

342B Amplifier

342B



- Mixer Power Amplifier**
- Four microphone inputs**
- Mixer Power Amplifier**
- 35-watt output**
- Four microphone inputs**
- Auxiliary input**
- Input matching for every type source**
- Master gain control**
- Bass and treble tone controls**
- Illuminated panel**
- Trim and compact**
- DC hum-free heaters**

The Altec 342B 35-watt combined amplifier and mixing preamplifier has a flexibility ideal for the small public-address system. It can be quickly tailored to the exact requirements of a given installation. It features four inputs with individual mixing volume controls. Any combination of four inputs can be used because of the unique built-in matching facilities. The input circuit of each of the four channels is equipped with a socket designed to receive the accessory to adapt that channel to the desired source, which may be a high- or low-impedance microphone, magnetic phonograph pick-up, tuner, tape recorder, or program line. This provides great flexibility in the initial installation and also makes it possible to modify or change the system to meet future requirements. An auxiliary input at the mixing level provides a connection point for line inputs, additional preamplifier inputs, or interconnection for a group of amplifiers.

In addition to the four input volume controls, there is a master control functioning on the final selected program material. Other controls include separate bass and treble, independent power switch, and a panel light providing illumination for script or cue sheet.

The dark green non-reflecting panel and green leatherette case are neat and unobtrusive and the amplifier will not interfere with the vision of the operator when placed on a table top. The front panel is inclined in order to facilitate viewing and operating of controls.

The 342B fulfills all requirements for a high-quality public address mixer-amplifier at moderate cost. While incorporating such professional features as DC operation of the tube heaters, to eliminate hum and the need for tube selection, the 342B remains ideal for the small-to-medium sized sound system where reliability, flexibility, and extended range are required with a minimum expense factor.



A Division of *ESL* Ling Altec, Inc.

1515 S. Manchester Ave., Anaheim, Calif.
New York

SPECIFICATIONS

Type:	4 Channel Mixer Amplifier
Gain:	115 db
Input Sensitivity:	.0023 volt rms for rated output
Power Output:	35 watts at less than 2% thd, @ 1000 cps 35 watts at less than 5% thd, 45-12,000 cps
Frequency Response:	±1 db, 20-20,000 cps
Input Impedance:	22,000 ohms, nominal
Source Impedance:	30/50 and 120/200 with 4722 Plug-in Transformer
Load Impedance:	4, 8, 16 ohms and 70 v (150 ohms) line
Output Impedance:	Less than 20% of nominal load impedance
Noise Level:	Equivalent input noise —123 dbm Output noise —30 dbm with master volume control at zero
Controls:	4 mixer, 1 master control; 1 bass, 1 treble control, 6 db boost, 10 db cut; all continuously variable, composition type.
Power Supply:	117 volts, 60 cps, 110 watts
External Power Available:	117 volt ac receptacle at rear of chassis
Tubes:	3—12AX7, 1—6CG7, 2—7027, 1—GZ34/5AR4
Dimensions:	7" H x 19 ⁵ / ₈ " W x 8 ¹ / ₈ " D With 12210 Assembly — 8 ³ / ₄ " H (rack space) x 19" W x 8 ¹ / ₈ " D
Color:	Green
Weight:	22 lbs.

ACCESSORIES

See "Power Amplifier Accessories" sheet for:

- 4722 Plug-in Transformer
- 12864 Assembly—plug-in phono equalizer
- 12210 Assembly—rack mounting adapter
- Cannon XLR-3-12 straight cord plug

ARCHITECTS AND ENGINEERS SPECIFICATIONS

The amplifier shall be so constructed that there is a choice of (A) portable, in green simulated-leather covered plywood cabinet, or (B) rack mounted with an available accessory. The amplifier shall include four mixer controls, one master volume control, one each bass and treble raise and cut equalizer controls, pilot light, and on-off switch. All controls shall be continuously variable and the control panel shall be visibly indexed and identified. The amplifier shall be so designed that any of four mixer positions may be used with high-impedance microphone or high-level line input or, by use of built-in input matching facilities, any or all of the mixer positions can be converted for low-impedance microphones, and two equalized for phonograph input. An amplifier not including these input matching facilities shall not be deemed acceptable under these specifications. It shall in addition to the four standard inputs have an auxiliary input to the wiring buss for use with supplementary equipment.

Power output shall be 35 watts with less than 2% total harmonic distortion at 1000 cps, and with less than 5% total harmonic distortion over the frequency range of 45 to 12,000 cps, the frequency response shall be ± 1 db from 20 to 20,000 cps, input impedances shall be 22,000 or 240,000 ohms with source impedances of 30/50 or 120/200 ohms (using the 4722 Plug-in Microphone Transformer). The over-all gain of the amplifier shall be not less than 115 db. The output impedance shall be less than 20% of nominal load impedance. Load impedance shall be 4, 8, 16, and 70 v (150 ohms) line.

The low-impedance microphone input matching device, where required, shall be of the plug-in type with not less than 60 db magnetic shielding, the equivalent input noise —123 dbm, output noise —30 dbm with master volume control at zero. The amplifier shall have a receptacle on the rear of the chassis for furnishing 117 v AC. The tube complement shall consist of three 12AX7, one 6CG7, two 7027, one GZ34/5AR4. The unit shall be finished in green and shall weigh in the order of 22 lbs.

The amplifier shall be Altec Lansing Model 342B.

NOTICE

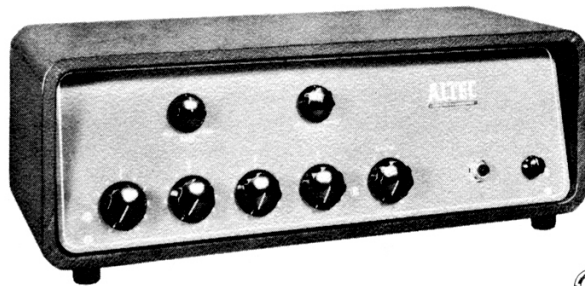
We recommend that you obtain your Altec products from factory trained authorized Altec Sound Contractors and Distributors. This will assure you of proper installation, a continuing source of knowledgeable advice, service, and quick warranty protection.



ALTEC
LANSING®

**342B
AMPLIFIER**

**OPERATING
INSTRUCTIONS**



SPECIFICATIONS

Type:	4 Channel Mixer Amplifier
Gain:	115 db
Input Sensitivity:	.0023 volt rms for rated output
Power Output:	35 watts at less than 2% thd, @ 1000 cps 35 watts at less than 5% thd, 45-12,000 cps
Frequency Response:	±1 db, 20-20,000 cps
Input Impedance:	22,000 ohms, nominal
Source Impedance:	30/50 and 120/200 with 4722 Plug-in Transformer
Load Impedance:	4, 8, 16 ohms and 70 v (150 ohm) line
Output Impedance:	Less than 20% of nominal load impedance
Noise Level:	Equivalent input noise — 123 dbm Output noise — 30 dbm with master volume control at zero
Controls:	4 mixer, 1 master control; 1 bass, 1 treble control, 6 db boost, 10 db cut; all continuously variable, composition type.
Power Supply:	117 volts, 60 cps, 110 watts
External Power Available:	117 volt ac receptacle at rear of chassis
Tubes:	3—12AX7, 1—6CG7, 2—7027, 1—GZ34/5AR4
Dimensions:	7" H, 19 $\frac{5}{8}$ " W, 8 $\frac{1}{8}$ " D overall
Color:	Green
Weight:	22 lbs.
Accessories:	4722 Plug-in Transformer 12864 Assembly — plug-in phono equalizer 12210 Assembly — rack mounting adapter Cannon XLR-3-12 straight cord plug



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1515 S. Manchester Ave., Anaheim, Calif.
New York

12976-3

Price \$.14

Litho in USA C/P

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GENERAL DESCRIPTION

The 342B Amplifier is a compact, high quality, 35 watt mixer amplifier, designed for portable or permanent public address applications. The unit provides a wide variety of input levels and impedances, with four mixing channels, master volume control, and separate bass and treble controls. DC operation of the heaters of the input tubes insures hum-free performance and eliminates the need for tube selection. The complete system is housed in a green leatherette covered cabinet.

INPUT CONNECTIONS

Input to each of the four channels is made by means of Cannon 3-pin XLR connectors. Pin #1 is the ground connection. An octal receptacle in each of the four channels provides the facility for easily accommodating any of the usual sources of program material. The amplifier has adapter plugs installed in each of these receptacles which provide for unbalanced high impedance inputs of either low or high level.

Low Level: (Microphone or equivalent) Connect to pins 1 and 3 of the XLR plug.

High Level: (Up to 10v. rms) Connect to pins 1 and 2 of the XLR plug.

Low Impedance Input: Accessory plug-in transformer #4722 may be installed to match any of the standard microphone impedances. Removing the adapter plug from the octal receptacle associated with the selected channel permits the 4722 transformer to be plugged in its place. Connect the speech line to pins 2 and 3 of the XLR connector and the shield to pin 1. As shipped, the 4722 transformer socket is connected for 120/200 ohms.

Phono Pickup Input: The use of the 12864 Assembly in either or both of channels 3 and 4 provides the RIAA playback characteristic necessary for variable reluctance cartridges. This assembly is installed by removing the adapter plug or 4722 transformer associated with the selected channel and replacing it with the 12864 assembly. Input connections are through pins 1 and 2 of the XLR connector.

OUTPUT CONNECTIONS

Output taps for loudspeaker loads of 4, 8 and 16 ohms, as well as a 70 volt line output, are provided.

Speaker Matching: The tap which most nearly equals the total speaker impedance should be used. Satisfactory results can be obtained with mismatches not exceeding $\pm 20\%$ of the tap value.

Use of 70 Volt Line: The constant voltage distribution system makes the connection to any number of speakers possible on a "required power" basis without regard for the impedances involved. In this system, each speaker has an associated transformer with multiple taps rated in terms of power. When connected to the 70 volt line, the transformer tap is chosen which will give the desired speaker power. The sum of the power in all speakers should equal or be less than the amplifier power rating.

CONTROLS

Individual gain controls for each channel provide simultaneous mixing of four program sources. A "master" gain control is common to all channels, as are the separate bass and treble controls which increase or decrease low and high frequency response. When the controls are positioned at the dots above the knobs, amplifier response is flat. Clockwise rotation from this point increases, and counter-clockwise rotation decreases the bass or treble.

VENTILATION

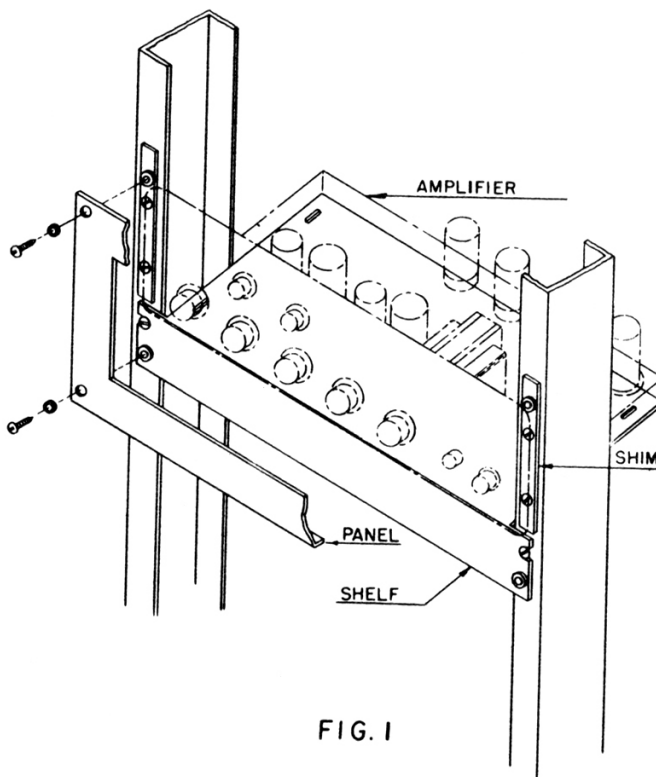
The cabinet design provides the necessary ventilation. Care should be taken to see that no large obstacle be placed closer than two inches from the rear of the cabinet. The air space between the cabinet and table which is provided by the rubber feet should remain open.

RACK MOUNTING

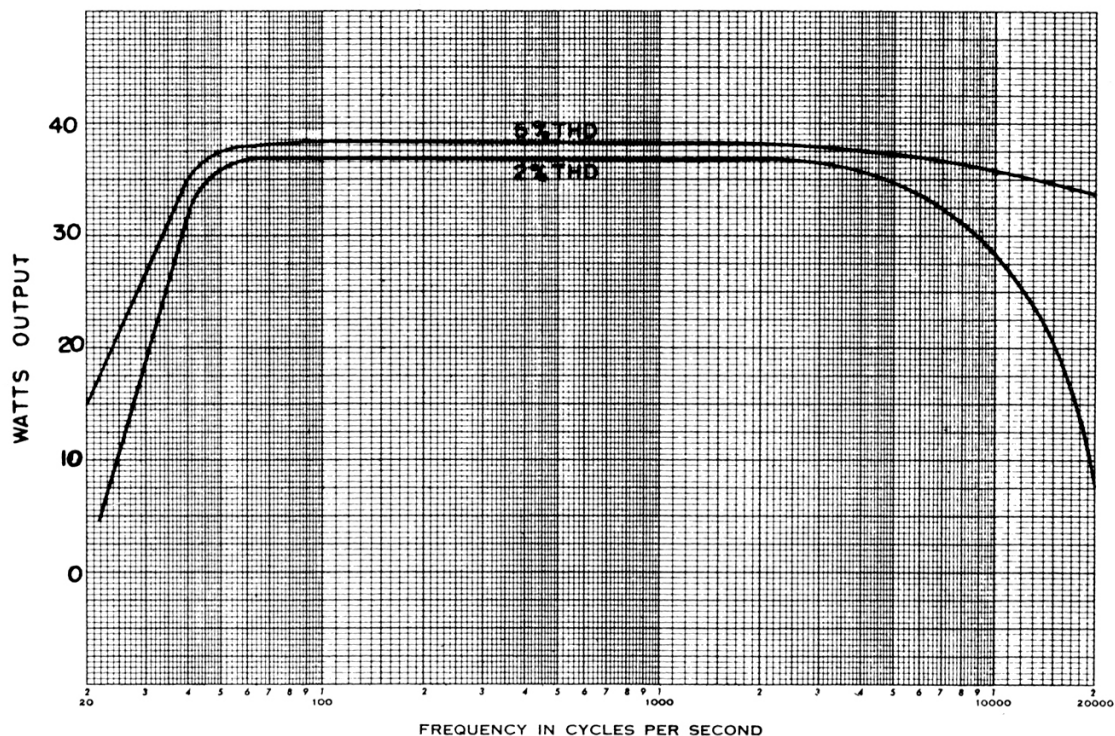
The 12210 Assembly is available to adapt the 342B Amplifier for rack mounting. It requires five units of rack space ($8\frac{3}{4}$ "') and consists of a mounting shelf, two shims and a front mat. Installation is accomplished by fastening the shelf to the bottom of the 342B chassis by means of four screws through the slots in the shelf and in turn, mounting the whole assembly to the rack. The two shims are screwed to the rack rails per Fig. 1. Mount the front mat over the panel by means of screws through the four inserts provided on the shelf and shims.

MAINTENANCE

All circuitry is straightforward and the unit can be serviced by conventional voltage measurements using a DC voltmeter.



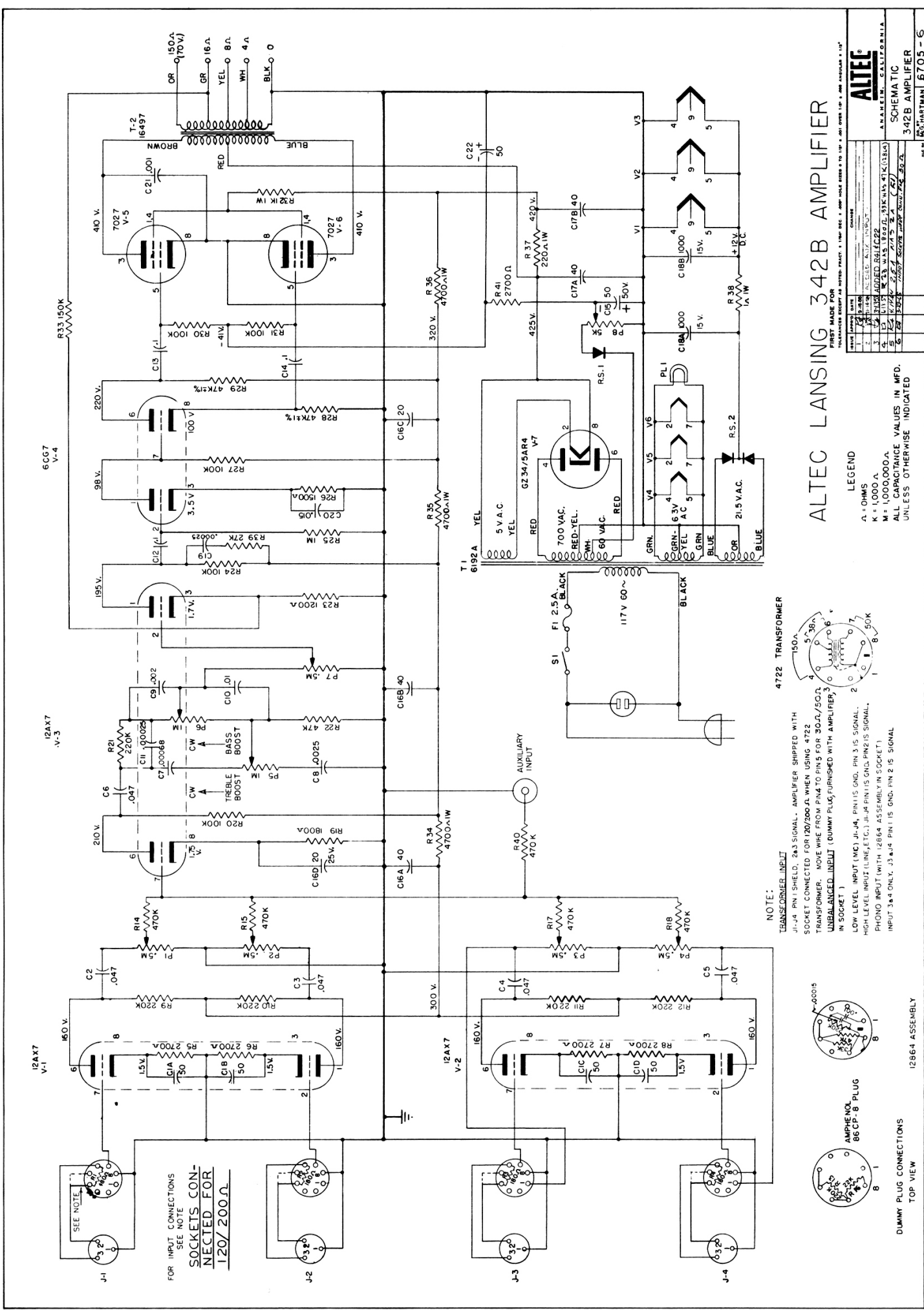
**342 B AMPLIFIER
FREQUENCY VS POWER AT SELECTED THD.**



PARTS LIST

C1	Capacitor, 50 x 50 x 50 x 50 mfd, 5 v (Mallory FP20-20667)	R13*	Resistor, 220,000 Ω \pm 10%, 1 w
C2 thru C6	Capacitor, 0.047 mfd, 400 v (Micamold or Astron)	R14, R15, R17 R18, R40	Resistor, 470,000 Ω \pm 10%, 1/2 w
C7	Capacitor, 0.00068 mfd \pm 10%, 600 v (Erie 811-861)	R16*	Resistor, 22,000 Ω \pm 10%, 1/2 w
C8	Capacitor, 0.0025 mfd \pm 10%, 500 v (Erie 301x500)	R19	Resistor, 1800 Ω \pm 10%, 1/2 w
C9	Capacitor, 0.002 mfd \pm 10%, 500 v (Erie 811-202)	R20, R24, R27	Resistor, 100,000 Ω \pm 10%, 1 w
C10	Capacitor, 0.01 mfd \pm 10%, 200 v (Micamold or Astron)	R22	Resistor, 47,000 Ω \pm 10%, 1 w
C11, C19	Capacitor, 0.00025 mfd \pm 10%, 600 v (Erie 811-251)	R23	Resistor, 1200 Ω \pm 10%, 1/2 w
C12, C13, C14	Capacitor, 0.1 mfd, 400 v (Micamold or Astron)	R25	Resistor, 1 meg Ω \pm 10%, 1/2 w
C15, C22	Capacitor, 50 mfd, 50 v (CD BR505)	R26	Resistor, 1500 Ω \pm 10%, 1/2 w
C16	Capacitor, 40-40-20-20 mfd, 350-350-350-25 v (FP419.3, 85° C)	R28, R29	Resistor, 47,000 Ω \pm 1%, 1/2 w (dep. carbon)
C17	Capacitor, 40-40 mfd, 500 v (UP4450, 85° C)	R30, R31	Resistor, 100,000 Ω \pm 10%, 1/2 w
C18	Capacitor, 1000-1000 mfd, 15 v (Mallory WP200)	R32	Resistor, 1000 Ω \pm 10%, 1 w
C20	Capacitor, 0.015 mfd \pm 10%, 200 v	R33	Resistor, 150,000 Ω \pm 10%, 1/2 w
C21	Capacitor, 0.001 mfd \pm 20%, 3000 v (Erie HD-3-1000)	R34 thru R36	Resistor, 4700 Ω \pm 10%, 1 w
F1	Fuse, 2.5 amp, 250 v (Littelfuse 31202.5)	R37	Resistor, 220 Ω \pm 10%, 1 w
J1 thr J4	Connector (Cannon XLR-3-13)	R38	Resistor, 1 Ω \pm 10%, 1 w (wire wound)
P1 thru P4, P7	Potentiometer, (Altec 12178-1)	R39	Resistor, 27,000 Ω \pm 10%, 1/2 w
P5, P6	Potentiometer, (Altec 12179-2)	RS1	Rectifier, selenium (Radio Receptor selection 8Y1)
P8	Potentiometer, 5000 Ω (Melrain Type FFF-1)	RS2	Rectifier, selenium (Sarkes 4T 261C1-2S)
PL1	Lamp, pilot (G.E. Mazda #44)	S1	Switch (Altec 12180-1)
R1 thru R4	Resistor, 180 Ω \pm 10%, 1/2 w	T1	Transformer (Altec 6192A)
R5 thru R8, R41	Resistor, 2700 Ω \pm 10%, 1/2 w	T2	Transformer (Altec 16597)
R9 thru R12, R21	Resistor, 220,000 Ω \pm 10%, 1/2 w	V1, V2, V3	Tube, vacuum (12AX7)
		V4	Tube, vacuum (6CG7)
		V5, V6	Tube, vacuum (7027A)
		V7	Tube, vacuum (GZ34/5AR4)

*Used on dummy plugs. Total of four required.



ALTEC LANSING 342B AMPLIFIER

REVISIONS

NO.	DATE	DESCRIPTION
1	12-15-50	INITIAL DESIGN
2	1-10-51	REVISIONS
3	1-10-51	REVISIONS
4	1-10-51	REVISIONS
5	1-10-51	REVISIONS
6	1-10-51	REVISIONS
7	1-10-51	REVISIONS
8	1-10-51	REVISIONS
9	1-10-51	REVISIONS
10	1-10-51	REVISIONS

REVISIONS

NO.	DATE	DESCRIPTION
11	1-10-51	REVISIONS
12	1-10-51	REVISIONS
13	1-10-51	REVISIONS
14	1-10-51	REVISIONS
15	1-10-51	REVISIONS
16	1-10-51	REVISIONS
17	1-10-51	REVISIONS
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19	1-10-51	REVISIONS
20	1-10-51	REVISIONS

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30	1-10-51	REVISIONS

REVISIONS

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31	1-10-51	REVISIONS
32	1-10-51	REVISIONS
33	1-10-51	REVISIONS
34	1-10-51	REVISIONS
35	1-10-51	REVISIONS
36	1-10-51	REVISIONS
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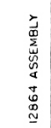
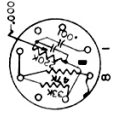
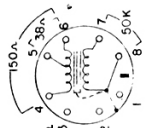
REVISIONS

NO.	DATE	DESCRIPTION
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45	1-10-51	REVISIONS
46	1-10-51	REVISIONS
47	1-10-51	REVISIONS
48	1-10-51	REVISIONS
49	1-10-51	REVISIONS
50	1-10-51	REVISIONS

LEGEND

- Ω - OHMS
- K = 1,000 Ω
- M = 1,000,000 Ω
- ALL CAPACITANCE VALUES IN MFD.
- UNLESS OTHERWISE INDICATED

NOTE: TRANSFORMER INPUT J1-J4 PIN 1 SHIELD, 2A3 SIGNAL - AMPLIFIER SHIPPED WITH SOCKET CONNECTED FOR 120/200A. WHEN USING 4722 TRANSFORMER, NOTE WIRE FROM PIN 4 TO PIN 5 FOR 50A/50C UNBALANCED INPUT (DUMMY PLUG FURNISHED WITH AMPLIFIER IN SOCKET)



DUMMY PLUG CONNECTIONS TOP VIEW

12864 ASSEMBLY

ALTEC LANSING
ANAHEIM, CALIFORNIA
SCHEMATIC
342B AMPLIFIER
REV. 1-10-51