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## LIMBO II INSTRUCTION MANUAL

**Power Supplies:** This unit requires a standard 9V Boss style power supply. Current draw approx 120ma, 2.1mm negative tip. It's best to treat this unit as a digital effect and use an isolated supply output otherwise it may interfere with other pedals if daisy chained.

**Basics:** For guitar set Gain to at least 12 O'Clock, at high settings will add some distortion to the delayed signal set to EXP mode to add the most gain. Gain and Level knobs should be adjusted in tandem as both will effect the delayed signals output level. Line level signals can be used without distortion if Gain is set low.

### **NORM/EXP Switch:**

Norm – slightly lowers the delay level output and regen. May not self oscillate at some settings.

EXP(expander) – higher delay level output and easier self oscillation. In some cases can help reduce noise.

**ARP Mode:** In ARP mode turn the Depth knob to change pattern. There is a total of four different patterns with a different pattern for each quarter rotation. The rhythm can also be changed by adjusting the Speed control. Similar to the Depth control there are four different positions each corresponding to a quarter rotation of the Speed control. Starting fully CCW and moving CW the ratios are 1:4, 1:3, 1:2, 1:1. A ratio of 1:1 means the ARP will pitch shift at the tap tempo speed. A ratio of 1:4 meaning the ARP will pitch shift 4x slower than the tap tempo speed. Pitch shifts involve 4ths, 5ths or octaves.

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**SELECTING SUBDIVISION:** Hold the tap button and give the subdivision control a quarter turn in any direction to select it, then turn the subdivision control to the setting you want and release the tap button. Settings are saved for next boot up.

**SELECTING EXPRESSION MODES:** Hold the tap switch then turn the Depth knob a quarter turn in any direction, then onto the desired setting and release the tap switch. Where the first quarter rotation (start fully "down" or CCW) is Feedback Gain, next quarter Mod Speed, next quarter Mod Depth and last quarter Delay Time.

**Mod Speed via expression control:** Set the maximum desired speed via tap tempo or the speed control. Your expression pedal will now sweep between this fastest speed and 4x as slow.

**Delay Time via expression:** Similar to above set the maximum desired delay via tap tempo or using the delay control. Your expression pedal will now sweep between this and twice this tempo. (Sweeps up to one octave down).

### **BOOT UP SETTINGS:**

**To access these power down the unit, hold the tap switch and re-power the unit. The tap tempo LED should remain solid red. Keep holding until you have followed one (or both) of the instructions below.**

**MOD DEPTH:** There is a setting to control how heavy the modulation can go, on boot give the Depth control a quarter turn in any direction to select it then move to Min to select heavy modulation or move to Max to set to normal release the tap tempo to set.

**RAMP AMOUNT:** Gives a subtle control over the amount of feedback gain. On boot up give the Speed knob a quarter turn in any direction to select it. The higher the setting on the Speed knob the more gain will be applied release the tap tempo to set.

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### Signal Diagram

