



Edit

PHASE DIFFERENCE

pulling  
pulling  
pulling  
pulling  
pulling  
pulling

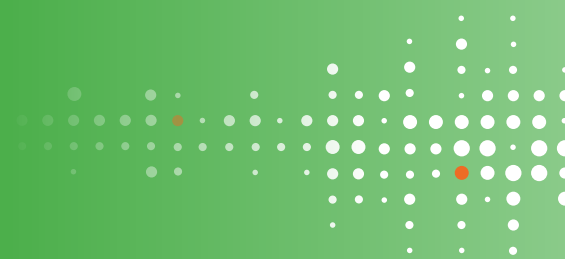


### MACHINES

MACHINE	MACHINE STATUS	AREA	LOCATION	ON BED
Modifier_e9_	Running, Auto	Bed 3		119
Extruder_e9_	Running, Man	-		
Extruder_e9_	Running, Man	-		
Saw_E9_123	Running, Man	-		
Preparer	-	-		
Prestresser	-	-		
Looper	-	-		

# AUTOMATIC

Hollow core production



# A COMPETITIVE EDGE

Automation optimizes hollow core slab production

**Strong, lightweight, and cost effective prestressed hollow core slabs represent precast technology at its finest. When you decide to start producing these time-tested favorites, we can provide you with the world's most advanced and automated equipment for your precast production.**

With automation, you can make the factory's working environment better – the machines will do the hardest work automatically. Working methods on the production line change as automatic machines work faster and with fewer personnel. As the automatic machines work independently, you'll need people for tasks such as making the machines ready, lifting them to the starting end of the bed, and downloading the bed plan. You won't need one person on the saw and another operating the extruder.

Every stage of the precasting process can benefit from automation – and each automated process will improve your factory efficiency.

If you already have a precast factory, you can start with the most time-consuming production phases and automate them one-by-one. By automating your factory, you can manage and monitor every aspect of your precast production for casting without bottlenecks. Your initial investment will quickly pay off due to the increase in cost-efficiency, product quality, and reduction of human error.

## HOLLOW CORE – a time-tested favorite

Prestressed hollow core slabs are one of the most sustainable products in construction, because less material – less cement, less water, and less steel – is needed for manufacturing them compared to cast-in-situ. Hollow core slabs are typically used as floors in a variety of buildings, from villas to multi-story constructions.

Thanks to their wide span, fewer columns are needed. This makes hollow core slabs a favored floor element in, for example, shopping malls, office buildings, and parking halls. The product's optimized geometry, with voids in the middle of the slabs, saves up to 50% in concrete compared to a massive slab.

The prestressed strands save many kilos of steel for reinforcement, and the dry concrete that hollow core slabs are made of requires very little water. This means that you can also minimize cement used in production.

The Extruder E9 is the workhorse for casting hollow core slabs. When paired with the Modifier E9, which digs the openings needed into fresh concrete, the Extruder E9 makes it possible to recycle concrete automatically back into the slab production process.

All this is reflected on both the financial and sustainability bottom lines, and makes it clear why hollow core slabs continue to be popular around the world.



### CARBON FOOTPRINT EVALUATION

Interested in reducing your precast factory's carbon footprint? Our carbon footprint evaluation service calculates the greenhouse gas emissions caused by your production and finds ways to decrease them. At the end of this process, you'll receive an actionable plan for reducing your carbon emissions both in the long and short term. Environmental Product Declaration (EPD) calculation is also possible. Both the carbon footprint evaluation service and EPD calculation are only available for customers in Europe.



# A COMPETITIVE EDGE

Automation optimizes hollow core slab production



Watch  
Contiga automated  
hollow core plant

## HIGH-SPEED CASTING WITH EXTRUDER E9

Extruder E9 is designed for a very high casting speed of up to 2.7m/min, with automatic compaction allowing for autonomous operation. It sets the pace for production, meaning you can cast more beds each day compared to conventional machines.

## MODIFIER E9 REDUCES CONCRETE CONSUMPTION

Modifier E9 marks cut lines, other markings and drill holes, and digs openings in slabs. It then recycles the dug-out concrete back into the extruder.

## FAST WATER HOLE DRILLING WITH DRILLBEAM E9

Drillbeam E9 speeds up water hole drilling. It provides the extra speed needed to fully utilize Extruder E9, the world's fastest extruder.

## SAW E9 CUTS ACCURATELY

The Saw E9 utilizes cutting-edge laser positioning technology for safer, cleaner, and smarter automated hollow core production.



## AUTOMATIC SLAB TRANSPORTATION WITH WAGON E9

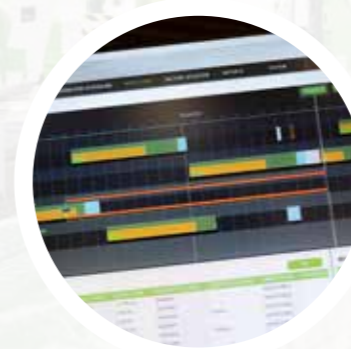
Once the slabs are lifted onto the Wagon E9, it transports them to the storage yard with the push of a button.

## PLANT CONTROL MAKES THE WORKFLOW SMOOTH

Automation is not done only with machinery; software plays a crucial role in automated production. Elematic Plant Control is a software suite for precast production. It helps you achieve a smooth process with zero interruptions and low operational costs.

## FULLY AUTOMATED CONCRETE DISTRIBUTION SYSTEM

The Elematic fully automated concrete distribution system transfers concrete from the batching and mixing plant to the casting machine. It includes Shuttle E9, Distributor E9, a track, and a cleaning system.

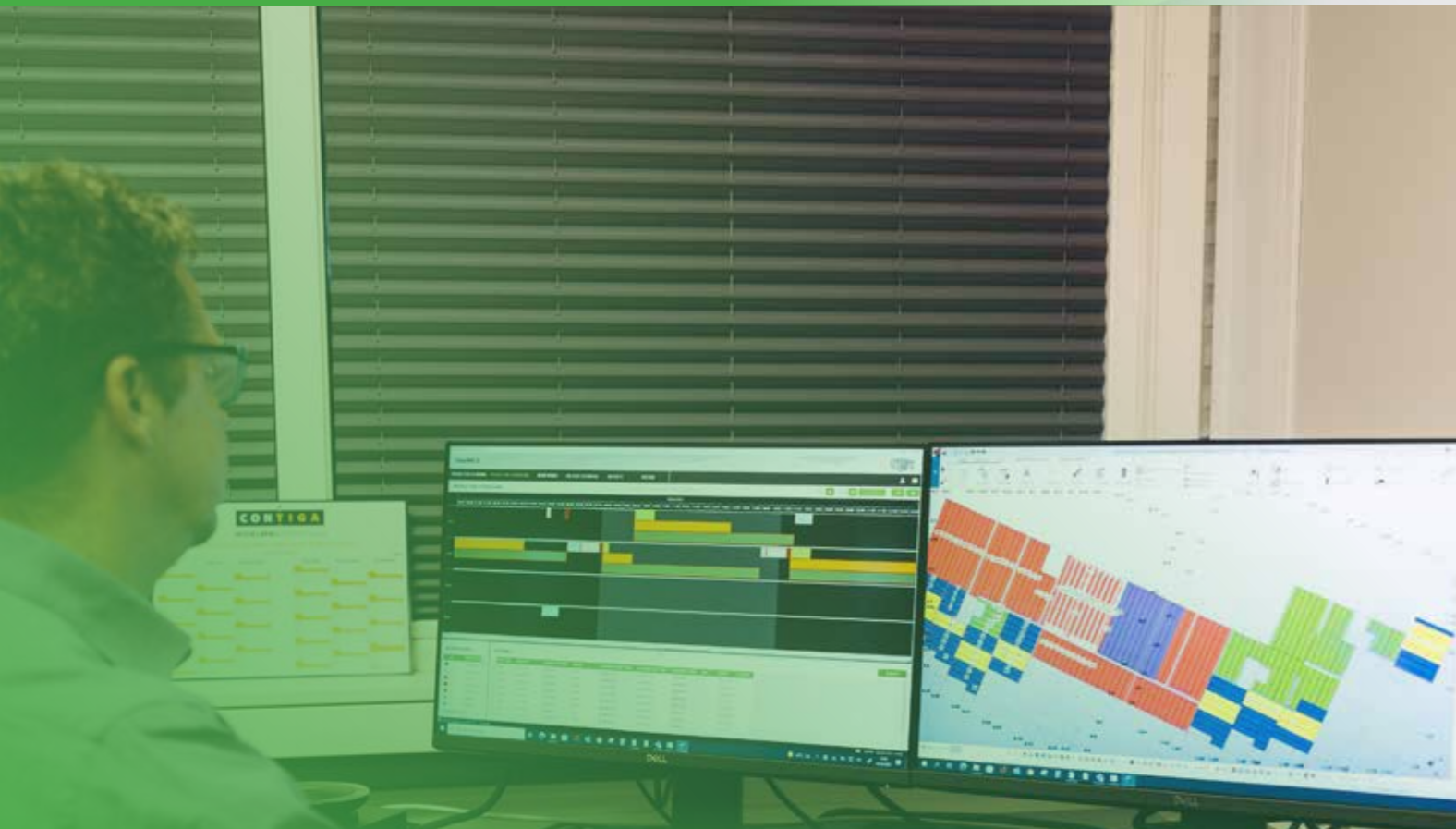


# PLANT CONTROL

Optimize your precast production flow



Watch  
Plant Control  
at Contiga



Elematic Plant Control is a production operations management software suite specially designed for precast concrete factories. It connects your precast factory's different work processes and aids in collaboration between designers and the construction site.

With Plant Control, you will always have an up-to-date overview of your plant's production-related operations. You can manage, control, and optimize the whole production process and automatic machines with just one system. When you connect work processes digitally, you can achieve major improvements in the production efficiency and profitability of your plant.

By automating routine tasks and connecting your factory to a BIM system, the software helps you keep up with tight building project schedules.

**PLANT CONTROL  
RUNS IN A  
STANDARD WEB  
BROWSER.**

## A MODULAR SYSTEM

The Plant Control system has various independent modules that connect and support different production lines, sales, storage, logistics, and total plant operation. You can expand the system to cover more functions step by step. This way, there's no need to make a big investment at one time. You can also make sure that everything runs as it should with the selected functions before moving to the next level.

## PLANT CONTROL FLOOR

Plant Control Floor – previously known as FloorMES – is Elematic's manufacturing execution system for floor production. It optimizes hollow-core slab production and offers a variety of tools for planning and monitoring. The system optimizes the use of production lines and work schedules and monitors work progress. It helps you achieve a smooth process with zero interruptions and low operational costs.

The Plant Control Floor system provides a single point of access to production planning and monitoring, with an easy-to-use visual user interface. All data required for production optimization is available in user-friendly dashboards that can be customized to suit your factory's needs.



MACHINE	MACHINE STATUS	AREA
Modifier_e9	Running, Auto	Bed 3
Extruder_e9	Running, Man	
Extruder_e9	Running, Man	
Saw_E9_123	Running, Man	
Preparer		
Prestresser		
Looper		



# EXTRUDER E9

Produce more in a day

**CASTING  
SPEED UP TO  
2.7 METERS PER  
MINUTE.**

- High casting speed
- Casts up to 2.7 meters per minute
- Easy to operate
- Modern visual user interface
- Automatic concrete recycling with Modifier E9

When you need fast slab production, the Extruder E9 suits the requirement perfectly with the industry's highest casting speed of up to 2.7 meters per minute. The high casting speed means it produces 8 to 10 cast beds in the same time that was previously used to produce only 6 cast beds, producing as many as 18 cast beds per day.

## HIGH-SPEED CASTING

The Extruder E9 achieves its high casting speed thanks to the smart design of the extruding screws, optimized casting parameters, and independent screw drives. Compaction is carried out using the shear compaction method.

The machine features a 2nd generation automatic compaction control system with the resistance of the levelling beam used as a new, additional input parameter. Together with the independent casting screws, this guarantees a balanced casting process because the concrete is fed more evenly throughout the whole slab cross section. The casting process is carefully monitored and controlled, leading to further increases in slab quality.

The extruder moves on four wheels on the side rails of the casting bed. It is pushed forward by the reaction force of the concrete feeding screws. Driving gear moves the extruder when it is not casting.

Troubleshooting has been made easy with clear alerts, a data log, and status display with currents, speeds, runtime etc. Troubleshooting can be done remotely via internet/Wifi.

## THE NEXT LEVEL OF EXTRUDER INTELLIGENCE

The Extruder E9 has numerous sensors that continuously feed data to an on-board computer. The stored data can be used and analyzed in different applications, remotely or on-site.

The Extruder E9 features an easy-to-use visual user interface. All casting parameters can be saved or recalled automatically, and several sets of casting parameters can be saved for each nozzle module.

In addition to using the metric system, it is easy to operate with the imperial system as well. The machine can be equipped with concrete ordering automation as an option.

The machine displays running hours for the power module and nozzle modules to assist in maintenance scheduling, and it produces clear reports for uptime, down-time, alerts, faults etc. The operating manuals are available through the user interface.

## MULTIPLE SLAB TYPES

The new Extruder E9 is a multi-product machine and changing slab-type is fast. Thanks to the modular structure of the Extruder, you only need to change nozzle modules or exchange parts. You can save several sets of casting parameters for one nozzle module.

## PRECAST PRODUCTS

- Narrow hollow-core slab (Filler slabs): 0.3, 0.4, 0.6, 0.8, 0.9, 1.0 m slabs
- Piles & poles
- Solid slab: 140 – 230 mm
- Wing-slab
- Wall and boundary wall
- Sockle
- Stadium slab

### Extruder E9

Width	1670 mm
Height (slab heights 120-320 mm)	2140 mm
Height (slab heights 320-500 mm)	2180 mm
Length (with cable drum)	5100 mm
Weight (depending on options)	6300-9450 kg

# MODIFIER E9

Fast, fully automatic digging and plotting



Watch  
Modifier E9  
in operation



- Production plans can be transferred wirelessly
- Wi-Fi communication hardware
- Intelligent digging plan
- Laser positioning
- Automatic operation resuming
- Obstacle sensors increase safety

The Modifier E9 is an automatic machine for digging openings and recesses, for example HVAC ducts and plumbing, into fresh hollow core slabs. It also drills water holes and plots cutting lines, openings, and text.

Modifier E9 travels directly after the extruder. If the extruder is equipped with an Elematic recycling kit, the cut-off concrete can be recycled back into slab production.

Efficient concrete recycling is possible because the Modifier E9 does not use any water in the digging process. To ensure slab quality, the recycled concrete is mixed gradually into the fresh concrete according to a time limit; recycled concrete will not be fed back into the process if it is older than a preset, factory-specific time value.

The Modifier E9 further reduces concrete consumption by using an advanced digging mechanism that ensures the minimum amount of concrete is left on the bed. The machine also features exchangeable jaws so large areas can be dug faster with large-size jaws. Jaw exchanging is automatic.

The machine reduces the need for manual work in the modifying phase of the hollow core slab production process, which improves production efficiency, eliminates mistakes, and improves safety on the shop floor.

## Modifier E9

Width	1670 mm
Height (without laser mast)	2310 mm
Length	5230 mm
Weight (max with options)	5580 kg
Max slab thickness	500 mm
Possible jaw sizes (crossw./longit.)	100...180/ 100...260 mm



With automatic concrete recycling, an average hollow core factory can decrease the amount of CO<sub>2</sub> emissions by 5400 metric tons annually.



# SAW E9

Safer, improved automated cutting



Watch  
Saw E9 in operation



## PRODUCT BENEFITS

- Fully automatic operation
- Fast and accurate cuts
- Significantly improved air quality in production hall
- Height 2560 mm, so fits low production halls
- Advanced safety through radars and telescopic blade cover
- Easy maintenance through front cover removal

- Fully automatic cutting
- Telescopic blade cover
- Dust reduction with HEPA 13 filter
- Reduced height to 2560 mm
- Modern control system
- Intelligent cutting speed control

The Saw E9 utilizes cutting-edge technology for safer, cleaner, and smarter automated hollow core production.

Saw E9 takes data from your production planning system using a laser positioning system. Just download the data, lift the saw to the start of the bed, and push a button. The saw will then operate automatically until the end of the bed. The machine can be programmed for different slab sizes to prevent cracks.

The machine features an advanced drive mechanism and blade movement for easy maintenance, with all parts accessible through removal of the front cover.

## SMART BLADE FEEDING

Blade feeding is done according to actual strand patterns when cutting vertically. When cutting horizontally, feed speed is controlled according to resistance. This protects the blade from excess forces and extends its lifetime, while still allowing it to reach maximum speeds when resistance is lower.

You can cut the bed in several steps. You can first make all the transverse cuts, lift the slabs out, and then make the longitudinal cuts. This prevents the

blade from hitting adjacent slabs when sawing longitudinal cuts.

When cutting longitudinally, the machine always works in such a way that the blade motor remains inside the saw. Because it is able to cut in many directions, the large blade motor does not come out of the saw onto another bed and there is no risk of a collision.

## WELL-THOUGHT-OUT SAFETY

A telescopic blade cover, which also reduces noise, blocks flying particles during cutting. The Saw E9 is also equipped with ultrasonic sensors to detect obstacles in the way and will stop cutting if necessary.

In addition, the Saw E9 comes with a highly efficient dust removal system with a HEPA 13 filter, which guarantees that air blown back to the production hall is clean air. Air filtration plays a significant role in staying within silica dust limits.



## Saw E9

Width	1670 mm
Height	2310 mm
Length	5230 mm
Weight without drums	5580 kg
Saw transfer speed, stepless	500 mm
Water pressure at saw min	100...180/ 100...260 mm

## SLAB DIMENSIONS

Width	max 1220 mm
Height	max 520 mm
Cutting blade diameter	800-1300 mm

# DRILLBEAM E9

Drill while lifting



- Drill at any location on the slab
- Automatic drilling of standard end holes
- Drill at any angle
- Make use of three separate drills
- Effective up to 18 meters
- User-friendly radio interface

Snow, rain, and moisture can make their way inside hollow cores during storage and construction. Often, holes need to be drilled in each void to let the water flow out.

The Drillbeam E9 combines lifting and drilling, making clean-cut water holes without the need for a separate drilling station. Drilling devices installed in the lifting beam drill the water holes while the slab is moved to a transport wagon. This saves time and money while eliminating a common production bottleneck.

Holes at the end of each slab are drilled automatically. Holes at other positions need to be chosen by the user, after which they are drilled automatically.

Drillbeam E9 is semi-automatic and can be maneuvered by a single crane operator.

## PRODUCT BENEFITS

- Saves time by drilling while lifting slabs for transport
- Makes accurate holes in hard concrete from below
- Eliminates the need to fix top holes
- Can drill holes anywhere on the slab





# WAGON E9

Automated slab transportation



## PRODUCT BENEFITS

- Free up working hours
- Increase safety through reducing human error
- Easy maintenance



- Battery drive
- Each wagon pair pulls up to 30 tons
- Remote touch-screen control
- Automatic transport with safety radar

The battery-powered Wagon E9-1200w-b moves slabs quickly from production to storage automatically. The transportation consists of an active and passive wagon with a combined 30-ton capacity.

Once the crane has lifted the slab to the wagon, the load can be sent to storage with the press of a button. The wagon navigates using automated radar pathing to avoid obstacles. Using a battery drive instead of a cable makes it easier to handle curves and turns in the wagon route.

Automating slab transportation frees up working hours that would be spent operating a cable or vehicle transport system, and the automated pathing prevents accidents.

Slab transportation can be monitored with a touch-screen system unit. The system unit displays wagon location and critical information, like battery level. You can also control driving permissions and emergency stops from the same place.

Slab transportation is the easiest way to increase the automation level of your precast production. Wagon E9 can be introduced in factories of any automation level.

Wagon E9	
<b>ACTIVE WAGON</b>	
Width	1522 mm
Height	1732 mm
Length	800 mm
Weight	1200 kg
<b>PASSIVE WAGON</b>	
Width	1210 mm
Length (w/o safety buffers)	800 mm

Height	870 mm
Weight	450 kg
<b>WAGON PAIR</b>	
Distance between rails	950 mm
Capacity (load)	15 + 15 t
Speed (with load)	0.2 m/s
Speed (empty)	0.53 m/s
Battery	2x24 V 150 Ah
Remote control	



## HOW MUCH CAN A FACTORY SAVE?

If a production line consists of six beds, 20 slabs are produced on each bed daily, and it takes 15 minutes to transport one load of five slabs, you can save up to \$2 200 EUR in labor costs annually.  
 $35 \text{ €}/\text{h} \cdot 0.25 \text{ h}/\text{load} \cdot 20 \text{ slabs}/\text{bed} \cdot 6 \text{ beds}/5 \text{ slabs}/\text{load} \cdot 250 \text{ days}/\text{a} = \text{€}2\,200/\text{a}$

# PLOTTER E9

Mark with speed and precision



## PRODUCT BENEFITS

- Easy-to-use operator touch screen
- Built-in safety features
- Easy maintenance saves service time

## PRODUCT FEATURES

- Laser positioning system
- Wi-Fi connection for slab data transfer from Plant Control
- Built-in safety sensors

Battery-powered Plotter E9 is an automatic machine for marking precise cutting lines, openings, and identification marks on the surface of hollow core slabs.

Automation, enabled through Plant Control, ensures fast and accurate plotting – and therefore precise cutting – of hollow core slabs while eliminating human error. Operation is easy. The machine is controlled through a 15.6" touch screen that handles everything from daily plotting tasks to slab planning and work status monitoring. It's also possible to connect directly with Plant Control through a built-in WiFi connection to download bed plan data.

The plotter is enhanced with built-in safety features, such as safety radars, to prevent collisions. When the machine detects an obstacle, it will stop. Automatic operation resumes when the obstacle is removed.

Plotter E9 can be used with an included water hole drill, which is a popular option. It moves horizontally to drill holes into all slab voids. Position data is pre-programmed into the automation system.

## Plotter E9-1200pl

Width	1800 mm
Height	2100 mm
Length	2800/3500 mm
Weight	1100 kg
Max slab height for printing	520 mm

\*See elematic.com for 1200plw model specs.

## OPTIONS

- Water hole drill
- Ink head for side printing, text height 63 mm.



# TARPAULIN ROLLER P7

Prevent escape of moisture and heat

The Elematic Tarpaulin Roller P7-1200t spreads tarpaulins onto slabs and winds them back onto the roller during precast concrete production. Covering the fresh slabs prevents escape of moisture and heat.

The Tarpaulin Roller P7-1200t-b is battery-powered, driven by two wheels with a chain transmission. The drive motors move the roller and a gear motor rotates the roll. The device is controlled with a remote control.

The rollers are interchangeable. Two height options, 1335 mm and 1455 mm, are available as standard. The roller support can be moved in a transverse direction. This allows by-passing machine on the adjacent beds.

The Tarpaulin Roller P7 has a steel frame which runs on the rails of a casting bed. One roll of tarpaulin is included in the basic set-up.

## Tarpaulin Roller P7

Length	1720 mm
Width	2300 mm
Diameter	1100 mm
Core diameter	150 mm
Weight	235 kg
Cover width, max	1900 mm
Cover weight, max	200 kg

### PRODUCT BENEFITS

- Interchangeable rollers
- Remote-controlled operation
- Roller support moveable in the transverse direction

Also available as battery powered



# SERVICES

Lifetime support for automated machinery

## We can help you navigate every step of the planning and design processes:

- Choosing the best ways of applying precast
- Designing your precast factory
- Finding the best possible production solution, state-of-the-art equipment, and a digital plant control system for your needs
- Defining future requirements
- Creating structural designs for precast buildings and products



Knowing your demands for precast products, factory capacity and flexibility, level of automation, and investment level, we will consult you in production planning and provide you with a preliminary factory layout proposal and production plan.

# CARE. GROW. CREATE.



Based on years of experience with the needs of precast factories around the world, we have created a range of services to support you in your precast operations and to provide you with concrete results: improved profitability, better efficiency, and higher uptime.

## EXPERT CARE

We offer continuing expert care to ensure higher uptime. A comprehensive range of services and technical support are available to you throughout the lifetime of your precast plant – from commissioning and maintenance, to upgrades and modernization.

## TRAINING

We offer machine training, production process training, and safety training which can be customized to your factory's specific needs.

## SERVICE AGREEMENTS

The Elematic service agreement protects your equipment investment and increases uptime. The agreement covers helpdesk support, regular maintenance visits, machine and equipment audits, and training.



## HELPDESK 24/7

In the case of a sudden or unexpected production problem, the Elematic Helpdesk is your first point of contact. Swift, expert help is available 24/7 in multiple languages to resolve problems via remote access, phone, and email.

## SPARE PARTS

Spare part availability is key to keeping a precast factory running smoothly, which is why we have over 3000 spare part items available in stock for fast delivery from three different locations: Finland, the UAE and the USA. It's not just the availability of spare parts, it's also their quality: our OEM wear parts have proved to be the highest performers, with the longest service life.

## E-SHOP

The Elematic E-shop is open 24/7, enabling you to review and order high quality Elematic spare and wear parts at your convenience. For high levels of productivity, parts availability matters.

# AUTOMATIC

Hollow core production



## THE FUTURE RUNS GREEN

Elematic precast technology has enabled hundreds of thousands of building projects in over 100 countries.

Precast manufactures — our customers — make it possible to build modern buildings resource-efficiently. To meet customer needs and exceed expectations, we've developed pioneering precast equipment, offered lifecycle services and refined manufacturing processes for more than 60 years.

[www.elematic.com](http://www.elematic.com)

Elematic Oyj • Airolantie 2, 37800 Akaa, Finland  
Tel. +358 3 549 511 • E-mail [marketing@elematic.com](mailto:marketing@elematic.com)



Please visit [elematic.com](http://elematic.com) for more information and follow us



Elematic and Acotec are trademarks of Elematic Oyj. Elematic reserves the right to alter specifications without notice. Machines shown in pictures may be equipped with options.