A COMPLETE SOLUTION READY TO PERFORM
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The solution for standard parts and general engineering
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**Highlights**

- **Outstanding price/performance ratio**
- **Ready to perform**
- **Simple to use graphics user interface**
- **Low operating costs**
- **High cutting rates**

**Ready to perform**
The practical structural layout yields the shortest possible installation time, and the customer can be productive within a few hours after delivery. The design takes in account good accessibility of the maintenance points, such as the filter cartridges, the wire container, upper and lower heads. This shortens down-time to the minimum and ensures safe, easy maintenance and operation. Equally, the work tank design ensures a comfortable accessibility.

**Simple to use graphics user interface**
The simple and functional user interface facilitates direct and intuitive dialogue. The input of data takes place in a structured manner with pictures and symbols guiding even inexperienced operators to fast effective results. The Windows operating system allows direct import/export of ISO files, through:

- USB memory key
- LAN network and checking by a 3D graphic mode.
Low operating costs
- Low energy consumption of its compact and modern generator
- Long life time of the wear parts

High cutting rates
The GF AgieCharmilles generator, equipped with the latest technology, assures outstanding performances and highly competitive results. For example:
- The new “Speed” technology package, allow in 2 to 4 cuts to reach competitive results in terms of precision, time and surface roughness.
- Its operating costs are minimised thanks to its sophisticated technology when brass wires are employed.

Outstanding price/performance ratio
The CUT 20 P/30 P, an EDM wire-cutting unit, is a very interesting machine offering outstanding features and excellent cutting performances. Equipped with joint technology from GF AgieCharmilles it positions itself as the ultimate in price/performance WEDM machine in the market place. It handles wire diameters from 0.15 to 0.30 mm (0.006 to 0.012 in) with ease and is highly flexible to satisfy most of the requirements in the field of general engineering and standard stamping.

Short return of investment → More competitiveness
**Glass Scales for high accuracy**

To obtain durable accuracy, direct measurement of positions by linear scales is used. This system enables the actual movement of the slide to be checked directly. It eliminates all the classic errors that arise from the screw, such as backlash on reversal, expansion or wear. Accuracy does not vary over time and no subsequent calibrating is required.

**Integrated Collision Protection**

The Z-Axis of CUT 20 P/30 P is equipped with Collision Protection. The ICP system prevents any breakage of sensitive parts and costly elements allowing the operator to work with more confidence during job preparation and execution.
Machining of large work pieces
Designed to maximise its class leading work area size and travels. Along with its advanced AWT greater productivity is achieved, as extended running during lights out is a reality. If large work pieces are needed to be machined the excellent accessibility allows a hassle free loading and unloading of work pieces of 1000 kg (2204 lb) in weight and maximum size of (L x W x H) 1050 x 800 x 350 mm (41.30 x 31.50 x 13.75 in).

Base Structure
The T-shaped base frame permits the loading of larger and heavy work pieces. The compact and rigid machine structure guarantees good positioning accuracy and highly repeatable results.

Lubricating system
The unique design of the centralized lubrication system minimises the machining down time. It lubricates the guides and sliding blocks as well as the ball-screws, simplifying the maintenance tasks.

High running hours
A large spool option is available on the CUT 20 P / 30 P. A spool of 25 kg extends running hours and allows continuous production in combination with:

- Deionising bottle with a volume of 20 l (5.3 gal)
- 2 filter cartridges of 450 mm height x 340 mm diameter each (17.71 x 13.38 in)
Wire system

The wire system has been designed by GF AgieCharmilles and is an optimized version from tried and tested solutions. The wire tension is monitored by an electromagnetic break, CNC programmable. The wire spool storage has been designed to be easily accessible so that the operator can carry out a rapid change of spools.

Simple wire circuit

The concept of wire circuit is composed by very few components and consumable parts. They are: wire guides, wire contacts and pinch rollers. Besides the low running costs, the advantages of this system are a high reliability during threading, rethreading and functioning.

Modern reliable wire circuit, GF AgieCharmilles design

The CUT 20 P/30 P handles the following standard wire diameters:
0.15 – 0.20 – 0.25 – 0.30 mm
(0.006 – 0.008 – 0.010 – 0.012 in)
Automatic threading and rethreading
As standard and to ensure unattended running hours, the equipment includes an automatic wire-threading and rethreading system.

Thermocut system for all types of wire
The automatic threading is rapid and reliable whatever the type of wire used: hard or soft brass, coated or not. The key of success is preparing the wire properly before threading.

1. **Wire heating**
   The wire is heated between the break and the upper head.

2. **Wire cooling**
   An air jet cools down the wire and in the mean time is stretched in order to reduce its diameter.

3. **Wire cut**
   The wire is annealed and stretched over a certain length. The thermal breakage leaves no burr and tapers the extremity.

4. **New threading**
   The newly prepared wire facilitates its path through the guides and parts.
Achieve more...
**Powerful Generator**
It integrates a SF (Fine Surface) module with which a surfaces roughness of less than Ra 0.25 μm (10 μin) can be achieved. The generator, completely anti-electrolysis, assures an homogenous and perfect surface finish. Along with the performance, the up-to-date electronics used in manufacturing ensure that the cost of ownership is the lowest possible.

**High cutting speed**
The thoroughly tested generator of the CUT 20 P/30 P with reliable electronics, is based on state-of-the-art technology developed by GF AgieCharmilles. Extremely high removal rates are possible with cheap brass wires, adding low hourly running cost to its unique features.
Technologies
Thanks to the FPGA technology (Field Programmable Gate Arrays – a logic device programmable instantaneously) and the completely digital process monitoring, servo response demonstrates a degree of flexibility that can only be achieved with a system designed specifically for EDM. The technology database package covers all requirements in a workshop. These technologies work with a variety of wires and encompass material ranging from steel to hard metals. It also has the flexibility to produce results from rapid cuts to precision finishing cuts.

GF AgieCharmilles Generator
• Highest level of performance
• High cutting speed
• Application oriented technologies
• Complete technology range using wires from Ø 0.15 mm (0.006 in) up to Ø 0.30 mm (0.012 in)

Speed technologies
The CUT 20 P/30 P has on board technologies that allow a unique speed cut. These technologies optimise main, 2nd and 3rd finishing cuts, to attain the most common values of surface roughness, like Ra 0.60 μm (24 μin) and Ra 0.35 μm (14 μin) to be achieved in a minimum of time. These high speed technologies, make the CUT 20 P/30 P a very powerful competitive production unit.
Strategy for stepped work pieces
The generator can manage and erode stepped work pieces. This function detects the difference of the material thickness in order to adapt automatically the power to the changing conditions.

Corner strategy
To ensure accuracy of:
- sharp angles
- small radii
the corner strategies adjust automatically the machining parameters during changes of direction. Even on the smallest details, high geometrical accuracy is obtained.
Power failure recovery
In case of power failure, the point and the job name are memorised, allowing a direct re-start of the job after power restoring.
Control unit

The graphics user interface is based on the Windows operating system and allows real time control of the EDM process. The system works with descriptive picture symbols and conversational screen pages following one after another in a logical way. This allows even new users to understand the WEDM principle quickly and means time to production is very short. The unique programming system also gives to the users a large degree of flexibility in a production environment, allowing a simple and fast setup and many hours of labour free running of the machine.

1 Job preparation

a. AC Easy Cam
The operator can easily prepare an ISO file during the machining with an onboard CAM system. This powerful feature is standard and renders this product as a complete solution from the contour creation to the part production.

Data transfer:
• DXF import & export
• ISO export for CUT 20 P / 30 P
• Possibility to import additional NC code

b. Most CAD/CAM programs worldwide are compatible with the CUT 20 P / 30 P giving the operator a large level of integration.
2 Measuring cycles
The intuitive, easy-to-use measuring functions allow the operator to quickly determine work piece references.

Work zone preparation, measuring cycles
- Edge find
- Corner find
- Center find
- Part alignment
- Center find Ext

3 Technology definition
The choice of the right technology is easily done by the operator. The technology database selects the appropriate setting in accordance to the characteristics of the application.

- Work piece material
- Work piece height
- Required roughness
- Wire type

4 EDM process
The EDM process is monitored by the operator in real time; by means of the "EDM Process" IHM screens he can check and optimise all the important technology parameters.
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 ablation
Laser ablation 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 ablation, 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.