Setting OMNITURN Servo Amplifiers

> ***NOTE:*** *The amplifiers are pre-set at the factory and should only rarely require slight adjustmets to following error. Step 2 (Zero Adjust) and Step 3 (Following Error) are the only adjustments normally required.*

If for some reason it becomes necessary to re-set the amplifiers from scratch, pre-set the pots as follows:

Signal Gain:	Full CCW *then four turns CW* ("Full CCW" means 20 turns)
Tach Gain:	Full CW ("Full CW" means 20 turns)
Comp:	Full CCW *then three turns CW*
Current Limit:	Full CW

Tools required: A digital voltmeter (DMM or DVM)
Fine tipped probes, or paper clips
Jewlers common screwdriver or trim-pot adjustment tool

To correctly setup the servo amps, it is necessary to adjust pots on the Servo Amps and on the Motion Card.

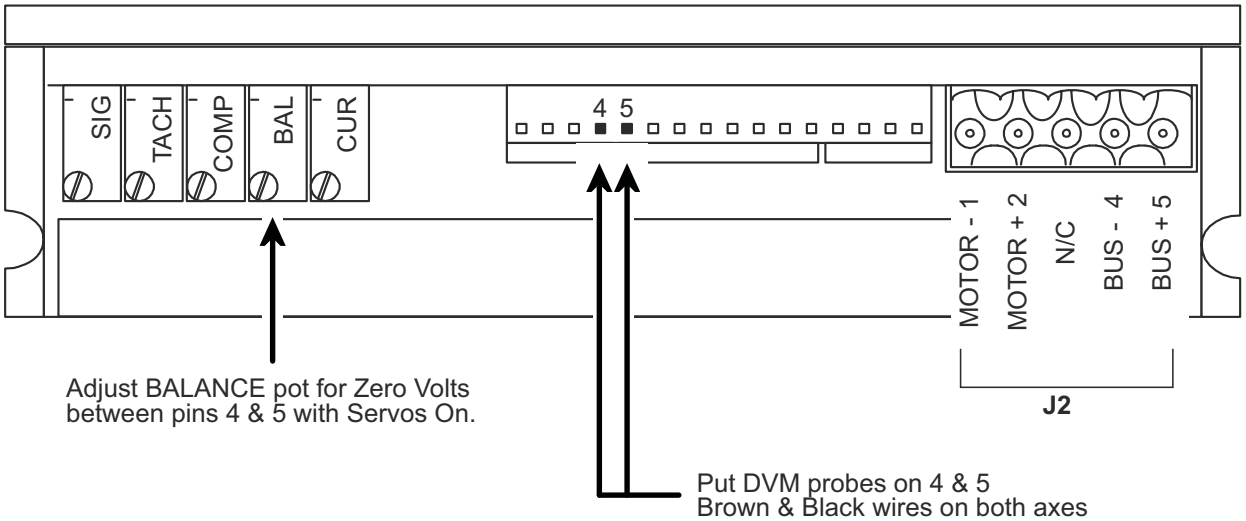
Set Servos ON *(All adjustments are made with servos ON.)*

The steps are as follows:
1. Servo Amplifier Balance Adjustment
2. Motion Card Zero Adjustment
3. Servo Amplifier Following Error Adjustment
4. Re-check Servo Amp balance and re-adjust as required
5. Re-check Servo Amp following error

1. Servo Amplifier Balance Adjustment

Put probes of DVM between Pins 4 & 5 on servo amp signal connector. If the probe-tips are too large, cut pieces of paper clip and insert into connector holes to make contact.
Adjust BALANCE pot on Servo Amplifier for 0V +/- 0.005V

SERVO AMPLIFIER BALANCE ADJUSTMENT



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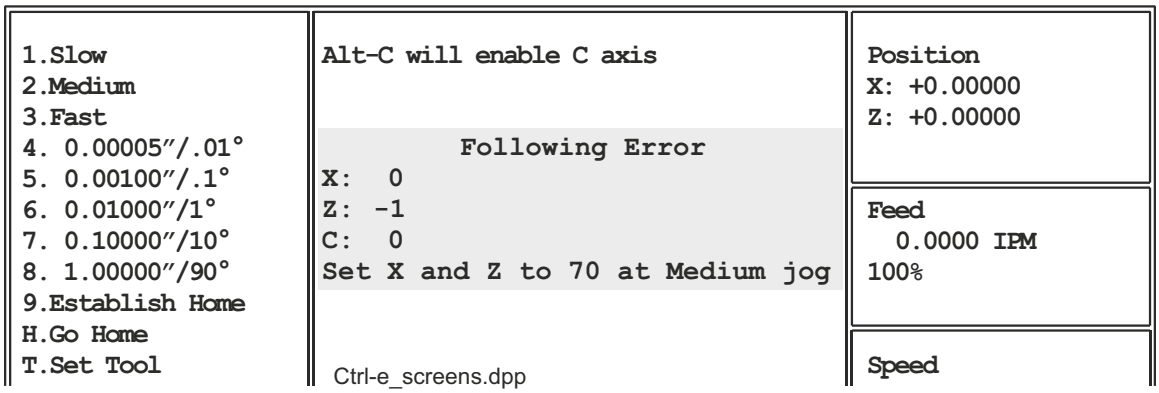
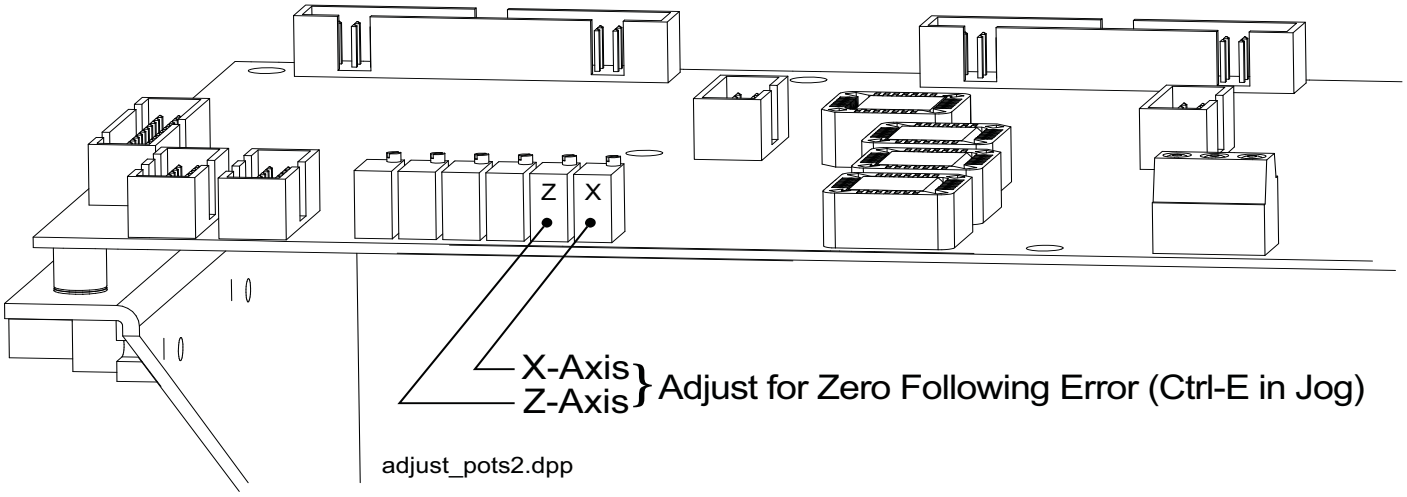
2. Motion Card Zero Adjustment (Ctrl-E)

In Jog Mode, open Following Error display box. (Press and hold Ctrl key, then press 'E' key). On the Motion Card, adjust the X and Z Axis Zero pots for zeros at the X: and Z: locations. Note that +/- 1 is acceptable; the numbers may alternate between 0 and 1.



Ctrl-e_screens.dpp

MOTION CARD ZERO ADJUSTMENT



adjust_pots2.dpp

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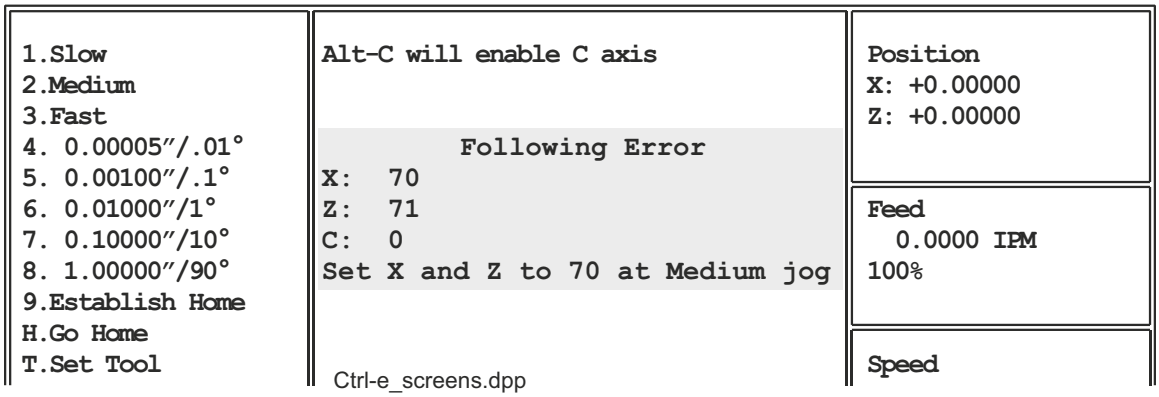
3. Servo Amplifier Following Error Adjustment (Ctrl-E)

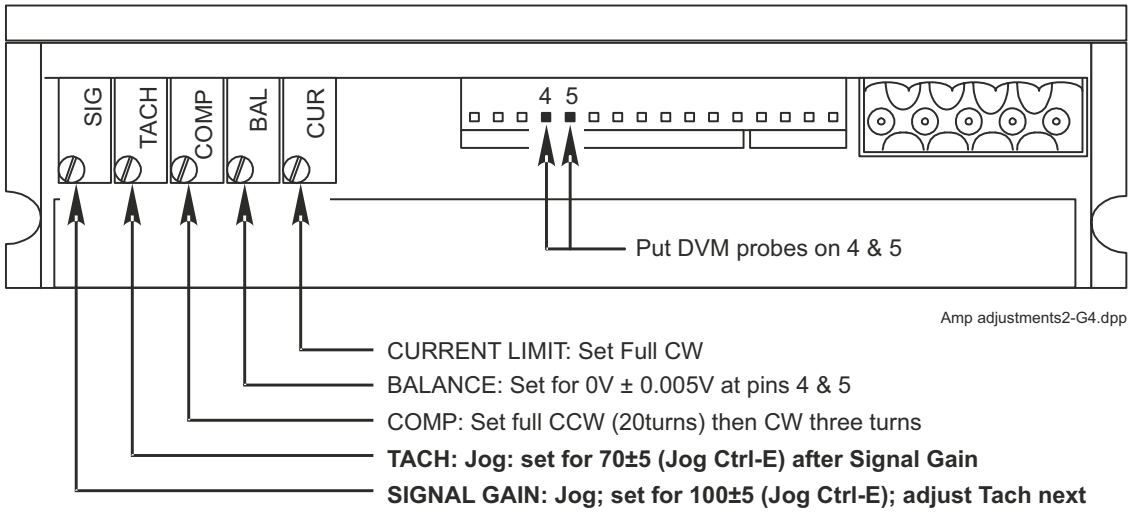
In Jog Mode, open Following Error display box. (Press and hold Ctrl key, then press 'E' key).
NOTE: The Feedrate Override defaults to 100% in Ctrl-E mode.

Select Jog 2 (Medium Jog)

On the Servo Amplifier, adjust the Signal Gain pot *while jogging;* adjust for 100 counts ± 5 at the X and Z locations. Next, adjust the Tach pot *while jogging;* adjust for 70 ±2 counts at the X and Z locations.
It doesn't matter which direction you jog; the polarity will change, but the numbers will be effective.



SERVO AMPLIFIER FOLLOWING ERROR ADJUSTMENT



4. Re-check Servo Amp balance and re-adjust as required

Verify that the voltage between pins 4 & 5 is still 0V ± 0.005 at rest (not jogging). Adjust Balance pot as required to set 0V.

5. Re-check Servo Amp following error

After re-adjusting the balance, be sure to jog back & forth at Jog 2 and re-adjust the Tach pot for 70 ± 2 counts.
Ctrl-E again to close the Following Error box.