2X72 GRINDER ASSEMBLY INSTRUCTIONS

BRODBECK IRONWORKS LLC

REVISION V

Contents

WARNING:

THE OPERATION OF THIS MACHINE MAY RESULT IN INJURY, DISMEMBERMENT, OR DEATH.

Lockout and secure power source before performing any work on the machine.

Make sure to use adequate personal protection equipment such as eye protection, respirator, etc. while operating this equipment.

Contact Brodbeck Ironworks LLC for any questions or concerns before operating this equipment

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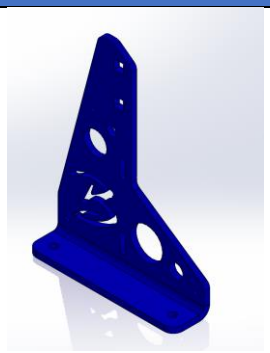
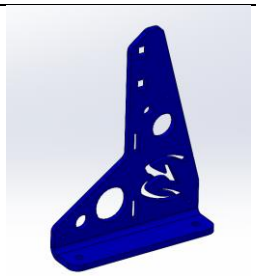
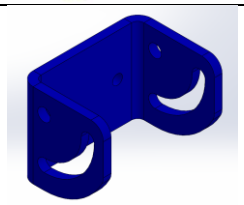
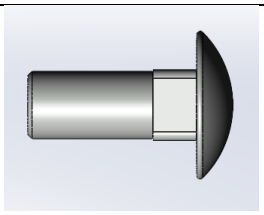
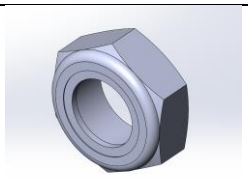
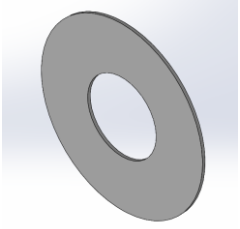
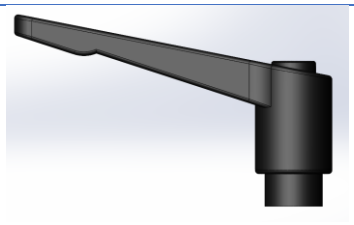
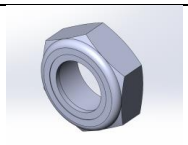
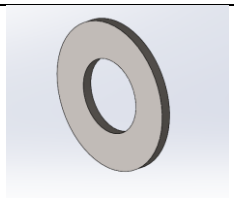
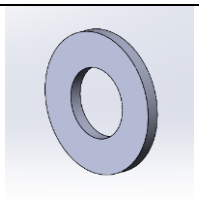
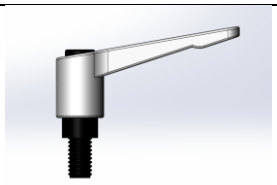
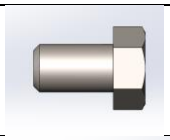
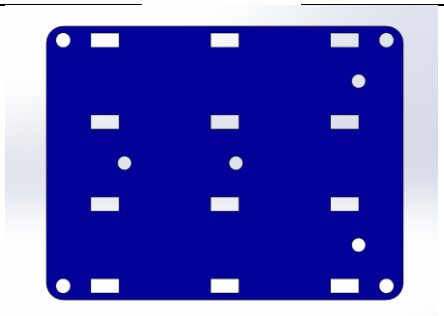
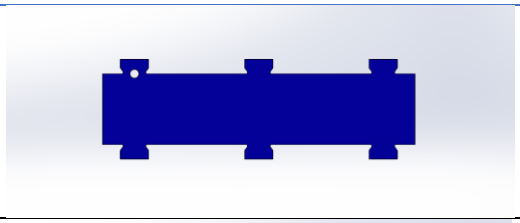
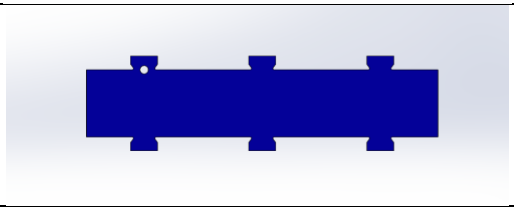
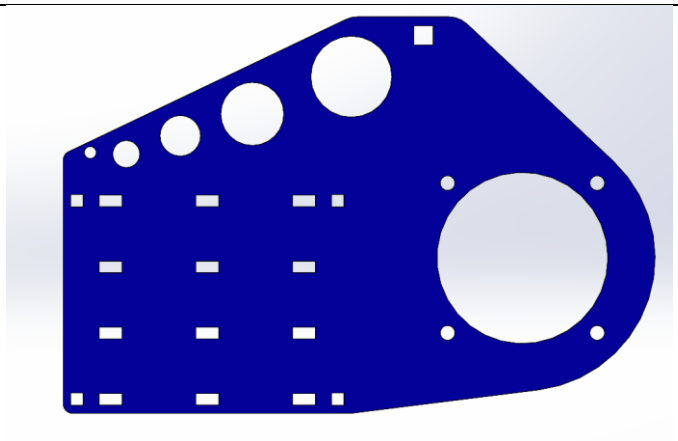
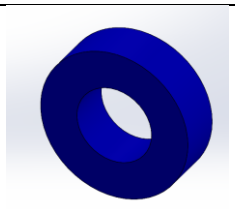
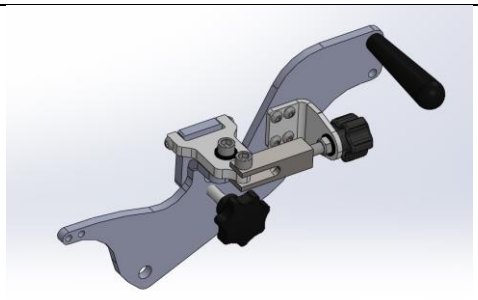
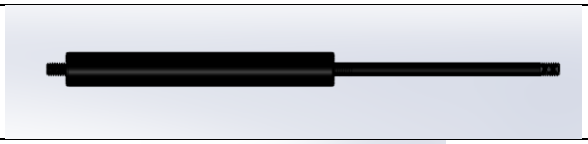
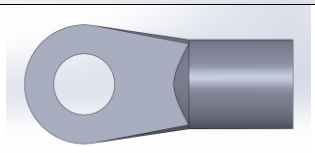
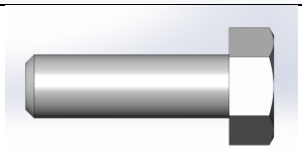
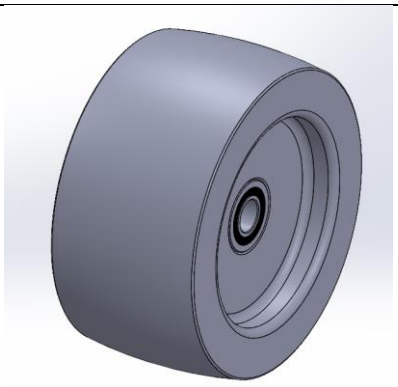
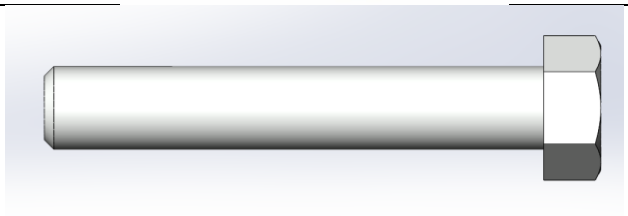
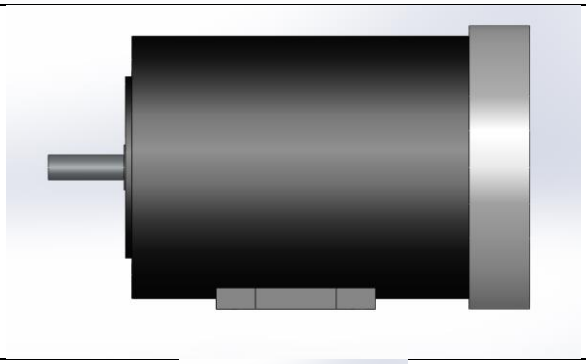
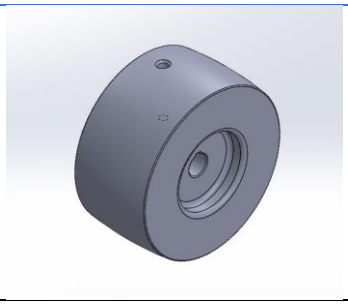
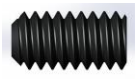
Parts List:

ITEM	DESCRIPTION	QTY	IMAGE
1	HINGE BASE RH 2X72	1	
2	HINGE BASE LH 2X72	1	
3	FORMED HINGE 2X72	1	
4	½” CARRIAGE BOLT 1-1/4”LG	4	
5	½” THIN NYLOCK NUT	5	
6	½” TEFLON WASHER .020” THK	2	

7	BLACK ADJUSTABLE HANDLE ½”-13 INTERNAL THREAD	1	
8	5/16” X 3/4”LG SCREW	4	
9	5/16” THIN LOCK NUT	10	
10	½” FLAT SAE WASHER	8	
11	1/4” FLAT WASHER	4	
12	GRAY ADJUSTABLE HANDLE 3/8”-16 EXTERNAL THREAD	2	
13	3/8" HEX BOLT 5/8” LG	2	
14	HINGE-SIDE SIDE PLATE	1	

15	TOOL ARM TOP PLATE	2	
16	TOOL ARM PLATE	2	
17	5/16” CARRIAGE BOLT 2-1/2” LG	4	
18	MOTOR MOUNT SIDE PLATE	1	
19	5/16” SPACER 1/2" ID 1.0”OD	1	
20	½” CARRIAGE BOLT 1-3/4”LG	1	
21	TRACKING/TENSIONING ASSEMBLY	1	

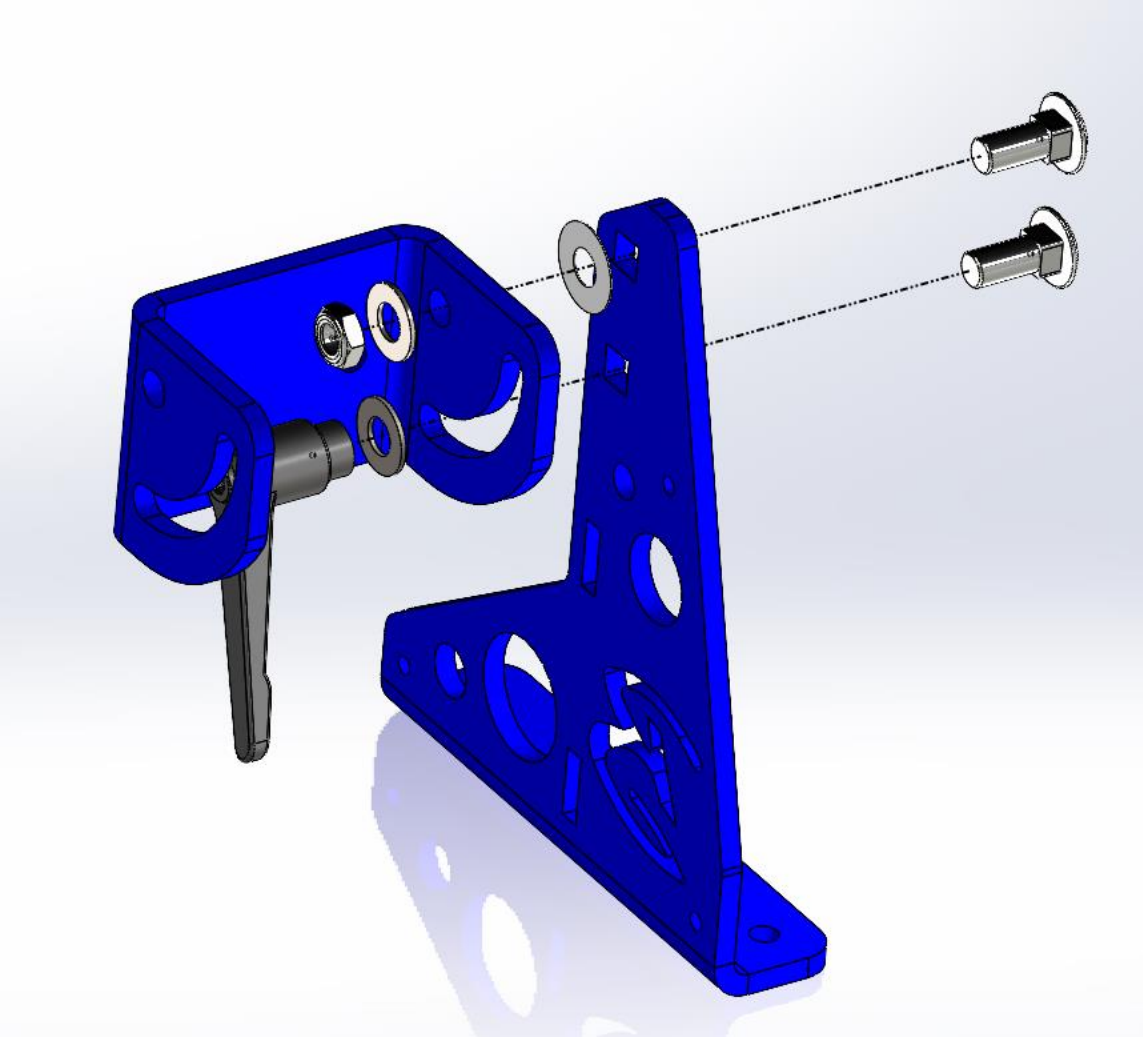
22	GAS SPRING (20LB) *Optional	1	
23	GAS SPRING EYELET *Optional	2	
24	COIL SPRING *Optional	1	
25	5/16” HEX BOLT 1” LONG	2	
26	4” TRACKING WHEEL	1	
27	HEX BOLT 1/2” X 3”LG	1	
28	MOTOR	1	
29	3/8” HEX BOLT 1” LONG	4	
30	3/8” SPLIT LOCK WASHER	4	

31	5” DRIVE WHEEL	1	
32	¼” SET SCREW ½” LONG	1	

**Refer to the Mareko Platen instructions for the assembly process.

Main Chassis Assembly

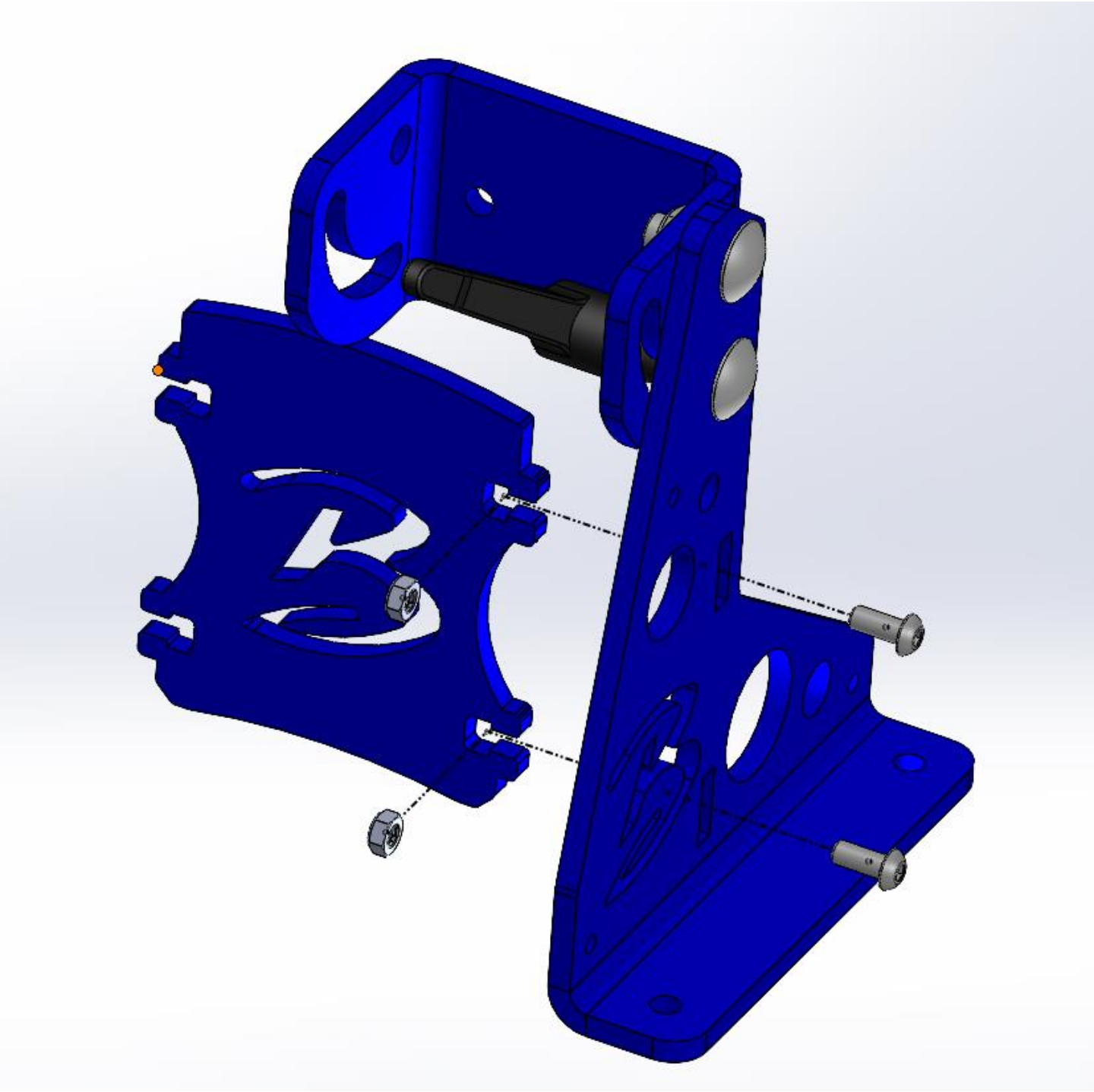
Step 1 – Hinge and Hinge Base RH



Insert a 1/2" x 1-1/4" long carriage bolt into the top hole of the Hinge Base. Then add a 1/2" teflon washer (.020" thick) to the bolt. Add the hinge on top of the carriage bolt. Then add a 1/2" metal flat washer and a 1/2" nut. Tighten until you can barely rotate the hinge.

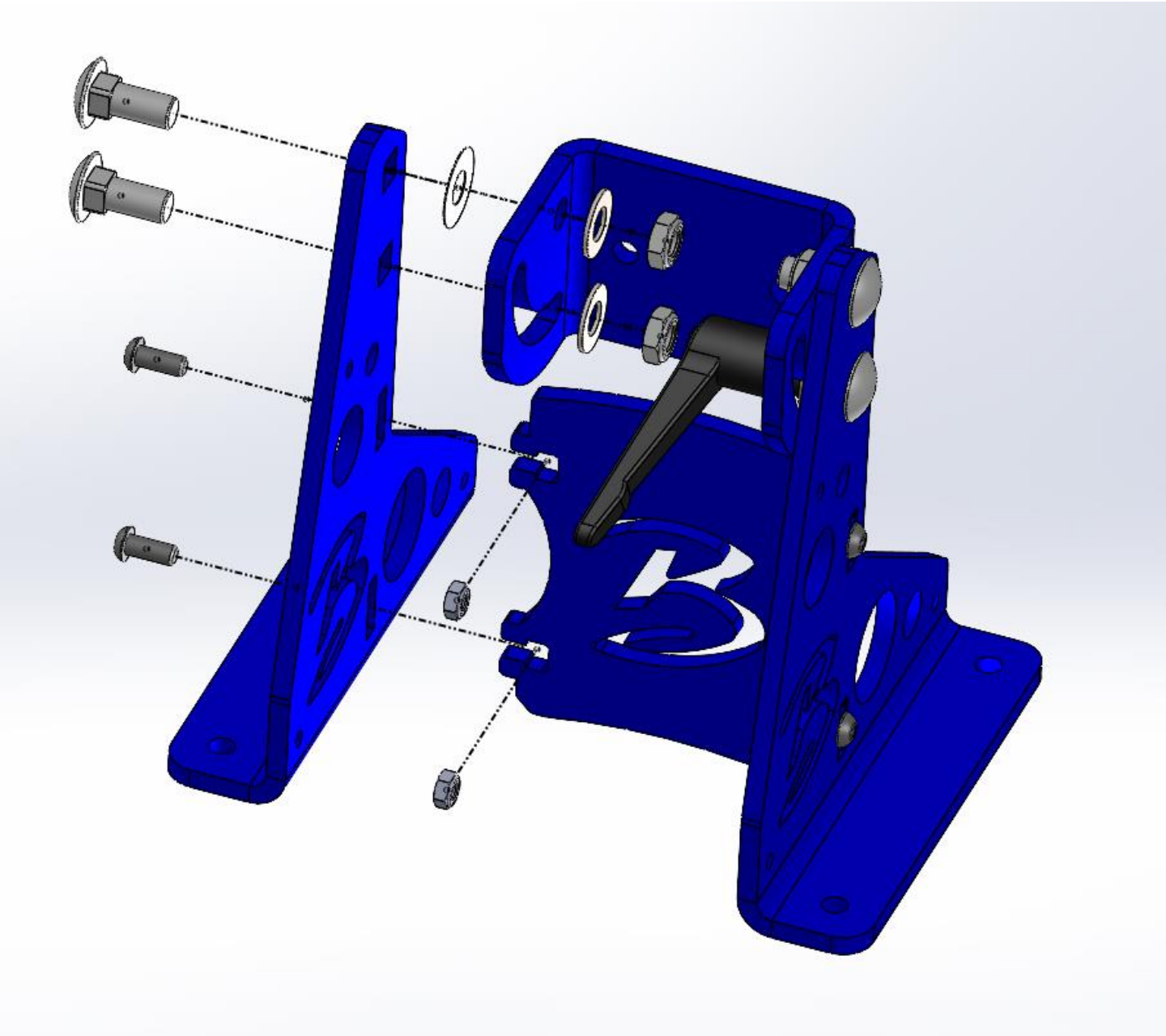
Insert a 1/2" x 1-1/4" long carriage bolt into the bottom hole of the Hinge Base through the slot of the Hinge. Add a 1/2" metal flat washer and screw on the Large Black Handle (Item 6). The handle can be adjusted by pulling up on the handle and rotating. You may need to hold the threaded portion while rotating the handle.

Step 2 – X Brace



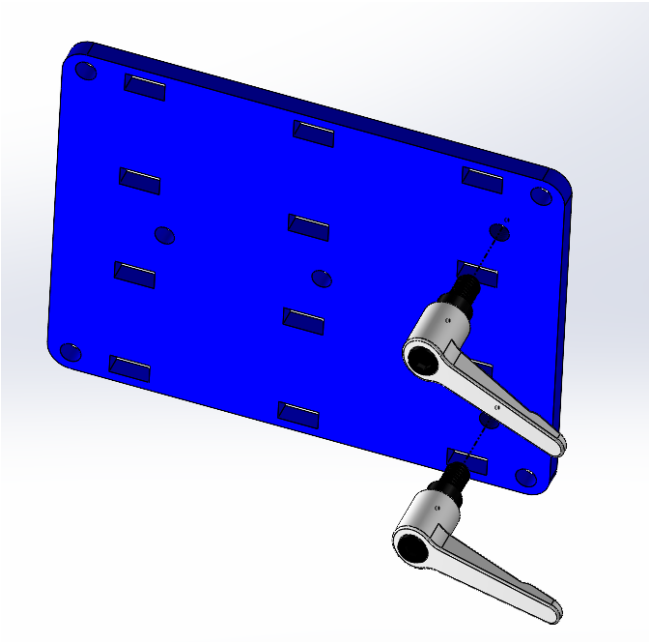
Insert X-Brace into the Hinge Base. Slide 5/16-18 nylock nuts into the X-Brace. Secure with 5/16-18 x 3/4” long Button Head Screw by inserting it through the Hinge Base into the nylock nut.

Step 3 – Hinge Base LH

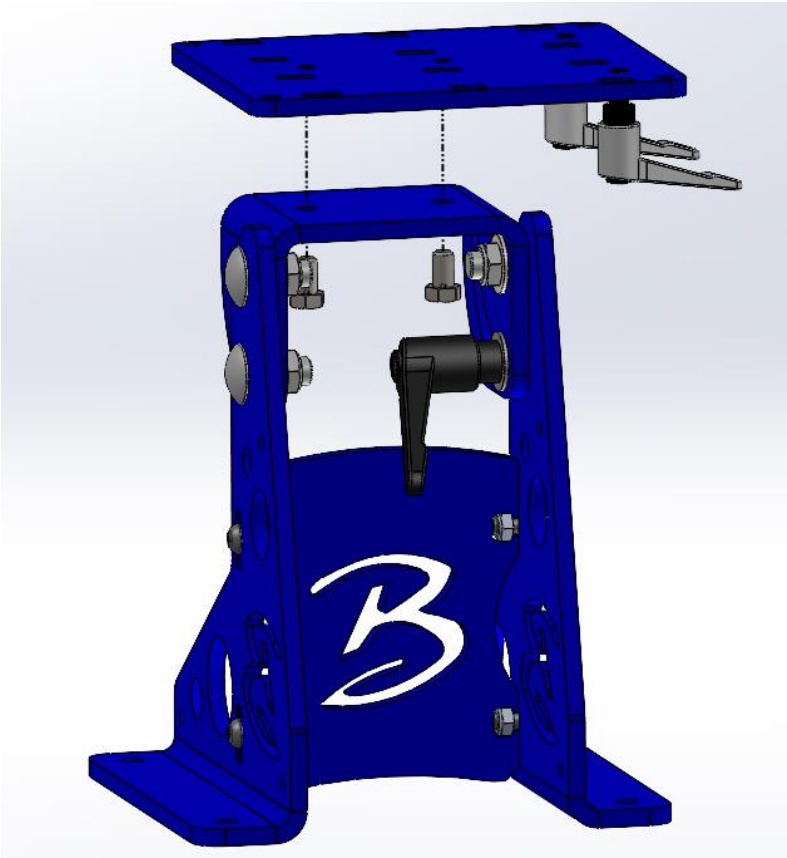


Insert a 1/2" x 1-1/4" long carriage bolt into the top and bottom hole of the Hinge Base. Then add a 1/2" teflon washer (.020" thick) to the top bolt. Install the Hing Base onto the X-Brace and Hinge. Then add a 1/2" metal flat washer and a 1/2" thin nylock nut. Tighten until you can barely rotate the hinge.

STEP 4 – Hinge Side Plate

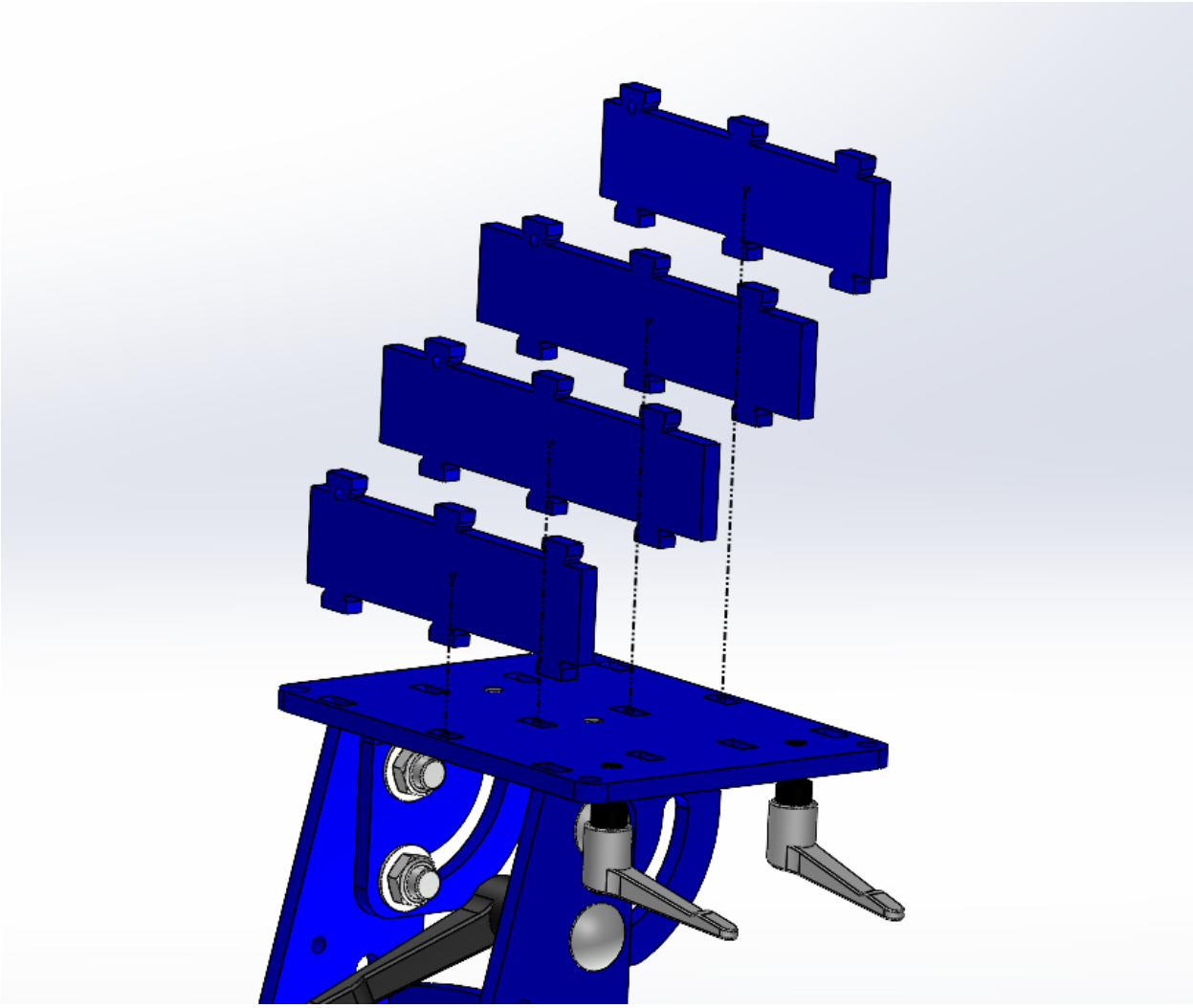


Install the 3/8-16 Threaded Handles into the Hinge-Side Side Plate. Do not tighten down all the way. Only tighten until the tip of the threads meet the inside face.



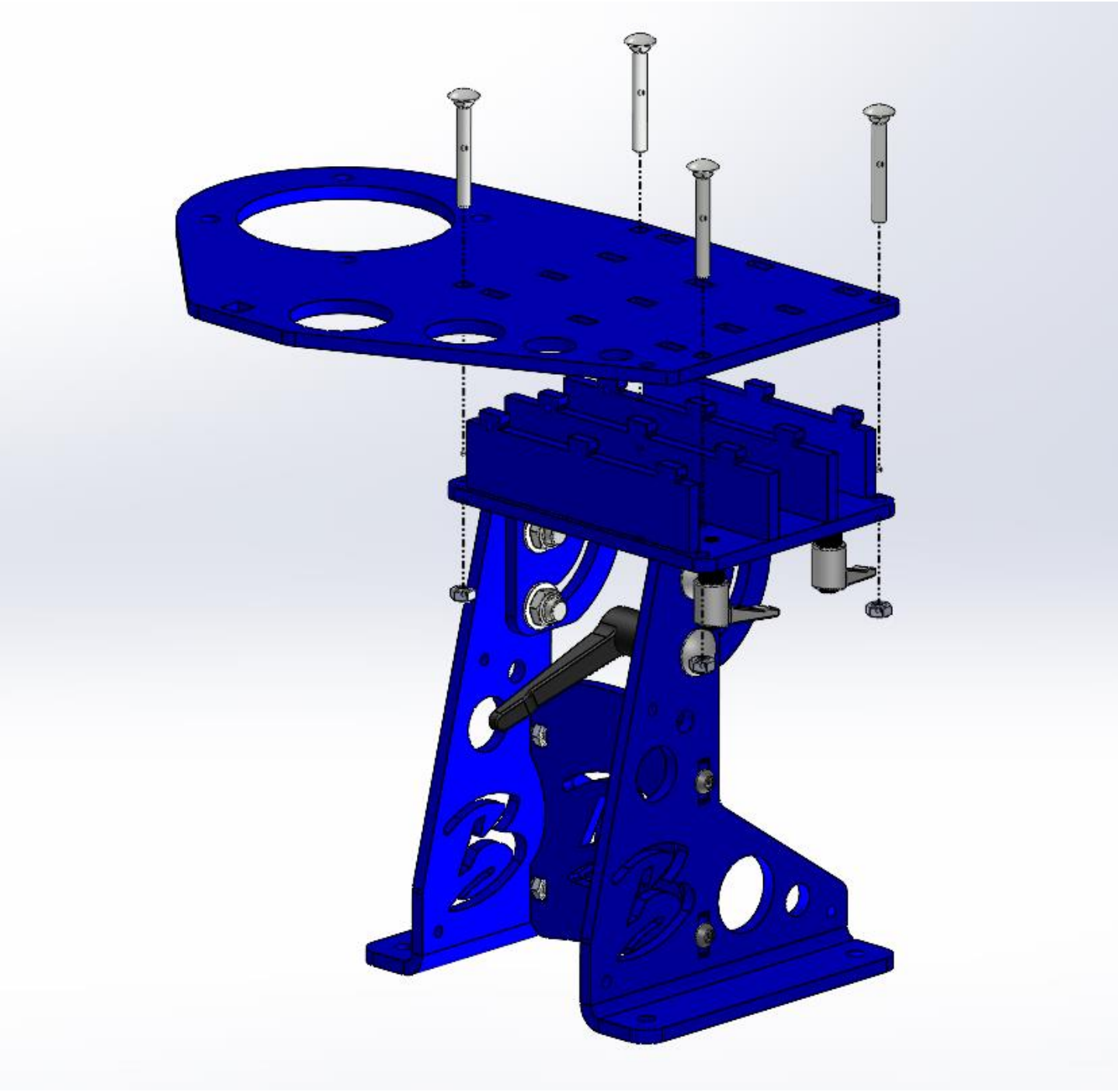
Lower the hinge-side side plate onto the hinges. Use two 3/8-16 x 5/8” Long hex head bolts.

STEP 5 – Tool Arm Plates



Install the tabs of (in order from front to back) the tool arm top plate and tool arm plates (3), into the slots of the hinge-side side plate.

STEP 6 – Motor Mount Side Plate



Place the motor mount side plate onto the tool arm and tool arm top plates.

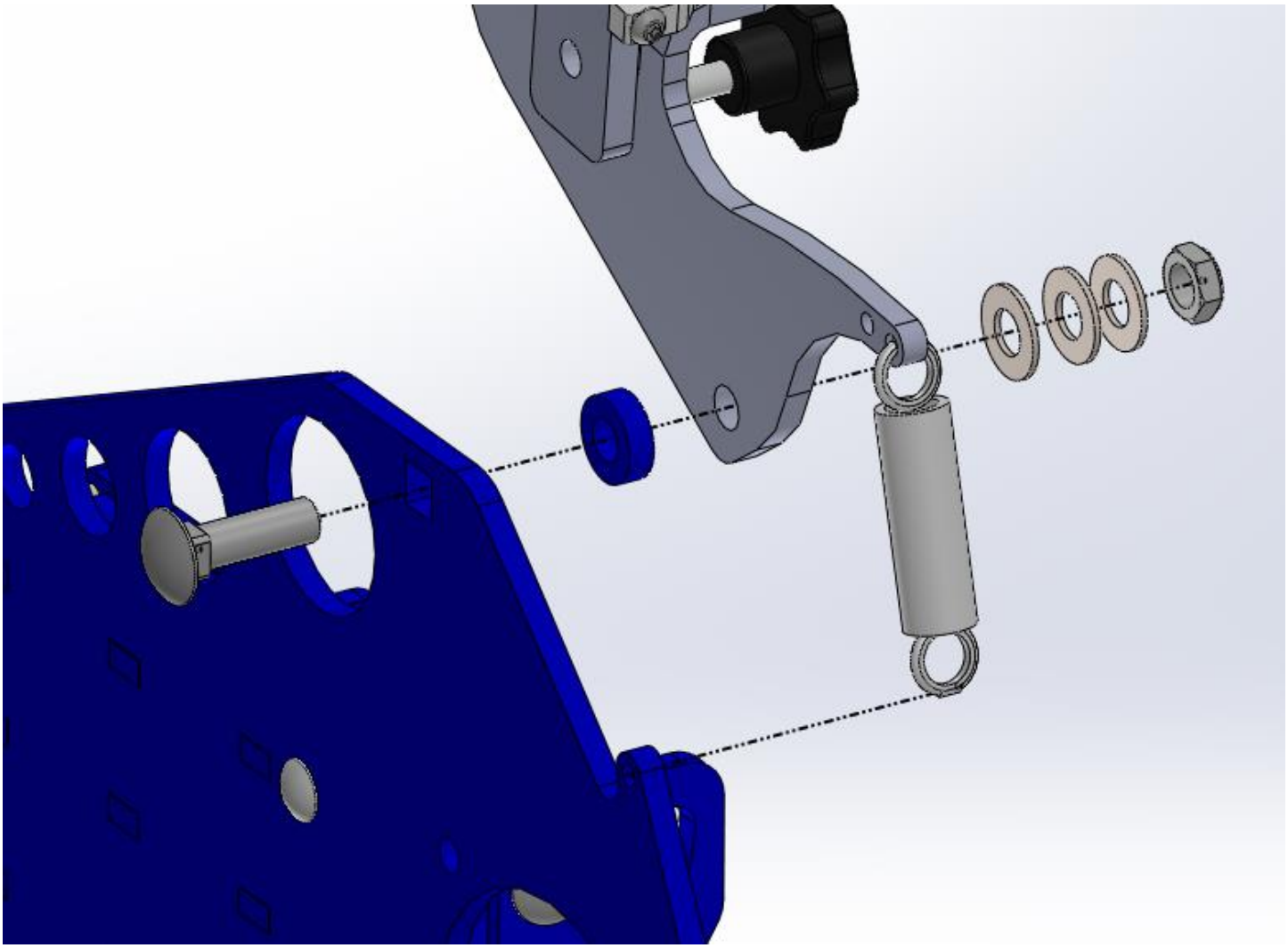
Insert (4) 5/16-18 x 2-1/2” carriage bolts and secure with the 5/16 nylock nuts. If you overtighten the sides plates may bow outward.

STEP 7 – Coil Spring and Tracking/Tension Arm

SEE DUAL AXIS TRACKING ASSEMBLY INSTRUCTIONS FOR THE DUAL AXIS TRACKING SUBASSEMBLY.

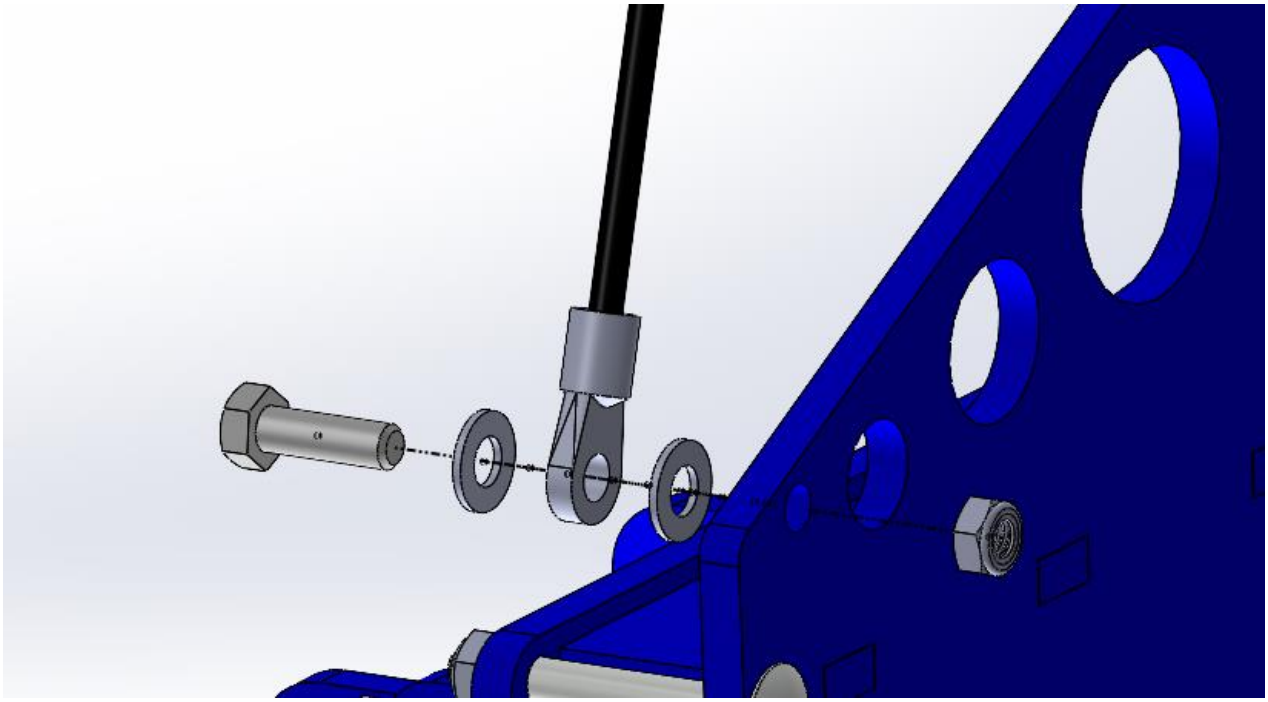
If your system has a coil spring tensioner, Install the spring onto the tension arm then the side plate.

Install the tension arm using the ½-13 x 1.75” carriage bolt, spacer, flat washer(s), and nylock nut. Tighten enough to eliminate side to side wobble. Overtightening can cause tracking issues. Additional washers are provided to fine tune the tracking.

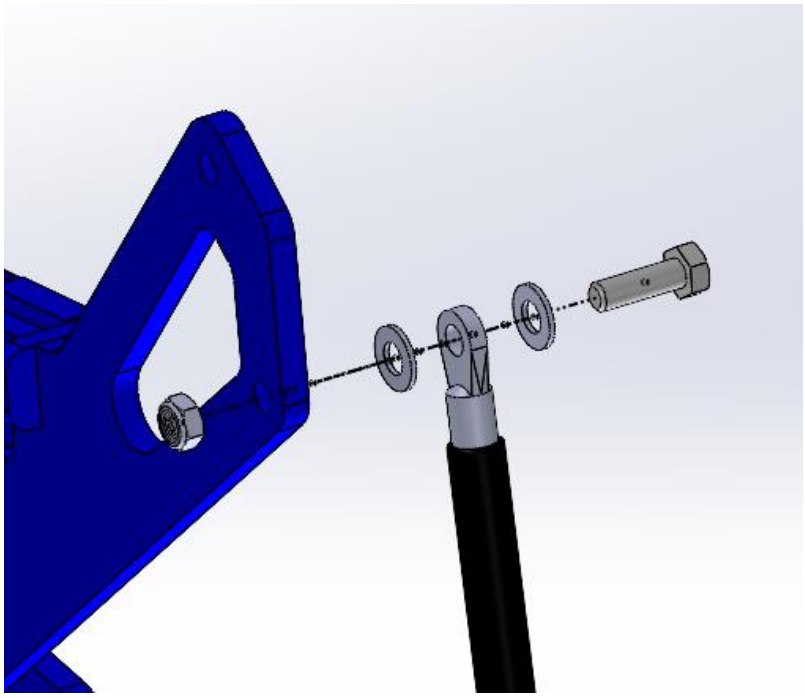


STEP 8 – Gas Spring (Optional replacement for coil spring)

Install the gas spring using 5/16-18 x 1.00” hex bolt, a flat washer on both sides of each eye, and nylock nut.



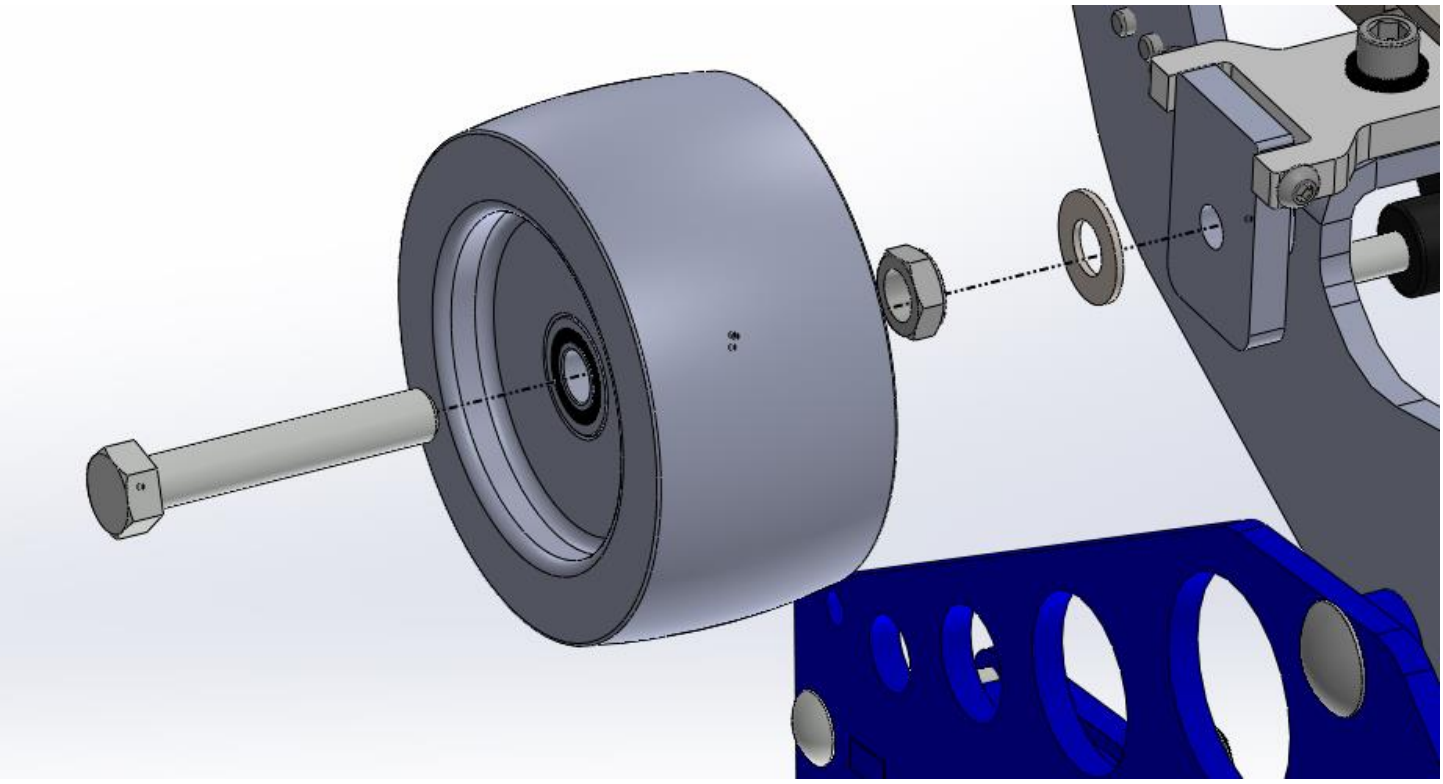
Do not overtighten the gas spring bolts. It will bind, cause tracking issues, and premature failure.



STEP 9 – Tracking Wheel

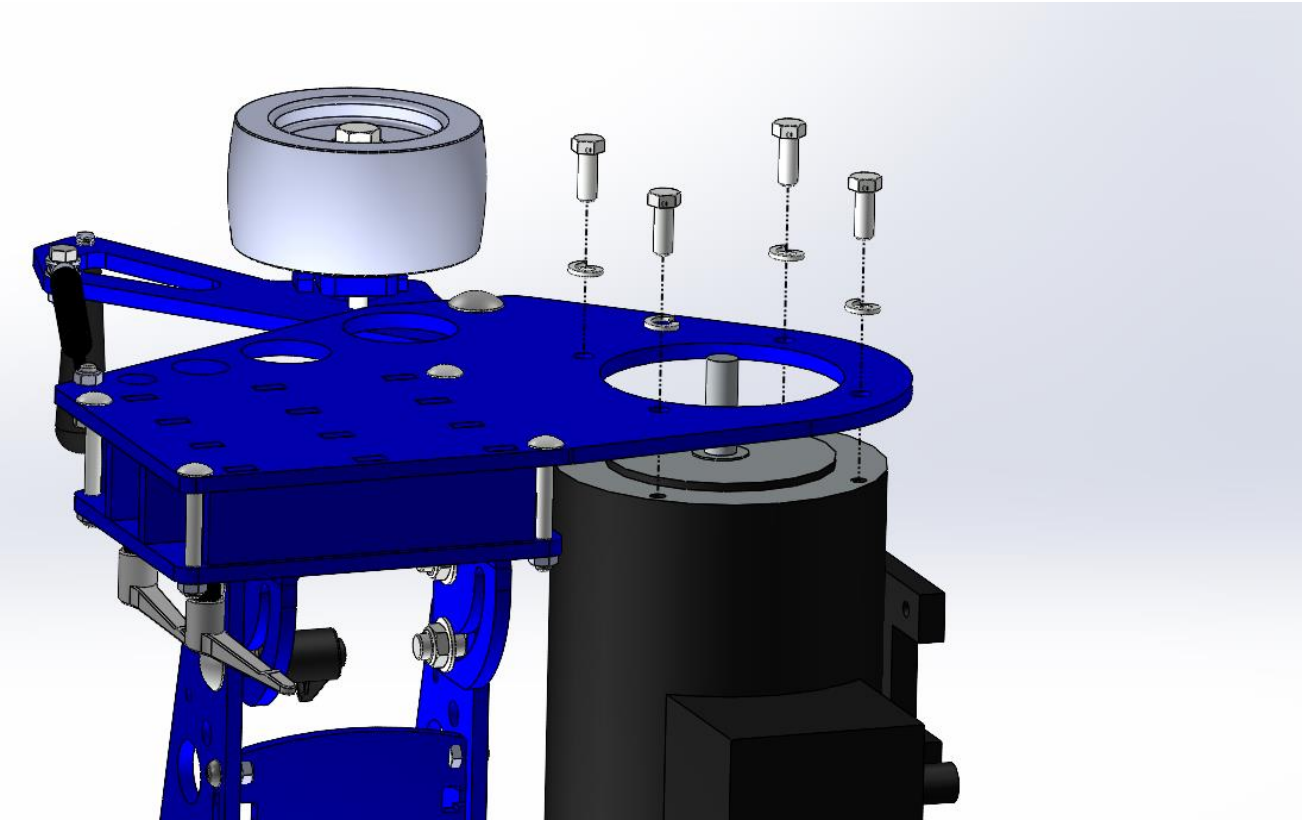
Install the tracking wheel into the tracking arm using ½-13 x 3” hex bolt, nylock nut, and flat washer.

BE CAREFUL NOT TO OVERTIGHTEN BEARINGS. THE WHEEL SHOULD SPIN FREELY BUT THERE SHALL NOT BE EXTRA SPACE BETWEEN THE BEARINGS AND NUT OR BOLT HEAD.



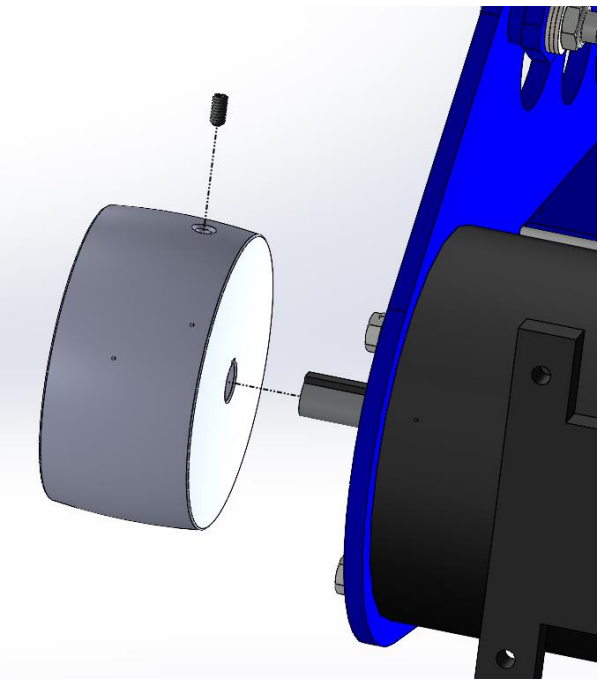
STEP 10 - Motor Install

Tilt the chassis into the horizontal position. Install motor into belt side plate using 3/8-16 x 1 hex bolts and split lock washers. Make sure the feet of the motor are facing the rear of the machine.

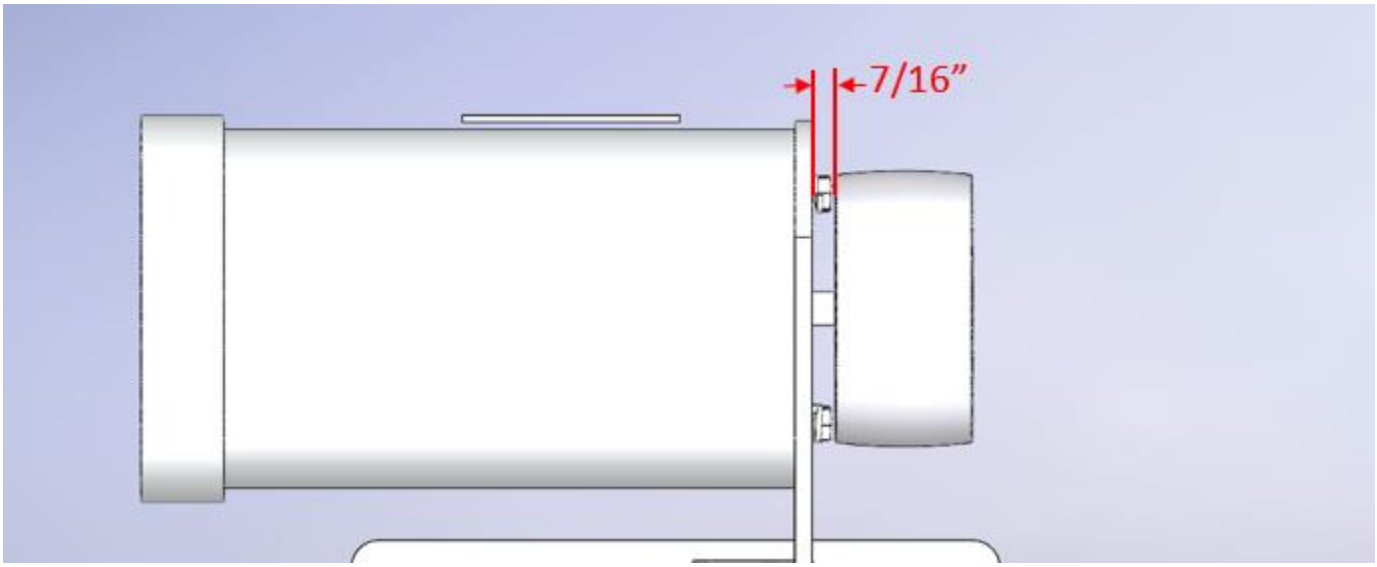


STEP 12 - Drive Wheel Install

Install drive wheel and secure with set screw.



Align with other wheels to ensure proper tracking. The drive wheel should be approximately 7/16” off of the side plate.



Additional Notes:

- Make sure all wheel centerlines are aligned with each other to ensure proper tracking. There may be some variance due to tolerance stack ups.
- To make sure the belt has enough tension, put the belt on all four wheels, pull and hold down the tension arm all the way, pull the platen arm out until the belt is tight, lock the platen arm in place, and release the tension arm.
- When adjusting tracking, start off rotating by hand or running the motor at a slow speed.
- Always adjust the speed on your VFD to 0 when starting after an attachment change
- The VFD Start/Stop switch is a three-way switch.
    - STOP (Bottom position)
    - RUN (Middle position)
    - START (Top Position, will spring back to middle)

PLACE ALL WARNING LABELS ONTO THE MACHINE IN A VISIBLE LOCATION.

Wiring Instructions

Below is a reference aid for the electrical wiring for your grinder. Please make sure your set up matches the manufacturers instruction supplied.

WARNING: HIGH VOLTAGE. DISCONNECT ALL POWER BEFORE ANY ELECTRICAL WORK

Variable Speed Motor Wiring

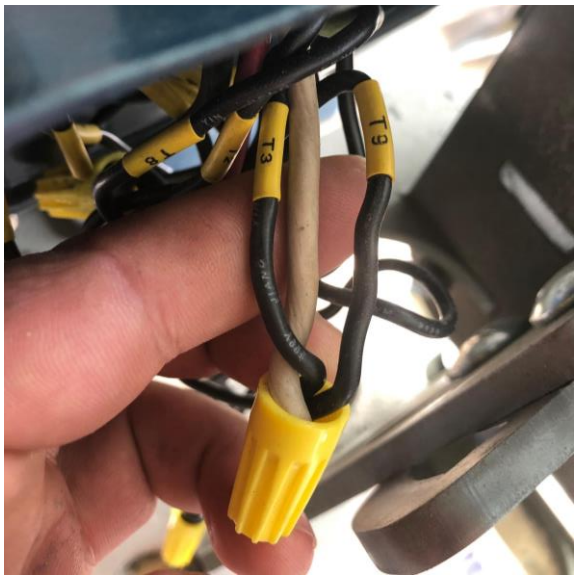
Open junction box and connect the 4 conductor cable as follows:

1. Green wire to ground screw

2. Connect T4, T5, and T6 together

3. Connect T1 and T7 to the 4 conductor cable black wire.

4. Connect T3 and T9 to the 4 conductor cable white wire.



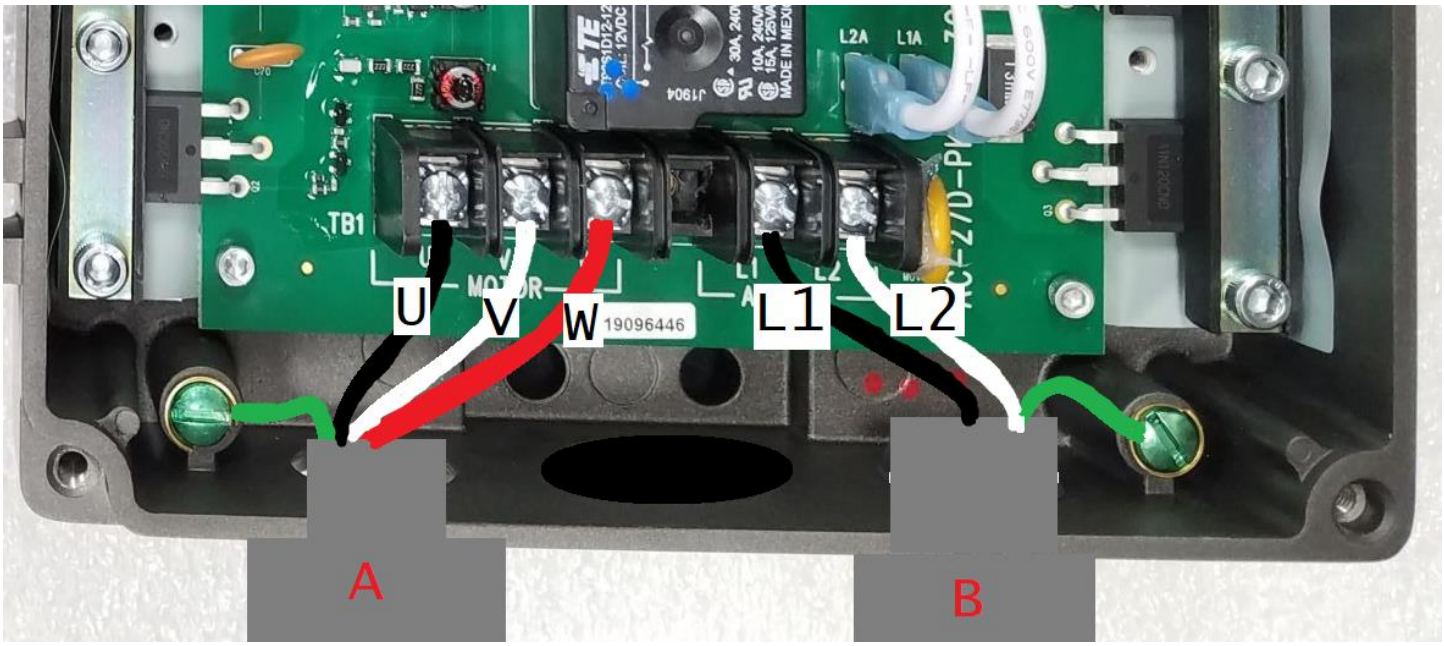
5. Connect T2 and T8 to the 4 conductor cable red wire.

   ****NOTE:** There are two wires(P1 & P2) that smaller than the others. These are not used. They can be left alone.

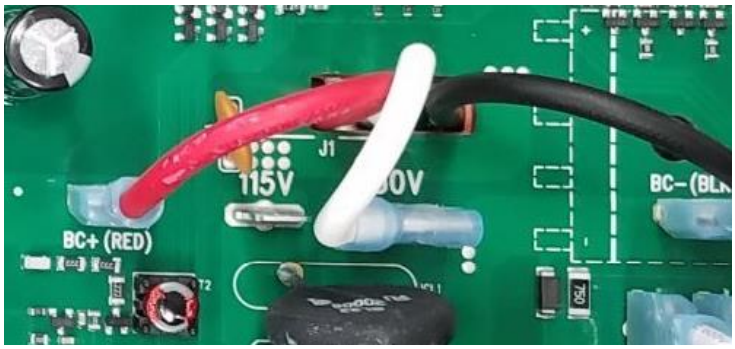
6. Close the motor junction box and tighten cord grip. (junction box can be rotated to desired orientation, arrives with cord grip coming out of the bottom)

VFD Setup

1. Install cord grips and wire 4 conductor cable (coming from motor). Strip 4-6” of cable jacket and separate each wire. Strip and install supplied ferrules and y connector(ground). Install according to the diagram as shown in “A” below. <u>If the motor runs backwards, switch the red and white wires.</u>
    a. GREEN – GROUND SCREW
    b. BLACK – U
    c. WHITE – V
    d. RED – W
    a. Install cord grips and wire 3 conductor cable (coming from motor). Strip 4-6” of cable jacket and separate each wire. Strip and install supplied ferrules and y connector(ground). Install according to the diagram as shown in “B” below. Turn cord grips until tight after connections are done.
    b. GREEN – GROUND SCREW
    c. BLACK – L1
    d. WHITE – L2



2. Set the input voltage jumper (J1) to the correct supply voltage (230V shown in photo). Standard Household voltage is 115



3. Close VFD. Install plug or directly wire into supply power junction box.