

Drawing Dies



1. Introduction

Polycrystalline diamond is manufactured by forming a mass of diamond crystals and then applying a combination of heat and pressure. Through this process, the mass becomes a single unit with the diamond particles inter-grown to each other. The final product is extremely wear resistant, maintains tight hole tolerances, and provides good surface finish.

Carbide dies have been used in the wire industry for many years. They are used in various drawing applications where diamond dies are not economical or where hole tolerance is not as critical. They are used extensively in the steel industry as well as the nonferrous industry in applications such as bunching or stranding large diameter cables. These dies are available in a large range of nib and hole sizes.

2. Natural Diamond Dies

Key benefits of LINT TOP ND diamond wire dies:

Long die life due to its extreme hardness and resistance to scratching.

Can be used in high-heat processes because of its extreme thermal conductivity.

Easy setup, smooth drawing.

100% of all diamonds are checked for inclusions, cracks.

Non-conductive properties make this product a good choice when electrical conductive materials are an issue.

Diameter range and standard tolerance of natural diamond dies:

Size Range (mm)	Standard Tolerance (mm)	Roundness(mm)
-0.020"	0.0007	0.00035
0.020-0.051"	0.0010	0.0005
0.051-0.102"	0.0010	0.0005
0.102-0.203"	0.0015	0.00075
0.203-0.508"	0.0020	0.0010
0.508-1.016"	0.003	0.0015
1.016-1.524"	0.0050	0.0025
1.524-1.981"	0.007	0.0035
> 1.981"	0.010	0.005

Typical reduction angle and bearing length:

Reduction of Area	Lead/Zinc/ Silver/Gold	Aluminum /Nickel/Copper	Brass Bronze Stainless Steel	High Carbon Steel	Hot Tungsten
8-12%	16°	12°	11°	10°	10°
12-16%	18°	14°	13°	12°	12°
16-25%	22°	18°	16°	15°	12°
25-35%	24°	22°	19°	18°	14°
Bearing length	0.2-0.5d		0.4-0.8d		

Note: we also provide artificial diamond dies with competitive price.

3. Polycrystalline Diamond Dies

Key benefits of diamond wire dies:

Available for almost any type of wire drawing operation, from rod-size to fine-size.

Can be used for wet and dry drawing applications.

Predictable wire surface quality.

Contain randomly oriented diamond crystals, making certain that wire remains round; even with significant wear the wire remains round.

Blank dimensions are guaranteed, hence maximum recut dimensions can be predicted.

Diameter range and standard tolerance of natural diamond dies:

Size Range (mm)	Standard Tolerance (mm)	Roundness(mm)
0.051-0.102 ⁻	0.0010	0.0005
0.102-0.203 ⁻	0.0015	0.00075
0.203-0.508 ⁻	0.0020	0.0010
0.508-1.016 ⁻	0.003	0.0015
1.016-1.524 ⁻	0.0050	0.0025
1.524-1.981 ⁻	0.007	0.0035
> 1.981	0.010	0.005

Typical reduction angle and bearing length:

Reduction of Area	Lead/Zinc/ Silver/Gold	Aluminum /Nickel/Copper	Brass Bronze Stainless Steel	High Carbon Steel	Hot Tungsten
8-12%	16°	12°	11°	10°	10°
12-16%	18°	14°	13°	12°	12°
16-25%	22°	18°	16°	15°	12°
25-35%	24°	22°	19°	18°	14°
Bearing length	0.2-0.5d		0.4-0.8d		

4. Tungsten Carbide Wire Drawing Dies

Key benefits of carbide dies:

Sizes are available up to 90 mm rod.

Cost effectively.

Even and round wear during usage.

Specifications of tungsten carbide nibs and dies.

Inches				
Type	(NIB)		(CASING)	
	Dia.	Ht.	Dia.	Ht.
R2	.325	.330	1	9/16
R3	.450	.380	1-1/2	3/4
R4	.500	.450	1-1/2	7/8
R5	.625	.600	1-1/2	7/8
R6	.710	.700	2	1-1/8
R7	.768	.768	3	1-3/8
R8	1.000	.820	3	1-3/4
R9	1.187	.820	3	1-3/4
R10	1.500	1.000	3	2
R11	1.8300	1.250	4	2-1/4
R12	2.185	1.375	4	2-3/8
R14	2.560	1.375	6	2-1/2
R15	3.000	1.375	6	2-1/2
R16	3.500	1.375	7	2-1/2
R17	4.000	1.500	7	2-1/2
R18	5.500	2.125	9	4-1/2
R19	6.500	2.125	11	4-1/2

Millimeters				
Type	NIB		CASING	
	Dia.	Ht.	Dia.	Ht.
B	13	10	30	16
D	16	14	32	20
G	22	18	40	26
H	30	21	66	35
K	40	25	95	40
L	50	28	95	48
M	60	35	114	60
N	75	35	114	70
O	90	35	145	70

We also provide drawing dies that meet Japanese and German standard.

Product link : <https://www.linttop.com/drawing-dies.html>