



E-Brake Mini Cell

Rapidly switch between products

Unfold the future

The E-Brake Mini Cell is a compact, automatic, flexible bending cell and is equipped with the latest type Fanuc Robot. The Mini Cell is ideal for the fully-automated production of small and complex products and can be configured exactly to a client's requirements.

It is also possible to bend different products sequentially.

Advantages

- Quiet machine
- Small footprint
- Industry 4.0-ready
- Save up to 50% on energy costs
- Up to 30% higher productivity due to the electric drive and integration of controls and drive motors
- Lower maintenance costs as compared with hydraulic press brakes, as no hydraulic oil, seals, filters, or valves are required
- The back gauge is able to be used over the full working length

Options

- Sheet thickness measuring system
- Programmable offline with RoboBend simulation software
- Automatic tool changer
- Automatic gripper changer

Rapidly switch between products

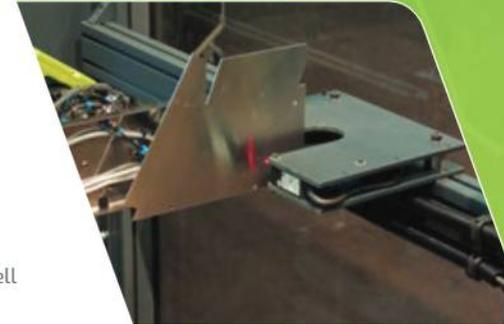
Standard equipment

- SafanDarley EC10 Touch Screen CNC split-screen controls on swivel arm
- CNC-controlled Y-axis (Y1 and Y2)
- CNC-controlled back gauge (X1, Z1-Z2, R1)
- Backgauge beam with 2 foldable, hardened fingers
- Upper beam provided with NSCL II MC Premium adapter for New Standard upper tools
- Lower beam provided with OB II MC table with ty adjustment
- Hold-To-Run operating console for fine-tuning the bending cell
- M-20iB25 FANUC robot
- 1 Manually changeable vacuum gripper
- 1 Referencing table with sheet separation
- Double-sheet detection to a maximum of 0.118 inch sheet thickness
- Small Parts Chute for collection Bin. Chute height 31.496 inch
- 1 Pallet position the size of half a Europallet
- Protective guards surrounding bending cell, in accordance with CE
- Safety door on the front side of the cell
- 2 Safety sliding doors: one on the right to manually load the referencing table and one on the left to unload the pallet

Technical specifications

Model	Bending length	Pressing force in US Ton	Maximum stroke in inches	Q-dimension in inches	Closing speed in inch/min.	Bending speed max.* in inch/min.	Return speed in inch/min.	Weight in lbs.
35-1250	49.212	38.5	11.811	27.165	425.197	47.244	425.197	16,535

* CE version: Max. bending speed 23.622 inch/min.



Double-sheet detection and sheet thickness measurement



Tool changer



Product Referencing table

Compact and complete

B-Shear

The top-quality hybrid shear



**SAFAN[®]
DARLEY**

The E-volution in sheet metal working

The E-evolution in sheet metal working increases your competitive strength as a manufacturer

The E-evolution in sheet metal working

SafanDarley is the new global brand of sheet metal working machines, created by the merger of Safan and Darley. SafanDarley represents a unique combination of expertise and innovative power.

B-Shear



SafanDarley offers innovative solutions for all types of sheet-metal working, applying revolutionary electronic or hydraulic technology. These innovations are the continuation of our previous milestones, such as the first CNCK servo-hydraulic brake press in 1980, the first servo-electronic brake press SMK in 1995, the first hybrid guillotine shearing machine in 1999 and the first fully-fledged electronic brake press, the original E-Brake, in 2004. This revolutionary machine concept started a global 'E-evolution in sheet-metal working'.

SafanDarley now offers a unique programme of electronic brake presses, from the E-Brake 20T Ergonomic to the E-Brake 300T Dual Drive. In the heavier segment too SafanDarley is the leader in innovation, as evidenced by the new generation SafanDarley H-Brake with its unique durable hydraulics.

All SafanDarley machines are operated by means of SafanDarley e-Control or TS Touch Screen control, the most user-friendly Man/Machine interface available. The combined expertise of SafanDarley is particularly strong in the field of

automated bending cells and client-specific production solutions, with custom-made machines if so desired.

SafanDarley continues to work on new, more efficient solutions under the motto of 'the E-evolution in sheet-metal working'. Electronics play an increasingly larger role in that respect. This also applies to the latest generation of guillotine shearing machines called SafanDarley B-Shear.



SafanDarley B-Shear



In addition to the multifunctional SafanDarley M-Shear with its very complete equipment and multifaceted options, SafanDarley offers the SafanDarley B-Shear, available in one standard model. The SafanDarley B-Shear still provides the same high-grade quality and functionality as the SafanDarley M-Shear. At its core is the advanced hybrid drive for the cutting beam. In addition, the SafanDarley B-Shear offers a series of innovative extras, such as a programmable starting position for the cutting beam, automatic x axis compensation when setting the clearance and Touch Screen control with data management of the cutting programmes. Since SafanDarley only produces the SafanDarley B-Shear in one standard model (310-6) with standard options, this superior shear is surprisingly low priced.



B-Shear: Superior integration of hydraulics and electronics

B-Shear



Cutting beam drive system



The E-standard for Efficiency

The robust hydraulic systems in the SafanDarley B-Shear are controlled by modern electronics. This means that the regulatory mechanism has evolved from hydraulic to electronic technology. A successful E-evolution that increases both your productivity and the quality of your products.

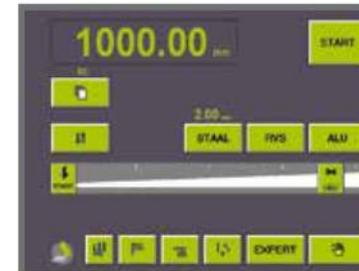
Low-noise and low-energy

The hybrid drive consists of a servo-electronic motor and a hydraulic pump, a combination that operates in a remarkably quiet and energy-saving manner. The motor only runs when the cutting beam is in motion. This provides two advantages in a single stroke. You save a lot of energy, and the cutting cycle does not produce much noise.

Touch Screen control

Of course, SafanDarley's own Touch Screen control is not missing from the SafanDarley B-Shear. This TS150 control with monochrome monitor makes it simple to work quickly and faultlessly. The settings are indicated by clear on-screen symbols. The control operates on Microsoft Windows®.

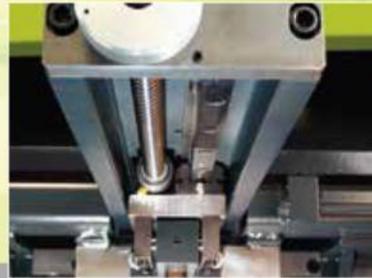
The TS150 control offers three setting levels for simple manual, extended manual and CNC programmed operation. The latter level can be used to program cutting programmes containing both general data and data specific to each cutting step.



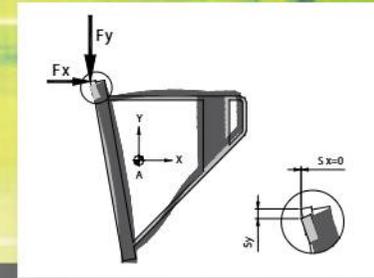
Extended manual operation

Blades with 4 cutting edges

The standard equipment for the SafanDarley B-Shear includes blades with four cutting edges, on both the top and bottom. They enable you to shear in a very economical manner for several reasons, including the fact that blade wear is spread over the blade's entire length.



Backgauge drive system



Self compensating clearance

Thanks to the programmable starting position of the cutting beam, short shearing work can also be done on the right side of the shear.

Precision and automatic compensation

Standard equipment for the SafanDarley B-Shear includes independent left and right clearance adjustment with built-in measuring sensor. Accuracy is $\pm 0,01$ mm. Due to the frame construction, clearance is self compensating so that, even with a load in the middle of the shear, the clearance remains all but constant throughout the entire cut. When the clearance is changed, the position of the backgauge is automatically corrected.

The size of the cut can be directly entered, after which the position of the backgauge is adjusted. The backgauge adjustment occurs by means of precise guides and ball screws. Setting precision is 0.01 mm, and repetitions are accurate to within ± 0.03 mm.

The cutting beam guides are constructed in a maintenance-free manner by using self lubricating graphite bronze.

Pneumatic sheet support

The standard pneumatic sheet support system makes cutting a little easier, especially when dealing with larger sheet sizes. The sheets to be cut are supported on the back of the shear, ensuring that they can be easily positioned against the backgauge.

B-Shear



The E-standard for Ecology

Safety in compliance with the EN norm

The safety features of the SafanDarley B-Shear fully satisfy the European Machine Directive. The cutting beam drive is equipped with block hydraulics. All visible high-pressure lines are protected. The shear has extensive guards protecting the back and sides. These consist of mechanical side covers on the right and left sides plus a photo-electrical guard on the back.

An emergency stop is located on the front of the machine. To prevent unauthorised persons from using the machine, a key switch can be used to block operation.

The highest performances are standard

The SafanDarley B-Shear is the most economical choice for cutting sheets up to 6 mm thick and 3 metres wide, as long as you do not require any extra possibilities or options. Standard equipment comprises everything needed to deliver top performances for the lowest possible costs. In addition to the above-mentioned equipment, the SafanDarley B-Shear also offers such features as:

- Cutting line lighting
- 2 support arms, adjustable over the entire width of the table (L=1200 mm from the cutting line)
- 2 squaring guides, left and right on the table (table width)

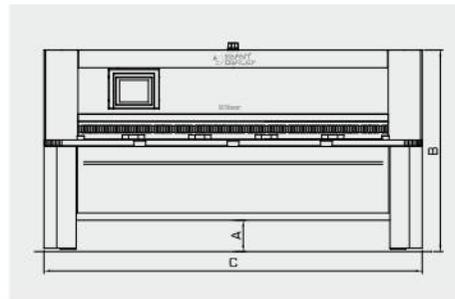
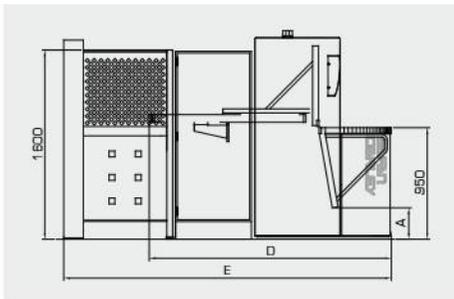
- 2 rulers in the table
- T slots and hand slots spread across the width of the table
- 1 T slot on the front of the table
- 2 spring-action stops
- Adjustable hold down cylinders
- Automatic retraction of the backgauge for narrow strip widths
- Pneumatic sheet support
- Sheet support fingers in backgauge beam



Technical specifications SafarDarley B-Shear

B-Shear	Cutting capacity (mm) St: 450 N/mm ²	Cutting length (mm)	Main motor power (kW)	No. of strokes/min (stroke length max. cutting angle)	No. of strokes/min (short stroke/min. cutting angle)	Cutting angle 0.5°-max (°)	Backgauge reach (mm)	Backgauge speed (mm/sec)	No. of hold-downs pads	Weight (kg)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
310-6	6	3100	11	24	80	2	1000	200	20	6200	250	1750	3850	2100	2850

(Subject to modifications)





H-Brake 175T-400T Ultra

Hydraulic press brakes with maximum efficiency

Unfold the future



The E-evolution in sheet metal working



Efficiency

The comprehensive solution for faster production



Ergonomics

Full control of the process operations with one finger

The future unfolded

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.

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



Ecology

Maximum CO2 and oil reduction



Economy

Optimum flexibility with Zero Defects



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.

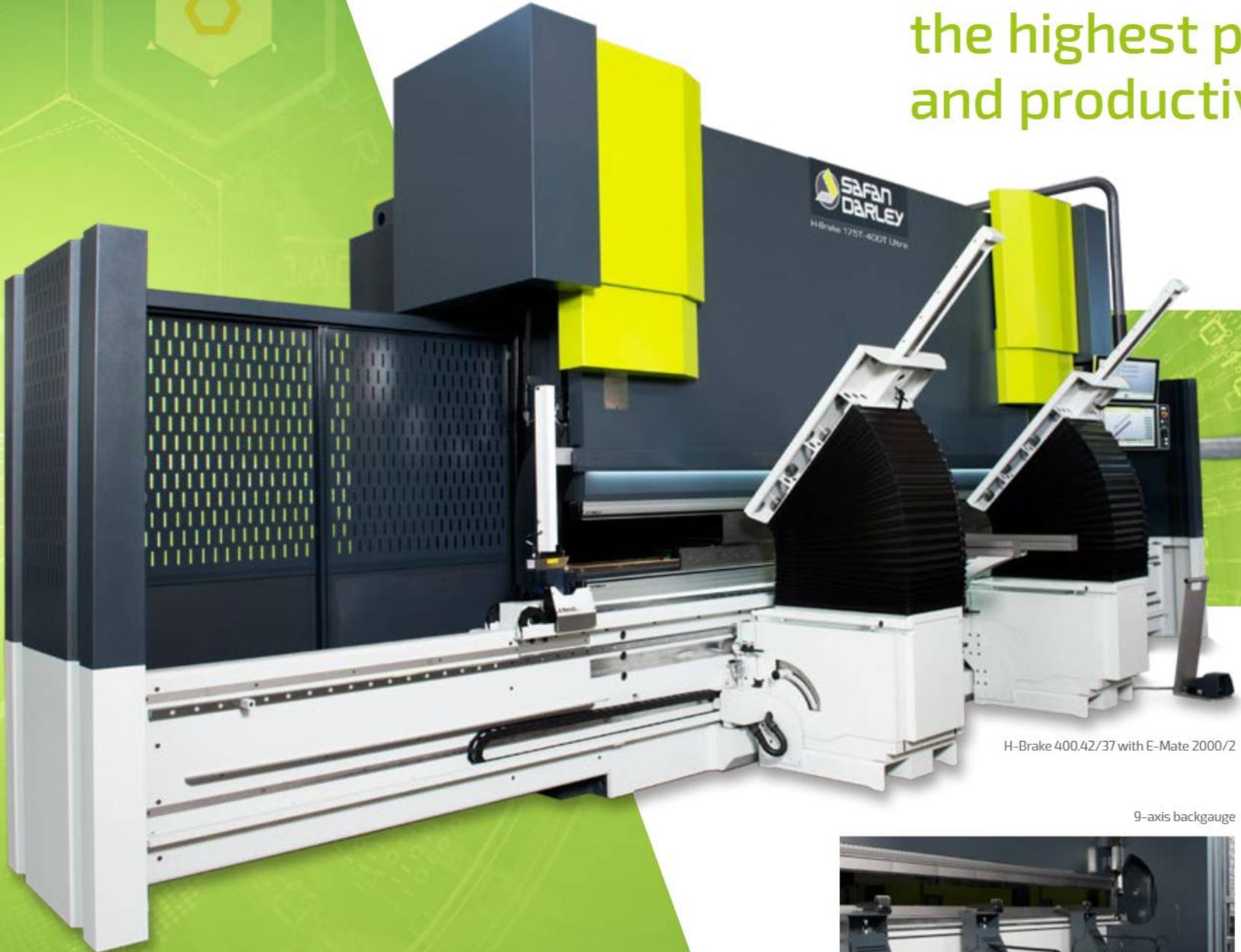
Put in more concrete terms, 'Smart Production' means improvement of your OEE or Overall Equipment Effectiveness. We consider your every need to make sure that our machines fit into your production line perfectly. Our purpose in employing our machines, software, data communication, robotization and human 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 hardly rare for companies' OEE to increase by 30%.

SafanDarley H-Brake

The H-Brake represents the highest level of quality in every respect. Because of the improved specifications and its newly designed parts, the SafanDarley H-Brake enables exceptionally fast, reliable, and high-quality production. Moreover, the new H-Brake offers game-changing opportunities for the production process to be more environmentally friendly, which is unique in the heavy hydraulics segment. Not only the environment benefits from these opportunities, but the benefit of your monthly energy bill being much lower! As is to be expected of a SafanDarley product, there is a wide range of options you can choose from to optimize your production process using the H-Brake.

SafanDarley H-Brake, the highest precision and productivity levels



H-Brake 400.42/37 with E-Mate 2000/2

9-axis backgauge Side view



The elegant design and attractive finish of the machine hides its robust internal construction, which features a large space between the side frames, a large throat depth, and a high standard Q-dimension (see page 19 for more information). This allows you to use the machine to its maximum capacity by using its full working length. In developing the machine, Safan and Darley combined their expertise and know-how regarding hydraulic bending solutions. The result is a machine with an even higher level of productivity that delivers flawless precision work.



Client-specific efficiency

An important characteristic of the new H-Brake is the fact that it has been designed with production efficiency in mind. For example, the frame is held together with bolts instead of being welded together. The complete range of H-Brake parts – machine frame, components, and outer covers – has been standardized, resulting in an optimized production process.

The new H-Brake features a double press beam guiding system, cylinder suspension using thrust bearings, and a completely newly developed modular backgauge system, among other things. Among the extra options

that you can choose from is an energy-saving Start-Stop system using a frequency regulator, several optional CNC-controlled bending aids, and the new E-Bend L blue Laser angle measuring system.

Apart from these efficient and environmentally friendly features and options, SafanDarley also offers the option of customizing your H-Brake, allowing the Q-size, stroke, and depth of the openings to be adjusted according to your personal preferences.

Wide range modular backgauge

An important innovation in the SafanDarley H-Brake is the modular backgauge. It ensures a high level of flexibility and diversity. Depending on which version of the basic model you get, the backgauge can be easily upgraded even after you have started using the machine.

The wide range of options allows you to customize the backgauge configuration to fit your personal needs. It is hugely important that you end up with a backgauge that meets all of your requirements.

SafanDarley offers a wide variety of backgauges ranging from 2 to 9 CNC-controlled axis, so that you can opt for the backgauge system that suits your production needs best. We use the most advanced techniques out there so that we are able to realize optimum accuracy as well as high traversing speed. You will be able to bend even the most complex products without having to access the rear of the machine.



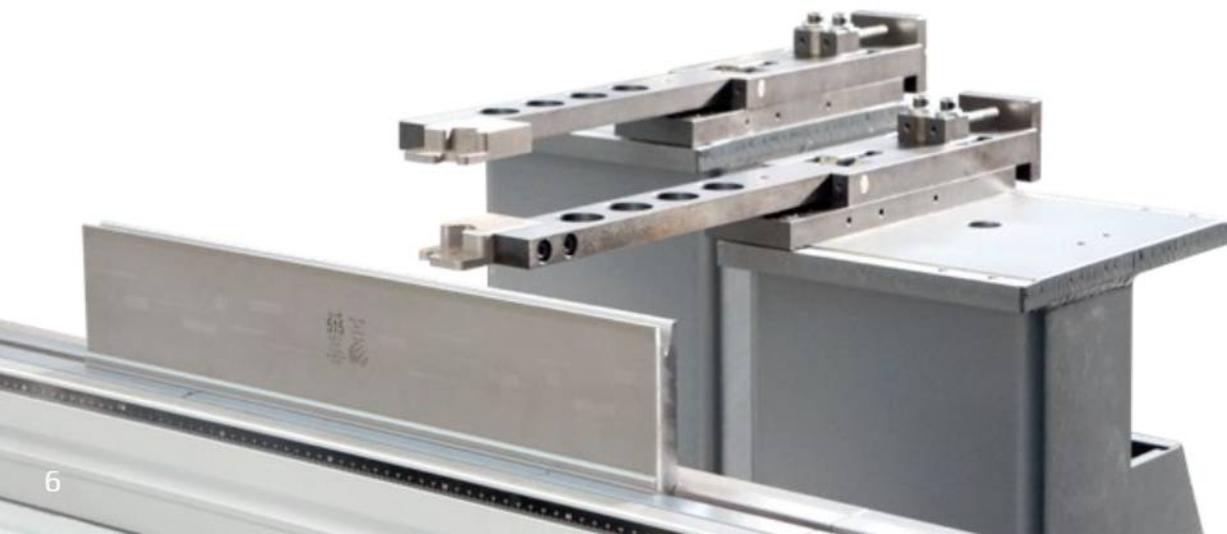
Heavy backgauge



Backgauge using X, R and Z1 + Z2-axis



Backgauge using X, Z1 + Z2, R and Delta X axis



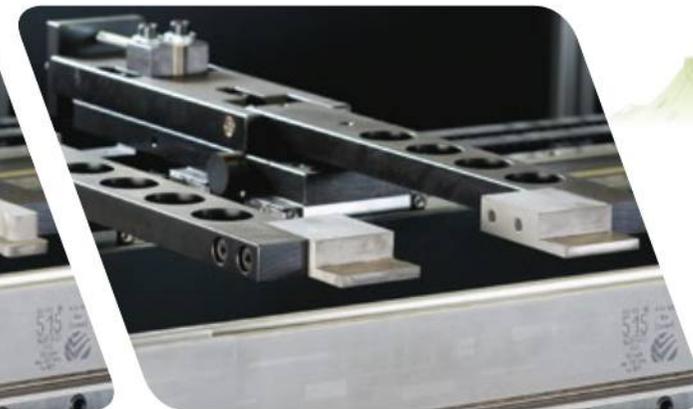
Unique
options

Options for optimal finger stops

The specially developed 3D finger stops are automatically positioned to surround the product on all sides through the controls. This makes it possible to produce complex products with a high precision rate. The finger stops are equipped with mechanical shock absorbers for protection and to prevent wear.



3D end stops



Standard end stops



Offline 3D-programming in three simple steps

01 Importing and unfolding

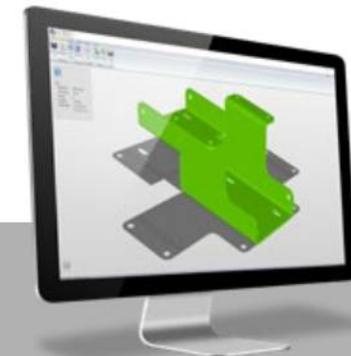
The software will automatically determine the correct results, optimum bending sequence, stop positions, and optimum tool set-up with as few manipulations as possible based on an imported 3D model. You also have the option of adjusting the bending sequence and stop positions manually.

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

Comprehensive solutions using offline 3D-programming

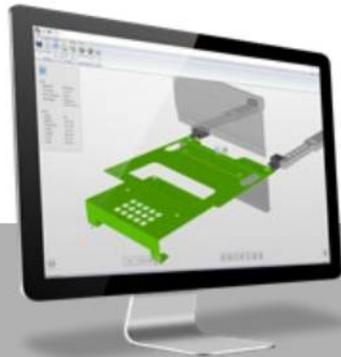
SafanDarley offline 3D programming stands for complete and reliable process management. As opposed to several widely used CAD/CAM systems, our system is very user-friendly and requires only a short 2-day training period.

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 maximizing 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 optimize 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: H-Brake allows you to streamline your manufacturing processes, even when used in conjunction with other CAD and CAM systems.



02 Bending simulation



03 Production





2D programming (EC20)

3D bending instructions (EC20)



Easy control using Touch-controls

For the new H-Brake range, you can choose from either our newly developed E-Control or the existing Delem controls, giving you more flexibility. This allows you to fully integrate the H-Brake line into your existing production environment. Both E-Control and the Delem controls (Delem control on request and available on a tandem press brake) are state of the art, each with their own unique focus.

E-Control, the new E-standard in ergonomics

The new SafanDarley E-Control controls are the result of years of research and optimization. They were developed with the goals of speeding up the manufacturing process and ensuring easy operating of the machine in mind. The self-learning database is easy to grasp and guarantees optimum results every time. Moreover, the E-Control controls can be equipped with a double screen to display additional information.

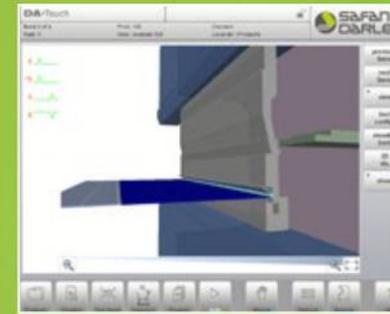
Delem, advanced precision (on tandem press brakes)

The Delem controls are widely used and are known for their precision, adjustment options and reliability. Both 2D and 3D programming is an option for several models, including the most advanced options such as automated bending sequence calculation and importing .dxf files.

Real time connectivity



Delem 66T



3D bending instructions (Delem 66T)



E-Control control

Type	Features	Can be controlled off-line with
EC20	<ul style="list-style-type: none"> - Colour Touch screen 21" - Numerical programming of products by means of Touch Screen - Numerical display of bending parameters - Use of up-to-date database - 2D and 3D Graphic display of offline-programmed products - 2D Programming of products using Profiler - Automated bending sequence calculation - Bending simulation 	SafanDarley EC Software - Delem Profile - Delem V Bend - Autopol - Radan
EC30	All of the EC20 features as well as the following: - 3D Graphic programming of products	SafanDarley EC Software - Delem Profile - Delem V Bend - Autopol - Radan

Delem control

Type	Features	Options	Software
Delem 66T	<ul style="list-style-type: none"> - Color Multi Touch Screen 17" - 2D programming - 3D visualization of 2D products - Qwerty touch keyboard - USB 2.0 connection - Network connection 100 MB Ethernet 	3D visualization of externally programmed 3D products 2D DXF importing	<ul style="list-style-type: none"> - Delem Profile - Delem V Bend - Autopol - Radan
Delem 69T	<ul style="list-style-type: none"> - Colour Multi Touch screen 17" - 3D programming - 2D & 3D DXF Importing - Qwerty touch keyboard - USB 2.0 connection - Network connection 100 MB Ethernet 		<ul style="list-style-type: none"> - Delem Profile - Delem V Bend - Autopol - Radan

Bending using E-efficient options

Fast, simple, and reliable measurement of sheet thickness and angles is often an absolutely essential part of the bending process. The SafanDarley E-evolution allows you to stay ahead of the game even in this area. The two SafanDarley E-Bend systems will increase your efficiency by enabling you to perform accurate sheet thickness and angle measurements.

SafanDarley E-Bend S

The SafanDarley E-Bend S sheet thickness measurement system is mounted by the left finger stop. The system measures the sheet thickness down to thousands of an inch. You can also set the exact time at which the measurement should be taken.

It only takes a tenth of a second for the machine to measure the sheet and any changes to the data are automatically made in the controls. The control's database keeps record of all measurements and plots them graphically.

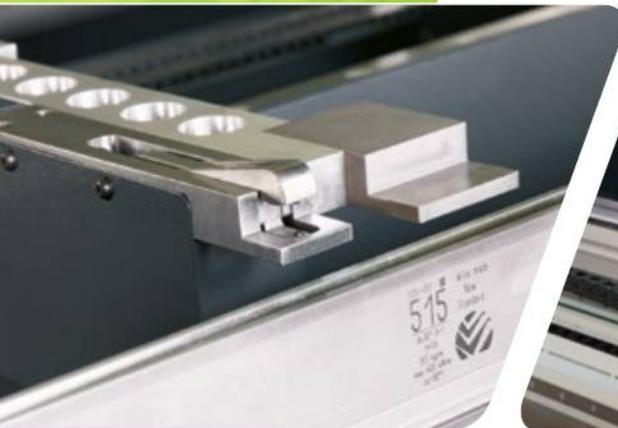
SafanDarley E-Bend L Blue

The system consists of two laser sensors, positioned on each side of the table, which are CNC-controlled. The system monitors and corrects the Y-axis continuously based on the current product angle and, as such, ensures that you will end up with a finished product with maximum angle precision. The system will adjust crowning automatically and also takes into account any potential springback.

The E-Bend L Blue can be used in 3 different ways:

- Angle measurement using springback measurement
- Angle measurement using the database
- Angle measurement using learned bending

For angle measurement using springback, the E-Bend L Blue measures in one of three positions during the bending process, corrects the crowning and parallelism (Y1 & Y2) and measures the springback. This data is then stored in the database. For angle measurement using the database, this database is then used. This ensures that the bending process is faster, resulting in zero time loss.



SafanDarley E-Bend S



SafanDarley E-Bend L Blue

The most versatile bending aids

The new SafanDarley CNC bending aids provide you with unprecedented flexibility and versatility. For example, both height and V-size are variable and easy to adjust on the bending aid. As a result, the new SafanDarley E-Mate bending aids can be used in conjunction with practically all dies instead of being compatible with only one type of die. The E-Mate plus and E-Mate 2000 truly are an E-evolution in sheet support!

E-Mate plus

- Electrically powered CNC bending aid controlled by an AC Servo motor
- The E-Mate plus has a bending movement of 168,6 lbs
- Movable on linear rails and can be removed using a pallet truck
- Bending aid movements synchronous with that of the pressing beam
- Manual V-groove setting ranging from $V = 0,24''$ to $V = 1,97''$
- Programmable bending speed and retraction speed
- Support arm 47,24" in length, extendable up to 70,87"

E-mate 2000

- Electrically powered CNC bending aid controlled by an AC Servo motor
- The E-Mate 2000 has a bending movement of 1475"/lbs
- Movable on linear rails and can be removed using a pallet truck
- Bending aid movements synchronous with that of the pressing beam
- Manual V-groove setting ranging from $V = 0,24''$ to $V = 5,91''$
- Programmable bending speed and retraction speed
- Table with steel rollers, 23.62" x 39.37", equipped with extended support arm of up to 62.99"

SafanDarley E-Mate plus





The E-standard in Ecology



Start/Stop system

Working in a more efficient and ecological manner using the new H-Brake

H-Brake, the greener choice

The new SafanDarley H-Brake's design isn't the only thing that's green; the machine can also be equipped with environmentally friendly technology. For example, SafanDarley allows you to equip the H-Brake with an energy-saving Start/Stop system.

In conventional press brakes, the main motor runs continuously and as such, the machine's energy consumption is continuous as well. The H-Brake's Start/Stop system offers a green alternative; in this system, the main motor is switched off whenever the machine is not actually moving.

During the fast descent of the press beam (which is set in motion by gravity), the Start/Stop system automatically restarts the main motor, thus creating an optimum production cycle with minimum start-up times. This efficient use of energy results not only in considerable savings in your energy costs, but also reduces CO2 emissions.

Because the combination of the main motor and pump runs fewer hours, it will experience less wear, the oil won't reach temperatures as high as it normally would and thus will maintain a higher quality for longer and

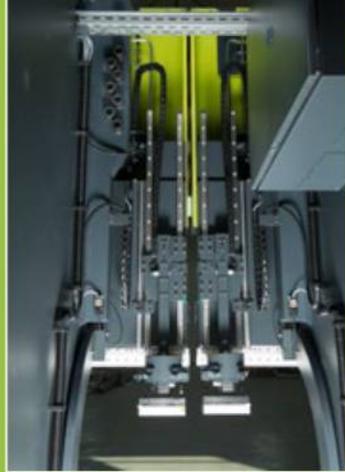
will need to be replaced less often. The SafanDarley Start/Stop system thus offers both ecological and economic advantages.

Let's list the advantages again:

- Reduced energy costs
- Reduced CO2 emissions
- Reduced noise pollution
- Requires less maintenance
- Extended oil lifespan

Moreover, you have the option of using bio-oil in your H-Brake to make it the most environmentally friendly machine it could possibly be.





LazerSafe in independent use



LazerSafe in tandem use



LazerSafe in independent use



2 x H-Brake 175.42/37

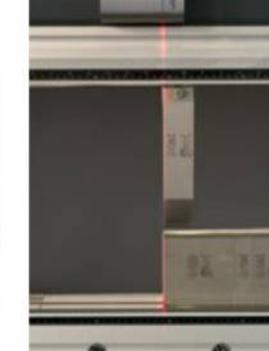
H-Brake tandem use

SafanDarley offers a wide range of flexible solutions to enable the tandem use of press brakes. A tandem press brake is a combination of 2 press brakes that have been mechanically aligned and can run in perfectly synchronized fashion via a tandem connection. The major advantage of this approach compared to one larger press brake is that it allows for more flexibility, because as both machines are working perfectly in sync,

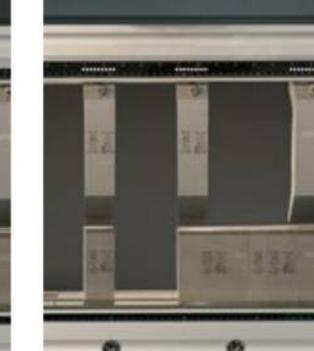
you have the option of producing much longer products. You can also use the two press brakes independently from one another, allowing you to double your capacity for producing shorter-length products. Another advantage is that, depending on the capacity, a specially-made foundation is often unnecessary.



Tool Cabinet



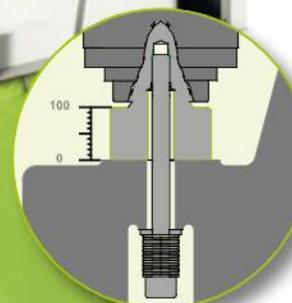
Tool Positioner



LED Smart Tool Locator



Integrated safety light curtain



Flexible Q-size

In perfect harmony with your toolset

The synchronization between press brake and toolset is vital to achieving the highest possible efficiency in the production process. A perfectly aligned press brake requires 100% perfect tools. This is why SafanDarley advises you to use only the highest quality tools. SafanDarley lets you use these tools with maximum efficiency and perform maintenance on them using the Tool Positioner, Tool Cabinet, and Smart Tool Locator.

The extensive tool applications and the flexible sizing of the H-Brake enable us to create client-specific bending solutions for any production process. Our tried and tested technology allows SafanDarley to increase the stroke and Q-size without having to make major adjustments to the overall construction. This gives you the freedom to tailor the H-Brake to fit your every need.



LazerSafe Block laser



LazerSafe LZS-004

H-Brake ensures a high safety level

The side paneling on both sides of the machine may be removed, allowing you to perform low speed bending work in this area. There is an emergency stop on the controls that is within easy reach for the operator. The controls are also equipped with a software-based security system that allows you to work with the machine on different levels.

The different types of controls work well in conjunction with various safety set-ups. E-Control is installed with a safety light curtain including floating blanking and 1 stroke or 2 stroke functions, and the light curtain is neatly integrated in the moveable side paneling.

The system can operate up to 0,04" above the bottom tool set at its approaching speed. Delem controls use LazerSafe light beam protection, with the option of adding a so-called Block Laser which results in a time gain of 2 seconds per bend compared to the conventional LazerSafe. The LazerSafe system can of course also be used in conjunction with the E-Control controls.

The settings of the various operating modes of both systems can be adjusted using a lockable switch on the electronic cabinet. When using a light screen, the operator can select the optimum (fastest) method for each step in the bending process manually. When operating the machine

using your feet, the maximum closing speed of the upper beam is always less than 0,4" per second, unless the safety system has been engaged. Only if such additional safety systems have been engaged can the speed of the upper beam ever exceed 0,4"/sec.

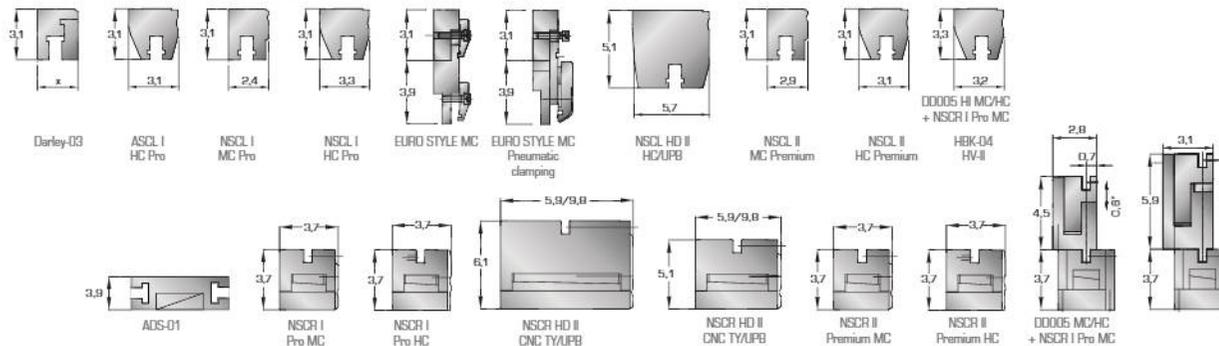
An additional (optional) control panel is required if 2 operators will be working on the machine simultaneously. This control panel can also be programmed to allow the operator to control the machine from 2 different locations.

Standard edition

Standard edition of the H-Brake

- E-Control EC20 controls
- Delem DA 66T 2D control on request and available on a tandem press brake
- Controls mounted on a swiveling arm on the right side of the machine
- Y1/Y2 axis are CNC-powered
- X axis is CNC-powered
- R axis is CNC-powered
- Z1 and Z2 axis are controlled manually
- Wila NSCL-II Premium top tool adaptor equipped with mechanical clamping, CNC deep-hardened tool clamping, maximum load 300 T/mtr, Tx/Ty alignment
- 2 support arms (11,8")
- LazerSafe light beam protection, type LZ5-004 (Delem)
- Programmable and integrated safety light screen (E-Control)
- Foot pedal including "Hold To Run" function
- Work area lighting on the front and rear side of the machine
- Electronic installation of mains connection 3/N/PE 50 Hz 230/400 VAC
- Machine is designed in accordance with the prevailing CE standards

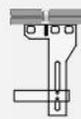
Tool adapters SafanDarley H-Brake



SafanDarley allows you to choose from a wide variety of support arms

Fixed support arms - standard

Support length: 11,8"
Support strength: 56,2 lbs
Adjustable by means of bolts



Moveable support arms - optional

Support length: 39,4"
Support strength: 337,2 lbs
Adjustable by means of bolts



Moveable support arms with adjustable height settings - optional

Support length: 39,4"
Support strength: 337,2 lbs
Adjustable by means of a hand wheel



Moveable pneumatic support arms - optional

Support length: 39,4"
Support strength: 224,8 lbs
Adjustable by means of a pneumatic system with 2 positions



Technical specifications of the SafanDarley H-Brake

H-Brake Model

H-Brake Model	Pressing force in US Ton	Operational length in ft	Stroke in inches	Q in inches	Approach speed in inch/sec.	Maximum bending speed in inch/sec.	Return speed in inch/sec.	Regular motor power in kW	Weight in lb	A in inches	B in inches	C in inches	D in inches	E in inches	F in inches	Noise level in dB
175.31/25	197	10	12	23-27	8	0,4	6	15	26.455	155	108	116	121	116	79	< 70
175.37/32	197	12	12	23-27	8	0,4	6	15	29.983	187	128	116	121	116	79	< 70
175.42/37	197	14	12	23-27	8	0,4	6	15	34.392	201	148	116	121	116	79	< 70
230.31/27	259	10	14	26-30	5	0,4	5	18,5	35.274	161	108	131	136	131	81	< 70
230.37/32	259	12	14	26-30	5	0,4	5	18,5	38.581	157	139	125	136	125	81	< 70
230.42/37	259	14	14	26-30	5	0,4	5	18,5	42.990	209	148	125	136	125	81	< 70
320.31/27	360	10	14	26-30	5	0,3	5	30	42.990	170	108	125	136	125	98	< 70
320.37/32	360	12	14	26-30	5	0,3	5	30	47.399	191	128	125	136	125	98	< 70
320.42/37	360	14	14	26-30	5	0,3	5	30	51.809	213	148	125	136	125	98	< 70
320.51/43	360	17	14	26-30	5	0,3	5	30	56.218	233	172	125	136	125	98	< 70
320.62/51	360	20	14	26-30	5	0,3	5	30	65.036	280	201	125	136	125	98	< 70
400.42/37	450	14	14	26-30	3	0,2	3	37	70.548	211	148	128	138	146	98	< 70
400.51/43	450	13	14	26-30	3	0,2	3	37	79.366	233	172	128	138	146	98	< 70
400.62/51	450	20	14	26-30	3	0,2	3	37	97.003	258	201	128	138	146	98	< 70

Besides this range of standard machines, SafanDarley also carries a range of Heavy Duty machines of a 551 to 1378 US Ton capacity. Please ask one of our sales consultants for more information.



Heavy-duty moveable support arms with adjustable height settings - optional

Support length: 39"
Support strength: 450 lbs
Adjustable by means of a hand wheel



E-Brake 160T-200T Ultra

Press brakes with an E for electronic



160T-200T Ultra

The E-evolution in sheet metal working increases your competitive strength as a manufacturer

The E-evolution in sheet metal working

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.



SafanDarley offers innovative solutions for all types of sheet-metal working, applying revolutionary electronic or hydraulic technology. These innovations are the continuation of our previous milestones, such as the first CNCK servo-hydraulic brake press in 1980, the first servo-electronic brake press SMK in 1995, the first hybrid guillotine shearing machine in 1999 and the first fully-fledged electronic brake press, the original E-Brake, in 2004. This revolutionary machine concept started a global 'E-evolution in sheet-metal working'.

SafanDarley now offers a unique programme of electronic press brakes, from the E-Brake 20T Ergonomic to the E-Brake 300T Dual Drive. In the heavier segment too SafanDarley is the leader in innovation, as evidenced by the new generation SafanDarley H-Brake with its unique durable hydraulics.

All SafanDarley machines are operated by means of SafanDarley E-Control, the most user-friendly Man/Machine interface available. The combined expertise of SafanDarley is particularly strong in the field of automated bending cells and client-



specific production solutions, with custom-made machines if so desired.

SafanDarley continues to work on new, more efficient solutions under the motto of 'the E-evolution in sheet-metal working'. Official recognition was on the cards: upon its introduction in 2006, the E-Brake 200T won both the Techni-Show Golden Innovation Award and the Made In Holland Award.



**SAFAN
DARLEY**
E-Brake 160T-200T Ultra

SafanDarley E-Brake 160T-200T Ultra



The E-standard
for Efficiency

The E-standard
for Ergonomics

The E-standard
for Economy

The E-standard
for Ecology

SafanDarley's servo-electronic technology has been proving itself all over the world since 1995. The SafanDarley E-Brake concept constitutes a further improvement on this technology, one that is resulting in ground-breaking performances. Customers are therefore full of praise, especially about the much shorter cycle times, more advantageous use of energy and substantially lower costs for maintenance in comparison with traditional hydraulic press brakes. Based on this extensive practical experience, SafanDarley has effectively adapted the technology and construction to the segment involving weights up to 200 ton and work lengths up to 13 ft. In addition, a strong point of the construction is the level foundation.



The E-evolution in sheet metal working

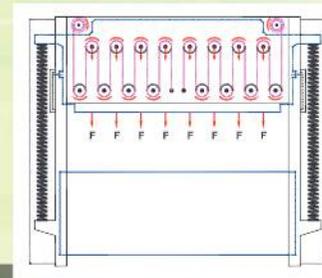
Servo-electronic bending with an E for even bending



Roller drive with 4 servo motors

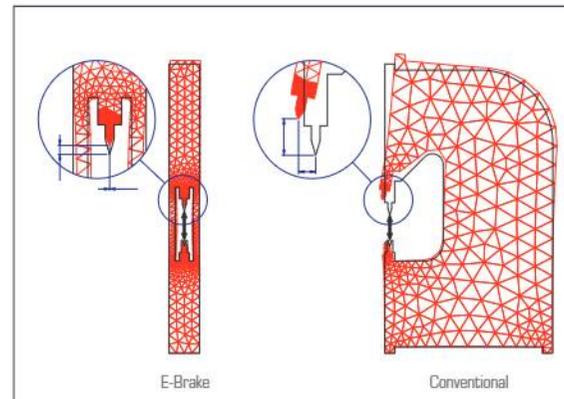


The E-standard for Efficiency



Even distribution of forces

The unique 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 200T. The flexible belts, which are only 0.12 inch thick and 4 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.



E-Brake

Conventional



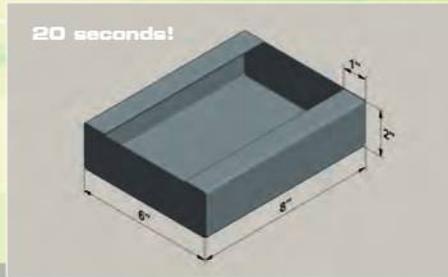
The unique pulley drive of SafanDarley has proven itself around the world

Up to 30% shorter cycle times

The new SafanDarley E-Brake is further optimised to take maximum advantage of the high acceleration and other favourable servo-motor characteristics. For this reason, our SafanDarley E-Brake is very fast throughout the entire cycle.



SafanDarley E-Brake 160T-200T Ultra



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



Bending test product

SafanDarley's self-developed controls make use of 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 160T 3100	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.

Heavy duty backgauge with a large range

The SafanDarley E-Brake 160-3100 and the E-Brake 200-4100 Ultra are both equipped with a heavy-duty CNC-controlled backgauge system fitted with recirculating ball screws and precision linear ball-bearing guides. The basic model comes complete with CNC-controlled X axis.



The E-standard for Economy



Heavy-duty backgauge



3D backgauge

The standard version of the backgauge has two hinging backgauge fingers that can be manually moved along the bending line (Z axis) as well as adjusted in height (R axis). The stop fingers are provided with interchangeable pins. In optimum use, they permit a maximum backgauge range of 43.3 inch. Optional equipment includes backgauge systems equipped with CNC-controlled R, Z1, Z2 and delta X axis, or full 3D movement with X1, X2, Z1, Z2, R1, and R2 axes.

Tool clamping system

The E-Brake comes with the New Standard Premium MC mechanical tool clamping system. The New Standard Premium HC hydraulic tool clamping system is an option. European Style clamping is also an option (only in combination with a Q-dimension of 25.59 inch).



Moveable and adjustable support arms

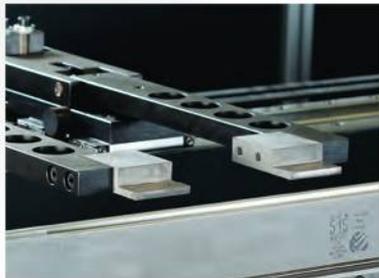
SafanDarley has developed a range of support arms of modular construction for both light and heavy-duty sheet-metal work. This makes it possible to rapidly set up the correct solution for each application. An optimum combination of ergonomics and efficiency.



Moveable support arms



Moveable support arms adjustable in height



Standard backgauge stops



3D backgauge stops

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.

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.

The E-standard for Ergonomics



2D bending instructions (EC20)



SafanDarley EC30 control

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. The standard E-Control 20 facilitates both numeric and 2D graphical 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. The optional E-Control 30 can be used to generate 3D drawings.

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 optimise your production process from a distance in the near future.



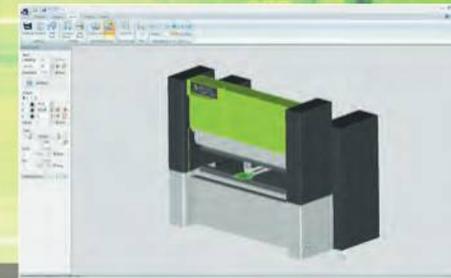
Summary of SafanDarley press brake controls EC20 - EC30



SafanDarley Dual screen



2D programming (EC20)



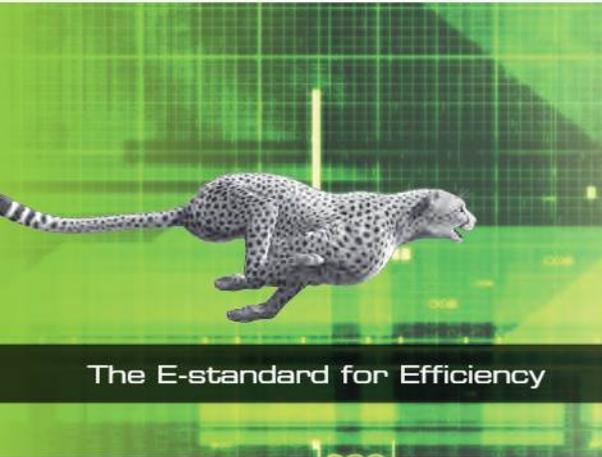
Off-line 3D programming (AutoPOL)



Control type	Possibilities	Off-line connections to
EC20	Numerical product data entry by means of touch screen - extensive tools library - numeric entry of bending parameters - usage of the actual database - 2D programming of products automatic bending sequence calculation with EC Profiler - 2D and 3D graphic display of products programmed offline for Autopol and Radan	- SafanDarley EC software - Delem Profile on Windows - Delem V-Bend - Autopol - Radan
EC30	As EC20, but with graphical 2D and 3D programming and representation of the bending sequence	- SafanDarley EC software - Delem Profile on Windows - Delem V-Bend - Autopol - Radan

Options for optimum ease of operation

Fast, simple and reliable angle measurement can be essential for your bending process. SafanDarley has made E-volution advancements in this area too. Two SafanDarley E-Bend systems, electronically linked to the SafanDarley Touch Screen controls, increase your efficiency through exact sheet thickness or angle measurement.



The E-standard for Efficiency



SafanDarley E-Bend S



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 L Blue

The system consists of two laser sensors, one each side of the table that are CNC controlled through the control system. The system continuously monitors and corrects the position of the Y axis on the basis of the actual angle of the product, thereby guaranteeing that the end product has the highest degree of angle precision. Where necessary, the system automatically corrects the crowning and takes the spring-back into account. To that end, the new generation

of E-Bend L Blue is equipped with blue laser sensors. This is because the blue light spectrum is much easier to distinguish from "natural" light, so reflections and sunlight can no longer interfere with the measurement. In addition, combined with the new control platform on the E-Control, the new sensor can perform far more measurements per second. This makes the system more accurate, as it is able to respond to measurements sooner. The E-Bend L Blue (patent pending) can be used in three ways

- Angle measurement with measurement of the spring-back
- Angle measurement with a database
- Angle measurement with learned bending

In the angle measurement with spring-back, the E-Bend L Blue measures at one or three positions during the bending process, corrects the crowning and (Y1 & Y2) positions, and measures the spring-back. These details are then stored in the database. This database is used in angle measurement with a database, making the bending process faster and thus preventing production time from being wasted.



SafanDarley E-Bend L Blue

The most versatile bending aids

The new SafanDarley bending aids provide you with unprecedented flexibility and versatility. For example, both height and V-size are variable and easy to adjust on the bending aid. As a result, the new SafanDarley E-Mate bending aids can be used in conjunction with practically all dies instead of being compatible with only one type of die.



SafanDarley E-Mate plus bending aid



SafanDarley E-Mate 2000

E-Mate plus

- Electrically powered bending aid controlled by an AC Servo motor
- The E-Mate plus has a bending movement of 168,6 lbs
- Movable on linear rails and can be removed using a pallet truck
- Bending aid movements synchronous with that of the pressing beam
- Manual V-groove setting ranging from $V = 0,24''$ to $V = 1,97''$
- Programmable bending speed and retraction speed
- Support arm 47,24" in length, extendable up to 70,87"

E-mate 2000

- Electrically powered bending aid controlled by an AC Servo motor
- The E-Mate 2000 has a bending movement of 1475"/lbs
- Movable on linear rails and can be removed using a pallet truck
- Bending aid movements synchronous with that of the pressing beam
- Manual V-groove setting ranging from $V = 0,24''$ to $V = 5,91''$
- Programmable bending speed and retraction speed
- Table with steel rollers, 23.62" x 39.37", equipped with extended support arm of up to 62.99"

Electronic evolution with an E for ecological and economical



Side view

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.

There is no need to adjust the settings of pressure relief valves – with the risk of mistakes and drift – and there are no filters to be checked and replaced. The servo-electronic system is therefore far more reliable than the hydraulic one, because of the lack of oil, tanks, pumps, seals, valves and filters. And you will never have trouble with a cold start up.

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-Control. In addition, the SafanDarley E-Brake 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.



Integrated safety light guard

Turn-key delivery of automated bending solutions

In 1988, SafanDarley had already installed the first robotic press brake in Europe. SafanDarley is now an experienced specialist in the field of automated bending cells including the standard SafanDarley R-Brake. The SafanDarley integral solutions for your production process go much further than stand-alone solutions.



The integral automation is not restricted to the bending cell alone, this also applies to other parts of the process such as punching and spot-welding, and the entire routing of sheet material around the bending cell.

Flexible solutions and off-line software

You retain your flexibility with SafanDarley in terms of new products or changes in your production process. You are also flexible in relation to coupling with external systems and choosing your robot. The SafanDarley

E-Brake is perfectly suited to operate as a mid-point for every automated bending cell. The SafanDarley controls run under the Windows® platform, adding a whole range of options for links, networks, software packages and resolving downtime of the unmanned production process over the Internet. SafanDarley can supply complete, fully tested programs for both new and existing robotic cells. You have a choice between off-line or parametric programming. Naturally, you can contract out all programming to SafanDarley.

The SafanDarley RoboBend off-line programming is a guarantee for maximum efficiency of your bending cell. All movements can be programmed and simulated in advance.

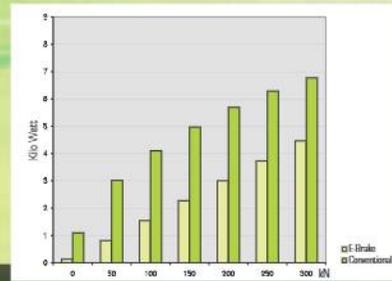
From advice & consultancy to manufacturing

SafanDarley makes automation of sheet-metal working easier than you think. This starts with the convenience of a single contact person for the entire project. Our consultants clearly present you with the entire range of options, enabling you to make the best possible choice for your production

process. SafanDarley develops and realises turnkey solutions for bending and cutting systems with guaranteed cycle times. This fixes the costs per product. The return time of your investment can be properly determined based on those set costs. With the help of a simulation model, you will get a reliable indication beforehand of your expected Return On Investment.

SafanDarley E-Brake energy consumption

On the SafanDarley E-Brake, 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.



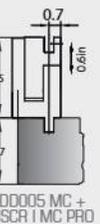
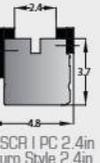
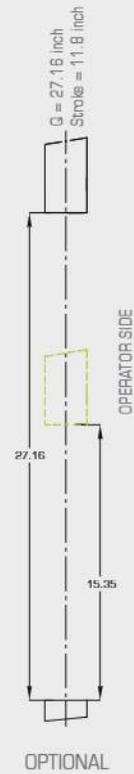
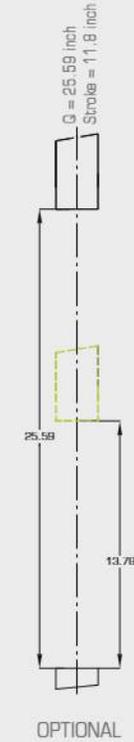
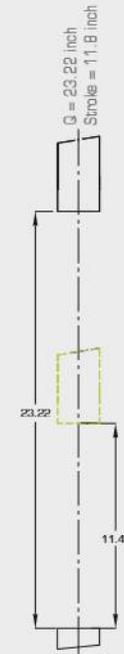
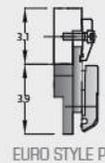
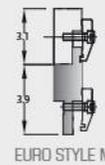
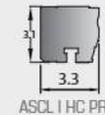
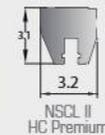
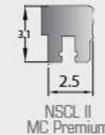
SafanDarley E-Brake energy consumption

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

Standard features

- SafanDarley EC20 Touch Screen CNC press brake controls
- CNC-controlled R- axis
- CNC-controlled Y1-Y2 axis (top beam adjustable inclined +/- 0.1 inch)
- CNC-controlled backgauge (X-axis) with a wide range
- Manual adjustment of 2 backgauge fingers across a linear parallel guide
- NSCL II MC Premium top tool mechanical clamping system and NSCL II MC Premium crowning
- Built in size of 23.22 inch (G-dimension)
- 2 Support arms (11.81 inch)
- 1 Hold to Run operating console
- Programmable and integrated safety light guard
- Safety in compliance with CE

Table Tool adapter SafanDarley E-Brake



OPERATOR SIDE

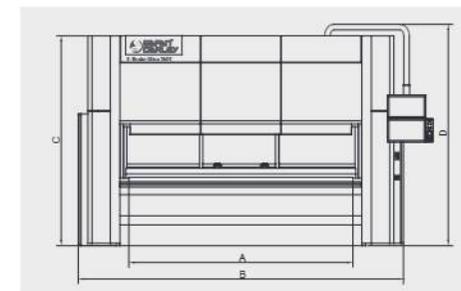
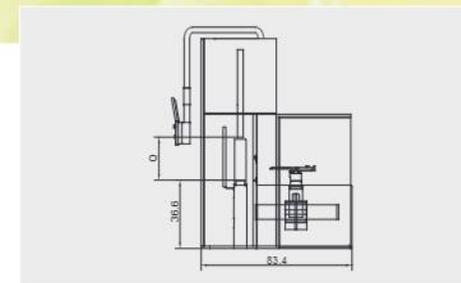
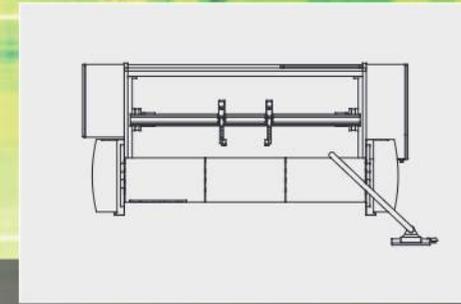
Technical specifications

SafanDarley E-Brake 160 - 200T Ultra

E-Brake 160T-200T Ultra	Pressure force in US ton.	Working length in inch	Maximum stroke in inch	Q size in inch	Closing speed in inch/min.	Bending speed max. in inch/min.	Return speed in inch/min.	Motor Power in kW	Weight in Lbs.	A in inch	B in inch	C in inch	D in inch
160-3100	176	120	12	23*	236	48**	236	22	33,069	120	177	114	122
200-4100	220	160	12	23*	177	48**	177	22	40,786	160	216	114	122

* Q size: Optional 25.59 or 27.16 inch
 ** CE version: Max. bending speed 24 inch/min.

(Subjects to modifications)



Accessories (optional)

- CNC-controlled Z1-Z2 axis (horizontal repositioning back gauge fingers)
- CNC-controlled Delta X-axis (horizontal repositioning of one backgauge finger)
- CNC-controlled 3D backgauge (X1-X2-R1-R2-Z1-Z2)
- Built in size of 25.59 inch or 27.16 inch (Q-dimension)
- Various upper and lower tool adaptors
- Various bending aids
- SafanDarley E-Bend S sheet thickness measurement system
- SafanDarley E-Bend L Blue angle measurement system
- Various support arms, fixed, moveable and adjustable in height where required
- Extra Hold To Run operating console for stage bending
- Integrated tool cabinet
- Machine lighting
- SafanDarley E-Control press brake control:
 - EC30 control, complete 2D and 3D graphic programming