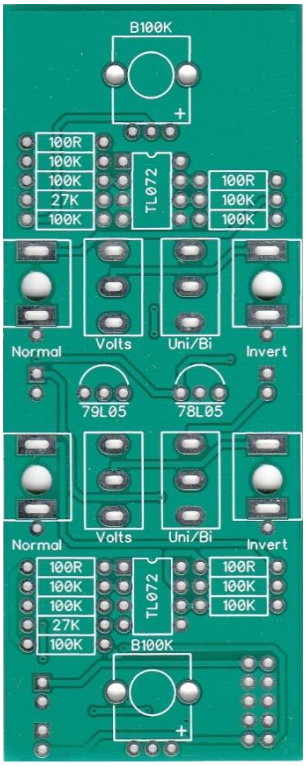
FREQUENCY CENTRAL

Build documentation for:

TURN! TURN!

Fixed voltage source

Fixed voltage sources are not a new idea in modular, but we hope that **Turn! Turn!** brings a new twist to the concept. **Turn! Turn!** features two independent fixed voltage sources with a useful range of features.



Turn! Turn! grew out of a conversation with Steve Levine - when a producer of such note makes a suggestion you have to listen - and act on it. Steve suggested that it would be useful to have a fixed voltage source under the control of a big knob, and the ability to go from as little as 1V over the entire range of the knob. Hence subtle, incremental changes are possible. The final feature set includes a voltage selection switch as well as a unipolar/bipolar switch. Both normal and inverted outputs are included. The following ranges are available from **Turn! Turn!** depending on switch positions:

- 0V to 1V
- 0V to 2.5V
- 0V to 5V
- -1V to 1V
- -2.5V to 2.5V
- -5V to 5V

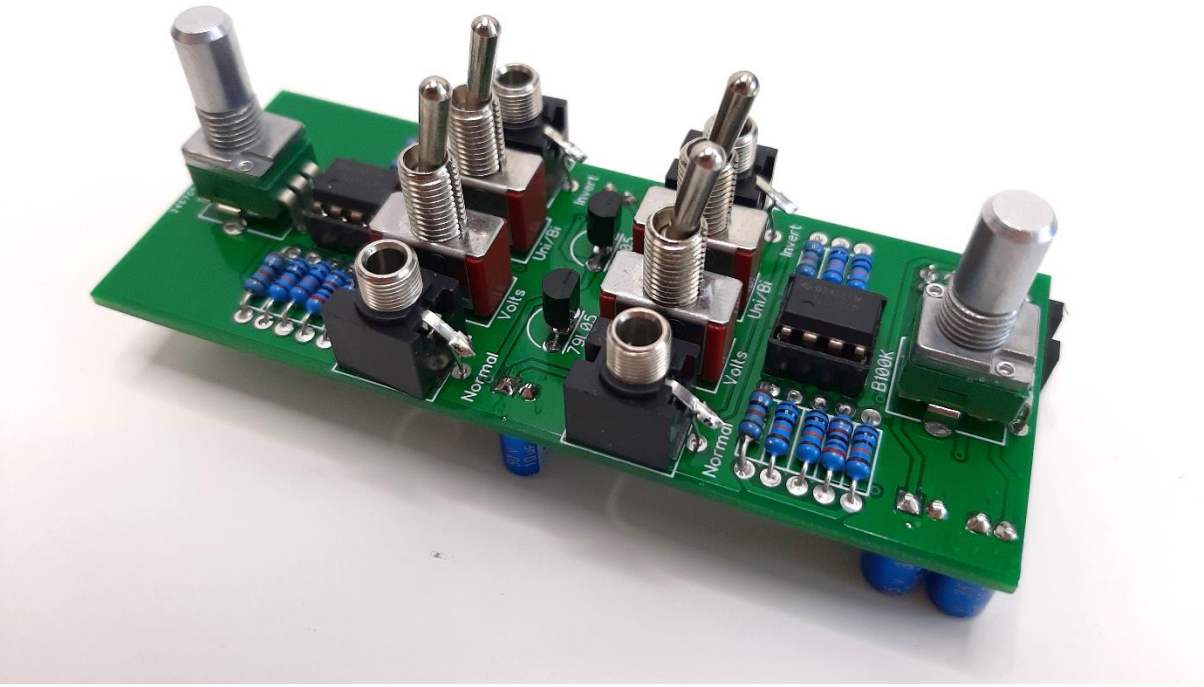
Bill of Materials

You will notice that all of the components listed below are also hyperlinks to where I buy each specific part from. You can also use the hyperlinks to find out more about what each component looks like. If you want to know even more, Google is your friend.

100R x 4 27K x 2 100K x 10 All resistors ¼ watt metal film.	10uF electrolytic x 2 47uF electrolytic x 2	TL072 x 2 78L05 x 1 79L05 x 1 8 pin IC socket x 2 Turn! Turn! PCB Turn! Turn! panel	B100K x 2 SPDT on/off/on x 2 (1V, 2.5V, 5V) SPDT on/on x 2 (uni/bi) 3.5mm socket x 4 10 pin box header Big knob x 2

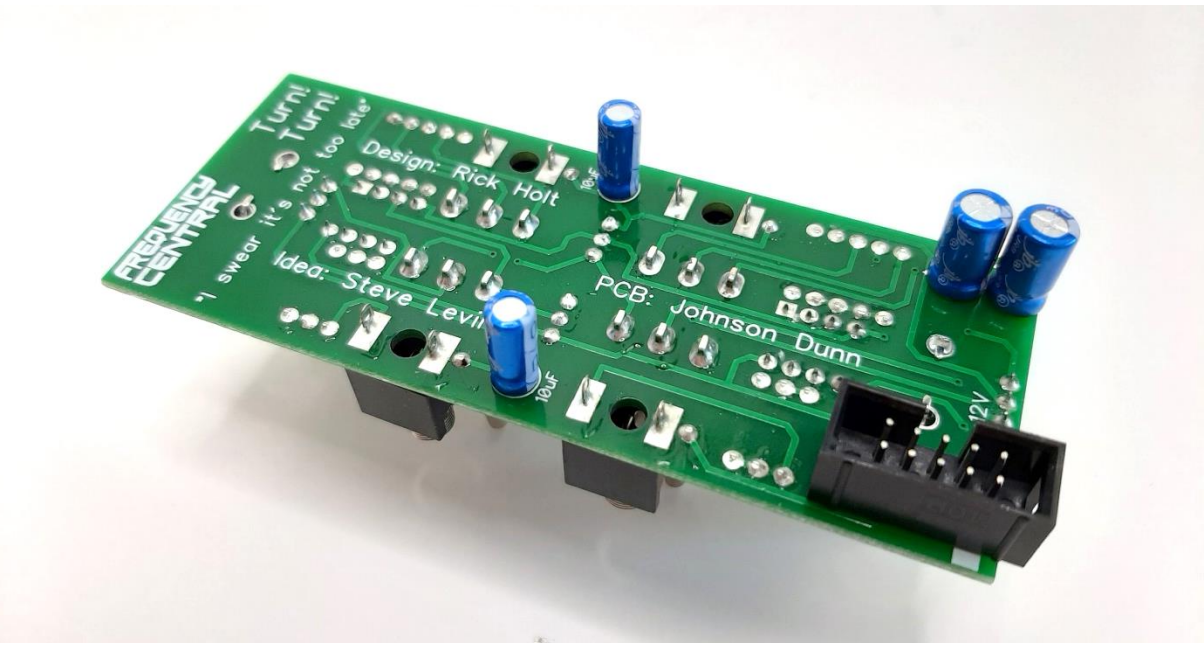
PCB assembly – top side – part 1

1. Solder all resistors
2. Solder IC socket
3. Solder both 22pF capacitors



PCB assembly – bottom side

1. Solder power header
2. Solder both 47uF capacitors



PCB assembly – top side – part 2

1. Place all sockets on the PCB, making sure the ground tabs line up with the PCB's ground pads, then place the panel over them. This will assure that the sockets are correctly positioned. Flip the whole lot over and solder the sockets into place.
2. Use cut off resistor legs to connect the sockets' ground tabs line up with the PCB's ground pads.

Go ahead and turn, turn, turn…

Troubleshooting

Not all DIY builds work first time. The vast majority of build issues are down to soldering inconsistencies. This is far more likely than a bad IC, for example. The first step of successful troubleshooting should always be to reflow all soldering to eliminate any dry joints (bad connections) or solder bridges (short circuits). This is also an opportunity to closely inspect your work – you might find some unsoldered pads, or an IC not inserted into its socket, for example. Next steps are to double check all resistor values are correct, and to check polarities of all diodes, transistors, ICs and electrolytic capacitors. This is not an exhaustive troubleshooting guide, but should address 95% of build issues.

RDH 29/10/20

http://www.frequencycentral.co.uk/