

## Maintenance Method of Drawing Equipment Dies

Currently, foreign drawing equipment dies process commonly used high-speed mechanical grinding machine, as well as surface plated diamond metal grinding, smooth operation of the equipment, grinding type and the use of standardized specifications make the product more accurate.

1. Select good pass design diamond drawing equipment dies.

2. Types of drawing equipment dies pass.

( 1 ) The longitudinal section of each section of the pass must be straight, flat work cone drawing force smallest;

( 2 ) The transfer of part of the dies each part must be clear, so that each part can give full play their respective roles, to avoid the transition Angle of sizing area actual length decreases;

( 3 ) Extend the height of the entrance area and the work area, the wire into the middle section of the die hole taper work, the use of the wedge on the inlet cone angle and work half cone angle, formed by the establishment of " wedge effect ", in the wire surface to form a more compact solid lubricating film, reducing wear and suitable for high-speed drawing;

( 4 ) Sizing area must be flat and reasonable length. Sizing zone too long, drawing friction will increase, after the wire pulled out easily cause necking die hole or break, sizing area is too short, it is difficult to obtain a stable shape, size, accuracy and good surface quality of the wire, while the die hole also will soon wear tolerance.

3. Drawing machine equipment installation must be reasonable.

( 1 ) Drawing machine installed base needs very strong, avoid vibration phenomena;

( 2 ) When installation, through debugging make the wire stretching axis symmetry with the center line of the die hole, the wire and cable dies stress uniformity;

( 3 ) Pull the process to avoid frequent start stop, because of start drawing the tensile stress caused friction more greater than the normal ratio of friction, which is bound to increase the mold wear.

4. The wire used for drawing should be pretreated.

( 1 ) Surface preparation: For surface dirt, adhering more impurities wire, first after washing, drying and then be drawn; for wire surface which have more oxide scale, first through a fine acid, bake dry and then be drawn; for the surface have peeling, concave pit, heavy leather and other phenomena of the wire,

but also through the polishing machine after grinding were conducted drawing;

( 2 ) Heat treatment: For the hardness is too large or uneven hardness of the wire, first reduce the hardness by annealing or tempering, and make the wire holding good hardness uniformity then drawn.

5. Maintain proper drawing surface shrinkage.

Diamond drawing equipment dies itself has a hard, brittle characteristics, if used for large shrinkage of necking drawing, easily lead to dies can withstand the stress fracture scrapped, therefore depending on the mechanical properties of the wire, select the appropriate surface drawing shrinkage rate. Stainless steel wire drawing diamond die, usually single-channel surface shrinkage rate does not exceed 20%.

6. Use lubricant with good lubrication performance.

In the drawing process , the supply of lubricants and lubricant quality are affecting the adequacy of drawing equipment dies life. Thus requiring the lubricant oil base stability, good oxidation resistance, with excellent lubrication, cooling and cleaning, the entire production process has always been to maintain optimum lubrication, in order to form a layer able to withstand high pressures without being destroyed the film, the work area to reduce friction and improve dies life.

Use of the process, we must continue to observe the condition of lubricating oil, if found serious discoloration or metal powder to increase, we must promptly replace or filtered, to avoid lubricating oil lubricating performance degradation due to oxidation, while avoiding drawing process tiny shed metal particles dies damage.

7. Regular maintenance and grinding of diamond wire drawing die.

drawing equipment dies in the long-term use, the die wall friction by strong metal wire and scouring action will inevitably produce wear and tear, the most common is the emergence of an annular groove( dents ) in the wire at the entrance to the work area.

Learning from experience, to develop a set of standards, strengthen the routine maintenance, repair dies often is very cost-effective thing. Once the dies have any slight abrasion, timely polishing, then the dies is restored to its original state spent polishing time is shorter, and pass no significant changes in the size of the dies.