SIR MECCANICA FULL CNC SERIES

ADVANTAGES

Sir Meccanica has designed safe and technologically advanced portable machines for grinding, boring and turning of valves of any diameter and depth, in the workshop or directly on-site. Equipped with the latest-generation of CNC heads, these machine tools can reach shallow and blind cavities, operating with micrometric precision.

CUSTOMIZABLE

Furthermore, upon request the machine can be supplied with our standard equipment, to perform all the machining that can be carried out with the Ws series, including overlay welding. The Ws Full CNC machines are customizable; the customer must provide details and geometric machining specifications to allow the technical staff to customize:

- the positioning and clamping instruments;
- the machine strokes;
- the tool holder elements.

CNC CONTROL PANEL

The CNC control activates a series of motors and guides for the controlled and coordinated movement of the machine axes, in order to bring the tool to the expected position and in the expected time. It has been designed to satisfy the real needs of CNC lathe operators. Here are some of the features of the CNC control panel:

- the CNC system used is extremely essential and practical. The basic programming is of the ISO type. The visualization of a 3D tool-path preview, with zoom functionality to focus on the desired details;
- easy to use, it allows to create tool paths quickly and directly on the machine, starting from the dimensional drawing;
- the machine tool can also be used by personnel with little programming experience can use it. The conversational programming standard also allows the operator to create complex profiles;
- in addition to the possibility of being able to create programs in manual mode, it is possible to execute files created with sophisticated CAM programs without having to type command lines;
- the three modes FILE, JOG and MDI are fully integrated and can be used together. It is possible to open a file and view it, to give commands in MDI mode and switch to JOG mode without limitations;
- a series of setting windows allows to generate, in a precise manner, the machining and to display the simulation of the tool paths.

Moreover, the Wizard System eliminates programming in G/M codes and significantly simplifies operations thanks to the possibility of using a graphical interface. The Wizard allows to change the speed of any parameter and or to obtain a new G code by just modifying one of them.

TOOL-HOLDER SHAFTS

The CONNECTABLE SHAFTS WITH CONICAL COUPLING are the result of in-depth research conducted by Sir Meccanica.

The main purpose of our Research and Development work is to continue the commitment started years ago on precision coupling joints and their relative resistance to mechanical stresses

In particular, we conducted studies on the locking mechanisms of conical couplings, which are used to assemble rotating and stationary parts capable of transmitting high torsional moments, or to join thin axial components, extended in length and capable of withstanding large torsional torques and bending moments.

Perfectly adaptable to both minimal and infinite processing lengths, the patented system is composed of various modular components of different sizes that, assembled together, achieve the required dimension. In fact, the modularity of the system makes Sir Meccanica’s brand products and technologies even more unique. The key advantages of our shafts are:

- immediate coupling and uncoupling, for continuous assembly and disassembly;
- precision and quality in coaxial alignment under any stress conditions;
- excellent control over interference levels between coupled surfaces;
- resistance to wear and stress over time;
- high torque transfer capability;
- increased safety factors;
- interchangeability.

REMOTE SYSTEM CONTROL FOR CNC MACHINES

Sir Meccanica's CNC machine tools are integrated with a remote system control that improves operational efficiency, reducing machine downtime and offering timely and targeted technical support while respecting the privacy and security of our customers' data.

The remote system control is a technological solution that puts the customer at the centre, offering him an efficient and safe assistance service. The convenience of remote management, combined with the powerful diagnostics, update and implementation of new features, translates into significant added value, helping to optimize the investment in the CNC machine and to guarantee maximum productivity and competitiveness on the market.

System Characteristics

The system is based on a software platform that allows a secure bidirectional connection between the CNC machine and our assistance centre; the connection can only be activated by the customer using temporary credentials. The remote system control operates via a simple Internet connection and, where the wired connection is absent, it can be easily configured thanks to a USB WiFi drive supplied (it will be the customer's responsibility to ensure a stable Internet connection with sufficient bandwidth for the correct functioning of the service). The main operational advantages are:

• Extension of the life of the machine.

• Proactive technical support and immediate intervention: for remote diagnosis and software assistance, without waiting, with the aim of preserving the integrity and efficiency of the machine over time.

• Costs reduction: travel expenses for technical staff are reduced.

• User-friendly: the connection can be easily managed by the customer.

• Transparency: The customer can monitor the activities carried out by the technician during the remote-control session.

Main Features

• Advanced fault diagnostics: real-time analysis of operating parameters, system logs and any error codes.

• Remote interventions: monitoring the status of components and sensors and correcting parameters, allows our technicians to quickly identify the nature of any malfunctions or drops in performance and to plan targeted physical interventions.

• Software updates: firmware, management software, security patches and new features can be installed remotely.

• Functionality extension: continuous performance optimization thanks to the implementation of macros, customized work cycles and new programming Wizards.