

# 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



The E-standard  
for Efficiency

The E-standard  
for Ergonomics

The E-standard  
for Economy

The E-standard  
for Ecology

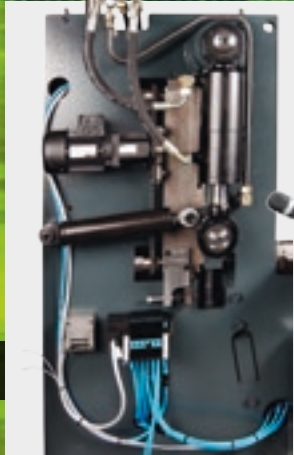
All SafanDarley's experience and technical ingenuity in the area of efficient sheet-metal shearing is combined in the SafanDarley M-Shear. The result is an extremely functional design that satisfies current and future requirements. Various possibilities for expansion, such as material-handling systems, 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.



The E-evolution in sheet metal working

# M-Shear: Superior integration of hydraulics and electronics

M-Shear



The E-standard for Efficiency

Drive system cutting beam

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

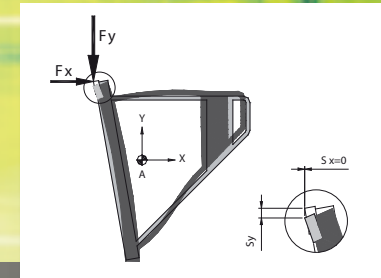
motion. This yields two advantages in a single stroke: you save a great deal of energy and the cutting cycle produces low noise levels. Since its introduction, the hybrid drive system has amply demonstrated its flexibility and reliability. In combination with the solid construction and the sophisticated, 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

$\pm 0.01$  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  $\pm 0.03$  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.

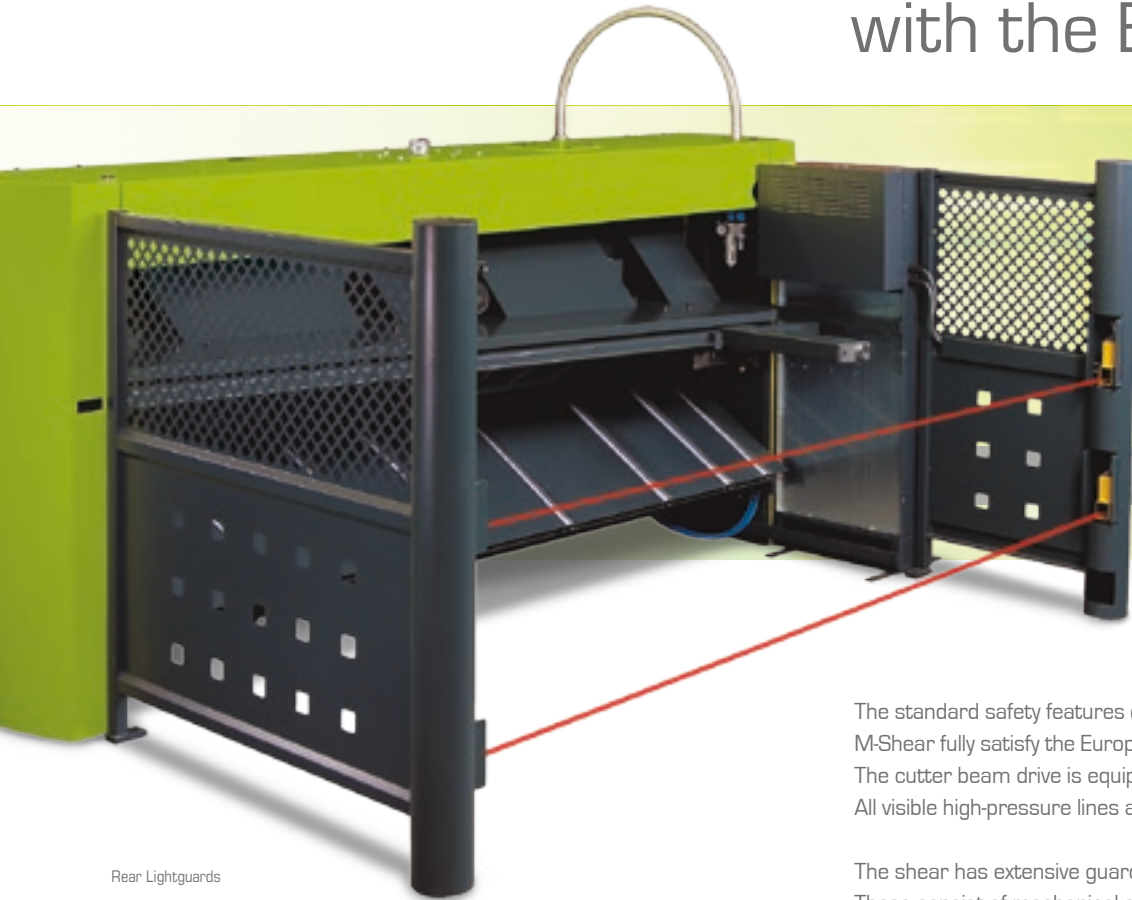
## 3. CNC programmed operation

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

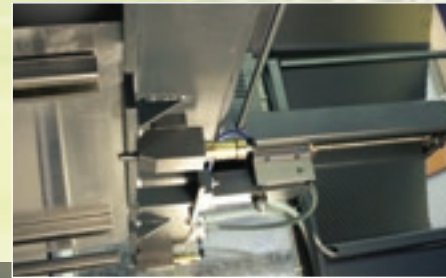
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The E-standard for Economy



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 a 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

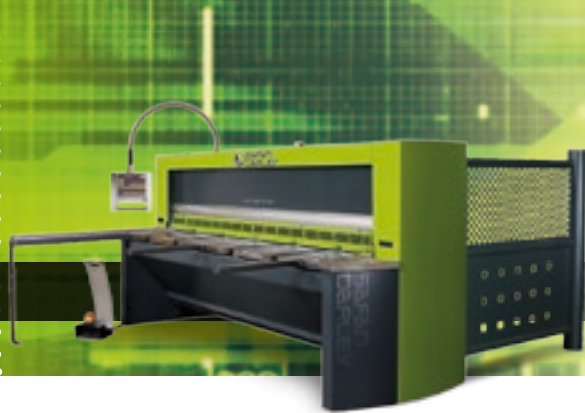
With the return-to-sender support system, it is possible to use the back-gauge as a frontgauge. The blanks to be cut would then lie on the support arms behind the blade.

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

M-Shear



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/mm<sup>2</sup>)
- 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

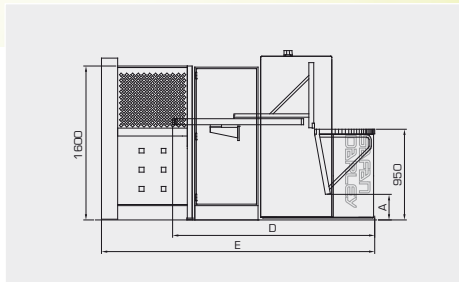
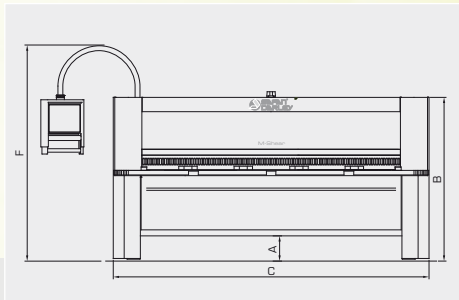
- Finger guard
- Filled oil reservoir
- Foundation plates

## 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 SafanDarley M-Shear



M-Shear	Cutting capacity (mm) St. 45D N/mm <sup>2</sup>	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	6	6100	15	14	48	1,5	1000	200	36	18800	0	2150	7050	2100	2850	2870
205-6		2050		32	90				14	4200	2800					
255-6		2550		28	85				17	5200	3300					
310-6		3100		24	80				20	6200	3850					
430-6	8	4300	15	15	34	1,5	1000	200	26	12500	0	2150	5250	2300	3000	2870
610-6		6100		12	30				36	18800			7050			
255-8		2550		19	40				17	8900			3500			
310-8		3100		16	35				20	9800			4050			
430-8	10	4300	18,5	13	30	1,5	1000	200	26	14500	0	2150	5250	2300	3000	2870
205-10		2050		16	35				14	8200			3000			
255-10		2550		14	32				17	8900			3500			
310-10		3100		12	30				20	9800			4050			
430-10	13	4300	30	10	24	2	1250	125	26	16500	0	2450	5450	2550	3350	3045
610-10		6100		5	16				36	28000			7200			
255-13		2550		20	50				17	10500			3700			
310-13		3100		18	46				20	12500			4250			
430-13	16	4300	30	14	38	3	1250	125	26	18500	0	2450	5450	2550	3350	3045
255-16		2550		14	38				17	10500			3700			
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 300T Dual Drive

H-Brake 175T-400T

H-Brake HD 500T-1250T

R-Brake

B-Shear & M-Shear

Special cutting lines



Watch our corporate movie here:



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