

#### North America

#### Allied Machine

120 Deeds Drive Dover, OH 44622 United States

#### ThreadMills USA<sup>™</sup>

4185 Crosstowne Ct #B Evans, GA 30809 **United States** 

#### Superion® 1285 S Patton St. Xenia, OH 45385

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Dover, OH 44622

United States

United States

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#### Wohlhaupter\* GmbH

#### Maybachstrasse 4 Postfach 1264 72636 Frickenhausen Germany

Asia

#### Wohlhaupter\* India

B-23, 3rd Floor B Block Community Centre Janakpuri, New Delhi - 110058 India



Allied Machine & Engineering is a worldwide leader in holemaking and finishing solutions. We are committed to providing practical and dependable solutions to our customers through innovative designs and superior customer and technical support.

We continue to expand our product offering in order to provide new and different solutions. With Field Sales Engineers located around the world, we position ourselves to provide technical support on site, right at your spindle.



www.alliedmachine.com

## Wohlhaupter<sup>®</sup> Special Boring Solutions

CATALOG

## Allied Machine & Engineering

#### **The Foundation**

Since 1941, Allied Machine & Engineering has provided dependable and practical holemaking solutions to the world. What was once a small job shop in Ohio is now a worldwide leader in cutting tool technology. With three manufacturing facilities in Ohio, one in Georgia, another in Germany, and headquarters in both the United States and Europe, Allied Machine is positioned to bring innovative solutions and technical expertise directly to the customers' hands.



#### The Beginning

Harold E. Stokey founded Allied Machine & Engineering to aid the war effort, manufacturing taper bearing lock nuts for the production of M1 tanks. Years later, after a sales meeting gone wrong, Stokey possessed a warehouse stocked with spade drill inserts. He set forth into the industry that would become Allied Machine's thriving identity: holemaking.

#### The T-A®

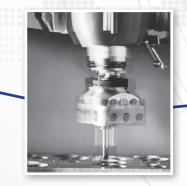
When Harold's son, William H. Stokey, became the president and CEO, he developed the Throw Away, or T-A®, spade drill insert system. The T-A revolutionized the holemaking industry, launching Allied Machine ahead of the competition. Since then, numerous innovations and advancements have been created from the T-A's inspiration.

## Wohlhaupter®



#### The Foundation

On October 1, 1929, Emil Wohlhaupter founded a small mechanical workshop in Stuttgart-Feuerbach, Germany, reconditioning cutting and stamping tools by hand. A few years later, the company was subcontracted to carry out small-scale batch productions.



#### The UPA Beginning

In 1936, the first model of the Universal Facing and Boring head was developed. One year later, it was shown at the Leipzig Trade Fair. The UPA became known around the world along with Wohlhaupter's name. The Universal Facing and Boring head can be used on different machines for individual and batch productions. Since then, numerous boring innovations and advancements have been created.



#### The MultiBore® System

Wohlhaupter developed the world's first modular boring system in 1973 called MultiBore. MultiBore was created with a system of modular components that is compatible with every machine spindle.

#### The Innovation

Since the development of the T-A®, Allied Machine has expanded its product offering to support a vast range of customer applications, including large diameter and deep hole drilling, boring, reaming, burnishing, porting, and threading.



## Today

In 2016, Allied Machine & Engineering joined forces with Wohlhaupter to create a globally sought after specialist for the entire holemaking process. Our customer support is crucial to what we do, and that's why we make sure the best engineers and customer service associates are in place to assist our customers around the world.





**Steve Stokey Executive Vice President** Allied Machine & Engineering

Frank-M. Wohlhaupter Managing Director Wohlhaupter GmbH Allied Machine & Engineering

Paul Crawford Managing Director (Europe) Ltd.

William H. Stokey President and CEO

**Mike Stokey** Executive Vice President Allied Machine & Engineering



Holemaking Solutions for Today's Manufacturing

## **WOHLHAUPTER**

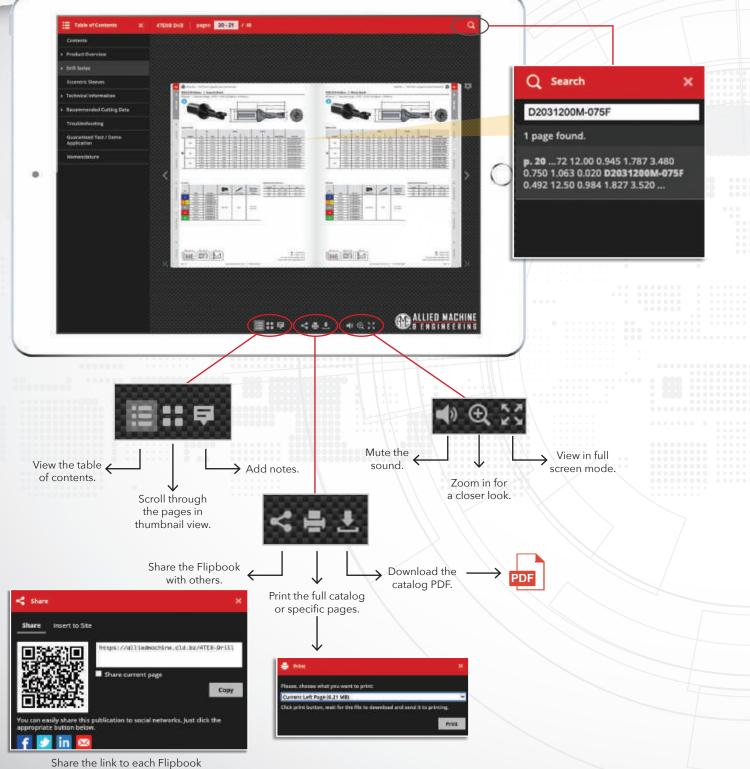
ThreadMills

CRITERION

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## Find what you need. Now.

Flipbooks give you the ability to search for specific item numbers, download PDFs, print pages, and share with others. Save time searching the catalog by hand by using the easy search function. View our flipbooks now at **alliedmachine.com/support/literature**.



via email and social media.

#### **Icon Reference Guide**



### Navigate with ease.

The following icons will appear throughout the catalog to help you navigate between products and find the best solution quickly.

#### **Tool Options**



Coolant Through

## Safety Information

Your safety and the safety of others is very important. This catalog contains important safety messages. Always read and follow all safety precautions.



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**WARNING** (shown above) means that failure to follow the precautions in this message could result in tool failure and serious injury.

**NOTICE** means that failure to follow the precautions in this message could result in damage to the tool or machine but not result in personal injury.

**NOTE** and **IMPORTANT** are also used. These are important that you read and follow but are not safety-related.

Visit www.alliedmachine.com for the most up-to-date information and procedures.

## Patent Information

Allied Machine & Engineering and Wohlhaupter patent information can be found at www.alliedmachine.com/patents

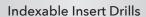


#### **Product Offering Overview**

#### **Replaceable Insert Drills**

- Reduce costs by decreasing setup time and utilizing a single holder for the lives of multiple inserts
- Provide flexibility to quickly switch between inserts with different geometries
- Products:
- GEN3SYS® XT | GEN3SYS® XT Pro
- T-A<sup>®</sup> | T-A<sup>®</sup> GEN2 | T-A Pro<sup>®</sup>
- High Performance | Universal





- Protect your investment and reduce your inventory with replaceable cartridges that allow the same holder to be used repeatedly
- Indexable inserts increase productivity and tool life while reducing costs
- Products:
- 4TEX<sup>®</sup> Drill
- Revolution Drill®
- Opening Drill®



### Replaceable / Indexable Insert Drills

- Drill large diameter holes and maximize penetration rates even on low horsepower machines
- Delivers strength and versatility needed for any deep hole drilling application
- Holders cover a range of sizes with the replaceable heads determining the cutting diameter
- Products:
- APX™ Drill





#### Solid Carbide Drills

- Offer greater strength and stability when drilling tougher materials
- Available in diameters from 3mm 20mm
- Can be made to order specifically for your application (Superion<sup>®</sup> quoted specials)
  - ASC 320®
  - Superion®



#### Structural Steel Solutions

- Deliver outstanding performance and durability in structural steel applications
- Designed to produce optimal results in difficult-tomachine materials
- Available in multiple lengths and diameters
- T-A<sup>®</sup> style drills have different insert geometry options to improve performance depending on material
- Products:
- T-A® | T-A® GEN2
- GEN3SYS® XT Pro

#### BTA (STS) Machining Solutions

- The internal ejection system flushes chips and debris from the hole with no interference to the cutting process
- Utilizes the advantages of the T-A® drill insert
- Designed to significantly increase penetration rates over brazed heads and traditional gun drills
- Products:
- BT-A Drill





#### Hydraulic Port Contour Cutters

- Save significant time and money by performing four processes in one step
- Replaceable insert design reduces costs, inventory, and setup times
- Available in four industry specifications:
- Imperial: SAE J-1926
- Metric: ISO 6149-1:2006
- Military: SAE AS5202
- John Deere: JDS-G173.1
- Products:
- AccuPort 432®

#### **Enhanced Special Drilling Capabilities**

- Allied Machine engineers are available to meet with you to evaluate your application and recommend the best solution for you
- Special drilling solutions can incorporate advanced features such as adjustable diameter locations, multiple steps, additional coolant designs, special lengths and diameters, and more
- Special drills can drastically reduce your cost per hole and increase your overall productivity by eliminating multiple processes and increasing tool life







#### **Product Offering Overview**

## **WOHLHAUPTER**<sup>®</sup> High Precision Boring Systems

- Designs available for high volume applications that increase rigidity to improve performance
- Versatile boring heads that are flexible with changing applications while maintaining excellent performance
- Provides high precision with absolute repeatability to ensure every part is held to tolerance
- Offers an industry leading modular shank connection that maintains rigidity and reduces inventory on your boring system
- Available with both digital and analog settings
- Products:
  - Wohlhaupter<sup>®</sup> Boring Tools



NOTE: Adjustment accuracy of 0.0001" or 0.002mm on diameter

## **CRITERION**<sup>®</sup> Modular Boring Systems

- The modular capabilities are ideal for use across multiple different projects
- Offers versatile boring heads suitable for job shops and tooling rooms
- Provides an economical solution for low volume and/ or short-term production applications
- Offers finish boring solutions
- Products:
  - Criterion® Boring Tools



#### **Expandable Reaming Solutions**

- Expandable cutting diameters accommodate for wear, which extends tool life
- Replaceable cutting heads and rings reduce waste and improve production time versus solid high speed steel and carbide reamers
- Hold tight tolerances to ensure processes are performed to accurate specifications
- Reduce tooling costs because many items are available for reconditioning
- Products:
  - ALVAN® Reamers







#### **Roller Burnishing Solutions**

- Produce excellent surface finishes
- Provide accurate size control
- Increase surface hardness
- Solutions for both through hole and blind hole applications
- Products:
  - S.C.A.M.I.<sup>®</sup> Roller Burnishing Tools

#### Solid Carbide Thread Mills

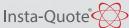
- · Available with coolant through options
- Cover a wide range of thread forms
- Provide optimal solutions for both high production projects and short-run applications
- Products
  - AccuThread® 856
  - AccuThread® T3
  - ThreadMills USA™

#### Indexable Insert Thread Mills

- Three insert lengths are available that cover a wide range of thread forms
- Holders can utilize inserts with different pitches and thread forms
- Repeatability is achieved by both the bolt-in style and the pin style locking systems
- Increase tool life by 25 50% with Allied Machine's AM210<sup>®</sup> coating
- Products
  - AccuThread® 856: Bolt-in Style
- AccuThread® 856: Pin Style









## **SPECIAL** CAPABILITIES

When it comes to designing and developing special solutions for customers, Allied Machine is the top choice. If your application requires special tooling, give us a call. Our engineered specials are developed by the brightest engineers in the industry. Most of our standard tooling can be altered as specials, or we can create entirely new concepts for particularly unique applications.

One special tooling solution is Insta-Quote<sup>®</sup>, the online system that allows you to design your own special tooling 24/7. Receive a quote and drawings within minutes just by following the steps.

And with the addition of Superion® technology and capabilities, we can customize made-to-order solid carbide tools to achieve optimal results for your applications.

Whatever your application, Allied Machine has the answer.



#### Online Tools | Design Anytime From Anywhere



## TooMD®

Increase the production and success of your applications today.

- Direct access to 2D drawings and 3D models
- · Assemble and view tool images in your browser
- Download drawings for use in most machining software programs
- Browse products, search item numbers, and save assemblies for future use

toolmd.com



## **Product Selector**

## Use the product selector to find the right tool for your application.

- Follow guided steps to generate the right tool for your application
- Learn about your recommended tool and how to maximize its performance





#### Eliminate the wait. Get your program now.

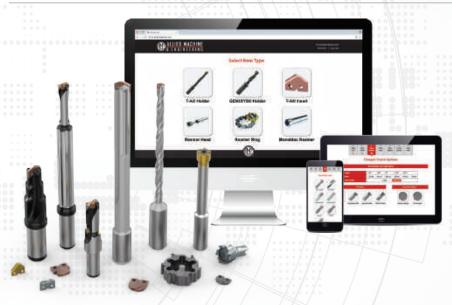
Choose the best thread mill for your application

Insta-Code also has a **Cycle Time Calculator** 

- Create program code for your machine
- Available as a PC download app (that can be used offline)
- Website app available 24/7



#### alliedmachine.com/InstaCode

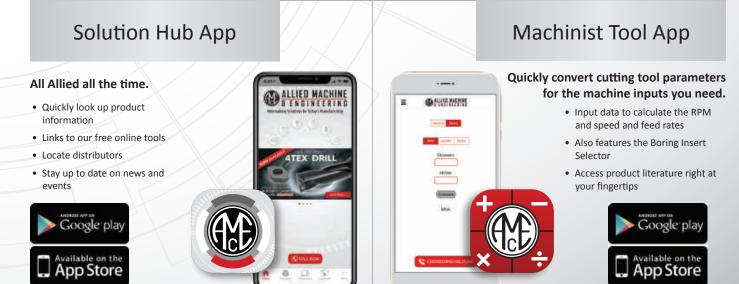


## Insta-Quote

## Design your custom tooling and receive a drawing and quote...all within minutes.

- Design and quote your own tooling
- Generate the solution you need in just a few steps
- Features the following products:
  - T-A<sup>®</sup> Inserts
  - T-A® Holders
  - GEN3SYS® XT Holders
  - ALVAN® Reamers

#### iq.alliedmachine.com



## **Customer Support**

#### Support You Can Count On

Allied Machine has many lines of support to ensure we're available to assist you at all times. It's important to establish relationships with new customers, but we also know it's equally important to strengthen and support relationships with existing customers. Whether you need help with an order or you need someone to come assist you at the spindle, we have the right people to get you what you need.



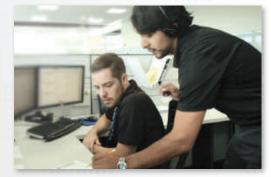


#### **Inside Sales Support**

Our inside sales team is trained to handle your account information and general inquiries. We are happy to assist you and find the answers to your questions.

- 💪 1.330.343.4283 ext. 8610
- 1.800.321.5537 (toll free United States and Canada)
- ☑ insidesales@alliedmachine.com





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#### **Engineering Support**

Our highly trained and skilled Application Engineers are here to assist you. If you are experiencing technical difficulties, our engineers will recommend the best solutions to the problem. Speeds and feeds, coolant pressure, and other machining components all affect the performance of our tooling. Our AEs are experienced in working with difficult materials in many different environments. Give us a call and put our knowledge to the test.

- 🌜 1.330.343.4283 ext. 7611
- 🌜 1.800.321.5537 (toll free United States and Canada)
- ☑ appeng@alliedmachine.com



#### **Field Support**

Allied Machine provides local engineering support all over the world. Our Field Sales Engineers (FSEs) spend months training in-house before going to the field. This support line allows us to provide assistance to our customers right at the spindle. They are available to visit your facility, run demos and tests, and work hand-in-hand with machine operators and engineers to find the best possible tooling solutions.

NOTE: If you do not know your local FSE, please contact us

- **\$** 1.330.343.4283
- 💪 1.800.321.5537 (toll free United States and Canada)
- ☑ info@alliedmachine.com



## Allied Tool Academy

#### Online | On-site Technical Education Seminar (TES) | LIVE (Broadcasting)

#### **Online Training**

Get **all** the tooling training of our 3-day in-person Technical Education Seminar (TES) through the online **Allied Tool Academy** training platform. Level up your tooling IQ through a series of product overviews, demos, and short quizzes.

- Online TES Certification as well as other training modules
- On demand
- On YOUR schedule



Register online today: www.alliedtoolacademy.com



Register online today: www.alliedmachine.com/live

#### Allied LIVE (Broadcasting)

Join us for *LIVE* broadcast training events where you will have the ability to learn about our tooling, watch live demos, and ask our trainers questions.

- Online
- Quick brief presentation provides basic knowledge of our products
- · Watch live demos of tools at the spindle at different speeds and feeds

#### **On-site Technical Education Seminar (TES)**

Allied Machine's **Technical Education Seminar (TES)** puts the attendees in front of the machines. When you attend our three day TES program, you'll gain first-hand experience in *real-life* application situations. Test and experiment with different speeds and feeds, observe the results, and discover the best solution.

- Training Lab: In-depth training at the spindle allows you to choose speeds and feeds
- · Learning Lab: Quick, brief sessions provide basic knowledge of our products

Register online today:

 Facility Tours: Take guided tours of our two manufacturing facilities located in Dover, Ohio

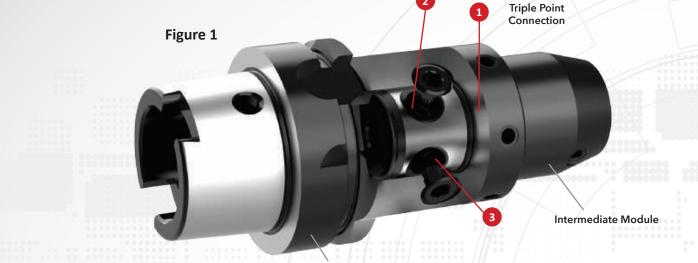




#### **The MVS Connection**

Wohlhaupter® GmbH developed the world's first modular tooling system called MultiBore® in 1973. The modular tooling system was designed to be compatible with all machine spindles, and its connection features a triple point clamp (Figure 1). The triple point clamp maximizes rigidity and creates an accuracy less than 3µm when the tool is changed.

- Ensures high axial clamping forces on mating surfaces
- Provides maximum rigidity
- Threaded taper pins for precise cutter positioning



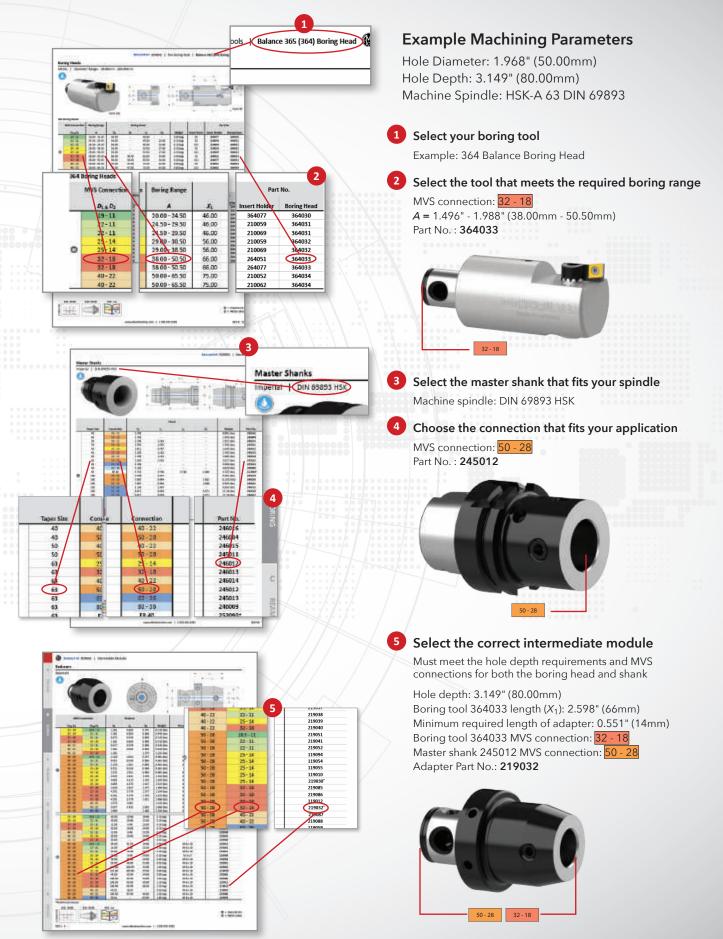
Shank

#### **MVS Connection Color Guide**

Wohlhaupter® created a unique color-coding system to find the right connections for different tool components quickly and easily. Each Wohlhaupter / MVS connection size has its own color-coding. Simply match the colors to select the correct combination of tool components (Figure 2). We've also incorporated the color-coding system into our packaging to reduce setup time even more.



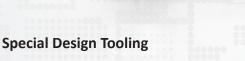
#### **MVS Connection Example - Selecting the Correct Intermediate Module**



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**Special Boring Solutions** 

## Wohlhaupter<sup>®</sup> Special Boring Solutions



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When it comes to special solutions for customers, Wohlhaupter has unique capabilities to effectively design and develop special boring tools. Our special boring tools are designed for specific machines, processes, and materials to help save you time and money.

If you have a particularly unique or difficult application, give our Application Engineering team a call.

phone: 330.343.4283 ext: 7611 | email: appeng@alliedmachine.com

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#### **Applicable Industries**



Aerospace



Agriculture





Machining



Energy

## Wohlhaupter<sup>®</sup> Special Boring Solutions Table of Contents

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#### EK Groover | Lay Down Cartridge

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## GROOVING TOOLS

- Create complex grooves faster and deeper than ever before
- Eliminate chatter in hard-to-reach internal forms
- The electronically-controlled insert release can be adapted to most machine tools
- Single or double grooving in one operation

#### ROUGH BORING TOOLS

## LAY DOWN CARTRIDGE

- Increase the productivity of your roughing tool while protecting your investment
- If the tool is ever damaged, simply replace a cartridge and resume making chips

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#### SPECIAL BORING TOOLS

## **ANTI-VIBRATION**

- Vibration dampening rings
- Optimized tool weight
- Used to reduce harmonic vibration in deeper boring applications

#### SPECIAL BORING TOOLS

## **MULTI-STEP BORING TOOL**

- Fine adjustment tool for reverse machining
- Combined with multi-diameter fine adjustable cartridgess for finish machining

#### OD Turning | Padded Line Boring Tool

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 SPECIAL BORING TOOLS
 SPECIAL BORING TOOLS

 SPECIAL BORING TOOLS
 SPECIAL BORING TOOLS

- Multi-step OD turning
- Drastically reduce cycle time
- Improve surface finish and feature concentricity

SPECIAL BORING TOOLS

## PADDED TOOLING

- Aids in stable part processing
- Expands length to diameter capabilities
- Improves surface finish
- ▶ Pads are replaceable to extend tool life

B10-K: 4

**3E**<sup>TECH</sup> Special Tools



**3ETECH BORING TOOL** 

## **MULTI-STEP BORING TOOL**

- ▶ Easy diameter adjustments with 3E<sup>TECH</sup>
- One digital readout module to use on all steps

3ETECH BORING TOOL

www.alliedmachine.com | 1.330.343.4283

## LINE BORING TOOL

- One digital readout module used on all steps
- Easy diameter adjustment at the machine spindle

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#### **DigiBore Special Boring Tools**

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## FINISH BORING TOOLS

## DIGIBORE WITH 249 (248)

- Standard DigiBore head, standard 249(248) head, and special slide for precise 2-step bore
- MVS connection

#### FINISH BORING TOOLS

## **DIGIBORE SPECIAL**

- Standard DigiBore boring head with OD turn and OD chamfer insert holder
- MVS connection



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#### ROUGH, FINISH, and CHAMFER BORING TOOLS

## **COMBI-LINE**

- Standard Combi-Line tooling with added chamfer cartridge
- MVS connection

#### ToolMD

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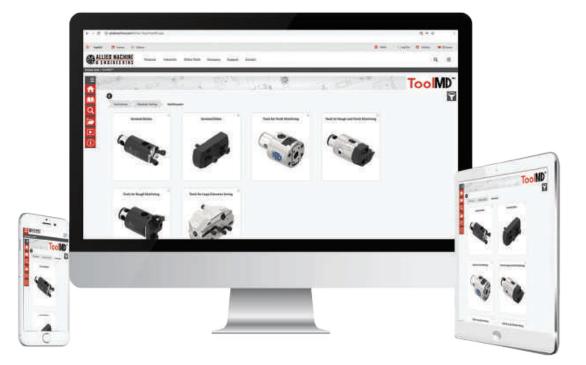
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## TooMD® www.toolmd.com



#### **Design Your Own Solutions**

ToolMD is a configurator for Wohlhaupter modular tooling systems that allows customers to virtually build their own solution. This online-based simulator puts the entire Wohlhaupter product line at your fingertips. It provides a digital bank of every individual part that Wohlhaupter manufactures in either inch or metric.

Once you select a component, you will be guided by a series of user-friendly prompts to select the next components until you have built your tooling system. Throughout the process, you can monitor the size of your custom tool and ensure what you're building matches your real-life specifications. Once a complete system is virtually assembled, the program will render the tool in either a 2D or 3D drawing to view on your device.

Designing your tools with ToolMD saves you time and allows you to instantly obtain the right tool for the job.





Design anytime from anywhere. Available online 24/7.

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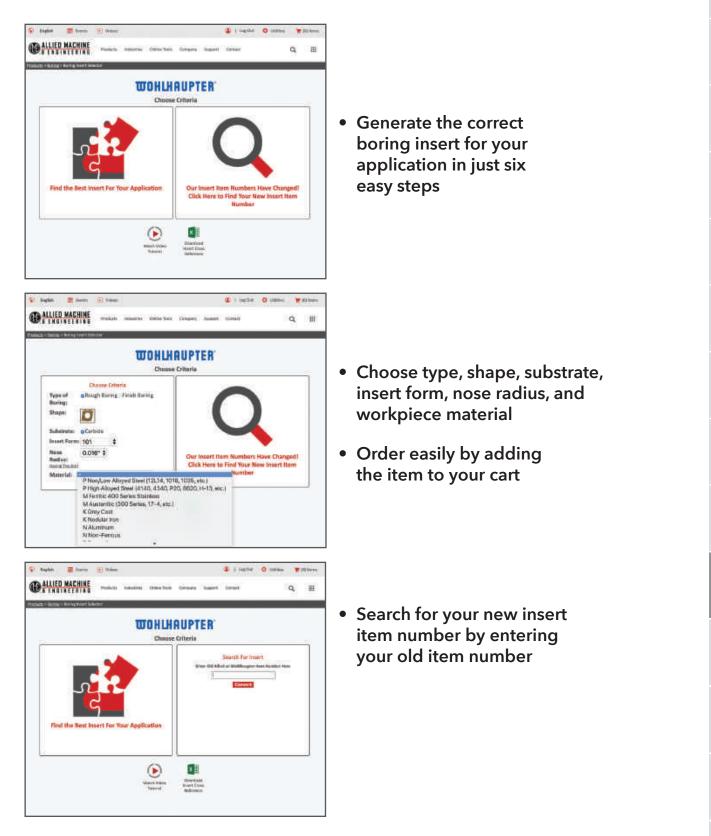
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## **WOHLHAUPTER**<sup>°</sup> | Boring Insert Selector

www.alliedmachine.com/bis



## United States

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**Fax:** +1.330.602.3400

Toll Free USA and Canada: 800.321.5537

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**Phone:** +1.330.343.4283

Toll Free USA and Canada: 800.321.5537

Fax: +1.330.364.7666 (Engineering Dept.)

Phone:

### Europe

Allied Machine & Engineering Co. (Europe) Ltd. 93 Vantage Point Pensnett Estate Kingswinford West Midlands DY6 7FR England

#### Wohlhaupter GmbH

Maybachstrasse 4 Postfach 1264 72636 Frickenhausen Germany **Phone:** +49 (0) 7022.408.0

+44 (0) 1384.400900

**Fax:** +49 (0) 7022.408.212

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Your local Allied Machine representative:



www.alliedmachine.com

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