

Type RDO “Omega” Tool Application: Cylinders, inner surfaces

Diameters 60 – 455 mm

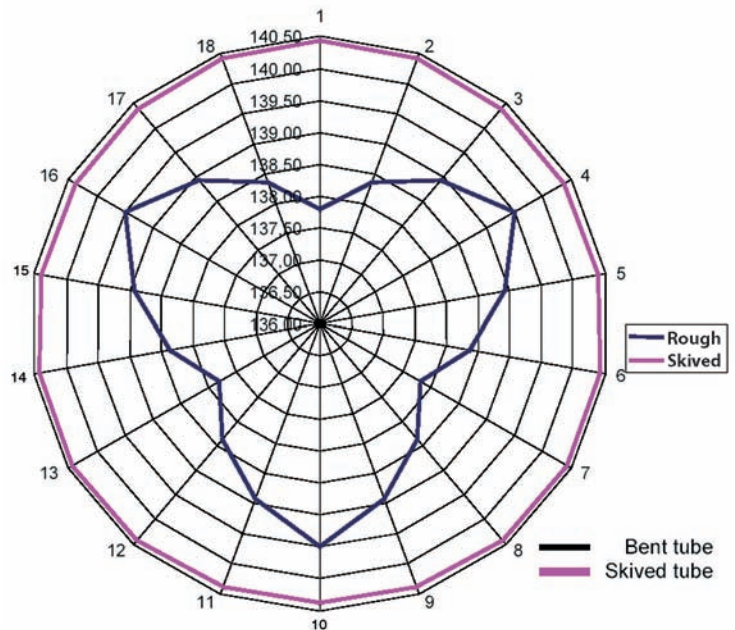
A long-standing problem in this diameter range increases with diameter size: large diameter tubes with relatively low wall thickness exhibit greater irregularities in their circular form due to cold drawing or the straightening process. Conventional skiving heads can correct these irregularities only in certain circumstances. After such a conventional machining process, spiral-shaped waves may appear along the entire length of the cylinder’s inner surface, creating a so-called rippling effect.



Cylinder with rippling problem

The RDO skive-burnishing tools equipped with the OMEGA skiving head offer an innovative solution to this problem. The following trial demonstrates the tools’ effectiveness.

Cylinder tubes with dimensions 156 mm x 8.5 mm were bent on the in-feed end into a polygonal shape with roughly three sides, in which the diameter varied in a range from 1 – 1.7 mm.



Improving the cylinder’s circular form

Summary of the trial results:

After bending, the tubes exhibited irregularities in circular form of up to 1.7 mm. After skiving with an RDO tool, the infeed end of the tubes demonstrated a maximum irregularity of just 0.07 mm. At 150 mm from the infeed end (6 mm from the tube’s opposite end) the maximum circular form irregularity measured just 0.02 mm. Positive results in production continue to confirm these trial results.