CASE STUDY

Application: Cross-Hole Deburring for Hydraulic T-Pieces

Tool: COFA X

Industry: Hydraulics

Material: Stainless Steel 316

Benefits: Automation, Reliability, High-Volume Output

Challenge: A leading manufacturer of hydraulic ball-valve T-pieces was looking to replace a labor-intensive manual deburring process for cross-holes (Ø 10.4 mm in 316 SS) where bore ratio was 1:1 — a very steep, challenging geometry. The manual brush-debur prior process was slow, inconsistent and exposed operators to repetitive-motion risk. The manufacturer needed a **fully automated solution** that would improve throughput, eliminate manual handling of sharp edges, and maintain reliably clean bore edges.

Solution: HEULE developed the **COFA-X system**, a purpose-built adaptation of the COFA technology optimized for steep 1:1 bore ratios. Mounted on the customer's DOOSAN CNC center, the tool ran at 10 m/min with a 0.06 mm/U feed and external coolant, automatically deburring the cross-bore insert and achieving consistent quality without manual intervention. The result: no operator handling of burrs, zero indexing of parts, and a fully repeatable cycle for high-volume production.

Results: With COFA-X in place, the customer transitioned from a slow, manual "hand-brush" task to a seamless automated cycle—delivering reliable, repeatable edge quality across thousands of T-pieces. The automated process **reduced process variability**, eliminated manual labor and operator exposure, and enabled high-volume production of hydraulic components with greater uptime and fewer quality deviations. The result is an efficient, safer, and more reliable manufacturing workflow that transforms what was once a bottleneck into a streamlined production step.