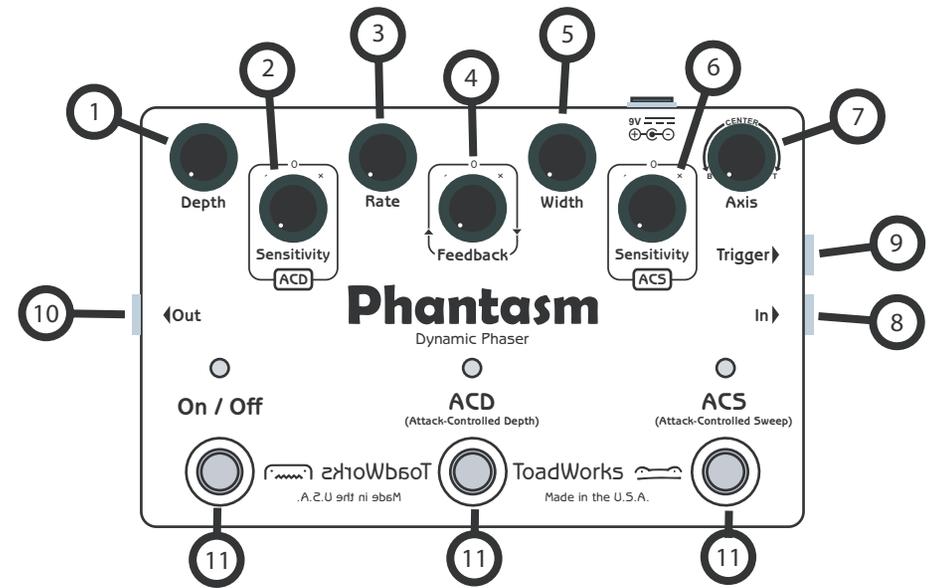


## General Operation

ToadWorks Phantasm is a phase shift effect with dynamic capabilities. In addition to the standard Depth, Rate and Width controls, Phantasm offers attack-based dynamic depth and sweep. While the Phantasm has all the features common to other phasers, it offers more fundamental control of the effect. The original instrument signal is split into two signal paths, the Clean and Shifted signals. The Shifted signal differs from the Clean signal in two important ways: 1) it has been delayed (or "phase shifted") for a very tiny period of time and 2) the amount of that delay is changing over time.

- 1 Depth**  
Controls the amount of phaser effect present in the final mix. Fully counter-clockwise is minimal effect while fully clockwise is maximum effect. When in ACD mode, this control sets the "starting point" from which Depth is affected by instrument dynamics (attack). ACD mode aside, this control is common to many phaser effects.
- 2 ACD Sensitivity**  
When ACD mode is engaged (via ACD stomp-switch and associated LED), this control adjusts how much Depth is affected by instrument dynamics (attack) relative to the Depth control setting. 12:00 o'clock (straight-up or center position) is the minimum setting - as if ACD is turned off. Rotating the knob clockwise from center causes the depth to increase with attack and counter-clockwise from center causes depth to decrease with attack. This control is unique to Phantasm. Note that effect depth is affected by ACD Sensitivity relative to wherever the Depth control is presently set. For example, if Depth is set to maximum (full CW), turning ACD Sensitivity clock-wise from center will have no effect since depth is already at a maximum. However, turning ACD Sensitivity CCW from center will decrease depth and at maximum CCW will cause depth to sweep to minimum with attack.
- 3 Rate**  
Adjusts the frequency or speed at which the LFO sweeps the phaser back and forth between phase offsets, equidistant relative to the Axis control setting. Adjustment range varies from a slow crawling sweep (full CCW) to a fast "wobble" (full CW). This control is common to virtually all phaser effects.
- 4 Feedback**  
This control is sometimes referred to as "regeneration" or "resonance" on other phasers and adjusts the "sharpness" of the phasing sound using both positive and negative feedback, with 12:00 o'clock as the "null" setting. Turning the knob clockwise from center will increase the positive feedback, and turning the knob left from center will increase the negative feedback.
- 5 Width**  
This control adjusts the LFO sweep width or just how far the LFO sweeps the phaser from one phase offset to another. At maximum setting (full CW) the LFO sweeps the phaser between the absolute extremes of phase offset while a minimum setting (full CCW) will effectively turn the LFO sweep off and only ACS or manually turning the Axis control will sweep the phaser. Note that Width only affects how far the LFO will sweep the phaser and does not affect the operation of ACS or the Axis control.
- 6 ACS Sensitivity**  
When ACS mode is engaged (via ACS stomp-switch and associated LED), this control adjusts how much and in what direction instrument dynamics (attack) sweep the phase offset relative to the Axis control setting. 12:00 o'clock (straight-up or center position) is the minimum setting - as if ACS is turned off. Rotating the knob clockwise from center causes a "forward" phase sweep with attack while counter-clockwise from center causes a "backward" phase sweep. Note that ACS sweeps the relative to wherever the Axis control is presently set. For example, if Axis is set to maximum (full CW), turning ACS Sensitivity clock-wise from center will have no effect since the Axis control already has the sweep sitting at its absolute maximum and it cannot sweep "forward" any farther from this point. However, turning ACS Sensitivity CCW from center will cause a "backward" sweep and can in fact sweep the phaser all the way to minimum.
- 7 Axis**  
The Axis control sets the relative "starting point" or "center" from which the LFO and ACS sweep the phaser. The Axis control has an adjustment range from absolute minimum to absolute maximum phase offset. The LFO sweeps the phaser back and forth equidistantly from the Axis setting and ACS sweeps the phaser "forward", toward the top (T) or "backward" toward the bottom (B), relative to the Axis setting. With the Width control at minimum and ACS off, the Axis control is effectively a "manual" sweep control and can sweep the phaser over the entire range. NOTE: This control is dual-function - it can also be used in Manual Sweep mode. To manually sweep the phaser, just turn the Width control fully counter-clockwise, and the Axis control becomes a "Manual Sweep" control.
- 8 In**  
The input jack is clearly labeled on the right side of the pedal. It is designed for use with 1/4" phone plugs only.
- 9 Trigger**  
The Trigger jack is clearly labeled on the right side of the pedal. This is the "side-chain" input, and it is connected directly to the dynamic portion of the circuit. If a signal is present in the Trigger jack, the effect dynamics will cease to be controlled by the signal present at the In jack and will instead be controlled by the amplitude of the signal present at the Trigger control. It is designed for use with 1/4" phone plugs only.
- 10 Out**  
The output jack is clearly labeled on the left side of the pedal. It is designed for use with 1/4" phone plugs only.
- 11 Switches**  
The switches are located directly on top of the pedal, they are used to turn associated functions on and off (Note: Phantasm is wired for "True Bypass." This means that when the switch is in the "off" position, the original signal is routed around the effect circuit, resulting in no signal loss or coloration). The On/Off switch activates the phase-shift effect, the ACD switch activates the Attack-Controlled Depth circuit, and the ACS switch activates the Attack-Controlled Sweep circuit.



Phantasm is an extremely complex and sensitive circuit, and requires an optimal power supply at all times. Phantasm has a considerable current draw, and comes equipped with two 9V battery clips. Although one battery will power the unit, it won't last very long. If you use two batteries, be sure they are both fresh, and replace both batteries at the same time. If no battery is installed, consider placing a piece of masking tape over the battery clip terminals (this will help protect against a short-circuit).

### Power Supply Jack

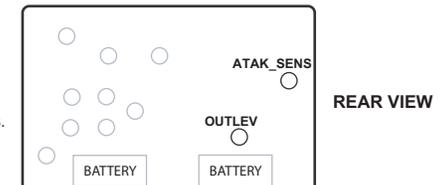
Phantasm is equipped with a 2.1mm barrel jack for use with a tip-negative 9 Volt DC REGULATED power adapter (Note: Many 9V power adapters are grossly out of spec, and the actual voltage can range anywhere from 7.5 Volts to 16 Volts. Voltages of 11V and above will affect the operation of the pedal and can damage the components. To avoid damage and/or incorrect operation, use only the highest quality power adapters). ToadWorks recommends the Godlyke Powerall 9VDC adapter.

### DO NOT UNDER ANY CIRCUMSTANCES USE AN 18V ADAPTER!

Forget about "increasing headroom" - if the pedal was intended to be used with 18V, we would say so. Any voltage higher than 11 VDC will DESTROY the op-amps, and we won't fix it for free.

### Trim Pots

Phantasm is equipped with two user-adjustable trim pots. The trimmer marked **OUTLEV** adjusts the output level of the effect, and trimmer **ATAK\_SENS** adjusts for pickup strength on the attack-controlled modes. **DO NOT ATTEMPT TO ADJUST THE OTHER TRIM POTS!**



### Warranty

We guarantee that your pedal will be free of defects in workmanship for a period of two (2) years from the date of purchase. We also guarantee the continued operation of all components for a period of two (2) years from the date of purchase. Within this two year period ToadWorks will repair or replace at our discretion any pedal that ceases to function properly as a result of faulty workmanship or materials.

This warranty can be voided by any of the following:

- Removal or replacement of any component
- Prolonged exposure to elements
- Abuse above and beyond normal wear and tear
- Application of incorrect power supply

No pedal shall be repaired or replaced that shows signs of abuse and/or modification. All requests for warranty service must be accompanied by documented proof of purchase. This warranty is non-transferable. As of January 1, 2006, units purchased from US domestic dealers and shipped to Europe, Asia and Australia are not eligible for warranty services.

### ToadWorks USA

4717 N Washington St. Spokane, WA 99205 USA  
Ph: (415) 462-5539 Fax: (708) 570-8303  
www.ToadWorksUSA.com