

# Timken TIM-6V: World-Class Hollow Bar to EN 10294-1

## Delivering World-Class Value and Performance

In today's globally competitive environment, companies can't sacrifice quality to reduce costs. Timken TIM-6V micro-alloy seamless mechanical tubing offers strength and value.

### **Timken TIM-6V hollow bars are:**

- Manufactured to Euronorm EN 10294-1 global standard to ease ordering and ensure grade consistency
- Micro-alloyed and fine-grained to optimize strength and toughness
- Designed for longer tool life with faster feed rates during machining
- Sulphur boosted and engineered for enhanced machinability and longer tool life
- Available in outside diameters from 50 mm to 330 mm
- Readily available from our mill or through the Timken Fast-Track™ warehouse

Timken TIM-6V is specifically designed to meet a diverse range of general-purpose industrial and mechanical applications, including:

- *Axles*
- *Sleeves and bushings*
- *Extrusion barrels*
- *Cylinders*
- *Output hubs in speed-reduction gear boxes*
- *Shafts*
- *Spacers*
- *Turning equipment in drilling, mining and mechanical handling machines and*
- *Other parts that require machining.*

Our micro-alloy formula minimizes the need for heat treatment, simplifying finishing. These hollow bars deliver exceptional value in strength and hardness without reducing the efficiency of your manufacturing operations. And we've improved availability so you can access common sizes even faster.

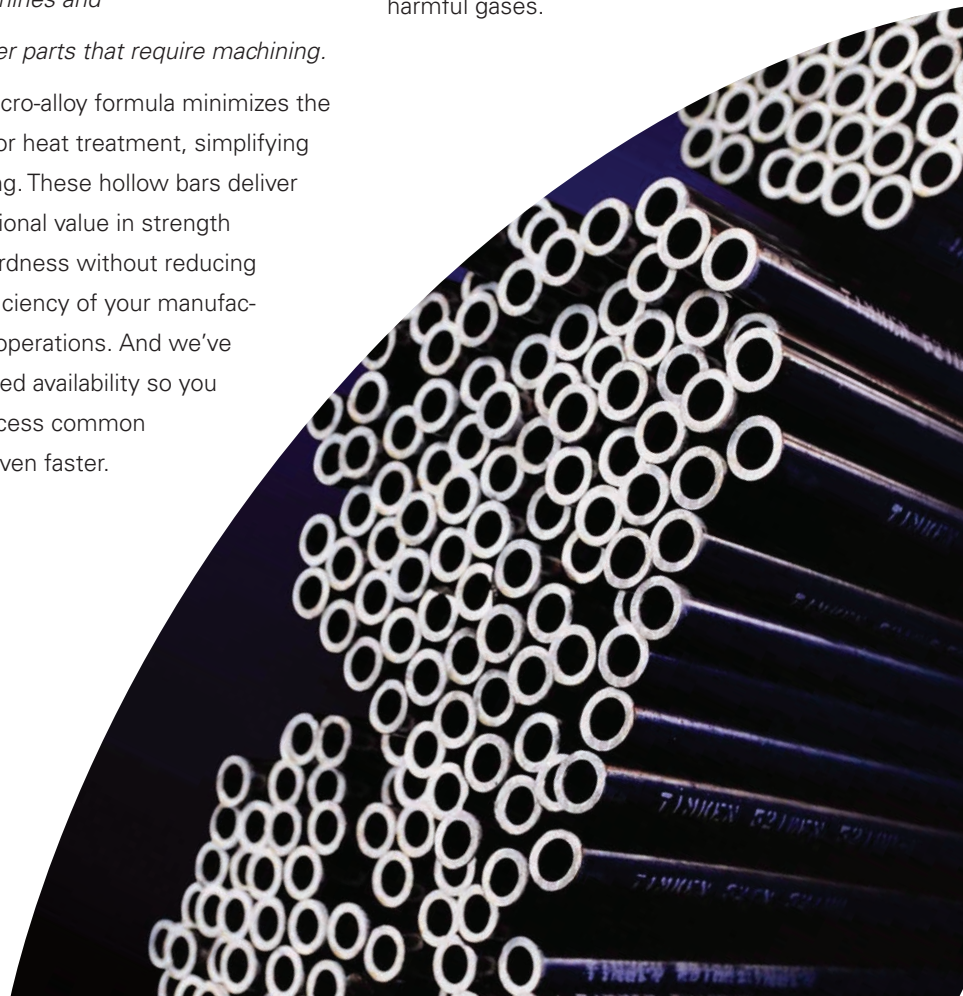
# TIMKEN

Where You Turn

### **Formulated for performance**

The chemical composition of TIM-6V is carefully and consistently controlled to balance durability and machinability. We start with premium raw materials and combine clean, certified scrap and high-quality ferroalloys in electric-arc furnaces.

After reaching the proper temperature and homogeneity, the liquid metal is tapped in large, pre-heated ladles that are transported to refining stations. Here, precise chemistry control is achieved and the steel is stirred with inert argon under a near-perfect vacuum to float out impurities and remove harmful gases.



### Additives for higher strength and better machinability

Precise amounts of vanadium are added to fine-tune the internal grain structure and sulphur levels are increased to optimum ranges. Rare-earth elements are injected into the molten bath to scientifically modify the shape of the microscopic manganese-sulfide inclusions.

These final adjustments help to create the high-quality, clean steel for TIM-6V hollow bars, which are known for uniform strength, durability and toughness. TIM-6V hollow bars give customers longer tool life with faster feed rates during machining.

Mechanical Properties		
Hot rolled		
Ultimate Tensile Strength Rm		N/mm <sup>2</sup> 650/800
Yield Stress Rp 0.2 min	Wall thickness	N/mm <sup>2</sup>
	≤ 16mm	480
	>16-30mm	460
	>30mm	440
Elongation A % min Lo = 5.65 √ So		18%
Typical Hardness		200-240 HB

### A focus on finishing

Foundational metallurgy is important, but Timken takes it a step further. When the molten steel is poured from the ladle, the stream is surrounded with inert gases to shroud it from oxygen in the atmosphere. At one of our facilities, it is teemed into uniformly spaced clusters of bottom-poured ingots; at another, it is transferred into pre-heated tundishes that feed Timken's state-of-the-art curved mold bloom continuous caster.

After solidification, ingots and blooms are reheated to optimum temperatures and rolled into long, round billets. These bars are the feedstock for rotary piercing mills, which makes Timken a leader in the production of hollow bar in North America.

### Readily available in common sizes

When you turn to Timken, you can be confident in the quality and durability of the steel. We are now stocking an array of sizes to make TIM-6V available when you need it – in smaller quantities. While mill minimum quantities start at just 4.5 tonnes, stock quantities can be sourced in as few as one tonne. Your customers are assured high quality with shorter lead and quicker deliveries.

*For more information on Timken steel products and value-added solutions, e-mail us at [pscfasttrack@timken.com](mailto:pscfasttrack@timken.com).*



*TIM-6V hollow bars are the foundation for a variety of steel components.*

### Chemical Analysis

C	Mn	Si	V	S	P
0.22	1.60	0.35	0.12	0.040	0.030

*All figures are maxima.*

**TIMKEN**  
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Engineered Steel Solutions for:  
Aerospace • Automotive •  
Bearings • Defense • Distribution •  
Energy • Industrial  
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