

instruction book

Cedar Rapids Division | Collins Radio Company, Cedar Rapids, Iowa



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 - (G) Part number (9 or 10 digit number) and name of part thought to be causing trouble
 - (H) Item or symbol number of same obtained from parts list or schematic
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- (B) Collins part number (9 or 10 digit number) and description
- (C) Item or symbol number obtained from parts list or schematic
- (D) Collins type number, name and serial number of principal equipment
- (E) Unit subassembly number (where applicable)

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instruction book

26U-2 Stereo Peak Limiter

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World Radio History



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Figure 1-1. 26U-2 Stereo Peak Limiter

section

general description

1.1 Purpose of Instruction Book.

The instruction book describes the installation, adjustment, operation and maintenance of the 26U-2 Stereo Peak Limiter. See figure 1-1.

1.2 Purpose of Equipment.

The 26U-2 Stereo Peak Limiter controls the peak amplitude of audio-frequency signals. In transmitter applications, it will prevent overmodulation by limiting the loud audio passages. When used in conjunction with recording equipment or public address systems, it prevents overloading. See block diagram figure 1-2 for application. The 26U-2 is capable of 40-db gain and may be used as a straight amplifier.

1.3 Description.

The 26U-2 mounts in any standard 19-inch relay rack or cabinet. Vertical mounting space of 10-1/2 inches is required. The front portion contains a 16-1/2 by 1-7/8-inch panel that is hinged at the bottom. Two meters along with the meter function switch, and a 0 VU REFERENCE switch are located on the front of the panel. External connections are made at the rear of the unit, which include two barrier strips and an a-c connector. The panel and mounting angles are finished in Collins gray enamel and the chassis is chromate dipped.

The 26U-2 consists of two audio peak limiters in a single package. Each section consists of a push-pull variable gain input stage, a push-pull interstage voltage amplifier, and a push-pull output stage. A bias rectifier provides bias to regulate the gain of the input stage. A self-contained power supply provides the B+ and filament voltages. Each section can operate independently or can be combined for stereo operation. The two meters indicate the functioning of three internal circuits for each channel: INPUT; G.R. (gain reduction); and OUTPUT. In addition, the meters can switched to two external circuits: G.R. EXT be (External) and EXT audio. The two G.R. EXT circuits are included so that the gain reduction of associated circuits can be measured. The EXT audio metering circuit is an extra feature that can be used to measure audio levels in other broadcast audio equipment.

1.4 Equipment Supplied.

The equipment supplied under Collins part number 522-3237-00, consists of the 26U-2 Stereo Peak Limiter complete with tubes, rectifiers (see table 1-1), fuse and a-c plug.

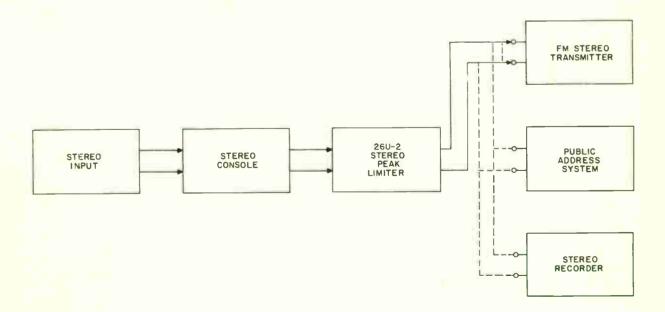


Figure 1-2. 26U-2 Stereo Peak Limiter, Application Block Diagram

TABLE 1-1 TUBE AND RECTIFIER COMPLEMENT

QUANTITY	ΤΥΡΕ	APPLICATION
2	GL-6386	Variable gain input stage
2	12AU7	Interstage voltage amplifier
4	6V6-GTA	Output amplifier
2	6AL5	Bias rectifier
2	0A2	Voltage regulator
4	1N3256	Power rectifier
2	1N 45 9	Blocking diode

1.5 Specifications and Performance Data.

Type of service Continuous unattended operation
Size
Weight
Audible noise None
Number of units One
Ambient temperature range 0°C to +45°C
Ambient humidity range Up to 95%
Altitude Up to 10,000 feet
Shock conditions Normal handling and transportation
Vibration conditions . Normal handling and transportation
Power source 115 or 230 volts a-c, 50/60 cycles, single phase. (150 watts at 115 voltage) shipped wired for 115 volts
Input 600 ohms, bridged T Input

Input level -20 dbm to +20 dbm

NOTE

0 dbm equals one milliwatt across 600 ohms.

Output 600 ohms Bridged T (ungrounded) Output level -20 dbm to +20 dbm Response ± 1.5 db, 50 to 15,000 cps Distortion. 1.5% maximum Output noise. . . . -50 dbm or less Crosstalk 60 db minimum Compression ratio . 12 to 1 first 10 db above threshold (See figure 1-3.) (slow release time) Attack time Adjustable 2.0 to 5.0 milliseconds Release time . . . Adjustable 1/2 to 3 seconds for 63% recovery Gain 40 db Controls Panel mounted . . . Meter Function switch 0 VU REFERENCE Subpanel controls. . Input level (2) Output level (2) Gain Reduction Meter Zero (2)Gain Reduction Balance (2) Stereo Mono **Power ON-OFF** Rear chassis controls Attack Time (2) Release Time (2) Metering Two 3-1/2-inch VU meters which can be switched to measure input level, external gain reduction, gain reduction, output level, and external level.

1.6 Fuse.

The 26U-2 is equipped with a 2-ampere 250-volt, receptacle mount fuse with test point in cap, Slo-Blo fuse. Change to a 1-ampere fuse when reconnecting for 230-volt operation.

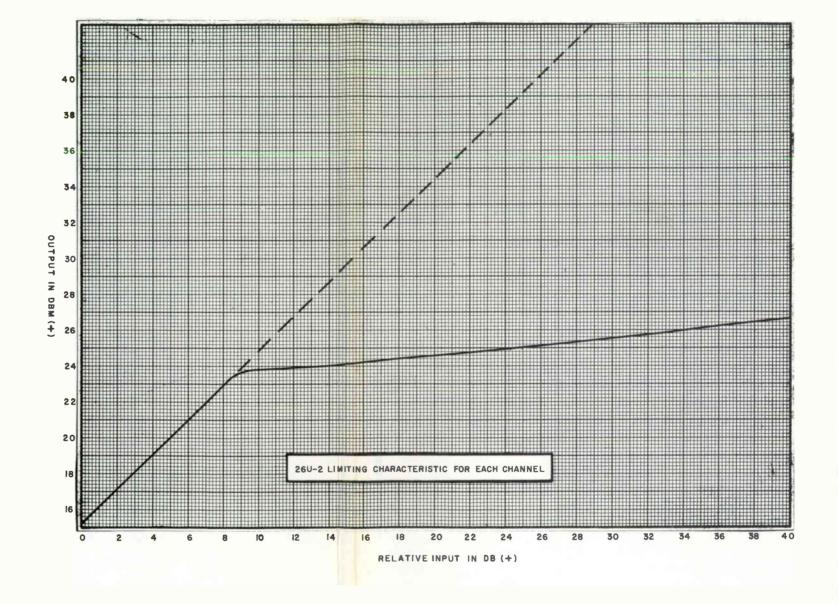


Figure 1-3. 26U-2 Stereo Peak Limiter, Limiting Characteristic Curve

1-3/1-4



section **2**

installation

2.1 Unpacking.

Remove all packing material and search for small packages. Inspect the unit for loose screws or bolts. Be certain that all controls work properly. All claims for damage should be filed promptly with the transportation company. If a claim for damage is to be filed, the original packing case and material must be preserved.

2.2 Mounting.

a. Place the unit in position in a standard 19-inch relay rack cabinet.

b. Secure the unit with hexagonal or roundhead screws and flat washers.

c. Place tubes in sockets.

2.3 Connections.

2.3.1 POWER CONNECTIONS.

When shipped, the unit is connected for 115-volt operation. If 230-volt operation is desired, reconnect the primary of the power transformer as shown on the main schematic diagram (figure 7-1). This puts the two halves of the primary in series. Change to a 1-ampere fuse when reconnecting for use with 230-volts.

2.3.2 AUDIO CONNECTIONS.

All audio connections are made to the barrier-type terminal strip location at the back of the unit near the bottom edge. Use shielded wire for all audio connections to minimize hum pickup. The input and output impedances of the 26U-2 are 600 ohms.

2.3.2.1 INPUT. Under normal conditions the 26U-2 can be fed from a floating input because the input circuit is not grounded. Connect the input line to terminals 1 and 2 of TB1 and TB2.

2.3.2.2 OUTPUT. Under normal conditions the 26U-2 can be fed into a nongrounded load because the output circuit is not grounded. If used in this manner, the center tap of the transmitter input transformer must not be grounded.

2.3.3 EXTERNAL METER CONNECTIONS.

Meters M1 and M2 can meter two external circuits. METER FUNCTION switches S1A, S1B, S1C, and S1D, has two positions that are wired to the external connectors TB1 and TB2. One position, G.R. EXT, can be connected to an associated amplifier to measure the gain reduction obtained in that amplifier. The other position, EXT, can be used to indicate audio level in 600-ohm circuits. To use in the external circuit, connect terminals 3 and 4 of TB1 and/or TB2 to one (and/or two) 600-ohm audio circuits of less than +27 VU. The meters indicate audio levels of -16 VU to +27 VU using AT1A and AT1B attenuators in the 26U-2 as meter multipliers. For example, with the 0 VU REFERENCE attenuator set at 24, 0 VU reading on the meters will be 24 volume units. The meter reads up to +3 VU; hence the meter reading will be +27 volume units at +3 VU.



When measuring signals of unknown level, be sure to preset the 0VU REFERENCE attenuator to OFF, and gradually advance the attenuator as needed.

2.4 Initial Adjustments.

Determine the level of the audio signal being delivered to the input of the 26U-2 with the studio equipment in normal operation. The 212E-1, 212G-1 and 212F-2 consoles, as do most modern consoles, supply +8 VU to the line when the console VU meter reads 0 VU. Normal studio program operation would be with the console VU meter peaking at 0 VU or 100 on the percent scale.

If the input level to the 26U-2 is too high to allow good control range of the INPUT LEVEL control, the input pads consisting of R14, R15, R16, R114, R115, and R116 can be changed to allow more or less suppression. See table 2-1 for the values in ohms and loss in db.

NOTE

A program waveform with a high peak is a complex wave and is read in volume units. The usual conception is to assume that the peaks are 10 db above the sine wave peaks. When testing with a sine wave, it is normal to test at a level 10 db higher than the normal volume unit level.

TABLE 2-1 RESISTANCE VALUES FOR 600-OHM FIXED PADS

LOSS IN DB	R14 R15 (R114) (R115)	R16 (R116)
0	0	OPEN
3	103	17 <mark>03</mark>
6	199	8 <mark>03</mark>
10	312	422
15	419	220
20	490	121

2.4.1 ADJUSTMENT PROCEDURE, STEREO OPERATION.

a. Set the two INPUT LEVEL and OUTPUT LEVEL controls to off position (ccw position), set the METER switch to EXT, set the 0 VU REFERENCE attenuator to OFF, and set the STEREO MONO switch to STEREO. b. Turn on the equipment, and after a 5-minute stabilization period turn the METER quitable C. R.

stabilization period, turn the METER switch to G.R. Adjust the two G.R. ZERO controls until the METER indicates 0 on the DB GAIN REDUCTION scale with no audio input to the 26U-2.

NOTE

Always allow stabilization period before zeroing gain reduction.

c. Feed equal 1-kc signals from an HP-200AB Audio Oscillator into both sides of the input to the 26U-2.

Check and adjust, if need be, by positioning the METER switch to INPUT.

d. Set the METER FUNCTION switch to G.R. and gradually advance the two INPUT LEVEL controls until the meter readings indicate the desired limiting (3 to 5 db is normal).

e. With the two OUTPUT LEVEL controls still turned ccw, turn on the transmitter and adjust for normal r-f output. Adjust the modulation monitor carrier input controls in the normal manner, being sure to adjust the tuning controls accurately to a peak before adjusting the monitor gain control.

f. Set the indicator on the monitor for 95-percent modulation.

g. Gradually increase the 26U-2 OUTPUT LEVEL controls until the indicator registers 95-percent modulation. This will result in normal limiting of peaks.

NOTE

A periodic check should be made to ensure the equality of output of the two channels.

h. Set the attack time (R52, R152) and release time (R48, R148). An attack time of 3 milliseconds and a release time of 2.5 seconds are commonly used for all-around operation. Refer to paragraph 5.1.4 for a method to use in checking the attack and release times of the 26U-2.

i. If the limiting action of either or both channels has a tendency to produce a thump, refer to paragraph 5.1.3.2 for the method of setting the G.R. BAL controls to prevent this condition.

2.4.2 ADJUSTMENT PROCEDURE, MONO OPERATION.

Set the STEREO MONO switch to MONO. The procedure for adjustment is the same as that for stereo. Either or both channels may be used.

section 3

operation

3.1 Description of Controls.

3.1.1 PANEL CONTROLS. (See figures 3-1 and 3-2.)

a. POWER ON-OFF. This switch is inserted in series with the power line to the power transformer. When it is in the OFF position, both sides of the line are disconnected from the power transformer.

b. INPUT LEVEL. These two controls are used to adjust the audio input to the 26U-2. Set these controls

to obtain the desired degree of gain reduction as shown on the DB GAIN REDUCTION scale of the meter when the METER switch is in the G.R. position.

c. OUTPUT LEVEL. These two controls adjust the audio output level of the 26U-2. The setting of these controls depends upon the requirements of the transmitter (or stereo recorder) with which the 26U-2 is used. For normal operation these controls should be set for 95-percent modulation. See paragraph 2.4.1 for explanation of method of setting this control.

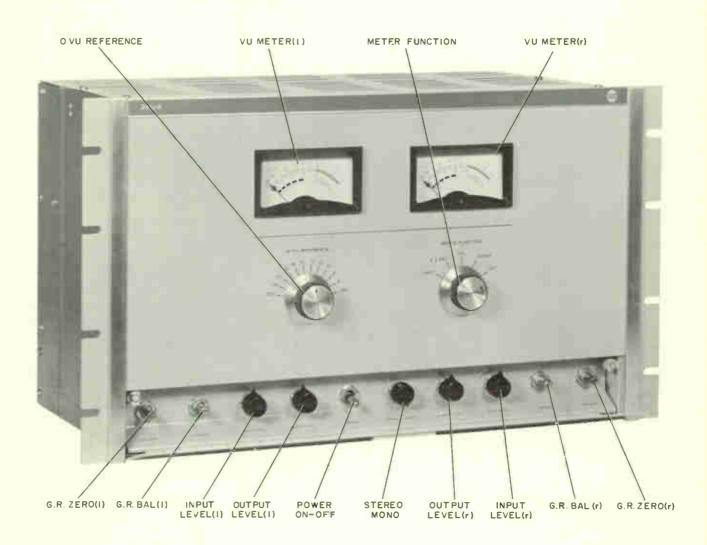


Figure 3-1. 26U-2 Stereo Peak Limiter Operation Controls, Front View

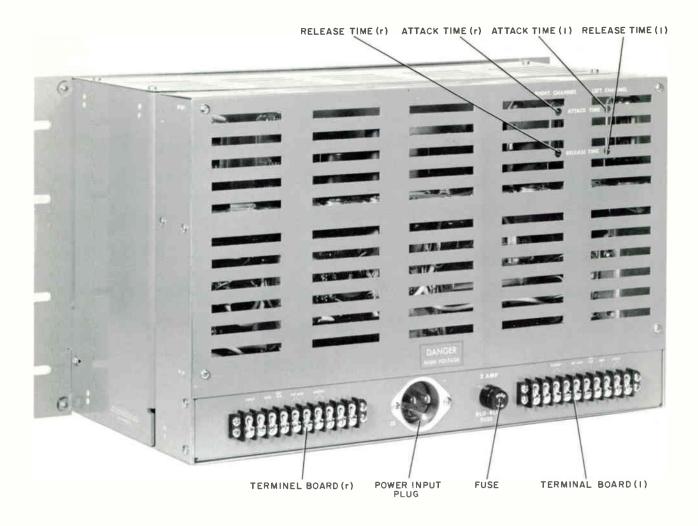


Figure 3-2. Operational Controls, Rear View

d. METER FUNCTION Switch. This switch selects the circuits to be read on the meter. In the INPUT position, the meter reads audio level at the input terminals of the 26U-2. In the G.R. position, the meter reads the value of gain reduction on the DB GAIN REDUCTION scale of the meter. In the OUTPUT position, the meters read the audio level at the output terminals of the 26U-2. The G.R. EXT and EXT positions of the switch are for external circuits and, if used, are connected by the customer.

e. 0 VU REFERENCE. This attenuator is used to vary the amount of attenuation in series with the two meters when the meters are used to measure audio levels. It contains a switch which breaks the circuit to the meter when placed in the OFF position. The attenuator is calibrated in steps of 2 db. The calibration of the attenuator is correct only when the meter is indicating 0 on the VU scale. The 0 VU REFERENCE attenuator is not used when the meter is reading gain reduction.

·······	
CAUTION	
human	

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When measuring audio signals of unknown levels, start with the 0 VU REFERENCE attenuator set to OFF, and gradually advance the control as needed. This will prevent pinning the meter and possibly damaging it.

f. STEREO MONO. Positioning this switch will allow either stereo operation or two separate monaural limiters.

g. G.R. ZERO. The gain reduction zeros for both channels are used to reference the two meters. To ensure proper positioning, turn the METER FUNCTION switch to G.R. and adjust the two G.R. ZEROS until the meters read 0 on the DB GAIN REDUCTION scale with no signal.

SECTION 3 Operation

h. G.R. BAL. The function of these controls is that of equalizing the signal into the sides of the pushpull amplifiers. Adjustment of these controls is described in paragraph 5.1.3.2.

3.1.2 INTERNAL CONTROLS.

The internal controls present consist of two ATTACK TIME potentiometers and two RELEASE TIME potentiometers, and are mounted in the rear of the chassis. These controls are to be set by the station engineer. (See figure 3-2.) Instruction for this procedure is found in paragraph 5.1.4.

3.2 Routine Operation (Stereo Operation).

a. Turn on the 26U-2 and allow for a 5-minute warmup period. Turn the STEREO MONO to STEREO. b. Turn the METER FUNCTION switch to G.R., and with no input signal, check to see if the meters read 0 on the DB GAIN REDUCTION scale. If not, adjust the two G.R. ZERO controls for 0 indication on the meters. The 0 VU REFERENCE attenuator should be set at OFF.

c. Turn the METER FUNCTION switch to G.R., feed program material into the 26U-2 from the console at normal level, and check to see that both channels are limiting to same required value (usually 3 to 5 db). If not, follow the adjustment procedure given in paragraph 2.4.1. d. Assuming that the transmitter has been warmed up and the modulation monitor correctly calibrated to 95-percent modification, check to see that the indicator is showing proper modulation. If not, follow the adjustment procedure given in paragraph 4.2.1.

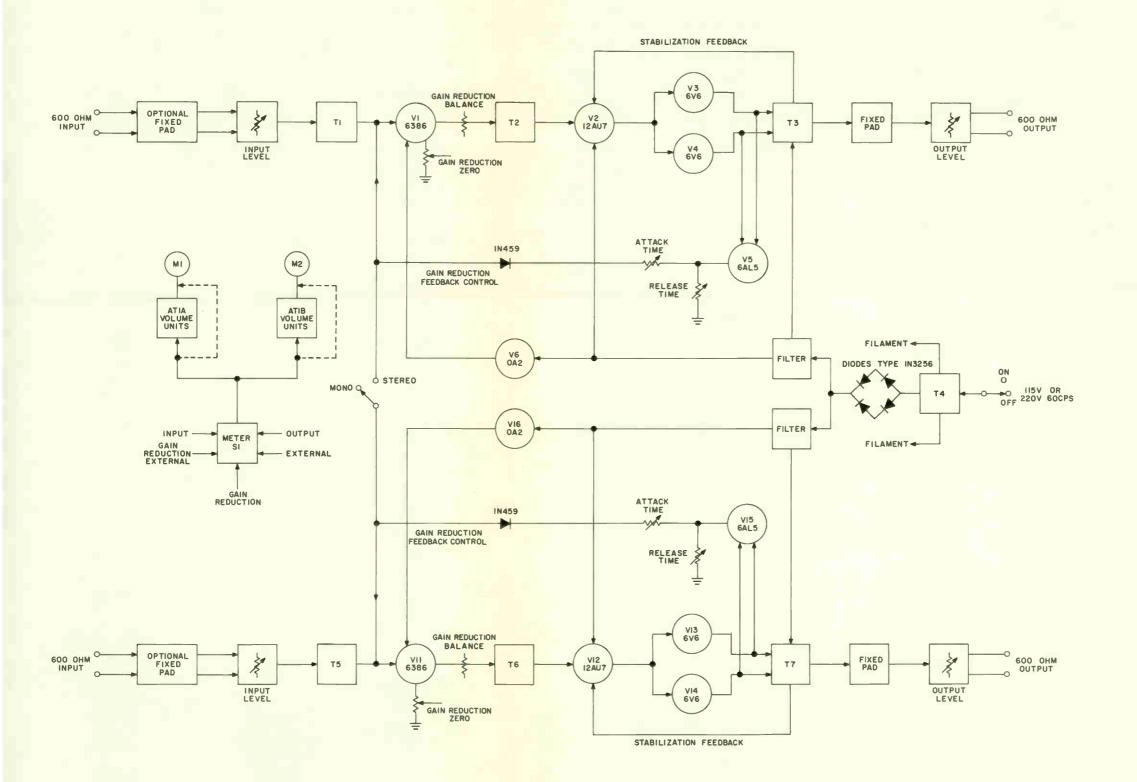
e. Change the METER FUNCTION switch to OUT-PUT, and adjust the 0 VU REFERENCE attenuator to the setting that results in a comparable reading of the 26U-2 meters and the console VU meters at the audio signals below the threshold of the limiter. Periodic checks of the output balance between channels should be made with an audio oscillator.

3.3 Routine Operation (Mono Operation).

a. Turn the STEREO MONO switch to MONO. The same procedure as illustrated for stereo operation may now be used.

NOTE

Paragraph 2.4 contains detailed information on adjusting the equipment for operation. Once the equipment is adjusted per paragraph 2.4, the information in paragraph 3.2 should be sufficient for routine operation. It should also be noted that periodic checks of output level equality should be made with an audio oscillator as illustrated in paragraph 2.4.1.



3



principles of operation

4.1 General.

The 26U-2 is a stereo limiting amplifier used in broadcast stations to prevent overmodulation. Its use in any audio application will increase the signal-tonoise ratio and lessen the possibility of distortion by limiting the audio peaks. The 26U-2 consists of two, separate, identical, three-stage amplifiers. The first stage of each amplifier is limited automatically by a system which utilizes the audio peaks above a fixed threshold. These audio peaks are taken from the output stage of each amplifier and rectified to produce a regative bias that is fed back to the grids of the input stages. The input and output of each amplifier are both controllable by means of attenuators located on the front panel. Two panel meters are provided for metering three selectable internal circuits and two selectable external circuits. A single self-contained power supply is included in the 26U-2.

4.2 Audio Amplifier Circuits.

Refer to block diagram figure 4-1 and to figure 7-1. Audio enters the 26U-2 at terminals 1 and 2 of both TB1 and TB2, which connect to optional pads (see optional connections). The output of the two pads is fed through INPUT LEVEL attenuators A and B and into the input transformers T1 and T5. The first audio stage of each amplifier, V1 and V11, type GL-6386, is excited in push-pull from the secondary of T1 and T5. The plate voltage for V1 and V11 is obtained by a shunt circuit through current balancing controls R12 and R112. The audio outputs of V1 and V11 are transformer coupled to the grids of V2 and V12. These push-pull intermediate amplifiers are of the type 12AU7 dual triodes. The outputs of V2 and V12 are connected to two sets of two 6V6-GTA tubes, V3, V4, V13, and V14. The plate loads for the two final amplifiers are transformers T3 and T7. One secondary winding, terminals 5 and 6 of T3 and T7, is employed in a negative feedback circuit to the cathodes of V2 and V12 to reduce distortion and improve frequency response characteristics of the amplifiers. The other winding is the output winding and is connected to two 10-db pads and then to the OUTPUT LEVEL attenuators A and B. The attenuators are connected to the terminals 7 and 8 of TB1 and TB2. These terminals are two 600-ohm floating outputs.

4.3 Peak Limiting Control Circuits.

The characteristics of V1 and V11, type GL-6386 tubes, are such that the gain of each tube can be varied by varying the bias to the control grid without producing

appreciable distortion. The 26U-2 takes advantage of this feature by using two 6AL5 dual diode tubes, V5 and V15, to rectify the peak audio at the plates of the output tubes, then feeding the voltages thus obtained back to the grids of V1 and V11 as negative bias to reduce the gain of the amplifier during the periods of peak audio. The audio from the plates of the audio output tubes is coupled to the cathodes of the two 6AL5 tubes through the two sets of capacitors C11, C12 and C111, C112. The cathodes of the two 6AL5 tubes are biased with a fixed positive voltage from the regulated portion of the power supply to obtain a threshold below which the two 6AL5 tubes will not pass current. When the audio output level of the 6V6-GTA tubes goes above the threshold bias level, the two 6A15 tubes conduct and rectify the audio peaks. The gain control bias, obtained at the plates of the two 6AL5 tubes, is fed to the grids of V1 and V11 through R52 and R152, the attack time variable resistors. The attack time constant is produced by capacitors C10 and C110 which also filter the audio ripple from the gain control bias. The release time of the gain control bias is adjusted by resistors R48 and R148 which bleed the charge from capacitors C10 and C110 after the 6AL5 tubes stop conducting.

4.4 Power Supply.

The power supply uses a full-wave, bridge-type rectifier circuit. The combination plate and filament transformer T4 drives the four bridge rectifiers CR2, CR3, CR5, and CR6 (see figure 7-1). Resistor R62 is an 18-ohm resistor used as a surge limiter. Capacitor C18 is used to hold the rectified wave at a constant d-c level. Resistors R59, R60, R61, R159, R160, and R161 along with capacitors C15A, C15B, C16A, C16B, C17A, and C17B are connected as filters for each channel to eliminate ripple inthed-c current value. The full output of the power supply is applied to the plates and screens of the output tubes V3, V4, V13, and V14. Regulated 150 volts are obtained by the use of R47, R147, and VR tubes V6 and V16, OA2 gaseous regulators. This regulated 150-volt supply is used for the plates of V1 and V11 and for the threshold bias applied to V5 and V15. The threshold bias is reduced to the proper value by the use of bleeder resistors R53, R54, R153, and R154. Extra filtering and audio decoupling is obtained by the use of capacitors C8, C13, C3, C108, C113, and C103.

4.5 Metering Circuits.

Meters M1 and M2 are panel-mounted, rectifier-type meters calibrated in volume units (vu) and db gain reduction units. The meters are connected to three

SECTION 4 Principles of Operation

internal circuits, INPUT, G.R., and OUTPUT, and to two external circuits G.R. EXT and EXT audio, by the meter switch, S1A, S1B, S1C, and S1D. It should be noted that switch S1A, S1B, S1C, and S1D are connected to a single panel indicator. When the meters are measuring audio, meter multipliers AT1A and AT1B, calibrated in volume units are connected to them. The 0 VU REFERENCE attenuators, AT1A and AT1B, extend the meter calibration in 2 VU steps so that the meters can indicate levels in the range of -16 VU to +27 VU and OFF.

4.6 Stereo-Monaural Option.

The 26U-2 contains optional stereo-monaural operation. When switch S5 is placed in monaural position, the 26U-2 operates as two separate monaural limiters. Positioning S5 to stereo enables both channels to be limited to the same output. Semi-conductors CR1 and CR4 are used to prevent feedback into C10 and C110. Such feedback would increase the attack time by effectively lowering C10 and C110.

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maintenance

5.1 Bench Performance Test.

The following procedure can be used to check the results of any service work done on the equipment or to check equipment suspected of being faulty.

5.1.1 TEST EQUIPMENT REQUIRED.

The following test equipment or equivalents are required to perform the specified test:

- a. Audio oscillator HP-200AB.
- b. Attenuator panel, Daven Ha-740-B with pads.
- c. Vtvm HP-410B.
- d. Vtvm HP-400D.
- e. Distortion analyzer HP-330D.
- f. Head phones, high impedance.
- g. Oscilloscope, Elco d-c wide band or equivalent.
- h. Resistance bridge.

5.1.2 TEST CONDITIONS.

Unless otherwise specified, all test should be performed under the following conditions:

a. Line voltage, frequency and phase: 115 volts (or 230 volts if 26U-2 is so converted) 50/60 cps, single phase.

b. Ambient temperature: Normal studio ambient.

c. Ambient humidity: Normal studio ambient.

d. Ambient atmospheric pressure: Normal studio ambient.

e. Shielding and isolation requirements: The 26U-2 should be tested in an area free from a strong

electromagnetic field and have adequate power line shielding.

- f. Operational duty cycle: Continuous.
- g. Warmup period: Five minutes.
- h. Input and output impedance: 600 ohms.

5.1.3 INITIAL ADJUSTMENTS.

5.1.3.1 G.R. ZERO SETTING. Set the METER switch to the G.R. position, and with zero input signal, set the two G.R. ZERO controls, R10 and R110, for 0 reading on the DB GAIN REDUCTION scale of the two meters.

5.1.3.2 G.R. BAL.

a. Set the two OUTPUT LEVEL controls to maximum attenuation (ccw).

- b. Set METER switch to INPUT.
- c. Set all VU attenuation to 8.
- d. Set STEREO MONO switch to MONO.

e. Connect the audio oscillator to one input of the 26U-2 through the Daven attenuator panel with at least 10 db of attenuation inserted. (See figure 5-1.)

f. Set INPUT LEVEL control of channel to be used to CCW position.

g. Apply 1000-cps audio to the input channel being used of the 26U-2 until the meter indicates 0 VU (0 equals +8 VU when 0 VU REFERENCE attenuator is set at 8).

h. Set the METER FUNCTION switch to G.R., and slowly advance the INPUT LEVEL control until threshold is reached (meter reading starts to indicate gain reduction).

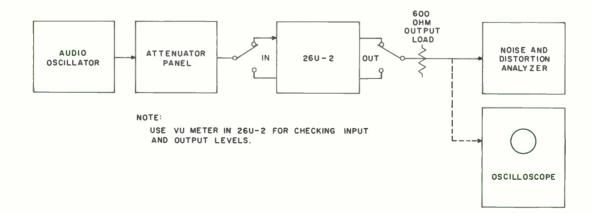


Figure 5-1. Test Setup, Block Diagram

i. Set the METER FUNCTION switch to OUTPUT and the 0 VU REFERENCE attenuator to 8 VU. Advance the OUTPUT LEVEL control until the VU meter indicates 0 VU.

j. Switch out 2- or 3-db attenuation at the Daven attenuator, and note if the output meter has a downward deflection before rising.

k. If the condition of step j is noted R12 (R112), the G.R. BAL potentiometer is not set properly and should be readjusted to a point where no downward kick is present.

1. Make the same check (step j) with a 10-db increase in input signal. If the setting of R12 (R112) has to be changed very much, find a compromise setting that will give a 1/2-db or less downward kick for either a 3- or 10-db increase in signal.

m. Reconnect the input and output to the other channel. Repeat steps e through 1.

An oscilloscope may be used to check balance, if desired. Attach the oscilloscope to the amplifier output, and synchronize it to the 1000-cps input so several cycles can be observed. With the 26U-2 set on the verge of compression, remove 10 db of attenuation from the Daven attenuator panel, and observe the pattern. When the 26U-2 is balanced, the change in amplitude with increase will be uniform as shown in figure 5-2. While watching the attack time, switch 10 db of attenuation in and out. Set R12 (R112) for best point of balance. Figure 5-3 is a photograph of a 26U-2 unbalanced to both limits of R12 (R112). The input level was increased from 4 db below threshold to 6 db above threshold. Each division equals 50 milliseconds.

5.1.4 ATTACK AND RELEASE TIME.

The attack and release time can be checked by using an oscilloscope and a 1000-cps input signal. Attach the oscilloscope to the output of one channel of the 26U-2 and synchronize it with the 1000-cps input signal. Set STEREO MONO switch to MONO (see figure 5-1). Set the 26U-2 on the verge of compression, suddenly remove 10 db of attenuation from the Daven attenuator, and observe the attack time. The attack time should be adjustable between 2 to 5 milliseconds with R52 (R152). See figure 5-2 for illustration of a typical unit for attack time. The top view was made with R52 (R152) set for fast attack time. The bottom view was made with R52 (R152) set for fast attack time. The bottom view was made with R52 (R152) set for fast attack time. The bottom view was made with R52 (R152) set for slow attack time. The photographs were made of the output level of the 26U-2 with an input change from 4 db below threshold to 6 db into compression. Each division equals 50 milliseconds.

In order to observe release time, quickly insert 10-db attenuation with the Daven attenuator, and observe the time it takes for the waveform to return to its original level on the scope. This release time should be adjustable between 1/2 to 5 seconds for 63 percent recovery with R48 (R148).

Figure 5-4 illustrates release time. In the top photograph R48 (R148) was set for fast release. In the bottom photograph R48 (R148) was set for slow release, and the photographs were made of the output level of the 26U-2 while the input changed from 6 db above threshold to 4 db below threshold. Each division equals one second.

NOTE

For optimum stereo limiting, both the attack time and the release time should be set the same on each channel.

5.1.5 TEST PROCEDURES.

5.1.5.1 FREQUENCY RESPONSE.

a. Run a standard freugency response after the input has been adjusted to a point 3 db below limiting for

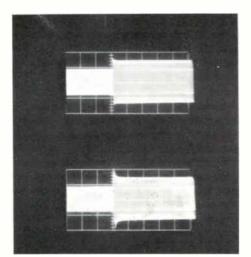


Figure 5-2. 26U-2 Stereo Peak Limiter, Attack Time

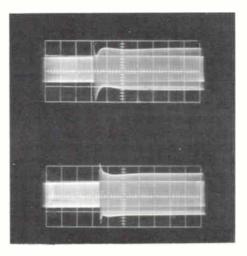


Figure 5-3. 26U-2 Stereo Peak Limiter, Unbalancing

SECTION 5 Maintenance

1000 cps and maintained at that level for balance of frequencies. The response should be the same for both channels and should vary not more than ± 15 dbm.

b. Repeat step a with the input set at 10 db above the verge of limiting. The response should be the same as listed for a.

5.1.5.2 GAIN.

a. Set the INPUT LEVEL and OUTPUT LEVEL controls to full cw position.

b. Feed audio into the 26U-2, but stay below limiting action as indicated by the DB GAIN REDUCTION scales.

c. Compute gain. The gain should have a value of approximately 40 db.

5.1.5.3 DISTORTION MEASUREMENTS.

a. Adjust the audio input level to 3 db below the point of limiting at 1000 cps and hold constant as the following frequencies are checked for distortion: 50 cps; 1000 cps; and 15,000 cps. The distortion from both channels should be not more than 1 percent at 15,000 cps and 1000 cps or more than 1.5 percent at 50 cps.

b. Repeat step a except for adjusting the input level to 10 db above limiting. The distortion on both channels should be approximately the same or slightly more than that in step a.

5.1.5.4 NOISE LEVEL.

a. Disconnect the audio input to the 26U-2. Connect both input and output terminations to 600-ohm loads, and turn the two INPUT LEVEL and OUTPUT LEVEL controls to full cw. Switch STEREO MONO switch to MONO position and measure output noise. The value of both channels should be less than -50 dbm.

5.1.5.5 COMPRESSION RATIO.

a. Set the ATTACK (R52, R152) and the RELEASE (R48, R148) time controls to slow (ccw).

b. Set the OUTPUT LEVEL attenuator to midrange. With a 1000-cps input signal adjust input level to 1 db above threshold. Increase the signal until the output signal has increased 1 db and find ratio of input level increase/output level increase. Ratio should be 12:1 for slow attack and release times.

c. Repeat for fast attack and release times, i.e., R52, R152, R48, and R148 set at cw position. Ratio should be 9:1.

d. Repeat steps c and bfora 2-db increase in output. Ratio should be 20:2 for slow attack and release times.

5.1.5.6 CROSS CONTROL.

a. With STEREO MONO switch in STEREO, apply a 1000-cps signal at threshold to both channels and set the OUTPUT LEVEL for +20 dbm. Increase the level to one channel 10 db. The gain reduction meters should read the same and output level of the increased channel should now be 20.5 to 22 dbm and the other channel 9 to 13 dbm.

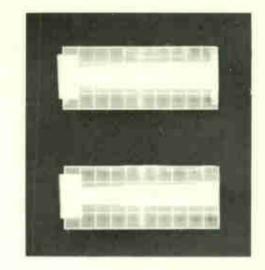


Figure 5-4. 26U-2 Stereo Peak Limiter, Release Time

b. Increase the input to the other channel, and observe output and gain reduction meter readings. These readings should be the same as in step a.

5.1.5.7 CROSS TALK.

a. Set STEREO MONO switch to STEREO and apply a 1000-cps signal at threshold to one channel. Set with OUTPUT LEVEL controls to cw position (maximum), and measure the difference in the output levels. This value should be 60 db or more.

b. Repeat step a for opposite channel. The difference should be 60 db or more.

5.1.5.8 PLATE VOLTAGE. Measure the plate voltage between pin 4 of V4 and chassis when line voltage is at specified value. The value of plate voltage should be not less than 285 volts and not more than 315 volts.

5.2 Maintenance.

5.2.1 TROUBLE SHOOTING.

a. Check fuse. If it is defective, replace with 2-ampere, cartridge-type, Slo-Blo fuse (1-ampere fuse using 230-volt input).

b. Connect 26U-2 to 115 volts 50/60 cps and check to see that filaments are lighting. Absence of power to the filaments will indicate a faulty power transformer (T4).

c. Check voltage to plates of V4 and V14. The value should be between 285 and 315 volts. If the voltage is other than this, the bridge circuit (CR2, CR3, CR5, CR6) of the power supply is probably malfunctioning. The voltage at the output of the bridge rectifier should be 380 volts. If the bridge circuit is okay, check the components of the filter circuits R59, C15A, R159, C16A, etc.

d. Measure the voltages illustrated in table 5-1 with power applied as in normal operation and with 50-cps input signal to cause 10 db of limiting. All voltage readings in table 5-1 are taken with the line voltage SECTION 5 Maintenance

		PIN NUMBER								
TUBE	MEASUREMENT	1	2	3	4	5	6	7	8	9
V1, V11 GL-6386	V d-c		1.1	-4.5	119		119	-4.5	1.1	
GL-0380	V a-c	2.9		0.48	1.1		1.0	0.48		2.8
	Ohms	0.1	195	11 meg	22K		22K	11 meg	190	0.1
V2, V12	V d-c	178	0	6.4			175	0	6.4	
12AU7	V a-c	5.2	1.5	1.0	2.9	2.9	5.2	1.5	0.95	2.9
	Ohms	50K	9700	800	0.1	0.1	50K	9700	800	0.1
V3, V4, V13, V14	V d-c			280	290	0			18.5	
6V6-GTA	V a-c		2.9	71.0		5.0		2.9	1.0	
	Ohms		0.1	9600		280K		0.1	470	
V5, V15	V d-c	102	-4.5			102		-4.5		
6AL5	V a-c	71.0	0.07	2.9	2.9	71.0		0.07		
	Ohms	530K	0.5 meg	0.1	0.1	520K		0.5 meg		
V6, V16 OA2	V d-c		0			148				
UA2	Ohms		0			16K				
		1		1	L	1	1			·

TABLE 5-1. RESISTANCE AND VOLTAGE MEASUREMENTS

NOTES

1. Measurements made between each pin and ground.

2. Resistance measurements made with vom.

3. Voltage measurements made with 50-cps input and 10-db limiting.

4. A-c and d-c measurements made with Hewlett-Packard 410B.

as specified. All resistance measurements are taken with no power applied. All measurements are taken between specified terminal and ground.

e. If trouble still cannot be located, perform resistance continuity checks from input until fault is found.

5.2.2 TUBE REPLACEMENT.

Best results are obtained with the 26U-2 when matched tubes are used in the output stage (V3, V4, and V13, V14). Select replacement tubes that are free from electrical and mechanical noises. Should the characteristics of the type 6386 (V1, V11) change, a thump might appear in the limiting action and be difficult to remove by adjustment of G.R. BAL. Replace the tube and adjust G.R. BAL, using procedure given in paragraph 5.1.3.2.

5.2.3 METER LAMP REPLACEMENT.

The lamps for the VU meters are accessible from the top. These lamps are mounted on a bracket at the inside of the front panel. Remove the top of the 26U-2 unit and replace the lamps with number 47, 6.3-volt, brown-bead, bayonet-base lamps, and replace the top.

section 6

parts list

ITEM	DESCRIPTION	COLLINS PART NUMBER	ITEM	
	26U-2 STEREO PEAK LIMITER	522-3237-00	0110	
	200-2 SIEREO PEAK LIMITER	522+5251-00	C119 C120	CA CA
			CRI	SE
AT1	ATTENUATOR, VARIABLE: 7500 ohms input,	378-0574-00	CIU	Hu
	3900 ohms output nom impedance; 12 steps;			par
	2 vu attenuation per step; Daven Co.		CR2	SE
	part no. 9806			her
C1	CAPACITOR, FIXED, ELECTROLYTIC: 24 uf	183-1173-00	CR3	SE
	-10% +100%, 50 v dc; Sprague Electric			as
	part no. D29328		CR4	SE
C2	CAPACITOR, FIXED, PAPER: 0.1 uf ±20%,	931-5511-00		as
	600 v dc		CR5	SE
C3	CAPACITOR, FIXED, ELECTROLYTIC: 40 uf	183-1556-00		as
	-10% +50%, 450 v dc; Sprague Electric		CR6	SE
	part no. D29679			2.5
C4	CAPACITOR, FIXED, PAPER: same as C2	931-5511-00	DS1	LA
C5	CAPACITOR, FIXED, ELECTROLYTIC:	183-1173-00		baa
	same as C1			am
C6	CAPACITOR, FIXED, ELECTROLYTIC:	183-1173-00	DS2	LA
C7	same as C1	012 2012 00	F1	FU
	CAPACITOR, FIXED, CERAMIC: 10,000 uuf ±20% 500 v dc	913-3013-00	E.0	125
C8	CAPACITOR, FIXED, CERAMIC: 0.1 uf	913-3152-00	F2	FU
	-20% +80%, 500 v dc; Sprague Electric Co. of	819-2125-00		lag pai
	Wisconsin part no. 41C92			Mo
C9	NOT USED		H1	
C10	CAPACITOR, FIXED, PAPER: 1.0 uf ±20%,	931-6854-00		in.
	400 v dc; Sprague Electric part no. 161P10504			Pr
C11	CAPACITOR, FIXED, PAPER: same as C10	931-6854-00	H2	BR
C12	CAPACITOR, FIXED, PAPER: same as C10	931-6854-00		5/8
C13	CAPACITOR, FIXED, ELECTROLYTIC:	183-1562-00		pai
	450 v dc, 8 uf -10% +50%		H3	RE
C14	NOT USED			pla
C15	CAPACITOR, FIXED, ELECTROLYTIC: dual	183-1486-00		in.
	section; 60 uf both sections -10% +50%, 450 v dc		H4	WA
	both sections			fin
C16	CAPACITOR, FIXED, ELECTROLYTIC:	183-1486-00	H5	ĢR
	same as C15			rut
C17	CAPACITOR, FIXED, ELECTROLYTIC:	183-1486-00		15/
	same as C15		J1	CO
C18	CAPACITOR, FIXED, ELECTROLYTIC:	183-1411-00		3 n
210	100 uf -10% +100%, 450 v dc	001 5505 00	70	at
C19	CAPACITOR, FIXED, PAPER: 0.033 uf ±20%,	931-5505-00	J2	CO
	200 v dc; Sprague Electric Co. part no. 160P33302			4 f
C20	CAPACITOR, FIXED, PAPER; same as C19	021 5505 00	7.9	pai
C21	NOT USED	931-5505-00	J3	CO 841
hru			M1	ME
C100			INT I	100
2101	CAPACITOR, FIXED, ELECTROLYTIC:	183-1173-00		ma
	same as C1	100 110-00		3-1
C102	CAPACITOR, FIXED, PAPER: same as C2	931-5511-00	M2	ME
C103	CAPACITOR, FIXED, ELECTROLYTIC:	183-1486-00	MP1	CO
	same as C3			me
C104	CAPACITOR, FIXED, PAPER: same as C2	931-5511-00		by
C105	CAPACITOR, FIXED, ELECTROLYTIC:	183-1173-00	MP2	co
	same as Cl			me
C106	CAPACITOR, FIXED, ELECTROLYTIC:	183-1173-00		by
	same as Cl		MP3	00
2107	CAPACITOR, FIXED, CERAMIC: same as C7	913-3013-00		me
2108	CAPACITOR, FIXED, CERAMIC: same as C8	913-3152-00		by
2109	NOT USED		MP4	DO
2110	CAPACITOR, FIXED, PAPER: same as C10	931-6854-00		fin
2111	CAPACITOR, FIXED, PAPER: same as C10	931-6854-00	MP5	HA
2112	CAPACITOR, FIXED, PAPER: same as C10	931-6854-00		7/3
2113	CAPACITOR, FIXED, ELECTROLYTIC:	183-1562-00	01	KN
	same as C13			ins
2114	NOT USED			8-3
2115	NOT USED			Mo
2116	NOT USED		02	KN
2117	NOT USED		03 04	KN
2118				

ITEM	DESCRIPTION	COLLINS PART NUMBER
C119 C120 CR1	CAPACITOR, FIXED, PAPER: same as C19 CAPACITOR, FIXED, PAPER: same as C19 SEMICONDUCTOR DEVICE, DIODE: silicon;	931-5505-00 931-5505-00 353-0206-00
CR2	Hughes Products Div of Hughes Aircraft Co. part no. 1N459 SEMICONDUCTOR DEVICE, DIODE: silicon;	353 <mark>-3277-00</mark>
	hermetically sealed; JETEC type 1N3256	
CR3	SEMICONDUCTOR DEVICE, DIODE: same as CR2	353-3277-00
CR4	SEMICONDUCTOR DEVICE, DIODE: same as CR1	353-0206-00
CR5	SEMICONDUCTOR DEVICE, DIODE: same	353-3277-00
CR6	SEMICONDUCTOR DEVICE, DIODE: same	353-3277-00
DS1	LAMP, INCANDESCENT: miniature bayonet base; T-3-1/4 pilot light bulko; 6.3 v, 0.150	262-3240-00
DS2	amps; General Electric Co. part no. 47 LAMP, INCANDESCENT: same as DS1	262-3240-00
F1	FUSE, CARTRIDGE: glass enclosed, 2 amp,	264-0297-00
F2	125 v; Littelfuse, Inc. part no. 313002 FUSE, CARTRDGE: glass enclosed, time	264-0295-00
	lag; 1 amp, 250 v dc max; Littelfuse, Inc. part no. 313.001 (to be used when rewired for	
H1	Modification Kit) RETAINER, CAPACITOR: carbon steel; 1/16	139-0090-00
	in. id, 5/8 in. w, 1/8 in. dia mtg hole; Prestole Corp. part no. E 50008-051	
H2	BRACKET, CAPACITOR: steel, 13/16 in. id, 5/8 in. w, 1/8 in. dia mtg hole; Prestole Corp.	139-0088-00
Н3	part no. E 50005-051 RETAINER, CAPACITOR: metallic, zinc plated finish; 0.625 in. w, 0.937 in. dia, 1.125	139-0089-00
H4	in. h; Prestole Corp. part no. E 50007-051 WASHER, FLAT: rd shape, CRES, passivate	504-0730-003
Н5	finish; 0.120 in. id, 0.375 in. od, 0.018 in. thk GROMMET, RUBBER: rubber or synthetic rubber; black finish; 3/8 in. by 7/16 in. by	201-0023 -00
J1	15/16 in.; MS type MS35489-42 CONNECTOR, RECEPTACLE, ELECTRICAL: 3 male contacts; 15 amp. at 110 v ac, 10 amp	368-0203-00
J2	at 250 v ac; Amphenol Borg part no. 160-5 CONNECTOR, RECEPTACLE, ELECTRICAL: 4 female contacts; 3 amps; Amphenol Borg	3 <mark>72-2184-00</mark>
J 3	part no. 77-26 CONNECTOR, RECEPTACLE, ELECTRICAL:	372-2184-00
M1	same as J1 METER, AUDIO LEVEL: -20 thru +3, 0 thru 100 VU, 20 thru 0 db gain reduction, scale markings; 2-1/8 in. by 2-13/16 in. by	456-00 <mark>60-00</mark>
M2 MP1	3-1/2 in. METER, AUDIO LEVEL: same as M1 COVER, PEAK LIMITER, TOP: aluminum, med dark gray finish; 0.032 in. thk; 6-1/4 in. by 16-7/16 in.	456-0060-00 554-6055-003
MP2	COVER, PEAK LIMITER, BOTTOM: aluminum, med dark gray finish; 0.040 in. thk; 8-1/2 in.	554-6052-003
MP3	by 16-7/16 in. COVER, PEAK LIMITER, REAR: aluminum, med dark gray finish; 0.032 in. thk; 8.406 in.	554-6065-003
MP4	by 16. 438 in. DOOR, ACCESS: carbon steel, light gray	554-6084-003
MP5	finish; 0.747 in. thk; 2.547 in. by 16.444 in. HANDLE, DOOR: aluminum, brush finish;	554-6041-003
01	7/16 in. by 11/32 in. by 2 in. KNOB: setscrew type, black phenolic, brass	281-0069-00
0.	insert for 1/4 in. shaft, 13/32 in. by 1 in. dia, 8-32NC-2 setscrew supplied; Harry Davies	
	Moulding Co. part no. 1400	
02	KNOB: same as Ol KNOB: same as Ol	281-0069-00 281-0069-00

SECTION 6 Parts List

06 KNOE: Liske phenolic shell, abuniums shift, Liske Lizke and Liske phenolic shell, abuniums shift, Liske Lizke TWA Linke RECOVERS (Linker Schuler Schuler) 144-080	EX000. Back selectic selection. 10, all L2 20 all s	ITEM	DESCRIPTION	COLLINS PART NUMBER	ITEM	DESCRIPTION	COLLINS PART NUMBE
64 KYOB: Make possible shell, stumine mitti, www.mittiget.com/state 949-103-003 attic, 1/2 ar ML type CCOCPUIG: Market possible shell, stumine mitti, www.mittiget.com/state 746-869 746-869 or KYOB: same a 04 Market possible shell, stumine mittig, state 746-869 Market possible shell, stumine mittig, state 746-869 74	RVDB. Back phenolic suble, stateminum skin, Vol Back and black phenolic suble, phenolic	05	KNOB: same as O1	281-0069-00	R45	RESISTOR, FIXED, COMPOSITION: 10 megohnis	745-1520-00
07 NNOR: same a 04 940-112-003 847 FEESTOR 1. TREED, VIEWOURD, Same as Ref 34-084 74-044 72 CONNECTOR, HIGC: PLACE, ELECTRICL 4. same as Ref 74-144 74-148-00 74-144 74-148-00 74-144 74-148-00 74-144 74-148-00 74-144 74-148-00	NO.00. same as 0.6 950-483-003 Ref TESETOR, FUEX, UNIXAUDUS, LEY, MARCHARD, SAME ARD AND AND AND AND AND AND AND AND AND AN	06	KNOB: black phenolic shell, aluminum skirt, 1.562 in. dia and black plastic setscrew knob	549-1023-003		±10%, 1/2 w; MIL type RC20GF106K RESISTOR, FIXED, WIREWOUND: 310 ohms	746-6087-00
conductor; 125 v; 13 unp, Amphenia Borg T75-146 P2 Conta, S., 20 unp, Amphenia Borg 372-318-00 P3 Conta, S., 20 unp, S.	consistency: 125 *, 15 amps, Ampheend Borg 17 - 218 - 00 17 - 218 - 00 17 - 218 - 00 18 - 014 - 00		KNOB: same as O6 CONNECTOR, RECEPTACLE, ELECTRICAL:			RESISTOR, FIXED, WIREWOUND: same as R46 RESISTOR, VARIABLE, COMPOSITION:	746-6087-00 380-0681-00
Construct, 3 amos, Amplemed Borg part ao. 70-26 PRO Description, 2000 PRO Description, 2000 PRO 00 NOT USED 372-2183-00 372-2183-00 PRO P	constructs amage: Amage: Amage: Amage and process of the second of the sec	50	conductors; 125 v, 15 amps, Amphenol Borg part no. 160-8	070 0100 00	R49	RV4NAXSD505D RESISTOR, FIXED, COMPOSITION: 0.47	745-1464-00
a. P2 R1 RESERVOR. FXED, CMNCSHTDN: same 745-143 R1 RESERVOR. FXED, CMNCSHTDN: same 745-144 R2 RESERVOR. FXED, CMNCSHTDN: same 745-144 R3 R35 RESERVOR. FXED, CMNCSHTDN: same 745-144 R4 R4 R55 R55 R55 R55 R55 R55 R4 R4 R55	a. 19 A. 19 PA 19 PA 148-19 PA 148-19 MOT USED MOT USED PA 148-19 PA 148-19 PA 148-19 PA 148-19 MOT USED PA 148-19 PA		contacts; 3 amps; Amphenol Borg part no. 70-26		R 50	RESISTOR, FIXED, COMPOSITION: 0.56	745-1468-00
13 ATTENUATOR, VARIABLE: to setting: 2 w; 000 cmm s278, 2 w; 14 w; NIL type R220 PERL 8 138-004-00 000 cmm s278, 2 w; 140 w; NIL type R220 PERL 9 745-707 745-707 16 B3:004-00 000 cmm s278, 1 2 w; 140 w; NIL type R220 PERL 958, 1 2 w; MIL type R230 PERL 950, 1 2 w; MIL type R2	ATTENUATOR, VARUABLE: to section; 2%, 383-004-00 383-004-00 25,000 0mm; 20%, 2%; ML Pyte 745-721- Barding Co., part an. 8200 383-004-00 785 78		as P2 NOT USED		R51	RESISTOR, FIXED, COMPOSITION: same	745-1468-00
Braday Co. paraty no. 8230 Paraty Co. paraty no. 8230 Paraty Co. paraty no. 8230 Paraty Co.	Bradby Co. part no. 4250 745-5074 745-5074 745-5074 745-5074 745-5074 745-5074 745-5074 745-5074 745-5074 745-5074 745-5074 745-5074 745-5074 745-5074 745-5074 745-5074 745-5074 745-1432-00 745-5074 745-1432-00 745-5074 745-1432-00 745-5074 745-1432-00 745-5074 745-5074 745-1432-00 745-5074 745-1432-00 745-5074 745-1432-00 745-5074 745-1432-00 745-5074 745-1432-00 745-5074 745-1432-00 745-5074 745-1432-00 745-5074 745-1432-00 745-5074 745-1432-00 745-5074 745-1432-00 745-5074 745-1432-00 745-5074 745-1432-00 745-5074 745-1432-00 745-5074 745-50		ATTENUATOR, VARIABLE: two section; 2 w,	383-0044-00	R52	25,000 ohms ±20%, 2 w; MIL type	380-0664-00
55 RESISTOR, FUED, COMPOSITION: 620 ohms 745-133-00 R54 R254 RESISTOR, FUED, COMPOSITION: 620 ohms 745-173-703 67 RESISTOR, FUED, COMPOSITION: 620 ohms 745-133-00 R55 RESISTOR, FUED, COMPOSITION: 47,000 745-143-00 68 RESISTOR, FUED, COMPOSITION: 1,000 705-7082-00 R56 R57 NOT USED 745-143 69 RVA, WILL type RV6000FP R37 705-703-00 R57 NOT USED R57 745-143 60 RUSETOR, FUED, VILL type RV6000FP R35 705-703-00 R58 NOT USED R58 774-640 744-640 11.4 w, WILL type RV6000FP R35 705-703-00 R61 RESISTOR, FUED, VILLWEWOIND: anne as R59 744-640 11.2 RESISTOR, FUED, VILLWEWOIND: anne as R59 744-640 R61 RESISTOR, FUED, VILLWEWOIND: anne as R59 744-640 11.3 RESISTOR, FUED, FUEN, FUED, FUEN, FUED, FUED, FUEN, FUED, FUED, FUEN, FUED, FUEN, FUED	RESERTOR, FYEED, COMPOSITION: 400 ohms 745-1343-00 R54 125-1343-00 R55 R552707, FYEED, COMPOSITION: 47, 000 PRESERTOR, FYEED, COMPOSITION: 47, 000 745-142-0 R55 R55707, FYEED, COMPOSITION: 47, 000 PRESERTOR, FYEED, COMPOSITION: 47, 000 75-7045-00 R57 NOT USED R57 PRESERTOR, FYEED, COMPOSITION: 47, 000 80-0071-00 R57 NOT USED R57 PRESERTOR, FYEED, COMPOSITION: 1, 000 80-0071-00 R56 R57 NOT USED PRESERTOR, FYEED, COMPOSITION: 1, 000 80-0071-00 R56 R57 NOT USED NOT USED PRESERTOR, FYEED, COMPOSITION: 1, 000 80-0071-00 R56 R57 NOT USED NOT USED PRESERTOR, FYEED, COMPOSITION: 1, 000 80-0071-00 R56 R57 NOT USED NOT USED NOT USED XVALABLE, COMPOSITION: 1, 000 80-0071-00 R56 R57 NOT USED NOT USED NOT USED XVALABLE, COMPOSITION: 1, 000 80-0071-00 R56 R57 R57 R57 R57 R57 R57 R57 R57 R57	₹ 4	Bradley Co. part no. 82503	383-0044-00	R53	RESISTOR, FIXED, COMPOSITION: 47,000	745-5721-00
64 RESISTOR, FIXED, COMPOSITION: same as R5 745-1343-00 R55 RESISTOR, FIXED, COMPOSITION: 4, 000 745-143 88 JASSISTOR, FIXED, FILM: 19 ohms 1%; JA 4*, 541 type RK3000FF 705-7046-00 R65 R071 DSED NOT DSED R60 RESISTOR, FIXED, VIRRNOUND: 20 ohms aff, 146-001 aff, 14: MU type RV32PUBB NOT DSED R60 NOT DSED R60 NOT DSED NOT DSED R60 RESISTOR, FIXED, PILM: same as R7 765-7165-00 R10 R05 RESISTOR, FIXED, PILM: same as R7 765-7165-00 R10 R85 R06 RESISTOR, FIXED, PILM: same as R17 765-7165-00 R10 R85 R06 RESISTOR, FIXED, PILM: same as R17 765-7165-00 R10 R85 R06 RESISTOR, FIXED, PILM: same as R17 765-7165-00	RESETTOR, FIXED, COMPOSITION: same as R5 765-1036-00 R5 765-1036-00 765-1042-00 76		RESISTOR, FIXED, COMPOSITION: 620 ohms		R54	RESISTOR, FIXED, COMPOSITION; same	745-5707-00
8 RESETOR, FIXED, FILL: 10.9 ohms al%; DA(4, yiki, Wyer NF6008PF) 705-705-200 R57 NOT USED Packator 9 RESETOR, FIXED, FILL: 12 domas al%; RESETOR, FIXED, FILL: 10.000 ohms, 705-7052-00 R61 RESETOR, FIXED, WIERVOUND: same as R59 746-614 10 RESETOR, FIXED, FILL: 10.000 ohms, 705-7052-00 R61 RESETOR, FIXED, WIERVOUND: same as R59 746-614 11 RESETOR, FIXED, FILL: 10.000 ohms, 705-7239-00 R61 RESETOR, FIXED, WIERVOUND: same as R59 746-614 12 RESETOR, FIXED, FILL: 11, 000 ohms, 705-7155-00 R106 RESETOR, FIXED, COMPOSITION: same as R7 746-514 13 RESETOR, FIXED, FILL: 11, 800 ohms al%; 705-7156-00 R106 RESETOR, FIXED, FILL: 11, 800 ohms al%; 705-7156-00 R106 RESETOR, FIXED, FILL: 11, 800 ohms al%; 705-7156-00 R106 RESETOR, FIXED, FILL: 11, 800 ohms al%; 705-7156-00 R106 RESETOR, FIXED, FILL: 11, 800 ohms al%; 705-7156-00 R106 RESETOR, FIXED, FILL: 11, 800 ohms al%; 705-7156-00 R106 RESETOR, FIXED, FILL: 11, 800 ohms al%; 705-7156-00 R106 RESETOR, FIXED, FILL: 11, 800 ohms al%; 705-7156-00 R106 RESETOR, FIXED, FILL: 11, 800 ohms al%; 705	RESISTOR, FIXED, FILM: 90.9 ohms alfs, 1/4 wild upper NofSenger T05-7064-00 R17 NOT USED R14 wild upper NofSenger R15 T05-7052-00 R15 NOT USED R2528TOR, FIXED, FILM: 21 ohms alfs, 1/4 wild upper NofSenger T05-7052-00 R18 NOT USED R2528TOR, FIXED, FILM: 10,000,000 ohms, alfs, 1 v; ML type RN7855111F T05-7052-00 R25 R18 R25		RESISTOR, FIXED, FILM: 196 ohms ±1%,			RESISTOR, FIXED, COMPOSITION: 47,000 ohms ±10%, 1/2 w; MIL type RC20G F473K	745-1422-00
99 RESISTOR, FIXED, FILM: 121 ohms #15, 1/4 will, Uppe RV84XSD10D 705-7022-00 855 FIXESETOR, FIXED, WILEWOUND: same as R59 746-14 110 RESISTOR, FIXED, WILEWOUND: same as R59 746-14 746-14 746-14 111 Will, Dyne RV84XSD10D 765-3259-00 R60 RESISTOR, FIXED, WILEWOUND: same as R59 746-14 112 RESISTOR, FIXED, WILEWOUND: same as R59 746-14 R61 RESISTOR, FIXED, WILEWOUND: same as R59 746-14 111 Will, Dyne RV84ASD102B 705-3259-00 R62 R62 R62 R63 NOT USED R63 NOT USED R64-04	RESETTOR, TIXED, VIANUE, 121 ohms s15, 1/4 v; ML type RMSB1210F 705-7032-00 RESS RESETOR, TIXED, VIEWOUND: 210 ohms s16, 1 v; ML type RMSB1210F 746-6147. RESETTOR, TIXED, VIEWOUND: same same same same same same same same	18	RESISTOR, FIXED, FILM: 90.9 ohms ±1%;	705-7046-00	R57	NOT USED	
10 RESISTOR, VARIABLE, COMPOSITION: 1,000 380-0671-00 R60 RESISTOR, FIXED, WIEWOUND: same as R59 746-144 11 RESISTOR, FIXED, WIEWOUND: same as R59 746-145 746-144 746-144 12 RESISTOR, FIXED, WIEWOUND: same as R59 746-144 746-144 746-144 13 RESISTOR, FIXED, WIEWOUND: same as R59 746-144 746-144 746-144 14 NOT USED 745-145 746-144 746-144 14 NOT USED 746-145 746-145 746-144 14 NOT USED 746-145 746-145 746-145 14 NOT USED 746-1328-00 746-1328-00 746-1328-00 746-1328-00 18 RESISTOR, FIXED, PEED, FILM: same as R11 745-1328-00 745-1328-00 746-1328-00 746-1328-00 746-1328-00 746-1328-00 746-1328-00 746-1328-00 746-1328-00 746-1328-00 746-1328-00 746-1328-00 746-1328-00 746-1328-00 746-1328-00 746-1328-00 746-1328-00 746-1328-00 746-1328-00 746-1328-00 746-1328-00 <td< td=""><td>RESETOR, VARIABLE, COMPOSITION: 1,000 380-0671-00 RESETOR, FIXED, WIEEWOUND: same as R59 746-6147- 746-6147- 746-6147- 746-6147- 746-6147- 746-6147- 746-6147- 8255TOR, FIXED, FILM: 1,000 obms, -158, 1;2, WIEEWOUND: 18 obms, -58, 2;2, WIEEWOUND: 18 obms, -58, 2;2, WIEEWOUND: 18 obms, -58, 2;2, WIEEWOUND: 18 obms, -58, 2; WIEEWOUND: 18, 17, 4;2, WIEEWOUND: 12, 000 -0, 12, 12, WIEE</td><td>39</td><td>RESISTOR, FIXED, FILM: 121 ohms ±1%,</td><td>705-7052-00</td><td></td><td>RESISTOR, FIXED, WIREWOUND: 270 ohms</td><td>746-6147-00</td></td<>	RESETOR, VARIABLE, COMPOSITION: 1,000 380-0671-00 RESETOR, FIXED, WIEEWOUND: same as R59 746-6147- 746-6147- 746-6147- 746-6147- 746-6147- 746-6147- 746-6147- 8255TOR, FIXED, FILM: 1,000 obms, -158, 1;2, WIEEWOUND: 18 obms, -58, 2;2, WIEEWOUND: 18 obms, -58, 2;2, WIEEWOUND: 18 obms, -58, 2;2, WIEEWOUND: 18 obms, -58, 2; WIEEWOUND: 18, 17, 4;2, WIEEWOUND: 12, 000 -0, 12, 12, WIEE	39	RESISTOR, FIXED, FILM: 121 ohms ±1%,	705-7052-00		RESISTOR, FIXED, WIREWOUND: 270 ohms	746-6147-00
RESISTOR, FURED, FILM: 1, 000, 000 ohms, at 8, iv; ML type RYSB5111F RESISTOR, FURED, VIREWOUND: 18 ohms at 8, 10%, 11%, ML type RYSB5117F RESISTOR, FURED, VIREWOUND: 18 ohms at 8, 10%, 11%, ML type RYSB5117F RESISTOR, FURED, FILM: same as R11 705-2259-00 resistors, FURED, FURED, FILM: same as R11 705-2259-00 resistors, FURED, FURED, FILM: same as R11 705-2259-00 resistors, FURED, FURED, FURED, FILM: same as R17 705-7156-00 resistors, FURED, FURED, FURED, FILM: same as R17 705-7156-00 resistors, FURED, FURED, FURE, FURED, FURE, FURED, FURE, FURED, FURE, FURED, FURE, Same as R17 705-7156-00 resistors, FURED, FURE, COMPOSITION: same as R10 705-7156-00 RESISTOR, FURED, COMPOSITION: same as R10 705-7156-00 R111 R1111 RESISTOR, FURED, COMPOSITION: same as R10 705-7156-00 R111 R1111 R11111	RESISTOR, FXEED, FILM: 1,000,000 chms, s15, 1v; MLL type RV259101F 765-2259-00 R65 NOT USED 745-6845- 875, 1v; ML type RV259100 745-1345- 875, 1v; ML type RV259100 NOT USED 705-2259-00 R105 R65 NOT USED 745-1345- 875-136-00 745-1345- 875-136-00 NOT USED 705-2259-00 R106 RESISTOR, FXED, PILM: same as R1 745-1345- 705-704- 705-7156-00 RESISTOR, FXED, FILM: same as R1 705-7156-00 R107 RESISTOR, FXED, FILM: same as R1 765-7156-00 RESISTOR, FXED, PILM: 17, 800 ohms a 1%, 174, 172, w; ML type R7050T100: 100 ohms 705-7156-00 R110 RESISTOR, FXED, FILM: same as R1 705-7156-00 RESISTOR, FXED, PILM: 11, and as R17 705-7156-00 R110 RESISTOR, FXED, FILM: same as R1 705-7156-00 RESISTOR, FXED, COMPOSITION: 200 ohms 745-1328-00 R111 RESISTOR, FXED, FILM: same as R1 705-7256-700 RESISTOR, FXED, COMPOSITION: 20, 000 745-5707-00 R111 R2SISTOR, FXED, COMPOSITION: 20, 000 745-1450-00 R111 R2SISTOR, FXED, COMPOSITION: 20, 000 745-1450-00 R111 R2SISTOR, FXED, COMPOSITION: 20, 000 745-1450-00 R111 R2SISTOR, FXED, COMPOSITION: 20, 000	R10	RESISTOR, VARIABLE, COMPOSITION: 1,000	380-0671-00		RESISTOR, FIXED, WIREWOUND: same as R59	746-6147-00
112 RESISTOR, FARLABLE, COMPOSITION: 1,00 380-087-00 R63 NOT USED 113 RESISTOR, FUKED, FILM: same as R11 705-3259-00 R104 R2 R104 R2 R2 R111 R2 R2 R111 R2 R2 R2 R111 R2 R	RESISTOR, VARIABLE, COMPOSITION: 1,000 380-087-00 F63 NOT USED 0hms 202, 27, 27,000 FXED, FILM: same as R1 705-3259-00 R103 RESISTOR, FIXED, COMPOSITION: same as R5 745-1343-745	R11	RESISTOR, FIXED, FILM: 1,000,000 ohms,	705-3259-00		RESISTOR, FIXED, WIREWOUND: 18 ohms	746-6045-00
144 NOT USED 1105 PESISTOR, FIXED, COMPOSITION: same as R5 745-134 145 NOT USED 1105 PESISTOR, FIXED, COMPOSITION: same as R5 745-134 116 NOT USED 1106 PESISTOR, FIXED, COMPOSITION: same as R5 745-134 117 RESISTOR, FIXED, COMPOSITION: 270 ohms 745-1328-00 745-1328-00 745-1328-00 1106 PESISTOR, FIXED, COMPOSITION: same as R5 745-1328-00	NOT USED NOT USED RESISTOR, FIXED, COMPOSITION: same as R5 745-1345 NOT USED RESISTOR, FIXED, FIXED, FILM: 17,800 ohms ±1%, 17,800 ohms ±10%, 17,800 ohms ±18,			380-0637-00			
115 NOT USED PESISTOR, FIXED, COMPOSITION: same as R1 745-1328-00 117 RESISTOR, FIXED, FILM: 17, 800 ohms s1%, 1705-7156-00 RESISTOR, FIXED, FILM: same as R1 705-7156-00 118 RESISTOR, FIXED, COMPOSITION: 270 ohms s1%, 1705-7156-00 R106 RESISTOR, FIXED, FILM: same as R1 705-7156-00 118 RESISTOR, FIXED, COMPOSITION: 270 ohms s1%, 1745-1328-00 R111 RESISTOR, FIXED, COMPOSITION: same as R1 705-7156-00 118 RESISTOR, FIXED, COMPOSITION: 1000 ohms s1%, 1745-1328-00 R111 RESISTOR, FIXED, COMPOSITION: same as R1 705-732 210 RESISTOR, FIXED, COMPOSITION: same same 745-1328-00 R111 RESISTOR, FIXED, COMPOSITION: same as R1 705-732 221 RESISTOR, FIXED, COMPOSITION: same 745-507-00 R111 RESISTOR, FIXED, COMPOSITION: same 8817 705-732 223 RESISTOR, FIXED, COMPOSITION: same 745-507-00 R113 R017 RESISTOR, FIXED, COMPOSITION: same 8817 705-732 234 RESISTOR, FIXED, COMPOSITION: same 745-5638-00 R120 R121 RESISTOR, FIXED, COMPOSITION: same 745-133 R131 RESISTOR, FIXED, COMPOSITION: same 745-133 236 RESISTOR, FIXED, COMPOSITION: 2,200 745-1450-00 R112 RESISTOR, FIXED, COMPOSITION: 3,200	NOT USED NOT USED NOT USED NOT USED NOT USED NOT USED RESISTOR, FIXED, COMPOSITION: 17,000 ohms ±1%, 17,400 ohms ±1%, 1000 ohms ±1%, 17,400 ohms ±1%, 17,4000 ohms ±1%, 17,40000 ohms ±1%, 17,4000 ohms ±1%, 17,4000 ohms ±1%, 17,400			705-3259-00		RESISTOR, FIXED, COMPOSITION: same as R5	745-1343-00
17 RESISTOR, FIXED, FILM: 17, 800 ohms ±1%, 17, 800 ohms ±10%, 17, 800 ohms ±10\%, 17, 800 ohms ±10\%, 17, 800 ohms ±10\%	RESISTOR, FIXED, FILM: 17, 800 ohms ±1%, 1/4 w; MIL type RC30F172F 705-7156-00 R108 RESISTOR, FIXED, FILM: same as R8 705-7056- 705-7056- R55170R, FIXED, COMPOSITION: 1000 ohms ±10%, 1/2 w; MIL type RC30F271K 705-7156-00 R10 RESISTOR, FIXED, COMPOSITION: 1000 ohms ±10%, 1/2 w; MIL type RC30F71K 705-7156-00 R110 RESISTOR, FIXED, COMPOSITION: 1000 ohms ±10%, 1/2 w; MIL type RC30F71K 705-7156-00 R111 RESISTOR, FIXED, COMPOSITION: 1000 ohms ±10%, 1/2 w; MIL type RC30F71K 705-7156-00 R111 RESISTOR, FIXED, COMPOSITION: 1000 ohms ±10%, 1/2 w; MIL type RC30F723J 705-7156-00 R111 RESISTOR, FIXED, COMPOSITION: 12,000 705-7156-00 R116 NOT USED R117 RESISTOR, FIXED, COMPOSITION: 10,000 745-1450-00 R119 RESISTOR, FIXED, COMPOSITION: 100,000 745-1450-00 R119 RESISTOR, FIXED, COMPOSITION: 100,000 745-1436-00 R120 R121 RESISTOR, FIXED, COMPOSITION: 100,000 745-1436-00 R121 RESISTOR, FIXED, COMPOSITION: 100,000 745-1436-00 R121 <t< td=""><td></td><td>NOT USED</td><td></td><td>R106</td><td>RESISTOR, FIXED, COMPOSITION: same as R5</td><td>745-1343-0</td></t<>		NOT USED		R106	RESISTOR, FIXED, COMPOSITION: same as R5	745-1343-0
1/4 w, ML type RNS5B1782 F 1/5 Rios Rios Rios Resistron, FIXED, FILM: same as B3 705-705 19 RESISTOR, FIXED, COMPOSITION: 270 ohms 745-1328-00 Ril Resistron, FIXED, COMPOSITION: same 380-063 20 RESISTOR, FIXED, COMPOSITION: 1000 ohms 745-1328-00 Ril Ril Resistron, FIXED, FILM: same as Ril 705-725 21 RESISTOR, FIXED, COMPOSITION: same 745-1328-00 Ril	1/4 w; ML type R465B1782F 705-7156-00 RESISTOR, FIXED, CUMPOSITION: 20 ohms 705-7156-00 R110 RESISTOR, FIXED, CUMPOSITION: 3ame 380-0671. a F31 27 w; ML type RC30GF21K 745-1328-00 R111 RESISTOR, FIXED, CUMPOSITION: 3ame 380-0671. a F31 27 w; ML type RC30GF21K R25170R, FIXED, CUMPOSITION: 3ame 745-1328-00 R111 RESISTOR, FIXED, CUMPOSITION: 3ame 380-0677. a F13 RESISTOR, FIXED, COMPOSITION: 3ame 745-1328-00 R111 RESISTOR, FIXED, COMPOSITION: 3ame 380-0637. a F13 RESISTOR, FIXED, COMPOSITION: 3ame 745-5707-00 R115 NOT USED R116 NOT USED RESISTOR, FIXED, COMPOSITION: 3ame 745-5707-00 R116 NOT USED R117 RESISTOR, FIXED, COMPOSITION: 3ame 745-1328-00 resistor, FIXED, COMPOSITION: 3ame 745-5638-00 R111 RESISTOR, FIXED, COMPOSITION: 3ame 745-1328-00 resistor, FIXED, COMPOSITION: 3ame 745-1436-00 R121 RESISTOR, FIXED, COMPOSITION: 3ame 745-1328-00 resistor, FIXED, COMPOSITION: 3ame 745-1436-00 R121 RESISTOR, FIXED, COMPOSITION: 3ame 745-1328-00 <td></td> <td></td> <td>705-7156-00</td> <td></td> <td></td> <td></td>			705-7156-00			
19 RESISTOR, FIXED, COMPOSITION: 270 ohms 745-1328-00 1110	RESISTOR, FIXED, COMPOSITION: 270 ohms 745-1328-00 R113 as R10 as R10 r05-2259. RESISTOR, FIXED, COMPOSITION: 1000 ohms 745-1352-00 R112 RESISTOR, FIXED, COMPOSITION: same as R11 705-2259. RESISTOR, FIXED, COMPOSITION: same as R12 745-1328-00 R113 RESISTOR, FIXED, FIXED, COMPOSITION: same as R12 705-2259. RESISTOR, FIXED, COMPOSITION: same as R12 745-5707-00 R115 NOT USED R114 RESISTOR, FIXED, FIXED, COMPOSITION: same as R17 705-7156. RESISTOR, FIXED, COMPOSITION: same as R17 745-1328-00 R115 NOT USED R116 RESISTOR, FIXED, COMPOSITION: same as R17 705-7156. RESISTOR, FIXED, COMPOSITION: 220,000 745-1450-00 R119 RESISTOR, FIXED, COMPOSITION: same as R17 705-7156. RESISTOR, FIXED, COMPOSITION: 100,000 745-1436-00 R121 RESISTOR, FIXED, COMPOSITION: same as R17 745-1328. al06, 12, wi, ML type RC32CF22X 745-1436-00 R121 RESISTOR, FIXED, COMPOSITION: same as R24 R42 RESISTOR, FIXED, COMPOSITION: 2,200 745-1436-00 R124 R125 R25 R26 R26 R26 R26 74		1/4 w; MIL type RN65B1782F				705-7052-0
4.10%, 1/2 w; ML type RC20CF21K 745-1352-00 REISTOR, FIXED, FILM: same as R11 705-723 20 RESISTOR, FIXED, COMPOSITION: 1000 ohms 745-1352-00 R111 RESISTOR, FIXED, FILM: same as R11 705-723 21 RESISTOR, FIXED, COMPOSITION: same 745-1352-00 R113 RESISTOR, FIXED, FILM: same as R11 705-723 22 RESISTOR, FIXED, COMPOSITION: same 745-5707-00 R114 NOT USED 31 RESISTOR, FIXED, COMPOSITION: same 745-5707-00 R116 NOT USED 32 RESISTOR, FIXED, COMPOSITION: same 745-1450-00 R116 NOT USED 34 RESISTOR, FIXED, COMPOSITION: 100,000 745-1450-00 R110 RESISTOR, FIXED, COMPOSITION: same 745-137 36 RESISTOR, FIXED, COMPOSITION: 22,000 745-1436-00 R120 RESISTOR, FIXED, COMPOSITION: same 745-137 37 RESISTOR, FIXED, COMPOSITION: 22,000 745-1436-00 R120 RESISTOR, FIXED, COMPOSITION: same 745-1436-00 310 RDSTOR, FIXED, COMPOSITION: 37 745-3386-00 R121 RESISTOR, FIXED, COMPOSITION: same 745-1436-00 32	±10%, 1/2 w; ML type RC20CF271K 745-1352-00 R111 RESISTOR, FIXED, COMPOSITION: same as R11 705-2359- ±10%, 1/2 w; ML type RC20CF102K 745-1352-00 R112 RESISTOR, FIXED, COMPOSITION: same as R11 705-2359- as R19 RESISTOR, FIXED, COMPOSITION: same as R19 745-1352-00 R114 NOT USED 800-0637- mass R19 RESISTOR, FIXED, COMPOSITION: same as R17 705-1252-00 R114 NOT USED 705-2359- RESISTOR, FIXED, COMPOSITION: same as R17 705-7156- R116 NOT USED 705-1350- RESISTOR, FIXED, COMPOSITION: same as R17 705-7156- R116 RDT USED 705-1350- RESISTOR, FIXED, COMPOSITION: 100,000 745-1436-00 R10 RESISTOR, FIXED, COMPOSITION: same as R17 705-1360- a R19 RESISTOR, FIXED, CMPOSITION: same as R17 705-1360- R118 RESISTOR, FIXED, COMPOSITION: same as R17 705-1360- a R18 RESISTOR, FIXED, CMPOSITION: same as R17 705-1360- R12 RESISTOR, FIXED, COMPOSITION: same as R17 705-1360- a R19 RESISTOR, FIXED, CMPOSITION: same as R17 705-1360- R12 RESISTOR, FIXED, COMPOSITION: s				R110		380-0671-0
21 RESISTOR, FIXED, COMPOSITION: same 745-1328-00 R113 TESISTOR, FIXED, FILM: same as R11 705-323 22 RESISTOR, FIXED, COMPOSITION: 22,000 745-5707-00 R115 NOT USED R117 RESISTOR, FIXED, COMPOSITION: 23,000 745-5707-00 R115 NOT USED 23 RESISTOR, FIXED, COMPOSITION: 23,000 745-5707-00 R116 NOT USED R117 RESISTOR, FIXED, COMPOSITION: 23,000 745-1450-00 R118 NOT USED R117 RESISTOR, FIXED, COMPOSITION: 23,000 745-1436-00 R118 R25 R26 R25 R25 R21 R26 R25 R25 R26 R25 R25 R21 R25 R25 R21 R22 R21 R25 R21 R22 R25 R21 R25 R22 R21 R25 R21 R22 R21 R21 R22 R21 R21 R25 R21 R22 R21	RESISTOR, FIXED, COMPOSITION: same as R19 745-1328-00 R113 R114 R115 R114 R115 R115 R116 R117 R117 R118 R118 R119 R111 R1111 R11111 R11111 R1111 <		±10%, 1/2 w; MIL type RC20GF271K			RESISTOR, FIXED, FILM: same as R11	705-3259-0
22 RESISTOR, FIXED, COMPOSITION: 22,000 745-5707-00 R115 NOT USED 23 RESISTOR, FIXED, COMPOSITION: same 745-5707-00 R116 NOT USED 24 RESISTOR, FIXED, COMPOSITION: 220,000 745-1450-00 R116 NOT USED 25 RESISTOR, FIXED, COMPOSITION: 20,000 745-1450-00 R118 RESISTOR, FIXED, COMPOSITION: same 745-137 26 RESISTOR, FIXED, COMPOSITION: 470 ohms 745-5638-00 R120 RESISTOR, FIXED, COMPOSITION: 32,00 745-136-00 26 RESISTOR, FIXED, COMPOSITION: 2,00 745-366-00 R121 RESISTOR, FIXED, COMPOSITION: 3ame 745-137 27 RESISTOR, FIXED, COMPOSITION: 3ame 745-1460-00 R122 RESISTOR, FIXED, COMPOSITION: 3ame 745-1460-00 28 R24 RESISTOR, FIXED, COMPOSITION: same 745-16638-00 R12 R124 RESISTOR, FIXED, COMPOSITION: same 745-146-00 29 RESISTOR, FIXED, COMPOSITION: same 745-16638-00 R124 RESISTOR, FIXED, COMPOSITION: same 745-146-00 20 RESISTOR, FIXED, COMPOSITION: same 745-16638-00 R126 R127	PESISTOR, FIXED, COMPOSITION: 22,000 745-5707-00 R115 NOT USED RESISTOR, FIXED, COMPOSITION: same as R22 745-5707-00 R115 NOT USED RESISTOR, FIXED, COMPOSITION: 20,000 745-1450-00 R116 NOT USED RESISTOR, FIXED, COMPOSITION: 20,000 ohms 4105, 1/2 w; MIL type RC20GF224X RESISTOR, FIXED, COMPOSITION: 10,000 745-1450-00 R120 RESISTOR, FIXED, COMPOSITION: same as R20 745-5638-00 R121 RESISTOR, FIXED, COMPOSITION: same as R20 745-1450-00 R121 RESISTOR, FIXED, COMPOSITION: same as R20 745-1450-00 R122 RESISTOR, FIXED, COMPOSITION: same as R20 745-1450-00 R122 RESISTOR, FIXED, COMPOSITION: same as R20 745-1450-00 R122 RESISTOR, FIXED, COMPOSITION: same as R24 745-1450-00 R122 RESISTOR, FIXED, COMPOSITION: same as R24 745-1450-00 R122 RESISTOR, FIXED, COMPOSITION: same as R24 745-1450-00 R124 RESISTOR, FIXED, COMPOSITION: same	21	RESISTOR, FIXED, COMPOSITION: same	745-1328-00		RESISTOR, FIXED, FILM: same as R11	705-3259-0
23 RESISTOR, FIXED, COMPOSITION: same as R22 745-5707-00 (745-1450-00) R117 (715-717) RESISTOR, FIXED, FILM: same as R17 (705-711 705-717 (75-717) 24 RESISTOR, FIXED, COMPOSITION: 220,000 ohms a105, 1/2 w; ML type RC20GF224K 745-1450-00 ohms a105, 1/2 w; ML type RC20GF104K 745-1436-00 as R19 R118 RESISTOR, FIXED, COMPOSITION: same as R19 745-133 25 RESISTOR, FIXED, COMPOSITION: 20,000 ohms a105, 1/2 w; ML type RC20GF104K 745-5638-00 R121 RESISTOR, FIXED, COMPOSITION: same as R20 745-1436-00 26 RESISTOR, FIXED, COMPOSITION: 32.00 745-1436-00 R212 RESISTOR, FIXED, COMPOSITION: same as R24 745-1436-00 27 RESISTOR, FIXED, COMPOSITION: same as R24 745-1436-00 R212 RESISTOR, FIXED, COMPOSITION: same as R24 745-1436-00 28 RESISTOR, FIXED, COMPOSITION: same as R24 745-1436-00 R212 RESISTOR, FIXED, COMPOSITION: same as R24 745-143 29 RESISTOR, FIXED, COMPOSITION: same as R26 745-1370-00 R212 RESISTOR, FIXED, COMPOSITION: same as R26 745-137 30 RESISTOR, FIXED, COMPOSITION: same as R34 745-1370-00 R45-1370-00 R212 R212 R212 R212 R212<	RESISTOR, FIXED, COMPOSITION: same 745-5707-00 R117 RESISTOR, FIXED, FIXED, COMPOSITION: 20,000 745-1450-00 R118 RESISTOR, FIXED, FIXED, COMPOSITION: 20,000 745-1450-00 R118 RESISTOR, FIXED, COMPOSITION: 300 745-1436-00 R118 RESISTOR, FIXED, COMPOSITION: 300 745-1436-00 R118 RESISTOR, FIXED, COMPOSITION: 300 745-1436-00 R120 RESISTOR, FIXED, COMPOSITION: 300 745-1436-00 R121 RESISTOR, FIXED, COMPOSITION: 300 745-1436-00 R122 RESISTOR, FIXED, COMPOSITION: 300 745-1436-00 R121 RESISTOR, FIXED, COMPOSITION: 300 745-1436-00 R122 RESISTOR, FIXED, COMPOSITION: 300 745-1436-00 R124 RESISTOR, FIXED, COMPOSITION: 300 R145-1436-00 R124 R255 R255 R255 R26 R255 R26 R255 R26	22	RESISTOR, FIXED, COMPOSITION: 22,000	745-5707-00	R115	NOT USED	
as R22 ras R22 rds-1450-00 RESISTOR, FIXED, COMPOSITION: 220,000 rds-1450-00 R118 RESISTOR, FIXED, COMPOSITION: same rds-1450-00 25 RESISTOR, FIXED, COMPOSITION: 100,000 rds-1436-00 R119 RESISTOR, FIXED, COMPOSITION: same rds-133 26 RESISTOR, FIXED, COMPOSITION: 100,000 rds-1436-00 R120 RESISTOR, FIXED, COMPOSITION: same rds-133 26 RESISTOR, FIXED, COMPOSITION: 2,200 rds-3366-00 R121 RESISTOR, FIXED, COMPOSITION: same rds-574 27 RESISTOR, FIXED, COMPOSITION: same rds-1450-00 R123 RESISTOR, FIXED, COMPOSITION: same rds-547 28 RESISTOR, FIXED, COMPOSITION: same rds-1450-00 R123 RESISTOR, FIXED, COMPOSITION: same rds-547 29 RESISTOR, FIXED, COMPOSITION: same rds-1436-00 R124 RESISTOR, FIXED, COMPOSITION: same rds-147 30 RESISTOR, FIXED, COMPOSITION: same rds-147.06-00 R124 RESISTOR, FIXED, COMPOSITION: same rds-547 31 NOT USED RESISTOR, FIXED, COMPOSITION: same rds-147.36-00 R124 RESISTOR, FIXED, COMPOSITION: same	as R22 RESISTOR, FIXED, COMPOSITION: 220,000 ohms ±10%, 1/2 w; ML type RC20GF224k RESISTOR, FIXED, COMPOSITION: 100,000 ohms ±10%, 1/2 w; ML type RC20GF104k RESISTOR, FIXED, COMPOSITION: 3400,000 ohms ±10%, 1/2 w; ML type RC20GF104k RESISTOR, FIXED, COMPOSITION: 2,200 ohms ±10%, 1/2 w; ML type RC20GF222k RESISTOR, FIXED, COMPOSITION: 3,200 ohms ±10%, 1/2 w; ML type RC20GF222k RESISTOR, FIXED, COMPOSITION: 3,200 doms ±10%, 1/2 w; ML type RC20GF22k RESISTOR, FIXED, COMPOSITION: 3,200 RESISTOR, FIXED, COMPOSITION: 3,200 doms ±10%, 1/2 w; ML type RC20GF22k RESISTOR, FIXED, COMPOSITION: 3,200 RESISTOR, FIXED, COMPOSITION: 3,200 RESISTO	23		745-5707-00			705-7156-0
ohms ±10%, 1/2 w; MIL type RC20GF224k as R19 as R19 as R19 as R19 25 RESISTOR, FIXED, COMPOSITION: 100,000 745-1436-00 Resistor, FIXED, COMPOSITION: same 745-133 26 RESISTOR, FIXED, COMPOSITION: 470 ohms 745-5638-00 R121 Resistor, FIXED, COMPOSITION: same 745-573 27 RESISTOR, FIXED, COMPOSITION: 2,200 745-3366-00 R122 RESISTOR, FIXED, COMPOSITION: same 745-573 28 RESISTOR, FIXED, COMPOSITION: same 745-1450-00 R123 RESISTOR, FIXED, COMPOSITION: same 745-1450-00 29 RESISTOR, FIXED, COMPOSITION: same 745-1456-00 R123 RESISTOR, FIXED, COMPOSITION: same 745-1456-00 29 RESISTOR, FIXED, COMPOSITION: same 745-1456-00 R124 RESISTOR, FIXED, COMPOSITION: same 745-1456-00 30 RESISTOR, FIXED, COMPOSITION: same 745-1456-00 R124 RESISTOR, FIXED, COMPOSITION: same 745-145-145 31 NOT USED RESISTOR, FIXED, COMPOSITION: same 745-1370-00 R26 R212 RESISTOR, FIXED, COMPOSITION: same 745-1370-00 33 RESISTOR, FIXED, COMPOSITION	ohms 10%, 1/2 w; MIL type RC20CF224X RESISTOR, FIXED, COMPOSITION: 100,00 ohms 10%, 1/2 w; MIL type RC20CF104K RESISTOR, FIXED, COMPOSITION: 470 ohms 10%, 1/2 w; MIL type RC20CF11K RESISTOR, FIXED, COMPOSITION: 3, 2, 200 ohms 10%, 1 w; MIL type RC20CF22X RESISTOR, FIXED, COMPOSITION: 3 ame as R24 RESISTOR, FIXED, COMPOSITION: 3 ame as R25 RESISTOR, FIXED, COMPOSITION: 3 ame as R26 RESISTOR, FIX		as R22				705-7156-0
ohms ±10%, 1/2 v; ML type RC20GF104K r45-5638-00 rais rais <thr> rais rais</thr>	ohms 10%, 1/2 w; MLL type RC20GF104k745-5638-00R121Ra B20R121Ra B20RESISTOR, FIXED, COMPOSITION: 2,200745-3366-00R122RESISTOR, FIXED, COMPOSITION: same745-1328-RESISTOR, FIXED, COMPOSITION: 2,200745-3366-00R122RESISTOR, FIXED, COMPOSITION: same745-5637-as R24RESISTOR, FIXED, COMPOSITION: same745-1450-00R123R22RESISTOR, FIXED, COMPOSITION: same745-5638-00as R24RESISTOR, FIXED, COMPOSITION: same745-1436-00R124RESISTOR, FIXED, COMPOSITION: same745-1450-00as R25R25R125RESISTOR, FIXED, COMPOSITION: same745-5638-00R124RESISTOR, FIXED, COMPOSITION: same745-5638-00as R26NOT USEDRESISTOR, FIXED, COMPOSITION: same745-1370-00R2RESISTOR, FIXED, COMPOSITION: same745-3666NOT USEDRESISTOR, FIXED, COMPOSITION: 2700745-1370-00R127RESISTOR, FIXED, COMPOSITION: same745-3366NOT USEDRESISTOR, FIXED, COMPOSITION: 1500745-1370-00R128R25R127RESISTOR, FIXED, COMPOSITION: same745-3366RESISTOR, FIXED, COMPOSITION: 1500745-1359-00R128R127RESISTOR, FIXED, COMPOSITION: same745-1359-00R36R25R120R129RESISTOR, FIXED, COMPOSITION: same745-1359-00R36R25R120R120R120R120R120R45R45R45-1359-00R131NOT USEDR120R46R45R45-1359-00R131R120R120		ohms ±10%, 1/2 w; MIL type RC20GF224K		R119	as R19	745-1328-0
±10%, 2 w; ML type RC42GF471Kas R19R122as R19R2227RESISTOR, FIXED, COMPOSITION: 2,200745-3366-00R122RESISTOR, FIXED, COMPOSITION: same745-57038R24RESISTOR, FIXED, COMPOSITION: same745-1450-00R123RESISTOR, FIXED, COMPOSITION: same745-57039RESISTOR, FIXED, COMPOSITION: same745-1436-00R124RESISTOR, FIXED, COMPOSITION: same745-14330RESISTOR, FIXED, COMPOSITION: same745-5638-00R125R125R125R125R12531NOT USEDR125RESISTOR, FIXED, COMPOSITION: same745-5638-00R125R126R2515TOR, FIXED, COMPOSITION: same745-56332NOT USEDR125RESISTOR, FIXED, COMPOSITION: same745-1370-00R127RESISTOR, FIXED, COMPOSITION: same745-14334RESISTOR, FIXED, COMPOSITION: same745-1370-00R128RESISTOR, FIXED, COMPOSITION: same745-14335RESISTOR, FIXED, COMPOSITION: same745-1370-00R128RESISTOR, FIXED, COMPOSITION: same745-14336RESISTOR, FIXED, COMPOSITION: same as R34R45-1359-00R131NOT USEDR131NOT USED37RESISTOR, FIXED, COMPOSITION: same as R34R45-5629-00R131NOT USEDR131NOT USED39RESISTOR, FIXED, COMPOSITION: same as R34R45-5638-00R131R25R133R0T USED39RESISTOR, FIXED, COMPOSITION: same as R34R45-5638-00R131R131R0T USEDR13339RESISTO	10%, 2 w; MIL type RC42GF471Kas R19as R19RESISTOR, FIXED, COMPOSITION: 2.200 ohms 10%, 1 w; MIL type RC32GF22X RESISTOR, FIXED, COMPOSITION: same as R24745-3366-00R122RESISTOR, FIXED, COMPOSITION: same as R22 RESISTOR, FIXED, COMPOSITION: same as R24745-1450-00R123RESISTOR, FIXED, COMPOSITION: same as R24RESISTOR, FIXED, COMPOSITION: same as R26745-1436-00R124RESISTOR, FIXED, COMPOSITION: same as R26745-5638-00R125RESISTOR, FIXED, COMPOSITION: same as R26745-5638-00NOT USED NOT USED NOT USED NOT USED RESISTOR, FIXED, COMPOSITION: same as R34745-1370-00R127RESISTOR, FIXED, COMPOSITION: same as R26745-1370-00RESISTOR, FIXED, COMPOSITION: 1500 ohms a10%, 1/2 w; MIL type RC20CF272X RESISTOR, FIXED, COMPOSITION: same as R34745-1370-00R128RESISTOR, FIXED, COMPOSITION: same as R27745-1370-00RESISTOR, FIXED, COMPOSITION: 1500 ohms a10%, 1/2 w; MIL type RC20CF12X RESISTOR, FIXED, COMPOSITION: same as R34745-1359-00R132R25RESISTOR, FIXED, COMPOSITION: 1500 ohms a10%, 1/2 w; MIL type RC20CF12X RESISTOR, FIXED, COMPOSITION: same as R36745-1359-00R130RESISTOR, FIXED, COMPOSITION: 300 ohms as R36745-5629-00R131 R133NOT USEDRESISTOR, FIXED, COMPOSITION: same as R36745-5629-00R131 R133NOT USEDRESISTOR, FIXED, COMPOSITION: same as R36745-5638-00R134 RESISTOR, FIXED, COMPOSITION: same as R34745-1370 R51370RESISTOR, FIXED, COMPOSITION: same as R36745-5629-00 <t< td=""><td></td><td>ohms ±10%, 1/2 w; MIL type RC20GF104K</td><td></td><td></td><td>as R20</td><td>745-1352-0</td></t<>		ohms ±10%, 1/2 w; MIL type RC20GF104K			as R20	745-1352-0
ohms 410%, 1 w; MIL type RC32GF222Kas R24as R24as R2428RESISTOR, FIXED, COMPOSITION: same745-1450-00R123as R22RESISTOR, FIXED, COMPOSITION: same745-7429RESISTOR, FIXED, COMPOSITION: same745-1436-00R124RESISTOR, FIXED, COMPOSITION: same745-14430RESISTOR, FIXED, COMPOSITION: same745-5638-00R125RESISTOR, FIXED, COMPOSITION: same745-56331NOT USEDRESISTOR, FIXED, COMPOSITION: 2700745-1370-00R127RESISTOR, FIXED, COMPOSITION: same745-33033NOT USEDRESISTOR, FIXED, COMPOSITION: 2700745-1370-00R127RESISTOR, FIXED, COMPOSITION: same745-34034RESISTOR, FIXED, COMPOSITION: 2700745-1370-00R128RESISTOR, FIXED, COMPOSITION: same745-14534RESISTOR, FIXED, COMPOSITION: 2700745-1370-00R127RESISTOR, FIXED, COMPOSITION: same745-14535RESISTOR, FIXED, COMPOSITION: 1500745-1370-00R128RESISTOR, FIXED, COMPOSITION: same745-14536RESISTOR, FIXED, COMPOSITION: 1500745-1359-00R131NOT USEDR131NOT USED37RESISTOR, FIXED, COMPOSITION: 300 ohms745-5629-00R131NOT USEDR131NOT USED38RESISTOR, FIXED, COMPOSITION: same745-5638-00R131NOT USEDR134RESISTOR, FIXED, COMPOSITION: same745-1338RESISTOR, FIXED, COMPOSITION: same745-5638-00R134RESISTOR, FIXED, COMPOSITION: same745-1339RESIS	ohms ±10%, 1 w; ML type RC32GF222K RESISTOR, FIXED, COMPOSITION: same as R24as R22 RESISTOR, FIXED, COMPOSITION: same as R25 RESISTOR, FIXED, COMPOSITION: same as R26 NOT USED NOT USED RESISTOR, FIXED, COMPOSITION: same as R26 NOT USED RESISTOR, FIXED, COMPOSITION: same as R26 RESISTOR, FIXED, COMPOSITION: same as R36 RESISTOR, FIXED, COMPOSITION: same as R36 RESISTOR, FIXED, COMPOSITION: same as R3 R26 RESISTOR, FIXED, COMPOSIT		±10%, 2 w; MIL type RC42GF471K			as R19	745-1328-0
as R24RESISTOR, FIXED, COMPOSITION: same as R25745-1436-00 resistor, FIXED, COMPOSITION: same as R26R124RESISTOR, FIXED, COMPOSITION: same as R26745-1436-00 resistor, FIXED, COMPOSITION: same as R26R124RESISTOR, FIXED, COMPOSITION: same as R26745-1436-00 resistor, FIXED, COMPOSITION: same as R26R124RESISTOR, FIXED, COMPOSITION: same as R26745-143R31NOT USED resistor, FIXED, COMPOSITION: 2700 ohms ±10%, 1/2 w; MIL type RC20CF272K 	as R24RESISTOR, FIXED, COMPOSITION: same as R25745-1436-00R124as R22RESISTOR, FIXED, COMPOSITION: same as R24745-1436-00RESISTOR, FIXED, COMPOSITION: same as R26745-5638-00R125RESISTOR, FIXED, COMPOSITION: same as R26745-1436-00NOT USED NOT USED NOT USED NOT USED NOT USED RESISTOR, FIXED, COMPOSITION: 2700745-1370-00RESISTOR, FIXED, COMPOSITION: same as R26R127RESISTOR, FIXED, COMPOSITION: same as R26745-3366- as R26RESISTOR, FIXED, COMPOSITION: same as R34 RESISTOR, FIXED, COMPOSITION: same as R36 RESISTOR, FIXED, COMPOSITION: same as: R36 RESISTOR, FIXED, COMPOSITION: same as: R45-1359-00R128 RESISTOR, FIXED, COMPOSITION: same as: R45-1359-00R129 RESISTOR, FIXED, COMPOSITION: same RESISTOR, FIXED, COMPOSITION: same as: R36 R36 R36 RESISTOR, FIXED, COMPOSITION: same as: R36 RESISTOR, FIXED, COMPOSITION: same as: R45-1359-00R131 R45-1359-00NOT USED R132 R131 R131 R515TOR, FIXED, COMPOSITION: same as: R36 R36 R36 R36R131 R515TOR, FIXED, COMPOSITION: same as: R45-1343-00R131 R133 R135 R36 R131R136 R131 RESISTOR, FIXED, COMPOSITION: same as: R36 R131R136 R131 RESISTOR, FIXED, COMPOSITION: same as: R36 R36 R36 R36 R36 R36 R36 R36 R36 R36 R36 R36 R36 R455 R455 R455 R45500<		ohms ±10%, 1 w; MIL type RC32GF222K			as R22	
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as R26as R26R31NOT USEDR32NOT USEDR33NOT USEDR34RESISTOR, FIXED, COMPOSITION: 2700r45-1370-00r65r8126r835RESISTOR, FIXED, COMPOSITION: 2700r65r45-1370-00r65r8127r85r85r85r85r85r85r85r85r85r85r85r85r85r85r85r85r85r85r86r87r85r87r87r86r87r86r87r88r87r89r87r89r87r89r87r80r87r81r87r81r87r81r87r81r87r82r87r81r87r82r87r83r87r84r87r85r87r85r87 <td>as R26NOT USEDas R25R126as R25R126RESISTOR, FIXED, COMPOSITION: same745-5638NOT USEDNOT USEDRESISTOR, FIXED, COMPOSITION: 2700745-1370-00R128R26R127RESISTOR, FIXED, COMPOSITION: same745-3366RESISTOR, FIXED, COMPOSITION: same745-1370-00R25R25RESISTOR, FIXED, COMPOSITION: same745-1450as R34RESISTOR, FIXED, COMPOSITION: same745-1359-00R128RESISTOR, FIXED, COMPOSITION: same745-1450as R34RESISTOR, FIXED, COMPOSITION: same as R36745-1359-00R131NOT USEDR130R130R131RESISTOR, FIXED, COMPOSITION: same as R36R45-5629-00R131NOT USEDR131NOT USEDR131R25RESISTOR, FIXED, COMPOSITION: same745-5629-00R134RESISTOR, FIXED, COMPOSITION: same745-1370as R36RESISTOR, FIXED, COMPOSITION: same745-5638-00R134RESISTOR, FIXED, COMPOSITION: same745-1370as R36RESISTOR, FIXED, COMPOSITION: same as R36745-1343-00R135R25R134R25745-1370as R26RESISTOR, FIXED, COMPOSITION: same as R36745-1343-00R137R251STOR, FIXED, COMPOSITION: same745-1359ATTENUATOR, VARIABLE: same as R3383-0044-00R137R251STOR, FIXED, COMPOSITION: same745-1359ATTENUATOR, VARIABLE: same as R3383-0044-00R137R251STOR, FIXED, COMPOSITION: same745-1359</td> <td></td> <td>as R25</td> <td></td> <td></td> <td>as R24</td> <td>745-1436-0</td>	as R26NOT USEDas R25R126as R25R126RESISTOR, FIXED, COMPOSITION: same745-5638NOT USEDNOT USEDRESISTOR, FIXED, COMPOSITION: 2700745-1370-00R128R26R127RESISTOR, FIXED, COMPOSITION: same745-3366RESISTOR, FIXED, COMPOSITION: same745-1370-00R25R25RESISTOR, FIXED, COMPOSITION: same745-1450as R34RESISTOR, FIXED, COMPOSITION: same745-1359-00R128RESISTOR, FIXED, COMPOSITION: same745-1450as R34RESISTOR, FIXED, COMPOSITION: same as R36745-1359-00R131NOT USEDR130R130R131RESISTOR, FIXED, COMPOSITION: same as R36R45-5629-00R131NOT USEDR131NOT USEDR131R25RESISTOR, FIXED, COMPOSITION: same745-5629-00R134RESISTOR, FIXED, COMPOSITION: same745-1370as R36RESISTOR, FIXED, COMPOSITION: same745-5638-00R134RESISTOR, FIXED, COMPOSITION: same745-1370as R36RESISTOR, FIXED, COMPOSITION: same as R36745-1343-00R135R25R134R25745-1370as R26RESISTOR, FIXED, COMPOSITION: same as R36745-1343-00R137R251STOR, FIXED, COMPOSITION: same745-1359ATTENUATOR, VARIABLE: same as R3383-0044-00R137R251STOR, FIXED, COMPOSITION: same745-1359ATTENUATOR, VARIABLE: same as R3383-0044-00R137R251STOR, FIXED, COMPOSITION: same745-1359		as R25			as R24	745-1436-0
132NOT USEDas R26133NOT USED145-1370-00RESISTOR, FIXED, COMPOSITION: same745-330134RESISTOR, FIXED, COMPOSITION: same745-1370-00RESISTOR, FIXED, COMPOSITION: same745-1330135RESISTOR, FIXED, COMPOSITION: same745-1370-00RESISTOR, FIXED, COMPOSITION: same745-140136RESISTOR, FIXED, COMPOSITION: 1500745-1359-00RESISTOR, FIXED, COMPOSITION: same745-160137RESISTOR, FIXED, COMPOSITION: same as745-1359-00R130RESISTOR, FIXED, COMPOSITION: same745-560138RESISTOR, FIXED, COMPOSITION: same as745-629-00R131NOT USED88 R26139RESISTOR, FIXED, COMPOSITION: same745-5629-00R132NOT USED88 R34140RESISTOR, FIXED, COMPOSITION: same745-5638-00R135RESISTOR, FIXED, COMPOSITION: same745-13139RESISTOR, FIXED, COMPOSITION: same745-1343-00R136RESISTOR, FIXED, COMPOSITION: same745-1343-00141RESISTOR, FIXED, COMPOSITION: same as R3745-1343-00R136RESISTOR, FIXED, COMPOSITION: same745-1343-00142RESISTOR, FIXED, COMPOSITION: same as R3745-1343-00R137RESISTOR, FIXED, COMPOSITION: same745-1343-00143ATTENUATOR, VARIABLE: same as R3383-0044-00R137RESISTOR, FIXED, COMPOSITION: same745-13	NOT USED NOT USED RESISTOR, FIXED, COMPOSITION: 2700 ohms ±10%, 1/2 w; MIL type RC20GF272K 		as R26			as R25	745-5638-0
134RESISTOR, FIXED, COMPOSITION: 2700745-1370-00as R27135RESISTOR, FIXED, COMPOSITION: same745-1370-00as R24136RESISTOR, FIXED, COMPOSITION: same745-1370-00as R24137RESISTOR, FIXED, COMPOSITION: 1500745-1359-00R130138RESISTOR, FIXED, COMPOSITION: same as745-1359-00R131139RESISTOR, FIXED, COMPOSITION: same745-629-00R131139RESISTOR, FIXED, COMPOSITION: same745-5629-00R131139RESISTOR, FIXED, COMPOSITION: same745-5629-00R134139RESISTOR, FIXED, COMPOSITION: same745-5629-00R134139RESISTOR, FIXED, COMPOSITION: same745-5638-00R135139RESISTOR, FIXED, COMPOSITION: same745-1343-00R135141RESISTOR, FIXED, COMPOSITION: same as R3745-1343-00R137142RESISTOR, FIXED, COMPOSITION: same as R3745-1343-00R137	RESISTOR, FIXED, COMPOSITION: 2700 ohms 10%, 1/2 w; MIL type RC20GF272K RESISTOR, FIXED, COMPOSITION: same as R34 RESISTOR, FIXED, COMPOSITION: 1500 RESISTOR, FIXED, COMPOSITION: 1500 RESISTOR, FIXED, COMPOSITION: same as r45-1359-00R128 R128 RESISTOR, FIXED, COMPOSITION: same as R24 R129R128 RESISTOR, FIXED, COMPOSITION: same r45-1436 r45-1436 r85 r45-1359-00R128 R129 RESISTOR, FIXED, COMPOSITION: same r45-1639-00 R131R129 RESISTOR, FIXED, COMPOSITION: same r45-1638 r85 R131R129 RESISTOR, FIXED, COMPOSITION: same r45-5638 r85 R131R130 R131 R131 R131R130 RESISTOR, FIXED, COMPOSITION: same r45-5638 R131R130 R131 R131 R131R130 RESISTOR, FIXED, COMPOSITION: same r45-1370 r8745-1343-00 r8736 r8745-1370 r8756 r8736 <td></td> <td></td> <td></td> <td></td> <td>as R26</td> <td>745-3366-0</td>					as R2 6	745-3366-0
as R34R34RESISTOR, FIXED, COMPOSITION: 1500745-1359-00RESISTOR, FIXED, COMPOSITION: same as R26745-1359-00R129RESISTOR, FIXED, COMPOSITION: same as R26745-144138RESISTOR, FIXED, COMPOSITION: same as r36745-1359-00R130RESISTOR, FIXED, COMPOSITION: same 	as R34 RESISTOR, FIXED, COMPOSITION: 1500 ohms 110%, 1/2 w; MIL type RC20GF152K RESISTOR, FIXED, COMPOSITION: same as 16%, 2 w; MIL type RC42GF301J RESISTOR, FIXED, COMPOSITION: same as R36 RESISTOR, FIXED, COMPOSITION: same as R3 r45-1343-00 R137 RESISTOR, FIXED, COMPOSITION: same as R36 R137 RESISTOR, FIXED, COMPOSITION: same as R36 R137 RESISTOR, FIXED, COMPOSITION: same as R36 R137 RESISTOR, FIXED, COMPOSITION: same as R36 R137 R137 RESISTOR, FIXED, COMPOSITION: same as R36 R137 R137 R137 R137 R137 R137 R137 R137 R133 R137 R133 R133 R134 R134 R135		ohms ±10%, 1/2 w; MIL type RC20GF272K	745-1370-00		as R27	745-1450-0
ohms ±10%, 1/2 w; MIL type RC20GF152KR130RESISTOR, FIXED, COMPOSITION: same as as R26R130RESISTOR, FIXED, COMPOSITION: same as R26R130RESISTOR, FIXED, COMPOSITION: 300 ohms ±5%, 2 w; MIL type RC42GF301J745-5629-00R131NOT USEDR132RESISTOR, FIXED, COMPOSITION: same as R38745-5629-00R132NOT USEDR133RESISTOR, FIXED, COMPOSITION: same as R38745-5629-00R134RESISTOR, FIXED, COMPOSITION: same as R34745-13'440RESISTOR, FIXED, COMPOSITION: same as R26745-1343-00R135RESISTOR, FIXED, COMPOSITION: same as R34745-13'441RESISTOR, FIXED, COMPOSITION: same as R5 as R26745-1343-00R136R136R25443ATTENUATOR, VARIABLE: same as R3383-0044-00R137RESISTOR, FIXED, COMPOSITION: same as R36745-13	ohms ±10%, 1/2 w; MIL type RC20GF152K RESISTOR, FIXED, COMPOSITION: same as RS6R130RESISTOR, FIXED, COMPOSITION: same as R26 R131 R132 NOT USEDR130RESISTOR, FIXED, COMPOSITION: same as R26 R131 R132 R133 R133 R134R130RESISTOR, FIXED, COMPOSITION: same resistor, FIXED, COMPOSITION: same as R5 rd5-1343-00 resistor, FIXED, COMPOSITION: same resistor, FI		as R34	745-1370-00		as R24	745-1436-0
R36R36R131NOT USED38RESISTOR, FIXED, COMPOSITION: 300 ohms ±5%, 2 w; MIL type RC42GF301J745-5629-00R131NOT USED39RESISTOR, FIXED, COMPOSITION: same as R38745-5629-00R133NOT USED40RESISTOR, FIXED, COMPOSITION: same as R26745-5638-00R135RESISTOR, FIXED, COMPOSITION: same as R34745-1343-0041RESISTOR, FIXED, COMPOSITION: same as R5745-1343-00R136R251STOR, FIXED, COMPOSITION: same as R26745-1343-0042RESISTOR, FIXED, COMPOSITION: same as R5745-1343-00R137RESISTOR, FIXED, COMPOSITION: same as R36745-1343ATTENUATOR, VARIABLE: same as R3383-0044-00R137RESISTOR, FIXED, COMPOSITION: same as R36745-13	R36 RESISTOR, FIXED, COMPOSITION: 300 ohms ±5%, 2 w; MIL type RC42GF301J RESISTOR, FIXED, COMPOSITION: same as R38 RESISTOR, FIXED, COMPOSITION: same as R26 RESISTOR, FIXED, COMPOSITION: same as R5 RESISTOR, FIXED, COMPOSITION: same as R3 RESISTOR, FIXED, COMPOSITION: same as R3 R26 RESISTOR, FIXED, COMPOSITION: same as R5 R45-1343-00 R136R131 R131 RESISTOR, FIXED, COMPOSITION: same RESISTOR, FIXED, COMPOSITION: same as R3 R38-0044-00R131 R136 R137NOT USED RESISTOR, FIXED, COMPOSITION: same R136 R136R131 R136 R136 R137NOT USED R137 RESISTOR, FIXED, COMPOSITION: same R137R131 R131 R136 R137NOT USED R131 R131 R136 R136 R136R131 R136 R136 R136R131 R136 R136 R136R131 R136 R136 R137R131 R136 R137NOT USED R137 R136 R136 R137		ohms ±10%, 1/2 w; MIL type RC20GF152K	ļ		as R25	745-5638-0
±5%, 2 w; MIL type RC42GF301JR133NOT USED39RESISTOR, FIXED, COMPOSITION: same as R38745-5629-00R133NOT USED40RESISTOR, FIXED, COMPOSITION: same as R26745-5638-00R134RESISTOR, FIXED, COMPOSITION: same as R34745-1341RESISTOR, FIXED, COMPOSITION: same as R5745-1343-00R136RESISTOR, FIXED, COMPOSITION: same as R34745-1342RESISTOR, FIXED, COMPOSITION: same as R3383-0044-00R137RESISTOR, FIXED, COMPOSITION: same as R36745-13	±5%, 2 w; MIL type RC42GF301JR133NOT USEDRESISTOR, FIXED, COMPOSITION: same745-5629-00R134RESISTOR, FIXED, COMPOSITION: same745-1370as R38RESISTOR, FIXED, COMPOSITION: same745-5638-00R135RESISTOR, FIXED, COMPOSITION: same745-1370as R26RESISTOR, FIXED, COMPOSITION: same as R5745-1343-00R136R136R137RESISTOR, FIXED, COMPOSITION: sameRESISTOR, FIXED, COMPOSITION: same as R5745-1343-00R136R137RESISTOR, FIXED, COMPOSITION: same745-1359ATTENUATOR, VARIABLE: same as R3383-0044-00R137RESISTOR, FIXED, COMPOSITION: same745-1359		R36		R131	as R26 NOT USED	
as R38RS38as R34as R34RESISTOR, FIXED, COMPOSITION: same as R26745-5638-00R135RESISTOR, FIXED, COMPOSITION: same as R34745-13R41RESISTOR, FIXED, COMPOSITION: same as R5745-1343-00R136RESISTOR, FIXED, COMPOSITION: same as R34745-13R42RESISTOR, FIXED, COMPOSITION: same as R3383-0044-00R137RESISTOR, FIXED, COMPOSITION: same745-13	as R38 RESISTOR, FIXED, COMPOSITION: same as R26 RESISTOR, FIXED, COMPOSITION: same RESISTOR, FIXED, COMPOSITION: same as R5 RESISTOR, FIXED, COMPOSITION: same as R5 RESISTOR, FIXED, COMPOSITION: same as R5 ATTENUATOR, VARIABLE: same as R3 383-0044-00 R137 RESISTOR, FIXED, COMPOSITION: same as R36 R137 RESISTOR, FIXED, COMPOSITION: same		±5%, 2 w; MIL type RC42GF301J		R133	NOT USED	
as R26 as R26 Resistor, FixeD, COMPOSITION: same as R5 745-1343-00 Resistor, FixeD, COMPOSITION: same as R5 745-1343-00 Ras R34 Resistor, FixeD, COMPOSITION: same as R5 Attriangle Ras R34 Resistor, FixeD, COMPOSITION: same as R5 745-1343-00 Ras R34 Resistor, FixeD, COMPOSITION: same as R5 R136 Ras R34 Resistor, FixeD, COMPOSITION: same as R5 745-1343-00 Ras R36 R137 Resistor, FixeD, COMPOSITION: same 745-13	as R26 RESISTOR, FIXED, COMPOSITION: same as R5 RESISTOR, FIXED, COMPOSITION: same as R5 ATTENUATOR, VARIABLE: same as R3 383-0044-00 R137 RESISTOR, FIXED, COMPOSITION: same as R36 R136 R137 RESISTOR, FIXED, COMPOSITION: same as R36 R137 RESISTOR, FIXED, COMPOSITION: same as R36 R137 R137 R137 R137 R137 R137 R137 R137		as R38			as R34	745-1370-0
RESISTOR, FIXED, COMPOSITION: same as R5 745-1343-00 ATTENUATOR, VARIABLE: same as R3 383-0044-00 R137 RESISTOR, FIXED, COMPOSITION: same	RESISTOR, FIXED, COMPOSITION: same as R5 745-1343-00 ATTENUATOR, VARIABLE: same as R3 383-0044-00 R137 RESISTOR, FIXED, COMPOSITION: same		as R26			as R34	745-1370-0
Inter Hand, court of the second of the secon		₹42	RESISTOR, FIXED, COMPOSITION: same as R5	745-1343-00		as R36	
					R137		745-1359-0

SECTION 6 Parts List

ITEM	DESCRIPTION	COLLINS PART NUMBER	ITEM	DESCRIPTION	COLLINS PART NUMBER
R138	RESISTOR, FIXED, COMPOSITION: same as R38	745-5629-00	TB5	TERMINAL BOARD: same as TB4	306-9033-00
R139	RESISTOR, FIXED, COMPOSITION: same	745-5629-00	TB6	TERMINAL BOARD: phenolic, 1/16 in. by 3/8 in. by 1-1/2 in., 4 brass solder lug terminals;	306-9032-00
	as R38			Cinch Mig. Corp. part no. 1532-A	
R140	RESETOR, FIXED, COMPOSITION: same as R26	745-5638-00	TB7	TERMINAL BOARD: phenolic w/ 4 solder lug	306-0838-00
R141	RESISTOR, FIXED, COMPOSITION: same	7 <mark>45</mark> -1343-00		terminals; 15/32 in. by 11/16 in. by 1-1/2 in. o/a; Cinch Mfg. Corp. part no. 1909	
R142	as R5 RESISTOR, FIXED, COMPOSITION: same	745-1343-00	TB8	TERMINAL BOARD: w/2 solder lugs; 5/8 in.	306-0002-00
R142	as R5	145-1545-00		lg, 19/32 in. w; Cinch Mfg. Corp. part no. 332-14-02-210	
R143	NOT USED		TB9	TERMINAL BOARD: same as TB7	306-0838-00
R144 R145	NOT USED RESISTOR, FIXED, COMPOSITION; same	745-1520-00	TB10 TB11	TERMINAL BOARD: same as TB2 TERMINAL BOARD: same as TB1	306-0550-00 367-0018-00
	as R45		TB12	TERMINAL BOARD: same as TB1	306-0550-00
R146 R147	RESISTOR, FIXED, WIREWOUND: same as R46 RESISTOR, FIXED, WIREWOUND: same as R46	746-6087-00 746-6087-00	TB13	TERMINAL BOARD: same as TB2	306-0550-00
R148	RESISTOR, VARIABLE, COMPOSITION:	380-0681-00	TB14 TB15	TERMINAL BOARD: same as TB4 TERMINAL BOARD: same as TB4	306-9033-00 306-9033-00
	same as R48		TB16	TERMINAL BOARD: same as TB7	306-0838-00
R149	RESISTOR, FIXED, CO MPOSITION: same	745-1464-00	TB17 TB18	TERMINAL BOARD: same as TB7 TERMINAL BOARD: 2 brass solder lugs,	306-0838-00
R150	RESISTOR, FIXED, COMPOSITION: same	745-1468-00	1 BIO	cadmium plated; 1/16 in. by 3/8 in. by 3/4 in.;	300-000-00
R151	as R50 RESISTOR, FIXED, CO'MPOSITION: same	745-1468-00	тв19	Herman H. Smith, Inc. part no. 862 TERMINAL BOARD: same as TB4	306-9033-00
	as R50		TB19 TB20	TERMINAL BOARD: same as TB4 TERMINAL BOARD: same as TB2	306-9033-00
R152	RESISTOR, VARIABLE, COMPOSITION: same as R52	380-0664-00	TB21	TERMINAL BOARD: same as TB2	306-0550-00
R153	RESISTOR, FIXED, COMPOSITION: same	745-5721-00	TB22 TB23	TERMINAL BOARD: same as TB8 TERMINAL BOARD: same as TB2	306-0002-00 306-0550-00
-	as R53		TB24	TERMINAL BOARD: same as TB18	306-0006-00
R154	RESISTOR, FIXED, COMPOSITION: same as R22	745-5707-00	V1	ELECTRON TUBE: glass envelope; Aero- nautical Radio, Inc. part no. 6386	253-0015-00
R155	NOT USED		V2	ELECTRON TUBE: twin triode; Radio Corp.	255-0199-00
R156 R157	NOT USED			of America part no. 12AU7	
R157	NOT USED		V3	ELECTRON TUBE: beam; Radio Corp. of America part no. 6V6GT	255-0021-00
R159	RESISTOR, FIXED, WIREWOUND: same as R59	746-6147-00	V4	ELECTRON TUBE: same as V3	255-0021-00
R160 R161	RESISTOR, FIXED, WIREWOUND: same as R59 RESISTOR, FIXED, WIREWOUND: same as R59	746-6147-00 746-6147-00	V5	ELECTRON TUBE: twin diade, Tung-Sol	257-0018-00
S1	SWITCH, ROTARY: 8 circuit, 5 position,	259-1851-00	V6	Electric, Inc. part no. 6AL5 ELECTRON TUBE: glass envelope; Radio Corp.	257-0052-00
S2	4 sections; 1 moving, 12 fixed contacts SWITCH, ROTARY: 1 circuit, 2 position,	259-1852-00		of America part no. OA2	
55	1 section; 1 moving, 2 fixed contacts	233-1032-00	V7 V8	NOT USED NOT USED	
S3	SWITCH, TOGGLE: dost; 15 amps at 125 v ac,	266-0099-00	V9	NOT USED	1
	10 amps at 25 v ac; hardware supplied with switch; Cutler Hammer, Inc. part no. 7561K4		V10 V11	NOT USED ELECTRON TUBE: same as V1	253-0015-00
T1	TRANSFORMER, AUDIO FREQUENCY: 600	667-0438-00	V12	ELECTRON TUBE: same as V2	255-0199-00
	ohms, 150 ohms, two center taps, input, 60,000 ohms output, center tapped; 30 to 15,000		V13 V14	ELECTRON TUBE: same as V3 ELECTRON TUBE: same as V3	255-0021-00 255-0021-00
	cps; 1-5/8 in. by 1-5/8 in. by 2-3/8 in.		V15	ELECTRON TUBE: same as V5	257-0018-00
T2	TRANSFORMER, AUDIO FREQUENCY: pri 30,000 ohms, zero ma, sec. 68,000 ohms zero	667-0894-00	V16	ELECTRON TUBE: same as V6	257-0052-00
	ma; 1000 rms test voltage; United Transformer		XDS1	LAMPHOLDER: for use with T-3-1/4 miniature bayonet base lamps; MIL type MS90282-3	262-0913-00
m 2	Corp no. X-5738 TRANSFORMER, AUDIO FREQUENCY: 9000	CUT 0427 00	XDS2	LAMPHOLDER: same as XDS1	262-0913-00
Т3	ohms, center tapped input, 3 outputs, 600 ohms	667-0437-00	XF1	FUSEHOLDER: extractor post type; accommo- dates 1-1/4 by 1/4 3 AG fuses; 11/16 in. by	265-1002-00
	series wound, 150 ohms parallel; 0 dbm to +39			2-9/32 in.; 1/16 in. locking slug to be furnished;	
	dbm output power level; $2-3/8$ in. by $2-3/4$ in. by $3-13/16$ in.			Bussmann Fuse part no. HKP 1/16	000 1007 00
T4	TRANSFORMER, POWER, STEP-DOWN AND	662-0135-00	XV1	SOCKET, ELECTRON TUBE: beryllium copper, or phosphor bronze contacts plated w/ silver or	220-1337-00
	STEP-UP: primary (15 v rms, 230 v rms,			gold; Elco Corp. part no. 1520 BC	
	secondary 6.3 v rms, CT, 2.5 amps, 6.3 v rms, CT, 2.5 amps, 50/50 cycles frequency,		XV2 XV3	SOCKET, ELECTRON TUBE: same as XV1 SOCKET, ELECTRON TUBE: copper base	220-1337-00 220-1121-00
	continuous duty cycle	000 0100 00	2440	alloy contacts; silver plated; 5/8 in. h, 1-7/64	555 1151-50
Т5	TRANSFORMER, AUDIO FREQUENCY: same	667-0438-00		in. dia, 1-7/8 in. lg o/a dim., excl terminals and contacts; MIL type TS101P01	
Т6	TRANSFORMER, AUDIO FREQUENCY: same	667-0894-00	XV4	SOCKET, ELECTRON TUBE: same as XV3	220-1121-00
T 7	as T2 TRANSFORMER, AUDIO FREQUENCY: same	667-0437-00	XV5	SOCKET, ELECTRON TUBE: 7 contact, top	220-1334-00
	as T3			mounting miniature tube socket; type MFE low loss plastic construction; Sylvania Electric	
TB1	TERMINAL BOARD: barrier type strip w/ lug for back connection; 13/32 in. thk by 7/8 in. w	367-0018-00		part no. 7470-023	000 1001 00
	by 4-1/8 in. 1g; 10 terminals spaced apart 3/8		XV6 XV7	SOCKET, ELECTRON TUBE: same as XV5 NOT USED	220-1334-00
	in.; phenolic insulation; Howard B. Jones		XV8	NOT USED	
T B2	part no. 353-18-10-301 TERMINAL BOARD: phenolic, w/ 5 solder-lug	306-0550-00	XV9	NOT USED	
	terminals; 1-7/8 in. lg by 11/16 in. w;	000 000-00	XV10 XVI1	NOT USED SOCKET, ELECTRON TUBE: same as XV1	220-1337-00
TPS	Cinch Mfg. Corp. part no. 1542-A	208,0550,00	XV12	SOCKET, ELECTRON TUBE: same as XV1	220-1337-00
TB3 TB4	TERMINAL BOARD: same as TB2 TERMINAL BOARD: phenolic w/3 solder-lug	306-0550-00 306-9033-00	XV13 XV14	SOCKET, ELECTRON TUBE: same as XV3 SOCKET, ELECTRON TUBE: same as XV3	220-1121-00 220-1121-00
	terminals; 11/16 in. w by 1-1/8 in. 1g; Cinch	-	XV15	SOCKET, ELECTRON TUBE: same as XV5	220-1334-00
	Mfg. Corp. part no. 1520-A		XV16	SOCKET, ELECTRON TUBE: same as XV5	220-1334-00

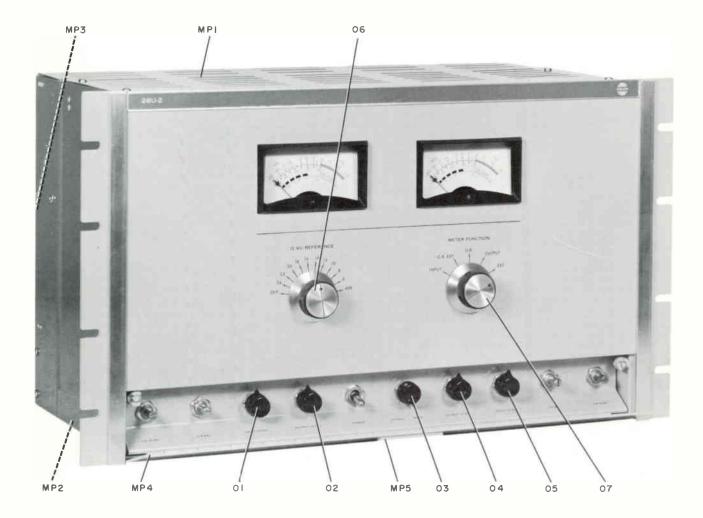


Figure 6-1. 26U-2 Stereo Peak Limiter, Front View, Subpanel Cover Lowered

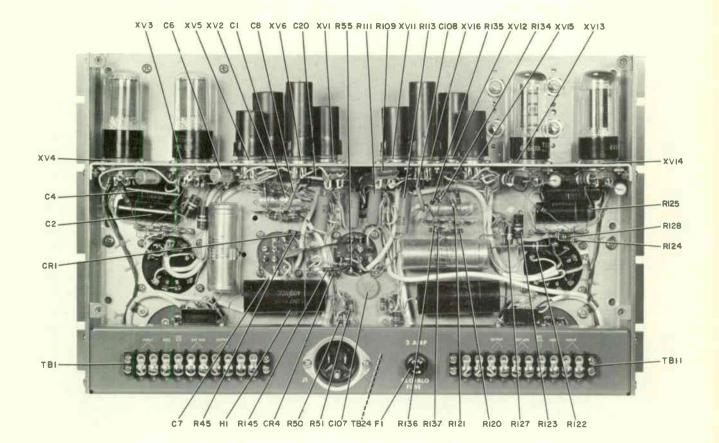


Figure 6-2. 26U-2 Stereo Peak Limiter, Inside Back View

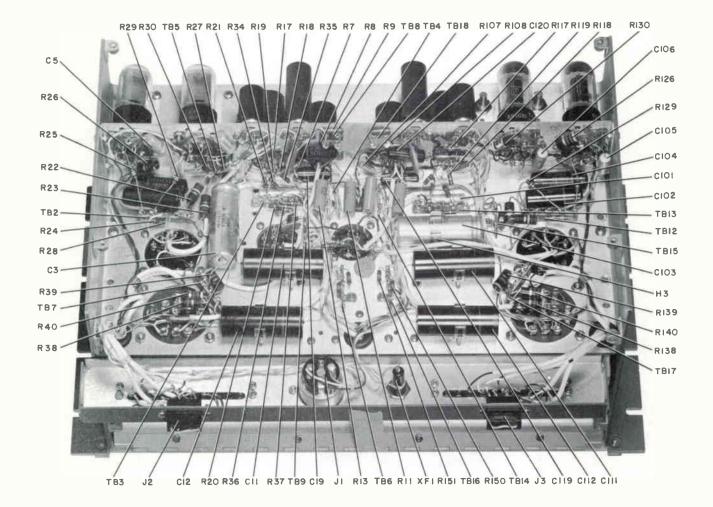


Figure 6-3. 26U-2 Stereo Peak Limiter, Inside Rear View with Terminal Panel Lowered

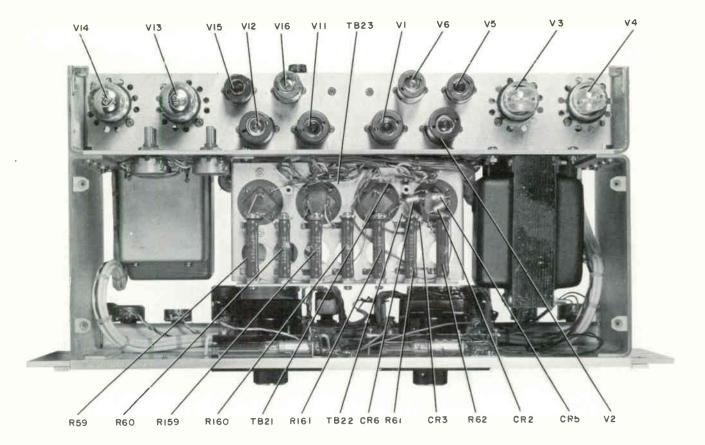


Figure 6-4. 26U-2 Stereo Peak Limiter, Top View

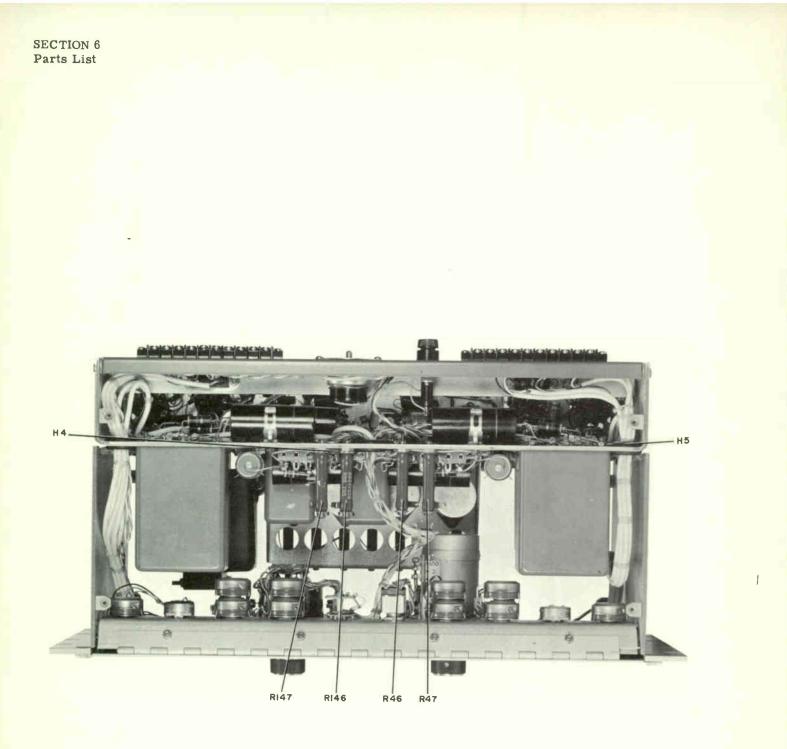


Figure 6-5. 26U-2 Stereo Peak Limiter, Bottom View

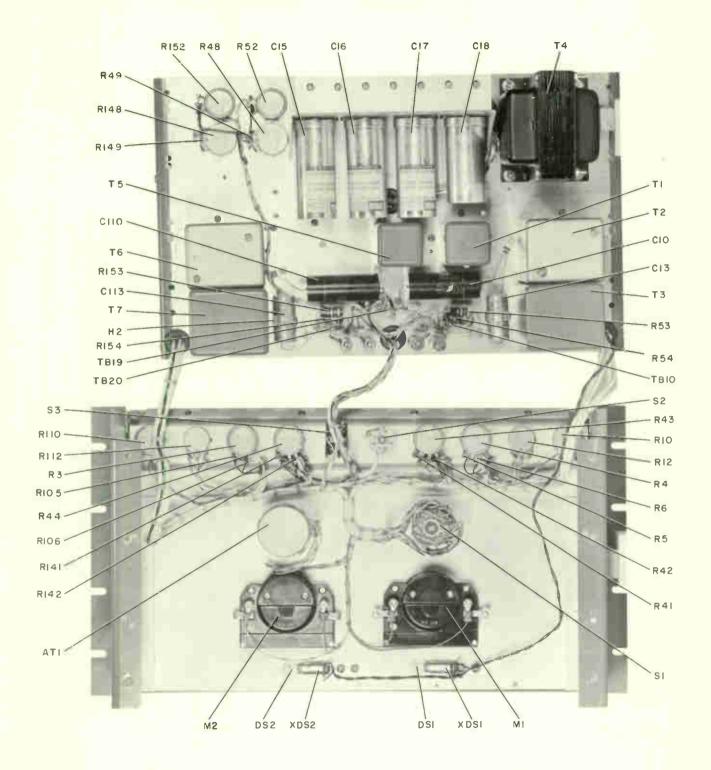
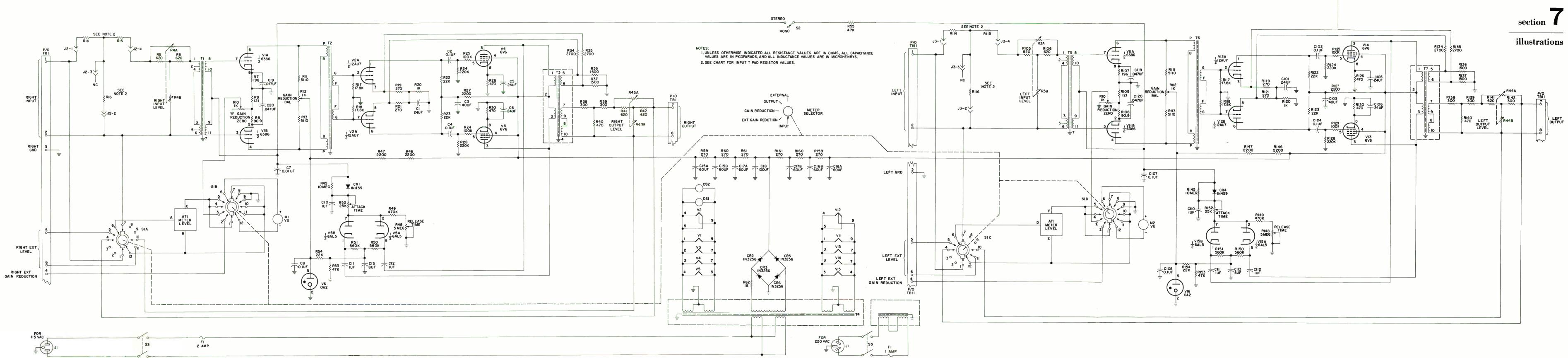
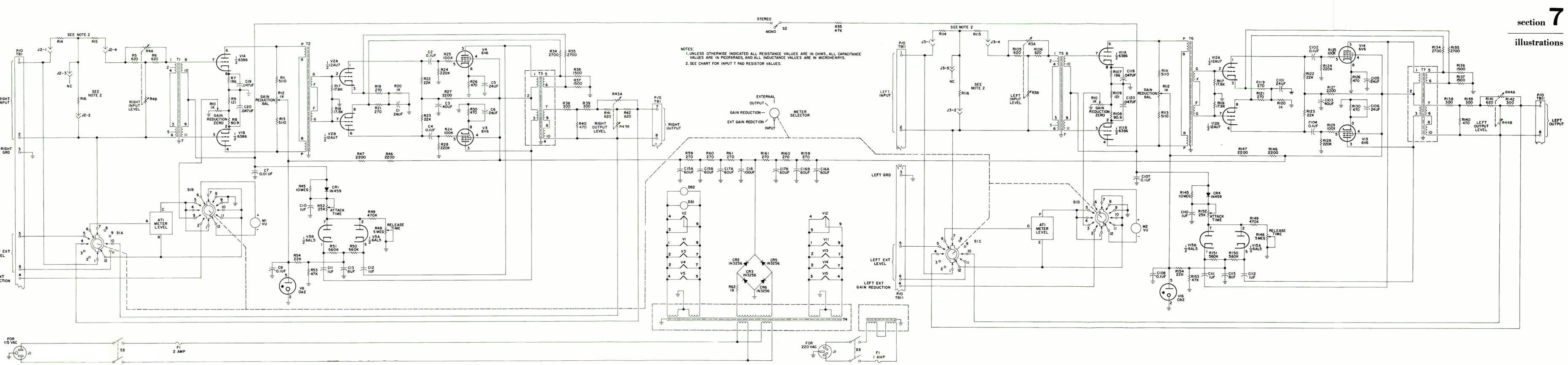


Figure 6-6. 26U-2 Stereo Peak Limiter, Module Separated at Center





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Figure 7-1. 26U-2 Stereo Peak Limiter, Schematic Diagram

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