Powerful, reliable and cost-effective
GE extruders and extrusion systems

Engineering value

KraussMaffei
Berstorff
Practical examples
Premium quality products from a wide variety of industries

Various components for high-performance tires
Automotive hoses
Industrial hoses
Multi-component sealing profiles for the automotive industry
Sealing profiles for the construction industry
Coated rollers
Steel wire rope and textile conveyor belts
Neoprene materials
Printing blankets
Powerful, reliable and cost-effective
GE extruders and extrusion systems

A rubber extruder must be prepared for the high requirements of rubber product manufacturing to the greatest extent possible, in order to ensure continuous use and to contribute to the profitable success of a company. From proven extruders from the GE-K series to GE-SC Pinconvert extruders, the same principles of success apply for every model: high quality, maximum availability and flexibility as well as perfect integration into the treatment process.

The advantages at a glance
- High output
- Low-maintenance and reliable thanks to premium quality machine components and materials
- Low-wear screws and barrels
- Outstanding product quality
- Peripheral devices perfectly matched to the machine
First encounter:
Take a tour of the cold-feed GE-K rubber extruder

Flexible machine design
- The process unit and drive can be combined on an individualized basis

High user friendliness
- Short set-up times
- Easy maintenance

Fast commissioning
- Ready-to-use delivery
Cold-feed GE-K rubber extruder
Efficiency and reliability for simple treatment processes

The cold-feed rubber extruders from the GE-K series are the ideal machines for simple treatment processes. It only requires a little space in order to show its strengths due to its compact design. Its high degree of automation makes it an easy-to-operate machine. The GE-K series offers high production reliability thanks to high product quality, established reliability and high recoverability.

High-performance machine design
The GE-K series is designed to be plug-and-go, so that it can be commissioned quickly. The robust gearbox and optimally-sized drive designs with a water-cooled AC motor provide long service life and low maintenance costs.

The vacuum systems on Vac GE-K extruders are individually matched to the process. The machines provide high outputs, low melt temperatures downstream of the injection mold and even better size stability for the extruded products.

### Cold-feed GE-K rubber extruder

<table>
<thead>
<tr>
<th>Type</th>
<th>GE-K extruder</th>
<th>Vac GE-K extruder</th>
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<tbody>
<tr>
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<td>GE30K</td>
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<td>Screw diameter</td>
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<td>Screw speed</td>
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<td>Drive power max.</td>
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<tr>
<td>Maximum output</td>
<td>G kg/h</td>
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First encounter: Take a tour of the cold-feed GE-KS pin-barrel rubber extruder

- Flexible machine design
  - The process unit and drive can be combined on an individualized basis

- High user friendliness
  - Short set-up times
  - Easy maintenance

- Fast commissioning
  - Ready-to-use delivery

- High product quality
  - Process unit with pin barrel and optional vacuum degassing
Cold-feed GE-KS pin-barrel rubber extruder

Flexibility and reliability without compromise

GE-KS and Vac GE-KS pin-barrel rubber extruders are all-around machines for a wide variety of applications. Their flexibility and reliability make them true success machines in the treatment process. The attractiveness of pin-barrel extruders is enhanced even further by the expansive suite of series equipment, such as an automatic pin adjusting device, replaceable wet sleeves, a pin breakage display and high-performance screws. The advanced technology processes a wide spectrum of rubber mixtures of varying viscosity with just one screw type without requiring a conversion.

GE-KS pin-barrel extruders distinguish themselves with
- High output
- Low melt temperatures
- Low specific energy consumption
- Excellent extruded product homogeneity
- High availability

We equip Vac GE-KS degassing extruders with a vacuum zone and a procedure part utilizing pin-barrel technology. The machines provide high outputs, low melt temperatures downstream of the injection mold and even better size stability for the extruded products.

<table>
<thead>
<tr>
<th>Type</th>
<th>Screw diameter mm</th>
<th>Screw length L/D</th>
<th>Screw speed n rpm</th>
<th>Drive power max. kW</th>
<th>Maximum output G kg/h</th>
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<tr>
<td>GE-KS extruder</td>
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<td>60</td>
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<td>Vac GE 120KS</td>
<td>120</td>
<td>20</td>
<td>50</td>
<td>110</td>
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</tbody>
</table>

Cold-feed GE-KS pin-barrel rubber extruder

Type | GE-KS extruder | Vac GE-KS
---|---|---
GE 60KS | GE 90KS | GE 120KS | GE 150KS | GE 200KS | GE 250KS | GE 300KS | Vac GE 60KS | Vac GE 90KS | Vac GE 120KS
Screw diameter mm | 60 | 90 | 120 | 150 | 200 | 250 | 300 | 60 | 90 | 120
Screw length L/D | 14 | 14 | 16 | 16 | 18 | 18 | 18 | 18 | 20 | 22
Screw speed n rpm | 60 | 55 | 50 | 45 | 32 | 24 | 22 | 60 | 55 | 50
Drive power max. kW | 22 | 60 | 110 | 190 | 330 | 450 | 650 | 22 | 60 | 110
Maximum output G kg/h | 150-250 | 500-650 | 800-1300 | 1200-2000 | 2100-3300 | 3500-6000 | 4800-7800 | 70-90 | 250-330 | 400-550
Cold-feed GE-SC Pinconvert rubber extruders
Maximum flexibility for demanding tasks

A defining feature of the KraussMaffei Berstorff GE-SC Pinconvert® extruder is a throttle element built into the area near the maximum channel volume of the sleeve.

It has pins distributed symmetrically around the circumference that radially penetrate into the channels of the barrel sleeve. These can be adjusted manually or electrohydraulically and allow the channel volume to be reduced to zero in this area.

Because this allows the output, melt temperature and homogeneity performance parameters to be influenced and optimized, GE-SC extruders provide you with a guarantee for flexibility and adaptability that cannot be beat. We expanded the implementation options for our GE-SC Pinconvert® extruder using a specially developed cylinder degassing system. The throttle element is of critical importance for these extruder versions as well, since the extruded material filling level can be influenced using the pin penetration depth before it reaches the degassing zone. This can both prevent flooding for various rubber mixtures and mold counter pressures and optimize the degassing procedure.
Hot-feed GE-W rubber extruder
High-performance extruder with proven technology

Hot-feed KraussMaffei Berstorff GE-W series extruders have proven themselves in manufacturing a wide assortment of natural and artificial rubber products. They are fed as units downstream of roller mills, either continually with strips or intermittently with rolls of uncured rubber. They evenly shape the pre-heated plasticized rubber. In addition, they can be arranged as discharge extruders directly below internal mixers. In this form they receive screws with larger diameters and tamping dies as a means of facilitating infeeding.

Vertical extruder
Innovative series for different applications

Our vertical extruders provide an optimal setup for injecting colored stripes or sealing lips onto cables and profiles in one step using a main machine – even if the injection is made of rubber with different qualities.

The extruders are installed on a movable framework and can be adjusted to the necessary injection height using a hoist. The rubber is fed cold using granulate or strips.
High-performance filtration device for highest mixture clarity

Rheologic optimized flow channels
- without corner and edge

Screenchanger with hydraulically pushing system
- to simply changing of the screens
The innovative system for clean mixtures and high efficiency

Strainer systems are the ideal investment for the future for many manufacturers of rubber articles; they reliably remove contamination from rubber mixtures. The result: Clean mixtures for manufacturing premium quality sealing profiles, hoses or sheets. KraussMaffei Berstorff strainer systems are outfitted with innovative components to reduce setup time and increase productivity. The various mesh sizes provide the mixture with highest possible purity.

Modular design for maximum throughput
The strainer systems can be configured and equipped individually. The spectrum ranges from cold-fed gear extruders to cold-fed extruder gear pump combinations to hot-fed systems. The systems are equipped with various components depending on the requirement. These components include extruder screws with a special surface coating, reliable gear pumps or cassette changers for quickly swapping screens. You can achieve high mixture quality while keeping high throughput with these proven components equipped.

Absolute reliability
The rubber extruders for the systems provide maximum availability, high reliability and consistent, very high output – for a critical leap forward in technology and productivity. Rubber extruders with screw diameters from 150 mm – 250 mm are available depending on your requirements. The drive trains, temperature control units, electrical systems and control system are perfectly matched to the extruder and are installed on a basic framework together with the gear pump.

Perfectly matched downstream components
In the gear pump, two gears rotate between the screen and extruder and transport the mass of rubber according to Archimedes’ principle. The pump presses the rubber mixture through the screens at a low mixture temperature. It also minimizes variations in throughput and improves product tolerance. The gear pumps are designed for high load carrying ability and thus are equipped with high-quality bearings and solid pump bodies. The result is long service life despite large amounts of stress. We have developed screen changing equipment for effectively cleaning rubber mixtures and changing the cleaning elements without interrupting production. Outfitted with electrohydraulic drives, you can attain very short change times. Hydraulic ring barrels ensure absolutely leak-free sealing. Cassette changers that operate automatically substantially shorten set-up times for replacing cassettes. The changer consists of a hydraulically-operated pushing system with two cleaning or preparation stations located on the side of the head.

<table>
<thead>
<tr>
<th>Type</th>
<th>GE 150 W(K) + ZRP</th>
<th>GE 200 W(K) + ZRP</th>
<th>GE 250 W(K) + ZRP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screw diameter mm</td>
<td>150</td>
<td>200</td>
<td>250</td>
</tr>
<tr>
<td>Screw length L/D</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Extruder rotational speed n rpm</td>
<td>60 (45)</td>
<td>50 (32)</td>
<td>40 (24)</td>
</tr>
<tr>
<td>Extruder power kW</td>
<td>65 (190)</td>
<td>100 (335)</td>
<td>200 (440)</td>
</tr>
<tr>
<td>ZRP rotational speed n rpm</td>
<td>35</td>
<td>32</td>
<td>30</td>
</tr>
<tr>
<td>ZRP power kW</td>
<td>54</td>
<td>90</td>
<td>135</td>
</tr>
<tr>
<td>Maximum output G kg/h</td>
<td>1500</td>
<td>2500</td>
<td>3800</td>
</tr>
</tbody>
</table>
Extrusion heads
Fast mold change and short cleaning times

The extrusion heads from KraussMaffei Berstorff ensure excellent product quality and providing excellent productivity at the same time. The heads are installed on the extruder with connections that are pressure-tight up to 600 bar. The connections are opened and closed automatically or manually in a few easy steps. The optimized flow channels distribute the entire mass of rubber to the extrusion heads for a wide variety of products.

**The program includes:**
- Straight, angled and cross injection heads as single or multi-point heads for manufacturing profiles and hoses as well as for jacketing cables, hoses and sheaths
- Protector heads as single or multi-point heads for manufacturing tread and sidewalls for car and truck tires
- Pelletizer heads for manufacturing granulate and pellets
- Wide injection heads for manufacturing webs and sheets based on the roller head principle
- Hose-plate injection heads with and without blades for manufacturing hoses and sheets
- Strainer heads for screening rubber mixtures
- Roll-in roller heads (single roller heads) with replaceable flow channel inserts and an adjustment drive for adjusting the roller gap for manufacturing sheets and profiles such as sidewall strips, wing strips, apex strips and the like.
- Multiplex extrusion heads for manufacturing tire components with up to 6 different rubber mixtures

The heads can be outfitted with some multi-compartment molds or they can be combined with strainer heads. The product is connected to the procedure part with flange connections, a clamp lock or a Bayonet lock. The connection designs can be made so that the heads can be folded down for easy, fast cleaning and quickly changing molds.
Control technology
Process-oriented operator guidance for easy machine operation

Central system control
High demands on product quality call for high process reliability. As one of the most modern control, regulation and monitoring systems in the area of extrusion, the KraussMaffei Berstorff control system features reliable technology and intelligent functions for central system control. It ensures optimized production preparation and transparent production conditions at a constantly high level.

Optimum visualization even for several extruders
The individual units in a machine can be visualized and operated on a row of screen pages. Thanks to central synchronization, the complete machine can also be safely and easily regulated across several extruders.

All important units in the machine can be directly accessed via the control system’s machine keypad. The current operating status of the complete machine is permanently displayed and a freely configurable actual value column comprising seven parameters ensures optimum process control. Information messages and error messages are displayed in plain text in the selected national language. The control system also features options for logging and easily connecting to a host computer.

User-friendly models
Three operating versions are available: integrated operator panel, swivel-mounted operator panel or mobile operator panel. With the swivel-mounted version, the machine can be operated entirely from the aspect of the mold.
OEE Plus
Boosting cost-efficiency for you

High overall equipment efficiency (OEE) is a fundamental prerequisite for your company’s success. KraussMaffei Berstorff’s product portfolio comprises tailored machines and lines along with perfectly matched services that increase the economic efficiency and the sustainability of your production. Benefit from our proven know-how of extrusion technology in any application.

For more information about OEE Plus, visit: www.kraussmaffeiberstorff.com/oeeplus
KraussMaffei Berstorff
A strong brand in a unique global group

Value-proven Extrusion Technology solutions
Around the world, KraussMaffei Berstorff stands for reliable and value-proven solutions in Extrusion Technology. These range from using individual extruders for degassing in polymerization, compounding, pipe, profile, film and sheet extrusion, physical foaming and the manufacture of technical rubber articles and intermediates for tire production up to complete extrusion lines. All machines and systems from KraussMaffei Berstorff are custom-configured, for example for the chemical, automotive, construction, packaging or pharmaceutical industry.

There for you around the world
KraussMaffei Berstorff is your partner – from the first planning meeting through development of the best possible technical and business solution up through commissioning, servicing and production of your system. We guarantee high-quality advice, solution expertise, reliable spare parts logistics and fast-reacting service during each phase. Our goal is increasing your success.

Individualized service
Benefit from KraussMaffei Berstorff’s reliable service. Our customer service team and experienced fitters, technicians and engineers are there for you as quickly as possible and even help on location to optimize your systems and processes and to minimize downtime as much as possible. Rely on our highly skilled repair and spare parts service

You can find additional information about KraussMaffei Berstorff at: www.kraussmaffeiberstorff.com

KraussMaffei Group
Comprehensive expertise

Unique selling proposition Technology
The KraussMaffei Group is the only provider in the world to possess the essential machine technologies for plastics and rubber processing with its KraussMaffei, KraussMaffei Berstorff and Netstal brands: Injection Molding Machinery, Automation, Reaction Process Machinery and Extrusion Technology.

The group is represented internationally with more than 30 subsidiaries and over ten production plants as well as about 570 commercial and service partners. This is what makes us your highly skilled and integrated partner. Use our comprehensive and unique expertise in the industry.

You can find additional information at: www.kraussmaffeigroup.com
KraussMaffei Berstorff delivers not only extremely high-performance rubber extruders along the entire rubber treatment value-adding chain, but also complete systems for manufacturing rubber hoses, profiles, sheets and tire parts. The machines and systems meet all of the requirements for an economical and reliable manufacturing process.

Whatever your customer needs – we deliver the solution. Discover the customized products and services from KraussMaffei Berstorff that strengthen your company for the long term – in every market and in every regard.

www.kraussmaffeiberstorff.com