

Timken 13-, 14-, and 15-inch Round Bars

TIMKEN
Where You Turn

Timken provides customers around the world with high-performance steel. Capitalizing on the synergy between its bearing and steel businesses, we have the expertise to tailor production heats to customer specifications. We continually look at ways to meet customer needs through value-added products and services.

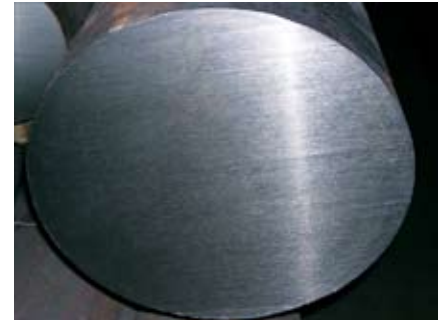
A recent innovation is the expansion of its rolled carbon and alloy steel round bar capabilities to a maximum diameter of 15 inches (381 mm). This new, larger diameter bar improves yield and efficiency through:

- *Length optimization*
- *Enhanced product consistency due to rolled bar diameter*
- *Less product testing*
- *Larger heats*
- *Maximized process capabilities resulting from 5.9:1 to 4.4:1 reduction ratio for 13- to 15-inch (330 to 381 mm) rounds respectively*

This expanded size range makes Timken the only North American steel company that direct rolls 13-inch (330 mm), 14-inch (356 mm) and 15-inch (381 mm) round bar from ingots and produces it in lengths up to 27 feet (8.23 m), 23 feet (7.01 m) and 20 feet (6.10 m) respectively. This new capability enables us to offer a broader size range of product globally.

Ring rollers and forgers use rolled bar to produce parts for applications such as gears, bearings and valves. Rolled bar features a consistent diameter along the full length of the bar, significantly improving the ability to cut parts to exacting weight controls. Rolled bar has more hot work than cast ingots, which may allow for an increased height to diameter ratio when upset forging. Longer lengths can significantly reduce material handling and increase productivity. Our larger heat size will minimize testing costs.

While some hot work is imparted to these rolled round bars, sound centers are not guaranteed. This product was



developed for applications where centers will be removed, such as hot-rolled rings or trepanned bars. It also is used in applications where forging will heal any remaining center conditions.

Customers turn to Timken for innovation that moves them ahead of the competition. This expanded size capability is one example of how Timken continues to expand its capabilities to improve customer performance. In addition to unique products like these, Timken's supply chain and application development groups offer added value by consulting with customers regarding their specific requirements in order to qualify Timken® steel for their applications.



Rolled bar specifications:

- Casting method: Ingot cast
- Quality levels: Aircraft, bearing and commercial quality
- Typical condition: Hot rolled – forging quality
- Grade limitations: 0.80% C maximum
- Straightness: Standard mill straightness
- Surface inspection: Visual inspection and grinding
- Thermal treatment options: None
- Size:

13 in.	14 in.	15 in.
(330 mm)	(356 mm)	(381 mm)
- Minimum diameter to be removed (for ring rolling and trepan applications):

3 in.	3.5 in.	4 in.
(76 mm)	(89 mm)	(102 mm)
- Maximum length:

27 ft.	23 ft.	20 ft.
(8.23 m)	(7.01 m)	(6.10 m)
- Reduction ratio:

5.9:1	5.1:1	4.4:1
-------	-------	-------



Timken is a leading manufacturer of carbon and alloy bar. We produce ingot-cast and continuous-cast steel bars that will help your product perform more effectively in the most demanding applications. Size ranges offered are:

- *Rounds: 1.8750 inch (48 mm) through 15 inch (381 mm)*
- *Squares: Round-Cornered – 3.5000 inch (89 mm) through 12 inch (305 mm)*

For more information on Timken steel and other value-added services, call 866-284-6536, fax 330-471-7032 or visit our website at www.timken.com/products/alloysteel.

TIMKEN
Where You Turn

Bearings • Steel •
Precision Components • Lubrication •
Seals • Remanufacture and Repair •
Industrial Services

www.timken.com

Timken® is a registered trademark of
The Timken Company

© 2007 The Timken Company
Printed in U.S.A.

2.5M 05-07-29 REV Order No. 10080