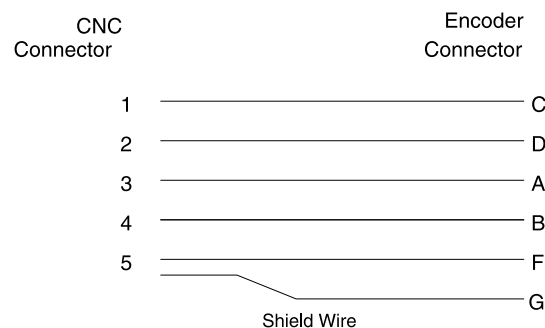# Omni*Turn* Technical Note

Intermittant Lock-up or Servo Error Problems

When faced with intermittant computer lock-up or peculiar non-reproducible problems it is important the following steps be taken BEFORE attempting costly, time-consuming component swapping:

1. **Verify that CPU is <u>NOT</u> AMD K-5.** Observe monitor during boot-up: when rectangular box with double lines appears, note "CPU type" in upper left. If CPU type is AMD K-5 it should be replaced with Intel Pentium-S.

2. **Disable CPU cache.** Go to CMOS setup screen during boot. Find page which displays state of internal and external cache, and set both to 'disable'.

3. **Thoroughly clean all connections.** This includes the cables at the rear of the control, the connections from the computer cards to ribbon cables etc, and computer card edge connectors. Use Radio Shack Tuner Control Cleaner and Lubricant, Radio Shack Cat No. 64-4315 for all connectors. Freon or alcohol can be used, but the RS cleaner is best.

4. **Remove oxidation from mother board connectors.** Use a credit card with #600 sandpaper folded around one edge to clean the slots used for the MC2 or MC2B cards. Swipe only two or three times, then apply the Radio Shack Tuner Cleaner.

5. **Clean gold pins on edge connectors.** Use Radio Shack Edge Connector Cleaner & Protector, Radio Shack Cat No. 64-4340 to remove oxidation from the edge connectors. In a pinch you can us a pencil eraser. Spray with RS Tuner Cleaner or wipe with alcohol.

6. **Verify that spindle encoder cable is new version** identified by white stripe near each end. If not, replace with new version or modify existing cable per drawing below.

7. **Verify that MC2 card has 'delay' board installed** on non-component side, near the center by the edge connector. If not, request "delay board kit" from the factory.

8. **Install Additional Filter Caps.** Machines shipped before 11/9/2000 could benefit. Factory offers cap only and also cap which plugs into outlet strip on GT75; very slick. For other machines, install cap only across AC in on Connect Card. Also install across 12VDC in spindle cab at TB1-8 and TB1-9. DigiKey pn P-4613-ND, P-10527-ND, P-10733-ND (800 344 4539) 0.33uF 250vac. Or call factory.

9. **Try another outlet for the 110vac.** The OmniTurn control has a noise filter, but sometimes emi generated by other machines can cause problems

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Encoder Cable
Modification:

CNC
Connector

Encoder
Connector

1	C
2	D
3	A
4	B
5	F
	G

Shield Wire

To Modify Encoder Cable:
Splice wire to Shield Drain, both ends.
At encoder connector, solder wire to Pin G
At CNC, solder wire at to Pin 5.