



Enabling Your Ideas

Service Bulletin

Number: 0012

Title: Computers for Controlling the PCNC 1100

Date: October 25, 2007

Product Identification: PCNC 1100 Milling Machine

Background:

Most computers can be successfully configured for the PCNC 1100 (Mach 2/3) control software, however some cannot. The issues normally involve hardware or device drivers that generate interrupts, stealing time cycles from the background process that is critical to accurate and error free motion control. This service bulletin makes a few general recommendations when selecting a computer, but also offers some specific model recommendations for known performers.

General Recommendations:

The computer must have a parallel printer port. A USB conversion does not make it. The default configuration works with most computers that have a printer port integral to the motherboard. If your printer port is an add-on card, please refer to maintenance section of the PCNC 1100 owner's manual for configuration.

The computer should be at least 800 MHz. High performance computers are not necessary and will add nothing in respect to milling machine performance. Low cost Celeron or AMD processors work just fine. While 256MB memory will work, we normally ship PCs with 512MB.

The operating system should be Windows 2000, XP, or Vista. XP Pro offers no advantage over XP Home. Certain accessories can create problems. Use game controllers, wireless keyboards, and similar devices at your own risk. The safest solution is always buying a Tormach configured computer. Our configuration goes far beyond standard and includes a hard disk restore utility allowing restoration even if Windows operating system becomes corrupted. Check PN 30282 for details.

You cannot use a laptop computer. Laptop computers use hard wired interrupts as part of their power management scheme. This steals CPU time and creates critical time slice errors. The machine control program may appear to run, but motion accuracy will suffer as well as operating reliability. Laptops are find for running the machine control software offline, in demo mode, without a machine attached.

Specific Recommendations:

Tormach uses Dell computers. We do not suggest that Dell PCs are superior to others; it's simply a mainstream brand, offering some consistency in supply and accepted in most corporate environments. The least risk solution is to purchase a preconfigured Dell computer from Tormach.

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The following list has the Dell PCs that we have used in the past with success, along with some notes and comments. Some of these are no longer manufactured, but most can be purchased from a variety of sources such as off-lease vendors.

- Dimension 1100: An older model that works just fine. The BIOS is older and does not recognize USB devices, but Windows does.

Specific Recommendations (continued):

- Dimension B110: This appears to be a variant of the 1100. It works just fine; we have shipped quite a few of these configured as mill controllers.
- Dimension 5150: This model works but it does not have a printer port on the motherboard so it requires a printer port card. This means configuration will need support from Tormach, the default installation disk gives the wrong port address.
- Optiplex GX520: Works fine.
- Optiplex 210L: We prefer the small form factor.
- Optiplex 310: We prefer the small form factor.
- Optiplex 320: We prefer the small form factor. This is most current Optiplex model.
- Vostro 200: Requires printer port card addition. Vostro series must be used as Standard PC, not ACPI PC.

Warning – Problem Computers:

- Dimension E521 has a 1 second interrupt that we could not eliminate. We couldn't determine if it was directly out of hardware or linked to a critical device driver, but after considerable effort we gave up and sent a stack of these back to Dell. Probably a fine PC, but don't bother trying to run your mill with it.