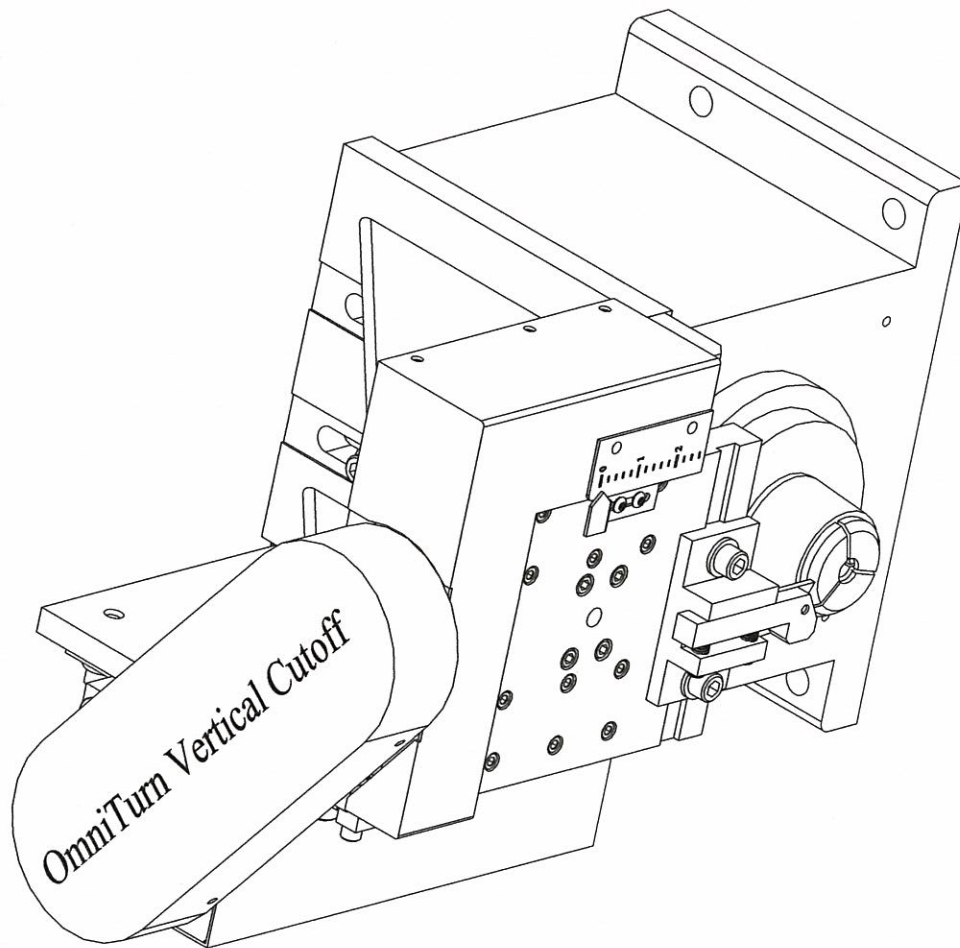


Using the Vertical Cut-Off / Groove-cutter (VCO)



Jogging and Homing the VCO:

The VCO will home exactly as the other axes, so be sure to jog it off the Zero the same as is done for the Z and X axes. In jog mode, the C axis jog switch will jog the cutoff slide any time C axis is not enabled.

There are two cutoff cycles, initiated by M80 and M81:

Either of these cycles may be programmed to allow other machining operations to proceed during the cutoff cycle. If you choose to do this, be sure to include an M82 (wait for cutoff completion) command before performing any operation that might conflict with the cutoff.

Generally, one of these cycles is used for cut-off, and the other for grooving; or one could be reserved for a long-run job and the other modified as required for short runs or specials. The operation of both cycles is the identical: the cutoff moves rapidly from home to a predefined clearance diameter, then proceeds to the programmed depth at the programmed feedrate, then rapid-retracts back to home.

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Programming the cutoff cycle:

Pressing Ctrl-V in Jog or Auto mode will bring up this menu:

1. **Edit M80 Cutoff File**
2. **Edit M81 Cutoff File**
3. **Adjust VCO offset**

The parameters for each of the cycles are entered using the program editor. Selecting either option 1 or 2 will bring up the editor with the Cutoff file, which will look like this:

```
Rapid feedrate(IPM):150
Cutoff feedrate:.003
Cutoff feed mode:(ipm/ipr):ipr
Use constant surface speed(Y/N):y
Surface speed(sfm):325
Clearance diameter:.70
Cut diameter:-.06
Allow simultaneous ops(Y/N):n
```

Edit only the values to the right of the colon on each parameter line. All values are entered in inch units regardless of the inch/metric mode of the main program; calculate and enter inch equivalent of any metric dimensions.

If simultaneous ops (operations) are allowed, be sure the part program contains an M82 command to wait for cutoff completion before doing any operations that could conflict with the cutoff (collet open, spindle stop, program end, etc.).

Value entered for surface speed does not matter if constant surface speed is not enabled.

Setting Cutoff tool offset:

Selecting 3 from the Ctrl-V menu allows you to adjust the cutoff tool offset. The amount entered is the change desired in the ending diameter of the cutoff stroke. For example, if you want the cutoff tool to go to a .002" smaller diameter, enter -.002.

Initial setting of the cutoff tool is accomplished by jogging the cutoff tool down to touch a known diameter, then pressing V. You will be prompted for the diameter you are touching, and when you enter it, the cutoff position display will change to reflect your entry.