

5_x
faster cycles.

10_x
the tool life.

DRILLING
has changed.

- Eliminate cannulated bar stock
- Drill difficult materials with ease
- Improve surface finishes
- More reliable drilling process
- Stop random tool breakage

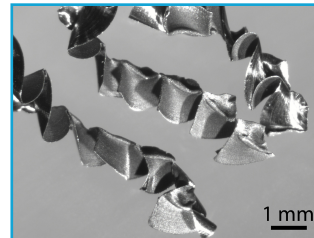
M⁴Sciences
changing the PHYSICS of MACHINING

Discover more at
M4Sciences.com

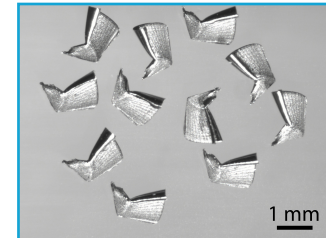


TribomAM®

Modulation Assisted Machining



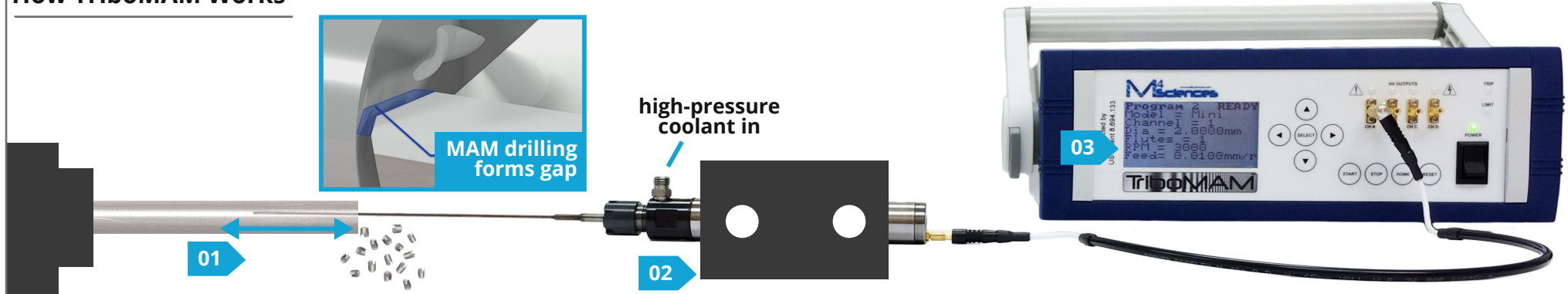
Conventional Drilling



TribomAM Optimized

Products covered by U.S. and foreign patents, issued and pending. Specifications subject to change.

How TriboMAM Works



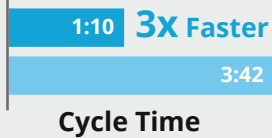
01 Precision oscillation up to 1,000Hz. Modulation creates momentary interruption in the cut, producing a **fine consistent chip**.

02 One-hour self installation. Fits most lathe tool holders. Rotary coupling available for turret mounting.

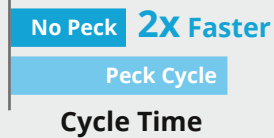
03 Easily program your process. Simply enter hole diameter, flutes, feed, and speed. Remotely control up to 4 actuators.

Performance

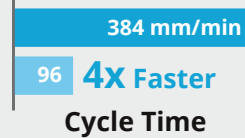
Cannulated Bone Screw
Ti6Al4V
2 x 70 mm
Gun drill



Electrical Part
Copper 101
7 x 35 mm
Twist drill

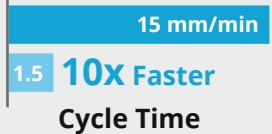


Automotive Component
Steel Alloy
3.2 x 46 mm
Gun drill

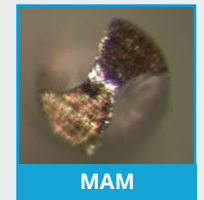
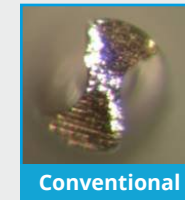


"At savings of over \$1,000 per day, TriboMAM completely paid for itself two times during its first year of use." - **Alphatec Spine**

Energy Part
Inconel 718
3 mm
Gun drill



Micro Hole
Steel 4140
.3 x 2.5 mm
Twist drill



Specifications

Model	Hole Diameter	Max Operation	Tooling
Micro	0.2 - 2.0 mm 0.008 - 0.08 in	0.015 mm/rev 9,960 RPM	ER11 collet 1 - 7 mm shank
Mini	0.2 - 3.5 mm 0.008 - 0.14 in	0.04 mm/rev 9,960 RPM	ER11 collet 1 - 7 mm shank
Standard	2.0 - 6.5 mm 0.08 - 0.26 in	0.08 mm/rev 7,200 RPM	ER16 collet 2 - 10 mm shank
Mega ²	5.0 - 12.0 mm 0.20 - 0.47 in	0.06 mm/rev 6,000 RPM	ER20 collet 2 - 13 mm shank

NEW TriboMAM Live For Rotating Tools

For Gundrilling Machines, Transfer Machines, or Machining Centers

The TriboMAM actuator rotates in the spindle, while also modulating the drill to provide all the same benefits of our lathe system.



Hole Diameter	Max Operation
0.5 - 5.0 mm L < 90 x D	0.04 mm/rev 7,000 RPM