

# Important criteria's of a wire drawing die

## ► Raw material (diamond).

Concerning dies in natural diamond, the stones have to be selected according to precise criteria's (weight, purity, tension and stress...) in order to best withstand the pressures of the wire drawing process and to maximize the amount of repolishing that can be done.

Concerning polycrystalline dies (PCD), the choice of suppliers for these blanks is essential in order to achieve the best balance between surface finish and longevity. PCD blanks are regularly tested before being approved.

## ► Respect and repeatability of the geometry.

The required geometry must be achieved and be identical from one die set to the next for multiline machines. This reduces the risks of early wear and wire breakages.

## ► Profil blend.

The junction between angle changes within the die need to be smoothed out and blended together, thus eliminating sharp angles. This will avoid the creation of metal dust and swarf which would contaminate the lubricant baths.

## ► Polishing.

A polishing of quality (mirror finish) allows to reduce stress and defects on the wire during the drawing process. Polishing quality will determine the wire surface finish and is essential for the finishing dies in a set.

## ► Mounting powder.

The mounting powder, in which the diamond is inserted, must be robust and also have properties to remove heat generated by drawing. It is decisive to get the best die's lifespan.

