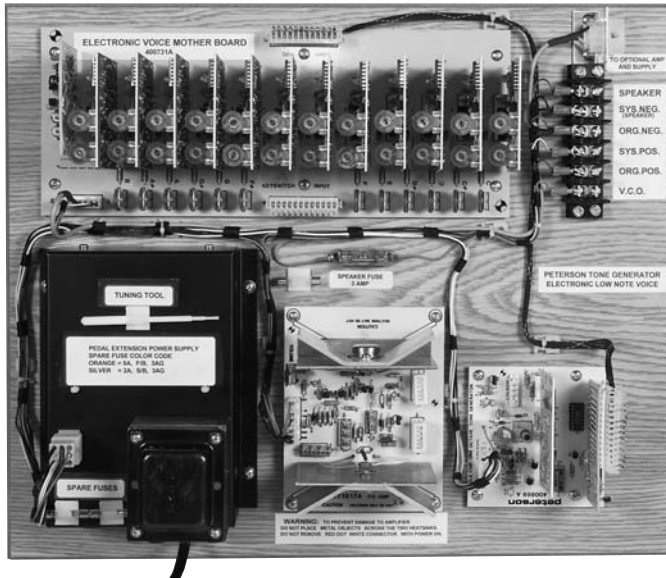


# Electronic Low Note Tone Generators

Popular and versatile “analog/digital” extensions for pipe organs



- Superior tonal flexibility.
- Available in various reed, string, stopped flute, and open flue voices.
- Volume level & various tone quality factors are adjustable separately for each note.
- Combines digital and analog electronic technologies.
- Single control of tuning for all notes.
- Optional AutoTrack™ circuit automatically adjusts tuning.
- “High Power” voices are available for the most demanding applications.

A pipe organ can often be greatly enhanced by extending a rank down to 16' or adding a 32' stop, but in many cases it is just not feasible to do this with pipes. In recent years, there has been an overwhelming increase in pipe organ builders' acceptance of the use of our high quality electronic voices to augment pipe organs where space, budget, or other considerations prohibit the use of additional pipes. Peterson engineers have dedicated countless hours to developing electronic tone generating equipment worthy of enhancing the world's finest instruments. It is gratifying to see many highly respected pipe organ builders using our voices to augment the pipes in their most prestigious installations.

Company founder Richard Peterson began working with the electronic generation of pipe organ sounds in 1948 and has long been respected as a pioneer in this field. Many patents have been awarded for the Peterson company's innovations in this area. Continued research over a period of more than five decades has led to a keen understanding of the complex factors that give listeners to a pipe organ that certain “thrill” in a way that has never been duplicated in an electronic organ. This understanding has been invaluable in the development and evolution of these tone generators.

Today's Peterson Electronic Voices use a combination of digital and analog electronics technologies to “synthesize” complex waveforms similar to those that pipes produce. These systems process the harmonic structure of each note separately, which makes possible several adjustments on a note-by-note basis. This allows the character of each note to be slightly different, adding an extra degree of realism. It also permits enough flexibility so that the system can meet your exact tonal requirements, regardless of the

characteristics of the room or the rest of the organ. This adjustability is extremely important where you are trying to match pipes, as is the case when using the tone generator to extend a rank.

Interestingly, many people believe that systems which play back digitally sampled recordings of pipes must inherently give the most “realistic” results. Our experience with digital sampling technology has allowed us to understand some important limitations inherent in sampled voices. For example, the relative amplitudes and frequencies of the partials within a sample are fixed, not independent and adjustable as they are in Peterson tone generators. When a sample of one note is “translated,” or shifted in frequency to represent other notes, all notes derived from the sample have partials in the same ratios. As a practical matter, the sample is usually recorded from a pipe voiced for a different organ, in a different acoustical environment, which tends to make it more difficult to achieve the exact results that the organbuilder intends for his own instrument.

Another limitation results from the fact that only a single cycle, or at most a few cycles, of the steady state tone of the pipe is usually sampled. This short sample is then repeated over and over upon “playback” for as long as the note is held. This means the resulting tone lacks any of the random character that is so important in making us believe the sound is coming from a pipe. In fact, any random sounds such as wind noise are usually purposely filtered out when a sample is taken to avoid clicks at the sample rate when the note is played.

## TECHNICAL INFORMATION

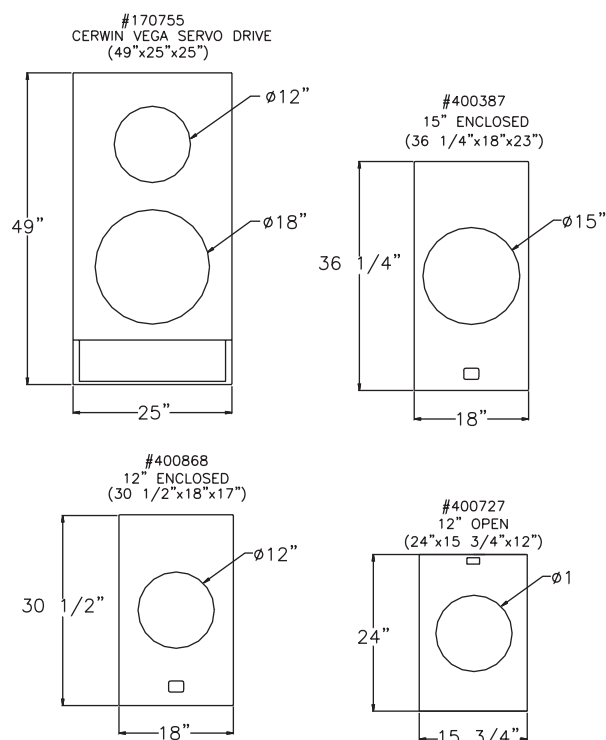


Optional AutoTrack™ includes a temperature sensor in a spring loaded holder.

One additional feature of Peterson Electronic Voice systems that we believe makes them superior to digital sampling systems on the market today is their lack of any dependence on custom parts or one-of-a-kind programs. Hundreds of Peterson voices in use today have virtually identical plug-in modules that use basic digital and analog electronic components that will continue to be widely available for many, many years.

By making intelligent selective use of digital and analog electronics, we are able to provide pipe organ builders with highly flexible, economical and dependable electronic tone generators that can enhance the finest pipe organs. We're so sure that you will be pleased with these systems that we offer the following guarantee: if any Peterson Electronic Tone Generator system fails to perform to your highest expectations, return it in new condition, within a reasonable time, for a full, prompt and unconditional refund. (*Installation and freight charges excluded.*)

## Speaker Cabinet Dimensions



## Specifications

Each Peterson Electronic Tone Generator System must be plugged into a live 117 Volt 60 Hz outlet and connected to an organ rectifier producing a voltage of from 10 to 18 Volts DC. A built-in relay switches the tone generator system on whenever the organ rectifier is energized. Standard systems require a positive keying voltage. Stop control is usually provided as part of a Peterson or other manufacturer's switching system, just as though the tone generator system were a set of pipes. Electronic expression control can be provided at extra cost if required, but it is common to provide expression by placing the speaker cabinet(s) in a chamber. Where appropriate, tremolo can also be provided at extra cost. Available options include loud/soft control so a single voice may be played at different volume levels from different stop controls; keying polarity inverter; tuning control to manually tune all Peterson electronic voices from the console with a single knob; a step-down transformer for use with 220 VAC nominal line current, and AutoTrack™ temperature compensating automatic tuning.

High power systems using special amplifiers and high performance heavy-duty speakers can be provided to handle even the most demanding situations. We will accommodate other special requirements you might have whenever possible. Peterson Electronic Tone Generator Systems for Pipe Organs are backed by a Ten Year Limited Warranty.