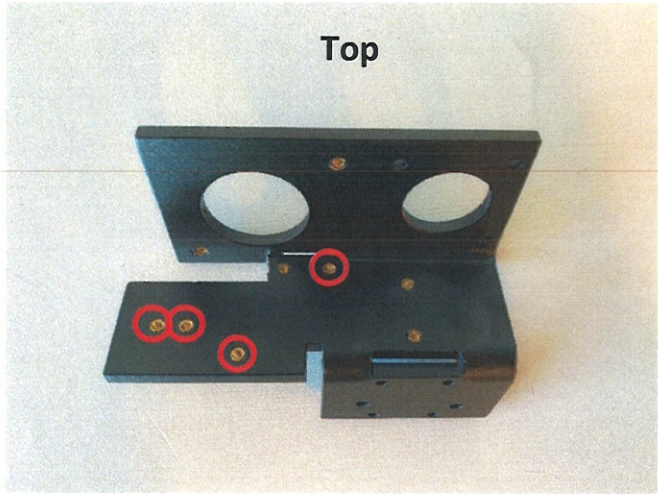
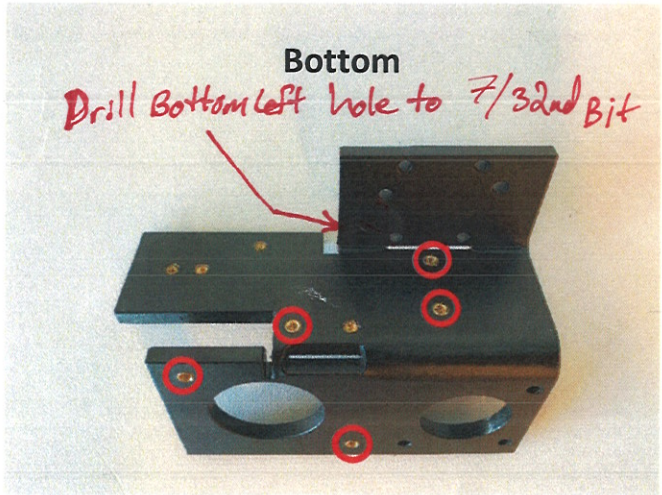
Extruder Bracket

Parts Needed:
(1) Extruder Bracket
(2) Press inserts x9

X4



X5



Tools Needed:

1. Press
2. 5/32" Drill Bit
3. Drill

Note:

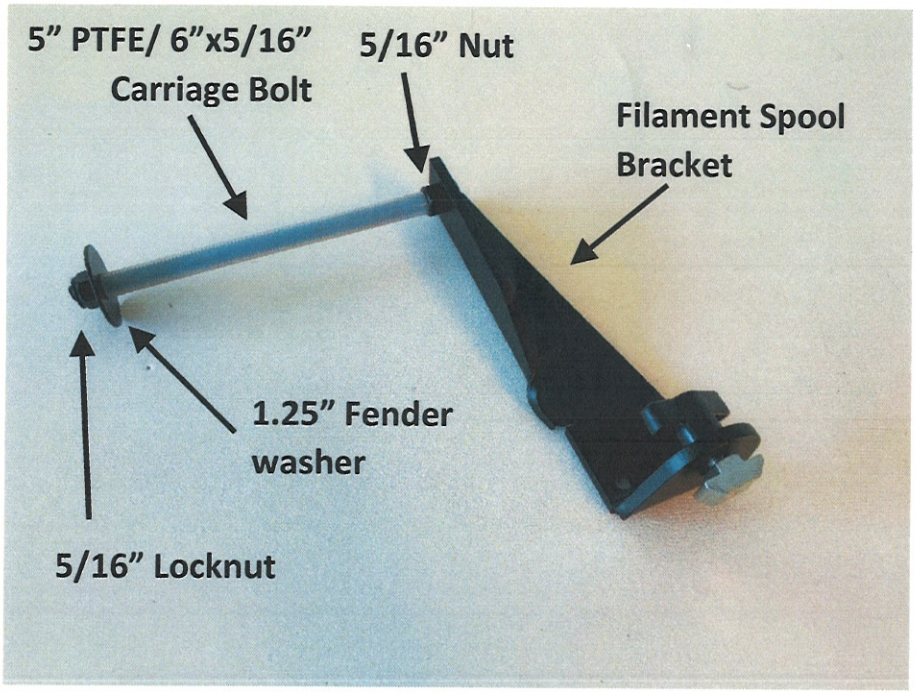
○ =Press Insert

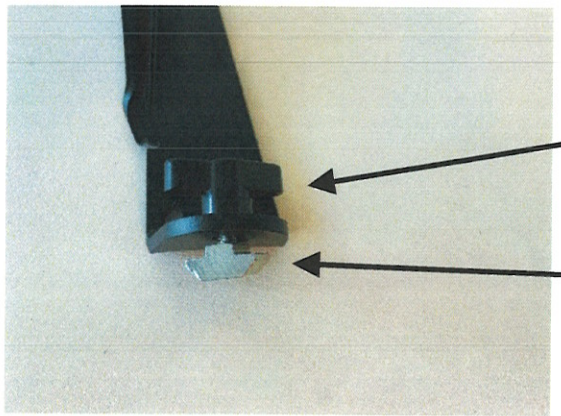
Press insert placement is the same for duals (the bracket is longer)

Steps:

1. Drill out existing holes
2. Put in press inserts

Filament Spool Holder





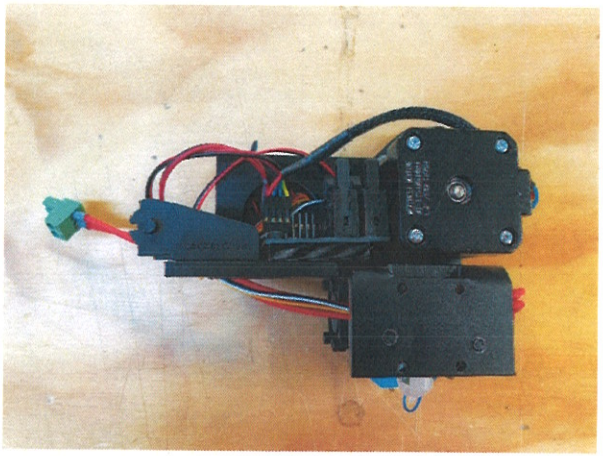
Parts Needed:

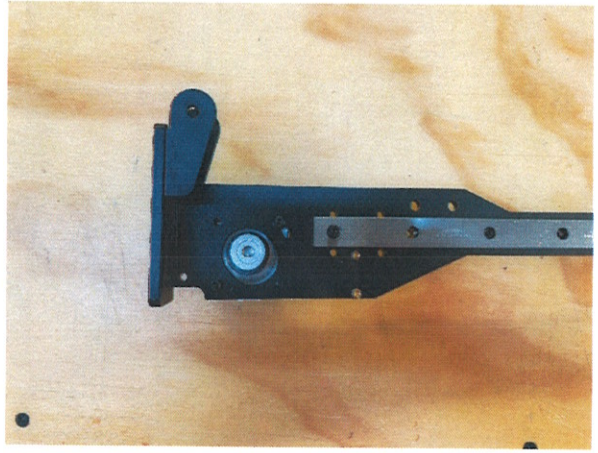
(1) 5" 5/16" PTFE Tube
(2) Filament Spool Bracket
(3) m6 t-nut
(4) Two Arm Knob
(5) 5/16" Lock Nut
(6) 5/16" Nut
(7) 6"x5/16" Carriage Bolt
(8) 1.25" Fender Washer

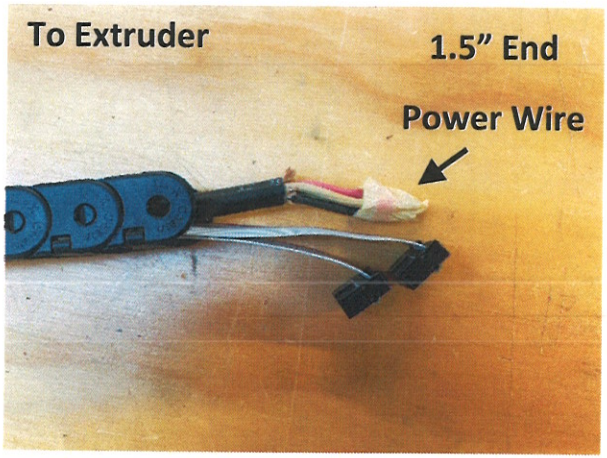
Steps:

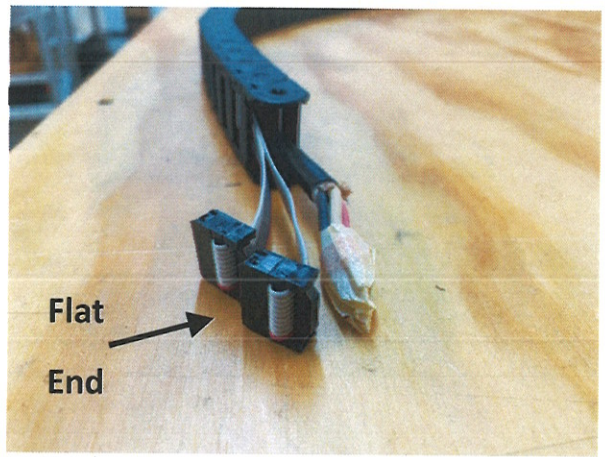
1. Insert 6"x5/16" carriage bolt into filament spool bracket
2. Screw on 5/16" nut to secure to filament spool bracket
3. Slide 5" PTFE tube over the carriage bolt. (slide/twist)
4. Place 1.25" fender washer at the end of the 5" PTFE tube and secure with a 5/16" locknut at the very end
5. Screw the two-arm knob onto the m6 t-nut on the bottom hole of the filament spool bracket

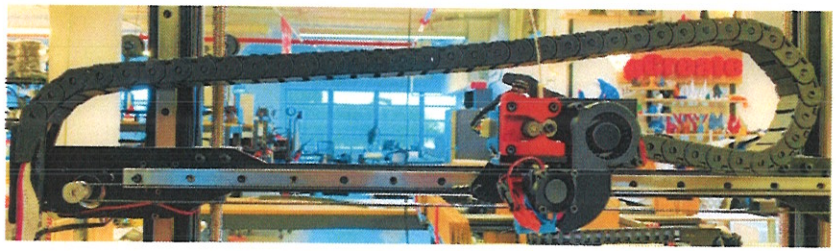
Drag Chain











Parts Needed:

(1) Completed Hot End Power Wire
(2) Drag chain (43 links)
(1) Ribbon Cable x2

Steps:

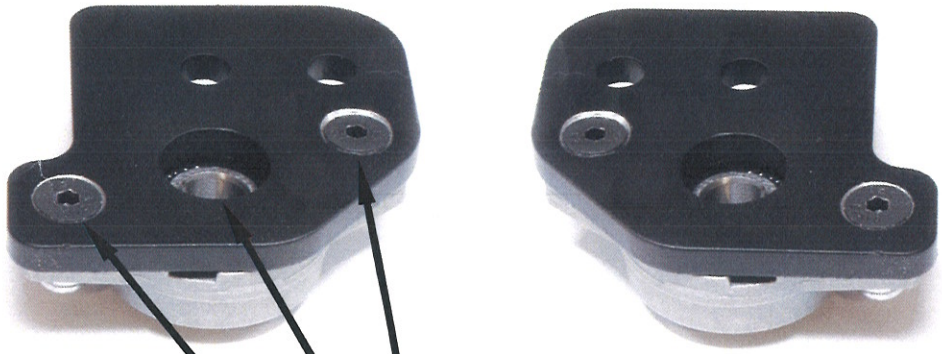
1. Be mindful of which side of which side of drag chain goes towards extruder (workshop this)
2. Ribbon cables with flat end go towards extruder (workshop this)
3. 1.5” side of hot end power wire goes towards extruder (workshop this)

Lead Screw Top Plate

190709

Left Plate

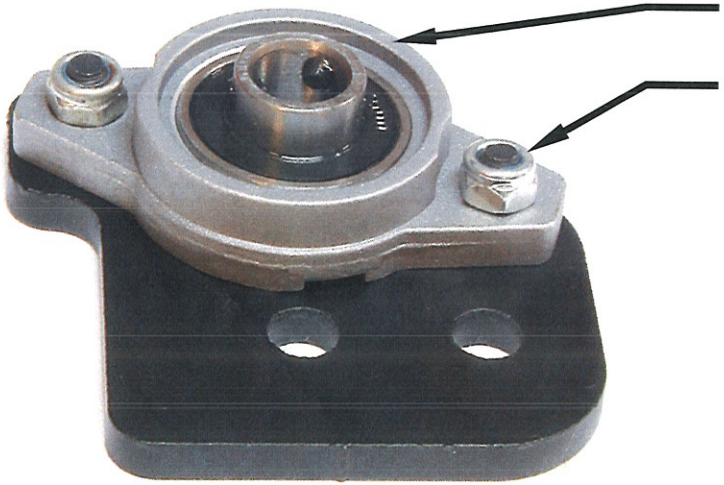
Right Plate



Countersink holes

Center bearing in hole

M5x16 Flat Head



Pillow Block

M5 Lock Nut

Parts Needed

(2) M5x16 mm Flat Head
(2) M5 Lock Nut
(1) 20 tooth pulley
(1) Lead Screw Top Plate (VMChoppy)
(1) 10mm Pillow Block Bearing

Steps

1. Countersink plates on mill (300-400 rpm 3 flute bit)

2. Tighten M5x16mm flat head bolts with M5 lock nuts. Make sure bearing is centered on hole.

Torque #2

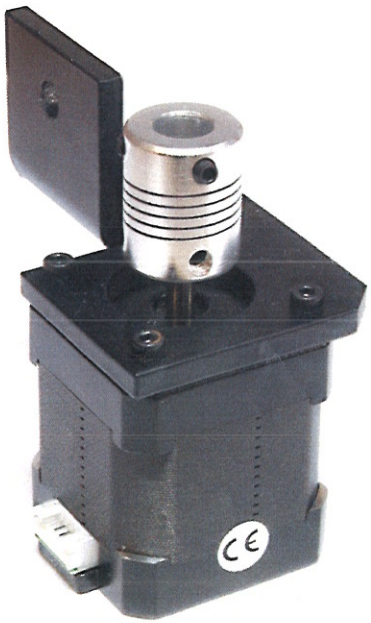
3. Remove set screws and put in clear bin.

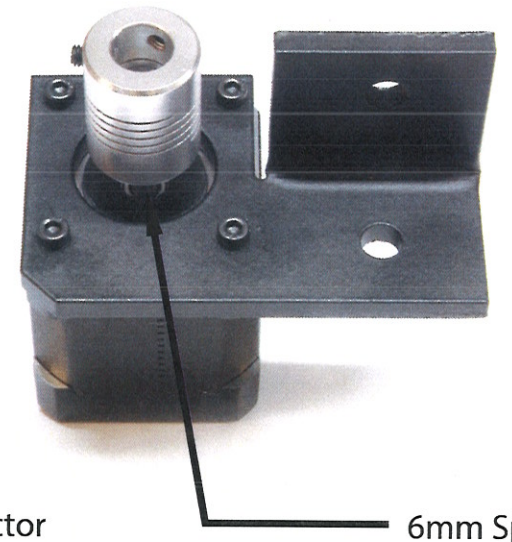
190709

Z-Axis Motor

Left Bracket

Right Bracket





Parts Needed

(4) M3x10 mm Socket Head
(1) Bracket
(1) 20 tooth pulley
(1) Motor

Steps

1. Screw in motor to metal bracket

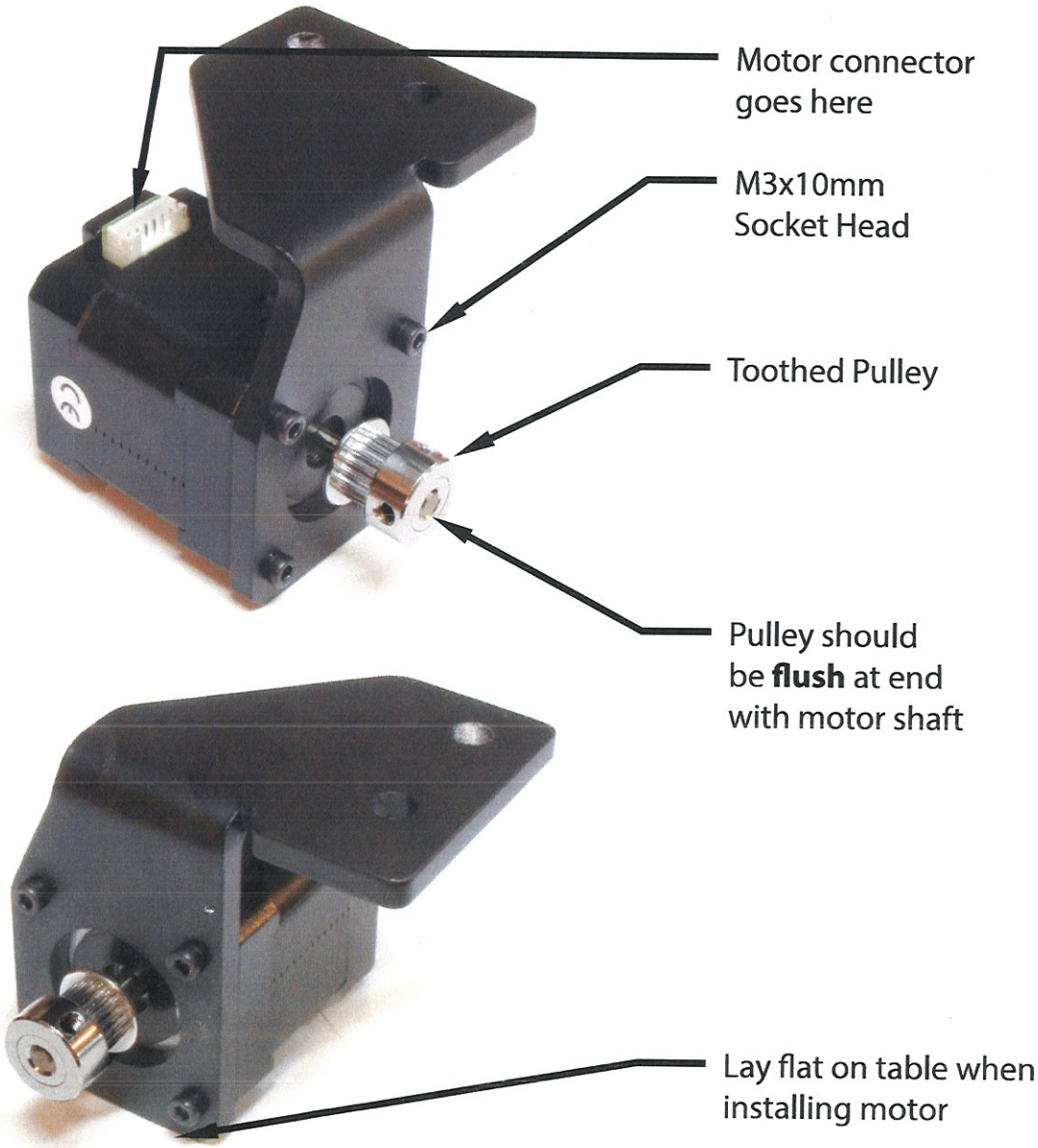
Torque #1

2. Loosen set screw and slide pulley on to shaft.

3. Line up flat spot with set screw and tighten both set screws.

Y-Axis Motor

190709



Parts Needed

(4) M3x10 mm Socket Head
(1) Bracket
(1) 20 tooth pulley
(1) Motor

Steps

1. Screw in motor to metal bracket

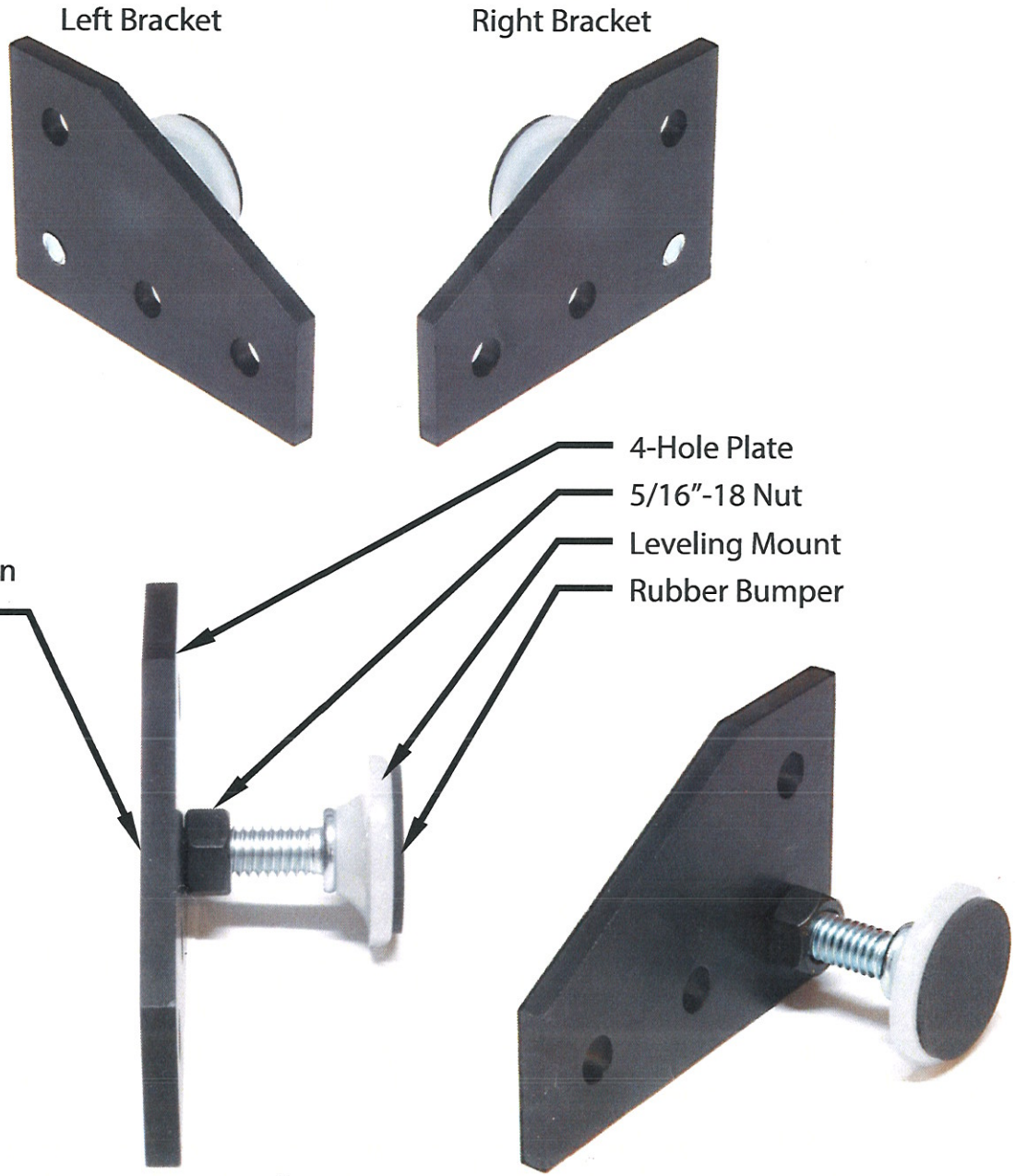
Torque #1

2. Loosen set screw and slide pulley on to shaft.

3. Line up flat spot with set screw and tighten both set screws.

190709

Corner Foot



Parts Needed

(1) 5/16"-18 Leveling mount
(1) 5/16" Black Oxide Nut
(1) Vm Choppy Bracket
(1) Rubber Bumper

Steps

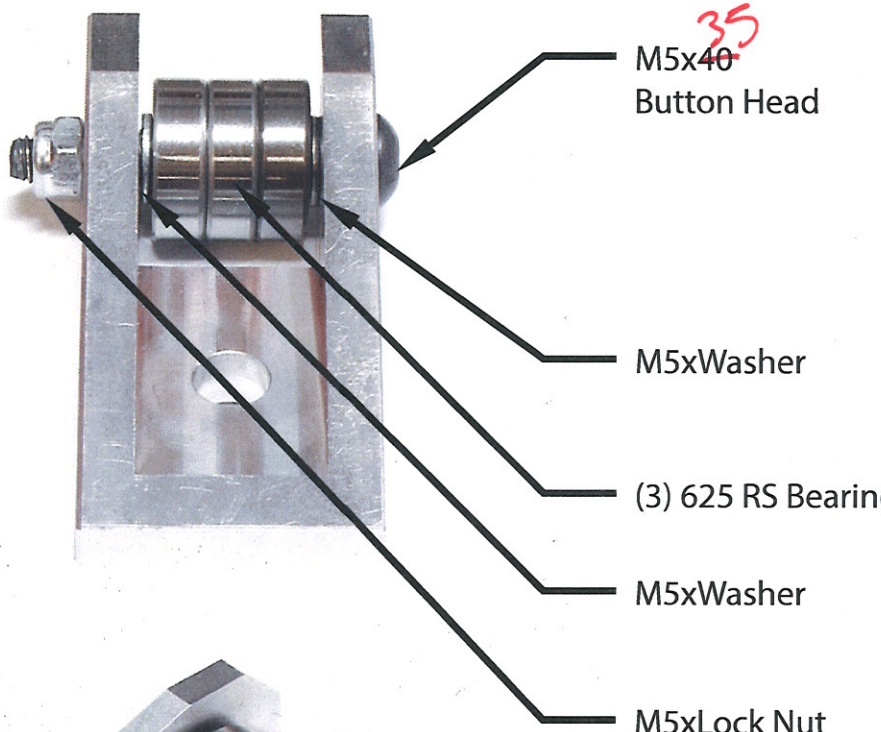
1. Tap metal plate with 5/16"-18 Tap

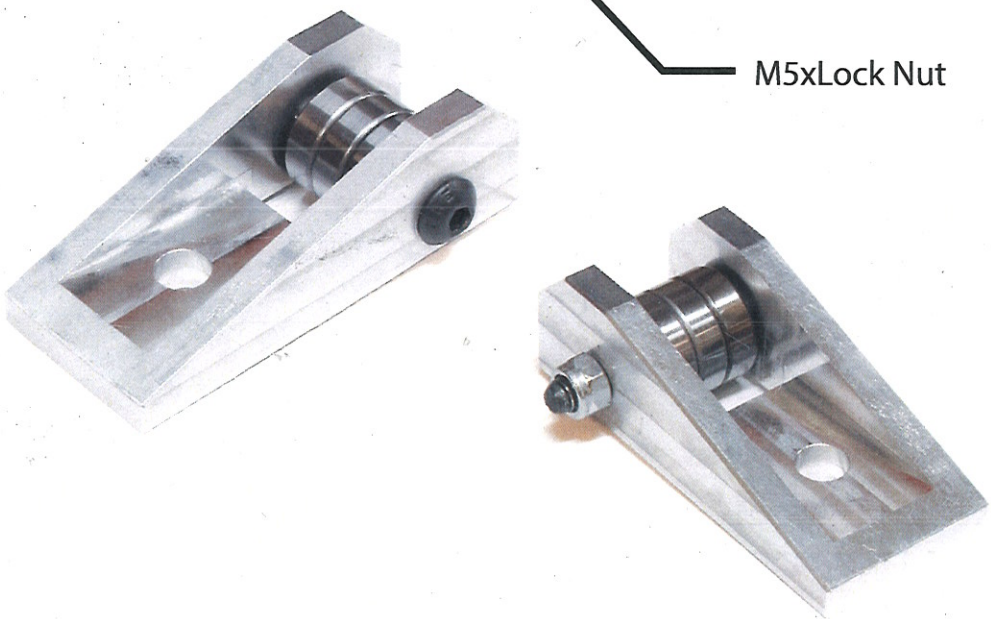
2. Screw 5/16"-18 nut on to leveling mount.

3. Screw in leveling mount to corner bracket. **Make sure mount is flush with outside.**

190709

Y-Axis Bearing





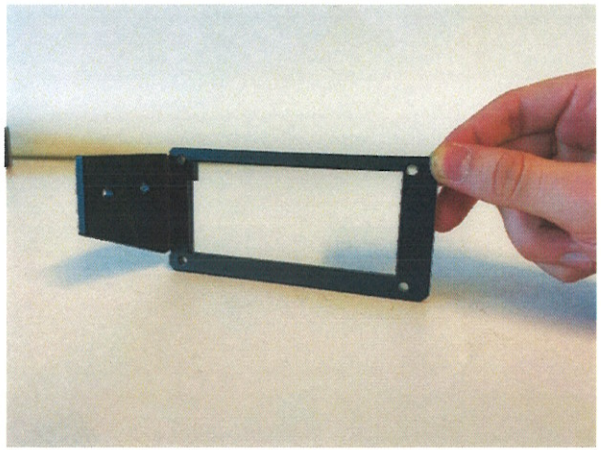
Parts Needed

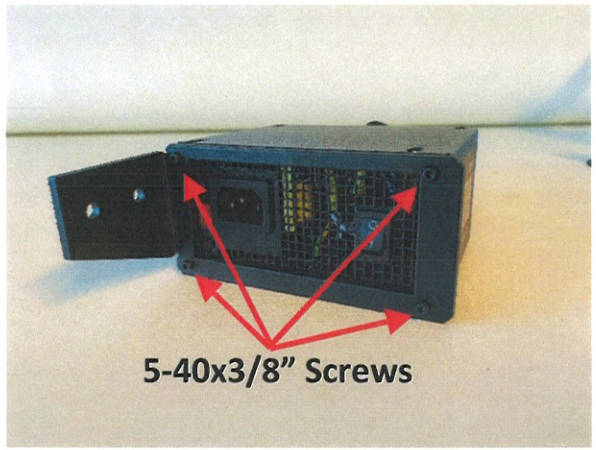
(1) M5 x ~~40~~ 35 Button Head
(2) M5 washers
(1) M5 Lock Nut
(3) 625 RS Bearings
(1) CNC part

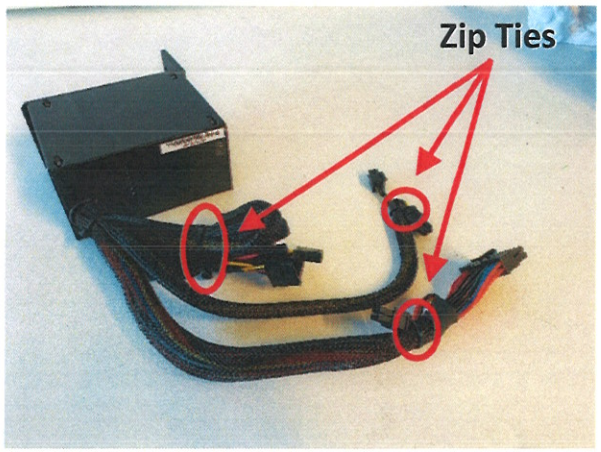
Steps

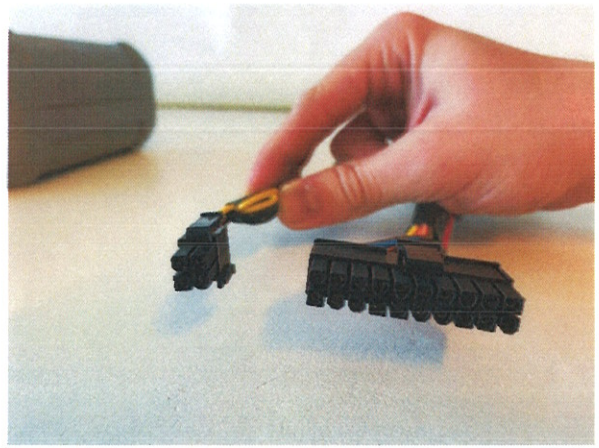
1. Start to slide in M5x40 bolt
2. Slip on M5 washer
3. Slide in (3) bearings
4. Gently slide in M5 washer on other side
5. Tighten with M5 locknut

Power Supply









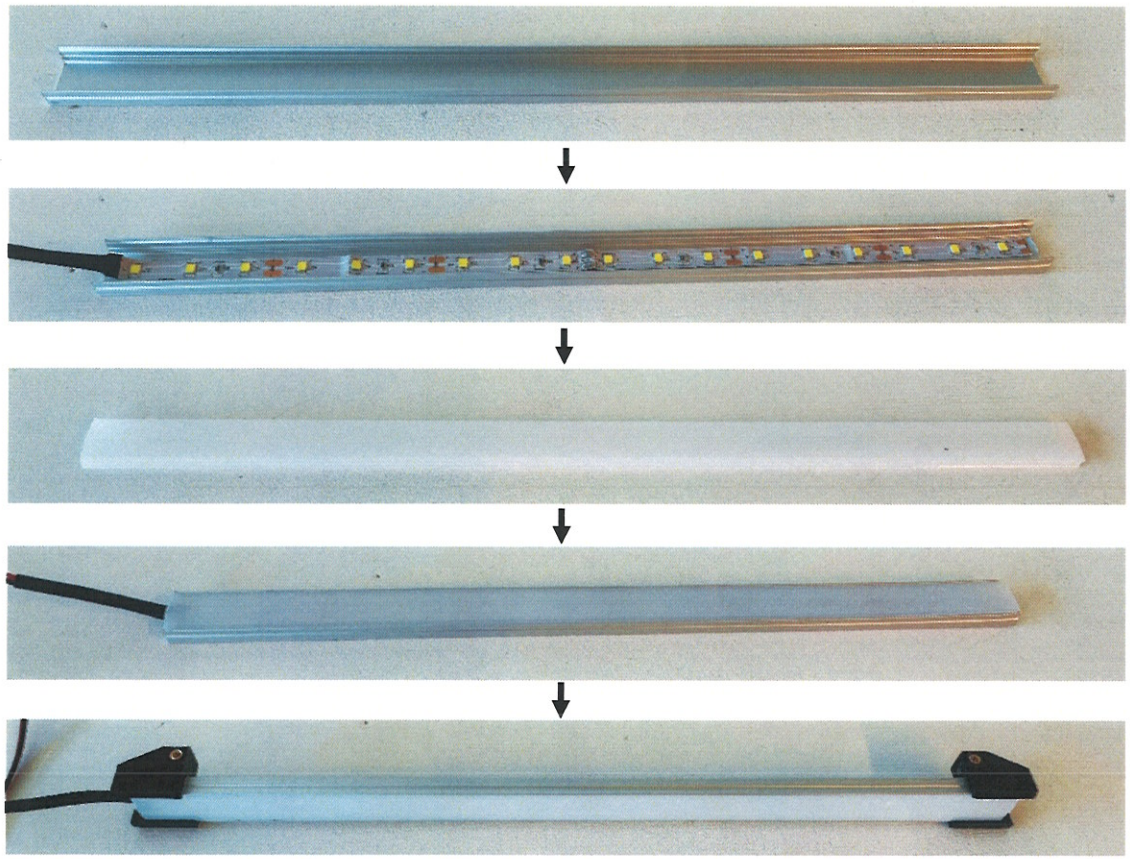
Parts Needed:

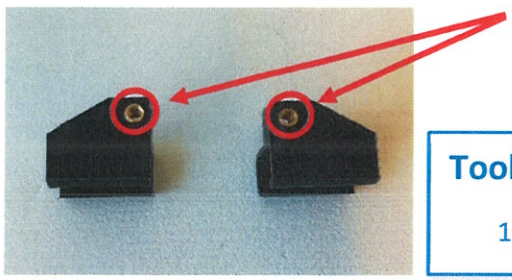
(1) Power Supply
(2) Power supply Bracket
(3) 5-40x3/8" screws x4
(4) 5" Zip ties x3

Steps:

1. Mount bracket to power supply using (4) 5-40x3/8" screws
2. Zip tie un-needed wires on power supply out of the way

LED Assembly





Tools Needed:

1. Press

Note:

Metal Bracket Length: 11 ¾"

Plastic Diffuser length: 11 ¾"

Parts Needed:

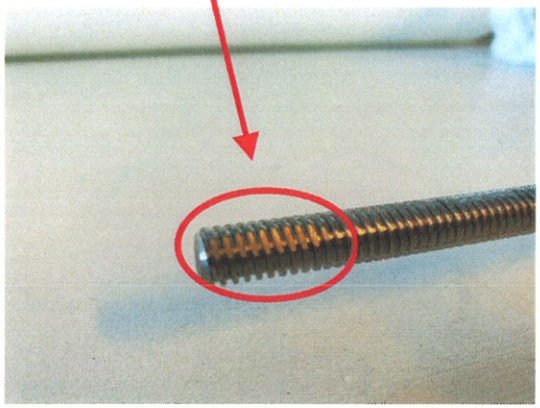
(1) Metal Bracket
(2) Plastic Diffuser
(3) Cut and Soldered LED Strip
(4) Left and Right 3d Printed Connector
(5) Press Insert x2

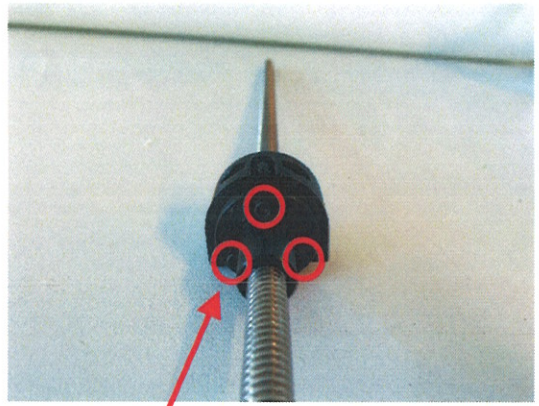
Steps:

1. Remove adhesive sticker from LED strip and stick to metal bracket
2. Slide/snap plastic diffuser into the grooves on the metal bracket
3. Clip on 3d printed connectors on each end of completed assembly
4. Make sure the LED wire is on the side of the left 3d printed connector

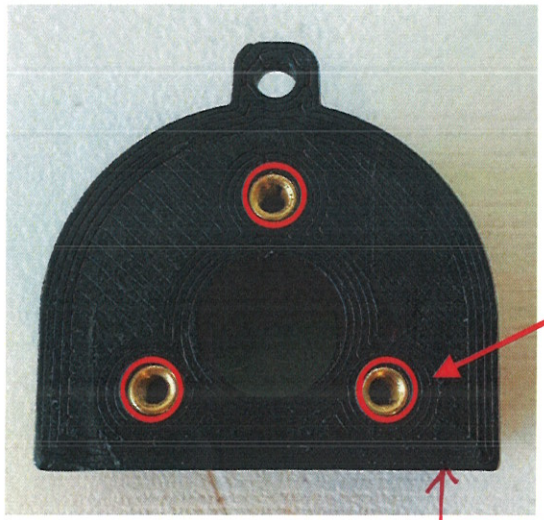
Lead Screws

Flat





M3x8



Press Insert

SAND CORNER

Parts Needed:

(1) Lead screw
(2) 3d Printed Nut Block
(3) Palm Nut
(4) m3x8 Socket x3
(5) press Inserts x3

Steps:

1. Grind down lead screws on both ends
2. Put (3) press inserts in the 3d printed nut block
3. Screw the palm nut into the 3d printed nut block using (3) m3x8 screws using the below torque setting
4. Screw nut block/palm nut on to lead screw (preferably towards the middle)

* SAND BOTTOM EDGE OF 3D PRINTED PARTS.

Torque #2

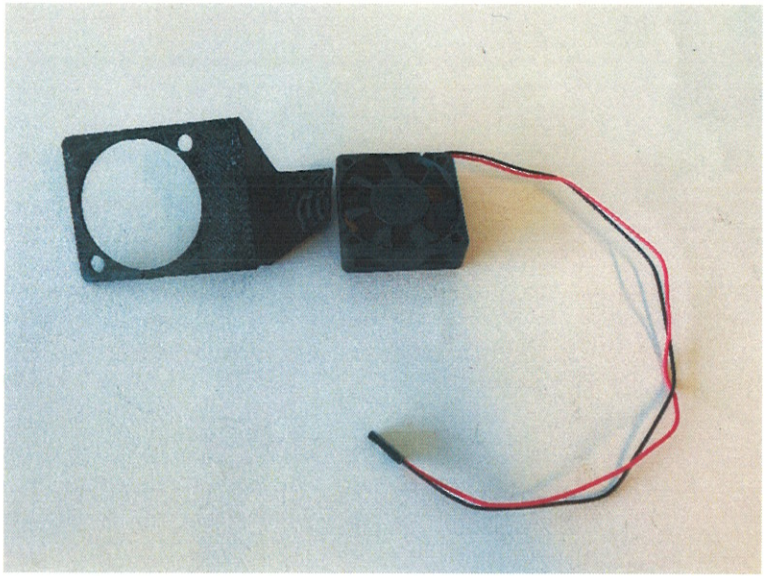
Tools Needed:

1. Drill
2. Press
3. Bench Grinder

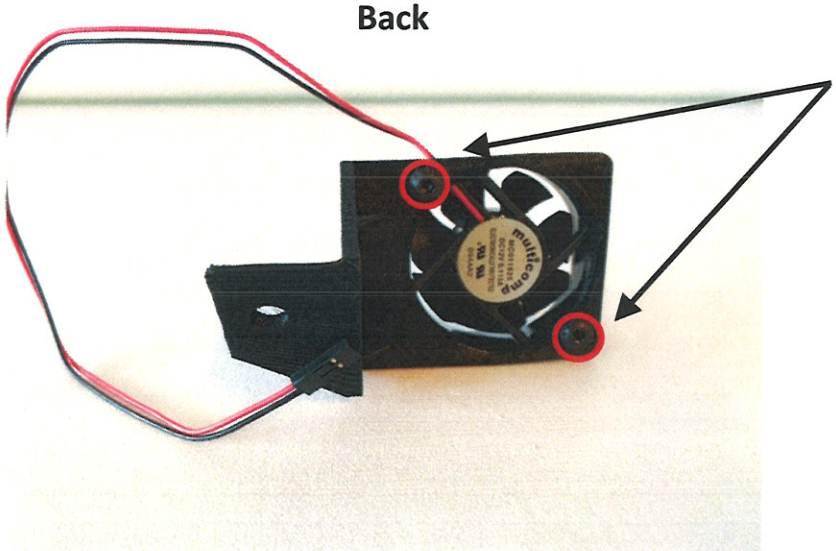
Note:

Do not grind down the lead screws too much. Doing so will cause them to wobble when installed on printer

Internal Case Fan



Back



M5x8mm Button

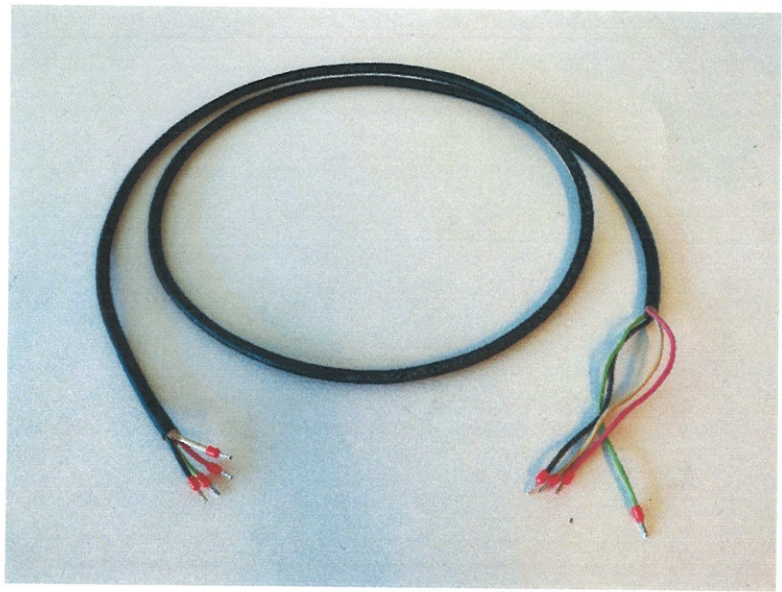
Parts Needed:

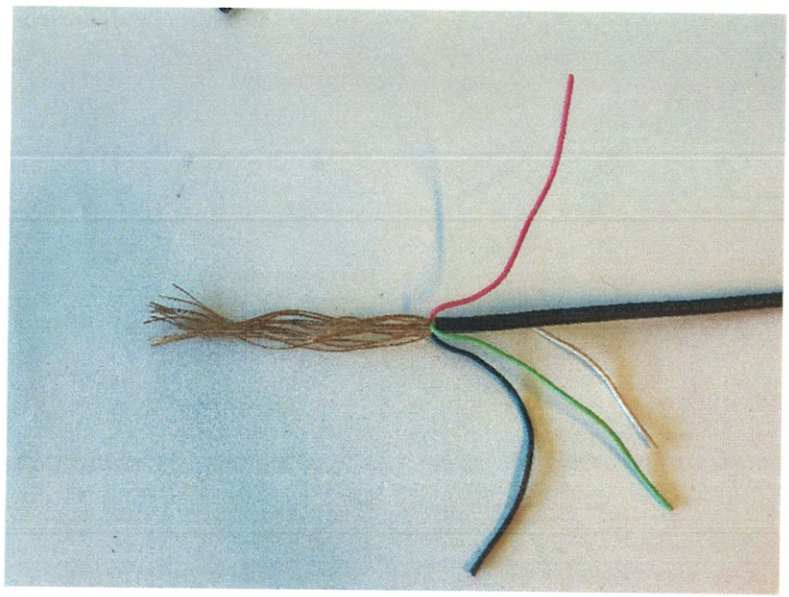
(1) Fan
(2) 3d Printed Bracket
(3) m5x8 Button Head x2

Steps:

1. Align fan with bracket keeping wire facing up
2. Screw in with 2 m5x8

Hot End Power Wire





Parts Needed:

(1) 76" (less for Pro) Power wire
(2) 16 awg Ferrules x8

Steps:

1. Strip 6" of black rubber on one side
2. Strip 1.5" of black rubber on the other
3. Separate the twine surrounding the red, black, green, and white wires
4. Cut away twine
5. Strip individual wires
6. Crimp individual wires

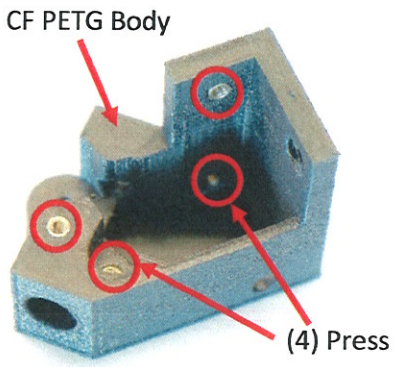
Tools Needed:

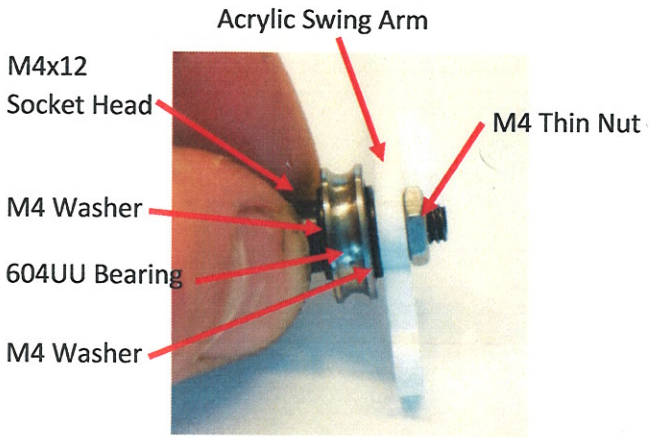
1. Box cutter
2. Wire Stripper
3. Wire Crimper
4. Scissors

Note:

Be sure not to cut the inner wires when stripping the outer black rubber

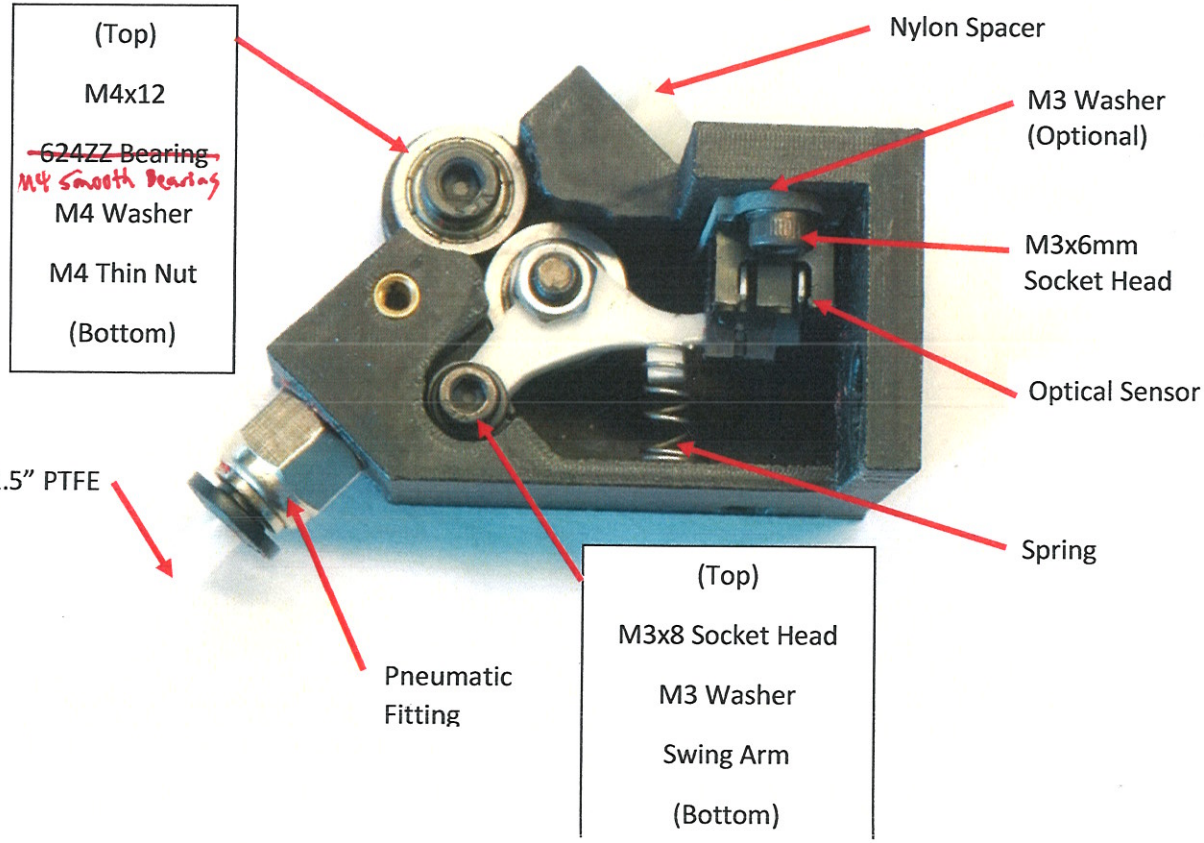
Runout Sensor PRO (Left Single)





Parts Needed:

- (1) 3d Printed Body
- (4) M3 Press Inserts
- (2) M3x6
- (1) M3x8
- (1) 1.25" PTFE Tube
- (1) 604UU Bearing
- (1) ~~624ZZ~~ M4 Smooth Bearing
- (2) M4x12
- (2) M4 Thin Nut
- (3) M4 Washer
- (1) Nylon Fitting
- (1) Spring
- (1) Optical Sensor
- (1) Pneumatic Press Fitting
- (1) Dual Runout Sensor Wire
- (1) White Sheathing
- (1) Shrink Wrap 2"
- (1) Acrylic Cover



Steps:

1. Put Press Inserts into 3d printed Body
2. Screw optical sensor into body. See note below when testing.
3. Install smooth bearing
4. Assemble acrylic swing arm and insert into body.
5. Put in nylon fitting and pneumatic press fitting with PTFE
6. Make dual runout wire
7. Install acrylic cover with (1) M3x8mm socket head bolt.

Note:

You may need to add an M3 washer to adjust the optical endstop height.