More efficiency in machine building for the plastics industry

Modular system solutions for all applications

siemens.com/plastics
Optimal product quality with maximum productivity, availability, and flexibility. The demands placed on modern machinery are enormous – and constantly increasing. At the same time, their level of automation continues to grow. Increasingly shorter development times and a faster time to market are further, tremendous challenges for machine building.

Whether extrusion, blow molding, injection molding, thermo-forming, or temperature control: For plastics machines, we offer the optimal solution for all of these requirements. Our new, modular software library with standard modules and our SIMATIC, SINAMICS, and SIMOTICS-based hardware platform are an unbeatable combination for tackling any task.

Our worldwide service offering ranges from the hotline to personal 24-hour service, ensuring that you can get exactly the help you need at all times: from quick instructions for solving a simple problem to a qualified technician providing expert service on site.

“Ultimately all those concerned, from the manufacturer to the end user of blow-molded parts, benefit from the resulting advantages.”

Thomas-Marten Koetke
CEO of MBK
Highlights at a glance

**Time to market**
Coordinated hardware and software accelerate development and commissioning – for a shorter time to market.

**Reduced overhead**
In addition to standard solutions (such as preset operator control screens), the TIA Portal reduces overhead for machine implementation.

**Modularity**
Independent, standalone software modules make it easier to implement our software in your application.

**Scalability**
The scalability of the proven hardware means that it can be optimally adapted to your specific tasks.

**Visualization**
Each software module contains a ready-to-start HMI with powerful operator screens.

**Reliability**
Your application benefits from years of development expertise and worldwide experience.

**Performance**
The optimized combination of software and hardware handles any quantity structure with high performance.

**Flexibility**
You determine the functionality of your machine and can flexibly expand it as needed.

**Energy efficiency**
The use of our energy-efficient drive technology pays dividends in operation from the very start.
The Plastics Toolbox with its four software modules was developed for the four segments of the plastics industry.

TCP:
The temperature control package offers excellent control accuracy of heating and cooling processes. Additional key features include various monitoring functions, group switching, a week clock timer, cold start monitoring, and automatic controller optimization.

DRV:
With the aid of the drive package, any number of extruders can be activated and controlled. It already contains all the necessary monitoring and control functions and synchronous speed control as well as throughput and pressure control functions.

MOT:
Motion control technology ensures the high-precision, axis-granular positioning of electric and hydraulic axes – including with synchronism functionality.

PCO:
Parison control technology (wall thickness control) in blow molding machines guarantees precise control of the desired tube profile – for both continuous and accumulator head machines. Various auxiliary functions (for example, tube length and fill level control) complete the range of possible applications. Thanks to its modular, channel-granular design, this technology can be perfectly adapted to the quantity structure of the machine.

ACL:
The modular, parametrizable, automatic cycle is at the heart of cyclically operating machines. The integrated, sequence-based system can be flexibly scaled and, if desired, parametrized via the operator control system, thus making machine operation more flexible and helping to drastically reduce development time.

The Plastics Toolbox with its four software modules was developed for the four segments of the plastics industry.

<table>
<thead>
<tr>
<th></th>
<th>TCP</th>
<th>DRV</th>
<th>MOT</th>
<th>PCO</th>
<th>ACL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injection molding</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Extrusion</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blow molding</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Thermo-molding</td>
<td>✔</td>
<td></td>
<td>✔</td>
<td></td>
<td>✔</td>
</tr>
</tbody>
</table>
More efficiency in machine building for the plastics industry

Sample application: Thermoforming

Comprehensive, scalable portfolio from a single source

You can order proven components from a hardware kit and preconfigured software modules. This allows you to quickly, flexibly, and cost-effectively implement individual machine designs. All automation components work together efficiently within the framework of Totally Integrated Automation (TIA) and include integrated Industrial Security, Safety Integrated, and diagnostic options. This is unique.

SIMATIC controller family with Safety Integrated

Maximum integration: a controller, communication, and engineering for standard, failsafe automation

siemens.com/simatic

SIMATIC HMI

Comprehensive offering for maximum efficiency in all areas of machine-level operation and monitoring

siemens.com/hmi

Integrated drive systems

The world’s only truly complete solution for entire drive systems: shorter time to market with a correspondingly shorter time to profit

siemens.com/ids
Siemens provides products and solutions with industrial security functions that support the secure operation of plants, systems, machines and networks.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens’ products and solutions only form one element of such a concept.

Customer is responsible to prevent unauthorized access to its plants, systems, machines and networks. Systems, machines and components should only be connected to the enterprise network or the internet if and to the extent necessary and with appropriate security measures (e.g. use of firewalls and network segmentation) in place.

Additionally, Siemens’ guidance on appropriate security measures should be taken into account. For more information about industrial security, please visit

http://www.siemens.com/industrialsecurity

Siemens’ products and solutions undergo continuous development to make them more secure. Siemens strongly recommends to apply product updates as soon as available and to always use the latest product versions. Use of product versions that are no longer supported, and failure to apply latest updates may increase customer’s exposure to cyber threats.

To stay informed about product updates, subscribe to the Siemens Industrial Security RSS Feed under

http://www.siemens.com/industrialsecurity