

The ELEKTRON Series

300 to 5,500 kN



ELEKTRON

All-Electric Injection Molding for Everyone

The ELEKTRON Series is the product of Milacron's years of innovation in all-electric injection molding technology. The ELEKTRON is designed for a full range of standard applications, and offers outstanding value to manufacturers. The advantages of all-electric injection molding include:

■ ECONOMY

Uses 60 % less energy and 90 % less water than hydraulic injection molding machines

■ DYNAMICS

Parallel movements for optimal cycle times

■ PRECISION

Exceptional part quality with excellent mold protection thanks to stroke accuracy of .01 millimeter

■ PRODUCTIVITY

Minimal rejects with maximum repeatability and machine availability

■ FLEXIBILITY

Suitable for all standard applications

■ CLEAN

Ideal for clean room operations since no oil is used

■ QUIET

Minimal noise – perfect for personnel-intensive operations and assembly areas



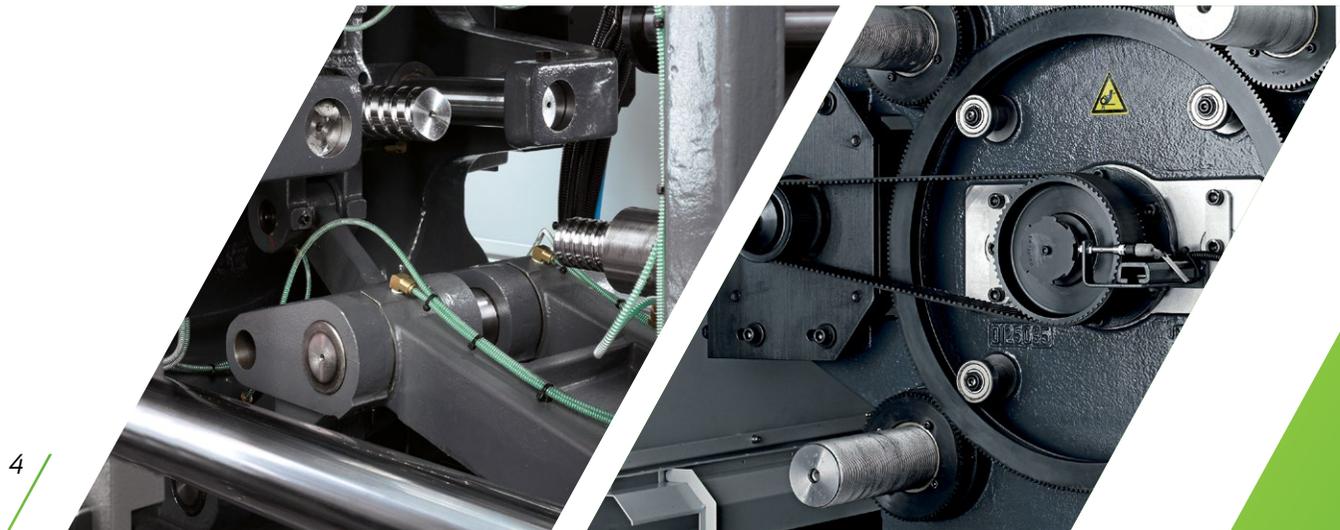
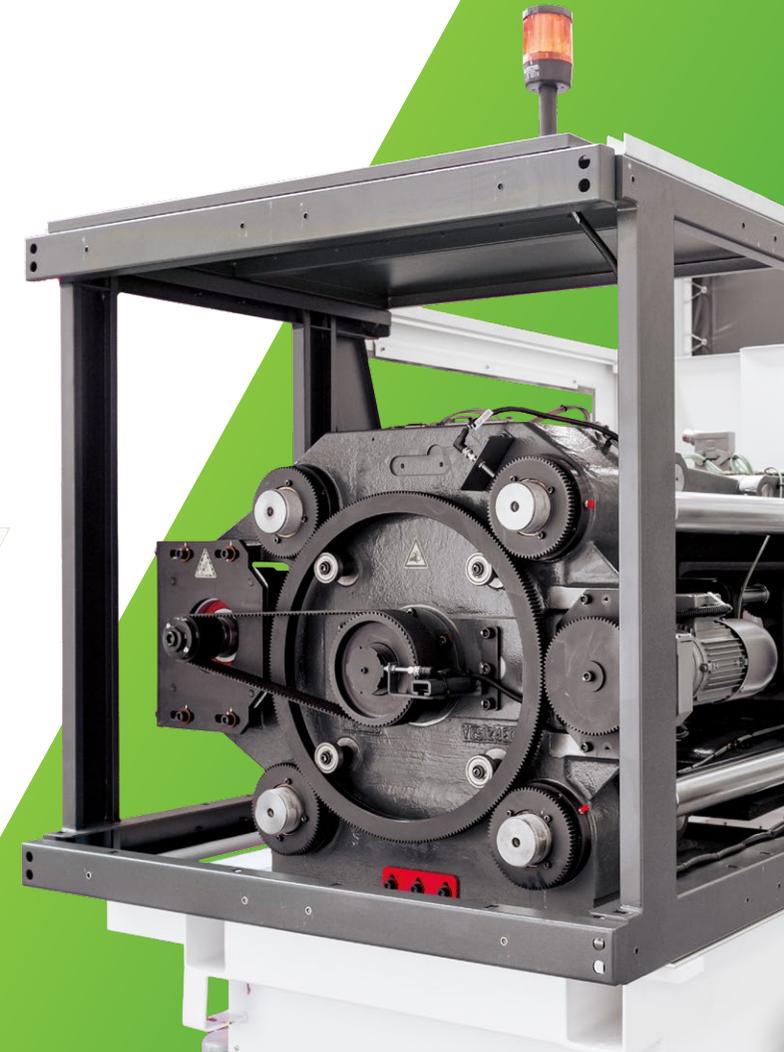
DYNAMIC

Optimized Movement for Optimal Cycle Times

As with accumulator-driven hydraulic machines, ELEKTRON offers parallel movements as a standard feature. The result is excellent machine dynamics:

- All axes can operate in parallel - standard on all machines
- FEM-optimized construction of all moving and stressed parts
- Power- and acceleration-optimized 5-point toggle system - large mold opening strokes in a compact design
- Precise positioning of ejector via electromechanical drive system and ball screw drives
- Platen guides allow for high-speed operation with perfect platen parallelism, even for heavier molds

Tie-bar spacing with a stiff platen and highly sensitive mold safety ensure long-term part-quality and mold life. The mold installation area is easily accessed, allowing for quick mold changes.



ELEKTRON – THE PRODUCT OF A STRONG GLOBAL TEAM

With locations in the US, India, China, and Germany, manufacturers in the Milacron group have been building all-electric injection molding machines for more than 25 years:

- *In 1985 Milacron introduces the world's first all-electric machine*
- *In 1992 Ferromatik Milacron presents the ELEKTRA, the first European company to offer all-electric machines*
- *At K 2001 Ferromatik Milacron introduces third-generation all-electric injection molding machines*
- *In 2009 Milacron presents ELEKTRON – internationally developed all-electric machine for standard applications*
- *The ELEKTRON has been available in Europe since 2010*

The ELEKTRON is based on the proven ELEKTRA series. Both machines share the same platform: service, spare parts and retrofits are available through Ferromatik Milacron's SERVTEK customer support in Malterdingen, Germany. The high quality standards for the machines are assured worldwide through experienced product management.



EXACT

Precise Movements Ensure Quality Parts for the Long Term

All-electrics set the standard for movement repeatability. Exact movements are assured by the machines' drive components and robust mechanics. This ensures consistent part quality for the long term. The stroke precision of servo-driven axes is significantly greater than even the best hydraulic systems can provide. All this makes the ELEKTRON ideal for the reliable production of high-precision parts:

- *Absolute stroke measurement of all machine axes with precision movements*
- *Sensors for direct, precise, and repeatable monitoring of the injection and holding pressure*
- *Fast, repeatable injection movements with parallel independent plasticizing*
- *Linear guide for injection unit*
- *Perfect integration of controls and drive components*
- *All machine axes utilize servomotors, belt drives, and ball screw drives*
- *Injection unit carriage movement and nozzle-holding force via clean, easily maintained system*
- *Automatic central lubrication*



THE ELECTRICAL CABINET – EVERYTHING IN ITS PLACE

The electrical cabinet is integrated into the machine base. This design, with separate areas for controls and power components, as well as the location of the central processor in the operator panel, offers plenty of room for the available ELEKTRON options. An Ethernet Powerlink connection guarantees fast and reliable communications between the motor, amplifier, and machine controls.



ENDURA touch

Operator-friendly Controls

The new ENDURA touch controls were developed especially to meet the requirements of the ELEKTRON series. Machine operators will easily find their way around the system right from the start. ENDURA touch at a glance:

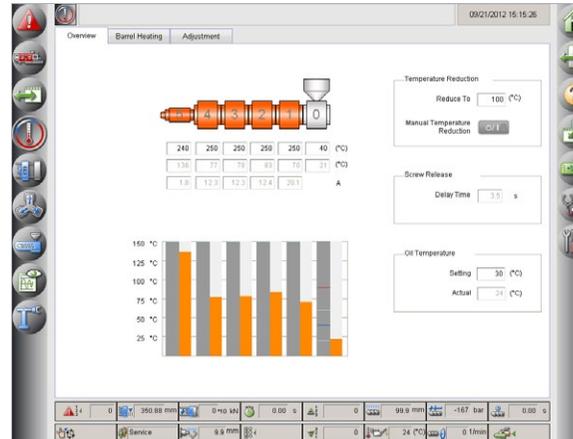
- High-performance controls from B&R
- Intuitive operations via 15" color touchscreen
- No page more than two clicks away
- Keypad for entering notes and information
- 32 function keys with LEDs, arranged around the touchscreen
- Various interfaces (3 USB, RS232, Ethernet) for connecting external devices
- Save mold data and screenshots to USB keys
- Setpoint and actual values shown as absolute values
- Plausibility check on values entered
- Process monitoring with graphically displayed minimum, maximum, and average values
- Graphical display of 33 parameters for the last 150 cycles
- Summary of last 3,000 alarms with date and time stamps
- Display of last 3,000 setpoint-value changes (change log)
- Internal memory for up to 200 mold data sets
- 3+3 freely configurable inputs and outputs for connecting peripheral devices
- Data protection with four access levels for up to 100 machine operators
- Choice of three languages



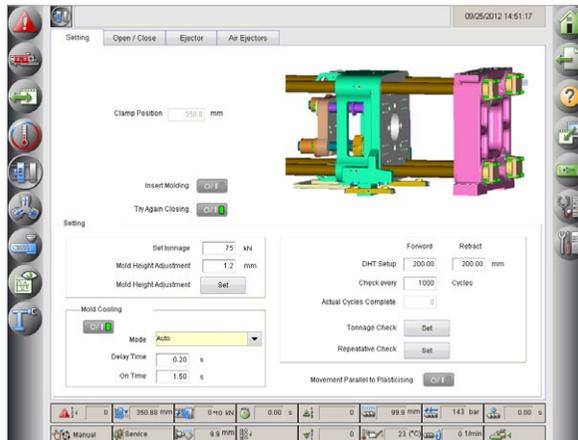
ENDURA TOUCH CONTROLS FOR A CLEAR OVERVIEW



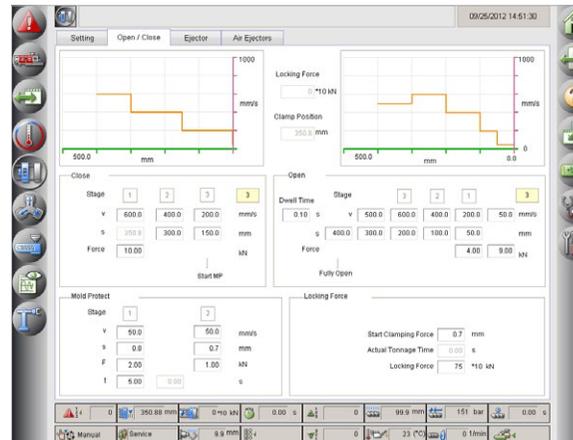
Every page can be accessed directly from an overview page



Cylinder heating, including heating energy indicator and monitoring



Enter mold data for mold closing and opening



Enter pressure, velocity, time and stroke

SPECIFICATIONS

Clamping Unit	
5-Point toggle system	■
Clamp movement via ball screw and belt drive	■
3 adjustable closed-loop opening and closing speeds	■
Clamping force adjustable	■
Automatic mold installation height adjustment	■
Position-based ramping for accurate switching and precise speed, pressure controls	■
High-sensitivity mold safety (stroke and force) adjustable in two stages	■
Mold safety with one try-again circuit	■
Automatic grease lubrication	■
Actual tonnage display on control panel	■
SPI ejector cross	■
Hydraulic or pneumatic core pull	□
Air valves	□
Machine height increased 100 mm	□
Ejector	
Ejector movement via ball screw and belt drive	■
Forward speed adjustable in two stages	■
Speed and force adjustable on control panel	■
Pulsating ejector strokes, adjustable from 1 to 9	■
Zero point adjustable	■
Ejector forward dwell timer	■
Injection Unit	
3 screw diameters available per injection unit	■
Nitrided barrel and screw	■
Bimetallic barrel and hardened screw	□
Barrel cover with perforated metal	■
Barrel cover V2A with insulation	□
Injection movement via ball screw and belt drive	■
Injection speed increased	□
5-Stage injection switchable by pressure, time, or position	■
10-Stage back pressure	■
5-Stage plasticizing switchable by position	■
Digital setting and read-out of screw RPM	■
Screw suck-back before and after plasticizing	■
Screw cold start protection	■
Semi-auto purge	■
Intrusion molding program	■
Sprue break with timer	■
Needle shut-off nozzle, pneumatic operated	□
Feed throat temperature indication and control	■
Material hopper	□
Adapter plate for coloring unit or hopper loader	□

Standard	■
Option	□

Injection Unit	
Control for coloring unit	<input type="checkbox"/>
Auto heat startup and shutdown	<input checked="" type="checkbox"/>
Actual current display of heating zones	<input checked="" type="checkbox"/>
Display of set and actual temperature with bar graph	<input checked="" type="checkbox"/>
Heaterband and thermocouple failure detection	<input checked="" type="checkbox"/>
Heat standby after achieving set number of cycles	<input checked="" type="checkbox"/>
Temperature and tolerance range monitoring for each zone	<input checked="" type="checkbox"/>
Controls	
High-performance controls from B&R	<input checked="" type="checkbox"/>
Intuitive operations via 15" color touchscreen	<input checked="" type="checkbox"/>
No page more than two clicks away	<input checked="" type="checkbox"/>
Keypad for entering notes and information	<input checked="" type="checkbox"/>
32 function keys with LEDs, arranged around the touchscreen	<input checked="" type="checkbox"/>
Various interfaces (3 USB, RS232, Ethernet) for connecting external devices	<input checked="" type="checkbox"/>
Save mold data and screenshots to USB keys	<input checked="" type="checkbox"/>
Setpoint and actual values shown as absolute values	<input checked="" type="checkbox"/>
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Process monitoring with graphically displayed minimum, maximum, and average values	<input checked="" type="checkbox"/>
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Internal memory for up to 200 mold data sets	<input checked="" type="checkbox"/>
3+3 freely configurable inputs and outputs for connecting peripheral devices	<input checked="" type="checkbox"/>
Data protection with four access levels for up to 100 machine operators	<input checked="" type="checkbox"/>
Choice of three languages	<input checked="" type="checkbox"/>
Drive Technology	
Closed-loop control of all pressures, strokes and speeds	<input checked="" type="checkbox"/>
Servo-driven mold, ejector, plasticizing and injection movements	<input checked="" type="checkbox"/>
High-speed Ethernet POWERLINK connection between motor, amplifier and machine controls	<input checked="" type="checkbox"/>
Parallel mold, ejector and plasticizing movements	<input checked="" type="checkbox"/>
Other	
Euromap mold mounting pattern	<input checked="" type="checkbox"/>
Mounting patterns to Euromap standards for robots on fixed platen	<input checked="" type="checkbox"/>
Moving platen supported on machine frame by glide shoes	<input checked="" type="checkbox"/>
Cooling water battery	<input type="checkbox"/>
Hosing from cooling water battery to stationary or moving platen	<input type="checkbox"/>
Part removal possible from two sides	<input checked="" type="checkbox"/>
Interface for robot to Euromap 67	<input type="checkbox"/>
Interface for conveyor belt	<input type="checkbox"/>
Receptacle packages	<input type="checkbox"/>
Electric panel integrated in the machine base	<input checked="" type="checkbox"/>

Standard	<input checked="" type="checkbox"/>
Option	<input type="checkbox"/>



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