

Tables for straight-line and shaped cutting

Macotec designs and produces a wide range of automatic and manual cutting tables for different requirements, all provided with specific software. This article explains the particular functions of a number of Macotec's machines, together with their technical features and the size of manufacturer for whom the table is best suited.

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MACOTEC

HAND-CUT



HAND-CUT

The *Hand-Cut* is a manual, single-headed table for straight-line cutting of monolithic glass. It is designed to satisfy the needs of small- and medium-sized glassworks which aim to partially automate their work. Through a simple movement of the bridge and small head (quick and precise), the glass can be cut. The *Hand-Cut* is cost-effective and is therefore an ideal machine for firms who want to keep investments to a minimum; it can be updated and automated should the customer so wish. Despite the fact that the cutting table is economical, it is equipped with high quality pneumatics from Bosch. The table is available in both 3 and 4 metre versions and features the following:

- displays which show quotes;
- a hydraulically tilting work surface;
- air cushion for movement of glass sheets;
- break-out bars.

Further break-out bars can be added if necessary.

MASTER-CUT

Especially designed for medium-sized glass manufacturing companies, is the *Master-Cut* single-headed cutting table. It cuts monolithic glass and is remarkable for its easy maintenance, accuracy and simplicity of use.

The table features the following:

- 2 axis NC;
- security photocells;
- high precision rack and guides for moving the bridge and cutting head with Brushless digital motors;

- oleodynamic tilting worksurface;
- air cushion for sheet movement;
- break out bars.

The Master-Cut is available in 3, 4 and 6 metre sizes. Additional break-out bars and a pressure foot for specular cutting are optional. This table is particularly suitable for integration in cutting lines with fully automatic loading and breakout functions.

Software

The system uses Windows '98 and the table can be equipped with Opty-Way E software for linear cutting.

The Opty-Way technology has the following characteristics:

TECHNICAL FEATURES - HAND-CUT

	3 m	4 m
MAXIMUM SHEET SIZE:	3,210 x 2,400 mm	4,500 x 2,600 mm
GLASS THICKNESS:	2-12 mm	2-12 mm
CUTTING PRECISION:	± 0.25 mm	± 0.25 mm
INSTALLED POWER:	3.5 kW, 380 V, 50 Hz	3.5 kW, 380 V, 50 Hz
WEIGHT:	1,500 kg	1,700 kg
OVERALL DIMENSIONS:	4,000 x 3,000 mm	5,200 x 3,200 mm

LAMI-CUT

Designed with large glassworks in mind is the Lami-Cut for the linear cutting of laminated glass.

The principle features of this table are the speed, precision and quality with which it can carry out operations.

The *Lami-Cut* also features an automatic system for the positioning of the 'X' axis, by means of small reference blocks (which can be folded away) as a check for measuring the cutting of the glass (min. size 200 mm, max. size 1,750 mm).

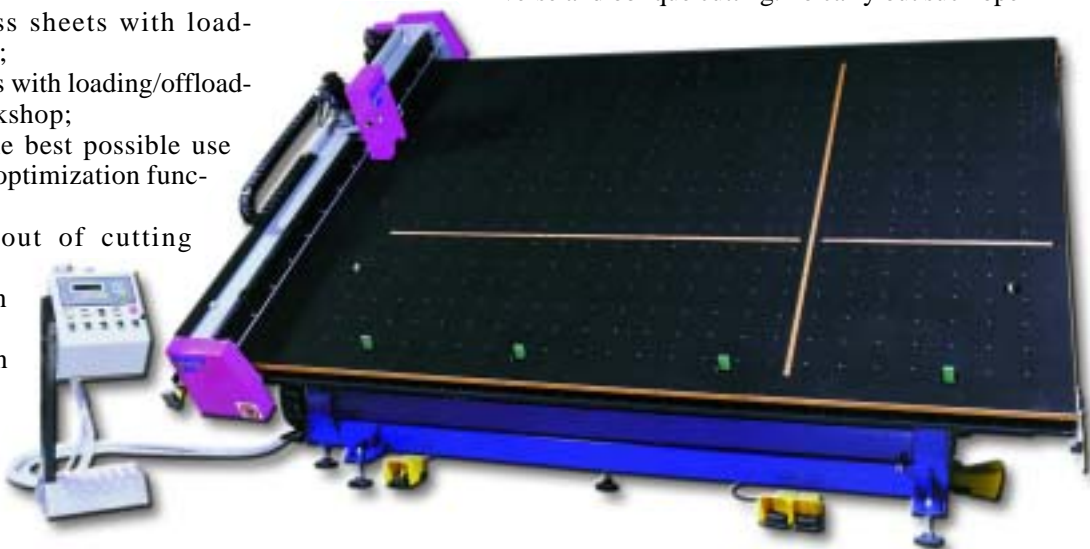
A tilting table and laser tracer can be added to this model. Furthermore, the table allows transverse and oblique cutting. To carry out such oper-

TECHNICAL FEATURES - MASTER-CUT

	3 m	4 m	6 m
MAXIMUM SHEET SIZE	3,210 mm x 2,400 mm	4,500 x 2,600 mm	6,000 x 3,210 mm
MAXIMUM CUTTING SPEED	90 m/min	90 m/min	90 m/min
GLASS THICKNESS	2-19 mm	2-19 mm	2-19 mm
CUTTING PRECISION	± 0.25 mm	± 0.25 mm	± 0.25 mm
INSTALLED POWER	6 kW, 380 V, 50 Hz	6 kW, 380 V, 50 Hz	8 kW, 380V, 50 Hz
WEIGHT	1,600 kg	1,800 kg	4,600 kg
OVERALL DIMENSIONS	4,000 x 3,050 mm	5,200 x 3,250 mm	7,500 x 3,900 mm

- insertion, change and cancellation of work orders;
- management of glass sheets with loading/offloading device;
- management of offcuts with loading/offloading device in the workshop;
- optimizer to make the best possible use of scrap materials - 3 optimization functions;
- high quality print-out of cutting layout;
- print-out of situation in the workshop;
- print-out of stickers in predefined format;
- import/export data from external systems;
- multi-measurement unit.

MASTER-CUT



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ations, the laser is used to give better direction. All of these characteristics make the Lami-Cut cutting table an ideal instrument to integrate in cutting lines with fully automatic loading and off-loading functions.

It further features an air cushion for movement of the glass sheets, a roller system for off-loading the glass, thermal resistance for opening the cut and a numerical control with display.

The breakout, incision and separation cycles of the PVB are completely automatic and work without interfering with the glass sheet.

This table is best suited for cutting monolithic glass sheets with a thickness of between 3 and 19 mm. It is possible to add on a tilting loading table at the side.

TECHNICAL FEATURES - LAMI-CUT

MAXIMUM CUTTING SIZE	3,300 mm
GLASS THICKNESS	6 + 6 mm plastic
CUTTING PRECISION	± 0.5 mm
INSTALLED POWER	8 kW, 380 V, 50 Hz
WEIGHT	2,300 kg
OVERALL DIMENSIONS	4,700 x 2,450 x 1,400 mm

Software

This machine works using Windows '98 software. The Lami-Cut cutting table can be equipped with the *Optistrato* optimization programme for the linear cutting of laminated glass sheets. The programme is based upon a computerized station linked to the side of the machine, in which the functions related to data introduction, optimization and planning are stored.

Optistrato features the following characteristics:

- import of data of optimized work orders;
- display on the side of the machine;
- link to the NC by series;
- optimizer/reoptimization function for the maxi-



LAMI-CUT

- mum use of waste materials;
 - a cycle reduction ensures that the number of cuts which are carried out on the worktable are kept to a minimum.
- Available as optional are a:
- tilting worktable for offloading glass sheets;
 - laser tracer used as a pointer for the correct positioning of the glass sheets.

STAR-CUT

The automatic cutting table, *Star-Cut*, is manufactured for use by large glassworks and is able to carry out straight-line and shaped cutting. The machine is easy to use and, due to its technology, is able to carry out high-quality, precise and reliable cutting operations.

The electronics and high-quality pneumatics together with the differentiation of cutting pressures, allows precise 'open cuts' to be carried out even on shapes. The table, available in 3, 4 and 6 metre versions is equipped with the following:

TECHNICAL FEATURES - STAR-CUT

	3 m	4 m	6 m
MAXIMUM CUTTING SIZE	3,210 x 2,400 mm	4,500 x 2,600 mm	6,000 x 3,210 mm
MAXIMUM CUTTING SPEED	120 m/min	120 m/min	120 m/min
GLASS THICKNESS	2-19 mm	2-19 mm	2-19 mm
CUTTING PRECISION	± 0.2 mm	± 0.2 mm	± 0.2 mm
INSTALLED POWER	6.5 kW, 380 V, 50 Hz	7 kW, 380 V, 50 Hz	9 kW, 380 V, 50 Hz
WEIGHT	2,200 kg	2,400 kg	4,600 kg
OVERALL DIMENSIONS	4,200 x 3,050 mm	5,400 x 3,250 mm	7,500 x 3,900 mm

- 3 axis interpolated NC;
- an industrial computer at the side of the machine;
- cutting pressures managed electronically;
- security photocells;
- rack and very high precision, tempered, straight-line guide for moving the bridge and the small cutting head with Brushless motors;
- oleodynamic, tilting worktable;
- air cushion for movement of glass sheets;
- breakout bars.

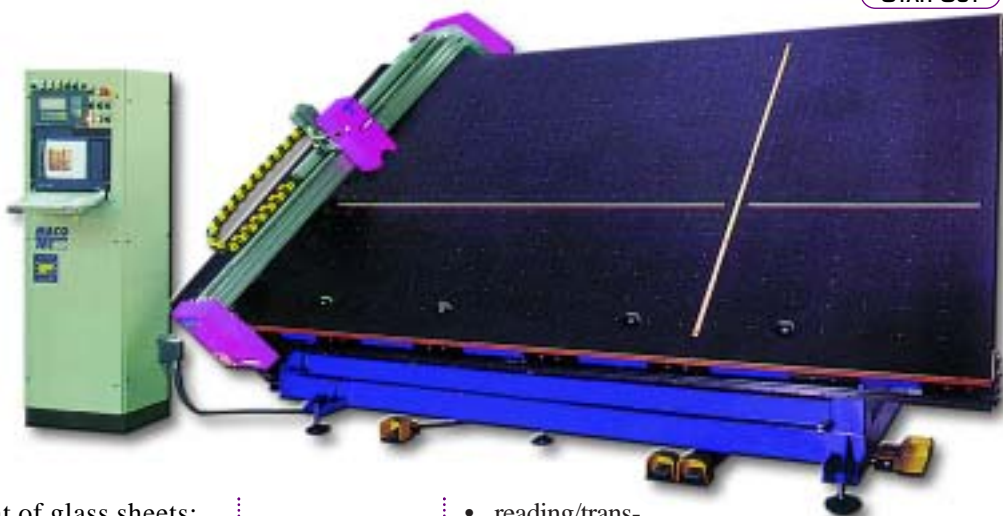
As an option, additional breakout bars, a pressure foot for specular cutting, an Opty Way CAD optimization programme and a shape-marker can be supplied.

Software

This machine uses Windows '98 software. The cutting table can be equipped with an optimization programme, Opty-Way G/E, for linear and shaped cutting (inside the system there are all the standard shapes, so all the operator has to do is input the dimensions). The Star-Cut can be upgraded with the addition of other optional extras such as the Opty-Way CAD optimization programme (necessary for the creation of any geometric shape); Opty-Way SK system (used for the formation of shapes in parametric form) and digital, technical drawing machine.

The Opty-Way G/E programme contains:

- insertion, change and cancellation of work orders;
- management of glass sheets with loading/offloading device;
- management of offcuts with loading/offloading device in the workshop;
- optimizer to make the best possible use of scrap materials with 3 optimization functions;
- high quality print-out of cutting layout;
- print out of situation in the workshop;
- print out of stickers in predefined format;
- import/export of data from external systems;
- multi-measurement unit;
- parametric shape library;



- reading/transmission of shapes from other systems;
- special functions: Nesting, Mirror, Rotation, Offset, management of holes and notches.

Contained within the Opty-Way GE programme is the Opty-Way E programme (see description of Master-Cut for details).

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