BAUMÜLLER

PLASTICS

Your technology partner for the plastics industry
Dynamic and precise application solutions from a single source

Sustainable, innovative and customized drive solutions for plastics machines,
as individual components or complete systems.

ASB Form Your Vision

Damla Plast extrusion

DAVIS·STANDARD

BOY Spritzgiessautomaten

ENGEL be the first

GABLER THERMOFORM TECHNOLOGY

HÜRMAK

HUSKY

KraussMaffei

Polimáquinas

Your technology partner for plastics machines

Numerous companies from a wide range of fields in the plastics sector have been relying on the innovative capacity and expertise of Baumüller for years. Baumüller also plays an important pioneering role in the development of high-torque motors and the servo pump solution.

Baumüller offers dynamic and precision application solutions from a single source. We develop innovative and tailored solutions according to your requirements, which are implemented either as an individual module or a complete system and provide you with decisive competitive advantages.

SUSTAINABILITY

Sustainable drive solutions for plastics machines

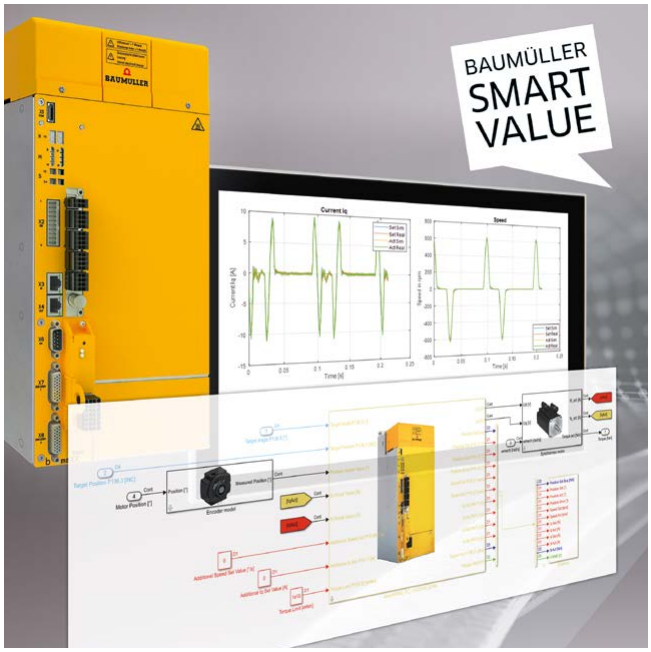
Plastic is one of the most diverse and adaptable materials in the world. Numerous industries use it. However, virgin material is becoming increasingly less abundant. A rethink is the order of the day. An increasing number of plastic processors now use recycled material. The recyclate fraction is expected to rise to around 50 percent by 2050.

Sustainability and Circular Economy

Global warming and the measures introduced by politicians to meet global climate targets are giving the issues of sustainability and the circular economy a considerable boost. The processing of recyclate, the design and use of thin-walled products in order to reduce the use of material or, for example, the substitution of heavy metallic materials with plastics in the area of e-mobility are being implemented with ever greater consistency.

Digital tools for the optimum

Digitalization also plays an important role in the ambitious climate targets. It is a powerful tool for using the potential of the drive technology with optimal manpower and resources efficiently, for example, by using simulation software:
With the help of the digital twin, drive components can be designed efficiently and put into service virtually. Another example are the modern communication interfaces for intelligent machine communication in the production cluster, with peripheral devices or, for example, with downstream and upstream value-adding steps.

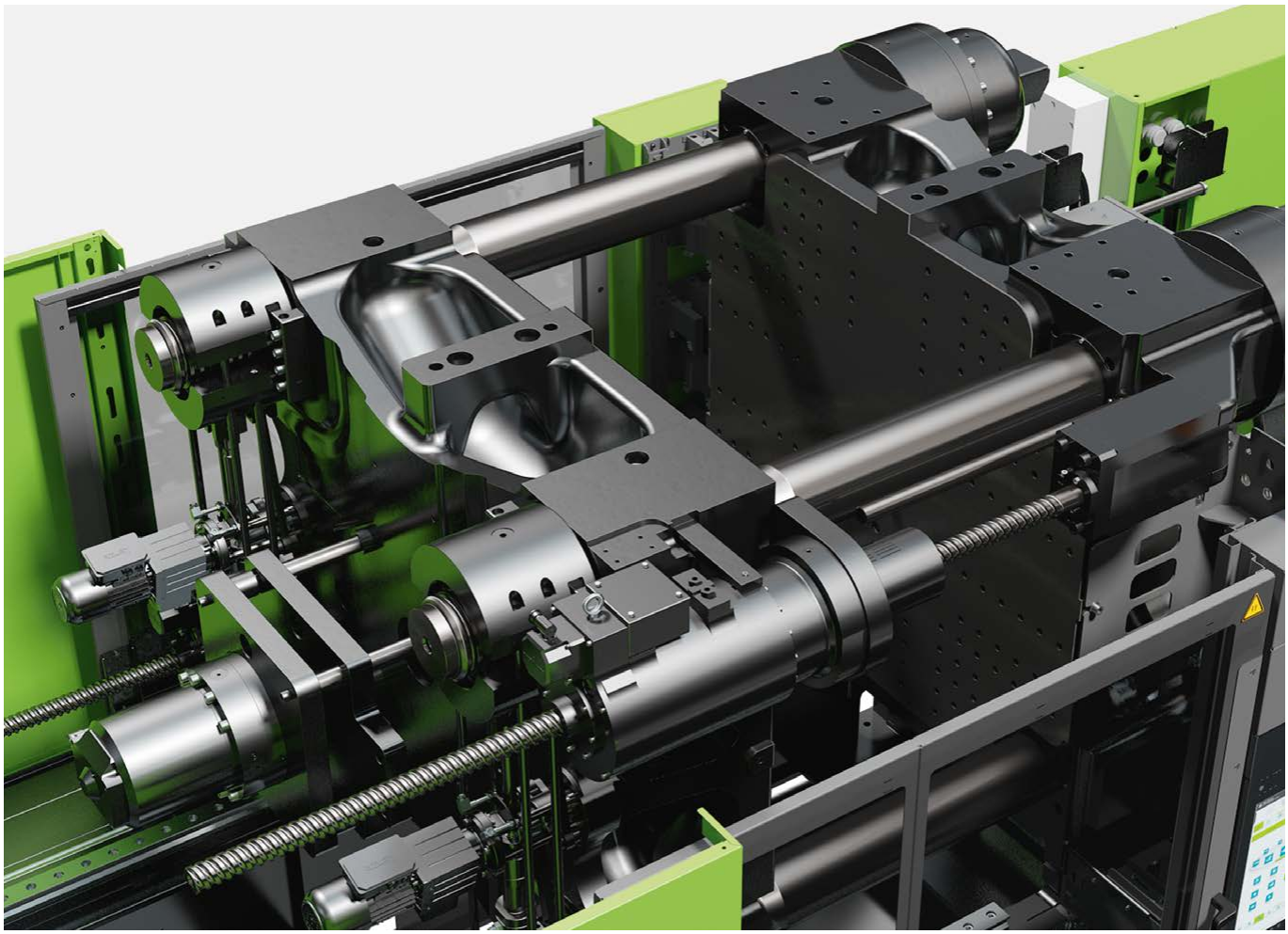


Efficient drive technology versus rising energy costs

The use of electric drive technology with its high precision and dynamics makes an important contribution to high productivity with very good process reliability. This reduces rejects to a minimum and therefore enables further savings. In addition, energy-efficient drive concepts help to reduce the overall energy requirements. Baumüller offers a very suitable portfolio of solutions for the electrification of the drive axes in plastics machines. This enables the realization of hybrid and fully electric machines.

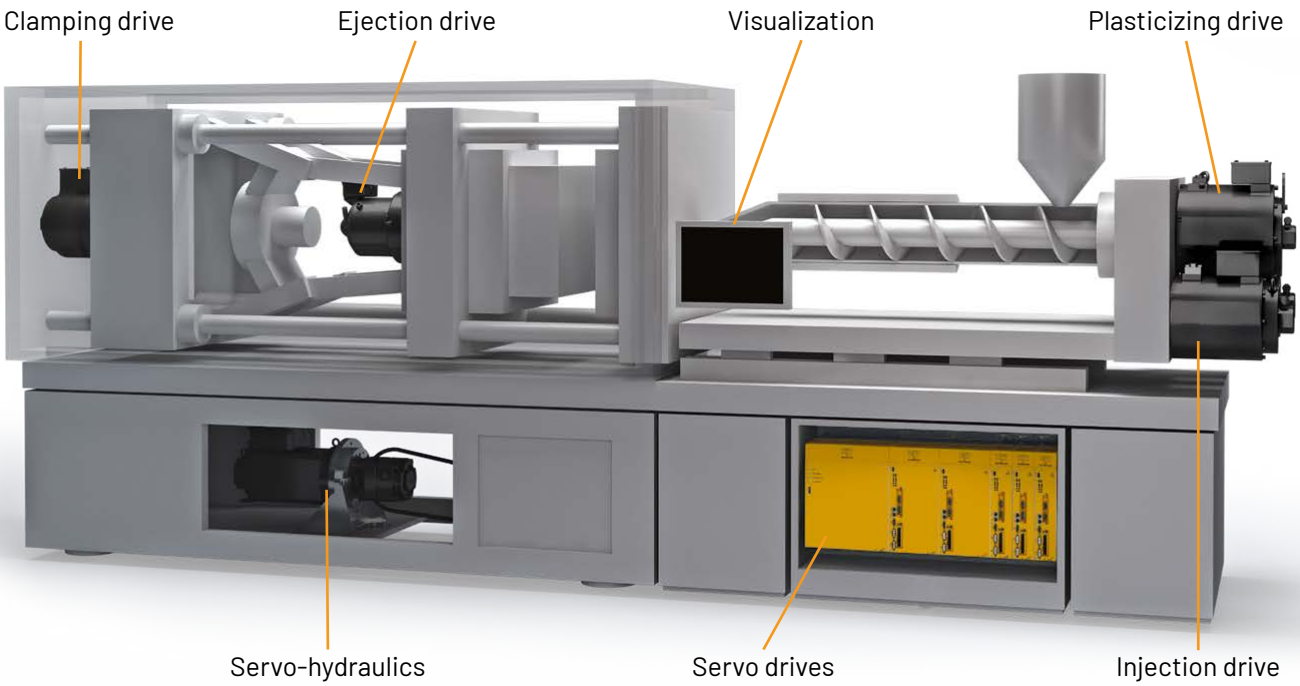
APPLICATIONS

Injection molding machines



Baumüller offers a comprehensive portfolio for servo-hydraulic, hybrid, and fully electric injection molding machines. With optional regenerative systems, intelligent software and simulation solutions, as well as efficient synchronous motor technology. The drive technology products make an important contribution to the energy-efficient and precise production of even highly complex injection molding parts.

- Solutions for hybrid and fully electric machines
- Intelligent controller functions for plasticizing and injection drive
- Energy-efficient and dynamic with servo-hydraulic drives



Benefits of the electric drives and intelligent controller functions

Clamping drive

- Extremely compact type of construction and excellent dynamics for compact machine designs and short cycle times
- Intelligent “error response to encoder breakage” controller function protects against tool damage

Plasticizing drive

- High energy efficiency, even within the partial load range
- Shorter cycle times due to parallel functions
- Direct drives enable a compact machine construction, even with multi-layer processes

Injection drive

- High accuracy due to precise control
- Intelligent “PWM frequency switchover” controller function enables longer dwell times for higher product quality
- Intelligent “gantry” controller function for modular electrification of the injection unit

Ejector drive

- Extremely compact type of construction and excellent dynamics for compact machine designs
- Prevention of oil contamination of end products in the tool space
- Flexible integration in the machine room

Servo-hydraulics

- Significantly lower energy consumption through control of the pump drive
- Lower noise emissions
- Higher process and product quality
- Monitoring of the thermal pump load

Servo drives

- Compact system saves control cabinet space
- Ethernet-based field buses enable vertical integration in the control architecture
- Flexible drive topologies up to 315 kW
- Intelligent controller functions

Solutions for hybrid and fully electric machines

Baumüller offers a wide range of system solutions for the injection molding industry. The best choice of system depends primarily on the product manufactured by the machine and thus on the machine configuration. The number of axes to be electrified also plays an important role.

Clever buffering

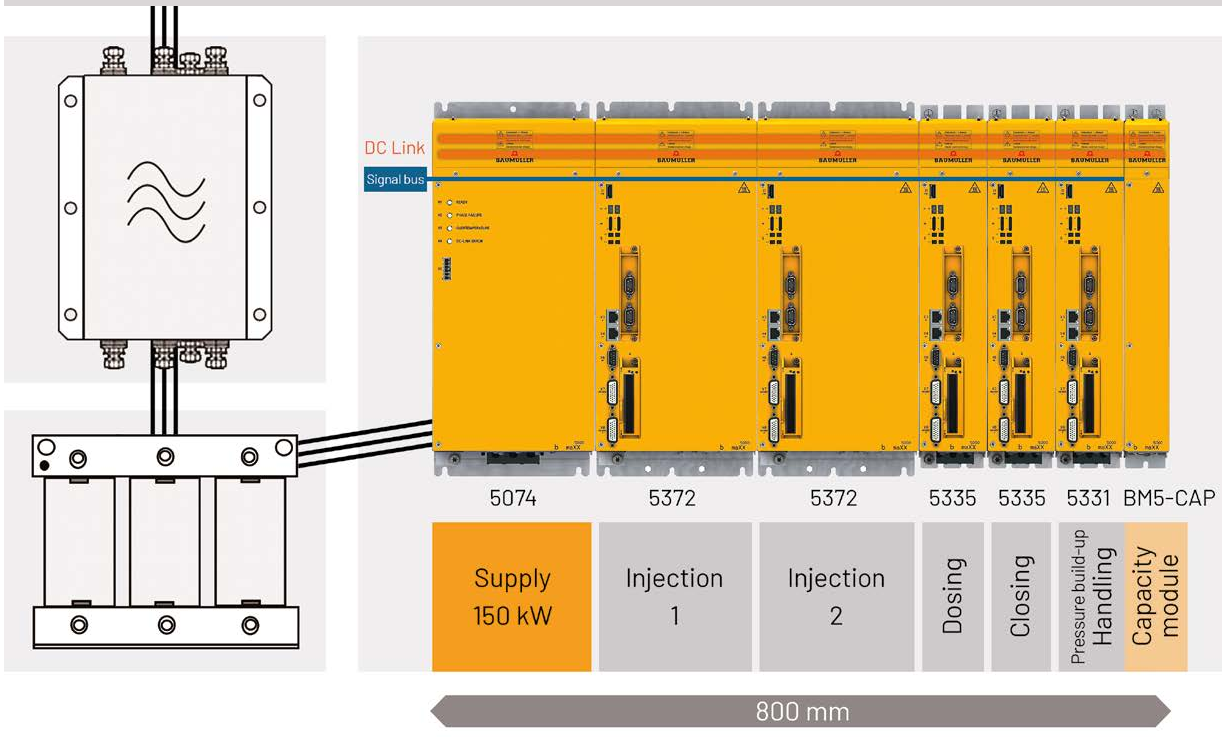
Thanks to its scalability, the compact drive system with multiple drives can be optimally adapted to the power requirements of the injection molding machine. Moreover, it is no longer necessary to draw the short-term peak power required for individual drives from the mains. Instead, the energy can be distributed within the DC link system.

Your benefits

- Better energy efficiency
- Smaller feed units
- Minimized thermal power loss
- No need for / downsizing of brake resistors
- Space-saving and cost-lowering

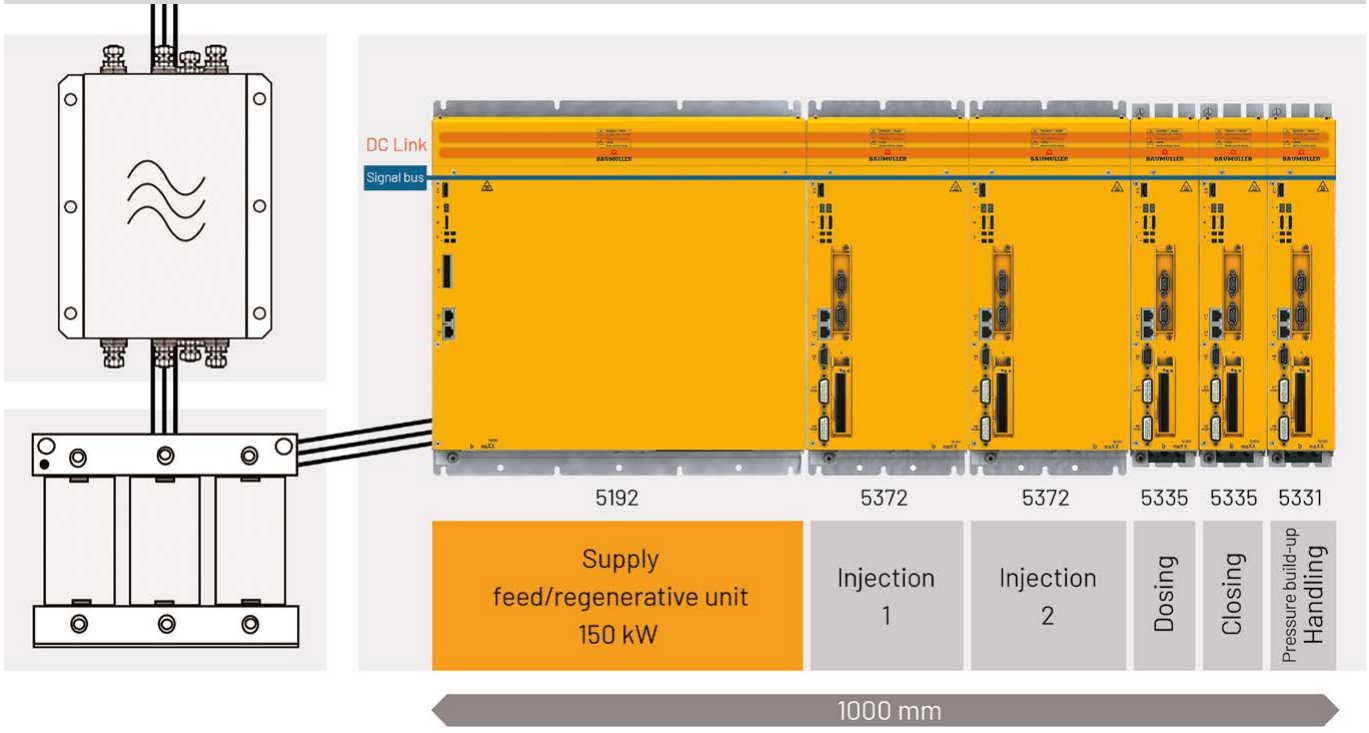
Optionally, a **capacity module** can be integrated into the DC link for buffering excess energy. This means that energy can be stored and freed up again as needed in the event of a power failure or when braking the drive axes. Furthermore, after a power failure or malfunction, it is possible to move the drive axes to a defined position depending on the available residual energy. This prevents damage and accelerates a machine restart.

Drive topology with feed unit for fully electric machines



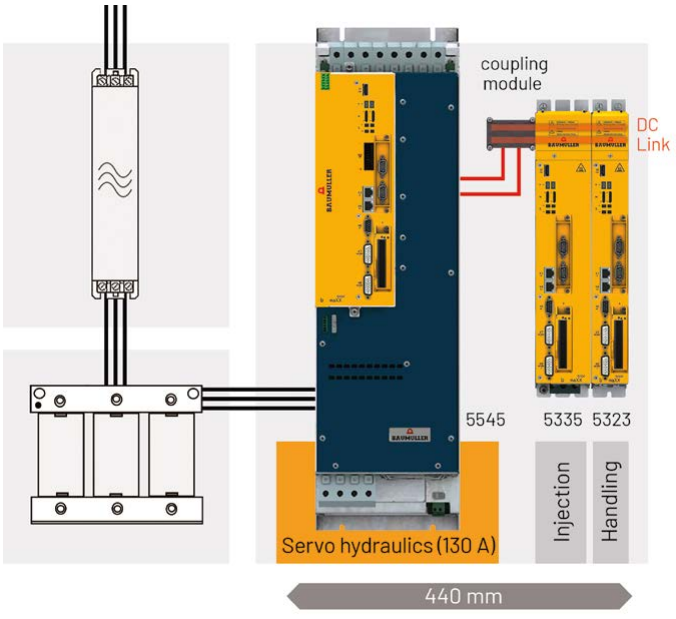
In addition to supplying power to the power modules, the use of a **regenerative feed unit** also enables the sinusoidal feedback of excess braking energy into the power supply system. This regenerative system thereby makes an additional contribution to reducing energy consumption.

Drive topology with regenerative feedback unit for fully electric machines



For **servo-hydraulic machines** with one electric axis, a powerful mono unit is used in combination with a compact and dynamic servo motor.

The module system combined with a mono unit in a DC link system is useful, for example, for the electrification of a few axes in combination with a high-performance drive axis. The starting point is often an already implemented servo-hydraulic drive, which is supplemented by additional electric axes. In this case, the large, powerful mono unit is linked directly to the module system via intelligent connection technology. This saves space in the control cabinet and is easy to implement, as both unit types use the same firmware. The degree of electrification of servo-hydraulic machines can thus be increased in an economic way thanks to the limited engineering work required and the elimination of a separate power feed.

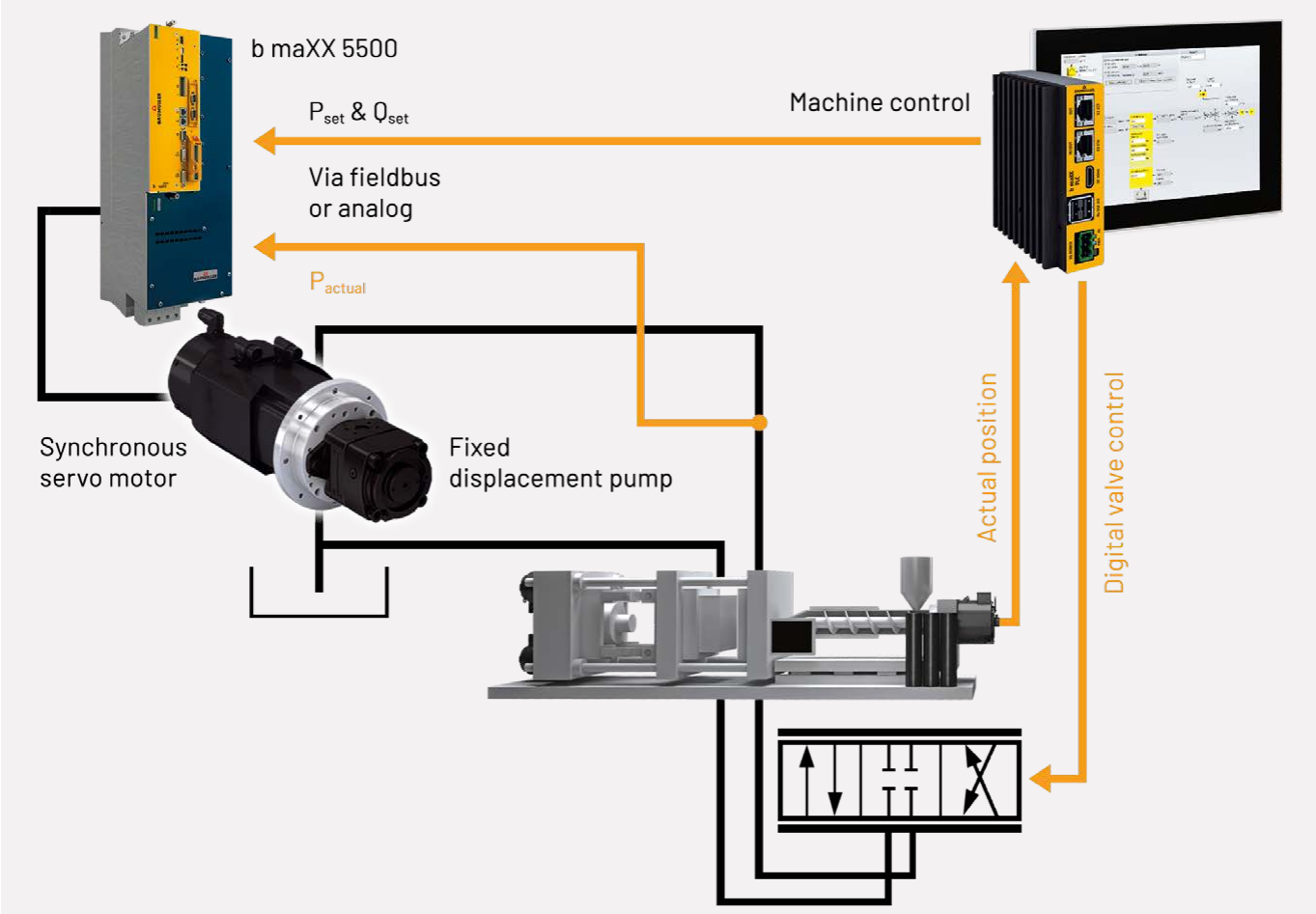


All drive solutions are compact and scalable, and allow high power density. Due to the identical controller firmware, costs for project planning, maintenance, and service are also reduced.

SERVO HYDRAULICS

The servo-hydraulic drive system

Example of the structure of a servo-hydraulic system in an injection molding machine



The servo-hydraulic system consists of a servo drive, which drives a synchronous servo motor. This motor drives a fixed displacement pump. The pressure and volume flow set values (Pset and Qset) are sent from the control unit to the servo drive. Pressure and flow rate are controlled on the servo drive by adjusting the speed. As in the conventional hydraulic systems with standard motors, the actual positions are read out via the machine control unit.

The machine builder provides the system supplier with the flow rate and pressure values required for the design of the drive system. Baumüller undertakes the design of the entire drive system, including the pump, motor, and the servo drive.

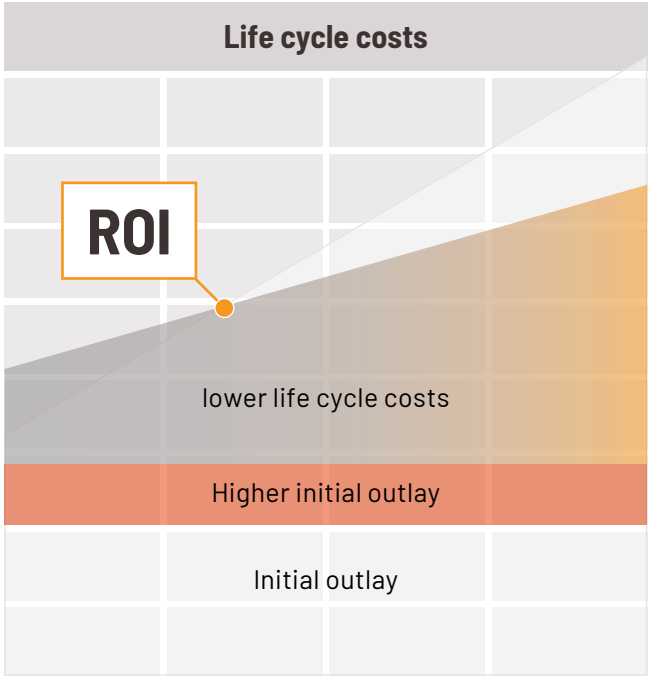
Energy efficiency and dynamics

Baumüller's servo hydraulic system combines the advantages of hydraulic power transmission with those of electric servo drive technology. Servo pump drives for the hydraulic supply consist of a fixed displacement pump and a servo motor. The quantity (flow rate) and pressure can be controlled precisely by highly dynamic changing of the motor speed. If neither flow rate nor pressure are required, the motor stops and does not consume any energy. The following applies to the pressure control: The motor turns at the lowest speed. It only consumes the energy necessary to maintain the pressure control.

The integrated Baumüller controller function enables simple linking to existing machine control systems. The actuation signals can be adopted directly from conventional hydraulic systems. This simplifies the machine integration and reduces commissioning times to a minimum.

The control of the drive and the low energy consumption of the components, especially in the partial load range, results in a highly energy-efficient and yet economical solution that you can use in your machines as a decisive competitive advantage.

Combine hydraulics and servo technology and save up to 50% on energy costs



Annual power cost for a conventional hydraulic machine at 300 days continuous operation and energy unit price of 0.30 € per kWh:

30 kW * 7,200 h * € 0.30/kWh = € 64,800

Typical energy consumption reduction of 30%:

€ 64,800 * 0.3 = € 19,440

Amortization of initial costs:

< 1 year

Not included in this analysis:

- ✓ Reduced cycle times
- ✓ Improved accuracy
- ✓ Less demand for air conditioning
- ✓ Smaller cooling system
- ✓ Longer service life of oil, etc.

Advantages

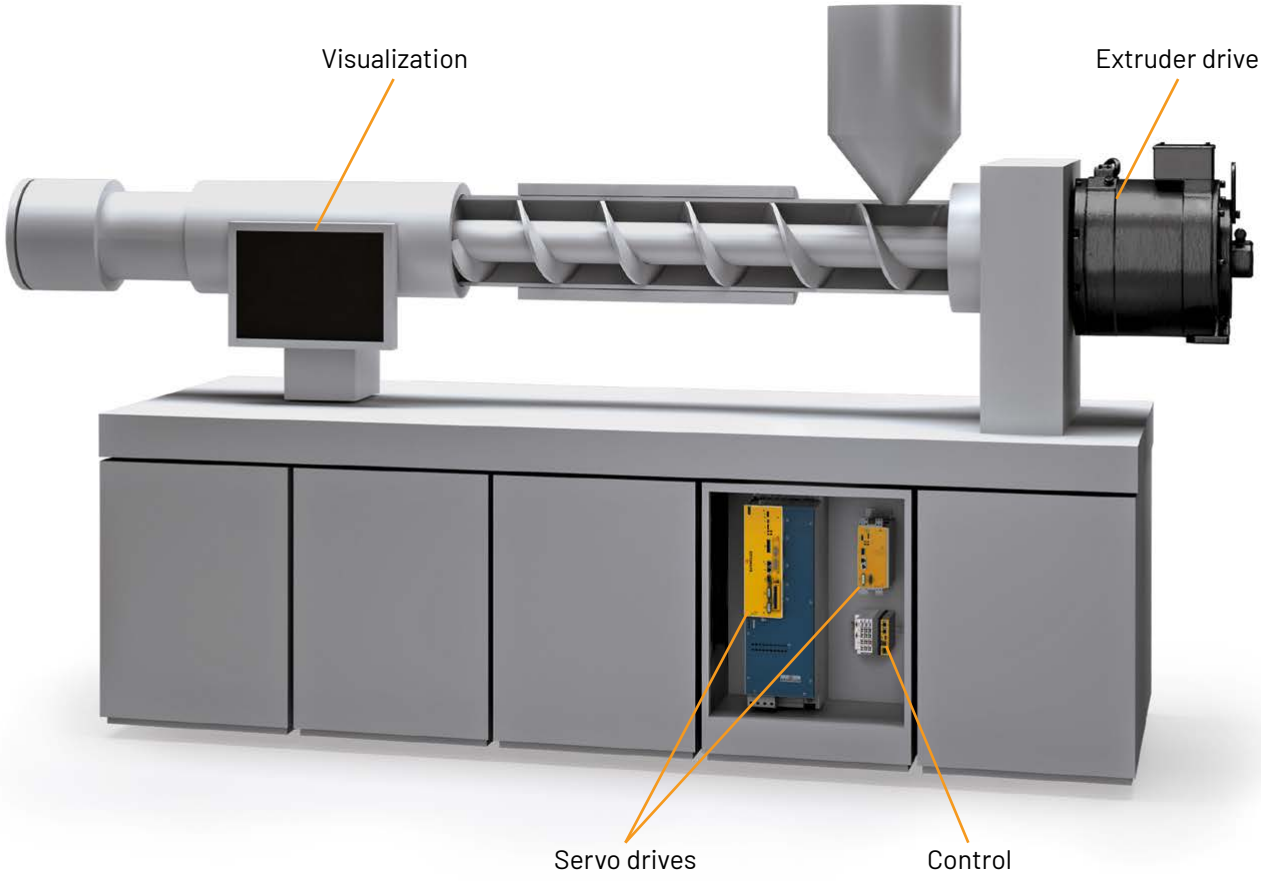
- ✓ Significantly lower energy consumption through control of the pump drive
- ✓ Lower noise emissions
- ✓ Higher process and product quality
- ✓ Downsizing of the drive components due to higher speeds -> compact drive system and smaller machine footprint

APPLICATIONS

Solutions for extrusion machines

Baumüller offers energy-efficient direct drive technology for extrusion machines. With this technology you can minimize drive losses, reduce background noise during operation and increase the reliability of the machines. At the same time, the lack of gearing means a smaller size for the machines, which can be designed more compactly.
For special ambient conditions, such as powder processing or production in high humidity regions, water-cooled motors can be used.

- Coaxial design to the dosing unit for multi-layer processes
- Intelligent controller functions for extruder drive
- Optional precise control of material feed through servo drive technology



Benefits of the electric drive and automation

Extruder drive

- High energy efficiency, even within the partial load range
- Coaxial structure for dosing unit enables a compact machine construction even with multi-layer processes
- Intelligent “screw relaxing” controller function: Torque dissipation before switching off the extruder to protect the mechanics
- Sensorless operation of synchronous and asynchronous motor
- Field-oriented control for high torque accuracy
- Optional: precise control for material feed of the extruder screw by servo drive technology

Automation and technology functions

- Extensive libraries included for machine functions, for example, exact and dynamic temperature control of the heating elements for energy saving
- Applicable for networking and control of machines and machine modules
- Enables complex data analyses
- Software for IoT functionalities are implemented
- OPC UA module ensures the interoperability at the machine level

Visualization

- Powerful hardware
- Display sizes from 7” to 15.6”
- Extensive, integrated software package
- Classic or web-based visualization

APPLICATIONS

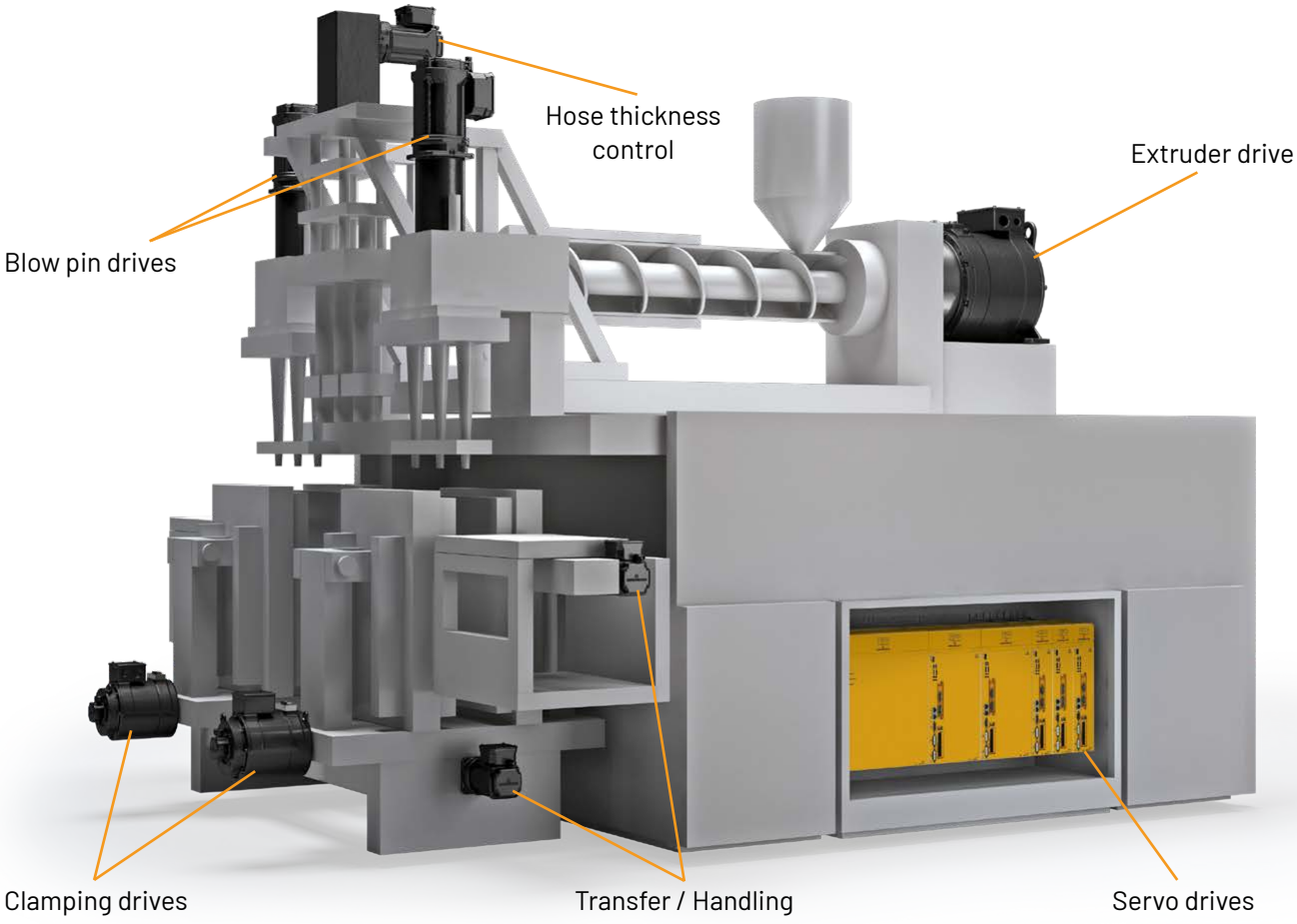
Solutions for blow molding machines

The drive concepts from Baumüller are the optimal solution for reducing energy requirements in blow molding machines. Water-cooled motors and converters in particular succeed with their highly compact design and rapid heat dissipation.

Application example of electric extrusion and closing unit:

"High torques and precise speed control are required to melt the pellets in the extrusion unit. The main advantage of the fully-electric closing unit is the faster build-up of clamping force and the faster traversing speeds. In addition, the electric clamping system runs like clockwork. Viewed overall, the unit handles the material more carefully and is more energy efficient."

Jörg Johannpaschedag, CEO of Bemaco Engineering GmbH



Benefits of the electric drives

Extruder drive

- High energy efficiency
- Precise speed control and therefore high product quality in the raw material
- Coaxial structure for extruder screw enables a compact machine construction even with multi-layer processes

Hose thickness control

- Precise control and therefore high reproducibility of the wall thickness in the end product
- Reduced cooling time due to constant thickness
- High product quality due to precise and level surfaces without formation of fins
- Optimization of the use of materials

Clamping drive

- Faster build-up of clamping force and very fast traversing speeds, and therefore high productivity
- High locking forces and precise control for high reproducibility of a uniform weld and high product quality
- Lower noise emissions to protect production workers

Blow pin

- Precise control and therefore high reproducibility, e.g. neck contour of the subsequent blow mold part
- No wear-susceptible hydraulics
- High robustness and machine availability

Handling

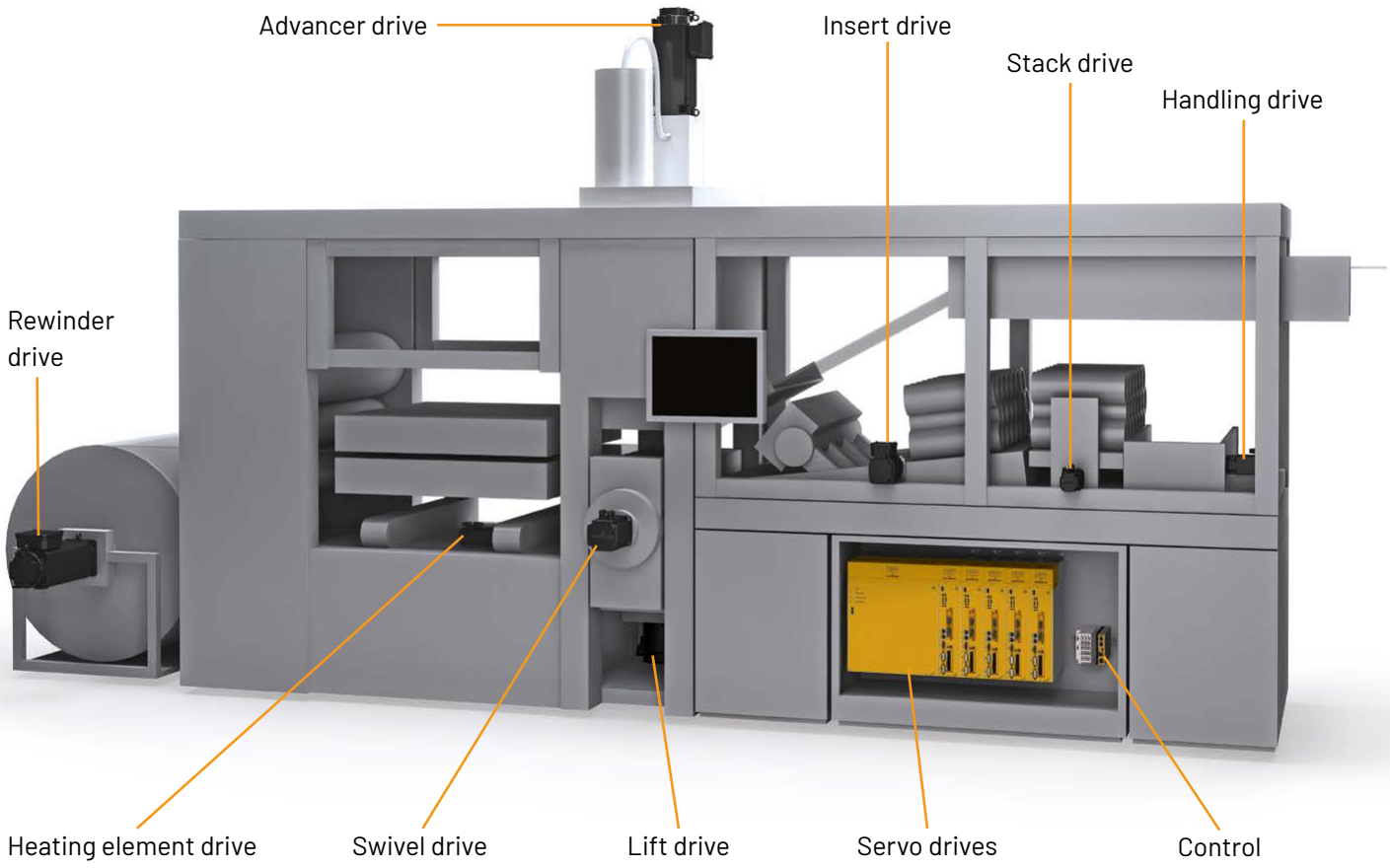
- High dynamics, short transfer times and thus high machine productivity

APPLICATIONS

Thermoforming machine solutions

Baumüller offers a complete automation solution for fast and high-precision thermoforming machines.
From dynamic, water-cooled servo motors to reduced heat input to the machine to control using pre-assembled motion modules, e.g. for temperature regulation, Baumüller offers the full system of hardware and software. Here, also, the compact and flexible modular system b maXX 5300 offers many advantages.

- Optimized movement sequences thanks to cam disk technology
- Clever drive topology by using the DC link system
- Optional touch probe for fast reading of synchronization markings



Benefits of the electric drives and automation

Automation and technology functions

- Exact and dynamic temperature control of the heating elements helps to save energy
- Cam disk technology, e.g. in the lift drive, avoids erratic movements, and ensures optimized movement sequences
- Optional: touch probe for fast reading of synchronization markings, and therefore for exact cutting to size of material

Motors

- Extremely robust motors for high shock and vibration loads in swivel, lift or advancer drives, among other things due to special bearing and casting technology
- Motors with excellent acceleration properties for high cycle rates

Servo drives

Clever drive topology by using the DC link system:

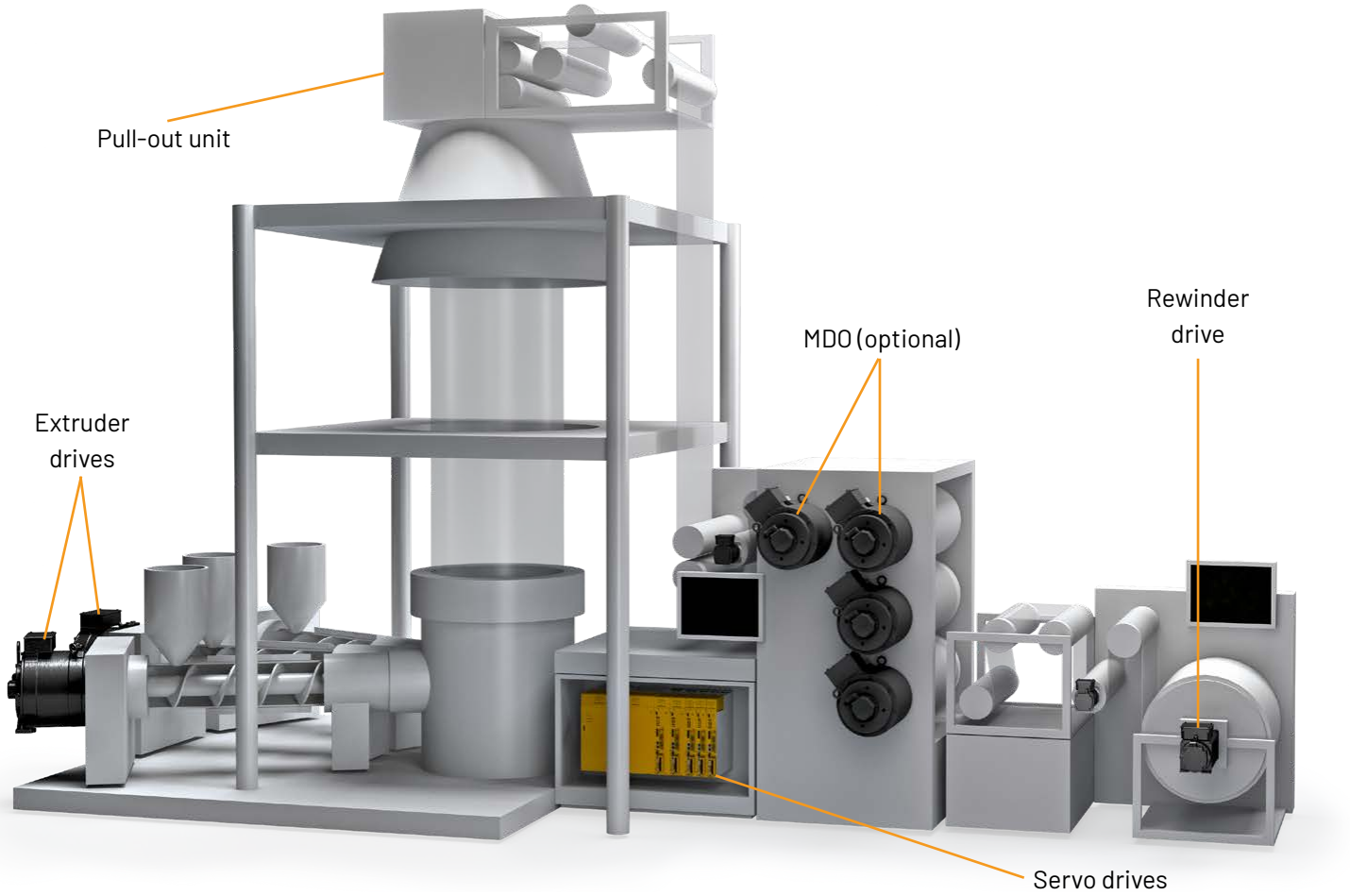
- Storage of energy in the DC link or in additional capacities to provide energy again when it is needed -> higher energy efficiency with lower energy costs
- The electrical drive output can therefore be dimensioned to be smaller and more economical if necessary
- Due to the energy stored in the DC link, controlled shutdown of the system in the event of faults is possible, e.g. in case of power outages
- Compact modular system saves space in the control cabinet

APPLICATIONS

Solutions for blown film machines

Recycling and reusing plastics to reduce the use of resources is a sustainable solution. The use of recyclate helps to decrease CO_2 release. We offer highly efficient drive systems that help to reduce emissions. Green and high-precision synchronous motors also offer a very high efficiency within the partial load range and are therefore ideally suited for blown film machines. Choosing the right motors and exactly dimensioning the drives are decisive for minimal operating costs and thus an optimized CO_2 footprint.

- An optional screw pull-out to the rear does not require time-consuming disassembling of the extruder screw
- b maXX 6300 or b maXX 5300 modular system with optional safety functions for optimal productivity and seldom machine stoppage



Benefits of the electric drives and intelligent controller functions

Extruder drives

- High energy efficiency thanks to synchronous technology, even in partial load mode, and with a broad material mix
- Drive and pure software-based smart energy monitoring for optimal transparency and comparability without additional hardware costs
- Drive-based, fast block monitoring for intelligent protection of the extruder screw
- Coaxial mounting relative to the extruder screw enables a compact machine layout when using high-torque motors. Combined with the optional screw pull-out to the rear, time-consuming disassembling of the extruder screw is not necessary
- Maximum cooling and type flexibility by using efficient synchronous motor-transmission combinations

Optional MDO unit (stretching unit)

- Virtually cogging-torque free motors in combination with intelligent drive functions for cogging torque compensation enable optimal film stretching and material quality
- Precise speed control of the drive axes leads to optimal film thickness and film surface
- High torque density and compactness of the motors help to achieve smaller center-to-center spacings of the rollers
- b maXX 6300 or b maXX 5300 modular system with optional safety functions such as STO, SLP, SLD, SS1 for optimal productivity and seldom machine stoppage during roller maintenance and cleaning work

Pull-out unit

- Master-Slave operation is possible for high-precision speed control and material quality

Rewinder

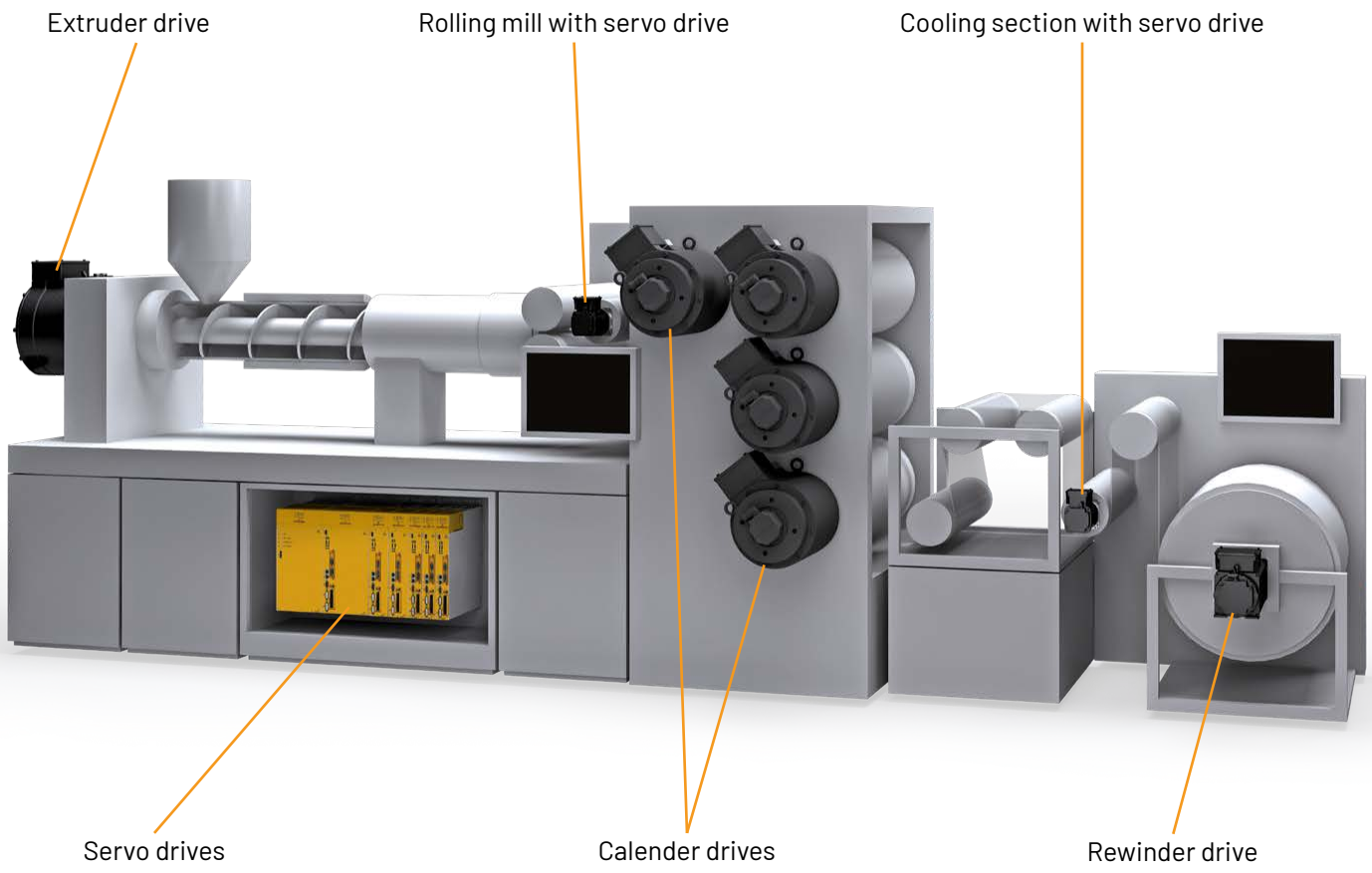
- Wide field weakening range of the motors enables optimal and economic dimensioning of the drive technology

APPLICATIONS

Solutions for calender machines

The use of direct drive technology enables the production of very high-quality films, as the lack of gearing means that torque fluctuations can be reduced even at low speeds. With specific functionalities in the converter combined with the servo motors, the cogging torque is almost fully compensated. Using the flexible modular system, machine modules can also be easily connected for further processing.

- Coaxial structure for extruder allows for compact construction
- Intelligent controller function for extruder protects the mechanics
- Cogging torque compensation enables high foil quality



Benefits of the electric drives and intelligent controller functions

Extruder drive

- High energy efficiency due to synchronous technology
- Precise speed control in the drive and therefore high product quality in the calender raw material
- Coaxial structure for extruder screw enables compact machine construction
- Intelligent “screw relaxing” controller function for gentle torque dissipation before switching off the extruder to protect the mechanics

Calender drive

- Virtually cogging-torque-free motors in combination with intelligent drive functions for cogging torque compensation enable high foil quality
- Precise speed control of the drive axes leads to optimal foil thickness and foil surface
- High torque density and compactness of the motors help to realize smaller center-to-center spacings of the rollers

Rewinder

- Further weak field area of the motors enables optimal and economic dimensioning of the drive technology ->
  Space saving in the control cabinet

ProSimulation

Immediate access to the simulation

ProSimulation extends the ProDrive parameterization and operating software to include the simulation of drive technology. The extensive library for drive components such as motors, drives, feed and regenerative feedback units, etc. reproduce the dynamic machine behavior quickly and realistically. This enables efficient and economic dimensioning of the drive components. Ideal for complex applications with energy store or non-linear gear ratios.

- Efficient machine development
- Fast commissioning
- Baumüller drive technology as controller models
- Extensive library of common mechanics
- CAD import from other tools available

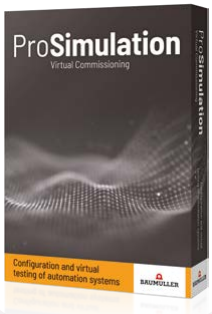
Realistic simulations can be set up and evaluated quickly and easily. This is achieved by the optimum combination of simple operability, open interfaces and convenient evaluation options. In addition to the design, ProSimulation also provides decisive added value during the commissioning phase.
The simulation enables the commissioning although the real machine is not yet set up. This not only saves valuable commissioning time, it also enables drive optimization without the risk of mechanical damage.
By developing an understanding of the system and providing troubleshooting support, ProSimulation also creates added training and service value for machine and plant builders.

User-friendly simulation platform

- Direct integration in ProDrive
- Graphic user interface screens
- Block-oriented modeling
- Simple license model

Convenient evaluation options

- Representation of the simulation results in the oscilloscope function
- Reading in of real reference measurements for direct comparison of simulation and reality
- High-quality data analysis with FFT, M-n diagram, etc.



Precise drive models

- Verified models of the Baumüller drive technology
- Mapping of the dynamic system behavior
- Extensive library of established mechanics

Open interfaces

- Import of models as a functional mockup unit (FMU)
- Import of CAD files for 3D-animation
- Uniform dataset structure between simulation and reality

ProSimulation – Use Cases

Model-based design	Virtual commissioning	Digital twin in operation
Detailed drive design Efficient drive selection	Simultaneous engineering Drive optimization	Training Service support
Economic component selection	Reduced commissioning time	Fast troubleshooting and development of system know-how

Whitepapers about ProSimulation

Simulation tech. in drive dimensioning

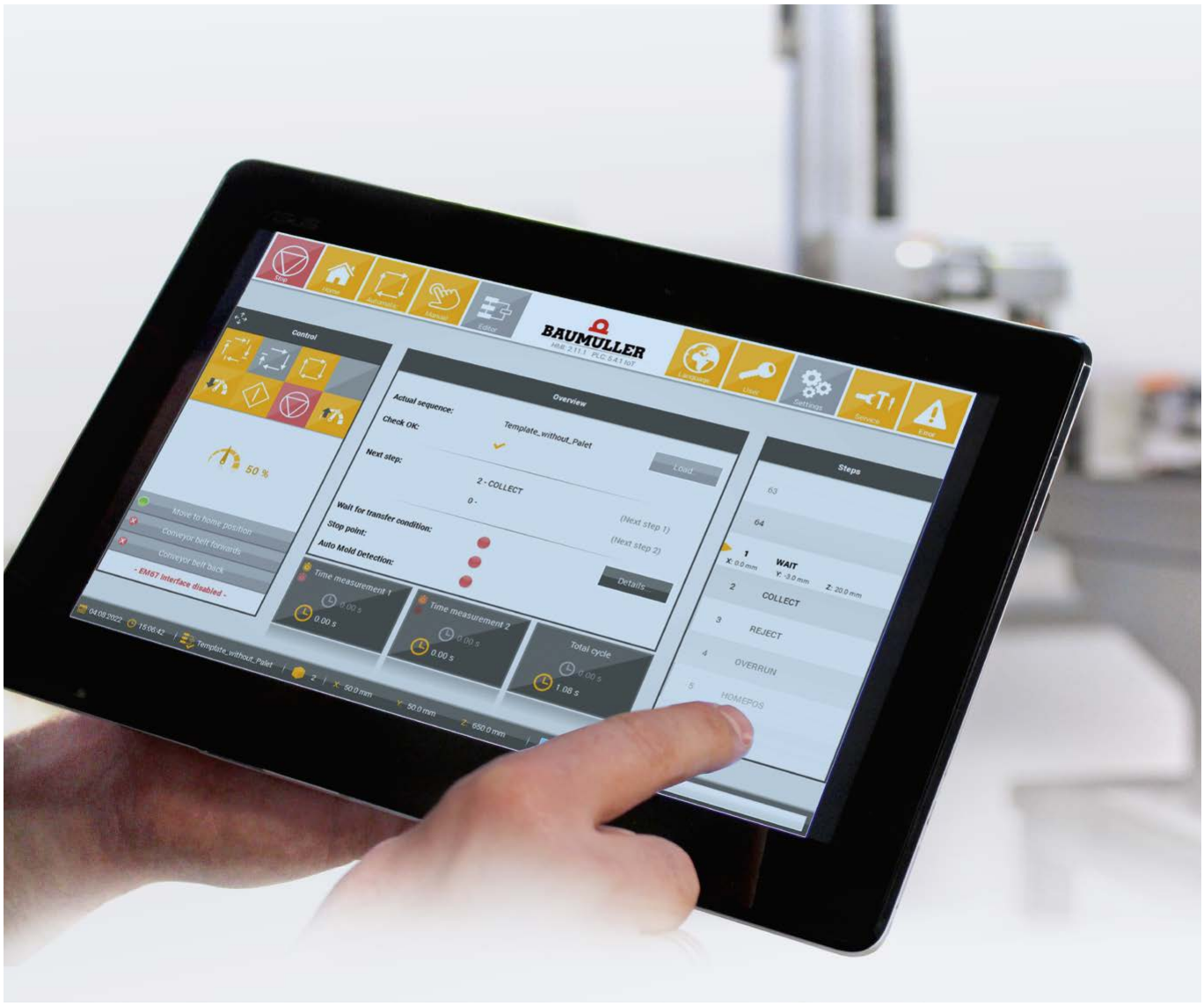
www.baumueller.com/en/insights/whitepaper/whitepaper-drive-dimensioning

Drive simulation as a silver bullet

www.baumueller.com/en/insights/whitepaper/whitepaper-drive-simulation-as-a-silver-bullet

3-AXIS-LINEAR

Handling systems



Baumüller also offers economical and efficient solutions for your material handling application, as well as post-processing and finishing of plastic parts, e.g. inserting, removal, deburring, mounting or sorting.

From the motor to converter and control technology to control systems and software solutions for movement functions, Baumüller offers a range of mechanical handling and automation concepts.

Benefits for your machine concept

Retrofittable solution

- Integrates easily with the existing machine concepts via Euromap 67 or 12 interface
- Short time-to-market
- Integrates quickly with existing mechanics

Quick commissioning

- Plug & Play: Integrates quickly with existing mechanics
- Simple generation of travel ranges without programming time and effort
- Use of pre-defined templates for standard processes

Fast and precise operation

- Jerk-free and continuous movement
- Complete system with drive technology and software in typical Baumüller quality
- Positioning-accurate servo drives as part of the overall system

Intuitive operation

- Control and parameterization with intelligent user guidance
- Simple diagnostics and fast error resolution
- Palletization function even for tilted pallets
- Collision protection
- Teach function

Flexible adaptation options

- Simple loading, saving and adapting of existing travel ranges without programming
- Travel ranges freely definable
- Free definition of tolerance and restricted areas
- USB import and export of travel ranges
- Additional input and output modules possible
- Also suitable for retrofit solutions

Your benefits

- Short commissioning times
- Ready-to-use functionalities usable without programming
- Alternatively, we also offer you the option of programming your system yourself with the 3-Axis-Flex template

Baumüller products

- Baumüller motors
- b maXX 5000 converter
- b maXX 3000 converter
- b maXX PLC mc
- b maXX PCC-04
- b maXX HMI

MACHINE PROTECT

Four controller functionalities for the pla

1. Error response for encoder break

Machine protection integrated

Application example: Closing action of an injection molding machine

The problem: If the encoder fails when closing the injection mold, this can result in great damage to the closing tool of the injection molding machine, as it would close with great force without decelerating and would break. This results in a longer term production stoppage, since a new mold will first have to be built and will additionally cause high repair costs.

The solution: The function "Error response for encoder break" was developed to deal with exactly this problem The controller firmware in the b maXX converters checks the status of the encoder every micro-second and in case of an encoder error automatically converts from closed-loop regulation to U/f operation. The system is then immediately decelerated and stops, depending on parameterization. At the same time, information can be sent to the control unit via the fieldbus so that the entire machine can be regulated and shut down synchronously. The closing procedure is thus finished and the machine comes to a stop without damage.

The benefits:
No damage to the mechanical parts or the tool from uncontrolled coasting down

2. Gantry function with synchronous error response

Machine protection integrated

Example: Movement of the clamping unit of an injection molding machine

The problem:
The movement of the clamping unit of an injection molding machine can be regulated with two gantry axes. If one axis fails and the other one continues running, there will be a tilting of the clamping unit. This can cause mechanical damage. This will lead to high repair costs and production downtimes.

The solution:
The "Gantry function with synchronous error response" prevents the tilting of the clamping unit since both axes always respond synchronously, i.e. at the same time and the same movement. This occurs automatically, and without delay, after detection of an error. As soon as the error is corrected, the axes can continue traversing in gantry operation. Therefore there is no damage to the mechanical parts.

The benefits:
Protection from damage to the mechanical parts from similar response behavior

ION INTEGRATED

stics industry

3. PWM frequency switchover

Machine protection integrated

Example: Holding pressure phase injection molding machine

The problem:
For example, in the holding pressure phase, the speed is extremely low. IGBTs are subjected to high loads. If appropriate measures are not taken, the losses are enormous and the life of the power semiconductor is also short.

The solution:
Due to the "PWM frequency switchover" control function, the cycle losses are reduced and currents can be run for a longer time. It is used during the pressure or torque holding process at low speeds and extends the service life of the IGBT units. Further advantages are reduced IGBT losses and an extended torque or pressure holding duration. By shifting the standard pulse width modulation down from 4 to 2 kHz the torque can be held longer without damaging the end stage.

The benefits:
Service life-friendly, higher currents can be run at low speeds, e.g. in order to maintain the pressure during the holding pressure phase.

4. Spindle/ screw relaxation function

Machine protection integrated

Application example: Extrusion machine

The problem:
The extruder screw is very long and thin. It is turned constantly in a single direction and runs like a clock spring. The screw is distorted. As a result, there is a large impact when the extruder is switched off, and the extruder relaxes. The impact can have a negative effect on the bearing.

The solution:
Before the extruder is switched off, the "Spindle / screw relaxing" controller function switches off the torque via a ramp, so that the screw does not spring back suddenly. The converter reduces the current (= torque) within a few seconds and only then does it switch off.

The benefits:
Gentler torque reduction to reduce the impact on the mechanics

DSC1-135

Direct ejector for injection molding

With the ejector drive, Baumüller offers a compact and high acceleration drive. The DSC1-135 was specially designed for the plastics industry. Thus, in addition to a compact design and high dynamics, the motor has a special bearing to compensate axial process forces. Plastics machine manufacturers benefit from a special mechanic interface for spindle connection and from the high overload capability of the motor.

- Compact construction
- Highly dynamic, as well as high overload capability
- Special bearing for compensation of axial process forces
- Special mechanical interface for spindle connection
- Maximum torque up to approx. 560 Nm, Nominal torque up to approx. 280 Nm, speed range up to approx. 2000 min^{-1}
- By default with multi-turn encoder, optionally available with other encoder versions

Flexible use cases

The 16-pole motor concept can also be used in other applications with high acceleration requirements while simultaneously under extremely compact installation conditions.

DSC1-135 – Technical data

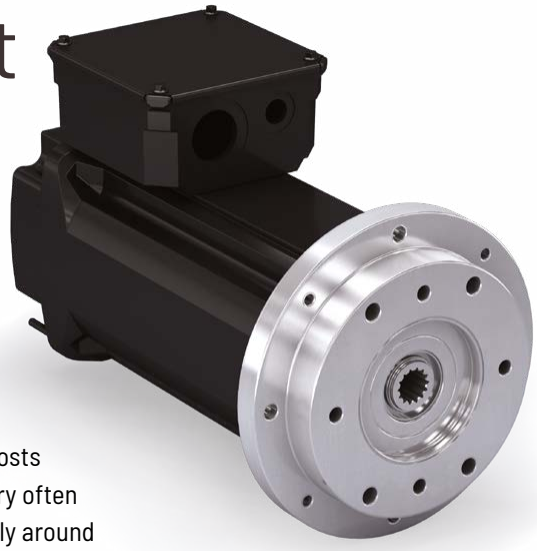
Typ	P_N	n_N	n_{max}	M_{0max}	Stroke length	Axial force	Travel speed *
	[kW]	[min^{-1}]	[min^{-1}]	[Nm]	[mm]	[kN]	[mm/s]
DSC1-135SO	12	1000	1800	270	210	70	up to 480
DSC1-135SO	17	1500	1800	270	210	70	up to 480
DSC1-135LO	23	1000	1600	535	280	130	up to 420
DSC1-135LO	34	1500	1800	530	280	130	up to 480

The values specified are maximum values. For details, please refer to the relevant technical documentation.
*) at 16 mm spindle pitch

Subject to change

SERVO HYDRAULICS

Direct pump attachment with internal toothing



High efficiency, better process performance and low heat development. These are just a few of the advantages of a servo pump. This is why the Baumüller servo pump solution has been in use for years in a number of applications such as presses and injection molding machines. Their use is now part of the standard equipment of machine manufacturers, partly due to rising energy costs. End customers are increasingly taking the total operating costs into account and are finding that the higher purchase price for a servo pump very often pays for itself within a year due to the reduction in energy consumption of usually around 30 percent.

Direct pump attachment: Compact and low-maintenance

In the latest enhancement, the hydraulic pump is attached directly to the engine with a gear tooth system.
This eliminates the need for coupling and pump support as is the case with classic servo pump versions, which has the advantage of a shorter installation length and therefore a smaller machine installation area.

Furthermore, direct attachment eliminates the need for several mechanical parts. In this way, the machine manufacturer benefits from lower storage costs and the operator benefits from lower service costs.

Permanent oil lubrication of the internal toothing

Another advantage lies in the intelligent use of hydraulic oil. The latest version, for example, features new connections for both the motor and the constant pump so that the leakage flow of the pump can be used for the permanent lubrication of the gear tooth system. This eliminates the need for grease lubrication of the internal toothing, which is required every 3,000 operating hours on average. The machine can operate without interruption. Baumüller is the sole supplier of this solution, which also results in significantly reduced service costs for machine manufacturer and end customer.
The new features were already implemented for the DSD2 and DS2 three-phase current synchronous motors and are particularly well suited for plastics machines.

Automation – control platforms

With the b maXX control units, you can consistently implement the concept of scalability and modularity for flexible and individual adaptation to today's mechanical engineering requirements. Depending on the application, we support you during the development of central, modular decentralized and hybrid control architectures.

The control platforms are also suitable for highly synchronous drives and are completely integrated in the ProMaster engineering framework.

b maXX servo drives

With its converters, Baumüller provides its customers with important advantages: From cost savings to higher dynamics to increased safety.

Together, the converter series of the b maXX family cover a wide power range up to 400 kW. The b maXX family includes both stackable devices and powerful mono units. With optional safety packs, all devices in this series can be easily adapted to meet your individual safety needs.

Motors

You are looking for the right motor for your application? We offer you a wide portfolio of motors from 0.3 to 530 kW.

Depending on your requirements, we equip your plants or your mobile application with disk motors, dynamic three-phase motors, high-torque motors or if necessary, direct current motors also.

Software tools

As the complexity of machines and plants increases, so too do the demands on automation software. For this reason, it is important to provide users in the engineering field with the most user-friendly and flexible tools and software modules possible in each process phase in order to keep theengineering work required to a minimum. This allows software engineers to concentrate on their actual tasks and reach their goals faster. We offer the right tools and software modules for every stage of the engineering process. Because only with a holistic approach can state-of-the-art automation tasks be solved with minimum resources.

Sheet metal working / control cabinet construction

For many years, we have been implementing custom solutions for renowned machine and plant manufacturers – from sheet metal parts to completely wired control cabinets. You receive everything from us, a single source that can therefore deal optimally with your needs and wishes.

Planning | design | sheet metal production | serial production | assembly | installation

Service / Retrofit / drive modernization

With our services we support maintenance personnel, who are responsible for the smooth running of machines and plants every day, in all topics of industrial maintenance – and regardless of the manufacturer.

Regardless of the manufacturer, we offer you tailored and multi-level solutions for the modernization of your electrical drive systems.

HOUSE OF AUTOMATION

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