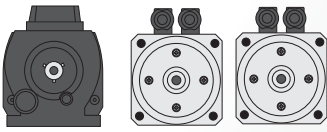


# APPLICATION PLASTICS MACHINERY

EN

# INJECTION MOLDING TECHNOLOGY



**MOTORS 360°**

Servo motors stand for highest dynamic and maximum flexibility in the connection to the machine design. With high overload and low mass moment of inertia, they are the ideal solution for your plastics machinery. In combination with the COMBIVERT F6/S6/H6 drive controllers and pre-assembled encoder/motor cables, powerful drive systems are created and precisely coordinated with each other.



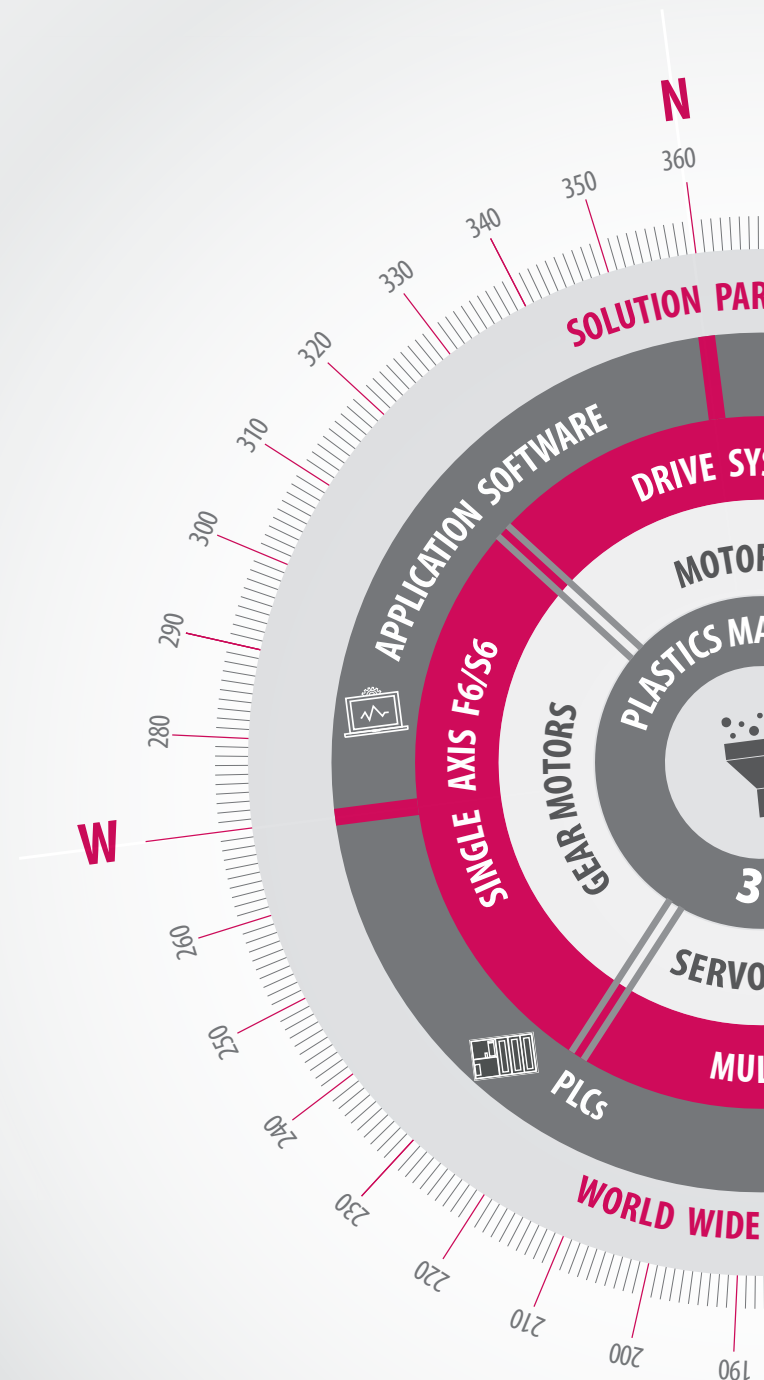
**DRIVES 270°**

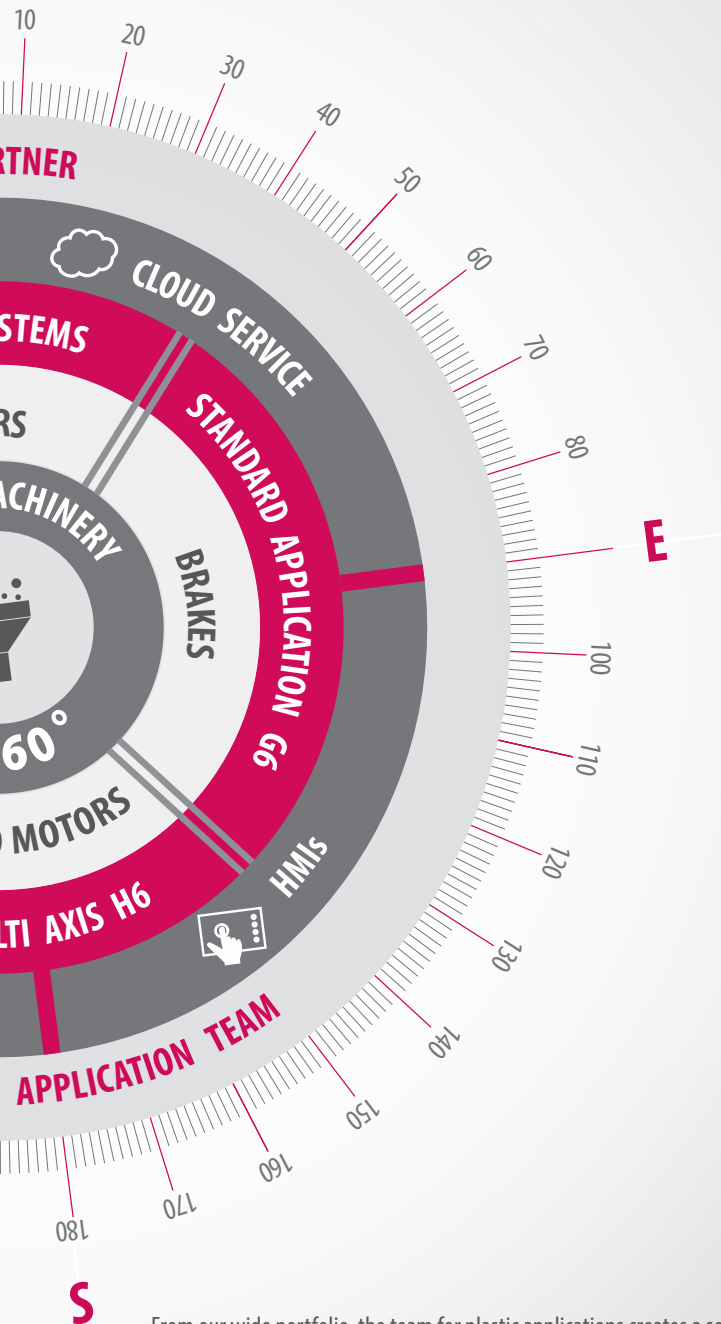
In addition to functionality and economy, flexibility has a central role in modern drive systems. KEB Drive Controllers support the implementation of new machine concepts with extended requirements for performance, communication and integrated safety. They operate different motors in the power range from 0.37 kW to 900 kW and offer a variety of application-specific special functions for your plastics machinery.

## PRECISION, PERFORMANCE AND QUALITY

Precision, performance and quality - the strengths of our systems are particularly evident in plastics machinery, one of our main application fields. They are complemented by our worldwide service, a global application team and more than 20 years of experience in plastics applications.

360° for plastics machines? Today, our portfolio offers individually coordinated 360° solutions – starting with the software including a cloud solution, through the HMI and PLC, right up to the Drive Controller. The system is rounded off by servo motors and geared motors with matching permanent magnet brakes.



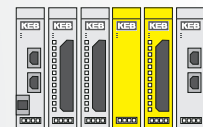


## SOFTWARE 90°



We offer suitable software solutions for applications in the field of plastics. They can, for example, be integrated directly into the Drive Controller in order to process time-critical tasks effortlessly. In addition, software solutions are provided separately for the PLC, which can be supplemented by a finished HMI. Both the PLC software and the HMI can be individually expanded. This makes your plastics machine to your business card without any problems.

## PLC 180°



KEB's scalable system consisting of control technology and functional safety can be optimally adapted to the requirements of your plastics machine. Our portfolio covers both the need for high processing power for fast implementation of the machine functions and a sufficient display size for the HMI. The systems can be automated with open software tools based on standards such as IEC 61131. So, individual solutions can be created according to your requirements in the area of control, visualization and safety for your machines.

From our wide portfolio, the team for plastic applications creates a solution tailored to your requirements. The KEB Automation Group is internationally positioned and achieves an optimal result for your machine through a continuous exchange with you. We accompany the process from the idea through development and commissioning up to the after sales service.

# INJECTION MOLDING TECHNOLOGY



## **SERVOPUMP KERNEL**

Intelligent servo pump control



## **COMBIVIS studio 6**

Automation tool for CNC, PLC, safety and drives



## **COMBIVIS studio HMI**

Machine visualization



## **COMBIVIS CLOUD**

Ready for IoT



## **COMBIVIS CONNECT**

Remote maintenance



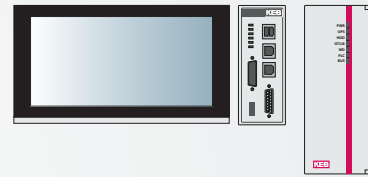
In addition to the COMBIVERT H6 and F6 for fully electric solutions, KEB also offers the function of a servo pump control for hybrid machine solutions. The adjustment of the pump speed in the partial load range and outside the machine cycle in combination with a volume flow or pressure control directly via the pump system offers up to 70 percent energy saving potential in hydraulic systems.

When the pump is operated according to requirements, noise emissions are reduced by up to 20 dB(A) and contribute to a better environment and economy.



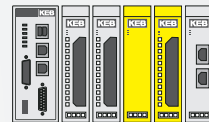
### EMBEDDED CONTROLS IPC CONTROLS

Scalable real time control solutions



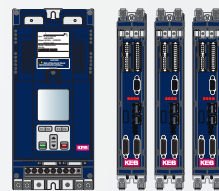
### REMOTE I/O SAFETY PLC

EtherCAT® based I/O system,  
Safety over EtherCAT®



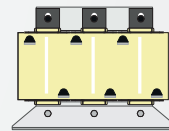
### DRIVE UNITS

Modular drive systems



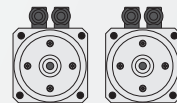
### FILTER

Flexible mains and  
motor filters



### MOTORS

Extensive range of  
motors



Highly dynamic control is achieved with the DL4 motor series, which is matched to our drive controllers. This is characterized by a low mass moment of inertia in conjunction with an internal gear pump, for example. Thanks to the control parameters of the servo pump integrated in the COMBIVERT F6, the cycle times of the actuators can be drastically reduced.

In cooperation with hydraulic experts, we developed effective tools and auto tuning functions. This results in reduced system commissioning, which in turn reduces operating costs and time.



### HIGHLIGHTS

- Controller auto tuning
- Pump protection function
- Setup wizard
- Pump energy consumption
- I/O interface in (bar - l/min)



## EXTRUSION TECHNOLOGY



### HMI

Modern HMI with many ready-made functions



### CONTROLLER TUNING

Specially developed controllers with auto tuning function



### FUNCTION BLOCKS

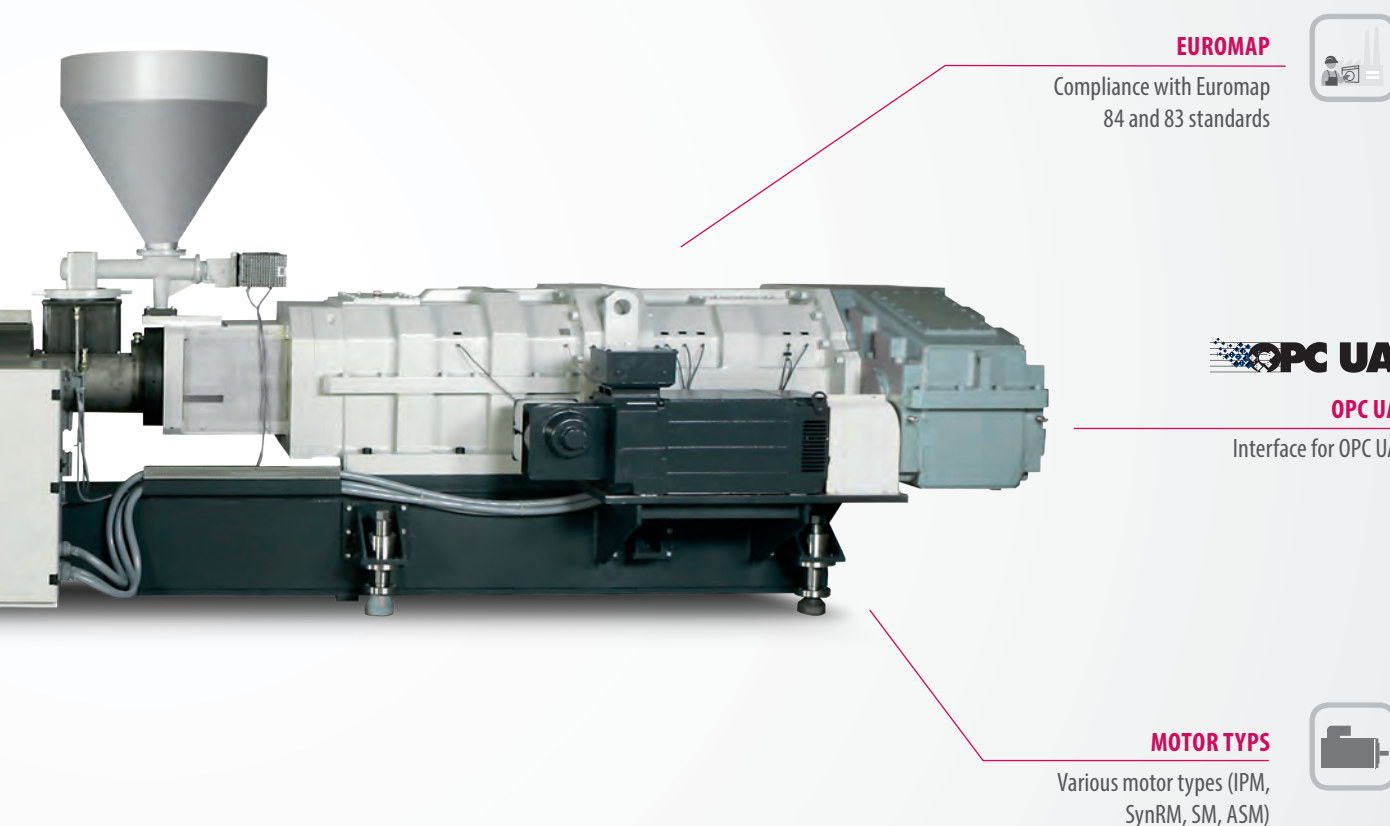
Ready-made function blocks for extruder application



## THE 360° SOLUTION FOR YOUR SUCCESS:

For the complete automation of an extruder line, KEB offers an extensive project framework, with which it is possible to operate the extruder itself as well as the auxiliary drives – from the newly developed extruder software, which is perfectly tuned to the performance of our control technology, via the drive controller and right up to the motors.

Our portfolio enables the user to generate a 360° solution for his machine. The extruder solution can be optimally adapted to the requirements of the customer's machinery both in terms of software and hardware technology.



#### EUROMAP

Compliance with Euromap  
84 and 83 standards



#### OPC UA

Interface for OPC UA

#### MOTOR TYPES

Various motor types (IPM,  
SynRM, SM, ASM)



## EXTRUDER SOFTWARE

The extruder software features a modern HMI design and a basic control project with ready-made function blocks. Through the open solution, which is programmed in line with Euromap, you can enhance and individually design the control project and HMI according to your requirements. In its basic structure, the software also offers many application-specific functions. An integrated setup wizard enables users to fully set up their machines via the HMI. Furthermore, the software has excellent controllers that can be independently configured via auto tuning and have been specially developed for extruder applications.

In addition to the process visualization, the HMI also offers additional features such as complete user management, a long-term trend display and comprehensive error handling to facilitate visualization and programming for the user.



### HIGHLIGHTS

- Extensive project framework to automate extrusion lines
- Perfectly coordinated hardware and software
- Special controllers for extruder applications
- Developed according to Euromap standards



## KEB'S COUNTRY ORGANISATIONS

### **Austria** | KEB Automation GmbH

E-Mail: [info@keb.at](mailto:info@keb.at) Web: [keb-automation.com](http://keb-automation.com)

### **Benelux** | KEB Automation KG

E-Mail: [info.benelux@keb.de](mailto:info.benelux@keb.de) Web: [keb-automation.com](http://keb-automation.com)

### **Canada** | KEB Canada

E-Mail: [sales@keb-automation.ca](mailto:sales@keb-automation.ca) Web: [keb-automation.ca](http://keb-automation.ca)

### **Czech Republic** | KEB Automation s.r.o.

E-Mail: [info@keb.cz](mailto:info@keb.cz) Web: [keb-automation.com](http://keb-automation.com)

### **France** | Société Française KEB SASU

E-Mail: [info@keb.fr](mailto:info@keb.fr) Web: [keb-automation.com](http://keb-automation.com)

### **Germany** | **Geared Motors**

KEB Antriebstechnik GmbH

E-Mail: [info@keb-drive.de](mailto:info@keb-drive.de) Web: [keb-automation.com](http://keb-automation.com)

### **Germany** | **Headquarters**

KEB Automation KG

E-Mail: [info@keb.de](mailto:info@keb.de) Web: [keb-automation.com](http://keb-automation.com)

### **Italy** | KEB Italia S.r.l. Unipersonale

E-Mail: [info@keb.it](mailto:info@keb.it) Web: <https://blog.keb.it>

### **Japan** | KEB Japan Ltd.

E-Mail: [info@keb.jp](mailto:info@keb.jp) Web: [keb.jp](http://keb.jp)

### **P. R. China** | KEB Power Transmission Technology (Shanghai) Co. Ltd.

E-Mail: [info@keb.cn](mailto:info@keb.cn) Web: [keb.cn](http://keb.cn)

### **Poland** | KEB Automation KG

E-Mail: [roman.trinczek@keb.de](mailto:roman.trinczek@keb.de) Web: [keb-automation.com](http://keb-automation.com)

### **Republic of Korea** | KEB Automation KG

E-Mail: [vb.korea@keb.de](mailto:vb.korea@keb.de) Web: [keb-automation.com](http://keb-automation.com)

### **Spain** | KEB Automation KG

E-Mail: [vb.espana@keb.de](mailto:vb.espana@keb.de) Web: [keb-automation.com](http://keb-automation.com)

### **Switzerland** | KEB Automation AG

E-Mail: [info@keb.ch](mailto:info@keb.ch) Web: [keb-automation.com](http://keb-automation.com)

### **United Kingdom** | KEB (UK) Ltd.

E-Mail: [info@keb.co.uk](mailto:info@keb.co.uk) Web: [keb-automation.com](http://keb-automation.com)

### **United States** | KEB America, Inc.

E-Mail: [info@kebamerica.com](mailto:info@kebamerica.com) Web: [kebamerica.com](http://kebamerica.com)

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THE COMPLETE WORLDWIDE KEB PARTNER NETWORK



# Automation with Drive

# [keb-automation.com](http://keb-automation.com)

KEB Automation KG Suedstrasse 38 32683 Barntrup Germany Phone +49 5263 401-0 E-Mail: [info@keb.de](mailto:info@keb.de)