



CTE PLUS twin screw extruders. Perfect combination of German quality mindset and Chinese innovation.

»» Optimal balance of maximum cost effectiveness and high product quality. The CTE PLUS series from Coperion offers a high quality compounding system at a very attractive cost/performance ratio. It is the result of improved quality standards at Coperion Nanjing and perfectly meets the requirements for economical processing.

With the CTE PLUS Coperion Nanjing offers a twin screw compounding system with a very attractive cost/performance ratio. The precise manufacturing of the CTE PLUS series ensures the economical processing of a wide range of applications at high product quality. The CTE PLUS is equipped with a gearbox engineered by Coperion Stuttgart, Germany. It offers a terminal box that meets highest safety standards and is supplied on a unitized base frame at lower cost.

Before delivery each CTE PLUS extrusion system is subjected to a Factory Acceptance Test (FAT) at the Coperion Nanjing site to ensure high quality standards. As an option the CTE PLUS series can be provided with TÜV CE certification. The CTE PLUS series has been developed with a specific focus on the special needs of small and medium-sized companies in China and Asia in terms of technological requirements and price.

CNC machinery with international state-of-the-art equipment, computer controlled machines for grinding of screw parts and for milling of die heads, in-house machining and assembly of gearboxes and our professional quality control are all part of the standards Coperion Nanjing has established to ensure the high reliability of the CTE PLUS compounding systems.

HIGHLIGHTS OF THE NEW CTE PLUS

Gearboxes, engineered by Coperion, Germany, that can bear a specific torque of 7.2 Nm/cm ³ and are exchangeable with old generation CTE gearboxes
Higher process safety due to new gearbox
Base frame designed by Coperion, Germany, to ensure higher stiffness
Gearbox housing manufactured in-house at Coperion Nanjing with CNC machine of Heller, Germany, and checked with 3-dimensional inspection machine of Carl Zeiss, Germany
Final assembly check with 3-dimensional check instrument of Faro, Switzerland



» CTE 65 PLUS TWIN SCREW EXTRUDER

TYPICAL AREAS OF APPLICATION

Engineering plastics
Masterbatch
Filling
TPE/TPR/TPV
Wood composites
Cable compounds (PVC, HFFR, XLPE, semi-conductive)
Devolatilization/degassing & reaction
Direct extrusion

COMPREHENSIVE PRODUCT PORTFOLIO OF COPERION NANJING

Co-rotating twin screw extruders (STS Mc ^{II} and CTE PLUS)
Volumetric feeders
Side feeders
Water cooling unit
Vacuum systems
Screen changers
Water cooling strand pelletizing systems (SP treasure)
Air cooled die face cutting systems
Waterring die face cutting systems



› ISO 9001:2015 CERTIFICATE
OF COPERION NANJING



» CTE PLUS. The perfect twin screw compounding system for maximum flexibility.

IDEAL CONFIGURATION DUE TO MODULAR DESIGN

The modular design of the CTE PLUS series is a major advantage. The versatile configuration of the process section allows many combinations to cover a large range of applications.

AS FLEXIBLE AS THE APPLICATIONS - PROCESS SECTION ACCORDING TO REQUIREMENTS

The modular principle of the barrels permits precise sequencing for each application. Each barrel section's temperature can be set up separately. Electrical heater shells provide for heating. Cooling is obtained with water. Barrels as well as screw and kneading elements are made out of nitrided steel in the standard version. For demanding applications wear and corrosion resistant construction materials are available.

STANDARD BARRELS AVAILABLE

- › Barrels with opening on top for feed intake
- › Closed barrels
- › Barrels with side opening for side feeders
- › Liquid injection ports

CLOSELY INTERMESHING, CO-ROTATING TWIN SCREWS

The screws in the CTE PLUS compounder consist of solid shafts, each with an individual configured sequence of screw and kneading elements. The freely selectable order of screws and kneading elements ensures that the process section meets the process needs. Different process zones can be set up:

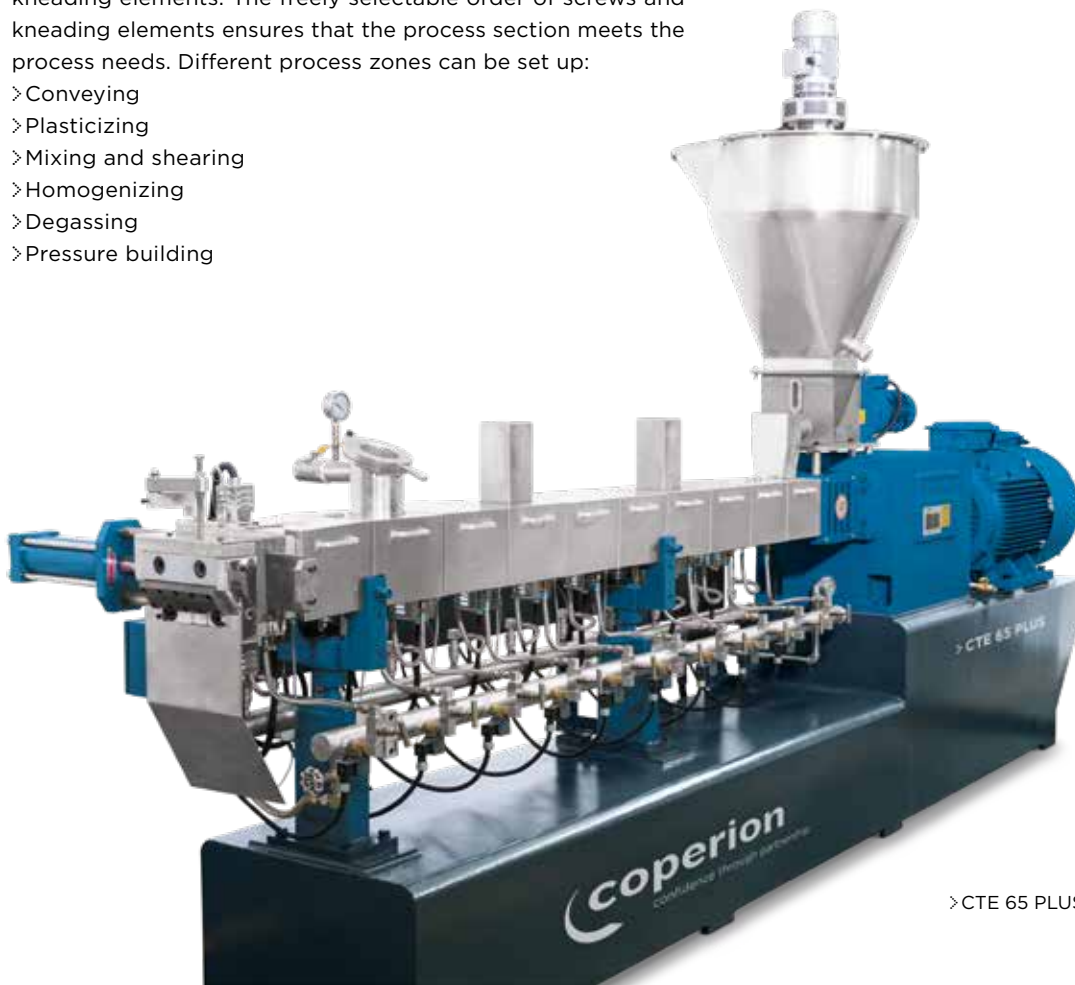
- › Conveying
- › Plasticizing
- › Mixing and shearing
- › Homogenizing
- › Degassing
- › Pressure building

FIRST-CLASS GEARBOXES FOR IMPROVED RELIABILITY AND LONGER LIFE TIME

To improve reliability and to ensure longer life time Coperion, Germany, has engineered gearboxes for the CTE PLUS. These gearboxes have the same dimension like the ones used for the previous CTE series and are exchangeable. The rotating parts and bearings of gearboxes have been redesigned, tooth width has been enlarged and tooth flank and profile have been optimized to ensure perfect intermeshing surface. The bearings are supplied by INA, Germany. The gearboxes offer improved cooling and oil supply. The geometry of their housing has been optimized for higher stiffness and prevention of vibrations. Coperion Nanjing manufactures all housings of the CTE PLUS gearboxes with a CNC machine of Heller, Germany. The positioning precision of this CNC machine is 5 µm. After production all gearbox housings are checked in-house with a 3-dimensional inspection machine of Carl Zeiss, Germany. The precision of this machine is 1.4 µm.

DOWNSTREAM EQUIPMENT

Coperion Nanjing offers a wide range of downstream equipment for the CTE PLUS series such as strand pelletizers or hot face cutting.

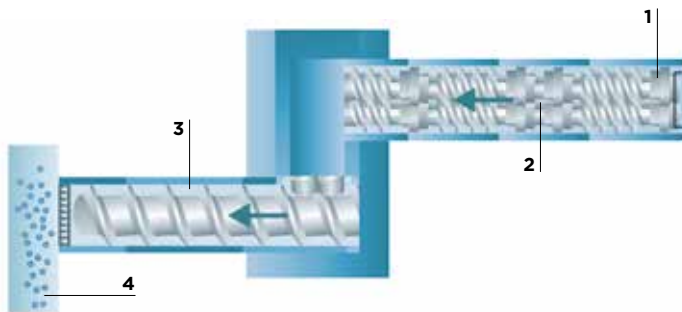


› CTE 65 PLUS TWIN SCREW EXTRUDER

» CTE PLUS two-stage. The ideal compounding and pelletizing system for gentle processing of heat and shear sensitive materials.

The CTE PLUS two-stage compounding and pelletizing system is mainly designed for the modification and compounding of heat and shear sensitive materials. Its two-stage set-up and the modular principle of the process section allow highly ef-

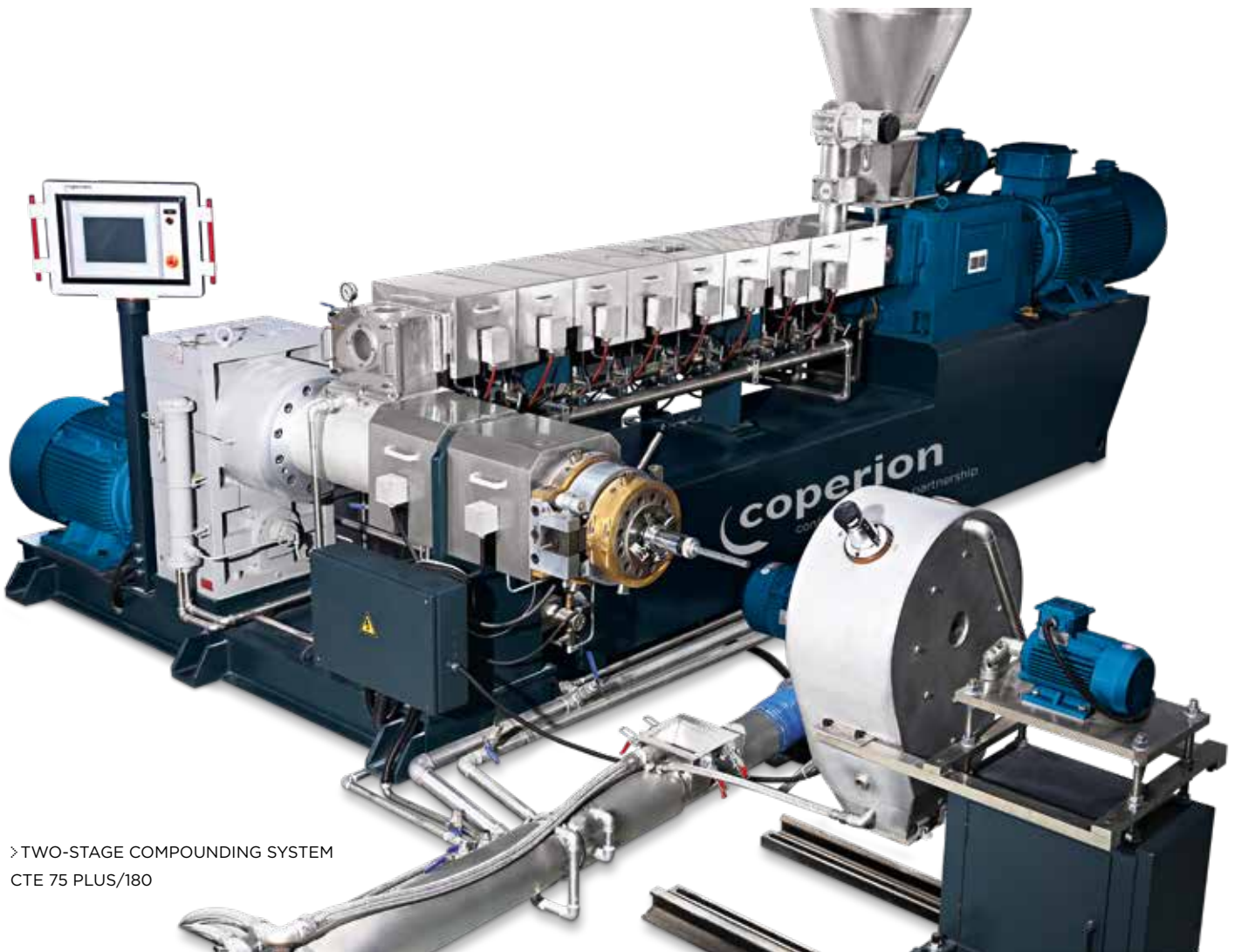
ficient compounding of applications such as PVC, XLPE and HFFR cable compounds, soft PVC, medical compounds, EVA footwear compounds, etc.



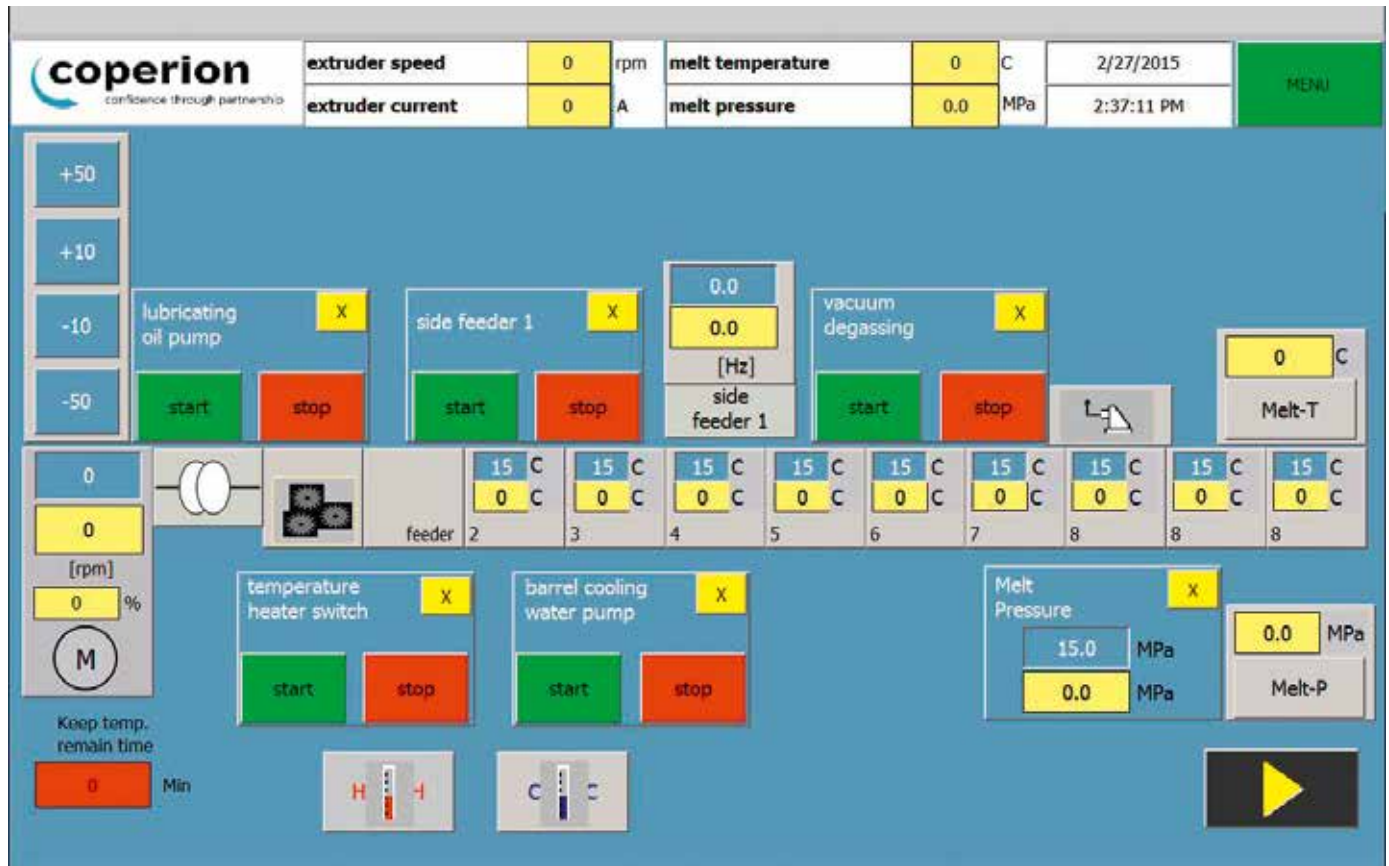
- 1 Crammer feeder
- 2 Twin screw extruder CTE PLUS
- 3 Single discharge screw SE
- 4 Air cooling pelletizer

WORKING PRINCIPLE OF THE CTE PLUS TWO-STAGE

Plasticizing, mixing and homogenizing in the twin screw process section
Open, pressureless product transfer into the discharge screw with the possibility of degassing
Gentle discharge through the die plate with a slow rotating single screw
Air-cooling pelletizing as well as eccentric pelletizing - optionally available with strand and waterring pelletizing



➤ Control systems. Coperion Nanjing provides different control systems for the CTE PLUS series.



> HMI CONTROL SYSTEM OF CTE PLUS SERIES

> **RELAY CONTROL**

Simple, low-cost, but reliable and easy maintenance system

> **PLC**

Visualized touch screen to control the machine. Functions like supervision, alarm, print and parameter tendency can be included

> **IPC**

System with bus control technology (Profinet, Profibus, OPC, etc.). One PC to control several production lines, including functions like supervision, data collection and tendency analysis



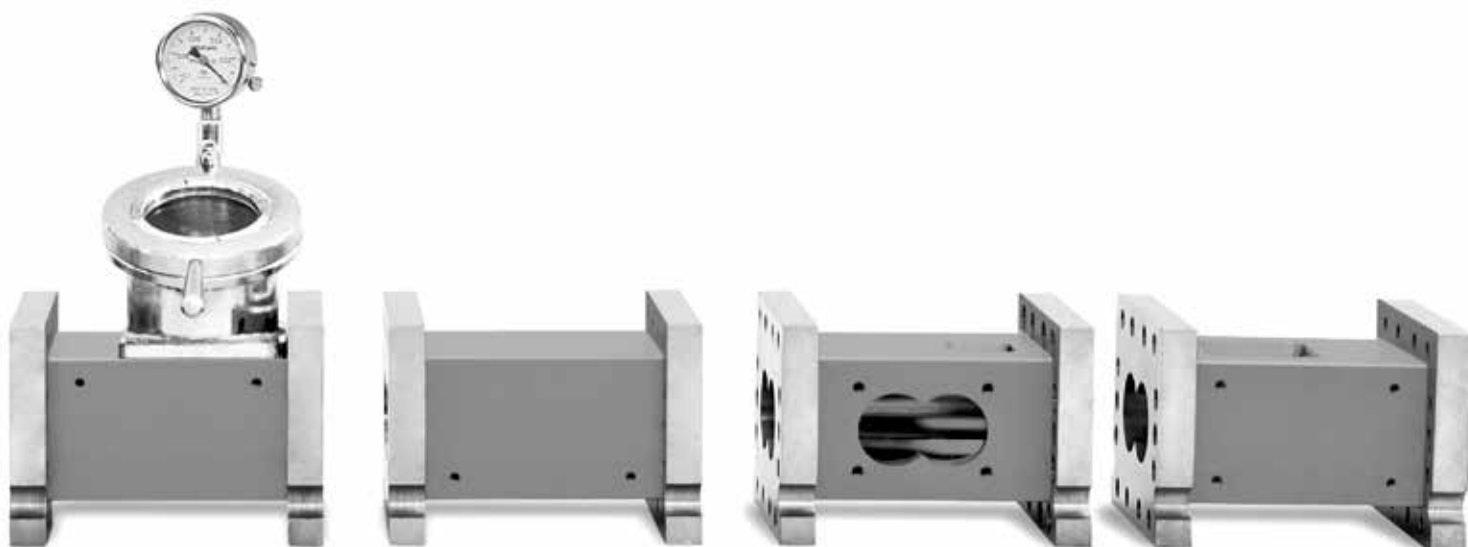
> MODULAR DESIGN OF THE PROCESS SECTION OF THE CTE PLUS SERIES

Technical data of the CTE PLUS

	Max. torque per shaft [Nm]	Screw diameter [mm]	Max. screw speed [min ⁻¹]	Main motor power [kW]	Throughput [kg/h]
CTE 20 PLUS	42	22	600	3/5.5	2-13
CTE 35 PLUS	194	36	600	18.5/22	30-90
CTE 50 PLUS	533	51	600	55/75	90-280
CTE 65 PLUS	1,012	62	600	90/132	150-460
CTE 75 PLUS	1,555	71	600	160/200	260-830
CTE 96 PLUS	3,417	94	600	315/355	500-1,500
CTE 135 PLUS	7,160	132	400/600	600/900	1,400-3,500
CTE 165 PLUS	14,300	165	400	1,200	2,000-5,000

Technical data of the CTE PLUS two-stage

	Model	Screw diameter [mm]	Max. screw speed main motor [min ⁻¹]	Main motor power [kW]	Throughput [kg/h]
CTE 50-100 PLUS two-stage	CTE 50 PLUS	51	400/600	37-75	100-380
	SE 100	100	60/85	18.5/22	
CTE 65-150 PLUS two-stage	CTE 65 PLUS	62	400/600	75-132	150-640
	SE 150	150	60/85	37/45	
CTE 75-180 PLUS two-stage	CTE 75 PLUS	71	400/600	110-200	300-1,100
	SE 180	180	60/85	45/55	
CTE 96-200 PLUS two-stage	CTE 96 PLUS	94	400/600	200-355	600-2,000
	SE 200	200	60/85	55/75	



»» Quality is our benchmark. Significant improvements in the quality standards at Coperion in Nanjing prove our commitment.

During the development process of the CTE PLUS series Coperion Nanjing, China, the production site of the CTE series, has undertaken comprehensive initiatives to significantly improve its quality standards. Coperion Nanjing uses state-of-the-art German machining centers and long-proven Coperion quality production norms have been implemented. The production process is very closely monitored, using German high-precision,

high-level production and quality measuring machinery and equipment. The Quality Check Plan together with Factory Acceptance Tests (FAT) make every step of manufacturing and assembly traceable to ensure the high quality of our extruders. Coperion Nanjing manufactures all key components in-house. This includes barrels, screw elements and screw shafts as well as the assembly of control cabinets.



BARREL AND GEARBOX HOUSING MANUFACTURING WITH HELLER CNC MACHINE

The barrels and gearbox housings of the CTE PLUS are manufactured on a machining center of Gebr. Heller Maschinenfabrik, Germany, the leading CNC manufacturer in the world – to ensure high precision machinery parts.



MANUFACTURING OF SCREW ELEMENTS WITH DMG MACHINE

For the manufacturing of screw elements Coperion Nanjing uses a machining center of DMG Gildemeister, Germany. It is a one-step production process to ensure perfectly intermeshing screw profiles.



ASSEMBLY OF CONTROL CABINETS

Coperion Nanjing assembles all control cabinets in-house – according to European standards and regulations. Main electrical components are of world-renowned brands. Relay control, PLC control as well as IPC control systems are available.

In-house production ensures that every single component of the CTE PLUS twin screw extruder is an example of top class technology – so that you can rely on maximum throughput rates and highest product quality.



ALL THESE MEASURES ENSURE THE HIGH QUALITY STANDARDS THAT THE MARKET EXPECTS FROM COPERION.

➤ MEASUREMENTS FOR QUALITY CHECK



QUALITY CHECK OF RAW MATERIAL COMPOSITES

The metallic composition of raw materials is checked and recorded by an atomic emission spectrometer. A Vickers hardness tester checks the hardness of the material after heat treatment to strictly control product quality.



QUALITY-CHECK OF SCREW ELEMENTS

A special instrument checks the timing and the crest width of screw elements at highest precision.



CARL ZEISS 3-DIMENSIONAL BARREL AND GEARBOX INSPECTION CENTER

The 3-dimensional inspection center by Carl Zeiss AG, Germany, checks the dimension range at micron level. A specially designed temperature sensor offers extremely reliable temperature compensation to ensure highest precision. The quality of every single barrel and gearbox is assured and closely monitored.



FARO 3-DIMENSIONAL CHECK EQUIPMENT FOR ASSEMBLY ALIGNMENT

During assembly Coperion Nanjing aligns each extruder using a portable arm measuring system. It is a 3-dimensional test instrument of Faro, Switzerland, that ensures high precision, reliable operation under high speed and high torque and minimizes abnormal wear of barrels and elements.

» We design optimal solutions for your compounding systems using state-of-the-art technology. In addition to our simulation and scale-up expertise, we have excellent facilities for extensive testing and further process development of products under realistic production conditions: the Coperion test labs.

Coperion has the world's most extensive test labs for compounding and extrusion systems. They support the development of the optimal designs for compounding systems under realistic production conditions, while further enhancing our processing technology through internal tests. The modular design of our twin screw extruders permits them to be set up to the exact specifications of each test.

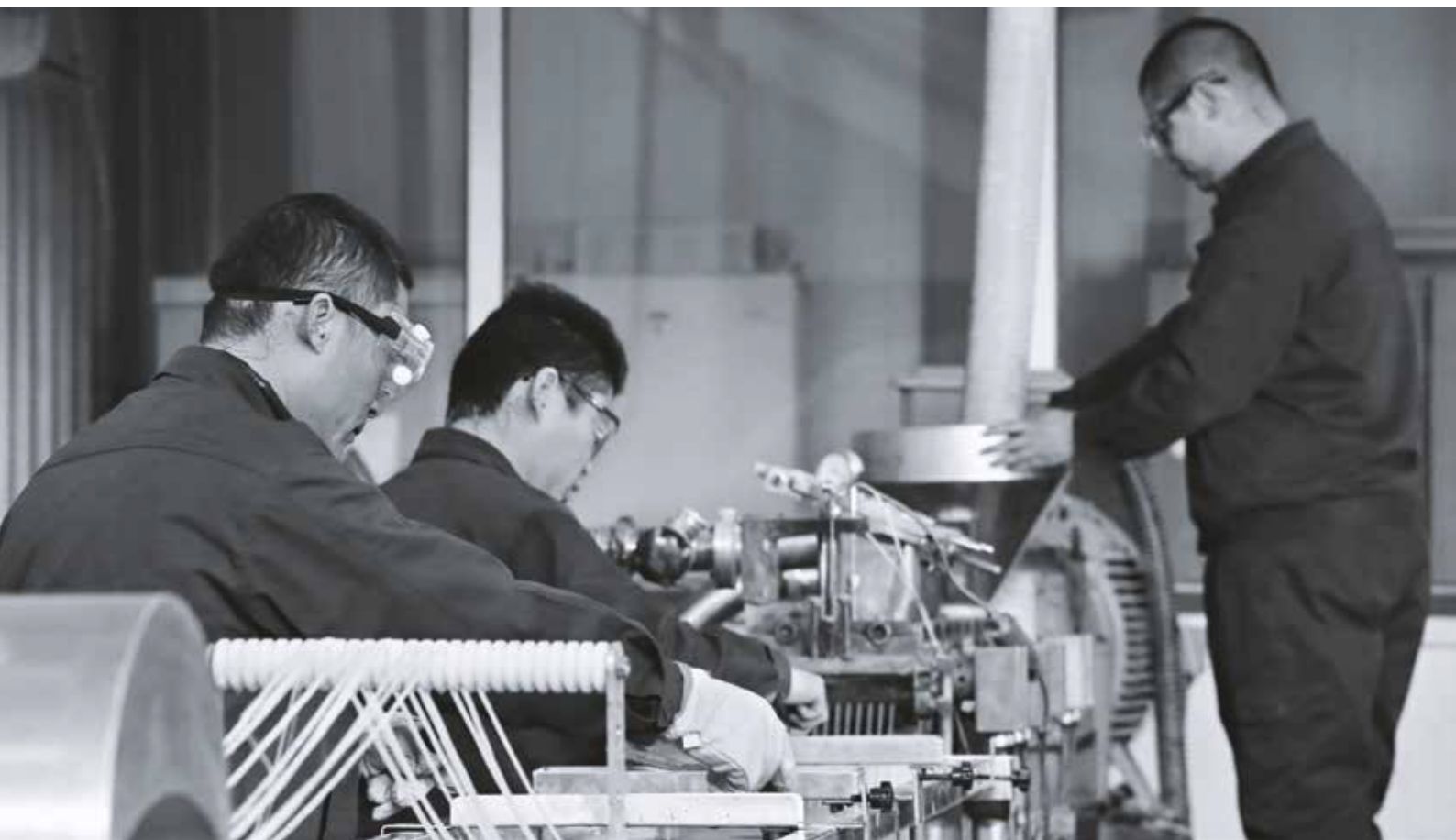
Depending on the processing task, the latest Coperion developments are integrated into the test set-ups. This allows processes with throughput rates from just a few kg/h up to a medium production scale to be developed or optimized. Coperion experts transpose the test results to production scale with proven scale-up methods.

TEST LABS FOR COMPOUNDING & EXTRUSION

Test labs in Stuttgart (D), Sewell (USA) and Nanjing (CN)
A total of 30 ZSK and STS compounding systems worldwide permanently available for testing – from laboratory to large-scale extruder
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

EQUIPMENT OF COPERION'S TEST LAB IN NANJING, CHINA

STS 35 Mc ¹¹
STS 50 Mc ¹¹
ZSK 32 Mc ¹⁸
Comprehensive peripheral equipment for feeding, conveying and pelletizing



» It feels like a safety net. That's what we mean when we say "confidence through partnership".

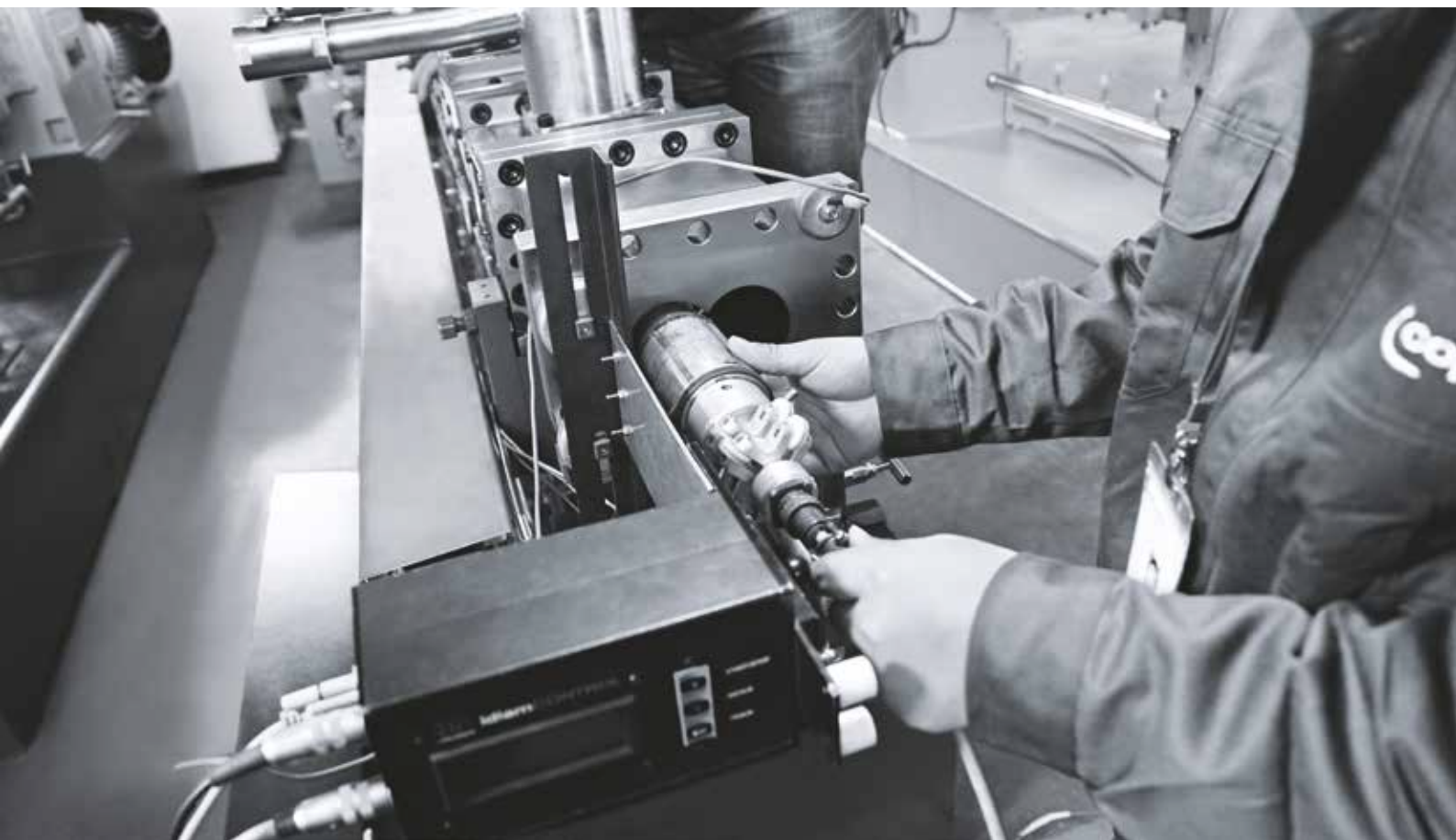
Service means more to us than someone stopping by to repair equipment. Our service structure offers much more than that. It consists of a global network to ensure direct contact with our customers. With a total of over 40 locations, 2,500 employees and numerous representative agencies worldwide, we are able to act quickly, providing support where needed.

The Coperion Nanjing service team is comprised of more than 30 highly skilled on-site service engineers and spare parts sales persons to provide comprehensive services. Our specialists and local partners speak your language and are extremely familiar with local customs – because confidence is born when you understand your partner.

COMPREHENSIVE SERVICES

Spare parts services
Barrel bore measurement
Vibration measurement
Gearbox overhaul
Exchange of gearboxes
Modernization
Operator training
Maintenance contracts

» BARREL BORE MEASUREMENT OF A COPERION EXTRUDER BARREL



Coperion GmbH
Theodorstrasse 10
70469 Stuttgart, Germany
Tel.: +49 711 897-0
Fax: +49 711 897-3999

Coperion GmbH
Niederbieger Strasse 9
88250 Weingarten, Germany
Tel.: +49 751 408-0
Fax: +49 751 408-200

info@coperion.com
www.coperion.com

> Europe

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

France
Coperion S.a.r.l.
56 boulevard de Courcerin
77183 Croissy-Beaubourg, France
Tel.: +33 164 801 600
Fax: +33 164 801 599

Germany
Coperion GmbH
Germany West Office
Industriestrasse 71a
50389 Wesseling, Germany
Tel.: +49 2232 20700-10
Fax: +49 2232 20700-11

Coperion Pelletizing Technology GmbH
Heinrich-Krumm-Strasse 6
63073 Offenbach, Germany
Tel.: +49 69 989 5238-0
Fax: +49 69 989 5238-25

Coperion K-Tron Deutschland GmbH
Heinrich-Krumm-Strasse 6
63073 Offenbach, Germany
Tel.: +49 69 8300 899-0
Fax: +49 69 8300 9498

Italy
Coperion S.r.l.
Via E. da Rotterdam, 25
44122 Ferrara, Italy
Tel.: +39 0532 7799-11
Fax: +39 0532 7799-80

Coperion S.r.l.
Milan Office
Via XXV Aprile, 49
20091 Bresso (MI), Italy
Tel.: +39 02 241 049-01
Fax: +39 02 241 049-22

Russian Federation, CIS
OOO Coperion
Proezd Serebryakova 14,
Bld. 15, Office 219
129343 Moscow, Russian Federation
Tel.: +7 499 258 4206
Fax: +7 499 258 4206

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

Switzerland
Coperion K-Tron (Schweiz) GmbH
Lenzhardweg 43/45
5702 Niederlenz, Switzerland
Tel.: +41 62 885-7171
Fax: +41 62 885-7180

United Kingdom
Coperion Ltd.
Coperion K-Tron Great Britain Ltd.
Unit 4, Acorn Business Park
Heaton Lane
Stockport, SK4 1AS, United Kingdom
Tel.: +44 161 209 4810
Fax: +44 161 474 0292

> Asia

China
Coperion (Nanjing)
Machinery Co. Ltd.
No. 1296 Jiying Avenue
Jiangning District
Nanjing 211106, PR China
Tel.: +86 25 5278 6288
Fax: +86 25 5261 1188

Coperion (Nanjing)
Machinery Co. Ltd.
Taiwan Branch Office
7F-2, No.201, Fuxing N. Road
Songshan District
Taipei City 105403, Taiwan
Tel.: +886 2 2547 5267
Fax: +886 2 2547 5980

Coperion International
Trading (Shanghai) Co. Ltd.
Coperion Machinery &
Systems (Shanghai) Co. Ltd.
3rd Floor, Building B1
6000 Shenzhuan Road
Dongjing Town, Songjiang District
Shanghai 201619, PR China
Tel.: +86 21 6767 9505
Fax: +86 21 6767 9108

Coperion K-Tron (Shanghai) Co. Ltd.
3rd Floor, Building B1
6000 Shenzhuan Road
Dongjing Town, Songjiang District
Shanghai 201619, PR China
Tel.: +86 21 6767 9505
Fax: +86 21 6767 9108

India
Coperion Ideal Pvt. Ltd.
Ideal House, A-35, Sector 64
201307 Noida (U.P.), India
Tel.: +91 120 4299 333
Fax: +91 120 4308 583

Japan
Coperion K.K.
4F, Leaf Square Shin-Yokohama Bldg.
3-7-3, Shin-Yokohama,
Kohoku-ku Yokohama,
Kanagawa 222-0033, Japan
Tel.: +81 45 595 9801
Fax: +81 45 595 9802

Saudi Arabia
Coperion Middle East Co. Ltd.
Street # 327, Sector G, Block 2, Lot # 31
Jubail 2 Industrial City,
Kingdom of Saudi Arabia
Tel.: +966 13 510 4420
Fax: +966 13 510 4421

Singapore
Coperion Pte. Ltd.
Coperion K-Tron Asia Pte. Ltd.
8 Jurong Town Hall Road
#28-01/02/03 The JTC Summit
Singapore 609434
Tel.: +65 641 88-200
Fax: +65 641 88-203

> America

South America
Coperion Ltda.
R. Arinos, 1000
RBCA - Royal Business Center
Anhanguera, Módulo 4
Parque Industrial Anhanguera
06276-032 Osasco - SP, Brazil
Tel.: +55 11 3874-2740
Fax: +55 11 3874-2757

USA, Canada, Mexico, NAFTA
Coperion Corporation
590 Woodbury Glassboro Road
Sewell, NJ 08080, USA
Tel.: +1 201 327-6300
Fax: +1 201 825-6494

Coperion Corporation
Wytheville Office
196 Appalachian Drive
Wytheville, VA 24382, USA
Tel.: +1 276 228-7717
Fax: +1 276-227-7044

Coperion Corporation
Houston Office
5825 North Sam Houston Pkwy West
Suite 250
Houston, TX 77086, USA
Tel.: +1 281 449-9944
Fax: +1 281 449-4599

Coperion K-Tron Salina, Inc.
606 North Front Street
Salina, KS 67401, USA
Tel.: +1 785 825-1611
Fax: +1 785 825-8759

Coperion K-Tron Salina, Inc.
Sewell Office
590 Woodbury Glassboro Road
Sewell, NJ 08080, USA
Tel.: +1 856 589-0500
Fax: +1 856 589-8113

For more information about
the worldwide Coperion network,
visit www.coperion.com