BEST VALUE FOR YOUR MONEY
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FORM 20
FORM 30

The most cost-efficient EDM die sinker for general mold and die applications
Highlights

Swiss top technology with best price-performance ratio

Outstanding price/performance ratio
The FORM 20/FORM 30 die-sinking EDM machines offer success-triggering features and excellent performance. Equipped with GF AgieCharmilles’ Swiss-made generator, the FORM 20/FORM 30 are the market’s ultimate in EDM price/performance.

Innovative, space-saving design
The NEW FORM 20 and FORM 30 are the most compact universal machines in the standard level segment. In only just one meter of width, a 940 mm x 540 mm workpiece can be loaded, allowing reduction of fixed costs. The new, modern machine design creates homogeneity with the entire GF AgieCharmilles product range.
Two machines in one
The FORM 20 and FORM 30 are available with the optional GammaTEC technology to optimize machining performance for shiny surface finishing on big workpiece surfaces. Rapid and easy changing from this configuration to standard EDM gives you the advantage of having two machines in one. Notably, the Swiss-made generator and all the available features of the standard configuration make the FORM20/FORM 30 comprehensive partners in your production chain.

Versatile, reliable and easy to use
The FORM 20/FORM 30 are amazingly flexible and easy to use, making it possible to cover a wide range of applications. Plus, they offer exceptional reliability and ease of use.
Rigid and compact
The use of cast iron and the short C frame design ensure static and dynamic rigidity of the mechanical structure. The cross-table, fitted with linear glass scales, guarantees positioning accuracy. The ergonomics of the machine are designed to provide the most favorable ratio between the floor space area and the work surface area.

Linear Tool Changer (optional)
Designed to be both economical and efficient, the fully integrated Linear Tool Changer (LTC) is ideal for less complex applications requiring few electrodes or involving longer cuts.
FORM 20: four positions
FORM 30: six positions
Closed loop servo control
Positioning measurements are done by means of linear glass scales fixed directly on the X, Y and Z axes of the FORM 20/FORM 30, thus eliminating errors that might otherwise arise when the screw thread becomes worn or too hot. Furthermore, before delivery, every FORM 20/FORM 30 is rigorously checked by means of a laser interferometer to guarantee the best possible accuracy.

C axis (optional)
A rugged C axis delivers high positioning precision (0.001°) regardless of electrode weight (up to 25 kg) and full machine current. Completely integrated, the C axis is easily extended to increase X and Y travels when machining very large parts. Thanks to the CNC-controlled C axis integrated into the quill of the Z axis, the FORM 20 and FORM 30 are incredibly flexible machines, with four axes that can be interpolated simultaneously. Allows curved recesses and undercuts by rotating the C axis and 3D vector widening.
Achieve more...
Maximize the productive hours

In order to answer to these needs, AC FORM HMI provides new solutions:

Complete machining report
The jobs executed out are the subject of a detailed report containing the strategy, the discharge time, events, etc. These information can be exploited for:
- Control the workpiece
- Archive data
- Enrich the know-how
- Calculations of the production costs

Automatic sequence: choose your priorities
Based on the machining strategies and number of electrodes and parts, the "sequence" screen automatically organizes the machining flow. This can be modified according to the criteria defined by the operator using the sequence wizard. After validation, the ISO program is generated, and you are ready for machining.

Generic optimum machining strategy
AC FORM HMI offers clear choices for each application. It then generates the optimal machining strategies. The operator introduces, on a single screen, machining parameters such as: state of surface, depth, machining cycle, and type of application to extract the best generator performance.

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Embedded documentation

In order to avoid big workbooks, electronic documentation is embedded in the machine (HTML format). There is no need for printed information on the current screen, code programming, parameters of machining, maintenance, for example. With a simple touch, the necessary information instantly appears on the screen.

Interactive graphical assistance

All operations such as measurement and machining cycles are illustrated by graphics/icons for fast operator understanding and ease of use.

Programming interactive chart

• Rapid
• Intelligent
• Flexible

Standard Windows platform

• Integrated PC
• Touchscreen
• Interconnectivity network

AC FORM HMI for increased productivity

The development of this new AC FORM human-machine interface (HMI) is based on a study carried out with numerous mold makers to streamline the mold-making technique. The organization and layout of screens are a direct development of data derived from the study. This ease-of-use that has made GF AgieCharmilles interfaces so successful has not only been maintained but developed even further to benefit the mold maker’s task.

The development of this new interface is based on a study involving more than 100 mould makers to define the mold manufacturing process. The organization of the functions and composition of screens are directly derived from data derived from the study. GF AgieCharmilles’ interface is based on a commitment to understanding and meeting customers’ needs.
Generator and technology

The FORM 20 and FORM 30 are equipped with one of the most modern generators in the world for die-sinking EDM. Integrated into the generator is quality-boosting and cost-saving intelligence. The EDM process is continuously optimized with every impulse, drastically reducing electrode wear on even the finest finishes. Process control takes a fraction of a second and produces an extremely homogeneous surface finish.

The high-power generator has maximum output of 80 A on FORM 20 and 140 A on FORM 30. The generator’s switchgear cabinet is equipped with a closed water-air cooling circuit that is controlled by the cooling unit within the system. To ensure the longest life and reliability of the electronics, they are contained within a dustproof cabinet, in which the temperature is monitored and stabilized.

TECFORM

The embedded TECFORM module allows the FORM 20/FORM 30 to quickly and safely achieve best performance and produce the desired results. Segment-dedicated technology means the operator doesn’t need to adjust the generator’s parameters. TECFORM improves and enhances your machining efficiency and dramatically reduces unproductive time.

Surface homogeneity

A uniform texture of the injected part is directly linked to the quality of surface finish. To respond to the need for a perfect surface finish to the mould, GF AgieCharmilles has developed a “Surface” technology designed to meet the most stringent criteria of surface homogeneity.

Micromachining

Especially when electrode dimensions are reduced, surface finish and wear become decisive factors in terms of performance. To address the needs of the connections and micromachining sectors in particular, GF AgieCharmilles has developed a dedicated module designed to reduce electrode wear by up to 30% and to offer unequalled surface finish.
Ergonomic job preparation

The most common measuring cycles, from simple measuring of Z level to rotating the workpiece around the C axis, are integrated into the control. Thanks to these measuring cycles, the position of the workpiece is plotted, eliminating the need for the operator to adjust the workpiece. This means the time to erosion is minimized and the workpiece can be placed in the working area without time-consuming manual alignment. The operator can start the erosion.

The new FORM 20 and FORM 30 are ideal machines for inexperienced users in the field of general engineering and tool production. With the new FORM 20 and FORM 30, die-sinking EDM is no longer the domain of absolute experts.
Milling  High-Speed and High-Performance Milling Centers
In terms of cutting speed, HSM centers are 10 times faster than conventional milling machines. Greater accuracy and a better surface finish are also achieved. This means that even tempered materials can be machined to a condition where they are largely ready to use. One essential advantage of HSM is that with systematic integration, the process chain can be significantly shortened. HSM has developed alongside EDM into one of the key technologies in mold and tool making.

EDM  Electric Discharge Machines
EDM can be used to machine conductive materials of any hardness (for example steel or titanium) to an accuracy of up to one-thousandth of a millimeter with no mechanical action. By virtue of these properties, EDM is one of the key technologies in mold and tool making. There are two distinct processes – wire-cutting EDM and die-sinking EDM.

Laser  Laser texturing
Laser texturing supplements and extends the technologies offered by GF AgieCharmilles. With our laser technology we enable you to produce texturizing, engraving, microstructuring, marking and labeling of 2D geometries right through to complex 3D geometries. Laser texturing, compared to conventional surface treatment using manual etching processes, offers economic, ecological and design advantages.

Customer Services  Operations, Machine and Business Support
Customer Services provides with three levels of support all kind of services for GF AgieCharmilles machines. Operations Support offers the complete range of original wear parts and certified consumables including wires, filters, electrodes, resin and many other materials. Machine Support contains all services connected with spare parts, technical support and preventive services. Business Support offers business solutions tailored to the customer’s specific needs.

Automation  Tooling, Automation, Software
Tooling for fixing workpieces and tools; automation systems and system software for configuring machine tools and recording and exchanging data with the various system components.
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