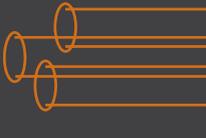


World leader in seamless precision



**TUBE HOLLOW**  
INTERNATIONAL

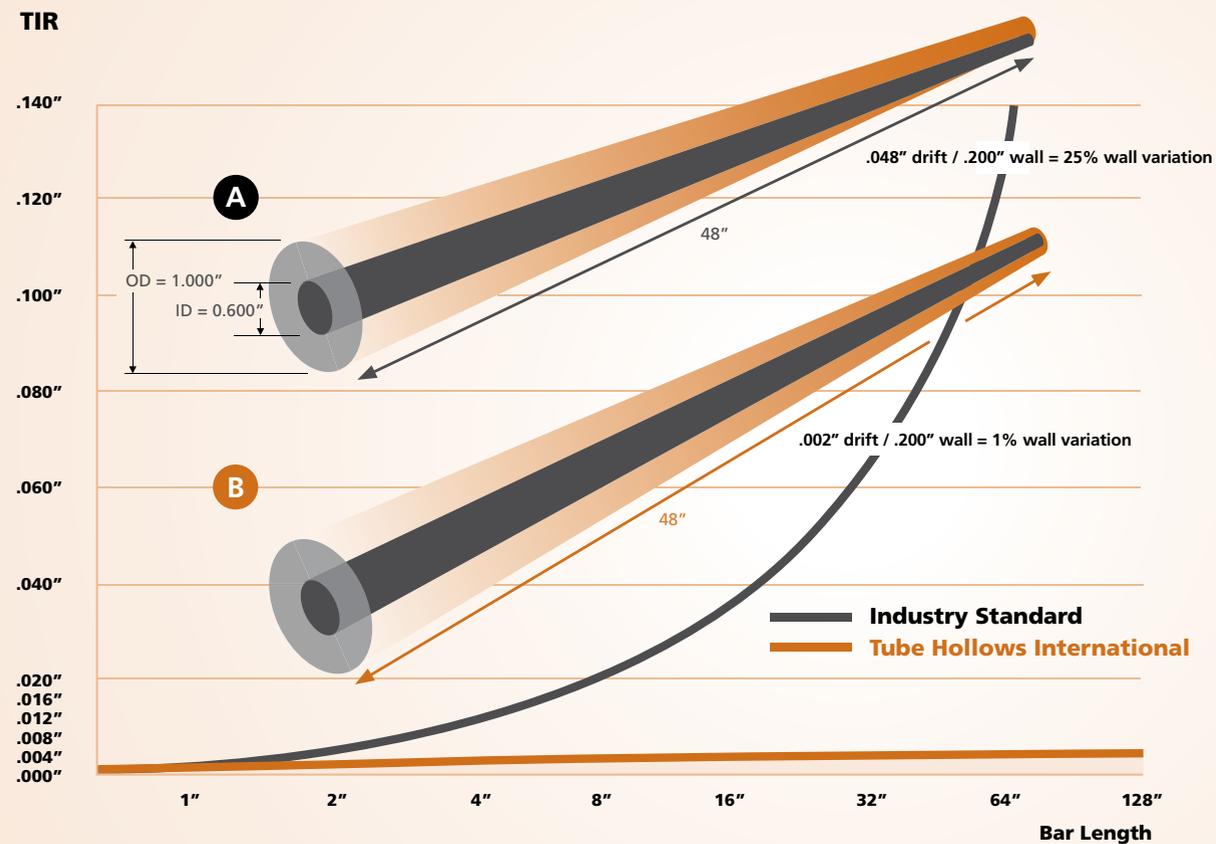
# TUBE HOLLOW INTERNATIONAL IS YOUR ONE-STOP SHOP FOR ENGINEERING SOLUTIONS TO MEET ALL YOUR TUBULAR COMPONENT NEEDS.

## GUN DRILLING

### THI SETS THE INDUSTRY STANDARD IN MEETING TIGHT TOLERANCES FOR WALL VARIATION.

Deep hole drilling is a specialized process used to generate holes with ratios typically greater than 10 times the drill diameter. Standard gundrilling techniques allow for a drift of .001" for every inch drilled. But THI's unique machining technology allows us to drill bars as long as 25 feet with exceptionally low drift, maintaining wall variations as low as 1%—tolerances previously unachievable. The result: unmatched **concentricity**.

### TOTAL INDICATED RUNOUT OVER DRILLED LENGTH IN A BAR



**A Industry Standard**  
Ordinary gun drilling processes produce hole drift relative to the tube walls. Starting with a finished OD bar, the chart at left indicates that in a 16" bar, Total Indicated Runout already exceeds .030", which compromises the function of many designs. At a length of 120", TIR of .240" severely impacts part quality.

**B Tube Hollows International**  
THI can virtually eliminate drift in the same bar. Our machining processes maintain a TIR of .004" through 72" and achieve TIR of .006 – .008" on lengths up to 25 feet.

## COMPLEMENTARY SERVICES

### TUBE CONDITIONING

Correcting eccentricity in conventional hollows with no OD stock removal can yield cost savings with expensive alloys.

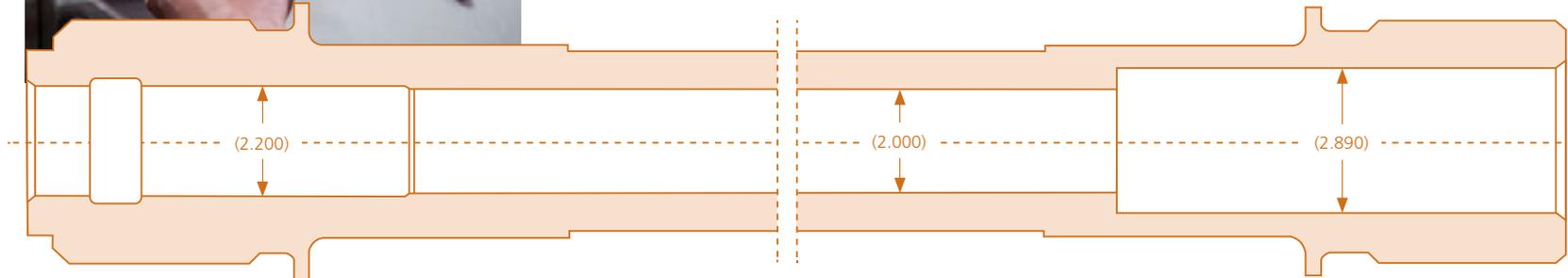


### HONING

We can improve the ID finish by honing bores greater than 0.250" to finishes down to Ra 16 and finer.

### CENTERLESS GRINDING

THI routinely processes barstock OD dimensions to +/- .0005" or better and to roundness tolerances within .001".



### PRECISION MACHINING

We can machine a variety of features:

- Complex Bores, such as bottle bores and step bores, chamfers, radiused corners and more complex shapes
- Platen/Flat Work that often requires multiple and multi-axis holes
- Pattern Drilling—machining multiple holes in varying locations and axes
- Swiss Screw Machining on tubes up to 32mm OD
- CNC Lathe Machining

### TREPANNING

A highly efficient solution for larger holes (>1.125"), trepanning preserves intact the removed metal core, which can be reused to save money when working with expensive alloys.



Incoming stock to be ID conditioned and centerless ground

## MASTERING THE CHALLENGES OF SPECIALTY ALLOYS

THI has decades of experience machining specialty alloys, including titanium, MP35N, nitinol, 300 & 400 series stainless steel, molybdenum, Inconel, nickel-based, tungsten and other non-ferrous materials.



## MORE THAN A HALF-CENTURY MEETING THE MOST EXACTING TOLERANCES.

At Tube Hollows International (THI), our expertise in gun drilling goes back to 1947. Everything we do has grown out of our ability to drill precise holes with uniform wall thickness in a range of specialty metals and alloys. Today, our climate-controlled plant houses state-of-the-art equipment to meet our customers' expanding requirements.

We specialize in unique, engineered solutions to challenging design problems. Our ability to provide uniform-wall, seamless precision tubing at extreme depth-to-ID ratios, with industry-leading concentricity specs, has made us the world leader in custom heavy-wall tubing, hollow bars, precision cannulae and tubular components. And we apply the same passion for precision to a full range of other boring and machining services.

WORLD LEADERS IN

WALL VARIATION

CONCENTRICITY

HOLE-TO-DEPTH RATIO

PRECISION



"At Tube Hollows, unexpected solutions are something we strive to produce every day."

— DAVID MORSE, MANAGING DIRECTOR

