



Unibar

Technical Documentation

Unibar. Continuous Cast Iron Bar produced by United Cast Bar Limited

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UNIBAR MACHINING

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UNIBAR MACHINING

So that our customers can maximize the use of their precision machining centres (which are costly to run) to produce their more complex parts, we make available all Unibar Production Centres with machining facilities. Less complicated operations, or the prior work of proof machining, can be carried out, thus lowering the overall cost of production.

In addition to the clear reduction in pre-machining costs due to using less costly machinery in this operation, machined Unibar products allow our customers to increase their production capacity by subcontracting part of their machining process to Unibar, thus allowing them to meet peaks in demand which they would not otherwise be able to satisfy.

This also means that our customers can concentrate their investments on more complex and up-to-date machinery, which will allow them to maintain and improve their competitive position in an environment subject to continual change.

UNIBAR TUBES

Unibar tubes can be supplied with the exterior surface as-cast or machined. These two variants are complemented by a wide selection of internal measurements, which currently range from 30 to 250 mm. However, since Unibar's range of dimensions is increasing daily, new internal and external measurements are continually being incorporated into the Unibar production schedule.

Unibar Tubes are especially suitable for applications such as:

- Rings
- Segments
- Cylinder end caps
- Spacers
- Pulleys

Note: Other sizes, lengths and tolerances also available after consultation.

The expected mechanical characteristics in Unibar Tubes are those which correspond to the solid bar (External \varnothing) and not to the thickness of the tube.

Unibar Type	Outside Diameter	Inside Diameter	Tool \varnothing Increments	Outside Tolerance	Inside Tolerance	Length
Concast	From \varnothing 50 mm to \varnothing 500 mm	From \varnothing 20 mm to \varnothing 100 mm	5 mm	+0 / +2 mm for Outside Proof-Machined	+0 / -2 mm	1000 mm -0 / +50 mm
		From \varnothing 110 mm to \varnothing 250 mm	10 mm		+0 / -3 mm	
Ingot	From \varnothing 510 mm to \varnothing 715 mm	From \varnothing 110 mm to \varnothing 250 mm	10 mm	-0 / 2 mm for Outside Proof-Machined	+0 / -3 mm	1000 mm -0 / +50 mm

UNIBAR TURNED

Unibar Turned can avoid the machining operations prior to grinding as they are supplied with a machining allowance close to the final measurement required by our customers. In this way, our customers only have to carry out the final grinding in order to achieve the desired measurements. Unibar Turned therefore comes with a standard tolerance of +1mm, although after consultation we can offer alternatives to suit all of our customers' requirements.

Following are the most common applications of Unibar Turned:

- Pistons
- Pulleys
- Valve guides

Unibar Type	Outside	Tolerance	Length
Concast	From \varnothing 50 mm to \varnothing 500 mm	-0 / +2 mm for Outside Proof-Machined	3.000 mm -50 / +150 mm
Ingot	From \varnothing 510 mm to \varnothing 715 mm	-0 / +5 mm for Outside Proof-Machined	1.000 mm -0 / +30 mm

Note: Other measurements, lengths and tolerances available after consultation.

UNIBAR PEELED

In the case of machined Unibar with diameters of less than 110 mm., the alternative to Unibar Turned is Unibar Peeled. As these are smaller dimensions, and involve a different machining process, the tolerances offered are more precise, for example h-12.

Following are the most common applications of Unibar Peeled:

- Pistons
- Valve guides
- Corrector guides

Unibar Type	Outside	Tolerance	Length
Concast	From \varnothing 20 mm to \varnothing 105 mm	h-11 Outside Proof-Machined	3.000 mm 0 / +80 mm

Note: Other sizes, lengths and tolerances available after consultation. However, for more information consult the standard Unibar length as cast on pages 19 and 40.

UNIBAR MILLED

In the case of Square or Rectangular Unibar, we can offer our customers two options: milling on either 4 or 6 faces. This means that the only remaining machining operations are the grinding and boring of the block.

In addition to this, Unibar has more than 150 different un-machined sizes permanently in stock, allowing us to adapt to any standard hydraulic block dimension in existence on the market. The range of dimensions that Unibar offers is increasing daily, and new sizes are continually being incorporated into the Unibar production schedule.

- Hydraulic blocks
- Guides
- Bases

Unibar Type	Outside	Tolerance	Length
Concast 4 Sides Milled	From □ 30x30 mm to □ 400x400 mm	± 0.2 mm	2000 to 3000 mm -0 / +80 mm
Concast 4 Sides Milled	From □ 30x30 mm to □ 400x400 mm	± 0.2 mm	Cut pieces to 500, 1000, 1500, 2000 mm in length.
Ingot 6 Sides Milled	From □ 450x450 mm to □ 600x600 mm	+0 / +2 mm for Outside Proof-Machined	1000 mm -0 / +30 mm

NOTE: Tighter tolerances are also available depending on the length of the pieces.