



BOSCHERT GIZELIS.co

G-ELECTRO
series

SAVE ENERGY

Earth provides enough to satisfy every man's needs, but not every man's greed.

– Mahatma Gandhi

BOSCHERT GIZELIS.co



G-ELECTROCUT

22

ELECTRO CUT CONTROL

24

INNOVATIVE DESIGN

26

TECHNICAL SPECIFICATIONS

29

OPTIONS

30

INDUSTRY 4.0

32



PRODUCT RANGE

37



G-ELECTRO-CUT • SERVO ELECTRIC SHEAR



Gizelis SA has been manufacturing hydraulic swing beam shears for over 50 years. Gizelis shears have always been top of the line with sturdy machine elements that ensure a lifetime of trouble-free operation. With the same philosophy our new line of servo electric shears is manufactured. This new type of shear brings Gizelis shears to the new millennium and introduces a new state of the art.

ENERGY EFFICIENT

UP TO 50% COMPARED TO HYDRAULIC SHEARS OF ANY KIND.

FAST & PRODUCTIVITY

FAST AND PRODUCTIVE. WITH SPEEDS THAT CAN REACH UP TO REAL 40 CUTS/MIN.

INTRINSICALLY SAFE

THE GUILLOTINE IS MOUNTED ON SPRINGS AND THUS IN THE EVENT OF FAILURE IT MOVES UPWARDS.

ENVIRONMENTALLY

THERE IS NO OIL USED AND THUS NO PROBLEMS RELATED TO ITS EXCHANGE / DISPOSAL ETC.

UNIQUE CONTROL

UNIQUE CONTROL FEATURES. GIZELIS SOFTWARE PROVIDES MANY FUNCTIONS THAT ARE NOT PRESENT ON OTHER SHEARS.

USER FRIENDLY

VERY EASY TO COMMISSION AND OPERATE OIL FREE, THUS NO LEAKS AND VIRTUALLY ZERO MAINTENANCE.

UNIQUE SHEET SUPPORT

THE SHEET SUPPORT SYSTEMS UTILIZES A HYBRID BELT/ PNEUMATIC DRIVE THAT CAN BRING FULL LENGTH PIECES TO THE FRONT OF THE SHEAR, THUS INCREASING PRODUCTIVITY LIKE NO OTHER SHEAR.

COST EFFECTIVE

A GUILLOTINE SHEAR WITH VARIABLE RAKE ANGLE AT A VERY COMPETITIVE PRICE.

G-ELECTROCUT CONTROL

Gizelis S.A. electric shear is controlled by a Beijer X2 Control panel which combines industrial Human-Machine Interface (HMI) and PLC functionality in the same compact hardware.

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

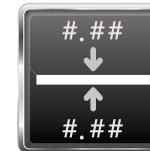


CONTROL 'S MAIN MENU



1. CENTRAL POWER

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



3. CUTTING GAP ADJUSTMENT

Automatic adjustments of the cutting gap according to cutting thickness.



2. SHEARING ANGLE ADJUSTMENT

Automatic adjustments of the cutting angle according to cutting thickness.



4. THICKNESS MEASUREMENT

Special Sensor to measure the material thickness and automatic regulation of the cutting gap and cutting angle.

G-ELECTRO CUT CONTROL



5. BACK GAUGE ADJUSTMENT

Accurate back gauge positioning, based on AC servo motor.



6. BACK SHEET SUPPORT (menu)

The back sheet support (BSS) has five operation modes (buttons 7-11). The operator has to choose a mode according to his needs in order to reduce the time needed to handle cut pieces.



7. TILT BACK

In Tilt Back function the back sheet support remains tilted in order to let the cut piece slide away to the back area.



8. TILT FRONT

In Tilt Front function the back sheet support remains tilted in order to let the cut piece slide into the front drawer.



9. DROP BACK

In Drop Back function the back sheet support is placed under the sheet material and moves away to let the cut piece to slide away to back area.



10. DROP FRONT

In Drop Front function the back sheet support is placed under the sheet material and moves away to let the cut piece in order to slide into the front drawer.



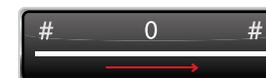
11. RETURN TO FRONT FUNCTION

In Return To Front (RTF) the back sheet support lifts the cut piece back to the cutting line after the cut, then the back gauge pushes it out on the cutting table. This function aims to reduce the time needed to handle cut pieces.

12. SETTINGS/PARAMETERS



13. CUTTING LENGTH



14. RECIPES

Touching the Recipes button, the main menu is swapped out by the Parameters menu which is depicted on the figure. Using the recipes menu, the operator is able to determine a work flow by defining:

- Sheet material's thickness
- 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

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ELECTRIC SERVO MOTOR

Conventional shears use AC motors that rotate continuously and circulate oil by means of a pump and produce hydraulic power that is then used to perform the cut. There are several drawbacks to this system that are eliminated by the use of an AC servo motor.

- Energy consumption: the AC servo moves only when the guillotine moves. Conventional hydraulic systems circulate the oil constantly, thus up to 50% less electrical energy consumed.
- Guillotine speed and control: There are several things that limit the performance of a hydraulic system among which dwell times etc. This is not the case for AC servos that can change direction and speed instantly. This means that the cut cycle can be greatly reduced.



POWER EFFECTIVE FORCE DISTRIBUTION

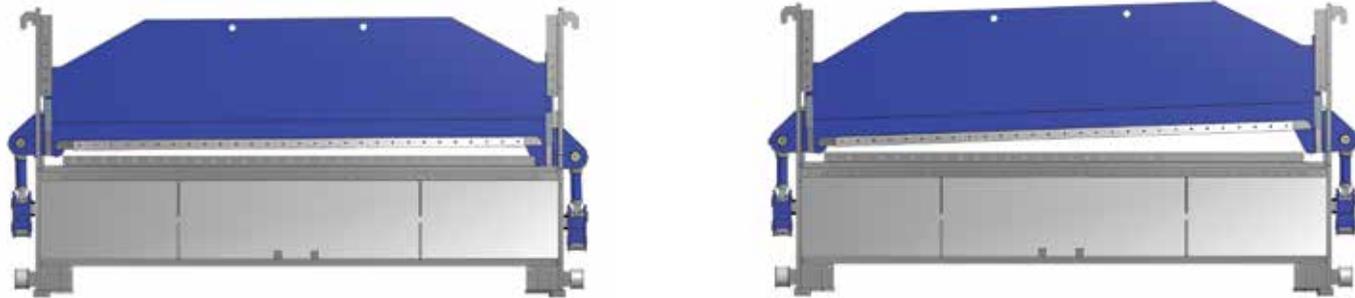
During shearing of a metal sheet, the full force required must be provided at the start of the cut and also, at the end of the cut. This means that each hydraulic cylinder of the shear has to be sized in order to be able to provide the full force of the cut on its own. The force provided on the guillotine is twice as much needed in the center of the cut length. For a given power the extra force provided comes at an expense of speed. This is not the case with the force distribution in the new Gizelis shear. The force

INNOVATIVE DESIGN

is distributed to the place that it is needed by means of a torque tube installed on top of the shear. This means that the motor power can be used much more effectively providing greater speeds for cutting. during non-bend ram movements). This makes cycle times of the Gizelis press brakes even faster.

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



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

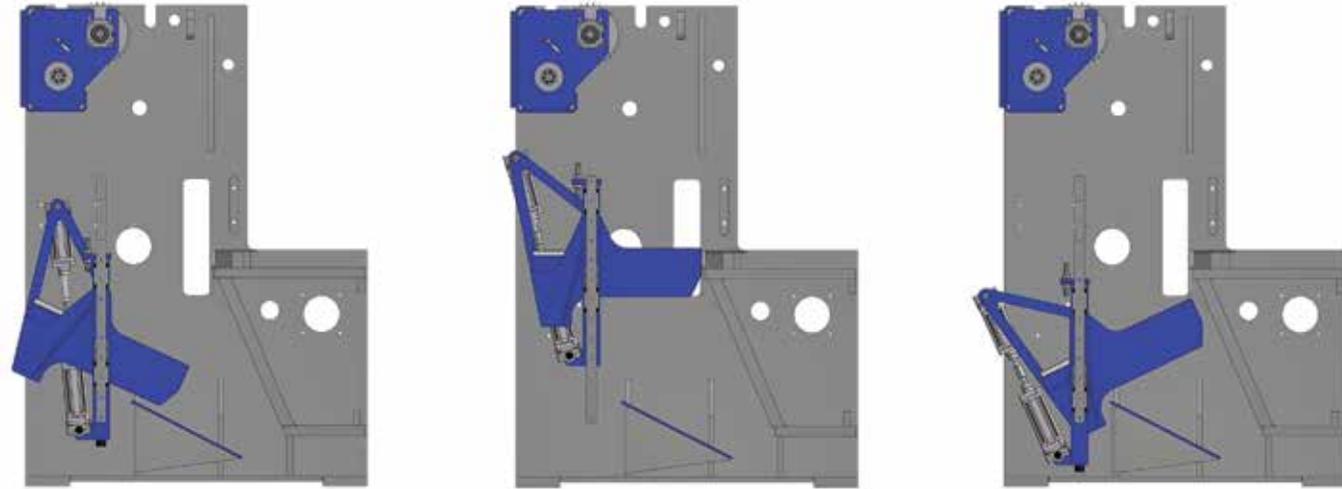
The upper blade of the shear is rectangular thus allowing the user to use all four edges. This means that the upper blade lasts twice as long compared to a blade with two cutting edges.

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

For the guillotine position two (2) linear encoders of very high resolution are used. Thus the precision of the shear is greatly enhanced. Functions like length of cut are faster and more precise than ever before.

AC SERVO BACK GAUGE

The Gizelis electric shear back gauge features an AC servo. Together with a rigid steel back gauge with high dynamic characteristics, the positioning of the back gauge is extremely accurate and very fast.

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

		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

OPTIONALS

RSS System: Rear Sheet Support



RTF System: Return to the front



MFP System: Movable Front Panel



ATM system: automatic thickness measurement



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*

Transport belts



Finger safety with light guards



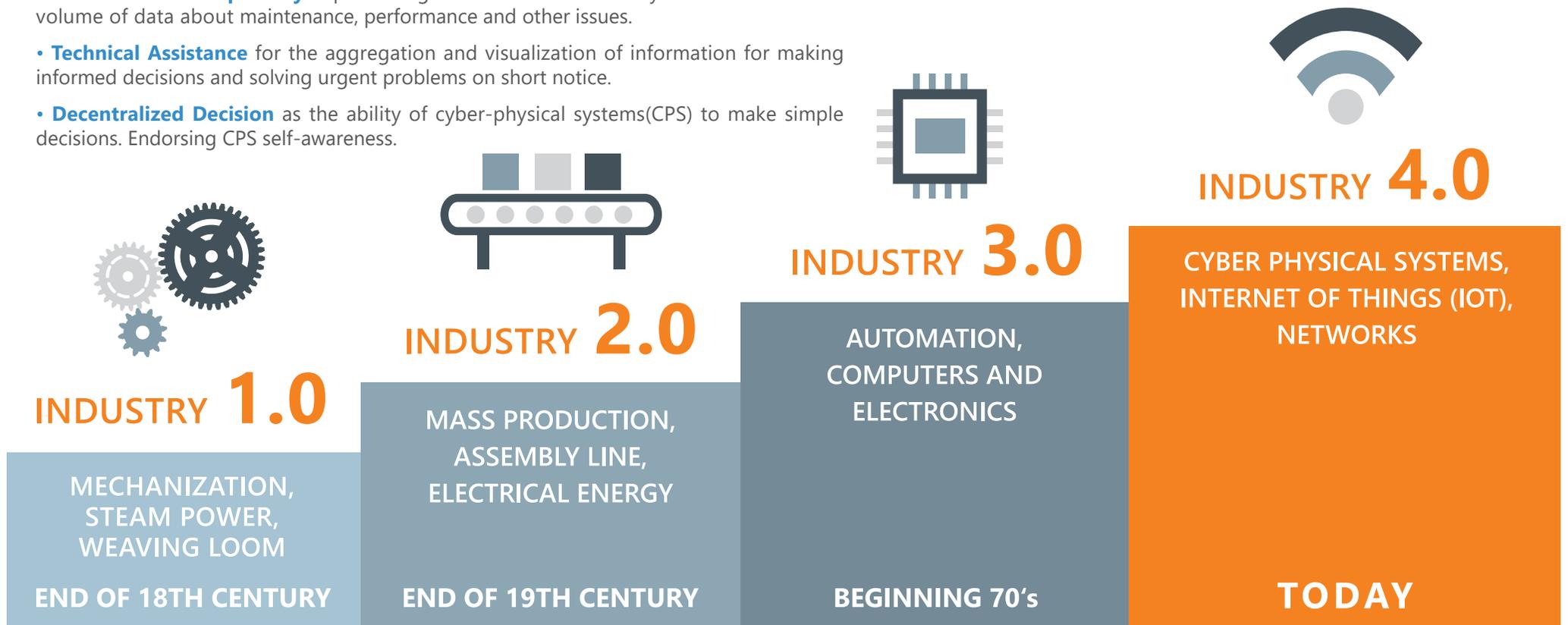
INDUSTRY 4.0

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

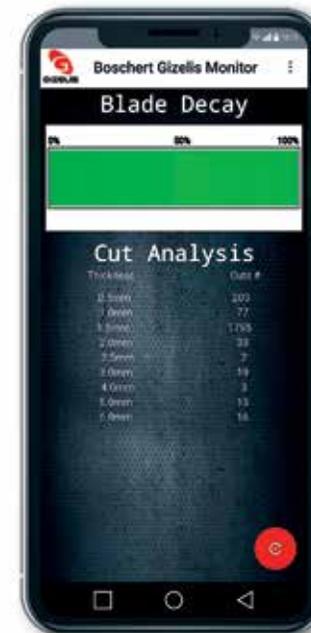
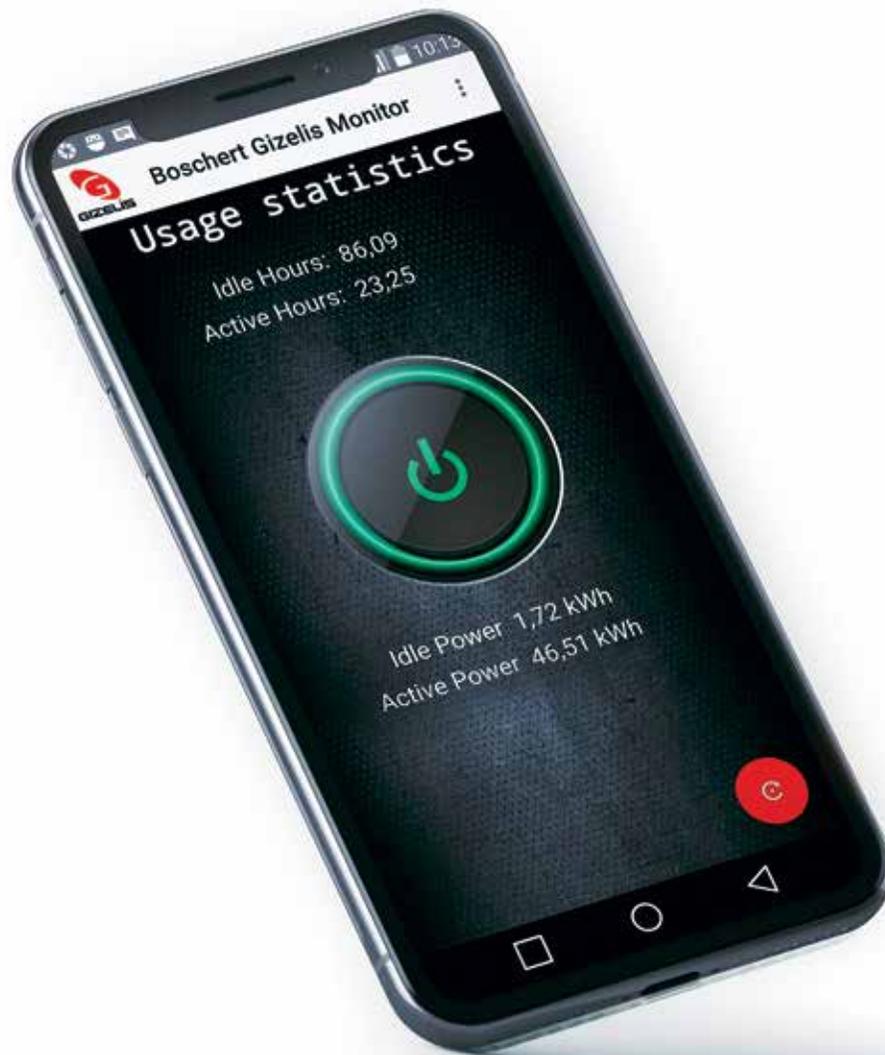
- Graphical Data representation
- Graphic Only user interface - language independent

Secure Password Protected and Encrypted Connection

BOSCHERT GIZELIS 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



Recipe Name	Repetitions	Average Time
AAAList	1	0 min 36 sec
BBBList	3	1 min 1 sec
CCCList	3	0 min 47 sec
DDDList	35	3 min 38 sec
EE	1	3 min 33 sec
FFFFFFFFFFList	6	0 min 0 sec
GGGList	27	3 min 37 sec
HHHHList	27	2 min 37 sec
IIIIList	1	0 min 53 sec

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

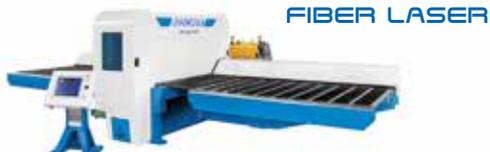


PRODUCT RANGE

➔ 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, 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.



MULTIPUNCH



G-ELECTROBEND



G-ELECTROCUT

↘ **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)

AFTER SALES SERVICE

One Group
One Deal
One Service Center
One Partner

SAVE ENERGY



G6-ELECTROBEND



G6-ELECTROCUT

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