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ROBOTICS AND MOTION DIVISION DRIVES AND CONTROLS

# **ABB solutions for automation**

In plastics processing plants.



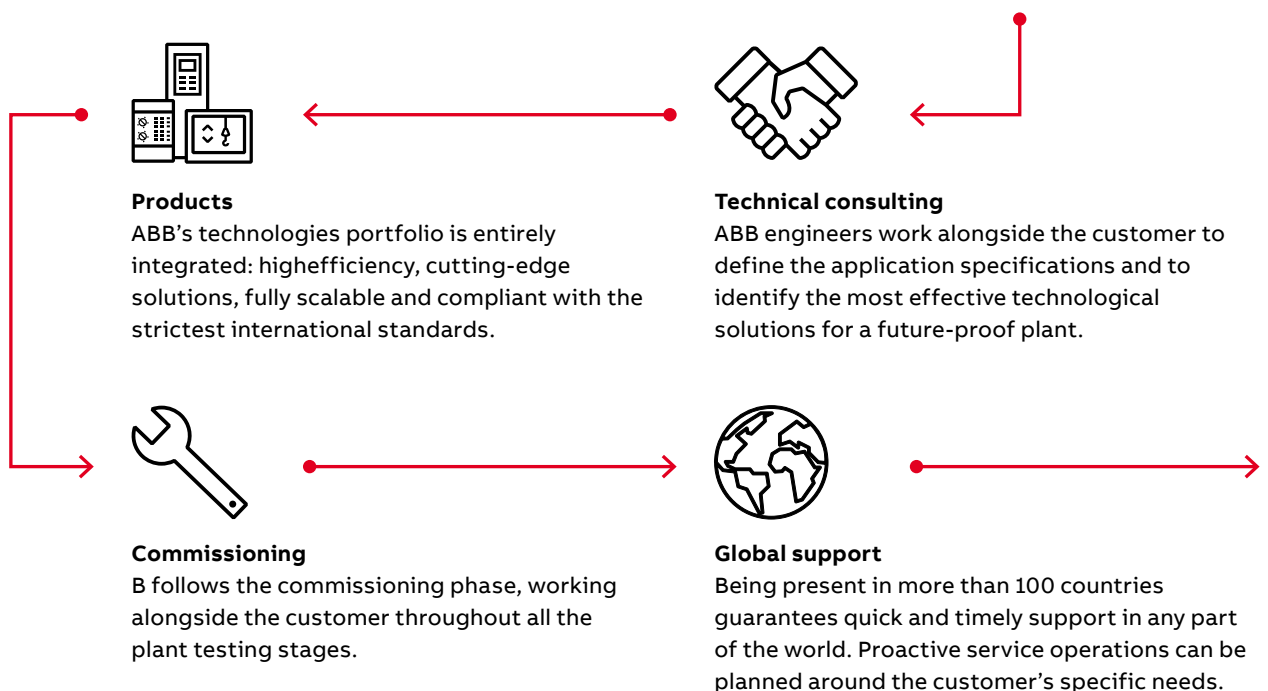
# ABB for the plastics industry.

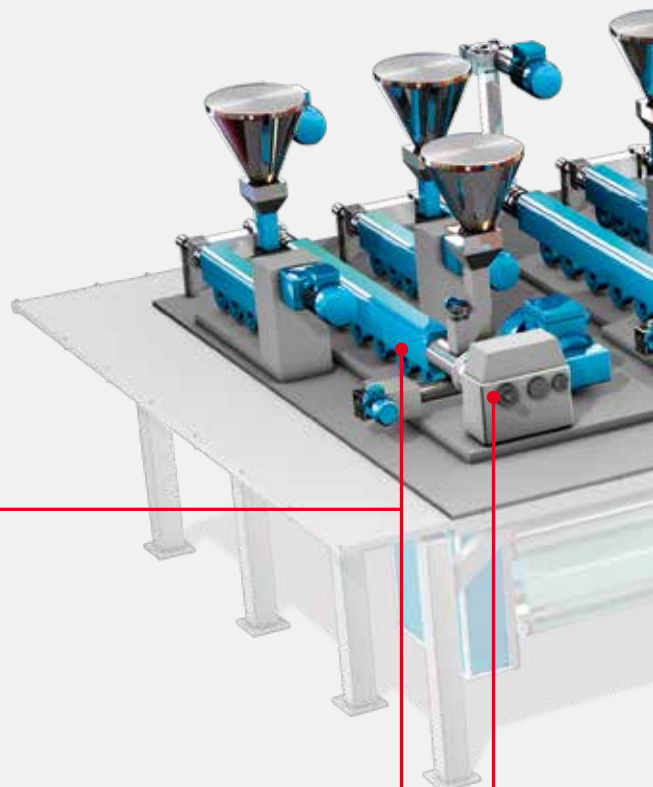
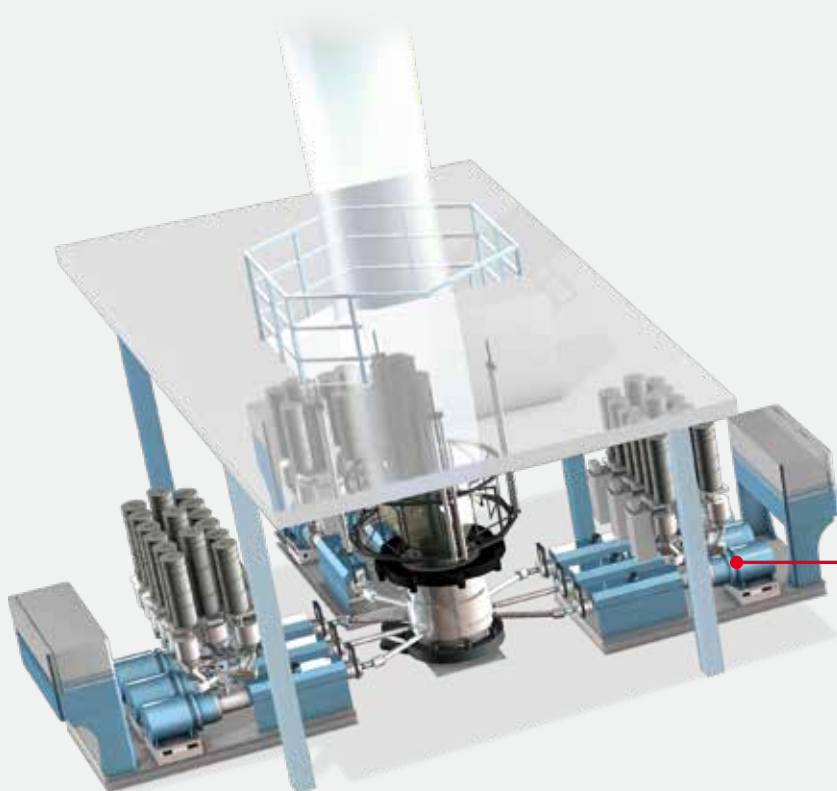
## Efficient, complete and reliable solutions.

ABB has always provided targeted solutions to manage any process precisely and accurately. In the plastics transformation industry, ABB plays a key role in helping the customer, not only to reach the legally required efficiency and safety levels, but also to achieve the management cost-effectiveness that is essential for being as competitive as possible.

ABB is able to provide cutting-edge and customized solutions to obtain top production efficiency levels. The integrated portfolio is supported by dedicated services to support customers in achieving their goals.

In the plastic materials processing and transformation industry, control precision and continuity of processes are fundamental aspects. Thanks to a global presence with expert engineers and service centers located all over the world, ABB is an ideal partner, capable of following every stage of the plant, from design to product choices, set-up and commissioning, operational management and on-site service. Choosing ABB means preferring excellence without sacrificing efficiency and reduced costs.

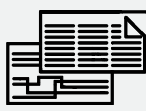
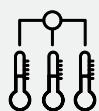




### Extruder

#### SynRM Motors

- Reduced dimensions up to two sizes
- Cooler motors with temperatures lower than F/B class without power cooling, bearings temperature about 15°C lower, with a reduction in lubrication times.
- IE4 efficiency class: 50% energy savings, controlled by ACS880.
- Noise reduced by 5 dB on average thanks to the absence of power cooling.

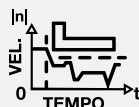


### Temperature control

#### OTC (Optimized Thermo Control) software library for PLC AC500

- Multi-zone tuning of the plastic material temperature
- Auto-tuning of the parameters
- Remote control of the parameters with user-friendly graphic interfaces
- Graphic interface for CP600 panel operator CP600

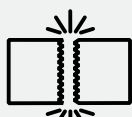




#### Calender

##### ACS880 drive with built-in safety features

- Cleaning of the cylinders at reduced speed and SLS (Safe Limited Speed) feature to limit the motor rotation speed with blocking of the current pulse modulation if the threshold is exceeded
- Emergency stop with controlled angle in accordance with the regulation standards
- Open loop static precision: 0.01% of the rated speed



#### Winder

##### ACS880 with DTC control and Winder Control Program

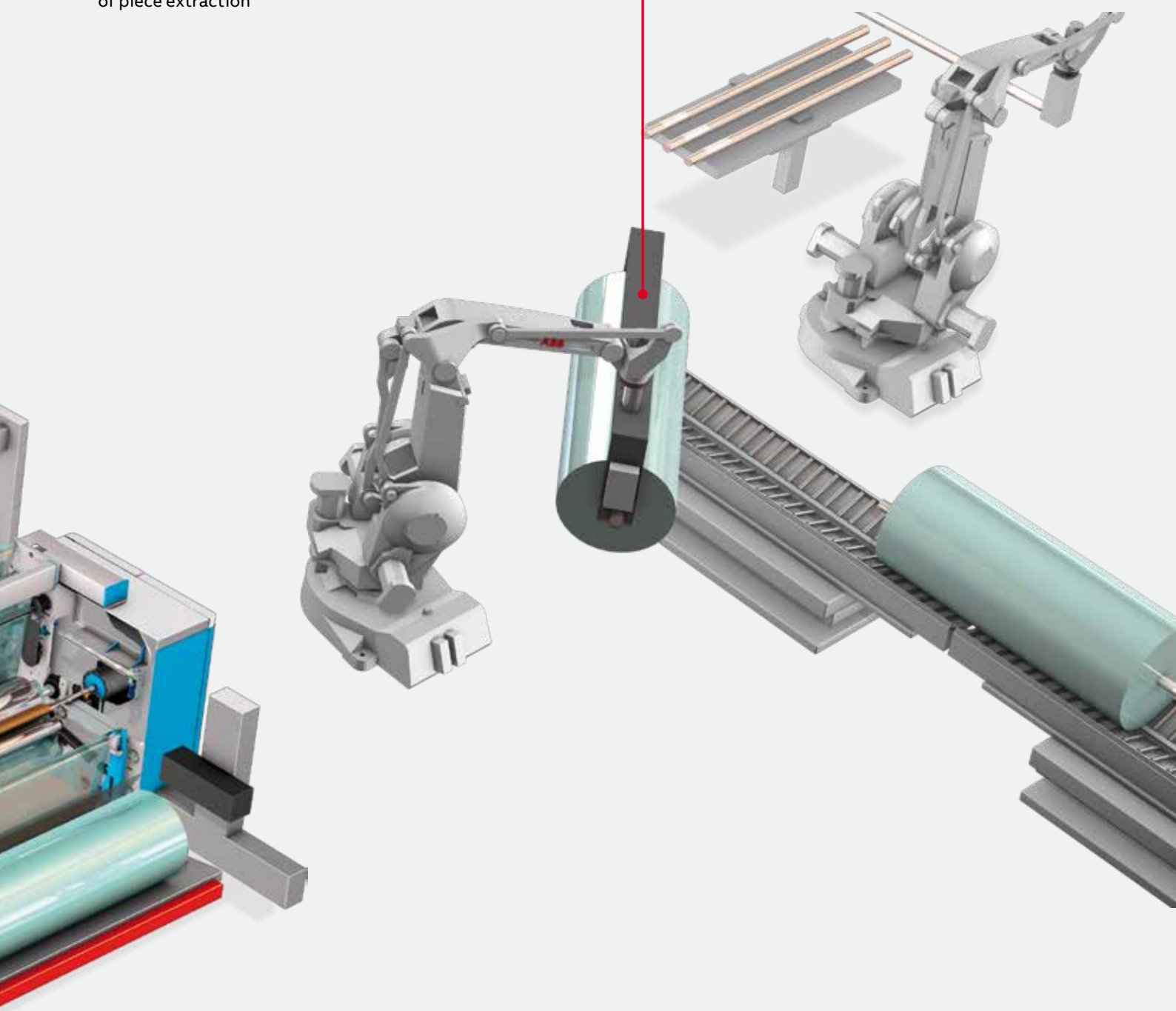
- Diameter check during coil winding
- Increase of material tension during coil replacement in order to facilitate cutting
- Prompt warning of film breakage
- Draw control for different types of materials



### Palletizing

#### 1 to 800 Kg Robot

- Programming software
- Integrated vision
- Quick and accurate handling, thanks to the collision avoidance system
- Cartesian Soft Servo for maximum ease of piece extraction



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## SynRM Motors

A complete range for extrusion processes

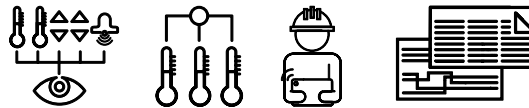


ABB synchronous reluctance motors are extremely efficient, especially in plastic material production and processing plants. The low operating temperatures avoid the need for power cooling fans, increasing reliability, cleanliness and operational continuity. In particular, SynRM, synchronous variable reluctance motors, provide control performance comparable to that of a permanent magnet motor, optimized overload capacity, compact size, quiet operation and reduced operating costs.

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## OTC Solutions

Temperature management in plastics transformation



In extrusion processes it is essential to maintain constant control over the material's physical properties. For this specific application, ABB has developed the OTC (Optimized Thermo Control) software library for multi-zone temperature tuning of the machine. Thanks to a single AC500 PLC, the OTC solution allows an accurate selfdiagnosis of the adjustment parameters based on thermal inertias and the dimensions of the individual zones being controlled. The library includes graphic pages that can be accessed via browser with the possibility of remote control thanks to the interface built into the PLC. The user has the possibility of tuning the system through real-time graphics and icons that indicate critical status conditions and alarms. Templates are also available for CP600 range ABB control panels.

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## Robot

New handling and palletizing solutions

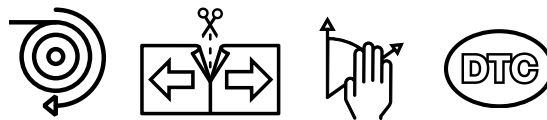


ABB has a wide range of robots with solutions designed for every type of application where speed, positioning precision and capacity from 1 to 800 kilograms are required. Through an extremely wide range of action, ABB robots can serve up to four supply transporters, two stacks of pallets, a stack of slipsheets and four output palletizing lines. Their versatility, reach and handling capacity make these machines suitable, not only for palletizing purposes, but also for other operational contexts. A collision avoidance handling supervision system guarantees fast and highly reliable operation.

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## ACS880 Drives

New platform for plastics industries



The latest generation direct torque control (Enhanced DTC) guarantees excellent control performance with any type of motor and on any type of application. Open loop static precision, about 0.01% of the rated speed, further improved dynamic performance and high overload capacity: these are just some of the technical characteristics that make the ACS880 the ideal drive to control all plastic material processing procedures. The new, high resolution control panel, extremely user friendly and with an “assistant” feature, reduces commissioning and user learning times to a minimum. ACS880 complies with the most recent European Union Machine Directive 2006/42/EC requirements, not only with “safe torque off” as a standard feature, but also integrating the FSO module wherever required, which allows advanced safety features to be implemented directly on the drive in SIL 3 category, in accordance with the IEC 61508 standard, PL and in accordance with the ISO 13849-1 standard.

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## ABB Service

A strategic partner up to date with innovation



Thanks to its global presence, ABB Service provides its customers with excellent technical and operational support, acting directly on site or through certified laboratories. The service package also includes remote monitoring operations on all the installed products in order to always guarantee maximum operating efficiency. Thanks to the modular architecture of the products, obsolete or faulty parts can be replaced with latest generation components, thereby extending the lifecycle of the systems. All the ABB products and solutions in a plant are planned and commissioned directly in the field, optimizing operation based on the application. ABB Service also organizes technical training sessions for customer personnel willing to learn the skills needed to reduce plant down times to a minimum.

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[www.abb.it/soluzioni-drives](http://www.abb.it/soluzioni-drives)