Single Crystal Diamond Dies / SPECIFICATIONS

Fort Wayne Wire Die

Single crystal diamond (SCD) dies from Fort Wayne Wire Die are the result of expert technology and precision craftsmanship. The data shown below are standard specifications for typical wire drawing applications and apply equally to Single Crystal Natural or Single Crystal Synthetic Diamond Dies.

Fort Wayne Wire Die gives you the best in performance and quality because every diamond has been oriented in the optimum plane and high pressure mounted in a one-piece powdered metal matrix to give you flawless surface finish and consistent quality, run after run.

Total Bore Diameter Tolerances SCD Wire Drawing Dies—New and Recuts

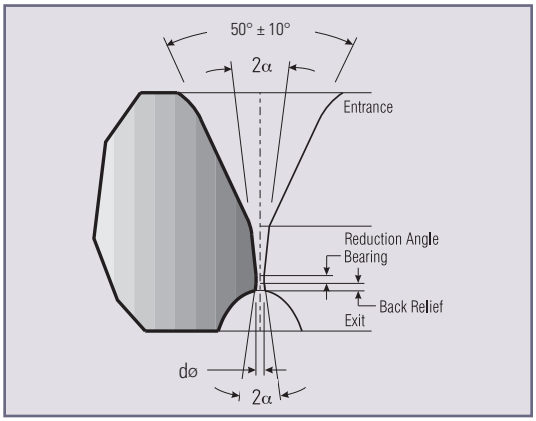
INCH

Size Range	Standard Hole Size Tolerance STD102	Standard Ovality Tolerance STD102	Min. "Tightest" Hole Size Tolerance STD301
.0006 or less	.000024	.000020	.000010
.00061–.0008	.000024	.000020	.000012
.00081–.0010	.000028	.000020	.000014
.00101–.0020	.000036	.000020	.000016
.00201–.0030	.000040	.000020	.000020
.00301–.0040	.000050	.000030	.000030
.00401–.0050	.000060	.000040	.000040
.00501–.0080	.000060	.000040	.000040
.00801–.0100	.000080	.000040	.000040
.01001–.0160	.000080	.000040	.000050
.01601–.0200	.000120	.000080	.000060
.02001–.0300	.000120	.000080	.000080
.03001–.0400	.000160	.000100	.000080
.04001–.0600	.000160	.000100	.000100
.06001–.1500	.000200	.000120	.000120
.1501–.5000	.000500	.000500	.000500

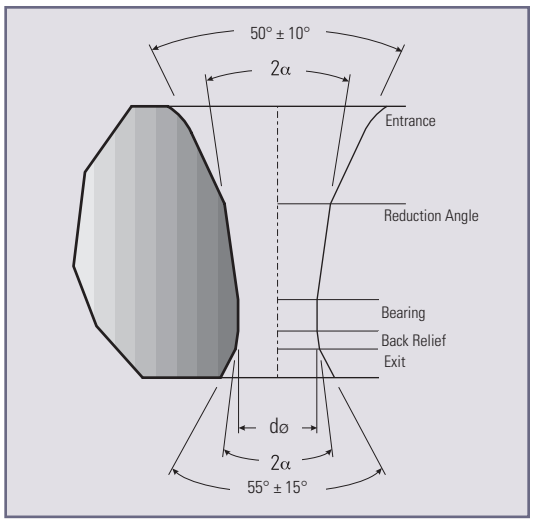
MILLIMETER

Size Range	Standard Hole Size Tolerance STD102	Standard Ovality Tolerance STD102	Min. "Tightest" Hole Size Tolerance STD301
0.015 or less	0.0006	0.0005	0.00025
0.0151–0.020	0.0006	0.0005	0.00030
0.0201–0.025	0.0007	0.0005	0.00035
0.0251–0.050	0.0009	0.0005	0.0004
0.0501–0.075	0.0010	0.0005	0.0005
0.0751–0.100	0.0012	0.0008	0.0008
0.101–0.125	0.0015	0.0010	0.0010
0.126–0.200	0.0015	0.0010	0.0010
0.201–0.250	0.0020	0.0010	0.0010
0.251–0.400	0.0020	0.0010	0.0012
0.401–0.500	0.0030	0.0020	0.0015
0.501–0.750	0.0030	0.0020	0.0020
0.751–1.000	0.0040	0.0025	0.0020
1.001–1.500	0.0040	0.0025	0.0025
1.501–3.80	0.0050	0.0030	0.0030
3.801–12.70	0.0127	0.0127	0.0127

Typical Die Profile



Typical Profile of New Single Crystal Diamond Dies under .004" (0.100 mm)



Typical Profile of New Single Crystal Diamond Dies over .004" (0.100 mm)

Typical Die Specifications for Various Wire Materials

WIRE MATERIAL	DEGREE OF BLENDING	REDUCTION ANGLE (2α)	BEARING LENGTH
Bare Copper	Well Blended	18° ± 2°	40% ± 10%
Aluminum	Well Blended	20° ± 2°	25% ± 10%
Tin or Silver Plated Copper	Very Well Blended	20° ± 2°	20% ± 10%
Stainless Steel	Slightly Blended	14° ± 2°	50% ± 10%
Tungsten	Slightly Blended	14° ± 2°	50% ± 10%
Brass or Copper Covered Steel	Slightly Blended	10° ± 2°	35% ± 10%

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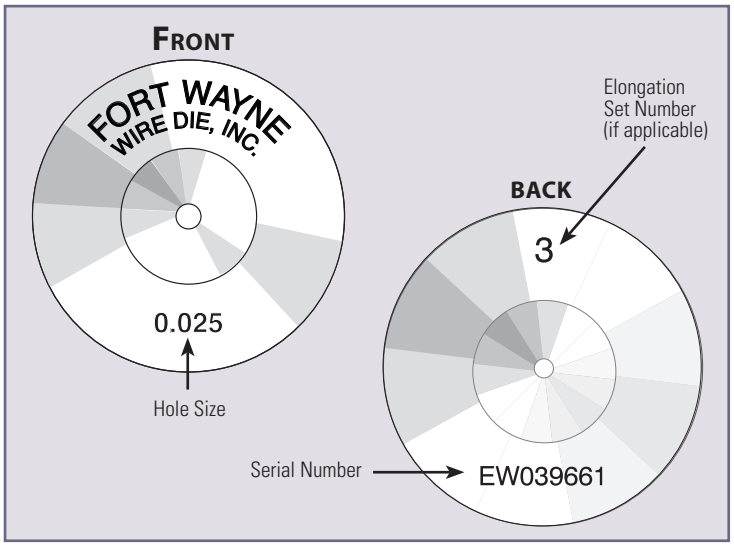
Standard Casing Sizes

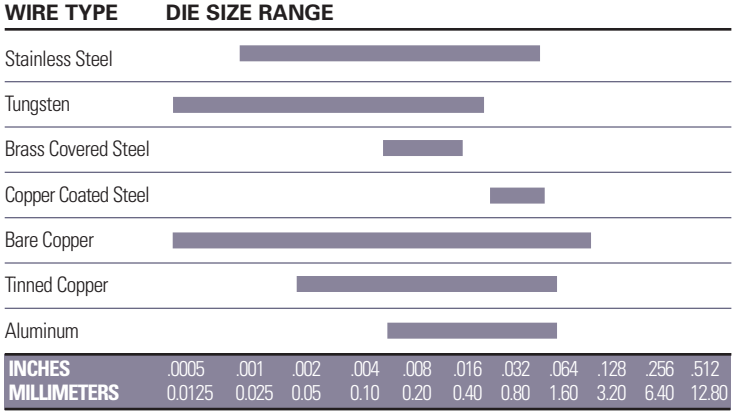
INCH		*MILLIMETER*	
SIZE RANGE	**CASING SIZE D X T**	**SIZE RANGE**	**CASING SIZE D X T**
.0163 and smaller	1 or 1 1/8 x 5/16	0.1 and smaller	25 x 6 or 8
.0164–.041	1 or 1 1/8 x 3/8	0.101–0.40	25 or 28 x 8
.042 and larger	1 or 1 1/8 x 1/2	0.401–1.0	25 or 28 x 10
		1.01 and larger	25 or 28 x 12

**Special casing sizes available upon request.*

Standard Die Stamping



Typical Die Sizes by Wire Type



Suggested Microscope Viewing Ranges

INCH	*MILLIMETER*	
HOLE SIZE	**HOLE SIZE**	**MAGNIFICATION**
.002 and smaller	0.05 and smaller	120–160X
.00201–.004	0.051–0.10	90–120X
.00401–.010	0.101–0.25	60–90X
.0101–.090	0.251–2.30	30–45X
.0901 and larger	2.301 and larger	10–20X

Ordering Information

Fort Wayne Wire Die drawing dies provide the quality needed for optimum wire drawing efficiency. For enhanced order processing, please verify your product requirements for the following die specifications.

1. Casing Dimensions _____
2. Hole Size _____
3. Hole Size Tolerance _____
4. Reduction Angle _____
5. Bearing Length _____
6. Quantity per Hole Size _____
7. Wire Material _____