

NDCEE FACT SHEET- Green Machining of Multi-Service Weapons By 3D Waterjet

Project Summary

Waterjet (WJ) machining uses abrasive and high pressure jets to machine weapon components of advanced materials that are difficult or nearly impossible for conventional machining. Waterjet is an environmentally friendly technology that reduces or eliminates the use of hazardous chemicals/lubricants. The objective is to demonstrate the feasibility of machining penetrators and expand the application of 3D WJ machining for tubes and other industrial machined parts.

Benefits

The primary stakeholders are the military and ammunition industrial manufacturing bases. Successful completion of this project will lead to increased warfighter readiness, reduce production cost, eliminate chemical waste and insure regulatory compliancy. Waterjet Machining also allows for the removal and stripping of refractory metal coatings from small, medium and large caliber weapons without the need for chemical processes (i.e. reverse electroplating) and reduce steps in labor intensive and costly machining processes.

Path Forward

Waterjet Machining technology will be transitioned to the military industrial manufacturing technology base. DEVCOM AC will transition the Waterjet Machining technology to the contract vendor. Both of these processes have multiple uses within the DoD industrial manufacturing base and will be used to replace many of the existing environmentally unfriendly manufacturing processes. PDM Abrams has signed a letter of endorsement supporting the use of Waterjet technology.

One demonstration will be at the Watervliet Arsenal. The penetrator demonstration will be at the Picatinny Arsenal.

The next higher echelon is the U.S. Army Combat Capabilities Development Command, known as DEVCOM AC.

