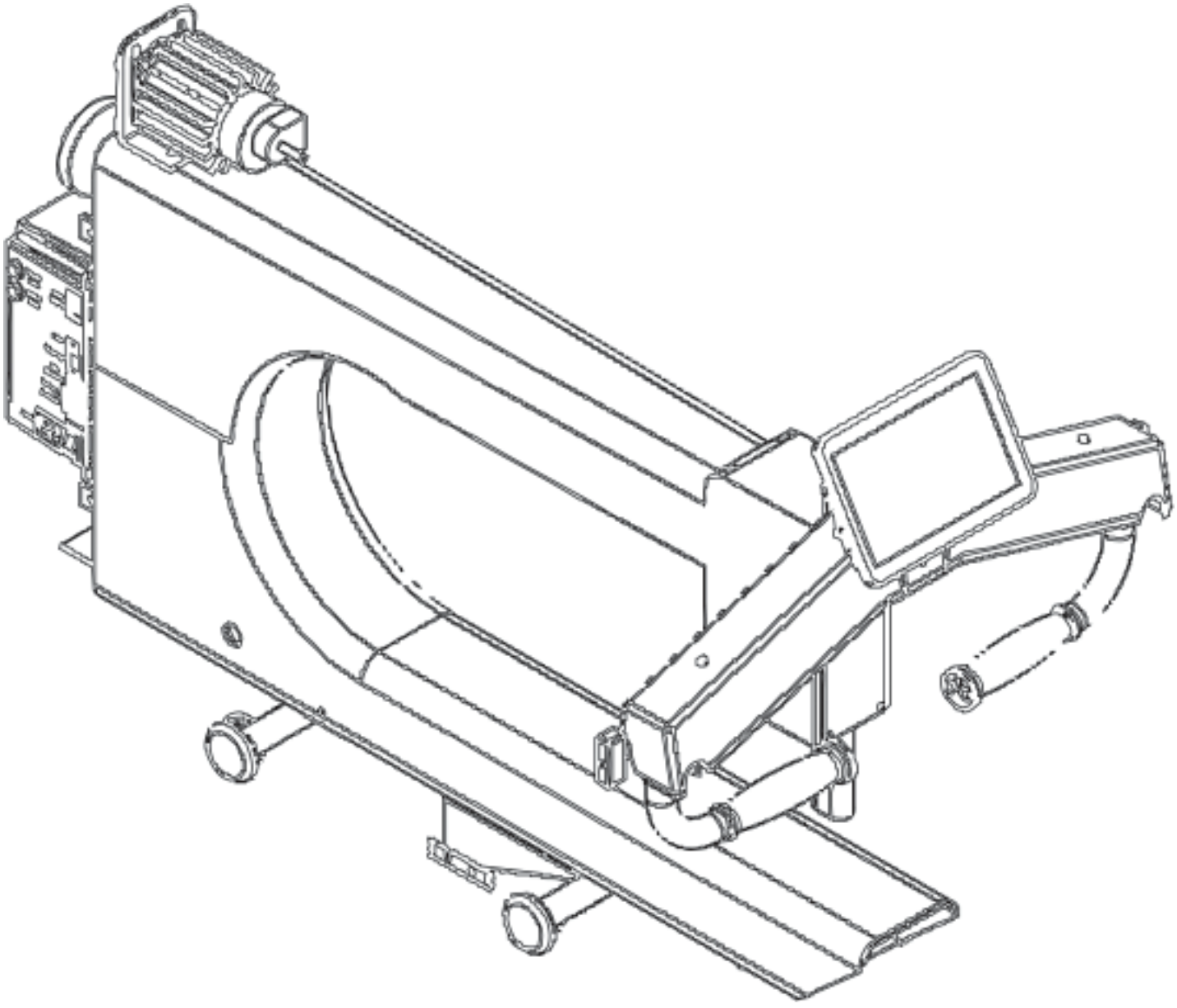
Quilt EZ

PerfectStitch

Machine Upgrade

Nolting Assembly Instructions



Revision: 12/22/15

Table of Contents

Aides

1

2

3

Before You Begin

Test the Machine

Before installing the upgrade, make sure that the machine is fully opperational. Do not remove any electronics until the machine has been tested.

Determine Pulley Size

To get the correct ratio you will need to make sure that you install the correct size motor pulley.

Measure the machine pulley from end to end.

Divide that measurement by 1.5

The divided number translates to the ratio and corresponding size of pulley. This number is unlikely to be a whole number, round up or down to the nearest whole number.

Use this rounded number to choose the correct pulley size. The pulley diameter should equal the rounded number.

Pulley Sizes

1”
1 1/2”
2”
3”

Aides

Tools

- ☐ Power drill
- ☐ Saftey glasses
- ☐ Hex key set
- ☐ Hammer
- ☐ Punch
- ☐ Electrical tape
- ☐ Hack saw
- ☐ #1 Phillips Screwdriver
- ☐ #2Phillips Screwdriver
- ☐ #30 drill bit
- ☐ #29 drill bit
- ☐ #25 drill bit
- ☐ #7 drill bit
- ☐ 3/4” drill bit
- ☐ 3/8” drill bit
- ☐ Tap wrench
- ☐ #1 4/20 tap
- ☐ #8-32 tap
- ☐ #10-24 tap
- ☐ Tapping oil

Perfect Stitch Parts

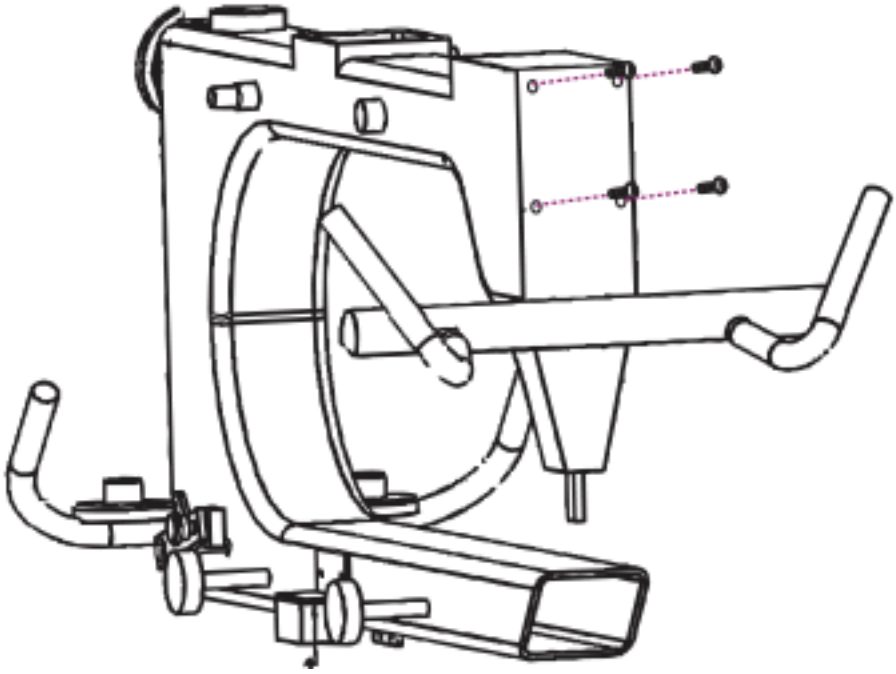
- ☐ (1) Handlebar assembly [106MA002B-Black]
- ☐ (1) External remote cable [105AW006]
- ☐ (1) 110V Power cable [AB178]
- ☐ (2) Motor heat sink [AB173]
- ☐ (1) Rocker arm cover [112EW003-Black]
- ☐ (1) Upgraded rear handlebar assembly [105AW011A-UPGRADE BLACK-NO METALS]
- ☐ (1) Index sensor assembly [Q-E-UNI-PER-MAG-1]
- ☐ (1) Index bracket [Q-UNI-PER-BRK-1]
- ☐ (1) Index L bracket short [Q-UNI-MAG-2]
- ☐ (1) Internal remote cable [105AW007]
- ☐ (1) 10 pin extension 300mm [114EW007A]
- ☐ (1) 9 pin extension 300mm [114EW008A]
- ☐ (1) Encoder assembly set- includes 2 encoders [130AA007A]
- ☐ (1) 180W Motor [105EW57400-AMP]
- ☐ (1) Motor Bracket [Q-UNI-MOT-1]
- ☐ (1) Motor Belt [2L130]
- ☐ (1) PCB control box [112e001a]
- ☐ (1) Touch screen display either:
  Android 10" [106AA009]
  Android 7" [106AA015A-7]
  Linux 7" [110EA164A-PS]

1 - Disassemble the Machine

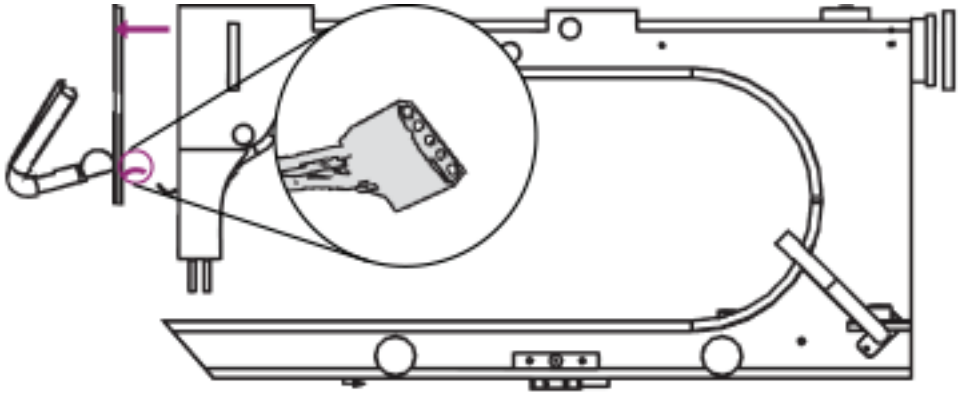
1A - Remove the Handle Bars, Back Cover, Motor

Remove the Handle Bars

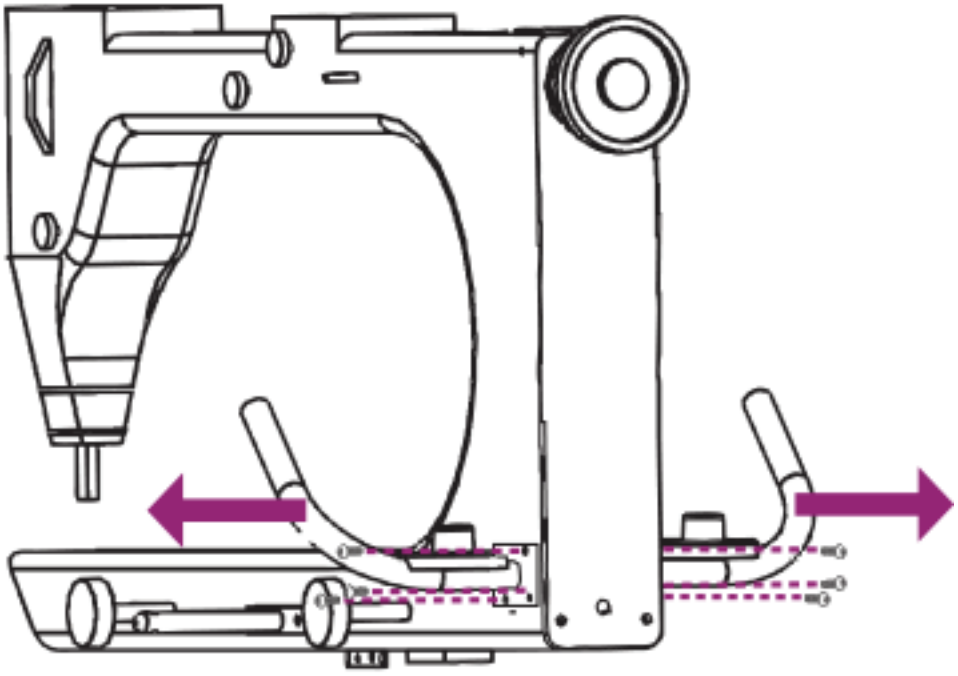
1. Remove the four screws attached to the front face plate.



Remove the face plate, and disconnect the interior wire.

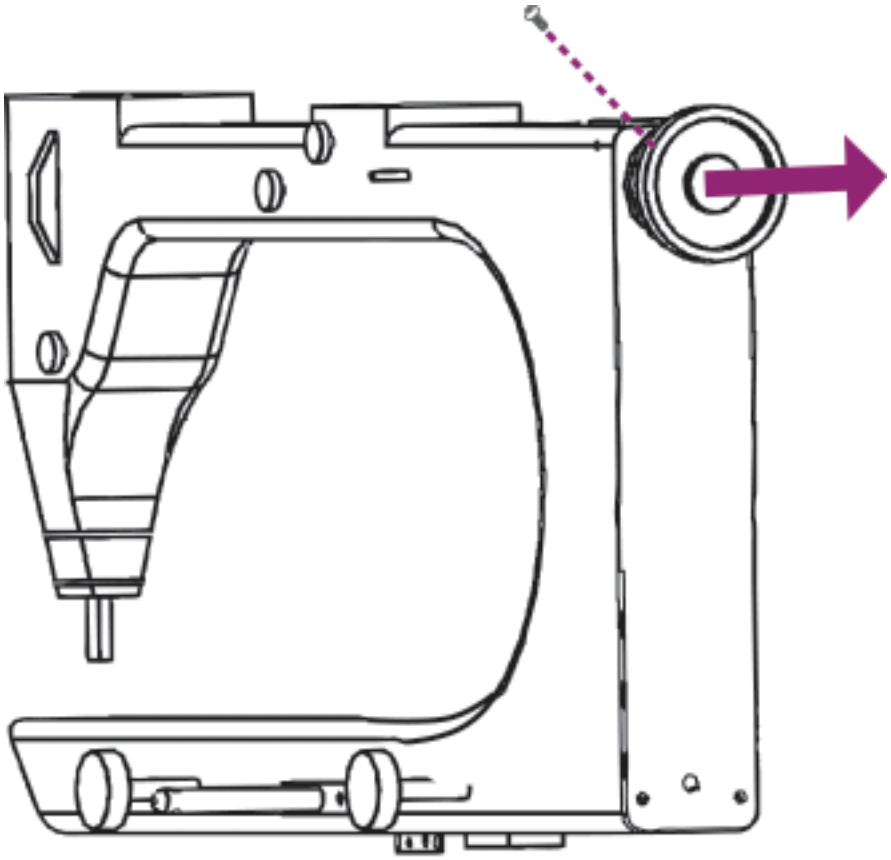


Remove the three screws attached to each of the rear handlebars.



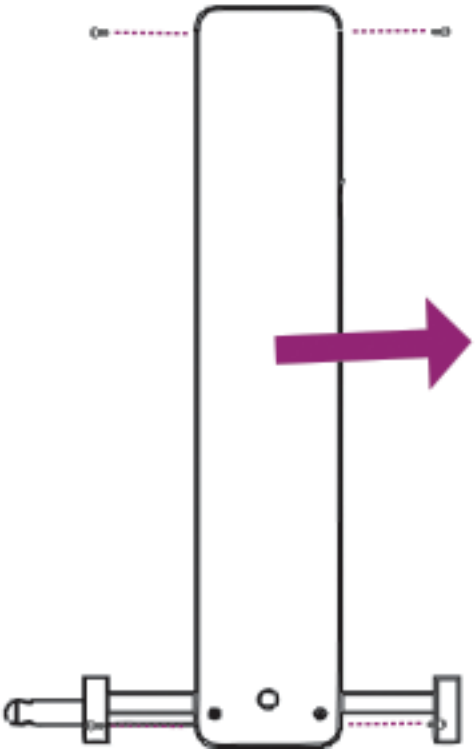
Remove Hand Wheel

1. Remove the screw from the hand wheel and slide the handwheel off.



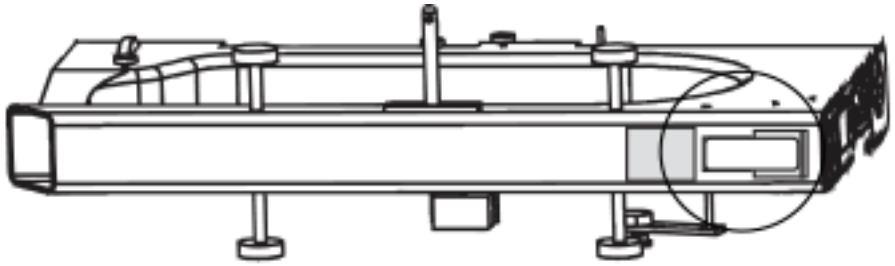
Remove Back Cover

1. Remove the four screws from the back face plate, and remove it from the frame

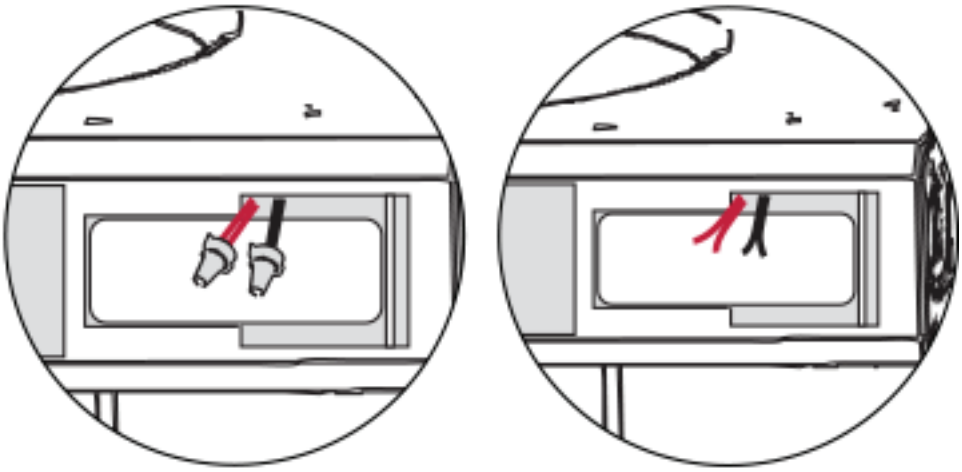


Modify Motor

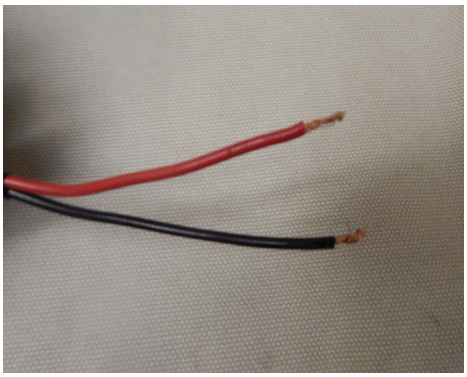
1. Find the two red wires and two black wires connected by the wire nut.

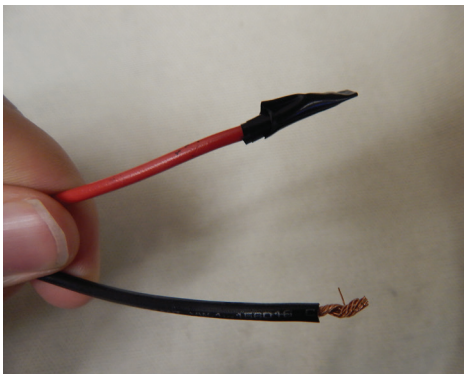


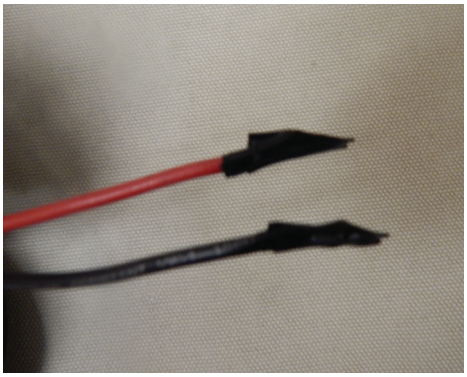
2. Remove both wire nuts to disconnect the wires.



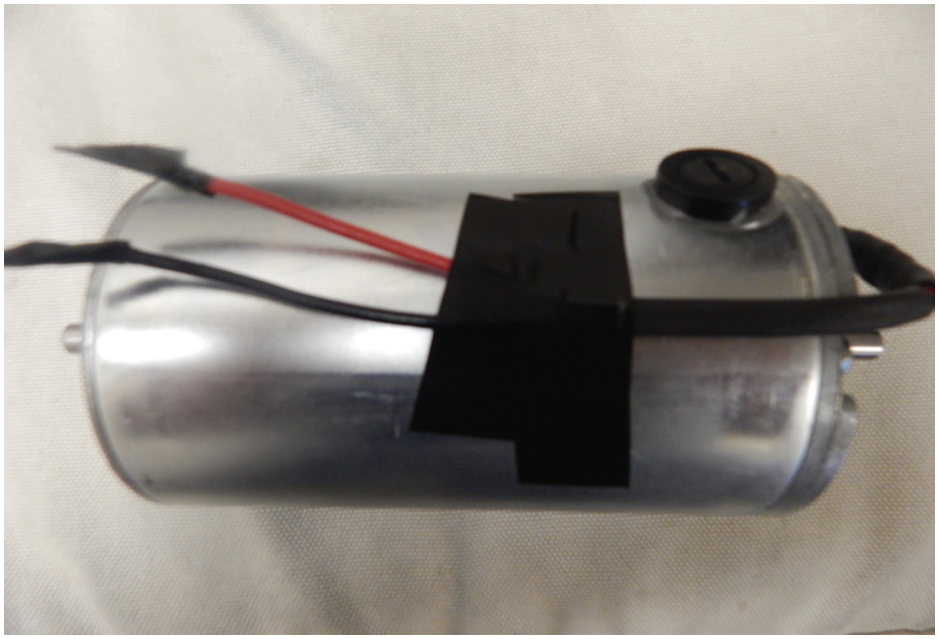
3. Wrap each wire in electrical tape to prevent them from making contact.







4. Fasten the two wires to the side of the motor with electrical tape so that they are out of the way of any moving parts.



2 - Modify the Machine

2A - Modify Right Rear Handle Bar, Carriage

Modify the Rear Handlebars

1. Use a hacksaw to cut off the tip of both rear handlebars. Cut enough to remove the flange on the inside of the bar.

2. Using a 3/8” drill bit, drill a hole at the base of the handlebar tube for the handlebar button wires.

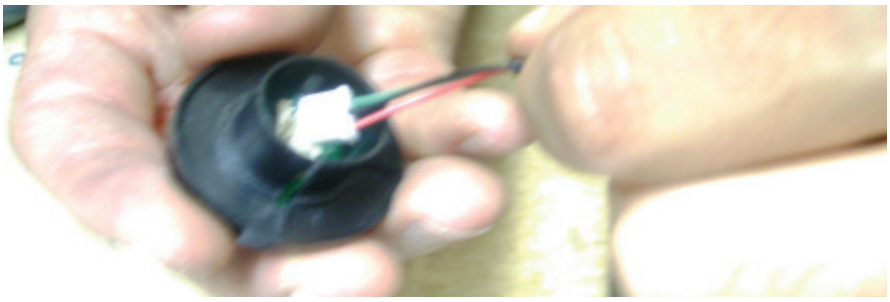
3. Pull back the handle bar foam a 1/4 of an inch and drill two holes.

   Use a #30 drill bit, drill two holes opposite eachother through the end of the handle bar.

4. Feed the wire through the bottom of the handlebar.

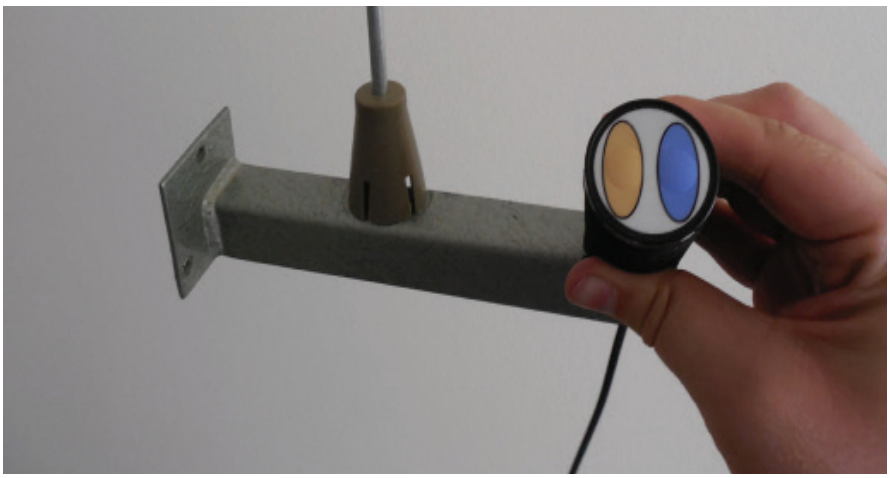
   Plug the connector into the port on the handle bar buttons.

   Perform a tug test by lightly pulling on the wire to make sure it is secure.



5. Align the groove on the buttons with the holes, then press the buttons into place in the handlebar.

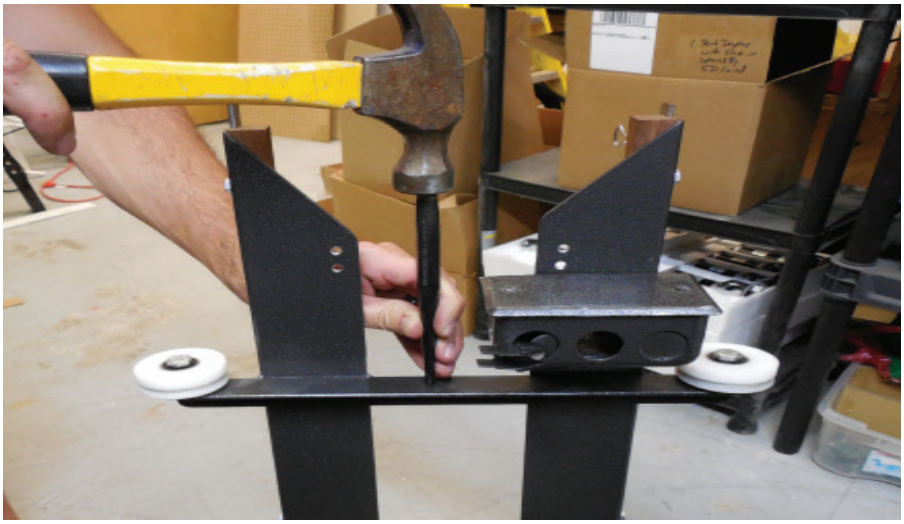
6. Align the buttons so that they run vertically in line with the handlebar.



7. Insert a 4 x 1/4 screw to hold the button holder in place.

Modify the Carriage

1. Use a tape measure to find the center of the carriage cross bar, then use the tap, mark it.



2. Using a #7 bit, drill a hole where you marked the center of the carriage crossbar for the encoder.

3 - Reassemble the Machine

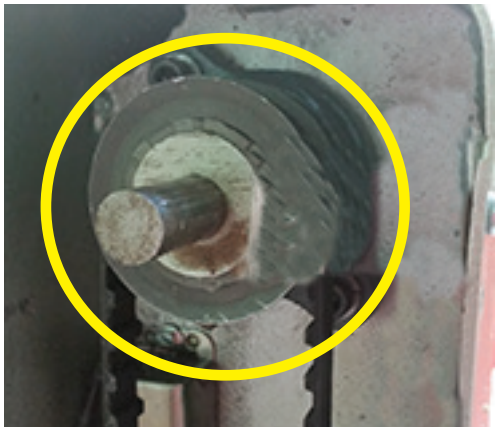
3A - Attach Magnetic Index Sensor, Attach Motor, and Belts

Attach the Index Sensor

1. You will be mounting the magnetic index to the pulley located at the rear of the machine.

Option 1

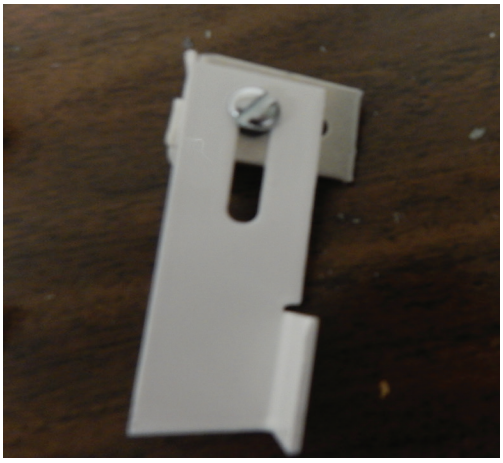
Option 2



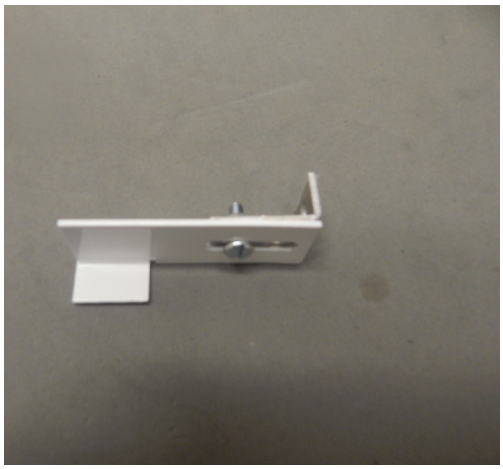
Option 1

2. Assemble the Index Sensor Bracket. Use a nut and bolt to attach the longer white bracket to the smaller chrome bracket.

   Cut the bracket as needed to mount the index sensor.



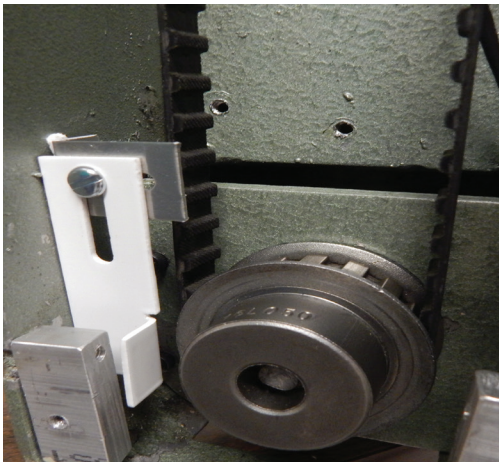
Option 2



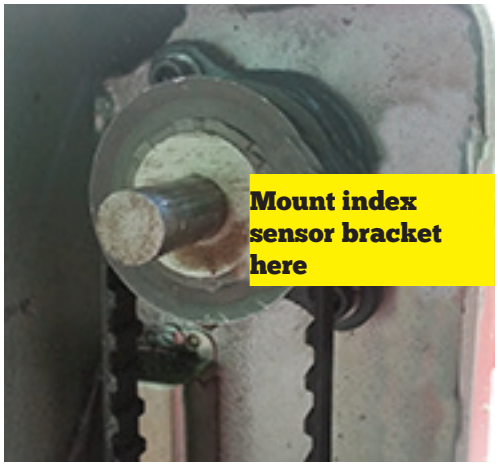
3. Use industrial strength double sided tape to mount the Index Sensor Bracket to the side wall of the machine.

   For option 2 mount the bracket to the right side wall so that it hangs over the front of the pulley. Cut as needed.

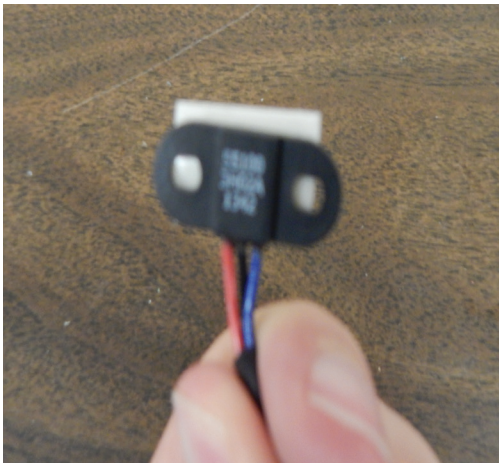
Option 1

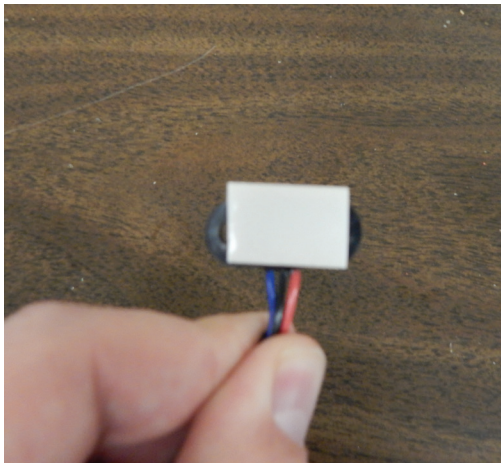


Option 2



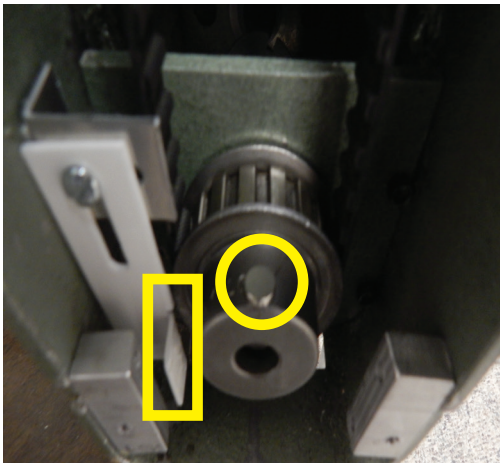
4. Apply industrial strength double sided tape to the Index Sensor.



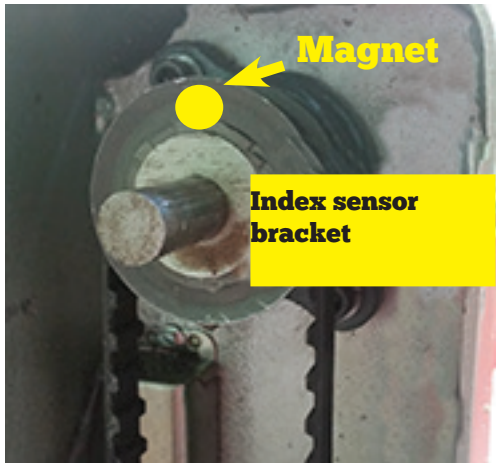


Option 1

5. Use Epoxy to mount the magnet to the pulley. Position the magnet so that as it revolves it will pass by the bracket.



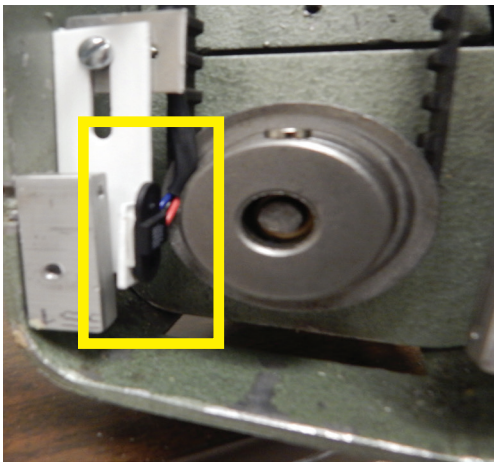
Option 2



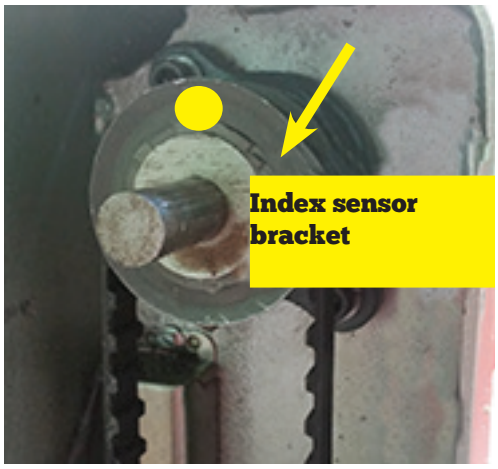
6. Attach the Index Sensor to the Index Sensor Bracket.

   For option 2 mount the sensor to the back of the sensor bracket so as the magnet passes it will pass the sensor.

Option 1



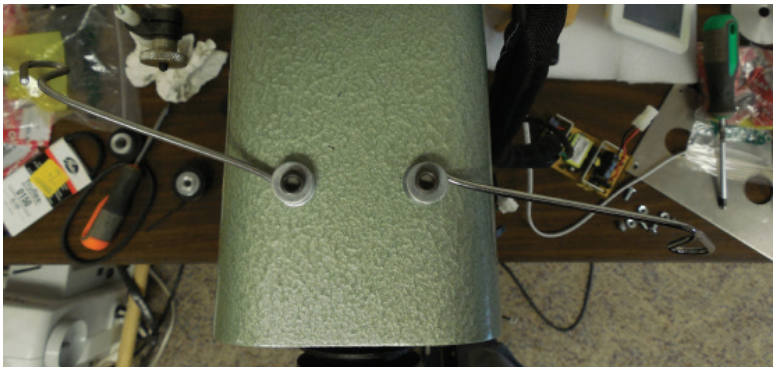
Option 2

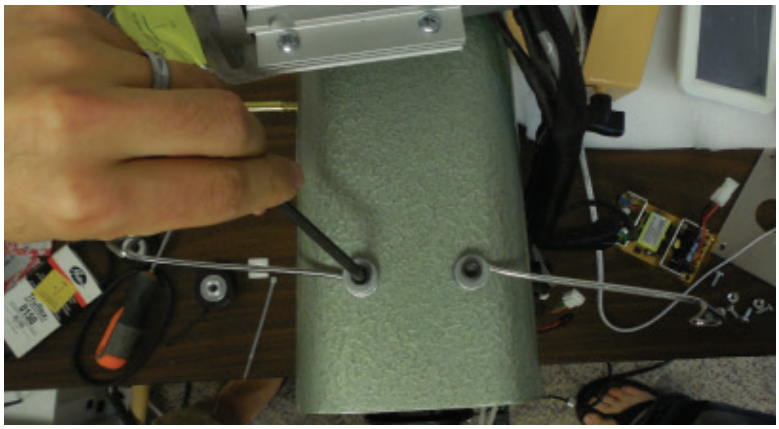


7. Run the Index Sensor wire so that it is out of the way of moving parts.

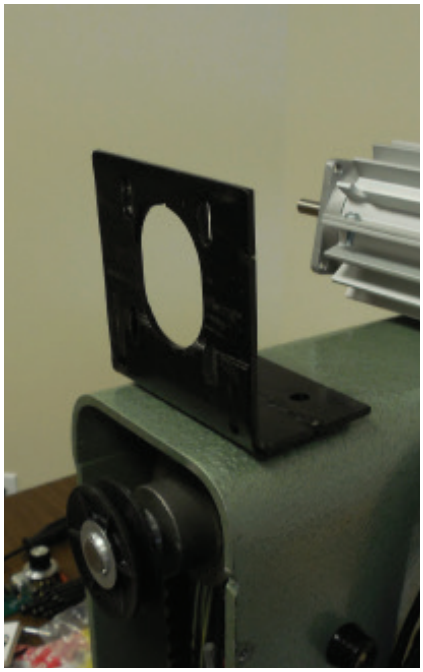
Attach Motor

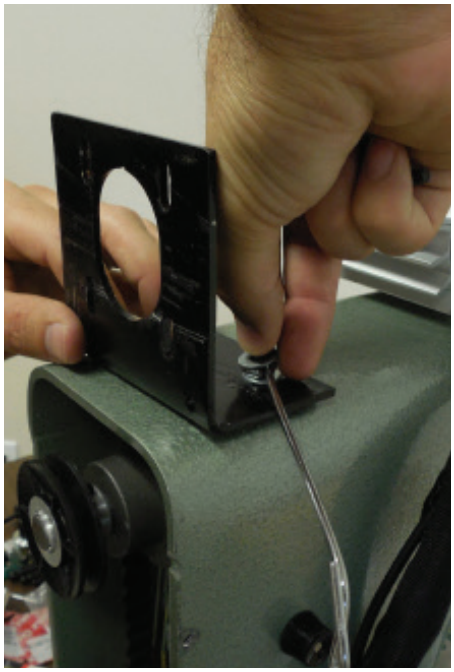
1. Remove the thread guides located at the rear top of the machine.



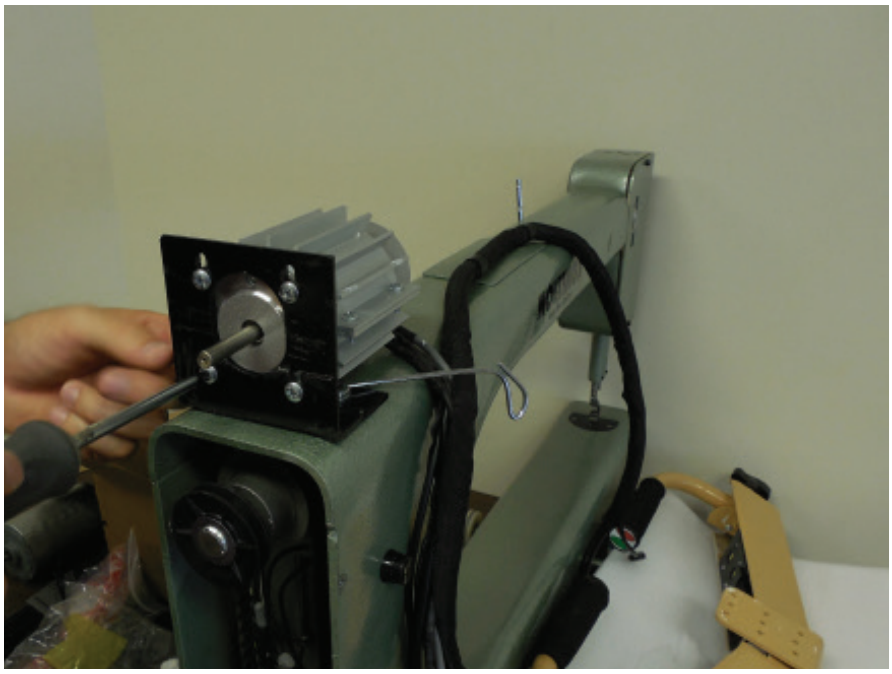


2. Position the motor mount so that the bracket aligns with the thread guide screw holes. Reattach the thread guides.

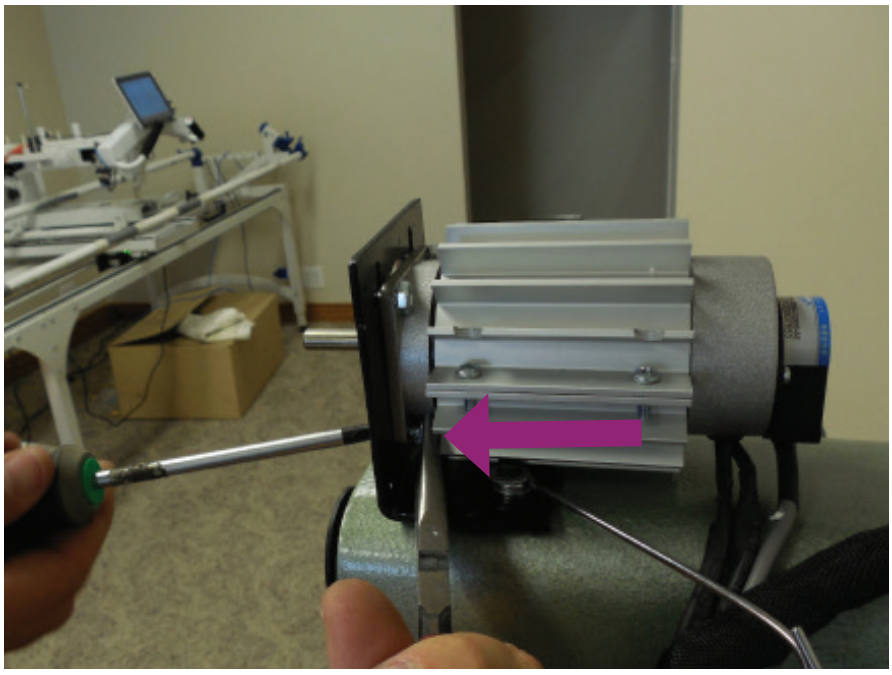




4. Attach the motor to the bracket with the four 10-24 x 1/2 in. screws.

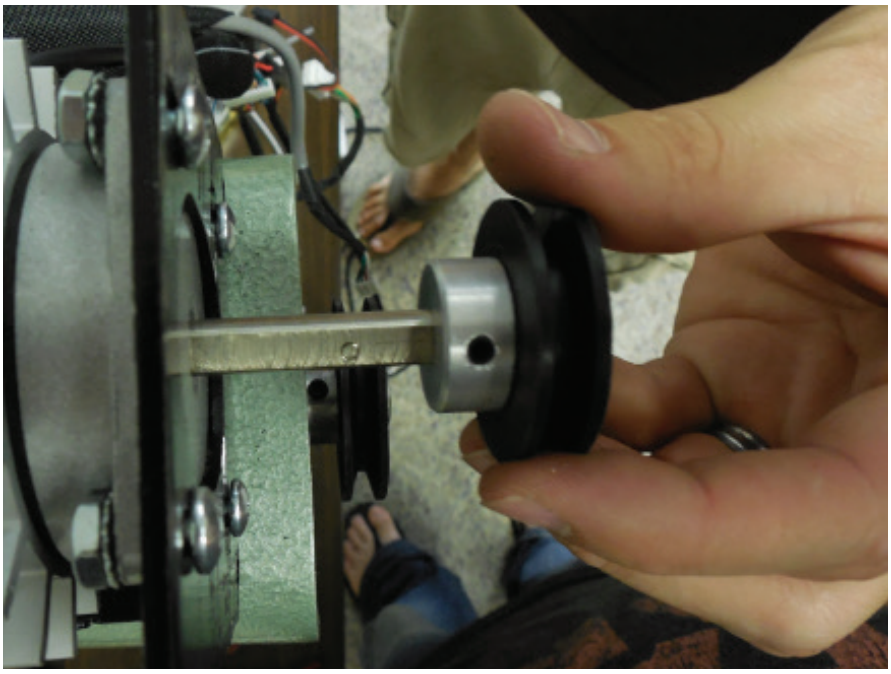


5. Use the 10-24 k-lock nuts to mount the motor in place.

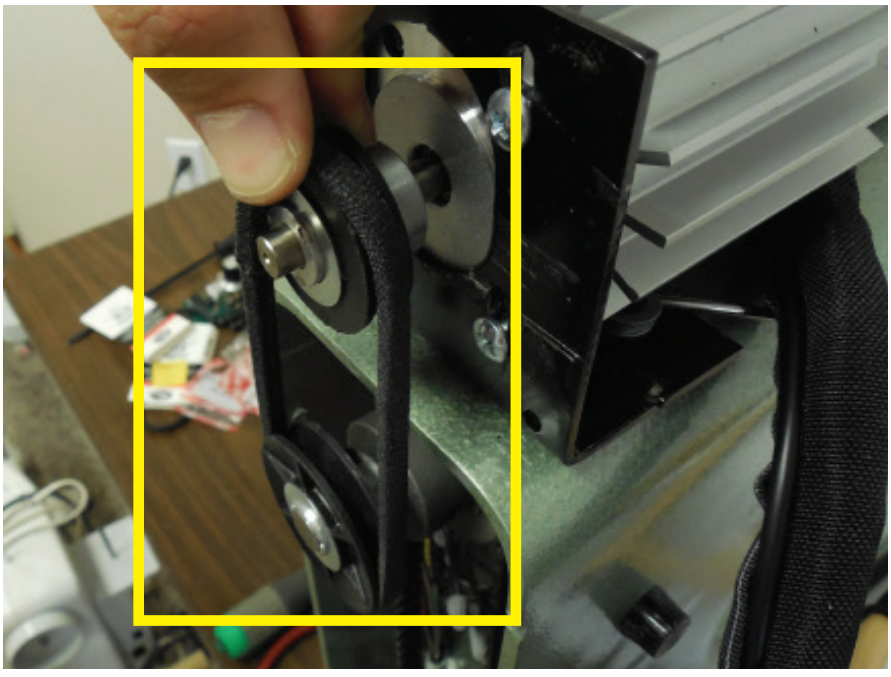


6. Align the provided belt pulley so that the screw hole aligns with the flat side of the motor shaft.

   Once aligned, tighten into place.



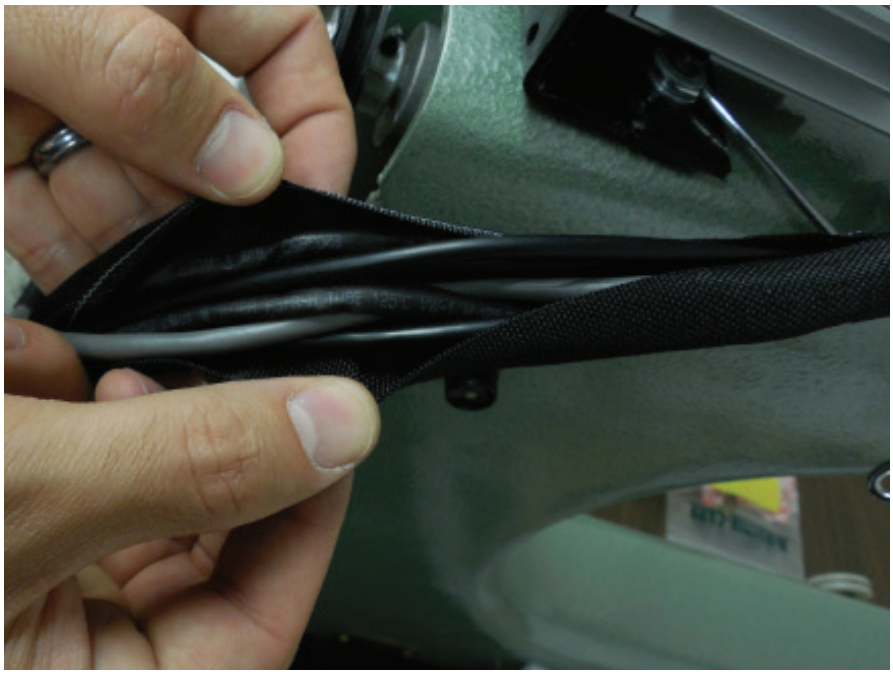
7. Loop the belt around the two pulleys.



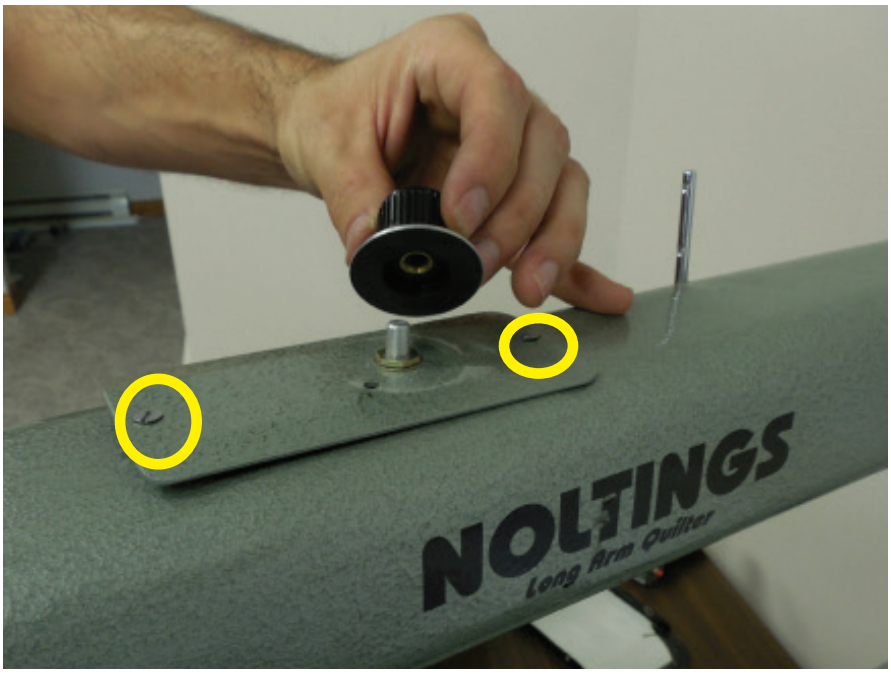
3B - Attach Wires, Rear Cover, Control Box

Attach the Handle Bar and Motor Wires to the Machine

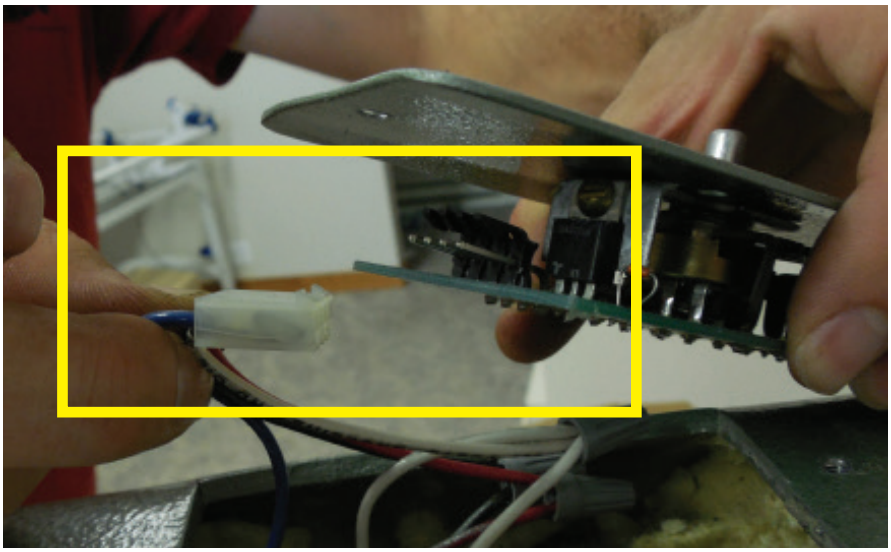
1. Wrap the front handlebar wires and the motor wires in the provided nylon sheath.



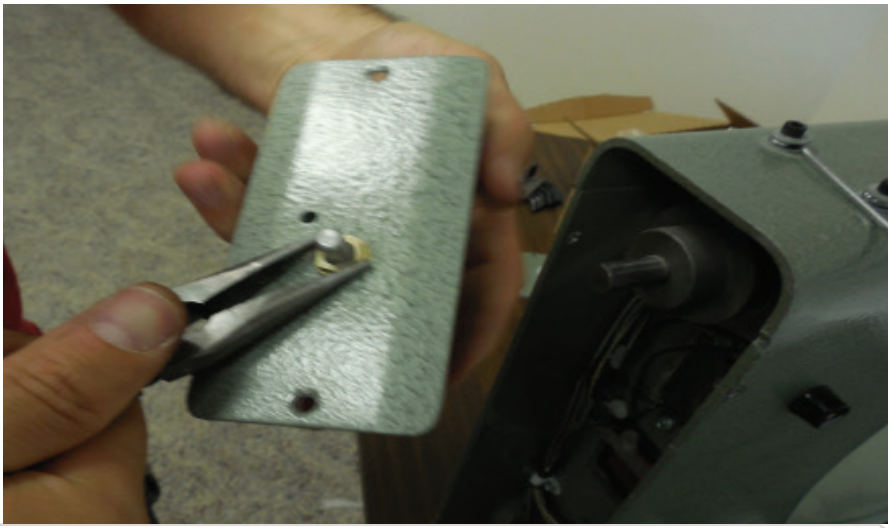
2. Remove the two screws on the sides of the plate, then remove the top dial.



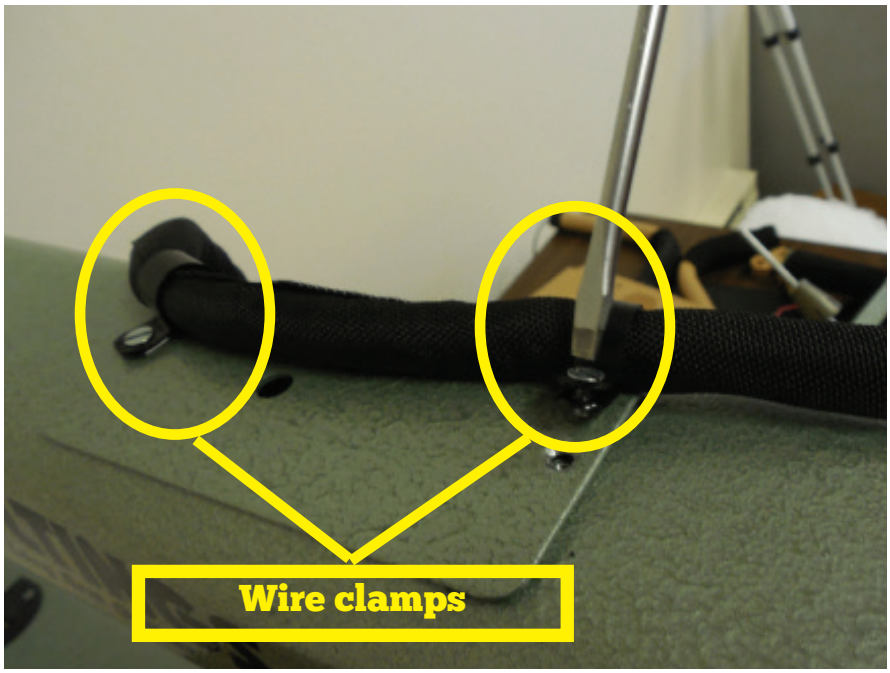
3. Unplug the top dial PCB board and remove the top dial bolt using needle-nose pliers.



Remove the nut and bolt on the dial cover.



4. Replace the cover, and then use the existing holes to attach the wire clamps to hold the mesh wire in place on the machine.



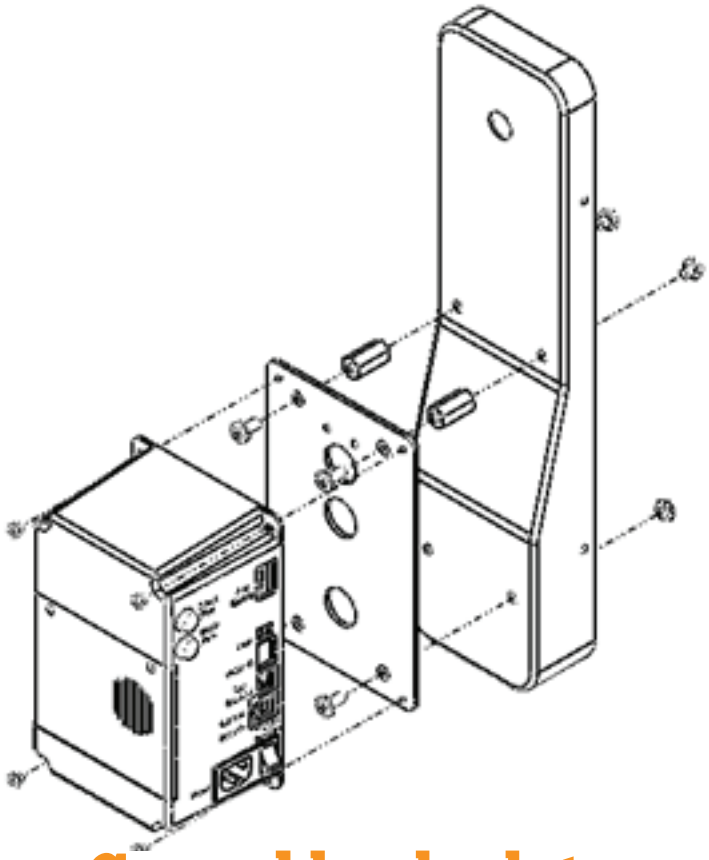
5. Attach a third cable holder using the screw on the machine head.

1. **Attach rear cover and control box**

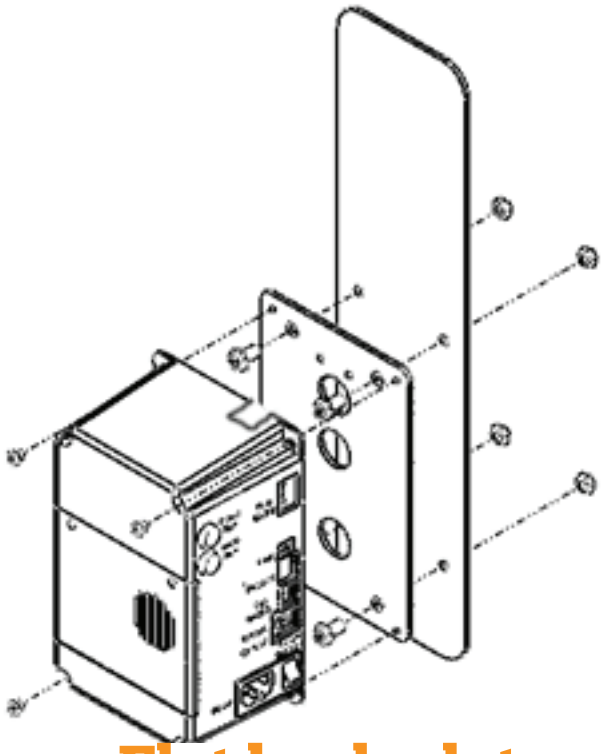
   The machine will have either a curved back plate or a flat back plate.

   For curved backplates, continue to step 2a

   For flat backplates, continue to step 2b



Curved back plate

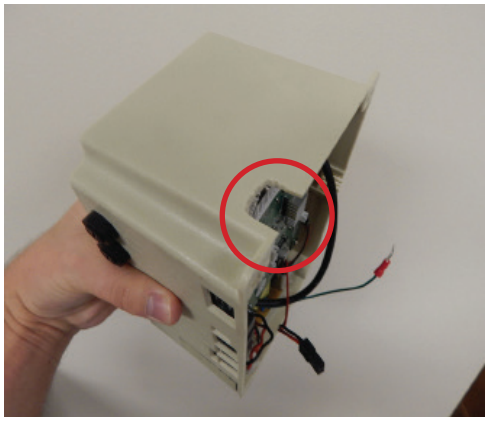


Flat back plate

2a. *This step is only for flat rear covers. If your cover is curved (shown in step 1) continue to next step*

You will need to make a cutout on the PCB to fit the mesh wire sleeve.

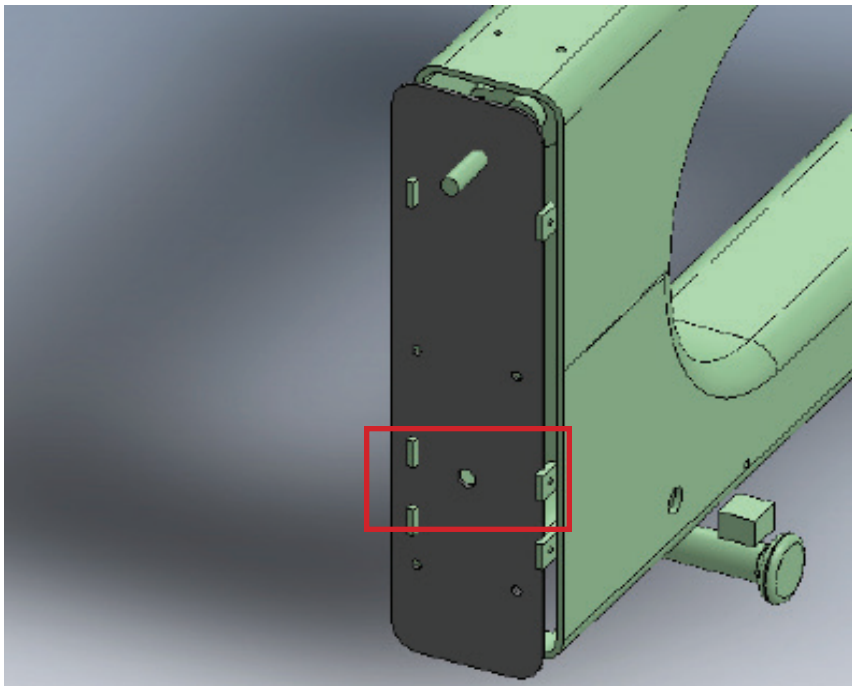
You will attach the PCB box in a later step.



2b. Drill a hole large enough for the index sensor wire to run through. placement doesn't matter, the PCB will conceal it when it is mounted.

Do the same if your machine has the curved back plate. (shown in step 1.)

Feed the index sensor out through this hole

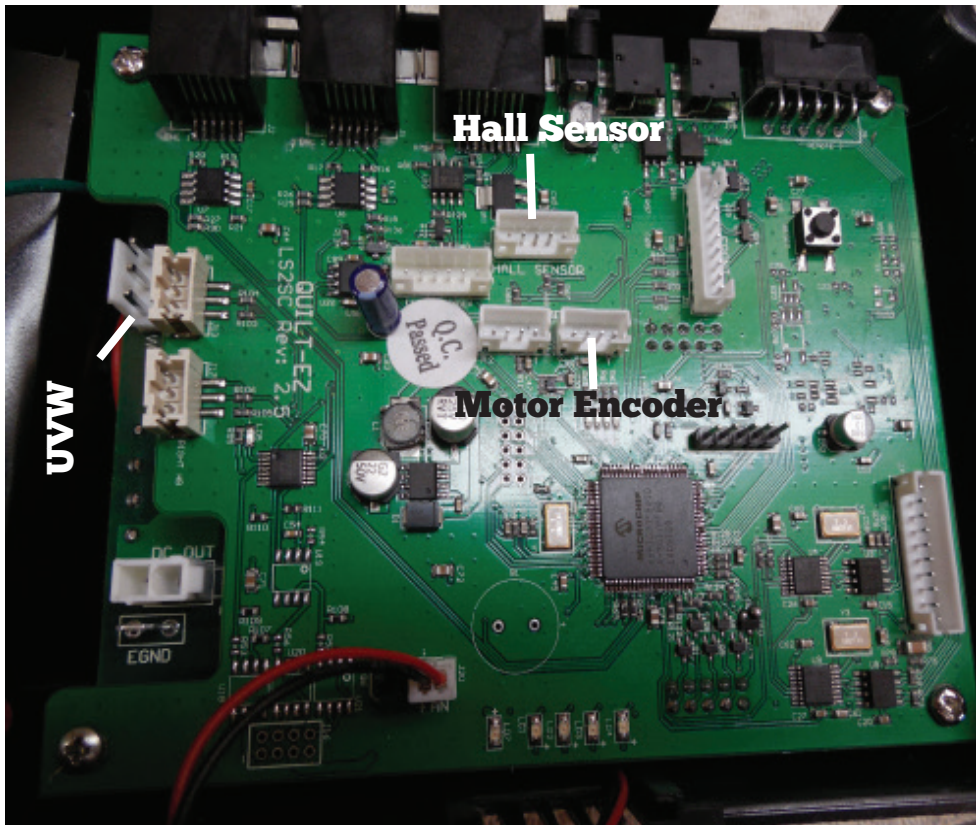


Connect Motor Wires

3. Connect the motor wires as shown at right.

   Each of the ports will be labeled. Be sure to plug into the correctly labeled ports on the PCB.

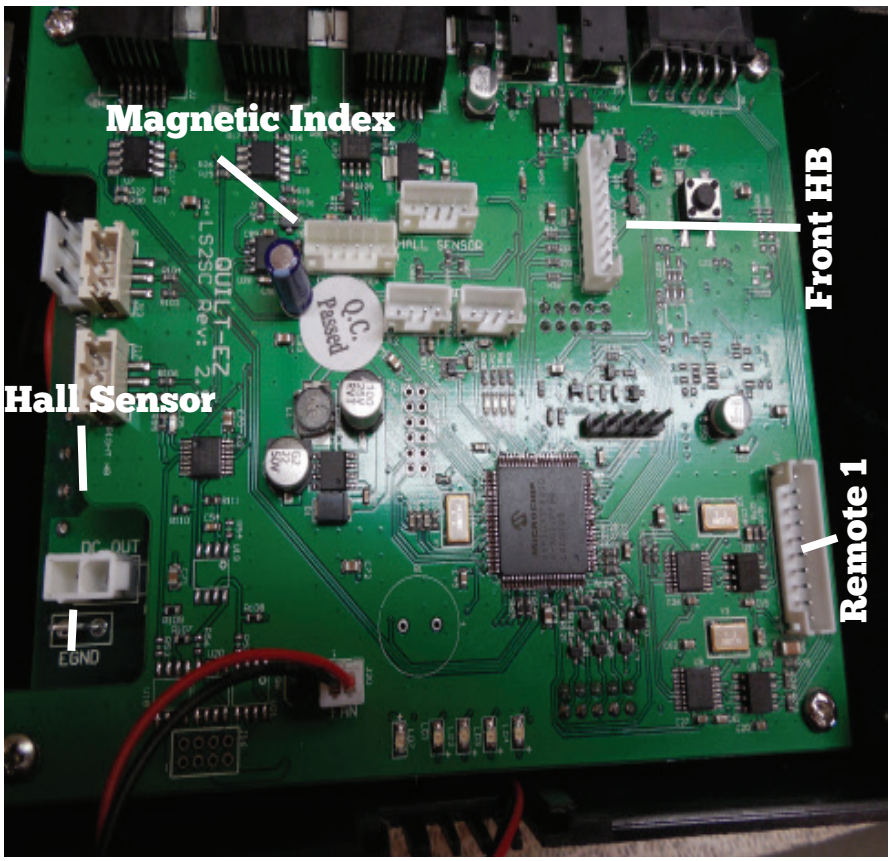
Motor Wires



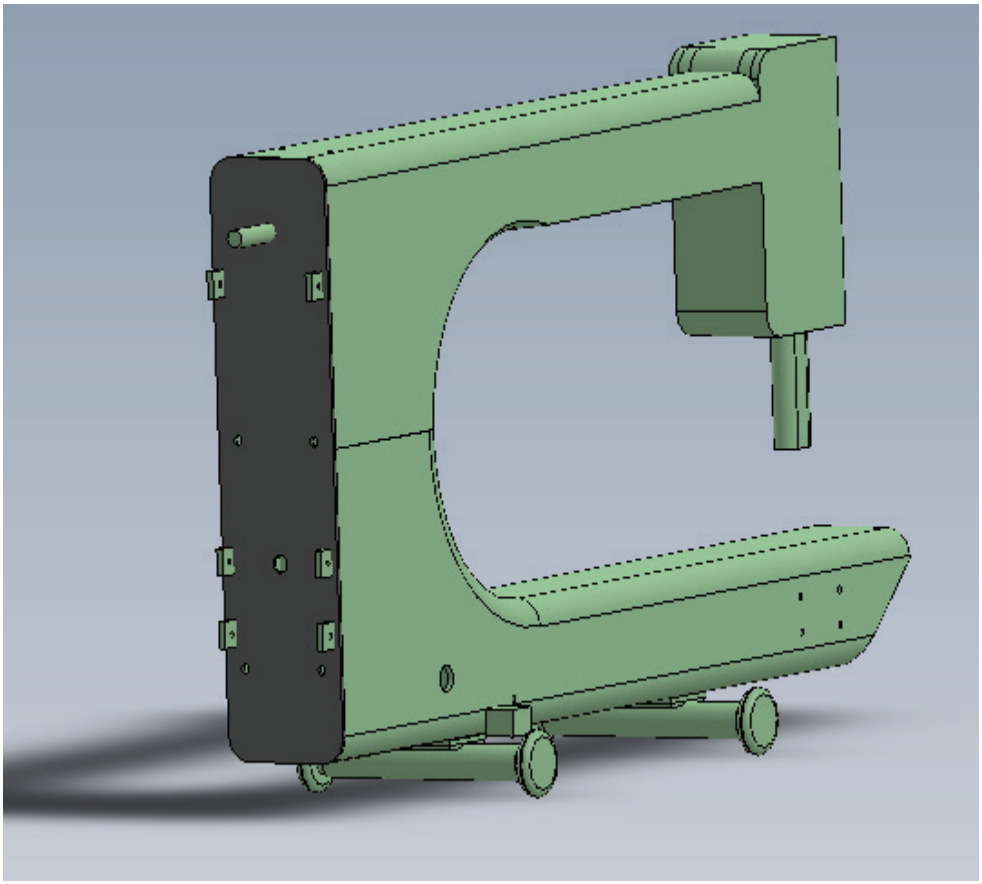
Connect Index, Handle Bars

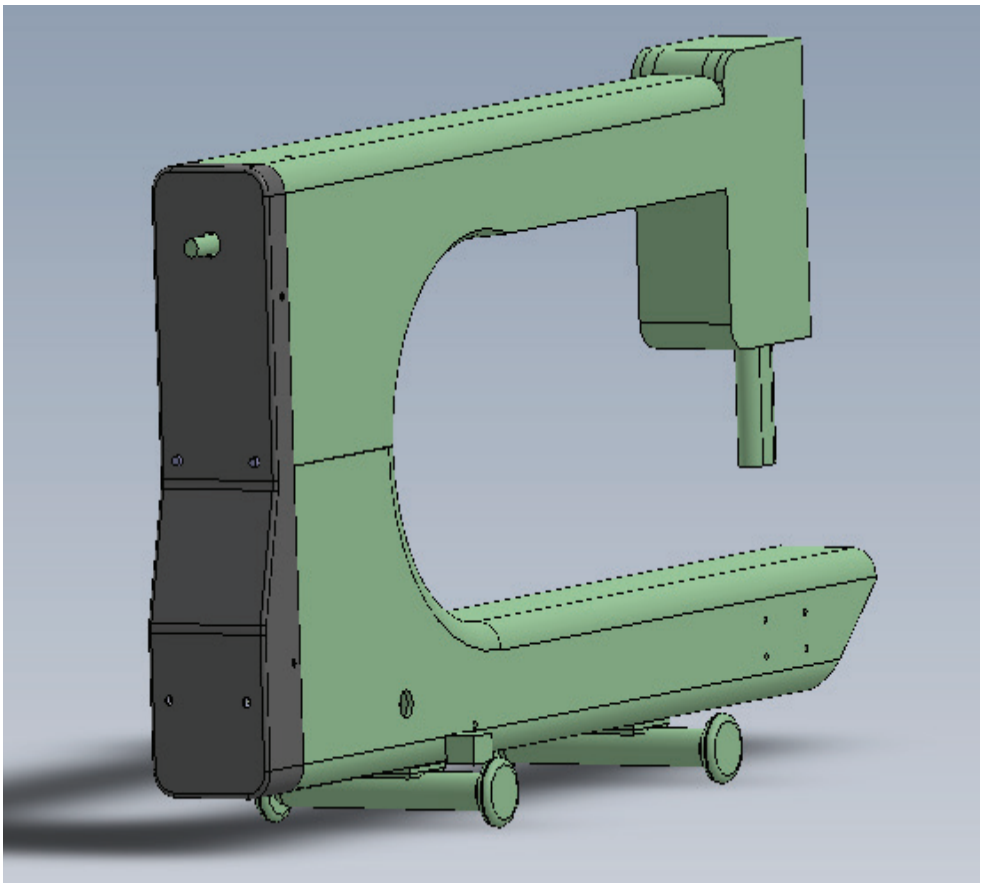
4. Connect the handle bar and display wires as shown at right. Each of the ports will be labeled. Be sure to plug into the correctly labeled ports on the PCB.

Handle Bar, Display Wires

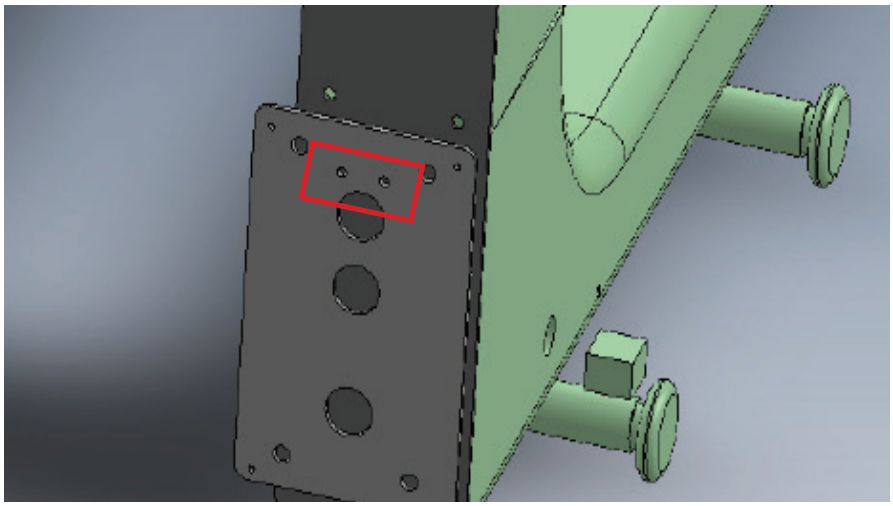


5. Reattach the backplate to the machine using the original hardware.

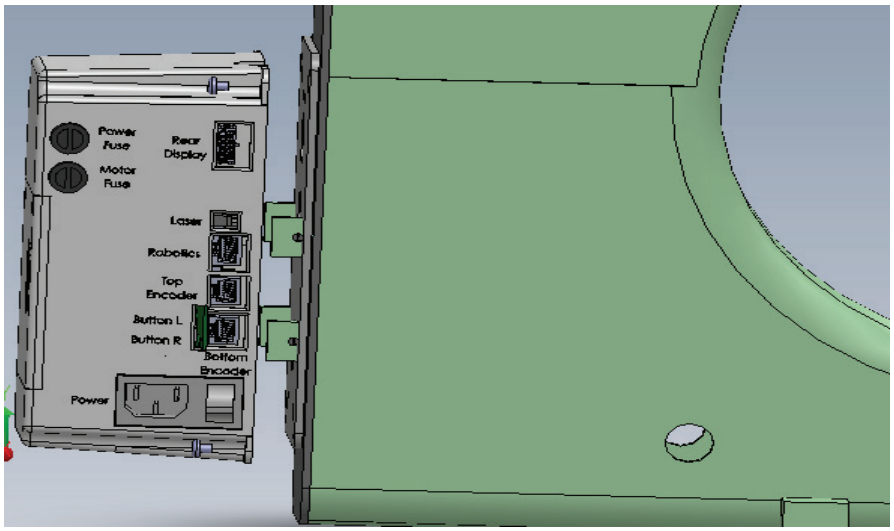


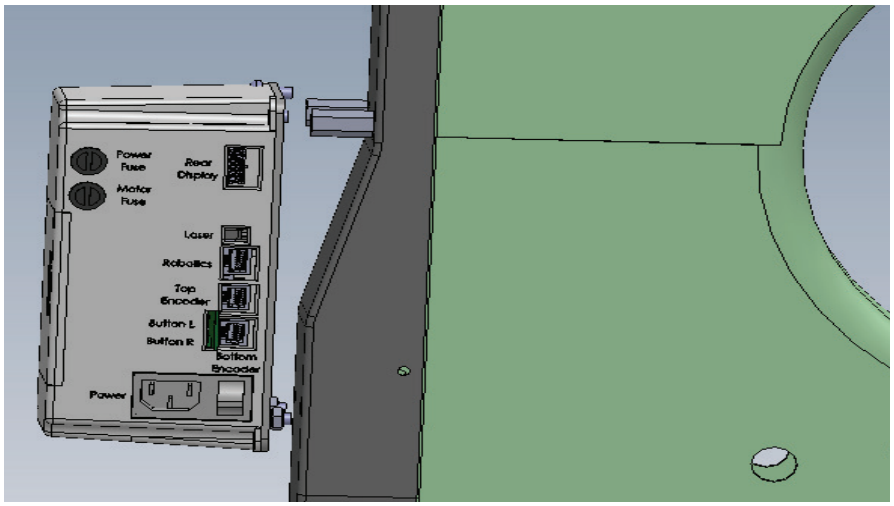


6. Attach the ground wire (Green wire attached to the power supply on the PCB) to one of these two holes on the back cover using the provided screw.

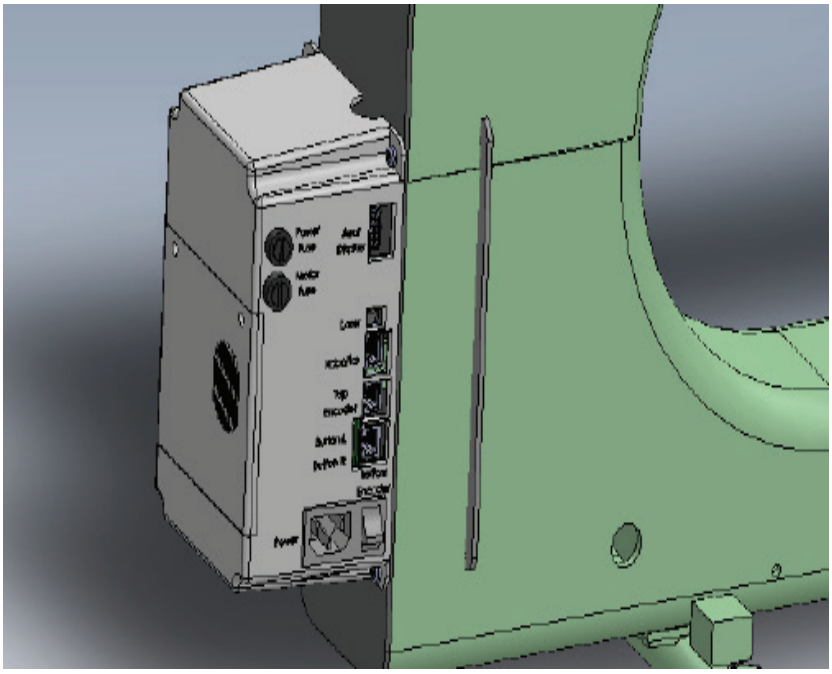


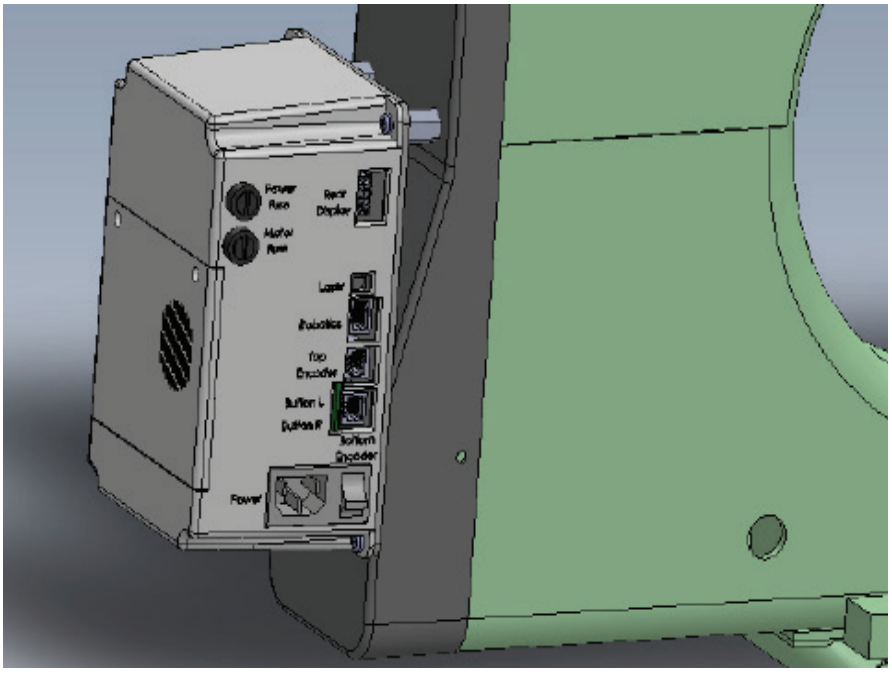
7. Align the Control Box with the rear cover holes. For cuved plates (shown below) use provided spacers when installing PCB box.





8. Attach the control box to the rear cover using the provided screws and a philips head screwdriver.

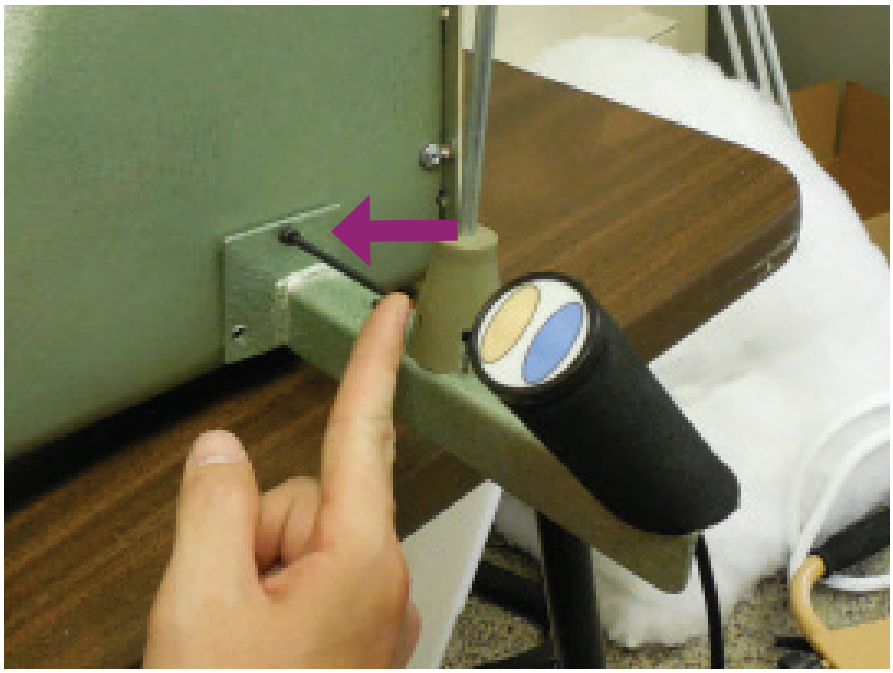




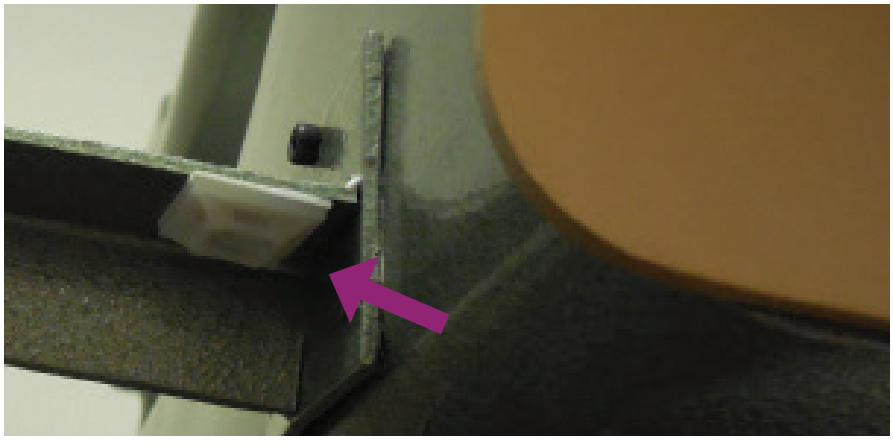
3C - Attach Handlebars, and Encoders

Attach Rear Handle Bars

1. Reattach the rear handlebars on each side using the original screws.



2. Apply the adhesive zip tie anchor to the underside of each handle bar near where the handlebar connects to the frame.



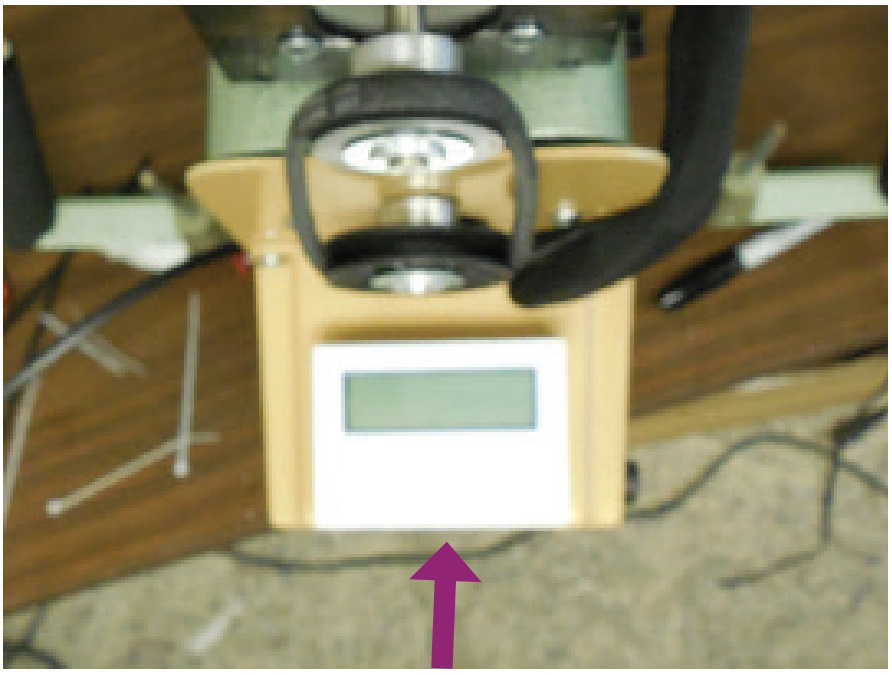
3. Pull the handlebar wire slack through and then tighten a zip tie to the anchor.

4. Position an adhesive zip tie anchor just above the control box status lights.

5. Pull the handlebar wire slack through and then tighten a zip tie to the anchor.

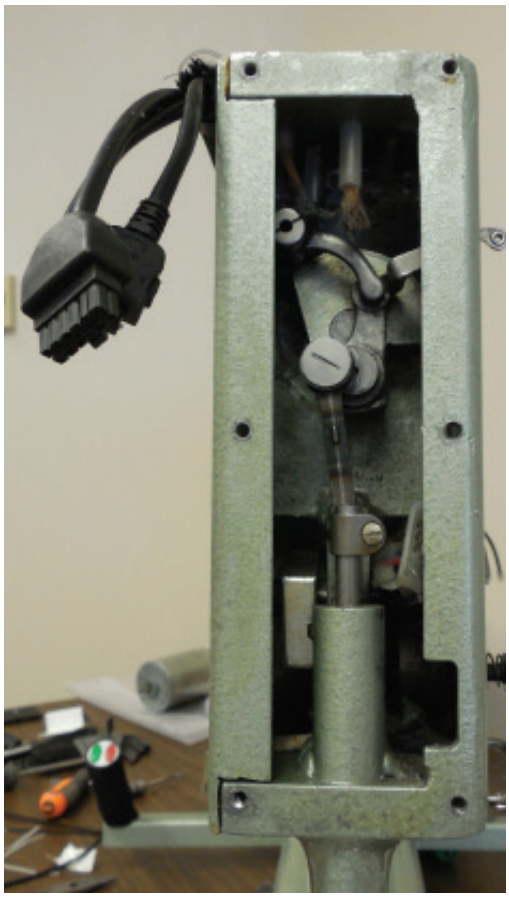
   Repeat for the other side.

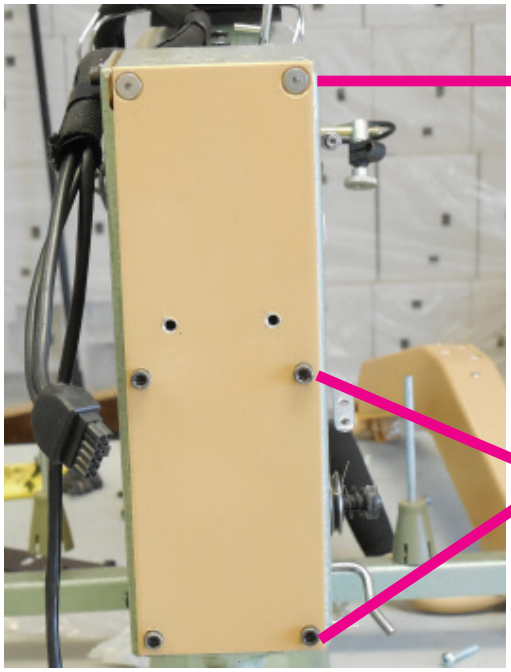
6. Remove the adhesive tape from the back of the rear display and firmly attach it to the top of the control box so that the bottom edge is flush with the edge of the control box.



Attach Front Handle Bars

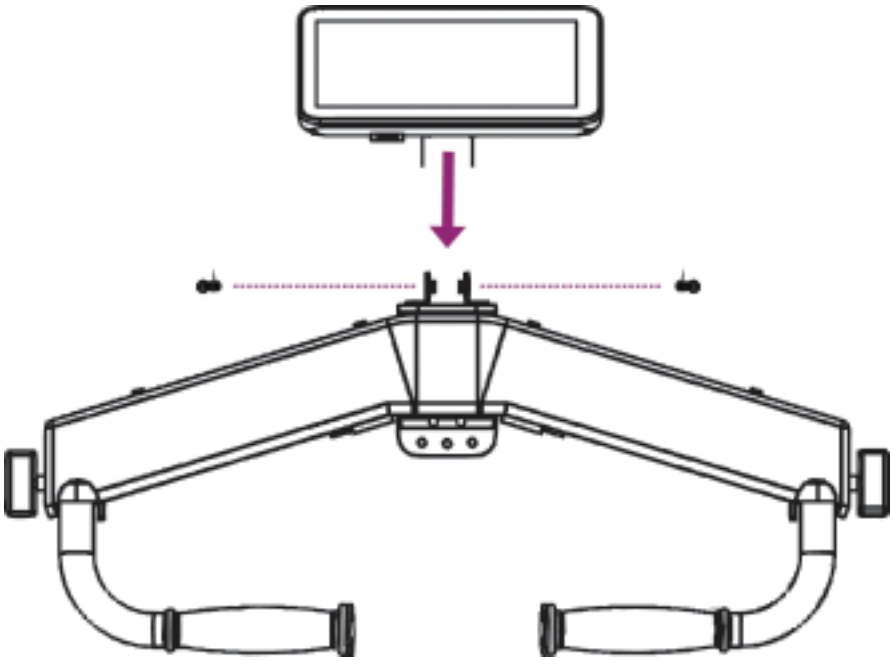
1. Using a hex key set, attach the front faceplate with the four original screws in the bottom holes and the two provided #10/32 x 1/2" screws in the top holes.



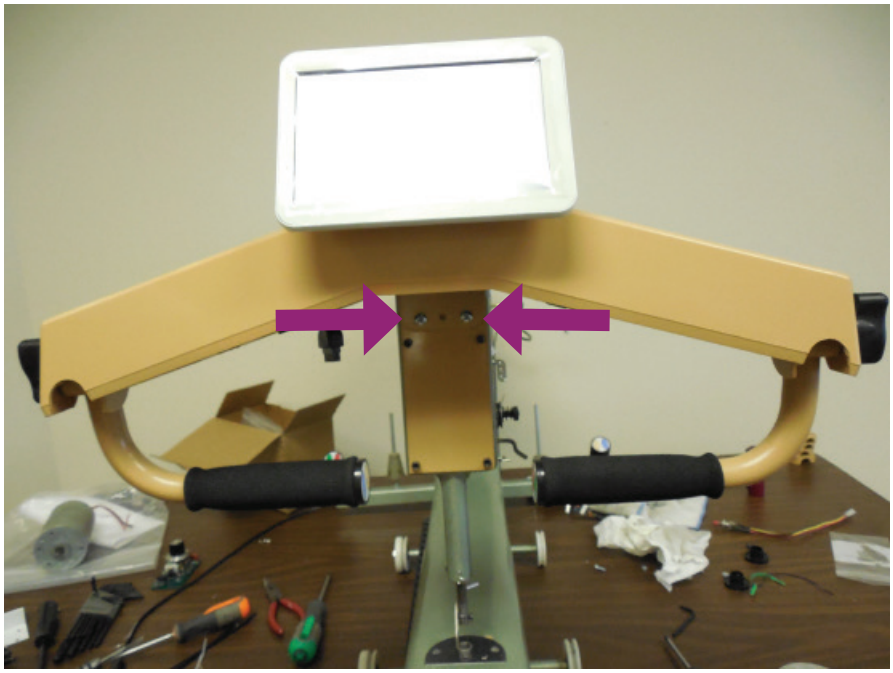


2. Attach the display to the handle bars.

   For Android displays please refer to the Android Installation guide

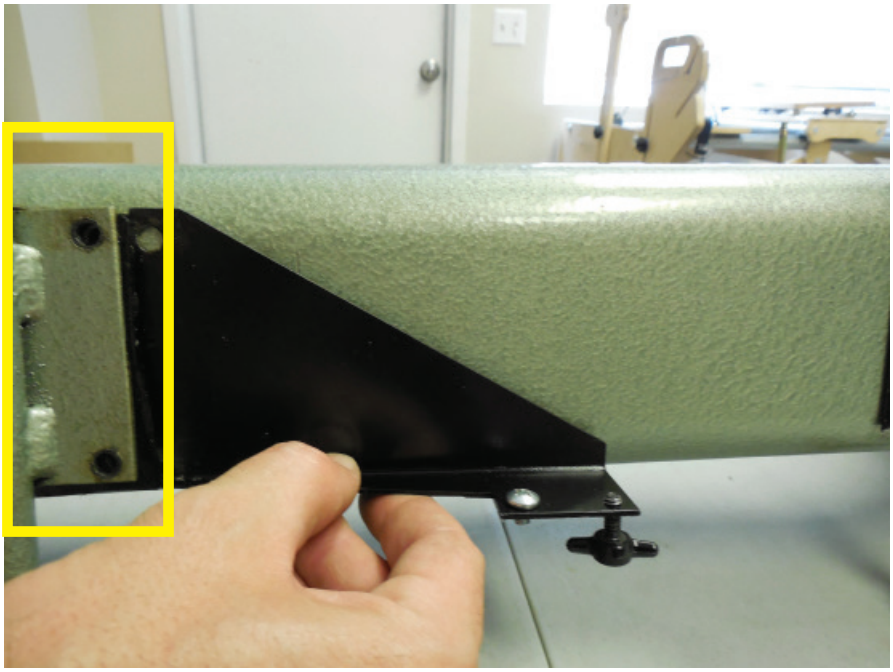


3. Attach the handle bars to the faceplate using the two provided 10-32 x 3/4" screws.

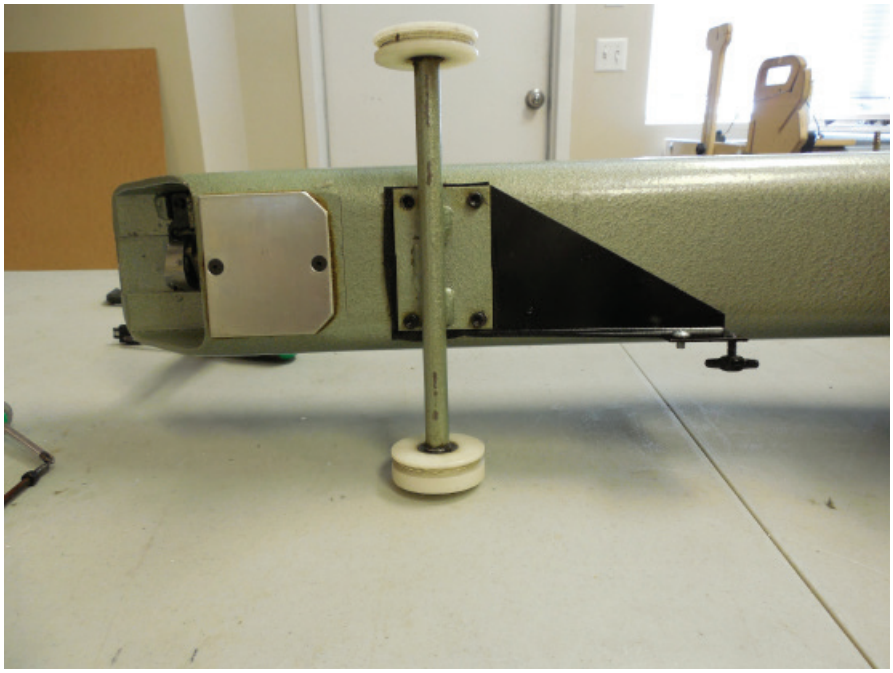


Attach Carriage Brackets, Encoders

1. Remove the two right screws from the front wheel base.



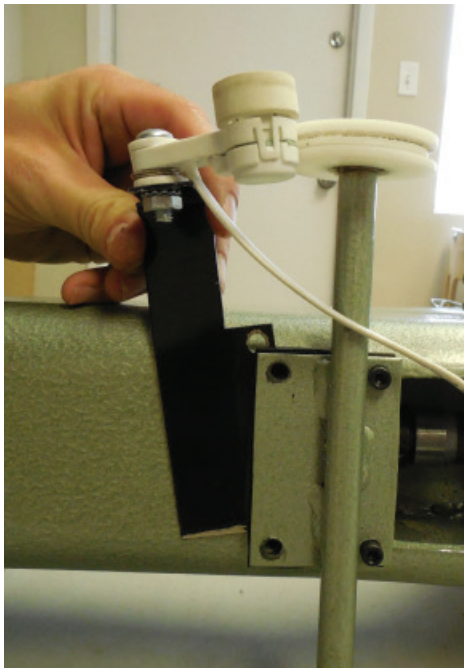
2. Align the bracket with the screw holes and replace the screws to attach the bracket.

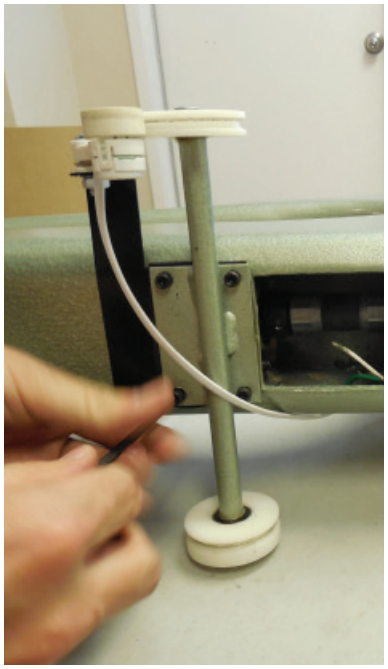


3. Attach the motor encoder to the bracket.

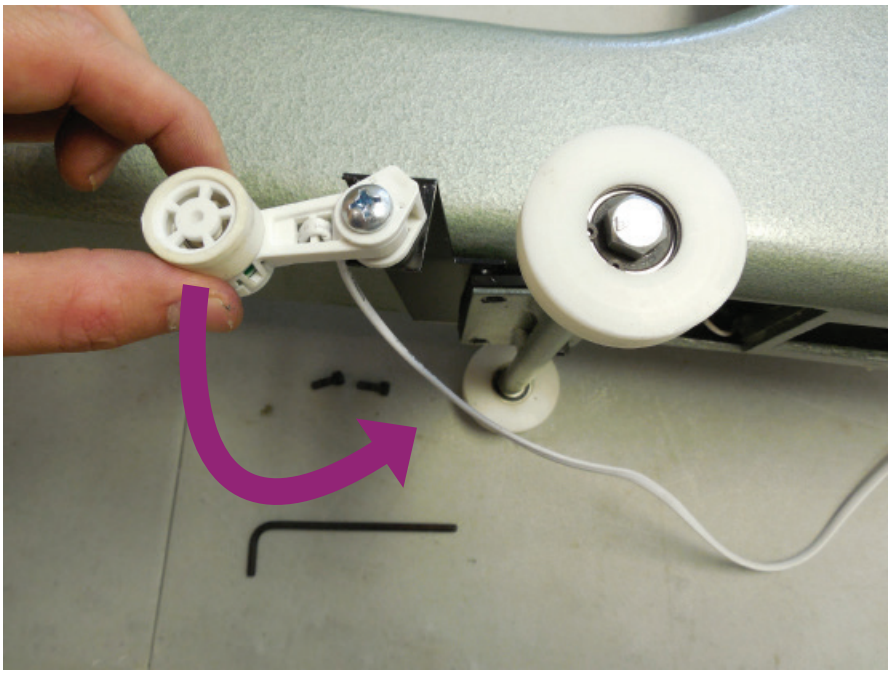
   Remove two left screws from the rear wheel base.

   Align bracket with the screw holes and replace screws to attach the bracket.



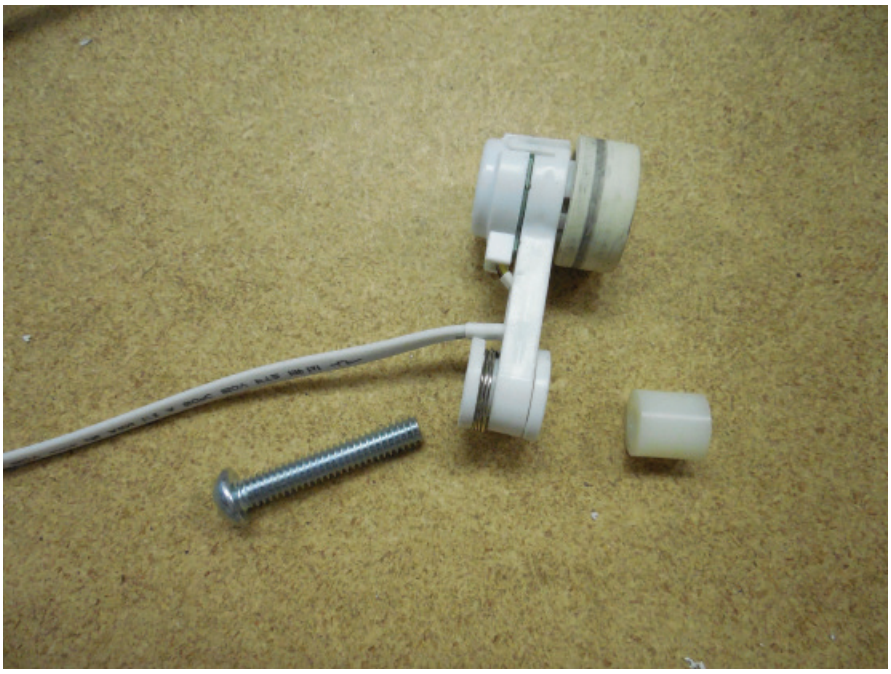


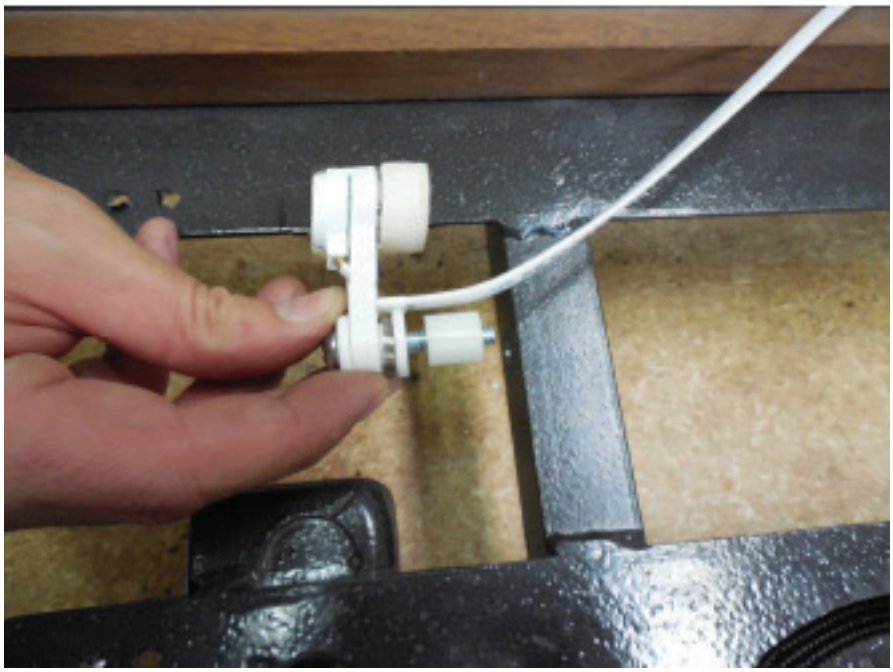
4. The encoder should swing towards the carriage wheel.



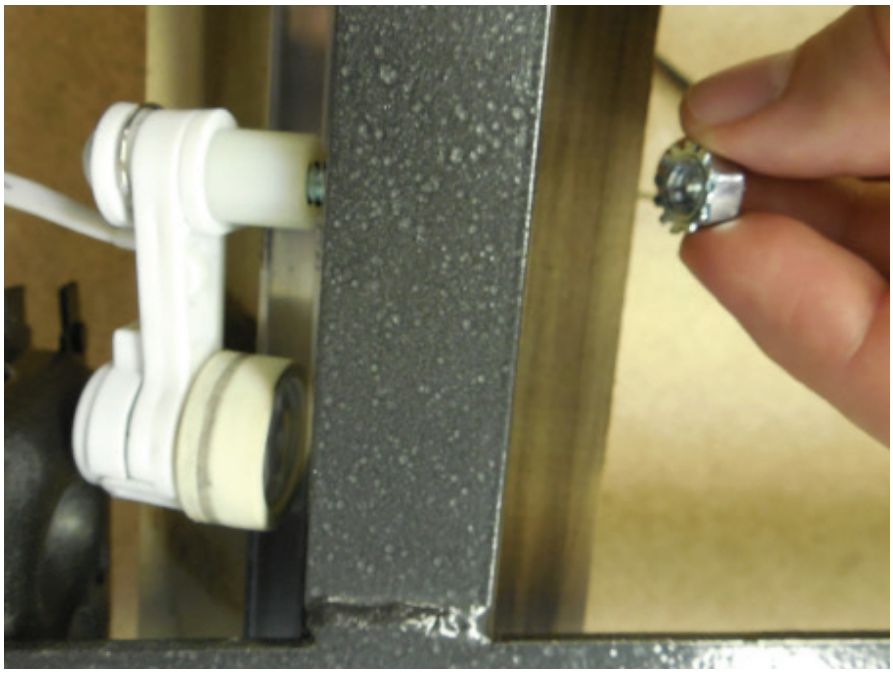
Attach carriage encoder

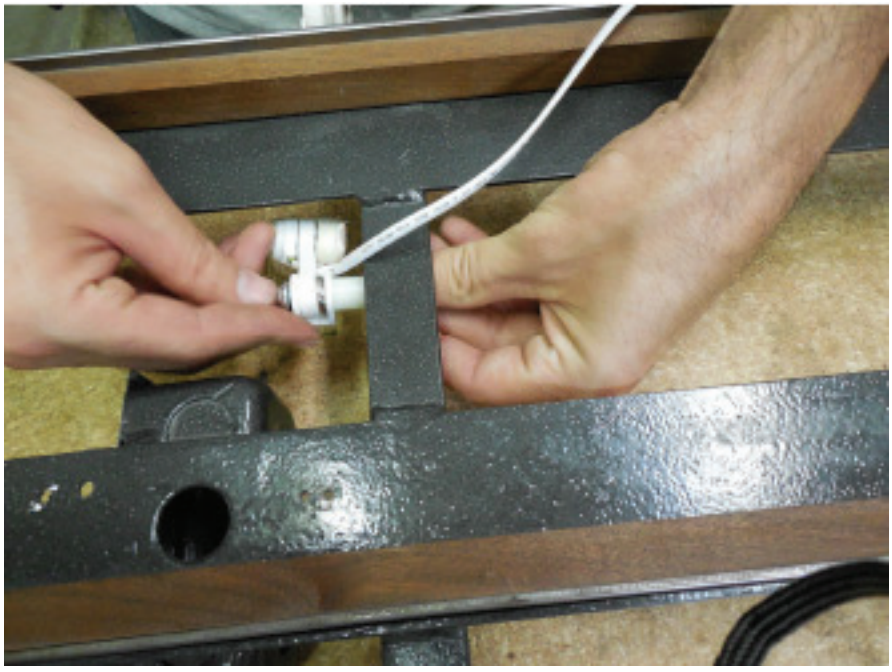
5. Assemble the encoder using the provided screw and spacer.





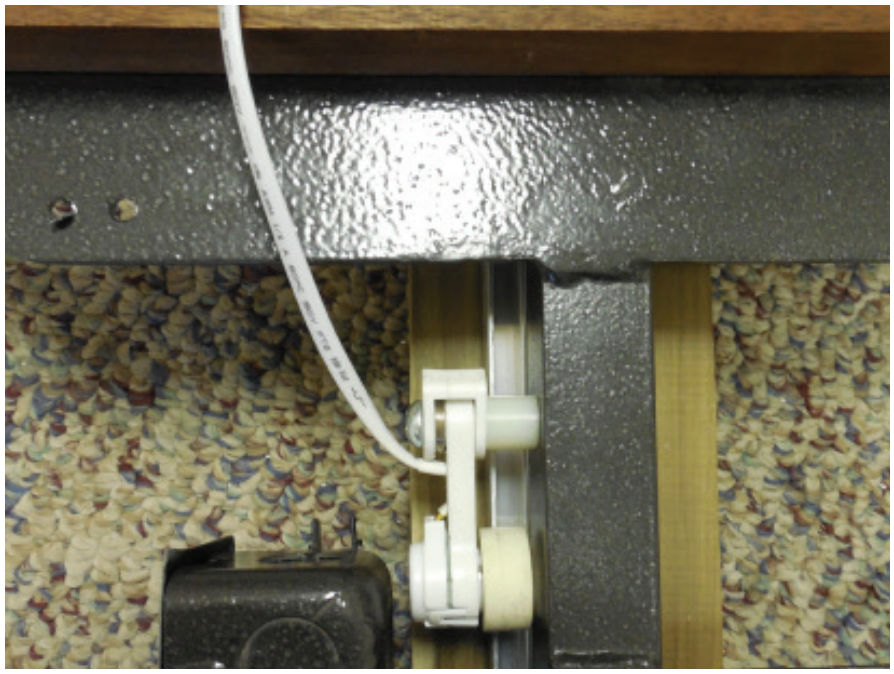
6. Using the provided nut, attach the encoder to the previously drilled hole.





Final Testing

Before returning to the customer, time the needle and bobbin thread.



Machine Checklist

1. All cables run properly and will not be caught by any moving parts

2. All cable plugged into their respective locations and seated well
    a. Will not come unplugged if vibrated.
    b. Might want to have them address each cable here…showing pictures of well seated and not well seated cables.
3. All screws tight for all pieces
    a. Will not come loose after vibration.

4. Belts a good tension
    a. Discuss belt tension and how it should not be extremely tight, but also should not easily slide, needs some give, but also some tension.

5. After all pieces confirmed power on system.

6. Confirm the display comes up and communicates
    a. If gives the communication error should refer them to their trouble shooting guide, to a specific step.

7.Have them go into the system – additional settings and set the motor ratio.
    a. Don't forget to BOLD to check the box to "load ratio" when the machine starts. Explain if they don't check this box the ratio will default and need up position will not be proper.

8. Confirm all system settings:
    a. Index working
    b. Motor encoder working
    c. Carriage encoders working – add the encoder test sheet to this section
    d. Lights working
        i. White Lights on and dimming
        ii. Black lights turning on (if available)
        iii. Laser working (if available)
9. Run manual stitch for 5 minutes, confirm all good

10. Run regulated for 5 minutes faster and slower, confirm all good.

11. Run Idle for 1 minute, confirm

12. Run baste for 1 minute: confirm the needle stops up each time.
    a. IF it does not stop consistently in the up position, go into the motor settings
    b. Additional setting – PID Settings
    c. Change the "stat position – KD" to .0012

13. IF the unit has rear handle bars:
    a. Confirm all 4 buttons function
    b. Confirm rear display communicates and functions

Perfect Stitch

Machine Upgrade

www.quilt-ez.com