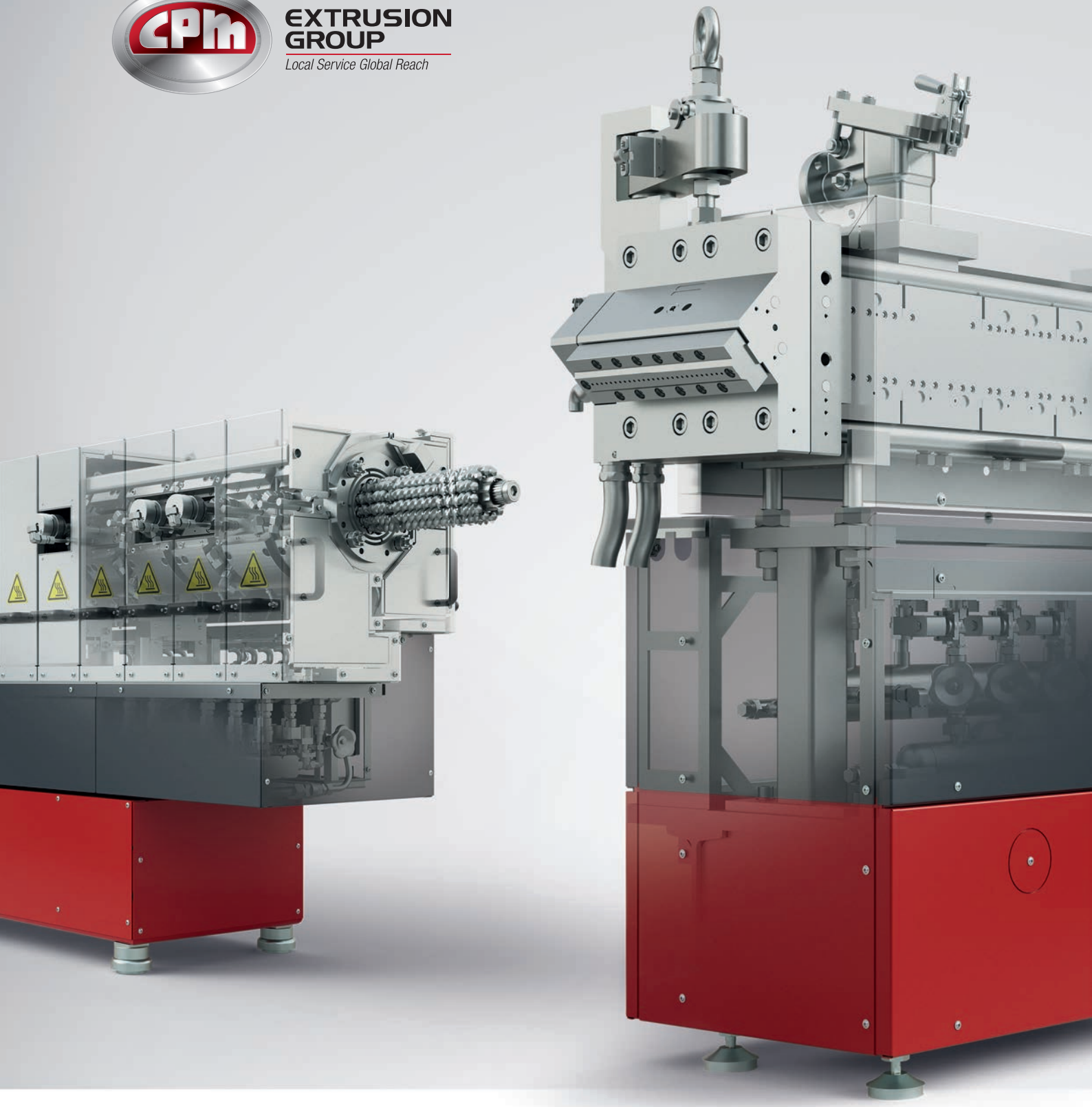
EXTRUSION GROUP
Local Service Global Reach



MACHINES – OUR RANGE FOR YOUR BEST RESULTS

Compounding Systems | Twin Screw Extruders | *RingExtruder* RE® | Auxiliary Devices | Services

DIRECTORY

WIDE RANGE OF PRODUCTS

Through many years of experience and utilizing the strength of each of our business units, the CPM Extrusion Group is a global leading supplier of:

- Compounding Systems
- Twin Screw Extruders
- *RingExtruder* RE®
- High Performance Elements
- Twin Screw Replacement Parts
- Auxiliary Equipment
- Services (training, engineering service, supporting services)

LOCAL SERVICE GLOBAL REACH

CPM Extrusion Group offers a wide range of products to support the global compounding market. For several decades we have been developing a broad range of extrusion machines and components which meet our customer's requirements and demands.

Our offering of turn-key compounding systems is proof that we are capable of supplying our customers at the highest level. As a leading global supplier, we pay close attention to our high-quality standards and our facilities are ISO 9001 certified.

We offer matching wear parts and specific optimizations for all current Twin Screw Extruders and RingExtruders, regardless of the brand.
We offer many new possibilities with regards to geometry, material selection and technical design to provide you customized solutions.
Our broad range of Twin Screw Extruders and RingExtruders allows us to meet the needs of every customer.

We use our experience and creativity for continuous improvement of your plant's output, both in terms of quality and throughput. We always focus on a long service life of our machinery and broad range of components resulting in low maintenance and repair costs.

COMPOUNDING SYSTEMS – HIGHLY ENGINEERED PROCESS SYSTEMS

THE CPM EXTRUSION GROUP HAS SIGNIFICANT EXPERIENCE PROVIDING COMPLETE COMPOUNDING LINES AND SYSTEMS.

1. ABOUT COMPOUNDING SYSTEMS

By leveraging our applications knowledge, manufacturing capabilities, and our premier group of supply partners, CPM Extrusion Group has the capability to offer processing systems for numerous compounding applications. With significant design, project engineering, manufacturing and field service resources in North America and China, CPM Extrusion Group is the perfect systems partner for you. We offer two types of compounding systems:

› COMPLETE COMPOUNDING SYSTEMS

Complete compounding systems of CPM Extrusion Group have the capability to satisfy customer requirements ranging from basic to very advanced system specification and construction. We work on your request and start a project together with you from the idea until final complete compounding line in your factory.

› MODULAR COMPOUNDING SYSTEMS

Modular compounding systems by CPM Extrusion Group represent an alternative to conventional project build with specific advantages such as: competitive advantage for leading compounders, allowing you to respond quickly to your customers' changing environments.

Modular systems by CPM Extrusion Group incorporate key unit machines, ancillary dosing and pelletizing equipment, and controls into a pre-manufactured and pre-tested package.

Modular compounding systems are very much of your interest if you are looking for shortened, simplified project installation, minimized field project risk of cost overrun and reduced overall project cost and schedule. Modular systems approach is most effective for mid-sized multi-screw extrusion plants through 70 mm range of CPM Extrusion Group products.

2. THE ADVANTAGES

CPM Extrusion Group offers the following advantages when you choose us as your supplier for a

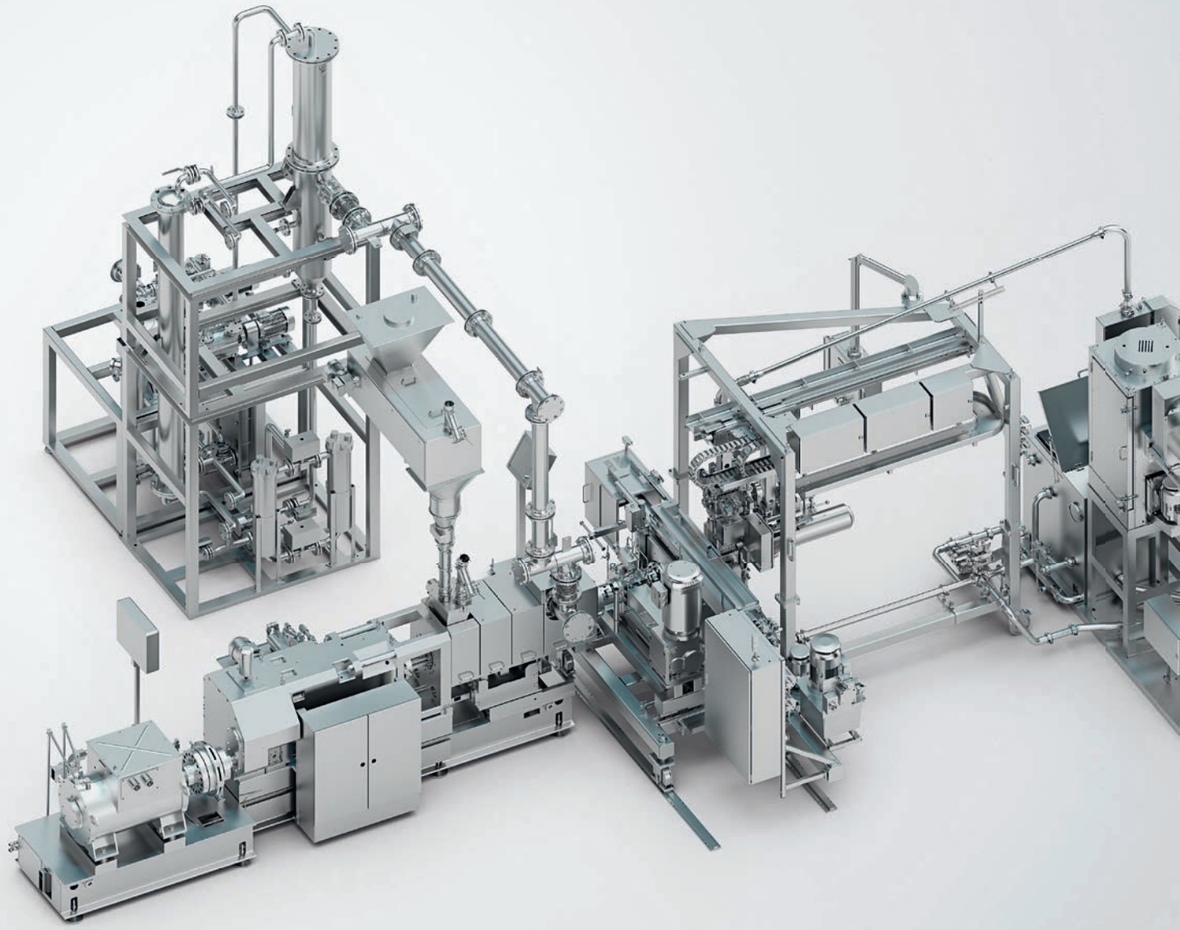
› Complete Compounding System:

YOUR BENEFITS
Integrated project delivery for ingredient receiving through product packaging
Advanced plant automation to manage and operate one or several extrusion lines
Classified area competency
Concurrent design, sourcing and delivery for improved project schedule
Modular and on-board construction for lean field installation of equipment and infrastructure
Distributed and intelligent control for reduced electrical field labor and materials

› Modular Compounding System:

YOUR BENEFITS
A significant reduction in the total installed project cost (up to 25%)
Single supply relationship
Reduction in performance risk (Ability to mechanically and electrically pre-test system)
Construction and installation time reduced by 70%
Ability to quickly deploy, re-deploy, or move compounding assets from one location to another

COMPOUNDING SYSTEMS



› APPLICATIONS:

- Appealing project delivery models for most multi-screw extrusion processes
- Single-point of responsibility for design, procurement, integration of operation, safety
- Management of the mechanical and electrical compatibility of the various pieces of the system

› APPLICATION - INDUSTRIES:

- Adhesives
- Direct extrusion
- Engineered plastics
- Powder coatings and toners
- Masterbatch
- Reactive extrusion
- PVC, XLPE and cable compounds

CXE SERIES

THE INDUSTRY BENCHMARK FOR QUALITY & RELIABILITY THROUGH THE LATEST TECHNOLOGY

The CXE Series represents the industry benchmark for quality and reliability.

1. MAIN PRINCIPLE AND USE

This series has been developed through 25 years of focus on customer requirements and is globally well known as the benchmark in the industry.
All components specified for the CXE extruder are of the highest level of quality and reliability. CXE machines are designed for maximum flexibility, performance and serviceability.

2. THE ADVANTAGES

The design of the CXE Series offers excellent quality and meets your highly demanding requirements. Investing in a CXE series will bring you benefits on different levels:

YOUR BENEFITS
Highly customized machine, configured to your specific requirements
Do/Di ratio of 1.55
We offer responsive engineering consulting
Advanced process control and/or machine integration
Long-term reliability at extreme operating conditions
High wear and corrosion resistant materials

3. CXE FEATURE SERIES: HO AND sHO

Our CXE machines are available in two feature series:

Our HO - High Output – CPM Extrusion Group solution for 24/7 compounders which require the highest torque and power. The HO gearbox provides 18 Nm/cm³ torque density and is available with screw speeds up to 1200 rpm. The HO is equipped with our proprietary cold-formed premium screw shafts and a broad portfolio of wear and corrosion protection for screws and barrels.

Our sHO – smart High Output – in addition to the HO series features, includes a variety of smart features to support multi-screw extruder operations at the highest level of performance. The sHO includes our independent shaft torque measurement technology which monitors the torque of each shaft, greatly reducing the risk of machine failure due to imbalanced torque transmission.

The HO also features an oil monitoring system which measures oil quality via inline analysis of temperature, moisture, light transmission and various other parameters reflecting the oil condition. Additionally, we apply vibration and temperature sensors for condition monitoring of the gearbox and motor bearings. Energy monitoring is an important feature of state-of-the-art compounding equipment as it instantly shows the energetic compounding efficiency by measuring electrical power of motor, heaters and auxiliary equipment as well as the cooling water consumption.

4. MACHINE DESIGNING ENGINEERING

FEATURES
Designed to meet your specific mechanical, electrical and processing requirements
Custom feeding and degassing equipment, unlimited screw configurations, user-specified key components like instrumentation, motors and pumps
High level of user definition in the specification of process control platforms & automation
Design incorporates the industry standard 1.55 Do/Di ratio
Highest power and safety factors available
Main bearing lifetime up to 50,000 hours

CXE SERIES

APEX SERIES

PROVIDES THE HIGHEST LEVELS OF QUALITY AND THROUGHPUT AT AN ECONOMICAL PRICE

1. MAIN PRINCIPLE AND USE

CPM Extrusion Group designed the APEX series to focus explicitly on an excellent economical price. We focus on costs and on worldwide quality without sacrificing throughput, reliability and our global service.
CPM Extrusion Group takes advantage of its global footprint (Locations in US, Germany and China) to supply the APEX series. This series utilizes key process section components manufactured in either Europe or the US and is assembled by CPM Ruiya Extrusion in China.
The APEX series consists of two levels that are distinguished by geometry, cost and screw speed:

2. THE APEX SERIES: CX AND RXT SERIES

THE APEX CX SERIES

The CX series was developed to meet the requirements of high-level users of twin screw extruders:

- High torque European gearbox, lubrication system and safety clutch: maximum screw speed of 1200 rpm
- Screw geometry based on Western standard centerlines
- High Performance screws, barrels and shafts manufactured at our site in the US or Germany

THE APEX RXT SERIES

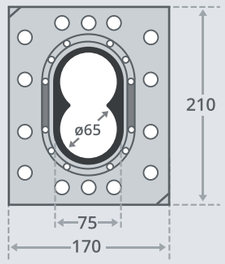
The RXT machine series is our most price competitive machine designed for the global market. The RXT is an economical twin screw extruder with advanced features, higher throughput, higher product quality and higher reliability. The features here are:

- European high torque gearbox, lubrication systems and safety clutch: maximum screw speed of 900 rpm
- Screw geometry based on Chinese standard centerlines
- Barrel design based on Western standards

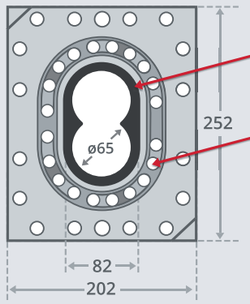
3. THE ADVANTAGES

YOUR BENEFITS
Cost advantage for both series established through assembly in China (price difference between CX and RXT lie within difference in available power and process section materials of construction)
Services delivered wherever your company is located
Increased cooling capacity and extended thickness to resist high mechanical forces

COMPETITION'S BARREL



APEX BARREL

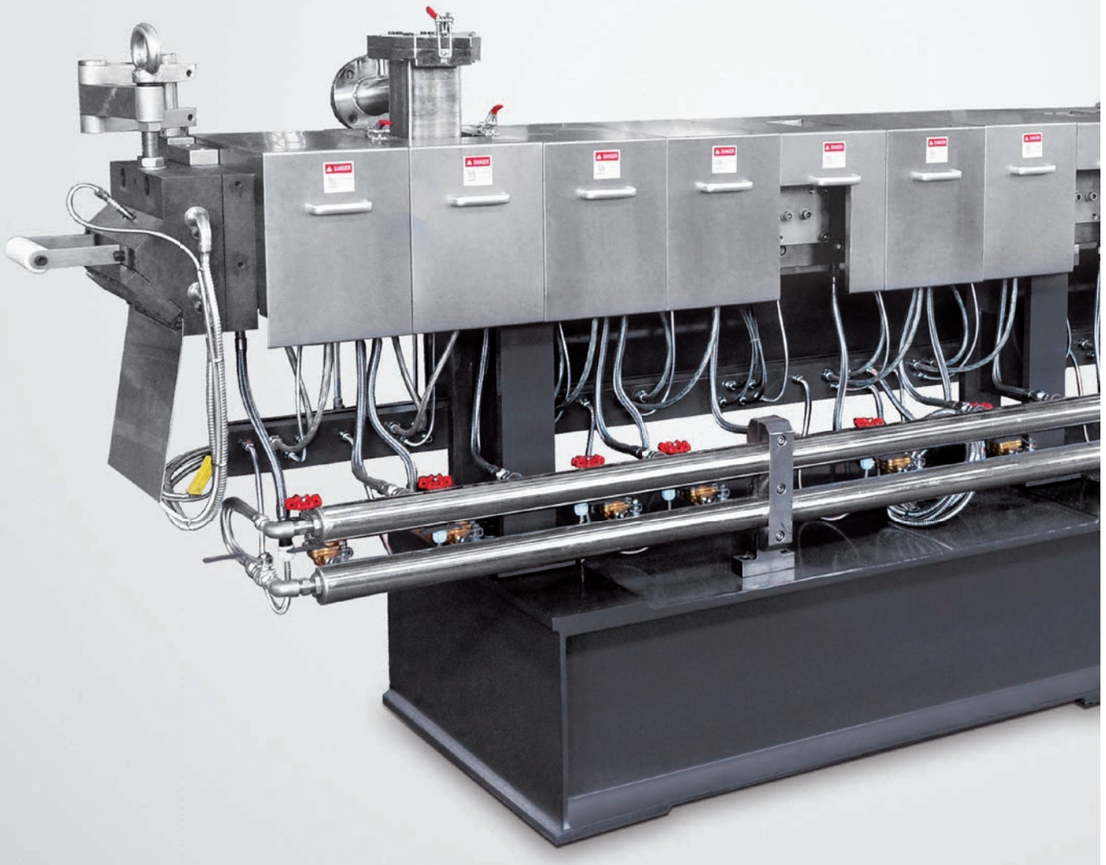


- 50% increase in barrel thickness to resist high mechanical forces
- 65% increase in cooling capacity
- Proprietary RX 101 HIP wear materials for maximum wear resistance

APEX SERIES

APPLICATION - INDUSTRIES:

- Adhesives
- Direct extrusion
- Engineered plastics
- Masterbatch
- Reactive extrusion
- PVC, XLPE and cable compounds



› APPLICATION - INDUSTRIES:

- Adhesives
- Direct extrusion
- Engineered plastics
- Masterbatch
- Reactive extrusion
- PVC, XLPE and cable compounds

TSE SERIES

TSE SERIES

ADVANCED FEATURES AT AN ECONOMICAL PRICE

The TSE series from CPM Ruiya Extrusion is one of the most commonly used twin-screw machines in Chin and is the industry standard throughout Asia.

1. MAIN PRINCIPLE AND USE

The TSE series has been in production for more than 25 years and is the benchmark for quality among entry level machines. Within this series you can also obtain the TSE Plus. Both series have highly economical prices and are driven by advanced features.

The TSE series is developed to maintain the same level of throughput, quality, and reliability at a reduced cost. The TSE uses a modular building block design consisting of base frame, motor, safety clutch, gearbox, segmented barrels and screws. The TSE typically uses electric heating and modular cooling with water for controlling the temperature of each barrel module.

At the most economical solution, all components are sourced from quality Chinese and global suppliers.

› TSE SERIES PLUS

The TSE Series Plus allows processors to obtain advanced performance within the TSE series.
It includes all of the features of the TSE and the following additions:

- European high torque gearbox with the industry's highest safety factor, low noise, and significantly longer working life
- European high-performance gearbox lubrication system
- European safety clutch for advanced mechanical protection
- Frame with increased rigidity and strength
- Barrels and shafts interchangeable with the TSE base models

2. THE ADVANTAGES

YOUR BENEFITS
Design proven and refined over 25 years and over 2000 installations
The benchmark for quality among entry-level machines
The industry standard in China

3. MACHINE DESIGN ENGINEERING

FEATURES
Co-rotating intermeshing twin-screw geometry based on Chinese standard centerlines
Closed-loop barrel cooling system
Modular barrel configuration with individual electric heaters, modular cooling by water, and independent temperature control zones
Vent ports for atmospheric venting
Splined shafts
Self-wiping segmented screws
User-friendly analog or PLC control systems
Integrated torque limiting system
Proven and reliable gearbox
Robust frame design
Vacuum ports and vacuum systems for degassing
Available with side-feeding barrels and side feeders
Available with 600 rpm maximum screw speed
Available with screw diameters between 20mm-135mm

THE *RINGEXTRUDER* RE®

RINGEXTRUDER **RE® FOR CHALLENGING PROCESSES LIKE CONTINUOUS COMPOUNDING OF RUBBER, POST-CONSUMER PET- RECYCLING, ADHESIVES AND REACTIVE EXTRUSION OR OTHER APPLICATIONS**

1. ABOUT MULTI-SCREW EXTRUDERS

It is common knowledge that the advantages of multi screw extruders lie in the intermeshing section – the apex. The apex is the base for the advantageous features of multi-screw extruders:

- Dispersive mixing via elongational flow
- Distributive mixing via stream divisions
- Surface renewal for degassing
- Extraordinary cooling features

Hence, it is quite obvious that increasing the amount of screws in the extruder is an excellent way to boost the capability of the extruder.

The *RingExtruder* RE® with 12 screw shafts is a co-rotating multi-screw extruder which was developed for challenging mixing and degassing applications.

› BASIC DESIGN & TECHNOLOGICAL FEATURES

12 screw shafts arranged symmetrically in a ring rotate in the same direction each on its own axis. The outer barrel and the stationary core enclose the screws with a narrow gap. Transportation of material takes place in a double helix: around the stationary core and around each screw.

The apex is used extensively in the *RingExtruder* RE® as the central point of the process technology. Material is passed to the adjacent screw with a change in flow direction, resulting in a 3D elongation flow without partial overloading and leads to an excellent dispersion, wetting and homogenization.

In addition, the RE provides a high surface-to-volume ratio which is unmatched by any other multi-screw extruder. The combination of the more frequent passage of the intermeshing section and the high surface-to-volume ratio is enhancing the degassing capability of the machine.

Finally, the arrangement of the screw shafts in a ring largely compensates the spreading forces known in multi-screw extruders and therefore reduces barrel and screw wear.

2. THE ADVANTAGES

The optimized design creates competitive advantages in the production of shear-sensitive compounds, challenging mixing and degassing applications.

YOUR BENEFITS
Superior dispersive and distributive mixing
Excellent degassing
Extraordinary temperature and residence time control
High energy efficiency and lower operating costs

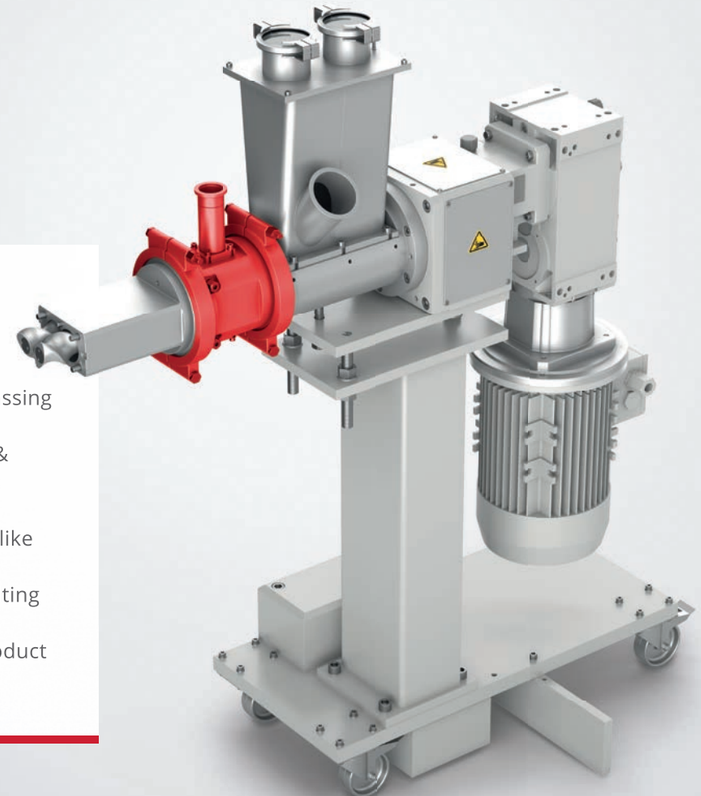
3. MACHINE DESIGN AND ENGINEERING

FEATURES
Consists of electrical drive, safety coupling, reduction and distribution gearbox and processing unit
Single torque measurement for secure processes and quality control
Barrels, screws and core divided into individual segments with modular configuration
Barrels heated electrically and cooled with water, additional core cooling
Solids or liquids can be added downstream on combi barrels
Special barrels for multiple sidefeeding or optimized degassing processes
Control concept allows to control and monitor the entire extrusion process
We supply single Extruder or complete turnkey systems

RINGEXTRUDER

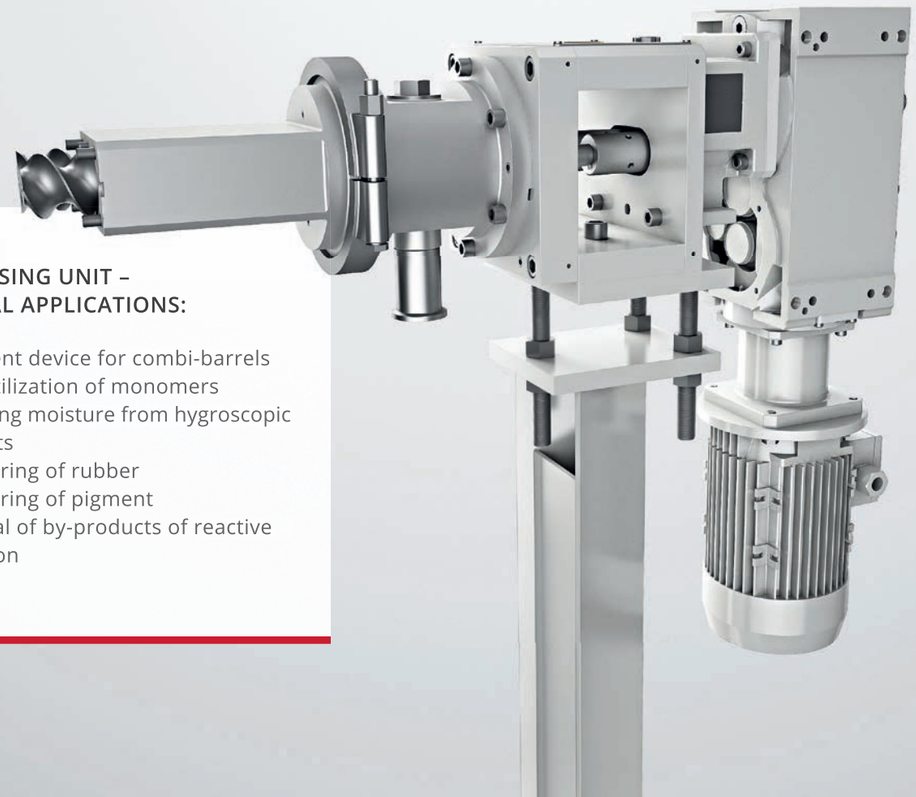
› APPLICATIONS - INDUSTRIES:

- Continuous compounding of rubber
- PET-Recycling
- Adhesives
- Reactive extrusion
- Pharmaceutical compounding
- Food



HIGH OUTPUT SIDEFEEDER – APPLICATION & BENEFITS:

- Highly efficient feeding by degassing & compacting
- Downstream feeding of fillers & reinforcing agents or pigments
- Adding of glass or other fibers
- Gentle processing of additives like flame retardants
- Reducing wear costs in the melting section of the main extruder
- Improving productivity and product quality



DEGASSING UNIT – TYPICAL APPLICATIONS:

- Back-vent device for combi-barrels
- Devolatilization of monomers
- Removing moisture from hygroscopic products
- Dewatering of rubber
- Dewatering of pigment
- Removal of by-products of reactive extrusion

OUR AUXILIARY DEVICES

CPM Extrusion Group has developed a wide range of auxiliary devices for multi screw extruders which are well known in the market.

Our flexible design is based on standard components, and our large portfolio of sizes is helping on easy integration in various types of extrusion systems.

ADVANTAGES OF OUR SIDEFEEDER AND DEGASSING UNITS

YOUR BENEFITS
Universal equipment, fast and easy adaption to any machine
Wear protection
Fast change-over time, thanks to quick removable system
Sidefeeder system available with screw diameter from 25mm to 160mm

OUR HIGH OUTPUT SIDEFEEDER

BASIC DESIGN

In many extrusion processes, fillers and reinforcing agents, as well as pigments and flame retardants are not added in the main feeding port, but in the subsequent downstream processing sections. A flexible, wear-resistant and reliable sidefeeder using intermeshing, co-rotating twin screws provides positive conveying into the multi-screw extruder.

Our High Output Sidefeeder is a customer-specific solution that increases your productivity and product quality. The High Output Sidefeeder easily adapts to all OEM brands and types in many ways. With the new High Output technology, powder can be added to the extruder while simultaneously deaerating.

TECHNICAL ASPECTS

Typically, the sidefeeder is fed by a gravimetric feeding system. The tightly intermeshing screws of the sidefeeder receive the product and transport the material into the main extruder.

OUR DEGASSING UNIT

BASIC DESIGN

Degassing units are manufactured to optimize the degassing or venting of an extrusion process. In special cases these devices can also be used for the removal of liquids.

Our degassing units achieve excellent degassing results, even under the most difficult processing conditions and can be individually adapted to the requirements of degassing volume, available space and connection dimensions of the existing degassing.

The CPM Extrusion Group degassing unit can be either mounted on top of an open barrel or on the side of a combi-barrel.

TECHNICAL ASPECTS

The axially open screw profile of the degassing unit allows effective and fail-safe separation of product and volatile components.

Any discharged products are conveyed back into the processing chamber and gaseous components are carried off by the vacuum applied to the degassing unit.

TECHNICAL DATA

CXE SERIES

Model	D(mm)	Central Distance (cm)	Max L/D	Screw Speed (rpm)	Max Power (kw)	Torque/Shaft (Nm)
CX/CXE 25	25	2,11	72	1200	21	81
CX/CXE 26	26	2,11	72	1200	35*	139*
CX/CXE 32	32	2,62	72	1200	83	315*
CX/CXE 40	40	3,34	72	1200	110/170*	425/675*
CX/CXE 45	45	3,75	72	1200	245	930*
CX/CXE 50	50	3,95	72	1200	200	800
CX/CXE 58	58	4,80	72	1200	355/503*	1440/2000*
CX/CXE 70	70	5,85	72	1200	630/880*	2450/3500*
CX/CXE 92	92	7,60	72	1200	1250/1583*	6000/6300*
CX/CXE 103	103	8,50	72	1200	1600	8300
CX/CXE 105	105	8,60	72	1200	2558*	10176*
CX/CXE 133	133	11,00	72	1000	3600*	17500*

*This power and torque data is for CXE/CX HO Series.

APEX RXT SERIES

Model	D(mm)	Central Distance (cm)	Max L/D	Screw Speed (rpm)	Max Power (kw)	Torque/Shaft (Nm)
RXT35	35,6	3,00	72	900	55	283
RXT40	41,0	3,45	72	900	90	463
RXT52	51,4	4,30	72	900	160	823
RXT65	62,4	5,20	72	900	315	1621
RXT75	71,0	6,00	72	900	450	2316
RXT95	93,0	7,80	72	900	1000	5146
RXT135	134,4	11,00	72	600	1800	14325

TECHNICAL DATA

TSE SERIES

Model	D(mm)	Central Distance (cm)	Max L/D	Screw Speed (rpm)	Max Power (kw)	Torque/Shaft (Nm)
TSE20	22,0	1,48	72	600	4	30
TSE30	30,0	2,60	72	600	11	83
TSE35	35,6	3,00	72	600	18,5	140
TSE40	41,0	3,45	72	600	30	227
TSE52	51,4	4,30	72	600	55	416
TSE65	62,4	5,20	72	600	90	680
TSE75	71,0	6,00	72	600	160	1210
TSE85	81,0	6,78	72	600	220	1663
TSE95	93,0	7,80	72	600	315	2381
TSE120	120,0	9,80	72	600	560	4457
TSE125	124,0	10,00	72	600	630	4763

TSE PLUS SERIES

Model	D(mm)	Central Distance (cm)	Max L/D	Screw Speed (rpm)	Max Power (kw)	Torque/Shaft (Nm)
TSE35Plus	35,6	3,00	72	600	30	232
TSE40Plus	41,1	3,45	72	600	45	235
TSE52Plus	51,4	4,30	72	600	90	695
TSE65Plus	62,4	5,20	72	600	160	1235
TSE75Plus	71,0	6,00	72	600	250	1930
TSE95Plus	93,0	7,80	72	600	550	4246
TSE135Plus	134,4	11,00	72	600	1500	11579

TECHNICAL DATA

TSC SERIES

Model		D(mm)	Max L/D	Screw Speed (rpm)	Max Power (kw)
TSC 52-120	TSE 52	51,4	48	500	45
	SE 120	120,0	20	85	37
TSC 65-150	TSE 65	62,4	48	500	75
	SE 150	150,0	20	85	45
TSC 75-180	TSE 75	71,0	48	500	110
	SE 180	180,0	20	85	55
TSC 95-200	TSE 95	93,0	48	500	250
	SE 200	200,0	20	85	75

RINGEXTRUDER RE®

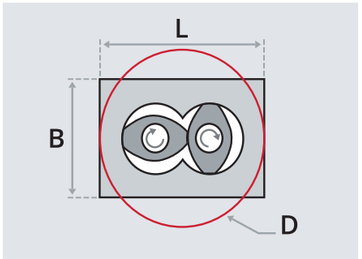
RingExtruder		RE©1	RE©2	RE©3	RE©4	RE©5	RE©6	RE©7	RE©9
XPV-series									
app. Diameter	[mm]	19	24	31	42	52	63	74	95
chanel depth	[mm]	4,0	5,2	6,7	8,9	11,1	13,4	15,7	20,1
free crossectional area	[cm³]	11,7	19,7	32,9	58,3	90,4	131,1	180	297,1
drive specifications									
max. screw speed	[min-1]	1500	1500	1200	1200	1200	1200	900	600
max. torque per shaft	[Nm]	32	69	150	353	675	1185	1906	4019
max. motor power	[kW]	69	130	226	532	1018	1787	2156	3030
Dimensions at 32 L/D									
app. Machine length	[mm]	2600	3200	3880	5260	5850	7600	8200	*1
app. Machine width	[mm]	800	1000	1200	1200	1300	1400	1450	*1
app. machine height	[mm]	1450	1450	1450	1450	1650	1650	2100	*1

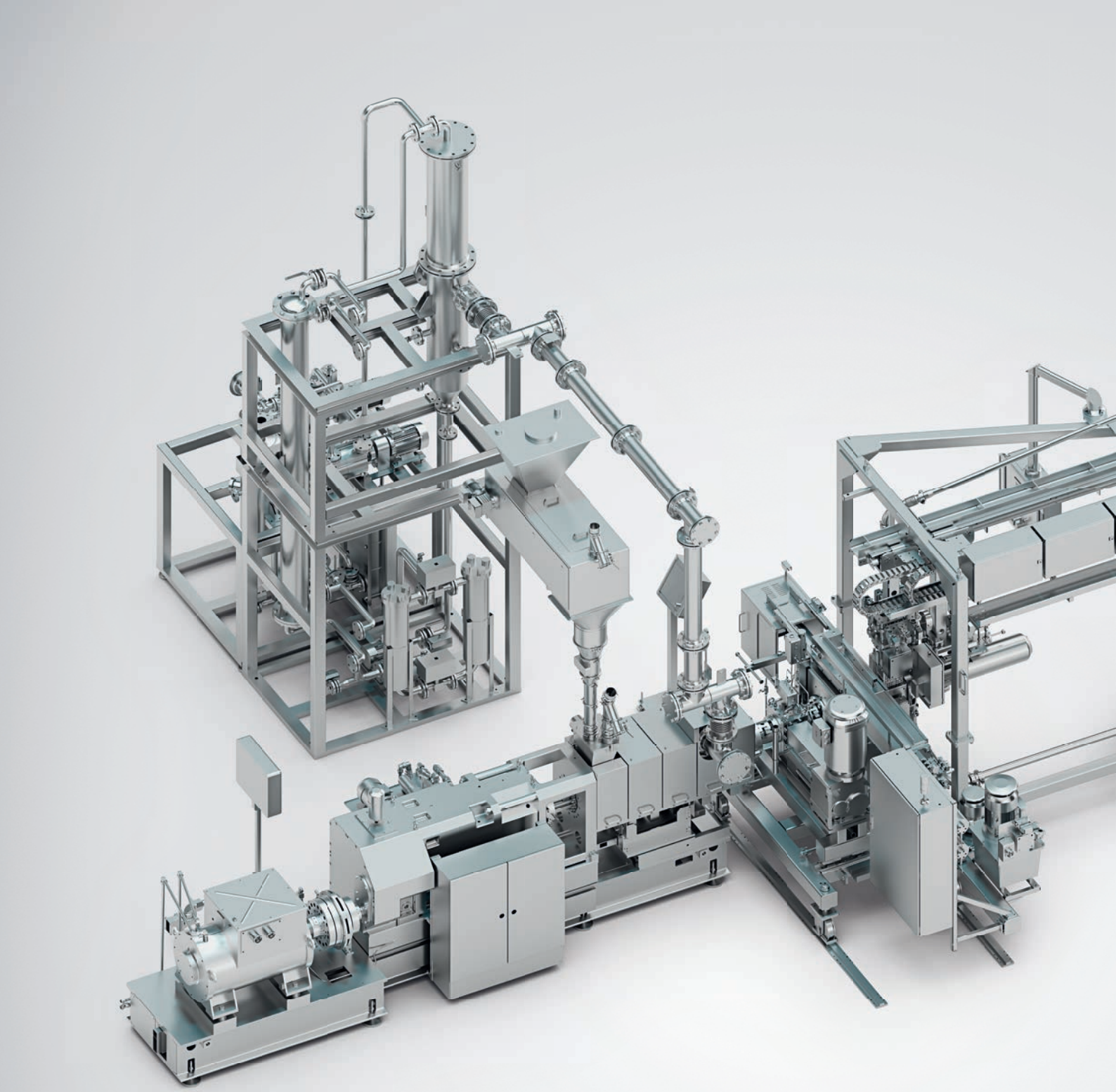
*1 : project specific, information on request.

TECHNICAL DATA

SIDEFEEDER / DEGASSING UNIT

Sidefeeder / Degassing Unit Specifications		025	030	040	055	058	070	080	092	120	133	160
Nominal diameter	[mm]	25	30	40	55	58	70	80	92	120	133	160
free crossectional area	[cm²]	3,4	5,3	9,3	17,5	21,2	31,9	41,6	51,9	96,2	123,0	173,8
Max. Backpressure rating	[bar]	30	30	30	30	30	30	30	30	30	30	30
Sidefeeder Specifications		**SF025**	**SF030**	**SF040**	**SF055**	**SF058**	**SF070**	**SF080**	**SF092**	**SF120**	**SF133**	**SF160**
SideFeeder: max. screw speed	[rpm]	500	500	500	500	500	500	500	500	400	400	400
Power @50Hz	[kW]	3	3	4	7,5	7,5	11	11	15	15	22	30
max. volumetric conveying capacity	[l/h]	80	150	350	920	1.115	2.155	3.120	4.285	8.660	12.550	20.860
Degassing Unit Specifications		**DG025**	**DG030**	**DG040**	**DG055**	**DG058**	**DG070**	**DG080**	**DG092**	**DG120**	**DG133**	**DG160**
Degassing Unit: max. screw speed	[rpm]	250	250	250	250	250	250	250	250	200	200	200
Power @50Hz	[kW]	1,5	1,5	2,2	4	4	5,5	5,5	7,5	7,5	11	15





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