BASICS OF WIRE DRAWING DIES AND POSSIBLE PROBLEMS OCCURING DURING THEIR PRACTICAL USE:

In the midst of all spectacular infrastructure and huge machinery in wire drawing and cable manufacturing plants, it is easy to lose sight of the die-tool.

However, one of the major keys to boost any wire drawing/cable plant’s economy considerably simply is not to allow costly precision wire drawing die tools to deteriorate, as prolonged die tool life will ensure that more and consistent wire can be drawn.

Nowadays modern multiline wire drawing machines are using many more dies which former or later are queueing in increasingly larger quantities for reconditioning in die workshops, where skilled operators or suitable die reconditioning are often in short supply.

While suitable die working equipment can easily get purchased from special suppliers, very often there is a lack of specific Know How in understanding existing problems in dies and of how best to react to these and that is why I want to let you participate a little in our over 60 years of experience in this special field today.

1. A short view on nowadays used die-tool materials (PPT):
   
   TC – Natural Diamond – Monodies – PCD –
   PCD blank producers – Grain sizes available – Recommendation for blanks
   Comparison: ND – PCD.

2. Die Geometry in general:

3. Different stages of wear in Dies shown:
   New Die – Die with light wear ring – Die with severe wear ring –
   Totally worn out die.

4. Possible Problems occurring when using dies –
   4.1 Wrong Geometry:
   Sharp edged transitions – undulatory contour – rough surface – too small blank
   
   4.2 Wrong setting of dies (reduction/elongation)
   4.3 Wear in dies (break outs at blank – horizontal marks – one sided wear)
   4.4 Breaks in dies (break by force – breaks by overheating – break of blanks)

5. How to check the condition of dies properly:
   
   Microscopical inspection – Measuring of the Geometry (Conoptica)
   Measuring of the diameter (micrometers – laser measuring instruments)
   Elongation measuring.

Generally speaking, “dies” should not only be considered as a mere subject to be purchased by just comparing price-lists, but are deserving a much higher consideration as to their inherent quality and potential available, as they do offer a large contribution to the economic welfare of any wire- and cable plant.
When using dies, the easiest way to measure success simply is to look at the quantity of perfectly drawn wire achieved by means of the relevant die-tool. This clearly proofs that the best economy to get obtained, mainly is in an optimal increase of the tool life. A prolonged die-life will simply ensure that more wire can be drawn.

It also is a proven fact that only well maintained drawing die-tools that are kept in top condition and not allowed to deteriorate, can guarantee an improved die life, larger quantities of high quality wire and thus can save considerable money in wire mills and cable plants.

There is therefore ample play for prolonging the service life of wire drawing die-tools and to boost any plants’ economy considerably, provided that a suitable die reconditioning workshop equipment and trained, experienced personnel are available.

EDER-Austria and the Trade House of the VNIIPK, as our representation in Russia, are standing by for any of your demands in easy to understand and operate die working equipment and to assist you too in achieving an optimal economy by keeping your wire drawing dies in perfect condition.

Thank you very much for your kind attention and I remain at your entire disposal for any further questions required.

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Brief company information:
Globally active since 1947 (98% exportation)
Continuously active in the Ex-USSR since 1956

Scope of production: 10% die-tools, 80 % die working machines, 10% Software and projects.

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