



assembly manual

WERSIVOICE

AM 460 (Part)

Functional Description and User Instructions

Fig. 1 shows the table-top model of the WERSIVOICE. The controls of the built-in version are identical to the ones shown, except where noted otherwise. The front panel controls have the following functions:

"Power" switch: It applies AC power to the unit. The on condition is indicated by the pilot light.

The built-in version is powered automatically whenever the host organ is turned on.

"Volume" control: This slide control adjusts the output signal amplitude to match it to the input sensitivity of the following pre-amp or power amplifier.

This control is a pre-set trim pot in the built-in version, establishing the balance between the W E R SIVOIC E channel and other non-vibrato channels.

-Speed- control: The 'Now' vibrato speed can be varied by means of this control from approx. .6 H z to 6 H z (which corresponds to 36 through 360 revolutions per minute).

Figure 1: WERSIVOICE, Table-Top Model



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The "Slow" speed is pre-set to .6 H z in the built-in version for may be set to any other speed by a trim pot).

"Effect On" switch: When released, the signal connected to the W E R SIVOIC E by-passes the effect circuitry. The unit acts simply as a linear pre-amplifier (usually with a gain of unity).

When depressed, the signal is modified according to the settings of the other controls and switches. Internal trim-pots balance the volumes of the processed and the bypassed signal respectively.

"Fast/Slow" switch: It controls the vibrato speed between the pre-set values of normally .6 H z and 6 Hz.

When released, the speed is "Fast".

When depressed, the speed jumps to "Slow".

When released again, the speed changes slowly from "Slow" to "Fast", simulating the inertial speeding up of mechanical motor-driven rotators.

The switch "Fast/Slow" as well as the "Speed" control are disabled in the "Choir" mode.

"Vibrato/Choir" switch in position "Vibrato" (depressed): When depressed, the W E R SIVOIC E operates in the "Vibrato" mode. The input signal is applied to three analog shift registers (bucket brigades), each of which is clocked at a different frequency which, in turn, is modulated with various frequencies. The three signal branches, therefore, undergo different phase-and amplitude modulations. When the three audio signals are re-combined at the outputs of the shift registers the result is a rolling and lively sound which has no similarities to the monotonous vibratos known heretofore.

As mentioned earlier, the "rotator speed" can be switched between "Slow" and "Fast", and, in the tabletop model, the slow speed can be varied by the "Speed" control.

Switches "Effect Deep" and "Effect Flat": The intensity of the vibrato can be set to four different levels:

Normal (both switches released): This setting produces the sound of conventional rotating speakers.

Deep (switch "Deep" depressed, switch "Flat" released): The vibrato effect is strongly emphasized, producing a heavily wavering sound.

Flat (switch "Flat" depressed, switch "Deep" released): This combination allows a portion of the signal to by-pass the vibrato channel, remaining unprocessed. The vibrato is imposed on about half of the total signal only, lessening the overall intensity.

Very flat (both switches depressed): A very weak vibrato exists if both switches "Deep" and "Flat" are depressed. This switch combination is not obvious from the labeling. May we suggest an algorithm: Think of the label "Deep" as "More". With both switches depressed, you get something you may remember as "More" "Flat".

See also Table 1 for a summary of the switch functions:

"Vibrato/Choir" switch in position "Choir" (released): This mode utilizes the same circuit components as the vibrato mode, however, the similarity ends here. The input signal is still applied to the three shift registers. The clock

generators for the shift registers are, in this case, controlled by identical, but phase-shifted, frequencies. The three branched signals travel along the shift registers at different speeds and arrive, therefore, at the outputs with different non constant time delays. This is what we mean with "multiplication" of the input signal.

Each incoming solo voice gets translated into a set of voices, a string instrument becomes a string orchestra, brass instruments are given a resonant body formant structure.

The "Choir" effect can be set to four different intensities, using the same switches as for the vibrato. They have similar functions here. A very interesting effect exists with the switch "Deep" depressed. Due to the multiple passage through the processor, the sound appears with "fading". Single tones fade in and out from time to time, producing a sound picture seemingly coming from outer space.

The "Fast/Slow" switch and the "Speed" control are disabled in the "Choir" mode.

See also Table 1 for a summary of the switch functions.

All switch functions can be controlled remotely. The front panel switches are disabled when the remote control cable is plugged into the receptacle. The remote control switches may be located at considerably longer distances than at the 10 feet when using our standard cable.

Two sources may be connected to two inputs each of which has an adjustable input sensitivity of 50 mV R MS to 1 V R MS.

The output also is adjustable from 0 to 1 V R MS.

The table-top model has a built-in power supply.

The built-in version also has its own power supply with an externally mounted power transformer. Lf the WERSIVOICE is built into an organ the single by-pass switch "Effect On" (as shown on the table-top model) is best replaced by a number of channel selector switches such that the different signal sources from within the organ (keyboards, pedal, drawbars, piano, etc.) can be connected to the W E R SIVOIC E (or by-pass it) selectively and at will. See Fig. 4.

VIBRATO								
Switch Positions		Functions		Effect	Use			
Effect ON	Slow	Choir	Effect Deep	Flat	Speed	Intensity		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fast	Normal	Normal fast vibrato	Theatre type music, full sound
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fast	Deep	Fast vibrato, strongly wavering	Beat, rock, acid rock
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fast	Flat	Weak fast vibrato	Ballads, soul, rhythm and blues
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fast	Very flat	Very weak fast vibrato	"Defocussing" of electronic harshness of some organs
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Slow	Normal	Normal slow vibrato	Slow sacred music
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Slow	Deep	Emphasized slow vibrato	Beat, funk, special effects
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Slow	Flat	Weak slow vibrato	General church type music
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Slow	Very flat	Very weak slow vibrato	Heavy slow sacred music
CHOIR								
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	N/A	Normal	Normal choir effect	Multiplication of voices (strings, brass) Piano becomes Honky Tonk
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	N/A	Deep	Fading effect	"Outer Space" sounds, synthesizer-like
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	N/A	Flat	Choir effect, less intense	Solo voice with background choir
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	N/A	Very flat	Faint choir effect	Solo voice with faint background choir

Table 1: Summary of the WERSIVOICE Switch Functions

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