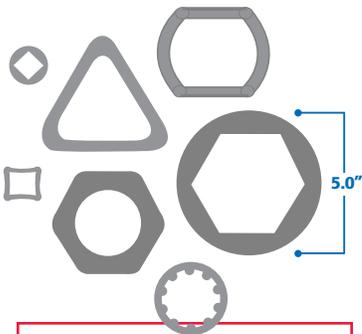


Our **Special Shapes** Capabilities

Create **Special Advantages** For You

Stop extensive machining to get the shape you want out of bars or rounds. Special shapes from Plymouth Tube can slash processing costs, lower scrap material, and reduce your turnaround times.

Shape possibilities are virtually endless, limited primarily by the maximum OD of 5"



Size Range

.250" - 5.000" OD (6.35 - 127 mm) and walls from .020" - .500" (.508 mm - 12.700 mm). Lengths depending on application; short lengths available.

Grades

Up to .40 carbon steel, as well as chrome-moly and heat-treatable alloys (e.g. 1018, 4130 and 8620).

Shapes

Symmetrical and non-symmetrical shapes including rounds, squares, rectangles, triangles, hexagons and customer OD/ID combinations. The possibilities are virtually unlimited.

Properties

Wide range of physical and mechanical properties, depending on grade, processing and annealing options.

If your products or components require high quality precision shapes combined with high strength and superior physical and mechanical properties, consider Plymouth Tube's near-net carbon and alloy shapes. No other tube manufacturer in North America offers so much experience in special shape technology, or provides so many value-added options to meet your product specifications.

Plymouth's special shapes are widely used by manufacturers in the automotive, aerospace, construction, drilling, tool, industrial, medical equipment, and many other industries. OEMs and metal fabricators currently specify Plymouth special shapes for such diverse applications as:

- Automotive shafts and steering columns
- Aircraft seat mounts
- Tools and tool handles
- Torque wrenches and wrench extensions
- Telescoping components
- Rebar and direct drilling couplers
- Components for a wide assortment of industrial and medical equipment

Technical Solutions

Plymouth cold drawn seamless near-net shapes enable manufacturers to solve tough technical challenges and attain physical and mechanical properties that would be difficult

to achieve with other methods, such as machining from bar. Advantages include:

- Greater range of custom sizes, grades, symmetrical and non-symmetrical shapes
- Wider range of physical properties attainable through process and annealing options
- Greater consistency with better tolerances due to cold drawing
- Freedom from grade limitations imposed by existing bar stock machining grades
- Precise custom OD/ID pre-forms without machining

Manufacturing Solutions

In addition to providing cost-effective product solutions, Plymouth special shapes can help you streamline manufacturing in several ways:

- Reduce handling and labor costs
- Near-net shapes or pre-forms result in fewer process steps with less waste
- Faster, more predictable cycle times for on-time delivery, better customer service
- Just-In-Time delivery programs available to reduce excess inventory and storage costs

Added-value options to maximize your benefits

Plymouth Tube offers a wide range of additional capabilities that assure you receive the part or product that best suits your manufacturing process. These include, but are not limited to:

- Short cut lengths
- Stamping, beading, bending
- Machining
- CNC
- Tempering
- Plating
- Powder coating

Take the Next Step — Call Us!

For more information on how Plymouth Tube special shapes can help you save time and money while reducing process steps, please call us. Our Technical Resource Team can help you perform a feasibility analysis to determine whether our unique capabilities match your product specifications.

Added-value processes can deliver a finished piece, ready to go

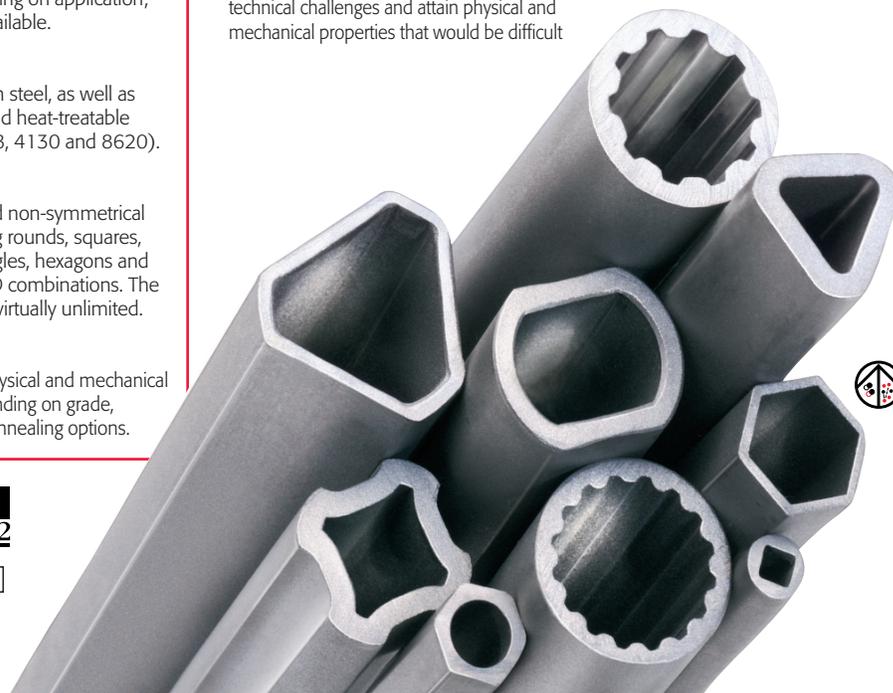


Stage 1: Cold drawn to inner profile

Stage 2: Cold drawn to near-net

Stage 3: Machined to final configuration

Photo used courtesy of Remington Arms Company, Inc.



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