SAFAN DARLEY®

The E-volution in sheet metal working

E-Brake 35T-130T Premium

Press brakes with an E for electronic

Unfold the future

the future unfolded

Efficiency
The comprehensive solution for faster production

Ergonomics
Full control of the process operations with one finger

As the inventor of the electronic press brake, SafanDarley set in motion a worldwide Evolution in sheet metal working. Even now, SafanDarley continues to work on innovative ways to raise your efficiency levels.

With SafanDarley, you will be able to operate at the highest possible level from the get-go and benefit from unique innovations and developments, guided by those people who set the standard: the highest possible standard for integrated sheet metal working.

Ecology
Maximum C02 and oil reduction

Economics
Maximum return on your investment

SafanDarley offers innovative solutions for all varieties of sheet metal working, using game-changing electronic, hybrid and hydraulic techniques.

SafanDarley unfolds a future in which each sheet metal worker can benefit from opportunities to produce in a more Efficient, Economical, Ergonomic, and Ecological way. Complex products, large and smaller product ranges: process optimization and lean manufacturing with zero defects are a given with SafanDarley, and just-in-time production is guaranteed.

Working with SafanDarley means being able to trust us at our word and knowing we will keep our promises: providing technology that sets the standard in industrial sheet metal working; introducing innovations that actually contribute to maximum operating efficiency; and being a partner that actively contributes high-level ideas and solutions to your problems. SafanDarley will allow you to be ahead of the times and secure your competitive position.

Smart production in the Smart Industry

SafanDarley leads the way to smarter production with its new technology and its Smart Industry. Smart Industry is an approach that allows industrial companies to take up a strong position by making maximum use of the newest information and technological developments. We do so by implementing far-reaching digitalization and more closely linking equipment, production resources, and organizations, which results in a new, better integrated way of production. SafanDarley ensures production that is more efficient and flexible, of higher quality, and tailor-made.

Put in more concrete terms, 'Smart Production' means improvement of your OEE or Overall Equipment Effectiveness. We consider your every need to make sure that our machines fit into your production line perfectly. Our purpose in employing our machines, software, data communication, robotization and human guidance to aid you is to ensure optimization of your manufacturing processes with zero defects.

Improvement of your Overall Equipment Effectiveness is easy once you have SafanDarley as a part of your production process. To put it more concretely, it is common for companies' OEE to increase by 30%.

SafanDarley enables you to stay ahead of time and safeguard your competitive position.

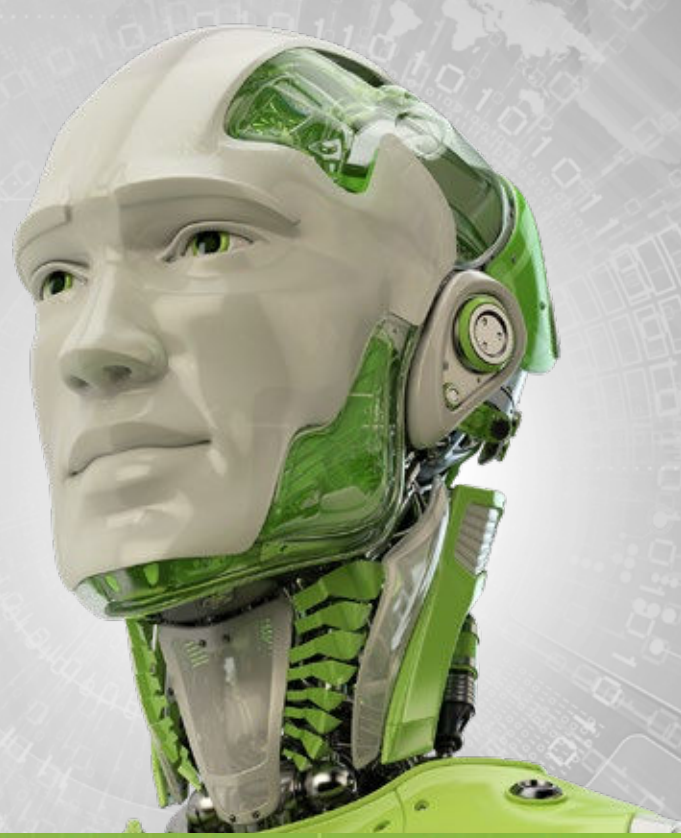
Roller drive with 2 servomotors

E-Brake Premium

Fully electric drive

SafanDarley E-Brake Premium

The fourth generation E-Brake adds important new benefits to existing E-Brake technology, which has now proven itself worldwide. E-Brake Premium is the successor to the current E-Brake up to 100T. One key feature is the new design, which significantly improves the ergonomics. The controls are also given a new design and are Industry 4.0-ready, which means that they communicate with external systems. In short, the new generation SafanDarley E-Brake represents the next step in the E-volution of sheet-metal working.



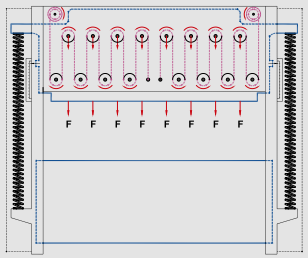
- More than 30% higher productivity
- Up to 50% energy saving, low CO2 emissions
- No harmful hydraulic oil
- Noiseless operation
- Full working length backgauge
- User-friendly Touchscreen control

The unique pulley drive of SafanDarley has proven itself around the world

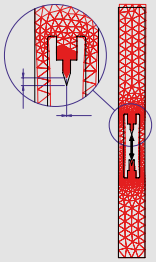
Servo-electronic bending
with the E for even bending

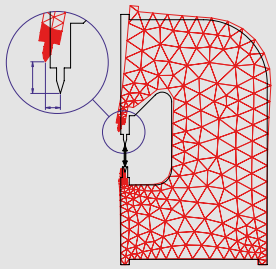
The unique, patented roller drive system in the upper beam ensures a uniform and even distribution of forces. A balanced combination of powerful electro-motors, fixed and movable rollers and specially developed belts facilitate capacities of up to 300 ton.

The flexible belts, which are only 0.12 inch thick and 2 inch wide, are reinforced with steel wires and coated with hard polyurethane. This advanced technology has been extensively tested in the demanding elevator industry. So reliable is the technology that SafanDarley are able to offer a 5 year warranty on the mechanical drive system, when combined with an annual service contract. The special construction of the SafanDarley E-Brake also contributes to the even absorption of large forces. The O-frame acts as a single unit and deformation is kept to an absolute minimum. It is more stable, stronger and produces less deformation than a conventional C-frame.



Even distribution of forces


E-Brake


Conventional

E-Brake Premium

Up to 30% shorter cycle times

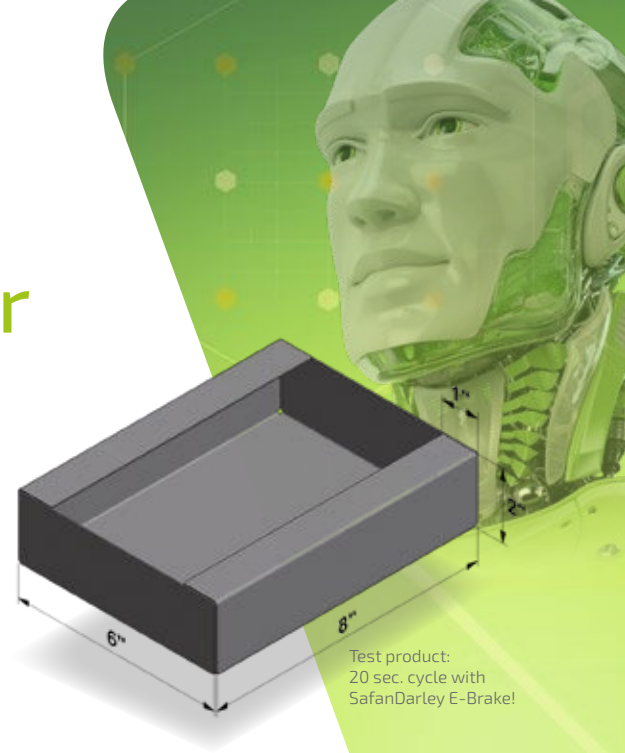
The new SafanDarley E-Brake Premium has been optimized further in order to profit from the acceleration options and the other convenient servo characteristics. This not only makes the E-Brake very fast in rapid traverse, but also during the full cycle.

The E-Control control system, which was developed in-house, uses a new generation of electronics and software. This results in incredibly short reaction and stop times, through which bending speeds of up to 48 inch/min. can be achieved. Cycle times are also far shorter than with conventional press brakes, partly through the fast backgauge. In comparison tests, the SafanDarley E-Brake is shown to be up to 30% faster than a conventional press brake. Cycle times for this product (see image below):

SafanDarley E-Brake 50T 2050	Cycle time 20 sec.
Conventional hydraulic press brake	Cycle time 35 sec.

Up to 50% energy saving

The SafanDarley E-Brake only uses energy when the top beam is actually moving. This can deliver an energy saving of up to 50% compared with conventional hydraulic press brakes.



Test product:
20 sec. cycle with
SafanDarley E-Brake!

Bending test product

Innovation
with the E for efficiency

After the success of the first generation of E-Brake and the breakthrough to the heavier segment of 331 US Ton, we have continued optimizing the machine concept. What could we improve in the construction and how could we make the machine even more efficient to work with? The answer was found in a modular construction of the E-Brake, a new back gauge, and a longer stroke.

Modular machine concept

The biggest innovation in the SafanDarley E-Brake is in how the machines are constructed. Thanks to the new modular concept, every machine in the range can be produced more efficiently and delivered faster, from the 35T–1250 to the 130T–4100. The standard Q size (Opening) is 23 inches, but you can opt for 26, 27 or 31 inches also.

Extremely stable back gauge with CNC controlled X and R axis

A newly designed construction makes the innovative back gauge system of the SafanDarley E-Brake extremely stable. The system is very distinct, as the back gauge spans the entire width of the machine.

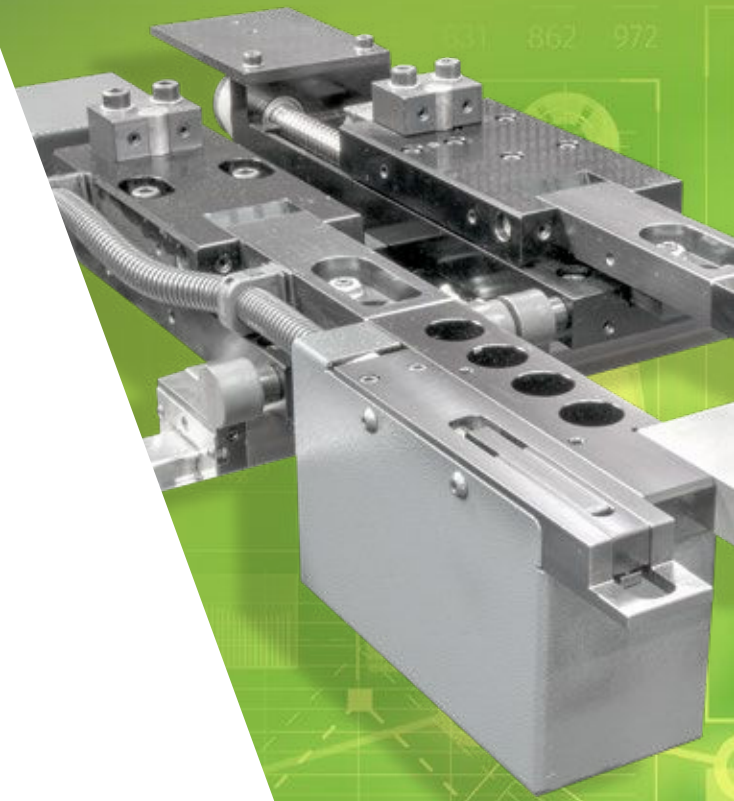
In addition, the electronic control system makes it extremely precise (0.0008 inches) . The back gauge has a traverse speed of no less than 827 in/min. The CNC controlled X and R-axis are a standard feature, as are the folding back gauge fingers and 39 inches range.

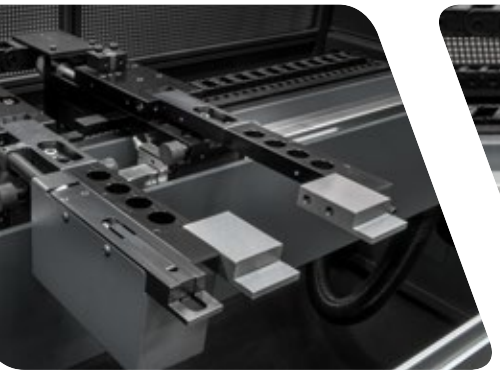
Options

As an option, the back gauge system can be equipped with CNC controlled Z-axis and Delta X-axis.

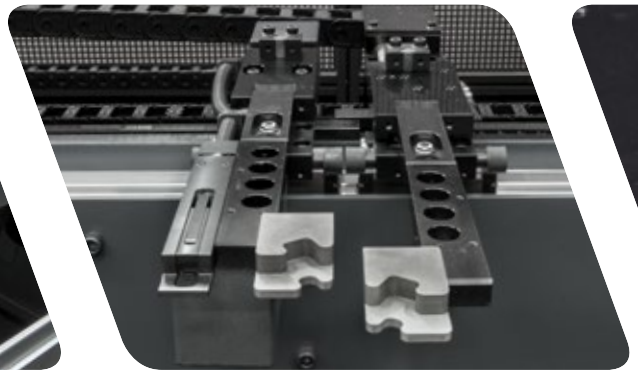
Tool system

As a standard, the E-Brake comes with the New Standard Pro MC mechanical tool clamp system. As an optional extra, we'll supply the E-Brake Premium with the New Standard NSCL-I HC Premium hydraulic tool-clamping system. You may also select from a wide variety of hardened and/or hydraulic Wila clamps or the European Style tool-clamping system.



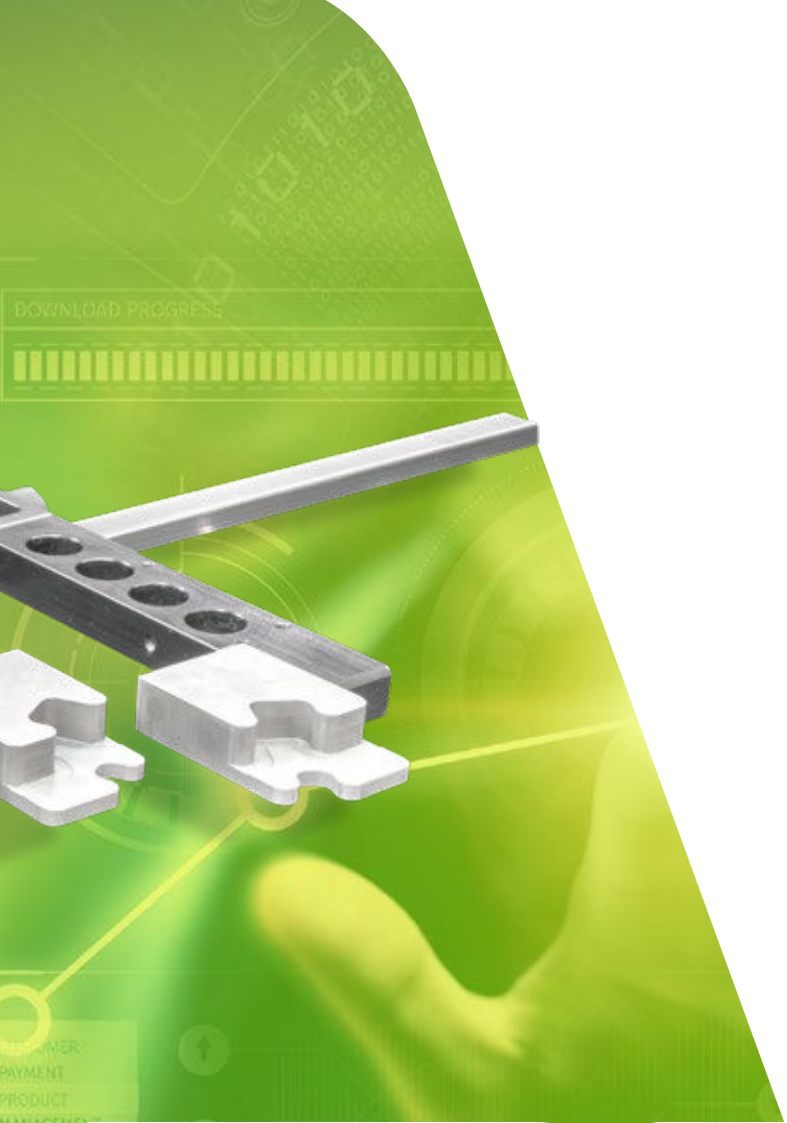


Backgauge with X-, R- and Z1+Z2-axis



Backgauge with X-, R-, Z1+Z2- and Delta X-axis

3D stops



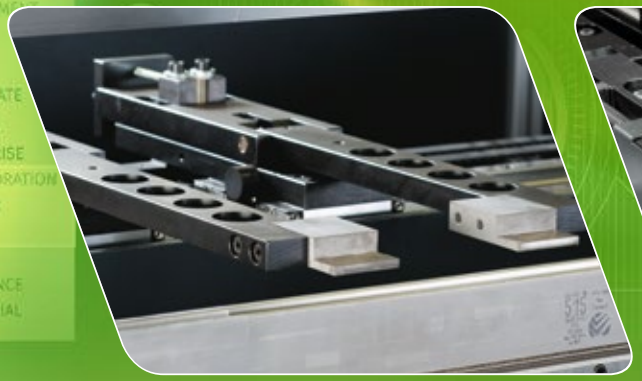
Moveable and adjustable support arms

SafanDarley has developed a range of support arms of modular construction for both light and heavy-duty sheet-metal work. This makes it possible to rapidly set up the correct solution for each application. This results in a perfect synergy between ergonomics and efficiency.

All support arms can be used in combination with the light guard. The support arms are as standard equipped with brushes. You can choose from the following possibilities:

- Support arms fixed to the machine
- Support arms movable across the front side of the machine
- Support arms movable across the front side of the machine and height adjustable with a handwheel
- Support arms movable across the front side of the machine and pneumatically adjustable in height (programmable on the control)

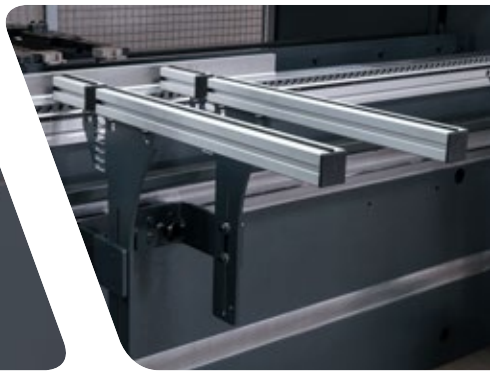
Optionally all support arms can be equipped with adjustable front stops.



Standard backgauge stops

3D backgauge stops

Movable support arms adjustable in height



Movable support arms

Programming in three steps

01 Importing and unfolding

The software will automatically determine the correct results, optimum bending sequence, stop positions, and optimum tool set-up with as few manipulations as possible based on an imported 3D model. You also have the option of adjusting the bending sequence and stop positions manually.

02 Bending simulation

A complete 3D bending simulation allows you to check the entire bending process. A CNC program containing all of the offset data will then be generated. This powerful software ensures product-accuracy from the get-go.

03 Production

Retrieving the data package from the network using the controls and start your production on the brake. The NC program and the bending simulation will appear on the bottom screen, and other data such as the technical drawings, video, notes, etc. will appear on the top screen (this is optional).

01 Importing and unfolding

Offline 3D-programming

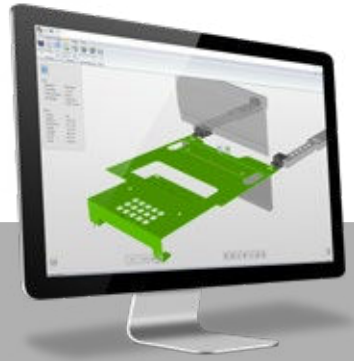
SafanDarley offline 3D programming stands for complete and reliable process management. As opposed to several widely used CAD/CAM systems, our system is very user-friendly and requires only a short 2-day training period.

The design program includes an ingenious simulation and control module for using the press brake that can be remote-controlled, from the office for example. This limits the time during which the machine is at a standstill, thus maximising productivity.

The system consists of 3 simple steps. Fast and flawless work is the SafanDarley standard.

Offline programming offers you plenty of ways to do 3D Design and to import and correctly produce 3D drawings. If the employee using the program is also the one controlling the press brake, an NC code for the system may be generated instantly. The program will then select the necessary tools and optimise the machine. A work planner can even switch to a different press brake at the last moment, re-generate the NC code and run a collision check.

To conclude: optimum streamlining of your manufacturing processes. Even when used in conjunction with other CAD and CAM systems.



02 Bending simulation

03 Production

SafanDarley E-Control,
the new E-standard in ergonomics

Since the introduction in 1995, the SafanDarley E-Controls have been the international standard for ease of operation. The SafanDarley touch screen concept is therefore the most functional and intuitive Man-Machine interface in the sheet-metal working industry. SafanDarley have once again shifted the standards with the SafanDarley E-Control as the latest generation touch screen controls.

Complete Touch Screen convenience

The SafanDarley E-Control is fully touch screen, whereby the only buttons visible on the 21" screen are those that are needed during operation. The controls simply run on a PC under Microsoft Windows®, the software was developed based on Microsoft.net Framework. The unit is fitted with a 100 MB Ethernet UTP network connection as standard. The instructions are transmitted to a central processor from the SafanDarley E-Control controls, which in turn regulates the various axis via a so-called CAN-BUS (Control Area Network). The system can be programmed quickly and accurately thanks to a 'self-teaching' database with data on materials, tools and previous, already corrected bending. The SafanDarley E-Control can be coupled to the majority of off-line programming systems.

E-controls

The E-Brake Premium is fitted as standard with E-control EC10 controls on a single split-screen display. This functionality allows the user to run two applications on a single display, enabling you to create a paperless working environment using the EC10 controls. The machine may also be optionally fitted with EC20 controls. This enables both numeric and 2D-graphic programming. It is possible to draw a complete product by means of touch screen and to then automatically generate a bending program. The developed length is also calculated.

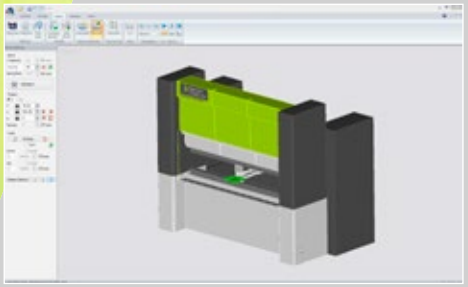
Web-based communication and support

The controls are set-up for web-based communication such as online diagnoses and loading software updates via the web. Machines can also be coupled to each other in a group and tooling databases can be shared. By monitoring and analysing your operating data online, SafanDarley will be in a position to optimize your production process remotely in the near future.

Real time connectivity

Summary of EC10 and EC20
SafanDarley press brake controls

Type	Possibilities	Can be controlled offline with
EC10	• Color touch screen 21" • Numerical programming of products by means of touch screen • Numerical display of bending parameters • Use of up-to-date database	SafanDarley EC software • Delem Profile • Delem V Bend • Autopol • Radan
EC20	All of the EC10 features as well as the following: • 2D and 3D graphic display of products programmed offline for Autopol and Radan • 2D Programming of products using Profiler • Automated bending sequence calculation Bending simulation	SafanDarley EC Software • Delem Profile • Delem V Bend • Autopol • Radan



Off-line 3D programming (Autopol)

2D bending instructions (EC20)

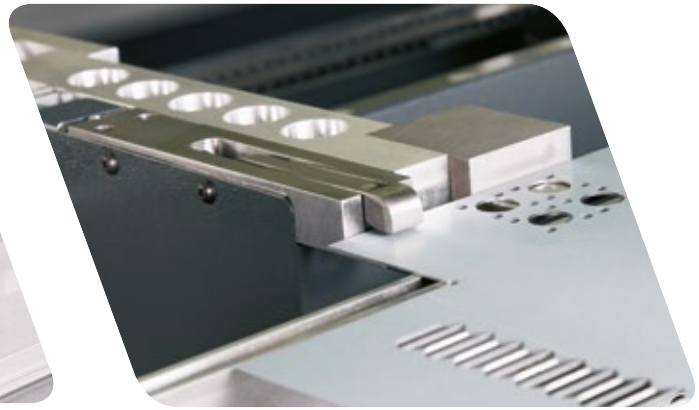
2D programming (EC20)

Bending with an E for efficient options

Fast, simple and reliable sheet thickness measurement can be essential for your bending process. SafanDarley has made E-volutionary advancements in this area too. The SafanDarley E-Bend system, electronically interfaced to the E-Control Touch Screen controls, gives you greater efficiency with precise measurements of sheet thickness.

SafanDarley E-Bend S

The SafanDarley E-Bend S sheet thickness measurement system is mounted next to the backgauge finger. The system measures the sheet thickness to an accuracy of ± 0.0004 inch. It can be precisely programmed when measurement should take place. Measurement takes just tenths of a second and the data in the control system is immediately adjusted. The control system database maintains all records of measurement and is set out graphically.



SafanDarley E-Bend S

Increase your efficiency with exact sheet thickness and angle measurements.

SafanDarley E-Mate bending aids

With the electrically-driven E-Mate bending aids from SafanDarley, you prevent angle deviation when bending thin sheets with large dimensions. The bending aid provides the operator with a simple and ergonomic means to remain within set angle tolerances.

It is often not easy for an operator to position large sheets. Certainly during the return movement of the top beam, it is difficult work to keep everything in hand. Instead of having a second operator provide assistance, it is frequently more efficient to install a SafanDarley bending aid. In most cases, it can be used by a single operator to position larger products. In brief, along with accuracy, productivity is increased by the SafanDarley E-Mate, the best partner for your operator. In order to relieve the operator in the case of long, routine, heavy duty work, SafanDarley has developed an extremely powerful and highly accurate bending aid, the E-mate plus. The bending aid supports and follows the sheet with great accuracy throughout the entire bending process.

Type of bending aid	Max. sheet weight
• E-Mate	66 lbs.
• E-Mate plus	330 lbs.

SafanDarley E-Mate bending aid

SafanDarley E-Mate Plus bending aids

Electronic evolution

with an E for ecological and economical

The SafanDarley E-Brake contributes perfectly to your sustainable business, while at the same time making your business operations much more economic. The absence of hydraulics means that the problems associated with environmentally harmful and risky oil are a thing of the past. No overpressure valves need to be set – with a chance of errors and narrowing – and no filters need to be checked and replaced. The servo-electronic system is therefore much more reliable than the hydraulics, due to the lack of oil, tank, pump, seals, valves, and filters. You'll never have to deal with a cold start.

Integrated safety

Work fast without risk: SafanDarley makes that a reality with the safety system integrated within the controls. It works with a safety light screen that is automatically directed from the SafanDarley E-Controls. In addition, the SafanDarley E-Brake Premium has an additional in-built safety provision. The application of a spring return means that the top beam will always move upwards in the event of a failure.

E-Brake Premium with an integrated safety system

E-Brake 35T-40T
Premium

With the Ergonomic design of the E-Brake, SafanDarley enables the operator and the press brake to work as a unit. The operator is partially seated inside the machine, surrounded by an edging table with his legs in a spacious cut-away underneath the lower beam, where the foot pedal is located. The ergonomic ease of operation is assured as the seating position can be adjusted as desired. The height and angle of the foot rest is also adjustable. All actions of the bending cycle take place in one fluent sequence, as a result of which the shortest possible cycle times can be achieved.

Faster production of larger series

Particularly when bending large quantities, it is an advantage to be able to work sitting down. The sophisticated ergonomic facilities of the Ergonomic model enable the operator to maintain a high output for a long time. This increases the productivity.

Flexible concept

The seating position and the foot rest are adjustable, and the edging table can also be adjusted in four parts. This will enable you to achieve the perfect pick-up height, working height and cast-off height every time. In addition, the edging table can be fully or partially collapsed, enabling the operator to bend whilst standing up. Finally, the entire edging table can easily be removed from the machine to make the front freely accessible. This allows you to use the E-Brake Ergonomic for larger sheet-metal work like you would a “regular” machine, making use of the support arms.

Integrated security

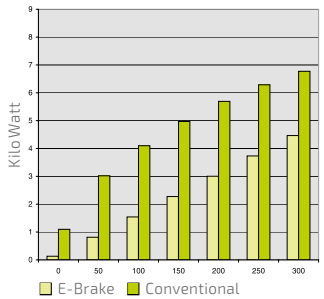
The E-Brake Ergonomic has a double-function safety light screen that is integrated into the control panel.
Its first function is to secure the bending zone, its second function allows the axis to move while the operator turns, picks up or removes the product.
These simultaneous actions of the operator and machine lead to lightning-fast cycle times, with the highest level of safety. Particularly in the serial production of small parts, this integrated system facilitates an unrivalled work speed with optimum ease of operation.

Man & Machine
as one unit

Energy consumption

On the SafanDarley E-Brake Premium, the main drive motor is used only when the E-Brake has to actually perform a movement. With a conventional hydraulic press brake, the hydraulic pump motor is running all the time.

SafanDarley E-Brake energy consumption

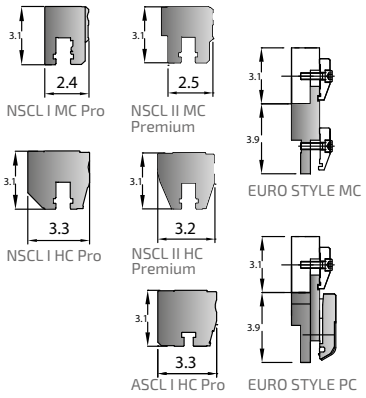


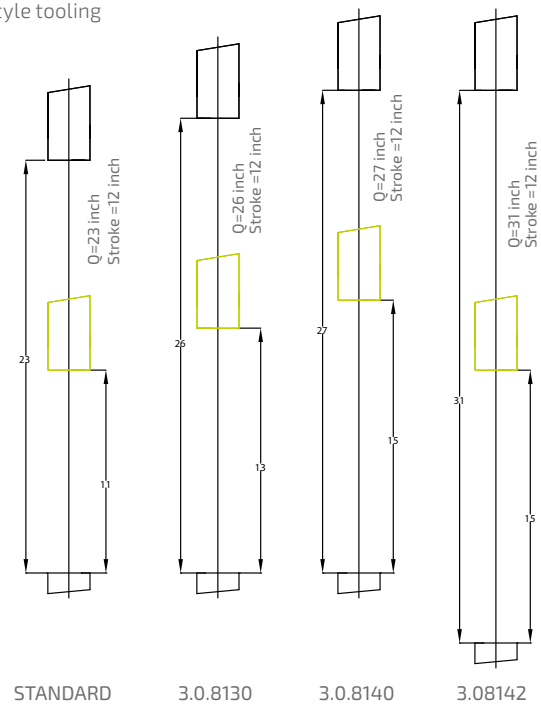
The graph only covers the time while the press brake is actually in operation. During the standby time - which can be as much as 90% on account of sheet handling, machine set up and intervals - this will mean a further saving with the E-Brake up to 3000 kWh a year.

Standard features

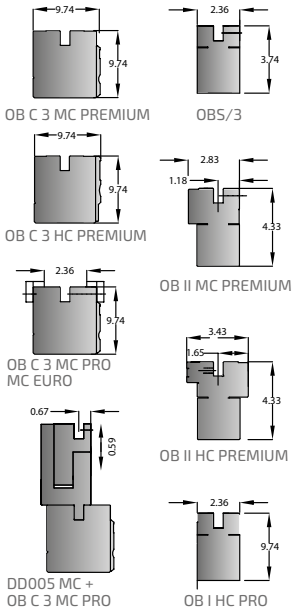
- EC10 controls, single split-screen display
- CNC-controlled R- axis
- CNC-controlled Y1-Y2 axis (top beam inclination adjustable +/- 0.1 inch)
- CNC-controlled back gauge (X-axis) with a wide range
- Manual variable adjustment of back gauge fingers width across a linear guide
- NSCL I MC Pro upper-tool adapter and OB/S-3 lower table with mechanical clamps for New Standard Style tooling
- Z1/Z2 axis, manually adjustable on a linear guide
- Opening size of 23.22 inch (Q-dimension)
- 2 Support arms (11.81 inch in length)
- 1 Hold to Run operating console
- Programmable and integrated safety light guard
- Front-mounted tool lighting
- Safety in conformance with CE

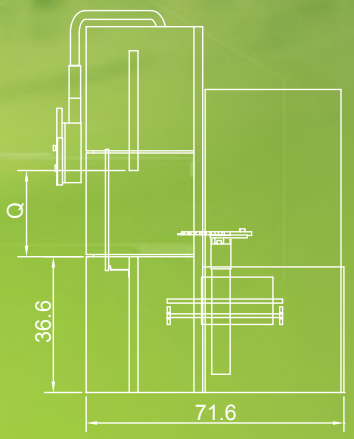
Tool adapters SafanDarley E-Brake

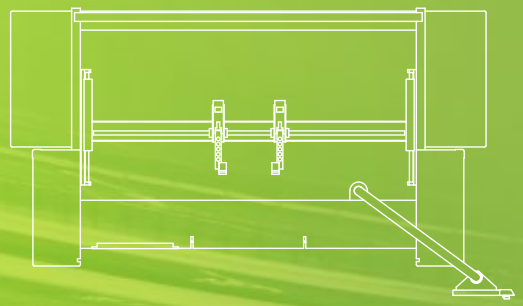


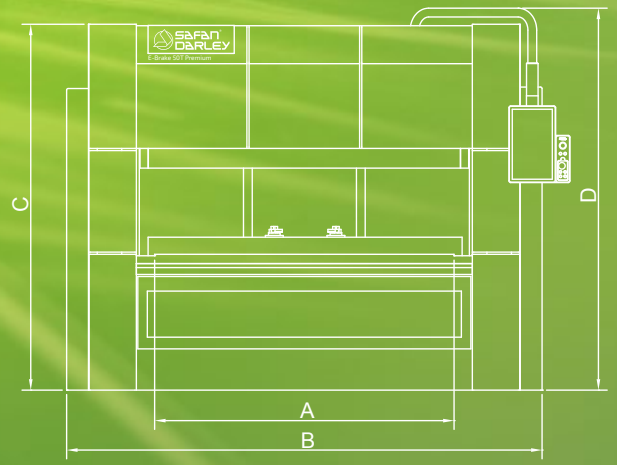


OPERATOR SIDE









Technical specifications

E-Brake 35T-130T Premium	Pressing force in US Ton	Working length in inches	Maximum stroke in inches	Q-dimension in inches	Closing speed in inch/min	Bending speed max.* in inch/min	Return speed in inch/min	Motor Power in kW	Weight in lb	A in inches	B in inches	C in inches	D in inches
35-1250	39	50	12	23	449	48*	449	11	10.800	50	98	99	104
40-1600	44	60	12	23	449	48*	449	11	11.905	60	112	99	104
50-2050	55	80	12	23	378	48*	378	11	13.450	80	130	99	104
80-2550	88	100	12	23	213	48*	213	11	15.210	100	150	99	104
100-3100	110	120	12	23	177	48*	177	11	16.535	120	171	99	104
130-3100	146	120	12	23	307	48*	307	15	19.731	160	171	107	111
130-4100	146	160	12	23	260	48*	260	15	23.149	200	204	107	111

* CE version: Max. bending speed 24 inch/min.
Subject to modifications.

Accessories (optional)

- CNC-controlled Z1-Z2 axis (horizontal repositioning back gauge fingers)
- CNC-controlled Delta X-axis (horizontal repositioning of one back gauge finger)
- Opening size increase up to 26 inch, 27 inch or 31 inch (Q-dimension)
- Various upper and lower tool adaptors
- Various bending aids
- SafanDarley E-Bend S sheet thickness measurement system
- Ergonomic model for E-Brake 35T and 40T
- Various support arms, fixed, moveable and adjustable in height where required
- Extra Hold To Run operating console (compulsory with 2 machine operators)
- Integrated tool cabinet
- Machine lighting
- EC20 2D-graphic CNC controls, single split-screen display

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E-Brake 35T-40T Premium Ergonomic

E-Brake 35T-130T Premium

E-Brake 50T-130T Ultra

E-Brake 160T-200T Ultra

E-Brake 300T Ultra Dual Drive

E-Brake 35T Mini Cell

E-Brake 160T-200T iTC

H-Brake Hybrid 110T-1600

H-Brake Hybrid 110T-170T Premium

H-Brake Hybrid 110T-170T Ultra

H-Brake 175T-400T Ultra

H-Brake HD 500T-1250T Ultra

R-Brake 130T

B-Shear & M-Shear

Special cutting lines

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