

# SHOT PEENING MOTION CONTROLLERS GOING CHEAP? CHEAP IS NOT ALWAYS THE INEXPENSIVE CHOICE

A cheap alternative to true CNC is Personal Computer (PC) based numerical controls. PC systems are often priced significantly lower, and claim the same level of accuracy and dependability compared to dedicated CNC controllers. Before you go the cheap route, consider some important points.

CNC controllers have developed a very stable platform. There are literally thousands of these controllers made and sold every month. The latest CNC controllers have been through many years of design adaptations making them extremely dependable. Time between controller failures is measured in decades now. Fanuc measures 27 years MTBF (Mean Time Between Failures) for their controllers. Ratings for most PC manufactures would be a guess since they have not been on shop floors for any extended periods and many are simply first time, one of a kind programs.

Support for PC based systems is beyond the developer's control. Companies offering this type of control can only support their product as long as the PC manufactures continue to make PC's in the same manner they are today. The industry has already seen issues in the PC world where some hardware and applications will not run on the newest types of processors, or the type of hard drive installed in the PC is no longer manufactured. This can lead to costly system downtime while an entire system is upgraded because of one component failure. Most of us have experience the pain of operating system updates, such as XP then Vista, now back to Windows 7. Then throw in a good mix of Mac and one can get confused rapidly. PC based controllers ride on the backbone of the OS (operating system) installed on the PC. Once the OS is updated the application may no longer run on the PC, or may perform erratically, or worse, unsafely. Companies like Microsoft and Apple did not develop their programs for industrial machine control; rather they built them for what the name implies, Personal Computers. A PC motion control company then takes this operating system and designs a "one-of-a-kind" program, whereas

it was written specifically for your machine or your application. If, in the future you experience a need for simple upgrades or fixes due to an OS or hardware change or failure you may find yourself looking for "that guy", the person who originally wrote the program. Many companies are already experiencing problems with an outdated OS. Windows NT and Windows XP has been phased out and companies cannot obtain new copies, updates or support for these products. CNC controllers do not share this problem; the software was specifically designed with the control system in mind, and is supported by the manufacturer of the controller. CNC motion controls used by Innovative Peening Systems and manufactured by Fanuc provides a 15 year after life support on all CNC controllers. That means that 15 years after the product has been discontinued, Fanuc will continue to provide replacement parts for the controller.

Another issue is incompatibility. The internal operating system of a PC system is still designed to be a general purpose computer and the potential for conflict among the CNC components and software is real. One result of this conflict can be a system lock up which is always inconvenient for a user in the home or office, but could be devastating to a machine tool that suddenly lost its control. CNC systems are just that...a system. Complete with controller, amplifiers, cables, I/O, servos and spindle motors. CNC systems are not a hodgepodge of components but a completely integrated system that is build for longevity. CNC controls are specialized computers which often use the same main processor as a PC, but its sole purpose is to control machinery in industrial environments. Because it is a machine control, the design incorporates safeguards at the hardware and software level to detect problems and to stop the machine if an error were to be detected. Since control features are specifically designed for that control, system conflicts are virtually non-existent.

PC's, use a single high speed processor to perform the majority of the tasks required

by the software. This means that not all of the machine's critical functions can be monitored simultaneously. The processor must share some percentage of the time monitoring the servo positions and speed, scanning the control logic, handling operator input, updating displays, plus manage its own internal housekeeping. Although the high speed of the processor can minimize the time that certain functions are not being checked, the bottom line is that at any given time many control functions are being ignored. Innovative Peening Systems CNC controls use multiple processors to control each aspect of the system. This means peripheral request or machine functions can be done at a sub-system level without interfering with other processors.

Innovative Peening Systems installs CNC controls that utilize digital technology with the servo drive systems. This results in a higher accuracy and speed. For example, CNC controller manufacturer Fanuc, provides their own proprietary digital servo system which allows for an integrated system designed to take advantage of their specific control features.

From a capital standpoint PC controls may be cheap but they often get expensive later. Smart shot peen machine buyers purchase a machine to make money by producing the product the machine will make. The production of this product has far greater economic impact than simply buying a cheap controller. Next time you want to play solitaire or write a document like this one, buy a PC and get good virus protection. Then after a couple of years, buy another, because your PC will be outdated. If you want a sound, long lasting industrial shot peen machine control, get the right tool for the job. Demand a true CNC motion controller.

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