



How to Attach Butler Robotics to a Falcon Wood Frame

In order to accommodate all machine types we use universal parts bags, not all parts will be used in every installation.

Bag #

Contents

Picture

Cables

Vary by machine



X1

1-White belt (12')
4 - Plastic belt clamps
4 - Screw (4-40 x 0.5)



Y1

1 - Black Belt (86")
4 - Plastic Belt Clamps
4 - Screw (4-40 x 0.5)



Z2

5- Plastic Anchors
2- Screw (M5 x 12mm)
2- Washer (M5)
1- Stylus
5-Zip ties
1- Drill bit (5/16")



Z3

1 - Motor Pulley Cover
2 - Nuts (M5 K-Lock)



Bag

Contents

Picture

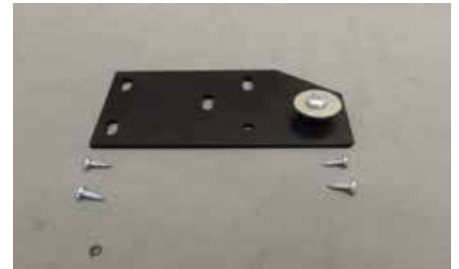
D1, D4, or N/A

1- Display bracket
2- Screw (M3 x 8mm)
2- Remote base
4- Screw (M6 x 8)
4- Nut (M6)
2- Poly disc
2- Screw (M3 x 8mm)



I3

1- Rear idler bracket
1- Rear idler clamp
4- Screw (#4 x 5/16")
1- Pulley assembly



Y4

1- Carriage bracket
1- Universal Y-bracket
1- Thumb screw (#M5 x 6mm)
1- Eye bolt (M5 x 40)
2- Lock nut (M5)
2- Pan-head screw (#10-24 x 1")



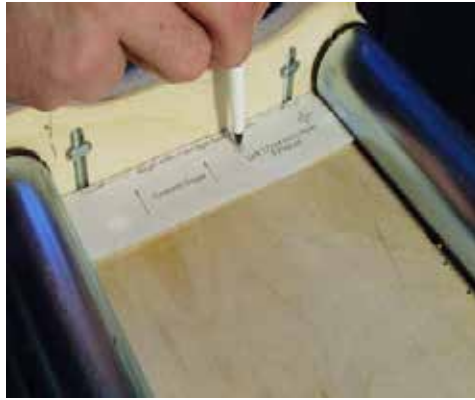
X12

2- Eye bolt (M5 x 40 10mm)
4- Lock nut (M5)

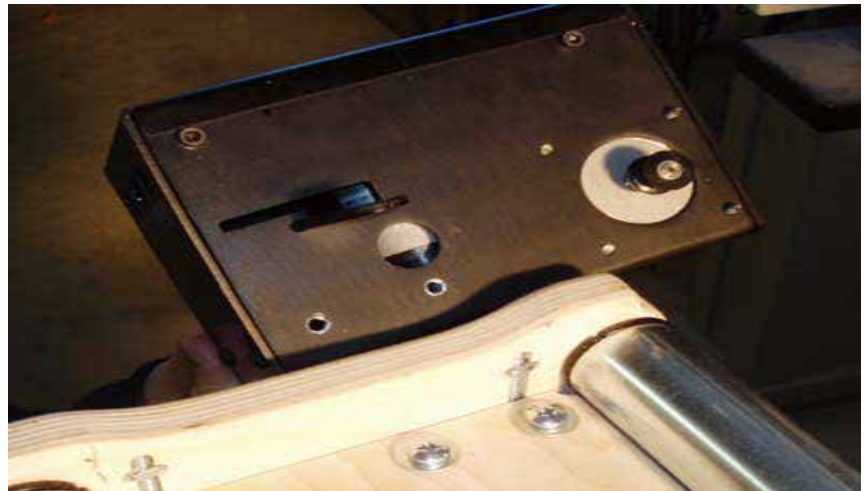


Attach the Motor Box

- 1 Use the provided drill templates to drill into the lower carriage at the front with an 11/64" bit.



- 2 Line the motor box two holes on the motor box up with the holes drilled



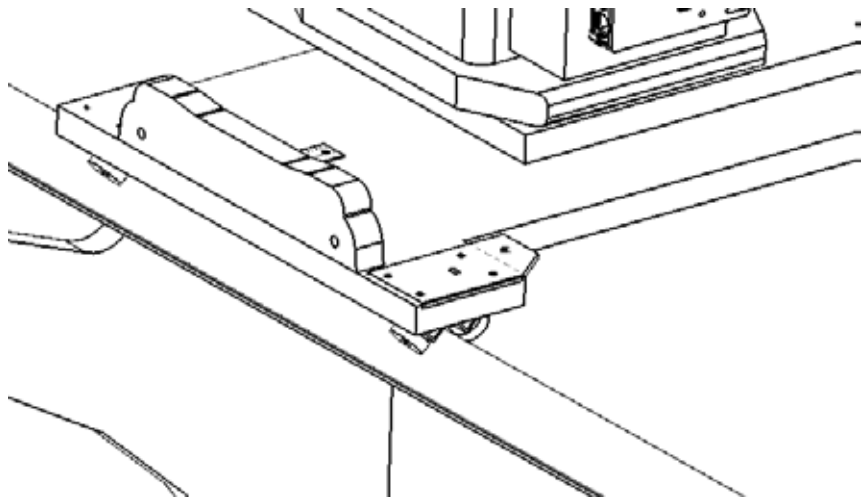
- 3 Install the motor box using the provided M5 x 12mm screws.

Use the washers to space as needed.

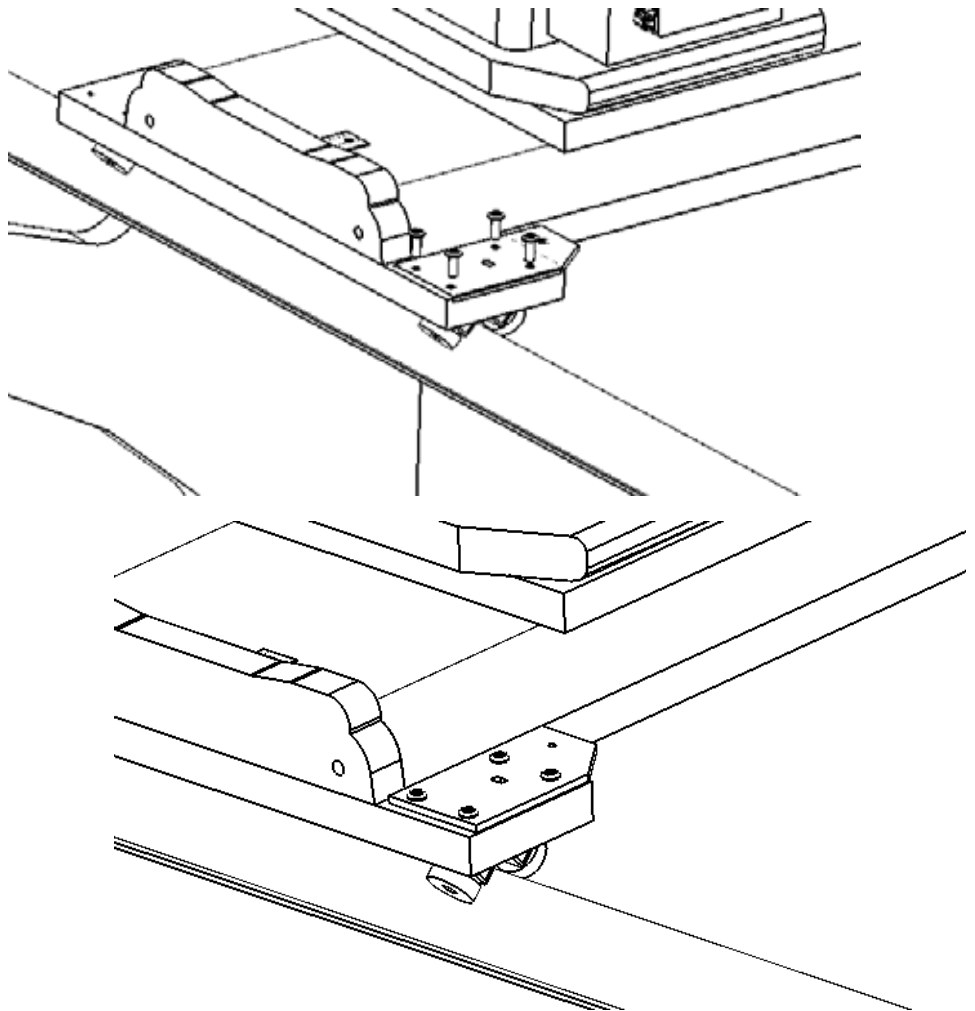


Rear Idler Bracket (Bag I3)

- 1** At the back of the machine line the rear idler pulley on the right of the carriage bracket over the wheels with the pulley facing down.

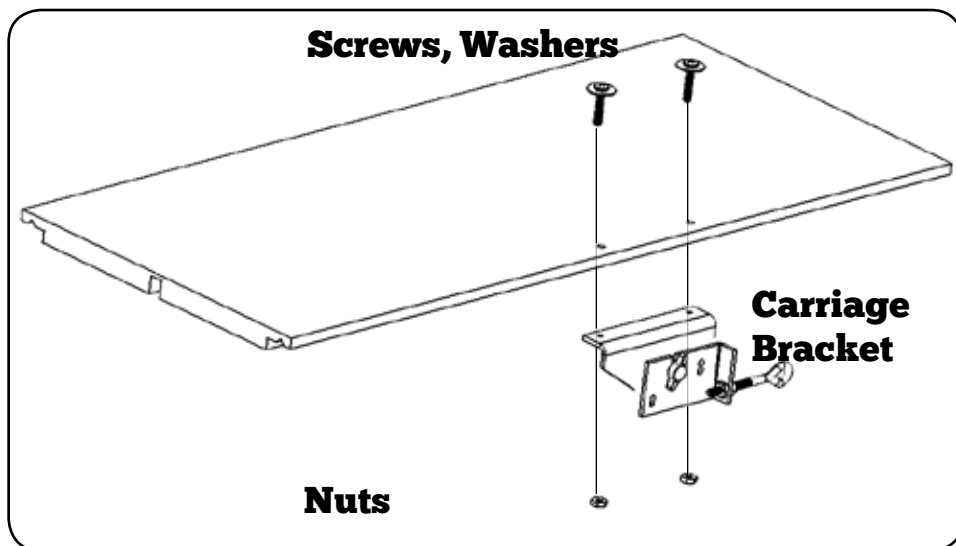


- 2** Secure the bracket to the carriage using the provided 14/” screws.

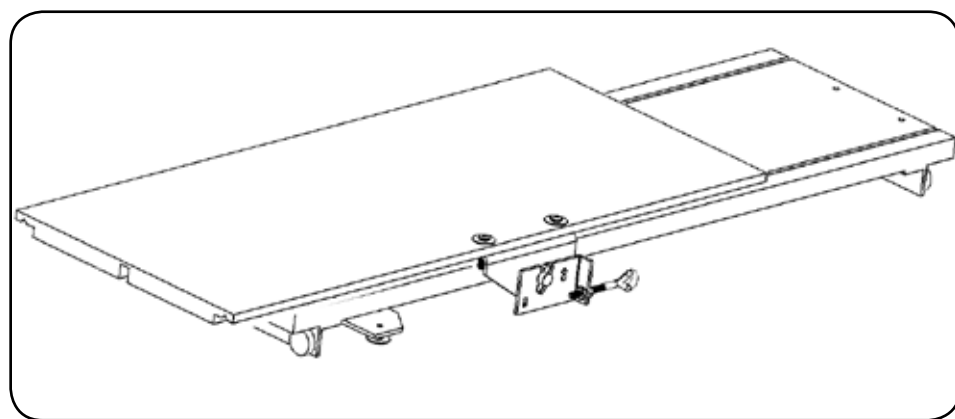
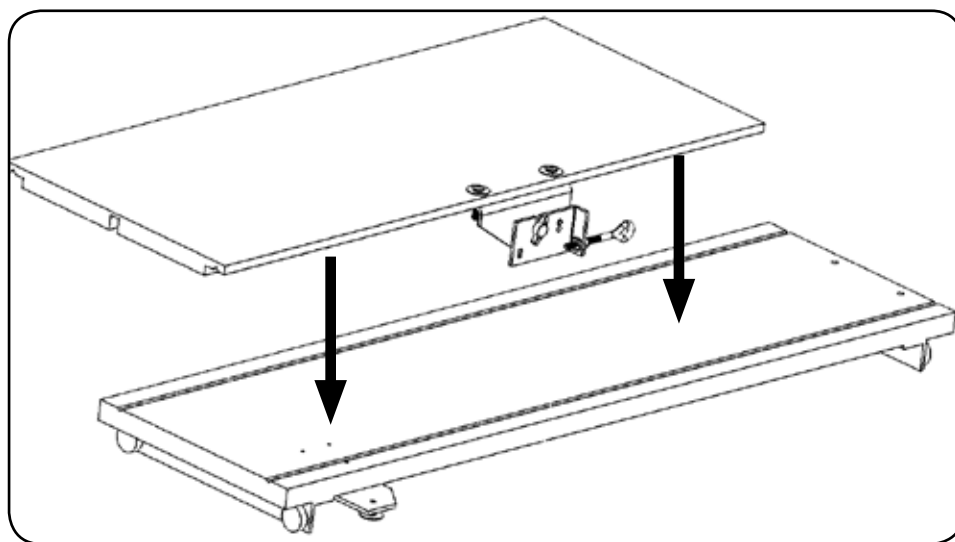


Attach the Carriage Bracket (Bag Y4)

- 1** Remove the top carriage and attach the carriage bracket to the underside on the right using the provided screws, washers, and nuts.



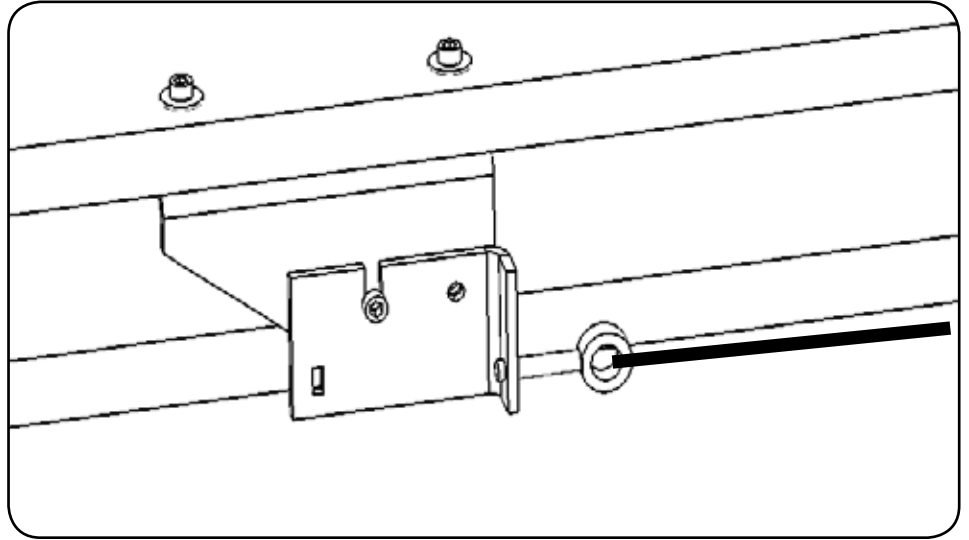
- 2** Replace the top carriage onto the bottom carriage.



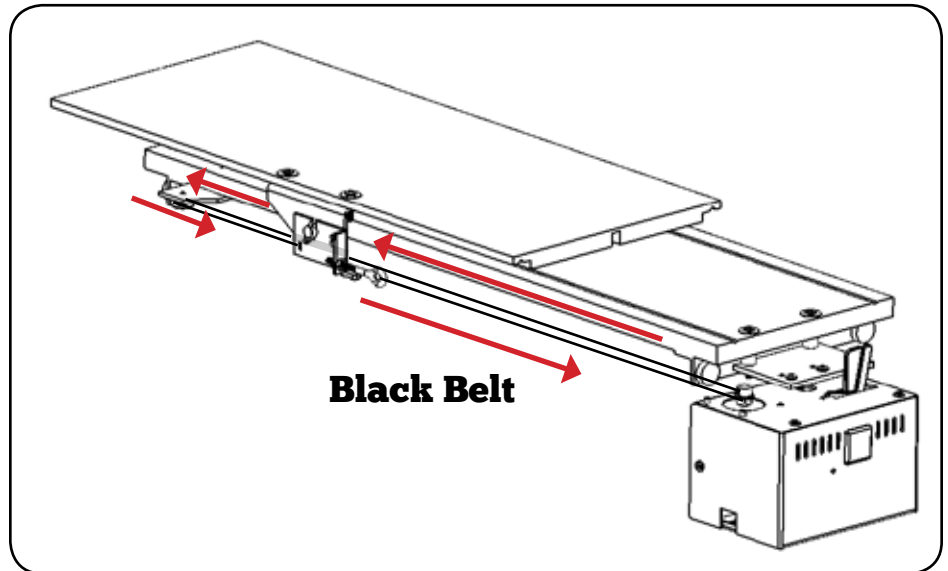
Black Belt (Bag Y1)

- 1** Attach one end of the black belt to the eye-bolt on the carriage bracket using the belt clamps with the teeth facing the carriage.

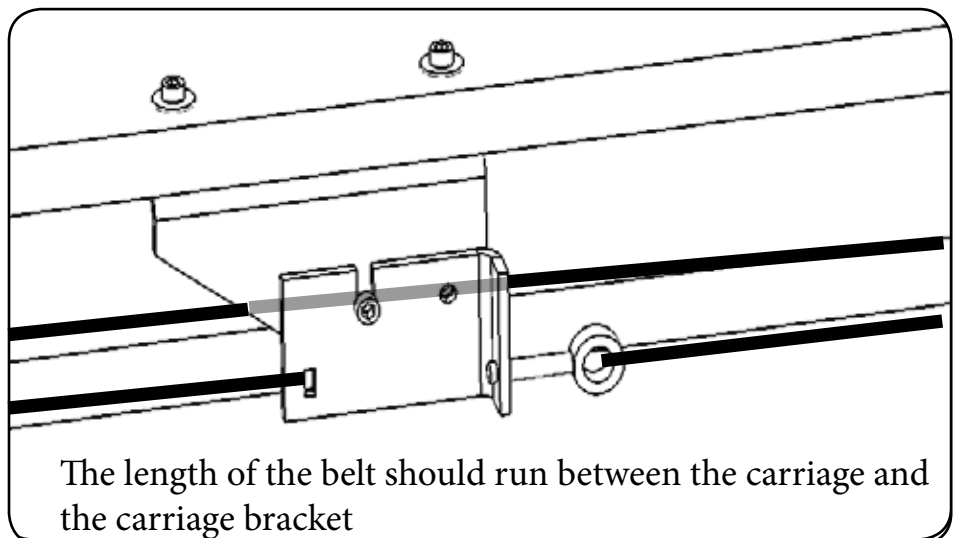
See Appendix A for help using belt clamps.



- 2** Run the belt around the pulley on the motor box then behind the carriage bracket and around the rear idler pulley.



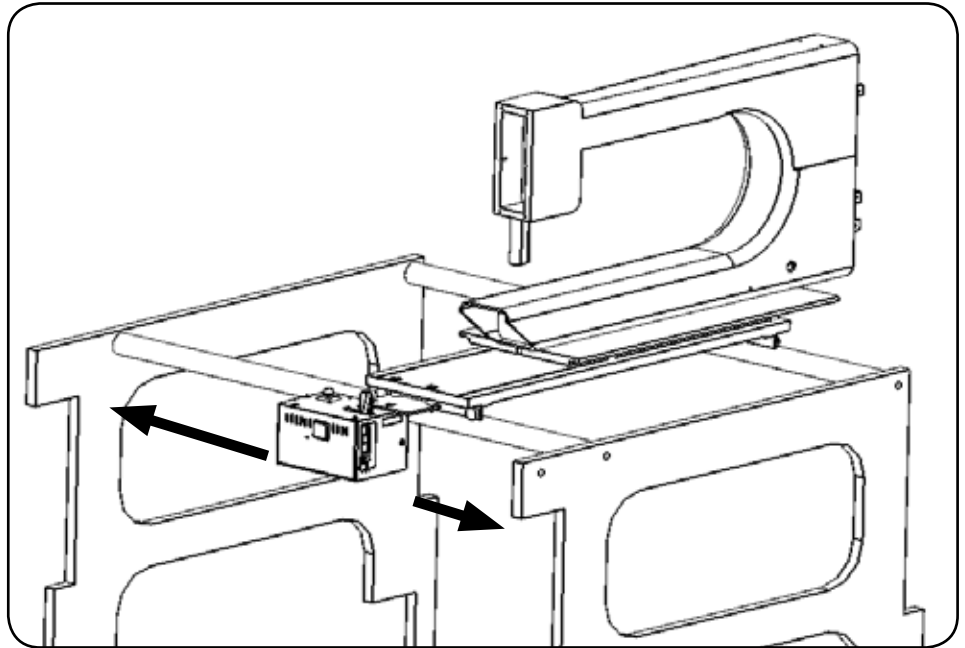
- 3** Attach the other end of the black belt to the slot on the carriage bracket using another belt clamp.



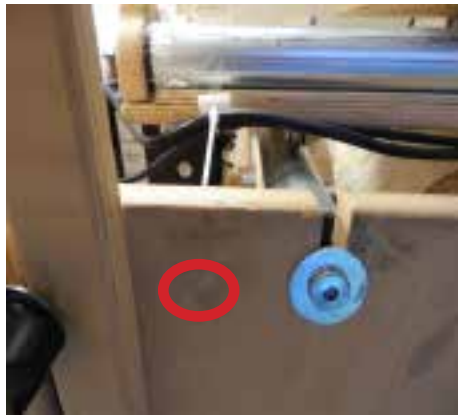
White Belt (Bag X1 and Bag X12)

1 To install the white belt, you will need to drill into the wood frame.

Slide the motor box as close to one end of frame as possible.



2 Mark and drill where the eye-bolt will be level with the Motor Box Pulley. (The eye-bolt attaches to the belt that runs through the pulley.)



- 3** Repeat steps 1-2 for remaining side of frame.



- 4** Attach the white belt to each of the eyebolts with the belt clamps.

See Appendix A.



- 5** Attach the eyebolts to each side of the frame in the drilled holes with the belt teeth facing up.

Release the locking lever on the motor box and run the belt over the two bearings and under the motor pulley.



Install the Android 10" Display (Bag D1, Bag D4, or No Bag)

For ESP, SE, or PerfectStitch

- 1** Remove the existing display and attach the Android display bracket.
- Refer to the Android Installation Guide for further help installing.



For LS and DLS machines (Bag D1)

- 1** Slide the display bracket over the handle bars.

It does not require any bolts as the weight of the display will hold it in place.

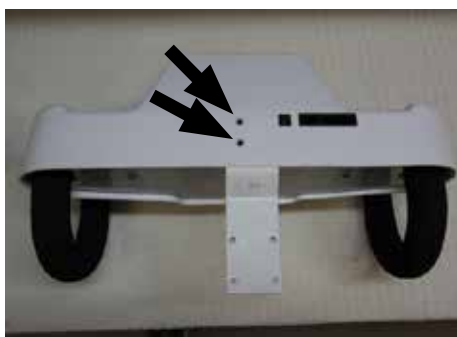
Refer to the Android Installation Guide for further help installing.



For Ram machines (Bag D4)

- 1** Use included screws to attach white bracket to back of handle bars.
- Replace the handle bars onto the machine.

Refer to the Android Installation Guide for further help installing.



Connect Cables

Connect the power cable

- 1 Plug the power cable into the port on the motor box.

Ensure that the cable is running towards the top of the motor box and not towards the ground.



- 2 Run the cable along the carriage to the back of the machine, and then plug into the outlet or power source.

For ESP, SE or PerfectStitch continue to next page.

For DLS or Ram style machines continue to page 15.

For LS machines continue to page 17.



For ESP, SE, or PerfectStitch

- 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 and 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.



*Image not representative of all machine types.



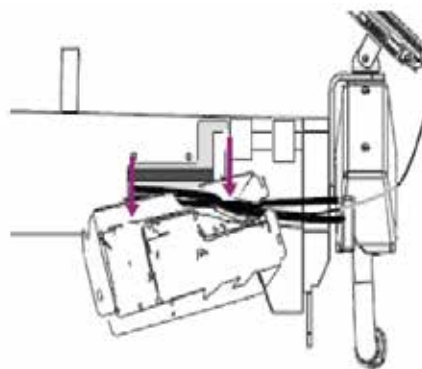
3 Steps 3-4 for Android upgrades only:
Locate display cable. It will be a network style cable on one or both ends.

Plug the network style end into the hub (black box mounted to the display bracket).



4 Plug the remaining end of the black cable into the port near the front of the machine.

If the machine has a rocker arm cover, then this connection may be inside the machine. Remove the rocker arm, and locate the joint in the cable.



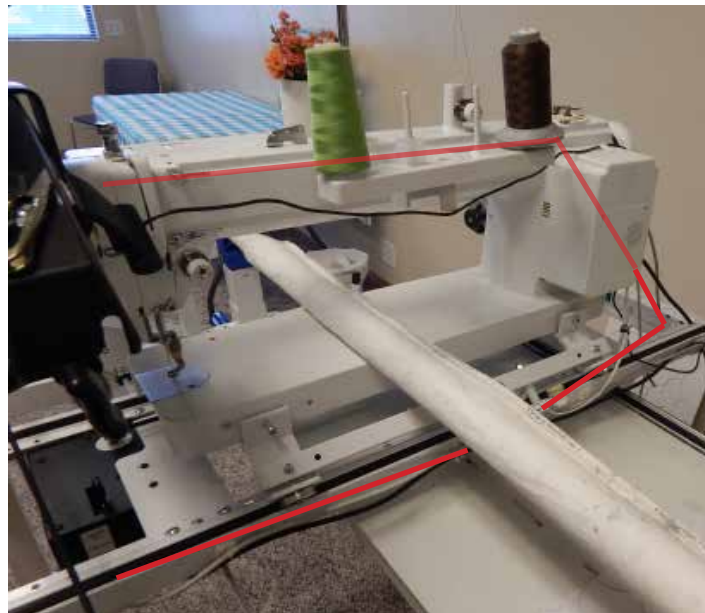
For DLS or Ram style machines

- 1 Plug the handlebar wire into the “HandleBar” port on the motor box.

Colors may vary



- 2 Run the handlebar cable along the base of the carriage behind the back of the machine up to the handle bar controls.



*Image not representative of all machine types.

3 For DLS models plug the other end of the cable into the right most port on the right handlebar control box.

For RAM style handlebars plug the other end of the cable into the center phone style plug (plug should be a 6 pin connection).



DLS



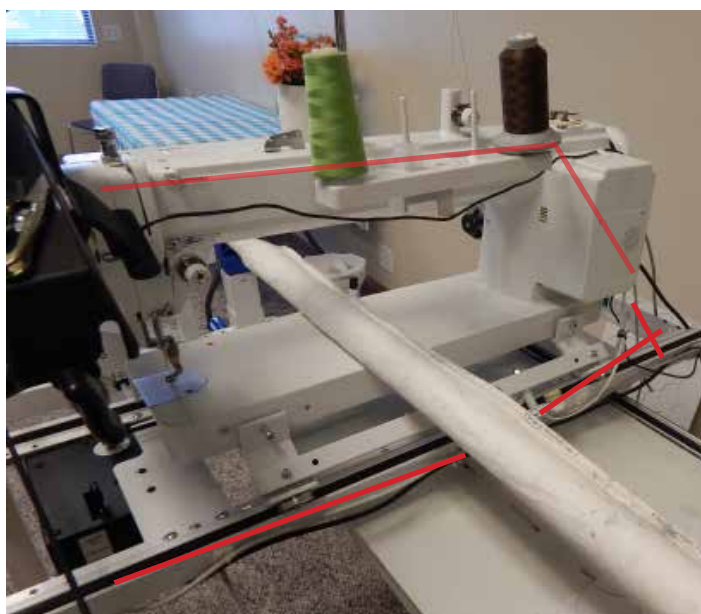
RAM

4 Plug the network style cable into the “Remote” port on the motor box.



5 Run the cable with the handlebar cable around the back of the machine up to the display.

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.



*Image not representative of all machine types.

6 Connect the other end of the display cable into the display.

Android cables will plug into the RJ45 network connection on the hub on the back of the tablet.

Standard displays will plug into the slot on the bottom of the display.

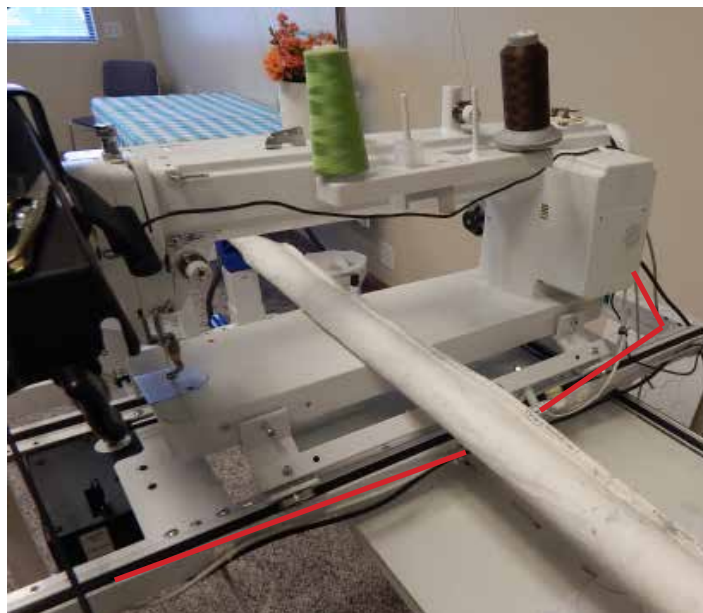


For LS Machines

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



- 2** Run the cable along the carriage to the and plug into the Motor Box port on the Stitcher box



*Image not representative of all machine types.



- 3** Remove the cable from the control box at the back of the machine that connects to the handlebars

Replace it with the provided shorter cable with the same pin out.

Plug the other side of the short cable into the Power Box port on the Stitcher box.



- 4** Plug the remaining side of the cable coming from the front handlebars into the HandleBar Front port on the Stitcher box.

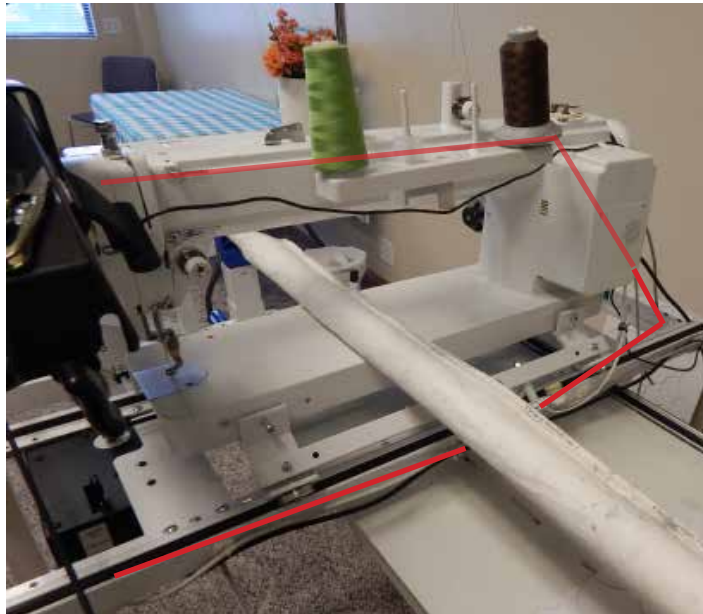
Then use the included double-sided foam tape to attach the stitcher box to the back of the machine.



- 5** Plug the network style cable into the “Remote” port on the motor box.



- 6** Run the cable around the back of the machine up to the display.



*Image not representative of all machine types.

- 7** Connect the other end of the display cable into the display.

Android cables will plug into the RJ45 network connection on the hub on the back of the tablet.

Standard displays will plug into the slot on the bottom of the display.

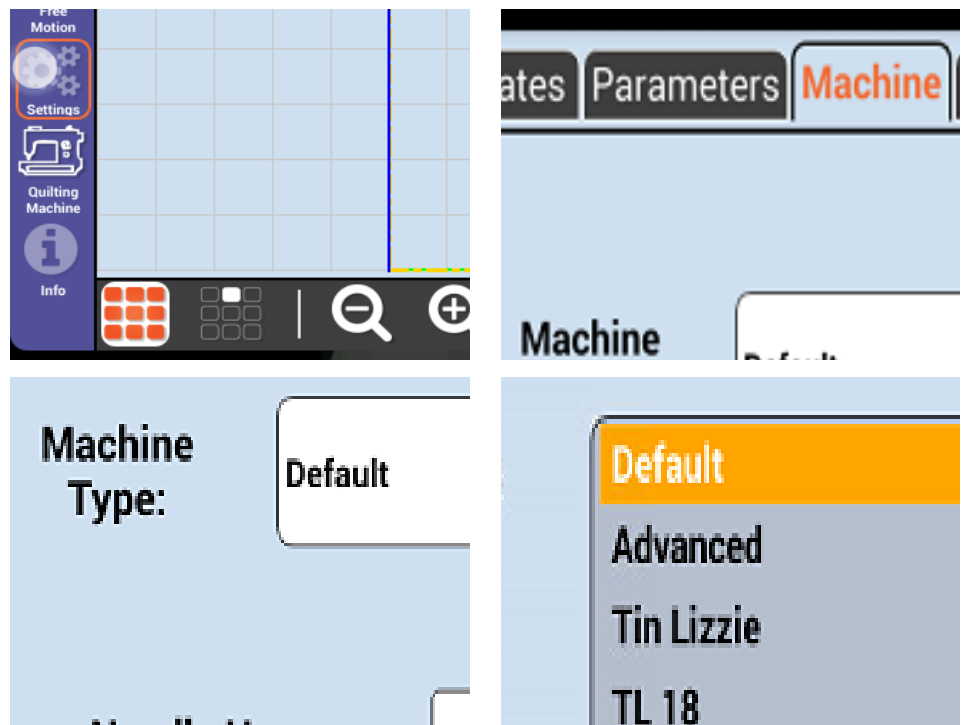


Set Machine Type

Android Tablet

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

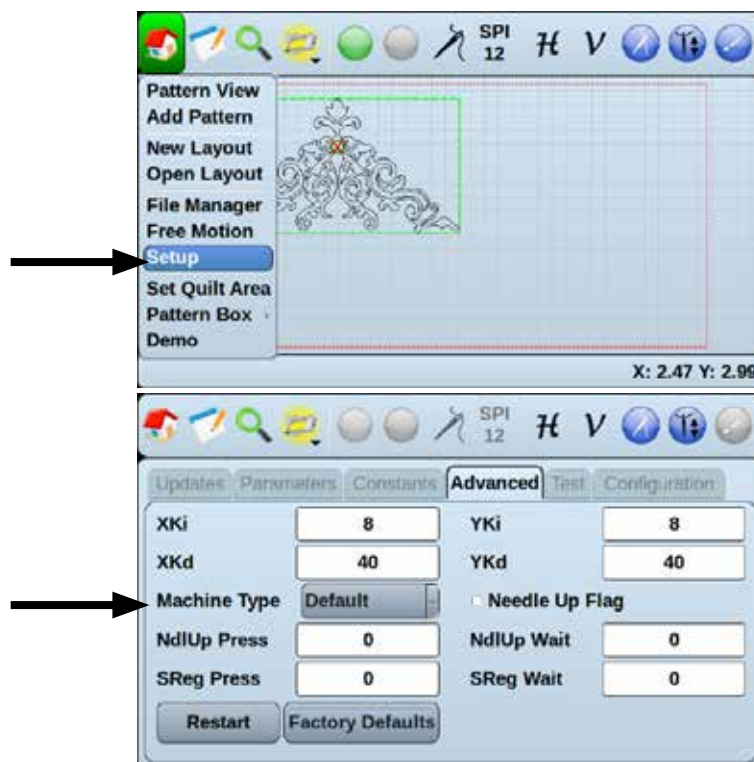
For Systems using the Remote port on the black motor box, set the machine to Tin Lizzie.



Standard Display

- 1** Power on the display, go to Setup > Advanced and set the machine type to Default for ESP, SE, or PerfectStitch machines.

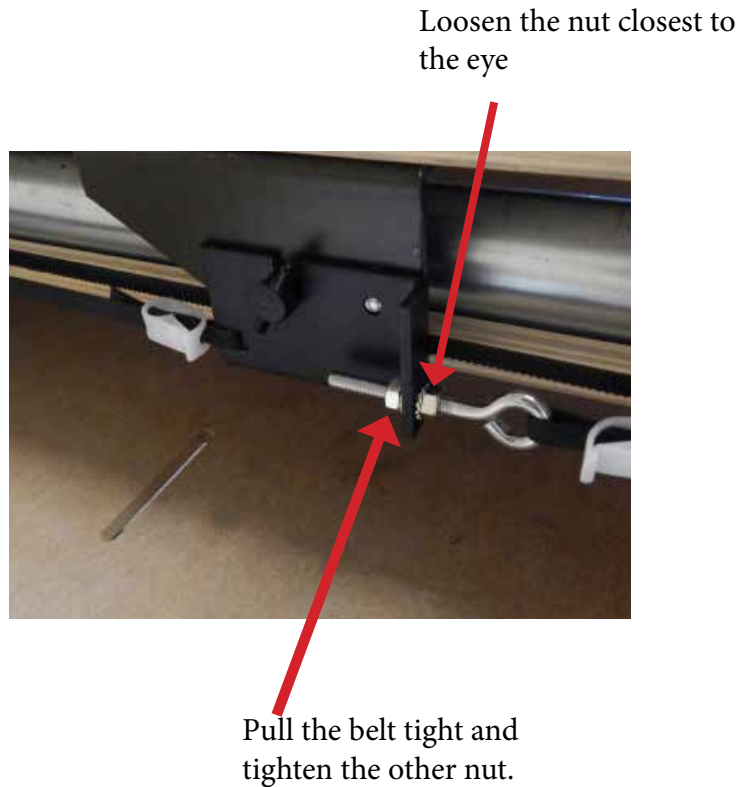
For Systems using the Remote port on the robot set the machine to Tin Lizzie.



Check Belt Tension

- 1 Adjust the belt tension by tightening the nuts on the eye-bolts.

The black belt should have about 1/4" of play while the white belt should have between 1" and 1 1/2" of play with the machine in the middle of the frame.

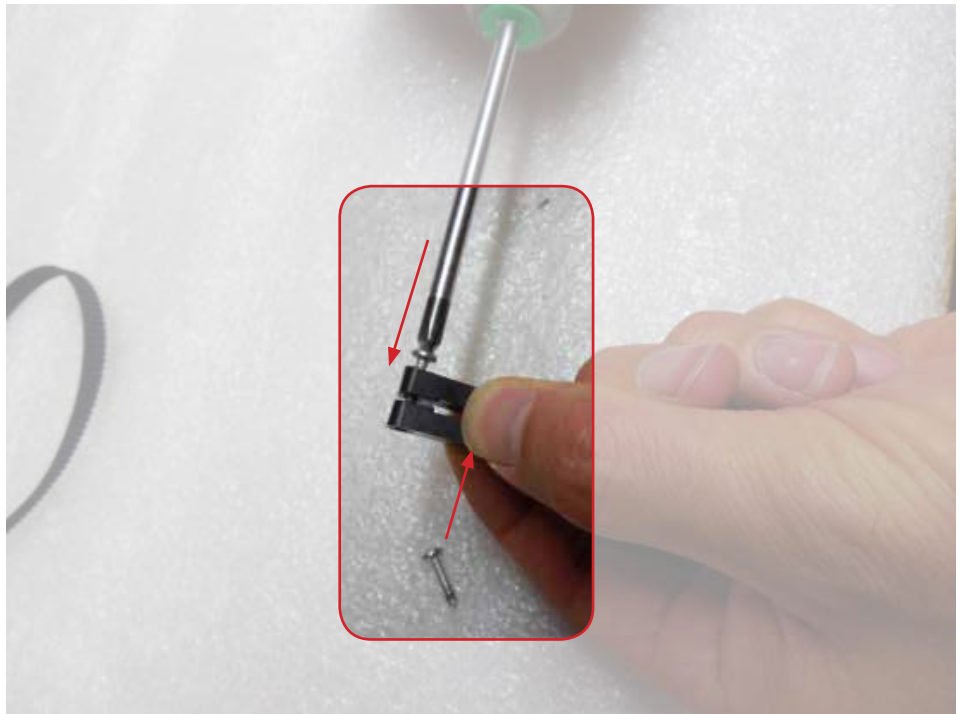


Appendix A - How to use Belt Clamps

A belt clamp consists of two clamps and two screws.



- 1** Using a Phillips screwdriver, insert each screw on opposite sides of the clamps and tighten halfway.



- 2** Thread the belt between the clamps, loop it around and reinsert it between the clamps.



- 3** Align the belt teeth, then finish tightening the clamps.



Appendix B- Additional help

Power on the robotics

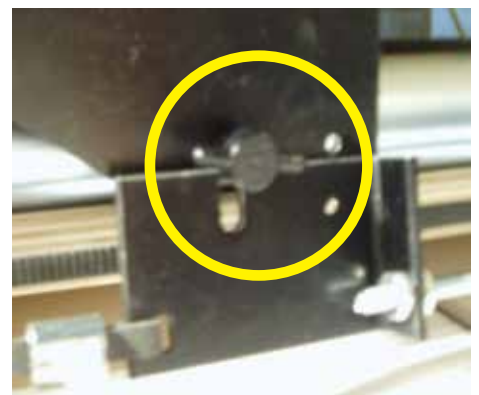
Use the power switch located on the side of the motor box with the ports to power the motor box off and on.



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, loosen the wing-nut on the carriage bracket.

You can now use free motion quilting.

Tin Lizzie Drill Template



When printing PDFs, DO NOT select fit to page, otherwise the template will be distorted when printed.

Line up the left side of the template with the front of the carriage rail.

Make sure the holes on the template line up with the holes on the motor box before drilling any holes in the carriage.



Tin Lizzie Drill Template



When printing PDFs, DO NOT select fit to page, otherwise the template will be distorted when printed.



Line up the right side of the template 9 inches from the front of the carriage on the left hand side of the carriage (from front).



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