



THINK PARTS THINK TORNOS



MICRO 7

High-precision CNC type automatic turning machine with sliding headstock.

NEW LINE



Tornos, the undisputed world leader in the construction of automatic turning machines designed for the production of high-value-added parts of small diameter now unveils the new Micro line.

This family of machines is characterised by the ability to achieve very high standards of precision, combined with unrivalled productivity and exemplary operating flexibility.

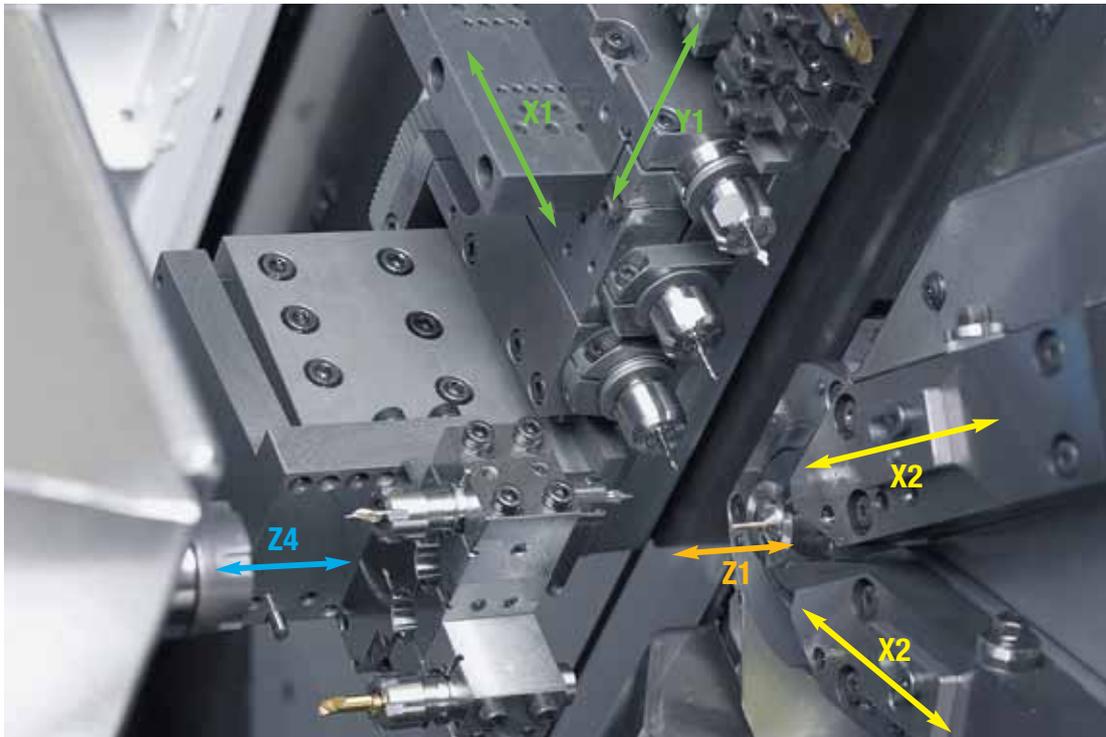
With the Micro 8 for short workpieces and the

Micro 7 for longer workpieces, Tornos offers you a solution that enables you to exceed the performance of your old cam-type machine.

Discover the benefits of Micro 7

- Productivity.
- Precision of +/- 2 microns in production.
- Flexibility and modularity.
- Simplicity.
- Value.





Micro 7 users can eliminate costly second operations, thereby simplifying production management. It also costs less and takes less time to produce high quality parts, so the machine ensures that the operators can focus on value-added operations.

Micro 7 proposes an overall productivity solution with an optimum return on investment.

Machine kinematics

- Moving parts allowing simultaneous operations and counter operations.
- Rough turning and finishing can be performed simultaneously.
- Identical power and speed of spindle and counter spindle.
- Very dynamic spindles permitting rapid acceleration and deceleration.

- Optimum swarf removal preventing unforeseen stoppages.
- Cycle times similar to those of the best available cam-type machines.

Adjustment and changeover time

- Extensive access to the machining area.
- Guide bush mounting and adjustment from the front.
- Tornos macro for tool adjustment.
- Pre-setting system permitting major time savings at tool changeover.

Strength

- Rigid structure offering great machining stability in production.
- No micro-vibrations, meaning longer cutting tool life.

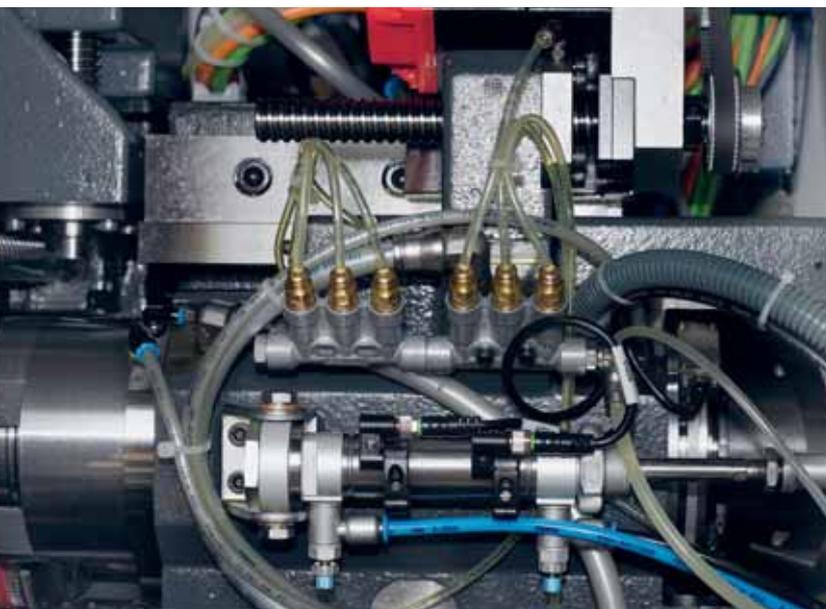
PRECISION OF +/- 2 MICRONS IN PRODUCTION

Micro 7 users are assured of dimensional and surface condition quality and production repeatability. They are also able to manufacture the most demanding parts in the market.

To ensure very high precision the Micro 7 applies the tried and tested technologies that made the Micro 8 such a success.

Solid construction, minimizing thermal and vibration effects

- Cast iron components of rigid construction, developed using CAD techniques and finite element analysis.
- Monobloc cast iron base and bench/frame.
- Highly rigid tool support mounted directly on the machine bench.
- Independent system with two very high precision tools.

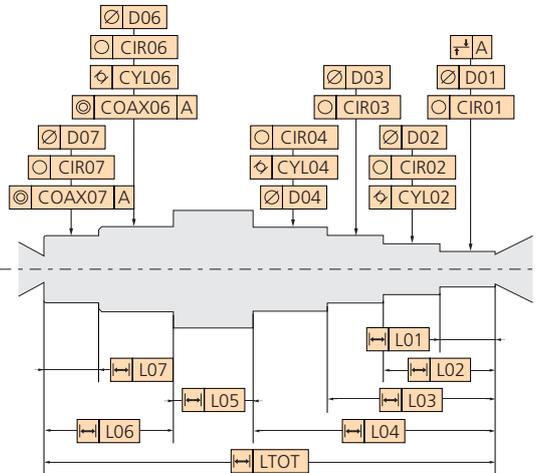
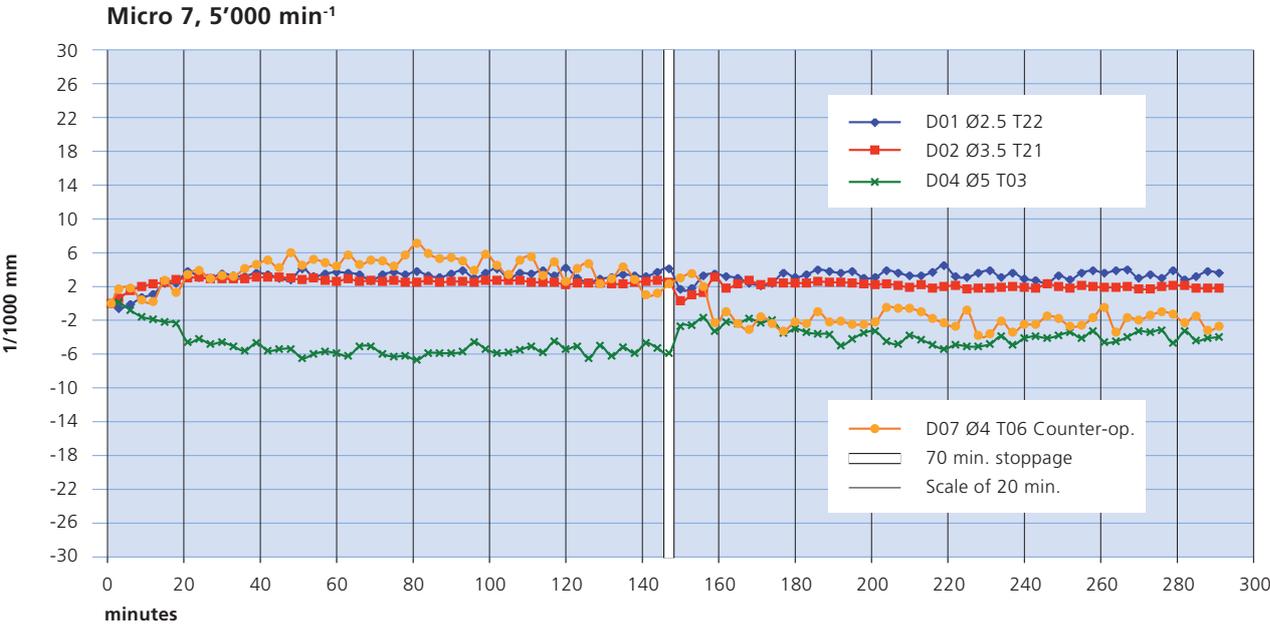


Innovative guidance systems and spindles

- Innovative concept for the main spindle and counter spindle guidance systems to avoid thermal influence on the spindle centre position.
- Powered spindle with thermal regulation.
- Ceramic front rolling bearing located near the cutting point for greater rigidity.
- Spindle speed adjustable from 100 to 20,000 rpm.

PROVEN PRECISION IN PRODUCTION

Micro 7 users are assured of having a production tool that keeps its promises over time.



Test conditions

Workshop temperature	25.5 - 28.6°C
Material	Brass
Oil	Motorex NFX-15
Cycle time	60 seconds
Spindle speed	5,000 rpm
Feed	0.02 mm/rev.
Cutting depth	0.2 mm
Number of parts produced	385

Results

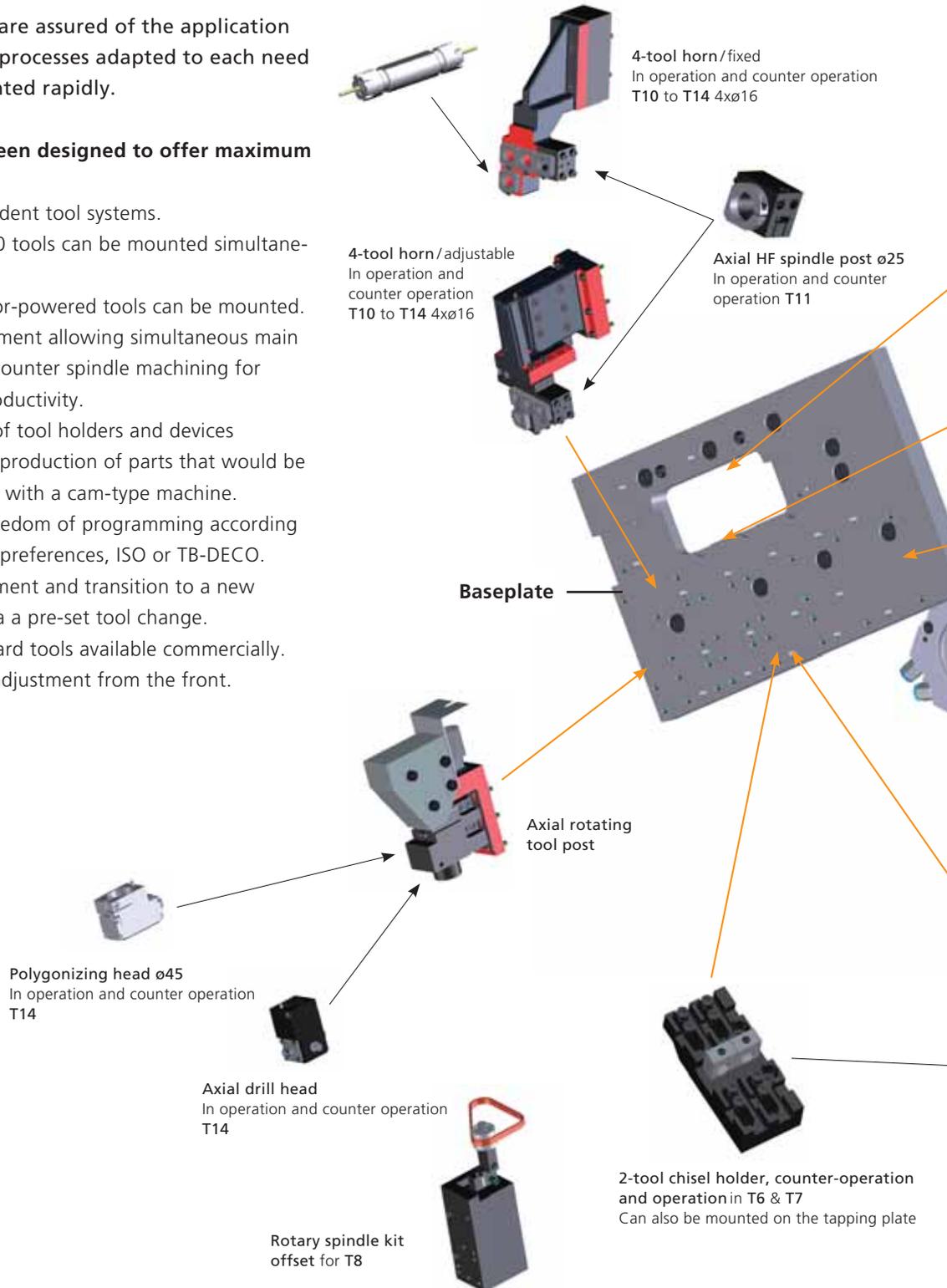
After a warm-up period of 20 minutes, the production variation, including a 70-minute stoppage, does not exceed 2.1 microns.

FLEXIBILITY

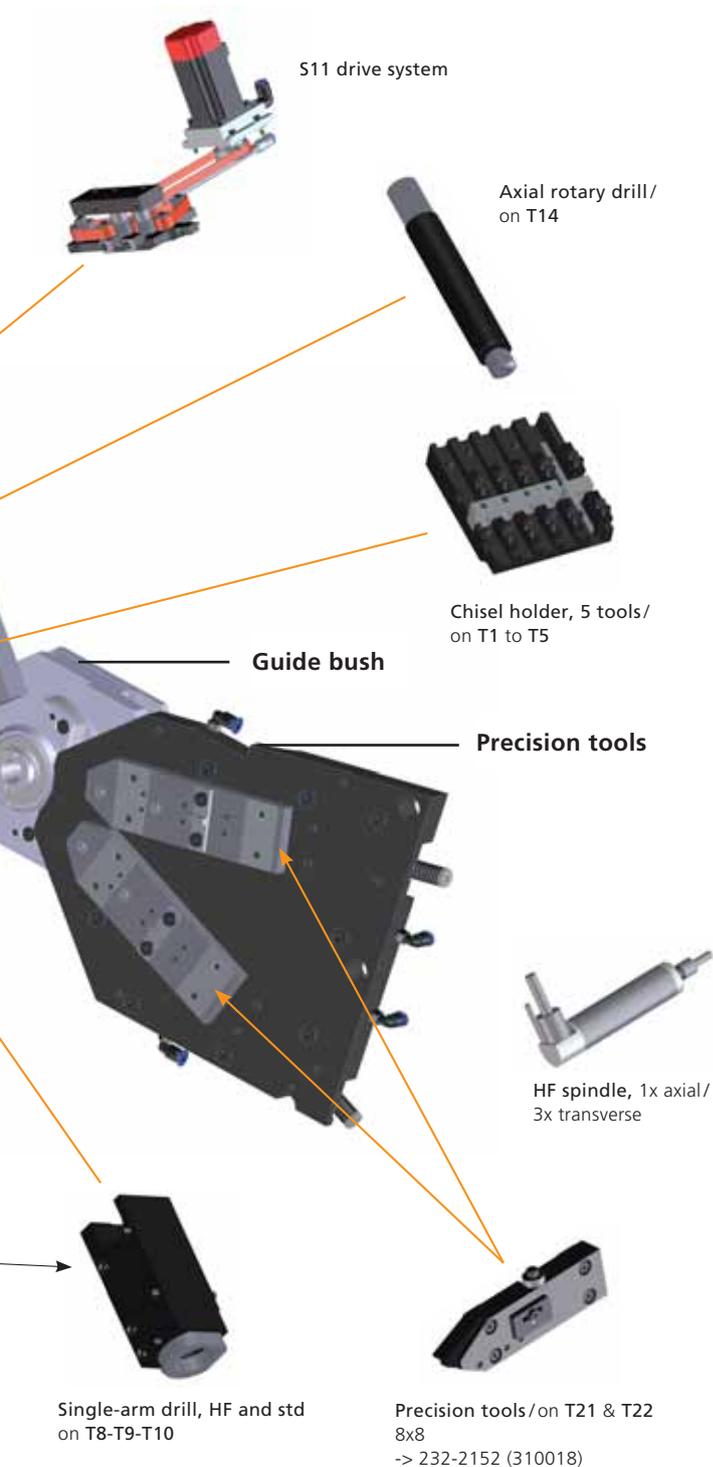
Micro 7 users are assured of the application of machining processes adapted to each need and implemented rapidly.

Micro 7 has been designed to offer maximum flexibility:

- Two independent tool systems.
- More than 20 tools can be mounted simultaneously.
- Up to 3 motor-powered tools can be mounted.
- Tool arrangement allowing simultaneous main spindle and counter spindle machining for increased productivity.
- Wide range of tool holders and devices allowing the production of parts that would be "impossible" with a cam-type machine.
- Complete freedom of programming according to the user's preferences, ISO or TB-DECO.
- Rapid adjustment and transition to a new workpiece via a pre-set tool change.
- Use of standard tools available commercially.
- Guide bush adjustment from the front.



SIMPLICITY



Micro 7 users are assured of straightforward machine integration into their current processes.

Micro 7 combines 100 years of know-how in turning small-diameter workpieces with expertly designed simplicity that has proved itself with the Micro 8 machine :

- Highly accessible machining area with tool change operations facilitated.
- Guide bush mounting and adjustment from the front.
- Control unit on swivelling arm.
- Tool pre-setting.
- Choice of ISO or TB-DECO programming.
- No special computer knowledge required.
- Short training course to quickly start working the machine competently.
- Latest-generation Fanuc control unit.
- Tornos macros available.
- Electronic handle.

VALUE

Micro 7 users are assured of a return on investment unmatched by alternate solutions available in the market.

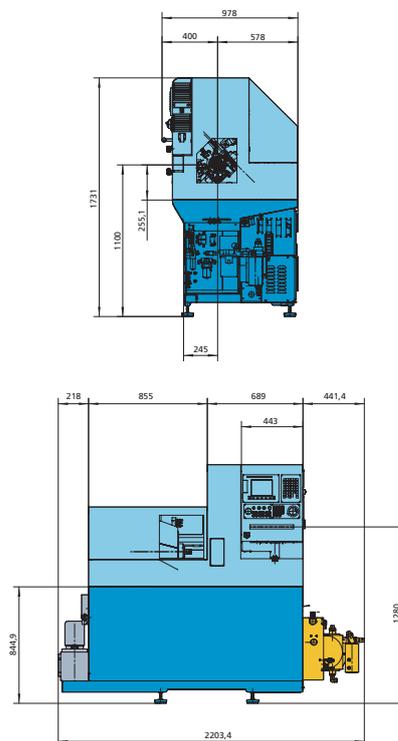
For long workpieces of average geometric complexity, the Micro 7 solution is an excellent alternative to cam-type machines :

- Highly competitive price.
- Unmatched productivity.
- Ability to work continuously.
- Flexibility and potential.

CHARACTERISTICS

TECHNICAL SPECIFICATIONS

Max. bar capacity of main spindle	mm	7
Max. turning length (1 clamping without restriction)	mm	60
Spindle speed	rpm	20,000
Spindle power	kW	2.2
Spindle locking / indexing		yes
Max. clamping diameter on counter spindle	mm	7
Max. counter spindle speed	rpm	20,000
Counter spindle power	kW	2.2
Counter spindle locking / indexing		yes
C-axes		yes
Max. number of tools		21
Rotating tool section	mm	8x8
Total number of tools for fixed / rotating end operations		4 (3/1)
Total number of tools for fixed / rotating rear operations		4 (3/1)
Total number of powered radial tools		3
Speed of rotation of rotary tools	rpm	10,000
Number of work axes		5 linear + 2 C-axes
Numerical control type		FANUC 32i-A
Weight	kg	1,700



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