

INSTALLATION INSTRUCTIONS
MODEL TPA-60/TPA-100
PAGING AMPLIFIERS

GENERAL APPLICATION INFORMATION

Wheelock's models TPA-60 and TPA-100 paging amplifiers are rated at 60 watts RMS and 100 watts RMS respectively.

These amplifiers afford a choice of five different inputs: two microphone inputs, one telephone input, and two background music inputs. Only three of these inputs can be used actively at one time: one microphone, a choice of a second microphone or telephone input, and a choice of one background music input applied through either AUX. 1 or AUX. 2. Note that the background music will automatically be muted whenever a page is generated, from either a microphone or telephone input.

An automatic volume limiter compensates for the varying voice levels and paging styles that may have access to a system.

The amplifiers feature individual input volume controls, as well as a master volume control, individual treble and bass controls, or low-cut horn protect switch, two input selector switches, an illuminated power on switch and a peak level indicator.

Both models operate from 120 volts, 60Hz and have a power consumption of 180 watts (TPA-60) and 250 watts (TPA-100). The units have an AC circuit breaker on the line input side, as well as a thermal breaker for overload protection on the output. The AC circuit breaker is manually resettable. However, in the event it does not reset, have the trouble investigated by an authorized service technician or return unit to the factory.

WARNING:
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK,
DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

INSTALLATION

Unpacking

The amplifier was carefully checked before leaving the factory. Inspect shipping container and unit carefully for indication of improper handling. If the unit has been damaged, make an immediate claim to the carrier.

Mounting Instructions

The amplifier is provided with a set of universal mounting brackets to facilitate either rack or surface wall mounting. Remove the 8 screws (4 on either side) holding the cover to the chassis. Choose the mounting required (rack or surface wall), and insert screws thru the universal mounting bracket and back into the cover/chassis holes as shown in Figures 1 and 2.

CAUTION: THESE DEVICES ARE NOT INTENDED FOR USE IN HAZARDOUS LOCATIONS AS DEFINED BY THE NATIONAL ELECTRICAL CODE (NEC) AND BY THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA).

FIGURE 1.

SURFACE WALL MOUNTING

For surface mounting, be sure to use hardware suitable for the mounting surface.

FIGURE 2.

Power and Grounding

The 120 VAC line cord has a three-prong plug which should be plugged into a three wire grounded electric outlet. It is very important to maintain the amplifier ground for safe and trouble-free operation. If there is no grounded electric outlet, connect a wire from the GND terminal of the unit to a water or steam pipe.

P81932 H
SHEET 2 OF 7

TECHNICAL SPECIFICATIONS

#	PARAMETERS	TPA-60	TPA-100	
1	POWER OUTPUT @ 1 KHz	60 WATTS RMS	100 WATTS RMS	
2	TOTAL HARMONIC DISTORTION	LESS THAN 2% THD		
3	OUTPUTS	4 ohms, 8 ohms, 25V, 70V		
4	TAPE/BOOSTER OUTPUT	47K ohm, 0.6V		
	INPUTS	TELEPHONE	MIC 1/MIC 2	AUX 1/AUX 2
5	IMPEDANCE	600 ohm	150 ohm	47K ohms
6	SENSITIVITY	-20 dBm	.5 - 1 mV	220 mV
7	FREQ. RESPONSE	300Hz - 4KHz	70Hz - 15KHz	70Hz - 15KHz
8	SIGNAL TO NOISE RATIO	60dB	60dB	70dB
9	TYPE OF INPUT	XFRMR ISOLATED/BAL	BALANCED OR UNBAL.	UNBALANCED
10	CONTROLS	TEL/MIC 1, MIC 2, AUX 1/AUX 2, INPUT LEVELS, BASS, TREBLE, MASTER VOLUME, TEL/MIC 1 AND AUX 1/AUX 2 SELECTOR SWITCHES, POWER ON/OFF SWITCH, LO-CUT SWITCH		
11	INDICATORS	AMBER NEON - POWER ON RED LED - PEAK LEVEL		
12	PROTECTION	AC LINE RESETTABLE CIRCUIT BREAKER, THERMAL OVERLOAD PROTECTION ON OUTPUT, AND SHORT CIRCUIT PROTECTION ON OUTPUT.		
13a	TREBLE CONTROL	+/-9 dB @ 12 KHz		
13b	BASS CONTROL	+/-9 dB @ 100 Hz		
14	LO-CUT SWITCH	-6 dB @ 250 Hz		
15	AUTOMATIC LIMITER FOR PAGING	+/-3 dB OUTPUT LEVEL MAINTAINED WITHOUT CLIPPING, EVEN WHILE EXCEEDING RATED INPUT LEVEL UP TO 20 dB.		
16	AUTOMATIC MUTE OPERATION	OUTPUT LEVEL 1 WATT FOR 40 dB MUTING		
17	REGULATION	NO LOAD TO FULL LOAD OUTPUT LESS THAN 2 dB.		
18	CONSUMPTION	180 WATTS MAX.	240 WATTS MAX.	
19	SIZE	15"W X 11.25"D X 4.125"H (38.1 X 28.6 X 10.1cm)		
20	WEIGHT	15lbs. (6.75Kg)	18lbs. (8.1Kg)	

INPUT CONNECTIONS

FIGURE 3.

TELEPHONE: Connect telephone wires to the input screw terminals marked TIP and RING. Set TEL/MIC 1 Switch to TEL position. For connection to unused CO trunk port, see Figure 7. For connection to CO line, Centrex line or Analog Station port, a Wheelock TPI-100 Interface is required.

MICROPHONE: Connect balanced low-impedance microphone wires to the input screw terminals marked LO-Z. The shield must be connected to the GND screw terminals. An unbalanced microphone may be connected to the same screw terminals. However, one of the two LO-Z terminals for that input must be connected to the adjacent screw terminal marked GND. Use an external piece of wire to form a jumper, and secure between one LO-Z screw terminal and the GND screw terminal.

CAUTION:
TO AVOID POSSIBLE INTERFERENCE, THE MICROPHONE INPUT CABLE
MUST BE A SHIELDED CABLE WITH THE SHIELD CONNECTED TO GND.

MIC 2 is a dedicated input, while for MIC 1 input to be activated - the TEL/MIC 1 switch must be in the MIC 1 position. With the selection mode switch in the MIC 1 position the TEL input is disconnected.

HI-Z INPUTS: AUX 1, AUX 2

FIGURE 4.

To connect an FM tuner, CD player or cassette to either the AUX 1 or AUX 2 input jacks, use a single conductor shielded cable terminated in a standard RCA type phono plug.

The mode selector switch on the front panel must be set to either the AUX 1 or AUX 2 position.

TAPE/BOOSTER OUTPUT

FIGURE 5.

To connect a cassette recorder to the TPA-60 or TPA-100, use a single conductor shielded cable terminated in a standard RCA type phono plug. One side will plug into the tape/booster output jack, while the other side will plug-in to the RECORD INPUT jack of the cassette recorder.

The tape/booster output signal can also be used to feed an AUX input of another amplifier for system expansion or greater power capabilities.

Note that the tape/booster output signal level is constant and unaffected by any of the amplifier controls.

OUTPUT CONNECTIONS

FIGURE 6.

CAUTION:
CONNECT ONLY TO PBX INCORPORATING ISOLATION FROM TELECOM NETWORK.

ATTENTION:
RACCORDER SUELEMENT A UNSYSTEME PBX INDEPENDANT/DU RESEAU DE TELECOMMUNICATION.

Connect output wires to the COM screw terminal and the selected mode for constant voltage distribution, i.e. 25 volts or 70 volts. The constant voltage distribution method facilitates the use of multiple speakers in parallel with a single amplifier. Note that each speaker must have its own line-matching transformer. The tap on the line matching transformer is selected to give the power desired for each speaker.

It is recommended for long distances to use a wire as heavy as possible in order to minimize a consequent power loss on the distribution line.

NOTE:
TO ALLOW FOR FUTURE EXPANSION, IT IS RECOMMENDED THAT THE TOTAL SYSTEM WATTAGE SHOULD NOT EXCEED 85% OF THE AMPLIFIER'S RATED OUTPUT (I.E. 51 WATTS FOR THE TPA-60 AND 85 WATTS FOR THE TPA-100).

THE TOTAL SYSTEM WATTAGE REQUIREMENT IS THE SUMMATION OF THE WATTAGE TAP SELECTIONS OF ALL SYSTEMS SPEAKERS AND HORNS.

A single 4 ohm or 8 ohm speaker may be connected to the COM and either the 4 ohm or 8 ohm terminals. Be sure that the wattage rating of the speaker exceeds that of the amplifier.

P81932 H
SHEET 5 OF 7

UNUSED CO TRUNK PORT CONNECTIONS

When connecting an amplifier to an unused CO trunk port, install as shown in Figure 7 using an RPS-2406 power supply to provide talk battery to the port.

FIGURE 7.

OPERATION

FIGURE 8.
(Front panel controls, switches and indicators.)

<p>NOTE: ALL CONTROLS ROTATE CLOCKWISE TO INCREASE AND COUNTERCLOCKWISE TO DECREASE.</p>
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POWER SWITCH (ILLUMINATED): The amber light inside the switch will light when the AC cord is plugged into a 120 VAC source and the power switch is pressed to the ON position.

MASTER VOLUME CONTROL: Sets the total output level of the amplifier without disturbing the individual level settings of the microphone, telephone and music inputs.

P81932 H
SHEET 6 OF 7

TEL/MIC 1 SELECTOR SWITCH: Switch to TEL position when using telephone input paging, or switch to MIC 1 position when using MIC 1 input.

AUX 1/AUX 2 SELECTOR SWITCH: Switch to either AUX 1 or AUX 2 position, depending upon which of 2 program source inputs are utilized.

TEL/MIC 1 CONTROL: Adjusts the volume of either the telephone paging or MIC 1 paging input.

MIC 2 CONTROL: Adjusts the volume of the MIC 2 paging input.

AUX 1/AUX 2 CONTROLS: Adjusts the volume of the AUX 1/AUX 2 inputs. Inputs are typically used for music, prerecorded program sources, or tone signaling.

TONE CONTROLS: Set the individual Bass and Treble controls for optimum tonal balance of the output signal. The amplifier frequency response is flat with the knob indicators pointing straight up (Dot #6).

MUSIC MUTE: Music is automatically muted when paging. After completion of the paging message the music will gradually return to its original level. Note that pausing for too long a period while making an announcement will result in the gradual return of music, until speaking again.

PEAK INDICATOR: Flickering of the LED at maximum levels is a proper indication of the amplifier level. If the LED stays on permanently, this should be a sign that an overdrive condition exists.

HORN PROTECT/LO-CUT: This switch is located on the right hand side of the rear panel. Turn the switch ON whenever HORNS are used in the system. This will protect the horns from damage from low frequencies.

MAINTENANCE

<p style="text-align: center;">CAUTION: THERE ARE NO USER-REPLACEABLE PARTS WITHIN THE UNIT. HAVE ALL INTERNAL SERVICING DONE BY A QUALIFIED TECHNICIAN.</p>

LIMITED WARRANTY

Refer to Wheelock's Terms and Conditions of sale.