



G-ELECTROSERIES
G-ELECTROCUT

SAVE ENERGY

*reduce costs, minimize maintenance - save
the environment.*

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**INTRODUCING G ELECTROCUT FULLY
ELECTRICAL SWING BEAN SHEAR
ACCREDITED WITH A GLOBAL PATENT.**



G-ELECTROCUT • COMPETITIVE ADVANTAGES



Gizelis SA has been a leader in manufacturing hydraulic swing beam shears for over 50 years, consistently delivering top-tier machines known for their robust design and reliable, long-lasting performance. Building on this legacy, we are proud to introduce our new line of servo-electric shears. These cutting-edge shears represent the next generation of Gizelis technology, seamlessly blending our tradition of excellence with modern innovation, setting a new benchmark in precision and efficiency for the industry.

ENERGY EFFICIENT

Up to 50% compared to hydraulic shears of any kind.

FAST & PRODUCTIVITY

Fast and highly productive, with speeds reaching up to 40 real cuts per minute.

INTRINSICALLY SAFE

The guillotine is mounted on springs, allowing it to move upward in the event of a failure.

ENVIRONMENTALLY

No oil is used, eliminating any issues related to its replacement, disposal, or associated maintenance.

UNIQUE CONTROL

Unique control features: Gizelis software offers a range of functions not found on other shears.

USER FRIENDLY

Extremely easy to commission and operate, oil-free design ensures no leaks and virtually zero maintenance.

UNIQUE SHEET SUPPORT

The sheet support system uses a hybrid belt/pneumatic drive that can bring full-length pieces to the front of the shear, boosting productivity beyond any other shear on the market.

COST EFFECTIVE

A guillotine shear with a variable rake angle offered at a very competitive price.

G-ELECTROCUT CONTROL

Gizelis S.A. electric shear is operated through a Beijer X2 control panel, seamlessly integrating industrial Human-Machine Interface (HMI) and PLC functionality into one compact unit.

1. CENTRAL POWER BUTTON
2. SHEARING ANGLE ADJUSTMENT
3. CUTTING GAP ADJUSTMENT
4. THICKNESS MEASUREMENT
5. BACK GAUGE ADJUSTMENT
6. BACK SHEET SUPPORT MENU
7. TILT BACK
8. TILT FRONT
9. DROP BACK
10. DROP FRONT
11. RETURN TO FRONT
12. SETTINGS/PARAMETERS
13. CUTTING LENGTH
14. RECIPES



CONTROL 'S MAIN MENU



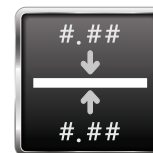
1. CENTRAL POWER

Confirm an action, stop a recipe, on/off the machine, etc.



2. SHEARING ANGLE ADJUSTMENT

Automatic adjustments of the cutting angle according to cutting thickness.



3. CUTTING GAP ADJUSTMENT

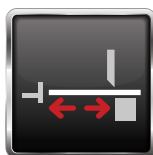
Automatic adjustments of the cutting gap according to cutting thickness.



4. THICKNESS MEASUREMENT

A special sensor measures the material thickness, enabling automatic adjustment of the cutting gap and cutting angle for optimal performance.

G-ELECTRO CUT CONTROL



5. BACK GAUGE ADJUSTMENT

AC servo motor based, accurate back gauge positioning.



6. BACK SHEET SUPPORT (menu)

The back sheet support (BSS) option is equipped with five operation modes. The operator can choose the appropriate mode, suitable to their needs, to reduce required time for the handling of cut pieces.



7. TILT BACK

In Tilt Back mode, the back sheet support remains tilted, allowing the cut piece to smoothly slide away to the back area.



8. TILT FRONT

In Tilt Front mode, the back sheet support stays tilted to allow the cut piece to slide directly into the front drawer.



9. DROP BACK

In Drop Back mode, the back sheet support positions itself under the sheet material and then moves away, allowing the cut piece to slide to the back area.



10. DROP FRONT

In Drop Front mode, the back sheet support positions itself under the sheet material and then moves away, guiding the cut piece to slide into the front drawer.

11. SETTINGS/PARAMETERS



12. CUTTING LENGTH



13. RECIPES

By pressing the recipes button, the main menu is replaced with the parameters menu, as shown in the figure. Through the recipes menu, the operator can define and customize the workflow by specifying various settings and parameters.

- Cutting Angle
- Back Gauge's Position
- Support's function
- Start Of Cut (SOC) in mm
- End Of Cut (EOC) in mm
- Control the thickness measurement function
- Number of repetitions (R)
- Enable or disable the cyclical repetition of the recipe by ticking or unticking the repeat field.



The operator is able to insert up to 16 lines on his work flow. The recipe can be stored for future use.

INNOVATIVE DESIGN

ELECTRIC SERVO MOTOR

Conventional shears use AC motors that rotate continuously, circulating oil via a pump to generate hydraulic power for cutting. This system has several drawbacks, which are addressed by the use of an AC servo motor:

ENERGY CONSUMPTION: AC servo motors operate only when the guillotine is in motion, reducing electrical energy consumption by up to 50% compared to conventional hydraulic systems, which continuously circulate oil.

GUILLOTINE SPEED AND CONTROL: Hydraulic systems face limitations such as dwell times that can hinder performance. In contrast, AC servos can instantly change direction and speed, significantly reducing the cut cycle time and improving overall efficiency.



POWER EFFECTIVE FORCE DISTRIBUTION

During the shearing process, full force must be applied at both the start and the end of the cut. Each hydraulic cylinder is required to be sized accordingly in order to handle the maximum force individually. As a result, excess force is being applied on the center of the cut length, resulting in reduced cutting speeds, due to the need for increased power.

INNOVATIVE DESIGN

Thanks to its innovative design, the electric shear allows for easy adjustment of the rake angle by simply shortening or lengthening the belt on each side of the guillotine. This adjustment is effortlessly done through the control panel, where you can input the material thickness or desired rake angle. The system then automatically optimizes the cutting settings to achieve the best possible results in both speed and quality.

VARIABLE RAKE ANGLE

It is well known that the rake angle of shearing is a choice between force/quality/speed. The Gizelis electric shear comes with variable rake angle so that optimum results can be obtained for any given shearing task.



UNIQUE BACK SHEET SUPPORT SYSTEM

The sheet support system is manufactured in a revolutionary manner by utilizing both electric and pneumatic technology. This provides the capability of sending the cut piece to the back or the front of the shear. Productivity especially for relatively narrow and long strips is greatly enhanced by the sheet to front capability.

RECTANGULAR UPPER BLADE

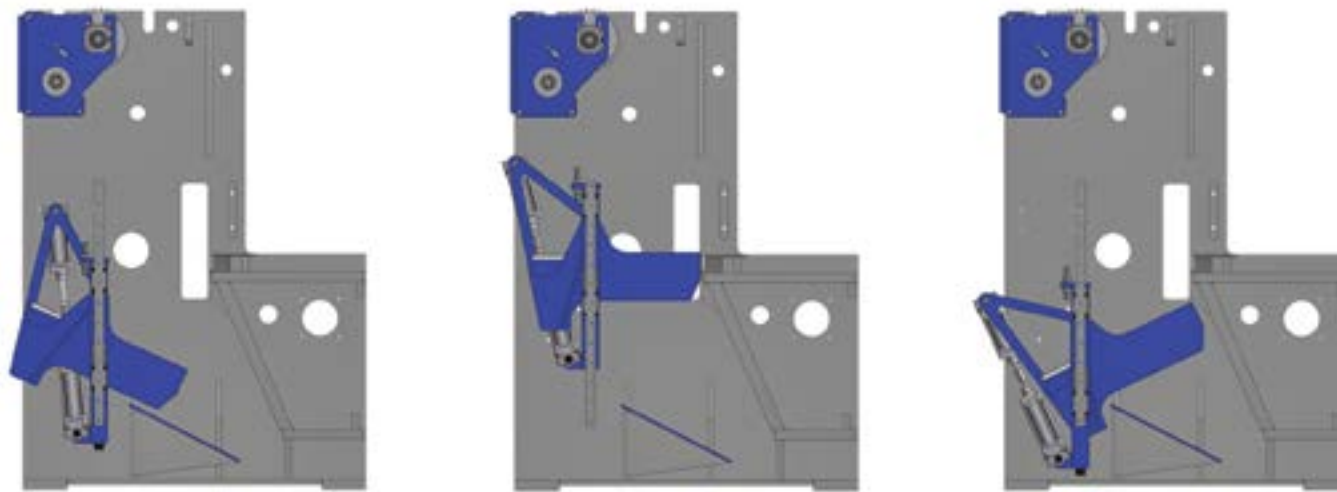
The upper blade of the shear is rectangular, allowing the user to utilize all four edges. This design effectively doubles the blade's lifespan compared to a blade with only two cutting edges.

PNEUMATIC HOLD-DOWNS

Pneumatic hold-down system is a combination of pneumatic and mechanical elements. This design offers various advantages among which the two most important are:

- Hold-down force can be adjusted by means of pneumatic pressure adjustment.
- Flexibility to control the hold-downs independently of the guillotine movement.

INNOVATIVE DESIGN



LINEAR ENCODER FOR GUILLOTINE MOVEMENT AND CUT LENGTH

The guillotine uses two high-resolution linear encoders, significantly enhancing precision. This setup ensures that functions such as cut length are completed with greater speed and accuracy than ever before.

AC SERVO BACK GAUGE

Gizelis electric shear's back gauge is equipped with an AC servo and a rigid steel structure with high dynamic characteristics. This combination ensures extremely accurate and rapid positioning of the back gauge.

USER FRIENDLY

- 15" Color touch screen
- Programmable cutting length with linear encoder
- Automatic calculation of the cutting clearance
- Automatic calculation of the optimum rake angle
- Manual or semi-automatic or full automatic mode
- User friendly creation of programs in the form of tables

TECHNICAL SPECIFICATIONS

BELT PULLEY SYSTEM

The Belt Pulley System on Gizelis SA's ElectroCut Shear, inspired by the Archimedes concept, combines mechanical efficiency with modern electromechanical technology to enhance the cutting process.

The concept of Archimedes revolves around his understanding of levers, pulleys, and mechanical advantage, which is fundamental in many modern machines. In a pulley system, mechanical advantage is created by distributing force over multiple pulleys, reducing the effort needed to move or control loads. This idea is reflected in the belt pulley system of the ElectroCut Shear, optimizing the balance between force and efficiency in its operation.



ADVANTAGES OF THIS SYSTEM

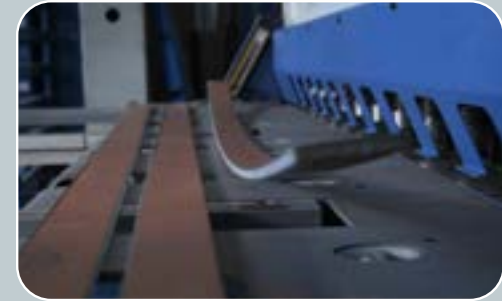
- Energy-saving design thanks to mechanical advantage.
- Enhanced durability due to smoother, more controlled movement of the blade.
- Reduced operational costs through lower maintenance requirements and energy usage.
- Precision cutting with the ability to handle a wide range of materials and thicknesses.

INNOVATIVE DESIGN

		G ELECTROCUT® 2004	G ELECTROCUT® 2504	G ELECTROCUT® 3006	G ELECTROCUT® 4006
Maximum cutting thickness mild steel st42	mm	4	4	6	6
Maximum cutting thickness stainless steel	mm	2	2	4	4
Maximum cutting length	mm	2000	2500	3000	4000
Back gauge stroke	mm	1000	1000	1000	1000
Cutting angle	degrees	0.5-2.0	0.5-2.0	0.5-2.0	0.5-2.0
Main Motor Power	kW	6	6	8.5	8.5
Length	mm	2950	3450	3950	4950
Width	mm	1400	1400	1400	1400
Height	mm	1950	1950	1950	1950
Weight	kg	5100	6200	7300	8700

SPECIAL FEATURES

Narrow Strip Cutting (NSC): The NSC function allows the operator to perform very narrow strips, without any kind of distortions.



Return to front (RTF): When activating the RTF function, the cut part doesn't fall from the machine's backside; it returns to the front side, directly to the operator's hands, for further processing and stacking.

Automatic Thickness measurement (ATM): the machine is equipped with a special sensor that automatically measures the material thickness, thus minimizing the risks for errors.



OTHER OPTIONS

MFS System: Movable
Front Supports



Synthetic cups on the
hold downs



Brushes on table and
supports



Rectangle holders
with synthetic cups
to cut narrow strips
without being
deformed

**NSC system required.*



OTHER OPTIONS

Transport belts



Finger safety with light guards



RSS System: Rear Sheet Support



MFP System: Movable Front Panel



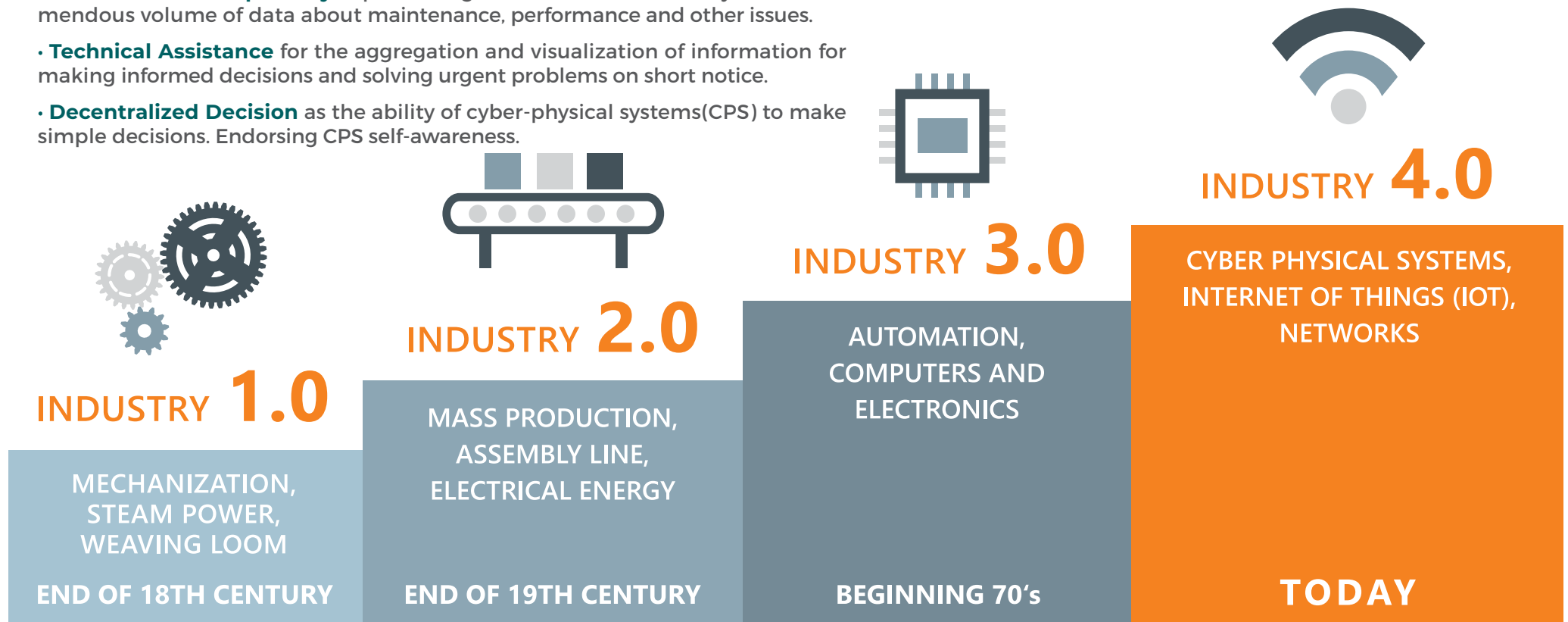
INDUSTRY 4.0

WHAT IS INDUSTRY 4.0?

As INDUSTRY 4.0, is defined the rise of new digital industrial technology, a transformation that makes possible to gather and analyze data across machines.

INDUSTRY 4.0 PRINCIPLES:

- **Interconnection** of machines, devices, sensors and people via the Internet of Things (IoT).
- **Information Transparency** is permitting the collection and analysis of a tremendous volume of data about maintenance, performance and other issues.
- **Technical Assistance** for the aggregation and visualization of information for making informed decisions and solving urgent problems on short notice.
- **Decentralized Decision** as the ability of cyber-physical systems(CPS) to make simple decisions. Endorsing CPS self-awareness.



~~BOSCHERT~~ GIZELIS G-ELECTROCUT & INDUSTRY 4.0



Easy Implementation of Client Applications

- Data availability is implemented according to international standards

Easy Access to Data

- All information collected in a SQL database
- Connectivity to ERP systems, according to standards

Easy Connection to Current Infrastructure

- Integrated WiFi - No need for cables

Easy to Use

- Graphical Data representation
- Graphic Only user interface - language independent

Secure Password Protected and Encrypted Connection

G-ELECTROCUT APPLICATION

The G-ELECTROCUT is equipped with the Boschert Gizelis Monitor App. Providing the collection of manufacturing data and usage statistics:

- Number of cuts per thickness
- Blade Decay per position of length
- Power Consumption
- Recipes information
- List of Alerts and Warnings per timestamp



RESULTS:

- Maintenance management
- Precise prediction of machine's health, to gain near-zero downtime
- Instant warning in the case of malfunction



REMOTE SERVICES

~~Boschert~~ Gizelis provides the ability to remote access the G-ELECTROCUT.



PROVISION OF REMOTE SERVICES:

- Allows the study of collected data to provide a thoughtful solution, before the arrival of our technical staff
- Reduces the Service response time
- Permits the remote update of the software and Graphical User Interface (GUI)
- Eliminates the need of physical presence of the technical staff on the factory

GIZELIS ELECTRIC MACHINES

GIZELIS ELECTRIC MACHINES MEANS:

PAY LESS

- Save up to 50% on energy compared to press brake
- High reliability. No downtime. Only very simple components like bearings, flat belts and gearboxes are involved in ram movement
- Very low maintenance. Simple components without maintenance needs
- Less scrap because of high repeating accuracy achieved by:
 - Uniform deflection of O-frame
 - Servo driven upper ram
 - No oil - no thermal interference

EARN MORE

Increase productivity by up to 35% with:

- High ram speeds. Highest ram speeds in the market for electric machines
- Very high ram acceleration - deceleration. Unique servo motor technology
- Shortest possible change of high to low speed with RapidBend Ultimate
- Quick change tooling system, customizable UI, offline programming etc

SAVE THE PLANET

- Less energy used - reduced CO2 emissions
- Absence of oil - less scrap
- High reliability - less spare parts production



PAY LESS



EARN MORE



SAVE THE PLANET

PRODUCT RANGE

➡ Boschert-Gizelis' combined product range covers a large variety of machines, necessary for the sheet-metal processing industry, such as press brakes, shears, punching and notching machines, combined machines, combined machines, portal type oxy and plasma cutting as well as laser-cutting machines. On top of these, Boschert-Gizelis Group can manufacture specially-made machines upon request.

Hydraulic Bending



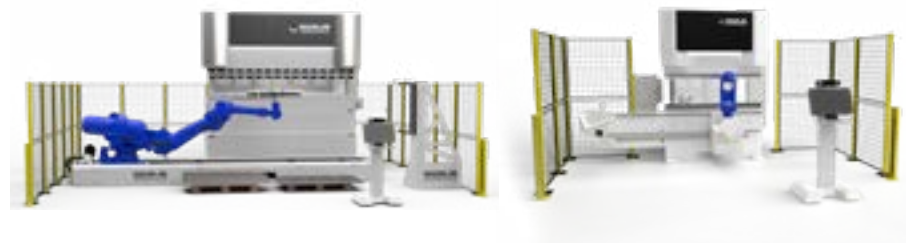
Hybrid Series



Shearing



Robobend



AFTER SALES SERVICE

- **Teleservice** 5 days a week
- **Service Stations** covering major geographical areas:

- Germany
- Greece
- France
- Poland
- Croatia (Balkan Countries)
- Russia
- India
- Thailand
- USA
- GCC countries
(Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, UAE)



**One Group
One Deal
One Service Center
One Partner**

SAVE ENERGY



G6-ELECTROBEND



G6-ELECTROCUT

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