

# ▶ AUTOMATIC PART PROGRAMMING USING NCEXPRT™



Nothing's better at describing what we do and how it can help than a one-on-one, web-based demonstration. Invite your associates. Ask lots of questions. Tell us about your operation, and we'll share our experience and show our software tools. Contact us at [optinest.com/contact\\_us.asp](http://optinest.com/contact_us.asp)

The Automatic Part Programming Module (NCExpert) is a highly integrated processor for translating CAD geometry into a ready-to-nest part programs using Single-Step Database Technology.

### **Eliminate Manual Programming**

The Knowledge Base and NCExpert software provide the user with technology that virtually eliminates manual programming. This not only saves time and increases accuracy; it frees programmers for more creative, involved, and valuable analytical work.

Look to Automatic Part Programming for these time-and-error saving processes.

### **CAD Error Correction**

CAD geometry often contains minor errors like redundant lines, small gaps in geometry intended to be continuous and extraneous geometry. NCExpert will identify errors in part design... link geometric entities into a logical tool path and heal tool paths... apply tabbing when required... and place the part in the part library ready to be nested.... all in seconds per part.

### **The Optimization Advantage**

With this automated expert system, the user has virtually no part programming to do. This not only saves time, increases accuracy and insures configuration control; it frees programmers for more creative, involved, and valuable analytical work.

It will identify and correct common errors in part design... link geometric entities and create tool paths... apply tabbing where required... and create the machine-specific CNC code... all in seconds per part.

### **CAD Integration**

NCExpert can be highly integrated into your CAD system using your standard drawing practices. This integrated method obsoletes the previous double database method created by using two CAD systems to process a part ([contact us for more information on the importance of a single CAD database design](#)).

With NCExpert, manufacturing data contained in the CAD model can be automatically transferred to eliminate manual data input and greatly increasing the accuracy and speed of the part programming process. NCExpert is able to handle special programming requirements directly from the information in the CAD drawing. Etching, special tooling, recognition of part geometry, grain constraints, material identification, and a host of other requirements can be obtained directly from your CAD system.

### **Machine Integration**

NCExpert works with real, intelligent machine interfaces that obsolete old post processor programs. Machine interfaces are fully programmable and provide all information about the machine's function and abilities to NCExpert. This allows parts to be programmed for all of your machines with a single input from your CAD system.

This unique technology removes restrictions that older obsolete technology imposes. Flexibility in tool assignment allows for optimal tool setup management and maximum efficiency in nesting parts. Advanced lead-in technology allows for intelligent lead-in placement either before or after the parts are nested.

Safe, error free management of part configuration is built into the integration of the Single-Step, Single-Database process of programming parts for all of your machines.

### **Automatic Programming**

Automatic programming, based upon advanced Knowledge Base Set-and-Forget Parameters, that makes it smarter than simpler systems. The Automatic Part Programming Module automatically creates distinct tool paths based upon the production process, sets the direction for each tool path, and determines kerf side and direction. It reads and applies any special directives, i.e. default orientation, grain direction, common cut, and other

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part specific attributes assigned to that part all according to the Knowledge Base Set-and-Forget Parameters.

### **Revision Management that Works with Orders**

Revision Management helps you control and manage part revisions. Whether you are interested in working with only the latest revision or choosing from all revisions, you have the power to set the system to fit your specific needs. Doing so eliminates the potential for accidentally creating the wrong part version wasting time and material.

### **Automatic Tabbing that is Process Specific**

Tabbing is an art and a science, as all programmers know. Optimization empowers you with tools to set the tabbing rules uniquely for each fabrication process – laser, punch. Optimization automatically knows the different needs in each process – stationary material v. stationary turret, for example – and anticipates these differences when automatically tabbing. No doubt, there is no one-size-fits-all approach to tabbing, because there is no one-size-fits-all approach to fabrication. But, now you can more accurately and effortlessly achieve the results you need.

### **Automatic Tool Selection**

Automatic tool selection limits tool setup and provides dynamic turret management in real time on the shop floor. Managing tools – which tool, what station, indexed or not – is no small feat. Powerful, intelligent software helps plan and strategically choose the right tools for the right nests now and throughout the production run.

### **One-Step Automation**

One-Step Automation can program thousands of parts at the beginning of every day. Within minutes all of the parts needed for a day or shifts production on one machine or many can be ready for nesting. And you have the added confidence of automated error-checking to further ensure your production won't be hampered by unforeseen problems.

### **Our reliable expert system eliminates all but the most rare exceptions.**

This process is seamless and invisible. The user retains complete control of the operation because all “decisions” are based on Set-and-Forget Parameters stored in the Knowledge Base along with manufacturing data.

The result is doubly beneficial. Clean geometry means greater accuracy and fewer mistakes. Having this done automatically reduces the need for time-consuming, manual interaction significantly and frees your staff from redundant work.

**The Optimization® Advantage**

The benefits are threefold. Tight CAD integration means greater accuracy and fewer mistakes and effortless configuration control. Automatic expert programming reduces the need for time-consuming, manual interaction by over 90% and frees your staff from mindless repetitive work. Because this next generation technology is intelligent, greater savings in nesting efficiency and machine throughput are also achieved with the power of NCExpert.

Contact Optimization for more information.

### About Optimization®

Optimization® delivers economic performance for fabricators through advanced nesting software. Optimization® develops and supports nesting and CNC part programming software for fabrication processes, which include punch, laser, plasma, Waterjet, router, and CNC knives. We cover the range from single-machine sites to sites with hundreds of machine tools with the highest possible automation.

Our automated approach to manufacturing solutions dates back to our beginning more than three decades ago. It is our belief that routine - and even not so routine - nest technology fabrication can be best achieved through a rules-based system that reduces not only material waste but programming time and error and keeps the manufacturer in control.