

# holemaking & finishing **SOLUTIONS**

[www.alliedmachine.com](http://www.alliedmachine.com)

DRILLING



BORING



REAMING



BURNISHING



THREADING



SPECIALS



**DECREASE YOUR  
COST-PER-HOLE**

 **ALLIED MACHINE  
& ENGINEERING**

Allied Machine offers a wide range of drilling, boring, reaming, burnishing, and threading tools to lower your **cost-per-hole**.



## Replaceable Insert Drills

- Reduces cost and decreases set-up and downtime by utilizing a single holder for multiple insert use.
- Proves efficient tool changeover by replacing inserts rather than entire tools.



### GEN3SYS® XT Pro

- Diameter Range: 0.4331" - 1.3780" (11.00mm - 35.00mm)
- Inserts are designed with specific geometry/coating combinations for different ISO materials.
- The holder design increases coolant flow to the cutting zone and improves chip evacuation.
- **Why would I use this?** With increased coolant at the cutting zone, the XT Pro inserts stay cool and achieve longer tool life. The increased coolant flow allows the tool to achieve maximum penetration rates, which can help increase your throughput.



### GEN3SYS® XT

- Diameter Range: 0.4331" - 1.3780" (11.00mm - 35.00mm)
- Available in different geometries to meet your application needs.
- The ability to replace the inserts on the spindle provides cost benefits by reducing machine downtime and setups.
- **Why would I use this?** The XT increases penetration rates and allows you to increase your throughput. The AM300® coating increases tool life, which improves your overall cost-per-hole over competing tooling.



### GEN2 T-A®

- Diameter Range: 0.373" - 4.500" (9.50mm - 114.30mm)
- Inserts are designed with Notch Point® geometry that improves stability and hole straightness and also reduces thrust.
- The advanced cutting geometry improves chip evacuation.
- **Why would I use this?** The GEN2 T-A allows you to increase your penetration rates and improve your chip evacuation, which can help increase your throughput.



### Original T-A®

- Diameter Range: 0.373" - 4.500" (9.50mm - 114.30mm)
- Large variety of geometries and coatings optimizes chip formation in various materials.
- The replaceable insert increases productivity by reducing setups and downtime.
- **Why would I use this?** The large assortment of geometries available with the T-A drilling system allows for a consistent drilling process you can rely on, regardless of material.



## Solid Carbide Drills

- Achieve greater strength and stability when drilling tougher materials.
- Provides diameter sizes much smaller than replaceable insert drills can provide.



### Superion™ Solid Carbide Tooling

- Diameter Range: 0.1181" - 0.7874" (3.00mm - 20.00mm)
- Coolant through solid carbide tooling drives high penetration rates and long tool life.
- Multiple coatings are available to extend tool life and increase penetration rates.
- **Why would I use this?** Superion solid carbide tooling offers tight tolerances, multiple steps, detailed profiles, high desired penetration rates, and application-specific solutions.



### Superion™ PCD Tooling

- Diameter Range: 0.1181" - 0.7874" (3.00mm - 20.00mm)
- Provides superior tolerancing and increased penetration rates.
- The tool hardness extends tool life 10-fold over carbide tooling.
- **Why would I use this?** Superion PCD tooling is ideal for CFRP and other unique and/or challenging materials. Regrinds and PCD remanufactures are available to fit your tooling budgets.



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& ENGINEERING**



## Indexable Insert Drills

- Indexable inserts increase productivity and tool life while reducing costs.
- By simply rotating the inserts when one edge begins to wear, you can reduce machine downtime and tooling set-ups, which increases production time and throughput.

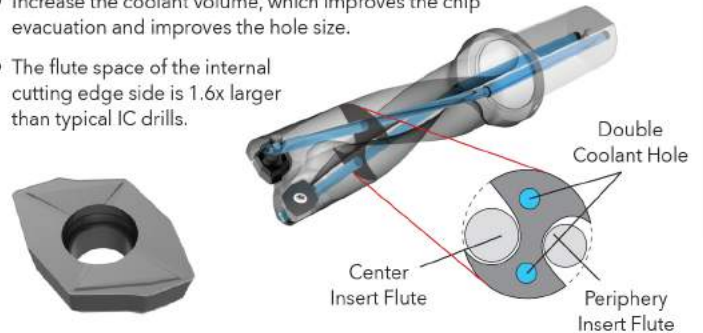


### 4TEX™ Drill

- Diameter Range: 0.472" - 1.850" (12.00mm - 47.00mm)
- The drill holder has an increased and stronger core that improves rigidity and increases reliability.
- Provides single effective cutting on light duty machines that increases penetration rates.
- **Why would I use this?** Produce holes quickly and efficiently on a variety of machine tools that have less than desired rigidity.

### 2 Twisted Coolant Holes

- Allow the core to remain intact, making the core thicker and stronger.
- Increase the coolant volume, which improves the chip evacuation and improves the hole size.
- The flute space of the internal cutting edge side is 1.6x larger than typical IC drills.



### Revolution Drill®

- Diameter Range: 1.875" - 4.000" (47.63mm - 101.60mm)
- The replaceable cartridges allow the tool to be rebuilt and also make the diameter adjustable.
- Drills from solid, which eliminates the need for a pilot hole.
- **Why would I use this?** The Revolution Drill provides ideal performance on low horsepower machines while maintaining high penetration rates. These capabilities make the drill an excellent solution for large holes.



### Opening Drill®

- Diameter Range: 2.000" - 5.620" (50.80mm - 142.80mm)
- Opens an existing hole in a single operation.
- Eliminates multiple boring passes to improve cost-per-hole and decrease cycle time.
- **Why would I use this?** The Opening Drill provides ideal performance on low horsepower machines while maintaining high penetration rates. These capabilities make the drill an excellent solution for large holes.



## Replaceable / Indexable Insert Drills

- Holders cover a range of sizes with the replaceable heads determining the cutting diameter.
- The replaceable heads, pilot inserts, and outboard inserts all help reduce tooling costs, set-up times, and reduce your overall cost-per-hole.



### APX Drill

- Diameter Range: 1.500" - 4.000" (38.00mm - 101.60mm)
- Allows for higher spindle speeds and takes advantage of the power curves on modern CNC machines.
- Ideal for large diameter and deep hole applications.
- **Why would I use this?** The flexibility to use one body for multiple head sizes minimizes tooling investments while still providing optimal performance in many of your large diameter drilling operations.



APX heads are available in both T-A® and GEN3SYS® XT pilot styles



T-A® Style



XT Style

Allied Machine & Engineering is a leading manufacturer of holmaking and finishing tooling systems. Allied devotes its advanced engineering and manufacturing capabilities to creating the widest selection of value-added tooling available to metal-cutting industries around the world. Our tooling solutions deliver the lowest cost-per-hole in a wide range of drilling, boring, reaming, burnishing, and threading applications.

Located in Dover, Ohio, Allied's precision holmaking technologies provide end users worldwide with the highest level of tooling performance. Precision engineering and expert application support make Allied the first and best choice for solving complex metal-cutting challenges.

Visit [www.alliedmachine.com](http://www.alliedmachine.com) today to learn more.



### Structural Steel Solutions

- Reduce costs and decrease set-up and downtime by utilizing a single holder for the lives of multiple inserts.
- Achieve consistent high production in structural applications.



#### Structural Steel XT Pro

- Diameter Range: 0.4724" - 1.3780" (12.00mm - 35.00mm)
- The XT Pro Structural Steel (XTST) geometry will optimize your structural applications.
- Insert features an enhanced spur point, improved radial rake, and improved Notch Point®.
- **Why would I use this?** The XT Pro increases penetration rates and allows you to increase your throughput. The AM420 coating increases tool life which improves your overall cost-per-hole.



#### Structural Steel Original T-A® and GEN2 T-A®

- Diameter Range: 0.511" - 1.882" (12.98mm - 47.80mm)
- The GEN2 T-A® inserts come standard with High Efficiency (-HE) geometry.
- The Original T-A® inserts come standard in Thin Wall (-TW), Notch Point® (-NP), and Structural Steel (-SS) geometries.
- **Why would I use this?** The T-A structural steel products maximize the advantages of the T-A drilling system in structural applications. A single holder can utilize a range of insert diameter sizes and multiple different geometry options, providing versatility across machining operations.



### Hydraulic Port Contour Cutters

- The replaceable insert design reduces costs, inventory, and set-up times.
- Save significant time and money by performing four processes in one step.



#### AccuPort 432®

- Port Size: 4 to 32
- Drills and finishes port forms in one operation.
- Specials include MS-33651 specification or special gauge length.
- **Why would I use this?** The AccuPort 432 allows for increased performance and shorter cycle times by combining multiple operations into one tool. These tools are available in 4 industry specifications: (1) imperial SAE J-1926, (2) metric ISO 6149-1:2006, (3) military SAE AS5202, and (4) John Deere JDS-G173.1



**Also Available:** Port and Thread Finishing Kits (includes AccuPort 432® holder, T-A® inserts, port contour inserts, and dedicated AccuThread™ 856 solid carbide thread mill)



### BTA (STS) Machining Solutions

- Designed to significantly increase penetration rates over brazed heads and traditional gun drills.
- Utilized specifically on BTA (STS) machine equipment.



#### BT-A Drill

- Diameter Range: 0.5100" - 1.8820" (12.95mm - 47.80mm)
- 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.
- **Why would I use this?** The versatility of available T-A geometries and substrates allows for increased penetration rates and excellent chip control in any application.

#### Original T-A Insert: BT-A Geometry (-BT)

- Low thrust web geometry reduces Z-axis requirements.
- Tiny chip (-TC) lip geometry improves chip formation.
- Polished cutting surface eliminates material build-up.





## Boring Systems

- Eliminates scrap and stress.
- Provides straighter holes that are on size, in tolerance, and under budget.

### WOHLHAUPTER® High Precision Boring Systems



#### Why would I use this?

- Rigid design to improve performance in high precision or high production roughing and finishing applications.
- 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 of your boring systems.
- Available with both digital and vernier adjustment.

### CRITERION™ Modular Boring Systems



#### Why would I use this?

- Rugged and economical design to improve performance in high precision roughing and finishing applications while staying under budget.
- Offers versatile boring heads suitable for production facilities, job shops, and tool rooms.
- Flexible modular system provides an economical solution for low volume and/or short-term production applications so they can be applied in the future.
- Available with analog adjustment.



WE HAVE A  
**KIT**  
FOR THAT

#### DO YOU BORE DIFFERENT SIZES DAILY?

Kits aren't for everyone, but if you work on different projects from day to day, you need to *be prepared for the work tomorrow will bring.*



### S.C.A.M.I.® Roller Burnishers

- Provides a more effective method of sizing, finishing, and work-hardening of your parts to **exact** specifications.
- Eliminates costly secondary operations such as grinding, honing, or lapping.



**Blind Hole Style**  
0.1850" - 6.5315" (4.70mm - 165.90mm)



**Through Hole Style**  
0.1555" - 6.5315" (3.95mm - 165.90mm)

#### S.C.A.M.I.® Roller Burnishers

- Provides versatility because the operation can be performed on any rotating spindle.
- Provides accurate size control with tolerances within 0.0005" or better (depending on variables such as material).
- Achieves fine surface finishes between 1 - 10 µin Ra and increases surface hardness by 5 - 10%.
- **Why would I use this?** Add consistency and superior quality to your finished parts with little addition to cycle time.



## ALVAN® Reamers by S.C.A.M.I.®

- Improves tool life over standard reamers by accommodating for wear with these expandable reamers.
- Lower cycles time with carbide and cermet reamers that have a specific geometry for your application.



### Replaceable Head Style

0.4646" - 2.3858" (11.80mm - 60.60mm)



### Monobloc Style

0.2283" - 1.2638" (5.80mm - 32.10mm)



### Cutting Ring Style

0.6929" - 7.8975" (17.60mm - 200.60mm)

#### Replaceable Head Style

- Heads can be reconditioned and are available in carbide, cermet, PCD, and CBN.
- Provides tight tolerances ( $\pm 0.0002"$ ) and improves the surface finish of the hole.
- **Why would I use this?** The replaceable head functionality increases tool life and reduces set-up times which can increase your cost savings while also providing superior hole quality.

#### Monobloc Style

- Tools are expandable to accommodate for wear and increase tool life.
- High penetration rates yield lower costs-per-hole.
- **Why would I use this?** The monobloc reamer can be repaired to new condition which extends the life of your investment. It's also an excellent replacement for solid carbide reamers because it allows for diameter expansion to accommodate for cutting edge wear.

#### Cutting Ring Style

- Asymmetrical cutting edges provide excellent hole roundness.
- Expandable up to 4% of nominal diameter to accommodate for wear.
- **Why would I use this?** The cutting ring can be expanded to increase tool life. The ring can also be reconditioned which makes it an excellent solution for reaming large diameters.



## Thread Mills

- Produce quality threads by precisely controlling the thread's programmed diameter.
- Cut large diameter threads with a stocked carbide thread mill.



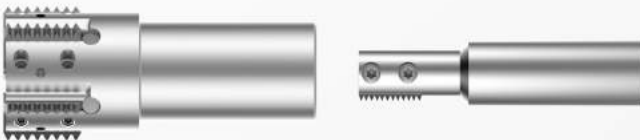
AccuThread™ 856 Solid Carbide



ThreadMills USA™ Solid Carbide



AccuThread™ T3 Solid Carbide



AccuThread™ 856 Indexable

#### AccuThread™

- All AccuThread items are coated with AM210® coating that yields a 25-50% increase in tool life over competitor products.
- AccuThread 856 items are available in solid carbide and indexable styles (bolt-in or pin style replaceable insert).
- AccuThread T3 provides optimal results in hard-to-machine materials and is available in small diameters.
- **Why would I use this?** Thread mills drastically reduce the occurrences of scrap when compared to taps, and this advantage makes them desirable when manufacturing large and/or costly components.

#### ThreadMills USA™

- All ThreadMills USA items are coated with TiAlN coating that improves tool life over uncoated thread mills.
- Available in both non-coolant and coolant through options.
- Provides an economical solution for achieving high quality, consistent, and predictable production.
- **Why would I use this?** ThreadMills USA still drastically reduces the occurrence of scrap when compared to taps at an economical price for low-to-medium volume production jobs.

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Allied Machine offers expert engineering support. Whether you need a quote, a test, or an application solution, a highly skilled and trained engineer is standing by, ready to help.  
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Literature Order Number: PROF-EN