

Die internal geometry

Whatever its use, the internal profile of a die can always be defined by 5 zones. Each zone has an essential purpose in the wire drawing process.

► **Entrance.**

The entrance cone allows a sufficient and controlled flow of lubricants, liquids, grease or powders.

► **Reduction cone.**

The reduction cone ensures a regular and controlled reduction of the wire.

The reduction angle will be dependent on the type of drawn material and of the reduction ratio of the wire diameter (or elongation).

► **Bearing.**

The bearing allows to bring the wire to the precise required diameter and roundness, and to keep these requirements all the way to the exit of the die. The bearing also ensures the wire is straight.

Its length will depend on the type of drawn material and of the required specifications.

► **Back relief .**

This little rounded off zone between the bearing and the exit angle ensures that no sharp angle is present. The back relief reduces the risk of the wire being scratched and reduces the creation of metal particulates which would contaminate the lubrication baths. This is essential for the wire quality and reliability of the process in avoiding early die wear, wire breakages...

► **Exit cone.**

The exit cone allows a good positioning and support of the bearing in relation to the mechanical stress created by the wire drawing process.

