



Spindle Inverter Tuning

If you have an older Baldor Vector or Sweo drive (non-removable keypad) in your Fadal CNC mill, likely it is time to tune it. Like anything, with heat, cooling and age, the electronic components tend to drift.

The signs of an out-of-tune drive are first seen with the RPM not tracking properly throughout your machines spindle RPM range. Generally FadalCNC.com is contacted once the machine will no longer orient properly. This is solved easily with a quick tune up; it's quite simple and only takes 10 minutes or less.

Here are the procedures:

When you replace your inverter, if you see the spindle still turning slightly after an M5 spindle stop command, you need to tune the zero offset.

Here are the keystrokes:

With the machine power on, spindle inverter set to zero perform the following procedure.

Sweo Drive Tuning Procedure

TYPE	DI SPLAY
LOCAL	" 0"
PROGRAM	"P 0"
PRESS THE UP KEY	UNTIL IT READS "P100"
ENTER	"ALL"
PRESS THE UP KEY	"AU01"
ENTER	PASS
LOCAL	PASS
PROGRAM	ZERO

Adjusting the Baldor Vector Drives (NON SWE0)

Whenever a Baldor Drive's DC Power Supply or a spindle controller card is replaced, it will need to be ZERO BALANCED to the machine. On Rigid Tapping machines in particular, the control sets the RPM and direction by supplying a precise -10 to +10 VDC control voltage through pins 4 and 6 at the control moxex plug hanging on the right side of the inverter. To reverse the direction, a negative 0 to 10 VDC control voltage is sent. In rigid-tapping this allows the spindle motor to be rapidly reversed and ramped up and down. If the control voltage at idle is not exactly 0 VDC, then it is possible for the inverter to interpret it as a command to move in one direction or another at a slow speed.



Auto Tuning to Zero Balance

Verify that the inverter is installed properly, the spindle is off, and the keypad is installed. Use the keypad to complete the following procedure:

1. Install the display unit in inverter (if not already installed).
2. The display should read OFF MOTOR SPEED REMOTE 0 RPM.
3. Press PROG.
4. Press the DOWN ARROW twice. The display will read LEVEL 2 BLOCKS.
5. Press ENTER.
6. Press the DOWN ARROW three times. The display will read AUTO TUNING.
7. Press ENTER.
8. Press the UP ARROW once. The display will read CMD OFFSET TRM.
9. Press LOCAL.
10. Press ENTER two times. The display will read TEST PASSED.
11. Press RESET three times. The display will read PRESS ENTER FOR PRESET SPEED.
12. Press the DOWN ARROW once. The display will read ENTER FOR PROGRAMMING EXIT.
13. Press ENTER.
14. Press LOCAL. The display will read OFF MOTOR SPEED REMOTE 0 RPM.
15. Done!