

long glPower [MAX  
char gszAxisName  
unsigned short g



Life Position			
X	Y	Z	C
0.0100	0.0000	0.0000	0.0000
-28.0000	0.0000	0.0000	0.0000
23.0000	0.0000	0.0000	0.0000
-99.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000

Relative Position			
X	Y	Z	C
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000



## More Capability... More Power... More Productivity FROM YOUR **MACHINE TOOL**

### EXPERTISE IN IMPLEMENTING TECHNOLOGY

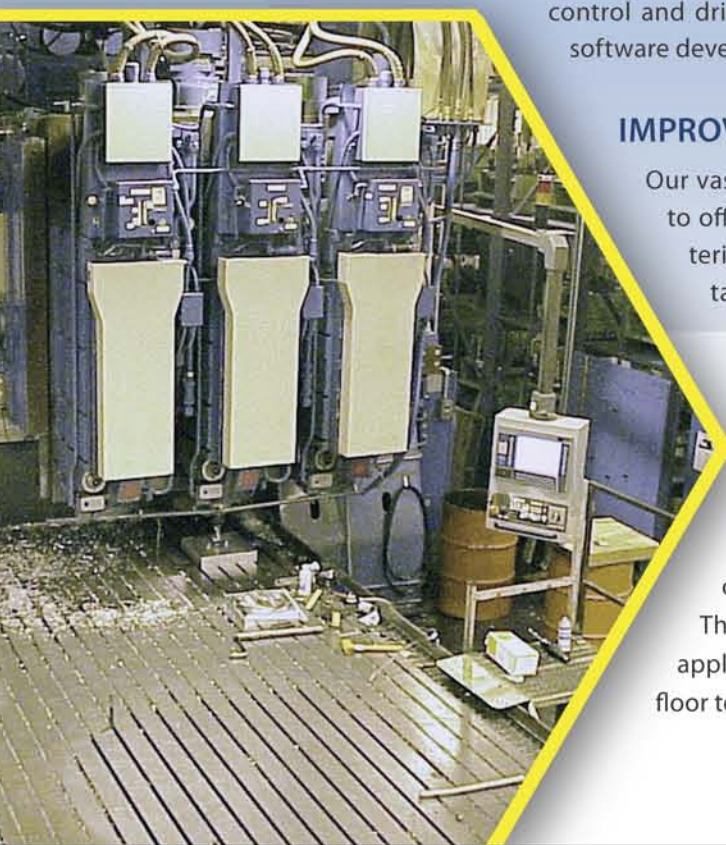
Since our first retrofit installation in 1983, CNC Engineering has grown to become one of the largest retrofitters of GE Fanuc controls in North America. Our experience in all aspects of CNC retrofits provides us the expertise needed to implement technology to help our customer's improve productivity.

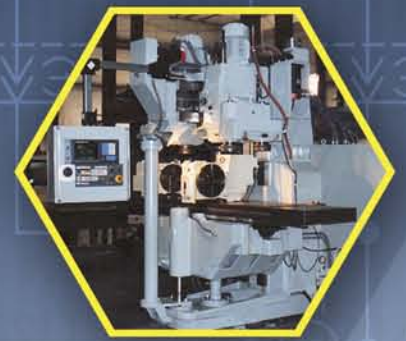
In today's complex and rapidly changing manufacturing environment there is an increasing number of choices available for CNC control systems, PC based control options and integration with information systems. With our thorough understanding of CNC controls and machine tools we can help you select the best solution for your application, develop a design that meets your needs, install the retrofit with minimal downtime, and provide services to help you maximize the benefits of your upgraded machine tool. CNC Engineering's expertise includes control and drive systems, feedback systems, probes, mechanical components, & software development, including custom screens when needed.

### IMPROVE THE PRODUCTIVITY OF YOUR MACHINE TOOL

Our vast experience from retrofitting a wide variety of machines allows us to offer solutions that take into account a machine tool's unique characteristics and can incorporate such things as additional axis, rotary tables, probing, vision systems and robots. Custom programming, system integration, and training services help insure that the retrofit integrates with your company's manufacturing processes, operator and maintenance procedures.

Additionally, you can control your machine tool with an Open Architecture interface. Designed specifically as a PC based front-end for GE Fanuc controls, Open Vision™ HMI simplifies machine operation and maintenance and adds functionality and flexibility. This system also incorporates all the power of a PC to run third-party applications as well as connect operators and machines on your plant floor to your information systems, your intranet or the Internet.





## CERTIFIED PRE-ASSEMBLED RETROFITS MINIMIZE DOWNTIME

CNC Engineering has developed Certified Pre-Assembled Retrofit (CPR) packages. Our CPR packages use state-of-the-art GE Fanuc controls, which bring new life to older machine tools, thereby increasing the return of the original investment. These packages are fully engineered, assembled and tested at our facility before being sent to the field. This expedites the installation process to a point where some CPR packages can be installed in as little as one week. Estimated machine downtime is always included in our proposals.

The installation may be performed by CNC Engineering's install team, which is trained in quality workmanship and comprehensive safety procedures, by an authorized RIP (Retrofit Integration Partner) or even by the end user themselves.

## LOCAL SUPPORT THROUGH OUR RIP PROGRAM

Our growing network of RIP's provide local support in a wide variety of areas nationwide. They are often familiar with your facility and machines as well as your processes and procedures.

The qualified engineers from CNC Engineering provide full backing and support throughout the entire process. The local proximity of these RIP's provides the customer additional savings in travel and related expenses.

## TRAINING AND SUPPORT SERVICES

Following installation, on-site training is provided for operators and maintenance personnel. Hands-on exercises and interactive demonstrations enable students to apply newly acquired principles and skills, thus achieving a thorough understanding of the control and other newly added components. Instructions for troubleshooting and general maintenance are also provided. Additional training programs at your site or at CNC Engineering's training center may also be contracted.

A complete documentation package, which often surpasses that of the OEM, is provided in both CD and paper formats. An archive copy is maintained at CNC Engineering, so we can provide support after leaving your facility.



## THE NEW STANDARD IN OPERATOR FREINDLINESS

While Open Vision™ HMI was developed for a Windows operating system, it uses the GE Fanuc HSSB (High Speed Serial Bus) interface to access the GE Fanuc control. It operates on an industrial hardened PC equipped with Touch Screen Technology. This combination provides incredible performance, dependability and the ultimate in user friendliness. The careful design of an intuitive menu system insures that you are never more than three screens deep. Touching different areas of the main menu brings up subwindows – eliminating submenus. Standard menus are provided for machining centers and turning machines, however, custom menus and screens are available.

## FEATURES TO ENHANCED MACHINE OPERATION

Simplifying and enhancing the standard GE Fanuc functions makes Open Vision™ HMI easy to learn and operate. Furthermore, standardized and convenient operator menus provide common screens from machine to machine, thus increasing machine operator efficiency and reducing errors.

### Operational Features:

- Configurable sizes and colors
- Axis load display movable to any axis position block
- Spindle load bar provides access to a graphical history
- NC editor with background edit for part program control
- Full description of any G or M code
- Active code displayed in groups

### Tooling Information:

- Offset adjustment verification minimizes operator errors
- Optional probing and CLM routines
- Complete tool library with tool pictures displayed
- Active tool list

### Maintenance Options:

- Configurable preventative maintenance schedules
- Full function ladder
- Diagnostics
- Enhanced axis compensation features
- Configurable security

### Machine Information:

- Operator's and maintenance manuals
- Electrical Schematics and mechanical drawings
- Access to 3rd party software via user defined keys
- Context sensitive help

The screenshot displays several key information screens:

- Distance To Go:** Shows Y: -12.8987, Z: -1.3809, X: 0.0000, B: 89.2090, C: 88.2176.
- Machine Position:** Shows X: 8.1216, Y: 2.2800, Z: -0.7976, B: -0.0330, C: -0.0396.
- Actual vs Program Data:**

Actual	Ovr%	Program
6.243	100	6.243
20000	0	20000
		83%
- Geometry vs Wear:**

Geometry	Wear
.2210	.0030
2.1620	.0000
08	
13	
- Program:** Lists various G and M codes such as G17G40, G49, G50, G54, G15, G90, G20, G80, G67, G64, G50.1, and M01.
- Buttons:** Includes 'Reposition Exec Block', 'Active G Codes', 'M Codes', and 'Parts 6'.
- Footer:** Shows 'Operator Console', 'Tool Monitoring', and 'Prof Re'.

# More Capability... More Power... More Productivity FROM YOUR **MACHINE TOOL**

## IS YOUR MILL A...

Alliant, Berardi, Bohle, Bridgeport, Brown & Sharpe, Burgmaster, Butler, Cincinnati, Devlieg, Ekstrom Carlson, Giddings & Lewis, Gilbert, Hillyer, HydroTel Blade Mill, Kearney & Trecker, Keller, Kingsbury, Hartford, Heller, Ingersoll, Mandelli, Masco, Matsuura, Mazak, Mitsubishi, Monarch, Moore, Niigata, Ooya, Pama, Positool, Pratt & Whitney, Producto, Rambdaudi, Rigid, Setco, Sip, Toyoda, Union, Waldrich Coburg, White Sundstrand, Wotan, Zayer

## IS YOUR LATHE A...

America, Axelson, Azuma, Bullard, Cincinnati, Dorries, Dubio, Excello, Giana, Giddings & Lewis, Gray, Hardinge, Heinemann, Hess, Homa, Jones & Lamson, Leblond, Lodge & Shipley, Miyano, Mazak, Monarch, Mori Seiki, Motch, Okuma Poreba, Schiess, Simmons, Star, Toshulin, Tsugami, Warner & Swasey, Wasino, Webster Bennett, White Sundstrand

## MACHINE ENHANCING TECHNOLOGIES

During a Retrofit, Add the Following to Greatly Enhance Your Machine's Capability and Productivity;

- **Rotary Tables / Additional Axis** – expand your machine and reduce setup times
- **Tool Monitoring Systems & Adaptive Controls** – monitor for broken tools in process and automatically adjust feeds and speeds
- **Probing & Tool Setting Lasers** – check parts on the machine as well as checking tools for wear, breakage and thermal growth
- **Cell Controls & Fanuc Robots** – automate the flow of materials and product
- **Custom Integration Software** – implement software specific to your manufacturing process and product specification

CNC Engineering has performed retrofits on the above machines and more, visit our website at [www.cnc1.com](http://www.cnc1.com) for photos & additional information.

Contact us today for a quote on your retrofit project, to schedule a demonstration or to arrange a visit to our facility!

