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A BRAND OF COPERION

kemutec
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Powder Coatings Processing Solutions

- 
- » Feeding
 - » Extrusion
 - » Cooling
 - » Milling
 - » Sifting & Screening



CHALLENGES WE ADDRESS:

PRODUCT QUALITY
PROCESS RELIABILITY
INTEGRATED SOLUTIONS
INCREASED EFFICIENCY
HIGH PERFORMANCE
COST OF OWNERSHIP

YOUR WORLDWIDE POWDER COATINGS PROCESSING PARTNER

Baker Perkins and Kemutec are global leaders in powder processing and extrusion systems. Together, we provide full and integrated process capability and support for manufacturers of powder coatings.

Everything is covered for your peace of mind and your customers' satisfaction: from specification and commissioning of equipment, through to optimisation in our global Test & Innovation Centres or on-site, backed by comprehensive Aftersales services.

With our innovative easy-clean designs and patented technologies engineered to enhance efficiency and throughputs, we help manufacturers of powder coatings maintain the highest levels of product consistency.

OUR INTEGRATED SOLUTIONS:

- » Volumetric & gravimetric feeding
- » Twin-screw extrusion
- » Cooling & flaking
- » Milling & size reduction
- » Sifting & screening
- » Process controls
- » Test & Innovation Centres
- » Engineering & design services
- » Aftersales services and remote support

COMPLETE PROCESS SYSTEMS AND SUPPORT FROM ONE SOURCE

Decades of serving the powder coatings industry has given us a full understanding of our customers' needs.

Whether you require standalone equipment, a fully integrated system, or the design and installation of an entire plant, Baker Perkins and Kemutec can support you through all these options.

We will work closely with you to design the ideal system matched to your specific requirements and application needs.

MATERIAL TESTING

Realistic, scalable tests in our global Test & Innovation Centres help determine optimum processes, design solutions and ensure flawless products.

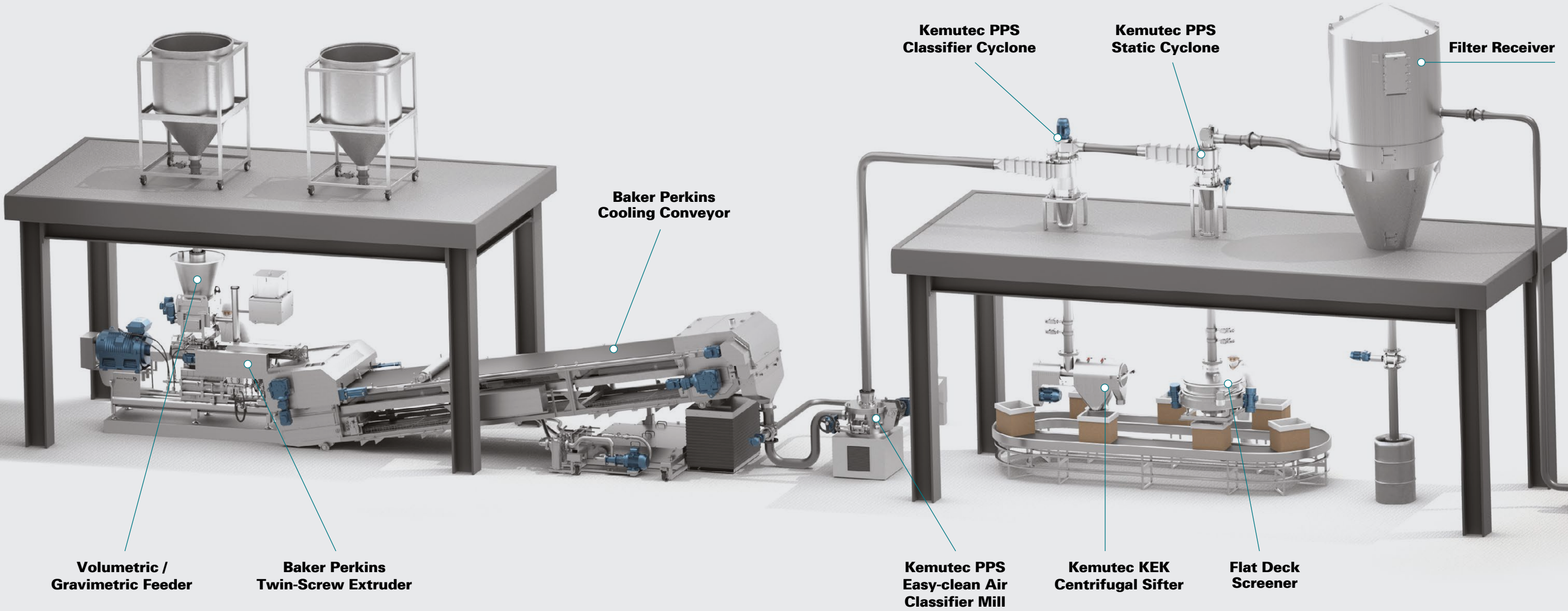
LIFETIME SUPPORT ASSURANCE

All backed by the reassurance of our experience, Aftersales services and guarantee of Lifetime Support.

Our experts are available for site visits, product trials and remote support at every stage of your project and beyond.

FULLY INTEGRATED PROCESSING SYSTEMS

FOR POWDER COATINGS





MECHATRON CONI-FLEX FEEDERS

ACCURATE EXTRUDER FEEDING SYSTEMS

Versatile and accurate, the MechaTron Coni-Flex is suitable for volumetric or gravimetric feeding of powder coatings pre-mix into the extruder. The unique design of the flexible feed hopper ensures reliable product flow without bridging and deposits to ensure product quality and process performance.

With accuracies of 0.5% of feed rate setpoint, the MechaTron Coni-Flex is not just accurate and reliable, it's also designed to be simple to operate, clean and maintain. The easily accessible internals ensure straightforward cleaning, making the MechaTron Coni-Flex ideal for fast-paced cleaning cycles and colour changes to increase uptime and production output.

KEY BENEFITS:

- » Feeding accuracies up to 0.5% for better quality finished product and reduced waste
- » Throughputs matched to performance of the extruder
- » Complete and easy disassembly from the non-process side simplifies and speeds cleaning and maintenance to minimise downtime
- » Fast-paced colour changes increase productivity, saving time and money



**EASY-CLEAN
DESIGNS FOR
FASTER CLEANING
CYCLES AND
COLOUR CHANGES**

FEEDING TECHNOLOGIES

PURGE FEEDING AND EASY-CLEAN SYSTEMS

ACCURATE SERIES PURGE FEEDER

The AccuRate Series volumetric feeding system can be used for continuous feeding, charging and batching. The simple, compact design ensures easy cleaning and maintenance, as well as economical integration into existing production lines.

DESIGNED FOR AN EASY-TO-CLEAN PROCESS

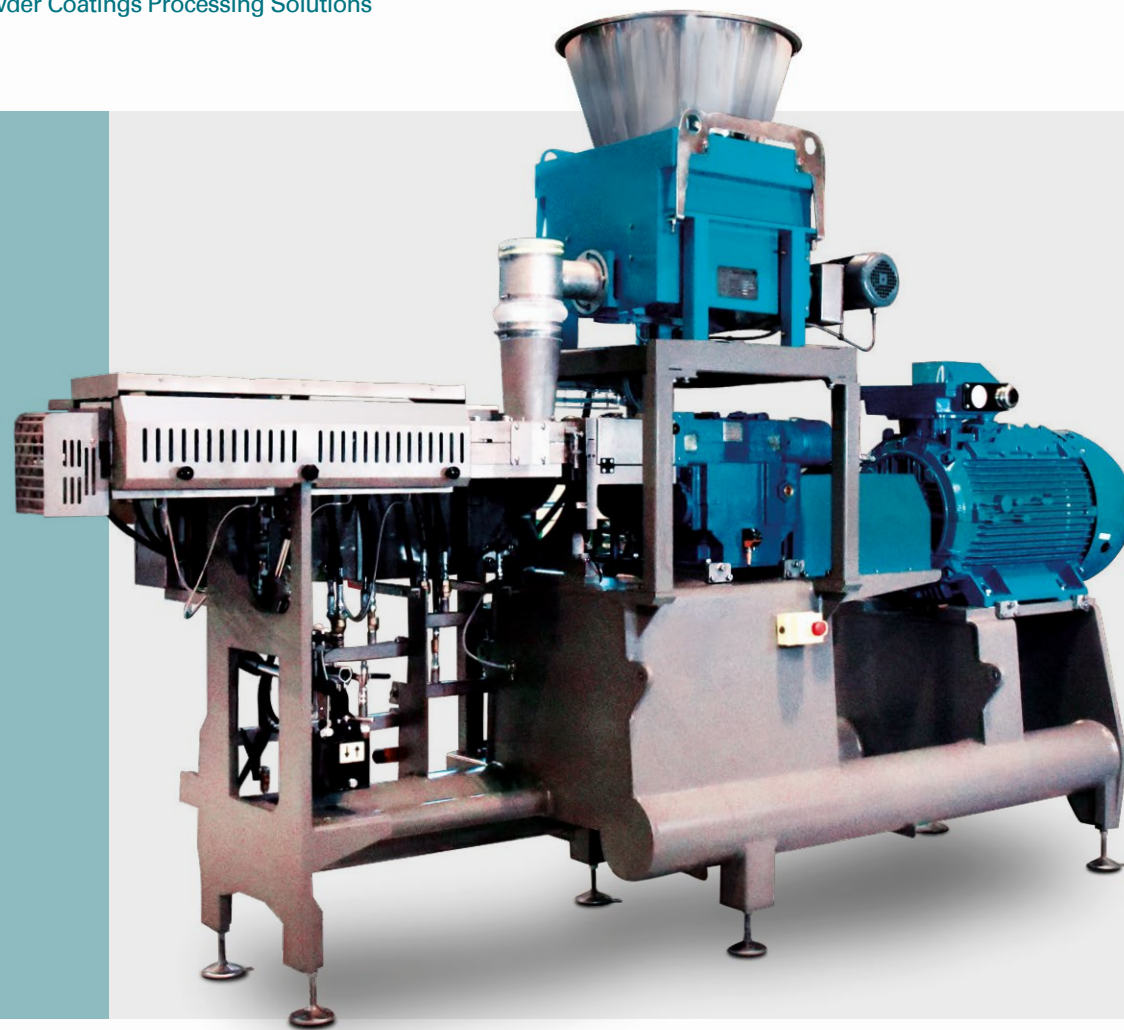
Effective cleaning of process lines and equipment is critical to good manufacturing performance, minimising downtime and assuring batch quality. We have applied our 'Easy-clean' philosophy to the design of our machinery at every stage of the production process.

CLEAN-IN-PLACE (CIP) SYSTEMS

With a simple two-step dry cleaning process, our Clean-in-Place (CIP) systems suit quick turnarounds on batch changes and deep cleaning between product changes – further reducing costs and increasing uptime.

EASY CLEANING STARTS AT THE FEEDER

The CIP system within the main feeder removes residual dust and debris. Resin is introduced to further scrub the system clean, which is then used to purge the extruder barrel, reducing the overall amount of resin required and improving the cleaning of the extruder.



TWIN-SCREW EXTRUDERS

FOR SMALL BATCH TO HIGH-OUTPUT PRODUCTION

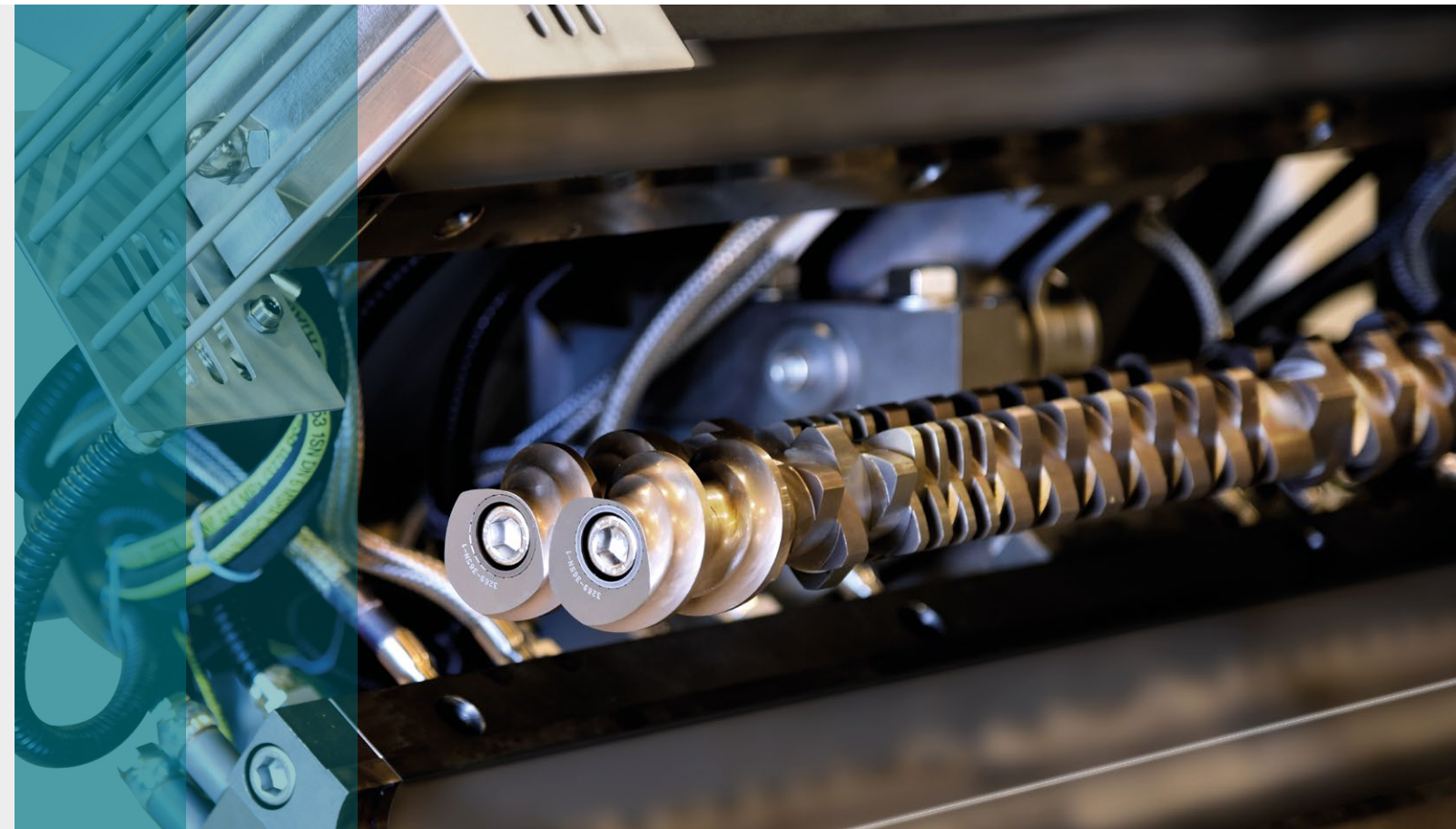
Baker Perkins manufactures a comprehensive range of twin-screw extruders precisely engineered for powder coating applications, from small batch to continuous high-output production.

The extruders have been designed with features that maintain consistent quality while keeping running costs low. Careful consideration of screw profiles, high free-volume geometry and unique, patented innovations such as our MAX³ feed system. When integrated, this technology enables the extruders to process a high-quality product for the minimum of power and cost under all operating conditions.

FOR ALL TYPES OF POWDER COATING FORMULATIONS:

- » Epoxy
- » Hybrids
- » Polyester
- » Acrylics
- » Fines recycling

All Baker Perkins extruders feature a clamshell design, which provides easy access for in-situ cleaning and maintenance operations.



PATENTED MAX³ FEED SYSTEM

INCREASED THROUGHPUT AT MINIMAL POWER AND COST

The MAX³ feed system successfully addresses the long-standing, industry-wide issue of restricted output and torque surges caused by material building up in the extruder feed port – when particles hit the intake screws and ‘bounce’ back into the infeed area rather than flowing into the machine.

Our patented system introduces a reconfigured feed port and unique screw designs to improve the flow of material into the extruder barrel and the air out of it. A major benefit is that lightweight, low density materials and fines are handled much more efficiently, eliminating the need for side-feeding and its unnecessary floor space, capital and running costs.

MAX³ is available on all HPX and MPX production and laboratory extruders; it can be retrofitted to top-feeding machines, and side-fed machines can be converted to top feeding.

KEY BENEFITS:

- » Increased throughput
- » Reduced torque surges
- » Eliminates additional side-feeding costs
- » Better handling of fines
- » Retrofits available



EXTRUDER SYSTEMS – KEY BENEFITS

POWER AND TORQUE TUNED FOR POWDER COATING PRODUCTION

Unlike other companies' multi-purpose extruders, Baker Perkins specify motors with the precise power and torque for powder coating applications, so output is maximised without wasting energy.

SPECIFICALLY SELECTED MOTORS EXTEND LIFESPAN

As power and torque are precisely matched to powder coating production, motor efficiency and lifespan are increased by reducing wear, while long-term maintenance costs are cut. The water-cooled motor is also quieter, cooler and easier to clean than the air-cooled alternative.

ADVANCED HEATING AND COOLING DECREASE RESPONSE TIMES

Easy-to-replace electric cast slab heaters and advanced water cooling within the barrel work simultaneously to provide accurate and consistent temperature control.

LOW OPERATING AND MAINTENANCE COSTS

Quick start-up, reliable operation and rapid changeover keep operating costs low. Wear parts are long-lasting and easily replaced and, when combined with the ultra-low maintenance drive train, result in minimal maintenance costs.

AUTOMATIC EXTRUDER CLEAN-IN-PLACE PURGE SYSTEM

Whether it is quick resin purges between batches, or deep clean purges between product changes, the automatic system reduces turnaround times, reduces labour requirements and minimises waste. The extruder software takes control to ensure repeatable, quality cleaning regimes.

When integrated with upstream and downstream equipment, the system can take control in an emergency event, minimising product waste and equipment downtime; automatically returning to production once the issues have been resolved.

ADVANCED CONTROL SYSTEM FOR EASE OF USE AND REMOTE SUPPORT

The HMI provides automatic management of formula settings and full visualisation of the process for exact, unvarying replication of product. Remote support enables off-site access for fault-finding and software updates.

INDUSTRY 4.0 READY FOR INFORMED DECISION MAKING

All our powder coating extruders are Industry 4.0 ready. Data collection records all process variables to combine with data from other machines, devices and sensors across a line, to facilitate informed and timely decisions regarding performance, efficiency or maintenance issues.



LABORATORY EXTRUDERS

SMALL BATCH, EASY-CLEAN EQUIPMENT

Baker Perkins supplies the MPX19 and MPX24 twin-screw extruders for small batch and low-output continuous production. Both models are ideal for academic, laboratory and development work and offer accurate scale-up for a risk-free switch to continuous processing.

The MPX19 is a benchtop twin-screw extruder that delivers repeatable results, and enables full, reliable scale-up to production outputs on the range of larger extruders.

The MPX24 is a small batch extruder designed for use either in a laboratory for new product development, or in a production environment for tasks such as colour matching and small batch production.

MODEL	LAB – SMALL BATCH PRODUCTION	
Model	MPX19	MPX24
Barrel Length L/D	25	25
Motor Power (kW)	2	9.1
Screw Speed RPM	500	1000
Maximum Output	25kg/hr	130kg/hr
Average Output	13kg/hr	70kg/hr



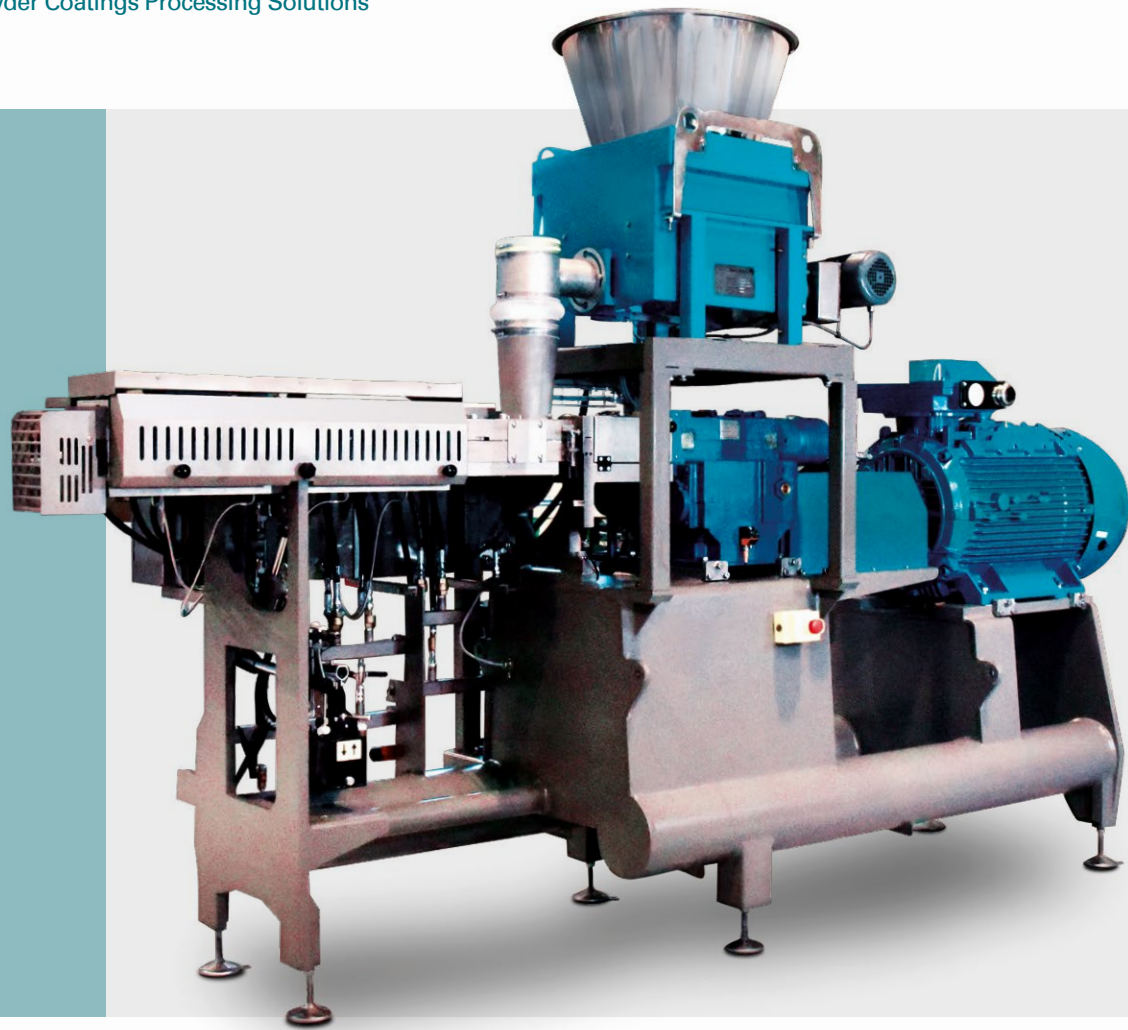
HPX HIGH PERFORMANCE EXTRUDERS

HIGH POWER, HIGH-OUTPUT CONTINUOUS PRODUCTION

Designed for increased power and speed on all formulations, the HPX high power range of twin-screw extruders delivers superior outputs on specialist applications from a smaller barrel.

Increased power and speed are achieved by full utilisation of the motor through torque stability provided by the patented MAX³ feed system, and increased thrust capacity of the solid-shaft drive train.

MODEL	SMALL – MEDIUM BATCH PRODUCTION		MEDIUM – LARGE BATCH PRODUCTION	
Model	HPX35	HPX45	HPX55	HPX65
Barrel Length L/D	25	25	25	25
Motor Power (kW)	45	83	140	190
Screw Speed RPM	1000 (Option for 1200)	1000 (Option for 1200)	1000 (Option for 1200)	1000 (Option for 1200)
Maximum Output	650kg/hr	1250kg/hr	2000kg/hr	2700kg/hr
Average Output	400kg/hr	800kg/hr	1300kg/hr	1800kg/hr



MPX PRODUCTION EXTRUDERS

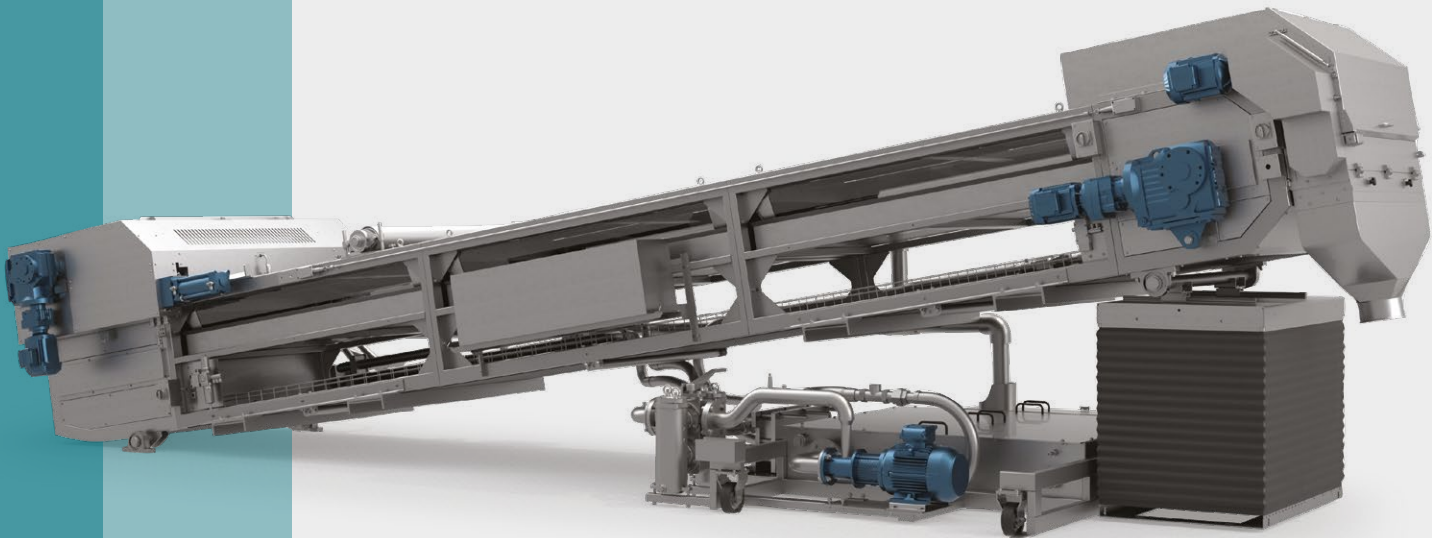
THROUGH-SHAFT COOLING MINIMISES PRE-CURING

Baker Perkins’ MPX50 to MPX80 production extruders are high specification twin-screw extruders specifically designed for powder coating production. MPX extruders are suitable for small batches (100kg/hr) to high-output continuous production (up to 2,900kg/hr).

Across the MPX range, high torque-capacity, high free-volume geometry and uniform barrel heating ensure that product consistency is maintained under all operating conditions.

Through-shaft cooling minimises pre-curing which increases reliability and cleanliness, as well as ensuring uniform cooling and the elimination of ‘hot spots’ linked to temperature-sensitive materials.

MODEL	SMALL – MEDIUM BATCH PRODUCTION		
Model	MPX50	MPX65	MPX80
Barrel Length L/D	25	25	25
Motor Power (kW)	63	126	206
Screw Speed RPM	900	900	750
Maximum Output	950kg/hr	1900kg/hr	3000kg/hr
Average Output	600kg/hr	1400kg/hr	2500kg/hr



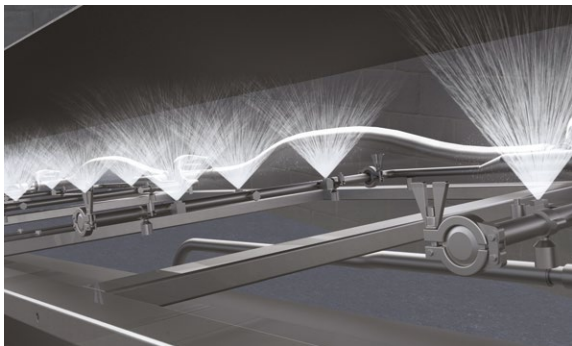
COOLING CONVEYORS

INTEGRATED RAPID COOLING AND FLAKING

Baker Perkins’ stainless-steel belt cooling conveyors are designed to cool extruded material efficiently, and produce flakes which are ideally sized for feeding into the milling stage of the process. The range is sized to match the outputs of the HPX and MPX extruders and integrates seamlessly into the production line.

Integration into the control system of the entire plant allows automated start-up and shutdown sequences to be actioned from a single point of control with one button – minimising start-up and shutdown times and maximising efficiency.

The flaking unit also has its own air vortex cleaning system for dust extraction, resulting in reduced labour requirements and decreased turnaround time. This further reduces any risk of contamination, ensuring high-quality end-products.





PPS AIR CLASSIFIER MILLS

ULTRA-FINE GRINDING

The Kemutec PPS Air Classifier Mill controls the particle cut point of the finished powder using a built-in classifier that limits the maximum particle size of the milled powders exiting the grinding chamber.

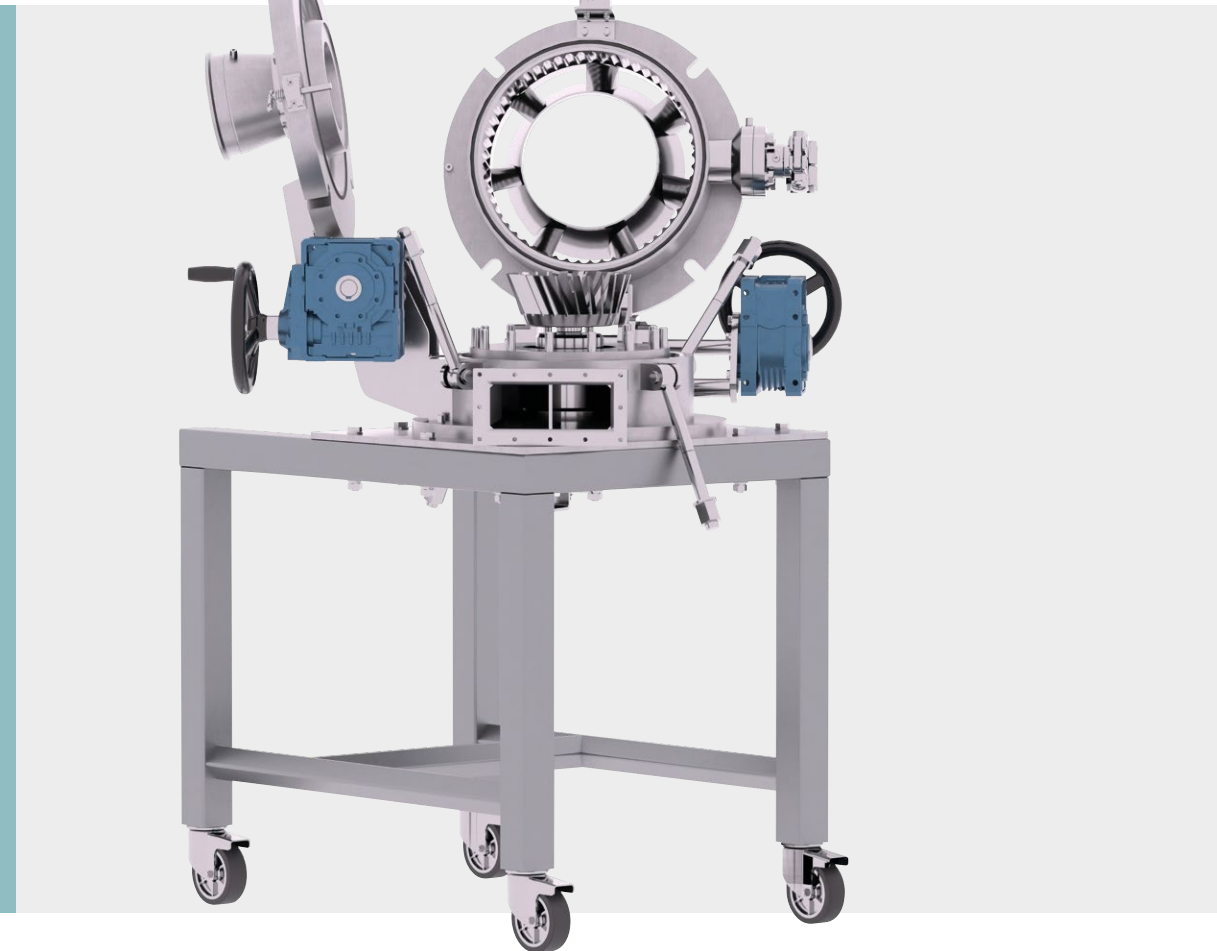
Kemutec PPS Air Classifier Mills can grind powder coatings to a broad range of different particle size distributions, from coarser grades through to the finest grades.

The design of these mills has been continuously improved to meet the changing demands of the powder coatings industry. All models are simple to operate, clean and maintain.

RANGE INFORMATION:

- » 10 models, from lab through to large-scale production mills
- » 5 kW to 400 kW main drives
- » Typical milled particle size range down to a D50 of 20 μ to 5 μ
- » Optional Easy-clean models
- » 10 Bar EPSR explosion protection mills
- » Multiple mill system configurations are available

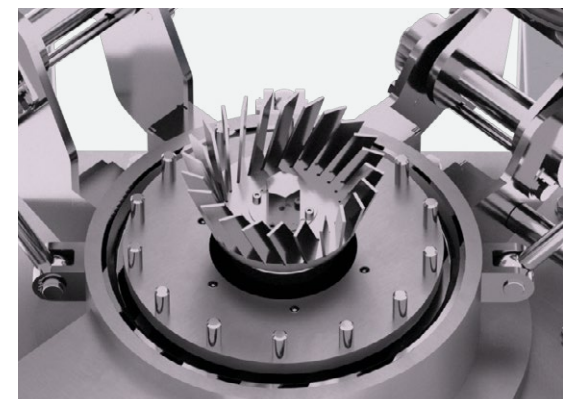
A high-energy, ultra-fine grinder for producing all grades of powder coatings, from standard epoxies to acrylics and specialised filled formulations.



PPS EASY-CLEAN AIR CLASSIFIER MILLS

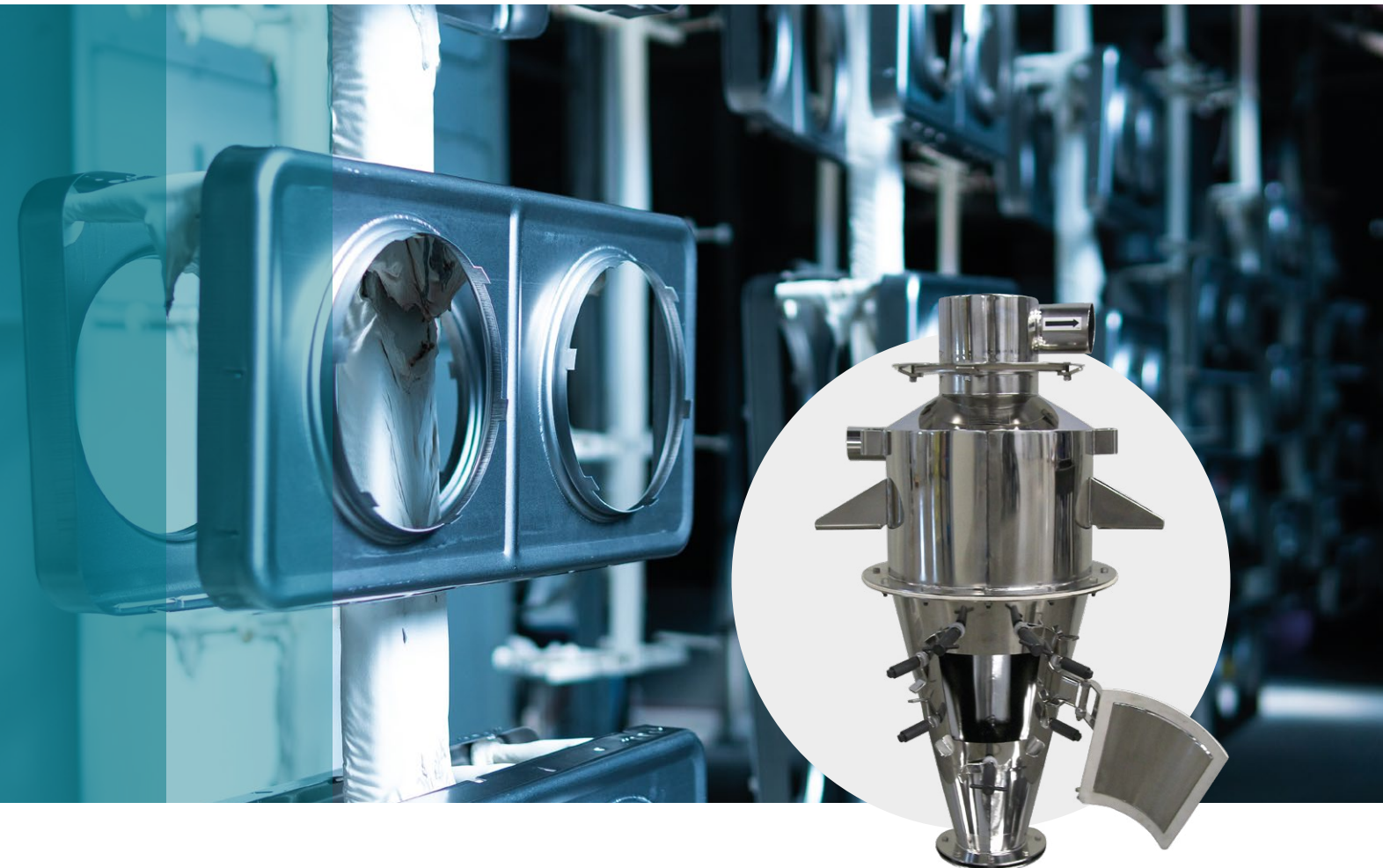
UNRIVALLED ACCESS FOR CLEANING

The latest Easy-clean models allow full cleaning access to the mill's internals and grinding media, resulting in shorter clean down times during colour changes – which reduces downtime and maximises production uptime.



BENEFITS OF THE EASY-CLEAN MODELS:

- » Easy access to the mill's internals and grinding media
- » Fewer components to clean
- » Faster clean down times
- » Minimised risk of cross-contamination
- » Increased production uptime
- » Opportunity for increased throughputs



PPS CYCLONE COLLECTORS

SEPARATION OF FINE & COARSE PORTIONS OF MILLED POWDERS

To complement the PPS range of Air Classifier Mills as part of an overall system, Kemutec supplies a range of versatile cyclone collectors.

For straightforward collection of the milled powder from the conveying air, we offer a range of high-efficiency static cyclones, with recovery rates in excess of 98.5%.

When there is a requirement to separate the milled powder into both coarse and fine powder fractions, we offer dual cyclone technology, where the coarse portion is collected in a primary classifier cyclone and the fine portion is collected in a secondary static cyclone.

KEY BENEFITS:

- » Ability to separate fines and coarse portions of milled powders
- » Provides cleaner 'cuts' of milled powders, with reduced fines or oversize
- » Option to operate either the dual cyclone collection or to revert to the standard single cyclone collection through simple pipework changes

"Kemutec is our preferred supplier of PPS Air Classifier Mills and Cyclones, resulting from years of reliable and cost-effective operation and supported by excellent Aftersales spare parts and technical support service."

Production Manager of major US powder coatings manufacturer



Featuring a specialised cantilever design, the Kemutec KEK Centrifugal Sifter offers unprecedented easy access for cleaning and rapid screen change functionality, averaging at just 30 seconds.

KEK CENTRIFUGAL SIFTERS

HIGH-EFFICIENCY SIFTING AND SCREENING

In powder coatings production lines where there is a requirement to 'scalp' the milled powder before packaging, the KEK Centrifugal Sifter from Kemutec is an ideal choice for high-efficiency screening. As standard, all models in the range feature proven centrifugal sifter technology and a cantilever shaft which provides user-friendly access for rapid cleaning.

RANGE INFORMATION:

- » 7 models to suit a wide range of throughputs
- » Models that can process from a few kilograms per hour to over 90 tonnes
- » Available with nylon, stainless-steel woven wire and wedge wire screens

KEY BENEFITS:

- » High-efficiency, high-capacity performance
- » Quick, easy-clean design
- » Cantilever shaft results in no oversize bearing or seal
- » 30-second screen changes



VIBRATING FLAT DECK SCREENERS

VERSATILE MULTI-DECK SEPARATION

Vibrating flat deck screeners are an alternative to Kemutec KEK Centrifugal Sifters in powder coating production lines.

Vibrating control screeners are designed for control and safety screening of high volumes and also provide multi-deck screening capability where more than one separation is required.

Where customers prefer a flat deck vibratory screener, Kemutec offers a wide range of options.

KEY FEATURES:

- » Wide range of sizes to suit varying throughputs
- » Multiple screening decks for various sifting splits
- » Ultrasonic vibration for increased sifting throughput, efficiency and continuous screen cleaning
- » Easy access for screen cleaning and changes
- » Re-screening and screen replacement Aftersales service



ADVANCED CONTROL SYSTEMS AND REMOTE SUPPORT

Developed in-house for the complete range of Baker Perkins and Kemutec technologies, our software enables the full integration of upstream and downstream equipment into a single control system for the line, to provide clear, at-a-glance visualisation and control of the entire process.

Automatic management of formula settings ensures exact, unvarying replication of product, eliminating quality variations caused by operator error. Data trending and logging, and a network connection for data acquisition, support short and long-term efficiency and process improvement programmes.

The system includes remote access over the internet via a secure connection. This enables engineers from Baker Perkins and Kemutec to connect to a machine anywhere in the world for commissioning or to implement software updates, as well as assess the status of all major components and parameters for fault-finding or identifying optimisation opportunities.



INDUSTRY 4.0 READY FOR INFORMED DECISION MAKING

Technology that ensures equipment is Industry 4.0 Ready is fitted as standard to the full range of extrusion and milling technologies.

Industry 4.0 harnesses data from all machines, devices and sensors in a manufacturing operation and enables them to communicate with each other, to facilitate informed and timely decisions.

The equipment is Industry 4.0 Ready to a level that allows interconnection with other systems via a secure connection. An edge device gateway allows linkage to remote devices for data acquisition, handling and transmission.

All systems sample and upload data from the process equipment to a secure cloud or server. Analysis is carried out on the process as a whole, rather than in discrete sections, for real-time overall equipment effectiveness (OEE) trend reporting and component lifetime monitoring.

UNIQUE MACHINE CENTRE-LINING SYSTEM

Innovative features of the control system include a unique machine centre-lining system that allows operating parameters to be compared with reference settings, alerting supervisors to potential problems caused either by operator changes or impending equipment failure.



GLOBAL TEST & INNOVATION CENTRES

Investing in the right technology and system configuration has never been more important for powder coatings manufacturers.

As part of our commitment to partnering with you and providing complete process support, our global Test and Innovation Centres are available as a dedicated resource for customers seeking ways to achieve competitive advantage.

All our Test and Innovation Centres are fully equipped to develop new products, optimise processes, produce samples, or conduct feasibility trials. We can also help when exploring a change from batch to continuous processing.

EQUIPPED FOR POWDER COATING PROCESSES:

- » Feeding, extruding, cooling and flaking technologies
- » PPS Easy-clean Air Classifier Mills
- » KEK Centrifugal Sifters
- » Units for grinding, spraying and curing
- » Laboratory for on-site analysis of particle size, thickness, gloss and imperfections

DISCOVER YOUR COMPETITIVE EDGE

A practical trial using our customer's own materials is the best way to discover the optimum, most cost-effective system configuration. We can replicate your production processes for highly accurate trials, and we guarantee complete confidentiality.

Watching or taking part in trials is an important part of the discovery process. Working together, you and our team will recognise when refinements are needed. Settings on equipment can be adjusted in real-time to achieve the desired result.

Alternatively, trials can be observed online, providing all the benefits of seeing the equipment in action and avoiding the associated travel time and cost.

HOW OUR TEST & INNOVATION CENTRES CAN HELP YOU:

- » Quicker time to market for end-products
- » Optimise existing and new processes
- » Support decision-making and avoid costly mistakes
- » Complements your in-house R&D facilities
- » Sustainability improvements
- » Remote trials and testing
- » Real-time assistance for operators via live streaming
- » Customised training



ENGINEERING DESIGN SERVICES

To fulfil our commitment to providing complete process systems and support, our offering goes beyond the supply of processing equipment and systems. Combining our extensive know-how and resources to supply the complete engineering package, we can design, build and install fully integrated powder coatings systems or deliver entire new plants.

As experts in our technologies, we understand your processes and are trusted by many global powder coating manufacturers to manage every aspect of their most complex design projects: from specifications and surveys to trials and testing, through to process controls and commissioning.

Our project teams are experienced at co-ordinating civil, structural, or architectural aspects of projects and we will work in partnership with your team to design the ideal system expertly matched to your materials and particular requirements.

SCOPE OF SUPPLY:

- » Product trials
- » Process designs
- » Equipment and systems supply
- » Control systems
- » Site services
- » Aftersales service and support

AFTERSALES SERVICES AND SUPPORT

When choosing processing equipment and systems from Baker Perkins and Kemutec, manufacturers of powder coatings are guaranteed the best in equipment specification, performance, efficiency, end-product quality and low cost of ownership.

With Baker Perkins and Kemutec as your processing technology partner, you can benefit from compliance with international safety standards and our guarantee of Lifetime Support. We offer a variety of parts and services to help maximise the performance and productivity of your powder coatings processing line and extend its useful life.

LIFETIME SUPPORT:

- » Spare parts and components
- » Service contracts for inspections and maintenance
- » Upgrades
- » Major repairs and rebuilds
- » Optimisation and design services

**WE PARTNER WITH YOU TO
KEEP YOUR PLANT PRODUCTIVE,
PROFITABLE AND SAFE.**



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All specifications are subject to change. © 2024

Your Partner

Please contact Baker Perkins / Kemutec where you will be directly connected to an engineering expert.

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