



Precision meets power:
The new force in high-speed cutting

SINUMERIK

Answers for industry.

SIEMENS

SINUMERIK 840D sl: The CNC control for high-speed cutting



High-speed cutting is an exacting metal cutting method which is distinguished by its high cutting speeds. The CNC machines for these types of cutting tasks have high spindle speeds and much higher feed rates. They require a powerful CNC system.

The powerful control system for demanding solutions

The SINUMERIK 840D sl is the pioneering system platform for HSC. Whether you want perfect surfaces, precision, speed, flexibility or productivity – it delivers more than enough to meet the high requirements of HSC for medical engineering and other industries. The integrated functions provide you with support during setup and programming and they also contribute to fast and precise production sequences. The hardware and software can be scaled separately from one another and all of the components have a unique capacity for being integrated and

configured in combinations. In addition, SINUMERIK is configurable in HMI, CNC and PLC. Together with the SINAMICS S120, the SINUMERIK 840D sl is setting the standards in terms of scalability, flexibility and connectivity. And with SINUMERIK Safety Integrated – the concept with integrated and certified safety functions – you can also implement highly effective personnel and machine protection. Simple, economical and practice-oriented. SINUMERIK 840D sl reduces your requirements for CNC equipment to a common denominator: full flexibility, productivity and precision – from operating and programming to the finished workpiece.

Specialty area: High-speed cutting

A technology package that is tailored to your respective requirements



SINUMERIK
SINAMICS

ShopMill – graphical programming

CAD / CAM / PP connection

Technology cycles
Automatic measuring cycles

HMI functions

Data handling – program handling

HSC functions

The image shows a central Siemens SINUMERIK high-speed cutting machine. Surrounding it are several icons and screenshots representing different software and hardware components: SINUMERIK control panel and SINAMICS drive unit; ShopMill graphical programming interface; CAD/CAM/PP connection simulation; HMI functions screenshot; Data handling via USB drive; and HSC functions screenshot.

The consistent use of CAD/CAM technology and an optimized CAM-PP-NC interface for activating the control functions of the SINUMERIK are essential for successful high-speed machining. From the idea to the finished workpiece – SINUMERIK is involved along the entire process chain – from the clinic to the high-precision implant.

Easily convert ideas into programs

NX CAM from Siemens PLM supports the latest machine tool technology and offers powerful functions for NC programming and simulation of high-speed machines. The advantages of such machines can be effectively utilized with powerful NC programs. For machining complex free-form

surfaces, five-axis machines are often the key to efficient production. These machines are decisive for reducing setup times and for efficient metal cutting in medical engineering and for aircraft parts or turbines.



SINUMERIK 840D sl – highlights at a glance:

- The powerful CNC system for user-friendly solutions
- Easy operation and programming thanks to the proven ShopMill operating and programming software
- Integrated openness in the area of the operator interface, PLC and the NC
- High level of functionality and high degree of operating convenience during setup and measuring
- Perfect workpiece surfaces thanks to excellent motion control and highly dynamic drives
- Easy data handling thanks to Ethernet network or USB stick
- High degree of precision thanks to multi-axis kinematic measuring and optional correction of the smallest errors while the machine is operating
- Ideal utilization of technology with functions for easy measuring or calibration of multi-axis kinematics, for jerk limitation, feed forward control, look-ahead and tool orientation.

You can increase your machine tools' throughput using advanced functions for programming the widest variety of NC machines, integrated simulation and post-processing. NX CAM also offers expanded functions for realistically simulating the machining with machine tools on the basis of the integrated SINUMERIK VNCK (Virtual NC Kernel) from Siemens.

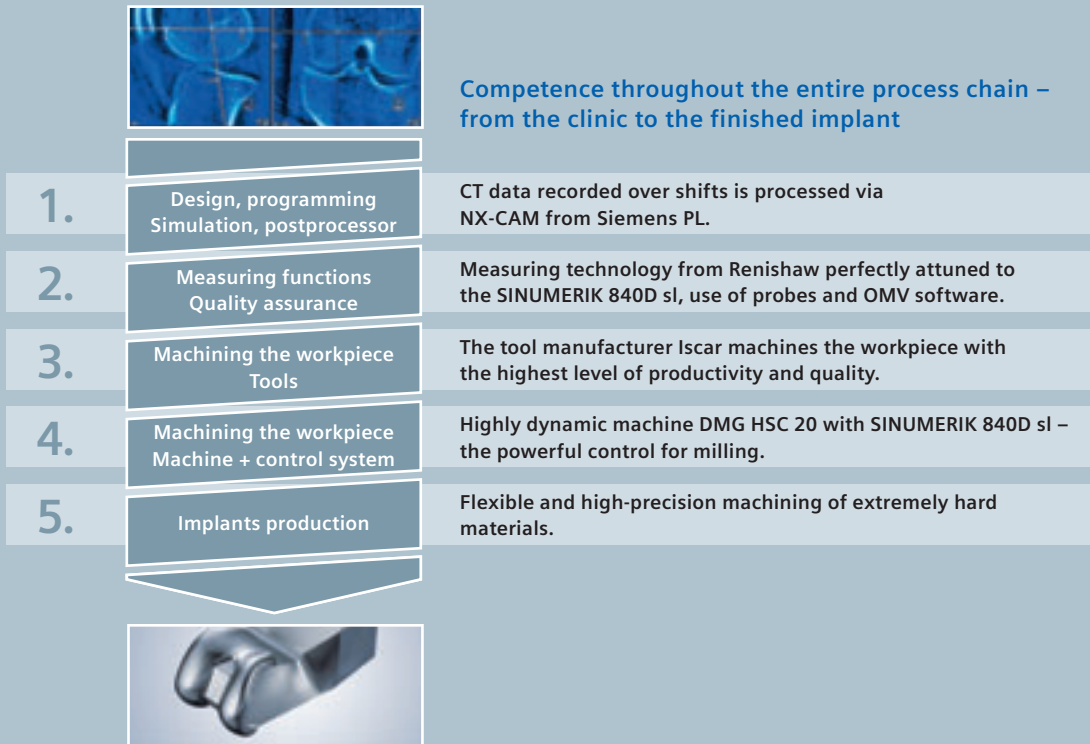
Easy setup, programming and getting started

A perfect workpiece using the finished CAM program: With SINUMERIK, setting up and programming the machine has never been easier. The integrated operator interface ensures simple and well-structured work processes in combination with smart functions on the machine. The result: Perfect surfaces for the highest demands in medical engineering.

Precisely cut

With the perfect CNC equipment and a powerful cutting machine such as the HSC 20 linear machining center from DMG, the idea of a workpiece becomes reality. Workpieces from medical engineering such as implants, knee joints, or prosthetic hips, which require sensitive and highly precise machining, are made quickly, easily and dynamically.

On the road: CNC competence for medical engineering



Whether you are dealing with tooth or bone implants, bone-screws or hip implants – new technologies and solutions are in demand of the manufacture of medical products in the growing market of medical technology. This is also the case because quality of life is becoming more and more important in later stages of life. The expectations are very high. The processes and work steps leading up to the finished product must be just as precise, simple and flexible as the implants have to be. Even in the clinic, there are countless work steps that must be run through before an implant can be used. Siemens in cooperation with DMG and their other partners, Iscar and Renishaw, are demonstrating the entire process chain in the form of a road show that focuses on the topic of high-speed cutting.

Diagnostics: highly precise and flexible

Do you work in the metal cutting industry, as in medical technology or mold and die making? Then you will be interested to know how important the innovative solutions for manufacturing prosthetics and implants using HSC machining are. We will give you a live demonstration of the CNC solution using medical engineering workpieces as examples – from the clinic to the finished implant. From creating the CAD/CAM data using NX CAM from Siemens PLM, the easy programming and setting up of the SINUMERIK CNC system from Siemens, all the way to the extremely precise cutting of the workpiece at the HSC 20 linear cutting center from DMG.

This allows the dynamic production of medical engineering workpieces throughout the entire production process. Quick, easy, flexible, and precise.

Get more information

Everything to do with SINUMERIK CNC equipment:
www.siemens.com/sinumerik

Further information about the road show:
www.siemens.com/high-speed-cutting

Siemens AG
Industry Sector
Motion Control Systems
P.O. Box 31 80
91050 ERLANGEN
GERMANY

www.siemens.com/high-speed-cutting

Subject to change without prior notice
Order No.: E20001-A940-P610-X-7600
Dispo 06311
21/17766 GD.MC.10.HSCM.59.9.01 WS 11081.0
Printed in Germany
© Siemens AG 2008

The information provided in this brochure contains merely general descriptions or characteristics of performance which in actual case of use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract.

All product designations may be trademarks or product names of Siemens AG or supplier companies whose use by third parties for their own purposes could violate the rights of the owners.