Tube+ is a method for partially thickening tube walls as a supplement or alternative to rotary swaging. It can cut out several process steps and shorten production time.

**CONVENTIONAL PRODUCTION:**

1. Blank
2. Infeed reduction
3. Plunge reduction
4. Facing and chamfering
5. Spline axial forming
6. Thread forming
7. 180° workpiece rotation
8. Infeed reduction
9. Facing and chamfering
10. Infeed reduction

**PRODUCTION WITH Tube+:**

1. Blank
2. Tube+
3. Plunge reduction
4. Facing and chamfering
5. Spline axial forming
6. Thread forming
7. 180° workpiece rotation
8. Infeed reduction

**MORE EFFICIENT. SHORTER CYCLE TIMES.**
**Tube+** is an innovative cold forming process to strengthen the wall thickness of tubes. Thickening processes may have been predominantly warm before now, but with **Tube+**, the thickening area is continuously cold formed. The solution is the smart interaction between multiple axles and tools. With this innovation, Felss added an important cold forming process to its product portfolio—designed to be integrated into a multi-stage process or as an independent system.

**Process**

**Blank**

With **Tube+**, you can partially thicken thin-walled blanks in those sections that need a greater wall thickness.

**CUSTOMER BENEFITS**

**ENHANCED PROCESS**

Adding to its existing processes, **Tube+** introduces a tube wall-thickening process to the Felss cold forming range. Designed as a standalone process or to integrate into a multi-stage system.

**EFFICIENT**

Compared to conventional production, **Tube+** can cut out several steps of the process. In the production of a steering spindle, instead of rotary swaging, you can use **Tube+** to save multiple process steps. Fewer process steps mean a more cost-effective production overall.

**RESOURCE-EFFICIENT**

In the production of steering, drive, and transmission shafts, for example, **Tube+** offers shorter cycle times, with high potential savings on resources. For parts with a short thickening section, why not improve production by thickening a thin tube with **Tube+** instead of thinning a large section of the tube with the rotary swaging process?