



Machines of the Elion Series

The powerful, high-precision and
efficient injection molding machine.



Packaging



Closures



Medical Technology

Your best choice

[Netstal.com](https://www.netstal.com)

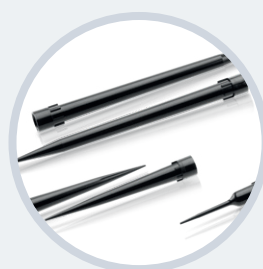
Areas of Application of the Elion Series



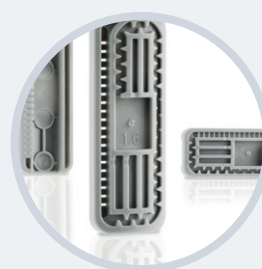
Drinks bottle caps



Thin-walled Packaging



Medical parts



High-precision applications

Variant overview

Elion all-electric

Injection units	N 60	N 130	N 270	N 250	N 510	N 870
Shot weight (PS)	47 g	77 g	154 g	154 g	301 g	579 g
Elion 800 (410 x 410)						
Elion 1200 (510 x 510)						
Elion 1750 (560 x 560)						
Elion 2200 (670 x 620)						
Elion 2800 (720 x 670)						

Elion hybrid

Injection units	N 200	N 450	N 1000	N 2000	N 2900	N 4200
Shot weight (PS)	97 g	206 g	456 g	916 g	1350 g	1953 g
Elion 1200 (510 x 510)						
Elion 1750 (560 x 560)						
Elion 2200 (670 x 620)						
Elion 2800 (720 x 670)						
Elion 3200 (720 x 670)						
Elion 4200 (770 x 720)						

Technical data and foundation plans can be found at www.Netstal.com in the Download Center (My Netstal).

Elion high-performance machines allow you to produce high-precision plastic parts with the lowest energy consumption values. Top energy efficiency is not just good for the environment, it also lowers your unit costs.



The highlights of the Elion series at a glance:

- Clamping force range 800-4200 kN
- Application-specific configuration options
- Maximum productivity and total precision
- Superior reliability and availability
- Minimum energy consumption



Resource-preserving technology that increases your competitiveness:

- Energy recovery (recuperation) of electric motion leads to the lowest energy consumption
- Increased precision reduces the reject rate significantly
- Increased overall performance provides substantial material savings

Your benefits in a nutshell

- Competitive strength thanks to increased effectiveness in the global overall system comparison
- Energy efficiency thanks to hybrid technology with energy recuperation
- Cost optimization as a result of fast cycle times and substantial material savings
- Operational reliability through consistently high precision and reproducibility
- Flexibility as equipment options can be adapted to your applications
- User convenience because it is easy, quick and intuitive to use
- Value protection thanks to robust design and tried-and-tested technologies

Total Precision and Cleanliness The All-Electric Elion at a Glance



Clean and precise clamping unit

High durability due to high-precision gearboxes with beltless and spindleless drives.

Your benefits in a nutshell

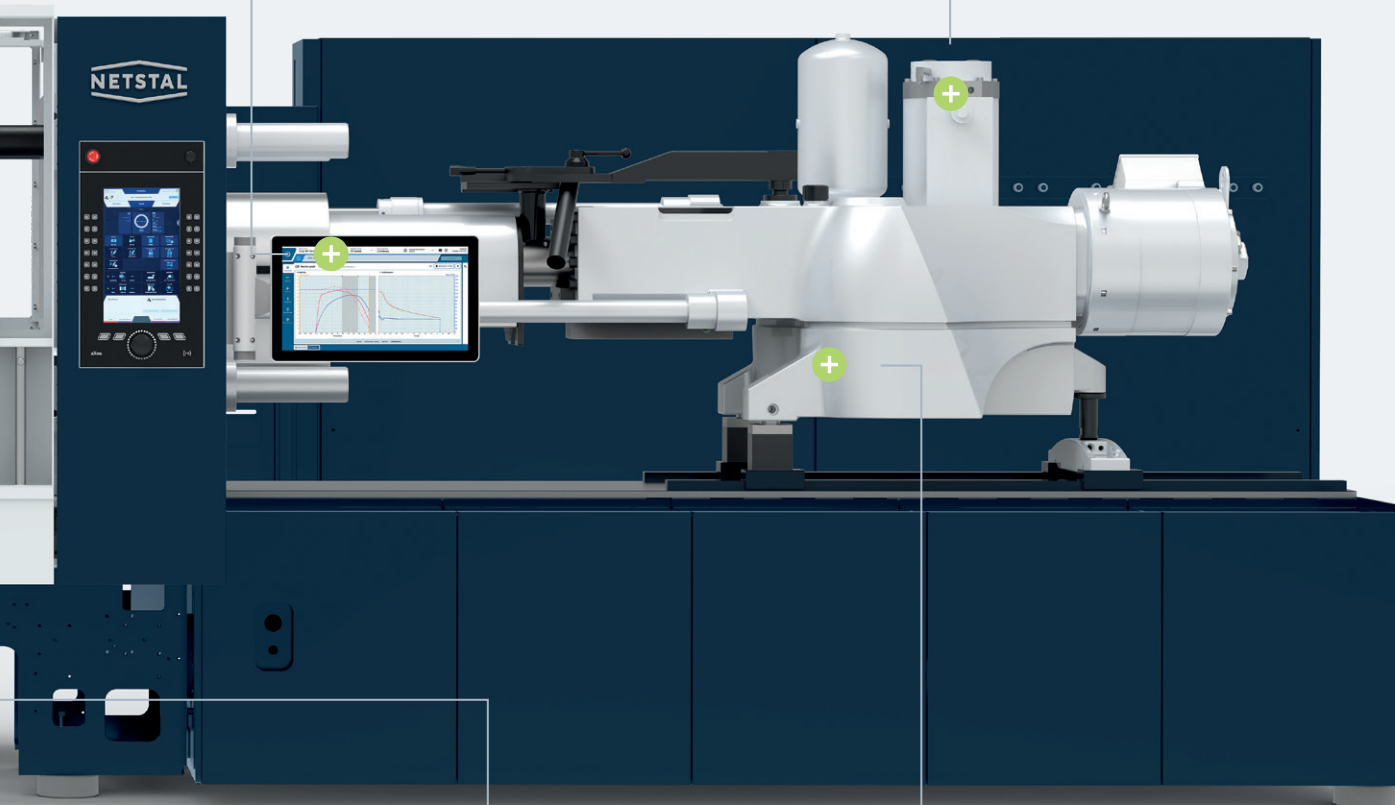
- Maximum precision
- Total repeatability
- Maximum reliability
- Low-noise and practically emission-free operation

Flexible operating unit

The latest generation of innovative and user-friendly Axos controllers can provide you with the best possible support in developing applications and production operations.

Highly precise injection unit

Injection unit with high-precision double toothed-rack drive and dynamic servo motors.



Dedicated drive technology

Fully integrated, adaptive drive unit for injection unit movement and hydraulic mold auxiliary functions.

Sophisticated media concept

Flexible solutions for the supply of molds and peripheral equipment.

06 All-Electric Drive Innovative Detail Solutions

Maximum productivity and highest precision are important features of an injection molding machine. An equally important focus for us is the topic of energy efficiency. That's why the Elion is available in an all-electric version with a clamping force of up to 2800 kN. You benefit from maximum performance and particularly low energy consumption. The Elion provides you with a leading injection molding solution in superlative Swiss quality to deliver optimal manufacturing efficiency.

Clean mold installation space

The Elion clamping unit is designed for use within a clean production environment. All bearing points are completely sealed and the lubricating oil runs through a hermetically sealed circuit. This means that any contamination of the mold installation space can be effectively prevented.

Electric injection unit, extremely dynamic and absolutely precise

Thanks to the unique transmission principle with double toothed-rack gear and a highly precise force measurement integrated into the injection axis, the Elion injection unit provides outstanding precision combined with absolute reproducibility. The result is a shot-to-shot consistency that is otherwise unheard of on the market.

Precisely positioned and dynamic ejector

The stable and rigid ejector lever mechanism is driven via a highly dynamic servo motor. In combination with highly sensitive angles, as well as position sensors and sophisticated control technology, the ejector of the Elion provides outstanding precision and reproducibility.

Stable connection of the injection unit

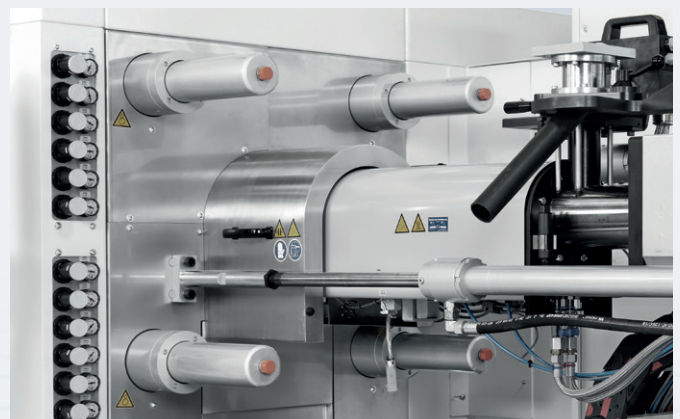
A hydro-mechanical principle is used for the movement of the injection unit, as well as the generation of the press-on force. This allows a completely torque-free contact pressure and thereby guarantees a minimal mold wear.

Dedicated and optimized drive unit

All main movement axes of the Elion are powered by a servo-electric drive. The intelligent adaptive drive unit provides the specific amount of energy required for actuating the hydro-mechanical movement elements. It is very quiet and extremely energy efficient but has sufficient reserves to operate optional hydraulic mold auxiliary functions (core tractions).

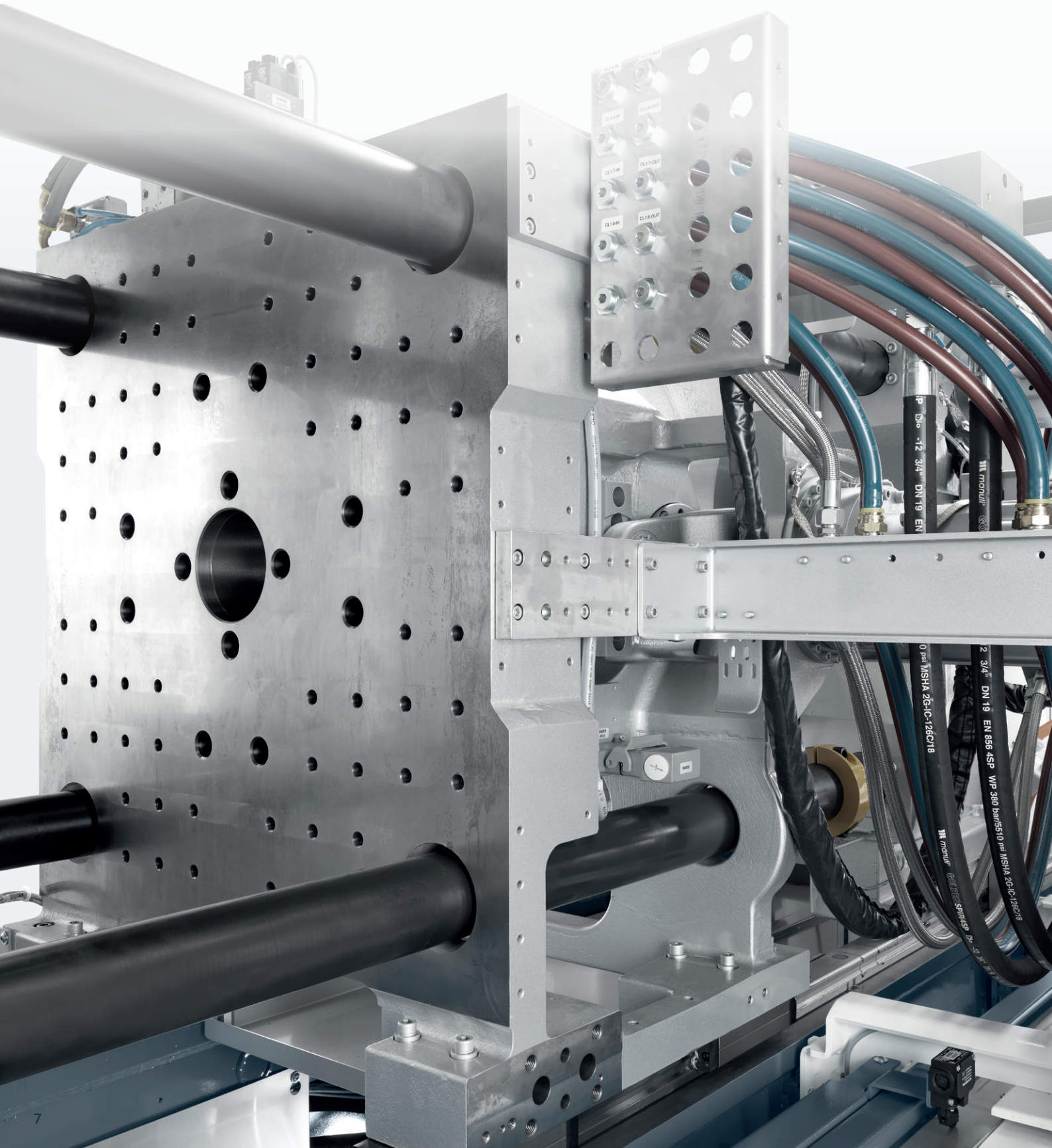


Electric ejector with precise and dynamic lever actuation



Stable and torque-free connection of the injection unit to the fixed mold plate

The sophisticated design of the Elion offers the flexibility to make adjustments based on customer requirements.



The All-Electric Elion MED Highest Precision in the Cleanroom

Consistent cleanroom suitability, high process capability and elevated injection dynamics are what make the all-electric injection molding machines of the Elion series your tailor-made core element of complex medical production lines for consumables for in-vitro diagnostics, primary packaging, drug delivery systems and many other plastic parts in medical technology and the healthcare sector.

Constantly maintain cleanroom standards

Even the standard configuration of the all-electric models of our Elion series meet cleanroom class ISO 7. Depending on your product requirements, even lower ISO classes also below 7 can be achieved through numerous medical equipment options. These include additional cover panels, extraction devices, closed media feeds and special medical coating.

Best quality consistently reproduced

Precision and reproducibility is essential in high-volume medical applications. Our all-electric injection units work with integrated force measurement. A unique selling proposition that is standard at Netstal. Using this technology, we have been ensuring part weight stability within strict tolerance limits in the most complex applications for decades. You can find out more about this on page 12.

Plan productivity absolutely reliably

The Elion is designed for continuous operation at maximum capacity. That means reliable manufacturing around the clock in the shortest of cycle times. Our medical technology customers regularly confirm that their Netstal machines continue to deliver

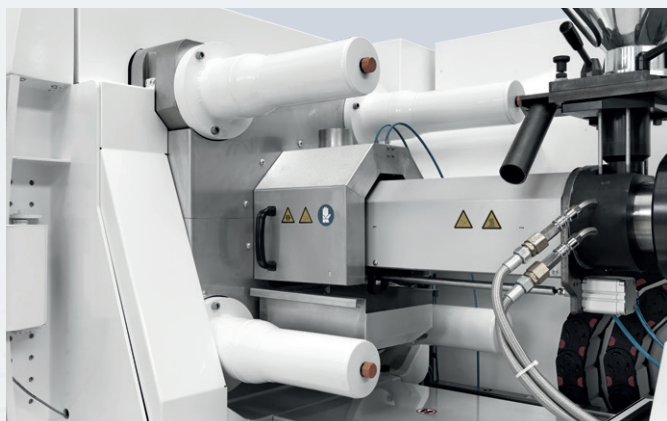
the same powerful performance levels even after years of operation.

Intuitive and safe operation in the production environment

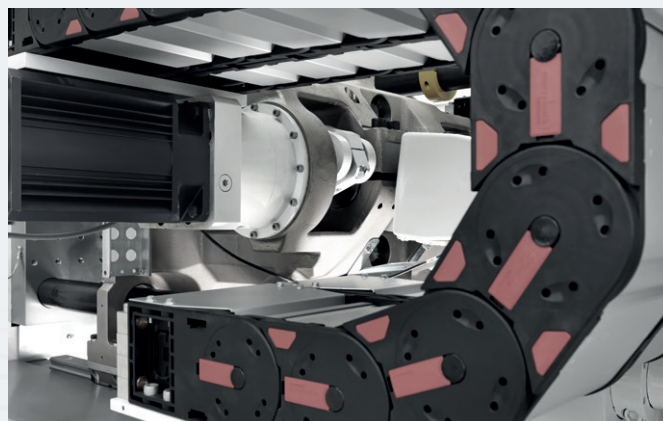
The Smart Operation function integrated into the new Axos controller supports simplified and safe machine control in cleanroom environments. Guided operation with specific handling instructions reliably prevents errors. There's no need for printed handling instructions because they are anchored in the control and can be displayed on the screen. Smart Operation lastingly increases the overall equipment efficiency of your injection molding production.

Machine calibration in accordance with ISO 17025:2017 directly from the manufacturer

Raise the benchmark as a manufacturer of high-quality molded parts for the medical technology segment. As an ISO 17025 accredited organization, we carry out recurrent certified machine calibrations to maintain production reliability, including the commensurate documentation.



The "clean purge" nozzle hood with automatic volume flow control significantly reduces particle discharge during purging.



For optimum cleanroom suitability, we equip the Elion MED with closed drag chains.

The all-electric injection molding machine for medical applications at the highest level.

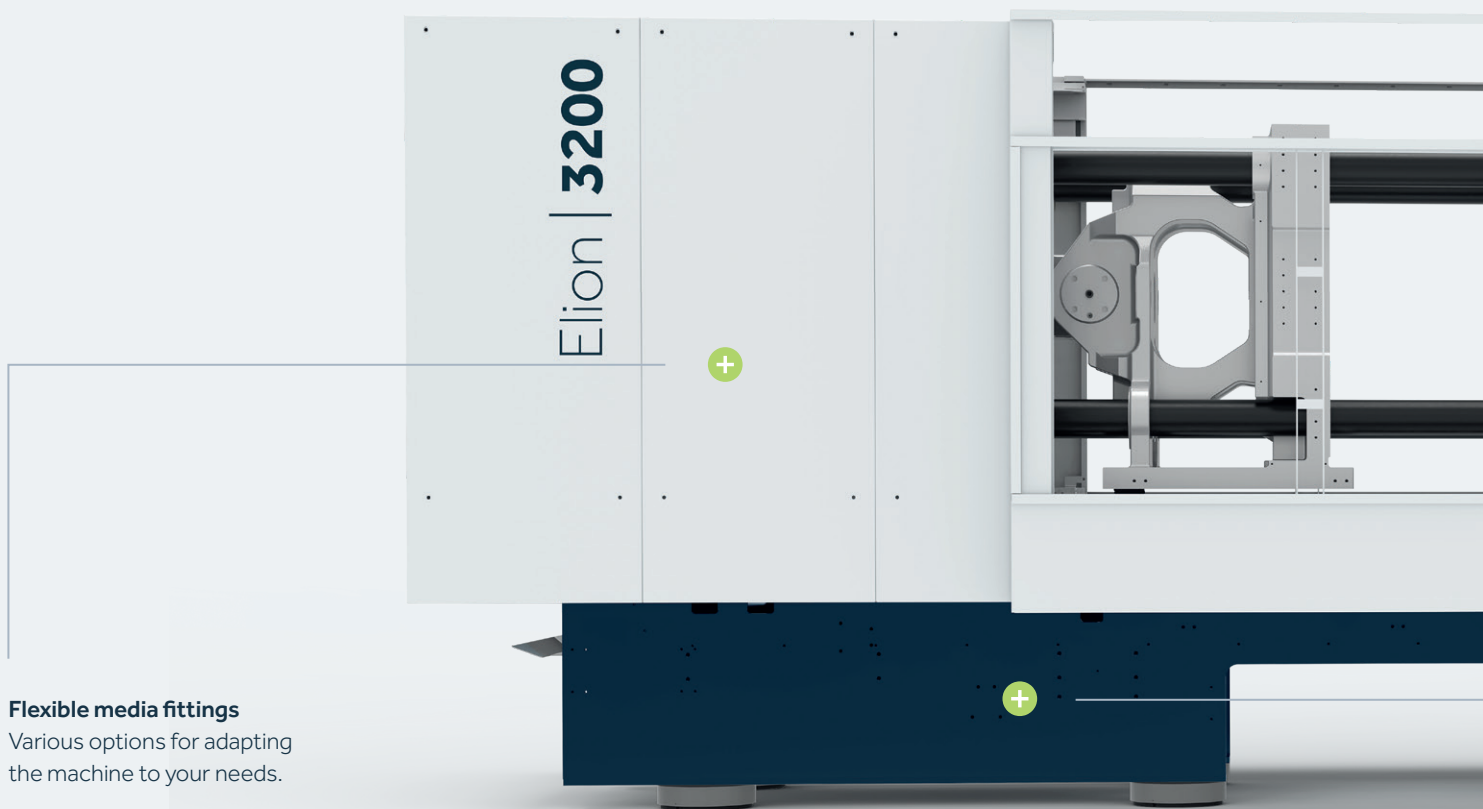


Your benefits in a nutshell

- The fastest cycle times
- Perfect precision and reproducibility
- Optimum cleanroom suitability
- Maximum availability
- Lowest energy consumption
- Leading price/performance ratio

All-electric high-performance unit enables the highest precision and repeatability within a very narrow tolerance range

Superior Performance, Optimal Efficiency The Hybrid Elion at a Glance



Flexible media fittings

Various options for adapting the machine to your needs.

Your benefits in a nutshell

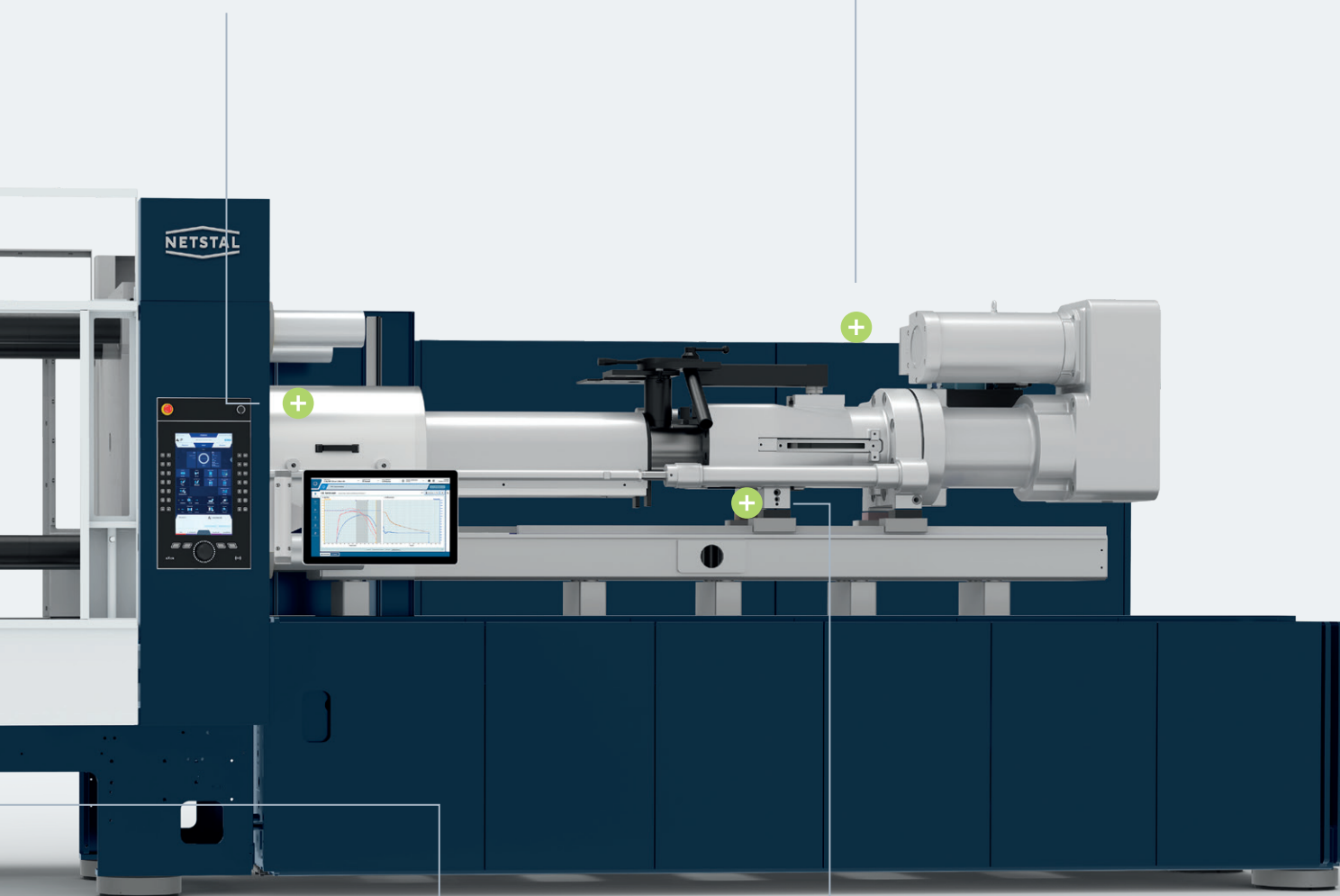
- The ideal drive technology for all axes of motion
- Superior performance
- Optimum energy efficiency
- Low noise level
- Low emissions

Flexible operating unit

The latest generation of innovative and user-friendly Axos controllers can provide you with the best possible support in developing applications and production operations.

High-performance injection unit

Hybrid-driven injection unit with an extremely high injection performance and superior control accuracy.



Hybrid drive technology

Innovative, adaptive drive unit with unlimited performance range and optimal energy efficiency.

Precise and dynamic Clamping unit

High durability due to high-precision gearboxes with beltless and spindleless drives.

Hybrid Drive Innovative Detail Solutions

For certain applications, the highest injection performance is required to produce the best quality consistently and efficiently. That's why the Elion is available with our hybrid injection units from a clamping force of 1200 kN. Regardless, we have designed the hybrid Elion for optimal energy efficiency. Your added value: Highest performance potential with lowest energy consumption on the market.

5-point toggle lever with central force introduction

The centrally aligned 5-point toggle lever is actuated via a unique crank mechanism as well as a highly dynamic servo motor. This allows us to achieve very high acceleration and fast movement. The Elion enables you to achieve maximum productivity with the fastest cycle times.

Hydraulic ejector precise and fast

The hybrid Elion models are equipped with a hydro-mechanically actuated ejector. Two cylinders, which are working in tandem, ensure a powerful and extremely dynamic ejector plate movement. Thanks to a precise stroke measuring system and an optional position and speed control, it is extremely precise and achieves a very high reproducibility.

Extreme injection performance

Thanks to the innovative two-valve technology, the hybrid injection units achieve an injection performance not previously realized on the market. With injection speeds of up to 2,200 mm/s and extremely high dynamics, even thin-walled products with long flow paths can be filled reliably. You save valuable material and produce more economically.

Hybrid drive technology, highest performance potential, optimal energy efficiency

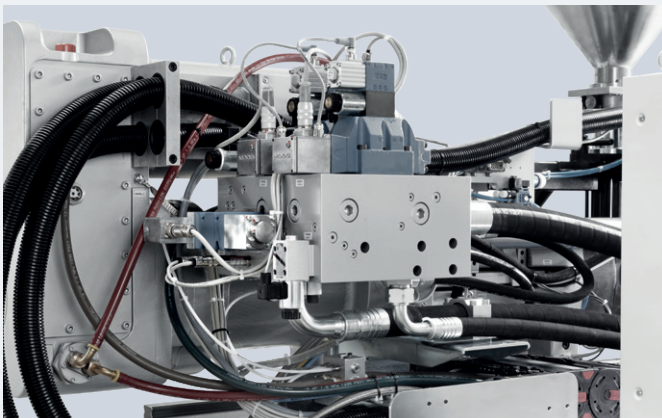
The unique combination of servo-electric and hydro-mechanic drive concepts – supported by the innovative, adaptive drive unit – offers you optimal energy efficiency. Regardless, there is sufficient performance potential available for even extremely fast-running applications.

Stable and durable construction

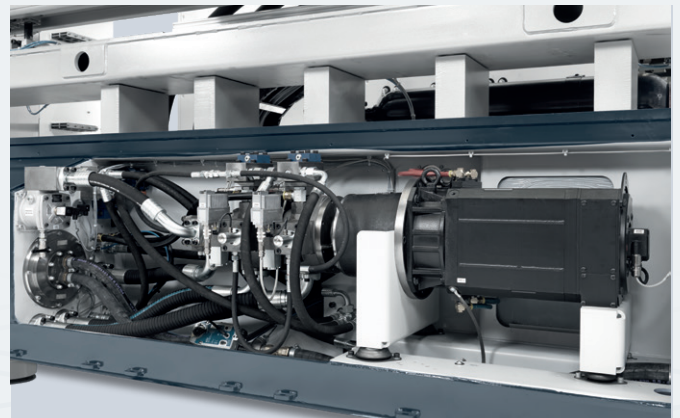
All Elion elements are designed for continuous operation and extreme loads. Netstal machines impress with their long service life and high reliability.

Optimal ergonomics

We want you to be able to work efficiently with our machines. That's why all operating elements and functions are easily accessible.

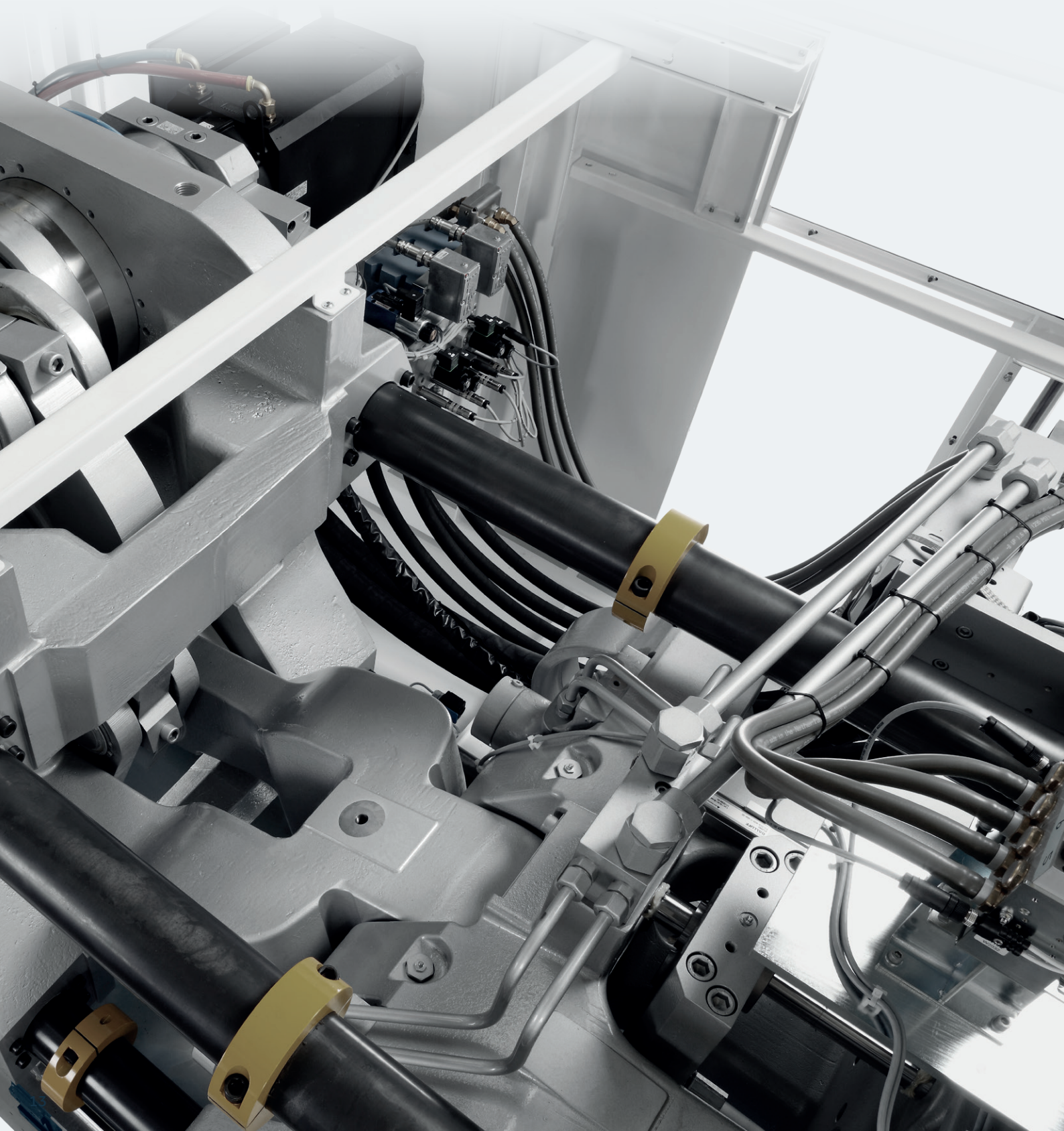


Two-valve technology; maximum injection movement performance



Innovative adaptive drive unit with optimal energy efficiency

Quick and precise The Elion clamping unit with central 5-point toggle lever.



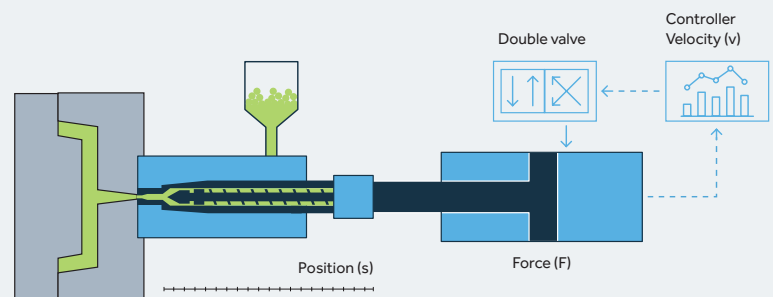
Responsive Filling Control Maximum Precision under all Conditions

Netstal has always stood for high-speed, maximum precision applications with superior repeatability within a very narrow tolerance range. Thanks to the Netstal-specific RFC injection control system, users benefit from the best overall equipment efficiency on the market.

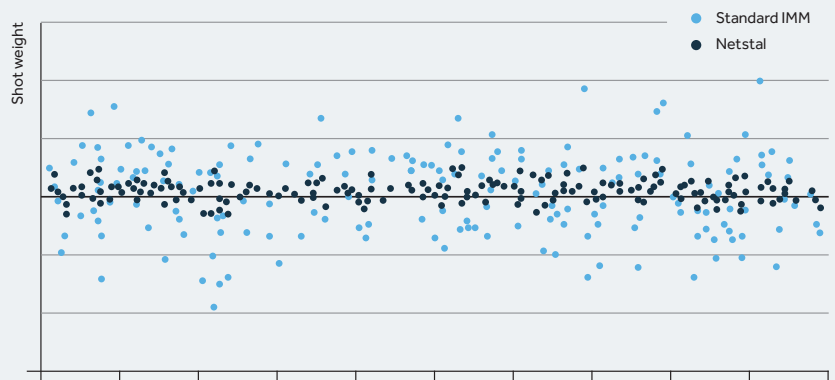
The hybrid injection units of the Elion series are equipped with highly precise sensors for distances, forces and pressures that were developed exclusively for Netstal and break all processes down to the thousandths of each unit of measurement. The RFC injection control system (based on the Sycap technology) achieves maximum control through the dynamic resolution of rules in millisecond cycles.

Because all sensors we use measure with great precision, continuously and in a coordinated manner, the machine can optimally control the entire injection process at any time. This is where our lightning-fast power control system comes into effect. Force-dependent pressure switching is the most reliable method for overcoming material variations – and not just during very fast cycle times.

Responsive Filling Control ensures top injection dynamics and, at the same time, a particularly precise process control. The entire system features a very robust design and operates with particularly little friction. There is a reason why Netstal machines have been considered the most precise and reliable machines on the market for decades.



Responsive Filling Control (RFC) is based on highly precise and dynamic sensor technology that was developed and manufactured exclusively for Netstal. The integrated force control provides ideal prerequisites for a very precise process control.

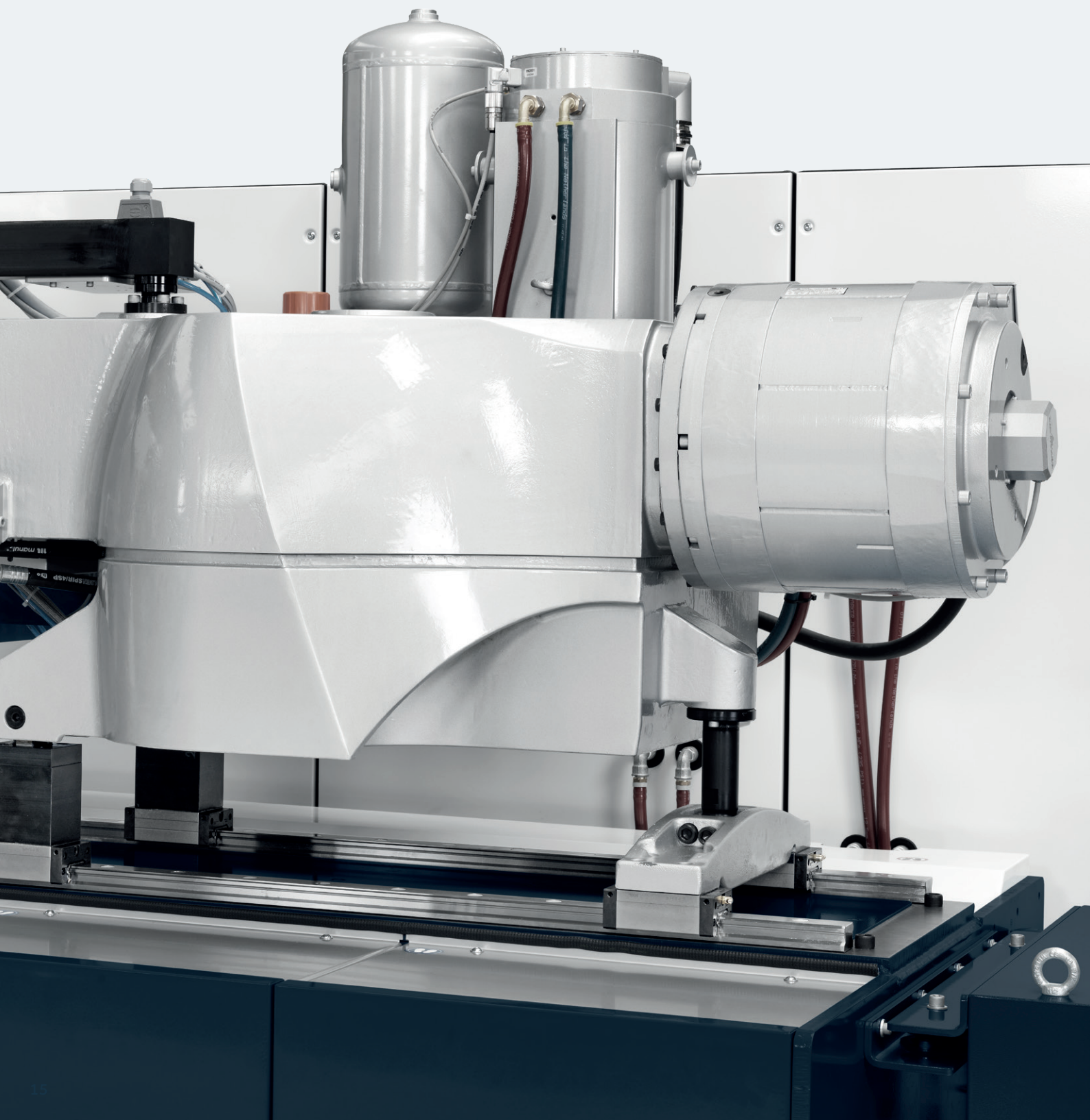


The force-dependent pressure switching occurs independently of material properties and, as a result, allows consistent part weights within very narrow tolerances.

Your benefits

- Superior shot-to-shot consistency
- Faster cycle times
- Fewer rejects
- Greater availability
- Top overall equipment efficiency

The RFC injection control of a Netstal machine is individually set up for each injection unit size.



Modular Design

Clamping Unit and Injection Unit Combinations

We are guided by your needs and configure a tailored Elion to achieve the highest profitability of your production. Depending on your application, the clamping unit, injection unit, drive and screw diameter can be optimally combined.

Modular flexibility

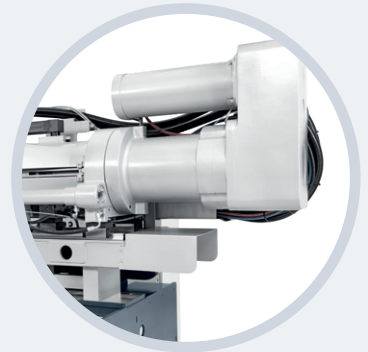
We can meet your individual needs with the modular system of the Elion series. Depending on which injection unit, screw, clamping unit or drive you need, we can meet your requirements exactly thanks to our modular machine concept.

Across the entire series, more than 40 combinations of clamping forces, injection units and screws are available. Depending on the model, four or five drive modules with an output between 13 and 83 kW are available.

The consistently modular design allows the implementation of basically any application. You will produce with outstanding quality and benefit from the efficiency of an optimally adapted Netstal machine.



Clamping unit



Injection unit



Drive



Screws

Your benefits

- Design of all machine components based on your requirements
- Top overall equipment efficiency
- Future security
- Optimal maintenance friendliness

Simply Clever Maximum Flexibility of the Media

We have designed the Elion to be so flexible that you can react to new demands at any time. Thanks to the high flexibility of the media and the optimal accessibility of the connections, the Elion can be adapted to the respective application with a minimum of effort.

Pneumatic valves

The pneumatic valves are installed near the consumer to ensure shorter reaction times.

Hydraulic controls

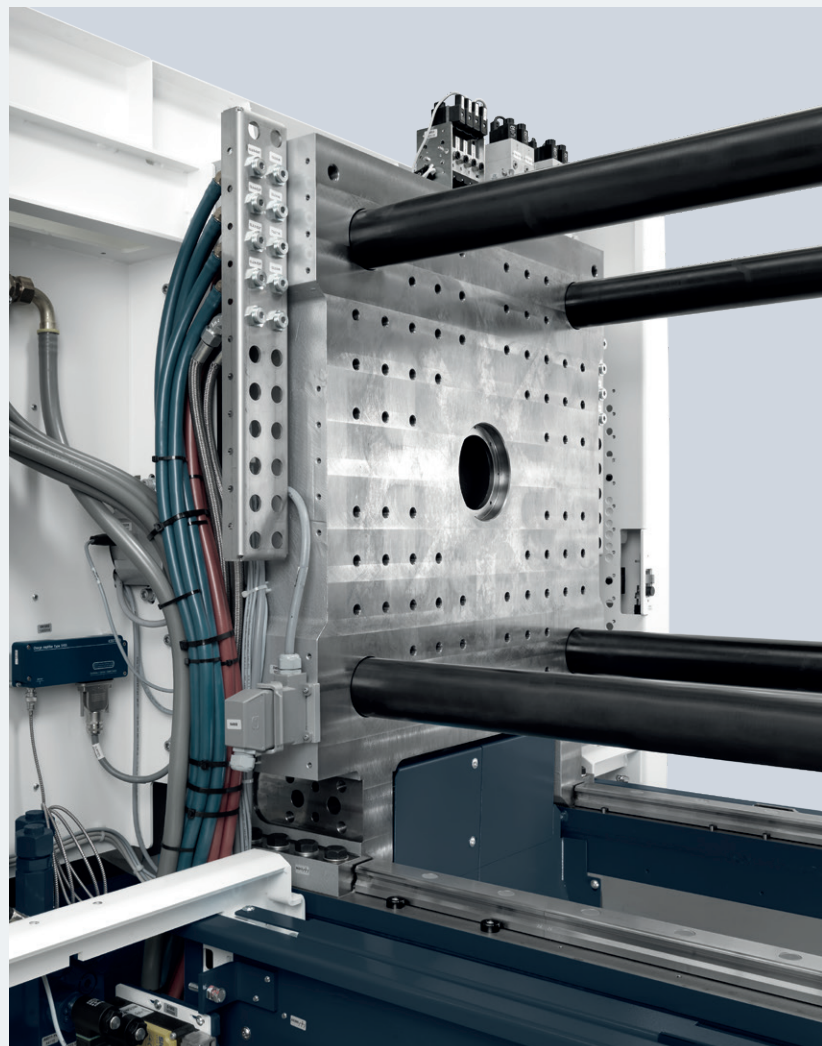
The connections for hydraulic mold auxiliary controls can be mounted on either the operating or the non-operating side.

Cooling water distributor

Depending on the mold, cooling water distributors are available for all mold plates. The distributors are corrosion-protected. The use of ball valves ensures optimum flow rates.

Socket outlet boxes

Socket outlet boxes with integrated circuit breakers can be placed at various positions on the machine for the connection of peripheral devices.



All media connections are right where you need them.

Your benefits

- Optimal accessibility
- Simple operation
- Especially easy to maintain
- Optimal efficiency

Axos 9

Innovative and User-Friendly

The newly developed Axos controller allows you to get the most out of your Netstal machine. We developed the controller to meet the increasingly complex requirements of contemporary and future applications. Numerous innovative functions support straightforward, fast and fault-free operation within the production environment.

The needs-based operation of the new Axos controller provides an optimal and setting-specific user experience for operators within the product environment as well as in application programming.

Latest technology for your added value

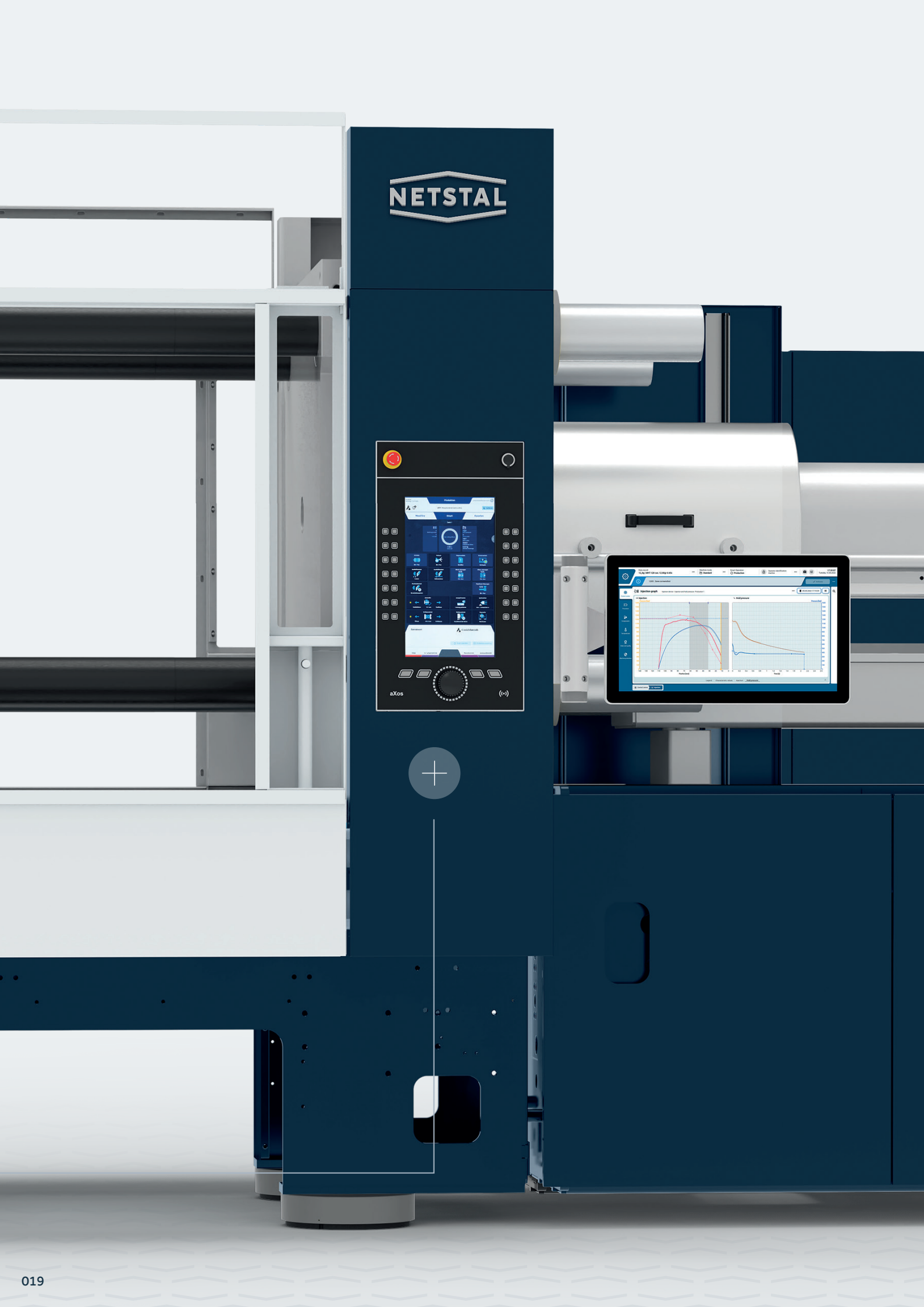
With state-of-the-art hardware components and a newly developed temperature control system, you can achieve the highest quality in terms of production parts as well as a reduction in energy consumption of the injection molding machine.

Smart control increases availability

The integrated four-button Smart Operation control panel enables simple and safe machine control within the production environment. Operating errors are reliably avoided. Smart Operation lastingly increases the overall equipment efficiency of your injection molding production.



The innovative Axos controller supports intuitive operation and allows the machine to perform at its best.



NETSTAL



Less Energy, Optimal Efficiency Produce More Sustainably



When developing the Elion, we gave intensive consideration to the subject of energy efficiency. Objective and result at the same time: In terms of performance and energy efficiency, the Elion sets a new benchmark in global overall system comparison.

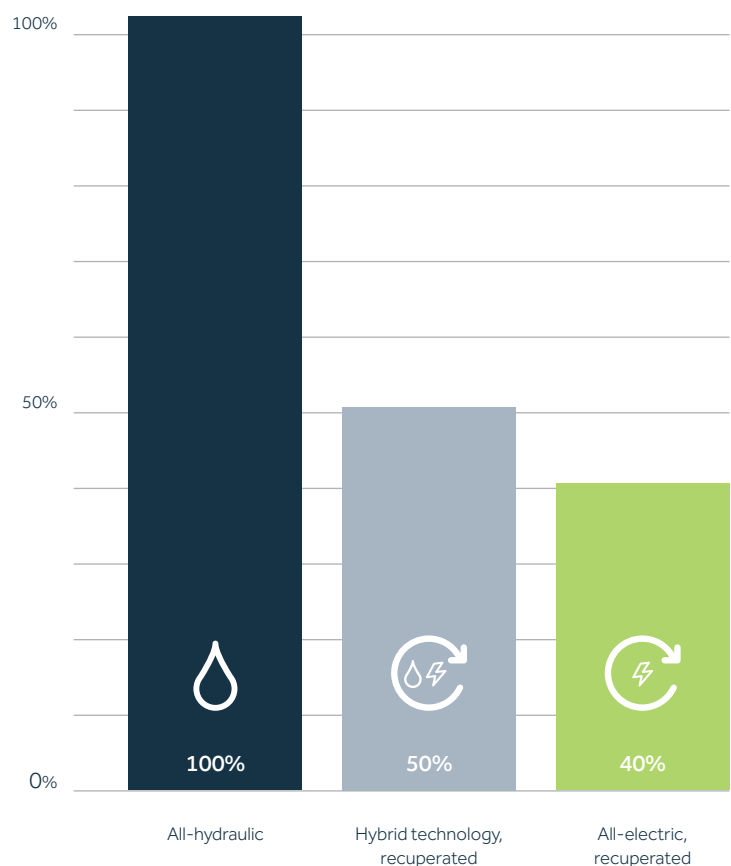
Key features:

- Recuperation of kinetic energy
- Adaptive drive control
- Interconnected power converters
- Optimal operating point at maximum efficiency
- Adaptive system pressure reduction enables additional energy saving (optional)

Effectively reduce energy consumption

The kinetic energy generated during braking processes flows into the electric motor of the main drive where it is converted into hydraulic energy and stored. Because we use the energy recuperated in this way directly in the overall system again, you save up to 50% electricity compared with an all-hydraulic machine, even under full load. The all-electric Elion can save you up to 60% in energy.

Energy consumption comparison



Your benefits

- Up to 60% less energy consumption
- Outstanding efficiency in high-performance applications
- Competitive advantages through optimized unit costs
- Additional savings can be made with the adaptive system pressure reduction

The low-friction guided, moving mold plate makes a major contribution to the high degree of efficiency of the clamping unit.



Digital Solutions



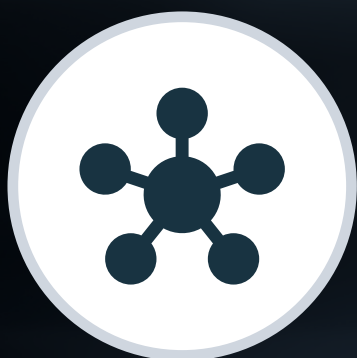
Netstal eService

Maintain peak production efficiency with our free eService. All machine-specific documentation is provided here. Quickly identify and order the required spare parts with the 3D spare parts catalog. Use the ticketing system to directly request our support if required.



Netstal Remote Control

Access your machine controls at any time with Netstal Remote Control (NRC). Even complex application process settings can be adjusted remotely. Machine checks at change of shift can be carried out from the office to save the walk through the machine park. Use the collaborative potentials to make internal technical assistance available on-call 24/7 and across all locations to support other plants.



Standardized data exchange

The Euromap 77 standard specifies the interface between injection molding machines and the overriding production control system. Systems (MES, ERP, QM, etc.). The basis for Euromap 77 and other Euromap interfaces for integrating periphery systems, such as Euromap 82.1 for temperature control devices and Euromap 82.2 for hot runner control devices, is OPC UA, one of the most widely used Industry 4.0 protocols. OPC UA enables standardized, manufacturer-independent and efficient data exchange between machines, devices and other systems within the industrial environment.

Maintain Values, Create Value

Netstal stands for world's leading injection molding technology. The Netstal brand goes back to the name of the place where the company was founded in the Swiss canton of Glarus.

We employ a staff of more than 500 at our head office and production plant in Näfels and in our branch offices.

We provide manufacturing companies from the packaging sector, beverage industry and medical technology with high-performance machines that are extremely efficient and deliver absolute precision with exceptional reliability. We are constantly developing our technology. Because we feel that we are jointly responsible for ensuring that you can produce successfully, efficiently and sustainably.

Worldwide presence

Our subsidiaries and agencies across the globe ensure a top-rate service. This means that we are able to address your individual needs as quickly as possible and provide you with comprehensive and customer-oriented service.

Individual service

While our customer service supports you with a range of solution-oriented services and products, it also excels as a provider of "classic" services thanks to its high reliability and quality standards. Be it commissioning, troubleshooting or customer training – make the most of our first-class services.

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The powerful, high-precision and
efficient injection molding machine.

Your best choice

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