

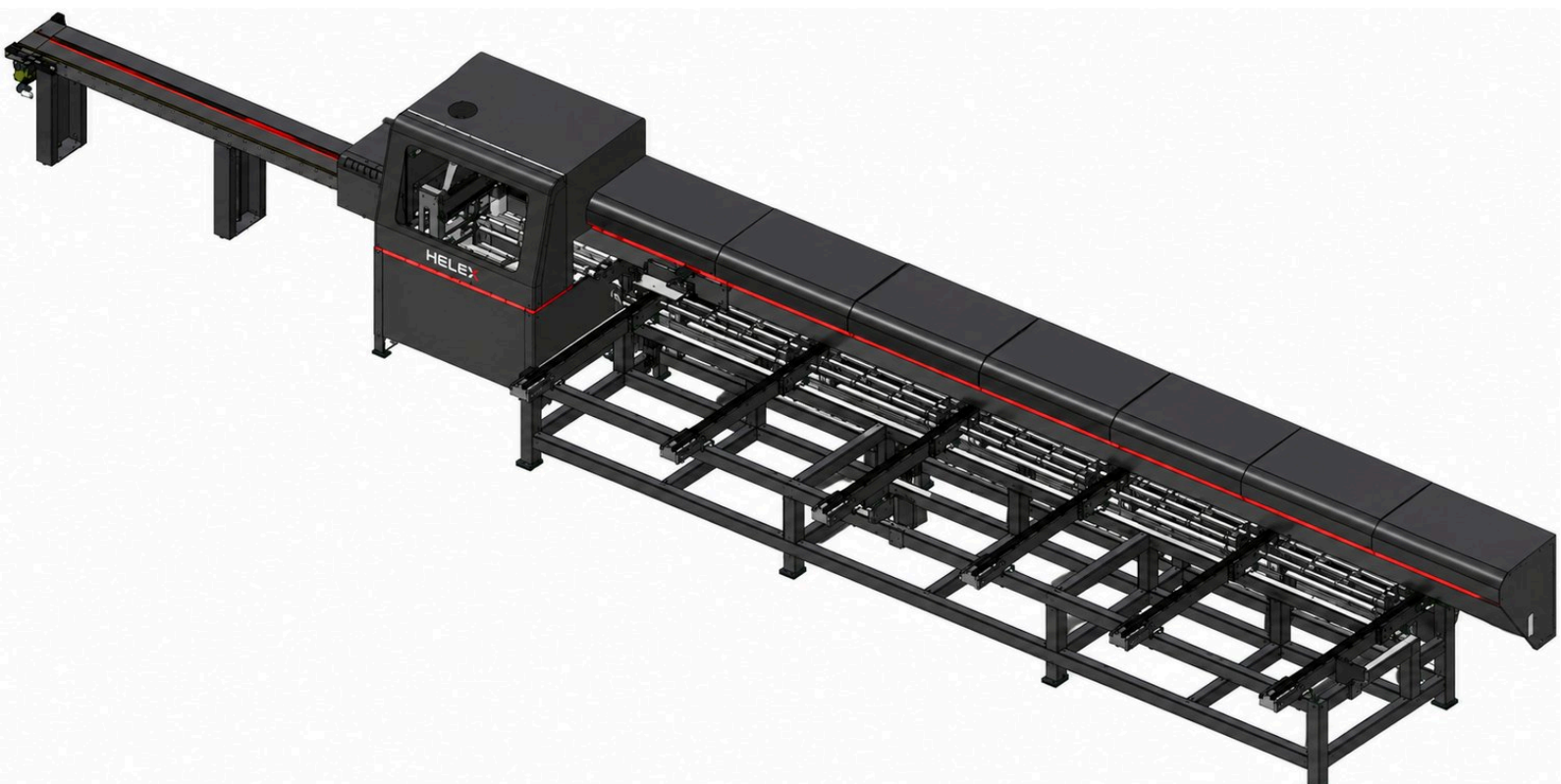
CROSS-CUT SAW SERIES

Push-Feed Optimizing Cross-Cut Saw Line

Automatic feeding, optimized cutting and automatic sorting in one continuous line for solid timber production.

MODEL HE 6000 O

6000 mm	150 m/min	300 x 120 mm	6
MAX. FEED LENGTH	FEED SPEED	MAX. CUTTING SECTION	SORTING KICKERS



/ Application & Use

The HELEX HE 6000 O is a fully automatic cross-cut line for the optimized cutting of solid timber. Boards and battens are loaded onto the infeed table, advanced by a servo push-feed unit, cut to the programmed lengths and automatically sorted into up to six collection positions, while waste pieces are evacuated by a separate conveyor. The line works continuously without an operator at the discharge end, so a single operator can supervise the complete cutting process from the control panel.

The line is designed for furniture and sofa frame factories, pallet and packaging plants, tray production, wooden house and glulam manufacturing, and for every production where large volumes of timber have to be cross-cut to fixed lengths with a controlled level of waste.

Key Features

- Six functional groups: automatic infeed, servo push-feed, sawing unit, marking recognition, sorting output and waste evacuation
- Optimization by grade, by quantity or by value, with zero-waste cutting programs
- Head and tail trimming with both ends aligned in a single pass
- Fixed-length cutting and cutting after line marking
- Servo feeding with precision rack and pinion transmission, cutting tolerance below 0.4 mm
- Cutting cycle of 0.2 seconds per cut at 3000 rpm saw shaft speed
- Intelligent speed control, electrically adjustable from the touch screen
- Colour code recognition (SICK, Germany) for automatic grade sorting
- Fully enclosed sawing cabin with two dust extraction ports

Raw Materials

- Solid timber battens and boards, softwood and hardwood
- Finger-jointed and glued lamellas
- Pallet, packaging and tray timber
- Structural timber for wooden houses and glulam beams

Working Range

- Workpiece length 1000 - 6000 mm
- Cutting section up to 300 x 120 mm
- Feed speed 1 - 150 m/min, infinitely adjustable
- Output table length 9000 mm



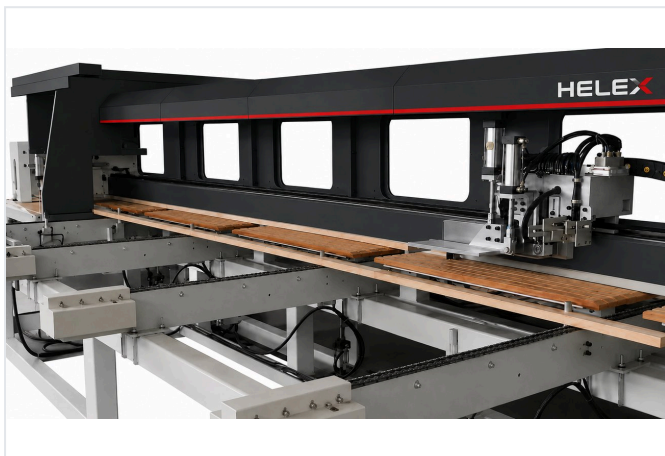
Sawing unit with enclosed cabin, control panel and outfeed measuring table

/ Structure and Configuration

The line is built from six functional groups mounted on a common welded steel base. All feeding and transport speeds are electrically adjustable from the control panel, so the line can be matched to the timber section and to the required output.

- 1 Automatic infeed table**
Chain-driven feeding table for workpieces from 1000 to 6000 mm, driven by a 2 kW servo motor. Feed speed is infinitely adjustable between 1 and 150 m/min. Heavy-duty motorized rollers transport boards up to 300 mm wide and 120 mm thick towards the pushing station.
- 2 Servo push-feed unit**
A 4 kW servo pusher running on precision linear guides (AirTAC) advances the timber to the saw through a rack and pinion transmission. The servo positioning holds a cutting tolerance below 0.4 mm and allows both ends of the workpiece to be trimmed and aligned in a single pass.
- 3 Sawing unit**
Fully enclosed sawing cabin with a 5.5 kW motor driving a 500 mm diameter blade at 3000 rpm. The blade is raised and lowered by a 4 kW servo motor, giving a cutting cycle of 0.2 seconds per cut. Maximum cutting section is 300 x 120 mm. Two dust extraction ports of 160 mm and 100 mm diameter are provided, working at 0.6 MPa compressed air supply.
- 4 Marking and colour code recognition**
An industrial colour code recognizer (SICK, Germany) reads the marks applied to the timber and transmits the defect positions to the control system. The line then cuts after the marked line, removes the defect and applies the selected optimization criterion: grade preference, quantity preference or value preference.
- 5 Sorting output conveyor**
Belt conveyor of 9000 mm length driven by a 2 kW servo discharging motor, fitted with six pneumatic kicking legs. Each kicker is assigned to a length or grade group from the control panel and pushes the finished pieces onto the lateral collection racks, so that sorted material leaves the line ready for the next operation.
- 6 Sloped waste conveyor**
A separate sloped conveyor table collects the trimmed ends and the rejected pieces and discharges them at the side of the line into a container or a chipper infeed, keeping the working area clear during continuous production.

All drives are servo controlled and the working speeds of the infeed, pushing, sawing and discharging groups are set electrically from the touch screen. No mechanical adjustment is required when changing from one cutting program to another.



Push-feed section with servo pusher and clamping unit



Chain transport and pneumatic positioning inside the feeding section

/ Working Modes

Head and tail alignment

Both ends of the workpiece are trimmed automatically so that every piece leaves the line square and aligned.

Cutting after marking

Defects marked on the timber are recognized and removed, the sound material being cut into the programmed lengths.

Grade optimization

The cutting plan is calculated to obtain the highest possible quantity of the required quality grade.

Value optimization

The cutting plan gives priority to the total value of the pieces produced from each workpiece.

Fixed length cutting

Cutting to a list of fixed lengths entered on the touch screen, with automatic repetition of the cutting sequence.

Automatic feeding

Continuous servo feeding of the workpieces without operator intervention at the infeed end.

Quantity optimization

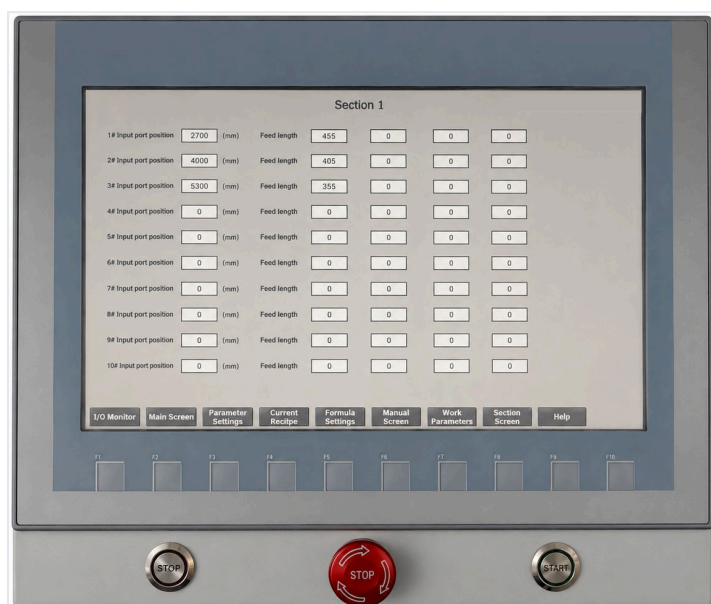
The cutting plan gives priority to the number of pieces obtained from each workpiece.

Zero waste program

Remaining sections are re-cut into shorter usable lengths so that waste is reduced to a minimum.

/ Control System

The line is operated from an industrial touch screen panel with dedicated screens for cutting sections, work parameters, formula and recipe management, manual operation and input and output monitoring. Cutting lists are stored as recipes and recalled directly on the screen. Intelligent speed control adapts the feed rate to the programmed cutting sequence.



Control panel: section screen with input port positions and feed lengths

Operator functions

- Section screen with up to ten input positions and feed lengths
- Recipe and formula management for repeated cutting lists
- Work parameter screen for speeds, tolerances and kicker assignment
- Manual screen for setting and maintenance operations
- Input and output monitor for diagnostics
- Integrated help function
- Emergency stop, start and stop controls on the panel front



Output belt conveyor with lateral sorting racks



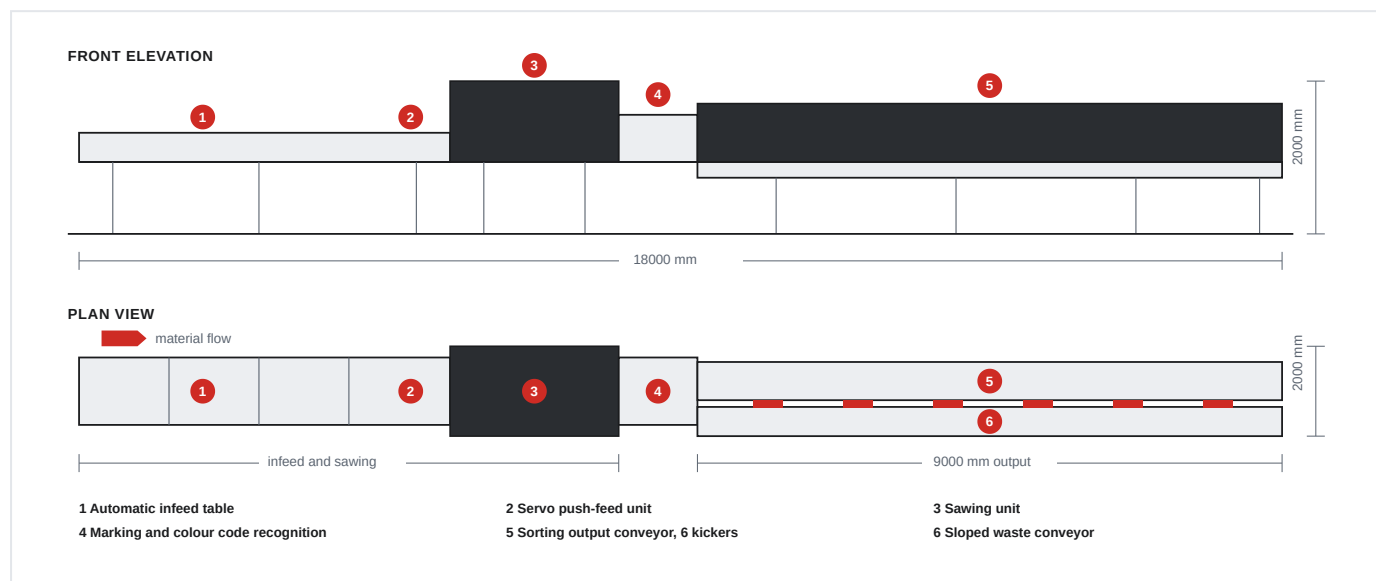
Sloped waste conveyor with driven chain transmission

/ Technical Data

Model	HE 6000 O
Type	Optimizing cross-cut saw line
Feeding speed	1 - 150 m/min
Feed length	1000 - 6000 mm
Max. sawing cross-section	300 x 120 mm
Cutting cycle	0.2 s per cut
Saw shaft speed	3000 rpm
Saw blade diameter	500 mm
Cutting tolerance	under 0.4 mm
Pushing motor	4 kW servo
Feeding motor	2 kW servo
Saw lifting motor	4 kW servo
Discharging motor	2 kW servo
Sawing motor	5.5 kW
Total installed power	17.5 kW

Voltage	380 V / 50 Hz
Compressed air pressure	0.6 MPa
Dust extraction ports	2
Dust port diameter	160 mm / 100 mm
Intelligent speed control	Yes
Colour code recognizer	SICK, Germany
Detection switches	Omron, Japan
Cylinders and linear guides	AirTAC
Electrical components	Schneider
Sorting kickers	6
Output table length	9000 mm
Waste evacuation	Sloped conveyor table
Overall dimensions (L x W x H)	18000 x 2000 x 2000 mm
Weight	3500 kg
Operator required	1

/ Layout Diagram



SUPPLIER

PROMACH LTD
Str. Kolednitsa 2, et. 1
7002 Ruse, Bulgaria
VAT Nr. 208556296

CONTACT

www.promach-machinery.com
contact@promach-machinery.com
BG +359 87 6832151
RO +40 755 023 024