Setting Up an X Box Controller to be Compatible with Centroid Acorn, Version 1.1

By R. G. Sparber

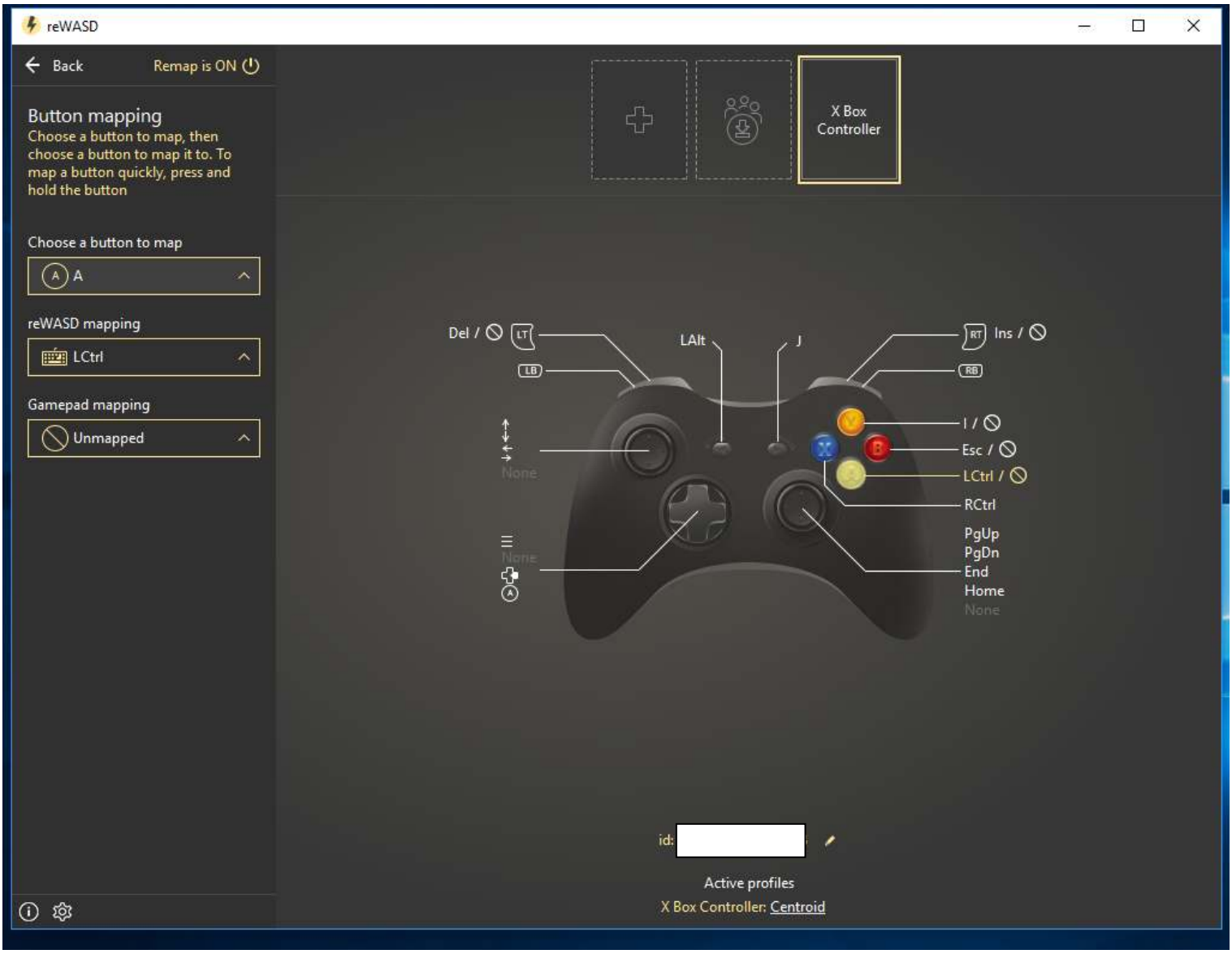
The X Box Controller (XBC) has been around since 2001. It is a very solid design, rugged, excellent human/machine interface, and low cost ($15 at Wal-Mart).

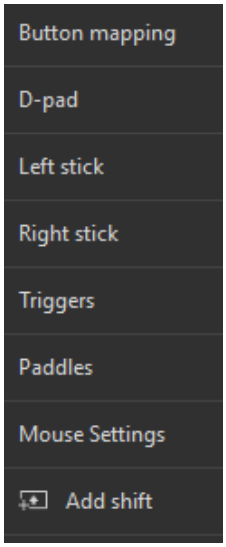
By adding a bit of software from reWASD (https://www.rewasd.com) for $6, you can set up the XBC to generate any keystroke you want on any button or joy stick you want.

For example, I have chosen to control my X axis with the upper left joy stick. Moving it to the right moves the cutter with respect to the table to the right. Moving the stick to the left moves the cutter in the opposite direction. Additionally, I set up this joy stick to control my Y axis in a similar fashion.

See https://www.youtube.com/watch?v=y_-tPoq_2tU&t=69s for a demonstration.

Opening up the reWASD software, you are greeted with the provisioning screen. Press the "✚" button at the top to create a new profile. You can then name the profile. Mine is called X Box Controller with a subtitle of Centroid.



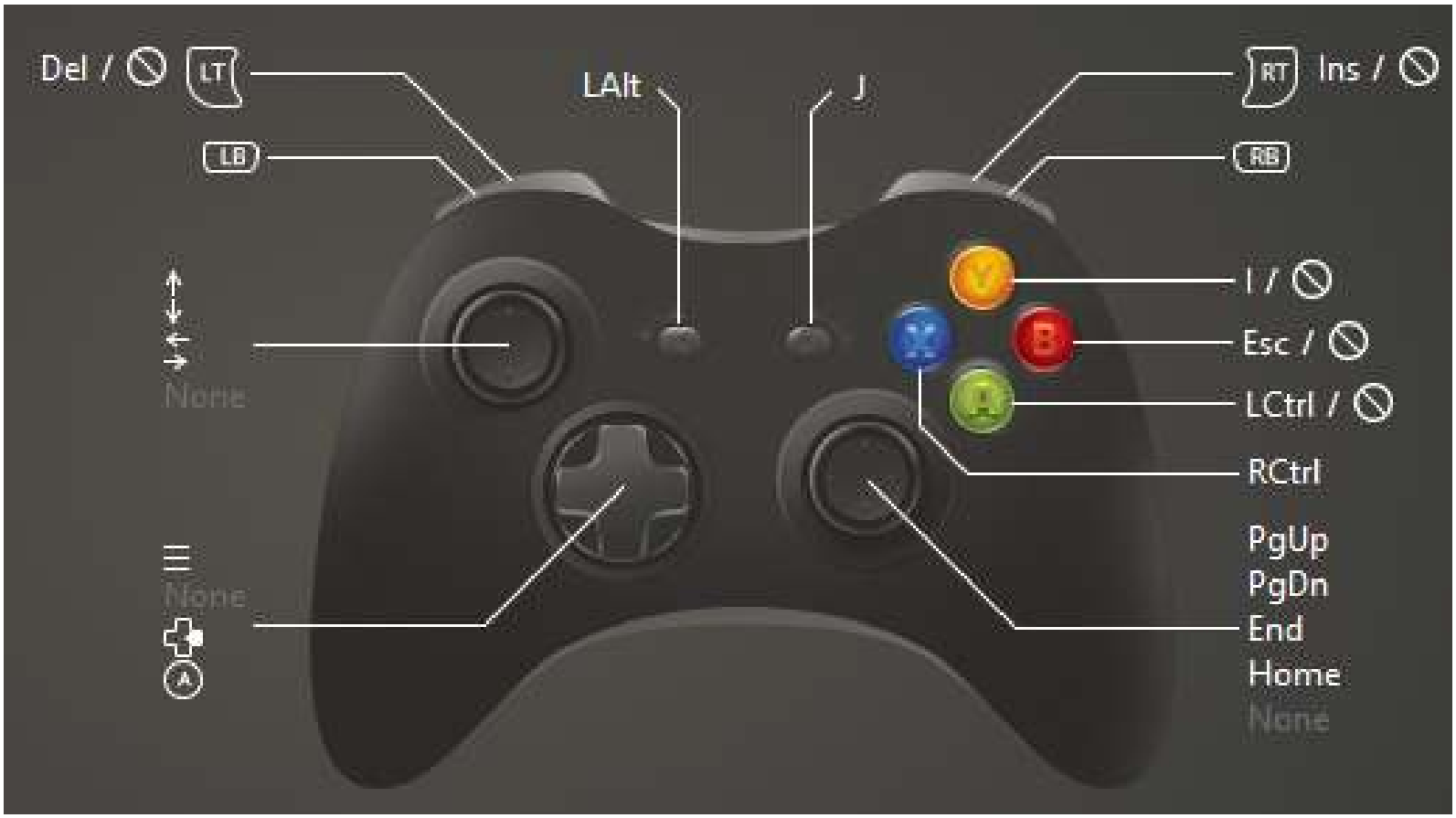


On the left side of the screen are the categories of input sites. Clicking one will bring up a picture of the XBC and your provisioning choices will show on this picture as you progress.

The one thing that initially confuse me was how to assign CNTRL+I to a button. The answer is that you can't. But you can assign CNTRL to one button and "I" to a second button. Push both buttons at the same time and you get the correct result. It is the same as on a keyboard.

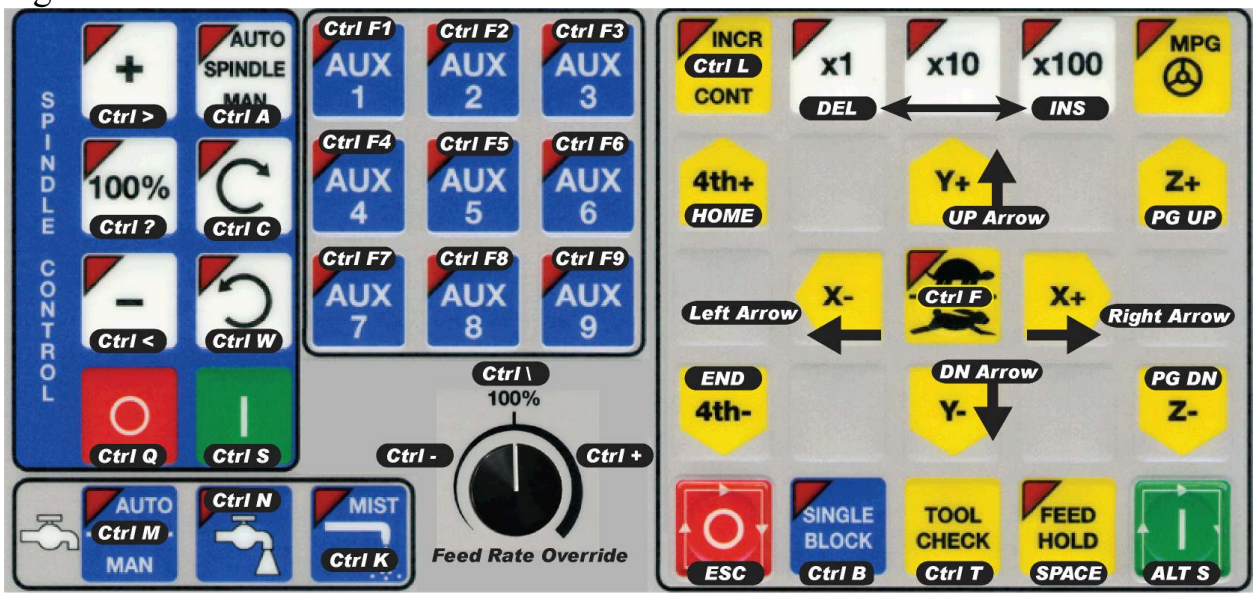
More on provisioning later.

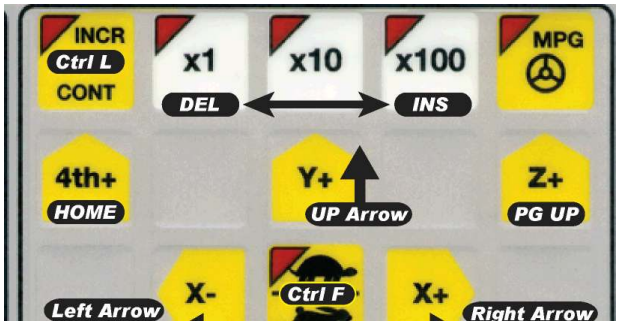
In this screen shot you can see all of my button assignments. The blue X button has been assigned the right Control key (RCtrl). The yellow Y button produces "I". Ignore the "/" and circle with a line through it for now.



On the top edge of the XBC are two triggers which can't be seen from the front. I have assigned the Left Trigger (LT) the key Del (Delete) and the Right Trigger (RT) the key Ins (Insert).

To make sense out of these assignments, we need to look at Centroid's Keyboard Jog Panel.





Notice in the right window at the top is "x1" and under it is DELETE. Press DELETE on the keyboard and the jog step size decrements by one order of magnitude. Press INSERT and the jog step size increments by one order of magnitude. In this way you can sequence from times 1 to times 10 to times 100 and back again. On the XBC I do this by pulling those triggers on the back of the unit.

Here is the full list of keyboard shortcuts:

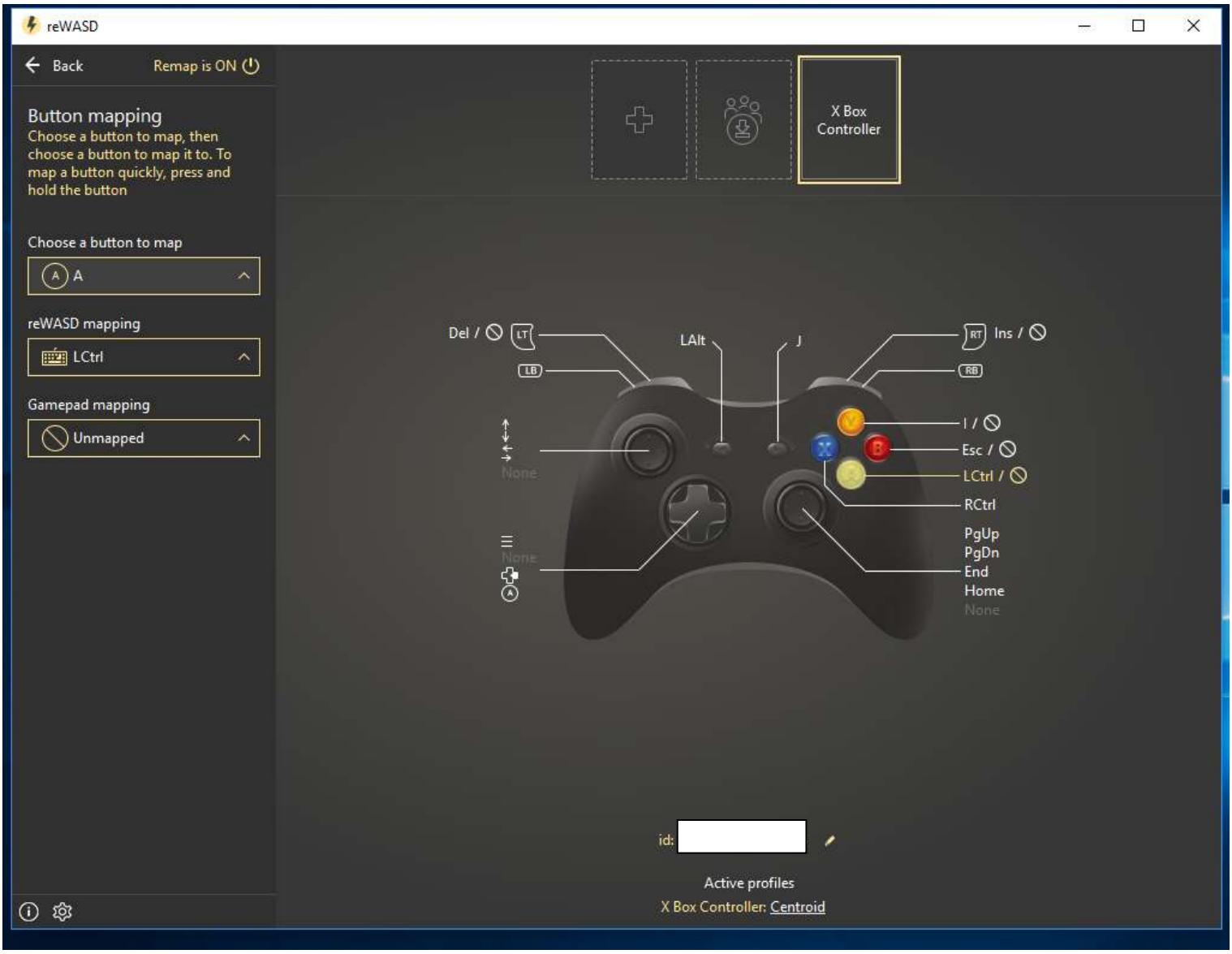
CNC12 Operator Commands	Keyboard Keystroke(s)
Turn ON/OFF Keyboard control	<ALT J>
X axis + jog	Right Arrow key
X axis - jog	Left Arrow key
Y axis + jog	Up Arrow key
Y axis - jog	Down Arrow key
Z axis + jog	Page Up key
Z axis – jog	Page Down key
4th axis + jog	Home key
4th axis – jog	End key
Cycle Start	<Alt S> (press ALT and S keys at same time)
Cycle Cancel	ESC key
Tool Check	<CTRL T>
Feed Hold	Space Bar
Single Block mode	<CTRL B>
Switch between Incremental and Continuous Jogging	<CTRL L>
Incremental Jog amount, x1,x10,x100	DEL to increase, INS to decrease
Feedrate Overide increase	<CTRL +>
Feedrate Overide decrease	<>CTRL ->
Feedrate Overide 100%	<CTRL \>

Switch Spindle Auto / Manual control	<CTRL A>
Spindle Start Manual	<CTRL S>
Spindle Stop Manual	<CTRL Q>
Spindle direction CCW	<CTRL C>
Spindle direction CW	<CTRL W>
Spindle Speed Overide increase	<CTRL > >
Spindle Speed Overide decrease	<CTRL < >
Spindle Speed 100%	<CTRL ? >
Switch Coolant Auto Manual	<CTRL M>
Flood Cooland ON/OFF	<CTRL N>
Mist Coolant ON/OFF	<CTRL K>
Aux Key 1	<CTRL F1>
Aux Key 2	<CTRL F2>
Aux Key 3	<CTRL F3>
Aux Key 4	<CTRL F4>
Aux Key 5	<CTRL F5>
Aux Key 6	<CTRL F6>
Aux Key 7	<CTRL F7>
Aux Key 8	<CTRL F8>
Aux Key 9	<CTRL F9>

Which of these keyboard shortcuts you choose to provision is entirely up to you.

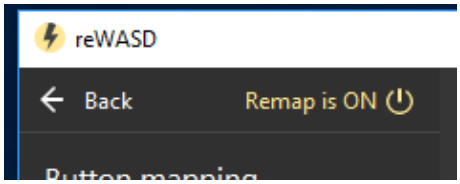
The joy sticks not only respond to forward/backward/left/right movements, but they also can have different shortcuts assigned to how far you push the stick in any given direction. I chose not to use that feature.

This screen shot shows provisioning the yellow "A" button.



Note on the left are 3 drop down menus. The first one is titled **Choose a button to map**. I picked **A**. The second menu is called **reWASD mapping**. I decided to assign the left CTRL (**LCtrl**) button to it. The last menu is **Gamepad mapping**. Leave it Unmapped in all cases.

When done, push the Save button and you are ready to go.



At least for the current version of the reWASD program, there is one more thing you must do. Either before or after you start the Centroid software, press the Windows button and start the reWASD program.

Then click on the button marked **Remap is OFF** at the top of the window.

That will cause it to change to **Remap is ON.** You can then close the program. Version 2.x of the program due out in September is supposed to have a way to essentially keep reWASD active at all times.

I welcome your comments and questions.

If you wish to be contacted each time I publish an article, email me with just "Article Alias" in the subject line.

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