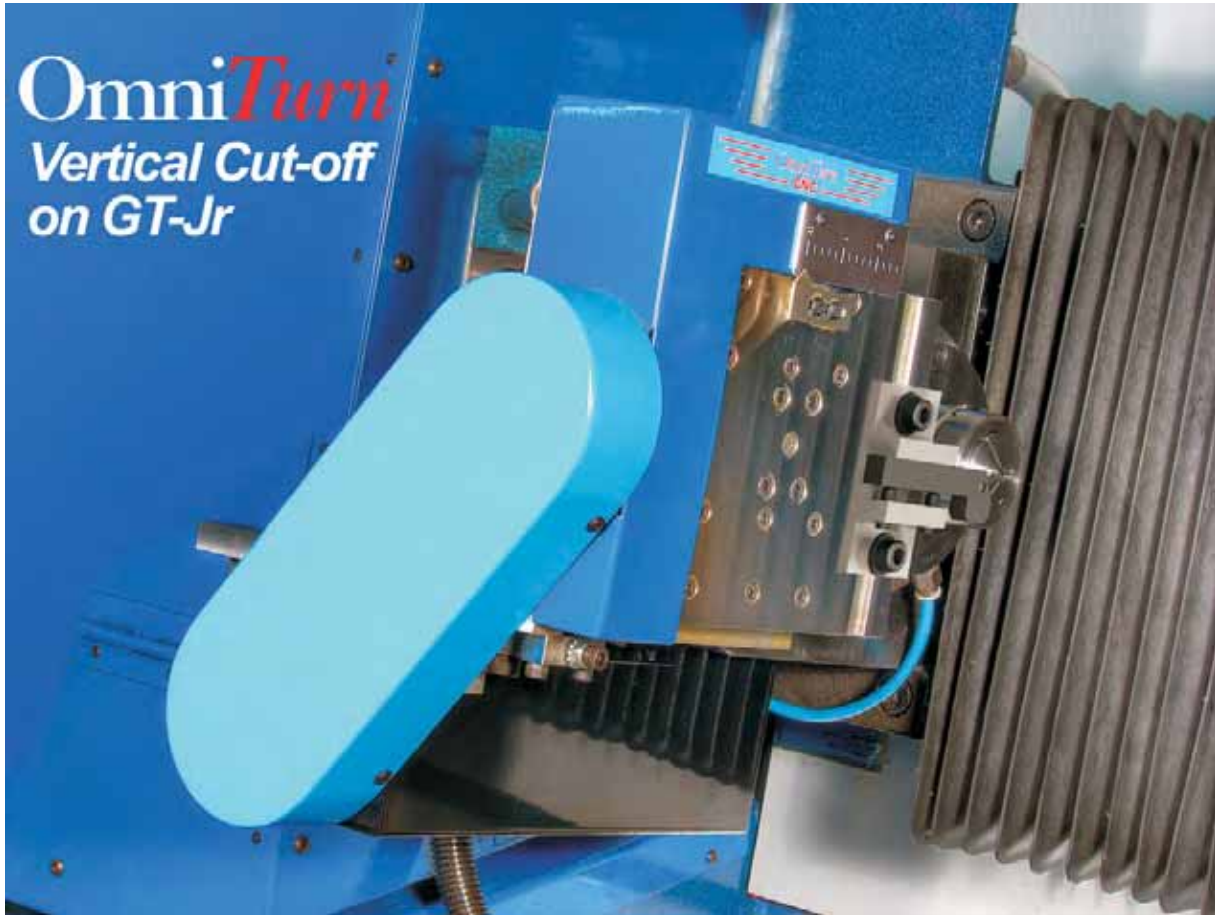
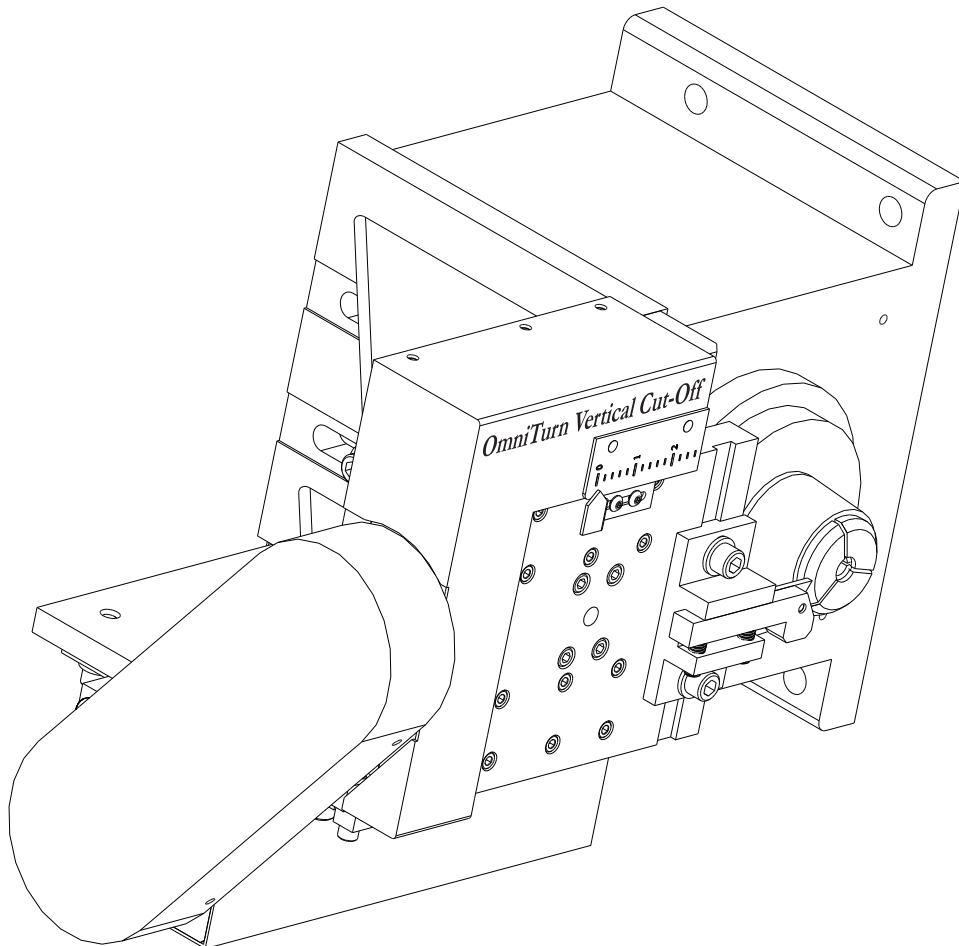


OmniTurn Vertical Cut-off Operation & Technical Documents



This document describes the OmniTurn Vertical Cut-off (VCO) operation, and includes block-diagram, schematic, dimensional drawing of table and motor replacement instructions.

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 cut-off slide any time C axis is not enabled.

There are two cut-off cycles, initiated by M80 and M81:

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

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 cut-off 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.

Using the Vertical Cut-Off / Groove-cutter (VCO) con't

Programming the cut-off cycle:

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

1. Edit M80 Cut-off File
2. Edit M81 Cut-off 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 Cut-off file, which will look like this:

```
Rapid feedrate(IPM):150
Cut-off feedrate:.003
Cut-off 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.

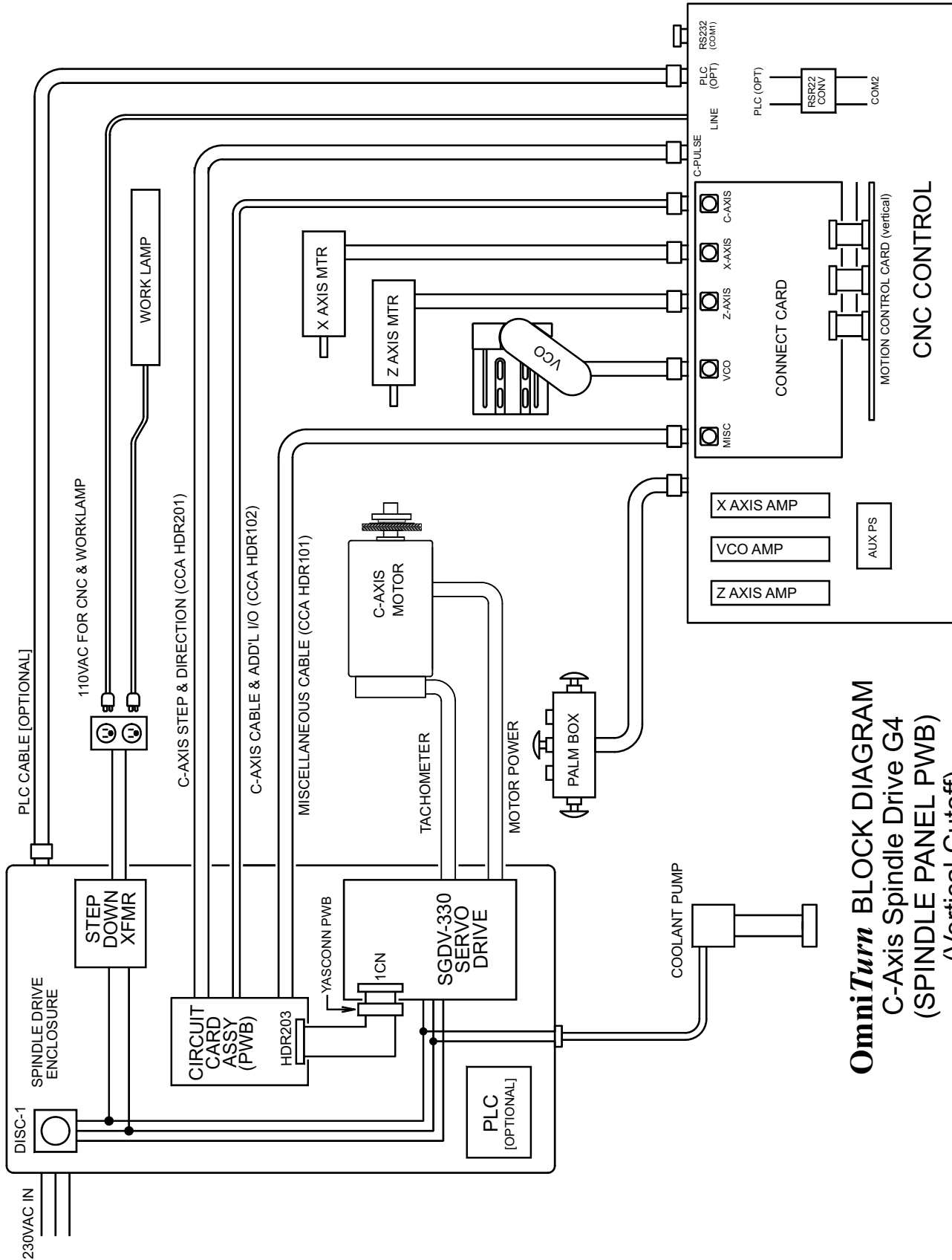
If simultaneous ops (operations) are allowed, be sure the part program contains an M82 command to wait for cut-off completion before doing any operations that could conflict with the cut-off (collet open, spindle stop, program end, etc.).

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

Setting Cut-off tool offset:

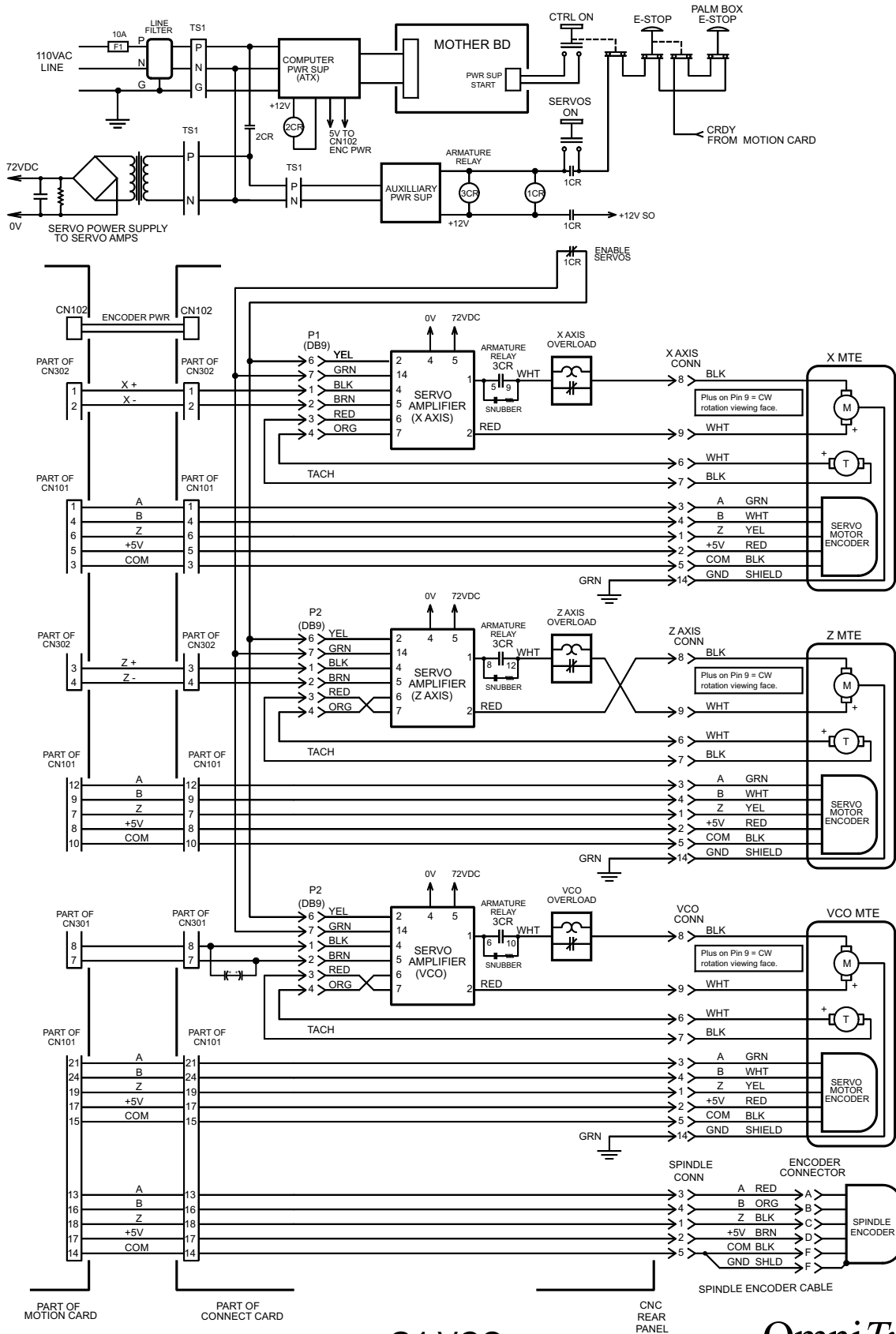
Selecting 3 from the Ctrl-V menu allows you to adjust the cut-off tool offset. The amount entered is the change desired in the ending diameter of the cut-off stroke. For example, if you want the cut-off tool to go to a .002" smaller diameter, enter -.002.

Initial setting of the cut-off tool is accomplished by jogging the cut-off 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 cut-off position display will change to reflect your entry.



OmniTurn BLOCK DIAGRAM
C-Axis Spindle Drive G4
(SPINDLE PANEL PWB)
(Vertical Cutoff)

otbdex_g4_pwb_vco.dcd Dec 2012

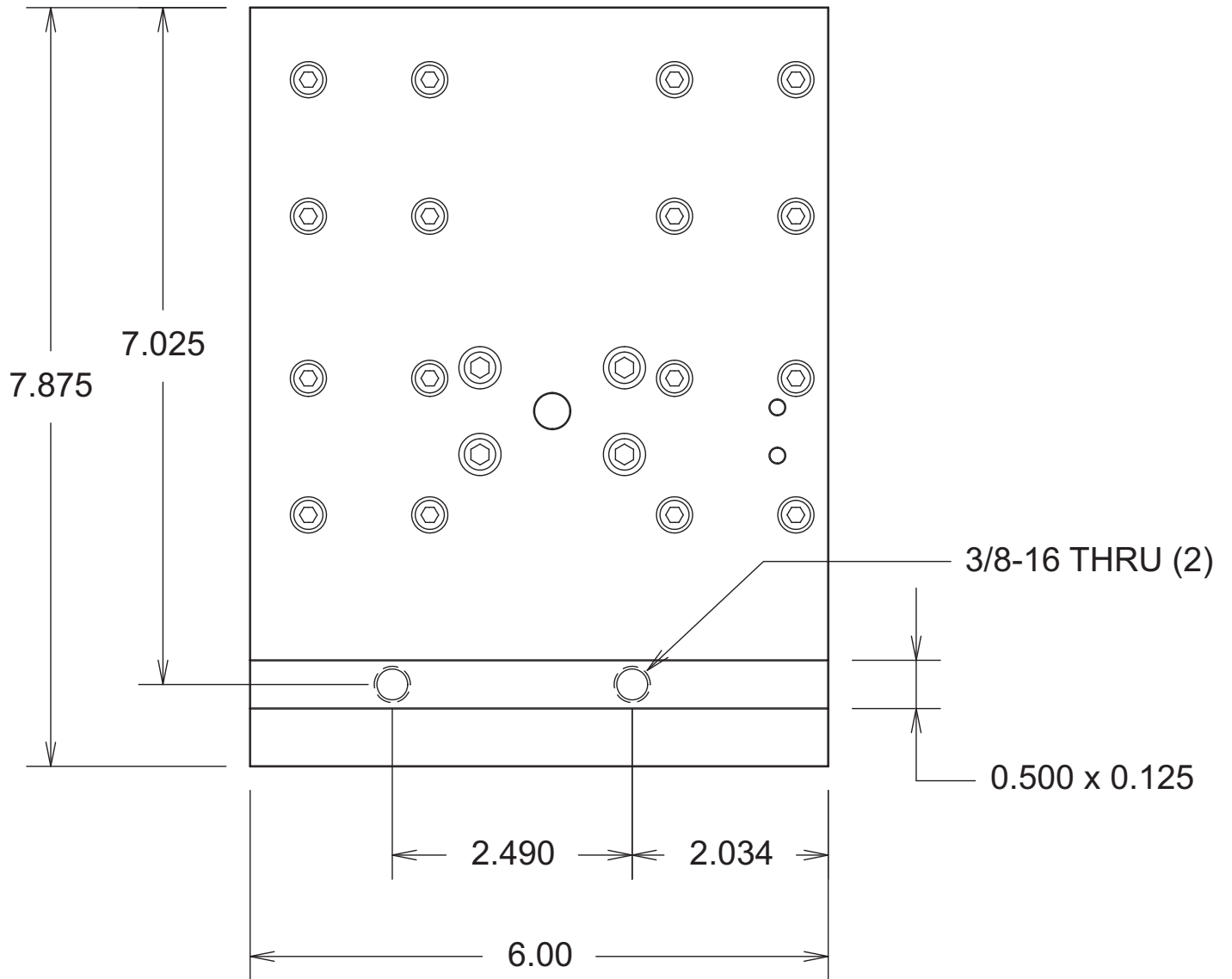


G4 VCO

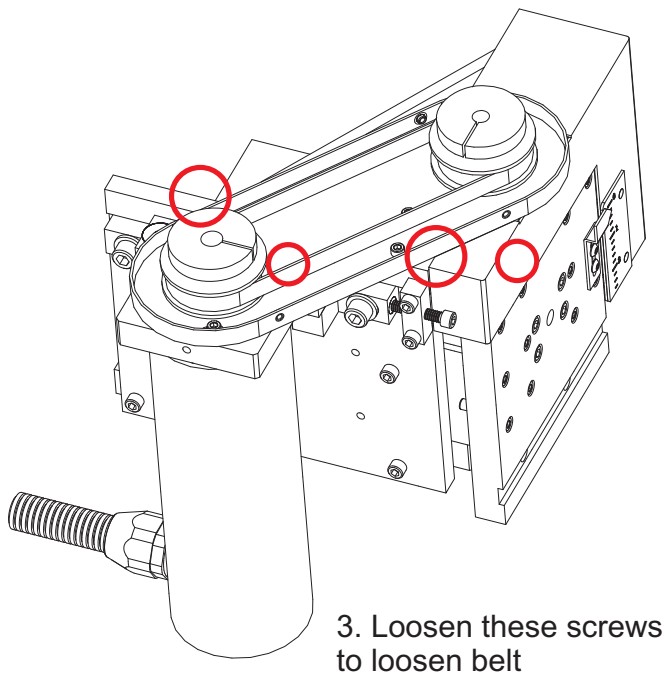
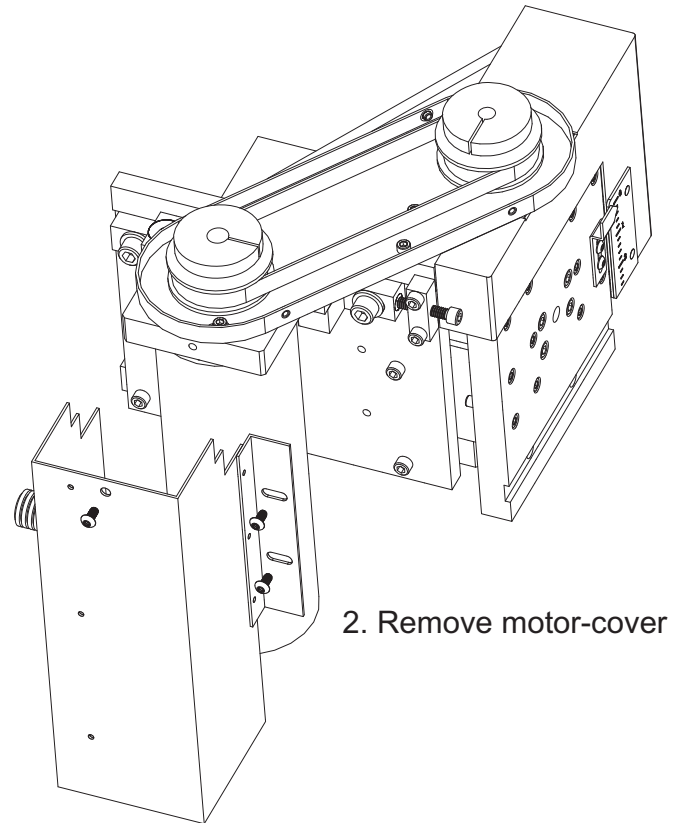
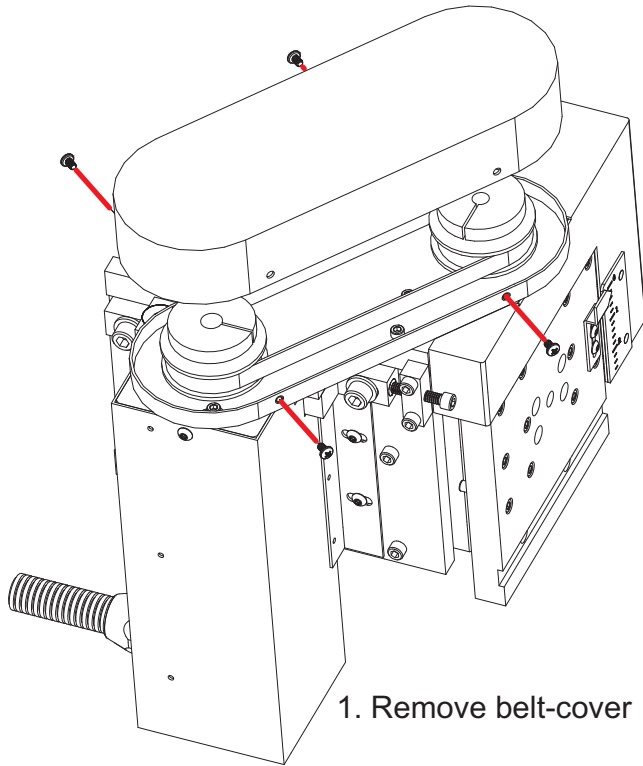
OmniTurn
SERVO DRIVE INTERFACE

srvo_sch-G4_VCO.dcd nov 2013

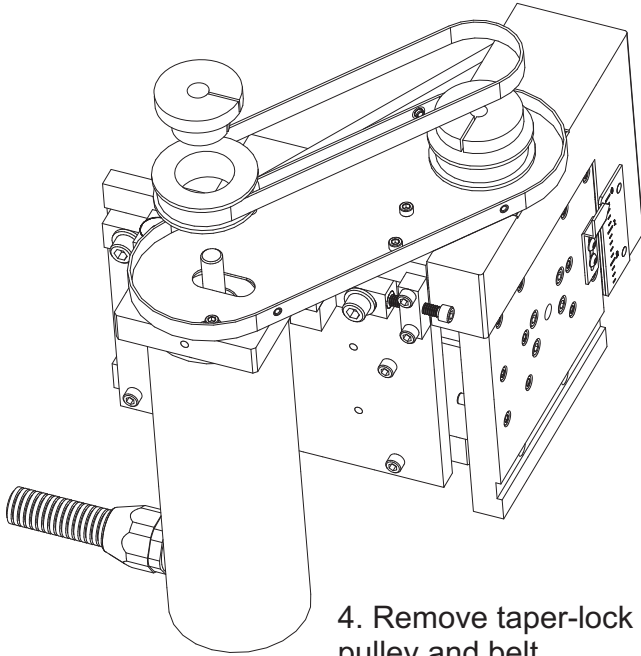
VCO Table Dimensions



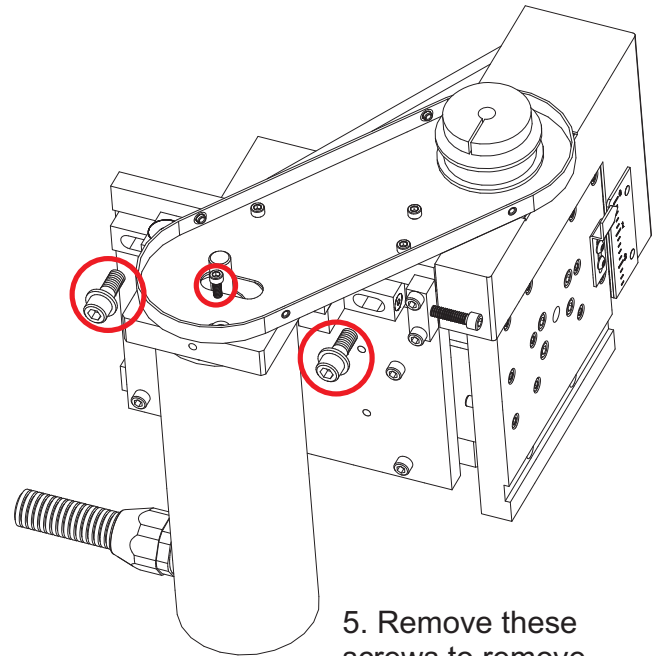
VCO Motor Removal



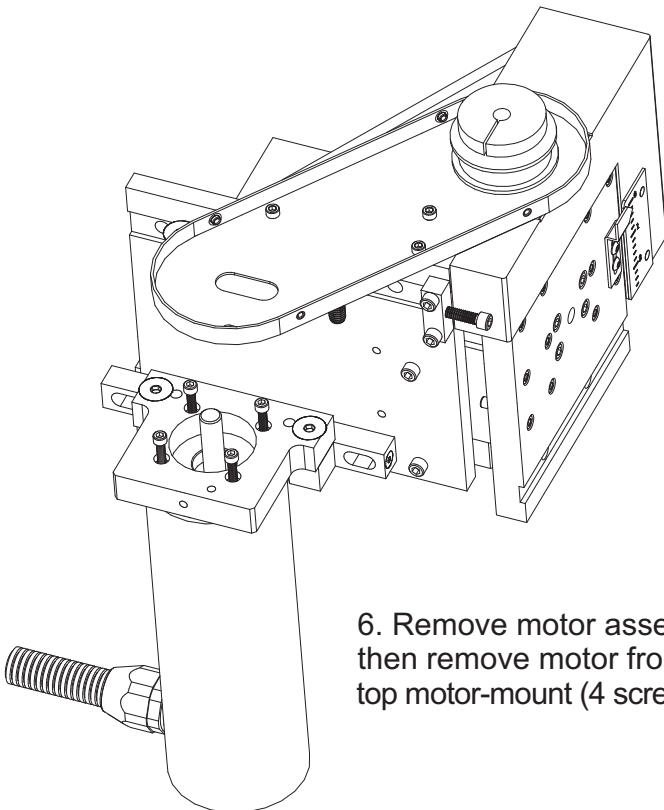
VCO Motor Removal con't



4. Remove taper-lock motor pulley and belt



5. Remove these screws to remove motor assembly



6. Remove motor assembly, then remove motor from top motor-mount (4 screws)