



Directions of motion:

Table motion left/right is the X axis. Table motion fore/aft is the Y axis. Headstock motion up/down is the Z axis.

When it comes to polarity, be careful. We like to see programmers view polarity as if the tool is moving in all axes. Tool movement to the right is plus X. Tool movement to the left is minus X. Tool movement away is plus Y. Tool movement toward you is minus Y. But note that the tool does not move in X and Y. Again, it is the table that moves to form these axes.

This is the source of great confusion between programmers and operators. The operator must, of course, know which way the machine is going to move as they press a button. They'll view polarity as the table motion in X and Y.

When it comes to the Z axis, the tool actually does move along with the headstock, so understanding polarity is simple. Z minus is the tool (and headstock) motion downward.

Note that there are machines (like bridge-type) that do have the tool moving along with all axes. The polarity of these machines are much simpler to understand.