

NATURAL DIAMOND DIES



Natural Diamond, abbreviated as ND, are naturally formed in the earth's crust from high temperature and high pressure. Due to its extremely rigid lattice structure, impurities such as boron or antimony may be infiltrated during the formation process.

The natural diamonds we use are carefully selected to ensure their purity.

*Size Range: 0.008mm-2.00mm

Advantage

- Best surface finish of any die material available.
- Extremely high hardness and wear resistance ensure die life.
- The highest thermal conductivity of all substances can be used in high temperature processing processes.
- High temperature resistant up to 1700°C.
- Smooth wire drawing



Typical Application/Market

ND dies are frequently used for fine wire and ultra fine wire drawing, or in the requirements of excellent wire surface finish, good heat dissipation performance and other applications to maintain a wide range of applications.

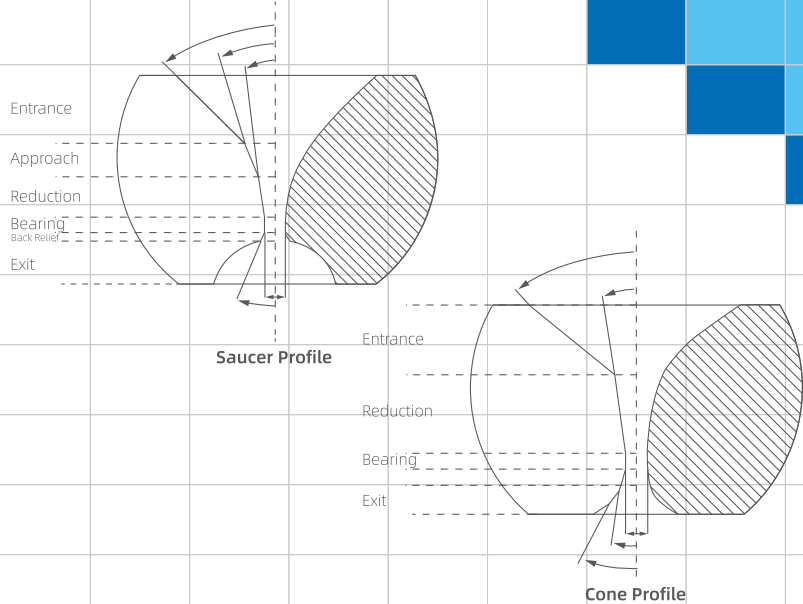
- Tungsten filament wire
- Bonding wire (golden wire, copper wire, silver plated copper wire, aluminum wire, silver alloy wire etc.)
- Stainless steel wire (304, 316L, 430, 201, 202 etc.)
- Copper wire (pure copper wire, silver plated copper wire, aluminum copper wire, brass wire etc.)
- Steel wire (saw wire, spring steel wire, tire copper plated steel wire etc.)
- Precious metal metal
- Special alloy wire (copper nickel alloy wire, nichrome wire etc.)



WIRE DRAWING DIES CHART—ND

Min hole size for mass production: 0.008mm

Product number	Maximum Recom. Die Size (mm)	Maximum ϕd for new die						Maximum ϕd for recut die					Limit ϕd for a recut die, not recommended				
		0.0080-0.0150	0.0151-0.0200	0.0201-0.0300	0.0301-0.0400	0.0401-0.0500	0.0501-0.200	0.201-0.300	0.301-0.400	0.401-0.500	0.501-0.600	0.601-0.800	0.801-1.000	1.001-1.200	1.201-1.400	1.401-1.600	1.601-1.800
# 1	0.15	Blue	Blue	Blue	Blue	Blue	Light Blue	Red									
# 2	0.20						Blue	Light Blue	Light Blue	Red							
# 3	0.30							Blue	Light Blue	Light Blue	Red						
# 4	0.40								Blue	Light Blue	Light Blue	Red					
# 5	0.50									Blue	Light Blue	Light Blue	Red				
# 6	0.60										Blue	Light Blue	Light Blue	Red			
# 8	0.80											Blue	Light Blue	Light Blue	Red		
# 10	1.00												Blue	Light Blue	Light Blue	Red	
# 12	1.20													Blue	Light Blue	Light Blue	Red
# 14	1.40														Blue	Light Blue	Light Blue
# 16	1.60															Blue	Light Blue



SINGLE CRYSTAL DIAMOND DIES



Single crystal diamond, abbreviated as SSCD, MONO, SMCD, MCD, or AD are man-made diamonds manufactured under controlled conditions and are free from inclusions and cracks. The characteristics guarantee die life is more stable and predictable.

Blank dimensions of SSCD drawing dies are more consistent than natural diamond blanks, ensuring more predictable recut performance than natural diamond drawing dies.

*Size Range: 0.008mm-2.00mm

Advantage

- Extremely high hardness and wear resistance ensure die life
- Predictable wear shape and Predictable maximum recut size
- Excellent heat dissipation guarantee can be used in high temperature processing processes
- Smooth wire drawing
- 111-oriented diamonds Minimize the instability of Die life

Typical Application/Market

Single crystal diamonds are similar with ND which can be used in all ND die's application. Typically for fine wire and ultra fine wire drawing, or in the requirements of excellent wire surface finish, good heat dissipation performance and other applications to maintain a wide range of applications.

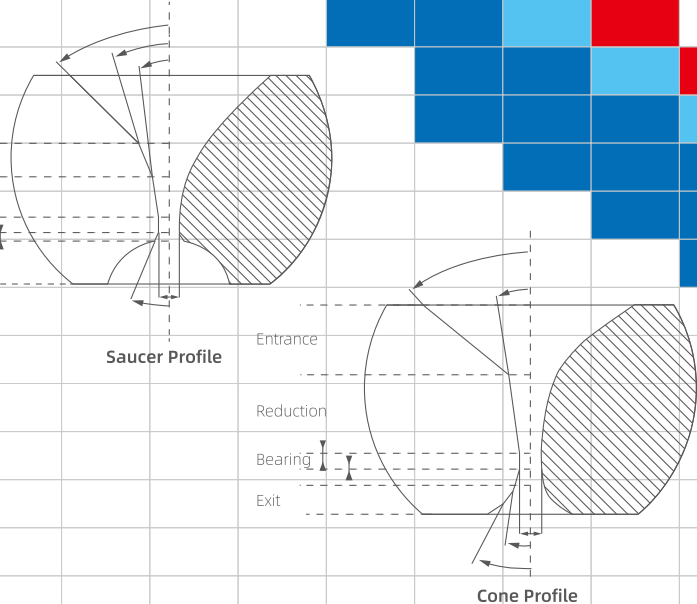
- Bonding wire (golden wire, copper wire, silver plated copper wire, aluminum wire, silver alloy wire etc.)
- Stainless steel wire (304, 316L, 430, 201, 202 etc.)
- Copper wire (pure copper wire, silver plated copper wire, aluminum copper wire, brass wire etc.)
- Steel wire (saw wire, spring steel wire, tire copper plated steel wire etc.)
- Precious metal wire
- Special alloy wire (copper nickel alloy wire, nichrome wire etc.)



WIRE DRAWING DIES CHART—SSCD/AD

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		0.0080-0.0150	0.0151-0.0200	0.0201-0.0300	0.0301-0.0400	0.0401-0.0500	0.0501-0.100	0.101-0.200	0.201-0.300	0.301-0.400	0.401-0.500	0.501-0.600	0.601-0.700	0.701-0.800	0.801-1.000	1.001-1.200	1.201-1.400	1.401-1.600	1.601-1.81
MD111/05	0.10	Blue	Blue	Blue	Blue	Blue	Light Blue	Light Blue	Red										
MD111/06	0.15			Blue	Blue	Blue	Blue	Light Blue	Red										
MD111/07	0.20				Blue	Blue	Blue	Blue	Light Blue	Red									
MD111/08	0.25					Blue	Blue	Blue	Blue	Light Blue	Red								
MD111/09	0.35						Blue	Blue	Blue	Blue	Light Blue	Red							
MD111/10	0.40	Entrance						Blue	Blue	Blue	Blue	Light Blue	Red						
MD111/11	0.50	Approach							Blue	Blue	Blue	Blue	Light Blue	Red					
MD111/12	0.60	Reduction								Blue	Blue	Blue	Blue	Light Blue	Red				
MD111/13	0.70	Bearing Back Relief									Blue	Blue	Blue	Blue	Light Blue	Red			
MD111/14	0.80	Exit										Blue	Blue	Blue	Blue	Light Blue	Red		
MD111/15	0.90												Blue	Blue	Blue	Blue	Light Blue	Red	
MD111/16	1.00													Blue	Blue	Blue	Blue	Light Blue	
MD111/17	1.10														Blue	Blue	Blue	Light Blue	
MD111/18	1.20															Blue	Blue	Light Blue	
MD111/19	1.30																Blue	Light Blue	
MD111/20	1.40																	Light Blue	



POLYCRYSTALLINE DIAMOND DIES



Polycrystalline Diamond, abbreviated as PCD Which is man-made sintered diamonds and are available in three grade: self-supported metal filled, tungsten carbide supported metal filled, and self-supported thermally stable.

*Size Range: 0.04mm-12.00mm

Advantage

- Longest die life of any die material, Highest production efficiency with less downtime.
- Available from large size wire to ultra fine wire
- Predictable surface finish of wire
- All PCD blanks contain randomly oriented diamond particles. The result is a perfectly round wear pattern for each die, ensuring that your wire remains round.
- The size of blank is guaranteed and predictable maximal reaming can be obtained

Typical Application/Market

PCD Dies can be used for any type of wet and dry wire drawing process. Especially for larger size where demanding wear is a problem, but surface finish is less critical.

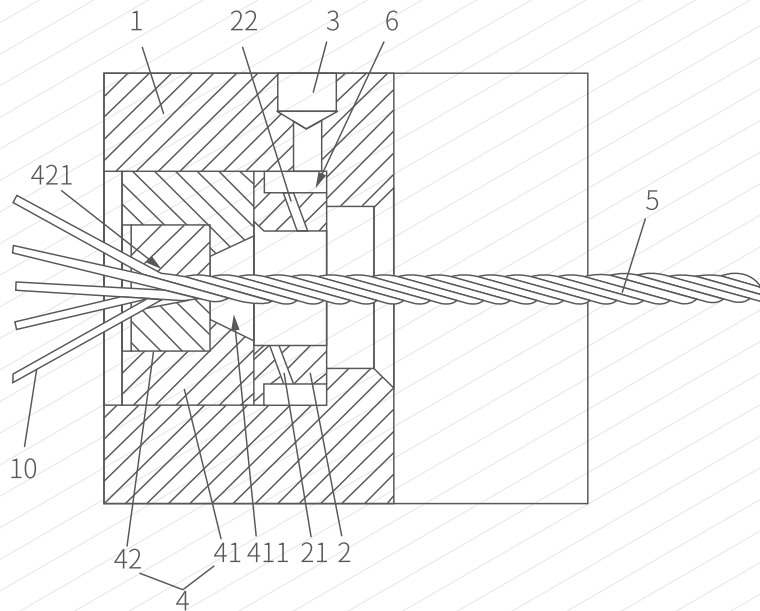
- Stainless steel wire
- Copper wire
- Tire cord
- Welding wire
- Saw wire
- Special alloy wire



BUNCHING, COMPACTING & STRANDING DIES

Bunching, Compacting & Stranding Dies are used to guide and organize wire through wiring machines and winch machines for wire and cable stranding.

Two material is available: PCD and Nano diamond coated dies, maximum diameter up to 120mm.



SHAPED PROFILE DIES

All shaped profile dies are custom made to your specific requirements out of extremely high wear-resistant polycrystalline diamond or tungsten carbide material.



*All Shaped profile dies is custom-made, detailed drawing are required.



ENAMELLING DIES



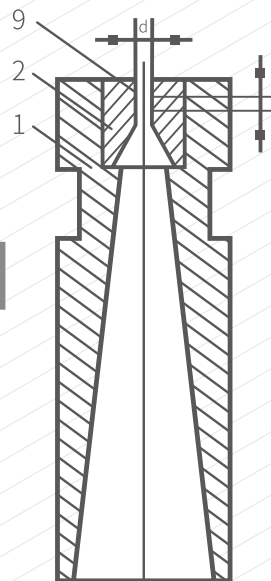
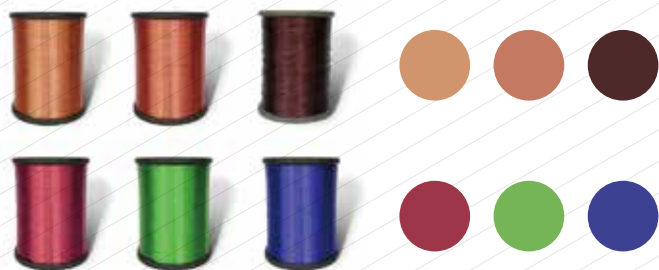
Enamelling dies is a special process tools for wire coating, which is used to control the amount of coating and finally ensure that the finished enameled wire reaches the specified coating thickness.

Advantage

- Diamond Enamel dies have better surface finish
- Better enamelling precision and consistency
- PCD enamel die life can reach to 100 times of TC
- Reducing Inventory and Improving Cost-effectiveness for Customers

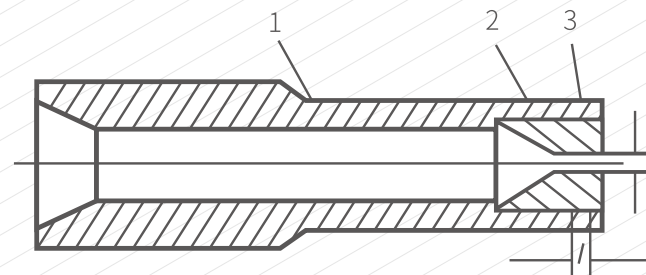


DIAMOND ENAMEL DIE'S SPECIFICATION



Upright Enamel Dies

Min hole size for mass production: 0.04mm



Horizontal Enamel dies

Size Range	Standard Tolerance	Min. ϕ Tolerance
mm	mm	mm
0.040 - 0.150	0.0010	0.0005
0.151 - 0.300	0.0020	0.0010
0.301 - 0.500	0.0030	0.0015
0.501 - 1.000	0.0040	0.0020
1.001 - 1.500	0.0050	0.0030
>1.500	0.0060	0.0030

