

Tool-X[®]

Tech Data Sheet 112
CNC Machining
Water-based MWF

What is Tool-X? A new line of metalworking fluids that contain a new additive - trillions of carbon-based nano-onions in solution. These nano-onions improve the lubrication along the cutting edge, preventing build-ups and improving heat transfer. The result is longer-lasting tools that cut truer, with more precision, with less force required, than with conventional metal working fluids.

Customer: A Tier One manufacturer of wheels for Chrysler.

Application: A complex CNC operation on a low volume production line finishing prototype aluminum wheels from castings using water-based MWF. Surfaces were being milled for a smoother Ra and cuts and grooves added for visual effects into 7075 aluminum.

Problem: Improve efficiency and surface finish in wheel production.

Evaluation Process: Data was collected for several weeks of production using their existing water-based MWF. The sump was then emptied and flushed, and Tool-X SS-500 MWF was substituted.

Results: The Tool-X SS-500 MWF substantially improved the Ra, which simplified polishing processes. See the photo below. Feeds and speeds were increased, resulting in 40% higher production.

Tool-X improves machining processes. The role of metalworking fluids is to permit tools to change the shape of materials as efficiently and effectively as possible. To achieve this objective, metalworking fluids must counteract common failure modes by reducing heat, adhesion, pressure and wear while providing lubricity under the extreme temperatures and pressures associated with metalworking. Tool-X nanofluid technology enables our metalworking fluids to attain new levels of performance.

Tool-X Benefits: With Tool-X, surface finish is improved (lower Ra, fewer and smaller distortions). Feeds and speeds can be increased, often by 25% or more. Tool life is extended. Problems caused by excess heat (white film layers, long chip sizes, metallurgical damage) can be avoided. Reworks, tool sharpenings, and deburring steps can be reduced or eliminated.

With Tool-X, it's all about the numbers. Tool-X metalworking fluids cost more than conventional fluids, as much as twice as much. But the savings that are possible, through extended tool life, increased productivity, and parts with better surface finish and better dimensional accuracy, can provide users with substantial returns on investment. Let us demonstrate how Tool-X can improve productivity and reduce expenses in your facility.

See www.tool-x.net for more information.

