



Tonemaster – Germanium Booster

Based on the Dallas Rangemaster™

Unlike other Rangemaster™ based effects the Tonemaster includes a tone control so it will act as more than just a treble boost and can give you a full range boost! The input tone control is versatile though and can be set up as a classic Rangemaster™, a full range tone control, or both! (See mod notes below). Onboard charge pump is included to save you the hassle of a separate power inverter board or power supply.

Bill of materials

Resistors		Diode	
R1	68k	D1	1n4001
R2	3k9		
R3	470k	Transistor	
R4	1meg	U1	Germanium PNP
Capacitors		IC	
C1	100nf (104)	U2	Charge Pump (tc1044scpa)
C2	5nf (502)		
C3	100nf (104)	Potentiometer	
C4	10uf	Volume	10ka (9mm Log Pot)
C5	100uf	Tone	100kb (9mm Linear Pot)
C6	10uf		
C7	47uf		

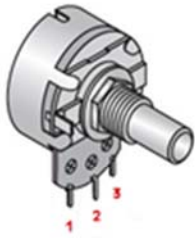
1590a

The Tonemaster PCB is spaced to fit a 1590a enclosure. Compact DC jack is recommended for a 1590a build. 9mm pots can be mounted directly to the board.

Tone mod

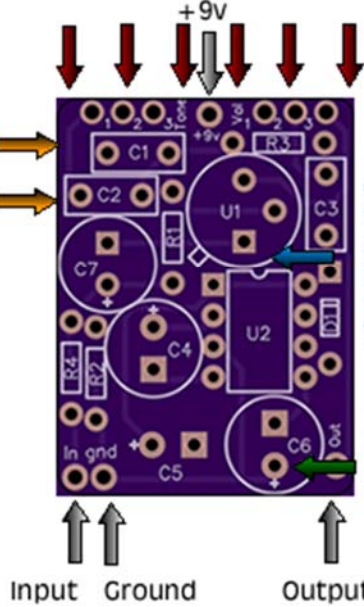
The Tone control can be used in a few different ways (See wiring diagram below for a visual guide “Classic Rangemaster Mod”):

- As per BOM, 5nf and 100nf for the input caps will give you a good range to sweep through making this more of a general booster than a treble boost.
- For a traditional treble boost without the tone control, leave off c1 and the tone potentiometer.
- Wire in the tone pot (instead of board mount) and add a spdt to pin 3 of the potentiometer to join / break this connection. This will give you both of the above options.



Note the numbers on the PCB (1,2,3) should be matched to the numbers on the pot. Pots with mounting lugs can be soldered directly to the PCB

C1 & C2 set the upper and lower limit of the tone control. Experiment with these values



Check the pinout of the transistor you are using. The square pad on the layout indicates the emitter. Use a socket if you plan to experiment!

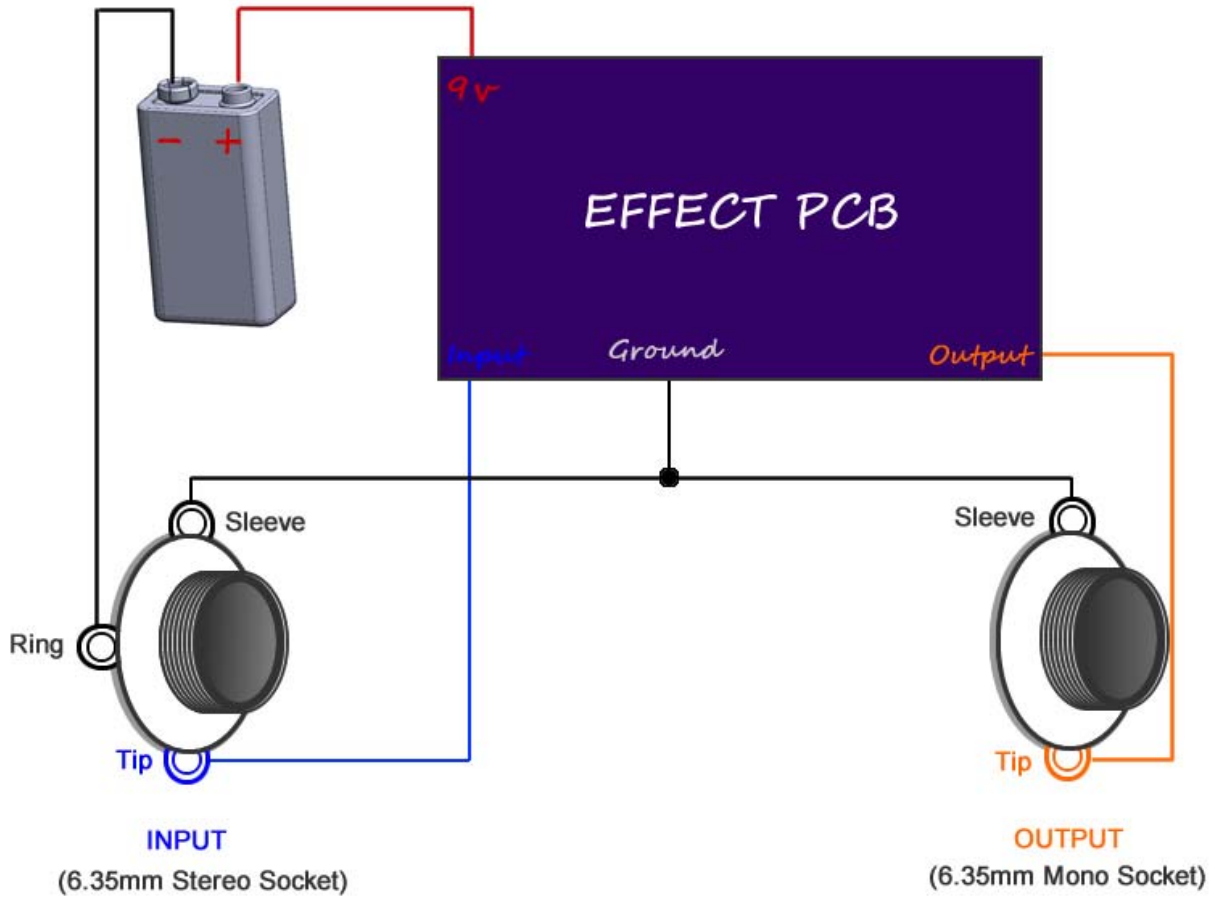
Pay close attention to cap polarity

Classic Rangemaster Mod

Add a spdt switch to pin 3 of your tone pot to add / remove the tonepot from the circuit. This will leave only the 5nf cap on the input making the tonemaster input the same as a rangemaster

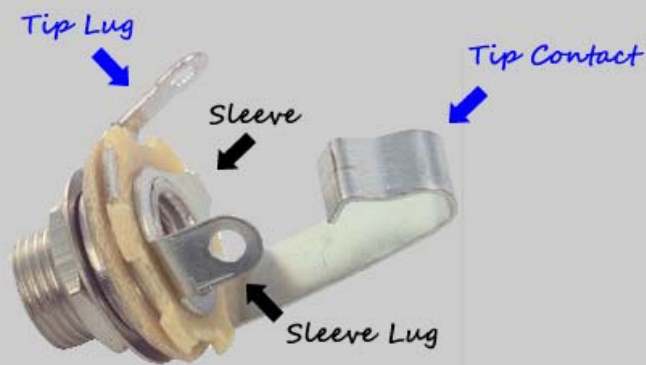
Testing Your Effect

Using aligator clips or soldering directly, wire your effect as in the following...



Input and Output Sockets

Pay close attention to the lugs of your sockets. Look at them side on so that you can distinguish the sockets individual layers. For instance the tip lug is connected to tip contact. The stereo jack looks the same as the socket below except it has an extra lug and contact for "Ring".



Boxing up your effect

Watch my offboard wiring tutorial for information on wiring this effect up inside an enclosure (with LED, stompswitch, etc)

http://www.youtube.com/watch?v=z6fpwU8RY_0