

M-Shear

Superior cutting technology
with hybrid drive



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.

M-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 M-Shear.



SafanDarley M-Shear



All SafanDarley's experience and technical ingenuity in the area of efficient sheet-metal shearing is combined in the SafanDarley M-Shear. The result is an extremely functional design that satisfies current and future requirements. Various possibilities for expansion, such as material-handling systems, are already incorporated in the design. This is not surprising, as the M of SafanDarley M-Shear stands for multifunctional. At its core is the advanced hybrid drive for the cutting beam. This consists of a servo-electronic motor and a hydraulic pump, a combination that produces a remarkably quiet and energy-saving system. In addition, SafanDarley M-Shear offers a series of innovative extras, such as a programmable starting position for the cutting beam, automatic x-axis compensation when adjusting clearance, and Touch Screen control with data management of the cutting programmes.



M-Shear: Superior integration of hydraulics and electronics

M-Shear



Drive system cutting beam



The E-standard for Efficiency

The robust hydraulic systems in the SafanDarley M-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.

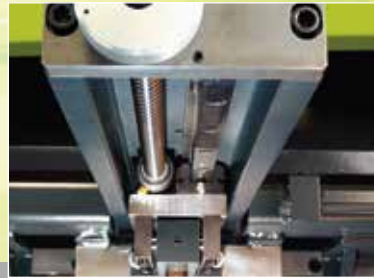
Low-noise and low-energy

The servo-electronic motor powering the hybrid drive only runs when the cutting beam is in

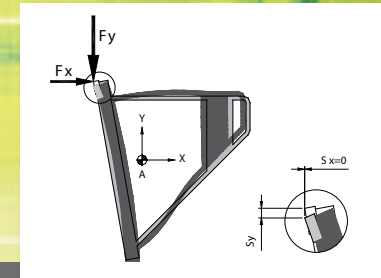
motion. This yields two advantages in a single stroke: you save a great deal of energy and the cutting cycle produces low noise levels. Since its introduction, the hybrid drive system has amply demonstrated its flexibility and reliability. In combination with the solid construction and the sophisticated, modular assembly, makes this SafanDarley M-Shear a superior guillotine shear.



With the M-Shear, the blade cuts four ways



Drive system of the backgauge



Self compensating clearance

The standard equipment for the SafanDarley M-Shear includes blades with four cutting edges, on both the top and bottom. Your shearing is done very economically because blade wear is spread over the blade's entire length, thanks to the programmable starting position of the cutting beam. Cutting small blanks can also be done on the right side of the shear.

Precision and automatic compensation

Standard equipment for the SafanDarley M-Shear includes independent left and right clearance adjustment with built-in measuring sensor. Accuracy is

± 0.01 mm. Due to the special frame construction, clearance is self compensating so that, even with a load in the middle of the shear, the clearance remains constant over the entire length. When the clearance is changed, the backgauge setting 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 play-free 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.

Ease of use with an E for ergonomic

Maximum ease of operation is provided to you by the SafanDarley Touch Screen control TS 200 which is standard on the SafanDarley M-Shear. This TS 200 control makes it simple to work quickly and faultlessly. The settings are indicated by clear symbols on the TFT colour monitor. The control operates on Microsoft Windows®.

M-Shear

The E-standard for Ergonomics



Simple manual operation



Extended manual operation



CNC programmed operation

The TS 200 offers three setting levels: simple manual operation, extended manual operation and CNC programmed operation.

1. Simple manual operation

A shearing operation is performed based on the input of data concerning material type, material thickness and blank size.

2. Extended manual operation

In this case, data concerning all available functions of the shear are entered before a series of shearing operations is performed.

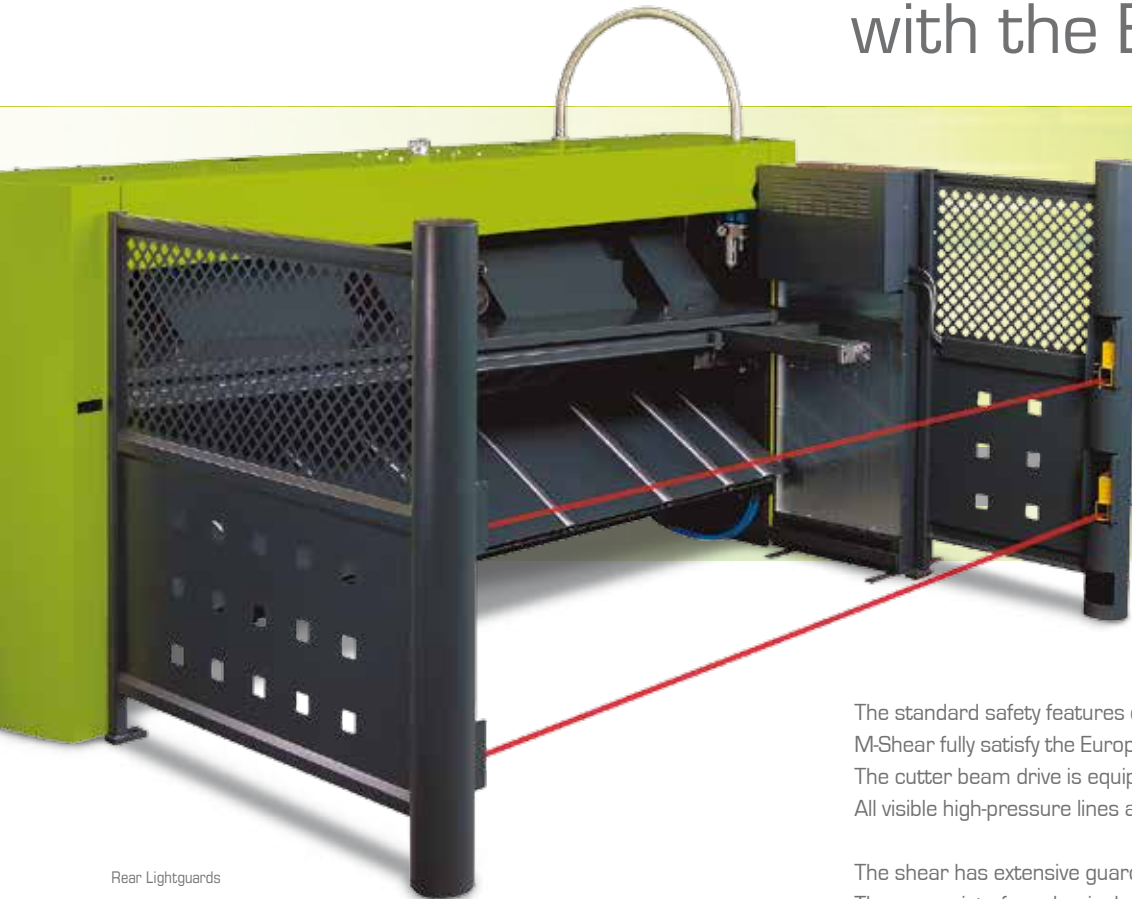
3. CNC programmed operation

For programming cutting programs that can be stored and retrieved later.



SafanDarley TS 200 control

M-Shear: 'safety first' in accordance with the EN norm



Rear Lightguards

The standard safety features of the SafanDarley M-Shear fully satisfy the European Machine Directive. The cutter beam drive is equipped with block hydraulics. All visible high-pressure lines are protected.

The shear has extensive guards on the back and sides. These consist of mechanical side covers on the right and left sides plus a photo-electrical guard on the back. The machine's foot-operated console is fitted with an

emergency stop. To prevent unauthorised persons from using the machine, a key switch can be used to block operation.

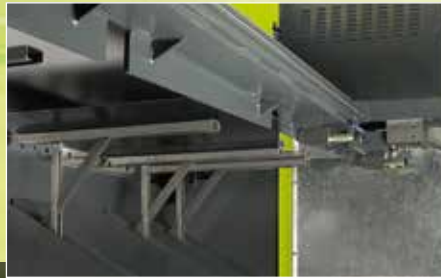
Robust finger guards have been installed. For up to and including 6 mm cuts, openings have been made in these guards, allowing the operator to safely get closer to the blade. A moveable finger guard and safety light screen can be supplied as options.

Perfect results with the pneumatic sheet support

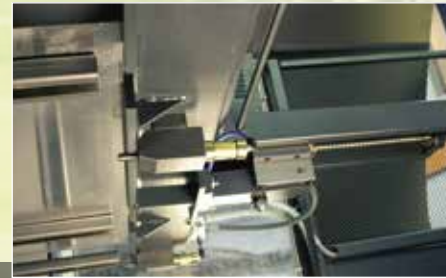
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The E-standard for Economy



Pneumatic sheet support



Sheet support fingers in backgauge

As an option, the SafanDarley M-Shear can be supplied with a pneumatic sheet support equipment. This makes cutting a little easier, especially when dealing with larger-size blank sizes.

The sheet to be cut is supported at the back of the shear, ensuring that it can be accurately positioned against the backgauge.

In addition, the backgauge can be equipped with sheet support arms (as an optional accessory) that support the sheet on the left side throughout the cutting stroke. Ensures an accurate cut across the full material width.

A useful extra accessory, only in combination with the pneumatic sheet support system, is the scrap separation feature, which can be used with or without sorting flap. The sorting flap enables pieces of scrap and small strips to be separated from the cut blanks.

Superior efficiency with Return-to-Sender version sheet support system



Sheet support system with "Return-To-Sender"-Function

With the Return-to-Sender-Function you will get a quicker economical return of your shear and you are able to cut more ergonomically. The support system can be further equipped with a Return-to-Sender-Function, which provides the following advantages:

1. Return of the blanks

The cut blanks are returned to the shear table at the front of the shear. The operator does not have to walk around to the back in order to retrieve them: a strong ergonomic advantage.

2. Prevent sheet marking

Having the blanks return to the shear table prevents the cut sheets from being damaged.

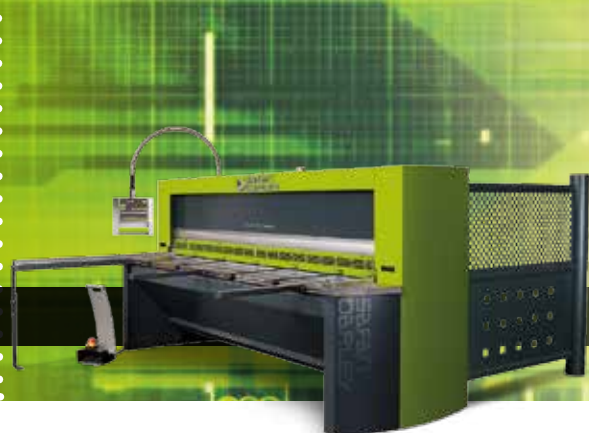
3. Reverse cutting

With the return-to-sender support system, it is possible to use the back-gauge as a frontgauge. The blanks to be cut would then lie on the support arms behind the blade.

There are two advantages to this:

- a) Narrow strips can be cut in a torsion-free manner.
- b) Pre-punched sheets can be very accurately cut into strips without any built-up tolerance.

M-Shear: Standard features that are multifunctional



The E-standard for Ecology



Adjustable angle guide



Moveable finger guard

- Touch Screen control, type TS200 with TFT colour monitor on a swivel arm
- CNC controlled backgauge
- Automatic clearance and cutting-angle adjustment
- Automatic retraction of the backgauge for narrow strip widths
- Adjustable starting and end stopping position for the entire length of the cutting beam
- Backgauge supports equipped with ball screws and play free linear guides
- Maintenance free cutting beam guides
- Fine adjustment of backgauge parallelism
- Adjustable hold down cylinders
- Push-on adiprene covers for the hold down cylinders

- Blades with 4 cutting edges, suitable for shearing stainless steel (max. tensile strength 750 N/mm²)
- Cutting line lighting with cutting line indication
- 2 support arms, adjustable over the entire width of the table (length is approx. 1200 mm from the cutting line)
- 2 squaring guides on the right and left sides of the table (across the entire 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
- Key switch (3 positions)
- Safety features complying with the European Machine Directive

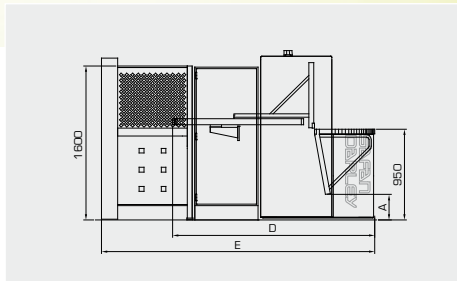
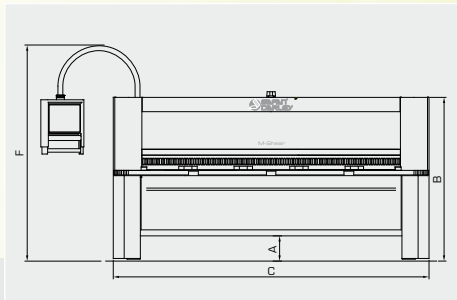
- Finger guard
- Filled oil reservoir
- Foundation plates

Accessories for maximum operating advantage

- Extended squaring guides with or without hardened edge
- Front stop with or without fine adjustment
- Extended support arms
- Stops for the support arms
- Adjustable angle guide
- Roller balls in table
- Scratch preventing table cover
- Pneumatic sheet support equipment
- Sheet support fingers in backgauge

- Return to Sender function
- Scrap separator (with or without sorting flap)
- Scrap removal bin (with or without moveable bottom)
- Sheet conveyor system (with or without stacking system)
- Sheet handling system
- Extended backgauge range
- Pneumatically hingeable backgauge
- Moveable finger guard
- Safety light guard instead of mechanical finger guard

Technical specifications SafarDarley M-Shear



M-Shear	Cutting capacity (mm) St. 450 N/mm²	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)	F (mm)						
205-4	4	2050	11	44	110	2	1000	200	14	4200	250	1750	2800	2100	2850	2870						
255-4		2550		39	100				17	5200			3300									
310-4		3100		34	90	20			6200	3850												
430-4		4300		22	60	26			8200	5050												
610-4		6100		14	48	36			18800	0	2150	7050										
205-6	6	2050	32	90	2	14			4200	250	1750	2800	2300	3000	3045							
255-6		2550	28	85		17			5200			3300										
310-6		3100	24	80		20			6200			3850										
430-6		4300	15	34	26	12500			5250													
610-6	8	6100	12	30	1,5	36			18800	7050	0	2150					5250	2300	3000			
255-8		2550	19	40		17			8900	3500												
310-8		3100	16	35	20	9800			4050													
430-8		4300	13	30	26	14500			5250													
205-10	10	2050	16	35	2	14			8200	3000							0	2150	3000	2300	3000	
255-10		2550	14	32		17			8900	3500												
310-10		3100	12	30		20			9800	4050												
430-10		4300	10	24		26			16500	5450												
610-10	13	6100	18,5	5	16	36			28000	7200									0	2450	7200	2550
255-13		2550	20	50	17	10500	3700															
310-13		3100	18	46	20	12500	4250															
430-13		4300	14	38	26	18500	5450															
255-16	16	2550	30	14	38	3	1250	125	17	10500						3700					2550	3350
310-16		3100	12	34	20				12500	4250												
430-16		4300	8	26	26				21500	5450												

(Subject to modifications)



E-Brake Ergonomic



E-Brake 35T-200T
E-Brake B 20T-100T



E-Brake Ultra 50T-130T



E-Brake 300T Dual Drive



E-Brake ATC



H-Brake 175T-400T



H-Brake Hybrid 110T-170T



H-Brake HD 500T-1250T



R-Brake



B-Shear & M-Shear



Special cutting lines



**SAFAN[®]
DARLEY**

The E-volution in sheet metal working

Watch our corporate
movie here:



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