

8-BALL

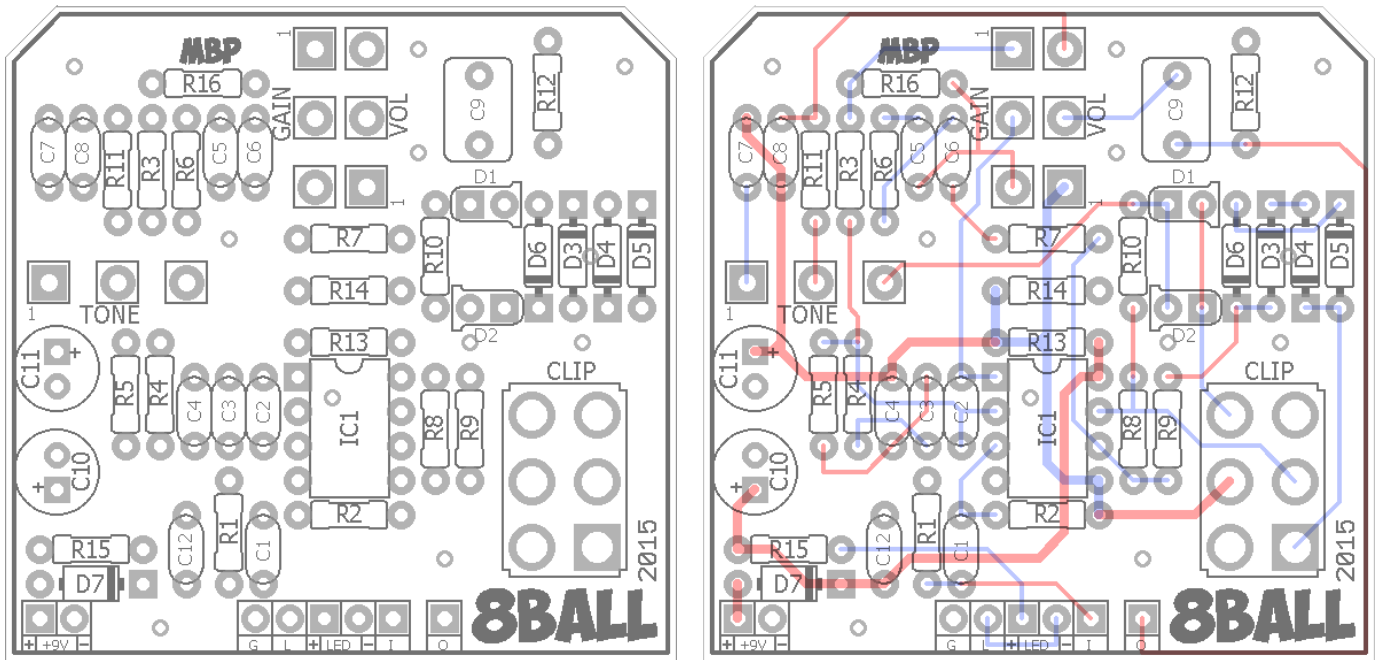
FX TYPE: Overdrive

Based on the Marshall® Blues Breaker™

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2014 version: <http://www.madbeanpedals.com/projects/8Ball/8Ball.zip>

1.95" W x 1.91" H

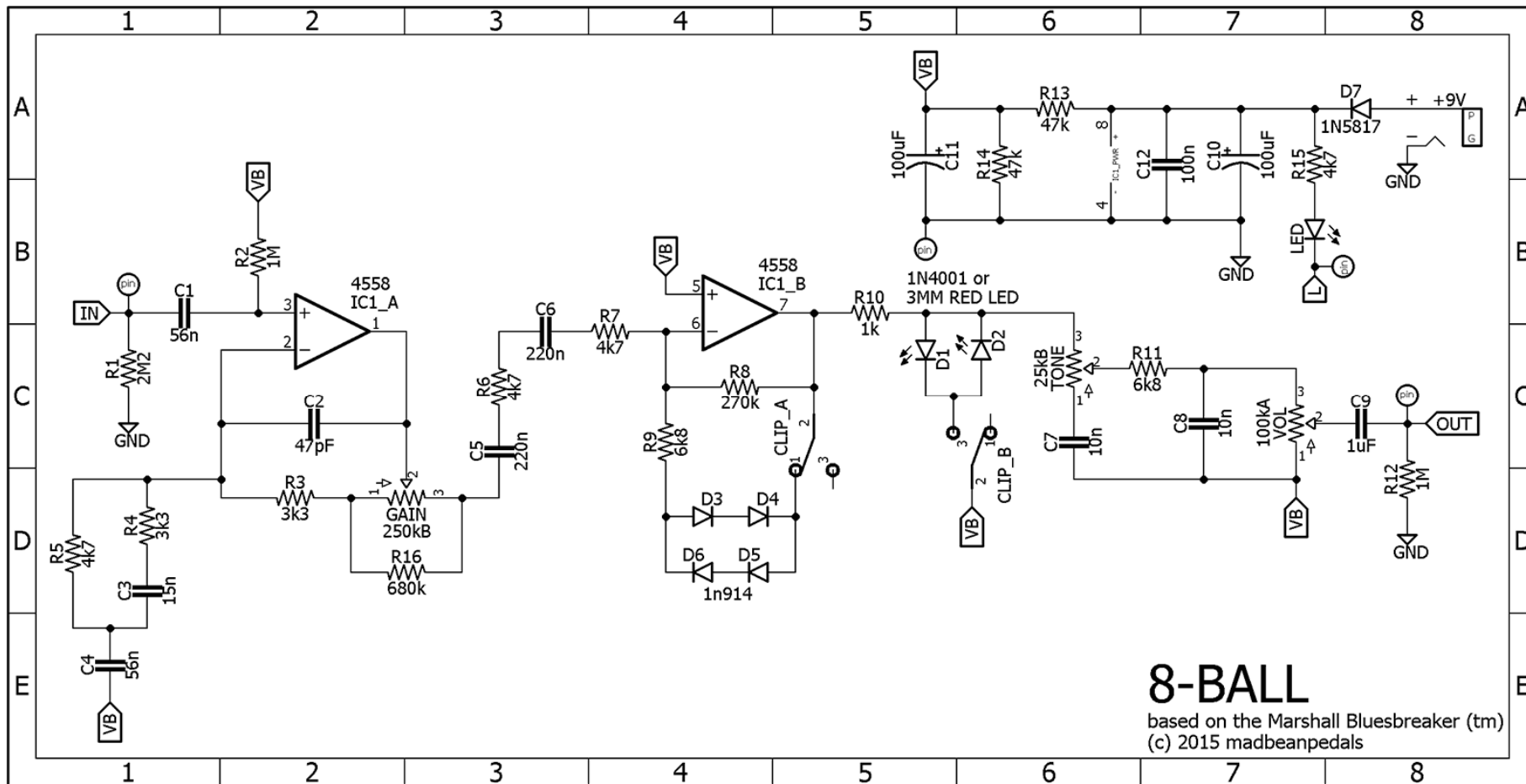


2015 update: Minor layout tweaks. Clip switch can now be either solder lug or PCB pin mount type DPDT.

Terms of Use: You are free to use purchased **8-Ball** circuit boards for both DIY and small commercial operations. You may not offer **8-Ball** PCBs for resale or as part of a "kit" in a commercial fashion. Peer to peer re-sale is, of course, okay.

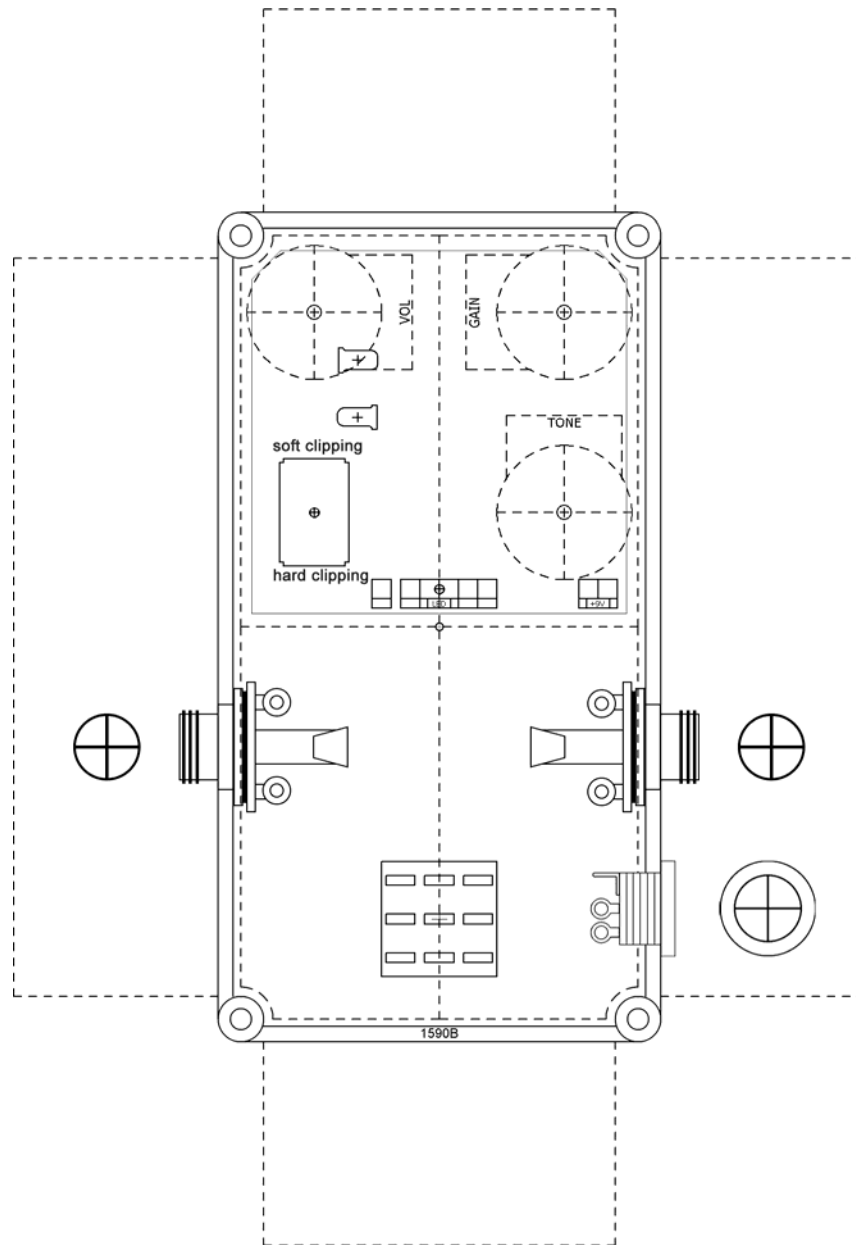
Resistors		B.O.M. Caps		Diodes	
R1	2M2	C1	56n	D1, D2	*see notes
R2	1M	C2	47pF	D3 - D6	1n914
R3	3k3	C3	15n	D7	1N5817
R4	3k3	C4	56n	IC	
R5	4k7	C5	220n	IC1	4558
R6	4k7	C6	220n	Switch	
R7	4k7	C7	10n	CLIP	DPDT
R8	270k	C8	10n	Pots	
R9	6k8	C9	1uF	GAIN	250kB
R10	1k	C10	100uF	TONE	25kB
R11	6k8	C11	100uF	VOL	100kA
R12	1M	C12	100n		
R13	47k				
R14	47k				
R15	4k7				
R16	680k				

Shopping List			
Value	QTY	Type	Rating
1k	1	Metal / Carbon Film	1/4W
3k3	2	Metal / Carbon Film	1/4W
4k7	4	Metal / Carbon Film	1/4W
6k8	2	Metal / Carbon Film	1/4W
47k	2	Metal / Carbon Film	1/4W
270k	1	Metal / Carbon Film	1/4W
680k	1	Metal / Carbon Film	1/4W
1M	2	Metal / Carbon Film	1/4W
2M2	1	Metal / Carbon Film	1/4W
47pF	1	Ceramic / Mica	16v or more
10n	2	Film	16v or more
15n	1	Film	16v or more
56n	2	Film	16v or more
100n	1	Film	16v or more
220n	2	Film	16v or more
1uF	1	Film	16v or more
100uF	2	Electrolytic	16v or more
1n914	4		
RED LED 3MM	2	Alt: 1N4001	
1N5817	1		
4558	1	Or other Dual Op-Amp	
DPDT	1	PCB or Solder Lug	On/On
250kB	1	PCB Mount	16mm
25kB	1	PCB Mount	16mm
100kA	1	PCB Mount	16mm



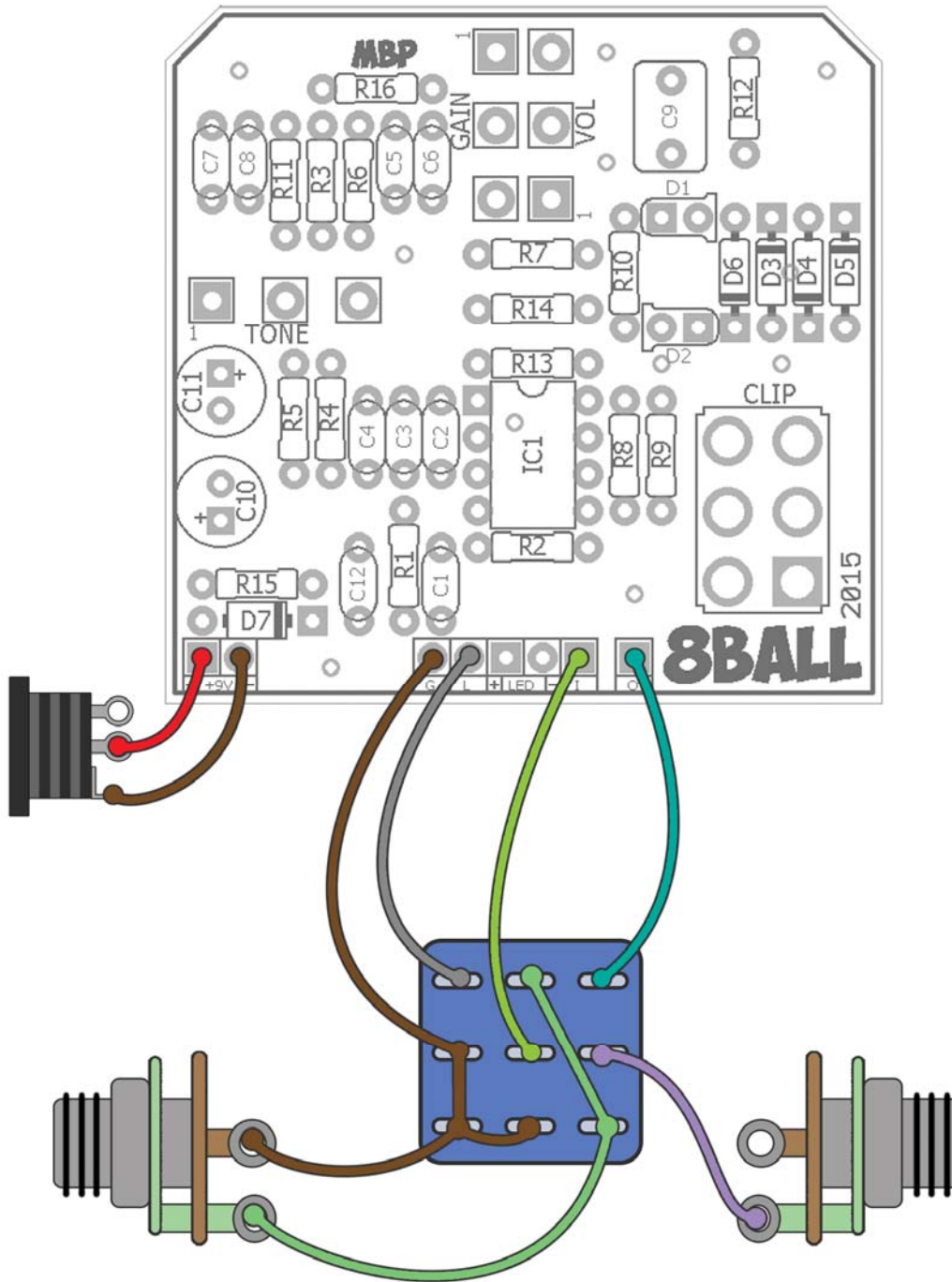
1590B Drill Template

4.44" W x 6.44" H



Download the Photoshop file used for this template here:
http://www.madbeanpedals.com/projects/8Ball/8Ball_DRILL.zip

Wiring Guide



- The indicator LED can be soldered directly to the PCB.
- The enclosure grounds the output jack. If testing outside an enclosure with the jacks wired, you must ground the output jack sleeve.

The **8-Ball** is based on the Marshall® Blues Breaker™ pedal. It has several modifications to increase the range of overdrive as well as address some of the inherent brightness of the stock design. This should be a very easy project for all levels of builders as well as provide a solid foundation to any pedal board.

The 8-Ball includes two clipping options: the stock soft clipping and LED hard clipping. These are very different sounding. The soft clip is very smooth while the LED clipping is quite aggressive. The remaining mods are all at the component value level. The stock version has been re-voiced to a thicker, meaty overdrive via some cap value tweaks. The 8-Ball also has more gain on tap. Finally, the traditionally low output of the stock unit has been increased slightly. Note that the 8-Ball is still on the low side of total output so you should expect unity volume at around 1 to 2 o'clock on the Volume knob.

Notes

- D1 and D2 are shown as LEDs on the PCB (my preference for diode choice) but you can use other clipping diodes here such as the 1N4001.
- You can increase the effect output further by going up to 300k on R8. This is as far as I could take it before making the circuit unstable.

Voltages

9.42v Supply	
IC1	4558
1	4.66
2	4.61
3	4.2
4	0
5	4.59
6	4.6
7	4.6
8	9.2

Build Pic

(prototype board)

