

# SHEFFIELD™ #10 “Hot Roll” Heat Treated - High Strength Alloy

For over 50 years, **Sheffield #10** has been a material of choice where toughness is required and minimizing fatigue failure is critical.

**Sheffield #10** out performs many other trade name grades, as well as, commercial grades of steel, because of its distinctive physical properties. The high physical properties are achieved through CLEAN STEEL TECHNOLOGY and comprehensive testing.

## Benefits of Sheffield #10

**HIGH PHYSICAL STRENGTH** – excellent properties (156,000 PSI tensile strength) especially for applications where torque is a concern.

**FINE GRAIN STRUCTURE** – obtained by careful manufacturing control and alloy selection, makes this product ideal for applications where maximum core toughness is desired.

**HIGH FATIGUE STRENGTH** – provides maximum life in high torsion applications, such as crane shafts, armature shafts, etc., where fatigue is most often the cause of failure.

**STRESS RELIEVED** – to remove residual internal stresses in order to minimize danger of deformation and failures caused by these stresses. Reduces the likelihood of material “walking” during machining.

**UNIFORM HARDNESS** – **Sheffield #10** will maintain its hardness and strength where extensive turning and machining are required, especially in multi-diameter shafts.

**MACHINE STRAIGHTENED** – 1/8” in any 5 feet – half the industry standard for material of this configuration.

## Surface Finish Options:

**Redi-Finish** – Supplied pre-machined oversize, to allow for final clean-up. Custom cut lengths or randoms available in flats and squares.

**Flat-Ground** – Supplied precision ground to tight tolerances. 18” and 36” lengths.



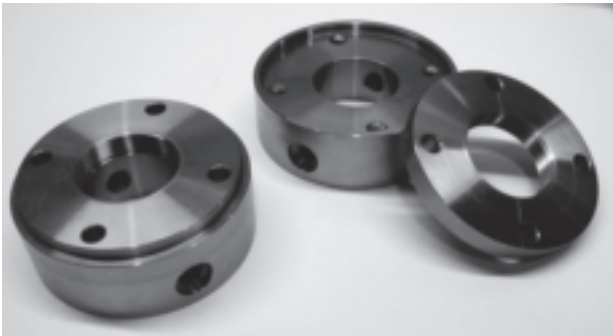
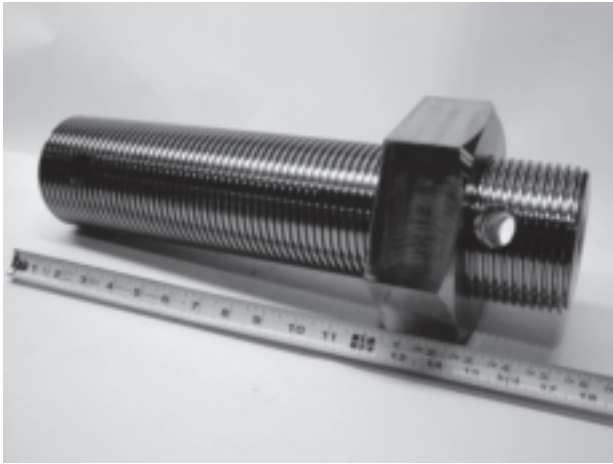
## Typical Applications

Arbors	Journals	Stub Shafts
Bolts	Line Shafts	Tool Shanks
Crank Shafts	Mine Car Axles	Tie Rods
Drive Shafts	Pinions	Textile Parts
Drag Line Parts	Piston Rods	Valve Stems
Feed Screws	Rings	Wear Strips
Gears	Spindles	Worm Gears
Hubs	Studs	Wrist Pins

## Stock Lengths

10 / 12 Ft Random Lengths
20 / 24 Ft Random Lengths
Custom Cut Lengths

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**Sheffield #10** eliminates the need to have multiple grades of steel on-hand, such as: 1045, 4130, 4140, 4150, 4340 and 6150.

**Sheffield #10** is manufactured to the tightest standards for increased performance and reliability in severe service applications.

**Sheffield #10** offers much more than other alloy grades. The advantages and features of **Sheffield #10** are unique.

- Pre-Hardened – 269/321 BHN
- Machinable
- High Tensile and Yield Strengths
- Fine Grain Structure
- Deep Uniform Hardness
- Stress Relieved
- Vacuum Degassed

**Sheffield #10** is designed to provide optimum performance. SAE only establishes minimum standards

**Consider Sheffield #10 where other products fail because of fatigue lack of toughness.**

## Typical Physical Properties\*

Hardness.....	269/321 BHN
Tensile Strength.....	156,000 P.S.I.
Yield Strength.....	125,000 P.S.I.
Grain Size.....	8
Elongation in 2".....	16%
Reduction of Area.....	55%
Machinability.....	50%

\*Based on 1/2" Diameter Specimen

## Available Sizes\*

Rounds – 1/2" to 16"  
 Squares – 1/2" to 6"  
 Flats – 1/4" to 6" thick and 1/2" to 12" wide

\* Rounds over 10" are furnished as RTOS to finish to the nominal size.

## Value-Added Services

We offer total fabrication services, to provide you with finished parts and assemblies, whether you require multiple parts or one-of-a-kind prototype items. Let us quote on; machining, grinding, straightening, and all types of hardening.

Custom machining of **Sheffield #10** may be quoted from worn parts, hand-drawn sketches, or detail drawings. Full CAD service available.

**Past Protected Trade Name Of Pyramid Steel Company – Maintenal™**