



TFA 3-R ELBOWS GIVE YOU ALL THESE BENEFITS... AT NO ADDITIONAL COST.

- **FIELD SEGMENTABLE 3-R ELBOWS THAT MAINTAIN A "1% OUT-OF-ROUND" O.D. TOLERANCE**
- **HOT-FORMED AND FULL-BODY-SIZED FOR FIELD SEGMENTING APPLICATIONS**
- **TOTAL QUALITY AND PROCESS CONTROL THROUGH ALL MANUFACTURING STAGES**

HERE'S WHY TFA 3-R ELBOWS ARE THE "PREFERRED" 3-R BRAND OF MANY PIPELINE COMPANIES, NATURAL GAS UTILITIES AND ENGINEERING COMPANIES:

IN THE FIELD

- Meets the most stringent industry standard—a "1% out-of-round" O. D. tolerance—**AFTER FIELD SEGMENTING.**
- We achieve the "1% out-of-round" O. D. tolerance as a result of our standard manufacturing process—at no additional cost.

FOR SPECIFICATION AND PURCHASING

- Manufactured completely in our facility in Portland, Oregon for predictable, achievable lead-times—assuring no project delays.
- Never manufactured using rough forgings from an offshore forging supplier. We maintain complete process quality control*—from raw material selection through all manufacturing stages.
- Manufactured from tubing that is hot-formed over a mandrel and full-body-sized in an encapsulating top and bottom die, allowing us to meet the more stringent "1% out-of-round" O. D. tolerance.
- Raw material is manufactured to our proprietary purchasing specification which controls residual elements, including vanadium, copper, chrome, nickel and molybdenum.
- After heat treatment, high-yield fittings manufactured from our raw material spec exhibit excellent ductility, while achieving the required strength and mechanical properties to meet the various high-yield grades** from Y-42, up to and including Y-70, as well as Canadian specifications for high-strength fittings.

FOR MORE INFORMATION ABOUT TFA 3-R ELBOWS

email TFA3Rinfo@tubeforgings.com or visit our website at www.tubeforgings.com.



TUBE FORGINGS
of **AMERICA INC.**