

The more complex,  
the better:  
Sophisticated  
prototypes and  
models are Wehl &  
Partner's preferred  
business

■ Wehl & Partner, Germany

# “Models” on the Road to Success

Quick, precise, flexible model and prototype production with Sinumerik.

**T**he more complex, the better. With this self-assured fundamental motto, Wehl & Partner GmbH in Zimmern ob Rottweil, Germany, has become a sought-after partner of the well-known company throughout Europe in a relatively short period of time. The core competence is model and prototype construction in a wide range of variants. When it comes to cutting, the company relies on a dozen CNC machining centers with Sinumerik 810D, the compact digital control system from Siemens.

## Prototype of a Swabian Company

The tale is true: Bernardo Wehl and his partner Uwe Haag started manufacturing model and prototype components out of molded plastic in a garage in 1994, they hardened them in the oven and sold them to prospective customers virtually on their doorsteps. These times have long gone, and the two Swabian inventors are running a company that is just as creative and agile – and successful as a result. More specifically, it is a small group of specialized companies: as well as the “headquarters” that currently employs 30 people in “In-Kom Südwest,” the municipal industrial park on the edge of Zimmern, there are now establishments in Gingen, Germany (sinter technology), Bad Lauterberg, Germany (investment casting) and Aizòain in Pamplona, Spain (rapid prototyping). In addition, it uses its resources and methods to take on products with high success potential, develops them further, produces them under its own management and sells them on. Primarily however, Wehl & Partner sees itself as a sub-contractor for customers.

The company has accumulated a wealth of experience and now offers a variety of services ranging from stereolithography to selective laser sintering, vacu-

um casting and injection molding to CNC cutting technology. The Swabian’s use these technologies to create highly-complex product models true to the originals, and almost every kind of prototype, also in original materials. From casings for D.I.Y. appliances, to diverse automotive parts, artistic models and exhibition pieces. Batch size 1 to 10 is the rule here; if there is a tight deadline, it also produces small batches (50, 100, 200 pieces), for instance, for cast tools in separate production. Its satisfied customer base includes a number of well-known companies from all over Europe such as Airbus, Bosch, Daimler, Marquardt, Porsche and Siemens, to name but a few.

## Digital Compact Control System Preferred

Flexible on the one hand, but fixed on the other with the range of machines and their control systems. The Wehl & Partner cutting machine center consists almost exclusively of CNC machining centers of the VMC-Chevalier range (Vertical Machining Center), which the German distributor Maschinen-Wagner Werkzeugmaschinen GmbH (in Renchen), supplies with three different control systems. “Our very first machining center from Wagner was equipped with a Sinumerik 810D and the ShopMill user interface from Siemens – this always proved to be a good choice over the years,” explains the managing director. With the VMC machines (2025, 2033, 2040, 2552) and the compact, digital, medium class control system from Siemens, even the most complex 3D geometries to date have been processed, predominantly manufactured from solid metal. Plus, they have been processed much quicker and with a surface quality that is clearly higher than with other in-house control systems. The materials to be processed, primarily aluminum, titanium, magnesium and various synthetic ▶▶



Programs can be fed to the networked Sinumerik control systems via an Ethernet connection or the systems can be conveniently programmed in the workshop with ShopMill or ShopTurn

» materials enable high-speed procedures to be performed, which, as a result of the innovative motion control of Sinumerik, can be followed without any major jumps.

NC functions such as Look Ahead and jerk Limitation enable constant, high-speed procedures to be

equipment for all new machining centers is a flexible clamping system (Spreitzer), a tool changer (32 slots) and a faster work spindle (up to 10,000 min<sup>-1</sup>).

The machining programs are generally created based on the customer's CAD data (IGS, Step, DXF, etc.) on four central programming stations, to allow them to then be transferred to the machines via Ethernet coupling. The uniform control system ensures an extremely flexible configuration at all machining centers, which in turn, helps to avoid supply bottlenecks. By concentrating it all into a single control system, a tedious incorporation process is also avoided – not only in programming, but also in production

when new machines are introduced. With this, everyone is able to operate every machine.

## »It takes newcomers a week at the very most to get to grips with Sinumerik.«

Alexander Wehl

performed without abrupt braking or acceleration for directional changes. The result (in addition to a more cautious mechanical operation mode) is the production of work pieces with a precision of up to two hundredths of a millimeter with high-quality surfaces and no scrapes or other marks – with up to a 20% reduction in machining time compared to the few other machines/control systems at Wehl & Partner. The basic

### User-Friendly Functions

It's also a question of user interfaces – these are described as very simple and convenient throughout the ranks. "It takes newcomers a week at the very most to



A supplier, a control system manufacturer: Wehl & Partner relies almost exclusively on CNC machining centers with Sinumerik 810D from Siemens

get to grips with Sinumerik,” exclaims Alexander Wehl, who not only programs the PC for production planning, but also programs the machine directly.

For workshop programming, all in-house control systems are fitted with ShopMill, the graphical user interface. This also allows challenging machining jobs to be solved quickly and easily on-site, and also optionally in DIN/ISO, as another employee emphasizes.

A new CNC turning center is being exclusively programmed in the workshop, for the reasons already stated, also from Chevalier and Maschinen-Wagner, and also with Sinumerik 810D and the ShopTurn user interface, the equivalent of ShopMill, but for turning. The operation workflows of both interfaces are practically identical so anyone who has mastered ShopMill can also quickly get to grips with ShopTurn, and vice versa. Both offer an extensive pool of ready-made machining cycles that can be conveniently parameterized with a few keyboard entries and also simulated to considerably fast-track programming and retain high productivity. Among other things, this also means it is very simple to define drilling templates or pouches once and transfer these by zero

offset to several components that can then be consecutively assigned in a setting.

### Reach New Dimensions with Sinumerik

To emphasize the opening motto, some time ago Bernardo Wehl and his partner also decided to enter the realm of top class CNC machining: In December, Maschinen-Wagner will put the first two machines into operation for five-axis milling. Sinumerik 840D will lie at the heart of both machines.

In the future, this means even more complex three-dimensional model and prototype parts can be produced even more quickly, precisely and/or with the highest surface quality. ■

info

[www.siemens.com/sinumerik](http://www.siemens.com/sinumerik)

contact

[www.wehl-partner.com](http://www.wehl-partner.com)

[ulrich.schleider@siemens.com](mailto:ulrich.schleider@siemens.com)