

MICRO 7 – MS 7 CONTEST AT THE SUMMIT DURING THE SIMODEC TRADE FAIR

Replacing cam-type lathes with an NC lathe? Even though this challenge has been attempted many times by numerous manufacturers, Tornos announces its intention to pick up this gauntlet at the Simodec trade fair. To do this, the manufacturer has chosen to stage a contest between the Micro 7 and the MS-7, the benchmark unit!

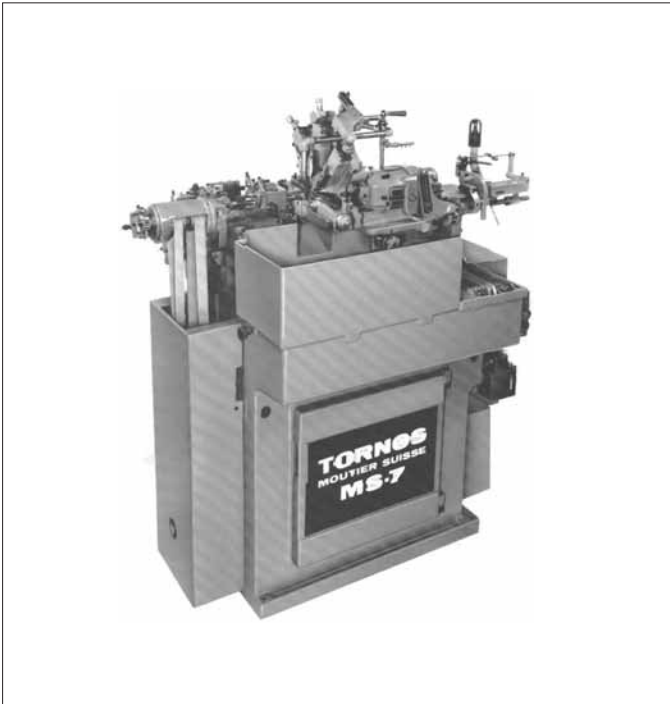


The cam-type lathe has nothing left to prove, so measuring performance against it is a real challenge.

With more than 100 years of experience, over 100,000 cam-type lathes supplied worldwide with over 40,000 still in active service and our experience of the world of NC with sales of more than 6000 DECO machines, the Swiss manufacturer is able to take up this challenge with real panache. The basic idea behind this demonstration was a wish to stage a match right at the summit. To get a firm grounding in factual reality, Tornos teamed up with MGB, one of the great European bar-turning specialists. The latter brings all its experience and expertise in the operation of cam-type machines to bear on this comparative exercise, to the point where an "MGB-enhanced" MS-7 machine features on the Tornos stand, in direct confrontation with the Micro 7.

What are the factors that influence the choice of a machine tool? Naturally enough, price is one of them. On this point the Micro 7 is less competitive than an MS-7 machine disclosed on the balance sheet with a book value of just SFr 1.-. Nevertheless, the manufacturer notes that various elements come into play during the decision-making process culminating in the purchase of a product. The contest was therefore conceived with this global vision, leaving it to each party involved to ponder the different criteria in terms of their needs and prevailing situation.

With this demonstration staged in the form of a contest, Tornos is aligning itself with the comparison logic employed in "beauty contests" between products such as cameras, to take just one example.



Tornos sets out to analyse the following criteria:

- **the cycle time;** even if the time per workpiece is only one element, it is an essential one
- **productivity;** stability during production, tool wear, pre-setting
- **precision;** speed, repeatability, temperature setting
- **technology;** power, speed, modularity, elimination of fixture changes
- **ergonomics;** setting, lubrication, access, noise, evacuation
- **future;** difficulty of finding "cam-trained" operators, access to training and simplicity – a pretty tough list!

To find out a bit more, decomagazine met up with Mr. Serge Villard, Product Manager for the Micro 7.

decomagazine: Mr. Villard, is this not a pretty bold bet to compare your product in this way against the benchmark reference of a cam-type machine?

Serge Villard: The MS-7 lathe has nothing left to prove: it is fast, reliable and precise. Measuring yourself against it, especially when it comes to speed of operation, is a real challenge. We decided to showcase this operation because we are convinced by the performance capabilities of the Micro 7 and by its ability to outclass this legendary lathe, even in the familiar field of productivity.

dm: What do other manufacturers of single-spindle lathes make of this? Did you not pick the easy solution by comparing your product to an "old Tornos product" instead of to one of the more modern products out there?

Serge Villard: Quite the contrary is true. We know that the Micro 7 outclasses its competitors in many different respects. Seeking to measure up to a benchmark reference like the MS-7 lathe is a challenge of a quite different sort.

Several of our competitors' lathes have been heralded as the successors to the cam-type lathe. Is this really true? In reality, when I go visiting bar-turning workshops in Europe or in Asia, I can't help noticing that cam-type lathes are still well represented on the ground. You have to ask yourself why this is the case. Apart from the issue of cost, one key factor is the speed to completion of a bar-turning workpiece requiring only minor to average levels of machining. This is the challenge we set ourselves with the Micro 7, first of all to produce an electronics component, then to produce some components for the watchmaking sector, a field in which the MS-7 lathe is still used a great deal.

dm: The first of the parameters you mentioned earlier was "cycle time". On what basis have you been working to confirm that you can equal the MS-7 in terms of cycle time?

Serge Villard: We conducted this contest on the basis of very tangible elements. To achieve this, we

decided to work from a basis of electronic connection components. We collaborated with MGB (Marnaz – France), a benchmark reference company in this field. We therefore had precise and measurable data for cycle times and machining processes on the MS-7 lathe. Together we chose an 'ls' component representative of this segment of the market and we worked on the program, the setting of the workpiece and its optimisation with the aim of achieving the same production outcomes as the cam-type lathe. The result emerged as a dead heat between the units in this respect.

dm: Everything depends on the choice of component doesn't it? Subject to the operations to be performed, there surely must be some differences?

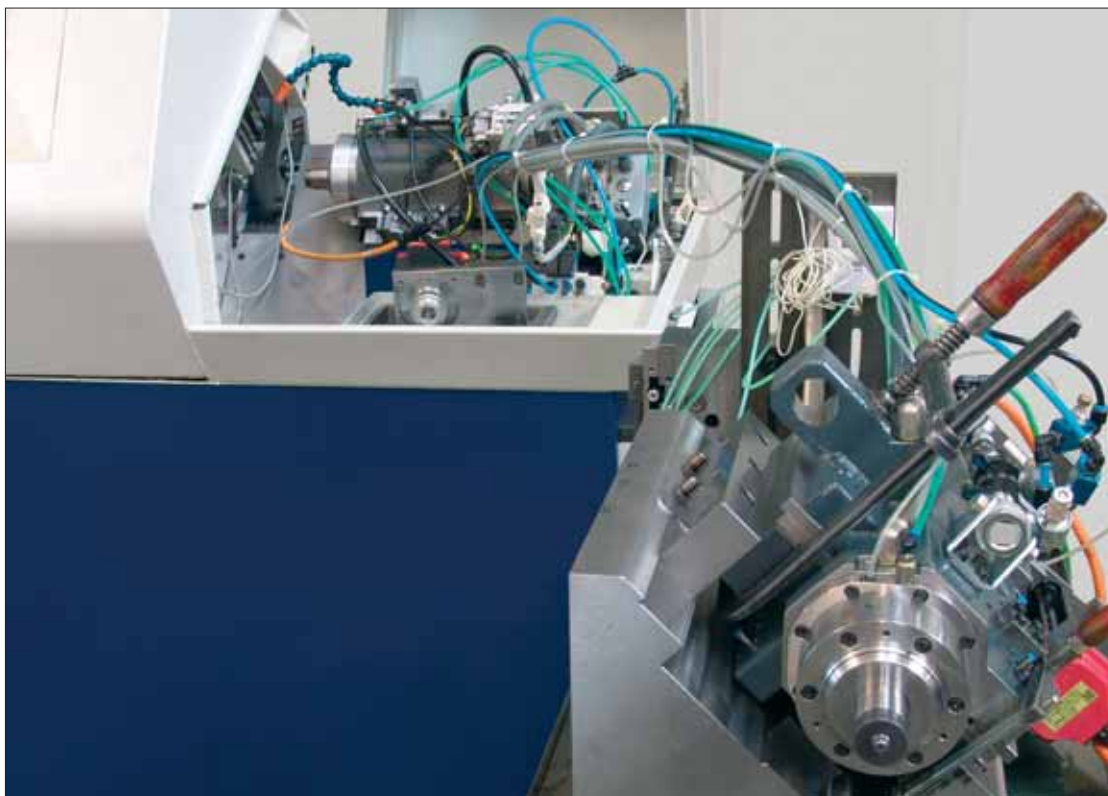
Serge Villard: You're absolutely right. It would not be correct to state that the new Micro 7 lathe would be capable of beating a cam-type lathe in all cases, and certainly not in terms of pure cycle times. Based on our first trials and on the basis of the experience gained by our customers in the use of the Micro 8 lathe, you find in some cases that we are going to be a little slower and sometimes a little faster, especially when seeking to achieve precision on difficult materials. In some cases honours are absolutely even.

dm: Let's talk now about another important parameter: precision. How well does this lathe deliver on this front? Do you believe that you'll be able to achieve results as spectacular as you did with your Micro 8?

Serge Villard: All the tests performed have shown us that precision and production stability are going to be the major arguments in favour of this machine, exactly as they already are with the Micro 8. With the Micro 7, nothing is left to chance from that point of view. This assembly is perfectly consistent and well structured, echoing the innovative concepts of the Micro 8, to such an extent that, in terms of precision, it is not only going to win this contest, but will go on to win every match over the next few years staged with different adversaries, and not just with Tornos veterans.

dm: Let's also talk about ergonomics: nowadays, operators are pretty demanding about the tools of their trade, aren't they?

Serge Villard: On this front, all I can say to our customers is quite simply to come and see this lathe, and bring your machine operators: they're going to fall in love with it! Here too, nothing whatsoever has been left to chance. We put it into the hands of our own operators right from the start of this project. All their comments have been taken into account. The



result is, in my opinion, quite remarkable, but I will leave it to our customers to deliver the final verdict. I am very confident though! That applies whether we're being compared against a cam-type machine or indeed against any similar machines already out there on the market.

dm: Are there any other determining factors that will enable Tornos to meet the challenges presented by these bar-turning customers?

Serge Villard: I believe that you really do need to come and see this lathe before you can fully appreciate its qualities. I can give you a few points which were raised by some of our customers in the course of a project, and these provide us with a reassuring level of comfort prior to this official launch.

- The modularity of the tool system enables us to adapt it to suit any conceivable user need and component.
- The impressive number of fixed or rotating tools can be adapted for bar-turning work or for tail-stock operations.

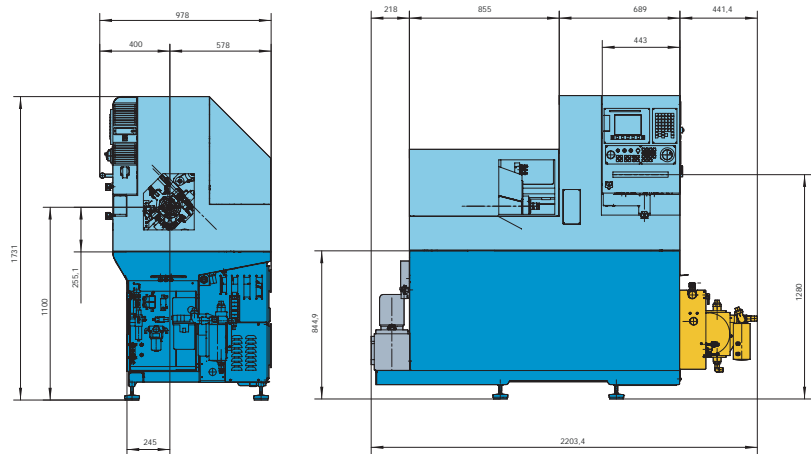
- Access to the tool area.
- The robust construction and dimensioning of constituent elements.
- The speed of axis movement.
- The flexibility for programming and the scope for pre-setting tools.
- The speed and power of the spindles!

dm: We will revisit the results of this contest in greater detail in a future edition. To conclude this presentation, how are you positioning the Micro 7 against the Micro 8?

Serge Villard: These are clearly complementary products. For short, precise components, the Micro 8 lathe is the ideal solution. For longer components, Micro 7 is the machine of choice.

I invite all readers of **decomagazine** to come and make their own minds up. They should not hesitate to get in touch with Tornos. Either myself or other people in the team will take great pleasure in demonstrating the new Micro 7 lathe.

Micro 7



Technical specifications

Bar capacity:	7 mm
Max. speed of spindle and counter-spindle (aka 'back spindle'):	20,000 rpm
Spindle and counter-spindle power:	2.2/3.7 kW
Total number of tools:	21
Total number of tools for operations with fixed/rotating ends:	4 (3+1)
Total number of tools for fixed/rotating tailstock operations:	4 (3+1)
Total number of powered radial tools:	3
Number of working axes:	5 + 2 C axes
Parallel work on spindle and counter-spindle:	Yes