Installing Robotics onto the Phoenix Frame Integrated

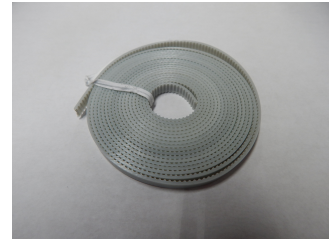| Bag #	Contents	Picture
Cables	Power Cable Network Cable	
X1	1-White belt *(15')*	
Y1	1 - Black Belt *(86")*	
Z1	10-Zip Tie Base Anchors 2-Screws (M5x12mm) 2-Washer (M5) 5-10" Zip Ties 10-5" Zip Ties	

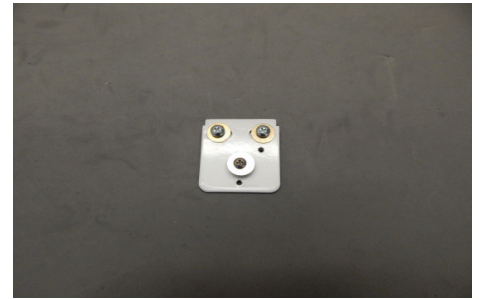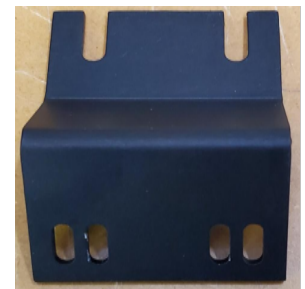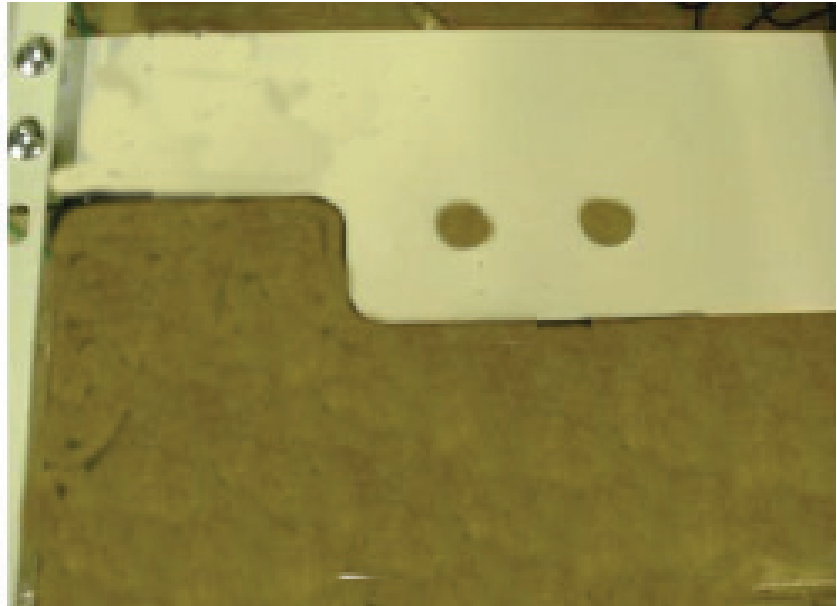| Bag #	Contents	Picture
X3	2- Phoenix X belt bracket 2-X Belt Clamp	
I4	1- Rear idler bracket 1- Rear idler clamp 2- 10-24 x 1/2" screws 2- #10 fender washers 1- Pulley assembly	
Y5	1- Carriage bracket 1- Carriage bracket clamp 2- Wing nut screws	

Installing the Motor Box and Rear Idler Pulley

1 Locate the front white bracket that is attached between the two sides of the carriage.

2 If the frame has spacers as shown, they will need to be removed and the bracket reattached so that it is flush on the carriage.
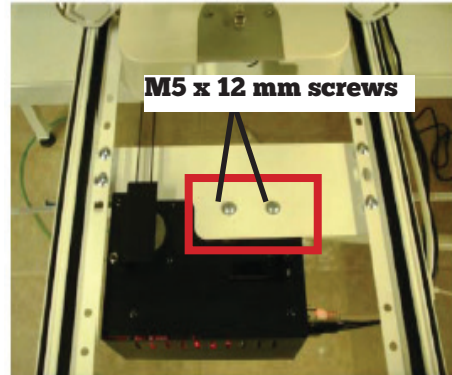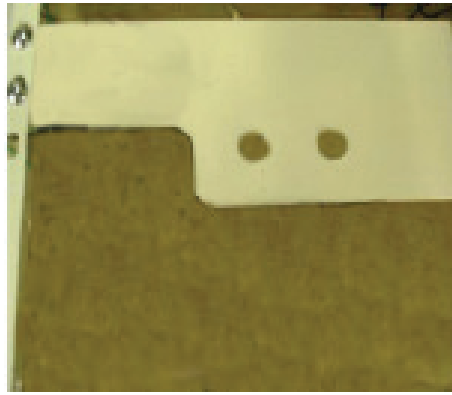
Otherwise the motor box might hit the center support rail when it is attached.
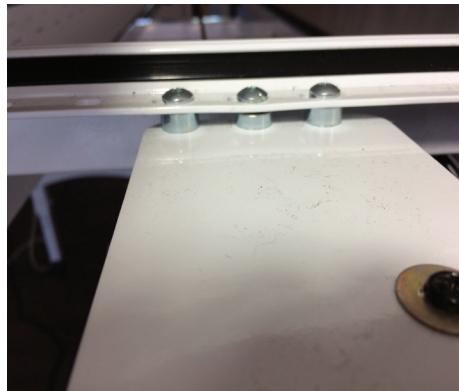
3 Make sure that the bracket shown is at the front of the machine. If it is not then the carriage is backward, and will need to be flipped.
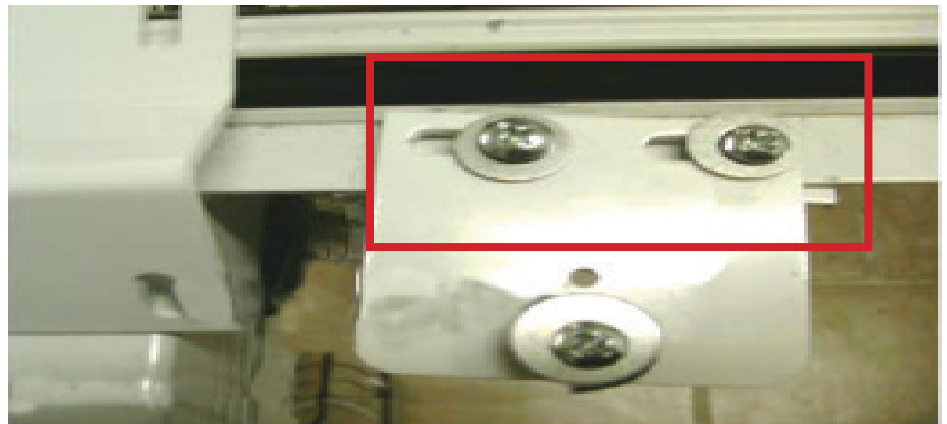
Line the holes on the motor box with the pre-existing holes on the bracket.
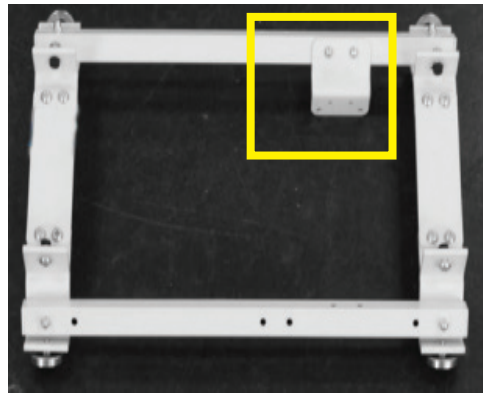
Secure with the M5 x 12mm screws.

M5 x 12 mm screws

4 Mount the rear idler pulley bracket at the rear of the carriage in the pre-drilled holes closest to the back of the carriage.

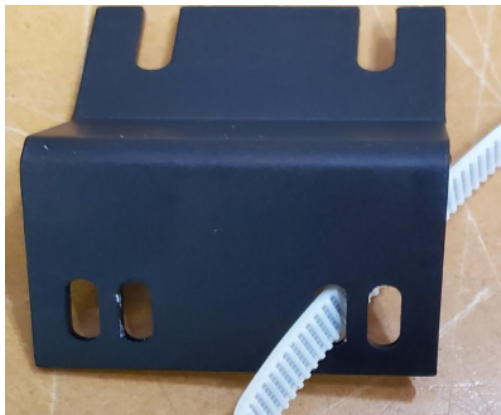Clamp the rectangular bracket to the bottom with the carriage in between.

Installing the Black Belt

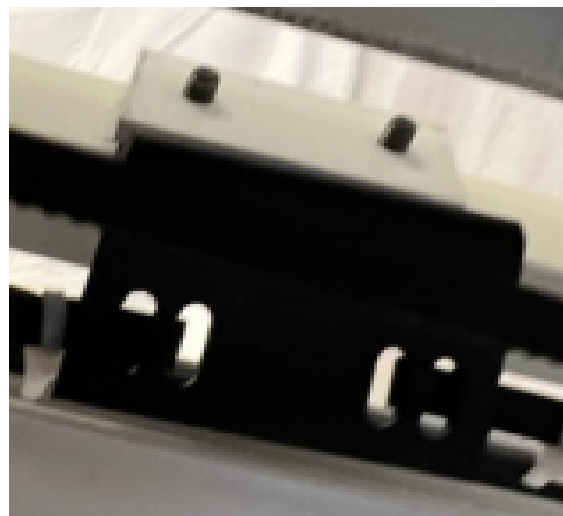**1** Remove the existing carriage bracket.

2 Thread belt up through inner slot   Thread belt down through the outer slot
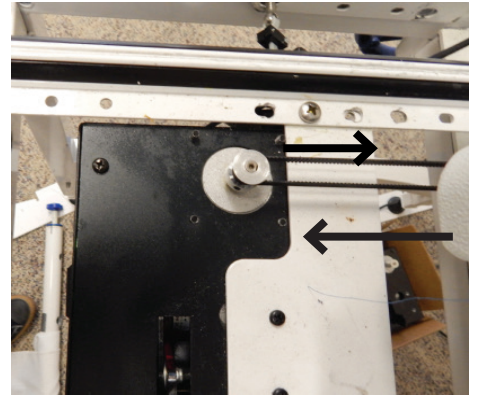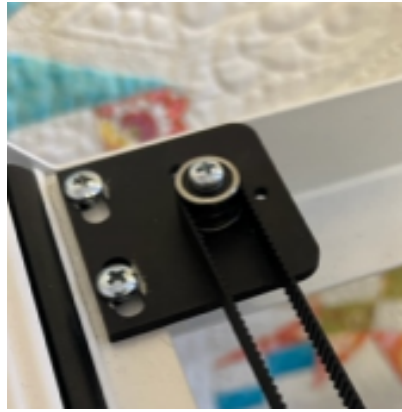
zip tie to secure the belt together

3 Run the belt around the rear idler pulley with the teeth facing in.

Then run the belt around t he motor box pulley.

Connect the belt back to the carriage bracket with the second belt clamp.

Please note that your machine and bracket may not look exactly like this, the main thing here is to make sure the black belt travels BEHIND the bracket as shown in the pictures below.

Using the zip ties, attach one end of the black belt to the carriage bracket.

Wrap the toothed side of the black belt (highlighted at right) around both the Idle and Motor Box pulleys, then use zip ties to attach the remaining end of the belt to the carriage bracket.
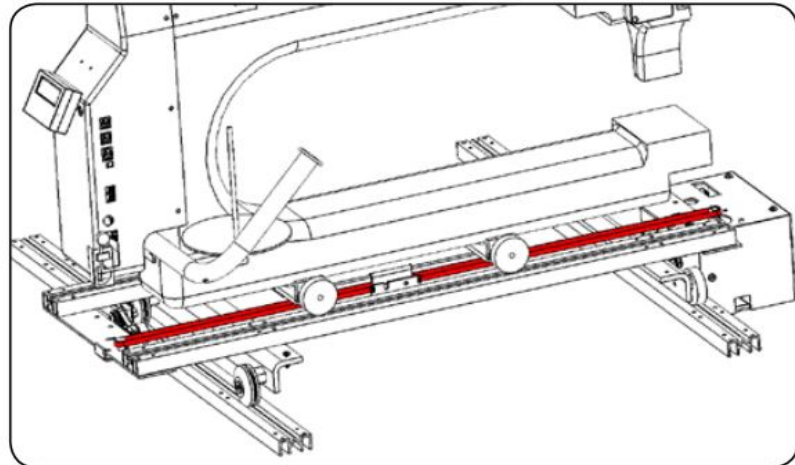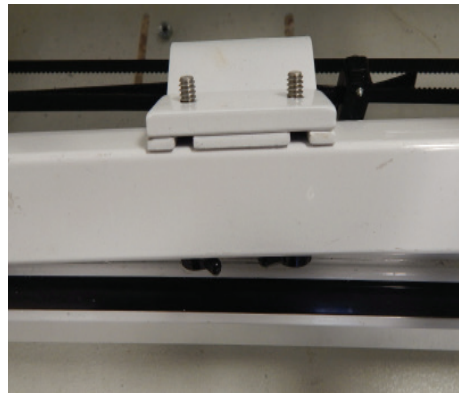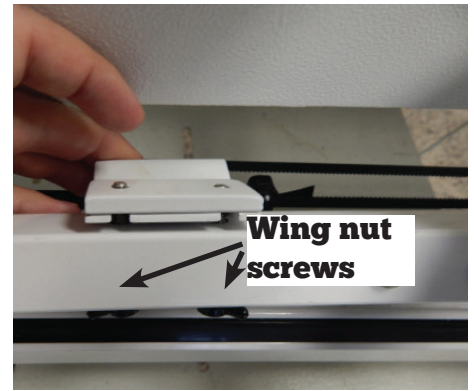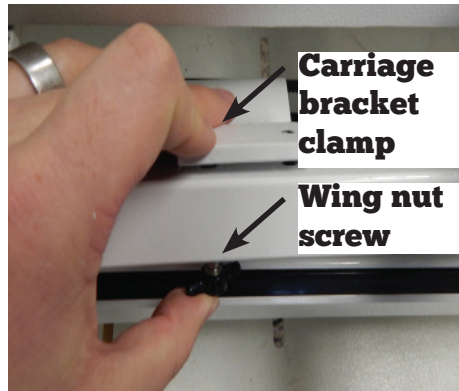
Ensure that the black belt travels **behind** the carriage bracket (shown at right).

Belt behind bracket
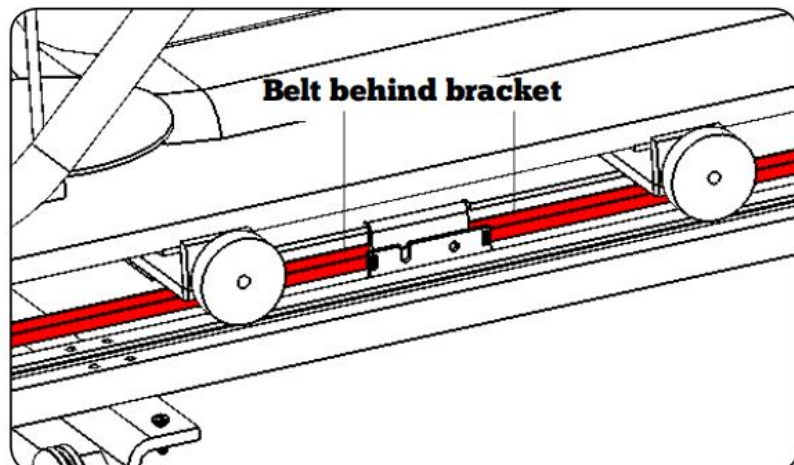
4 Insert the wing nut screws through the pre-drilled holes at the rear of the carriage on the inside.

Slide the carriage bracket in between the clamp and the carriage and secure with the wingnut screws.

Carriage bracket clamp

Wing nut screw

Wing nut screws

When engaged the black belt should have approximately 1/4" of play in the line. Play is measured when the machine is in the center of the frame. Adjust belt clamps as needed.

Installing the White Belt

Step 1:
Remove the M8 bolt from the quilting frame as shown in Figure 1.

Figure 1

Step 2:

Attach the X-Belt bracket to the quilting frame with the M8 bolt that was removed in step 1. Mount the bracket using the same hole that the bolt was taken out of. See Figure 2 for example.

Figure 2

Tighten down the M8 screw with the top of the X-Belt bracket facing up.

Figure 3

Step 3:

Align the Adjustable Belt Anchor with the X-Belt bracket as shown in Figure 4.

Figure 4

Loosely secure the Adjustable Belt Anchor with a #8-32 x 0.5" screw, as shown in Figure 5.

Figure 5

Step 4:

Run the ¼" MXL White Belt through the second slot on the Adjustable Belt Anchor.

Figure 6

Be sure the belt teeth are facing the same way as shown in Figure 6.
Next, thread the belt through the first slot on the Adjustable Belt Anchor. See Figure 7.

Figure 7

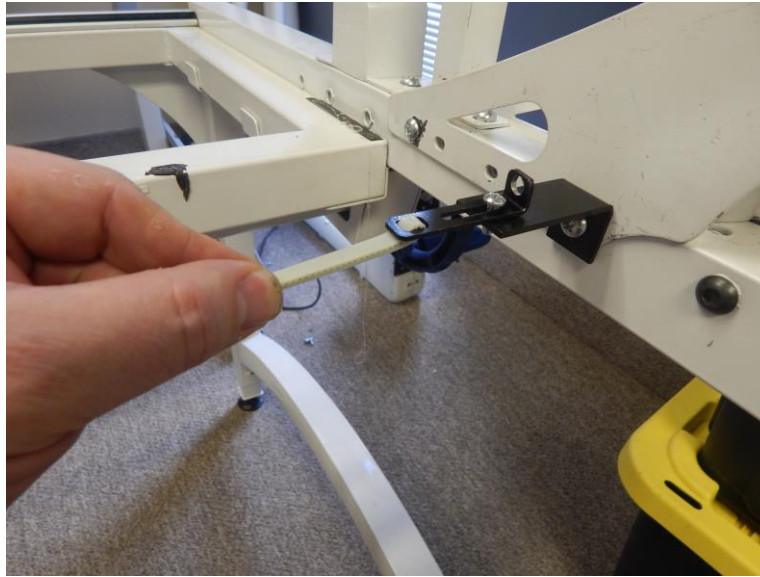When the belt is pulled away from the belt anchor the belt will lock into place and not slip.

Figure 8

Step 5

Follow steps 1 through 4 for both sides of the frame. With the belt threaded though both Adjustable Belt Anchors on either side of the frame, and with the belt secured on the X-Belt pulley of the Butler, tighten the X-Belt as much as possible by further feeding the belt through one of the Adjustable Belt Anchors. You will not be able to get the belt fully tightened, but be sure to make it as snug as you can.

To fully tension the belt, loosen the #8-32 screw on one of the X-Belt brackets, either right side or left side. Using your thumb pull the belt tight.

Figure 9

Tighten the #8-32 screw on the X-Belt bracket to lock the Adjustable Belt Anchor into place and tension the X-Belt.

Figure 10

Place a zip tie around the belt near the Adjustable Belt Anchor to help the belt stay in place when the belt is disengaged from the robot.
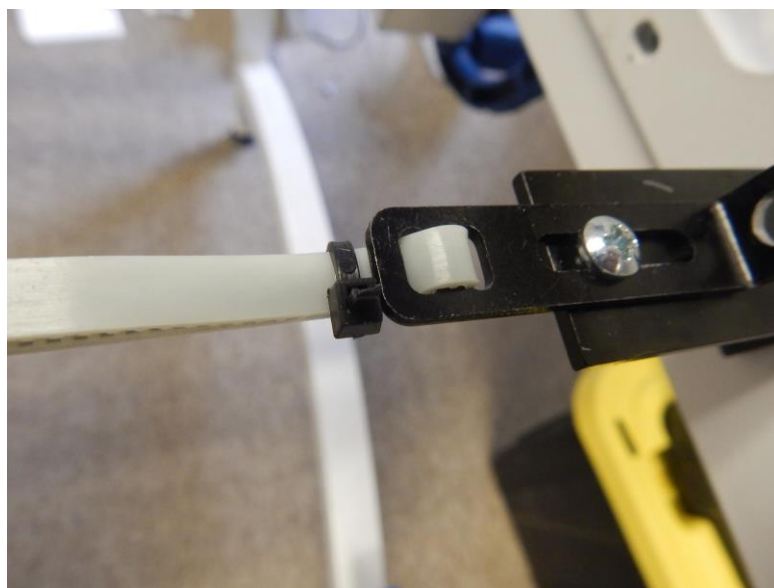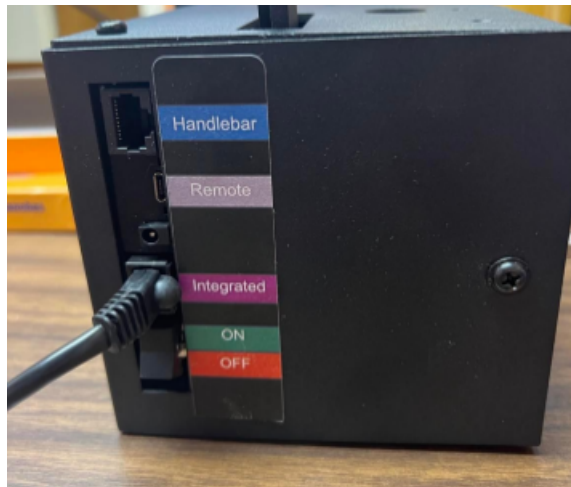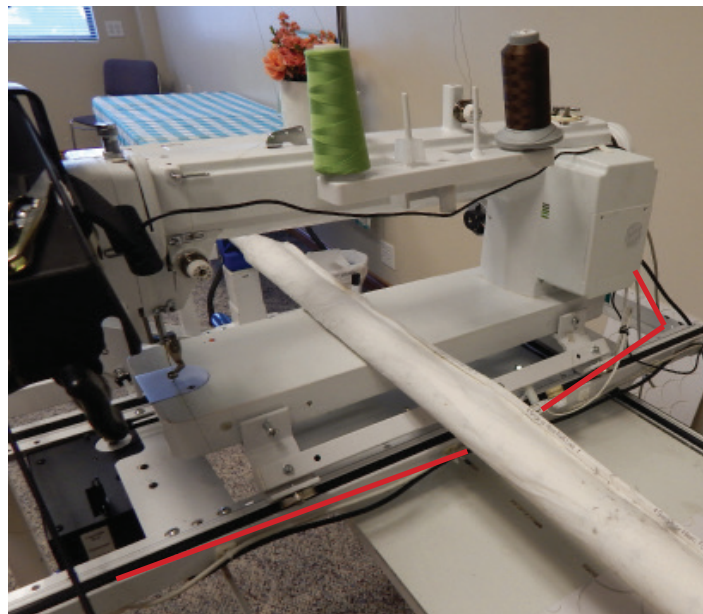

Figure 11

1   Attach one end of the network cable to the Stitcher Box port on the Motor box.

2   Run the cable along the carriage with the power cable to the control box

*Image not representative of all machine types.

Plug into the robotics port on the PCB.

Use the provided anchors and zip-ties to secure the cables to the carriage. Make sure they are out of the way of any moving parts.
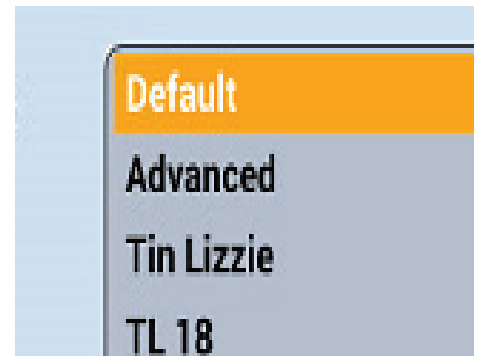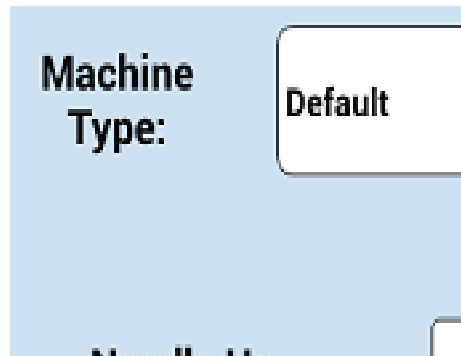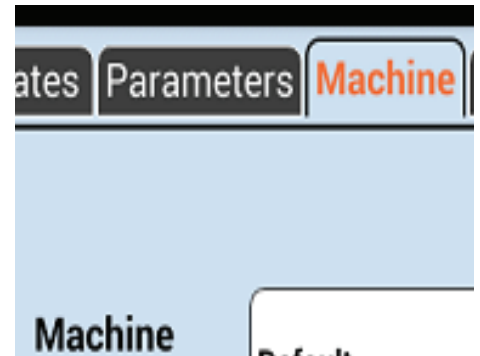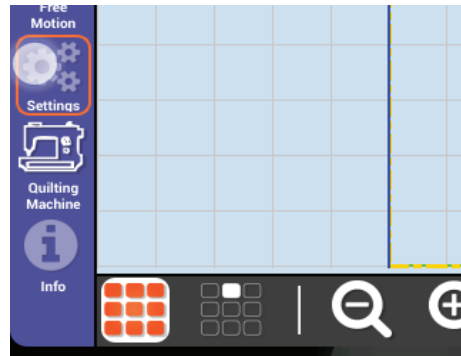
Set Machine Type- *Use this step only on the Professional Butler
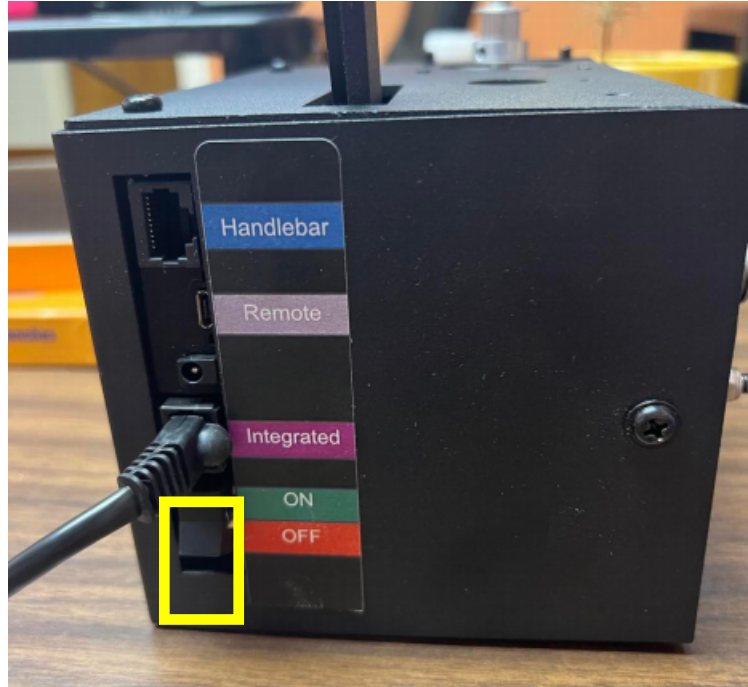
Android Display

1. Power on the display, go to Settings > Machine and set the machine type to Default for ESP, SE, or PerfectStitch machines.

Appendix - Additional help

Power on the robotics

Use the power switch located on the side of the motor box with the ports to power the motor box off and on.

Disengage belts for free motion

In order to use free motion with the butler connected the belts will need to be disengaged.

To disengage the x-belt, move the locking lever away from the edge of the motor-box.
To disengage the y-belt (black belt),
loosen the wing-nut screws on the carriage bracket.

You can now use free motion quilting.