

SIEMENS



SINUMERIK 808D SINUMERIK 808D ADVANCED

Outstanding performance. Simply smart.
Perfectly preconfigured CNC for basic standard machines

siemens.com/sinumerik

Answers for industry.

Three-year warranty*

After the SINUMERIK 808D / 808D ADVANCED CNC system has been delivered, if there are quality issues during the warranty period relating to components, such as the CNC, servo drive, motor or cables then Siemens will replace the part and the associated on-site service is free of charge.

support.automation.siemens.com



* Standard warranty period : 24 months from 1st delivery of equipment package from Siemens factory.
Extended warranty period: 36 months from 1st delivery of equipment package from Siemens factory,
when registration is completed within the standard warranty period.

SINUMERIK 808D and SINUMERIK 808D ADVANCED

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Siemens Machine Tool Systems

Siemens Machine Tool Systems – your partner for machine tools

A strong partner for the machine tool environment

SINUMERIK CNCs have been setting standards in the machine tool market for more than 50 years. With the power and innovation of a unique and experienced development team in the industry, Siemens is there to ensure that highly productive machine tools can also be implemented in the future based on SINUMERIK control systems. In addition to innovation, quality is first and foremost, and based on continuous improvements in development, production and test processes, we ensure maximum availability of software and hardware products.

Global organization

With a closely meshed network of sales, service and training locations, as well as international production facilities, Siemens Machine Tool Systems is optimally organized to globally market machine tools. Here, our own Technology and Application Centers (TACs) prove our technological expertise, and secure the ergonomics of our CNC software in practical use. Additionally, Siemens is the pioneer when it comes to sustainability and energy efficiency as Siemens Machine Tool Systems plays a leading role when it comes to energy-efficient equipment for machine tools.

SINUMERIK 808D and SINUMERIK 808D ADVANCED: the entry-level CNCs for basic standard machines

With SINUMERIK 808D and SINUMERIK 808D ADVANCED, the latest CNC technology is now available for basic standard milling machines and lathes. It goes without saying that Siemens also ensures that entry level CNCs have the maximum degree of robustness. This means that coated electronic boards and assembly under strict German quality guidelines are an absolute must. With over 50 years of experience in CNC technology, SINUMERIK CNCs guarantee maximum machining performance. In fact, SINUMERIK 808D and SINUMERIK 808D ADVANCED also continues this long tradition by offering the latest CNC system architecture as well as proven CNC features. Since SINUMERIK 808D and SINUMERIK 808D ADVANCED are members of the SINUMERIK family, operators enjoy the benefits of fully-compatible CNC operation as well as CNC programming.

Small, robust, simple ... simply smart



Robust and user-friendly

Thanks to a panel-based CNC design, SINUMERIK 808D and SINUMERIK 808D ADVANCED reduce the number of sensitive system interfaces to a minimum. Together with an IP65 degree of protection at the front panel, SINUMERIK 808D / 808D ADVANCED offers a long service life, even under harsh environmental conditions. In addition to the robustness, SINUMERIK 808D / 808D ADVANCED sets itself apart as a result of its user-friendliness. Mechanical keys guarantee maximum convenience when entering parameters on a daily basis – and hotkeys and softkeys make CNC operation absolutely intuitive. Last but not least, data can be transferred via the USB port on the front panel. And what is really important in machining environments: full IP65 degree of protection is guaranteed when the front cover is closed!

Preconfigured for basic standard lathes and milling machines

SINUMERIK 808D / 808D ADVANCED Turning offers exactly what basic standard lathes require – a high contour accuracy coupled with a high dynamic performance. This guarantees maximum machine productivity, especially when it comes to the typical mass production of turned workpieces. With the milling version, SINUMERIK 808D / 808D ADVANCED Milling is the perfect fit for vertical machining centers. Thanks to the Advanced Surface function, SINUMERIK 808D / 808D ADVANCED Milling can also be used to machine basic mold & die parts. As a consequence, SINUMERIK 808D and SINUMERIK 808D ADVANCED have an unbeatable price-performance ratio when it comes to equipping basic standard machine tool applications for milling.



With an intelligent, robust and easy-to-use hardware concept, SINUMERIK 808D and SINUMERIK 808D ADVANCED set the benchmark when it comes to basic standard turning and milling machines.

SINUMERIK – a CNC portfolio for the global machine tool environment



SINUMERIK 808D / SINUMERIK 808D ADVANCED

- Panel-based compact CNC
- Technologies: turning and milling
- Up to 5 axes / spindles
- 1 machining channel
- 7.5" color display
- S7-200 PLC

SINAMICS V60

SINAMICS V70

SIMOTICS
S-1FL5

SIMOTICS
S-1FL6

SINUMERIK
808D

SINUMERIK
808D
ADVANCED

Smart class

SINUMERIK 828D / SINUMERIK 828D BASIC

- Panel-based compact CNC
- Technologies: turning and milling
- Up to 8 axes / spindles
- 1 machining channel
- 8.4" / 10.4" color display
- S7-200 PLC

SINAMICS S120

SINAMICS S120 Combi

SINUMERIK
828D BASIC

SINUMERIK
828D

Compact class

SINUMERIK 840D sl

- Drive-based, modular CNC
- Multi-technology CNC
- Up to 93 axes / spindles
- Up to 30 machining channels
- Modular panel concept up to 19" color display
- SIMATIC S7-300 PLC

SINAMICS S120
Combi

SINAMICS S120

SINUMERIK
840D sl BASIC

SINUMERIK
840D sl

Premium class

An overview of the PPU (Panel Processing Unit)

Communicative:

- Front panel USB (IP65)
- Serial interface RS232C
- RJ45 Ethernet at the rear (SINUMERIK 808D ADVANCED only)



Optimal view:

- 7.5" LCD color display with 640x480 resolution

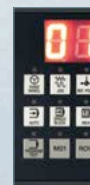
User-friendly:

- Technology-specific keyboard layout
- Hard keys with protective membrane



Process-safe:

- LED tool number display
- MCP with rotary switch for feed and spindle override



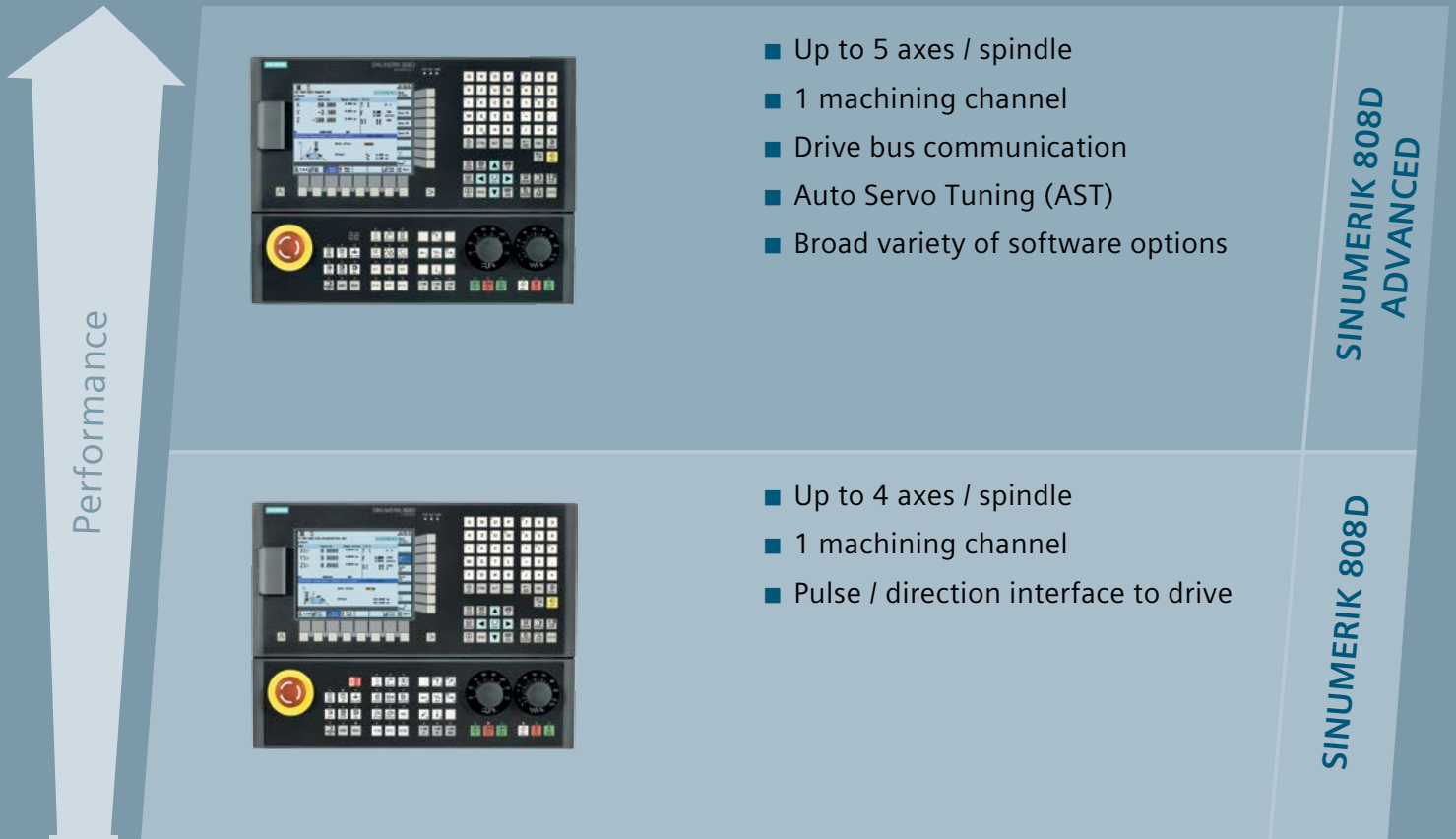
Robust:

- No fan
- No hard disk

Maintenance-friendly:

- No battery. Continuous data buffering based on NV-RAM technology (SINUMERIK 808D ADVANCED only)
- IP65 degree of protection on front

SINUMERIK 808D ADVANCED and SINUMERIK 808D – optimum scalability in the entry class



SINUMERIK 808D and SINUMERIK 808D ADVANCED offer a broad performance range for entry class machines. With the drive bus technology, SINUMERIK 808D ADVANCED together with SINAMICS V70 and SIMOTICS S-1FL6 guarantees a high system performance.

Both, SINUMERIK 808D and SINUMERIK 808D ADVANCED, offer a high cost-performance ratio for basic standard machines.

SINAMICS and SIMOTICS – the powerhouses behind the scenes



	<ul style="list-style-type: none"> ■ Rated torque 1.9 – 40 Nm ■ Drive line input 400 V ■ Up to 300% overload ■ 2 encoder-options: Incremental encoder with 2500 ppr Absolute encoder with 20-bit resolution ■ Motor speed up to 4000 rpm ■ Safe Torque Off (STO) ■ Degree of protection IP65 	SINAMICS V70 SIMOTICS S-1FL6
	<ul style="list-style-type: none"> ■ Rated torque 4 – 10 Nm ■ Drive line input 220 V ■ 200% overload ■ Incremental encoder with 2500 ppr ■ Motor speed 2000 rpm ■ Degree of protection IP54 	SINAMICS V60 SIMOTICS S-1FL5

SINUMERIK 808D / 808D ADVANCED in conjunction with SINAMICS drives and SIMOTICS motors are optimally designed to address the requirements of basic standard lathes and milling machines.

Surprisingly high dynamic performance and precision for basic lathes and milling machines

Packed with innovative CNC features, SINUMERIK 808D and SINUMERIK 808D ADVANCED offer an unbeatable workpiece accuracy and cutting efficiency, which is generally only expected from more sophisticated CNC systems.

Maximum precision and accuracy

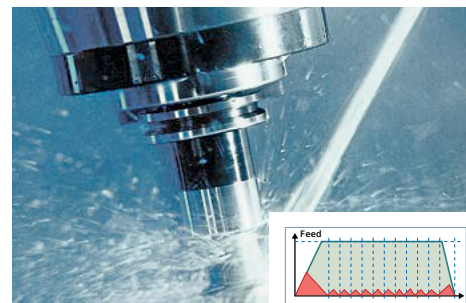
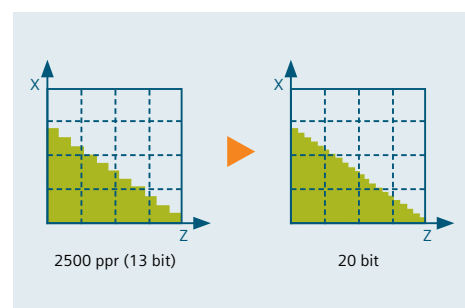
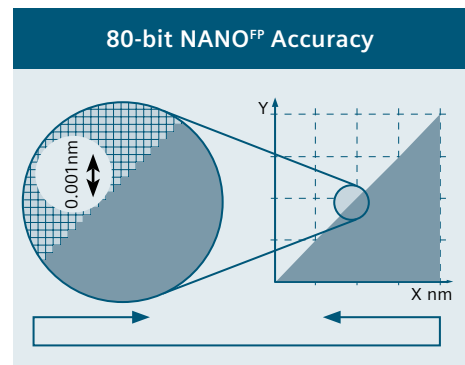
As a result of the 80-bit NANO^{FP} accuracy, SINUMERIK 808D / 808D ADVANCED offers a calculation accuracy in the nanometer range – far beyond what even a high-end machine tool can achieve. Both CNCs also feature an intelligent jerk limitation function. This bell-profile acceleration characteristic not only guarantees smooth path behavior, but also reduces the stress on the mechanical system of the machine. As a consequence, SINUMERIK 808D / 808D ADVANCED guarantees maximum workpiece precision.

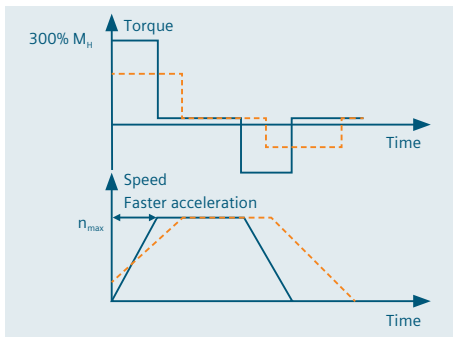
High-resolution position feedback

SIMOTICS S-1FL6 motors support 2500 ppr incremental encoders as well as 20-bit absolute encoders, which precisely feed back the actual motor position. This ensures high precision and optimum surface quality of the finished workpiece.

Prepared for mold & die

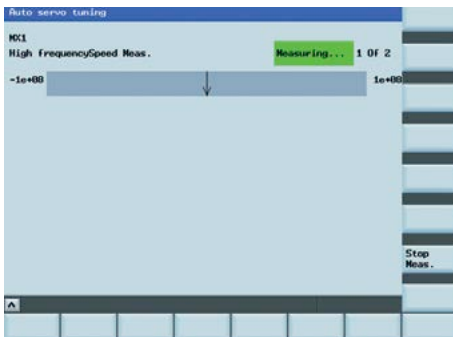
Mold and die applications are the biggest challenge for milling machines. In order to allow free forms to be machined, SINUMERIK 808D ADVANCED features state-of-the-art Advanced Surface with innovative Look Ahead algorithms and dynamic compression of linear and circular blocks. This means that perfectly smooth workpiece surfaces can be achieved when carrying out line-by-line milling of molds.





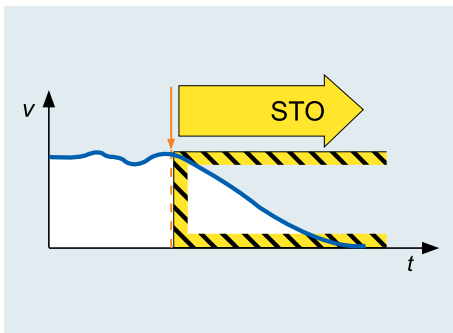
High speed

The SIMOTICS S-1FL6 motor has a maximum speed of 4000 rpm, so that axes can be operated up to their physical limit. Thanks to the 300% overload capability of the SINAMICS V70 drive and SIMOTICS S-1FL6 motor, faster acceleration and deceleration are possible with SINUMERIK 808D ADVANCED. As a result, the non-cutting operating times of basic machines are reduced and higher productivity is achieved.



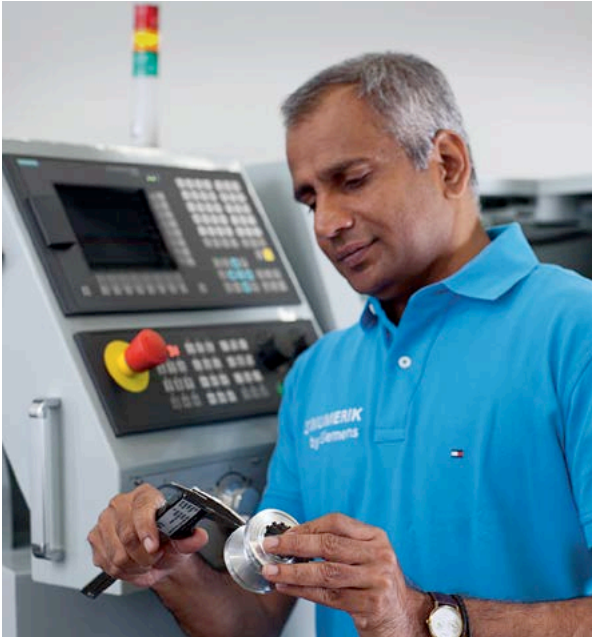
Intelligent machine optimization

With the proven Auto Servo Tuning (AST) function, users can easily optimize the machine using the SINUMERIK 808D ADVANCED system. By selecting the tuning strategy, the CNC and drive parameters are automatically optimized according to the machine condition. Thus, basic standard machines can be optimized to address applications demanding a high dynamic performance.



Protection for man and machine

The drive-based Safe Torque Off (STO) function prevents the unexpected machine movement by double-channel protection which complies with the European Safety Standards (CE, SIL3). SINUMERIK 808D ADVANCED together with SINAMICS V70 means that this safety function can now be integrated in basic machines.



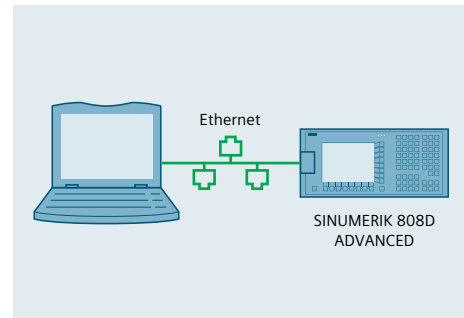
Operation just like a PC

The SINUMERIK Operate BASIC user interface has many helpful features – providing the same look & feel as a PC.

Easy communication via USB or Ethernet*

Machine commissioning and part program management become quite easy with the high-speed USB and Ethernet interface. For instance, series machine commissioning can be simply carried out by using a USB stick, and part programs can be managed at a PC.

* Ethernet interface only available for SINUMERIK 808D ADVANCED



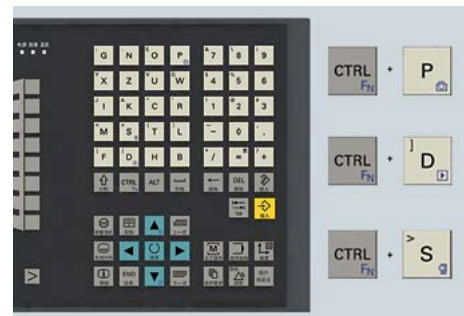
PC-style file handling

With SINUMERIK 808D / 808D ADVANCED, part programs in a linear memory and names in the form of cryptic numbers are thing of the past. Part programs can be allocated meaningful names and the CNC memory can be easily structured by using subfolders – just the same as for a PC.



Convenient shortcuts

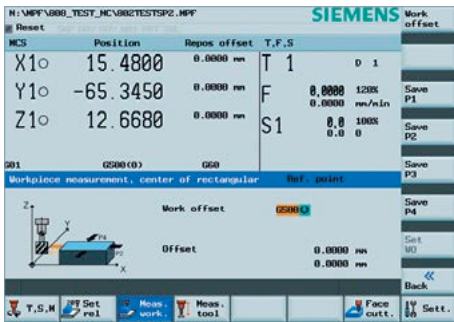
In order to open the most commonly used HMI screens, such as the tool offset list or the Program Manager, SINUMERIK 808D / 808D ADVANCED offers hotkeys on the operator panel. Furthermore, HMI features are linked to convenient shortcut keys. With Ctrl+P for instance, screenshots from the HMI can be stored as bitmaps on the memory stick or Ctrl+S generates a complete CNC system backup file.



Optimal support for day-to-day operations

The machining process itself is not the only influencing factor when it comes to the overall productivity. The setup time also plays a role: For example, determining zero offsets or tool dimensions are decisive for the overall machining time.

SINUMERIK 808D/808D ADVANCED offers a whole raft of intelligent features to reduce these non-productive times.



Intelligent JOG

The common JOG mode is certainly not adequate when it comes to preparing the machining job. As a consequence, SINUMERIK 808D/808D ADVANCED offers additional intelligent JOG features: a fully graphically supported tool and workpiece probing and cutting cycles. These allow blank parts to be prepared without having to create a part program. Also simple machine functions, such as coolant on/off or the selection of the spindle gear, can be managed without having to key in cryptic G codes.



Tool handling

Precise tool data handling is very important in order to guarantee maximum process reliability. As a consequence, SINUMERIK 808D/808D ADVANCED offers clearly structured and intuitive tool handling. Tools are displayed with easy-to-understand tool icons, and tool wear data can be entered to ensure the high workpiece quality.



Best onboard support with startGUIDE

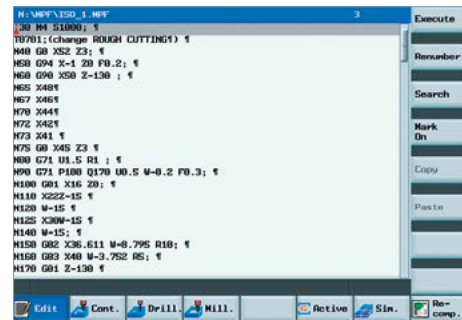
StartGUIDE in SINUMERIK 808D/808D ADVANCED provides support from engineering and production through sales to operation and programming during all process steps of the machine. The startup wizard of startGUIDE features a graphical interactive wizard for machine commissioning. The sales wizard supports the machine tool sales by showing a slide show with sales arguments for SINUMERIK CNCs as well as the machine. The operation wizard teaches users how to operate SINUMERIK 808D/808D ADVANCED with the help of a graphic guide.

Perfect in all CNC programming styles

Different operators request different CNC programming styles. On one hand, operators still use the ISO-style CNC programming. On the other hand, certain industries, such as the automotive industry or simply operators who need more flexibility and technological features, request a more modern CNC programming language. To address these demands, SINUMERIK 808D/808D ADVANCED features two different styles of CNC programming.

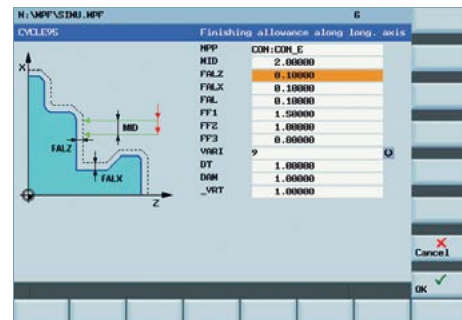
ISO-style CNC programming

SINUMERIK 808D / 808D ADVANCED offers the common ISO code programming language. This allows operators familiar with other ISO-based CNC systems to quickly make a transition to SINUMERIK 808D / 808D ADVANCED. In addition to the standard G codes, such as G01, G02, canned cycles like G81 or G74 are also available. If an operator requires more technological features, the standard ISO codes can be mixed with high-level SINUMERIK CNC commands. This makes it easy to explore and understand the wealth of technological features provided by SINUMERIK 808D / 808D ADVANCED.



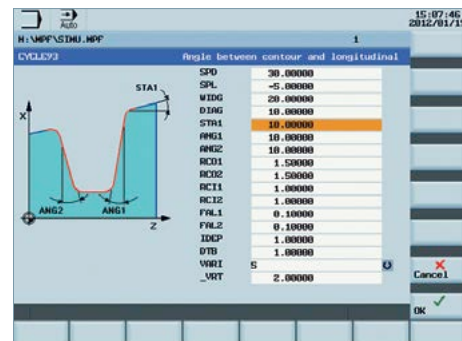
SINUMERIK high-level CNC language

In addition to the standard ISO codes, SINUMERIK 808D / 808D ADVANCED offers the SINUMERIK high-level CNC language, which has established itself around the world. This extends the technological scope as well as the flexibility. In addition to standard G codes, meaningful CNC commands for calculations and coordinate transitions are provided. A wide range of technology cycles is available in the form of programGUIDE BASIC. Fully graphic input screens perfectly support the entry of technology cycle parameters.



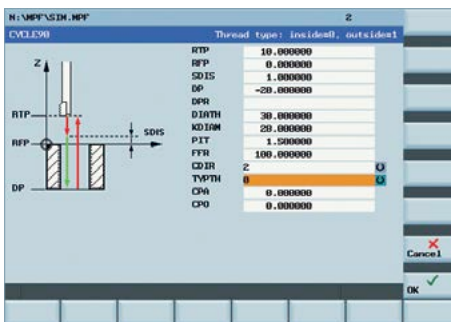
Technology cycles for turning

In order to fully leverage the technology of lathes, SINUMERIK 808D / 808D ADVANCED features a best-in-class turning cycle package. A wealth of functions are integrated, such as machining standard contours, grooves and thread undercuts, cutting of various thread types – and even a powerful contour stock removal cycle. These cycles allow the optimum performance to be obtained from lathes with just a few parameter settings.



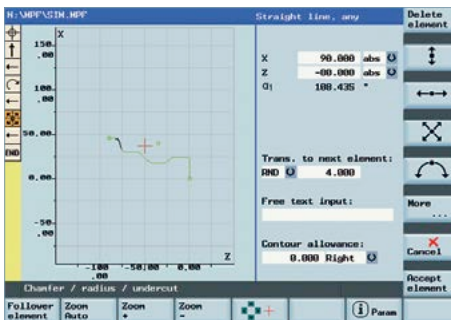
Maximum technology and CNC programming support

With a wide range of technology cycles, SINUMERIK 808D/808D ADVANCED offers a best-in-class technological performance. CNC programs can be very efficiently generated thanks to intelligent help features such as a contour computer and powerful CNC program simulation.



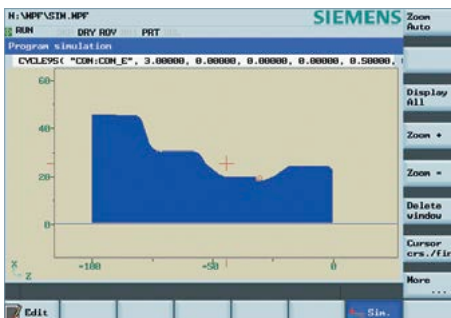
Technology cycles for drilling and milling

When it comes to drilling and milling operations, SINUMERIK 808D/808D ADVANCED is a top performer. Boring, centering, drilling, thread milling, pocket machining are no problem! There is even a machine cycle to support parameter input for high-speed mold & die applications. And the best is yet to come: drilling and milling operations can be linked to a variety of position patterns, and of course, with graphic input screens.



Contour computer

Using an integrated contour computer, even complex contours can be directly created at the CNC without requiring a CAD/CAM system. A pocket calculator is not required since the contour computer calculates partly defined contour elements automatically.



Simulation

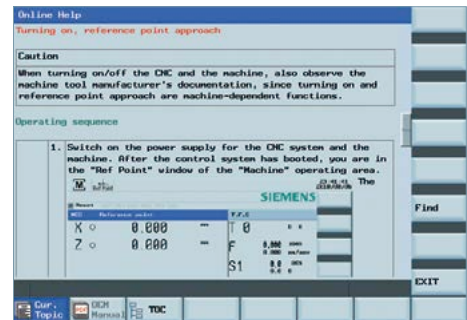
In order to guarantee maximum process reliability, SINUMERIK 808D/808D ADVANCED offers a powerful simulation routine. With its "solid graphics", the simulation perfectly displays how the blank part is machined and material is removed. The simulation can be used to check the program prior to machining and during machining in order to display the tool path when it is difficult to see the machining operation, for example, as a result of coolant or spray mist.

Best-in-class operator support – onboard as well as offline

With a context-sensitive onboard help, SINUMERIK 808D/808D ADVANCED offers a unique feature to learn, explore and simplify state-of-the-art CNC machining operations at the push of a button. Thanks to SINUMERIK 808D on PC, CNC learning and offline programming can be done conveniently on a PC. Customers can also choose from a variety of training materials that they are interested in.

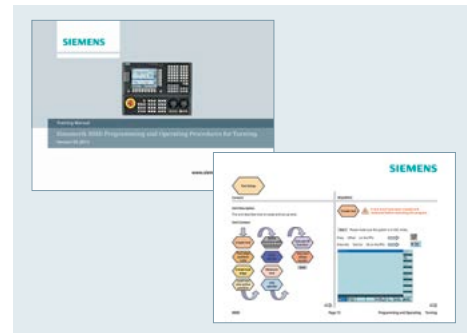
Context-sensitive onboard help

The times of having to sit in front of the CNC flipping through a lot of paper are now gone. SINUMERIK 808D / 808D ADVANCED provides comprehensive context-sensitive onboard by just pushing the info button on the operator panel.



Multimedia training material

There is a variety of options that operators have when it comes to learning about SINUMERIK 808D / 808D ADVANCED. A tutorial video and a well-organized training document that explains step-by-step how easy it is to get from the drawing to the finished part.



SINUMERIK 808D on PC

SINUMERIK 808D on PC offers learning, training and offline programming at the desk. A real SINUMERIK CNC kernel and a real SINUMERIK Operate BASIC operator interface allow fully fledged CNC operation and CNC programming. With its fully operable software-based machine control panel, SINUMERIK 808D on PC has the same look & feel as a real machine. And what makes it especially interesting is that SINUMERIK 808D on PC software can be downloaded free of charge!

www.siemens.com/cnc4you





All-round technological competence

With an extremely well-qualified team of machinists, trainers and service engineers, Siemens helps to optimally set up machining processes and keep productions running smoothly at top speed.



SINUMERIK training

SITRAIN offers professional training for operation, programming, commissioning and maintenance of SINUMERIK controls in more than 50 countries around the globe.

www.siemens.com/sitrain



On-site service and support

Our service and maintenance technicians are always available to keep your productions running smoothly. Their excellent technical training and quick response times ensure that machine downtimes are kept to a minimum. Our global experts can be found by visiting www.siemens.com/sinumerik



Always close by: technology and application centers

We employ highly-qualified machining specialists in our Technology and Application Centers (TACs), which are available to give advice and support at all times. We regard our global TACs as “breeding grounds” for our technological advancement – to guarantee that all CNC functions are ideally geared to practical use and are as user-friendly as possible. Further information is available at:

www.siemens.com/cnc4you

Technical data

	SINUMERIK 808D	SINUMERIK 808D ADVANCED
	PPU141.1	PPU16x.2
Configuration		
Mechanical design	Panel-based	
Operation with SINAMICS V60 and SIMOTICS S-1FL5 via pulse / direction interface	●	–
Operation with SINAMICS V70 and SIMOTICS S-1FL6 via drive bus interface	–	●
Maximum number of axes / spindles	4	5
± 10V analog interface for spindles	●	●
CNC user memory	1.25 MB	
Additional CNC user memory on USB stick	●	●
Display size (TFT color displays)	7.5"	
PLC adaptation control	S7-200-based	
Standard data transfer RS232C	●	●
Standard data transfer via USB	●	●
Standard data transfer via Ethernet	–	●
Number of digital I/O	72 / 48	72 / 48
Tool probe interface	●	●
Axis functions		
Acceleration with jerk limitation	●	●
Dynamic Servo Control in the drive	–	●
Feed motor, max. speed	2000 rpm	Up to 4000 rpm
Drive and motor overload capability	200%	Up to 300%
2500 ppr Incremental encoders are supported	●	●
20-bit absolute encoders are supported	–	●
Interpolation		
Interpolating axes, up to (turning / milling)	3 / 4	3 / 4
Straight line, circle, helix	●	●
Thread cutting with constant or variable pitch	●	●
Rigid tapping	●	●
Advanced Surface	Milling	
Look Ahead, number of blocks (turning / milling)	1 / 50	1 / 50
Compressor	–	●
Couplings		
Synchronous axis pair (gantry basic)	–	●
Transformations		
Face / peripheral surface transformation (TRANSMIT / TRACYL without Y axis)	–	●

	SINUMERIK 808D	SINUMERIK 808D ADVANCED
	PPU141.1	PPU16x.2
SINUMERIK synchronous architecture		
Asynchronous subprograms ASUB	●	●
Compensations		
Backlash and leadscrew compensation	●	●
Bidirectional leadscrew compensation	–	●
Friction compensation	–	●
Tools		
Number of tools/cutting edges in the tool list, up to	64 / 128	64 / 128
Driven tool for turning	–	●
CNC operation		
SINUMERIK Operate BASIC	●	●
T, S, M function in JOG	●	●
Graphic guided tool / workpiece measuring in JOG	●	●
Block search with calculation (T, S, F, M, position)	●	●
SINUMERIK 808D on PC (can be downloaded free of charge)	●	●
CNC programming		
SINUMERIK CNC programming language with high level language elements	●	●
ISO code CNC programming language with canned cycles	●	●
ProgramGUIDE BASIC (technology cycle support)	●	●
Technology cycles for drilling, milling and turning	●	●
Contour computer	●	●
2D CNC simulation and simultaneous recording (real-time simulation)	●	●
Onboard optimization and diagnostics		
Context-sensitive onboard help system	●	●
Onboard signal and network diagnostics	●	●
Onboard servo and drive optimization (AST)	–	●
Onboard drive commissioning and diagnosis	–	●
Service planner	●	●
Safety functions		
Safe Torque Off (drive-based)	–	●
Open Architecture		
Customized HMI extension (Easy XML)	●	●
User cycle	●	●

– not available ● available (certain functions are available as CNC option, please ask your machine tool manufacturer)

Everything about SINUMERIK CNC
can be found online

www.siemens.com/sinumerik

Learn more about our
machine tool solutions

> Detailed information and
videos about our
products and services



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Order No.: E20001-A1560-P610-V1-7600
Dispostelle 06311
WÜ/1000137097 V1.MK808D.WES WS 12132.0
Printed in Germany
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downloads of SINUMERIK 808D on PC,
tutorials and more:
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