble to rhythm will aid in balancing the sound level. Tone control settings will affect the volume settings somewhat; therefore, the settings of the two volume controls will not necessarily be numerically identical.

FOR MONAURAL OPERATION

Place the rotary switch marked Stereo-Monaural, in the monaural position. This places the two channels in parallel and connects the center 12 inch speaker for 360 degree sound distribution. Plug in regular instrument in either monaural jack. A wide range of tonal colorings are available by adjusting the controls in both channels.

VIBRATO

The Gibson GA-83S Stereo and Vib amplifier has an unique vibrato with a 15 foot remote on - off foot control. This vibrato is effective on both channels and has both frequency and depth adjustment on the control panel. When used with a Stereo wired guitar you will be aware of an entirely new and pleasing dimension added to your musical sound.

POLARITY SWITCH

This added convenience enables the player to quickly find the polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum.

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the Amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, the Transportation Company should be notified immediately, and a claim placed.

CAUTION

Damage to the Amplifier will result if it is connected to an improper power source. This Amplifier is designed to be operated on 105 - 125 volt, 50 - 60 cycle alternating current ONLY. Check the voltage from the power lines to determine that it is not over 125 volts, and that the frequency of the current is either 50 or 60 cycles.

TUBES

Check tubes for proper positioning before placing the Amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

SERVICE

If the Amplifier is in need of servicing, consult a reliable radio man. The electrical diagram attached to the amplifier will assist the repair man in servicing.

FUSE

The fuse in the GA-83S Stereo-Vib amplifier is a type 3AG Slo-Blo of three ampere rating. DO NOT USE A FUSE OF HIGHER RATING.

GIBSON

MODEL GA-85 AMPLIFIER

INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICH.

GIBSON AMPLIFIER — MODEL GA-85

Gibson's latest creation in amplifiers, the GA-85 is a masterpiece of beauty, design and performance. Engineered to give the performer a wide range of tone colors from clear bell-like trebles to deep resonant bass response.

Features powerful response, extra wide range of effects, monitor jack, extension speaker jack, and top mounted removable chassis that is detachable from amplifier case — case with speaker can be placed for best tone projection, while chassis with control panel can be placed near player for easy operation — eliminating tube rattles, hum, and other noises that frequently occur in regular amplifiers.

Read carefully the instructions on the care, use, features, and design of this outstanding unit to produce top performance and long-lasting service.

DESIGN

The GA-85 is designed to be played with chassis removed from case, and lid of case tightly closed with the snap fasteners — make sure that cord from speaker to chassis comes out of case through small hole cut out in center of bottom edge of lid. For practicing, amplifier may be used without removing chassis, but should be removed for regular playing. May also be played with chassis removed from case and with lid completely removed if desired.

FIDELITY

The GA-85 is a high gain, high fidelity amplifier with 25 watts output power with less than 3% distortion at a full 25 watts.

SPEAKER

Specially designed 12" Jensen P12P Speaker — perfectly matched to the powerful chassis and design of the GA-85 for maximum results and top performance.

TWO CHANNELS

Channel one with its own volume control and separate bass and treble voicing controls, together with channel two that has its own volume control and combination treble and bass control, permit a wide range of power and tone colorings and the use of a variety of units in numerous combinations. Suitable for Spanish Guitar, Rhythm, Jazz Guitar, Accordion, Steel Guitar, Mandolin, Microphone, and many other amplified instruments.

For all practical purposes there is no interaction between the two channels, so that entirely different settings of tone and volume controls can be used as desired; the surplus power of the amplifier insures ample volume level for each channel. Both channels have a wide range of volume and tone colorings.

CONTROL SETTING

The dynamic range of the amplifier and the power handling capabilities of the specially designed speaker and chassis is more than ample to faithfully reproduce all notes and their harmonics throughout the audio frequency range. The unusual clarity of tone and sound dispersment possibilities permits setting the volume at a relatively low level for general use — seldom is all the power required — when it is, the design of the amplifier permits 25 watts output with less than 3% distortion. Each channel has its own volume control. When only one input jack is used in each channel, the one at left in each channel produces more gain.

VOICING CONTROLS

Each channel has its own arrangement of Treble and Bass Voicing possibilities. Each channel, with the controls in the middle or upright position, will reproduce a medium voicing within its particular range. This can be varied to produce more Treble or more Bass within the range of each channel by setting the Voicing Controls to the desired tone quality.

Channel 1 — Suitable for all types of instruments and microphones. Equipped with separate Treble and Bass Voicing Controls. Start with both controls in middle or upright setting. Moving Bass Control counterclockwise reduces bass response — turning Bass Control clockwise adds bass response. Again, starting with controls in middle or upright position turning Treble Control counterclockwise reduces treble response — turning Treble Control clockwise adds treble response. Any variety of settings can be used.

Channel 2 — Suitable for all types of instruments and microphones. Equipped with combination Treble and Bass Voicing Control. Starting in upright or middle position turning Combination Control counterclockwise reduces bass response and emphasizes treble—moving Combination Control clockwise adds more bass emphasizing bass response.

MONITOR JACK

Crystal type headphones can be plugged into the Monitor Jack and, with the switch in the Standby Position, the player may practice without any sound produced from the loudspeaker; with the switch in the On Position, the player may monitor his playing with the amplifier set some distance away. For making recordings, it is sometimes desirable to plug the recorder into the monitor jack as this will eliminate disturbing room echoes and other extraneous noises. The Monitor Jack is operative when playing from either channel.

EXTENSION SPEAKER JACKS

Equipped with switching jacks for extension speakers. The extension speaker can be plugged into the jack in back of chassis which is farther away from the AC Line Cord, and both the regular speaker and the extension speaker will disperse the sound; or, the extension speaker can be plugged into the other jack closest to the AC Line Cord after removing the plug from the regular speaker and only the extension speaker will disperse the sound. Replace regular speaker plug into jack nearest the AC Line Cord when amplifier only is used.

STANDBY SWITCH

The 110 Volt power switch has three positions: OFF, STANDBY, and ON. In the Standby position, the tubes are lighted and heating, but the speaker is disconnected, eliminating any possible accidental sounds. Movement of the switch from Standby to ON gives instant response without waiting to warm up.

OPERATION OF THE MICROPHONE

Because of the high power output, high gain and high fidelity characteristics of the GIBSON GA-85 Amplifier, it makes an exceptionally fine public address system when used with either the crystal, dynamic or velocity types of microphones. Either channel is suitable for microphone use. The jack at extreme left in each channel is recommended because of its added gain.

While the Amplifier will operate very well with any of the crystal, medium or high impedance dynamic or velocity (ribbon) microphones, it is recommended that a GIBSON Dealer be consulted before investing in a microphone. Authorized Gibson Dealers can supply a microphone which has been selected and matched to the amplifier, thus insuring the most faithful reproduction of voice and music.

When using a microphone it is important that a shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise objectional hum will result. Figure B illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the MICROPHONE socket and advance the Microphone Volume Control until a feedback squeal or howl is produced by the loudspeakers. Reduce the Volume Control to just below the feedback point. This setting will vary considerably depending upon the size of the room, its acoustical properties and the distance between the microphone and the loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.



FIGURE B

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the Amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, the Transportation Company should be notified immediately, and a claim placed.

CAUTION

Damage to the Amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105 - 125 volt, 50 - 60 cycle alternating current ONLY. Check the voltage from the power lines to determine that it is not over 125 volts, and the frequency of the current is either 50 or 60 cycles.

When ready to use power, plug the power cord into the electric outlet and move the switch to the ON position. Approximately one minute is required for the tubes to heat before the Amplifier is ready to use.

TUBES

Check tubes for proper positioning before placing the Amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

GROUND CLIP

The AC Line Cord is equipped with an external Ground Clip that can be attached to any grounded object such as a water pipe, steam radiator, or to a grounded circuit such as is used in recording and broadcasting studios. This reduces extraneous noises and hum — a feature very essential for top notch performance.

SERVICE

If the Amplifier is in need of servicing, consult a reliable radio man. The electrical diagram herein should be shown to the repairman to assist him in servicing the Amplifier.

FUSE

The fuse in the GA-85 Amplifier is a type 3 AG Slo-Blo of three amperes rating. DO NOT USE A FUSE OF HIGHER RATING.

GIBSON

STEREO-AMP.

INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICHIGAN

GIBSON STEREO-AMP. MODEL GA-88S

The Gibson "Stereo-Amp." is an amplifier with the newest electronic advances in true Stereo amplification and reproduction.

POWER OUTPUT

The Gibson Stereo-Amp. is a high fidelity amplifier capable of a normal output of 18 watts in each stereo channel, or 36 watts total.

OPERATING INSTRUCTIONS

To remove the inner speaker enclosure, push in the lower tab of the two case catches that are located along the side and near the top edge of the speaker grill. Place one hand near the center top of the outer enclosure, with the other hand gently lift the top edge of the inner enclosure and pull out of the larger enclosure.

Place the two speaker enclosures in their desired locations, try to keep as much separation as possible between speakers for best stereo effects. Remove the amplifier from the inner enclosure by turning the retaining brackets sideways and sliding the amplifier out. Place it near the playing position for convenience in changing control settings.

Uncoil the speaker cables from their respective holders and plug them into the speaker jacks located in the small well, located along the back and bottom edge of the metal amplifier cabinet. The A.C. line cord also enters the metal cabinet at this point.

FOR STEREO OPERATION

Place the function switch in stereo position. This switch also controls the off, on, standby function.

Gibson stereo guitars are furnished with a special two-conductor shielded cable with a "Y" junction. Place a plug from the "Y" connector in Channel 1, Jack 1; place the second plug from the "Y" connector in Channel 2, Jack 1; place the special two-conductor plug at opposite end of "Y" instrument cord in the instrument jack. Set all controls as desired. The volume from each speaker should be adjusted until the sound from each speaker appears equal to the player's ear. Tone control settings will affect the volume settings somewhat; therefore, the settings of Channel 1 and Channel 2 volume controls will not necessarily be numerically identical.

FOR MONAURAL OPERATION

Place the function switch in Monaural position. This places Channel 1 and Channel 2 output amplifiers in parallel. Plug in regular instrument with conventional manner and adjust only those controls that are associated with the channel in which the instrument is being used.

POLARITY SWITCH

This added convenience enables the player to quickly find the polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum.

ASSEMBLING CASE FOR CARRYING

Unplug speaker cables and coil up in their respective holders. Set amplifier in inner speaker enclosure, lock amplifier in place by moving retaining brackets to the front of the amplifier chassis. Coil up the A.C. line cord and place it in the receptacle at the right end of the case. Slide the inner enclosure into the outer enclosure. It will be necessary to lower the carrying handle of the inner enclosure. Line up the edges of the inner and outer cases and lock in position by pressing upper tab of the two case catches. The combined case can now be safely carried.

MICROPHONE OPERATION

The Gibson "Stereo-Amp." can be used as an excellent public address system. To use the microphone, place the function switch in the monaural position, insert the microphone plug in any of the four input jacks and advance the associated volume control until a feedback squeal or howl is produced by the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably depending upon the size of the room, its acoustical properties and the distance between the microphone and the loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeaker is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.

It is important that a shielded plug be attached to the microphone cable. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Objectional hum will result otherwise. Figure A illustrates the proper way to connect the plug to the microphone cable.



FIGURE A

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the Amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, the Transportation Company should be notified immediately, and a claim placed.

CAUTION

Damage to the Amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105 - 125 volt, 50 - 60 cycle alternating current ONLY. Check the voltage from the power lines to determine that it is not over 125 volts, and the frequency of the current is either 50 or 60 cycles.

When ready to use power, plug the power cord into the electric outlet and move the switch to the Stereo or Monaural position. Approximately one minute is required for the tubes to heat before the Amplifier is ready to use.

TUBES

Check tubes for proper positioning before placing the Amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

GROUND CLIP

The AC Line Cord is equipped with an external Ground Clip that can be attached to any grounded object such as a water pipe, steam radiator, or to a grounded circuit such as is used in recording and broadcasting studios. This reduces extraneous noises and hum — a feature very essential for top notch performance.

SERVICE

If the Amplifier is in need of servicing, consult a reliable radio man. The electrical diagram attached to the amplifier will assist the repair man in servicing.

FUSE

The fuse in the GA-88S GIBSON-STEREO Amplifier is a type 3AG Slo-Blo of three ampere rating. DO NOT USE A FUSE OF HIGHER RATING.

GIBSON

MODEL GA-90 AMPLIFIER

INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICHIGAN

GIBSON AMPLIFIER - MODEL GA-90

FIDELITY

The GA-90 is a HIGH FIDELITY amplifier with a normal output of twenty-five watts, and a peak out-put in excess of thirty-five watts.

A greatly enlarged angle of sound distribution is obtained from the 6 eight inch MATCH-ED GIBSON ULTRA-SONIC speakers which reproduce the extremely high level of audio power free of distortion.

THE FREQUENCY RESPONSE of this amplifier is plus or minus 1 D.B. from 20 cycles to 20,000 cycles with a distortion measurement of less than 2 percent. Due to the advanced design of the two chassis the hum is reduced to an almost inaudible level.

PRE-AMPLIFIER

The amplifier is designed and constructed in two units. The preamplifier with the controls is mounted in the top of the case, while the main amplifier and power supply is mounted in the bottom of the case. This construction not only brings the controls at a position of maximum convenience for you, but also permits a more even distribution of weight, for ease of carrying.

TWO CHANNELS

The pre-amplifier is divided into two separate channels with two input jacks in each channel. Each channel having an independent volume and voicing control. Channel ONE is provided with a GAIN switch to allow the use of either two microphones or two instruments. Channel TWO provides two jacks for use with instruments.

Complete isolation is provided between the two channels so that entirely different settings of the voicing and volume controls can be used without inter action between the channels.

This permits two entirely different styles of instruments, such as an accordion or electric bass and steel guitar to be played simultaneously with the controls set for the type of response best suited for each instrument.

CONTROL SETTING

The dynamic range of the amplifier and the power handling capabilities of the six speakers is more than ample to faithfully reproduce all notes and their harmonics throughout the audio frequency range.

Due to the wide dispersement of sound from this amplifier it is possible to set the volume at a lower level than with single or double speaker amplifiers. This reduces extraneous vibrations that are induced in surrounding objects at low frequencies and high power levels.

VOICING CONTROLS

The VOICING CONTROLS are very effective, and for best results they should be set to the correct register for the range of the instrument being played.

RECOMMENDED SETTINGS

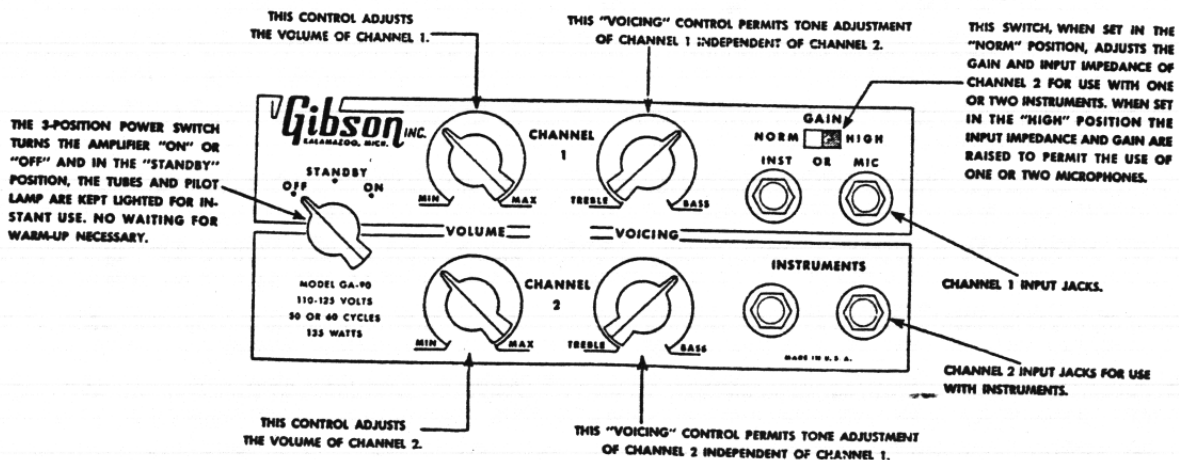
Instrument	Voice Control Setting
Electric Bass	Extreme Bass Voicing
Spanish Guitar	Normal voicing
Hawaiian Guitar	Normal to Treble
Electric Mandolin	Treble
Accordion with Pick up	Normal to Bass

STANDBY SWITCH

The three position power switch turns the 110 Volt current on or off. In the "STANDBY" position the pilot light and tubes are lighted and heating, but the speaker is disconnected, eliminating any possible accidental sounds. A flick of the switch from standby to ON gives you instant response, no waiting to warm up.

CONTROL DIAGRAM

Diagram A below gives a complete explanation of the controls and channels.



OPERATION OF THE MICROPHONE

Because of the high power output, high gain and high fidelity characteristics of the GIBSON GA-90 Amplifier it makes an exceptionally fine public address system when used with either the crystal, dynamic or velocity types of microphones.

While the amplifier will operate very well with any of the crystal, medium or high impedance dynamic or velocity (ribbon) microphones, it is recommended that, before investing in a microphone, you consult your GIBSON dealer. Authorized GIBSON dealers can supply you with a microphone which has been selected and matched to the amplifier, thus insuring the most faithful reproduction of voice and music.

When using a microphone it is important that the GIBSON 75A or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise objectionable hum will result. Figure B illustrates the proper way to connect the plug to the microphone cable. To use the microphone, move the switch marked GAIN to the high position, insert the plug in the MICROPHONE socket and advance the CHANNEL I volume control until a feedback squeal or howl is produced by the loudspeakers. Reduce the volume control to just below the feedback point. This setting will vary considerably depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.

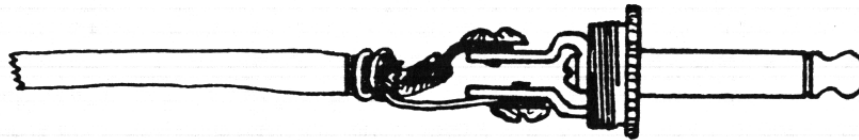


Figure B

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However upon receipt of the amplifier, look it over carefully to make sure there has been no breakage of tubes or parts. If you find that damage has occurred during shipment, we suggest the Transportation Company be called immediately.

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. Make sure the voltage from the power lines is not over 125, and that the frequency of the current is either 50 or 60 cycles. When ready to turn on the power, plug the power cord into the electric outlet and turn on the switch. Wait approximately one minute for the tubes to heat, and the amplifier is ready for use.

TUBES

Be sure tubes are in their proper positions before placing the amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

GROUND CLIP

The AC line cord is equipped with an external Ground Clip that can be attached to any grounded object such as a water pipe, steam radiator, or to a grounded circuit such as used in recording and broadcasting studios. This reduces extraneous noises and hum — a feature very essential for top notch performance.

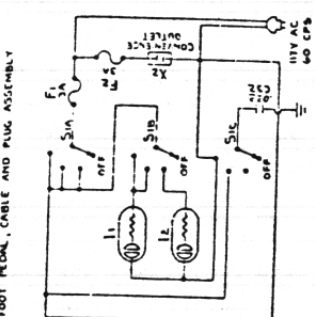
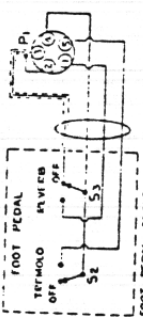
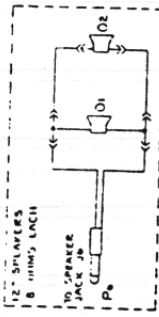
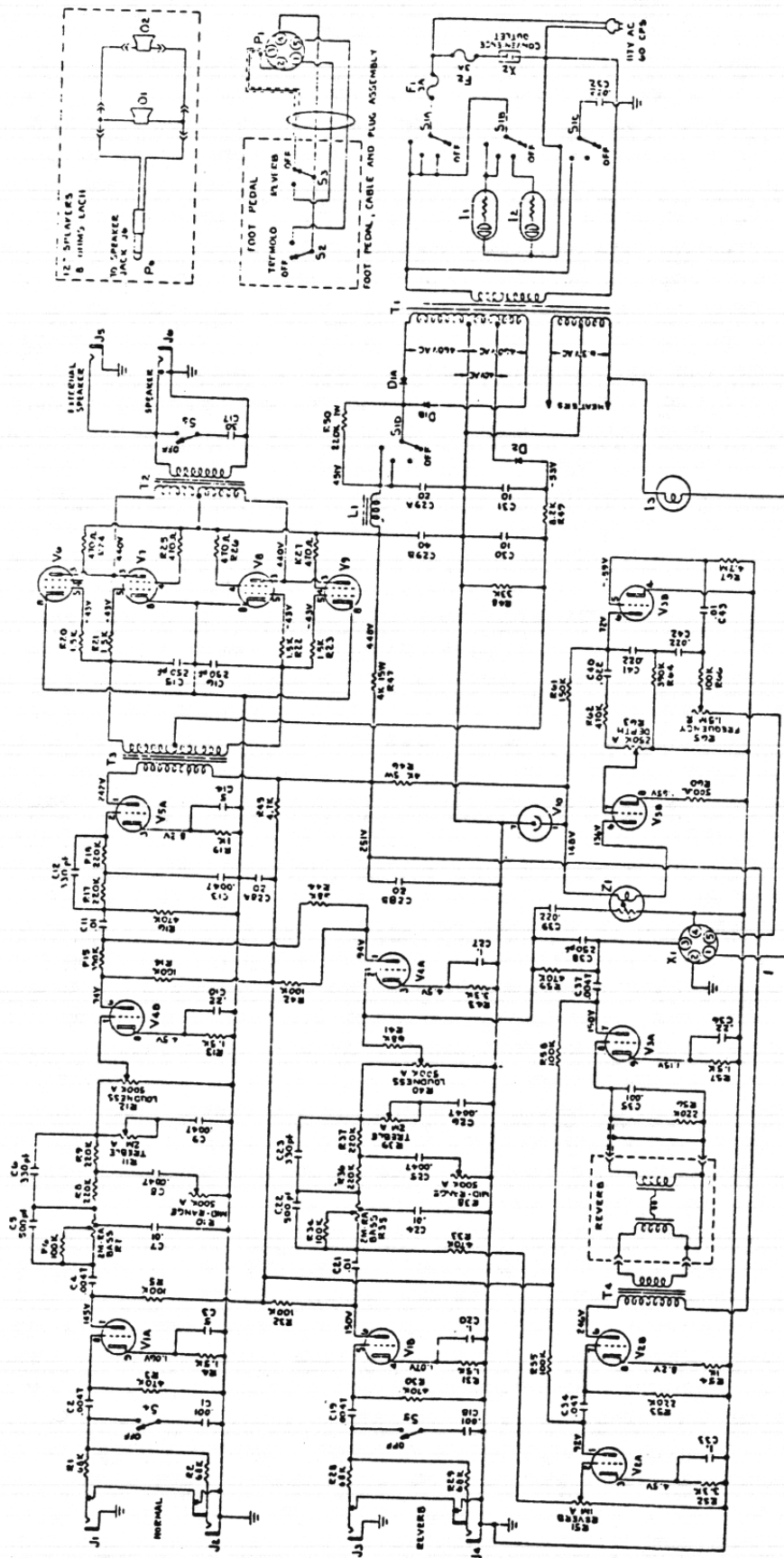
SERVICE

If the amplifier is in need of servicing, we suggest it be taken to a reliable radio man. The electrical diagram attached should be shown the repairman to assist him in servicing the amplifier.

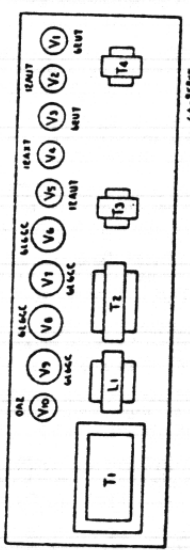
* * *

The fuse in the GA-90 Amplifier is a type AG of three ampere rating. DO NOT USE FUSES OF HIGHER RATING.

GA-95 "APOLLO"



- | | | | | |
|--------------|--------------------------|----------|--------------------------------|----------------|
| T1 | Power Transformer | TF-103P | Diode - 1200 PIV | D1-57 |
| T2 | Output Transformer | TF-503-0 | Diode - 200 PIV | D1-105 |
| T3 | Pr Driver Transformer | TF-1001B | Foot Pedal Socket | Ch-78FC0-5 |
| T4 | Reverb Transformer | TF-8400 | Convenience Outlet | Ch-303 |
| L1 | Filter Choke | TF-109C | Control -12 meg audio w/switch | |
| S1A, B, C, D | Switch SPST | SW-78A-1 | Control - 500K audio | Ch-4005-1 |
| S2 | Switch SPST | SW-82103 | Control - 250K audio | Ch-4004 |
| S3 | Switch SPST | SW-82122 | Control - 2 meg, audio | GMA-011-1702-1 |
| SW, S5 | Switches DPDT 2140 | SW-817 | Control - 1 meg, audio | GMA-011-1702-1 |
| L1, L2 | Pilot Light (red) | PL-37R | Control - 1.5 meg, RA | GMA-011-1711-1 |
| L3 | Pilot Light (amber) | PL-37A | Control - 2 meg, RA | GMA-011-222-1 |
| L4 | Pilot Light (red) w/dial | PL-37B | Speakers - 12" & ohms each | 9-00011 |



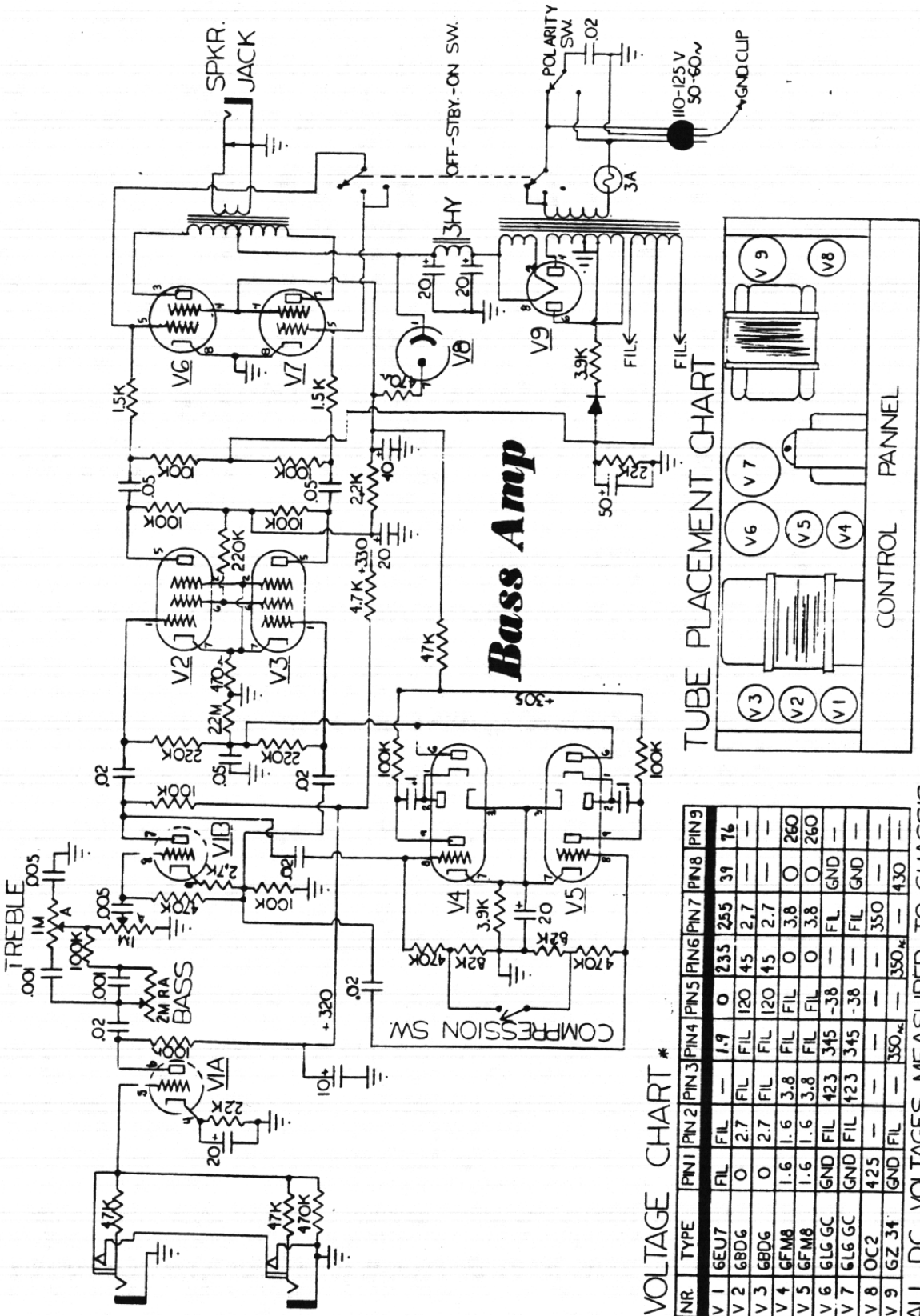
GIBSON

"BASS AMP"

MODEL GA-100 AMPLIFIER
FOR BASS AND CLASSIC GUITAR

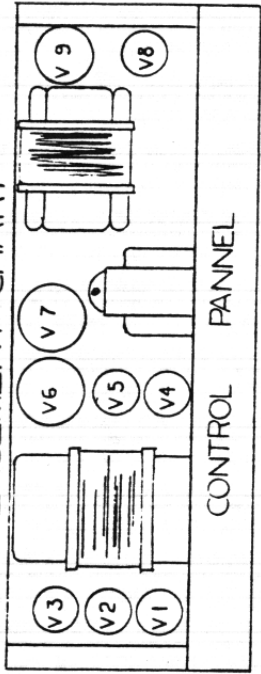
INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICH.



Bass Amp

TUBE PLACEMENT CHART



VOLTAGE CHART *

NR.	TYPE	PN1	PN2	PN3	PN4	PN5	PN6	PN7	PN8	PN9
V 1	6EU7	FIL	FIL	1.9	O	235	255	39	76	—
V 2	6BD6	O	2.7	FIL	120	45	2.7	—	—	—
V 3	6BD6	O	2.7	FIL	120	45	2.7	—	—	—
V 4	6FM8	1.6	1.6	3.8	FIL	O	3.8	O	260	—
V 5	6FM8	1.6	1.6	3.8	FIL	O	3.8	O	260	—
V 6	6LG GC	GND	FIL	423	345	-38	—	FL	GND	—
V 7	6L6 GC	GND	FIL	423	345	-38	—	FIL	GND	—
V 8	OC2	425	—	—	—	—	—	350	—	—
V 9	6Z 34	GND	FIL	—	350 _±	—	350 _±	—	430	—

* ALL DC VOLTAGES MEASURED TO CHASSIS WITH V.T.V.M.

GIBSON BASS AMP — MODEL GA-100

The GIBSON "BASS AMP" is specially engineered and designed for use with the ELECTRONIC BASS and CLASSIC GUITAR. A built-in compression circuit prevents the overloading of the speaker by the low frequencies of the ELECTRONIC BASS. It features a clear powerful undistorted performance, sturdy, compact, portable construction and rich attractive appearance. The use of a specially designed speaker, premium tubes, deluxe transformers and other top quality components, insure great reserve power and trouble free service.

FIDELITY

The GA-100 amplifier is a high fidelity amplifier, rated at 30 watts output, and capable of 45 watts of peak power. The frequency response is within plus or minus 1½ DB from 50 to 15,000 cycles.

WIDE RANGE SPEAKER

The GA-100 amplifier is equipped with a twin cone speaker, developed by a famous research laboratory to reproduce realistically the low frequencies of the ELECTRONIC BASS and the medium frequencies of the CLASSIC GUITAR, for which this amplifier was designed.

COMPRESSION SWITCH

The compression circuit of the GA-100 amplifier is a built-in safety device which automatically controls the gain of the amplifier and reduces the possibilities of distortion and speaker overload.

REMOVABLE AMPLIFIER

The removable feature of the GA-100 amplifier is a great help in reducing distortion caused by vibration or microphonics, due to closeness of the speaker. The amplifier may be placed any distance, up to 20 feet, from the speaker cabinet. A receptacle is provided for an adjustable tripod stand, which can be purchased through any GIBSON dealer.

CONTROL SETTINGS

The following suggested settings are noted for average use, and deviation from these can be made at the player's discretion.

	<i>VOLUME</i>	<i>BASE</i>	<i>TREBLE</i>
ELECTRONIC BASS	Minimum Necessary	0	0
CLASSIC GUITAR	Minimum Necessary	3-5	3-5

The dynamic range of the amplifier and the power handling capabilities of the special designed speaker is more than ample to faithfully reproduce all the notes and their harmonics throughout the audio frequency range.

POLARITY SWITCH

This added convenience enables the player to quickly find the polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum.

STANDBY SWITCH

The 110 Volt power switch has three positions: OFF, STANDBY, and ON. In the Standby position, the tubes are lighted and heating, but the speaker is disconnected, eliminating any possible accidental sounds. Movement of the switch from Standby to ON gives instant response without waiting to warm up.

OPERATION OF THE MICROPHONE

Because of the high power output, high gain and high fidelity characteristics of the GIBSON GA-100 Amplifier, it makes an exceptionally fine public address system when used with either the crystal, dynamic or velocity types of microphones.

While the Amplifier will operate very well with any of the crystal, medium or high impedance dynamic or velocity (ribbon) microphones, it is recommended that a GIBSON Dealer be consulted before investing in a microphone. Authorized Gibson Dealers can supply a microphone which has been selected and matched to the amplifier, thus insuring the most faithful reproduction of voice and music.

When using a microphone it is important that a shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise objectional hum will result. Figure B illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the instrument jack and advance the Volume Control until a feedback squeal or howl is produced by the loudspeaker. Reduce the Volume Control to just below the feedback point. This setting will vary considerably depending upon the size of the room, its acoustical properties and the distance between the microphone and the loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeaker is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.



FIGURE B

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the Amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, the Transportation Company should be notified immediately, and a claim placed.

CAUTION

Damage to the Amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105 - 125 volt, 50 - 60 cycle alternating current **ONLY**. Check the voltage from the power lines to determine that it is not over 125 volts, and the frequency of the current is either 50 or 60 cycles.

When ready to use power, plug the power cord into the electric outlet and move the switch to the **ON** position. Approximately one minute is required for the tubes to heat before the Amplifier is ready to use.

TUBES

Check tubes for proper positioning before placing the Amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

GROUND CLIP

The AC Line Cord is equipped with an external Ground Clip that can be attached to any grounded object such as a water pipe, steam radiator, or to a grounded circuit such as is used in recording and broadcasting studios. This reduces extraneous noises and hum — a feature very essential for top notch performance.

SERVICE

If the Amplifier is in need of servicing, consult a reliable radio man. The electrical diagram herein should be shown to the repairman to assist him in servicing the Amplifier.

FUSE

The fuse in the GA-100 Amplifier is a type 3 AG, two ampere rating. **DO NOT USE A FUSE OF HIGHER RATING.**

Gibson
Crestline  *Amplifier*

MODEL GA-300RVT AMPLIFIER

INSTRUCTIONS

PRODUCT OF



Gibson Electronics

KALAMAZOO, MICHIGAN

REVERB UNIT UNPACKING INSTRUCTIONS

IMPORTANT — READ CAREFULLY BEFORE USE

CAUTION

The Reverb Unit has been carefully constructed. It is, however, a delicate electronic device. Treat it with the same care and respect given a TV set.

Avoid dropping, sudden jolts, or rough handling and it will give excellent service. This beautifully musical Reverberation effect is not to be confused with the repeating signal produced by the mechanical tape recorder style of echo units.

UNPACKING

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use power, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

The Reverberation Unit must always be placed on a solid non-vibrating surface or footing when in operation.

Any sudden shock, jolt, or wiggle, when in use, will cause undesirable noise. The resultant clatter of an inadvertant shake or bump is annoying but not necessarily harmful. This delicate sensitivity to shock and vibration is a normal characteristic of the device.

No problem will be encountered while the unit is connected if supporting surface is solid and unit is not moved about. To avoid the unwanted noise, turn the reverberation unit off by pressing the foot switch.

SET UP INSTRUCTIONS

1. REMOVING "Tuck-a-way" CHASSIS FROM TONE CHAMBER CASE

To remove the amplifier chassis it is necessary to open the upper back panel of the Tone Chamber. To open this panel, push up on the RIGHT hand side of each latch located inside the cut out. See Figure 1. The back panel will now swing downward revealing the "Tuck-a-way" chassis.

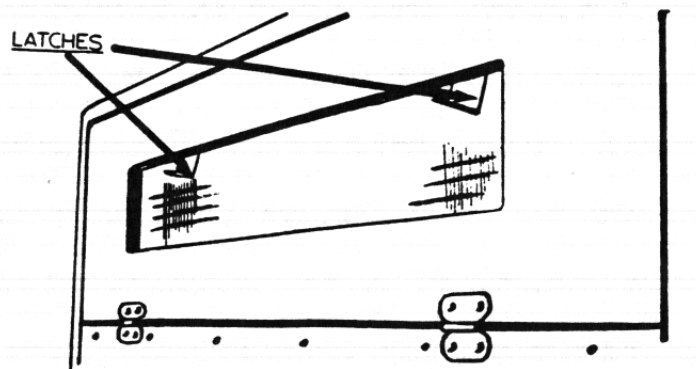


FIGURE 1.

Before removing the "Tuck-a-way" chassis notice how the Foot Pedal, Speaker Cord and the A.C. Power Cord are stored. They should be returned to these locations when the chassis is returned to its "Tuck-a-way" position. See Figure 2.

CAUTION: Do not allow the Speaker Cord to fall into the Tone Chamber.

Handles have been provided at each end of the "Tuck-a-way" chassis for easy removal from the Tone Chamber compartment. See Figure 2. The Foot Pedal and the Speaker Cord should also be taken out at this time. The upper back panel should be closed and latched before the unit is played. Push up on the LEFT hand side of each latch to lock. Pushing in on the top of the back panel while latching may be necessary.

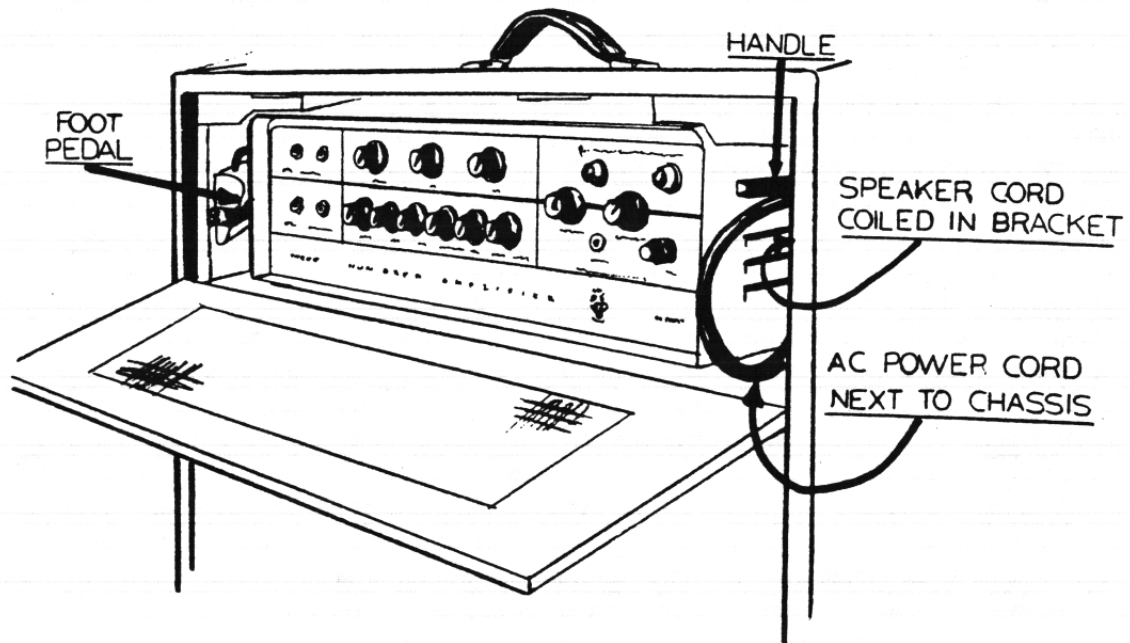


FIGURE 2.

2. FOOT PEDAL AND SPEAKER CORD CONNECTIONS

The Speaker Cord and the Foot Pedal cable must be plugged into the rear of the amplifier chassis. See Figure 3. The plug on the Foot Pedal is "Polarized" and may be inserted in only one way.

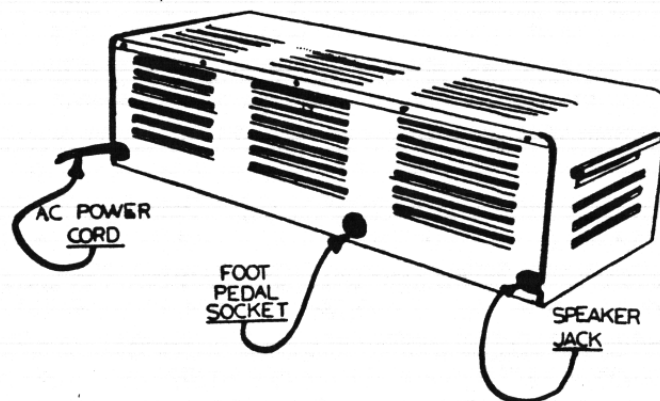


FIGURE 3.

The amplifier is ready for operation when its A.C. Power Cord is plugged into the proper power source. The amplifier chassis SHOULD NOT be set on top of the Tone Chamber as vibrations may produce undesirable effects.

Before returning amplifier chassis to its "Tuck-a-way" position, unplug the Foot Pedal and the Speaker Cord.

CONTROL LOCATIONS

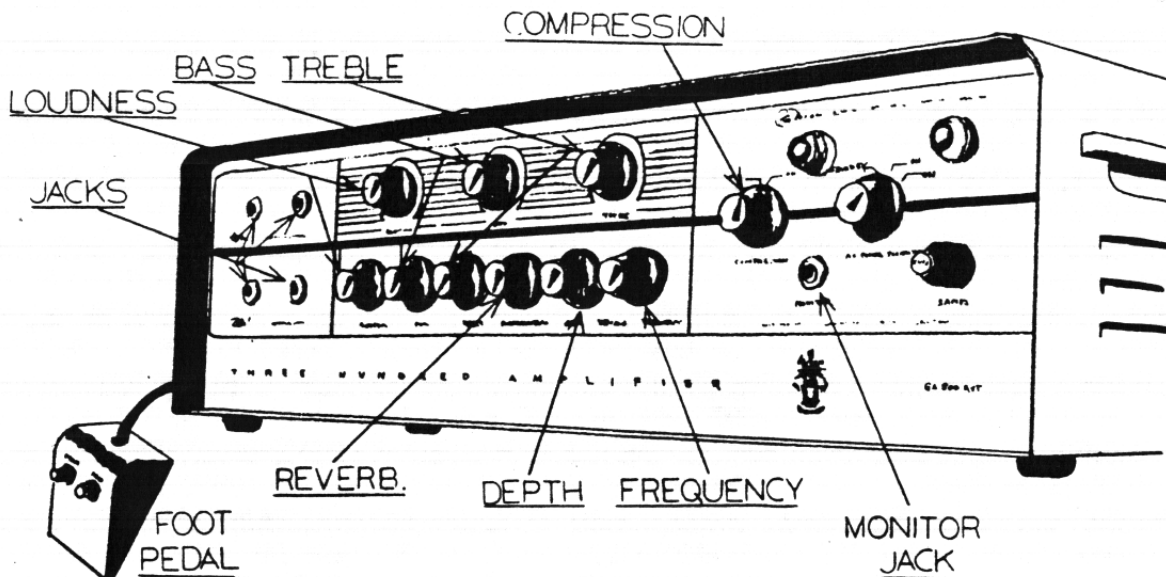


FIGURE 4.

A.C. POWER-POLARITY SWITCH

A convenient switch has been provided for performing a total of three functions, turning the amplifier on and off, putting the amplifier in "Standby" and selecting the proper polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum. In the "Standby" position the amplifier is kept "warmed up" and ready to play at the instant the switch is advanced to the "On" positions. Two "On" positions have been provided. The hum and hiss level on one of the "On" positions will be noticeably lower — this is the correct "Polarity" for using the amplifier.

In locations of extremely high noise levels, clipping the "Ground Clip" to a grounded object will greatly reduce objectionable noise and hum.

As an added convenience to the artist this amplifier is equipped with a "Standby pilot light" as well as the "Regular pilot light". When the "Green" light is on the amplifier is in "Standby"; when the "Red" light is on the amplifier is "On" and ready to play.

COMPRESSION SWITCH

This amplifier is equipped with "photon power control" which assures use of total power 100% of the time with a minimum of distortion. The Compression feature affects both channels and should be used when high power settings are used. The Compression feature — a Gibson exclusive — reduces the possibility of distortion and overloading of the speakers.

NOTE: WHEN PLAYING ELECTRIC BASS INTO THIS AMPLIFIER THE COMPRESSION SWITCH MUST BE IN THE "ON" POSITION.

TREMOLO — EFFECTIVE IN CHANNEL 2 ONLY

The Tremolo effect adds another dimension to the Reverberation effect. It can be used either with or without reverberation at the player's discretion. The Tremolo is turned on or off by the use of the foot switch. The Tremolo Frequency Range has been carefully set to cover a wide range of Tremolo effects. The Depth of the Tremolo is also variable being controlled by the Depth control.

OPERATION OF MICROPHONE

The high gain and high fidelity characteristics of this Amplifier, permit the use of most of the popular high impedance microphones for public address work. The microphone should be plugged into the Number One Jack of Channel 1.

If the Microphone jacks are not in use, turn the Channel one Loudness control completely off.

TILT FOOT

The Tone Chamber has a "Tilt Foot" installed on the bottom to allow the artist to change the angle of sound dispersion. See Figure 5.

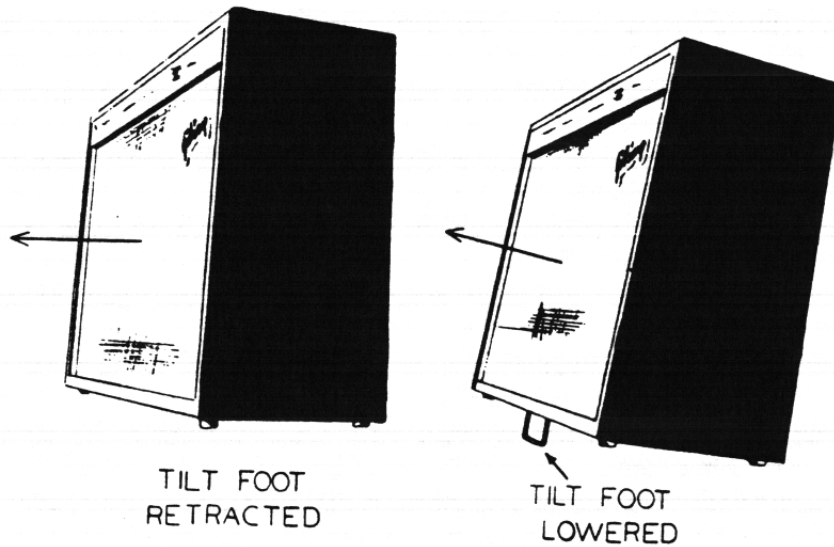


FIGURE 5.

CHANNEL TO USE

Players may wish to produce a specific tone or style by using a channel and setting to reproduce the "effect" desired, although the channel is normally used for another purpose. General suggested uses of the various channels:-

Channel 1. - For low frequency response with distortion-free power-Electric Bass, Accordion, Guitar and other amplified instruments where deep, low frequency response is required.

Channel 2. - For mid-range frequency response and rhythm — Spanish Guitar, Steel Guitar, Accordion. This channel is also excellent for lead instruments when a definitive response is required. The Tremolo and Reverberation effects are available only in this channel.

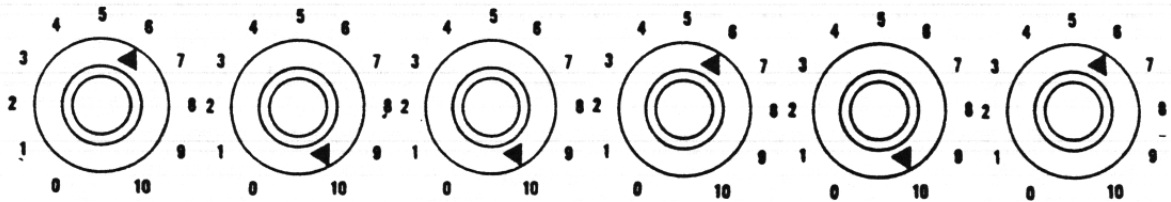
MODEL GA-300 RVT AMPLIFIER

REVERBERATION — EFFECTIVE IN CHANNEL 2 ONLY

Due to the unusual flexibility of the Reverberation circuit, it is important that the Operator understands the various control settings to obtain the total range of Reverberation effects of which this Amplifier is capable. Illustrated below are several examples of control settings which will reproduce different Reverberation effects.

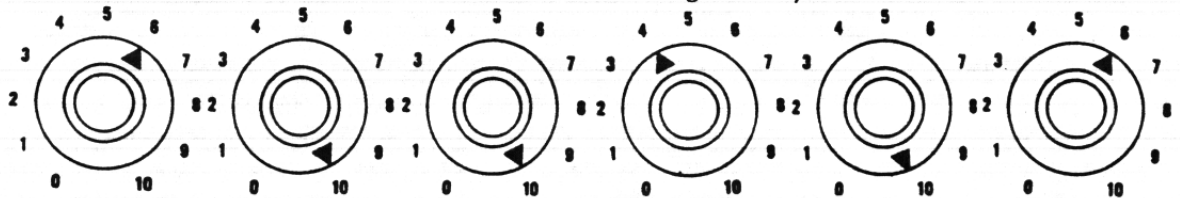
Loudness 2 Bass Treble Reverberation Depth Frequency

Example No. 1. 50% Main Signal - 50% Reverb.



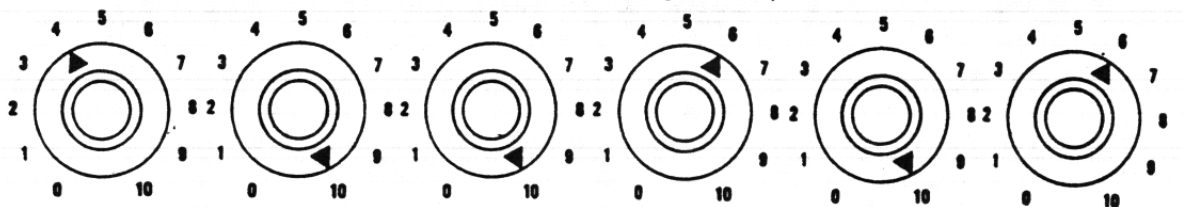
INSTRUMENT SETTINGS — Tone control and/or toggle switch in maximum treble position. Volume control setting 7.

Example No. 2. 75% Main Signal - 25% Reverb.



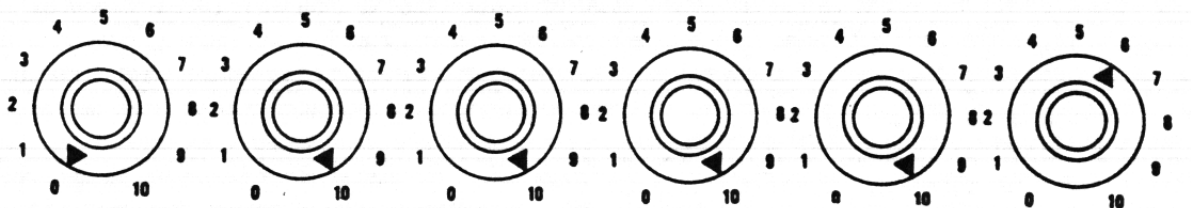
INSTRUMENT SETTINGS — Same as above,

Example No. 3. 25% Main Signal - 75% Reverb.



INSTRUMENT SETTINGS — Same as Example No. 1.

Example No. 4. 100% Reverb.



INSTRUMENT SETTINGS — Same as Example No. 1.

FOOT SWITCH MUST BE IN THE "ON" POSITION FOR REVERBERATION.

OPERATIONAL INSTRUCTIONS FOR USE OF THIS REVERBERATION AMPLIFIER IN CONJUNCTION WITH A REGULAR AMPLIFIER

The use of this Reverberation Amplifier with a Regular Amplifier will add a spacious liveliness to instrument reproduction that is far beyond the possibilities of single amplifier Reverberation. Listed below are the simple instructions for this type of operation.

1. Plug the A.C. cord of this Reverberation Amplifier into a convenient outlet.
2. Now plug one end of a shielded jumper cord into the No. 1 Jack of Channel 2 (the one with the Red Washer) Plug the other end of the jumper cord into the input jack normally used in a regular amplifier. Set regular amplifier for normal volume.
3. The Guitar instrument cord should be plugged into the No. 2 Jack of Channel 2 of this Reverberation Amplifier. Plug the A.C. line cord of the Regular Amplifier into a convenient outlet.
4. Turn on the A.C. switches for both amplifiers and the tone controls may be set as illustrated on page 2.
5. If both Reverb. and Normal Signals are to be heard at the regular Amplifier, plug the Shielded Jumper Cord into the Monitor Jack of this Reverberation Amplifier instead of the Jack with the Red Washer.

Illustrated below is a pictorial diagram showing the correct hook-up.

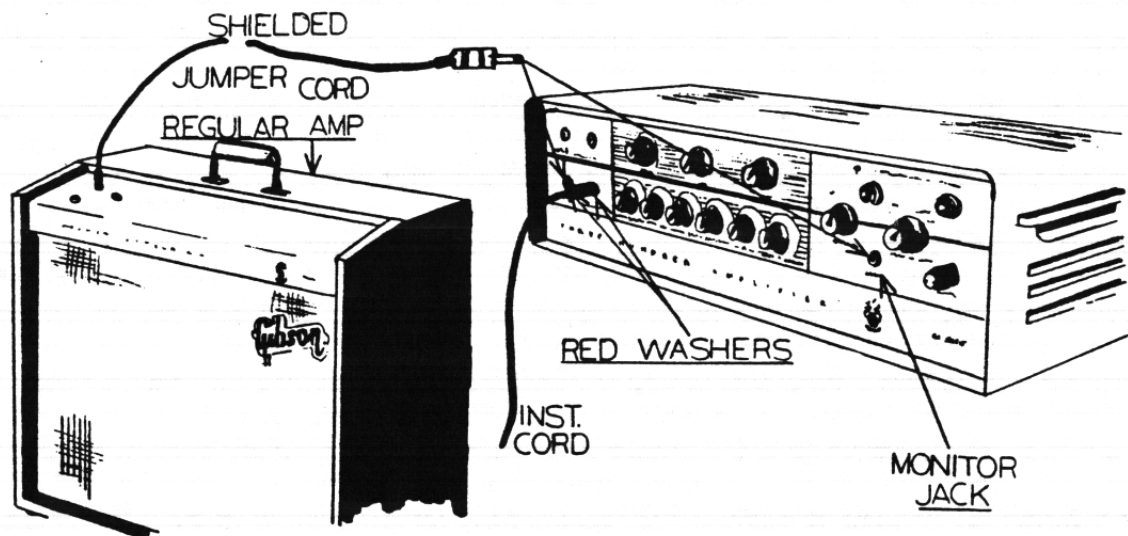


FIGURE 6.

6. Place the combination reverberation, tremolo foot control switch in a convenient position and the system is ready to operate. Either, or both, reverberation and tremolo effect is available by switching the indicated switch ON or OFF.
7. The percentage of Reverberation can be controlled by the Reverberation Control, Channel 2 Loudness Control and the Volume Control of the Regular Amplifier.
8. The instrument is ready to be played. If reverb signal is not coming through, step on the foot switch as it may be in the OFF position. Thereafter, the reverb effect can be conveniently cut in or out at a snap of the foot switch.
9. When the Reverberation Foot Switch is OFF, the reverb unit operates as a regular amplifier adding an extra self-powered speaker that expands the regular amplifier sound without reverberation. If a cord length space separates the regular amplifier and the reverberation unit, an excellent impression of the "Stereo" and echo effect is obtained. When Reverberation Foot Switch is ON, the reverb signal is super-imposed on the above "Stereo" sound with a minimum contrast of volume change.

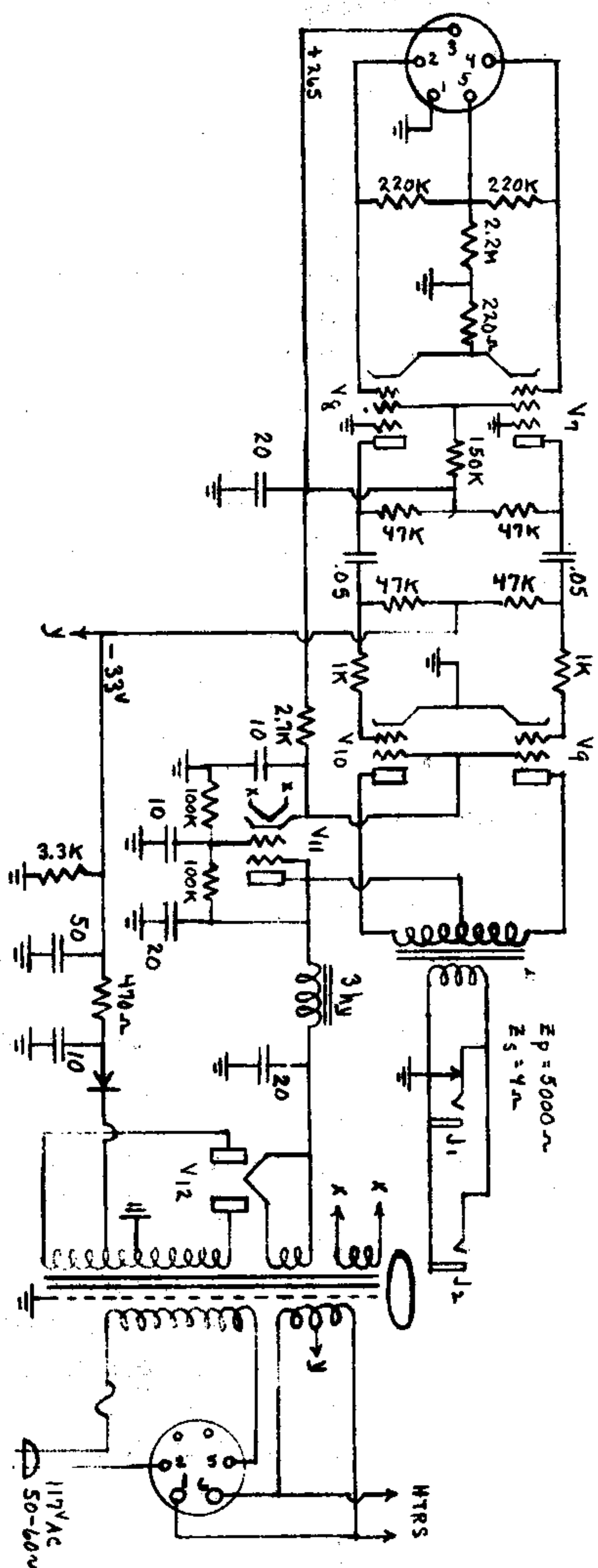
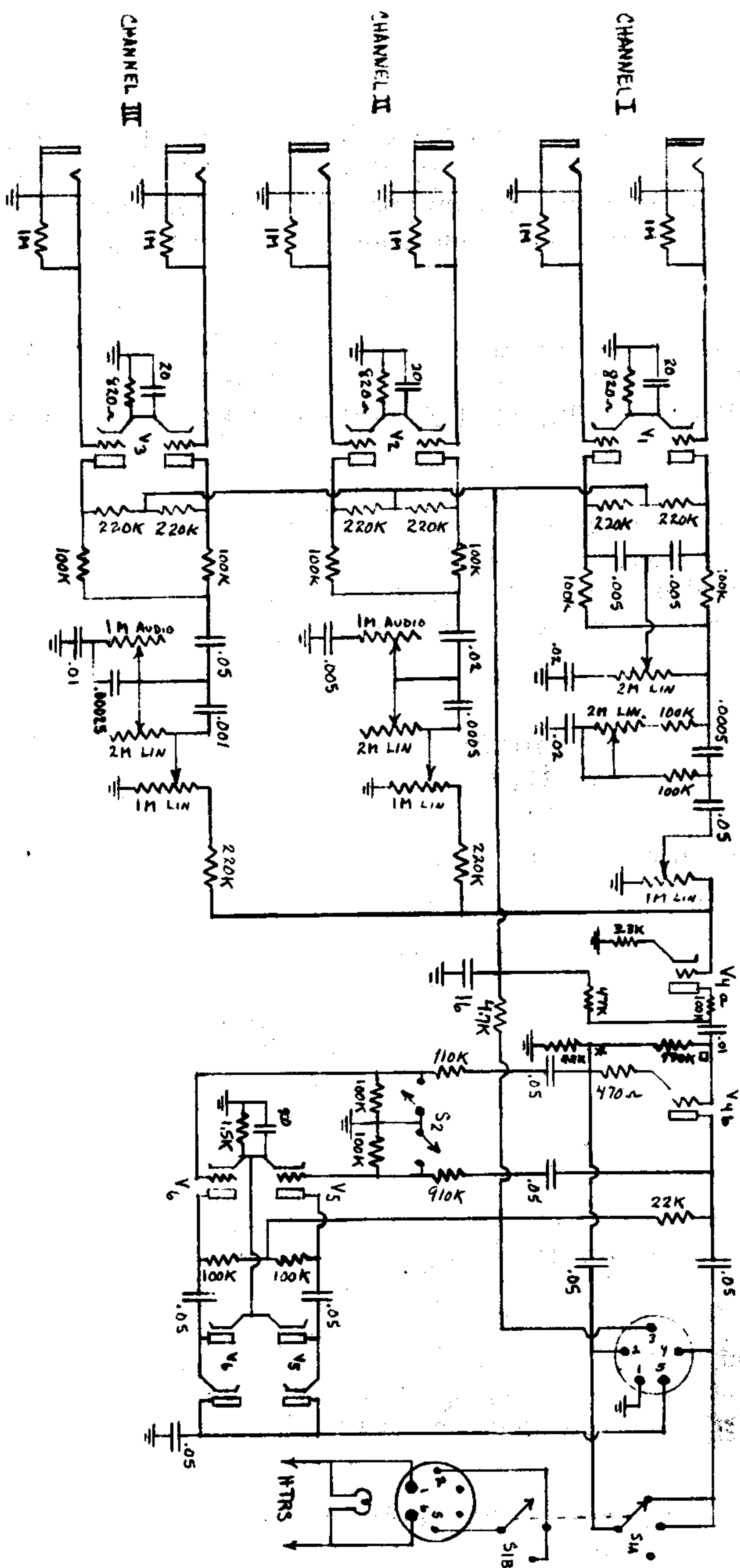
GIBSON

MODEL GA-400 AMPLIFIER

INSTRUCTIONS

GIBSON INC., KALAMAZOO, MICH.

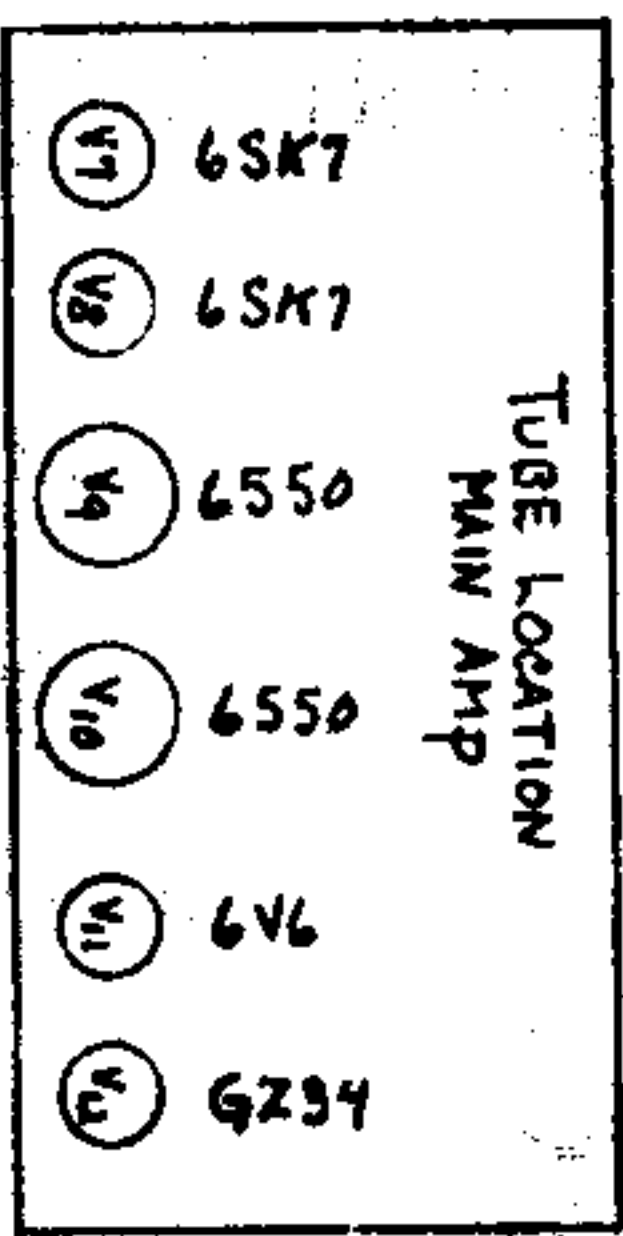
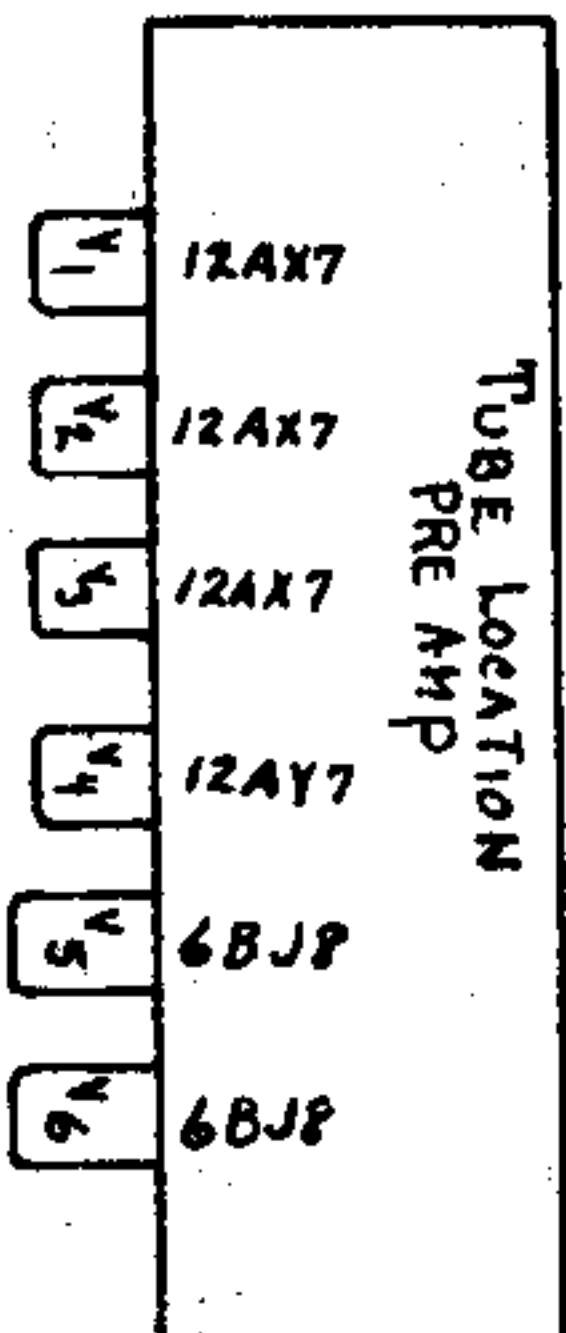
GA-400



Tube Type and EP, Es, E_g, E_g, E_k

Tube Type	EP	Es	E _g	E _g	E _k
V1-12AX7 MAIN PRE AMP	+135	—	0	0	+1.15
V2- " " " "	+110	—	0	0	+0.85
V3- " " " "	+105	—	0	0	+0.9
V4-12AX7 MIXER AMP	+197	—	0	0	+3.2
V4-12AX7 DRIVER	+210	—	0	0	+3.2
V5-6BQ6 COMP AMP + RECT.	+110	—	0	0	+4.9
V6- " " " "	+110	—	0	0	+4.9
V7-6SK7 DRIVER	+445	+42	-1	-1	+1.5
V8- " " " "	+195	+42	-1	-1	+1.5
V9-6550 PWR AMP	+570	+300	-35	-35	0
V10- " " " "	+570	+300	-35	-35	0
V11-6V6 VOLTAGE REG.	+570	+570	+285	+285	+300
V12-6Z34 RECTIFIER	90° rms	—	—	—	+580

ALL DC READINGS WITH 11MEG VTVM MEASURED TO CHASSIS



GIBSON AMPLIFIER — MODEL GA-400

The Gibson GA-400 is the finest, most versatile amplifier in the guitar field today. It has been designed and crafted to supply the guitarist with faithful high fidelity reproduction, at hitherto unknown volume and range. Its three separate channels and compression feature make it possible to play lead, rhythm and bass instruments simultaneously.

This fine equipment contains premium tubes, deluxe transformers, especially designed imported speakers, and the finest of other electronic components. The unit is housed in a sturdy solid lumber California Redwood case carefully designed for rugged beauty.

Like a fine watch or automobile, your amplifier requires care in handling and service. With a little study, you can quickly familiarize yourself with the controls and the use of the tremendous reserve power at your fingertips.

FIDELITY

The GA-400 is a High Fidelity Amplifier with 60 watts output with less than 3% distortion at a full 60 watts.

WIDE RANGE SPEAKERS

Equipped with two very heavy-duty 12" twin cone speakers developed for this amplifier by a famous research laboratory, the full resonance speakers give a realistic "Living Sound" reproduction unmatched by other speakers.

PRE-AMPLIFIER

The amplifier is designed and constructed in two units. The pre-amplifier with the controls is mounted in the top of the case, while the main amplifier and power supply is mounted in the bottom of the case. This construction brings the controls to a position of maximum convenience and more evenly distributes the weight. This allows for excellent heat dissipation.

THREE CHANNELS

The pre-amplifier is divided into three separate channels with two input jacks in each channel. The exclusive terrace design indicates the channel separation at a glance. Each channel has an independent set of volume, treble, and bass voicing controls.

Channel 1 — Reproduces exceptionally high frequency notes with clear, bell-like tones — especially good for take-off.

Channel 2 — Reproduces mid-range frequencies with excellent definition.

Channel 3 — Reproduces very exceptional low frequency notes — as low as 40 cycles with a depth and clarity that is seldom equalled with portable equipment.

Complete isolation is provided among the three channels so that entirely different settings of the tone and volume controls can be used without inter-action. This permits three different styles in any combination—microphone, electric jazz guitar, rhythm guitar, bass or accordion — to be played at the same time with correct tone and volume settings for each instrument. The surplus power of the amplifier insures ample volume level for each instrument, but care should be used to avoid rattling the lights or other loose items in the room.

COMPRESSION SWITCH

The compression switch affects all three channels and should be used when high volume settings are used or when all three channels are in use. The compression feature — a Gibson exclusive — reduces the possibility of distortion and overloading of the speaker.

CONTROL SETTING

The dynamic range of the amplifier and the power-handling capabilities of the two special speakers is more than ample to faithfully reproduce all notes and their harmonics throughout the audio frequency range. The unusual clarity of tone and dispersment of sound permits setting the volume at a relatively low level for general use — seldom is all the power required — when it is, the design of the amplifier permits a full 60 watts output with less than 3% distortion.

VOICING CONTROLS

Each channel has its own set of Bass and Treble Voicing controls. With the Treble and Bass controls at the middle or upright setting, each channel will reproduce a medium voicing within its particular range. This can be varied to produce more treble or more bass within the range of each channel by setting the voicing controls to the desired tone quality.

CHANNEL TO USE

Players may wish to produce a specific tone or style by using a channel and setting to reproduce the "effect" desired, although the channel is normally used for another purpose. General suggested uses for the various channels:

Channel 1 — For high frequency response and take-off — microphone and lead instruments — Spanish Guitar, Steel Guitar, Mandolin, Tenor Guitar, voice, and other amplified lead instruments. Remember to use the compression feature when extra volume is used. This prevents overloading on low cycle frequencies.

The compression feature is operative in all three channels — most effective in channels Two and Three.

Channel 2 — For mid-range frequency response and rhythm — microphone, Spanish Guitar, Steel Guitar, Accordion. This channel is also excellent for lead instruments when a rounded, less penetrating but clear, definitive response is required. Use compression feature as required.

Channel 3 — For low frequency response with distortion-free power — electric bass, Accordion, Guitar, and other amplified instruments where deep, low frequency response is required. The compression feature is most effective in this channel.

EXTENSION SPEAKER JACKS

Equipped with switching jacks for extension speakers. The extension speaker can be plugged into the jack away from the baffle, and both the regular speaker and the extension speaker will disperse the sound; or, the extension speaker can be plugged into the other jack closest to baffle after removing the plug from the regular speaker and only the extension speaker will disperse the sound. Replace regular speaker plug into jack nearest baffle when amplifier only is used.

STANDBY SWITCH

The 110 Volt power switch has three positions: OFF, STANDBY, and ON. In the Standby position, the tubes are lighted and heating, but the speaker is disconnected, eliminating any possible accidental sounds. Movement of the switch from Standby to ON gives instant response without waiting to warm up.

OPERATION OF THE MICROPHONE

Because of the high power output, high gain and high fidelity characteristics of the GIBSON GA-400 Amplifier, it makes an exceptionally fine public address system when used with either the crystal, dynamic or velocity types of microphones. Channels one and two are recommended for microphone use.

While the Amplifier will operate very well with any of the crystal, medium or high impedance dynamic or velocity (ribbon) microphones, it is recommended that a GIBSON Dealer be consulted before investing in a microphone. Authorized Gibson Dealers can supply a microphone which has been selected and matched to the amplifier, thus insuring the most faithful reproduction of voice and music.

When using a microphone it is important that a shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise objectional hum will result. Figure B illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the MICROPHONE socket and advance the Microphone Volume Control until a feedback squeal or howl is produced by the loudspeakers. Reduce the Volume Control to just below the feedback point. This setting will vary considerably depending upon the size of the room, its acoustical properties and the distance between the microphone and the loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.



FIGURE B

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the Amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, the Transportation Company should be notified immediately, and a claim placed.

CAUTION

Damage to the Amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105 - 125 volt, 50 - 60 cycle alternating current ONLY. Check the voltage from the power lines to determine that it is not over 125 volts, and the frequency of the current is either 50 or 60 cycles.

When ready to use power, plug the power cord into the electric outlet and move the switch to the ON position. Approximately one minute is required for the tubes to heat before the Amplifier is ready to use.

TUBES

Check tubes for proper positioning before placing the Amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

GROUND CLIP

The AC Line Cord is equipped with an external Ground Clip that can be attached to any grounded object such as a water pipe, steam radiator, or to a grounded circuit such as is used in recording and broadcasting studios. This reduces extraneous noises and hum — a feature very essential for top notch performance.

SERVICE

If the Amplifier is in need of servicing, consult a reliable radio man. The electrical diagram herein should be shown to the repairman to assist him in servicing the Amplifier.

FUSE

The fuse in the GA-400 Amplifier is a type AG Slo-Blo of three ampere rating. DO NOT USE A FUSE OF HIGHER RATING.

Gibson

**BASS AMP
ATLAS IV**

INSTRUCTIONS

PRODUCT OF



Gibson Electronics

KALAMAZOO, MICHIGAN

UNPACKING

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CAUTION

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SET UP INSTRUCTIONS

A set of 4 heavy duty casters are furnished with this amplifier for ease of moving it from one place to another. They are detached from the amplifier at time of shipment and are taped to the amplifier cabinet in a brown vinyl bag. They can be easily attached or detached as needed. When playing this amplifier at relatively high power output it is suggested the casters be removed to eliminate the possibility of synthetic vibrations or rattles.

The Piggy Back amplifier may be played on or off the speaker cabinet. When playing it on the speaker cabinet be sure it is fastened securely by the locking fixtures provided.

SPEAKER CORD CONNECTION

The speaker cord is packed with the A. C. supply cord. One end must be plugged into the speaker jack located on the speaker cabinet back panel and the other end should be plugged into the speaker jack located on the back of the amplifier chassis.

A.C. POWER-POLARITY SWITCH

A convenient switch has been provided for performing a total of three functions, turning the amplifier on and off, putting the amplifier in "Standby" and selecting the proper polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum. In the "Standby" position the amplifier is kept "warmed up" and ready to play at the instant the switch is advanced to the "On" positions. Two "On" positions have been provided. The hum and hiss level on one of the "On" positions will be noticeably lower — this is the correct "Polarity" for using the amplifier.

In locations of extremely high noise levels, clipping the "Ground Clip" to a grounded object will greatly reduce objectionable noise and hum.

As an added convenience to the artist this amplifier is equipped with a "Standby pilot light" as well as the "Regular pilot light". When the "Amber" light is on, the amplifier is in "Standby"; when the "Red" light is on the amplifier is "On" and ready to play.

TILT LEG

This amplifier is equipped with a "Tilt Leg" which allows the artist to change the angle of sound dispersion. See Figure 1.

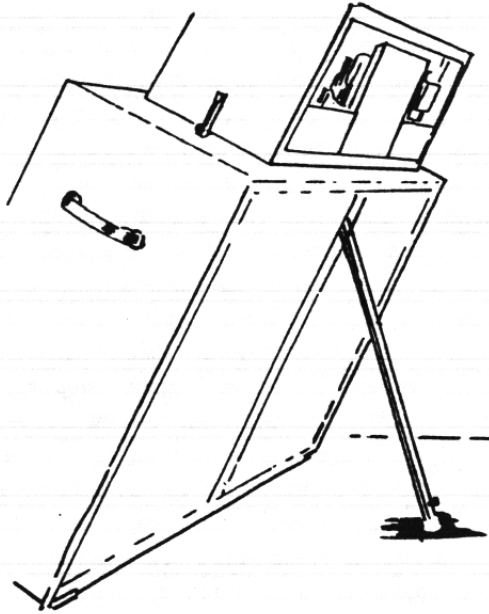


FIGURE 1.

OPERATION OF INSTRUMENTS

This Amplifier is equipped with two input jacks for use with various types and styles of instruments.

The gain for both jacks is adjusted by the control marked "Loudness". The tonal coloring can be varied by use of the "Bass" and "Treble" tone, controls. The "Bass" and "Treble" controls supply the artist, timbre adjustment. Proper setting will enhance the quality and power of the bass tones.

Gibson

**BASS AMP
ATLAS MEDALIST**

INSTRUCTIONS

PRODUCT OF



Gibson Electronics

KALAMAZOO, MICHIGAN

UNPACKING

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CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use amplifier, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

SET UP INSTRUCTIONS

A set of 4 heavy duty casters are furnished with this amplifier for ease of moving it from one place to another. They are detached from the amplifier at time of shipment and are taped to the amplifier cabinet in a brown vinyl bag. They can be easily attached or detached as needed. When playing this amplifier at relatively high power output it is suggested the casters be removed to eliminate the possibility of synthetic vibrations or rattles.

A.C. POWER-POLARITY SWITCH

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As an added convenience to the artist this amplifier is equipped with a "Standby pilot light" as well as the "Regular pilot light". When the "Amber" light is on, the amplifier is in "Standby"; when the "Red" light is on the amplifier is "On" and ready to play.

FUSE

The fuse used in this Amplifier is a type 3 AG Slo-Blo of two amperes rating. DO NOT USE FUSES OF HIGHER RATING.

SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown to the repairman to assist him in servicing the amplifier.

TILT LEG

This amplifier is equipped with a "Tilt Leg" which allows the artist to change the angle of sound dispersion. See Figure 1.

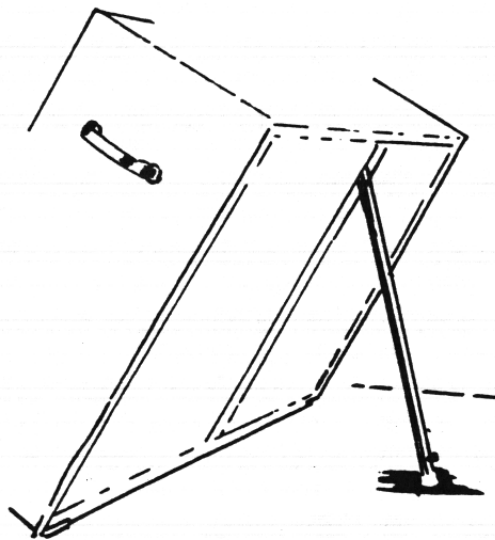


FIGURE 1.

OPERATION OF INSTRUMENTS

This Amplifier is equipped with two input jacks for use with various types and styles of instruments.

The gain for both jacks is adjusted by the control marked "Loudness". The tonal coloring can be varied by use of the "Bass" and "Treble" tone, controls. The "Bass" and "Treble" controls supply the artist, timbre adjustment. Proper setting will enhance the quality and power of the bass tones.

Gibson

MERCURY I AND II
"WITH SPECTRUM CONTROL"

INSTRUCTIONS

PRODUCT OF



Gibson Electronics

KALAMAZOO, MICHIGAN

UNPACKING

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SET UP INSTRUCTIONS

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The Piggy Back amplifier may be played on or off the speaker cabinet. When playing it on the speaker cabinet be sure it is fastened securely by the locking fixtures provided.

SPEAKER CORD CONNECTION

The speaker cord is packed with the A. C. supply cord. One end must be plugged into the speaker jack located on the speaker cabinet back panel and the other end should be plugged into the speaker jack located on the back of the amplifier chassis.

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In locations of extremely high noise levels, clipping the "Ground Clip" to a grounded object will greatly reduce objectionable noise and hum.

As an added convenience to the artist this amplifier is equipped with a "Standby pilot light" as well as the "Regular pilot light". When the "Amber" light is on, the amplifier is in "Standby"; when the "Red" light is on the amplifier is "On" and ready to play.

OPERATION OF MICROPHONE

The high gain and characteristics of this amplifier, permit the use of most of the popular high impedance microphones for public address work.

TILT LEG

This amplifier is equipped with a "Tilt Leg" which allows the artist to change the angle of sound dispersion. See Figure 1.

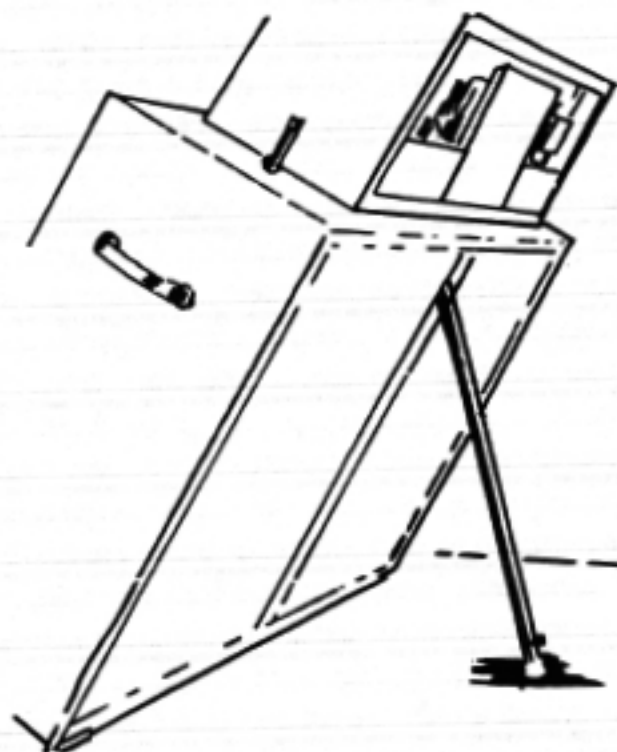


FIGURE 1.

TREMOLO — EFFECTIVE IN CHANNEL 1 ONLY

The Tremolo effect is turned on and off by means of a Push Type Foot Switch. The Tremolo frequency of the Amplifier is controlled by the Variable Control marked "Frequency." The speeds have been carefully set to cover a wide range of Tremolo effects. The depth of the Tremolo is also variable being controlled by the "Depth" Control.

TWO CHANNELS

The Pre-Amplifier is divided into separate channels with two input jacks in each channel. Each channel has an independent set of volume, treble, mid and bass voicing controls.

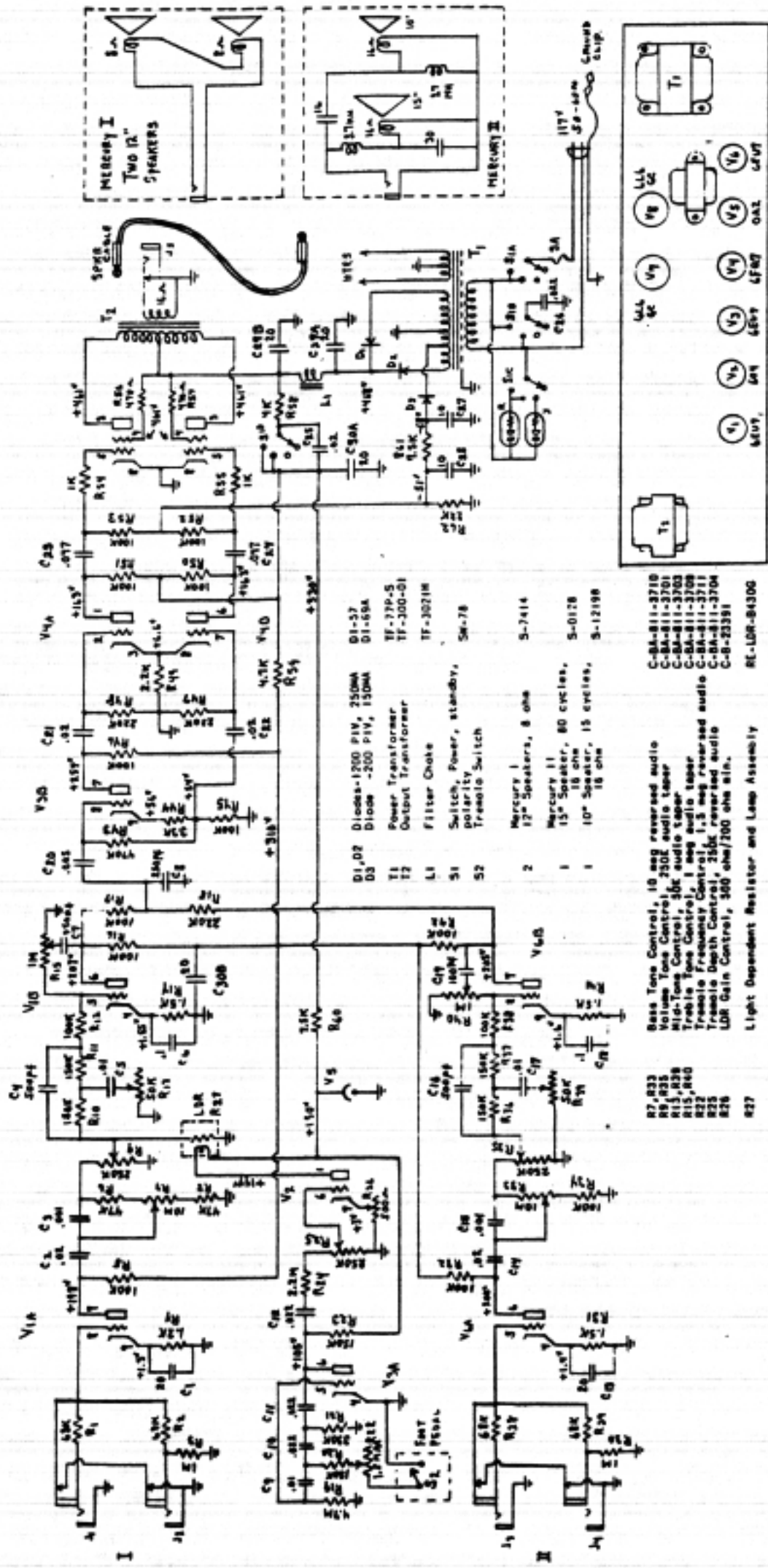
Complete isolation is provided between the two channels so that entirely different settings of tone and volume controls can be used without inter-action. This permits two different styles in any combination — microphone, electric jazz guitar, rhythm guitar, bass or accordion — to be played at the same time with correct tone and volume settings for each instrument.

SPECTRUM CONTROLS

The wide range of tonal extremes required by different artists can all be accommodated with Gibson Spectrum Control. For maximum loudness with a given power, the "treble" control should be Maximum, the "mid range" minimum, and the bass near 5. With this adjustment the tone controls on the guitar will have their maximum effectiveness.

"Jazz" sound to the artist taste can be had by reducing the "treble", adding some "mid range", and adjusting the "bass" to the artist requirement.

Spectrum Controls plus the tone controls on the artist's instrument offer an endless variety of tonal color.



- D1, D2 Diodes-1200 PIV, 250MA
- D3 Diode -200 PIV, 150MA
- T1 Power Transformer TF-307P-S
- T2 Output Transformer TF-307IM
- L1 Filter Choke S-7414
- S1 Switch, Power, standby, polarity Tremolo Switch S-0128
- S2 Tremolo Switch S-12198
- 2 Mercury I 12" Speakers, 8 ohm
- 1 Mercury II 15" Speaker, 80 cycles, 16 ohm
- 1 10" Speaker, 15 cycles, 16 ohm
- C-B-811-2710
- C-B-811-2701
- C-B-811-2702
- C-B-811-2708
- C-B-811-2711
- C-B-811-2704
- C-B-23391
- RE-LDR-84300

- R7, R23 Bass Tone Control, 10 meg reversed audio
- R8, R25 Volume Tone Control, 750K audio taper
- R13, R29 Treble Tone Control, 50K audio taper
- R22, R40 Treble Frequency Control, 1 meg audio taper
- R25 Tremolo Depth Control, 1.5 meg reversed audio
- R26 LDR Gain Control, 250K reversed audio
- R27 Light Dependent Resistor and Lamp Assembly

Mercury I and II

FUSE

The fuse used in this Amplifier is a type 3AG of three amperes rating. **DO NOT USE FUSES OF HIGHER RATING.**

SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.

Gibson

TITAN I-III AND V
"WITH SPECTRUM CONTROL"

INSTRUCTIONS

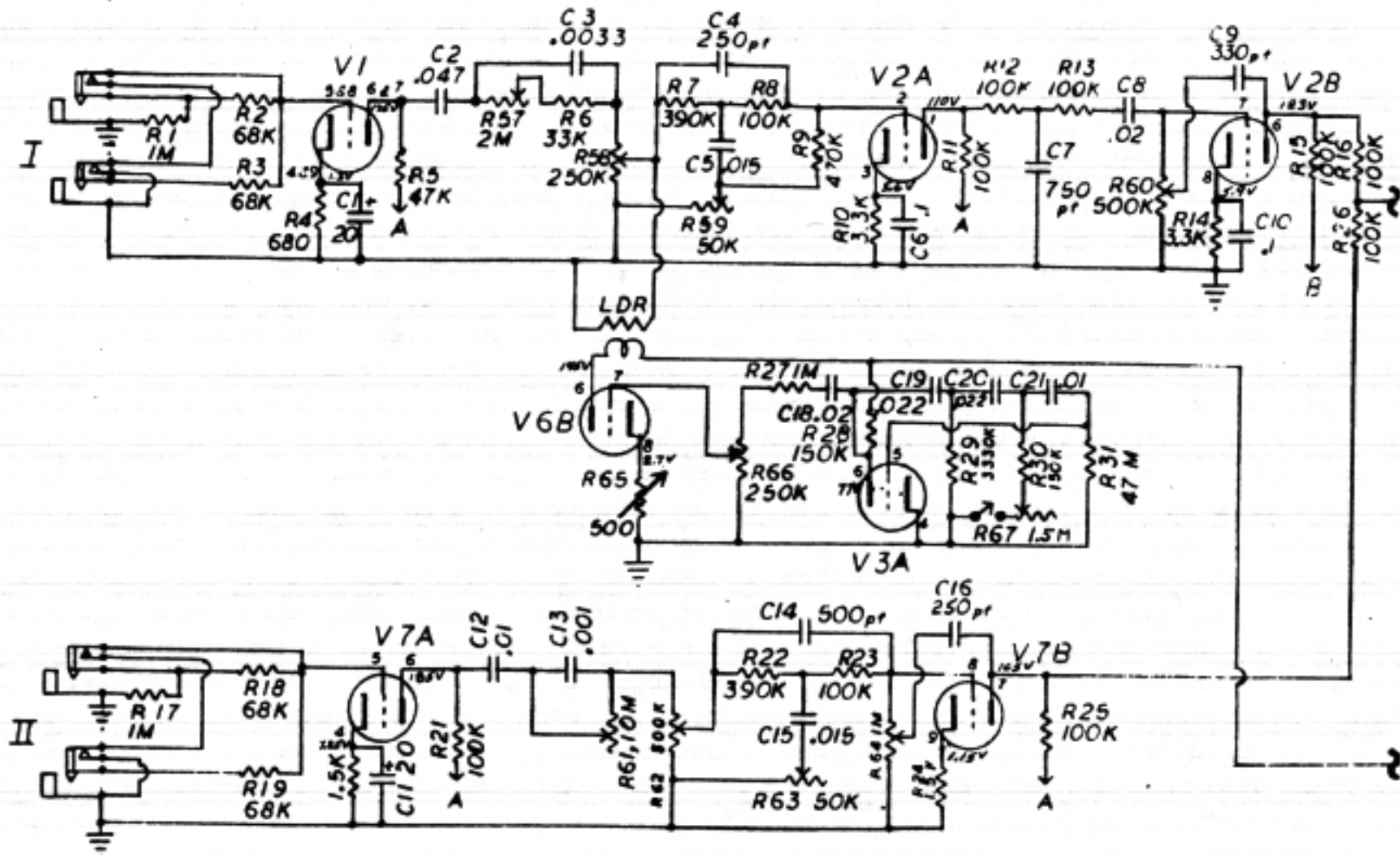
PRODUCT OF



Gibson Electronics

KALAMAZOO, MICHIGAN

T1	Power Transformer	TF-135P	R63, R59	50K Audio Taper (mid-control) control	C-BA-811-370
T2	Output Transformer	TF-531-0	R61	10 meg reversed audio (bass) control	C-BA-811-371
T3	Auto Transformer - 8 ohm, 16 ohm	TF-130A	R58, R66	250K audio taper (volume & depth) control	C-BA-811-370
L1	Filter Choke	TF-3021H	R57	2 meg reversed audio (bass) control	C-BA-811-375
			R62, R60	500K audio taper (volume & treble) control	C-BA-811-370
L1, L2	Inductances 3.7 mh		R64	1 meg audio taper (treble) control	C-BA-811-370
			R67	1.5 meg reversed audio (frequency) control	C-BA-811-371
S1	Switch - off, standby, on-on	SW-78	R65	500 ohm wire wound control	C-8-23391
LDR-1	Light Dependent Resistor Lamp Assembly	RE-LDR-430G			
(2)	Speakers, 10" 8 ohm for Titan 3	S-12197			
(1)	Speaker, 15" 16 ohm for Titan 3	S-0128			
(2)	Speakers, 15" 16 ohm for Titan 5	D-130F			
(2)	Speakers, 12" 8 ohm for Titan 1	S-7414-2			



UNPACKING

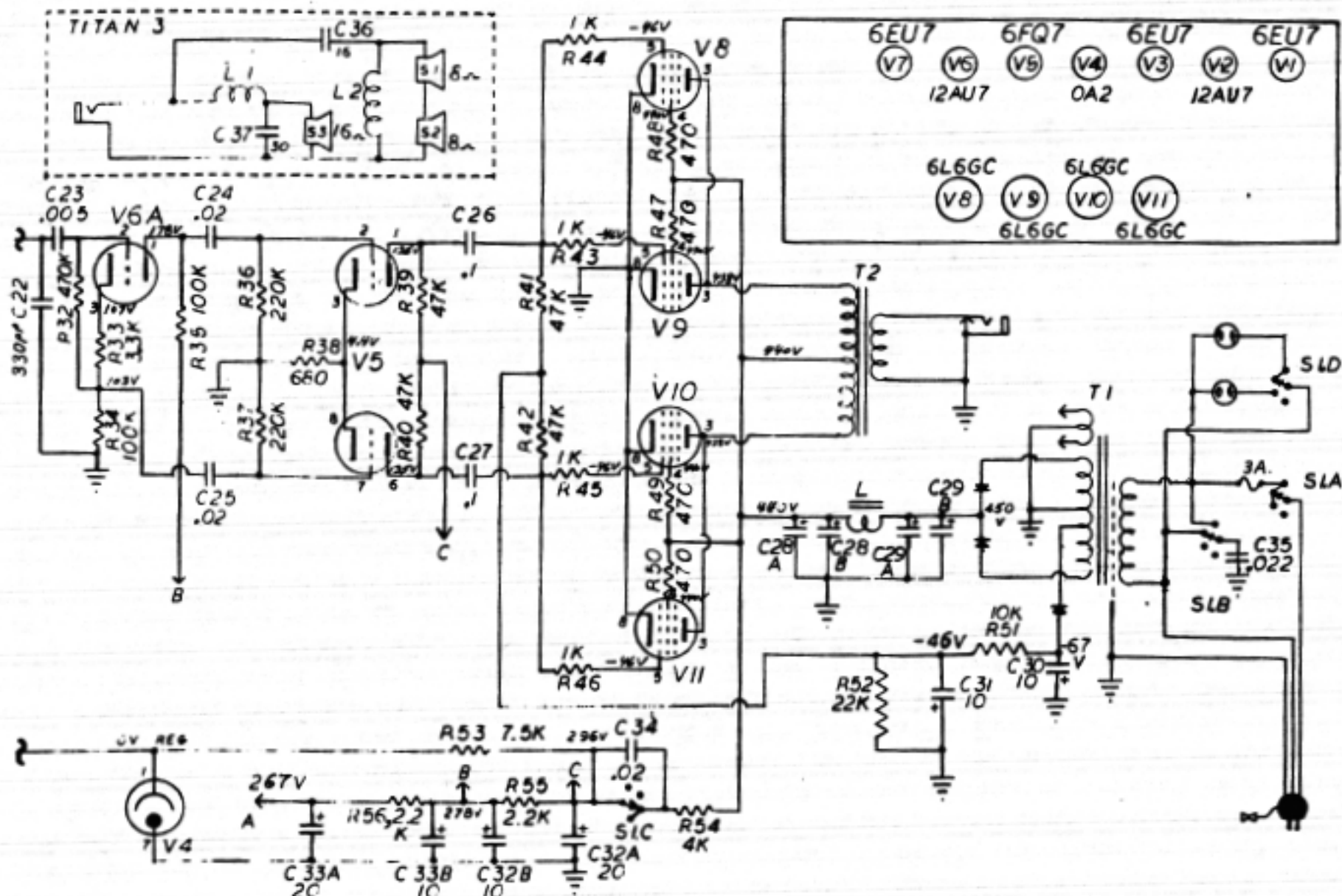
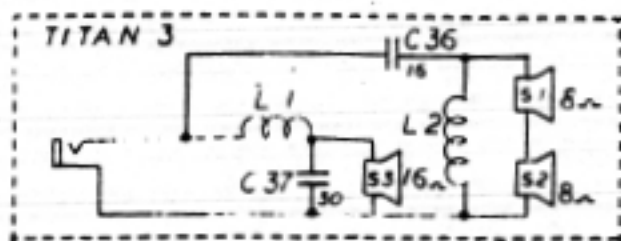
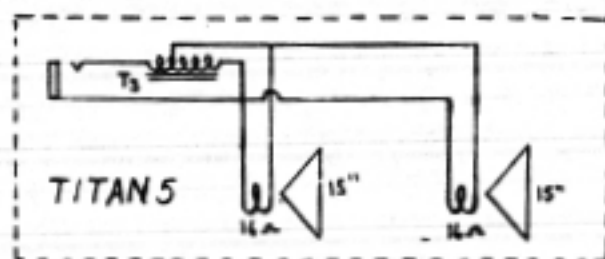
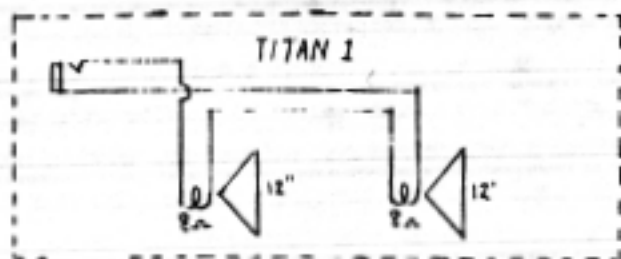
Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use amplifier, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

SET UP INSTRUCTIONS

A set of 4 heavy duty casters are furnished with this amplifier for ease of moving it from one place to another. They are detached from the amplifier at time of shipment and are taped to the amplifier cabinet in a brown vinyl bag. They can be easily attached or detached as needed. When playing this amplifier at relatively high power output it is suggested the casters be removed to eliminate the possibility of synthetic vibrations or rattles.



The Piggy Back amplifier may be played on or off the speaker cabinet. When playing it on the speaker cabinet be sure it is fastened securely by the locking fixtures provided.

SPEAKER CORD CONNECTION

The speaker cord is packed with the A. C. supply cord. One end must be plugged into the speaker jack located on the speaker cabinet back panel and the other end should be plugged into the speaker jack located on the back of the amplifier chassis.

A.C. POWER-POLARITY SWITCH

A convenient switch has been provided for performing a total of three functions, turning the amplifier on and off, putting the amplifier in "Standby" and selecting the proper polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum. In the "Standby" position the amplifier is kept "warmed up" and ready to play at the instant the switch is advanced to the "On" positions. Two "On" positions have been provided. The hum and hiss level on one of the "On" positions will be noticeably lower — this is the correct "Polarity" for using the amplifier.

In locations of extremely high noise levels, clipping the "Ground Clip" to a grounded object will greatly reduce objectionable noise and hum.

As an added convenience to the artist this amplifier is equipped with a "Standby pilot light" as well as the "Regular pilot light". When the "Amber" light is on, the amplifier is in "Standby"; when the "Red" light is on the amplifier is "On" and ready to play.

OPERATION OF THE MICROPHONE

The high gain and characteristics of this amplifier, permit the use of most of the popular high impedance microphones for public address work.

TILT LEG

This amplifier is equipped with a "Tilt Leg" which allows the artist to change the angle of sound dispersion. See Figure 1.

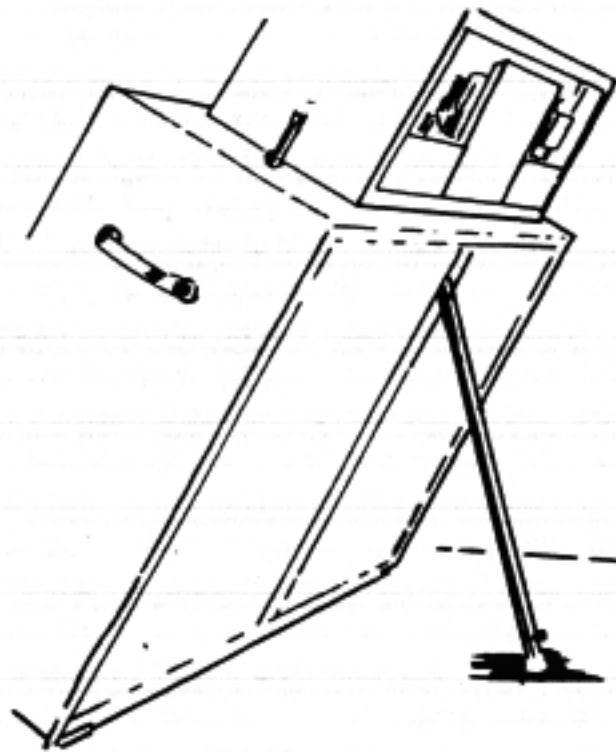


FIGURE 1.

SPECTRUM CONTROLS

The wide range of tonal extremes required by different artists can all be accommodated with Gibson Spectrum Control. For maximum loudness with a given power, the "treble" control should be Maximum, the "mid range" minimum, and the bass near 5. With this adjustment the tone controls on the guitar will have their maximum effectiveness.

"Jazz" sound to the artist taste can be had by reducing the "treble", adding some "mid range", and adjusting the "bass" to the artist requirement.

Spectrum Controls plus the tone controls on the artist's instrument offer an endless variety of tonal color.

TREMOLO — EFFECTIVE IN CHANNEL 1 ONLY

The Tremolo effect is turned on and off by means of a Push Type Foot Switch. The Tremolo frequency of the Amplifier is controlled by the Variable Control marked "Frequency." The speeds have been carefully set to cover a wide range of Tremolo effects. The depth of the Tremolo is also variable being controlled by the "Depth" Control.

TWO CHANNELS

The Pre-Amplifier is divided into separate channels with two input jacks in each channel. Each channel has an independent set of volume, treble and bass voicing controls.

Complete isolation is provided between the two channels so that entirely different settings of tone and volume controls can be used without inter-action. This permits two different styles in any combination — microphone, electric jazz guitar, rhythm guitar, bass or accordion — to be played at the same time with correct tone and volume settings for each instrument. The surplus power of the amplifier insures ample volume level for each instrument.

FUSE

The fuse used in this Amplifier is a type 3AG of three amperes rating. **DO NOT USE FUSES OF HIGHER RATING**

SERVICE

If the Amplifier is in need of servicing, consult a reliable radio man. The electrical diagram herein should be shown to the repairman to assist him in servicing the Amplifier.

Gibson

TITAN MEDALIST
"WITH SPECTRUM CONTROL"

INSTRUCTIONS

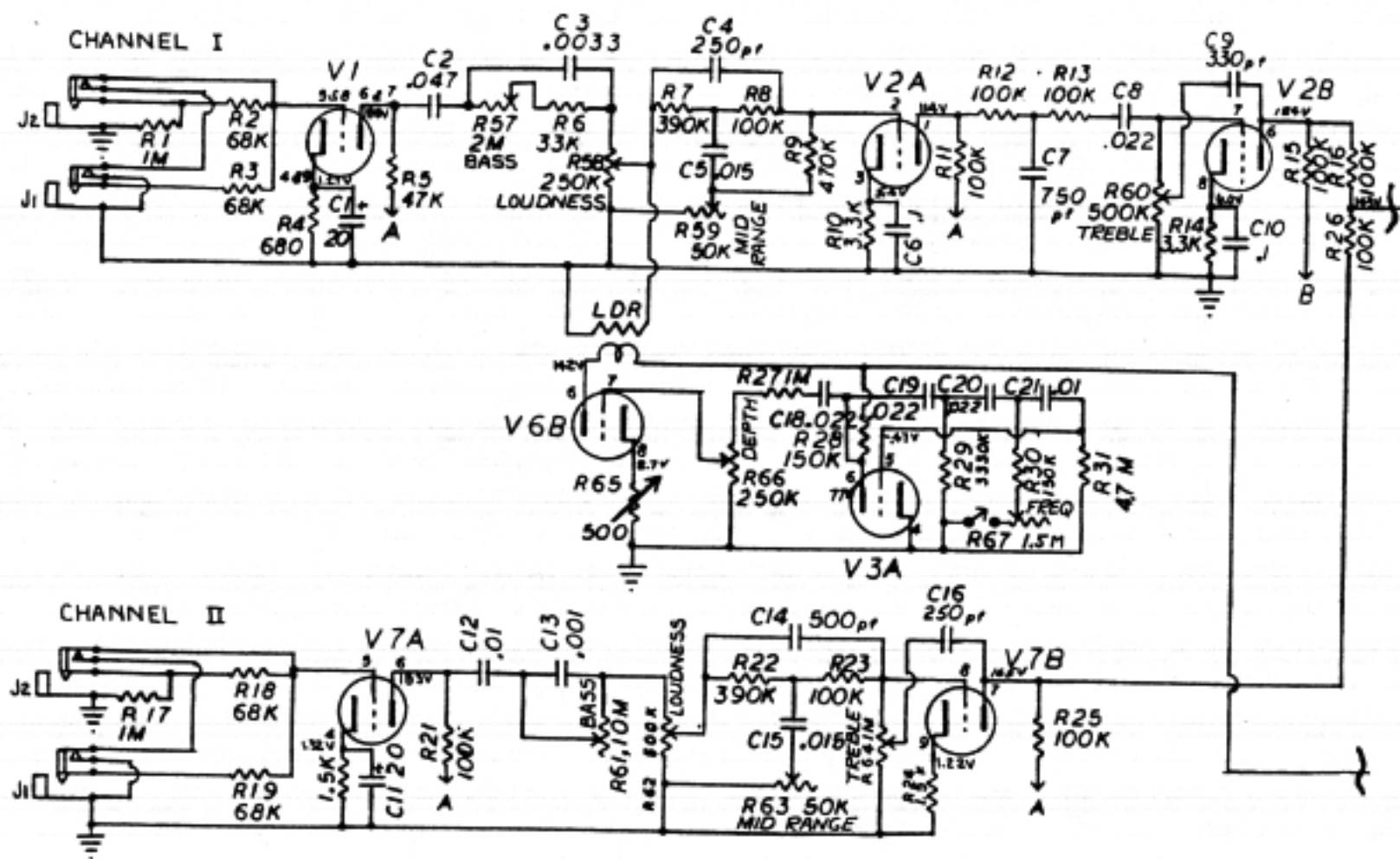
PRODUCT OF



Gibson Electronics

KALAMAZOO, MICHIGAN

T1	Power Transformer	TF-135P	R83, R59	50K Audio Taper (mid-control) control	C-BA-811-3703
T2	Output Transformer	TF-531-0	R81	10 meg reversed audio (bass) control	C-BA-811-3710
T3	Auto Transformer - 8 ohm, 16 ohm	TF-130A	R58, R66	250K audio taper (volume & depth) control	C-BA-811-3701
L3	Filter Choke	TF-3021H	R57	2 meg reversed audio (bass) control	C-BA-811-3751
L1, L2	Inductances 3.7 mh		R62, R60	500K audio taper (volume & treble) control	C-BA-811-3707
S1	Switch - off, standby, on-on	SW-78	R64	1 meg audio taper (treble) control	C-BA-811-3708
LDR-1	Light Dependent Resistor Lamp Assembly RE-LDR-430F		R67	1.3 meg reversed audio (frequency) control	C-BA-811-3711
			R65	500 ohm wire wound control	C-B-23291
SP2	(1) Speakers, 15" 16 ohm 5-0127				
SP1	(1) Speakers, 10" 16 ohm 5-7666				



UNPACKING

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use amplifier, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

SET UP INSTRUCTIONS

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OPERATION OF THE MICROPHONE

The high gain and characteristics of this amplifier, permit the use of most of the popular high impedance microphones for public address work.

TILT LEG

This amplifier is equipped with a "Tilt Leg" which allows the artist to change the angle of sound dispersion. See Figure 1.

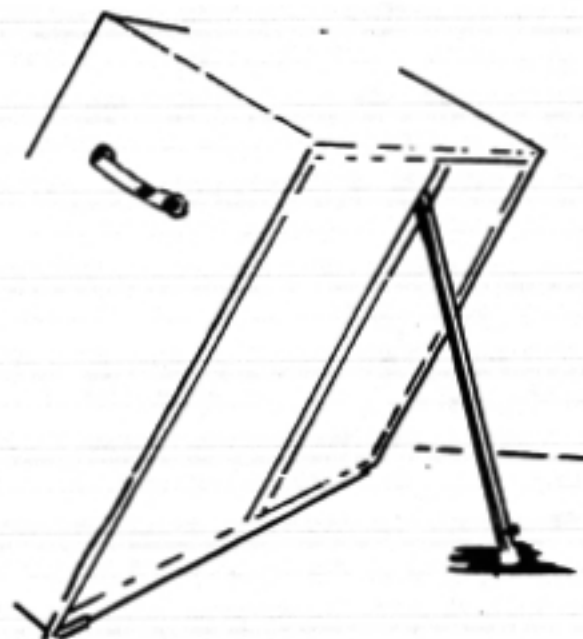


FIGURE 1.

SPECTRUM CONTROLS

The wide range of tonal extremes required by different artists can all be accommodated with Gibson Spectrum Control. For maximum loudness with a given power, the "treble" control should be Maximum, the "mid range" minimum, and the bass near 5. With this adjustment the tone controls on the guitar will have their maximum effectiveness.

"Jazz" sound to the artist taste can be had by reducing the "treble", adding some "mid range", and adjusting the "bass" to the artist requirement.

Spectrum Controls plus the tone controls on the artist's instrument offer an endless variety of tonal color.

TREMOLO — EFFECTIVE IN CHANNEL 1 ONLY

The Tremolo effect is turned on and off by means of a Push Type Foot Switch. The Tremolo frequency of the Amplifier is controlled by the Variable Control marked "Frequency." The speeds have been carefully set to cover a wide range of Tremolo effects. The depth of the Tremolo is also variable being controlled by the "Depth" Control.

TWO CHANNELS

The Pre-Amplifier is divided into separate channels with two input jacks in each channel. Each channel has an independent set of volume, treble and bass voicing controls.

Complete isolation is provided between the two channels so that entirely different settings of tone and volume controls can be used without inter-action. This permits two different styles in any combination — microphone, electric jazz guitar, rhythm guitar, bass or accordion — to be played at the same time with correct tone and volume settings for each instrument. The surplus power of the amplifier insures ample volume level for each instrument.

FUSE

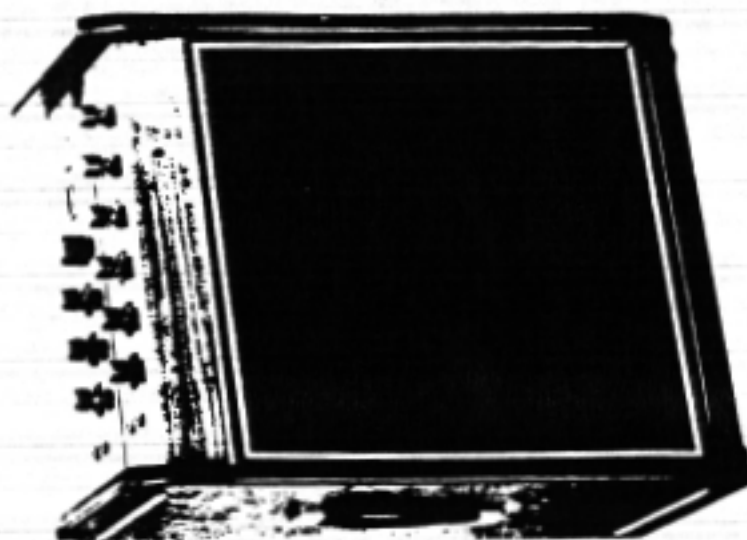
The fuse used in this Amplifier is a type 3 AG Slo-Blo of two amperes rating. DO NOT USE FUSES OF HIGHER RATING.

SERVICE

If the Amplifier is in need of servicing, consult a reliable radio man. The electrical diagram herein should be shown to the repairman to assist him in servicing the Amplifier.



DUO MEDALIST AMPLIFIER

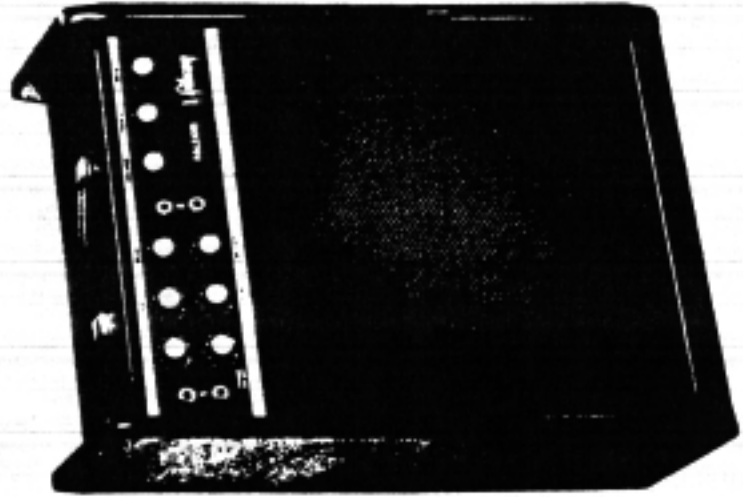


DUO MEDALIST PARTS LIST

Part	Description	Schematic Reference	Part Number
CONSOLE ASSEMBLY			
Assembly	Reverb & Tremolo Footswitch.....		977-012789
Reverberation Unit	.....		984-012419
Speaker	12" 8 Ohm.....		985-012431
Switch	S.P.S.T. Foot.....		900-003574
Switch	S.P.D.T. Foot.....		990-010698
CONTROL PANEL ASSEMBLY			
Assembly	Pilot Light.....		939-011452
Jack	Phone.....		919-012404
Knob	Control.....		919-012408
Knob	On-Off Polarity.....		915-012451
Potentiometer	250K Spectral Linear Taper.....		925-012424
Potentiometer	2 Meg Audio Taper.....	VR2, 6	925-012425
Potentiometer	2 Meg Reverse Audio Taper.....	VR1, 5	925-012426
Potentiometer	250K Audio Taper.....	VR8	925-012427
Potentiometer	250K Audio Taper.....	VR3, 7, 10	925-012428
Potentiometer	1.5 Meg Reverse Audio Taper.....	VR9	925-012429
Reverb	Complete Unit.....		984-012419
Switch	3 Position Polarity.....		990-012430
PRE-AMPLIFIER ASSEMBLY			
Assembly	Photocell.....	P1	948-012416
Capacitor	Electrolytic 1 UF 6V.....		945-011469-5
Capacitor	Electrolytic 40-20-20 UF @ 350V.....		945-012440
Potentiometer	500Ω.....	VR11	925-012423
Resistor	10K 7W W.W.....		924-012434-4
Transformer	Reverb.....	T3	955-003955
Tube	12AU7A.....	V3, 5	900-001291-25
Tube	6EU7.....	V1, 2, 4	990-003522
POWER AMPLIFIER ASSEMBLY			
Assembly	Power Amplifier Chassis.....		997-012441
Capacitor	Electrolytic 20-20 UF @ 500V.....		945-012437
Capacitor	Electrolytic 25 UF 12V.....		945-011469-8
Capacitor	Electrolytic 100 UF 50V.....		945-011469-9
Card	A. C. Line.....		989-012435
Diode	Silicon.....	D3	919-010029
Diode	Silicon 1200V Piv.....	D1, 2	919-012414
Fuse	2 Amp. Slo-Blo.....		939-013304
Holder	Fuse.....		996-006303
Jack	2T.....		910-010678
Potentiometer	100 Ohm 2W.....	VR4	925-012422
Resistor	1K 7W W.W.....		924-012434-1
Resistor	3K 7W W.W.....		924-012434-2
Resistor	14K 15W W.W.....		924-012434-3
Socket	Phone.....		908-003512
Transformer	Power.....	T1	954-003090
Transformer	Output.....	T2	955-011408
Tube	7591.....	V7, 8	990-003521
Tube	12AX7.....	V6	990-003570



FALCON AMPLIFIER



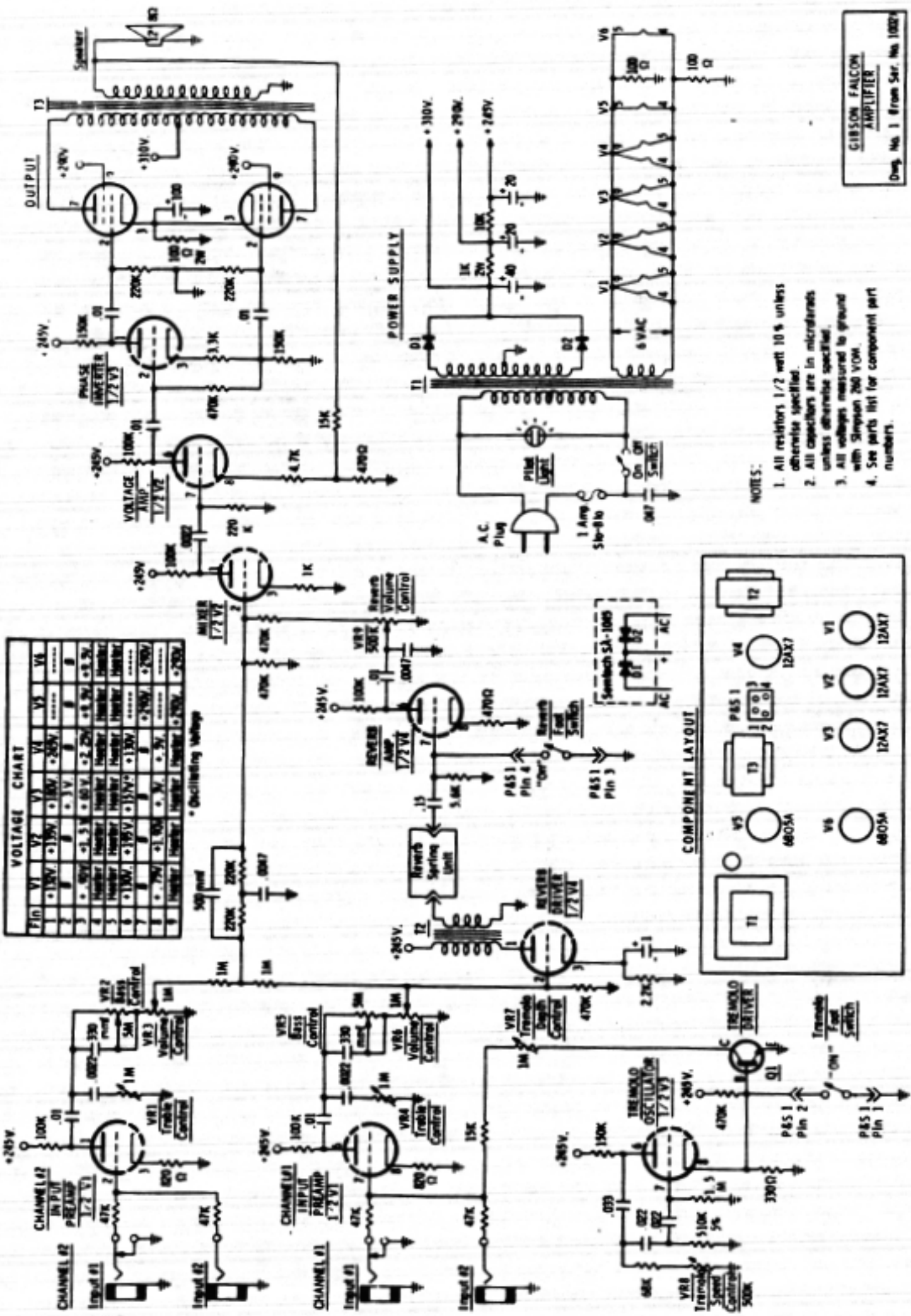
GIBSON FALCON PARTS LIST

PART	DESCRIPTION	SCHEMATIC PART REFERENCE NUMBER
Assembly	Reverberation Unit Complete	997-003564
Assembly	Trem/Reverb Footswitch	997-012520
Capacitor	Electrolytic 100 MFD 25V	945-011488-004
Capacitor	Elect. 40-20-20 MFD 350V	945-011489
Capacitor	Mylar .0022 MFD 400V	946-003565-222
Capacitor	Mylar .01 MFD 400V	946-003566-103
Capacitor	Mylar .047 MFD 600V	946-003567-473
Capacitor	Mylar .022 MFD 200V	946-011465-223
Capacitor	Mylar .033 MFD 200V	946-011465-333
Capacitor	Mylar 330 PF 200V	946-011490-331
Capacitor	Mylar .15 MFD 100V	946-011492-154
Capacitor	Mylar 500 PF 500V	947-002630-501
Cord	A.C. Line	989-003518
Diode	Duo SA-1045	D1, 2
Fuse	1 Amp. 3 AC Slo-Blo	919-003516
Holder	Fuse	939-013304-02
Jack	Input (3T)	906-006303
Jack	Input (2T)	#1 910-010078
Knob	Control	#2 910-010878
Plug	4 Pin	915-011459
Plug	Phono	P&S1 910-003576
Potentiometer	500K Reverb (A)	910-003589
Potentiometer	1 Meg Tremolo Depth (RA)	VR9 925-003562
Potentiometer	1 Meg Volume (SP, L)	VR7 925-012428
Potentiometer	5 Meg Bass (RA)	VR3, 6 925-012507
Potentiometer	1 Meg Treble (A)	VR2, 5 925-012508
Potentiometer	500K Trem. Freq./Switch (RA)	VR1, 4 925-012509
Shell	4 Pin Plug	VR8 925-012510
Socket	Footswitch	P&S1 976-003577
Socket	9 Pin Wafer Tube	906-003575
Socket	9 Pin Bakelite Tube	906-005797
Speaker	12"	906-008498
Switch	Reverb & Tremolo Foot	985-012512
Transformer	Power TF-113-B-P	960-003574
Transformer	Reverb Driver	T1 954-011407
Transformer	Output TF-508-O	T2 955-003555
Transistor	Tremolo Driver	T3 955-003694
Tube	6BQ5	Q1 991-006393
Tube	12AX7	V5, 6 990-003570
Tube		V1-4 990-003571

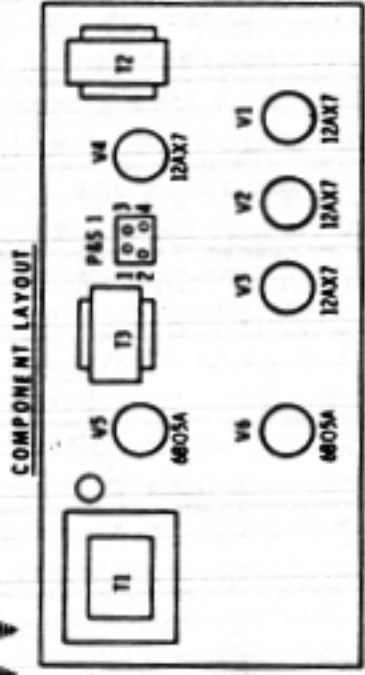
VOLTAGE CHART

Pin	V1	V2	V3	V4	V5	V6
1	150V	150V	150V	150V	250V	250V
2	80V	1.5V	80V	2.25V	8.5V	8.5V
3	Header	Header	Header	Header	Header	Header
4	Header	Header	Header	Header	Header	Header
5	Header	Header	Header	Header	Header	Header
6	150V	150V	150V	150V	250V	250V
7	75V	1.5V	75V	2.25V	8.5V	8.5V
8	Header	Header	Header	Header	Header	Header

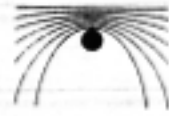
* Oscillating Voltages



- NOTES:**
1. All resistors 1/2 watt 10% unless otherwise specified.
 2. All capacitors are in microfarads unless otherwise specified.
 3. All voltages measured to ground with Simpson 260 VOM.
 4. See parts list for component part numbers.

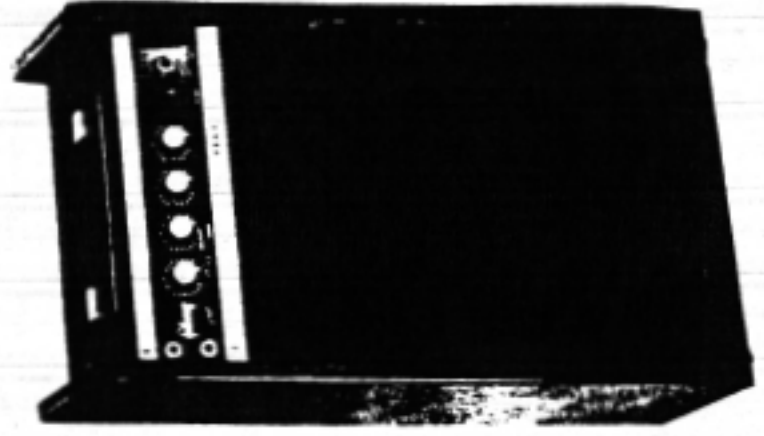


**GIBSON FALCON
AMPLIFIER**
Des. No. 1 From Ser. No. 10029



Gibson

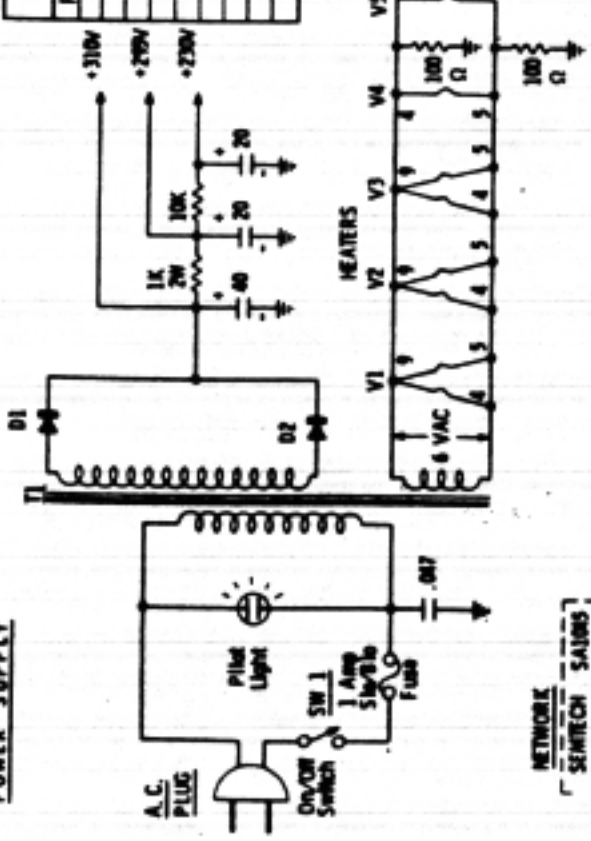
HAWK AMPLIFIER



GIBSON HAWK PARTS LIST

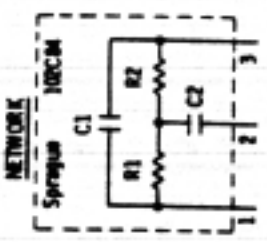
PART	DESCRIPTION	SCHEMATIC PART REFERENCE	PART NUMBER
Assembly	Reverberation Unit Complete.		997-003564
Assembly	Reverb Tremolo Footswitch.		997-012520
Capacitor	Electrolytic 1 MFD 6VDC.		945-011468-1
Capacitor	Electrolytic 10 MFD 15 VDC.		945-011468-2
Capacitor	Electrolytic 5 MFD 6VDC.		945-011468-3
Capacitor	Electrolytic 100 MFD 25V.		945-011468-4
Capacitor	Elect. 40-20-20 MFD 350V.		945-011469
Capacitor	Mylar .001 MFD 400 VDC.		946-003566-102
Capacitor	Mylar .01 MFD 400V.		946-003566-103
Capacitor	Mylar .0047 MFD 400 VDC.		946-003566-472
Capacitor	Mylar .047 MFD 600V.		946-003567-473
Capacitor	Mylar .1 MFD 100 VDC.		946-011463-104
Capacitor	Mylar .2 MFD 100 VDC.		946-011463-204
Capacitor	Mylar .022 MFD 200V.		946-011465-223
Capacitor	Mylar .033 MFD 200V.		948-011465-333
Capacitor	Mylar .0047 MFD 200V.		946-011466-472
Capacitor	Mylar 330 PF 200V.		946-011490-331
Cord	A. C. Line.		989-003518
Diode	Duo SA-1045	D1, 2	919-003516
Fuse	1 Amp. 3 AG Slo-Blo.		939-013304-2
Holder	Fuse		906-006303
Jack	Input (3T)	#1	910-010078
Jack	Input (2T)	#2	910-010878
Knob	Control		915-011459
Pilot Light			939-003533-1
Plug	Phono		910-003589
Plug	4 Prong	P&S1	910-003576
Potentiometer	500K Reverb Control (A)	VR3	925-003562
Potentiometer	1 Meg Tone Cont. Switch (A)	VR1	925-011461
Potentiometer	1 Meg Volume Control (SP.L)	VR2	925-011460
Potentiometer	500K Tremolo Control (RA)	VR4	925-011462
Shell	4 Prong Plug	P&S1	976-003577
Socket	Footswitch		906-003575
Socket	9 Pin Wafer Tube		906-005797
Socket	9 Pin Bakelite Tube		906-006498
Speaker	10"		985-003563
Switch	Reverb & Tremolo Foot.		960-003574
Transformer	Reverb Driver	T2	955-003555
Transformer	Output TF-508-0	T3	955-003694
Transformer	Power TF-113-B-P	T1	990-003570
Tube	6BQ5	V4, 5	954-011407
Tube	12AX7	V1-3	990-003571

POWER SUPPLY

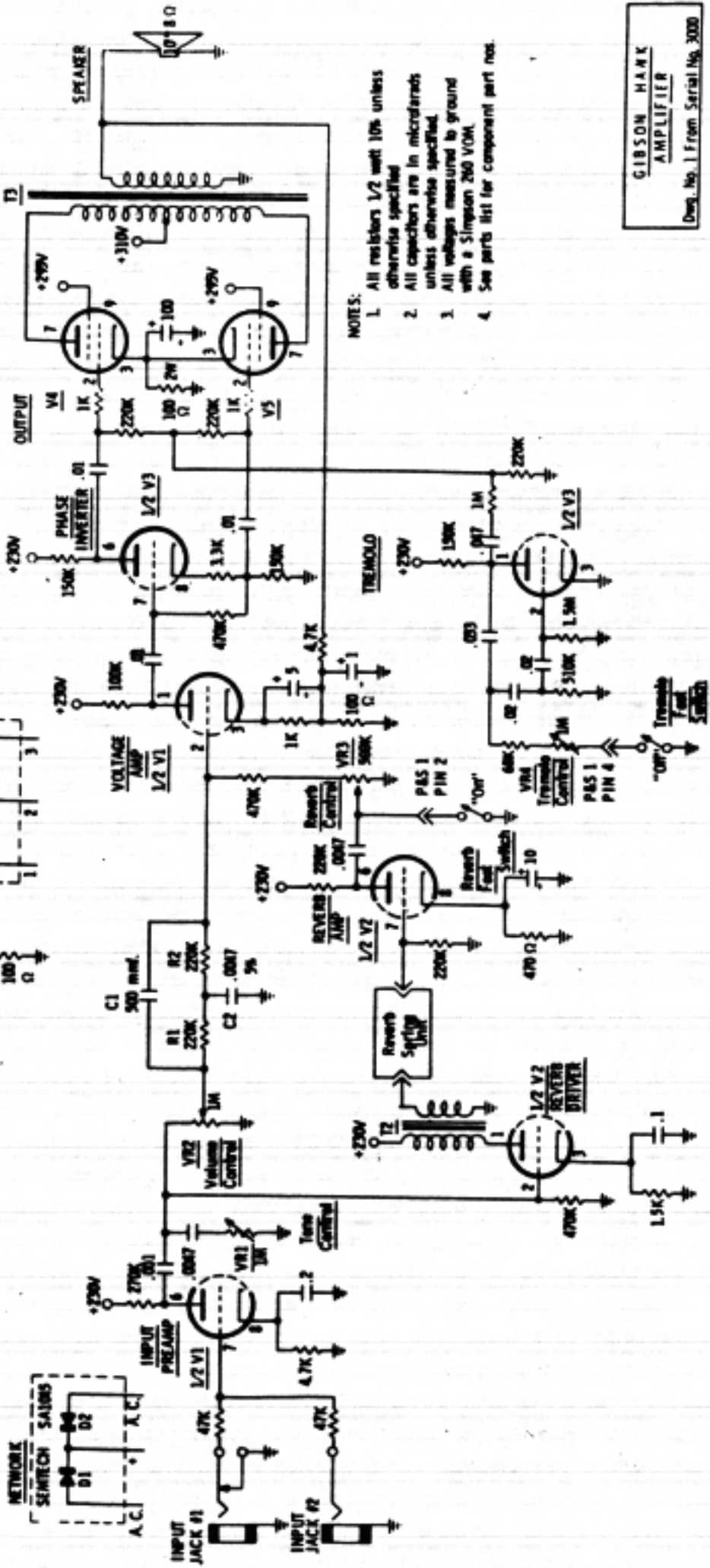
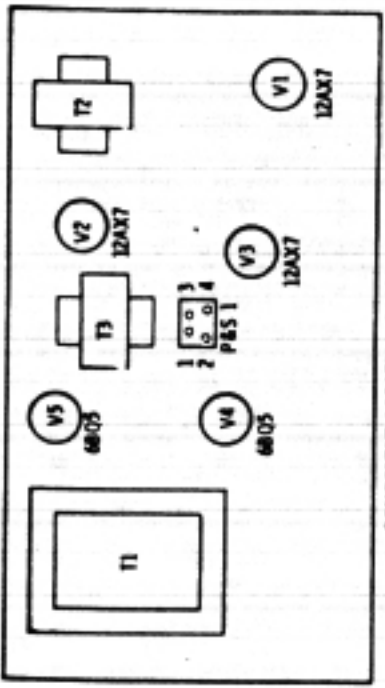


VOLTAGE CHART

PIN	V1	V2	V3	V4	V5
1	+1.45V	+2.30V	+1.65V	-	-
2	0	0	-1.1V	0	0
3	+0.9V	+1.4V	0	+0.15V	+0.15V
4	Header	Header	Header	Header	Header
5	Header	Header	Header	Header	Header
6	+1.50V	+0.5V	+1.8V	+0.9V	+0.9V
7	+1.2V	+0.4V	+0.5V	+0.9V	+0.9V
8	Header	Header	Header	Header	Header
9	Header	Header	Header	Header	Header

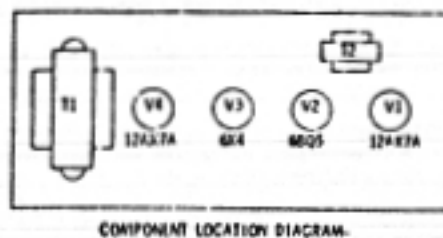
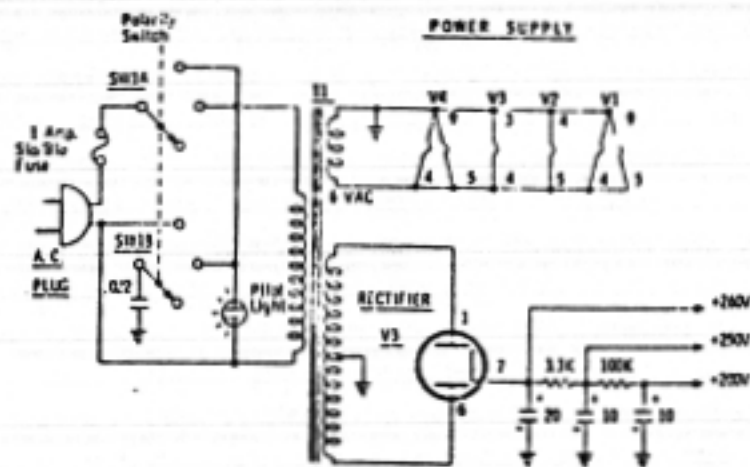


COMPONENT LOCATION DIAGRAM



- NOTES:**
1. All resistors 1/2 watt 10% unless otherwise specified.
 2. All capacitors are in microfarads unless otherwise specified.
 3. All voltages measured to ground with a Simpson 260 VOM.
 4. See parts list for component part nos.

**GIBSON HAWK
AMPLIFIER**
Des. No. 1 From Serial No. 3000

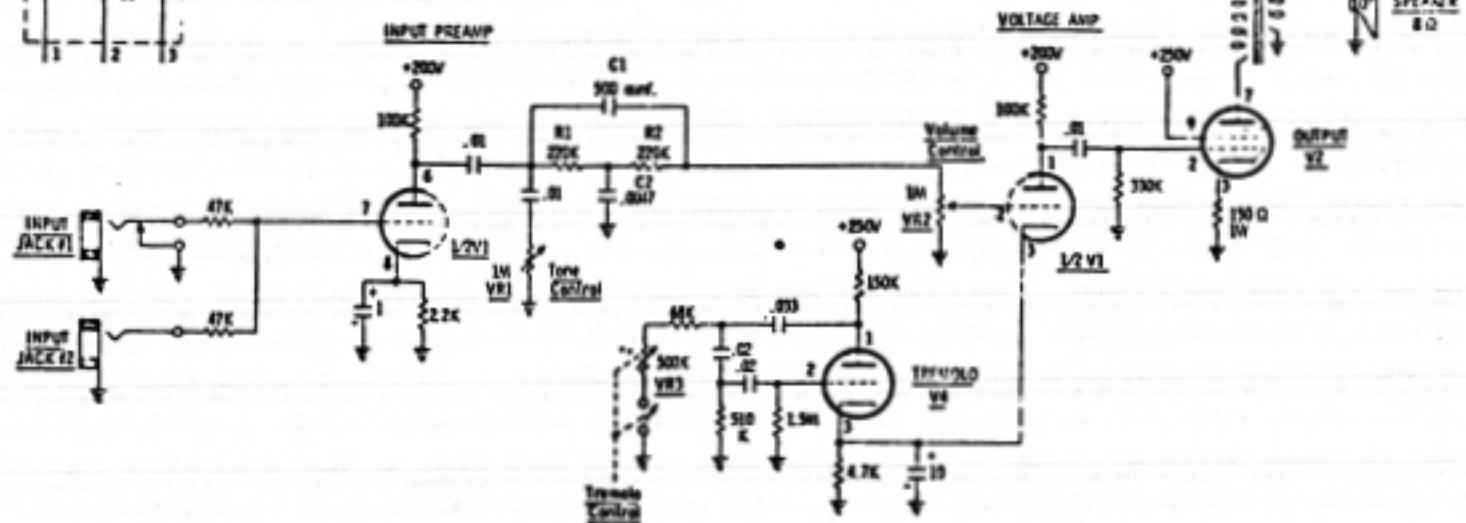
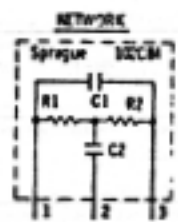


VOLTAGE CHART

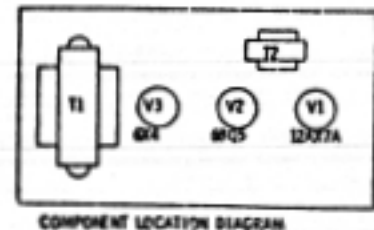
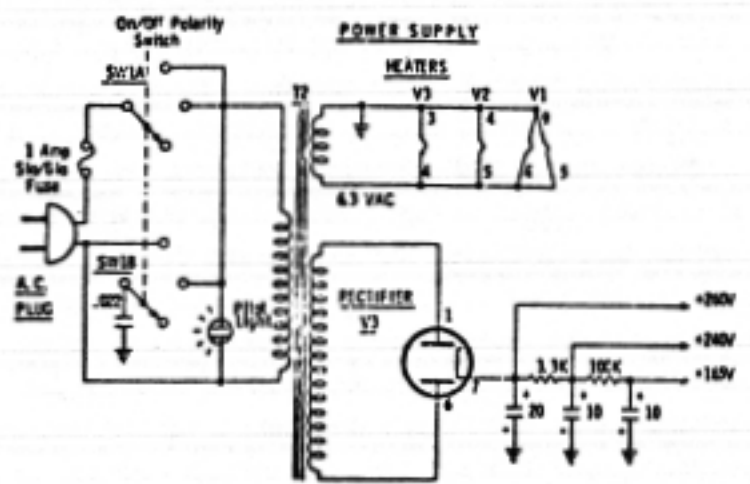
PIN	V1	V2	V3	V4
1	+15V	-	250 VAC	+250V
2	0	0	-	0
3	+2.7V	+1.7V	Heater	+2.7V
4	Heater	Heater	Heater	Heater
5	Heater	Heater	-	Heater
6	+15V	-	250 VAC	-
7	0	+25V	-	-
8	+1.6V	+25V	-	-
9	Heater	+25V	-	Heater

• Fuse

- NOTES:**
1. All resistors 1/2 watt 10% unless otherwise specified.
 2. All capacitors are in microfarads unless otherwise specified.
 3. All voltages measured to ground with a Simpson 260 VOM.
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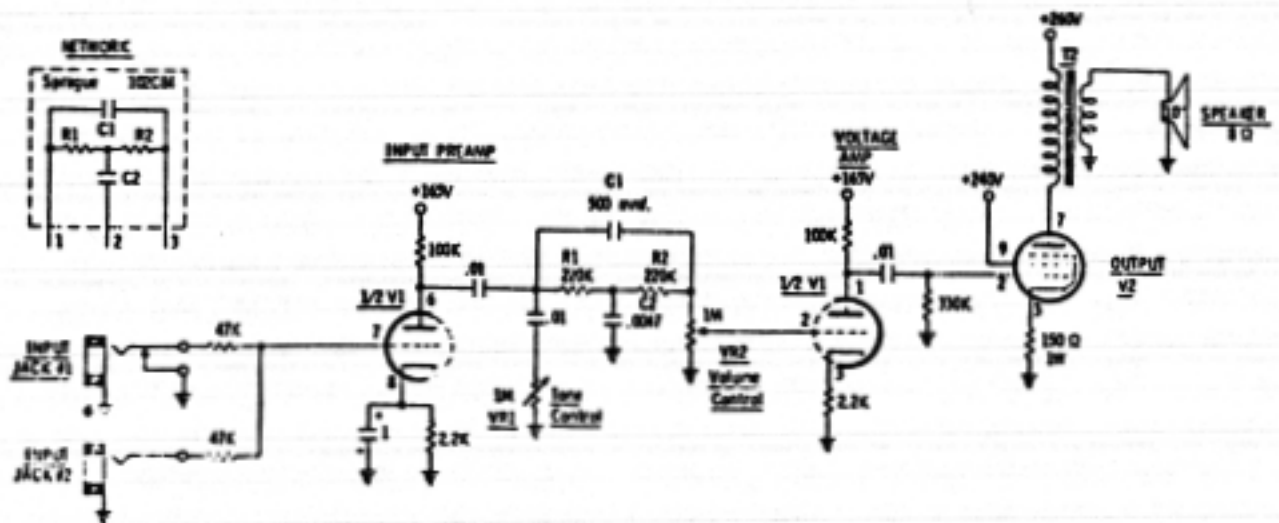
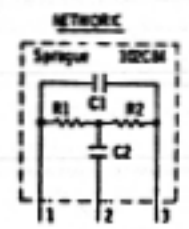
GIBSON
5075/5076/5077
AMPLIFIER
Sag No. 1



VOLTAGE CHART

PIN	V1	V2	V3
1	+12V	-	250 VAC
2	0	0	-
3	+1.7V	+1.7V	Heater
4	Heater	Heater	Heater
5	Heater	Heater	-
6	+12V	-	250 VAC
7	0	+16V	-
8	+1.7V	+16V	-
9	Heater	+16V	-

- NOTES:**
1. All resistors 1/2 watt 10% unless otherwise specified.
 2. All capacitors are in microfarads unless otherwise specified.
 3. All voltages measured to ground with a Simpson 260 VOM.
 4. See parts list for component part nos.

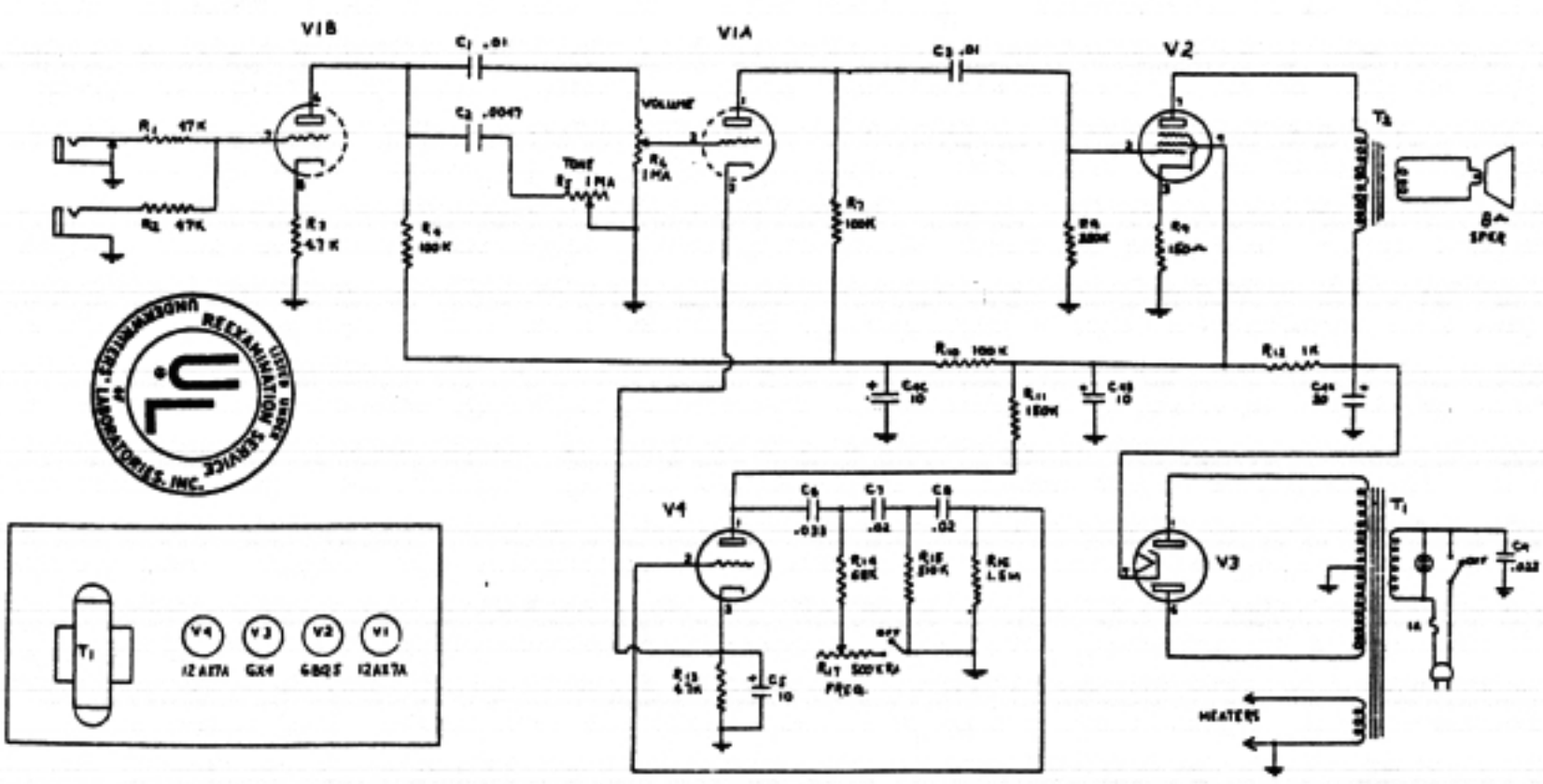
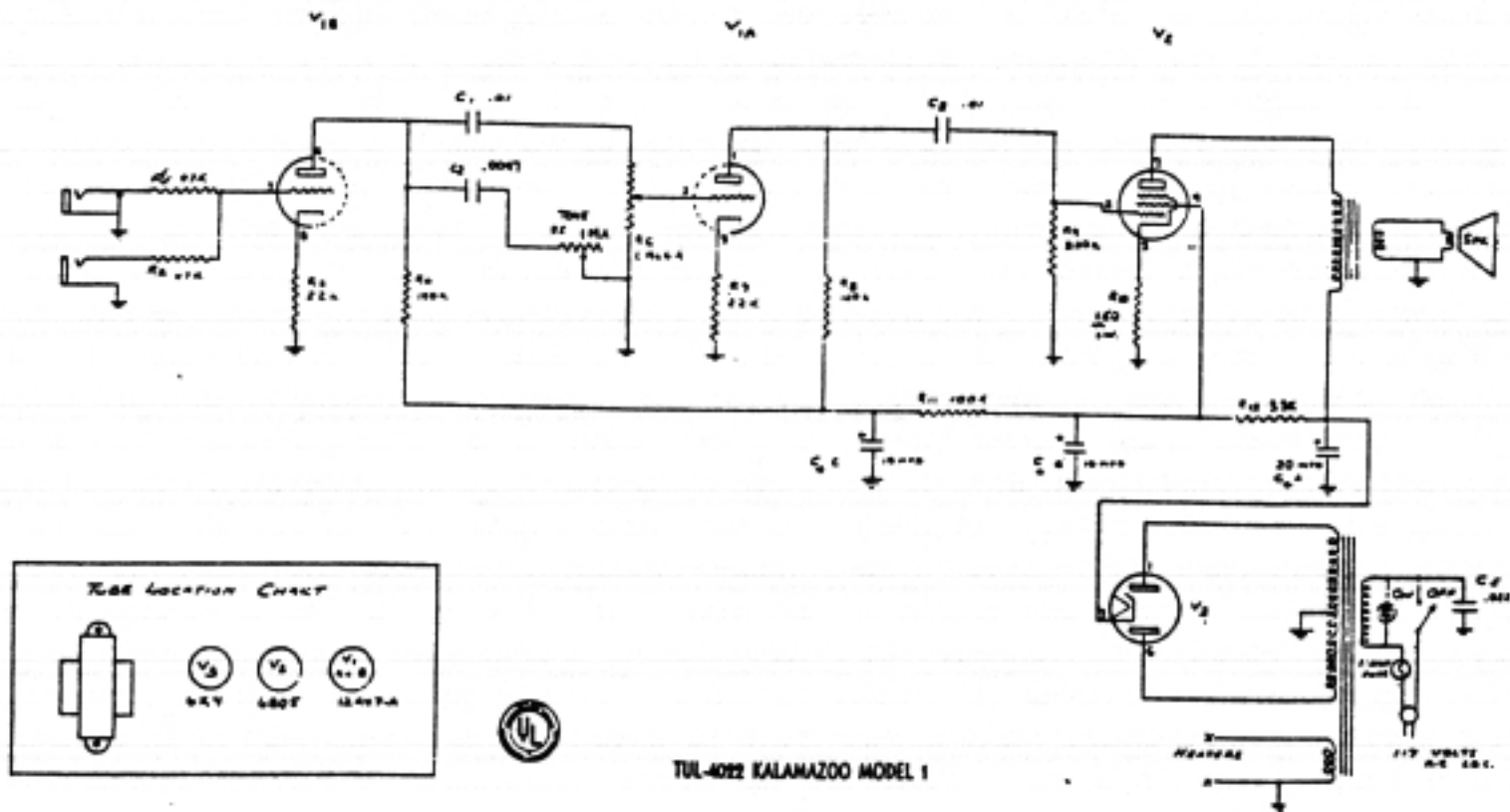


GIBSON
5075/5076/5077
AMPLIFIER
Sag No. 1

GIBSON SKYLARK T AMPLIFIER

PARTS LIST

PART	DESCRIPTION	SCHEMATIC REFERENCE	PART NUMBER
CHASSIS ASSEMBLY			
Chassis	Assembly.....		7510
Overlay	Chassis Face.....		CHP-162
Transformer	Power.....	T1.....	TF-1028
Transformer	Output (With Speaker Connections).....	T2.....	TF-500-01
Tube	Input Preamplifier, Voltage Amp & Tremolo.....	V1 & V4....	TU-12AX7A
Tube	Output.....	V2.....	TU-6BQ5
Tube	Rectifier.....	V3.....	TU-6X4
Socket	Tube - 9 pin.....		TUS-203
Socket	Tube - 7 pin.....		TUS-204
Fuse	1 Amp 3 AC, Slo-Blo.....		FU-312001
Fuse Post	Assembly.....		FU-342012
Light	Pilot.....		PL-33R
Switch	3 Position Polarity.....	SW1A, SW1B..	SW-899-1
Cord	10 Feet.....		CRD-SPT-2
Jack	Input.....	#2.....	J-11
Jack	Input.....	#1.....	J-12A
Control	1 Meg Audio.....	VR1.....	CBA-811-3709-1
Control	1 Meg Linear.....	VR2.....	CBA-4016
Control	500K RA W/SPST Switch.....	VR3.....	CBA-4017
Knob	Control.....		K-910
Network	Notch Filter.....		PEC-1005
Capacitor	1 Mfd., 6V, 85°C.....		CD-9E-1-6
Capacitor	20-10-10- Mfd., 450V., 80°C.....		CD-F-1008
CASE ASSEMBLY			
Case	Complete.....		WCCA-83-2
Speaker	10" 8 Ohm.....		S-20008
INSTRUCTIONS			
Manual	Literature.....		TUL-4037



EPHONE

EMPEROR

MODELS

EA-4T, EA-4TL *AND* EA-6T
AMPLIFIERS

INSTRUCTIONS

EPHONE Inc., KALAMAZOO, MICHIGAN

UNPACKING

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use amplifier, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

SET UP INSTRUCTIONS

A set of 4 heavy duty casters are furnished with this amplifier for ease of moving it from one place to another. They are detached from the amplifier at time of shipment and are taped to the amplifier cabinet in a brown vinyl bag. They can be easily attached or detached as needed. When playing this amplifier at relatively high power output it is suggested the casters be removed to eliminate the possibility of synthetic vibrations or rattles.

The Piggy Back amplifier may be played on or off the speaker cabinet. When playing it on the speaker cabinet be sure it is fastened securely by the locking fixtures provided.

SPEAKER CORD CONNECTION

The speaker cord is packed with the A. C. supply cord. One end must be plugged into the speaker jack located on the speaker cabinet back panel and the other end should be plugged into the speaker jack located on the back of the amplifier chassis.

A.C. POWER-POLARITY SWITCH

A convenient switch has been provided for performing a total of three functions, turning the amplifier on and off, putting the amplifier in "Standby" and selecting the proper polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum. In the "Standby" position the amplifier is kept "warmed up" and ready to play at the instant the switch is advanced to the "On" positions. Two "On" positions have been provided. The hum and hiss level on one of the "On" positions will be noticeably lower — this is the correct "Polarity" for using the amplifier.

In locations of extremely high noise levels, clipping the "Ground Clip" to a grounded object will greatly reduce objectionable noise and hum.

As an added convenience to the artist this amplifier is equipped with a "Standby pilot light" as well as the "Regular pilot light". When the "Amber" light is on, the amplifier is in "Standby"; when the "Red" light is on the amplifier is "On" and ready to play.

OPERATION OF MICROPHONE

The high gain and characteristics of this amplifier, permit the use of most of the popular high impedance microphones for public address work.

TILT LEG

This amplifier is equipped with a "Tilt Leg" which allows the artist to change the angle of sound dispersion. See Figure 1.



FIGURE 1.

TREMOLO — EFFECTIVE IN CHANNEL 2 ONLY

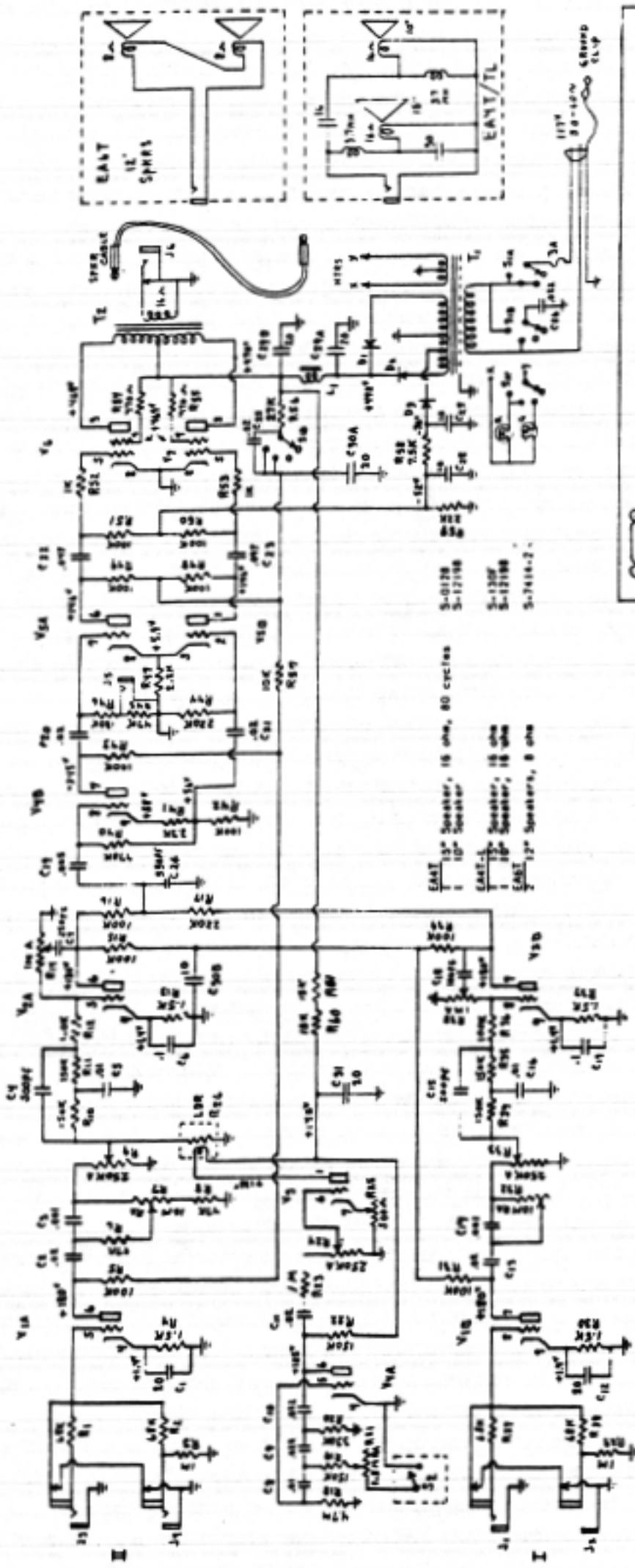
The Tremolo effect is turned on and off by means of a Push Type Foot Switch. The Tremolo frequency of the Amplifier is controlled by the Variable Control marked "Frequency." The speeds have been carefully set to cover a wide range of Tremolo effects. The depth of the Tremolo is also variable being controlled by the "Depth" Control.

TWO CHANNELS

The Pre-Amplifier is divided into separate channels with two input jacks in each channel. Each channel has an independent set of volume, treble and bass voicing controls.

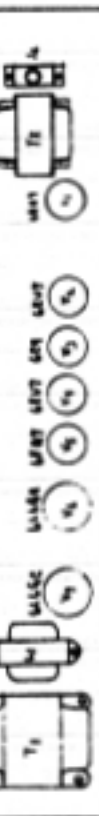
Complete isolation is provided between the two channels so that entirely different settings of tone and volume controls can be used without inter-action. This permits two different styles in any combination — microphone, electric jazz guitar, rhythm guitar, bass or accordion — to be played at the same time with correct tone and volume settings for each instrument.

EA-4T, 4TL, & 6T



- R7 Bass Tone Control, 10 meg, Reversed Audio
- R8 Treble Tone Control, 250k Audio Taper
- R9 Volume Control, 1 meg, Audio Taper
- R10 Frequency Control, 10 meg, Reversed Audio
- R11 Treble Depth Control, 250k Audio Taper
- R12 LDR Gain Control, 500 ohm/200 ohm min.
- R13 Bass Tone Control, 10 meg, Reversed Audio
- R14 Treble Tone Control, 250k Audio Taper
- R15 Light Dependent Resistor Lamp Assembly
- D1, D2 Diodes - 1200 PIV, 250 MA
- D3 Diode - 600 PIV, 250 MA
- T1 Power Transformer
- T2 Output Transformer
- L1 Filter Choke
- S1 Switch, Power, Standby, Polarity
- S2 Switch, Treble

- D1-57
- D1-710
- TF-270-5
- TF-300-01
- TF-3021H
- SW-78



FUSE

The fuse used in this Amplifier is a type 3AG of three amperes rating. **DO NOT USE FUSES OF HIGHER RATING**

SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.

EPiPHONE

EMPEROR

MODEL EA-5 RVT AMPLIFIER

INSTRUCTIONS

EPiPHONE Inc., KALAMAZOO, MICHIGAN

REVERB UNIT UNPACKING INSTRUCTIONS

IMPORTANT — READ CAREFULLY BEFORE USE

CAUTION

The Reverb Unit has been carefully constructed. It is, however, a delicate electronic device. Treat it with the same care and respect given a TV set.

Avoid dropping, sudden jolts, or rough handling and it will give excellent service. This beautifully musical Reverberation effect is not to be confused with the repeating signal produced by the mechanical tape recorder style of echo units.

UNPACKING

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

TUBES

Make certain all tubes are seated firmly into their respective sockets. Each tube is labeled for proper replacement should any tube be out of its socket. Be especially careful when inserting tubes to see that the pins on the tube are correctly aligned with the holes in the socket before pushing into place. Do not twist tube — push tube straight into socket. It is advisable to check tubes from time to time depending on amount of use and excellence of performance. *Be sure tubes are always returned to proper sockets and seated firmly.*

REVERB POWER UNIT SET UP INSTRUCTIONS

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use power, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

The Reverberation Unit must always be placed on a solid non-vibrating surface or footing when in operation.

Any sudden shock, jolt, or wiggle, when in use, will cause undesirable noise. The resultant clatter of an inadvertent shake or bump is annoying but not necessarily harmful. This delicate sensitivity to shock and vibration is a normal characteristic of the device.

No problem will be encountered while the unit is connected if supporting surface is solid and unit is not moved about. To avoid the unwanted noise, turn the reverberation unit off by pressing the foot switch.

OPERATION OF MICROPHONE

The high gain and high fidelity characteristics of this Amplifier, permit the use of most of the popular high impedance microphones for public address work. The microphone should be plugged into the Number One Jack of Channel 1.

If the Microphone jacks are not in use, turn the Channel one Loudness control completely off.

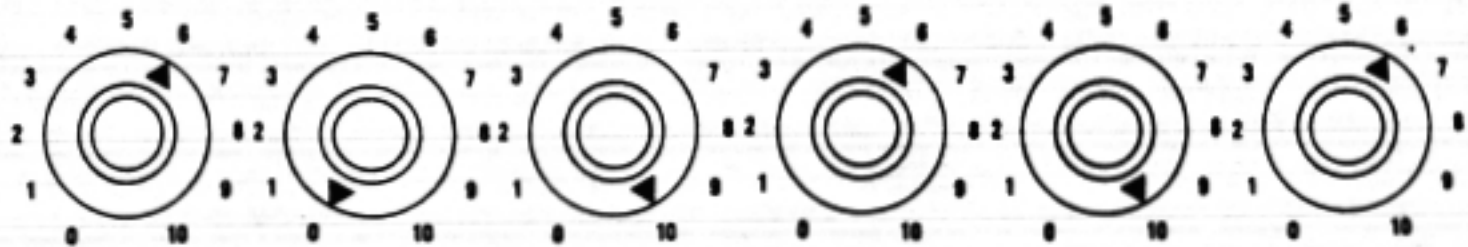
MODEL EA-5 RVT

REVERBERATION — EFFECTIVE IN CHANNEL 2 ONLY

Due to the unusual flexibility of the Reverberation circuit, it is important that the Operator understands the various control settings to obtain the total range of Reverberation effects of which this Amplifier is capable. Illustrated below are several examples of control settings which will reproduce different Reverberation effects.

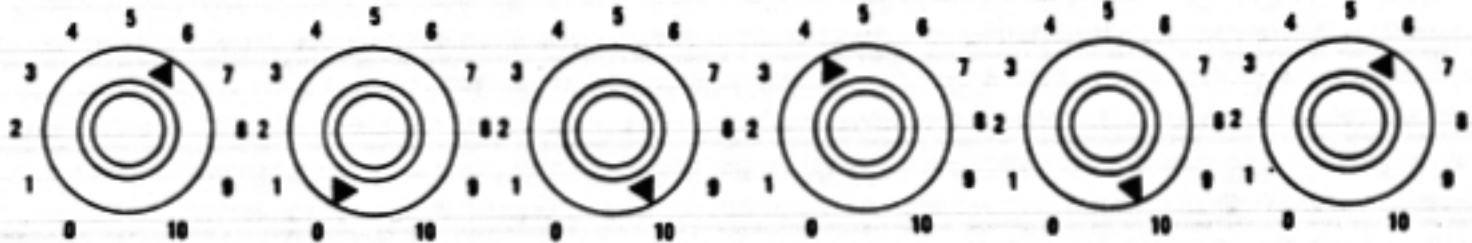
Loudness 2 Bass Treble Reverberation Depth Frequency

Example No. 1. 50% Main Signal - 50% Reverb.



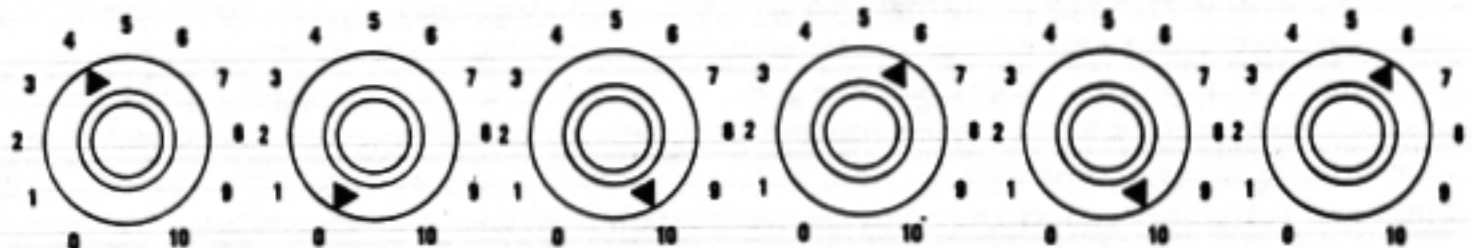
INSTRUMENT SETTINGS — Tone control and/or toggle switch in maximum treble position. Volume control setting $2\frac{1}{2}$ to 3.

Example No. 2. 75% Main Signal - 25% Reverb.



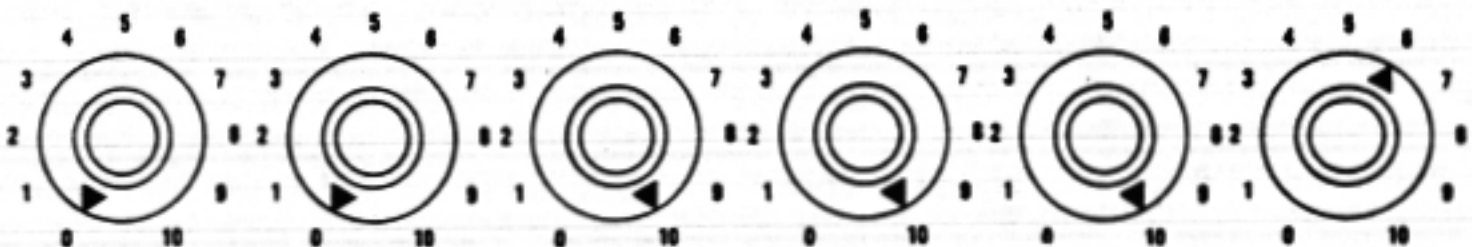
INSTRUMENT SETTINGS — Tone control same as above, Volume control setting 5 to 6.

Example No. 3. 25% Main Signal - 75% Reverb.



INSTRUMENT SETTINGS — Same as Example No. 2.

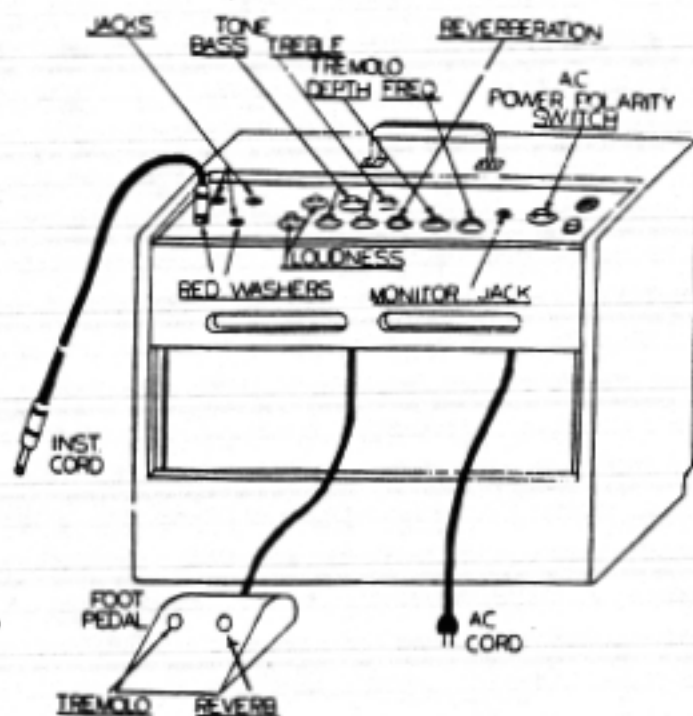
Example No. 4. 100% Reverb.



INSTRUMENT SETTINGS — Same as Example No. 2.

FOOT SWITCH MUST BE IN THE "ON" POSITION FOR REVERBERATION.

CONTROL LOCATIONS

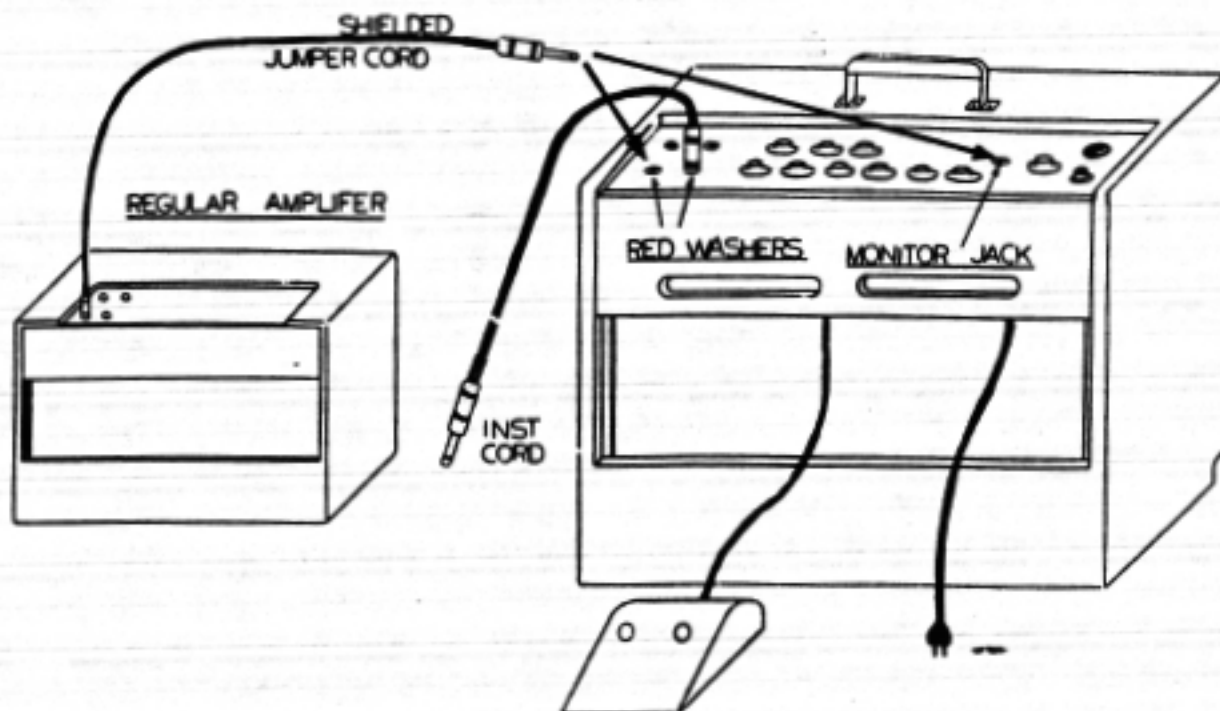


OPERATIONAL INSTRUCTIONS FOR USE OF THIS REVERBERATION AMPLIFIER IN CONJUNCTION WITH A REGULAR AMPLIFIER

The use of this Reverberation Amplifier with a Regular Amplifier will add a spacious liveliness to instrument reproduction that is far beyond the possibilities of single amplifier Reverberation. Listed below are the simple instructions for this type of operation.

1. Plug the A.C. cord of this Reverberation Amplifier into a convenient outlet.
2. Now plug one end of a shielded jumper cord into the No. 1 Jack of Channel 2 (the one with the Red Washer) Plug the other end of the jumper cord into the input jack normally used in a regular amplifier. Set regular amplifier for normal volume.
3. The Guitar instrument cord should be plugged into the No. 2 Jack of Channel 2 of this Reverberation Amplifier. Plug the A.C. line cord of the Regular Amplifier into a convenient outlet.
4. Turn on the A.C. switches for both amplifiers and the tone controls may be set as illustrated on page 2.
5. If both Reverb. and Normal Signals are to be heard at the regular Amplifier, plug the Shielded Jumper Cord into the Monitor Jack of this Reverberation Amplifier instead of the Jack with the Red Washer.

Illustrated below is a pictorial diagram showing the correct hook-up.



6. Place the combination reverberation, tremolo foot control switch in a convenient position and the system is ready to operate. Either, or both, reverberation and tremolo effect is available by switching the indicated switch ON or OFF.
7. The percentage of Reverberation can be controlled by the Reverberation Control, Channel 2 Loudness Control and the Volume Control of the Regular Amplifier.
8. The instrument is ready to be played. If reverb signal is not coming through, step on the foot switch as it may be in the OFF position. Thereafter, the reverb effect can be conveniently cut in or out at a snap of the foot switch.
9. When the Reverberation Foot Switch is OFF, the reverb unit operates as a regular amplifier adding an extra self-powered speaker that expands the regular amplifier sound without reverberation. If a cord length space separates the regular amplifier and the reverberation unit, an excellent impression of the "Stereo" and echo effect is obtained.
When Reverberation Foot Switch is ON, the reverb signal is super-imposed on the above "Stereo" sound with a minimum contrast of volume change.

TREMOLO — EFFECTIVE IN CHANNEL 2 ONLY

The Tremolo effect adds another dimension to the Reverberation effect. It can be used either with or without reverberation at the players discretion. The Tremolo is turned on or off by the use of the foot switch. The Tremolo Frequency Range has been carefully set to cover a wide range of Tremolo effects. The Depth of the Tremolo is also variable being controlled by the Depth control.

A.C. POWER-POLARITY SWITCH

A convenient switch has been provided for performing a total of three functions, turning the amplifier on and off, putting the amplifier in "Standby" and selecting the proper polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum. In the "Standby" position the amplifier is kept "warmed up" and ready to play at the instant the switch is advanced to the "On" positions. Two "On" positions have been provided. The hum and hiss level on one of the "On" positions will be noticeably lower — this is the correct "Polarity" for using the amplifier.

In locations of extremely high noise levels, clipping the "Ground Clip" to a grounded object will greatly reduce objectionable noise and hum.

FUSE

The fuse used in this Amplifier is a type 3AG of three amperes rating. **DO NOT USE FUSES OF HIGHER RATING**

SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.

EPiPHONE

**THE PROFESSIONAL
MODEL EA-7P OUTFIT**

INSTRUCTIONS

EPiPHONE Inc., KALAMAZOO, MICHIGAN

REVERB UNIT UNPACKING INSTRUCTIONS

IMPORTANT — READ CAREFULLY BEFORE USE

CAUTION

The Reverb Unit has been carefully constructed. It is, however, a delicate electronic device. Treat it with the same care and respect given a TV set.

Avoid dropping, sudden jolts, or rough handling and it will give excellent service. This beautifully musical Reverberation effect is not to be confused with the repeating signal produced by the mechanical tape recorder style of echo units.

UNPACKING

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

TUBES

Make certain all tubes are seated firmly into their respective sockets. Each tube is labeled for proper replacement should any tube be out of its socket. Be especially careful when inserting tubes to see that the pins on the tube are correctly aligned with the holes in the socket before pushing into place. Do not twist tube — push tube straight into socket. It is advisable to check tubes from time to time depending on amount of use and excellence of performance. *Be sure tubes are always returned to proper sockets and seated firmly.*

REVERB POWER UNIT SET UP INSTRUCTIONS

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use power, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

The Reverberation Unit must always be placed on a solid non-vibrating surface or footing when in operation.

Any sudden shock, jolt, or wiggle, when in use, will cause undesirable noise. The resultant clatter of an inadvertent shake or bump is annoying but not necessarily harmful. This delicate sensitivity to shock and vibration is a normal characteristic of the device.

No problem will be encountered while the unit is connected if supporting surface is solid and unit is not moved about. To avoid the unwanted noise, turn the reverberation unit off by pressing the foot switch.

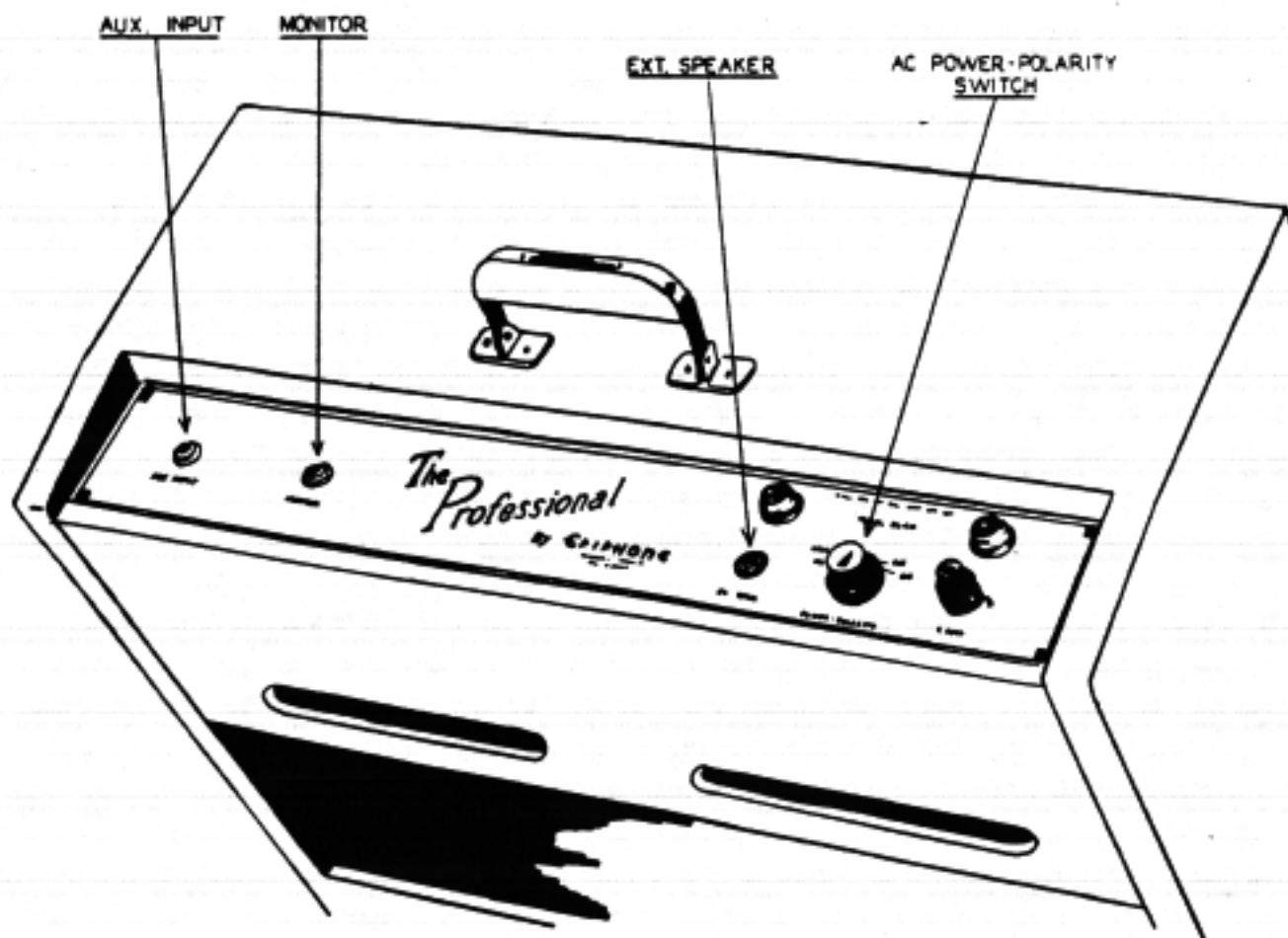
FUSE

The fuse used in this Amplifier is a type 3AG of two ampere rating. **DO NOT USE FUSES OF HIGHER RATING**

SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.

AMPLIFIER CONTROL LOCATIONS



A.C. POWER-POLARITY SWITCH

A convenient switch has been provided for performing a total of three functions, turning the amplifier on and off, putting the amplifier in "Standby" and selecting the proper polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum. In the "Standby" position the amplifier is kept "warmed up" and ready to play at the instant the switch is advanced to the "On" positions. Two "On" positions have been provided. The hum and hiss level on one of the "On" positions will be noticeably lower — this is the correct "Polarity" for using the amplifier.

As an added convenience to the artist this amplifier is equipped with a "Standby pilot light" as well as the "Regular pilot light". When the "Green" light is on the amplifier is in "Standby"; when the "Red" light is on the amplifier is "On" and ready to play.

MONITOR JACK

This convenient jack is provided for extending the usefulness of the amplifier. Some of its many uses include: — Use in tape recording; Use in driving additional amplifiers, feeding into Public Address systems; Use with Hi-Fi amplifiers. For best results the Monitor Jack should be fed into a High-impedance circuit.

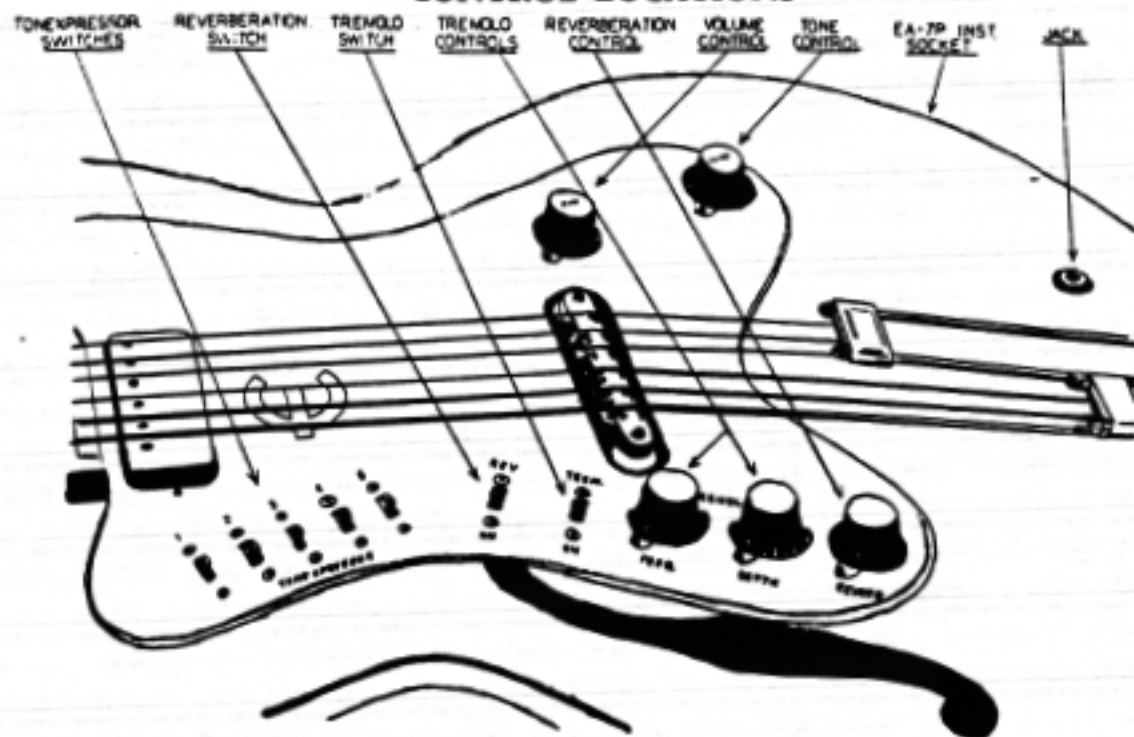
EXT. SPEAKER JACK

Provided for adding a wide dispersion of sound to the amplifier. An additional speaker may be plugged into this jack and, when the additional speaker is separated from this amplifier by several feet, a richer and fuller sound will result.

AUX. INPUT JACK

This jack has been provided as an "Extra" input jack for the amplifier. The Tone and Volume controls on the EA-7P will not affect the signal plugged into this jack. Tremolo will be present if the EA-7P instrument is set for Tremolo operation. Reverberation will be available on the EA-7P instrument only.

INSTRUMENT CONTROL LOCATIONS



TONEXPRESSOR

These five switches are provided to allow the artist to switch conveniently to various tonal expressions. The normal, or off, position for the switches is toward the strings.

REV. SWITCH

Allows the artist to switch on and off a preset amount of Reverberation.

TREM. SWITCH

Allows the artist to switch on and off the desired Tremolo effect.

TREMOLO CONTROLS

The Tremolo frequency of the Amplifier is controlled by the control marked **FREQ.** The speeds have been carefully set to cover a wide range of Tremolo effects. The depth of the Tremolo is also variable being controlled by the **DEPTH** control.

REVERB. CONTROL

Controls the amount of Reverberation, the **REV. SWITCH** must be on in order to obtain the Reverberation effect.

VOLUME CONTROL

Standard instrument volume control.

TONE CONTROL

Standard instrument tone control, may be used in addition to **TONEXPRESSOR** switches.

JACK

Provided for use when the EA-7P instrument is to be played into an Amplifier other than the EA-7P. The **REVERB** and **TREMOLO** controls will not function with an Amplifier other than the EA-7P.

EA-7P INST. SOCKET

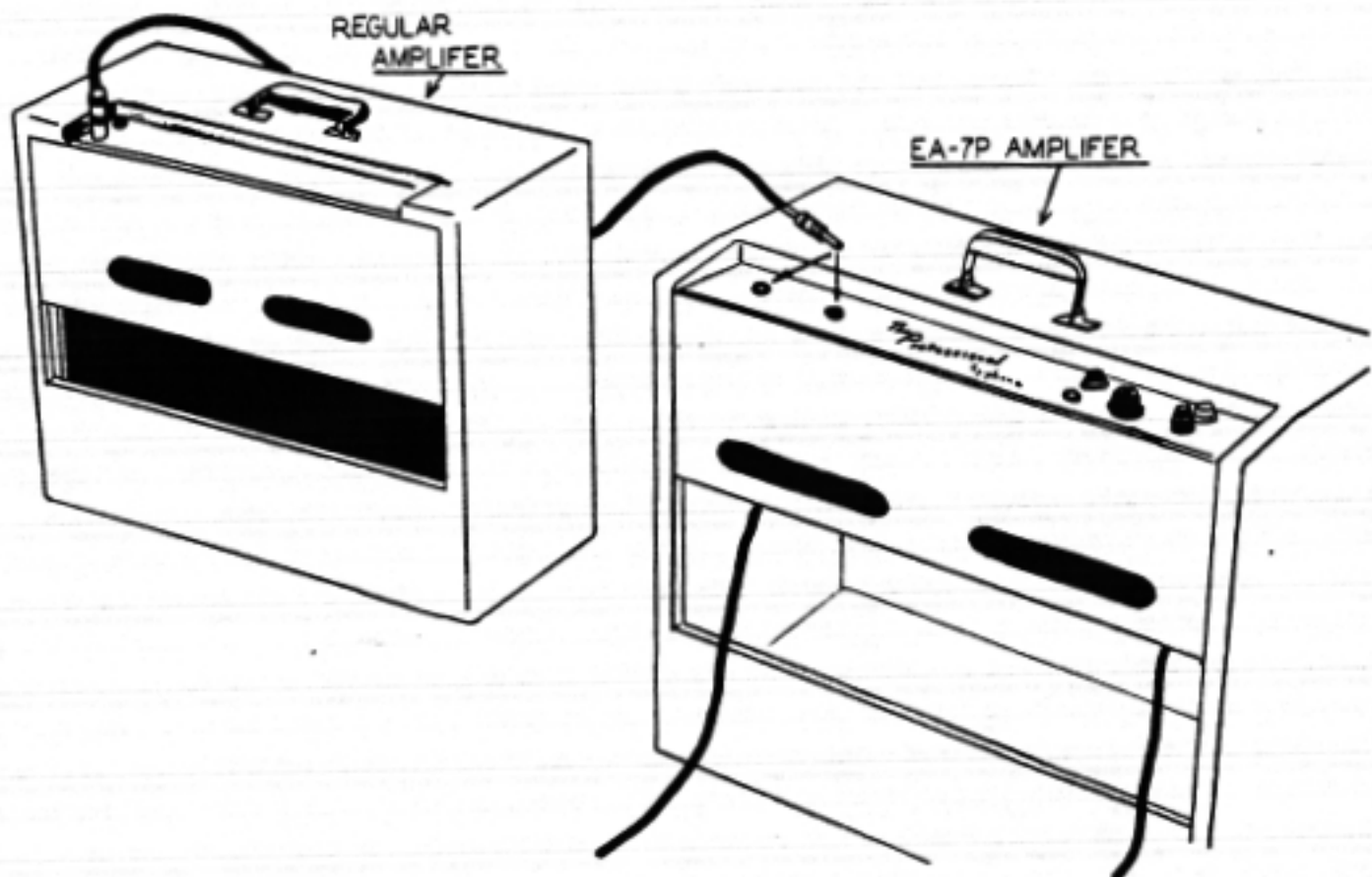
The cable from the EA-7P Amplifier plugs into this socket. Note that this plug is keyed and may be inserted in only one way. The plug must be pushed firmly into the socket and the knurled nut screwed up onto the socket.

OPERATIONAL INSTRUCTIONS FOR USE OF THIS REVERBERATION AMPLIFIER IN CONJUNCTION WITH A REGULAR AMPLIFIER

The use of this Reverberation Amplifier with a Regular Amplifier will add a spacious liveliness to instrument reproduction that is far beyond the possibilities of single amplifier Reverberation. Listed below are the simple instructions for this type of operation.

1. Plug the A.C. cord of this Reverberation Amplifier into a convenient outlet.
2. For normal signal amplification in Regular Amplifier insert one plug of a Shielded Jumper Cord into AUX. INPUT of the Reverberation Amplifier. Plug other end of this jumper into the input jack normally used in the Regular Amplifier. For Reverberation, and/or, normal signal, with or without Tremolo, amplification in the Regular Amplifier move the plug from AUX. INPUT to the Monitor Jack on the Reverberation Amplifier. Set Regular Amplifier Volume control for normal volume.
3. Turn ON the A.C. switches for both amplifiers, the Volume and Tone controls may be set as illustrated on page 2.

Illustrated below is a pictorial diagram showing the correct hook-up.



4. The percentage of Reverberation can be controlled by the Reverberation control, Loudness control and the Volume control of the Regular Amplifier.
5. When the Reverberation Switch is OFF, the Reverberation Amplifier is operated as a Regular Amplifier sound without Reverberation. If a cord length space separates the Regular and the Reverberation Amplifiers, an excellent impression of the "Stereo" and ECHO effect is obtained. When the Reverberation Switch is ON, the Reverb. signal is super-imposed on the above "STEREO" sound with a minimum contrast of volume change.

EPiPHONE

**THE PROFESSIONAL
MODEL EA-8P OUTFIT**

INSTRUCTIONS

EPiPHONE Inc., KALAMAZOO, MICHIGAN

REVERB UNIT UNPACKING INSTRUCTIONS

IMPORTANT — READ CAREFULLY BEFORE USE

CAUTION

The Reverb Unit has been carefully constructed. It is, however, a delicate electronic device. Treat it with the same care and respect given a TV set.

Avoid dropping, sudden jolts, or rough handling and it will give excellent service. This beautifully musical Reverberation effect is not to be confused with the repeating signal produced by the mechanical tape recorder style of echo units.

UNPACKING

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

TUBES

Make certain all tubes are seated firmly into their respective sockets. Each tube is labeled for proper replacement should any tube be out of its socket. Be especially careful when inserting tubes to see that the pins on the tube are correctly aligned with the holes in the socket before pushing into place. Do not twist tube — push tube straight into socket. It is advisable to check tubes from time to time depending on amount of use and excellence of performance. *Be sure tubes are always returned to proper sockets and seated firmly.*

REVERB POWER UNIT SET UP INSTRUCTIONS

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use power, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

The Reverberation Unit must always be placed on a solid non-vibrating surface or footing when in operation.

Any sudden shock, jolt, or wiggle, when in use, will cause undesirable noise. The resultant clatter of an inadvertant shake or bump is annoying but not necessarily harmful. This delicate sensitivity to shock and vibration is a normal characteristic of the device.

No problem will be encountered while the unit is connected if supporting surface is solid and unit is not moved about. To avoid the unwanted noise, turn the reverberation unit off by pressing the foot switch.

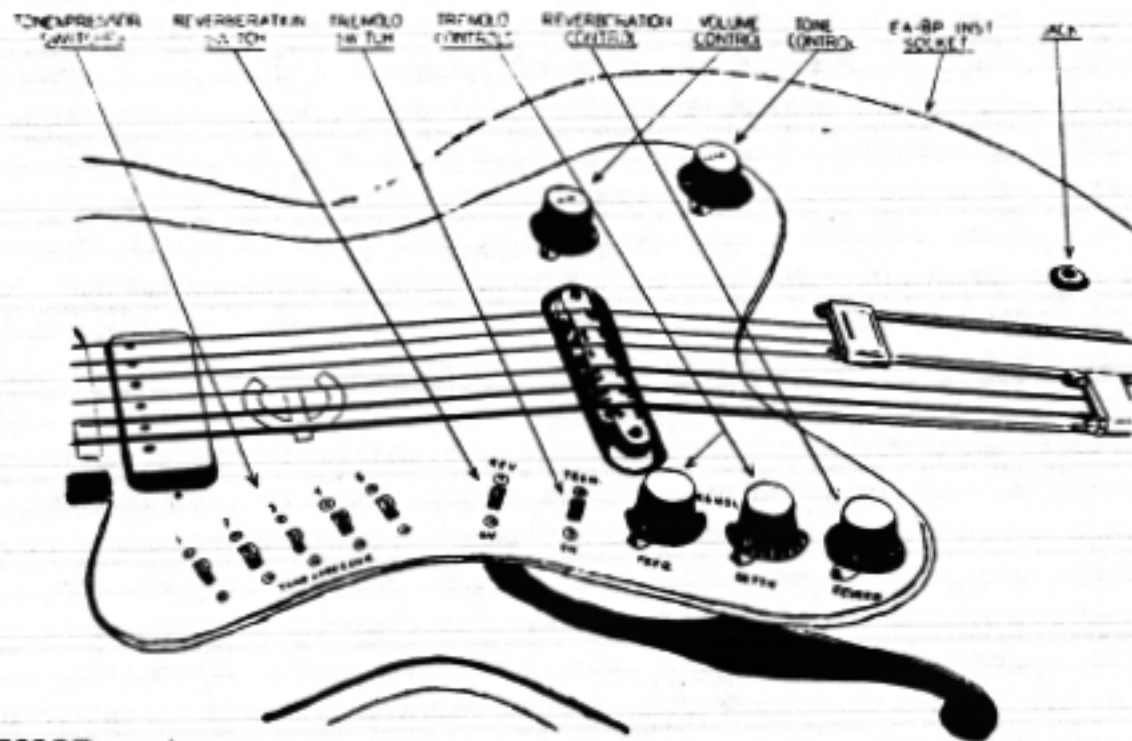
FUSE

The fuse used in this Amplifier is a type 3AG of two ampere rating. **DO NOT USE FUSES OF HIGHER RATING**

SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.

INSTRUMENT CONTROL LOCATIONS



TONEXPRESSOR

These five switches are provided to allow the artist to switch conveniently to various tonal expressions. The normal, or off, position for the switches is toward the strings.

REV. SWITCH

Allows the artist to switch on and off a preset amount of Reverberation.

TREM. SWITCH

Allows the artist to switch on and off the desired Tremolo effect.

TREMOLO CONTROLS

The Tremolo frequency of the Amplifier is controlled by the control marked **FREQ.** The speeds have been carefully set to cover a wide range of Tremolo effects. The depth of the Tremolo is also variable being controlled by the **DEPTH** control.

REVERB. CONTROL

Controls the amount of Reverberation, the **REV. SWITCH** must be on in order to obtain the Reverberation effect.

VOLUME CONTROL

Standard instrument volume control.

TONE CONTROL

Standard instrument tone control, may be used in addition to **TONEXPRESSOR** switches.

JACK

Provided for use when the EA-8P instrument is to be played into an Amplifier other than the EA-8P. The **REVERB** and **TREMOLO** controls will not function with an Amplifier other than the EA-8P.

EA-8P INST. SOCKET

The cable from the EA-8P Amplifier plugs into this socket. Note that this plug is keyed and may be inserted in only one way. The plug must be pushed firmly into the socket and the knurled nut screwed up onto the socket.

A.C. POWER-POLARITY SWITCH

A convenient switch has been provided for performing a total of three functions, turning the amplifier on and off, putting the amplifier in "Standby" and selecting the proper polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum. In the "Standby" position the amplifier is kept "warmed up" and ready to play at the instant the switch is advanced to the "On" positions. Two "On" positions have been provided. The hum and hiss level on one of the "On" positions will be noticeably lower — this is the correct "Polarity" for using the amplifier.

As an added convenience to the artist this amplifier is equipped with a "Standby pilot light" as well as the "Regular pilot light". When the "Green" light is on the amplifier is in "Standby"; when the "Red" light is on the amplifier is "On" and ready to play.

MONITOR JACK

This convenient jack is provided for extending the usefulness of the amplifier. Some of its many uses include: — Use in tape recording; Use in driving additional amplifiers, feeding into Public Address systems; Use with Hi-Fi amplifiers. For best results the Monitor Jack should be fed into a High-impedance circuit.

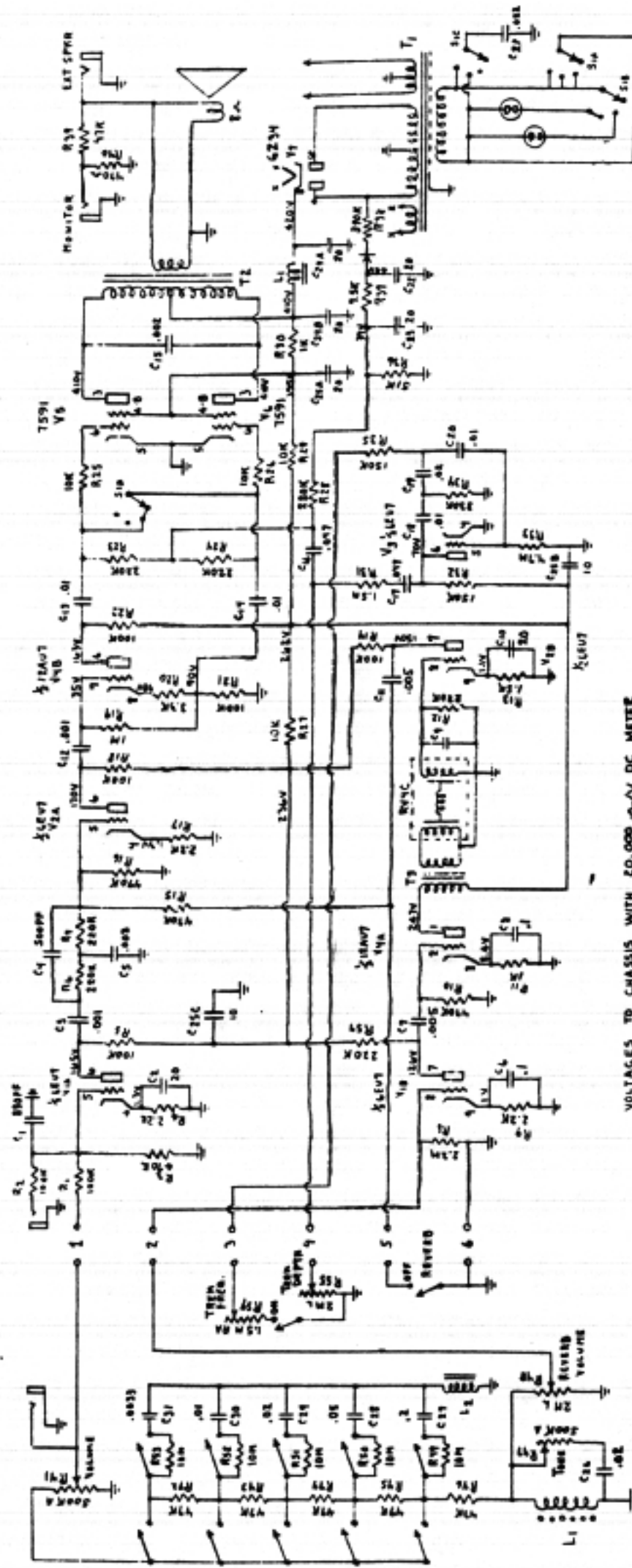
EXT. SPEAKER JACK

Provided for adding a wide dispersion of sound to the amplifier. An additional speaker may be plugged into this jack and, when the additional speaker is separated from this amplifier by several feet, a richer and fuller sound will result.

AUX. INPUT JACK

This jack has been provided as an "Extra" input jack for the amplifier. The Tone and Volume controls on the EA-8P will not affect the signal plugged into this jack. Tremolo will be present if the EA-8P instrument is set for Tremolo operation. Reverberation will be available on the EA-8P instrument only.

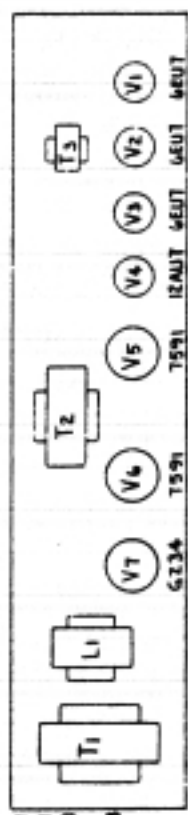
EA-8P



- VOLTAGES TO CHASSIS WITH 20,000 \sim V DC METER
- R41 INSTRUMENT VOL CONTROL 500K AUDIO CBA 9H-3707
 - R47 INSTRUMENT TONE CONTROL 500K AUDIO CBA 9H-3707
 - R48 REVERB VOL CONTROL 2M LINEAR CBA 9H-3708
 - R54 TREMOLO FREQ CONTROL 1.5M REVERSE CBA 9H-3711
 - R55 TREMOLO DEPTH CONTROL 2M LINEAR CBA 9H-3708

- L1 PICKUP
- L2 CHOKER
- T1 POWER AFMR
- T2 OUTPUT AFMR
- T3 DRIVER AFMR
- S1 4 POLE 4 POS SWITCH REVERB UNIT

CAPACITORS IN MFD
RESISTORS IN OHMS K = 1,000 ; M = 1,000,000



EPiPHONE

FUTURA

MODEL EA-12RVT AMPLIFIER

INSTRUCTIONS

EPiPHONE Inc., KALAMAZOO, MICHIGAN

REVERB UNIT UNPACKING INSTRUCTIONS

IMPORTANT — READ CAREFULLY BEFORE USE

CAUTION

The Reverb Unit has been carefully constructed. It is, however, a delicate electronic device. Treat it with the same care and respect given a TV set.

Avoid dropping, sudden jolts, or rough handling and it will give excellent service. This beautifully musical Reverberation effect is not to be confused with the repeating signal produced by the mechanical tape recorder style of echo units.

UNPACKING

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

TUBES

Make certain all tubes are seated firmly into their respective sockets. Each tube is labeled for proper replacement should any tube be out of its socket. Be especially careful when inserting tubes to see that the pins on the tube are correctly aligned with the holes in the socket before pushing into place. Do not twist tube — push tube straight into socket. It is advisable to check tubes from time to time depending on amount of use and excellence of performance. *Be sure tubes are always returned to proper sockets and seated firmly.*

REVERB POWER UNIT SET UP INSTRUCTIONS

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use power, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

The Reverberation Unit must always be placed on a solid non-vibrating surface or footing when in operation.

Any sudden shock, jolt, or wiggle, when in use, will cause undesirable noise. The resultant clatter of an inadvertent shake or bump is annoying but not necessarily harmful. This delicate sensitivity to shock and vibration is a normal characteristic of the device.

No problem will be encountered while the unit is connected if supporting surface is solid and unit is not moved about. To avoid the unwanted noise, turn the reverberation unit off by pressing the foot switch.

FUSE

The fuse used in this Amplifier is a type 3AG of three amperes rating. **DO NOT USE FUSES OF HIGHER RATING**

TREMOLO

The Tremolo effect adds another dimension to the Reverberation effect. It can be used either with or without reverberation at the players discretion. The Tremolo is turned on or off by the use of the foot switch. The Tremolo Frequency Range has been carefully set to cover a wide range of Tremolo effects. The Depth of the Tremolo is also variable being controlled by the Depth control.

REVERBERATION — EFFECTIVE IN CHANNEL 2 ONLY

Due to the unusual flexibility of the Reverberation circuit, it is important that the Operator understands the various control settings to obtain the total range of Reverberation effects of which this Amplifier is capable. Illustrated below are several examples of control settings which will reproduce different Reverberation effects.

Loudness

Tone

Reverberation

Depth

Frequency

Example No. 1. 50% Main Signal - 50% Reverb.



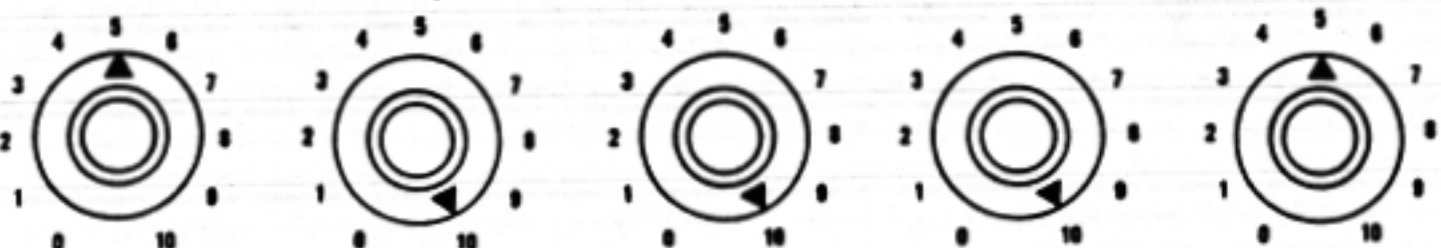
INSTRUMENT SETTINGS — Tone control and/or toggle switch in maximum treble position. Volume control setting $2\frac{1}{2}$ to 3.

Example No. 2. 75% Main Signal - 25% Reverb.



INSTRUMENT SETTINGS — Same as Example No. 1.

Example No. 3. 25% Main Signal - 75% Reverb.



INSTRUMENT SETTINGS — Same as Example No. 1.

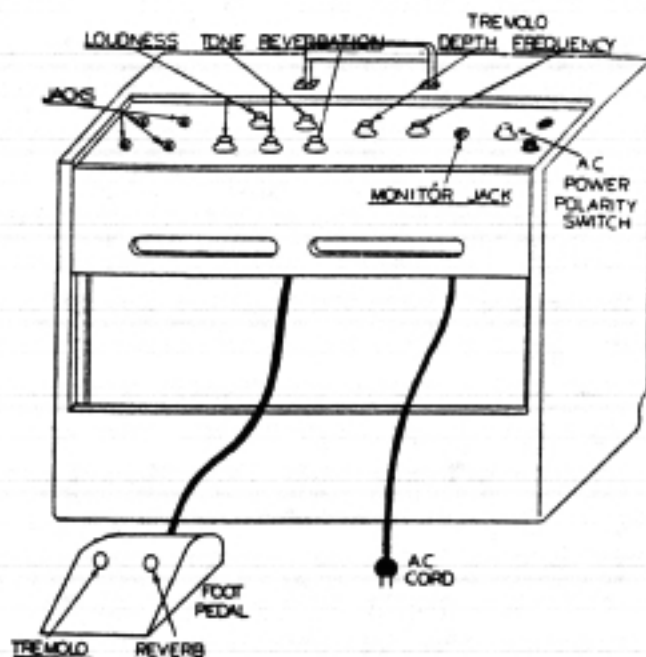
Example No. 4. 100% Reverb.



INSTRUMENT SETTINGS — Same as Example No. 1.

FOOT SWITCH MUST BE IN THE "ON" POSITION FOR REVERBERATION.

CONTROL LOCATIONS

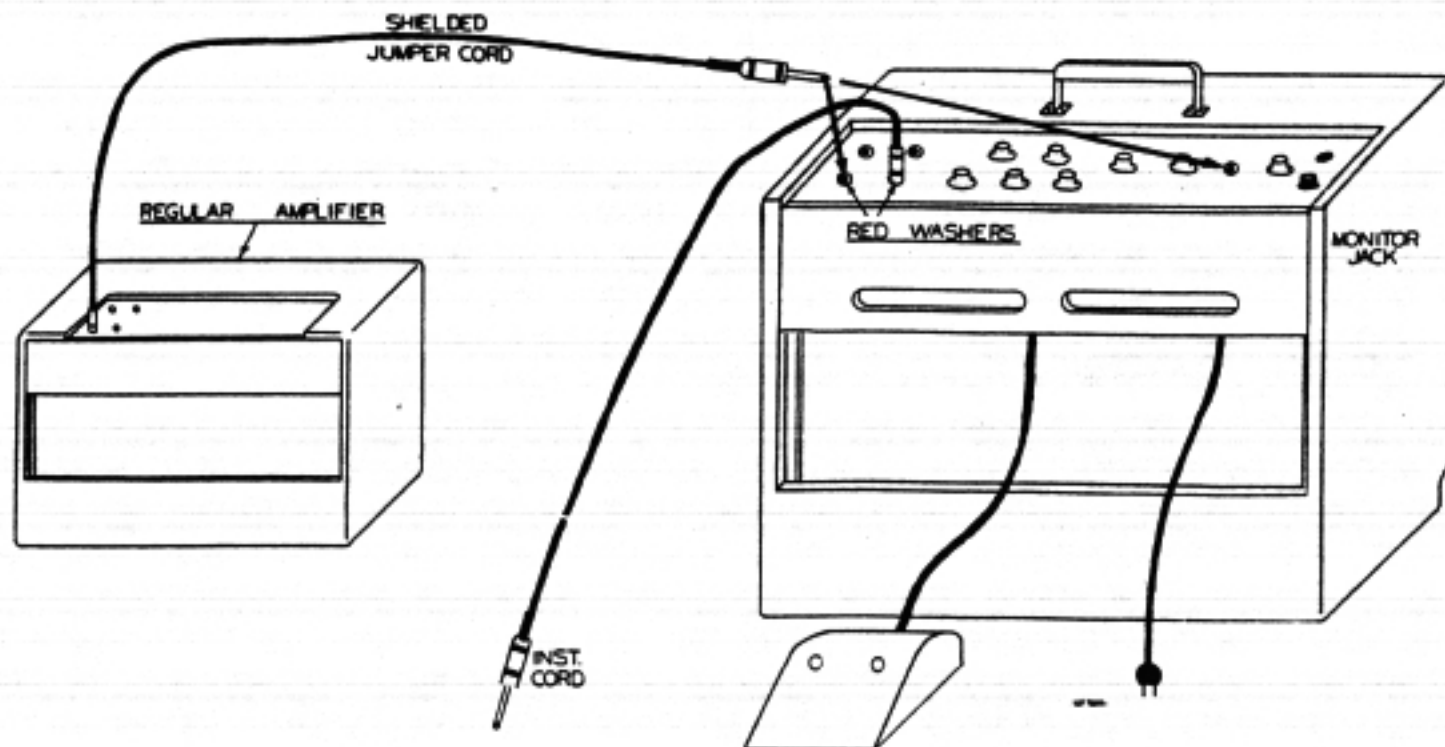


OPERATIONAL INSTRUCTIONS FOR USE OF THIS REVERBERATION AMPLIFIER IN CONJUNCTION WITH A REGULAR AMPLIFIER

The use of this Reverberation Amplifier with a Regular Amplifier will add a spacious liveliness to instrument reproduction that is far beyond the possibilities of single amplifier Reverberation. Listed below are the simple instructions for this type of operation.

1. Plug the A.C. cord of this Reverberation Amplifier into a convenient outlet.
2. Now plug one end of a shielded jumper cord into the No. 1 Jack of Channel 2 (the one with the Red Washer) Plug the other end of the jumper cord into the input jack normally used in a regular amplifier. Set regular amplifier for normal volume.
3. The Guitar instrument cord should be plugged into the No. 2 Jack of Channel 2 of this Reverberation Amplifier. Plug the A.C. line cord of the Regular Amplifier into a convenient outlet.
4. Turn on the A.C. switches for both amplifiers and the tone controls may be set as illustrated on page 2.
5. If both Reverb. and Normal Signals are to be heard at the regular Amplifier, plug the Shielded Jumper Cord into the Monitor Jack of this Reverberation Amplifier instead of the Jack with the Red Washer.

Illustrated below is a pictorial diagram showing the correct hook-up.



6. Place the combination reverberation, tremolo foot control switch in a convenient position and the system is ready to operate. Either, or both, reverberation and tremolo effect is available by switching the indicated switch ON or OFF.
7. The percentage of Reverberation can be controlled by the Reverberation Control, Channel 2 Loudness Control and the Volume Control of the Regular Amplifier.
8. The instrument is ready to be played. If reverb signal is not coming through, step on the foot switch as it may be in the OFF position. Thereafter, the reverb effect can be conveniently cut in or out at a snap of the foot switch.
9. When the Reverberation Foot Switch is OFF, the reverb unit operates as a regular amplifier adding an extra self-powered speaker that expands the regular amplifier sound without reverberation. If a cord length space separates the regular amplifier and the reverberation unit, an excellent impression of the "Stereo" and echo effect is obtained.
When Reverberation Foot Switch is ON, the reverb signal is super-imposed on the above "Stereo" sound with a minimum contrast of volume change.

OPERATION OF MICROPHONE

The high gain and high fidelity characteristics of this Amplifier, permit the use of most of the popular high impedance microphones for public address work. The microphone should be plugged into the Number One Jack of Channel 1.

If the Microphone jacks are not in use, turn the Channel one Loudness control completely off.

A.C. POWER-POLARITY SWITCH

A convenient switch has been provided for performing a total of three functions, turning the amplifier on and off, putting the amplifier in "Standby" and selecting the proper polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum. In the "Standby" position the amplifier is kept "warmed up" and ready to play at the instant the switch is advanced to the "On" positions. Two "On" positions have been provided. The hum and hiss level on one of the "On" positions will be noticeably lower — this is the correct "Polarity" for using the amplifier.

In locations of extremely high noise levels, clipping the "Ground Clip" to a grounded object will greatly reduce objectionable noise and hum.

SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.

EPHONE

ZEPHYR

MODEL EA-15 RVT AMPLIFIER

INSTRUCTIONS

EPHONE Inc., KALAMAZOO, MICHIGAN

IMPORTANT — READ CAREFULLY BEFORE USE

CAUTION

The Reverb Unit has been carefully constructed. It is, however, a delicate electronic device. Treat it with the same care and respect given a TV set.

Avoid dropping, sudden jolts, or rough handling and it will give excellent service. This beautifully musical Reverberation effect is not to be confused with the repeating signal produced by the mechanical tape recorder style of echo units.

UNPACKING

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

TUBES

Make certain all tubes are seated firmly into their respective sockets. Each tube is labeled for proper replacement should any tube be out of its socket. Be especially careful when inserting tubes to see that the pins on the tube are correctly aligned with the holes in the socket before pushing into place. Do not twist tube — push tube straight into socket. It is advisable to check tubes from time to time depending on amount of use and excellence of performance. *Be sure tubes are always returned to proper sockets and seated firmly.*

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use amplifier, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

A.C. POWER-POLARITY SWITCH

A convenient switch has been provided for performing a total of three functions, turning the amplifier on and off, and selecting the proper polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum. Two "On" positions have been provided. The hum and hiss level on one of the "On" positions will be noticeably lower — this is the correct "Polarity" for using the amplifier.

FUSE

The fuse used in this Amplifier is a type 3AG of three amperes rating. **DO NOT USE FUSES OF HIGHER RATING**

SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.

REVERBERATION — EFFECTIVE IN CHANNEL 2 ONLY

The Reverberation Unit must always be placed on a solid non-vibrating surface or footing when in operation.

Any sudden shock, jolt, or wiggle, when in use, will cause undesirable noise. The resultant clatter of an inadvertant shake or bump is annoying but not necessarily harmful. This delicate sensitivity to shock and vibration is a normal characteristic of the device.

No problem will be encountered while the unit is connected if supporting surface is solid and unit is not moved about. To avoid the unwanted noise, turn the reverberation unit off by pressing the foot switch.

TREMOLO — EFFECTIVE IN CHANNEL 2 ONLY

The Tremolo effect adds another dimension to the Reverberation effect. It can be used either with or without reverberation at the players discretion. The Tremolo is turned on or off by the use of the foot switch. The Tremolo Frequency Range has been carefully set to cover a wide range of Tremolo effects. The Depth of the Tremolo is also variable being controlled by the Depth control.

OPERATION OF MICROPHONE

The high gain and high fidelity characteristics of this Amplifier, permit the use of most of the popular high impedance microphones for public address work. The microphone should be plugged into the Number One jack and it is not recommended that other instruments be used in conjunction with the microphone.

When using a microphone it is important that the Number 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable.

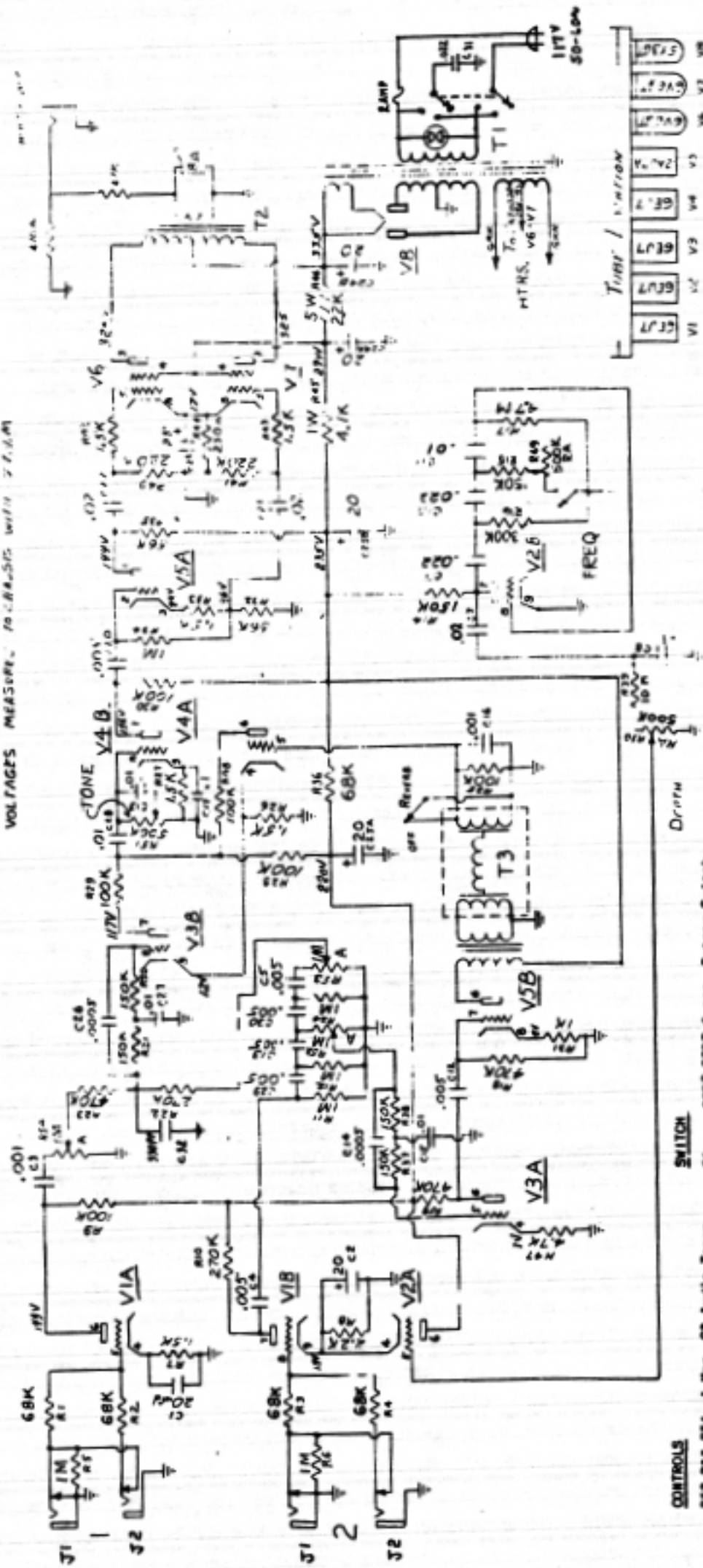
To use the microphone, insert the plug in the Number One jack and advance the Loudness control until a feedback squeal or howl is produced on the loudspeaker. Reduce the Loudness control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.



Figure A

EA-15RV T

VOLTAGES MEASURED TO CENTER-TAP WITH 27.5MΩ



- CONTROLS**
- R32, R33, R34 1 Meg, C2 Audio Taper
 - (Reverb. & Loudness) C-BA-811-3709
 - R51 (Tone) 500K, C7 Audio Taper
 - C-BA-811-3707
 - R50 (Depth) 500K, C3 Reversed-Audio
 - C-BA-811-3704
 - R49 (Frequency) 500K, C3 Reversed Audio
 - C-BA-811-3706
- SWITCH**
- S1 SPST-3POT 3 pos., Rotary Switch
 - 58-899
- SPEAKER**
- S-7334-2 C158 15" Speaker with 90
 - cycle resonance cone.
 - Jensen
- TRANSFORMERS**
- T1 Power Transformer TF-23-P
 - T2 Output Transformer TF-18-01
 - T3 Reverb. Transformer TF-L-6400

EPHPHONE

REGENT

MODEL EA-16 RVT AMPLIFIER

INSTRUCTIONS

EPHPHONE Inc., KALAMAZOO, MICHIGAN

IMPORTANT — READ CAREFULLY BEFORE USE

CAUTION

The Reverb Unit has been carefully constructed. It is, however, a delicate electronic device. Treat it with the same care and respect given a TV set.

Avoid dropping, sudden jolts, or rough handling and it will give excellent service. This beautifully musical Reverberation effect is not to be confused with the repeating signal produced by the mechanical tape recorder style of echo units.

UNPACKING

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

TUBES

Make certain all tubes are seated firmly into their respective sockets. Each tube is labeled for proper replacement should any tube be out of its socket. Be especially careful when inserting tubes to see that the pins on the tube are correctly aligned with the holes in the socket before pushing into place. Do not twist tube — push tube straight into socket. It is advisable to check tubes from time to time depending on amount of use and excellence of performance. *Be sure tubes are always returned to proper sockets and seated firmly.*

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use amplifier, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

A.C. POWER-POLARITY SWITCH

A convenient switch has been provided for performing a total of three functions, turning the amplifier on and off, and selecting the proper polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum. Two "On" positions have been provided. The hum and hiss level on one of the "On" positions will be noticeably lower - this is the correct "Polarity" for using the amplifier.

FUSE

The fuse used in this Amplifier is a type 3AG of two amperes rating. **DO NOT USE FUSES OF HIGHER RATING**

SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.

REVERBERATION — EFFECTIVE IN CHANNEL 2 ONLY

The Reverberation Unit must always be placed on a solid non-vibrating surface or footing when in operation.

Any sudden shock, jolt, or wiggle, when in use, will cause undesirable noise. The resultant clatter of an inadvertant shake or bump is annoying but not necessarily harmful. This delicate sensitivity to shock and vibration is a normal characteristic of the device.

No problem will be encountered while the unit is connected if supporting surface is solid and unit is not moved about. To avoid the unwanted noise, turn the reverberation unit off by pressing the foot switch.

BASS AND TREBLE TONE CONTROLS

A separate control has been provided for control of the bass or low frequencies and for the treble or high frequencies. The use of these two controls allows the player to obtain the maximum combinations of tone from a beautiful clear treble to a deep resonant bass. Setting the "BASS" control at maximum and the "TREBLE" at minimum, produces the deepest, fullest bass tone. Setting the "TREBLE" control at maximum and the "BASS" at minimum produces a chime-like tone rich in higher harmonics and will enable the artist to pick harmonics with greater ease. When both "BASS" and "TREBLE" controls are set at minimum the middle register predominates.

TREMOLO — EFFECTIVE IN CHANNEL 2 ONLY

The Tremolo effect adds another dimension to the Reverberation effect. It can be used either with or without reverberation at the players discretion. The Tremolo is turned on or off by the use of the foot switch. The Tremolo Frequency Range has been carefully set to cover a wide range of Tremolo effects. The Depth of the Tremolo is also variable being controlled by the Depth control.

OPERATION OF MICROPHONE

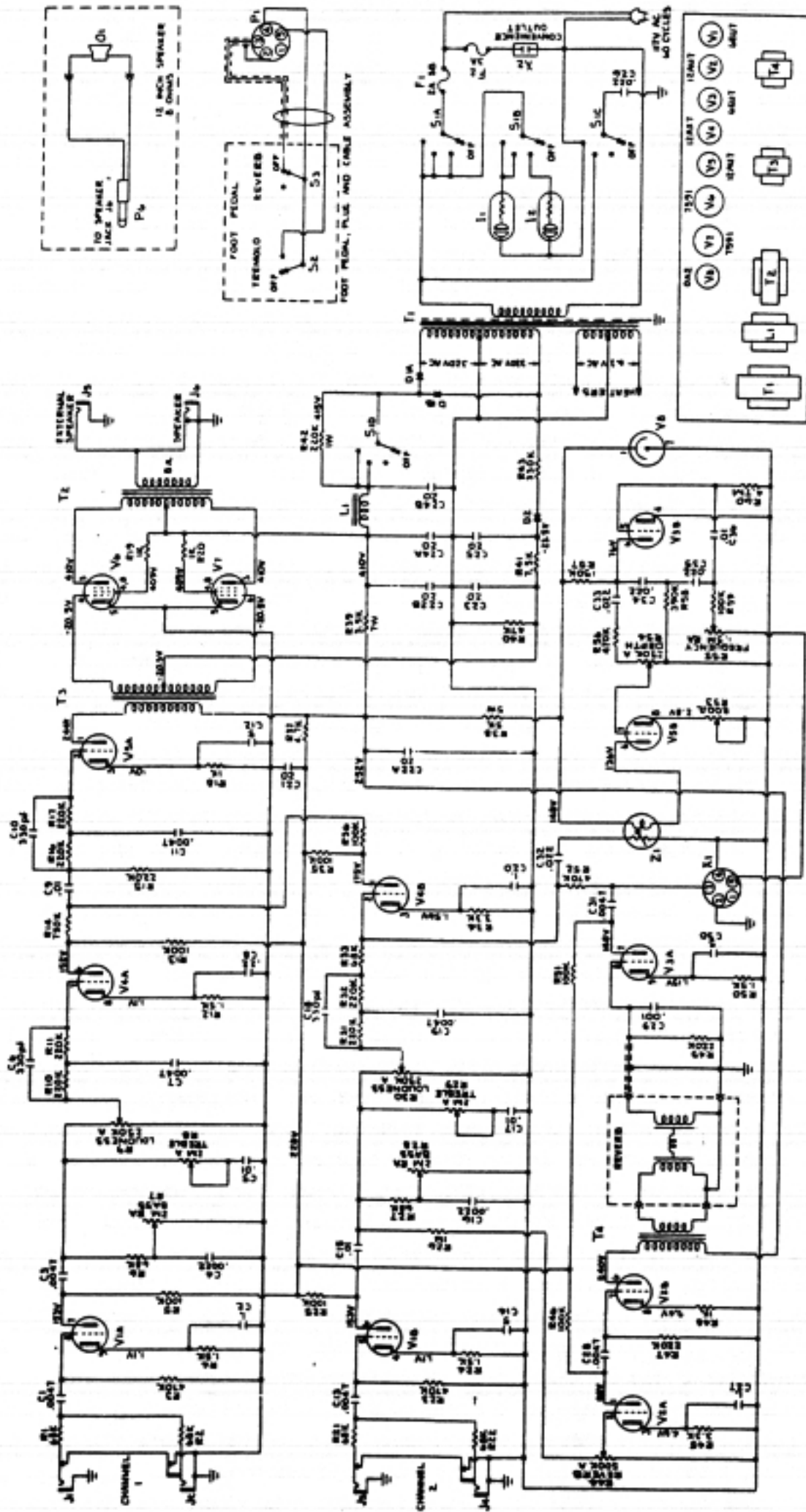
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When using a microphone it is important that the Number 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the Number One jack and advance the Loudness control until a feedback squeal or howl is produced on the loudspeaker. Reduce the Loudness control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.



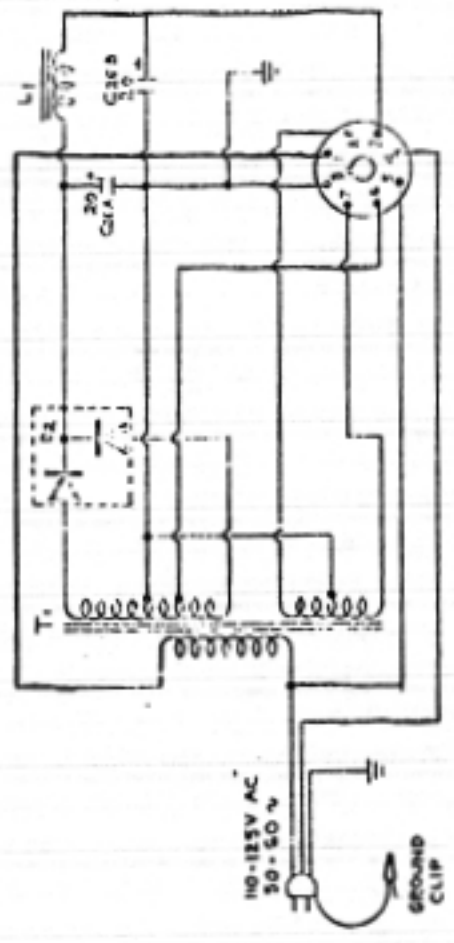
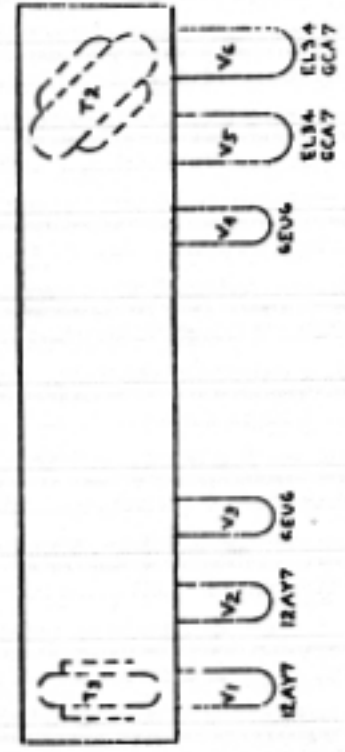
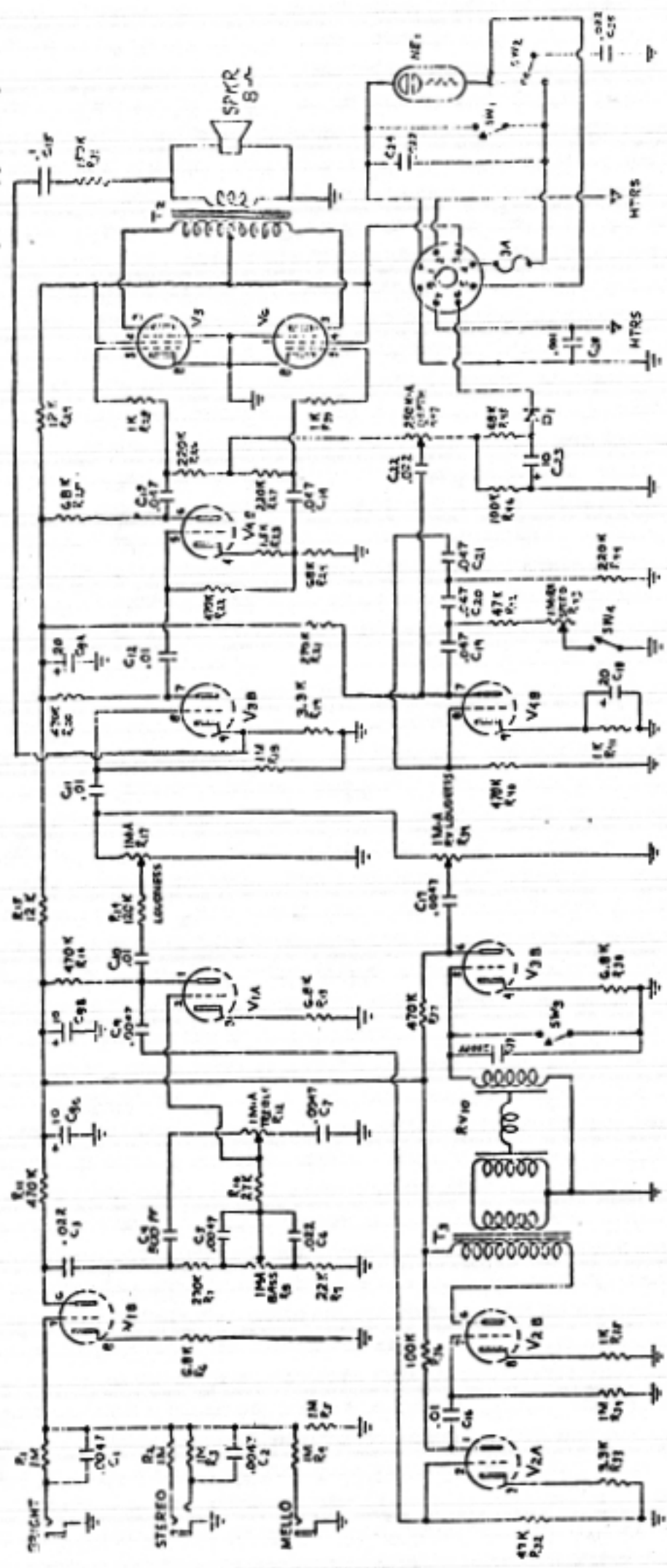
Figure A

EA16 RVT



- T1 T2 T3 T4
 - S1A, B, C, D
 - S2, S3
 - I1 I2
 - R9, R20, R54
 - R8, R29
 - R44
 - R55
 - R7, R28
- Power Transformer
 - Output Transformer
 - PP Driver Transformer
 - Reverb Transformer
 - Filter Choke
 - Switch - off, standby-on
 - Switches - 5PST
 - PL-37R Pilot Light (Red)
 - PL-38A Pilot Light (Amber)
 - Control - 250K Audio
 - Control - 2 meg, audio
 - Control - 500K Audio
 - Control - 1.5 meg, RA
 - Control - 1 meg, audio
- TF-104P
 - TF-P8417
 - TF-10010-1
 - TF-E8403
 - TF-3021H
 - SW-78A-1
 - SW-82403
- D1A, B Diode - 1200 PIV 01-57
 - D2 Diode - 600 PIV 01-71B
 - CN-78PC9-3 Foot Pedal Socket
 - CN-303 AC Convenience Outlet
- CBA-4008
 - CBA-811-3702-1
 - CBA-4007
 - CBA-811-3711-1
 - CBA-811-3709-1

EA-22 RVT



EPiPHONE

**ELECTRA
MODEL EA-26 RVT AMPLIFIER**

INSTRUCTIONS

EPiPHONE Inc., KALAMAZOO, MICHIGAN

IMPORTANT — READ CAREFULLY BEFORE USE

CAUTION

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A convenient switch has been provided for performing a total of three functions, turning the amplifier on and off, and selecting the proper polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum. Two "On" positions have been provided. The hum and hiss level on one of the "On" positions will be noticeably lower - this is the correct "Polarity" for using the amplifier.

FUSE

The fuse used in this Amplifier is a type 3AG of 1½ amperes rating. **DO NOT USE FUSES OF HIGHER RATING**

SERVICE

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OPERATION OF MICROPHONE

The high gain and high fidelity characteristics of this Amplifier, permit the use of most of the popular high impedance microphones for public address work. The microphone should be plugged into the Number One jack and it is not recommended that other instruments be used in conjunction with the microphone.

When using a microphone it is important that the Number 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the Number One jack and advance the Loudness control until a feedback squeal or howl is produced on the loudspeaker. Reduce the Loudness control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.



Figure A

EPiPHONE

PATHFINDER

MODEL EA-28RVT AMPLIFIER

INSTRUCTIONS

EPiPHONE Inc., KALAMAZOO, MICHIGAN

REVERB UNIT UNPACKING INSTRUCTIONS

IMPORTANT — READ CAREFULLY BEFORE USE

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REVERB POWER UNIT SET UP INSTRUCTIONS

CAUTION

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No problem will be encountered while the unit is connected if supporting surface is solid and unit is not moved about. To avoid the unwanted noise, turn the reverberation unit off by pressing the foot switch.

FUSE

The fuse used in this Amplifier is a type 3AG of one ampere rating. **DO NOT USE FUSES OF HIGHER RATING**

TREMOLO

The Tremolo effect adds another dimension to the Reverberation effect. It can be used either with or without reverberation at the players discretion. The Tremolo is turned on or off by the use of the foot switch. The Tremolo Frequency Range has been carefully set to cover a wide range of Tremolo effects. The Depth of the Tremolo is also variable being controlled by the Depth control.

OPERATION OF MICROPHONE

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When using a microphone it is important that the Number 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable.

To use the microphone, insert the plug in the Number One jack and advance the Loudness control until a feedback squeal or howl is produced on the loudspeaker. Reduce the Loudness control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.



Figure A

SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.

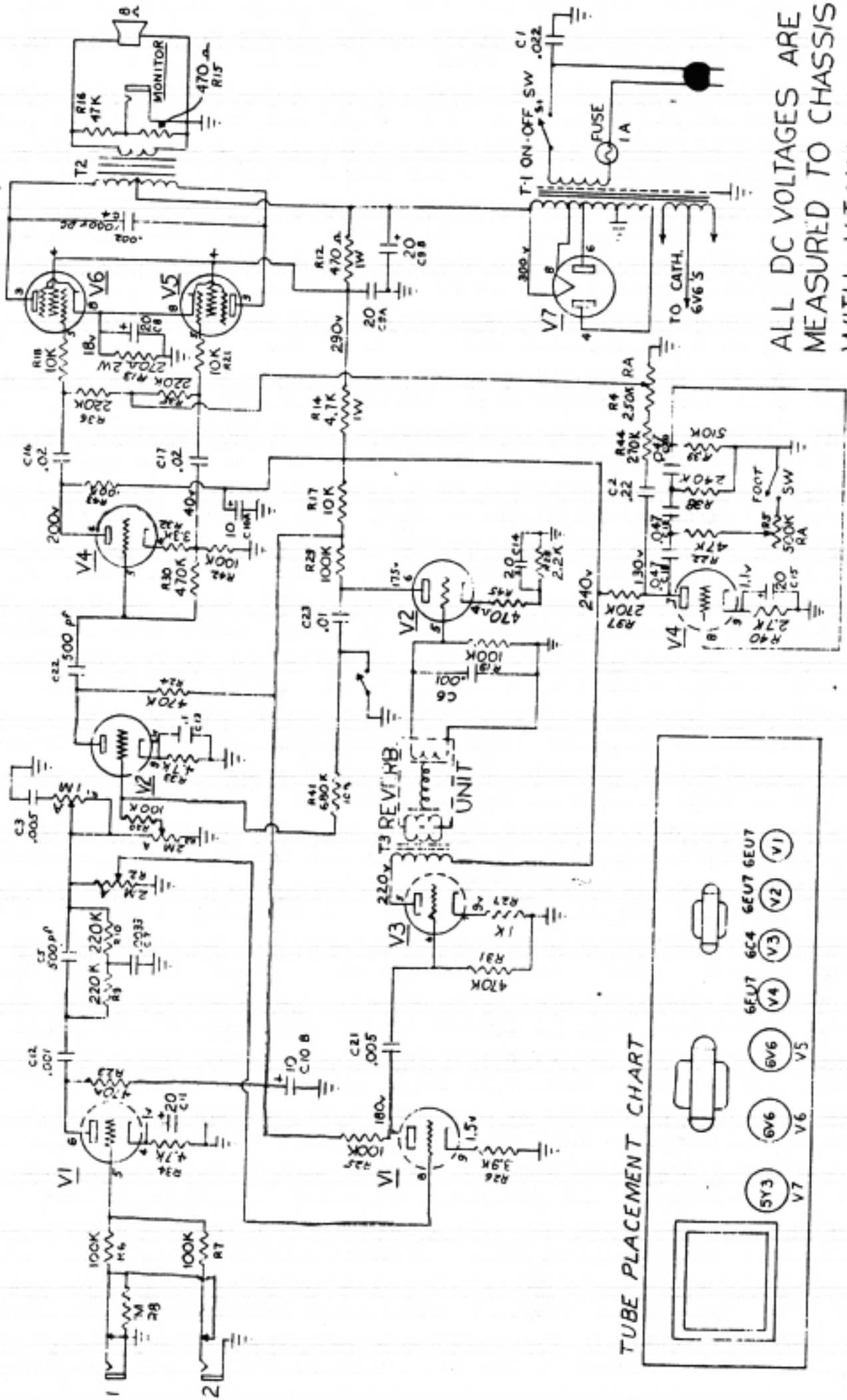
MONITOR JACK

This convenient jack is provided for extending the usefulness of the amplifier. Some of its many uses include: — Use in tape recording; Use in driving additional amplifiers, feeding into Public Address systems; Use with Hi-Fi amplifiers. For best results the Monitor Jack should be fed into a High-impedance circuit.

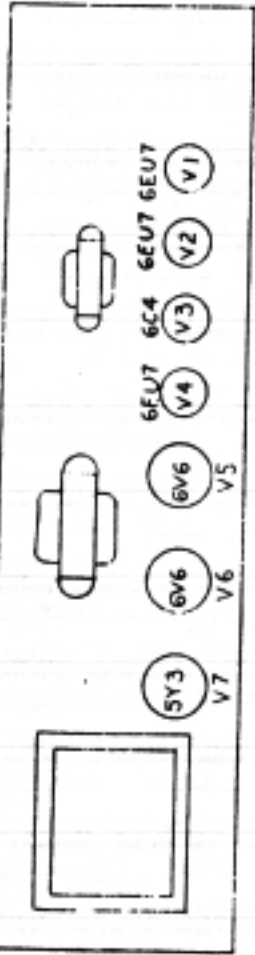
EA 28 - RVT

- T1 T-18-01
- T2 TP-18P
- T3 TP-3-6A00
- V1 6X4
- V2 6X4
- V3 6X4
- V4 6X4
- V5 6V6
- V6 6V6
- V7 6V6
- R1 500K
- R2 100K
- R3 220K
- R4 250K
- R5 500K
- R6 100K
- R7 100K
- R8 100K
- R9 220K
- R10 470K
- R11 470K
- R12 470A
- R13 470K
- R14 4.7K
- R15 470A
- R16 47K
- R17 100K
- R18 100K
- R19 470K
- R20 470K
- R21 470K
- R22 270K
- R23 100K
- R24 270K
- R25 270K
- R26 270K
- R27 270K
- R28 270K
- R29 270K
- R30 470K
- R31 1K
- R32 1K
- R33 1K
- R34 1K
- R35 1K
- R36 1K
- R37 1K
- R38 1K
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- R40 1K
- R41 1K
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- R43 1K
- R44 270K
- R45 270K
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- R92 270K
- R93 270K
- R94 270K
- R95 270K
- R96 270K
- R97 270K
- R98 270K
- R99 270K
- R100 270K
- C1 20
- C2 20
- C3 .005
- C4 .005
- C5 500 pF
- C6 220K
- C7 .02
- C8 .02
- C9 .02
- C10 10
- C11 20
- C12 .001
- C13 .001
- C14 .02
- C15 .02
- C16 .02
- C17 .02
- C18 .02
- C19 .02
- C20 .02
- C21 .005
- C22 500 pF
- C23 .01
- C24 .01
- C25 .01
- C26 .01
- C27 .01
- C28 .01
- C29 .01
- C30 .01
- C31 .01
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- C90 .01
- C91 .01
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- C96 .01
- C97 .01
- C98 .01
- C99 .01
- C100 .01

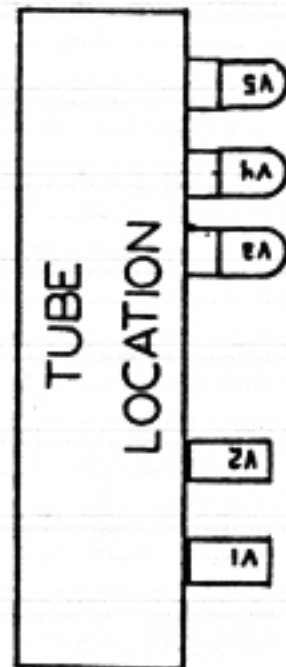
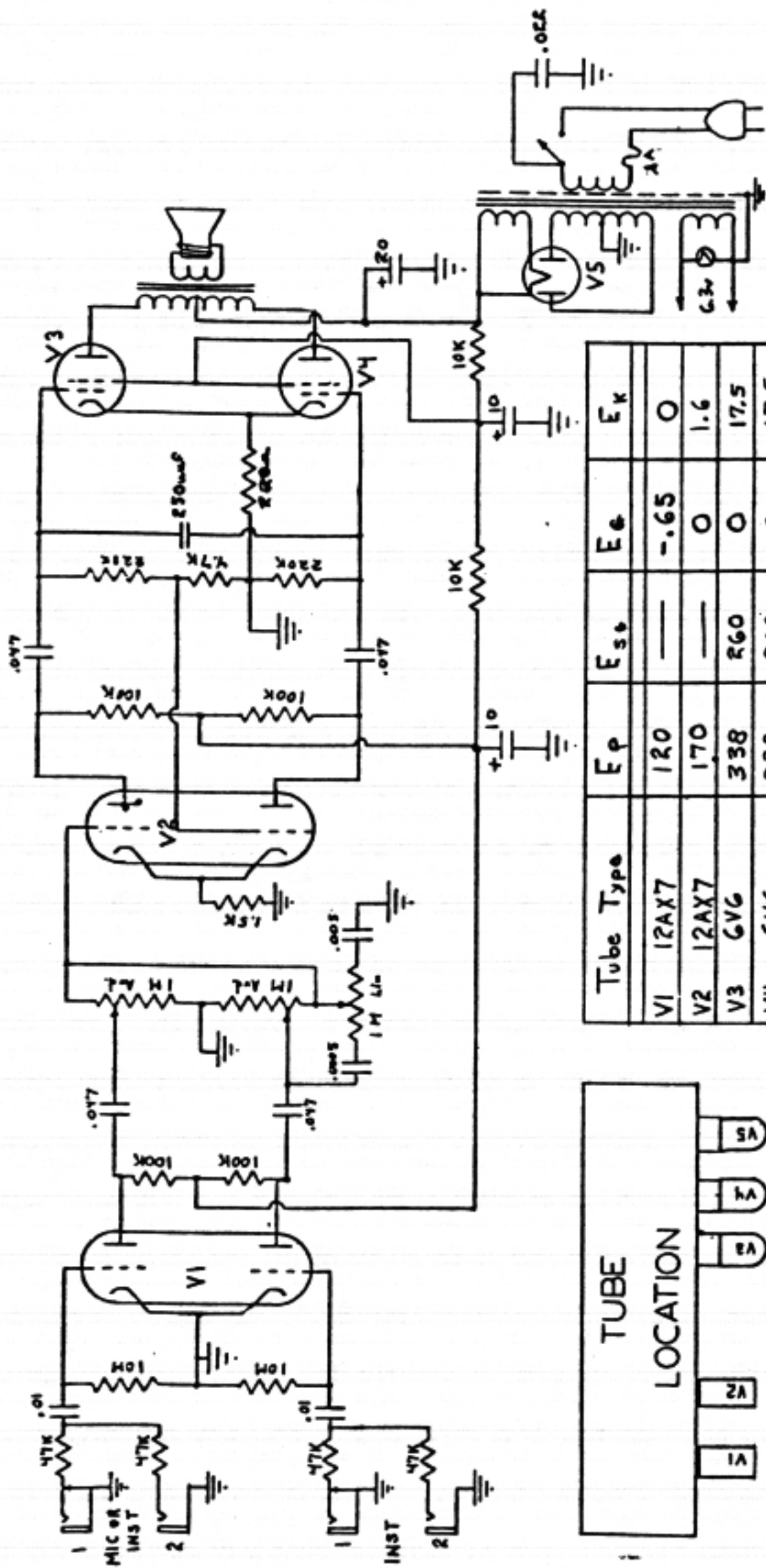
- R2, R3 Loudness & Reverb. Control, 2 meg audio taper
- R4 Depth Control, 250K reversed audio
- R5 Frequency Control, 500K reversed audio
- R1 Tone Control, 1 meg audio taper
- C-8A-811-3702
- C-8A-811-3704
- C-8A-811-3706
- C-8A-811-3708



TUBE PLACEMENT CHART



ALL DC VOLTAGES ARE MEASURED TO CHASSIS WITH V.T.V.M.



12AX7 V1
12AX7 V2
5Y3 V3
5Y3 V4
5Y3 V5

Tube Type	E _p	E _s	E _e	E _k
V1 12AX7	120	—	-.65	0
V2 12AX7	170	—	0	1.6
V3 5Y3	338	260	0	17.5
V4 5Y3	338	260	0	17.5
V5 5Y3	320 RHE	—	—	345

DC Voltages to chassis with 11 meg VTVM

EA-30 TRIUMPH
EPIPHONE, INC.

EPHPHONE

COMET

MODEL EA-32RVT AMPLIFIER

INSTRUCTIONS

EPHPHONE Inc., KALAMAZOO, MICHIGAN

IMPORTANT — READ CAREFULLY BEFORE USE

CAUTION

The Reverb Unit has been carefully constructed. It is, however, a delicate electronic device. Treat it with the same care and respect given a TV set.

Avoid dropping, sudden jolts, or rough handling and it will give excellent service. This beautifully musical Reverberation effect is not to be confused with the repeating signal produced by the mechanical tape recorder style of echo units.

UNPACKING

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

TUBES

Make certain all tubes are seated firmly into their respective sockets. Each tube is labeled for proper replacement should any tube be out of its socket. Be especially careful when inserting tubes to see that the pins on the tube are correctly aligned with the holes in the socket before pushing into place. Do not twist tube — push tube straight into socket. It is advisable to check tubes from time to time depending on amount of use and excellence of performance. *Be sure tubes are always returned to proper sockets and seated firmly.*

REVERB POWER UNIT SET UP INSTRUCTIONS

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt; 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use amplifier, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

The Reverberation Unit must always be placed on a solid non-vibrating surface or footing when in operation.

Any sudden shock, jolt, or wiggle, when in use, will cause undesirable noise. The resultant clatter of an inadvertant shake or bump is annoying but not necessarily harmful. This delicate sensitivity to shock and vibration is a normal characteristic of the device.

No problem will be encountered while the unit is connected if supporting surface is solid and unit is not moved about. To avoid the unwanted noise, turn the reverberation unit off by pressing the foot switch.

FUSE

The fuse used in this Amplifier is a type 3AG of 1½ ampere rating.
DO NOT USE A FUSE OF HIGHER RATING.

TREMOLO

The Tremolo effect adds another dimension to the Reverberation effect. It can be used either with or without reverberation at the players discretion. The Tremolo is turned on or off by the use of the foot switch. The Tremolo Frequency Range has been carefully set to cover a wide range of Tremolo effects.

OPERATION OF MICROPHONE

The high gain and high fidelity characteristics of this Amplifier, permit the use of most of the popular high impedance microphones for public address work. The microphone should be plugged into the Number One jack and it is not recommended that other instruments be used in conjunction with the microphone.

When using a microphone it is important that the Number 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable.

To use the microphone, insert the plug in the Number One jack and advance the Loudness control until a feedback squeal or howl is produced on the loudspeaker. Reduce the Loudness control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.

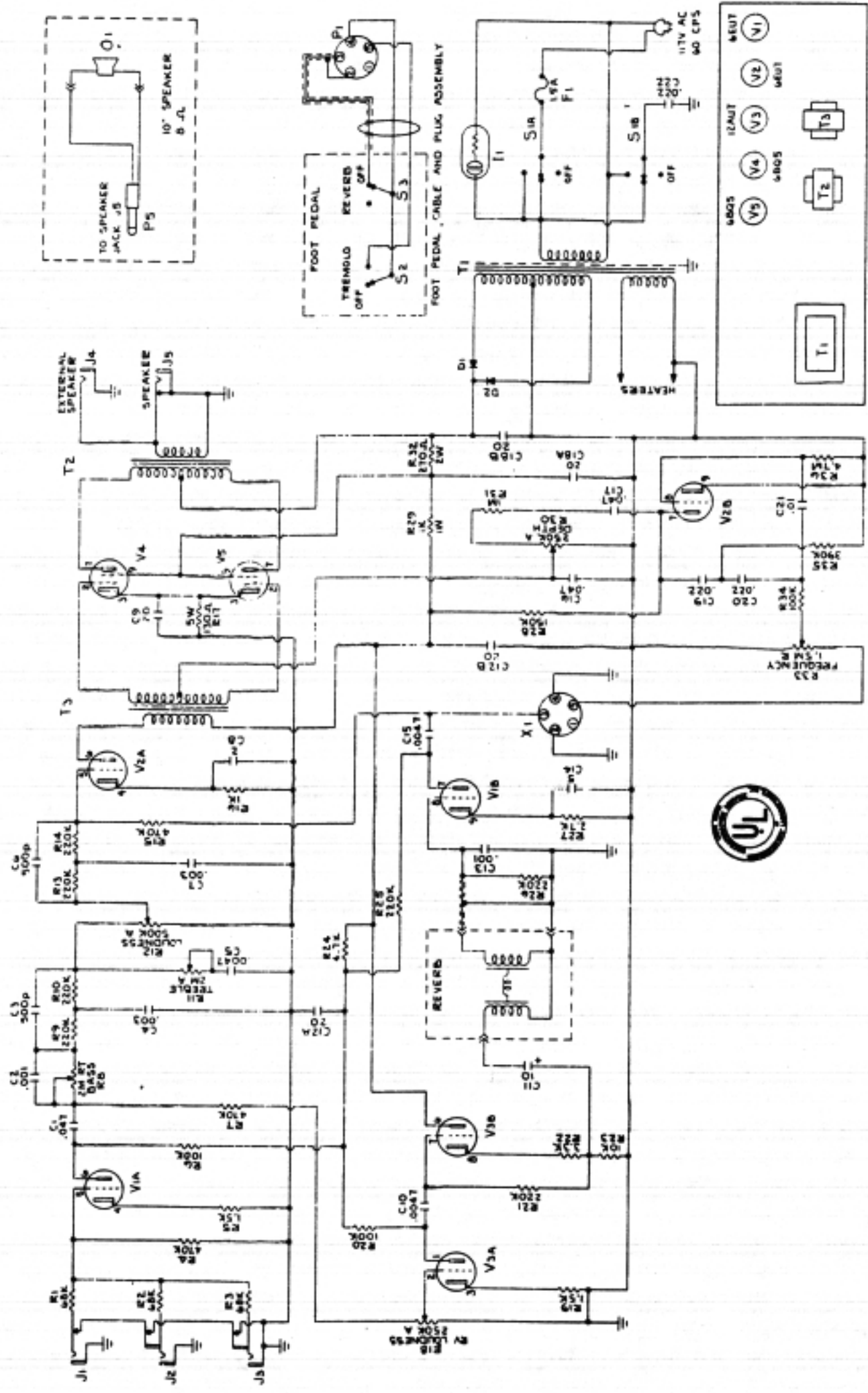


Figure A

SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.

EA 32-RVT



EPHONE

GALAXIE

MODEL EA-33RVT AMPLIFIER

INSTRUCTIONS

EPHONE Inc., KALAMAZOO, MICHIGAN

IMPORTANT — READ CAREFULLY BEFORE USE

CAUTION

The Reverb Unit has been carefully constructed. It is, however, a delicate electronic device. Treat it with the same care and respect given a TV set.

Avoid dropping, sudden jolts, or rough handling and it will give excellent service. This beautifully musical Reverberation effect is not to be confused with the repeating signal produced by the mechanical tape recorder style of echo units.

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TUBES

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REVERB POWER UNIT SET UP INSTRUCTIONS

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use amplifier, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

The Reverberation Unit must always be placed on a solid non-vibrating surface or footing when in operation.

Any sudden shock, jolt, or wiggle, when in use, will cause undesirable noise. The resultant clatter of an inadvertent shake or bump is annoying but not necessarily harmful. This delicate sensitivity to shock and vibration is a normal characteristic of the device.

No problem will be encountered while the unit is connected if supporting surface is solid and unit is not moved about. To avoid the unwanted noise, turn the reverberation unit off by pressing the foot switch.

FUSE

The fuse used in this Amplifier is a type 3AG Slo-Blo of one ampere rating.
DO NOT USE A FUSE OF HIGHER RATING.

TREMOLO

The Tremolo effect adds another dimension to the Reverberation effect. It can be used either with or without reverberation at the players discretion. The Tremolo is turned on or off by the use of the foot switch. The Tremolo Frequency Range has been carefully set to cover a wide range of Tremolo effects.

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When using a microphone it is important that the Number 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the Number One jack and advance the Loudness control until a feedback squeal or howl is produced on the loudspeaker. Reduce the Loudness control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.



Figure A

SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.

EPHPHONE

DEVON

MODEL EA-35 AMPLIFIER

INSTRUCTIONS

EPHPHONE Inc., KALAMAZOO, MICHIGAN

INSTRUCTIONS

CAUTION

Damage to the Amplifier will result if it is connected to an improper power source. This Amplifier is designed to be operated on 105 - 125 volt, 50 - 60 cycle alternating current **ONLY**. Check the voltage from the power lines to determine that it is not over 125 volts, and that the frequency of the current is either 50 or 60 cycles.

When ready to use power, plug the power cord into the electric outlet and move the switch to the ON position. Approximately one minute is required for the tubes to heat before the Amplifier is ready for use.

GENERAL

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the Amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, the Transportation Company should be notified immediately, and a claim placed.

TUBES

Check tubes for proper positioning before placing the Amplifier in operation. All tubes have been tested and proved satisfactory before shipment.

OPERATION OF MICROPHONE

The high gain and high fidelity characteristics of this Amplifier, permit the use of most of the popular high impedance microphones for public address work. The microphone should be plugged into the Number One jack and it is not recommended that other instruments be used in conjunction with the microphone.

When using a microphone it is important that the Number 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable. To use the microphone, insert the plug in the Number One jack and advance the Volume control until a feedback squeal or howl is produced on the loudspeaker. Reduce the volume control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.



Figure A

OPERATION OF INSTRUMENTS

This Amplifier is equipped with two input jacks for use with various types and styles of instruments and microphones. The input jacks are numbered 1. and 2. and when plugging in the instrument cords, they should be inserted in their respective jacks — that is, first instrument in the No. 1 jack, and second instrument in the No. 2 jack.

The gain for both jacks is adjusted by the control marked "Loudness". The tonal coloring can be varied over a wide range by use of the "Bass" and "Treble" tone controls.

MONITOR JACK

This convenient jack is provided for extending the usefulness of the amplifier. Some of its many uses include: — Use in tape recording; Use in driving additional amplifiers, feeding into Public Address systems; Use with Hi-Fi amplifiers. For best results the Monitor Jack should be fed into a High-impedance circuit.

EXT. SPEAKER JACK

Provided for adding a wide dispersion of sound to the amplifier. An additional speaker may be plugged into this jack and, when the additional speaker is separated from this amplifier by several feet, a richer and fuller sound will result.

SERVICE

If the Amplifier is in need of servicing, consult a reliable radio man. The electrical diagram herein should be shown to the repairman to assist him in servicing the Amplifier.

FUSE

The fuse used in this Amplifier is a type 3AG Slo-Blo of one ampere rating.
DO NOT USE A FUSE OF HIGHER RATING.

EPiPHONE

DEVON -TREMOLo
MODEL EA-35T AMPLIFIER

INSTRUCTIONS

EPiPHONE Inc., KALAMAZOO, MICHIGAN

EPiPHONE

PACEMAKER

MODEL EA-50 AMPLIFIER

INSTRUCTIONS

EPiPHONE Inc., KALAMAZOO, MICHIGAN

EPiPHONE

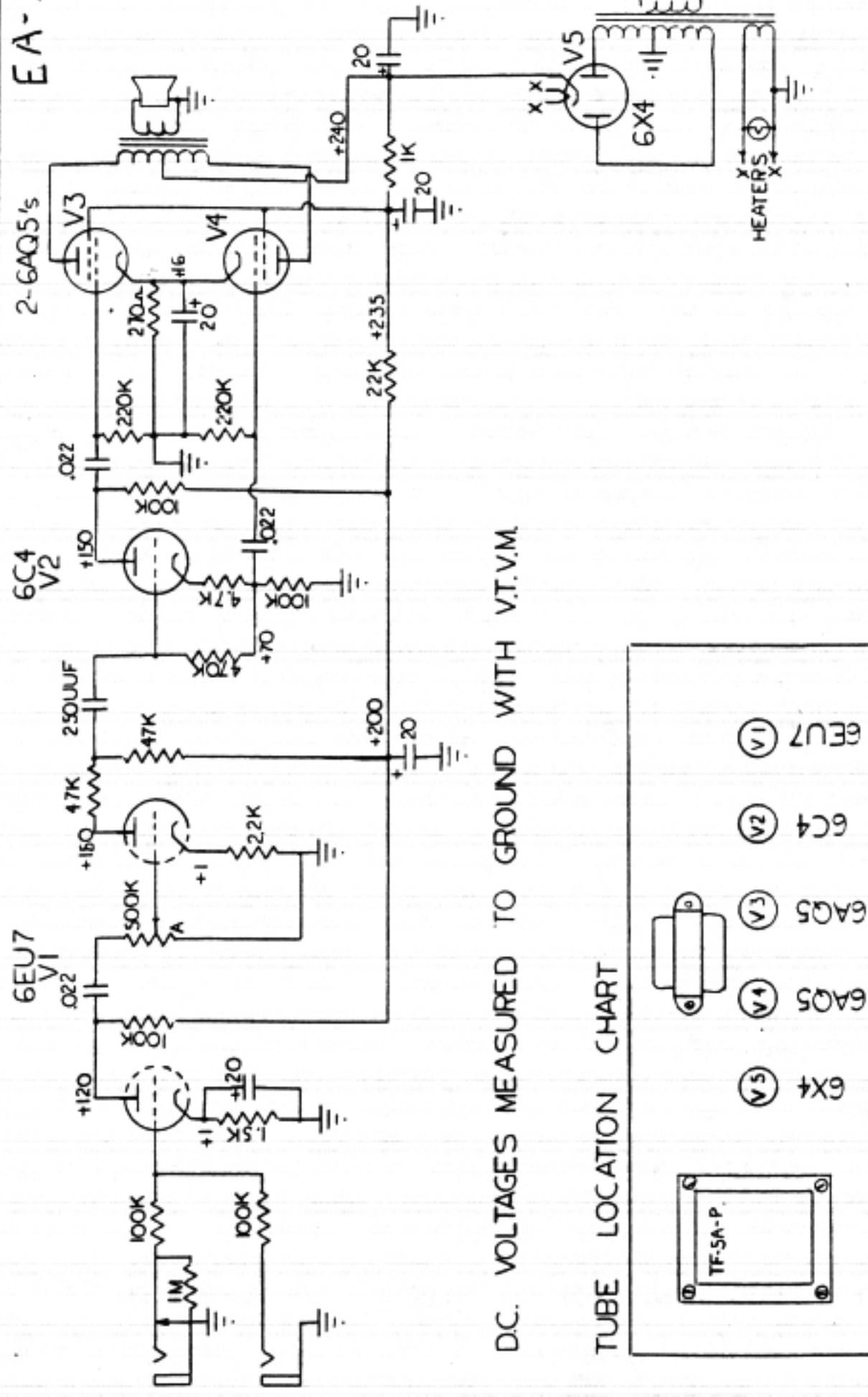
PACEMAKER

MODEL EA-50 AMPLIFIER

INSTRUCTIONS

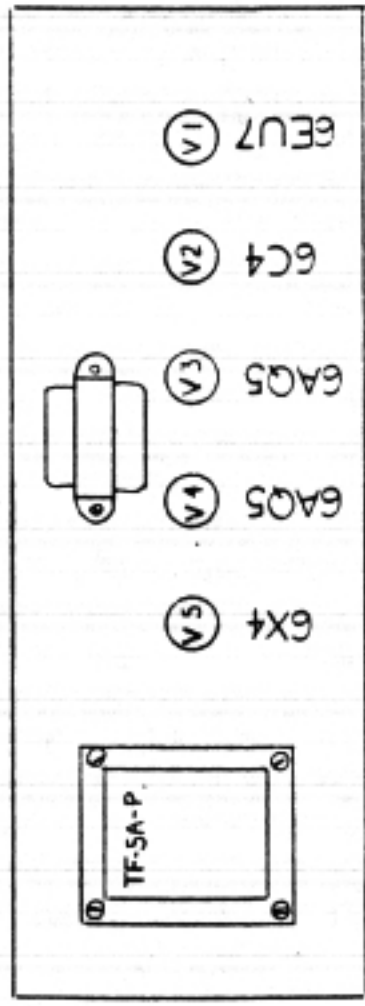
EPiPHONE Inc., KALAMAZOO, MICHIGAN

EA-50



DC. VOLTAGES MEASURED TO GROUND WITH V.T.V.M.

TUBE LOCATION CHART



INSTRUCTIONS

When only one instrument is used, plug into No. 1 input jack.

This amplifier is designed for 105-125 volt, 50-60 cycle current. Damage will result if connected to improper power source.

Use the above schematic to facilitate service by a reliable radio man.

Do not use higher rating fuse than one ampere, Slo-Blo, type 3 A.G.

This amplifier was carefully checked and in good playing condition when shipped. If damaged when received call transportation company immediately and place claim.

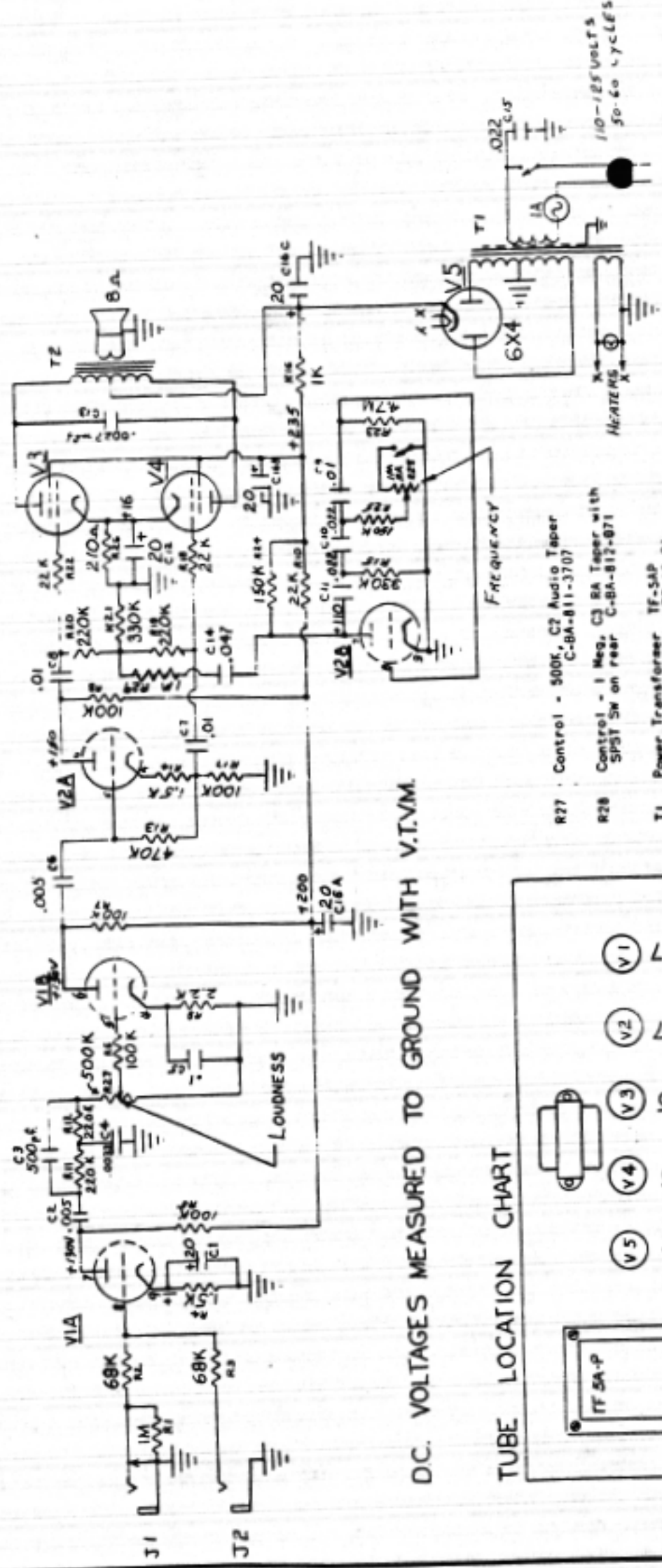
EPiPHONE

**PACEMAKER-TREMOLO
MODEL EA-50T AMPLIFIER**

INSTRUCTIONS

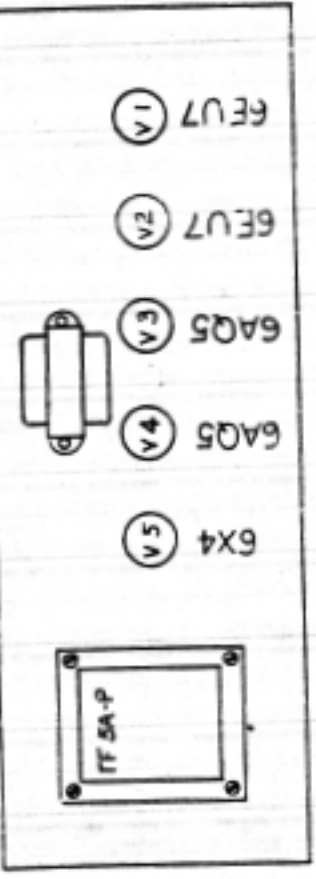
EPiPHONE Inc., KALAMAZOO, MICHIGAN

EA-50T



DC. VOLTAGES MEASURED TO GROUND WITH V.T.V.M.

TUBE LOCATION CHART



- R27 - Control - 500K, C2 Audio Taper C-BA-811-3707
- R28 Control - 1 Meg, C3 BA Taper with SPST SW on rear C-BA-812-871
- T1 Power Transformer TF-5AP
- T2 Output Transformer TF-18-01
- S1 SPST Rotary Switch 3/8" split knurled shaft 5W-898
- S one, 10" Speaker S-70001

INSTRUCTIONS

When only one instrument is used, plug into No. 1 input jack.

The Tremolo effect is turned on by the Pointer knob marked "Frequency" located on the Control Panel. The speeds have been set to cover a wide range of Tremolo effects.

This amplifier is designed for 105-125 volt, 50-60 cycle current. Damage will result if connected to improper power source.

Use the above schematic to facilitate service by a reliable radio man.

Do not use higher rating fuse than one ampere, Slo-Blo, type 3 A.G.

This amplifier was carefully checked and in good playing condition when shipped. If damaged when received call transportation company immediately and place claim.

EPHPHONE

RIVOLI

MODEL EA-65 AMPLIFIER

"WITH PHOTON POWER CONTROL"

Patent Applied For

INSTRUCTIONS

EPHPHONE Inc., KALAMAZOO, MICHIGAN

UNPACKING

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use power, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

TUBES

Make certain all tubes are seated firmly into their respective sockets. Each tube is labeled for proper replacement should any tube be out of its socket. Be especially careful when inserting tubes to see that the pins on the tube are correctly aligned with the holes in the socket before pushing into place. Do not twist tube — push tube straight into socket. It is advisable to check tubes from time to time depending on amount of use and excellence of performance. *Be sure tubes are always returned to proper sockets and seated firmly.*

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The gain for both jacks is adjusted by the control marked "Loudness". The tonal coloring can be varied over a wide range by use of the "Bass" and "Treble" tone controls.

A.C. POWER-POLARITY SWITCH

A convenient switch has been provided for performing a total of three functions, turning the amplifier on and off, putting the amplifier in "Standby" and selecting the proper polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum. In the "Standby" position the amplifier is kept "warmed up" and ready to play at the instant the switch is advanced to the "On" positions. Two "On" positions have been provided. The hum and hiss level on one of the "On" positions will be noticeably lower — this is the correct "Polarity" for using the amplifier.

In locations of extremely high noise levels, clipping the "Ground Clip" to a grounded object will greatly reduce objectionable noise and hum.

FUSE

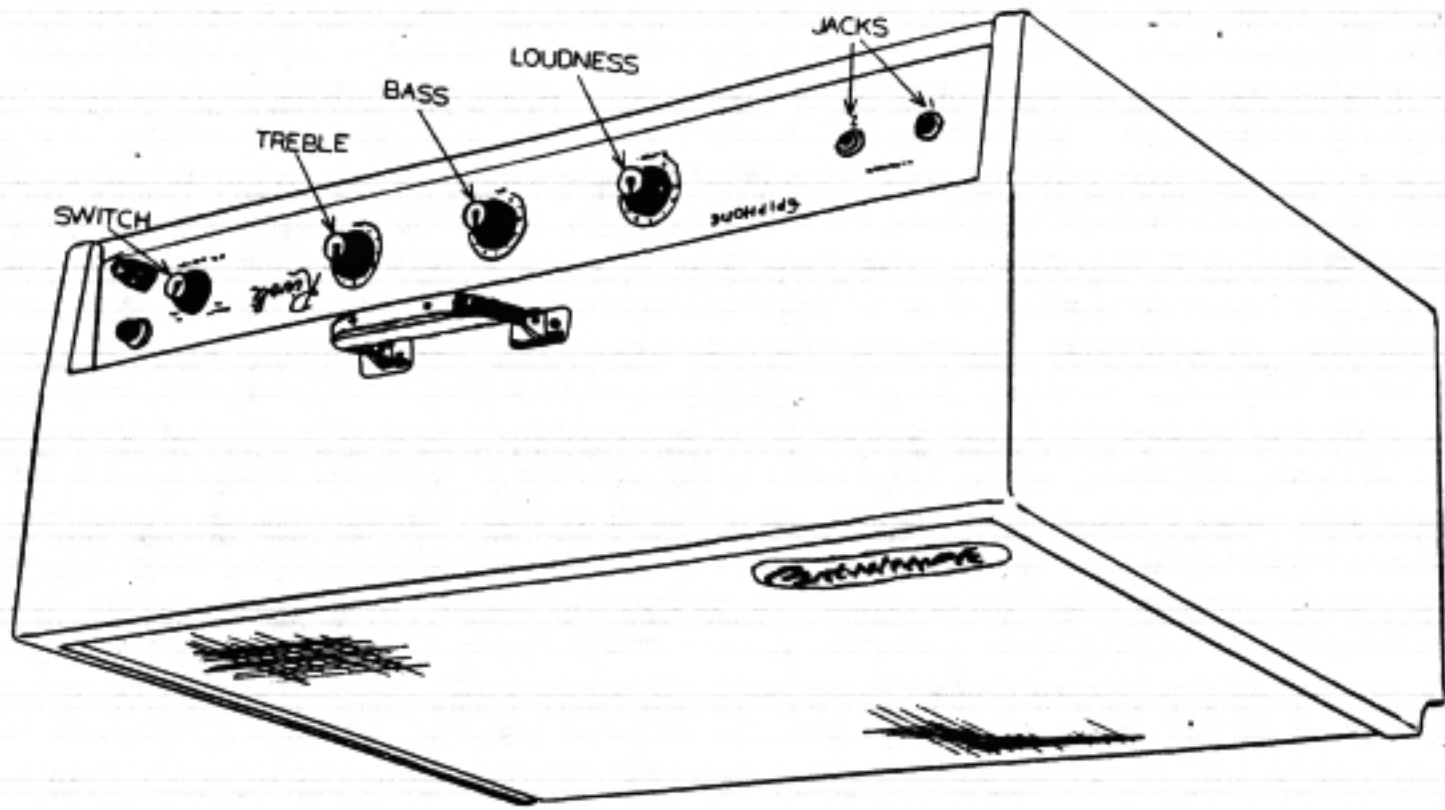
The fuse used in this Amplifier is a type 3AG of three amperes rating.

DO NOT USE A FUSE OF HIGHER RATING.

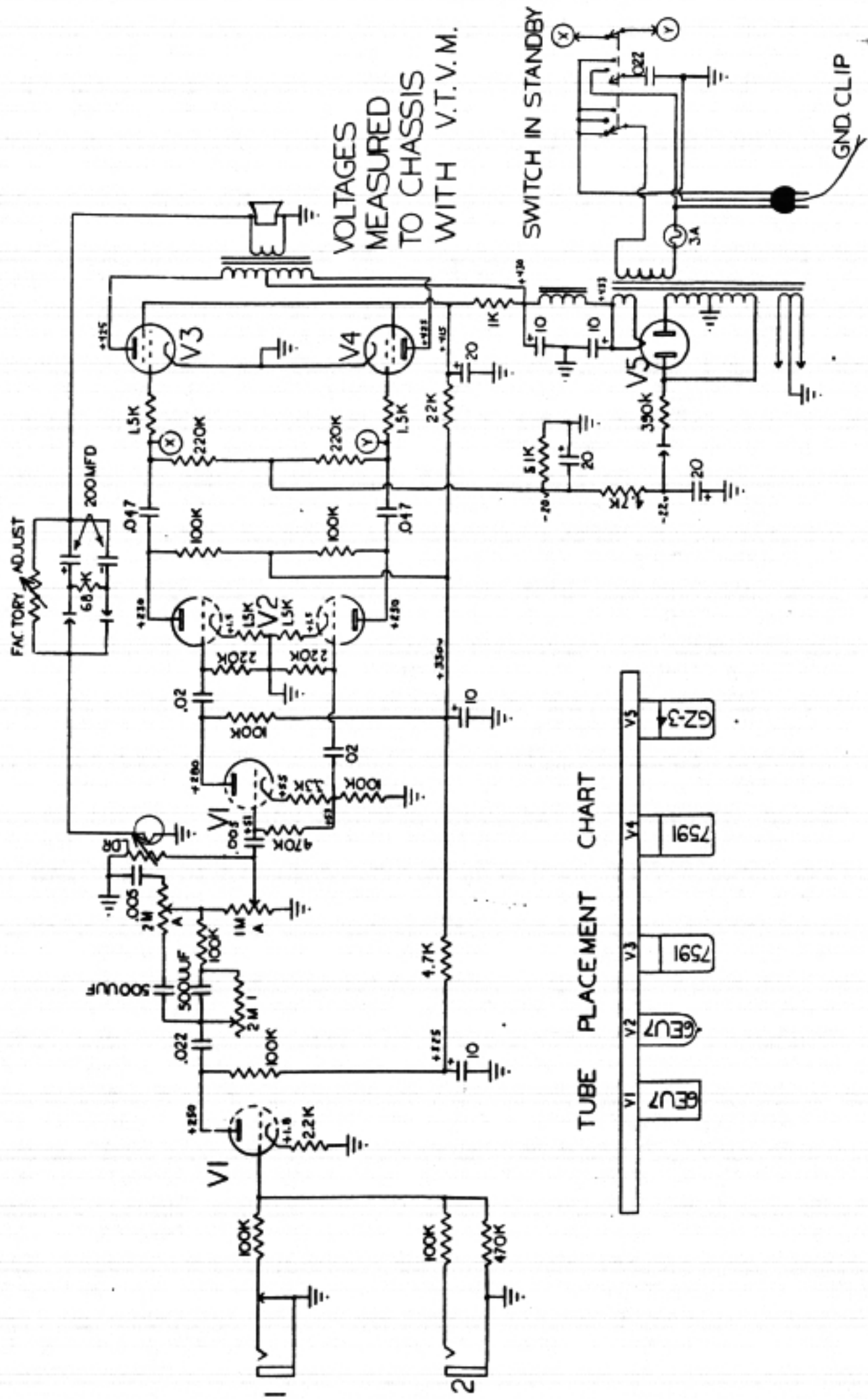
SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.

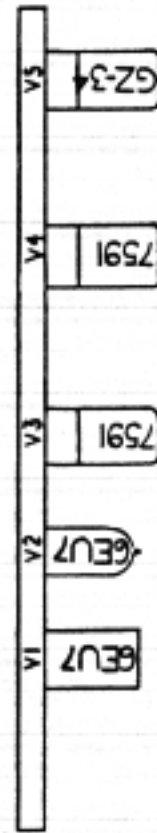
CONTROL LOCATIONS

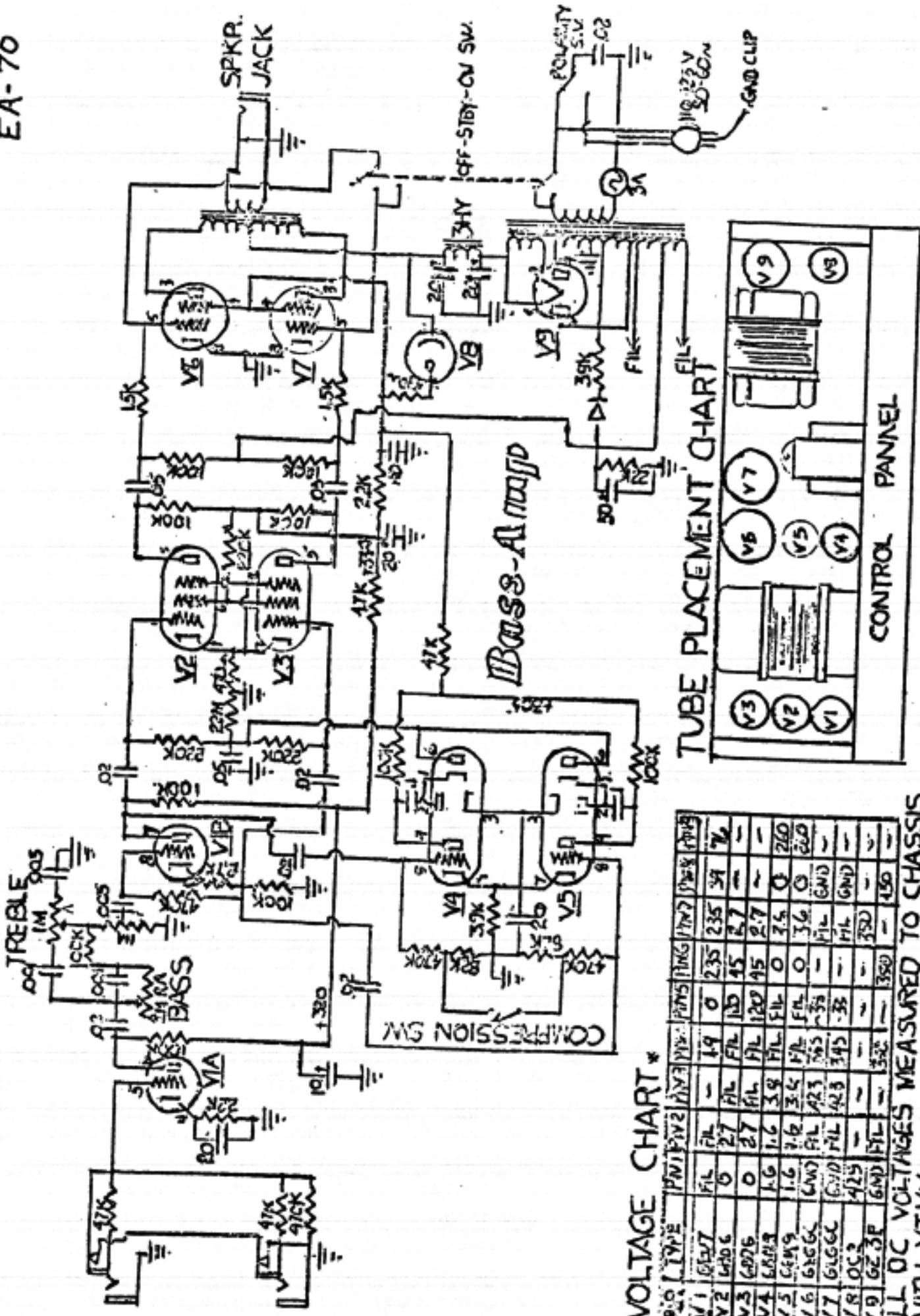


EA-65



TUBE PLACEMENT CHART



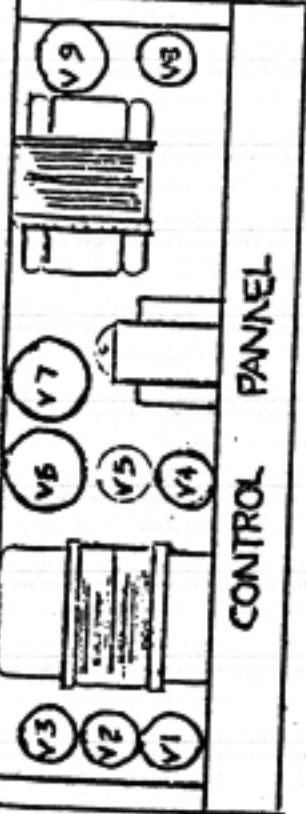


VOLTAGE CHART *

TUBE TYPE	PN1	PN2	PN3	PN4	PN5	PN6	PN7	PN8	PN9
V1 6X4P	FIL	0	235	235	0	235	235	235	235
V2 6X4	0	27	FIL	120	45	45	27	27	27
V3 6X4	0	27	FIL	FIL	120	45	27	27	27
V4 6X4	1.6	1.6	3.6	FIL	FIL	0	2.5	0	260
V5 6X4	1.6	1.6	3.6	FIL	FIL	0	3.6	0	260
V6 6X4	GND	GND	425	35	35	35	FIL	GND	260
V7 6X4	GND	GND	425	35	35	35	FIL	GND	260
V8 6X4	425	425	35	35	35	35	FIL	GND	260
V9 6X4	GND	GND	350	350	350	350	350	350	350

* ALL DC VOLTAGES MEASURED TO CHASSIS WITH V.T.V.M.

TUBE PLACEMENT CHART



EPiPHONE

CONSTELLATION V

BASS AMP

MODEL EA-71 AMPLIFIER

INSTRUCTIONS

EPiPHONE Inc., KALAMAZOO, MICHIGAN

UNPACKING

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use amplifier, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

SET UP INSTRUCTIONS

A set of 4 heavy duty casters are furnished with this amplifier for ease of moving it from one place to another. They are detached from the amplifier at time of shipment and are taped to the amplifier cabinet in a black vinyl bag. They can be easily attached or detached as needed. When playing this amplifier at relatively high power output it is suggested the casters be removed to eliminate the possibility of synthetic vibrations or rattles.

A.C. POWER-POLARITY SWITCH

A convenient switch has been provided for performing a total of three functions, turning the amplifier on and off, putting the amplifier in "Standby" and selecting the proper polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum. In the "Standby" position the amplifier is kept "warmed up" and ready to play at the instant the switch is advanced to the "On" positions. Two "On" positions have been provided. The hum and hiss level on one of the "On" positions will be noticeably lower — this is the correct "Polarity" for using the amplifier.

As an added convenience to the artist this amplifier is equipped with a "Standby pilot light" as well as the "Regular pilot light". When the "Amber" light is on, the amplifier is in "Standby"; when the "Red" light is on the amplifier is "On" and ready to play.

FUSE

The fuse used in this Amplifier is a type 3 AG Slo-Blo of two amperes rating. **DO NOT USE FUSES OF HIGHER RATING.**

SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown to the repairman to assist him in servicing the amplifier.

TILT LEG

This amplifier is equipped with a "Tilt Leg" which allows the artist to change the angle of sound dispersion. See Figure 1.

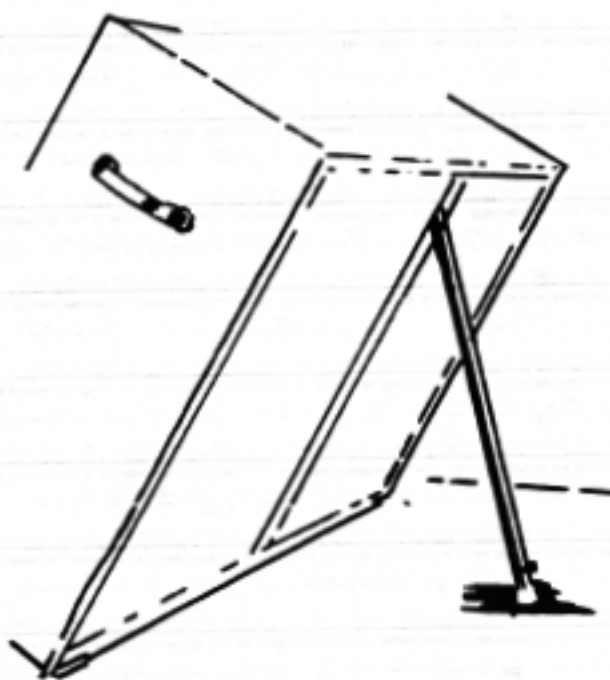


FIGURE 1.

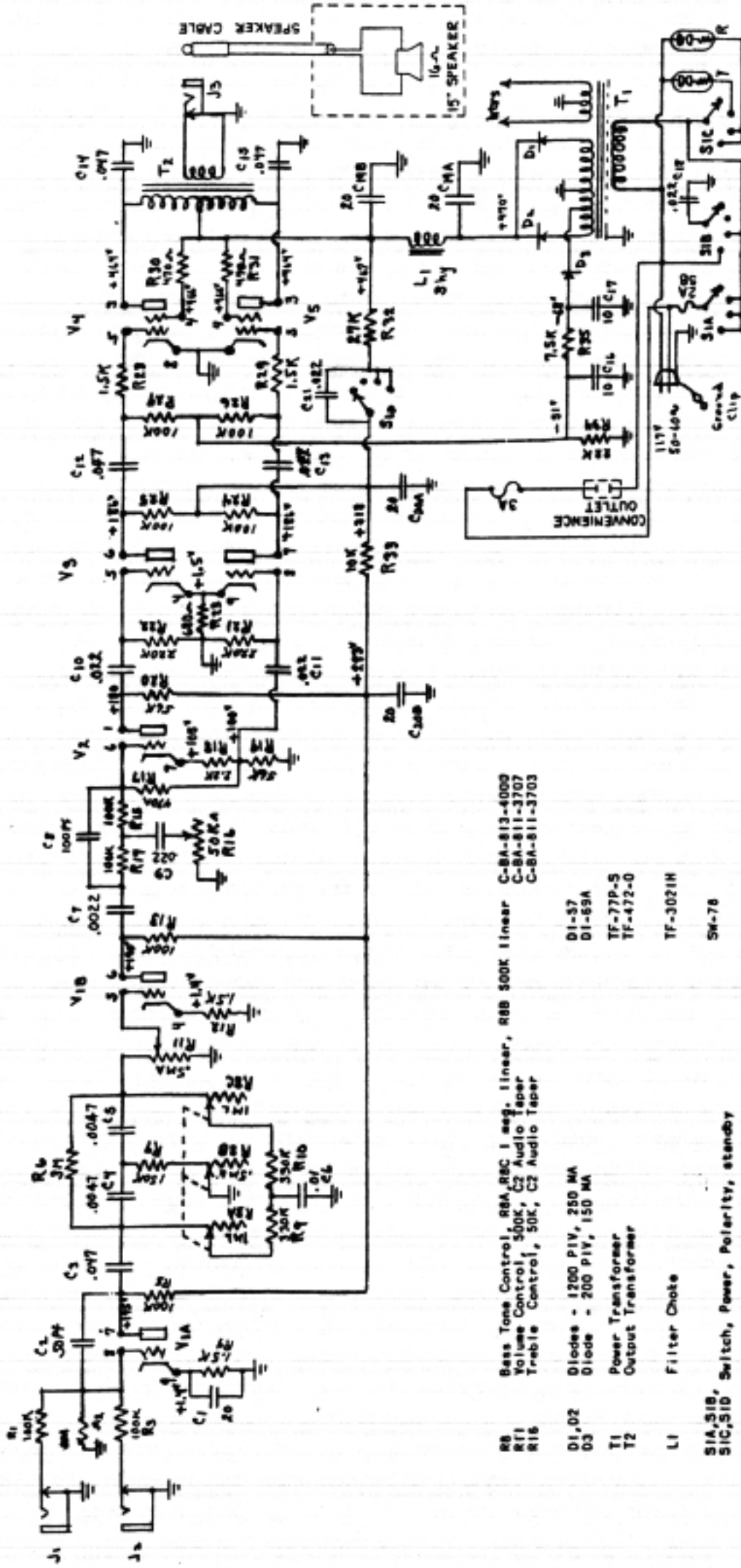
OPERATION OF INSTRUMENTS

This Amplifier is equipped with two input jacks for use with various types and styles of instruments.

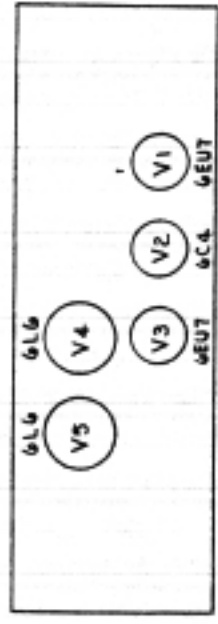
The gain for both jacks is adjusted by the control marked "Loudness". The tonal coloring can be varied by use of the "Bass" and "Treble" tone, controls. The "Bass" and "Treble" controls supply the artist, timbre adjustment. Proper setting will enhance the quality and power of the bass tones.

CONVENIENCE OUTLET

The convenience outlet, located on the back of the amplifier chassis, is separately fused with a type 3 AG, 3 ampere fuse. This outlet may be used for any accessory using less than three amperes, such as a tape recorder, reverberation and reverb/echo devices or a second amplifier.



- R8 Bass Tone Control, 88A, R8C 1 meg. linear, R8B 500K linear C-BA-813-4000
- R11 Volume Control, 500K, C2 Audio Taper C-BA-811-3707
- R16 Treble Control, 50K, C2 Audio Taper C-BA-811-3703
- D1, D2 Diodes - 1200 PIV, 250 MA D1-57
- D3 Diode - 200 PIV, 150 MA D1-65A
- T1 Power Transformer TF-77P-5
- T2 Output Transformer TF-472-0
- L1 Filter Choke TF-3021H
- S1A, S1B, S1C, S1D Switch, Power, Polarity, standby SW-76
- 15" Speaker, 16 ohm, 40 cycle S-0127



DC VOLTAGES TO CHASSIS WITH V.T.M.
CAPACITORS IN MFD EXCEPT WHERE NOTED.

EPiPHONE

CONSTELLATION

BASS AMP

MODEL EA-72 AMPLIFIER

INSTRUCTIONS

EPiPHONE Inc., KALAMAZOO, MICHIGAN

UNPACKING

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CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use amplifier, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

SET UP INSTRUCTIONS

A set of 4 heavy duty casters are furnished with this amplifier for ease of moving it from one place to another. They are detached from the amplifier at time of shipment and are taped to the amplifier cabinet in a brown vinyl bag. They can be easily attached or detached as needed. When playing this amplifier at relatively high power output it is suggested the casters be removed to eliminate the possibility of synthetic vibrations or rattles.

The Piggy Back amplifier may be played on or off the speaker cabinet. When playing it on the speaker cabinet be sure it is fastened securely by the locking fixtures provided.

SPEAKER CORD CONNECTION

The speaker cord is packed with the A. C. supply cord. One end must be plugged into the speaker jack located on the speaker cabinet back panel and the other end should be plugged into the speaker jack located on the back of the amplifier chassis.

A.C. POWER-POLARITY SWITCH

A convenient switch has been provided for performing a total of three functions, turning the amplifier on and off, putting the amplifier in "Standby" and selecting the proper polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum. In the "Standby" position the amplifier is kept "warmed up" and ready to play at the instant the switch is advanced to the "On" positions. Two "On" positions have been provided. The hum and hiss level on one of the "On" positions will be noticeably lower — this is the correct "Polarity" for using the amplifier.

In locations of extremely high noise levels, clipping the "Ground Clip" to a grounded object will greatly reduce objectionable noise and hum.

As an added convenience to the artist this amplifier is equipped with a "Standby pilot light" as well as the "Regular pilot light". When the "Amber" light is on, the amplifier is in "Standby"; when the "Red" light is on the amplifier is "On" and ready to play.

TILT LEG

This amplifier is equipped with a "Tilt Leg" which allows the artist to change the angle of sound dispersion. See Figure 1.

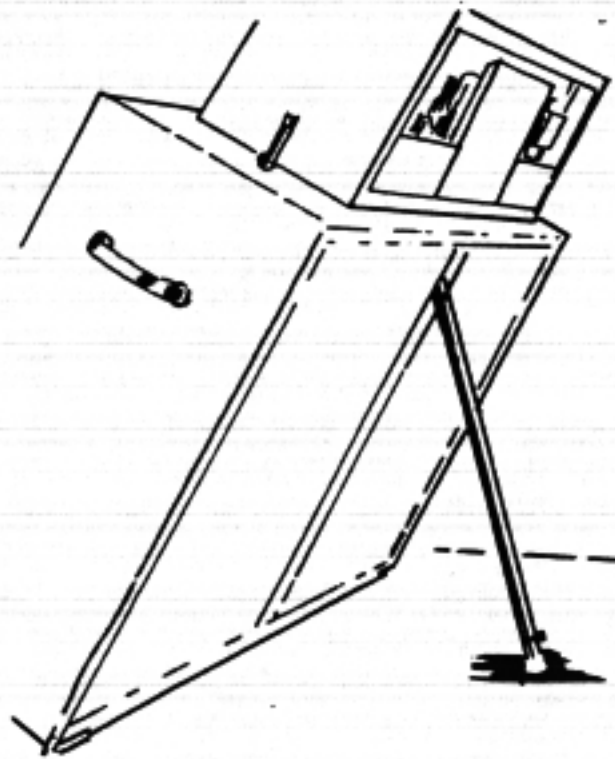
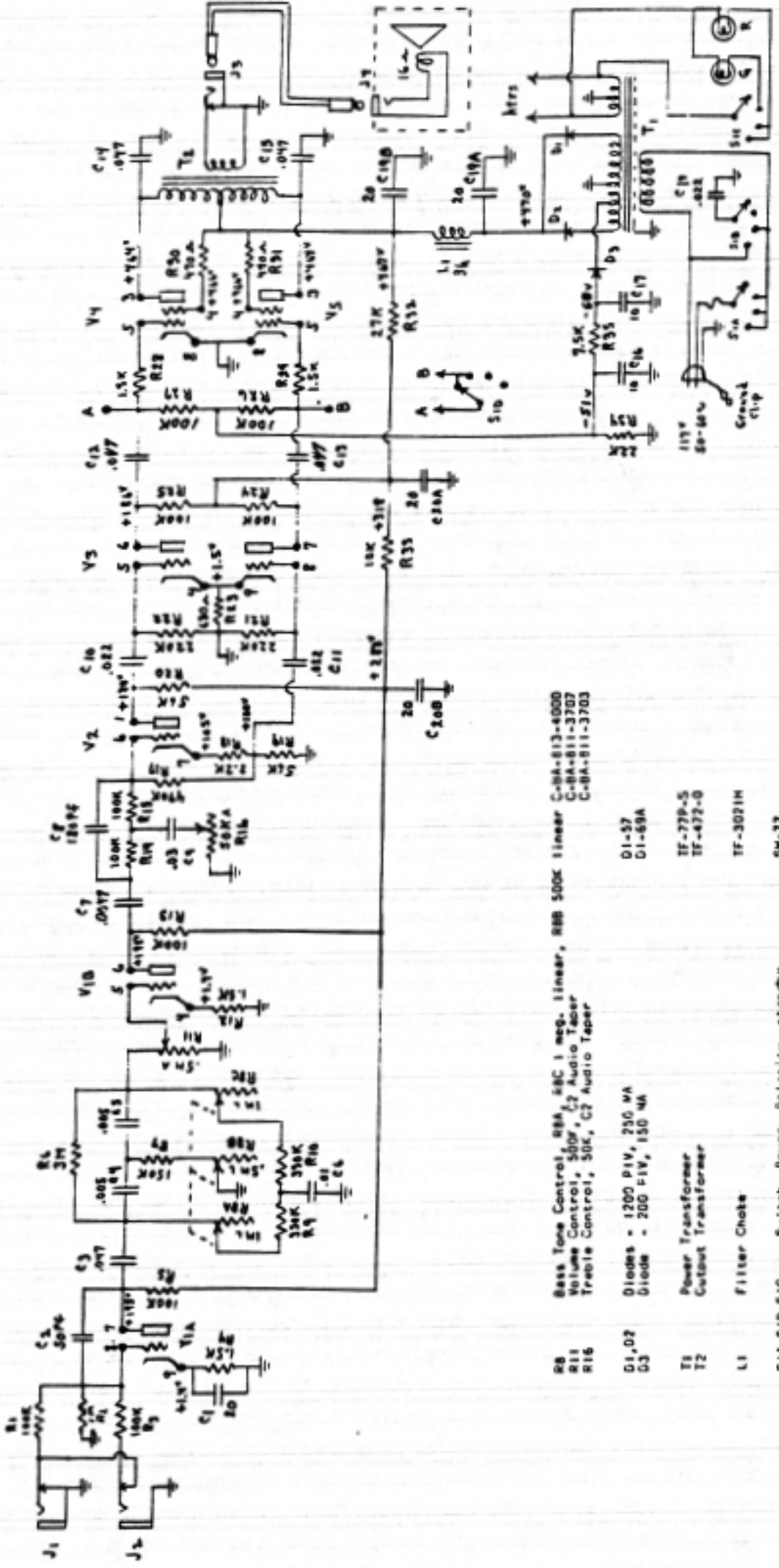


FIGURE 1.

OPERATION OF INSTRUMENTS

This Amplifier is equipped with two input jacks for use with various types and styles of instruments.

The gain for both jacks is adjusted by the control marked "Loudness". The tonal coloring can be varied by use of the "Bass" and "Treble" tone controls. The "Bass" and "Treble" controls supply the artist, timbre adjustment. Proper setting will enhance the quality and power of the bass tones.



- R8 Bass Tone Control, RBA 58C 1 meg. linear, RBB 500K linear C-BA-813-4000
- R11 Volume Control, 500K, C2 Audio Taper
- R16 Treble Control, 50K, C7 Audio Taper
- D1, D2 Diodes - 1200 PIV, 250 MA
- D3 Diode - 200 PIV, 150 MA
- T1 Power Transformer
- T2 Output Transformer
- L1 Filter Choke
- S1A, S1B, S1C Switch, Power, Polarity, standby
- 15" Speaker, 16 ohm, 40 cycle
- D1-37
- D1-59A
- TF-779-S
- TF-472-0
- TF-3071H
- SM-77

FUSE

The fuse used in this Amplifier is a type 3AG of three amperes rating. DO NOT USE FUSES OF HIGHER RATING.

SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.



DC VOLTAGES TO CHASSIS WITH VTVM

- 50V V1
- 50V V2
- 50V V3
- 50V V4
- 50V V5

EPiPHONE

EMBASSY

MODEL EA-300RVT AMPLIFIER

INSTRUCTIONS

EPiPHONE Inc., KALAMAZOO, MICHIGAN

IMPORTANT — READ CAREFULLY BEFORE USE

CAUTION

The Reverb Unit has been carefully constructed. It is, however, a delicate electronic device. Treat it with the same care and respect given a TV set.

Avoid dropping, sudden jolts, or rough handling and it will give excellent service. This beautifully musical Reverberation effect is not to be confused with the repeating signal produced by the mechanical tape recorder style of echo units.

UNPACKING

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

TUBES

Make certain all tubes are seated firmly into their respective sockets. Each tube is labeled for proper replacement should any tube be out of its socket. Be especially carefully when inserting tubes to see that the pins on the tube are correctly aligned with the holes in the socket before pushing into place. Do not twist tube — push tube straight into socket. It is advisable to check tubes from time to time depending on amount of use and excellence of performance. *Be sure tubes are always returned to proper sockets and seated firmly.*

CAUTION

Damage to the amplifier will result if it is connected to an improper power source. This amplifier is designed to be operated on 105-125 volt, 50-60 cycle alternating current only. The voltage from the power lines should not exceed 125, and the frequency of the current should be either 50 or 60 cycles. When ready to use amplifier, insert the plug on the power cord into the electric outlet and move switch to "on." After approximately one minute for the tubes to heat, the amplifier is ready for use.

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A convenient switch has been provided for performing a total of three functions, turning the amplifier on and off, putting the amplifier in "Standby" and selecting the proper polarity of the power source which reduces the A.C. hum and other extraneous noises to a minimum. In the "Standby" position the amplifier is kept "warmed up" and ready to play at the instant the switch is advanced to the "On" positions. Two "On" positions have been provided. The hum and hiss level on one of the "On" positions will be noticeably lower — this is the correct "Polarity" for using the amplifier.

As an added convenience to the artist this amplifier is equipped with a "Standby pilot light" as well as the "Regular pilot light". When the "Amber" light is on, the amplifier is in "Standby"; when the "Red" light is on the amplifier is "On" and ready to play.

FUSE

The fuse used in this Amplifier is a type 3AG of 3 ampere Slo-Blo rating. **DO NOT USE A FUSE OF HIGHER RATING.**

SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.

REVERBERATION — EFFECTIVE IN CHANNEL 2 ONLY

The Reverberation Unit must always be placed on a solid non-vibrating surface or footing when in operation.

Any sudden shock, jolt, or wiggle, when in use, will cause undesirable noise. The resultant clatter of an inadvertant shake or bump is annoying but not necessarily harmful. This delicate sensitivity to shock and vibration is a normal characteristic of the device.

No problem will be encountered while the unit is connected if supporting surface is solid and unit is not moved about. To avoid the unwanted noise, turn the reverberation unit off by pressing the foot switch.

TREMOLO — EFFECTIVE IN CHANNEL 2 ONLY

The Tremolo effect adds another dimension to the Reverberation effect. It can be used either with or without reverberation at the players discretion. The Tremolo is turned on or off by the use of the foot switch. The Tremolo Frequency Range has been carefully set to cover a wide range of Tremolo effects. The Depth of the Tremolo is also variable being controlled by the Depth control.

OPERATION OF MICROPHONE

The high gain and high fidelity characteristics of this Amplifier, permit the use of most of the popular high impedance microphones for public address work. The microphone should be plugged into the Number One Jack of Channel 1.

SPECTRUM CONTROLS

The wide range of tonal extremes required by different artists can all be accommodated with Epiphone Spectrum Control. For maximum loudness with a given power, the "treble" control should be Maximum, the "mid range" minimum, and the bass near 5. With this adjustment the tone controls on the guitar will have their maximum effectiveness.

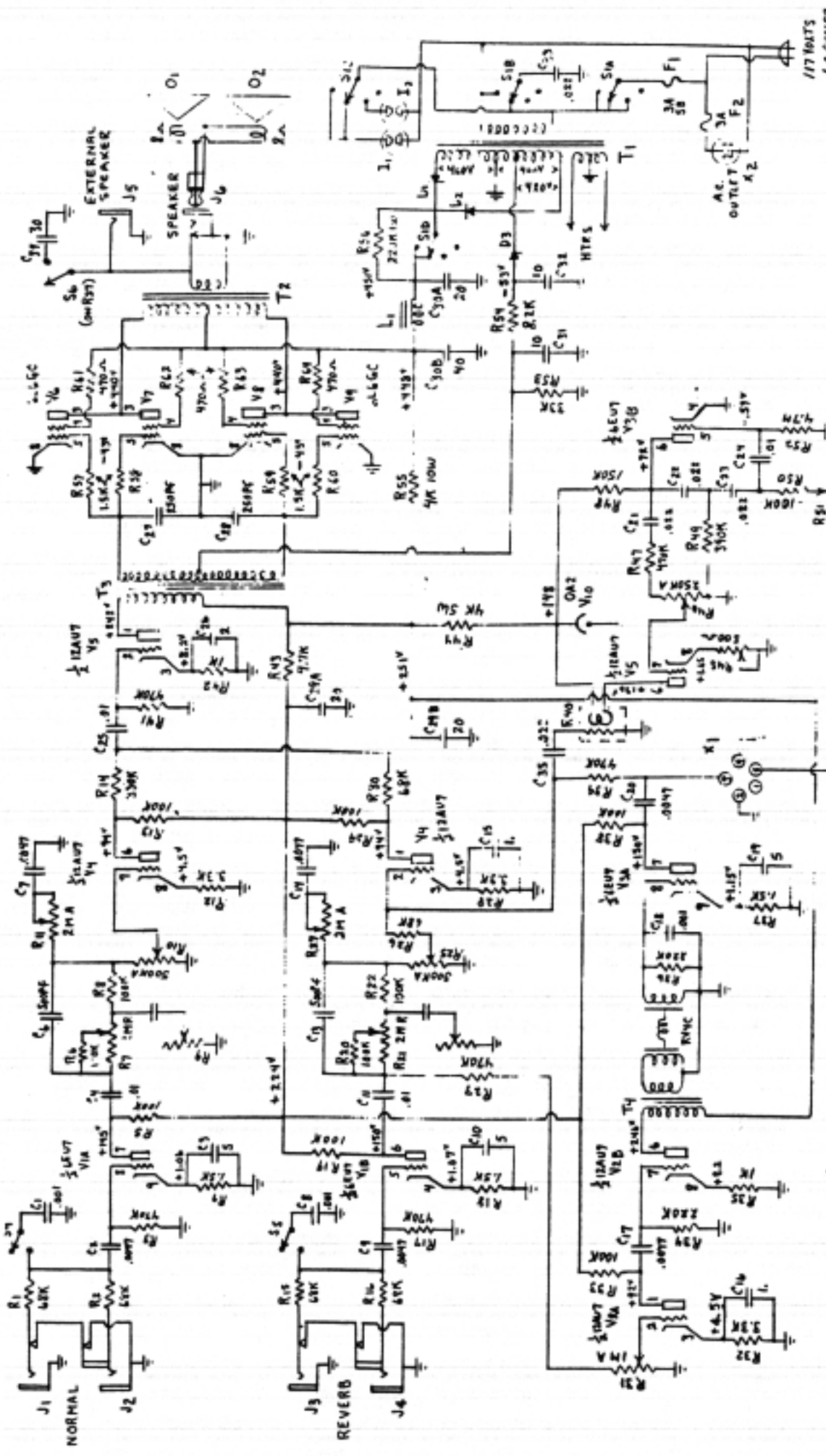
"Jazz" sound to the artist taste can be had by reducing the "treble", adding some "mid range", and adjusting the "bass" to the artist requirement. Set treble control channel II to jazz position for maximum jazz effect

Spectrum Controls plus the tone controls on the artist's instrument offer an endless variety of tonal color.

PRESENCE SWITCH

Presence switch in upper position will add a Chime or Bell like tone to the upper harmonics. In the lower position, the treble tones will have a mello characteristic.

EA-300 RVT



- DI-57 Diode 1200 PIV, 250 MA
- DI-405 Diode 200 PIV, 1 A D.
- S-200L1 Speakers 12", 8 ohms
- 6M-411-3701 Control 250K Audio
- 6M-411-3702 Control 2 meg Audio
- 6M-411-3707 Control 500K Audio
- 6M-411-3709 Control 1 meg Audio
- 6M-411-3711 Control 1.5 meg RA
- 6M-411-3751 Control 2 meg RA
- 6M-411-3751 Control 500 ohm MF
- 6M-411-3751 Control 2 meg Audio w/switch

- TR-103P Power Transformer
- TR-503-0 Output Transformer
- TR-1003D PP Driver Transformer
- TR-254.00 Reverb Transformer
- TR-1000C Filter Choke
- 6M-70A Switch
- 6M-82103 Foot Pedal Switches
- 6M-129 3PDT Slide Switches
- PL-302 Pilot Light (Red)
- PL-302 Pilot Light (Amber)



- Serial Number 1-465,000 to

Maestro

REVERB. TREMOLO
MODEL M-1 RVT

INSTRUCTIONS

PRODUCT OF



Gibson Electronics

KALAMAZOO, MICHIGAN

REVERB UNIT UNPACKING INSTRUCTIONS

IMPORTANT — READ CAREFULLY BEFORE USE

CAUTION

The Reverb Unit has been carefully constructed. It is, however, a delicate electronic device. Treat it with the same care and respect given a TV set.

Avoid dropping, sudden jolts, or rough handling and it will give excellent service. This beautifully musical Reverberation effect is not to be confused with the repeating signal produced by the mechanical tape recorder style of echo units.

UNPACKING

Amplifiers are carefully packed to prevent damage in shipment. However, upon receipt of the amplifier, examine carefully to determine if there has been breakage of tubes or parts. If damage has occurred during shipment, call the Transportation Company immediately, and place a claim.

TUBES

Make certain all tubes are seated firmly into their respective sockets. Each tube is labeled for proper replacement should any tube be out of its socket. Be especially careful when inserting tubes to see that the pins on the tube are correctly aligned with the holes in the socket before pushing into place. Do not twist tube — push tube straight into socket. It is advisable to check tubes from time to time depending on amount of use and excellence of performance. *Be sure tubes are always returned to proper sockets and seated firmly.*

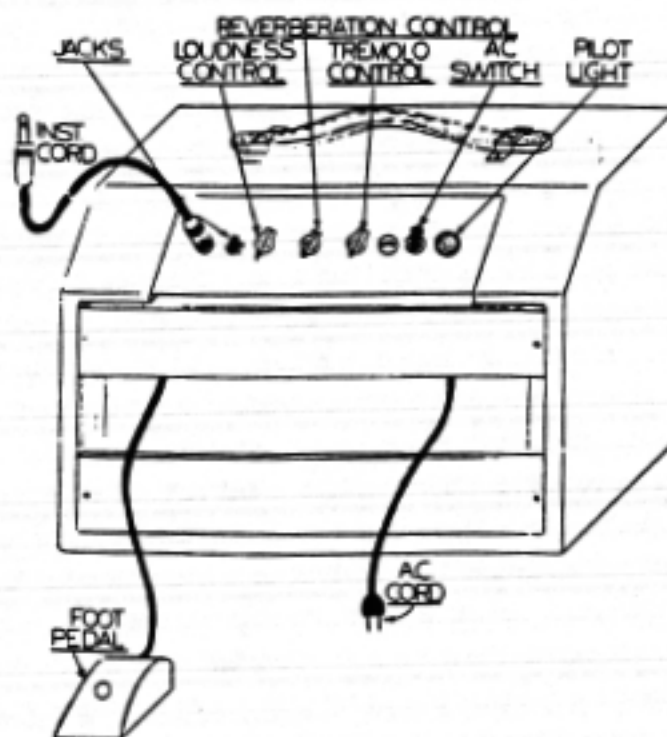
REVERB POWER UNIT SET UP INSTRUCTIONS

CAUTION

Check the current rating of the power outlet to be used. *Be positive it is 110-120 volt, 50-60 cycle A. C. (alternating current) ONLY.* Never connect the Reverb Unit to a D. C. (direct current) outlet. Improper current type or rating can do serious damage.

SET UP

Set up the guitar and amplifier in the usual manner — see diagram below.



1. If only one instrument is used it should be plugged into the Number 1 Jack for maximum gain.
2. Place the foot control switch of the Reverberation Unit in a convenient position and the system is ready to operate. This foot switch turns the reverberation effect ON and OFF.
3. If tremolo is to be used with the music being played, it can be accomplished by turning Tremolo control clockwise from the OFF position. The frequency of the tremolo can be varied over a wide range of speeds by turning this control.
4. **REVERBERATION:**—Due to the unusual flexibility of the Reverberation circuit, it is important that the operator understands the various control settings to obtain the total range of Reverberation effects of which this amplifier is capable. Illustrated herein are several examples of control settings which will reproduce different Reverberation effects.

Loudness

Reverberation

Tremolo

Example No. 1. 50% Main Signal - 50% Reverb.



INSTRUMENT SETTINGS — Tone control and/or toggle switch in maximum treble position. Volume control setting $2\frac{1}{2}$ to 3.

Example No. 2. 75% Main Signal - 25% Reverb.



INSTRUMENT SETTINGS — Same as above

Example No. 3. 25% Main Signal - 75% Reverb.



INSTRUMENT SETTINGS — Same as Example No. 2.

Example No. 4. 100% Reverb.



INSTRUMENT SETTINGS — Same as Example No. 2.

FOOT SWITCH MUST BE IN THE "ON" POSITION FOR REVERBERATION.

Maestro

MODEL M-201 AMPLIFIER

INSTRUCTIONS

PRODUCT OF



Gibson Electronics

KALAMAZOO, MICHIGAN

Maestro

MODEL M-216 RVT

INSTRUCTIONS

PRODUCT OF



Gibson Electronics

KALAMAZOO, MICHIGAN

REVERB UNIT UNPACKING INSTRUCTIONS

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REVERB POWER UNIT SET UP INSTRUCTIONS

CAUTION

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The Reverberation Unit must always be placed on a solid non-vibrating surface or footing when in operation.

Any sudden shock, jolt, or wiggle, when in use, will cause undesirable noise. The resultant clatter of an inadvertant shake or bump is annoying but not necessarily harmful. This delicate sensitivity to shock and vibration is a normal characteristic of the device.

No problem will be encountered while the unit is connected if supporting surface is solid and unit is not moved about. To avoid the unwanted noise, turn the reverberation unit off by pressing the foot switch.

FUSE

The fuse used in this Amplifier is a type 3AG of one ampere rating. **DO NOT USE FUSES OF HIGHER RATING**

TREMOLO

The Tremolo effect adds another dimension to the Reverberation effect. It can be used either with or without reverberation at the players discretion. The Tremolo is turned on or off by the use of the foot switch. The Tremolo Frequency Range has been carefully set to cover a wide range of Tremolo effects. The Depth of the Tremolo is also variable being controlled by the Depth control.

REVERBERATION —

Due to the unusual flexibility of the Reverberation circuit, it is important that the Operator understands the various control settings to obtain the total range of Reverberation effects of which this Amplifier is capable. Illustrated below are several examples of control settings which will reproduce different Reverberation effects.

Volume

Tone

Reverberation

Depth

Frequency

Example No. 1. 50% Main Signal - 50% Reverb.



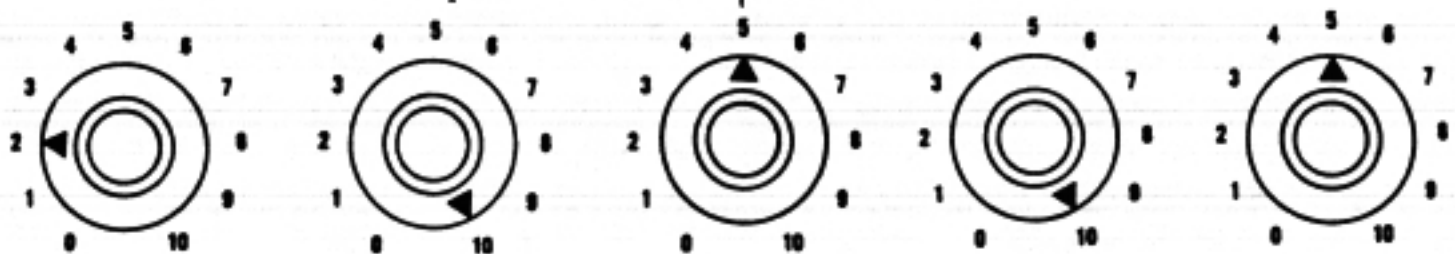
INSTRUMENT SETTINGS — Tone control and/or toggle switch in maximum treble position. Volume control setting $2\frac{1}{2}$ to 3.

Example No. 2. 75% Main Signal - 25% Reverb.



INSTRUMENT SETTINGS — Same as Example No. 1.

Example No. 3. 25% Main Signal - 75% Reverb.



INSTRUMENT SETTINGS — Same as Example No. 1.

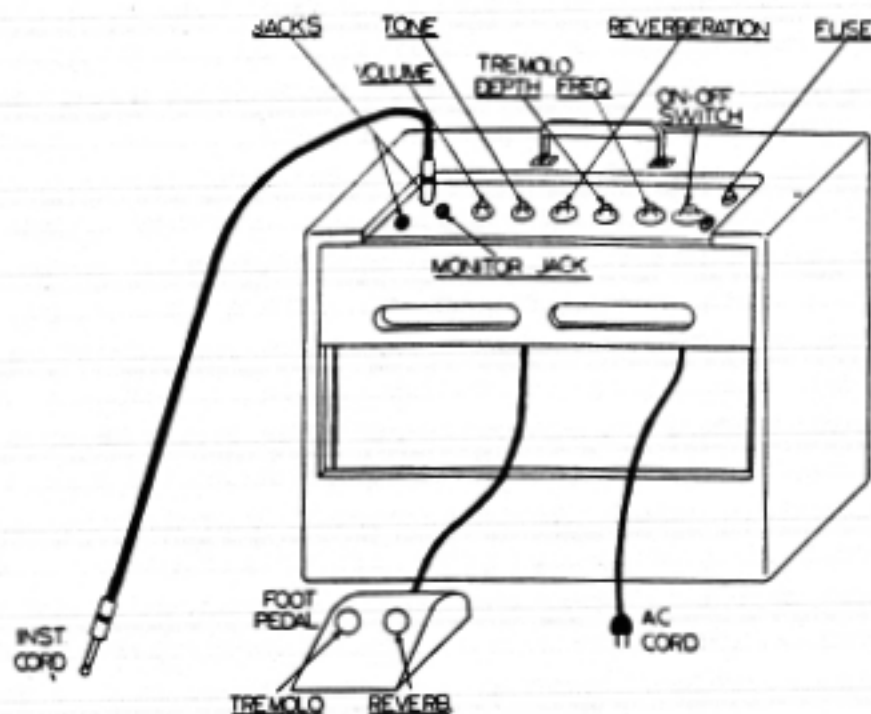
Example No. 4. 100% Reverb.



INSTRUMENT SETTINGS — Same as Example No. 1.

FOOT SWITCH MUST BE IN THE "ON" POSITION FOR REVERBERATION.

CONTROL LOCATIONS

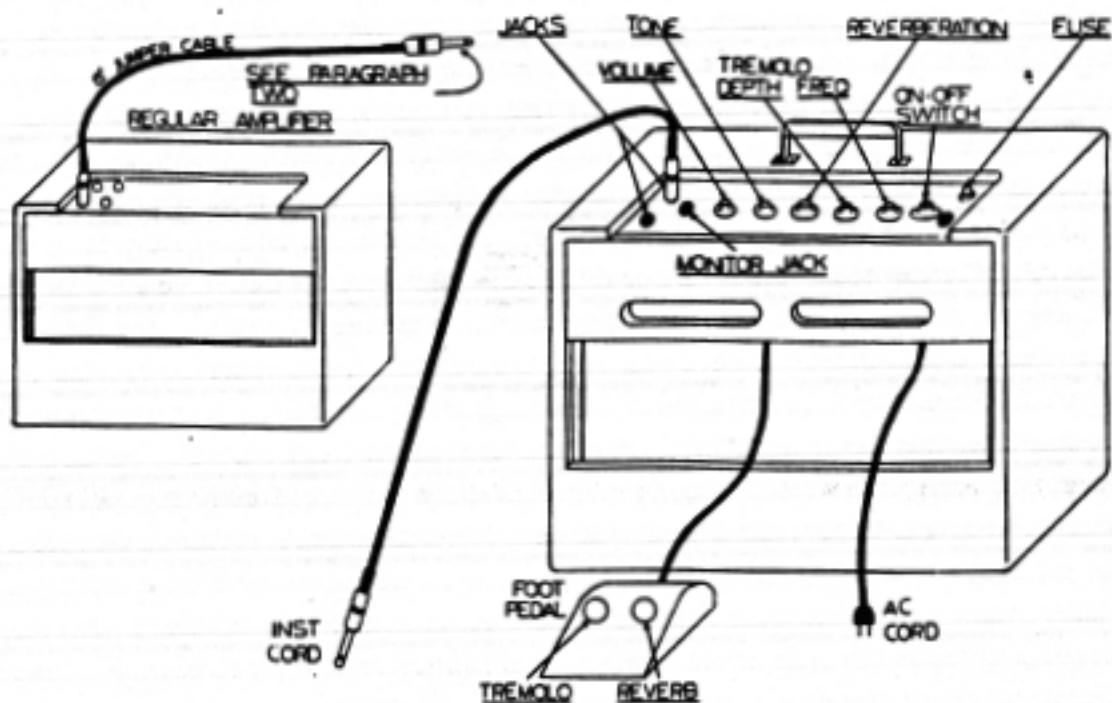


OPERATIONAL INSTRUCTIONS FOR USE OF THIS REVERBERATION AMPLIFIER IN CONJUNCTION WITH A REGULAR AMPLIFIER

The use of this Reverberation Amplifier with a Regular Amplifier will add a spacious liveliness to instrument reproduction that is far beyond the possibilities of single amplifier Reverberation. Listed below are the simple instructions for this type of operation.

1. Plug the A.C. cord of this Reverberation Amplifier into a convenient outlet.
2. For normal signal amplification in Regular Amplifier insert one plug of a Shielded Jumper Cord into Jack No. 2 of the Reverberation Amplifier. Plug other end of this jumper into the input jack normally used in the Regular Amplifier. For Reverberation, and/or, normal signal, with or without Tremolo, amplification in the Regular Amplifier move the plug from Jack No. 2 to the Monitor Jack on the Reverberation Amplifier. Set Regular Amplifier Volume control for normal volume.
3. The Instrument Cord should be plugged into the No. 1 jack of the Reverberation Amplifier. Plug the A.C. line cord of the Regular Amplifier into a convenient outlet.
4. Turn ON the A.C. switches for both amplifiers, the Volume and Tone controls may be set as illustrated on page 2.

Illustrated below is a pictorial diagram showing the correct hook-up.



5. Place the combination Reverb. Tremolo Foot Switch in a convenient position and the system is ready to operate. Either, or both, Reverberation and Tremolo effect is available by switching the indicated switch ON or OFF.
6. The percentage of Reverberation can be controlled by the Reverberation control, Loudness control and the Volume control of the Regular Amplifier.
7. The instrument is ready to be played. If Reverb. signal is not coming through, step on the Foot Switch as it may be in the OFF position. Thereafter the Reverberation effect can be conveniently cut in or out with a snap of the Foot Switch.
8. When the Reverberation Foot Switch is OFF, the Reverberation Amplifier is operated as a Regular Amplifier sound without Reverberation. If a cord length space separates the Regular and the Reverberation Amplifiers, an excellent impression of the "STEREO" and ECHO effect is obtained. When the Reverberation Foot Switch is ON, the Reverb. signal is super-imposed on the above "STEREO" sound with a minimum contrast of volume change.

OPERATION OF MICROPHONE

The high gain and high fidelity characteristics of this Amplifier permit the use of most of the popular high impedance microphones for public address work. The microphone should be plugged into the Number One jack and it is not recommended that other instruments be used in conjunction with the microphone.

When using a microphone it is important that the Number 280 or similar shielded plug be attached to the cord. The ordinary phone plug with bakelite or other non-shielded cover is not suitable because the leads from the microphone must be completely shielded. Otherwise, objectionable hum will result. Figure A illustrates the proper way to connect the plug to the microphone cable.

To use the microphone, insert the plug in the Number One jack and advance the Loudness control until a feedback squeal or howl is produced on the loudspeaker. Reduce the Loudness control to just below the feedback point. This setting will vary considerably, depending upon the size of the room, its acoustical properties and the distance between the microphone and loudspeaker. Feedback is the limiting factor in all public address installations and is caused when the level of sound from the loudspeakers is sufficient to actuate the microphone. The general rule when setting up the equipment is to place the loudspeaker as far from the microphone as possible.



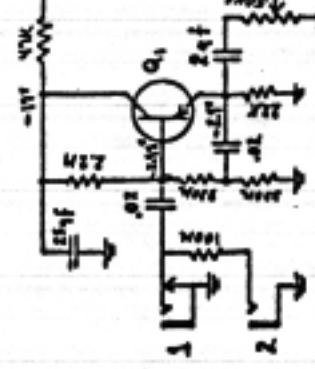
Figure A

SERVICE

If the amplifier is in need of servicing, it should be taken to a reliable radio man. The electrical diagram in this folder should be shown the repairman to assist him in servicing the amplifier.

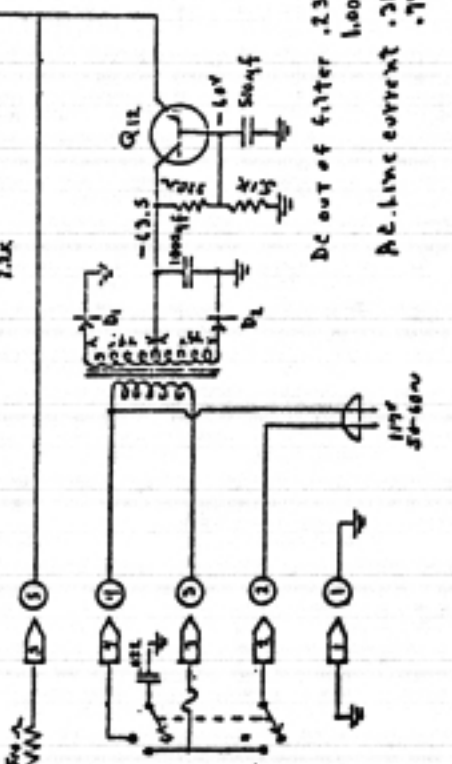
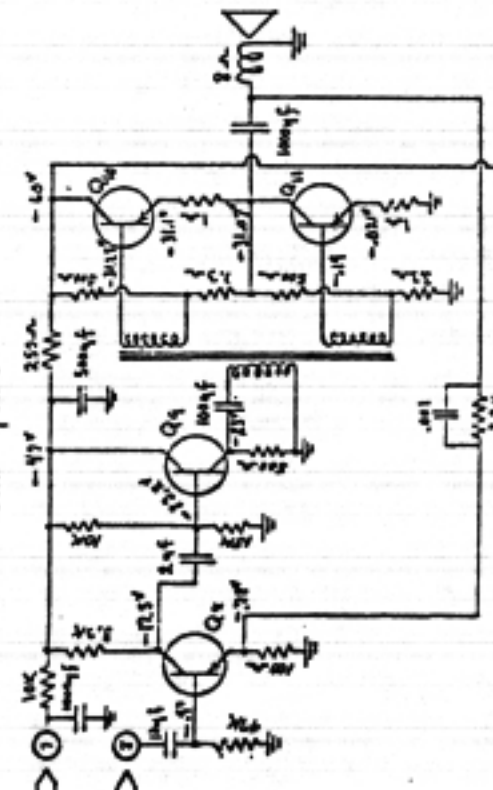
STARFIRE JR-10007

PREAMPLIFIER + CENTRAL SECTION



- Q1, Q2, Q3, Q4 2N208
- Q5 + Q6 2N210
- Q7 2N255A/B1629
- Q8 2N1424
- Q9 + Q10 2N1073A/D1423
- Q11 2N1033A/B1632
- D1 + D2 1N324

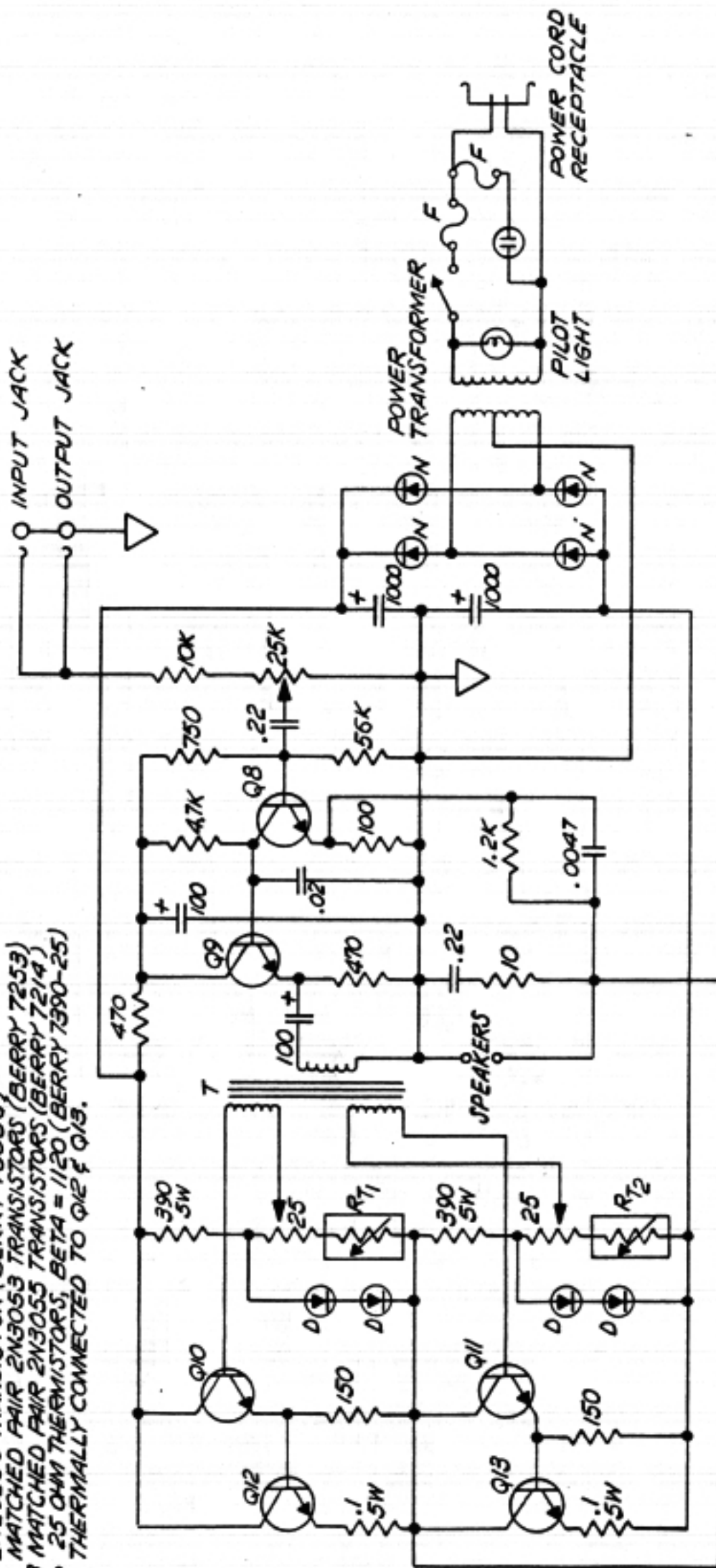
POWER AMPLIFIER



DC out of filter .23 amp at 300 signal
 100 amp at 25 watts out
 AC line current .212 amp at 300 signal
 .74 amp at 25 watts out.

NOTES

1. ∇ IS CHASSIS GROUND.
 2. D DHD 800 SILICONE DIODE.
 3. N F-1 RECTIFIER.
 4. T BERRY 7245.
 5. F 5 AMPERE BUSS FUSE.
 6. Q8 Q9 2N2926G TRANSISTOR (BERRY 7005G)
 7. Q10 Q11 MATCHED PAIR 2N3053 TRANSISTORS (BERRY 7253)
 8. Q12 Q13 MATCHED PAIR 2N3055 TRANSISTORS (BERRY 7214)
 9. RT1 RT2 25 OHM THERMISTORS, BETA = 1120 (BERRY 7390-25)
10. THERMALLY CONNECTED TO Q12 & Q13.



GIBSON
PLUS 50

G I B S O N

100 WATT AMPLIFIER

MODEL GSS - 100

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CHICAGO MUSICAL INSTRUMENT CO.
7373 N. Cicero Ave., Chicago, Illinois 60646

Transistor voltage readings & bias adjustment.

Improper Bias adjustment will most commonly result in a fuzzy tone (distortion) at medium playing levels, although occasionally all volume levels will be affected. Sometimes this fuzzy tone will tend to disappear after the amplifier has completely warmed up.

Two systems of Bias adjustment are shown below. It is recommended that the "Scope" system be used if at all possible, however, the "Approximation" system plus adjustment by ear may do if a scope is not available.

Bias Adjustment using an oscilloscope.

1. Disconnect speakers from amplifier and connect a 4 ohm 200 watt dummy load and the oscilloscope to the speaker terminals.
2. Connect a 100 HZ (1000 HZ on later Models) sine wave signal into the Bass channel, turn amplifier "on" and set volume to 30-50%.
3. Adjust Bias Pots on driver board to an approximate 1/3 clockwise position. Observe "scope" waveform, touch up Bias pot adjustment, going just beyond a perfect sine wave.

Bias Adjustment by approximation.

1. Set Bias Pots on driver board to an approximation 1/3 clockwise position.
2. While an instrument is being played through the amplifier at the volume level where distortion is heard, touch up Bias pot adjustment by "ear" to remove distortion. Do not adjust either Bias pot very far from the 1/3 clockwise positions.

I M P O R T A N T

Be certain output transistors and output transistor fuses are OK before adjusting Bias.

TRANSISTOR VOLTAGES

	Collector	Base	Emitter
VIBRATO/TREMOLO BOARD			
Q1	+12.	+.6	Ø
Q2	+12.	Ø	Ø
Q3	+6.6	+1.	+6
Q4	+6.6	+6	+5.4
Q5	+16.	+.32	+3
Q6	+12.	+3.9	+3.9
Q7	+16.	+3.7	+3.6
Q8	+12.5	+6.6	+6.6

TREBLE PREAMP

Q1	+6.2	+1.5	+.3
Q9 or Q2	+4.1	+12	+12.2
Q10 or Q3	+6.6	+3.2	+2.7
Q11 or Q4	+10.0	+7.5	+.35

BASS PREAMP

Q12	+2 to 10		Ø
Q13 or Q1	+6.6	+1.45	+1.
Q14 or Q2	+13.	+.85	+.4
Q15 or Q3	+8.4	+2.	

REVERB

Q16 or Q3	+7.3	+12.	+11.5
Q17 or Q4	+7.3	+1.35	+.8
Q18 or Q1	+1.85	+.65	Ø
Q19 or Q2	+35.	+1.85	+1.3

POWER SUPPLY

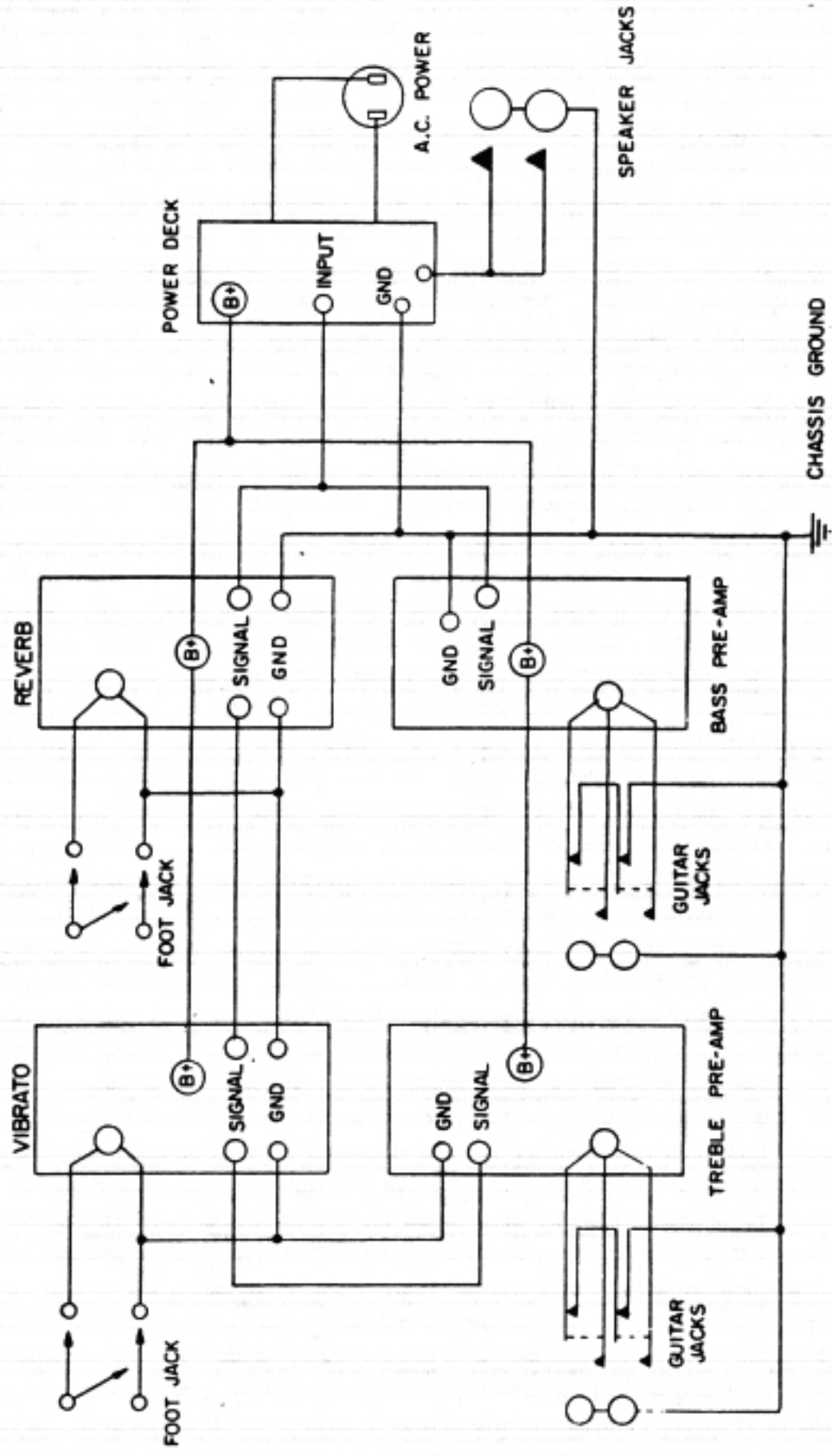
Q20	+2.25	+.26	+.25
Q21	+17.	+2.25	+1.65
Q22	+47	+17.	+16.5
Q23	+47	+1.05	+.5
Q24	Ø	-50	-50.5
Q25	+47	+.5	Ø
Q26	Ø	-50.5	-51

I M P O R T A N T

The above voltage readings were measured to ground with a Simpson Model 260 V.O.M. Voltage readings shown are intended only as a guide in troubleshooting. Voltages will vary from unit to unit due to normal manufacturing tolerances.

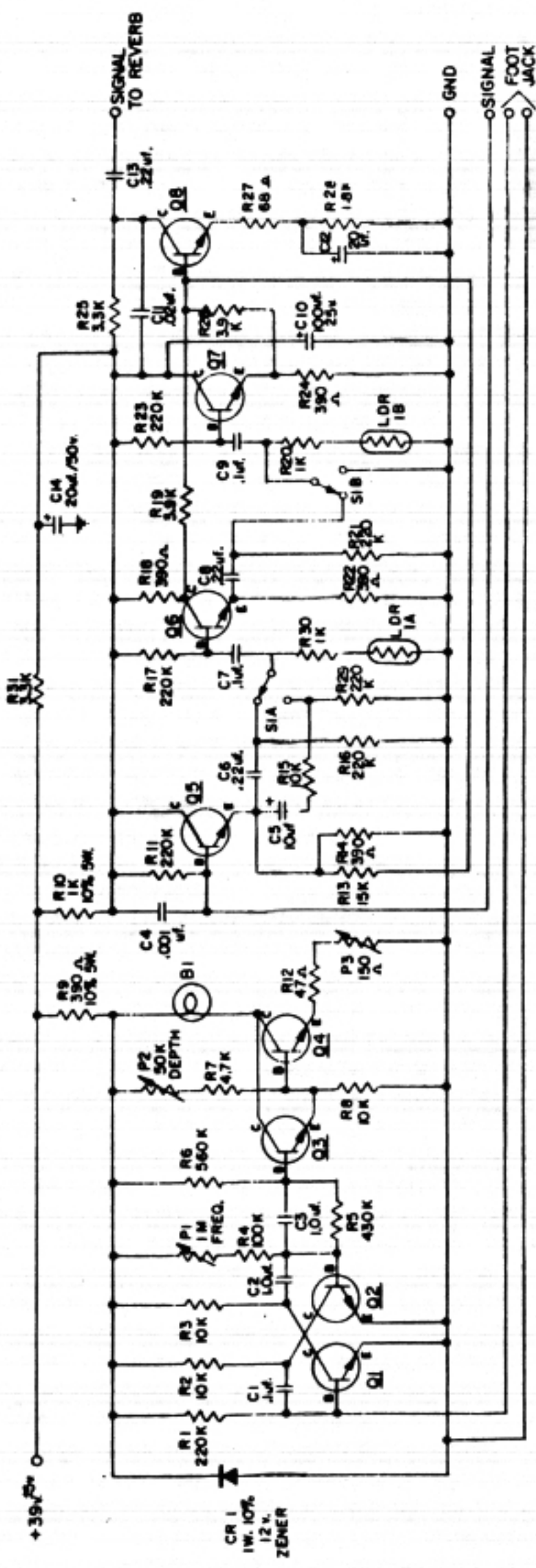
C A U T I O N

Exercise extreme care when making voltage measurements. Accidental shorting of transistor leads may damage transistors.



ALLOWABLE VARIATION ON ALL DIMENSIONS UNLESS OTHERWISE SPECIFIED: ANGLES ± 1/2° FRACTIONS ± 1/64 DECIMALS ± .005 HOLES ± .002 - .000

APPROVED		FINISH		MATERIAL		NAME	
CHECKER	DATE	FINISH	DATE	MATERIAL		100 W Amplifier	
REMARKS				SCALE		DRAW. NO.	
SET "A"				DATE	BRNEN	CHECKED	APPROVED
LETTER							3000 A

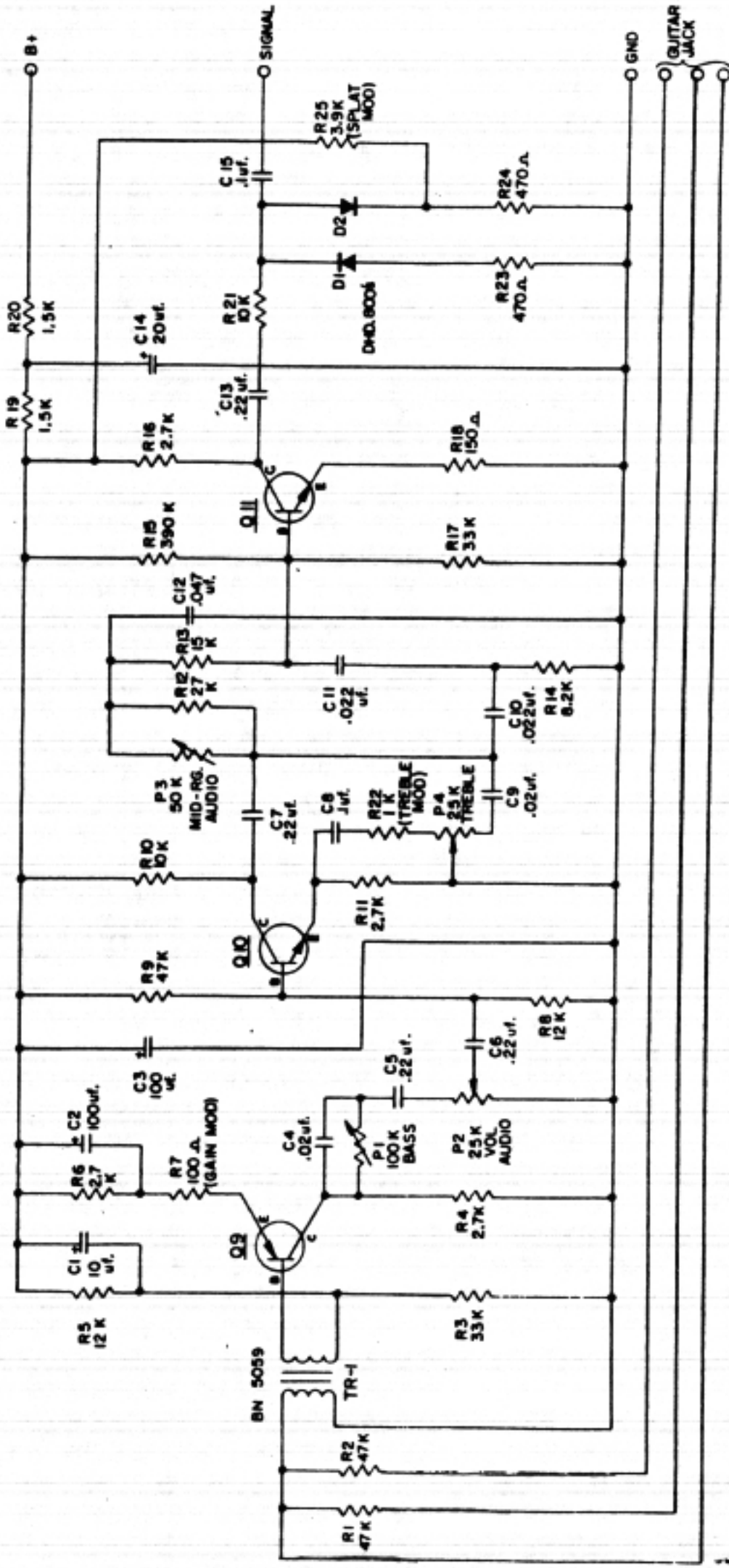


NOTE:

1. ALL RESISTORS 1/2 W. 10% CARBON UNLESS OTHERWISE NOTED.
2. ALL CAPACITORS 200 v. 20% IN MICROFARADS UNLESS OTHERWISE NOTED.
3. Q1-Q8 -2N2926.
4. B1 IS SYLVANIA 6ES.
5. COMPONENT WITH BERRY P N.5058 IS A COMPOSITE OF B1, LDR 1A & LDR 1B.
6. S1 SHOWN IN 'VIBRATO' POSITION.
7. EARLY PRODUCTION: R28 IS 1.0K.
R29 IS 3.3K.
R31 & C14 NOT USED.

ALLOWABLE VARIATION ON ALL DIMENSIONS UNLESS OTHERWISE SPECIFIED ARE: ± 1/64 DECIMALS & 1/64 FRACTIONS & 1/64 DECIMALS & 1/64 FRACTIONS & 1/64 DECIMALS & 1/64 FRACTIONS - .002 - .004

APPROVED	PROGRAM		MATERIAL		100W Amplifier	
DATE	REVISED	DATE	REVISED	NAME	VIBRATO	
DESIGNED	DRAWN		CHECKED		DATE	5055A
SET "A"						

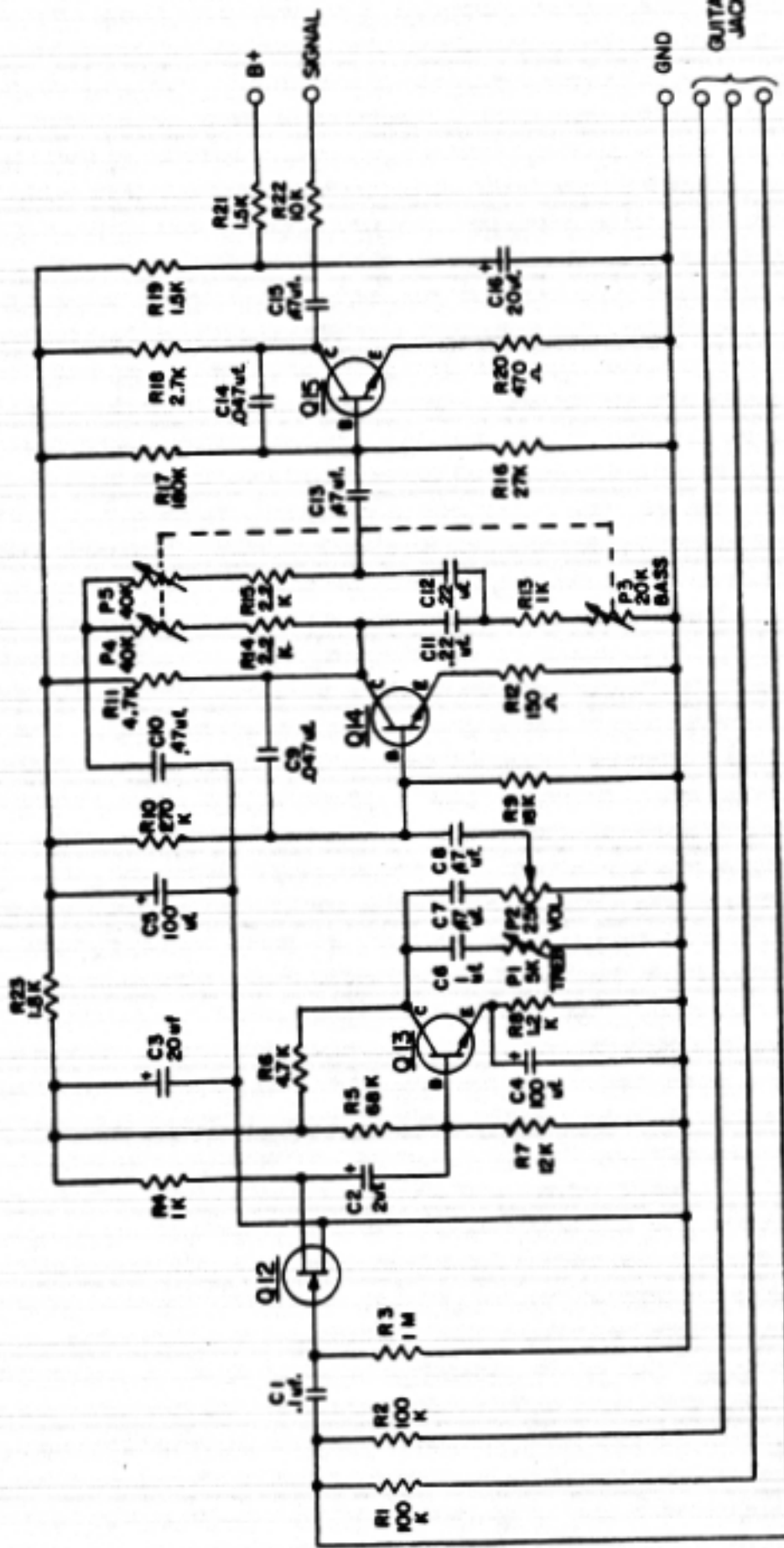


NOTE

1. R1, R2, R4, R6, R7 ARE CARBON FILM
2. ALL RESISTOR 1/4 WATT, 10% CARBON UNLESS OTHERWISE NOTED
3. ALL CAPACITORS ARE IN MICROFARADS UNLESS OTHERWISE NOTED
4. Q9 - 2N2613
Q10+Q11-2N3391
5. EARLY PRODUCTION: R7 IS 47 OHMS.
C8 IS .22 MFD.
R22 TO R25, D1, D2 & C15 NOT USED.

ALLOWABLE VARIATION ON ALL DIMENSIONS UNLESS OTHERWISE SPECIFIED: ANGLES ± 1/8° FRACTIONS ± 1/64 DECIMALS ± .005 HOLES ± .002 - .005

APPROVED:	FINISH	SET "A"		SCALE	DATE	DESIGNED	CHECKED	APPROVED
DESIGNED	DATE			SCALE	DATE	DESIGNED	CHECKED	APPROVED
PROJECT		SET "A"		REMARKS				
MAKE				100 W Amplifier				
LETTER		SET "A"		NAME				
LETTER				TREBLE PRE-AMP 100 WATT AMPLIFIER				
LETTER		SET "A"		DRWG. NO.				
LETTER				5054 A				



NOTE:

1. ALL RESISTORS 1/4 WATT 10% CARBON UNLESS OTHERWISE NOTED
2. ALL CAPACITORS IN MICROFARADS UNLESS OTHERWISE NOTED
3. Q13 - Q15 - 2N3391
4. Q12 IS U1154 BERRY P. N. 7174
5. R1, R2, R3, R6, R7 ARE CARBON FILM RESISTORS
6. EARLY PRODUCTION: R11 IS 1.5K. R14 & R15 ARE 1.2K. R22 IS 47K.

ALLOWABLE VARIATION ON ALL DIMENSIONS UNLESS OTHERWISE SPECIFIED: ANGLES ± 1/64 DECIMALS ± .005 HOLE ± .002 ± .005

FINISH

MATERIAL

APPROVED: _____

DATE: _____

LETTER: _____

100W Amplifier

NAME

BASS PRE-AMP

SCALE DATE DRAWN CHECKED APPROVED

SCALE DATE DRAWN CHECKED APPROVED

SCALE DATE DRAWN CHECKED APPROVED

SCALE DATE DRAWN CHECKED APPROVED

SCALE DATE DRAWN CHECKED APPROVED

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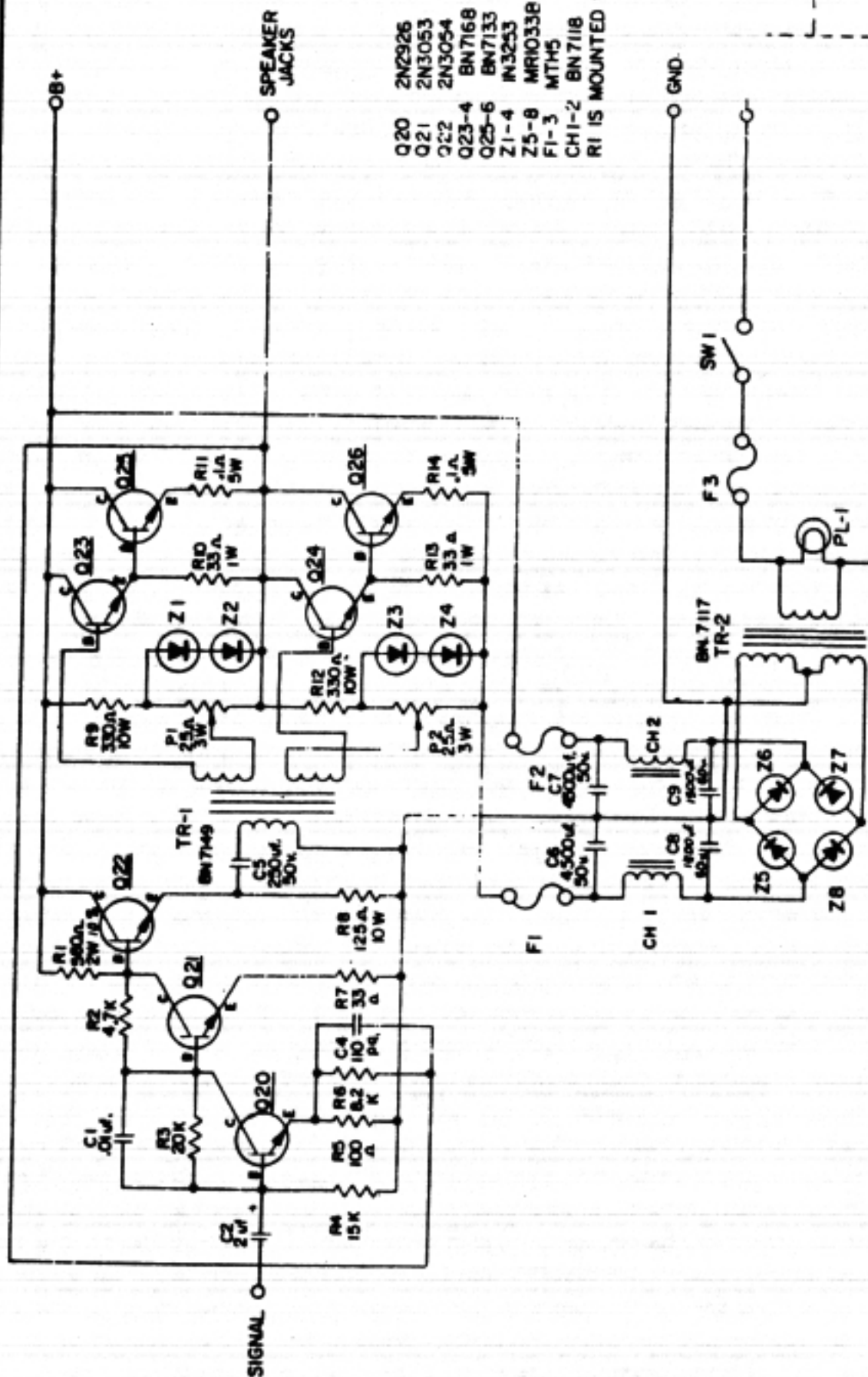
SCALE DATE DRAWN CHECKED APPROVED

SCALE DATE DRAWN CHECKED APPROVED

SCALE DATE DRAWN CHECKED APPROVED

SET "A"

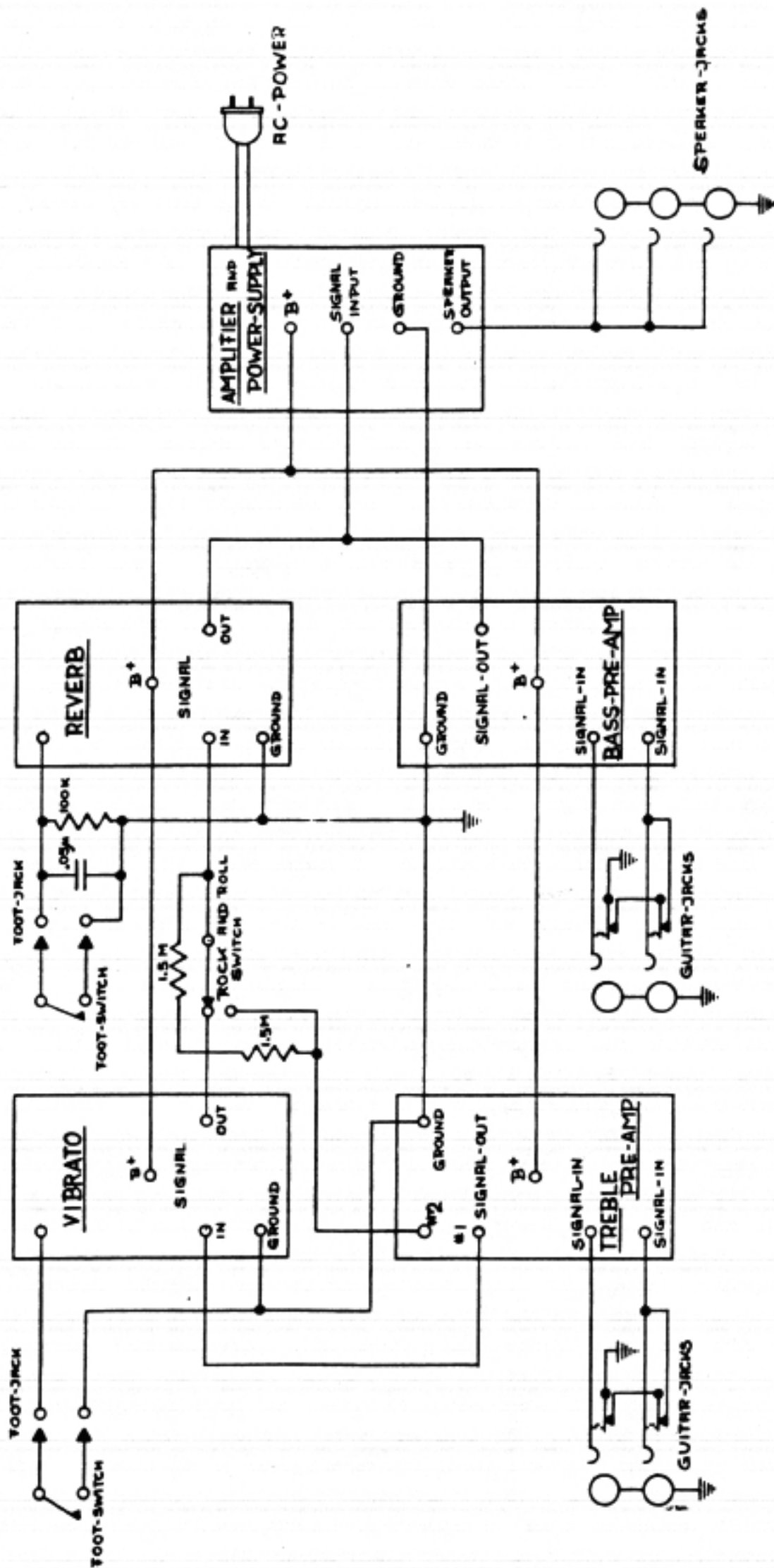
5053 A



- Q20 2N2926
- Q21 2N3053
- Q22 2N3054
- Q23-4 BN7168
- Q25-6 BN7133
- Z1-4 IN3253
- Z5-8 MR1033B
- F1-3 MTH5
- CH1-2 BN7118
- R1 IS MOUNTED ON Q22 SOCKET

ALLOWABLE VARIATIONS ON ALL DIMENSIONS UNLESS OTHERWISE SPECIFIED: ANGLES & 1/64" FRACTIONS & 1/4" DECIMALS & .001" - .002" - .004"

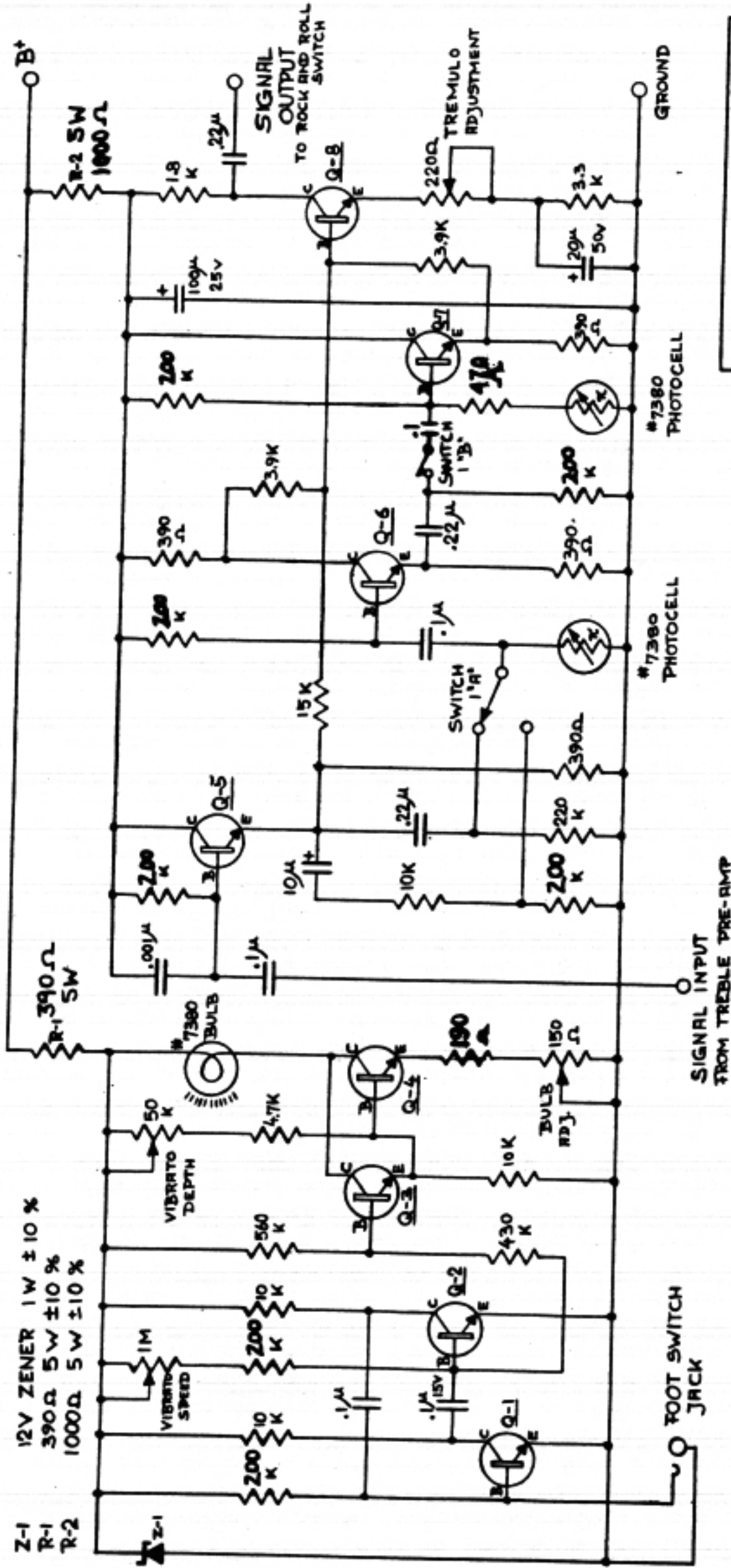
APPROVED		FINISH		MATERIAL		100 W Amplifier	
CHECKED	DATE	DESIGNED	CHECKED	APPROVED	NAME	POWER SUPPLY 100 WATT AMPLIFIER	
DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE
SET "A"						DRWG. No.	5048A



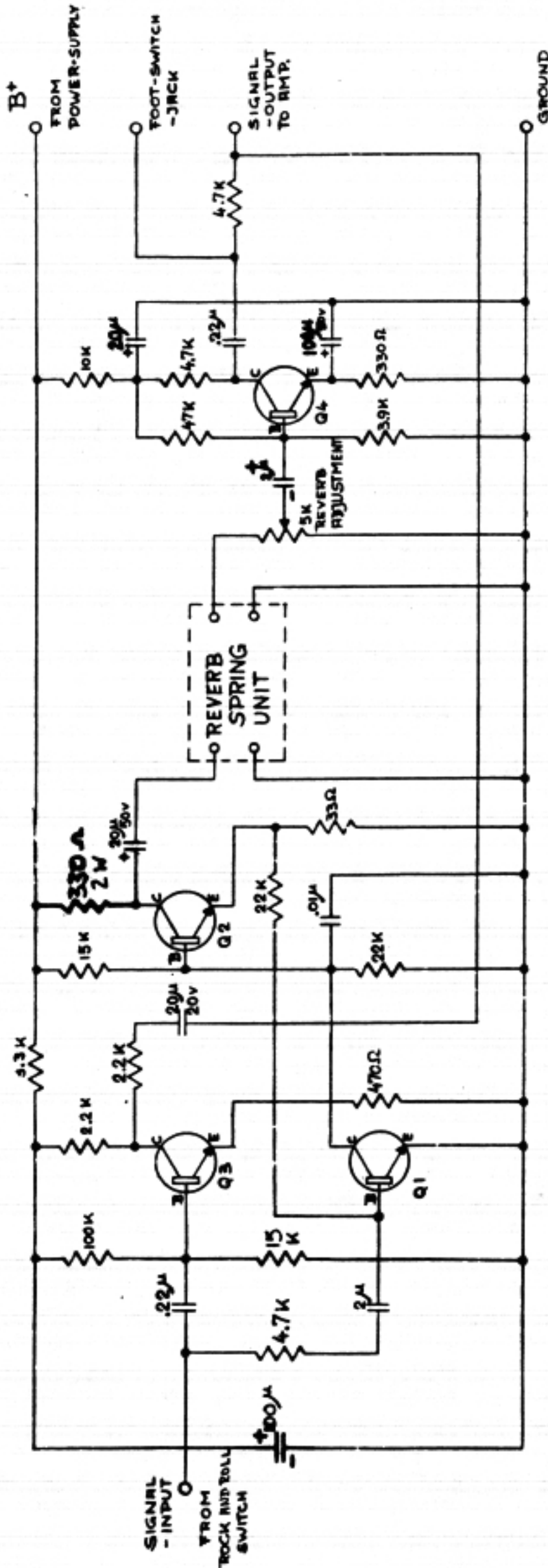
- Q-1, Q-2, Q-4 2N2926 B, R or X
- Q-3, Q-8 2N2926 Y or G
- Q-5 2N2926 R, X or Y
- Q-6, Q-7 2N2926 X

- Z-1 12V ZENER 1W ±10%
- R-1 390Ω 5W ±10%
- R-2 1000Ω 5W ±10%

#7380 A COMBINATION OF 2 PHOTOCELLS AND 1 LIGHT BULB
 SWITCH 'R' AND 'B' VIBRATO-TREMULO SHOWN IN VIBRATO POSITION

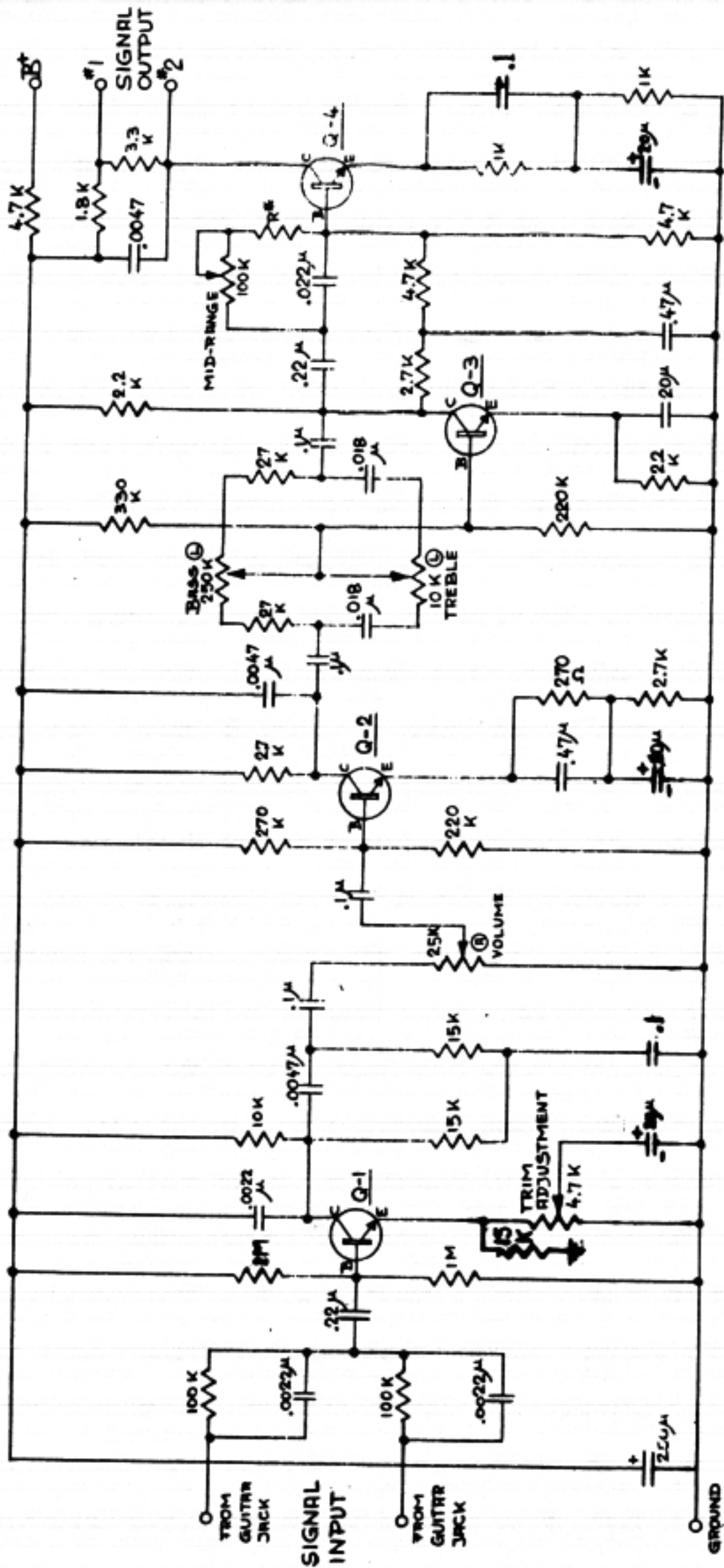


VIBRATO
 SET "B" 5055 S



- Q1 2N2926 R - 2N2926 B
- Q2 2N3053 - RCR 40314
- Q3 2N2926 R - 2N2926 X - 2N2926 Y
- Q4 2N3900 R

REVERB-UNIT
 SET "B"
 5056 S

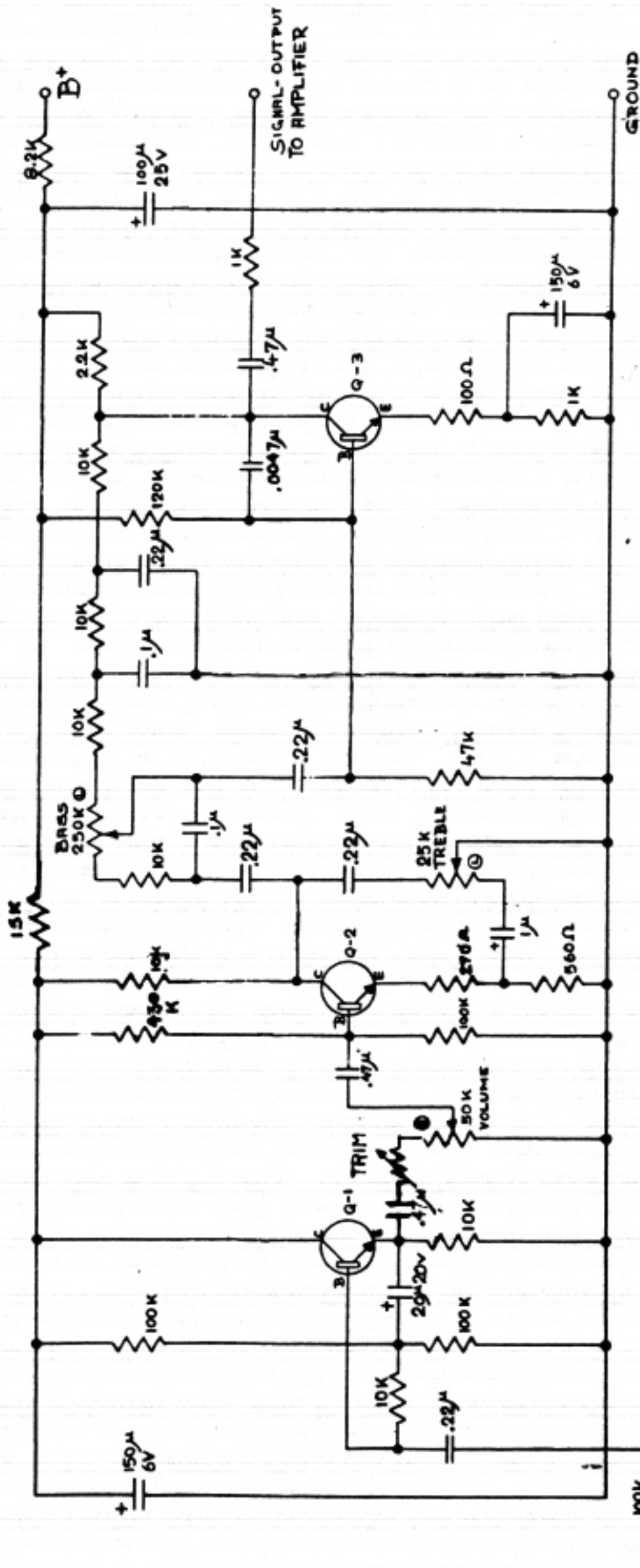


TREBLE PRE-AMP
SET "B" 5094 S

R# - JUMPER RESISTOR
 (R) - AUDIO TAPER
 (L) - LINEAR TAPER

SIGNAL OUTPUT
 #1 HIGH OUTPUT TO VIBRATO
 #2 LOW OUTPUT TO ROCK AND ROLL SWITCH

- Q-1 2N3900A -BN7517
- Q-2 2N3900A -BN7517
- Q-3 2N3900A -BN7517
- Q-4 2N3900A -BN7517



- Q-1 2N3900R - 2N 751B
- Q-2 2N3900R - 2N 751B
- Q-3 2N3900R - 2N 751B
- (A) AUDIO-TAPER
- (L) LINEAR-TAPER

BASS-PREAMP
SET "B" 5093S

FROM GUITAR-JACKS

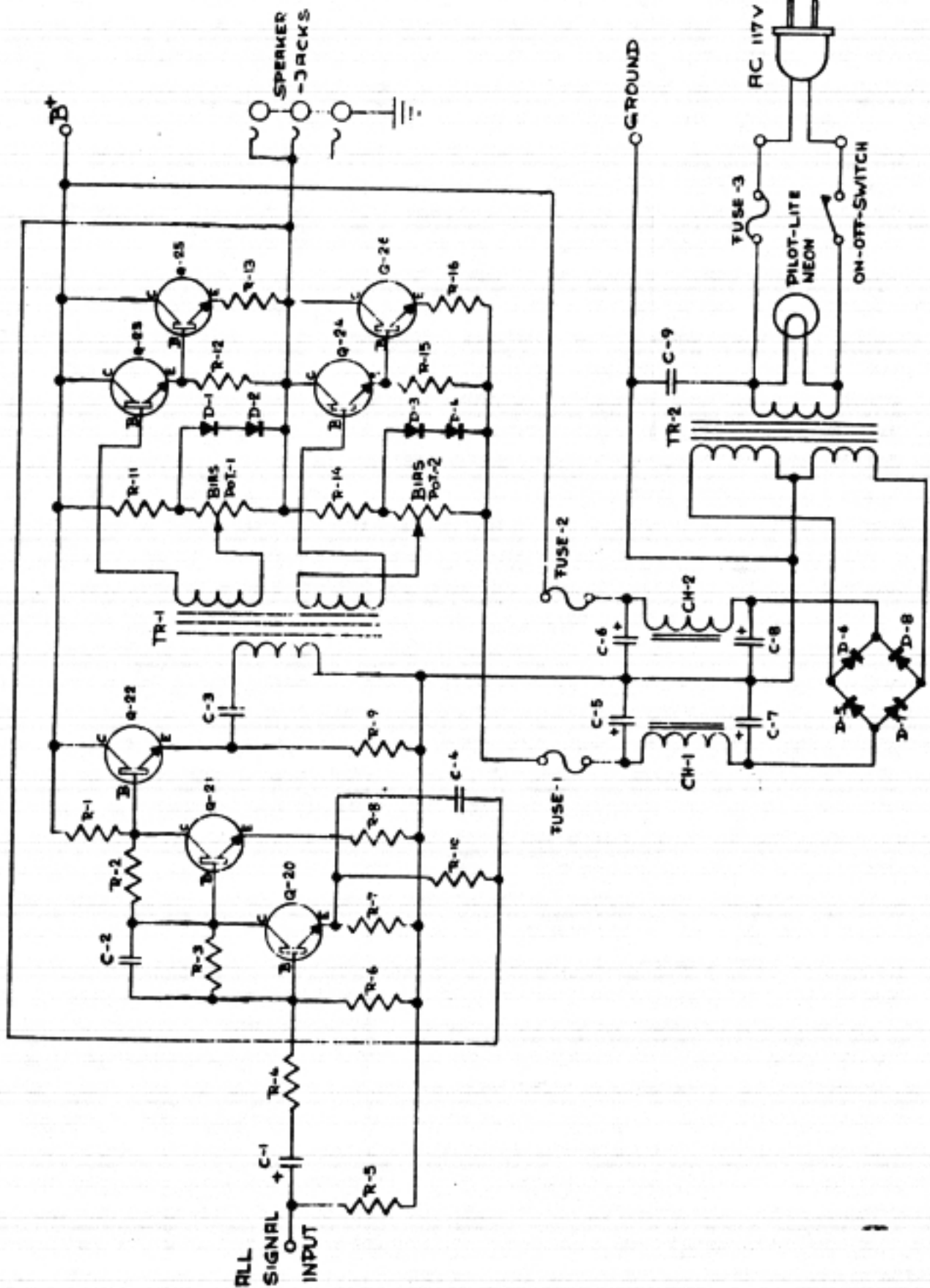
- Q-20 2N2926
- Q-21 2N3053
- Q-22 2N3054
- Q-23-24 2N7149
- Q-25-26 2N7149

- R-1 560 Ohm 2W ± 10%
- R-2 4.7K
- R-3 20K
- R-4 2.7K
- R-5 2.2K
- R-6 1.5K or 100K*
- R-7 100
- R-8 33 Ohm
- R-9 125 Ohm 10W or 390 Ohm 5W ± 10%
- R-10 8.2K
- R-11-14 330 Ohm 10W ± 10%
- R-15-15 33 Ohm 1W ± 10%
- R-13-16 1 Ohm 3W or 3.9 Ohm 5W ± 10%

- D-1-2-3-4 DIODE 2N3253
- D-5-6-7-8 DIODE MLL1033B
- FUSE-1-2-3 FUSE 4 (SAME)
- C-1 20 UF
- C-2 .01
- C-3 250 50V
- C-4 110 PC
- C-5-6 4500/50
- C-7-8 1500/50
- C-9 01 UF 600V

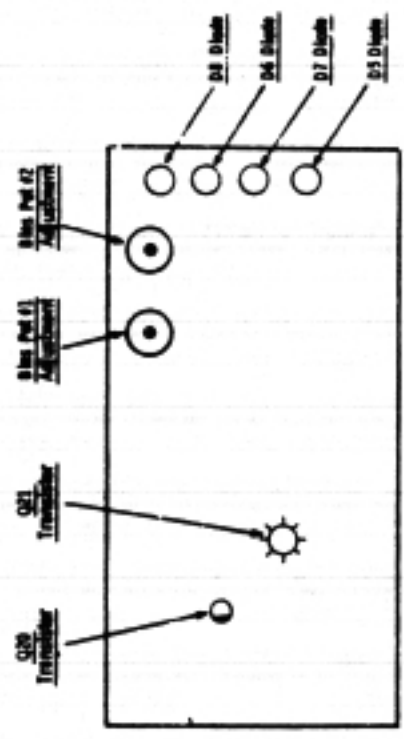
- TR-1 2N7149
- TR-2 2N7149
- BIAS-POT.-1-2 25 Ohm 3W
- CH-1-2 2N7118

*Later Production

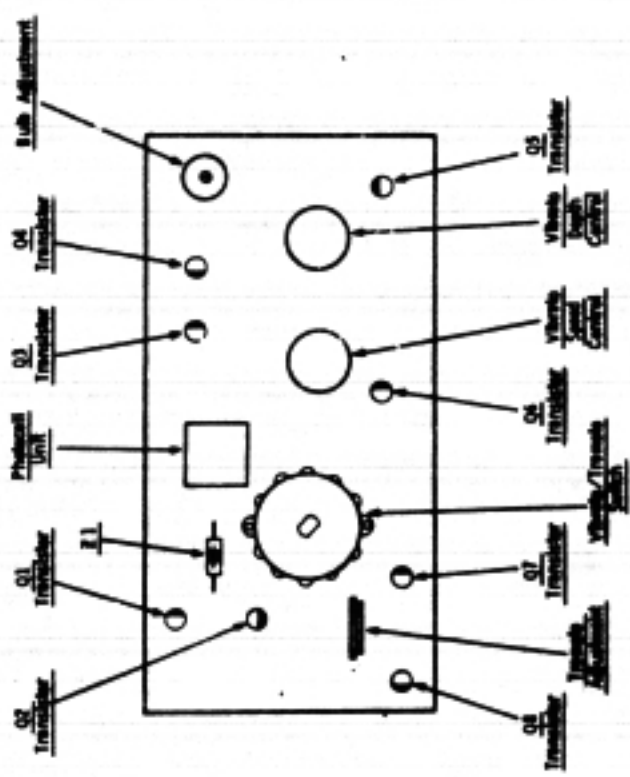


POWER-SUPPLY
100 W. AMPLIFIER
SET "B" 3002

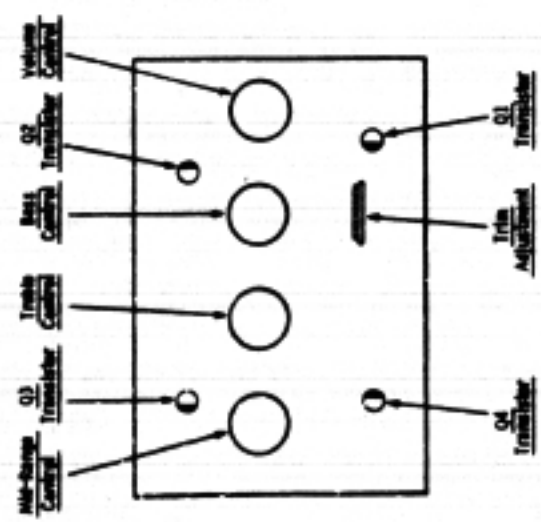
AMPLIFIER/POWER SUPPLY BOARD



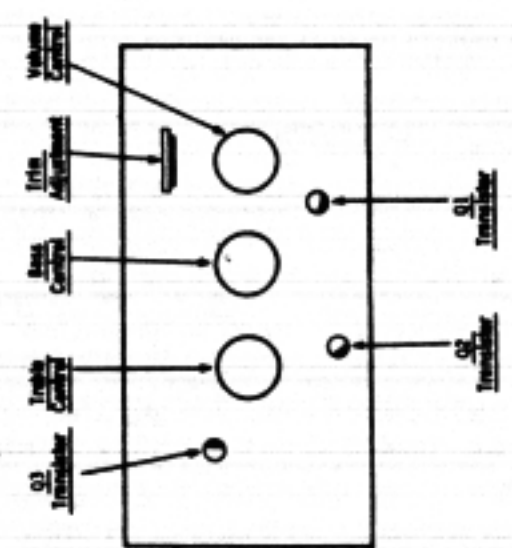
VIBRATO BOARD



TREBLE BOARD

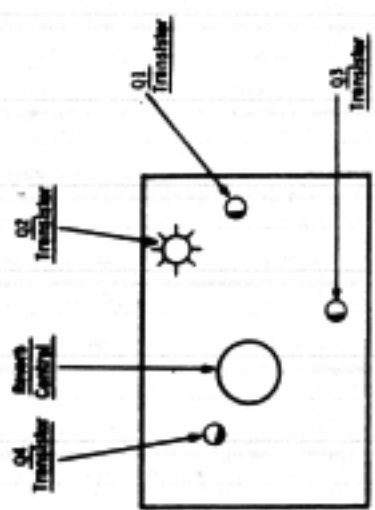


BASS BOARD

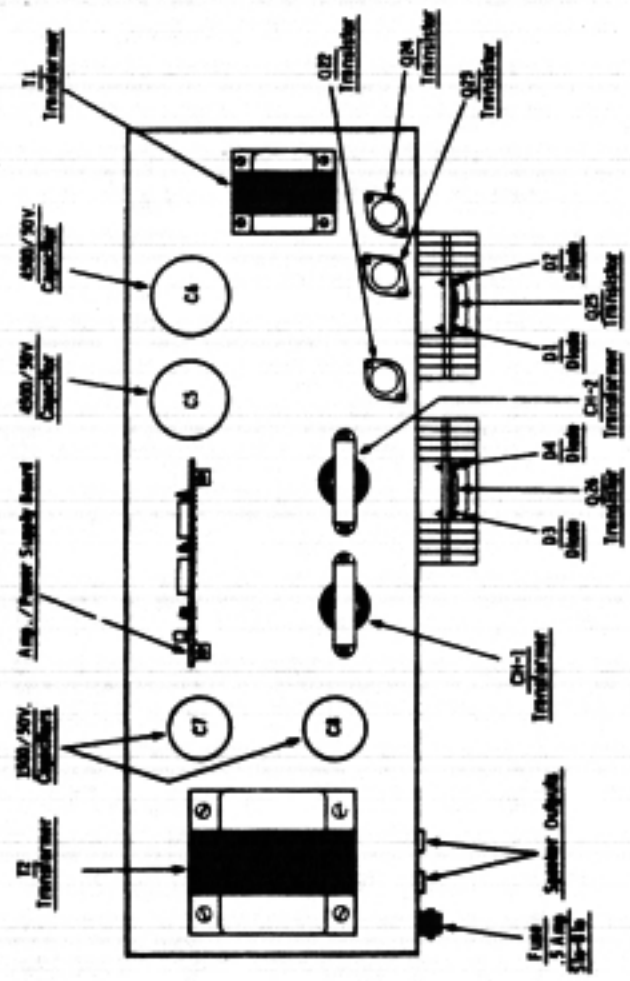


PRINTED CIRCUIT BOARD
LAYOUTS
Dep. No. 1 S a i f

REVERB BOARD



AMPLIFIER/POWER SUPPLY CHASSIS



PARTS LIST

<u>PART</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>
Assembly	Footswitch (reverb & Tremolo) Complete	997-015484
Capacitor	Electrolytic 1500/50V	945-013696
Capacitor	Electrolytic 4500/50V	945-013697
Capacitor	Trantalum 1 Mfd 15V	945-013794
Capacitor	Electrolytic 250 Mfd 50V	945-013795-1
Capacitor	Electrolytic 20 Mfd 50V	945-013795-2
Capacitor	Electrolytic 10 Mfd 20V	945-013796-2
Capacitor	Electrolytic 2 Mfd 20V	945-013796-3
Capacitor	Electrolytic 100 Mfd 25V	945-013797-1
Capacitor	Electrolytic 100 Mfd 25V & 20 Mfd 50V	945-013798
Capacitor	Electrolytic 150 Mfd 6V	945-013799
Choke	Power	956-013693
Cord	Power (A.C.)	989-013701
Diode	Rectifier (IN3253)	919-013677
Diode	Zener (12V 1 watt)	919-013732
Driver	For Horn (HC12)	985-002938
Feet	Black Rubber	916-013762
Feet	Black Rubber	916-013763
Feet	Black Rubber	916-013776
Fuse	5 Amp Regular (AGC-5)	939-013304-8
Fuse	5 Amp Slo-Blo	939-015489
Handle	With hardware	930-013766
Horn	Deflection (HC12) Driver not Inc.	985-001978
Jack	Phone type with hardware	910-013707
Jack	With ground contact	910-013720
Jack	No ground contact	910-013721
Jack	Footswitch	910-013722
Knob	Red with arrow	915-013717
Knob	Red numbered	915-013718
Knob	Black numbered	915-013719
Light	Pilot with hardware	939-013716
Photocell	Assembly (7380)	948-013734
Photocell	Assembly #5058	948-015485
Potentiometer	Bias Adj. 25 Ohms	925-013687
Potentiometer	50K Audio	925-013727
Potentiometer	1 M C.C.W. Audio	925-013728
Potentiometer	220 Ohms Linear	925-013729
Potentiometer	150 Ohms	925-013733
Potentiometer	5 K Linear	925-013742
Potentiometer	25 K Linear	925-013746
Potentiometer	250K Audio	925-013747
Potentiometer	10 K Variable	925-013748
Potentiometer	100K C.C.W. Audio	925-013749
Potentiometer	10 K Linear	925-013750
Potentiometer	250K	925-013751
Potentiometer	25 K Audio	925-013752
Resistor	1000 Ohms 3 Watt	924-013735
Resistor	390 Ohms 5 Watt	924-013736
Resistor	Power 330 Ohms 10 Watt	924-013800-1
Resistor	Power 125 Ohms 10 Watt	924-013800-2
Resistor	Power .1 Ohm 5 Watt	924-013801-1
Resistor	Power 560 Ohms 2 Watt	924-013802-1
Resistor	390 Ohms 10 Watt (later Prod.)	924-015486
Resistor	.33 Ohms 5 Watt (later Prod.)	924-015487

PARTS LIST

<u>PART</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>
Reverb	Assembly	984-012419
Speaker	4 used (HC12)	985-009961
Speaker	4 used (SC10 Cabinet)	985-013778
Switch	A.C. Power with hardware	960-013715
Switch	Vibrato/Tremolo (wafer)	960-013730
Switch	S.P.S.T. (Vibrato-Reverb)	960-003574
Switch	Rock & Roll.	960-015488
Transistor	Power Output (2N3055)	992-004091
Transistor	General (2N2926)	991-013683
Transistor	Amplifier (2N3053 or 40314)	992-013684
Transistor	(2N3054)	992-013705
Transistor	100V Rating (2N3054)	992-004092
Transistor	(2N3391)	992-013738
Transistor	(2N3900A)	991-013740
Transformer	Power	954-013692
Transformer	Driver	955-013694

PARTS INFORMATION

Standard Parts

Replacements for all standard electronic parts and hardware can be purchased directly from local suppliers generally in less time than would be required to obtain them from the factory.

Special Parts

In addition to the standard replacement parts, special electronic parts and mechanical parts are also used. These parts are manufactured by and to the specifications of the factory. Order these parts directly from the factory since they would be difficult or impossible to obtain from other sources.

Parts Ordering

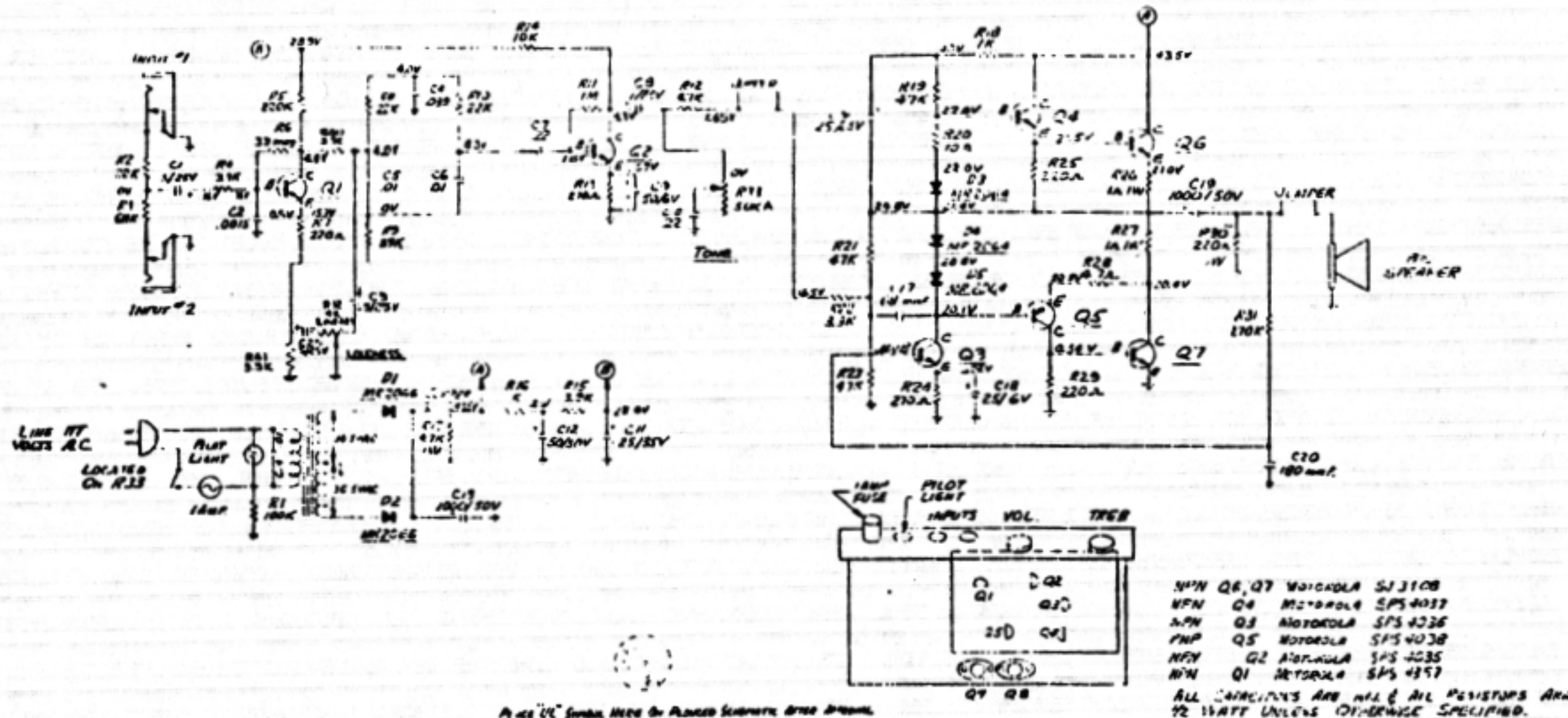
When ordering parts be sure to include the following information:

1. Model and Serial Number
2. Part Number
3. A description of the part
4. Specify how you want the part shipped.

Most special electronic parts and mechanical parts will have a part number stamped on them. In the event that the part number is missing, or you are unable to read the part number, a complete description of the part and where it is used will allow the factory to fill your parts order. When parts are ordered in the proper manner the factory is able to fill your orders promptly - delays that might result are avoided.

**ADDRESS PARTS ORDERS TO
C.M.I. SERVICE DEPT.
7301 North Cicero
Chicago, Illinois 60646**

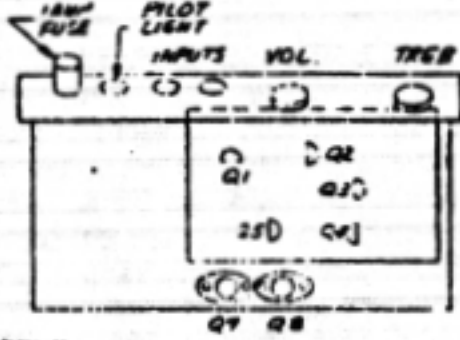
IMPORTANT
In any correspondence concerning this instrument
ALWAYS INCLUDE MODEL AND SERIAL NUMBERS.



NOTES
 1. ALL VOLTAGES TAKEN WITH V.T.M. TO GROUND AT NO SIGNAL, INPUT SHORTED, TUNING CAP. TUNE AT MAX. TUNING VOL. CONTROL. 100%

ALL 1/2" DIMENSIONS UNLESS OTHERWISE SPECIFIED

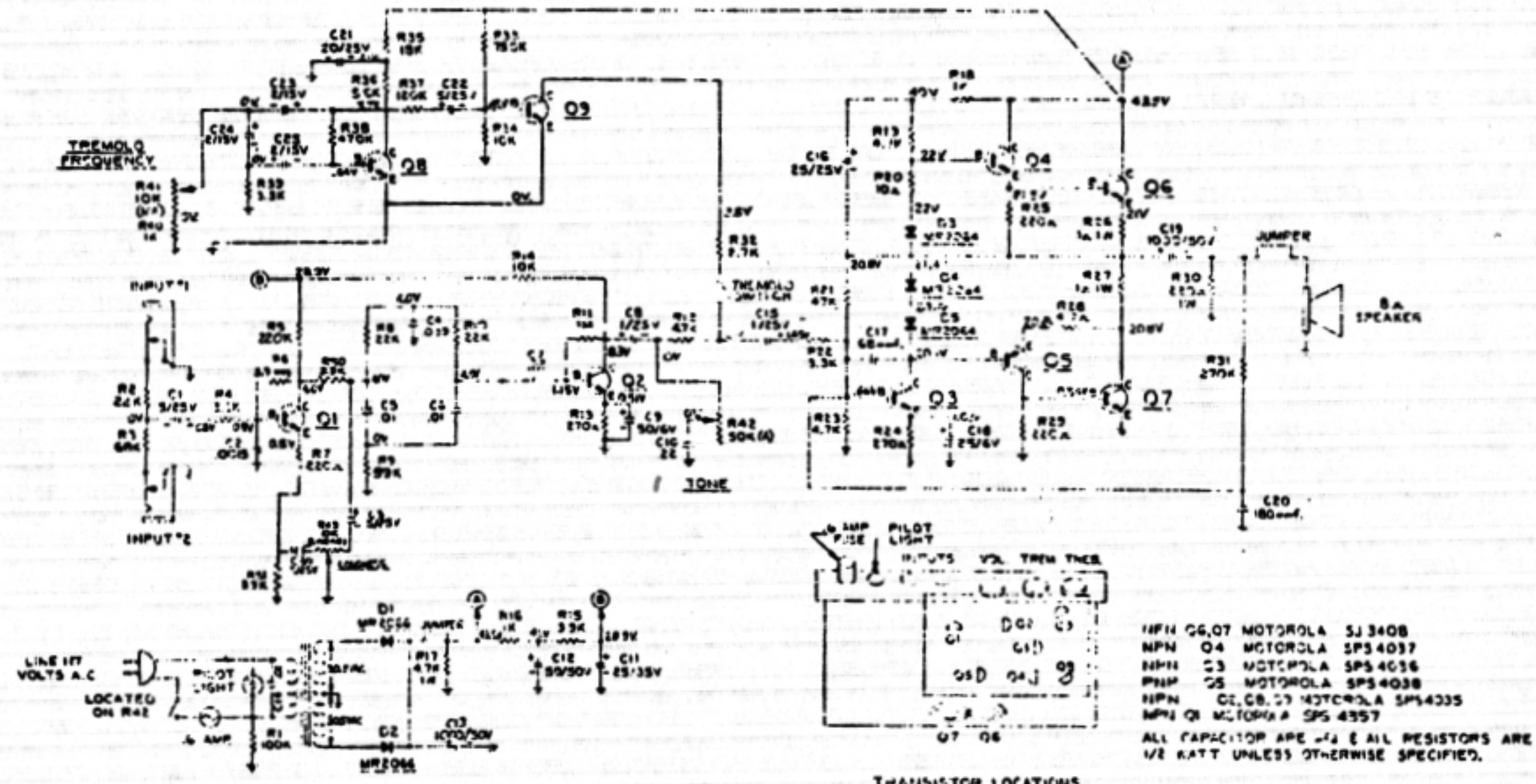
TRANSISTOR LOCATIONS



- NPN Q1, Q2 MOTOROLA SJ3108
 - NPN Q3 MOTOROLA SPS4037
 - NPN Q4 MOTOROLA SPS4038
 - PNP Q5 MOTOROLA SPS4038
 - NPN Q6 MOTOROLA SPS4038
 - NPN Q7 MOTOROLA SPS4157
- ALL CAPACITORS ARE 50V & ALL RESISTORS ARE 1/2 WATT UNLESS OTHERWISE SPECIFIED.

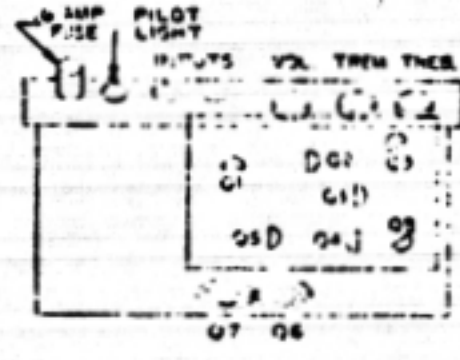
KALAMAZOO 3
 SERIAL No

TUL-4024 A PRODUCT OF C.M.I. ELECTRONICS - CHICAGO, ILL. 110-120 V. 60 CYCLES 0.3 AMP



NOTES
 1. ALL VOLTAGES TAKEN WITH V.T.M. TO GROUND AT NO SIGNAL, INPUT SHORTED, TUNING CAP. TUNE AT MAX. TUNING VOL. CONTROL. 100%

TRANSISTOR LOCATIONS



- NPN Q1, Q2 MOTOROLA SJ3408
 - NPN Q3 MOTOROLA SPS4037
 - NPN Q4 MOTOROLA SPS4038
 - PNP Q5 MOTOROLA SPS4038
 - NPN Q6, Q7 MOTOROLA SPS4038
 - NPN Q8 MOTOROLA SPS4157
- ALL CAPACITORS ARE 50V & ALL RESISTORS ARE 1/2 WATT UNLESS OTHERWISE SPECIFIED.

KALAMAZOO 4
 SERIAL No

TUL-4025 A PRODUCT OF C.M.I. ELECTRONICS - CHICAGO, ILL. 110-120 V. 60 CYCLES 0.3 AMP

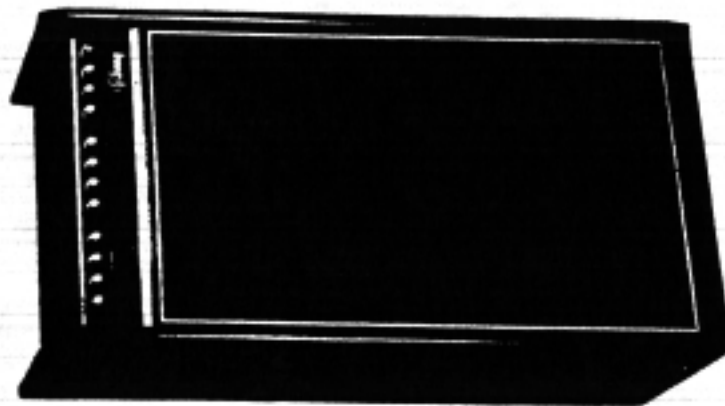


SERVICE
MANUAL



Gibson

GTR-600 AMPLIFIER



GTR-600 AMPLIFIER

FEATURES

- All Solid State Design
- Separate Amplifiers for Treble and Bass
- Power Output: 120 Watts RMS; 360 Watts Peak Music Power
- 2 Channels (Normal and Reverb)
- 6 Instrument Inputs
- Reverb
- Tremolo
- Footswitch for Reverb and Tremolo
- 3 High-Fidelity Speakers (2 specially designed 12-inch extra-heavy-duty woofers and 1 super-efficient horn speaker)
- Normal Channel Controls
 - Volume—Bass—Midrange—Treble
- Reverb Channel Controls
 - Volume—Bass—Midrange—Treble—Trem Level—Trem Speed—Reverb Level—Off/On/Polarity
- Auxiliary Amplifier Jack
- Pilot Light
- Leslie Output Jack (Intended for Cordovox Leslie Model CL-10)

DESCRIPTION

- Semi-Rigid Vinyl on both side panels gives protection from every angle
- Heavy-Duty Black Vinyl Covering—washable and scuff-resistant
- Retractable Carrying Handles
- Attractive Wood-Grained Metal Control Panel
- Plug-In Casters

SPECIFICATIONS

- 29 Silicon Transistors
- 6 Silicon Diodes
- Solid-State Rectifier Circuit
- Dimensions: 42½" high x 22" wide x 14½" deep
- Weight: 90 lbs.
- Power Requirements: 120 Volt AC, 60 cycle

ACCESSORY (available at additional cost):

- Simulated Leather Cover

PARTS LIST

THE PARTS LIST CONTAINS THE FOLLOWING INFORMATION:

1. Name of Part
2. Value, Tolerance and Code (when important)
3. Brief description
4. Where the part is found (assembly, printed circuit board and etc.)
5. Schematic Reference Number
6. PART NUMBER --- USE IT!

This parts list includes all standard stock replacement parts. No attempt has been made to include every nut, bolt and screw. If the necessity for a non-listed part arises, please write describing the part's location and function as well as model and serial number of the unit.

PARTS LIST

PART	DESCRIPTION	SCHEMATIC PART REFERENCE NUMBER
Assembly	Driver Board	997-010994
Capacitor	Ceramic .001 PF 500V	947-002630-102
Capacitor	Ceramic 270 PF 500V	947-002630-271
Capacitor	Electrolytic 1 UF 25V	945-008895-38
Capacitor	Electrolytic 1500 UF 15V	945-008895-37
Capacitor	Mylar .22 UF 50V	946-002155-224
Capacitor	Mylar .47 UF 50V	946-002155-474
Capacitor	Mylar .022 UF 50V	946-002155-223
Capacitor	Mylar .033 UF 100V	946-005872-46

PARTS LIST

PART	DESCRIPTION	SCHEMATIC PART REFERENCE NUMBER
Transistor	Power	Q18, 20 992-004092
Transistor	Power	Q19, 21, 25, 26 .. 992-004091
Transistor	Aux. Output Emitter Follower	Q27 991-008393

PREAMP BOARD NO. 1

Assembly	Preamp Board No. 1	996-010998
Capacitor	Ceramic .001 UUF 500V	947-002630-102
Capacitor	Electrolytic 25 UF 5V	945-008895-51
Capacitor	Electrolytic 1 UF 25V	945-008895-38
Capacitor	Mylar .22 UF 50V	946-002155-224
Capacitor	Mylar .033 UF 50V	946-002155-333
Capacitor	Mylar .001 UF 50V	946-002155-102
Capacitor	Mylar .047 UF 50V	946-002155-473
Capacitor	Mylar .022 UF 50V	946-002155-223
Capacitor	Mylar .12 UF 50V	946-002155-124
Capacitor	Mylar .1 UF 50V	946-002155-104
Potentiometer	Bass	VR3 925-010435-1
Potentiometer	Midrange	VR1 925-010435-7
Potentiometer	Treble	VR5 925-010435-3
Potentiometer	Volume	VR2, 4 . 925-010435
Transistor	Guitar Input Amp. Emitter Follower	Q1 991-011708
Transistor	Output Preamp	Q2, 4 .. 991-008393
Transistor	Feedback Preamp	Q3 991-011705

PREAMP BOARD NO. 2

Assembly	Preamp Board No. 2	996-010999
Capacitor	Ceramic .001 PF 500V	947-002630-102
Capacitor	Electrolytic 1 UF 25V	945-008895-38
Capacitor	Mylar .082 UF 20V	946-002155-823
Capacitor	Mylar .068 UF 50V	946-002155-683
Capacitor	Mylar .047 UF 50V	946-002155-473
Capacitor	Mylar .022 UF 50V	946-002155-223
Capacitor	Mylar .22 UF 50V	946-002155-224
Capacitor	Mylar .12 UF 50V	946-002155-124
Capacitor	Mylar .1 UF 50V	946-002155-104
Coil		L1 952-003308
Potentiometer	Bass	VR8 925-010435-1
Potentiometer	Midrange	VR6 925-010435-2
Potentiometer	Treble	VR10 .. 925-010435-3
Potentiometer	Volume	VR7, 9 . 925-010435
Transistor	Emitter Follower. Output Preamp	Q6, 8 .. 991-008393

PARTS LIST

PART	DESCRIPTION	SCHEMATIC PART REFERENCE NUMBER
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Transistor	Feedback Preamp	Q7 991-011705
Transistor	Guitar Input Amp	Q5 991-010461

REVERB AND TREMOLO FOOT-SWITCH ASSEMBLY

Assembly	Complete Footswitch	997-012447
Plug	Stereo Phone	910-012679
Switch	S.P.D.T.	980-012474
Switch	S.P.S.T.	960-003574

STONE CABINET ASSEMBLY

Bulb	Light	939-012678
Caster		978-012854
Socket	Bulb	906-012857
Speaker	Horn	985-010425
Speaker	12"	985-009961
Transformer	Power	955-010428

TREMOLO-REVERB BOARD

Assembly	Tremolo-Reverb Board	996-010997
Capacitor	Ceramic 100 UUF 500V	947-002630-101
Capacitor	Electrolytic 200 UF 20V	945-010448
Capacitor	Electrolytic 5 UF 20V	945-008995-25
Capacitor	Electrolytic 4 UF 15V NP	945-008995-40
Capacitor	Electrolytic 1.4 UF 20V	945-008995-4
Capacitor	Electrolytic 1 UF 25V	945-008995-38
Capacitor	Mylar .12 UF 50V	946-002155-124
Capacitor	Mylar .01 UF 50V	946-002155-103
Capacitor	Mylar .022 UF 50V	946-002155-223
Capacitor	Mylar .047 UF 50V	946-002155-473
Capacitor	Mylar .0047 UF 50V	946-002155-472
Potentiometer	Intensity	VR12 .. 925-010435-5
Potentiometer	Reverb	VR13 .. 925-010435-6
Potentiometer	Tremolo Speed	VR11 .. 925-010435-4
Photocell	Tremolo Raysistor	P1
Transistor	Reverb Pre-Driver	Q10, 28 991-002356
Transistor	Reverb Amp	Q12, 13 991-011705
Transistor	& Mixer Amp	Q11, 29 991-010462
Transistor	Reverb and Tremolo Driver	Q9, 14 991-008393
Transistor	Isolation and Main Preamp	

PARTS LIST

PART	DESCRIPTION	SCHEMATIC PART REFERENCE NUMBER
------	-------------	---------------------------------

Capacitor	Mylar .0022 UF 50V	946-002155-222
Capacitor	Mylar .012 UF 50V	946-002155-123
Transistor	Voltage Amp No. 1	Q22 ... 991-011705
Transistor	(Treble)	
Transistor	Voltage Amp No. 2	Q16, 23 991-008393
Transistor	(Bass & Treble)	
Transistor	Voltage Amp No. 1	Q15 ... 991-010461
Transistor	(Bass)	

FRONT PANEL ASSEMBLY

Jack	Phone (3T)	910-010455-4
Jack	Phone (2T)	910-010878-2
Jack	Phone (5T)	910-010457-2
Knob	Control	915-010880-1
Knob	On-Off Switch	915-010880
Light	Pilot	939-010879
Panel	Front Light	963-010874

MAIN CHASSIS ASSEMBLY

Assembly	Reverb Unit	984-003365
Capacitor	Ceramic .01 UF 500V	947-002631-103
Capacitor	Electrolytic 3000 UF 50V	945-010057
Capacitor	Electrolytic 2000 UF 50V	945-010465
Capacitor	Electrolytic 35 UF 25V NP	945-008995-50
Capacitor	Mylar .01 UF 400V	946-003003-103
Cord	Power	989-008717-3
Diode		D5, 6 919-004799
Diode	Rectifier	D1-4 ... 919-010459
Fuse	2 Amp Slo-Blo	939-013304
Holder	Fuse	906-006303
Insulator	Power Transistor	908-008882
Jack	Phone (4T)	910-010464
Jack	Phone (3T)	910-010455
Potentiometer	60 Ohm (Bias Adjust)	VR14-17 925-008863-3
Resistor	.33 Ohm 5W	924-008896-2
Resistor	WW 340 Ohm 10W	924-006811-67
Resistor	WW 750 Ohm 10W	924-006811-66
Resistor	1K 7W	924-008896-8
Switch	On-Off	960-010636
Transformer	Driver Bass TF 1005D	T2 ... 955-010426
Transformer	Driver Treble TF 1006D	T3 ... 955-002254-4
Transformer	Power TF 114P	T1 ... 954-010431
Transistor	Driver	Q17, 24 992-008890

PARTS INFORMATION

STANDARD PARTS

Replacements for all standard electronic parts and hardware may be purchased directly from local suppliers generally in less time than would be required to obtain them from the factory.

SPECIAL PARTS

In addition to the standard replacement parts, special electronic and mechanical parts are also used. These parts are manufactured by and to the specifications of the factory. Order these parts directly from the factory since they would be difficult or impossible to obtain from other sources.

PARTS ORDERING INFORMATION

When ordering parts be sure to include the following information:

1. Model and Serial Number
2. Part Number
3. A description of the part
4. Specify how you want the part shipped.

Most special electronic parts and mechanical parts will have a part number stamped on them. In the event that the part number is missing, or you are unable to read the part number, a complete description of the part and where it is used will allow the factory to fill your parts order. When parts are ordered in the proper manner the factory is able to fill your orders promptly—delays that might result are avoided.

GIBSON GTR600 AMPLIFIER BIAS ADJUSTMENT

The amplifier bias adjustments are carefully set at the factory. Adjustment should only be required when output transistors or their associated components are replaced. Since the GTR600 consists of two amplifiers (one for bass and one for treble), there are two separate bias adjustments consisting of two potentiometers each. Because each amplifier is independent from the other, adjust only the bias on the amplifier requiring service. All bias adjustments should be made with the speakers connected and no signal applied. Three meters are required to properly adjust amplifier bias. Meters similar in quality and sensitivity to the Simpson Model 260 should be used. Use the following instructions and meter readings to adjust either the **bass** or **treble** amplifier bias:

With AC power off.

1. Connect one VOM meter (set at its highest current range—500 milliamps minimum) in series with the positive 40 volts supplied to the amplifier output circuit. This point is the junction of transistor collectors Q18 and Q19 and one end of the 1K 7 watt resistor on the Bass Amplifier. On the Treble Amplifier the point would be the junction of transistor collector Q25 and one end of the 1K 7 watt resistor. Observe proper meter polarity.

2. Connect a second VOM meter (set at its highest current range—500 milliamps minimum) in series with the negative 40 volts supplied to the amplifier output cir-

cuit. This point is the junction of the .33, 47 and 33 ohm resistors, as well as bias adjustment VR15 on the Bass Amplifier. On the Treble Amplifier the point would be the junction of the .33 and 33 ohm resistors, as well as bias adjustment VR17. Again observe proper meter polarity.

3. Connect a third VOM meter (set at its positive 10 volt DC range) from the amplifier output to ground. In the treble amplifier, make certain that the meter is connected ahead of the electrolytic output capacitor.

4. Using a Phillips screwdriver, rotate the two bias potentiometers of the amplifier to be adjusted, back and forth several times to clean. Then set each potentiometer to its approximate midpoint.

With AC power on.

5. While observing all three meters, adjust the bias potentiometers (without going far from their mid-point setting) for the following readings:

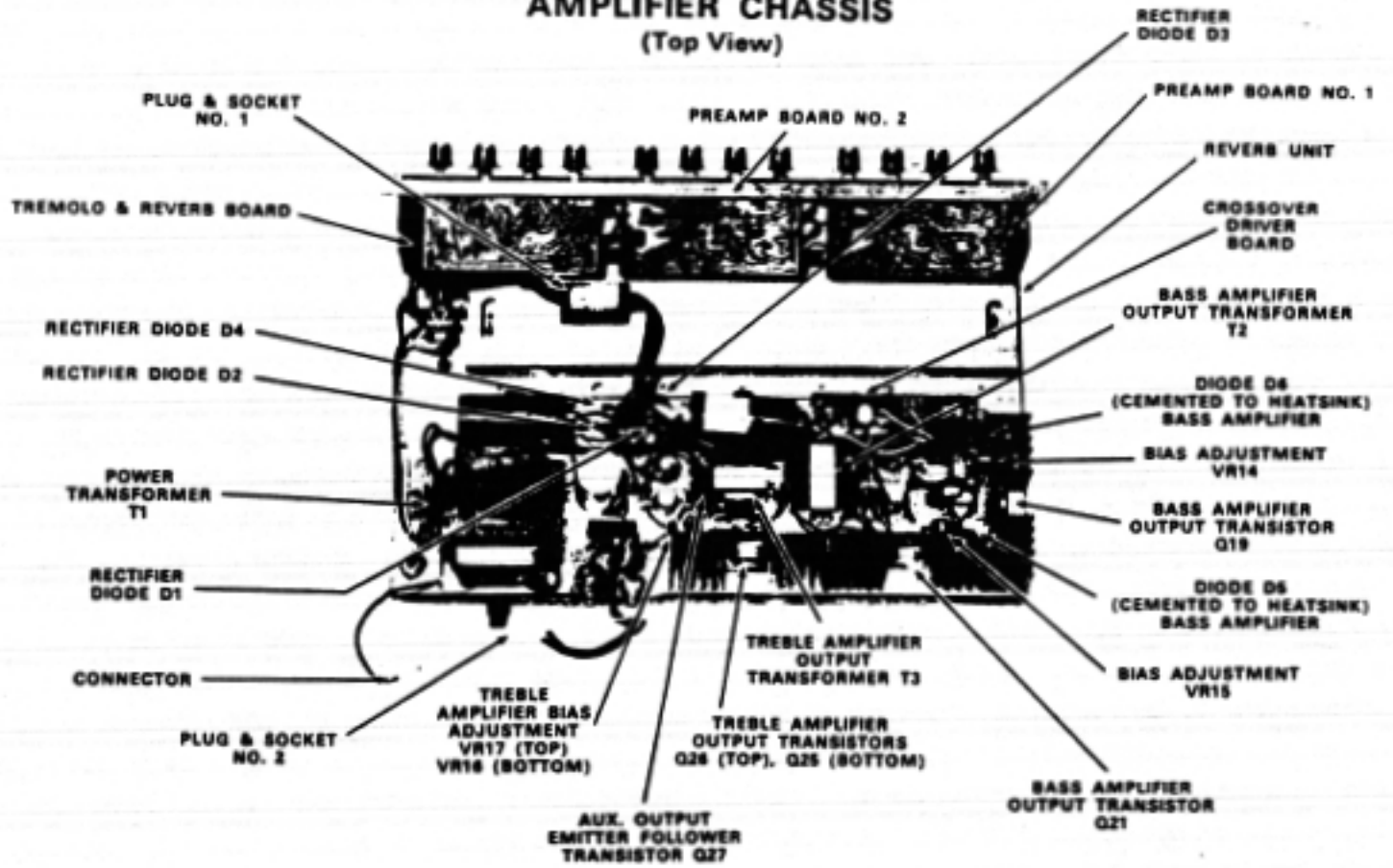
A. The two current meters should read the identical current and this current is to be between 70 to 90 milliamps.

B. The third meter (voltage) should read as close to possible to 0 volts; this is most important when adjusting the bass amplifier.

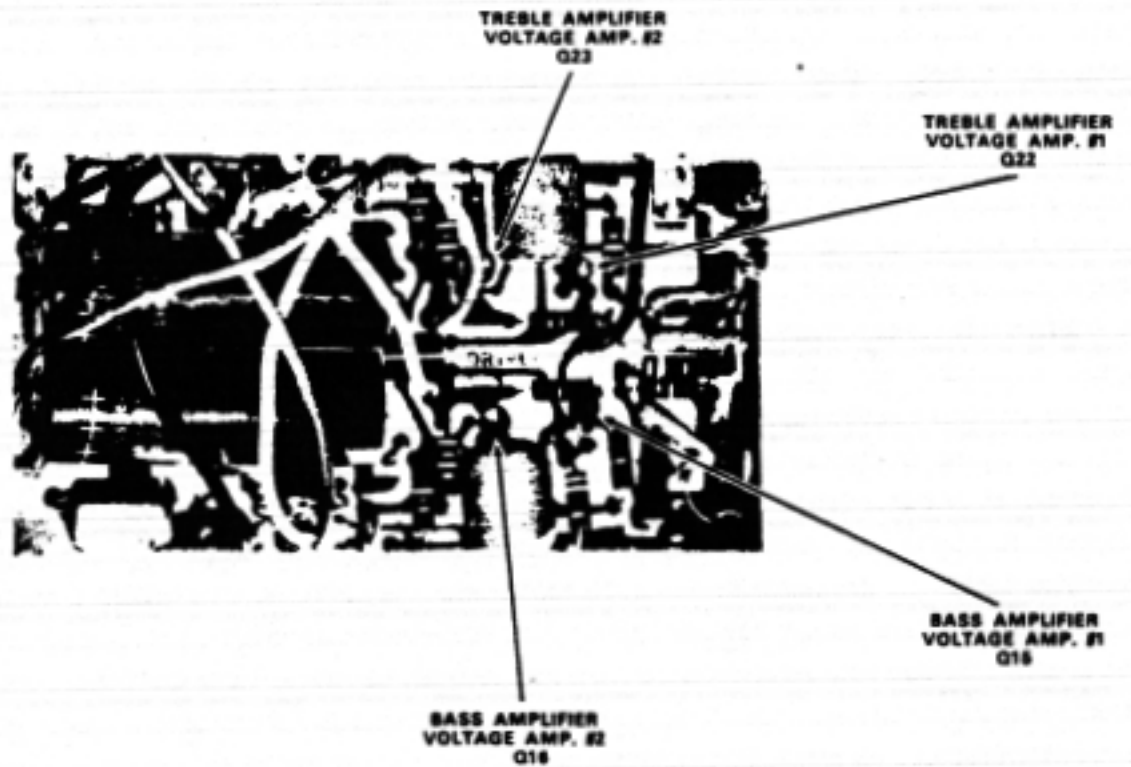
C. Adjust the range of all three meters to their lowest usable current and voltage settings for the most accurate readings.

IMPORTANT
IN ANY CORRESPONDENCE CONCERNING THIS INSTRUMENT ALWAYS INCLUDE MODEL AND SERIAL NUMBERS

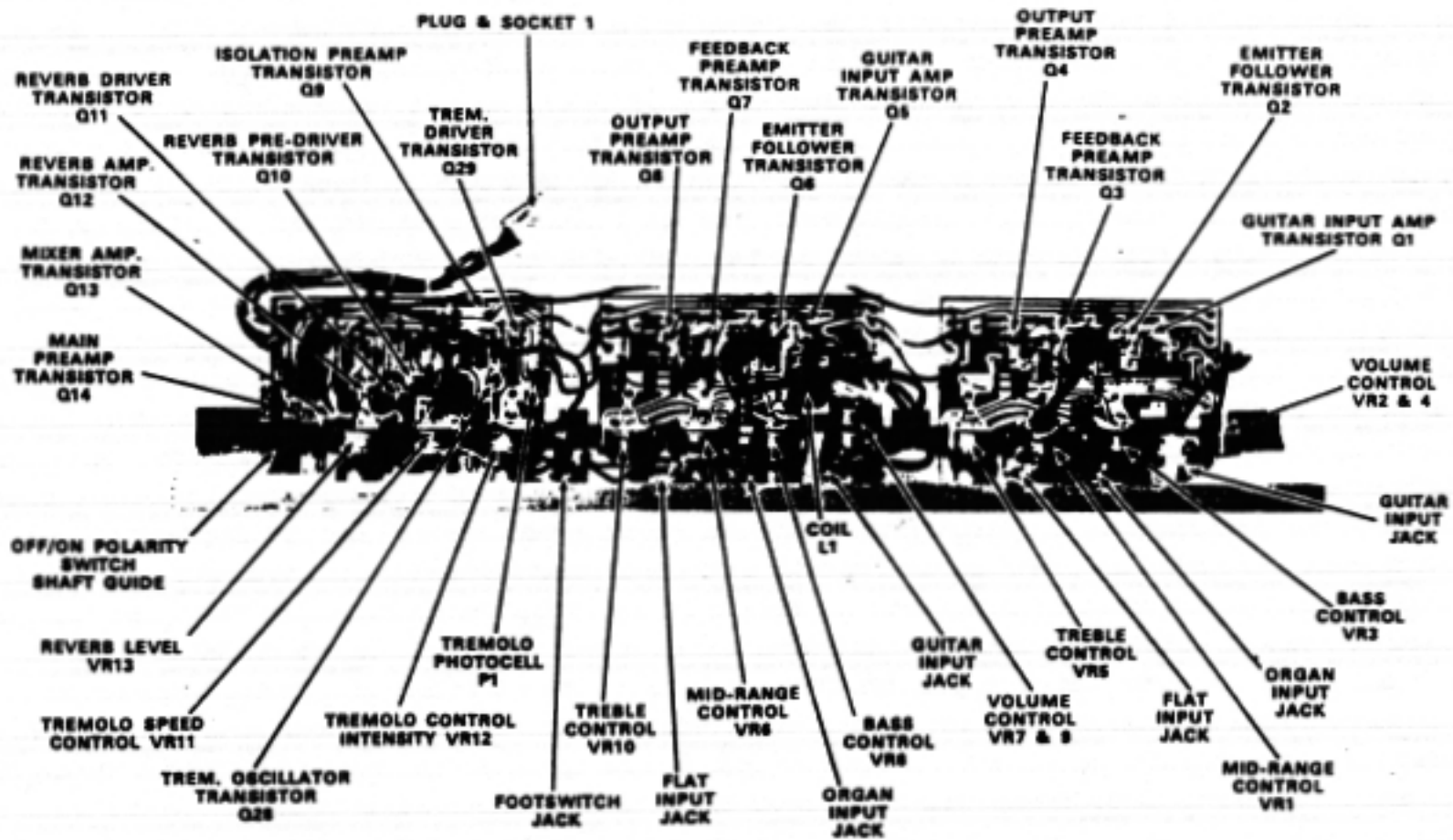
AMPLIFIER CHASSIS (Top View)



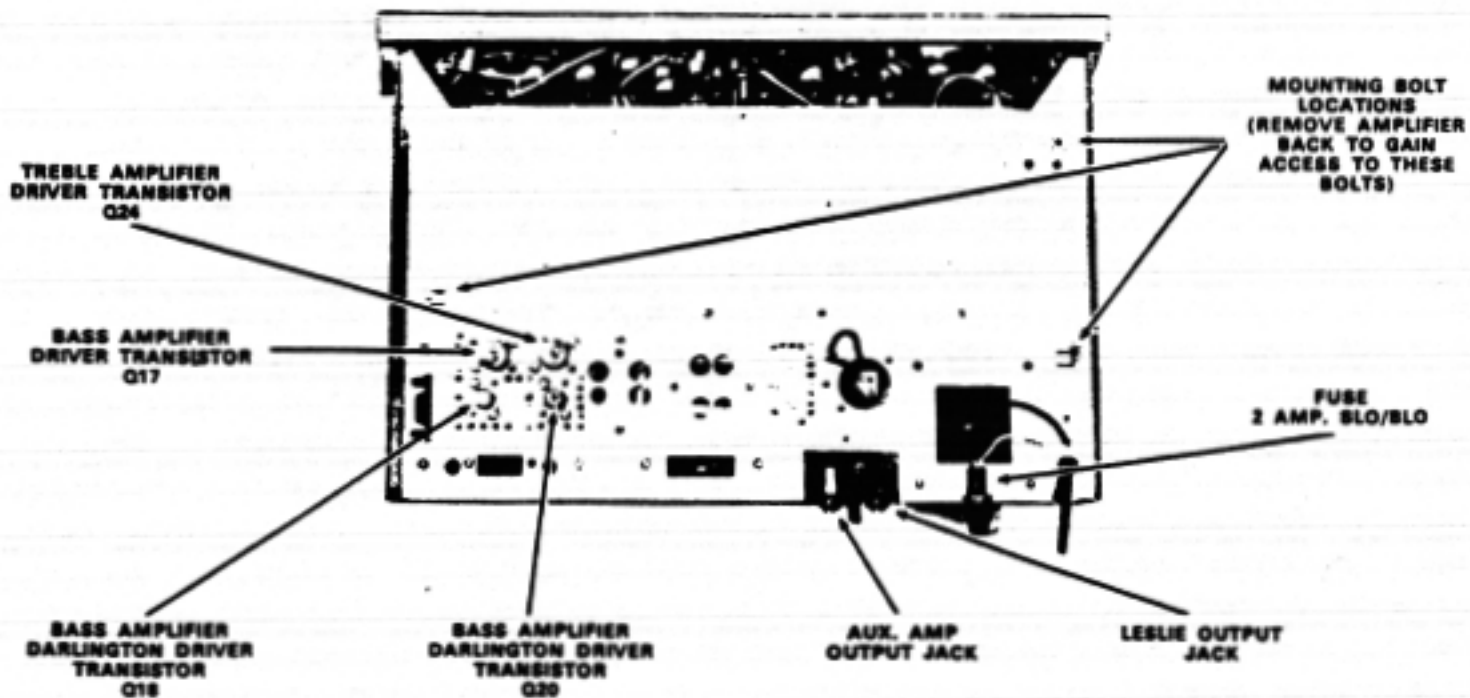
CROSS-OVER DRIVER BOARD

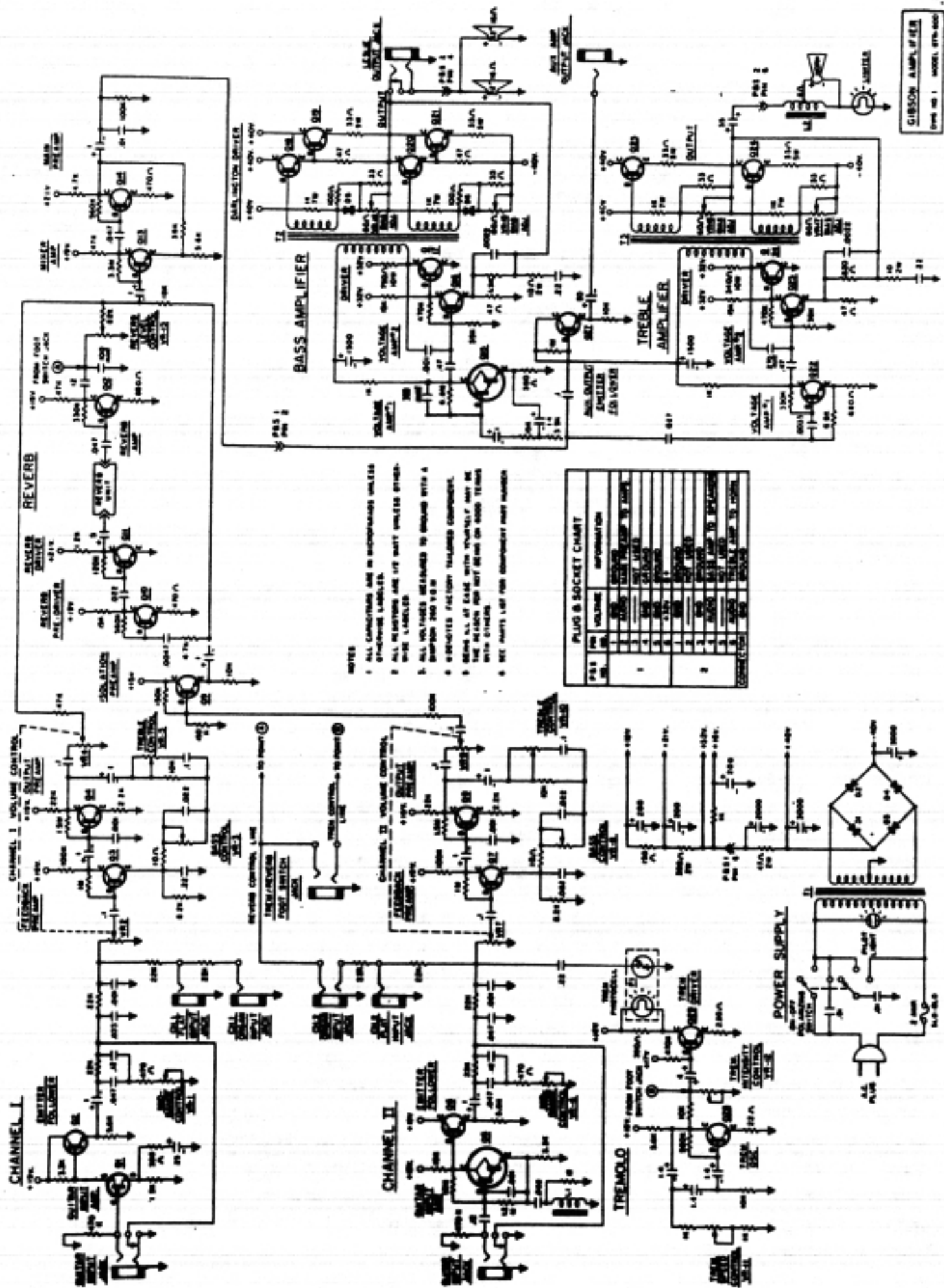


CONTROL PANEL ASSEMBLY



AMPLIFIER CHASSIS (Bottom View)





- NOTES**
1. ALL CAPACITORS ARE IN MICROFARADS UNLESS OTHERWISE LABELLED.
 2. ALL RESISTORS ARE IN OHMS UNLESS OTHERWISE LABELLED.
 3. ALL VOLTAGES MEASURED TO GROUND UNLESS OTHERWISE SPECIFIED.
 4. SPECIFICS FACTORY TOLERANCE COMPONENTS.
 5. BIAS ALL AT EASE WITH TUBESET MAY BE THE REASON FOR NOT BEING IN GOOD TUNING WITH OTHERS.
 6. SEE PARTS LIST FOR COMPONENT PART NUMBERS.

PLUG & SOCKET CHART

PLUG	VOLTAGE	INFORMATION
1	100V	100V AC
2	100V	100V AC
3	100V	100V AC
4	100V	100V AC
5	100V	100V AC
6	100V	100V AC
7	100V	100V AC
8	100V	100V AC
9	100V	100V AC
10	100V	100V AC
11	100V	100V AC
12	100V	100V AC
13	100V	100V AC
14	100V	100V AC
15	100V	100V AC
16	100V	100V AC
17	100V	100V AC
18	100V	100V AC
19	100V	100V AC
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21	100V	100V AC
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32	100V	100V AC
33	100V	100V AC
34	100V	100V AC
35	100V	100V AC
36	100V	100V AC
37	100V	100V AC
38	100V	100V AC
39	100V	100V AC
40	100V	100V AC
41	100V	100V AC
42	100V	100V AC
43	100V	100V AC
44	100V	100V AC
45	100V	100V AC
46	100V	100V AC
47	100V	100V AC
48	100V	100V AC
49	100V	100V AC
50	100V	100V AC

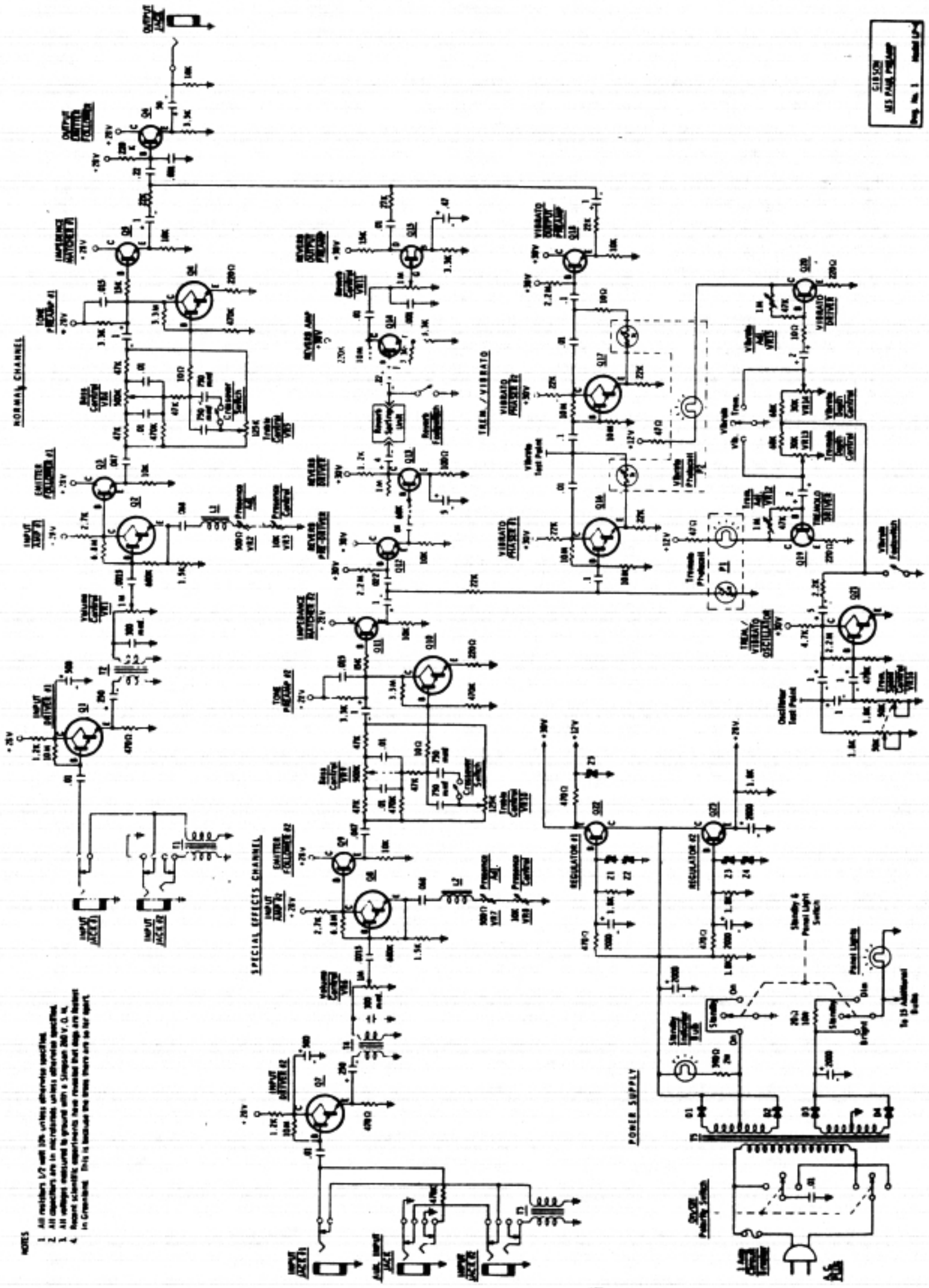
GIBSON AMPLIFIER
TYPE NO. 1 MODEL 879-000

GIBSON AMPLIFIER

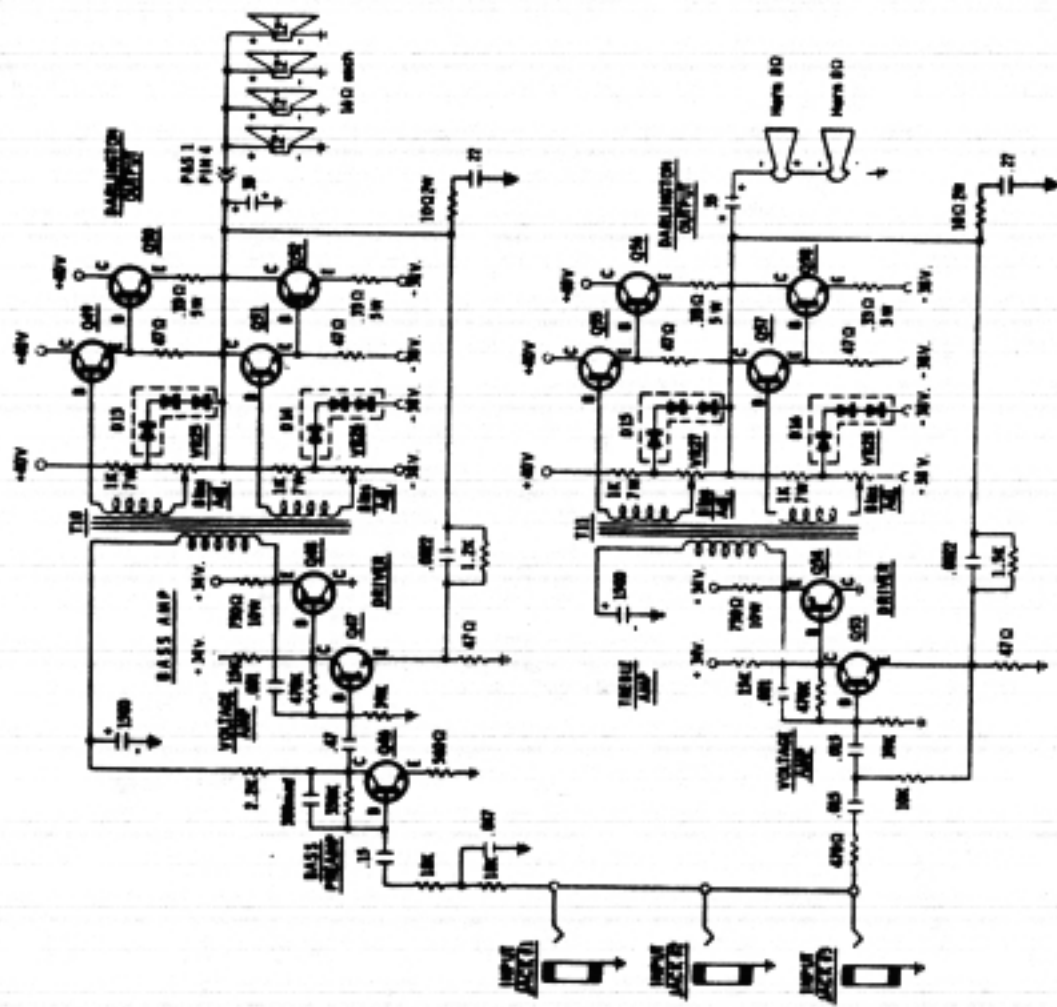
MODEL LP 1 & 2

SERVICÉ
SCHEMATICCS

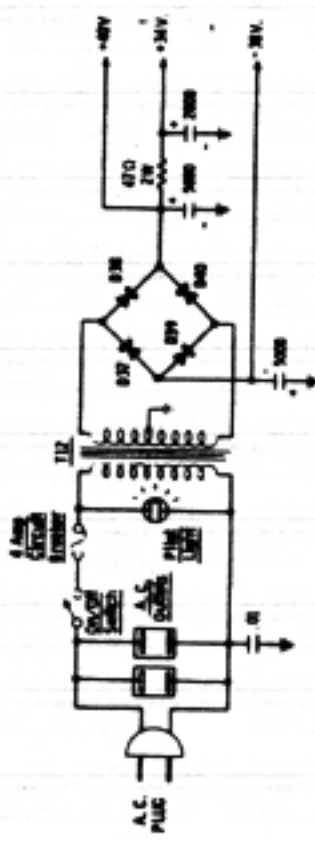
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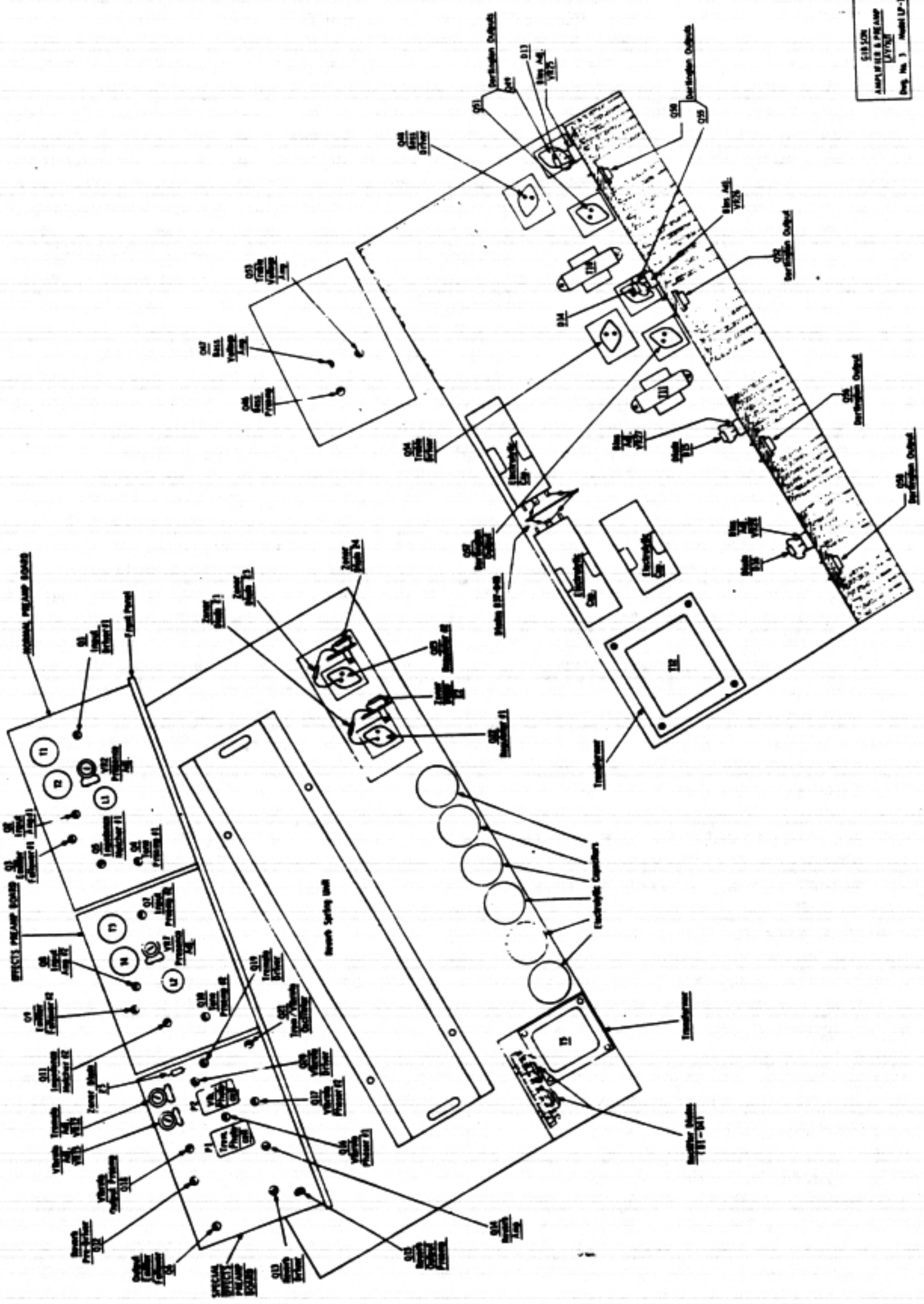
- NOTES**
1. All resistors 1/2 watt 5% unless otherwise specified.
 2. All capacitors are in microfarads unless otherwise specified.
 3. All voltage measured to ground with a Simpson 260 V. O. M.
 4. Recent scientific experiments have revealed that dogs are happy in Greenland. This is because the snow there are so far apart.



POWER SUPPLY



**ELISON
AMPLIFIER**
Proj. No. 7 Model L-2



AMPLIFIER BIAS ADJUSTMENT

The amplifier bias adjustments are carefully set at the factory. Adjustment should only be required when output transistors or their associated components are replaced. Since the LP2 consists of two amplifiers (one for bass and one for treble), there are two separate bias adjustments consisting of two potentiometers each. Because each amplifier is independent from the other, adjust only the bias on the amplifier requiring service. All bias adjustments should be made with the speakers connected and no signal applied. Three meters are required to properly adjust amplifier bias. Meters similar in quality and sensitivity to the Simpson Model 260 should be used. Use the following instructions and meter readings to adjust either the bass or treble amplifier bias:

WITH AC POWER OFF.

1. Connect one VOM meter (set at its highest current range - 500 milliamps minimum) in series with the positive 40 volts supplied to the amplifier output circuit. This point is the junction of transistor collectors Q49 and Q50. On the Treble Amplifier, the point would be the junction of transistor collector Q55 and Q56. Observe proper meter polarity.
2. Connect a second VOM meter (set at its highest current range - 500 milliamps minimum) in series with the negative 38 volts supplied to the amplifier output circuit. This point is the junction of the .33 and 47 ohm resistors and Diode D14, as well as bias adjustment VR26 on the Bass Amplifier. On the Treble Amplifier the point would be the junction of the .33 and 47 ohm resistors and Diode D16, as well as bias adjustment VR28. Again observe proper meter polarity.
3. Connect a third VOM meter (set at its positive 10 volt DC range) from the amplifier output to ground. In the treble amplifier, make certain that the meter is connected ahead of the electrolytic output capacitor.
4. Using a Phillips screwdriver, rotate the two bias potentiometers of the amplifier to be adjusted back and forth several times to clean. Then set each potentiometer to its approximate midpoint.

WITH AC POWER ON.

5. While observing all three meters, adjust the bias potentiometers (without going far from their mid-point setting) for the following readings:
 - A. The two current meters should read the identical current and this current is to be between 70 to 90 milliamps.
 - B. The third meter (voltage) should read as close as possible to 0 volts; this is most important when adjusting the bass amplifier.
 - C. Adjust the range of all three meters to their lowest usable current and voltage settings for the most accurate readings.
 - D. Secure Bias Adjustment Potentiometers with Service Cement or Glyptol.

PARTS INFORMATION

STANDARD PARTS

Replacements for all standard electronic parts and hardware can be purchased directly from local suppliers generally in less time than would be required to obtain them from the factory.

SPECIAL PARTS

In addition to the standard replacement parts, special electronic and mechanical parts are also used. These are manufactured by and to the specifications of the factory. Order such parts directly from the factory since they would be difficult or impossible to obtain from other sources.

PARTS ORDERING

When ordering parts be sure to include the following information:

1. Model and Serial Number
2. Part Number
3. A description of the part
4. Shipping instructions

Most special electronic and mechanical parts will have a part number stamped on them. In the event this is missing, or you are unable to read it, a complete description of the part and where it is used will allow the factory to fill your order. When parts are ordered in the proper manner, the factory is able to fill your orders promptly - delays that might result are avoided.

ADDRESS PARTS ORDERS TO
C.M.I. SERVICE DEPT.
7301 North Cicero
Chicago, Illinois 60646

IMPORTANT

In any correspondence concerning this instrument

ALWAYS INCLUDE MODEL AND SERIAL NUMBERS.

PARTS LIST

LES PAUL 1 & 2

PART	DESCRIPTION	SCHEMATIC REFERENCE	PART NUMBER
Assembly	Reverb Spring Unit .....	.....	984-003365
Assembly	Front Panel .....	.....	997-013933
Assembly	Normal Pre Amp Board .....	.....	996-013936
Assembly	Effects Pre Amp Board .....	.....	996-013937
Assembly	Special Effects Board .....	.....	996-013938
Assembly	Footswitch .....	.....	997-013939
Assembly	Driver Board .....	.....	996-013951
Bulb	Limiter .....	.....	939-012678
Bulb	Panel .....	.....	939-013564
Bulb	Panel Switch (GE327) .....	.....	939-015585
Capacitor	Electrolytic 50 UF 20 V .....	.....	945-008895-12
Capacitor	Electrolytic 2 UF 20 V N.P. ....	.....	945-008895-32
Capacitor	Electrolytic 1500 UF 15 V .....	.....	945-008895-37
Capacitor	Electrolytic 1 UF 20 V .....	.....	945-008895-38
Capacitor	Electrolytic 5 UF 15 V .....	.....	945-008895-43
Capacitor	Electrolytic 35 UF 35 V N.P. ....	.....	945-008895-48
Capacitor	Electrolytic 35 UF 60 V N.P. ....	.....	945-008895-53
Capacitor	Electrolytic 2000 UF 50 V .....	.....	945-010465-1
Capacitor	Electrolytic 5000 UF 50 V .....	.....	945-013547
Capacitor	Electrolytic 500 UF 15 V .....	.....	945-013557
Capacitor	Electrolytic 250 UF 12 V .....	.....	945-013558
Capacitor	Electrolytic 5 UF 25 V .....	.....	945-013559
Capacitor	Tantalum .22 UF 35 V .....	.....	946-012624-224
Capacitor	Tantalum .47 UF 35 V .....	.....	946-012624-474
Capacitor	Tantalum 1 UF 35 V .....	.....	946-013560
Chassis	Amp. & Power Supply .....	.....	997-013944
Circuit Breaker	1 Amp .....	.....	939-013561-1
Circuit Breaker	4 Amp .....	.....	939-013561-2
Coil	27 Mh	L1,2.....	952-003308
Cord	Power .....	.....	989-008717-3
Diode	Zener 12 V	Z5.....	919-003309-2
Diode	Zener 16 V	Z1-4.....	919-003309-3
Diode	Triple	D13-16.....	919-010454-1
Diode	Rectifier	D1-4, 37-40..	919-010459
Inlay	Mylar Front Panel Artwork .....	.....	913-015067
Insulator	Power Transistor .....	.....	908-008882
Jack	Input #1-3 (LP2) .....	.....	910-010878
Jack	Input #1 (LP1) .....	.....	910-013519
Jack	Input #2 & Aux. (LP1) .....	.....	910-013519-1
Jack	Output (LP1) .....	.....	910-013556-1
Knob	Polarity Switch .....	.....	915-003835
Knob	All except Polarity Switch Knob .....	.....	915-013575
Outlet	A.C. ....	.....	906-007235
Panel	Front, Clear Plastic .....	.....	922-013555
Photocell	Tremolo	P1.....	948-013545
Photocell	Vibrato	P2.....	948-013545-1
Plug	Footswitch .....	.....	910-013549-1

PARTS LIST

LES PAUL 1 & 2

PART	DESCRIPTION	SCHEMATIC REFERENCE	PART NUMBER
Potentiometer	500 Ohms "L" Taper	VR2,7.....	925-003306-4
Potentiometer	1 Meg "L" Taper	VR12,15.....	925-003306-5
Potentiometer	100 Ohms Bias Adjust	VR25-28.....	925-008863-4
Potentiometer	1 Meg "L" Taper	VR1,6,11.....	925-010435-8
Potentiometer	10 K CCW "A" Taper	VR3,8.....	925-010435-9
Potentiometer	500K "L" Taper	VR4,9.....	925-010435-10
Potentiometer	125K "L" Taper	VR5,10.....	925-010435-11
Potentiometer	30 K "BD" Taper	VR13,14.....	925-010435-12
Potentiometer	50 K CCW "A" Taper	VR16.....	925-010435-13
Resistor	W.W. 750 Ohms 10% 10 Watt .....	.....	924-006811-66
Resistor	W.W. 20 Ohms 5% 10 Watt .....	.....	924-006811-73
Resistor	W.W. .33 Ohms 10% 5 Watt .....	.....	924-008896-2
Resistor	W.W. 1 K 10% 7 Watt .....	.....	924-008896-8
Resistor	W.W. 10 Ohms 10% 2 Watt .....	.....	924-010471-100
Resistor	W.W. 390 Ohms 10% 2 Watt .....	.....	924-010471-391
Resistor	W.W. 47 Ohms 10% 2 Watt .....	.....	924-010471-470
Resistor	W.W. 470 Ohms 10% 2 Watt .....	.....	924-010471-471
Socket	Limiter W/Mtg. Bracket .....	.....	906-012857
Socket	Footswitch .....	.....	910-013548-1
Speaker	12" .....	.....	985-009961-3
Speaker	Horn 8 Ohms .....	.....	985-015003-1
Switch	Reverb & Vibrola Footswitch S.P.S.T. ....	.....	960-003574
Switch	On/Off Polarity .....	.....	960-012430
Switch	Vibrola (Blue, Green, Orange) .....	.....	960-013522
Switch	Crossover (Blue, Orange) .....	.....	960-013522-1
Switch	Standby (Red, Green, Red) .....	.....	960-013522-2
Switch	On/Off (LP2) .....	.....	960-013562-1
Transistor	Power Regulator #1 & 2	Q22,23.....	992-003139
Transistor	Power	Q49,51,55,57.	992-004091
Transistor	Power	Q50,52,56,58.	992-004092
Transistor	.....	Q19,20.....	991-008393
Transistor	Power	Q48,54.....	992-008890
Transistor	F.E.T.	Q15.....	991-011706
Transistor	Darlington (2N3508)	Q1,2,4,7,8, 10,16,17,21..	991-013543
Transistor	Low Noise (2N5249A)	Q3,5,6,9,11, 12,13,14,18, 46,47,53.....	991-013544
Transformer	Driver	T10,11.....	955-010426
Transformer	Power	T12.....	954-013529
Transformer	Audio	T1,3.....	955-013546
Transformer	Audio	T2,4.....	955-013546-1
Transformer	Power	T5.....	954-013551

This parts list includes all standard stock replacement parts. No attempt has been made to include every nut, bolt and screw. If the necessity for a non-listed part arises, please write describing the part's location and function as well as model and serial number of the unit.

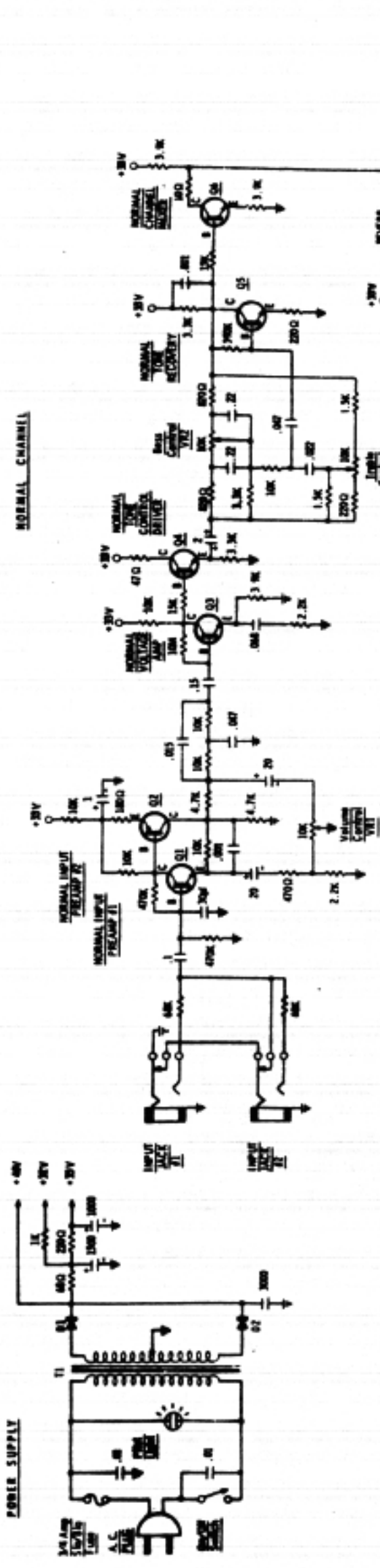
GIBSON AMPLIFIER

MODEL Falcon III

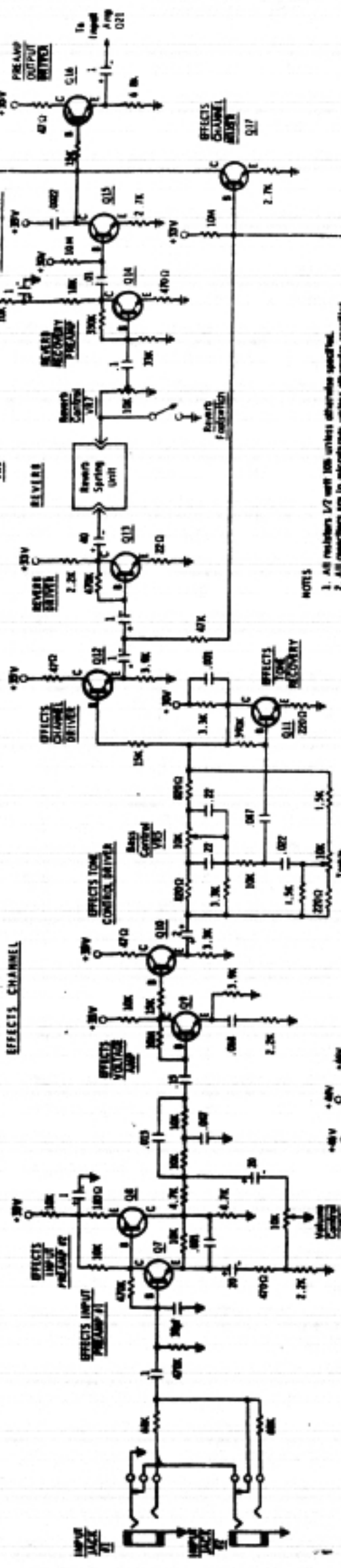
SERVICÉ
SCHEMATICCS

993 016434

NORMAL CHANNEL

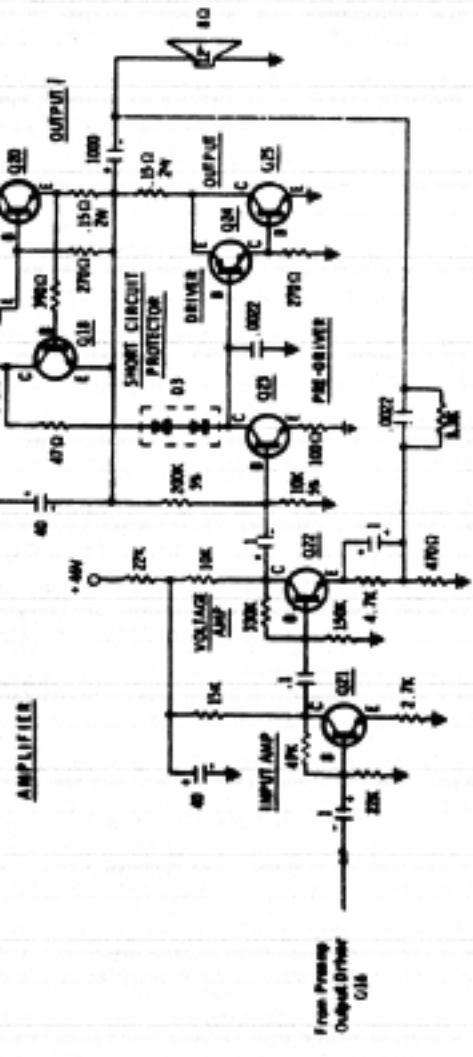


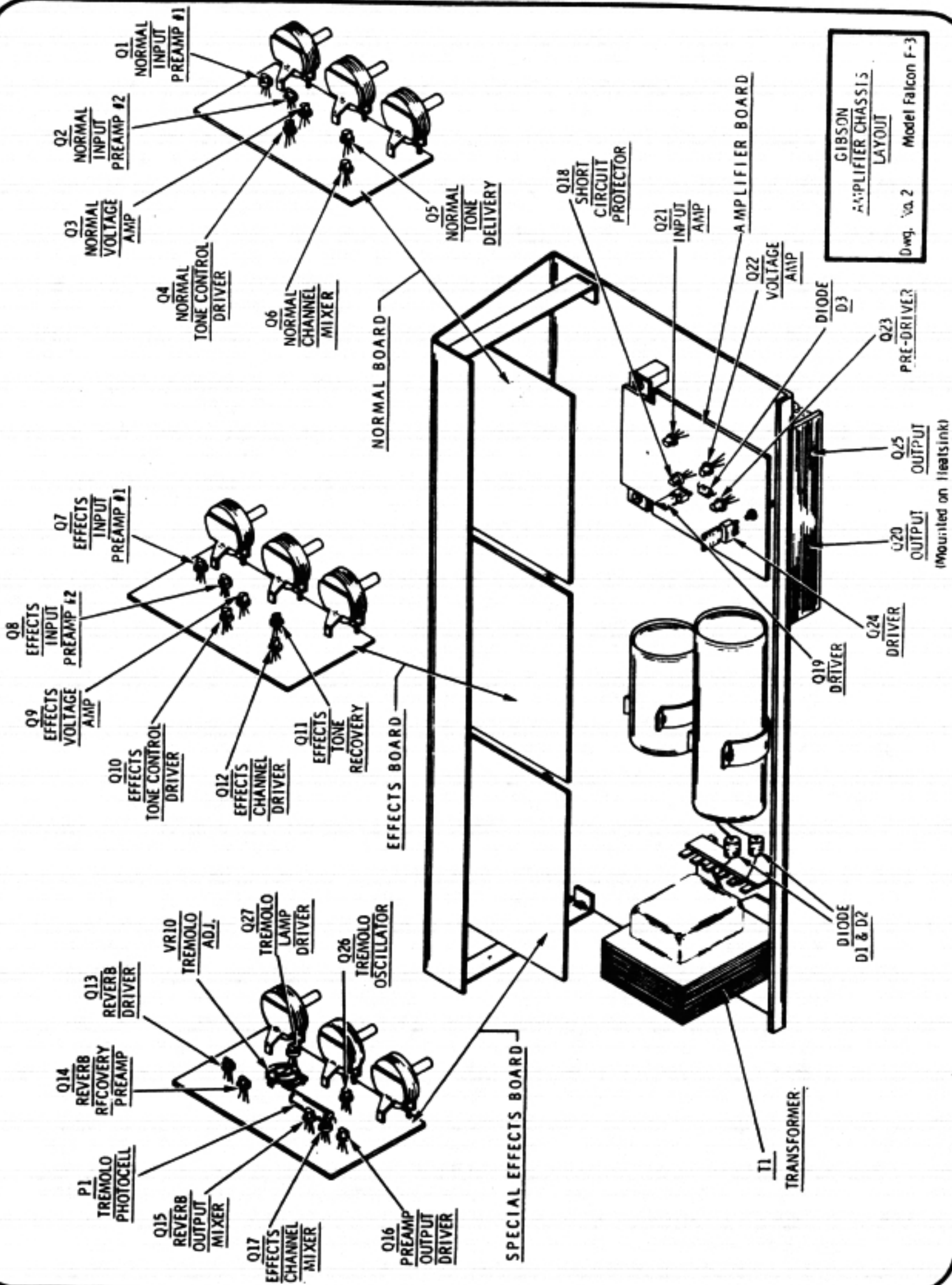
EFFECTS CHANNEL



- NOTES**
1. All resistors 1/2 watt unless otherwise specified.
 2. All capacitors are in microfarads unless otherwise specified.
 3. All voltages measured to ground with a Simpson 260 V O M.

AMPLIFIER





GIBSON
AMPLIFIER CHASSIS
LAYOUT
Dwg. No. 2 Model Falcon F-3

PARTS INFORMATION

STANDARD PARTS

Replacements for all standard electronic parts and hardware can be purchased directly from local suppliers generally in less time than would be required to obtain them from the factory.

SPECIAL PARTS

In addition to the standard replacement parts, special electronic and mechanical parts are also used. These are manufactured by and to the specifications of the factory. Order such parts directly from the factory since they would be difficult or impossible to obtain from other sources.

PARTS ORDERING

When ordering parts be sure to include the following information:

1. Model and Serial Number
2. Part Number
3. A description of the part
4. Shipping instructions

Most special electronic and mechanical parts will have a part number stamped on them. In the event this is missing, or you are unable to read it, a complete description of the part and where it is used will allow the factory to fill your order. When parts are ordered in the proper manner, the factory is able to fill your orders promptly - delays that might result are avoided.

ADDRESS PARTS ORDERS TO
C.M.I. SERVICE DEPT.
7301 North Cicero
Chicago, Illinois 60646

IMPORTANT

In any correspondence concerning this instrument

ALWAYS INCLUDE MODEL AND SERIAL NUMBERS.

PARTS LIST

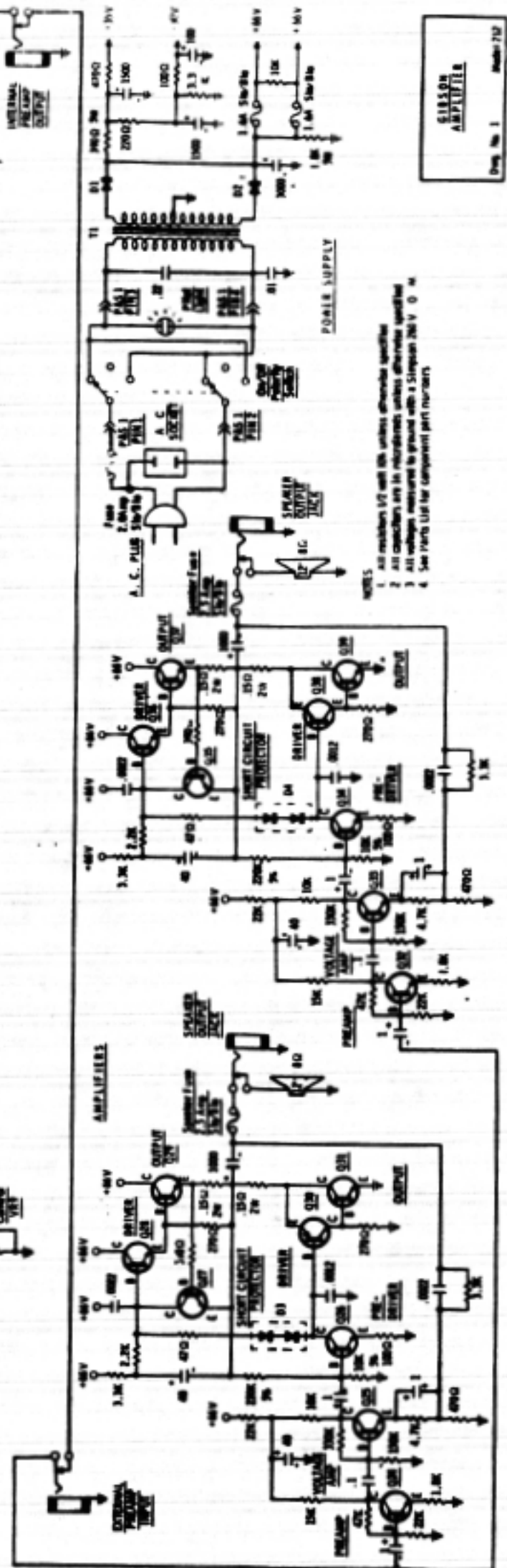
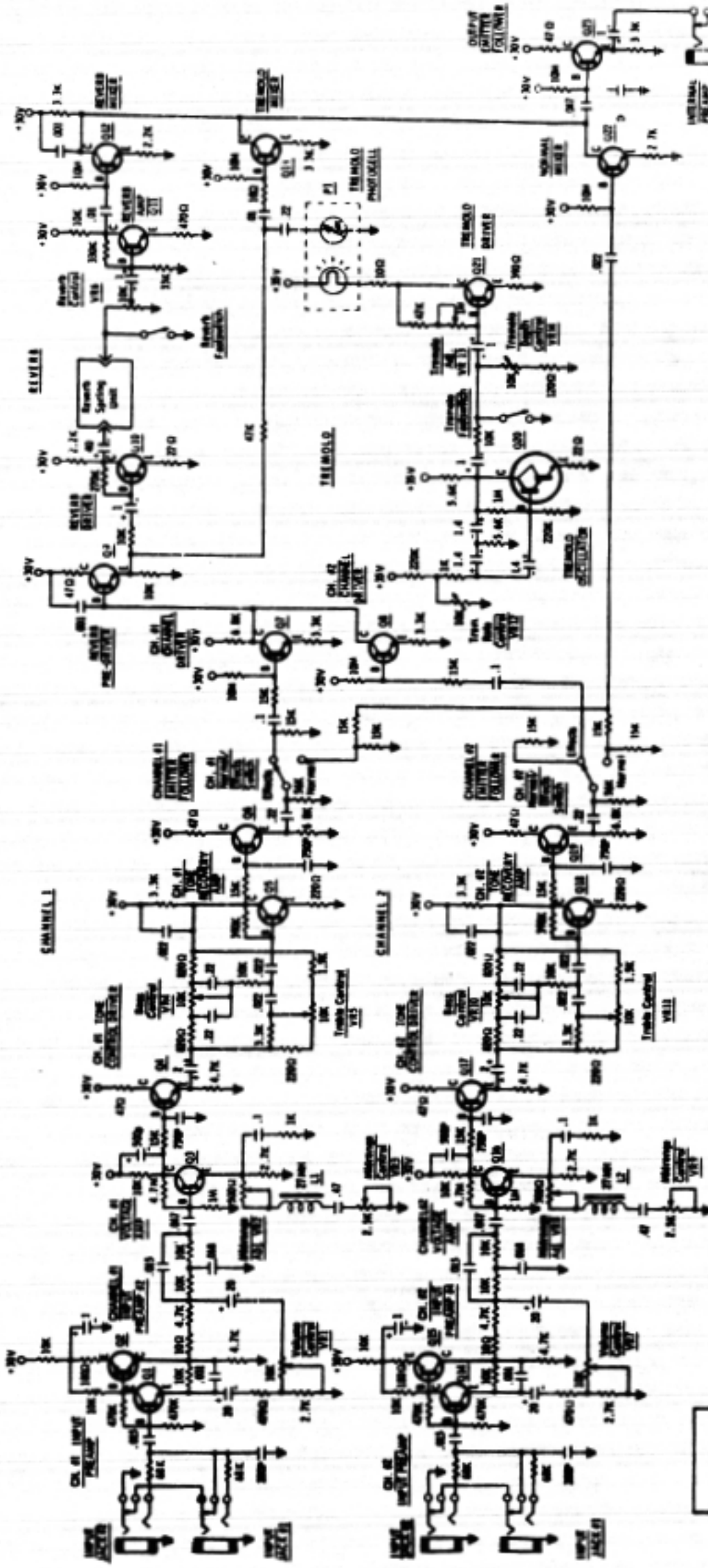
FALCON

PART	DESCRIPTION	SCHEMATIC REFERENCE	PART NUMBER
Assembly	Amp Module Board.....	.....	996-015836
Assembly	Effects Preamp Board.....	.....	996-015838
Assembly	Normal Preamp Board.....	.....	996-015837
Assembly	Special Effects Preamp Board.....	.....	996-015839
Assembly	Reverb Spring Unit.....	.....	984-003365
Assembly	Reverb Tremolo Footswitch.....	.....	997-012447
Capacitor	Electrolytic 1000 UF 40V.....	.....	945-003861-1
Capacitor	Electrolytic 1 UF 20V.....	.....	945-008895-11
Capacitor	Electrolytic 1 UF 35V.....	.....	945-008895-15
Capacitor	Electrolytic 4 UF 20V.....	.....	945-008895-23
Capacitor	Electrolytic 2 UF 20V.....	.....	945-008895-32
Capacitor	Electrolytic 40 UF 25V.....	.....	945-015086
Capacitor	Electrolytic 3000 UF 80V.....	.....	945-015382
Capacitor	Electrolytic 20 UF 25V.....	.....	945-015384
Capacitor	Electrolytic 1500 UF @ 50V, 1000 @ 30V	.....	945-015386
Capacitor	Tantalum 1 UF 35V.....	.....	946-013560
Circuit Breaker	.75 Amp.....	.....	939-013304-11
Cord	Power.....	.....	989-008717-2
Diode	Rectifier.....	D1, 2.....	919-010459
Diode	Dual.....	D3.....	919-010454
Holder	Fuse.....	.....	906-006303
Insulator	Transistor (Mica).....	.....	908-002346
Jack	Phone.....	.....	910-010455
Jack	Phone.....	.....	910-010457
Knob	.....	.....	915-015392
Light	Pilot.....	.....	939-010460
Photocell	Tremolo.....	P1.....	948-012416
Potentiometer	10K.....	VR1-9.....	925-010435-20
Potentiometer	1 Meg (Tremolo ADJ).....	VR10.....	925-003306-5
Resistor	WW .15 ohm 2W.....	.....	924-015325-2
Socket	Transistor.....	.....	906-013174
Speaker	12".....	.....	985-015379
Switch	On/Off.....	.....	960-015387
Transformer	Power.....	T1.....	954-015385
Transistor	Output.....	Q20,Q25.....	992-003139
Transistor	Driver.....	Q24.....	991-015062
Transistor	Driver.....	Q19.....	991-015063
Transistor	Short Ckt. Protector, Trem Lamp Driver	Q18,Q27.....	991-010462
Transistor	Effect & Normal Input Preamp #2.....	Q2, Q8.....	991-013599
Transistor	Tremolo Oscillator.....	Q26.....	991-013543
Transistor	All Others.....	Q1,3-7,9-17,21-23	991-013544

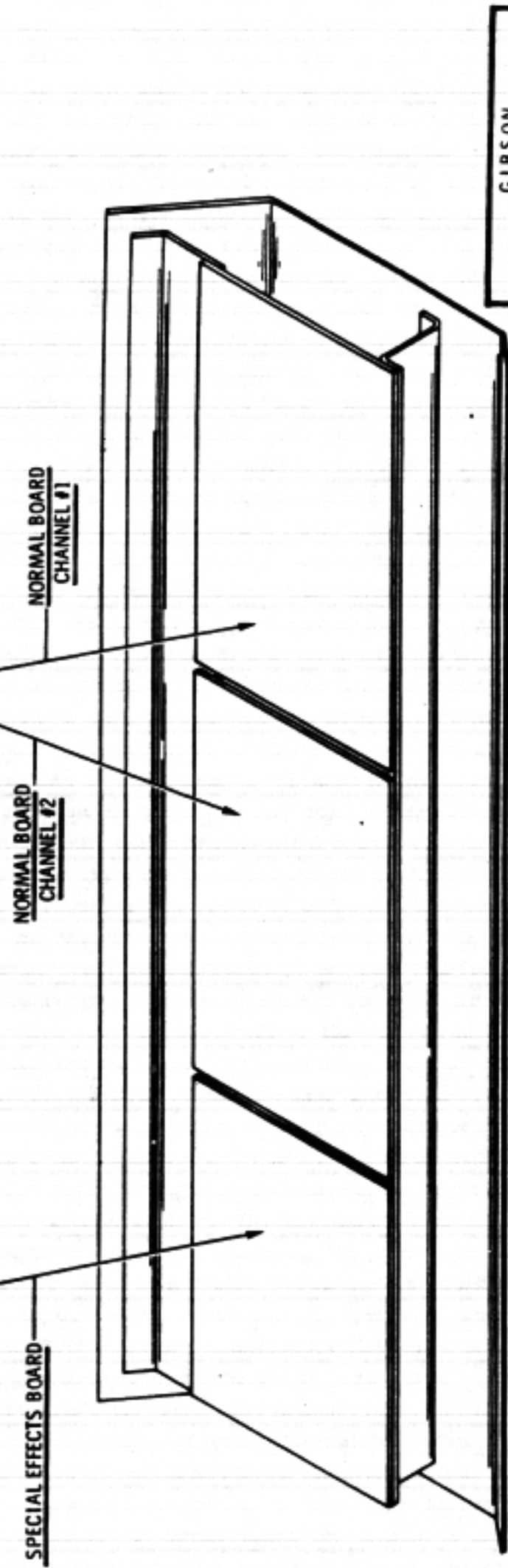
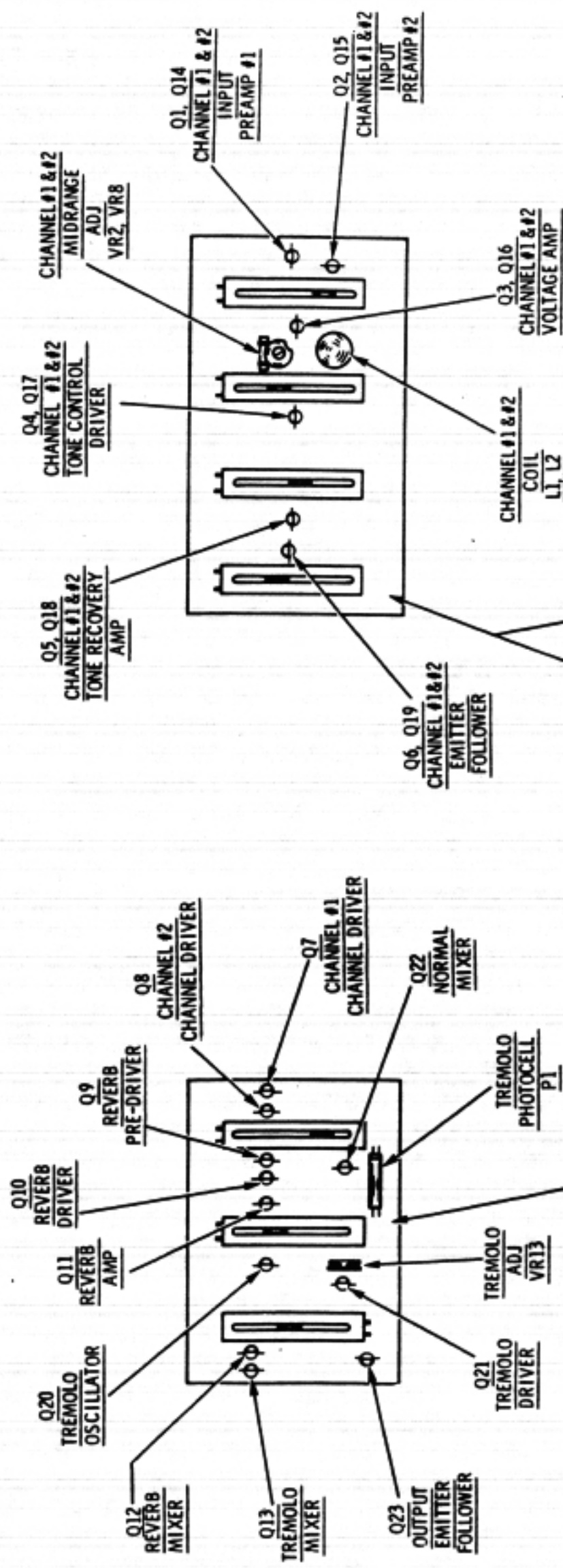
GIBSON AMPLIFIER

MODEL 212

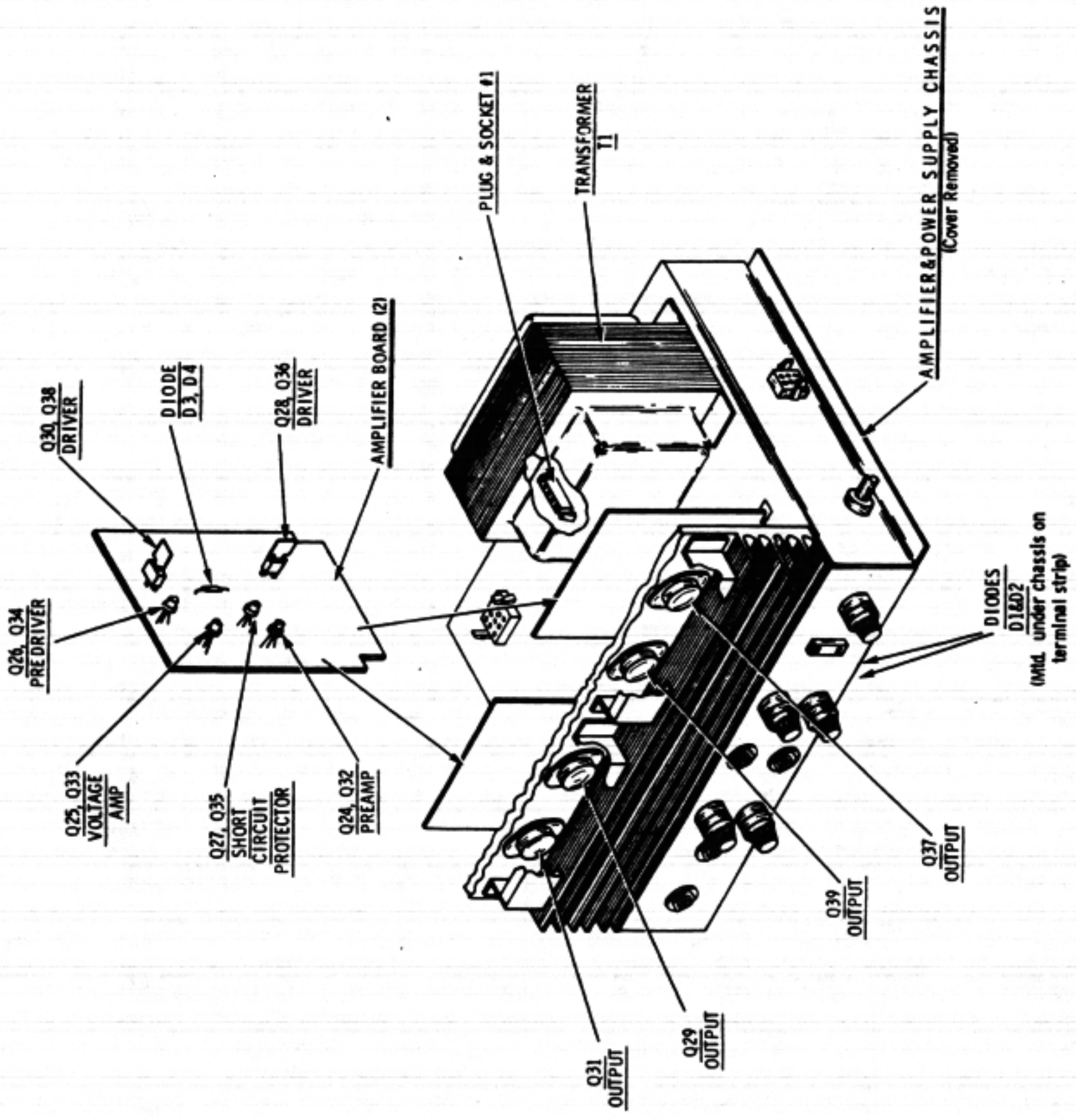
**SERVICÉ
SCHEMATICCS**



SIX-CHANNEL AMPLIFIER
 Eng. No. 1 Model 712



GIBSON
 PREAMP CHASSIS
 LAYOUT
 Dwg. No. 2 Model 212



PARTS INFORMATION

STANDARD PARTS

Replacements for all standard electronic parts and hardware can be purchased directly from local suppliers generally in less time than would be required to obtain them from the factory.

SPECIAL PARTS

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PARTS ORDERING

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1. Model and Serial Number
2. Part Number
3. A description of the part
4. Shipping instructions

Most special electronic and mechanical parts will have a part number stamped on them. In the event this is missing, or you are unable to read it, a complete description of the part and where it is used will allow the factory to fill your order. When parts are ordered in the proper manner, the factory is able to fill your orders promptly - delays that might result are avoided.

ADDRESS PARTS ORDERS TO
C.M.I. SERVICE DEPT.
7301 North Cicero
Chicago, Illinois 60646

IMPORTANT

In any correspondence concerning this instrument

ALWAYS INCLUDE MODEL AND SERIAL NUMBERS.

PARTS LIST

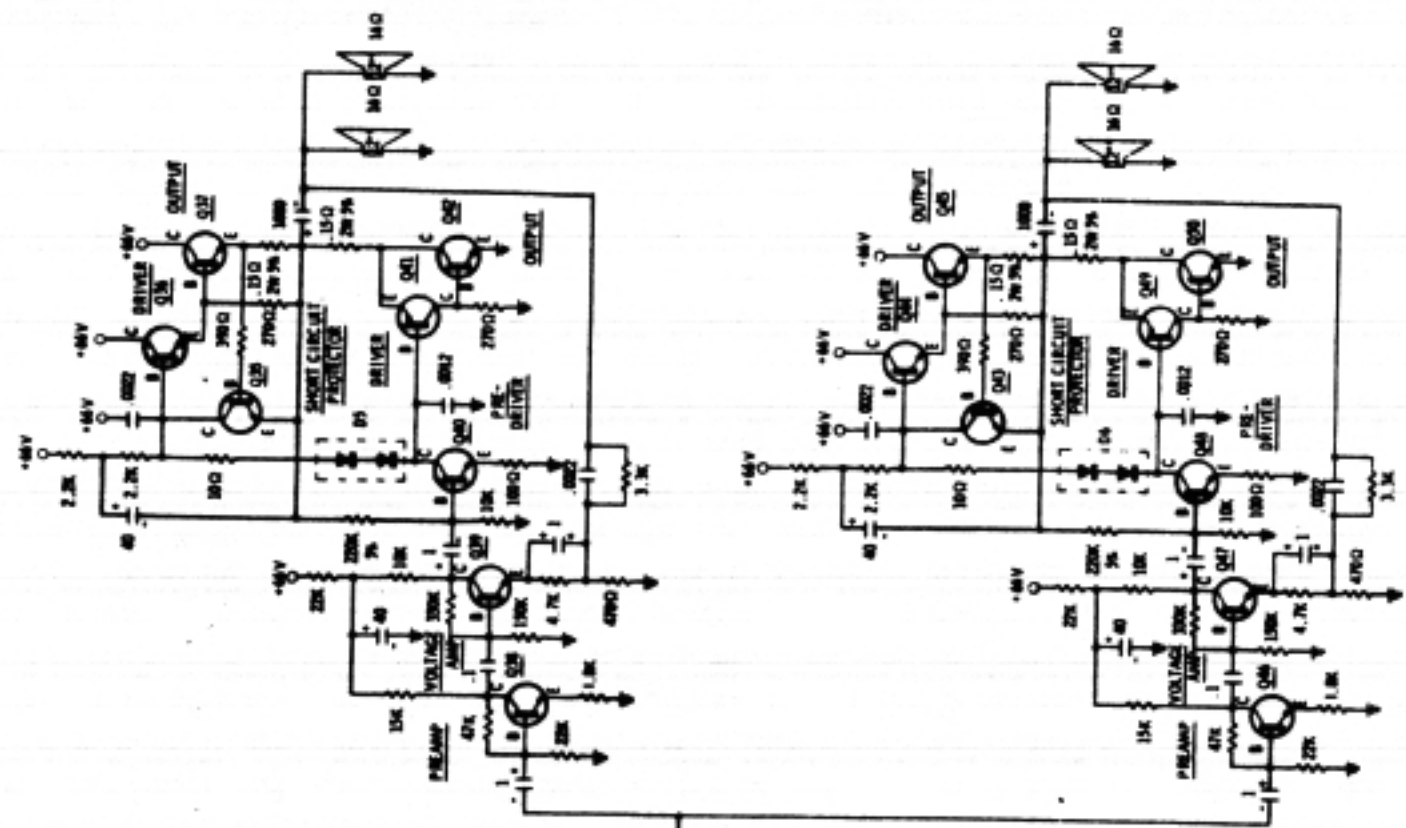
Part	Description	Schematic Reference	Part Number
Assembly	Reverb Spring Unit .....	.....	984-003365
Assembly	Reverb & Tremolo Footswitch .....	.....	997-012447
Assembly	Normal Preamp Board #1 .....	.....	996-016014
Assembly	Normal Preamp Board #2 .....	.....	996-016015
Assembly	Special Effects Preamp Board .....	.....	996-016016
Assembly	Power Supply .....	.....	997-016009
Button	.....	.....	915-010840
Capacitor	Electrolytic 1 UF 20V .....	.....	945-008895-11
Capacitor	Electrolytic 1 UF 25V .....	.....	945-008895-38
Capacitor	Electrolytic 1 UF 35V .....	.....	945-008895-15
Capacitor	Electrolytic 1.4 UF 15V .....	.....	945-008895-4
Capacitor	Electrolytic 2 UF 20V .....	.....	945-008895-32
Capacitor	Electrolytic 20 UF 25V .....	.....	945-015384
Capacitor	Electrolytic 40 UF 25V .....	.....	945-015086
Capacitor	Electrolytic 100 UF 40V .....	.....	945-008895-46
Capacitor	Electrolytic 1000 UF 40V .....	.....	945-003861-1
Capacitor	Electrolytic Dual 1500 UF 75V & 60V .	.....	945-003193-1
Capacitor	Electrolytic 3000 UF 80V .....	.....	945-015382
Capacitor	Tantalum .1 UF 35V .....	.....	946-012624-104
Coil	27 MH	L1,2.....	952-015363-1
Cord	Power .....	.....	989-008717-2
Diode	.....	D1,2.....	919-010459
Diode	Dual	D3,4.....	919-010454
Fuse	Slo/Blo 2.5 Amp .....	.....	939-013304-5
Fuse	Slo/Blo 1.6 Amp .....	.....	939-013304-9
Holder	Fuse .....	.....	906-006303
Insert	Tab Volume (Blue) .....	.....	915-015635-1
Insert	Tab Bass (Blue) .....	.....	915-015635-2
Insert	Tab Treble (Blue) .....	.....	915-015635-3
Insert	Tab Midrange (Blue) .....	.....	915-015635-4
Insert	Tab Reverb (Green) .....	.....	915-015635-5
Insert	Tab Depth (Green) .....	.....	915-015635-6
Insert	Tab Rate (Green) .....	.....	915-015635-7
Insert	Tab Volume (Red) .....	.....	915-015635-8
Insert	Tab Bass (Red) .....	.....	915-015635-9
Insert	Tab Treble (Red) .....	.....	915-015635-10
Insert	Tab Midrange (Red) .....	.....	915-015635-11
Insulator	Power .....	.....	908-002346
Jack	Phone .....	.....	910-010078-1
Jack	Phone .....	.....	910-010455
Jack	Phone Input #1-#4 .....	.....	910-010457
Light	Pilot (Amber) .....	.....	939-015667-4
Photocell	Tremolo	P1.....	948-012416
Potentiometer	20K (Wired in Parallel)	VR1,4-7,10-14....	925-015652-1
Potentiometer	5K (Wired in Parrallel)	VR3,9.....	925-015652-2
Potentiometer	500 Ohm Midrange Adj.	VR2,8.....	925-003306-4
Potentiometer	1M Tremolo Adj.	VR13.....	925-004349-4

Part	Description	Schematic Reference	Part Number
Resistor	WW 220 Ohm 2W.....	.....	924-010471-221
Resistor	WW1800 Ohm 5W.....	.....	924-008896-28
Resistor	WW 390 Ohm 5W.....	.....	924-008896-19
Resistor	WW .15 Ohm 2W.....	.....	924-015325-2
Socket	AC.....	.....	906-007235
Socket	Transistor.....	.....	906-010453
Speaker	12" 8 Ohms.....	.....	985-015646
Switch	D.P.D.T. (Red).....	.....	906-015685
Switch	S.P.D.T. (Green).....	.....	960-015684
Transistor	Input Preamps.....	Q2,15.....	991-013599
Transistor	Short Ckt Protectors, Rev & Trem Drvs	Q10,21,27,35	991-010462
Transistor	Tremolo Oscillator.....	Q20.....	991-013543
Transistor	Output	Q29,31,37,39	992-003139
Transistor	Driver PNP.....	Q30,38.....	991-015062
Transistor	Driver NPN.....	Q28,36.....	991-015063
Transistor	All Others.....	Q1,3-9,11-14, 16-19,22-26, 32-34	991-013544
Transformer	Power	T1.....	954-015636

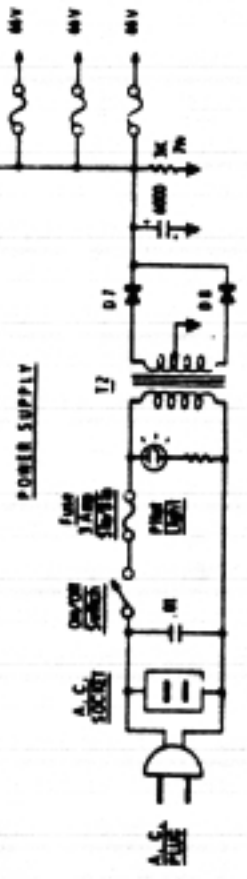
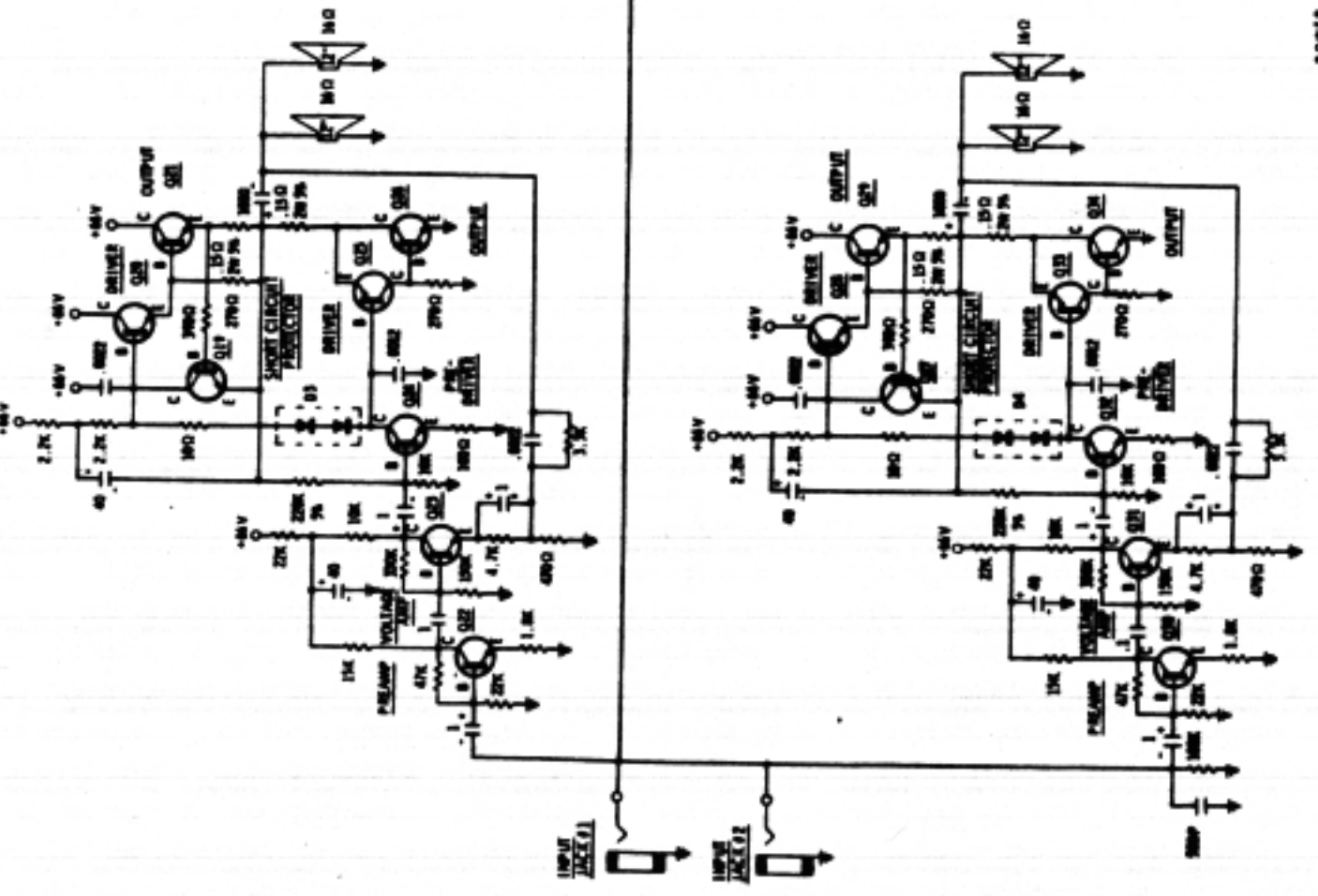
GIBSON AMPLIFIER
MODEL 800G / 800-8

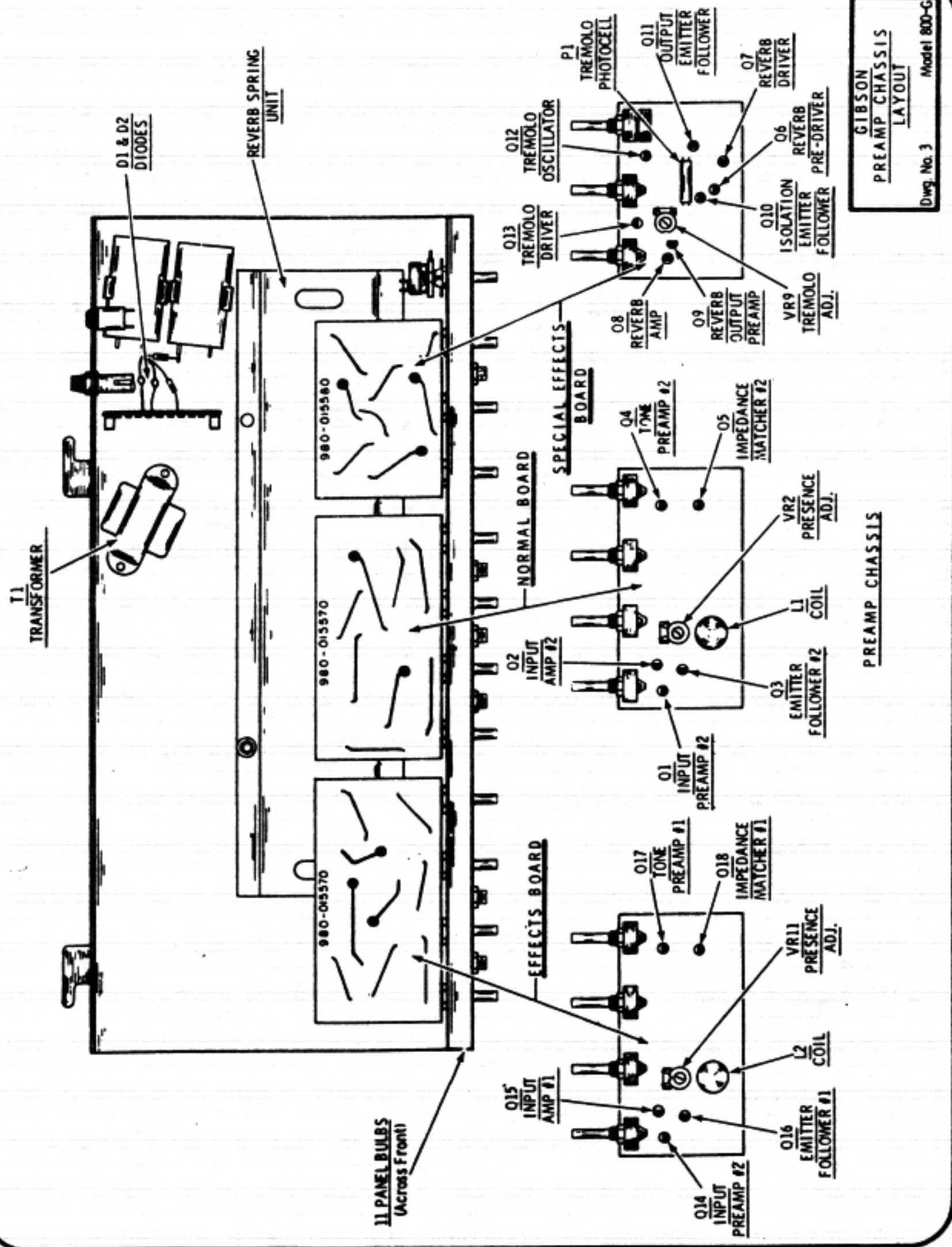


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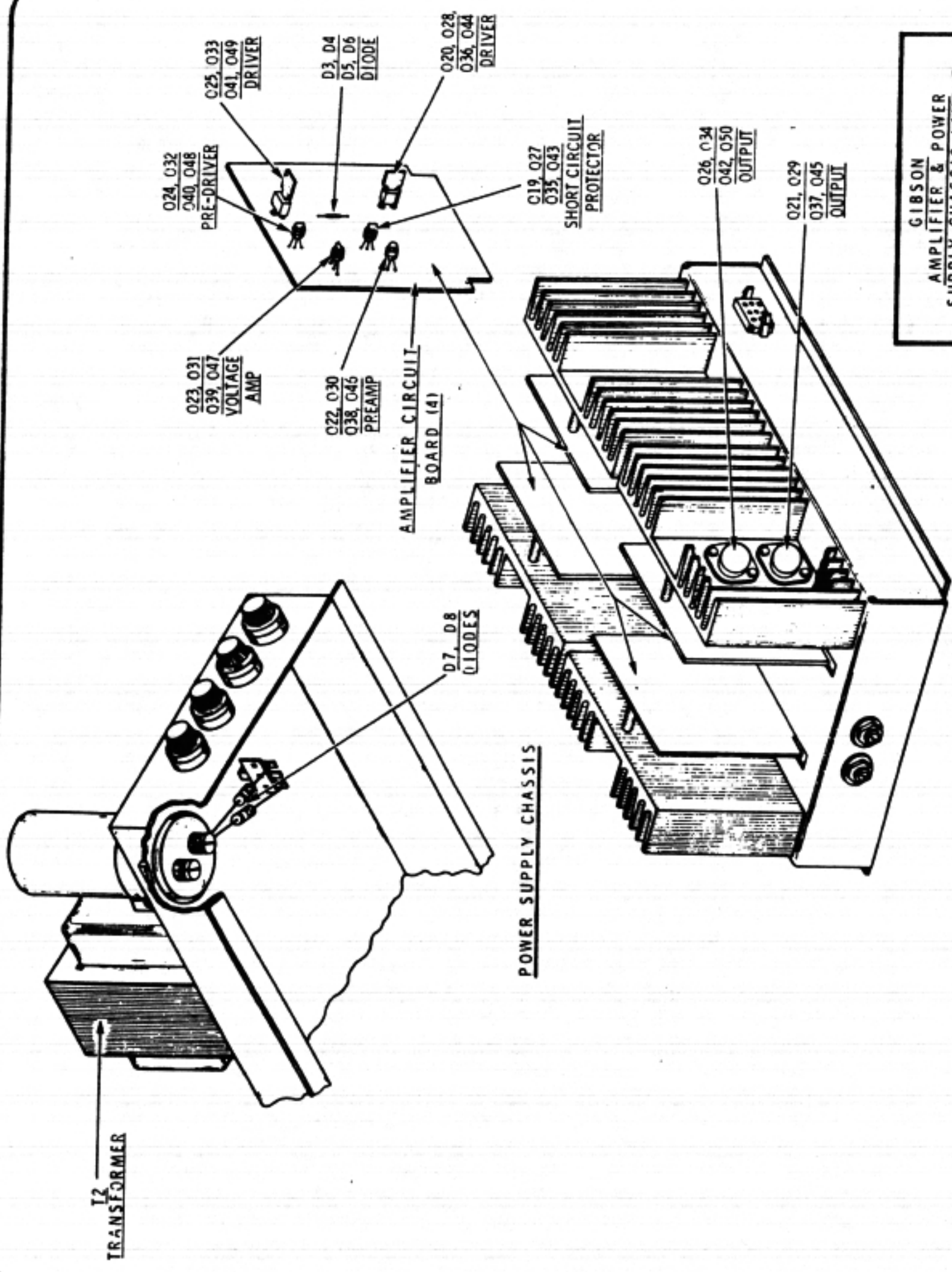
- NOTES**
1. All resistors 1/2 watt 5% unless otherwise specified.
 2. All capacitors are in microfarads unless otherwise specified.
 3. See parts list for component part numbers.
 4. All voltages measured to ground with a Simpson 200 VOM.
 5. * denotes factory installed component.





GIBSON
PREAMP CHASSIS
LAYOUT
Dwg. No. 3 Model 800-G

PREAMP CHASSIS



GIBSON
 AMPLIFIER & POWER
 SUPPLY CHASSIS LAYOUT
 Dwg. No. 4 Model 800-8

AMPLIFIER CHASSIS

PARTS INFORMATION

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ADDRESS PARTS ORDERS TO
C.M.I. SERVICE DEPT.
7301 North Cicero
Chicago, Illinois 60646

IMPORTANT

In any correspondence concerning this instrument

ALWAYS INCLUDE MODEL AND SERIAL NUMBERS.

PARTS LIST

Part	Description	Schematic Reference	Part Number
Assembly	Amplifier Board .....	.....	996-015814
Assembly	Effect: Preamp Board .....	.....	996-015824
Assembly	Footswitch Complete .....	.....	997-012447
Assembly	Normal Preamp Board .....	.....	996-015823
Assembly	Power Supply .....	.....	997-015805
Assembly	Reverb Spring Unit .....	.....	984-003365
Assembly	Special Effects Board .....	.....	996-015825
Capacitor	Electrolytic 1 UF 20V .....	.....	945-008895-11
Capacitor	Electrolytic 1 UF 25V .....	.....	945-008895-38
Capacitor	Electrolytic 2 UF 20V .....	.....	945-008895-32
Capacitor	Electrolytic 6 UF 20V .....	.....	945-008895-7
Capacitor	Electrolytic 40 UF 25V .....	.....	945-015086
Capacitor	Electrolytic 50 UF 20V .....	.....	945-008895-12
Capacitor	Electrolytic 3000 UF 40V .....	.....	945-010473
Capacitor	Electrolytic 6000 Mfd 75V .....	.....	945-015345
Capacitor	Tantalum 1 UF 35V .....	.....	946-013560-1
Capacitor	Tantalum .47 UF 35V .....	.....	946-012624-474
Coil	27 MH	L1,2.....	952-015363-1
Cord	Power (800-G) .....	.....	989-008717-3
Cord	Power - Detachable (800-8) .....	.....	989-013895
Diode	Rectifier	D1,2.....	919-010623
Diode	Dual	D3-6.....	919-010454
Diode	Rectifier	D7,8.....	919-010459
Fuse	2 Amp Slo/Blo .....	.....	939-013304
Fuse	3 Amp Slo/Blo .....	.....	939-013304-1
Holder	Fuse 2A Slo/Blo .....	.....	906-008121
Holder	Fuse 1.5A Slo/Blo .....	.....	906-006303
Insulator	Transistor .....	.....	908-002346
Jack	Input (800-G) .....	.....	910-013556-1
Jack	Phone (112B)Output .....	.....	910-013556-2
Jack	Phone (114B)Input .....	.....	910-013556-3
Jack	Phone (Amp Input #1 & #2) (800-8).....	.....	910-010878
Knob	.....	.....	915-013575-1
Light	Pilot .....	.....	939-015344
Light	Panel .....	.....	939-013564
Panel	Front, Clear Plastic .....	.....	922-015346
Photocell	Tremolo	P1.....	948-001859
Plug	Footswitch Stereo Phone .....	.....	910-012679
Potentiomer	500 Ohm Presence Adj.	VR2,11.....	925-003306-4
Potentiometer	10K Presence Control	VR3,12.....	925-010435-15
Potentiometer	30K Tremolo Depth Control	VR8.....	925-010435-18
Potentiometer	50K Tremolo Speed Control	VR7.....	925-010435-19
Potentiometer	125K Treble Control	VR5,14.....	925-010435-17
Potentiometer	500K Bass Control	VR4,13.....	925-010435-16
Potentiometer	1M Tremolo Adj.	VR9.....	925-003306-5
Potentiometer	1M Volume, Reverb Control	VR1,6,10.....	925-010435-14
Resistor	WW 3000 Ohm 7W .....	.....	924-008896

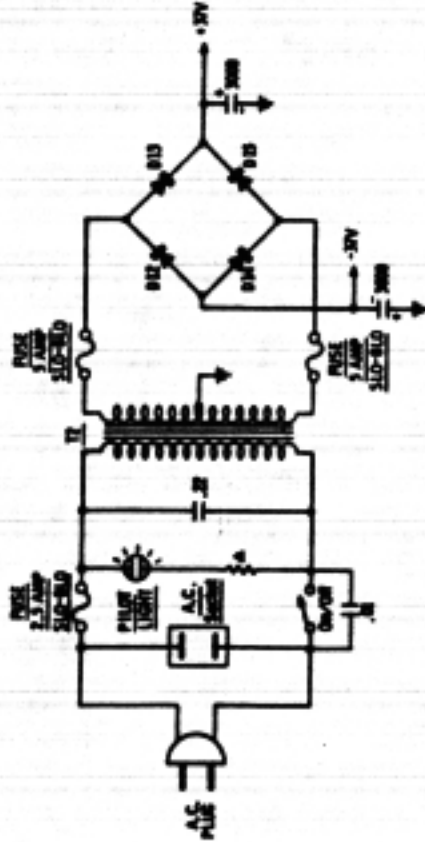
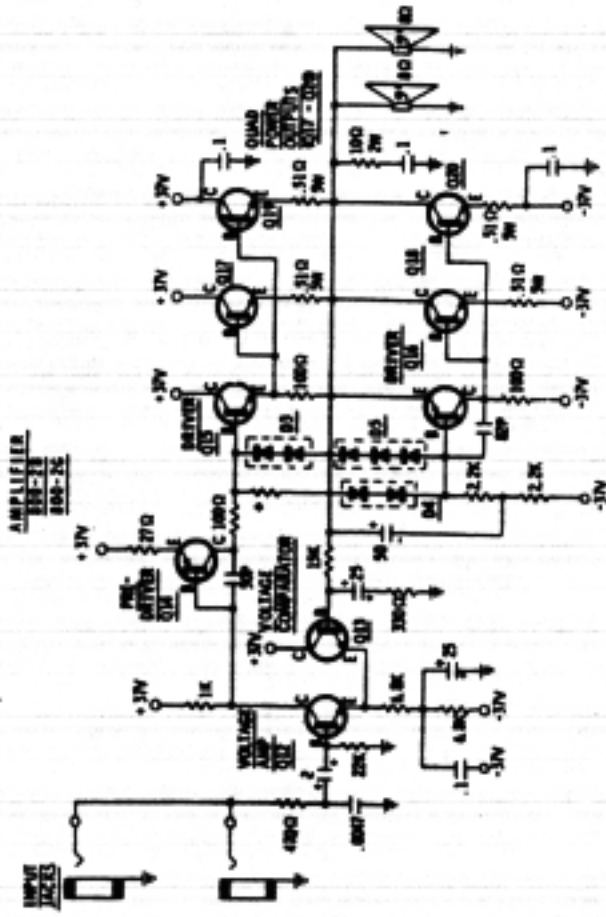
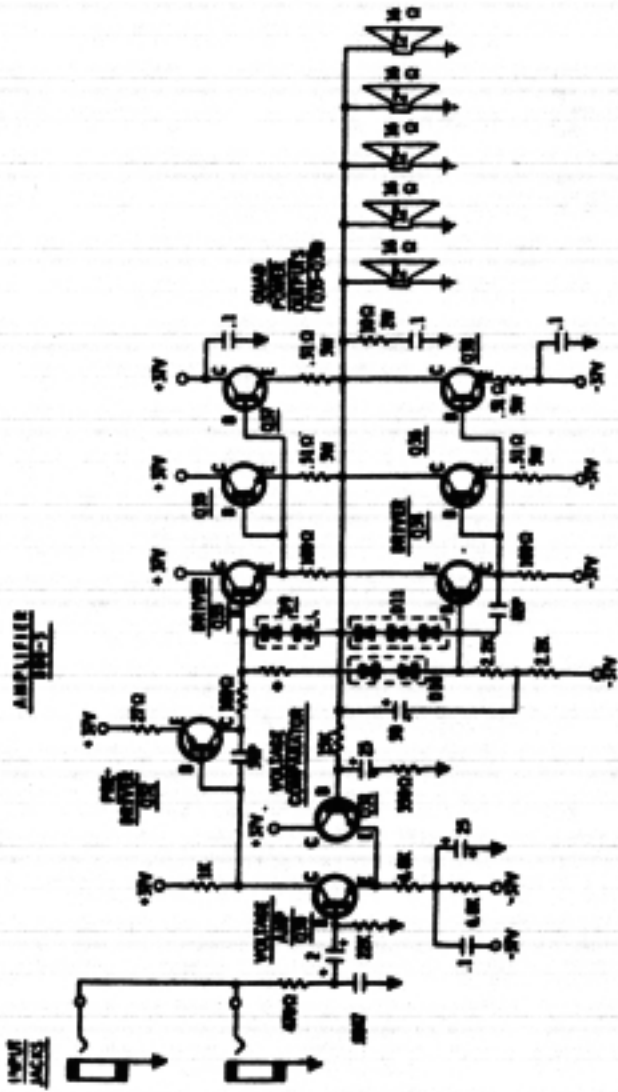
Socket	Transistor	906-010453
Socket	A. C.	906-007235
Speaker	12"	985-015314
Switch	On/Off (800-G)	960-010636-2
Switch	Footswitch S.P.D.T.	960-012474
Switch	Footswitch S.P.S.T.	960-003575
Switch	On/Off (800-8)	960-015357
Transistor	Output	Q21,26,29,34,37, 42,45,50.....
Transistor	Short Circuit Protector,Trem. Driver	Q13,19,27,35,43.
Transistor	Reverb Output Preamp	Q9.....
Transistor	Input Amp #1 & #2, Tone Preamp #1 & #2, Tremolo Oscillator (800-G)	Q2,4,12,15,17... 991-013543
Transistor	Driver PNP (800-8)	Q25,33,41,49.... 991-015062
Transistor	Driver NPN (800-8)	Q20,28,36,44.... 991-015063
Transistor	All Others	Q1,3,5-11,14,16, 18,22-24,30-32, 38-40,46-48..... 991-013544
Transformer	Power (800-G)	T1..... 954-015362
Transformer	Power (800-8)	T2..... 954-015347

GIBSON AMPLIFIER
MODEL 800-B, 2B, 2G & 5

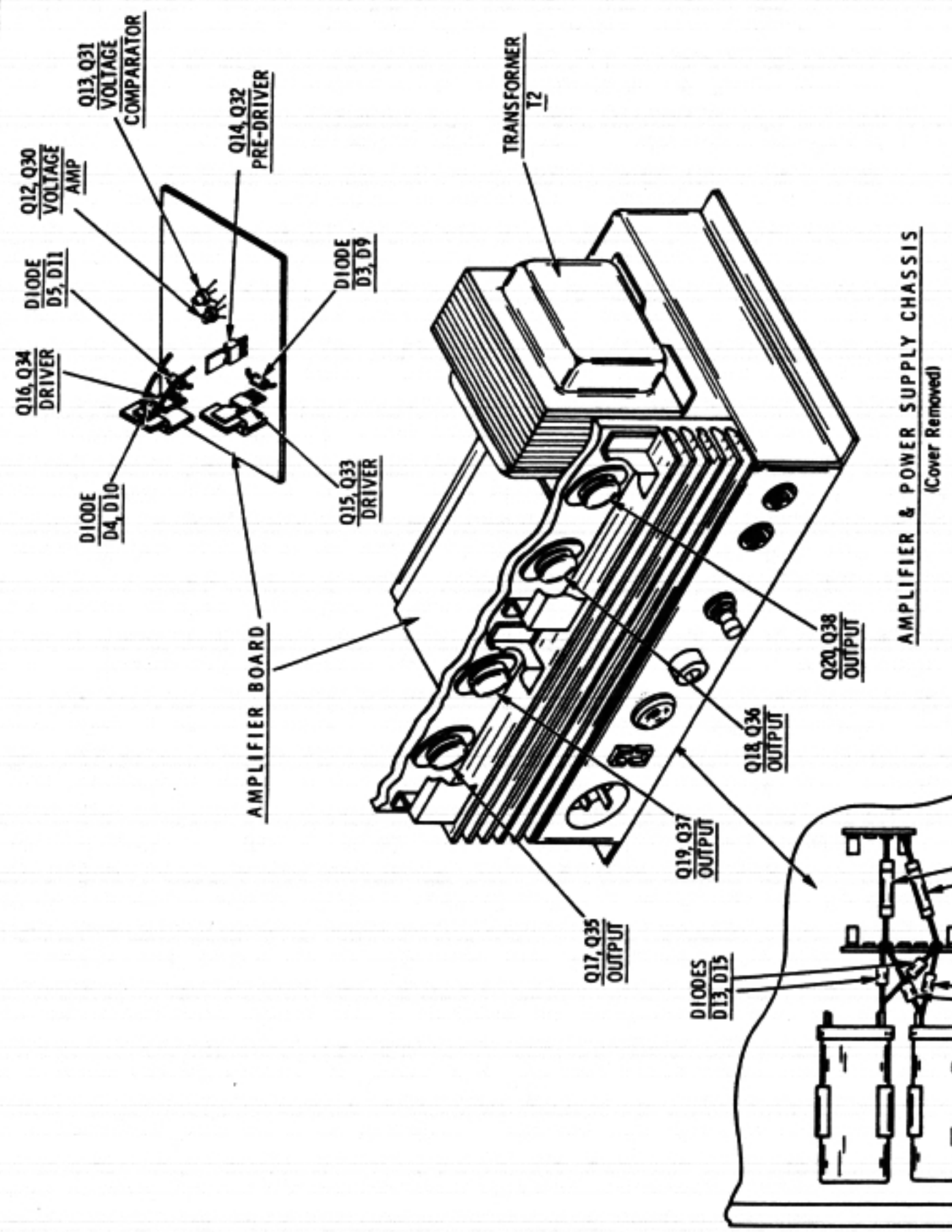
SERVICÉ
SCHEMATICCS

993-017158

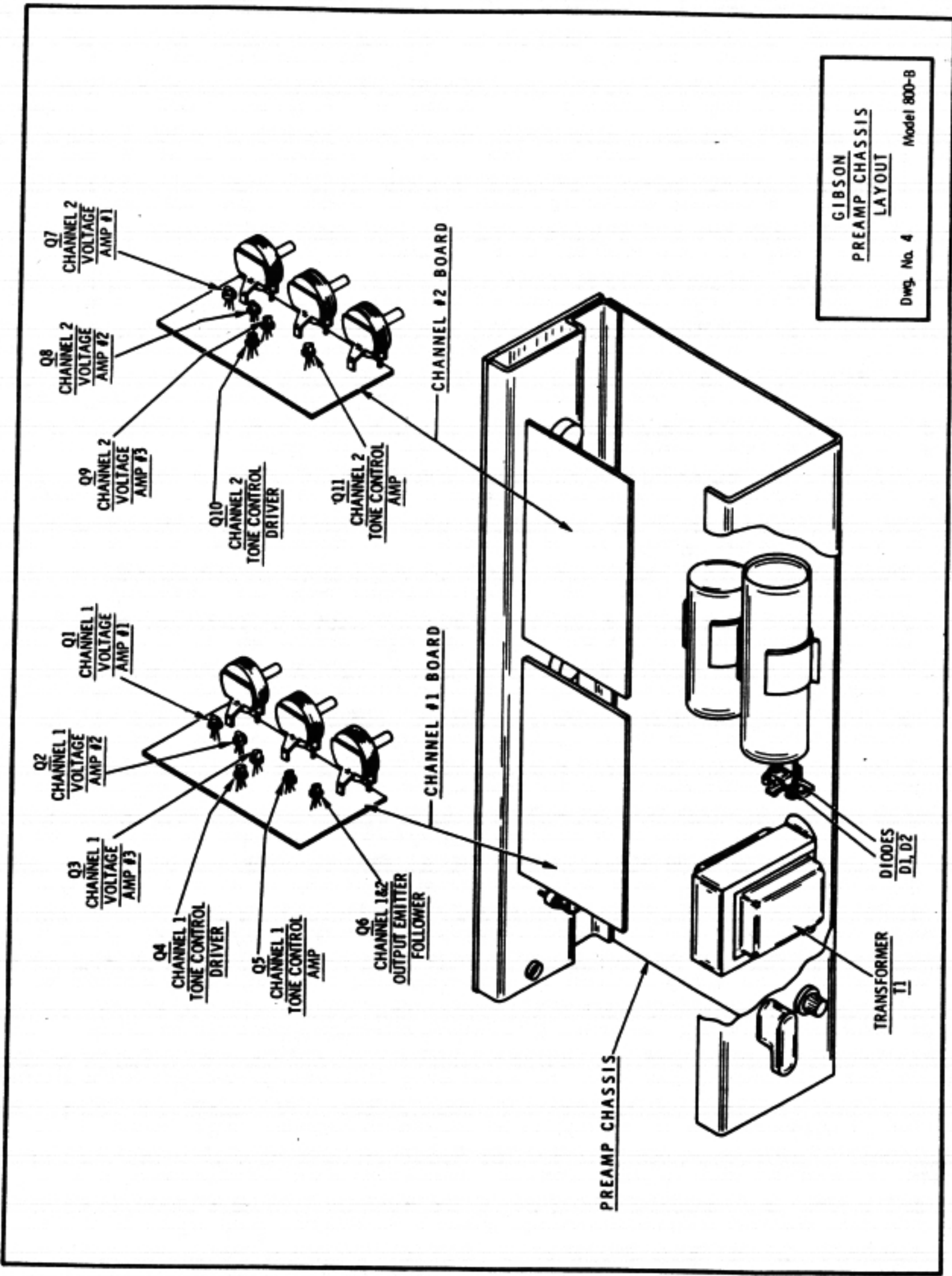
- NOTES**
1. All resistors are 1/2 watt 5% unless otherwise specified.
 2. All capacitors are in microfarads unless otherwise specified.
 3. All voltages measured to ground with a Simpson 200 VOM.
 4. See Parts List for component part numbers.
 5. Z100 when driver transistors with black color code are used.
 6. Z100 when driver transistors with white color code are used.
 7. A. Inverness factory fabricated component.



GIBSON
AMPLIFIER
Comp. No. 7 Model 200



GIBSON
PREAMP CHASSIS
LAYOUT
Dwg. No. 4 Model 800-B



PARTS INFORMATION

STANDARD PARTS

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SPECIAL PARTS

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PARTS ORDERING INFORMATION

When ordering parts be sure to include the following information:

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2. Part Number
3. A description of the part
4. Specify how you want the part shipped.

Most special electronic parts and mechanical parts will have a part number stamped on them. In the

event that the part number is missing, or you are unable to read the part number, a complete description of the part and where it is used will allow the factory to fill your parts order. When parts are ordered in the proper manner the factory is able to fill your orders promptly—delays that might result are avoided.

ADDRESS PARTS ORDERS TO:

C.M.I. SERVICE DEPT.
7373 No. Cicero Ave.
Chicago, Illinois 60646

IMPORTANT

IN ANY CORRESPONDENCE CONCERNING
THIS INSTRUMENT ALWAYS INCLUDE
MODEL AND SERIAL NUMBERS

PARTS LIST

THE PARTS LIST CONTAINS THE FOLLOWING INFORMATION:

1. Name of Part
2. Value, Tolerance and Code (when important)
3. Brief description
4. Where the part is found (assembly, printed circuit board and etc.)
5. Schematic Reference Number
6. PART NUMBER — USE IT!

This parts list includes all standard stock replacement parts. No attempt has been made to include every nut, bolt and screw. If the necessity for a non-listed part arises, please write describing the part's location and function as well as model and serial number of the unit.

PARTS LIST

Part	Description	Schematic Reference	Part Number
Assembly	Amplifier Board.....		996-016129
Assembly	Channel #1 Board.....		996-016143
Assembly	Channel #2 Board.....		996-016142
Assembly	Power Supply.....		997-016123
Assembly	Preamp Chassis.....		997-016138
Bumper	Rubber(Adhesive Back).....		916-015372
Bumper	Rubber(Screw On).....		916-009802-3
Capacitor	Electrolytic 1 UF 20V.....		945-008895-11
Capacitor	Electrolytic 2 UF 20V NP.....		945-008895-32
Capacitor	Electrolytic 5 UF 20V.....		945-008895-25
Capacitor	Electrolytic 20 UF 25V.....		945-015384
Capacitor	Electrolytic 25 UF 25V NP.....		945-008895-60
Capacitor	Electrolytic 50 UF 20V.....		945-008895-12
Capacitor	Electrolytic 50 UF 50V.....		945-008895-59
Capacitor	Electrolytic 1500 UF 75V & 60V.....		945-003139
Capacitor	Electrolytic 3000 UF 50V Can Neg.....		945-015576
Cord	Power-Detachable(800-2B,2G,&5).....		989-013895
Cord	Power(800-B).....		989-008717-6
Cover	Protective(800-B).....		932-015966
Diode	Rectifier.....	D1,2.....	919-010623
Diode	Dual.....	D3,4,9,10.....	919-010454
Diode	Triple.....	D5,11.....	919-010454-1
Diode	Rectifier.....	D12,13,14,15.....	919-010459
Holder	Fuse(800-B).....		906-008121
Holder	Fuse(800-2B,2G,&5).....		906-013301
Insulator	Power Transistors(800-2B,2G,&5).....		908-002346
Jack	Phone In/Out Signal(800-2B,2G,&5).....		910-010878
Jack	Phone Audio Output(800-B).....		910-013556-1
Jack	Phone Input Jacks(800-B).....		910-013556-3
Knob	Control(800-B).....		915-016216-1
Light	Panel(800-B).....		939-013564
Light	Pilot(800-2B,2G,&5).....		939-015953
Panel	Front Clear Plastic.....		922-016262
Plug	Male A.C. In(800-2B,2G,&5).....		906-015343
Potentiometer	10K Volume, Bass,& Treble Controls.....	VR1-6.....	925-010435-21
Receptacle	Pre-Amp A.C.(800-2B,2G,&5).....		906-007235
Resistor	WW 10 Ohm 2W.....		924-010471-100
Resistor	WW .51 Ohm 5W.....		924-008896
Socket	Power Transistors(800-2B,2G,&5).....		906-010453
Speaker	12"(800-5).....		985-015314
Speaker	15"(800-2B).....		985-015958
Speaker	15"(800-2G).....		985-015983
Switch	On/Off Polarity(800-B).....		960-010636-2
Switch	Push-Push(800-2B,2G,&5).....		960-003574
Transformer	Power(800-2B,2G,&5).....	T1.....	954-004356
Transformer	Power(800-B).....	T2.....	954-015967
Transistor	Voltage Amp #2 PNP.....	Q2,8.....	991-013599
Transistor	Pre-Driver PNP.....	Q14,32.....	991-015062
Transistor	Driver with Heatsink.....	Q16,34.....	995-016130
Transistor	Driver with Heatsink.....	Q15,33.....	995-016131
Transistor	Power Output.....	Q17-20,35-38.....	992-003139
Transistor	All Others.....	Q1,3-7,9-13,30, 31	991-013544

185-195 Amplifiers

No Tone Control: Cathode of 3rd 6J7 grounded.

Cuts Out: Speaker wires loose at Speaker Plug.

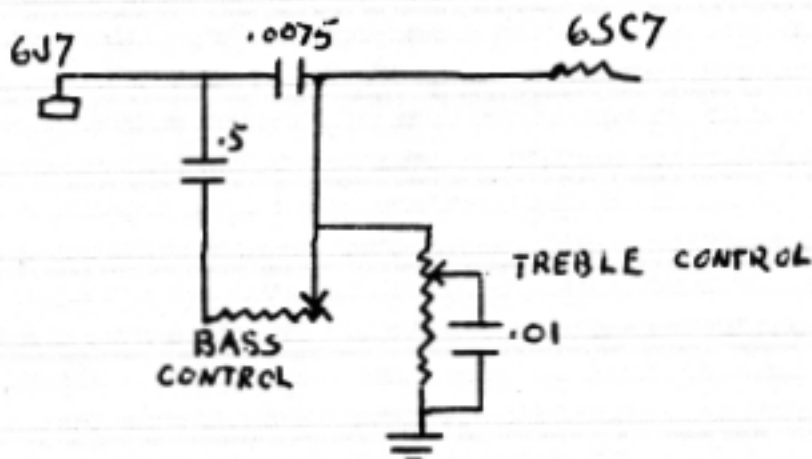
Power Transformer Loose: The bolt in one corner not holding Transformer.

Dead: Grid caps shorting out grid leads. Pull spaghetti tubing up over exposed metal of Grid clip.

Hum: 195- Excessive hum can be eliminated if first filter lead is run down center of chassis instead of along sockets at rear of chassis.

Hum: 185- Hum in earlier models can be substantially reduced by re-routing grid lead of 1st 6J7 under chassis and up to grid near socket, also connect #14 bus bar from mike jack to instrument volume control to rack at 6J7 end of chassis, also keep filter condenser leads away from coupling condensers of 1st 6J7-if necessary shield this condenser.

195- Serial#16023: Tone control circuit was changed to eliminate hum pickup of tone control choke.



185- Play before warming up, much of it would die out quietly-Tube shorting internally.

185- Hum can be reduced by twisting together wires leading from voice control, and tying shielded leads away.

EH 125 SERVICE HINTS

Motorboating: On the models where the microphone control is wide open, it can be eliminated by using .25 or .5 mfd. bypass condenser in the plate decoupling circuit, in place of the .05 or .1mfd. now used.

Noisy: Loose connections prevalent in early runs of this model. Look for them everywhere. Also check output transformer for low volume, distortion, noise, and over heated 6V6,s.

Noisy Mike Stage: 2 Meg. input load resistor not soldered to grounding lug of mike jack.

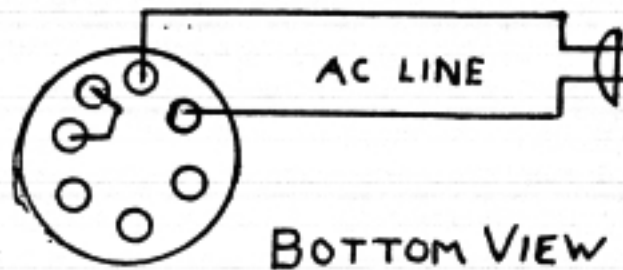
No Bass: Cone glued to pole piece. Replace speaker cone..

6V6,S won't light: Filament lead from transformer is not soldered to filament lug of 6V6 socket.

Low Volume: Check output transformer primary, half found shorted. May be remedied by pushing, pulling, or twisting leads where they enter transformer.

Dead: Excess of solder shorting out power supply at plate terminal strip of first two stages.

Smokes: On 220/110 volt Amplifiers, if power transformer leads are not connected in correct phase, the transformer will heat up.



Distortion: Check 1 Meg. resistor on plate of 6SJ7. This resistor has been found to cause low volume and distortion on many Amps.

**SABRE AMPLIFIER
VOLTAGE CHART**

A Supplement to Sabre Amplifier Schematics

TRANSISTOR VOLTAGE CHART		
Q No.	Collector	Base Emitter
1	+ 7.5V.	β + 5.5V.
2	+ 2V.	+ .5V. β
3	+ 12V.	+ .7V. + .75V.
4	+ 7.5V.	+ .5V. β
5	+ 5.5V.	+ .5V. + .5V.
6	+ 6.5V.	+ .5V. β
7	+ 12V.	+ 2V. + 3V.
8	+ 12V.	+ 1.5V. + 7V.
9	+ β	+ 12.5V. + 12.5V.
10	+ 55V.	+ 25.5V. + 25V.
11	+ 25V.	+ 5V. + 3V.
12	+ 13.5V.	+ 12V. + 12V.

POWER SUPPLY B + VOLTAGES

- A = 55V.
- B & C = 50V.
- D = 22V.

IMPORTANT

The above voltage readings were measured to ground with a Simpson Model 260 V. O. M. Voltage readings shown are intended only as a guide in troubleshooting. Voltages will vary from unit to unit due to normal manufacturing tolerances.

CAUTION

Exercise extreme care when making voltage measurements. Accidental shorting of transistor leads may damage the transistor.

PARTS LIST

<u>Part</u>	<u>Description</u>	<u>Schematic Reference</u>	<u>Part Number</u>
Assembly	Fuse Post.....	.....	P-6303
Assembly	Reverb.....	.....	.....
Capacitor	1000mfd, 40V (output).....	C27.....	P-8895-1
Capacitor	15mfd, 20V.....	C12.....	P-8895-10
Capacitor	500mfd, 25V.....	C21.....	P-8895-19
Capacitor	5mfd, 20V.....	C4.....	P-8895-25
Capacitor	6mfd, 6V NP.....	C3.....	P-8895-27
Capacitor	200mfd, 15V.....	C17.....	P-8895-28
Capacitor	1500-1500mfd, 76V-65V.....	C20.....	P-3193
Control	25ohm, 2W 20%.....	R53, R55.....	P-8863-1
Control	250K, Audio.....	R27, R34.....	CBA-811-3701
Control	50K, Audio.....	R1, R2.....	CBA-811-3703
Control	500K Audio.....	R26.....	CBA-811-3707
Cord	Line.....	.....	P-8717
Diffraction Horn	.....	.....	P-1978
Driver Unit	.....	.....	P-2938
Fuse	2 amp Regular.....	.....	.....
Jack	.....	.....	J-11
Jack	.....	.....	J-12B
Jack	.....	.....	J-13B
Knob	.....	.....	K-900
Resistor	Plastic Wall, Small.....	.....	P-6811
Resistor	35ohm, 5W 10%.....	R38.....	P-6811-10
Resistor	1K, 5W 10%.....	R39.....	P-6811-50
Resistor	340ohm, 10W 10%.....	R48.....	P-6811-56
Resistor	800-800ohm, 5W 10%.....	R54A, B.....	P-8896
Resistor	51ohm, 5W 10%.....	R56, R57.....	P-3145
Speaker	15".....	.....	P-3131
Transformer	Power.....	.....	P-2254
Transformer	Driver.....	.....	P-8882
Transformer	Insulator.....	.....	P-2298
Transistor	Low Noise.....	Q8.....	P-8871
Transistor	Socket.....	.....	P-3139
Transistor	Output.....	Q10, 11.....	P-8871
Transistor	Socket.....	.....	P-8890
Transistor	Voltage Driver.....	.....	P-3144
Transistor	With Heat Sink.....	.....	.....

DUO MEDALIST PARTS LIST

Part	Description	Schematic Reference	Part Number
CONSOLE ASSEMBLY			
Assembly	Reverb & Tremolo Footswitch.....	.....	977-012789
Reverberation Unit	.....	.....	984-012419
Speaker	12" 8 Ohm.....	.....	965-012431
Switch	S.P.S.T. Foot.....	.....	960-003574
Switch	S.P.D.T. Foot.....	.....	960-010068
CONTROL PANEL ASSEMBLY			
Assembly	Pilot Light.....	.....	939-011452
Jack	Phone.....	.....	910-012404
Knob	Control.....	.....	915-012408
Knob	On-Off Polarity.....	.....	915-012451
Potentiometer	250K Special Linear Taper.....	.....	925-012424
Potentiometer	2 Meg Audio Taper.....	VR2, 6	925-012425
Potentiometer	2 Meg Reverse Audio Taper.....	VR1, 5	925-012426
Potentiometer	250K Audio Taper.....	VR8	925-012427
Potentiometer	250K Audio Taper.....	VR3, 7, 10	925-012428
Potentiometer	1.5 Meg Reverse Audio Taper.....	VR9	925-012429
Reverb Switch	Complete Unit.....	.....	984-012419
Switch	3 Position Polarity.....	.....	960-012430
PRE-AMPLIFIER ASSEMBLY			
Assembly	Photocell.....	P1	948-012418
Capacitor	Electrolytic 1 UF 6V.....	.....	948-011469-5
Capacitor	Electrolytic 40-20-20 UF @ 350V.....	.....	945-012440
Potentiometer	500Ω.....	VR11	925-012423
Resistor	10K 7W W.W.....	.....	924-012434-4
Transformer	Reverb.....	T3	955-003555
Tube	12AU7A.....	V3, 5	990-001291-25
Tube	6EU7.....	V1, 2, 4	990-003522
POWER AMPLIFIER ASSEMBLY			
Assembly	Power Amplifier Chassis.....	.....	997-012441
Capacitor	Electrolytic 20-20 UF @ 500V.....	.....	945-012437
Capacitor	Electrolytic 25 UF 12V.....	.....	945-011469-8
Capacitor	Electrolytic 100 UF 50V.....	.....	945-011469-9
Cord	A. C. Line.....	.....	989-012435
Diode	Silicon.....	D3	919-010629
Diode	Silicon 1200V Piv.....	DI, 2	919-012414
Fuse	2 Amp. Slo-Blo.....	.....	939-013304
Holder	Fuse.....	.....	906-006303
Jack	2T.....	.....	910-010878
Potentiometer	100 Ohm 2W.....	VR4	925-012422
Resistor	1K 7W W.W.....	.....	924-012434-1
Resistor	3K 7W W.W.....	.....	924-012434-2
Resistor	14K 15W W.W.....	.....	924-012434-3
Socket	Phone.....	.....	906-003312
Transformer	Power.....	T1	954-003690
Transformer	Output.....	T2	955-011408
Tube	7591.....	V7, 8	990-003521
Tube	12AX7.....	V6	990-003570

985-011463

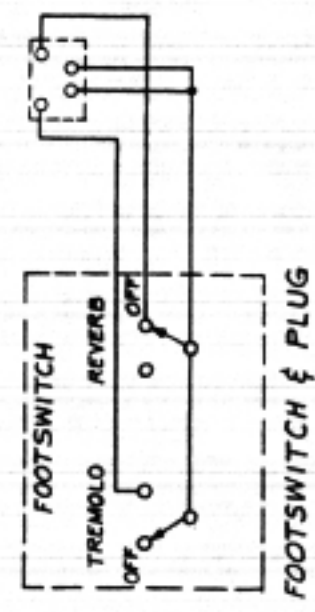
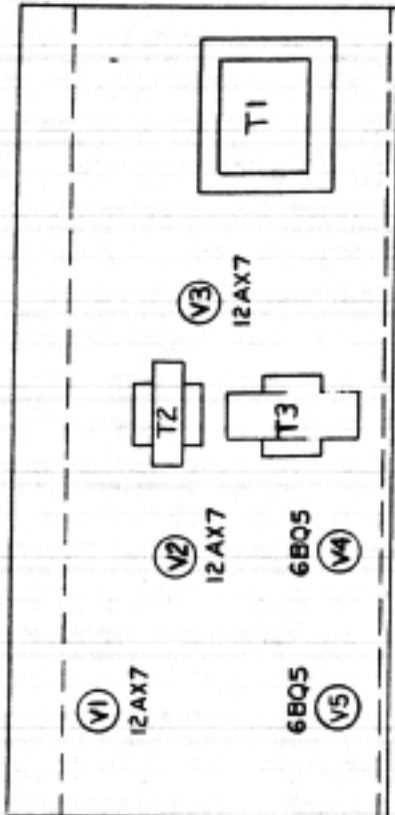
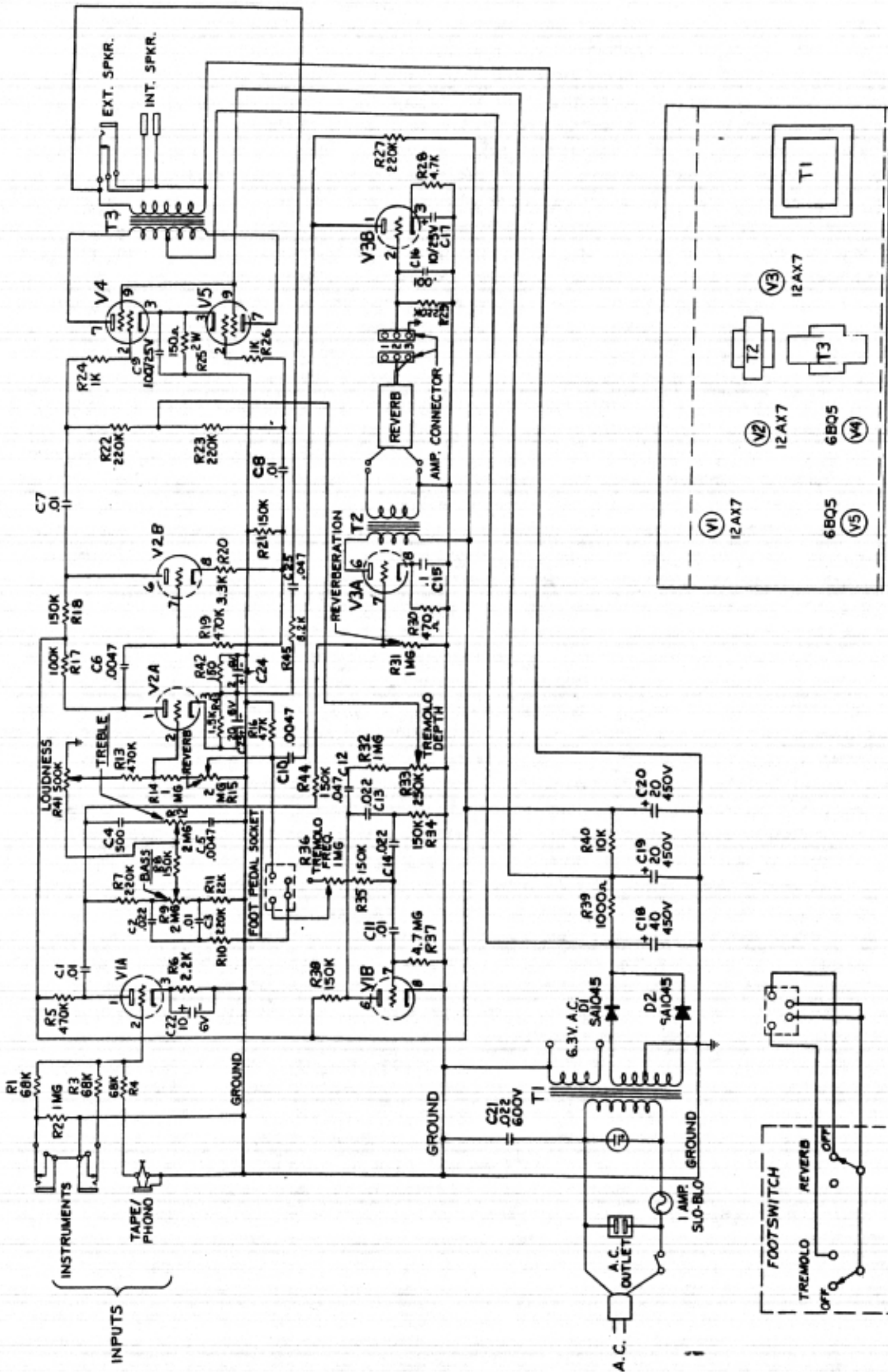
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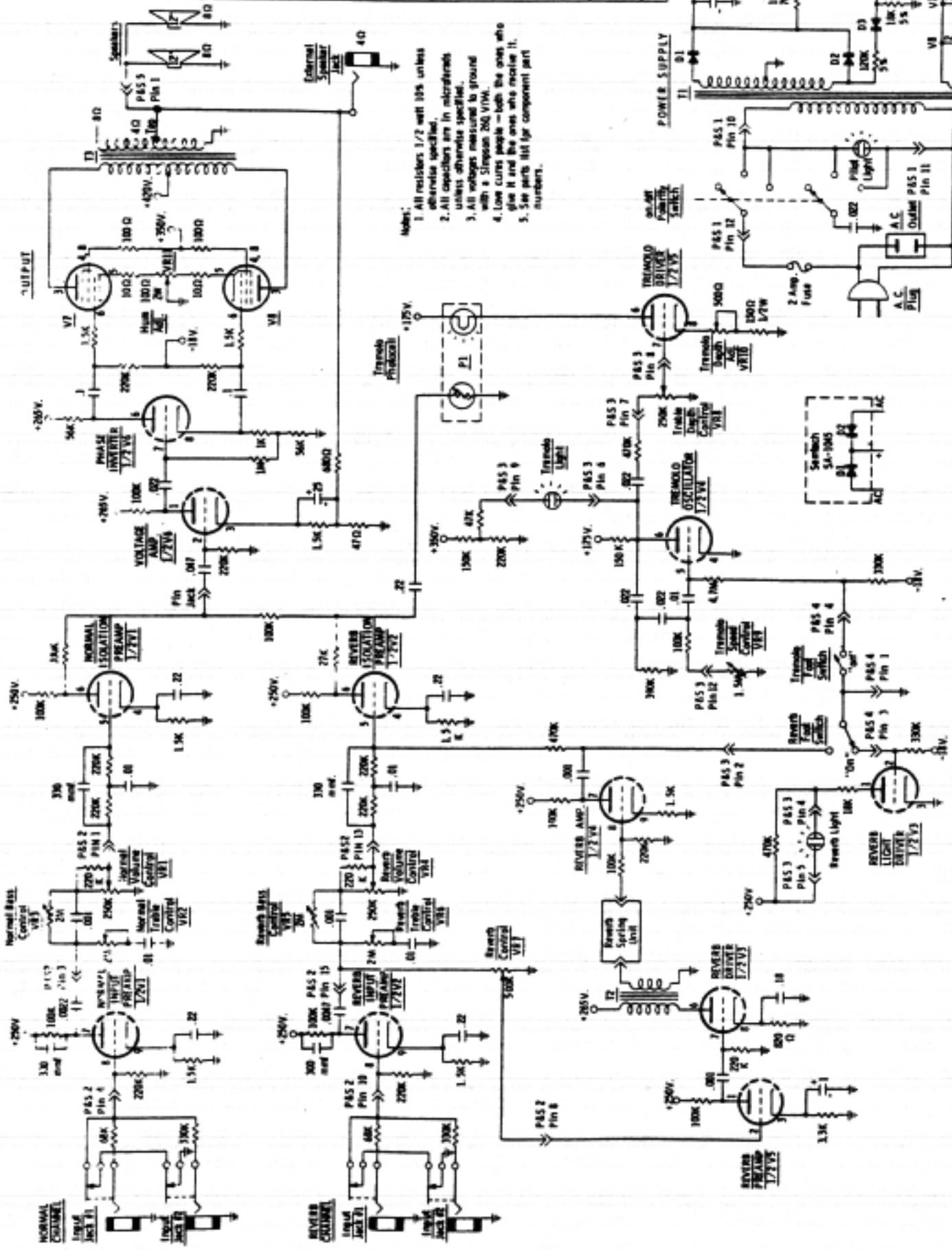
**DUO MEDALIST
AMPLIFIER**



REVERB 12 AMPLIFIER

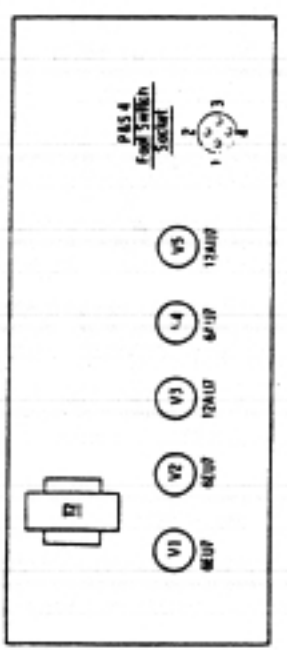
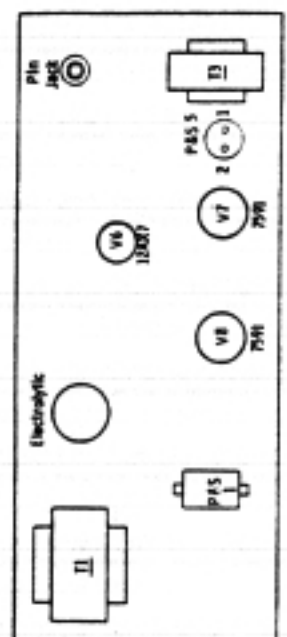


FLUID & SOCKET CONNECTIONS		
PAS No.	Pin No.	Information
1	1	+250V
	2	+250V
	3	8.33VAC
	4	8.33VAC
	5	-18V
	6	8.33VAC
	7	Ground
	8	Not Used
	9	Not Used
	10	117 VAC From on/off Switch
	11	117 VAC From Pilot Light
	12	117 VAC From on/off Switch
2	1	Audio
	2	Audio
	3	Audio
	4	Audio
	5	Audio
	6	Audio
	7	Audio
	8	Not Used
	9	Not Used
	10	Audio
	11	Not Used
	12	Not Used
3	1	From Reverb Light
	2	+250V
	3	+120V
	4	A.C.
	5	A.C.
	6	A.C.
	7	-120V
	8	Ground
	9	Ground
	10	Ground
	11	Ground
	12	Ground
4	1	Reverb Arm, Double
	2	Audio
	3	Reverb Light Driver
	4	-10V
	5	Audio
	6	Audio
	7	Audio
	8	Audio
	9	Audio
	10	Audio
	11	Audio
	12	Audio
5	1	Ground
	2	Ground
	3	Ground
	4	Ground
	5	Ground
	6	Ground
	7	Ground
	8	Ground
	9	Ground
	10	Ground
	11	Ground
	12	Ground



- Notes:
1. All resistors 1/2 watt 10% unless otherwise specified.
 2. All capacitors are in microfarads unless otherwise specified.
 3. All voltages measured to ground with a Simpson 265 VOM.
 4. Low current paths—both the ones who give it and the ones who receive it.
 5. See parts list for component part numbers.

VOLTAGE CHART	
Pin	Voltage
V1	Header
V2	Header
V3	Header
V4	Header
V5	Header
V6	Header
V7	Header
V8	Header
V9	Header
V10	Header
V11	Header
V12	Header
V13	Header
V14	Header
V15	Header
V16	Header
V17	Header
V18	Header
V19	Header
V20	Header
V21	Header
V22	Header
V23	Header
V24	Header
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V26	Header
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V28	Header
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V96	Header
V97	Header
V98	Header
V99	Header
V100	Header

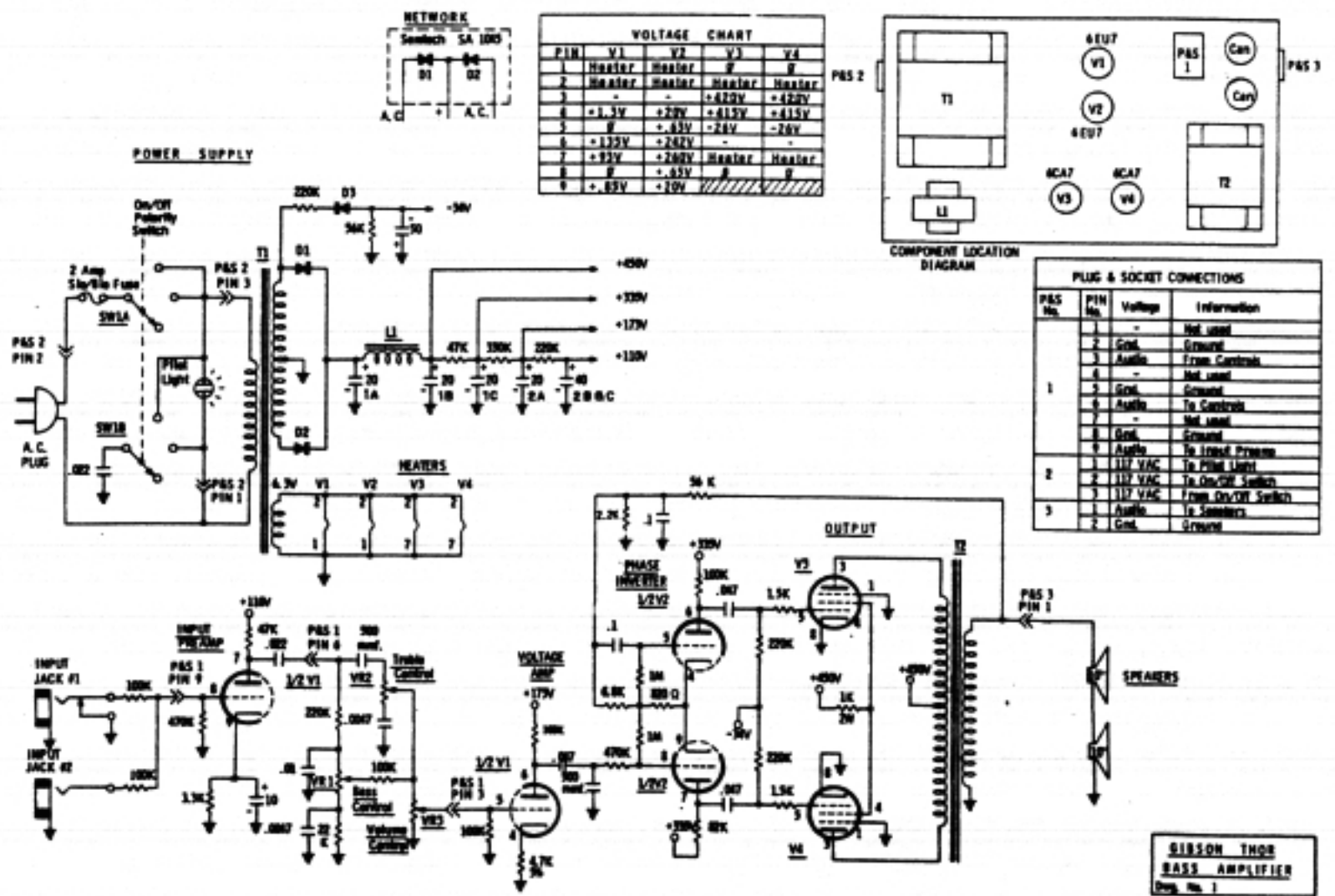


GIBSON
SUPER REALIST
Eng. No 1

PARTS LIST

SUPER MEDALIST

PART	DESCRIPTION	SCHEMATIC REFERENCE	PART NUMBER
CONSOLE ASSEMBLY			
Assembly	Reverb/Tremolo Footswitch.....	.....	997-012789
Reverb	Unit Complete.....	.....	984-012419
Speaker	12" 8 Ohm.....	.....	985-012431
Switch	S.P.S.T. Foot.....	.....	960-003574
Switch	S.P.D.T. Foot.....	.....	960-010698
CONTROL PANEL ASSEMBLY			
Assembly	Pilot Light.....	.....	939-011452
Jack	Phone.....	.....	910-012404
Knob	Control.....	.....	915-012408
Knob	Off/On Polarity.....	.....	915-012451
Potentiometer	250K Norm. & Reverb Vol. & Trem. Depth Cont.	VR1,4,8.....	925-012428
Potentiometer	2M Norm. & Reverb Bass Controls.....	VR3,5.....	925-012426
Potentiometer	2M Norm. & Reverb Treble Controls.....	VR2,6.....	925-012425
Potentiometer	500K Reverb Control.....	VR7.....	925-012427
Potentiometer	1.5M Tremolo Speed Control.....	VR9.....	925-012429
Reverb	Complete Unit.....	.....	984-012419
Switch	3 Position Polarity.....	.....	960-012430
PREAMP CHASSIS			
Assembly	Photocell.....	P1.....	948-012416
Capacitor	Electrolytic 1 UF 6V.....	.....	945-011468-001
Capacitor	Electrolytic 40-20-20 UF 350V.....	.....	945-012440
Potentiometer	500 Ohm Tremolo Depth Adj.....	VR10.....	925-012423
Resistor	10K 7W W.W.....	.....	924-012434-4
Transformer	Driver.....	T2.....	955-003555
Tube	12AU7A.....	V3,5.....	990-012407
Tube	6EU7.....	V1,2,4.....	990-003522
POWER AMPLIFIER ASSEMBLY			
Capacitor	Electrolytic 25 UF 12V.....	.....	945-011468-6
Capacitor	Electrolytic 100 UF 50V.....	.....	945-011468-7
Capacitor	Electrolytic 20-20 UF 500V.....	.....	945-012437
Cord	Line.....	.....	989-012435
Diode	Keying.....	D3.....	919-010829
Fuse	Slo-Blo 2 Amp.....	.....	939-013304
Holder	Fuse.....	.....	906-006303
Jack	Phone.....	.....	910-010878
Jack	Phono.....	.....	910-012407
Potentiometer	Hum Adj. 100 Ohms 2W.....	VR11.....	925-012422
Resistor	1K 7W W.W.....	.....	924-012434-1
Resistor	3K 7W W.W.....	.....	924-012434-2
Resistor	14K 15W W.W.....	.....	924-012434-3
Transformer	Output.....	T3.....	955-011408
Transformer	Power.....	T1.....	954-003690
Tube	12AX7A.....	V6.....	990-003570
Tube	7591.....	V7,8.....	990-003521



PARTS LIST

Part	Description	Schematic Reference	Part Number
Transformer	Power.....	T-1.....	954-003622
Transformer	Output.....	T-2.....	955-003623
Choke	.....	L-1.....	956-003624
Diode	Dual Rectifier.....	D1-D2.....	919-012414
Diode	Rectifier.....	D3.....	919-003517
Switch	Polarity.....	SW-1A&B...	960-012430
Speakers	10".....	.....	985-003631
Potentiometer	Volume Control 1 Meg-L.....	.....	925-003525
Potentiometer	Bass Control 2 Meg-L.....	.....	925-003529
Potentiometer	Treble Control 2 Meg-A.....	.....	925-003559
Capacitor	Filter, 50 Mfd 50V.....	.....	945-003627
Capacitor	Filter, 20-20-20-475V.....	C1 AB&C...	945-003626
Capacitor	Filter, 20-20-20-475V.....	C2 AB&C...	945-003626

PARTS LIST

DESCRIPTIONPART NUMBERCAPACITORS - BLACK BEAUTY

.001 Mfd. 400V.....	CD-IT-001-400-10
.001 Mfd. 600V.....	CD-IT-001-600-10
.0022 Mfd. 200V.....	CD-IT-0022-200-10
.0022 Mfd. 400V.....	CD-IT-0022-400-10
.0047 Mfd. 200V.....	CD-IT-0047-200-10
.0047 Mfd. 400V.....	CD-IT-0047-400-10
.01 Mfd. 200V.....	CD-IT-01-200-10
.01 Mfd. 400V.....	CD-IT-01-400-10
.01 Mfd. 500V.....	CD-IT-01-500-10
.01 Mfd. 600V.....	CD-IT-01-600-10
.015 Mfd. 400V.....	CD-2D-015-400-10
.02 Mfd. 200V.....	CD-2D-02-200-10
.02 Mfd. 400V.....	CD-2D-02-400-10
.02 Mfd. 500V.....	CD-2D-02-500-20
.022 Mfd. 600V.....	CD-2D-022-600-20
.03 Mfd. 100V.....	CD-2D-03-100-20
.033 Mfd. 200V.....	CD-2D-03-200-20
.047 Mfd. 200V.....	CD-2D-047-200-20
.047 Mfd. 400V.....	CD-2D-047-400-20
.047 Mfd. 600V.....	CD-2D-047-600-20
.047 Mfd. 1000V.....	CD-2D-047-1000-20
.22 Mfd. 400V.....	CD-2D-22-400-20

DISC CAPACITORS

15 PF 1000V.....	CD-2D-15P-1000-5
30 PF 1000V.....	CD-2D-30P-1000-5
150PF 1000V.....	CD-2D-150P-1000-10
180PF 1000V.....	CD-2D-180-1000-10
270PF 1000V.....	CD-2D-270P-1000-10
15 mmfd. 500V.....	CD-2D-15P-500-10
30 mmfd. 500V.....	CD-2D-30P-500-10
100 mmfd. 1000V.....	CD-2D-100P-1000-10
150 mmfd. 50V.....	CD-2D-150P-50-10
180 mmfd. 250V.....	CD-2D-180P-250-10
270 mmfd. 1000V.....	CD-2D-270P-1000-10
.01 Mfd. 50V.....	CD-2D-01-50-20
.01 Mfd. 1000V.....	CD-2D-01-1000-20
.002 Mfd. 1000V.....	CD-2D-002-1000-20
.0015 Mfd. 100V.....	CD-2D-0015-100-10
.02 Mfd. 50V.....	CD-2D-02-50-20
.01 Mfd. 100V.....	CD-2D-01-100-10
.01 Mfd. 1400V.....	CD-2D-01-1400-20
.03 Mfd. 50V.....	CD-2D-03-50-20
.0033 Mfd. 500V.....	CD-2D-0033-500-20
.005 Mfd. 50V.....	CD-2D-05-50-20
.005 Mfd. 1000V.....	CD-2D-05-1000-20
.22 Mfd. 12V.....	CD-2D-22-12-20
.22 Mfd. 50V.....	CD-2D-22-50-20

PARTS LIST

DESCRIPTIONPART NUMBERCAPACITORS CERAMIC

15 mmfd. 500V.....	CD-6C-15P-500-10
22 mmfd. 500V.....	CD-6C-22P-500-20
50 mmfd. 500V.....	CD-3C-50P-500-10
75 mmfd. 500V.....	CD-3C-75P-500-10
100 mmfd. 500V.....	CD-3C-100P-500-10
150 mmfd. 500V.....	CD-3C-150P-500-10
200 mmfd. 500V.....	CD-3C-200-500-5
200 mmfd. 500V.....	CD-3C-200P-500-10
250 mmfd. 500V.....	CD-3C-250P-500-10
330 mmfd. 500V.....	CD-3C-330P-500-10
500 mmfd. 500V.....	CD-3C-500P-500-10
750 mmfd. 500V.....	CD-3C-750P-500-10

CAPACITORS MYLAR

.001 mfd. 400V.....	CD-4M-001-400-10
.001 mfd. 600V.....	CD-4M-001-600-10
.0015 mfd. 400V.....	CD-4M-0015-400-10
.0022 mfd. 200V.....	CD-4M-0022-200-10
.0022 mfd. 400V.....	CD-4M-0022-400-10
.0022 mfd. 600V.....	CD-4M-0022-600-10
.0033 mfd. 400V.....	CD-4M-0033-400-10
.0047 mfd. 400V.....	CD-4M-0047-400-10
.01 mfd. 200V.....	CD-4M-01-200-10
.01 mfd. 400V.....	CD-4M-01-400-10
.01 mfd. 600V.....	CD-4M-01-600-10
.01 mfd. 600V.....	CD-4M-01-600-20
.015 mfd. 400V.....	CD-4M-015-400-10
.02 mfd. 100V.....	CD-4M-02-100-10
.02 mfd. 200V.....	CD-4M-02-200-10
.02 mfd. 400V.....	CD-4M-02-400-10
.022 mfd. 200V.....	CD-4M-022-200-10
.022 mfd. 400V.....	CD-4M-022-400-10
.022 mfd. 600V.....	CD-4M-022-600-10
.033 mfd. 200V.....	CD-4M-033-200-10
.039 mfd. 100V.....	CD-4M-039-100-10
.047 mfd. 50V.....	CD-4M-047-50-20
.047 mfd. 200V.....	CD-4M-047-200-10
.047 mfd. 400V.....	CD-4M-047-400-10
.047 mfd. 600V.....	CD-4M-047-600-10
.1 mfd. 200V.....	CD-4M-A1-200-10
.1 mfd. 400V.....	CD-4M-A1-400-10
.1 mfd. 600V.....	CD-4M-A1-600-10
.15 mfd. 200V.....	CD-4M-A15-200-10
.22 mfd. 50V.....	CD-4M-A22-50-20
.22 mfd. 100V.....	CD-13M-A22-100-10
.22 mfd. 200V.....	CD-4M-A22-200-10
.22 mfd. 400V.....	CD-4M-A22-400-10
.47 mfd. 100V.....	CD-4M-A47--100-10

PARTS LIST

DESCRIPTIONPART NUMBERCAPACITORS ELECTROLYTIC

1 mfd. 25V.....	CD-9E-125-20
1 mfd. 6V.....	CD-7E-1-6
2 mfd. 15V.....	CD-9E-2-15-20
2 mfd. 25V.....	CD-7E-2-25
5 mfd. 6V.....	CD-7E-5-6
5 mfd. 25V.....	CD-5E-5-25
5 mfd. 25V.....	CD-7E-5-25
5 mfd. 25V.....	CD-9E-5-25
10 mfd. 15V.....	CD-5E-10-15
10 mfd. 25V.....	CD-5E-10-25
10 mfd. 15V.....	CD-7E-10-25
10 mfd. 25V.....	CD-7E-10-15
10 mfd. 25V.....	CD-12E-10-25
10 mfd. 35V.....	CD-11E-10-35-20
10 mfd. 70V.....	CD-7E-10-70
10 mfd. 75V.....	CD-12M-10-75
16 mfd. 50V.....	CD-11E-16-50
20 mfd. 6V.....	CD-7E-20-6
10 mfd. 300V.....	CD-12E-10-300
20 mfd. 25V.....	CD-7E-20-25
20 mfd. 25V.....	CD-9E-20-25
20 mfd. 300V.....	CD-12E-20-300
20 mfd. 600V.....	CD-12E-20-600
25 mfd. 6V.....	CD-9E-25-6
25 mfd. 15V.....	CD-5E-15
25 mfd. 35V.....	CD-9E-25-35
30 mfd. 50V.....	CD-11E-30-50
25 mfd. 25V.....	CD-9E-25-25
40 mfd. 500V.....	CD-12E-40-500
50 mfd. 3V.....	CD-5E-50-3
50 mfd. 3V.....	CD-7E-50-3
50 mfd. 6V.....	CD-7E-50-6
50 mfd. 50V.....	CD-5E-50-50
50 mfd. 25V.....	CD-9E-50-25
50 mfd. 50V.....	CD-7E-50-50
50 mfd. 50V.....	CD-9E-50-50
50 mfd. 75V.....	CD-12E-50-75
100 mfd. 25V.....	CD-5E-100-25
100 mfd. 25V.....	CD-7E-100-25
100 mfd. 6V.....	CD-7E-100-6
100 mfd. 50V.....	CD-12E-100-50
200 mfd. 6V.....	CD-7E-200-6
200 mfd. 6V.....	CD-9E-200-6
200 mfd. 25V.....	CD-5E-200-25
200 mfd. 35V.....	CD-7E-200-35
500 mfd. 50V.....	CD-9E-500-50
1000 mfd. 30V.....	CD-7E-1000-30
1000 mfd. 30V.....	CD-9E-1000-30

PARTS LIST

DESCRIPTION

PART NUMBER

CAPACITORS ELECTROLYTIC (CONTINUED)

1000 mfd. 35V.....	CD-7E-1000-35
1000 mfd. 50V.....	CD-9E-1000-50
2000 mfd. 8V.....	CD-7E-2000-6
2000 mfd. 35V.....	CD-7E-2000-35
2000 mfd. 6V.....	CD-5E-2000-6

CAPACITOR-FILTER

500-500 mfd. 75V.....	CD-F-1004
20-20 mfd. 325V.....	CD-F-1005
20-20 mfd. 650V.....	CD-F-1006
40-40 mfd. 500V.....	CD-F-1007
20-10-10 mfd. 450V.....	CD-F-1008
20-20-20 mfd. 300V.....	CD-F-1009
20-40 mfd. 500V.....	CD-F-1010
40-20-20 mfd. 350V.....	CD-F-1011
20-20-20 mfd. 475V.....	CD-F-1012
40-20-20 mfd. 350V.....	CD-F-1013
20-20 mfd. 500V.....	CD-F-1014
20-20-20 mfd. 350V.....	CD-F-1015
80 mfd. 350V.....	CD-F-1016
80 mfd. 350V Can Type.....	CD-F-1017
20-20 mfd. 500V.....	CD-F-1018
40-40 mfd. 500V.....	CD-F-1019
20-20 mfd. 450V.....	CD-F-6673
20-20 mfd. 450V.....	CD-F-8222
20-20 mfd. 500V.....	CD-F-8557
20-10-10 mfd. 450V.....	CD-F-10157
10-10 mfd. 450V.....	CD-F-10160
20-10 mfd. 450V.....	CD-F-10413

CONTROLS

500 Ohm.....	CB-23991
500K Ohm.....	CBA-001-801
500K Ohm.....	CBA-811-1053
250K Ohm.....	CBA-811-1831
10 Meg Ohm.....	CBA-811-3700
250K Ohm.....	CBA-811-3701
2 Meg Ohm.....	CBA-811-3702
2 Meg Ohm.....	CBA-811-3702-1
50K Ohm.....	CBA-811-3703
250K Ohm.....	CBA-811-3704
1 Meg Ohm.....	CBA-811-3705
500K Ohm.....	CBA-811-3706
500K Ohm.....	CBA-811-3706-1
500K Ohm.....	CBA-811-3707
2 Meg Ohm.....	CBA-811-3708

PARTS LIST

DESCRIPTIONPART NUMBERCONTROLS (CONTINUED)

1 Meg Ohm.....	CBA-811-3709
1 Meg Ohm.....	CBA-811-3709-1
10 Meg Ohm.....	CBA-811-3710
1.5 Meg Ohm.....	CBA-811-3711
1.5 Meg Ohm.....	CBA-811-3711-1
25K Ohm.....	CBA-811-3712
25K Ohm.....	CBA-811-3712-1
2 Meg Ohm.....	CBA-811-3751
2 Meg Ohm.....	CBA-811-3751-1
500K Ohm.....	CBA-812-1334
2 Meg Ohm.....	CBA-813-222
500K Ohm.....	CBA-813-4000
1 Meg Ohm.....	CBA-813-4002
2 Meg Ohm.....	CBA-4005
50K Ohm.....	CBA-4006
500K Ohm.....	CBA-4007
250K Ohm.....	CBA-4008
50K Ohm.....	CBA-4013
10K Ohm.....	CBA-4014
10K Ohm.....	CBA-4015
1 Meg Ohm.....	CBA-4016
500K Ohm.....	CBA-4017
1 Meg Ohm.....	CBA-4018
50K Ohm.....	CBA-4019
2 Meg Ohm.....	CBA-4020
250K Ohm.....	CBA-4021
150K Ohm.....	CBA-4022
100 Ohm.....	CBA-4023
250K Ohm.....	CBA-4024
1 Meg Ohm.....	CBA-4025
500K Ohm.....	CBA-4026
20 Ohm.....	CBA-4027
2 Meg Ohm.....	CBA-4028
2 Meg Ohm.....	CBA-4029
10K Ohm.....	CBA-4030
10K Ohm.....	CBA-4031
10K Ohm.....	CBA-4032
10K Ohm.....	CBA-4033
150K Ohm.....	CBA-4034
50K Ohm.....	CBA-4035
20K Ohm.....	CBA-4036
50K Ohm.....	CBA-4037
5 Meg Ohm.....	CBA-4038
5K Ohm.....	CBA-4039
500K Ohm.....	CBA-5124
2 Meg-1.8 Meg Ohm.....	CBA-823-037
250K-500K Ohm.....	CBA-991-023
50K Ohm.....	CBA-1023-001

PARTS LIST

<u>DESCRIPTION</u>	<u>PART NUMBER</u>
<u>DIODE</u>	
1200 PIV, 300ma.....	D1-57
1200 PIV, 250ma.....	D1-58
50V-750ma.....	D1-67
600V-250ma.....	D1-718
100V-150ma.....	D1-91
36V-400ma.....	D1-402
15V-400ma.....	D1-403
800V-800ma.....	D1-404
200V-1 amp.....	D1-405
200V-1 amp.....	D1-4003
200 PIV-1 amp.....	D1-406
50 PIV-1 amp.....	D1-407
600 PIV-150ma.....	D1-408
1500 PIV.....	D1-409
IN4721.....	D1-410
<u>FUSES</u>	
20 amp, 32V.....	FU-307020
5 amp, 32V.....	FU-311005
1 amp,.....	FU-312001
2 amp,.....	FU-312002
3 amp,.....	FU-312003
1.5 amp,.....	FU-312015
½ amp,.....	FU-312500
1.5 amp Slo Blo.....	FU-313015
1 amp Slo Blo.....	FU-313001
2 amp Slo Blo.....	FU-313002
3 amp Slo Blo.....	FU-313003
3.2 amp Slo Blo.....	FU-313003-2
5 amp Slo Blo Pigtail.....	FU-342012
<u>PHOTO CELL ASSEMBLY</u>	
Light Dependent Resistor.....	LDR-500
Light Dependent Resistor.....	LDR-501
<u>PILOT LIGHT ASSEMBLY</u>	
Pilot Light Green.....	PL-20G
Pilot Light Red.....	PL-20R
Pilot Light Red Jewel.....	PL-20J
Pilot Light Red.....	PL-32A
Pilot Light Red.....	PL-32R
Pilot Light Red 6V.....	PL-34R
Pilot Light Red.....	PL-35R
Pilot Light Red.....	PL-36R

PARTS LIST

DESCRIPTIONPART NUMBERPILOT LIGHT ASSEMBLY (CONTINUED)

Pilot Light Red.....	PL-37R
Pilot Light Amber.....	PL-38A
Pilot Light.....	PL-39
Pilot light Red.....	PL-40
Pilot Light.....	PL-41
Pilot Light Red.....	PL-42
Pilot Light Amber.....	PL-43
Pilot Light Socket.....	PL-44
Pilot light Red Jewel.....	PL-45
Pilot light Red.....	PL-46
Pilot Light #47.....	PL-47
Pilot Light Amber.....	PL-48
Pilot Light 28V.....	PL-1829
Pilot Light Sockets.....	PL-B-0150

RESISTORS WIREWOUND

10 Ohm 5W.....	RE-KB-1001
1K Ohm 5W.....	RE-KB-1021
10K Ohm 5W.....	RE-KB-1031
130 Ohm 5W.....	RE-KB-1315
1.5K Ohm 5W.....	RE-KB-1512
2.2K Ohm 5W.....	RE-KB-2221
250 Ohm 5W.....	RE-KB-2511
25K Ohm 5W.....	RE-KB-2531
4K Ohm 5W.....	RE-KB-4021
500 Ohm 5W.....	RE-KB-5011
5K Ohm 5W.....	RE-KB-5021
68 Ohm 5W.....	RE-KB-6801
125 Ohm 5W.....	RE-KB-1201
10K Ohm 7W.....	RE-LB-1031
200 Ohm 7W.....	RE-LB-2011
3K Ohm 7W.....	RE-LB-3021
3.5K Ohm 7W.....	RE-LB-3521
4K Ohm 7W.....	RE-LB-4021
7.5K Ohm 7W.....	RE-LB-752
150 Ohm 10W.....	RE-MB-1511
180 Ohm 10W.....	RE-MB-1811
200 Ohm 10W.....	RE-MB-2011
22 Ohm 10W.....	RE-MB-2205
2.5K Ohm 10W.....	RE-MB-2521
25K Ohm 10W.....	RE-MB-2531
5K Ohm 10W.....	RE-MB-5021
5K Ohm 15W.....	RE-NB-4025

PARTS LIST

<u>DESCRIPTION</u>	<u>PART NUMBER</u>
RELAY	
KA-1472.....	RL-1472
REVERB UNIT	
Reverb Unit Complete.....	RV-1
Reverb Unit Complete w/o Foot Switch.....	RV-2
Reverb Unit.....	RV-3
Reverb Unit.....	RV-4C
Reverb Unit with Cardboard.....	RV-4C-1
Reverb Unit Model 1V.....	RV-4F
Reverb Unit Model 5HA.....	RV-5HA
Reverb Unit.....	RV-6
Reverb Unit.....	RV-8
Reverb Unit.....	RV-9
Reverb Unit.....	RV-9F
Reverb Unit.....	RV-10
SPEAKERS	
D-110F 10" Lansing.....	S-110F
D-120F 12" Lansing.....	S-120F
D-123 12" Lansing.....	S-123F
D-130 15" Lansing.....	S-130
S-140 15" Lansing.....	S-140
S-0127 15" CTS used on EA-4T;Atlas 1V;EA-72;EA-500; Titan 111;Mercury 11.....	S-0127
V-1285 Jensen Used on EA-12RVT.....	S-1285
V-1287 Jensen used on EA-12RVT.....	S-1287
V-1309 Jensen used on Maestro 1.....	S-1309
V-1310 8J-11 Jensen.....	S-1310
V- 1392 12" Jensen.....	S-1392
P86 Jensen.....	S-5013
AD-5277M Phillips used on GA-300;GA-400;GA-200.....	S-5277
S-5824-2 P10Q Jensen.....	S-5824-2
C-5920-2 P12R Jensen.....	S-5920-2
S-6065 15" Gifco used on GA-60;GA-100;EA-65.....	S-6065
C-6265-3 P12R Jensen.....	S-6263
C-6265-3 P12R Jensen.....	S-6265-3
C-6279 P12P Jensen.....	S-6279
C-6351 P15N Jensen.....	S-6351
C-6761 P8 Jensen.....	S-6761
C6764 P-15P Jensen.....	S-6764
C-6786 P10R Jensen.....	S-6786
C-7129-2C 15N used on GA-77RVT;EA-8P.....	S-7129
C8S8 Jensen Ceramic Magnet.....	S-7155
C-7259-3 C10Q Jensen used on GA79RVT.....	S-7259-3
C-7324 C12R Jensen used on GA19RVT;EA-7P;GA-30RVT; M-216.....	S-7324-2

PARTS LIST

DESCRIPTIONPART NUMBERSSPEAKERS (CONTINUED)

C-7334-5	C15R Jensen used on GA-25RVT;EA-15RVT.....	S-7334-5
C-7414	C12P Jensen used on GA-40T.....	S-7414-4
C-7633-3	10" Jensen used on TITAN III;EA-500T.....	S-7633-5
C-7646	10" Jensen used on MERCURY II;EA-4T.....	S-7646-3
C-9363	ROLA.....	S-9363
C-9364	ROLA.....	S-9364
9762M	PHILLIPS.....	S-9762
57FCM123	ROLLA.....	S-11688-1
10C1848	10"CTS used on GA-5;EA-50;EA-50T.....	S-20001
120299	12"CTS used on GA-8T;EA-35T.....	S20002
10C1077	10"CTS used on EA-15RVT;EA-32RVT.....	S-20003
10C1073	10"CTS used on GA-30RVT;.....	S-20004
10E14730	10"CTS used on GA-75;GA-77RT;GA-45;EA14RVT....	S-20005
10F1043	10"CTS used on GA-79RVT;GSS-50;EA-550.....	S-20005
SP-123	12" CTS.....	S-20006
12C1073	12" CTS used on GA-8T;EA-35.....	S-20007
10C4727	10" CTS used on GA-5;EA50;KAL I, II, III, IV....	S-20008
12E12730	12" CTS used on GA-19RVT;EA-28RVT;GA-30RVT....	S-20009
15F35760	15" CTS used on GA-77RVT.....	S-20010
C-7887	12" Jensen used on GA-95RVT;EA-300RVT.....	S-20011
10E14730	10" CTS used on GSS-100.....	S-20012
10E14730	10" CTS used on GSS-100.....	S-20012-1
10F14730	10" CTS used on GSS-100;600RVT.....	S-20012-2
10E1050	10" CTS used on GA-55RVT;EA-12RVT.....	S-20014
E12E1058	12" CTS	S-20015
PCN10	10" Jensen.....	S-20016
C12KS-S-14317	Jensen used on MED;DUO MEDALIST.....	S-20017
10-0371	10" CTS used on HAWK.....	S-20018
12NS-14360	12" Jensen used on EA-301;EA-401.....	S-20019
12-1470	12" CTS.....	S-20020
OP-8	Horn OXFORD Type.....	S-20021
ID-40	UNIVERSITY.....	S-20022
ID-0860	10" Replaces S-20014 in 4/10.....	S-20023

TRANSFORMERS

TF-1P	Transformer GA-1P.....	80-00001
TF-5-0	Transformer-output GA-5;M-201;M-1.....	80-10001
TF-5P	Transformer Power.....	80-00002
TF-5AP	Transformer Power used on GA-5;GA-4RE;GA-5T EA-50;EA-50T;.....	80-00003
TF-5APF	Transformer Power, Foreign use.....	80-00003-0
TF-5TP	Transformer Power, used on GA-5T.....	80-00004
TF-8AP	Transformer Power.....	80-00005
TF-8APF	Transformer Power. Foreign use.....	80-00005-0
TF-10P	Transformer Power.....	80-00006
Tf-18-01	Transformer Output.....	80-10002
TF-18P	Transformer Power, used on GA-18;Gb-100;.....	80-00007
TF-18PF	Transformer Power, Foreign use.....	80-00007-0

PARTS LIST

<u>DESCRIPTION</u>	<u>PART NUMBER</u>
<u>TRANSFORMERS (CONTINUED)</u>	
TF-18P-40 Transformer Power, GA-18.....	80-00007-04
TF-20-P-1 Transformer Power, GA-20.....	80-00008
TF-21-0 Transformer Output.....	80-10003
TF-23-0 Transformer Output.....	80-10004
TF-23-P Transformer Power, GA-23.....	80-00009
TF-23P-2 Transformer Power for Canada.....	80-00009-0
TF-30-1 Transformer Output, used on GA-30.....	80-10005
TF-40-0-2 Transformer Output, used on GA-40.....	80-10006
TF-45-0-2 Transformer Output, used on GA-45.....	80-10007
TF-55 Transformer Output, used on GA-55RVT.....	80-10008
TF-60- P Transformer Power used on GA-100;60; 40T; 65; EA-8P;EA-12RVT.....	80-00010
TF-60-PF Transformer Power, Export.....	80-00010-0
TF-60-PF-1 Transformer Power, Export.....	80-00010-0
TF-61 Crossover Network.....	80-40001
TF-70-02 Transformer Output, used on GA-70.....	80-10009
TF-77-0 Transformer Output, used on GA-77.....	80-10010
TF-77-02 Transformer Output.....	80-10011
TF-77P Transformer Power.....	80-00011
TF-77PF Transformer Power, Export.....	80-00012-0
TF-79PF-1 Transformer Power.....	80-00013-0
TF-79P Transformer Power.....	80-00014
TF-PF Transformer Power, Export.....	80-00014-0
TF-85 Transformer Output used on GA-85.....	80-10012
TF-88C Transformer Choke.....	80-30001
TF- 88-0 Transformer Output, used on GA-88.....	80-10013
TF-88-P Transformer Power, used on GA-88.....	80-00015
TF-9-0-1 Transformer Output, used on GA-9.....	80-10014
TF-90C-1 Transformer Choke, used on GA-90.....	80-30002
TF-90-0 Transformer Output, used on GA-90.....	80-10015
TF-90-P-L Transformer Power, used on GA-90.....	80-00016
TF-100 P Transformer Power, used on GA-30;EA-15RVT...	80-00017
TF-100 PFD Transformer Power, Export.....	80-00017-0
TF-101 P Transformer Power used on GA-3RV;.....	80-00018
TF-101 PF Transformer power, Export.....	80-00018-0
TF-102 P Transformer Power.....	80-00019
TF-103-P-1 Transformer Power.....	80-00020
TF-103-P-1 Transformer Power, Export.....	80-00020-0
TF-104-P-1 Transformer Power.....	80-00021
TF-104-PF Transformer Power, Export.....	80-00021-0
TF-105-P-1 Transformer Power.....	80-00022
TF-105-PF Transformer Power, Export.....	80-00022-0
TF-106-P Transformer Kal III & IV.....	80-00023
TF-107-P Transformer Medalist & Duo Medalist.....	80-00024
TF-108-P Transformer Power, Bass 50.....	80-00025
TF-109-P Transformer Power, Hawk.....	80-00026
TF-110-P Transformer Power Med. 4/10.....	80-00028
TF-110-P1 Transformer Power. Med. 4/10.....	80-00027
TF-111-P Transformer Power, EA-301 & EA-401.....	80-00029

PARTS LIST

DESCRIPTIONPART NUMBERTRANSFORMERS (CONTINUED)

TF-112P	Transformer Power, Medalist 2/15.....	80-00030
TF-135-P	Transformer Power, used on Titan,.....	80-00031
TF-113P	Transformer Falcon & Hawk.....	954-011407
TF-135-PF	Transformer Power, Export.....	80-00031-0
TF-114P	Transformer Power, GTR 600.....	954-010431
TF-115-P	Transformer Power, Super Medalist.....	954-011444
TF-135-PF1	Transformer Power, Export.....	80-00031-0
TF-202-P	Transformer Power, used on GA-3,.....	80-00033
TF-202-P-1	Transformer Power, used on M-202.....	80-00035
TF-300-0	Transformer Output, used on GA-300,200....	80-10017
TF-366A-6B	Transformer Output.....	80-10019
TF-400-0	Transformer Output, used on GA-400,.....	80-10020
TF-300-01	Transformer Output, used on GA-77RVT-L Mercury, Titan, EA-4T.....	80-10018
TF-400-01	Transformer Output, used on GA-400.....	80-10021
TF-400-02	Transformer Output, used on GA-400.....	80-10022
TF-400 P	Transformer Power, used on GA-400.....	80-00036
TF-400-P-1	Transformer Power, used on GA-400.....	80-00037
TF-400-P-2	Transformer Power, used on GA-400.....	80-00038
TF-400-P-1F	Transformer Power, Export.....	80-00037-0
TF-472-0	Transformer Output, used on Atlas; EA-72...	80-10023
TF-500-0	Transformer Output, Kal I/ & Kal II.....	80-10024
TF-500-01	Transformer Output for CSA.....	80-10024-01
TF-501-0	Transformer Output.....	80-10025
TF-502-0	Transformer Output.....	80-10026
TF-503-0	Transformer Output.....	80-10027
TF-504-0	Transformer Output.....	80-10028
TF-505-0	Transformer Output.....	80-10029
TF-506-0	Transformer Output, Duo Med.....	80-10030
TF-507-0	Transformer Output, Bass 50.....	80-10031
TF-508-0	Transformer Output.....	80-10032
TF-509-0	Transformer Output, Medalist 4/10.....	80-10033
TF-510-0	Transformer Output, Medalist 2/15.....	80-10034
TF-511-0	Transformer Output, Medalist.....	80-10035
TF-512-0	Transformer Output, Duo.....	80-00136
TF-513-0	Transformer Output.....	80-10037
TF-1000-D	Transformer Driver used on TR-1000T;TR-1000	80-20001
TF-1001-D	Transformer Driver used on EA-15RVT.....	80-20002
TF-1000-P	Transformer Power used on TR-1000T;TR-1000 RVT.....	80-00038
TF-1000PF	Transformer Power, Export.....	80-00038-0
TF-1000-R	Transformer Reverb used on TR-1000; TR-1000 RVT.....	80-20003
TF-1001-D	Transformer Driver.....	80-20004
TF-1002-C	Filter Choke.....	80-30003
TF-1003-C	Filter Choke,.....	80-30004
TF-1004-C	Filter Choke.....	80-30005

PARTS LIST

DESCRIPTIONPART NUMBERTRANSFORMERS (CONTINUED)

TF-10005-D	Transformer Driver, GTR-600.....	80-20005
TF-1006-D	Transformer Driver, GTR-600.....	80-20006
TF-1007-A	Audio Autoformer, GTR-600.....	80-10038
TF-1824-C	Inductors used on cross-over network, used on Titan,Mercury.....	80-4002
TF-3021-S	Filter Choke.....	80-30006
TF-3021-H	Filter Choke.....	80-30007
TF-6283	Choke.....	80-30008
TF-E-6400	Transformer Audio.....	80-20007
TF-E-6400	Transformer Audio, for CSA.....	80-20007-01
TF-6401	Transformer Reverb.....	955-003555
TF-E-6415	Transformer Power.....	80-20008
TF-E-6415-PF	Transformer Power, Export.....	80-00039-0
TF-6417	Transformer Output, used on EA-12RVT....	80-10039
TF-6417-1	Transformer Output, GA-30;EA-15RVT, GA-25RVT.....	80-10040
TF-E-6446	Transformer Power, Export.....	80-00040-0
TF-E-6461	Transformer Power, CSA & Los Angeles...	80-00041-0
TF-6846	Transformer Reverb.....	80-20009
TF-GAV-1P	Transformer Power.....	80-00042
TF-6402	Transformer Reverb.....	80-20010
TFA-90-C-1	Choke Assembly.....	
TFA-90-C-2	Choke Assembly.....	
TFS-150	Transformer Step Down 220/250 to 110/125 150 Watts.....	80-40003

SWITCHES

Switch-2-pole-4 position, plus AC on-off Rotary, used on GA-300RVT, GA-77RVT, EA-5RVT.....	SW-77
Switch off, standby, on, on.....	SW-78
Switch.....	SW-103
Switch.....	SW-120
Switch-G-126 slide switch.....	SW-126
Switch.....	SW-128
Switch.....	SW-129
Switch DPT 2 amp AC.....	SW-130
Switch.....	SW-131
Switch.....	SW-203
Switch, Bash, Push, used on Tro-115.....	SW-575
Switch, SPST, rotary.....	SW-898
Switch, SPST-SPDT, 3 Pcs, rotary.....	SW-899
Switch.....	SW-903
Switch, Black Button.....	SW-913
Switch, used on CA-345.....	SW-1007
Switch, lever.....	SW-1073
Switch, lever.....	SW-1078
Switch, lever used on old style Les Paul.....	SW-1430

PARTS LIST

DESCRIPTIONPART NUMBERSWITCHES (CONTINUED)

Switch 2 pole 3 position lever.....	SW-1452
Switch.....	SW-1454
Switch Toggle.....	SW-1456
Switch.....	SW-1824
Switch, Push.....	SW-1885
Switch, level.....	SW-2234
Switch, phase toggle.....	SW-2711
Switch, slide DPST.....	SW-4602
Switch lever.....	SW-5124
Switch for console.....	SW-14222
Switch SPDT with Black knobs.....	SW-34-160
Switch SPDT.....	SW-80515
Switch toggle.....	SW-80994
Switch pushbutton.....	SW-82403
Switch SPDT Push, Push.....	SW-82422
Switch toggle.....	SW-82630
Switch.....	SW-102904
Switch.....	SW-70-03620
Switch.....	SW-70-03799
Switch.....	SW-70-03805
Switch special phasing.....	SW-10827
Switch 3 pole 4 position.....	SW-180752

TUBES

TU-6V6 GT	Tube.....	85-40014
TU-6X4	Tube.....	85-20004
TU-12AU7A	Tube.....	85-30006
TU-12AU7-J	Tube.....	85-30006-06
TU-12AY7	Tube.....	85-30008
TU-12AX7-A	Tube.....	85-30007
TU-5881	Tube.....	85-40015
TU-5879	Tube.....	85-40016
TU-6550	Tube.....	85-40017
TU-7199	Tube.....	85-40018
TU-7591	Tube.....	85-40019
TU-GZ-34	Tube.....	85-20005

TREMELO ASSEMBLIES

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