A V L L O O M S
AVL Looms, Incorporated

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Jacq3G Drive Cable Replacement Procedure

Introduction

This document applies to all Jacq3G Jacquard looms. The Jacq3G utilizes a coated cable to actuate the knives. This single cable snakes through the Jacquard module with both ends attaching to the drive shaft drive pulley creating a closed loop connection that based on the drive shaft rotation is either pulling the knives apart to create a shed or closing the knives together for the shed selection at center shed.

Service Life

Three factors affect the service life of the drive cables: cycles (or picks), cable age and clamping effectiveness.

> *Cycles*: The cable life is specified in hundreds of thousands of cycles or picks. Drive cables should periodically be inspected after five hundred thousand cycles and replaced if wear is detected.
>
> *Cable Age*: Cable coating will age over time appearing to yellow and possibly crack. Aging is dependent upon the environment in which the loom is stored. A good rule of thumb is to check for cable aging after three years and replace if aging is visible. In addition, if corrosion is visible on the cable, it will be more prone to breakage and should be replaced.
>
> *Clamping Effectiveness*: The drive cable is clamped at four places on the module and two at the drive shaft pulley. The clamps rely on intact cable coating. If the cable coating becomes significantly damaged or stripped, the cable should be replaced. Note: coating flattening and compression is acceptable as long as the underlying cable is not flattened or exposed.

Due to risk of damaging a module, it is better to replace a questionable cable rather than wait until it breaks.

In May of 2014, AVL introduced a new drive cable material that is more flexible, more corrosion resistant and stronger. It is highly advisable to upgrade to the new cable at first appropriate opportunity.

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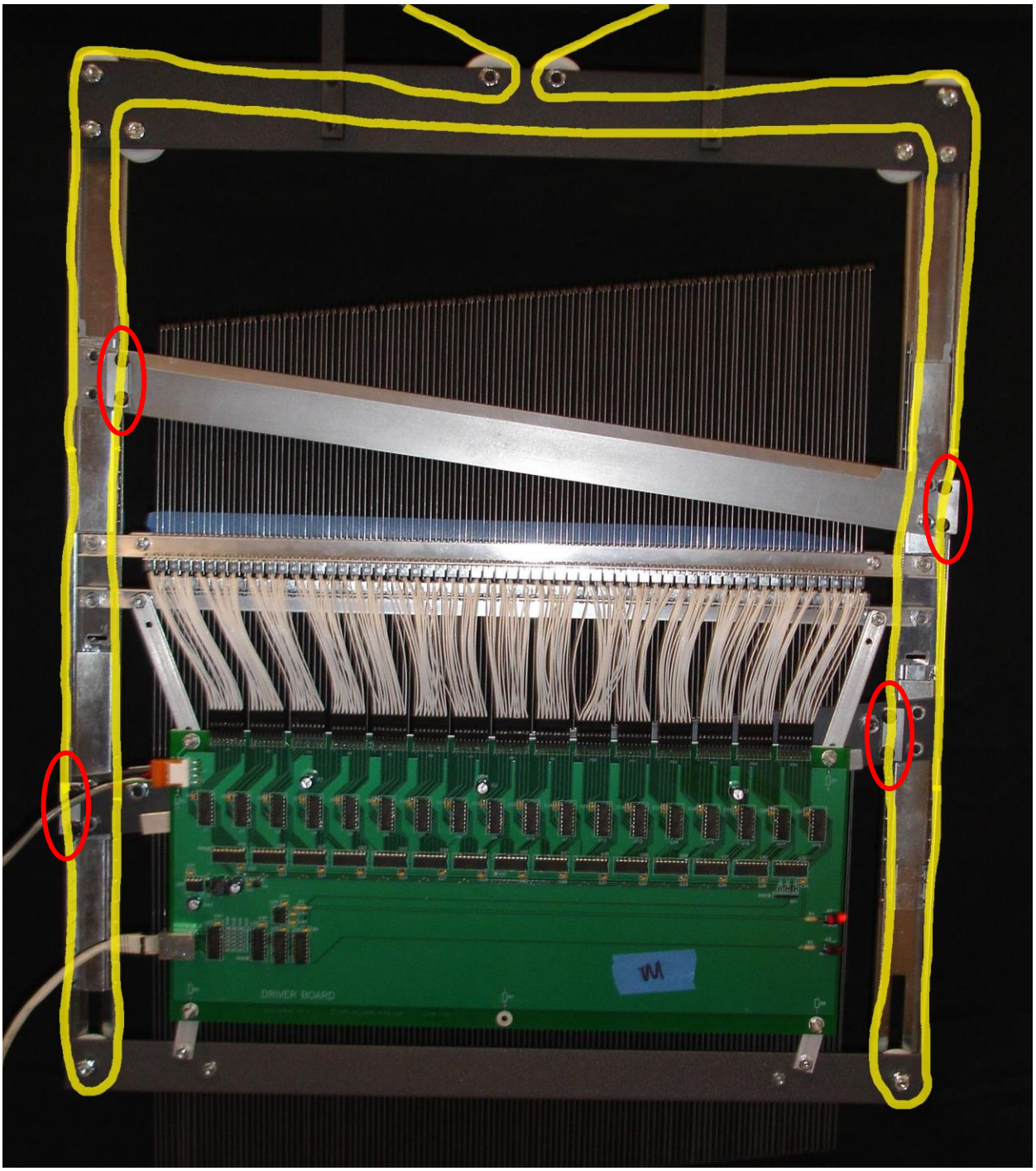

Image 1: Jacq3G Module with Highlighted Cable Path (yellow) and Clamps (red)

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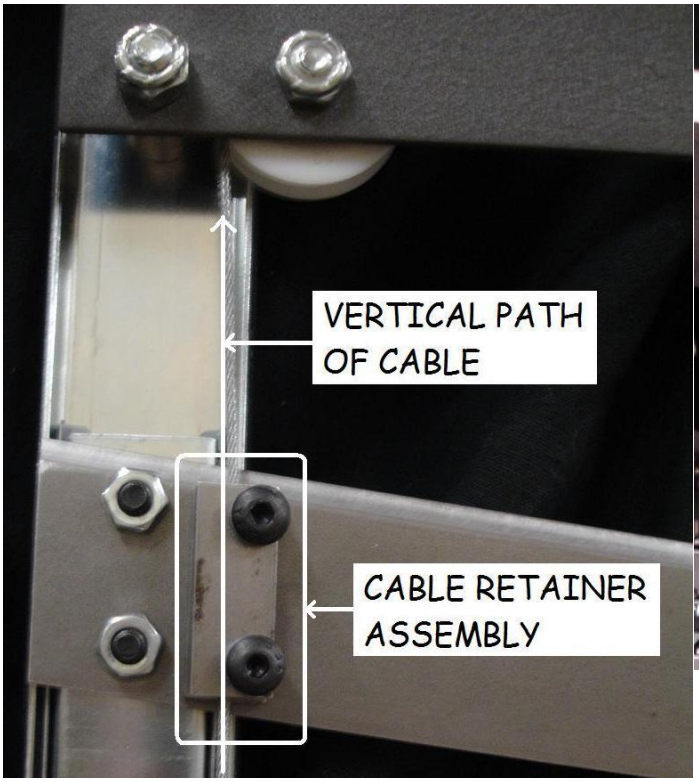

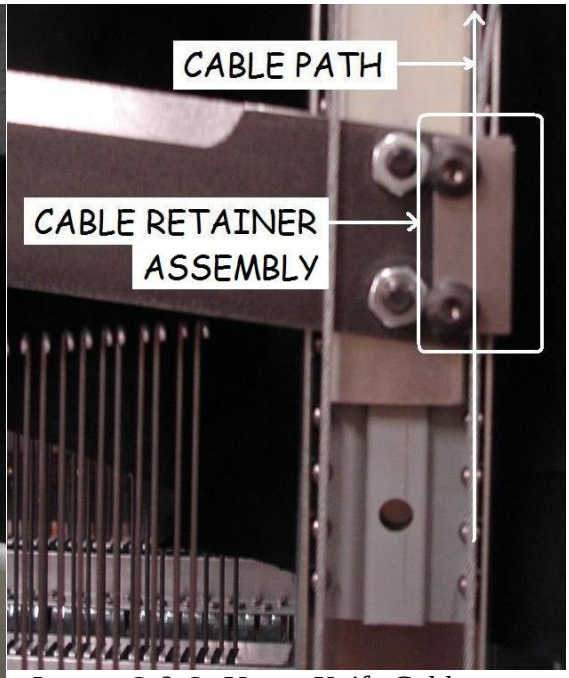

Images 2 & 3: Upper Knife Cable Clamps

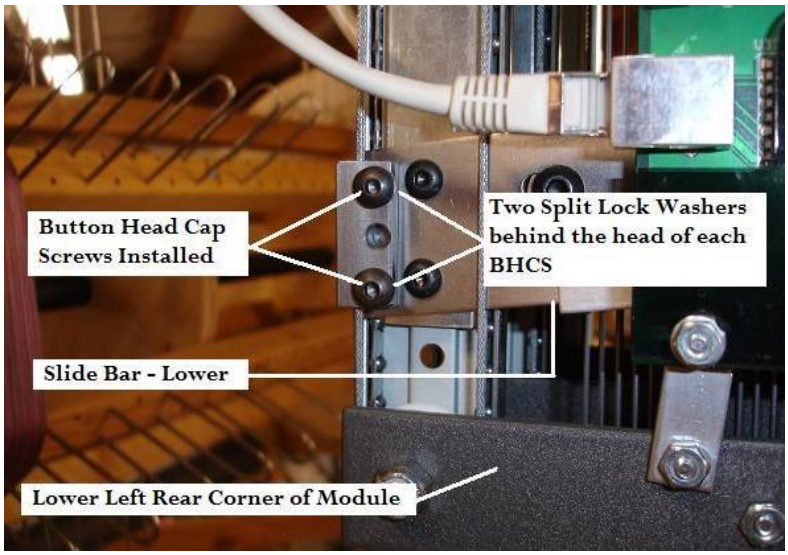

Image 4: Lower Knife Cable Clamp

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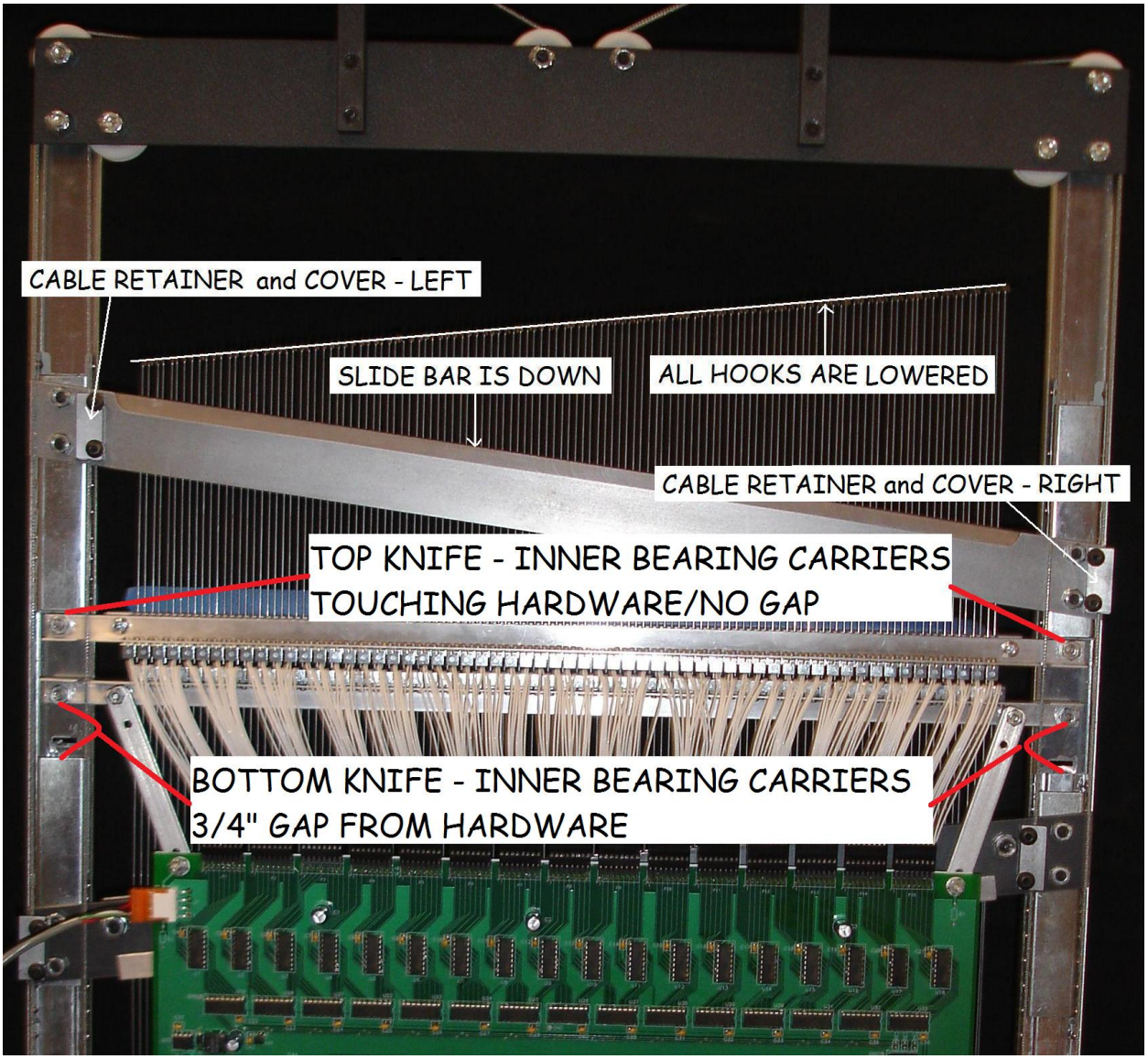

Image 5: Drive Shaft/Module in Position for Cable Change

Drive Cable Replacement Procedure

1) Unhook the springs for the module.
2) With power off the loom, unplug the electrical power connector at the module(s). Power on the loom, then press and hold the foot pedal for a count of ten to enter single shed mode. Press the foot pedal to move to center shed (knives closest together).
3) Use the next module over as a guide for the cable path way. You will start from one end of the cable and work your way around to the other end, replacing old with new as you go. You will leave all clamps loose until after evening out the cable position, adjust for slack and knife position.

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4) Loosen the lower / more rearward drive shaft clamp and pull the old cable down and out of the clamp. Insert the new cable into the same clamp and pull approximately 6" of extra cable through the clamp. Lightly tighten two of the four Allen bolts.
5) Remove the old cable and replace with the new cable as you move from pulley to pulley.
6) The first knife clamp you come to will be at the front of the module for the upper knife. Loosen the clamp pull out the old cable and insert the new cable. Don't tighten the clamp yet.
7) Continue removing and replacing cable around the lower, front pulley then back up the front, lower knife clamp. Loosen the clamp, remove and replace the old cable with the new. Again, do not tighten the clamp.
8) Continue back around the pulleys replacing old with new cable. When you reach the rear clamp on the upper knife, again loosen the clamp and leave it loose after replacing the cable. Then do the same as you reach the rear clamp on the lower knife.
9) Follow around until going over the front of the drive pulley to top drive pulley clamp. As you replace the old cable with new, snug up the cable. Compare the amount of extra cable coming through the upper and lower drive pulley clamps. They should be roughly equal amounts. You can make adjustments once you loosen the two Allen bolts on the lower drive pulley clamp.
10) At this point, your cable should have no slack between any of the clamps. If you find any slack work it out up through the drive pulley clamps. The knife position does not matter at this point. Tighten the drive pulley clamp Allen bolts, but be careful not to pull so hard on the cable while tighten that you lift the accordion above the module out of its track.
11) Follow the knife adjustment procedure below to position the knives and clamp the cable.

Knife Adjustment Procedures:

Upper Knife:

1) Loosen the clamps at each end to allow the knife to slide without stripping the cable coating.
2) Bring the upper knife all the way down until the inner bearing carriers at the front and back are touching the upper solenoid bracket hardware.
3) Tighten the cable clamps.
4) With the loom in this state, we move to adjusting the lower knife.

Lower Knife:

1) Loosen the clamps at each end to allow the knife to slide without stripping the cable coating.
2) Bring the lower knife up until the inner bearing carriers at the front and back are ¾" from the lower solenoid bracket hardware.
3) Tighten the cable clamps.
4) Press the foot pedal to move the knives to open shed position (knives farthest apart).
5) Reattach the springs.
6) Turn the loom off, reconnect electrical power cable to the module(s), power the loom back on for weaving.