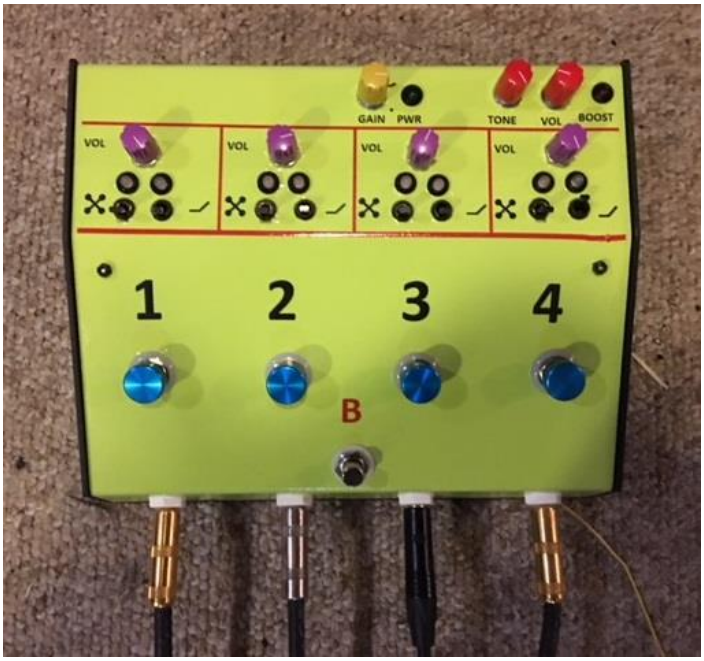
HardWay
VINTAGE ELECTRONICS

Project 180805-A
REV. 01H
08/22/18

FORTRESS OF SOLITUDE

Custom made for a customer.



The **Fortress of Solitude** is a buffered splitter with four isolated outputs. The class A buffer is non-inverting, unity gain and does not alter the tone of the guitar. There is a green LED near the top of the unit which remains illuminated while the unit has power. There is no ON / OFF switch – when the power supply is plugged into the unit, the unit is "ON". Near the power indicator light there is the buffer Gain control; set the control to the dash (-) for unity gain, or to the dot (.) for slightly increased positive gain.

The outputs can drive long cables with little signal attenuation. There is an additional non-isolated Direct output on the back of the unit which can be used with a tuner or mixing board or another amplifier. Each of the four isolated outputs can be switched on or off with the large numbered footswitches. Each channel footswitch has a blue light which indicates that it is in use. Each channel has a volume control for balancing signal, a phase inverting switch and a ground lift switch. The LEDs associated with these switches will glow green in the "normal" position (down) and red when engaged (up). This makes it easy to see at a glance which channels are on, and if the Phase and/or Ground Lift are active.

The on-board Boost is modeled after the LPB-1 linear power booster; it is activated with the lower, non-illuminated footswitch, labeled "B". This is a clean boost which does not alter the guitar signal but is designed to overdrive the amplifier's preamp stage. Near the top of the unit there is a red LED indicator which illuminates when boost in "on". Next to this LED are the tone and volume controls of the Boost. There is an internal Gain control for the Boost; it is set at the factory (ha!) for a gain of about 5, which gives plenty of headroom. The Booster can achieve gain in excess of 25, but at this level of gain the circuit may distort and / or clip, and of course the noise floor will be higher. *If you want to experiment with higher gain, you can open the unit enclosure and adjust the small blue pot on the Booster board, but I highly recommend bringing the unit to me and let me adjust it to your taste.*

The transformer isolated outputs are designed to eliminate hum and buzz caused by ground loops. Sometimes, however, it may be necessary to engage the "ground lift" switch on one or more channels to eliminate hum from the amp(s).

When doing set-up at a new venue, check and adjust one amp at a time, before operating multiple amps at once. If a hum or other noise develops that cannot be easily reduced, check guitar and amp cables, make sure each amp is properly grounded, and make sure the noise is not from the guitar (especially single-coils).

The buffer is non-inverting, but when Boost is engaged the signal will be inverted. This is nothing to worry about unless you have a long pedal chain (most guitar effects are signal inverting), when it might be necessary to engage the "Phase Invert" switch in order to reduce noise. The other time the Phase Invert switch should be used is to match multiple amplifiers so that they are all in the same phase with the guitar signal. If two amps are "out-of-phase" with each other, they will tend to cancel each other out and sound "thin". The best way to check amplifier phase is to play through two amps, flip the phase switch, and use the position that sounds best; obviously you only need to switch *one* of the channels. When that is done, then you can check the other pairs of amps and set them accordingly.

There is no hard and fast rule about pedals / effects before or after the buffer. Try both and see which one you like. The advantage of placing pedals *after* the buffer is that each amp can have different pedal combinations – one amp for rhythm, and one for lead, as an example. The Buffer should not affect the performance of pedals, but there are all kinds of pedals out there, so you never know…

The wall adapter / transformer is a 15VAC, 1.8 A, CT linear unit. Do not use any other adapter. The Fortress of Solitude operates on ± 9VDC and use of another adapter might damage the unit. Don't lose it. A center-tapped unit like this is expensive, and hard to find. Trust me.

Do not lose the enclosed electrical schematic, either. The most recent Revision as of this writing is **01H**. Any technician who works on this device will want to see the schematic.

The Fortress of Solitude is a prototype. There is only one, and this is it. As such, it is hand-wired, uses discrete components and prototyping boards (no PCBs) and does not appreciate rough handling. I can't stress this enough – it is not road-hardened. So, you know, be gentle.

FYI: Please use high-quality cables for both your guitar and your amps. Most noise and other problems are cable-related. Cheap cables suck tone, are noisy, and don't last long. Good cables cost more, but they bring Peace of Mind.

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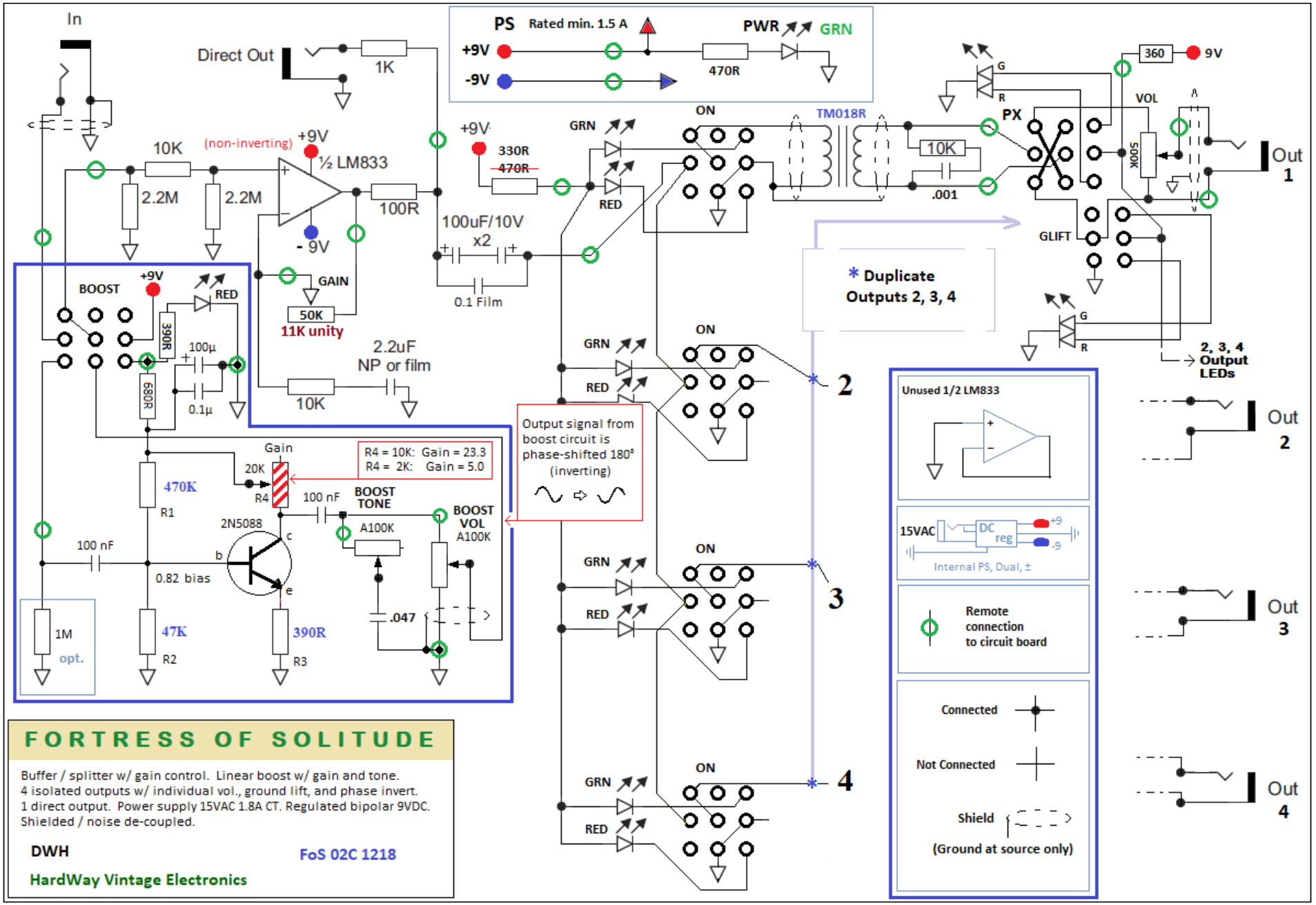
Materials and workmanship are guaranteed for six months from the date of this Invoice. Tubes by manufacturer.



FORTRESS OF SOLITUDE

Buffer / splitter w/ gain control. Linear boost w/ gain and tone.
4 isolated outputs w/ individual vol., ground lift, and phase invert.
1 direct output. Power supply 15VAC 1.8A CT. Regulated bipolar 9VDC.
Shielded / noise de-coupled.

DWH FoS 02C 1218

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