SSABP

FX Type: **UTILITY**
Build Level: Beginner

Last Updated: April 25, 2024 9:13 AM
© 2024 madbeanpedals

Overview

The SSABP (Standard Series Advanced Bypass) is the companion to the Standard Series projects. It offers true mechanical bypass via a 3PDT foot-switch and easy hook-up with a 2” ribbon cable (optional). The SSABP also adds an optional timer circuit for lighting up the LED. This offers a couple nice extras:

1. It reduces or eliminates the possibility of instantaneous illumination of the bypass LED being a noise source.
2. It looks cool.

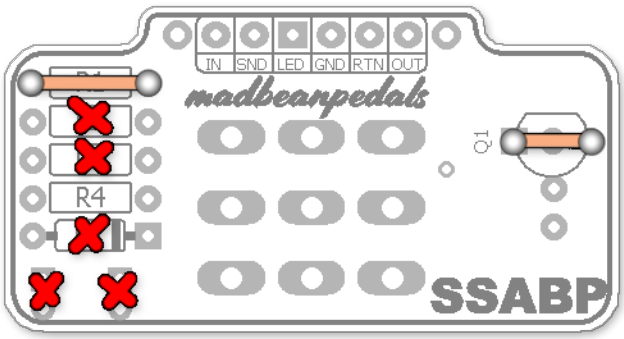
With the timer circuit, the LED will gradually power on and off in just under a second. You can build the SSABP with or without this feature.

Build Notes

To build the SSABP with the timer circuit, populate all parts indicated on the BOM. The two electrolytic caps go on the bottom of the PCB. You can use either low-profile or full sized electrolytic caps (5mm or 11m, resp.) The Q1 transistor should be folded flat onto the PCB after soldering so that it does not come in contact with the enclosure lid.

The power up of the LED is determined by the time constant created through R3 and C2. To reduce the charge up time, decrease C2 to 4u7. To increase it, make C2 15uF or 22uF. The power down of the LED is determined by the value of R2 in parallel with C1. To reduce the power down time, decrease R2 to 10k. To increase it, make R2 47k or 100k.

To omit the timer circuit, omit all parts except R4. Solder a jumper across R1 and the two outside pads of Q1 (collector and emitter). R4 is the CLR for the LED in this case, so use whatever value you like.

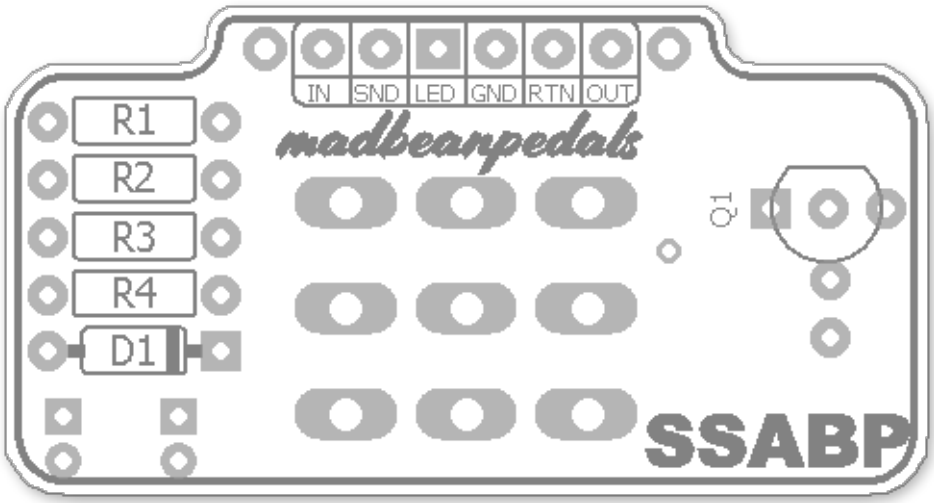


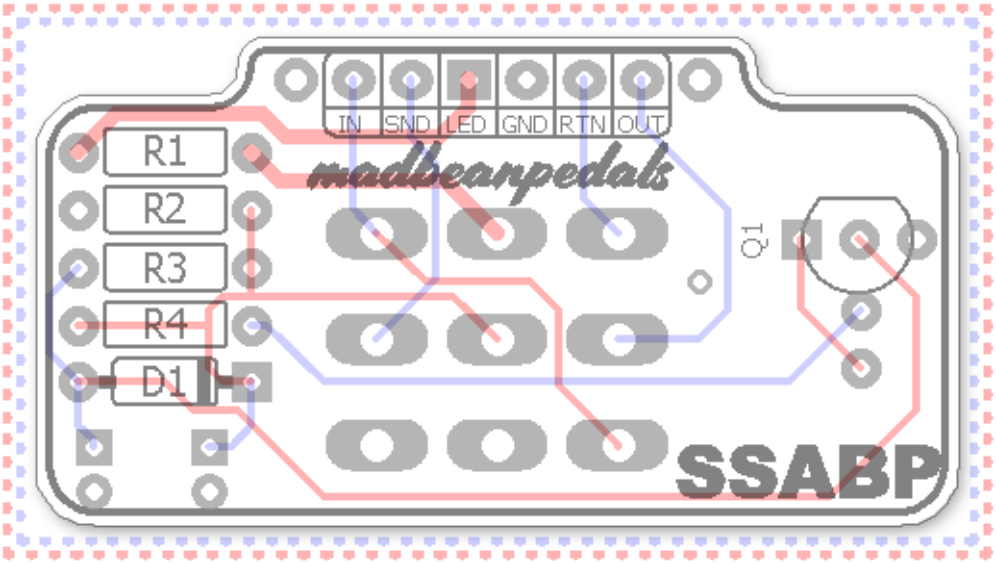
Terms of Use: *You are free to use purchased **SSABP** circuit boards for both DIY and small commercial operations. You may not offer **SSABP** PCBs for resale or as part of a “kit” in a commercial fashion. Peer to peer re-sale is fine, though.*

Technical assistance for is available via the madbeanpedals forum. Please go there rather than emailing me for personal assistance. This is because (1) I’m not always available to respond via email in a timely and continuous manner, and (2) posting technical problems and solutions in the forum creates a record from which other members may benefit.

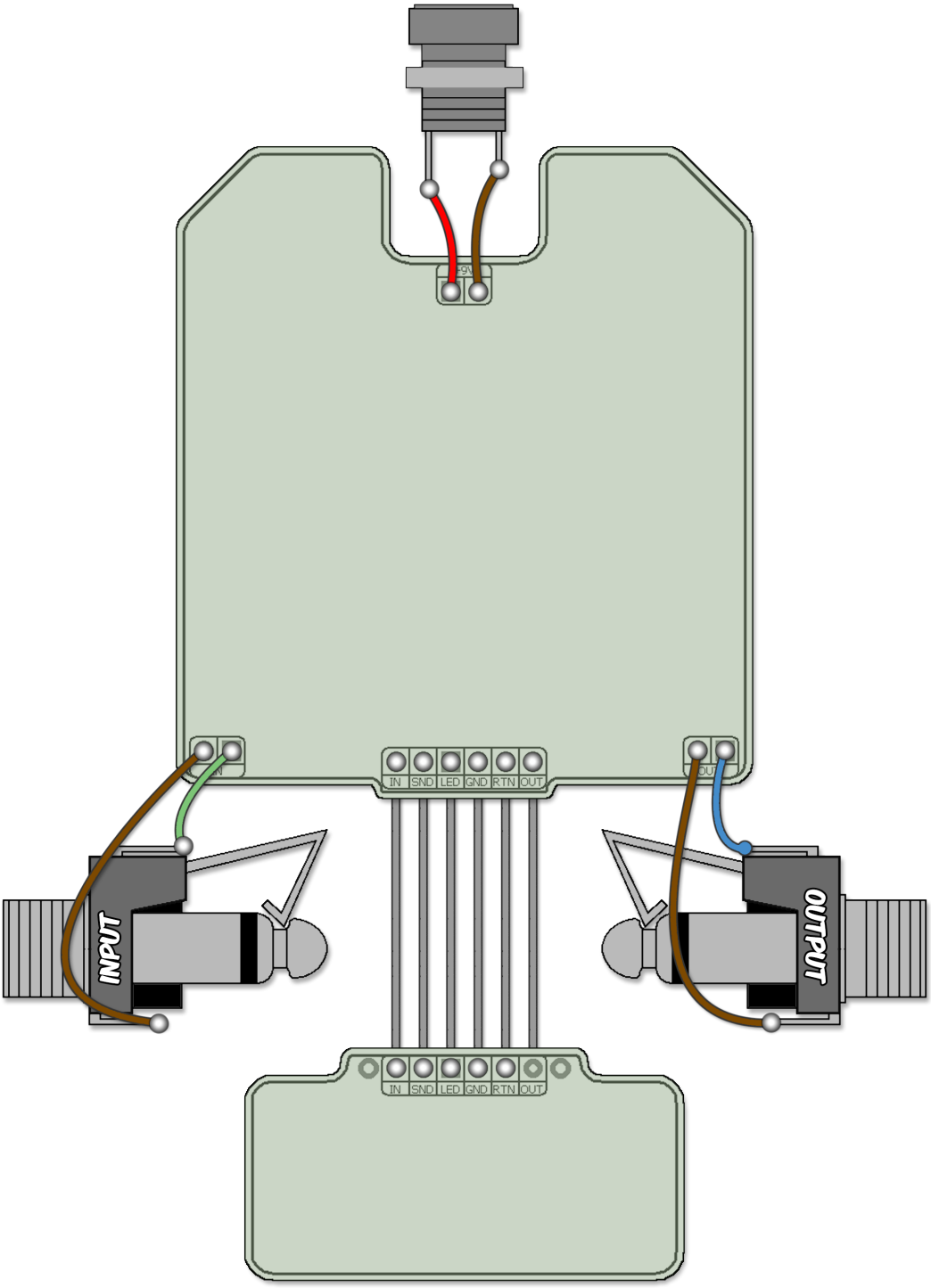
All copyrights and registered trademarks are property of their original owners. Any mention of trademarked or intellectual properties in this documents is purely for comparative purposes.

Parts Layout





Wiring



Unless otherwise noted, all Standard Series projects have the same wiring regardless of which 3PDT bypass board is used. A 6-pin, 2” ribbon cable is recommended for soldering the connections between the two PCBs.

B.O.M.

Resistors		QTY	Value
R1	330R	1	1/4W
R2	22k	1	1/4W
R3	1M	1	1/4W
R4	10k	1	1/4W
Caps			
C1	10uF	2	16v min.
C2	10uF		
Diodes			
D1	1n914	1	
LED	any	1	5mm
Transistors			
Q1	2n3904	1	
Switches			
BYP	3PDT	1	lugs or pins

Circuit Voltages

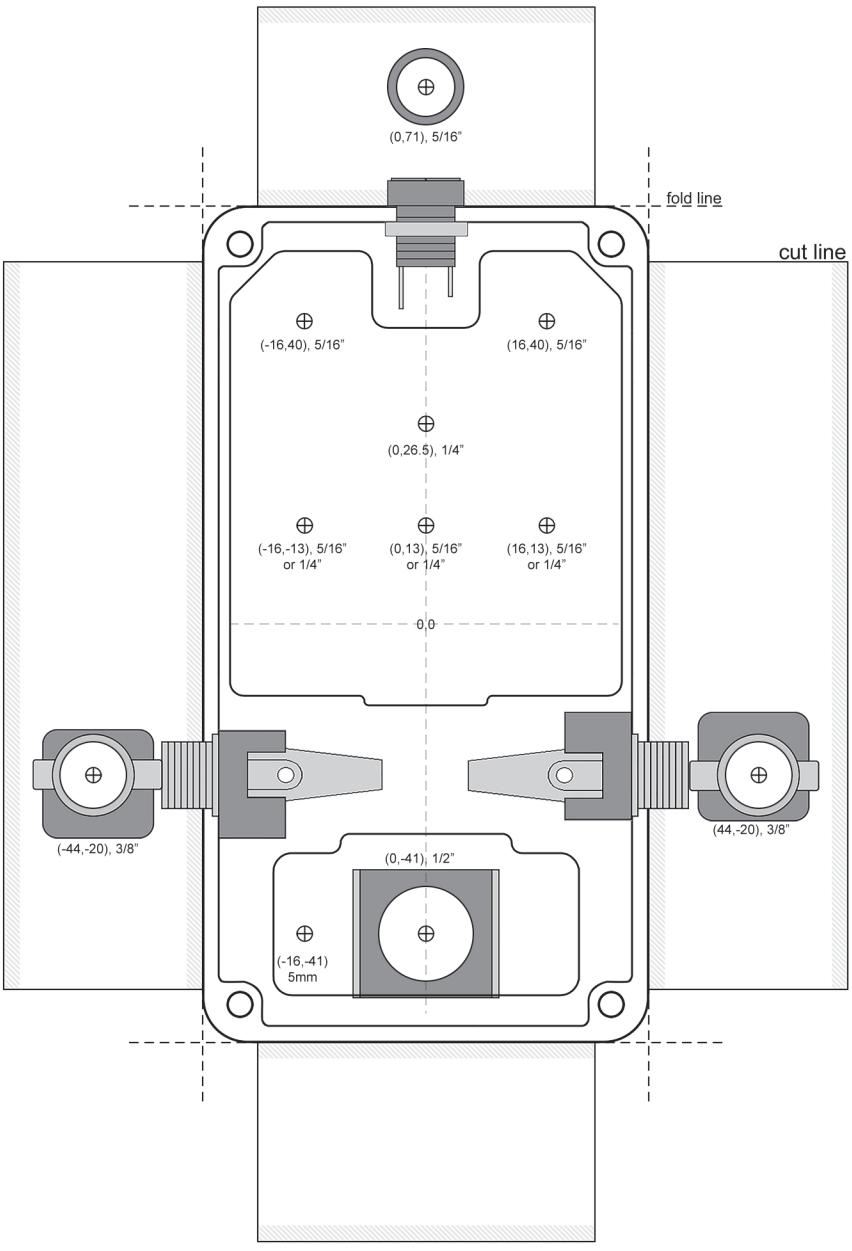
“On” state:

Q1
C: 170mV
B: 0.65v
E: 0v

Current Draw: ~1mA

1590B Drill Template

Coordinates are denoted in [(X,Y), drill size] format starting from the center (0,0) location of the enclosure.

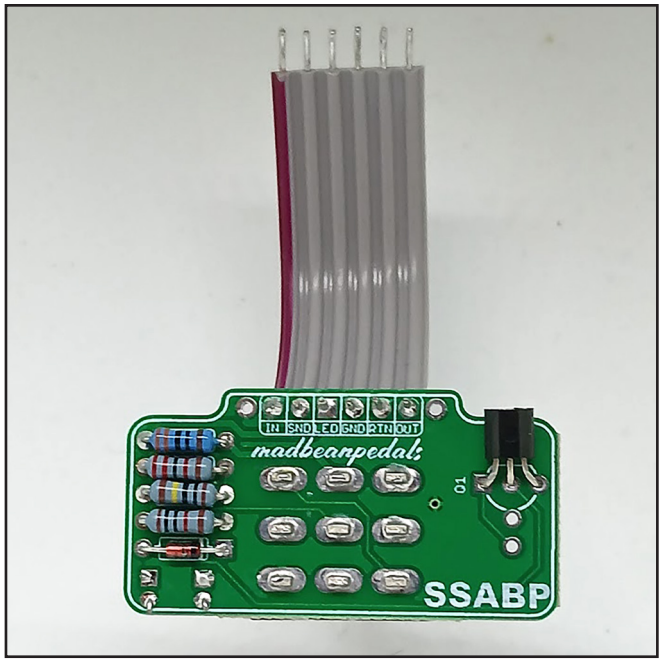


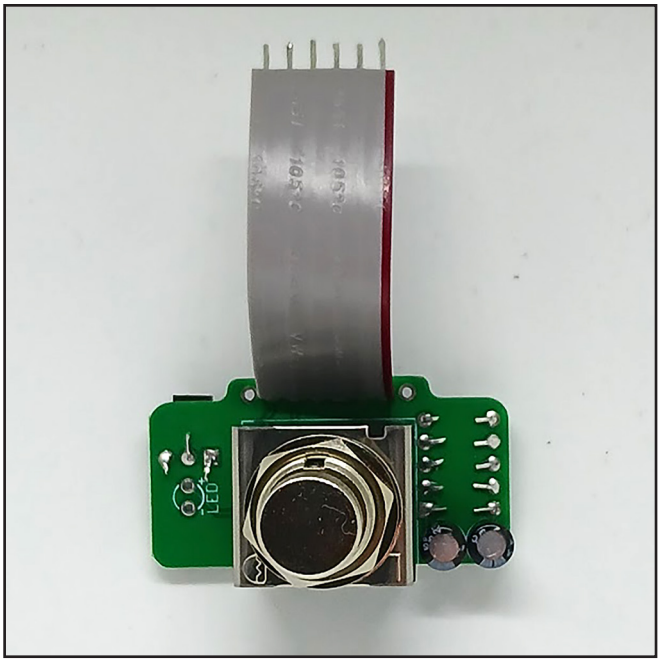
Hardware

1590B enclosure
16mm pots
Lumberg 1/4” Compact mono jacks
Slim 2.1mm DC jack
Standard 3PDT footswitch
5mm LED

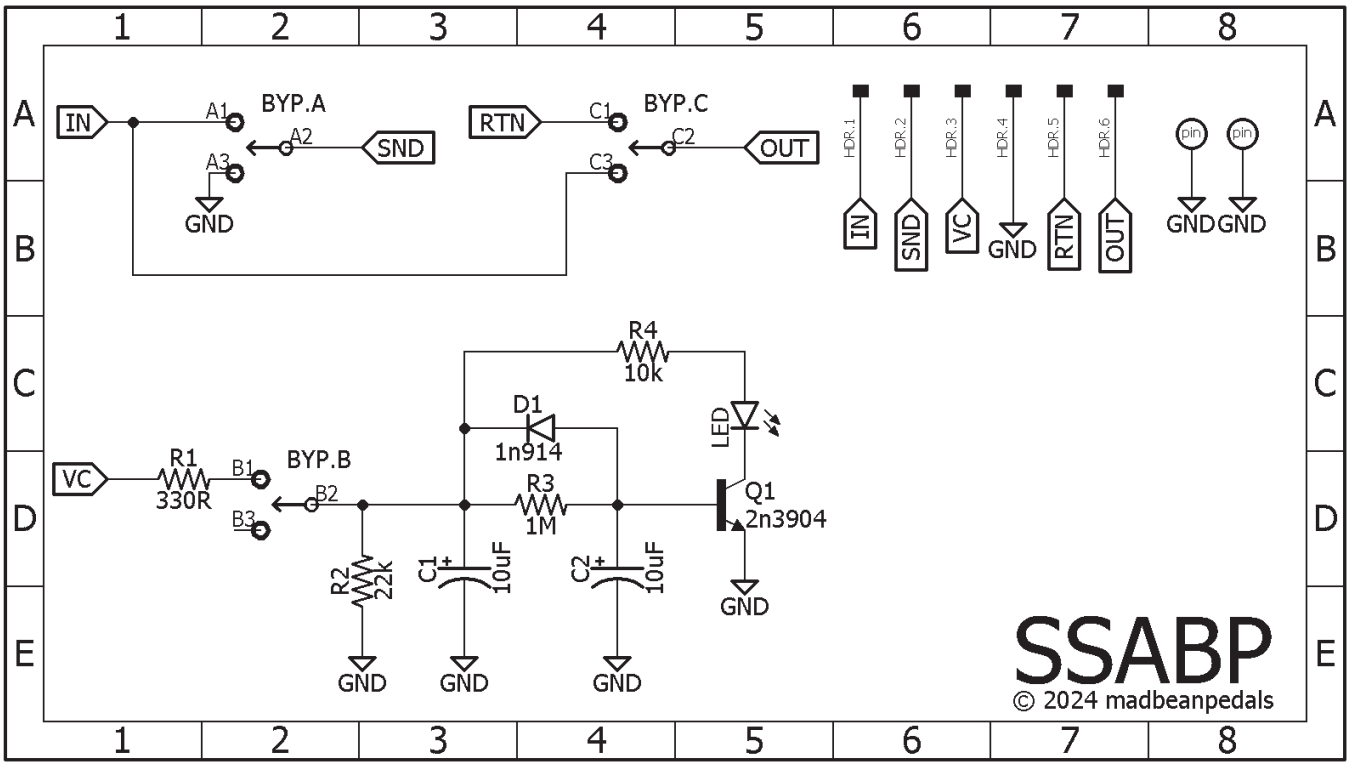
NOTE: Different 1/4” and DC jack styles may require different sized drill holes.

Build Pic

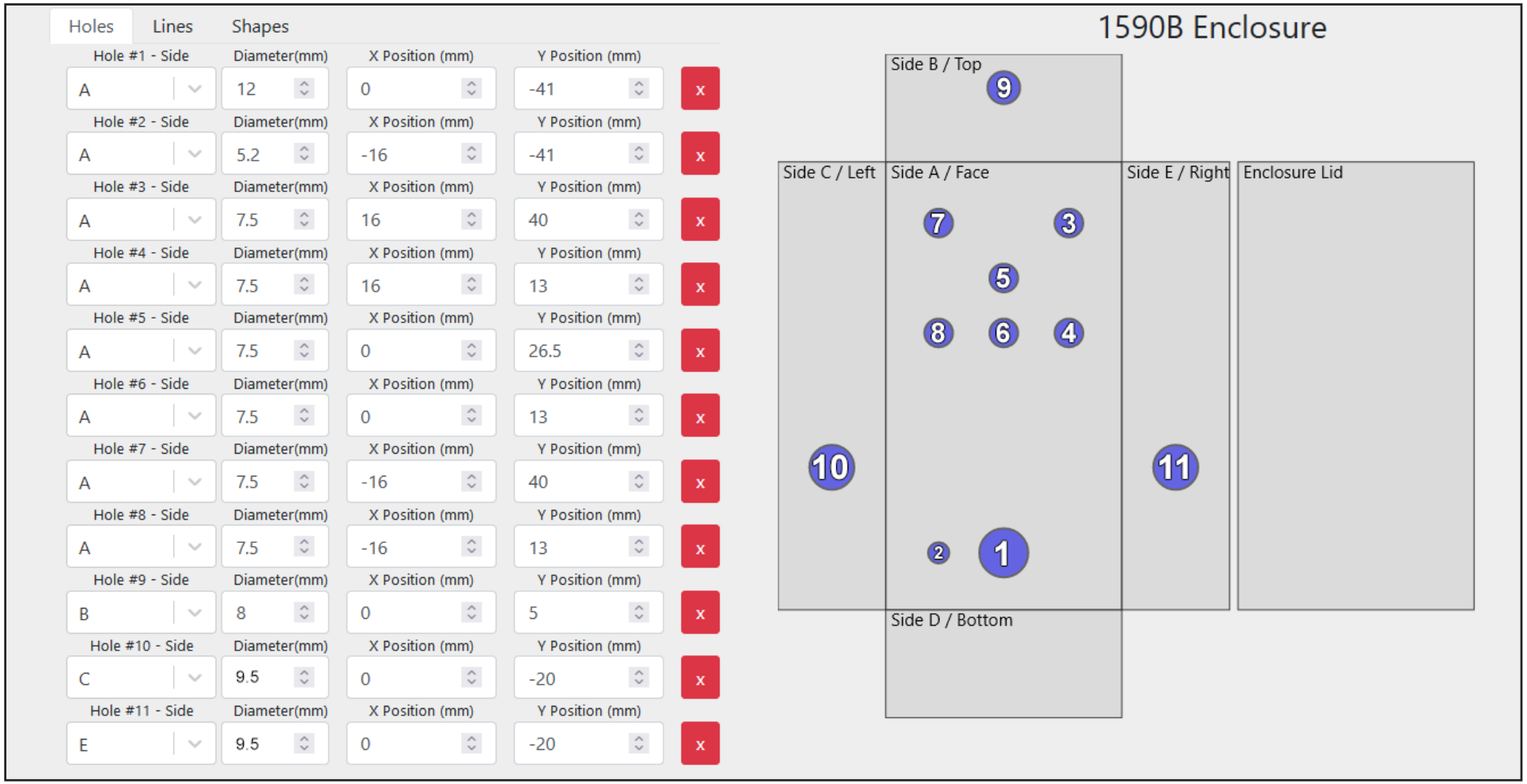




Schematic



Tayda Drill Template



I've set the drill sizes according to the hardware spec'd in this doc (Lumberg jacks, slim 2.1mm DC jack, etc). If you use different parts you'll need to measure them for the correct millimeter drill size. Note that the pots use 7.5mm and switches only require 6.5mm. These drill sizes are slightly oversized from what's required but better to have a little more room than needed. Also, I've set the drill size for the 1/4" jacks to fit the annular ring inside the enclosure wall. If you don't want to do that, make #10 and #11 drills 9mm instead (it seems not all the Lumberg jacks have the ring around the jack anyway).

Link to Tayda Standard Series master drill template