H-Brake 175-1250T
Hydraulic press brakes of the highest efficiency
The E-volution 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 blend of expertise and innovative power.

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 CNC electro-hydraulic press brake EHP in 1979, the first servo-electronic press brake SMK in 1995, the first hybrid guillotine shearing machine in 1999 and the first fully-fledged electronic press brake, the original E-Brake, in 2004. This revolutionary machine concept marked the beginning of a global trend of ‘E-volution in sheet-metal working’. SafanDarley now offers a unique programme of electronic press brakes, shears and automated systems. In the heavy-duty hydraulic press brake segment too, SafanDarley is the leader in innovation, as evidenced by the new generation SafanDarley H-Braakes with their unique durable hydraulics.

The SafanDarley machines are operated with a variety of advanced control systems, such as the E-Control and Delem control systems for the new H-Brake range. This makes it possible to equip the H-brake with a control that suits your requirements best.

As a pioneer in the field of hydraulic press brakes, SafanDarley enjoys a lead. This is once again proven by the unique qualities of the new H-Brake machine concept.
The H-Brake guarantees the highest quality in all aspects. Thanks to the many improved specifications and newly designed components, the SafanDarley H-Brake delivers an extremely fast and reliable production performance of the highest quality. In addition, the new H-Brake offers pioneering options for an environmentally-friendly production process, which is unique in the heavy-duty hydraulic segment. Not only is this beneficial to the environment, it reduces your monthly energy bill at the same time. And as you may expect from SafanDarley, the H-Brake offers a wide range of different options you can select to further optimise your production process.
SafanDarley H-Brake, unsurpassed precision and productivity

Underneath the elegant design and high quality exterior hides a very robust construction with generous spacing between the side frames, an extensive working width and a large standard Q-size*. This makes it possible to utilise the full operational length of the machine.

The joint expertise and knowhow of Safan and Darley in the field of hydraulic bending solutions has been used to create synergy in the development of the machine concept. This has resulted in even higher productivity of flawless precision work.

*See page 19 for further information
An important feature of the new H-Brake is that its design allows for efficient production. For example, the frame consists of a bolted construction, rather than a welded one. The complete range of H-Brake product parts - machine frame, components and covers - has been standardised, resulting in an optimal production process.

Standard features in the new H-brake include double pressure bar guidance, cylinder suspension with pivot bearing and fully re-engineered modular backgauge system.

Options include an energy-saving start-stop system (frequency control-regulated), multiple CNC-controlled bending aids and the new E-Bend L Laser angle measuring system.

In addition to these efficient and environmentally-friendly features and options, SafanDarley also offers the option to customise your H-Brake, allowing Q-size, stroke and the throat depth to be adjusted according to preference.
Modular backgauge with an extensive range

An important innovation for the SafanDarley H-Brake is the modular backgauge. It provides a high level of flexibility and diversity. Depending on the version of the basic model, the backgauge can be easily upgraded, even after having been taken into service in your plant.

A wide range of options enables you to select a backgauge configuration that suits your needs. It is of paramount importance that the backgauge of your choice meets all your requirements.

SafanDarley can offer you multiple backgauge systems, ranging from 2 to 6 CNC-controlled axis, so you can choose for a backgauge system that best suits your production.

Thanks to the use of the most advanced technologies, high levels of accuracy are combined with high speeds. The smart structure of the 6-axis (3D) backgauge enables bending of the most complex products, by programming the backgauge fingers with the CNC control. You can even bend the most complex products without having to access the rear of the machine.
Options for optimal finger stops

The specially developed 3D finger stops are automatically positioned so the product is correctly positioned on all edges. This makes it possible to produce high precision work. The finger stops are standard equipped with mechanical shock absorbers for protection and to prevent wear.
Control with the convenience of Touch-screen technology

SafanDarley offers flexibility with both, its in house developed E-Control and the Delem controller for the new H-Brake range. This enables maximum integration of the H-brake series in the existing production environment. Both the EC and Delem controller rank among the absolute top segment of control systems, each with its own focus.

<table>
<thead>
<tr>
<th>Type</th>
<th>Features</th>
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| EC10 | - Touch Screen 17" colour  
- Numerical programming of products by means of Touch Screen  
- Numeric display of bending parameters  
- Use of current database |
| EC20 | - All features of EC10 +  
- 2D and 3D Graphic display of offline programmed products  
- 2D Programming of products with Profiler  
- Automatic bending sequence calculation  
- Bend simulation |
| EC30 | - All features of EC20 +  
- 3D Graphic programming |
|      | Off-line controllable with |
|      | SafanDarley EC software  
- Delem Profile  
- Delem V Bend  
- Autopol  
- Radan |
|      | SafanDarley EC  
- Delem Profile  
- Delem V Bend  
- Autopol  
- Radan |
|      | SafanDarley EC  
- Delem Profile  
- Delem V Bend  
- Autopol  
- Radan |

E-Control, the new E-standard in ergonomics

The newest SafanDarley E-Control systems are the result of many years of research and optimisation. They have been developed in order to speed up the production process and they keep the machine operation as straightforward as possible. The intelligent database gives a convenient overview and always guarantees the best results. In addition, the E-control can be equipped with a double VDU for additional information to be displayed.
Delem, advanced precision

Delem control systems are widely used and are well-known for their precision, flexibility & reliability. Both 2D and 3D programming is offered through different models, including the most advanced options such as automatic bending sequence calculation and importing .dxf files.

<table>
<thead>
<tr>
<th>Type</th>
<th>Features</th>
<th>Options</th>
<th>Software</th>
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<td>Delem 63W</td>
<td>- Numerical programming of products</td>
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<td></td>
<td>- 10.4” colour screen</td>
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<td></td>
<td>- USB connection</td>
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<td></td>
<td>- Network connection 100Mb Ethernet</td>
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| Delem 65W | - 2D graphic control 10.4” colour screen                                  | - Delem Profile, Delem V Bend, Autopol, Radan                           |                   |
|          | - 2D programming                                                          |                                                                        |                   |
|          | - USB connection                                                          |                                                                        |                   |
|          | - Network connection 100Mb Ethernet                                        |                                                                        |                   |

| Delem 66T | - Multi Touch Screen 17” colour                                           | 3D visualisation of 3D products externally programmed, Importing 2D DXF | - Delem Profile, Delem V Bend, Autopol, Radan                       |
|          | - 2D programming                                                          |                                                                        |                   |
|          | - 3D visualisation of 2D products                                          |                                                                        |                   |
|          | - Qwerty touch keyboard                                                   |                                                                        |                   |
|          | - USB 2.0 connection                                                      |                                                                        |                   |
|          | - Network connection 100Mb Ethernet                                        |                                                                        |                   |

| Delem 69T | - Multi Touch Screen 17” colour                                           |                                                                        | - Delem Profile, Delem V Bend, Autopol, Radan                       |
|          | - 3D programming                                                          |                                                                        |                   |
|          | - Importing 2D & 3D DXF                                                   |                                                                        |                   |
|          | - Qwerty touch keyboard                                                   |                                                                        |                   |
|          | - USB 2.0 connection                                                      |                                                                        |                   |
|          | - Network connection 100Mb Ethernet                                        |                                                                        |                   |
Bending with an E for efficient options

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 increase your efficiency through exact sheet thickness or angle measurement.

SafanDarley E-Bend L
The system consists of two laser sensors, positioned on either side of the table and CNC positioned by the controller. The system continuously monitors and corrects the position of the Y-axis based on the required product angle and thus guarantees an end product with the highest angle precision. The system automatically adjusts the crowning and at the same time takes into account the spring back.

The E-Bend Laser* can be used in two different ways
- Angle measurement with spring back measuring
- Angle measurement with database

Using the angle measurement with spring back, the E-Bend Laser measures in one or three positions during the bending process, correcting the crowning, parallelism (Y1 & Y2) and measures the spring back. This data is subsequently stored in the database. Using the database angle measurement, the system uses this database. This enables the bending process to be executed quicker resulting in zero waste of production time.

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 ± 0.01 mm. 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.

* Patent pending
The most versatile bending aids

The innovations of SafanDarley are aimed at the complete bending process. Effective sheet support, particularly in the event of larger and heavy-duty sheet metal working, is an important factor for working faster with less manpower.

The new SafanDarley CNC bending aids offer unsurpassed flexibility and versatility in this respect. For example, the height and V-dimension are variable and easy to adjust on the bending aid. As a result, the new SafanDarley E-Mate bending aids are no longer linked to a specific Die. Instead, these bending aids can be used in combination with practically all die variants. The E-Mate 1000 and E-Mate 2000 truly are an E-volution in sheet support!

- Electrically driven CNC bending aid, AC-servo motor controlled
- Both models can be used as a stand-alone unit or in combination
- The E-Mate 1000 model has a bending moment of 1,000 Nm
- The E-Mate 2000 model has a bending moment of 2,000 Nm
- Standard detachable with a pallet truck
- Standard equipment includes 1,500 mm support arm
- Bending aid movement synchronous with the pressing beam
- Programmable retraction speed
- Programmable additional bending (pre-bending)
- Manually adjustable height setting to match die height 55 mm to 150 mm
- Manually adjustable V-groove setting for V-6 mm to V-150 mm
- Optional support options: extended support arms, brush/roller tables and custom made solutions.
In conventional press brakes the main motor is running continuously and thus energy consumption is continuous. The green alternative is the H-Brake version equipped with a Start/Stop system: the system automatically switches off the main motor when the machine is running idle.

During the fast downward movement of the press beam (G-force driven) the Start/Stop system automatically switches on the main motor, thus creating an optimal production cycle with minimum start-up times. Not only does this efficient energy consumption generate considerable savings in your energy costs, it at the same time reduces CO2 emissions.

And since the main motor/pump combination runs fewer hours, it will show less wear and tear.

The oil reaches lower temperatures and therefore maintains a higher quality for longer, ultimately resulting in less frequent oil replacement. The SafanDarley Start/Stop system thus offers both ecological and economic advantages.

A summary of the benefits is shown below:

- Reduced energy costs
- Reduced CO2 emissions
- Reduced noise level
- Requires less maintenance
- Extended life of the oil

As an additional green option, we offer the possibility of equipping your H-Brake with bio-oil to make this a truly ecological machine.
The synchronisation between press brake and your toolset is vital to achieve the highest possible efficiency in the production process. A perfectly attuned press brake requires 100% perfect tools. Hence SafanDarley only advises the highest quality tools. SafanDarley further offers the option of using these tools with maximum efficiency and to keep them in perfect condition with the Tool Positioner, Tool Cabinet or the Smart Tool Locator.

Extensive tool applications and flexibility in dimensioning the H-Brake enable customised bending solutions, regardless of the production process. Thanks to a tried and tested technology, SafanDarley has the ability to increase the stroke and Q-size without making adjustments to the construction. This gives you the freedom to fully tailor the H-Brake to your requirements.
By introducing the special H-Brake Base series, SafanDarley brings the innovative new H-Brake technology within everyone’s grasp. The extremely favourable pricing of the H-Brake Base has been made possible by minimising the number of models and options, so that the range can be produced as economically as possible. The H-Brake Base is available in four models: 175.31/27, 175.37/32, 175.42/37 and 230.42/37.

These machines are technically as capable as the entire H-Brake range, but are limited in options. By limiting everything to your basic requirements, SafanDarley has been successful in creating a technically superior hydraulic press brake for a surprisingly favourable price.
Standard equipment and options

As a standard, the backgauge of the H-Brake Base is fitted with CNC-controlled X and R axis. The Z1 and Z2 axis are manually operated. As an option, and after delivery if need be, we can retro fit two CNC-controlled drives in order to make the Z1 and Z2 axis CNC-controlled. Moreover it is even possible to equip the H-brake base with a ΔX axis.

The choice in control is also limited in the H-Brake Base series, yet does offer the superior SafanDarley ease of operation. The EC10 or the Delem 63W are offered as standard. Optionally, they can be upgraded to EC20 or Delem 65W with e.g. 2D graphic programming, automatic calculation of the bending sequence and collision detection. A network connection is also possible.

The H-Brake Base is, as standard equipped with two 300mm support arms. Optional it is possible to equip the H-Brake Base with movable support arms and even bending aids.
H-Brake stands for a high level of safety

The standard safety provisions of the SafanDarley H-Brake are in full compliance with European Standard EN12622. The upper beam drive has been fitted with double valve block hydraulics, secured and monitored by a safety PLC. The rear and both sides are secured by means of a mechanical covers with safety switches.

The side protection on either side can be opened, enabling bending work to be carried out in this area at low speed. The operator has an emergency stop within reach on the control panel. The control system is further equipped with a software security, making it possible to work with the machine at different levels.

The different types of control are used most efficient with a variety of safety designs. E-Control is equipped with safety lightguard including floating blanking, 1-break or 2-break function. The lightguard is neatly integrated in the moveable side covers. This system has the possibility of operating in approach speed up to 1 mm above the material.

The Delem controller works with LazerSafe light beam protection, giving the option of a so-called Block laser that can lead to a time-saving of 2 seconds per bend compared to the conventional LazerSafe. The LazerSafe system can of course also be used in combination with E-Control.

The various operating modes of both systems can be set by means of a lockable switch on the electronic cabinet. When using a lightguard, the operator can select the best [fastest] method for each bending step. If no protection is activated the maximum closing speed of the upper beam is always less than 10 mm/sec. Only when an additional safety system is active the closing speed of the upper beam may exceed 10 mm/sec. An additional (optional) operating panel is required when 2 operators work on the machine simultaneously. This operating panel can also be programmed so that the operator can operate the machine from 2 working positions.
SafanDarley offers wide selection of support arms

### H-Brake Base
- **Comfort**
  - Support length: 500 mm
  - Support strength: 750 N
  - Adjustable: by means of bolts
- **Comfort Plus**
  - Support length: 750 mm
  - Support strength: 750 N
  - Adjustable: by means of hand wheel

### H-Brake
- **Comfort**
  - Support length: 1000 mm
  - Support strength: 1500 N
  - Adjustable: by means of bolts
- **Comfort Plus**
  - Support length: 1000 mm
  - Support strength: 1500 N
  - Adjustable: by means of hand wheel
- **Pneumatic**
  - Support strength: 1000 N
  - Adjustable: by means of pneumatic system
- **Heavy-duty**
  - Support length: 750 mm
  - Support strength: 2000 N
  - Adjustable: by means of hand wheel
Fully equipped

**Standard design H-Brake**
- Delem DA 65W 2D -or- E-Control EC20
- Control mounted on a swivelling arm on the right-hand side of the machine
- CNC-controlled Y1/Y2 axis
- CNC-controlled X-axis
- CNC-controlled R-axis
- Manual Z1 and Z2 axis
- Wila NSCL-II Premium top tool adapter with mechanic clamp Max. load 250 T/m top-bearing, 300 T/m shoulder-bearing, CNC deep-hardened tool clamping
- Wila NSCRH-II Premium CNC-controlled crowning with mechanical clamping, CNC deep-hardened tool clamping, max. load 300 T/m, Tx/Ty alignment
- 2 support arms, 300 mm
- LazerSafe light beam protection, type LZS-004 (Delem)
- Programmable and integrated safety light guard (E-Control)
- Foot pedal with “Hold To Run” function
- Front and rear side work area lighting
- Electrical system for mains connection 3/N/PE 50 Hz 230/400 VAC
- Machine is designed in accordance with the prevailing CE standard

**Standard design H-Brake Base**
- Delem DA 63W -or- E-Control EC10
- Control mounted on a swivelling arm on the right-hand side of the machine
- CNC-controlled Y1/Y2 axis
- CNC-controlled X-axis
- CNC-controlled R-axis
- Manual Z1 and Z2 axis
- Wila NSCL-II Premium top tool adapter with mechanic clamp
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SafanDarley H-Brake technical data

<table>
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<tr>
<th>H-Brake Model</th>
<th>Pressing force in kN</th>
<th>Operational length in mm</th>
<th>Stroke in mm</th>
<th>Approach speed in mm/sec</th>
<th>Max. bending speed in mm/sec</th>
<th>Return speed in mm/sec</th>
<th>Nominal motor power in kW</th>
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<th>B in mm</th>
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Besides this standard range of machines, SafanDarley offers another 5 models in the range 500 to 1250 Tons. The throat depth of these machines is 500 mm as standard. Working length and execution are custom made. Further information available on request.
Watch our corporate movie here: