



# Extrusion Machines and Services **for Advancing Your Materials**

ONECPM.COM



Extrusion Systems  
And  
Range of Extruders

EXTRUSION.SALES@CPM.NET



## WIDE RANGE OF PRODUCTS

Driven by a customer-first approach and being solution oriented, CPM is global leading supplier of:

- Extrusion Systems
- Twin Screw Extruders
- *RingExtruder* RE®
- High Performance Elements
- Twin Screw Replacement Parts
- Auxiliary Equipment
- Global Services (training, engineering service, process consultancy, maintenance service and support)

CPM 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 extrusion 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. In every possible situation we are there for our customer whether it is for engineering support, service, training, parts or a complete extrusion line. We are your partner in your productivity.



Listen



Customize



Solve



Partner



# EXTRUSION SYSTEMS – HIGHLY ENGINEERED PROCESS SYSTEMS

## ABOUT EXTRUSION SYSTEMS

By leveraging our applications knowledge, manufacturing capabilities, and our premier group of supply partners, CPM has the capability to offer processing systems for numerous applications. With significant design, project engineering, manufacturing and field service resources spread located at our different facilities in Germany, China and North America, CPM is the perfect global system partner for you.

## COMPLETE EXTRUSION SYSTEMS

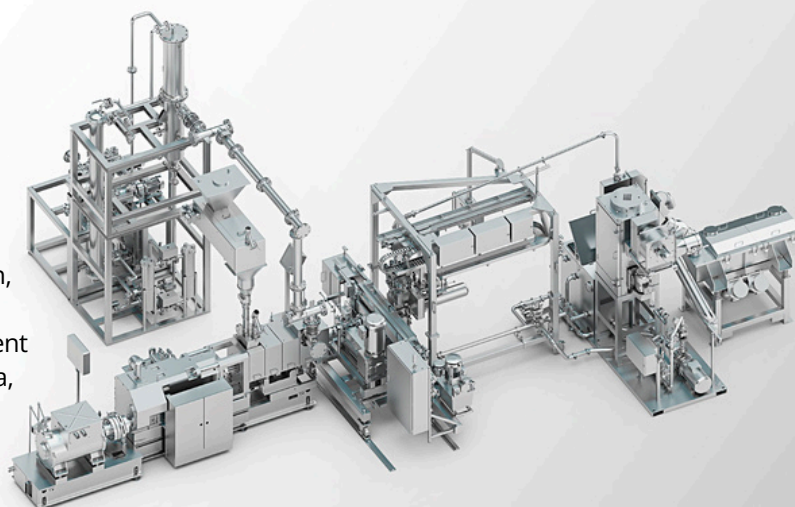
Complete extrusion systems of CPM have the capability to satisfy customer requirements ranging from basic to very advanced system specification and construction. We work on your request and start a project together with you from the idea until final complete extrusion line in your factory.

## MODULAR EXTRUSION SYSTEMS

Modular extrusion systems by CPM are an alternative for conventional project build with advantages such as an increase in responsiveness in a quickly changing environment.

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

Modular extrusion systems offer shortened, simplified project installation, minimized field project risk of cost overrun and reduced overall project cost and schedule. This approach is most effective for mid-sized multi-screw extrusion plants through 70 mm range of CPM products.



## THE ADVANTAGES

### Complete Extrusion 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 Extrusion 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)

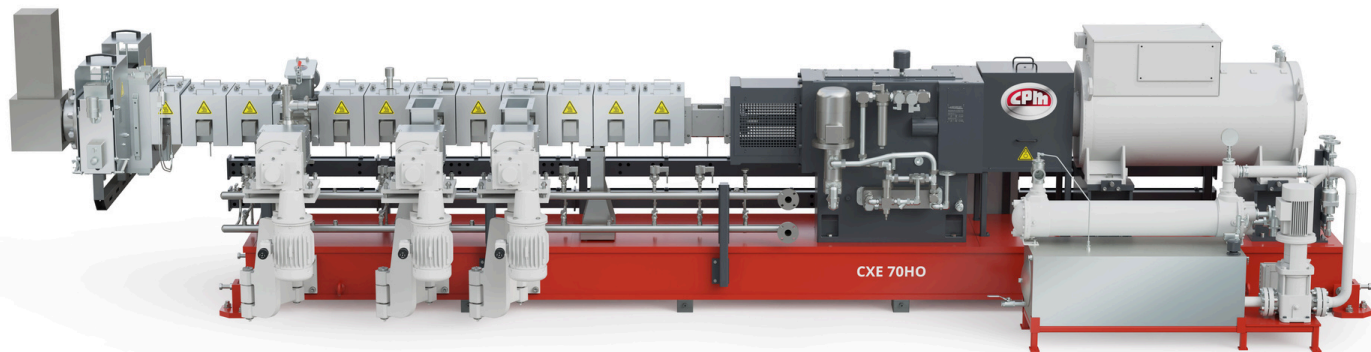
Construction and installation time reduced by 70%

Ability to quickly deploy, re-deploy, or move compounding assets from one location to another



# CXE/CX SERIES

THE INDUSTRY BENCHMARK FOR QUALITY & RELIABILITY THROUGH THE LATEST TECHNOLOGY



## MAIN PRINCIPLE AND USE

The CXE Series has been developed through 30 years of focus on customer requirement and is globally well known as the benchmark for 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.

## THE ADVANTAGES

The design of the CXE Series offers excellent quality and meets your highly demanding requirements. The enhanced customer benefits realized by investing in a CXE series include:

### 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

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.

## 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 FEATURE SERIES: HO AND sHO

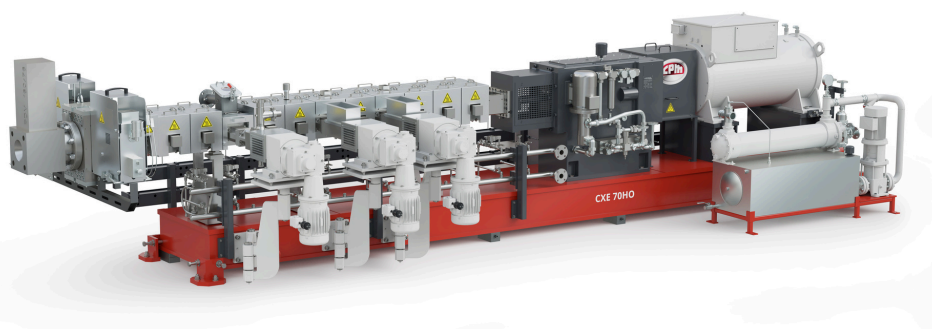
Our CXE machines are available in two feature series:

Our HO – High Output – CPM solution for 24/7 compounders which require the highest torque and power. The HO gearbox provides 18 Nm/cm<sup>3</sup> torque density and is available with screw speeds up to 1200 rpm. The HO is equipped with our proprietary cold-formed premium screw

# TECHNICAL DATA

## APPLICATION - INDUSTRIES:

- Engineered plastics
- Adhesives
- Direct extrusion
- Powder coatings and toners
- Masterbatch
- Reactive extrusion
- PVC, XLPE and cable compounds - TPU, PC, ABS
- Lithium-ion batteries
- Recycling



## > CXE SERIES

Model	D (mm)	Center Distance (cm)	Screw Speed (rpm)	Max Power* (kW)	Torque/Shaft* (Nm)
CX/CXE 26	25.00	2.11	1200	35	140
CX/CXE 32	32.00	2.62	1200	83	315
CX/CXE 40	40.00	3.34	1200	170	675
CX/CXE 45	45.00	3.75	1200	245	930
CX/CXE 58	58.00	4.80	1200	503	2000
CX/CXE 70	70.00	5.85	1200	880	3500
CX/CXE 92	92.00	7.60	1000	1570	7500
CX/CXE 103	103.00	8.40	1000	1738	8300
CX/CXE 119	118.00	9.70	1000	3204	15300
CX/CXE 133	133.00	11.00	1000	3665	17500

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





# THE RINGEXTRUDER RE®

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

## 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.



## 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

## 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

# TECHNICAL DATA



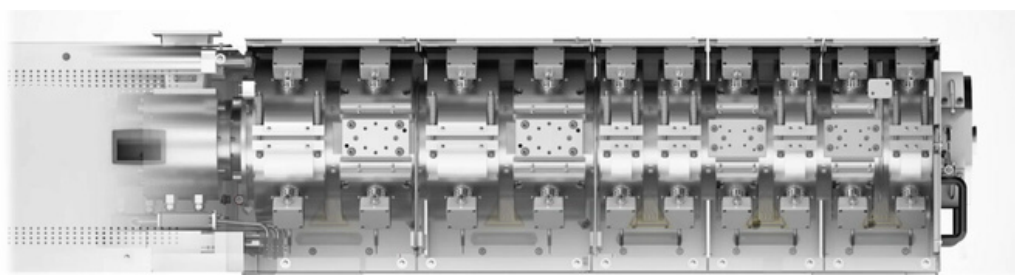
## APPLICATION - INDUSTRIES:

- New generation plastics
- Rubber (compounding, devulcanization, mixing, degassing, salinization)
- rPET Recycling
- Adhesives
- Reactive Extrusion
- High Filling rates
- Food
- Pharmaceutical compounding

## > RINGEXTRUDER RE®

RingExtruder		RE1	RE3	RE5	RE7	RE9
XPV-series						
app. Diameter	[mm]	19	31	52	74	95
channel depth	[mm]	4.00	6.70	11.10	15.70	20.10
free crosssectional area	[cm³]	11.70	32.90	90.40	180.00	297.10
drive specifications						
max. screw speed	[min-1]	1500	1200	1200	900	600
max. torque per shaft	[Nm]	32	150	675	1906	4019
max. motor power	[kW]	69	226	1018	2156	3030
Dimensions at 32 L/D						
app. Machine length	[mm]	2600	3880	5850	8200	*1
app. Machine width	[mm]	800	1200	1300	1450	*1
app. machine height	[mm]	1450	1450	1650	2100	*1

\*Other dimensions upon request.



# RXT SERIES

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

## MAIN PRINCIPLE AND USE

CPM designed the RXT 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 takes advantage of its global footprint (Locations in US, Germany and China) to supply the RXT series. This series has the flexibility to utilize shafts and screw elements manufactured in US, China or Germany, depending on the customer location, and machine is assembled in China.

## THE 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 Western standard centerlines
- Barrel design based on Western standards
- Increased cooling capacity and extended thickness to resist high mechanical forces
- High quality screws, barrels and shafts manufactured in China
- Key components are manufactured on CNC equipment to ensure the highest quality and the best alignment of screws, barrels and gearbox.
- Safety standards and electrical control options to meet the needs of leading domestic and global customers.



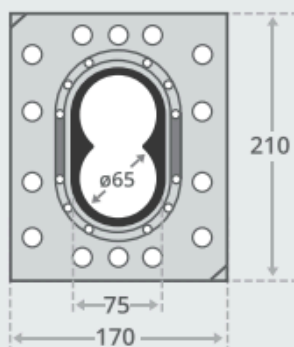
## THE ADVANTAGES

### YOUR BENEFITS

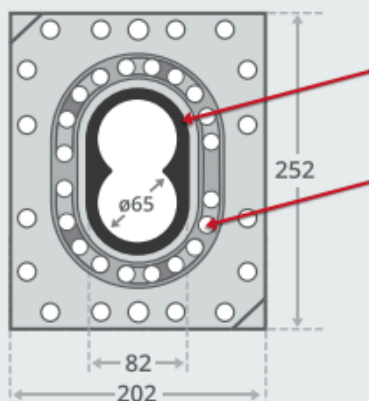
Cost advantage for both series established through assembly in China (price difference between CX and RXT lie within difference in available power and process section materials of construction)

Services delivered wherever your company is located

### > COMPETITOR BARREL



### > RXT BARELLS



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



# TECHNICAL DATA



## APPLICATION - INDUSTRIES:

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

## > RXT SERIES

Model	D (mm)	Central Distance (cm)	Screw Speed (rpm)	Max Power (kw)	Torque/Shaft (Nm)
RXT26	25.40	2.11	900	22	111
RXT40	40.00	3.34	900	75	378
RXT50	50.00	3.95	900	132	665
RXT58	58.00	4.80	900	250	1260
RXT70	70.00	5.85	900	450	2268
RXT92	92.00	7.60	600	630	4763
RXT103	103.00	8.40	600	800	6048
RXT119	119.00	9.70	600	1250	9451
RXT133	133.00	11.00	600	1800	13609
RXT177	177.00	14.60	500	3600	32661
RXT250	247.90	20.50	500	9800	88911

# OUR AUXILIARY DEVICES

CPM 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 allow for ease of integration into various extrusion systems.

## ADVANTAGES OF OUR SIDEFEEPER 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

Sidfeeder system available with screw diameter from 25mm to 120mm

### DEGASSING UNIT

Degassing units are manufactured to optimize the degassing or venting of an extrusion process.

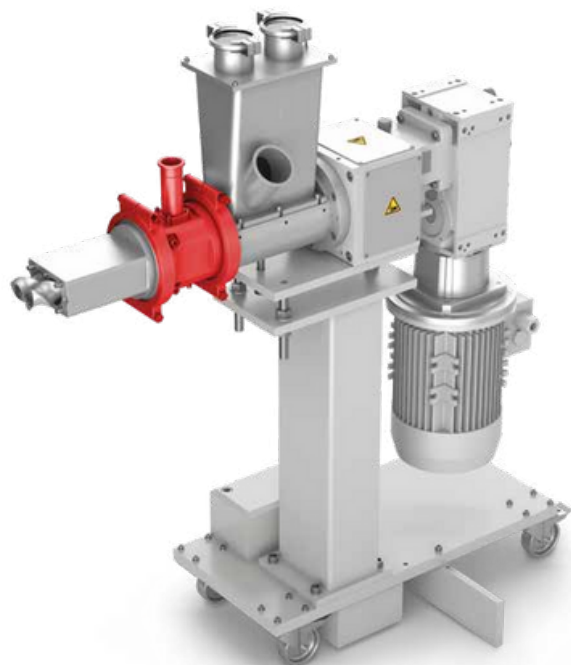
Our degassing units achieve excellent results, even under the most difficult processing conditions. The degassing units can be specified according to individual degassing volume requirements, and provided with adapters for connections.

The CPM 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.



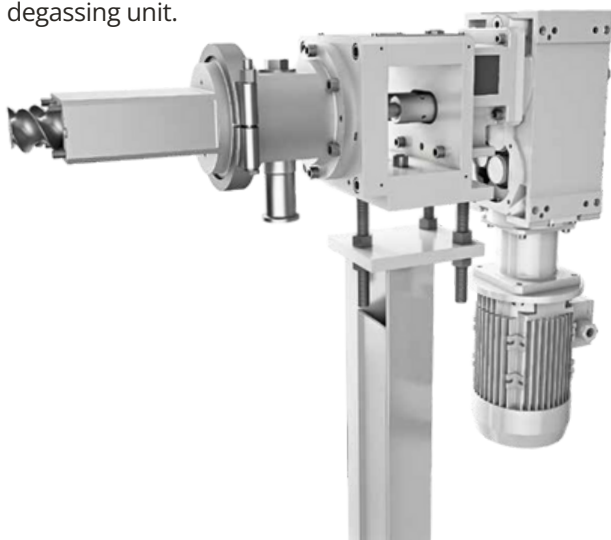
### HIGH OUTPUT SIDEFEEPER

Many extrusion processes add fillers, reinforced agents, pigments, flame retardant and other materials to the existing melt stream at a downstream location from the main feed throat. A flexible, wear-resistant and reliable sidfeeder using intermeshing, co-rotating screws is the preferred solution to provide positive material conveyance into the extruder.

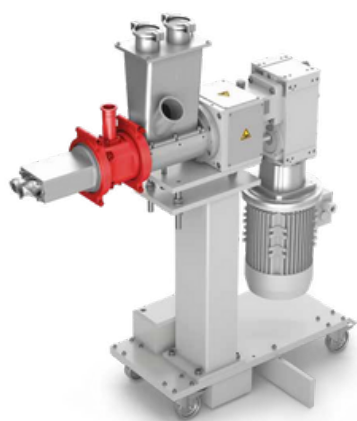
Our High Output Sidfeeder is a customer-specific solution that increases your productivity and product quality. The High Output Sidfeeder easily adapts to all OEM brands and types in many ways. With the new High Output technology, powder can be added to the extruder while simultaneously deaerating.

### TECHNICAL ASPECTS

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



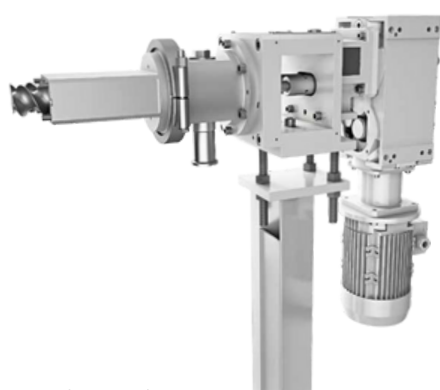
# TECHNICAL DATA



High Output Sidefeeder

## APPLICATION - INDUSTRIES:

- 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

## APPLICATION - INDUSTRIES:

- 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

## > 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 crosssectional area	[cm²]	3.40	5.30	9.30	17.50	21.20	31.90	41.60	51.90	96.20	123.00	173.80
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	7.50	7.50	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]	1.50	1.50	2.20	4	4	5.50	5.50	7.50	7.50	11	15



## OVERVIEW OF SERVICES

The most expensive item for a company is downtime. CPM has a solution. The aftermarket service team provides customers with a comprehensive assessment of their extruders. Our audit includes full visual inspection, barrel mapping, bore measurements using capacitive sensor technology along with high-resolution imaging and video of the internal barrel bores. The summary report presents measurement data and wear analysis along with our recommendations. Images captured with our borescope are also included as part of the report.

# EXCEPTIONAL SERVICE OFFERINGS

## SERVICE AND MAINTENANCE FOR TWIN- SCREW EXTRUDERS AND EXTRUSION SYSTEMS

The CPM is the leading supplier of extrusion machines, systems, spare parts and after sales services with locations in the US, Europe and Asia.

Our global service team is your source for all questions regarding machine installation and startup, system operations and maintenance, operator training, as well as process optimization. This service is not only for our own machinery but with a specific focus on other OEMs as well.

Our comprehensive scope of services is the best choice for keeping your machine in optimal condition. We accompany you throughout the entire life cycle of your extruder, starting with commissioning, ordering of spare parts, as well as the modernization of outdated systems.

### SERVICE CONTACT

[extrusion.service@cpm.net](mailto:extrusion.service@cpm.net)



## TRAINING & WEBINARS

CPM is the leader for twin-screw extrusion training offerings. We offer free monthly webinars, process consulting, workshops, and onsite trainings.

Would you like to scale-up, improve your process, or optimize your screw design? Are you in need for a twin-screw training for your new hires? We have multiple types of training on hand for you.

Our Online Knowledge Center is an online library containing more than fifty (50) one-hour training webinars. Take one of our monthly trainings free and online.

Would you prefer a personalized training on a certain topic? Just ask us.

[extrusion.sales@cpm.net](mailto:extrusion.sales@cpm.net)

# SYSTEM COMMISSIONING & REMOTE SERVICES

## PROFESSIONAL SUPPORT

Modern high-performance extruders require trained and confident operators to achieve the most efficient and high-quality results.

Our experience with customized machines and extrusion systems for complex extrusion processes is the perfect foundation for our successful project management and execution. Starting with sketches of ideas to the commissioning of your system, our support team will remain by your side for the entire process.

Twin-screw extruders from the CPM are commissioned on site at our customers' plants. Our service technicians will accompany customers during the first production runs to ensure a smooth and safe start of the new system.

Kick off meetings held

Checklist for the preparation of the start-up

Inspection of the installation

Setting of optimized system processes

Test run

Commissioning protocol

Intensive training of the system supervisors

## PROFESSIONAL CONSULTING

We have over 40 years of know-how and experience in building innovative turnkey extrusion systems, developing customized procedures and complex extrusion process solutions, all the while remaining focused on specific customer requirement. Our team of technicians and engineers are ready to assist with your questions.

Our team of engineers assists with even the most complicated procedures and processes

Diagnosis and consulting

Optimization of extrusion systems from screw to complete process

## REMOTE MAINTENANCE, PROCESS OPTIMIZATION, AND COMMISSIONING

Remote access to machine controls is an indispensable advantage CPM offers.

We offer a hardware-based solution which provides our customers with improved operational reliability, error analysis, correction of configuration deficiencies or technical faults, and the implementation of software updates and functional extensions.

Data security is of utmost importance for us. Therefore, we utilize an encrypted VPN tunnel with additional protection through a separate fire wall. With our customers approval of remote access, a service call can be completed in a quick and cost-effective manner.

Remote inspections and process optimization

Remote commissioning

Smart Glasses



## SMART REMOTE SERVICES

Through using smart glasses our customers can communicate with our service team both easily and bidirectionally via a secure VPN. The glasses contain a camera and a microphone for video and audio recordings as well as a display, allowing you to follow all instructions directly at the worksite. A lot of our services can be done remotely. Commissioning, remote maintenance, problem investigation, ... you name it. Ask about our experience.



## MAINTENANCE AND INSPECTIONS

Wear and corrosion are a natural phenomenon of machine parts which are in daily use. Regular inspections of your equipment can ensure operational efficiency. CPM offers various audit packages as well as additional inspection and maintenance services that ensure long lasting machine life and a reduction in downtime.

Through regular inspections, our customers not only benefit from an efficiently running system, they also gain valuable insights and confidence often leading to system optimizations which result in significant cost savings. Consider playing it safe by entering into a service agreement with CPM. Reach out to us if you want further information on our customized service agreements.

### ASK FOR YOUR PERSONALIZED

Regular inspections

Various audit models

Service agreements

### WEAR INSPECTIONS AND MAINTENANCE SERVICES

You can make sure you are prepared for maintenance by initiating service audits at your site. We recommend that a first full maintenance

inspection is carried out 6-12 months after commissioning and once annually thereafter. Of course, this is based on our experience and can be implemented differently depending on your needs.

Barrel and screw wear inspections can help you identify parts which require replacing as well as data for analyses and predictive maintenance. High resolution videos and photos help identify any bore damage not discovered through measurement (i.e. metal to metal adhesive wear).



### SCREW DISMANTLING

Interested in having somebody else dismantle your screws and shafts? The CPM disassembles the elements, cleans, inspects and reassembles them. Our trained service technicians perform these operations using safe and efficient techniques around your schedule. We ensure fast turnaround to minimize disruption of your production schedule.

## MODERNIZATION AND REPAIR SERVICES

### RETROFITS AND UPGRADES

It is not uncommon for production requirements of an extrusion system to change or for components of older machines to become obsolete. CPM is the ideal partner for your modernization project:

- Replacement of obsolete gearboxes
- Upgrading of your process section
- Replacement or addition of side feeder and degassing units
- Replacement of DC motor
- Updating/Expanding your control systems

### REPAIR SERVICES

Experiencing worsening product quality, unstable processes, or decreasing throughput rates are usually results of wear on the screw elements or barrels. CPM is the expert to further investigate these issues. Consider sending us your used or damaged parts and we will refurbish and return them to you like new. Through this service, you will minimize your downtime and achieve considerable cost savings.

Screw element dismantling services

Repair services for barrels