The optimized automation solution for injection molding machines
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KEBA customers enjoy the best possible support and assistance. A thorough understanding of the markets, processes and demands right down to the smallest detail forms the basis for a successful and long-lasting partnership. This begins with initial consultation and continues with system design through to installation and series production support. Our modular training programs provide focused instruction in operation, servicing and programming.
The technology expert for optimized industry solutions

We speak the language of your industry

Thanks to years of experience in controlling injection molding machines, the experts from KEBA have acquired comprehensive knowledge of the industry and technology. As a result, KEBA employees are able to respond to your requests in all areas quickly and competently and discuss issues with you on an equal footing in the specialist language that you are accustomed to.

From simple, hydraulic injection molding machines to complex multi-component systems – our specialists will gladly support you with their expert knowledge. Our KePlast team is also ready to provide assistance in tasks relating to electrical machine design and process-integrated robotics or in topics concerning safety technology in order to realize the best possible design for your project.

A large team of highly trained application engineers are also available worldwide. The locally based teams will put your injection molding machine into operation quickly and competently. They can also carry out customer-specific software adaptation quickly and without problems through to process control optimization.

European brand quality and innovation leadership through permanent monitoring of the very latest trends help you secure a decisive market advantage now and in the future.
KePlast – the optimized, integrated control platform for injection molding machines
KePlast control systems have been specially developed for use in plastics processing machines. The model series covers the entire spectrum of applications from simple hydraulic and all-electric injection molding machines through to complex multi-component systems with process-integrated robotics.

**Uniform concept**

All machines have a uniform design regardless of whether they are hydraulic, hybrid or all-electric. All injection molding machines stand out thanks to:

- Uniform engineering
- Uniform look and feel
- Uniform diagnostics and maintenance

**Best price-performance ratio thanks to customized solutions**

The control systems and electrical drive technology used in the injection molding machines are precisely optimized toward their intended application. Thanks to the innovative solutions from the scalable KePlast series, expensive undersizing and oversizing have become a thing of the past.
Hardware solutions in highest quality

The KePlast model series features special hardware and software solutions developed for the plastics industry which are based on standard components of the KEBA modular system for machine and robot automation.

Reliable control systems and I/Os

KePlast control systems are future-proof. They combine the classic strengths of PLC technology such as real-time operation, industrial suitability and stability, with state-of-the-art technology such as real-time Ethernet and the platform-independent programming language Java. The PC-based, fully scalable hardware architecture provides a high level of technological reliability and quickest possible time-to-market, and therefore secures investments for the future.

The functional scope of every KePlast control system can be expanded extremely simply by plugging in additional I/O modules. Analog I/Os, digital I/Os, temperature-measurement I/Os and communication I/Os that can be controlled via EtherCAT or CAN bus are available.
Highly optimized, industry-specific compact modules

Apart from the extensive range of standard I/O modules, we also offer highly optimized components that have been specially designed for the requirements of injection molding machines. Whether a block I/O module for large-scale machines with a large number of I/Os or temperature control modules for hot runner systems – we can provide the right configuration for any constellation.

Operating devices in high-quality design

Depending on the requirements of the application, various TFT displays in portrait and landscape format are available. Operation occurs via microswitch keyboard or touchscreen.

In addition to these stationary operation and visualization possibilities, KeTop provides you with a mobile alternative for maximum freedom of movement. All KEBA operating devices stand out thanks to their robust and high-quality design.

Precise temperature control with hot runner modules

The compact modules for controlling heating zones are specially optimized for the regulation of hot runner systems. An integrated heating-current monitoring system and optimized regulation by means of phase synchronization offer an extremely attractive complete solution for the complex processes in the world of injection molding.

Depending on the version, the modules are controlled via CAN bus or via the real-time fieldbus EtherCAT.

Seamless integration in the KePlast application software means that the usual parameters for hot runner controllers can be set extremely conveniently directly at the operating panel. As a result, an external control device is no longer required, the process specialist works in his usual environment directly at the machine.
The scalable KePlast product range

From simple hydraulic injection molding machines to complex multi-component systems with process-integrated robotics – KePlast control systems cover the entire range of applications.

The control systems of the i1000, i2000 and i8000 series stand out thanks to their precision and high productivity and ensure savings in energy consumption. The common software platform and the scalable hardware – both in control performance and in the operating unit – provide maximum flexibility. Identical elements are also used for visualization in order to ensure uniform visual operation over the entire range.

KePlast i1000

Owing to its powerful computer core, the KePlast control system i1000 is real-time-capable, thereby enabling a continuously controlled quality of production.

- For hydraulic standard injection molding machines
- Ultracompact single-board computer
- 7” to 12” TFT displays
- Operation via microswitch keyboard
- Closed-loop injection process including monitoring by means of injection graphic
- SPC package (Statistic Process Control)
- Expandable via CAN bus
- Network-compatible through Ethernet connection
KePlast i2000

The hardware of the i2000 series consists of a high-performance single-board computer with scalable performance level. I/O modules or electric drives are connected via the integrated high-speed real-time EtherCAT bus.

- For hydraulic, hybrid and all-electric injection molding machines
- Modular hardware based on Intel Atom
- High-performance EtherCAT interface
- 12" SVGA to 15" XGA TFT displays in portrait and landscape format
- Operation via touchscreen
- Seamless integration of the KEBA drive technology incl. application package for all-electric injection molding machines
- Comprehensive quality data package

KePlast i8000

The control solution of the i8000 series offers the very latest multitouch technology in combination with top performance. The Linux-based complete package combines state-of-the-art gesture operation with an open control platform and provides maximum individuality.

- For hydraulic, hybrid and all-electric multi-component injection molding machines as well as high tonnage IMMs
- Open Linux control platform with extremely short control cycles
- Active operating unit with Linux operating system and JavaFx technology
- 15" and 21.5" multitouch widescreen displays in portrait format
- Seamless integration of KEBA drive technology via EtherCAT interface
The lower-priced KePlast control systems of the i1000 series have been specially developed for standard hydraulic injection molding machines. By focusing on the essentials, KePlast i1000 offers an unbeatable price-performance ratio. Furthermore the integration of the KePlast SpeedPump, our solution for hydraulic servo pumps, makes additional energy savings possible.

Cost-optimized solution for injection molding machines

Around 90 percent of all hydraulic injection molding machines can be automated quickly and good-value pricing using control systems of the i1000 model series. The ultracompact single-board computer has all the I/Os required to control standard injection molding machines as well as a speed input. Direct control of proportional valves is possible via separate current outputs.

Optimum scalability

Apart from the optimized combination of control system, operating panel and the matching application software, the KePlast i1000 series is characterized by extensive scalability in operation. From the entry-level model with 7” display to the comfortable 12” variant – the control CPU and operating panel are freely combinable.
European brand quality

Owing to its powerful computer core, the high-quality model series is full real-time capability so that even the lower-priced models can provide a controlled injection and holding pressure process as standard.

Via Ethernet it is possible to integrate the compact control system in a control station concept. As a result, all machine data can then be managed conveniently using a PC.
With the solutions i2000 to i8000, KePlast offers a complete package comprising control system, drives and software technology libraries that are all perfectly matched to each other. As a result, problems previously encountered by machine builders when assembling systems consisting of different components are a thing of the past.
Top-class control systems

The control systems of the i2000 and i8000 series stand out thanks to their precision and high productivity. Furthermore, the controllers provide in combination with the electric drive package lowest energy consumption. The high level of precision is made possible by fast controller cycle times while an increase in productivity can be achieved thanks to sophisticated control technology with the parallelization of movements.

High-performance drive technology

A comprehensive range of drives and motors is available for all-electric injection molding machines. They are inexpensive and offer a high degree of flexibility with regard to the design of machine configurations.

Whether highly dynamic applications with low power requirements or high-energy installations with an injection power of up to 300 kW – the experts at KEBA will gladly assist you in dimensioning drives in order to determine the perfect combination of drive technology and motor configuration.

Control at the highest level

The high-performance hardware platform in both control and drive technology and the matching KePlast software package together present an attractive complete package for the injection molding market. Intelligent control algorithms that run directly at the drive guarantee extremely short response times and optimum process behavior.

The possibility of coupling drives and by doing so further increasing performance and dynamics offers maximum flexibility. Whether rigidly coupled systems or master/slave drive combinations with intelligent software-based solutions – the right solution is available for every machine requirement.

The technology libraries used in the KePlast software and the parts of applications optimized for electric injection molding machines round off the complete package.
The KePlast SpeedPump is a complete package consisting of a highly dynamic servo drive and a robust, economical hydraulic pump. A key advantage is the use of the CANopen or EtherCAT field-buses with which the KePlast SpeedPump can be optimally integrated in the KePlast system.

Cost saving through energy reduction

Highly dynamic changes in energy flows to the individual hydraulic consumers during the production cycle are typical for injection molding machines.

However, conventional hydraulic concepts with standard motors and fixed displacement pumps can provide only a constant energy value over the entire machine cycle.

The KePlast SpeedPump only provides hydraulic energy when it is actually needed.

In idle phases (e.g. during the cooling time), energy consumption therefore drops to almost zero. The energy reduction achieved with the KePlast SpeedPump corresponds to that of an all-electric machine.
Highly integrated, hydraulic servo pump

Simple commissioning and service thanks to fieldbus communication

The consequent use of CANopen and EtherCAT field-buses allows user-friendly and time-saving commissioning of the KePlast SpeedPump drives.

All adjustment and optimization work can be carried out directly at the KePlast control system via the convenient machine HMI without the need for additional tools.

The data sets for the entire KePlast SpeedPump systems are permanently saved in the control system. Thanks to automatic recognition, the hydraulic drive always receives the optimum parameters.

Optimum efficiency by integrated temperature and energy monitoring

The motor temperature of the servo pump is permanently monitored and recorded in the KePlast control system. This allows the cycle time to be optimally shortened and the performance potential of the injection molding machine to be fully utilized. The integrated performance measurement function continually forwards current energy consumption values to the KePlast control system for the purpose of further analysis.
Whether a single-board computer or a complex modular system, whether for hydraulic, hybrid or all-electric injection molding machines – all KePlast systems are based on a completely scalable control and software platform.

Comprehensive technology libraries

Part of the powerful software framework is the extensive range of technology functions for controlling the injection molding process and for implementing all of the injection molding functions. As a result of years of experience, a wide variety of technology modules such as servo valve control or control of the mold position is available. Furthermore, process-specific special functions such as coining and venting are also contained in the software and technology libraries. They allow highly complex applications to be realized in a very short time.

Fast and simple creation of applications

KePlast software is extremely portable. Without tedious adaptation, programs that were created for one injection molding machine can also run on other KePlast-controlled machines with different hardware. To ensure that applications can be created simply and quickly, comprehensive software and technology libraries for injection molding machines are included in the scope of delivery.

Software tools for injection molding

Programming takes place in a uniform, modularly structured development environment. The operating concept and the scope of services are adapted to the performance and the target market of the machine in question. In this way, the customer receives an optimally dimensioned control system for each machine, irrespective of whether it is hydraulic, hybrid or electric.
Software makes the difference

KePlast MachineSequencer
Software assistant for configuring the machine sequence

KePlast MachineSequencer is a graphical online programming interface for machine sequences. Its intuitive design allows the sequence program to be adapted quickly and cost-effectively.

The sequence of all machine movements is fully flexible so that new tools are ready for use in no time at all. KePlast MachineSequencer is ideal for use in high-quality machines with complex alternating core sequences or multiple injection units.

Time and cost saving when commissioning

KePlast MachineSequencer allows the machine setter himself to adapt the sequence program of his machine on the end customer needs because no modifications to the control software are needed to do this. This saving in special, typically external programming know-how ensures extremely short lead times when commissioning customized tools or optimizing the machine program.
The ergonomic software tool KePlast AppCo assists the machine manufacturer in creating his control application by guiding him in dialog form through the entire configuration process to the completed control program without the need for programming skills. Expensive and time-consuming employee training courses for complex programming languages are therefore unnecessary.

KePlast AppCo
Minimal training required to configure instead of programming

Pre-programmed software elements allow applications to be created quickly. The machine equipment such as clamping unit, injection unit, ejector or machine options such as core pullers and hot runner controllers simply need to be selected in a predefined query matrix and the assistant then automatically creates the entire control software in the background. Afterwards, the application can then be transferred to the machine comfortably via CompactFlash. With KePlast AppCo, the project designer of the standard machine configuration does not need to enter any program commands.
Assistance for fast application creation and quick commissioning

Quicker startup and higher sampling quality

Within a very short time, employees without specialist injection molding know-how can use KePlast EasyMold to set up a mold tool and move it to the optimum operating point. This was previously the reserve of skilled experts. With KePlast EasyMold, the process of finding the right tool parameters is standardized and therefore reproducible. The result is an increase in quality of the entire sampling process.

KePlast EasyMold
Fast and reliable determination of the correct mold settings

KePlast EasyMold is an interactive software assistant for quickly determining the correct process setting when putting a mold into operation, and can be used by the user without the need for any specialist practical experience. The KePlast EasyMold software package contains the control and process know-how required for the plastics industry.
KePlast EasyNet is a simple, user-friendly program enabling low-cost networking of injection molding machines and is ideally suited for central data acquisition and backup. KePlast EasyNet allows you to keep an eye on your production machines at all times. Short response times ensure maximum productivity.

Status of all machines at a glance

With EasyNet, the production manager or shift supervisor can access all machines in the network. EasyNet makes the production status, the quality data and the productivity data of every single machine available at the control station PC or on a smartphone.
Central production and quality data management

EasyNet captures all of the machine parameters relevant in a production facility and reads them out cyclically. This data is stored in a database on the control station PC where it is then available for evaluation. Quality protocols or productivity evaluations can be presented in a clearly structured manner.

Integration of third-party machines

A production hall often contains machines from a variety of different manufacturers. With the optional add-on EasyNet AccessBox exists an opportunity to integrate machines which are not controlled by the KePlast control system into the EasyNet network.

Production status available at any time

KePlast EasyNet Mobile is an add-on for the EasyNet control station software and makes the data available for mobile devices. Important performance indicators such as the current cycle time, reject rate and utilization factor are available on the mobile device.

Reduction of standstill periods

If a fault occurs or in the case of important events such as maintenance, EasyNet Mobile sends an e-mail to specific service staff to enable a fast and efficient response, thereby reducing machine downtimes. This makes production monitoring much easier, reduces inspection rounds and shortens response times in the event of faults.
KePlast ServiceNet is a user-friendly plug & play solution for comprehensive remote support and efficient remote monitoring of injection molding machines. Fast, worldwide access to process data for Service & Support as well as simple remote diagnosis are just as easy and uncomplicated as the convenient support of operating employees in the case of application and process queries.
KePlast ServiceNet
Remote support for IMMs

Service engineers from KEBA as well as from machine manufacturers can process incoming support queries quickly and conveniently using a user-friendly software tool. A secure connection to the respective injection molding machine and to the on-site engineer is set up at the click of a mouse.

Independence from IT integration

No intervention in the IT network, firewall or Internet connection of the respective company is needed to set up a secure and fast ServiceNet connection. No cables have to be installed and no other additional network components are required. Communication takes place via a completely autonomous, direct UMTS/HSPA modem connection (3G) by means of a secure VPN tunnel.

Reduction in travel expenses

The machine and the service engineer of the machine manufacturer set up an Internet connection to a central service portal at which the service engineer logs in using customer-specific login data. In this way, service operations can be carried out irrespective of the location – whether at the service headquarters of the machine manufacturer or on site during a service visit.
KEBA – Automation by innovation.

KEBA is continuously occupied with the production of new developments and solutions for industrial automation, banking and service automation and energy automation. Its goal is to provide its customers with sustainable competitive advantages.

Optimized complete systems for the respective target market are developed jointly in intensive cooperation with customers. A thorough understanding of markets, processes and demands right down to the smallest detail has top priority at KEBA and forms the basis for a successful and long-lasting partnership.

Technology from KEBA helps people to organize their living and working environment more easily.
Fit for the future with KEBA.

KEBA AG was founded in 1968 and is an internationally successful electronics company headquartered in Linz (Austria) with branch offices worldwide. In line with its credo, “Automation by innovation” KEBA has been developing and producing inventive, top quality automation solutions for 45 years for industrial, banking, services and energy automation branches.

Indeed, as a result of competence, experience and courage, KEBA is the technology and innovation leader in its market segments. Extensive development and production expertise have proved a recipe for highest quality.

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