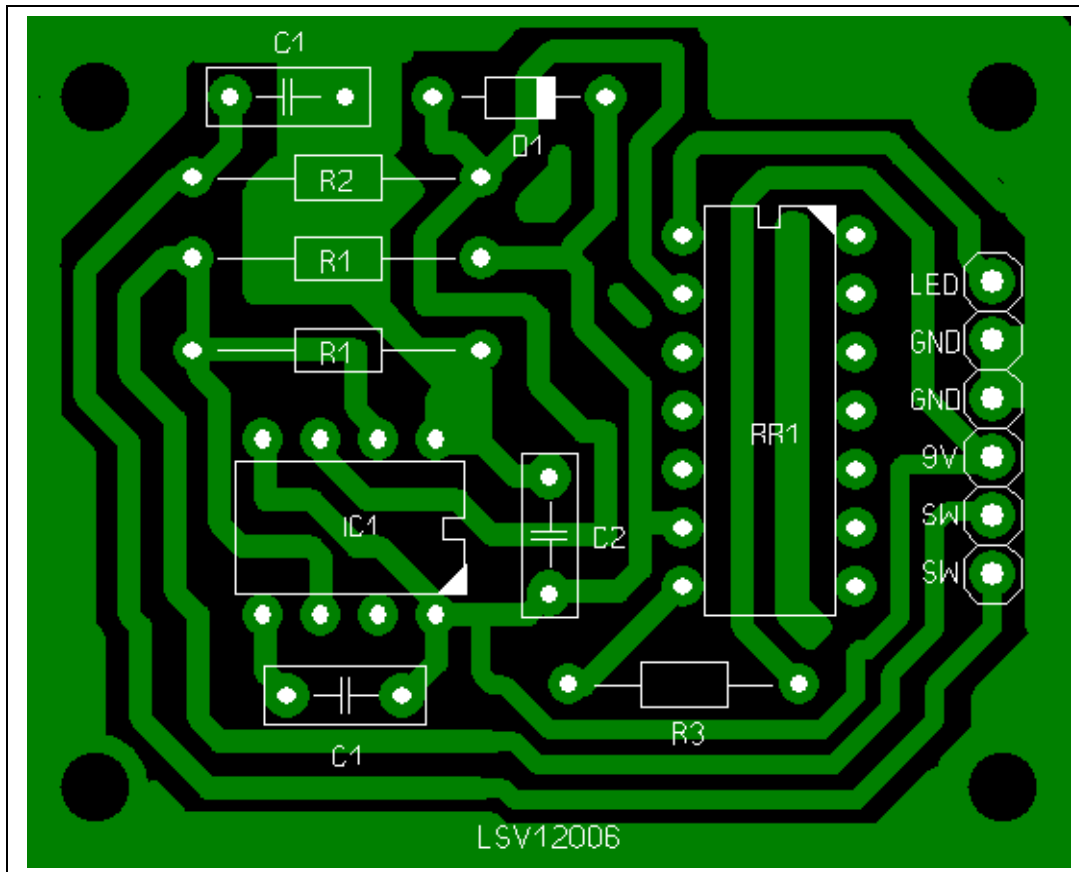


TriAngles™ 3D Scanner
LED Latch Circuit Assembly Instructions V1



Please Note that the LED Latch Circuit Functionality is Now Embedded into the Micro Step Driver that is Supplied with the Turn Table.

The information provided here is for those who wish to build their own turn table using other motor driver electronics.

Disclaimer

TriAngles 3D Scanner LED Latch Circuit Version 1 PUBLICATION
TriAngles 3D Scanner LED Latch Circuit Version 1 CIRCUIT DESIGN
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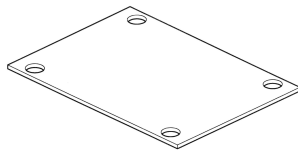
1. Introduction

Making a complete circumference scan of an object requires that it is rotated exactly 360 degrees. This is necessary in order to process the scan correctly. To achieve this, the design uses a LED Latch Circuit. The latch circuit is connected to an indicator LED and a momentary switch (roller snap switch). The turn table disc has a small notch which serves to engage the switch during turning. When this happens the LED will go off. The latch switch prevents the LED from going on again as the disc notch turns past the switch and it disengages. Only after the disc has made a full 360 degree rotation and again engages the switch will the LED turn back on. This is an effective and precise yet very simple way to inform the user when to start and when to stop processing the scan.

2. Tools

1. Soldering Iron with point tip
2. Solder (for electronics)
3. Clipper (for leads)
4. Multimeter
5. Scissors
6. Lighter
7. Screw driver (flat)
8. Wire stripper

3. Parts List



PCB1



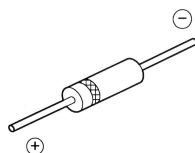
R1



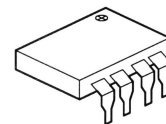
R2



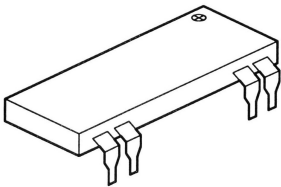
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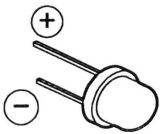
D1



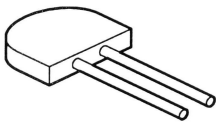
IC1



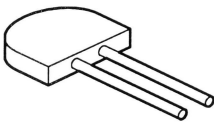
RR1



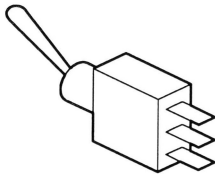
LED



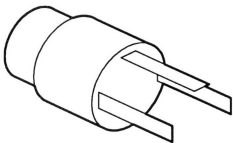
C1



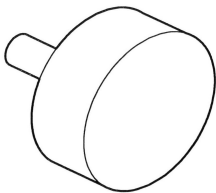
C2



SW1



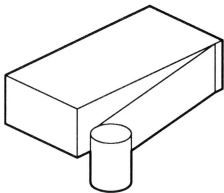
PJ



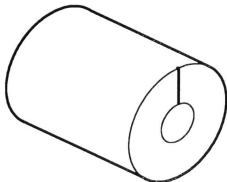
PM1



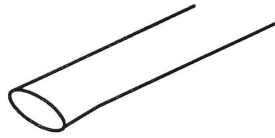
LH1



RS1



K1



Shrink Tube

Qt.	Part	Description	Rating	Remark
1	PCB1	PCB	NR	On PCB
2	R1	Resistor	6.8K Ohm (Blue,Gray,Red)	On PCB
1	R2	Resistor	220K Ohm (Red,RedYellow)	On PCB
1	R3	Resistor	470 Ohm (Yellow,Violet,Brown)	On PCB
1	D1	Scotty Diode	Schottky	On PCB
1	IC1	555 Timer		On PCB
1	RR1	Reed Relay	171DIP-4 for 12V or 171Dip-21 for 5V	On PCB
1	LED	Green		On PCB.
2	C1	Cap non polarized	Ceramic, 224 value is .22UF	On PCB
1	C2	Cap non polarized	Ceramic, 104 value is .1UF	On PCB
2	S1	SPDT ON-ON MINI TOGGLE SWITCH, 3 pin	6mm screw	Off PCB
1	PJ1	PowerJack	8mm screw	Off PCB
1	PM1	Potentiometer	1MOhm	Off PCB
1	LH1	LED Holder		Off PCB
1	RS1	Roller Switch (Snap Action, Momentary)	BASIC SWITCH SPDT 5A ROLL LEVER SW156-ND	Off PCB
1	K1	Knob	20x20mm	Off PCB
1		Shrink Tube		Off PCB
1		Wiring	500mm	Diverse Colors, Thin, stranded, not drawn

4. General Guidelines

4 main aspects must be observed during assembly:

1. Before assembly it is advised to first read through the instructions carefully as well as lay all major parts in position.
2. Avoid touching the copper side of the PCB1. This can contaminate the surface making it more difficult to solder.
3. Use only solder that is certified for soldering electronic components (solder must comply with RoHs lead free for European countries under the EU).
4. Pay attention to the orientation of IC1, RR1, D1 and the LED.

5. Assembly

Consult the front page picture of this manual for the PCB with silk trace for parts placement.

1. Insert the leads of the resistors R1, R2, and R3 into the designated PCB holes and solder. Cut off the excess leads.
2. Do the same for the capacitors C1 and C2.
3. Install the diode D1. Make sure that the striped side indicated on the diode lines up as with the silk screen diode on the PCB.
4. Install the 555 timer IC1 and the Reed Relay RR1 onto the PCB. Make sure the indicator points are in alignment with the silk screen.
5. Cut 6 pieces wire to a length of 80mm and remove 5mm of insulator on both ends of each of the 6 wires with a wire stripper.
6. Insert and solder wire into each of the 6 interface holes labeled: LED, GND, GND, 9V, SW and SW.

6. Testing

Attach the supplied LED (do not solder) to the LED and GND designated wires. Make sure that the cathode and anode of the LED are connected correct wire. The positive (+) wire should go to the LED lead with the longest length. Connect a 9-12 Volt DC power to the leads 9V and GND. Briefly allow the two SW wires to connect and then disconnect. The LED should go on or off when this is done. Touch the wires together until the LED goes to the on state. Touch the wires again. The LED must go to off state. When the two wires touch, the LED must change state and remain that way until the SW wires touch again. If this does not occur then check the power supply. Also check the PCB for shorts or loose contacts.

7. PCB

