

## Industrial machinery and heavy equipment

# Armo Tool

Armo Tool increases overall operational productivity by 40 percent with NX

### Product

NX

### Business challenges

Simultaneously work with both 2D and 3D files

Use existing files without having to change CAD procedures

Efficiently run expanded "tombstone" operation

### Keys to success

Implement NX CAM software to handle all design files, especially utilizing feature-based recognition technology

### Results

Ability to open all design files without translation

Auto-recognition of approximately 90 percent of existing features

Increased efficiency, with 4 to 5 components programmed in one session

Overall productivity increased by 40 percent



**Using Siemens PLM Software technology, Armo Tool continues to innovate, taking its machining solutions from first-class to world-class**

### Helping turn customer ideas into action

From prototyping to complete automation solutions, Armo-Tool Limited (Armo Tool) complements a company's development team with its generations of toolmaking tradecraft. For more than 40 years, Armo Tool has been building long-term relationships with manufacturing companies throughout North America. Armo Tool helps these companies bring new products to market, improve production processes and repurpose their machinery and equipment. Clients rely on Armo Tool to solve

their machining, tool and automation problems and help them get innovative ideas to market. That's why the Armo Tool motto is: "We help you turn your ideas into action!"

Armo Tool started as a precision grinding and coating shop and quickly grew into a leader in several areas, including progressive and transfer stamping dies, tooling and automation, particularly for the automotive industry. The company specializes in automation for small diameter tubes.

Armo Tool has been using NX™ software from product lifecycle management (PLM) specialist Siemens PLM Software for die design for a number of years. "Using NX CAD (computer-aided design) software, we keep tooling costs down by ensuring the



**“Using NX, we can accomplish anything we want to do.”**

Jozef Mucha  
CAM Program Leader  
Armo Tool

minimum number of stations is used to make each part,” notes Ben Whitney, president of Armo Tool. “Our precision is second-to-none. Our cutting clearances are up to six-tenths of a thousandth on cutting sections.” With a philosophy of proactive continuous improvement, the company recognized an opportunity in its computer-aided manufacturing (CAM) environment.

#### **Programming complex geometry**

Armo Tool had a number of limitations with its previous CAM software, especially when attempting to program complex geometry or working with both 2D and 3D CAD files. There were also issues with specifying proper geometry for components developed and provided by the customer. Therefore, the decision was made to implement NX CAM to take advantage of solids-based programming.

Jozef Mucha, CAM program leader at ArmoTool, explains, “Switching to NX CAM

solved a lot of issues relative to manufacturing. With our previous software, we had to maintain two libraries, one for 2D and one for 3D, and that was becoming very difficult to do. Another benefit of using NX is that the tool library isn’t stored by user or computer, but rather on the network. If the programming team decides to change the speeds and feeds for a particular cutter, they are changed team-wide. Using NX, we can accomplish anything we want to do. In addition, NX gives us exposure to continuous, stable 5-axis machining.”



**“Using NX CAD software, we keep tooling costs down by ensuring the minimum number of stations is used to make each part. Our precision is second-to-none.”**

Ben Whitney  
President  
Armo Tool



Whitney adds, "Having used NX CAD for many years, NX CAM was a natural fit for us because we don't have to translate any of the data. That is really a strong point for us. On our automation side, we design with SolidWorks. Moreover, NX CAM can open files created with SolidWorks without the need for translation. Even for the segment of our business that wasn't designed using NX CAD, NX CAM is a big plus."

#### Exploiting feature-based modeling for operational efficiency

When Armo Tool decided to purchase NX CAM, feature-based modeling was one of the main reasons driving the decision. Longterm Technology Services, Inc., a Siemens PLM Software partner, conducted a two-day training class specifically addressing feature-based modeling. "I am very happy with the training," says Mucha. "It was an important eye-opener and a huge step forward. The one-on-one training session was exceptionally productive. Customized training materials tailored to our data helped us quickly take full advantage of NX CAM to solve any issues we might encounter. We're now starting to more fully utilize the latest and greatest capabilities of NX for competitive gain."

Whitney adds, "Without changing our CAD procedures, the feature-based capabilities of NX CAM recognizes about 90 percent of existing model features. That makes us happy. I think once we are able to use the full capabilities of NX CAM, we'll realize substantial operational efficiencies."

**"Being able to assemble components onto a cube for horizontal machining using NX CAM was a huge bonus for us."**

Jozef Mucha  
CAM Program Leader  
Armo Tool

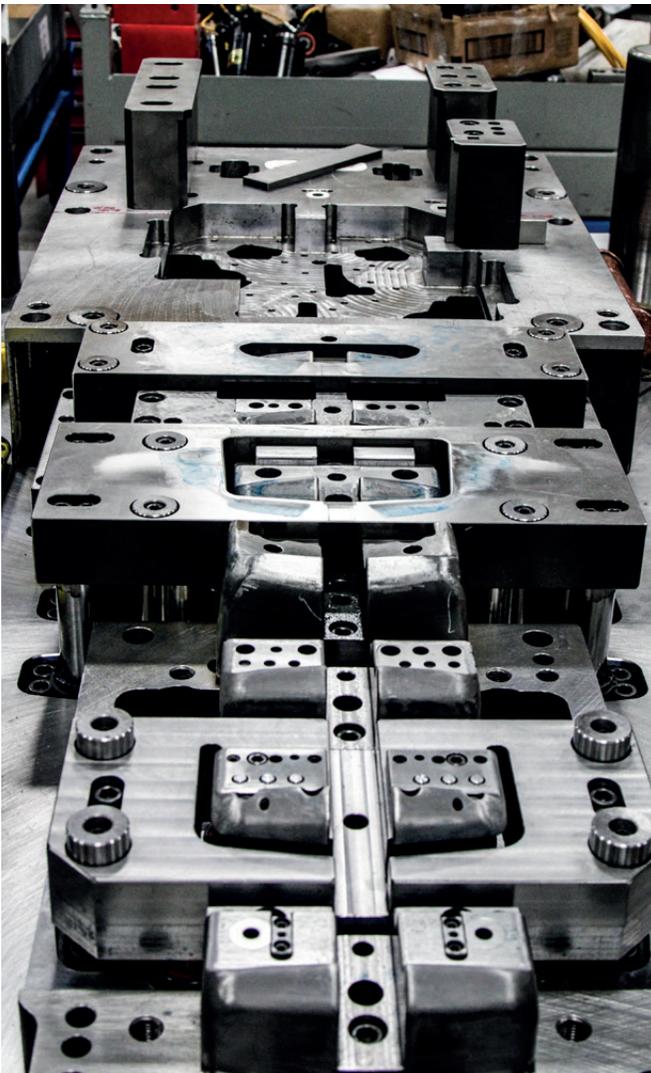
**“For us, it’s always been design and innovation that largely drives new business. Using NX, we’ve moved into the domain of world-class CNC machining.”**

Ben Whitney  
President  
Armo Tool

### **Effectively setting up a tombstone operation**

Armo Tool can now set up on a “tombstone” operation with multiple, different kinds of blocks using a full 3D model. Using its prior system, this simply wasn’t possible. Complex setups require multiple, different blocks set up on one mill, all at the same time. Whitney explains, “You have to be very careful not to crash the spindle into block two when it’s going around block one. With NX CAM, we can readily perform the more rigorous 3D modeling that we’re setting up; we’ve been quite productive when doing that type of machining.”

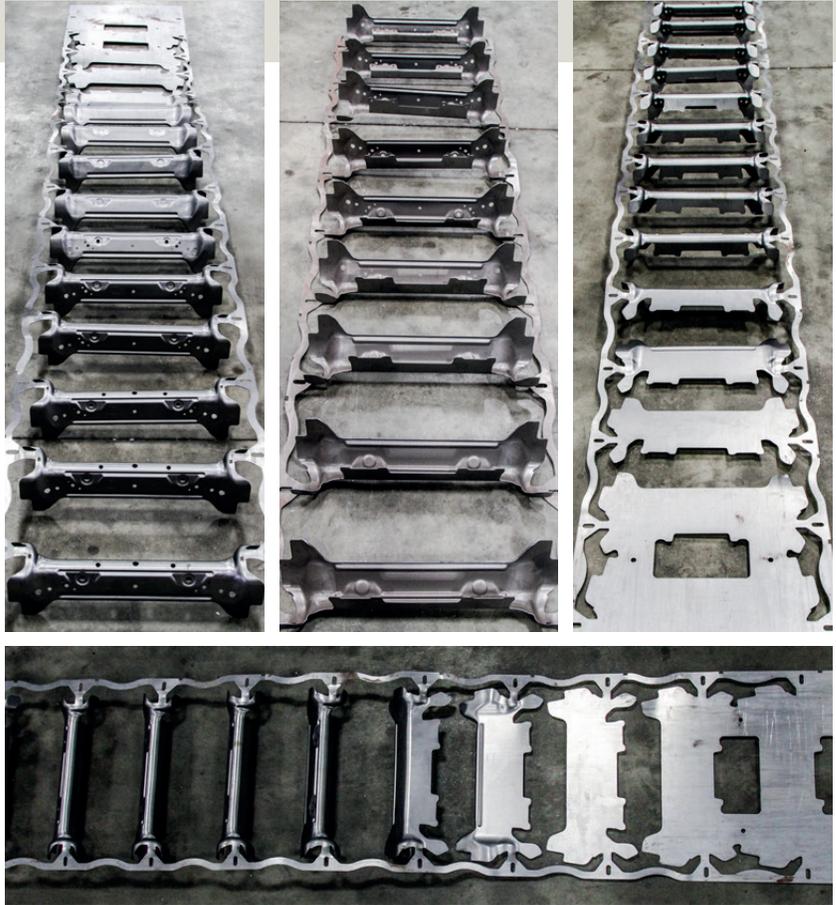
Adds Mucha, “When it comes to this type of complex programming, we can program four or five components in one session. With other software, that would be very difficult. We can now simulate everything we cut, all residing in one assembly. We can see how components interact while the software does a gouge check of one component against adjacent components. We have realized increased productivity, keeping the spindle running longer during operations. Being able to assemble components onto a cube for horizontal machining using NX CAM was a huge bonus for us.”



### Growing the business; going world-class

After implementing new fixturing technology, new computer numerical control (CNC) machines and new NX CAM software, Armo Tool has seen a 40 percent increase in productivity. The company continues to increase its strengths with the expanded use of NX, including bolstering its stamping design operations and taking on new, larger and more complex 3D forms. Armo Tool is now machining cast forms that are more than 50 inches long, with the ability to machine forms up to 50 inches by 80 inches and 2D plates much bigger than that.

Whitney notes, "Our power in terms of speed, quality and competitiveness with which we can do large forms has really grown over the last year. For some companies, machining is how they get work. For us, it's always been design and innovation that largely drives new business. We've always had a first-class deliverable. Now, with NX, we've moved into the domain of world-class CNC machining."



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Jozef Mucha  
CAM Program Leader  
Armo Tool

#### Solutions/Services

NX CAD  
NX CAM  
[www.siemens.com/nx](http://www.siemens.com/nx)

#### Customer's primary business

Armo Tool manufactures precision stamping dies as well as provides custom automation and complex tooling. Most of Armo Tool's business is in the automotive space. A wide range of in-house expertise makes Armo a unique resource for solving complex problems and delivering reliable solutions efficiently.  
[www.armotool.com](http://www.armotool.com)

#### Customer location

London, Ontario  
Canada

#### Partner

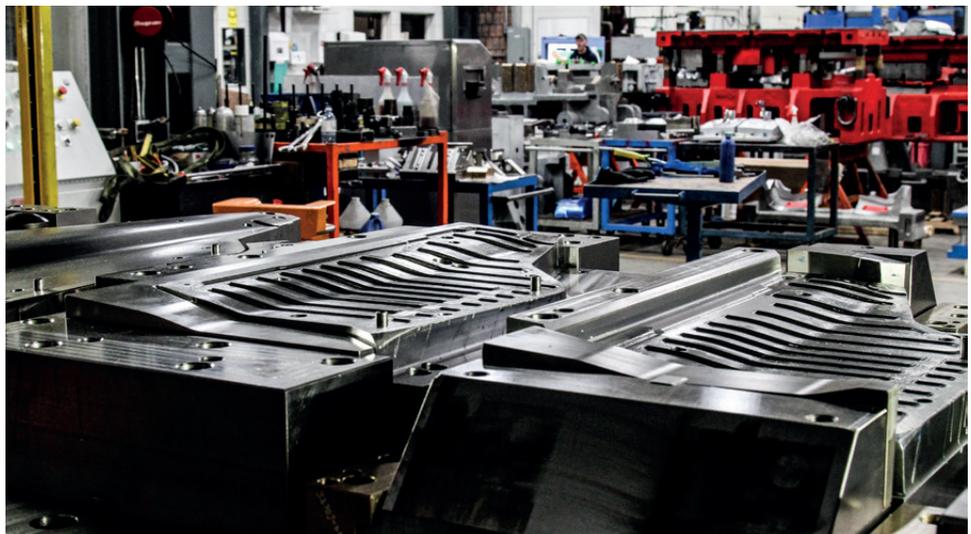
Longterm Technology  
Services Inc.  
[www.longtermtec.com](http://www.longtermtec.com)

"For us, it's always been about the design and the innovation. We've always had a first-class deliverable. Now, with NX, we've moved into the domain of world-class CNC machining."

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