Checking and Cleaning a Stuck Compression Roller

Background

The top compression rollers are located on the underside of the head portion of the machine and assure that the workpiece is firmly pressed down onto the sandpaper belts during operation. These rollers are spring loaded in the up and-down-direction so that they can accommodate a small deviation in thickness as the workpiece moves in and out of the machine.

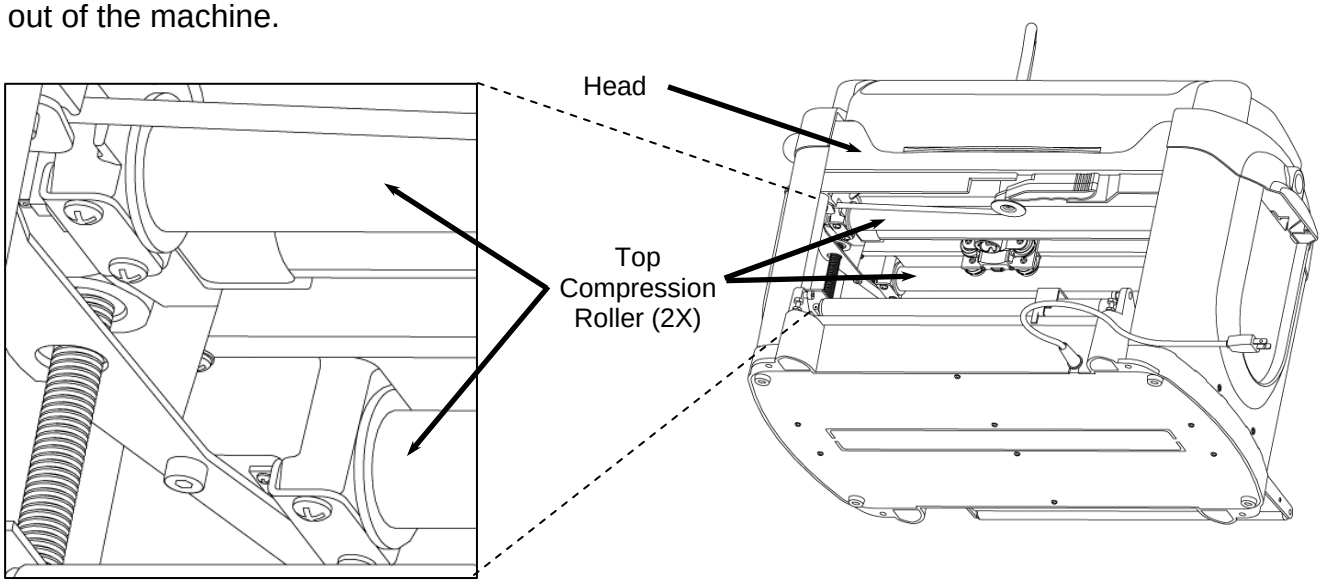

FIGURE 1: VIEW SHOWING TOP COMPRESSION ROLLERS

Each roller has a position sensor located near its end (on the end nearest the keypad) which relays a signal to the machine electronics each time the roller is *Compressed* or *Released*. If the sensor signals that the roller is *Compressed* it simply means that a board is currently under the roller and the head is cranked down to a proper loading level. The control system reads these sensors and takes certain actions based on when these sensor toggle from *Compressed* to *Released* during the project. For example, if the machine is moving the board in the direction coming out of the machine in order to measure the end with the board sensor and it sees the rear roller toggle to *Released* it knows that the end of the board is currently ~3.5 inches away.

The rollers are spring loaded and have a stroke of .25 inches upward from the released position. The sensors rely on the fact that these rollers always return to the full down position when released. Over time, sawdust can get underneath the ends of the rollers and prevent them from returning to the full down position. When this happens the sensor does not reliably report the correct state of the roller and can cause the machine to take an incorrect action. In the example above, if the board rolled out from under the back roller and the sensor did not report it to the controller, the machines does not know

to begin looking for the end of the board with the board sensor. In this case the board would simply be moved all the way out of the front of the machine. Conversely, if the machine expects the roller to be released and the sensor does not report it at the expected time, it will report a Roller Stuck error. Again the most likely reason for this is dust under the end of the roller.

Checking the Compression Roller Sensors

Checking the compression roller sensors is very easy. Turn the machine ON and navigate to the *Configurations Menu* from the *CarveWright Main Menu* by using the **up/down arrows** or pressing the "**0**" (**Options**) key on the keypad. Navigate to, or select key "**7**", *Sensor Check*. Use the **up/down arrows** to find menu items titled *Front Roller* and *Back Roller*. With no board inserted they should both read Released. If this is not the case, proceed to *Cleaning a Stuck Compression Roller* section below. Continue to test the sensors by reaching into the machine through the open cover and lifting each of the rollers by hand. As they are lifted the state shown on the LCD screen should change from *Released* to *Compressed* (a faint click should also be heard). If the state does not change from *Released* to *Compressed* when the roller is lifted, please call CarveWright technical support for further diagnosis.

Cleaning a Stuck Compression Roller

If either of the sensors fails in the *Compressed* state, you will first need to clean dust out of the compression roller with compressed air. In order to effectively clean the roller sensors lift up on the roller and insert the air nozzle under the large rubber washer. These rubber washers act as dust shields, keeping dust out of the sensor during operation but also keep any dust contained that gets past. Lifting the rubber washer with the nozzle of the air hose allows any trapped dust to escape. If cleaning the roller sensors does not resolve the issue please contact CarveWright technical support.

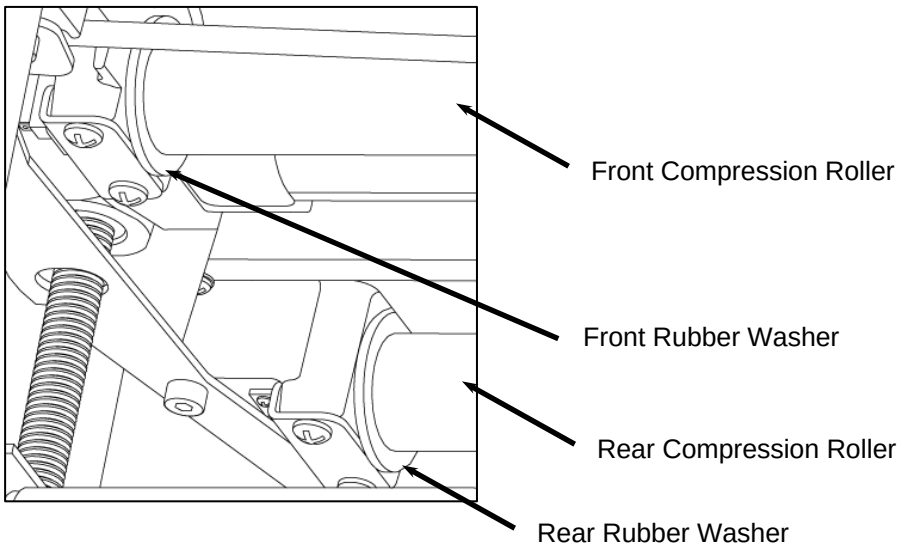

FIGURE 2: CLEANING THE TOP COMPRESSION ROLLER SENSOR