

# SureStitch™



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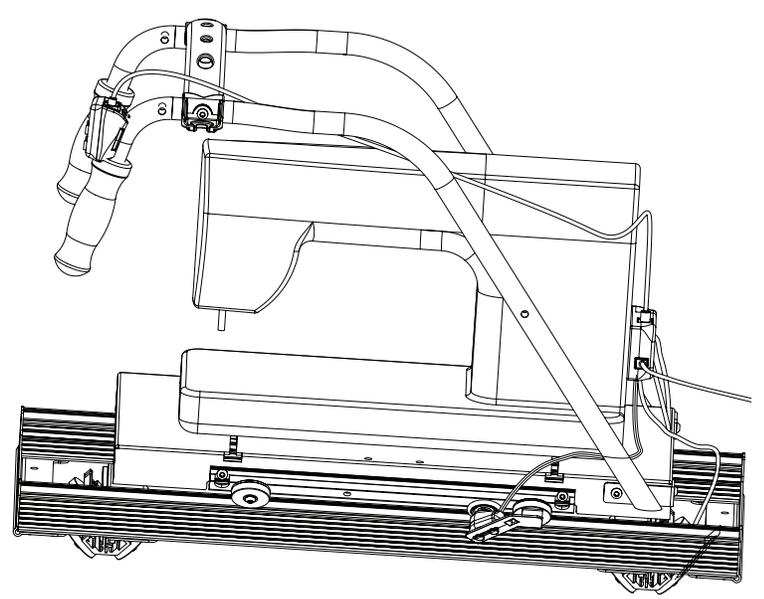
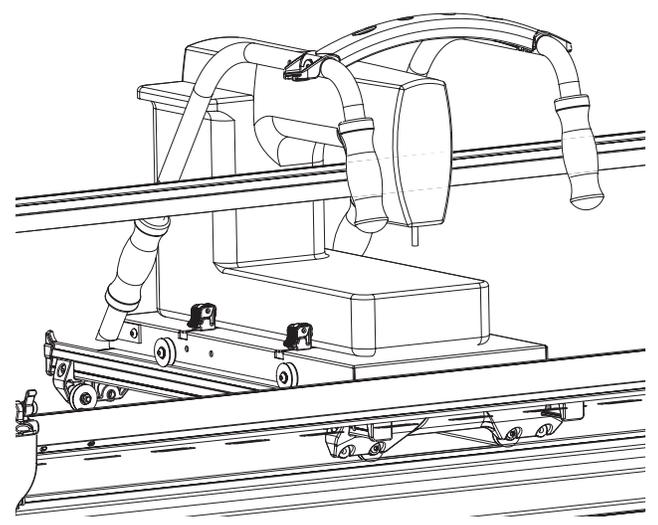
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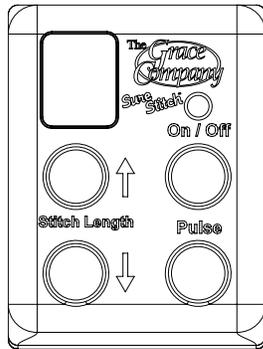
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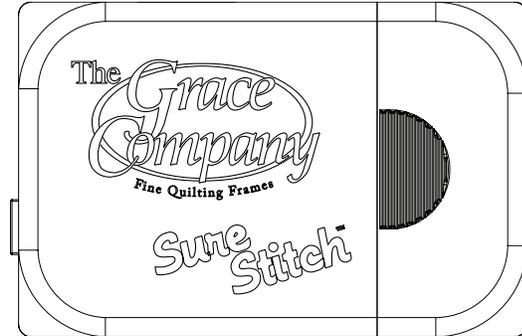
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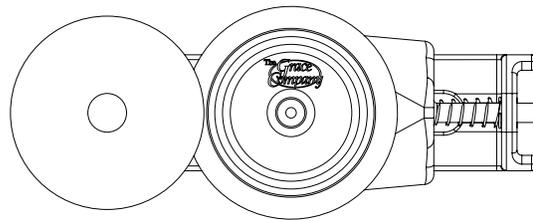
# Parts List



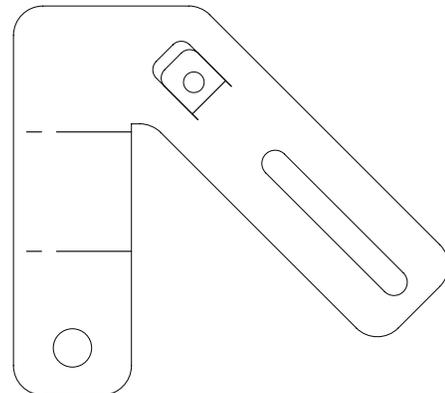
Display Console



Control Box



Encoder



Steel Dual Track Bracket

## Parts Included:

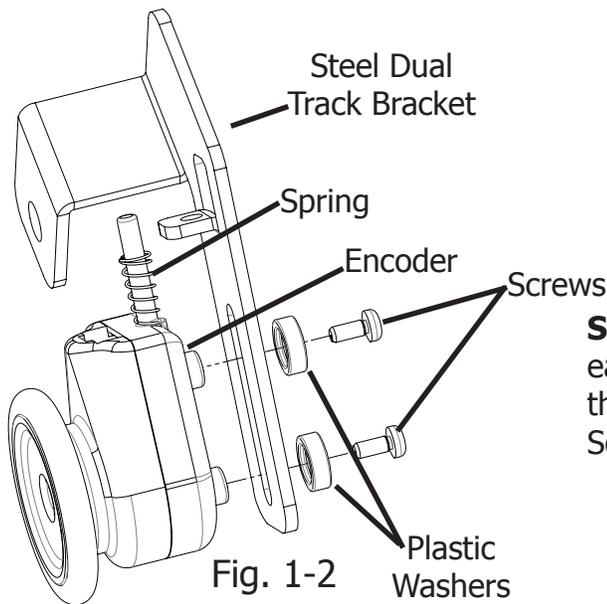
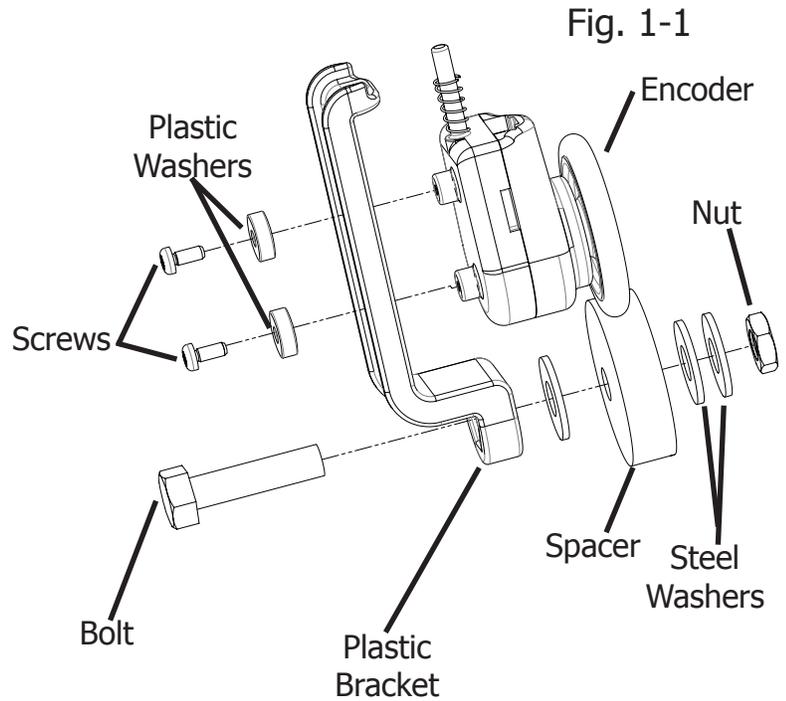
- 1: Display Console
  - 1: Control Box
  - 2: Encoder (Wires attached)
  - 2: Steel Dual Track Bracket
- (Not Shown)
- 1: 5v Power Supply
  - 1: Display Cable
  - 1: Sewing Machine Control Cable
  - 6: Velcro - Cable Ties
  - 2: Self Adhesive - Tie Mount
  - 2: Zip Tie

# Instructions for installing SureStitch on Dual Track Frames

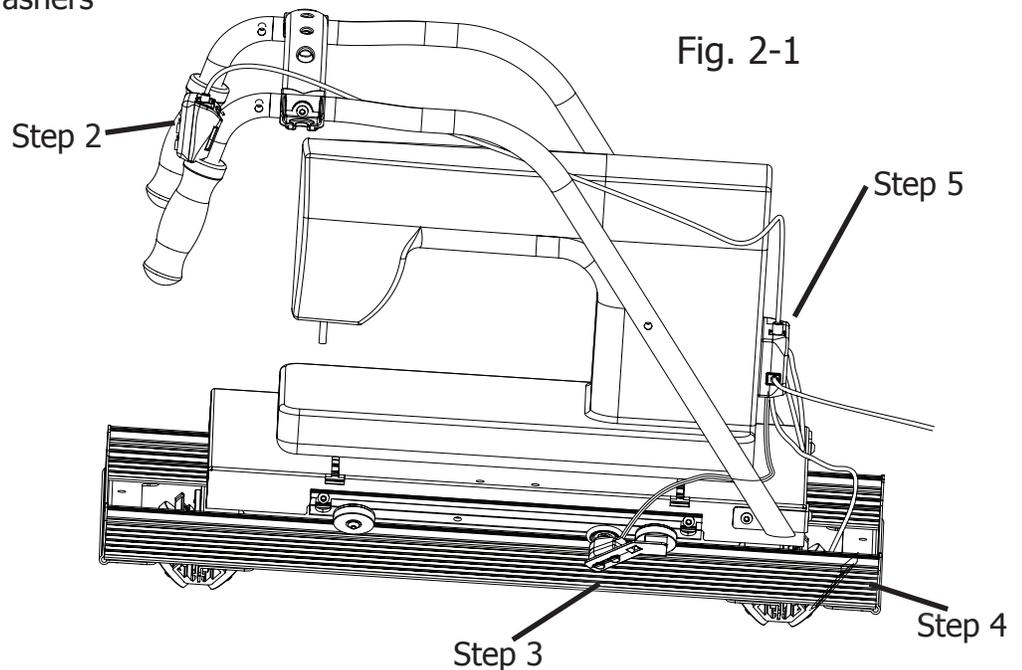
## Step 1 - Encoder Assembly

**Step 1-1:** For each Encoder Assembly remove the pre-assembled Plastic Bracket in order to attach the Steel Dual Track Bracket. This is done by first removing the Nut at the bottom of the Encoder and removing the Steel Washers, Spacer and Bolt once the Nut is removed (see Fig. A-1). Then remove the Screws and Plastic Washers on the back of the Encoder (they will be used in the next step).

**Be careful not to lose your springs.**



**Step 1-2:** Attach the Steel Dual Track Bracket to each Encoder by sliding the post with the Spring into the hole on the Bracket (see Fig. 1-2). Insert the Screws and Plastic Washers removed in Step 1-1.



## Step 2 - Display Console Attachment

**Step 2-1:** Secure the Display Console to your quilting frame with the included velcro strap. Place the Display Console so that the controls will be easily accessible while you are quilting.

**(NOTE:** Do not attach all the wires until after Step 5.)

### Step 3 - Top Plate Encoder Attachment

**Step 3-1:** Remove your sewing machine from the carriage before continuing. You will also need to turn the top plate up-side down, to be able to access the supporting hardware.

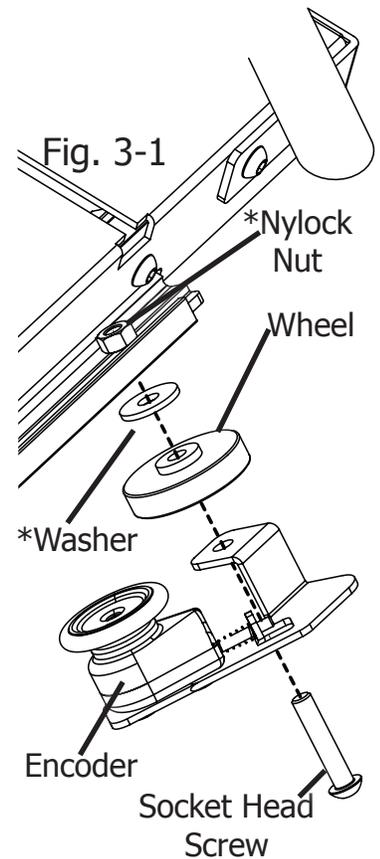
**3-2:** Unscrew the Socket Head Screw and remove the back wheel on the right side (if you are facing the front of the carriage) from the top plate before attaching the encoder. You will use the Socket Head Screw to attach the encoder assembly. (Use this wheel to reassemble the encoder, as shown above in Step 1-2, to work with this carriage.)

**Note:** If your wheel bolted directly into wheel bracket without using a nut skip to step 3-4

**3-3:** If the wheel was bolted on using a nut, place the Nylock nut that was removed from the top plate in Step 2-2 over the hole it was removed from.

**3-4:** Insert the Socket Head Screw through the encoder, Washer (for Start Right Frame only), and the Wheel which was removed and replace the wheel on the hole it was removed from, but do not fully tighten. (See Fig. 3-1)

**3-5:** Angle the encoder so that its wheel touches the track and tighten the Socket Head Screw until the encoder is secure so that it can't wiggle. *Make sure that the encoder wheel is the only part that contacts any part of the carriage.* When the top plate is sitting upright, the encoder should be angled, so that the encoder's wheel touches the track on the Bottom Plate and the spring on the encoder is partially compressed.



### Step 4 - Bottom Plate Encoder Attachment

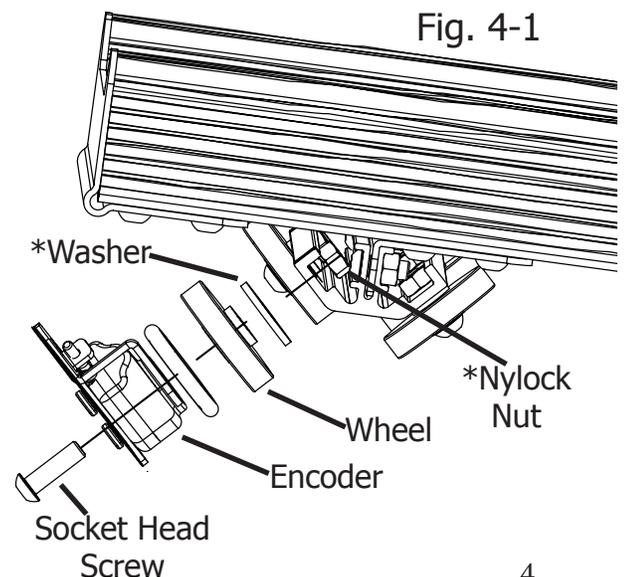
**Step 4-1:** Unscrew the Socket Head Screw and remove the back wheel on the right side. You will use the Socket Head Screw to reassemble the carriage. (This wheel will be used to reassemble the encoder, as shown above in Step A-2, to work with this carriage.)

**Note:** If your wheel bolted directly into wheel bracket without using a nut skip to step 4-3

**4-2:** If the wheel was bolted on using a nut, place the Nylock Nut that was removed from the back right wheel of the bottom plate in Step 4-1 over the hole from which it was removed.

**4-3:** Insert the Socket Head Screw through the Encoder, Washer (for Start Right Frame only), and wheel and into the hole which it was removed from, but do not fully tightening. See fig. 4-1.

**4-4:** Angle the encoder until it touches the track and tighten the Socket Head Screw until the encoder is securely attached so that it can't wiggle. *Make sure that the encoder wheel is the only part that contacts any part of the carriage.* When the bottom plate is sitting upright, the encoder should be angled up slightly, so that the encoder's wheel touches track on the quilting frame and the spring on the encoder is partially compressed. (See Fig. 4-1)



\* Washer is only used in Start Right Assembly

\* Nylock Nut not used on some Frames

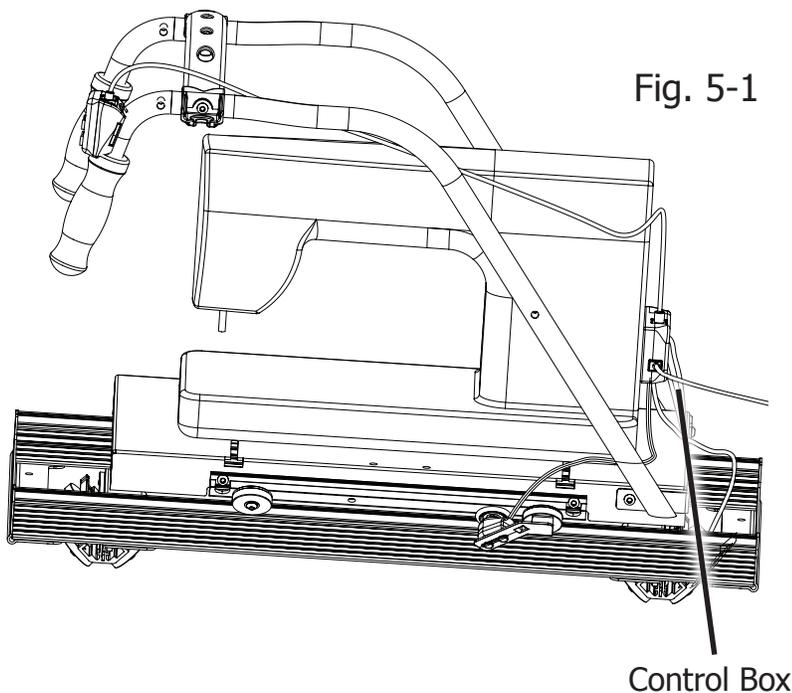
## Step 5 - Control Box Attachment

**Step 5-1:** Place your bottom and top plates back onto your quilting machine. Also, place your sewing machine back onto the carriage.

**NOTE:** One end of all of the SureStitch wires are attached to the Control Box. Determine a place to mount the Control Box where it, or the wires attached to it do not obstruct other features on your quilting frame, or sewing machine. (the back of your sewing machine is often an ideal location to mount your Control Box, but other locations may work better for you.)

**5-2:** Remove the backing from the adhesive on the back of the Control Box.

**5-3:** Adhere the Control Box to the location you have determined to be the most convenient.



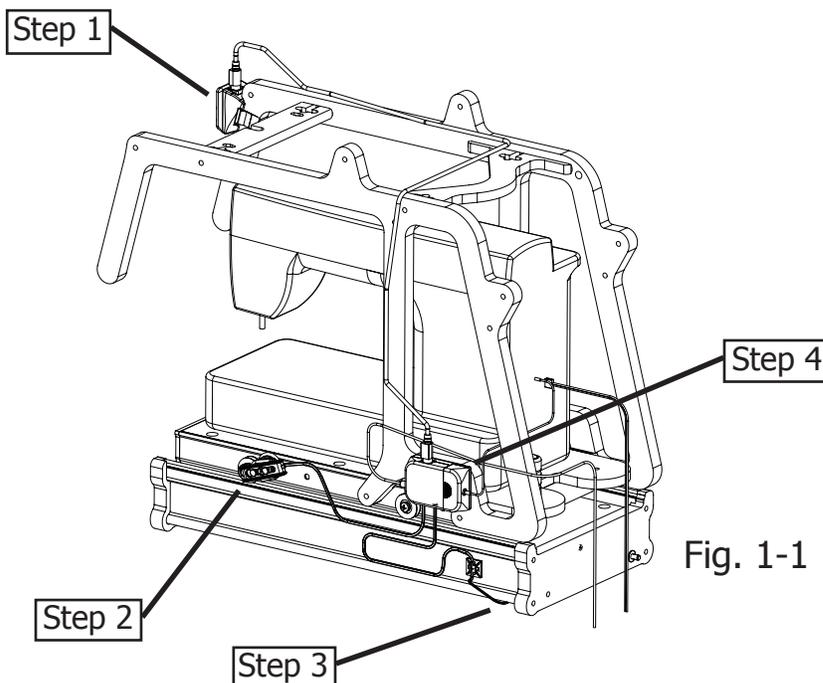
**Go to page 10 for cable installation instruction.**

# User Manual for installation on Wooden Carriage

## SureStitch - Assembly

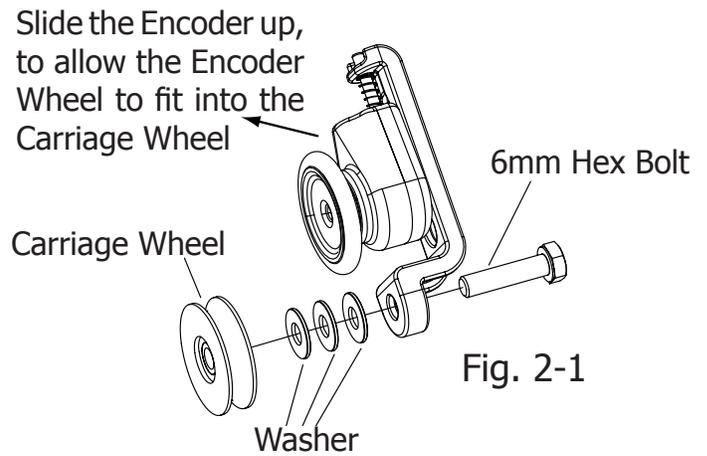
### Step 1 - Display Console Attachment

**1-1:** Secure the Display Console to your quilting frame with the included velcro strap. Place the Display Console so that its controls will be easily accessible while you are quilting. (**NOTE:** Wait to attach all wires until after Step 5.)



## Step 2 - Encoder Wheel Attachment

**Step 2-1:** This section is provided so you can properly attach a wheel to your encoder. The process is identical for any bolt used. Replace the Spacer with the Carriage Wheel (removed from your carriage) as shown in Fig. 2-1.



## Step 3 - Top Plate Encoder Attachment

**Note:** The Encoders come with different sized bolts. Use the encoder with the shorter bolt on the top plate and the encoder with the longer bolt on the bottom plate.

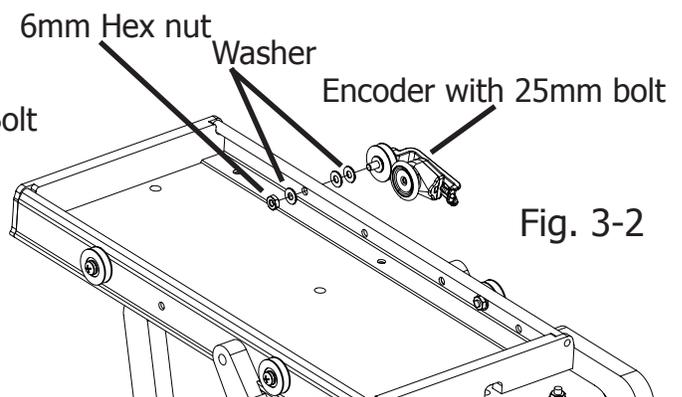
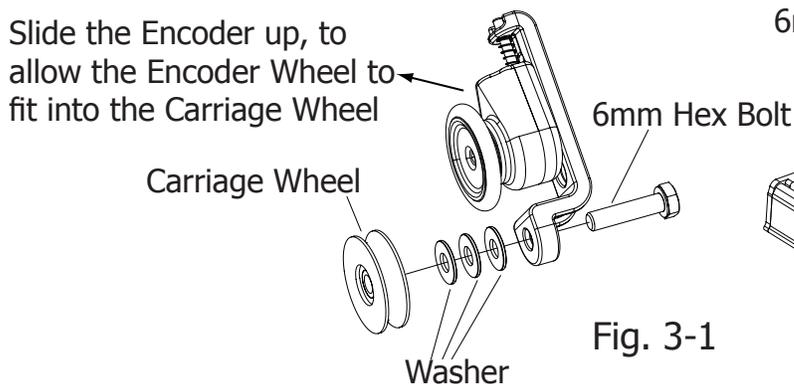
**Step 3-1:** Remove your sewing machine from the carriage before continuing. You will also need to turn the top plate up-side down, to be able to access the supporting hardware.

**3-2:** Remove one of the front wheels from the top plate. (To help keep the wires more organized attach this encoder to the same side of the carriage that you will attach the Control Box to, in Step 5.)

**3-3:** Remove the 6mm Hex nut, the first washers and the cardboard spacer from the encoder with the shorter bolt. Then replace the spacer with the wheel that you removed in step 2-2. (See Fig. 2-1)

**3-4:** Place the exposed end of the bolt on the encoder through the hole where the wheel was just removed.

**3-5:** Place the washer, and 6mm nut back onto the bolt and tighten the nut securely. When you tighten the nut, make sure that the encoders moving parts don't contact any part of the carriage. When the top plate is sitting upright, the encoder should be angled up, so that the encoder's wheel doesn't touch the track on the bottom plate. (See Fig. 2-2).



## Step 4 - Bottom Plate Encoder Attachment

**NOTE: THE WHEELS ON ONE END OF THE BOTTOM PLATE ARE ATTACHED AS SHOWN IN Fig. 4-1. REMOVE ONE OF THESE WHEELS IN STEP 4-1.** The wheels attached to the other end of the Bottom Plate can not be used to attach the encoder.

**Step 4-1:** Remove one of the wheels from the bottom plate. (To help keep the wires more organized attach this encoder to the side of the carriage that is opposite of the side you attached the top plate encoder to, in Step 2. )

**4-2:** Remove the 6mm Hex nut, and the first washer from the remaining encoder and replace the cardboard spacer with the wheel that you removed from the bottom plate. Which should be a longer bolt.

**4-3:** Insert the exposed end of the bolt on the Encoder through the hole that the wheel was removed from, as shown in Fig. 4-2

**4-4:** Place the washer, and 6mm nut back onto the bolt. Tighten the nut securely. When you tighten the nut make sure that the encoders moving parts don't contact any part of the carriage. When the bottom plate is sitting upright, the encoder should be angled up, so that the encoder wheel won't touch the table track.

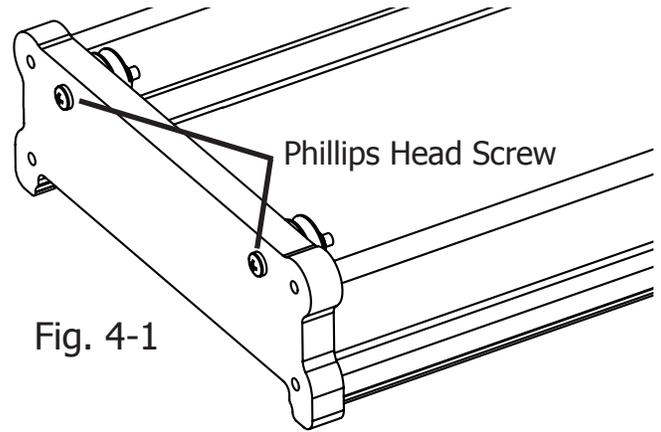


Fig. 4-1

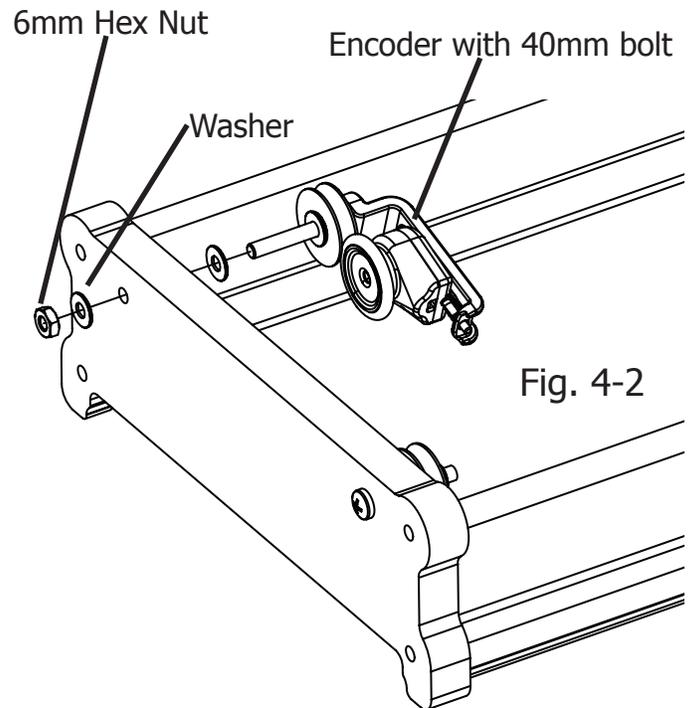


Fig. 4-2

## Control Box Attachment

**Step 5-1:** Place your bottom and top plates back onto your quilting frame. Also, place your sewing machine back onto the carriage.

**NOTE:** One end of all the SureStitch wires are attached to the Control Box. Determine a place to mount the Control Box where it, or the wires attached to it do not obstruct other features on your quilting frame, or sewing machine. (The lower portion of one of the carriage handles (see Fig. 5-1), or directly to the back of your sewing machine are often ideal locations, but other locations may work better for you.)

**5-2:** Remove the backing from the adhesive on the back of the Control Box.

**5-3:** Adhere the Control Box to the location that you have determined to be the most convenient.

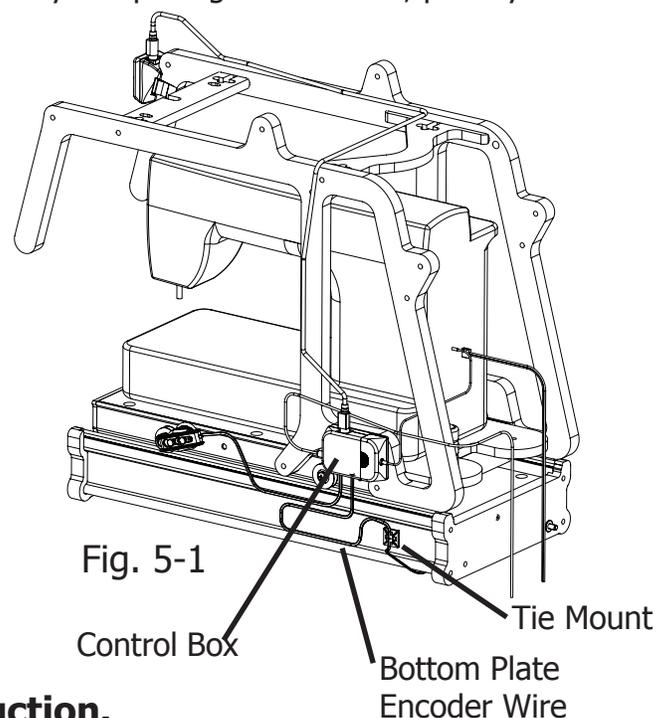


Fig. 5-1

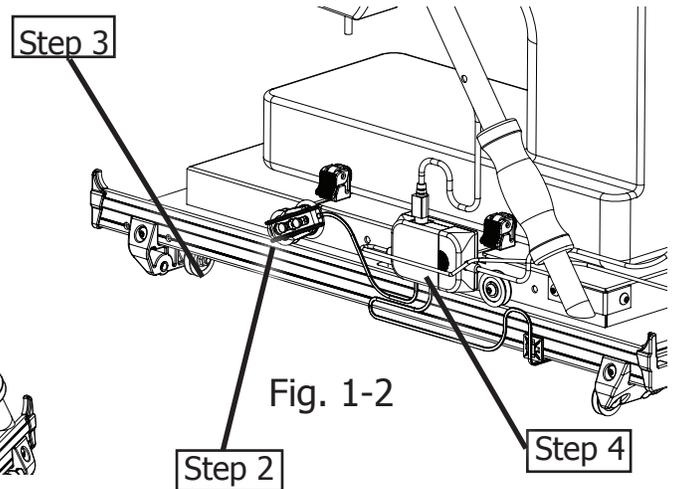
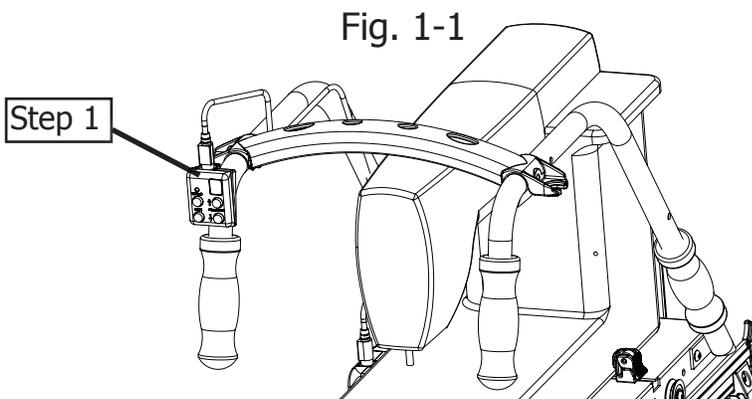
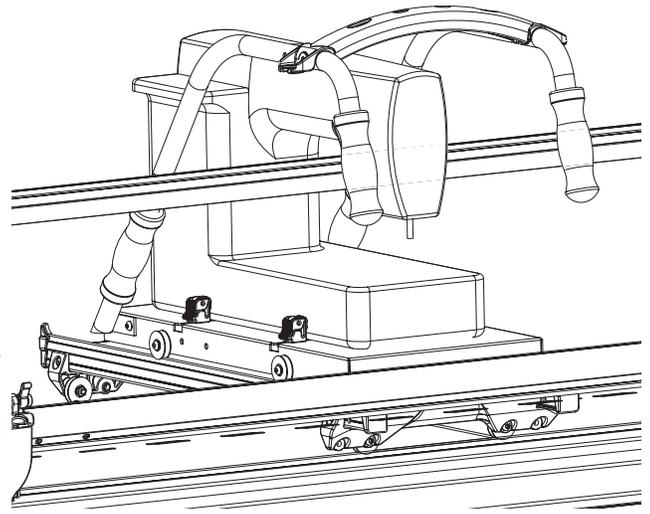
**Go to page 10 for cable installation instruction.**

# Instructions for installing the SureStitch on the Pinnacle, Mini-Pinni, and the Professional Series Carriage Upgrade

## SureStitch - Assembly

### Display Console Attachment

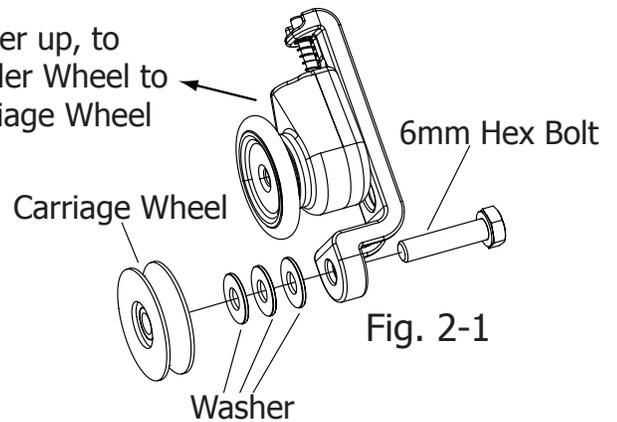
**Step 1:** Secure the Display Console to the handle of your carriage with the included velcro strap. Place the Display Console so that it's controls will be easily accessible while you are quilting. (**NOTE:** Do not to attach the wires until Step 5.)



### Step 2 - Encoder Wheel Attachment

**Step 2-1:** This section is provided so you can properly attach a wheel to your encoder. The process is identical for any bolt used. Replace the Spacer with the Carriage Wheel as shown in Fig. 2-1.

Slide the Encoder up, to allow the Encoder Wheel to fit into the Carriage Wheel



### Step 3 - Top Plate Encoder Attachment

**Note:** The Encoders come with different sized bolts. Use the encoder with the shorter bolt on the top plate and the encoder with the longer bolt on the bottom plate.

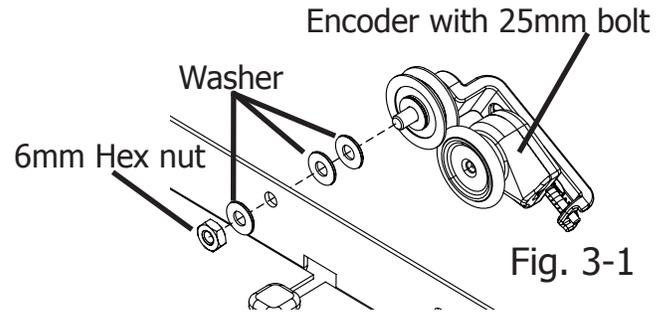
**3-1:** Remove your sewing machine from the carriage before continuing. You will also need to turn the top plate up-side down, to be able to access the supporting hardware.

**3-2:** Remove one of the front wheels from the top plate before attaching the encoder. (To help keep the wires more organized, attach this encoder to the same side of the carriage that you will attach the Control Box to, in Step 4. )

**3-3:** Remove the 6mm Hex nut, and the first washer from the **encoder with the shorter bolt** and replace the spacer with the Carriage Wheel.

**3-4:** Place the exposed end of the bolt on the Encoder through the hole that the wheel that you removed, was in. (See Fig. 1-1)

**3-5:** Apply the Washer, and 6mm nut back onto the bolt. Tighten the nut securely. When you tighten the nut, *make sure that the encoders moving parts don't contact any part of the carriage.* When the top plate is sitting upright, the encoder should be angled up, so that the encoder's wheel doesn't touch the track on the Bottom Plate.



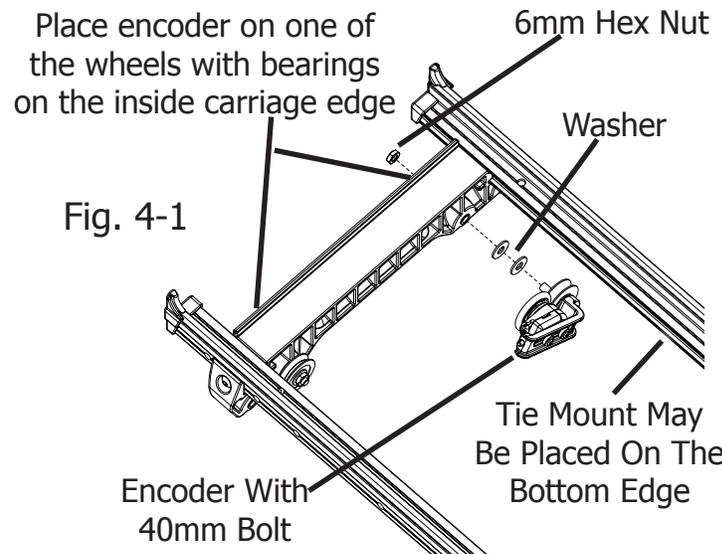
**Bottom Plate Encoder Attachment**

**Step 4-1:** Remove one of the wheels from the bottom plate. (To help keep the wires more organized attach this encoder to the side of the carriage that is opposite of the side you attached the top plate encoder to, in Step 2. )

**4-2:** Remove the 6mm Hex nut, and the first washer and spacer and replace it with a the Carriage Wheel. This encoder should have the longer bolt through the wheel (40mm).

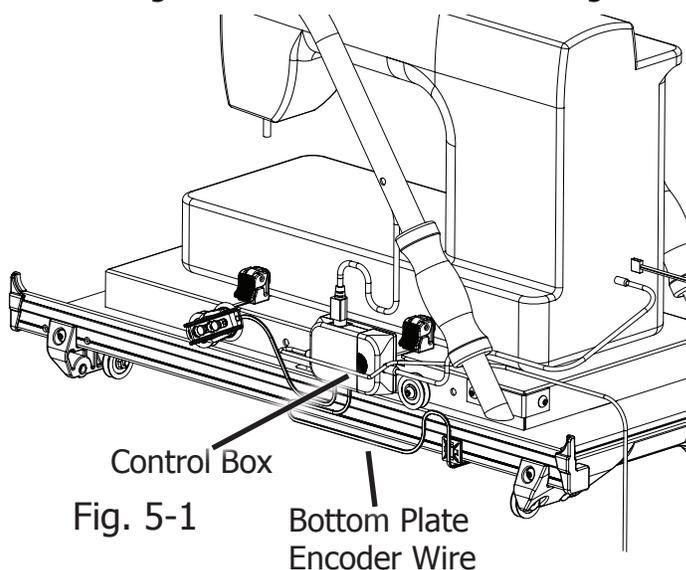
**4-3:** Place the exposed end of the bolt on the Encoder through the hole that the wheel that you just removed, was in. Fig. 2-1

**4-4:** Place the Washer, and 6mm nut back onto the bolt and tighten the nut securely. When you tighten the nut *make sure that the encoders moving parts don't contact any part of the carriage.* When the bottom plate is sitting upright, the encoder should be angled up, so that the encoder wheel doesn't touch the Track.



**Control Box Attachment**

**Step 5-1:** Place your bottom, and top plates back onto your quilting machine. Also, Place your sewing machine back onto the carriage.



**NOTE:** One end of all SureStitch wires are attached to the Control Box. Determine a place to mount the Control Box where it, or the wires attached to it do not obstruct other features on your quilting frame, or sewing machine. (The side of the top plate (see Fig. 5-1), or directly to the back of your sewing machine are often ideal locations, but other locations may work better for you.)

**5-2:** Remove the backing from the adhesive on the back of the Control Box.

**5-3:** Adhere the Control Box to the location that you have determined to be the most convenient.

# Operating SureStitch

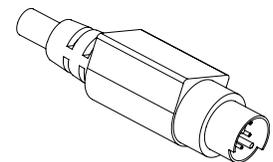
## Wire Attachment

### NOTE:

- When wiring the SureStitch make sure that your sewing machine is turned off, and unplugged from power, (this will ensure that when your sewing machine is turned on, it will accept the SureStitch as it's speed control).
- Leave a little slack in the wires near the wire connectors, to prevent the connector from being pulled out, or damaged.
- Secure the wires to the carriage using the included velcro straps, tie mounts, and zip ties. Keep the wires taut between the velcro straps, and keep the wires organized.
- When there is more wire than you need, coil up the extra wire, and secure it to the carriage so that it is out of the way.

**Step 6-1:** Attach the Display Wire (See Fig. 6-1, and Fig 6-2) to the Display Console, and to the Control Box. Be sure to line up the pins in the connectors to avoid bending them. Secure the wire to the carriage to keep the wire organized.

**6-2:** Attach the wires from each of the encoders to the Control Box. It doesn't matter which wire goes into which of the Telephone Type connectors. Secure the encoder wires to the carriage using Tie Mounts and Zip Ties to keep the wires organized.



Display Wire Connector  
Fig. 6-1

**NOTE:** When securing the wires for the bottom plate encoder, be sure to leave enough slack to allow the top plate to travel its entire available distance. This will prevent damage to the encoder wire. Also, use a tie mount to secure the encoder wire to the bottom plate to prevent the wire from rubbing on the quilting frame table when the carriage is being moved.

## Wiring Diagram

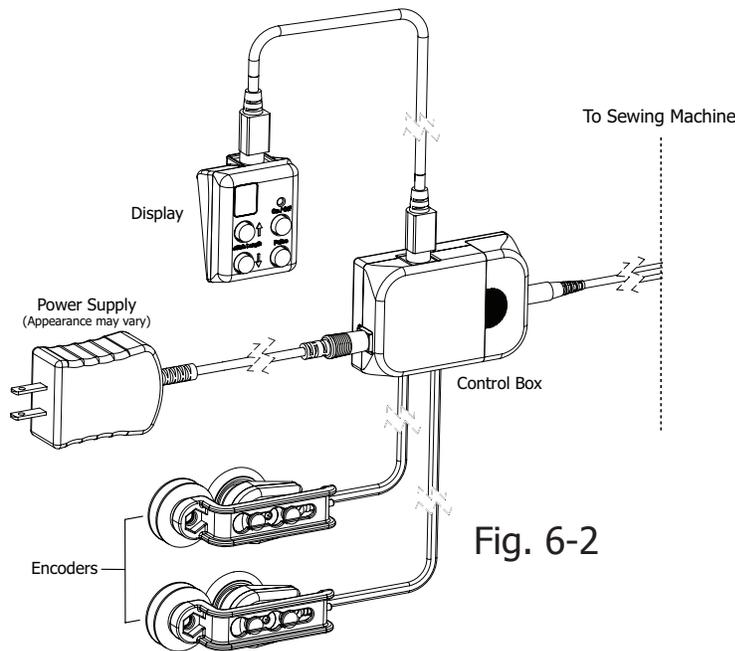


Fig. 6-2

**6-3:** Connect the sewing machine control wire to the Control Box, and also to the location on your sewing machine where the foot pedal attaches.

**6-4:** Plug your sewing machine into an available power outlet, but do not turn your sewing machine on. Connect the 5 volt power supply to the Control Box. Plug the 5 volt power supply into an available power outlet. (The power supply needs to be connected to a cord that is long enough to allow the carriage to travel the entire length of the quilting frame.) It is OK to leave the SureStitch connected to a power source. If you disconnect the SureStitch from power, be sure to re-attach the unit to power before turning on your sewing machine.

**6-5:** Check to ensure that all of the wires are attached correctly. When the SureStitch is first connected to power, the LED panel on the display should show a number 5.

## Troubleshooting

If you are experiencing problems.

**T1-1:** Turn the sewing machine off.

**T1-2:** Unplug the power cord out of the SureStitch control box.

**T1-3:** Plug the power cord back into the SureStitch control box.

**T1-4:** Turn the sewing machine on.

Because of your sewing machine's built-in safety features, sometimes the machine will not respond to your movement of the carriage and needs to be reset.

If your machine is running at an unusually slow speed, reset your machine and SureStitch using the following steps.

**T2-1:** Turn the sewing machine off.

**T2-2:** Unplug the sewing machine from the wall, wait 5 seconds, then plug it back in.

**T2-3:** Unplug the power cord out of the SureStitch control box.

**T2-4:** Plug the power cord back into the SureStitch control box.

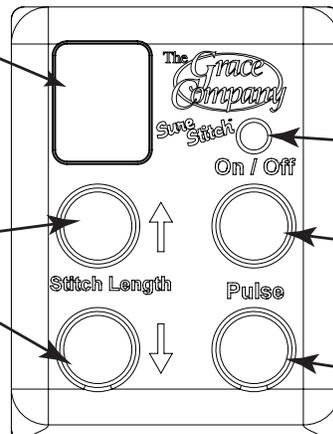
**T2-5:** Turn the sewing machine back on.

## SureStitch - Operation Instructions

**Note:** When the SureStitch is in the "on" mode, the sewing machine WILL BEGIN TO STITCH! When you stop moving the machine, it will continue to stitch at the sewing machine's minimum speed until you press the off button. This feature ensures the machine will maintain as consistent a stitch length as possible with the initial movement of the machine.

Stitch Length Display

Stitch Length Buttons



Active (Green)/  
Over-speed (Red)  
Indicator

On/Off Button

Pulse Button

All of the SureStitches controls are located on the Display Console.

**On/Off Button:** The On/Off button activates/disables the regulated stitch feature of the SureStitch. When the regulated stitch is active, the green LED light directly above the button will be lit. In regulated mode, your sewing machine will automatically adjust the speed that it stitches based on how fast you move your sewing machine around on the quilting frame. If you move your sewing machine too fast, it will reach its maximum stitch speed, and no longer be able to stitch fast enough to keep a constant stitch size. The green LED above the On/Off button will turn red when your sewing machine has reached its maximum stitch speed. When the LED above the On/Off button is lit red, your stitches will be longer than your set size.

**Pulse Button:** When the Pulse button is pushed your sewing machine will sew at a constant speed, until the button is released. Use the Pulse button to tie off a stitch, or to sew at a constant, non-regulated speed.

**Stitch Length Buttons:** Use the Stitch Length buttons to adjust how long your stitches will be while using the regulated stitch mode. The LED display directly above the Stitch Length buttons displays your current Stitch Length setting. You can set the Stitch Length from "1" to "10", indicated by "0", the stitch length setting does not indicate "Stitches per inch", but will be consistent based on your sewing machine. The Stitch Length setting will be set to "5" every time you turn on the SureStitch.



**WARNING!** To avoid injury, always turn your sewing machine off before threading your needle, or changing your bobbin.

## SureStitch Limited 1 Year Warranty

### SureStitch Limited 1 Year Warranty

The Grace Company, warrants to the original end user customer that the SureStitch is free from defects in material and workmanship. The Grace Company will, at its option, either repair or replace any part of the SureStitch system that proves defective by reason of improper workmanship or materials. Repaired parts or replacement products will be provided by The Grace Company on an exchange basis, and will be either new or refurbished to be functionally equivalent to new. If The Grace Company is unable to repair or replace the product, it will refund the current value of the product at the time the warranty claim is made.

This limited warranty does not cover any damage to this product that results from improper installation, accident, abuse, misuse, natural disaster, insufficient or excessive electrical supply, abnormal mechanical or environmental conditions, or any unauthorized disassembly, repair, or modification.

This limited warranty covers only repair, replacement or refund for defective SureStitch devices, as provided above. The Grace Company is not liable for, and does not cover under warranty, any damage caused to machinery attached to the SureStitch. In the event of a claim, The Grace Company's sole obligation shall be replacement of the SureStitch hardware.

### Warranty Registration:

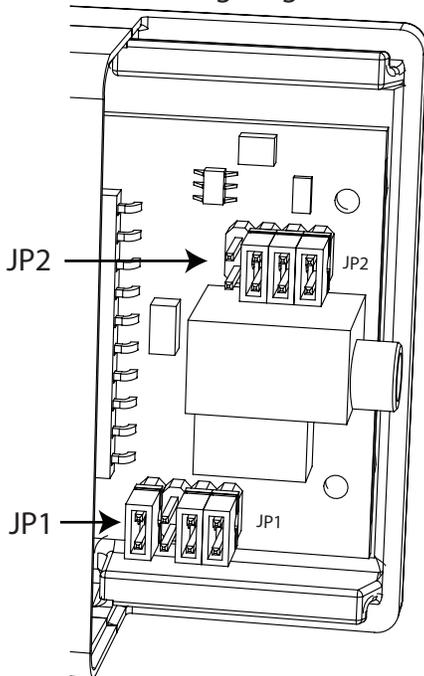
Warranty registration must be postmarked within 30 days of purchase. Please complete the included warranty registration card, and mail it, along with a copy of your sales receipt to: The Grace Company, P.O. Box 27823, Salt Lake City, UT 84127

Your SureStitch has been preset to a configuration, if you have a sewing machine other than those listed for the configuration, place jumpers in the indicated locations for the configuration that lists your sewing machine model.

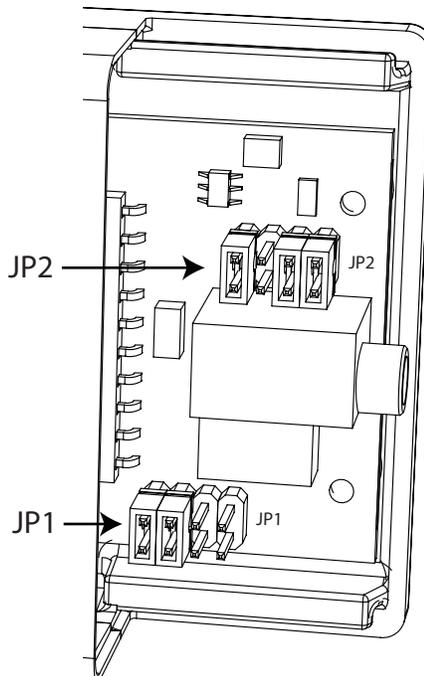
If you own a Brother 1500, or Baby Lock QC Pro your Control Box will look different than those shown below.

If your sewing machine model is not listed please call The Grace Company at 1-800-264-0644 to see if there is a model of the SureStitch that will work with your machine.

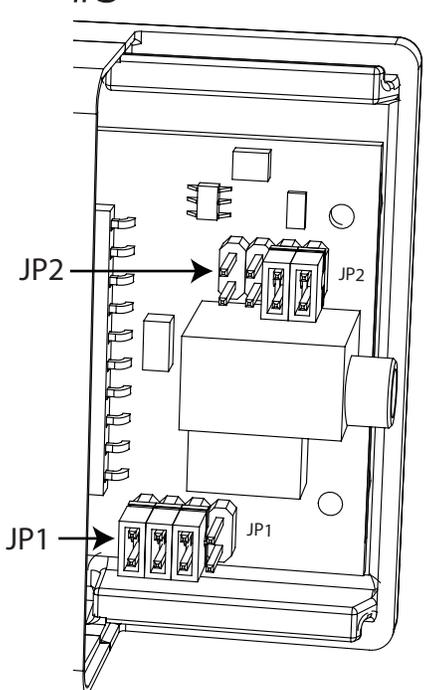
**#1** Janome 1600  
Pfaff Grand Quilter  
Viking Mega Quilter



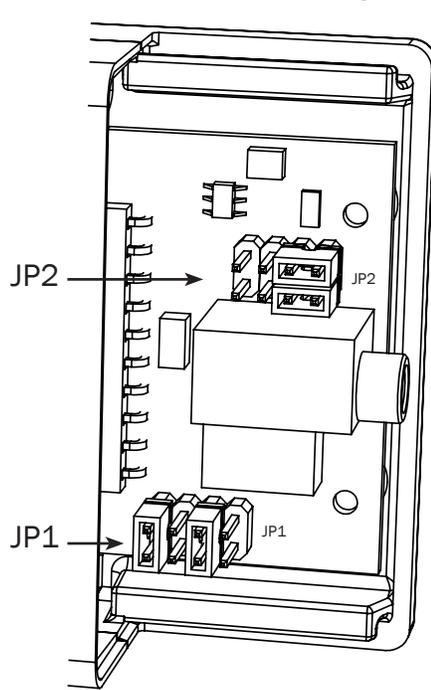
**#2** Janome 6500, 6600,  
Elna 7200



**#3** Juki TL98Q, TL98QE



**#4** Juki TL2010Q



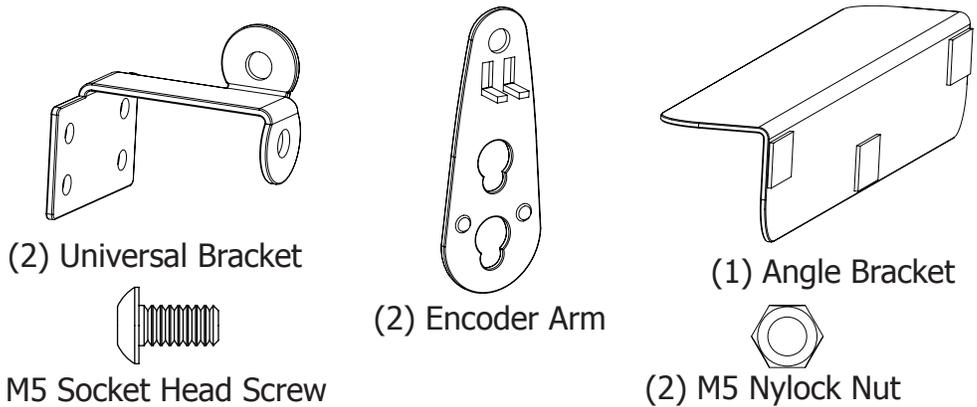
# Sure-Stitch Universal Adaptor

## Before you begin:

Take a look at the sure-stitch instructions to determine if any of your encoders can be attached without the universal adaptor brackets. Steps 2, and 3 of the Sure-Stitch manual show how the encoders are typically installed. Also note that you will need the Sure-Stitch manual to complete the Sure-Stitch installation. The Universal Adaptor is simply another method to attach the Sure-Stitch encoders to the vast majority of "Grace Company" and Non-Grace quilting frames currently available. Replace Steps 2, and 3 in the Sure-Stitch manual with this manual, but continue using the Sure-Stitch manual for all of the remaining steps.

## Hardware:

- 2) Universal Bracket
- 2) Encoder Arm
- 1) Angle Bracket
- 2) M5 Socket Head Screw
- 2) M5 Hex Nut



Keep the following guidelines in mind when determining where to attach your encoders.

Each encoder measures the movement from the Top/Bottom Plate that it is attached to. The encoders tell the controller how fast your sewing machine needs to stitch. **See Fig. 1** The encoder attached to the top plate needs to roll from front to back. The encoder attached to the bottom plate needs to be able to roll from side to side, for the entire length of your quilting frame.

The Angle Bracket is provided for quilting frames that do not have a place for the encoder wheel to roll, to give the encoder attached to the top plate a place to roll on. (Original GMQ, Original Little Gracie). See Fig. 2

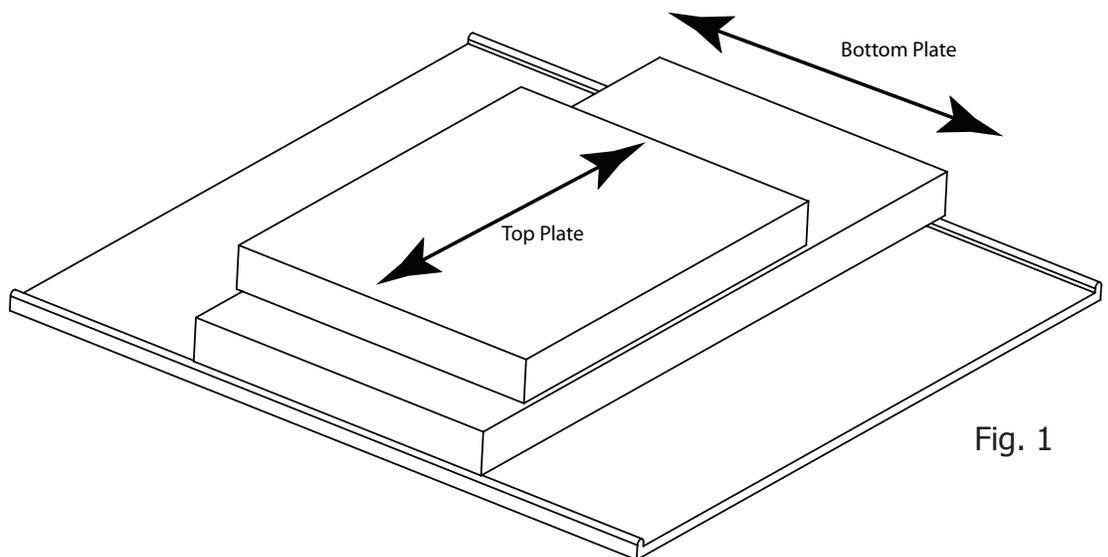
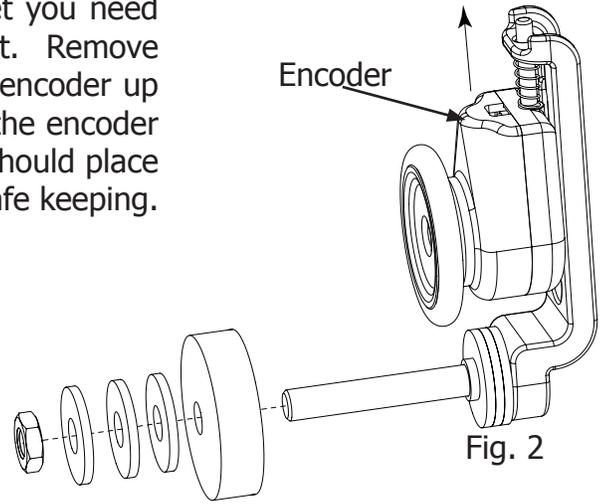
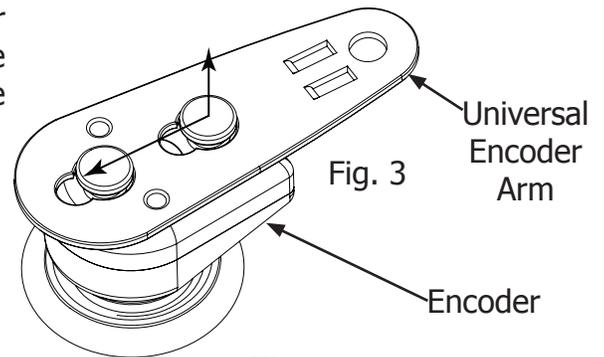


Fig. 1

Before you can attach an encoder to the Universal Bracket you need to remove the encoder from the standard encoder bracket. Remove the hardware as shown (Right). You may need to lift the encoder up slightly to remove the wheel. After the wheel is removed the encoder should now easily slide down and off of the bracket. You should place the wheel and other hardware back onto the bracket, for safe keeping.



Now attach the encoder to the Universal Encoder Arm. To do this, place the encoder posts through the holes in the Encoder Arm as shown (See Fig. 3). Then Slide the encoder into the notches. The spring isn't required to hold the encoder in place, but may be put on if you prefer, or have problems with the encoder coming off of the Encoder arm.



When you attach the Angle Bracket to the Bottom Plate be sure to attach it low enough for the Top Plate to pass over it without hitting.

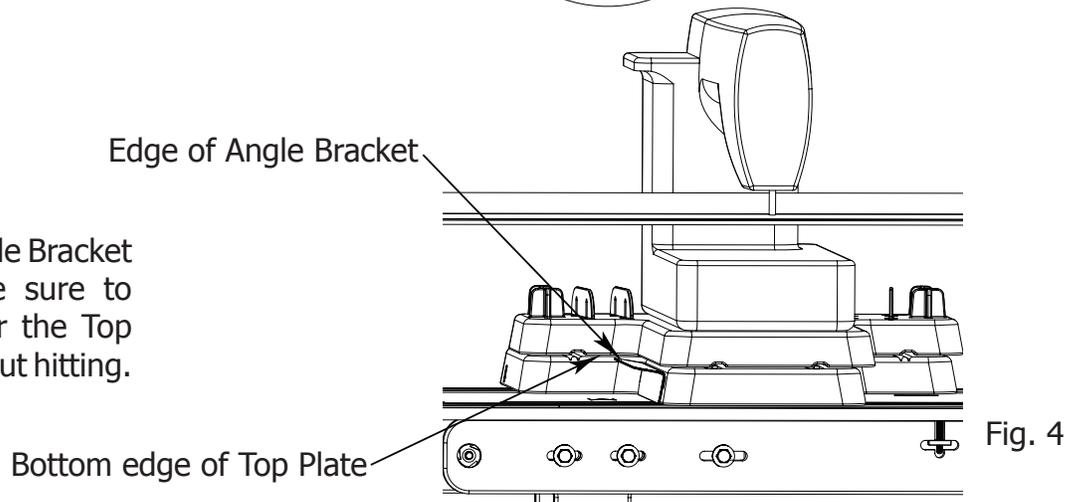
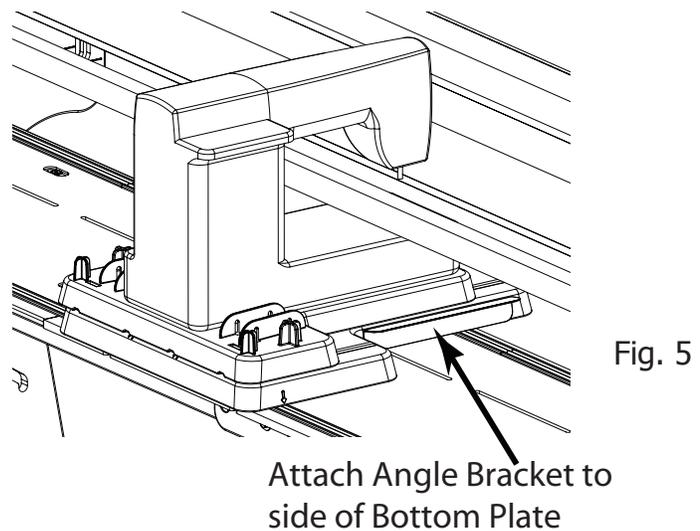
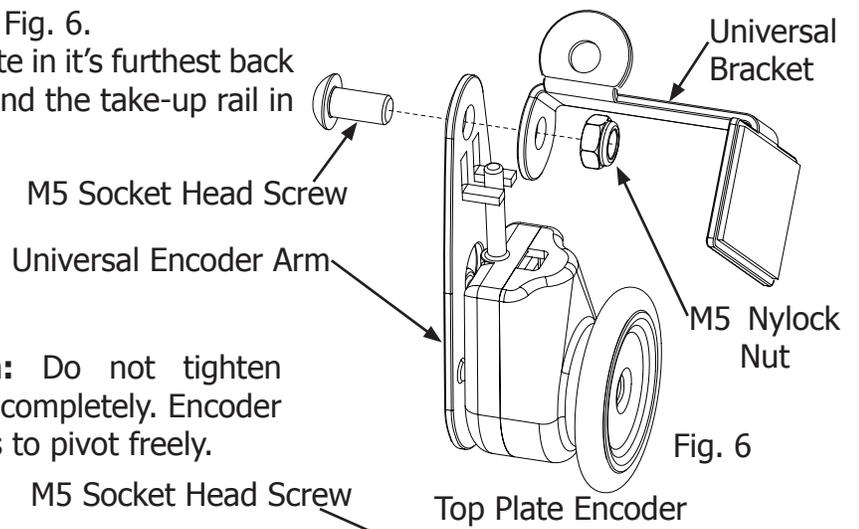


Figure 5, shows how to attach the Angle Bracket to the Bottom Plate. The Angle Bracket is required in this situation, it gives the encoder attached to the top plate a place to roll.

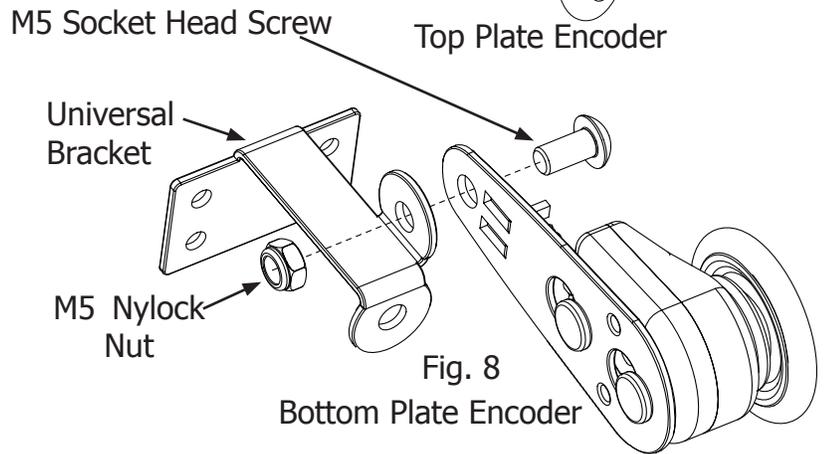
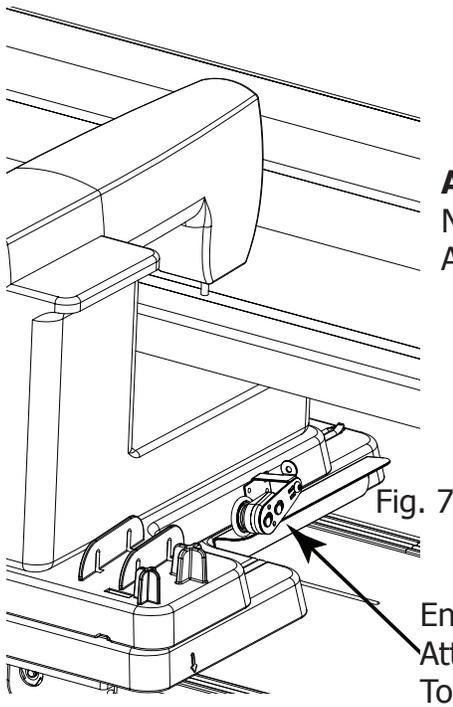


Assemble the Top Plate encoder as shown in Fig. 6.

**NOTE:** It is critical that you have the Top Plate in it's furthest back position, with the sewing machine in place, and the take-up rail in place (**before attaching the encoder**).



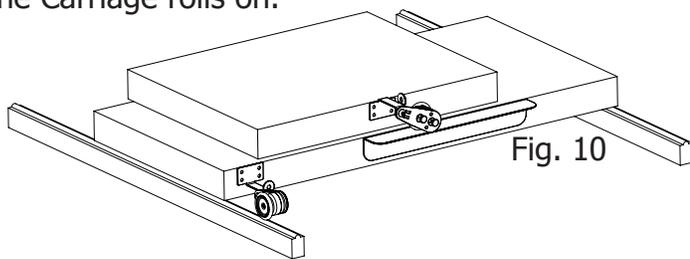
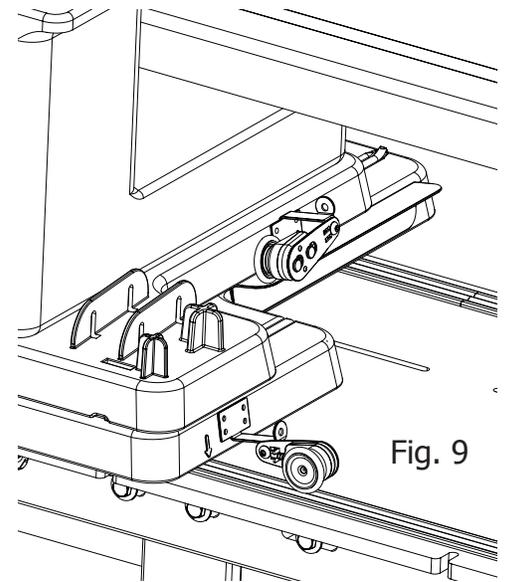
**Attention:** Do not tighten Nylock nut completely. Encoder Arm needs to pivot freely.



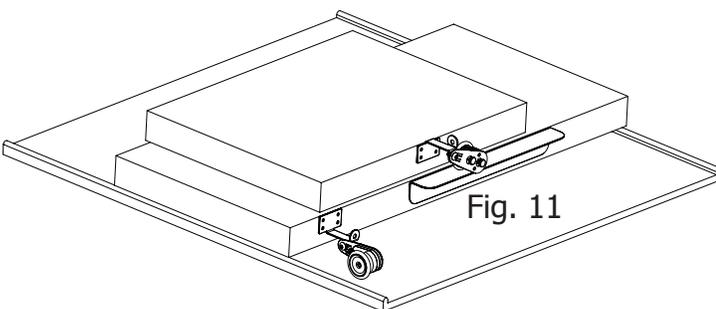
Assemble the Encoder for the Bottom Plate as shown in Fig. 8.

**Attention:** Do not tighten Nylock nut completely. Encoder Arm needs to pivot freely.

Attach the encoder to the Bottom plate so that it rolls on the track that the Carriage rolls on.



Quilting Frame without continuous table.



Quilting Frame with continuous Table

There are many other possible ways to attach the Sure-Stitch to a quilting frame. If you don't see a picture matching your type of Frame in this manual, there is still very likely a way to attach the encoders. (See Right)