

Custom-made solutions

Roger Barber reports from the Spanish home of grinding

In 1942 three production staff from a well-known sewing machine company created a workshop in Elgoibar in the Basque region.

Founded in 1952, GER Maquinas Herramienta s.i.u. focuses exclusively on the construction of grinding machines. The knowledge and expertise accumulated over more than six decades enables the company to offer a wide range of solutions that can be specifically adapted to the customers' needs across the fields of surface, cylindrical and vertical grinding. GER's operating philosophy is to work in close collaboration with customers, the capacity to integrate high-tech solutions, quality in manufacturing and the efficiency of the service it provides.

Five main types of machines are manufactured and GER creates turnkey solution around these models to meet all necessary requirements for specific parts and processes. Automation can also improve the productivity of the machines and a wide range of adapted solutions are available. The first cylindrical grinder was produced in 1952.

Sales managing director, Xalba Zubizaretta says: "History is the essence of our past, our present and our future. Our machines are long term investments that have to start grinding as soon as they are installed."

The five families of machines are:

- CNC flat surface grinding machines with FANUC control
- CNC cylindrical grinding machines with a C-axis option for non-cylindrical shapes plus

B-axis on wheelhead for grinding wheel operations

- CNC rotary table surface grinding machines
- CNC vertical grinding machines up to 2,600 mm diameter
- CNC grinders for races, gears etc

GER exports to more than 25 countries including Sweden, where it has installed a machine for the grinding of crankshafts with a cycle time of 20-25 seconds and incorporating a loading/unloading robot.

UVG-8 universal grinder

The UVG-8 is a universal grinder has been developed using proven methods to achieve a high level of precision. It was built facilitating the successful software designs that are used throughout the GER range of innovative machines for the aerospace, automotive, bearing gear manufacturers and general engineering sectors.

It provides complete processing of a component and includes automatic adjustment in order to machine flat and cylindrical parts on the same machine. A generously ribbed rigid cast iron structure based on a fixed column arrangement provides the necessary damping and stability required for such a highly technical application. High process stability is provided thanks to temperature compensation and wheel dressing/measuring facilities integrated in the machine.

A high level of grinding flexibility is provided due to all possible multi-spindle wheelhead combinations. A powerful direct



rotary table with drive through built-in torque motor is precisely managed by an in-axis encoder. Options include an automatic tool changer and pallet workholding system.

GER is more than happy to carry out grinding tests on customer parts, with no obligation. In the event of an order being placed, it undertakes to repeat these tests once the machine has been installed in the customer's premises, as a prerequisite for acceptance. Once an agreement has been reached, customers are invited to come to GER to sign off the machine.

GERGrinder software interface

GER software was first developed 5-6 years ago and today the four-man design department plays a vital role in the development of the machines and applications, including remote diagnostics.

GERGrinder allows conversational user-friendly programming for grinding and dressing processes by sequencing predefined parametris graphical cycles. Direct programming from part drawing can also be added. An easy-to-use profile editor creates profiles either for C-axis interpolation, axis interpolation or profile dressing. Complicated profiles defined in ISO programming can be directly imported.

GERGrinder allows grinding wheel and dressing tool definition and database creation. Many possibilities are available for in-time intervention in automatic execution to adapt the parameters to the real needs shown by the process, without aborting the program. Geometric correction tools, e.g. taper, bombing etc, can be superimposed on the grinding cycle without modifying the original program. GERGrinder offers





GERGrinder allows the superimposing of geometrical corrections, e.g. taper, camber etc., to an existing program without modifying the program.



GERGrinder includes a library with messages for helping the operator to choose the most suitable grinding parameters for the process. Grinding time calculation is included in the programming menu, very useful for cost estimations.

integrated grinding knowledge that helps the operator select the appropriate grinding parameters. Integrated grinding and dressing time estimation is especially useful in calculating machining costs. Internet-based teleservice software is available for maintenance tasks. Measuring cycles are integrated within the grinding cycles for either pre or post process measuring.

GER is located in Itziar, in the Basque Country, a privileged area on the Cantabrian Coast, where 90 percent of Spanish machine tool manufacturers are concentrated.

Most auxiliary subcontractors and suppliers for the machine tool industry have their installations in a 40 km area, which makes GER totally self-sufficient and highly flexible in the design and construction of its grinding machines.

GER grinding machines operate in all kind of sectors such as aerospace, automotive, bearings, gears, injection and pultrusion moulds, punch manufacturing, sheet and profile laminating, printing, machine tool manufacturing, oil, general purpose mechanical industry etc.

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CNC SURFACE GRINDERS...



GER manufacture precision grinding machines in Spain. Machines can be supplied as standard products or customised with features such as indexing wheel heads and automated load / unload

Table lengths 400 to 6,000mm

Table widths 200 to 1,000mm

Wheel size 225 to 400mm diameter

Spindle power 2.2 to 22kw

...NOT FORGETTING

Cylindrical grinders Between centres 350 to 8,000mm

Profile grinders Table lengths 400 to 6,000mm

Universal vertical grinders Table size 600 to 1,800mm Up to 4 grinding heads

Internal grinders Longitudinal travel 125 to 400mm

Rotary table grinders Table size 600 to 1,500mm diameter



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