High-precision bar miller

BA 1008 range
The BA 1008 range comprises ultra-compact, high-precision bar millers. Thanks to their multi-spindle technology, these fast and powerful machining centres deliver impressive productivity.
BA 1008

Based on the SwissNano, the BA 1008 is an ultra-compact, high-precision bar miller. The BA 1008 is fed with bars via the machine, using a divider system which allows workpieces up to a diameter of 16 mm to be loaded. Positioned machining operations and interpolation between the tool systems and the workpiece are easily possible.

BA 1008: advantages

- Machining area enclosed in a retractable bubble
- Multi-spindle machining for maximum productivity
- Different configurations possible depending on the workpiece requirements
- Ultra-compact, footprint of just 1.6 m²
- 50-litre oil tray
- CNC FANUC on swivel arm
- Material feed from bar or coil from the machine
- Retrieval of workpieces
- Chip recovery

High precision

- Watchmaking, index assembly
- Eyewear
- Watchmaking, exterior components
- Watchmaking
- Optical

Brass
316L stainless steel
Titanium
316L stainless steel

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<td>10 mm 55 s/part</td>
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BA 1008 HP

Based on the same design as the BA 1008, the BA 1008 HP is an ultra-compact bar miller equipped with multi-spindle technology and a high-pressure unit for through-spindle cooling. The BA 1008 HP is a flexible, compact, precise and efficient production tool.

- Multi-spindle technology identical to the BA 1008 with through-spindle cooling (120 bar)
- Machining area housing for optimal recovery of precious materials
- Fine filtration and transfer tray, can be replaced during operation
- Container with high-pressure unit and optimal management of fluids and chips
- Ultra-compact, only 2.4 m²
- 300-litre oil tray
- Access hatch for chip management

BA 1008 HP: advantages

Exceptional machining performance

Micromechanics
Watchmaking
Watchmaking, exterior components
Micromechanics
BA 1008 XT

In the XT version, the BA 1008 has an integrated tool-change solution. This key asset enables increasingly complex parts to be produced in record time!

Up to 23 tools!

BA 1008 XT: advantages

- Multi-spindle machining for maximum productivity
- Material fed from bar or coil from the machine
- CNC FANUC on swivel arm
- Tool changer for 6-position lateral spindle
- Tool changer for 10-position front spindle

High feasibility

Watchmaking

- 316L stainless steel
- 10 mm
- 4 mm
- 3 mm
- 10 mm
- 20 mm
- 3 mm

Watchmaking

- 316L stainless steel
- 10 mm
- 10 mm
- 3 mm
- 3 mm
- 20 mm
- 20 mm
- 3 mm

Watchmaking

- 316L stainless steel
- 10 mm
- 10 mm
- 3 mm
- 3 mm
- 3 mm
- 3 mm
- 3 mm
Bar diameter
Max. Ø 16 mm

Spindles
- Up to 4 front spindles
- Up to 3 lateral spindles
- Up to 2 counter-operation spindles
- 1 sectioning tool

Tool measurement
- Tool measuring system built into the machining area
- Tool length measurement
- Tool breakage detection
- Fanuc 0iMF CNC

Strokes
- X/Y/Z 26/160/60 mm
- U/V/W 26/160/5 mm
- C 360°
Spindle blocks

<table>
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<th>SPINDLE</th>
<th>MECHANICAL</th>
<th>HF 2B</th>
<th>HF/HP 2B</th>
<th>HF 28 Auto*</th>
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<tr>
<td>Type</td>
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<tr>
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<td>ER 11</td>
<td>ER 11</td>
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</tbody>
</table>

* automatic

3-axis tool measuring system
Tornos has developed a special assembly for compact integration in the BA 1008. The probe is mounted on a pneumatic table allowing the sensor to move into two positions: control position and machining position.

Counter-spindle block
Mounted on a U, V slide 4 front spindles 2 HF spindles

Counter-spindle block
Mounted on a U, V slide 4 front spindles 2 HF spindles

Lateral spindle block
Mounted on an X, Y, Z slide 4 front spindles 80-mm sectioning option

Inclined front spindle block
Adjustment angle from 0° to 17° Manual, pneumatic or NC motor control

Front spindle block
Mounted on an X, Y, Z slide 4 front spindles 17° open up to 17°

10-position tool changer for front spindle (BA 1008 XT)

6-position tool changer for lateral spindle (BA 1008 XT)
Mechanical design

The heart of each machine
The kinematic structure was designed for exemplary balance and thermal management. The axes and cast iron members are aligned symmetrically to the clamping spindle, and the thermal aspects are managed by ‘mini-loops’ that prevent heat propagation. The structure is anchored on three damped points. What about the results? Rigidity and vibration stability reach new peaks. Consequently, machining precision and quality are everything that they should be.

Symmetrical structure

Large tray with continuous thermostabilisation

The filter bags and their filtration fineness can be adjusted as required. An optional locking system is also available for secure machining of precious materials.
Main and secondary operation clamping

Collet clamping system

The F22 divider collet clamps bars up to 16 mm in diameter. An F35 collet may be fitted optionally, after analysis of the clamping system.

Clamping system with parallel jaws

Used to machine profiled bars (saves on material); ideal for machining precious materials; better bar positioning; allows several bars to be machined simultaneously.

Clamping system with parallel jaws for long parts

Tornos draws on its expertise to develop customised solutions to suit your requirements for machining more complex parts.

Standard pickup collet

The pickup collet clamps the workpiece for sectioning, and can be used to move the workpiece to the counter-operation spindles and eject it. It is possible to machine the shape of the collet using the pickup spindles.

Pickup collet for thin workpieces

Tornos has developed this special collet to efficiently clamp thin workpieces. A peg is used to position the workpiece during separation.

Reinforced pickup vice

For the most complex machining operations, the pickup vice with parallel jaws ensures optimal clamping. A spray system at the rear of the jaws prevents chips from entering. This clamping system is ideal for multi-bar machining.
The BA 1008 machining centre is equipped as standard with the Fanuc 0iMD numerical control, renowned worldwide for its reliability, precision and ease of use.
- 10.4” colour LCD screen
- 512 KB memory (scalable up to 8 MB)
- Up to 4 simultaneous axes
- Data server
- Ethernet
- AI control contour mode (up to 200 blocks)
- Electronic handwheel
- Rigid tapping

Compatible with the biggest names in CAM
Tornos has established important partnerships with leading producers of CAM software. This enables you to exploit the full potential of your Tornos machines, whichever software you’re using.

ECO-PACK option
• Up to 75% lower consumption when the machine is not in production
• Easy-to-use CNC screen
• Fast payback

ECO-PACK PLUS option
• Option to program machine preheating
• Option to program machine shutdown

Tornos TISIS
The machines also benefit from the power of our TISIS software, which enables highly advanced monitoring of machines, easily and efficiently.

Industry 4.0-ready
In addition to TISIS, thanks to the tool probe, Tornos offers the option to make automatic corrections, allowing closed-loop control.
Part recovery devices

Standard part recovery device
The counter-operation collet places the finished part in the part recovery device. It is then conveyed by gravity into a basket on the side of the machine that can be accessed when the machine is in production. This system is designed for workpieces measuring less than 4 mm.

Vacuum part recovery device
With the Vacuum option, the parts are extracted via the Venturi effect and collected in a basket with an oil bath to avoid marking.

Pneumatic part recovery device
This recovery system is mounted on a pneumatic cylinder. At the end of machining, the cylinder retracts and the workpiece falls into the part recovery device. It is then conveyed to a basket under the machining area. This system is designed for average size workpieces, 4 mm – 26 mm.
Material coil feeder
The material is fed into the machine in coil form. A coil weighing between 30 and 80 kg is unwound by a dispenser on the side of the machine. The material is pulled through the machine by the wire feed system.

BA 1008 material feeder
The bar feeder has a loading capacity of 650 mm, which allows the BA 1008 to automatically machine around fifty bars of 12 mm in diameter. It allows the production tool to run 24/7, with the least possible intervention from the operator. This option fully optimises the production costs of the BA 1008.
The configuration of the BA 1008 XT significantly increases the machining options, enabling the manufacture of parts previously impossible to produce. It can house up to 8 spindles and two tool changers for a maximum capacity of 23 tools.

Precious metals machining area
Machining area housing for optimal chip drainage
Chip collection up to 99.7% in 20 min.

Tool changers

Tool changer for 6-position lateral spindle

Tool changer for 10-position front spindle
Buying a Tornos machine is much more than a business transaction. It is your investment in the future. Tornos Service thrives worldwide by guaranteeing the superior production capabilities of products carrying the Tornos name.

Certified original spare parts
Rapid, reliable, worldwide delivery of certified original spare parts is a speciality of Tornos Service. Regardless of the age of your Tornos machine, we stock the essential certified spare parts to keep the machine running at peak performance.

Machine overhauls
Tornos machines inspire confidence. It’s no surprise, therefore, that many customers turn to Tornos for a complete overhaul of their machines. The Tornos overhaul service returns the machines in good-as-new condition, significantly extending their service life.

Options, upgrades and X-change modules
To help you achieve your manufacturing, productivity and quality objectives, our experts collaborate with you to manage complex machining processes, develop software features for machining complex shapes, design special equipment, and tailor peripherals to your needs. Tornos’ X-change modules expand your application capabilities and profitability.

Backed by both geographical proximity to customers and an in-depth understanding of their processes, applications and market challenges, Tornos Service delivers an unparalleled continuum of support: start-up assistance, expert training and coaching, free hotline, on-site operations support and preventive maintenance, original spare parts seamlessly delivered worldwide, complete overhauls to extend the service life of Tornos machines, and a range of operations and X-change modules to expand customers’ application capabilities and profitability.

Free Hotline support
Wherever you are in the world, highly qualified specialists who speak your language and understand your processes are just a phone call away to quickly support you with handling and programming solutions.

On-site support
Fast, efficient on-site operations and preventive maintenance ensure the continuous high performance of your Tornos machines. Regular scheduled preventive maintenance can help you avoid 70% of machine breakdowns and keep you on the path to productivity.

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Technical specifications

### BA 1008
- **6 linear axes**
- **1 rotating axis**

### BA 1008 HP
- **6 linear axes**
- **1 rotating axis**

### BA 1008 XT
- **6 linear axes**
- **1 rotating axis**

#### X/Y/Z Travel
- **BA 1008**: 26/160/60
- **BA 1008 HP**: 26/160/60
- **BA 1008 XT**: 26/160/60

#### U/V/W Travel
- **BA 1008**: 26/160/35
- **BA 1008 HP**: 26/160/35
- **BA 1008 XT**: 26/160/35

#### Rapid Feed
- **BA 1008**: 16
- **BA 1008 HP**: 16
- **BA 1008 XT**: 16

#### Feed
- **BA 1008**: 10 to 5000
- **BA 1008 HP**: 10 to 5000
- **BA 1008 XT**: 10 to 5000

### Numerical control
#### Control type
- **BA 1008**: Fanuc 0i-MD/0i-MF
- **BA 1008 HP**: Fanuc 0i-MD/0i-MF
- **BA 1008 XT**: Fanuc 0i-MF

#### Max. number of axes
- **BA 1008**: 8/12
- **BA 1008 HP**: 8/12
- **BA 1008 XT**: 12

#### Simultaneous axes
- **BA 1008**: 4
- **BA 1008 HP**: 4
- **BA 1008 XT**: 4

#### Rigid tapping
- **BA 1008**: From S0.6 to M6
- **BA 1008 HP**: From S0.6 to M6
- **BA 1008 XT**: From S0.6 to M6

#### Micro rigid tapping
- **BA 1008**: From S0.3 to S0.6
- **BA 1008 HP**: From S0.3 to S0.6
- **BA 1008 XT**: From S0.3 to S0.6

### Divider
#### Max. bar capacity
- **BA 1008**: 16
- **BA 1008 HP**: 16
- **BA 1008 XT**: 16 (F22)/28 (F35)*

#### Max. workpiece length
- **BA 1008**: 16
- **BA 1008 HP**: 16
- **BA 1008 XT**: 16

#### Positioning offset
- **BA 1008**: ± 22
- **BA 1008 HP**: ± 22
- **BA 1008 XT**: ± 22

#### Repetition accuracy
- **BA 1008**: ± 7
- **BA 1008 HP**: ± 7
- **BA 1008 XT**: ± 7

### Front spindle block
#### Max. number of spindles
- **BA 1008**: 4
- **BA 1008 HP**: 4
- **BA 1008 XT**: 4

#### Tool changer for front spindle
- **BA 1008**: –
- **BA 1008 HP**: –
- **BA 1008 XT**: 10 tools

#### Spindle type
- **BA 1008**: Mechanical or HF
- **BA 1008 HP**: Mechanical or HF
- **BA 1008 XT**: Mechanical/HF

#### Mechanical spindles rotational speed
- **BA 1008**: 12,000 (ER 11)
- **BA 1008 HP**: 12,000 (ER 11)
- **BA 1008 XT**: 12,000 (ER 11)

#### HP spindle rotation speed
- **BA 1008**: 28,000 (ER 11)
- **BA 1008 HP**: 28,000 (ER 11)
- **BA 1008 XT**: 28,000 (ER 11)

#### HF/HF spindle rotational speed
- **BA 1008**: or 80,000 (ER 8)
- **BA 1008 HP**: or 80,000 (ER 8)
- **BA 1008 XT**: or 80,000 (ER 8)

#### Speed of rotation of automatic HF spindles
- **BA 1008**: –
- **BA 1008 HP**: –
- **BA 1008 XT**: 28,000 (ER 11)

* Optional

### Lateral spindle block
#### Max. number of spindles
- **BA 1008**: 3
- **BA 1008 HP**: 3
- **BA 1008 XT**: 3

#### Tool changer for lateral spindle
- **BA 1008**: –
- **BA 1008 HP**: –
- **BA 1008 XT**: 6 tools

#### Spindle type
- **BA 1008**: Mechanical or HF
- **BA 1008 HP**: Mechanical or HF
- **BA 1008 XT**: Mechanical/HF

#### Mechanical spindles rotational speed
- **BA 1008**: 12,000 (ER 11)
- **BA 1008 HP**: 12,000 (ER 11)
- **BA 1008 XT**: 12,000 (ER 11)

#### HP spindle rotational speed
- **BA 1008**: 28,000 (ER 11)
- **BA 1008 HP**: 28,000 (ER 11)
- **BA 1008 XT**: 12,000 (ER 11)

#### HF/HF spindle rotational speed
- **BA 1008**: or 80,000 (ER 8)
- **BA 1008 HP**: or 80,000 (ER 8)
- **BA 1008 XT**: or 80,000 (ER 8)

#### Speed of rotation of automatic HF spindles
- **BA 1008**: –
- **BA 1008 HP**: –
- **BA 1008 XT**: 28,000 (ER 11)

### Workpiece clamping
#### Main clamping
- **BA 1008**: Pickup collet/Pickup vice
- **BA 1008 HP**: Pickup collet/Pickup vice
- **BA 1008 XT**: Pickup collet/Pickup vice

#### Pickup clamping
- **BA 1008**: –
- **BA 1008 HP**: –
- **BA 1008 XT**: –

### Tool measuring system
#### Repeatability
- **BA 1008**: ± 1 µm
- **BA 1008 HP**: ± 1 µm
- **BA 1008 XT**: ± 1 µm

### Tool breakage detection system
- **BA 1008**: Yes
- **BA 1008 HP**: Yes
- **BA 1008 XT**: Yes

### Filtration unit
#### Coolant
- **BA 1008**: Oil
- **BA 1008 HP**: Oil
- **BA 1008 XT**: Oil

#### Cutting oil tray capacity
- **BA 1008**: 30 l
- **BA 1008 HP**: 100 l
- **BA 1008 XT**: 100 l

### General specifications
#### BA 1008
- **Length**: 2400 mm
- **Width**: 650 mm
- **Height**: 1675 mm
- **Weight**: 950 kg

#### BA 1008 HP
- **Length**: 2700 mm
- **Width**: 872 mm
- **Height**: 1920 mm
- **Weight**: 1200 kg

#### BA 1008 XT
- **Length**: 2400 mm
- **Width**: 650 mm
- **Height**: 1675 mm
- **Weight**: 950 kg
A global footprint

Rooted in Switzerland, Tornos’ global footprint keeps us close to you. Economy, flexibility and efficiency are the most important premises of the Tornos Group’s production and assembly network.

Lean assembly and careful use of resources are the guiding principles behind all Tornos production planning and an integral part of the entire production process.

The same consistent quality standards are enforced at all locations around the globe. Intelligent linking of knowledge between our plants, along the commitment and know-how of our employees—enable production to begin right on time.

Wherever you are in the world, we keep you turning.
Complies with current CE/EMC safety directives

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