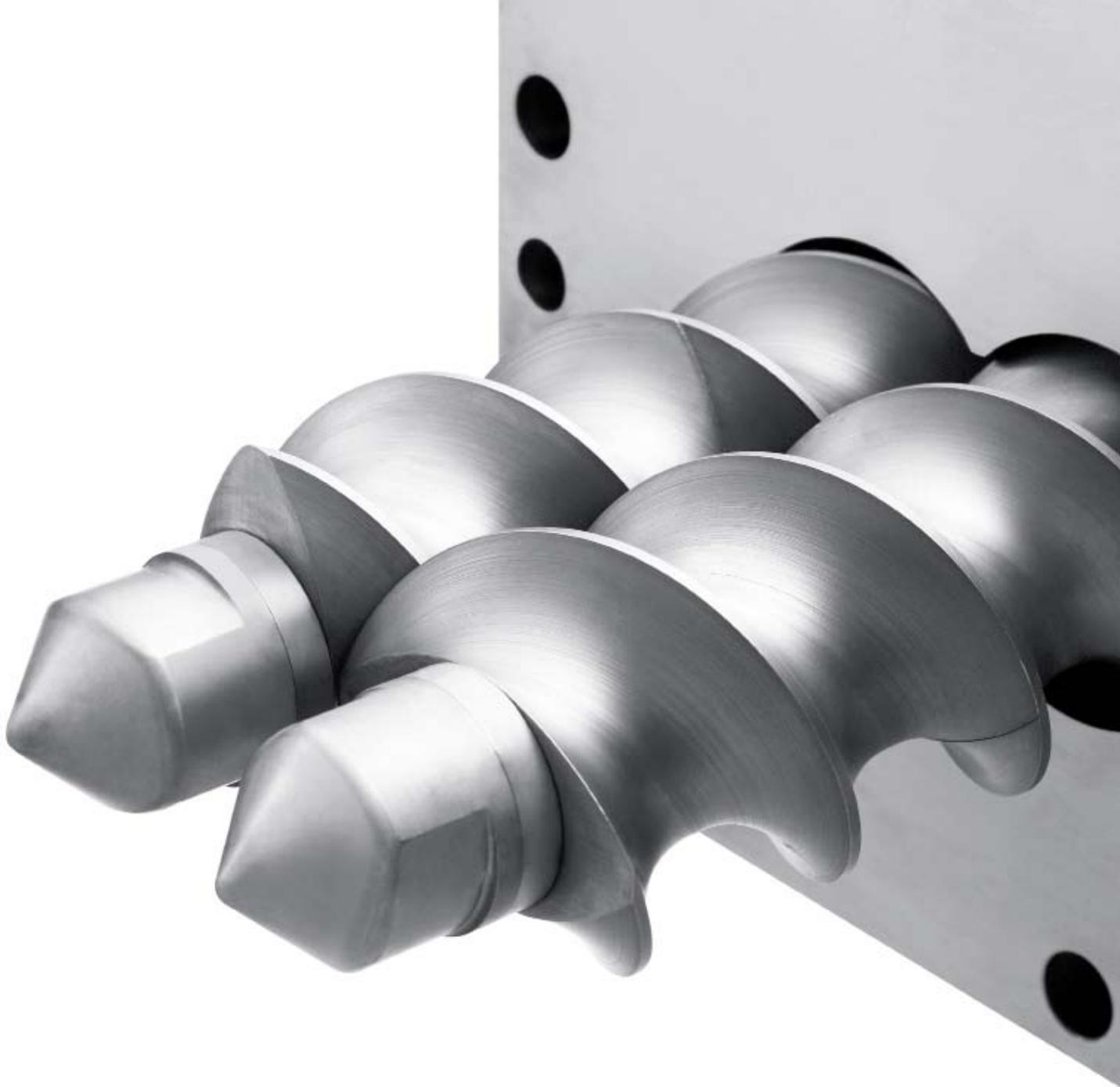




Competence Center Compounding & Extrusion. [First-class products are based on state-of-the-art technology.](#)



### Technology

Over 130 years of experience with mixing and kneading processes
Pioneering work and continuous development of the closely inter-meshing, 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 MEGAcoumpounder
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

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02 | INSTALLATION OF SCREW SHAFTS

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03 | KNIFE ROTOR FOR  
UNDERWATER PELLETIZER

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>01



>02



>03



## ZSK series

<b>ZSK MEGAc ompounder</b>	Large extruder to homogenize polyolefins downstream of the polymerization reactor
<b>ZSK MEGAc ompounder PLUS</b>	Extruder for products with high torque requirement, such as engineering plastics and masterbatches
<b>ZSK MEGAvolume PLUS</b>	Extruder for products with high volume requirement, like products with high solids content in the chemicals and food sectors
<b>ZSK NT</b>	Pioneering development: two-stage ZSK for separating plastification and homogenization in compounding of bimodal polyolefins
<b>Kombiplast</b>	ZSK combined with a single-discharge screw to build up pressure gently for shear-sensitive products such as PVC



»» 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.

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01 | ZSK 18 MEGALAB

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02 | STS ADVANCED

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03 | MODULAR PLANT

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>01



>02



>03



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. Affiliate 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.

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01 | SCREW CONFIGURATIONS

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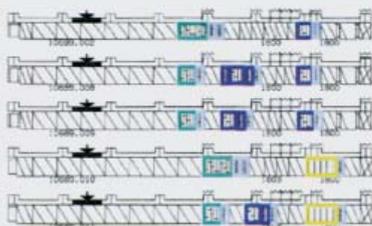
02 | PARTICLE PATHS IN  
SCREW CHANNELS

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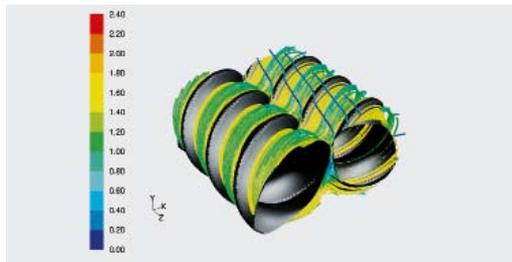
03 | TEST ON ZSK 50 MC PLUS

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>01

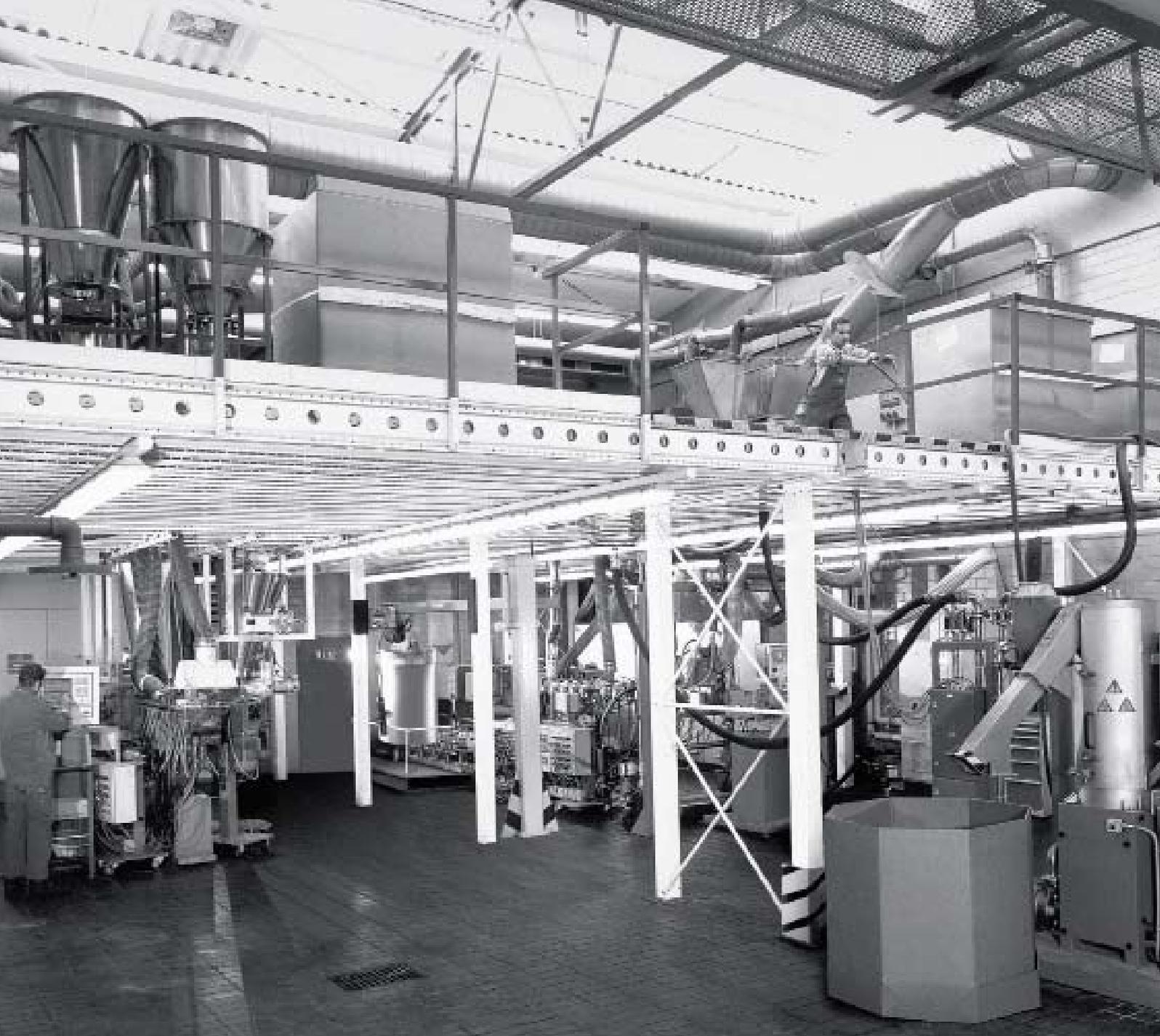


>02



>03





### 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**

Compounding systems installed worldwide	over 10,000
Bulk materials handling systems installed worldwide	over 8,000
Employees worldwide	over 2,100
Network of locations worldwide	27



## > 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.



**Coperion GmbH**

Competence Center  
Compounding & Extrusion  
Theodorstraße 10  
70469 Stuttgart, Germany  
Tel.: +49 (0) 711 897-2301  
Fax: +49 (0) 711 897-3963  
info.cc-ce@coperion.com

**Coperion GmbH**

Competence Center  
Materials Handling  
Niederbieger Straße 9  
88250 Weingarten, Germany  
Tel.: +49 (0) 751 408-0  
Fax: +49 (0) 751 408-200  
info.cc-mh@coperion.com

**Coperion GmbH**

Competence Center  
Service  
Theodorstraße 10  
70469 Stuttgart, Germany  
Tel.: +49 (0) 711 897-2206  
Fax: +49 (0) 711 897-3920  
info.cc-se@coperion.com

info@coperion.com  
www.coperion.com

> Europe

Germany

**Coperion GmbH  
Offenbach Office**  
Heinrich-Krumm-Straße 6  
63073 Offenbach, Germany  
Tel.: +49 (0) 69 829775-0  
Fax: +49 (0) 69 829775-50

**Coperion GmbH**

**Germany West Office**  
Industriestraße 71a  
50389 Wesseling, Germany  
Tel.: +49 (0) 2232 20700-10  
Fax: +49 (0) 2232 20700-11

Belgium, Luxembourg, Netherlands

**Coperion N.V.**  
Industrieweg 2, 2845 Niel, Belgium  
Tel.: +32 3 870-5100  
Fax: +32 3 877-0710

Sweden, Denmark,  
Finland, Norway

**Coperion AB**  
Sjödalsvägen 42  
14124 Huddinge, Sweden  
Tel.: +46 8 608-1818  
Fax: +46 8 608-0868

France

**Coperion Sarl**  
13 Chemin du Baudy  
69260 Charbonnières-les-Bains  
France  
Tel.: +33 478 4426-97  
Fax: +33 478 8784-78

United Kingdom

**Coperion Ltd.**  
Victoria House, 19-21 Ack Lane East  
Bramhall, Cheshire, SK7 2BE  
United Kingdom  
Tel.: +44 161 925-6910  
Fax: +44 161 925-6911

Italy

**Coperion S.r.l.**  
Via Calvino 32  
44100 Ferrara, Italy  
Tel.: +39 0532 7799-11  
Fax: +39 0532 7799-80

**Coperion S.r.l.**

**Milan Office**  
Via Milanese 20  
20099 Sesto San Giovanni (MI)  
Italy  
Tel.: +39 02 241049-01  
Fax: +39 02 241049-22

Spain, Portugal

**Coperion, S.L.**  
Balmes, 73, pral.  
08007 Barcelona, Spain  
Tel.: +34 93 45173-37  
Fax: +34 93 45175-32

Russian Federation, CIS

**Coperion OOO**  
ul. Pravdy 26, 127137 Moscow  
Russian Federation  
Tel.: +7 495 72558-93  
Fax: +7 495 64895-45

> Asia

China

**Coperion (Nanjing)  
Machinery Co. Ltd.**  
No. 59, West Tianyuan Road  
Jiangning District  
Nanjing, 211100, PR China  
Tel.: +86 25 5278-6288  
Fax: +86 25 5261-1188

**Coperion International  
Trading (Shanghai) Co. Ltd.  
Coperion Machinery &  
Systems (Shanghai) Co. Ltd.**

Bldg. No. A2, 155 Dong She Road  
Song Jiang Industrial Zone  
(Dong Jing Branch)  
Dong Jing Town, Songjiang District  
Shanghai 201619, PR China  
Tel.: +86 21 6767-9505  
Fax: +86 21 6767-9198

**Coperion Representative Office**

2F, Tian Fu Ge, Tian He Square  
No. 268 Zhong Shan Da Dao  
Tian He District, Guangzhou 510660  
Guangdong, PR China  
Tel.: +86 20 8230-7248  
Fax: +86 20 8230-2606

Singapore

**Coperion Pte. Ltd.**  
150 Beach Road  
#08-01/04 Gateway West  
Singapore 189720  
Tel.: +65 641 88-200  
Fax: +65 641 88-204

Taiwan

**Coperion Pte. Ltd.  
Taiwan Branch Office**  
9F-2 No. 30 Chung San  
North Road, Sec. 3  
Taipei, Taiwan  
Tel.: +886 225 9150-51  
Fax: +886 225 9153-04

Japan

**Coperion K.K.**  
Kotobuki-Bldg.-9F  
3-18, Kanda-Nishikicho, Chiyoda-Ku  
Tokyo 101-0054, Japan  
Tel.: +81 3 5217-1050  
Fax: +81 3 5217-1055

India

**Coperion Ideal Pvt. Ltd.**  
Ideal House, A-35, Sector 64  
201307 Noida (U.P.), India  
Tel.: +91 120 24016-86  
Fax: +91 120 24016-91

> America

USA, Canada, Mexico, NAFTA

**Coperion Corporation**  
663 East Crescent Avenue  
Ramsey, NJ 07446, USA  
Tel.: +1 201 327-6300  
Fax: +1 201 825-6494

**Coperion Corporation  
Wytheville Office**

285 Stafford Umberger Drive  
P.O. Drawer 775  
Wytheville, VA 24382, USA  
Tel.: +1 276 228-7717  
Fax: +1 276 228-7682

**Coperion Corporation  
Houston Office**

3955 World Houston Parkway  
Suite 190  
Houston, TX 77032, USA  
Tel.: +1 281 449-9944  
Fax: +1 281 449-4599

South America

**Coperion Ltda.**  
R. Dona Germaine Buchard 418  
05002-062 São Paulo-SP  
Brazil  
Tel.: +55 11 3874-2740  
Fax: +55 11 3874-2757

For more information about  
the worldwide Coperion network,  
visit [www.coperion.com](http://www.coperion.com)