361B MIXER/AMPLIFIER

OPERATING INSTRUCTIONS

SPECIFICATIONS

Type:	Two channel transistor mixer/power amplifier with plug-in options.
Gain:	100 db into high-impedance microphone input. *117 db with 1578A plug-in microphone preamplifier. *67 db with 15095 plug-in transformer bridging 600-ohm line.
Input Sensitivity:	700 mv rms for 18 watts output, ceramic phono pick-up. *500 mv rms for 18 watts output, tuner input. *0.5 mv (1 kc) for 18 watts output, with 1579A equalized plug-in amplifier for magnetic phono pick-up.
Power Output:	25 watts mid-band at less than 2% thd, 4 to 6 ohm loads and 70-volt line, 18 watts at less than 2% thd, 30 to 15,000 cps, 4 to 8 ohm load, 18 watts at less than 2% thd, 40 to 15,000 cps, 70-v line, 12 watts at less than 2% thd, 45 to 12,000 cps, 16 ohm load.
Frequency Response:	±1 db from 10 to 20,000 cps.
Input Impedance:	Direct input to mixer pots, 600 ohms nominal (unbalanced), Tuner input, 30,000 ohms.
Source Impedance:	20,000 ohms high-impedance microphone input (channel 1 only), Ceramic phono input (channel 1 only), Up to 50,000 ohms, tuner input (channel 2 only), 150 ohms nominal with 1578A accessory preamplifier (channel 1 or 2), Up to 50,000 ohms with 1579A accessory magnetic phono amplifier (channel 1 or 2), 600 to 15,000 ohms with 15095 accessory transformer (channel 1 or 2).
Load Impedance:	4/8/16 ohms. 275 ohms, ungrounded, with 16660 (70-v) transformer.
Load Voltages:	8.5/12/14 volts. 70 volts, ungrounded, with 16660 transformer.
Noise Level: (with CER-HI Z switch in the CER position)	Equivalent input noise; —119 dbm with 1578A preamplifier, Output noise; —30 dbm with mixer controls closed (8 ohm load).
Controls:	2 mixer, 1 tone, 1 power switch on front panel, 1 selector switch for high impedance microphone or ceramic phono pickup on rear panel,* 1 balance control, internal.
Power Supply:	117 volts, 50-60 cps (10 watts at zero signal, 28 watts at ⅓ output, and 42 watts at full power).
Dimensions:	4¾"H x 13⅛"W x 8 11/16"D.
Color:	Altec Green
Weight:	10 lbs.
Accessories:	1578A transistor preamplifier, plug-in (microphone). 1579A equalized transistor preamplifier, plug-in (magnetic phono). 1588A transistor preamplifier, plug-in, transformer-isolated input (microphone). 14678 Compressor assembly and 14722 bracket, plug-in connection. 15095 transformer, plug-in (high-level balanced line to mixer). 16660 transformer for 70-volt line (mounts internally from rear with 6 screws for mechanical and electrical connections).

*Indicates the ceramic phone — hi z Microphone switch, which functions as a high-low gain switch when plug-in accessories are used, is in the HI Z MIC position. Approximately 5.5 db of attenuation is available when the switch is in the CER PHONO position.

Ordering Information: Order one 361B amplifier plus the following:

If 70-volt line output is required order one 16660 transformer.

If volume compressor is required, order one 14678A assembly with 14722 mounting bracket.

If accessory inputs are to be used, order any combination of the following: (two maximum may be used at any one time.)

1578A transistor preamplifier plug-in. (microphone).

1579A equalized transistor phono preamplifier for magnetic phono pick-up. Plug-in.

1588A transistor preamplifier, plug-in, transformer-isolated input (microphone).

15095 transformer plug-in (high level balanced line to mixer).

If rack mounting of the 361B mixer/power amplifier is desired, order one 14965 rack mounting assembly. (Requires 5-1/4" of rack space.)

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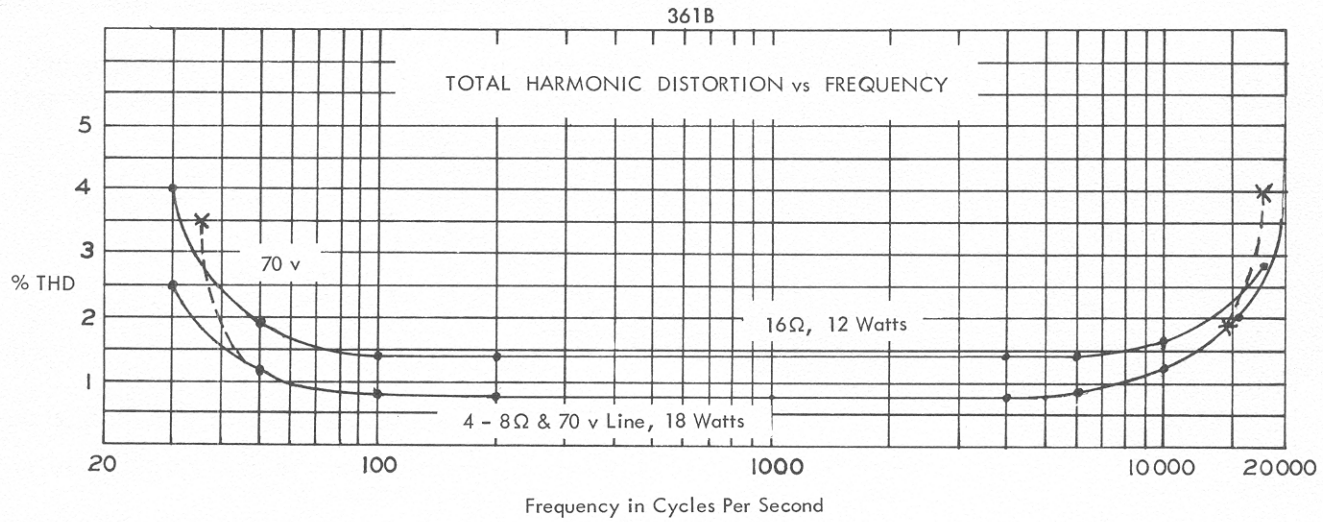

Figure 1

DESCRIPTION

The Altec 361B mixer/power amplifier, a solid-state unit for controlling, mixing, and amplifying two independent input signals, is designed to operate with or without accessories. Delivering 18 watts of power, the 361B can drive speakers of the 4-16 ohm type, or, equipped with the 16660 output transformer, it may be used for standard 70-volt speaker distribution systems. Figure 1 illustrates the output performance of the 361B.

Figure 2 illustrates various combinations for the 361B with and without accessories. Without accessories, one input may be used for ceramic phono pick-up or a high impedance announce microphone while the other input may be used for any high-level device such as a radio tuner or tape machine. The inputs may also be used directly for 600-ohm sources.

Both inputs will accept the following accessories: The 1578A or 1588A microphone preamplifier for low-impedance microphones, (See figures 3 and 4), the 1579A equalized phono amplifier for magnetic type pick-ups, (See figure 6), or the 15095 line transformer for bridging low-impedance lines.

Other accessories include the 14678A volume compressor assembly which may be mounted directly to the rear panel of the 361B where an interconnecting socket with the required voltage and circuit connections is provided; the 16660 70-volt line transformer, which is installed on the rear panel without soldering; and the 14965 rack mounting assembly which enables the 361B to be rack mounted using only 5¼" of rack space.

The 361B mixer/power amplifier is equipped with self-resetting circuit breakers in both the primary and transistor supply circuits to provide maximum protection to components in the event of speaker line short circuit, inadequate ventilation or other abnormal operating condition.

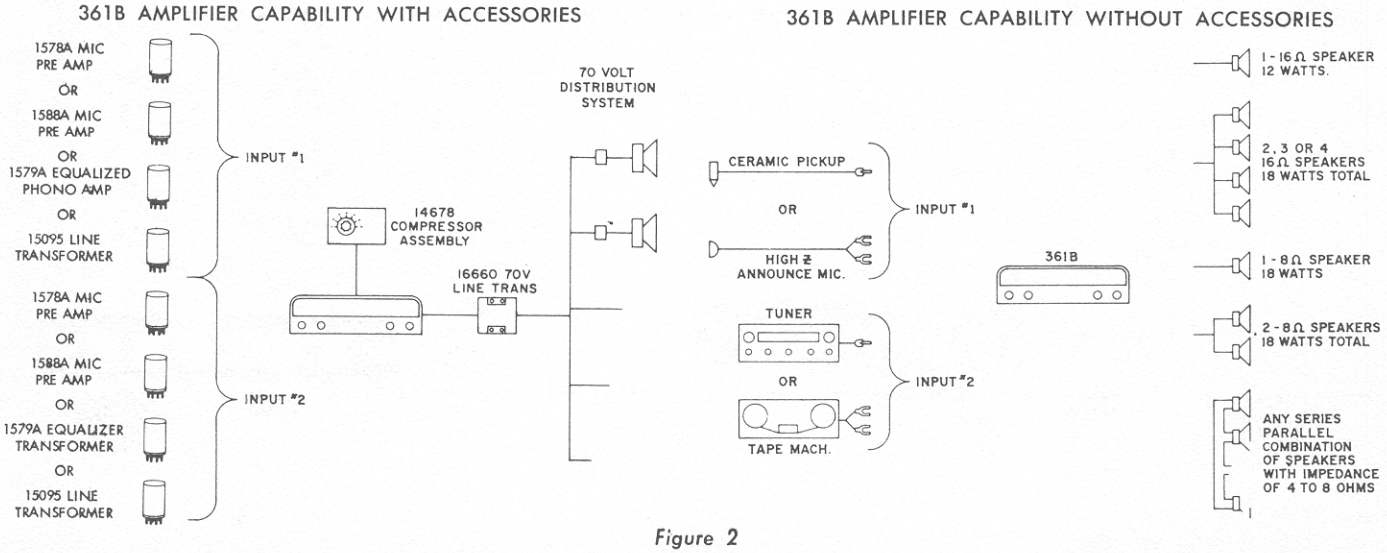

Figure 2

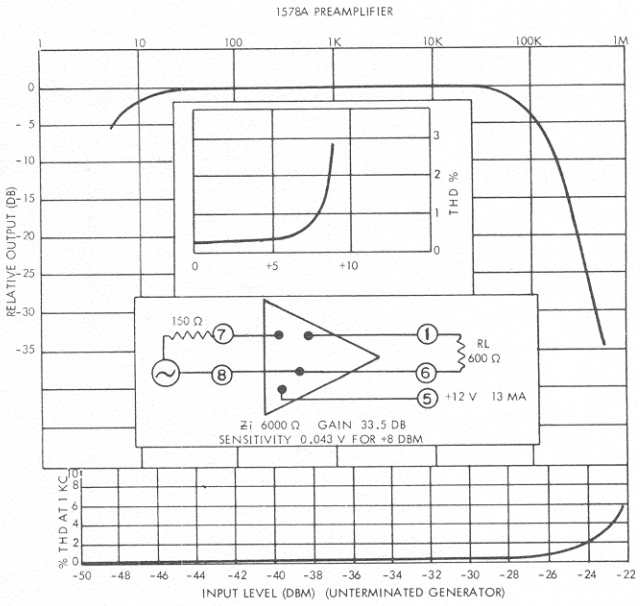

Figure 3

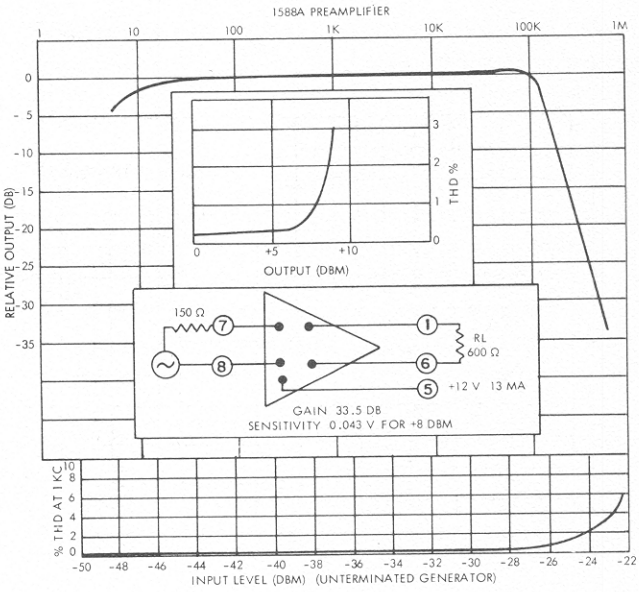

Figure 4

14678A VOLUME COMPRESSOR ASSEMBLY

The 14678A volume compressor assembly mounts on the rear of the amplifier with the 14722 mounting bracket. The four sheet metal screws, supplied with the 14722 mounting bracket, are used in the four holes provided on the rear plate of the amplifier. See figure 5. The volume compressor is connected to the amplifier circuit by means of the six-pin plug attached to the volume compressor assembly. It is inserted in the socket on the rear plate of the amplifier. Threshold adjustment is made with the range switch on the compressor assembly in steps of 2, 4, 8, 16 and off. The numbers correspond to power level, (in watts), where compression will begin. The compression ratio above threshold is better than five to one. The compressor is rapid acting, having an attack time of 10 milliseconds.

NOTE: The threshold point has been carefully adjusted at the factory and should not be changed. The control is on the rear surface of the volume compressor assembly and is not available without removing the compressor assembly from the amplifier. In the event that the threshold point must be readjusted, the following procedure is provided:

1. Connect a 1 kc signal to the input and an ac voltmeter to the 4-16 ohm speaker output.
2. Turn the Compression Range Switch to off.
3. Adjust the volume control of the 361B to produce 3 volts across the 4-16 ohm output.
4. Rotate the compression threshold potentiometer (on the rear of the compressor assembly) fully clockwise.
5. Turn the Compression Range Switch to 16.
6. Rotate the compression threshold potentiometer counter clockwise until the output starts to reduce. Leave the setting at a point where the output has decreased 0.2 db.

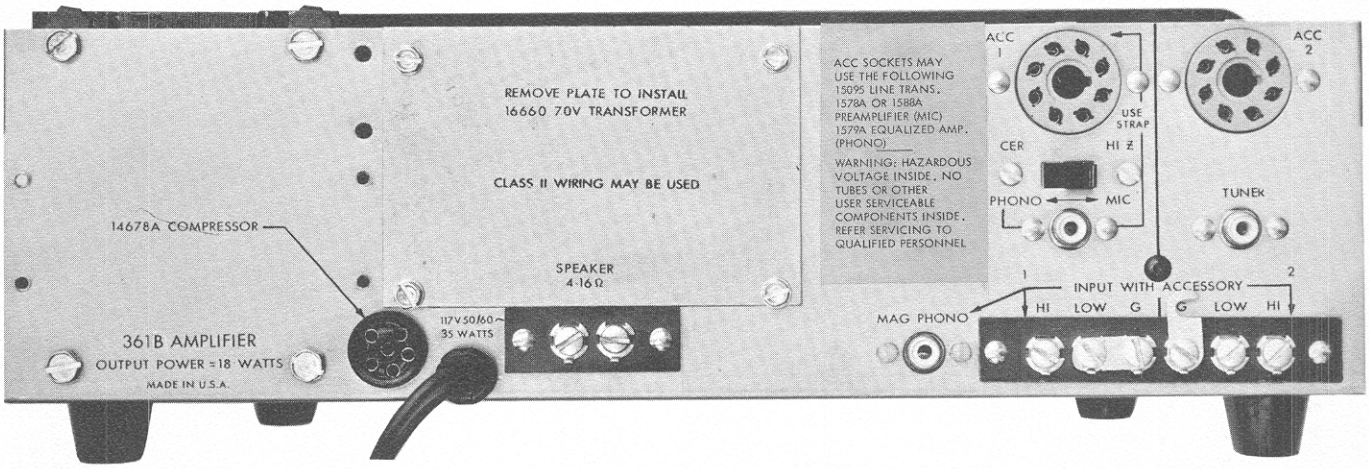

Figure 5

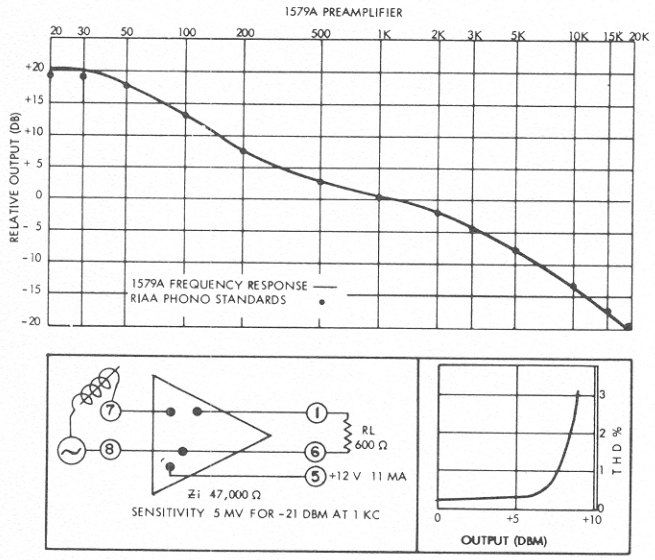

Figure 6

INPUT CONNECTIONS

Various input connections are diagramed in figures 7, 8, and 9. Many combinations are possible with the two inputs and are explained in the following paragraphs. The slide switch on the rear of the amplifier may be used to provide additional gain for any input used. For instance; if a plug-in accessory were used in input #1 and a 600-ohm source in input #2, the gain of both channels would be increased if the slide switch were placed in the CER position.

Ceramic Pick-ups and High-Impedance Microphones:

Ceramic or crystal cartridge pick-ups and high-impedance microphones require no input accessory. Use J1, labelled PHONO-MIC, and make sure the slide switch on the rear of the amplifier is in the proper position. When using this input, a shorting link is required across terminals 1 and 2 of ACC 1 socket. (Shorting link No. 13567) Note that the MAG PHONO input and the HI-LOW input an the terminal strip are not used when ceramic pick-ups or high-impedance microphones are used. See figure 7.

Tuners or Tape Machines:

Tuners or tape machines may be plugged into the socket labelled TUNER without using any accessories. No shorting link is required and nothing should be inserted in the ACC 2 socket. See figure 7.

Magnetic Phono Pick-up:

Plug-in accessory 1579A must be used when a magnetic phono pick-up is connected to the amplifier. Either input may be used, however, a phono socket has been provided on input #1. See figure 8.

Low-Impedance Microphones:

Plug-in accessory 1578A or 1588A must be used for proper operation of low-impedance microphones. Either input may be used, however, if some other input device is used in input #1, then input #2 must be used and the proper connections are diagramed in figure 8.

600-ohm Balanced Lines:

Plug-in accessory 15095 is required for 600-ohm balanced lines. The 15095 transformer is used as a bridging transformer. If line termination is required a 680 ohm resistor must be connected across the input terminals. Figure 9 illustrates the connections using input #2, however either input may be used.

600-ohm Unbalanced Lines:

No plug-in accessory is required for 600-ohm unbalanced lines. Shorting link #13567 must be used between pins 1 and 8 on the A C C 1 socket. When direct connection to the 600 ohm mixing bus is used (isolation transformer omitted), care should be taken that no other ground exists on the line or ground loops may result that will induce hum and noise into the system.

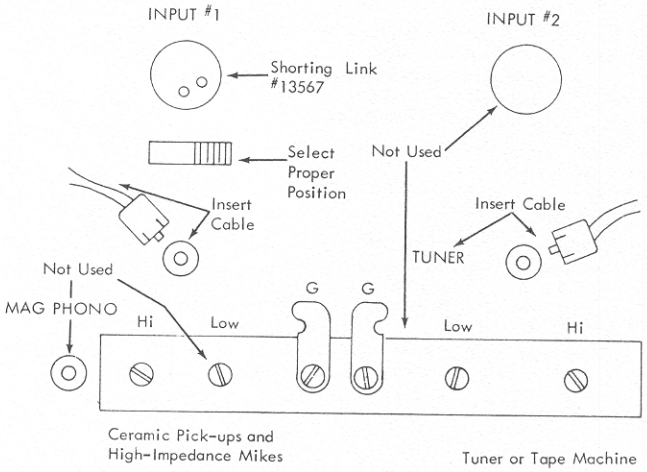

Figure 7

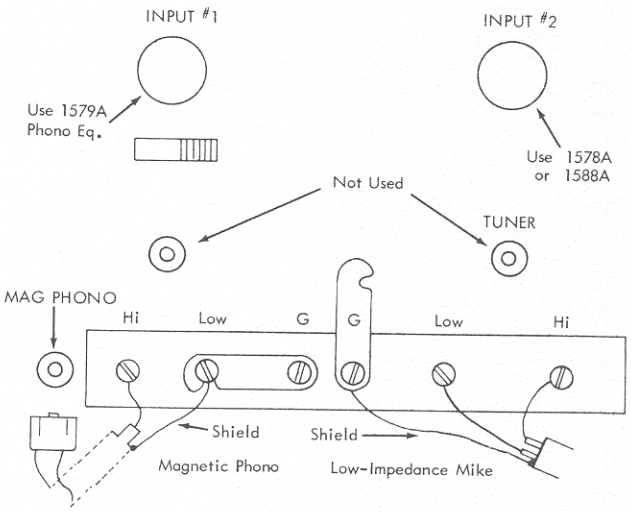

Figure 8

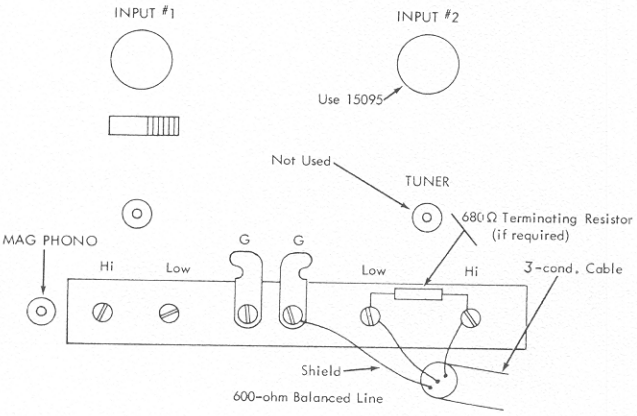

Figure 9