

# ***PRECISION TOOL & DIE, INC.***



Precision Tool & Die, Inc. was established in 1968 as a privately held company. Our present state-of-the-art manufacturing facility, built in 1993, is conveniently located just 1.5 miles from I-95 in the south side of Richmond, VA.

Our quality services feature custom tool and die manufacturing as well as Wire EDM. From small intricate machine parts to a full 12 inch work piece, our programmable 5 axis Wire EDMs deliver the reliability and accuracy your requirements demand; 80 millionths positioning accuracy and 40 millionths repeatability.

Locally and nationally, we pride ourselves in our quality craftsmanship and design capabilities. Our experienced team of die makers are skilled in manufacturing and maintaining tools, dies, jigs, fixtures and other machine components to meet your specific needs.

Built on sound reputation, quality work, excellent service, and modern equipment; Precision Tool & Die, Inc. can definitely be an asset to you now and in the future.

## **PRECISION TOOL & DIE, INC.**

2805 DECATUR STREET RICHMOND, VIRGINIA 23224

TELEPHONE (804) 233-8810

FAX (804) 233-4672

[WWW.PRECISIONTOOLANDDIE.COM](http://WWW.PRECISIONTOOLANDDIE.COM)



Our ultra-modern environment is a welcome atmosphere for employees and customers alike.

At Precision Tool & Die, Inc. we specialize in building quality dies and precision WIRE EDM components for manufacturing industries worldwide.

Our new state-of-the-art facilities and equipment further our capabilities to better serve the manufacturing and machining industry.

For your next tooling or EDM requirement see how our guarantee of high quality work will lower your production costs.

**WIRE EDM & STAMPING DIE SPECIALISTS**  
*Pride of Workmanship and a can do attitude insure the best quality*

<ul style="list-style-type: none"><li>● <b>DESIGN</b></li><li>● <b>PROGRESSIVE DIES</b></li><li>● <b>PROTOTYPE STAMPING</b></li><li>● <b>WIRE EDM PRODUCTION RUNS</b></li></ul>	<ul style="list-style-type: none"><li>● <b>EXTRUSION DIES</b></li><li>● <b>PRECISION GRINDING</b></li><li>● <b>PROTOTYPE WIRE EDM PARTS</b></li><li>● <b>DIE REPAIRS &amp; MODIFICATIONS</b></li></ul>
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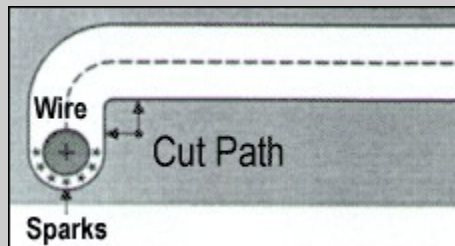
## THE WIRE EDM PROCESS

Wire EDM machining (Electrical Discharge Machining) is an electro thermal production process in which a thin single-strand metal wire in conjunction with de-ionized water (used to conduct electricity) allows the wire to cut through metal by the use of heat from electrical sparks.

Due to the inherent properties of the process, wire EDM can easily machine complex parts and precision components out of hard conductive materials.

### How Wire EDM Works

Wire EDM machining (also known as "spark EDM") works by creating an electrical discharge between the wire or electrode, & the workpiece. As the spark jumps across the gap, material is removed from both the workpiece & the electrode.



To stop the sparking process from shorting out, a non conductive fluid or dielectric is also applied. The waste material is removed by the dielectric, and the process continues.

### From wikipedia.org:

"...In [wire EDM machining], a thin single-strand metal wire, usually brass, is fed through the workpiece. The wire, which is constantly fed from a spool, is held between upper and lower guides. The guides move in the X-Y plane, and sometimes the upper guide can also move independently giving rise to transitioning shapes (circle on the bottom square at the top). This gives the Wire EDM the ability to be programmed to cut very intricate and delicate shapes. The wire-cut uses water as its dielectric with the water's resistivity and other electrical properties carefully controlled by filters and de-ionizer units."



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# FACILITIES

## Tool Making:

- Haas VF-4 20x50x25 Vertical Machining Center
- 2 Haas VF-2 16x30x20 Vertical Machining Centers
- Haas HST210 4<sup>th</sup> Axis
- Hurco CNC Vertical Milling Machine
- 2 Bridgeport Milling Machines
- 4' Radial Arm Drill Press
- Servo Precision Sensitive Drill Press

## Turning:

- Haas SL10 Turning Center
- Clausing Colchester Lathe 15x48
- Hardinge 10x20 Tool Room Lathe

## Wire EDM:

- 3 Fanuc Wire EDM Machines 14x20x12
- Hitachi Wire EDM Machine
- Hole Popper Small Hole EDM Drill

## Grinding:

- Okamoto Hydraulic Surface Grinder 16x32 w/Incremental Down Feed
- Kent Hydraulic Surface Grinder 8x20 w/Incremental Down Feed
- Heald 18" Rotary Surface Grinder w/Auto Down Feed
- Thompson 6x18 Surface Grinder
- Chevalier 6x18 Surface Grinder

## Quality Control:

- Brown & Sharp CMM 18x20x16
- Gage Master Optical Comparator w/Auto Edge Detection
- Height Master
- Mitutoyo Computerized Height Gage
- Surface Plates up to 48x62
- Rockwell Hardness Tester
- Gages & Numerous other Inspection Equipment

## Miscellaneous:

- Try-out Presses up to 60 Tons
- Miller Mig Welder
- Miller Tig Welder
- 16 ga Metal Shear
- 16 ga Metal Brake
- Sunnen Hone Machine
- Glass Bead Machine
- Cress Heat Treat & Draw Ovens
- DoAll Vertical Band Saw w/Hydraulic Table
- DoAll Horizontal Band Saw w/Automatic Feed

All quality control instruments are calibrated at specified intervals against standards with traceability to the National Institute of Standards and Technology

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