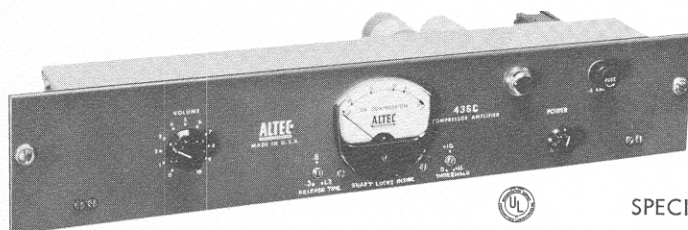


**ALTEC**
LANSING®**436C
AMPLIFIER****OPERATING
INSTRUCTIONS****SPECIFICATIONS**

Type:	Compressor Amplifier	Attack Time:	50 milliseconds
Gain:	56 db from 15,000 ohm source 40 db bridging 600 ohm line	Release Time:	Adjustable: .3 seconds to 1.3 seconds (63% recovery)
Frequency Response:	±1.5 db, 30-15,000 cycles	Threshold:	Adjustable: 0 dbm to +16 dbm output
Power Output:	+24 dbm (as straight amplifier)	Compression Ratio:	2:1 at 0 dbm threshold; 4:1 at +16 dbm threshold
Harmonic Distortion:	At 25 db of compression: Less than 1.5%, 35-15,000 cycles; At 30 db of compression: Less than 2.5%, 25-10,000 cycles. (0 db threshold setting)	Controls:	Input gain control Threshold control Release time control AC power switch
Noise Level:	74 db below rated output (-111 dbm equivalent input noise)	Power Supply:	117 volts, 60 cycles, 20 watts
Input Impedance:	15,000 ohms bridging transformer (ungrounded)	Tubes:	6BC8, 6CG7, 6AL5
Source Impedance:	Any up to 15,000 ohms	Dimensions:	19" long; 3 1/2" high; 6" deep
Load Impedance:	150/600 ohms	Color:	Dark green
Maximum Compression:	30 db	Weight:	8 1/2 lbs.
		Special Features:	Compression meter; shaft locks for threshold and recovery time controls

DESCRIPTION

The 436C Compressor Amplifier is designed for use in professional recording, PA, and sound reinforcement systems wherein varying amounts of compression, threshold, and release time are required. The unit operates from a 115-volt, 60 cycle AC source and occupies 3 1/2 inches of rack mounting space. The input source (to the bridging transformer) may have an impedance from 600 to 15,000 ohms; output loads of 150 to 600 ohms may be accommodated. All indicators and controls are mounted on a hinged front panel.

APPLICATIONS

The 436C may be employed wherever it is desired to maintain a relatively uniform level of reproduced sound, regardless of the differences in the audio input signal level. Such variations are caused, in part, by varying distances of performers from a single microphone, together with extreme changes in the level of the sound source itself.

The 436C also finds use in those applications (primarily the recording of sound) wherein optimum dynamic range must be preserved, while maintaining a higher average recording level without causing overmodulation of the recording medium. Because of the unusually wide latitude afforded by the variable compression ratio, threshold, input gain, and release time controls, the 436C may be adjusted for optimum performance in virtually any application. The compressor-amplifier may also be used to advantage in instances requiring automatic fading of background music for voice announcements.

The unit may be employed as a 'straight' line amplifier, with a power output of +24 dbm, simply by removing the 6AL5 tube from its socket.

Specifications and components subject to change without notice. Overall performance will be maintained or improved.



A Division of **SPV** Ling Altec, Inc.

1515 S. Manchester Ave., Anaheim, Calif. 92803
New York

14291-3 Price \$0.14
Litho in USA CP-38-.5K

INSTALLATION

The design of the 436C compressor amplifier provides considerable versatility of connection when used with other components of the 1500 series. The bridging input has sufficiently high impedance that it may be directly connected to the output of the Altec 1566A, 1567A, or 1563A line amplifiers without the use of line transformers in these units. When the transformers are desired to provide balance and isolation from ground, a 560 ohm resistor is used across the 436C input terminals to provide proper termination for the line transformer.

The output transformer of the 436C provides load impedances of 150 and 600 ohms and is well balanced. Because of the transformer configuration and amplifier power capability, it is suitable for directly feeding transmission lines or combinations of one or more power amplifiers.

OPERATION AND USE OF CONTROLS

The 436C compressor amplifier has four controls, all mounted on the front panel:

- 1: Input gain control
- 2: Threshold control
- 3: Release time control
- 4: AC power switch

1: Input Gain Control:

This control is used to adjust the input level to provide the desired average compression as indicated on the compression meter.

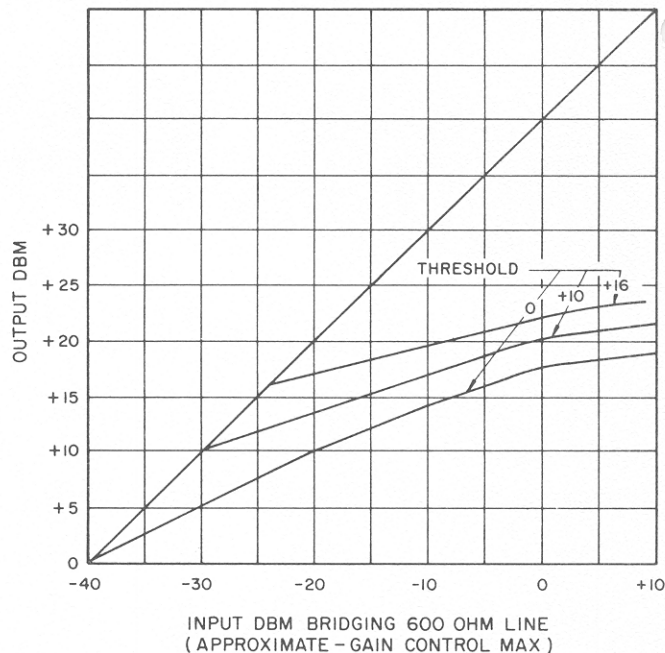
2: Threshold Control:

The output level at which compression commences, together with the compression ratio, is adjustable by means of this control. In the maximum counter-clockwise position, compression begins when the output is approximately zero level. An increase in input level of 20 db at this point results in an output level increase of 10 db, giving a compression ratio of 2:1. At maximum clockwise rotation, compression starts when the output is approximately +16 dbm; an increase in input level of 20 db at this point, results in an output level increase of 5 db, giving a compression ratio of 4:1 (Maximum compression before distortion is 22 db at this setting). The higher threshold and flatter output characteristics may be more desirable in applications, such as the recording of sound, where the adjustment can be such that the majority of the material operates the amplifier in the linear transfer region and the occasional peak is compressed sufficiently (by the higher compression ratio) to prevent overmodulation of the recording mechanism.

For background music control, on the other hand, where the compressor function is to equalize differences in recording level and program dynamics, the zero level threshold and 2:1 ratio are more desirable. In this application, "average" level material is used to set the compressor for 10 to 15 db of compression, and expansion or compression results for material of lower or higher level than the standard "average." Input-output characteristics are shown in more detail on the accompanying "transfer graph" for three settings of the threshold control.

3: Release Time Control

The time interval required to restore full gain following a condition of compression is adjustable in the range of .3



seconds to 1.3 seconds by means of this control. In applications such as sound recording, where only an occasional peak actuates the compressor, the faster release times will be found desirable.

For public-address usage, where the compressor is utilized as an averaging device to compensate for variances in microphone and speech levels, the longer release time will be found desirable.

4: AC Power Switch:

This control operates the power switch (Altec 12180-1), turning the compressor amplifier on and off, as indicated by the front panel pilot light.

CONTROL LOCKS

Both the threshold and release time controls are of the screwdriver adjustment type and are mounted flush with the front panel. A 1/2" open end wrench is required for loosening and tightening the shaft locks before and after adjustment. (The front panel must be dropped to gain access to the locks.)

COMPRESSION METER

It is usually desirable to have the compression meter visible from the operating position. When conditions dictate a remote location for the compressor amplifier, an Altec 6049 meter is connected in parallel with the front panel by means of a pair of wires extended to the console location.

SERVICING

All circuit components are easily reached by opening the hinged front panel of the unit. Normal servicing may be done with a voltmeter; all pertinent information is shown on the accompanying schematic.

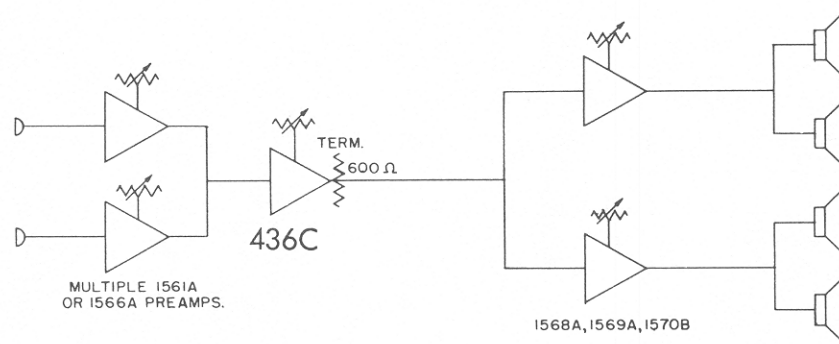


Figure 2

The 436C Compressor Amplifier connected to the high impedance input of the Altec 1568A, 1569A, or 1570B: Terminate 436C with 600 ohms. Line to power amplifiers may be 1,000 feet of 30 mm/ft cable for 1 db loss at 10 kc.

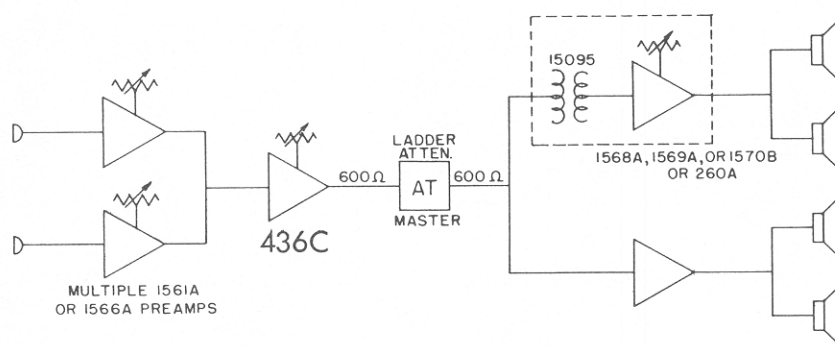
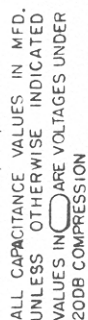


Figure 3

Illustrating the use of a master in compressor output of 436C for control of volume. Added control is essential when Altec 260A amplifier is used.

PARTS LIST

Reference Designator	Name and Description	Reference Designator	Name and Description
C2,3,5,6	Capacitor, 0.022 mfd $\pm 10\%$, 600V CD PKM6S22	R9,15	Resistor, 270K $\Omega \pm 10\%$, 1/2W
C4	Capacitor, 1 mfd, 200V (Hopkins 15-390-3)	R10,11	Resistor, 220K $\Omega \pm 10\%$, 1/2W
C7	Capacitor, 80 mfd, 350V (Mallory FP 138A or Sprague TVL-1630)	R12	Resistor, 33K $\Omega \pm 10\%$, 1/2W
C8	Capacitor, 80/200, 40/450, 10/450 (Mallory FP 370 or Sprague TVL-3761)	R13	Resistor, 10K $\Omega \pm 10\%$, 1W
F1	Fuse, 1/2 Amp, 3AG	R14	Resistor, 7K Ω , 5W, axial leads
M1	Meter (Altec 6049)	S1	Switch, power (Altec 12180-1)
P1A,1B	Volume control (Altec 13021-1)	T1	Transformer, input (Altec 4651A)
P2	Potentiometer, 1 M Ω (Altec 14289-1)	T2	Transformer, output (Altec 16402)
P3	Potentiometer, 25,000 Ω (Altec 14288-1)	T3	Transformer, power (Altec 6216)
PL1	Pilot lamp (Mazda 44)	TS1	Terminal strip (Jones Barrier Strip 353-18-03-001)
R3,4	Resistor, 47K $\Omega \pm 1\%$, 1/2W	TS2	Terminal strip (Jones Barrier Strip 353-18-05-001)
R6,6	Resistor, 1 M $\Omega \pm 10\%$, 1/2W	V1	Vacuum tube, 6BC8
R7	Resistor, 220 $\Omega \pm 10\%$, 1/2W	V2	Vacuum tube, 6CG7
R8	Resistor, 34 $\Omega \pm 1\%$, 1/2W	V3	Vacuum tube, 6AL5
			Rectifier (Sarkes #58-D)



ALTEC LANSING
436C COMPRESSOR AMPLIFIER