

## X, Y, Z Axis and Cut Motor Testing

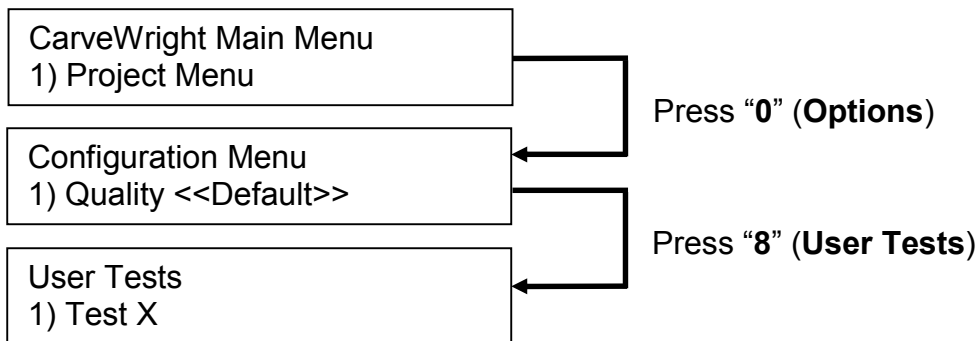
### Introduction

LHR has provided a series of independent X, Y, and Z axis (and cut motor) tests in order to quickly facilitate the resolution of customer mechanical issues. There are many instances during troubleshooting when it is advantageous to activate a single drive axis and obtain feedback from the control system. These tests provide independent axis command and provide quantitative feedback on the drive parameters. **These tests are to be used under the direction of the LHR service technicians for troubleshooting purposes only. They do not measure performance and are simply tools used to aid in the troubleshooting process.**

### Accessing the User Tests

To begin, make sure to update the Designer software to version 1.181 or later. Once that is done, make sure to update the firmware on the memory card by inserting it in the programmer and selecting *Flash Manager* from the *File* menu. It will indicate whether the card is running the latest firmware version and prompt the user to update if not. To get to the User Tests menu, follow the instructions and flow chart below:

1. Insert the memory card, turn the machine ON, and navigate to the *Configurations Menu* from the *CarveWright Main Menu* by pressing the “0” (**Options**) key on the keypad.
2. Navigate to the *User Tests* menu item by using the **up/down arrows** and press **ENTER**, or select item 8 by pressing the “8” key.



The *User Tests* menu has 4 options.

- 1) Test X
- 2) Test Y
- 3) Test Z
- 4) Test Cut Motor

### Testing the X Drive

In order to test only the X drive (the sandpaper or rubber drive belts) choose the first option in the *User Tests* menu labeled *Test X*. The display will instruct the user to

remove the bit and board from the machine. As an additional precaution, move the Z truck to the center of its left/right travel and to the top of its up/down travel and crank the head up a couple of inches. The machine will drive the belts both forward and backward. Diagnostic data is shown on the LCD. Report this data to the LHR technician ONLY if requested.

### **Testing the Y Drive**

In order to test only the Y drive (the left to right motion of the cutting truck) choose the second option in the *User Tests* menu labeled *Test Y*. The display will instruct the user to remove the bit and board from the machine. As an additional precaution, move the Z truck to the top of its up/down travel and crank the head up a couple of inches.

The machine will move the cutting truck to the left of the machine to find the home position. It will then slowly move the cutting truck from the left side of the machine to the right and back. Diagnostic data is shown on the LCD. Report this data to the LHR technician ONLY if requested.

### **Testing the Z Drive**

In order to test only the Z drive (the up and down motion of the cutting truck) choose the third option in the *User Tests* menu labeled *Test Z*. The display will instruct the user to remove the bit and board from the machine. As an additional precaution, move the Z truck to the center of its left/right travel and crank the head up a couple of inches.

The machine will move the cutting truck upward to find home. Then it will slowly move down to the bottom of travel, reverse and come back to the top position. Diagnostic data is shown on the LCD. Report this data to the LHR technician ONLY if requested.

### **Testing the Cut Motor**

There are many times when a customer may want to test the cut motor directly without having to spend the time setting up a project.

The fourth test will simply command the cut motor to switch on. The machine will home as normal, then move to the center on its left/right travel and prompt the user to load "Any size board" and remove all bits from the machine. tighten the spindle screw a couple turns **AND BEFORE PROGRESSING MAKE SURE THAT THE SPINDLE SCREW IS NOT STICKING OUT TOO FAR BY ROTATING THE SPINDLE 360 DEGREES AND VERIFYING THAT IT DOES NOT HIT THE Y TRUCK.** Press any key to turn the cut motor on and press any key to stop the motor.

**Again, these tests are for use in diagnosing machine issues at the direction of LHR technicians. They are tools that are used to aid our technicians and are not used to test machine performance.**