

Voice Projector

Plus Power 25[®]

**OPERATING INSTRUCTIONS
and trouble-shooting guide**

LECTROSONICS, INC.

Rio Rancho, NM

INTRODUCTION

The Plus Power 25 Extension Speaker is designed to provide virtually unlimited additional sound coverage when operated in conjunction with any of the Voice Projector® family of portable sound systems and microphone mixers. In addition, it is intended to offer an easy method of providing additional audience coverage when used to amplify the high level remote speaker output from tape cassette players, sound motion picture projectors, video tape players, etc. The Plus Power 25 is completely portable and each unit contains its own amplifier and power pack as well as the speaker and enclosure. It weighs less than 6 pounds and is intended for situations requiring moderate sound reinforcement, primarily in indoor applications.

The Plus Power 25 may be connected to any Voice Projector unit by means of an audio extension cable. Each Plus Power unit has both an input and output connector, permitting units to be connected in series. While both the total number of Plus Power extension speakers and the total length of audio extension cables which may be driven by a Voice Projector unit are virtually unlimited, some deterioration of the higher frequency components may be noticed in installations exceeding fifteen Plus Power speakers or driving cables whose total length is in excess of 2500 feet.

AUDIO EXTENSION CABLES

Audio extension cables used with the Plus Power family of extension speakers must be made from a high quality, shielded, 2-conductor cable, such as Belden 8412. One end of the cable must be terminated with a 3-pin female audio connector (Switchcraft A3F or equivalent) and the other with a 3-pin male audio connector (Switchcraft A3M or equivalent). The cable shield must be connected to Pin 1 on each connector with the two signal wires connected to Pins 2 and 3 respectively.

Audio extension cables specifically designed for use with Plus Power extension speakers are available in standard lengths of 25', 50', and 100' (CP-25, CP-50 and CP-100 cables, respectfully) from your local dealer or from Lectrosonics, Inc. In addition a special "Y" adapter cable is available for use in applications where two or more Plus Power speakers are to be located in opposite directions from the driving unit.

OPERATING CONTROLS

The Plus Power 25 extension speaker has only a single operating control, a four position Volume Range Selector switch. This control is located on the same panel as the Plus Power input (female) and output (male) connectors. All other control functions are provided by the Voice Projector unit driving the Plus Power 25.

The Volume Range Selector provides four separate settings for adjusting the sound output level relative to the volume of the driving unit. To select the appropriate position, the user should first set the Volume Range Selector to the minimum (counter clockwise) position and check the sound level while operating the driving unit with its volume control at mid-range. If additional sound coverage is required, the Volume Range Selector should be advanced (moved clockwise) step-by-step until the desired sound coverage is achieved. The Volume Range Selector should always be set at the minimum level providing adequate sound coverage since higher volume settings than necessary often tend to decrease, rather than increase, intelligibility of the speaker. The Volume Control on the driving unit provides the master gain adjustment for both the driving unit and all Plus Power extension speakers connected to that unit.

When the Plus Power 25 is driven by a Voice Projector unit a relay located within the Plus Power 25 is remotely activated by a special signal which is supplied by the driving unit via the audio extension cable. In this mode of operation the Plus Power 25 will be turned ON when, *and only when*, the driving unit is turned on. This feature provides the user with a single master On/Off control for a multiunit sound system composed of the driving unit and one or more Plus Power extension speakers.

When the Plus Power 25 is used as an auxiliary amplifier for the output from a tape cassette player, sound motion picture projector, etc. the high level remote speaker input must be connected to the Plus Power 25 via the HI LEVEL IN jack located on the control panel of the unit. In this mode of operation the Plus Power 25 will be turned on whenever a phone plug is inserted into the HI LEVEL IN jack.

POWER PACK REPLACEMENT

As the J-7 Power Pack in the Plus Power 25 nears the end of its useful life, its output voltage will begin to drop, causing the Plus Power 25 sound to become increasingly distorted. Whenever this distortion becomes noticeable the power pack should be replaced. If there is no sound output, check all power pack connections before returning the unit for repair.

Regardless of frequency of use the J-7 Power Pack should be replaced every 12 months to insure satisfactory performance. If the Plus Power 25 is to be stored in excess of 12 months, the power pack should be removed before storing.

Access to the power pack in the Plus Power 25 unit is obtained by removing two screws which retain the back cover. Once this cover is off, the power pack may be readily removed and replaced. Before reinstalling the cover, make sure that the power cord plug is properly seated. Replacement power packs may be obtained from your local dealer or from Lectrosonics, Inc.

ACCESSORIES

A J-27 heavy duty power pack can readily be installed in place of the usual power pack. This power pack offers both additional operating life and an extended storage life of 3-4 years, as compared to 12-18 months for the J-7 power pack.

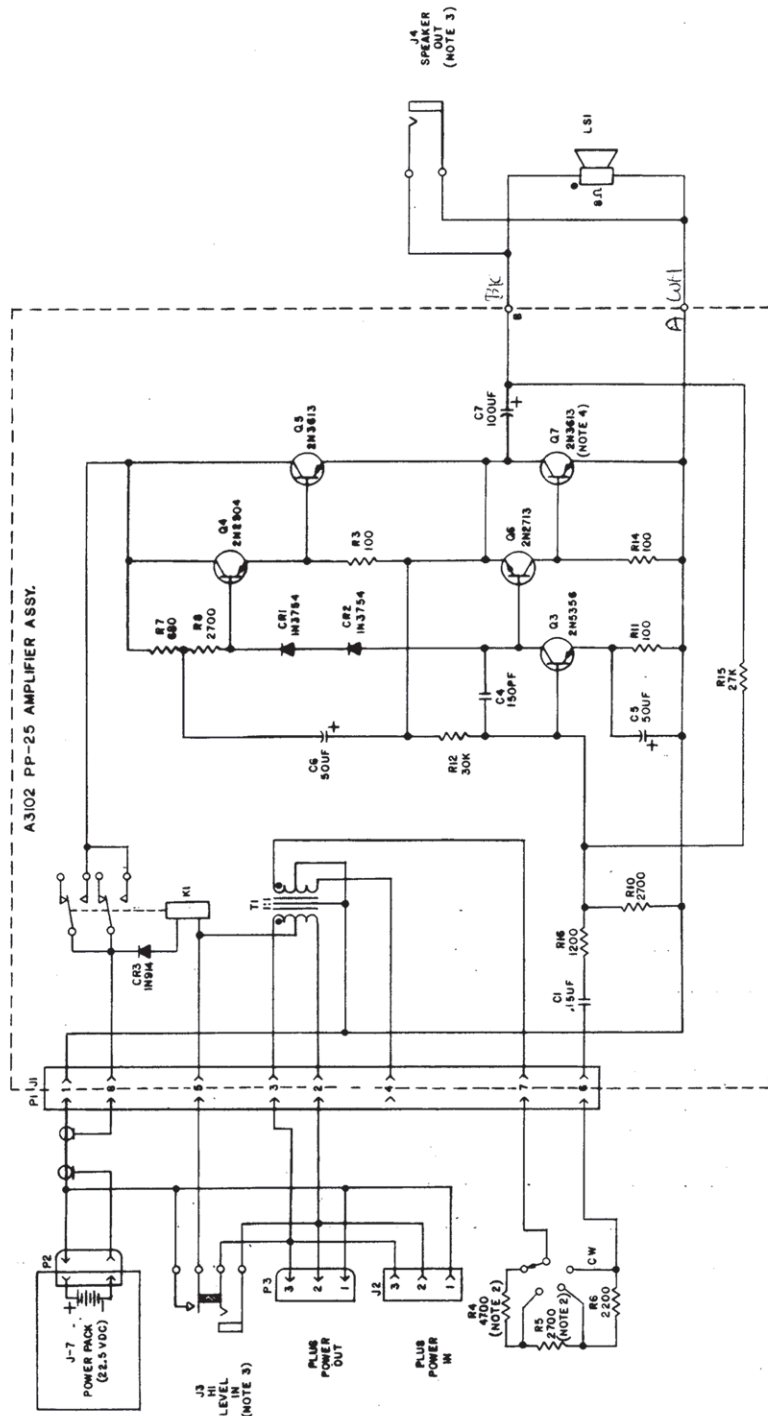
An AC power converter which operates on conventional 115VAC current is available for the Plus Power 25 extension speaker. The J-47 Power Converter may be readily installed in place of the J-7 power pack provided with the Plus Power 25.

Audio extension cables, which are described elsewhere in these instructions, are available for interconnecting the Plus Power 25 with the driving unit and with other Plus Power units.

Voice Projector Model PP25**REPLACEMENT PARTS LIST**

<u>Part Number</u>	<u>Schematic Reference</u>	<u>Description</u>
A3012	None	PP-25 Amplifier Assembly
15002	C1	Capacitor, 0.15uf/25v
15006	C4	Capacitor, 150pf, disc
15007	C5, C6	Capacitor, 50uf/25v
15001	C7	Capacitor, 100uf/25v
48003	CR1, CR2	Diode, D1300A or 1N3754
48002	CR3	Diode, 1N914
48102	Q3, Q4	Transistor, 2N5356
48105M	Q5, Q7	Transistor, 2N3613 or KT1231 w/Hardware
48107	Q6	Transistor, 2N697
51002	K1	Relay, DPDT
A5001	T1	Audio Transformer
Various	R7, R8, R10-R16	Resistor, 1/2W, Various Values +/-10%
21004	J1	Octal Socket
21121	J2	Female Audio Connector, 3-pin
21241M	J3	Phone Jack & Switch w/Hardware
21235	J4	Phone Jack w/Hardware
21122	P1	Octal Plug
21223	P2	Power Pack Connector Cord
21115	P3	Male Audio Connector, 3-pin
51003M	S1	Switch, 4-position w/hardware
Various	R4-R6	Resistor, 1/2W, Various Values +/-10%
13001	LS1	Coaxial 6" Speaker
14030	None	Black Rubber Foot
14195	None	Handle, Black Plastic, Fixed
14010	None	Handle, Black Plastic (Old Style)
14012	None	Handle Bracket (Old Style)
14013	None	Clip-on Cover for Handle Bracket (Old Style)
J-27	None	22.5v Power Pack, (Heavy Duty) Alkaline

REV	DATE	DESCRIPTION
A	1-75	RELEASE
B	6-76	UPDATE



COMPONENTS	
UNUSED	HIGHEST
C2,C3	C7
	CR3
	J4
	K1
	LSI
	P3
	Q1,Q2
	Q7
	R1-R3,R9
	R6
	S1
	T1

- NOTES:
1. CR1, CR2, Q5 AND Q7 ARE MOUNTED ON COMMON HEAT SINK.
 2. R4 AND R5 WERE 12KΩ AND 82KΩ PRIOR TO DECEMBER, 1972.
 3. HI LEVEL IN JACK J3 AND SPEAKER OUT JACK J4 ADDED NOV. 1973.
 4. Q7 MUST BE ELECTRICALLY INSULATED FROM HEAT SINK.
 5. RESISTOR VALUES ARE IN OHMS.

VOICE PROJECTOR;
 SCHEMATIC DIAGRAM
 PLUS POWER 25
 Lockheed
 REV B

SERVICE AND REPAIR

If your system malfunctions, you should attempt to correct or isolate the trouble before concluding that the equipment needs repair. Make sure you have followed the setup procedure and operating instructions. Check out the interconnecting cords and then go through the TROUBLE SHOOTING section in the manual

We strongly recommend that you **do not** try to repair the equipment yourself and **do not** have the local repair shop attempt anything other than the simplest repair. If the repair is more complicated than a broken wire or loose connection, send the unit to the factory for repair and service. Don't attempt to adjust any controls inside the units. Once set at the factory, the various controls and trimmers do not drift with age or vibration and never require readjustment. **There are no adjustments inside that will make a malfunctioning unit start working.**

LECTROSONICS' service department is equipped and staffed to quickly repair your equipment. In warranty repairs are made at no charge in accordance with the terms of the warranty. Out of warranty repairs are charged at a modest flat rate plus parts and shipping. Since it takes almost as much time and effort to determine what is wrong as it does to make the repair, there is a charge for an exact quotation. We will be happy to quote approximate charges by phone for out of warranty repairs.

RETURNING UNITS FOR REPAIR

You will save yourself time and trouble if you will follow the steps below:

A. DO NOT return equipment to the factory for repair without first contacting us by letter or by phone. We need to know the nature of the problem, the model number and the serial number of the equipment. We also need a phone number where you can be reached 8 am to 4 pm (Mountain Standard Time).

B. After receiving your request, we will issue you a return authorization number (R.A.). This number will help speed your repair through our receiving and repair departments. The return authorization number must be clearly shown on the outside of the shipping container.

C. Pack the equipment carefully and ship to us, shipping costs prepaid. If necessary, we can provide you with the proper packing materials. UPS is usually the best way to ship the units. Heavy units should be "double-boxed" for safe transport.

D. We also strongly recommend that you insure the equipment, since we cannot be responsible for loss of or damage to equipment that you ship. Of course, we insure the equipment when we ship it back to you.

Mailing address:

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