Competence Center Compounding & Extrusion. First-class products are based on state-of-the-art technology.
Technology

- Over 130 years of experience with mixing and kneading processes
- Pioneering work and continuous development of the closely intermeshing, co-rotating twin-screw extruder
- Over 10,000 compounding systems installed worldwide
- Comprehensive product portfolio: from laboratory extruder ZSK 18 MEGAlab to largest extruder ZSK 380 MEGAcompounder
- Throughput rates from 1 kg/h to 100 t/h
- Turnkey compounding systems from raw material feeding to downstream pelletizing and handling equipment
- Know-how for compounding technology and bulk materials handling supported by 2,100 employees at 27 locations

Research & development

- The most comprehensive test labs in the industry: in Stuttgart (D), Ramsey (USA) and Nanjing (CN)
- 30 compounding systems worldwide permanently available for testing
- Over 60 specialists permanently assigned to process development and application optimization for our customers, including 30 process engineers
- Experience from 5,000 compounding tests and 40,000 product analyses in our own laboratories
- Over 75% of all plastics compounds worldwide were tested in Coperion’s test labs
- Over 950 patents and patent applications since 1980
Why quality is our benchmark. It is the only way to provide customers with what they are expecting for processing their products: a compounding system individually tailored to their needs. We have established this expectation as our standard and we guarantee it permanently through continuous research, development and implementation in innovative state-of-the-art products. However, our top priority is to give our customers comfort and thus confidence – this reassures them that they have found the right partner for present and future projects.

In Coperion, you have a partner on hand to provide the optimum solution to every compounding task. This ranges from special applications on laboratory scale to industrial-scale production. As pioneers in the development of the closely intermeshing, co-rotating twin-screw extruder, we have unique expertise and experience in this field. Since the 1950s, Coperion has continued to set new standards in processing machinery and plant design for compounding technology. We plan and implement compounding systems for the plastics, chemicals and food industries which are tailored precisely to our customers’ applications. Werner & Pfleiderer und Keya untied under Coperion provide you the full range of expertise in this field. Complemented by our technology centers in Ramsey (USA) and Wytheville (USA), we provide the ideal extruder for every formulation. Over 10,000 compounding systems delivered all over the world are proof of our unique system and process competence. And despite all our engineering skills, there’s still one thing we always keep in mind: we listen to what our partners have to say! That’s what we mean when we say “confidence through partnership”.

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01 | SIMULATION TECHNOLOGY
02 | INSTALLATION OF SCREW SHAFTS
03 | KNIFE ROTOR FOR UNDERWATER PELLETIZER
<table>
<thead>
<tr>
<th><strong>ZSK series</strong></th>
<th><strong>Description</strong></th>
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<tr>
<td>ZSK MEGAcompounder</td>
<td>Large extruder to homogenize polyolefins downstream of the polymerization reactor</td>
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<tr>
<td>ZSK MEGAcompounder PLUS</td>
<td>Extruder for products with high torque requirement, such as engineering plastics and masterbatches</td>
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<tr>
<td>ZSK MEGAvolume PLUS</td>
<td>Extruder for products with high volume requirement, like products with high solids content in the chemicals and food sectors</td>
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<tr>
<td>ZSK NT</td>
<td>Pioneering development: two-stage ZSK for separating plastification and homogenization in compounding of bimodal polyolefins</td>
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<tr>
<td>Kombiplast</td>
<td>ZSK combined with a single-discharge screw to build up pressure gently for shear-sensitive products such as PVC</td>
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Individuality guarantees your productivity. Turnkey compounding systems from raw material feeding to the downstream pelletizing and handling equipment? Throughput rates from 1 kg/h to 100 t/h? Individual customization to suit our customers’ applications enables us to guarantee that our machines and systems have maximum throughput rates at highest possible efficiency and product quality.

Coperion’s continuous research and development have made our closely intermeshing, co-rotating twin-screw extruder into what it is today: a top-quality product at the highest technical level. This is why our comprehensive product range can satisfy an enormous variety of requirements.

The ZSK combines the results of over 50 years of processing and engineering expertise. It is the high-end, high-tech key product of our systems with maximum torque, speed and free volume.

The STS series is characterized by standard design and is particularly suited for standardized process tasks in compounding of engineering plastics. It combines the process technology expertise of Coperion in Germany with series production in China at an extremely attractive cost/performance ratio.

CTE and CKY are designs developed and manufactured in China. They are adapted for the regional market and are specifically suited to standard engineering plastics compounding tasks.

Our modular systems are a special feature for turnkey compounding system solutions. They provide the customer with a compounding system preassembled from standardized individual components arranged in a steel structure and providing everything from raw material feeding to the downstream pelletizing and handling equipment. The customized system is set up at Coperion prior to delivery, and tested in operation using original products and together with the customer. Due to its modular design, the system is ready for operation on the customer’s side within the shortest possible time.

We furthermore offer peripheral equipment from our own development, such as melt pumps, screen pack changers and pelletizers. These are perfectly matching our compounding systems. Whichever of the different models you select from our compounders, combined with the peripheral equipment it will guarantee you a system individually tailored to your application with maximum productivity, efficiency and flexibility.
Customized solutions in a wide range of processes: polyolefins, devolatilization, engineering plastics, masterbatches, long-fiber technology, PVC, wood plastics compounds, cable compounds, chemical and reaction technology, direct extrusion, in-line compounding, thermoplastic elastomers, powder coatings, food extrusion, pharmaceuticals, toner, biodegradable plastics, rubber, adhesives, sealants, catalyst carriers, modified starch, ABS, pet feed, TPU, nanocomposites, polymer blends, insulating compounds, HFFR, flour polymers, PET/PLA films.
Coperion is omnipresent – it’s just that hardly anyone realizes it. Toothbrushes, plastics parts for cars, powder-coated car wheel rims, wall plugs, cable insulations, shoe soles, sealants, window profiles, packing materials ... the list of ordinary everyday products whose raw materials were processed using Coperion’s extruders or systems could go on and on. When our customers ask us to design the processing technology for a new product and the appropriate compounding system, this is the biggest incentive there is for us: to provide them with a customized solution tailored to their exact needs.

In complex processes such as the compounding of high viscous masses, the quality of the end product is the key factor. From dosing, through raw materials feeding, conveying, melting, dispersing, homogenizing, devolatilizing, pressure build-up, filtering and pelletizing, every process step has to be precisely adapted to suit the application. The process and system competence of our specialists guarantees you high-quality results. We are at your side from project planning and implementation stage right through to commissioning. This means you will get a compounding machine or system to meet your individual needs. Each one of our extruders and systems convinces customers with the optimum co-ordination of the individual process steps and gentle handling of the product – all at maximum productivity and efficiency. From engineering to process optimization, production of key components using state-of-the-art materials technology, fitting the individual parts and on to commissioning and after-sales services – Coperion has an extremely diverse range of services. With every single component and every application, our design expertise pursues just one goal: maximum customer satisfaction.
Some people think it’s our research department. Actually, it’s yours. We design the right process technology and the ideal compounding system for every product as – beside simulation and scale-up – we have found an ideal way of showing our customers today their tomorrow: the Coperion test labs.

Coperion provides test labs for the compounding & extrusion market in Stuttgart (D), Ramsey (USA) and Nanjing (CN). These three test labs are the platform for advanced testing of any challenge of a production plant, like the development of the optimized screw configuration for a new product formulation. Over 60 specialists are permanently assigned to process development and application optimization for our customers, including 30 process engineers. A total of 30 compounding systems are available worldwide for testing – from laboratory extruder ZSK 18 to ZSK 92. With throughput rates of 1 kg/h to 2 t/h, our test labs enable us to demonstrate any conditions ranging from laboratory experiments all the way up to medium-scale production. Affiliated to our test labs are our laboratories, in which our scientists have access to numerous analysis options to evaluate the product quality in real-time. Proven scale-up methods are used to extrapolate test results to production conditions. In addition to this, Coperion has developed its own simulation programs to calculate flow processes. It can be used to optimize both existing processes and the design of individual components.
**Compounding & extrusion test labs**

- Test labs in Stuttgart (D), Ramsey (USA) and Nanjing (CN)
- A total of 30 compounding systems worldwide permanently available for testing - from laboratory extruder ZSK 18 to ZSK 92
- Throughput rates from 1 kg/h to 2 t/h
- Affiliated laboratories for real-time analyses of product quality
- Over 60 specialists permanently assigned to process development and application optimization for our customers, including 30 process engineers
- Simulation programs to calculate flow processes, optimize existing processes and the design of individual components
For the market we manufacture machinery and plants. For our customers we are a reliable partner. We design machinery and plants for the plastics, chemical, food and aluminium industries. We implement individual and turnkey solutions with the network of our three Competence Centers. But what’s the feeling when it comes to Compounding & Extrusion or Materials Handling? And how do we interpret Service? Important for us is a customer who confides in our constant support. Maybe it is because there are not only engineers working at Coperion, but also chemists, food technicians and other experts. Maybe it is the teams who develop new processes and individual solutions together with our customers. It is certainly the close cooperation with the customer and the fact that we make his business part of ours. A growing confidence is the consequence. On this basis, we design machinery and plants.

### Facts and Figures

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<tr>
<td>Compounding systems installed worldwide</td>
<td>over 10,000</td>
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<tr>
<td>Bulk materials handling systems installed worldwide</td>
<td>over 8,000</td>
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<tr>
<td>Employees worldwide</td>
<td>over 2,100</td>
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<tr>
<td>Network of locations worldwide</td>
<td>27</td>
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compounding & extrusion

ZSK, STS and CTE – three letters embody modern processing machinery and plant design for compounding technology. Our twin-screw compounders continually set new standards in the plastics, chemical and food processing industries. They are the high-tech, high-end core of our plants, guaranteeing the highest product quality.

materials handling

Hand in Hand – we master all process steps in the treatment and handling of bulk materials. Quality is our benchmark when conveying, elutriating, homogenizing, storing, dosing or thermally treating the products. Our worldwide leading position in the field of bulk materials plants and components is proof of our extensive systems and process expertise.

service

Your Success is Our Success – and your comfort is what we guarantee with our worldwide presence. Already during installation and commissioning of a machine or plant a service team is on-site. Maintenance, spare parts service, service consulting, training and modernization – we use our experience and competence to the advantage of our customers.