# Fort Wayne Wire Die, Inc.

**Pioneers in Wire Die Innovation** | Since its origin in 1937, Fort Wayne Wire Die has been a scientific trailblazer and technological innovator in the production of consistent, ultra-high precision wire drawing dies.

### Leading the Wire Die Evolution: What the 21st Century Holds

In recent years, derived from intensive research in both the lab and the field, FWWD has made discoveries that are changing conventional wisdom in the low-slip, high-speed wire drawing industry, shifting the paradigm away from an emphasis on hole size to that of elongation.

With more applications demanding dies that are specified per elongation rates, FWWD has developed its own analysis procedures and proprietary software capable of calculating complete die sets, precisely matched to the elongation of any particular wire drawing machine.

This technology yields die sets that elongate wire at exactly the proper rate to maximize high-speed wire drawing efficiency by minimizing downtime associated with wire breaks and capstan wear.

> With each published revision of the Blue Book, FWWD reestablishes its foothold as the leader in the industry.



#### From the Authors of the Wire Drawing Blue Book

For decades, wire drawing professionals around the world have relied on FWWD's original *Blue Book* Wire Drawing Reference Guide, with its practiced formulas and calculations that, to this day, are the recognized theorems in precision wire die specification.



# A History of Breakthroughs : Experience That

**Is Proven |** Since 1937, FWWD has hit numerous milestones that have impacted the global industry.

FWWD's ability to hold very close tolerances while producing intricate holes and shapes in the hardest materials on earth led to the company's development of new markets for ultra-hard precision wear parts.

With the ability to produce increasingly more precise dies and components came the need to develop accurate methods to compare the finished product to the design specifications. When readily available measurement devices did not meet the accuracy criteria required by its customers, FWWD developed its own.

As a result, we are able to produce dies as small as .0003 inch (0.0076 mm). FWWD holds hole size tolerances on the smallest dies within ten millionths of an inch and even tighter on out-of-roundness variances, becoming the leading global supplier of dies for high-quality fine and ultrafine wire applications.

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FWWD was the first to develop and implement X-ray technology in its diamond orientation processes, achieving unparalleled alignment optimization of the die axis in relationship to various diamond orientation planes. This maximizes wear resistance to extend die life and wire production consistency.





## X-ray-oriented die

#### **Nonoriented die**

With X-ray orientation, the proper orientation plane provides more uniform wear characteristics around the bore circumference, producing rounder wire.





Once the proper diamond orientation has been determined, two parallel flats are polished on the diamond, ensuring proper orientation through the entire manufacturing process.





FWWD developed the C300 concentricity comparator to measure ID to OD concentricity in extrusion tips, dies and similar components, allowing for total indicator reading (T.I.R.) verification accuracy to .0002 in (0.005 mm).