



High performance made to measure Machines in the ELION Series

Engineering Excellence



Application Areas of the ELION Series



Closures



Packaging



Medical components



Technical components

Securely closed:

Closures and closure systems for an extremely wide range of applications

Its performance and energy efficiency make the ELION ideally suited for the highly productive manufacture of beverage closures. Thanks to its high precision, it is also ideal for use in complex closure systems such as flip-top or push-pull designs.

Well-packaged:

Thin-wall packaging parts

In order to save raw materials and transport weight, the packaging industry is demanding increasingly thinner wall thicknesses and therefore wall thickness to flow path ratios that are extreme in some cases. Due to a well-conceived performance concept, machines in the ELION Series are ideally suited for the production of complex thin-wall parts.

Vitally important:

Consumable materials and equipment components for medical technology

Molded parts and components for use in medical technology are often produced in cleanrooms. With regard to design and specifications, this means that highly demanding requirements for the entire production infrastructure must be fulfilled. At a basic equipment level the ELION already offers a wide range of features which provide considerable support for use in cleanrooms.

Zero tolerance:

Technical precision parts

Precision parts, for example those used in the electronics and automotive sectors, place the highest possible demands on the manufacturing process and its reproducibility. Thanks to its solid design, intelligent control technology and many smart detailed solutions, the ELION is ideally suited for this task. Since it is also designed for low-wear and low-maintenance operation, it has a long service life.

Machines in the ELION Series

Low Energy High Performance

Fast, precise, reliable, user-friendly and efficient in operation. These are the most important characteristics of our ELION Series. The main objective in their development was to ensure “Low Energy, High Performance”. This means the following for you: Top performance and optimized energy efficiency. Thanks to a consistent modular design and a large number of additional equipment options, ELION can easily be adapted to meet the needs in different application areas.

Benefits of the ELION Series at a glance:

- Minimal piece costs
- Best possible productivity
- Smallest CO₂ footprint
- Low noise level
- Highest performance

Absolute Precision and Cleanliness A Fascinating Tour of the ELION with fully electric drive system

Clean and precise clamping unit

With a central 5-point toggle lever,
a closed-loop lubrication system
and precise linear guides.



Your advantages:

- Maximum precision
- Absolute reproducibility
- Maximum reliability
- Quiet and practically emission-free operation

Flexible operating unit

The innovative aXos control unit offers freely programmable processes and maximum flexibility. As a result, the user experiences a very high level of user-friendliness.

High-precision injection unit

Injection unit with high-precision dual rack and pinion drive and dynamic servo motors.



Well-conceived media concept

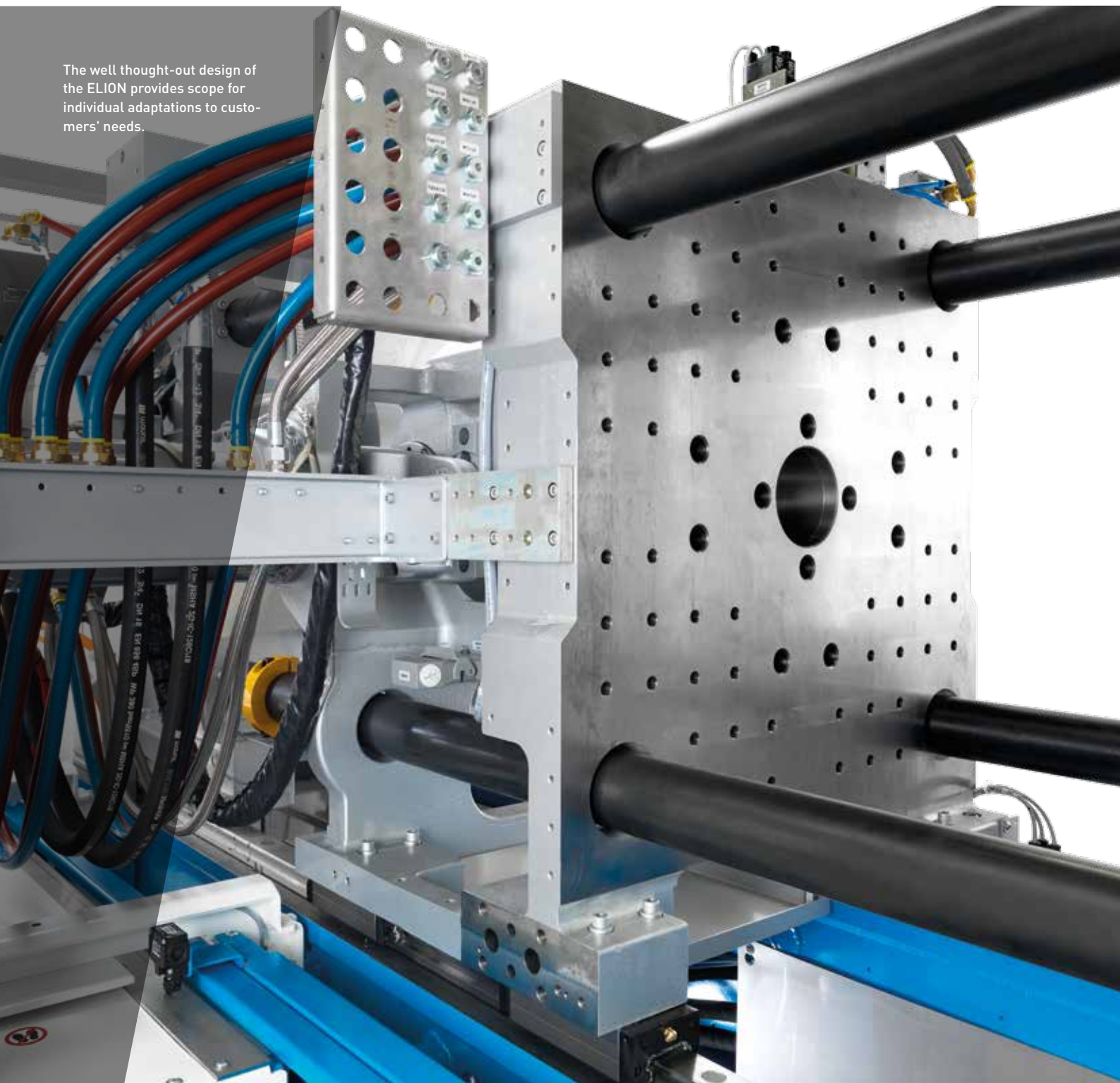
Flexible solutions for the supply of mold and peripheral devices.

Dedicated drive technology

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

ELION with Fully Electric Drive System Innovative Detailed Solutions

The well thought-out design of the ELION provides scope for individual adaptations to customers' needs.



Clean mold area

The clamping unit of the ELION was systematically designed for use in a clean production environment. All bearing positions are optimally sealed and the lubricating oil flows in a hermetically closed cycle. This effectively prevents any contamination of the mold area.

The injection unit, highly dynamic and yet totally precise

Thanks to the unique transmission principle with a dual rack and pinion gearbox and high-precision force measurement integrated in the injection axis, the ELION injection unit features outstanding precision coupled with total reproducibility. The result is shot-to-shot consistency which remains unmatched on the market.

Position-accurate and dynamic ejector

The stable and rigid level mechanism in the ejector is driven by a highly dynamic servo motor. In combination with a highly sensitive angle and position sensors, as well as sophisticated control technology, the ELION ejector offers outstanding precision and reproducibility.

Stable connection of the injection unit

A hydromechanical principle is used for movement of the injection unit and application of the contact force. This enables absolutely torque-free contact, thus ensuring minimal wear on the mold.

Dedicated and optimized drive unit

All main movement axes in the ELION are driven by electric servo motors. The intelligent adaptive drive unit provides exactly

the right amount of energy to activate the hydromechanical movement elements. Although it operates very quietly in an extremely energy efficient manner, it has enough reserves to operate optional hydraulic auxiliary mold functions (core-pullers).



Dynamic, high-precision all-electric injection unit.



Electric ejector with precise and dynamically level activation.



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



Dedicated drive unit with adaptive and energy-efficient technology.

Top Performance, Optimal Efficiency A Fascinating Tour of the ELION with Hybrid Drive Concept

Flexible media module

The machine can be adapted to your requirements in a variety of ways.

Precise and dynamic clamping unit

Central 5-point toggle lever based on the unique ELION principle for fast movements and short cycle times.



Flexible operating unit

The innovative aXos control unit offers freely programmable processes and maximum flexibility. As a result, the user experiences a previously unknown level of user friendliness.

Your advantages:

- The ideal drive technology for every movement axis
- Top performance
- Optimum energy efficiency
- Low noise level
- Low emissions

High-performance injection unit

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

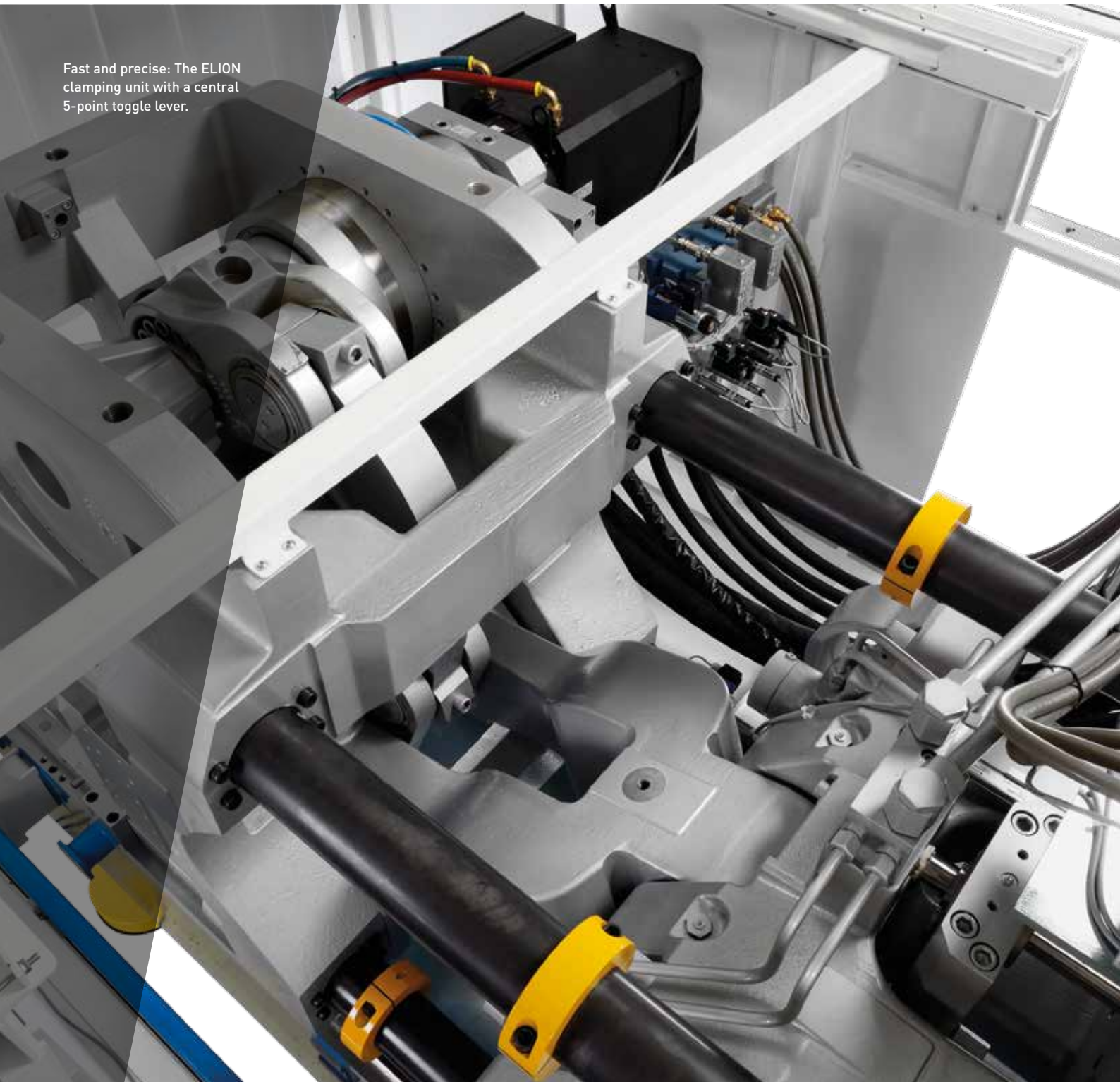
Hybrid drive technology

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



ELION with a Hybrid Drive Unit Innovative Detailed Solutions

Fast and precise: The ELION clamping unit with a central 5-point toggle lever.



5-point toggle lever with central force application

The centrally arranged 5-point toggle lever is activated by a unique crank mechanism and is driven by a highly dynamic servo motor. This enables very high accelerations and quick travel movements to be attained. This means that the ELION offers ideal conditions for extremely short cycle times.

Hydraulic ejector: Precise and fast

The hybrid ELION models are equipped with a hydromechanically activated ejector. Two cylinders operating in parallel ensure powerful and extremely dynamic movement of the ejector plate. Thanks to a precise stroke measuring system and an optional position and speed regulator, very high accuracy and reproducibility are attained.

Extreme injection performance

Thanks to the innovative dual-valve technology, the hybrid ELION injection units offer an injection rate that is unmatched on the market. With injection speeds up to 2200 mm/s and extremely high dynamism, even very thin-wall products with long flow paths can be reliably filled. Material savings can be made and your production can be made more cost-effective.

Hybrid drive technology, maximum performance potential, optimum energy efficiency

The unique combination of servo electric and hydromechanical drive concepts supported by the innovative, adaptive drive unit ensures optimum energy efficiency. However, unlimited performance potential is also available for extremely fast applications.

Stable and durable design

All elements in the ELION are designed to cope with continuous operation and the highest possible demands. This ensures a long service life and absolutely reliable operation.

Optimum ergonomics

Great attention is paid to user-friendliness and ergonomics in the ELION. All operating elements and functions are easily accessible. This is the only way to ensure efficient work.



Hydraulic ejector activated with two parallel cylinders.



Optimized process control thanks to an actively controlled nozzle needle valve.



Dual-valve technology; maximum performance for injection movement.



Innovative, adaptive drive unit with maximum energy efficiency.



Design Features of the ELION Intelligent Detailed Solutions

During the development of the ELION; close attention was paid to optimum ergonomics and the highest possible quality. This is demonstrated by means of a large number of clever detailed solutions.

Easy accessibility

All operating elements in the machine are designed for optimum ergonomics. A large number of clever detailed solutions ensure that the ELION can be operated more easily and more efficiently.

Quality right down to the last detail

Here at Netstal we pay close attention to quality. Even seemingly unimportant details are designed for durability and reliability.



Stable swiveling suspension of the operating console.



All air valves can be adjusted with a closed safety cover.



The very robust door locking mechanism ensures reliable operation.



All media connections are precisely where they are needed.

Clamping and Injection Unit Solutions in the ELION Series

The ELION Series follows a consistent modular system principle: clamping unit, plasticizing unit, injection unit and drive unit can be combined to meet your needs.

The individual modules with different drive technology can be combined with one another in almost any number of ways. Thanks to standardized interfaces, the modules also ideally fit together.

You therefore obtain a customized system with an optimum size and design. For

lower clamping forces, we utilize an all-electric drive concept. For medium and high clamping forces, the electric clamping unit of the ELION is equipped with a highly efficient hybrid injection unit.

Electric clamping unit

Electric injection unit

Drive unit

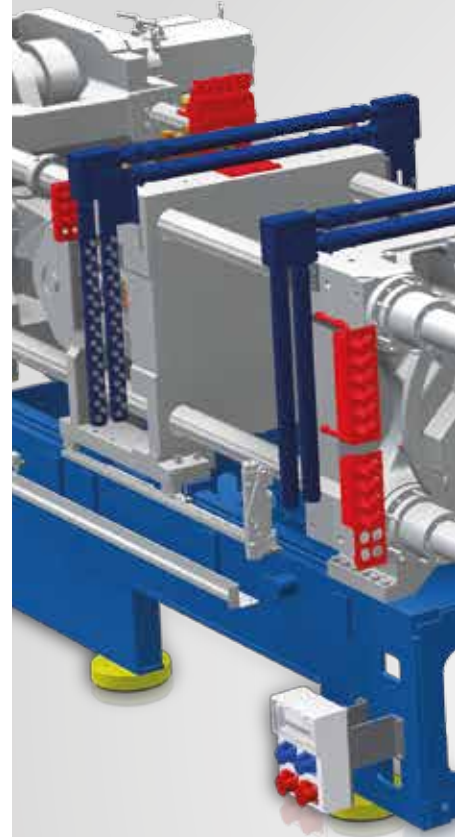
Electric clamping unit

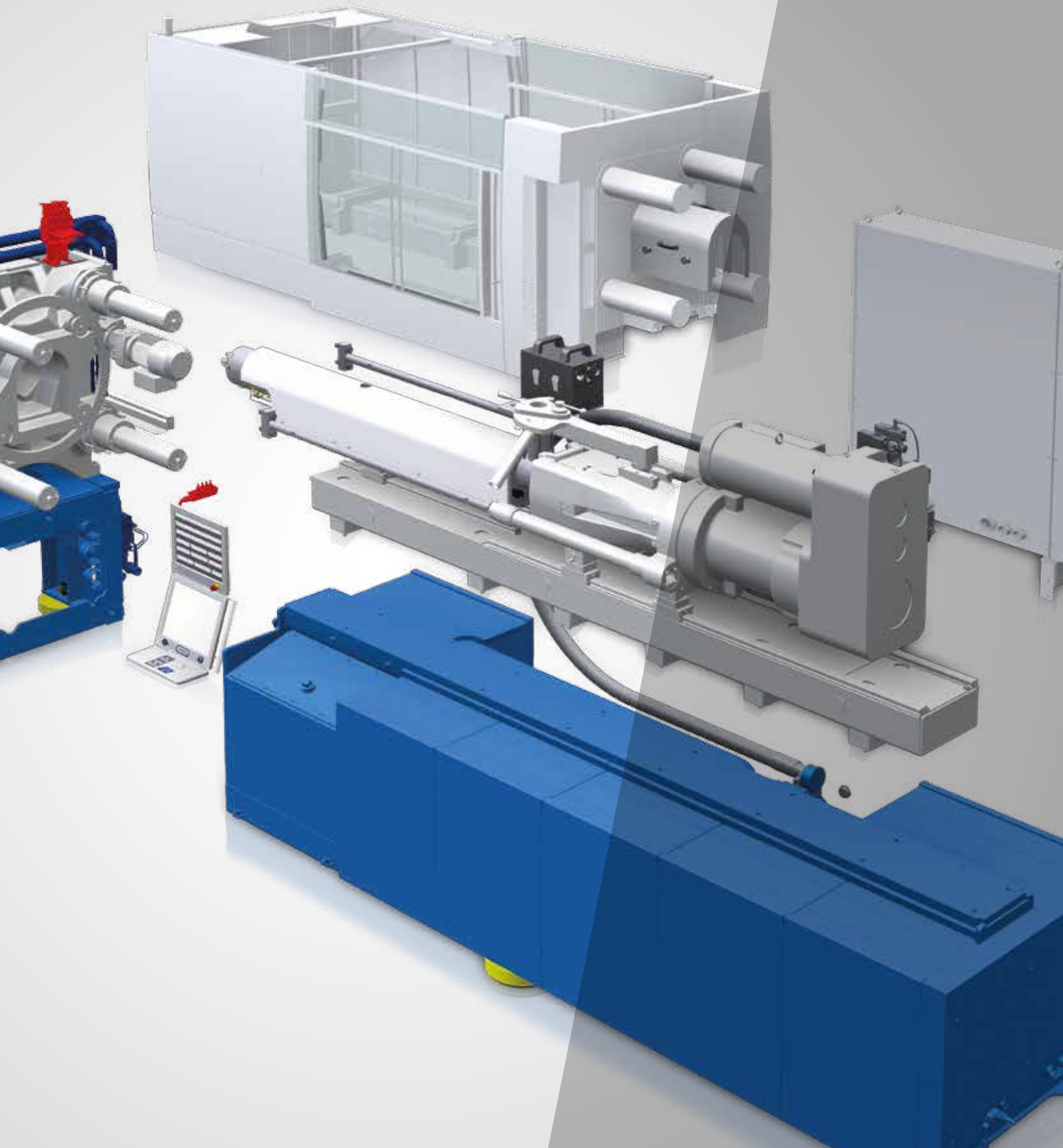
Hybrid injection unit

Drive unit

Your advantages:

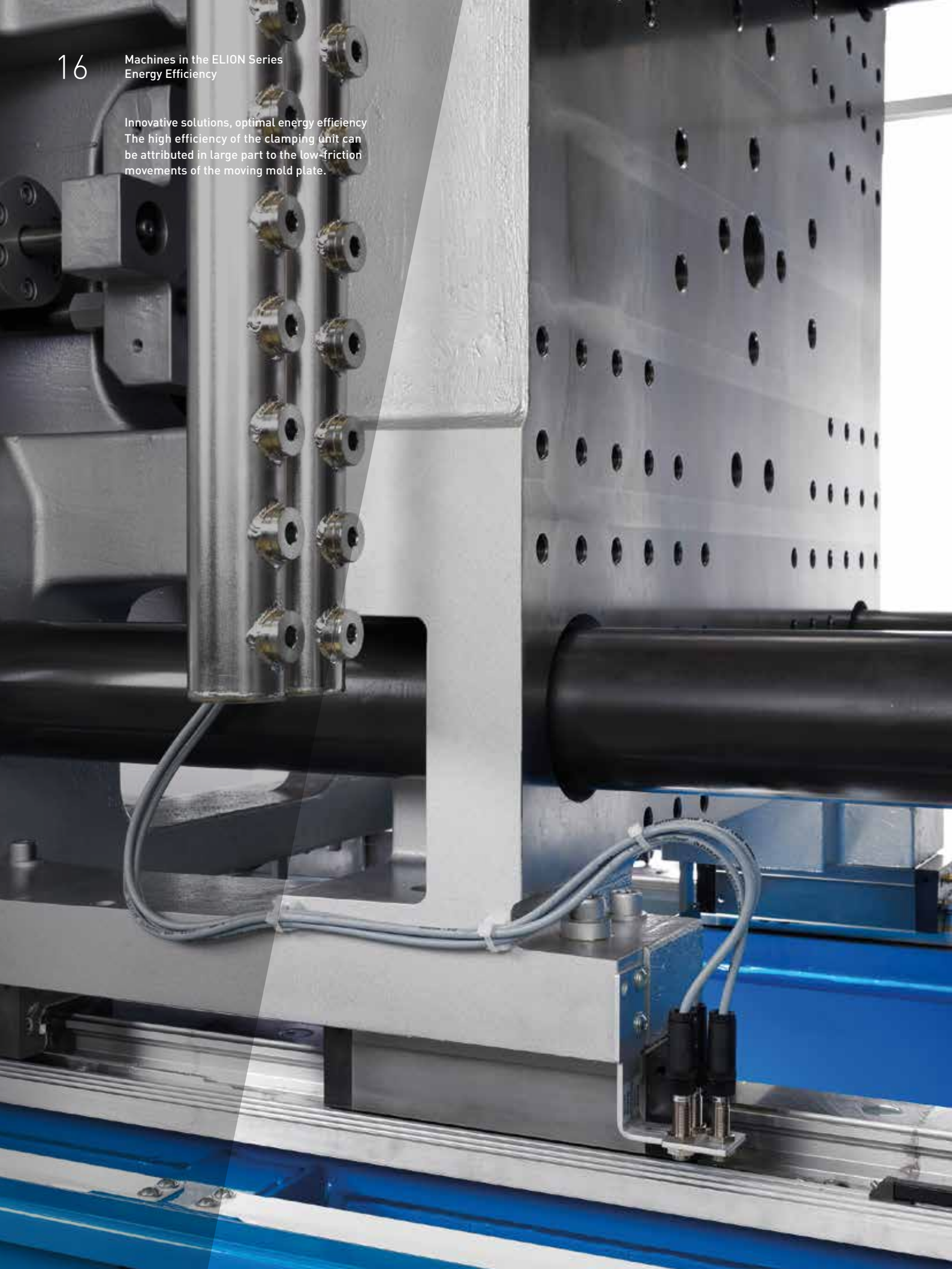
- Optimum design of machine components
 - Maximum flexibility
 - Future security
 - Optimum ease of maintenance
-





The modular concept is not just limited to the main components, i.e. the clamping unit and the injection unit. Additional equipment packages also have a logical modular design and can be individually configured.

Innovative solutions, optimal energy efficiency
The high efficiency of the clamping unit can be attributed in large part to the low-friction movements of the moving mold plate.



Low Energy, High Performance Efficient Drive Concept

The actual operation of the machine is responsible for the largest proportion of its energy consumption. Thanks to the innovative concepts of the ELION and intelligent drive technology, enormous energy savings can be achieved with hybrid or all-electric injection molding machines.

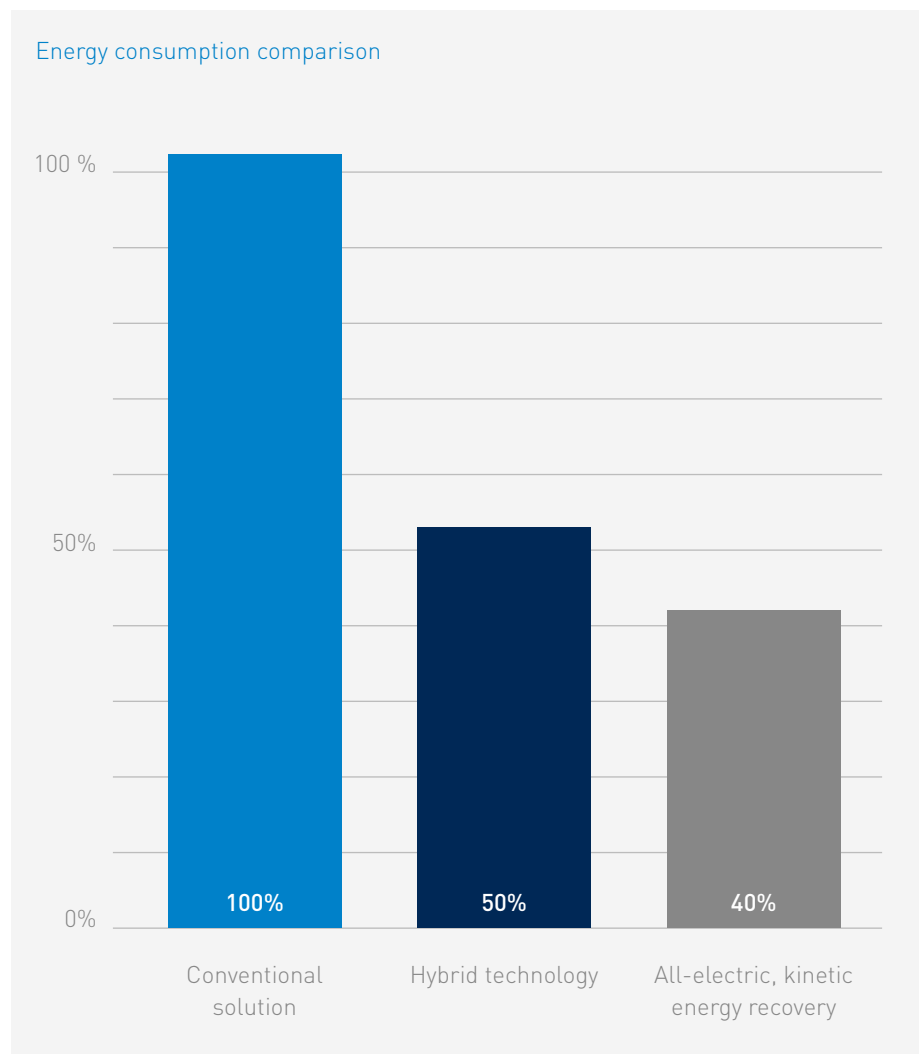
Main features of Netstal drive technology:

- Complete recovery of kinetic energy
- Adaptive drive control
- Interconnected power converters
- Optional working point at maximum efficiency

Based on its low consumption values, the ELION is a machine that stands for maximum cost-efficiency. With the adaptive drive unit, energy savings of up to 50% can be achieved compared with conventional hydraulic machines. If an all-electric machine is used, efficiency is increased again by around a further 10 percent.

Energy efficiency stands for sustainability

It is anticipated that energy costs will rise further in the future. In addition to material costs, the proportion of energy costs will become the second most important factor in the cost of ownership. Netstal is committed to developing innovative systems and solutions that ensure optimal energy efficiency at maximum productivity in line with our motto: "Low Energy, High Performance".



Simply Clever Maximum Media Flexibility

Pneumatic valves

The pneumatic valves are optimally arranged to ensure the fastest reaction times.

Hydraulic controls

The connections for hydraulic auxiliary mold controls can be installed on the operating or non-operating side of the machine as preferred.

Cooling water distributor

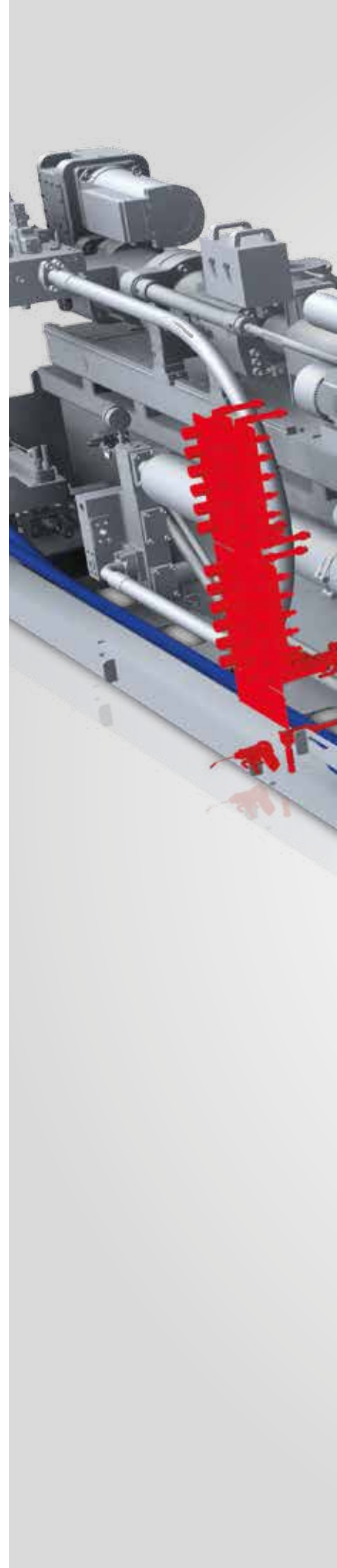
Depending on the mold, cooling water distributors are available for any position on the mold plates. The distributors are protected against corrosion and an optimal flow rate is guaranteed thanks to the use of ball valves.

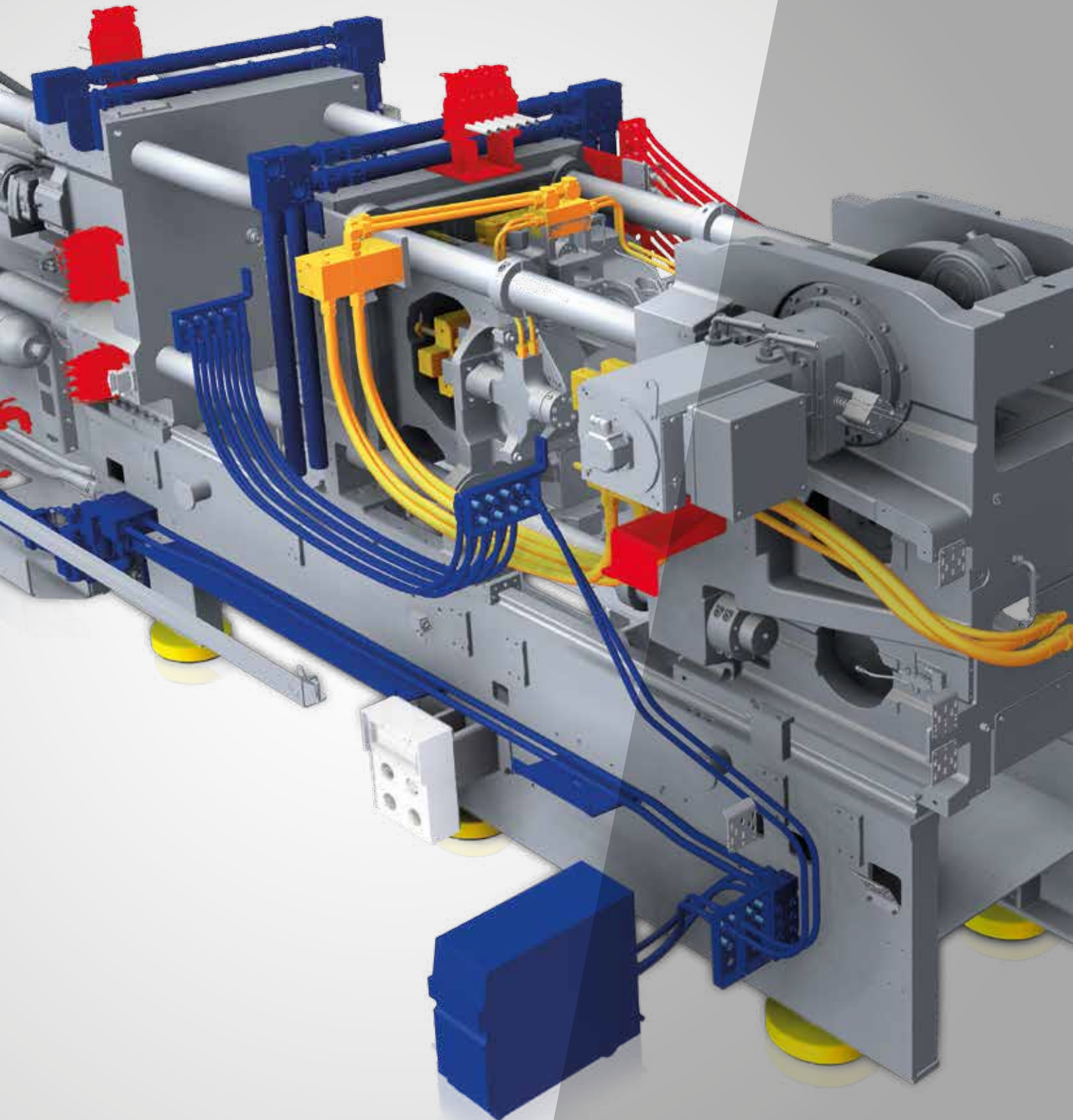
Socket outlets

Optional socket outlets with integrated circuit breakers can be installed in various positions on the machine to connect peripheral devices.

Clear connection layout

All connections for machine and mold cooling, as well as the pneumatic system are located on the front and are therefore easy to access.





The ELION can be customized for an extremely wide range of applications with a large number of options.

aXos Control Unit Innovative and user-friendly

The aXos control unit enables users to create the required production processes in a way that is both customizable and cost-effective.



The aXos operating philosophy brings together the very different requirements of operators from the many application areas in which injection molding machines are used. Consequently, the operating keyboard offers users a range of facilitating functions, such as shortcut buttons for quick access to desired topics, or the 17-inch TFT flat screen which serves as a display medium for the entire process programming setup.

Sequence Editor

The Sequence Editor can be used to create a graphic display of any production process into which simple commands can then be subsequently incorporated using the corona by moving the cursor. The corona is a context-sensitive editing tool that offers optional commands and available insertion points for these commands.

Component Manager

The term component covers all the non-primary axes of a machine, e.g. auxiliary mold controls, blowing controls, conveyor belts and reject gate. They can be created by the user for individual upgrades and can be freely configured.

Operating keyboard

The operating keyboard is equipped with shortcut buttons to provide fast access to relevant topics. Navigation buttons, a trackball and a numeric keypad are also available. The keyboard is ergonomically designed and can be folded down during maintenance.

17-inch flat screen

Serving as a display medium for the entire process programming setup, the flat screen is slightly tilted to optimize screen readability. Users can navigate the TFT flat screen using cursor buttons or the centrally located trackball.

Operating panel (keyboard for manual operation)

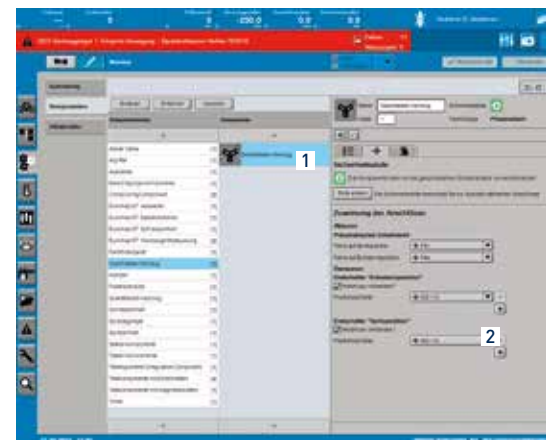
The operating panel offers a wide range of functions to support user operation of the machine during day-to-day work. The combination of a screen and a membrane keyboard is a development that has been patented by Netstal.

Your advantages:

- Flexible sequence programming
- All-purpose
- Intuitive operating concept
- Effective safety mechanisms
- Efficient thanks to graphic programming



- 1 Field for process value display
- 2 Field for system message list
- 3 Navigation to topics
- 4 Sequence editor / aXos task area
- 5 Command parameter field
- 6 User ID
- 7 Global functions
- 8 Activation field
- 9 Status display



- 1 Created component "Switched core-retraction"
- 2 Assignment of connections (sensors/actuators)

Our Worldwide Expertise is your Advantage Service & Solutions



The Netstal service department provides you with full support throughout your machine's entire life cycle. By providing solution-driven services and products – for example commissioning, troubleshooting, spare parts supply and customer training – we can help you achieve optimal production efficiency and thereby secure your investment. In this way we aim to build a lifelong partnership which works to your advantage.

Start-up

- Assembly
- Commissioning
- Training courses
- Teleservice

Utilization

- Spare parts packages
- Troubleshooting
- Hotline
- Preventive maintenance

Optimization

- Application advice
- Retrofitting
- Energy consulting
- Process consulting

Phase-out

- Overhauling and refurbishing
- Modernization
- Relocating machines
- Second-hand machines

Netstal

A strong brand in a unique global group

Premium high-performance and high-precision Injection Molding Machinery and system solutions

Netstal is an international provider of premium high-performance and high-precision Injection Molding Machinery and system solutions. Our customers are always impressed by the innovations and services that we provide, as well as by our efficient and performance-driven technological approaches for the beverage, packaging and medical technology sectors in particular. Our production systems are all characterized by the same attributes: speed, precision, reli-

ability, user friendliness and operational efficiency. We are constantly refining our technological standard of excellence and, thanks to our innovative technologies, we are able to offer high-performance production systems to our customers.

There for you around the world

With eight subsidiaries and around 30 distributors, our global presence guarantees optimum customer proximity. This means that we are able to address your individual needs as quickly as possible and provide you with a comprehensive and customer-oriented service.

Individualized 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.

You can find additional information about Netstal at: www.netstal.com

KraussMaffei Group

Comprehensive expertise

Unique selling proposition Technology³

The KraussMaffei Group is the only provider in the world to possess the essential machine technologies for plastics and rubber processing with its KraussMaffei, KraussMaffei Berstorff and Netstal brands: Injection Molding Machinery, Automation, Reaction Process Machinery and Extrusion Technology.

The group is represented internationally with more than 30 subsidiaries and over ten production plants as well as about 570 commercial and service partners. This is what makes us your highly skilled and integrated partner. Use our comprehensive and unique expertise in the industry.

You can find additional information at: www.kraussmaffei.com



The KraussMaffei Group has a global presence. Countries with subsidiaries are marked in light blue. In the white-colored regions, the Group is represented by over 570 sales and service partners.

**Fast.
Precise.
Efficient.**
Machines in the ELION Series

Fast, precise, reliable, user-friendly and efficient in operation. The ELION has all the typical Netstal features. It also offers a large number of innovative detailed solutions that leave nothing to be desired when it comes to modern injection molding machines. With either an all-electric or a hybrid design, the ELION is the perfect choice for a wide range of demanding applications. All models from the ELION Series are based on the unique clamping unit principle with a central 5-point toggle lever.

The continuous development of our series and the use of innovative technologies mean that we are able to provide our customers with powerful and extremely cost-effective production systems.